

Poster Sessions

Place: Subterranean level

Wednesday, 19th September 2018

Posters P1.-P8. (13:30-14:00)

- Session 1:** Genomics and genomics-driven research
- Session 2:** RNA and RNP structures and mechanisms of action: from theory to experiment
- Session 5:** Molecular virology
- Session 6:** Non-coding RNA and gene expression
- Session 7:** Structural studies of large assemblies
- Session 8:** Molecular bioenergetics

Thursday, 20th September 2018

Posters P11.-P19. (13:30-14:00)

- Session 11:** Medical biotechnology in regenerative medicine and drug research
- Session 13:** Metabolic activation of xenobiotics – therapeutic target and drug monitoring
- Session 14:** New biomarkers in neurodegenerative diseases
- Session 15:** New molecular targets in personalized therapy of cancer
- Session 16:** Clinical metabolomics
- Session 17:** Tumor microenvironment in cancer progression
- Session 19:** Inside plant organelles: structure, function and stress response

Friday, 21st September 2018

Posters P20.-P31. (13:30-14:00)

- Session 20:** Plant biochemistry and metabolomics
- Session 22:** Proteomics of ageing and diseases
- Session 23:** Entanglement in biology – from proteins folding to drug design
- Session 25:** From experimental data to in silico simulations and way back
- Session 26:** Biochemistry of the connective tissue

Session 27: Inflammation and cancer

Session 28: Marine biotechnology

Session 31: Miscellaneous

Session 1: Genomics and genomics-driven research

P1.1. The genetic landscape of pre-state Iron Ages societies of the East Central Europe

I. Stolarek¹, L. Handschuh¹, A. Juras², M. Marcinkowska-Swojak¹, P. Kozłowski¹, M. Figlerowicz¹

¹Department of Molecular and Systems Biology, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan, Poland; ²Department of Human Evolutionary Biology, Adam Mickiewicz University in Poznan, Poland

P1.2. Beta Defensin 1 gene variability as a risk factor for oral pathology: association analysis between -20 G>A and -44 C>G polymorphisms within the 5'UTR region and recurrent aphthous stomatitis

Zuzanna Celmer^{1,3}, Zuzanna Ślebioda², Tomasz Woźniak¹, Robert Zasadziński^{1,3}, Marta Daszkowska^{1,3}, Barbara Dorocka-Bobkowska², Maria A. Bobowicz³, Anna Kowalska¹

¹Polish Academy of Sciences, Institute of Human Genetics, Poland; ²University of Medical Sciences, Dept. of Oral Mucosa Diseases, Poland; ³Adam Mickiewicz University, Dept. of Genetics, Faculty of Biology, Poland

P1.3. Do retroposed genes make an important contribution to the human proteome?

Magdalena R. Kubiak, Joanna Ciomborowska-Basheer, Michał W. Szcześniak, Jan G. Kosiński, Izabela Makałowska

Department of Integrative Genomics, Institute of Anthropology, Faculty of Biology, Adam Mickiewicz University in Poznan, Poland

P1.4. Analysis of two novel maize genomes differing in Roundup® resistance

Agata Tyczeńska¹, Medhat Helmy¹, Marek Żywicki², Joanna Gracz¹, Wojciech Karłowski², Tomasz Twardowski¹

¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznań, Poland; ²Department of Computational Biology, Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University, Poznań, Poland

P1.5. Do transcripts of protein-coding genes overlapping at their 5' end form RNA:RNA duplexes?

Jarosław K. Sikora¹, Patryk Konieczny², Izabela Makałowska¹

¹Department of Integrative Genomics, Institute of Anthropology, Faculty of Biology, Adam Mickiewicz University in Poznan, Poland; ²Department of Gene Expression, Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University in Poznan, Poland

Session 2: RNA and RNP structures and mechanisms of action: from theory to experiment

P2.1. Structural determinants of Ty1 genomic RNA dimerization and packaging in the LTR-retrotransposon Ty1

Julita Gumna¹, Katarzyna J. Purzycka¹, Małgorzata Zawadzka¹, David Garfinkel², Katarzyna Pachulska-Wieczorek¹

¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Structure and Function of Retrotransposons, Poland; ²University of Georgia, Department of Biochemistry & Molecular Biology, USA

P2.2. Regulation of LTR-retrotransposons life cycle

Julita Gumna¹, Katarzyna J. Purzycka¹, Agniva Saha², Małgorzata Zawadzka¹, David Garfinkel², Katarzyna Pachulska-Wieczorek¹

¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Structure and Function of Retrotransposons, Poland; ²University of Georgia, Department of Biochemistry & Molecular Biology, USA

P2.3. Low- mass RNA Ladder and its potential application in analysis of small-molecule RNAs

Natalia Krówczyńska¹, Agnieszka Meler¹, Piotr Putaj¹, Katarzyna Kolet¹, Marcin K. Chmielewski^{1,2}

¹FutureSynthesis sp. z o.o., Rubież St. 46H, Poznań, Poland; ²Institute of Bioorganic Chemistry Polish Academy of Sciences, Noskowskiego St. 12/14, Poznań, Poland

P2.4. Bioinformatic construction of PUM1 and PUM2 RNA-Regulons in TCam-2 cell line

Maciej J. Smialek¹, Marcin Sajek¹, Aleksandra Swiercz², Erkut Ilaslan¹, Damian M. Janecki¹, Maciej Kotecki³, Kamila Kusz-Zamelczyk¹, Tomasz Wozniak¹, Luiza Handschuh², Marek Figlerowicz² and Jadwiga Jaruzelska¹

¹Institute of Human Genetics Polish Academy of Sciences, Poznan, Poland; ²Institute of Bioorganic Chemistry Polish Academy of Sciences, Poznan, Poland; ³Tufts University Medical School, Department of Developmental, Molecular and Chemical Biology, U.S.A.

P2.5. The activity and function of MCP1P2 – the most enigmatic member of the ZC3H12 family of proteins

Mateusz Wawro, Aneta Kasza

Department of Cell Biochemistry, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Poland

P2.6. Isolation and biophysical studies of proteins from IFIT and FASTKD families

Mikołaj Kuska^{1,2}, Jan Kutner³, Maria Klimecka¹, Anna Laskowska¹, Natalia Karolak¹, Matthew Merski¹, Maria W. Górna¹

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²Department of Biophysics, Faculty of Physics, University of Warsaw, Poland; ³Core Facility

for Crystallography and Biophysics, CNBCH, Department of Chemistry, University of Warsaw, Poland

- P2.7. Structure-function studies of RNA-binding IFIT proteins**
Natalia Karolak^{1,2}, Maria Klimecka¹, Krzysztof Młynarczyk¹, Matylda Izert¹, Martyna Nowacka¹, Maria W. Górna¹
¹University of Warsaw, Faculty of Chemistry, Poland; ²Nencki Institute of Experimental Biology, Laboratory of Calcium Binding Proteins, Poland
- P2.8. Studies on the oxidative damage of wobble 5-methylcarboxymethyl-2-thiouridine in transfer RNAs**
Małgorzata Sierant¹, Patrycja Komar¹, Rafał Szewczyk², Agnieszka Dziergowska³, Elżbieta Sochacka³ and Barbara Nawrot¹
¹Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Department of Bioorganic Chemistry, Lodz, Poland; ²University of Lodz, Institute of Microbiology, Biotechnology and Immunology, Department of Industrial Microbiology and Biotechnology, Lodz, Poland; ³Lodz University of Technology, Institute of Organic Chemistry, Lodz, Poland
- P2.9. *Escherichia coli* tRNA 2-selenouridine synthase (wtSelU) and its G67E mutant (mutSelU G67E): catalysis of conversion of bacterial 2-thiouridine-tRNA to its 2-seleno-analog**
Patrycja Komar, Małgorzata Sierant and Barbara Nawrot
Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Department of Bioorganic Chemistry, Lodz, Poland
- P2.10. Thermo-sensitive fluorescent dye for nucleic acid labeling**
Piotr Putaj¹, Natalia Krówczyńska¹, Katarzyna Kolet¹, Marcin K. Chmielewski^{1,2}
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Session 5: Molecular virology

- P5.1. BMV-based VLP – faster, cheaper, easier**
Aleksander Strugała¹, Karol Kamel¹, Adam Mieloch^{2,3}, Jakub D. Rybka^{2,3}, Michael Giersig^{2,3}, Marek Figlerowicz^{1,4}, Anna Urbanowicz^{1,5}
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Z. Noskowskiego 12/14, 61-704 Poznań, Poland; ²Faculty of Chemistry, Adam Mickiewicz University, Umultowska 89b, 61-614 Poznań, Poland; ³Centre for Advanced Technologies, Adam Mickiewicz University, Umultowska 89c, 61-614 Poznań, Poland; ⁴Institute of Computing Science, Poznan University of Technology, Piotrowo 2, 60-965 Poznań, Poland; ⁵Institute of Chemical Technology and Engineering, Poznan University of Technology, 5 M. Skłodowska-Curie Square, 60-965 Poznań, Poland
- P5.2. The role of viral glycoprotein B and exosomes in the formation of antiviral immune response during alphaherpesvirus infection**
Kinga Grabowska, Magda Wąchalska, Michał Rychłowski, Krystyna Bieńkowska-Szewczyk, Andrea D. Lipińska

Laboratory of Virus Molecular Biology, Intercollegiate Faculty of Biotechnology, University of Gdańsk and Medical University of Gdańsk, Gdańsk, Poland

- P5.3. In search for crucial amino acid residues in the bovine herpesvirus-1-encoded UL49.5 involved in the inhibition of transporter associated with antigen presentation (TAP)**
 Małgorzata Graul¹, Natalia Karska², Magdalena J. Ślusarz², Michał Rychtowski¹, Sylwia Rodziewicz-Motowidło², Krystyna Bieńkowska-Szewczyk¹, Andrea D. Lipińska¹
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- P5.4. Fluorescent TAP as a model for virus-induced degradation of the antigenic peptide transporter**
 Magda Wąchalska¹, Małgorzata Graul¹, Aleksandra Babnis¹, Rutger D. Luteijn², Robert J. Lebbink², Emmanuel J.H.J. Wiertz², Krystyna Bieńkowska-Szewczyk¹, Andrea D. Lipińska¹
¹Laboratory of Virus Molecular Biology, Intercollegiate Faculty of Biotechnology, Poland; ²Department of Medical Microbiology, University Medical Center Utrecht, The Netherlands
- P5.5. Comparative proteomic analysis of the latex of virus infected and non-infected medicinal plant Greater Celandine (*Chelidonium majus* L.)**
 Michalina Krakowiak¹, Robert Nawrot²
¹Institute of Experimental Biology, Department of Molecular Virology, Poland; ²Institute of Experimental Biology, Department of Molecular Virology, Poland
- Session 6: Non-coding RNA and gene expression**
- P6.1. Crosstalk between miRNA production and transcriptional machinery via DRB1 protein**
 Dawid Bielewicz, Jakub Dolata, Mateusz Bajczyk, Łukasz Szewc, Przemysław Wiczorek, Agata Stępień, Artur Jarmołowski, Zofia Szweykowska-Kulińska
 Department of Gene Expression, Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University in Poznań, Poland
- P6.2. FUS mediates the processing of snoRNAs to shorter RNA fragments that can regulate gene expression**
 K.D. Raczyńska¹, M. Szcześniak², M. Żywicki³, P. Plewka¹, A. Pacak¹, M-D. Ruepp⁴
¹Department of Gene Expression, Institute of Molecular Biology and Biotechnology, Adam Mickiewicz University in Poznań, Poland; ²Department of Integrative Genomics, Institute of Anthropology, Adam Mickiewicz University in Poznań, Poznań, Poland; ³Department of Computational Biology, Institute of Molecular Biology and Biotechnology, Adam

Mickiewicz University in Poznan, Poland; ⁴Department of Chemistry and Biochemistry, University of Bern, Switzerland

- P6.3. Circular RNAs in *Arabidopsis thaliana***
Michał Stelmaszczyk¹, Paulina Jackowiak¹, Katarzyna Kozłowska¹, Anna Philips¹, Jan Podkowinski¹, Marek Figlerowicz^{1,2}
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Molecular and Systems Biology, Poznań, Poland; ²Institute of Computing Science, Poznań University of Technology, Poznań, Poland
- P6.4. The many faces of Dicer: RNA landscape in Dicer-deficient human cells**
Natalia Koralewska¹, Marek C. Milewski¹, Anna Kurzyńska-Kokorniak¹, Paulina Jackowiak¹, Marek Figlerowicz^{1,2}
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznań, Poland; ²Institute of Computing Science, Poznań University of Technology, Poznań, Poland
- P6.5. Bioinformatics analysis of circular RNAs in *Arabidopsis thaliana***
Katarzyna Kozłowska¹, Anna Philips¹, Michał Stelmaszczyk¹, Paulina Jackowiak¹, Jan Podkowiński¹, Marek Figlerowicz^{1,2}
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Molecular and Systems Biology, Poznań, Poland; ²Poznań University of Technology, Institute of Computing Science, Poznań, Poland
- P6.6. mRNA expression of *SOD1*, *SOD2*, *GPx1*, *GPx4* in depression-chronic mild stress model**
Paulina Wigner, Ewelina Synowiec, Tomasz Sliwinski
Laboratory of Medical Genetics, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland
- P6.7. Single nucleotide polymorphisms in genes encoding TPH1 and TPH2 increases risk of Acute Coronary Syndrome**
Rafał Szelenberger¹, Paulina Wigner², Michał Kacprzak³, Michał Bijak¹, Joanna Saluk-Bijak¹
¹University of Lodz, Faculty of Biology and Environmental Protection, Department of General Biochemistry, Poland; ²University of Lodz, Faculty of Biology and Environmental Protection, Laboratory of Medical Genetics, Poland; ³Medical University of Lodz, Intensive Cardiac Therapy Clinic, Poland
- P6.8. Differentially expressed gene transcripts in boar spermatozoa analyzed by RNA-Seq**
Leyland Fraser, Paweł Brym, Karolina Wasilewska
Faculty of Animal Bioengineering, University of Warmia and Mazury in Olsztyn, Poland
- P6.9. Expression of soybean microRNAs and their target genes during chilling stress**
Jakub Kuczyński¹, Joanna Gracz², Agata Tyczevska², Tomasz Twardowski¹
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Department of Protein

Biosynthesis, Poland; ²Institute of Bioorganic Chemistry, Polish Academy of Sciences, Laboratory of Animal Model Organisms, Poland

- P6.10. Metabolism of oxalic acid by *Abortiporus biennis* – transcriptomic analysis**
 Marcin Grąz, Anna Jarosz-Wilkolazka, Grzegorz Janusz, Marta Ruminowicz-Stefaniuk
 Department of Biochemistry, Maria Curie-Skłodowska University, Lublin, Poland
- P6.11. MAP kinases regulate RNA polymerase III activity in LPS-activated macrophages**
 Aneta Jurkiewicz, Damian Graczyk
 Institute of Biochemistry and Biophysics Polish Academy of Sciences, Department of Genetics, Poland
- P6.12. The overexpression of AC19, a common subunit of RNA polymerases I and III affects autophagy in yeast**
 Monika Wiśniewska, Magdalena Boguta, Damian Graczyk
 Institute of Biochemistry and Biophysics Polish Academy of Sciences, Pawińskiego 5a, 02-106 Warsaw, Poland
- P6.13. Influence of chemotherapeutics and irradiation on lncRNAs expression in HNSCC cell lines**
 Kacper Guglas^{1,2,3}, Tomasz Kolenda^{1,3}, Marcel Rys^{1,2}, Anna Teresiak¹, Renata Bliźniak¹, Izabela Łasińska⁴, Jacek Mackiewicz^{4,5,6}, Katarzyna Lamperska¹
¹Laboratory of Cancer Genetic, Greater Poland Cancer Centre, Poznan, Poland; ²Department of Cancer Immunology, Chair of Medical Biotechnology, Poznan University of Medical Sciences, Poznan, Poland; ³Postgraduate School of Molecular Medicine, Medical University of Warsaw, Warszawa, Poland; ⁴Department of Medical and Experimental Oncology, Heliodor Swiecicki Clinical Hospital, Poznan, Poland; ⁵Department of Biology and Environmental Sciences, Poznan University of Medical Sciences, Poznan, Poland; ⁶Department of Diagnostics and Cancer Immunology, Greater Poland Cancer Centre, Poznan, Poland
- P6.14. Quantification of long non-coding RNAs using qRT-PCR method– comparison of different cDNA synthesis methods and RNA stability**
 Tomasz Kolenda^{1,2,6}, Marcel Rys¹, Kacper Guglas^{1,2}, Anna Teresiak¹, Renata Bliźniak¹, Jacek Mackiewicz^{3,4,5}, Katarzyna Lamperska¹
¹Greater Poland Cancer Centre, Laboratory of Cancer Genetic, Poland; ²Medical University of Warsaw, Postgraduate School of Molecular Medicine, Poland; ³Heliodor Swiecicki Clinical Hospital, Department of Medical and Experimental Oncology, Poland; ⁴Poznan University of Medical Sciences, Department of Biology and Environmental Sciences, Poland; ⁵Greater Poland Cancer Centre, Department of Diagnostics and Cancer Immunology, Poland; ⁶Poznan University of Medical Sciences, Chair of Medical Biotechnology, Poland
- P6.15. Isoforms of ER translocon protein Sec61 α - differential expression and involvement in ERAD pathway**

Natalia Sowa, Monika Słomińska-Wojewódzka
University of Gdańsk, Department of Medical Biology and Genetics, Poland

P6.16. MALAT1, MEG3 and UCA1 lncRNAs as potential biomarkers of surgery assessment in head and neck cancers

Tomasz Kolenda^{1,2,3}, Kacper Guglas^{1,2}, Marta Kapałczyńska¹, Patrycja Czerwińska^{3,4}, Anna Teresiak¹, Renata Bliźniak¹, Katarzyna M. Lamperska¹

¹Greater Poland Cancer Centre, Laboratory of Cancer Genetic, Poland; ²Medical University of Warsaw, Postgraduate School of Molecular Medicine, Poland; ³Poznan University of Medical Sciences, Chair of Medical Biotechnology, Poland; ⁴Greater Poland Cancer Centre, Department of Diagnostics and Cancer Immunology, Poland

P6.17. miRNAs set expression profiles in whole blood during prostate cancer patients treatment

Katarzyna Monika Lamperska¹, Piotr Milecki², Tomasz Kolenda^{1,3}, Anna Teresiak¹, Renata Bliźniak¹, Aldona Kaczmarek⁴, Ewa Leporowska⁵, Wiktoria Suchorska⁶, Julian Malicki⁶, Agata Jurczyk-Reszelska¹, Michał Michałak⁷

¹Cancer Genetic Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ²Electro-radiology Department, University of Medical Sciences, Poznan, Poland, Department of Oncological Radiotherapy, Greater Poland Cancer Centre, Poznan, Poland; ³Postgraduate School of Molecular Medicine, Medical University of Warsaw, Poland; ⁴Department of Pathology, Greater Poland Cancer Centre, Poznan, Poland; ⁵Department of Clinical Laboratory, Greater Poland Cancer Centre, Poznan, Poland; ⁶Electro-radiology Department, University of Medical Sciences, Poznan, Medical Physics Department, Greater Poland Cancer Centre, Poznan, Poland; ⁷Department of Computer Science and Statistics, University of Medical Sciences, Poznan, Poland

P6.18. EDEM3 overexpression in HEK293 cells- its role in ricin cytotoxicity and transport from the endoplasmic reticulum to the cytosol

Hanna Sominka, Jowita Nowakowska, Monika Słomińska-Wojewódzka
Department of Medical Biology and Genetics, Faculty of Biology, University of Gdańsk

P6.19. ER degradation-enhancing α -mannosidase-like proteins (EDEM) can regulate amyloid precursor protein (APP) level in HEK293 cells

Jowita Nowakowska, Justyna Czapiewska, Monika Słomińska-Wojewódzka
University of Gdańsk, Faculty of Biology, Department of Medical Biology and Genetics, Poland

P6.20. Non-AUG translation generates new protein isoforms with mitochondrial localization

Anna Miscicka^{1#}, Geoffray Monteuius^{2#}, Lounis Zenad^{1#}, Michał Swirski^{1#}, Olli Niemitalo³, Lidia Wrobel^{3#}, Jahangir Alam², Agnieszka Chacinska^{3,4}, Alexander J. Kastaniotis¹, Joanna Kufel¹

¹Institute of Genetics and Biotechnology, Faculty of Biology, University of Warsaw, 02-106 Warsaw, Poland; ²Faculty of Biochemistry and Molecular Medicine, University of Oulu,

Session 7: Structural studies of large assemblies

- P7.1. The intrinsically disordered F domain of ecdysteroid receptor from *Aedes aegypti* possesses multiple Zn²⁺ and Cu²⁺ binding sites**
 Anna Więch¹, Magdalena Rowińska-Żyrek², Andrzej Ożyhar¹, Marek Orłowski¹
¹Department of Biochemistry, Faculty of Chemistry*, Wrocław University of Science and Technology, Wrocław, Poland; ²Department of Chemistry*, University of Wrocław, Wrocław Poland; *The Leading National Research Centre (KNOW), Wrocław, Poland
- P7.2. N-terminal domain of *Helicoverpa armigera* Ultraspiracle controls functionality of DNA-binding domain and ligand-binding domain**
 Krzysztof Wycisk¹, Zbigniew Pietras², Andrzej Ożyhar¹
¹Department of Biochemistry, Faculty of Chemistry, Wrocław University of Science and Technology, Poland; ²Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Poland
- P7.3. Interaction of replication initiation proteins with ssDNA of AT-rich regions of replication origins**
 Katarzyna Wegrzyn¹, Katarzyna Bury¹, Marzena Nowacka², Marcin Nowotny² and Igor Konieczny¹
¹Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of Gdansk, Abrahama 58, 80-307 Gdansk, Poland; ²Laboratory of Protein Structure, International Institute of Molecular and Cell Biology, 4 Ks. Trojdena Street, 02-109 Warsaw, Poland

Session 8: Molecular bioenergetics

- P8.1. The impact of chronic hypoxia on aerobic metabolism of human endothelial EA.hy926 cells**
 Agnieszka Koziel, Wiesława Jarmuszkiewicz
 Department of Bioenergetics, Adam Mickiewicz University, Poznan, Poland
- P8.2. The relationship between standard reduction potential and thermodynamic constants of antioxidant compounds – creation of Antioxidant Power Series**
 Klaudia Suliborska¹, Monika Baranowska², Agnieszka Bartoszek², Jacek Namieśnik³, Wojciech Chrzanowski¹
¹Department of Physical Chemistry, ²Department of Food Chemistry, Technology and Biotechnology, ³Department of Analytical Chemistry, Faculty of Chemistry, Gdansk University of Technology, Poland
- P8.3. Tryptophan and taurine deficiency affects neuroactive amino acid pool in cerebellum of rats**

Hanna Vinitzskaya, Eugenij Doroshenko, Vladimir Lelevich
Department of Biological Chemistry, Grodno State Medical University, Grodno, Belarus

- P8.4. Cardioprotective flavonoids as natural modulators of mitochondrial potassium channels**
Rafał Kampa^{1,2}, Aleksandra Sęk^{2,3}, Anna Kicińska⁴, Bogusz Kulawiak², Wiesława Jarmuszkiewicz⁴, Adam Szewczyk², Piotr Bednarczyk¹
¹Department of Biophysics, Warsaw University of Life Sciences (SGGW), Warsaw, Poland; ²Laboratory of Intracellular Ion Channels, Nencki Institute of Experimental Biology, Warsaw, Poland; ³Faculty of Chemistry, University of Warsaw, Warsaw, Poland; ⁴Laboratory of Bioenergetics, Adam Mickiewicz University, Poznan, Poland
- P8.5. Identification of potassium channels in the mitochondria of human bronchial epithelial cells**
Aleksandra Sęk^{1,2}, Rafał Kampa^{1,3}, Bogusz Kulawiak¹, Adam Szewczyk¹, Piotr Bednarczyk³
¹Laboratory of Intracellular Ion Channels, Nencki Institute of Experimental Biology, Warsaw, Poland; ²Faculty of Chemistry, University of Warsaw, Warsaw, Poland; ³Department of Biophysics, Warsaw University of Life Sciences (SGGW), Warsaw, Poland
- P8.6. BK-DEC splice variant forms a functional BK_{Ca} channel in the inner mitochondrial membrane**
Shur K. Kucman, Justyna Jędraszko, Piotr Bednarczyk, Adam Szewczyk, Bogusz Kulawiak
Nencki Institute of Experimental Biology Polish Academy of Science, Laboratory of Intracellular Ion Channels, Poland
- P8.7. The phenotype of the yeast *Saccharomyces cerevisiae* double mutants depleted of the copper-and zinc-containing superoxide dismutase (CuZnSOD) and voltage dependent anion channel (VDAC) encoding genes**
Martyna Baranek, Wojciech Grabiński, Hanna Kmita, Andonis Karachitos
Laboratory of Bioenergetics, Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University in Poznań, Poland
- P8.8. Flavonoid-induced changes in oxygen consumption and mitochondrial membrane potential in isolated endothelial mitochondria**
Anna Kicińska¹, Piotr Bednarczyk², Rafał Kampa^{2,3}, Adam Szewczyk³, Wiesława Jarmuszkiewicz¹
¹Adam Mickiewicz University, Poznan, Department of Bioenergetics, Poland; ²Warsaw University of Life Sciences (SGGW), Department of Biophysics, Poland; ³Nencki Institute of Experimental Biology, Laboratory of Intracellular Ion Channels, Poland
- P8.9. Role of mitochondrial alternative oxidase in successful anhydrobiosis of the tardigrade *Milnesium tardigradum***
Daria Grobys, Wiktor Rzeźniczak, Łukasz Kaczmarek, Robert Sobkowiak, Milena Roszkowska, Hanna Kmita
Department of Bioenergetics, Faculty of Biology, Adam Mickiewicz University, Poznań, Poland

- P8.10. Influence of *Acanthamoeba castellanii* UCP protein expressed in yeast on viability of SOD1- and SOD2-deficient yeast under oxidative stress**
N. Antos-Krzemińska, K. Grądzka, K. Jasiewicz, W. Nobik, W. Jarmuszkiewicz
Adam Mickiewicz University in Poznan, Departement of Bioenergetics, Poland
- P8.11. The role of bleomycin hydrolase in mitochondria functionality**
Jarosław Zimny¹, Daria Grobys², Joanna Perła-Kaján¹, Hanna Kmita²
¹Department of Biochemistry and Biotechnology, Poznań University of Life Sciences, Poland; ²Laboratory of Bioenergetics, Institute of Molecular Biology and Biotechnology, Faculty of Biology, Adam Mickiewicz University in Poznań, Poland
- P8.12. Metabolic markers of active and anhydrobiotic tardigrades – preliminary results**
Milena Roszkowska^{1,2}, Andonis Karachitos¹, Daria Grobys¹, Łukasz Kaczmarek², Hanna Kmita¹
¹Department of Bioenergetics, Faculty of Biology, Adam Mickiewicz University, Poznań (Poland); ²Department of Animal Taxonomy and Ecology, Faculty of Biology, Adam Mickiewicz University, Poznań (Poland)
- P8.13. Mitochondrial stress response in *parkin* mutant fibroblasts derived from patients with Parkinson's disease**
Iryna Kamienieva¹, Jerzy Duszyński¹, Galina Skibo², Joanna Szczepanowska¹
¹Nencki Institute of Experimental Biology, Polish Academy of Science, Department of Biochemistry, Poland; ²Bogomoletz Institute of Physiology, National Academy of Sciences of Ukraine, Department of Cytology, Ukraine
- P8.14. Mitochondrial dynamics and function in bronchial epithelial cells after long-term exposure to total particulate matter from a candidate modified-risk tobacco product and reference cigarette**
Dominika Malinska¹, Jaroslaw Walczak¹, Karolina Drabik¹, Bernadeta Michalska¹, Jędrzej Szymanski¹, Monika Prill¹, Paulina Patalas-Krawczyk¹, Aleksandra Wojtala¹, Małgorzata Partyka¹, Marco van der Toorn², Staphanie Johne², Karsta Luettich², Julia Hoeng², Jerzy Duszyński¹, Mariusz R. Wieckowski¹, Joanna Szczepanowska¹
¹Nencki Institute of Experimental Biology, Polish Academy of Sciences, 3 Pasteur Street, 02-093 Warsaw, Poland; ²Philip Morris International, Philip Morris Products S.A., Quai Jeanrenaud 5, 2000 Neuchâtel, Switzerland
- P8.15. Mutation of genes participated in mitochondrial quality control in PD patients**
Klaudia Pacewicz^{*1}, Małgorzata Popis^{*1}, Adrian Brodziński^{*1}, Wojciech Dłubała^{*1}, Hanna Kmita¹, Jolanta Florczak – Wyspianska², Małgorzata Wojtkowska¹, Sławomir Michalak³
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and Biotechnology, Department of Bioenergetics, Umultowska 89, 61-614 Poznań, Poland; ²University of Medical Science in Poznań, Department of Neurology, Przybyszewskiego 49, 60-355 Poznań, Poland; ³University of Medical Science in Poznań, Department of Neurochemistry and Neuropathology, Przybyszewskiego 49, 60-355 Poznań, Poland; *authors on an equal contribution

P8.16. Lipophilic antioxidants in blood plasma HIV-infected patients treated by antiretroviral drugs

Mikhail N. Kurbat

Grodno State Medical University, Belarus

Session 11: Medical biotechnology in regenerative medicine and drug research

P11.1. Alpha ketoglutarate promotes differentiation and mineralization of osteoblasts *in vitro*

Aleksandra Żurek¹, Magdalena Mizerska-Kowalska¹, Adrianna Sławińska-Brych², Katarzyna Kaławaj¹, Agnieszka Bojarska-Junak³, Martyna Kandefe-Szerszeń¹, Barbara Zdzińska¹

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P11.2. Small-molecule inhibition of PEX5-PEX14 protein-protein interaction

M. Kolonko^{1,2}, M. Dawidowski^{2,3}, V.C. Kalel⁴, R. Erdmann⁴, M. Sattler^{2,3}, G.M. Popowicz^{2,3}

¹Wrocław University of Science and Technology, Faculty of Chemistry, Department of Biochemistry, Poland; ²Institute of Structural Biology, Helmholtz Zentrum München, Germany; ³Center for Integrated Protein Science Munich at Chair of Biomolecular NMR, Department Chemie, Technische Universität München, Germany; ⁴Institute of Biochemistry and Pathobiochemistry, Department of Systems Biochemistry, Faculty of Medicine, Germany

P11.3. Improved production of caffeoylquinic acid derivatives in pRI-transformed plants of *Rhaponticum carthamoides* and biological activity

Ewa Skąła¹, Laurent Picot², Michał Bijak³, Joanna Saluk-Bijak³, Tomasz Kowalczyk⁴, Janusz Szemraj⁵, Agnieszka Kicel⁶, Monika A. Olszewska⁶, Przemysław Sitarek¹

¹Medical University of Lodz, Department of Biology and Pharmaceutical Botany, Poland; ²University of La Rochelle, UMRi CNRS7266 LIENSs, France; ³University of Lodz, Department of General Biochemistry, Faculty of Biology and Environmental Protection, Poland; ⁴University of Lodz, Department of Genetics and Plant Molecular Biology and Biotechnology, Poland; ⁵Medical University of Lodz, Department of Medical Biochemistry, Poland; ⁶Medical University of Lodz, Department of Pharmacognosy, Poland

P11.4. Growth of *Leonurus sibiricus* L. roots with over-expression of AtPAP1 transcriptional factor in closed bioreactor, production of bioactive phenolic compounds and evaluation of their biological activity

Przemysław Sitarek¹, Tomasz Kowalczyk², Laurent Picot³, Dorota Michalska-Hejduk⁴, Michał Bijak⁵, Adam J. Białas⁶, Marzena Wielanek⁷, Tomasz Śliwiński⁸, Ewa Skała¹

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Biochemistry, Faculty of Biology and Environmental Protection, Poland; ⁶Medical University of Lodz, Department of Pneumology and Allergy, 1st Chair of Internal Medicine, Poland; ⁷University of Lodz, Department of Plant Physiology and Biochemistry, Faculty of

Biology and Environmental Protection, Poland; ⁸University of Lodz, Laboratory of Molecular Genetics, Łódź, Poland

P11.5. Peptide-based biopolymers PolyRGD to be used for pro-regenerative purposes

Agnieszka Żylicz-Stachula^{1,2}, Joanna Żebrowska^{1,2}, Natalia Krawczun^{1,2}, Małgorzata Palczewska¹, Piotr Mucha³, Piotr M. Skowron^{1,2}

¹University of Gdansk, Faculty of Chemistry, Department of Molecular Biotechnology, Poland; ²BioVentures Institute Ltd., Poland; ³University of Gdansk, Faculty of Chemistry, Department of Molecular Biochemistry

P11.6. Identification of a novel protein interaction with the EKLF transcription factor (Erythroid Krüppel-like factor)

Anna Witucka, Klaudia Kulczyńska, Mirosława Siatecka

Institute of Experimental Biology, Department of Genetics, University of Adam Mickiewicz, 61-614 Poznań, Poland

P11.7. Cytotoxic potential analysis of biomaterials modified with proteolytic enzyme inhibitors

Katarzyna Szafapata¹, Mateusz Pięt², Justyna Kaprał³, Roman Paduch², Bożena Pawlikowska-Pawłęga³, Monika Osińska-Jaroszuk¹, Anna Jarosz-Wilkołazka¹

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P11.8. Functionalization of silk with metal binding peptides to produce iron oxide/silk composite spheres for theranostics purpose

Kamil Kucharczyk^{1,2}, Tomasz Deptuch^{1,2}, Karolina Penderecka^{1,2}, Andrzej Mackiewicz^{1,2}, Hanna Dams-Kozłowska^{1,2}

¹Poznan University of Medical Sciences, Department of Medical Biotechnology, Poland;

²Greater Poland Cancer Centre, Department of Diagnostics and Cancer Immunology, Poland

- P11.9. How to create drug delivery systems based on supramolecular compounds, proteins and carbon nanotubes?**
A. Jagusiak, B. Piekarska, B. Stopa, G. Zemanek, K. Chłopaś, O. Chmura
Jagiellonian University Medical College, Faculty of Medicine, Chair of Medical Biochemistry, Krakow, Poland
- P11.10. Tetragametic chimeras in DNA testing, diagnostics, and therapy**
Anna Jędrzejak
Regenerative Medicine and Cancer Research Section, Student's Naturalists Science Club, Adam Mickiewicz University in Poznań, Poznań, Poland
- P11.11. Endocytosis, intracellular trafficking and degradation behavior of functionalized silk particles for targeted drug delivery**
Anna Florczak^{1,2}, Andrzej Mackiewicz^{1,2}, Hanna Dams-Kozłowska^{1,2}
¹Chair of Medical Biotechnology, Poznan University of Medical Sciences, Poznan, Poland; ²Department of Diagnostics and Cancer Immunology, Greater Poland Cancer Centre, Poznan, Poland
- P11.12. Genistein-mediated lysosomal degradation of main pathogenic factors of Alzheimer's disease as a novel therapeutic strategy**
Karolina Pierzynowska¹, Magdalena Podlacha^{1,2}, Lidia Gaffke¹, Irena Majkutewicz², Jagoda Mantej¹, Dorota Myślińska², Grzegorz Węgrzyn¹
¹Department of Molecular Biology, Faculty of Biology, University of Gdańsk, Wita Stwosza 59, 80-308 Gdańsk, Poland; ²Department of Animal and Human Physiology, Faculty of Biology, University of Gdańsk, Wita Stwosza 59, 80-308 Gdańsk, Poland
- P11.13. Degradation of glycosaminoglycans through autophagy stimulation in mucopolysaccharidosis type III**
Lidia Gaffke, Karolina Pierzynowska, Grzegorz Węgrzyn
University of Gdańsk, Department of Molecular Biology, Poland
- P11.14. Structural investigations on the components synergy of a new proposed regenerative treatment for periodontal lesions**
Eugenia Eftimie Totu¹, Roxana Buga¹, Daniel Petre¹, Tiberiu Totu¹, Daniela Mănuc², Corina Marilena Cristache²
¹University Politehnica of Bucharest, Romania; ²University of Medicine and Pharmacy Carol Davila, Bucharest, Romania
- P11.15. 3-Bromopyruvic acid affects the mobility and redox balance of metastatic cells**
Monika Pichla¹, Natalia Pieńkowska¹, Jolanta Sroka², Katarzyna Piwowarczyk², Zbigniew Madeja², Grzegorz Bartosz³, Izabela Sadowska-Bartosz¹
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- P11.16. Nrf2 influences satellite cells and muscle regeneration but does not aggravate the progression of Duchenne muscular dystrophy**
Iwona Bronisz-Budzynska, Magdalena Kozakowska, Katarzyna Chwalenia, Paulina Podkalicka, Olga Mucha, Agnieszka Loboda, Alicja Jozkowicz, Jozef Dulak
Jagiellonian University, Faculty of Biochemistry, Biophysics and Biotechnology, Department of Medical Biotechnology, Poland
- P11.17. The influence of polyphenolic phytochemicals on the redox homeostasis of cells**
Monika Baranowska, Klaudia Suliborska, Zuzanna Koziara, Emon Asaduzzaman, Wojciech Chrzanowski, Jacek Namieśnik, Agnieszka Bartoszek
Gdansk University of Technology, Faculty of Chemistry, Gdansk, Poland
- P11.18. CRISPR/Cas9 editing of heme oxygenase-1 affects cardiomyocytes differentiated from human induced pluripotent stem cells**
Mateusz Jeż¹, Jacek Stępniewski¹, Kalina Andrysiak¹, Alan Kania², Łukasz Chrobok², Katarzyna Palus-Chramiec², Marian H. Lewandowski², Alicja Józkwicz¹, Józef Dulak^{1,3}
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Session 13: Metabolic activation of xenobiotics –therapeutic target and drug monitoring

- P13.1. Metabolism of antitumor unsymmetrical bis-acridines in liver microsomes and cytosol: Identification of the metabolites and metabolic pathways of the compounds**
Anna Mieszkowska, Agnieszka Potęga, Zofia Mazerska
Gdańsk University of Technology, Faculty of Chemistry, Department of Pharmaceutical Technology and Biochemistry, Poland
- P13.2. The effect of phytochemicals and their combination on the expression and activity of Nrf2 in human pancreatic cancer cells**
Marta Cykowiak, Hanna Szaefer, Violetta Krajka-Kuźniak
Department of Pharmaceutical Biochemistry, Poznan University of Medical Sciences, 60-781 Poznań, 4 Świącicki street, Poland
- P13.3. Generation of hydrogen peroxide by dietary antioxidants**
Michalina Grzesik¹, Ireneusz Stefaniuk², Jacek Namieśnik³, Grzegorz Bartosz⁴, Izabela Sadowska-Bartos¹
¹Department of Analytical Biochemistry, Faculty of Biology and Agriculture, University of Rzeszów, Zelwerowicza Street 4, 35-601 Rzeszów, Poland; ²Teaching and Research Center of Microelectronics and Nanotechnology, Faculty of Mathematics and Natural Sciences,

University of Rzeszów, Pigoń 1, 35-959 Rzeszów, Poland; ³Department of Analytical Chemistry, Faculty of Chemistry, Gdańsk University of Technology, Narutowicza Street 11/12, 80-233 Gdańsk, Poland; ⁴Department of Biochemistry and Cell Biology, University of Rzeszów, Faculty of Biology and Agriculture, Zelwerowicza Street 4, 35-601 Rzeszów, Poland

Session 14: New biomarkers in neurodegenerative diseases

- P14.1. Plant's compounds modulate GABA-shunt enzymes activity**
 Jowita A. Rzajew, Bożena Ferenc, Elżbieta Rębas
 Medical University of Łódź, Department of Molecular Neurochemistry, Chair of Medical Biochemistry, Poland
- P14.2. Altered PMCA composition in differentiated PC12 cells causes changes in CCL5 – induced response**
 Tomasz Radzik, Bożena Ferenc, Ludmila Zylinska
 Department of Molecular Neurochemistry, Medical University of Lodz, Poland
- P14.3. Correlation between the concentration of fibrinogen in blood platelets and the degree of platelet aggregation in multiple sclerosis**
 Angela Dziejdzic¹, Elzbieta Miller², Joanna Saluk-Bijak¹, Michal Bijak¹
¹University of Lodz, Department of General Biochemistry, Poland; ²Medical University of Lodz, Department of Physical Medicine, Poland

Session 15: New molecular targets in personalized therapy of cancer

- P15.1. Glucose transporters, symporters and sodium/hydrogen exchangers – new targets for clear cell renal cell carcinoma therapy**
 Piotr Popławski, Katarzyna Rodzik, Beata Rybicka, Agnieszka Piekietko-Witkowska
 Centre of Postgraduate Medical Education, Department of Biochemistry and Molecular Biology, Warsaw, Poland
- P15.2. The translational aspect of CTCs aggressive phenotype in breast cancer patients**
 Justyna Topa¹, Aleksandra Markiewicz¹, Anna Nagel¹, Jolanta Szade², Hanna Majewska², Jarosław Skokowski³, Barbara Seroczynska⁴, Marzena Welnicka-Jaśkiewicz⁵, Anna J. Żaczek¹
¹Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of Gdansk, Poland; ²Department of Pathology, Medical University of Gdansk, Poland; ³Department of Surgical Oncology, Medical University of Gdansk, Poland; ⁴Department of Medical Laboratory Diagnostics and Bank of Frozen Tissues and Genetic Specimens, Medical University of Gdansk, Poland; ⁵Department of Oncology and Radiotherapy, Medical University of Gdansk, Poland
- P15.3. Effect of L- and D-isomers of ascorbic acid on the levels of 5-methylcytosine and its epigenetic derivatives generated by TET family proteins in the genome of established, human cancer cell lines**

Maciej Gawroński, Marta Starczak, Martyna Modrzejewska, Daniel Gackowski
 Nicolaus Copernicus University in Toruń, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Department of Clinical Biochemistry, Poland

- P15.4. Profile of the products of active DNA demethylation pathways in leukocytes of breast and colon cancer patients**
 Marta Starczak¹, Ewelina Zarakowska¹, Martyna Modrzejewska¹, Tomasz Dziaman¹, Anna Szpila¹, Kinga Linowiecka¹, Justyna Szpotan¹, Maciej Gawronski¹, Zbigniew Banaszekiewicz², Bogdan Zurawski³, Olga Urbanowska-Domanska³, Marek Foksinski¹, Ryszard Olinski¹, Daniel Gackowski¹

¹Department of Clinical Biochemistry, Faculty of Pharmacy, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, Poland; ²Department of Surgery, Faculty of Medicine, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Toruń, Poland; ³The Franciszek Lukaszczyk Oncology Centre in Bydgoszcz, Poland

- P15.5. Purification and initial characterization of Nucleobindin-2 protein from *Gallus gallus***

Anna Skorupska, Andrzej Ożyhar, Dominika Bystranowska
 Wrocław University of Science and Technology, Faculty of Chemistry, Department of Biochemistry, Wrocław, Poland

- P15.6. Phenotypic plasticity of primary and metastatic breast cancer cells in the context of epithelial-mesenchymal transition program**
 Aleksandra Markiewicz¹, Anna Nagel¹, Jolanta Szade², Hanna Majewska², Jaroslaw Skokowski³, Barbara Seroczynska⁴, Tomasz Stokowy⁵, Marzena Welnicka-Jaskiewicz⁶, Anna J Żaczek¹

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- P15.7. Identification of novel mechanisms of transport of proteins to primary cilia**

Sylvia Niedziółka, Paweł Niewiadomski
 Centre of New Technologies - University of Warsaw, Laboratory of Molecular and Cellular Signaling, Poland

- P15.8. Transcription factors regulating the expression of genes from the Grainyhead-like (*GRHL*) family in the context of human cancer**

Agnieszka Taracha, Grzegorz Kotarba, Tomasz Wilanowski
 Laboratory of Signal Transduction, Nencki Institute of Experimental Biology of Polish Academy of Sciences, 3 Pasteur St., 02-093 Warsaw, Poland

- P15.9. Regulation of Gli proteins by the Ubiquitin-Proteasome System**
Tomasz Uśpieński, Paweł Niewiadomski
Centre of New Technologies University of Warsaw
- P15.10. MLK4 drives aggressiveness of triple-negative breast cancer through NF- κ B dependent mechanism**
Anna A. Marusiak¹, Monika K. Prelowska^{1,4}, Dawid Mehlich¹, Michał Lazniewski^{2,3}, Klaudia Kaminska¹, Adam Gorczynski⁵, Aleksandra Korwat⁵, Olga Sokolowska^{1,4,6}, Jakub Golab^{6,7}, Wojciech Biernat⁵, Dariusz Plewczynski^{2,8}, John Brognard⁹, Dominika Nowis^{1,6,10}
¹Laboratory of Experimental Medicine, Centre of New Technologies, University of Warsaw, Poland, ²Laboratory of Functional and Structural Genomics, Centre of New Technologies, University of Warsaw, Poland, ³Department of Physical Chemistry, Faculty of Pharmacy, Medical University of Warsaw, Poland, ⁴Postgraduate School of Molecular Medicine, Medical University of Warsaw, Poland, ⁵Department of Pathomorphology, Medical University of Gdansk, Poland, ⁶Department of Immunology, Medical University of Warsaw, Poland, ⁷Centre for Preclinical Research and Technology, Medical University of Warsaw, Warsaw, Poland, ⁸Faculty of Mathematics and Information Science, Warsaw University of Technology, Poland, ⁹National Cancer Institute, Frederick, Maryland, USA, ¹⁰Genomic Medicine, Medical University of Warsaw, Poland
- P15.11. Import-export business: nuclear trafficking of Gli proteins**
Lukasz Markiewicz, Paweł Niewiadomski
Centre of New Technologies - University of Warsaw, Laboratory of Molecular and Cellular Signaling, Poland
- P15.12. Ghrelin and GHS-R receptor in colorectal cancer**
Adam. I. Cygankiewicz¹, Kacper Kuśmierk¹, Marcin Włodarczyk^{2,3}, Łukasz Dzik³, Adam Dzik³, Jakub Fichna², Wanda M. Krajewska¹
¹ Department of Cytobiochemistry, Faculty of Biology and Environmental Protection, University of Lodz, Lodz, Poland; ² Department of Biochemistry, Faculty of Medicine, Medical University of Lodz, Lodz, Poland; ³ Department of General and Colorectal Surgery, Faculty of Military Medicine, Medical University of Lodz, Lodz, Poland
- P15.13. Vemurafenib-resistant melanoma cells demonstrate altered invadopodia and changes in sensitivity to EGFR and c-Met inhibitors**
Ewelina Dratkiewicz, Aleksandra Simiczyjew, Katarzyna Pietraszek-Gremplewicz, Dorota Nowak
Department of Cell Pathology, Faculty of Biotechnology, University of Wrocław, Poland
- P15.14. In research of molecular mechanism of gastric cancer cell response to FGFR inhibitor**
Dima Antoun¹, Kamila Kitowska¹, Monika Górską¹, Andrzej C. Składanowski¹, Aleksandra Stańczak², Maciej Wieczorek², Rafał Sądej¹
¹ Intercollegiate Faculty of Biotechnology, University of Gdańsk and Medical University of Gdańsk, Department of Molecular Enzymology, Poland; ² Research and Development Centre, Celon Pharma S.A., Łomianki, Poland

- P15.15. TRIM28 protein domains in self-renewal process in human induced pluripotent stem cells (hiPSC)**
Sylvia Mazurek^{1,2,3}, Patrycja Czerwińska^{1,3}, Maciej Wiznerowicz^{1,3}
¹Department of Cancer Immunology, Chair of Medical Biotechnology, Poznan University of Medical Sciences, Poznan, Poland; ²Postgraduate School of Molecular Medicine, Medical University of Warsaw, Warsaw, Poland; ³Gene Therapy Laboratory, Department of Cancer Immunology, Greater Poland Cancer Centre, Poznan, Poland
- P15.16. On the Quest of Therapeutic Opportunities - filtering “big data” to find novel oncogenic drivers**
Katarzyna Chojnowska, Paweł Niewiadomski
Laboratory of Molecular and Cellular Signaling, Centre of New Technologies, University of Warsaw
- P15.17. CD151 regulates activity of ERBB receptors**
Magdalena Mieszkowska¹, Dominika Piasecka², Piotr Potemski³, Rafal Sadej¹, Hanna M. Romanska²
¹Intercollegiate Faculty of Biotechnology University of Gdansk and Medical University of Gdansk, Department of Molecular Enzymology, Poland; ²Medical University of Lodz, Department of Pathology, Poland; ³Medical University of Lodz and Copernicus Memorial Hospital in Lodz, CCC & T, Department of Chemotherapy, Poland
- P15.18. LATS1 HIPPO kinase is involved in cancer stem cell formation and EMT in melanoma**
Urszula Kazimierczak¹, Ewelina Dondajewska¹, Maria Zajączkowska¹, Andrzej Mackiewicz^{1,2}
¹Poznan University of Medical Sciences, Chair of Medical Biotechnology, Department of Cancer Immunology; ²Greater Poland Cancer Centre, Department of Cancer Diagnostics and Immunology
- P15.19. The influence of quantum dots Ag-In-Zn-S conjugated with unsymmetrical bisacridine derivatives on cytotoxicity and cell cycle distribution in lung and colon cancer cells**
Joanna Pilch¹, Piotr Bujak², Anna M. Nowicka³, Ewa Augustin¹
¹Gdańsk University of Technology, Faculty of Chemistry, Department of Pharmaceutical Technology and Biochemistry, Poland; ²Warsaw University of Technology, Faculty of Chemistry, Poland; ³University of Warsaw, Faculty of Chemistry, Poland

Session 16: Clinical metabolomics

- P16.1. A simple UPLC-UV method for normalization of cellular concentration of metabolites involved in an active DNA demethylation process**
Martyna Modrzejewska, Maciej Gawroński, Marta Starczak, Marek Foksiński, Daniel Gackowski
Nicolaus Copernicus University in Toruń, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Department of Clinical Biochemistry, Poland

- P16.2. Consequences of changes in serum FA composition in chronic kidney disease on liver lipid metabolism**
Aleksandra Czumaj¹, Tomasz Śledziński¹, Michał Chmielewski³, Adriana Mika^{1,2}
¹Department of Pharmaceutical Biochemistry, Medical University of Gdansk, Gdansk, Poland; ²Department of Environmental Analysis, Faculty of Chemistry, University of Gdansk, Gdansk, Poland; ³Department of Nephrology, Transplantology and Internal Medicine, Medical University of Gdansk, Gdansk, Poland
- P16.3. Metabolic profiling of free amino acids in blood plasma of experimental animals in the model of acute and chronic phase of allergic contact dermatitis**
Maria S. Chumachenko, Elena O. Korik, Igor V. Semak
Belarusian State University, Minsk, Belarus
- P16.4. Preferential polyunsaturated fatty acids uptake by colorectal cancer cells**
Alicja Pakiet¹, Aleksandra Czumaj², Ewa Sokołowska², Jarosław Kobiela³, Wojciech Makarewicz⁴, Piotr Stepnowski¹, Tomasz Śledziński², Adriana Mika^{1,2}
¹University of Gdańsk, Department of Environmental Analysis, Poland; ²Medical University of Gdańsk, Department of Pharmaceutical Biochemistry, Poland; ³Medical University of Gdańsk, Department of General, Endocrine and Transplant Surgery, Poland; ⁴Medical University of Gdańsk, Department of Oncologic Surgery, Poland
- P16.5. Methotrexate-induced inhibition of amino acid transport via the gamma-glutamine cycle (GGC)**
Yana Novogrodskaya, Mikhail Kurbat
Grodno State Medical University, Belarus
- P16.6. Application of untargeted metabolomic approach to study biochemical changes in women with polycystic ovary syndrome**
Anna Stefaniak¹, Magdalena Buszewska-Forajta¹, Aleksandra Szybiak², Agnieszka Kowalewska³, Dominik Rachoń², Michał J. Markuszewski¹
¹Medical University of Gdańsk, Department of Biopharmacy and Pharmacodynamics, Poland; ²Medical University of Gdańsk, Department of Clinical and Experimental Endocrinology, Poland; ³Specialist Medical Practice Agnieszka Kowalewska, Poland
- P16.7. Metabolomic insight into the pathomechanism of prostate cancer through the "fingerprinting" analysis of seminal fluid**
Magdalena Buszewska-Forajta¹, Małgorzata Patejko¹, Wiktoria Struck-Lewicka¹, Joanna Raczak-Gutknecht¹, Anna Stefaniak¹, Magdalena Misiura², Marcin Markuszewski³, Marcin Matuszewski³, Michał J. Markuszewski¹
¹Department of Biopharmaceutics and Pharmacodynamics, Medical University of Gdańsk, Poland; ²Department of Clinical Molecular Biology, Medical University of Białystok, Poland; ³Department of Urology, Medical University of Gdańsk, Poland

- P16.8. Analysis of serum lipid fraction of patients suffering from cardiovascular disease related to chronic kidney disease**
Łukasz Marczak¹, Jakub Idkowiak¹, Joanna Tracz¹, Magdalena Łuczak¹,
Bartłomiej Perek², Katarzyna Kostka-Jeziorny², Alina Podkowińska²,
Maciej Stobiecki¹
¹Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan, Poland; ²Karol
Marcinkowski University of Medical Sciences, Poznan, Poland

Session 17: Tumor microenvironment in cancer progression

- P17.1. Spontaneous senescence of ovarian cancer cells: first observations and further research directions**
Anna Witucka, Justyna Mikuła-Pietrasik, Martyna Pakuła, Krzysztof Książek
Department and Clinic of Hypertensiology, Angiology and Internal Medicine, Poznań
University of Medical Sciences, Długa 1/2 Str., 61-848 Poznan, Poland
- P17.2. Carboplatin and paclitaxel induce premature senescence in normal peritoneal mesothelial cells and fibroblasts**
Martyna Pakuła, Justyna Mikuła-Pietrasik, Anna Witucka, Krzysztof Książek
Poznań University of Medical Sciences, Department of Hypertensiology, Angiology and
Internal Medicine, Poland
- P17.3. Snail regulation of microRNAs during epithelial-to-mesenchymal transition in HT29 colorectal cancer cells**
Patrycja Przygodzka¹, Izabela Papiewska-Pajak¹, Helena Bogusz¹, Joanna
Boncela¹, M. Anna Kowalska^{1,2}
¹Institute of Medical Biology, PAS, 106 Lodowa Street, 93232 Lodz, Poland; ²Department of
Pediatrics, The Children's Hospital of Philadelphia, Philadelphia, PA 19104, USA
- P17.4. The role of FGFR2-regulated E3 ubiquitin ligases in progesterone receptor (PR) turnover in breast cancer cells**
Kamil Mieczkowski*, Kamila Kitowska*, Monika Górka, Andrzej C.
Składanowski, Rafał Sądej
Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of
Gdansk, Department of Molecular Enzymology, Gdansk, Poland; * the authors equally
contributed to this study
- P17.5. FGFR2 involvement in regulation of autophagy**
Monika Górka, Dominika Czaplinska, Dima Antoun, Kamila Kitowska,
Kamil Mieczkowski, Andrzej C. Składanowski, Rafał Sądej
Intercollegiate Faculty of Biotechnology, University of Gdańsk and Medical University of
Gdańsk, Department of Molecular Enzymology, Poland
- P17.6. Impact of oxygen conditions on apoptosis and cell cycle of human ovarian cancer cell line A2780 treated with cisplatin and resveratrol**

Agnieszka Synowiec¹, Klaudia Brodaczevska¹, Sławomir Lewicki², Gabriel Wcisło³, Claudine Kieda¹

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²Department of Regenerative Medicine and Cell Biology, Military Institute of Hygiene and Epidemiology, Warsaw, Poland; ³Clinical Department of Oncology and Hematology, Central Clinical Hospital of MSWiA, Warsaw, Poland

P17.7. Engineering and biosynthesis of TRF1 and TRF2 telomeric proteins for a novel anticancer chemotherapy development

Joanna Zebrowska, Marta Fiutak, Daria Krefft, Maciej Prusinowski, Aleksandra Skokowska, Marta Głębocka, Małgorzata Witkowska, Piotr Skowron, Agnieszka Żylicz-Stachula

University of Gdansk, Faculty of Chemistry, Department of Molecular Biotechnology, Poland

Session 19: Inside plant organelles: structure, function and stress response

P19.1. Changes in gene expression and identification of potential molecular markers of resistance to clubroot disease (*Plasmodiophora brassicae*) in Brassica plants

Monika Markiewicz, Lech Michalczyk

Research Institute of Horticulture, Department of Applied Biology, Poland

P19.2. High zinc in medium affects for changes of content in individual fractions of pectin in tobacco leaves

Aleksandra Weremczuk¹, William G.T. Willats², Danuta Maria Antosiewicz¹

¹Faculty of Biology, University of Warsaw, Miecznikowa 1, 02-096, Warsaw, Poland;

²School of Agriculture, Food and Rural Development, Newcastle University, Newcastle upon Tyne, NE1 7RU, England

P19.3. Spotlight on mitochondrial respiration-dependent activity of transcription in *Arabidopsis* chloroplast

Małgorzata Kwasniak-Owczarek, Aleksandra Adamowicz, Urszula Kazmierczak, Hanna Janska

University of Wrocław, Faculty of Biotechnology, Department of Cellular Molecular Biology, F. Joliot-Curie 14a, 50-383 Wrocław, Poland

Session 20: Plant biochemistry and metabolomics

P20.1. Occurrence of HpLV and ArMV in hop gardens in Poland

Marcin Przybyś, Urszula Skomra, Grażyna Korbecka-Glinka

Institute of Soil Science and Plant Cultivation – State Research Institute, Department of Plant Breeding and Biotechnology, Poland

P20.2. Profiling DGAT acyl donor specificity in castor bean and soybean seed development

Kamil Demski, Justyna Rygelska, Antoni Banaś

Intercollegiate Faculty of Biotechnology UG&MUG, University of Gdańsk, Poland

- P20.3. The effect of drought on the content and degradation of soluble sugars and starch in *Solanum tuberosum* L. leaves**
Sławomir Orzechowski, Ilona Cisowska, Joanna Cania, Magdalena Chądzyńska, Dorota Marecka, Anna Rybarczyk-Płońska, Joanna Jasnos, Dorota Sitnicka
Department of Biochemistry, Faculty of Agriculture and Biology; Warsaw University of Life Sciences-SGGW, Warsaw, Poland
- P20.4. Plant polyphenols prevent the deleterious effects of Shiga-like enterotoxins**
Magdalena Komiazyk¹, Joanna Gasik^{1,2}, Małgorzata Palczewska³, Magdalena Biesaga², Sławomir Pikula¹, Patrick Groves³
¹Nencki Institute of Experimental Biology PAS, Poland; ²University of Warsaw, Department of Chemistry, Poland; ³University of Gdansk, Department of Chemistry, Poland
- P20.5. Indole-3-acetyl-*myo*-inositol biosynthesis pathway is regulated during germination of maize seeds**
Maciej Ostrowski¹, Emilia Wilmowicz², Anna Ciarkowska¹, Agata Dalka¹, Bartosz Iglński¹, Anna Jakubowska¹
¹Nicolaus Copernicus University in Toruń, Department of Biochemistry, Poland; ²Nicolaus Copernicus University in Toruń, Chair of Plant Physiology and Biotechnology, Poland
- P20.6. Antioxidant properties of plant oils: tocopherols and beyond**
Agnieszka Trela¹, Renata Szymańska²
¹AGH University of Science and Technology, Department of Medical Physics and Biophysics, Poland; ²AGH University of Science and Technology, Department of Medical Physics and Biophysics, Poland
- P20.7. Generation of *Arabidopsis thaliana* lines with reduced CPT3 expression**
Agnieszka Onyśk, Ewa Świeżewska, Liliana Surmacz
Institute of Biochemistry and Biophysics Polish Academy of Sciences, Department of Lipid Biochemistry, Poland
- P20.8. Effects of disrupted vesicular transport on plant sterol biosynthesis and localization**
Marta Zajbt-Łuczniwska¹, Małgorzata Lichočka¹, Maciej Sojka², Grzegorz Spólnik², Małgorzata Gutkowska-Stronkowska¹
¹Institute of Biochemistry and Biophysics, Polish Academy of Sciences, 02-106 Warsaw, Poland; ²Institute of Organic Chemistry, Polish Academy of Sciences, 01-224 Warsaw, Poland
- P20.9. Functional analysis of scopoletin UDP-glucosyltransferase in plant responses to environmental stresses**
Izabela Perkowska, Joanna Siwinska, Ewa Łojkowska, Anna Ihnatowicz
Intercollegiate Faculty of Biotechnology of University of Gdansk and Medical University of Gdansk, Department of Biotechnology, Poland

P20.10. Lysophospholipid acyltransferases (LPLATs) from *Camelina sativa* – activity, biochemical characteristics and substrate specificity

Sylwia Klińska, Katarzyna Jasieniecka-Gazarkiewicz, Antoni Banaś
Institute of Biotechnology, Intercollegiate Faculty of Biotechnology UG & MUG, Gdańsk, Poland

Session 22: Proteomics of ageing and diseases

P22.1. Missense mutation of FBP2 gene causes reversible early childhood leukodystrophy

Janusz Wiśniewski¹, Agnieszka Gizak¹, Susan Diegmann², Peter Huppke², Jutta Gärtner², Dariusz Rakus¹

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P22.2. MicroLC-SWATH-MS proteome profiling of fresh-frozen normal and cancerous human breast tissue

Katarzyna Macur¹, Aleksandra E. Lewandowska², Anna Fel², Stanisław Ołdziej², Jarosław Skokowski³, Tomasz Bączek⁴, Paulina Czaplewska¹

¹Intercollegiate Faculty of Biotechnology University of Gdańsk and Medical University of Gdańsk, Core Facility Laboratories, Poland; ²Intercollegiate Faculty of Biotechnology University of Gdańsk and Medical University of Gdańsk, Laboratory of Biopolymer Structure, Poland; ³Medical University of Gdansk, Department of Surgical Oncology, Poland; ⁴Medical University of Gdańsk, Department of Pharmaceutical Chemistry, Poland

P22.3. Proteomic analysis red blood cell membrane from patients with polycythemia vera

Anna Fel¹, Aleksandra Lewandowska¹, Stanisław Ołdziej¹, Petro E. Petrides², Jacek R. Wiśniewski³

¹University of Gdansk and Medical University of Gdansk, Intercollegiate Faculty of Biotechnology, Poland; ²Hematology Oncology Center Munich, Germany; ³Max Planck Institute of Biochemistry, Department of Proteomics and Signal Transduction, Germany

P22.4. Sex affects homocysteine modification at lysine residue 212 of albumin in mice

Marta Sikora¹, Łukasz Marczak¹, Joanna Perła-Kajan², Hieronim Jakubowski^{2,3}

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P22.5. Methionine-induced hyperhomocysteinemia causes changes in the mouse kidney proteome associated with blood coagulation

Izabela Bielińska¹, Marta Sikora¹, Hieronim Jakubowski^{2,3}

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Sciences, Poznan, Poland; ³Department of Microbiology, Biochemistry and Molecular Genetics, Rutgers University, New Jersey Medical School, Newark, NJ, USA

P22.6. LC-MS/MS analysis of the monocytes CD14+ proteome in atherosclerosis related and non-related to chronic kidney disease

J. Tracz¹, K. Kostka-Jeziorny², B. Perek², A. Podkowińska², D. Formanowicz², M. Luczak¹

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P22.7. Copper binding by human cystatin C fragment. Role of histidine residues
Aneta Szymańska¹, Dariusz Wyrzykowski¹, Patrick Groves¹, Edward Krzyżak², Paulina Czaplewska³, Justyna Brasuń²

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P22.8. Human serum albumin and human cystatin C complex studies

Andrzej Wiese¹, Anna Fel¹, Katarzyna Macur¹, Stanisław Ołdziej¹, Aneta Szymańska², Katarzyna Węgrzyn¹, Paulina Czaplewska¹

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P22.9. Proteomic analyses reveal homocysteine modification of protein lysine residues, deregulated protein folding, oxidative stress, and apoptotic pathways in the yeast *Saccharomyces cerevisiae* model of hyperhomocysteinemia

Joanna Perła-Kaján¹, Jarosław Zimny¹, Agata Malinowska², Dominik Cysewski², Hieronim Jakubowski^{1,3}

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P22.10. Glycogen phosphorylase inhibition – a new fountain of youth?

Dominika Drulis-Fajdasz¹, Adam Krzystyniak², Arkadiusz Miązek³, Michał Zalas³, Jakub Włodarczyk², Dariusz Rakus¹

¹University of Wrocław, Department of Molecular Physiology and Neurobiology, Poland; ²Nencki Institute of Experimental Biology PAN in Warsaw, Laboratory of Cell Biophysics, Poland; ³Hirszfeld Institute of Immunology and Experimental Therapy PAN in Wrocław, Laboratory of Tumor Immunology, Poland

Session 23: Entanglement in biology – from proteins folding to drug design

P23.1. *In vitro* protein folding – development of the method of receiving the therapeutically relevant recombinant bovine IFN- α and anti-staphylococcal endolysin LysK_{CA}

Alexander V. Zhydzetski, Mikhail V. Sholukh
Belarusian State University, Biochemistry department, Belarus

P23.2. Identification of amino acid residues indispensable for metalloid antiport function of Acr3

Katarzyna Mizio, Donata Wawrzycka, Robert Wysocki, Ewa Maciaszczyk-Dziubińska
Institute of Experimental Biology, Department of Genetics and Cell Physiology, Poland

P23.3. The arsenite transporter Acr3 undergoes Rsp5-dependent UbK63-linked oligo-ubiquitination

Donata Wawrzycka, Ewa Maciaszczyk-Dziubińska, Joanna Sadlak, Robert Wysocki
Institute of Experimental Biology, Department of Genetics and Cell Physiology, Wrocław University, 50-328 Wrocław, Poland

P23.4. Recovery of Herpesvirus entry mediator (HVEM) from inclusion bodies of *Escherichia coli*

Marta Orlikowska¹, Marta Szymczak¹, Szymon Ziętkiewicz², Sylwia Rodziewicz-Motowidło¹
¹Faculty of Chemistry, University of Gdańsk, Poland; ²Intercollegiate Faculty of Biotechnology UG&MUG, University of Gdansk, Poland

P23.5. Possible chromophore formation in the Trp-Cage miniprotein variants - investigation of new potential fluorescent miniprotein

Wioletta Żmudzińska, Marcel Thiel, Stanisław Ołdziej
Intercollegiate Faculty of Biotechnology, University of Gdansk and Medical University of Gdansk, POLAND

Session 25: From experimental data to in silico simulations and way back

P25.1. A novel approach for the *in situ* visualization of individual gene location within the nucleus

Marek C. Milewski¹, Piotr Piasecki¹, Weronika Kotkowiak¹, Anna Pasternak¹, Maciej Figiel¹ and Marek Figlerowicz^{1,2}
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P25.2. NANOS1 and NANOS3 paralogs repress distinct somatic pathways in human germ cells

Erkut Ilaslan¹, Maciej J. Smialek¹, Marcin Sajek¹, Damian Janecki¹, Tomasz Wozniak¹, Anna Spik¹, Maciej Kotecki², Kamila Kusz-Zamelczyk¹
¹Institute of Human Genetics Polish Academy of Sciences, Poland; ²Tufts University Medical School, Department of Developmental, Molecular and Chemical Biology, U.S.A.

P25.3. Understanding bedaquiline: atomistic insights into the inhibition of ATP synthase Fo subunit

Antoni Marciniak, Paweł Chodnicki, Miłosz Wieczór, Joanna Słabońska,
Jacek Czub

Gdansk University of Technology, Department of Physical Chemistry, Poland

Session 26: Biochemistry of the connective tissue

P26.1. Exendin-4 improves blood and tissue biochemical markers of inflammation and wound healing in Zucker diabetic rats

Monika Wolak, Teresa Staszewska, Ewa Bojanowska

Department of Behavioral Pathophysiology, Medical University of Lodz, Poland

P26.2. The effects of peroxisome proliferator-activated receptor ligands in the TGF- β 1-induced myofibroblastic transition of bronchial fibroblasts derived from asthmatics

Milena Paw¹, Dawid Wnuk¹, Maria Tylka¹, Mateusz Majerek¹, Olga Roman¹, Anna Cetnarowska², Marta Michalik¹

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Session 27: Inflammation and cancer

P27.1. Depletion of histone H3K27me3 is an epigenetic stress that induces cellular senescence in fibroblasts

Patrick M. Perrigue¹, Kamila Pawlicka¹, Justyna Obacz¹, Marek Figlerowicz¹, and Jan Barciszewski²

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¹Department of Molecular and Systems Biology, ²Department of Epigenetics

P27.2. The role of HAX-1 and MCPIP proteins in regulation of transcripts involved in pro-inflammatory response of cancer cells

E. Macech-Klicka¹, E. Sarnowska¹, N. Rusetska¹, A. Chrzan², M. Ligaj², M. Szymański³, T. Demkow³, E. Grzybowska¹, J.A. Siedlecki¹

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P27.3. Identification of the cellular partners of the proapoptotic HtrA4 protease

Tomasz Wentka, Monika Borysiak, Anna Latała, Bartosz Isański, Karol Jasiński, Małgorzata Sakowicz, Barbara Lipińska

Department of General and Medical Biochemistry, Faculty of Biology, University of Gdańsk, 80-308 Gdańsk, Poland

P27.4. Gain-of-function complement C2 mutant as a supporter of anti-CD20 therapy in lymphoma *in vitro* model

Aleksandra Urban, Anna Felberg, Weronika Roźniak, Marcin Okrój
Intercollegiate Faculty of Biotechnology, Department of Medical Biotechnology, Gdańsk,
Poland

- P27.5. Determination of proteolytic activity in urine samples**
Natalia Gruba, Joanna Zdancewicz, Magdalena Wysocka, Adam Lesner
University of Gdansk, Faculty of Chemistry, Poland
- P27.6. Synthesis and biological evaluation of RTD-2 analogues against selected breast cancer cell lines**
Joanna Zdancewicz¹, Natalia Gruba¹, Magdalena Wysocka¹, Kamila Kitowska-Marszałkowska², Rafał Sądej², Adam Lesner¹
¹University of Gdansk, Faculty of Chemistry, Poland; ²University of Gdansk and Medical University of Gdansk, Intercollegiate Faculty of Biotechnology, Poland
- P27.7. Comparison of cellular response induced by unsymmetrical bisacridine derivative, C-2045 and its monomer subunit, C-1311 in HCT116 and H460 cancer cells**
Monika Pawłowska, Małgorzata Górczak, Sylwia Ossowska, Joanna Polewska, Ewa Augustin
Gdańsk University of Technology, Chemical Faculty, Department of Pharmaceutical Technology and Biochemistry, Gdańsk, Poland
- P27.8. Inefficient repair of oxidative DNA lesions and DNA double strand breaks - the missing link between Rheumatoid arthritis and cancer**
Grzegorz Galita¹, Olga Brzezinska^{2,3}, Anna Lewandowska-Polak², Joanna Makowska², Tomasz Popławski¹
¹University of Lodz, Department of Molecular Genetics, Poland; ²Medical University of Lodz, Department of Rheumatology, Poland; ³Medical University of Lodz, Department of Rheumatology, Immunology and Allergy, Poland
- P27.9. Antihistaminic and cytotoxic activity of new diarylsulfones**
Dasha A. Peremotova, Bbandaruk V. Yaugen, Mikhail V. Sholikh
Belarusian State University, biochemistry, Belarus
- P27.10. Designing peptide inhibitors of BTLA-HVEM and CD160-HVEM complexes formation as potential targets for immunotherapy**
Katarzyna Kalejta, Marta Orlikowska, Sylwia Rodziewicz-Motowidło, Marta Spodzieja
University of Gdansk, Faculty of Chemistry, Department of Biomedical Chemistry, Gdansk, Poland
- P27.11. Design of inhibitors of BTLA-HVEM complex creation**
Marta Spodzieja¹, Marlena Lelujko¹, Adam Sieradzan², Katarzyna Kalejta¹, Laurent Derre³, Sylwia Rodziewicz-Motowidło¹
¹University of Gdansk, Faculty of Chemistry, Department of Biomedical Chemistry, Gdansk, Poland; ²University of Gdansk, Faculty of Chemistry, Department of Theoretical Chemistry, Gdansk, Poland; ³University Hospital of Lausanne (CHUV), Urology Department, Urology Research Unit, Lausanne, Switzerland

- P27.12. Expression and purification of CD160, protein important for human health**
Marta Szymczak¹, Marta Orlikowska¹, Szymon Ziętkiewicz², Sylwia Rodziewicz-Motowidło¹
¹University of Gdansk, Faculty of Chemistry, Poland; ²University of Gdansk, Intercollegiate Faculty of Biotechnology UG&MUG, Poland
- P27.13. Medial septal NMDA receptor inhibition affects pro-inflammatory response in rats differing in their stress susceptibility**
Magdalena Podlacha¹, Dorota Myślińska², Irena Majkutewicz², Danuta Wrona², Grzegorz Węgrzyn¹
¹University of Gdansk, Faculty of Biology, Department of Molecular Biology, Poland; ²University of Gdansk, Faculty of Biology, Department of Human and Animal Physiology, Poland
- P27.14. Application of ethanol and fatty acids induces Ca²⁺ responses in pancreatic stellate cells *in vitro* and leads to activation of these cells *in vivo***
Pawel E. Ferdek¹, Monika A. Jakubowska², Xiaoying Zhang³, Wei Huang⁴, Robert Sutton³, Ole H. Petersen⁵
¹Department of Cell Biology, Faculty of Biochemistry, Biophysics and Biotechnology, Jagiellonian University, Krakow, Poland; ²International Associated Laboratory (LIA), Malopolska Centre of Biotechnology, Jagiellonian University, Krakow, Poland; ³Liverpool Pancreatitis Study Group, Institute of Translational Medicine, University of Liverpool, Liverpool, United Kingdom; ⁴Department of Integrated Traditional Chinese and Western Medicine, Sichuan Provincial Pancreatitis Centre and West China-Liverpool Biomedical Research Centre, West China Hospital, Sichuan University, Chengdu, China; ⁵Medical Research Council Group, School of Biosciences, Cardiff University, Cardiff, United Kingdom
- P27.15. Selective inhibition of Bcl-2 by venetoclax (ABT-199) does not induce intracellular Ca²⁺ responses or cell death in pancreatic acinar cells**
Monika A. Jakubowska^{1,2}, Geert Bultynck³, Julia V. Gerasimenko JV², Oleg V. Gerasimenko², Ole H. Petersen², Tim Vervliet³, and Pawel E. Ferdek^{2,4}
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- P27.16. Lichen-derived depsides and depsidones modulate the STAT3 signaling pathway in colorectal cancer cells**
Katarzyna Papierska¹, Jarosław Paluszczak¹, Robert Kleszcz¹, Elżbieta Studzińska-Sroka², Violetta Krajka-Kuźniak¹
¹Poznan University of Medical Sciences, Department of Pharmaceutical Biochemistry, 60-781 Poznań, ul. Świącickiego 4, Poland; ²Poznan University of Medical Sciences, Department of Pharmacognosy, 60-781 Poznań, ul. Świącickiego 4, Poland
- P27.17. Modulation of NF-κB signaling pathway by oleanolic acid derivatives and its conjugates with non-steroidal anti-inflammatory drugs in HepG2**

hepatocellular cells line

Maria Narozna, Violetta Krajka-Kuźniak, Hanna Szafer, Jarosław Paluszczak, Barbara Bednarczyk-Cwynar, Wanda Baer-Dubowska
Department of Pharmaceutical Biochemistry, Poznan University of Medical Sciences, 60-781 Poznań, ul. Święcickiego 4, Poland

P27.18. The cellular response of human colon and lung cancer cells to treatment with unsymmetrical bisacridine derivatives

Milena Gospodarek, Monika Pawłowska, Ewa Augustin
Gdańsk University of Technology, Chemical Faculty, Department of Pharmaceutical Technology and Biochemistry, Poland

P27.19. The impact of extracts from cranberrybush (*Viburnum opulus*) leaves on the growth of human colon cells

Katarzyna Chojnacka¹, Katarzyna Owczarek¹, Miłosz Caban¹, Jakub Fichna¹, Dorota Sosnowska², Małgorzata Redzynia², Urszula Lewandowska¹

¹Department of Biochemistry, Faculty of Medicine, Medical University of Lodz, Lodz, Poland; ²Institute of Technical Biochemistry, Technical University of Lodz, Lodz, Poland

Session 28: Marine biotechnology**P28.1. Profiles of miRNAs and their isomiRs in the rainbow trout (*Oncorhynchus mykiss*) eggs exposed to X-rays for the androgenetic purpose**

Konrad Ocalewicz¹, Klaudia Pawlina-Tyszko², Artur Gurgul², Tomasz Szmatoła², Igor Jasielczuk², Monika Bugno-Poniewierska³, Stefan Dobosz⁴

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P28.2. Microbial fuel cells as a new method of electrochemical evaluation of biochemistry of unicellular aquatic organisms and bacteria - preliminary studies of the new concept

Kamil Kamiński¹, Magdalena Jarosz¹, Joanna Grudzień¹, Mirosława Kobasa¹, Marta Kaczor-Kamińska², Grzegorz D. Sulka¹

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P28.3. Characterisation of a novel bioflocculant produced by *Rhodococcus opacus* strain

Magdalena Czemińska¹, Justyna Kapral², Aleksandra Szczes³, Bożena Pawlikowska-Pawłęga², Anna Jarosz-Wilkołazka¹

¹Maria Curie-Skłodowska University, Department of Biochemistry, Poland; ²Maria Curie-

Session 31: Miscellaneous

- P31.1. Role of Hint1 protein in metabolism of oligo (nucleoside phosphorothioate) drugs and prodrugs**
Agnieszka Krakowiak, Danuta Piotrkowska, Anna Maciaszek
Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Lodz 90-363, Sienkiewicza 112, Poland
- P31.2. The route to protein secretion in *Bacteroidetes* phylum- revealing the role of QC and porU proteins**
Danuta Mizgalska¹, Magdalena Nowak¹, Magdalena Widziotek¹, Matthias Bochtler², Jan Potempa^{1,3,4}
¹Department of Microbiology, Faculty of Biochemistry, Biophysics, and Biotechnology, Jagiellonian University, Poland; ²Małopolska Center of Biotechnology, Jagiellonian University, Poland; ³International Institute of Molecular and Cell Biology, Poland;; ⁴Department of Oral Immunology and Infectious Diseases, University of Louisville School of Dentistry, USA
- P31.3. Searching for vitamin D receptor splice variants in human keratinocytes**
Anna Olszewska, Justyna Wierzbicka, Dominika Pankanin, Michał A. Żmijewski
Department of Histology, Medical University of Gdansk, Gdansk, Poland
- P31.4. Low molecular weight compounds which accumulate in red blood cell units increase the reactivity of blood platelets**
Kamila A. Czubak¹, Halina M. Żbikowska¹
¹Institute of Biochemistry, Department of General Biochemistry, Faculty of Biology and Environment Protection, University of Lodz, Poland
- P31.5. Novel kinase families - unexpected biology and biochemistry in a well-known enzyme superfamily**
Marcin Gradowski, Krzysztof Pawłowski
Warsaw University of Life Sciences SGGW, Department of Experimental Design and Bioinformatics, Poland
- P31.6. CRISPR/Cas9 and Sleeping Beauty System - novel tools for genome editing**
Weronika Sowińska, Mateusz Wawro, Aleksandra Solecka, Aneta Kasza
Jagiellonian University, Faculty of Biochemistry, Biophysics and Biotechnology, Department of Cell Biochemistry, Poland
- P31.7. Disruption of the cell cycle in mucopolysaccharidoses**
Joanna Brokowska, Grzegorz Węgrzyn
Department of Molecular Biology, University of Gdansk, ul. Wita Stwosza 59, 80-308 Gdańsk

- P31.8. QM/MM ONIOM calculations for DNA damage by solvated electrons. Optimizing a methodology for the modeling of radiotherapy-induced lesions**
 S. Makurat¹, L. Chomicz-Mańka¹, R. P. P. Neves², S. F. Sousa², P.A. Fernandes², P. Wityk³, M. Wieczór³, J. Czub³, J. Rak¹
¹University of Gdańsk, Faculty of Chemistry, Poland; ² University of Porto, Faculty of Sciences, Portugal; ³Gdańsk University of Technology, Faculty of Chemistry, Poland
- P31.9. Changes in MUPs expression patterns induced by Cbs deficiency in mice are mediated by liver Zfx2 and androgene receptor**
 Jacek Wróblewski^{1,2}, Ewa Bretes², Hieronim Jakubowski^{2,3}
¹Institute of Bioorganic Chemistry PAS, Poland; ²Poznań University of Life Sciences, Department of Biochemistry and Biotechnology, Poland; ³Rutgers – New Jersey Medical School, Department of Microbiology, Biochemistry and Molecular Genetics, USA
- P31.10. Impact of physiological concentrations of adrenaline on platelet procoagulant response, clot structure and thrombus formation under flow in human blood**
 Agata Gołaszewska¹, Natalia Marcińczyk², Tomasz Misztal¹
¹Medical University of Białystok, Department of Physical Chemistry, Poland; ²Medical University of Białystok, Laboratory of Biopharmacy, Poland
- P31.11. Telomere length is not related to homocysteine and life span in cystathionine-β synthase-deficient mice and humans**
 Olga Utyro^{1,2}, Joanna Perła-Kaján², Jolanta Kubalska³, Viktor Kožich⁴, Hieronim Jakubowski^{2,5}
¹Institute of Bioorganic Chemistry, Poznan, Poland; ²Poznan University of Life Sciences, Department of Biochemistry and Biotechnology, Poland; ³Institute of Psychiatry and Neurology, Department of Genetics, Warsaw, Poland; ⁴Institute of Inherited Metabolic Disorders, Charles University-First Faculty of Medicine and General University Hospital, Prague, Czech Republic; ⁵Rutgers-New Jersey Medical School, International Center for Public Health, Department of Biochemistry, Microbiology and Molecular Genetics, Newark, NJ, USA
- P31.12. In search for pectinolytic bacteria in Polish lakes**
 Weronika Babinska, Agata Motyka-Pomagruk, Sabina Zoledowska, Wojciech Sledz, Ewa Łojkowska
 University of Gdańsk, Intercollegiate Faculty of Biotechnology/Intercollegiate Faculty of Biotechnology UG&MUG, Poland
- P31.13. Thymoquinone effectiveness and mechanism of antibacterial action against *Staphylococcus aureus***
 Grzegorz Gawron¹, Leszek Kadziński¹, Wojciech Ślędź¹, Wojciech Krzyczkowski², Bogdan Banecki¹
¹Intercollegiate Faculty of Biotechnology of University of Gdansk and Medical University of Gdansk, Department of Molecular and Cellular Biology; ²BioVico, Gdynia, Poland