

WELCOME ADDRESS

We are honoured and pleased to welcome over 2,700 participants and guests at the 38th Congress of the Federation of European Biochemical Societies in St. Petersburg, Russia. The Congress Advisory Board and the Program Committee have built an outstanding scientific program under the motto 'Mechanisms in Biology'. A central attraction is the series of Plenary Lectures delivered by distinguished speakers, including eleven Nobel Laureates **Sydney Altman, Aaron Ciechanover, Jules Hoffmann, Robert Huber, Roger Kornberg, Jean-Marie Lehn, Richard Roberts, Jack Szostak, Susumu Tonegawa, Kurt Wüthrich and Ada Yonath**, and encompassing a wide spectrum of ground-breaking achievement in molecular life science research.

The core of the Congress comprises 38 Symposia chaired by internationally renowned scientists. These will span all key areas of biochemistry, molecular biology, biotechnology and related fields, allowing every Congress participant to stay on top of the latest research in his or her area.

As a complement to the core scientific program, FEBS will be organizing workshops on topics of more general interest to students, researchers and educators. A special SCIENCE & SOCIETY SESSION is devoted to the emerging area of personalized cancer medicine; an EDUCATION WORKSHOP will look at molecular life sciences education for the needs of industry; and WOMEN IN SCIENCE EVENTS will include a workshop on careers issues as well as presentation of the 2013 FEBS/EMBO Women in Science Award.

The Congress is preceded by the 13th FEBS Young Scientists' Forum (YSF). This event provides an excellent opportunity for young scientists from across the FEBS area to get together, present their scientific results, and critically discuss novel ideas, trends and features, achievements and hypotheses. In addition to its financial support for participants of the YSF at the Congress, FEBS has also supported the attendance of over 250 young scientists through FEBS Congress Bursaries. Further support was provided by Russian Foundation for Basic Research (RFBR) to enable 200 young Russian scientists to attend the Congress.

The Congress offers a unique chance to visit St Petersburg, one of the most beautiful European cities, in the high season of the famous White Nights. The city is renowned for its culture, beauty, splendour and rich history, with numerous palaces, cathedrals, museums, monuments and parks.

We are delighted to invite a broad scientific community to this meeting to present their results from across the field of molecular life sciences. We very much hope that you will share our enthusiasm for this Congress and we thank everybody who have decided to join us in this beautiful city.

VLADIMIR SKULACHEV

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**President, Russian
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SERGEY KOCHETKOV

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KEY INFORMATION

Badges

The ID badge included in delegate's bags is the admission pass to the congress venue. Delegates and accompanying persons are asked to wear it all the time.

Internet

There will be free Wi-Fi Internet Access in Pavilion 4.

Abstract Book

The Congress abstract book is published online as FEBS Journal Supplement (Wiley-Blackwell). Additionally, a USB flash drive with the abstract volume is included in delegate's bags.

Language

English is the Congress official language. No translation will be provided.

Congress Venue

Address: 103, Bolshoy Avenue of Vasilievsky Island, St. Petersburg, Russia 199106



How to reach LENEXPO

From metro station Primorskaya

- Trolley bus #10
- Bus #6, #1
- Minibus #6, #44, #690, #120, #359

From metro station Vasileostrovskaya

- Minibus #183, #690, #349, #44, #309

Accreditation Desk Opening Hours

July 6th, 10.00 – 13.00

Park Inn Pribaltiyskaya Hotel (Address: 14, Korablestroiteley Street, St Petersburg)

July 6th, 10.00 – 13.00

Azimet Hotel (Address: 43/1, Lermontovsky prospect, St Petersburg)
for FEBS Bursary winners only who stay at this Hotel

July 6th, 14.00 – 20.00

Oktyabrsky Concert Hall (Address: 6, Ligovsky Avenue, Saint Petersburg)

July 7th through July 10th, 08.30 – 17.00

LenExpo, Entrance from Nalichnaya Street between Pavilions 3 and 4

July 11th, 08.30 – 12.00

LenExpo, Entrance from Nalichnaya Street between Pavilions 3 and 4

Oral Presentations

- Plenary Lectures: up to 1 h including questions
- Keynote Lectures: up to 40 min including questions
- Invited Lectures: up to 25 min including questions
- Short talks: up to 15 minutes including questions

PPT Presentations

Power Point Presentations (on CD or USB flash drives) should be handed to the representative of the Congress Secretariat in advance but not later than 15 min prior to the start of the session.

Poster Sessions

Poster sessions will be held in Pavilion 7 and in Pavilion 4, 2nd floor on July 7th and in Pavilion 6 on July 8th through July 10th.

Poster Sessions Schedule

- July 7th: W4, S15, S20, W24, S25
- July 8th: S1, S6, S7, W10, S14, S17, S19, S36, W37
- July 9th: S2, W9, S11, S12, S16, S21, S28, W31, W34
- July 10th: S3, W5, W8, S13, S18, S22, S23, S26, S27, S29, W30, W32, W33

Opening Ceremony

- July 6th, 16.00 – 17.00
- July 6th, 17.00 – 18.00

Oktyabrsky Concert Hall (Address: 6, Ligovsky Avenue, Saint Petersburg)
Opening Plenary Lecture by Jules Hoffmann, Nobel Laureate

Social Program

- July 6th, 18.30 – 19.30
- July 6th, 19.30 – 10.30
- July 7th, 12.00 – 16.00, 21.00 – 22.30
- July 10th, 12.00 – 16.00, 21.00 – 22.30
- July 10th, 20.30

- Ballet "Swan Lake" Oktyabrsky Concert Hall
- Get Together Party Oktyabrsky Concert Hall
- Hermitage guided tours (tickets are available at accreditation desk; for registered participants and accompanying persons free of charge)
- Hermitage guided tours (tickets are available at accreditation desk; for registered participants and accompanying persons free of charge)
- Congress Dinner in Russian style, Peter and Paul Fortress (Ticket price EU 85, ordered in advance)

Congres Tours

We are happy to offer you FEBS Congress Tours. You should have a ticket to participate in a Congress tour. For more info on price and selection of tours please visit our website at <http://www.febs-2013.org/eng/catalog/769.aspx> or ask the tour manager at our accreditation desk upon arrival.

	July 6	July 7	July 8	July 9	July 10	July 11
City Tour in St. Petersburg + The Nobels in St. Petersburg Duration: 3 hours	10.00 Park Inn	10.30 Park Inn 11.00 LenExpo	10.30 Park Inn 11.00 LenExpo			
Boat Night City Tour Duration: 2 hours				00.30 Park Inn 01.00 Moika 23 02.30 Moika 23		
Parks and Fountains of Peterhoff Duration: 4 hours	10.00 Park Inn		10.30 Park Inn 11.00 LenExpo	10.30 Park Inn 11.00 LenExpo		
Journey to Pushkin. Catherine's Palace and the Amber Chamber Duration: 4 hours		08.30 Park Inn 09.00 LenExpo			08.00 Park Inn 08.30 LenExpo	
Behind the stage of the Mariinsky Theatre Duration: 3 hours			10.30 Park Inn 11.00 LenExpo		10.30 Park Inn 11.00 LenExpo	
Journey to Shuvalovka Village Duration: 4 hours						09.30 Park Inn 10.00 LenExpo

Official FEBS Congress hotels

1. **Rocco Forte Hotel Astoria**
39 Bolshaya Morskaya st, St. Petersburg 190000, +7 (812) 494-5757, www.thehotelastoria.com
2. **Rocco Forte Angletterre Hotel**
St. Isaac's Square / Malaya Morskaya st 24, St. Petersburg 190000, Tel: +7 (812) 494-5666, http://www.angletterrehotel.com
3. **Sokos Hotel Palace Bridge**
V.O. Birzhevoi pereulok 2-4 (Vasilievsky Island), Saint-Petersburg 199004, +7 (812) 335-2200, www.sokoshotels.fi/en/hotels/pietari/palacebridge/
4. **Sokos Hotel Vasilievsky**
V.O. 8 Liniya, 11-13 (Vasilievsky Island), St. Petersburg, 199004, +7 (812) 335-2291, www.sokoshotels.fi/en/hotels/stpetersburg/sokos-hotel-vasilievsky7
5. **Park Inn by Radisson Pribaltiyskaya Hotel**
14 Korablestroiteley Street - Vasilievsky Island, Saint-Petersburg 199226, +7 812 329 26 26, www.parkinn.com/hotelpribaltiyskaya-stpetersburg
6. **Oktyabrskaya Hotel**
10, Ligovsky Prospect, St. Petersburg, 191036, +7 (812) 578-1515, www.oktober-hotel.spb.ru
7. **Saint-Petersburg Hotel**
5/2, Pirogovskaya Emb., St. Petersburg, 194175, +7 (812) 380-1919, www.hotel-spb.ru/hotel-spb.nsf/main/en

38th FEBS Congress Shuttle buses

On July 6th, a complimentary shuttle bus service is provided for FEBS Congress participants and accompanying person from Pulkovo 2 airport to official FEBS Congress Hotels.

July 6, 2013	
Traffic interval - every 30 minutes	
07:30 - 23:30	International airport Pulkovo 2 – Official FEBS Congress hotels
Traffic interval – as soon as the shuttle is full	
14:00 - 00:00	Park Inn by Radisson Pribaltiyskaya hotel – Oktyabrsky Concert Hall – Park Inn by Radisson Pribaltiyskaya

From July 7th though July 11th, shuttle buses will be available from Park Inn by Radisson Pribaltiyskaya, the Congress main hotel, to LenExpo and back. For those participants who stay at other hotels, we provide shuttle bus service from Primorskaya metro station to LenExpo and back.

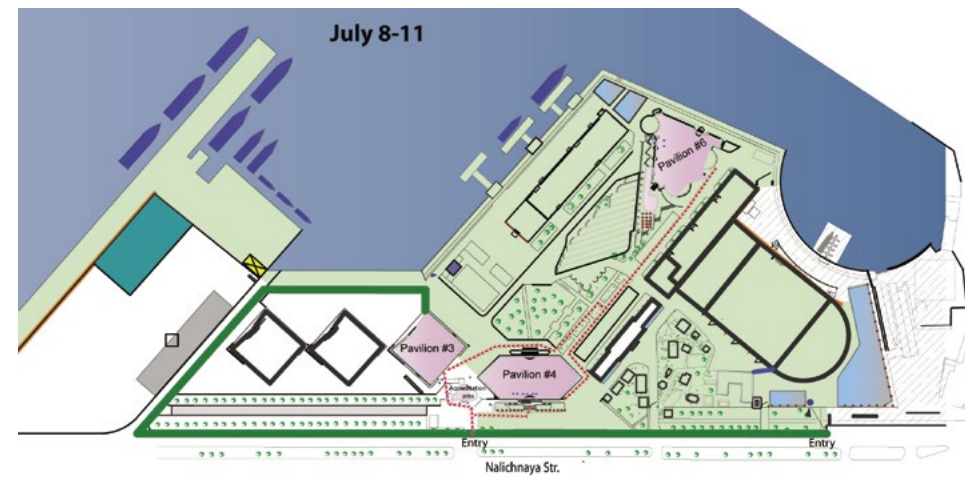
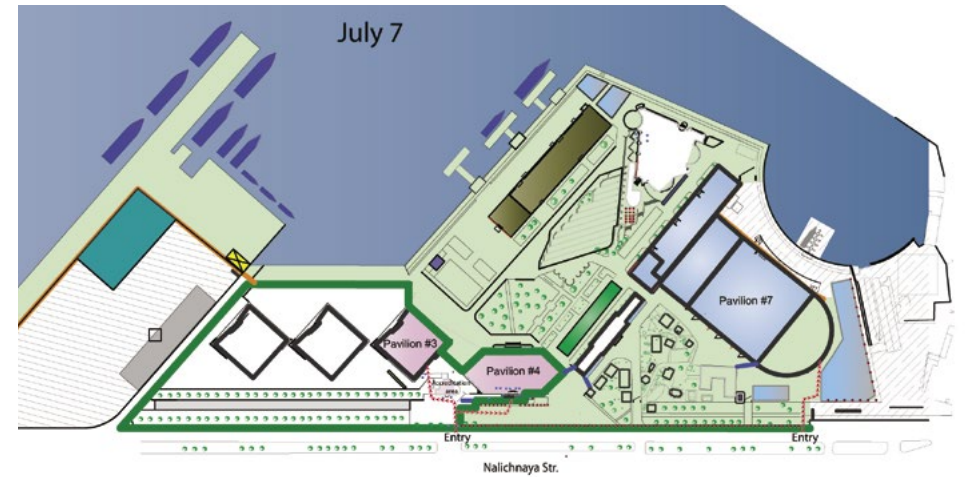
July 7-10, 2013	
Traffic interval – as soon as the shuttle is full	
07:00 - 22:00	Park Inn by Radisson Pribaltiyskaya – LENEXPO – Park Inn by Radisson Pribaltiyskaya
07:00 - 22:00	Primorskaya metro station - LENEXPO – Primorskaya metro station
July 11, 2013	
Traffic interval – as soon as the shuttle is full	
07:00 - 14:00	Park Inn by Radisson Pribaltiyskaya - LENEXPO – Park Inn by Radisson Pribaltiyskaya
07:00 - 14:00	Primorskaya metro station - LENEXPO – Primorskaya metro station
July 07 and July 10, 2013	
22:00 – 00:00	The Hermitage museum – Sokos Palace Bridge, Sokos Vasilievsky, Park Inn by Radisson Pribaltiyskaya hotel



METRO MAP

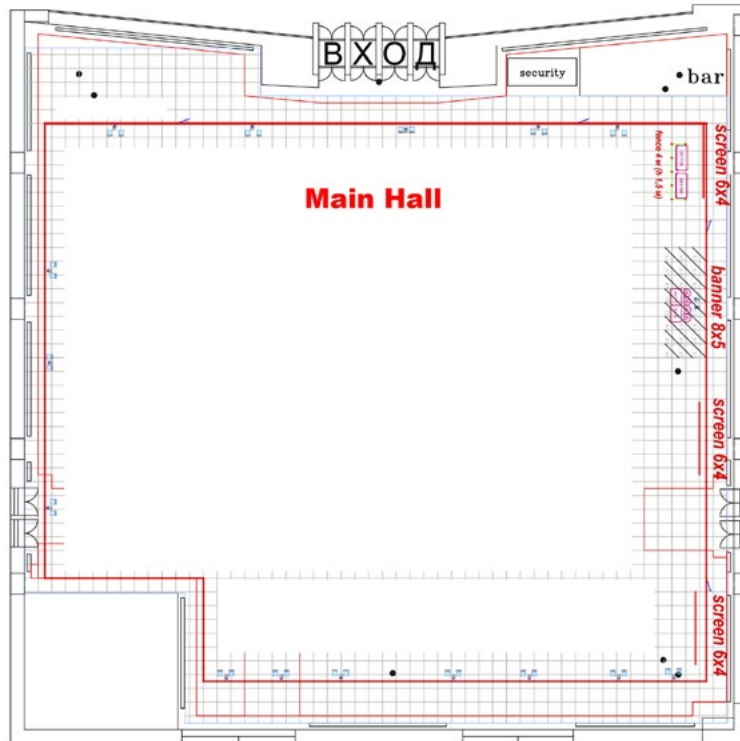


LENEXPO



FLOOR PLANS

pavilion 3



Plenary Sessions

July 7–11: Main Hall (Pavilion 3)

Symposia, FEBS Special Activities, Satellite Events

July 7: Pavilions 3, 4, 7 (entrance to Pavilion 7 from Nalichnaya Street)

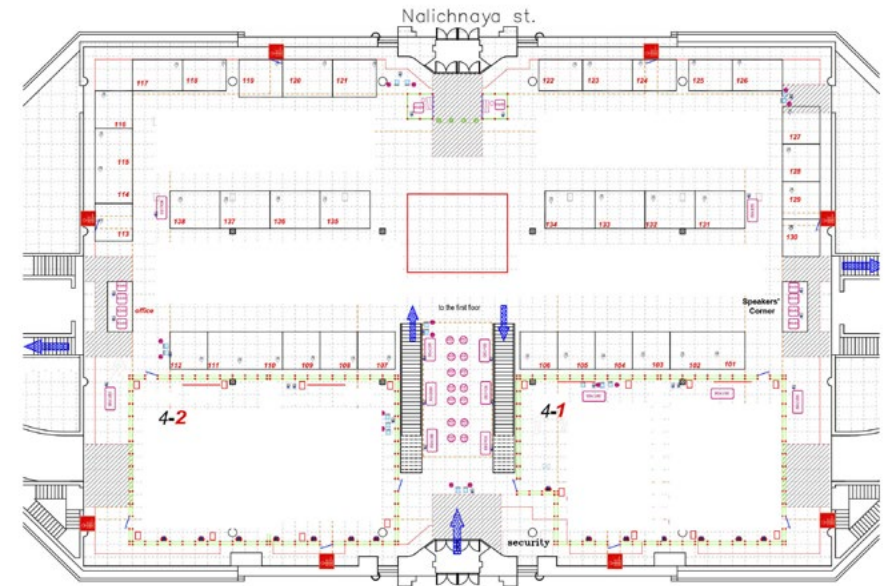
July 8–11: Pavilions 3, 4, 6

Poster Sessions

July 7: Pavilion 4 (W4, S15, 24) and Pavilion 7 (S20, S25)

July 8–11: Pavilion 6, 1st floor

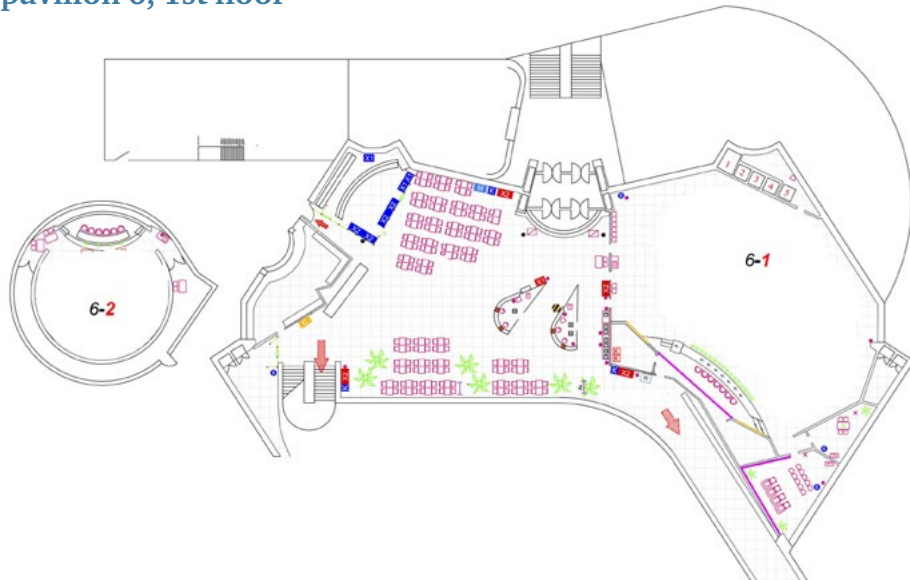
pavilion 4, 1st floor



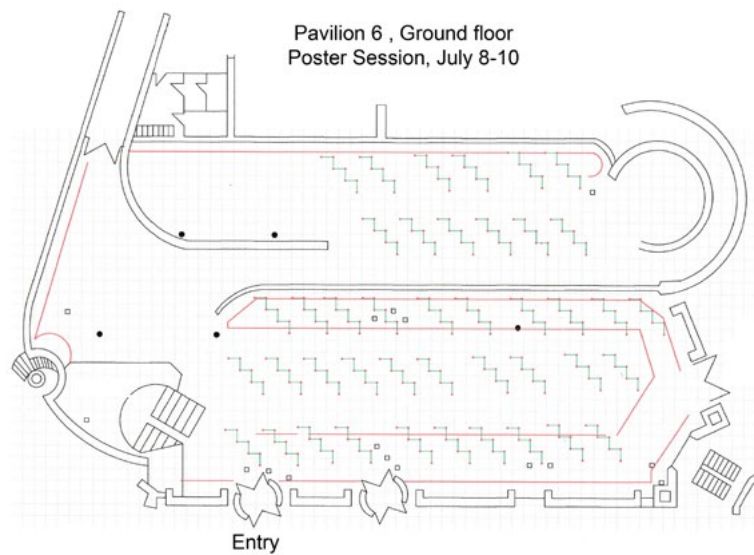
pavilion 4, 2nd floor



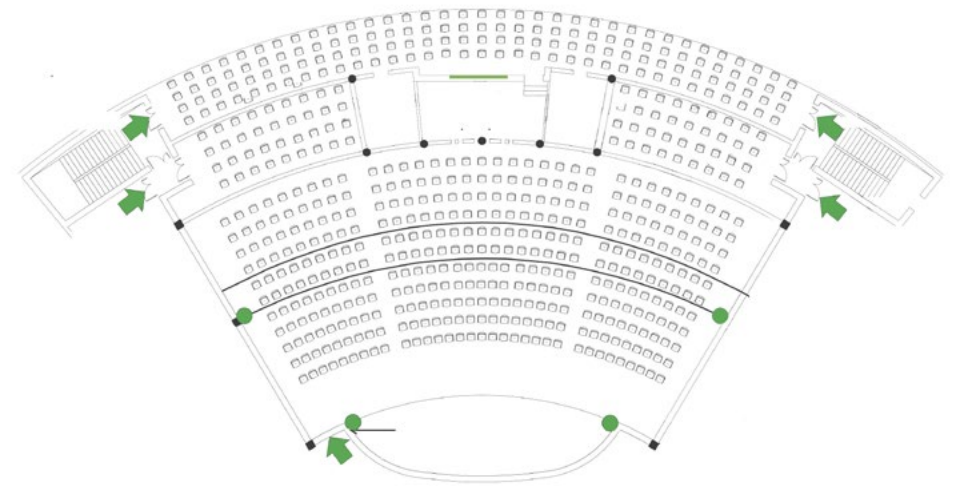
pavilion 6, 1st floor



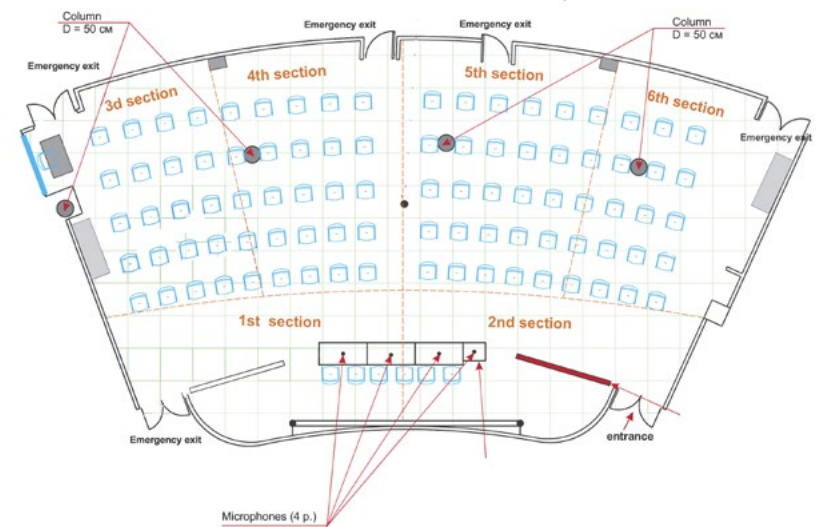
pavilion 6, 2nd floor



pavilion 7, 1st floor



pavilion 7, 2nd floor



38th FEBS Program Schedule

July 6, Saturday																							
Oktyabrsky Main City Concert Hall																							
09.00 – 13.00	ACCREDITATION	Accreditation of most Congress participants is open in PARK INN PRIBALTIYSKAYA Hotel. FEBS Bursary winners are accredited in the AZIMUT Hotel																					
14.00 – 19.00	ACCREDITATION	Accreditation of all Congress participants in the OKTYABRSKY Concert Hall																					
16.00 – 17.00	Opening	Opening																					
17.00 – 18.00		OPENING PLENARY LECTURE: JULES HOFFMANN "Evolutionary perspectives of innate immunity", Chairs: <i>Alan Fersht, Konstantin Skryabin</i>																					
18.30 – 19.30		Ballet																					
19.30 – 21.00		Get-Together Party																					
July 7, Sunday																							
LENEXPO																							
	Code	I-S2	Main hall	III-S15	4-4	II-S7	4-1	III-S14	4-2	IV-S19	4-5	IV-S20	7-2	V-W24	4-7	VI-S25	7-1	I-W4	4-6	EMBL-W38	4-9		
08.30 – 10.30	SYMPOSIA and WORKSHOPS	RNA World, <i>Olga Dontsova, Eric Westhof</i>		Regulation of Biological Processes by Ubiquitin and Ubiquitin-like Proteins in Health and Disease: Proteolysis, Autophagy and Apoptosis, <i>Aaron Ciechanover, Helle Ulrich</i>		Protein Structure and Folding, <i>Cyrus Chothia, Alexei Finkelstein</i>		"Mitochondriology": New Approaches in Bioenergetics, <i>Sergio Papa, Vladimir Skulachev</i>		Biochemistry of Neurodegeneration, <i>Yves Agid, Michael Ugrumov</i>		Photoreception and Biochemistry of Vision, <i>Karl-Wilhelm Koch, Michael Ostrovsky</i>		B Cells in Inflammation and Disease, <i>Elias Toubi, Moncef Zouali</i>		Proteomics and Peptidomics, <i>Vadim Govorun, Vadim Ivanov</i>		Evolutionary Genomics, <i>Konstantin Skryabin, Huanming Yang</i>		Russia's Cooperation with European Partners in Life Sciences, <i>Iain Mattaj, Vladislav Panchenko</i>			
10.30 – 11.00		Coffee Break																					
11.00 – 12.00		EMBO LECTURE Dedicated to Vladimir Engelhardt: AARON CIECHANOVER "The end of the polyubiquitin chain as the hallmark proteasomal signal", Chairs: <i>Maria Leptin, Vladimir Skulachev</i>																					
12.00 – 13.00		PLENARY LECTURE: JOSEPH SCHLESSINGER "Cell signaling by receptor tyrosine kinases: from basic principles to cancer therapy", Chairs: <i>Georgy Georgiev, Sergio Papa</i>																					
13.00 – 14.30		POSTER SESSION (W4, S15, S20, W24, S25)																					
14.30 – 15.30		BÜCHER PLENARY LECTURE: KURT WÜTHRICH "Structural genomics with soluble and membrane proteins", Chairs: <i>Michael Kirpichnikov, Claudina Rodrigues-Pousada</i>																					
15.30 – 16.30		PLENARY LECTURE: ADA E. YONATH "An ancient chemical bonding machine functioning nowadays", Chairs: <i>Miguel de la Rosa, Alexander Spirin</i>																					
16.30 – 17.00		Coffee Break																					
	Code	I-S2	Main hall	III-S15	4-4	II-S7	4-1	III-S14	4-2	IV-S19	4-5	IV-S20	7-2	V-W24	4-7	VI-S25	7-1	IV-S16	4-6	VI-W31	4-9		
17.00 – 19.40	SYMPOSIA and WORKSHOPS	RNA World, <i>Olga Dontsova, Eric Westhof</i>		Regulation of Biological Processes by Ubiquitin and Ubiquitin-like Proteins in Health and Disease: Proteolysis, Autophagy and Apoptosis, <i>Aaron Ciechanover, Helle Ulrich</i>		Protein Structure and Folding, <i>Cyrus Chothia, Alexei Finkelstein</i>		"Mitochondriology": New Approaches in Bioenergetics, <i>Sergio Papa, Vladimir Skulachev</i>		Biochemistry of Neurodegeneration, <i>Yves Agid, Michael Ugrumov</i>		Photoreception and Biochemistry of Vision, <i>Karl-Wilhelm Koch, Michael Ostrovsky</i>		B Cells in Inflammation and Disease, <i>Elias Toubi, Moncef Zouali</i>		Proteomics and Peptidomics, <i>Vadim Govorun, Vadim Ivanov</i>		Biochemistry for Medicine. Immunochemical Approaches, <i>Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima</i>		Biogenic Polyamines in Cell Metabolism, <i>Robert Casero, Alexey Khomutov, Heather Wallace</i>			
July 8, Monday																							
LENEXPO																							
	Code	I-S2	Main hall	I-S1	6-1	II-S7	4-1	III-S14	4-8	II-S6	4-5	II-W10	4-10	IV-S16	6-2	IV-S17	4-2	IV-S21	4-4	III-S12	4-6	ED-S36	4-9
08.30 – 10.30	SYMPOSIA and WORKSHOPS	RNA World, <i>Olga Dontsova, Eric Westhof</i>		Organization of Eukaryotic Genomes, <i>Wendy Bickmore, Sergey Razin</i>		Protein Structure and Folding, <i>Cyrus Chothia, Alexei Finkelstein</i>		"Mitochondriology": New Approaches in Bioenergetics, <i>Sergio Papa, Vladimir Skulachev</i>		Biocatalysis: General Problems, Part 1: General Aspects, <i>George Michael Blackburn, Alexander Gabibov</i>		Alexander Braunstein Memorial Symposium: Enzymes, cofactors, mechanisms, <i>Tatyana Demidkina, Andrea Mozzarelli, Vladimir Tishkov</i>		Biochemistry for Medicine. Molecular Diagnostics, <i>Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima</i>		Biochemistry of Neoplastic Transformations, <i>Georgy Georgiev, Joseph Schlessinger</i>		Stem Cells: Fundamentals and Applications, <i>Clare Blackburn, Alexey Tomilin</i>		Membrane Transport and Secretion: From Nephrons to Neurons, <i>Gais Al-Awqati, Dominique Eladari, Alexander Petrenko</i>		Education in Biochemistry "The Bologna Process – Towards the European Higher Education Area: Discussing the Pros and Cons", <i>Ferdinand Hucho, Tatiana Ovchinnikova</i>	
10.30 – 11.00		Coffee Break																					
11.00 – 12.00		IUBMB LECTURE: JACK W. SZOSTAK "The origin of cellular life and the emergence of Darwinian evolution", Chairs: <i>Olga Dontsova, Gregory A. Petsko</i>																					
12.00 – 13.00		SCIENCE AND SOCIETY LECTURE: GOTTFRIED SCHATZ "What it takes to succeed in science – and what Europe should do for its young scientists", Chairs: <i>Tatiana Ovchinnikova, Israel Pecht</i>																					
13.00 – 14.30		POSTER SESSION (S1, S6, S7, W10, S14, S17, S19, S36, W37)																					
14.30 – 15.00		FEBS LETTERS AWARD LECTURE: SUSUMU MITSUTAKE "Ceramide kinase deficiency improves diet-induced obesity and insulin resistances", Chairs: <i>Felix Wieland, Oleg Kisselev</i>																					
15.00 – 15.30		FEBS JOURNAL AWARD LECTURE: ANNA-KARIN GUSTAVSSON "Sustained glycolytic oscillations in individual isolated yeast cells", Chairs: <i>Richard Perham, Vladimir Tishkov</i>																					
15.30 – 16.10		MAREK DZIKI: SKOLKOVO Presentation, Chairs: <i>Alexander Chernov, Angelo Azzi</i>																					
16.30 – 17.00		Coffee Break																					
	Code	I-S2	Main hall	I-S1	6-1	IV-S16	4-1	III-S14	4-8	II-S6	4-5	II-W10	4-10	IV-S16	6-2	IV-S17	4-2	IV-S21	4-4		4-6	ED-W37	4-9
17.00 – 19.40	SYMPOSIA and WORKSHOPS	RNA World, <i>Olga Dontsova, Eric Westhof</i>		Organization of Eukaryotic Genomes, <i>Wendy Bickmore, Sergey Razin</i>		Biochemistry for Medicine, Neurology, <i>Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima</i>		"Mitochondriology": New approaches in Bioenergetics, <i>Sergio Papa, Vladimir Skulachev</i>		Biocatalysis: General Problems, Part 2: Phosphate Aspects, <i>George Michael Blackburn, Alexander Gabibov</i>		Alexander Braunstein Memorial Symposium: Enzymes, cofactors, mechanisms, <i>Tatyana Demidkina, Andrea Mozzarelli, Vladimir Tishkov</i>		Biochemistry for Medicine. Cardiovascular Diseases, <i>Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima</i>		Biochemistry of Neoplastic Transformations, <i>Georgy Georgiev, Joseph Schlessinger</i>		Stem Cells: Fundamentals and Applications, <i>Clare Blackburn, Alexey Tomilin</i>		17.00 – 19.00 SKOLKOVO Session		FEBS Education Committee Workshop on "Molecular Life Sciences Education for the Needs of the Industry", <i>Gül Güner Akdoğan, Keith Elliott</i>	

July 9, Tuesday																											
LENEXPO																											
	Code	I-S2	Main hall	I-S1	4-2	IV-S21	4-9	III-S11	4-8	II-S6	4-5	VI-S28	4-6	IV-S16	4-7	IV-S16	6-2	II-W9	4-4	VI-W31	4-10	S&S-S35	6-1	LifeTech	4-1		
08.30 – 10.30	SYMPOSIA and WORKSHOPS	RNA World, Olga Dontsova, Eric Westhof	Organization of Eukaryotic Genomes, Wendy Bickmore, Sergey Razin	Stem Cells: Fundamentals and Applications, Clare Blackburn, Alexey Tomilin	Ion Channel Signaling: From Spatial Structures to Physiological Mechanisms, Elena Kaznacheyeva, Oleg Krnshital, Alan North, Victor Tsetlin	Biocatalysis: General Problems Part 3: Medical Aspects, George Michael Blackburn, Alexander Gabibov	Glycobiology: Carbohydrate-Protein Recognition, Nicolai Bovin, Monica Palcic	Biochemistry for Medicine: New Approaches to Therapy, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Biochemistry for Medicine: Metabolism of Carcinogenes and Drugs, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Enzymes Reacting with Organophosphorus Agents, Patrick Masson, Sergey Vartolomeev	Biogenic Polyamines in Cell Metabolism, Robert Casero, Alexey Khamutov, Heather Wallace	Science & Society Session "Cancer", Jacques-Henry Weil, Alexander Eggermont, Mikhail Lichintser	10.00 – 14.30 Exploration of Disease Pathways from Gene to Function. Life Technologies™ Satellite Event														
10.30 – 11.00	Coffee Break																										
11.00 – 12.00	PLENARY LECTURE: RICHARD LERNER "Chemistry of large numbers", Chairs: Alexander Gabibov, Daniel Thomas																										
12.00 – 13.00	PLENARY LECTURE: SUSUMU TONEGAWA "Engrams for genuine and false memories", Chairs: Valery Chereshnev, Michael Sela, Yuri Sykulev																										
13.00 – 14.30	POSTER SESSION (S2, W9, S11, S12, S16, S21, S28, W31, W34)																										
14.30 – 15.30	PRAKASH DATTA PLENARY LECTURE: ROGER D. KORNBERG "The molecular basis of eukaryotic transcription", Chairs: Jaak Järvi, Konstantin Severinov																										
15.30 – 16.30	WISE AWARD PLENARY LECTURE: GENEVIÈVE ALMOUZNI "The multifaces of chromatin assembly, a recipe that mixes new with old partners", Chairs: Cecilia Arraiano, Olga Lavrik																										
16.30 – 17.00	Coffee Break																										
	Code	I-S2	Main hall	I-S1	4-2	WISE-W34	4-7	III-S11	4-8	II-W10	4-9	VI-S28	4-6	III-S12	6-1	IV-S16	6-2	II-W9	4-4	VI-W31	4-10	BioNMR-S38	4-5		4-1		
17.00 – 19.40	SYMPOSIA and WORKSHOPS	RNA World, Olga Dontsova, Eric Westhof	Organization of Eukaryotic Genomes, Wendy Bickmore, Sergey Razin	Women in Science Symposium, Cecilia Maria Arraiano	Ion Channel Signaling: From Spatial Structures to Physiological Mechanisms, Elena Kaznacheyeva, Oleg Krnshital, Alan North, Victor Tsetlin	Alexander Braunstein Memorial Symposium: Enzymes, cofactors, mechanisms, Tatyana Demidkina, Andrea Mozzerelli, Vladimir Tishkov	Glycobiology: Carbohydrate-protein recognition, Nicolai Bovin, Monica Palcic	Membrane Transport and Secretion: From Nephrons to Neurons, Gais Al-Awqati, Dominique Eladani, Alexander Petrenko	Biochemistry for Medicine: Metabolism of Carcinogenes and Drugs, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Enzymes Reacting with Organophosphorus Agents, Patrick Masson, Sergey Vartolomeev	Biogenic Polyamines in Cell Metabolism, Robert Casero, Alexey Khamutov, Heather Wallace	Satellite Symposium "NMR in Biology – Special Activity", Isabella Felli	15.30 – 17.00 SKOLTECH Session														
July 10, Wednesday																											
LENEXPO																											
	Code	I-S3	4-6	I-S1	4-4	II-W8	4-5	III-S13	Main hall	IV-S16	4-1	IV-S18	4-8	III-S12	4-10	V-S22	6-1	V-S23	4-7	VI-S26	4-9	VI-W33	4-2	C-HPP	6-2		
08.30 – 10.30	SYMPOSIA and WORKSHOPS	DNA Damage and Repair, Elizaveta Gromova, Olga Lavrik, Leon Mullenders	Organization of Eukaryotic Genomes, Wendy Bickmore, Sergey Razin	Protein Dynamics, Alexander Arseniev, Olga Fedorova, Jaak Jarv	Biochemistry of Stress Response, Boris Margulis, Gabriele Multhoff	Biochemistry for Medicine: Infectious Diseases and Drug Design, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Mechanisms of G Protein Signaling, Andrew B. Goryachev, Alfred Wittinghofer	Membrane Transport and Secretion: From Nephrons to Neurons, Gais Al-Awqati, Dominique Eladani, Alexander Petrenko	Molecular Basis of Autoimmunity, Jean Francois Bach, Ludvig M. Sollid	Immunochemistry and Bioengineering, Sergey Deyev, Andreas Plückthun	Metabolism of Marine Organisms: Structure and Activities, Valentin Stonik	Bioengineering: Fundamentals and application, Vladimir Popov, Vytautas Svedas, Marcel Wubbolts	Scientific Meeting for the Chromosome-centric Human Proteome Project														
10.30 – 11.00	Coffee Break																										
11.00 – 12.00	HANS KREBS PLENARY LECTURE: RICHARD ROBERTS "Bacterial methylomes", Chairs: Alexey Bogdanov, Laszlo Fesus																										
12.00 – 13.00	PLENARY LECTURE: PAVEL GEORGIEV "Chromatin insulators and long-distance interactions", Chairs: Sergey Razin, Eric Westhof																										
13.00 – 14.30	POSTER SESSION (S3, W5, W8, S13, S18, S22, S23, S26, S27, S29, W30, W32, W33)																										
14.30 – 15.30	PLENARY LECTURE: ROBERT HUBER "Proteases and their control in health and disease", Chairs: Michael Blackburn, Vladimir Shuvalov																										
15.30 – 16.30	PLENARY LECTURE: SIDNEY ALTMAN "Antibiotics: present and future", Chairs: Mathias Sprinzl, Valentin Vlassov																										
16.30 – 17.00	Coffee Break																										
	Code	I-S3	4-6	I-W5	4-4	II-W8	4-5	III-S13	Main hall	IV-S16	4-1	IV-S18	4-8	III-S12	4-10	V-S22	6-1	V-S23	4-7	VI-W29	4-9	VI-W33	4-2	C-HPP	6-2		
17.00 – 19.40	SYMPOSIA and WORKSHOPS	DNA Damage and Repair, Elizaveta Gromova, Olga Lavrik, Leon Mullenders	Nucleic Acid Targets and Therapeutics, Sidney Altman, Valentin Vlassov	Protein Dynamics, Alexander Arseniev, Olga Fedorova, Jaak Jarv	Biochemistry of Stress Response, Boris Margulis, Gabriele Multhoff	Biochemistry for Medicine: Infectious Diseases and Drug Design, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Mechanisms of G Protein Signaling, Andrew B. Goryachev, Alfred Wittinghofer	Membrane Transport and Secretion: From Nephrons to Neurons, Gais Al-Awqati, Dominique Eladani, Alexander Petrenko	Molecular Basis of Autoimmunity, Jean Francois Bach, Ludvig M. Sollid	Immunochemistry and Bioengineering, Sergey Deyev, Andreas Plückthun	Bioinformatics, Mikhail Gelfand, Eugene Koonin	Bioengineering: Fundamentals and Application, Vladimir Popov, Vytautas Svedas, Marcel Wubbolts	Scientific Meeting for the Chromosome-centric Human Proteome Project														
July 11, Thursday																											
LENEXPO																											
	Code	VI-W30	4-6	I-W5	4-4	VI-S27	4-7	III-S13	Main hall	IV-S16	4-1	IV-S16	4-5	VI-S26	4-9	VI-W32	4-8			VI-W29	4-10	VI-W33	6-1	C-HPP	6-2		
08.30 – 11.00	SYMPOSIA and WORKSHOPS	Systems Biology, Maria Samsonova, Daniel Thomas	Nucleic Acid Targets and Therapeutics, Sidney Altman, Valentin Vlassov	Plant Biochemistry, Alexander Grechkin	Biochemistry of Stress Response, Boris Margulis, Gabriele Multhoff	Biochemistry for Medicine: Metabolic Disorders, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Biochemistry for Medicine: Proteases as Therapeutic Targets, Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima	Metabolism of Marine Organisms: Structure and Activities, Valentin Stonik	Biochemistry of Invertebrates, Andrey Granovitch, Jürgen Markl, Natalia Mikhailova	Bioinformatics, Mikhail Gelfand, Eugene Koonin	Bioengineering: Fundamentals and Application, Vladimir Popov, Vytautas Svedas, Marcel Wubbolts	Scientific Meeting for the Chromosome-centric Human Proteome Project															
11.00 – 11.30	Coffee Break																										
11.30 – 12.30	PLENARY LECTURE Dedicated to Yuri Obchinnikov: JEAN-MARIE LEHN "Perspectives in chemistry: From supramolecular chemistry towards adaptive chemistry", Chairs: Sergey Kochetkov, Jacques-Henry Weil																										
12.30 – 13.00	CLOSING																										
13.00 – 14.00	Lunch																										
14.00 – 18.00	FEBS COUNCIL																										
																						4-2	Meeting of the Russian Biochemical Society and St Petersburg Division of the Russian Biochemical Society		4-4	C-HPP	6-2
Scientific Meeting for C-HPP																											



Opening Ceremony Oktyabrsky Concert Hall

Sunday, July 6, 2013, 16.00 – 17.00

Welcome Addresses

VALERY CHERESHNEV Chair, Science Committee of the Parliament
of the Russian Federation

ISRAEL PECHT Secretary General, Federation of European Biochemical Societies (FEBS)

VLADISLAV PANCHENKO Board Chair, Russian Foundation for Basic Research (RFBR)

AARON CIECHANOVER Nobel Laureate, Member, International Advisory Board

VIKTOR VEKSELBERG President, Skolkovo Foundation

IAIN MATTAJ Director General, European Molecular Biology Laboratory

WELCOME ADDRESS from the Government of St Petersburg

VLADIMIR SKULACHEV Congress President

Sunday, July 6, 2013, 17.00 – 18.00

Opening Plenary Lecture

Chairs: **ALAN FERSHT**, **KONSTANTIN SKRYABIN**

JULES HOFFMANN UPR 9022 du CNRS, Institut de Biologie Moléculaire et Cellulaire,
Strasbourg, France

Evolutionary perspectives of innate immunity

PLENARY LECTURES

July 7, 11.00 – 12.00

Chairs: **MARIA LEPTIN, VLADIMIR SKULACHEV**

EMBO LECTURE DEDICATED TO VLADIMIR ENGELHARDT

AARON CIECHANOVER *Tumor and Vascular Biology Research Center, The Rappaport Faculty of Medicine and Research Institute, Technion – Israel Institute of Technology, Haifa, Israel*
The end of the polyubiquitin chain as the hallmark proteasomal signal

July 7, 12.00 – 13.00

Chairs: **GEORGY GEORGIEV, SERGIO PAPA**

JOSEPH SCHLESSINGER *Yale University, USA*

Cell signaling by receptor tyrosine kinases: from basic principles to cancer therapy

July 7, 14.30 – 15.30

Chairs: **MICHAEL KIRPICHNIKOV, CLAUDINA RODRIGUES-POUSADA**

THEODOR BÜCHER LECTURE

KURT WÜTHRICH *The Scripps Research Institute, La Jolla, California, USA*
Structural genomics with soluble and membrane proteins

July 7, 15.30 – 16.30

Chairs: **MIGUEL DE LA ROSA, ALEXANDER SPIRIN**

ADA E. YONATH *The Helen and Milton A. Kimmelman Center for Biomolecular Structure and Assembly, Structural Biology Department, Weizmann Institute of Science, Rehovot, Israel*
An ancient chemical bonding machine functioning nowadays

July 8, 11.00 – 12.00

Chairs: **OLGA DONTSOVA, GREGORY A. PETSKO**

IUBMB LECTURE

JACK W. SZOSTAK *Howard Hughes Medical Institute; Harvard Medical School; Massachusetts General Hospital, USA*
The origin of cellular life and the emergence of Darwinian evolution

July 8, 12.00 – 13.00

Chairs: **TATIANA OVCHINNIKOVA, ISRAEL PECHT**

SPECIAL SCIENCE AND SOCIETY LECTURE

GOTTFRIED SCHATZ *Biozentrum, Universität Basel, Switzerland*

What it takes to succeed in science - and what Europe should do for its young scientists

July 8, 14.30 – 15.00

Chairs: **FELIX WIELAND, OLEG KISSELEV**

FEBS LETTERS AWARD LECTURE

SUSUMU MITSUTAKE *Hokkaido University, Hokkaido, Japan*

Ceramide kinase deficiency improves diet-induced obesity and insulin resistances

July 8, 15.00 – 15.30

Chairs: **RICHARD PERHAM, VLADIMIR TISHKOV**

FEBS JOURNAL AWARD LECTURE

ANNA-KARIN GUSTAVSSON *University of Gothenburg, Sweden*

Sustained glycolytic oscillations in individual isolated yeast cells

July 8, 15.30 – 16.30

Chairs: **ALEXANDER CHERNOV, ANGELO AZZI**

SKOLKOVO Presentation

MAREK DZIKI *Executive Director of the Biomedical Cluster Skolkovo Foundation*

VLADIMIR SHKLOVER *Director of the Common Use Center «Microanalysis Laboratory» of Skolkovo Technopark*

What is Skolkovo about?



PLENARY LECTURES

July 9, 11.00 – 12.00

Chairs: **ALEXANDER GABIBOV, DANIEL THOMAS**

RICHARD LERNER *The Scripps Research Institute, La Jolla, CA, USA*
Chemistry of large numbers

July 9, 12.00 – 13.00

Chairs: **VALERY CHERESHNEV, MICHAEL SELA, YURI SYKULEV**

SUSUMU TONEGAWA *RIKEN-MIT Center for Neural Circuit Genetics, Department of Biology, USA*
Engrams for genuine and false memories

July 9, 14.30 – 15.30

Chairs: **JAAK JÄRV, KONSTANTIN SEVERINOV PRAKASHDATTA LECTURE**

ROGERD KORNBERG *Stanford University Medical School, Department of Structural Biology, Stanford, USA*

The molecular basis of eukaryotic transcription

July 9, 15.30 – 16.30

Chairs: **CECILIA ARRAIANO, OLGA LAVRIK**

WOMEN IN SCIENCE AWARD PLENARY LECTURE

GENEVIEVE ALMOUZI *l'Institut Curie, Paris, France*

The multifaces of chromatin assembly, a recipe that mixes new with old partners

July 10, 11.00 – 12.00

Chairs: **ALEXEY BOGDANOV, LASZLO FESUS**

HANS KREBS LECTURE

RICHARD ROBERTS *New England BioLabs, Ipswich, MA, USA*

Bacterial methylomes

July 10, 12.00 – 13.00

Chairs: **SERGEY RAZIN, ERIC WESTHOF**

PAVEL GEORGIEV *Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia*

Chromatin insulators and long-distance interactions

July 10, 14.30 – 15.30

Chairs: **MICHAEL BLACKBURN, VLADIMIR SHUVALOV**

ROBERT HUBER *Max-Planck-Institut für Biochemie, EmeritusgruppeStrukturforschung, Martinsried, Germany; Technische Universität München, Fakultät für Chemie, Garching, Germany; Universität Duisburg-Essen, Zentrum für Medizinische Biotechnologie, Essen, Germany; Cardiff University, School of Biosciences, Cardiff, UK*

Proteases and their control in health and disease

July 10, 15.30 – 16.30

Chairs: **MATHIAS SPRINZL, VALENTIN VLASSOV**

SIDNEY ALTMAN *Department of Molecular, Cellular and Developmental Biology (MCDB), Yale University, New Haven, Connecticut, USA*

Antibiotics: present and future

July 11, 11.30 – 12.30

Chairs: **SERGEY KOCHETKOV, JACQUES-HENRY WEIL**

DEDICATED TO YURI OVCHINNIKOV

JEAN-MARIE LEHN *ISIS, Université de Strasbourg, France*

Perspectives in chemistry: From supramolecular chemistry towards adaptive chemistry

Main Symposia

Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: **Olga Dontsova, Eric Westhof**

July 7, 2013 TRANSLATION

Chairs: **Alexey Bogdanov, Ivan Shatsky**

- 08.30 – 08.35 Jean-Francois Bach *French Academy of Sciences, Paris, France*
Introduction
- 08.35 - 09.15 Harry F. Noller *University of California, Santa Cruz, Department of Molecular, Cellular and Developmental Biology, Santa Cruz, USA*
Ribosome structure and dynamics
- 09.15 - 09.40 Marina Rodnina *Max Planck Institute for Biophysical Chemistry, Göttingen, Germany*
Processive movement, pausing, and stalling of ribosomes on the mRNA track
- 09.40 -10.05 Marat Yusupov *Département de Biologie et de Génomique Structurales, Institut de Génétique et de Biologie Moléculaire et Cellulaire, Université de Strasbourg, CNRS, INSERM, Illkirch, France*
Structural studies of the ribosome complexes
- 10.05 -10.30 Matthias Hentze *European Molecular Biology Laboratory (EMBL), Heidelberg, Germany*
RNA biology meets metabolism: from mRNA interactomes to REM networks

Main Symposia

Hall 7-1

Proteomics and Peptidomics (VI-S25)

Chairs: **Vadim Govorun, Vadim Ivanov**

July 7, 2013

- 08.30 - 09.10 Rudolf Aebersold *Die Eidgenössische Technische Hochschule Zürich, Switzerland*
Quantitative proteomics and network biology
- 09.10 - 09.35 Jonathan Blackburn *Institute of Infectious Disease & Molecular Medicine, Faculty of Health Sciences, University of Cape Town, South Africa*
Comprehensive, comparative exploration of the Mycobacterium tuberculosis proteome to identify novel vaccine targets, drug targets and disease-associated biomarkers
- 09.35 -10.00 John Gregory Marshall *Ryerson University, Toronto, Canada*
Proteomic and functional comparison of phagocytosis by Fcγ receptors and oxLDL receptors in human macrophages
- 10.00 -10.25 Andrei Lisitsa Orekhovich *Institute of Biomedical Chemistry of the Russian Academy of Medical Sciences, Moscow, Russia*
Web-based library of SRM spectra and its application for estimation of protein copy numbers

Main Symposia

Hall 7-2

Photoreception and Biochemistry of Vision (IV-S20)

Chairs: Karl-Wilhelm Koch, Michael Ostrovsky

July 7, 2013

- 08.30 - 09.10 Mordehai Sheves *The Weizmann Institute of Science, Rehovot, Israel*
Molecular mechanism for the function of rhodopsin and other retinal proteins
- 09.10 - 09.35 Vladimir Kefalov *Washington University, St. Louis, USA*
Rod pigment regeneration and dark adaptation without the RPE?
- 09.35 - 10.00 Karl-Wilhelm Koch *University of Oldenburg, Germany*
A calcium-relay mechanism in vertebrate phototransduction
- 10.00 - 10.15 Evgeni Zernii *Lomonosov Moscow State University, Moscow, Russia*
New mechanisms of regulatory activity of photoreceptor calcium sensors

Main Symposia

Hall 4-1

Protein Structure and Folding (II-S7)

Chairs: Cyrus Chothia, Alexei Finkelstein

July 7, 2013

- 08.30 – 09.10 Roland Riek *Zürich, Switzerland*
NMR structural investigations on cotranslational protein folding and aggregation at near physiological conditions
- 09.10 – 09.35 Alexei Finkelstein *Institute of Protein Research, Pushchino, Moscow Region, Russia*
Restrictions superimposed on protein folding by its size
- 09.35 – 10.00 Alexey G. Murzin *MRC Laboratory of Molecular Biology, Cambridge, UK*
Insights into protein folding and evolution from the structural classification of protein
- 10.00 – 10.25 Anna Tramontano *Department of Physics, Sapienza University of Rome, Italy*
Genomes and proteomes: a tale of two complexities

Main Symposia

Hall 4-2

“Mitochondriology”: New Approaches in Bioenergetics (III-S14)

Chairs: Sergio Papa, Vladimir Skulachev

July 7, 2013 MITOCHONDRIAL MECHANISMS

- 08.30 - 08.55 Sergio Papa *Institute of Biomembranes and Bioenergetics (IBBE), Consiglio Nazionale delle Ricerche, Bari, Italy*
Mitochondria from molecular mechanisms to pathophysiology
- 08.55 - 09.35 Leonid A. Sazanov *Medical Research Council Mitochondrial Biology Unit, Wellcome Trust/MRC Building, Cambridge, UK*
Molecular structure and functional mechanisms of respiratory Complex I
- 09.35 - 10.00 Renata Zvyagilskaya *A. N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia*
Mitochondrial ATP-dependent K⁺-permeability is dissimilarly regulated in different yeast species
- 10.00 - 10.25 Shinya Yoshikawa *Department of Life Science, University of Hyogo, Hyogo, Japan*
Molecular structure and functional mechanisms of cytochrome C oxidase

Main Symposia

Hall 4-4

Regulation of Biological Processes by Ubiquitin and Ubiquitin-like Proteins in Health and Disease: Proteolysis, Autophagy and Apoptosis (III-S15)

Chairs: Aaron Ciechanover, Helle Ulrich

July 7, 2013

- 08.30 - 09.10 Scott D. Emr *Weill Institute for Cell and Molecular Biology; Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY, USA*
A Ubiquitin-dependent protein quality control system at the plasma membrane
- 09.10 - 09.35 Thomas Sommer *Max-Delbrück-Center for Molecular Medicine and Humboldt-University, Berlin, Germany*
Protein quality control functions carried out by the hrd-ubiquitin ligase
- 09.35 - 10.00 Helle Ulrich *Institute of Molecular Biology, Mainz, Germany*
Function of the ubiquitin system in DNA damage bypass
- 10.00 - 10.25 Ronald T. Hay *Wellcome Trust Centre for Gene Regulation and Expression, College of Life Sciences, University of Dundee, Sir James Black Centre, Dundee, UK*
How SUMO targets proteins for ubiquitin modification

Main Symposia

Hall 4-5

Biochemistry of Neurodegeneration (IV-S19)

Chairs: Yves Agid, Michael Ugrumov

July 7, 2013

- 08.30 - 09.10 John Hardy *Department of Molecular Neuroscience, Institute of Neurology UCL, London, UK*
Genetic analysis of neurodegenerative disease
- 09.10 - 09.35 Yves Agid *Institute of the Brain and Spinal Cord, Paris, France*
Myths in neurodegenerative diseases
- 09.35 - 10.00 Etienne Hirsch *Institute of the Brain and Spinal Cord, Paris, France*
Neuroinflammation in Parkinson's disease
- 10.00 - 10.25 Michael Ugrumov *Institute of Developmental Biology RAS and the Institute of Normal Physiology RAMS, Moscow, Russia*
Modeling of Parkinson's disease and hyperprolactinemia with focus on the mechanisms of brain plasticity



Main Symposia

Hall 4-6

Evolutionary Genomics (I-W4)

Chairs: Konstantin Skryabin, Huanming Yang

July 7, 2013

- 08.30 - 09.05 Svante Pääbo *Department of Genetics, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany*
Archaic genomics
- 09.05 - 09.40 Huanming Yang *BGI, Shenzhen, China*
HGP and -omics: Big Science and Big Data
- 09.40 - 10.05 Ludovic Orlando *Centre for GeoGenetics, Paleomix Group, Natural History Museum of Denmark, University of Copenhagen, The Netherlands*
Sequencing ancient and really ancient genomes illuminates horse evolution
- 10.05 – 10.30 Egor Prokhortchouk, Konstantin Skryabin *Centre "Bioengineering", Russian Academy of Sciences, Moscow, Russia; NRC "Kurchatov Institute", Moscow, Russia*
Sequencing the Human genome as a tool for refinement of some anthropological and historical hypotheses
- 10.30 – 10.55 Nikolay Kolchanov, Konstantin Gunbin *Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia, NRC "Kurchatov Institute", Moscow, Russia*
TATA Box as molecular markers of Human origin and evolution

Main Symposia

Hall 4-7

B Cells in Inflammation and Disease (V-W24)

Chairs: **Elias Toubi, Moncef Zouali**

July 7, 2013

- 08.30 – 09.10 Moncef Zouali *Inserm U606, University Paris, France*
The multifaceted roles of B lymphocytes in the immune system
- 09.10 – 09.35 Paola Ricciardi-Castagnoli *A*STAR Centre of Immunology SIGN, Singapore*
B cells & antigen-presentation
- 09.35 – 10.00 Xuetao Cao *Institute of Immunology, Zhejiang University Scholl of Medicine, Hangzhou, China*
B cells and innate immunity
- 10.00 – 10.15 Alexey V. Stepanov *M. M. Shemyakin and Y. A. Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*
Liposome-encapsulated peptides protect against experimental allergic encephalitis

SKOLKOVO Lectorium

- 13:00 – 14:30 Vladimir Zelman *University of Southern California, Los Angeles, CA, USA*
The Human Genome and future of translational and personalized medicine

Satellite Symposium

Hall 4-9

Russia's Cooperation with European Partners in Life Sciences

Chairs: **Iain Mattaj, EMBL Director General**
Vladislav Panchenko, Chair of the RFBR Board

July 7, 2013 Cooperation in life sciences

- 08.30 – 08.40 Iain Mattaj, *EMBL Director General*
- 08.40 – 08.50 Maria Leptin, *EMBO Director*
- 08.50 – 09.00 Mikhail V. Kovalchuk, *Director, Kurchatov Institute*
- 09.00 – 09.10 Representative of the Ministry of Education and Research
- 09.10 – 09.20 DISCUSSION
- Valery Chereshnev, *Head of Committee on Science and Technology of Russian Council of Federation*
- Alexander Archakov, *Vice President, Russian Academy of Medical Sciences*
- Alexei Egorov, *RFBR-EMBL Cooperation Coordinator*

Joint EMBL-RFBR Projects: win-win research

- 09.20 – 09.30 EMBL: Ramesh Pillai, Russia: V.A. Gvozdev
Molecular mechanisms of piRNA biogenesis and its nuclear action
- 09.30 – 09.40 EMBL: Matthias Wilmanns, Russia: Alexander Gabibov
Structure-functional interrelation in artificial enzymes
- 09.40 – 09.50 EMBL: Victor Lamzin, Russia: V.G. Grigorenko
Novel potential inhibitors of beta-lactamases for overcoming bacterial antibiotic resistance
- 09.50 – 10.00 EMBL: Johanna Kallio, Russia: Olga Dontsova
Structural characterisation of components of a H. polymorpha telomerase complex: towards an atomic understanding of cell division control
- 10.00 – 10.10 Vladislav Panchenko
Conclusions and outlook to the future

Main Symposia

Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: Olga Dontsova, Eric Westhof

July 7, 2013 TRANSLATION

Chairs: Alexey Bogdanov, Ivan Shatsky

- 17.00 - 17.40 Alexander Spirin *Institute of Protein Research, Pouchino, Russia*
Eukaryotic polyribosomes: formation, and structural and functional transformations
- 17.40 - 18.05 Eric Westhof *Architecture et Réactivité de l'ARN, Université de Strasbourg, Institut de biologie moléculaire et cellulaire du CNRS, Strasbourg, France*
Unusual base pairs in recognition and decoding
- 18.05 - 18.30 Roland Beckmann *Gene Center and Department for Biochemistry and Center for integrated Protein Science Munich (CiPSM), University of Munich, Munich, Germany*
Visualization of the higher eukaryotic ribosome: from tentacles to translocation
- 18.30 - 18.55 Rachel Green *Howard Hughes Medical Institute, Department of Molecular Biology and Genetics, Johns Hopkins University School of Medicine, Baltimore, USA*
Mechanistic insights into how mRNA surveillance is triggered on the ribosome
- 18.55 - 19.20 Petr Sergiev *Moscow State University, Moscow, Russia*
Modification of bacterial ribosome
- 19.20 - 19.35 Mykhaylo Tukalo *State Key Laboratory of Molecular and Cellular Biology, Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine, Kyev, Ukraine*
tRNA-assisted editing mechanism in translation quality control

Main Symposia

Hall 7-1

Proteomics and Peptidomics (VI-S25)

Chairs: Vadim Govorun, Vadim Ivanov

July 7, 2013

- 17.00 - 17.40 Takahiro Kikawada *NIAS, Tsukuba, Japan*
Some like it dry: hsp in the sleeping chironomid and their role in the complete desiccation resistance
- 17.40 - 18.05 Vadim Ivanov *M.M. Shemyakin–Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Peptidomics of *Physcomitrella patens* moss. Generation of peptide pools by gametophores, protonema and propotoplasts
- 18.05 - 18.30 Dmitry Alexeev *Russian Institute of Physico-Chemical Medicine, Moscow, Russia*
System biology of *H.pylori* through lens of proteomics
- 18.30 - 18.55 Markus Ralser *Dept. of Biochemistry, University of Cambridge, UK*
Monitoring protein expression in whole-cell extracts by targeted label- and standard-free LC-MS/MS
- 18.55 - 19.10 Sergey Kovalchuk *M.M. Shemyakin–Yu.A. Ovchinnikov Institute of Bioorganic Chemistry of the Russian Academy of Sciences, Moscow, Russia*
Quantitative LC-MS/MSALL discovery of serum peptide biomarkers
- 19.10 - 19.25 John LaCava *The Rockefeller University, New York, USA*
Complementary tools supporting comprehensive mapping of protein complexes via affinity capture / mass spectrometry
- 19.25 - 19.40 Diogo M.L.P. Cavalcanti *University of Sao Paulo (USP), Sao Paulo, Brazil*
Glucose and intracellular peptides metabolism alteration in neurolysin knockout mice

Main Symposia

Hall 7-2

Photoreception and Biochemistry of Vision (IV-S20)

Chairs: Karl-Wilhelm Koch, Michael Ostrovsky

July 7, 2013

- 17.00 - 17.40 Klaus Peter Hofmann *Humboldt University, Berlin, Germany*
Signal transfer from a receptor to its G protein: Insights from spectroscopic and structural studies on rhodopsin
- 17.40 - 18.05 Daniele Dell'Orco *University of Verona, Italy*
Rhodopsin organization and phototransduction: reconciling classical and novel perspectives
- 18.05 - 18.20 Viktor Govardovskii *Sechenov Institute for Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia*
Rhodopsin diffusion in the photoreceptor membrane
- 18.20 - 18.35 Michael Firsov *Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia*
cAMP affects calcium homeostasis and PDE6 in the phototransduction cascade
- 18.35 - 18.50 Oyuna S. Kozhevnikova, Natalia G. Kolosova *Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia*
Comparative analysis of rat retinal transcriptome using RNA-Seq: Effects of aging and AMD-like retinopathy
- 18.50 - 19.05 Mikhail Ostrovsky *N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow Russia*
Harmful bisretinoid side-products of rhodopsin photolysis: age- and pathology-dependence, ways of protection
- 19.05 - 19.20 Daniela Calzia *University of Genova, Genova, Italy*
Inhibition of FOF1-ATPase and ATP synthase by polyphenolic phytochemicals in rod outer segments



Main Symposia

Hall 4-1

Protein Structure and Folding (II-S7)

Chairs: Cyrus Chothia, Alexei Finkelstein

July 7, 2013

- 17.00 - 17.40 Cyrus Chothia *MRC Laboratory of Molecular Biology, Cambridge, UK*
Protein family expansion and biological complexity
- 17.40 - 18.05 Oxana Galzitskaya *Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia*
How to determine the size of the nucleus of protofibrils from the concentration dependence of the lag-time of aggregation?
- 18.05 - 18.30 Robert Weatheritt, M. Madan Babu *MRC Laboratory of Molecular Biology, Cambridge, UK*
Intrinsically disordered proteins: regulation and disease
- 18.30 - 18.55 Lev Weiner *Weizmann Institute of Science, Rehovot, Israel*
Unfolding of *Torpedo Californica* Acetylcholinesterase: Effects of chemical and pharmacological chaperones
- 18.55 - 19.10 Andrey Kajava *Equipe: Bioinformatique structurale et modélisation moléculaire, Centre de Recherches de Biochimie Macromoléculaire, (CRBM), UMR 5237 CNRS, Université Montpellier 1 et 2, France*
Breaking the amyloidogenicity code: Bioinformatics approach to predict predisposition to amyloidosis
- 19.10 - 19.25 Salam Al-Karadaghi *Department of Biochemistry & Structural Biology, Lund University, Lund, Sweden*
Structure and oligomerization of frataxin: Insights into the mechanisms of iron delivery and detoxification in mitochondria
- 19.25 - 19.40 Hamed Shaykhalishahi *Institute of Physical Biology, Heinrich Heine University Düsseldorf, Germany*
An engineered binding protein targeting a critical region in the alpha-synuclein sequence

Main Symposia

Hall 4-2

“Mitochondriology”: New Approaches in Bioenergetics (III-S14)

Chairs: Sergio Papa, Vladimir Skulachev

July 7, 2013 MITOCHONDRIAL MECHANISMS

- 17.00 - 17.40 Pere Puigserver *Harvard Medical School, Dana-Farber Cancer Institute, Boston, MA, USA*
Regulatory processes of mitochondrial biogenesis and dynamics
- 17.40 - 18.05 Norbert A. Dencher *Physical Biochemistry, Department of Chemistry, Technische Universität Darmstadt, Germany*
ATP synthase oligomers and respiratory supercomplexes: structures, functions and superactivities
- 18.05 - 18.30 Nikolaus Pfanner *Institut für Biochemie und Molekularbiologie, Zentrum für Biochemie und Molekulare Zellforschung (ZBMZ), Universität Freiburg, Germany*
The molecular machinery of mitochondrial protein import
- 18.30 - 18.55 Boris V. Chernyak *Lomonosov Moscow State University, Belozersky Institute of Physico-Chemical Biology, Moscow, Russia*
Mitochondria in cell differentiation and programmed cell death
- 18.55 – 19.10 Alexandra Litvinchuk *Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia*
Mitochondrially-encoded protein Var1 promotes loss of respiratory function in *Saccharomyces cerevisiae* under stressful conditions
- 19.10 – 19.25 Konstantin Lyamzaev A.N. *Belozersky Institute of Physico-Chemical Biology, Moscow State University, Moscow, Russia*
The novel mitochondria-targeted antioxidants – derivatives of plant alkaloids berberine and palmatine
- 19.25 - 19.40 Eduard Noguera Jorda *Institute for Research in Biomedicine, Barcelona, Spain*
Opa1 and Mfn1 are key proteins for muscle cell differentiation in C2C12 cells

Main Symposia

Hall 4-4

Regulation of Biological Processes by Ubiquitin and Ubiquitin-like Proteins in Health and Disease: Proteolysis, Autophagy and Apoptosis (III-S15)

Chairs: Aaron Ciechanover, Helle Ulrich

July 7, 2013

- 17.00 - 17.40 Adi Kimchi *Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel*
The protein interaction maps of autophagy and apoptosis and specific points of interface between them
- 17.40 - 18.05 Kazuhiro Iwai *Department of Molecular and Cellular Physiology, Graduate School of Medicine, Kyoto University, Kyoto, Japan*
Linear polyubiquitination: a new regulator of NF-kappaB activation
- 18.05 - 18.30 Ivan Dikic *Institute of Biochemistry II, Goethe University School of Medicine, University Hospital, Frankfurt, Germany*
Ubiquitin networks in regulation of inflammation and autophagy
- 18.30 - 18.55 Daniel Finley *Department of Cell Biology, Harvard Medical School, Boston, MA, USA*
Recognition and editing of ubiquitin conjugates by the proteasome
- 18.55 – 19.10 Andriy Sibirny *Department of Molecular Genetics and Biotechnology, Institute of Cell Biology, NAS of Ukraine, Lviv, Ukraine*
New genes involved in peroxisome and soluble protein fructose-1,6-bisphosphatase autophagic degradation in yeasts
- 19.10 – 19.25 Alexey Belogurov *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Ubiquitination is not required for proteasome-mediated degradation of myelin basic protein
- 19.25 – 19.40 Naveen Kumar Chandappa Gowda *Department of Molecular Biosciences, The Wenner-Gren Institute, Stockholm University, Sweden*
Two isoforms of Hsp70 nucleotide exchange factor Fes1 are essential for compartment-specific proteasomal degradation of misfolded proteins

Main Symposia

Hall 4-5

Biochemistry of Neurodegeneration (IV-S19)

Chairs: Yves Agid, Michael Ugrumov

July 7, 2013

- 17.00 - 17.40 Bart De Strooper *VIB Center for the Biology of Disease, Leuven, Belgium*
Aberrant proteolytic processing in Alzheimer's Disease: pitfalls and hope for a therapy
- 17.40 - 18.05 Anthony Turner *Institute of Molecular and Cellular Biology, Faculty of Biological Sciences, University of Leeds, UK*
The amyloid precursor protein: biochemical enigma in brain development, function and disease
- 18.05 - 18.30 Sergei Kozin *Engelhardt Institute of Molecular Biology, RAS, Moscow, Russia*
Molecular determinants of Alzheimer's disease
- 18.30 - 18.45 Aleksey Alekseev *Institute for Systems Biology, St Petersburg, Russia*
Kinetic model of AB distribution and aggregation in human
- 18.45 - 19.00 Maria Ryazantseva *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*
Familial Alzheimer's disease PS1 gene mutants affect activity of calcium channels differently
- 19.00 - 19.15 Montserrat Arrasate *Center for Applied Medical Research (CIMA), School of Medicine, University of Navarra, Pamplona, Spain*
A longitudinal microscope-based methodology to assess the effect of alpha-synuclein pathological mutations on stability and survival in primary cortical neurons
- 19.15 - 19.30 Agnese De Mario *Department of Experimental Biomedical Sciences, University of Padua, Padua, Italy*
The role of the prion protein in neurodegenerative disorders
- 19.30 - 19.45 Francesca Amati *Department of Medical Basic Sciences, Neurosciences and Sense Organs University of Bari "Aldo Moro", Bari, Italy*
S100A4 calcium binding protein is differently expressed in patients with early-onset Parkinson's disease associated with PINK1 W437X and PARK2 gene mutations

Main Symposia

Hall 4-6

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 7, 2013

IMMUNOCHEMICAL APPROACHES

Chairs: Serhiy Komisarenko, Valery Chereshevnev

- 17.00 - 17.40 Michael Sela *Department of Immunology, Weizmann Institute of Science, Rehovot, Israel*
The benefit of two antibodies against the same receptor in immunotherapy of cancer
- 17.40 - 18.05 Ruth Arnon *Weizmann Institute of Science, Rehovot, Israel*
Immunochemical approach to a universal flu vaccine
- 18.05 - 18.30 Srini Kaveri *Centre de Recherche des Cordeliers, Paris, France*
Physiopathologic and therapeutic potential of natural and catalytic antibodies
- 18.30 - 18.55 Vladimir K. Popov & Vladislav Ya. Panchenko *Institute of Laser and Information Technologies, Russian Academy of Sciences, Moscow, Troitsk, Russia*
Lasers and supercritical fluids for biomedical and pharmaceutical applications
- 18.55 - 19.20 Valery Chereshevnev *Institute of Immunology and Physiology, Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russia*
Diagnostics and treatment approaches in HIV
- 19.20 - 19.45 Gábor Pál *Department of Biochemistry, Eötvös Loránd University, Budapest, Hungary*
Regulation and mechanistic pathways within the complement system
- 19.45 - 20.00 Yegor Vassetzky *CNRS UMR8126, LIA1066, Villejuif, France; IBG RAS, Moscow, Russia*
Nuclear organization in lymphoid cells: implications for translocations and gene regulation

Main Symposia

Hall 4-7

B Cells in Inflammation and Disease (V-W24)

Chairs: Elias Toubi, Moncef Zouali

July 7, 2013

- 17.00 – 17.40 Elias Toubi *Division of Allergy and Clinical Immunology, Bnai-Zion Medical Center, Technion, Rapaport, Faculty of Medicine, Haifa, Israel*
Role of regulatory B cells in autoimmunity and inflammation
- 17.40 – 17.55 Alexander Apt *Department of Immunology, Central Institute for Tuberculosis, Moscow, Russia; Department of Immunology, School of Biology, Moscow State University, Moscow, Russia*
B cell follicles in the lung tissue during mycobacterial infections in mice: protection or pathology
- 17.55 – 18.20 Svitlana Sidorenko *Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of NAS of Ukraine, Kyiv, Ukraine*
Receptor-mediated signal transduction pathways that regulate B lymphocyte fate
- 18.20 – 18.45 Dmitriy Chudakov *Shemyakin–Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Adaptive immunity profiling using next generation sequencing
- 18.45 – 19.10 Elena Vorontsova *Institute of Molecular Biology and Biophysics, Novosibirsk, Russia*
B-cell derived microvesicles are important component of extracellular communication in health and disease
- 19.10 – 19.25 Gulcin Akca *Department of Medical Microbiology, Faculty of Dentistry, Gazi University, Ankara, Turkey*
Indoleamine 2,3-dioxygenase related anti-inflammatory additive effects of 3-aminobenzamide and infliximab in experimental colitis model

Main Symposia

Hall 4-9

Biogenic Polyamines in Cell Metabolism (VI-W31)

Chairs: Robert Casero, Alexey Khomutov, Heather Wallace

July 7, 2013

- 17.00 – 17.40 Anthony E. Pegg *Penn State College of Medicine, Hershey, PA, USA*
The role(s) of polyamines in mammalian physiology
- 17.40 – 18.05 Kazuei Igarashi *Chiba University, Chiba, Japan*
Mechanism of polyamine stimulation of proteinsynthesis in eukaryotes
- 18.05 – 18.30 Anthony J. Michael *University of Texas, Southwestern Medical Center, Dallas, Texas, USA*
The diversity of polyamine biosynthesis and function in bacteria
- 18.30 – 18.55 Keith T. Wilson *Vanderbilt University, Nashville, TN, USA*
Polyamine synthesis and oxidation in the pathogenesis of immune dysregulation and gastric cancer caused by *Helicobacter pylori*
- 18.55 – 19.10 Natalia A. Ignatenko *University of Arizona, Tucson, AZ, USA*
Loss of mutant K-RAS leads to suppression of invasion and metastases in pancreatic cancer cell lines
- 19.10 – 19.25 Janne Weisell *University of Eastern Finland, Kuopio, Finland*
Isosteric analogues of natural polyamines with altered carbon chain length and additional amino groups
- 19.25 – 19.40 Vadim V. Annenkov *Limnological Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia*
Long-chain polyamines from diatom algae: structure, functions and synthetic analogues

Main Symposia

Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: **Olga Dontsova, Eric Westhof**

July 8, 2013 RNA MATURATION AND REGULATION

Chairs: **Eric Westhof, Lynne Maquat**

- 08.30 - 09.10** Reinhard Lührmann *Max Planck Institute for Biophysical Chemistry (Karl Friedrich Bonhoeffer Institute), Department of Cellular Biochemistry, Göttingen, Germany*
Structure and function of the spliceosome
- 09.10 - 09.35** Juan Valcárcel Juárez *Centro de Regulacion Genomica, Barcelona, Spain*
Mechanisms of alternative pre-mRNA splicing regulation
- 09.35 - 10.00** Alain Krol *Institut de Biologie Moléculaire et Cellulaire du CNRS, Strasbourg, France*
Recoding UGA as selenocysteine: idiosyncratic and shared factors for ribonucleoprotein complex assembly and translation
- 10.00 - 10.25** Claus M. Azzalin *ETH Zurich, Institute of Biochemistry (IBC), Zurich, Switzerland*
Nuclear non-coding RNA regulation

Main Symposia

Hall 6-1

Organization of Eukaryotic Genomes (I-S1)

Chairs: **Wendy Bickmore, Sergey Razin**

July 8, 2013

Chair: **Wendy Bickmore**

- 08.30 – 09.10** Suzan M. Gasser *Friedrich Miescher Institute for Biomedical Research and National Center for Competence in Research “Frontiers in Genetics”, Basel, Switzerland*
Functional sequestration of the heterochromatin during worm development
- 09.10 – 09.35** Mikhail Spivakov *Regulatory Genomics Group, The Babraham Institute, Cambridge, UK*
Multi-scale organization of the genome
- 09.35 – 10.00** Wouter De Laat *Hubrecht Institute, Utrecht, The Netherlands*
Gene regulation in the 3D genome
- 10.00 – 10.25** Sergey V. Razin *Institute of Gene Biology, Moscow, Russia*
Elusive active chromatin hubs: nuclear compartments, folded chromatin domains or rigid complexes of regulatory elements?

Main Symposia

Hall 6-2

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko,
Tomas Zima

July 8, 2013 MOLECULAR DIAGNOSTICS
Chairs: Till Bachmann, Alexey Egorov

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- 08.30 - 09.10 Till T. Bachmann *University of Edinburg, UK*
Opportunities for diagnostic technologies in personalized medicine
- 09.10 – 09.25 Reinhard Renneberg *The Hong Kong University of Science and Technology, The Biosensor & Bioelectronics Lab, Hong Kong*
Mega-amplified immuno- and DNA-assays using nanocrystals.
- 09.25 – 09.40 Vladimir A. Oleinikov *Shemyakin–Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Nanoprobes on the base of fluorescent semiconductor nanocrystals for bioassays and biosensing
- 09.40 – 09.55 Valery V. Fokin *The Scripps Research Institute, La Jolla, CA, USA and Moscow Physical Technical Institute, Moscow, Russia*
Bioorthogonal chemistry for diagnostics and therapeutics
- 09.55 – 10.10 Boris Shenkman *Institute for Biomedical Problems, Russian Academy of Sciences, Moscow, Russia*
Impairment of signaling pathways in skeletal muscle of chronic alcohol consumers
- 10.10 – 10.25 Alexey Egorov *Chemistry Faculty, M.V. Lomonosov Moscow State University, Moscow, Russia*
A set of DNA microarrays for rapid determination of bacterial resistance towards B-lactam antibiotics

Main Symposia

Hall 4-1

Protein Structure and Folding (II-S7)

Chairs: Cyrus Chothia, Alexei Finkelstein

July 8, 2013

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- 08.30 - 09.10 Chris Dobson *University of Cambridge, Department of Chemistry, Cambridge, UK*
The nature of neurodegenerative disorders and approaches to their prevention
- 09.10 - 09.35 Gennady Semisotnov *Institute of Protein Research, Pushchino, Moscow Region, Russia*
GroEL-assisted protein folding: does it occur inside or outside of the chaperonin inner cavity?
- 09.35 -10.00 Mikael Oliveberg *Department of Biochemistry and Biophysics, Arrhenius Laboratories for Natural Sciences, Stockholm University, Stockholm, Sweden*
Folding without charges
- 10.00 -10.25 Round Table Discussion on Protein Structure and Folding

Main Symposia

Hall 4-2

Biochemistry of Neoplastic Transformations (IV-S17)

Chairs: **Georgy Georgiev, Joseph Schlessinger**

July 8, 2013

- 08.30 - 09.10 Tony Hunter *Section of Molecular Biology, UCSD, Molecular and Cell Biology Laboratory, The Salk Institute, USA*
The central role of tyrosine phosphorylation in cancer
- 09.10 - 09.45 Louis M. Staudt *Metabolism Branch, Molecular Biology of Lymphoid Malignancies Section, Bethesda, MD, USA*
Molecular mechanisms and treatments of lymphoid malignancies
- 09.45 - 10.20 Mark A. Lemmon *Department of Biochemistry and Biophysics, 809C Stellar-Chance Labs, Philadelphia, PA, USA*
EGF receptor ALK in lung and other cancers



Main Symposia

Hall 4-4

Stem Cells: Fundamentals and Applications (IV-S21)

Chairs: **Clare Blackburn, Alexey Tomilin**

July 8, 2013

- 08.30 – 09.10 Ian Chambers *MRC Centre for Regenerative Medicine, University of Edinburgh, UK*
Transcription factor control of transitions in pluripotent cells
- 09.10 – 09.35 Ana Pombo *Imperial College, London, UK*
Polycomb complexes co-associate with a specific RNA polymerase II variant in mouse ES cells
- 09.35 – 10.00 Sophie Jarriault *IGBMC Centre Européen de Recherche en Biologie et Médecine, Strasbourg, France*
Decoding the mechanisms of direct cell reprogramming
- 10.00 – 10.25 Clare Blackburn *MRC Centre for Regenerative Medicine, University of Edinburgh, UK*
Transcriptional regulation of thymus regeneration

Main Symposia

Hall 4-5

Biocatalysis: General Problems (II-S6)

Chairs: George Michael Blackburn, Alexander Gabibov

July 8, 2013 **BIOCATALYSIS: GENERAL ASPECTS**

- 08.30 - 09.10 Thomas Carell *Chair for Organic Chemistry, Department of Chemistry, LMU München, Germany*
The chemistry of stem cell development
- 09.10 - 09.35 Wei Yang *LMB, NIDDK, NIH, Bethesda, MD, USA*
Watching human DNA polymerase ϵ make a phosphodiester bond
- 09.35 - 10.00 Adrian Goldman *Helsinki University, Finland*
Structure and function of ion-pumping pyrophosphatases
- 10.00 - 10.25 Magali Remaud-Simeon *Enzyme Molecular Engineering and Catalysis Team, Laboratoire Ingénierie des Systèmes Biologiques et des Procédés, UMR INSA/CNRS 5504; UMR INSA/INRA 792, Université de Toulouse, France*
Glucanases, mechanism and engineering for glyco-based vaccines and glycodiversification

Main Symposia

Hall 4-6

Membrane Transport and Secretion: From Nephrons to Neurons (III-S12)

Chairs: Qais Al-Awqati, Dominique Eladari, Alexander Petrenko

July 8, 2013

- 08.30 - 09.10 Iain W. Mattaj *European Molecular Biology Laboratory, Heidelberg, Germany*
Integrating phosphorylation and dephosphorylation signals during Nuclear Envelope assembly
- 09.10 - 09.35 Konstantin Petrukhin *Columbia University, USA*
Pharmacological modulation of anion exchange in treatment of retinal disorders
- 09.35 - 10.00 Pascal Houillier *Parisdescartes University/INSERM, France*
Which role(s) for the calcium-sensing receptor in the kidney?
- 10.00 - 10.25 Gero Miesenböck *Oxford University, UK*
Membrane transport processes in sleep regulation

Main Symposia

Hall 4-7

“Mitochondriology”: New Approaches in Bioenergetics (III-S14)

Chairs: Sergio Papa, Vladimir Skulachev

July 8, 2013 MITOCHONDRIAL PATHOLOGIES

- 08.30 - 09.10 Flint Beal *Department of Neurology and Neuroscience, Weill Medical College of Cornell University, New York, USA*
Mitochondrial dysfunction in human diseases
- 09.10 - 09.35 Agnès Rötig *DR1 INSERM, INSERM U781, Hôpital Necker-Enfants Malades, Paris, France*
Translation deficiencies in mitochondrial disorders
- 09.35 - 10.00 Domenico De Rasmio *Institute of Biomembranes and Bioenergetics (IBBE), Consiglio Nazionale delle Ricerche, Bari, Italy*
Signal transduction and complex I regulation: pathophysiological implications
- 10.00 - 10.25 Maxim V. Skulachev *Belozersky Institute of Physico-Chemical Biology and Institute of Mitoengineering, Moscow State University, Moscow, Russia*
SkQ, the first mitochondria-targeted medicine tested in humans: clinical trials and therapy of the dry eye syndrome, an incurable age-related disease

Main Symposia

Hall 4-8

Alexander Braunstein Memorial Symposium: Enzymes, Cofactors, Mechanisms (II-W10)

Chairs: Tatyana Demidkina, Andrea Mozzarelli, Vladimir Tishkov

July 8, 2013

Chair: Tatyana Demidkina

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- 08.30 - 09.10 Eugene Severin *All-Russia Research Center for Molecular Diagnostics and Therapy, Moscow, Russia*
A.E. Braunstein and my life in enzymology and biochemistry
- 09.10 - 09.35 Hideyuki Hayashi *Osaka Medical College, Osaka, Japan*
Threonine synthase: Role of the product phosphate in determining thereaction pathway
- 09.35 - 10.00 Andrea Mozzarelli *University of Parma, Parma, Italy*
Sulfur assimilation pathways in bacteria: new avenues for antibiotics
- 10.00 - 10.25 Aharon Rabinkov *The Weizmann Institute of Science, Rehovot, Israel*
Alliinase: structural peculiarities and applying for targeted therapy

Main Symposia

Hall 4-9

Education in Biochemistry “The Bologna Process – Towards the European Higher Education Area: Discussing the Pros and Cons”

Chairs: Ferdinand Hucho, Tatiana Ovchinnikova

July 8, 2013

- 08.30 – 08.40 Tatyana Ovchinnikova *M.M. Shemyakin – Yu.A. Ovchinnikov
Institute of Bioorganic Chemistry, Russian Academy of Sciences,
Moscow, Russia*
Introduction
- 08.40 - 09.10 Ulrich Hahn *Hamburg University, Germany*
The Bologna process – what we lost and what we missed
- 09.10 - 09.40 Ivan Leban *University of Ljubljana, Slovenia*
The Bologna reform – locally and globally
- 09.40 - 10.10 Burkhard Bechinger *University of Strasbourg, France*
How the Bologna rules affect the university education of
biological chemistry students at the University of Strasbourg
- 10.10 - 10.30 Ferdinand Hucho *Berlin, Germany*
Panel Discussion & Conclusion



Satellite Symposium

Hall 6-2

MINPROM Panel Discussion: Breakthroughs in Life Sciences: The Basis for Pharmaceutical Industry Development

Moderator: Alexey Egorov

July 8, 2013

13.00 – 15.00

Topics for discussion:

- Means of state support of medical biotechnology in Russia: state program “Strategy of Pharmaceutical Industry Development in the Russian Federation for the Period up to the Year 2020”
- Basic research today – new drugs and treatments tomorrow?
- New horizons in biotechnology and pharmaceutical industry
- From idea to product: development and market launch of new drugs. What is needed for success?
- Risks and advantages of new technology. How to create positive perception of innovation on the market and involve business into new product development process?
- Effective technology transfer. Special aspects of pharmaceutical industry
- Establishment and scaling up of innovative drugs and medical devices manufacturing facilities

Speakers:

Dmitry Chagin, CEO, Medical & Pharmaceutical Projects XXI Century, Russia
Oleg Korzinov, COO, Northern Biopharmaceutical Cluster, Russia
Richard Lerner, Professor, The Scripps Research Institute, La Jolla, CA, USA
Joseph Schlessinger, Professor, Yale University, USA
Maxim Skulachev, CEO, Mitotech LLC, Russia
Representative of the Russian Ministry of Industry, Russia

Main Symposia

Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: **Olga Dontsova, Eric Westhof**

July 8, 2013 RNA MATURATION AND REGULATION

Chairs: **Eric Westhof, Lynne Maquat**

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- 17.00 - 17.40 Lynne Maquat *Department of Biochemistry and Biophysics, University of Rochester Center for RNA Biology, School of Medicine and Dentistry, University of Rochester, USA*
Alu-strious effects on human mRNA metabolism and disease
- 17.40 - 18.05 Ivan Shatsky *Moscow State University, Moscow, Russia*
Variety of mechanisms of mRNA binding with ribosomes in mammalian cells
- 18.05 - 18.30 Bertrand Seraphin *IGBMC, Strasbourg, France*
Characterization of factors regulating gene expression through mRNA decay and RNA Quality Control
- 18.30 - 18.55 Konstantin Severinov *Rutgers University, Department of Molecular Biology and Biochemistry, Waksman Institute of Microbiology, USA; Institute of Gene Biology, Moscow, Russia; SkolTech, Moscow, Russia*
Small RNA-based adaptive immunity in prokaryotes
- 18.55 – 19.10 Alexey Malygin *Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia*
Proteins forming the hepatitis C IRES binding site on the human 40S ribosome
- 19.10 – 19.25 Alla Krasikova *Saint-Petersburg State University, St Petersburg, Russia*
Non-coding transcripts of tandem repeats involved into formation of nuclear domains in growing oocytes
- 19.25 – 19.40 Janusz Bujnicki *International Institute of Molecular and Cell Biology in Warsaw, Poland*
Engineered “restriction RNases” for sequence-specific cleavage of dsRNA and RNA in DNA-RNA hybrids

Main Symposia

Hall 6-1

Organization of Eukaryotic Genomes (I-S1)

Chairs: **Wendy Bickmore, Sergey Razin**

July 8, 2013

Chair: **Sergey Razin**

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- 17.00 – 17.40 Giacomo Cavalli *Institute of Human Genetics, CNRS, Montpellier, France*
3D epigenomics and Polycomb proteins in *Drosophila*
- 17.40 – 18.05 Kerstin S. Wendt *Department of Cell Biology, Erasmus Medical Center, Rotterdam, The Netherlands*
The roles of Cohesin and CTCF for shaping the chromatin fiber
- 18.05 – 18.30 Douglas Higgs *MRC Molecular Haematology Unit, Weatherall Institute of Molecular Medicine, University of Oxford, John Radcliffe Hospital, Oxford, UK*
Long range chromatin interactions at individual loci
- 18.30 – 18.55 Marcel Mechali *Institute of Human Genetics, CNRS, Montpellier, France*
DNA replication: from origin recognition to genome organization
- 18.55 – 19.10 Ana Pombo *Berlin Institute for Medical Systems Biology, MDC, Berlin, Germany*
Modelling large-scale organization of chromatin: a tale of the HoxB locus organization in mouse ES cells
- 19.10 – 19.25 Eva Bártoová *Institute of Biophysics, Academy of Sciences of the Czech Republic, v.v.i., Brno, Czech Republic*
Nuclear pattern and kinetics of HP1B protein
- 19.25 – 19.40 Alexander M. Ishov *University of Florida, Cancer & Genetics Research Complex and Department of Anatomy and Cell Biology, Gainesville, USA; Institute of Technology, St. Petersburg, Russia*
Function of Daxx/ATRX complex at centromeric and pericentromeric heterochromatin

Main Symposia

Hall 6-2

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 8, 2013 **CARDIOVASCULAR DISEASES**
Chairs: Mauro Giacca, Vsevolod Tkachuk

- 17.00 – 17.25 Jon Clardy *Harvard Medical School, UK*
Lessons from symbiotic bacteria
- 17.25 – 17.50 Serhiy Komisarenko *Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine*
Immunochemical investigation of fibrin polymerization sites and its application for diagnosis and treatment of prethrombotic states
- 17.50 – 18.15 Vsevolod Tkachuk *Moscow State University, Moscow, Russia*
Urokinase system: The role of multidomen structure in regulation of blood vessels' growth and remodeling
- 18.15 – 18.40 Mauro Giacca *ICGEB Trieste Component, Trieste, Italy*
High throughput screening of microRNA libraries reveals pathways involved in cardiomyocyte proliferation and myocardial regeneration
- 18.40 – 19.05 Jozef Dulak *Faculty of Biochemistry, Biophysics and Biotechnology of the Jagiellonian University, Krakow, Poland*
Molecular mechanisms of inflammation-driven blood vessel formation
- 19.05 – 19.20 Vera Spiridonova *A.N. Belozersky Institute of Phyico-Chemical Biologie, Lomonosov Moscow State University, Moscow, Russia*
DNA aptamers as antithrombotic therapeutic agents
- 19.20 – 19.35 Elena Vodovozova *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian academy of Sciences, Moscow, Russia*
Antitumor liposomes loaded with lipophilic prodrugs

Main Symposia

Hall 4-1

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 8, 2013 **NEUROLOGY**
Chairs: Joan J. Guinovart, Olga Favorova

- 17.00 - 17.40 Joan J. Guinovart *Institute for Research in Biomedicine and University of Barcelona, Spain*
Brain glycogen metabolism and neurodegeneration
- 17.40 - 18.05 Ernesto Carafoli *Dept. of Biological Chemistry, University of Padova, Italy*
Cellular calcium dyshomeostasis and neurodegeneration
- 18.05 - 18.30 Olga Favorova *N.I. Pirogov Russian National Research Medical University, Moscow, Russia*
Pharmacogenomics of multiple sclerosis
- 18.30 - 18.55 Vladimir Buchman *University of Cardiff, UK and Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka, Russia*
Pathological protein aggregation in brain – the promising biotargeting pathway
- 18.55 – 19.20 Vladimir Popov *Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia*
Mechano growth factor: from the mechanisms of induction to therapeutic applications
- 19.20 - 19.40 Achileas Gravanis *University of Crete, Greece*
From Evolution to Pharmacology: developing agonists of neurotrophin receptors
- 19.40 – 20.00 Serap Arbak *Acibadem University School of Medicine, Dept of Histology and Embryology Istanbul, Turkey*
The effect of exogenous oxytocin on streptozotocin (STZ)-induced diabetic adult rat testes

Main Symposia

Hall 4-2

Biochemistry of Neoplastic Transformations (IV-S17)

Chairs: **Georgy Georgiev, Joseph Schlessinger**

July 8, 2013

- 17.00 – 17.25 Eugene Sverdlov *Institute of Molecular Genetics, Russian Academy of Sciences, Moscow; Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
In search for pan-cancer promoter
- 17.25 – 17.50 Alexander S. Sobolev *Institute of Gene Biology, Russian Academy of Sciences, Moscow; Moscow State University, Russia; Duke University Medical Centre, Durham, NC, USA*
Modular nanotransporters: a versatile platform for nuclear delivery of anti-cancer pharmaceuticals
- 17.50 – 18.10 Michael V. Dubina *St Petersburg Academic University – Nanotechnology Research and Education Center of the Russian Academy of Sciences, Russia*
Cell–cell communication molecules and cancer progression
- 18.10 – 18.30 Denis Yashin *Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia*
Interplay between innate immunity-associated protein Tag7 and Hsp70, Mts1 and HspBP1 in antitumor immune defense
- 18.30 – 18.45 Ksenia Kulikova *Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia*
Wnt11 isoforms and Wnt signaling in cancer cells

Main Symposia

Hall 4-4

Stem Cells: Fundamentals and Applications (IV-S21)

Chairs: **Clare Blackburn, Alexey Tomilin**

July 8, 2013

- 17.00 - 17.40 Azim Surani *The Gurdon Institute, University of Cambridge, UK*
Principles and programming of the mammalian germ line
- 17.40 - 18.05 Alexander Medvinsky *MRC Centre for Regenerative Medicine, University of Edinburgh, UK*
Haematopoietic stem cell development in mammals
- 18.05 - 18.30 Alexey Tomilin *Institute of Cytology, Russian Academy of Sciences, St-Petersburg, Russia*
Human artificial chromosomes for regenerative medicine and gene therapy
- 18.30 - 18.50 Naihe Jing *Shanghai Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences*
The interaction between extrinsic signals and intrinsic factors during neural commitment of pluripotent cells
- 18.50 – 19.05 Galina Sineva *Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia*
Wnt, MEK/ERK and mTOR signaling pathways interaction in mouse embryonic stem cells
- 19.05 – 19.45 Rudolf Jaenisch *Massachusetts Institute of Technology & Whitehead Institute for Biomedical Research, USA*
Stem cells, pluripotency and nuclear reprogramming

Main Symposia

Hall 4-5

Biocatalysis: General Problems (II-S6)

Chairs: George Michael Blackburn, Alexander Gabibov

July 8, 2013 BIOCATALYSIS: PHOSPHATE ASPECTS

- 17.00 - 17.40 Nigel Richards *Department of Chemistry and Chemical Biology, IUPUI, USA*
Catalytic strategies for cleaving unreactive C-C bonds
- 17.40 - 18.05 Michael Famulok *Life & Medical Sciences (LIMES)-Institut, Chemical Biology & Medicinal Chemistry Unit, Bonn, Germany*
Insight into ErbB receptor signaling from a Chemical Biology perspective
- 18.05 - 18.30 John W. Kozarich *ActivX Biosciences, Inc., Kyorin Pharmaceutical Co., LTD (Tokyo), The Scripps Research Institute, La Jolla, CA, USA*
Functional, ChemoProteomic interrogation of nucleotide binding space for drug discovery and development
- 18.30 - 18.55 Jon Waltho *Manchester Institute of Biotechnology, Manchester, UK*
Kinases, phosphatases, mutases, and G-proteins
- 18.55 - 19.20 Paul Wentworth *The Scripps Institute for Research, La Jolla, USA*
From antibody catalysis to protein misfolding diseases – the destructive chemistry of inflammation
- 19.20 - 19.40 Matthew Bowler *Synchrotron Science Group, European Molecular Biology Laboratory, Grenoble, France*
Tracking ATP generation from start to finish: the complete reaction cycle of human PGK
- 19.40 - 19.55 Ivan Smirnov *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*
Evolution of a reactibody by combined natural and computational methods

Main Symposia

Hall 4-8

“Mitochondriology”: New Approaches in Bioenergetics (III-S14)

Chairs: Sergio Papa, Vladimir Skulachev

July 8, 2013 MITOCHONDRIAL PATHOLOGIES

- 16.00 - 16.40 Barbara Cannon *The Wenner-Gren Institute, The Arrhenius Laboratories F3, Stockholm University, Sweden*
Functions of mitochondrial uncoupling proteins under normal and pathological conditions: present state of the art
- 16.40 - 17.05 Dmitry B. Zorov *Department of Bioenergetics, A.N. Belozersky Institute of Physico-Chemical Biology, Moscow State University, Moscow, Russia*
Acute phenoptosis: sudden death after a crisis, mediated by mitochondrial ROS
- 17.05 - 17.30 Natalya Kolosova *Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia*
OXYS rats: role of mitochondria in the accelerated senescence
- 17.30 - 17.55 Irina G. Shabalina *The Wenner-Gren Institute, Stockholm University, Stockholm, Sweden*
Penetrating cation C12TPP as possible tool to treat obesity
- 18.55 - 19.10 Silvia Grancara *Department of Biomedical Sciences, University of Padova, Padova, Italy*
The mechanism of spermine cycling across the inner mitochondrial membrane and its pathophysiological implication
- 19.10 - 19.25 Ivan Tarassov *UMR 7156 CNRS - UdS, France*
Mitochondrial targeting of RNA: Alternative mechanisms of translocation
- 19.25 - 19.40 Vitaly Selivanov *University of Barcelona, Barcelona, Spain*
Multistationary and oscillatory modes of free radicals generation by the mitochondrial respiratory chain

Main Symposia

Hall 4-10

Alexander Braunstein Memorial Symposium: Enzymes, Cofactors, Mechanisms (II-W10)

Chairs: Tatyana Demidkina, Andrea Mozzarelli, Vladimir Tishkov

July 8, 2013

Chair: Andrea Mozzarelli

- 17.00 - 17.40 Annalisa Pastore *National Institute for Medical Research, The Ridgeway, London, UK*
Iron sulfur cluster assembly and disease
- 17.40 - 18.05 Barbara Cellini *University of Verona, Verona, Italy*
Effects of polymorphic and pathogenic mutations on the structural and functional properties of human alanine:glyoxylate aminotransferase
- 18.05 - 18.30 Robert S. Phillips *University of Georgia, Athens, USA*
Structural basis of the substrate specificity of human and bacterial kynureninase
- 18.30 - 18.55 Tatyana Demidkina *Engelhardt institute of Molecular Biology, Moscow, Russia*
Methionine γ -lyase as a target in pathogens
- 18.55 - 19.10 Despoina A.I. Mavridou *Christina Redfield Biochemistry Department, University of Oxford, Oxford, UK*
Concerted protein-protein interactions drive heme delivery in cytochrome c Assembly
- 19.10 - 19.25 Henrique G. Colaco *Institute for Medicines and Pharmaceutical Sciences, Faculty of Pharmacy, University of Lisbon, Portugal*
Oxidative and nitrosative stress responsive genes as targets for the search and development of compounds with anti-amoebic potential
- 19.25 - 19.40 John C. Salerno *Department of Biology Kennesaw State University, GA, USA*
Molecular basis of control of endothelial and neuronal NO synthase

FEBS Special Activity

Hall 4-9

FEBS Education Committee Workshop on “Molecular Life Sciences Education for the Needs of the Industry” (ED-W37)

Chairs: Gül Güner Akdogan, Keith Elliott

July 8, 2013

- 17.00 - 17.05 Gül Güner Akdogan (*Izmir, Turkey*), Keith Elliott (*Manchester, UK*)
Introduction
- 17.05 - 17.40 Detlev Riesner *Heinrich Heine University of Düsseldorf, Qiagen, Germany*
What the industry expects from molecular life sciences graduates?
- 17.40 - 18.15 Ruth Arnon *Weizmann Institute of Science, Rehovot, Israel*
From basic research to applied science
- 18.15 - 18.40 Tomas Zima *Prague University 1st Faculty of Medicine, Czech Republic*
How medical schools prepare students for the industry?
- 18.40 - 19.05 Panel Discussion (Co-Chairs and Speakers)

Main Symposia

Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: **Olga Dontsova, Eric Westhof**

July 9, 2013 **NON-CODING RNAs, TELOMERASE, MicroRNAs**

Chairs: **Olga Dontsova, Peter Baumann**

- 08.30 - 09.10** Peter Baumann *Howard Hughes Medical Institute and Stowers Institute for Medical Research, Kansas City, USA*
Telomerase biogenesis and regulation
- 09.10 - 09.35** Joachim Lingner *EPFL SV ISREC UPLIN, Lausanne, Switzerland*
Telomerase and TERRA lncRNA at chromosome ends
- 09.35 - 10.00** Juli Feigon *Dept. of Chemistry and Biochemistry, University of California, Los Angeles, USA*
The architecture of telomerase
- 10.00 - 10.25** Irene Bozzoni *Sapienza University of Rome, Italy*
Role of non coding RNAs in muscle differentiation and disease

Main Symposia

Hall 6-2

Biochemistry for Medicine Symposium (IV-S16)

Chairs: **Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima**

July 9, 2013 **METABOLISM OF CARCINOGENS AND DRUGS. FROM GENES TO CANCER AND ITS TREATMENT**

Chairs: **Tomas Zima, Vladimir Chekhonin**

- 08.30 - 09.10** F. Peter Guengerich *Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, Tennessee, USA*
Mechanisms of activation of carcinogens by oxidations and conjugations
- 09.10 - 09.35** David H. Phillips *Analytical and Environmental Sciences Division, King's College London, London, UK*
Carcinogen activation in mice with genetically-altered cytochrome P450 expression
- 09.35 - 10.00** Vladimir Chekhonin *Russian Academy of Medical Sciences, Moscow, Russia*
Treatment of brain tumor by targeted cisplatin-loaded nanogels in rats
- 10.00 - 10.25** Heinz H. Schmeiser *Research Group Genetic Alterations in Carcinogenesis, German Cancer Research Center (DKFZ), German Cancer Research Center (DKFZ), Heidelberg, Germany*
Metabolism of the human carcinogen aristolochic acid
- 10.25 - 10.50** Charles McKenna *USC Dornsife College of Letters, Arts & Sciences, Los Angeles, CA, USA*
DNA polymerase beta and the BER pathway: toward a new approach to anti-cancer drug design

Main Symposia

Hall 4-2

Organization of Eukaryotic Genomes (I-S1)

Chairs: Wendy Bickmore, Sergey Razin

July 9, 2013

Chair: Rainer Renkawitz

- 08.30 – 09.10 Peter Cook *Sir William Dunn School of Pathology; University of Oxford; Oxford, UK*
A model for all genomes: the role of specialized transcription factories
- 09.10 – 09.35 Ivan Raska *Institute of Cellular Biology and pathology, 1st Faculty of Medicine, Charles University in Prague, Czech Republic*
Large scale organization of chromatin
- 09.35 – 10.00 Andrew S. Belmont *Dept. of Cell and Developmental Biology, University of Illinois at Urbana-Champaign, USA*
Long-range, directed movement of Hsp70 transgenes to nuclear speckles after transcriptional activation
- 10.00 – 10.25 Peter Becker *Ludwig Maximilians Universität, Adolf-Butenandt-Institut, München, Germany*
The Drosophila X chromosome, a functional nuclear compartment

Main Symposia

Hall 4-4

Enzymes Reacting with Organophosphorus Agents (II-W9)

Chairs: Patrick Masson, Sergey Varfolomeev

July 9, 2013

- 08.30 - 09.10 Oksana Lockridge *University of Nebraska Medical Center, Omaha, USA*
Reaction of tyrosinyl and histidinyl residues with OPs
- 09.10 - 09.35 Martin Weik *Institute of Structural Biology, Grenoble, France*
Molecular dynamics of ChEs
- 09.35 – 09.50 Sofya Lushchekina *Institute of Biochemical Physics, Moscow, Russia*
QM/MM of ChE-catalyzed reactions, in particular OP inhibition
- 09.50 – 10.15 Eugenio Vilanova *University Miguel Hernandez, Elche, Spain*
Theoretical kinetic aspects of enzymes reacting with OPs
- 10.15 – 10.40 Galina Makhaeva *Institute of Physiologically Active Compounds, Chernogolovka, Russia*
NTE and neuropathies induced by OPs

Main Symposia

Hall 4-5

Biocatalysis: General Problems (II-S6)

Chairs: George Michael Blackburn, Alexander Gabibov

July 9, 2013 **BIOCATALYSIS: MEDICAL ASPECTS**

- 08.30 - 09.10 Gregory A. Petsko *Department of Neurology and Center for Neurologic Diseases, Harvard Medical School and Brigham & Women's Hospital, Brandeis University, Waltham, MA, USA*
Is it time to reverse the classical paradigm of enzymology?
- 09.10 - 09.35 Michael Blackburn *Department of Molecular Biology & Biotechnology, The University of Sheffield, UK*
DNA Repair by UNG – stressful glycolysis!
- 09.35 -10.00 Rudolf K. Allemann *School of Chemistry & Cardiff Catalysis Institute, Cardiff University, UK*
The role of protein motions in catalysis by dihydrofolate reductase
- 10.00 -10.25 Daniela De Biase *University of Rome La Sapienza, Department of Medico-Surgical Sciences and Biotechnologies, Latina, Italy*
“Some like it acid”: How *Escherichia coli* glutamate decarboxylase controls its intracellular activity in response to acid stress

Main Symposia

Hall 4-6

Glycobiology: Carbohydrate–Protein Recognition (VI-S28)

Chairs: Nicolai Bovin, Monica Palcic

July 9, 2013

- 08.30 - 09.10 Kurt Drickamer *Imperial College, UK*
Recognizing sugars: Identification of glycan-binding receptors in innate and adaptive immunity
- 09.10 - 09.35 James Paulson *Departments of Chemical Physiology and Molecular Biology, La Jolla, CA, USA*
Siglecs mediate B cell tolerance as sensors of self
- 09.35 -10.00 Jacques LePendu *Institut de Biologie, Nantes, France*
Histo-blood group antigens in host-pathogens co-evolution and providers of «herd innate protection»
- 10.00 -10.25 John Skehel *MRC National Institute for Medical Research, London, UK*
Sialic acid recognition by influenza viruses

Main Symposia

Hall 4-7

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko,
Tomas Zima

July 9, 2013 NEW APPROACHES TO THERAPY

Chairs: Yair Reisner, Oleg Kisselev

- 08.30 - 09.10 Yair Reisner *Weizmann Institute of Science, Rehovot, Israel*
Novel perforin positive regulatory dendritic cells in immune tolerance and autoimmunity
- 09.10 - 09.35 Miguel A. De la Rosa *University of Seville & CSIC, Seville, Spain*
Antimalarial activity of cupredoxins
- 09.35 - 10.00 David Rice *Krebs Institute, Dept of Molecular Biology and Biotechnology, University of Sheffield, UK*
Towards a new understanding of the bacterial cell wall
- 10.00 - 10.25 Maryna Skok *Palladin Institute of Biochemistry, Kyiv, Ukraine*
Nicotinic acetylcholine receptors in mitochondria: a new role for the old player

Main Symposia

Hall 4-8

Ion Channel Signaling: From Spatial Structures to Physiological Mechanisms (III-S11)

Chairs: Elena Kaznacheyeva, Oleg Krishtal, Alan North,
Victor Tsetlin

July 9, 2013

- 08.30 - 09.10 Alan North *University of Manchester, UK*
Molecular physiology of P2X receptors
- 09.10 - 09.35 Victor Tsetlin *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*
Neurotoxic assistants in research on nicotinic receptors
- 09.35 - 10.00 Indu Ambudkar *Molecular Physiology and Therapeutics Branch and Secretary Physiology Section, NIDCR, NIH, Bethesda, MD, USA*
TRP channels in cell function and dysfunction
- 10.00 - 10.25 Alex Verkhratsky *University of Manchester, UK*
P2X and NMDA receptors mediate fast sodium signalling in cortical astroglia

Main Symposia

Hall 4-9

Stem Cells: Fundamentals and Applications (IV-S21)

Chairs: **Clare Blackburn, Alexey Tomilin**

July 9, 2013

- 08.30 – 09.10 Hans Scholer *Division of Cell and Developmental Biology, Max Planck Institute for Molecular Biomedicine, Münster, Germany*
Induction of multi- and pluripotency
- 09.10 – 09.35 Christine Mummery *Leiden University Medical Centre, The Netherlands*
Human pluripotent stem cells: the new heart patient
- 09.35 – 10.00 Elena Cattaneo *Centre for Stem Cell Research, University of Milano, Italy*
Generation of authentic striatal neurons from human pluripotent stem cells for transplantation studies in Huntington's disease
- 10.00 – 10.40 Hans Clevers *Hubrecht Institute, University of Utrecht, The Netherlands*
Lgr5 stem cells in self-renewal, regeneration and cancer

Main Symposia

Hall 4-10

Biogenic Polyamines in Cell Metabolism (VI-W31)

Chairs: **Robert Casero, Alexey Khomutov, Heather Wallace**

July 9, 2013

- 08.30 – 09.10 Robert A. Casero *Johns Hopkins University School of Medicine, Baltimore, MD, USA*
New antitumor targets for polyamine-like compounds
- 09.10 – 09.35 Chaim Kahana *Weizmann Institute of Science, Rehovot, Israel*
How polyamine depletion inhibit cellular proliferation and differentiation
- 09.35 – 10.00 Rafael Penafiel *University of Murcia, Spain*
Antizyme inhibitor 2: a novel player in polyamine metabolism
- 10.00 – 10.25 Lisa M. Shantz *Penn State College of Medicine, Hershey, PA USA*
Post-transcriptional regulation of ornithine decarboxylase (ODC)

FEBS Special Activity Hall 6-1

Science & Society Session (S&S-S35)

Chairs: Jacques-Henry Weil, Alexander Eggermont, Mikhail Lichinitser

July 9, 2013

- 08.30 - 09.10 Alexander Eggermont *Institut de Cancerologie Gustave Roussy, Villejuif, France*
Personalized cancer medicine: Conceptual, organizational and financial challenges
- 09.10 - 09.35 Serena Nik-Zainal *Welcome Trust Sanger Institute, Hinxton, Cambridge, UK*
Interrogating the architecture of cancer genomes
- 09.35 - 10.00 Anne-Lise Børresen-Dale *Institute for Cancer Research, The Norwegian Radiumhospital, Oslo University Hospital, Oslo, Norway*
Towards integrated «omics» for personalized treatment of breast cancer
- 10.00 - 10.25 Cornelia Ulrich *Dept of Preventive Oncology, National Center for Tumor Diseases (NCT), Heidelberg, Germany*
Can we personalize cancer prevention?



Satellite Event Hall 4-1

Exploration of Disease Pathways from Gene to Function Life Technologies™

July 9, 2013

- 10.00 – 10.15 Vice President *Life Technologies*
Welcome
- 10.15 – 11.00 Raimo Tanzi *Business Development Director, Next Generation Sequencing Europe, Life Technologies, Milan, Italy*
Mutation discovery and disease pathway research using Ion Torrent™ next generation sequencing
- 11.00 – 11.30 Alexander Pavlov *Project leader, CEO, Sequoia Genetics, St Petersburg, Russia*
Next Generation Sequencing solution for clinical application - newborns screening. Customer Case Study
- 11.30 – 12.15 Jeoffrey Schageman *Staff Scientist, Transcriptome Bioinformatics Ambion R&D, Austin, USA*
Solutions for quantification of gene expression changes in disease pathways with real-time PCR and Ion Torrent™ RNA Sequencing
- 12.15 – 12.45 Lunch, networking and discussion with the presenters
- 12.45 – 13.15 Ermias Melles Sr. *Technical Sales Specialist Genetic Analysis Systems, Life Technologies*
Expanding the detection limits of disease-associated mutations with digital and real-time PCR systems
- 13.15 – 13.45 Ludmila Lubchenko *Head of the Lab of Clinical Oncogenetics, Russian Oncology Centre, Moscow, Russia*
Mutation analysis in melanoma. Customer Case Study
- 13.45 – 14.30 Anna Pils *Molecular Biology Scientist, Life Technologies, Germany*
Synthetic Biology tools for streamlining your workflows in functional characterization of putative disease targets
- 14.15 Thank you and close of satellite event
An opportunity for attendees to join the plenary sessions in the main conference and to find out more about the technologies discussed in the presentations at Life Technologies' booth 101 & 102 in the exhibition hall.

Satellite Event SKOLKOVO Club

July 9, 2013

- 10.30 – 12.00 SkolTech presents: International Center for Research and Education «Stem Cells and Cell Technologies»
- 12:00 -13:00 Discussion Club on Cell Technologies

Satellite Event Hall 4-1

July 9, 2013

- 15.30 – 17.30 Oncology Session: What to Invest Money in to Conquer Cancer? Skolkovo Projects Presentation
- NewVac
 - Petar
 - Quantum Age
 - Sequoia Genetics
 - ANO «NII»
 - InErPharm



Main Symposia Main Hall

RNA World (I-S2)

Dedicated to the memory of Professor Marianne Grunberg-Manago

Chairs: **Olga Dontsova, Eric Westhof**

July 9, 2013 NON-CODING RNAs, TELOMERASE, MicroRNAs
Chairs: **Olga Dontsova, Peter Baumann**

- 17.00 - 17.40 David Bartel *Howard Hughes Medical Institute and Whitehead Institute for Biomedical Research, Cambridge, USA*
MicroRNAs and other regulatory RNAs
- 17.40 - 18.05 Gunter Meister *Biochemistry Center Regensburg (BZR), University of Regensburg, Regensburg, Germany*
Regulation of microRNA biogenesis and function
- 18.05 - 18.30 Olivier Voinnet *Swiss Federal Institute of Technology Zurich, Department of Biology, Zürich, Switzerland*
Direct evidence for antiviral RNAi in mammal
- 18.30 - 18.55 Marina Zvereva *Lomonosov Moscow State University, Moscow, Russia*
Telomerase complex from *Hansenula polymorpha*
- 18.55 – 19.10 Marie-Christine Maurel *ANBioPhy UPMC, Paris, France*
From ancient to modern RNA world and conversely
- 19.10 – 19.25 Nikolay V Dokholyan *University of North Carolina at Chapel Hill, Chapel Hill, NC, USA*
Predicting 3D RNA structure and dynamics using Discrete Molecular Dynamics
- 19.25 – 19.40 Nina Entelis *UMR 7156 Uds/CNRS Strasbourg, France*
Mitochondrial diseases: modeling anti-genomic therapy by imported RNA

Main Symposia

Hall 6-1

Membrane Transport and Secretion: From Nephrons to Neurons (III-S12)

Chairs: Qais Al-Awqati, Dominique Eladari, Alexander Petrenko

July 9, 2013

- 17.00 - 17.40 Jim Rothman *Yale University, USA*
New insights into the mechanism of synchronous synaptic transmission
- 17.40 - 18.05 Matthijs Verhage *Vrije Universiteit, Amsterdam, the Netherlands*
Mechanisms of dense core vesicle secretion
- 18.05 - 18.30 Jacopo Meldolesi *San Raffaele Scientific Institute, Milan, Italy*
Neurosecretion is governed by the transcription repressor REST
- 18.30 - 18.55 Christian Huebner *Friedrich Schiller University, Jena, Germany*
Bicarbonate transport and synaptic transmission
- 18.55 - 19.10 Valery Krizhanovsky *Weizmann Institute of Science, Rehovot, Israel*
Senescent cells impact their microenvironment by direct protein transfer
- 19.10 - 19.25 Tobias Langenhan *University of Leipzig, Germany*
The neuronal functions of Adhesion-class G protein-coupled receptors - a physiological riddle wrapped up in a signaling enigma
- 19.25 - 19.40 Max Werth *Columbia University, New York, USA*
Transcription factor Cp2L1 controls cell fate decisions in the collecting duct

Main Symposia

Hall 6-2

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 9, 2013 Keynote Lecture

17.00 - 17.30 Alexander Archakov *Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia*
Human proteome project for medicine

July 9, 2013 METABOLISM OF CARCINOGENS AND DRUGS. FROM GENES TO CANCER AND ITS TREATMENT

Chairs: Alexander Shtil, Jiarui Wu

- 17.30 - 18.10 Volker M. Arlt *Analytical and Environmental Sciences Division, King's College London, London, UK*
Impact of p53 function on the metabolic activation of environmental carcinogens in human cells
- 18.10 - 18.35 Jiarui Wu *Shanghai Institutes for Biological Sciences Chinese Academy of Sciences, China*
Different roles of p53 on tumorigenesis under various conditions
- 18.35 - 19.00 Vladimir A. Mitkevich *Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*
Anticancer potential of microbial RNases
- 19.00 - 19.25 Valeriy Filonenko *Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine, Kyiv, Ukraine*
New insight into regulatory mechanisms of CoA biosynthesis
- 19.25 - 19.40 Alexander Shtil *Moscow, Russia*
The Partner Matters: Alkyl Cationic Glycerolipids as Unexpected DNA Ligands and Topoisomerase Blockers
- 19.40 - 19.55 Mikhail Akimov *Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
The biochemistry and signaling of bioactive lipids of N-acyl dopamines group

Main Symposia

Hall 4-2

Organization of Eukaryotic Genomes (I-S1)

Chairs: Wendy Bickmore, Sergey Razin

July 9, 2013

Chair: Peter Becker

- 17.00 – 17.40 Wendy Bickmore *Medical Research Council, Human Genetics Unit, Western General Hospital, Edinburgh, UK*
Long-range regulation of gene expression
- 17.40 – 18.05 Rainer Renkawitz *Genetisches Institut, Justus-Liebig-Universitaet, Giessen, Germany*
Chromatin insulation: How many mechanisms do we need?
- 18.05 – 18.30 Howard Cedar *Department of Cellular Biochemistry and Human Genetics, The Hebrew University-Hadassah Medical School, Jerusalem, Israel*
Programming DNA methylation patterns during development
- 18.30 – 18.55 Brian McStay *Centre for Chromosome Biology, School of Natural Sciences, National University of Ireland, Galway, Ireland*
Human nucleolar organiser regions lie within a complex chromatin landscape in previously uncharted regions of the genome
- 18.55 – 19.10 Morten Kjos *Molecular Genetics Department, University of Groningen, The Netherlands*
Transcription contributes to efficient chromosome segregation in *streptococcus pneumoniae*
- 19.10 – 19.25 Nikolai Tchurikov *Engelhardt Institute of Molecular Biology, Moscow, Russia*
Hot spots of DNA double-strand breaks coupled with *parp1* and *hnrnpa2b1* binding sites shape coordinately expressed domains in human chromosomes
- 19.25 – 19.40 Alexey Kurnosov *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Whole-genome identification of somatic retroelement insertions in human brain tissues

Main Symposia

Hall 4-4

Enzymes Reacting with Organophosphorus Agents (II-W9)

Chairs: Patrick Masson, Sergey Varfolomeev

July 9, 2013

- 17.00 - 17.40 Florian Nachon *IRBA-CRSSA, Toxicology Dept, Grenoble, France*
X-ray structure of phosphorylated ChEs
- 17.40 - 18.05 Zrinka Kovarik *Institute for Medical Research and Occupational Health, Zagreb, Croatia*
Reactivators and pseudo-catalytic scavengers
- 18.05 - 18.30 Yakov Ashani *The Weizmann Institute of Science, Rehovot, Israel*
Theory of stoichiometric and catalytic OP bioscavengers
- 18.30 - 18.55 Moshe Goldsmith *The Weizmann Institute of Science, Rehovot, Israel*
Evolved paraoxonases against nerve agents
- 18.55 – 19.20 Elena Efremenko *Department of Enzymology, Moscow State University, Moscow, Russia*
Biotechnology of PTEs and application to inactivation of OPs
- 19.20 – 19.35 Denis Ilyushin *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Chemical polysialylation of human butyrylcholinesterase. Towards the delivery of a long-acting bioscavenger for nerve agents in vivo

Main Symposia

Hall 4-6

Glycobiology: Carbohydrate–Protein Recognition (VI-S28)

Chairs: Nicolai Bovin, Monica Palcic

July 9, 2013

- 17.00 – 17.40 Tatiana Gorshkova *Kazan Institute of Biochemistry and Biophysics, Kazan, Russia*
Plant cell wall polysaccharides: Interactions and supramolecular organization
- 17.40 – 18.05 Hans-Joachim Gabius *Muenchen University, Germany*
How human lectins translate the sugar code
- 18.05 – 18.30 Monica Palcic *Carlsberg Laboratory, Copenhagen, Denmark*
Structure, function and evolution of retaining glycosyltransferases
- 18.30 – 18.45 Marcin Czerwinski *Ludwik Hirszfeld Institute of Immunology and Experimental Therapy, Wroclaw, Poland*
Gb3/CD77 synthase (alpha1,4-galactosyltransferase) and its variant form, NOR-synthase, exist as dimers
- 18.45 – 19.10 Beat Ernst *Institute of Molecular Pharmacy, University of Basel, Basel, Switzerland*
Selectin antagonists as anti-inflammatory agents: a glycomimetic approach
- 19.10 – 19.25 Nicolai Bovin *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia*
New anti-glycan natural antibodies in humans
- 19.25 – 19.40 Gordan Lauc *University of Zagreb Faculty of Pharmacy and Biochemistry, Croatia*
Complex genetics of protein glycosylation

Main Symposia

Hall 4-8

Ion Channel Signaling: From Spatial Structures to Physiological Mechanisms (III-S11)

Chairs: Elena Kaznacheyeva, Oleg Krishtal, Alan North, Victor Tsetlin

July 9, 2013

- 17.00 - 17.40 August B. Smit *Department of Neurosciences, CNCR, VU University Amsterdam, The Netherland*
From structure and function analysis in AChBP to drug design
- 17.40 - 18.05 Helmut Kettenmann *Max Delbrück Center for Molecular Medicine, Berlin, Germany*
Purinergic signaling in microglia
- 18.05 - 18.30 Rodrigo Cunha *University of Coimbra, Portugal*
Role of extracellular purines in the control of stressful brain dysfunction
- 18.30 - 18.55 Rashid Giniatullin *University of Helsinki, Finland*
Desensitization properties of ATP-gated P2X3 receptors
- 18.55 - 19.10 Christian Andrea Di Buduo *Biotechnology Research Laboratories, Department of Molecular Medicine, IRCCS San Matteo Foundation, University of Pavia, Pavia, Italy*
Purinergic signalling engage both intracellular Ca²⁺ mobilization and extracellular Ca²⁺ inflow to regulate human megakaryocyte motility and platelet production
- 19.10 - 19.25 Alexey Shalygin *Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia*
Electrophysiological properties of native store-operated channels regulated by Stim2 calcium sensors
- 19.25 - 19.40 Irina Shelukhina *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Functional expression and axonal transport of alpha7 nAChRs by CGRP-ergic neurons of adult rat dorsal root ganglion.

Main Symposia

Hall 4-9

Alexander Braunstein Memorial Symposium: Enzymes, Cofactors, Mechanisms (II-W10)

Chairs: Tatyana Demidkina, Andrea Mozzarelli, Vladimir Tishkov

July 9, 2013

Chairs: Judith Klinman, Vladimir Tishkov

- 17.00 - 17.40 Judith Klinman *University of California, Berkeley, USA*
The intrigues and intricacies of quino-cofactor biosynthesis
- 17.40 - 18.05 Vadim Gladyshev *Harvard Medical School, Boston, USA*
Selenium, redox biology, and aging
- 18.05 - 18.30 Loredano Pollegioni *University of Insubria, Varese, Italy*
Modulation of D-serine cellular concentration by human D-amino acid oxidase
- 18.30 - 18.55 Peter Golyshin *Bangor University, Bangor, UK*
Mechanisms of cold adaptation in oil-degrading marine bacteria
- 18.55 - 19.20 Vladimir Tishkov *M.V. Lomonosov Moscow State University, Moscow, Russia*
Plant formate dehydrogenase: structure – function studies
- 19.20 – 19.35 Paola Laurino *Weizmann Institute of Science, Rehovot, Isarel*
Engineering DNA Methyltransferase for a novel cofactor

Main Symposia

Hall 4-10

Biogenic Polyamines in Cell Metabolism (VI-W31)

Chairs: Robert Casero, Alexey Khomutov, Heather Wallace

July 9, 2013

- 17.00 - 17.40 Heather M. Wallace *University of Aberdeen, Scotland, UK*
Drug delivery to cancer cells
- 17.40 - 18.05 Patrick M. Woster *Medical University of South Carolina, Charleston, USA*
Design of small molecule epigenetic modulators based on the polyamine backbone
- 18.05 - 18.30 Leena Alhonen *University of Eastern Finland, Kuopio, Finland*
New insight into mechanisms of myeloproliferative diseases
- 18.30 - 18.55 Enzo Agostinelli *University of Rome La Sapienza, Rome, Italy*
New chemical compounds enhance the toxic effects induced by polyamine metabolites. Strategies to deliver molecules into cancer cells for therapeutic approaches
- 18.55 – 19.10 Francisca Sánchez-Jiménez *University of Malaga, Spain*
Aminoxy analogue of histamine is an efficient inhibitor of mammalian L-histidine decarboxylase: Combined in silico and experimental evidence
- 19.10 – 19.25 Silvia Grancara *University of Padua, Italy*
Polyamines transport by probiotics
- 19.25 – 19.40 Olga Smirnova *Engelhardt Institute of Molecular Biology RAS, Moscow, Russia*
Hepatitis C virus alters the polyamine metabolism in human hepatoma Huh7 cells

FEBS Special Activity Hall 4-7

The Women in Science (WISE) Seminar (7-W34)

Chair: **Cecília Maria Arraiano**

July 9, 2013

17.00 - 19.00 Elizabeth Pollitzer *genSET programme, Portia Ltd, UK*
We need to talk about sex

Panel discussion



Satellite Symposium Hall 4-5

NMR in Biology – Special Activity

Chairs: **Isabella Felli**

July 9, 2013

17.00 - 17.10 Isabella Felli *CERM Florence, Italy*
BioNMR: an opportunity for biologists

17.10 – 17.40 Michael Sattler *TUM, Munich, Germany*
Dynamics and molecular recognition in splicing regulation

17.40 – 18.05 Isabelle Landrieu *CNRS, Université de Lille-Nord de France, France*
Impact of a single phosphorylation on the Dynamics, Structure and Function of the Pin1 WW domain

18.05 – 18.30 Irene Diaz Moreno *University of Seville, Spain*
Insights into TIA-1 binding to RNA: a novel approach combining SIA and STD-NMR with SPR

18.30 – 18.55 Jean-Pierre Simorre *IBS - CNRS/CEA/UJF, Grenoble, France*
Molecular interactions with the bacterial cell wall by liquid state, standard and DNP solid state NMR

18.55 – 19.20 Marta Cascante *University of Barcelona, Spain*
Combined study of microarray expression and NMR metabolic profile as a powerful approach to identify potential chemopreventive activity of natural products

Main Symposia

Main Hall

Biochemistry of Stress Response (III-S13)

Chairs: Boris Margulis, Gabriele Multhoff

July 10, 2013

- 08.30 - 09.10 Willem van Eden *Utrecht University, Utrecht, The Netherlands*
Heat shock proteins can be targets of inflammation controlling regulatory T cells
- 09.10 - 09.35 Carmen Garrido *Stress Protein and Cancer, INSERM U866, Faculte de Medecine, Dijon, France*
Role of the transcription factor HSF1 (heat shock factor 1) in macrophages differentiation
- 09.35 - 10.00 Gabriele Multhoff *Technische Universitat Munchen, Munich, Germany*
Hsp70-based anti-tumor therapies
- 10.00 - 10.25 Michael Sherman *Boston University School of Medicine, Boston, USA*
Role of heat shock proteins in cancer initiation and progression

Main Symposia

Hall 6-1

Molecular Basis of Autoimmunity (V-S22)

Chairs: Jean Francois Bach, Ludvig M. Sollid

July 10, 2013

- 08.30- 08.35 Jean-François Bach *Hospital Necker, Paris, France*
Introduction
- 08.35 - 09.15 Ludvig M. Sollid *University of Oslo, Norway*
On autoimmunity: Lessons from celiac disease
- 09.15 - 09.40 Lars Klareskog *Karolinska Institute, Stockholm, Sweden*
Genetic and environmental interactions in the development of rheumatoid arthritis
- 09.40 - 10.05 Lucienne Chatenoud *Descartes University, Paris, France*
Cellular and molecular mechanisms in type 1 diabetes mellitus
- 10.05 - 10.30 Andy Sewell *Cardiff University School of Medicine, UK*
T cells receptors implicated in type 1 diabetes

Main Symposia

Hall 4-1

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko,
Tomas Zima

July 10, 2013 INFECTIOUS DISEASES AND DRUG DESIGN

Chairs: Stephen Cusack, Oleg Kisselev

- 08.30 - 09.10 Oleg I. Kisselev *Institute of Influenza, St Petersburg, Russia*
Mechanisms of immunosuppression in viral infections: From retroviruses to Ebola and influenza viruses
- 09.10 - 09.35 Andrey P. Kozlov *Biomedical Center and St Petersburg State University, St Petersburg, Russia*
Evolution by tumor neofunctionalization and phenomenon of TSEEN genes
- 09.35 - 10.00 Stephen Cusack *EMBL, France*
Targeting influenza virus polymerase for new anti-viral drugs
- 10.00 - 10.25 Alexander Wlodawer *NIH/NCI, USA*
Fighting HIV: enzyme inhibitors, lectins, and antibodies
- 10.25 - 10.50 Leonid Margolis *National Institute of Child Health and Human Development, NIH, Bethesda, USA*
HIV and HSV: Dual-targeted antivirals in human tissues ex vivo

Main Symposia

Hall 4-2

Bioengineering: Fundamentals and Application (VI-W33)

Chairs: Vladimir Popov, Vytas Svedas, Marcel Wubbolts

July 10, 2013 Biorefineries and Green Chemistry

- 08.30 - 09.10 Marcel Wubbolts *DSM Innovation Center*
Sustainable technologies for new, biobased value chains
- 09.10 - 09.35 Manfred Kircher *CLIB2021 Cluster industrielle Biotechnologie, Dusseldorf, Germany*
The Bioeconomy asks for cutting-edge science and technology
- 09.35 - 10.00 Sergio Riva *Istituto di Chimica del Riconoscimento Molecolare, C.N.R., Milano, Italy*
Laccases: blue enzymes for green chemistry
- 10.00 - 10.25 N.V. Stoyanova *Ajinomoto-Genetika Research Institute, Moscow, Russia*
Microbial production of amino acids: perspective approaches in metabolic engineering

Main Symposia

Hall 4-4

Organization of Eukaryotic Genomes (I-S1)

Chairs: Wendy Bickmore, Sergey Razin

July 10, 2013

Chair: Giacomo Cavalli

- 08.30 – 09.10 Tom Misteli *National Cancer Institute; National Institutes of Health; Bethesda, MD, USA*
Genome organization and disease
- 09.10 – 09.35 Thomas Cremer *LMU Biocenter, Department of Biology II, Anthropology and Human Genetics, Ludwig Maximilians University, Martinsried and German Cancer Research Center, Heidelberg, Germany*
On the road towards a quantitative description of nuclear architecture in space and time
- 09.35 – 10.00 Maria Carmo-Fonseca *Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisboa, Portugal*
Nuclear checkpoints
- 10.00 – 10.25 Marie-Noëlle Prioleau *Institut Jacques Monod, Paris, France*
Dissection of molecular mechanisms involved in the spatio-temporal program of DNA replication in vertebrates

Main Symposia

Hall 4-5

Protein Dynamics (II-W8)

Chairs: Alexander Arseniev, Olga Fedorova, Jaak Jarv

July 10, 2013

- 08.30 - 09.10 Gerhard Wagner *Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, USA*
Dynamic mechanisms of inhibiting protein-protein interactions in translation initiation for design of anti-tumor agents
- 09.10 - 09.35 Rafael Bruschweiler *Chemical Sciences Laboratory & National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL, USA*
Functional protein dynamics from NMR spectroscopy and computational models
- 09.35 - 10.00 Christian Griesinger *Max Planck Institut für Biophysikalische Chemie, Göttingen, Germany*
Protein dynamics between nano- and microseconds by NMR: functional implications
- 10.00 - 10.25 Alexander Arsenyev *Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
NMR view on transmembrane helix-helix interaction

Main Symposia

Hall 4-6

DNA Damage and Repair (I-S3)

Chairs: Elizaveta Gromova, Olga Lavrik, Leon Mullenders

July 10, 2013

- 08.30 - 09.10 Wim Vermeulen *Erasmus Medical Center, Rotterdam, The Netherlands*
Mammalian nucleotide excision repair in the spotlights
- 09.10 - 09.35 Hans Krokan *Norwegian University of Science and Technology, Norway*
Genomic uracil - potent mutagen but normal intermediate in adaptive immunity
- 09.35 - 10.00 Gregory Dianov *Gray Institute for Radiation Oncology & Biology, University of Oxford, UK*
DNA damage recognition, signaling and processing
- 10.00 - 10.25 Olga Lavrik *Institute of Chemical Biology and Fundamental Medicine, Siberian Division of RAS, Novosibirsk, Russia*
The new activities in repair of apurinic/aprimidinic sites

Main Symposia

Hall 4-7

Immunochemistry and Bioengineering (V-S23)

Chairs: Sergey Deyev, Andreas Plückthun

July 10, 2013

- 08.30 - 09.10 Andreas Plückthun *Biochemisches Institut, Universitaet Zürich, Switzerland*
Protein ligands for receptors engineered to give powerful biological responses
- 09.10 - 09.35 Victor Krasnykh *Department of Experimental Diagnostic Imaging, M.D. Anderson Cancer Center, University of Texas, Houston, TX, USA*
Molecular engineering of viral vector tropism for targeted gene delivery
- 09.35 - 10.00 Andre Lieber *University of Washington, Seattle, USA*
A recombinant epithelial junction opener improves cancer therapy with nanoparticles, monoclonal antibodies, and T-cells
- 10.00 - 10.25 Chae-Ok Yun *Department of Bioengineering, College of Engineering, Hanyang University, Seoul, Korea*
Optimizing DC vaccination by combination with cytokine-expressing oncolytic adenoviruses

Main Symposia

Hall 4-8

Mechanisms of G Protein Signaling (IV-S18)

Chairs: Andrew B. Goryachev, Alfred Wittinghofer

July 10, 2013

- 08.30 - 09.10 Frank McCormick *UCSF Helen Diller Family, Comprehensive Cancer Center, San Francisco, CA, USA*
K-Ras in human cancer
- 09.10 - 09.35 David Barford *Division of Structural Biology, Chester Beatty Laboratories, London, UK*
Structures of Ras CAAX motif modifying enzymes
- 09.35 – 09.50 Daniel Abankwa *Turku Centre for Biotechnology, Abo Akademi University, Turku, Finland*
Certain cancer and RASopathy associated mutations affect Ras nanoclustering
- 09.50 – 10.05 Corinne Gerard *Aix-Marseille Universite, CNRS, CRN2M UMR 7286, Marseille, France*
Key role of the Ras GTPases in the cAMP-dependent control of pituitary function
- 10.05 – 10.30 Klaus Gerwert *Ruhr-University Bochum, Lehrstuhl für Biophysik, Bochum, Germany*
GTP-catalysis by G-proteins monitored by time-resolved FTIR at atomic detail

Main Symposia

Hall 4-9

Metabolism of Marine Organisms: Structure and Activities (VI-S26)

Chair: Valentin Stonik

July 10, 2013

- 08.30 - 09.10 Ricardo Riguera *Department of Organic Chemistry, Faculty of Chemistry and CIQUS, University of Santiago de Compostela, Santiago de Compostela, Spain*
Drug and Gene delivery systems based on a marine polysaccharide
- 09.10 - 09.35 Eugene Grishin *M.M. Shemyakin & Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Analgetic peptides from animal venoms
- 09.35 -10.00 Margherita Gavagnin *Istituto di Chimica Biomolecolare (ICB), Consiglio Nazionale delle Ricerche, Naples, Italy*
Exploring the chemistry of marine mollusks: from defensive chemicals to pharmacological leads
- 10.00 -10.25 Dmitry Aminin *G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia*
New immunomodulators from sea cucumbers. Molecular mechanisms of action

Main Symposia

Hall 4-10

Membrane Transport and Secretion: From Nephrons to Neurons (III-S12)

Chairs: Qais Al-Awqati, Dominique Eladari,
Alexander Petrenko

July 10, 2013

- 08.30 – 09.10 Thomas Jentsch *Leibniz-Institut für Molekulare Pharmakologie, Max-Delbrueck-Centrum für Molekulare Medizin, Germany*
Endosomal/lysosomal Cl⁻ transport: Role in cell biology and disease
- 09.10 – 09.35 Jacques Barhanin *CNRS–UNS Nice, France*
Different tasks for TASK K⁺ channels in adrenal glands
- 09.35 – 10.00 Eugene Solenov, Lyudmila Ivanova *Novosibirsk University, Russia*
Cellular and molecular basis for the regulation of the water movement through the renal tubular epithelium
- 10.00 – 10.25 Dominique Eladari *INSERM U970 Paris Cardiovascular Research Center, France*
Renal Intercalated Cells: Animal cells using the V H⁺-ATPase as bioenergizer



Satellite Symposium

Hall 6-2

Scientific Meeting for the Chromosome- centric Human Proteome Project (C-HPP)

July 10, 2013 CONSOLIDATION OF TRANSCRIPTOMIC AND PROTEOMIC
DATA IN CHROMOSOME-CENTRIC FORMAT

Chairs: Gilbert Omenn, Alexander Archakov

- 08.00 - 08.30 Gilbert Omenn *University of Michigan, Ann Arbor, MI, USA*
The overall strategy, organization, and progress of the Human Proteome Project
- 08.30 - 09.00 Alexander Archakov *Institute of Biomedical Chemistry, Moscow, Russia*
Depth and width of human proteome
- 09.00 - 09.30 Juan Pablo Albar *ProteoRed-ISCIII, National Center for Biotechnology, CSIC, Madrid, Spain*
Human Proteome Project: Characterization of the proteins encoded by the chromosome-16 protein coding genes
- 09.30 – 09.40 Break
- 09.40 - 10.10 Victor Zgoda *Institute of Biomedical Chemistry, Moscow, Russia*
Transcriptoproteome of Chr 18: Lessons from first 3 years
- 10.10 - 10.30 Pengyuan Yang *Fudan University, China*
Upgrade of liver based chinese C-HPP (CCHPP) data

Satellite Events

Skolkovo Club

July 10, 2013

Skolkovo Lectorium

- 13:00 - 14:30 Peter Fedichev *Quantum Age LLC*
Modern approaches to novel drugs development

Main Symposia

Main Hall

Biochemistry of Stress Response (III-S13)

Chairs: Boris Margulis, Gabriele Multhoff

July 10, 2013

- 17.00 – 17.40 Marja Jäättela *Danish Cancer Society, Copenhagen, Denmark*
Hsp70 and lipid metabolism
- 17.40 – 18.05 Andre-Patrick Arrigo *Claude Bernard University, Lyon, France*
Small stress proteins as chaperones modulating many different client proteins
- 18.05 – 18.30 Laszlo Vigh *Institute of Biochemistry Hungarian Acad. Sci., Szeged, Hungary*
The role of membranes in the heat-stress management
- 18.30 – 18.55 Pierre Goloubinoff *Department of Plant Molecular Biology, University of Lausanne, Switzerland*
Hsp70 and Hsp60 acting as catalytic polypeptide unfolding enzymes: implications for protein misfolding diseases and aging
- 18.55 – 19.10 Zsolt Balogi *Center for Advanced Bioanalysis GmbH, Linz, Austria*
Lysosomal rerouting of Hsp70 trafficking as a potential immune activating tool for targeting melanoma
- 19.10 – 19.25 Maxim Shevtsov *Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia*
Exogenous heat shock protein Hsp70 cycling through cancer cells can enhance anti-tumor innate and adaptive immune response
- 19.25 – 19.40 Jessica Gobbo *Inserm U866, Faculty of Medicine, Dijon, France*
Tumor-derived exosomes with extramembrane HSP70: cancer therapeutic target?
- 19.40 – 19.55 Alexander Mironov *State Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow, Russia*
On the role of gasotransmitters in bacterial physiology

Main Symposia

Hall 6-1

Molecular Basis of Autoimmunity (V-S22)

Chairs: Jean Francois Bach, Ludvig M. Sollid

July 10, 2013

- 17.00 - 17.40 Ken Smith *University of Cambridge, UK*
Stratifying patients with autoimmune disease: Will genetics and genomics displace clinical assessment?
- 17.40 - 18.05 Cisca Wijmenga *University of Groningen, The Netherlands*
Mapping of immune-mediated disease genes
- 18.05 - 18.30 David Wraith *University of Bristol, UK*
Antigen specific therapy of autoimmune diseases
- 18.30 - 18.55 Yuri Sykulev *Department of microbiology and Immunology, the Kimmel Cancer Center, Thomas Jefferson University*
On the recognition of self: the double sword
- 18.55 - 19.10 Melody A. Shahsavarian *Genie enzymatic et Cellulaire(GEC), FRE 3580 CNRS, Universite de Technologie de Compiègne, Compiègne, France*
Study of catalytic antibodies and their implication in autoimmune disease
- 19.10 - 19.25 Ievgen Koliesnik *Immunology Group, FLI, Jena, Germany*
T cell development in mice with increased alternative NF-κB pathway

Main Symposia

Hall 4-1

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 10, 2013 INFECTIOUS DISEASES AND DRUG DESIGN

Chairs: Tom Blundell, Sergey Kochetkov

- 17.00 - 17.40 Tom Blundell *University of Cambridge, Cambridge, UK*
Targeting macromolecular assemblies to make new medicines: gaining selectivity through allostery
- 17.40 - 18.05 Alain Friboulet *Université de Technologie de Compiègne, France*
Selection and identification of active biomolecules with potential therapeutic values
- 18.05 - 18.30 Victor Lamzin, Alexei Egorov *EMBL, Germany; Moscow State University, Russia*
Combating bacterial antibiotic resistance ^ novel lactamase inhibitors
- 18.30 - 18.55 Katherine L. Seley-Radtke *University of Maryland, Baltimore*
Exploring structural diversity in anticancer nucleoside drug design
- 18.55 - 19.05 Anastasia Khandazhinskaya *Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*
Depot forms of antiHIV drugs
- 19.05 - 19.20 Alexander Ivanov *Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*
Hepatitis C and oxidative stress
- 19.20 - 19.35 Sergey K. Zavriev *M.M. Shemyakin-Yu.A Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Food safety: monitoring of grain and its treatment products on the presence of mycotoxin producers

Main Symposia

Hall 4-2

Bioengineering: Fundamentals and Application (VI-W33)

Chairs: Vladimir Popov, Vytas Svedas, Marcel Wubbolts

July 10, 2013 Industrial Biocatalysis

- 17.00 - 17.40 Roland Wohlgemuth *Sigma-Aldrich, Buchs, Switzerland*
Biocatalysis and metabolite synthesis
- 17.40 - 18.05 Dick Janssen *Groningen Biomolecular Sciences and Biotechnology Institute, University of Groningen, Groningen, The Netherlands*
Computation-supported enzyme engineering for preparative biocatalysis
- 18.05 - 18.30 Dmitry Suplatov *Faculty of Bioengineering & Bioinformatics and Belozersky Institute of Physicochemical Biology, Lomonosov Moscow State University, Moscow, Russia*
Understanding structure-function relationship in protein families: bioinformatics and molecular modeling provide new concept for enzyme engineering
- 18.30 - 18.55 Anna Kulminskaya *Konstantinov Petersburg Nuclear Physics Institute, National Research Centre "Kurchatov Institute", PNPI, Gatchina, Leningrad Region, Russia*
Enzymatic way to modify oligosaccharides
- 18.55 - 19.10 Mikhail Beburow *The State Scientific Center of Russian Federation "GosNIIgenetika" Moscow, Russia*
Recombinant analogs of spider silk proteins as the base of new biomaterials for medical applications
- 19.10 - 19.25 Gianfranco Gilardi *Department of Life Sciences and Systems Biology, University of Torino, Italy*
Engineering human cytochrome P450 and omega-hydroxylation of fatty acids
- 19.25 - 19.40 Maria Dumina *Center "Bioengineering", Russian Academy of Sciences, Moscow, Russia*
Metabolic engineering of cephalosporin C producer - *Acremonium chrysogenum*: overexpression of MFS transporter CefT changes biosynthesis profile of beta-lactam compounds.

Main Symposia

Hall 4-4

Nucleic Acid Targets and Therapeutics (I-W5)

Chairs: Sidney Altman, Valentin Vlassov

July 10, 2013

- 17.00 – 17.40 Mike Gait *MRC Laboratory of Molecular Biology, UK*
Peptide conjugates of morpholino oligonucleotides (PMO) for exon skipping in Duchenne muscular dystrophy
- 17.40 – 18.05 Georg Sczakiel *University of Lubeck, Germany*
Intracellular delivery of siRNAs
- 18.05 – 18.30 Jorgen Kjems *Interdisciplinary Nanoscience Center, France*
TBA
- 18.30 – 18.55 Jian-Sheng Sun *DNA Therapeutics, France*
The «Dbait»: A new class of DNA repair inhibitors, from concept to clinic
- 18.55 – 19.10 Ulrich Hahn *Hamburg University, MIN-Faculty, Chemistry Department, Institute for Biochemistry and Molecular Biology, Germany*
Multifunctional interleukin-6 receptor specific DNA and RNA aptamers
- 19.10 – 19.25 Giedrius Gasiunas *Institute of Biotechnology, Vilnius University, Vilnius, Lithuania*
Cas9 – a programmable RNA-guided DNA endonuclease from the bacterial adaptive immune system
- 19.25 – 19.40 Vildan Bozok Cetintas *Department of Medical Biology, Ege University School of Medicine, Izmir, Turkey*
Inhibition of STAT3 expression via chemically modified siRNA's enhances the effects of cisplatin in the parental and resistant Calu1 non-small cell lung cancer cells

Main Symposia

Hall 4-5

Protein Dynamics (II-W8)

Chairs: Alexander Arseniev, Olga Fedorova, Jaak Jarv

July 10, 2013

- 17.00 – 17.40 Robert Kaptein *NMR Spectroscopy Research Group, Bijvoet Center for Biomolecular Research, Utrecht University, the Netherlands*
Structure and dynamics in lac repressor-DNA interaction
- 17.40 – 18.05 Kenneth A. Johnson *Department of Chemistry & Biochemistry, The University of Texas, Austin, USA*
Dynamics of substrate-induced conformational changes in determining enzyme specificity
- 18.05 – 18.30 Peep Palumaa *Tallinn University of Technology, Department of Gene Technology, Tallinn, Estonia*
Structure and functioning of copper chaperones
- 18.30 – 18.55 Jörg Langowski *Division Biophysics of Macromolecules, German Cancer Research Center (DKFZ), Heidelberg, Germany*
Dynamics of nucleosomes studied by single molecule spectroscopy and computer simulations
- 18.55 – 19.10 Nikita A. Kuznetsov *Department of Natural Sciences, Novosibirsk State University, Novosibirsk, Russia*
Recognition of DNA damages by human 8-oxoguanine DNA glycosylase
- 19.10 – 19.25 Eftychia Pinakoulaki *University of Cyprus, Nicosia, Cyprus*
Dynamics of the signal transducer protein HemAT as revealed by time-resolved step scan FTIR spectroscopy
- 19.25 – 19.40 Vladimir Torbeev *Institute for Biophysical Dynamics, Department of Chemistry, University of Chicago, Chicago, USA*
Protein conformational dynamics in the mechanism of HIV-1 protease catalysis

Main Symposia

Hall 4-6

DNA Damage and Repair (I-S3)

Chairs: Elizaveta Gromova, Olga Lavrik, Leon Mullenders

July 10, 2013

- 17.00 - 17.40 Samuel H. Wilson *Laboratory of Structural Biology, NIEHS, NIH, USA*
Understanding base lesion DNA repair
- 17.40 - 18.05 Leon Mullenders *Department of Toxicogenetics, Leiden University Medical Center, The Netherlands*
Regulation of nucleotide excision repair: from DNA damage recognition to complex assembly
- 18.05 - 18.30 Paolo Plevani *Department of Biomolecular Science and Biotechnology, Milano, Italy*
The importance of being DNA: RNase H and post-replication repair protect the genome from ribonucleotide incorporation
- 18.30 - 18.55 Elizaveta Gromova *Chemistry Department, Moscow State University, Moscow, Russia*
Impact of carcinogen-DNA adducts on DNA methylation
- 18.55 - 19.10 Irena Stevanovic *IRB Barcelona, Oncology Programme, Barcelona, Spain*
Characterization of the in vivo functions of PrimPol, a novel TLS primase-polymerase
- 19.10 - 19.25 Meltem Muftuoglu *Koc University, School of Medicine, Department of Biochemistry, Istanbul, Turkey*
The involvement of Cockayne syndrome B protein in base excision repair
- 19.25 - 19.40 Dmitry O. Zharkov *Institute of Chemical Biology and Fundamental Medicine, Siberian Division of the Russian Academy of Sciences, Russia*
Dissecting base excision: New insights into the mechanism of lesion recognition by formamidopyrimidine-DNA glycosylase

Main Symposia

Hall 4-7

Immunochemistry and Bioengineering (V-S23)

Chairs: Sergey Deyev, Andreas Plückthun

July 10, 2013

- 17.00 - 17.40 Sergey Deyev *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Modular nanoconstruct concept for bioimaging and therapy
- 17.40 - 18.05 Brian Kuhlmann *U North Carolina Chapel Hill, USA*
Computational design of protein interfaces and switches
- 18.05 - 18.30 Roger Schibli *ETH Zurich, Institute for Pharmaceutical Sciences, Zurich, Switzerland*
Novel methods for the site-specific and stoichiometric modification of therapeutic protein
- 18.30 - 18.55 Nina Tikunova, Yana Khlusevich *Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; State Research Center of Virology and Biotechnology VECTOR, Koltsovo, Russia*
Antibodies against ectromelia virus capable of neutralizing variola virus: generation and application for epitope mapping
- 18.55 - 19.10 Boris B. Dzantiev *A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia*
Quantitative study of mono- and multivalent interactions between viral antigens and antibodies or their derivatives of different compositions
- 19.10 - 19.25 Ahmed Adel Seida *Department of Obstetrics and Gynecology, University of Wurzburg, School of Medicine, Wurzburg, Germany and Interdisciplinary Center for Clinical Research, University of Wurzburg, School of Medicine Wurzburg, Germany*
The immunomodulatory role of endogenous glucocorticoids in ovarian cancer
- 19.25 - 19.40 Anna A. Chashchina *Biological Faculty and A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*
Evaluation of the immune functions in novel humanized TNF knock-in mice

Main Symposia

Hall 4-8

Mechanisms of G Protein Signaling (IV-S18)

Chairs: Andrew B. Goryachev, Alfred Wittinghofer

July 10, 2013

- 17.00 – 17.40 Johannes L. Bos *Dept. Physiological Chemistry, UMC Utrecht, The Netherlands*
Rap signaling modules: Landmark recognizing complexes in cell adhesion and polarity
- 17.40 - 18.05 Mark R. Philips *NYU Cancer Institute, Smilow Research 1205, NYU School of Medicine, New York, NY, USA*
Membrane targeting of GTPases and their effectors
- 18.05 – 18.30 Andrew B. Goryachev *Centre for Systems Biology, School of Biological Sciences, The University of Edinburgh, Edinburgh, Scotland, UK*
Cdc42-based mechanism of cell fate differentiation in budding yeast
- 18.30 – 18.55 Bruno Antony *CNRS-Institut de Pharmacologie Moléculaire et Cellulaire, Valbonne, France*
Feedback loops controlling the GDP/GTP cycle of Arf1 on membranes
- 18.55 – 19.10 Aleksandr Piskunov *International Biotechnology Center "Generium", Volgynsky, Russia*
Retinoic Acid Receptor in complex with G protein alpha Q – novel non-genomic
- 19.10 – 19.35 Alfred Wittinghofer *Max-Planck-Institute for Molecular Physiology, Dortmund, Germany*
Ras protein trafficking and its regulation by Arf-related proteins

Main Symposia

Hall 4-9

Bioinformatics (VI-W29)

Chairs: Mikhail Gelfand, Eugene Koonin

July 10, 2013

- 17.00 – 17.40 Peer Bork *Structural and Computational Biology, EMBL Heidelberg, Germany*
The human gut microbiome: variation, stratification and association with diseases
- 17.40 – 18.05 Nicola Mulder *Computational Biology Group, University of Cape Town, South Africa*
Using biological networks to understand mycobacterial pathogens
- 18.05 – 18.30 Yitzhak Pilpel *Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel*
How protein translation changes in cancer and in development
- 18.30 – 18.45 Anastasia A. Samsonova *Harvard Medical School, Boston, USA*
A computational framework for de novo discovery of RNA editing events from RNASeq data
- 18.45 – 19.00 Ceslovas Venclovas *Institute of Biotechnology, Vilnius University, Vilnius, Lithuania*
The use of interatomic contact areas for the assessment of RNA 3D structural models
- 19.00 – 19.15 Anna Philips *Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University, Poznan, Poland; Laboratory of Bioinformatics and Protein Engineering, International Institute of Molecular and Cell Biology, Warsaw, Poland*
LigandRNA: computational predictor of RNA-ligand interactions

Main Symposia

Hall 4-10

Membrane Transport and Secretion: From Nephrons to Neurons (III-S12)

Chairs: Qais Al-Awqati, Dominique Eladari,
Alexander Petrenko

July 10, 2013

- 17.00 – 17.40 Bernard Rossier *University of Lausanne, Switzerland*
Genetic dissection of sodium transport along the aldosterone sensitive distal nephron
- 17.40 – 18.05 Qais Al-Awqati *Columbia University, USA*
Differentiation of epithelial cells in the kidney
- 18.05 – 18.30 Alexander Petrenko *Shemyakin–Ovchinnikov Institute of Bioorganic Chemistry, Russia*
Alkali-sensing receptor
- 18.30 – 18.55 M. Weiss *Case Western Reserve University, USA*
Structural determinants of proinsulin secretion in beta-cells with application to the genetics of neonatal-onset diabetes mellitus
- 18.55 – 19.10 Olga Andrini *University Pierre and Marie Curie, Paris, France*
Reduced surface expression and blunted pH-dependent gating of ClC-Kb chloride channel in mild Bartter syndrome caused by CLCNKB mutation within the selectivity filter
- 19.10 – 19.25 Nataliia Korotkevich *Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine*
Intracellular trafficking of EGFR in response to binding with soluble heparin-binding EGF-like growth factor
- 19.25 – 19.40 Artem I. Fokin *Lomonosov Moscow State University, Moscow, Russia*
Variations in Golgi capability to organize microtubules

Satellite Symposium

Hall 6-2

Scientific Meeting for the Chromosome-centric Human Proteome Project (C-HPP)

July 10, 2013 CLINICAL APPLICATION OF C-HPP
Chairs: Young-Ki Paik, Sergey Moshkovskii

- 16.45 – 17.15 Young-Ki Paik *Yonsei University, Seoul, Korea*
The Chromosome-Centric Human Proteome Project (C-HPP), a new paradigm of multi-omics research in the biomedical community
- 17.15-17.45 William Hancock *Northeastern University, Boston, MA, USA*
Gilbert Omenn *University of Michigan, Ann Arbor, MI, USA*
New Insights into cancer biology by the integration of encode, transcriptomic and proteomic data
- 17.45 – 17.55 Break
- 17.55 - 18.15 Sergey Moshkovskii *Institute of Biomedical Chemistry, Moscow, Russia*
Cancer-specific genome changes observed at proteome level in colorectal cancer
- 18.15 - 18.35 Petr Likhov *Institute of Biomedical Chemistry, Moscow, Russia*
Metabolic Fingerprinting of blood plasma as a diagnostic and risk assessment tool for diabetes
- 18.35-18.55 Kirill Solovyov *Institute of Experimental Medicine, St Petersburg, Russia*
Experimental fibrillogenesis modeled on Chr 18 coded protein transthyretin and other proteins
- 18.55-19.15 Kestutis Bendinskas *State University of New York at Oswego, USA*
Human serum metallomics and proteomics

Main Symposia

Main Hall

Biochemistry of Stress Response (III-S13)

Chairs: Boris Margulis, Gabriele Multhoff

July 11, 2013

- 08.30 - 09.10 Johannes Buchner *Technische Universität München, Garching, Germany*
Regulation of molecular chaperone networks
- 09.10 - 09.35 David Rubinsztein *Cambridge Institute for Medical Research, Cambridge, UK*
Autophagy and neurodegeneration
- 09.35 - 10.00 Irina V. Guzhova *Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia*
Hsp70 and its co-chaperones in normal and pathologic CNS
- 10.00 - 10.25 Michael Cheetham *UCL Institute of Ophthalmology, London, UK*
The cell stress machinery and retinal degeneration
- 10.25 - 10.40 Francesco Vieceli Dalla Sega *University of Bologna, Italy*
Role of aquaporin isoforms on Nox-dependent redox signalling involved in proliferation of leukaemia cells
- 10.40 - 10.55 Heath Ecroyd *University of Wollongong, Wollongong, Australia*
The small heat shock proteins: Important players in small packages



Main Symposia

Hall 4-1

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko, Tomas Zima

July 11, 2013 METABOLIC DISORDERS

Chairs: Friedrich Spener, Eugene Severin

- 08.30 - 09.10 Friedrich Spener *Department of Molecular Biology and Biochemistry, Medical University of Graz, Austria*
Evolution of lipidomics in health and disease: The lipid droplet in the center
- 09.10 - 09.35 Stefan Chłopicki *Jagiellonian University, Krakow, Poland*
Towards NO- and PGI2 – based experimental pharmacotherapy of endothelium
- 09.35 - 10.00 Antonio Francisco Ambrosio *Centre of Ophthalmology and Vision Sciences, IBILI, Faculty of Medicine, University of Coimbra, Portugal*
New potential molecular targets to treat ocular diseases
- 10.00 - 10.15 Elena Lukashova, T.T. Berezov *Institute of Peoples' Friendship, Moscow, Russia*
New mechanism of L-lysine a-oxidase biological action
- 10.15 - 10.30 Sergey V. Popov, Yury S. Ovodov *Institute of Physiology, Komi Science Centre, The Ural Branch of the Russian Academy of Sciences, Syktyvkar, Russia*
Polypotency of the immunomodulatory effect of pectins
- 10.30 - 10.45 Teimur Aliev *Lomonosov Moscow State University, Moscow, Russia*
Bioengineering tools in antibody humanization

Main Symposia

Hall 4-2

Bioengineering: Fundamentals and Application (VI-W33)

Chairs: Vladimir Popov, Vytas Svedas, Marcel Wubbolts

July 11, 2013 FLUORESCENCE LIVE IMAGING

- 08.30 - 09.10 Konstantin Lukyanov *Shemyakin–Ovchinniov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Unusual fluorescent proteins: design and applications
- 09.10 - 09.35 Frank Chuang *NSF Center for Biophotonics Science & Technology, University of California, Davis Medical Center, Sacramento, CA, USA*
Advancing molecular medicine through superresolution structured-illumination microscopy of live cells
- 09.35 - 10.00 T.W.J. Gadella Jr *Van Leeuwenhoek Centre for Advanced Microscopy, Swammerdam Institute for Life Sciences & Netherlands Institute for Systems Biology, University of Amsterdam, The Netherlands*
3rd generation fluorescent proteins with enhanced properties for FRET and for monitoring signaling in living cells
- 10.00 - 10.25 Kirill Larin *University of Houston, TX, USA*
Live optical imaging of mammalian embryos to assess congenital diseases
- 10.25 - 10.40 Alexander Nemukhin *Laboratory of Chemical Cybernetics, Physical Chemistry Division, Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia*
Quantum based simulations of structure and spectra of photoreceptor proteins
- 10.40 - 10.55 Ilya Turchin *Institute of Applied Physics, Russian Academy of Science, Nizhny Novgorod, Russia*
Optical control of cell physiology using GEPS
- 10.55 - 11.10 Alexander Savitsky *A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia*
Excited state proton transfer in fluorescent proteins

Main Symposia

Hall 4-4

Nucleic Acid Targets and Therapeutics (I-W5)

Chairs: Sidney Altman, Valentin Vlassov

July 11, 2013

- 08.30 - 09.10 Marvin H. Caruthers *University of Colorado, Boulder, USA*
Oligonucleotide synthesis interfaced with molecular biology
- 09.10 - 09.35 Zhang Li-He *School of Pharmaceutical Sciences; State Key Laboratories of Natural and Biomimetic Drugs, Peking University, Beijing, China*
Synthesis and properties of isonucleoside modified oligonucleotides and siRNAs
- 09.35 - 10.00 Marina Zenkova *ICBFM SB RAS, Russia*
Anticancer siRNAs
- 10.00 - 10.25 Andrzej Dziembowski *Department of Genetics and Biotechnology, Faculty of Biology, University of Warsaw, Poland*
The role of the Dis3 exonuclease in cell physiology and multiple myeloma
- 10.25 - 10.40 Marina Gottikh *Lomonosov Moscow State University, Moscow, Russia*
Modified oligonucleotides as inhibitors of HIV-1 enzymes
- 10.40 - 10.55 Julian A. Tanner *University of Hong Kong*
Nucleic acid aptamers against Plasmodium lactate dehydrogenase for malaria diagnosis – discovery, characterization, structure and application

Main Symposia

Hall 4-5

Biochemistry for Medicine (IV-S16)

Chairs: Alexey Egorov, Oleg Kisselev, Serhiy Komisarenko,
Tomas Zima

July 11, 2013 PROTEASES AS THERAPEUTIC TARGETS

Chairs: Jan Konvalinka, Tatyana Demidkina

08.30 - 09.10 Charles S. Craik *Chemistry and Chemical Biology Graduate Program, Department of Pharmaceutical Chemistry, UCSF, Mission Bay, Genentech Hall, San Francisco, CA, USA*
Novel targets in proteases

09.10 - 09.35 Jan Konvalinka *Institute of Organic Chemistry and Biochemistry, Praha, Czech Republic*
Prostate specific membrane antigen as a protease and potential target for drug delivery

09.35 - 10.00 Colin Adrain *Instituto Gulbenkian de Ciência, Oeiras, Portugal*
Physiological and mechanistic roles of iRhoms

10.00 - 10.25 Gillian Murphy *Proteases and Tumor Micro-environment Laboratory, Cancer Research UK Cambridge Research Institute, Li Ka Shing Centre, Cambridge, UK*
A novel strategy for targeting metalloproteinases in cancer



Main Symposia

Hall 4-6

Systems Biology (VI-W30)

Chairs: Igor Goryanin, Daniel Thomas

July 11, 2013

08.30 – 08.35 Maria Samsonova, Daniel Thomas
Introduction to the session and welcome remarks

08.35 - 09.15 Daniel Thomas *University of Technology of Compiègne, France*
Systems biotechnology and biorefinery

09.15 - 09.40 Maria Samsonova *St Petersburg Polytechnical University, Russia*
Variability and robustness in biological systems

09.40 - 10.05 Andrey Rzhetsky *Department of Human Genetics, The University of Chicago, USA*
Glimpse into etiology of complex diseases through analysis of very large datasets

10.05 - 10.30 Fedor Kolpakov *Institute of Systems Biology, Novosibirsk, Russia; Design Technological Institute of Digital Techniques, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia*
Building virtual cell using BioUML platform

10.30 - 10.45 Kirill Peskov *Russian Institute of Physico-Chemical Medicine, Moscow, Russia*
Mechanism-based modeling approach relating human gut microbial community to physiologically-relevant biomarkers

10.45 – 11.00 Ansar Zhalyalov *Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia*
Fibrinolysis wave propagation in a reaction-diffusive system

Main Symposia

Hall 4-7

Biochemistry of Plants (VI-S27)

Chair: Alexander Grechkin

July 11, 2013

- 08.30 - 09.10 David Baulcombe *Department of Plant Science, University of Cambridge, UK*
RNA silencing and epigenetics in plants
- 09.10 – 09.50 Lothar Willmitzer *Max-Planck-Institut für Molekulare Pflanzenphysiologie, Potsdam, Germany*
Metabolomics meets genetics – novel approaches for linking complex traits to biochemical pathways in plants
- 09.50 – 10.15 Vladimir A. Shuvalov *Institute of Basic Biological Problems, Russian Academy of Sciences, Pushchino, Moscow Region, Russia*
Primary charge separation in reaction centers of photosynthesis
- 10.15 – 10.40 Irene Díaz-Moreno *IBVF, Universidad de Sevilla-CSIC, CIC Isla de la Cartuja, Seville, Spain*
Biointeractomics of cytochrome C under programmed cell death in plants and humans
- 10.40 – 11.05 Dmitry A. Los *Institute of Plant Physiology, Russian Academy of Sciences, Moscow, Russia*
Genomics and phosphoproteomics of stress responses in cyanobacteria



Main Symposia

Hall 4-8

Biochemistry of Invertebrates (VI-W32)

Chairs: Andrey Granovitch, Jürgen Markl,
Natalia Mikhailova

July 11, 2013

- 08.30 - 09.10 Hans-Otto Poertner *Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany*
Oceans under climate change: integrating the biochemical background into ecosystem shifts
- 09.10 -09.35 Inna Sokolova *University of North Carolina at Charlotte, Charlotte, NC, USA*
Physiological mechanisms of environmental adaptation and stress tolerance in marine invertebrates
- 09.35 - 10.00 Jürgen Markl *Institute of Zoology, Johannes Gutenberg University, Mainz, Germany*
Blue blood: Structure, evolution and function of hemocyanins
- 10.00 - 10.25 Beata G. Vertessy *Institute of Enzymology, Hungarian Academy of Sciences Budapest University of Technology, Budapest, Hungary*
Uracil-DNA in Holometabola and beyond
- 10.25 - 10.40 Alexander Vassilevski *Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*
Modular organization of arachnid toxins
- 10.40 – 10.55 Heli Havukainen, Gro V Amdam *Norwegian University of Life Sciences, Norway*
Understanding the proteolysis of a lifespan regulator protein vitellogenin in honeybee workers

Main Symposia

Hall 4-9

Metabolism of Marine Organisms: Structure and Activities (VI-S26)

Chairs: Valentin Stonik

July 11, 2013

- 08.30 - 09.10 Tadeusz Molinski *Department of Chemistry and Biochemistry, Skaggs School of Pharmacy and Pharmaceutical Sciences, La Jolla, CA, USA*
Bioactive marine natural products: Dimensions of scale, structure and synthesis
- 09.10 - 09.35 Jong-Young Kwak *Immune-Network Pioneer Research Center & Department of Biochemistry, School of Medicine, Dong-A University, Busan, Korea*
Fucoidan exerts immunogenic anti-tumor effect through scavenger receptor type A
- 09.35 - 10.00 Friedemann Honecker *University Hospital Hamburg-Eppendorf, Hamburg, Germany*
Anti-cancer activities of novel and previously characterized marine natural compounds
- 10.00 - 10.25 Tat'yana Makarieva G.B. Elyakov *Pacific Institute of Bioorganic Chemistry, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia*
New natural products from sponges. Structures and Properties
- 10.25 - 10.40 Thomas Dzeha *Newcastle University, Newcastle upon Tyne, UK*
Chemical and molecular approaches towards the biosynthesis of the modular cyclohexadepsipeptide anticancer agent homodolastatin 16
- 10.40 - 10.55 Benoit Schoefs *Mer Molecules Sante, LUNAM, University of Le Mans, EA 2160, Faculte des Sciences et Techniques, Le Mans, France*
Regulation of the carbon metabolism by high-light in the marine diatom *Phaeodactylum tricorutum*: a transcriptional approach

Main Symposia

Hall 4-10

Bioinformatics (VI-W29)

Chairs: Mikhail Gelfand, Eugene Koonin

July 11, 2013

- 08.30 - 09.10 Andreas Wagner *Institute of Evolutionary Biology and Environmental Sciences, University of Zurich, Zurich, Switzerland*
On the origins of evolutionary adaptation and innovation
- 09.10 - 09.35 Martijn Huynen *Nijmegen Centre for Molecular Life Sciences, Radboud University Nijmegen Medical Center, The Netherlands*
Probing the last eukaryotic common ancestor and beyond: evolution of the ciliary and mitochondrial proteomes
- 09.35 - 10.00 Martin Lercher *Heinrich-Heine-University, Düsseldorf, Germany*
Predicting the evolution of C4 photosynthesis: modular, individually adaptive steps on a Mount Fuji fitness landscape
- 10.00 - 10.25 Eduardo Rocha *Microbial Evolutionary Genomics, Institut Pasteur, Paris, France*
Evolutionary tinkering of bacterial appendages to produce protein and DNA secretion apparatus
- 10.25 - 10.40 Evgeny Gordienko *Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia*
Evolution of pan-genomes of *Escherichia coli*, *Shigella* spp. and *Salmonella enterica*

Satellite Symposium Hall 6-2

Scientific Meeting for the Chromosome-centric Human Proteome Project (C-HPP)

July 11, 2013 TECHNOLOGIES FOR PROTEIN IDENTIFICATION AND QUANTITATION IN THE CONTEXT OF THE C-HPP

Chairs: **Christoph Borchers, Victor Bykov**

- 08.00 - 08.30 Alexander Makarov *Thermo Fisher Scientific, Bremen, Germany*
Orbitrap mass spectrometry in proteomics: Past, present and future
- 08.30 - 09.00 Larry Gold *SomaLogic, Boulder, Colorado, USA*
Unbiased affinity-based proteomics: SOMAscan applications for healthcare
- 09.00 - 09.30 Christoph Borchers *University of Victoria–Genome BC Proteomics Centre, Victoria, British Columbia, Canada*
Development of highly multiplex MRM analysis for the quantitation of chromosome six proteins in human clinical samples
- 09.30 – 09.40 Break
- 09.40 - 10.10 Victor Bykov *NT-MDT, Zelenograd, Moscow, Russia*
Scanning probe microscopy for biological and medical applications
- 10.10 - 10.30 Sergey Usanov *Institute of Bioorganic Chemistry NAS, Minsk, Belarus*
Family-based approach in proteomics: human cytochrome P450 (CYPome)
- 10.30 - 10.50 Stanislav Naryzhny *Petersburg Nuclear Physics Institute, St Petersburg, Russia*
Toward evaluation of the human proteome: Can 2DE technique afford it?
- 10.50 - 11.10 Arthur Kopylov *Institute of Biomedical Chemistry, Moscow, Russia*
Hidden proteome: Multiplexed quantitation of low- and ultralow-copy number proteins in HepG2 cells
- 11.10 - 11.30 Alexei Ivanov *Institute of Biomedical Chemistry, Moscow, Russia*
A four-step approach in the experimental protein interactomics
- 11.30 - 11.50 Oleg Boyarkine *EPFL Lausanne, Switzerland*
Cold ion spectroscopy for structural determination of peptides and proteins



- 11.50 - 12.10 Mikhail Gorshkov *Institute for Energy Problems of Chemical Physics, Moscow, Russia*
Towards MS/MS-free «shotgun» proteomics for increasing human proteome coverage

July 11, 2013 CHROMOSOME-CENTRIC RESOURCES FOR KNOWLEDGE GENERATION

Chairs: **Amos Bairoch, Andrey Lisitsa**

- 15.00 – 15.30 Amos Bairoch *Swiss Institute of Bioinformatics, Geneva, Switzerland*
NeXtProt: Helping the Proteomics community with a human protein knowledge platform
- 15.30 – 16.00 Alexey Nesvizhskii *University of Michigan, Ann Arbor, USA*
Combined Transcriptome and proteome analysis: Methods and applications
- 16.00 – 16.30 Eugene Kolker *Seattle Children's Research Institute, USA*
Customized MOPED for Chromosome-Centric Research: Chromosome 18 case study
- 16.30 – 16.40 Break
- 16.40 - 17.00 Ancha Baranova *Research Center for Medical Genetics RAMS, Moscow; School of Systems Biology, College of Science, George Mason University, Fairfax, VA, USA*
All of it is Already there: Protein-centric analysis of publicly available PPI data for functionally diverse KCTD family as an example
- 17.00 - 17.20 Fedor Kolpakov *Institute of Systems Biology, Russia*
Analyses of RNA-seq Data for Prediction Translation Efficiency and Protein Quantity from Transcriptomics Data
- 17.20 - 17.40 Elena Ponomarenko *Institute of Biomedical Chemistry, Moscow, Russia*
Estimation of Protein Species Number for Mammalian, Insect, Yeast and Bacteria
- 17.40 - 18.00 Andrey Lisitsa *Institute of Biomedical Chemistry, Moscow, Russia*
Consolidating Chr 18 Data Using Knowledgebase of Protein and Transcript Annotations



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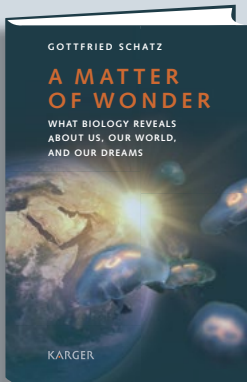
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C-HPP POSTER SESSION

Svetlana Novikova *Institute of Biomedical Chemistry, Moscow, Russia*

Combined proteome and transcriptome analysis of leukemia HL60 cell differentiation

Ekaterina Poverennaya *Institute of Biomedical Chemistry, Moscow, Russia*

Chromosome-centered interactome of human chromosome 18 by analysis of GPMDB datasets

Ekaterina Ilgisonis *Institute of Biomedical Chemistry, Moscow, Russia*

MRM spectrum library of the chromosome 18

Ilya Toropygin *Institute of Biomedical Chemistry, Moscow, Russia*
The use of peptide probes to profile protease activity in cancer and non-cancer sera

Joaquim Abian *Universitat Autònoma de Barcelona, Spain*
Human primary T-cells Chromosome 16 phosphoproteome

Yuri Ivanov *Institute of Biomedical Chemistry, Moscow, Russia*
Atomic force microscopy fishing and mass spectrometry identification of gp120 on immobilized aptamer

Sergey Radko *Institute of Biomedical Chemistry, Moscow, Russia*
Aptamer multimeric constructs as synthetic capture reagents with the enhanced affinity for proteomic studies

Evolutionary Genomics (I-W4)

Global hypomethylation and promoter related demethylation are associated with copy number loss of DNMT1 gene and unfavourable clinical outcome in primary melanomas

Szilvia Ecsedi¹, Hector Hernandez-Vargas², Sheila C. S. Lima², Laura Vizkeleti¹, Reka Toth, Viktoria Lazar, Zdenko Herceg, Roza Adany, Margit Balazs

¹Public Health Research Group of the Hungarian Academy of Sciences, University of Debrecen, Hungary; Department of Preventive Medicine, Faculty of Public Health, Medical and Health Science Centre, University of Debrecen, Hungary; ²WHO International Agency for Research on Cancer, Epigenetics Group, Lyon, France

Polymorphisms in Her2/Neu and MMP1 genes and associations with breast cancer risk

Melek Ozturk, Fatma Kaya-Dagistanli, Erdinc Dursun, Duygu Gezen-Ak, Penbe Cagatay, Sennur Ilvan, Hilal Unal
Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey

Increased transcriptional activity of CD40LG in patients with essential hypertension

Yanina Timasheva, Valeriya A. Matveeva, Timur R. Nasibullin, Ilsiya A. Tuktarova, Olga E. Mustafa
Institute of Biochemistry and Genetics, Ufa Scientific Centre, Russian Academy of Sciences, Ufa, Russia

The H6 rs1800795 polymorphism (-174G/C) relationship to metabolic indices in Bulgarian sample

Dejana Vankova¹, Yoana Kiselova-Kaneva¹, Maria Radanova¹, Valentina Madjova², Diana Ivanova¹
¹Department of Biochemistry, Medical University Varna, Bulgaria; ²Department of General Medicine and Clinical Laboratory, Medical University Varna, Bulgaria;

Inflammatory effects of resistin on human smooth muscle cells: up-regulation of fractalkine/CX3CR1 expression by TLR4 and Gi proteins pathways

Ana-Maria Gan, Elena Butoi (Dragomir)
Institute of Cellular Biology and Pathology "Nicolae Simionescu", Bucharest, Romania

Expression of genes encoding for sterol catabolism in *Mycobacterium* sp. VKM Ac-1817D producing 9-alpha-hydroxy androstenedione

Viktoriya Shtratnikova¹, Eugeny Bragin¹, Dmitry Dovbnya², Yuri Pekov¹, Mikhail Schelkunov³, Marina Donova²
¹Center of Innovations and Technologies "Biological Active Compounds and Their Applications", Russian Academy of Sciences, Moscow, Russia; ²G.K. Skryabin Institute of Biochemistry & Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow Region, Russia; ³Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Sfp1 prion conversion is not equal to the absence of this yeast protein

Polina Drozdova¹, Elina Radchenko¹, Tatyana Rogoza^{1,2}, Polina Lipaeva¹, Ludmila Mironova¹
¹Saint Petersburg State University, St. Petersburg, Russia; ²St. Petersburg Branch of Institute of General Genetics, Russian Academy of Science, St. Petersburg, Russia

Association of caspase-9 promoter region polymorphisms and breast cancer

Melek Ozturk, Derya Metin, Fatma Kaya-Dagistanli, Duygu Gezen-Ak, Erdinc Dursun, Sennur Ilvan, Hilal Unal
Istanbul University, Cerrahpasa Faculty of Medicine, Istanbul, Turkey

Effect of 5-HT on phenotypic transition of renal proximal tubular epithelial cells

Acelya Yalovac, Samiye Yabanoglu-Ciftci, Gulberk Ucar
Hacettepe University, Faculty of Pharmacy, Department of Biochemistry, Ankara, Turkey

Association of hsp70-2 (+1267A/G) and hsp70-hom (+2437T/C) polymorphisms with cerebral atherosclerosis in Croatian population

Karmela Barisic¹, Mirela Matokanovic¹, Ruzaica Galovic², Magdalena Ravlic¹
¹Faculty of Pharmacy and Biochemistry University of Zagreb, Zagreb, Croatia; ²University Hospital Centre Zagreb, Zagreb, Croatia

Effects of physical activity on DNA stability and production of reactive oxygen species

Natasa Bogavac Stanojevic¹, Miron Sopic¹, Jelena Kotur Stevuljevic¹, Zorana Jelic Ivanovic¹, Ivana Baralic², Brizita Djorjevic²
¹Department of Medical Biochemistry, Faculty of Pharmacy, University of Belgrade; ²Department of Bromatology, Faculty of Pharmacy, University of Belgrade

The draft genome sequence of *Bacillus cereus* F strain, isolated from ancient permafrost sample

E.V. Brenner¹, A.V. Brouchkov², G.I. Griva³, E. Kashuba⁴, V.I. Kashuba⁴, A.M. Kurilshchikov¹, O. Meleforts⁴, V.E. Repin¹, V.P. Melnikov³, V.V. Vlasov¹

¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Moscow State University, Moscow, Russia; ³Institute of the Earth Cryosphere, Siberian Branch of the Russian Academy of Sciences, Russia; ⁴Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden

Regulation of Biological Processes by Ubiquitin and Ubiquitin-like Proteins in Health and Disease: Proteolysis, Autophagy and Apoptosis (III-S15)

Brain-derived immunoproteasome generates increased amounts of encephalitogenic MBP peptide epitope

Ekaterina Kuzina^{1,2}, Anna Kudriaeva¹, Anna Bacheva², Alexander Gabibov^{1,2,3}, Alexey Belogurov Jr.^{1,3}
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ³Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Basic charge rather than polyubiquitination is sufficient for proteasomal degradation of the myelin basic protein

Anna Kudriaeva¹, Ekaterina Kuzina^{1,2}, Alexander Gabibov^{1,2,3}, Alexey Belogurov, Jr.^{1,3}
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ³Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Structural study of ubiquitin-like domains: Towards protein interactions in ubiquitin proteasome system

Monika Siva, Klara Grantz Saskova, Vaclav Veverka, Jan Konvalinka
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of Czech Republic, Prague, Czech Republic

Search of proteolytical activity of DNA damage-inducibile protein

Michal Svoboda, Klara Grantz Saskova, Zuzana Demianova, Jan Konvalinka
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of Czech Republic, Prague, Czech Republic

The effect of beclin-1, LC3 II/I, BCL-2 and phospho BCL-2 in hypercholesterolemia induced oxidative stress

Erdi Sozen, Burak Yazgan, Betul Catalgol, Nesrin Kartal Ozer
Department of Biochemistry, Medicine Faculty, Marmara University, Istanbul, Turkey

High cholesterol diet induced apoptotic process on rabbit cardiac myocyte failure

Burak Yazgan^{1,2}, Erdi Sozen¹, Betul Catalgol¹, Nesrin Kartal Ozer¹
¹Department of Biochemistry, Medicine Faculty, Marmara University, Istanbul, Turkey; ²Central Research Laboratory, Amasya University, Amasya, Turkey

Proteomic study of linear polyubiquitin chains interactome

Alexander Chernorudskiy
Institute of Applied and Fundamental Medicine, Nizhny Novgorod State Medical Academy, Nizhny Novgorod, Russia

Autophagosomal Syntaxin17-dependent lysosomal degradation maintains neuronal function in *Drosophila*

Szabolcs Takats, Peter Nagy, Agnes Varga, Karolina Pircs, Manuela Karpati, Kata Varga, Attila L. Kovacs, Krisztina Hegedus, Gabor Juhasz
Department of Anatomy, Cell and Developmental Biology, Eotvos Lorand University, Budapest, Hungary

Dual degradation in G1 and S/G2 phases limits Stem Loop Binding Protein expression to the S phase

Umidahan Djakbarova^{1,2}, William F. Marzluff³ and Mehmet Murat Koseoglu^{1,2}
¹Fatih University, Department of Genetics and Bioengineering, Istanbul, Turkey; ²Fatih University, Bionano Research Center, Istanbul, Turkey; ³Program in Molecular Biology, Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill (UNC-CH), Chapel Hill, USA

Characterization of a deubiquitylation gene in *Drosophila melanogaster*

Levente Kovacs¹, Octavian Popescu², Peter Deak³

¹University of Szeged, Faculty of Sciences, Department of Genetics, Szeged, Hungary; ²Interdisciplinary Research Institute on Bio-Nano-Sciences, Molecular Biology Center, Babes-Bolyai University, Cluj-Napoca, Romania; ³University of Szeged, Faculty of Science and Informatics, Department of Genetics, Szeged, Hungary

Two isoforms of Hsp70 nucleotide exchange factor Fes1 are essential for compartment-specific proteasomal degradation of misfolded proteins

Naveen Kumar Chandappa Gowda, Claes Andreasson

Department of Molecular Biosciences, The Wenner-Gren Institute, Stockholm University, Sweden

Regulation of glucokinase regulatory protein by acetylation

Joo-Man Park, Tae-Hyun Kim, Seong-Ho Jo, Mi-Young Kim, Yong-Ho Ahn

Dept. Biochemistry and Molecular Biology, Yonsei University, College of Medicine, Seoul, Korea

Platelet PAR4 associated with neutral sphingomyelinase responsible for thrombin-stimulated ceramide-NF-kappaB signaling in human platelets

Joen-Rong Sheu, Wei-Fan Chen

Taipei Medical University, Taiwan

The malin-laforin complex downregulates R6, a PPI regulatory subunit, targeting it to lysosomal degradation

Carla Rubio, M. Adelaida Garcia, Pascual Sanz

Instituto de Biomedicina de Valencia, Spain

Discovery and application of DNA aptamers which specifically bind and inhibit WWP1 ubiquitin ligase in the osteoblast

Julian A. Tanner, Wesley O. Tucker

University of Hong Kong

Cystatin SN neutralizes the inhibitory effect of cystatin C on cathepsin B activity

Hee Gu Lee¹, Jong-Tae Kim¹, Seon-Jin Lee¹, Bo-Yeon Kim¹, Do-Yoon Yoon², Young Il Yeom¹, Yong-Kyung Choe¹

¹Korea Research Institute of Bioscience and Biotechnology, South Korea; ²Konkuk University, South Korea

Divergent mechanisms of Ran pathway organization in metazoan species

Maria Lyanguzova, Alexei Arnaoutov and Mary Dasso

Program in Cellular Regulation and Metabolism, NICHD/NIH, Bethesda, MD, USA

Photoreception and Biochemistry of Vision (IV-S20)

Inhibition of F₀F₁-atpase and ATP synthase by polyphenolic phytochemicals in rod outer segments

Daniela Calzia¹, Michele Oneto¹, Greta Garbarino², Simona Candiani², Silvia Ravera¹, Martina Bartolucci¹, Lucia Manni³, Federico Caicci³, Carlo Enrico Traverso⁴, Alessandro Morelli¹, Isabella Panfoli¹

¹DIFAR-Biochemistry Lab., University of Genova, Genova, Italy; ²DISTAV, University of Genova, Genova, Italy; ³Biology Department University of Padova, Italy; ⁴Clinica Oculistica, DINOG, University of Genova, Italy

Unusual photolysis products of a blue-sensitive cone visual pigment in some fish species

Darya A. Korenyak, Victor I. Govardovskii

Sechenov Institute for Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia

B Cells in Inflammation and Disease (V-W24)

The influence of long-term diet supplementation with biological active substances on level inflammation markers in rat colon

Dariusz Kamola, Jacek Wilczak

Warsaw University of Life Sciences-SGGW, Department of Physiological Sciences, Warsaw, Poland

Cholinergic regulation of B lymphocyte activation and antibody immune response

Ljudmyla Koval, Olena Lykhmus, Maryna Skok, Serhiy Komisarenko

Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kiev, Ukraine

Measles virus hemagglutinin affects CD150-mediated signaling in B lymphocytes and dendritic cells

Olga Romanets, Larysa Kovalevska, Mariya Yurchenko, Larysa Shlapatska, Branka Horvat, Svetlana Sidorenko Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology, National Academy of Sciences of Ukraine, Kyiv, Ukraine; CIRI INSERM U1111-ENS-Lyon, Lyon, France

Protein kinase D2 as a marker of differentiation of normal and malignant human B lymphocytes

Larysa Kovalevska, Larysa Shlapatska, Svitlana Mikhalap, Svetlana Sidorenko

R.E. Kavetsky Institute of Experimental Pathology Oncology and Radiobiology, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Nucleocapsid proteins of human paramyxoviruses: antigenic similarities and differences

Indre Dalgediene, Indre Kucinskaite-Kodze, Rimantas Slibinskas, Mindaugas Juozapaitis, Kestutis Sasnauskas, Aurelija Zvirbliene

Vilnius University Institute of Biotechnology, Vilnius, Lithuania

Regulation of CD20 levels in B-cell tumors by SRC family kinases

Kamil Bojarczuk, Magdalena Winiarska, Jacek Bil, Malgorzata Wanczyk, Michal Dwojak, Dominika Nowis, Nina Miazek, Piotr Zapala, Anna Dabrowska-Iwanicka, Przemyslaw Juszczyński, Jakub Golab

Department of Immunology, Center of Biostructure Research, Medical University of Warsaw, Warsaw, Poland

Functional and protective activity of dendritic cells exosomes

V.G Khomenkov, E.A. Akhmatov, N.K. Akhmatova, V.D. Lotte, L.I. Kovalev, E.A. Kurbatova, M.V. Kiselevskij

Mechnikov Research Institute for Vaccines and Sera, Russian Academy of Medical Sciences, Moscow, Russia; Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; Blokhin Cancer Research Center, Russian Academy of Medical Sciences, Moscow, Russia

Proteomics and Peptidomics (VI-S25)

The human nucleolar protein SURF6 affects degradation of the pre-rRNA internal transcribed spacers and interacts with a number of rRNA processing factors

Maria Kordyukova¹, Michael Polzikov¹, Ksenia Shishova¹, Jean-Jacques Diaz², Olga Zatssepina¹

¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Centre National de la Recherche Scientifique (CNRS) UMR 5534, Centre Leon Berard, Lyon, France

Gaining insights into the role of tumor initiating cells in colon cancer by a multitask approach

Claudia Corbo, Marica Gemei, Stefania Orru, Rosa Di Noto, Peppino Mirabelli, Esther Imperlini, Margherita Ruoppolo, Luigi Del Vecchio, Francesco Salvatore

CEINGE, Biotecnologie Avanzate scrl, Naples, Italy

Proteomic analysis of proteins responsible for the development of doxorubicin resistance in human uterine cancer cells journal of proteomics

Szu-Ting Lin, Hong-Lin Chan

Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Hsinchu, Taiwan

A proteomic approach to study malignant pleural mesothelioma

Federica Ciregia¹, Laura Giusti¹, Ylenia Da Valle¹, Alessandra Bonotti², Elena Donadio¹, Tiziana Ventroni¹, Rudy Foddis³, Gino Giannaccini¹, Giovanni Guglielmi², Alfonso Cristaudo², Antonio Lucacchini¹

¹Department of Pharmacy, University of Pisa, Pisa, Italy; ²Operative Unite of Occupational Medicine of University Hospital of Pisa, Italy; ³Department of Translational Research and New Technologies in Medicine and Surgery, University of Pisa, Italy

Comparable effect of different heavy metal ions on *Enterococcus hirae* membrane vesicles ATPase activity

Zaruhi Vardanyan¹, Armen Trchounian²

¹Department of Biophysics, Faculty of Biology, Yerevan State University, Yerevan, Armenia; ²Department of Microbiology, Microbes and Plants Biotechnology, Faculty of Biology, Yerevan State University, Yerevan, Armenia

Mesopore-assisted fingerprints of gingival crevicular fluid by MALDI-TOF mass spectrometry for monitoring inflammatory state in patients wearing fixed orthodontic appliance

Alessio Gentile, Mariaimmacolata Preiano¹, Rocco Savino, Sergio Paduano, Rosa Terracciano

Department of Health Sciences, University Magna Graecia Catanzaro, Catanzaro, Italy

A proteomic view on factors associated with high virulence of *Staphylococcus aureus* in chicken embryo model

Emilia Bonar, Iwona Wojcik, Sylwia Kedracka-Krok, Grzegorz Dubin, Benedykt Wladyka, Adam Dubin
Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland

Ultra-miniaturisation of tandem affinity purifications: a new frontier in dissecting/mapping organellar interactomes

Shane Austin¹, Karin Nowikovsky¹, Keiryn L. Bennett²
¹Department of Internal Medicine I, Medical University, of Vienna, Vienna, Austria; ²CEMM Research Centre for Molecular Medicine of the Austrian Academy of Sciences, Vienna, Austria

Modulation of cytokine and angiogenic factors on glioblastomas

Elena Codrici-Raducan¹, L. Albulescu¹, I. D. Popescu¹, S. Mihai¹, M. Teodoru², D. Petrescu³, R. Albulescu¹, Cristiana Tanase¹
¹Victor Babes National Institute of Pathology, Romania; ²ELIAS Emergency Hospital, Neurosurgery Department, Bucharest, Romania; ³National Institute of Neurovascular Diseases, Bucharest, Romania

Human blood sera peptidome analysis for a search of cancer biomarkers

Georgij Arapidi, Rustam Ziganshin, Sergey Kovalchuk, Igor Azarkin, Olga Ivanova, Nikolay Anikanov, Dmitry Kamaev, Vadim Govorun, Vadim Ivanov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Ascites and sera proteome and peptidome analysis for potential biomarker discovery of ovarian cancer

V.O. Shender¹, R.H. Ziganshin¹, G.P. Arapidi¹, S.I. Kovalchuk¹, N.A. Anikanov¹, V.M. Govorun^{1,2}
¹Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow; ²Scientific Research Institute of Physical-Chemical Medicine, Moscow

Integrating peptidomic with lipidomic fingerprints by using mesoporous aluminosilicate and MALDI-TOF MS

Mariaimmacolata Preiano¹, Olimpio Galasso, Luca Gallelli, Giorgio Gasparini, Rocco Savino, Rosa Terracciano
Department of Health Sciences, University Magna Graecia Catanzaro, Catanzaro, Italy

Adhesive proteins and crosslinking enzymes are concentrated together on a spot on the surface of the phosphatidylserine-expressing activated platelets

Sergey Obydenny, Yana Kotova, Fazly Ataullakhanov, Mikhail Pantelev
Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia

Comparative analyses of peptidome and proteome of CSF samples from patients with Guillain-Barre syndrome and with non-neurological diseases

Igor Azarkin, Rustam Ziganshin, Georgy Arapidi, Sergey Kovalchuk, Victoria Shender, Vadim Govorun, Vadim Ivanov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Production of Hen Egg IgY liposomes against different salmonella species

Eray Metin Guler¹, Mustafa Kesmen¹, Huri Dedeakayogullari¹, Ziba Mokhberi Oskoue¹, Ahmet Kilinc², A. Suha Yalcin¹
¹Marmara University School of Medicine Department of Biochemistry, Istanbul, Turkey; ²Oksante R&D Laboratory, Istanbul, Turkey

Formation of the complex between human thymidylate synthase and dihydrofolate reductase, the enzymes involved in thymidylate biosynthesis

Anna Antosiewicz¹, Elzbieta Senkara-Barwijk¹, Piotr Wilk², Adam Jarmula², Wojciech Rode², Joanna Ciesla¹
¹Faculty of Chemistry, Warsaw University of Technology, Warsaw, Poland; ²Nencki Institute of Experimental Biology PAS, Warsaw, Poland

QCM-D study of the serine hydroxymethyltransferase – thymidylate synthase – dihydrofolate reductase tri-complex

Elzbieta Senkara-Barwijk¹, Anna Antosiewicz¹, Kinga Gazda², Joanna Ciesla¹
¹Faculty of Chemistry, Warsaw University of Technology, Warsaw, Poland; ²Laboratory of Neurodegeneration, The International Institute of Molecular and Cell Biology, Warsaw, Poland

A central fragment of ribosomal protein S26 containing the eukaryote-specific motif

D.E. Sharifulin, D.M. Graifer, Y.S. Bartuli, A.V. Ivanov, G.G. Karpova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences (ICBFM), Novosibirsk, Russia

Proteomic analysis of exosomes secreted by human glioblastoma cells hold promise for identifying markers of brain cancer

V.S. Burdakov, T.A. Shtam, S.N. Naryzhny, S.B. Landa, N.L. Ronzina, M.V. Filatov
Petersburg Nuclear Physics Institute, Gatchina, Russia

Actin-binding protein alpha-actinin 4 (ACTN4) is a transcriptional co-activator of RelA/p65 sub-unit of NF-kB

Aksenova Vasilisa^{1,2}, Lidia Turoverova¹, Mikhail Khotin¹, Karl-Eric Magnusson³, Eugene Tulchinsky⁴, Gerry Melino^{2,5}, George P. Pinaev¹, Nickolai Barlev^{1,2}, Dmitri Tentler^{1,2}
¹Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ²Laboratory of Molecular Pharmacology, St. Petersburg Technological Institute, St. Petersburg, Russia; ³Division of Medical Microbiology, Department of Clinical and Experimental Medicine, Linköping University, Linköping, Sweden; ⁴Department of Cancer Studies and Molecular Medicine, University of Leicester, RKC/SB, LRI, Leicester, UK; ⁵MRC Toxicology Unit, Leicester, UK

A group of brain exo- and endo-metalloproteases bound to axonal ends of neurons (NEMPs); some specific properties, ways to protect therapeutic peptides

Ekaterina S. Kropotova, Mark I. Mosevitsky
Petersburg Nuclear Physics Institute, Gatchina, Russia

Study of the mechanisms of antiaggregation activity of a-crystallin and chemical chaperones using a test system based on dithiothreitol-induced aggregation of bovine serum albumin

Vera Borzova¹, Kira Markossian¹, Dmitriy Kara², Natalia Chebotareva¹, Konstantin Muranov³, Nikolay Polyansky³, Valentina Makeeva¹, Boris Kurganov¹
¹A.N. Bach Institute of Biochemistry Russian Academy of Sciences, Moscow, Russia; ²Lomonosov Moscow State University, Moscow, Russia; ³N.M. Emanuel Institute of Biochemical Physics Russian Academy of Sciences, Moscow, Russia

In vitro and in situ study of homo- and hetero-oligomers of brain proteins BASP1 and GAP-43

Oksana S. Vitiuk, Nadezhda Y. Giliano, Vladislav V. Zakharov
Petersburg Nuclear Physics Institute, Gatchina, Russia

Interaction of actin-binding protein actinin-4 and actin in the cell nucleus

Nikolai Panyushev^{1,2}, Vasilisa Aksenova^{1,2}, George P. Pinaev¹, Dmitri Tentler^{1,2}
¹Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ²Laboratory of Molecular Pharmacology, St. Petersburg Technological Institute, St. Petersburg, Russia

Comprehensive analysis of proteome changes induced by the inactivation the tumor suppressor ACVR2 in microsatellite unstable colon carcinoma cells

Juergen Kopitz, Seda Ballikaya, Johannes Gebert, Martina Schnoelzer
University of Heidelberg, Applied Tumor Biology, Germany

Exploring protein-protein interactions of the TerB protein with phage display

Lenka Turkovicova, Jana Schubertova Aradska, Roman Smidak, Jan Turna
Department of molecular biology PriF UK Bratislava, Slovakia

Mechanisms of chaperone functioning under crowding conditions

Natalia Chebotareva, Tatjana Eronina, Svetlana Roman, Dmitrii Filippov, Boris Kurganov
A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Modifications of the acidic soluble salivary proteome in human babies from the birth up to the age of 48 months investigated by a top-down HPLC-ESI-MS platform

Irene Messana^{1,2}, Tiziana Cabras¹, Elisabetta Pisano³, Maria Teresa Sanna¹, Alessandra Olinas¹, Vassilios Fanos³, Gavino Faa³, Sonia Nemolato³, Federica Iavarone⁴, Massimo Castagnola⁴, Barbara Manconi¹
¹Department of Life and Environmental Sciences, University of Cagliari, Italy; ²Cittadella Universitaria di Monserrato, Monserrato (CA), Italy; ³Department of Surgical Sciences, University of Cagliari, Italy; ⁴Institute of Biochemistry and Clinical Biochemistry, Catholic University, Rome, Italy

Monoclonal antibodies to alfaC-regions of fibrin(ogen)

Tetiana A. Pozniak, I. N. Kolesnikova, M. O. Pydiura, N. S. Storozhylova, E. V. Lugovskoy
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Peptide mediated targeting of natively unfolded protein synuclein-gamma to inhibit human endometriotic lesions in a xenograft mouse model

Vinay Singh, Andrew K Edwards, Sharanya Ramesh and Chandrakant Tayade
Department of Biomedical & Molecular Sciences, Queen's University, Canada

Proteomic profile of placenta during physiological pregnancy and preeclampsia

Victoria Gunko, Tatiana Pogorelova, Victor Linde
Rostov Scientific-Research Institute of Obstetrics and Pediatrics, Rostov-on-Don, Russia

Prothrombin activation mediated by BbetaN-domain of fibrin

V.O. Chernyshenko¹, T.M. Chernyshenko¹, T.M. Platonova¹, G.P. Volynets², I.N. Kolesnikova¹, L.I. Mikhailovska³, S.V. Komisarenko⁴

¹Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Protein Structure and Functions Department, Kyiv, Ukraine; ²Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine, Department of Medicinal Chemistry, Kyiv, Ukraine; ³University of Brighton, the School of Pharmacy and Biomolecular Sciences, Brighton, UK; ⁴Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Molecular Immunology Department, Kyiv, Ukraine

The role of meizothrombin and prothrombin-1 in fibrin formation and platelet aggregation

D.S. Korolova, T.M. Chernyshenko, O.V. Gornitskaia, T.N. Platonova
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Protein Structure and Functions Department, Kyiv, Ukraine

"Muscle Organs Proteomics" multi-level database

Marina Kovaleva, Leonid Kovalev, Ksenia Lisitskaya, Lidia Eremina, Alexey Ivanov, Irina Krakhmaleva, Elchin Sadykhov, Sergey Shishkin
A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Rat hippocampal proteomic alterations following acute emotional stress

Natalia Sharanova¹, I. Yu. Toropygin², E. V. Khrypova², N. V. Kirbaeva¹, S. S. Pertsov³
¹Institute of Nutrition, Russian Academy of Medical Sciences, Moscow, Russia; ²Orekhovich Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia; ³P.K. Anokhin Research Institute of Normal Physiology, Russian Academy of Medical Sciences, Moscow, Russia

On the role of αC-regions of fibrin in the self-assembly and lateral association of protofibrils

L. Urvant, Y. Makogonenko, N. Pozniak, N. Pydura, P. Tsap, I. Kolesnikova, E.V. Lugovskoy, S.V. Komisarenko
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Assessment of blood contamination in biological fluids using MALDI-TOF MS

Katrina Laks^{1,2}, Tiina Kirsipuu^{1,2}, Tuuli Dmitrijeva¹, Andres Salumets^{2,3}, Peep Palumaa^{1,2}
¹Tallinn University of Technology, Tallinn, Estonia; ²Competence Center on Reproductive Medicine and Biology, Tartu, Estonia; ³University of Tartu, Tartu, Estonia

Purification of the YgdP Nudix protein, a putative virulence factor from *Pseudomonas aeruginosa*

Martyna Kujawa, Elzbieta Kraszewska
Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Poland

Production of human recombinant His-tagged prothrombin-2 in *Escherichia coli* expression system and its activation to thrombin

Michaela Osadska, Eva Slikova, Jan Krahulec, Hana Halaszova, Stanislav Stuchlik, Martina Stuchlikova, Jan Turna
Comenius University in Bratislava, Faculty of Natural Sciences, Department of Molecular Biology, Bratislava, Slovakia

Production of recombinant human enterokinase light chain in methylotrophic yeast *Pichia pastoris*

Kristina Jirickova, Jan Krahulec, Zdenko Levarski, Lucia Panciova, Diana Dianovska, Stanislav Stuchlik and Jan Turna
Comenius University in Bratislava, Faculty of Natural Science, Department of Molecular Biology, Bratislava, Slovakia

Study of *B. burgdorferi* outer membrane proteins by protein-protein interaction approach

Renate Ranka^{1,2}, Karlis Vilks¹, Kalvis Brangulis¹, Ivars Petrovskis¹, Valentina Capligna¹, Viesturs Baumanis¹
¹Latvian Biomedical Research and Study Centre, Riga, Latvia; ²Riga Stradins University, Riga, Latvia

Antimicrobial peptides of animals as molecular factors of innate immunity

Vladimir N. Kokryakov¹, Galina M. Aleshina¹, Olga V. Shamova¹, Dmitry S. Orlov¹, Mikhail N. Berlov¹, Irina A. Yankelevich¹, Vladimir A. Yukhnev¹, Larisa E. Leonova², Alexander A. Kolobov², Alexander V. Men'shenin², Tatiana V. Ovchinnikova³
¹Institute of Experimental Medicine, NorthWest Branch of the Russian Academy of Medical Sciences, St. Petersburg, Russia; ²Saint Petersburg State University, St. Petersburg, Russia; ³Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Acipensins are antimicrobial peptides from leukocytes of the sturgeons

Olga V. Shamova¹, Pavel V. Pantelev², Dmitry S. Orlov¹, Il'ya A. Bolosov², Elena V. Tsvetkova³, Sergey V. Balandin², Maria S. Zharkova¹, Tatyana Yu. Pazina¹, Tatyana V. Ovchinnikova², Vladimir N. Kokryakov¹
¹Institute of Experimental Medicine, NorthWest Branch of the Russian Academy of Medical Sciences, St. Petersburg, Russia; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ³Saint Petersburg State University, St. Petersburg, Russia

Determining proteins composing HTLV-1 biofilms by mass-spectrometry analysis and mouse hybridoma screening

Dmitriy Mazurov, Anna Tarasevich, Alexander Filatov
Institute of Immunology, Moscow, Russia

Profiling of human neuroblastoma SH-SY5Y cells cytokines/chemokines secretome by Luminex xMAP multiplex assay

Nadezhda Rogovskaya, Petr Beltiukov, Andrey Radilov, Vladimir Rembovsky, Vladimir Babakov
Research Institute of Hygiene, Occupational Pathology and Human Ecology, St. Petersburg, Russia

Cis-gamma-amino-L-proline peptides as an example of cell-penetrating peptides

Ximena Pulido^{1,2}, Daniel Carbajo³, Almudena Lopez-Sanchez⁴, Elena Rebollo⁵, Luis Rivas⁴, Fernando Albericio^{1,6}, Miriam Royo³
¹Institute for Research in Biomedicine, Barcelona Science Park, Barcelona, Spain; ²Department of Chemistry, University of Tolima, Ibague, Colombia; ³Combinatorial Chemistry Unit, Barcelona Science Park-University of Barcelona, Barcelona, Spain; ⁴Centro de Investigaciones Biológicas, CSIC, Madrid; ⁵Advanced Fluorescence Microscopy Unit Fluorescence, Molecular Biology Institute of Barcelona-CSIC, Barcelona, Spain; ⁶Department of Organic Chemistry, University of Barcelona, Barcelona, Spain

Heterologous production of recombinant ecarin in *Pichia pastoris* expression system

Hana Halaszova, Jan Krahulec, Michaela Osadska, Stanislav Stuchlik, Jan Turna
Department of Molecular Biology, Faculty of Natural Sciences, Comenius University in Bratislava, Slovakia

Microcin-B-like compounds produced by *Pseudomonas syringae*: Structure and species-specificity of antibacterial action

Mikhail Metelev¹, Dmitry Ghilarov^{1,2}, Marina Serebryakova^{1,3}, Konstantin Severinov^{1,4}
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia; ³Lomonosov Moscow State University, Moscow, Russia; ⁴Waksman Institute for Microbiology and of Molecular Biology and Biochemistry, Rutgers, The State University of New Jersey, Piscataway, NJ, USA

Identification of prions and amyloids by a novel proteomic approach

Alexey Galkin¹, Anton Nizhnikov¹, Ryzhova Tatyana³, Olga Mytkevich⁴
¹St. Petersburg Branch Vavilov Institute of General Genetics, Russian Academy of Science, St. Petersburg, Russia; ²Saint Petersburg State University, St. Petersburg, Russia; ³A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Comparative proteome analysis of toxic metal resistance of bacterial pathogens

Roman Smidak, Jana Schubertova Aradska, Lenka Turkovicova, Jan Turna
Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Characterisation of initiator of replication in *Acetobacter pasteurianus*

Juraj Bugala¹, Viera Cimova¹, Martin Babic¹, Peter Gronos², Jozef Gronos¹
¹Faculty of Natural Sciences, Department of Molecular Biology, Comenius University in Bratislava, Slovakia; ²Department of Plant Systems Biology, VIB, Gent, Belgium

Histidine acid phytase of *Pantoea vagans*

Aliya Suleimanova, Margarita Sharipova
Kazan Federal University, Kazan, Russia

The glucose-regulated protein 78 (GRP78) binding peptide coupled with 111In-labeled polymeric micelles is a novel tool targeting to gastric tumors for improving early diagnosis

Jungshan Chang¹, Sy-Jye Leu²
¹Graduate Institute of Medical Sciences, Taipei Medical University, Taipei, Taiwan; ²Department of Microbiology and Immunology, Taipei Medical University, Taipei, Taiwan

Purification of apoptosis-inducing protein using 2D cell blot method

Keiya Nagashima, Takato Kimura, Yoshihiro Miyazaki, Yuri Mukai, Takeo Terasaki
Dept. of Electr. & Bioinfo., Grad. Sch. Sci. & Tech., Meiji Univ., Kawasaki, Japan

Analysis of protein-DNA interactions in process of plasmid DNA replication

Martin Babic, Viera Cimova, Juraj Bugala, Jozef Gronos
Comenius University in Bratislava, Faculty of Natural Sciences, Department of molecular biology, Bratislava, Slovakia

The thioacetamide-induced liver fibrosis in the murine animal model is associated with reduction in expression of glucose-regulated protein 78 (GRP78)

Yi-Yuan Yang¹, Chun-Chia Cheng², Chun-Chao Chang³, Jungshan Chang²
¹School of Medical Laboratory Science and Biotechnology, College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan; ²Graduate Institute of Medical Sciences, School of Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan; ³Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei Medical University Hospital, Taipei, Taiwan;

Excretory/secretory proteins of liver fluke *Opisthorchis felineus*

Maria Lvova¹, N. Galeva¹, M. V. Zhukova¹, A. V. Katokhin¹, T. Williams², V. A. Mordvinov¹, T. G. Duzhak³
¹Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²University of Kansas, Lawrence, KS, USA; ³International Tomography Center, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Converting a plant defense peptide into a potassium channel blocker

Antonina Berkut¹, Steve Peigneur², Dinara Usmanova¹, Peter Oparin¹, Konstantin Mineev¹, Alexander Arseniev¹, Jan Tytgat², Eugene Grishin¹, Alexander Vassilevski¹
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Laboratory of Toxicology and Food Chemistry, University of Leuven, Belgium

Peptidome profiling of induced sputum by mesoporous silica beads and MALDI-TOF MS for biomarker discovery of Asthma and COPD

Mariaimmacolata Preiano¹, Daniela Falcone, Girolamo Pelaia, Rosario Maselli, Rocco Savino, Rosa Terracciano
Department of Health Sciences, University Magna Graecia Catanzaro, Catanzaro, Italy

Interphase chromatin defined probabilistically using biological perturbation proteomics

Georg Kustatscher, Juri Rappsilber
Wellcome Trust Centre for Cell Biology

Cell Penetrating Peptides (CPP) as the Intracell Delivery System for Anticancer Agents.

V.K.Bozhenko*, A.A.Tuzhilin**, A.S.Mishenko**, T.M.Kulinich*, E.A.Kudinova*
**Russian Scientific Center of Roentgenology and Radiology MHR, **Moscow State University, Moscow, Russia*

Nuclear protein complexes of actin-binding protein alpha-actinin 4

Mikhail Khotin¹, Lidia Turoverova¹, Sergey Shabelnikov¹, Karl-Erick Magnusson⁴, George Pinaev¹, Dmitry Tentler¹
¹Institute of Cytology Russian Academy of Sciences, St. Petersburg, Russia; ²Linköping University, Linköping, Sweden

Mechanistic aspects of translational inhibitor microcin C maturation

Alexey Kulikovskiy, Svetlana Dubiley, Marina Serebryakova, Konstantin Severinov
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

The CD36 scavenger receptor in the phagocytic engulfment of oxLDL particles in human U937 macrophages

Angelica K Florentinus-Mefailoski, John G Marshall
Ryerson University, Toronto, Canada

Analysis of the secretome of human granulosa cells after hormonal stimulation by various gonadotrophins

Tanja Panic-Jankovic¹, Detlef Pietrowski², Rainer Schmid¹, Goran Mitulovic¹
¹Department of Laboratory Medicine, Division of Medical and Chemical Laboratory Diagnostics, Medical University of Vienna, Austria; ²Department of Obstetrics and Gynaecology, Division of Gynaecologic Endocrinology and Reproductive Medicine, Medical University of Vienna, Austria

Analyzing the preimplantation secretome of human embryos

Goran Mitulovic¹, Tanja Panic-Jankovic¹, Detlef Pietrowski², Mikhail Gorshkov³, Rainer Schmid¹
¹Clinical Department of Laboratory Medicine, Medical University of Vienna, Vienna, Austria; ²Clinical Department of Gynecology, Medical University of Vienna, Vienna, Austria; ³Institut of Energy Problems in Chemical Physics, Russian Academy of Sciences, Moscow, Russia

Tetraspanin proteins in the IgG-Fc receptor complex from human U937 macrophages

Pardis Pakshir, Jeff Howard, John Marshall
Ryerson University, Toronto, Canada

The peptides of normal human blood plasma

Jaimie Dufresne, Thanusi Thavarajah, Angeliqe Florentinus, Pete Bowden, John Marshall
Ryerson University, Toronto, Canada

The presence of integrins specifically associated with activated FC receptor complexes from human U937 macrophages

Jaimie Dufresne, Angelica Florentinus, Jeff Howard, John Marshall
Ryerson University, Toronto, Ontario

Proteomic analysis of epileptic human brain - "alcoholic" mobile phase detects more proteins

Goran Mitulovic¹, Tanja Panic-Jankovic¹, Harald Stefanits², Rainer Schmid¹
¹Clinical Department of Laboratory Medicine, Medical University of Vienna, Vienna, Austria; ²Clinical Department of Neurosurgery, Medical University of Vienna, Vienna, Austria

Secretome profiling of senescent mesenchymal stem cells (MSC) by high resolution LC-MS analysis

Valeria Severino^{1,2}, Nicola Alessio³, Annarita Farina⁴, Umberto Galderisi³ and Angela Chambery²
¹Institute of Biostructures and Bioimaging-IBB, CNR, Napoli, Italia; ²Department of Environmental, Biological and Pharmaceutical Sciences and Technologies, Second University of Naples, Caserta, Italia; ³Department of Experimental Medicine, Biotechnology and Molecular Biology Section, Second University of Naples, Napoli, Italia; ⁴Biomedical Proteomics Research Group, Department of Bioinformatics and Structural Biology, Geneva University, Geneva, Switzerland



Lumiere Group

*Ligovsky pr., 10, St Petersburg
191036, Russia
Tel.: +7 (812) 578-1553
E-mail: office@lumieregroup.ru
www.lumieregroup.ru*

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Organization of Eukaryotic Genomes (I-S1)

Drosophila ELYS protein affects chromosome architecture in interphase nucleus

Semen Doronin, Anna Fedotova, Valentina Nenasheva, Elena Mikhaleva, Yuri Shevelov
Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

Tandem repeats of mouse and primate genomes *in silico* and *in situ*

O.I. Podgornaya, A.S. Komissarov
Institute of Cytology, Russian Academy of Sciences; Saint Petersburg State University, St. Petersburg, Russia

Interaction between the nuclear matrix protein EAST and proteins of the Su(Hw) insulator complex in *Drosophila melanogaster*

Anton Golovnin, Igor Shapovalov, Larisa Melnikova, Margarita Kostyuchenko
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

The role of microRNA-30c-2* as an anti-angiogenic mediator

Saran Shantikumar¹, Andrea Caporali¹, Micol Marchetti¹, Marco Meloni¹, Lynsey Howard¹, Fabio Martelli², Costanza Emanuelli¹

¹Bristol Heart Institute, Bristol, England; ²Laboratory of Vascular Pathology, IDI-IRCCS, Rome, Italy

A novel method to calculate transcription factor binding in chromatin

Daria A. Beshnova, Karsten Rippe, Vladimir B. Teif
DKFZ and Bioquant, Heidelberg, Germany

Epigenetic aspects of HP1 exchange kinetics in apoptotic chromatin

Sona Legartova¹, Lenka Stixova¹, Jana Suchankova¹, Stanislav Kozubek¹, Zbynek Zdraha², Gabriela Lochmanova², Eva Bartova¹

¹Institute of Biophysics, AS CR, v.v.i. Brno, Czech Republic; ²Core Facility Proteomics, Central European Institute of Technology, Masaryk University, Brno, Czech Republic

IA2 insulator can interact with promoter of hsp70 gene in *Drosophila melanogaster*

Pavel Elizar'ev, Darya Chetverina, Pavel Georgiev, Maksim Erokhin
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

A novel proteomic approach to study epigenetic changes in chromatin

Pavel Tarilykov¹, Muhammad Shoaib², Arman Kulyyassov³, Chloe Robin², Erlan Ramanculov³, Vasily Ogryzko²

¹L.N. Gumilyov Eurasian National University, Astana, Kazakhstan; ²CNRS UMR 8126, Université Paris Sud, Institut de Cancérologie Gustave Roussy, Villejuif, France; ³National Center for Biotechnology, Astana, Kazakhstan

Unique polymorphism of the gene *CYP21A2* encoding the 21-hydroxylase in female patients with the signs of hyperandrogenism: data of the whole gene sequencing

A.P. Barannik, L.I. Patrushev, I.A. Shilov, A.A. Koltunova, L.A. Ozolinya
Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Laccase gene families in basidiomycetes from different taxonomy groups

Lilia Maloshenko¹, Konstantin Moiseenko¹, Tatiana Fedorova¹, Sergey Bruskin², Olga Koroleva¹

¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²N.I. Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Structure and dynamics of a highly stable G-quadruplex with one imperfect G-tetrad

Vladimir Tsvetkov, Anna Varizhuk, Galina Pozmogova
Institute of Physical-Chemical Medicine, Ministry of Public Health, Moscow, Russia; Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

A study of insulator-promoter interactions in *Drosophila*

Darya Chetverina, Maksim Erokhin, Anna Davydova, Pavel Georgiev
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Transcription through enhancers suppresses their activity in *Drosophila*

Maksim Erokhin, Darya Chetverina, Anna Davydova, Pavel Georgiev
Department of the Control of Genetic Processes, Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Akt1 mediated Hox gene expression through epigenetic modifications in mouse embryonic fibroblast

Myoung Hee Kim, Kyoung-Ah Kong, Ji Hoon Oh, Youna Lee
Department of Anatomy, Embryology Lab., BK 21 Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea

G-Quadruplexes with imperfect tetrads are stable under physiological conditions and may be prevalent in human genome

Galina E. Pozmogova, Anna M. Varizhuk
Institute of Physical-Chemical Medicine, Ministry of Public Health, Moscow, Russia

The nuclear pore complex based on DNA/RNA-lipid interactions: main way of genome organization and regulation

Vasily Kuvichkin
Institute of Cell Biophysics, Russian Academy of Sciences, Pushchino, Moscow reg., Russia

Common cell polyploidy-associated transcriptomic traits in evolutionary distant organisms

Olga Anatskaya, Alexander Vinogradov
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Dual role of gammaH2AX in the cellular response to hyperthermia

Artem K. Velichko¹, Nadezhda V. Petrova², Omar L. Kantidze¹, Sergey V. Razin¹
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²Department of Molecular Biology, Lomonosov Moscow State University, Moscow, Russia

Interplay between duplicated genomes in mammalian hepatocyte and cardiomyocyte

Olga V. Anatskaya¹, Jekaterina Erenpreisa², Alexander E. Vinogradov¹
¹Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ²Latvian Biomedical Research and Study Centre, Latvia

Identification of New *Drosophila* proteins involved in insulator functions

Nikolay Zolotarev, Viacheslav Stakhov, Olga Kyrchanova, Oksana Maksimenko
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Highly conserved Eny2/Sus1 protein binds to *Drosophila* and human CTCF and is required for barrier activity

Oksana Maksimenko, Olga Kyrchanova, Artem Bonchuk, Viacheslav Stakhov, Alexander Parshikov, Pavel Georgiev
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Functional analysis of a chromosomal regulatory element based on its addressed insertion into the primary transgene

A.I. Burlin, S.V. Tillib
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Spider genes encoding two-domain toxins

Maria Sachkova, Anna Slavokhotova, Alexander Vassilevski, Eugene Grishin
Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Comet assay as a tool to investigate topology of DNA loops in intact cells

Katerina Afanasieva, Marianna Zazhytska, Mariana Chopei, Andrei Sivolob
Taras Shevchenko National University, Kiev, Ukraine

Nuclear translocation of myosin VI (MVI) due to cell stimulation in PC12 cells: a possible role of MVI in gene transcription

Jolanta Jozwiak, Lukasz Majewski, Magdalena Sobczak, Serhiy Havrylov, Maria Jolanta Redowicz
Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warszawa, Poland

Intra- and interspecies evolution of beta-fructosidase SUC genes in the yeast *Saccharomyces*

Aygul Zh. Sadykova¹, Elena S. Naumova¹, Nikolay N. Martynenko², Gennadi I. Naumov¹
¹State Institute for Genetics and Selection of Industrial Microorganisms, Moscow, Russia; ²State University of Foodstuff Productions, Moscow, Russia

Chromosomal polymorphism of LAC genes for lactose fermentation in dairy probiotic yeasts *Kluyveromyces*

Gennadi I. Naumov, Aygul Zh. Sadykova, Elena S. Naumova
Scientific Research and Educational Center for Biomedical Technologies, VILAR, Russian Academy of Sciences and State Institute for Genetics and Selection of Industrial Microorganisms, Moscow, Russia

Low yield of 3C ligation products: technical issues or infrequent interaction between DNA regulatory elements?

Alexey A. Gavrilov^{1,2,3}, Arkadiy K. Golov^{1,4}, Sergey V. Razin^{1,4,5}
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²University of Oslo, Norway; ³Center for Medical Studies in Russia, Moscow, Russia; ⁴Faculty of Biology, Lomonosov Moscow State University, Moscow, Russia; ⁵French-Russian Joint Cancer Research Laboratory, Villejuif, France-Moscow, Russia

Long-term effects of cryptosporidial gastroenteritis on neonatal rat cardiomyocyte

Olga Anatskaya, Ivan Matveev, Nina Sidorenko, Marianna Kharchenko, Andrew Kropotov, Alexander Vinogradov
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Transcriptional activity of superoxide dismutase genes in aphid-stressed maize seedlings

Hubert Sytykiewicz¹, Bogumil Leszczynski¹, Adam Szpehcinski², Pawel Czerniewicz¹, Iwona Sprawka¹, Cezary Semppruch¹, Grzegorz Chrzanoski¹, Iwona Lukasik¹, Agnieszka Kozak¹
¹Department of Biochemistry and Molecular Biology, University of Siedlce, Siedlce, Poland; ²Institute of Tuberculosis and Lung Disease, Warsaw, Poland

Biological functions of linker histones in Arabidopsis

Magdalena Kroten¹, Kinga Rutowicz², Maciej Lirski², Andrzej Jerzmanowski^{3,4}
¹College of Inter-Faculty Individual Studies in Mathematics and Natural Sciences (MISDoMP), Warsaw University, Warsaw, Poland; ²Polish Academy of Sciences, Institute of Biochemistry and Biophysics, Warsaw, Poland; ³Polish Academy of Sciences, Institute of Biochemistry and Biophysics, Warsaw, Poland; ⁴Laboratory of Plant Molecular Biology, Warsaw University, Warsaw, Poland

A multipotent zinc finger protein essential for wing development in *Drosophila melanogaster*

Sonia G. Tsitilou, Panagiotis Giannios
Department Biochemistry and Molecular Biology, National and Kapodistrian University of Athens, Athens, Greece

Telomere length between mononuclear blood cells (MNC) and peripheral white blood cells (WBC) in context with population-specific mitochondrial (MT) lineages in a Latvian population ageing

Egija Zole^{1,2}, Liana Pliss^{1,2}, Renate Ranka¹, Astrida Krumina¹, Viesturs Baumanis^{1,2}
¹Latvian Biomedical Research and Study Centre, Riga, Latvia; ²University of Latvia, Faculty of Biology, Department of Molecular Biology, Riga, Latvia

Analysis of epigenetic pathways of enhancer and insulator functioning in genetic constructs transfected into *Drosophila* S2 cells

Daria Fedoseeva, Olga Kretova, Nikolai Tchurikov
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

The transcriptional activity of neuronal genes in lifespan control: mechanisms regulating transcription of *Drosophila melanogaster* Lim3 gene

O.Yu. Rybina, E.R. Veselkina, E.G. Pasyukova
Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

***De novo* assembly and preliminary annotation *Rhytidadelphus squarrosus* (Bryophyta) large-scale transcriptome data**

Denis V. Goryunov¹, Maxim S. Belenikin², Anna V. Kudryavtseva², Natalia V. Melnikova², Marko Sabovljevic³, Aneta Sabovljevic³, Aleksey V. Troitsky¹
¹Lomonosov Moscow State University, Belozersky Institute of Physico-Chemical Biology, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ³Institute of Botany and Botanical Garden, Faculty of Biology, University of Belgrade, Belgrade, Serbia

Characterization of long range interactions of the chicken house-keeping gene ggPRX

Ekaterina Gushchanskaya¹, Artem Artemov¹, Aleksey Gavrilov²
¹Moscow State University, Moscow, Russia; ²Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

Conformations of the mononucleosome in different ionic environment

Igor Nazarov, Alexey Tomilin
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Inorganic polyphosphate triggers interleukin 11 production in osteoblasts cell signalling

Julian A. Tanner, Eric L. Lui, Carl K.L. Ao, K.T. Shum, Lina Li
University of Hong Kong

Inhibition of nuclear actin polymerisation alters genome architecture in transcriptionally active avian and amphibian oocytes

Antonina Maslova, Alla Krasikova
Saint Petersburg State University, St. Petersburg, Russia

The role of *Drosophila* chromatin remodeling factor CHD1 in replication-independent nucleosome assembly and in chromosome organization

Alexander Konev, Anna Makase, Maria Ignatieva, Daniil Pokrovsky, Daria Metelskaya, Ludmila Kotlovanova
Petersburg Nuclear Physics Institute, Gatchina, Russia

Molecular modeling and SANS spectra simulations of alternative nucleosomal structures

Georgy Rychkov¹, Andrey Ilatovskiy¹, Alexey Shvetsov¹, Dmitry Lebedev¹, Vladimir Isaev-Ivanov¹, Alexey Onufriev²
¹Department of Molecular and Radiation Biophysics, Petersburg Nuclear Physics Institute, Gatchina, Russia; ²Departments of Computer Science and Physics, Virginia Tech 2050 Torgersen Hall (0106), Blacksburg, Virginia, USA

The phenomenon of fractal organization of chromatin nuclei of eukaryotes by SANS

Dmitry Lebedev¹, Michael Filatov¹, Alexandr Konev¹, Rimma Pantina¹, Natalya Belyakova¹, Andrey Ilatovskiy¹, Georgy Rychkov¹, Elena Varfolomeeva¹, Vitaliy Pipich², Alexey Onufriev³, Vladimir Isaev-Ivanov¹
¹Department of Molecular and Radiation Biophysics, Petersburg Nuclear Physics Institute, Gatchina, Russia; ²Juelich Centre for Neutron Science, Outstation at FRM II, Garching, Germany; ³Departments of Computer Science and Physics, Virginia Tech 2050 Torgersen Hall (0106), Blacksburg, Virginia, USA

Bioinformatic and proteomic analysis of transcription factor binding sites in interacting regulatory elements in mouse T cells

Petros Tzerpos¹, Thodoris Savvidis¹, Michalis Aivaliotis¹, Panagiotis Benos², Charalampos Spilianakis¹
¹Institute of Molecular Biology and Biotechnology, Foundation of Research & Technology-Hellas (IMBB-FORTH), Heraklion, Greece; ²Department of Computational & Systems Biology, School of Medicine, University of Pittsburgh, Pittsburgh, USA

Distribution of tandem repeats in human genome

Marina Fridman¹, Ivan Kulakovskiy², Dmitris Lvovs³, Nina Oparina², Vsevolod Makeev¹
¹Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ³Institute of Genetics and Selection of Industrial Microorganisms, GosNIIGenetika, Moscow, Russia

Neonatal cardiomyocyte excessive genome accumulation and HIF-1A overexpression after neonatal gastroenteritis: All or nothing response to disease

Olga Anatskaya, Nina Sidorenko, Ivan Matveev, Andrew Kropotov, Marianna Kharchenko, Alexander Vinogradov
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Regions, associated with internal telomere repeats, in chromatin structuring

Olga Shubernetskaya¹, Maria Zvereva¹, Dmitry Skvortsov¹, Gromenko Elena¹, Igor Kireev², Alexey Olovnikov³, Olga Dontsova¹
¹Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ²Belozersky Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ³Institute of Biochemical Physics, Russian Academy of Science, Moscow, Russia

Sequencing and comparative analysis of plastid genomes of non-photosynthetic plants

Maria Logacheva¹, Viktoriya Shtratnikova¹, Mikhail Schelkunov², Tagir Samigullin¹, Marc-Andre Selosse³, Aleksey Penin¹
¹Lomonosov Moscow State University, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ³Centre d'Ecologie Fonctionnelle et Evolutive, Montpellier, France

Similar patterns of satellite DNA organization in mammal genomes

Aleksey Komissarov, Olga Podgornaya
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Methylation status of telomerase reverse transcriptase and telomerase RNA genes in *Danio rerio* at different ages

Elena Belova, Alexey Kozlov, Maria Zvereva, Olga Dontsova
Lomonosov Moscow State University, Moscow, Russia

Mutations in ANTXR1 cause GAPO syndrome Inherited disorders

Viktor Stranecky¹, Alexander Hoischen², Hana Hartmannova¹, Maha S Zaki³, Amid Chaudhary⁴, Enrique Zudaire⁴, Lenka Noskova¹, Veronika Baresova¹, Anna Pristoupilova¹, Katerina Hodanova¹, Jana Sovova¹

¹Institute for Inherited Metabolic Disorders, First Faculty of Medicine, Charles University in Prague, Czech Republic;

²Department of Human Genetics, Nijmegen Center for Molecular Life Sciences, Institute for Genetic and Metabolic Disease, Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands; ³Clinical Genetics Department, National Research Centre, Cairo, Egypt; ⁴Tumor Angiogenesis Section, Frederick National Laboratory for Cancer Research, Frederick, MD, USA

Spatial changes of HSA6, HSA12, HSA18 and HSAX centromeres in the interphase nucleus of MSC during cultivation and differentiation

Alexander Lavrov¹, Yana Voldgorn¹, Elmira Adilgereeva¹, Evgenii Nekrasov²

¹Research Centre for Medical Genetics, Russian Academy of Medical Sciences, Moscow, Russia; ²Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Nuclear localization of beta2-tubulin in A431 cells

Daria Malikova, Mikhail Khotin, Lidia Turoverova, Dmitry Tentler

Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The effect of linker histones on nucleosome distribution in Arabidopsis

Maciej Lirski¹, Magdalena Krotien², Kinga Rutowicz¹, Andrzej Jerzmanowski¹

¹Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland; ²College of Inter-Faculty Individual Studies in Mathematics and Natural Sciences (MISDoMP), University of Warsaw, Warsaw, Poland

Function of Daxx/ATRX complex at centromeric and pericentromeric heterochromatin

Alexander M. Ishov^{1,2}, Viacheslav M. Morozov¹, Ekaterina V. Gavrilova^{1,3,4}, Vasily V. Ogrzyzko⁵

¹University of Florida, Gainesville, USA; ²Institute of Technology, St. Petersburg, Russia; ³St. Petersburg State University, Russia; ⁴Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ⁵Institut Gustave Roussy, Villejuif, France

The breakpoint cluster regions of ETO gene involved in (8;21) leukemic translocations are enriched in acetylated histone H3

Marcela Stuardo¹, Nicolas Schnake¹, Amjad Javed², Soraya Gutierrez¹

¹University of Concepcion, Concepcion, Chile; ²University of Alabama at Birmingham, Birmingham, Alabama, USA

Nuclear Factor of Activated T cells (NFAT) as a key control of endothelial cell phenotype

Maria-Paz Mena Jaramillo¹, Izabela Papiewska-Pajak¹, Patrycja Przygodzka¹, Joanna Boncela¹, Czeslaw S. Cierniewski^{1,2}

¹Institute for Medical Biology, Polish Academy of Sciences, Lodz, Poland; ²Department of Molecular and Medical Biophysics, Medical University of Lodz, Poland

Cracking “the junk” in genomes of two strains of mice BL6 vs CD1. Novel perspectives for The Human Genome Project

Ekaterina Fomicheva¹, Anna Sheyidina², Svetlana Baranovskaya³, Vladimir Bondarenko⁴

¹Jerichon, Ann Arbor MI, USA; ²Sanford-Burnham Medical Research Institute, California, USA; ³Agilent Technologies, California, USA; ⁴Touro University, Nevada, USA

Biocatalysis: General Problems (II-S6)

Towards the understanding of age-specific regulatory variation

Paula Freire Pritchett, Laura Wisby, Michelle Simon, Paul Potter, Mikhail Spivakov
Braaham Institute, Cambridge, UK; MRC Harwell, Oxfordshire, UK

New insights in HIV protease substrate and inhibitor binding, studying by fast kinetic approach

Mariya Zakharova¹, Mariya Dronina¹, Nikita Kuznetsov², Elena Kaliberda¹, Arina Kozyr³, Ivan Smirnov¹, Alexander Kolesnikov², Olga Fedorova², Alexander Gabibov¹

¹Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ³State Research Center for Applied Microbiology and Biotechnology, Serpukhov District, Obolensk, Russia

On the regiospecificity of hydroperoxidation of fatty acids by mammalian lipoxygenases

Reynier Suardiaz, Laura Masgrau, Angels Gonzalez-Lafont, Jose M. Lluch
Autonomous University of Barcelona, Barcelona, Spain

Purification and characterization of permuted penicillin acylase from *Alcaligenes faecalis*

A.V.Stepashkina^{1,2}, S.S. Savin^{2,3}, V.I. Tishkov^{1,2,3}

¹Chemical Enzymology Department, Chemistry Faculty, Lomonosov Moscow State University, Moscow, Russia; ²Innovations and High Technologies MSU Ltd, Moscow, Russia; ³A.N. Bach Institute of Biochemistry Russian Academy of Sciences, Moscow, Russia

Molecular recognition and regulation of human angiotensin-I converting enzyme (ACE) activity by natural inhibitory peptides

Geoffrey Masuyer¹, Sylva L. U. Schwager², Edward D. Sturrock², R. Elwyn Isaac³, K. Ravi Acharya¹

¹University of Bath, UK; ²University of Cape Town, South Africa; ³University of Leeds, UK

Enzymatic characterization of two novel enzymes with enone-reductase activity

Alexandra Binter^{1,2}, Tea Pavkov-Keller^{1,3}, Georg Steinkellner^{1,3}, Kerstin Steiner¹, Karl Gruber³, Peter Machereux²

IACIB GmbH, Graz, Austria; ²Institute of Biochemistry, Graz University of Technology, Graz, Austria; ³Institute of Molecular Biosciences, Graz, Austria

Laccase from ascomycete *Botrytis aclada*: effect of mutation near the T1 site on the structure and properties of the enzyme

Eugene Osipov¹, R. Kitt², K.M. Polyakov³, T.V. Tikhonova¹, S.V. Shleev¹, V.O. Popov¹, R. Ludwig²

¹A.N.Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Food Biotechnology Laboratory, Department of Food Sciences and Technology, University of Natural Resources and Life Sciences, Vienna, Austria; ³Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

A new mechanism of acceleration of 2-dimentional reactions by confining proteins to a high-binding membrane region: assembly of tenase on activated platelets

Anastasia Golomysova¹, Nadezhda Podoplelova², Mikhail A. Pantelev²

¹Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia; ²Center for Theoretical Problems of Physicochemical Pharmacology, Russian Academy of Sciences, Moscow, Russia

Exogenous NO accelerates apoptosis of human neutrophils followed phagocytosis

Galina M. Viryasova, Zoryana V. Grishina, Galina F. Sud'ina

Lomonosov Moscow State University, A.N. Belozersky Research Institute of Physico-Chemical Biology, Moscow, Russia

Interaction between *Drosophila* CENP-C and protein phosphatase 4

Zoltan Lipinszki, Marcin R. Przewloka, Matthew S. Savoian, David M. Glover

Department of Genetics, University of Cambridge, Cambridge, UK

Siroheme as an intermediate in the biogenesis of heme and heme d₁; a new branch of tetrapyrrole synthesis

Shilpa Bali¹, Andrew Lawrence², Stuart J Ferguson¹, Martin J Warren²

¹University of Oxford, UK; ²University of Kent, UK

Mutation to alter the substrate specificity of a thermophilic L-rhamnose isomerase from *Thermoanaerobacterium saccharolyticum* NTOU1

Tsuei-Yun Fang, Chia-Jui Lin

National Taiwan Ocean University, Taiwan

X-ray study of molecular oxygen reduction by fungal laccase from basidiomycete *Steccherinum murashkinskyi*

Tatyana Fedorova¹, Olga Glazunova¹, Konstantin Polyakov², Olga Koroleva¹
¹A.N.Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Exploration of the function of human methyltransferase like 23 (METTL23)

Chanakan Tongsook¹, Marie Bernkopf², Christian Windpassinger³, Peter Macheroux¹
¹Institute of Biochemistry, Graz University of Technology, Graz, Austria; ²Laboratory for Molecular Biology and Tumorcytogenetics, Hospital of the Sisters of Mercy, Linz, Austria; ³Institute of Human Genetics, Medical University Graz, Graz, Austria

EDC4 interacts with and regulates the dephospho-CoA kinase activity of CoA synthase

Daria Gudkova¹, Ganna Panasyuk², Ivan Nemazanyy², Alexander Zhyvolou³, Pascale Monteil³, Valeriy Filonenko¹, Ivan Gout³
¹IMBG, Kyiv, Ukraine; ²INSERM U845, Paris, France; ³UCL, London, UK

Inhibition kinetics of sheep brain cortex glucose 6-phosphate dehydrogenase by metal ions

N. Nuray Ulusu, Cihangir Sengezer
Hacettepe University, Faculty of Medicine, Ankara, Turkey

Mechanistic and Structural Study of BcGT

Yaw-Kuen Li, Hsi-Ho Chiu, Singing Wang
National Chiao Tung University, Taiwan

Substrate specificity and subsites role of a recombinant digestive cathepsin L-like proteinase of *Tenebrio molitor*

Ticiane F. Damasceno¹, Juliana R. Oliveira², Maria A. Julliano², Walter R. Terra¹
¹Universidade de Sao Paulo, Sao Paulo, Brazil; ²Universidade Federal de Sao Paulo, Sao Paulo, Brazil

Two forms of laccase from fungus *Cerrena unicolor*: preparation, properties and crystallization

Svetlana Tishchenko¹, Azat Gabdulkhakov¹, Uliana Tin¹, Alexandr Lisov², Zoy Lisova², Alexey Leontievsky²
¹Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia; ²G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

Cellular ATP of iron- and sulfur-oxidizing bacteria as an indicator of cell energetics and growth

Eva Pakostova, Martin Mandl, Blanka Omesova Pokorna
Department of Biochemistry, Faculty of Science, Masaryk University, Brno, Czech Republic

Production of cyclodextrins using purified cyclodextrin glycosyltransferase from *Thermoanaerobacter* sp. P4

Ayse Avci^{1*}, Ender S. Poyrazoglu², Sedat Donmez²
¹Sakarya University, Faculty of Engineering, Department of Food Engineering, Sakarya, Turkey; ²Ankara University, Faculty of Engineering, Department of Food Engineering, Ankara, Turkey

Interplay between the trigger loop and the F loop in the active centre of bacterial RNA polymerase during catalysis

Nataliya Miropolskaya¹, Daria Esyunina¹, Saulius Klimasauskas², Andrey Kulbachinskiy¹
¹Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia; ²Institute of Biotechnology, Vilnius University, Vilnius, Lithuania

Hydrolytic activity of adenosinetriphosphatases (ATPases) measured by a new experimental method

Gianluca Bartolommei, Maria Rosa Moncelli, Francesco Tadini-Buoninsegni
Department of Chemistry "Ugo Schiff", University of Florence, Sesto Fiorentino, Italy

Biological function of the NudC Nudix protein from plant pathogen *Pseudomonas syringae* pv. tomato DC3000

Marta Maria Modzelan, Elzbieta Kraszewska
Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland

Differential phosphorylation of Akt isoforms by protein kinase CK2: biochemical evidences and functional implications

Cristina Girardi¹, Peter James², Lorenzo A. Pinna¹, Maria Ruzzene¹
¹Department of Biomedical Sciences, University of Padova, Padova, Italy; ²Lund University, Immunteknologi, Lund, Sweden

The structure of two ferryl-oxo intermediates at the same oxidation level in the heme-copper binuclear center of cytochrome c oxidase: The protein effect

Constantinos Varotsis¹, Eftychia Pinakoulaki², Vangelis Daskalakis¹, Takehiro Ohta³, Oliver-Matthias H. Richter⁴, Kerstin Budiman⁵, Teizo Kitagawa⁶, Bernd Ludwig¹
¹Cyprus University of Technology, Lemesos, Cyprus; ²University of Cyprus, Nicosia, Cyprus; ³Kyushu University, Fukuoka, Japan; ⁴Johann Wolfgang Goethe-University, Frankfurt, Germany; ⁵Max-Planck Institut of Biophysics, Frankfurt, Germany; ⁶University of Hyogo, Hyogo, Japan

Two non-canonical RNA polymerases encoded by phiKZ-like giant phages

Maria Yakunina¹, D. Vorontsova¹, T. Artamonova¹, M. Khodorkovskiy¹, K. Severinov², L. Minakhin²
¹St. Petersburg State Polytechnical University, Institute of Nanobiotechnologies, St. Petersburg, Russia; ²Waksman Institute, Piscataway, USA

Isolation and purification of methanobactin from *Methylococcus capsulatus* (M)

Lidiya Avdeeva, Ildar Tukhvatullin, Rudolf Gvozdev
The Institute of Problems of Chemical Physics, Russian Academy of Sciences, Chernogolovka, Russia

Regioselectivity of alpha-galactosidase from *Thermotoga maritima* in hydrolysis and transglycosylation reaction. Impact of non-enzymatic mutorotation process on the observed hydrolytic activity

Anna S. Borisova, Kirill S. Bobrov, Georgy N. Rychkov, Konstantin A. Shabalin
B.P. Konstantinov Petersburg Nuclear Physics Institute, Gatchina, Russia

Molecular aspects of tissue-specific regulation of canonical and non-canonical functions of aminoacyl-tRNA synthetases using tryptophanyl-tRNA synthetase as the example

Malik Nurbekov¹, D.V. Yarygin¹, A.B. Ilin¹, O.A. Speranskaya¹, R.I. Zhdanov²
¹Sholokhov Moscow State University for the Humanities, Moscow, Russia; ²Kazan Federal University, Kazan, Russia

The role of tryptophanyl-tRNA synthetase in the regulation of protective reactions cascades and homeostasis at the tissue and organismal level

M.K. Nurbekov¹, D.V. Yarygin¹, N.O. Minkova¹, O.A. Speranskaya¹, R.I. Zhdanov²
¹Sholokhov Moscow State University for the Humanities, Moscow, Russia; ²Kazan Federal University, Kazan, Russia

Dinucleoside polyphosphates as key regulators of biological processes in tissues and body: molecular aspects of their synthesis by aminoacyl-tRNA synthetases

Malik K. Nurbekov¹, D.V. Yarygin¹, N.O. Minkova¹, R.I. Zhdanov²
¹Sholokhov Moscow State University for the Humanities, Moscow, Russia; ²Kazan Federal University, Kazan, Russia

Thermal stability and energy of deactivation of immobilized cell wall invertase in natural and synthetic hydrogel polymers

Aleksandra Margetic¹, Zoran Vujcic²
¹Institute of Chemistry, Technology and Metallurgy, Centre of Chemistry, University of Belgrade, Belgrade, Serbia; ²Faculty of Chemistry, Department of Biochemistry, University of Belgrade, Belgrade, Serbia

Immobilization of NAD⁺/NADH on magnetic nanoparticles and its selective oxidation and reduction reactions with mediated by galactitol- and lactate- dehydrogenases

Bilsen Tural¹, Tuba Tarhan², Servet Tural¹
¹Department of Chemistry, Faculty of Education, Dicle University, Diyarbakir, Turkey; ²Department of Vocational High School of Health Services, Mardin Artuklu University, Mardin, Turkey

Human flavin-containing monooxygenase 3 polymorphism and its effect on drug metabolism

Stefania Bortolussi, Silvia Castrignano, Gianluca Catucci, Gianfranco Gilardi, Sheila J. Sadeghi
Dept. of Life Sciences and Systems Biology, University of Torino, Italy

Effect of Cathepsin L variant gen silencing over proliferation, viability and organization of mitotic spindle in cell lines of colorectal cancer (Caco-2) and uterine cervical cancer (HeLa)

Violeta Morin M¹, Fernando Rivas¹, Orlando Riquelme¹, Camila Reyes¹, Soraya Gutierrez¹, Maritza Leonardi², Ximena Romo²
¹Universidad de Concepcion, Concepcion, Chile; ²Universidad Andres Bello, Concepcion, Chile

Protective role of hyaluronic acid and hyaluronidase in the mechanism of overcoming carbohydrate deficiency shock by the culture of bacterial strain streptococcus zooepidemicus

R.N. Tsepilov
N.F. Gamaley Research Institute of Epidemiology and Microbiology, Moscow, Russia

Molecular dynamics and QM/MM free energy profiles of cytosine C5-methyltransferase M.Hhai

J. Aranda, K. Zinovjev, K. Swiderek, M. Roca, I. Tunon

*Departament de Química Física, Universitat de València, Burjassot, Spain***Simulation tools for the automatic determination of enzymatic reaction mechanisms. The guanidinoacetate methyltransferase (GAMT) case**Kirill Zinovjev¹, J. Javier Ruiz-Pernía², Iñaki Tuñón¹¹Departament de Química Física, Universitat de València, Burjassot, Spain; ²Departament de Química Física i Analítica; Universitat Jaume I, Castellón, Spain**The kinetics of binding of factor X to the activated platelet membrane**

N.A. Podoplelova, F.I. Ataullakhanov, M.A. Panteleev

*Center for Theoretical Problems of Physicochemical Pharmacology, Russian Academy of Sciences, Moscow, Russia***Relationship between NAD redox status and FAD degradation in *S. cerevisiae* mitochondria**Teresa Anna Giancaspero¹, Emilia Dipalo¹, Vittoria Locato² and Maria Barile¹¹Dipartimento di Bioscienze, Biotechnologie e BioFarmaceutica, Università degli Studi di Bari "A. Moro" and IBBE, CNR, via Orabona 4, I-70126, Bari, Italia; ²Centro Integrato di Ricerca, Università Campus Bio-Medico di Roma, via A. del Portillo 21, 00128 Roma, Italia.**Biochemical characterization and classification of a novel metagenomic nicotinamidase**

Ruben Zapata-Perez, Ana-Belen Martinez, Maria-Inmaculada Garcia Garcia, Samanta Hernandez-Garcia, Hideto Takami, Alvaro Sanchez-Ferrer

*Department of Biochemistry and Molecular Biology-A, Faculty of Biology, Regional Campus of International Excellence "Campus Mare Nostrum", University of Murcia, Campus Espinardo, Murcia, Spain***Expression, purification and characterization of a novel NADH-dependent glutamate dehydrogenase from *Geobacillus kaustophilus* HTA426**

Ana-Belen Martinez, Ruben Zapata-Perez, Samanta Hernandez-Garcia, Maria-Inmaculada Garcia-Garcia, Manuela Perez-Gilbert, Alvaro Sanchez-Ferrer

*Department of Biochemistry and Molecular Biology-A, Faculty of Biology, Regional Campus of International Excellence "Campus Mare Nostrum", University of Murcia, Campus Espinardo, Murcia, Spain***Synthesis of 2-keto-3-deoxy-D-glycero-galactononulosonic acid (KDN) by N-acetyl-D-neuraminic acid aldolase protein aggregates**

Maria-Inmaculada Garcia-Garcia, Samanta Hernandez-Garcia, Ana-Belen Martinez, Ruben Zapata-Perez, Francisco Garcia-Carmona

*Department of Biochemistry and Molecular Biology-A, Faculty of Biology, Regional Campus of International Excellence "Campus Mare Nostrum", University of Murcia, Campus Espinardo, Murcia, Spain***Immobilization and characterization of *trametes versicolor* lacasse in porous silica particles**

Samanta Hernandez-Garcia, Maria-Inmaculada Garcia-Garcia, Ruben Zapata-Perez, Ana-Belen Martinez, Francisco Garcia-Carmona

*Department of Biochemistry and Molecular Biology-A, Faculty of Biology, Regional Campus of International Excellence "Campus Mare Nostrum", University of Murcia, Campus Espinardo, Murcia, Spain***Enzyme bioprospecting for lignin valorization: Searching for novel bacterial oxidases and peroxidases**

Anastasia P. Galanopoulou, Thomas S. Fountzoulas, Amalia D. Karagouni, Dimitris G. Hatzinikolaou

*Microbial Biotechnology Unit, Department of Biology, National and Kapodistrian University of Athens, Zografou Campus, Attica, Greece***Solubility and lipophilicity of boron cluster pharmacophores**Jakub Rak¹, Robert Kaplanek¹, Barbora Dejlova¹, Hana Lampova¹, Pavel Matejcek², Petr Cigler³, Vladimir Kral¹¹Institute of Chemical Technology, Prague, Czech Republic; ²Charles University in Prague, Czech Republic; ³Academy of Sciences of Czech Republic, Prague, Czech Republic**Proteinase-binding loop does not significantly contribute to the specificity of recognition of serine protease factor XIIa by its canonical inhibitor**Vera A. Korneeva¹, Mikhail M. Trubetskov², Fazoil I. Ataullakhanov², Mikhail A. Panteleev¹¹HemaCore LLC, Moscow, Russia; ²Faculty of Physics of Moscow State University, Moscow, Russia**Rational design by QM maturation to generate highly functional antibodies**A. Stepanova¹, I. Smirnov¹, S. Chatziefthimiou², A. Golovin², I. Kurkova¹, T. Bobik¹, N. Ponomarenko¹, A. Gabibov¹¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia;²Lomonosov Moscow State University, Faculty of Bioengineering and Bioinformatics, Moscow, Russia; ³European Molecular Biology Laboratory Hamburg, Hamburg, Germany**Study of structural and functional interrelations of A17 reactibody due to light chain constant domain switching**

Yuliana Mokrushina, Spyros Chatziefthimiou, Inna Kurkova, Ivan Smirnov, Tatyana Bobik, Anastasiya Stepanova, Azad

Mamedov, Vladimir Mitkevich, Victor Lamzin, Matthias Wilmanns, Natalia Ponomarenko, Alexander Gabibov

*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia***One-step purification and covalent immobilization of benzaldehyde lyase (BAL, EC 4.1.2.38) with chelate-epoxy modified magnetic solid support and its carboligation reactivity**Bilsen Tural¹, Servet Tural¹, Erdal Ertaş¹, Ayhan S. Demir²¹Department of Chemistry, Faculty of Education, Dicle University, Diyarbakir, Turkey; ²Department of Chemistry, Faculty of Arts and Sciences, Middle East Technical University, Ankara, Turkey**Protein Structure and Folding (II-S7)****Structural and functional features of ceruloplasmin in complexes with other proteins of acute phase**Alexej Sokolov¹, Valeria Samygina², Elena Zakharova¹, Hans Bartunik³, Dmitri I Svergun⁴, Vadim Vasilyev¹¹Institute of Experimental Medicine, NorthWest Branch of Russian Academy of Medical Sciences, St. Petersburg, Russia;²CICbioGUNE, Structural Biology Unit, Derio, Bizkaia Technology Park, Spain; ³ASMB-MPG, DESY, Hamburg, Germany; ⁴EMBL Hamburg, DESY, Hamburg, Germany**Precambrian antibiotic resistance**Valeria A. Risso¹, Jose A. Gavira², Diego F. Mejia-Carmona¹, Eric A. Gaucher³, Jose M. Sanchez-Ruiz¹¹Facultad de Ciencias, Departamento de Química Física, Universidad de Granada, Spain; ²Laboratorio de Estudios

Cristalograficos, Instituto Andaluz de Ciencias de la Tierra (Consejo Superior de Investigaciones Científicas -

Universidad de Granada, Spain; ³Georgia Institute of Technology, School of Biology, School of Chemistry, and Parker H.

Petit Institute for Bioengineering and Biosciences, USA

The structure of a membrane-bound sodium pumping pyrophosphatase

Juho Kellosalo, Tommi Kajander, Konstantin Kogan, Kisun Pokharel, Adrian Goldman

*Institute of Biotechnology, University of Helsinki, Finland***Crystal structure and mutational analysis of thermostable direct hemolysin from *Grimontia hollisiae* reveals new insights on membrane binding and physiological activity**

Tung-Kung Wu

*Department of Biological Science and Technology, National Chiao Tung University, Hsin-Chu, Taiwan***On the possibility of lipid-induced regulation of conformation and immunogenicity of hemagglutinin from influenza A virus H1N1 in the content of TI-complexes**Vladimir Vorontsov¹, Nina Sanina¹, Eduard Kostetsky¹, Alexander Tsybul'sky¹, Liudmila Davydova¹, Andrey Mazeika¹,Natalia Vorobieva¹, Natalia Kim², Valery Shnyrov³¹Far Eastern Federal University, Vladivostok, Russia; ²Pacific Institute of Bioorganic Chemistry, Far Eastern Branch ofRussian Academy of Sciences, Vladivostok, Russia; ³University of Salamanca, Salamanca, Spain**Structural insights into spatial organization and mechanism of DNA-binding of histone-like HU-proteins from mycoplasmas**Konstantin Boyko^{1,2}, Marina Gorbacheva^{1,2}, Tatiana Rakitina¹, Anna Vanyushkina¹, Dmitry Kamashev¹¹NRC "Kurchatov Institute", Moscow, Russia; ²A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia**Effective field theory for phase transition of protein macromolecule induced by force**

Evgeny Meilikhov, Rimma Farzetdinova

*NRC "Kurchatov Institute", Moscow, Russia***The effect of chemical cross-linking on protein structure and function**

Daniel Rozbesky, Josef Chmelik, Zdenek Kukacka, Petr Novak

Charles University in Prague, Czech Republic

What makes [NiFeSe] hases special?

¹Carla S. A. Baltazar, ¹Cláudio M. Soares

¹Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa (ITQB-UNL), Oeiras, Portugal

Influence of stress-changed lipids on conformation of OmpF-like porin of *Yersinia pseudotuberculosis*

Ludmila Davydova¹, Nina Sanina¹, Svetlana Bakholdina², Olga Novikova², Olga Pornyagina², Tamara Solov'eva², Valery Shnyrov³, Mikhail Bogdanov⁴

¹Far Eastern Federal University, Vladivostok, Russia; ²Pacific Institute of Bioorganic Chemistry, Far Eastern Branch of Russian Academy of Sciences, Vladivostok, Russia; ³Universidad de Salamanca, Salamanca, Spain; ⁴University of Texas-Houston Medical School, Houston, TX, USA

Conformational change of Starmaker protein and its ability of calcium ions binding is crucial for biomineralization activity.

Magdalena Wojtas, Monika Poznar, Piotr Dobryszycski

Wrocław University of Technology, Department of Biochemistry, Poland

Unraveling the determinants of polyketide synthases (PKS) substrate specificity

Anna Daria Grabowska, Yoann Brison, Alexandre Faille, Sabine Gavalda, Jean-Denis Pedelacq, Lionel Mourey, Christophe Guilhot, Christian Chalut

Institute of Pharmacology and Structural Biology, France

Oxidative modification of fibrinogen

Hayk Harutyunyan, Ani Soghomonyan

Yerevan State Medical University after M. Heratsi., Scientific Research Center, Lab. of Biochemical and Biophysical Investigations, Yerevan, Armenia

Metal-specific structural response of parvalbumin to the binding of physiological cations

Anush Bakunts

San Raffaele Scientific Institute, Milan, Italy

Carbonylation: effects of structural and functional modifications of fibrinogen on endothelial cells

Giulia Bruschi¹, Victoria Barygina¹, Matteo Becatti¹, Anna Maria Gori², Rossella Marcucci², Paolo Nassi¹, Niccolò Taddei¹, Rosalba Abbate², Claudia Fiorillo¹

¹Department of Biomedical, Clinical and Experimental Sciences, University of Florence, Florence, Italy; ²Department of Medical and Surgical Critical Care-AOU Careggi, University of Florence, Florence, Italy

A new approach on protein folding correction: rescue of Arginine to Cysteine mutations using thiol compounds

Marisa Mendes^{1,2}, Desiree Smith¹, Henrique Colaco², Sofia Santos², Isabel Rivera², Tawfeg Ben-Omran³, Gajja Salomons¹, Henk Blom¹, Paula Leandro²

¹VU Medical Centre, Amsterdam, The Netherlands; ²iMed.UL, Lisbon, Portugal; ³Hamad Medical Corporation, Doha, Qatar

Deciphering the mechanism of yeast Nth1 activation

Eva Macakova, Miroslava Kopecka

Institute of Physiology Academy of Sciences of the Czech Republic, Prague, Czech Republic

Comparison of protein redox homeostasis parameters in myocardial tissue of D-galactose induced and naturally aged rats

Tamer Cebe¹, Karolin Yanar¹, Duygu Uzun², Seval Aydin¹, Mustafa Erinc Sitar¹, Tansu Ozan¹, Fatma Tekeli³, Ufuk Cakatay¹

¹Istanbul University, Cerrahpasa Faculty of Medicine, Department of Medical Biochemistry, Turkey; ²Istanbul University, Istanbul Faculty of Medicine, Turkey; ³Istanbul University, Center for Experimental and Applied Medical Research, Turkey

Analysis of additional lipids variation effect on the crystallization in meso

Alexey Mishin¹, Ekaterina Round², Yuri Tarahovsky¹, Valentin Borshchevskiy¹, Alexander Kuklin³, Akhmed Islamov³, Valentin Gordeliy²

¹Moscow Institute of Physics and Technology, Dolgoprudny, Russia; ²Institut de Biologie Structurale, Grenoble, France; ³JINR, Dubna, Moscow Region, Russia

New structural studies on the PII-signaling system

Carlos Palanca¹, Laia Pedro-Roig², Jose Luis Llacer¹, Monica Camacho², Maria Jose Bonete², Vicente Rubio¹

¹Instituto de Biomedicina de Valencia (CSIC) and CIBERER, Valencia, Spain; ²Division de Bioquímica y Biología Molecular, Departamento de Agroquímica y Bioquímica, Facultad de Ciencias, University of Alicante, Alicante, Spain

Interaction of the cisplatin with the sodium potassium pump

Miroslav Huliciak¹, Jan Vacek², Marek Sebel², Eva Orolinova², Joanna Znaleziona², Marika Havlikova², Martin Kubala¹

¹Department of Biophysics, Palacky University in Olomouc, Czech Republic; ²Department of Medical Chemistry and Biochemistry, Palacky University in Olomouc, Czech Republic

Age related variations in oxidative damage markers in tissue of rat prostate

Seval Aydin¹, Duygu Uzun², Tamer Cebe¹, Karolin Yanar¹, M. Erinc Sitar¹, Murat Mengi³, Aylin Kuruc¹, Ufuk Cakatay¹

¹Istanbul University, Cerrahpasa Faculty of Medicine, Department of Medical Biochemistry, Istanbul, Turkey; ²Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey; ³Istanbul University, Cerrahpasa Faculty of Medicine, Department of Physiology, Istanbul, Turkey

Increased mobility of the C-terminal domain is responsible for loss of function in the human P168S variant of human NAD(P)H:quinone reductase (NQO1)

Peter Macheroux¹, Wolf-Dieter Lienhart¹, Michael K. Uhl², Venugopal Gudipati¹, Alexandra Binter¹, Karl Gruber²

¹Graz University of Technology, Institute of Biochemistry, Graz, Austria; ²University of Graz, Center of Molecular Biosciences, Graz, Austria

High molecular weight forms of human phenylalanine hydroxylase: the role of the ACT domain in the balance between a fully functional protein and the large inactive aggregates

Joao Leandro¹, Mariana Pina Amaro¹, Paulo Roque Lino², Torgeir Flatmark³, Paula Leandro¹

¹Metabolism and Genetics Group, Research Institute for Medicines and Pharmaceutical Sciences (iMed.UL), Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal; ²Nanomedicines and Drug Delivery Systems, Research Institute for Medicines and Pharmaceutical Sciences (iMed.UL), Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal; ³Department of Biomedicine, University of Bergen, Bergen, Norway

The evaluation of protein redox status in gastrocnemius and soleus muscles of mimetic and naturally aged rats

Karolin Yanar, Seval Aydin, Mustafa Erinc Sitar, Tamer Cebe, Aylin Kuruc, Tuna Ozan, Pinar Atukeren, Ata Alturfan, Ufuk Cakatay

Istanbul University, Cerrahpasa Faculty of Medicine, Department of Medical Biochemistry, Istanbul, Turkey

Preliminary characterization studies on recombinant protein FKBP39 from *Drosophila melanogaster*

Malgorzata Kozłowska, Michal Jakob, Aneta Tarczewska, Andrzej Ozyhar

Department of Biochemistry, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland

Product of starmaker-like gene from medaka (*Oryzias latipes*) is a member of intrinsically disordered proteins family

Mirosława Rozycka, Magdalena Wojtas, Andrzej Ozyhar

Department of Biochemistry, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland

The preparation of homogenous recombinant Chd64 protein from *Tribolium castaneum*

Aneta Tarczewska, Malgorzata Kozłowska, Magdalena Wojtas, Andrzej Ozyhar

Department of Biochemistry, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland

Expression and purification of the intrinsically disordered otolith matrix macromolecule-64

Monika Poznar, Jaroslaw Dudek, Piotr Dobryszycski

Department of Biochemistry, Wrocław University of Technology, Wrocław, Poland

Flagellin glycosylation in *Burkholderia cenocepacia*

Anna Hanuszkiewicz, Miguel Valvano

Center for Infection and Immunity, Queen's University, Belfast, UK

The N-terminal domain of Ultraspiracle exhibits characteristics of intrinsically disordered proteins

Joanna Pieprzyk, Agnieszka Zbela, Michal Jakob, Andrzej Ozyhar, Marek Orłowski

Department of Biochemistry, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland

A role of eNOS dimer stability for essential hypertension?

Stephanie Pick¹, Tatsiana Suvorava¹, Marc Oppermann¹, Martina Weber², Georg Kojda¹

¹Institut für Pharmakologie und Klinische Pharmakologie, Uniklinik Düsseldorf, Germany; ²Division of Cardiology, Emory University School of Medicine, Atlanta, USA

Molecular basis of 6-methyladenine recognition by R.DpnI restriction endonuclease

Karolina Mierzejewska¹, Wojciech Siwek¹, Honorata Czapinska¹, Krzysztof Skowronek², Janusz Bujnicki^{2,3}, Matthias Bocktel^{1,4}

¹Laboratory of Structural Biology, International Institute of Molecular and Cell Biology, Warsaw, Poland; ²Laboratory of Bioinformatics and Protein Engineering, International Institute of Molecular and Cell Biology, Warsaw, Poland;

³Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University, Poznan, Poland; ⁴Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland

DNA binding, allosteric regulation and PipX coactivation clarified structurally for the NtcA global nitrogen regulator of cyanobacteria

Alicia Forcada Nadal, Jose Luis Llacer, Vicente Rubio
CSIC, Spain

Recognition of the methionylated initiator tRNA by the translation initiation factor 2 in Archaea

Oleg Nikonov, Elena Stolboushkina
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Russia

Asn2 mutations in alphaIIb integrin lead to a structural deformation of a calcium-binding site and a defective expression of alphaIIb beta3 complex

Yulia Einav¹, Wissam Mansour², Hagit Hauschner², Uri Zeligsohn², Nurit Rosenberg²
¹Holon Institute of Technology, Holon, Israel; ²Sheba Medical Center, Tel-Hashomer, Israel

Purification and characterization of novel lacase from basidiomycete *Antrodiella faginea* 1998

Olga A. Glazunova¹, Tatyana V. Fedorova¹, Lilia G. Maloshenok¹, Natalia V. Shakhova², Konstantin M. Polyakov³, Olga V. Koroleva¹
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Komarov Botanical Institute, Russian Academy of Sciences, St. Petersburg, Russia; ³Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Structural characteristics and RNA-binding properties of plant coilin from *Arabidopsis thaliana*

Valentin Makarov¹, Natalia Kalinina¹, Irina Mukosei²
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia

Intracellular lacase of basidiomycete *Trametes hirsuta*

Daria Vasina, Dmitry Loginov, Lilia Maloshenok, Olga Koroleva
A.N. Bakh Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Identification a stable monomeric form of K315A mutant delta-crystallin on the pathway of unfolding

Hwei-Jen Lee¹, Hui-Chen Lin¹, Chih-Wei Huang², Wei-Chuo Kao¹
¹Department of Biochemistry, National Defense Medical Center, Taipei, Taiwan; ²Department of Pharmacy Practice, Tri-Service General Hospital, Taipei, Taiwan; Graduate Institute of Medical Science, National Defense Medical Center, Taipei, Taiwan

The critical role of cis-trans Pro32 isomerization in misfolding and aggregation of human beta2-microglobulin explored by chemical protein synthesis

Vladimir Torbeev, Donald Hilvert
Laboratory of Organic Chemistry, ETH Zurich, Switzerland

Hetero- and homodimerisation of cystein-knot Noggin proteins studied with molecular dynamics

Alexey M. Nesterenko^{1,2}, Fedor M. Eroshkin¹, Andrey V. Bayramov³, Natalia Yu. Martynova³, Galina V. Ermakova³, Alexandr V. Borodulin³, Dmitry V. Kukushkin², Dmitry V. Zlenko², Andrey G. Zaraisky³
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²Department of Biophysics, Biology Faculty, Lomonosov Moscow State University, Moscow, Russia; ³Laboratory of Molecular Bases of Embryogenesis, Shemyakin & Ovchinnikov Institute of Bioorganic chemistry, Russian Academy of Sciences, Moscow, Russia

The type 2B p.R1306W natural mutation of von Willebrand factor (VWF) dramatically enhances the multimer sensitivity to shear stress

Giovanni Luca Scaglione¹, Stefano Lancellotti¹, Massimiliano Papi², Marco De Spirito², Alessandro Maiorana², Luciano Baronciani³, Maria Teresa Pagliari³, Alessandro Arcovito⁴, Enrico Di Stasio⁴, Flora Peyvandi³, Raimondo De Cristofaro¹
¹Istituto di Medicina Interna e Geriatria, Servizio Malattie Emorragiche e Trombotiche, Facolta di Medicina e Chirurgia, Universita Cattolica del Sacro Cuore, Roma, Italy; ²Istituto di Fisica, Centro di Microscopia, Facolta di Medicina e Chirurgia, Universita Cattolica del Sacro Cuore, Roma, Italy; ³A. Bianchi Bonomi Hemophilia and Thrombosis Center, Fondazione I.R.C.C.S. Ca' Granda Ospedale Maggiore Policlinico, Universita' degli Studi di Milano and Luigi Villa Foundation, Milan, Italy; ⁴Istituto di Biochimica e Biochimica Clinica, Facolta di Medicina e Chirurgia, Universita Cattolica Sacro Cuore, Roma, Italy

Intracellular localization of recombinant human cardiac troponin I in the mammalian cell culture

Georgy Nosov, Anastasia Mamontova, Julia Abdulina, Alexey Kharitonov
Lomonosov Moscow State University, Department of Biochemistry, Moscow, Russia

Telomerase protein Est3 from *H. polymorpha*

Olga Petrova¹, E. Rodina², M. Zvereva¹, J. Kallio³, T. Wiegels³, O. Dontsova¹, V. Lamzin³
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia; ³European Molecular Biology Laboratory (EMBL), Hamburg, Germany

DNA methyltransferase SsoII: a balance between DNA methylation and transcription repression

Alexandra Ryazanova¹, Anzhela Migur², Maxim Norkin³, Nadezhda Timofeyeva⁴, Olga Fedorova⁴, Elena Kubareva¹
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia; ³Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ⁴Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

SeqOPT: web based server for rational design of conformationally stable alpha-helices in monomeric peptides and globular proteins

Alexander Yakimov¹, Georgy Rychkov¹, Michael Petukhov²
¹PNPI, Saint Petersburg State Polytechnical University, St. Petersburg, Russia; ²Petersburg Nuclear Physics Institute, Gatchina, Russia

The domains of *Staphylococcus aureus* haemoglobin receptor, IsdH, cooperate to steal haem from human haemoglobin

Claire F. Dickson¹, David A. Jacques², G. Reza Malmirchegini³, Thomas Spirig³, Kaavya Krishna Kumar², Joel P. Mackay², Robert T. Clubb³, J. Mitchell Guss², David A. Gell¹
¹Menzies Research Institute, UTAS, Hobart, Australia; ²School of Molecular Biosciences, USYD, Sydney, Australia; ³Department of Chemistry and Biochemistry, UCLA, Los Angeles, USA

X-ray crystallographic study of VapD from the phytopathogen *Xylella fastidiosa*: implications for DNA binding

Marina V. Polyakova¹, Marcelo Leite dos Santos², Cleiton Aparecido dos Santos³, Anete Pereira de Souza³, Igor Polikarpov⁴, Ricardo Aparicio², Alexander M. Golubev¹
¹Petersburg Nuclear Physics Institute, Gatchina, Russia; ²Institute of Chemistry, University of Campinas, Campinas, SP, Brazil; ³Institute of Biology, University of Campinas, Campinas, SP, Brazil; ⁴Sao Carlos Institute of Physics, USP, Sao Carlos, SP, Brazil

Experimental determination of the formation sequence of structure elements in the green fluorescent protein

B.S. Melnik, T.V. Povarnitsyna, A.S. Glukhov, T.N. Melnik
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

Substrate binding to 2-aminobenzoyl-CoA monooxygenase/reductase from *Azoarcus evansii*

Thomas Bergner¹, Tea Pavkov-Keller², Katharina Lukas¹, Jakob Kowaliuk¹, Markus Plank¹, Karl Gruber³, Peter Macheroux¹
¹Institute of Biochemistry, Graz University of Technology, Graz, Austria; ²ACIB GmbH, Graz, Austria; ³Institute of Molecular Biosciences, University of Graz, Graz, Austria

Interaction between linker histone H1 and non-histone protein HMGB1 *in vitro*

Tatyana Starkova, Nikita Mikhailov, Elena Kostyleva, Elena Chikhirzhina, Alexander Polyanchko
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; Saint Petersburg State University, St. Petersburg, Russia

Random approach to stabilize a membrane transport protein for crystallization studies

Arturo Rodriguez-Banqueri¹, Ekaitz Errasti Murrugarren¹, Manuel Palacin¹, Jose Luis Vazquez Ibar²
¹Institute for Research in Biomedicine (IRB), Barcelona, Spain; ²Department of Biochemistry and Molecular Biology, Universitat Autònoma de Barcelona (UAB), Cerdanyola del Valles, Spain

Supramolecular structures formed by TIP49A protein *in vitro*

Dmitry Lebedev¹, Maria Sokolova², Jana Fedirova², Daria Chervyakova¹, Sergey Landa¹, Mikhail Petukhov¹, Mikhail Khodorkovskii²
¹Petersburg Nuclear Physics Institute NRC KI, Gatchina, Russia; ²St. Petersburg State Polytechnical University, St. Petersburg, Russia

Contributions to the study on the interactions between blood proteins and monolayers and/or liposomes

Gerardo Prieto¹, Juan Sabin¹, Paula Toimil¹, Francisco J. Salgado², Montserrat Nogueira², and Félix Sarmiento¹
¹*Biophysics and Interfaces Group, Department of Applied Physics, University of Santiago de Compostela, Santiago de Compostela, Spain;* ²*Department of Biochemistry and Molecular Biology, Center for Research in Biology (CIBUS), University of Santiago de Compostela, Santiago de Compostela, Spain*

Structural bioinformatics of the human spliceosome

Janusz M. Bujnicki, Iga Korneta, Marcin Magnus
Laboratory of Bioinformatics and Protein Engineering, International Institute of Molecular and Cell Biology, Warsaw, Poland

Interaction between polyamidoamine dendrimers and regulatory plasma proteins: alkaline phosphatase and L-lactic dehydrogenase

Katarzyna Milowska¹, Maksim Ionov¹, Emilia Borowska¹, Inessa Halets², Teresa Gabryelak¹, Dzmitry Shcharbin², Maria Bryszewska¹
¹*Department of General Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland;* ²*Laboratory of Proteomics, Institute of Biophysics and Cell Engineering of the National Academy of Science of Belarus, Minsk, Belarus*

Application of mass spectrometry to the characterization of post-translational modifications of chromosomal proteins

Alena Sitnikova, Tatyana Starkova, Tatyana Artamonova, Victoriia Karpenko, Alexander Polyaniichko, Elena Chikhirzhina, Elena Kostyleva, Alexey Tomilin
Saint Petersburg State University, St. Petersburg, Russia; Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; St. Petersburg State Polytechnical University, St. Petersburg, Russia

How calcium and Bmh1 activate yeast neutral trehalase Nth1?

Miroslava Kopecka^{1,2}, Lenka Rezaczkova³, Petr Man⁴, Veronika Obsilova²
¹*2nd Faculty of Medicine, Charles University in Prague, Prague, Czech Republic;* ²*Institute of Physiology, Academy of Sciences of the Czech Republic v.v.i., Prague, Czech Republic;* ³*Faculty of Science, Charles University in Prague, Prague, Czech Republic;* ⁴*Institute of Microbiology, Academy of Sciences of the Czech Republic v.v.i., Prague, Czech Republic*

Effect of amino acids located on the surface of apomyoglobin on its energy landscape

Darya Larina¹, Tatiana Melnik¹, Ivan Kashparov¹, Andrey Kajava², Anatoly Glukhov¹, Bogdan Melnik¹
¹*Institute of Protein Research, RAS, Pushchino, Moscow Region, Russia;* ²*Centre de Recherches de Biochimie Macromoléculaire, (CRBM) UMR 5237 CNRS, Université Montpellier, Montpellier, France*

Structure of RecX complex with the presynaptic RecA filament: molecular dynamics simulations and small angle neutron scattering

Alexey Shvetsov¹, Dmitry Lebedev¹, Dmitry Baitin¹, Aurel Radulescu², Alexander Kuklin³, Vladimir Isaev-Ivanov¹
¹*Petersburg Nuclear Physics Institute, National Research Centre "Kurchatov Institute", Gatchina, Russia;* ²*Juelich Centre for Neutron Science, Outstation at FRM II, Garching, Germany;* ³*Joint Institute for Nuclear Research, Dubna, Russia*

Short peptides which enhance the fibrillogenesis of the model peptide

Vladimir Egorov¹, Aram Shaldzhyan¹, Alexey Sirotkin¹, Olga Mirgorodskaya¹, Andrey Vasin¹, Dmitry Lebedev², Alexey Shvetsov², Natalia Grudinina³, Michael Shavlovsky³
¹*FSBI Research Institute of Influenza; Ministry of Healthcare of the Russian Federation; St. Petersburg, Russia;* ²*Petersburg Nuclear Physics Institute, National Research Centre "Kurchatov Institute", Gatchina, Russia;* ³*FSBI Institute of Experimental Medicine, NorthWest Branch of the Russian Academy of Medical Sciences, St. Petersburg, Russia*

Study of molecular and immunological features of novel plant lipid transfer proteins

Ekaterina Finkina, Daria Melnikova, Ivan Bogdanov, Sergey Balandin, Tatiana Ovchinnikova
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Identification and characterization of soybean endoplasmic reticulum oxidoreductin

Reiko Urade, Motonori Matsusaki, Katsunori Koishihara, Ryuta Mita, Aya Okuda, Yurika Naruo, Taro Masuda
Kyoto University, Kyoto, Japan

Structure of uridine phosphorylase from *Shewanella oneidensis* MR-1 in the free state at atomic resolution and its structure in complex with the natural substrate

Tatiana Safonova¹, Konstantin Polyakov², Nadezhda Mordkovich¹, Vladimir Veiko¹, Kirill Alekseev², Sergei Mikhailov², Vladimir Popov¹
¹*A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia;* ²*Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*

Structural and biochemical investigation of human septin 9/6/7 hetero complex

J.C.P. Damalio, J.N.A. Macedo, S. Matos, E. Crusca, A.P.U. Araujo, R.C. Garratt
Instituto de Física de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, Sao Paulo, Brazil

Human superoxide dismutase 1 (hSOD1) maturation through interaction with human copper chaperone for SOD1 (hCCS)

Kairit Zovo¹, Lucia Banci^{2,3,4}, Ivano Bertini^{2,3,4}, Francesca Cantini^{2,3}, Tatiana Kozyreva², Chiara Massagni^{2,4}, Peep Palumaa¹, Jeffrey T. Rubino²
¹*Department of Gene Technology, Tallinn University of Technology, Tallinn Estonia;* ²*Magnetic Resonance Center, University of Florence, Sesto Fiorentino, Italy;* ³*Department of Chemistry, University of Florence, Sesto Fiorentino, Italy;* ⁴*Fondazione Farmacogenomica FiorGen onlus, Sesto Fiorentino, Italy*

Key role for membrane lipids in orchestrating the endocannabinoid hydrolase (FAAH) function and subcellular localization

Enrico Dainese¹, Gianni De Fabritiis², Annalaura Sabatucci¹, Sergio Oddi¹, Clotilde Beatrice Angelucci¹, Chiara Di Pancrazio¹, Toni Giorgino³, Nathaniel Stanley², Michele Del Carlo¹, Benjamin Cravatt⁴, Mauro Maccarrone⁵
¹*Department of Biomedical Sciences, University of Teramo, Teramo, Italy;* ²*Computational Biochemistry and Biophysics Laboratory, (GRIB-IMIM), University of Pompeu Fabra, Barcelona, Spain;* ³*Institute of Biomedical Engineering, National Research Council of Italy (ISIB-CNR), Padua, Italy;* ⁴*Departments of Cell Biology and Chemistry, The Scripps Research Institute, La Jolla, California, USA;* ⁵*Center of Integrated Research, Campus Bio-Medico University of Rome, Rome, Italy*

Domain movement probed by small angle X-ray scattering analysis of two plant amine oxidases: functional consequences for substrate accessibility

Enrico Dainese¹, Annalaura Sabatucci¹, Francesca Pintus², Rosaria Medda², Clotilde Beatrice Angelucci¹, Alessandro Finazzi-Agro³, Mauro Maccarrone³, Giovanni Floris²
¹*Department of Biomedical Sciences, University of Teramo, Teramo, Italy;* ²*Department of Sciences of Life and Environment, University of Cagliari, Cagliari, Italy;* ³*Center of Integrated Research (CIR), Campus Bio-Medico University of Rome, Rome, Italy*

Monitoring temperature-induced local conformational changes in mammalian tyrosyl-tRNA synthetase by fluorescent probes

Liliia Andriichuk, Vasyil Mykuliak, Alexander Kornelyuk
Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Unique alpha-helical insert between the N-terminal domain and AAA⁺ module of LonA proteases

T.V. Rotanova¹, A. Wlodawer², A. Gustchina²
¹*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow, Russia;* ²*National Cancer Institute, Frederick, MD, USA*

The X-ray study of the trigonal crystal form of phosphopantetheine adenylyltransferase from *Mycobacterium tuberculosis*

Vladimir Timofeev¹, Evgenia Smirnova¹, Larisa Chupova², Roman Esipov², Inna Kuranova¹
¹*A.V. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia;* ²*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Studies of the interaction of yeast and human HMGB with AT-rich DNA

Raquel Sanchez-Giraldo¹, Christopher S. Malarkey², Mair E. A. Churchill², Nuria Saperas¹, Juan A. Subirana¹, J. Lourdes Campos¹
¹*Departament d'Enginyeria Química, Universitat Politècnica de Catalunya, Barcelona, Spain;* ²*Department of Pharmacology, University of Colorado Denver, School of Medicine, Aurora, USA*

Detailed kinetic analysis of interaction between the FOXO4-DNA-binding domain and the DNA

Petr Vacha¹, Iva Zuskova¹, Ladislav Bumba², Veronika Obsilova², Tomas Obsil¹
¹Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague, Prague, Czech Republic; ²Institute of Microbiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic; ³Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

The 14-3-3 protein binding-dependent structural modulation of phosducin

Miroslava Kacirova¹, Lenka Rezbakova¹, Miroslav Sulec², Petr Herman³, Jaroslav Vecer³, Miroslav Stepanek¹, Veronika Obsilova⁴, Tomas Obsil¹
¹Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague, Prague, Czech Republic; ²Department of Biochemistry, Faculty of Science Charles University in Prague, Prague, Czech Republic; ³Faculty of Mathematics and Physics, Institute of Physics, Charles University in Prague, Prague, Czech Republic; ⁴Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Interaction of Asia plant tannins with human serum albumin

Szymon Sekowski¹, Maksim Ionov², Saidmukhtar Mavlyanov³, Maria Bryszewska², Maria Zamaraeva¹
¹Department of Biophysics, University of Bialystok, Poland; ²Department of General Biophysics, University of Lodz, Poland; ³Institute of Biorganic Chemistry, Academy of Science, Uzbekistan

Assembly of *Schistosoma mansoni* septins into hetero-oligomeric complex and biophysical characterization of its subunits

Ana Eliza Zeraik, Ana Paula Ulian de Araujo, Ricardo DeMarco
Departamento de Física e Informatica, Instituto de Física de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, Sao Paulo, Brazil

Novel affinity medium for purification of the human beta-adrenergic receptors

Pavel Kuzmichev, Vladimir Chupin, Maxim Dubinnyi, Lada Petrovskaya, Alexander Arseniev
Shemyakin & Ovchinnikov Institute of Biorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Lysostaphin and LytM – how similar and how different are these two peptidoglycan hydrolases

Izabela Sabala¹, Elzbieta Jagielska¹, Maja Grabowska¹, Matthias Bochtler^{1,2}
¹International Institute of Molecular and Cell Biology, Warsaw, Poland; ²Institute of Biochemistry and Biophysics, Warsaw, Poland

Heat-induced structural dynamics of a thermoacidophilic small heat-shock protein sHSP14.3; functional implications

Semra Kocabiyik, Ilir Sheraj
Middle East Technical University, Biological Sciences, Ankara, Turkey

Statistical potential for identification of 2+ metal cations bound in proteins

L.A. Uroshlev¹, S.V. Rakhmanov², V.J. Makeev²
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Dissociation of the subunits of the calcium-independent receptor of α -latrotoxin (CIRLI)

Oxana V Serova, N.V. Popova, I.E. Deyev, A.G. Petrenko
Shemyakin & Ovchinnikov Institute of Biorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Fluorone dyes binding to extracellular and cytoplasmic domains of Na,K-ATPase

Marika Havlikova^{1,2}, Miroslav Huliciak², Vaclav Bazgier³, Karel Berka⁴, Martin Kubala²
¹Department of Medical Chemistry and Biochemistry, Faculty of Medicine, Palacky University, Olomouc, Czech Republic; ²Department of Biophysics, Faculty of Science, Palacky University, Olomouc, Czech Republic; ³Department of Physical Chemistry, Centre of the Region Hana for Biotechnological and Agricultural Research, Faculty of Science, Palacky University, Olomouc, Czech Republic; ⁴Department of Physical Chemistry, Regional Center of Advanced Technologies and Materials, Faculty of Science, Palacky University, Olomouc, Czech Republic

The effect of substitutions of E457 and A534 residues in thermostable mutant of *Luciola mingrelica* firefly luciferase on its activity and stability

Yulia A. Modestova, Mikhail I. Koksharov, Natalia N. Ugarova
Dept. of Chemistry, Lomonosov Moscow State University, Moscow, Russia

A novel tool to shield against alpha-synuclein's toxic effects

Aziz Gauhar, Ewa Mirecka, Hamed Shaykhalishahi, Wolfgang Hoyer
Institute of Physical Biology, Heinrich Heine University Dusseldorf, Dusseldorf, Germany

Amyloid beta 1-42 oligomerization in vitro and characterization with SDS-PAGE, MALDI and ESI MS

Merlin Friedemann, Vello Tougu, Tiina Kirsipuu, Peep Palumaa
Tallinn University of Technology, Department of Gene Technology, Tallinn, Estonia

The molten globule state is the single conformational state of high lability

Vitalii Balobanov, Natalia Katina, Ekatarina Samatova, Valentina Bychkova
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

Right- and left-handed three-helix proteins: Experimental and simulation analysis of differences in folding and structure

Oxana V. Galzitskaya, Anna V. Glyakina, Leonid B. Pereyaslavets
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

Effect of resveratrol and tiron radicals on the activity of glyceraldehyde-3-phosphate dehydrogenase

Aleksandra Rodacka, Joanna Strumillo, Julita Rochowiak, Anita Krokosz, Mieczyslaw Puchala
Department of Molecular Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Poland

Selection of an engineered binding protein to tau

Clara Gruning¹, Ewa Mirecka¹, Matthias Stoldt², Wolfgang Hoyer¹
¹Institute of Physical Biology, Heinrich Heine University, Dusseldorf, Germany; ²Institute of Complex Systems, Forschungszentrum Julich, Julich, Germany

Heterologous expression of *Bacillus licheniformis* VK21 lantibiotic system components in *E.coli*

E. K.-A. Nurmukhamedova, E.I. Finkina, S.V. Balandin, T.V. Ovchinnikova
Shemyakin & Ovchinnikov Institute of Biorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Dimerization of transmembrane domain of amyloid precursor protein in micellar environment

Olga V. Bocharova, Anatoly S. Urban, Iliya S. Chaplygin, Kirill D. Nadezhdin, Eduard V. Bocharov, Alexander S. Arseniev
Division of Structural Biology, Shemyakin & Ovchinnikov Institute of Biorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Dimerization of transmembrane domain of human fibroblast growth factor receptor 3: implications for signaling and human pathologies

Eduard V. Bocharov, Dmitry M. Lesovoy, Sergey A. Goncharuk, Alexander S. Arseniev
Division of Structural Biology, Shemyakin & Ovchinnikov Institute of Biorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Intramolecular distances in Self-Processing Module studied by Trp-Trp energy transfer

Petra Liskova¹, Radovan Fiser¹, Ladislav Bumba², Jan Sykora³, Ivo Konopasek¹
¹Department of Genetics and Microbiology, Faculty of Science, Charles University in Prague, Czech Republic; ²Laboratory of Molecular Biology of Bacterial Pathogens, Institute of Microbiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic; ³J. Heyrovsky Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Structural studies on DCL-1 (CD302), human leukocyte receptor

Eliska Pospisilova^{1,2}, Daniel Kavan^{1,2}, Josef Chmelik^{1,2}, Barbora Ruzickova¹, Petr Novak^{1,2}
¹Department of Biochemistry, Faculty of Science, Charles University, Prague, Czech Republic; ²Institute of Microbiology v.v.i., Academy of Science of Czech Republic, Prague, Czech Republic

Characterization of amyloid-beta oligomers and their elimination by D-enantiomeric peptides

Oleksandr Brenner¹, Lothar Gremer¹, Ewa Mirecka¹, Filipp Oesterhelt¹, Luitgard Nagel-Steger¹, Dieter Willbold²
¹Institute of Physical Biology, Heinrich-Heine-Universität Dusseldorf, Germany; ²Institute of Complex Systems (ICS-6), Forschungszentrum Julich, Germany

Structure of C-terminal domain essential for folding of adenylate cyclase toxin from *Bordetella pertussis*

Lucia Motlova^{1,2}, Ladislav Bumba², Jakub Ptacek³, Cyril Barinka³, Ivo Konopasek¹, Radovan Fiser^{1,2}
¹Department of Genetics and Microbiology, Faculty of Science, Charles University in Prague, Prague, Czech Republic; ²Institute of Microbiology, Czech Academy of Sciences, Prague, Czech Republic; ³Institute of Biotechnology, Academy of Sciences, Prague, Czech Republic

Conformity of local 3D geometry of protein molecules to tetrahedral water structure provides for over 90% discrimination between the native fold and the decoys

Sergei Rahmanov, Vsevolod Makeev
Laboratory of System Biology and Computational Genetics, Vavilov Institute of General Genetic, Russian Academy of Sciences, Moscow, Russia

Structural and functional characterization of the Staphylococcus aureus virulence factor and vaccine candidate FhuD2

Vincenzo Nardi-Dei, Paolo Mariotti, Enrico Malito, Marco Biancucci, Paola Lo Surdo, Silvana Savino, Paolo Costantino, Glen Spraggon, Guido Grandi, Fabio Bagnoli, Matthew J. Bottomley
Dept. of Protein Biochemistry, Novartis Vaccines and Diagnostics, Siena, Italy

Crystallization and structure-functional studies of LinB haloalkane dehalogenase variant

Oksana Degtjarik¹, Radka Chaloupkova², Pavlina Rezacova³, Michal Kutý¹, Jiri Damborsky⁵, Ivana Kuta-Smatanova⁴
¹University of South Bohemia, ²Masaryk University, ³Institute of Molecular Genetics of the Academy of Science of the Czech Republic; ⁴University of South Bohemia, Faculty of Fisheries and Protection of Waters, South Bohemian Research Center of Aquaculture and Biodiversity of Hydrocosenoses and School of complex systems, Nove Hradý, Czech Republic; ⁵Loschmidt Laboratories, Faculty of Science, Masaryk University, Brno, Czech Republic

Expression and Purification of the intrinsically disordered membrane protein Harakiri: A cell killing member of the Bcl-2 family

Marta Jimenez, Clara Maria Santiveri, Eva de Alba
CSIC, MADRID, Spain

Structure and functional aspects of Rhodobacter sphaeroides Cryptochrome B

Yann Geisselbrecht¹, Sebastian Fruhwirth², Claudia Schroeder¹, Antonio J Pierik³, Gabriele Klug², Lars-Oliver Essen¹
¹Faculty of Chemistry—Biomedical Research Centre, Philipps-University, Marburg, Germany; ²Faculty of Biology and Chemistry—Institute of Microbiology and Molecular Biology, Justus-Liebig-University, Giessen, Germany; ³Faculty of Medicine—Institute of Cytobiology and Cytopathology, Philipps-University, Marburg, Germany

Structural study of partially disordered delta subunit of RNA polymerase unique for gram-positive bacteria

Veronika Papouskova¹, Jiri Novacek¹, Pavel Kaderavek¹, Hana Sanderova², Alzbeta Rabatinoval², Lukas Zidek¹, Libor Krasny², Vladimir Sklenar¹
¹NCBR & CEITEC, Masaryk University, Brno, Czech Republic; ²Institute of Microbiology, Academy of Sciences of the Czech Rep., Prague, Czech Republic

H/Dex MS gives insight into RAGE receptor intra and intermolecular interactions

Aleksandra Wyslouch-Cieszyńska, Monika Puchalska, Liliya Zhukova
Institute of Biochemistry and Biophysics, PAS, Warsaw, Poland

Oxidative protein folding pathway in mitochondria by NMR

Angelo Gallo, Lucia Banci, Chiara Cefaro, Simone Ciofi-Baffoni
CERM-University of Florence, Italy

Characterization of two modes of 1,8-ANS binding to bacterial luciferase in viscous media by time-resolved fluorescent spectroscopy

Tatyana Avsievich, Elena Nemtseva, Marina Gerasimova
Siberian Federal University, Krasnoyarsk, Russia

Remote control of protein-protein interactions: Photo-switchable peptides for the regulation of clathrin-mediated endocytosis

Laura Nevola¹, A. Martin-Quiros², K. Eckelt², N. Camarero², S. Tosi¹, A. Llobet³, Pau Gorostiza², Ernest Giralt¹
¹Institute for Research in Biomedicine (IRB), Barcelona, Spain; ²Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain; ³Bellvitge Biomedical Research Institute (IDIBELL), Barcelona, Spain

Ligand binding and catalytic properties of cytochrome P450s from Mycobacterium tuberculosis

Anna Vasilevskaya, Aleksei Yantsevich, Irina Grabovec, Sergey Usanov, Andrei Gilep
Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus

Thermodynamics of inhibitor binding to several recombinant carbonic anhydrases isoforms

David Timm¹, Asta Zubriene¹, Joana Gyllyte¹, Virginija Dudutiene¹, Alexey Smirnov¹, Elena Manakova², Saulius Grazulis², and Daumantas Matulis¹

¹Department of Biothermodynamics and Drug Design, Vilnius University Institute of Biotechnology, Vilnius, Lithuania; ²Department of Protein – DNA Interactions, Vilnius University Institute of Biotechnology, Vilnius, Lithuania

Investigation of receptor activator of nuclear factor kappa B ligand and osteoprotegerin levels of obese and nonobese postmenopausal women

Ekrem Erbay, Sevil Kurban, Idris Mehmetoglu, Erkan Tasyurek
Necmettin Erbakan University, Meram Medical School, Department of Biochemistry, Konya, Turkey

Crystal structure of thymidine phosphorylase from E. coli complexed with nucleoside analogs of chemotherapeutic value

Inna Kuranova¹, Vladimir Timofeev¹, Nadezhda Zhukhlistova¹, Roman Esipov², Yulia Abramchik², Tatiana Muravieva²
¹A.V.Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia; ²M.M. Shemyakin and Yu.A. Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Alexander Braunstein Memorial Symposium: Enzymes, Cofactors, Mechanisms (II-W10)

Human serine racemase, a key enzyme in neurophysiology and neuropathologies

Andrea Mozzarelli, Marialaura Marchetti, Stefano Bruno, Barbara Campanini, Alessio Peracchi, Nicole Mai, Pierfrancesco Lanzilotti
University of Parma, Italy

Management of properties and stability of recombinant formate dehydrogenase from soya Glycine max by single-point mutation

Anastasia A. Alekseeva^{1,2,3}, Ivan S. Kargov^{2,4}, Sophia A. Zarubina^{2,4}, Svyatoslav S. Savin^{1,2}, Evgeny V. Pometun³, Sergey Yu. Kleimenov^{1,5}, Vladimir I. Tishkov^{1,2,4}
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Innovations and High Technologies MSU Ltd, Moscow, Russia; ³Pomalex Ltd, Moscow region, Russia; ⁴Department of Chemical Enzymology, Chemistry Faculty, Lomonosov Moscow State University, Moscow, Russia; ⁵Koltzov Institute of Developmental Biology, Russian Academy of Sciences, Moscow, Russia

Investigation the role of Met104 in catalytic activity and thermal stability of D-amino acid oxidase

I.V. Golubev^{1,2}, N.V. Komarova^{2,3}, T.A. Chubar^{1,2,3}, V.I. Tishkov^{1,2,3}
¹Department of Chemical Enzymology, Faculty of Chemistry, Lomonosov Moscow State University, Moscow, Russia; ²Innovations and High Technologies MSU Ltd., Moscow, Russia; ³A.N.Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Glutathione S-transferase alpha from Esox lucius liver: purification and characterization

Ekaterina Borvinskaya, Lev Smirnov, Nina Nemova
Institute of Biology, Karelian Research Centre of the Russian Academy of Sciences, Petrozavodsk, Russia

Cytochrome c oxidase activity and its subunits gene expression in white muscles of fish: age and season-related changes

Maria Churova, Olga Meshcherjakova, Nina Nemova
Institute of Biology, Karelian Research Centre of the Russian Academy of Sciences, Petrozavodsk, Russia

S250F variant associated with aromatic amino acid decarboxylase deficiency: Molecular defects and intracellular rescue by pyridoxine

Elisa Oppici, Riccardo Montioli, Barbara Cellini, Alessandro Roncador, Mirco Dindo, Carla Borri Voltattorni
Department of Life Sciences and Reproduction, University of Verona, Italy

Modulation of protein and mRNA expressions of rat liver vitamin D3 metabolizing CYP27B1 by o-coumaric acid

Orhan Adali¹, Melike Sever², Serdar Karakurt², Alaattin Sen³
¹Middle East Technical University, Dept. Biological Sciences, Joint Graduate Program in Biochemistry, Ankara, Turkey; ²Middle East Technical University, Joint Graduate Program in Biochemistry, Ankara, Turkey; ³Pamukkale University, Dept. Biology, Denizli Turkey

Crystal structures modeling two elementary stages of gamma-eliminations reaction catalyzed by Citrobacter freundii methionine gamma-lyase

Svetlana Revtovich¹, Alexei Nikulin², Nikolai Faleev³, Elena Morozova¹, Tatyana Demidkina¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Institute of Protein Research, Russian Academy of Sciences, Pushchino-on-Oka, Russia; ³Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, Russia

The thioredoxin system in *Streptococcus mutans* and *Streptococcus thermophilus*: an insight on molecular and functional characterization of protein components

Salvatore Marco, Rosario Rullo, Antonella Albino, Mariorosario Masullo, Massimo Amato, Emmanuele De Vendittis
Dipartimento di Medicina Molecolare e Biotecnologie Mediche, Università di Napoli Federico II, Italy

Partial purification and characterization of a novel debranching enzyme from Globe Artichoke (*Cynara Scolymus*-L.)

Nilay Altas Kiyamaz, Aysegul Peksel
Department of Chemistry, Faculty of Science and Arts, Yildiz Technical University, Turkey

Pre-steady-state kinetics of substrate recognition and processing by *Citrobacter freundii* methionine gamma-lyase

Aleksandra A. Kuznetsova¹, Nikita A. Kuznetsov¹, Elena A. Morozova², N.V. Anufrieva², Tatyana V. Demidkina², Olga S. Fedorova¹

¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

In vitro investigation of HMG-CoA reductase inhibitory effects of various coumarin derivatives

Basak Yuce-Dursun, Ozkan Danis, Serap Demir, Ayse Ogan
Marmara University, Faculty of Arts and Sciences, Chemistry Department, Istanbul, Turkey

Computer simulations of the structures of horseradish peroxidase with chemically modified prosthetic group

Galina S. Zakharova¹, Igor V. Uporov², Vladimir I. Tishkov²

¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Department of Chemical Enzymology, Faculty of Chemistry, Lomonosov Moscow State University, Moscow, Russia

Preliminary identification of proteins that interact with acyl-CoA synthetase family member 4 (ACSF4)

Jakub Drozak¹, Maria Veiga-da-Cunha², Maria Piecuch¹, Emile Van Schaftingen²

¹Department of Metabolic Regulation, Institute of Biochemistry, Faculty of Biology, University of Warsaw, Warsaw, Poland; ²Laboratory of Physiological Chemistry, de Duve Institute, Université Catholique de Louvain, Brussels, Belgium

Characterization of the first extremophilic levansucrase purified from halophilic bacteria *Halomonas smyrnensis* AAD6T

Beste Calimlioglu^{1,2}, Ebru Toksoy Oner¹, Kazim Yalcin Arga¹

¹Department of Bioengineering, Marmara University, Istanbul, Turkey; ²Department of Bioengineering, Istanbul Medeniyet University, Istanbul, Turkey

Allosteric mechanism for the regulation of the activities of *Bacillus subtilis* phosphoribosyl pyrophosphate synthetase

Chi-Ching Hwang, Yi-Ping Jiang, Ching-Hsin Hsu, and Chia-Wei Ho

Department of Biochemistry, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

Kinetic parameters and cytotoxic activity of recombinant methionine gamma-lyase from pathogenic sources

Elena Morozova¹, Vitalia Kulikova¹, Denis Yashin², Natalia Anufrieva¹, Natalia Anisimova³, Svetlana Revtovich¹, Mikhail Kotlov⁴, Yury Belyi⁴, Vadim Pokrovsky³, Tatyana Demidkina¹

¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ³Blokhin Cancer Research Center, Russian Academy of Medical Sciences, Moscow, Russia; ⁴Gamaleya Research Institute, Russian Academy of Medical Sciences, Moscow, Russia

Alpha-amino acid ester hydrolase from *Xanthomonas rubrilineans*: cloning, expression in *Escherichia coli* and 3D-structure modeling

S.A. Zarubina^{1,2}, E.A. Fedorchuk^{1,2}, V.V. Fedorchuk^{1,2}, O.V. Berezina³, A.V. Sklyarenko³, S.S. Savin^{2,4}, S.V. Yarotsky³, I.V. Uporov¹, V.I. Tishkov^{1,2,4}

¹Department of Chemical Enzymology, Chemistry Faculty, Lomonosov Moscow State University, Russia; ²Innovations and High Technologies MSU Ltd, Moscow, Russia; ³State Research Institute for Genetics and Selection of Industrial Microorganisms, Moscow, Russia; ⁴A.N. Bach Institute of Biochemistry, RAS, Moscow, Russia

Connecting known and new metabolic pathways related to purine bases catabolism through a transcriptomic analysis of the soil bacterium *Acinetobacter baylyi* ADP1

Beatrice Segurens, Veronique De Berardinis, Marielle Besnard, Jean-Louis Petit, Marcel Salanoubat, Cecile Fischer
UMR8030 Genomique Metabolique DSV, CEAIG/UEVE/CNRS, Evry, France

Active site residues Tyr58, Tyr113 and Ser339 of *Citrobacter freundii* methionine gamma-lyase: The role of the hydroxyl groups in the reaction mechanism

Natalya V. Anufrieva¹, Nikolay G. Faleev², Elena A. Morozova¹, Natalia P. Bazhulina¹, Svetlana V. Revtovich¹, Alexei D. Nikulin³, Tatyana V. Demidkina¹

¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²A.N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, Russia; ³Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

Potential role of cytosolic 5'-nucleotidases in human NAD metabolism

Veronika Livinskaya¹, Arina Afanasyeva², Christian Dolle³, Marc Niere³, Mikhail Khodorkovskiy¹, Mathias Ziegler³, Andrey Nikiforov^{1,4}

¹Institute of Nanobiotechnologies, St. Petersburg State Polytechnical University, St. Petersburg, Russia; ²Department of Biophysics, St. Petersburg State Polytechnical University, St. Petersburg, Russia; ³University of Bergen, Department of Molecular Biology, Bergen, Norway; ⁴Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Promoter methylation profiles of inflammatory response genes is affected by stearoyl-CoA desaturase in 3T3 adipocytes

Malgorzata Malodobra-Mazur, Anna Dziewulska, Pawel Dobrzyn, Katarzyna Kolczynska, Kamil Kozinski, Agnieszka Dobrzyn

Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland

Stearoyl-CoA desaturase expression is upregulated in exercise training-induced left ventricular hypertrophy

Pawel Dobrzyn¹, Aleksandra Pyrkowska¹, Tomasz Bednarski¹, Anna Ochalek¹, Monika Duda², Jozef Langfort³, Agnieszka Dobrzyn¹

¹Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland; ²Postgraduate Medical School, Warsaw, Poland; ³Mossakowski Medical Research Centre, Warsaw, Poland

Pre-steady-state kinetics of substrate recognition and processing by *Citrobacter freundii* methionine gamma-lyase

Aleksandra A. Kuznetsova¹, Nikita A. Kuznetsov¹, Elena A. Morozova², N.V. Anufrieva², Tatyana V. Demidkina², Olga S. Fedorova¹

¹Institute of Chemical Biology and Fundamental Medicine, SB RAS s, Lavrentyev Ave, 8, 630090, Novosibirsk; ²Engelhardt Institute of Molecular Biology, RA S, Vavilov Street, 32, 119991, Moscow, Russian Federation

S250F variant associated with aromatic amino acid decarboxylase deficiency: Molecular defects and intracellular rescue by pyridoxine

Elisa Oppici, Riccardo Montioli, Barbara Cellini, Alessandro Roncador, Mirco Dindo, Carla Borri Voltattorni
Department of Life Sciences and Reproduction, University of Verona, Italy

“Mitochondriology”: New Approaches in Bioenergetics (III-S14)

Proton pumping mechanism of bovine heart cytochrome c oxidase

Shinya Yoshikawa, Minoru Kubo, Satoru Nakashima, Takashi Ogura, Jiyoung Kang, Masaru Tateno, Naomine Yano, Kazumasa Muramoto, Kyoko Shinzawa-Itou, Eiki Yamashita, Tomitake Tsukihara

Department of Life Science, Graduate School of Life Science, University of Hyogo, Japan

Induction of non-selective permeability of the inner membrane of rat liver mitochondria by alpha,omega -dioic acids

M. Dubinin, E. Khoroshavina, A. Vedernikov, S. Adakeeva, V. Samartsev
Mari State University, Yoshkar-Ola, Russia

Effect of lipophilic cations on yeast mitochondria

Tatiana Trendeleva, Renata Zvyagilskaya
A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

The novel mitochondria-targeted antioxidants - derivatives of plant alkaloids berberine and palmatine

K.G. Lyamzaev, Yu.N. Antonenko, L.V. Domnina, O.Yu. Ivanova, A.V. Pustovidko, T.I. Rokitskaya, I. I. Severina, R. A. Simonyan, B. V. Chernyak

A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Functional domain analysis of LetM1 protein: searching for the KHE activity

Shane Austin, Karin Nowikovsky
Department of Internal Medicine I, Medical University of Vienna, Austria

Substrate induced transcriptional upregulation of mitochondrial proteases: the mitochondria response to matrix accumulation of steroidogenic acute regulatory (STAR) protein

Assaf Bahat, Naomi Melamed-Book, Shira Perlberg, Joseph Orly
The Hebrew University of Jerusalem, Jerusalem, Israel

The effect of ionic strength of incubation medium on the cytochrome c release from liver mitochondria under conditions of the pore opening by α,ω -hexadecanedioic acid

M. Dubinin, A. Vedernikov, E. Khoroshavina, S. Adakeeva, V. Samartsev
Mari State University, Yoshkar-Ola, Russia

Agmatine and alpha-methylagmatine: Permeabilizing the outer mitochondrial membrane

Pamela Martinis¹, Silvia Grancara¹, Marcantonio Bragadin², Maria Angelica Grillo³, Enzo Agostinelli⁴, Alex R. Khomutov⁵, Antonio Toninello¹

¹Department of Biomedical Sciences, University of Padua, Padua, Italy; ²Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Venice, Italy; ³Department of Medicine and Experimental Oncology, University of Turin, Turin, Italy; ⁴Department of Biochemical Sciences "A. Rossi Fanelli", Sapienza University of Rome, Rome, Italy; ⁵Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

The mechanism of spermine cycling across the inner mitochondrial membrane and its pathophysiological implications

Silvia Grancara¹, Pamela Martinis¹, Enzo Agostinelli², Giampiero Tempera², Marcantonio Bragadin³, Antonio Toninello¹

¹Department of Biomedical Sciences, University of Padua, Padua, Italy; ²Department of Biochemical Sciences "A. Rossi Fanelli", Sapienza University of Rome, Rome Italy; ³Department of Molecular Sciences and Nanosystems, "Ca' Foscari" University of Venice, Venice Italy

Testicular mitochondrial bioenergetics is altered in pre-diabetes induced by a high-energy diet in rats

Luis Rato¹, Ana I. Duarte², Marco G. Alves¹, Maria S. Santos², Paula I. Moreira², Silvia Socorro¹, Jose E. Cavaco¹, Pedro F. Oliveira¹

¹CICS - UBI - Health Sciences Research Centre, University of Beira Interior, Covilha, Portugal; ²CNC - Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal

Characterization of the secondary mitochondrial dysfunction by multi-scale shifts of plasma analytes

Elizaveta Alekseevskaya, Tatiana Subbotina, Alexander Zhloba

St. Petersburg State I.P. Pavlov Medical University, St. Petersburg, Russia; FSI "Almazov Federal Heart, Blood and Endocrinology Centre", St. Petersburg, Russia

Formation of copper metabolic system in adrenal glands during development and link between adrenal glands and copper metabolism in liver

Yulia A. Vasilenko, Vitaly Yu. Tikhoplav, Ludmila V. Puchkova
St. Petersburg State Polytechnical University, St. Petersburg, Russia

Inherited variation in mtDNA in SHR-mtF344 versus SHR conplastic strains is associated with reduced OXPHOS enzyme levels, insulin resistance, left ventricular hypertrophy and cardiac dysfunction

Michal Pravenec¹, Ludmila Kazdova², Frantisek Kolar, Josef Houstek

¹Institute of Physiology, Academy of Sciences of the Czech Republic; ²Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Paternal inheritance of mitochondrial DNA and modeling human mitochondrial diseases in animals

Vadim Vasilyev, Oksana Kidgotko, Maria Kustova, Mikhail Bass, Vassilina Sokolova

Institute of Experimental Medicine, Russian Academy of Medical Sciences, St. Petersburg, Russia

Functional impact of mitochondrial complex I deficiency in fibroblasts of patients with m.3697G>A mutation in MTND1

Marie Rodinova, Hana Kratochvilova, Zuzana Hajkova, Jana Spacilova, Jana Sladkova, Marketa Tesarova, Hana Hansikova, Jiri Zeman

Department of Pediatrics and Adolescent Medicine, First Faculty of Medicine, Charles University in Prague and General University Hospital in Prague, Prague, Czech Republic

A mitochondrial biosensor for studies of molecularity of rate-limiting step of pore formation by alamethicin, mastoparan and melittin

Dinara Aliverdieva¹, Dmitry Mamaev², Madina Efendieva³, Leona Snezhkova⁴

¹Department of Biotechnology, Caspian Institute of Biological Resources, Russian Academy of Sciences, Makhachkala, Russia; ²A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ³Dagestan State Medical

Academy, Makhachkala, Russia; ⁴Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Novel mouse model with decreased levels of somatic cytochrome c in selected cell lineages

Evgeny S. Shilov¹, Ilgiz A. Mufazalov², Yury V. Shebzukhov³, Marina S. Drutskaya^{1,2}, Sergey A. Nedospasov^{1,2,3}

¹Lomonosov Moscow State University, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ³Deutsches Rheuma-Forschungszentrum Berlin, Germany

Developmental changes of gene expression of ATP synthase subunits and assembly factors in human fetal liver and muscle tissues

Martina Hulkova, Jana Spacilova, Martin Magner, Tomas Honzik, Hana Hansikova, Jiri Zeman

Department of Pediatrics and Adolescent Medicine, First Faculty of Medicine, Charles University in Prague and General University Hospital in Prague, Czech Republic

Sex-specific mtDNA-protein interactions in a system of obligatory biparental mtDNA inheritance and the exceptional role of perinuclear mitochondria

Eleni Kyriakou¹, Lara Kravariti¹, Eleftherios Zouros², George C. Rodakis¹

¹Department of Biochemistry and Molecular Biology, National and Kapodistrian University of Athens (NKUA), Athens, Greece; ²Department of Biology, University of Crete (UC), Heraklion, Crete, Greece

Mitochondria and exposure to Dibenzo[*a,h*]p-terylene: Is permeability transition a trigger for autophagy in the lung?

Filipe Duarte¹, Antonio Moreno², Carlos Palmeira^{1,2}

¹Center for Neurosciences and Cell Biology (CNC), University of Coimbra, Coimbra, Portugal; ²Department of Life Sciences, Faculty of Sciences and Technology, University of Coimbra, Coimbra, Portugal

The interplay between the inner membrane formation MINOS complex and MIA pathway responsible for protein transport

Paulina Kwiatkowska, Agnieszka Chacinska

International Institute of Molecular and Cell Biology, Warsaw, Poland

Paxilline attenuates the Cd(II)-induced oxidative damage and cell death

Nils-Erik L. Saris¹, Elena A. Belyaeva²

¹Department of Food and Environmental Sciences, Viikki Biocenter 1, University of Helsinki, Helsinki, Finland; ²Laboratory of Comparative Biochemistry of Inorganic Ions, I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St.-Petersburg, Russia

Expression of ascidian alternative NADH dehydrogenase in *Drosophila*

Dmytro V. Gospodaryov, Howard T. Jacobs

Institute of Biomedical Technology, University of Tampere, Finland

Study of endogenous fluorescence of mitochondria by fluorescence techniques

Maria Marekova, Vladimira Tomeckova, Miroslava Stefanisnova, Juraj Guzy

Department of Medical and Clinical Biochemistry P.J. Safarik University in Kosice, Faculty of Medicine; Kosice, Slovakia

Studies on targeting NADH dehydrogenase ubiquinone Fe-S 8 (NDUFS8) to mitochondria and rescuing mitochondrial complex I deficiency by HIV-transactivator of transcription (TAT)

Mou-Chieh Kao, Bo-Yu Lin

Institute of Molecular Medicine, National Tsing-Hua University, Hsinchu, Taiwan

Structural changes required for temperature adaptation are mediated by a mitochondrial H2O2 signal in *Drosophila melanogaster*

Ashwin Sriram¹, Nina Gubina¹, Victoria Ayala², Venkatesh Mallikarjun¹, Alba Naudi², Filippo Scialo¹, Reinald Pamplona², Alberto Sanz¹

¹Institute of Biomedical Technology and BioMediTech, University of Tampere and Tampere University Hospital/Tampere, Finland; ²Department of Experimental Medicine, University of Lleida-IRBLleida, Lleida, Spain

Effect of butylrhodamine and dodecylrhodamine on animal mitochondria

Anton Rogov, Renata Zvyagilskaya

A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Therapeutic action of the mitochondria-targeted antioxidant SkQ1 on retinopathy in OXYS rats linked with improvement of the alpha-crystallins expression

Natalia A. Muraleva, Oyuna S. Kozhevnikova, Natalia A. Stefanova

Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

The cytochrome c forms a complex with cardiolipin in a form of hydrophobic nanospheres

Yury Vladimirov¹, A.V. Alekseev¹, V.V. Volkov², V.E. Remenschikov², E.V. Proskurnina¹
¹Lomonosov Moscow State University, Moscow, Russia; ²Shubnikov Institute of Crystallography, Russian Academy of Science, Moscow, Russia

Cyt-CL complex: Peroxidase activity and role in lipid peroxidation

Elena V. Proskurnina, A. V. Alekseev, E. M. Demin, D. Yu. Izmailov, Yu. A. Vladimirov
Lomonosov Moscow State University, Faculty of Basic Medicine, Moscow, Russia

Inhibition of mitochondrial glycerol-3-phosphate dehydrogenase by alpha-tocopheryl succinate

Hana Rauchova, Martina Vokurkova, Zdenek Drahotka
Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Bioenergetics in the cell line derived from Hurtle carcinomas

Matina Vokurkova, Hana Rauchova, Zdenek Drahotka
Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Expression patterns of ATP-synthase subunits in liver and muscle during rat prenatal and early postnatal development

Jana Spacilova, Martina Hulkova, Hana Hansikova, Jiri Zeman
Department of Pediatrics and Adolescent Medicine, First Faculty of Medicine, Charles University in Prague and General University Hospital in Prague, Prague, Czech Republic

Voltammetry of the cytochrome c-cardiolipin complex in the immobilized state. Implications in apoptosis initiation

Giulia Di Rocco¹, Antonio Ranieri¹, Carlo Augusto Bortolotti¹, Marco Borsari², Gianantonio Battistuzzi², Marco Sola¹
¹Department of Life Sciences, University of Modena and Reggio Emilia, Italy; ²Department of Chemical and Geological Sciences University of Modena and Reggio Emilia, Italy

Mitochondrial Laccase ATPase

Jana Cesnekova, Jiri Zeman, Lukas Stiburek
First Faculty of Medicine, Charles University and General University Hospital in Prague, Prague, Czech Republic

Inhibiting the activity of mitochondrial ATP synthase with Oligomycin-A suppresses motility and "in vitro" capacitation achievement of boar spermatozoa but does not affect the sperm energy levels

Marc Yeste¹, Josep M. Fernandez-Novell², Laura Ramio-Lluch¹, Efrén Estrada¹, Jose A. Cebrían Perez³, Teresa Muino-Blanco³, Ilona I. Concha⁴, Alfredo Ramirez⁴, Joan E. Rodriguez-Gil¹
¹Department of Animal Medicine and Surgery, Autonomous University of Barcelona; ²Cerdanyola del Valles, Spain; ³Department of Biochemistry and Molecular Biology, University of Barcelona; ⁴Barcelona, Spain; ⁵Department of Biochemistry and Molecular and Cell Biology, University of Zaragoza; ⁶Zaragoza, Spain; ⁷Institute of Biochemistry and Microbiology, Austral University of Chile; ⁸Valdivia, Chile

Clusterin action on mitochondrial dynamics in insulin-secreting beta-cells

In-Sun Park¹, Yoeng-ju Kwon¹, Han-Sol Park², Min-seok Cho¹, Ja-Kyoeng Lee¹, Pyung-Lim Han³
¹Inha University, Incheon, Korea; ²Ulsan University, Seoul Korea; ³Ehwa University, Seoul, Korea

Opening of mitochondrial megachannel by iron: Competition of iron with calcium more important than oxidative stress

Jan Platenik, Juraj Gall, Jan Skrha, Jr., Richard Buchal, Eva Sedlackova, Karina Verebova
Institute of Medical Biochemistry and Laboratory Diagnostics, First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic

Biochemistry of Neoplastic Transformations (IV-S17)

Lysozyme dependent apoptosis induced in Ehrlich ascites carcinoma cells

Hayk Harutyunyan, Mariam Mikaelyan, Gayane Poghosyan, Vardan Gasparyan
H. Buniatian Institute of Biochemistry of NAS RA, Yerevan, Armenia

Methylation of PTEN gene promoter and PTENP1 pseudogene in endometrial and ovarian tumors

Tatiana Kovalenko¹, Anna Sorokina², Ludmila Ozoliny³, Lev Patrushev¹
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Research Institute of Physical and Chemical Medicine, Moscow, Russia; ³N.I. Pirogov Russian National Research Medical University, Moscow, Russia

Alpha-fetoprotein: 50-Year anniversary as cancer biomarker

Alexander Terentiev, Nurbubu Moldogazieva, Innokenty Mokhosoev, Ludmila Butba
Department of Biochemistry, N.I. Pirogov Russian National Research Medical University, Moscow, Russia

Cancer associated fibroblasts and M2 polarized macrophages synergize during prostate carcinoma progression

Giuseppina Comito¹, Elisa Giannoni¹, Coral Pons Segura¹, Pedro Barcellos-de-Souza¹, Maria Rosaria Raspollini², Gianna Baroni², Michele Lanciotti², Sergio Serni³, Paola Chiarugi¹
¹Department of Experimental and Clinical Biomedical Sciences, University of Florence, Italy; ²Histology and Molecular Diagnostic University Careggi Hospital, University of Florence, Italy; ³Department of Urology Careggi Hospital, University of Florence, Italy

Implication of alpha-5/beta-1 integrin in invasion of human breast carcinoma cells: A role for MMP-2 collagenase

Albert Berman, Nadezhda Kozlova, Galina Morozevich, Natalia Ushakova, Marina Preobrazhenskaya
Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia

Characterization of oncogenic properties of gene encoding chitinase 3-like 1 protein (CHI3L1)

Olena Balynska¹, Vladimir Baklaushchev²
¹Institute of Molecular Biology and Genetics, Kyiv, Ukraine; ²V.P. Serbsky National Research Centre for Social and Forensic Psychiatry, RMH, Moscow, Russia

PDK1 regulates epithelial cell migration through MRCK

Paolo Armando Gagliardi, Laura di Blasio, Alberto Puliafito, Giorgio Seano, Federica Chianale, Roberto Sessa, Federico Bussolino, Luca Primo
Dept of Oncological Science, Institute for Cancer Research and Treatment, University of Turin, Candiolo (TO), Italy

The acute cytotoxicity and lethal concentration (LC₅₀) of Agaricus sylvaticus mushroom through hemolytic activity on human erythrocyte

Maria Rita Carvalho Garbi Novaes, Joice Vinhal Costa Orsine, Maria de Fatima Menezes Almeida Santos
University of Brasilia, Brazil

Cytotoxicity of A. sylvaticus mushroom in non-tumor cells (NIH/3T3) and tumor (OSCC-3) using tetrazolium (MTT) assay

Maria Rita Carvalho Garbi Novaes, Joice Vinhal Costa Orsine, Renata Carvalho da Silva, Luissa Marques Brito, Maria de Fatima Santos Almeida
University of Brasilia, Brazil

Novel molecular mechanism of Akt-dependent down-regulation of Pcd4 tumor suppressor in lung cancer cells

Polina Vikhreva, Mikhail Shepelev, Elena Korobko, Igor Korobko
Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

GHRH-mediated transactivation of EGFR in human androgen-independent prostate cancer cells

Laura Munoz-Moreno¹, Maria Isabel Arenas², Juan Carlos Prieto¹, Maria Jose Carmena¹, Andrew V. Schally³, Ana Maria Bajo¹
¹Department of Physiology, Biochemistry and Molecular Biology, Faculty of Medicine and Health Sciences, University of Alcala, Alcala de Henares, Spain; ²Department of Biomedical Sciences I, University of Alcala, Alcala de Henares, Spain; ³Veterans Administration Medical Center and Departments of Pathology and Medicine, Division of Oncology and Hematology, University of Miami Miller School of Medicine and South Florida Veterans Affairs Foundation for Research and Education, Miami, USA

Relation of eNOS/NOS3 genotypes and oxidative stress markers in larynx cancer patients

Ufuk Cakatay¹, Nazli Ezgi Ozkan², Karolin Yanar¹, Seval Aydin¹, Saime Turan², Gurbet Korkmaz², Canan Cacina², Kadircan Karatoprak¹, Aysegul Verim³, Ilhan Yaylim²
¹Istanbul University, Cerrahpasa Faculty of Medicine, Department of Medical Biochemistry, Istanbul, Turkey; ²Istanbul University, Institute of Experimental Medicine, Department of Molecular Medicine, Istanbul, Turkey; ³Department of Otorhinolaryngology/Head and Neck Surgery, Haydarpasa Numune Educational and Research Hospital, Istanbul, Turkey

p53 and NFkB in CXCR5 gene regulation in human breast carcinoma cells

Nikita Mitkin¹, Christina Hook¹, Anton Schwartz¹, Dmitry Kochetkov², Julia Kravchenko², Marina Afanasieva¹, Dmitry Kuprash¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Laboratory of Immunoregulation, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Laboratory Regulation of Genome Transcription, Moscow, Russia

Involvement of p53 in the antitumoral effect of VIP in human clear cell renal cell carcinoma

Maria Jose Carmena Sierra, Eva Vacas Oliva, Laura Munoz-Moreno, Ana Maria Bajo Chueca, Manuel Sanchez Chapado, Juan Carlos Prieto Villapun
Department of Physiology, Biochemistry and Molecular Biology, University of Alcalá, Alcalá de Henares-Madrid, Spain

Paraoxonase 1 activity in patients with premalignant lesion of the cervix

Marija Grdic Rajkovic¹, Drazan Butorac², Ivana Celap³, Sanja Kackov⁴, Tihana Zanic Grubisic¹
¹*Department of Medical Biochemistry and Hematology, Faculty of Pharmacy and Biochemistry, University of Zagreb, Zagreb, Croatia;* ²*Clinic of Gynecology and Obstetrics, Clinical Hospital Center Sestre milosrdnice, Zagreb, Croatia;* ³*Clinical Institute of Chemistry, Clinical Hospital Center Sestre milosrdnice, Zagreb, Croatia;* ⁴*Medical biochemistry laboratory, Polyclinic Bonifarm, Zagreb, Croatia*

Tumour suppressor merlin regulates thrombospondin 1 signalling via CD47

Magdalena Barczyk^{1,2}, Lu Zhou^{1,2}, Neil Avent¹, Oliver Hanemann^{1,2}
1Plymouth University, UK; 2Peninsula Medical School, UK

Glucose metabolism and androgen responsiveness of prostate cancer cells

Catia Vaz, Marco Alves, Ricardo Marques, Pedro Oliveira, Claudio Maia, Silvia Socorro
CICS-UBI, Health Sciences Research Centre, Covilha, Portugal

Omega-3 PUFA modulate p-glicoprotein (Pgp) activity altering lipid raft cholesterol

Paola Antonia Corsetto¹, Chiara Riganti², Gigliola Montorfano¹, Giada Gelsomino², Andrea Cremona¹, Ivana Campia², Dario Ghigo², Amalia Bosia², Angela Maria Rizzo¹
¹*Dipartimento di Scienze Farmacologiche e Biomolecolari, Università degli Studi di Milano, Italy;* ²*Dipartimento di Oncologia, Università di Torino, Italy*

Study on the expression pattern of histone demethylases in HPV-induced cervical lesions

Iulia V. Iancu¹, Anca Botezatu¹, Adriana Plesa¹, Irina Huica¹, Demetra Socolov², Gabriela Anton¹
¹*"Stefan S. Nicolau" Institute of Virology, Bucharest, Romania;* ²*"Gr. T. Popa" University of Medicine, Iassy, Romania*

Role of ZNF224 in drug-induced apoptosis in Chronic myelogenous leukemia

Chiara Palladino¹, Giorgia Montano, Elena Cesaro and Paola Costanzo¹, Karina Vidovic and Urban Gullberg²
¹*University of Naples Federico II, Italy;* ²*Lund University, Sweden*

Metformin inhibits senescence associated secretory phenotype

Gerardo Ferbeyre, Olga Moiseeva
Universite de Montreal, Montreal, QC, Canada

Overexpression of Rukl/CIN85 in breast adenocarcinoma MCF-7 cells results in increased chemoresistance

Ganna Pasichnyk, Nadia Byts, Anatoly Samoylenko, Olga Povoroziuk, Olga Ponomarenko, Dmytro Petukhov, Denys Gerashchenko, Andrii Bazalii, Lyudmyla Drobot
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

New insights into the mechanism of action of the glycerophosphoinositols: Identification of the tyrosine phosphatase Shp1 as a direct target

Alessia Varone, Stefania Mariggio, Antonio Varriale, Sabato D'Auria, Giovanni Nicolosi, Piero Pucci, Daniela Corda
Institute of Protein Biochemistry, CNR, Naples, Italy

Molecular interactions of EGFR and integrin beta 1 in glioblastoma cells correlate with Akt mediated radioresistance

Tamas Lajtos¹, Miklos Petras¹, Burt G. Feuerstein², Janos Szollosi¹, Gyorgy Vereb¹
¹*University of Debrecen, Medical and Health Science Center, Department of Biophysics and Cell Biology, Debrecen, Hungary;* ²*Barrow Neurological Institute, St. Joseph's Hospital and Medical Center, USA*

TBARS level, quantitative expression of NF-kB and MMP-9 activity in colorectal cancer

Andrej Veljkovic, Gordana Kocic, Dusica Pavlovic, Tatjana Cvetkovic, Ivana Stojanovic, Sokolovic, Tatjana Jevtovic, Jelena Basic, Milena Marinkovic, Branka Dusan Djordjevic
Department for Biochemistry, Medical faculty Nis, Serbia

Cx43 participates in the pre-selection of metastatic progenitors during prostate cancer metastatic cascade in vitro

Damian Ryszawy¹, Michal Sarna², Katarzyna Szpak¹, Monika Rak¹, Marta Michalik¹, Maciej Siedlar³, Ewa Zuba-Surma¹, Wlodzimierz Korohoda¹, Zbigniew Madeja¹, Jaroslaw Czyz¹
¹*Jagiellonian University, Faculty of Biophysics, Biochemistry and Biotechnology, Department of Cell Biology, Krakow, Poland;* ²*AGH University of Science and Technology, Department of Medical Physics and Biophysics, Cracow, Poland;* ³*Jagiellonian University, Polish-American Institute of Paediatrics, Department of Clinical Immunology, Krakow, Poland*

Transgenic rats overexpressing regucalcin display lower-susceptibility to develop DMBA-induced mammary gland tumors

Ricardo Marques¹, Catia V Vaz¹, Claudio J Maia¹, Adelina Gama², Gilberto Alves¹, Fernando Schmitt³, Cecilia R Santos¹, Silvia Socorro¹
¹*Health Sciences Research Center, University of Beira Interior (CICS-UBI), Covilha, Portugal;* ²*Department of Veterinary Sciences, Animal and Veterinary Science Research Center, University of Trás-os-Montes and Alto Douro (CECAV-UTAD), Vila Real, Portugal;* ³*Institute of Molecular Pathology and Immunology, University of Porto (IPATIMUP), Porto, Portugal;* *Medical Faculty of Porto University (MFUP), Porto, Portugal*

Differential expression of glycolysis pathway genes in renal, lung and breast cancer

A.V. Kudryavtseva, A.V. Snezhkina, A.A. Dmitriev, G.S. Krasnov, A.F. Sadritdinova, N.V. Melnikova, O. A. Stepanov, L. A. Uroshlev, V. A. Lakunina, M. V. Darii, N. Yu. Oparina
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Genetic variations associated with coronary restenosis in Kazakh population

Akbota Aitkulova¹, Pavel Tarlykov¹, Aliya Dzholdasbekova², Dana Taizhanova³, Raushan Karabaeva⁴, Elena Zholdybaeva¹
¹*National Center for Biotechnology, Astana, Kazakhstan;* ²*National Scientific Medical Research Center, Astana, Kazakhstan;* ³*Karaganda State Medical University, Karaganda, Kazakhstan;* ⁴*Medical Center of President, Kazakhstan*

Understanding of transmembrane prostate androgen-induced protein (PMEPA1) role in stomach cancer by immunochemical approach

Mikhail Karbyshev^{1,2,3}, Evgeniya S. Grigorieva¹, Viktor V. Volkomarov¹, Elisabeth Kremmer⁴, Yoon Pin Lim⁵, Anton A. Epanchintsev², Oleg S. Stronin², Nadezda V. Cherdyntseva¹
¹*Cancer Research Institute, Siberian Branch of Russian Academy of Medical Sciences, Tomsk, Russia;* ²*Federal State Unitary Company "Microgen Scientific Industrial Company for Immunobiologic Medicines" Ministry of Healthcare, Branch in Tomsk SIC "Virion", Tomsk, Russia;* ³*International Biotechnological Center "Generium", Moscow, Russia;* ⁴*Helmholtz Zentrum Munchen, German Research Center for Environmental Health Institute of Molecular Immunology, Muenchen, Germany;* ⁵*National University of Singapore, Singapore, Singapore*

A metastatic cell line permanently silenced for iNOS (SW620-I12) resembles the primary tumor in many important phenotypes: The importance of nitric oxide in the progression of human colon carcinoma

Tatiana Alvarez Rinaldi¹, Fernando Toshio Ogata¹, Tuula Salo³, Hugo Pequeno Monteiro¹
¹*UNIFESP, SP, Brazil;* ³*University of Oulu, Oulu, Finland*

Dioxin receptor modulates fibroblast adhesion and migration through Cbp-Csk-Src and fibronectin combined pathways to control Beta1 integrin activation

Javier Rey-Barroso¹, Jose Carvajal-Gonzalez¹, Georgina Colo², Angeles Pardo², Joaquin Teixido², Pedro Fernandez-Salguero¹
¹*University of Extremadura, Badajoz, Spain;* ²*Biological Research Centre (CIB, CSIC), Madrid, Spain*

A chrysin derivative suppresses EGF-induced anchorage-independent growth of mouse epidermal JB6 P+ cells by inhibiting Cdk5

Bo Yeon Kim¹, Haidan Liu², Kangdong Liu³, Hee Gu Lee⁴, Suk Ran Yoon^{4,5}, In Ja Ryoo⁴, Nak Kyun Soung⁴, Zigang Dong⁵
¹*Korea Research Institute of Bioscience & Biotechnology, Ochang, Korea;* ²*The Second Xiangya Hospital, Central South University, Changsha, Hunan, China;* ³*Basic Medical College, Zhengzhou University, ZhengZhou, China;* ⁴*Korea Research Institute of Bioscience and Biotechnology, South Korea;* ⁵*The Hormel Institute, University of Minnesota, USA*

Acceleration of tumor growth by nitric oxide production in macrophages after radiotherapy

Geun-Hee Lee, Mi-Hee Lee, Young Ae Joe, Eun-Yi Moon
Department of Bioscience and Biotechnology, Sejong University, Seoul, Korea; *Cancer Research Institute and Department of Medical Life Science, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea*

Subchronic treatment with ferric nitrilotriacetate (FeNTA) induces AP-1 activation and cyclin D1 overexpression: possible mechanisms of renal carcinogenicity

F.A. Aguilar-Alonso¹, J.D. Solano¹, Chabetty Vargas-Olvera¹, C. M. Martinez-Martinez², F. Montalvo Munoz¹, T. O. Pariente-Perez¹
¹*Departamento de Biología, Facultad de Química, Edificio F, Laboratorio 120, Universidad Nacional Autónoma de México, México, D.F., México;* ²*Departamento de Biología Celular, Escuela Médico Militar, Universidad del Ejército y Fuerza Aérea, México*

Effects of nuclear receptor HNF4 α repression in human pancreatic ductal adenocarcinoma cells

Mikhail Chesnokov, Artem Gorev, Natalia Lazarevich

N.N. Blokhin Russian Cancer Research Center, Russian Academy of Medical Sciences, Moscow, Russia

The phosphatase DUSP1 induces apoptosis in prostate cancer cells by inhibiting both NF- κ B and p38 MAPK signalling pathways

Beatriz Gil-Araujo¹, Maria Gutierrez-Salmeron¹, Antonio Chilochech², Marina Lasa¹

¹Departamento de Bioquímica, Universidad Autónoma de Madrid, Instituto de Investigaciones Biomedicas Alberto Sols

CSIC-UAM, Madrid, Spain; ²Unidad de Bioquímica y Biología Molecular, Departamento de Biología de Sistemas, Universidad de Alcalá, Alcalá de Henares, Spain

What myosin VI does in the neuromuscular junction, sarcoplasmic reticulum and muscle nuclei?

Justyna Karolczak¹, Magdalena Sobczak¹, Lukasz Majewski¹, Marine Yeghiazaryan², Anna Jakubiec-Puka¹, Elisabeth

Ehler³, Urszula Slawinska², Grzegorz M. Wilczynski², Grzegorz M. Wilczynski², Maria Jolanta Redowicz¹

¹Department of Biochemistry, Nencki Institute of Experimental Biology, Poland; ²Department of Neurophysiology, Nencki Institute of Experimental Biology, Poland; ³Cardiovascular Division, King's College London, London, UK

Targeting ovarian cancer at the molecular mechanisms level of the treatment efficiency increase

Maryna Knyazyeva¹, Alexandra Prokopyuk²

¹V.N. Karazin Kharkov National University, Ukraine; ²Kharkov Regional Clinical Oncology Centre, Ukraine

Functional analysis of FOXO3a-p53 interaction in Mantle Cell Lymphoma cells

Margalida Serra-Sitjar, Antonia Obrador-Hevia, Priam Villalonga, Silvia Fernandez de Mattos

Universitat de les Illes Balears, Palma (Illes Balears), Spain

Targeting MyosinVa as a strategy to prevent cellular export of methotrexate in melanoma

Maria Piedad Fernandez-Perez¹, Maria F. Montenegro¹, Magali Saez-Ayala¹, Luis Sanchez-del-Campo², Antonio Pinero-Madrona³, Juan Cabezas-Herrera⁴, Jose Neptuno Rodriguez-Lopez¹

¹Department of Biochemistry and Molecular Biology A, School of Biology, University of Murcia, Murcia, Spain; ²Ludwig Institute for Cancer Research, Nuffield Department of Clinical Medicine, University of Oxford, Headington, Oxford, UK;

³Department of Surgery, University Hospital Virgen de la Arrixaca, Instituto Murciano de Investigación Biomedica, Murcia, Spain; ⁴Translational Cancer Research Group, University Hospital Virgen de la Arrixaca, Instituto Murciano de Investigación Biomedica, Murcia, Spain

⁵Translational Cancer Research Group, University Hospital Virgen de la Arrixaca, Instituto Murciano de Investigación Biomedica, Murcia, Spain

Prognostic significance of circulating tumor cells in castration resistant prostate cancer

Tomas Zima¹, Veronika Mikulova¹, Marketa Jancikova¹, Otakar Capoun², Viktor Soukup², Hana Honova³, Milada

Sirova⁴

¹Institute of Medical Biochemistry and Laboratory Diagnostics, General University Hospital in Prague and First Faculty of Medicine, Charles University in Prague; ²Department of Urology, General University Hospital in Prague and First Faculty of Medicine, Charles University in Prague; ³Department of Oncology, General University Hospital in Prague and First Faculty of Medicine, Charles University in Prague; ⁴Laboratory of Tumor Immunology, Institute of Microbiology, Academy of Sciences of the Czech Republic

⁵Department of Microbiology, Academy of Sciences of the Czech Republic

^{v600E}BRAF decreases E-cadherin expression through a Snail-dependent mechanism in thyroid cancer cells

Pablo Baquero¹, Eva Jimenez-Mora¹, Pilar Lopez-Ruiz¹, Marina Lasa², Antonio Chilochech¹

¹Departamento Biología de Sistemas, Unidad de Bioquímica y Biología Molecular, Facultad de Medicina, Universidad de Alcalá, Madrid, Spain; ²Departamento Bioquímica, Instituto de investigaciones Biomedicas "Alberto Sols", Univesidad Autónoma de Madrid-CSIC, Madrid

³Departamento Biología de Sistemas, Unidad de Bioquímica y Biología Molecular, Facultad de Medicina, Universidad de Alcalá, Madrid, Spain; ⁴Departamento Bioquímica, Instituto de investigaciones Biomedicas "Alberto Sols", Univesidad Autónoma de Madrid-CSIC, Madrid

⁵Departamento Biología de Sistemas, Unidad de Bioquímica y Biología Molecular, Facultad de Medicina, Universidad de Alcalá, Madrid, Spain; ⁶Departamento Bioquímica, Instituto de investigaciones Biomedicas "Alberto Sols", Univesidad Autónoma de Madrid-CSIC, Madrid

The tumorigenic role of Low Molecular Weight Phosphotyrosine-Phosphatase (LMW-PTP)

Giovanni Raugel¹, Duccio Cavalieri², Chiara Marconi¹, Maria Letizia Taddei¹, Irene Stefanini², Laura Pietrovito¹

¹Dip. Scienze Biomediche Sperimentali e Cliniche, University of Florence, Italy; ²Dipartimento di Neuroscienze, Psicologia, Area del Farmaco e Salute del Bambino (NEUROFARBA), Italy

GRP78 a mediator of intrinsic and extrinsic tumor resistance

Bojana Borjan, Gerold Untergasser, Gunther Gastl, Johann Kern

Medical University Innsbruck, Innsbruck, Austria

Enhanced levels of asymmetric dimethylarginine in serum of myelodysplastic patients overloaded with iron

Jiri Suttmar, Kristyna Pimkova, Leona Chrastinova, Jaroslav Cermak, Jan Dyr

Institute of Hematology and Blood Transfusion, Prague, Czech Republic



Caffeine enhances cisplatin efficacy by cell cycle modulation

Shinji Miwa, Robert M. Hoffman

AntiCancer Inc., San Diego, CA, USA

Intracellular prostaglandin E2 behaves as a pro-metastatic factor in human prostate cancer

Antonio Madrigal-Martinez, Javier Lucio-Cazana, Ana Belen Fernandez-Martinez

Department of Physiology, Alcalá University, Spain

Methioninase-induced S/G2-phase-trapping indicated by color-coded imaging for subsequent effective chemotherapy

Shuya Yano, Robert M. Hoffman

AntiCancer Inc., San Diego, CA, USA

Poly (adenosine diphosphate-ribose) polymerase-I Val762Ala polymorphism in Turkish gastrointestinal cancer patients

Handan Tuncel¹, Fumio Shimamoto², Ayse Cirakoglu³, Sibel Erdamar⁴, Mehmet Ali Korpinar¹

¹Istanbul University, Cerrahpasa Medical Faculty, Biophysics, Istanbul, Turkey; ²Prefectural University of Hiroshima, Hiroshima, Japan; ³Istanbul University, Cerrahpasa Medical Faculty, Medical Biology, Istanbul, Turkey; ⁴Istanbul University, Cerrahpasa Medical Faculty, Pathology, Istanbul, Turkey

⁵Istanbul University, Cerrahpasa Medical Faculty, Pathology, Istanbul, Turkey

Expression of GRHL genes in human non-melanoma skin cancers

Agnieszka Kikulska, Tomasz Wilanowski

Nencki Institute of Experimental Biology, Warsaw, Poland

Mechanisms of coupling of the cancerogenesis processes and metabolism disorders under neoplastic transformation

E. I. Erlykina¹, L. M. Obuchova¹, T. N. Gorshkova¹, A. V. Alyasova¹, V. G. Pimenov², I. I. Evdokimov²

¹Nizhny Novgorod State Medical Academy, Nizhny Novgorod, Russia; ²G. G. Devyatikh Institute of Chemistry of High-Purity Substances, Russian Academy of Sciences, Nizhny Novgorod, Russia

Regulation of hTERT transcription by the transcription factor KLF2 and DNA methylation in human T cells

Msatata Nakamura, Toshifumi Hara

Tokyo Medical and Dental University, Tokyo, Japan

The role of Poly(C)-Binding Protein 2 in human gliomas growth

Xiangbin Ruan, Liyuan Zhu, Wei Han, Boqin Qiang

Institute of Basic Medical Science, Chinese Academy of Medical Science, Beijing, China

The association of TGFBR3 gene polymorphisms with endometrial cancer

Piotr K. Zakrzewski¹, Ewa Forma¹, Anna Parzydło¹, Magdalena Brys¹, Andrzej Semczuk², Tomasz Rechberger², Wanda M. Krajewska¹

¹Department of Cytochemistry, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland;

²IInd Department of Gynecology, Lublin Medical University, Lublin, Poland

SHP-1 regulates gene expression through changes in epigenetic modifications in prostate cancer cell lines

Santiago Roperó, Ana Gonzalez-Corpas, Nadia Ashour, Raul Alelu, Begona Colas

Department of Systems Biology, University of Alcalá de Henares, Alcalá de Henares, Madrid, Spain

Protein tyrosine phosphatase SHP-1 regulates prostate cancer cell migration

Ariel E. Cariaga-Martinez, Javier Rodriguez-Ubrea, Sonia Suarez-Arias, M. Jesus Orea, Santiago Roperó, Pilar Lopez-Ruiz, Begona Colas

Department of System Biology, Biochemistry and Molecular Biology, University of Alcalá, Alcalá de Henares, Madrid, Spain

Role of Opisthorchis felineus in the induction of bile duct cancer in experimental opisthorchiasis

Galina Maksimova¹, N. A. Zhukova², E. V. Kashina¹, M. N. Lvova¹, T. G. Tolstikova², A. V. Katokhin¹, V. A.

Mordvinov¹

¹Institute of Cytology and Genetics, Siberian Branch of Russia Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk Institute of Organic Chemistry, Siberian Branch of Russia Academy of Sciences, Novosibirsk, Russia

Genetic differences in nuclear receptors Car and AhR activation and expression in different mouse strains after o-aminoazotoluene application

Nina Baginskaya, E. V. Kashina, M. Yu. Shamanina, S. I. Ilnitskaya, V. A. Mordvinov

Institute of Cytology and Genetics, Siberian Branch of Russia Academy of Sciences, Novosibirsk, Russia

Regulation of apoptosome apparatus in non-small cell lung cancer cells and tissues

Erika Moravcikova¹, Evzen Krepela¹, Jan Prochazka¹, Jan Cermak², Kamila Benkova³
¹Laboratories of Molecular and Cell Biology, Department of Pneumology and Thoracic Surgery, Hospital Bulovka and Third Faculty of Medicine, Charles University in Prague, Czech Republic; ²Division of Surgery, Department of Pneumology and Thoracic Surgery, Hospital Bulovka and Third Faculty of Medicine, Charles University in Prague, Czech Republic; ³Department of Pathology, Hospital Bulovka, Prague, Czech Republic

Expression of Nogo-A and Nogo-A/B in invasive ductal breast carcinoma and non-small cell lung cancer

Piotr Dziegielel¹, Bartosz Pula¹, Aleksandra Jethon¹, Mateusz Olbromski¹, Aleksandra Ambicka², Bozena Werynska³, Maciej Majchrzak³, Beata Muszczyńska-Bernhard³, Janusz Rys², Renata Jankowska³, Marzena Podhorska-Okolow¹
¹Department of Histology and Embryology, Medical University, Wrocław, Poland; ²Department of Tumor Pathology Centre of Oncology Maria Skłodowska-Curie Memorial Institute, Cracow Branch, Cracow, Poland; ³Department of Pulmonology and Pulmonary Tumors, Medical University, Wrocław, Poland

Regulation of Par-4 rat vs. human by casein kinase 2 in prostate cancer cells

Aurelie De Thonel
INSERM U866, Dijon, France

Role of WT1-ZNF224 interaction in the expression of the tumor suppressor interferon regulatory factor 8 in leukemia cells

Giorgia Montano¹, Karina Vidovic², Chiara Palladino¹, Elena Cesaro¹, Paola Costanzo¹, Urban Gullberg²
¹Department of Molecular Medicine and Medical Biotechnologies, University of Naples Federico II, Napoli, Italy; ²Division of Hematology and Transfusion Medicine, Lund University, Lund, Sweden

Effect of Vascular endothelial Growth Factor (VEGF) on ADAMTS1 Gene Expression in Hepatoma Cells

Kubilay Tugrul Gunerhan, Hatice Yildirim, Fatma Bahar Sunay, Sumeyye Aydogan Turkoglu, Feray Kockar
Balikesir University Faculty of Science and Literature, Department of Biology, Balikesir, Turkey

Superoxide-dependent uptake of vitamin C in human glioma cells

Francisco Nualart, Federico Rodriguez, Katterine Salazar, Nery Jara, Maria Garcia-Robles, Fernando Perez, Luciano Ferrada, Fernando Martinez
Cell Biology Department, Center for Advanced Microscopy CMA BIO BIO, Concepcion University, Chile

RAG1/2 recombinase introduces lesions at cryptic recombination signal sequences that drive lymphomagenesis

Martina Mijuskovic, Yi-Fan Chou, Susanna Lewis, Olga Shestova, David B. Roth
Department of Pathology and Laboratory Medicine and Abramson Cancer Research Centre, University of Pennsylvania, USA

Biochemistry of Neurodegeneration (IV-S19)

Mitochondrial abnormalities as a mechanistic link in diabetes and Alzheimer disease interaction

Cristina Carvalho^{1,2}, Nuno Machado¹, Maria S. Santos^{1,2}, Catarina R. Oliveira^{1,3}, Paula I. Moreira^{2,4}
¹Center for Neuroscience and Cell Biology, University of Coimbra, Portugal; ²Department of Life Sciences, Faculty of Sciences and Technology, University of Coimbra, Portugal; ³Laboratory of Biochemistry, Faculty of Medicine, University of Coimbra, Portugal; ⁴Laboratory of Physiology – Faculty of Medicine, University of Coimbra, Coimbra, Portugal

Interaction of Aβ40 and Aβ42 peptides with dipeptidyl peptidase IV

S.G. Sharoyan¹, A.A. Antonyan¹, N.M. Movsisyan¹, N.L. Hovnanyan², H.A. Harutyunyan¹, S.S. Mardanyan¹, K.O. Hovnanyan²
¹H. Buniatyan Institute of Biochemistry, Armenian National Academy of Sciences, Yerevan, Armenia; ²Institute of Molecular Biology, Armenian National Academy of Sciences, Yerevan, Armenia

Sex differences in striatal dopamine receptors in pre-pubertal rats mediated by a prenatal/postnatal application of methamphetamine

Monika Vrajova¹, Zdena Kristofikova¹, Jana Sirova¹, Romana Slamberova²
¹Prague Psychiatric Center, Laboratory of Biochemistry and Brain Pathophysiology, Prague, Czech Republic; ²Charles University in Prague, Third Faculty of Medicine, Department of Normal, Pathological and Clinical Physiology, Prague, Czech Republic

Platelets early apoptosis relationship with eNOS in stroke

Ozge Cevik¹, Goksel Somay², Azize Sener²
¹Cumhuriyet University, Faculty of Pharmacy, Sivas, Turkey; ²Haydarpasa Numune Training and Research Hospital, Department of Neurology, Istanbul, Turkey; ³Marmara University, Faculty of Pharmacy, Istanbul, Turkey

TDP-43 inclusion bodies formed in bacteria are structurally amorphous, non-amyloid and inherently toxic to neuroblastoma cells

Claudia Capitini¹, Simona Conti¹, Michele Perni¹, Francesca Guidi¹, Roberta Cascella¹, Amanda Penco², Annalisa Relini², Cristina Cecchi¹, Fabrizio Chiti¹
¹Department of Biochemical Sciences, University of Florence, Florence, Italy; ²Department of Physics, University of Genoa, Genoa, Italy

Aβ42 traffic through plasma membrane. Role of P-glycoprotein

Ivan Bello¹, Franck Soureau², Milena Salerno³
¹Universite Paris 13, France; ²Laboratory Jean Perrin, Paris, France; ³Laboratory CSPBAT, team SBMB, Universite Paris 13, Bobigny, France

Study of the process of Transthyretin aggregation in presence and absence of Polyphenols and other molecules

Manuela Leri¹, Monica Bucciantini¹, Stefania Rigacci¹, Diletta Ami², Antonino Natalello², Martina Del Lungo³, Luca Mazzoni³, Silvia Maria Doglia², Laura Sartiani³, Massimo Stefani¹
¹Department of Experimental and Clinical Biomedical Science, University of Florence, Florence, Italy; ²Department of Biotechnology and Biosciences, University of Milano-Bicocca, Milan, Italy; ³Department of Neuroscience, Area Drug and Child Health, University of Florence, Florence, Italy

Extramitochondrial oxidative phosphorylation in myelin sheath: Reactive oxygen species production and axonal degeneration in demyelinating diseases

Martina Bartolucci¹, Paola Cuccarolo², Paolo Degan², Chiara Scanarotti³, Daniela Calzia¹, Alessandro Morelli¹, Isabella Panfoli¹, Silvia Ravera¹
¹DIFAR, Lab. of Biochemistry, University of Genova, Italy; ²Molecular Mutagenesis & DNA repair U.O., IRCCS AOU San Martino – IST (Istituto Nazionale per la Ricerca sul Cancro), CBA Torre A2, Genova, Italy; ³DISEM, Lab. of Patology, University of Genova, Italy

Energetic metabolism of myelinated axons: A correlation among extramitochondrial ATP production in myelin and the sheath development

Silvia Ravera, Martina Bartolucci, Daniela Calzia, Isabella Panfoli, Alessandro Morelli
Pharmacy Dept., University of Genova, Genova, Italy

Store-operated calcium current in neuronal model of Huntington's disease

Vladimir Vigont, Olga Zimina, Lyubov Glushankova, Julia Suslova, Galina N Mozhayeva, Elena Kaznacheyeva
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Decreased protein arginine methylation in a mouse model of CBS deficiency

Ruben Esse¹, Apolline Imbard², Warren D. Kruger³, Tom Teerlink⁴, Rita Castro¹, Isabel Tavares de Almeida¹, Henk J. Blom¹
¹Institute for Medicines and Pharmaceutical Sciences (iMed.Ul), Metabolism and Genetics Group, Lisbon, Portugal; ²Service de Biochimie-Hormonologie, Hopital Robert Debre, Paris, France; ³Fox Chase Cancer Center, Philadelphia, USA; ⁴Department of Clinical Chemistry, Metabolic Unit, VU University Medical Center, Amsterdam, The Netherlands

Normal versus mutant huntingtin: Who wins the race?

Aliabbas Saleh, Ipsita Roy
National Institute of Pharmaceutical Education and Research, S.A.S Nagar, India

NMR solution structure of rat beta amyloid metal-binding domain: New insights into the mechanisms of rats' resistance to Alzheimer's disease

Aleksandra A. Kulikova, Andrey N. Istrate
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Type 1 diabetes affects expression of 14-3-3 proteins in a tissue specific way

Federica Taurino¹, Eleonora Stanca², Luisa Siculella², Anna Maria Sardanelli¹, Antonella Modugno¹, Rossella Ricciardi¹, Francesca Amati¹, Sergio Papa³, Franco Zanotti¹, Antonio Gnoni¹
¹Dept. of Basical Medical Sciences, Neurosciences and Sensory Organs, University of Bari, Bari, Italy; ²Dept. of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy; ³Inst. of Biomembranes and Bioenergetics, CNR, Bari, Italy

The combination of Nerve Growth Factor (NGF) with valproic acid and Trichostatin A increases apoptosis via NGF receptor p75^{NTR} and suppresses proliferation of C6 glioma cells

Sevinc Narin, Sehnaz Bolkent
Istanbul University, Turkey

Melatonin's effect on inflammatory cytokines in oxidative stress induced PC12 cells

Hande Yapıslar¹, Sule Ozdas², Demet Akin³, Melike Ersoz⁴
¹Istanbul Bilim University, Medical Faculty, Physiology Department, Turkey; ²Istanbul Bilim University, Medical Faculty, Medical Biology and Genetic Department, Turkey; ³Istanbul Bilim University, Medical Faculty, Pharmacology Department, Turkey; ⁴Istanbul Bilim University, Health Services Vocational School, Anaesthesia Program, Turkey

Alzheimer disease hallmarks in adult type 2 diabetic female rat brain: Is oxidative stress the predecessor?

Emanuel Candeias¹, Ana Duarte¹, Sonia Correia¹, Cristina Carvalho², Maria A. Fernandes³, Raquel Seica⁴, Maria S. Santos², Catarina R. Oliveira⁵, Paula I. Moreira⁶
¹Center for Neuroscience and Cell Biology, University of Coimbra; Institute for Interdisciplinary Research, University of Coimbra (IIUC); Coimbra, Portugal; ²Center for Neuroscience and Cell Biology, University of Coimbra; Department of Life Sciences, University of Coimbra; Coimbra, Portugal; ³IMAR – Instituto do Mar, Department of Life Sciences, University of Coimbra; Coimbra, Portugal; ⁴Laboratory of Physiology, Faculty of Medicine, University of Coimbra; Coimbra, Portugal; ⁵Center for Neuroscience and Cell Biology, University of Coimbra; Laboratory of Biochemistry, Faculty of Medicine, University of Coimbra; Coimbra, Portugal; ⁶Center for Neuroscience and Cell Biology, University of Coimbra; Laboratory of Physiology, Faculty of Medicine, University of Coimbra; Coimbra, Portugal

Cytochrome P450 enzymes specific expression and modulation in brain as a tool to treat bilirubin encephalopathy

Sabrina E. Gambaro, Silvia Gazzin, Claudio Tiribelli
Italian Liver Foundation, Trieste, Italy

Repetitive mild traumatic brain injury in early life alter blood-brain barrier integrity in immature rats

Nurcan Orhan¹, Oguzhan Ekizoglu², Imdat Elmas³, Mehmet Kaya⁴, Bulent Ahishali⁵, Candan Gurses⁶, Mutlu Kucuk⁷, Nadir Arican³
¹Istanbul University, Institute of Experimental Medicine, Department of Neuroscience, Turkey; ²Bakirkoy Sadi Konuk Education and Research Hospital, Turkey; ³Istanbul University, Istanbul Faculty of Medicine, Department of Forensic Medicine, Turkey; ⁴Istanbul University, Istanbul Faculty of Medicine, Department of Physiology, Turkey; ⁵Istanbul University, Istanbul Faculty of Medicine, Department of Histology and Embryology, Turkey; ⁶Istanbul University, Istanbul Faculty of Medicine, Department of Neurology, Turkey; ⁷Istanbul University Institute of Experimental Medicine, Department of Experimental Animal Biology and Biomedical Application Techniques, Turkey

Dysfunction of neuromuscular synapses in transgenic mice with Alzheimer's disease model

Marat Mukhamedyarov¹, Pavel Grigoriev¹, Milyausha Salimzyanova¹, Dilyara Khaliullina¹, Evgeniy Volkov¹, Andras Palotas², Andrey Zefirov¹
¹Kazan State Medical University, Kazan, Russia; ²Asklepios-Med (private practice and research center), Szeged, Hungary

Inhibition of neutral sphingomyelinase decreases elevated levels of nitrotyrosine and inducible nitric oxide synthase in ocular hypertensive rats

Mutay Aslan¹, Ertan Kucuksayan¹, Mustafa Unal², Akif Ciftcioglu³, Narin Derin⁴, Goksun Basaranlar⁴, Bulent Mutus⁵
¹Department of Medical Biochemistry, Akdeniz University Faculty of Medicine, Antalya, Turkey; ²Department of Ophthalmology, Akdeniz University Faculty of Medicine, Antalya, Turkey; ³Department of Pathology, Akdeniz University Faculty of Medicine, Antalya, Turkey; ⁴Department of Biophysics, Akdeniz University Faculty of Medicine, Antalya, Turkey; ⁵Department of Chemistry & Biochemistry, University of Windsor, Windsor, Ontario, Canada

The role of oxidative/antioxidative balance, vascular pathophysiology and inflammation in migraine

Eray Metin Guler¹, Ulker Anadol Kelleci², Hayriye Gul Polat², Gokhan Bicim¹, Ahmet Kilinc³, A. Destina Yalcin², A. Suha Yalcin¹
¹Marmara University School of Medicine Department of Biochemistry, Istanbul, Turkey; ²Umraniye Training and Research Hospital, Neurology Clinic, Istanbul, Turkey; ³Oksante R&D Laboratory, Istanbul, Turkey

Expression profile of genes associated with oxidative/antioxidant events during the development of age-related macular degeneration in OXYS rats

Maria Perepechaeva¹, Natalia Kolosova², Alevtina Grishanova¹
¹Institute of Molecular Biology and Biophysics, Siberian Branch of Russian Academy of Medical Sciences, Novosibirsk, Russia; ²Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Laboratory diagnostics of muscle-specific receptor tyrosine kinase auto-antibodies in patients with myasthenia gravis without acetylcholine receptor antibodies

Jana Uhrova, Anna Brichtnacova, Tomas Zima
Institute of Medical Biochemistry and Laboratory Diagnostics, 1st Faculty of Medicine, Charles University and General University Hospital, Prague, Czech Republic

Neurosteroids and cholesterol catabolism by steroid 7alpha-hydroxylases

Aliaksei Yantsevich, Yaroslav Dichenko, Andrei Gilep, Natallia Strushkevich, Sergey Usanov
Institute of Bioorganic Chemistry, National Academy of Sciences, Minsk, Belarus

Knockdown of GCAP1 rescues dominant retinal degeneration

Wolfgang Baehr, Li Jiang
University of Utah, Salt Lake City, UT, USA

Yeast models for mammalian protein aggregation disorders

Yury Chernoff, Pavithra Chandramowlishwaran, Meng Sun, He Gong, Kathryn Bruce, Zachery Deckner, Denis Kiktev, Gary Newnam
School of Biology, Georgia Institute of Technology, Atlanta, USA

Involvement of hippocampal neuropeptide Y system in methamphetamine-induced memory impairment: the role of NPY Y2 receptors

Joana Goncalves¹, Sofia Baptista¹, Mikkel O. Olesen², Carlos Fontes Ribeiro¹, Joao O. Malva³, David P. Woldbye², Ana Paula Silva¹
¹Laboratory of Pharmacology and Experimental Therapeutics and Institute of Biomedical Research on Light and Image, Faculty of Medicine, University of Coimbra, Coimbra, Portugal; ²Laboratory of Neuropsychiatry and Protein Laboratory, Department of Neuroscience and Pharmacology, University of Copenhagen, Copenhagen, Denmark; ³Laboratory of Biochemistry and Cell Biology, Faculty of Medicine, University of Coimbra, Coimbra, Portugal

Diabetes alters KIF1A and KIF5B motor proteins in the hippocampus

Filipa I. Baptista¹, Maria J. Pinto^{2,3}, Filipe Elvas¹, Ramiro D. Almeida², Antonio F. Ambrosio¹
¹Centre of Ophthalmology and Vision Sciences; Pharmacology and Experimental Therapeutics, IBILI, Faculty of Medicine, University of Coimbra, Coimbra, Portugal; ²Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal; ³PhD Programme in Experimental Biology and Biomedicine (PDBEB), Centre for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal

The suppressive effect of IL-27 on encephalitogenic Th17 cells induced by multi-walled carbon nanotubes reduces the severity of autoimmune experimental encephalomyelitis

Leonilda M.B. Santos¹, Adriel S. Moraes¹, Rosemeire F. O. Paula¹, Fernando Pradella^{1,2}, Mariana P. A. Santos^{1,2}, Elaine C. Oliveira¹, Felipe von Glehn¹, Daniela Camilo^{1,3}, Helder Ceragioli³, Alfredo Peterlevit³, Vitor Baranuskas³, Walkyria Volpini¹ and Alessandro S. Farias^{1,2}
¹Neuroimmunology unit, ²Neuroimmunomodulation group, Dept. of Genetics, Evolution and Bioagents, Institute of Biology, University of Campinas (UNICAMP), SP, Brazil; ³Electrical engineering and computation, University of Campinas (UNICAMP), São Paulo, Brazil

Single particle tracking reveals that amyloid aggregates alter the mobility of GM1 ganglioside on the plasma membrane of living cells

Martino Calamai, Francesco S Pavone
LENS, Sesto Fiorentino, Italy

Intercellular and intracellular signaling modulate PDT-induced death of neurons and glial cells

Anatoly Uzdensky, Mikhail Rudkovskii, Elena Berezhnaya, Maxim Komandirov, Vera Kovaleva, Marya Neginskaya, Svetlana Sharifulina
Southern Federal University, Rostov-on-Don, Russia

Kidney-to-brain cross-talk as a way to ameliorate brain damage after brain ischemia

Denis Silachev, Nikolay Isaev, Irina Pevzner, Ljubava Zorova, Elena Stelmashook, Svetlana Novikova, Egor Plotnikov, Vladimir Skulachev, Dmitry Zorov
Lomonosov Moscow State University, A.N. Belozersky Research Institute of Physico-Chemical Biology and Mitoengineering Research Institute, Moscow, Russia

Implication of ionotropic presynaptic glutamate receptors in the long-term sequelae of early life hypoxia and seizures

Olga Krupko, Alla Tarasenko, Nina Himmelreich
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Neuronal tumor cells are sensitive to arginine amino acid deprivation

Iuliia Pavlyk^{1,2}, Yuriy Rzhetsky², Anna Wasik¹, Oleh Stasyk², Maria Jolanta Redowicz¹
¹Nencki Institute of Experimental Biology, Warsaw, Poland; ²Institute of Cell Biology, National Academy of Sciences of Ukraine, Lviv, Ukraine

Comparison of phosphorus and viologen-phosphorus dendrimers as inhibitors of alpha-synuclein fibrillation process

Katarzyna Milowska¹, Teresa Gabryelak¹, Jean-Pierre Majoral³, Maria Bryszewska¹
¹Department of General Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland; ³Laboratoire de Chimie de Coordination CNRS, Toulouse, France

Biomembrane properties in gaucher disease: (Glyco)sphingolipid impact

Ana R. Varela¹, Anthony H. Futerman², Manuel Prieto³, Liana C. Silva¹
¹iMed.UL - Research Institute for Medicines and Pharmaceutical Sciences, Faculdade de Farmacia da Universidade de Lisboa, Portugal; ²Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel; ³Centro de Quimica-Fisica Molecular & Institute of Nanoscience and Nanotechnology, Instituto Superior Tecnico, Lisboa, Portugal

Deciphering biochemical processes underlying cognitive functions and neuronal plasticity in the brain

Natalia N. Nalivaeva, Svetlana A. Plesneva, Daria I. Bagrova, Nadezhda M. Dubrovskaya, Ekaterina G. Kochkina, Dmitrii S. Vasilev, Igor A. Zhuravin
I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia

Glycohydrolases and glycosphingolipids behavior in acid-sphingomyelinase knock-out mice

Valentina Murdica, Massimo Aureli, Nicoletta Loberto, Rosaria Bassi, Maura Samarani, Simona Prioni, Elena Chiricozzi, Vanna Chigorno, Alessandro Prinetti, Sandro Sonnino
Department of Medical Biotechnology and Translational Medicine, Center of Excellence on Neurodegenerative Disease, Milano University, Italy

Development of a novel Parkinson's disease model based on methylotrophic yeast *Hansenula polymorpha*

Natalia Sybirna, Iryna Denega, Olena Stasyk¹, Oleh Stasyk²
¹Ivan Franko Lviv National University, Lviv, Ukraine; ²Institute of Cell Biology, National Academy of Sciences of Ukraine, Ukraine

Interdependence of amyloid formation in yeast: significance for amyloid pathology

Alexander Alexandrov¹, Genrikh Serpionov¹, Alexander Dergalev¹, Olga Mitkevich¹, Natalia Kochneva-Pervukhova², Anton Nizhnikov³, Alexey Galkin³, Michael Ter-Avanesyan¹
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Cardiology Research Centre, Moscow, Russia; ³N.I. Vavilov Institute of General Genetics of the Russian Academy of Sciences, Moscow; Saint Petersburg University, Department of Genetics, St. Petersburg, Russia

Small-angle X-ray scattering studies of E3 ligase parkin

M.A. Tamarkin¹, E.A. Beckmann (Fedotova)⁵, P.I. Konarev^{2,4}, D.I. Svergun^{2,4}, V.V. Volkov², A.V. Lipkin³, V.O. Popov¹, H.D. Bartunik¹ and G.S. Kachalova¹
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russia; ³National Research Centre "Kurchatov Institute", Moscow, Russia; ⁴EMBL Hamburg Outstation, Hamburg, Germany; ⁵Georg-August-University Göttingen, Institute for Microbiology and Genetics, Dept. for Molecular Microbiology and Genetics, Göttingen, Germany

Overexpression of DYRK1A inhibits choline acetyltransferase induction by oleic acid in cellular models of Down syndrome

Maruan Hijazi¹, Cristina Fillat², Jose Maria Medina¹, Ana Velasco¹
¹Institute for Neuroscience of Castilla y Leon (INCYL). University of Salamanca, Spain; ²Institute for Biomedical Research August Pi i Sunyer (IDIBAPS), Barcelona, Spain

Evidence for the implication of L-Dopa decarboxylase in apoptosis

Anastasia C. Tsakou, Ioanna Chalatsa, Emmanuel G. Fragoulis, Dido Vassilacopoulou
Department of Biochemistry and Molecular Biology, Faculty of Biology, National and Kapodistrian University of Athens, Athens, Greece

Polychlorinated biphenyls decrease Glial Fibrillary Acidic Protein expression during dibutyl cAMP-induced astrocytic differentiation

Valentina Pagliara¹, Annagrazia Adornetto², Gianfranco Di Renzo³, Rosaria Arcone⁴
¹Department of Health Sciences, University Magna Grecia of Catanzaro, Italy; ²Department of Pharmacy and Nutrition and Health Sciences, University of Calabria of Cosenza, Italy; ³Department of Neuroscience, University Federico II of Naples, Italy; ⁴Department of Study and Institutions and Territorial Systems, University Parthenope of Naples, Italy

Serum complement factor H levels in late onset Alzheimer's disease

Selma Yilmazer¹, Duygu Gezen-Ak¹, Erdinc Dursun¹, Hasmet Hanagasi², Basar Bilgic², Ebba Lohman², Omur Selin Araz¹, Irem Atasoy¹, Merve Alaylioglu¹, Burak Onal¹, Hakan Gurvit²
¹Istanbul University, Cerrahpasa Faculty of Medicine, Department of Medical Biology, Istanbul, Turkey; ²Istanbul University, Istanbul Faculty of Medicine, Department of Neurology, Behavioral and Movement Disorders Unit, Istanbul, Turkey

Reduction of transporter-mediated glutamate release from rat brain nerve terminals by lowering cholesterol

Tatiana Borisova, Roman Sivko, Ludmila Kasatkina, Natalia Krysanova
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kiev, Ukraine

The choroid plexus is a site of testosterone synthesis

Telma Quintela, Filipa Patriarca, Isabel Goncalves, Cecilia Santos
Health Science Research Centre - CICS - UBI, Covilha, Portugal

Erythrocyte SOD1 activity-role in bioavailability of NO and possible cause of "duing back" phenomena in neurodegenerative diseases

Aleksandra Nikolovic-Kokic¹, Zorana Orescanin-Dusic¹, Marija Slavice¹, Mihajlo B. Spasic¹, Zorica Stevic¹, Vidosava Rakocevic-Stojanovic², Dusko Blaojevic¹
¹Department of Physiology, Institute for Biological Research "Sinisa Stankovic", University of Belgrade, Belgrade, Serbia; ²Institute of Neurology, Clinical Center of Serbia, University of Belgrade, Belgrade, Serbia

Iron activates 5-lipoxygenase and induces its nuclear translocation: Implications for the pathogenesis of Alzheimer

Enrico Dainese¹, Andrea Di Francesco¹, Claudio D'Addario¹, Sergio Oddi¹, Mauro Maccarrone²
¹Department of Biomedical Sciences, University of Teramo, Teramo, Italy; ²Center of Integrated Research, Campus Bio-Medico University of Rome, Rome, Italy

Novel 2-pyrazoline derivatives bearing thiazole ring as dual monoamine oxidase-B and acetylcholinesterase inhibitors also inhibit beta-amyloid fibril

Beyza Ayazgok¹, Umut Salgin-Goksen², Tuba Kucukkilinc¹, Nesrin Gokhan-Kelekci², Gulberk Ucar¹
¹Department of Biochemistry, Faculty of Pharmacy, Hacettepe University, Ankara, Turkey; ²Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Hacettepe University, Ankara, Turkey

DNA-abzymes selected from the phage display library of antibodies of multiple sclerosis patients

Vera V. Morozova¹, Alexandra S. Grigorieva², Ivan K. Baykov¹, Andrey L. Matveev¹, Victoria V. Dubrovskaya³, Nina V. Tikunova¹, Alexander G. Gabibov⁴
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk State University, Novosibirsk, Russia; ³The Scripps Research Institute, La Jolla, CA, USA; ⁴Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Effect of genotype structure for 5 MYOC gene SNPs on its frequency in patients with adult-onset Primary Open Angle Glaucoma (POAG)

Dinara E. Ivanoshchuk¹, Natalya A. Konovalova², Olga S. Konovalova², Mikhail I. Voevoda³, Aida G. Romashchenko³
¹Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Tyumen State Medical Academy, The Ministry of Health of the Russian Federation, Tyumen, Russia; ³The Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

The effects of intracerebroventricular administration of STZ on insulin signaling pathway in rat brain

Duygu Sahin¹, Mehmet Tonge², Ilknur Dursun³, Memduh Kaymaz², Nilgun Altan¹
¹Department of Medical Biochemistry, Faculty of Medicine, Gazi University, Ankara, Turkey; ²Department of Neurosurgery, Faculty of Medicine, Gazi University, Ankara, Turkey; ³Department of Molecular Biology and Genetics, Faculty of Engineering and Natural Sciences, Uskudar University, Istanbul, Turkey

Protective effect of GD1a and GM1 gangliosides against the toxic action of bacterial lipopolysaccharide on neuronal and epithelial cells

Svetlana Nikolaeva, Tatyana Sokolova, Liubov Bayunova, Rimma Parnova
Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia

The swiss cheese mutants develop morphological and functional changes in neuromuscular junctions of *Drosophila melanogaster*

G.A. Kislik¹, S.V. Sarantseva¹, E.M. Latypova¹, E.I. Trush²
¹National Research Centre «Kurchatov Institute» B.P. Konstantinov PNPI, Gatchina, Russia; ²Ivan Franko National University of Lviv, Lviv, Ukraine

Intersectin adaptor proteins and pathologies

Inessa Skrypkina¹, Dmytro Morderer¹, Liudmyla Tsyba¹, Sergii Kropyvko¹, Olga Novokhatska¹, Volodymyr Cherkas², Liubov Syvak³, Oleksandr Grabovyi³, Iryna Kryachok³, Alla Rynditch¹

¹State Key Laboratory on Molecular and Cellular Biology, Institute of Molecular Biology and Genetics, Kyiv, Ukraine;

²State Key Laboratory on Molecular and Cellular Biology, Bogomoletz Institute of Physiology, Kyiv, Ukraine; ³National Institute of Cancer, Kyiv, Ukraine

11S regulator has an influence on degradation of polyQ containing protein by proteasome

Anna V. Bacheva, Polina S. Nesterova, Maria P. Rubtsova

Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia

Modeling of the early clinical stage of Parkinson's disease for testing of anti-parkinsonian drugs

Anna Kolacheva, Elena Kozina, Gulnara Khakimova, Michael Ugrumov

Institute of Developmental Biology, Russian Academy of Sciences; Institute of Normal Physiology Russian Academy of Medical Sciences, Moscow, Russia

Modeling of the inducer-dependent aggregation of tau protein

Alexander Stepanov¹, Tatiana Karelina¹, Srighar Duvvuri², Timothy Nicholas², Peter Lockwood², David Stiles², Oleg Demin¹

¹Institute for Systems Biology SPb, Moscow, Russia; ²Pfizer Global R&D, USA

Distinct Roles of PI3 Kinase and MAP Kinases in Motor Neuron Regeneration

Alka Vyas, Rezina Siddique, Thomas Brushart

Johns Hopkins School of Medicine, Baltimore, MD, USA

Functional polarization of activated astrocytes

Kyoungsoo Suk¹, Eunha Jang¹, Jong-Heon Kim¹, Jae-Hong Kim¹, Myungwon Jin¹, Maan-Gee Lee¹, Il-Sung Jang², Won-Ha Lee³

¹Kyungpook National University School of Medicine; ²Kyungpook National University School of Dentistry; ³School of Life Sciences and Biotechnology, Kyungpook National University, South Korea

Education in Biochemistry and Molecular Biology (S36, W37)

European funding for talented life scientists from anywhere in the world

Ulrich Genschel

European Research Council, Brussels, Belgium

Careers and Research Performance of PhD Program Graduates of Health Sciences in Turkey

Zahide Cavdar¹, Cevval Ulman², Güldal Kirkali³, Hakan Baydur⁴, Gül Guner Akdogan⁵

¹Dokuz Eylül University, Graduate School of Health Sciences, Department of Molecular Medicine, Izmir, Turkey; ²Celal Bayar University, Faculty of Medicine, Department of Medical Biochemistry, Manisa, Turkey; ³National Institute of Standards and Technology (NIST), Biochemical Science Division, Gaithersburg, USA; ⁴Celal Bayar University, School of Health, Manisa, Turkey; ⁵Dokuz Eylül University, Faculty of Medicine, Department of Medical Biochemistry and Department of Molecular Medicine, Graduate School of Health Sciences, Izmir, Turkey

An outlook to journal publications from theses of MSc and PhD students at Dokuz Eylül University Graduate School of Health Sciences

Mehtap Yuksel Egrilmez*, Seniz Inanc*, Feriha Ozkaya*, Reza Salimi*, Duygu Harmanci*, Roghaiyeh Safari*, Güldal Kirkali^{†,***†}, Ibrahim Astarcioglu^{***}, Gül Guner Akdogan^{***}

*Department of Molecular Medicine, Graduate School of Health Sciences, Dokuz Eylül University, Izmir, Turkey;

Department of Medical Biochemistry, Faculty of Medicine, Dokuz Eylül University, Izmir, Turkey; *Graduate

School of Health Sciences and Department of General Surgery, Faculty of Medicine, Dokuz Eylül University, Izmir,

Turkey; †National Institute of Standards and Technology, Biochemical Science Division, Gaithersburg, MD, USA

Why Iranian students prefer doctoral education in Turkey

N. Nuray Ullusu, Afshin Samadi

Hacettepe University Faculty of Medicine Department of Biochemistry, Ankara, Turkey

Comparative medical education survey between Iranian and Turkish students

N. Nuray Ullusu, Afshin Samadi

Hacettepe University Faculty of Medicine Department of Biochemistry

Promoting deep learning in biochemistry by diversifying assessment strategies – experience at the university of Hong Kong

Julian A. Tanner, Samantha J. Bevan, Lydia Y.L. Cheng, Cecilia W.L. Chan, Brian C. Wong

Department of Biochemistry, Li Ka Shing Faculty of Medicine, University of Hong Kong, Pokfulam, Hong Kong SAR, China

RNA World (II-S2)

Biosynthesis and function of long non coding RNAs in muscle differentiation

M. Morlando, I. Legnini, V. Cazzella, S. Twayana, M. Ballarino, C. Pinnarò, I. Bozzoni
Dept. of Biology and Biotechnology "Charles Darwin", Sapienza, University of Rome, Italy

Reversible RNA methylation in biological regulation

Chuan He
The University of Chicago, USA

New insights into de assembly/disassembly of eukaryotic RNA polymerases

Francisco Navarro¹, Ana I. Garrido-Godino², M. Carmen Miron-Garcia², Veronica Martinez-Fernandez², M. Carmen Garcia-Lopez³, Ricardo Oya¹
¹University of Jaen, Jaen, Spain; ²Dept. Experimental Biology-Genetics, University of Jaen, Jaen, Spain; ³Dept. Genetics, University of Granada, Granada, Spain

Role of human Dbp5 in translation termination

Tatiana Mikhaylova, Elena Alkalaeva
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Supplemented model of the *Haloarcula marismortui* 50S ribosomal subunit

Azat Gabdulhakov, Stanislav Nikonov and Maria Garber
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

The TIA1/TIAL1 and TDP-43 proteins regulate alternative polyA site selection and thereby mRNA isoform expression

Miha Modic^{1,2}, Gregor Rot³, Tina Lence², Jan Attig², Jernej Ule²
¹Gene Center Munich, Germany; ²MRC Laboratory of Molecular Biology, Cambridge, England; ³University of Ljubljana, Slovenia

Supplemented model of the *Haloarcula marismortui* 50S ribosomal subunit

Azat Gabdulhakov, Stanislav Nikonov, Maria Garber
Institute of Protein Research Russian Academy of Sciences, Moscow Region, Russia

Deciphering the assembly of box C/D snoRNP complexes

Jonathan Bizarro¹, Berengere Pradet-Balade¹, Marc Quinternet², Xavier Manival², Bruno Charpentier², Christiane Branlant², Celine Verheggen¹, Edouard Bertrand¹
¹IGMM-UMR 5535; ²IMoPA-UMR 7365

Characterization of the pre-60S ribosomal particles able to translate in *Saccharomyces cerevisiae*

Olga Rodriguez-Galan¹, Juan Jose Garcia-Gomez¹, Dieter Kressler², Jesus de la Cruz¹
¹Departamento de Genetica, Facultad de Biologia, E-41012, University of Seville, Spain; ²Department of Medicine, Faculty of Science; Freiburg University, Switzerland

EBV encoded miR-BART15-3p promotes cell apoptosis by targeting BRUCE

Suk Kyeong Lee, Hoyun Choi
The Catholic University of Korea

Guard and protect versus Seek and destroy the antisense: contrasting roles of Hfq and PNPase in the regulation of non-coding RNAs

Jose Marques Andrade, Vania Pobre, Ricardo F. dos Santos, Cecilia M. Arraiano
Instituto de Tecnologia Quimica e Biologica, Universidade Nova de Lisboa (ITQB/UNL), Oeiras, Portugal

Phylogenetic analysis of bacterial group II intron-encoded ORFs

Nicolas Toro, Francisco Martinez-Abarca
Estacion Experimental del Zaidin, Consejo Superior de Investigaciones Cientificas (CSIC), Granada, Spain

Long terminal stem increases the lifetime of small non-coding RNAs in mammalian cells

Anastasia Koval, Irina Gogolevskaya, Karina Tatosyan, Dmitri Kramerov
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Alternative splicing of the X-linked NDUFB11 gene and its implication in mitochondrial complex I function and apoptotic process

Francesca Paola Lorusso
Department of Basic Medical Sciences, Section of Medical Biochemistry, University of Bari Aldo Moro, Bari, Italy

Profiling of apoptotic and gene expression changes in human chronic myeloid leukemia cells via transfection of mir-150 by MATRA

Tugce Balci¹, Cigir Biray Avcı¹, Sunde Yilmaz¹, Cagla Kayabasi¹, Guray Saydam², Cumhuri Gunduz¹
¹Medical Biology, Ege University Medical Faculty, Izmir, Turkey; ²Hematology Department, Ege University Medical Faculty, Izmir, Turkey

Novel, 3'-terminal phosphate modification activities of 5'-pRNA ligase from *Methanobacterium thermoautotrophicum*

Alexander Zhelkovsky, Larry McReynolds
New England Biolabs, Inc., 240 County Rd., Ipswich, MA 01960, USA

rRNA methyltransferase RsmD *Escherichia coli*

Olga Sergeeva
Lomonosov Moscow State University, Moscow, Russia

3'UTR-mediated rhythmic translation of *CryI*

Kyongtai Kim, Kyung-Ha Lee, Sung-Hoon Kim, Hyo-Jin Kim, Wanil Kim
Postech, Pohang Korea South

Comprehensive analysis of artificial box C/D RNAs action on human cells

Grigory Stepanov, Dmitriy Semenov, Julia Filippova, Elena Kuligina, Igor Rabinov, Vladimir Richter
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Interaction of *Bacillus subtilis* 6S-1 and 6S-2 RNAs with RNA polymerase – comparative functional analyses and proteomics of 6S-1/2 knockout strains

Olga Y. Burenina¹, Philipp G. Hoch², Elena A. Kubareva¹, Roland K. Hartmann²
¹Chemistry Department, Lomonosov Moscow State University and A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia; ²Institut für Pharmazeutische Chemie, Philipps-Universität Marburg, Marburg, Germany

The role of tandem repeats in mRNA and protein expression homeostasis

Sreenivas Chavali, M. Madan Babu
MRC Laboratory of Molecular Biology, Cambridge, UK

Identification of molecular targets of RNase A in antitumor therapy

Olga Patutina, Nadezhda Mironova, Evgeniy Brenner, Alexander Kurilshikov, Valentin Vlassov, Marina Zenkova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Differential expression of microRNAs in plasma of patients with Laryngeal Squamous Cell Carcinoma: Potential Early Detection Markers for Laryngeal Squamous Cell Carcinoma

Lokman Ayaz¹, Aysegul Gorur², Hatice Yildirim Yaroglu², Nil Unal Dogruer², Senay Balci Fidanci², Cengiz Ozcan³, Lulufer Tamer²
¹Department of Biochemistry, Trakya University Faculty of Pharmacy, Edirne, Turkey; ²Department of Biochemistry, Mersin University Faculty of Medicine, Mersin, Turkey; ³Department of Otorhinolaryngology Head & Neck Surgery, Mersin University Faculty of Medicine, Mersin, Turkey

Circulating non-coding RNAs as Biomarkers of Head and Neck Cancers

Samantha Khoury¹, Jonathon Clark, Michael Elliott², Nham Tran³
¹School of Medical and Molecular Biosciences, Faculty of Science, University of Technology Sydney, Australia; ²The Sydney Head and Neck Cancer Institute, Royal Prince Alfred Hospital, Australia; ³Centre for Health Technologies, Faculty of Engineering and Information Technology, University of Technology Sydney, Australia

Small non-coding RNAs of human blood plasma of healthy donors and patients with non-small cell lung cancer

Dmitry Baryakin, Dmitry Semenov, Evgeniy Brenner, Alexander Kurilshikov, Vadim Kozlov, Elena Chikova, Elena Kuligina, Vladimir Richter
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Molecular crowding favors reactivity of a human ribozyme under physiological ionic conditions

Neela Yennawar¹, Christopher Strulson², Philip Bevilacqua²
¹Huck Institutes of the Life Sciences, Pennsylvania State University, University Park, USA; ²Department of Chemistry, Pennsylvania State University, University Park, USA

Sequence-specific endoribonuclease from PemIK_{sa} toxin-antitoxin system modulates gene expression in *Staphylococcus aureus*

Michał Bukowski¹, Robert Lyzen², Weronika M. Helbin³, Emilia Bonar¹, Agnieszka Szalewska-Palasz², Grzegorz Węgrzyn², Grzegorz Dubin^{3,4}, Adam Dubin¹, Benedykt Władysław^{1,4}
¹Department of Analytical Biochemistry, Faculty of Biochemistry, Biophysics and Biotechnology, Krakow, Poland; ²Department of Molecular Biology, University of Gdansk, Gdansk, Poland; ³Department of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Krakow, Poland; ⁴Malopolska Centre of Biotechnology, Krakow, Poland

A strategy of isolation of telomerase from yeast *Hansenula polymorpha*

Alexander N Malyavko, Maria I Zvereva, Olga A Dontsova
Lomonosov Moscow State University, Moscow, Russia

Highly specific transcription templates and sensors for RNA polymerase activity based on single-stranded DNA aptamers

Danil Pupov, Daria Esiyunina, Andrey Kulbachinskiy
Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

Effects of RapA, the bacterial SWI2/SNF2 family factor, on transcription in vivo

Sergey Proshkin, Alexander Mironov
State Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow, Russia

Identification and differential expression analysis of conserved and novel microRNA in flax genotypes

Maxim S. Belenikin¹, Anna S. Speranskaya^{1,2}, Nadezhda L. Bolsheva¹, Valentina A. Lakunina^{1,2}, Olga A. Rachinskaya¹, Maria V. Darii¹, Anastasia A. Krinitina², Olga V. Muravenko¹, Alexander V. Zelenin¹, Anna V. Kudryavtseva¹, Nataliya V. Melnikova¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Faculty of Biology, Moscow State University, Moscow, Russia

Mitochondrial non-coding RNAs (ncRNAs) expression in Human Papilloma Virus-related cervical lesions

Cristina Daniela Rusanu¹, Iulia Iancu², Anca Botezatu, Irina Huica, Gabriela Anton
¹Ixia Medica Research Centre; ²Stefan S. Nicolau Institute of Virology

MODOMICS: a database of RNA modification pathways

Janusz M. Bujnicki¹, Magdalena A. Machnicka¹, Kaja Milanowska², Okan Osman Oglu³, Elzbieta Purta¹, Pawel Piatkowski¹, Malgorzata Kurkowska¹, Anna Olchowik¹, Kristian M. Rother², Mark Helm³, Henri Grosjean⁴
¹International Institute of Molecular and Cell Biology, Warsaw, Poland; ²Faculty of Biology, Adam Mickiewicz University, Poznan, Poland; ³Institut für Pharmazie und Biochemie, Johannes Gutenberg-Universität, Germany; ⁴Centre de Genetique Moleculaire, UPR 3404, CNRS, Universite Paris-Sud, FRC 3115, France

Degradome sequencing reveals an endogenous microRNA target in *C. elegans*

Chanseok Shin¹, June Hyun Park¹, Soungyub Ahn², Soyoung Kim, Junho Lee³, Jin-Wu Nam⁵
¹Department of Agricultural Biotechnology, Seoul National University, Seoul, Republic of Korea; ²Department of Biological Sciences, Seoul National University, Seoul, Republic of Korea; ³Research Center for Functional Cellulomics, Institute of Molecular Biology and Genetics, WCU Department of Biophysics and Chemical Biology, Seoul National University, Seoul, Republic of Korea; ⁴Graduate School of Biomedical Science and Engineering, Hanyang University, Seoul, Republic of Korea;

An integrated view on genetic and epigenetic mechanisms revealed aberrant DNA methylation as an important source for miRNA deregulation in prostate cancer

Olga Bogatyrova¹, Daniela Wuttig², Lei Gu¹, Po-Hsien Huang, Ruprecht Kuner², Constance Baer¹, Lars Feuerbach³, Holger Sultmann², Christoph Plass¹
¹Division of Epigenomics and Cancer Risk Factors, German Cancer Research Center, Heidelberg, Germany; ²Working Group Cancer Genome Research, German Cancer Research Center and National Center of Tumor Diseases, Heidelberg, Germany; ³Division of Theoretical Bioinformatics, German Cancer Research Center, Heidelberg, Germany

Regulation YB-1 synthesis by mTOR signaling pathway

Dmitry Lyabin, Irina Eliseeva, Lev Ovchinnikov
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow region, Russia

A novel mechanism of poly A(+) YB-1 mRNA translation regulation

Irina Eliseeva, Dmitry Lyabin, Lev Ovchinnikov
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow region, Russia

Function of Fap7 in the maturation of the ribosome small subunit

Jérôme Loc'h¹, Julie Jombart¹, Magali Blaud¹, Stéphane Réty¹, Simon Lebaron², Sander Grannemann³, David Tollervey², Patrick Deschamps¹, Joseph Bareille¹ and Nicolas Leulliot¹
¹LCRB, UMR 8015 CNRS, Faculté de Pharmacie, Université Paris Descartes, Paris, France; ²Wellcome Trust Centre for Cell Biology, The University of Edinburgh, Scotland; ³SynthSys Edinburgh, The University of Edinburgh, Scotland

Molecular mechanisms enhancing the coding potential of RNA genome of influenza A viruses

Andrey Vasin, Olga Temkina, Sergey Klotchenko, Marina Plotnikova, Vladimir Egorov, Oleg Kiselev
Research Institute of Influenza, St. Petersburg, Russia

Expression of miR-29 in chronic myeloid leukemia patients after imatinib treatment

Sona Kollinerova¹, Martina Divoká², Marie Jarosova², Jana Zapletalová³, Martin Modrianský¹
¹Department of Medical Chemistry and Biochemistry, Palacky University, Olomouc, Czech Republic; ²Department of Hemato-Oncology, University Hospital, Olomouc, Czech Republic; ³Department of Medical Biophysics, Palacky University, Olomouc, Czech Republic

Optimization of the preparation of tissue material by using the method of laser microdissection for molecular studies

Patrycja Wizinska¹, Andrzej Mazur², Marzena Podhorska-Okolow¹, Piotr Dziegieł^{1,3}
¹Department of Histology and Embryology Wrocław Medical University, Wrocław, Poland; ²Institut National de la Recherche Agronomique (INRA), Unite de Nutrition Humaine, Clermont Ferrand/Theix, France; ³Department of Histology and Embryology University of Medical Sciences, Poznan, Poland

FISH detection of single transcripts – the effects of improved probe design and advanced microscopy

Izabela Sabala¹, Rafał Wierzechowski², Anna Lasinska², Malgorzata Mazur², Aleksandra Szybinska¹
¹International Institute of Molecular and Cell Biology, Warsaw, Poland; ²Internal Security Agency, Warsaw, Poland

HEN1-directed labeling of microRNAs

Milda Mickute, Alexandra Plotnikova, Aleksandr Osipenko, Viktoras Masevicius, Saulius Klimasauskas, Giedrius Vilkaitis
Department of Biological DNA Modification, Institute of Biotechnology, Vilnius University, Vilnius, Lithuania

The transcriptionally- and translationally-acting ypaA riboswitch in *Bacillus subtilis*

Svetlana Sklyarova, Aleksandr Mironov
State Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow, Russia

A novel approach to studying the mechanism of mammalian selenoprotein synthesis

Olga Kossinova¹, Alexey Malygin¹, Alain Krol², Galina Karpova¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Institut de Biologie Moleculaire et Cellulaire, CNRS, Strasbourg, France

Regulation of the rplY gene encoding 5S rRNA binding protein L25 in *Escherichia coli* and related bacteria

Leonid Aseev, Natalia Bylinkina, Irina Boni
Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Influence of let-7d and miR-18a overexpression on the radiosensitivity of hypopharynx squamous cell carcinoma

Anna Teresiak-Manczak¹, Tomasz Kolenda^{1,2}, Karolina Zaleska³, Przybyła Weronika¹, Marta Kruszyna¹, Anna Kowalik⁴, Weronika Jackowiak⁴, Renata Blizniak¹, Anna Przybyła³, Katarzyna Lamperka¹
¹Cancer Genetics Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ²Postgraduate School of Molecular Medicine, Medical University of Warsaw, Poland; ³Radiobiology Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ⁴Medical Physics Department, Greater Poland Cancer Centre, Poznan, Poland; ⁵Department of Cancer Immunology, Faculty of Medical Biotechnology, Poznan University of Medical Sciences, Poland

Analysis of microRNAs expression changes after irradiation of oral and tongue squamous cell carcinoma lines

Tomasz Kolenda^{1,2}, Weronika Przybyła¹, Karolina Zaleska³, Anna Teresiak-Manczak¹, Anna Kozłowska⁴, Anna Kowalik⁵, Weronika Jackowiak⁵, Marta Kruszyna², Renata Blizniak¹, Katarzyna M. Lamperka¹
¹Cancer Genetics Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ²Postgraduate School of Molecular Medicine, Medical University of Warsaw, Poland; ³Radiobiology Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ⁴Department of Cancer Immunology, Faculty of Medical Biotechnology, Poznan University of Medical Sciences, Poland; ⁵Medical Physics Department, Greater Poland Cancer Centre, Poznan, Poland

Role of the stop codon context in eukaryotic translation termination

Elizaveta E. Sokolova¹, Polina N. Krjuchkova¹, Uliya V. Bocharova¹, Peter K. Vlasov², Elena Z. Alkalaeva¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Centre for Genomic Regulation and Universitat Pompeu Fabra, Barcelona, Spain;

Glycyl-tRNA synthetase modulates eIF4G activity to promote correct initiation of translation on type I picornavirus IREs

Dmitry Andreev, Ilya Terenin, Sergey Dmitriev, Ivan Shatsky
A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia

The mechanism of transcription antitermination by the p7 protein of *Xanthomonas oryzae* phage Xp10

Daria Esyunina^{1,2}, Konstantin Severinov^{1,2}, Andrey Kulbachinskiy¹
¹Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia; ²Molecular Biology Department, Biological Faculty, Lomonosov Moscow State University, Moscow, Russia; ³Waksman Institute of Microbiology, Piscataway, NJ, USA

Endonuclease cleavage is the first event of human telomerase RNA 3'-end processing

Maria Rubtsova^{1,2}, Daria Vasilkova¹, Alexander Malyavko¹, Dmitry Skvortsov¹, Dulat Azhbeik¹, Olga Dontsova^{1,2}
¹Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ²A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia

Energetics of translocating ribosome

Andrey L. Konevega^{1,2}, Wolfgang Wintermeyer², Yuri P. Semenov¹, Marina V. Rodnina²
¹B.P. Konstantinov Petersburg Nuclear Physics Institute, National Research Centre "Kurchatov Institute", Gatchina, Russia; ²Max Planck Institute for Biophysical Chemistry, Department of Physical Biochemistry, Göttingen, Germany

Does HIV-1 mRNA leader possess an IRES?

Victoria Smirnova, Ilya Terenin, Anastasia Hutornenko, Dmitry Andreev, Sergey Dmitriev, Ivan Shatsky
A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia

Alpha7 subunit of proteasomes participates in gene expression regulation

O.A. Fedorova, N.A. Barlev
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; Laboratory of Molecular Pharmacology, St. Petersburg State Technological Institute (Technical University), St. Petersburg, Russia

The dual functional role of Mir-9 in regulating migration and growth of glioma cells

Liyuan Zhu, Xiangbin Ruan, Xiaochao Tan, Caimin Xu, Jiangang Yuan
Institute of Basic Medical Science, Chinese Academy of Medical Science, Beijing, China

Telomere repeat transcription in chicken growing oocytes: new data gained with cytological approach

Tatiana Kulikova, Elena Gaginskaya
Saint Petersburg State University, St. Petersburg, Russia

Posttranslational modification of protein S6 in *E. coli* leads to suppression of translation in stationary phase

M.V. Nesterchuk, P.V. Sergiev, O.A. Dontsova
Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia

Does the component of telomerase complex Est3p interact with telomeric quadruplexes in yeast?

Natalia Logvina, Julia Parfenova, Maria Zvereva, Olga Dontsova
Lomonosov Moscow State University, Moscow, Russia

The role of short *trans* sense-antisense interactions in regulation of gene expression using TurboGFP as a model gene

Maria Zamkova¹, Andrey Marakhonov¹, Ancha Baranova^{1,2}, Mikhail Skoblov¹
¹Research Centre for Medical Genetics under the Russian Academy of Medical Sciences, Moscow, Russia; ²School of Systems Biology, David King Hall, MSN 3E1 George Mason University, Fairfax, VA, USA

Study of the structure and function of the novel gene *asASCL1* in human

Alexandra Filatova¹, Andrey Marakhonov¹, Ancha Baranova^{1,2}, Mikhail Skoblov¹
¹Research Centre for Medical Genetics under the Russian Academy of Medical Sciences, Moscow, Russia; ²School of Systems Biology, David King Hall, MSN 3E1 George Mason University, Fairfax, VA, USA

A new method for m6A identification in RNA

Anna Golovina¹, Margarita Dzama², Petr Sergiev³, Olga Dontsova³
¹A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia; ²Department of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia; ³Chemistry Department, Lomonosov Moscow State University, Moscow, Russia

miRNA implication in the most common subtypes of renal cell carcinoma and urothelial carcinoma of the upper urinary tract

Apostolos Zaravinos¹, George I. Lambrou², Nikos Mourmouras³, Dimitris Delakas³, Constantinos Deltas¹
¹Molecular Medicine Research Center and Laboratory of Molecular and Medical Genetics, Department of Biological Sciences, University of Cyprus, Nicosia, Cyprus; ²First Department of Pediatrics, Choremeio Research Laboratory, University of Athens, Athens, Greece; ³Department of Urology, Asklepieio General Hospital, Athens, Greece;

Investigation of applicability of plant extracts (*Euphorbia orientalis* L.) instead of chemical disinfectants

Gulcin Alp Avci¹, Emre Avci², Durdun Ali Kose³, Merve Geldi², Sevil Uzeli²
¹Hittit University School of Health, Department of Microbiology, Corum, Turkey; ²Hittit University, Faculty of Art and Science, Department of Biology, Corum, Turkey; ³Hittit University, Faculty of Art and Science, Department of Chemistry, Corum, Turkey

The peculiar mode of translation elongation inhibition by antitumor drug harringtonin

Sergey E. Dmitriev¹, Kseniya A. Akulich², Dmitri E. Andreev¹, Ilya M. Terenin¹, Ivan N. Shatsky¹
¹A.N. Belozersky Research Institute of Physico-Chemical Biology MSU, Moscow, Russia; ²Faculty of bioengineering and bioinformatics, Lomonosov Moscow State University, Moscow, Russia

Inflammation-caused shifts in microRNA expression as trigger of tumor growth

Volodymyr Halytskiy, Serhiy Komisarenko
Palladin Institute of Biochemistry, the National Academy of Sciences of Ukraine, Kiev, Ukraine

Human telomerase RNA 3'-end processing

Daria Vasilkova, Maria Rubtsova, Olga Dontsova
Chemistry Department, Lomonosov Moscow State University, Moscow, Russia

De-novo* transcriptome assembly and differential expression analysis of starfish, *Asterias rubens

Maxim Belenikin
Research Institute of Physico-Chemical Medicine of Russian Federal Medico-Biological Agency, Moscow, Russia; Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Nuclear bodies involved in U snRNPs biogenesis in late stage pigeon oocyte nucleus

Tatiana Khodyuchenko, Alla Krasikova
Saint Petersburg State University, St. Petersburg, Russia

Identification of molecular targets of RNase A antitumor therapy

O.A. Patutina, N.L. Mironova, E.V. Brenner, A.M. Kurilshikov, V.V. Vlassov, M.A. Zenkova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Stereochemistry of interaction between phosphorotioates at the guide strand of siRNA duplex and Ago2 protein

Malgorzata Sierant¹, Xianbin Yang², Milena Sobczak, Barbara Nawrot
¹Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Lodz, Poland; ²AM Biotechnologies LLC, Houston, Texas, USA

Prebiotic synthesis of biomolecules in space: key to the quick life origin

Natalia Gontareva, Evgenia Kuzicheva
Institute of Cytology, Lab of Exobiology, St Petersburg, Russia

Enzymes Reacting with Organophosphorus Agents (II-W9)

Model equations of inhibition of esterases by non-stable compounds: PMSF as a model

Jorge Estevez, Iris Mangas, Eugenio Vilanova
Unit of Toxicology. Institute of Bioengineering. University "Miguel Hernandez, Elche, Spain

Ex vivo experiments support Y337A/F338A human AChE as a potential pseudo-catalytic bioscavenger in the event of soman poisoning

Nikolina Macek¹, Zoran Radic², Palmer Taylor², Zrinka Kovarik¹
¹Institute for Medical Research and Occupational Health, Zagreb, Croatia ; ²Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California at San Diego, La Jolla, CA, USA

Genotyping of single nucleotide polymorphisms of human PON1 and BChE genes by high-resolution DNA melting

Ivan Kurdyukov, Vladimir Babakov
Research Institute of Hygiene, Occupational Pathology and Human Ecology, Russian Federal Medical-Biological Agency, St. Petersburg, Russia

QM/MM simulations of organophosphate compounds reactions with antibody Fab fragment

Anastasia Maslova, Olga Zolotareva, Andrey Golovin
Lomonosov Moscow State University, Faculty of Bioengineering and Bioinformatics, Moscow, Russia

Comparative analysis of CID and ETD tandem mass-spectrometry in human serum albumin adductomics

Yaroslav Dubrovskiy¹, Iliia Krasnov², Ekaterina Murashko¹, Maxim Anurov¹, Andrey Radilov¹, Nikolay Krasnov², Ekaterina Podolskaya², Vladimir Babakov¹
¹Research Institute of Hygiene, Occupational Pathology and Human Ecology, St. Petersburg, Russia; ²Institute for Analytical Instrumentation, Russian Academy of Sciences, St. Petersburg, Russia

Ion Channel Signaling: From Spatial Structures to Physiological Mechanisms (III-S11)

An investigation of the mechanism of hydrogen sulphide mediated uterine relaxation

Ana Mijuskovic¹, Zorana Orescanin Dusic¹, Aleksandra Nikolic Kokic¹, Marija Slavic¹, Slobodan Milovanovic², Dusko Blagojevic¹, Mihajlo B. Spasic¹
¹Department of Physiology, Institute for Biological Research "Sinisa Stankovic," University of Belgrade, Belgrade, Serbia; ²Faculty of Medicine, University of Eastern Sarajevo, Foca, Bosnia and Herzegovina

Escherichia coli hydrogenases and the F₀F₁-ATPase are coupled via H₂ forming and H⁺ transporting pathways

Karen Trchounian¹, Armen Trchounian^{1,2}
¹Department of Biophysics, Yerevan State University, Yerevan, Armenia; ²Department of Microbiology & Plants and Microbes Biotechnology, Yerevan State University, Yerevan, Armenia

Optical mapping of excitation waves in light-sensitive immortalised cell line of cardiomyocytes

Oleh Halaidych¹, Ivan Erofeev¹, Konstantin Agladze²
¹Moscow Institute of Physics and Technology, Dolgoprudny, Russia; ²Institute for Integrated Cell-Material Sciences, Kyoto University, Japan

Adrenergic-like effect of 2,3-dehydrosilybin on perfused adult rat heart

Eva Gabriellova^{1,2}, Lenka Bartosikova³, Jiri Necas⁴, Vladimir Kren⁴, Martin Jaburek⁵, Martin Modriansky¹
¹Palacky University, Department of Medical Chemistry and Biochemistry, Olomouc, Czech Republic; ²Palacky University, Institute of Molecular and Translational Medicine, Olomouc, Czech Republic; ³Palacky University, Department of Physiology, Olomouc, Czech Republic; ⁴Academy of Science of the Czech Republic, Institute of Microbiology, Prague, Czech Republic; ⁵Academy of Science of the Czech Republic, Institute of Physiology, Prague, Czech Republic

Three-dimensional structure of human K_v10.2 ion channel suggests mechanism for its activation

G. S. Gluhov, A. V. Grizel, A. V. Popinako, M. G. Karlova, O. S. Sokolova
Lomonosov Moscow State University, Moscow, Russia

Cell-free production and NMR-study of voltage-sensing domain of human Nav 1.4

Mikhail A. Shulepko, Ekaterina N. Lyukmanova, Zakhar O. Shenkarev, Alexander A. Paramonov, Mikhail Yu. Myshkin, Alexander A. Arseniev, Dmitry A. Dolgikh, Mikhail P. Kirpichnikov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Native store-operated channels formed by TRPC1 protein in HEK293 cells

Anton Skopin, Olga Zimina, Lyubov Glushankova, Elena Kaznacheeva
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Role of dipole potential in the channel-forming activity of cecropin A in planar lipid bilayers

Svetlana Efimova, Ludmila Schagina, Olga Ostroumova
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The role of PSD-95 in the rearrangement of Kv1.3 channels to the immunological synapse

Orsolya Szilagyi¹, Anita Boratko², Gyorgy Panyi¹, Peter Hajdu¹
¹University of Debrecen, Department of Biophysics and Cell Biology, Debrecen, Hungary; ²University of Debrecen, Department of Medical Chemistry, Debrecen, Hungary

The pathological pathway of endoplasmic reticulum calcium overload connected with Familial Alzheimer's disease

Kseniia Skobeleva, Maria Ryazantseva, Elena Kaznacheeva
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Abscisic acid transport in human erythrocytes

Tiziana Vigliarolo, Lucrezia Guida, Elena Zocchi
University of Genova, Dept of Experimental Medicine, Sect. of Biochemistry, Genova, Italy

Infertile HSL-knockout mouse testis shows class B scavenger receptor up-regulation, disrupted lipid raft microdomains, and activated p-ERK, p-AKT, and p-SRC

M.E. Casado, L. Huerta, A.I. Ortiz, A. Canfran, M.A. Lasuncion, R. Busto, A. Martin-Hidalgo
Servicio de Bioquímica-Investigación and Unidad de Cirugía Experimental y Animalario, Hospital Universitario Ramon y Cajal, Instituto Ramon y Cajal de Investigación Sanitaria (IRYCIS), Madrid, Spain; CIBER de Fisiopatología de la Obesidad y Nutrición (CIBERObn), ISCIII, Spain

An outwardly rectifying chloride current of *Xenopus tropicalis* oocytes

Ataulfo Martinez-Torres, Angeles Edith Espino Saldana, Juan Pablo Reyes, Lenin David Ochoa de la Paz
Instituto de Neurobiología UNAM, Mexico

Contribution of transmembrane residues to sensitization and pore dilation of the rat P2X7 receptor

Marie Jindrichova, Anirban Bhattacharya, Audrey Mokdad, Hana Zemkova
Institute of Physiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Neuroprotective efficiency of Sinestrol after bilateral ovariectomy

Karen Simonyan, Vergine Chavushyan, Irina Meliksetyan
Orbeli Institute of Physiology, Yerevan, Armenia

Influence of residues in low-conserved regions near the ATP-binding site of P2X4 receptor on channel gating

Vendula Tvrdonova, Milos Rokic, Hana Zemkova
Institute of Physiology of the Academy of Sciences of the Czech Republic, Prague; Faculty of Science of Charles University in Prague, Czech Republic

Plant flavonoids affect membrane activity of antimicrobial agents

Olga Ostroumova, Svetlana Efimova, Valery Malev, Ludmila Schagina
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Single channel recordings of STIM2-operated (I_{min}) calcium channels in HEK293 cells

Vera Kamaletdinova, Lyubov Glushankova, Galina N. Mozhayeva, Elena Kaznacheeva, Alexey Shalygin
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The first single-channel recordings of voltage-dependent ionic channels in dinoflagellates

Ilya Pozdnyakov, Olga Matantseva
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The subunit composition of NMDA receptors in human T-lymphocytes

Liana Zainullina, U.Sh. Fatkullina, Yu.V. Vakhitova
Institute of Biochemistry and Genetics, Ufa Science Centre of the Russian Academy of Sciences, Ufa, Russia

The role of alpha2 isoform of Na,K-ATPase in the wall of small arteries: contraction, relaxation and intercellular communication

Vladimir Matchkov, Lise Hangaard, Christian Aalkjaer
Aarhus University, Denmark

Surface expression and function of Ca_v3.2 T-type calcium channels are controlled by asparagine-linked glycosylation

Norbert Weiss, Stefanie A.G. Black, Chris Bladen, Lina Chen, Gerald W. Zamponi
University of Calgary, Hotchkiss Brain Institute, Department of Physiology and Pharmacology, Calgary, Canada

Membrane Transport and Secretion: From Nephrons to Neurons (III-S12)

Developing brain as an endocrine organ: secretion and endocrine action of dopamine

Julia Zubova, Julia Saifietarova, Anna Sapronova, Michael Ugrumov
Institute of Developmental Biology, Russian Academy of Sciences; Institute of Normal Physiology Russian Academy of Medical Sciences, Moscow, Russia

Propranolol restricts the mobility of single quantum-dot labelled EGF-receptors on the cell surface

Carolina Otero¹, Max Linke², Alfonso Gonzalez³, Iwan Schaap²
¹Center for Integrative Medicine and Innovative Science (CIMIS), Universidad Andres Bello, Santiago, Chile; ²Physikalisches Institut, Faculty of Physics, Georg-August Universität Göttingen, Germany; ³Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile

Effect of Lys-plasminogen on platelet functions

Yana M. Roka-Moya, Dmytro D. Zhernossekov, Tetiana V. Grinenko
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

The alteration of subplasmalemmal structure of hepatocyte during cytotoxicity and its prevention by sodium thiosulfate

Gohar Karapetyan, Nona Kukurtchyan, Guevorg Kevoorkian
H. Buntiatian Institute of Biochemistry of Natl. Acad Sci, Yerevan, Armenia

Mammals aquaporin modulators: screening by heterologous expression in *Saccharomyces cerevisiae*

Ana Paula Martins^{1,2}, Catarina Prista³, Angela Casini⁴, Graca Soveral^{2,5}
¹REQUIMTE, Chemistry Department, Sciences and Technology Faculty, New University of Lisbon, Almada, Portugal; ²Research Institute for Medicines and Pharmaceutical Sciences (iMed.UL), Lisbon, Portugal; ³Microbial Bioenergetic Lab., CBAA, Instituto Superior de Agronomia, TULisbon, Lisbon, Portugal; ⁴Dept. of Pharmacokinetics, Toxicology and Targeting, Research Institute of Pharmacy, University of Groningen, Groningen, The Netherlands; ⁵Dept. of Biochemistry and Human Biology, Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal;

Calcium signaling recruits substrate transporters GLUT4 and CD36 to the sarcolemma without increasing substrate uptake

Yeliz Angin¹, Robert Schwenk¹, Reyhan Nergiz-Unal², Nicole Hoebers¹, Johan Heemskerk², Benoit-Gilles Kerfant³, Will Coumans¹, Marc Zandvoort⁴, Dietbert Neumann¹, Jan Glatz¹, Joost Luiken¹
¹Dept. of Genetics and Cell Biology, School for Cardiovascular Diseases, Maastricht University, the Netherlands; ²Dept. of Biochemistry, School for Cardiovascular Diseases, Maastricht University, the Netherlands; ³Dept. of Physiology, School for Cardiovascular Diseases, Maastricht University, the Netherlands; ⁴Dept. of Molecular Cell Biology, School for Cardiovascular Diseases, Maastricht University, the Netherlands

Effect of exogenous annexin A2 on proliferation and mineralization of human osteosarcoma cells

Anna Cmoch¹, Malgorzata Palczewska², Paulina Podrzywalow-Bartnicka, Katarzyna Piwocka¹, Patrick Groves², Slawomir Pikula
¹Department of Biochemistry, Nencki Institute of Experimental Biology, Warsaw, Poland; ²Department of Biological Chemistry, Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa, Oeiras, Portugal

Membrane transporter biltranolocase – structural model for transmembrane domains

Amrita Roy Choudhury¹, Igor Zhukov², Sabina Passamonti³, Marjana Novic¹
¹National Institute of Chemistry, Ljubljana, Slovenia; ²Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland; ³Department of Life Sciences, University of Trieste, Italy

Mechanisms of the protein coat formation in the activated platelet subpopulations

Yana N. Kotova, Anastasiya A. Abaeva, Sergey I. Obydeny, Mikhail A. Panteleev
Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia

The use of fluorescent indicators to study the water and ion transport across plasma membrane of renal collecting duct principal cells

Alexander Ilyaskin¹, Galina Baturina¹, Liubov Katkova¹, Denis Karpov², Dmitriy Medvedev², Alexander Ershov², Evgeniy Solenov¹
¹Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Lavrentyev Institute of Hydrodynamics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

A PrPC-caveolin-Lyn complex inhibits GSK3beta activity and potentiates serotonin release in serotonergic neurons

Theo Hirsch, Julia Hernandez-Rapp¹, Severine Martin-Lannere¹, Elodie Pradines¹, Aurelie Alleaume-Butaux¹, Benoit Schneider¹, Odile Kellermann¹, Anne Baudry¹, Jean-Marie Launay², Sophie Mouillet-Richard¹
¹Cellules Souches, Signalisation et Prions, INSERM UMR747, Université Paris Descartes, Sorbonne Paris Cité, Paris, France; ²AP-HP Service de Biochimie, Fondation FondaMental, Hôpital Lariboisière, Paris, France & Pharma Research Department, F. Hoffmann-La-Roche Ltd., Basel, Switzerland

Infertile HSL-knockout mouse testis shows class B scavenger receptor up-regulation, disrupted lipid raft microdomains, and activated p-ERK, p-AKT, and p-SRC

M.E. Casado, L. Huerta, A.I. Ortiz, A. Canfran, M.A. Lasuncion, R. Busto, A. Martin-Hidalgo
Servicio de Bioquímica-Investigación and Unidad de Cirugía Experimental y Animalario, Hospital Universitario Ramon y Cajal, Instituto Ramon y Cajal de Investigación Sanitaria (IRYCIS), Madrid, Spain; CIBER de Fisiopatología de la Obesidad y Nutrición (CIBERObn), ISCIII, Spain

Membrane cholesterol oxidation and depletion effects on synaptic vesicle cycle in frog motor nerve terminals

Aleksey Petrov, Andrey Zefirov
Kazan State Medical University, Kazan, Russia

Effects of EPA and DHA on interleukin 6 and adiponectin secretion by 3T3-L1 cells

Adam Prostek, Bożena Balasinska
Department of Physiological Sciences, Faculty of Veterinary Medicine, Warsaw University of Life Sciences (WULS-SGGW), Warsaw, Poland

Senescent cells impact their microenvironment by direct protein transfer

Anat Biran, Meirav Perelmutter, Valery Krizhanovskiy
Weizmann Institute of Science, Rehovot, Israel

Role of transmembrane ion and water transport in outer medullary collecting duct principal cells volume regulation in the diuretic state

Galina Baturina, Aleksandr Ilyaskin, Liubov Katkova, Evgeniy Solenov
Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Role of PKC in antidiuretic action of vasopressin

Liubov Katkova, Galina Baturina, Alexandr Ilyaskin, Evgeniy Solenov
Institute of Cytology and Genetics, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia

Detrimental effect of bacterial lipopolysaccharide on vasotocin-induced osmotic water permeability: possible role of iNOS expression and changes in triacylglycerol metabolism and oxygen consumption

Rimma Parnova¹, Elena Lavrova¹, Svetlana Nikolaeva¹, Ekaterina Fock¹, Ekaterina Fedorova¹, Vera Bachtееva¹, Sabine Herterich², Stepan Gambaryan¹, Irina Brailovskaya¹
¹I.M.Sechenov Institute of Evolutionary Physiology & Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia; ²Institute of Clinical Biochemistry & Pathobiochemistry, University of Würzburg, Würzburg, Germany

Adenosine induces markers of epithelial to mesenchymal transition in renal proximal epithelial tubule cells

Rody San Martin, Catalina Kretschmar, Christopher Villablanca, Carlos Oyarzun, Claudia Quezada
Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Chile

Transport of platinum-based anticancer drugs by recombinant human copper ATPases (ATP7A/B)

Francesco Tadini-Buoninsegni¹, Gianluca Bartolommei¹, Maria Rosa Moncelli¹, Fabio Arnesano², Giovanni Natile²
¹Department of Chemistry "Ugo Schiff", University of Florence, Sesto Fiorentino, Italy; ²Department of Chemistry, University of Bari "A. Moro", Bari, Italy

Study of the role of extracellular adenosine on chemoresistance in glioblastoma stem-like cells

Claudia Quezada, Wallys Garrido, Dellis Rocha, Carla Gonzalez, Karin Hueicha, Pamela Ehrenfeld, Carlos Oyarzun, Rody San Martin
Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Chile

The technique of spectral precision distance microscopy (SPDM)

Wladimir Schaufler¹, Felix Bestvater¹, Heinz Eipel¹, Yuliya Sytnikova², Christoph Cremer³
¹German Cancer Research Center, Heidelberg, Germany; ²Nelson Lau lab, Brandeis University Waltham, MA, USA; ³Institute of Molecular Biology, Mainz, Germany

Investigation of the cellular mechanisms underlying the carboxypeptidase E mutation

Feride Kasikci¹, Cawley X. Niamh², Tulin Yanik¹, Peng Y. Loh¹
¹Middle East Technical University, Department of Biological Sciences, Ankara, Turkey; ²Section on Cellular Neurobiology, Laboratory of Developmental Neurobiology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland, USA

ERK1/2 kinase regulates exocytosis of neurohormones and neurotransmitters

Liubov Nikitina^{1,2}, Margarita Glazova¹, Nadezhda Dorofeeva¹, Kirill Khudik¹, Olga Kirillova¹, Anna Gagarskaya^{1,2}, Anatoly Korotkov^{1,3}, Elena Chernigovskaya¹
¹Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia; ²Saint Petersburg State University, St. Petersburg, Russia; ³St. Petersburg State Polytechnical University, St. Petersburg, Russia

Intracellular transport of melanin-concentrating hormone in neurons

Veronika Jancsik, Emese Eva Varkonyi, Peter Sotonyi
Szent Istvan University Faculty of Veterinary Science, Department of Anatomy and Histology, Budapest, Hungary

Insulin receptor-related receptor is involved in renal bicarbonate secretion

Nikita Radionov¹, M. Gorshkova¹, A.V. Mitrofanova¹, O.V. Serova¹, N. Popova¹, N. Picard², I.E. Deyev¹, D. Eladary², A.G. Petrenko¹
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Centre de Recherche Paris Cardiovasculaire, Paris, France

Differential regulation of ABCA1 in K562 cells by various differentiating stimuli

Lukasz Pulaski, Izabela Jateczak-Pawlik, Grzegorz Bartosz
Department of Molecular Biophysics, University of Lodz, Poland

The influence of the plant flavonoids on the domain shape in unilamellar vesicles

Evgeny G. Chulkov, Olga S. Ostroumova
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The electroneutral NaCl transport in the intercalated cells of the collecting duct is upregulated in PHAII-mutant WNK4 mice

Maximilien Jayat¹, Cara Busst², Pascal Houillier³, Dominique Eladari², Juliette Hadchouel², Regine Chambrey², Richard P. Lifton⁴
¹INSERM U970, Paris, France; ²INSERM U970 Equipe 3, Paris, France; ³INSERM U872 Equipe 3, Paris, France; ⁴Department of Genetics, Yale University School of Medicine, USA

Characterization of subpopulations of early endosome autoantigen 1 (EEA1)-positive vesicles in HeLa cells

Marianna Kharchenko, Maria Zlobina, Elena Kornilova
Institute of Cytology, Russian Academy of Science, St. Petersburg, Russia

MCT2 in brain glucose sensing

Maria Angeles Garcia-Robles, Christian Cortes-Campos, Roberto Elizondo, Claudio Carril, Maria Jose Barahona, Francisco Nualart
Universidad de Concepcion, Chile

Low intensity 70.6 and 73 GHz frequencies electromagnetic irradiation and different antibiotics effects on E. coli ions transports properties

Heghine Torgomyan¹, Armen Trchounian²
¹Department of Biophysics, Biology Faculty, Yerevan State University, Yerevan, Armenia; ²Department of Microbiology and Microbes and Plants Biotechnology, Biology Faculty, Yerevan State University, Yerevan, Armenia;

Biochemistry for Medicine (III-S16)

Immunoproperties of hypothalamic proline-rich polypeptides for humoral and adaptive immune response against methicillin-sensitive and methicillin-resistant *Staphylococcus aureus*

Andranik Durgaryan, Margarita Matevosyan, Torgom Seferyan, Armen Galoyan
H. Buniatian Institut of Biochemistry, Department of Neurohormones Biochemistry, Yerevan, Armenia

Binding polyspecificity and catalytic polyreactivity of human milk immunoglobulins is due to various combinations of antigen-binding sites

Sergey Sedyh, Valentina Buneva, Georgy Nevinsky
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Immunogenicity and protective efficacy of prime-boost regimens with recombinant multivalent BCG and modified vaccinia virus Ankara expressing tuberculosis antigens providing protection against *Mycobacterium tuberculosis*

Chi-Feng Lee¹, Ru-Wen Chou², Hsi-Hwa Chi¹, Chia-Tsui Yeh¹, Wen Chang³
¹National Defense Medical Center, Taipei, Taiwan; ²Centers For Disease Control, Taipei, Taiwan; ³Academia Sinica, Taipei, Taiwan

Immunocytochemistry approach in diagnosis of immunodeficiency in sportsmen

Tatyana Izmaylova, Lyubov Kuznetsova, Irina Samohina, Svetlana Petrichuk, Irina Korneeva, Zoyu Dukhova
Scientific Center for Children's Health, Russian Academy of Medical Sciences, Moscow, Russia

Blood complement proteomics of mother - umbilical cord - newborn triad. Lack of complement C1 inhibitor at newborns of risk group correlates with infection development

Renad Zhdanov¹, S.I. Zhdanova², Z.M. Bagavetdinova², S.V. Andina³, N. Gora³, L.V. Kozlov³, V.P. Bulatov²
¹Institute for Fundamental Medicine, Kazan Federal University, Kazan, Russia; ²Kazan State Medical University, Kazan, Russia; ³G.N. Gabrichevsky Institute of Epidemiology and Microbiology, Moscow, Russia

Some features of interaction between 2'-5' and 3'-5' oligoadenylates with proteins detected by MALDI-TOF mass spectrometry

Svitlana Levchenko¹, Andrew Rebriv², Z. Tkachuk¹
¹Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; ²Palladi Institute of Biochemistry of NAS of Ukraine, Kyiv, Ukraine

Screening for small molecules that disrupt epigenetic silencing in mammalian cells

Peter Bruton¹, Covadonga Huidobro¹, Vladimir Larionov¹, Alexander Kagansky²
¹MRC Human Genetics Unit, University of Edinburgh, Edinburgh, UK; ²National Cancer Institute, Bethesda, USA

New system for high-throughput search of the bacterial translation inhibitors

Ilya Osterman¹, Irina V. Prokhorova¹, Vasily O. Sysoev¹, Yulia V. Boykova², Olga V. Efremenkova², Maxim S. Svetlov³, Vyacheslav A. Kolb³, Alexey A. Bogdanov¹, Petr V. Sergiev¹, Olga A. Dontsova¹
¹Department of Chemistry and A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²G.F. Gauze Institute for Search for New Antibiotics, Russian Academy of Medical Sciences, Moscow, Russia; ³Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

The influence of tobacco smoking on glutathione status in the blood analyzed by capillary electrophoresis

Marta Zalewska, Katarzyna Kowalska, Halina Milnerowicz
Department of Biomedical and Environmental Analysis, Faculty of Pharmacy, Wroclaw Medical University, Poland

Annexin V: The old molecule with a new application

Hermine Yeritsyan¹, Mariam Mikaelyan¹, Gayane Poghosyan¹, Hamayak Avagyan², Vardan Gasparyan¹
¹H. Buniatian Institute of Biochemistry, Yerevan, Armenia; ²"DIALAB" Clinical-Diagnostic Laboratory, Yerevan, Armenia

Application of CdSe quantum dots for simultaneous determination of two antigens in homogeneous immunoassay

Seda Marukhyan, Hermine Yeritsyan, Vardan Gasparyan
H. Buniatian Institute of Biochemistry, Yerevan, Armenia

Thiol-disulfide system as universal biomarker for personalized therapy of infectious diseases and cancer

Igor Volchek¹, Tamara Sologub², Andrei Petrov¹
¹DiscoveryMed Ltd, St. Petersburg, Russia; ²Research Institute of Influenza, St. Petersburg, Russia

Development of a Multiplex-PCR assay for the simultaneous detection and identification of eight *Lactobacillus* strains in clinical samples

Carlos Gaspar¹, Jose Martinez-de-Oliveira^{1,2}, Rita Palmeira-de-Oliveira¹, Paula Gouveia¹, Ana Palmeira-de-Oliveira¹
¹CICS-UBI, Health Sciences Research Centre, Faculty of Health Sciences, University of Beira Interior, Covilha, Portugal; ²Women and Child Health Department, Hospital Center of Cova da Beira, Covilha, Portugal

Identification of inherited disorders by tandem mass spectrometry analysis of dried blood spots

Alexander Chernonosov, Irima Alekseeva, Olga Fedorova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Synthesis of triazole-linked oligonucleotides, which are usable as PCR primers

Anna Varizhuk^{1,2}, Dmitry Kaluzhny², Igor Smirnov¹, Galina Pozmogova¹, Vladimir Florentiev²
¹*Institute for Physical-Chemical Medicine, Ministry of Public Health, Moscow, Russia;* ²*Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia*

Quantification and validation of a liquid chromatography-tandem mass spectrometry assay for serum busulfan levels

Murat Ekremoglu, Elif Erkan Kurdoglu, Murat Oktm
Duzen Laboratories Group, Ankara, Turkey

Effect of DNA on the sensitivity, specificity and efficiency of three multiplex real-time PCR in different types of clinical specimens for rapid detection of extrapulmonary tuberculosis and focal complications of brucellosis

Rocio Sanjuan-Jimenez¹, Juan de Dios Colmenero², Pilar Bermudez³, Pilar Morata¹
¹*Biochemistry, Molecular Biology and Immunology Department, Faculty of Medicine, University of Malaga, Malaga, Spain;* ²*Infectious Diseases Service, Carlos Haya University Hospital, Malaga, Spain;* ³*Microbiology Service, Carlos Haya University Hospital, Malaga, Spain*

Search of differentially expressed genes in peripheral blood leukocytes for diagnostics of atherosclerosis

Andrei Samoilov¹, L. E. Goryunova¹, G. L. Khaspekov¹, E. S. Feoktistova¹, A. V. Skamrov¹, M. M. Lukyanov², S. A. Boitsov², R. Sh. Beabealashvili¹
¹*Russian Cardiology Research and Production Complex, Moscow, Russia;* ²*National Research Centre for Preventive Medicine, Moscow, Russia*

Method characteristics of 17 OH progesteron by tandem mass spectrometry

Fikret Akyurek, Sedat Abusoglu, Ali Unlu
Selcuk University, Faculty of Medicine, Medical Biochemistry Department, Konya, Turkey

Selection of DNA aptamers specific to Shiga toxin 1 of *Escherichia coli* O157:H7 for the development of diagnostic assays

Arina Kozyr, Nina Lunyova, Alexander Kolesnikov, Anna Khlyntseva, Galina Savchenko, Igor Shemyakin
State Research Center for Applied Microbiology and Biotechnology (SRCAMB), Obolensk, Russia

ADMA and total oxidant status in saliva

Ali Unlu¹, Alpaslan Taner², Nimet Unlu³, Zeynep Ure⁴, Emine Nedime Korucu¹
¹*Selcuk University Faculty of Medicine Medical Biochemistry Department, Konya, Turkey;* ²*Selcuk Department of Biochemistry, Dr Faruk Sukan Maternity and Children, Turkey;* ³*Necmettin Erbakan University Dentistry School Department of Conservative Therapy, Turkey;* ⁴*Selcuk University, Faculty of Dentistry, Konya, Turkey*

Developing a *Mycobacterium smegmatis* based test-system for screening mycobacterial protein kinase PknB inhibitors – potential next generation anti-tuberculosis drugs

Dmitry Maslov, Yulia Zhukova, Olga Bekker, Maria Alekseeva, Valery Danilenko
Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Study of pentamethinium fluorescent probes, indolium versus benzothiazolium probes and effect of gama substitution

Tomas Briza¹, Silvie Rimpelova¹, Jarmila Kralova², Kamil Zaruba¹, Zdenek Kejik¹, Pavel Martasek³, Tomas Ruml³, Vladimir Kral³
¹*Institute of Chemical Technology, Prague, Czech Republic;* ²*Academy of Sciences of the Czech Republic, Prague, Czech Republic;* ³*First Faculty of Medicine, Charles University, Prague, Czech Republic*

Diagnostic value of the minor lymphocytes subsets succinate dehydrogenase activity in children with autoimmune disease

Lyubov Kuznetsova, Svetlana Petrichuk, Ekaterina Tsimbalova, Alexander Potapov, Galina Semenova, Olga Kurbatova
Scientific Center for Children's Health, Russian Academy of Medical Sciences, Moscow, Russia

Cytological Investigation of saliva samples of disabled children

Rabia Pisiriciler¹, Ebru Emekli-Alturfan², Gizem Ozbay³, Esin Caliskan-Ak¹, Serap Akyuz³, Aysen Yarat²
¹*Marmara University, Faculty of Dentistry, Department of Histology and Embryology, Turkey;* ²*Marmara University, Faculty of Dentistry, Department of Biochemistry, Turkey;* ³*Marmara University, Faculty of Dentistry, Department of Pediatric Dentistry, Turkey*

Development of multiplex real-time PCR for quantification of cytokines mRNA expression in influenza virus infected human cells

Marina Plotnikova, Andrey Vasin
Research Institute of Influenza, St. Petersburg, Russia

Amino acid profiling in human follicular fluid and plasma of IVF patients

Tiina Kirsipuu^{1,2}, Katrina Laks^{1,2}, Agne Velthut-Meikas^{2,3}, Peep Palumaa^{1,2}
¹*Department of Gene Technology, Tallinn University of Technology, Tallinn, Estonia;* ²*Competence Centre on Reproductive Medicine and Biology, Tartu, Estonia;* ³*Centre for Biology of Integrated Systems, Tallinn University of Technology, Tallinn, Estonia*

Non-enzymatic systemic antioxidants as potential biomarkers for chronic obstructive pulmonary disease

Lada Rumora¹, Lara Milevoj Kopicinovic², Dolores Pancirov³, Ivana Cepelak¹, Tihana Zanic Grubisic¹
¹*University of Zagreb, Faculty of Pharmacy and Biochemistry, Department of Medical Biochemistry and Hematology, Zagreb, Croatia;* ²*University Department of Chemistry, Clinical Unit of Medical Biochemistry in Traumatology and Orthopedics, University Hospital Center Sestre Milosrdnice, Zagreb, Croatia;* ³*Department of Biochemistry and Hematology Diagnosis, Dr. Ivo Pedisic General Hospital, Sisak, Croatia*

Determination of asymmetric dimethylarginine in body fluids by ABSCIEX API 3200 liquid-chromatography mass spectrometry

Ali Unlu, Sedat Abusoglu, Fikret Akyurek
Selcuk University, Faculty of Medicine, Medical Biochemistry Department, Turkey

Diagnostic potential of fetal and embryonic hemoglobins as a markers of hypoxia, fetal development and hemoblastosis

Dina Nikulina, O. Dyakova, A. Agapova, T. Panova, Y. Kriventcev, R. Bisaliev, L. Bachmutova, S. Lapeko, L. Ogul, L. Zaklyakova, P. Ivanov
Astrakhan State Medical Academy, Astrakhan, Russia

Identification of genes of bacterial enzymes beta-lactamases on silicon microchips using gold nanoparticles as a label

Maya Rubtsova¹, Galina Presnova¹, Maria Ulyashova¹, Yuliya Pobolelova¹, Ekaterina Filatova¹, Denis Presnov², Alexey Egorov¹
¹*Faculty of Chemistry, Lomonosov Moscow State University, Moscow, Russia;* ²*Skobel'syn Institute of Nuclear Physics, Lomonosov Moscow State University, Moscow, Russia*

Highly sensitive and specific real-time PCR assay for the detection of proteolytic bacterial toxins

Alexander Kolesnikov, Arina Kozyr, Anna Khlyntseva, Alyona Ryabko, Nina Luneva, Olga Krasavtseva, Igor Shemyakin
State Research Center for Applied Microbiology and Biotechnology (SRCAMB), Obolensk, Russia

Determination of oxidative stress, antioxidant status and inflammation in patients with recurrent oral aphthous ulcers

Emre Avci¹, Zuhre Zafersoy Akarslan², Hulya Erten³, Sule Coskun Cevher⁴
¹*Hittit University, Faculty of Science and Arts, Department of Biology/Biochemistry, Corum, Turkey;* ²*Gazi University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Ankara, Turkey;* ³*Gazi University, Faculty of Dentistry, Department of Operative Dentistry, Ankara, Turkey;* ⁴*Gazi University, Faculty of Science and Arts, Department of Biology, Ankara, Turkey*

Type 1 diabetes affects expression of 14-3-3 proteins in a tissue specific way

Federica Taurino¹, Eleonora Stanca², Luisa Siculella², Anna Maria Sardanelli¹, Antonella Modugno¹, Rossella Ricciardi¹, Francesca Amati¹, Sergio Papa³, Franco Zanotti¹ and Antonio Gnoni¹
¹*Dept. of Basical Medical Sciences, Neurosciences and Sensory Organs, University of Bari, Bari, Italy;* ²*Dept. of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy;* ³*Inst. of Biomembranes and Bioenergetics, CNR, Bari, Italy*

Glycation impairs albumin drug binding properties in diabetic patients

Jennifer Baraka-Vidot¹, Alexis Guerin-Dubourg^{1,2}, Emmanuel Bourdon¹ and Philippe Rondeau¹
¹Groupe d'Etude sur l'Inflammation Chronique et l'Obésité (GEICO), Structure Fédérative Environnement Biodiversité Santé-FED4126, Université de La Réunion, Plateforme CYROI, Saint Denis de La Réunion, France; ²Unité fonctionnelle de recherche Biochimie, Centre Hospitalier Universitaire Félix Guyon, Saint Denis de La Réunion, France

Pyrimethamine chaperone enhances beta-hexosaminidase activity in Sandhoff fibroblasts without restoring lysosomal GM2 catabolism

Elena Chiricozzi¹, Massimo Aureli¹, Nicoletta Loberto¹, Alessandro Magini², Natalia Niemir³, Alice Polchi², Rosaria Bassi², Carla Emiliani², Catherine Caillaud³, Sandro Sonnino¹
¹Department of Medical Biotechnology and Translational Medicine, University of Milan, Italy; ²Department of Experimental Medicine and Biochemical Sciences, University of Perugia, Italy; ³INSERM U845, Université Paris Descartes, Sorbonne Paris Cité, Faculté de Médecine Necker, Paris, France

Novel causative relationship between low HDL and diet-induced nonalcoholic fatty liver disease

Eleni A. Karavia, Dionysios J. Papachristou, Kyriakos E. Kypreos
University of Patras, School of Health Sciences, Department of Medicine, Greece

ABO and ABCA1 gene polymorphisms in Bosnian patients with type 2 diabetes

Tanja Dujic¹, Sabina Semiz^{1,2}, Zeljka Veljica-Asimi³, Besim Prnjavorac⁴, Tamer Bego¹, Maja Malenica¹, Adlija Causevic¹
¹Department of Biochemistry and Clinical Analysis, Faculty of Pharmacy, University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ²Faculty of Engineering and Natural Sciences, International University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ³Clinic of Endocrinology and Diabetes, Clinical Centre, University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ⁴General Hospital Tesanj, Tesanj, Bosnia and Herzegovina

Testosterone deficiency reduces diet-induced weight gain, energy expenditure, and glucose intolerance in mice lacking the low density lipoprotein receptor

Peristera-Ioanna Petropoulou, Kyriakos E. Kypreos
Department of Medicine, Pharmacology Unit, University of Patras Medical School, Rio Achaias, TK., Greece

LVVYPW stimulates beta-endorphin secretion to lower plasma glucose in streptozotocin-induced diabetic rats

Flora Sarukhanyan, Nina Barkhudaryan
H. Buniatian Institute of Biochemistry NAS RA, Yerevan, Armenia

Modulation of Cox-2 and iNOS expression in macrophages by a lipophilic extract of the sea-star Marthasterias glacialis: cooperative effect of fatty acids and ergosta-7,22-dien-3-ol

David Pereira¹, Georgina Correia-da-Silva¹, Patricia Valentao², Natercia Teixeira¹, Paula B. Andrade²
¹Laboratory of Biochemistry, Department of Biological Sciences, Faculty of Pharmacy, University of Porto; ²REQUIMTE/Laboratory of Pharmacognosy, Department of Chemistry, Faculty of Pharmacy, University of Porto, Portugal

Second generation antipsychotic (SGA) drugs modify the differentiation program of human adipocytes inducing "browning" markers

Endre Kristof¹, Doan Minh², Anitta Sarvari¹, Zoltan Balajthy¹, Zsolt Bacso², Laszlo Fesus¹
¹University of Debrecen, Department of Biochemistry and Molecular Biology, Debrecen, Hungary; ²University of Debrecen, Department of Biophysics and Cell Biology, Debrecen, Hungary

Prostaglandin E(1) reduces renal ischemia/reperfusion-induced gastric damage through its anti-inflammatory and anti-oxidative effects

Selda Gezgin-Oktayoglu¹, Nurcan Orhan², Sehnaz Bolkent¹
¹Istanbul University, Faculty of Science, Department of Biology, Vezneciler, Istanbul, Turkey; ²Istanbul University, DETAE, Department of Neuroscience, Capa, Istanbul, Turkey

4-Methylcatechol suppresses liver injury through blocking ROS production in the liver of hyperglycemic rats

Serap Sancar-Bas, Selda Gezgin-Oktayoglu, Sehnaz Bolkent
Istanbul University, Faculty of Science, Biology Department, Vezneciler, Istanbul, Turkey

The role of vitamin B6 on liver damage induced with valproic acid

Ayse Karatug¹, Ismet Burcu Turkyilmaz², Sehnaz Bolkent¹, Refiye Yanardag²
¹Istanbul University, Faculty of Science, Istanbul, Turkey; ²Istanbul University, Faculty of Engineering, Istanbul, Turkey

The curative effect of a oxovanadium (IV) complex based on thiosemicarbazone on liver damage of streptozotocin-induced diabetic rats

Eda Oyar Yilmaz¹, Sevim Tunali², Tulay Bal Demirci³, Bahri Ulkuseven³, Refiye Yanardag², Sehnaz Bolkent⁴
¹Istanbul University, Istanbul, Turkey; ²Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Istanbul, Turkey; ³Istanbul University, Faculty of Engineering, Department of Chemistry, Inorganic Division, Istanbul, Turkey; ⁴Istanbul University, Faculty of Science, Department of Biology, Istanbul, Turkey

Elevated level of tumor necrosis factor-α in rats with impaired glucose tolerance

Branka Djordjevic¹, Dusan Sokolovic¹, Milena Despotovic¹, Andrej Veljkovic¹, Jelena Basic¹, Danka Sokolovic², Gordana Kocic¹, Tatjana Jevtovic Stoimenov¹
¹Department of Biochemistry, Faculty of Medicine, University of Nis, Nis, Serbia; ²Institute for Blood Transfusion, Clinical Center Nis, Nis, Serbia

Complex investigation of familial hypercholesterolemia in North-West Russia

Tatyana Komarova¹, Mikhail Mandelshtam^{1,2}, Vadim Vasilyev¹
¹Institute of Experimental Medicine, St. Petersburg, Russia; ²Saint Petersburg State University, St. Petersburg, Russia

Is there any association between the variants of receptor for advanced glycation end products (RAGEs) and obesity?

Ilhan Yalim¹, Ozlem Kucukhuseyin¹, E. Hande Karagedik¹, Emel Torun², Tolga Ozgen³, Hulya Yilmaz-Aydogan¹, H. Arzu Ergen¹
¹Department of Molecular Medicine, The Institute of Experimental Medicine, Istanbul University, Istanbul, Turkey; ²Department of Pediatrics, Bezmi Alem University, Istanbul, Turkey; ³Department of Pediatric Endocrinology, Bezmi Alem University, Istanbul, Turkey

Deficiency of DPP IV/CD26 impacts vasoactive intestinal peptide levels among the gut-brain axis in acute inflammation

Lara Baticic Pucar¹, Dijana Detel¹, Suncica Buljevic¹, Natalia Kucic², Jadranka Varljen¹
¹Department of Chemistry and Biochemistry, School of Medicine, University of Rijeka, Rijeka, Croatia; ²Department of Physiology and Immunology, School of Medicine, University of Rijeka, Rijeka, Croatia

Biochemical and immunological blood parameters in dynamics under esophageal alkali burn model of 1st and 2nd degrees

Tatiana Ishchuk, Ya. B. Raetska, O. O. Morgaenko, L. I. Ostapchenko
Taras Shevchenko National University of Kyiv, Kiev, Ukraine

Effects of specific cyclooxygenase-1 A-842G/C50T gene variation on type 2 diabetes mellitus

Ozlem Timirci-Kahraman¹, Ozlem Kucukhuseyin¹, Bahar Toptas¹, Selim Isbir², Kubilay Karsidag³, Turgay Isbir⁴
¹Istanbul University, Institute of Experimental Medicine, Department of Molecular Medicine, Istanbul, Turkey; ²Marmara University, Faculty of Medicine, Department of Cardiovascular Surgery, Istanbul, Turkey; ³Istanbul University, Faculty of Medicine, Department of Internal Medicine, Istanbul, Turkey; ⁴Yeditepe University, Faculty of Medicine, Department of Medical Biology, Istanbul, Turkey

Vanadium and experimental diabetes

Tugba Yilmaz Ozden¹, Ayse Can¹, Sevim Tunali², Ozlem Kurt¹, Nurten Ozsoy¹, Nuriye Akev¹, Refiye Yanardag²
¹Istanbul University, Faculty of Pharmacy, Department of Biochemistry, Beyazit-Istanbul, Turkey; ²Istanbul University, Faculty of Engineering, Department of Chemistry, Avclar-Istanbul, Turkey

Dynamics of NF-κB activity in fetal growth restriction

Victoria Gunko, Tatiana Pogorelova, Victor Linde
Rostov Scientific-Research Institute of Obstetrics and Pediatrics, Rostov-on-Don, Russia

The role of copper(II) ions in oxidative stress induced by glycation of human serum albumin with methylglyoxal

Ana Z. Penezic Romanjuk
Faculty of Chemistry, University of Belgrade, Serbia

Effects of n-3 Long chain PUFA on circulatory levels of adiponectin, IGF-1 and the proinflammatory cytokines, TNF-alpha, IL-1beta, IL-6 in type 2 diabetic patients

Gulden Bureak¹, Asuman Kurt¹, Dildar Konukoglu¹, Arzu Seven¹, Zeynep Osar Siva², Gulnur Andican¹
¹Istanbul University, Cerrahpasa Medical Faculty, Department of Biochemistry, Istanbul, Turkey; ²Istanbul University, Cerrahpasa Medical Faculty, Department of Internal Medicine, Istanbul, Turkey

Efficacy of antioxidant vitamins (vitamin C, vitamin E, beta-carotene) and selenium supplement on D-galactosamine-induced lung injury in rats

Sehnaz Bolkent¹, Bertan Boran Bayrak², Fusun Oztay¹, Tunc Catal³, Refiye Yanardag²
¹Department of Biology, Faculty of Science, Istanbul University, Vezneciler, Turkey; ²Department of Chemistry, Faculty of Engineering, Istanbul University, Avcilar, Turkey; ³Department of Molecular Biology and Genetics, Faculty of Engineering and Natural Sciences, Uskudar University, Altunizade, Istanbul, Turkey

Runx2 gene plays a protective role in ureteral obstruction-induced kidney fibrosis through inhibition of TGF-β signal

Jee In Kim, Kwon Moo Park
Kyungpook Natl. Univ., Daegu, South Korea

Effect of buccillamine on hyaluronan degradation induced *in vitro* by reactive oxygen species

Maria Banasova¹, Katarina Valachova¹, Vlasta Sasinkova², Jozef Rychly³, Raniero Mendichi⁴, Ivo Juranek¹, Ladislav Soltes¹
¹Institute of Experimental Pharmacology and Toxicology, Slovak Academy of Sciences, Bratislava, Slovakia; ²Institute of Chemistry, Slovak Academy of Sciences, Bratislava, Slovakia; ³Polymer Institute, Slovak Academy of Sciences, Bratislava, Slovakia; ⁴Istituto per lo Studio delle Macromolecole, Consiglio Nazionale delle Ricerche, Milano, Italy

Tissue factor activities of kidney in D-galactose induced rat aging model

Unsal Veli Ustundag¹, Nihal Sehkar Oktay¹, A. Ata Alturfan², Ebru Emekli-Alturfan¹, Karolin Yanar², Murat Mengi³, Tamer Cebe², Muhammed Sait Toprak², Seval Aydin³, Ufuk Cakatay²
¹Marmara University, Faculty of Dentistry, Department of Biochemist, Turkey; ²Istanbul University, Cerrahpasa Medical Faculty, Department of Biochemist, Turkey; ³Istanbul University, Cerrahpasa Medical Faculty, Department of Physiology, Turkey

Modeling of short-chain fatty acids metabolism in human gut: reconstruction of possible relations between microbiota composition and type 2 diabetes status

Yuri Kosinsky, Kirill Peskov, Anna Popenko, Aleksandr Tyakht, Dmitry Alexeev
Russian Institute of Physico-Chemical Medicine, Moscow, Russia

The role of lectin-like oxidized LDL receptor-1 as a mediator of endothelial dysfunction in patients with metabolic syndrome

Sabiha Civelek¹, Hafize Uzun¹, Muge Kutnu¹, Fusun Erdenen², Esmal Altunoglu², Gulnur Andican¹, Arzu Seven¹, Alp Oke Sahin¹, Gulden Burcak¹
¹Department of Medical Biochemistry, Cerrahpasa Faculty of Medicine, Istanbul University, Turkey; ²Istanbul Education and Research Hospital, Internal Medicine Clinic, Turkey

Effects of melatonin receptor 1B gene variation on glucose control in population from Bosnia and Herzegovina

Sabina Semiz^{1,2}, Tanja Dujic¹, Tamer Bego¹, Maja Malenica¹, Zeliha Velija-Asimi³, Besim Prnjavorac⁴, Adlija Causevic¹
¹Department of Biochemistry and Clinical Analysis, Faculty of Pharmacy, University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ²Faculty of Engineering and Natural Sciences, International University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ³Clinic of Endocrinology, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina; ⁴Faculty of Pharmacy, University of Sarajevo; General Hospital Tesanj, Tesanj, Bosnia and Herzegovina

Investigation of the tissue factor activities and antioxidant status of liver in D-galactose induced aging model

Unsal Veli Ustundag¹, Nihal Sehkar Oktay¹, Ebru Emekli-Alturfan², A. Ata Alturfan¹, Karolin Yanar², Murat Mengi⁴, Tamer Cebe³, Muhammed Sait Toprak³, Seval Aydin³, Ufuk Cakatay³
¹Marmara University, Faculty of Dentistry, Department of Biochemist, Turkey; ²Marmara University, Faculty of Dentistry, Department of Pediatric Dentist, Turkey; ³Istanbul University, Cerrahpasa Medical Faculty, Department of Biochemist, Turkey; ⁴Istanbul University, Cerrahpasa Medical Faculty, Department of Physiology, Turkey

Investigating the inadequate cellular stress response in peritoneal dialysis – a novel pathomechanism and its therapy

Klaus Kratochwill¹, Rebecca Herzog², Anton Lichtenauer², Lilian Kuster², Andreas Vychytil¹, Christoph Aufricht¹
¹Medical University of Vienna, Vienna, Austria; ²Zytoprotec GmbH, Vienna, Austria

CCAAT/enhancer-binding proteins mediate high glucose-induced upregulation of endothelin-1 in human endothelial cells

Simona-Adriana Manea, Andra Todirita, Adrian Manea
Institute of Cellular Biology and Pathology "Nicolae Simionescu" of the Romanian Academy, Romania

Searching for pharmacological chaperones aiding to stabilize hydroxymethylbilane synthase

Helene J. Bustad^{1,2}, Karen Toska¹, Sverre Sandberg¹, Aurora Martinez², Jarl Underhaug²
¹Norwegian Porphyria Centre (NAPOS), Laboratory of Clinical Biochemistry, Haukeland University Hospital, Bergen, Norway; ²Biorecognition, Department of Biomedicine, University of Bergen, Bergen, Norway

HLA-B27 allele frequency in a Turkish study population with primer osteoarthritis

Banu Bayram¹, Emrah Sayin², Sedat Bozari³, Fezan Mutlu⁴
¹Medical Laboratory Skills, Vocational School of Health Services, Mugla Siki Kocman University, Mugla, Turkey; ²Private Mus Sifa Hospital, Department of Orthopedics and Traumatology, Mus, Turkey; ³Mus Alparslan University, Faculty of Arts and Science, Department of Biology, Mus, Turkey; ⁴Department of Biostatistics, Medical Faculty, Eskisehir Osmangazi University, Eskisehir, Turkey

Alterations of thyroid hormone levels in cadmium exposure

Engin Tutkun¹, Hinc Yilmaz¹, Sedat Abusoglu², Fatma Meric Yilmaz³, Meside Gunduzoz¹, Ceylan Demir Bal¹, Ali Unlu²
¹Department Occupational Diseases Service, Occupational Diseases Hospital, 06200 Ankara, Turkey; ²Department of Biochemistry, Selcuk University Faculty of Medicine, 42200 Konya, Turkey; ³Department of Biochemistry, Yildirim Beyazit University Faculty of Medicine, 06200 Ankara, Turkey

Comparative analysis of glycogen molecule structure in hepatocytes of normal and cirrhotic rat liver

Anna Chestnova, Natalia Bezborodkina, Natalia Matyukhina, Boris Kudryavtsev
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

The role of hepatocyte CYP27A1 and CYP2R1 in the process of hydroxylation of cholecalciferol associated with the effects of prednisolone

Anna Khomenko, Larisa Apukhovska
Palladin Institute of Biochemistry of NAS of Ukraine, Kyiv, Ukraine

Thrombin binds human ceruloplasmin and proteolytically hinders its antioxidant activity: Implications in the pathogenesis of rheumatoid arthritis

Vincenzo De Filippis¹, Laura Acquasaliente¹, Alexej Sokolov², Valeria Kostevich², Elena Zakharova², Vadim Vasilyev²
¹Dept. of Pharmaceutical and Pharmacological Sciences, University of Padua, Italy; ²Institute of Experimental Medicine, North-Western Branch of Russian Academy of Medical Sciences, St. Petersburg, Russia

Molecular mechanism of body weight reducing effect for oral boric acid intake

Dilek Telci¹, Erhan Aysan², Merve Erdem¹, Emir Yalvac³, Mahmut Muslumanoglu², Erkan Yardimci², Huseyin Bektasoglu², Fikretin Sahin¹
¹Yeditepe University, Istanbul, Turkey; ²Bezmalem Vakif University, Istanbul, Turkey; ³Ohio State University, Columbus, OH, USA

Sodium tungstate decreases the progression of renal damage through inhibition of fibrosis in diabetic rat kidney

Pamela Silva, Karen Jaramillo, Daniel Carpio, Moises Perez, Alejandro Yanez
Universidad Austral de Chile, Valdivia, Chile

Sodium tungstate attenuates fibrosis through suppression of transforming growth factor-β1/Smad3 in diabetic nephropathy

Karen Jaramillo, Daniel Mansilla, Ariel Cumian, Moises Perez, Daniel Carpio, Rafael Burgos, Alejandro Yanez
Universidad Austral de Chile, Valdivia, Chile

Post-translational modulation of hydrogen peroxidation enzymes by streptozotocin induced diabetes and antioxidants

Gokhan Sadi, Davut Bozan, Huseyin Bekir Yildiz
Karamanoglu Mehmetbey University, Karaman, Turkey

Molecular function of the long noncoding RNA *SPRY4-IT1* in human melanomas

Ranjan J. Perera, Wei Zhao, Joseph Mazar, Jian-Liang Li, Laurence Brill, Maya Ratnam, Ahmad M. Khalil, Marcel E. Dinger, John S. Mattick
Sanford-Burnham Medical Research Institute, Orlando, FL, USA

Determination of kinetic parameters of telomerase inhibition by telomerase RNA template antagonist

Dulat Azhibek¹, Timofei Zatsepin^{1,2}, Maria Zvereva^{1,2}, Olga Dontsova^{1,2}
¹Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia; ²A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Differential binding of plasma proteins by liposomes loaded with lipophilic prodrugs of methotrexate and melphalan

Natalia Kuznetsova, Elena Vodovozova
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Nanoparticles designed to treat atherosclerosis and cancer

Viorel Simion¹, Daniela Stan¹, Monica Pirvulescu¹, Ana-Maria Gan¹, Elena Butoi¹, Ileana Manduteanu¹, Manuela Calin^{2,1}
¹Institute of Cellular Biology and Pathology "N. Simionescu" Romania; ²Institute of Macromolecular Chemistry "Petru Poni", Romania

New specific drugs for damaging of cancer cells in acute leukemia

Marina Orlova, Tatiana Trofimova
Lomonosov Moscow State University, Moscow, Russia

Combining chemotherapy and targeted therapies against resistance and recurrence in ovarian cancer

Ricardo Fernandez-Ramires¹, Eduardo Herreros¹, Cristian Vilos¹, Maria Loreto Bravo², Carolina Otero¹, Sebastian Morales¹, Luis Velasquez¹, Gareth Owen²
¹Universidad Andres Bello, Santiago de Chile; ²Pontificia Universidad Catolica de Chile

A new approach for targeted drug delivery into tumor cells

Nikita Yabbarov¹, Galina Posypanova², Elena Nikolskaya², Oksana Arsenkova³, Vasilisa Zavarzina³, Sergey Kuznetsov², Sergey Severin²
¹Centre Bioengineering, Russian Academy of Sciences, Moscow, Russia; ²NBICS Centre Kurchatov Institut, Moscow, Russia; ³Mendelev University (RCTU), Moscow, Russia

Effects of stabilized-Ag ion solution on 8-OHdG and MDA levels in different human lung cancer cells (H1299)

Aysun Ozkan¹, Odul Ozkan², Ayse Erdogan¹, Nadir Kiraz³
¹Akdeniz University, Science Faculty, Biology Department, Antalya, Turkey; ²TED Antalya College Foundation Private High School, Antalya, Turkey; ³Akdeniz University, Science Faculty, Chemistry Department, Antalya, Turkey

The potential of urinary volatile metabolites as a non-invasive, innovative and promising strategy for early diagnosis of cancer

Catarina Luis Silva, Jose S. Camara
Madeira University, Madeira Research Centre, Portugal

Cisplatin effects on nuclear neutral lipids of rat thymus cells

Nune Hakobyan, Agapi Hovhannisyann, Zhenya Yavroyan, Emil Gevorgyan
Yerevan State University, Yerevan, Armenia

In vitro effects of selenium on human glioblastoma multiforme cell lines

Duygu Harmanci^{1,3}, Zubeyde Erbayraktar², Oya Sayin³, Gul Guner^{1,2,3}
¹Dokuz Eylul University Graduate School of Health Sciences, Department of Molecular Medicine, Izmir, Turkey; ²Dokuz Eylul University School of Medicine, Department of Biochemistry, Izmir, Turkey; ³Dokuz Eylul University Research Laboratory R-LAB, Izmir, Turkey

Synthesis and evaluation of antitumoral activity of some new pyrazolic compounds

Lilia Matei¹, George M. Nitulescu², Ioana M. Aldea¹, Coralia Bleotu¹, Mihaela Chivu-Economescu¹, Carmen C. Diaconu¹
¹Stefan S Nicolau Institute of Virology, Bucharest, Romania; ²Carol Davila University of Medicine and Pharmacy, Bucharest, Romania

Study of protein content of mushrooms' intracellular extracts having anti-inflammatory and anticancer activity

Inesa Avagyan¹, Arus Zhamgaryan¹, Liya Minasbekyan²
¹Yerevan State University, Dep. of Botany and Mycology, Yerevan, Armenia; ²Yerevan State Medical University (YSMU), Dep. of Pharmacology, Yerevan, Armenia; ³Yerevan State University, Department of Biophysics, Yerevan, Armenia

Design of thrombospondin-binding peptides exhibiting strong anti-angiogenesis and anti-tumor properties

Albin Jeanne¹, Emilie Sick¹, Christophe Schneider¹, Nicolas Floquet², Jerome Devy¹, Nicolas Belloy¹, Marie-Daniele Diebold³, Manuel Dauchez¹, Laurent Martiny¹, Stephane Dedieu¹
¹Laboratoire SiRMA, FRE CNRS/URCA 3481 MEDyC, Reims, France; ²Institut des Biomolécules Max Mousseron, IBMM UMR 5247, Montpellier, France; ³Laboratoire central d'Anatomie et de Cytologie Pathologiques, Hôpital Robert Debre, Reims, France

A novel combined therapy to increase the sensitivity of breast cancer cells to tamoxifen

Maria del Mar Collado-Gonzalez¹, Nana Mchedlishvili², Tinatin Sadumihvili², Jose Neptuno Rodriguez Lopez¹, Maria Fernanda Montenegro¹
¹Department of Biochemistry and Molecular Biology A, University of Murcia, Murcia, Spain; ²Durmishidze Institute of Biochemistry and Biotechnology, Tbilisi, Georgia

IL-6 induced apoptosis and LDH release from K-562 cells

Vladimir Jurisic¹, Tatjana Srdic, Rajic²
¹University of Kragujevac, Faculty of Medicine, Kragujevac, Serbia; ²Institute of Oncology and Radiology of Serbia, Belgrade

Redox-mediated P-gp transport activity in human CD19+ and CD19- lymphocytes

Alexander Tamashevski
Institute of Biophysics and Cell Engineering, National Academy of Sciences of Belarus, Belarus

Antineoplastic properties of pomolic acid isolated from *Chamaenerion angustifolium*

Tatiana Frolova¹, Olga Sinitsyna², Tatiana Kukina³
¹Novosibirsk State University, Novosibirsk, Russia; ²Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ³Novosibirsk Vorozhtsov Institute of Organic Chemistry, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Risk assessment of lung cancer development on the basis of mass spectrometry analysis of blood plasma metabolites

Oxana Trifonova, Petr Lokhov, Dmitry Maslov, Alexander Archakov
Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia

Pentamethinium salts as new type selective cytostatic agents for target of cancer signal pathways

Zdenek Kejik¹, Tomas Briza¹, Jarmila Kralova², Marian Hajduch³, Petr Dzubak³, Pavel Martasek¹, Vladimir Kral⁴
¹First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic; ²Institute of Molecular Genetics, Academy of Sciences of the Czech Republic, Prague, Czech Republic; ³Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry, Palacky University and University Hospital in Olomouc, Olomouc, Czech Republic; ⁴Institute of Chemical Technology, Prague, Prague, Czech Republic

Increase in resistance of cancer cells in confluent cultures to survivin inhibitor YM155

Nadezda V. Dolgikh¹, Alexey V. Chekanov², Vladimir S. Akatov²
¹Pushchino State Natural Science Institute, Pushchino, Russia; ²Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Pushchino, Russia

Porous silicon nanoparticles for cellular delivery of anticancer molecules

Nicola Massimiliano Martucci¹, Immacolata Ruggiero¹, Nunzia Migliaccio, Ilaria Rea⁴, Paolo Arcari, Annalisa Lamberti
¹Department of Molecular Medicine and Medical Biotechnologies, University of Naples Federico II, Naples, Italy; ²Institute for Microelectronics and Microsystems, National Council of Research, Naples, Italy

In vitro probing of human refractory prostate cancer cells by microRaman spectroscopy

Ana Batista-de-Carvalho¹, Cristina R. Frias², Juan C. Otero², Maria P. Marques¹
¹Molecular Physical-Chemistry R&D Unit of University of Coimbra, Coimbra, Portugal / Department of Life Sciences of Faculty of Science and Technology of University of Coimbra, Coimbra, Portugal; ²Department of Physical Chemistry of University of Malaga, Malaga, Spain

Candidate breast cancer DNA vaccine: Design of polypeptide antigen and evaluation of its expression in human dendritic cells

Mariya Kharkova¹, Zhanna Nazarkina¹, Denis Antonets², Elena Borobova², Alyona Reguzova², Ekaterina Starostina², Pavel Laktionov¹, Sergey Bazhan², Larisa Karpenko², Alexandr Ilyichev², Valentin Vlassov¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Division of the Russian Academy of Sciences, Novosibirsk, Russia; ²State Research Center of Virology and Biotechnology Vector, Koltsovo, Novosibirsk Region, Russia

CYP2D6 genotype and tamoxifen response in pre and postmenopausal Thai women with hormone responsive breast cancer

Wilai Noonpakdee¹, Montri Chamnanphon², Chonlaphat Sukasem*², Wasun Chantratita³, Ekawat Pasomsab³
*¹Department of Biochemistry, Faculty of Science, Mahidol University, BKK, Thailand; ²Division of Pharmacogenomics and Personalized Medicine (*Corresponding Author), Mahidol University, BKK, Thailand; ³Division of Virology, Department of Pathology, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, BKK, Thailand*

The role of polyamines in the design of anticancer drugs

Sonia M. Fiuza, Ana M. Amado, Maria P. M. Marques, Luis A. E. Batista de Carvalho
Quimica-Fisica Molecular Faculdade de Ciencias e Tecnologia Universidade de Coimbra, Coimbra, Portugal

Triterpene saponosides from *Lysimachia ciliata* - new perspective in cancer therapy in vitro studies

Paulina Koczurkiewicz¹, Irma Podolak², Katarzyna Wojcik¹, Jaroslaw Czyz¹, Agnieszka Galanty², Zbigniew Janeczko², Marta Michalik¹

¹Jagiellonian University, Faculty of Biophysics, Biochemistry and Biotechnology, Department of Cell Biology, Krakow, Poland; ²Jagiellonian University Medical College, Faculty of Pharmacy, Department of Pharmacognosy, Krakow, Poland

Association of the MTHFR C677T polymorphism with toxicity in breast cancer adjuvant anthracycline-based treatment

Nataliia Svergun, Natalia Khranovska, Lyubov Syvak, Hanna Gubareva, Sergij Lialkin, Nataliia Klyukovska
National Cancer Institute, Ministry of Public Health of Ukraine, Ukraine

PKC-alpha mediates the therapeutic effect of salinomycin on breast cancer cell lines

Teresa Coronado-Parra
Bioquimica y Biologia Molecular A. Universidad de Murcia, Murcia, Spain

Mechanisms of anti-metastatic effects induced by dibenzoylmethane and its analogues on human breast carcinoma cells

Ya-Fan Liao¹, Yew-Min Tzeng¹, Hui-Chih Hung², Guang-Yaw Liu³
¹Department of Applied Chemistry, Chaoyang University of Technology, Taichung, Taiwan, ROC; ²Department of Life Sciences, National Chung Hsing University, Taichung, Taiwan, ROC; ³Institute of Microbiology & Immunology, Chung Shan Medical University, Taichung, Taiwan, ROC

Treatment of brain tumor by targeted cisplatin-loaded nanogels in rats

Natalia Nukolova¹, Vladimir Baklaushv¹, Alexander Khalansky², Gaukhar Yusubaliev¹, Tatiana Sandalova¹, Alexander Kabanov³, Vladimir Chekhonin¹

¹The Serbsky Scientific Center for Social and Forensic Psychiatry, Moscow, Russia; ²Research Institute of Human Morphology, Russian Academy of Medical Sciences, Moscow, Russia; ³Center for Nanotechnology in Drug Delivery and Division of Molecular Therapeutics, UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, USA

Chemical screening and cytotoxicity of some plants traditionally used as food in Armenia

Naira Movsisyan, Alvard Antonyan, Hayk Harutyunyan, Svetlana Sharoyan, Sona Mardanyan
H. Buniatyan Institute of Biochemistry, Armenian National Academy of Sciences, Yerevan, Armenia

A new trifluorothymidine prodrug for treating cancer

Natalya Antonova¹, Vladimir Lisitskiy^{1,2}, Tatyana Popova^{1,2}, Olga Zakharova¹, Igor Koptuyug^{2,3}, Andrey Akulov⁴, Vassily Kaledin⁴, Tatyana Godovikova^{1,2}

¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk State University, Novosibirsk, Russia; ³International Tomography Center, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ⁴Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Programmed tumor cells death induced by recombinant analog of lactaptin

Aleksandr Fomin, Olga Koval, Elena Kuligina, Vladimir Richter
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

BAI, a novel CDK inhibitor induces apoptosis or G2/M arrest according to p53 state of cancer cell

Jong Wook Park, Shin Kim
Department of Immunology, School of Medicine, Keimyung University, South Korea

Effects of flavonoids on mushroom tyrosinase and melanogenesis in mouse B16 melanoma cells

Worrawat Promden¹, Ruchy Jain², Orawan Monthakantirat³, Kaoru Umehara⁴, Hiroshi Noguchi⁴, Wanchai De-Eknamkul⁵
¹Program of General Sciences, Faculty of Education, Buriram Rajabhat University, Buriram, Thailand; ²International Pharmaceutical Technology, Faculty of Pharmaceutical Science, Chulalongkorn University, Bangkok, Thailand; ³Department of Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences, KhonKaen University, KhonKaen, Thailand; ⁴School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan; ⁵Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand

Modular nanotransporters efficiently deliver Auger electron emitters into nuclei of cancer cells

Tatiana Slastnikova¹, Eftychia Koumariou², Andrey Rosenkrantz¹, Ganesan Vaidyanathan², Michael Zalutsky², Alexander Sobolev¹
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²Duke University Medical Center, Durham, NC, USA

Targeted delivery of antitumor peptide lactaptin to tumors

Elena Kuligina¹, Anna Vaskova¹, Vasilii Kaledin², Alexander Ilyichev³, Mariya Borgoyakova³, Olga Koval¹, Vladimir Richter¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ³State Research Center of Virology and Biotechnology VECTOR, Koltsovo, Novosibirsk Region, Russia

Cytotoxic and antioxidant activity of 9-norbornyl-6-chloropurine - a novel carbocyclic nucleoside analogue

Pavla Plackova, Jana Gunterova, Nela Rozumova, Michal Sala, Radim Nencka, Helena Mertlikova-Kaiserova
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Nobiletin Induces apoptosis and potentiates the effects of the anticancer drug 5-fluorouracil in p53-mutated SNU-16 human gastric cancer cells

Somi Kim Cho, Jeong Yong Moon, YeonWoo Song
Jeju National University, Jeju, South Korea

Investigating expression levels of genes responsible for electron transport chain in uterine fibroid

Akile Tuncal¹, Hikmet Hakan Aydin¹, Niyazi Askar², A. Ozgur Yeniel², A. Mete Ergenoglu², Ali Akdemir², Handan Ak Celik¹
¹Ege University School of Medicine Department of Medical Biochemistry, Bornova, Izmir, Turkey; ²Ege University School of Medicine Department of Obstetrics & Gynecology, Bornova, Izmir, Turkey

ABCG2, a polyspecific multidrug resistance protein: Modulator screening studies

Charlotte Gauthier¹, Glaucio Valdameri¹, Evelyn Winter da Silva¹, Ahcene Boumendjel², Attilio Di Pietro¹
¹BMSSI UMR5086 CNRS-University of Lyon, IBCP, Lyon, France; ²Department of Molecular Pharmacology, UMR5063 CNRS-University of Grenoble, France

Trigona sirindhornae propolis reduces progression of head and neck cancer cell lines

Kusumawadee Utispan, Sittichai Koontongkaew
Faculty of Dentistry, Thammasat University, Klong Luang, Pathum Thani, Thailand

ROS-induced apoptosis of human melanoma cells using biocompatible polyelectrolyte nanocapsules as a carrier of cyanine-type photosensitizer

Kazimiera A. Wilk¹, Urszula Bazylinska¹, Julita Kulbacka², Krzysztof Szczepanowicz³, Piotr Warszynski³
¹Organic and Pharmaceutical Technology Group, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland; ²Department of Medical Biochemistry, Medical University of Wrocław, Wrocław, Poland; ³Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland

Effects of quercetin on experimental cancer in rats following oxidant / antioxidant balance

Maria Iuliana Gruia¹, Valentina Iivarosi², Valentina Negoita¹, Marieta Panait¹, Monica Vasilescu¹, Ion Gruia³
¹Institute of Oncology Bucharest, Bucharest, Romania; ²University of Medicine and Pharmacy, Bucharest, Romania; ³University of Bucharest-Faculty of Physics, Bucharest, Romania

Troeger's bases bearing two hydrazone units as new cytostatic agents

Martin Havlik¹, Robert Kaplanek¹, Jakub Rak¹, Vladimir Kral¹, Jarmila Kralova²
¹Institute of Chemical Technology, Prague, Czech Republic; ²Academy of Sciences of the Czech Republic, Prague, Czech Republic

Predictive significance of thymidylate synthase expression in non-small cell lung cancer (NSCLC)

Jana Dobra¹, Vlastimil Kulda¹, Martin Pesta², Vaclav Babuska¹, Milos Pesek³, Jaroslav Racek¹
¹Department of Biochemistry, Faculty of Medicine in Pilsen, Charles University in Prague, Czech Republic; ²Department of Biology, Faculty of Medicine in Pilsen, Charles University in Prague, Czech Republic; ³Department of Tuberculosis and Respiratory Diseases, Faculty of Medicine in Pilsen, Charles University in Prague, Czech Republic

Prospects of anticancer therapy by lactaplin

Vladimir Richter¹, Olga Koval¹, Alexandr Fomin¹, Elena Kuligina¹, Vasily Kaledin², Dmitry Semenov¹, Miraslava Potapenko¹, Valery Nikolin², Evgenij Zavjalov²
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Design and optimization of targeted therapeutics with precisely controlled pharmacokinetic and biodistribution properties

Elmira Safarova, Daria Zaytseva-Zotova
BIND (RUS), LLC

Cages for cancer cells, a new approach to block cell division

Olga Moiseeva, Frederic Lessard, Gerardo Ferbeyre
University of Montreal, Montreal, Canada

Oridonin inhibits RNA transportation to reduce glioma cell growth via down-regulation of RanGAP expression

Chwen-Ming Shih¹, Tsung-Yao Lin², Chin-Cheng Lee³
¹Department of Biochemistry, College of Medicine, Taipei Medical University, Taipei, Taiwan; ²Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei, Taiwan; ³Department of Pathology and Laboratory Medicine, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan

Targeted therapy of human Glioblastoma using saporin delivery approach

Rodolfo Ippoliti, Sabrina Mei, Francesco Giansanti, Giuseppina Pitari, Luana Di Leandro, Annamaria Cimini
Dept. of Life, Health and Environmental Sciences, University of L'Aquila, Italy

Potent angiogenic activity of proheparin and detection of proheparin in human cancer serum

Mi-Kyung Oh, Hyo-Jung Park, In-Sook Kim
Department of Medical Lifescience, College of Medicine, The Catholic University of Korea, Seoul, Korea

Effects caused by cyclophosphamid on microelement level and antioxidant system activity in rat tissues: A possibility for supporting therapy of cancer patients by microelement preparations

Milyausha Ibragimova¹, I.K. Valeeva², A.V. Skalny³, A.N. Fattakhova¹, Y.K. Ibragimov², R.I. Zhdanov¹
¹Institute for Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia; ²Kazan State Medical University, Kazan, Russia; ³Russian Society of Bioelementologists, Moscow, Russia

Development and *in vitro* efficacy of liposomes carrying anthracyclines and emetine for enhanced therapeutic effect

Lene Myhren¹, Ida M. Nilsen¹, Valerie Nicolas², Stein Ove Døskeland¹, Gillian Barratt³, Lars Herfindal¹
¹Department of Biomedicine, University of Bergen, Bergen, Norway; ²Plateforme d; ³Faculty of Pharmacy, Univ. Paris-Sud XI, 92296 Chatenay-Malabry, France

Effect of *Amarylidiaceae* alkaloids haemanthamine and haemanthidine on cell viability, apoptosis and cell cycle progression in human T-lymphoblast cell line

Radim Havelek¹, Martina Seifrtova², Karel Kralovec¹, Lenka Bruckova¹, Lucie Cahlikova⁵, Martina Rezacova², Zuzana Bilkova¹
¹University Pardubice, Faculty of Chemical Technology, Department of Biological and Biochemical Sciences, Czech Republic; ²Charles University in Prague, Faculty of Medicine in Hradec Kralove, Department of Medical Biochemistry, Czech Republic; ³Charles University in Prague, Faculty of Pharmacy, Department of Pharmaceutical Botany and Ecology, Czech Republic

L-DOPA decarboxylase (DDC) upregulation correlates with aggressive breast and prostate tumors, representing a novel biomarker for the accurate prognosis of breast and prostate cancer patients' outcome

Kleita Michaelidou, Margaritis Avgeris, Andreas Scorilas, Emmanuel G. Fragoulis
Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Athens, Panepistimiopolis, Athens, Greece

Cytotoxic and photodynamic activity of new cationic porphyrins

Anna G. Gyulkhandanyan, Grigor V. Gyulkhandanyan
Institute of Biochemistry of National Academy of Sciences of Armenia, Yerevan, Armenia

Modulation of L1210 cells sensitivity to cisplatin by treatment with fullerene C60

Svitlana Prylutska¹, Ganna Pasichnyk², Iryna Grynyuk¹, Olga Matyshevska¹, Lyudmyla Drobot²
¹Kyiv Taras Shevchenko University, Kyiv, Ukraine; ²Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Inhibition of poly(ADP-ribose) polymerases partially reduces the cytotoxic effect of doxorubicin on cultured rat cardiomyocytes

Anna S. Efremova, Irina A. Sinitsyna, Stanislav I. Shram
Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

Comparative analysis of proanthocyanidins protective effects in cytostatic-treated normal and malignant cells

Nebojsa Pavlovic, Jasmina Katanic, Branislava Srdenovc, Gordana Bogdanovic, Karmen Stankov
Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia

Fusion proteins capable of selective binding to melanoma cells for investigation of the mechanisms of cell malignization

Marina S. Syrkina^{1,2}, Mikhail A. Rubtsov², Dmitry A. Shirokov¹, Vladimir P. Veiko¹
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Lomonosov Moscow State University, Moscow, Russia

A single mechanism of cancer for all carcinogenic factors

Victor Ovsyannikov
Ioffe Physical-Technical Institute, Russian Academy of Sciences, St. Petersburg, Russia

Effect of Schiff base combination on liver cancer

Aysegul Dogan¹, Nese Basak¹, Dilek Telci¹, Bulent Dede², Ertugrul Kilic³, Kazim Kilic⁴, Fikrettin Sahin¹
¹Yeditepe University, Istanbul, Turkey; ²Suleyman Demirel University, Isparta, Turkey; ³Medipol University, Istanbul, Turkey; ⁴Firat University, Elazig, Turkey

Pre-clinical trials of the new antiCDK4/6 MMD37K peptide

V. K. Bozhenko¹, T. M. Kulinich¹, E. A. Kudinova¹, A. Boldirev²
¹Russian Scientific Center Roentgenradiology, Ministry of Healthcare of the Russian Federation, Moscow, Russia; ²Metamax S.a.

Cell penetrating peptides (CPP) as the intracell delivery system for anticancer agents

V. K. Bozhenko¹, A. A. Tuzhilin², A. S. Mishenko², T. M. Kulinich¹, E. A. Kudinova¹
¹Russian Scientific Center Roentgenradiology, Ministry of Healthcare of the Russian Federation, Moscow, Russia; ²Lomonosov Moscow State University, Moscow, Russia

***In vitro* and cellular study of benzothiofene-3-carboxamides as inhibitors of Aurora kinase family**

Pal Gyulavari¹, Kinga Penzes¹, Tibor Vantus¹, Peter Banhegyi², Balint Szokol², Zoltan Greff², Laszlo Orfi², Gyorgy Keri²
¹Pathobiochemistry Research Group, Hungarian Academy of Sciences, Budapest, Hungary; ²Vichem Chemie Ltd., Budapest, Hungary

The effect of omega-3 polyunsaturated fatty acid on hyper eosinophilic leukemia cells EOL-1

Kalliopi Moustaka¹, Eirini Maleskou¹, Andromahi Labrianidou¹, Marilena Lekka², Theoni Trangas¹, Eirini Kitsioulis¹
¹Department of Biological Applications & Technologies - University of Ioannina, Ioannina, Greece; ²Chemistry Department - University of Ioannina, Ioannina, Greece

Therapeutic enzymes for the treatment of leukemia: Autoproteolytic activation of human asparaginase induced by free glycine

Manfred Konrad¹, Christos S. Karamitros¹, Arnon Lavie²
¹Max Planck Institute for Biophysical Chemistry, Goettingen, Germany; ²University of Illinois at Chicago, Chicago, USA

Chemotherapeutic and radiotherapeutic treatments induce overexpression of the multidrug resistance 1 (MDR1) in gallbladder cancer cell models

Juan G. Carcamo¹, Jonathan Castillo², C. Missarelli³
¹Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, FONDEF-INCAR, Valdivia, Chile; ²Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Valdivia, Chile; ³Departamento de Oncología, Hospital Regional, Valdivia, Chile

Matrix metalloproteinase-9 and caspase-3 serum levels as potential markers of hepatic impairment in chronic Hepatitis C patients

Ghada Helaly
Department of Microbiology, Medical Research Institute, Alexandria University, Alexandria, Egypt

Gene polymorphisms of matrix metalloproteinase-9 in chronic and aggressive periodontitis in Turkish population
Gulcan Kuyucuklu¹, Guliz Nigar Guncu², Esra Baltacioglu³, Erhan Dursun², Erkan Sukuroglu³, Sibel Sumer⁴, Ferda Alev Akalin²

¹Hacettepe University Science Faculty Department of Biology, Ankara, Turkey; ²Hacettepe University, Faculty of Dentistry, Department of Periodontology, Ankara, Turkey; ³Karadeniz Technical University, Faculty of Dentistry, Department of Periodontology, Turkey; ⁴Hacettepe University, Faculty of Science, Department of Molecular Biology Ankara, Turkey

(R)-, (S)- and (R,S)-Phenyl tridecyl carbinols exhibit antielastase and anticollagenase activities

Ayşe Yusufoglu¹, Ozlem Sacan², Tulay Yildiz¹, Refiye Yanardag²
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Organic Division, Avclar-Istanbul, Turkey;
²Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Avclar-Istanbul, Turkey

Antiurease, antielastase and antioxidant activities of some monohydroxy tetradecanoic acid isomers

Belma Hasdemir¹, Bahar Bilgin Sokmen², Ayşe Yusufoglu¹, Refiye Yanardag²
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Organic Division, Avclar-Istanbul, Turkey;
²Giresun University, Faculty of Arts and Sciences, Department of Chemistry, Giresun, Turkey; ³Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Avclar-Istanbul, Turkey

Antielastase and antityrosinase activities of racemic and chiral phenyl dodecyl carbinols

Tulay Yildiz¹, Ozlem Sacan², Ayşe Yusufoglu¹, Refiye Yanardag²
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Organic Division, Avclar-Istanbul, Turkey;
²Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Avclar-Istanbul, Turkey

Effect of chirality of 3-hydroxy tetradecanoic acid enantiomers on skin diseases related enzymes

Hatice Baspınar Kucuk¹, Ozlem Sacan², Ayşe Yusufoglu¹, Refiye Yanardag²
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Organic Division, Avclar-Istanbul, Turkey;
²Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Avclar-Istanbul, Turkey

Stability of *Lysobacter* sp. XL1 AlpA and AlpB endopeptidase complexes of their pro regions and mature enzymes

Oleg Latypov¹, Helena Wenzel², Michael Shlyapnikov, Olga Stepnaya³, Igor Granovsky
¹Laboratory of Genetic Enzymology, Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow region, Russia; ²Department for Biotechnology, Mannheim University of Applied Sciences, Mannheim, Germany; ³Laboratory of Microbial Cell Surface Biochemistry, Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow region, Russia

Some 3-13 monohydroxy eicosanoic acid isomers exhibit antielastase, antiurease and antioxidant activities

Hulya Celik Onar¹, Bahar Bilgin Sokmen², Ayşe Yusufoglu¹, Refiye Yanardag¹
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Organic Division, Avclar-Istanbul, Turkey;
²Giresun University, Faculty of Arts and Sciences, Department of Chemistry, Giresun, Turkey

The lysozyme sustained release system based on poly(3-hydroxybutyrate)-poly(ethylene glycol) microparticles

Anton Zernov¹, Elina Ivanova², Garina Bonartseva¹, Anton Bonartsev²
¹A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia; ²Faculty of Biology, Lomonosov Moscow State University, Russia

Candidate breast cancer DNA vaccine: design of polyepitope antigen and evaluation of its expression in human dendritic cells

Mariya V. Kharkova¹, Zhanna K. Nazarkina¹, Denis V. Antonets², Elena A. Borobova², Alyona Reguzova², Ekaterina Starostina², Pavel P. Laktionov¹, Sergey. I. Bazhan², Larisa I. Karpenko², Alexandr A. Ilyichev², Valentin Vlassov¹
¹Institute of Chemical Biology and Fundamental Medicine SB RAS, Novosibirsk, Russia; ²State Research Center of Virology and Biotechnology Vector, Koltsovo, Novosibirsk, Russia

Programmed tumor cells death induced by recombinant analog of lactaptin

Aleksandr Fomin, Olga Koval, Elena Kuligina, Miroslava Potapenko, Dmitry Semenov and Vladimir Richter
Institute of Chemical Biology and Fundamental Medicine Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

Conjugate of human oxytomodulin and polysialic acid has a prolonged anorexic effect *in vivo*

Ivan Vorobiev¹, Sergey Kovnir¹, Nadezhda Orlova¹, Vera Knorre², Sanjay Jain³, Dmitry Genkin⁴, Alexandre Gabibov², Anatoly Miroshnikov²
¹Centre "Bioengineering" Russian Academy of Sciences, Moscow, Russia; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia; ³Xenetic Biosciences Plc, London, UK; ⁴OJSC "PharmSynthes", St. Petersburg, Russia

Identification of novel chemotypes of H⁺,K⁺-ATPase inhibitors

E. A. Strotskaya¹, K. V. Kudryavtsev², L. I. Ostapchenko¹
¹ESC Institute of Biology, Taras Shevchenko Kiev National University, Kiev, Ukraine; ²Lomonosov Moscow State University, Moscow, Russia

New polymeric nanocarriers for curcumin encapsulation, *in vitro* release and biocompatibility

Urszula Bazylińska¹, Kazimiera A. Wilk¹, Jadwiga Pietkiewicz², Joanna Rosowska³
¹Organic and Pharmaceutical Technology Group, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland; ²Department of Medical Biochemistry, Medical University of Wrocław, Wrocław, Poland; ³Institute of Immunology and Experimental Therapy Polish Academy of Sciences, Wrocław, Poland

Identification of molecular mechanisms mediating the adjuvanticity of cyclic di-nucleotides

Ivana Skrnjug, Christine Rueckert
Helmholtz Centre for Infection Research, Braunschweig, Germany

Protective effects of antioxidants against indomethacin-induced tongue injury in rats

İsmet Burcu Turkyilmaz and Refiye Yanardag
Istanbul University, Faculty of Engineering, Department of Chemistry, Division of Biochemistry, Istanbul, Turkey

Selection and properties of 2'-modified RNA aptamers against MBP-specific autoantibodies from patients with multiple sclerosis

Maria Vorobjeva, Valentina Timoshenko, Anastasia Popovetskaya, Alesya Fokina, Anna Timofeyeva, Georgy Nevinsky, Alya Venyaminova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Human recombinant polymorphic variants of CYP2C9 and CYP2C19 and its application to pharmacogenetic studies

Irina V. Haidukevich, Tatyana A. Sushko, Anastasia M. Iosko, Anastasia O. Veremeichik, Andrei A. Gilep, Sergey A. Usanov
Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus

Compounds stabilizers crystals nano calcium carbonate (CaCO₃) preparation with membrane contactor

Ewelina Sieradzka¹, Anna Witek-Krowiak²
¹Medical University, Faculty of Pharmacy, Department of Biomedical and Environmental Analysis, Wrocław, Poland;
²University of Technology, Chemical Division, Chemical Engineering Department, Wrocław, Poland

Cytoskeleton is implicated in the glutoxim and molixan effect on intracellular calcium concentration in macrophages

Lidiia Kurilova, Zoya Krutetskaya, Alexandra Naumova, Nina Krutetskaya, Victor Antonov
Saint Petersburg State University, St. Petersburg, Russia

Protective effects of lithium: A new look at an old drug with potential

Abdulmecit Albayrak¹, Zekai Halici¹, Beyzagul Polat², Emre Karakus³, Elif Cadirci², Yasin Bayir⁴, Semih Kunak⁵, Saliha Sena Karcioglu¹, Serdar Yigit⁶, Deniz Unal⁶, Sabri Selcuk Atamanalp⁷
¹Ataturk University, Faculty of Medicine, Department of Pharmacology, Erzurum, Turkey; ²Ataturk University, Faculty of Pharmacy, Department of Pharmacology, Erzurum, Turkey; ³Ataturk University, Faculty of Veterinary, Department of Pharmacology, Erzurum, Turkey; ⁴Ataturk University, Faculty of Pharmacy, Department of Biochemistry, Erzurum, Turkey; ⁵Giresun University, Faculty of Medicine, Department of Pharmacology, Giresun, Turkey; ⁶Ataturk University, Faculty of Medicine, Department of Histology, Erzurum, Turkey; ⁷Ataturk University, Faculty of Medicine, Department of General Surgery, Erzurum, Turkey

The role of infliximab on paracetamol-induced hepatotoxicity in rats

Irmak Ferah¹, Zekai Halici², Yasin Bayir³, Elif Demirci⁴, Bunyami Unal⁵, Elif Cadirci¹
¹Ataturk University, Faculty of Pharmacy, Department of Pharmacology, Erzurum, Turkey; ²Ataturk University, Faculty of Medicine, Department of Pharmacology, Erzurum, Turkey; ³Ataturk University, Faculty of Pharmacy, Department of Biochemistry, Erzurum, Turkey; ⁴Ataturk University, Faculty of Medicine, Department of Pathology, Erzurum, Turkey; ⁵Ataturk University, Faculty of Medicine, Department of Histology, Erzurum, Turkey

Plant extracts and some chemical compounds as carbonic anhydrase inhibitors

Ozlem Sacan, Esra Ugurlu
Istanbul University, Faculty of Engineering, Department of Chemistry, Avclar-Istanbul, Turkey

The biochemical and histopathological investigation of amlodipine in ethylene glycol-induced urolithiasis rat model

Abdumecit Albayrak¹, Yasin Bayir², Zekai Halici¹, Emre Karakus³, Akgun Oral⁴, Mevlut Sait Keles⁵, Suat Colak⁶, Tevfik Zupak⁷, Emrullah Dorman⁸, Koray Uludag⁹, Nuh Yayla²

¹Ataturk University, Faculty of Medicine, Department of Pharmacology, Erzurum, Turkey; ²Ataturk University, Faculty of Pharmacy, Department of Biochemistry, Erzurum, Turkey; ³Ataturk University, Faculty of Veterinary, Department of Pharmacology, Erzurum, Turkey; ⁴Ataturk University, Faculty of Medicine, Department of Pediatric Surgery, Erzurum, Turkey; ⁵Ataturk University, Faculty of Medicine, Department of Biochemistry, Erzurum, Turkey; ⁶Ataturk University, Faculty of Medicine, Department of Histology, Erzurum, Turkey; ⁷Ataturk University, Faculty of Medicine, Department of Urology, Erzurum, Turkey; ⁸Ataturk University, Faculty of Veterinary, Department of Biochemistry, Erzurum, Turkey; ⁹Department of Nephrology, Education and Research Hospital, Erzurum, Turkey

Eucaryotic-type serine/threonine protein kinases: Potential drug biotargets

N.Yu. Zhukova, L.L. Tyutyunnik, G.M. Alekseeva, N.V. Danilenko

Vavilov Institute of General Genetics, Russian Academy of Sciences, Russia, Moscow

WNT pathway activation – new perspective in downregulation of TGF-beta profibrotic action in bronchial asthma

Katarzyna Anna Wojcik, Marta Michalik, Paulina Koczurkiewicz, Bogdan Jakiela, Hanna Plutecka, Zbigniew Madeja, Marek Sanak

Jagiellonian University Medical College, Department of Medicine, Laboratory of Molecular Biology and Clinical Genetics, Cracow, Poland and Jagiellonian University, Faculty of Biochemistry, Biophysics and Biotechnology, Department of Cell Biology, Cracow, Poland

NO-releasing xanthine KMUP-1 bonded by simvastatin attenuates bleomycin-induced lung inflammation and delayed fibrosis

Ing-Jun Chen

Kaohsiung Medical University, Taiwan

In vitro biocompatibility studies of cyanine-loaded poly(D,L-lactide) nanoparticles; hemolytic activity, macrophage uptake and interaction with serum albumin

Jadwiga Pietkiewicz¹, Urszula Bazylinska², Kazimiera A. Wilk², Piotr Mlynarz³, Joanna Rossowska⁴

¹Department of Medical Biochemistry, Medical University of Wrocław, Wrocław, Poland; ²Organic and Pharmaceutical Technology Group, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland; ³Department of Bioorganic Chemistry, Faculty of Chemistry, Wrocław University of Technology, Wrocław, Poland; ⁴Institute of Immunology and Experimental Therapy Polish Academy of Sciences, Wrocław, Poland

Differential changes in protease-antiprotease balance and serum levels of soluble tumor necrosis factor receptors during radioiodine therapy

Adina Elena Stanciu¹, Anca Elena Hurduc¹, Anca Sasareanu¹, Marcel Stanciu²

¹Institute of Oncology Bucharest, Bucharest, Romania; ²University "Politehnica" of Bucharest, Bucharest, Romania

Thermal stability of recombinant human carbonic anhydrases II and VI

Vaida Jogaitė, Justina Kazokaite, Vilma Michailoviene, Asta Zubriene, Daumantas Matulis

Department of Biothermodynamics and Drug Design, Vilnius University Institute of Biotechnology, Vilnius, Lithuania

Staphylococcus aureus-induced sepsis and Coenzyme Q10 therapy: An isolated rat heart study

Savas Ustunova¹, Sevan Gurun², Ebru Gurel¹, Huri Dedeakayogullari², Cihan Demirci-Tansel¹

¹Department of Biology, Science Faculty, Istanbul University, Vezneciler, Istanbul, Turkey; ²Department of Marine Biology, Fisheries Faculty, Istanbul University, Laleli, Istanbul, Turkey; ³Department of Biochemistry, Medicine Faculty, Marmara University, Haydarpaşa, Istanbul, Turkey

The effects of vitamin B6 on testis injury induced by valproic acid

Egin Kaptan¹, Ismet Burcu Turkyilmaz², Sehnaz Bolkent¹, Refiye Yanardag²

¹Istanbul University Faculty of Science, Department of Biology, Vezneciler-Istanbul, Turkey; ²Istanbul University Faculty of Engineering, Department of Chemistry, Avcilar-Istanbul, Turkey

Efficient, non-toxic gene delivery by negatively charged polyprenyl-based lipoplexes: Application in RNA delivery and the effects on cell physiology

Monika Rak¹, Anna Ochalek¹, Ewa Bielecka², Marek Masnyk³, Marek Chmielewski³, Tadeusz Chojnacki⁴, Katarzyna Gawarecka⁴, Ewa Swiezewska⁴, Zbigniew Madeja¹

¹Department of Cell Biology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland; ²Department of Microbiology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University,

Krakow, Poland; ³Institute of Organic Chemistry, Polish Academy of Sciences, Warsaw, Poland; ⁴Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland

Dermal Restructuring effect of Trifolium pratense extract demonstrated by in vitro comparative studies

Laura Olariu, Brandusa Dumitriu, Manuela Diana Ene, Lenuta Zglimbea, Mariana Constantinovici
Biotehnos, Otopeni, Romania

The regulation of human gamma-glutamyltransferase gene expression

Alexander Mazein¹, Hongwu Ma², Igor Goryanin¹

¹Okinawa Institute of Science and Technology, Japan; ²University of Edinburgh, UK

The effect of edaravone on skin antioxidant, oxidant parameters in valproic acid induced toxicity

Burcin Alev¹, Sevim Tunali², Sehkar Oktay¹, Tugba Tunali-Akbay¹, Ebru Emekli-Alturfan¹, Hazal Ipecki¹, Refiye Yanardag², Aysen Yarat¹

¹Department of Basic Medical Sciences, Faculty of Dentistry, Marmara University, Turkey; ²Department of Chemistry, Faculty of Engineering, Istanbul University, Istanbul, Turkey;

The effects of tempol on liver in LPS-induced acute endotoxemia in the rat

Sinem Ozdemir¹, Asli Kandil¹, Tugba Kaskavali¹, Huri Dedeakayogullari², Cihan Demirci-Tansel¹

¹Department of Biology, Science Faculty, Istanbul University, Istanbul-Turkey; ²Department of Biochemistry, Medical Faculty, Marmara University, Istanbul-Turkey

The protective effect of amidarone in lung tissue of cecal ligation and puncture-induced septic rats: a perspective from inflammatory cytokine release and oxidative stress

Beyzagul Polat¹, Elif Cadirci¹, Zekai Halici², Yasin Bayir¹, Deniz Unal³, Bulent Caglar Bilgin⁴, Tuba Nurcan Yuksek², Serhat Vancelik⁵

¹Ataturk University, Faculty of Pharmacy, Department of Pharmacology, Turkey; ²Ataturk University, Faculty of Medicine, Department of Pharmacology, Turkey; ³Ataturk University, Faculty of Medicine, Department of Histology and Embriology, Turkey; ⁴Kafkas University, Faculty of Medicine, Department of Internal Medicine, Turkey; ⁵Ataturk University, Faculty of Medicine, Department of Public Health, Turkey

Synthetic muramyl peptides differ in their activity to stimulate the production of iNO synthase and nitric oxide

S.V. Guryanova

Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Biological relevance of fluorescent trilobolide conjugates

Michal Jurasek¹, Silvie Rimpelova¹, Eva Kmonickova², Pavel Drasar¹, Tomas Ruml¹

¹Institute of Chemical Technology, Prague, Czech Republic; ²Institute of Experimental Medicine, Academy of Sciences of the Czech Republic, v.v.i., Prague, Czech Republic

Association of MAOA, CCK, COMT, TPH1, SERT, PDE4B with panic disorder in patients from the Moscow population

Elena Afonchikova, J. E. Azimova, N. M. Fokina, Z. G. Kokaeva, T. O. Kochetkova, N. S. Kondratieva, O. I. Rudko, G. R. Tabeeva, E. A. Klimov

Faculty of Biology, Lomonosov Moscow State University, Moscow, Russia; Laboratory of Neurology and Clinical Neurophysiology, Department of Neuroscience, Scientific-Research Centre, I.M. Sechenov First Moscow State Medical University, Moscow, Russia; University Headache Clinic, Moscow, Russia

Curcumin inhibits transthyretin extracellular deposition in vivo: Implications for Familial Amyloidotic Polyneuropathy (FAP) therapy

Nelson Ferreira¹, Sonia A.O. Santos², Maria Rosario M. Domingues³, Maria Joao Saraiva^{1,4}, Maria Rosario Almeida^{1,4}

¹Institute for Molecular and Cell Biology (IBMC), University of Porto, Porto, Portugal; ²CICECO and Department of Chemistry, University of Aveiro, Aveiro, Portugal; ³Mass Spectrometry Center, QOPNA, Department of Chemistry, University of Aveiro, Aveiro, Portugal; ⁴Institute of Biomedical Sciences Abel Salazar (ICBAS), University of Porto, Porto, Portugal

Antibodies to acetylcholine receptor and prion protein protect cells from amyloid-beta induced toxicity and preserve memory impairment in mouse model of Alzheimer

Anna Kamynina^{1,2}, Natalia Bobkova³, Margarita Filatova¹, Dmitry Koroov^{1,2}, Natalia Medvinskaya³, Kira Holmstrom⁴, Andrey Abramov⁴, Olga Volpina^{1,2}

¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²LTD "Pharma Bio", Moscow, Russia; ³Institute of Cell Biophysics, Russian Academy of Sciences, Puschino, Russia; ⁴Institute of Neuroimmunology UCL, London, UK

The effect of vitamin U on lens antioxidant system in valproic acid administered rats

Sevim Tunali¹, Sibel Kahraman², Refiye Yanardag¹
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Avcilar, Istanbul, Turkey; ²Istanbul Aydin University, Faculty of Engineering-Architecture, Department of Food Engineering, Florya, Istanbul, Turkey

Efficiency of selegiline loaded PLGA-b-PEG nanoparticles in crossing blood brain barrier *in vivo*

Ipek Baysal¹, Samiye Yabanoglu-Ciftci¹, Kezban Ulubayram², Gulberk Ucar³
¹Hacettepe University, Faculty of Pharmacy, Department of Biochemistry, Ankara, Turkey; ²Hacettepe University, Faculty of Pharmacy, Department of Basic Pharmaceutical Sciences, Nanotechnology and Nanomedicine Division, Institute of Science, Ankara, Turkey; ³Hacettepe University, Faculty of Pharmacy, Department of Biochemistry, Nanotechnology and Nanomedicine Division, Institute of Science, Ankara, Turkey

Intranasal delivery of HMGB1 siRNA confers target gene knockdown and robust neuroprotection in the postischemic brain

Ja-Kyeong Lee¹, Il-Doo Kim¹, In-Sun Pak¹, Pyung-Lim Han²
¹Department of Anatomy, Inha University School of Medicine, Incheon, Korea; ²Division of Nano Sciences and Brain Disease Research Institute, Ewha Womans University, Seoul, Korea

Change of hypothalamic and peripheral levels of appetite related hypothalamic neurohormones in olanzapine treated male Wistar rats

Tulin Yanik¹, Deniz Sezlev¹, Mehmet Ak²
¹Middle East Technical University, Department of Biological Sciences, Ankara, Turkey; ²Gulhane School of Medicine, Department of Psychiatry, Ankara, Turkey

Atypical anti-psychotics and weight gain: Risperidone induced male Wistar rats shows increased food intake and change levels of hypothalamic and circulating appetite related neurohormones

Tulin Yanik¹, Canan Kursungoz¹, Mehmet Ak²
¹Middle East Technical University, Department of Biological Sciences, Ankara, Turkey; ²Gulhane School of Medicine, Department of Psychiatry, Ankara, Turkey

Mechanisms of prenatal hyperhomocysteinemia neurotoxicity: The effect on the offspring

Alexander Arutjunyan^{1,2}, Ljudmila Kozina², Yulia Milyutina¹, Andrew Korenevsky¹
¹D.O. Ott Research Institute of Obstetrics and Gynecology, Russian Academy of Medical Sciences, St. Petersburg, Russia; ²St. Petersburg Institute of Bioregulation and Gerontology, Russian Academy of Medical Sciences, St. Petersburg, Russia

Antioxidant properties of apelin-12 and its structural analogue in myocardial ischemia/reperfusion injury

Yulia Pelogeykina, Oleg Pisarenko, Larisa Serebryakova, Vadim Lankin, Aleksandr Timoshin, Galina Konovalova, Valentin Shulzhenko, Irina Studneva, Olga Tskitishvili
Russian Cardiology Research-and-Production Complex, Moscow, Russia

The effect of growth hormone receptor (GHR) exon-3 polymorphism on diabetes and coronary heart disease

Ozlem Kucukhuseyin¹, Bahar Toptas¹, Ozlem Timirci-Kahraman¹, Selim Isbir², Kubilay Karsidag³, Turgay Isbir⁴
¹Istanbul University, The Institute of Experimental Medicine, Department of Molecular Medicine, Istanbul, Turkey; ²Marmara University, Faculty of Medicine, Department of Cardiovascular Surgery, Istanbul, Turkey; ³Istanbul University, Faculty of Medicine, Department of Internal Medicine, Istanbul, Turkey; ⁴Yeditepe University, Faculty of Medicine, Department of Medical Biology, Istanbul, Turkey

New insight on the interplay between the urokinase and TNFalpha in MMP9 expression as a perspective in creation of new anti-invasive drugs

Irina Beloglazova, Ekaterina Zubkova, Mikhail Menshikov, Elizaveta Ratner, Yelena Parfyonova
Russian Cardiology Research and Production Centre Institute of Experimental Cardiology, Moscow, Russia

Phthalocyanines and 5-aminolevulinic acid as novel drugs for photodynamic treatment of human vascular cells

Olga Udartseva, Elena Andreeva, Ludmila Buravkova
Institute for Biomedical Problems, Russian Academy of Sciences, Moscow, Russia

Development of drugs used for therapy of duchenne muscular dystrophy: Crystallization of hematopoietic prostaglandin D synthase-inhibitor complexes in space

Yoshihiro Urade¹, Nobuko Uodome¹, Nanae Nagata¹, Kosuke Aritake¹, Sachiko Takahashi², Hiroaki Tanaka², Naoki Furubayashi³, Koji Inaka³, Kazunori Ohta, Tomoyuki Kobayashi⁴, Yoshinori Yoshimura⁴
¹Osaka Bioscience Institute, Osaka, Japan; ²Confocal Science Inc., Tokyo, Japan; ³Maruwa Foods and Biosciences Inc., Nara, Japan; ⁴Japan Aerospace Exploration Agency, Tsukuba, Japan

CDKN2A and CDKN2BAS expression levels in patients with atherosclerosis

Mujgan Cengiz¹, Caner Arslan², Safa Gode², Fatma Kaya Dagistanli¹, Berk Arapi², Serkan Bure Deser², Burcu Bayoglu¹
¹Istanbul University, Cerrahpasa Medical Faculty, Department of Medical Biology, Istanbul, Turkey; ²Istanbul University, Cerrahpasa Medical Faculty, Department of Heart and Vessel Surgery, Istanbul, Turkey

Effects of combination treatment with amiodarone and vitamin U (methylmethionine sulfonium chloride) on gingiva of rats

Sehkar Oktay¹, Ismet Burcu Turkyilmaz², Sarp Kaya³, Serap Akyuz³, Refiye Yanardag², Aysen Yarat¹
¹Department of Basic Medical Sciences, Faculty of Dentistry, Marmara University, Istanbul, Turkey; ²Department of Chemistry, Faculty of Engineering, Istanbul University, Istanbul, Turkey; ³Department of Clinical Sciences, Faculty of Dentistry, Marmara University, Istanbul, Turkey

Bioengineering of antimicrobial peptide arenicin analogs with improved therapeutic indices by site-directed mutagenesis

Pavel V. Pantelev, Il'ya A. Bolosov, Sergey V. Balandin, Tatiana V. Ovchinnikova
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Streptokinase influences tissue-type plasminogen activator activity in HUVEC

Maryna Burlova-Vasylieva, Nataliia Kravchenko, Olexiy Savchuk
Educational and Scientific Centre "Institut of Biology" of Taras Shevchenko National University of Kyiv, Ukraine

Role of ischemic preconditioning and tempol in ischemia/reperfusion injury in isolated rat heart

Deniz Erol¹, Savas Ustunova¹, Ebru Gurel¹, Huri Dedeakayogullari², Cihan Demirci-Tansel¹
¹Department of Biology, Science Faculty, Istanbul University, Vezneciler, Istanbul-Turkey; ²Department of Biochemistry, Medicine Faculty, Marmara University, Haydarpasa, Istanbul-Turkey

Important role of C/EBP transcription factors in mediating interferon gamma-induced NADPH oxidase expression and function in human aortic smooth muscle cells

Adrian Manea, Andra Todirita, Simona-Adriana Manea
Institute of Cellular Biology and Pathology "Nicolae Simionescu" of the Romanian Academy, Romania

Angiogenic effects of neurotrophins

Lola Rafieva¹, Maria Boldyreva², Yelena Parfyonova², Sergey Kostrov¹
¹Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia; ²Russian Cardiology Research and Production Complex, Moscow, Russia

Evaluation of blood coagulation, heart rhythm variation and psychological personality as novel approach to measure stress response by thrombodynamics test

Renad Zhdanov¹, Iu.V. Chernokhvostov¹, F.K. Alimova¹, V.G. Dvoenosov¹, F.I. Ataullakhanov²
¹Institute for Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia; ²Center for Theoretical Problems of Physico-Chemical Pharmacology, Russian Academy of Sciences, Moscow, Russia

Design of proteolytically stable cell-permeable peptide inhibitors of the myosin light chain kinase as potential anti-edemic drugs

Olga Kazakova, Asker Khapchaev, Michael Samsonov, Maria Sidoriva, Zhanna Bespalova, Vladimir Shirinsky
Russian Cardiology Research and Production Complex, Ministry of Healthcare of the Russian Federation, Moscow, Russia

Molecular dynamics study tylosin and its derivatives binding to *E. coli* ribosome

Gennady Makarov¹, Andrey Golovin², Alexey Bogdanov³, Anna Shishkina³, Galina Korshunova³, Natalia Sumbatyan³
¹Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia; ²Department of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia; ³A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Design of new inhibitors uridine phosphorylases with potential therapeutic effect

Alexander Lashkov¹, Alexander Mironov², Al'bert Mikhailov¹
¹Shubnikov Institute of Crystallography, Russian Academy of Sciences (IC RAS), Moscow, Russia; ²State Research Institute of Generics and Selection of Industrial Microorganisms, Moscow, Russia

Preparation of antioxidant liposomes using different methods

Ziba Mokhberi Oskoue, A. Suha Yalcin, Gokhan Bicim
Marmara University School of Medicine, Department of Biochemistry, Turkey

Evaluation of the efficiency of synthesized efflux pump inhibitors on *Salmonella enterica* cells

Valeryia Mikalayeva¹, Simona Sutkuviene¹, Silvia Pavan², Federico Berti², Rimantas Daugelavicius¹
¹Department of Biochemistry and Biotechnologies, Vytautas Magnus University, Kaunas, Lithuania; ²Department of Chemical and Pharmaceutical Sciences, University of Trieste, Trieste, Italy

Investigation of the effect of tuberculosis drug isoxyl on selected mycobacterial epoxide hydrolases

Jan Madacki¹, Martin Kopal¹, Mary Jackson², Jana Kordulakova¹
¹Department of Biochemistry, Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia; ²Mycobacteria Research Laboratories, Department of Microbiology, Immunology, and Pathology, Colorado State University, Fort Collins, USA

Characterization of tylosin-related macrolides – ribosome interactions by fluorescence polarization method

Anna V. Shishkina¹, Andrei G. Tereshchenkov², Nataliya V. Sumbatyan², Galina A. Korshunova¹, Alexei A. Bogdanov¹
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ²Department of Chemistry, Lomonosov Moscow State University Moscow, Russia

Triostin A analogues with another target

Rubi Zamudio-Vazquez, Judit Tulla-Puche, Fernando Albericio
Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain

Investigation of putative ABC transporter Rv1458c/Rv1457c/Rv1456c in mycobacteria

Michal Sarkan¹, Katarina Mikusova¹, Mary Jackson², Jana Kordulakova¹
¹Department of Biochemistry, Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia; ²Mycobacteria Research Laboratories, Department of Microbiology, Immunology, and Pathology, Colorado State University, Fort Collins, USA

The influence of mutations in C-terminal domain of HIV-1 integrase on its activity and interaction with HIV-1 RT

Olga V. Kondrashina, Sergey P. Korolev, Ekaterina S. Knyazhanskaya, Marina B. Gottikh
Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia

Purification and function of mycobacterial WecA protein

Stanislav Huszar, Katarina Mikusova
Comenius University in Bratislava, Faculty of Natural Sciences, Department of Biochemistry, Bratislava, Slovakia

Dimers of chloramphenicol as alternative antibacterials

Ouranía N. Kostopoulou¹, George E. Magoulas², Dionysios Papaioannou², Dimitrios L. Kalpaxis¹
¹Department of Biochemistry, School of Medicine, University of Patras, Patras, Greece; ²Laboratory of Synthetic Organic Chemistry, Department of Chemistry, University of Patras, Patras, Greece

Singlet oxygen effects on lipid membranes: Implication on viral fusion inhibitors mechanism of action

Axel Hollmann¹, Frederic Vigant², Miguel A. R. B. Castanho¹, Benhur Lee², Nuno C. Santos¹
¹Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal; ²Department of Microbiology, Immunology and Molecular Genetics, UCLA, Los Angeles, CA, USA

Rational design of apoptosis signal-regulating kinase 1 inhibitors

Galyna Volynets, Volodymyr Bdzholo, Sergiy Yarmoluk
Institute of Molecular Biology and Genetics, Kyiv, Ukraine

New carbocyclic uracil derivatives as potential antiviral and antibacterial agents

Elena Matyugina¹, V. T. Valeyev-Elliston¹, M. S. Novikov², L. A. Alexandrova¹, L. N. Chernoysova³, S. N. Kochetkov¹, A. L. Khandazhinskaya¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Volgograd State Medicinal University, Volgograd, Russia; ³Central Tuberculosis Research Institute Russian Academy of Medical Sciences, Moscow, Russia

Anti-biofilm activity of maghemite nanoparticles coated with dextran

Carmen Steluta Ciobanu¹, Simona Liliana Iconaru², Daniela Predoi¹
¹National Institute of Materials Physics, Magurele, Romania; ²National Institute of Materials Physics, Faculty of Physics, University of Bucharest, Magurele, Romania

Antimicrobial activity of silver doped hydroxyapatite thin films

Carmen Steluta Ciobanu¹, Simona Liliana Iconaru², Patrick Chapon³, Daniela Predoi¹
¹National Institute of Materials Physics, Magurele, Romania; ²National Institute of Materials Physics, Faculty of Physics, University of Bucharest, Magurele, Romania; ³Horiba Jobin Yvon S.A.S., 91165 Longjumeau Cedex France

The investigation of antibacterial effects of various 4-aryl substituted coumarin derivatives

Ozkan Danis¹, Serap Demir¹, Azade Attar², Basak Yuce-Dursun¹
¹Marmara University, Faculty of Arts and Sciences, Department of Chemistry, Istanbul, Turkey; ²Yildiz Technical University, Faculty of Chemistry-Metallurgical, Department of Bioengineering, Istanbul, Turkey

Cobalt bis(dicarbollide) derivatives as modulators of enzyme activity

Robert Kaplanek¹, Vladimir Kral¹, Jakub Rak¹, Linda J. Roman², Bettie Sue Siler Masters², Pavel Martasek³
¹Institute of Chemical Technology in Prague, Czech Republic; ²University of Texas Health Science Center at San Antonio, USA; ³Charles University in Prague, Czech Republic

Vitalang-2: The novel antiviral agent

T. V. Yamkovaya¹, V. I. Yamkovoy², L. E. Panin²
¹LLC "Vitalang", Novosibirsk, Russia; ²Biochemistry Institute, Siberian Branch of Russian Academy of Medical Sciences, Novosibirsk, Russia

Metabolism of 9-norbornyl-6-chloropurine – a novel antiviral and antileukemic agent

Marketa Smidkova, Pavla Plackova, Michal Sala, Radim Nencka, Helena Mertlikova-Kaiserova
Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

Biochemical characterization of acyltransferase MSMEG_2934 from *Mycobacterium smegmatis*

Zuzana Svetlikova, Jana Kordulakova, Katarina Mikusova
Department of Biochemistry, Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Distributed Informational Regulatory Influences (DIRI) – a new concept of drug design

Vladimir Bezuglov¹, Igor Serkov², Sergey Kononov³
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka, Russia; ³St. Petersburg Institute of Bioregulation and Gerontology, St. Petersburg, Russia

Hepatitis B escape mutants among patients with different types of chronic hepatitis B infection

Jerka Dumic¹, Sandra Supraha Goreta², Vesna Colic-Cvrle³, Ivanka Mihaljevic⁴
¹University of Zagreb, Faculty of Pharmacy and Biochemistry, Zagreb, Croatia; ²Croatian Institute of TranUniversity of Zagreb, Faculty of Pharmacy and Biochemistry, Zagreb, Croatia; ³University of Zagreb, School of Medicine, and University Hospital Merkur, Zagreb, Croatia; ⁴Croatian Institute of Transfusion Medicine, Zagreb, Croatia

9-{2-[(Phosphonomethyl)oximino]ethyl}adenine – acyclic phosphonate analogue with broad antiviral activity

Pavel Solyev, Maxim Yasko, Marina Kukhanova
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Modified 4,5,6-trisubstituted benzimidazole nucleosides

Maria I. Kharitonova, Ilja V. Fateev, Irina D. Konstantinova, Anatoly I. Miroshnikov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

The role of the Ser90 residue of the catalytic site of *E. coli* PNP in the synthesis of purine and 8-aza-7-deazapurine nucleosides

Igor Mikhailopolov¹, Ilja Fateev², Roman Esipov², Konstantin Antonov², Irina Konstantinova², Frank Seela³, Vladimir Stepchenko¹, Anatoly Miroshnikov²
¹Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ³Laboratory of Bioorganic Chemistry and Chemical Biology, Center for Nanotechnology, Munster, Germany

The chemo-enzymatic synthesis of clofarabine and related nucleosides. The role of electronic and stereochemical factors of substrates in reactions catalyzed by *E. coli* nucleoside phosphorylases

Ilja V. Fateev¹, Konstantin V. Antonov¹, Irina D. Konstantinova¹, Maria I. Kharitonova¹, Frank Seela², Roman S. Esipov¹, Anatoly I. Miroshnikov¹, Igor A. Mikhailopolov³
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Laboratory of Bioorganic Chemistry and Chemical Biology, Center for Nanotechnology, Munster, Germany; ³Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Belarus

Disulfide-containing drug glutoxim modulates Na⁺ transport in frog skin

Anastasiya Melnitskaya, Zoya Ktutetskaya, Sergey Butov, Nina Ktutetskaya, Victor Antonov
Saint Petersburg State University, St. Petersburg, Russia

Poster Sessions July 9, 13.00-14.30

Search for new antiviral compounds against human enteroviruses using fragment screening methodology

Zuzanna Kaczmarek^{1,2}, Michael Goldflam¹, Robert Janowski^{1,2}, Ernest Giralt¹, Miquel Coll^{1,2}
¹Institute for Research in Biomedicine (IRB Barcelona), Barcelona Science Park, Barcelona, Spain; ²Institute de Biologia Molecular de Barcelona (CSIC), Barcelona Science Park, Barcelona, Spain

The most influent chemical structure features for rational drug design of prion disease therapeutics

Katja S. Venko, Spela Zuperl, Marjana Novic
National Institute of Chemistry, Laboratory of Chemometrics, Ljubljana, Slovenia

Insulin superfamily peptides as a source of mutations in the design of new insulin drugs

Olga Ksenofontova, Vasilij Stefanov
Saint Petersburg State University, St. Petersburg, Russia

Pyrophosphate analogs suppress phosphorolytic activity of wild-type and AZT-resistant HIV-1 reverse transcriptase

Dmitry Yanvarev, Nikolay Usanov, Marina Kukhanova, Serge Kochetkov
Laboratory of Molecular Basis of Physiologically Active Compounds, Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Methylenebisphosphonates as new class of HIV-1 integrase inhibitors

A. Anisenko¹, J. Agapkina¹, S. Korolev¹, D. Yanvarev², S. Kochetkov², M. Gottikh¹
¹Lomonosov Moscow State University, Department of Chemistry and A.N. Belozersky Research Institute of Physico-Chemical Biology, Moscow, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Cytotoxic effect of human hepatitis A virus 3C protease is accompanied by cytoplasmic vacuolization

Andrey Shubin, Natalya Lunina, Marina Roshina, Alexey Komissarov, Ilya Demidyuk, Sergey Kostrov
Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia

The WhiB7 gene polymorphism and its regulon genes in micobacterium tuberculosis, as a new mechanism of drug resistance

Kirill Shur¹, Dmitry Maslov¹, Olga Bekker¹, Maria Alvarez², Valery Danilenko¹
¹Vavilov Institute for General Genetics, Russian Academy of Sciences, Moscow, Russia; ²Central Research Institute of Epidemiology of the Federal Service on Customers, Moscow, Russia

Studies of RND-type efflux pump inhibitor Phenylalanylarginyl-beta-naphthylamide interaction with *Salmonella enterica* cells

Rimantas Daugelavicius, Valeryia Mikalayeva, Simona Sutkuvienė
Vytautas Magnus University, Kaunas, Lithuania

EU-OPENSREEN, chemical keys for life's locks

Bahne Stechmann
EU-OPENSREEN Consortium, EU-OPENSREEN / FMP Berlin, Germany

Inhibitory effects of plant extracts and some chemical compounds on lipoxygenase

Ozlem Sacan, Emine Yildiz Turhan
Istanbul University, Faculty of Engineering, Department of Chemistry, Avcilar-Istanbul, Turkey

Molecular genetic analysis of DNA-polymerases and thymidine kinases from clinical and laboratory HSV isolates resistant to ACV and HpACV

Anna Korovina, Marina Kukhanova
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Molecular interactions with the bacterial cell wall by liquid state, standard and DNP solid state NMR

Simorre Jean-Pierre¹, Catherine Bougault¹, Lauriane Lecoq¹, Sabine Hediger², Hiroki Takahashi², Michel Arthur³
¹IBS, CNRS Grenoble France; ²INAC, CEA, Grenoble, France; ³INSERM, Paris, France

Insights into the inhibition of peptidoglycan L,D-transpeptidation

Simorre Jean-Pierre¹, Lecoq Lauriane¹, Vincent Dubee², Sebastien Triboulet², Catherine Bougault¹, Jean-Emmanuel Hugonnet², Michel Arthur²
¹IBS, CNRS Grenoble France; ²INSERM, Paris France

New nucleoside inhibitors of *M.tuberculosis* growth

Eduard R. Shmalenyuk¹, Larisa N. Chernousova², Lyudmila A. Aleksandrova¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Central Tuberculosis Research Institute, Russian Academy of Medical Sciences, Moscow, Russia

Poster Sessions July 9, 13.00-14.30

The role of the *Serratia* pore-forming toxin ShIA in bacterial invasion

Olga A. Tsaplina, Ekaterina S. Bozhokina, Sofia Yu. Khaitlina
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Biotechnological process for the preparation of an antiviral drug ribavirin analogues substituted on the amide group

Olga S. Smirnova¹, Irina D. Konstantinova¹, Ilja V. Fateev¹, Nikolai I. Zhurilo², Mikhail V. Chudinov², Anatoly I. Miroshnikov¹
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Lomonosov Moscow State University of Fine Chemical Technologies, Moscow, Russia

Disubstituted uracils as novel nonnucleoside inhibitors of HIV-1 reverse transcriptase inhibitors

Vladimir Valuev-Elliston¹, Denis Babkov², Maria Paramonova², Alexander Ivanov¹, Sergey Kochetkov¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Volgograd State Medicinal University, Volgograd, Russia

Role of myeloperoxidase binding with the surface of low-density lipoproteins in their proatherogenic modification by reactive halogen species

Alexej Sokolov¹, Valeria Kostevich¹, Irina Gorudko², Vadim Vasilyev¹, Oleg Panasenko³
¹Institute of Experimental Medicine, North-Western Branch of Russian Academy of Medical Sciences, St. Petersburg, Russia; ²Belarusian State University, Minsk, Belarus; ³Research Institute of Physico-Chemical Medicine, Moscow, Russia

Inclusion of antituberculous drug rifampicin into phospholipid-oleate nanoparticles as a way for efficiency increase

O.M. Ipatova, M.A. Sanzhakov, V.N. Prozorovskiy, T.I. Torkhovskaya, E.G. Tikhonova, N.V. Medvedeva, A.I. Archakov
Orehkovich Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia

HCV core protein induces oxidative stress and activates antioxidant defense system by several distinct mechanisms

Alexander V. Ivanov¹, Olga A. Smirnova¹, Irina V. Petrushanko¹, Inna L. Karpenko¹, Ekaterina Alekseeva E.², Irina Sominskaya², Alexander A. Makarov¹, Maria G. Isagulians^{3,4}, Sergey N. Kochetkov¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²Biomedical Research and Study Center, Riga, Latvia; ³D.I. Ivanovsky Institute of Virology, Ministry of Health and Social Welfare, Moscow, Russia; ⁴Department of Molecular, Tumor, and Cell Biology, Karolinska Institutet, Stockholm, Sweden

Antibodies against ectromelia virus capable of neutralizing variola virus: generation and application for epitope mapping.

Yana Khlusevich, Vera Morozova, Dmitriy Pyshniy and Nina Tikunova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

Design and study of artificial HIV-1 polyepitope immunogens optimized for inducing HIV-specific immune responses

¹Alena Reguzova, ¹Denis Antonets, ¹Rinat Maksyutov, ¹Larisa Karpenko, ¹Alexander Ilyichev, ¹Sergey Bazhan
¹State Research Center of Virology and Biotechnology VECTOR, Koltsovo, Novosibirsk region, Russia

Killing bacteria from the inside: genetically encoded Trojan horses to give insight in bacterial cell death

Rubén Ruiz-González^a, John H. White^b, Aitziber L. Cortajarena^c, Montserrat Agut^a, Cristina Flors^c and Santi Nonell^b
^aInstitut Químic de Sarrià, Universitat Ramon Llull, Barcelona, Spain, ^bSchool of Chemistry, University of Edinburgh, UK, ^cMadrid Institute for Advanced Studies in Nanoscience (IMDEA Nanoscience), Madrid, Spain

Discovery of the new antiviral drug among nitrosubstituted azolo-azines

E. Deyeva, N. Medvedeva, E. Ulomsky

The role of lipid metabolism and the formation of antibodies to neuronal proteins in the development of diabetes mellitus type 1

S.V. Savelyev, A.A. Selishcheva
Research Institute of Human Morphology, Russian Academy of Medical Sciences, Biological Department of Moscow State University, Moscow, Russia

Stem Cells: Fundamentals and Applications (IV-S21)

Identification of a novel type of immature haematopoietic stem cell (HSC) precursor in mouse development
Stanislav Rybtsov, Kateryna Bilotkach, Jordi Senserrich Velasco, Alexander Medvinsky
SCRM/ISCR University of Edinburgh, UK

Poly(ADP-ribose) acts as a signaling molecule during hydrogen peroxide-mediated osteogenic differentiation
Agnieszka Robaszekiewicz^{1,2}, Katalin Erdelyi², Katalin Kovacs², Istvan Kovacs², Peter Bai², Eva Rajnavolgyi³, Laszlo Virag²
¹University of Lodz, Department of Environmental Pollution Biophysics, Poland; ²University of Debrecen, Department of Medical Chemistry, Hungary; ³University of Debrecen, Department of Immunology, Hungary

Histone acetylation reduce differentiation and neovascularization potential of endothelial progenitor cells *in vitro*
Florin Iordache, Eugen Andrei, Andrei Constantinescu, Maya Simionescu, Horia Maniu
Institute of Cellular Biology and Pathology "Nicolae Simionescu" of Romanian Academy, Romania

Effects of GDNF and its synthetic modifications to the nerve cells
Galina Pavlova^{1,2,3}, Nadezda Kust^{1,2}, Dmitriy Pantelev¹, Iliia Mertsalov¹, Ekaterina Rybalkina¹, Ekaterina Savchenko^{2,3}, Alexander Revishchin^{1,2,3}
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²Ltd Apto-pharm; ³Ltd IMTC

The variant histone H2A.Z is a general facilitator of chromatin remodeling
Colyn Crane-Robinson¹, Gang-Qing Hu², Kairong Cui², Keji Zhao²
¹University of Portsmouth, Portsmouth, UK; ²National Institutes of Health, Bethesda, USA

SIK2 involvement in downregulation of FGF signaling through Gab1 and Raf1
Yeliz Yilmaz Sert
Department of Molecular Biology and Genetics, Bogazici University, Istanbul, Turkey (currently Department of Molecular Medicine, Dokuz Eylul University, Izmir, Turkey)

Mesenchymal stem cells expressing cytosine deaminase inhibit growth of murine melanoma *in vivo*
Lyudmila Krasikova^{1,2}, Saida Karshieva², Viktor Krasnov³, Maxim Vinokurov¹, Alexander Belyavsky²
¹Pushchino State Institute of Natural Sciences, Pushchino, Russia; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ³Postovsky Institute of Organic Synthesis, Russian Academy of Sciences, Ekaterinburg, Russia

The cleavage of Laminin-111 by MMP-2 affects early differentiation of murine ESCs and iPS cells
Christine Horejs¹, Sergio Bertazzo¹, Erhard Hohenester², Molly Stevens²
¹Department of Materials, Imperial College London, London, UK; ²Department of Life Sciences, Imperial College London, London, UK

Inhibitory effects of mesenchymal stem cells on lymphoblastic leukemia cell proliferation
Vildan Bozok Cetintas¹, Huseyin Aktug², Fatih Oltulu², Ahmet Keskinoglu³, Buket Erer Del Castello³, Dilek Taskiran⁴
¹Department of Medical Biology, Ege University School of Medicine, Izmir, Turkey; ²Department of Embryology and Histology, Ege University School of Medicine, Izmir, Turkey; ³Department of Pediatrics, Ege University School of Medicine, Izmir, Turkey; ⁴Department of Physiology, Ege University School of Medicine, Izmir, Turkey

Fluorescent bioimaging in the study of the different models "stem cells -tumor" interaction
Aleksandra Meleshina¹, Elena Cherkasova¹, Ekaterina Sergeeva², Ilya Turchin¹, Ekaterina Kiseleva³, Erdem Dashinimaev³, Marina Shirmanova⁴, Elena Zagainova⁴
¹Nizhny Novgorod State University, Nizhny Novgorod, Russia; ²Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia; ³Koltzov Institute of Developmental Biology, Russian Academy of Sciences, Moscow, Russia; ⁴Nizhny Novgorod State Medical Academy, Nizhny Novgorod, Russia

Effects of mobilization with G-CSF and apheresis processes on inflammatory markers in healthy voluntary donors
Cigdem Ilhan, Ozge Tugce Pasaoglu, Elif Suyani, Gulsan Sucak, Hatice Pasaoglu
Gazi University Faculty of Medicine, Ankara, Turkey

Proangiogenic features of umbilical cord matrix-derived mesenchymal stromal/stem cells and their ability to function as perivascular-like cells
Young Ae Joe¹, Moran Choi¹, Hyun- Sun Lee¹, Purevjargal Naidansaren¹, Hyun-Kyung Kim¹, Eunju O, Eun-Yi Moon², Jung-Ho Cha³
¹Cancer Research Institute and Department of Medical Lifescience, College of Medicine, The Catholic University of Korea, Seoul, Korea; ²Department of Bioscience and Biotechnology, Sejong University, Seoul, Korea; ³Department of Anatomy, College of Medicine, The Catholic University of Korea, Seoul, Korea

NIH 3T3 cell lines supporting hematopoietic progenitors: In search of factors maintaining hematopoietic stem and progenitor cells *ex vivo*
M.V. Savvateeva¹, F.N. Rozov², A.A. Raevskaya¹, A.V. Belyavsky¹
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Collagen-elastin based films as scaffolds for mesenchymal stem cells
A. Kevser Ozden, Merve Ugur, Erhan Piskin
Hacettepe University, Faculty of Medicine and Engineering, Departments of Medical Biochemistry and Bioengineering, Ankara, Turkey

Cryptotanshinone and tanshinone promote natural killer cell differentiation from hematopoietic stem cells
Won Sam Kim, Mi Jeong Kim, Haiyoung Jung, Young-Jun Park, Hee Gu Lee, Bo Yeon Kim, Inpyo Choi, Suk Ran Yoon
Immunotherapy Research Center, Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea

Mouse embryonic stem cells carrying human artificial chromosome
Mikhail Liskovykh¹, Vladimir Larionov², Natalay Kouprina², Michael Bader³, Natalia Alenina³, Alexey Tomilin¹
¹Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ²National Institute of Health, National Cancer Institute, Bethesda, USA; ³Max-Delbruecker Center for Molecular Medicine, Berlin, Germany

Lipin1 coactivates PPARγ transcriptional activity
Kyung-Sup Kim
Dept. of Biochem. & Mol. Biol. Yonsei Univ. Col. of Med., Korea

Molecular mechanism of CCN2-induced osteoclastogenesis
Masaharu Takigawa¹, Eriko Aoyama², Satoshi Kubota¹, Takashi Nishida¹
¹Department of Biochemistry and Molecular Dentistry, Okayama University Graduate School of Medicine, Dentistry & Pharmaceutical Sciences, Okayama, Japan; ²Biodental Research Center, Okayama University Dental School, Okayama, Japan

Expression of Sox2 and Oct4 in normal and diabetic human term placentas
Emin Turkey Korgun, Asli Ozmen, Gozde Unek, Leyla Sati, Ramazan Demir
Akdeniz University, Faculty of Medicine, Histology and Embryology Department, Antalya, Turkey

A human neuronal model of Niemann Pick C diseases developed from stem cells isolated from patient's skin
Stefania Zampieri
Regional Coordinator Centre for Rare Diseases, University Hospital "Santa Maria della Misericordia", Udine, Italy

Premature senescence and apoptosis are different responses of human embryonic stem cells, their differentiated progeny and adult stem cells to sublethal stresses
L.L. Alekseenko, I.V. Kozhukharova, V.I. Zemelko, V.V. Zenin, N.A. Pugovkina, T.M. Grinchuk, I.I. Fridlyanskaya, N.N. Nikolsky
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Lentiviral modification of mesenchymal stem cells with Notch ligands increases their ability to support hematopoietic stem cell expansion *in vitro*
Sergei V. Zhuk, Olga A. Abramova, Andrey Y. Zaritsky, Pavel A. Butylin
Institute of Hematology, Almazov Federal Heart, Blood and Endocrinology Centre, St. Petersburg, Russia

Human adipose-derived stem cells chondrogenic potential in 3D GAIPAA scaffolds developed for cartilage regeneration
Sorina Dinescu¹, Bianca Galateanu¹, Adriana Lungu², Izabela Stancu², Eugen Radu³, Marieta Costache¹
¹University of Bucharest, Department of Biochemistry and Molecular Biology, Bucharest, Romania; ²University Politehnica of Bucharest, Department of Bioresources and Polymer Science, Bucharest, Romania; ³University Hospital Bucharest, Molimagex, Bucharest, Romania

Regulation of stem cell differentiation and DNA damage responses by p53
Adam Odell, Monica Hollstein
LIGHT, University of Leeds, Leeds, UK

Role of apoptosis-relevant proteins p53 and Bcl-2 in the regulation of neural stem cells differentiation *in vitro*
Yuliya S. Belyaeva, Liubov S. Nikitina, Elena V. Chernigovskaya, Margarita V. Glazova
Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia

Wnt2 secreted by A-549 cells induces β -catenin signaling associated with expression of epithelial markers in the co-cultured MSCs

Nikolay S. Petrov, Olga V. Zhidkova, Boris V. Popov
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Developing of a new feeder free system and characterization of human embryonic stem cell sublines derived in this system under autogenic and allogenic culturing

Anna Koltsova¹, Irina Voronkina¹, Olga Gordeeva², Valeriy Zenin¹, Nadezhda Lifantseva², Anastasiya Musorina¹, Larisa Smagina¹, Tatiana Yakovleva¹, Galina Poljanskaya¹
¹*Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia;* ²*Koltzov Institute of Developmental Biology, Russian Academy of Sciences, Moscow, Russia*

Analysis of karyotypic stability of human endometrial stem cells during long-term cultivation

M.A. Shilina, T.M. Grinchuk, A.P. Domnina, V.I. Zemelko, N.N. Nikolsky
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Effect of mesenchymal cell delivered TRAIL and/or Dkk-1 on cancer cell viability

Fikretin Sahin¹, Cevriye Pamukcu¹, Emir Yalvac²
¹*Yeditepe University, Istanbul, Turkey;* ²*Ohio State University, Columbus, OH, USA*

Stimulation of decidua development by transplantation of endometrial stem cells

A.P. Domnina, V.M. Mikhailov, V.I. Zemelko and N.N. Nikolsky
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

Glycobiology: Carbohydrate-Protein Recognition (VI-S28)

Renal glycosphingolipid Gb3Cer/CD77 expression in rat models of type 1 and type 2 diabetes

Nikolina Režić Mužinić¹, Vedrana Čikeš Čulić¹, Lejla Ferhatović², Livia Puljak², Tina Tičionović Kurir³, Anita Markotić¹
¹*Department of Medical Chemistry and Biochemistry and* ²*Department of Anatomy, Histology and Embryology, University of Split School of Medicine, Split, Croatia,* ³*Department of Pathophysiology, University Hospital Split, Split, Croatia*

Decrease activity and expression of O-beta-N-acetylglucosaminidase in murine skeletal muscle cell atrophy

Luca Massaccesi¹, Giancarlo Goi¹, Bruno Venerando², Nadia Papini²
¹*Department of Biomedical, Surgical and Dental Sciences, University of Milan, Italy;* ²*Department of Medical Biotechnology and Translational Medicine, University of Milan, Italy*

Glycosylation of envelope proteins of hepatitis C virus and their effects on the formation of virus particles

Olga Orlova¹, Anna Timokhova¹, Valery L. Druetsa², Alexandr Zinin³, Pavel Spirin¹, Vladimir Popenko¹, Vladimir Prasolov¹, Petr Rubtsov¹, Sergey Kochetkov¹, Svetlana Belzhelarskaya¹
¹*Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia;* ²*Chemical Department, Lomonosov Moscow State University, Moscow, Russia;* ³*Zelinskii Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia*

Investigation of the mycobacterial ABC transporter involved in the assembly of the cell wall polysaccharides

Ivana Centarova, Giulia Degiacomi, Miroslav Brečik, Katarina Mikusova
Comenius University in Bratislava, Faculty of Natural Sciences, Department of Biochemistry, Bratislava, Slovakia

Changes in the structure of leukocyte surface glycoconjugates in streptozotocin-induced diabetic rats and after treatment with agmatine

Natalia Sybirna, Iryna Ferents, Iryna Brodyak, Maryana Lyuta
Ivan Franko Lviv National University, Lviv, Ukraine

Lectin binding infected with proteus vulgaris cell membranes spleen of rabbits

Nursel Gul, Maryam Diani, Mohammad Nima Badali
Ankara University, Ankara, Turkey

Binding of Shiga toxins to glycolipids expressed by NOR-positive cells

Radosław Kaczmarek¹, Maria Duk¹, Beth Binnington², Marcin Los³, Anna Suchanowska¹, Elwira Lisowska¹, Katarzyna Mikolajewicz¹, Clifford Lingwood², Grzegorz Wegryzn³, Marcin Czerwinski¹
¹*Ludwik Hirszfild Institute of Immunology and Experimental Therapy, Wrocław, Poland;* ²*Research Institute, Division of Molecular Structure and Function, The Hospital for Sick Children, Toronto, Canada;* ³*Department of Molecular Biology, University of Gdansk, Gdansk, Poland*

X-ray structure of a stable protease-resistant glectin-9 with short linker

Hiromi Yoshida, Nozomu Nishi, Misa Teraoka, Satoshi Yamashita, Shigehiro Kamitori
Life Science Research Center, Kagawa University, Kagawa, Japan

A new lectin from coral *Gerardia savaglia*. Purification, physico-chemical characterization and thermodynamics of saccharide binding

Uros Andjerkovic¹, Ivana Pajic¹, Matej Vizovisek², Robert Vidmar², Iztok Prisljan³, Srdjan Tufegdzic¹, Marko Fonovic^{2,4}, Jurij Lah³, Boris Turk^{2,4}, Dusan Sladic⁵
¹*Department of Chemistry, Institute for Chemistry, Technology and Metallurgy, University of Belgrade, Belgrade, Serbia;* ²*Department of Biochemistry, Molecular and Structural Biology, Jozef Stefan Institute, Ljubljana, Slovenia;* ³*Department of Physical Chemistry, Faculty of Chemistry and Chemical Technology, University of Ljubljana, Ljubljana, Slovenia;* ⁴*Centre of Excellence for Integrated Approaches in Chemistry and Biology of Proteins, Ljubljana, Slovenia;* ⁵*Department of Organic Chemistry, Faculty of Chemistry, University of Belgrade, Belgrade, Serbia*

Effects of astragalus, lemon balm, clove, fenugreek and cinnamon on blood glucose level after oral glucose loading in rats

Bahadır Ozturk¹, H. Serdar Ozturk², Ilker Durak²
¹*Selcuk University Faculty of Medicine, Department of Medical Biochemistry, Konya, Turkey;* ²*Ankara University Faculty of Medicine, Department of Medical Biochemistry, Ankara, Turkey*

Acetylation patterns of gangliosides in brain tissue of ganglioside-deficient mice

Kristina Mlinac¹, Dragana Fabris², Marko Rozman³, Marija Heffer⁴, Zeljka Vukelic², Svjetlana Kalanj Bogнар¹
¹*Croatian Institute for Brain Research, School of Medicine, University of Zagreb, Zagreb, Croatia;* ²*Department for Chemistry and Biochemistry, School of Medicine, University of Zagreb, Zagreb, Croatia;* ³*Department of Physical Chemistry, Rudjer Boskovic Institute, Zagreb, Croatia;* ⁴*Department of Medical Biology, School of Medicine, University of Osijek, Osijek, Croatia*

Epigenetic modulation of N-glycome excreted from HepG2 liver cells in culture

Tomislav Horvat¹, Darko Barisic^{1,2}, Petra Korac¹, Marija Klasic¹, Jasminka Kristic³, Gordan Lauc^{3,4}, Vlatka Zoldos¹
¹*Faculty of Science, Zagreb, Croatia;* ²*Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland;* ³*Genos Lid, Glycobiology Laboratory, Zagreb, Croatia;* ⁴*Faculty of Pharmacy and Biochemistry, Zagreb, Croatia*

Monitoring of urinary ethyl glucuronide using LC-MS/MS

Salih Cengiz, Beril Anilanmert, Fatma Cavus, Muhammed Aydin, Ali Acar Ozdemir
Istanbul University Institute of Forensic Sciences, Cerrahpasa, Istanbul, Turkey

GWAS of IgG glycome reveals importance of IgG glycosylation in a variety of diseases

Gordan Lauc
University of Zagreb Faculty of Pharmacy and Biochemistry, Croatia

Heterogeneous expression and epigenetic regulation of D-glucuronyl C5-epimerase tumour suppressor gene in prostate cancer

Elvira V. Grigorieva¹, Tatiana Y. Prudnikova¹, Lyudmila A. Mostovich¹, Nikolas Soultizis², Olesya S. Kutsenko¹, Klas Haraldson³, Ingemar Ernberg³, Vladimir I. Kashuba⁴, Eugene R. Zabarovsky², Demetrios A. Spandidos²
¹*Institute of Molecular Biology and Biophysics Siberian Branch of Russian Academy of Medical Sciences, Novosibirsk, Russia;* ²*Medical School of University of Crete, Heraklion, Greece;* ³*MTC, Karolinska Institute, Stockholm, Sweden;* ⁴*Institute of Molecular Biology and Genetics, Kiev, Ukraine*

TFEB is involved in the regulation of glycohydrolases lysosome-to-plasma membrane delivery

Alice Polchi, Alessandro Magini, Brunella Tancini, Lorena Urbanelli, Manlio Di Cristina, Mario Polidoro, Carla Emiliani
Department of Experimental Medicine and Biochemical Sciences, University of Perugia, Perugia, Italy

DAB derivatives as inhibitors of retaining glycosyltransferases

Mireia Diaz-Lobo^{1,2}, Alda Lisa Concia³, Livia Gomez³, Pere Clapes³, Joan J. Guinovart², Joan Carles Ferrer¹
¹*Dept. Bioquímica i Biologia Molecular, Universitat de Barcelona, Barcelona, Spain;* ²*Institute for Research in Biomedicine, Barcelona, Spain;* ³*Dept. of Biological Chemistry and Molecular Modeling, Instituto de Química Avanzada de Catalunya, IQAC-CSIC, Barcelona, Spain*

Fluorescence anisotropy changes induced by aminoglycosides in artificial and natural membranes

Claudia Istrate, Tudor Savopol, Minodora Iordache
"Carol Davila" University of Medicine and Pharmacy - Department of Biophysics and Cellular Biotechnology, Bucharest, Romania

Adhesins from *Pichia pastoris* - A structural basis for a symbiotic lifestyle?

Michael Kock¹, Stefan Bruckner², Maik Veelders¹, Julia Schlereth¹, Hans-Ulrich Mosch², Lars-Oliver Essen¹

¹Faculty of Chemistry – Biomedical Research Centre, Philipps-University, Marburg, Germany; ²Faculty of Biology, Philipps-University, Marburg, Germany

Proteoglycans as potential molecular markers in human prostate cancer

Anastasia V. Suhovskikh^{1,2}, Elvira V. Grigorieva²

¹Novosibirsk State University, Novosibirsk, Russia; ²Institute of Molecular Biology and Biophysics Siberian Branch of Russian Academy of Medical Sciences, Novosibirsk, Russia

Cell landscape engineering

E. Korchagina¹, A. Tuzikov¹, I. Rodionov², S. Stowell³, H. Perry⁴, N. Bovin¹, S. Henry⁴

¹Laboratory of Carbohydrates, Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Moscow/RU; ²Group of Peptide Chemistry, Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Pushchino Branch, Pushchino/Ru; ³Department of Pathology and Laboratory Medicine, Emory University, USA; ⁴Biotechnology Research Institute, AUT University, Auckland/NZ

Biogenic Polyamines in Cell Metabolism (VI-W31)

The diversity of polyamine biosynthesis and function in bacteria

Y. Maezato, S. H. Kim, S. Endapally, S. Kurihara, A. J. Michael

Dept. of Pharmacology, University of Texas Southwestern Medical Center, Dallas, TX, USA

Polyamine synthesis and oxidation in the pathogenesis of immune dysregulation and gastric cancer caused by *Helicobacter pylori*

Keith T. Wilson, Rupesh Chaturvedi, Thibaut de Sablet, Johanna C. Sierra

Vanderbilt University, School of Medicine, Nashville, TN, USA

New antitumor targets for polyamine-like compounds

Tracy Murray Stewart¹, Lihua Jin¹, Christin Hanigan¹, Christina Destefano Shields¹, Shannon Nowotarski¹, Valentina Battaglia¹, Keith T. Wilson², Patrick M. Woster³ and Robert A. Casero, Jr.¹

¹The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins School of Medicine, Baltimore, Maryland, USA; ²Division of Gastroenterology, Hepatology, and Nutrition, Vanderbilt University School of Medicine, Nashville, TN, USA; ³Department of Pharmaceutical and Biomedical Sciences, Medical University of South Carolina, Charleston, SC, USA

Inhibition of cellular proliferation and differentiation by polyamine depletion

Chaim Kahana¹, Guy Landau¹, Avichai Ran¹, Zippora Bercovich¹, Shirly Brenner¹, Ester Feldmesser¹, Shirly Horn-Saban¹, Edward Korkotian¹, David Ron², Jasmine Jacob-Hirsch³, Gideon Rechavi³

¹Weizmann Institute of Science, Rehovot, Israel; ²University of Cambridge, Cambridge, UK; ³Chaim Sheba Medical Center, Tel-Hashomer and the Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

Antizyme inhibitor 2: A novel player in polyamine metabolism

Rafael Penafiel, Bruno Ramos-Molina, Ana Lambertos, Andres J. Lopez-Contreras, Carlos Lopez-Garcia, Asuncion Cremades

University of Murcia, Murcia, Spain

Post-transcriptional regulation of ornithine decarboxylase (ODC)

Lisa Shantz

Penn State College of Medicine, Hershey, USA

Polyamine conjugates - a mechanism for selective drug delivery

Heather M Wallace

University of Aberdeen, UK

Design of small molecule epigenetic modulators based on the polyamine backbone

Patrick M. Woster

Medical University of South Carolina, Charleston, SC, USA

New insight into mechanisms of myeloproliferative disorders

L. Alhonen¹, S. Pirnes-Karhu¹, A. Uimari¹, E. Jantunen², P. Mäntymaa³, J. Määttä^{4,5}, M. Finnila⁶ and S. Mustjoki⁷

¹A.I. Virtanen Institute, University of Eastern Finland; ²Institute of Clinical Medicine, Internal Medicine, Kuopio University Hospital, Finland; ³Eastern Finland Laboratory Centre; ⁴School of Pharmacy, University of Eastern Finland; ⁵Institute of Biomedicine, Department of Cell Biology and Anatomy, University of Turku, Finland; ⁶Department of

Medical Technology, Institute of Biomedicine, University of Oulu, Finland; ⁷Department of Medicine, Division of Hematology, Helsinki University Central Hospital, Finland

Potentiation of cytotoxicity of polyamine metabolites induces apoptosis in tumor cells: New approaches in cancer therapy by nanocarriers

Giampiero Tempera¹, Martina Meringolo¹, Marco Coccia¹, Annette Kaiser², Giuseppe Arancia³, Agnese Molinari³ and Enzo Agostinelli¹

¹Department of Biochemical Sciences "Sapienza" University of Rome, Rome, Italy; ²University of Essen Institute of Pharmacogenetics, Essen, Germany; ³Italian National Institute of Health, Rome, Italy

Polyamines neurotoxicity at the brain and ways of its correction

Eugenia Konovalova¹, O. I. Kulikova¹, S. L. Stvolinsky¹, M. G. Makletsova¹, M. J. Maksimova¹, G. T. Rihireva², T. N. Fedorova¹

¹Research Center of Neurology, Moscow, Russia; ²Semionov Institute of Chemistry and Physics, Russian Academy of Sciences, Moscow, Russia

Antiproliferative activity of novel Pd(II) and Pt(II) polyamine analogue complexes in human breast cancer cell lines

Tania Silva¹, Maria P. M. Marques², Patrick Woster³, Lo Persson⁴, Stina Oredsson¹

¹Biology Department of Lund University, Lund, Sweden; ²Molecular Physical-Chemistry Research Unit of Coimbra University, Coimbra, Portugal; ³Pharmaceutical and Biomedical Sciences Department of South Carolina Medical University, Charleston, SC, USA; ⁴Experimental Medical Sciences Department of Lund University, Lund, Sweden

Novel (R)- and (S)-isomers of 3-methylspermidine

Maxim Khomutov¹, Mervi Hyvonen², Leena Alhonen², Janne Weisell³, Jouko Vepsäläinen³, Tuomo Keinänen³, Alex Khomutov¹, Sergey Kochetkov¹

¹Engelhardt Institute of Molecular Biology, Russian Academy of Science, Moscow, Russia; ²Biocenter Kuopio, A.I. Virtanen Institute for Molecular Sciences; ³Department of Biosciences, University of Eastern Finland, Kuopio, Finland

Regulatory effects of polyamines on *E. coli* persister cell formation and heterogeneity of persister subpopulation

Natalya Kashevarova¹, Elena Karavaeva¹, Mikhail Shumkov², Alexander Tkachenko¹

¹Institute of Ecology and Genetics of Microorganisms, Ural Branch of Russian Academy of Sciences, Perm, Russia; ²A.N. Bach Institute of Biochemistry, Russian Academy of Sciences, Moscow, Russia

Selective acetylation of primary amino groups; Simple method to prepare N,N'-diacetylated polyamines for biological studies

Janne Weisell¹, Sebahat Ucal¹, Alex Khomutov², Jouko Vepsäläinen¹

¹University of Eastern Finland, School of Pharmacy, Kuopio, Finland; ²Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Exogenous polyamines as inducers of beta-lactam biosynthesis in *A. chrysoyenum*

Alexander A. Zhgun, Stanislav G. Kalinin, Maria V. Dumina, Marina I. Novak, Alla G. Domracheva, Vakhtang V. Dzhevakhia, Dmitriy V. Petuhov, M. A. El'darov, Yuriy E. Bartoshevitch

Centre of "Bioengineering", Russian Academy of Sciences, Moscow, Russia

Synthesis of fluorescent derivatives of short-chain polyamines for monitoring of intracellular processes

Elena N. Danilovtseva, Stanislav N. Zelinskiy, Ol'ga N. Verkhovzina, Vadim V. Annenkov

Limnological Institute, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

Quantitative analysis of natural polyamines from human urine by using LC-MS/MS

M. R. Häkkinen¹, T. A. Keinänen¹, N. Oksala², A. Roine², A. Tuokko², E. Veskimäe¹, J. Vepsäläinen¹

¹School of Pharmacy, Biocenter Kuopio, University of Eastern Finland, Kuopio, Finland; ²Medical School, University of Tampere, Finland; ³Department of Urology, Tampere University Hospital, Tampere, Finland

Insights into the interaction of an agmatinase-like protein with Mn²⁺ and Zn²⁺ ions

Elena Uribe, Jaime Cofre, Paola Garcia, Jose Benitez, David Garcia, Jose Martinez-Oyanedel, Nelson Carvajal

Departamento de Bioquímica y Biología Molecular. Facultad de Ciencias Biológicas. Universidad de Concepcion, Concepcion, Chile

Exploring the antimalarial potential of (bis)urea and (bis)thiourea-alkylated polyamine analogues

Bianca Verlinden¹, Jandeli Niemand¹, Bernice Barnard¹, Janette Reader¹, Lubbe Wiesner², Kiplin Guy³, Patrick Woster⁴, Lyn-Marie Birkholtz¹

¹Department of Biochemistry, Faculty of Natural and Agricultural Sciences, University of Pretoria, Pretoria, South Africa; ²Department of Pharmacology, University of Cape Town, Medical School, South Africa; ³Department of Chemical Biology and Therapeutics, St Jude Children's Research Hospital, Memphis, TN, USA; ⁴Department of Pharmaceutical and Biomedical Sciences, Medical University of South Carolina, USA

Structural aspects of Polyamine oxidase activation by azofluorene and aniline derivatives

Natalia Shevkun¹, Sergey Syatkin¹, Andrey Khlebnikov²

¹Peoples' Friendship University of Russia (PFUR), Medical faculty, Biochemistry Dpt. Moscow, Russia; ²Department of Chemistry, Altai State Technical University, Barnaul, Russia

Women in Science (WISE)

Nadezhda O. Ziber-Shumova: the first Russian woman-Professor of biochemistry

Tatiana V. Denisenko, Yuri P. Golikov

Institute of Experimental Medicine, Russian Academy of Medical Sciences, St Petersburg, Russia

DNA Damage and Repair (I-S3)

Tetracycline induces competence in *Mycoplasma gallisepticum*

Mark Izraelson, A.Y. Gorbachev, G.Y. Fisunov, Vadim M. Govorun
Russian Institute of Physico-Chemical Medicine, Russia

REPAIRtoire – a database of DNA repair pathways

Kaja Milanowska¹, Joanna Krwawicz², Grzegorz Papaj³, Jan Kosinski³, Katarzyna Poleszak³, Justyna Lesiak³, Ewelina Osinska³, Kristian Rother³, Janusz M. Bujnicki³

¹Laboratory of Bioinformatics, Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University, Poznan, Poland; ²Department of Molecular Biology, Institute of Biochemistry and Biophysics Polish Academy of Sciences, Warsaw, Poland; ³Laboratory of Bioinformatics and Protein Engineering, International Institute of Molecular and Cell Biology, Warsaw, Poland

Extracellular nucleic acids in blood of patients with idiopathic interstitial pneumonia

Dmitry Klyuyev, Larissa Muravlyova, Vilen Molotov-Luchanskiy, Evgeniya Kolesnikova, Ludmila Demidchik
State Medical University, Karaganda, Kazakhstan

Epigenetics of DNA repair

Eva Bartova, Sonja Legartova, Veronika Foltankova, Petra Sehnalova, Michal Franek, Stanislav Kozubek
Institute of Biophysics, Academy of Sciences of the Czech Republic, v.v.i., Brno, Czech Republic

DNA repair events in chromatin of ribosomal genes and chromosome fragile sites

Veronika Foltankova, Sonja Legartova, Michal Franek, Stanislav Kozubek, Eva Bartova
Institute of Biophysics, Academy of Sciences of the Czech Republic, v.v.i., Brno, Czech Republic

SRCAP chromatin remodeling complex in double-strand break repair

Petar Botev, Anastas Gospodinov, Boyka Anachkova
Institute of Molecular Biology of the Bulgarian Academy of Sciences, Sofia, Bulgaria

Polymerase exchange at replication fork stalled at sites of DNA damage in *Saccharomyces cerevisiae*

Vamsi Krishna Gali, Daraba Andreea, Halmai Miklos, Unk Ildiko
Biological Research Centre, Szeged, Hungary

Novel small molecules that selectively induce transcriptional activity and modulate marks on chromatin

Iryna Charapitsa, George Reid
Institute of Molecular Biology

Nucleolin overexpression leads to increased quantity of DNA double strand breaks after etoposide treatment on HeLa cells

Mikhail A. Rubtsov, Lyudmila V. Ageeva, Sergey V. Razin, Olga V. Iarovaia
Lomonosov Moscow State University; Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia

The impact of dUTPase expression on genome integrity

Andras Horvath¹, Julia Batki¹, Villo Muha¹, Gergely Rona¹, Peter Vilmos², Miklos Erdelyi², Beata G. Vertessy¹
¹Institute of Enzymology, RCNS, Hungarian Academy of Sciences; ²Institute of Genetics, Biological Research Centre, Hungarian Academy of Sciences, Hungary

Application of repair enzymes to improve the quality of the DNA template in PCR amplification of degraded DNA

Antonina Dovgerd, Dmitry Zharkov
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

dUTPase based switch controls transfer of virulence genes in order to preserve integrity of the transferred mobile genetic elements

Judit Eszter Szabo¹, Veronika Nemeth-Pongracz¹, Veronika Papp-Kadar¹, Kinga Nyiri¹, Balazs Besztercei¹, Karoly Liliom¹, Gergely Rona¹, Hajnalka Palinkas¹, Imre Zagyva, Ibolya Leveles, Abris Bendes¹, Judit Toth¹, Beata G. Vertessy^{1,2}

¹Institute of Enzymology, RCNS, HAS; ²Department of Applied Biotechnology and Food Sciences, University of Technology and Economics, Budapest, Hungary

Pentapeptide repeat proteins deem effect of DNA damaging drug fluoroquinolones susceptibility in epidemic *Vibrio cholerae* O1 strains

Pramod Kumar, Abha Kumari, Deepak K Mishra, Baby Santosh, Soubhagya Bhuyan, Akhil Varshney, Pramod K Yadava
Jawaharlal Nehru University, New Delhi, India

Zinc finger nucleases generate DNA double strand brakes and modification in *Chlamydomonas reinhardtii*

Irina Sizova¹, Andre Greiner², Peter Hegemann²
¹*B.P.Konstantinov Petersburg Nuclear Physics Institute, Gatchina, Russia;* ²*Humboldt University Berlin, Berlin, Germany*

Comparative analysis of interaction of PARP1 and PARP2 with apurinic/apyrimidinic DNA

Mikhail Kutuzov¹, Svetlana Khodyreva¹, Jean-Christophe Ame², Maria Sukhanova¹, Ekaterina Ilina¹, Valerie Schreiber², Olga Lavrik¹

¹*Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ²*FRE3211, IREBS, CNRS, Universite de Strasbourg, ESBS, France*

RecA730 dependent suppression of DNA repair deficiency in RecA loading mutants of *Escherichia coli*

Ana Simatovic, Ignacija Vlastic, Krunoslav Brcic-Kostic
Institute Ruder Boskovic, Zagreb, Croatia

Single-molecule studies of dsDNA properties using optical tweezers

Georgii Pobegalov¹, Anatoly Arseniev¹, Anton Sabantsev¹, Yana Fedorova¹, Maria Sokolova¹, Alexey Melnikov¹, Mikhail Petukhov², Emmanuel Kas³, Mikhail Khodorkovskiy¹, Mikhail Grigoriev³

¹*Saint-Petersburg State Polytechnical University (SPbSTU), St. Petersburg, Russia;* ²*Petersburg Nuclear Physics Institute (PNPI), NRC "Kurchatov Institute", Gatchina, Russia;* ³*UMR 5099 CNRS; UPS; LBME, Toulouse, France*

Structural and biochemical characterization of the Rod-Zwilch-ZW10 (RZZ) complex

Anika Altenfeld, S. Mosalaganti, A. Wehenkel, S. Wohlgemuth, J. Keller, S. Raunser, A. Musacchio
Max Planck Institute for Molecular Physiology, Germany

Detrimental chromosomal initiations accumulate under thymine starvation modulating cell death in *Escherichia coli*

Elena Guzman
Universidad de Extremadura; Universidad de Malaga

Caffeine enhances proapoptotic activity of sodium butyrate, gamma-IR, UV-C and cisplatin in HeLa cells

Rossitca Hristova
Institute of Molecular Biology, Department: Molecular Biology Of Cell Cycle, Bulgarian Academy of Sciences, Bulgaria

CRP, IL6, IL10 levels and CRP polymorphism in patients with pancreas cancer

Sibel Bayil Oguzkan, Mehmet Ozaşlan, Hulya Cicek, Isik Didem Karagoz, Ibrahim Halil Kilic, Celalettin Camci, Avni Gokalp
Faculty of Art and Science, Biology, Molecular Biology and Genetic Department, Gaziantep University, Turkey

D vitamin levels and VDR gene polymorphisms at breast cancer and pancreas cancer

Sibel Bayil Oguzkan, Hulya Cicek, Nesli Guleken, Serdar Oztuzcu, Alper Sevinc
Faculty of Art and Science, Biology, Molecular Biology and Genetic Department, Gaziantep University, Turkey

Human DNA polymerase lambda can bypass cis-benzo[a]pyrene-dG lesions in the context of cluster-type lesions

L.V. Skosareva, N.A. Lebedeva, N.I. Rechkunova, O.I. Lavrik
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Interaction of human and yeast DNA damage recognition complexes with DNA in nucleotide excision repair

Nadejda Rechkunova, Yulia Krasikova, Ekaterina Maltseva, Olga Lavrik
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences; Novosibirsk State University, Novosibirsk, Russia

Tyrosyl-DNA phosphodiesterase 1 – a new player in base excision repair

Natalia Lebedeva¹, Nadejda Rechkunova¹, Sherif El-Khamisy², Olga Lavrik¹
¹*Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ²*University of Sussex, Brighton, UK*

Kinetic features of AP-site cleavage by Apn1 from *Saccharomyces cerevisiae* and its H83A mutant in base excision repair

Elena S. Dyakonova, Vladimir V. Koval, Olga S. Fedorova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk State University, Novosibirsk, Russia

Influence of thymidine glycol on DNA mismatch repair

Elena Kubareva¹, Svetlana Perevoztchikova¹, Roman Trikin², Roger Heinze³, Elena Romanova¹, Tatiana Oretskaya^{1,4}, Peter Friedhoff³

¹*A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia;* ²*Institute of Cell Biology, University of Bern, Bern, Switzerland;* ³*Institute for Biochemistry, Justus Liebig University, Giessen, Germany;* ⁴*Chemistry Department, Lomonosov Moscow State University, Moscow, Russia;*

The role of yeast *Saccharomyces cerevisiae* HSM3 and HSM6 genes in DNA repair, mutagenesis and chromatin modifications

Andrei Chernenkov, Dmitry Fedorov, Anna Kosareva, Tatiana Kozhina, Tatiana Evstiukhina, Vyacheslav Peshekhonov, Vladimir Korolev
Petersburg Nuclear Physics Institute, Gatchina, Russia

DNA damage response in normal human T cells

Ewa Sikora¹, Zbigiew Korwek¹, Olga Alster¹, Tomasz Sewastianik¹, Grazyna Mosieniak¹, Anna Bielak-Zmijewska¹, Maria Moreno-Villaneuva², Alexander Burkle²

¹*Nencki Institute of Experimental Biology, Pasteura 3, Warsaw, Poland;* ²*Molecular Toxicology Group, University of Konstanz, Universitaetsstrasse, Konstanz, Germany*

Das13 mutation in bacteriophage T4 RNase H increases its exonuclease activity

Natalia Kholod¹, Oleg Latypov¹, Dmitry Sivogribov¹, Michael Shlyapnikov¹, Andrey Kajava², Igor Granovsky¹
¹*Laboratory of Genetic Enzymology, G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow region, Russia;* ²*Macromolecular Biochemistry Research Center, CNRS, Montpellier, France*

An inter-species landscape of DNA repair proteins based on extreme metagenomes and repeated HMM profiling

Vince Grolmusz¹, Balazs Szalkai², Beata Vertessy^{3,4}, Ildiko Scher⁴
¹*Kuwait University, Kuwait;* ²*Eotvos University, Budapest, Hungary;* ³*Budapest Technical University, Budapest, Hungary;* ⁴*Institute of Enzymology Budapest, Hungary*

New players in recognition of AP sites in clustered DNA damages

Svetlana Khodyreva, Ekaterina Ilina, Mikhail Kutuzov, Olga Lavrik
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Double strand breaks introduced by phage T4 homing endonuclease SegD is repaired by alternative mechanism

Igor Granovsky¹, Oleg Latypov¹, Andrey Sokolov², Peter Kolosov³, Michael Shlyapnikov¹
¹*Laboratory of Genetic Enzymology, G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino, Moscow region, Russia;* ²*Protein Research Group, Institute for Biological Instrumentation, Russian Academy of Sciences, Pushchino, Moscow region, Russia;* ³*Laboratory of Molecular Neurobiology, Institute of Higher Nervous Activity and Neurophysiology, Russian Academy of Sciences, Moscow, Russia*

Stopped-flow kinetic analysis of the role of Asn212 in the catalytic mechanism of human AP endonuclease 1

Lyubov Yu Kanazhevskaya¹, Vladimir V Koval^{1,2}, Olga S Fedorova^{1,2}
¹*Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ²*Novosibirsk State University, Novosibirsk, Russia*

Human 8-oxoguanine DNA glycosylase C253I and C253L mutant forms in the DNA repair process

Maria V. Lukina, Vladimir V. Koval, Dmitry O. Zharkov, Olga S. Fedorova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

R56-sensitising effect of DNA-repair inhibitors in normal and cancer cells

Kamila Durisova¹, Ales Tichy¹, Lenka Zarybnicka¹, Jaroslav Pejchal², Jirina Vavrova¹
¹*Department of Radiobiology, Faculty of Health Sciences in Hradec Kralove, University of Defence, Brno, Czech Republic;* ²*Centre of Advanced Studies, Faculty of Health Sciences in Hradec Kralove, University of Defence, Brno, Czech Republic*

Tp12 interacts with and regulates NPM expression levels under genotoxic stress

Dimitris C. Kanellis¹, Philip N. Tschlis², Aristides G. Eliopoulos¹
¹Molecular & Cellular Biology Laboratory, Division of Basic Sciences, University of Crete Medical School and Institute for Molecular Biology & Biotechnology, Foundation of Research & Technology Hellas, Heraklion, Crete, Greece;
²Molecular Oncology Research Institute, Tufts University School of Medicine, Boston, MA, USA

Induction of DNA damage in A549 lung adenocarcinoma cells by inhibitors of type I and II topoisomerases

Paulina Rybak¹, Krzysztof Berniak¹, Lukasz Bujnowicz², Agnieszka Hoang¹, Hong Zhao³, Miroslaw Zarebski¹, Zbigniew Darzynkiewicz³, Jurek W Dobrucki¹
¹Division of Cell Biophysics, Jagiellonian University, Krakow, Poland; ²Division of Molecular Biophysics, Jagiellonian University, Krakow, Poland; ³Brander Cancer Research Institute and Department of Pathology, New York Medical College, Valhalla, New York, USA

Quantitative imaging analysis of replication stress in cells exposed to DNA targeting anticancer drugs and oxidative stress

Jerzy W. Dobrucki¹, Krzysztof Berniak¹, Paulina Rybak¹, Tytus Bernas¹, Kamil Solarczyk¹, Agnieszka Waligorska¹, Magdalena Kordon¹, Miroslaw Zarebski¹, Ewa Biela¹, H. Zhao², Zbigniew Darzynkiewicz²
¹Division of Cell Biophysics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland; ²Brander Cancer Research Institute and Department of Pathology, New York Medical College, Valhalla, New York, USA;

Xrcc1 recruitment to endogenous DNA damage in replicating cells

Magdalena Kordon, Aleksander Szczurek, Kamil Solarczyk, Jerzy W. Dobrucki
Division of Cell Biophysics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland

Heterochromatin Protein 1beta – a key factor in DNA repair and replication

Jurek W. Dobrucki, Dominika Trembecka-Lucas, Aleksander T. Szczurek, Magdalena Kordon, Kamil Solarczyk, Miroslaw Zarebski
Division of Cell Biophysics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland

Modification of UVC-induced DNA destruction in vitro

Marina Parr, Sofia Paston, Denis Platonov
Saint Petersburg State University, Faculty of Physics, St. Petersburg, Russia

The detection of nucleotide excision repair activity: new perspectives

Alexey Evdokimov, Irina Petrusheva, Aleksandra Tsidulko, Ludmila Koroleva, Inna Serpokyrova, Vladimir Silnikov, Olga Lavrik
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

The kinetic study of human apurinic/apyrimidinic endonuclease 1 in nucleotide incision repair pathway

Nadezhda Timofeyeva¹, Vladimir Koval¹, Alexander Ishchenko², Murat Saparbaev², Olga Fedorova¹
¹Institute of Chemical Biology and Fundamental Medicine Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia; ²Groupe "Réparation de l'AND", CNRS, Institut Gustave Roussy, Villejuif, France

Metabolome and proteome analysis of E. coli lacking HU protein

Dmitrii Kamashhev¹, Anna Vanyushkina¹, Tatiana Rakitina², Alexey Lipkin², Olga Pobeguts¹, Vadim Govorun¹
¹Research Institute of Physico-Chemical Medicine, Moscow, Russia; ²National Research Center Kurchatov Institute, Moscow; Institute of Bioorganic Chemistry, Moscow, Russia

The elevation of cell damage mechanisms on K562 cell line according to GSH-S conjugate rate

Sule Ozdas¹, Gonul Kanigur²
¹Istanbul Bilim University, Medical Faculty, Medical Biology and Genetic Dep., Turkey; ²Istanbul University, Cerrahpasa Medical Faculty, Medical Biology Dept., Turkey

Recognition of DNA damages by human 8-oxoguanine DNA glycosylase

Nikita A. Kuznetsov^{1,2*}, Alexandra A. Kuznetsova^{1,2*}, Alexander A. Ishchenko^{1,3}, Murat K. Saparbaev³ and Olga S. Fedorova^{1,2**}
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Department of Natural Sciences, Novosibirsk State University, Novosibirsk, Russia; ³Groupe «Réparation de l'ADN», Université Paris-Sud XI, UMR8200 CNRS, Institut Gustave Roussy, Villejuif, France

The detection of nucleotide excision repair activity: new perspectives

Alexey Evdokimov¹, Irina Petrusheva¹, Aleksandra Tsidulko², Ludmila Koroleva^{1,2}, Inna Serpokyrova¹, Vladimir Silnikov¹, Olga Lavrik^{1,2}
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk State University, Novosibirsk, Russia

Development of ribonuclease H2A inhibitors as anticancer agents

Vedrana Cikes Culic¹, Ashley E. Ross², Milena Vuica-Ross³
¹University of Split School of Medicine, Split, Croatia; ²The Johns Hopkins Medical Institution, The Brady Urological Institute, Baltimore, MD, USA; ³The Johns Hopkins Medical Institution, Department of Pathology, Baltimore, MD, USA

Effect of some purified cytokines and their medical forms on MGMT expression level

Kateryna V. Kotsarenko, Valentyna V. Lylo, Lyubov L. Lukash
Institute of Molecular Biology and Genetics of NASU, Kyiv, Ukraine

Molecular dissection of the methylome of *Burkholderia cenocepacia* J2315

Alexey Fomenkov¹, Tyson Clark², Kristi Spittle², Brain M. Anton¹, Tamas Vincze¹, Jonas Korlach², Richard J. Roberts¹
¹New England Biolabs Inc., Ipswich, MA, USA; ²Pacific Biosciences Inc., CA, USA

Nucleic Acid Targets and Therapeutics (I-W5)

The structural basis for the induction of nucleotide flipping-out, a sharp bend and a left-handed twist in CGG triplet repeats by actinomycin D binding

Ming-Hon Hou, Yu-Sheng Lo
Institute of Genomics and Bioinformatics, National Chung Hsing University, Taichung 402, Taiwan

New potentially targets to for inhibition the of metastatic and invasion capacity of gastric cancer cells

Denisa Laura Dragu, Mihaela Chivu-Economescu, Laura G. Necula, Lilia Matei, Carmen C. Diaconu
Stefan S. Nicolau Institute of Virology, Romanian Academy, Bucharest, Romania

The role of transcription factor ATF3 in cardiac hypertrophy

Lilach Koren, Ami Aronheim
Technion - Israel Institute of Technology, Israel

Ku protein as an intracellular target of extracellular DNA

Anna Cherepanova, Valentin Vlassov, Pavel Laktionov
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia

Gene Mbl1 is a target of interferon alpha

Olena Dragushchenko¹, M. Markadeiev¹, M. Yu. Obolenska²
¹Taras Shevchenko National University, Educational and Scientific Centre "Institute of Biology", Kiev, Ukraine; ²Institute of Molecular Biology and Genetics NAS, Ukraine

Expression and regulation of STEAP1 and STEAP1B in prostate cell lines through mRNA and protein stability and epigenetic mechanisms

Ines Gomes¹, Patricia Arinto¹, Pedro Costa-Pinheiro², Cecilia Santos³, Carmen Jeronimo^{2,4}, Claudio Maia¹
¹Health Sciences Research Centre, University of Beira Interior (CICS-UBI), Covilha, Portugal; ²Cancer Epigenetics Group, Department of Genetics, Portuguese Oncology Institute of Porto, Porto, Portugal; ³Health Sciences Research Centre, University of Beira Interior (CICS-UBI), Covilha, Portugal; ⁴Department of Pathology and Molecular Immunology, Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal

New fluorescent probes based on minor groove binders and cyanine fluorophores: synthesis and interaction with the target dsDNA

Alexandre Boutorine¹, Marc Bonan², Karine Nozeret¹, Serguii Yarmoluk³
¹Museum National d'Histoire Naturelle, INSERM U565 – CNRS UMR 7196, Paris, France; ²Universite Paris Descartes, Paris, France; ³Institute of Molecular Biology and Genetics, NAS of Ukraine, Kyiv, Ukraine

The interaction of lipophilic derivatives of siRNA with hematopoietic and tumor cells

Ivan Chernikov, Natalya Petrova, Mariya Meschaninova, Ilya Dovydenko, Aliya Venyaminova, Marina Zenkova, Valentin Vlassov, Elena Chernolovskaya
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia

Transferrin receptor targeted antisense oligonucleotide delivery to metastatic breast cancer cells

A. Kevsar Ozden, Canan Cakir Aktas, Araz Norouz Dizaji, Erhan Piskin
Hacettepe University, Faculty of Medicine and Faculty of Engineering, Departments of Medical Biochemistry and Bioengineering, Ankara, Turkey

The suppressor of cytokine signalling-2 regulates the effects of estradiol on body growth

Mercedes Mirecki-Garrido¹, Carlos Mateos-Diaz¹, Arima Santana-Fernandez¹, Amilcar Flores-Morales², Leandro Fernandez-Perez¹
¹*University of Las Palmas de Gran Canaria, Pharmacology Unit, Department of Clinical Sciences, Molecular and Translational Endocrinology Group, Spain;* ²*University of Copenhagen, Novo Nordisk Center for Protein Research, Molecular Endocrinology Group, Denmark*

Cationic liposomes for efficient delivery of nucleic acids

Mikhail Maslov, Nina Morozova¹, Tatiyana Kabilova², Nina Morozova¹, Marina Zenkova²
¹*Moscow State University of Fine Chemical Technology, Moscow, Russia;* ²*Institute of Chemical Biology and Fundamental Medicine Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia*

Exosomes are natural carriers of exogenous siRNA to human cells *in vitro*

Tatyana Shtam, Roman Kovalev, Mihail Filatov
Petersburg Nuclear Physics Institute, Gatchina, Russia

A component of transcriptional PRC2 complex, enhancer of zest homology (EZH2), modulates endothelial cell responses to hypoxia and post-ischaemic angiogenesis in a mouse model of limb ischaemia

Tijana Mitic, Orchi Anannya, Costanza Emanuelli
University of Bristol, Laboratory of Vascular Pathology and Regeneration, Section of Regenerative Medicine, School of Clinical Sciences, Research Floor Level 7, Bristol Royal Infirmary, Upper Maudlin Street, Bristol, BS2 8HW, United Kingdom

Retinoid signaling is implicated in early hepatic regenerative response

Igor O. Shmarakov¹, Myahailo M. Marchenko¹, William S. Blaner²
¹*Dept Biochem and Biotech, Chernivtsi National Univ, Chernivtsi, Ukraine;* ²*Dept. Medicine, Columbia Univ, New York, USA*

Gene signatures in cancer may also overlap at the level of the product special domain organization and function

Svitlana Antonenko, Olena Cherepenko, Gennady Telegeev
Institute of Molecular Biology & Genetics, NAS of Ukraine, Kyiv, Ukraine

Inhibition of HIV-1 reverse transcriptase and its binding to HIV-1 integrase by modified oligonucleotides

Sergey Korolev, Olga Kondrashina, Ekaterina Lysenko, Marina Gottikh
Department of Chemistry and A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

The study of 5-fluorouracil activation and distribution in lymphocytes and blood plasma

Maryna Stashkevych¹, Ievgen Khomutov², Ivan Genbach, Olga Shatova², Igor Zinkovych²
¹*Bogomolets National Medical University, Kyiv, Ukraine;* ²*M.Gorky Donetsk National Medical University, Donetsk, Ukraine*

Investigation of p53 codon 72 polymorphism and cytotoxicity in HEPG2, MCF-7 and HEK293 cell lines

Selin Oncul¹, Gozde Aydin¹, Gulberk Ucar¹, Ayse Ercan¹
¹*Hacettepe University, Faculty of Pharmacy, Department of Biochemistry, 06100 Sıhhiye Ankara, Turkey;* ²*Hacettepe University, Stem Cell Research and Application Center, 06100 Sıhhiye Ankara, Turkey*

Capsaicin induced apoptosis and gene expression dysregulation of human acute lymphoblastic leukemia CCRF-CEM cells

Vildan Bozok Cetintas, Burcin Tezcanli Kaymaz, Huseyin Aktug, Fatih Oltulu, Dilek Taskiran
Department of Medical Biology, Ege University School of Medicine, Izmir, Turkey

Inhibition of c-Myc transcription by olivomycin A involves preferential drug binding to NFAT/Sp1 promoter site

Nikita Durandin¹, Alexander Vinogradov¹, Alexander Shtil², Vladimir Kuzmin¹
¹*N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia;* ²*N.N. Blokhin Cancer Center, Moscow, Russia*

Recruitment of a phage site-specific recombinase for human gene therapy

Natalia Malchin, Mihail Kolot, Ezra Yagil
Dept. of Biochemistry and Molecular Biology, Tel-Aviv University, Israel

New method for mismatch detection by means of oligonucleotide-nanogold chimeric probes

Ravil Garafutdinov, Assol Sakhabutdinova, Alexey Chemeris
Institute of Biochemistry and Genetics, Ufa Scientific Center, Russian Academy of Sciences, Ufa, Russia

Optimisation of circulating cell-free DNA (cfDNA) purification for KRAS mutation and HPV detection in cancer patients

Agnieszka M. Mazurek, Anna Fiszler-Kierzkowska, Dorota Scieglińska, Grzegorz Wozniak, Rafał Kawczynski, Grzegorz Glowacki, Tomasz Rutkowski, Ewa Malusecka
Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice Branch, Poland

Quantitative imaging analysis of replication stress in cells exposed to DNA targeting anticancer drugs and oxidative stress

Jerzy Dobrucki¹, K. Berniak¹, P. Rybak¹, T. Bernas², K. Solarczyk¹, A. Waligorska¹, M. Zarebski¹, E. Biela¹, M. Kordon¹, H. Zhao³, Z. Darzynkiewicz³
¹*Division of Cell Biophysics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland;* ²*Nencki Institute of Experimental Biology, Laboratory of Functional and Structural Tissue Imaging, Polish Academy of Sciences, Warsaw, Poland;* ³*Brander Cancer Research Institute and Department of Pathology, New York Medical College, Valhalla, New York, USA*

Mechanisms in biology via “cardiolipin machinery”: cardiolipin-induced DNA assembly

Milyausha Ibragimova¹, A.S. Krylov², G. Bischoff³, R.I. Zhdanov¹
¹*Institute of Fundamental Medicine, Kazan Federal University, Kazan, Russia;* ²*Institute of General Pathology and Pathophysiology, Moscow, Russia;* ³*Martin Luther University Halle-Wittenberg, Germany*

Ku protein as an intracellular target of extracellular DNA

Anna Cherepanova, Valentin Vlassov, Pavel Laktionov
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

DNA as a target for anticancer drugs based on the coordination compounds of metals

Nina Kasyanenko
Faculty of Physics, Saint Petersburg State University, Russia

An algorithm for multiparameter cytometric analysis of spatial relationships between nuclear events represented by microfoci

Krzysztof Berniak¹, Tytus Bernas^{1,2}, Paulina Rybak¹, Mirosław Zarebski¹, Hong Zhao³, Zbigniew Darzynkiewicz³, Jerzy Dobrucki⁴
¹*Division of Cell Biophysics, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland;* ²*Nencki Inst. of Experimental Biology, Laboratory of Functional and Structural Tissue Imaging, Polish Academy of Sciences, Warsaw, Poland;* ³*Brander Cancer Research Institute and Department of Pathology, New York Medical College, Valhalla, New York, USA*

New mechanism of genetic control: nature and properties of DNA-bound lipids

Renad Zhdanov, Milyausha Ibragimova
Institute for Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

The eNOS 4a/b gene polymorphism as a genetic marker of aging in Kazakhstan population

Elmira Khussainova, Anastasiya Perfiljeva, Nurzhibek, Kira Djantaeva, Liliya Skvortsova, Zeinep Berkimbayeva, Leyla Djansugurova, Almagul Mansharipova
Institute of General Genetics and Cytology, Almaty, Kazakhstan

Loss of functions of glutathione S-transferases can predispose to colorectal cancer

Gulnur Zhunusova¹, Leyla Djansugurova¹, Georgy Afonin², Olzhas Iksan¹, Balzhan Nabieva¹, Elmira Khussainova¹, Anastasiya Perfiljeva¹, Bakhytzhann Bekmanov¹, Bakhyt Kaidarov², Dilyara Kaidarova³
¹*Institute of General Genetics and Cytology, Almaty, Kazakhstan;* ²*Kazakh National Medical University by S.Asfendiyarov, Almaty, Kazakhstan;* ³*Oncological Dispanser of Almaty city, Almaty, Kazakhstan*

Molecular dynamics simulations: quadruplex's loop topology reflects structural stability

Andrey Golovin¹, Matvey Zaharov¹, Alexey Kopylov², Roman Reshetnikov³
¹*Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia;* ²*Chemical Department, Lomonosov Moscow State University, Moscow, Russia;* ³*"Apto-Pharm" LLC.*

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Genes encoding RNA binding proteins / RNA splicing factors as potential therapeutic targets in heart failure in dogs

¹Magdalena Lóji, ²Magdalena Garnarcz, ²Marta Parzeniecka-Jaworska and ¹Michał Jank
¹Department of Physiological Sciences, Faculty of Veterinary Medicine, Warsaw University of Life Sciences, Warsaw, Poland; ²Department of Veterinary Diagnostics and Pathology, Faculty of Veterinary Medicine, Warsaw University of Life Sciences, Warsaw, Poland.

Protein Dynamics (II-W8)

The high-affinity inorganic phosphate transport system of *Saccharomyces cerevisiae*: a tale of two proteins

Dieter Samyn, Michael Andersson, Lorena Ruiz-Pavon, Yulia Popova, Bengt Persson, Johan Thevelein
Linnaeus University, Sweden

Role of NHERF2 adaptor protein in endothelial cells

Anita Boratko, Csilla Csontos
University of Debrecen, Debrecen, Hungary

Effect of apoA-I mutations in the capacity of reconstituted HDL to promote ABCG1-mediated cholesterol efflux

Georgios Daniil¹, Vassilis I. Zannis², Angeliki Chroni¹
¹Institute of Biosciences and Applications, National Center for Scientific Research "Demokritos", Agia Paraskevi, Athens, Greece; ²Molecular Genetics, Departments of Medicine and Biochemistry, Whitaker Cardiovascular Institute, Boston University School of Medicine, Boston, Massachusetts, USA

Regulation of protein synthesis pattern in skeletal muscle under early stage of hindlimb unloading

Yulia Lomonosova, Evgeniy Lysenko, Boris Shenkman, Alexey Krasnyi
Institute for Bio-Medical Problems, Moscow, Russia

Mouse nuclear myosin I knock-out shows interchangeability and redundancy of myosin isoforms in the cell nucleus

Tomas Venit, Rastislav Dzajak, Alzbeta Kalendova, Jana Rohozkova, Pavel Hozak
Department of Biology of the Cell Nucleus, Institute of Molecular Genetics, Academy of Sciences of Czech Republic, v.v.i., Prague, Czech Republic

A protein kinase (MKK6) can also function as a phosphatase

Thomas Lake¹, Matthew Cliffe²
¹Sheffield University, UK; ²Manchester University, UK

Anion-transport inhibitors interact and inhibit VDAC1 oligomerization

Danya Ben-Hail, Varda Shoshan-Barmatz
Department of Life Science and NIBN, Ben-Gurion University of the Negev (BGU), Beer-Sheva, Israel

From whole cells towards photosynthetic reaction centres: dynamics properties for biotechnological applications

Daniela Russo¹, Gaetano Campi², Pina Rea², Maya Lambreva²
¹CNR-IOM c/o Institut Laue Langevin, Grenoble, France; ²CNR Istituto di Cristallografia, Monterotondo Scalo, Rome, Italy

Nano-confinement tuning of biomolecules for bio-technological interest

D. Russo¹, B. Aoun², M. Gonzalez²
¹CNR-IOM c/o Institut Laue Langevin, Grenoble, France; ²Institut Laue Langevin, Grenoble, France

ESR-PELDOR studies of structural transitions of DNA induced by DNA repair enzyme

N.A. Kuznetsov^{1,2}, A.D. Milov³, N.P. Isaev², Yu.N. Vorobjev^{1,2}, S.A. Dzuba³, Yu.D. Tsvetkov³, O.S. Fedorova^{1,2}, D.G. Knorre^{1,2}
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Department of Natural Sciences, Novosibirsk State University, Novosibirsk, Russia; ³Institute of Chemical Kinetics and Combustion, Russian Academy of Sciences, Novosibirsk, Russia

Analysis of the interaction between gastrokinin I and amyloid-beta peptide: a potential anti-amyloid activity of the protein

Filomena Altieri, Chiara Stella Di Stadio, Giuseppina Miselli, Emilia Ripa, Paolo Arcari
Department of Molecular Medicine and Medical Biotechnologies, University of Naples "Federico II" Naples, Italy

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Dynamics of the dsDNA/TIP49a hexameric complexes

Michael Petukhov¹, Andrey Ilatovskiy¹, Tatiana Artamonova², Arina Afanasieva², Alexander Yakimov¹, Mikhail Khodorovskiy², Emmanuel Kas³, Mikhail Grigoriev³
¹Petersburg Nuclear Physics Institute, NRC "Kurchatov Institute", Gatchina, Russia; ²St.-Petersburg State Polytechnical University, St. Petersburg, Russia; ³UMR 5099, CNRS, LBME, Toulouse, France

Mechanism of ATP hydrolysis by the archeal TIP49 AAA+ protein

Arina Afanasieva¹, Angela Hirtreiter², Anne Schreiber², Maria Sokolova⁴, Dina Grohmann², Adam R. McKay⁵, Mikhail Khodorovskiy⁴, Irina Tsaneva², Michael Petukhov¹, Finn Werner², Mikhail Grigoriev⁶
¹Department of Biophysics, St.-Petersburg State Polytechnical University, St. Petersburg, Russia; ²University College London, Institute for Structural and Molecular Biology, Division of Biosciences, Darwin Building, London, UK; ⁴Institute for Nanobiotechnologies, St.-Petersburg State Polytechnical University, St. Petersburg, Russia; ⁵University College London, Department of Chemistry, London, UK; ⁶UMR 5099, CNRS, LBME, Toulouse, France

Erythrocyte remodeling in acute pancreatitis

Iuliia Azarova, Alexander Konoplya
Kursk State Medical University, Kursk, Russia

Asymmetric flexibility of a homodimeric enzyme as shown by molecular dynamics computations. A case study of the cold-active *Vibrio* alkaline phosphatase

Bjarni Asgeirsson¹, Giulia Renzetti², Gaetano Invernizzi, Elena Papaleo
¹Science Institute, University of Iceland, Reykjavik, Iceland; ²Department of Biotechnology and Biosciences, University of Milano-Bicocca, Milan, Italy

Structural properties of DNA glycosylases repairing 8-oxoguanine: a molecular dynamics study

Alexander V. Popov, Yuri N. Vorobjev, Dmitry O. Zharkov
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Dynamics of the ligand binding domain of PPAR gamma

Ranjit Vijayan
Department of Biology, UAE University, Al Ain, UAE

The effect of the arthrogyposis-causing Arg91Gly mutation in beta-skeletal tropomyosin on its position on the thin filament and flexibility during the ATPase cycle

Armen Simonyan¹, Nikita Rysev², Alexey Chervov¹, Zoya Krutetskaya¹, Adam Piers³, Charles Redwood³, Yurii Borovikov²
¹Saint Petersburg State University, St. Petersburg, Russia; ²Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia; ³University of Oxford, Oxford, UK

Disruption of ionic interactions between NBD1 and M domain in Hsp104 chaperone unleashes toxicity to yeast cells

Krzysztof Gumowski, Natalia Lipinska, Alicja Sobczak, Agnieszka Jurczyk, Ewa Morawiec, Elzbieta Chrusciel, Szymon Zietkiewicz, Krzysztof Liberek
Intercollegiate Faculty of Gdansk, University of Gdansk, Gdansk, Poland

Molecular dynamics study of A-domain of Protein Kinase A I -alpha?

Vasily Stefanov¹, Olga Rogacheva¹, Elena Vershinina², Boris Shchegolev²
¹Saint Petersburg State University, St. Petersburg, Russia; ²I.P. Pavlov Institute of Physiology, Russian Academy of Sciences, St. Petersburg, Russia

Large-scale mobility of RecA protein filaments in solution by molecular dynamics simulation and neutron spin echo

Alexey Shvetsov¹, Dmitry Lebedev¹, Oxana Ivanova², Peter Falus³, Vladimir Isaev-Ivanov¹
¹Petersburg Nuclear Physics Institute, NRC "Kurchatov Institute", Gatchina, Russia; ²Juelich Centre for Neutron Science, Oustration at FRM II, Garching, Germany; ³Institut Laue-Langevin, Grenoble, France

Mechanisms of human fibrinogen adsorption on colloid particles determined by electrokinetic and AFM measurements

Paulina Zeliszevska, Anna Bratek-Skicki, Zbigniew Adamczyk
Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Poland

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Human AP endonuclease I active site plasticity: MD simulation of WT and mutant enzyme-substrate complexes

Vladimir V. Koval, Alexander A. Lomzov, Lyubov Yu. Kanazhevskaya, Nadezhda A. Timofeyeva, Dmitri V. Pyshnyi, Olga S. Fedorova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia

Expression and immunohistochemical distribution of mitogen-activated protein kinases in normal and pathological placental tissues

Gozde Unek¹, Asli Ozmen¹, Inanc Mendilcioglu², Mehmet Simsek², Emin Turkyay Korgun¹
¹Department of Histology and Embryology, Medical Faculty, Akdeniz University, Antalya, Turkey; ²Department of Obstetrics and Gynecology, Medical Faculty, Akdeniz University, Antalya, Turkey

The kinetic study of human apurinic/aprimidinic endonuclease I in nucleotide incision repair pathway

Nadezhda Timofeyeva^{1,2}, Vladimir Koval^{1,2}, Alexander Ishchenko³, Murat Saparbaev³, Olga Fedorova^{1,2}
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk State University, Novosibirsk, Russia; ³Groupe «Reparation de l'ADN», CNRS, Institut Gustave Roussy, Villejuif, France

Thermal transitions of bacterial bioluminescence enzymes in viscous media by means of their intrinsic fluorescence

Elena Nemtseva, Dmitrii Gulnov, Marina Gerasimova, Valentina Kratasyuk
Siberian Federal University, Krasnoyarsk, Russia

Analysis of molecular dynamic the second catalytic cysteine half-domain (SCCH) from ubiquitin-activating enzyme E1 based on 15N relaxation data in solution

Igor Zhukov¹, Emilia A. Lubecka², Lukasz Popena³, Krystian Stodus¹, Stefan Jurga³
¹Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland; ²Faculty of Chemistry, University of Gdansk, Gdansk, Poland; ³NanoBioMedical Center, Adam Mickiewicz University, Poznan, Poland

Why some cells are radioresistant? The DBp53 interactions with double-strand DNA sequences in promoter regions of genes related to the cell cycle and apoptosis[†]

Magdalena Janicka¹, Milena Sobczak¹, Barbara Mikolajczyk¹, Aviva Kapitkovsky², Zippora Shakked², Piotr Guga¹
¹Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Lodz, Poland; ²Department of Structural Biology, Weizmann Institute of Science, Rehovot, Israel

Prediction of status residue to be protected or unprotected from hydrogen exchange in a protein chain

Oxana V. Galzitskaya, Mikhail Yu. Lobanov, Masha Yu. Suvorina, Nikita V. Dovidchenko, Igor V. Sokolovskiy, and Alexey K. Surin
Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow Region, Russia

An asymmetric transition between symmetric states: the Glucosamine 6-phosphate Deaminase allostery

Amanda Souza Camara, Eduardo Horjales Reboreda
Instituto de Fisica de Sao Carlos/USP, Sao Carlos-SP, Brasil

FTIR spectroscopy applied to study dynamics and flexibility of human aromatase

Giovanna Di Nardo, Maximilian Breitner, Sheila J. Sadeghi, Silvia Castrignanò, Gianfranco Gilardi
Dept. of Life Sciences and Systems Biology, University of Torino, Torino, Italy

Antibody opsonization-dependent internalization and trafficking of ABCG2 in cancer cell lines

Maciej Studzian, Grzegorz Bartosz, Lukasz Pulaski
University of Lodz, Lodz, Poland

Biochemistry of Stress Response (III-S13)

Ultrasensitive, high-speed microscopic method to profile individual stress response in heterogeneous mammalian cell populations

Laszlo Vigh Jr., Imre Gombos, Begum Peksel, Zsolt Torok
Institute of Biochemistry, Biological Research Center of the Hungarian Academy of Sciences, Szeged, Hungary

The effect of Hsp90 inhibition on mutant rhodopsin

Monica Aguila¹, Pere Garriga², Dalila Bevilacqua¹, Caroline McCulley¹, Nele Schwarz¹, Dimitra Athanasiou¹, David A. Parfitt¹, Sergey Novoselov¹, Michael E. Cheetham¹
¹UCL, Institute of Ophthalmology, London, UK; ²Universitat Politècnica de Catalunya, Terrassa, Spain

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Pharmacological manipulation of the stress response in retinal degeneration

David A Parfitt, Monica Aguila, Caroline H McCulley, Dalila Bevilacqua, Dimitra Athanasiou, Sergey Novoselov, Michael E Cheetham
UCL Institute of Ophthalmology, London, UK

The role of disulphide bond formation on wild-type and mutant rod opsin biogenesis

Dimitra Athanasiou, Caroline McCulley, Dalila Bevilacqua, Monica Aguila, David A. Parfitt, Michael E. Cheetham
UCL, Institute of Ophthalmology, London, UK

Transcriptional changes in rhodopsin Retinitis Pigmentosa

Dalila Bevilacqua, Monica Aguila, Dimitra Athanasiou, David A. Parfitt, Nele Schwarz, Michael E. Cheetham
UCL, Institute of Ophthalmology, London, UK

Lysosomal rerouting of Hsp70 trafficking as a potential immune activating tool for targeting melanoma

Kata Juhasz¹, Benedikt Nimmervoll¹, Roland Thuenauer¹, Jan Hesse¹, Thomas Haselgrubler¹, Ibolya Horvath², Laszlo Vigh², Peter Hinterdorfer³, Alois Sonnleitner¹, Lilia Chtcheglova¹, Zsolt Balogi¹
¹Center for Advanced Bioanalysis GmbH, Linz, Austria; ²Institute of Biochemistry, Biological Research Center, Szeged, Hungary; ³Institute for Biophysics, Johannes Kepler University, Linz, Austria

The structure and fine tuning of hsp70 promoters in different animal species with contrasting thermal habitats

Lyubov N. Astakhova, Olga G. Zatsepina, Michael B. Evgen'ev, David G. Garbuz
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

The role of structure and regulation of hsp70 gene family in the adaptation to extreme conditions

Sergei Yu. Funikov, Elena S. Zelentsova, Natalya G. Shostak, David G. Garbuz, Michael B. Evgen'ev, Olga G. Zatsepina
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Effect of endemic plants extracts on biological macromolecules

Dunja Samec, Dario Kremer, Jiri Gruz, Jasenka Piljac-Zegarac, Branka Salopek-Sondi
Institute Ruder Boskovic, Zagreb, Croatia

New insights into deleterious impacts of *in vivo* glycation on albumin antioxidant activities

Philippe Rondeau, Jennifer Baraka-Vidot, Alexis Guerin-Dubourg, Bertrand Payet, Emmanuel Bourdon
GEICO, Saint-Denis, France

Role of ROS in normalization of primary cilia length altered by ischemia/reperfusion insult

Jee In Kim, Kwon Moo Park
Kyungpook National University, Daegu, Korea South

Stimulation of mitochondrial biogenesis and mitochondrial elongation during preconditioning: The brain adapting to survive!

Sonia C. Correia¹, Maria S. Santos^{1,2}, Paula I. Moreira^{1,3}
¹CNC - Center for Neuroscience and Cell Biology, University of Coimbra, Coimbra, Portugal; ²Department of Life Sciences, Faculty of Sciences and Technology, University of Coimbra, Coimbra, Portugal; ³Laboratory of Physiology, Faculty of Medicine, University of Coimbra, Coimbra, Portugal

Ursolic acid sensitizes prostate cancer cells to TRAIL-mediated apoptosis

Jeen-Woo Park, Seoung Woo Shin
Kyungpook National University, Taegu, South Korea

Role of thioredoxin, thioredoxin reductase and peroxiredoxin in redox-dependent mechanism of development of multidrug resistance in cancer cells

Elena Kalinina, Nikolay Chernov, Timir Berezov, Alexander Shtil, Victoria Glasunova, Victor Sukhanov
People's Friendship University, Moscow, Russia

Antiproliferative and anticarcinogenic effects of an aqueous preparation of *Urtica urens* in human hepatocarcinoma HepG2 cells

Alaattin Sen, Sevki Arslan
Pamukkale University, Faculty of Arts & Sciences, Department of Biology, Kinikli, Denizli, Turkey

Regulation of a smallest AKAP, GSKIP, associates neuroprotection through attenuating mitochondrial dynamics under oxidative stress in SH-SY5Y cells

Yi-Ren Hong, Wen-Sheng Huang, Ming-Chang Yang, Ching-Chih Lin
Department of Biochemistry, Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Taiwan

The extracellular nuclear acids in blood of patients with different clinical forms of chronic obstructive pulmonary disease (COPD)

Larissa Muravlyova, Vilen Molotov-Luchanskiy, Dmitriy Kluyev, Ludmila Demidchik, Evgenya Kolesnikova
State Medical University, Karaganda, Kazakhstan

Short-term biochemical responses of gibel carp white muscle due to silicon quantum dots exposure

Mihaela Radu¹, Loredana Stanca¹, Iren Andreea Serban², Marieta Costache¹, Anca Dinischiotu¹
¹Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Bucharest, Bucharest, Romania;
²University of Agricultural Science and Veterinary Medicine, Faculty of Veterinary Medicine, Bucharest, Romania

Toxicological aspects of PANC-1 cells exposure to iron oxide dextran-covered nanoparticles

Mihaela Radu¹, Carmen Burtea², Daniela Predoi³, Robert Muller², Anca Dinischiotu¹
¹Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Bucharest, Bucharest, Romania;
²Department of General, Organic and Biomedical Chemistry, NMR and Molecular Imaging Laboratory, University of Mons, Mons, Belgium;
³National Institute of Materials Physics, Bucharest-Magurele, Romania

The effect of external thiamine on the antioxidative potential of baker's yeast *Saccharomyces cerevisiae* under abiotic stress conditions

Natalia Wolak, Maria Rapala-Kozik
Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland

The heat shock transcriptome of the legume microsymbiont *Mesorhizobium* sp. MAFF303099

Ana Alexandre, Marta Laranjo, Solange Oliveira
ICAM (Instituto de Ciencias Agrarias e Ambientais Mediterranicas) and IIFA (Instituto de Investigacao e Formacao Avancada) - Universidade de Evora, Portugal

Bioaccumulation of Si/SiO₂ QDs and the oxidative stress biomarkers assessment in the kidney tissue of *Carassius auratus gibelio*

Sorina Nicoleta Petrache¹, Loredana Stanca¹, Andreea Iren Serban², Andreea Cristina Staicu¹, Cornelia Sima³, Otilia Zarnescu¹, Marieta Costache¹, Anca Dinischiotu¹
¹Department of Biochemistry and Molecular Biology, University of Bucharest, Faculty of Biology, Bucharest, Romania;
²University of Agricultural Science and Veterinary Medicine, Faculty of Veterinary Medicine, Bucharest, Romania;
³Laser department, National Institute of Laser, Plasma and Radiation Physics, Bucharest, Romania

Regucalcin, an apoptosis regulator in spermatogenesis?

Sara Correia, Marco Alves, Pedro Oliveira, Jose Cavaco, Silvia Socorro
CICS-UBI, Health Sciences Research Centre, Covilha, Portugal

Regulation of pirin expression as a mechanism enabling cross-talk between NRF2 and other transcription factors

Kamil Brzoska¹, Tomasz Stepkowski¹, Marcin Kruszewski^{1,2}
¹Institute of Nuclear Chemistry and Technology, Warsaw, Poland; ²Institute of Agricultural Medicine, Lublin, Poland

Zinc homeostasis and eryptosis

Yuliya M. Harmaza, Ekaterina I. Slobozhanina
Institute of Biophysics and Cell Engineering, National Academy of Belarus, Minsk, Belarus

Evaluation of housekeeping genes in molecular ecotoxicology: *Cyprinus carpio* as a model test organism and determination of heat shock protein mRNA levels in gills and liver stressed with dibutyl phthalate exposure

Hizlan H. Agus¹, Sibel Sumet¹, Figen Erkoc²
¹Department of Biology, Science Faculty, Hacettepe University, Ankara, Turkey; ²Department of Biology Education, Gazi University, Teknikokullar, Ankara, Turkey

HIIF (hypoxia inducible factor) 2A as a marker of tissue oxygenation in human placental explants

Kateryna Kornieieva (Romanets)¹, Ruslan Rodriguez², Sergiy Ralchenko, Maria Obolenskaya
¹Taras Shevchenko National University, Kyiv, Ukraine; ²Institute of Molecular Biology and Genetics, National Academy of Science of Ukraine, Kyiv, Ukraine

Individual susceptibility to depressive-like traits in two mouse models of depression and hippocampal levels of GSK3 beta

Nataliya Markova¹, Elena Shevtsova¹, Sergey Bachurin¹, Harry MW Steinbusch², Tatyana Strekalova²
¹Institute of Physiologically Active Compounds, Russian Academy of Sciences, Chernogolovka, Russia; ²School for Mental Health and Neuroscience, Maastricht University, the Netherlands

Vascular endothelial growth factor (VEGF) resistance in human monocytes: Implications for impaired arteriogenesis in diabetes mellitus

Rinesh Godfrey¹, Ignacio Rubio³, Johannes Waltenberger^{1,2}
¹Molecular Cardiology, Department of Cardiovascular Medicine, University Hospital Munster, Munster, Germany;
²Department of Cardiology, Maastricht University Medical Center, Maastricht University, Maastricht, the Netherlands;
³Institute of Molecular Cell Biology, Center for Molecular Biomedicine, Jena University Hospital, Jena, Germany

Mitochondrial electron transport chain complex III inhibition causes nucleolar disruption via de novo pyrimidine biosynthesis pathway

Alexandra Dalina¹, Anastasia Khutornenko²
¹Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia; ²A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Bilirubin mediated oxidative stress involves activation of antioxidant response through Nrf2 pathway in SH-SY5Y cells

Mohammed Qaisiya, Carlos Coda-Zabetta, Cristina Bellarosa and Claudio Tiribelli
Fondazione Italiana Fegato-Onlus, Trieste, Italy

The heat shock protein TRAP1 is involved in translational control: A novel role in the quality control of mitochondrial proteins

Danilo Swann Matassa¹, Maria Rosaria Amoroso¹, Francesca Maddalena², Ilenia Agliarulo¹, Matteo Landriscina³, Franca Esposito¹
¹University "Federico II", Naples, Italy; ²IRCCS, Referral Cancer Center of Basilicata, Rionero in Vulture (PZ), Italy;
³University of Foggia, Foggia, Italy

Neurons have an active glycogen metabolism that plays a key role in the tolerance to hypoxia

Isabel Saez, Jordi Duran, Christopher Sinadinos, Joan J. Guinovart
Institute for Research in Biomedicine, Barcelona, Spain

Attenuation of hepatic damage by PARP-1 inhibitors treatment under diabetes in rats

Mykhailo Guzyk
Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine

The role of membranes in the heat-stress management

Laszlo Vigh, Gabor Balogh, Zsolt Torok, Imre Gombos, Maria Peter, Burcin Gungor, Tim Crul, Akos Hunya, Laszlo Vigh Jr., Attila Glatz, Ibolya Horvath
Institute of Biochemistry, Biological Research Centre, Hung. Acad. Sci., Szeged, Hungary

The impact of peritoneal dialysis fluid exposure on O-GlcNAc modification and resulting changes in stress response and survival of mesothelial cells

Rebecca Herzog, Christoph Aufricht, Klaus Kratochwill
Medical University of Vienna, Austria

Structural analysis of *Oryza sativa* COIs in jasmonate signal transduction

Han Yong Lee, Tae Young Um, Yang Do Choi¹, Ju-Kon Kim²
¹Department of Agricultural Biotechnology, Seoul National University, Seoul, Korea; ²School of Biotechnology and Environmental Engineering, Myongji University, Yongin, Korea

Oxidative modification of blood proteins and coagulation of white rats blood under the high level noise action

Ashkhen Manukyan¹, Lilit Hunanyan¹, Gagik Hoveyan¹, Magda Melkonyan¹, Hayk Harutyunyan²
¹Department of Medical Chemistry, ²Laboratory of Biochemical and Biophysical Researches, Scientific Research Center, Yerevan State Medical University after Mchitar Heratsi, Yerevan, Armenia

Lipid-protein intermolecular interactions in erythrocyte membranes of white rats after high level noise action

Lilit Hunanyan¹, Ashkhen Manukyan¹, Magda Melkonyan¹, Rima Kirakosyan¹, Gohar Sahakyan²
¹Department of Medical Chemistry, ²Laboratory of Biochemical and Biophysical Researches, Scientific Research Center, Yerevan State Medical University after Mchitar Heratsi, Yerevan, Armenia

Interaction sites of hordeivirus movement TGB1 proteins and coilin, a structural protein of subnuclear Cajal bodies, localize in unfolded domains of both viral and cellular proteins

Valentin Makarov¹, Mamed Guseynov¹, Daria Rakitina¹, Maria Semashko¹, Alina Chernova¹, Jane Shaw², Michael Taliensky², Natalia Kalinina¹
¹A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia;
²James's Hutton Institute, UK

The effects of melatonin on kidney nitric oxide-ADMA pathway in fructose-fed rats

Ozge Tugce Pasaoglu¹, Nurten Turkozkan¹, Turgut Topal², Filiz Sezen Bircan³
¹Department of Biochemistry, Faculty of Medicine, Gazi University, Ankara, Turkey; ²Department of Physiology, Gulhane Military Medicine Academy, Ankara, Turkey; ³Department of Biology, Faculty of Science, Gazi University, Ankara, Turkey

Mitochondria-targeted antioxidants prevent TNF α -induced endothelial cell apoptosis

Ivan I. Galkin, Olga Yu. Pletjushkina, Vlada V. Zakharova, Boris V. Chernyak, Ekaterina N. Popova, Roman A. Zinovkin
A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Whether DNA alone may activate neutrophils and endothelial cells?

Maria V. Vitushkina¹, Olga Yu. Pletjushkina², Ekaterina N. Popova², Marina A. Aznauryan³, Anna S. Lapashina³, Anastasia S. Prihodko³, Liudmila A. Zinovkina³, Roman A. Zinovkin¹
¹Institute of Mitoengineering, Lomonosov Moscow State University, Moscow, Russia; ²A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia; ³Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia

Quantum dots from non-toxic materials cause redox imbalance in carp liver - heat shock proteins come to the rescue

Loredana Stanca¹, Andreea Iren Serban², Constantin Grigoriu³, Anca Dinischiotu¹
¹Department of Biochemistry and Molecular Biology, University of Bucharest, Bucharest, Romania; ²Department of Preclinical Sciences, University of Agricultural Sciences and Veterinary Medicine, Bucharest, Romania; ³Laser Department, National Institute of Laser, Plasma and Radiation Physics, Bucharest-Magurele, Romania

Effect of resveratrol on nitric oxide metabolism and 3-nitrotyrosine level in heart tissues of fructose-fed rats

Filiz Sezen Bircan¹, Nurten Turkozkan², Turgut Topal², Ozge Tugce Pasaoglu²
¹Department of Biology, Faculty of Science, Gazi University, Ankara, Turkey; ²Department of Biochemistry, Faculty of Medicine, Gazi University, Ankara, Turkey; ³Department of Physiology, Gulhane Military Medical Academy, Ankara, Turkey

The effects of melatonin on serum nitric oxide, homocysteine and ADMA levels in fructose-fed rats

Serife Kantar¹, Nurten Turkozkan¹, Filiz Sezen Bircan², Ozge Tugce Pasaoglu¹
¹Department of Biochemistry, Faculty of Medicine, Gazi University, Ankara, Turkey; ²Department of Biology, Faculty of Science, Gazi University, Ankara, Turkey

Substrate-specific induction of epithelial-to-mesenchymal transition in Fabry disease nephropathy

Yeo-Jin Jeon, Youn Jeong Shin, Joo-Won Park, Sung-Chul Jung
Department of Biochemistry, School of Medicine, Ewha Womans University, Seoul, Korea

Exposure to Si/SiO₂ quantum dots induces adaptative changes in antioxidant enzyme, gelatinase activity and heat shock protein expression in carp white muscle

Andreea Iren Serban, Loredana Stanca, Anca Dinischiotu
Department of Biochemistry and Molecular Biology, Faculty of Biology, University of Bucharest, Bucharest, Romania

Integration of chaperone networks acting in stress defense, protein folding, trafficking and prion propagation

Yury Chernoff¹, Denis Kiktev¹, Rebecca Howie¹, Gary Newnam¹, Tatiana Chernova², Moeiz Ali³, Keith Wilkinson²
¹School of Biology, Georgia Institute of Technology, Atlanta, GA, USA; ²Department of Biochemistry, Emory University School of Medicine, Atlanta, GA, USA

Transcription factor TrnA inhibits the biosynthetic activity of glutamine synthetase in *Bacillus subtilis*

Ksenia Fedorova¹, Airat Kayumov¹, Olga Ilinskaja¹, Karl Forchhammer²
¹Kazan (Volga region) Federal University, Kazan, Russia; ²University of Tuebingen, Tuebingen, Germany

The cI β 2 α S51 phosphorylation pathway acts downstream of Akt and mTOR to determine cell fate in response to stress and chemotherapeutic drugs

Antonis E. Koromilas, Clara Tenkerian, Jothi Lala Krishnamoorthy, Zineb Mounir, Urszula Kazimierczak
McGill University, Montreal, Quebec, Canada

Yap1 mediates tolerance to cobalt toxicity in the yeast *Saccharomyces cerevisiae*

Catarina Pimentel, Soraia Caetano, Regina Menezes, Ines Figueira, Claudia N Santos, Ricardo B Ferreira, Manuel Santos, Claudina Rodrigues-Pousada
ITQB-UNL, Oei, Russian Academy of Sciences, Portugal

Genetic systems of toxin-antitoxin as modules responsible for stress

K.M. Klimina, D.H. Kyasova, E.U. Poluektova, V.N. Danilenko
Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Role of GS28 on hydrogen peroxide-induced cell death in human osteoblastoma cells

Seong-Whan Jeong, Hae-Mi Kim, Hwa Ok Lee, Min Jeong Son, Yu Jeong Byun, Oh-Joo Kwon
Department of Biochemistry, College of Medicine, The Catholic University of Korea, Seoul, Korea

Reduction in markers of oxidative capacity during 35d spaceflight simulation is offset by concurrent resistance exercise

Roser Cusso¹, Jose Maria Irimia¹, Rodrigo Fernandez-Gonzalez², Thomas Gustafsson³, Annelin Linne³, Per A. Tesch²
¹University of Barcelona, Spain; ²Karolinska Institute, Sweden; ³Karolinska University Hospital, Sweden

Protective effects of blueberry tea and blueberry wine on CCl₄ induced kidney toxicity in rats

Pelin Ergun¹, Gulin Guner², Ebru D. Sezer¹, Hatice K. Yildirim³, Eser Y. Sozmen¹, Yasemin D. Akcay¹
¹Ege University School of Medicine, Dept. of Medical Biochemistry, Izmir, Turkey; ²Medline Hospital, Biochemistry Dept., Aydin, Turkey; ³Department of Food Engineering, Ege University, Izmir, Turkey

Calcium paradox induces apoptosis in the isolated perfused vertebrate heart; involvement of p38-MAPK and calpain

Catherine Gaitanaki, Ioanna-Katerina Aggeli, Triantafyllos Zacharias, Georgia Papapavlou and Isidoros Beis
Department of Animal and Human Physiology, School of Biology, University of Athens, University Campus, Athens, Greece

Curcumin-induced signal transduction pathways in H9c2 cardiac myoblasts

Kyriaki Zikaki, Ioanna-Katerina Aggeli, Isidoros Beis and Catherine Gaitanaki
Department of Animal and Human Physiology, School of Biology, University of Athens, University Campus, Athens, Greece

Role of senescent stroma in prostate cancer progression

Maria Letizia Taddei, Giuseppina Comito, Lorenzo Cavallini, Elisa Giannoni, Paola Chiarugi
Department of Experimental and Clinical Biomedical Sciences, University of Florence, Florence, Italy

The effect of combined heavy metal ions on *copA*, *nikA* and *czcD* genes expression of metal-resistant bacilli

Armine Margaryan^{1,2}, Nils-Kare Birkeland², Hovik Panosyan¹, Yuri Popov¹, Armen Trchounian¹
¹Department of Microbiology, Plants and Microbes Biotechnology, Yerevan State University, Yerevan, Armenia; ²Department of Biology, University of Bergen, Bergen, Norway

Protective effect of natural polyphenol complex of red wine under radioinduced oxidative-nitrative stress

Nataliia Sybirna, Mariya Sabadashka, Ulyana Staranko, Victor Drel, Leonid Datsyuk
Ivan Franko Lviv National University, Lviv, Ukraine

14-3-3 positively regulates murine protein serine-threonine kinase 38 in a phosphorylation-dependent manner

Hyunjung Ha, Ravi Manoharan, Hyun-A Seong
Department of Biochemistry, School of Life Sciences, Chungbuk National University, Cheongju, Korea

3-Hydroxytyrosol protects human chondrocytes against cell death and matrix degradation

Silvia Cetrullo¹, Annalisa Facchini^{1,2}, Stefania D'Adamo¹, Benedetta Tantini¹, Rosa M. Borzi³, Carla Pignatti¹, Flavio Flamigni¹
¹Dipartimento di Scienze Biomediche e NeuroMotorie, Universita di Bologna, Bologna, Italy; ²Dipartimento di Scienze Mediche e Chirurgiche, Universita di Bologna, Bologna, Italy; ³Laboratorio di Immunoreumatologia e Rigenerazione Tissutale, Istituto Ortopedico Rizzoli, Bologna, Italy

A novel role for the yeast bZIP transcription factor Yap4p in the regulation of sterol biosynthesis

Karin Koch¹, Karin Athenstaedt², Venugopal Gudipati¹, Peter Macheroux¹
¹Institute of Biochemistry, Graz University of Technology, Graz, Austria; ²Institute of Molecular Biosciences, University of Graz, Graz, Austria

Analysis of SOD2 activity and its sub-cellular localization during diclofenac-induced apoptosis in melanoma cell lines

Nicola Massimiliano Martucci¹, Francesco Albano², Alessandro Arcucci², Giuseppina Granato, Valentina Pagliara³, Emmanuele De Vendittis, Maria Rosaria Ruocco
¹Department of Molecular Medicine and Medical Biotechnology, University of Naples Federico II, Italy; ²Department of Public Health, University of Naples Federico II, Italy; ³Department of Health Sciences, University of Catanzaro "Magna Graecia", Italy

To controversies of treating oxidative stress-related diseases by exogenous antioxidants

Ivo Juranek
Institute of Experimental Pharmacology & Toxicology, Slovak Academy of Sciences, Bratislava, Slovakia

Prokaryotic and functionally inactive eukaryotic chaperonins can induce amyloid transformation of prions

Vladimir Muronetz^{1,2}, Georgy Kiselev², Irina Naletova¹, Thomas Haertle³
¹Lomonosov Moscow State University, A.N. Belozersky Research Institute of Physico-Chemical Biology, Moscow, Russia;
²Lomonosov Moscow State University, Faculty of Bioengineering and Bioinformatics, Moscow, Russia; ³INRA, Equipe Fonctions et Interactions des Proteines, Nantes, France

CREB3L4 blocks adipocyte differentiation through the inhibition of C/EBPbeta transcriptional activity

Tae-Hyun Kim, Joo-Man Park, Jae-Woo Kim, Mi-Young Kim, Seong-Ho Jo, Yong-Ho Ahn
Dept. of Biochemistry and Molecular Biology, Yonsei University College of Medicine, Seoul, South Korea

The role of TXNP1 in impaired glucose tolerance in diabetic model mice

Seong-Ho Jo, Mi-Young Kim, Tae-Hyun Kim, Joo-Man Park, Yong-Ho Ahn
Department of Biochemistry and Molecular Biology, Yonsei University College of Medicine, Seoul, South Korea

Regulation of 28 kD dehydrin content in wheat plants by 24-epibrassinolide under cadmium stress

Ekaterina Klyuchnikova, Chulpan Allagulova, Dilara Maslennikova, Azamat Avalbaev, Ruslan Yuldashev, Farida Shakirova
Institute of Biochemistry and Genetics, Ufa Science Center, Russian Academy of Sciences, Ufa, Russia

H2O2 producing/reporter system, based on D-amino acid oxidase – HyPer fusion

Mikhail Matlashov^{1,2}, Grigori Enikolopov^{2,3}, Vsevolod Belousov^{1,2}
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Laboratory of Molecular Technologies, Moscow, Russia; ²Moscow Institute of Physics and Technology, Dolgoprudny, Russia; ³Cold Spring Harbor Laboratory, USA

Nitric oxide metabolites levels in blood in humans under exogenous acute severe normobaric hypoxia at rest

Olga Parshukova, Natalya Potolitsyna, Alexandra Lyudinina, Vera Shadrina, Nadezda Vakhnina, Aleksei Chernykh, Nadezhda Alisultanova, Evgeny Bojko
Department of Environmental and Social Human Physiology, Institute of Physiology, Komi Science Center, Ural Branch of Russian Academy of Sciences, Syktyvkar, Russia

Modifications of elicitin biological activity by surface charge altering

Jan Lochman¹, Michal Oboril¹, Jitka Klempova¹, Nikola Ptackova¹, Zbynek Zdrahal², Tomas Kasparovsky¹
¹Department of Biochemistry, Faculty of Science, Masaryk University, Brno, Czech Republic; ²Core Facility – Proteomics, Central European Institute of Technology (CEITEC), Masaryk University, Brno, Czech Republic

AKT/FoxO3a/Bim signaling pathway mediates ROS-induced apoptosis downstream of PTEN in selenite-treated colorectal cancer cells

Kaiyuan Hui, Hui Luo, Caimin Xu
Beijing, China

Carbamoylated free amino acids in uremia: HOCl generates volatile protein modifying and cytotoxic oxidant species from N-carbamoyl-threonine but not threonine

Hilde Laggner¹, Sabine M. Schreier¹, Marianne Hollaus¹, Marcela Hermann², Leopold Jirovetz³, Markus Exner⁴, Stylianos Kapiotis⁵, Bernhard M.K. Gmeiner¹
¹Center of Pathobiochemistry and Genetics, Department of Medical Chemistry and Pathobiochemistry, Medical University of Vienna, Austria; ²Department of Medical Biochemistry, Max F. Perutz Laboratories, Medical University Vienna, Austria; ³Department of Clinical Pharmacy and Diagnostics, University of Vienna, Austria; ⁴Gruppenpraxis Labors.at, Vienna, Austria; ⁵The Central Laboratory, Hospital of the Divine Redeemer, Vienna, Austria

Effects of biotic stress on the proteome of *Solanum lycopersicum*

Tomas Stary, Silvia Ochodnicka, Zbynek Zdrahal, Tomas Kasparovsky, Jan Lochman
Department of Biochemistry, Faculty of Science, Masaryk University; Core Facility – Proteomics, Central European Institute of Technology (CEITEC), Masaryk University, Brno, Czech Republic

Investigation of molecular mechanisms of regulation of alanine-aminotransferase (ALT): Effect of acetylcholine agonists

Nikolai N. Nikandrov, Vera P. Faenkova
1st Saint Petersburg State Medical University, St. Petersburg, Russia

Immunocytochemistry of neurotrophic factors receptors p75 and CNTF in crayfish stretch receptor organ under photooxidative stress

Mikhail Kolosov, Maxim Komandirov, Anatoly Uzdensky
Southern Federal University, Rostov-on-Don, Russia

Crosstalk between ATF4-dependent gene regulation and mTORC1 activity during ER stress

Dawid Krokowski¹, Bo-Jih Guan¹, Mithu Majumder¹, Mridusmita Saikia¹, Antonis E. Koromilas², Maria Hatzoglou¹
¹Case Western Reserve University, School of Medicine, Cleveland, USA; ²McGill University, Montreal, Canada

Differential expression of survivin splice variants during testicular torsion and their modulation by (-)-epigallocatechin-3-gallate

May Al-Maghrebi¹, Waleed M. Renno², Nada Al-Ajmi³
¹Biochemistry Department, Faculty of Medicine, Kuwait University, Kuwait; ²Anatomy Department, Faculty of Medicine, Kuwait University, Kuwait; ³Department of Natural Sciences, College of Health Sciences, The Public Authority for Applied Education & Training, Kuwait

Epigenetic modification of the gene regulating oxidative stress is responsible for stress-induced behavioral change

Pyung-Lim Han¹, Ji-Seon Seo¹, Jung-Eun Lee¹, Jin-Young Park¹, In-Sun Park², Ja-Kyeong Lee²
¹Department of Brain and Cognitive Sciences, Ewha Womans University, South Korea; ²Department of Anatomy, Inha University School of Medicine, South Korea

Effect of hypoxia and ischemia on the expression of CTGF, HGFR, PLAU, PLAUR, and HBEGF genes in U87 glioma cells with IRE1 loss of function

Olena V. Hubenia, Anna S. Kustkova, Vadim V. Yavorskyi, Natalia K. Murashko¹, Dmytro O. Minchenko², Taia V. Bakalets, Oleksandr H. Minchenko³
¹Shupik National Medical Academy of Post-Graduate Education, Kiev, Ukraine; ²Bogomolets National Medical University, Kiev, Ukraine; ³Palladin Institute of Biochemistry, National Academy of Sciences of Ukraine, Kiev, Ukraine

Pivotal role of Lys358 in the regulation of molecular chaperone Hsp104 ATPase activity

S. Zietkiewicz, N. Lipinska, A. Jurczyk, A. Sobczak, K. Gumowski, W. Potocki, E. Morawiec, K. Liberek
Intercollegiate Faculty of Biotechnology, University of Gdansk, Gdansk, Poland

Exposure of human bronchial epithelial cells to hexavalent chromium [Cr(VI)] decreases the expression of heat shock protein 90 alpha (Hsp90a) and attenuates the transient growth arrest induced by an acute cold shock

Ana M. Urbano¹, Leonardo M. R. Ferreira², Patricia L. Abreu²
¹Departamento de Ciencias da Vida, Unidade de Quimica-Fisica Molecular and Centro de Investigacao em Meio Ambiente, Genetica e Oncobiologia (CIMAGO), Universidade de Coimbra, Coimbra, Portugal; ²Departamento de Ciencias da Vida and Unidade de Quimica-Fisica Molecular, Universidade de Coimbra, Coimbra, Portugal

Desulfovibrio vulgaris Peroxide Regulon Repressor (PerR)

Cristina G. Timoteo, Vasco Ribeiro, David Sardinha, Pedro Tavares, Alice S. Pereira
Requimte, CQFB, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, Quinta da Torre, Monte de Caparica, Portugal

Systemic oxidative stress markers in animal model for depression

Elena V. Bouzinova¹, Violetta V. Kravtsova², Christian Aalkjaer³, Ove Wiborg¹, Vladimir V. Matchkov³
¹Translational Neuropsychiatry Unit, Clinic Institute, Health, Aarhus University, Risskov, Denmark; ²Dept. General Physiology, Faculty of Biology and Soil Science, Saint Petersburg State University, St. Petersburg, Russia; ³Institute for Biomedicine, Health, Aarhus University, Aarhus, Denmark

The effect of 17beta-estradiol on GABA metabolism under impaired calcium homeostasis conditions

Kinga Kusmirowska, Antoni Kowalski, Elzbieta Rebas
Medical University of Lodz, Dept. of Molecular Neurochemistry, Poland

The levels of total oxidant status, total antioxidant status and homocystein in hyperhydrosis patients

Husamettin Vatansav, Murat Oncel, Bahadir Ozturk, Fatmagul Gun, Hatice Baran, Guven Sadi Sunam, Sedat Abusoglu
Selcuk University Faculty of Medicine, Konya, Turkey

(-)-Epicatechin prevents palmitate-induced increase in NADPH oxidase expression and activation in the human hepatocyte cell line HepG2

Eleonora Cremonini¹, Ahmed Bettaieb², Carlo Cervellati¹, Fawaz G. Haj², Patricia I. Oteiza²
¹University of Ferrara, Department of Biomedical and Specialist Surgical Sciences, Ferrara, Italy; ²University of California, Departments of Nutrition and Environmental Toxicology, Davis, USA

Natural history of kidney damage in rat in pre-transplantation period

Andrey Marakhonov¹, Alexandra Filatova¹, Maria Zamkova¹, Anna Gus'kova¹, Mikhail Skoblov¹, Andrey Skvortsov², Alexander Reznik², Oleg Reznik², Ancha Baranova^{1,3}
¹Research Centre for Medical Genetics, Russian Academy of Medical Sciences, Moscow, Russia; ²St. Petersburg State Medical University named after I. Pavlov, St. Petersburg, Russia; ³School of Systems Biology, David King Hall, MSN 3E1, George Mason University, Fairfax, VA, USA

Protein aggregates comprising small Heat Shock Proteins show different requirements for chaperone disaggregating machinery than other protein aggregates²

Szymon Zwirowski, Szymon Zietkiewicz, Natalia Gralak, Krzysztof Liberek
Department of Cellular and Molecular Biology, Intercollegiate Department of Biotechnology, University of Gdansk, Gdansk, Poland

Biological effects of weak magnetic fields: model study of plausible mechanisms on the developing rat myocytes

Galina Belostotskaya¹, Sergey Surma², Boris Shchegolev², Vasily Stefanov³
¹I.M. Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia; ²I.P. Pavlov Institute of Physiology, Russian Academy of Sciences, St. Petersburg, Russia; ³Saint Petersburg State University, St. Petersburg, Russia

The effect of external thiamine on the antioxidative potential of baker's yeast *Saccharomyces cerevisiae* under abiotic stress conditions

Natalia Wolak, Maria Rapala-Kozik
Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland

Haponin - new regulator of cellular response to oxidative stress

Elena Vorobyeva, Evgeniya Smirnova, Tatyana Rakitina, Valeriy Lipkin
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Modulation of fatty acid uncoupling action in liver mitochondria under condition of oxidative stress

Olga V. Popova, Victor N. Samartsev
Mari State University, Yoshkar-Ola, Russia

Oxidative and reductive routes investigation in thermophilic bacilli strain *Geobacillus toebii* ArzA-8 under influence of oxidizing and reducing reagents

Astghik Ghazaryan, Anna Poladyan, Hovik Panosyan, Armen Trchounian
Department of Microbiology & Plants and Microbes Biotechnology, Biology Faculty, Yerevan State University, Yerevan, Armenia

Some like it dry: hsp in the sleeping chronomid and their role in the complete desiccation resistance

Oleg Gusev¹, Elena Shagimardanova¹, Natalia Rudakova¹, Richard Cornette², Yoshitaka Suetsugu², Takahiro Kikawada²
¹Kazan Federal University, Kazan, Russia; ²NIAS, Tsukuba, Japan

Induction of reactive oxygen and nitrogen species at different stages of the cell cycle and after exposure of human K562 and HL60 cells to ionizing radiation

Karolina Gajda¹, Magdalena Skonieczna¹, Artur Cieslar-Pobuda¹, Yuriy Saenko², Joanna Rzeszowska-Wolny¹
¹Biosystems Group, Institute of Automatic Control, Silesian University of Technology, Gliwice, Poland; ²Center of Nanotechnology Research Institute of Technology, Ulyanovsk State University, Ulyanovsk, Russia

Mitochondrial carnitine/acylcarnitine transporter under oxidative stress: mechanism of inhibition by H₂O₂

Annamaria Tonazzi¹, Lara Console², Cesare Indiveri^{1,2}
¹CNR Institute of Biomembranes and Bioenergetics (IBBE), Bari, Italy; ²Department BEST (Biologia, Ecologia, Scienze della Terra) Unit of Biochemistry and Molecular Biotechnology, University of Calabria, Arcavacata di Rende, Italy

Analysis of the cancer cell lines and the stress protein response to *Annona muricata*

Ladislav Vasko¹, Janka Vaskova¹, Gabriela Mojzisoova², Rafael Alvis Pizzaro³, Andrea Fejercakova¹, Klara Krempaska¹

Biological activities of selected ferrocenyl chalcones *in vitro*

Janka Vaskova¹, Ladislav Vasko¹, Andrea Fejercakova¹, Klara Krempaska¹, Pal Perjesi²
¹Department of Medical and Clinical Biochemistry, Faculty of Medicine, P.J. Safarik University in Kosice, Slovak Republic; ²Institute of Pharmaceutical Chemistry, Faculty of Medicine, University of Pecs, Hungary

Integrin alpha-2/beta-1 opposes senescence in human melanoma cells

Albert Berman, Galina Morozevich, Nadezhda Kozlova, Natalia Ushakova, Marina Preobrazhenskaya
Institute of Biomedical Chemistry, Russian Academy of Medical Sciences, Moscow, Russia

Oxidative stress-induced premature senescence of human endometrium-derived mesenchymal stem cells

A.V. Borodkina, A.N. Shatrova, N.N. Nikolsky, E.B. Burova
Institute of Cytology; Russian Academy of Sciences; St. Petersburg, Russia

Mitochondria-targeted compounds decrease TNF- α -dependent endothelium activation

Valeriya P. Romashchenko, Ivan I. Galkin, Vlada V. Zakharova, Olga Yu. Pletjushkina, Boris V. Chernyak, Roman A. Zinovkin, Ekaterina N. Popova
A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

The influence of VEGF-D on redox homeostasis of human endothelial cells

Izabela Papiewska-Pajak¹, Aneta Balcerczyk², Magdalena Słapek³, Joanna Boncela¹, Patrycja Przygodzka¹, Grzegorz Bartosz², Czesław S. Cierniewski^{1,3}
¹Institute for Medical Biology, Polish Academy of Sciences, Lodz, Poland; ²University of Lodz, Lodz, Poland; ³Medical University of Lodz, Lodz, Poland

VEGF and PAI-1 in endothelial cells apoptosis: balance between survival and death signals

Patrycja Przygodzka¹, Joanna Boncela¹, Izabela Papiewska-Pajak¹, Magdalena Słapek², Czesław S. Cierniewski^{1,2}
¹Institute of Medical Biology, Polish Academy of Sciences, Lodz, Poland; ²Medical University of Lodz, Poland

Methanol controls plant bacteria-host interactions

Tatiana V. Komarova, Denis V. Pozdyshev, Yuri L. Dorokhov
Lomonosov Moscow State University, Moscow, Russia

Effects of exercise and caloric restriction on metabolic syndrome induced hepatic oxidative stress in rats

Nevin Genç¹, Hazal Ipekci¹, Reyhan Özcelik², Selin Cadirci², Unsal Veli Ustundag¹, Tugba Tunali Akbay¹, Ebru Alturfan¹, Göksel Sener², Aysen Yarat¹
¹Department of Basic Medical Sciences, Faculty of Dentistry, Marmara University, Istanbul, Turkey; ²Department of Pharmacology, Faculty of Pharmacy, Marmara University, Istanbul, Turkey

The effects of thymol and thyme oil on differentiated PC12 cells with downregulated Mgst1

Monika Sobczak¹, Danuta Kalemba², Bożena Ferenc¹, Ludmila Zylinska¹
¹Department of Molecular Neurochemistry, Medical University, Lodz, Poland; ²Institute of General Food Chemistry, University of Technology, Lodz, Poland

The influence of long-term administration of diet enriched with the mixture of antioxidants, probiotics and polyunsaturated fatty acid on the antyoxidative status in rats spleen.

Hanna Kosińska, Tomasz Motyl
Warsaw University of Life Sciences, Faculty of Veterinary Medicine, Department of Physiological Sciences, Nowoursynowska 159, 02-776 Warsaw

The content of metallothioneins and lipid peroxidation in mouse brain: effects of cadmium and nickel ions

I. Sadauskienė^{1,2}, R. Bernotienė¹, J. Sulinskiene¹, L. Ivanoviene², L. Ivanov^{1,2}
¹Neuroscience Institute, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania; ²Department of Biochemistry, Medical Academy, Lithuanian University of Health Sciences, Kaunas, Lithuania

Mechanisms of G Protein Signaling (IV-S18)

Towards structural studies of ligand-induced conformational changes in arginine-vasopressin V2 receptor

Dalibor Milic, Franziska Heydenreich, Dmitry B. Veprintsev
Paul Scherrer Institut, Villigen, Switzerland

Local alteration of protein-lipid interactions regulates bleb-driven chemotaxis in *Dictyostelium* cells

Evgeny Zatulovskiy
University of Cambridge, UK

Atypical Rho family GTPase Chp/RhoV induces apoptosis of PC12 cells

Mikhail Shepelev^{1,2}, Jonathan Chernoff², Igor Korobko¹
¹Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia; ²Fox Chase Cancer Center, Philadelphia, USA

Poster Sessions July 10, 13.00-14.30

Myocardial beta-adrenergic signaling in spontaneously hypertensive rat: the effect of transgenic rescue of defective Cd36 gene

Jiri Novotny¹, Dmitry Manakov¹, Jan Neckar², Frantisek Kolar²

¹Charles University in Prague, Faculty of Science, Prague, Czech Republic; ²Academy of Sciences, Institute of Physiology, Prague, Czech Republic

P2Y₆-induced release of ATP from the urothelium exerts a dual role in the human urinary bladder

Isabel Silva¹, Joana Correia¹, Fatima Ferreirinha¹, Miguel Silva-Ramos², Jean Sevigny³, Paulo Correia-de-Sa¹

¹Laboratorio de Farmacologia e Neurobiologia, UMB, ICBAS – Universidade do Porto, Portugal; ²Servico de Urologia, CHP-Porto, Portugal; ³Centre Recherche en Rhumatol. et Immunol., CHU and Depart. Microbiol.-Infectiol. et d'Immunol., Fac. Medecine, Univ. Laval, Quebec, QC, Canada

Chemokine receptor antagonists influence on monocytes infiltration through endothelial cells monolayer studied by a real-time electrical impedance assay

Daniela Stan

ICBP "Nicolae Simionescu", Bucharest, Romania

The Intersectin-1L splice variant delta 35 is capable to activate Cdc42 but also binds RhoU

Olga Gubar¹, Tatiana Griaznova¹, Anton Iershov², Lyudmila Tsyba¹, Stephane Gasman³, Alla Rynditch¹

¹Department of Functional Genomics, Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine (IMBG), Kyiv, Ukraine; ²Department of Oncogenetics, Institute of Molecular Biology and Genetics, National Academy of Sciences of Ukraine (IMBG), Kyiv, Ukraine; ³CNRS UPR 3212 Institut des Neurosciences Cellulaires et Integratives (INCI) Strasbourg, France

Involvement of EGFR signaling in colon cancer cell migration

Aleksandra Simiczjyew, Antonina J. Mazur, Maria Malicka-Blaszkiwicz, Dorota Nowak

Department of Cell Pathology, Faculty of Biotechnology, University of Wroclaw, Poland

Epidermal growth factor receptor transactivation by intracellular prostaglandin E₂-activated prostaglandin E₂ receptors. Role in retinoic acid receptor-beta up-regulation

Ana Belen Fernandez-Martinez, Javier Lucio Cazana

Alcala University, Madrid, Spain

Epidermal growth factor receptor-dependent activation of MSK-1 by intracellular prostaglandin E₂ results in increased production of vascular endothelial growth factor-A through up-regulation of retinoic acid receptor-b

Ana Valdehita Torija, Francisco Javier de Lucio Cazana, Ana Belen Fernandez-Martinez

Alcala University, Madrid, Spain

Different effects of selected growth factors and RTK inhibitors on invasiveness of melanoma cells

Antonina J. Mazur, Aleksandra Makowiecka, Aleksandra Simiczjyew, Julita Wasielewska, Maria Malicka-Blaszkiwicz, Dorota Nowak

Department of Cell Pathology, Faculty of Biotechnology, University of Wroclaw, Poland

Study of a new potent C5aR non-competitive allosteric inhibitor for pain treatment

Emilia Mayo¹, Andrea Aramini², Mauro M. Teixeira³, Gianluca Bianchin², Laura Brandolini, Samuele Lillini, Michela Fani, Marcello Allegretti

¹Dompe s.p.a., Via P. Castellino, Naples, Italy; ²Dompe s.p.a., Research Centre Via Campo di Pile, L'Aquila, Italy;

³Imunofarmacologia, Departamento de Bioquimica e Immunologia, Instituto Ciencias Biologicas, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Identifying key residues important for CGRP binding to its receptor

Gabriel Kuteyi, James Barwell, David Poyner

School of Life & Health Sciences, Aston University, Birmingham, UK

Gi-protein dependent pathway and protein kinases activation contributes to alpha-fetoprotein induced THP-1 cell invasion and chemotaxis

Ekaterina Zubkova¹, Lidiya Semenkov², Elena Dudich², Igor Dudich², Irina Beloglazova¹, Elena Parfyonova¹, Mikhail Menshikov¹

¹Cardiology Research and Production Complex, Institute of Experimental Cardiology, Moscow, Russia; ²Institute of Engineer Immunology, Lyubuchany, Russia

Tangled in the signal network: How calcium and adhesion modulates Rho-dependent signaling?

Jaroslaw Korczynski, Wanda Klopocka, Pawel Pomorski

Department of Biochemistry, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland

Poster Sessions July 10, 13.00-14.30

Thrombin-induced CCAAT/enhancer-binding protein beta activation and IL-8/CXCL8 expression is mediated by MEKK1, ERK, and p90 Ribosomal S6 Kinase 1 pathways in lung epithelial cells

Bing-Chang Chen¹, Po-Ling Nai², Chien-Huang Lin²

¹School of Respiratory Therapy, College of Medicine, Taipei Medical University, Taipei, Taiwan; ²Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei, Taiwan

Biochemical mechanisms involved in the modulation of dopamine signaling by Trace Amine Associated Receptor 1 (TAAR1)

Raul Gainetdinov, Tatyana Sotnikova, Stefano Espinoza, Damiana Leo, Ilya Sukhanov

Istituto Italiano di Tecnologia, Genova, Italy

Role of non-degradative ubiquitination of the dopamine D₄ receptor

Kamila Skieterska¹, Pieter Rondou¹, Dasiel Oscar Borroto-Escuela², Beatrice Lintermans¹, Kjell Fuxe², Kathleen Van Craenenbroeck¹

¹Laboratory of Eukaryotic Gene Expression and Signal Transduction (LEGEST), Ghent University, Ghent, Belgium;

²Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden

Lysophosphatidic acid induces rapid myosin-9/tropomyosin complex rearrangement and myosin-9 cleavage in human fetal lung fibroblasts

Dan Bobkov, Irina Kropacheva, George Pinaev

Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

ROCK inhibitor Y-27632 increases invasion of HeLa cell by *Serratia* spp.

Ekaterina Bozhokina, Olga Tsaplina, Sofia Khaitlina

Institute of Cytology, Russian Academy of Sciences

Involvement of EGFR signaling in colon cancer cell migration

Aleksandra Simiczjyew, Antonina J. Mazur, Maria Malicka-Blaszkiwicz, Dorota Nowak

Department of Cell Pathology, Faculty of Biotechnology, University of Wroclaw, Poland

G protein-coupled receptors in atherosclerosis: Cannabinoid receptors as novel modulators of atherogenesis

Mirko Lanuti^{1,2}, Valerio Chiurchiu^{2,1}

¹Department of Biomedical Sciences, University of Teramo, Teramo, Italy; ²Neurochemistry of Lipids, I.R.C.C.S. Santa Lucia Foundation, Rome, Italy

Selectin modulation by 2-arachidonolglycerol

Daniela Evangelista¹, Valeria Gasperi¹, Maria Valeria Catani¹, Isabella Savini¹, Luciana Avigliano¹, Mauro Maccarrone²

¹University of Rome Tor Vergata, Department of Experimental Medicine & Surgery, Rome, Italy; ²Center of Integrated Research, Campus Bio-Medico University of Rome, Rome, Italy and European Center for Brain Research (CERC)/IRCCS S. Lucia Foundation, Rome, Italy

Endothelin-1 induced connective tissue growth factor expression in human lung fibroblasts by ETAR-dependent JNK/AP-1 pathway

Chien-Huang Lin¹, Chih-Ming Weng¹, Bing-Chang Chen², Min-Liang Kuo³

¹Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei, Taiwan; ²School of Respiratory Therapy, College of Medicine, Taipei Medical University, Taipei, Taiwan; ³Angiogenesis Research Center, Laboratory of Molecular and Cellular Toxicology, Institute of Toxicology, College of Medicine, National Taiwan University, Taipei, Taiwan

Targeting of encapsulated clozapine specifically at D₂-5-HT_{2A} heteromer

Sylwia Lukasiwicz¹, Ewelina Fic¹, Krzysztof Szczepanowicz², Monika Bzowska¹, Piotr Warszynski², Marta Dziedzicka-Wasylewska¹

¹Jagiellonian University, Faculty of Biochemistry, Biophysics and Biotechnology, Krakow, Poland; ²Institute of Catalysis and Surface Chemistry PAS, Krakow, Poland

Effect of EPA on cardiac muscle cell of infants of diabetic mother rats

Akio Nakamura¹, Ritsuko Kawaharada², Haruna Masuda¹, Masahiko Nishiyama¹

¹Dept. Mol. Pharmacol. & Oncol., Gunma Univ., Sch. of Med., Maebashi, Gunma, Japan; ²Dept. of Health and Nutri., Takasaki Univ., Sch. of Health and Welf., Takasaki, Gunma, Japan

The role of mTOR signal pathway in rat ovulation and implantation

Sevinc Inan¹, Gulcin Evirgen¹, Gulperi Oktem², Ece Onur³, Kemal Ozbildin¹
¹Celal Bayar University, Faculty of Medicine, Dept of Histology and Embryology, Turkey; ²Ege University, Faculty of Medicine, Dept of Histology and Embryology, Turkey; ³Celal Bayar University, Faculty of Medicine, Dept of Biochemistry, Turkey

Investigation of behavior of impulsive and self-controlled rats with local up-regulation of DRD1a expression in nucleus accumbens

A.A. Levandovskaya, M.I. Zaichenko, G.Kh. Merzhanova, S.V. Saloghin
Institute of Higher Nervous Activity and Neurophysiology, Russian Academy of Sciences, Moscow, Russia

Direct observation of G-Protein Coupled receptor heteroreceptor complexes in the brain by in situ proximity ligation assay

Dasiel Oscar Borroto Escuela¹, Wilber Romero-Fernandez¹, Manuel Narvaez², Julia Oflijan³, Pere Garriga⁴, Luigi F. Agnati⁵, Kjell Fuxe¹
¹Department of Neuroscience, Karolinska Institutet, Sweden; ²Department of Physiology, University of Malaga, Spain; ³Department of Physiology, University of Tartu, Estonia; ⁴Departament d'Enginyeria Quimica, Universitat Politècnica de Catalunya, Spain; ⁵Istituto Di Ricovero e Cura a Carattere Scientifico (IRCCS), Italy

Investigating the molecular mechanisms underlying the differential subcellular targeting of the metabotropic glutamate receptor 1 (mGlu1) in the cerebellar cortex

M. Mansouri¹, Y. Kasugai¹, S. Schoenherr¹, F. Bertaso², F. Raynaud², J. Perroy², L. Fagni², H. Lindner³, Y. Fukazawa⁴, R. Shigemoto⁴, F. Ferraguti¹
¹Dept. of Pharmacology, Innsbruck Medical University; ²Institut de Genomique Fonctionnelle, Montpellier, France; ³Division of Clinical Biochemistry, Innsbruck Medical University, Innsbruck, Austria; ⁴Division of Cerebral Structure, National Institute for Physiological Sciences, Okazaki, Japan

Molecular Basis of Autoimmunity (V-S22)

Tumor necrosis factor alpha trigger Caspase-3 gene expression in platelets

Ozge Cevik¹, Azize Sener²
¹Cumhuriyet University, Faculty of Pharmacy, Sivas, Turkey; ²Marmara University, Faculty of Pharmacy, Istanbul, Turkey

Vitamin D receptor gene polymorphism FokI in rheumatoid arthritis and associated osteoporosis

Milena Despotovic, Tatjana Jevtovic-Stoimenov, Sonja Stojanovic, Dusica Pavlovic, Dusan Sokolovic, Jelena Basic, Andrej Veljkovic, Branka Djordjevic
University of Nis, Faculty of Medicine, Department of Biochemistry, Nis, Serbia

Investigation of kappa B alpha inhibitor promoter polymorphisms in patients with primary Sjögren Syndrome

Simin Rota, Emine Kavalci, Aysen Cetin Kardesler, Veli Cobankara
Pamukkale University Medical School, Denizli, Turkey

Ets-2 protein is a transcriptional repressor of the HIV-1 virus

Ioannis Panagoulas¹, Tassos Georgakopoulos¹, Panagiota Spadidea¹, Athanasios Skoutelis², Athanasia Mouzaki¹
¹Division of Hematology, Dpt. of Internal Medicine, Medical School, University of Patras, Patras, Greece; ²E Dpt. of Internal Medicine and Infectious Diseases Unit, Evangelismos General Hospital, Athens, Greece

The role of endogenous glucocorticoids in glucose metabolism and immune status of MIF-deficient mice

Ivana Nikolic¹, Tamara Saksida¹, Timea Berki², Stanislava Stosic-Grujicic¹, Ivana Stojanovic¹
¹Department of Immunology, Institute for Biological Research "Sinisa Stankovic" (IBISS), University of Belgrade, Belgrade, Serbia; ²Department of Immunology and Biotechnology, Faculty of Medicine, University of Pecs, Pecs, Hungary

Release of ADAM15 exosomes and its functional characterization

Doo-Sik Ki, Hee Doo Lee
Yonsei University, Korea

Osteopontin, IL-10 and IL-12 in active and remission stages Behçet's disease

Gulnur Andican¹, Ayca Urhan¹, Serdal Ugurlu², Yilmaz Ozyazgan³, Hasan Yazici²
¹Istanbul University, Cerrahpasa Medical Faculty, Department of Biochemistry, Istanbul, Turkey; ²Istanbul University, Cerrahpasa Medical Faculty, Department of Internal Medicine, Istanbul, Turkey; ³Istanbul University, Cerrahpasa Medical Faculty, Department of Ophthalmology, Istanbul, Turkey

Scleroderma sera induce reactive oxygen species (ROS)-dependent activation of collagen synthesis in human pulmonary vascular smooth muscle cells*

Francesco Boin¹, Anna Maria Posadino², Annalisa Cossu², Roberta Giordo², Gaia Spinetti³, Gian Luca Erre⁴, Giuseppe Passiu⁴, Fredrick Wigley¹, Costanza Emanuelli⁵, Gianfranco Pintus²
¹Scleroderma Center, Division of Rheumatology, Johns Hopkins University, MD, Baltimore, USA; ²Laboratory of Vascular Biology, Department of Biomedical Sciences, University of Sassari, Sassari, Italy; ³Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS), Multi Medica, Milan, Italy; ⁴Department of Clinical and Experimental Medicine, Unit of Rheumatology, University of Sassari, Sassari, Italy; ⁵Laboratories of Vascular Pathology and Regeneration, University of Bristol, Bristol, England, UK

Novel modulators of inflammasomes: Insights from the endocannabinoid system

Emanuela Talamonti¹, Valerio Chiurchiu²
¹Department of Experimental Medicine and Surgery, University of Rome "Tor Vergata", Rome, Italy; ²Neurochemistry of Lipids, I.R.C.C.S. Santa Lucia Foundation, Rome / Department of Biomedical Sciences, University of Teramo, Teramo, Italy

Apolipoprotein E gene polymorphisms in chronic periodontitis

Petra Borilova Linhartova¹, Jan Machal¹, Jirina Bartova², Hana Poskerova³, Jan Vokurka³, Antonin Fassmann³, Lydie Izakovicova Holla^{1,3}
¹Department of Pathophysiology, Faculty of Medicine, Masaryk University, Brno, Czech Republic; ²Institute of Dental Research, General University Hospital, First Faculty of Medicine of the Charles University, Prague, Czech Republic; ³Clinic of Stomatology, Institutions Shared with St. Anne, Czech Republic

Intrinsic defect in B-lymphoblastoid cell lines from patients with X-linked lymphoproliferative disease type 1

Larysa Shlapatska, Larysa Kovalevska, Inna Gordienko, Svetlana Sidorenko
R.E. Kavetsky Institute of Experimental Pathology Oncology and Radiobiology, National Academy of Sciences of Ukraine, Kyiv, Ukraine

Regulation of immunoproteasomes by cigarette smoke

Ilona Keller, Shinji Takenaka, Ali O. Yildirim, Oliver Eickelberg, Silke Meiners
Comprehensive Pneumology Center (CPC), University Hospital of the Ludwig-Maximilians-University (LMU) and Helmholtz Zentrum Munchen, Member of the German Center for Lung Research (DZL), Munich, Germany

The involvement of NMDA-pepters in cytokine production of T lymphocytes in MS

Ulyana Fatkullina¹, K. Z. Bakhtiyarova², Yu. V. Vakhitova¹
¹Institute of Biochemistry and Genetics, Ufa Science Centre of the Russian Academy of Sciences, Ufa, Russia; ²Department of Neurology, Bashkir State Medical University, Ufa, Russia

Antibodies from naive and multiple sclerosis phage display libraries bind *Borrelia garinii* antigens

Vera V. Morozova¹, Natalya V. Fomenko¹, Andrey L. Matveev¹, Oleg V. Stronin², Nina V. Tikunova¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Federal State Unitary Company "Microgen Scientific Industrial Company for Immunobiological Medicines", Russia

Variants of the IL-23R and STAT3 gene are not associated with Hashimoto's thyroiditis

Ljubica Glavas-Obrovac¹, Mirjana Suver Stevic², Mario Stefanic³, Stana Tokic³, Silvio Mihaljevic⁴, Ivan Karner¹
¹Faculty of Medicine, J.J. Strossmayer University of Osijek, Osijek, Croatia; ²Medical Scientific Unit, Clinical Hospital Centre Osijek, Osijek, Croatia; ³Institute of Nuclear Medicine, Clin. Hosp. Centre Osijek, Osijek, Croatia; ⁴Department of Gastroenterology and Hepatology, Osijek University Hospital, Osijek, Croatia

The effect of allergic rhinitis treatment on serum ischemia modified albumin levels in children with allergic rhinitis

Husamettin Vatanssev¹, Fikret Akyurek¹, Hasibe Artac¹, Sait Selcuk Atici⁴, Bahadır Ozturk¹, Abdullah Sivrikaya¹
¹Selcuk University, Faculty of Medicine, Konya, Turkey; ⁴Numune Hospital, Konya, Turkey

Polymorphic *Prnp*-flanking genes, but not *Prnp* itself, controls phagocytosis of apoptotic cells

Mario Nuvolone*^{1,2}, Veronika Kana*¹, Gregor Hutter*¹, Daiji Sakata¹, Steven M. Mortin-Toth³, Giancarlo Russo⁴, Jayne S. Danska³, Adriano Aguzzi¹
¹Institute of Neuropathology, University Hospital of Zurich, Zurich, Switzerland; ²Institute of Advanced Studies of Pavia, Pavia, Italy; ³Hospital for Sick Children, Programme in Genetics and Genome Biology, Faculty of Medicine, Departments of Immunology and Medical Biophysics, University of Toronto, Toronto, ON, Canada; ⁴Functional Genomics Center Zurich (FGCZ), Zurich, Switzerland

Dioxin-mediated regulation of genes involved in cytokines production by macrophages

Elena Kashina, D.Y. Oshchepkov, E.V. Antontseva, E.A. Oshchepkova, M.Y. Shamanina, D.P. Furman, V.A. Mordvinov
Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Role SNPs of CD40 in predisposition to multiple sclerosis

Ekaterina Kudryavtseva, Yurii Aulchenko and Maxim Filipenko
Institute Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Immunochemistry and Bioengineering (V-S23)

New gene targets of LTβR signaling pathway in mouse lymphoid stroma

Marina Afanasyeva, L. V. Britanova, A. A. Kuchmiy, D. V. Kuprash
Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

Pancreatic polypeptide in chronic pancreatitis or/and diabetes

Mariola Sliwiska-Mosson¹, Stanislaw Milnerowicz², Milena Topola¹, Halina Milnerowicz¹
¹Department of Biomedical and Environmental Analyses, University of Medicine Wrocław, Poland; ²Department and Clinic of Gastrointestinal and General Surgery, University of Medicine Wrocław, Poland

Development of protective chimeric antibody against tick-borne encephalitis virus

Ivan Baykov, Andrey Matveev, Nina Tikunova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Active caspase-3 is stored within secretory compartments of mast cells

Gianni Garcia-Faroldi, Fabio R. Melo, Mirjana Grujic, Gunnar Pejler
Dpt. Anatomy, Physiology and Biochemistry, Swedish University of Agricultural Sciences, Sweden

Lactoferrin transactivates the IL-6 inflammatory gene

Paula Ecaterina Florian¹, Isabelle Huvent², Esthelle Hoedt², Adelma Escobar-Ramirez², Adeline Marcant², Anca Roseanu¹, Annick Pierce²
¹Institute of Biochemistry of the Romanian Academy, Department of Ligand Receptor Interaction, Bucharest, Romania; ²Unité de Glycobiologie Structurale et Fonctionnelle, UMR 8576 CNRS, Université des Sciences et Technologies de Lille, IFR 147, Villeneuve d'Ascq, France

Dendritic cells as pre-exposure and post-exposure antitumor vaccines

Oleg Markov, Nadezhda Mironova, Valentin Vlassov, Marina Zenkova
Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia

Effect of microbial transglutaminase on gluten immunotoxicity

Ivan Shatalov, Alexandrina Shatalova, Alexander Shleikin
National Research University of Information Technologies, Mechanics and Optics, St. Petersburg, Russia

New approach for purification native NS1 protein of tick-borne encephalitis virus, promising for development new ELISA Tick-Borne Encephalitis's diagnostics system

Andrey Matveev¹, Leonid Matveev¹, Victor Lyapustin², Nina Tikunova¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia; ²Chumakov Institute of Poliomyelitis and Viral Encephalitis, Russian Academy of Medicine Science, Moscow Region, Russia

Serine protease inhibitor characteristics of human T helper 2 cells

Sanna Edelman¹, Tarmo Aijo², Ida Koho¹, Henna Kallionpää¹, Soile Tuomela¹, Riitta Lahesmaa¹
¹Turku Centre for Biotechnology, Turku, Finland; ²Aalto University School of Science, Espoo, Finland

Dendritic cell-targeted multifunctional vaccine against melanoma using ligand-modified nanoparticles

Joana Silva^{1,2}, Gaëlle Vandermeulen², Vanessa Oliveira³, Sandra Pinto⁴, Luis Graca³, Veronique Preat², Helena Florindo¹
¹Research Institute for Medicines and Pharmaceutical Sciences (iMed.UL), Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal; ²LDRI - Louvain Drug Research Institute, Faculté de Pharmacie, Université Catholique de Louvain, Brussels, Belgium; ³Instituto de Medicina Molecular, Faculty of Medicine, University of Lisbon, Lisbon, Portugal; ⁴Centro de Química-Física Molecular & Institute of Nanoscience and Nanotechnology, Instituto Superior Tecnico, Lisbon, Portugal

Constitutive STAT5 phosphorylation is critical for interleukin-2 receptor alpha expression in human blood T lymphocytes

Elena Mityushova, Alla Shatrova, Vsevolod Zenin, Irina Marakhova
Institute of Cytology, Russian Academy of Sciences, St. Petersburg, Russia

ELISA for detection of 19-nortestosterone in dietary supplements

Elena A. Prokudina, Ludmila Sevcikova, Marie Dymicova, Petra Miksatkova, Oldrich Lapcik
Department of Chemistry of Natural Compounds, Faculty of Food and Biochemical Technology, Institute of Chemical Technology Prague, Prague, Czech Republic

An immunochromatographic strip test for a rapid detection of anabolic steroid 19-nortestosterone

Barbora Holubova, Sandra Goselova, Miroslav Vlach, Martina Blazkova, Oldrich Lapcik, Vladislav Fukal
Faculty of Food and Biochemical Technology, Institute of Chemical Technology Prague, Prague, Czech Republic

Ultrastructural studies on CD14 distribution in LPS-stimulated macrophages

Agnieszka Plociennikowska, Katarzyna Kwiatkowska
Nencki Institute of Experimental Biology, Warsaw, Poland

The development of a sensitive immunoassay for the detection of new synthetic drugs

Sandra Goselova, Barbora Holubova, Martina Blazkova, Radek Jurok, Lukas Huml, Martin Kuchar, Oldrich Lapcik, Ladislav Fukal
Department of Biochemistry and Microbiology and Department of Chemistry of Natural Compounds, Faculty of Food and Biochemical Technology, and Department of Organic Chemistry, Faculty of Chemical Technology, Institute of Chemical Technology Prague, Prague, Czech Republic

Immunodetection of human CA XII as a new potential biomarker of tumor cells

Dovile Dekaminaviciute¹, Rita Lasickiene¹, Milda Zilnyte², Vaida Jogaitė², Vilma Michailoviene², Seppo Parkkila³, Daumantas Matulis², Aurelija Zvirbliene²
¹Institute of Biotechnology, Vilnius University, V.Graciuno 8, Vilnius, Lithuania; ²University, V.Graciuno 8, Vilnius, Lithuania; ³Institute of Biomedical Technology, University of Tampere, Biokatu 8, Tampere, Finland

Effect of enzymatic cross-linking on allergenic properties of bovine beta-lactoglobulin

Marija Stojadinovic¹, Tanja Cirkovic Velickovic¹, Raymond Pieters², Joost Smit²
¹Faculty of Chemistry, Belgrade University, Serbia; ²Institute for Risk Assessment Sciences, Utrecht University, The Netherlands

Impact of caffeine in the internalization of *Candida albicans* by human keratinocytes

Marta Mota, Branca Silva, Luisa Cortes, Francisco Queiroz, Rodrigo Cunha, Teresa Goncalves
Centre for Neuroscience and Cell Biology, University of Coimbra and Faculty of Medicine, University of Coimbra, Rua Larga, Portugal

Peptide selection for binding to MHC class I: Insights from structure and molecular dynamics

Malgorzata Garstka¹, Alexander Fish¹, Patrick Celie¹, Magdalena Stadnik¹, Robbie Joosten¹, Anastassis Perrakis¹, Peter van Veelen², Huib Ovaal¹, Martin Zacharias³, Jacques Neefjes¹
¹Netherlands Cancer Institute, the Netherlands; ²Leiden University Medical Center, the Netherlands; ³Technical University Munich, Germany

Probing the mechanism of action of the Pro-rich antimicrobial peptide Bac7 - an anti-infective and bacterial cell penetrating agent

Renato Gennaro, Filomena Guida, Giulia Runti, Mario Mardirossian, Monica Benincasa, Marco Scocchi, Alessandro Tossi
Department of Life Sciences, University of Trieste, Trieste, Italy

Immune inspired self-organized sensor networks with adaptive scale of collective loss detectors

Rui Teng, Ryu Miura
National Institute of Information and Communications Technology, Japan

Study of structures formed by FtsZ in *Escherichia coli* and *Mycoplasma hominis* cells

A.V. Sabantsev¹, I.E. Vishnyakov², A.D. Vedyaykin¹, G.E. Pobegalov¹, S.N. Borchsenius², M.A. Khodorkovskiy¹
¹St. Petersburg State Polytechnical University, Institute of Nanobiotechnologies, St. Petersburg, Russia; ²Institute of Cytology, Russian Academy of Sciences, St. Petersburg Russia

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Methods of molecular biology and biochemistry for learning about microorganism: Comparison of *C. sakazakii* and *C. malonicus*

Martina Blazkova, Barbora Javurkova, Ludmila Karamonova, Denisa Mihalova, Jiri Vlach, Pavel Rauch, Ladislav Fukal
Institute of Chemical Technology, Prague, Czech Republic

Toll-like receptor 2 participates in the internalization of *Staphylococcus aureus* stimulated by prolactin in bovine mammary epithelial cells

Alejandra Ochoa-Zarzosa, Ivan Medina-Estrada, Joel E. Lopez-Meza
Centro Multidisciplinario de Estudios en Biotecnología-Facultad de Medicina Veterinaria y Zootecnia, Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Michoacan, Mexico

Cholecalciferol (vitamin D) differentially regulates antimicrobial peptide expression in bovine mammary epithelial cells: Implications during *Staphylococcus aureus* internalization

Alejandra Ochoa-Zarzosa, Ana Dolores Tellez-Perez, Nayeli Alva-Murillo, Joel E. Lopez-Meza
Centro Multidisciplinario de Estudios en Biotecnología-Facultad de Medicina Veterinaria y Zootecnia, Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Michoacan, Mexico

Probing the mechanism of action of the Pro-rich antimicrobial peptide Bac7 - an anti-infective and bacterial cell penetrating agent

Renato Gennaro, Filomena Guida, Giulia Runti, Mario Mardirossian, Monica Benincasa, Marco Scocchi, Alessandro Tossi
Department of Life Sciences, University of Trieste, Trieste, Italy

Immune Inspired Self-organized Sensor Networks with Adaptive Scale of Collective Loss Detectors

Rui Teng, Ryu Miura
National Institute of Information and Communications Technology, Japan

Construction of a human naïve (unimmunized) scFv antibody library

O.S. Oliinyk, A.A. Kaberniuk, K.O. Palivoda, D.V. Kolibo, S.V. Komisarenko
Palladin Institute of Biochemistry, NAS of Ukraine, Kiyev, Ukraine

In vitro selection and evolution of DARPins using SNAP display

Gillian Houlihan¹, Pietro Gatti-Lafranconi¹, Miriam Kaltenbach¹, David Lowe² & Florian Hoffelder¹.
¹Department of Biochemistry, University of Cambridge, UK; ²MedImmune, Cambridge, UK

Amino acid substitutions in plant-produced conservative Influenza antigen significantly increase animal immune response and protective efficacy of candidate nanovaccines

N.V. Petukhova, T.V. Gasanova, P.A. Ivanov
Lomonossov Moscow State University, Department of Virology, Moscow, Russia

Metabolism of Marine Organisms: Structure and Activities (VI-S26)

Effect of dimethylsulfoxide on redox potential and hydrogen photoproduction by *Rhodobacter sphaeroides*

Lilit Gabrielyan¹, Lilit Hakobyan¹, Armen Trchounian²
¹Department of Biophysics, Yerevan State University, Yerevan, Armenia; ²Department of Microbiology and Biotechnology, Yerevan State University, Yerevan, Armenia

Purification and characterization of a novel exo-cellulase produced by the deepest-sea amphipod "Hirondellea gigas"

Hideki Kobayashi, Yuji Hatada, Taishi Tsubouchi, Takahiko Nagahama, Hideto Takami
Japan Agency for Marine-Earth Science and Technology, Yokosuka, Japan

Mechanisms of anticancer action of the different alkaloids from marine organisms

A.M. Popov
G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia; Far Eastern Federal University, Vladivostok, Russia

Mechanistic understanding of the bacterial bioluminescence

Chaitanya Tabib¹, Thomas Bergner¹, Silvia Lang², Karl Gruber², Ellen Zechner², Peter Macheroux¹
¹Institute of Biochemistry, Technical University, Graz, Austria; ²Institute of Molecular Bioscience, Karl-Franzens University, Graz, Austria

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Influence of cucurbitoside A2-2 upon multi-drug resistance of cancer cells

Ekaterina Menchinskaya¹, T. Gorpenchenko², F. Honecker³, D. Aminin¹
¹G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Far-East Branch of the Russian Academy of Sciences; ²Institute of Biology and Soil Science, Far-East Branch of the Russian Academy of Sciences; ³Department of Oncology, Haematology and Bone Marrow Transplantation, Section Pneumology, Hubertus Wald-Tumorzentrum, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

The activity of cytosolic alanine aminotransferase 2 is regulated by fucose-binding protein through protein-protein interaction

I. Metón1, M. Giralt1, F. Fernández2 and I.V. Baanante1
¹Departament de Bioquímica i Biologia Molecular, Facultat de Farmàcia, Universitat de Barcelona, Barcelona, Spain; ²Departament d'Ecologia, Facultat de Biologia, Universitat de Barcelona, Barcelona, Spain

Effect of cadmium and transient hypoxia on mitochondrial function and oxidative stress in the Eastern oysters, *Crassostrea virginica*

Inna M. Sokolova, Anna V. Ivanina, Ryan W. Rutledge
University of North Carolina at Charlotte

New immunomodulators from sea cucumbers. Molecular mechanisms of action

Dmitry Aminin¹, Eugeny Pisyagin¹, Maxim Astashev², Rostislav Sokolov³, Ekaterina Yurchenko¹, Elena Zelepuga¹, Emma Kozlovskaya¹, Valentin Stonik¹
¹G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Far-East Branch of the Russian Academy of Sciences, Vladivostok, Russia; ²Institute of Cell Biophysics, Russian Academy of Science, Pushchino, Moscow Region, Russia; ³Lobachevsky State University of Nizhni Novgorod, Nizhni Novgorod, 603950, Russia

In vitro anticancer activity of mycalamide A - a metabolite of marine ascidian *Polysincraton* sp.

Sergey A. Dyshlovoy¹, Sergey N. Fedorov¹, Anatoly I. Kalinovsky¹, Larisa K. Shubina¹, Carsten Bokemeyer², Friedemann Honecker², Valentin A. Stonik¹
¹G.B. Elyakov Pacific Institute of Bioorganic Chemistry, Vladivostok, Russian Federation; University Medical Center Hamburg-Eppendorf, Hamburg, Germany; ²University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Kinetics and mechanisms of light stress recovery in the diatom *Phaeodactylum tricorutum*

Martine Bertrand, Isabelle Poirier¹, Karel Rohacek², Boris Jacquette, Brigitte Moreau, Annick Morant-Manceau, Benoit Schoefs³
¹Cnam/INTECHMER, Cherbourg, France; ²Biology Centre AS CR, IPMB, Ceske Budejovice, Czech Republic; ³Mer, Molecules, Sante-University of Maine, Le Mans, France;

Studies on the Bioremediation of Oil and Oil Derivatives using the Bacteria on the Marmara and the Black Seas

Yosun Mater, Selcuk Tasdan (MSc Student)
Gebze Institute of Technology (University),Kocaeli,Turkey

Approaches to cell cycle activity study in *Asterias rubens* L.

Natalia Sharlaimova, Valeriy Zenin, Olga Petukhova
Institute of Cytology, Russian Academy of Sciences, St-Petersburg, Russia

Exploring the molecular properties of marine mixotrophic protists by a multidimensional scaling

Olga Matantseva
Institute of Cytology, Russian Academy of Sciences, St Petersburg, Russia

Effect of antiparasitic drugs on expression levels of metabolic enzymes and drug resistance proteins in *Caligus rogercresseyi*

Juan G. Carcamo, Alejandra Mancilla, Marcos Ulloa, Luis Arias, Alejandro J. Yanez
Instituto de Bioquímica y Microbiología, Centro FONDA-INCAR, Universidad Austral de Chile. Valdivia, Chile.

Biochemistry of Plants (VI-S27)

Effect of endemic plants extracts on biological macromolecules

Dunja Samec, Dario Kremer, Jiri Gruz, Jasenka Piljac-Zegarac, Branka Salopek-Sondi
Institute Ruder Boskovic, Zagreb, Croatia

Non-cell-autonomous pathway protein binds tobacco mosaic virus movement protein

Denis Pozdyshev, Tatiana Komarova, Yuri Dorokhov
Lomonosov Moscow State University, Moscow, Russia

Copper amine oxidase and peroxidase: interacting enzymes in *Euphorbia characias* latex

Francesca Pintus, Delia Spano, Rosaria Medda, Giovanni Floris
Department of Sciences of Life and Environment, University of Cagliari, Italy

Collagenolytic activity of fig latex proteases

Brankica Raskovic, Natalija Polovic
Department of Biochemistry, Faculty of Chemistry, University of Belgrade, Belgrade, Serbia

Comparative analysis of different parts of *Vicia faba* for production of a protein isolate with high antioxidant activity, L-DOPA and phenolics content

Huri Dedeakayogullari¹, Ahmet K?l?nc², Gokhan Bicim¹, Eray Metin Guler¹, Ziba Mokhberi Oskouei¹, A. Suha Yalc?n^{1,2}
¹*Department of Biochemistry, School of Medicine, Marmara University, Haydarpasa, Istanbul, Turkey;* ²*Oksante R&D Laboratory, Eyup, Istanbul, Turkey*

Drought tolerance in plants: ABA regulated Transcription Factors

Montserrat Pages, Marta Riera
CRAI. Consejo Superior Investigaciones Cientificas, Barcelona, Spain

Copper induced physiological, biochemical and bimolecular responses in B73 maize

Delia Spano
University of Cagliari, Italy

The new plant protein involved in cell death

E.V. Sheshukova¹, T.V. Komarova², Y.L. Dorokhov³
¹*Vavilov Institute of General Genetics Russian Academy of Sciences, Moscow, Russia;* ²*A.N. Belozersky Research Institute of Physico-Chemical Biology, Moscow, Russia*

Anti-oxidant Capacity of *Aesculus Hippocastanum* fruit parts as an anti-aging agent

Asligul Aksoy¹, Sule Sahin¹, Yesim Kumbet¹, Nursen Coruh²
¹*Department of Biochemistry, Natural and Applied Sciences, Middle East Technical University, Ankara, Turkey;* ²*Department of Chemistry, Middle East Technical University, Ankara, Turkey*

Redox Regulation of Arabidopsis MEDIATOR: The missing link between transcription factors and their targets

Jehad Shaikhali, Gunnar Wingsle
Umea Plant Science Center-Swedish University of Agricultural Sciences, Umea, Sweden

Oxidative processes and defence system functioning in barley seedlings under drought and rewatering

Alena Spivak
Institute of Biophysics and Cell Engineering, NASB, Minsk, Republic of Belarus

Metabolic regulation of protein isoprenylation in tobacco

Alexandre Huchelmann, Clement Gastaldo, Denis Tritsch, Michel Rohmer, Thomas J. Bach, Andrea Hemmerlin
CNRS UPR 2357, CNRS UMR 7177/Universite de Strasbourg, Institut de Biologie Moleculaire des Plantes (IBMP), Department Plant Metabolic Networks, Institut de Chimie, Laboratoire de Chimie et de Biochimie des Microorganismes Strasbourg, France

2D-PAGE Gel-based comparison of proteomes of two pine species under environmental stress conditions

Can Yilmaz, Mesude Iscan
METU, Biological Sciences Department, Ankara, Turkey

Identification of phenolic constituents from Turkish *A. hippocastanum* by RP-HPLC

Nizamettin Ozdogan¹, Nursen Coruh²
¹*Department of Biochemistry, Metu, Ankara, Turkey;* ²*Department of Chemistry, Metu, Ankara, Turkey*

Structure and function of bicovalent flavoenzymes from *Arabidopsis thaliana*

Silvia Wallner¹, Daniel Bastian¹, Domen Zafred², Altijana Hromic¹, Barbara Steiner¹, Prashant Kumar², Karl Gruber², Peter Macheroux¹
¹*Institute of Biochemistry, Graz University of Technology, Graz, Austria;* ²*Institute of Molecular Biosciences, Karl-Franzens University, Graz, Austria*

Preparation and purification of native geranylgeraniol-18-hydroxylase from *Croton stellatopilosus* Ohba

Kittipat Sopitthummakhun, Yuttana Worawut & Wanchai De-Eknankul
Research Unit of Natural Product Biotechnology and Department of Pharmacognosy and Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand

Structure-function study on maize enzymes connected to cytokinin metabolism - nucleoside N-ribohydrolases and aldehyde dehydrogenases

David Kopecny¹, Martina Kopecna¹, Armelle Vigouroux², Radka Koncitikova¹, Hanna Blaschke³, Klaus von Schwartzberg⁴, Solange Morera², Marek Sebel¹
¹*Department of Protein Biochemistry and Proteomics, Centre of the Region Hana for Biotechnological and Agricultural Research, Faculty of Science, Palacky University, Olomouc, Czech Republic;* ²*Laboratoire d'Enzymologie et Biochimie Structurales, CNRS, Gif-sur-Yvette, France;* ³*Biozentrum Klein Flottbek, Universitat Hamburg, Germany;* ⁴*Biozentrum Klein Flottbek, Universitat Hamburg, Germany*

Evolutionary dynamics of disordered proteins in plants

Inmaculada Yruela, Bruno Contreras-Moreira
Estacion Experimental de Aula Dei (EEAD-CSIC), Avda. Zaragoza, Spain; Instituto de Biocomputacion y Fisica de Sistemas Complejos (BIFI), Universidad de Zaragoza, Mariano Esquillor, Edificio I + D, Zaragoza, Spain.

PYL8/PCAR3 is a positive regulator of abscisic acid signaling

Han Yong Lee, Taeyoung Um, Yang Do Choi
Department of Agricultural Biotechnology, Seoul National University, Seoul, Korea

Quantification of plaunotol and identification of transcript level of genes involved in plaunotol biosynthesis

Yuttana Worawut¹, Siriluk Sintupachee², Wanchai De-Eknankul¹
¹*Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok, Thailand;* ²*Department of Biotechnology, Faculty of Sciences, Chulalongkorn University, Bangkok, Thailand*

The high carbonic acids content variation of macrophytes: *Myriophyllum spicatum* L. and *Elodea canadensis* Michx. from Angara River under hyperthermia and cadmium chloride influence

K. A. Kirichenko, I.V. Lyubushkina
Siberian Institute of Plant Physiology and Biochemistry, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

Cytotoxic effects of *Aloe vera* (L.) Burm. fil. leaf extracts on B16F10 murine melanoma and NIH3T3 mouse embryogenic fibroblast cells

Eda Candoken¹, Serap Erdem Kuruca², Nuriye Akev¹
¹*Department of Biochemistry, Faculty of Pharmacy, Istanbul University, Istanbul, Turkey;* ²*Department of Physiology, Istanbul Faculty of Medicine, Istanbul University, Istanbul, Turkey*

Phytaspases: Plant cell death-related proteases with caspase specificity

Nina V. Chichkova, Alexander I. Tuzhikov, Raisa A. Galiullina, Larisa V. Mochalova, Roman E. Beloshistov, and Andrey B. Vartapetian
Belozersky Institute of Physico-Chemical Biology, Moscow State University, Moscow, Russia

OsNAC5 overexpression enlarges root diameter in rice plants leading to enhanced drought tolerance and increased grain yield

Jin Seo Jeong¹, Youn Shic Kim¹, Yang Do Choi², Ju-Kon Kim¹
¹*School of Biotechnology and Environmental Engineering, Myongji University, Yongin, Korea;* ²*School of Agricultural Biotechnology, Seoul National University, Seoul, Korea*

The role of mitochondria during realizing of cell death process, induced by subzero temperature, in suspension cell culture of *Saccharum officinarum* L.

Irina Lyubushkina, Olga Grabelnych, Anna Fedyaeva, Tamara Pobezhimova, Aleksey Stepanov, Victor Voinikov
Siberian Institute of Plant Physiology and Biochemistry, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

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Changes in the activity of alternative pathway of respiration, caused by overexpression or reduced expression of the *aox1a*, affect to the frost resistance of *Arabidopsis* plants

Olga Grabelnych, Olga Borovik, Irina Lyubushkina, Tamara Pobezhimova, Nina Koroleva, Nataliya Pavlovskaya, Svetlana Voznenko, Victor Voinikov
Siberian Institute of Plant Physiology and Biochemistry, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

The SWI/SNF complex in *Arabidopsis* responds to environmental changes in temperature - dependent manner

Dominika M. Gratkowska¹, Anna T. Rolicka², Ernest Bucior², Elzbieta Sarnowska³, Sebastian P. Sacharowski⁴, Csaba Koncz^{4,5}, Andrzej Jerzmanowski^{1,2}, Tomasz J. Sarnowski¹
¹Institute of Biochemistry and Biophysics, PAS, Warsaw, Poland; ²University of Warsaw, Faculty of Biology, Department of Plant Molecular Biology, Warsaw, Poland; ³Cancer Center Institute, Warsaw, Poland; ⁴Max-Planck Institut für Pflanzengzüchtungsforschung, Köln, Germany; ⁵Institute of Plant Biology, Biological Research Center of Hungarian Academy, Szeged, Hungary

The evaluation of the new potato lines' drought resistance by peroxidase and superoxide dismutase enzyme activity

Natalya Malakhova, Bekkali Zhumageldinov
M.A. Aitkhozhin's Institute of Molecular Biology and Biochemistry, Almaty, Kazakhstan

Primary electron donor environment modifications in *Rba. sphaeroides* reaction centers

Azat Gabdulkhakov¹, Tatiana Fufina², Lyudmila Vasilieva¹, Vladimir Shuvalov²
¹Institute of Protein Research, Russian Academy of Sciences, Pushchino, Moscow region, Russia; ²Institute of Basic Biological Problems, Russian Academy of Sciences, Pushchino, Moscow region, Russia

The properties of emulsion based on the ideal oil obtained from seed of transgenic flax plants overproducing phenylpropanoid compounds

Karolina Hasiewicz-Derkacz¹, Kamil Kostyn¹, Anna Kulma¹, Tomasz Gebarowski², Kazimierz Gasiorowski², Jan Szopa¹
¹Department of Genetic Biochemistry, University of Wrocław, Wrocław, Poland; ²Wrocław Medical University, Department of Basic Medical Sciences, Wrocław, Poland

Cloning and expression of CYP702B, a cytochrome P450 of *Pinus brutia* that catalyzes oxidations in the biosynthesis of diterpene resin acids

Asli Semiz, Alaattin Sen
Pamukkale University, Department of Biology, Denizli, Turkey

Functional characterization of NADPH-cytochrome P450 reductase from hot pepper (*Capsicum annuum*)

Young Hee Joung, Sang Hoon Ma, Hyun Min Kim, Se Hee Park, Ga-Young Lee, Chul-Ho Yun
School of Biological Sciences and Technology, Chonnam National University, Korea

Functional characterization of CYP707A70 (ABA 8'-hydroxylases) from hot pepper (*Capsicum annuum*)

Young Hee Joung, Hyun Min Kim, Sang Hoon Ma, Ga-Young Lee, Chul-Ho Yun
School of Biological Sciences and Technology, Chonnam National University, Republic of Korea

Jasmonate-induced pea root proteins

Vera Yakovleva, Alevtina Egorova, Igor Tarchevsky
Kazan Institute of Biochemistry and Biophysics, Kazan, Russia

Insights into the regulation of starch synthase activity from the crystal structure of barley starch synthase I

Lucia Marri, Jose A. Cuesta-Seijo, Morten M. Nielsen, Hidenori Tanaka, Sophie R. Beeren, Monica M. Palcic
Carlsberg Laboratory, Gamle Carlsberg Vej 10, 1799 Copenhagen V, Denmark

R. solanacearum lectin elicits defense reaction in tobacco cells

Katerina Dadakova, Peter Kysel, Michaela Wimmerova, Tomas Kasparovsky
Masaryk University, Brno, Czech Republic

Effect of sterol binding on biological activity of cryptogein in *Nicotiana tabacum*

Nikola Ptackova, Jitka Tieffova, Darina Hornakova, Sylvie Nedelova, Tomas Kasparovsky, Jan Lochman
Masaryk University, Faculty of Science, Department of Biochemistry, Brno, Czech Republic

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A novel chloroplast localized Rab GTPase involved in stress, development, thylakoid biogenesis and vesicle transport in *Arabidopsis*

Sazzad Karim¹, Mohamed Alezzawi¹, Emelie Lindquist¹, Nadir Zaman Khan¹, Katalin Solymosi², Christel Garcia-Petit¹, Peter Dahl³, Stefan Hohmann³, Henrik Aronsson¹
¹Department of Biological and Environmental Sciences, University of Gothenburg, Sweden; ²Department of Plant Anatomy, Institute of Biology, Eotvos University, Budapest, Hungary; ³Department of Chemistry and Molecular Biology, University of Gothenburg, Sweden

The expression of the gene for chloroplast ribosomal protein S16 is translationally repressed in tobacco

Masayuki Nakamura, Masahiro Sugiura
Center for Gene Research, Nagoya University, Nagoya, JAPAN

Crocin, a carotenoid pigment of saffron, promotes non-rapid eye movement sleep.

Kosuke Aritake¹, Mika Masaki¹, Yukihiko Shoyama², Yoshihiro Urade¹
¹Osaka Bioscience Institute, Osaka, Japan ²Nagasaki International University, Nagasaki, Japan

Immobilization of Olive b-glucosidase on to superparamagnetic nanoparticles and its characterization

Elif Savas¹, Serhad Onat², Yasar Mihrap Kaya², Hakan Kocakar², Feray Kocakar²
¹Balikesir University, Susurluk College, Susurluk/Balikesir, Turkey; ²Balikesir University Faculty Science and Literature, Department of Biology, Balikesir, Turkey

Activities of alternative oxidase, uncoupling proteins and adenine nucleotide translocator in winter wheat mitochondria during cold hardening

Olga Grabelnych, Olga Borovik, Irina Lyubushkina, Tamara Pobezhimova, Victor Voinikov
Siberian Institute of Plant Physiology and Biochemistry, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia

Inhibition of SAH-hydrolase during tobacco seeds germination induced by treatment by DHPA leads to mitotically heritable DNA hypomethylation, ectopic expression of floral genes and floral whorl malformations

Jaroslav Fulnecek¹, Roman Matyasek¹, Eva Kabathova¹, Ivan Votruba², Antonin Holy², Ales Kovarik¹
¹Institute of Biophysics, Academy of Sciences of the Czech Republic, Brno, Czech Republic; ²Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic

Protective effects of grape seed proanthocyanidin extract in experimental obstructive jaundice

Husamettin Vatansel¹, Mervan Savda², Fikret Akyurek³, Murat Cakir², Bahadır Ozturk¹, Ali Unlu³
¹Selçuk University Faculty of Medicine, Konya, Turkey; ²Necmettin Erbakan University Faculty of Meram Medicine, Konya, Turkey; ³Selçuk University Faculty of Medicine, Konya, Turkey

Anticlastase and antityrosinase activities of some thiocarbonylhydrazone Schiff bases

Ayşe Ercag¹, Özlem Sacan², Yeliz Kaya¹, Refiye Yanardag²
¹Istanbul University, Faculty of Engineering, Department of Chemistry, Inorganic Division, Avcılar-Istanbul, Turkey; ²Istanbul University, Faculty of Engineering, Department of Chemistry, Biochemistry Division, Avcılar-Istanbul, Turkey

Insight in azelaic acid effect on pea roots

Alevtina Egorova, Vera Yakovleva, Igor Tarchevsky
Kazan Institute of biochemistry and Biophysics of Kazan Science Centre of the Russian Academy of Sciences, Kazan, Russia

The influence of nitrate and nitric oxide on extracellular invertase activity

Svetlana Batasheva, Liliya Shamova
Kazan Institute of Biochemistry and Biophysics of the Russian Academy of Sciences, Kazan, Russia

The Influence of Mitochondrial Pore Modulator (Cyclosporine A) on Oxidative Processes in the Organs of Heat-Treated Wheat Seedlings (*Triticum aestivum* L.).

Marina Savicka, Natalja Shkute
Institute of Ecology, Daugavpils University, Daugavpils, Latvia

The Influence of Inhibition of Electronic Transport by Antimycin A on Oxidative and Photosynthetic Processes in Some Organs of Wheat Seedlings

Natalja Shkute, Anna Batjuka, Aleksandr Petjukevics
Institute of Ecology, Daugavpils University, Daugavpils, Latvia

Evaluation of Raman Spectroscopy for investigation of DNA methylation in Plants

Natalja Shkute, Aleksandr Petjukevics, Anna Batjuka
Institute of Ecology, Daugavpils University, Daugavpils, Latvia

Bioinformatics (VI-W29)

Characterization of newly isolated lytic *Thermus thermophilus* bacteriophage phiFa

Anna Lopatina¹, Konstantin Severinov²
¹Institute of Gene Biology Russian Academy of Sciences, Moscow, Russia; ²Department of Molecular Biology and Biochemistry, Rutgers, the State University of New Jersey, USA

In silico characteristics of structure and activity of the food-derived peptides with an ACE inhibitory bioactivity

Anna Iwaniak¹, Uko Maran², Malgorzata Darewicz¹, Piotr Minkiewicz¹
¹University of Warmia and Mazury in Olsztyn, Faculty of Food Biochemistry, Olsztyn-Kortowo, Poland; ²University of Tartu, Institute of Chemistry, Chair of Molecular Technology, Estonia

Hydrophobic segment: an essential domain for cytotoxicity of dimeric ribonucleases?

F.V. Shirshikov¹, G.V. Cherepnev², O.N. Ilinskaya¹, N.V. Kalacheva¹
¹Department of Microbiology, Kazan Federal University, Kazan, Russia; ²Department of Clinical Laboratory Diagnostics, Kazan State Medical Academy, Kazan, Russia

MisPred: Quality control of gene predictions and public databases

Alinda Nagy, Hedi Hegyi, Krisztina Farkas, Hedvig Tordai, Evelin Kozma, Gyorgy Szlama, Eszter Szarka, Maria Trexler, Laszlo Banyai, Laszlo Pathy
Institute of Enzymology, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary

The computational investigation of new inhibitors for aldose reductase

Aytun Onay, Osman Abul
Department of Computer Engineering, TOBB University of Economics and Technology, Sogutozu, Ankara, Turkey

Molecular systematics and evolution of *A. mystacinus* (Mammalia:Rodentia) inferred from *cytb* gene sequences

Gul Olgun Karacan, Reyhan Colak, Ercument Colak
Ankara University, Department of Biology, Faculty of Science, Ankara, Turkey

Genome-specificity of triplet periodicity

Yulia Suvorova, Eugene Korotkov
Centre "Bioengineering", Russian Academy of Sciences, Russia

In Silico methods as a prominent tool for predicting the potential biological activity of dietary flavones

N.F.L. Machado^{1,2}, Mafalda M. Dias¹, Maria P. Marques¹, Juan C. Otero²
¹Physical Chemistry R & D Unit, Coimbra University, Coimbra, Portugal; ²Physical Chemistry Department, Malaga University, Malaga, Spain

Molecular dynamics simulation approach for DNA duplex thermal stability prediction

Alexander Lomzov^{1,2}, Yury Vorobjev¹, Dmitry Pyshnyi¹
¹Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; ²Novosibirsk State University, Novosibirsk, Russia

Bioinformatic analysis of family GH101 of glycoside hydrolases

Daniil G. Naumoff
Winogradsky Institute of Microbiology, Russian Academy of Sciences, Moscow, Russia

Structural analysis of cytochromes P450 for development of new molecular dynamics force field parametrization

Dmitry Mukha, Sergey Usanov
Institute of Bioorganic Chemistry NAS of Belarus, Minsk, Belarus

Evaluation method for the potential functionome harbored in the genome and metagenome

Hideto Takami¹, Takeaki Taniguchi², Shigeki Moriya³, Tomomi Kuwahara⁴, Minoru Kanehisa³, Susumu Goto³
¹Japan Agency for Marine-Earth Science & Technology, Yokosuka, Japan; ²Mitsubishi Research Institute Inc., Tokyo, Japan; ³Kyoto University, Uji, Kyoto; ⁴Kagawa University, Miki, Kagawa

Association between polymorphism of MTHFR c.677C>T and risk of cardiovascular disease in Turkish population: A Meta-analysis for 2.780 cases and 3.022 controls

Vildan Bozok Cetintas, Cumhur Gunduz
Department of Medical Biology, Ege University School of Medicine, Izmir, Turkey

Molecular dynamics simulation of negatively charged DPPC/DPPI lipid bilayers and their interactions with I-BAR domains

Tatiana Stanishneva, Olga Sokolova
M.V. Lomonosov Moscow State University, Moscow, Russia

In silico evaluation of the integration of *Agrobacterium VirE2* protein into a lipid membrane

Yuri Gusev, Svyatoslav Masilov, Irina Volokhina, Mikhail Chumakov
Institute of Biochemistry and Physiology of Plants and Microorganisms, Russian Academy of Sciences, Saratov, Russia

Sequence analysis around transmembrane regions and discrimination of subcellular localization of type II membrane proteins.

Ryohei Nambu, Yuri Mukai
Meiji University, Kawasaki, Japan

Activation of NADPH oxidase subunit NCF4 (p40phox) induces ROS-mediated EMT signaling in HeLa cells

Yeung Mi Kim, Moonjae Cho
Department of Biochemistry, School of Medicine, Institute of Medical Science, Jeju National University, Republic of Korea

New bioinformatics tools for RNA 2D/3D structure prediction, modeling, and analysis

Janusz M. Bujnicki¹, Michal Boniecki¹, Grzegorz Chojnowski¹, Tomasz Walen¹, Magdalena Rother², Tomasz Puton², Pawel Piatkowski¹, Kristian M. Rother²
¹International Institute of Molecular and Cell Biology in Warsaw, Poland; ²Faculty of Biology, Adam Mickiewicz University, Poznan, Poland

Evolutionary decline for a nuclear-encoded human mitochondrial aminoacyl-tRNA synthetase

Marie Sissler¹, Hagen Schwenzer¹, Gert Scheper², Nathalie Zorn³, Lue Moulinier⁴, Agnes Gaudry¹, Emmanuelle Leize³, Franck Martin¹, Catherine Florentz¹, Olivier Poch⁴
¹Architecture et reactivite de l'ARN, IBMC-CNRS, Strasbourg, France; ²Crucel Holland BV, Leiden The Netherlands; ³Laboratoire de Spectrometrie de Masse des Interactions et des systemes, Strasbourg, France; ⁴Laboratoire de Bioinformatique et de Genomique Integratives, IGBMC, Strasbourg, France

Exact solution to protein alignment

Milan Randic
National Institute of Chemistry, Slovenia

Reactome knowledgebase: Annotating cancer variants and anti-cancer therapeutics

Robin Haw
OICR, Toronto, Canada

Characteristics for sugar modifications extracted from protein tertiary structures

Kenji Etchuya, Yuri Mukai
Dept. Electr. & Bioinfo., Grad. Sch. & Tech., Meiji Univ., Kawasaki, Japan

Soy isoflavone, Glycitin (4'-hydroxy-6-methoxyisoflavone-7-D-glucoside), promote human dermal fibroblast cell proliferation and migration by TGF- β signaling

Moonjae cho, Yeungmi Kim
Department of Medicine, School of Medicine, Jeju National University, Jeju, Korea

On the molecular basis of the onconase and barnase cytotoxicity

F.V. Shirshikov
Department of Microbiology, Kazan Federal University, Kazan, Russia

Alpha-amylase – an enzyme present in various sequence-based glycoside hydrolase families

Stefan Janecek¹, Birte Svensson², E. Ann MacGregor³
¹Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia; ²Department of Systems Biology, Technical University of Denmark, Kgs. Lyngby, Denmark; ³Nicklaus Green, Livingston, West Lothian, UK

Alpha-amylase family GH57 and its relatedness to families GH119 and GH38

Karol Blesak, Andrea Kuchtova, Stefan Janecek
Institute of Molecular Biology, Slovak Academy of Sciences, Bratislava, Slovakia

Transmembrane region prediction – amino acid adjacency information based approach

Amrita Roy Choudhury, Marjana Novic
National Institute of Chemistry, Ljubljana, Slovenia

Numerical analysis of gene networks models

Andrey Akinshin
Sobolev Institute of Mathematics, Novosibirsk, Russia

Evolutionary aspects of genome recombination in Dengoviruses

Elena Martynova, Tatiana Kapelinskaya, Dmitry Mukha
Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Thrombin forms: bioinformatic analysis of structural data

Arthur Zalevsky, Andrey Golovin, Roman Reshetnikov
Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia

Serine/threonine protein kinases eukaryotic type: Identification, classification, possible functions

Natalia Zakharevich, Venera Nezametdinova, Valery Danilenko
Vavilov Institute of General Genetics, Russian Academy of Sciences, Moscow, Russia

Docking of bacterial luciferase and NADPH:FMN-oxidoreductase using continuum electrostatic method

Anna Koval¹, Elena Nemtseva¹, Matthias Ullmann²
¹*Siberian Federal University, Krasnoyarsk, Russia;* ²*Structural Biology/Bioinformatics, University of Bayreuth, Bayreuth, Germany*

Correlation between signal peptide sequences and physicochemical properties of mature formed proteins

Kota Hamada, Kenji Etchuya, Ryohei Nambu, Yuri Mukai
Dept. of Electr. & Bioinfo., Grad. Sch. Sci. & Tech., Meiji Univ., Kawasaki, Japan

In silico analysis of the conserved regions with stable secondary structure within the NS gene of human influenza A viruses

Sergey Klotchenko, Alexandra Brodskaya, Olga Temkina, Andrey Vasin
Research Institute of Influenza, St. Petersburg, Russia

Amino acid preferences in extremophiles

Berna Sariyar Akbulut¹, Asuman Nevra Ozer¹, Ugur Akman², Burak Ayan¹, Alperen Cagatay Serdaroglu¹
¹*Bioengineering Department, Marmara University, Istanbul, Turkey;* ²*Chemical Engineering Department, Bogazici University, Istanbul, Turkey*

Fatty acid regulation of gene expression: bioinformatics view to structure and dynamics of DNA-fatty acid complexation

Milyausha Ibragimova, N.I. Akberova, D.S. Tarasov, E.D. Izotova, F.K. Alimova, R.I. Zhdanov
Institute for Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

Molecular dynamics simulation approach for DNA duplex thermal stability prediction

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Institute of Chemical Biology and Fundamental Medicine, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia; *Novosibirsk State University, Novosibirsk, Russia*

Possibility of the accurate prediction of secondary structures of loop regions in transmembrane proteins

Sawako Tsunemoto, Ryohei Nambu, Kenji Etchuya, Yuri Mukai
Meiji University, Japan

Physicochemical properties around cleavage sites by Caspase family proteases

Tsubasa Ogawa, Kenji Etchuya, Ryohei Nambu, Yuri Mukai
Meiji University, Japan

Towards an integrated framework for detection of insertions and deletions of transposable elements in next generation sequencing data

Alexander Kanapin¹, Emmanuele Marchi², Gkikas Magiorkinis², Robert Belshaw³, Gilean McVean¹
¹*Wellcome Trust Centre for Human Genetics, University of Oxford, Oxford, UK;* ²*Department of Zoology, University of Oxford, Oxford, UK;* ³*School of Biomedical and Biological Sciences, Plymouth University, Plymouth, UK*

KCNK-1, -3, -7, -10 genes are differentially expressed in malignant pleural mesothelioma patients

Ioannis Lempesis¹, Dimitrios E. Magouliotis¹, Vasiliki Tasiopoulou¹, Evgeniy I. Solenov², Alexander Ilyashin², Rajesh Jagirdar¹, Chrissi Hatzoglou¹, Paschalis-Adam Molyvdas¹, Konstantinos I. Gourgoulialis³, Sotirios G. Zarogiannis¹
¹*Department of Physiology, University of Thessaly Medical School, Larissa, Greece;* ²*Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ³*Department of Respiratory Medicine, University of Thessaly Medical School, Larissa, Greece*

Computational transcriptomic analysis of claudins in malignant pleural mesothelioma reveals significant correlations in their gene expression patterns

Erasmia Rouka¹, Rajesh Jagirdar², Evgeniy I. Solenov³, Chrissi Hatzoglou², Paschalis-Adam Molyvdas³, Konstantinos I. Gourgoulialis⁴, Sotirios G. Zarogiannis²
¹*Graduate Program in Primary Health Care;* ²*Department of Physiology, University of Thessaly Medical School, Larissa, Greece;* ³*Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ⁴*Department of Respiratory Medicine, University of Thessaly Medical School, Larissa, Greece*

CLIC-3 and -4 genes are over-expressed in malignant pleural mesothelioma patients

Vasiliki Tasiopoulou¹, Ioannis Lempesis¹, Dimitrios Magouliotis¹, Rajesh Jagirdar¹, Evgeniy I. Solenov², Chrissi Hatzoglou¹, Paschalis-Adam Molyvdas¹, Konstantinos I. Gourgoulialis³, Sotirios G. Zarogiannis¹
¹*Department of Physiology, University of Thessaly Medical School, Larissa, Greece;* ²*Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia;* ³*Department of Respiratory Medicine, University of Thessaly Medical School, Larissa, Greece*

Under-expression of ADRB1 and ADRB2 genes in malignant pleural mesothelioma

Dimitrios Magouliotis¹, Vasiliki Tasiopoulou¹, Ioannis Lempesis¹, Rajesh Jagirdar¹, Evgeniy I. Solenov², Chrissi Hatzoglou¹, Paschalis-Adam Molyvdas¹, Konstantinos I. Gourgoulialis³, Sotirios G. Zarogiannis¹
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Bioinformatics analysis of the GIY-YIG nuclease superfamily: new enzymes and new features

Katarzyna H. Kaminska^{1,2}, Mikihiro Kawai³, Michal Boniecki¹, Ichizo Kobayashi^{3,4} and Janusz M. Bujnicki^{1,2,3}
¹*Laboratory of Bioinformatics and Protein Engineering, International Institute of Molecular and Cell Biology, Warsaw, Poland;* ²*Laboratory of Bioinformatics, Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University, Poznan, Poland;* ³*Department of Medical Genome Sciences, Graduate School of Frontier Science, The University of Tokyo, Japan;* ⁴*Institute of Medical Science, The University of Tokyo, Tokyo, Japan*

MisPred: Quality control of gene predictions and public databases

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Institute of Enzymology, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary

Systems Biology (VI-W30)

Shotgun metagenomic analysis reveals metabolic diversity of electrogenic microbial community

Kiseleva Larisa, Igor Goryanin
Okinawa Institute of Science and Technology, Japan

A system wide simulation model of translation

Dominique Chu, Tobias von der Haar
University of Kent, Canterbury, UK

Building a predictive model of translation initiator ability of 5'-UTR prokaryotic mRNA

Sergey Evfratov, Ilya Osterman
Chemistry Department, Lomonosov Moscow State University, Moscow, Russia

pHi is not related to cellular proteome

Piotr Zielenkiewicz, Leszek Paczek
Institute of Biochemistry and Biophysics, Polish Academy of Science, Warsaw, Poland

Oligocene origin, holocene diversification and refugia of the European paleoendemic *Herberlea rhodopensis* (Gesneriaceae)

Galya Petrova¹, Teodora Dzhambazova¹, Dimitar Djilianov¹, Michael Moller²
¹*Abiotic stress, AgroBioInstitute, Sofia, Bulgaria;* ²*Royal Botanic Garden Edinburgh, Edinburgh, Scotland, UK*

Mollicutes adaptation to low pH conditions

Anna Vanyushkina, Alexey Gorbachev, Gleb Fisunov, Jim Kamashev, Vadim Govorun
Scientific Research Institute of Physical-Chemistry Medicine, Moscow, Russia

Effect of N-acetylcysteine on the MMP-3/TIMP-1 ratio in intestinal subepithelial myofibroblasts of Crohn's Disease patients

Filippo Fontani, Tommaso Marcucci, Maria Teresa Vincenzini, Teresa Iantomasi
Department of Experimental and Clinical Biomedical Sciences, University of Florence, Florence, Italy

Phenotypic characterisation and molecular changes induced by gestational diabetes mellitus (GDM) on human umbilical endothelial cells: focus on the KDM2B/miR-101/ EZH2 pathway

Ilaria Floris¹, Gianfranco Pintus², Anna Maria Posadino², Giuseppe Mangialardi¹, Giampiero Capobianco³, Costanza Emanuelli¹

¹Department of Vascular Pathology and Regeneration, Bristol Heart Institute, Bristol, UK; ²Laboratory of Vascular Biology, Department of Biomedical Science, University of Sassari, Sassari, Italy; ³Obstetrics and Gynaecology Clinic, University of Sassari, Sassari, Italy

Ultrastructural changes in the rat fallopian tubes with ageing

Sule Sahin¹, Gulnur Take Kaplanoglu², Deniz Erdogan², Asligul Aksoy¹, Guleser Goktas²

¹Middle East Technical University, Graduate School of Natural and Applied Sciences, Department of Biochemistry, Ankara, Turkey; ²Gazi University, School of Medicine, Department of Histology and Embryology, Ankara, Turkey

Characterization of the endocannabinoid system in telomerase-immortalized human endometrial stromal cell line, St-T1b

B. M. Fonseca, G. Correia-da-Silva, M. Almada, M. A. Costa, R. Ferreira, N. A. Teixeira
Institute for Molecular and Cell Biology (IBMC) and Biological Sciences Dep., Faculty of Pharmacy, University of Porto, Portugal

"Reverse Warburg" phenotype and PK-M2: Regulation of pentose phosphate pathway and implications for chemoresistance

Alberto Marini^{1,2}, Maria Letizia Taddei², Lorenzo Cavallini², Valentina Farini², Stefano Stinziani², Paolo Paoli², Gianfranco Pintus¹, Paola Chiarugi²

¹Department of Biomedical Sciences, University of Sassari, Italy; ²Department of Experimental and Clinical Biomedical Sciences, University of Florence, Italy

Binding of the coagulation factor IXa to the membrane of activated platelets

A.A. Kozlov¹, N.A. Podoplelova², F.I. Ataulkhanov³, M.A. Pantelev²

¹Lomonosov Moscow State University, Moscow, Russia; ²National Research Center for Hematology, Moscow, Russia; ³Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia

New concepts about fibroblasts trophic function

Alice Santi, Anna Caselli, Francesco Ranaldi, Paolo Paoli, Massimo D Amico, Stefano Stinziani, Paolo Cirri
University of Florence, Department of "Biomedical Experimental and Clinical Sciences", Florence, Italy

Results of the long-term observation of the population of *Blumeria graminis* f.sp. *hordei* in Latvia and Lithuania

Inese Kokina¹, Inese Gavarane¹, Isaak Rashal²

¹Daugavpils University, Institute of Systematic Biology, Daugavpils, Latvia; ²Institute of Biology, University of Latvia, Salaspils, Latvia

Interactions between nanoparticles and calli cultures of red clover and flax

Inese Kokina, Marija Jermalonoka, Kristina Valaine, Ilze Rubenina, Angelika Paskveica, Vjaceslavs Gerbreders, Eriks Sledevskis, Inese Gavarane

Daugavpils University, Daugavpils, Latvia

Investigation of the fructose uptake system in halophilic bacteria *Halomonas smyrnensis* AAD6T

Busra Aydin, Ebru Toksoy Oner, Kazim Yalcin Arga
Department of Bioengineering, Marmara University, Goztepe, Istanbul, Turkey

A model of "parasite - host" relationship. Could it be generated?

Maksims Zolovs, Muza Kirjusina
Daugavpils University, Institute of Systematics Biology, Daugavpils, Latvia

Coordination of the human antiviral transcriptional program by stochastic interchromosomal interactions

Dimitris Thanos
Biomedical Research Foundation Academy of Athens, Athens, Greece

Development of insulin resistance under consumption of high-calorie diet in rat

Taras Karpovets, Victoria Konopelnjuk, Galenova Tetiana, Oleksiy Savchuk, Lyudmyla Ostapchenko
Taras Shevchenko National University of Kyiv, Educational and Scientific Centre "Institute of Biology", Kyiv, Ukraine

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Taras Shevchenko National University of Kyiv, Educational and Scientific Centre "Institute of Biology", Kyiv, Ukraine

microRNA determines the early stage dynamics of the regulation network

Maria Duk¹, Alexander Samsonov¹, Maria Samsonova²
¹Ioffe Physical Technical Institute, Russian Academy of Sciences, Sr. Petersburg, Russia; ²St. Petersburg State Polytechnical University, Sr. Petersburg, Russia

The effect of exogenous oxytocin on streptozotocin (STZ) - induced diabetic adult rat testes

Pinar Koroglu¹, Gozde Erkanli Senturk¹, Deniz Yucel¹, Bingol O Ozakpinar², Fikriye Uras², Serap Arbak¹
¹Acibadem University School of Medicine, Dept of Histology and Embryology Istanbul, Turkey; ²Marmara University School of Pharmacy Department of Biochemistry, Istanbul Turkey

A phenomenological model of iron-mediated complications of aging diseases

Tatiana Sukhomlin
Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, Puschino, Russia

Mode of murine hippocampal cell death after treatment with cationic phosphorus dendrimers

Joanna Lazniewska¹, Katarzyna Milowska¹, Maria Bryszewska¹, Jean-Pierre Majoral², Teresa Gabryelak¹
¹Department of General Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland; ²Laboratoire de Chimie de Coordination CNRS, Toulouse, France

RAPD-PCR analysis of subgenus *Terricola* (Mammalia: Rodentia) in Turkey

Feride Nilüfer Teke, Reyhan Çolak, Ercüment Çolak
Ankara University, Faculty of Science, Department of Biology, Tandogan, Ankara, Turkey

The effect of fullerene C₆₀(OH)₃₆ on human erythrocyte morphology and acetylcholinesterase activity

Anita Krokosz, Jacek Grebowski, Aleksandra Rodacka, Katarzyna Nowak, Mieczyslaw Puchala
Department of Molecular Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Poland

Coupling bioinformatics and experimental approaches to elucidate the role of orphan human proteins

Lydie Lane, Franck Bontems, Marjorie Desmurs, Paula Duek, Camille Mary, Rachel Porcelli, Irene Rossito-Borlat, Lisa Salleron, Amos Bairoch
CALIPHO group, Department of Human Protein Science, Geneva University, and SIB-Swiss Institute of Bioinformatics, CMU, Michel Servet 1, Geneva, Switzerland

Platelet activation by endocannabinoids through the arachidonic acid pathway and PPARgamma involvement

E. Gkini¹, M. Antonelou², I. Passideri², M. Mavri-vavagianni¹, A. Siafaka-Kapadai¹
¹Department of Chemistry, NKUA, Panepistimiopolis, Athens, Greece; ²Department of Cell Biology & Biophysics, Faculty of Biology, NKUA, Panepistimiopolis, Athens, Greece

Study of a protein function of KCTD-family

Mikhail Skoblov, Maria Zamkova, Andrey Marakhonov, Ancha Baranova
Research Center for Medical Genetics, Russian Academy of Medical Sciences, Moscow, Russia

The prooxidative effect of resveratrol in a neuroblastoma cells

Joanna Gersonz, Aleksandra Rodacka, Agnieszka Gajewska, Katarzyna Stolarska, Mieczyslaw Puchala
Department of Molecular Biophysics, Faculty of Biology and Environmental Protection, University of Lodz, Poland

Interaction of *Mycoplasma gallisepticum* with host-cell organelles

Daria Matyushkina, Olga Pobegutz, Vasily Lazarev, Vadim Govorun
Scientific Research Institute of Physical-Chemistry Medicine, Moscow, Russia

Induction of cell responses to the endogenous expression of *Bacteroides fragilis* toxin in culture HEK-293

Natalya Zakharjevskaya, Darya Harlampieva, Olga Pobeguts, Vasily Lazarev, Vadim Govorun
Scientific Research Institute of Physical-Chemistry Medicine, Moscow, Russia

The role of nitric oxide in testicular sperm extraction (TESE)

Canan Hurdag¹, Yasemin Ersoy Canillioğlu², Asli Kandil³, Meral Yuksele⁴, Evrim Unsal¹, Vildan Karpuz⁵
¹Department of Histology and Embryology, Medical Faculty, Istanbul Bilim University, Istanbul, Turkey; ²Department of Histology and Embryology, Medical Faculty, Bahcesehir University, Istanbul, Turkey; ³Department of Biology, Science Faculty, Istanbul University, Istanbul, Turkey; ⁴Vocational School of Health Related Professions, Marmara University, Istanbul, Turkey; ⁵Department of Pathology, Medical Faculty, Istanbul Bilim University, Istanbul, Turkey

Out-of-peak ChIP-seq signal analysis and approach to ChIP-seq peaks and protein-protein interaction usage for protein complex reconstruction

Sasha Belostotsky
Institute for Information Transmission Problems (Kharkevich Institute) of Russian Academy of Sciences (Mathematic Methods and Models in Bioinformatics Lab), Moscow, Russia

Rule-based model of bacterial transcription initiation

Anatoly Sorokin^{1,2}, Evgenia Temlyakova¹
¹Institute of Cell Biophysics, Pushchino, Russia; ²Edinburgh University, Edinburgh, UK

Automatic transcription regulation model creation with kGraphProm

Evgenia Temlyakova¹, Anatoly Sorokin^{1,2}
¹Institute of Cell Biophysics, Pushchino, Russia; ²Edinburgh University, Edinburgh, UK

Uranium bioleaching – insight into the structure of microbial consortia from mining tailings

Urszula Zielenkiewicz, Pawel Szczesny
Institute of Biochemistry and Biophysics, Warsaw, Poland

Study of the kinetics of transcription as a function of the cell growth phase

Adrien Sala, Andre S. Ribeiro, Meenakshisundaram Kandhavelu
Laboratory of Biosystem Dynamics, Department of Signal Processing, Tampere University of Technology, Tampere, Finland

Examination of Angiopoietin-like protein 4, Neuropeptide Y, Omentin-1 levels of obese and nonobese patients with polycystic ovary syndrome

Meryem Gunes, Neslihan Bukan
Gazi University, Ankara, Turkey

Transcription regulation in prokaryotes: the role of electrostatics as a natural selection factor. DNA phenotype and biophysical bioinformatics

Alexander Osypov¹, Eugenia Krutinin¹, Gleb Krutinin^{1,2}, Svetlana Kamzolova¹
¹Institute of Cell Biophysics, Russian Academy of Sciences, Pushchino, Russia; ²DIAKON Ltd; Pushchino, Russia;

Variable patterning in *Drosophila* embryos due to basins of attraction in underlying gene regulatory dynamics

Alexander Spirov¹, David Holloway²
¹Sechenov Institute of Evolutionary Physiology and Biochemistry, Russian Academy of Sciences, St. Petersburg, Russia; ²British Columbia Institute of Technology, Burnaby, British Columbia, Canada

Biochemistry of invertebrates (VI-W32)

Glutathione S-transferase activity and glutathione level in the cestode *Eubothrium crassum*, Salmonid's parasite

I.V. Sukhovskaya, E.V. Borvinskaya, L.P. Smirnov
Institute of Biology, Karelian Research Centre, Russian Academy of Sciences, Petrozavodsk, Russia

Changes of blue mussels *Mytilus edulis* L. non-methylene-interrupted fatty acids content in response to environmental effects

Natalia Fokina, Zinaida Nefedova, Nina Nemova
Institute of Biology, Karelian Research Centre, Russian Academy of Sciences, Petrozavodsk, Russia

Effect of heavy metals and temperature on the activity of some lysosomal enzymes of the White Sea mussels *M. edulis*

Elizaveta Vdovichenko, Rimma Vysotskaya
Institute of Biology, Karelian Research Centre, Russian Academy of Sciences, Petrozavodsk, Russia

Production in insect cell lines and functional characterization of mite and whitefly esterases implicated in insecticide resistance

Evangelia Morou¹, Christos Meristoudis², Vassiliki Labropoulou², Maria Riga¹, Thomas Van Leeuwen⁵, Kostas Iatrou², John Vontas¹, Luc Swevers²
¹University of Crete, Iraklio, Greece; ²NCSR Demokritos, Athens, Greece; Heraklio, Greece; ³Ghent University, Ghent, Belgium

Transcriptome and small RNA analysis of larval midgut tissue persistently and acutely infected by cytoplasmic polyhedrosis virus (CPV) in the silkworm *Bombyx mori*

Luc Swevers¹, Filip Van Nieuwerburgh², Anna Kolloiopolou¹, Jingchen Sun³, Guy Smaghe⁴
¹Institute of Biosciences and Applications, National Centre for Scientific Research "Demokritos", Athens, Greece; ²Laboratory of Pharmaceutical Biotechnology, Ghent University, Belgium; ³South China Agricultural University, Guangzhou, China; ⁴Faculty of Bioscience Engineering, Ghent University, Belgium

Poster Sessions July 10, 13.00-14.30

Characterization of a *lef8* knock-out BmNPV: new data for an old gene

Konstantinos Ioannidis, Luc Swevers, Kostas Iatrou
Institute of Biosciences and Applications, NCSR Demokritos, Greece

Organ-specific distribution of copper, tyrosinase, and SOD1 in fresh-water mollusk *Planorbarius corneus*

Polina Babich, Polina Kudryavtseva, Polina Kim, Gennady Ataev
Russian State Pedagogical University of Russia, Laboratory of Experimental Zoology, St Petersburg, Russia

Effect of recombinant *Drosophila* Yorkie and Scalloped proteins on intestinal stem cell proliferation

Eun-Young Yun, Young-Il Yoon, Jae-Sam Hwang, Mi-Young Ahn, Tae-Won Goo
Department of Agricultural Biology, National Academy of Agricultural Science, Suwon, South Korea

Evolution of Insect Midgut Trehalases

Clelia Ferreira, Christiane Cardoso, Walter R. Terra
Universidade de Sao Paulo, Instituto de Química, Brazil

Xenobiotic-metabolizing system phase 1 in *Opisthorchis felineus* (Trematoda, Platyhelminthes)

Maria Pakharukova, Nikita Ershov, Valentin Vavilin, Kira Zadesenets, Tatiana Duzhak, Tatiana Merkulova, Viatcheslav Mordvinov
Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Research of the mechanisms of praziquantel action on fluke *Opisthorchis felineus* (Trematoda, Platyhelminthes)

Mariya Pakharukova, Nikita Ershov, Alexander Shilov, Alexey Katokhin, Viatcheslav Mordvinov
Institute of Cytology and Genetics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

The fatty acids composition of Baikalian endemic amphipods *Eulimnogammarus cyaneus* Dyb. and *Eulimnogammarus maritiji* Baz.

K.A. Kirichenko¹, I.V. Lyubushkina¹, K.P. Vereschagina², M.A. Timofeyev²
¹Siberian Institute of Plant Physiology and Biochemistry, Siberian Branch of the Russian Academy of Sciences, Irkutsk, Russia; ²Research Institute of Biology at Irkutsk State University, Irkutsk, Russia

Monoacylglycerol lipase and fatty acid amide hydrolase are secreted from lysosomal and nonlysosomal sources in *Tetrahymena thermophila*

A. Stamogiannos, E. Gkini, D. Galanopoulou, A. Velentzas, M. Antonelou, I. Papassideri, A. Siafaka-Kapadai
Department of Chemistry (Biochemistry), National and Kapodistrian University of Athens, Athens, Greece

Cathepsin L-like peptidase from *Tribolium castaneum* larvae – a possible candidate for treatment of Celiac disease

Valeriya F. Sharikova¹, Elena A. Vorotnikova², Yulia A. Smirnova³, Irina Yu. Filippova¹, Elena N. Elpidina³
¹Chemical Faculty, Lomonosov Moscow State University, Moscow, Russia; ²Faculty of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia; ³A.N. Belozersky Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

Analysis of cysteine cathepsins in Tenebrionidae

Elena N. Elpidina¹, Alexander G. Martynov², Brenda Oppert³
¹A.N. Belozersky Institute of Physico-Chemical Biology, Moscow State University, Moscow, Russia; ²Faculty of Bioengineering and Bioinformatics, Moscow State University, Moscow, Russia; ³USDA Agricultural Research Service, Center for Grain and Animal Health Research, USA

Molecular and functional approaches for understanding cytochrome P450-based detoxification mechanisms in insect pests

Evangelia Morou¹, Maria Riga¹, Dimitra Tsakireli¹, Aris Hlias¹, Eleni Sioziou¹, Nena Pavlidi¹, Ralf Nauen², Kriton Kalantidis¹, Thomas Van Leeuwen³, Mark J Paine⁴, John Vontas¹
¹Department of Biology, Faculty of Applied Biology and Biotechnology, University of Crete, Greece; ²BayerCropScience AG, Research Pest Control, Germany Bayer CropScience, Monheim, Germany; ³Department of Crop Protection, Faculty of Bioscience Engineering, Ghent University, Belgium; ⁴Vector Biology, Liverpool School of Tropical Medicine, Liverpool, UK

Membrane unsaturation contributes to stress resistance and longevity of wild-type and long-lived mutant strains of *Drosophila melanogaster*

Alba Naudi¹, Victoria Ayala¹, Mariona Jové¹, Manuel Portero-Otin¹, Ashwin Sriram², Alberto Sanz², Reinald Pamplona¹
¹Department of Experimental Medicine, University of Lleida-IRBLleida, Lleida, Spain; ²Institute of Medical Technology and Tampere University Hospital, University of Tampere, Finland

Poster Sessions July 10, 13.00-14.30

Bioengineering: Fundamentals and Application (VI-W33)

Bioconversion of airborne methylamine by immobilized methylamine oxidase from *Hansenula polymorpha*

Marina Nisnevitch¹, Sasi Sigawi^{1,2}, Andriy Zakalskiy³, Galina Gayda³, Yeshayahu Nitzan², Mykhaylo Gonchar^{3,4}
¹Department of Chemical Engineering, Biotechnology and Materials, Ariel University, Israel; ²The Mina and Everard Goodman Faculty of Life Sciences, Bar-Ilan University, Ramat-Gan, Israel; ³Department of Analytical Biotechnology, Institute of Cell Biology, Lviv, Ukraine; ⁴Institute of Biotechnology, University of Rzeszow, Kolbuszowa, Poland

Design of genetic elements and expression system optimization for high-level coagulation factor VIII production in mammalian cells

Nadejda A. Orlova¹, Sergey V. Kovnir¹, Ivan I. Vorobiev¹, Andrey I. Vorobiev², Alexander G. Gabibov³
¹Centre "Bioengineering", Russian Academy of Sciences, Moscow, Russia; ²Hematology Research Centre, Ministry of Healthcare and Social Development of the Russian Federation, Moscow, Russia; ³Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Methods development for high level recombinant factor IX production in mammalian cells

Sergey V. Kovnir¹, Nadejda A. Orlova¹, Ivan I. Vorobiev¹, Mikhail I. Shakhparonov², Alexander G. Gabibov²
¹Centre "Bioengineering", Russian Academy of Sciences, Moscow, Russia; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Purification and characterization of *Prunus cerasifera* HNL and its application for enantiomeric synthesis of cyanohydrins

Dilek Alagoz, Deniz Yildirim, S. Seyhan Tukul, Ozlem Alptekin
Cukurova University, Turkey

Immobilization of *Aspergillus niger* EH onto modified Eupergit C and its application for asymmetric hydrolysis of (R/S)-styrene oxide

Deniz Yildirim, Dilek Alagoz, S. Seyhan Tukul, Ozlem Alptekin
Cukurova University, Turkey

Light dependent activity of restriction endonucleases

Liudmila Abrosimova¹, Mayya Monakhova², Benno Schierling³, Evgeny Volkov², Elena Romanova⁴, Wolfgang Wende³, Alfred Pingoud³, Elena Kubareva⁴, Tatiana Oretskaya⁴
¹Department of Bioengineering and Bioinformatics, Lomonosov Moscow State University, Moscow, Russia; ²Chemistry Department, Lomonosov Moscow State University, Moscow, Russia; ³Institut fuer Biochemie, Fachbereich Biologie und Chemie, Justus-Liebig-Universitaet, Giessen, Germany; ⁴A.N. Belozersky Research Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

DR5-B – DR5-selective mutant variant of cytokine TRAIL overcomes resistance of cancer cells to TRAIL

Maxim Bychkov¹, Marine Gasparian², Dmitry Dolgikh¹, Mikhail Kirpichnikov¹
¹Lomonosov Moscow State University, Moscow, Russia; ²Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Characterization of a *lef8* knock-out BmNPV: New data for an old gene

Konstantinos Ioannidis, Luc Swevers, Kostas Iatrou
NCSR Demokritos, Athens, Greece

New insights into sugar catabolism of *Arthrobacter nicotinovorans*: Oxidative degradation of xylose

Marius Mihasan¹, Marius Stefan¹, Lucian Hritcu¹, Vlad Arteni¹, Roderich Brandsch²
¹Department of Biology, Alexandru Ioan Cuza University, Iasi, Romania; ²Institute of Biochemistry and Molecular Biology, Centre for Biochemistry and Molecular Cell Research, Albert-Ludwigs University, Freiburg, Germany

Some properties and utilization of fluorescent chimeras of human small heat shock proteins. Disturbance of native protein properties inside of the chimeric constructs

Petr Datskevich, Nikolai Gusev
Department of Biochemistry, School of Biology, Lomonosov Moscow State University, Moscow, Russia

Biodiesel production from hazelnut oil by means of transesterification reaction

Melih Onay¹, Meral Yucef², Huseyin Avni Oktem²
¹Department of Biochemistry, Middle East Technical University, Ankara, Turkey; ²Department of Biotechnology, Middle East Technical University, Ankara, Turkey

Cloning and expression of carbon cycle relevant enzymes of *Ralstonia eutropha* H16

Petra Kofinger, Daniel Schwendenwein, Zalina Magomedova, Steffen Gruber, Helmut Schwab
Institute of Molecular Biotechnology, Graz University of Technology, Austria

Cloning and characterization of a new dye degrading laccase from *Bacillus amyloliquefaciens* 12B1

Nikola Loncar¹, Natasa Bozic², Zoran Vujcic¹
¹*Faculty of Chemistry, University of Belgrade, Belgrade, Serbia;* ²*ICTM-Center of Chemistry, University of Belgrade, Belgrade, Serbia*

***Escherichia coli* F₀F₁-ATPase activity under glycerol fermentation at different pH and role of hydrogenases**

Syuzanna Bilbulyan, Armen Trchounian
Yerevan State University, Yerevan, Armenia

Diphenylene iodonium, as hydrogenase inhibitor, enhanced H₂ photoproduction by *Rhodospira rubra*

Harutyun Sargsyan¹, Lilit Gabrielyan¹, Armen Trchounian²
¹*Department of Biophysics, Yerevan State University (YSU), Yerevan, Armenia;* ²*Department of Microbiology, Microbes and Plants Biotechnology, Yerevan State University (YSU), Yerevan, Armenia*

A novel strategy for expression and purification of recombinant human TGF- β 1 monomer in *Escherichia coli*

Yana Kim, Marine Gasparian
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences (IBCh RAS), Moscow, Russia

***In vitro* anticancer activity of levan from *Halomonas smyrnensis* AAD6T**

Hande Kazak, Ebru Toksoy Oner
Industrial Biotechnology and Systems Biology (IBSB) Research Group, Department of Bioengineering, Faculty of Engineering, Marmara University, Istanbul, Turkey

***In vivo* cell tracking by using bioluminescence imaging**

Natalia Klementieva¹, Marina Shirmanova¹, Ekaterina Serebrovskaya², Arkady Fradkov², Elena Zagaynova^{1,3}
¹*Nizhny Novgorod State Medical Academy, Russia;* ²*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia;* ³*N.I. Lobachevsky State University of Nizhni Novgorod, Russia*

Formate and growth medium composition influence on *Escherichia coli* growth and molecular hydrogen production under glycerol fermentation at different pHs

Anna Poladyan, Varduhi Abrahamyan, Armen Trchounian
Department of Microbiology & Plants and Microbes Biotechnology, Biology Faculty, Yerevan State University, Yerevan, Armenia

Production of recombinant human growth hormone in *Pichia pastoris*

Diana Hopkova, Zdenko Levarski
Department of Molecular Biology, Faculty of Natural Sciences, Comenius University, Bratislava, Slovakia

Histidinyl phosphatidylethanolamine as an effective coplipid for transgene expression mediated by liposomal vectors

Wen-Chi Tseng, Gin-Han Liu
Department of Chemical Engineering National Taiwan University of Science and Technology, Taipei, Taiwan

The new expression system based on a novel yeast species of the genus *Komagataella*

Oleg Tyurin¹, Irek Gubaidullin¹, Sergey Cheperegin¹, Boris Efremov¹, Elena Naumova^{1,2}, Gennadi Naumov^{1,2}, Dmitry Kozlov¹
¹*State Institute for Genetics and Selection of Industrial Microorganisms (GosNIIGenetika), Moscow, Russia;* ²*Scientific Research and Educational Center for Biomedical Technologies, VILAR RASHN, Moscow, Russia*

Development of transgenic *Arabidopsis thaliana* plants expressing a root-specific phytase of microbial origin

Nyamsuren Chuluuntsetseg¹, Liya Valeeva¹, Alina Akhmetova¹, Aliya Suleymanova¹, Nelly Balaban¹, Eugene Shakirov², Margarita Sharipova¹
¹*Kazan (Volga region) Federal University Institute of Fundamental Medicine and Biology, Kazan, Russia;* ²*Department of Biology, Texas A & M University, College Station, USA*

Plant Growth-Promoting Fungi from soils under different agricultural crops

Yelena Brazhnikova¹, Togzhan Mukasheva², Lyudmila Ignatova²
¹*Scientific-Research Institute of Issues in Biology and Biotechnology, Almaty, Kazakhstan;* ²*Al-Farabi Kazakh National University, Almaty, Kazakhstan*

Cytocompatibility of Ar plasma treated polyhydroxybutyrate for fibroblasts and keratinocytes: Adhesion molecules in action

Silvie Rimpelova¹, Nikola Slepickova Kasalkova², Petr Slepicka², Vaclav Svorcik², Tomas Ruml¹
¹*Department of Biochemistry and Microbiology, Institute of Chemical Technology in Prague, Prague, Czech Republic;* ²*Department of Solid State Engineering, Institute of Chemical Technology in Prague, Czech Republic*

Bioengineering of bacteria for removal of haloacids

Jimmy S.H. Tsang, Ka-Fai Kong
The University of Hong Kong, Hong Kong SAR, China

Improved chondrogenic capacity of collagen hydrogel-expanded chondrocytes. *In vitro* and *in vivo* analysis

Patricia Sanz-Ramos¹, Julio Duart², Maria Victoria Rodriguez-Goni², Mikel Vicente-Pascual¹, Javier Dotor³, Inigo Izal-Azcarate¹

¹*Laboratory for Orthopaedic Research, University of Navarra, School of Medicine, Pamplona, Spain;* ²*Trauma and Orthopaedic Surgery, Servicio Navarro de Salud, Pamplona, Spain;* ³*DIGNA Biotech, Pamplona, Spain*

Identification of signalling pathways triggered by changes in the mechanical environment in rat chondrocytes

Patricia Sanz-Ramos, Mikel Vicente-Pascual, Inigo Izal-Azcarate
Laboratory for Orthopaedic Research, University of Navarra, School of Medicine, Pamplona, Spain

Interference from a myeloma derived light chain on diagnostic monoclonal antibody performance

Anthony Muerhoff, Sharmila Manoj, Bryan Tieman, Troy McSherry, Jeff Moore, You Pan, Steven Allen, Carolyn Strobel, Bailin Tu
Abbott Laboratories, Abbott Park, USA

Engineering novel crystallization chaperones with tunable crystal packing and increased power of phasing

Alexander Batyuk, Yufan Wu, Annemarie Honegger, Andreas Plueckthun
University of Zurich, Switzerland

The usage of different mixed cultures in phenol removal process

Gulden Kaplan, Nur Koçberber Kiliç, Gönül Dönmez
Department of Biology, Faculty of Science, University of Ankara, Besevler, Ankara, Turkey

The determination of boron removal capacities of newly isolated microorganisms from boron-contaminated waters

Burcu Ertit Tastan, Dilara Nur Çakir, Gönül Dönmez
Ankara University, Faculty of Science, Department of Biology, Besevler Ankara, Turkey

Genetically encoded fluorescent indicator for NAD⁺/NADH ratio imaging in different cellular compartments

Dmitry Bilan^{1,2}, Michael Matlashov^{1,2}, Andrey Gorokhovatsky¹, Carsten Schultz³, Grigori Enikolopov^{2,4}, Vsevolod Belousov^{1,2}
¹*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia;* ²*Moscow Institute of Physics and Technology, Moscow, Russia;* ³*European Molecular Biology Laboratory, Heidelberg, Germany;* ⁴*Cold Spring Harbor Laboratory, Cold Spring Harbor, USA*

Biotherapeutics with improved pharmacokinetic properties

Elizaveta Berkovich¹, Andrey Karpov¹, Uli Binder², Arne Skerra², Andrei Petrov¹
¹*LLC IBC Generium, Moscow, Russia;* ²*XL-protein GmbH, Freising, Germany*

Efficient system of obtaining genetically modified primordial germ cells for oviduct expression in chickens

Luiza Chojnacka-Puchta¹, Dorota Sawicka^{1,2}, Pawel Lakota², Grazyna Plucienniczak¹, Marek Bednarczyk², Andrzej Plucienniczak¹
¹*Institute of Biotechnology and Antibiotics, Warszawa, Poland;* ²*University of Technology and Life Sciences, Bydgoszcz, Poland*

Genetically encoded red fluorescent probe for intracellular H₂O₂ detection

Yulia G. Ermakova^{1,2}, Dmitry S. Bilan^{1,3}, Nataliya Mishina¹, Kseniya N. Markvicheva¹, Grigori Enikolopov^{3,4}, Vsevolod V. Belousov^{1,3}
¹*Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia;* ²*Lomonosov Moscow State University, Moscow, Russia;* ³*Moscow Institute of Physics and Technology, Moscow, Russia;* ⁴*Cold Spring Harbor Laboratory, USA*

Investigation of *Gonium* sp. biomass in possible usage of removing Reactive Blue 220

Gizem Boduroglu, Nur Koçberber Kiliç, Gönül Dönmez
Department of Biology, Faculty of Science, University of Ankara, Besevler, Ankara, Turkey

Investigating transesterification reaction parameters of *Candida tropicalis* lipids for biodiesel production

Sevgi Ertugrul Karatay, Gönül Dönmez
Ankara University, Faculty of Science, Department of Biology, Biotechnology Unit, Turkey

Using the biomass of halophilic *Dunaliella* sp. microalgae for bioethanol production

Meltem Erdogan¹, Sevgi Ertugrul Karatay¹, Sedat Dönmez², Gönül Dönmez¹
¹Ankara University, Faculty of Science, Department of Biology, Biotechnology Unit, Turkey; ²Ankara University, Faculty of Engineering, Department of Food Engineering, Turkey

Bacterial proteins for specific binding of fluorogenic synthetic dyes

Natalia V. Povarova, Karen S. Sarkisyan, Mikhail S. Baranov, Alexander S. Mishin
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Method for light-induced separation of protein domains via backbone cleavage

Nadezhda Markina, Nadezhda Gurskaya, Konstantin Lukyanov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Laboratory of Biophotonics, Moscow, Russia

Biotechnological production of recombinant analogues of natural thrombin inhibitors from different haematophagous animals

Mary A. Kostromina, Roman S. Esipov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Antibacterial properties of charged-stabilized silver nanoparticles

Marta Kujda¹, Magdalena Ocwieja¹, Zbigniew Adamczyk¹, Oliwia Bochenka², Grazyna Bras², Andrzej Kozik², Elzbieta Bielanska¹, Jakub Barbasz³
¹Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland; ²Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland; ³M. Smoluchowski Institute of Physics, Jagiellonian University, Krakow, Poland

Phytase of *Bacillus* sp. M2.11: Cloning, expression and purification

Alina Akhmetova, Margarita Sharipova
Kazan Federal University, Kazan, Russia

Heterologous production of Penicillin G Acylase (PGA) from *Bacillus megaterium* in *Pichia pastoris*

Ana Isabel de Camargo¹, Leandro Seiji Goto², Raquel de Lima Camargo Giordano¹
¹Chemical Engineering, Laboratory of Enzymatic Processes Engineering, Federal University of Sao Carlos, SP, Brazil; ²Genetic and Evolution Department, Laboratory of Biochemistry and Microorganisms Molecular Biology, Federal University of Sao Carlos, SP, Brazil

Functional expression of ligand-binding domains of eukaryotic proteins in *E.coli* membrane: exercises with Kv1.3 channel

Oksana Nekrasova, Kseniya Kudryashova, Alexander Vassilevski, Alexey Kuzmenkov, Yuliya Korolkova, Eugene Grishin, Mikhail Kirpichnikov, Alexey Feofanov
Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; Biological Faculty, Lomonosov Moscow State University, Moscow, Russia

Subcellular localization of GFP-signal sequence fusion proteins

Naoyuki Takachio, Tatsuya Komishi, Hiromu Takata, Takeo Terasaki, Noritaka Kato, Takanori Sasaki, Yuri Mukai
Dept. Electr. & Bioinfo., Grad. Sch. Sci. & Tech., Meiji Univ., Kawasaki, Japan

Phytase of *Bacillus ginsengihumi*: Cloning, expression and purification

Alina Akhmetova, Margarita Sharipova
Kazan Federal University, Kazan, Russia

The study of molecular mechanisms of antioxidant action of bile pigments and investigating their role during the interaction of biomolecules with a drug carrier protein

Alexey V. Solomonov, Evgeniy V. Rumyantsev, Boris A. Kochergin, Maria K. Serebryakova, Pavel V. Uckhov, Eleva V. Antina
Ivanovo State University of Chemistry and Technology, Ivanovo, Russia

Optimization of defined medium and nitrogen source for recombinant Penicillin G Acylase (PGA) production in *Bacillus megaterium*

Ana Maria Velez¹, Ana Isabel de Camargo¹, Ezequiel Franco-Lara², Christoph Wittmann², Florian David², Raquel de Lima Camargo Giordano¹
¹Chemical Engineering, Laboratory of Enzymatic Processes Engineering, Federal University of Sao Carlos, SP, Brazil; ²Institute of Biochemical Engineering, Department of Technical University of Braunschweig, Germany

Biochemical properties of intracellular laccase produced by *Sinorhizobium meliloti* strain originated from Poland

Anna Pawlik, Jerzy Rogalski
Department of Biochemistry, Maria Curie-Skłodowska University, Lublin, Poland

Immobilization and characterization of tomato alpha-galactosidase on Sepabead EC-EP

Hasan Bayraktar¹, Cevriye Ozrenk², Secil Onal²
¹Ege University Graduate School of Natural and Applied Sciences, Biochemistry Department, Izmir, Turkey; ²Ege University Faculty of Science, Biochemistry Department, Izmir, Turkey

Biosynthesis and isolation of STEAP1 peptides for prostate cancer immunotherapy

Ana Goncalves, Claudio Maia, Luis Passarinha
Health Sciences Research Centre- CICS, University of Beira Interior, Covilha, Portugal

Fabrics made from genetically modified flax enriched in polyhydroxybutyrate as an effective dressing for long-standing wounds

Anna Kulma, Michal Szatkowski, Jan Szopa
Wroclaw Research Centre EIT+, Wroclaw, Poland

The *Cerrena unicolor* laccase overproduction on waste agricultural based media

Beata Rola¹, Iwona Mazur¹, Andrzej Dawidowicz², Jerzy Rogalski¹
¹Department of Biochemistry, Maria Curie Skłodowska University, Lublin, Poland; ²Department of Physical Chemistry, Maria Curie Skłodowska University, Lublin, Poland

Bioinformatic analysis and molecular modeling reveal mutation bD484N to stabilize penicillin acylase and improve its catalytic performance in alkaline medium

N. Panin, D. Suplatov, E. Kirilin, T. Shcherbakova, P. Kudravtsev, V. Svedas
Faculty of Bioengineering and Bioinformatics and A.N. Belozersky Research Institute of Physicochemical Biology, Lomonosov Moscow State University, Moscow, Russia

Modulating electron transfer in cytochrome P450 3A4 fusion enzymes

Serena D'Avino, Sheila J. Sadeghi, Giovanna Di Nardo, Danilo Degregorio, Gianfranco Gilardi
Department of Life Sciences and Systems Biology, University of Torino, Italy

Genetically encoded fluorescent indicator for NAD⁺/NADH ratio imaging in different cellular compartments

D.S. Bilan^{1,2}, M.E. Matlashov^{1,2}, A.Yu. Gorokhovatsky¹, C. Schultz³, G.N. Enikolopov^{2,4}, V.V. Belousov^{1,2}
¹Shemyakin & Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia; ²Moscow Institute of Physics and Technology, Moscow, Russia; ³European Molecular Biology Laboratory, Heidelberg, Germany; ⁴Cold Spring Harbor Laboratory, Cold Spring Harbor, USA

In vitro selection of promoter sequences employing a hairpin-shaped DNA and a streptavidin-binding aptamer

Shoji Ohuchi
Kyoto University, Japan

A novel like expression system for production of applied *Bacillus* proteolytic enzymes print

Anna Toymentsseva¹, Iuliia Danilova¹, Mascher Thorsten², Margarita Sharipova¹
¹Kazan Federal University, Kazan, Russia; ²Ludwig-Maximilians-University Munich, Munich, Germany

Immobilization of Carbonic anhydrase II (CAII) enzyme on superparamagnetic iron-oxide nanoparticles

Sumeyye Aydogan Turkoglu, Ozgur Karaagac, Feray Kockar, Hakan Kockar, Derya Okuyan
Balikesir University Faculty of Science and Literature, Department of Biology and Department of Physics, Balikesir, Turkey

Expression of lactate dehydrogenase gene from *Fusobacterium nucleatum*

Emrah Sariyer¹, Aysegul Erdemir¹, Mike R. Milward², Paul R. Cooper⁴, Ebru Ozkan¹, Dilek Turgut-Balik¹
¹Yildiz Technical University, Faculty of Chemical Metallurgical Engineering, Department of Bioengineering, Davutpasa Campus, Esenler, Istanbul, Turkey; ²Periodontology, School of Dentistry, University of Birmingham, Birmingham, UK

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sales@labinstruments.ru, www.labinstruments.ru, www.labinstruments.ru



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