

STRAUB -NAPOK

2022
MÁJUS 25-26-27.



A Szegedi Biológiai Kutatóközpont „Straub-Napok” rendezvénye a COVID járvány miatti 2 éves kényszerszünet után 2022-ben ismételt személyes jelenlét mellett kerül megtartásra. A rendezők minden érdeklődőt szeretettel várnak.

A rendezvény kiemelt témája a Nemzeti Laboratóriumok Program, ezen belül a Biotechnológiai Nemzeti Laboratórium (BNL) bemutatása, és az eddig elért eredmények ismertetése. A rendezvény első napján kerül sor a BNL új BSL-3-as szintű laboratóriumának átadására.

Az SZBK "Straub-Napok 2022" rendezvénye a Szegedi Biológiai Kutatóközpont és a Hungarian Centre of Excellence of Molecular Medicine társszervezésében kerül megrendezésre.

SZEGEDI BIOLÓGIAI KUTATÓKÖZPONT

SZEGED, TEMESVÁRI KRT. 62.



HCEMM
Translational Medicine

May 25, Wednesday

TALKS ARE IN HUNGARIAN

10:00 - 10:05	Ferenc Nagy, opening speech (5')
10:05 - 10:25	VIP talk, National Laboratories Program (20')
10:25 - 10:45	Csaba Pál, BNL (20')
10:45 - 11:05	Bálint Kintses, BNL (20')
11:05 - 11:30	 coffee break
11:30 - 11:50	Miklós Erdélyi, BNL (20')
11:50 - 12:10	József Mihály, BNL (20')
12:10 - 13:00	BNL lab. inauguration, press conference (50')
13:00 - 14:00	 lunch break
14:00 - 14:50	Briefing by the DG and CFO (50')
14:50 - 15:00	Outstanding Employee Awards (10')
15:00 - 15:10	 technical break
15:10 - 15:30	Straub 2022 Award talk (20')
15:30 - 15:50	Tibor Farkas 2022 Award talk (20')
15:50 - 16:10	 coffee break
16:10 - 16:30	NSA Outstanding Student 2022 Award talk (20')
16:30 - 16:50	Qualitas Biologica 2022 Award talk (20')
16:50 - 17:00	Hotchkiss 2022 Award talk (10')
17:00 - 17:10	Hotchkiss 2022 Award talk (10')
17:10 - 17:20	Hotchkiss 2022 Award talk (10')
17:20 - 19:00	Poster Session
19:00	 reception

May 26, Thursday

TALKS ARE IN ENGLISH

9:00 - 9:25	Imola Wilhelm, IBP, BRC (20+5')
9:25 - 9:50	Ede Migh, IBC, BRC (20+5')
9:50 - 10:15	Péter Görög, IGE, BRC (20+5')
10:15 - 10:45	 coffee break
10:45 - 11:10	Attila Kereszt, IPB, BRC (20+5')
11:10 - 11:35	Csaba Bödör, HCEMM (20+5')
11:35 - 12:00	Jolán Csiszár, USZ (20+5')
12:00 - 12:05	HR Pharma Kft. Introductory talk (Hungarian) (5')
12:05 - 13:00	 lunch break
13:00 - 13:25	Tamás Fekete, IBP, BRC (20+5')
13:25 - 13:50	Melinda Tóth, IBC, BRC (20+5')
13:50 - 14:15	Gyula Timinszky, IGE, BRC (20+5')
14:15 - 14:45	 coffee break
14:45 - 15:10	Gabriella Endre, IPB, BRC (20+5')
15:10 - 15:35	Karolina Pircs, HCEMM (20+5')
15:35 - 16:00	Tamás Martinek, USZ (20+5')
16:00 - 17:00	Poster Session

May 27, Friday

TALKS ARE IN ENGLISH

9:00 - 9:25	Roland Patai, IBP, BRC (20+5')
9:25 - 9:50	Károly Kovács, IBC, BRC (20+5')
9:50 - 10:15	Gyöngyi Cinege, IGE, BRC (20+5')
10:15 - 10:45	 coffee break
10:45 - 11:10	Szilvia Zita Tóth, IPB, BRC (20+5')
11:10 - 11:35	Balázs Enyedi, HCEMM (20+5')
11:35 - 12:00	Zoltán Villányi, USZ (20+5')
12:00 - 12:05	Biocenter Kft. Introductory talk (Hungarian) (5')
12:05 - 13:00	 lunch break
13:00 - 13:25	Sarshad Koderi Valappil, IBP, BRC (20+5')
13:25 - 13:50	Gergő Mihály Balogh, IBC, BRC (20+5')
13:50 - 14:15	Éva Bálint, IGE, BRC (20+5')
14:15 - 14:45	 coffee break
14:45 - 15:10	Dóra Faragó, IPB, BRC (20+5')
15:10 - 15:35	Nazha Hamdani, HCEMM (20+5')
15:35 - 16:00	László Galgóczy, USZ (20+5')
ABBREVIATIONS:	
BNL: Biotechnological National Laboratory	
IBP: Institute of Biophysics	
IBC: Institute of Biochemistry	
IGE: Institute of Genetics	
IPB: Institute of Plant Biology	
BRC: Biological Research Centre	
USZ: University of Szeged	
HCEMM: Hungarian Centre of Excellence of Molecular Medicine	



ELNÖK: NAGY FERENC

(Szegedi Biológiai Kutatóközpont, Szeged)

10:00 – 10:05

NAGY FERENC

(Szegedi Biológiai Kutatóközpont, Szeged)

MEGNYITÓ

10:05 – 10:25

FELKÉRT ELŐADÁS: „A NEMZETI LABORATÓRIUMOK PROGRAM”

10:25 – 10:45

PÁL CSABA

(Biokémiai Intézet, SZBK Szeged;

Biotechnológiai Nemzeti Laboratórium, Szeged)

ANTIBIOTIKUMOK ÉS ELLENÁLLÓ BAKTÉRIUMOK

10:45 – 11:05

KINTSES BÁLINT

(Biokémiai Intézet, SZBK Szeged;

Biotechnológiai Nemzeti Laboratórium, Szeged;

HCEMM-SZBK, Szeged)

ÚJGENERÁCIÓS BAKTERIOFÁG-TERAPEUTIKUMOK KUTATÁSA ÉS FEJLESZTÉSE

11:05 – 11:30

KÁVÉSZÜNET

11:30 – 11:50

ERDÉLYI MIKLÓS

(Genetikai Intézet, SZBK, Szeged;

Biotechnológiai Nemzeti Laboratórium, Szeged)

"MRNS-LNP ALAPÚ ELJÁRÁSOK MEGHONOSÍTÁSA ÉS FEJLESZTÉSE AZ SZBK-BAN"

11:50 – 12:10

MIHÁLY JÓZSEF

(Genetikai Intézet, SZBK, Szeged;

Biotechnológiai Nemzeti Laboratórium, Szeged)

RITKA BETEGSÉGEK MODELLEZÉSE ÉS IN VIVO GYÓGYSZER PANEL SZŰRÉSI KÍSÉRLETEK ECETMUSLICÁBAN

12:10 – 13:00

BIOTECHNOLÓGIAI NEMZETI LABORATÓRIUM ÜNNEPÉLYES ÁTADÁSA, SAJTÓTÁJÉKOZTATÓ

13:00 – 14:00

EBÉDSZÜNET

ELNÖK: SIKLÓS LÁSZLÓ

(Szegedi Biológiai Kutatóközpont, Főigazgatói Főosztály, Szeged)

14:00 – 14:50

FŐIGAZGATÓI ÉS GAZDASÁGI BESZÁMOLÓ

14:50 – 15:00

KIVÁLÓ DOLGOZÓI DÍJAK ÁTADÁSA

15:00 – 15:10

TECHNIKAI SZÜNET

15:10 – 15:30

A STRAUB PLAKETT DÍJAZOTTJÁNAK BEMUTATÁSA, DÍJÁTADÁS ÉS ELŐADÁS

15:30 – 15:50

A FARKAS TIBOR PLAKETT DÍJAZOTTJÁNAK BEMUTATÁSA, DÍJÁTADÁS ÉS ELŐADÁS

15:50 – 16:10

KÁVÉSZÜNET

16:10 – 16:30

A NEMZETI TUDÓSKÉPZŐ AKADÉMIA DÍJAZOTTJÁNAK ELŐADÁSA

Czikkely Márton¹, Daruka Lejla¹, Szili Petra¹, Sipos Levente¹, Elvin Maharramov¹, Farkas Zoltán¹, and Pál Csaba¹

(¹ Biokémiai Intézet, Szintetikus és Rendszerbiológiai Egység, SZBK, Szeged)

ÚJ ANTIBIOTIKUMOK ELLEN KIALAKULÓ REZISZTENCIA FOLYAMATOK RENDSZERSZINTŰ VIZSGÁLATA: REZISZTENCIAMENTES ANTIBIOTIKUM-BAKTÉRIUM PÁROK AZONOSÍTÁSA

16:30 – 16:50

A QUALITAS BIOLOGICA ALAPÍTVÁNY PÁLYÁZATA 1. HELYEZETTJÉNEK ELŐADÁSA

Jipa András¹, Vedelek Viktor², Merényi Zsolt³, Ürmösi Adél¹, Takáts Szabolcs⁴, Kovács L. Attila⁴, Horváth V. Gábor¹, Sinka Rita², Juhász Gábor^{1,4}

(¹ Genetikai Intézet, SZBK, Szeged;

² Genetikai Tanszék, Szegedi Tudományegyetem, Szeged;

³ Biokémiai Intézet, SZBK, Szeged;

⁴ ELTE Anatómiai, Sejt- és Fejlődésbiológiai Tanszék, Budapest)

AUTOFÁG GÉNEK KANONIKUS ÉS NEM-KANONIKUS SZEREPEI

16:50 – 17:00

Széles Eszter^{1,2}, Nagy Krisztina³, Ábrahám Ágnes^{3,4}, Kovács Sándor¹, Podmaniczki Anna^{1,2}, Nagy Valéria¹, Kovács László¹, Galajda Péter³ és Tóth Szilvia Zita¹

¹Növénybiológiai Intézet, SZBK, Szeged;

²Biológia Doktori Iskola, SZTE, Szeged;

³Biofizikai Intézet, SZBK, Szeged;

⁴Multidiszciplináris Orvostudományok Doktori Iskola, SZTE, Szeged);

MIKROFLUIDIKAI ESZKÖZÖK FEJLESZTÉSE ZÖLDALGÁK EGYSEJT-SZINTŰ MORFOLÓGIAI ÉS FOTOSZINTETIKUS VIZSGÁLATAIHOZ

17:00 – 17:10

Kovács Szilárd¹, Fodor Lili², Domonkos Ágota², Ferhan Ayaydin^{3,4}, Laczi Krisztián^{1,5}, Rákhely Gábor^{5,6} és Kaló Péter^{1,2}

¹Növénybiológiai Intézet, SZBK, Szeged; ²Genetika és Biotechnológia Intézet, MATE, Gödöllő; ³Magyar Molekuláris Medicina Kiválósági Központ, Szeged; ⁴Mikroszkópos Sejtanalízis Laboratórium, SZBK, Szeged;

⁵Biotechnológiai Tanszék, SZTE, Szeged; ⁶Biofizikai Intézet, SZBK, Szeged)

MEDICAGO TRUNCATULA NSP2 GÉN SZEREPE A GÜMŐFEJLŐDÉS SZABÁLYOZÁSÁBAN

17:10 – 17:20

Patyi Gábor^{1,2}, Hódi Barbara^{1,2}, Solymosi Dániel¹, Vass Imre¹, Kós Péter^{1,3}

¹Növénybiológiai Intézet, SZBK, Szeged; ²Biológiai Doktori Iskola, SZTE-TTIK, Szeged, ³Biotechnológiai Tanszék, SZTE-TTIK, Szeged);

NEHÉZFÉM BIORPORT EREK ÉRZÉKENYSÉGÉNEK FOKOZÁSA TRANSZPORTER HIÁNYOS SYNECHOCYSTIS PCC6803 CIANOBAKTÉRIUM MUTÁNSOKBAN

17:20 – 19:00

POSZTER SZEKCIÓ

19:00 -

FOGADÁS, KUTATÓI VACSORA



2022. május 26. csütörtök

CHAIRMAN: LÁSZLÓ ZIMÁNYI

(Institute of Biophysics, BRC, Szeged)

9:00 – 9:25

Imola Wilhelm¹, Kinga Molnár¹, János Haskó¹, Ádám Mészáros¹, Attila E. Farkas¹, Csilla Fazakas¹ and István A. Krizsbai¹

¹Institute of Biophysics, BRC, Szeged)

ROLE OF THE NEUROVASCULAR UNIT IN BRAIN METASTASIS FORMATION

9:25 – 9:50

Andreas Mund¹, Fabian Coscia^{1,2}, **Ede Migh³**, Réka Hollandi³, Ferenc Kovács^{3,4}, András Kriston^{3,4}, Emma Lundberg^{5,6,7}, Peter Horvath^{3,4,8,*} and Matthias Mann^{1,9,*}

¹Proteomics Program, NNF Center for Protein Research, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark;

²Spatial Proteomics Group, Max Delbrück Center for Molecular Medicine in the Helmholtz Association, Berlin, Germany;

³Synthetic and Systems Biology Unit, BRC, Szeged;

⁴Single-Cell Technologies Ltd, Szeged;

⁵Science for Life Laboratory, School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH - Royal Institute of Technology, Stockholm, Sweden;

⁶Department of Genetics, Stanford University, Stanford, USA;

⁷Chan Zuckerberg Biohub, San Francisco, USA;

⁸Institute for Molecular Medicine Finland (FIMM), University of Helsinki, Helsinki, Finland;

⁹Proteomics and Signal Transduction, Max-Planck Institute of Biochemistry, Martinsried, Germany

*These authors contributed equally to this work)

AI-DRIVEN DEEP VISUAL PROTEOMICS DEFINES CELL IDENTITY AND HETEROGENEITY

9:50 – 10:15

Péter Görög^{1,2}, Szilárd Szikora¹, Dávid Farkas¹, Tamás Gajdos³, Miklós Erdélyi³, József Mihály¹

¹Institute of Genetics, BRC, Szeged;

²Doctoral School of Multidisciplinary Medical Science, Faculty of Medicine, University of Szeged, Szeged;

³Department of Optics and Quantum Electronics, University of Szeged)

FLIGHTLESS-I REGULATES SARCOMERE GROWTH BY PROMOTING ACTIN ASSEMBLY

10:15 – 10:45

BREAK

10:45 – 11:10

Jinge Liu¹, Ting Wang², Xiaocheng Yu¹, **Attila Kereszt²**, Hongyan Zhu¹

¹Department of Plant & Soil Sciences, University of Kentucky, Lexington, USA;

²Institute of Plant Biology, BRC, Szeged)

PAIRED PLANT RECEPTORS RESTRICT NODULATION BY SINORHIZOBIUM SYMBIONTS CARRYING A STRAIN-SPECIFIC PROTEIN

11:10 – 11:35

Csaba Bödör¹, Ákos Nagy¹, Bence Bátai¹, Lili Kotmayer¹ Tamás László¹ and Donát Alpár¹

¹HCEMM-SE Molecular Oncohematology Research Group, Department of Pathology and Experimental Cancer Research, Semmelweis University, Budapest)

IDENTIFICATION OF NOVEL MOLECULAR BIOMARKERS IN B-CELL LYMPHOMAS

11:35 – 12:00
Jolán Csiszár¹, Krisztina Bela¹, Edit Horváth¹, Ágnes Gallé¹, Ádám Hajnal¹, Bernát Tompa¹, Riyazuddin, Riyazuddin^{1,2}, Gábor Rigó², László Szabados² and Attila Fehér^{1,2}

⁽¹⁾ Department of Plant Biology, University of Szeged, Szeged;

²Institute of Plant Biology, BRC, Szeged)

NEW HUB IN THE SIGNAL TRANSDUCTION NETWORK CONNECTING REDOX REGULATION TO PLANT DEVELOPMENT: THE GLUTATHIONE-LINKED ANTIOXIDANT ENZYMES.

12:00 – 12:05
HR PHARMA KFT - BRIEF INTRODUCTION AND TRADE DESCRIPTION /IN HUNGARIAN/

12:05 – 13:00
LUNCH BREAK

CHAIRMAN: PÉTER HORVÁTH

(Institute of Biochemistry, BRC, Szeged)

13:00 – 13:25
Tamás Fekete^{1,2}, Mária Mészáros¹, Gaszton Vizsnyiczai¹, Mária Deli¹, Zsolt Szegletes¹, László Zimányi¹, Szilvia Veszélka¹ and Lóránd Kelemen¹

⁽¹⁾ Institute of Biophysics, BRC, Szeged;

²Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged)

OPTICALLY MANIPULATED MICROTOOLS TO MEASURE ADHESION OF THE NANOPARTICLE-TARGETING LIGAND GLUTATHIONE TO BRAIN ENDOTHELIAL CELLS

13:25 – 13:50
Melinda E. Tóth¹, Brigitta Dukay¹, Márta Sárközy², Mária Péter¹, Gábor Balogh¹, Gergő Szűcs², Ágnes Zvara³, Gábor J. Szebeni³, Petra Hajdu¹, Zsófia Ruppert¹, Csaba Csonka², Bence Kővári⁶, Gábor Cserni⁶, Ferenc Kovács^{1,4,5}, András Kriston^{1,4,5}, Péter Horváth^{1,4,5}, László G. Puskás³, Zsolt Török¹, Tamás Csont², László Vígh¹ and Miklós Sántha¹

⁽¹⁾ Institute of Biochemistry, BRC, Szeged;

²MEDICS Research Group, Department of Biochemistry, University of Szeged Albert Szent-Györgyi Medical School, Szeged;

³Laboratory of Functional Genomics, BRC, Szeged;

⁴Single-Cell Technologies Ltd, Szeged;

⁵Institute for Molecular Medicine Finland (FIMM), University of Helsinki, Helsinki, Finland;

⁶Department of Pathology, Albert Szent-Györgyi Medical School, University of Szeged, Szeged)

DIVERSE EFFECTS OF REGULAR EXERCISE IN A MOUSE MODEL OF HYPERLIPIDEMIA

13:50 – 14:15
Gyula Timinszky¹, Massimo Lopes², Ivan Ahel³

⁽¹⁾ Lendület Laboratory of DNA Damage and Nuclear Dynamics, Institute of Genetics, BRC, Szeged;

²Institute of Molecular Cancer Research, University of Zurich, Zurich, Switzerland;

³Sir William Dunn School of Pathology, University of Oxford, Oxford, UK)

TARG1 PROTECTS AGAINST TOXIC DNA ADP-RIBOSYLATION

14:15 – 14:45
BREAK

14:45 – 15:10
Gabriella Endre¹, Sándor Jenei¹, Hilda Tiricz¹, Rui M. Lima¹, Balaji Baburao Rathod¹, Mohamad Anas Al Bouni¹, Edit Tímár¹, Gábor Tóth², and Éva Kondorosi¹

⁽¹⁾ Institute of Plant Biology, BRC, Szeged;

²Department of Medical Chemistry, Albert Szent-Györgyi Medical School, University of Szeged, Szeged)

CAN POTENT ANTIMICROBIAL PLANT-DERIVED NCR PEPTIDES AND DERIVATIVES BE THE ANTIBIOTICS OF THE FUTURE?

15:10 – 15:35
Karolina Pircs^{1,2,3}

⁽¹⁾ HCEMM-SU, Neurobiology and Neurodegenerative Diseases Research Group, Budapest, Hungary.

² Institute of Translational Medicine, Semmelweis University, ¹⁰⁹⁴ Budapest, Hungary.

³ Laboratory of Molecular Neurogenetics, Department of Experimental Medical Science, Wallenberg Neuroscience Center and Lund Stem Cell Center, BMC Å¹¹, Lund University, ^{221 84} Lund, Sweden)

DIRECT NEURAL CONVERSION: NEW POSSIBILITIES TO MODEL LATE ONSET NEURODEGENERATIVE DISEASES

15:35 – 16:00
Kaushik Nath Bhaumik¹, Anasztázia Hetényi¹, Gábor Olajos¹, Ana Martins², Réka Spohn², Lukács Németh³, Balázs Jojart³, Petra Szili^{2,4}, Anett Dunai², Pramod K. Jangir², Lejla Daruka^{2,5}, Imre Földesi⁶, Diána Kata⁶, Csaba Pál² and **Tamás A. Martinek¹**

⁽¹⁾ Department of Medical Chemistry, University of Szeged;

²Synthetic and Systems Biology Unit, BRC, Szeged;

³Institute of Food Engineering, University of Szeged, Szeged;

⁴Doctoral School of Multidisciplinary Medical Sciences, University of Szeged, Szeged;

⁵Doctoral School of Biology, Faculty of Science and Informatics, University of Szeged, Szeged;

⁶Department of Laboratory Medicine, University of Szeged, Szeged)

RATIONALLY DESIGNED FOLDAMERIC ADJUVANTS ENHANCE ANTIBIOTIC EFFICACY VIA PROMOTING MEMBRANE HYPERPOLARIZATION

16:00 – 17:00
POSTER SECTION



CHAIRMAN: MIKLÓS ERDÉLYI

(Institute of Genetics, BRC, Szeged)

9:00 – 9:25

Tamás F. Polgár^{1,2}, Valéria Meszlényi^{1,3}, Bernát Nógrádi^{1,2,3}, Krisztina Spisák^{1,2}, Izabella Obál^{3,4}, József I. Engelhardt³, László Siklós¹ and **Roland Patai**¹

¹Institute of Biophysics, BRC, Szeged;

²Theoretical Medicine Doctoral School, University of Szeged, Szeged;

³Department of Neurology, Albert Szent-Györgyi Health Centre, University of Szeged, Szeged;

⁴Department of Neurology, Aalborg University Hospital, Aalborg, Denmark)

INTRODUCING AN EXPERIMENTAL MOTOR NEURON DEGENERATION MOUSE MODEL BASED ON SERUM INOCULATION FROM AMYOTROPHIC LATERAL SCLEROSIS PATIENTS

9:25 – 9:50

Zoltán Farkas¹, **Károly Kovács**^{1,2}, Zsuzsa Sarkadi^{1,2,3}, Dorottya Kalapis^{1,2}, Gergely Fekete^{1,2}, Fanni Birtyik¹, Ferhan Ayaydin^{4,5,6}, Csaba Molnár^{1,7}, Péter Horváth^{1,8,9}, Csaba Pál^{1*}, Balázs Papp^{1,2*}

¹Synthetic and Systems Biology Unit, Institute of Biochemistry, BRC, Szeged;

²HCEMM-BRC Metabolic Systems Biology Lab, Szeged;

³Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged;

⁴Functional Cell Biology and Immunology Advanced Core Facility (FCBI), Hungarian Centre of Excellence for Molecular Medicine (HCEMM), Szeged;

⁵University of Szeged, Faculty of Medicine, Albert Szent-Györgyi Health Centre Interdisciplinary R&D and Innovation Center of Excellence, Szeged;

⁶Laboratory of Cellular Imaging, BRC, Szeged;

⁷Broad Institute of MIT and Harvard; Cambridge, MA, USA;

⁸Institute for Molecular Medicine Finland (FIMM), HiLIFE, University of Helsinki; Helsinki, Finland;

⁹Single-Cell Technologies Ltd., Szeged)

GENE LOSS AND COMPENSATORY EVOLUTION PROMOTES THE EMERGENCE OF MORPHOLOGICAL NOVELTIES

9:50 – 10:15

Gyöngyi Cinege¹, Kirsten I Verster², Zoltán Lipinszki³, Edit Ábrahám³, Rebecca Tarnopol², Lilla B Magyar¹, Zsuzsanna Darula^{4,5}, Éva Kurucz¹, Noah K Whiteman² and István Andó¹

¹Institute of Genetics, BRC, Szeged;

²Department of Integrative Biology, University of California, Berkeley, USA;

³Institute of Biochemistry, BRC, Szeged;

⁴Core Facilities, BRC, Szeged;

⁵Hungarian Centre of Excellence for Molecular Medicine (HCEMM), Szeged)

HORIZONTALLY TRANSFERRED GENES ARE REQUIRED FOR AN EFFECTIVE INNATE IMMUNE RESPONSE

10:15 – 10:45

BREAK

10:45 – 11:10

Dávid Tóth^{1,2}, Roland Tengölics^{3,4}, André Vidal-Meireles¹, László Kovács¹, Soujanya Kuntam¹, Alisdair R. Fernie⁵, Balázs Papp^{3,4} and **Szilvia Z. Tóth**¹

¹Institute of Plant Biology, BRC, Szeged;

²Doctoral School of Biology, University of Szeged, Szeged;

³HCEMM-BRC Metabolic Systems Biology Lab, Szeged;

⁴Synthetic and Systems Biology Unit, Institute of Biochemistry, BRC, Szeged;

⁵Max-Planck-Institute of Molecular Plant Physiology, Potsdam-Golm, Germany)

CHLOROPLASTIC ASCORBATE CONTENT IS A MODULATOR OF THE PLANT METABOLOME

11:10 – 11:35

Balázs Enyedi^{1,2,3}

¹HCEMM-SE Inflammatory Signaling Research Group;

²MTA-SE Lendület Tissue Damage Research Group of the Hungarian Academy of Sciences;

³Department of Physiology, Semmelweis University, Budapest)

DETECTING EXTRACELLULAR GRADIENTS OF INFLAMMATORY MEDIATORS WITH NOVEL GENETICALLY ENCODED FLUORESCENT BIOSENSORS

11:35 – 12:00

Orsolya Németh-Szatmári¹, Ádám Györkei², Dániel Varga³, Bálint Barna H. Kovács³, Nóra Igaz¹, Kristóf Németh¹, Nikolett Bagi¹, Bence Nagy-Mikó¹, Dóra Balogh¹, **Zsolt Rázga**⁴, Miklós Erdélyi³, Balázs Papp², Mónika Kiricsi¹, András Blastyák⁵, Martine A. Collart⁶, Imre M. Boros¹ and **Zoltán Villányi**¹

¹ Department of Biochemistry and Molecular Biology, University of Szeged, Szeged;

² Synthetic and Systems Biology Unit, Institute of Biochemistry, BRC, Szeged;

³ Department of Optics and Quantum Electronics, University of Szeged, Szeged;

⁴Department of Pathology, Faculty of Medicine, University of Szeged, Szeged;

⁵ Institute of Genetics, BRC, Szeged;

⁶ Department of Microbiology and Molecular Medicine, Institute of Genetics and Genomics Geneva, Faculty of Medicine, University of Geneva, Switzerland)

PHASE SEPARATED RIBOSOME NASCENT CHAIN COMPLEXES PAUSED IN TRANSLATION ARE CAPABLE TO CONTINUE EXPRESSION OF PROTEINS PLAYING ROLE IN GENOTOXIC STRESS RESPONSE UPON DNA DAMAGE

12:00 – 12:05

BIOCENTER KFT – BRIEF INTRODUCTION AND TRADE DESCRIPTION /IN HUNGARIAN/

12:05 – 13:00

LUNCH BREAK

CHAIRMAN: IMRE VASS

(Institute of Plant Biology, BRC, Szeged)

13:00 – 13:25

Sarshad Koderi Valappil¹, Prateek Shetty^{2,3}, Zoltán Deim¹, Gabriella Terhes⁴, Edit Urbán⁴, Sándor Vácz⁵, Roland Patai⁶, Tamás Polgár^{6,7}, Botond Zsombor Pertics⁸, György Schneider⁸, Tamás Kovács^{9,10} and Gábor Rákhely^{1,6}

¹Department of Biotechnology, University of Szeged, Szeged;

²Institute of Plant Biology, BRC, Szeged;

³Doctorate School of Biology, University of Szeged, Szeged;

⁴Institute of Clinical Microbiology, University of Szeged, Szeged;

⁵Department of Pathophysiology, University of Szeged, Szeged;

⁶Institute of Biophysics, BRC, Szeged;

⁷Doctorate School of Theoretical Medicine, University of Szeged, Szeged;

⁸Department of Medical Microbiology and Immunology, University of Pécs, Pécs;

⁹Department of Biotechnology, Nanophagetherapy Center, Enviroinvest Corp., Pécs;

¹⁰Biopesticide Ltd., Pécs)

PHAGE INFECTION REINSTATES ANTIBIOTIC SENSITIVITY IN MDR PSEUDOMONAS AERUGINOSA: A COEVOLUTIONARY GAME BETWEEN PHAGE AND ITS BACTERIAL HOST

13:25 – 13:50

Gergő Mihály Balogh^{1,2}, Leó Asztalos², Csaba Pál², Lajos Kemény^{2,3} and Máté Manczinger^{1,2}

¹Institute of Biochemistry, BRC, Szeged;

²Albert Szent-Györgyi Medical School, University of Szeged, Szeged;

³HCEMM-USZ Skin Research Group, Szeged)

REVEALING THE INVISIBLE: EFFECTS OF APOBEC3 MUTAGENESIS ON THE ADAPTIVE IMMUNE RECOGNITION OF SARS-COV-2

13:50 – 14:15

Éva Bálint¹ and Ildikó Unk¹

¹Institute of Genetics, BRC, Szeged)

A NEW MECHANISM REGULATING ENZYME ACTIVITY: THE ROLE OF METAL COFACTORS IN THE TRANSFORMATION OF DNA POLYMERASE ETA INTO AN RNA SYNTHESIZING POLYMERASE

14:15 – 14:45

BREAK

14:45 – 15:10

Dóra Faragó¹, Laura Zsigmond¹, Dániel Benyó¹, Rubén Alcazar², Gábor Rigó¹, Ferhan Ayaydin^{3,4}, Sahilu Ahmad Rabilu¹, Aladár Pettkó-Szandtner⁵, László Szabados¹

¹Institute of Plant Biology, BRC, Szeged;

²Facultat de Farmàcia, Universitat de Barcelona, Spain;

³Hungarian Centre of Excellence for Molecular Medicine (HCEMM) Nonprofit Ltd., Szeged;

⁴Cellular Imaging Laboratory, BRC, Szeged;

⁵Laboratory of Proteomics Research, BRC, Szeged)

SMALL PARAQUAT RESISTANCE PROTEINS CONFER DROUGHT TOLERANCE TO OVEREXPRESSING ARABIDOPSIS PLANTS BY INTERFERING WITH PARAQUAT AND ABA RESPONSES

15:10 – 15:35

Roua Hassoun^{1,2}, Melissa Herwig^{1,2}, Melina Tangos^{1,2}, Heidi Budde^{1,2}, Saltanat Zhazykbayeva^{1,2}, Marcel Sieme^{1,2}, Simin Delalat^{1,2}, Muhammad Jarkas^{1,2}, and **Nazha Hamdani**^{1,2,3}

¹Institut für Forschung und Lehre (IFL), Department of Molecular and Experimental Cardiology, Ruhr University Bochum, Bochum, Germany;

²Department of Cardiology, St. Josef-Hospital and Bergmannsheil, Ruhr University Bochum, Bochum, Germany;

³HCEMM-Cardiovascular Research Group, Department of Pharmacology and Pharmacotherapy, University of Budapest, Budapest, Hungary)

TARGETING OXIDATIVE STRESS AND SARCOMERIC DYSFUNCTION IN HFPEF

15:35 – 16:00

Liliána Tóth¹, Renátó Kovács², Györgyi Váradi³, Attila Borics⁴, Zoltán Kele³, Gábor K. Tóth^{3,5}, Gábor Rákhely^{1,6}, Gyula Batta⁷, Florentine Marx⁸ and **László Galgóczy**^{1,4}

¹Department of Biotechnology, Faculty of Science and Informatics, University of Szeged, Szeged;

²Department of Medical Microbiology, Faculty of Medicine, University of Debrecen, Debrecen;

³Department of Medical Chemistry, Faculty of Medicine, University of Szeged, Szeged;

⁴Institute of Biochemistry, BRC, Szeged;

⁵MTA-SZTE Biomimetic Systems Research Group, University of Szeged, Szeged;

⁶Institute of Biophysics, BRC, Szeged;

⁷Department of Organic Chemistry, Faculty of Science and Technology, University of Debrecen, Debrecen;

⁸Institute of Molecular Biology, Biocenter, Medical University of Innsbruck, Innsbruck)

NEW ANTIFUNGAL STRATEGIES - CHARACTERIZATION AND APPLICATION OF NEOSARTORIA (ASPERGILLUS) FISCHERI ANTIFUNGAL PROTEIN 2 (NFAP2)

Posters

INSTITUTE OF BIOCHEMISTRY

1.

ALTERING THE SUBSTRATE SPECIFICITY OF THE CG-SPECIFIC MPEI DNA-METHYTRANSFERASE BY STRUCTURE-GUIDED MUTAGENESIS

Pál Albert^{1,3}, Bence Varga^{1,2,3}, Györgyi Ferenc² and Antal Kiss¹

¹Institute of Biochemistry, BRC, Szeged;

²Institute of Plant Biology, Oligonucleotide Synthesis Laboratory, BRC, Szeged;

³Doctoral School of Biology, Faculty of Science and Informatics, University of Szeged, Szeged)

2.

COMETANALYSER: A USER-FRIENDLY, OPEN-SOURCE DEEP-LEARNING MICROSCOPY TOOL FOR QUANTITATIVE COMET ASSAY ANALYSIS.

Attila Baleon¹, Sara Pignatta², Chiara Arienti², Antonella Carbonaro³, Peter Horvath^{1,4,5}, Giovanni Martinelli², Gastone Castellani⁶, Anna Tesei² and Filippo Piccinini²

¹ Synthetic and Systems Biology Unit, BRC, Szeged;

² IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori", Meldola, Italy;

³ Department of Computer Science and Engineering (DISI), University of Bologna, Cesena, Italy;

⁴ Institute for Molecular Medicine Finland-FIMM, Helsinki Institute of Life Science-HiLIFE, University of Helsinki, Helsinki, Finland;

⁵ Single-Cell Technologies Ltd., Szeged;

⁶ Department of Experimental, Diagnostic and Specialty Medicine (DIMES), University of Bologna, Bologna, Italy)
3.

LARGE-SCALE MUTAGENESIS OF PHAGE TAIL FIBERS TO ALTER HOST SPECIFICITY

Bálint Dénes Eszenyi¹, Gábor Apjok¹, Tóbiás Sári¹, Bálint Kintses¹

¹ Synthetic and Systems Biology Unit, BRC, Szeged)
4.

INVESTIGATING THE SEX-DEPENDENT EFFECTS OF REGULAR EXERCISE TRAINING ON MUSCLE AND BRAIN TISSUE IN A MOUSE MODEL OF HYPERLIPIDEMIA

Brigitta Dukay¹, Zsófia Bódai¹, Alexandra Csefová¹, Petra Hajdu¹, Zsófia Ruppert^{1,2}, Botond Penke³, Livia Fülöp³, Kitti Szabó⁴, Anikó Keller-Pintér⁴, László Dux⁴, Imre Gombos¹, Zsolt Török¹, Miklós Sántha¹ and Melinda E. Tóth¹

¹ Institute of Biochemistry, Biological Research Centre, Szeged;

² Doctoral School in Biology, University of Szeged, Szeged;

³ Department of Medical Chemistry, and

⁴ Muscle Adaptation Group, Department of Biochemistry, University of Szeged Albert Szent-Györgyi Medical School, Szeged)
5.

INVESTIGATION OF FEVER-LIKE HYPERTHERMIA INDUCED MEMBRANE-COUPLED EVENTS

Barbara Dukic¹, Ádám Tiszlavicz¹, Mária Péter¹, Vanda Varga-Zsíros¹, Gábor Balogh¹, László Vígh¹, Imre Gombos¹, Zsolt Török¹

¹ Institute of Biochemistry, BRC, Szeged)
6.

THE EFFECT OF THE HEAT SHOCK ON THE INTRACELLULAR MEMBRANE SYSTEM OF THE FISSION YEAST

Péter Gudmann¹, Mária Péter¹, Gábor Balogh¹, Imre Gombos¹, Zsolt Török¹, Attila Glatz¹

¹ Laboratory of Molecular Stress Biology, Institute of Biochemistry, BRC, Szeged)
7.

PROTEOMIC ANALYSIS OF BOTRYTIS CINEREA INDUCED NOBLE ROT DEVELOPMENT OF FURMINT GRAPE BERRIES

Éva Hunyadi-Gulyás¹, Zsuzsanna Darula^{1,2}, Miklós Pogány³

¹ Laboratory of Proteomics Research, BRC, Szeged;

² Single Cell Omics Advanced Core Facility, HCEMM, Szeged;

³ Plant Protection Institute, Centre for Agricultural Research, Budapest)
8.

QUANTITATION USING STABLE ISOTOPE LABALLED PEPTIDES TO SET UP A DIAGNOSTIC PROTEIN PANEL IN THE DIFFERENTIATION OF RENAL CARCINOMA AND NORMAL KIDNEY TISSUE

Éva Klement^{1,2}, Áron Bartha^{3,4}, Balázs Györfy^{3,4}, Zsuzsanna Darula^{1,2}

¹ Single Cell Omics Advanced Core Facility, HCEMM, Szeged)
9.

WE BRING METABOLOMICS CLOSER TO YOUR RESEARCH

Tímea Körmöczi^{1,2}, Dorottya Kalapis^{3,2}, Dávid Tóth^{4,5}, Valéria Nagy⁴, Szilvia Z. Tóth⁴, Balázs Papp^{3,2} and Roland Tengölics^{1,2}

¹ Metabolomics lab, BRC, Szeged;

² Hungarian Centre of Excellence for Molecular Medicine - Metabolic Systems Biology Lab, Szeged;

³ Synthetic and Systems Biology Unit, Institute of Biochemistry, BRC, Szeged;

⁴ Institute of Plant Biology, BRC, Szeged;

⁵ Doctoral School of Biology, University of Szeged, Szeged)
10.

THE ROLE OF CORRELATED MOTIONS OF CONSERVED STRUCTURAL MOTIFS IN THE ACTIVATION MECHANISM OF G PROTEIN-COUPLED RECEPTORS

Argha Mitra, Arijit Sarkar, Szabolcs Dvorácskó, Mária Harmati, Zsuzsánna Réthi-Nagy, Krisztina Buzás, Zoltán Lipinszki and Attila Borics

(Institute of Biochemistry, BRC, Szeged)
11.

ANALYSIS OF URINARY O-GLYCOPEPTIDES: SYSTEMATIC EVALUATION OF A DATASET USING DIFFERENT SEARCH ENGINES

Ádám Pap¹, Katalin F. Medzihradszky¹, Zsuzsanna Darula^{1,2}

¹ Laboratory of Proteomics Research, BRC, Szeged; ² Single Cell Omics Advanced Core Facility, HCEMM, Szeged)
12.

INVESTIGATING THE EFFECTS OF A SMALL HEAT SHOCK PROTEIN ON METABOLIC SYNDROME IN A TRANSGENIC MOUSE MODEL

Zsófia Ruppert¹, Bettina Rákóczi¹, Brigitta Dukay¹, Petra Hajdu¹, Márta Sárközy², Gergő Szűcs², Tamás Csont², Zsolt Török¹, Miklós Sántha¹, Melinda E. Tóth¹

¹ Institute of Biochemistry, BRC, Szeged;

² MEDICS Research Group, Department of Biochemistry, University of Szeged Albert Szent-Györgyi Medical School, Szeged)
13.

GENOMIC EPIDEMIOLOGY OF PATHOGENIC ACINETOBACTER BAUMANNII HOSPITAL OUTBREAKS IN EUROPE

Tamás Stirling¹, Ildikó Lantos¹, Eszter Ari^{1,2}, Bálint Vásárhelyi¹, Balázs Papp¹, Bálint Kintses¹

¹ Institute of Biochemistry, BRC, Szeged;

² Department of Genetics, Eötvös Lóránd University, Budapest)

14. **THE EVOLUTION OF THE YEAST METABOLOME**

Balázs Szappanos^{1,2,3}, Roland T engölics^{1,2}, Gábor Grézal^{1,2}, Dorottya Kalapis^{1,2}, Dóra Spekhardt^{1,2}, Stefánia Erdei^{1,2}, Viktor Kilin^{1,2}, Enrica Calvani⁵, Michael Müller⁴, Markus Ralser⁴ and Balázs Papp^{1,2}

¹*HCEMM-BRC Metabolic Systems Biology Research Group, Szeged;*

²*Institute of Biochemistry, Synthetic and Systems Biology Unit, BRC, Szeged;*

³*Department of Biotechnology, University of Szeged, Szeged;*

⁴*Department of Biochemistry, Charité University Medicine, Berlin, Germany;*

⁵*Department of Biochemistry, University of Cambridge, The Francis Crick Institute, London, NW1¹ AT, UK)*

15. **RATIONAL DESIGN OF BALANCED DUAL-TARGETING ANTIBIOTICS WITH LIMITED RESISTANCE**

Petra Szili¹, Tihomir Tomašić², Martina Durcik², Ákos Nyerges¹, Csaba Pál²

¹*Institute of Biochemistry, BRC, Szeged;*

²*University of Ljubljana, Faculty of Pharmacy, Ljubljana, Slovenia)*

16. **INVESTIGATION OF TUMOR HETEROGENEITY: A NOVEL, LASER MICRODISSECTION-COUPLED LIPIDOMIC METHOD**

Vanda Varga-Zsíros¹, Mária Péter¹, Ede Migh¹, Annamária Marton¹, Aladár Pettkó-Szandtner², Imre Gombos¹, Barbara Dukic¹, Zsuzsanna Darula^{2,3}, Csaba Vizler¹, László Tiszlavicz⁴, Péter Horváth¹, László Vigh¹, Zsolt Török¹, Gábor Balogh¹

¹*Institute of Biochemistry, BRC, Szeged;*

²*Laboratory of Proteomics Research, BRC, Szeged;*

³*Single Cell Omics Advanced Core Facility, HCEMM, Szeged;*

⁴*Department of Pathology, Faculty of Medicine, University of Szeged, Szeged)*

INSTITUTE OF BIOPHYSICS

17. **SINGLE-CELL LEVEL QUORUM SENSING RESPONSE OF PSEUDOMONAS AERUGINOSA UNDER DYNAMIC ENVIRONMENTAL CONDITIONS**

Ágnes Ábrahám^{1,2}, Krisztina Nagy¹, Eszter Csákvári¹, László Dér¹, Imre Pap^{1,2}, Rebeka Lukács¹, Vanda Varga-Zsíros^{1,3} and Péter Galajda¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged;*

³*Institute of Biochemistry, BRC, Szeged)*

18. **IL-6 AND IL-10 INDUCED MORPHOLOGICAL CHANGES IN BRAIN MICROVESSELS ISOLATED FROM WILD TYPE AND APOB-100 TRANSGENIC MICE**

Beáta Barabási¹, Lilla Barna¹, András Harazin¹, Melinda Tóth², Brigitta Dukay², Miklós Sántha², Zsófia Hoyk¹ and Mária A. Deli¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Institute of Biochemistry, BRC, Szeged)*

19. **THE EFFECT OF ADENOSINE ON THE INTEGRITY OF THE BLOOD-BRAIN BARRIER**

Lilla Barna^{1,2}, András Harazin¹, Gabriela Hurtado-Alvarado³, Krisztián Laczi⁴, Gábor Rákhely^{1,4}, Beatriz Gomez-Gonzalez³ and Mária A. Deli¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Doctoral School in Biology, University of Szeged, Szeged;*

³*Department of Reproductive Biology, Metropolitan Autonomous University, Mexico City, Mexico;*

⁴*Department of Biotechnology, University of Szeged, Szeged)*

20. **INVESTIGATION OF THE GALECTIN-1 PROTEIN ON CULTURE MODELS OF BIOLOGICAL BARRIERS**

Alexandra Bocsik¹, Ilona Gróf¹, Enikő Szabó², Norbert Imre³, Theodora M. Niczky¹, Anna Hegyi¹, Ágnes Czibula⁴, Éva Monostori⁴, Tamás Martinek³ and Mária A. Deli¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Laboratory of Functional Genomics, BRC, Szeged;*

³*Department of Medical Chemistry, University of Szeged, Szeged;*

⁴*Institute of Genetics, BRC, Szeged)*

21. **MICROBIAL TOLERANCE TO PETROLEUM PRODUCTS IN INVERSE EMULSIONS**

Attila Bodor^{1,2}, Máté Nagy², Katalin Perei² and Gábor Rákhely^{1,2}

¹*Institute of Biophysics, BRC, Szeged;*

²*Department of Biotechnology, University of Szeged, Szeged)*

22. **A NOVEL APPROACH IN HEART-RATE-VARIABILITY ANALYSIS BASED ON MODIFIED POINCARÉ PLOTS**

András Búzás¹, Tamás Horváth² and András Dér¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Centre of Cardiology, Medical Faculty of the University of Szeged, Szeged)*

23. **BOUNDARY SCATTERING AND THE SPATIAL DISTRIBUTION OF CONFINED ACTIVE PARTICLES**

András Búzás¹, Roberto Di Leonardo², Pál Ormos¹ and Gaszton Vizsnyiczai¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Dipartimento di Fisica, Università di Roma “Sapienza”, Roma, Italy)*

24. **INFLAMMATION INDUCED ALTERATIONS IN NANOMECHANICAL CHARACTERISTICS OF BRAIN SEEKING TUMOR CELLS**

Katalin Csonti^{3,4}, Anna Poscher², Csilla Fazakas¹, Kinga Molnár¹, Imola Wilhelm¹, István Krizbai¹, Márta Dorogi⁴ and Attila Gergely Végh¹

¹*Institute of Biophysics, BRC, Szeged;*

²*Faculty of Science and Informatics, University of Szeged, Szeged;*

³*Doctoral School of Physics, University of Szeged, Szeged;*

⁴*Semilab Semiconductor Physics Laboratory Co. Ltd., Budapest)*

25. **MEASURING THE BINDING FORCE BETWEEN GLUTATHIONE-FUNCTIONALIZED MICROTOOLS AND BLOOD-BRAIN BARRIER CELLS WITH OPTICAL TWEEZERS**

Tamás Fekete^{1,2}, Mária Mészáros¹, Gaszton Vizsnyiczai¹, Mária Deli¹, Zsolt Szegletes¹, László Zimányi¹, Szilvia Veszelka¹ and Lóránd Kelemen¹

¹Institute of Biophysics, BRC, Szeged;

²Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged)

26. **DIET, A RADICALLY NEW BIOGAS TECHNOLOGY HEAVES IN SIGHT**

Noémi Gönczi^{1,3}, Roland Wirth², Márk Szuhaj^{1,3}, Gábor Rákhely^{1,3}, Kornél L. Kovács^{1,4} and Zoltán Bagi^{1,3}

¹Department of Biotechnology, University of Szeged, Szeged;

²Institute of Plant Biology, BRC, Szeged;

³Institute of Biophysics, BRC, Szeged;

⁴Department of Oral Biology and Experimental Dental Research, University of Szeged, Szeged)

27. **EXAMINATION OF THE INTRACELLULAR TARGETING AND SHUTTLE ACTIONS OF THE WYKYW PENTAPEPTIDE FOR BIOMOLECULE CARGOES**

Ilona Gróf¹, Alexandra Bocsik¹, Enikő Szabó², Imre Norbert³, Anna Hegyi¹, Ágnes Czibula⁴, Éva Monostori⁴, Tamás Martinek³ and Mária A. Deli¹

¹Institute of Biophysics, BRC, Szeged;

²Laboratory of Functional Genomics, BRC, Szeged;

³Department of Medical Chemistry, University of Szeged, Szeged;

⁴Institute of Genetics, BRC, Szeged)

28. **MICROMANIPULATION OF BACTERIAL CELLS BY OPTICAL TWEEZERS AND MICROFLUIDICS**

Kiss Rebeka^{1,2}, Ágnes Ábrahám^{1,3}, Krisztina Nagy¹, Gaszton Vizsnyiczai¹, László Dér¹, Lóránd Kelemen¹ and Péter Galajda¹

¹Institute of Biophysics, BRC, Szeged;

²Institute of Physics, University of Szeged, Szeged;

³Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged)

29. **CELLULOSE DEGRADATION BY ANAEROBIC FUNGI**

Etelka Kovács¹, Zoltán Bagi^{1,2}, Gábor Rákhely^{1,2} and Kornél L. Kovács^{1,3}

¹Department of Biotechnology, University of Szeged, Szeged;

²Institute of Biophysics, BRC, Szeged;

³Department of Oral Biology and Experimental Dental Research, University of Szeged, Szeged)

30. **CEREBRAL PERICYTES AND ENDOTHELIAL CELLS COMMUNICATE THROUGH INFLAMMASOME DEPENDENT SIGNALS**

Ádám Mészáros¹, Mihály Kozma^{1,2}, Ádám Nyúl-Tóth¹, Kinga Molnár^{1,2}, Zsófia Hernádi¹, Csilla Fazakas¹, Attila E Farkas¹, Imola Wilhelm¹ and István Krizbai¹

¹Institute of Biophysics, BRC, Szeged;

²Theoretical Medicine Doctoral School, University of Szeged, Szeged)

31. **QUINONE-BINDING SITE OF TYPE VI SULFIDE:QUINONE OXIDOREDUCTASES**

Nikolett Miklovics¹, Ágnes Duzs¹, Gábor Paragi^{2,3}, Fanni Balogh¹, Gábor Rákhely^{1,4} and András Tóth^{1,4}

¹Institute of Biophysics, BRC, Szeged;

²Institute of Physics, University of Pécs, Pécs;

³MTA-SZTE Biomimetic Systems Research Group, Department of Medical Chemistry, University of Szeged, Szeged;

⁴Department of Biotechnology, University of Szeged, Szeged)

32. **IMPACT OF TRYPTOPHAN-RETINAL INTERACTION ON THE RETINAL EXCITED STATE AND PHOTOCYCLE OF GLOEBACTER RHODOPSIN**

Ramprasad Misra¹, Ishita Das¹, András Dér², Gábor Steinbach^{2,3}, Kwang-Hwan Jung⁴, László Zimányi² and Mordechai Sheves¹

¹Department of Molecular Chemistry and Materials Science, Weizmann Institute of Science, Rehovot, Israel;

²Institute of Biophysics, BRC, Szeged;

³Cellular Imaging Laboratory, BRC, Szeged;

⁴Department of Life Science and Institute of Biological Interfaces, Sogang University, Seoul, South Korea)

33. **MOTONEURONAL INFLAMMASOME ACTIVATION TRIGGERS EXCESSIVE NEUROINFLAMMATION AND IMPEDES REGENERATION AFTER SCIATIC NERVE INJURY**

Kinga Molnár^{1,2}, Bernát Nógrádi^{1,3}, Rebeka Kristóf^{1,2,4}, Ádám Mészáros¹, Krisztián Pajer⁴, László Siklós¹, Antal Nógrádi⁴, Imola Wilhelm¹ and István Krizbai¹

¹Institute of Biophysics, BRC, Szeged;

²Theoretical Medicine Doctoral School, University of Szeged, Szeged;

³Department of Neurology, Albert Szent-Györgyi Health Centre, University of Szeged, Szeged;

⁴Department of Anatomy, University of Szeged, Szeged)

34. **EMERGENCE OF PHAGE RESISTANT ESCHERICIA COLI MUTANTS IN MICROSTRUCTURED ENVIRONMENT**

Krisztina Nagy¹, Sarshad Koderi Valappil², Trung Phan³, László Dér¹, Gábor Rákhely^{1,2}, Péter Galajda¹ and Robert H. Austin³

¹Institute of Biophysics, BRC, Szeged;

²Department of Biotechnology, University of Szeged, Szeged;

³Department of Physics, Princeton University, Princeton, NJ, USA)

35. **A NOVEL SIMULATION APPROACH ADDRESSING LARGER BIOLOGICAL SYSTEMS: PARTICLE SWARM OPTIMIZATION**

Zoltán Násztor¹, János Horváth¹ and András Dér¹

¹Institute of Biophysics, BRC, Szeged)

36.

COMPUTATIONAL INVESTIGATION OF THE GRAPHENE OXIDE INTERACTION WITH HUMAN SERUM ALBUMIN

Zoltán Násztor¹, János Horváth¹, András Dér¹ and Ferenc Bogár²

¹*Institute of Biophysics, BRC, Szeged;* ²*MTA-SZTE Biomimetic Systems Research Group, University of Szeged, Szeged)*
37.

EFFECT OF SOLVATION ENVIRONMENT ON THE DISTRIBUTED KINETICS OF NADH COFACTOR: A SIMULATION STUDY

Zoltán Násztor¹, János Horváth¹ and András Dér¹

¹*Institute of Biophysics, BRC, Szeged)*
38.

DEVELOPMENT AND APPLICATIONS OF BACTERIAL “MOTHER MACHINES”

Imre Pap^{1,2}, Krisztina Nagy¹, Ágnes Ábrahám^{1,2} and Péter Galajda¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Doctoral School of Multidisciplinary Medical Science, University of Szeged, Szeged)*
39.

INTEGRATED OPTICAL MACH-ZEHNDER INTERFEROMETER BIOSENSOR TO DETECT THE PENETRATION OF SARS-COV-2 SPIKE PROTEIN ACROSS A HUMAN BLOOD-BRAIN BARRIER CELL-CULTURE MODEL SYSTEM

Dániel Petrovski¹, Fruzsina R. Walter¹, Judit P. Vigh^{1,3}, Anna Kocsis¹, Sándor Valkai¹, Mária A. Deli¹ and András Dér¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Doctoral School of Multidisciplinary Medical Sciences, University of Szeged, Szeged;*
³*Doctoral School of Biology, University of Szeged, Szeged)*
40.

PHOTBLEACHING ALTERS QUANTIFIED MORPHOLOGICAL FEATURES OF MICROGLIA AND THE NUMBER OF NEURONAL PROFILES DURING IMMUNOFLOUORESCENT IMAGING

Tamás F. Polgár^{1,2}, Krisztina Spisák^{1,2}, László Siklós¹ and Roland Patai¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Theoretical Medicine Doctoral School, University of Szeged, Szeged)*
41.

METASTASIS RELATED ADHESION PATTERN OF BRAIN SEEKING TUMOR CELLS IN CONTACT WITH BRAIN ENDOTHELIUM

Anna Poscher², Katalin Cconti^{3,4} Csilla Fazakas¹, Kinga Molnár¹, Imola Wilhelm¹, István Krizbai¹, and Attila Gergely Végh¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Faculty of Science and Informatics, University of Szeged, Szeged;*
³*Doctoral School of Physics, University of Szeged, Szeged;*
⁴*Semilab Semiconductor Physics Laboratory Co. Ltd., Budapest;)*
42.

TRIPLE LIGAND-TARGETED NANOPARTICLES CROSS THE BLOOD-BRAIN BARRIER IN VITRO AND ENTER HUMAN MIDBRAIN ORGANOIDs

Gergő Porkoláb^{1,2}, Mária Mészáros¹, Anikó Szecskó¹, Nóra Kondor¹, Györgyi Ferenc³, Zoltán Kóta¹, Tibor Páli¹, Judit P. Vigh^{1,2}, Fruzsina R. Walter¹, Silvia Bolognin⁴, Jens C. Schwamborn⁴, Jeng-Shiung Jan⁵, Mária A. Deli¹ and Szilvia Veszélka¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Doctoral School of Biology, University of Szeged, Szeged;*
³*Institute of Plant Biology, BRC, Szeged;*
⁴*Luxembourg Centre for Systems Biomedicine, University of Luxembourg, Belvaux, Luxembourg;*
⁵*Department of Chemical Engineering, National Cheng Kung University, Tainan, Taiwan)*
43.

PASSIVE TRANSFER OF BLOOD SERA FROM ALS PATIENTS WITH KNOWN GENETIC ALTERATIONS RESULTS IN ELEVATED CALCIUM LEVELS AND MOTOR NEURONAL LOSS IN MICE

Krisztina Spisák^{1,2}, Tamás F. Polgár^{1,2}, Valéria Meszlényi^{1,3}, Bernát Nógrádi^{1,2,3}, Izabella Obál^{3,4}, József I. Engelhardt³, László Siklós¹ and Roland Patai¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Theoretical Medicine Doctoral School, University of Szeged, Szeged;*
³*Department of Neurology, Albert Szent-Györgyi Health Centre, University of Szeged, Szeged;*
⁴*Department of Neurology, Aalborg University Hospital, Aalborg, Denmark)*
44.

EXAMINATION OF VIRAL PEPTIDE-TARGETED NANOPARTICLES ON A CULTURE MODEL OF THE BLOOD-BRAIN BARRIER

Anikó Szecskó¹, Mária Mészáros¹, Gergő Porkoláb^{1,2}, Vera Neves³, Marco Cavaco³, Miguel A.R.B. Castanho³, Mária A. Deli¹ and Szilvia Veszélka¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Doctoral School of Biology, University of Szeged, Szeged;*
³*Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Portugal)*
45.

IN VITRO CONFRONTATION ASSAY OF ASPERGILLUS CLAVATUS AND TRICHODERMA REESEI

Csilla Szűcs¹, Etelka Kovács¹, Zoltán Bagi¹, Gábor Rákhely^{1,2} and Kornél L. Kovács^{1,3}

¹*Department of Biotechnology, University of Szeged, Szeged;*
²*Institute of Biophysics, BRC, Szeged;*
³*Department of Oral Biology and Experimental Dental Research, University of Szeged, Szeged)*
46.

CO-CULTURE OF HUMAN BRAIN ORGANOIDs WITH BLOOD-BRAIN BARRIER MODEL ON A MICROFLUIDIC BIOCHIP PLATFORM: MORPHOLOGICAL AND FUNCTIONAL CHARACTERIZATION

Judit P. Vigh^{1,2}, Fruzsina R. Walter¹, Anna Kocsis¹, Gergő Porkoláb^{1,2}, Ilona Gróf¹, Lilla Barna¹, András Kincses¹, Sándor Valkai¹, Silvia Bolognin³, Jens C. Schwamborn³, András Dér¹ and Mária A. Deli¹

¹*Institute of Biophysics, BRC, Szeged;*
²*Doctoral School of Biology, University of Szeged, Szeged;*
³*Luxembourg Centre for Systems Biomedicine, University of Luxembourg, Belvaux, Luxembourg)*

47.

ROLE OF LYSOSOMAL TRPML/MUCOLIPIN-1 CALCIUM CHANNEL IN AUTOPHAGIC FLUXHussein Abuammar^{1,3}, Arindam Bhattacharjee¹, Gabor Juhasz^{1,2}¹*Institute of Genetics, BRC, Szeged;*²*Department of Anatomy, Cell and Development Biology, Eötvös Loránd University, Budapest;*³*University of Szeged, Szeged)*

48.

NEW ROLE OF NCPRC1 CORE MEMBER YAF2 IN NEURAL DEVELOPMENTLili Adorján^{1,2}, Enikő Sutus^{1,3}, Melinda Katalin Pirty¹¹*Institute of Genetics, BRC, Szeged;*²*Faculty of Science and Informatics, University of Szeged, Szeged;*³*Doctoral School in Biology, Faculty of Science and Informatics, University of Szeged, Szeged)*

49.

DROSOPHILA PIWI PROTEIN UTILIZES MOLECULAR MIMICRY OF SUMO TO RECRUIT SU(VAR)2-10 TO THE SITE OF TRANSPOSON REPRESSIONMelinda Bence¹, Ákos Gyetvai¹, Ferenc Jankovics¹, Beáta G. Vértessy^{2,3}, Miklós Erdélyi¹¹*Institute of Genetics, BRC, Szeged;*²*Department of Applied Biotechnology and Food Sciences, Budapest University of Technology and Economics, Budapest;*³*Institute of Enzymology, Research Centre for Natural Sciences, Budapest)*

50.

PARALLEL MECHANISMS ENSURE THE ROBUST NUCLEAR IMPORT OF ACTIN

Péter Borkúti, Ildikó Maruzs-Kristó, Anikó Szabó, Zoltán Kovács and Péter Vilmos

(Institute of Genetics, BRC, Szeged)

51.

INVESTIGATING THE ROLE OF DROSOPHILA SNX25 IN THE ENDOMEMBRANE SYSTEM OF NEPHROCYTESDalma Feil-Böröcsök¹, Tamás Maruzs¹, Enikő Lakatos¹, Gábor Juhász¹, Péter Lőrincz², András Blastyák¹ and Gábor Juhász^{1,2}¹*Institute of Genetics, BRC, Szeged;*²*Department of Anatomy, Cell and Developmental Biology, Eötvös Loránd University, Budapest)*

52.

HIGH-THROUGHPUT SCREENING FOR SMALL MOLECULE MODULATORS OF THE PCNA UBIQUITINATION CASCADEGabriel Fenteany^{1,2,8,*}, Gaurav Sharma^{3,4,8}, Paras Gaur^{3,5}, Attila Borics⁶, Edit Wéber¹, Ernő Kiss², and Lajos Haracska^{3,7,9,*}¹*Department of Medical Chemistry, University of Szeged, Szeged;*²*Institute of Genetics, BRC, Szeged;*³*HCEMM-BRC Mutagenesis and Carcinogenesis Research Group, Institute of Genetics, BRC, Szeged;*⁴*Doctoral School of Biology, Faculty of Science and Informatics, University of Szeged, Szeged;*⁵*Carver College of Medicine, University of Iowa, Iowa City, USA;*⁶*Laboratory of Chemical Biology, Institute of Biochemistry, BRC, Szeged;*⁷*Delta Bio²⁰⁰⁰ Ltd., Szeged;*⁸*These authors contributed equally*⁹*Lead contact)*

53.

THERE AND BACK AGAIN: THE HETEROGENEITY OF DROSOPHILA HEMOCYTESErika Gábor¹, Aliz Gécz^{1,2}, Bayan Kharrat^{1,2}, Ede Migh³, Attila Beleon³, Péter Horváth³, Bence Széplaki⁴, Márton Enyedi⁴, Lajos Pintér⁴, Lajos Haracska⁴, Balázs Vedelek⁵ and Viktor Honti¹¹*Drosophila Blood Cell Differentiation Group, Institute of Genetics, BRC, Szeged;*²*Department of Biology, Faculty of Science and Informatics, University of Szeged, Szeged;*³*Laboratory of Microscopic Image Analysis and Machine Learning, Institute of Biochemistry, BRC, Szeged;*⁴*Laboratory of Mutagenesis and Carcinogenesis Research, Institute of Genetics, BRC, Szeged;*⁵*Laboratory of Actin Cytoskeleton Regulation, Institute of Genetics, BRC, Szeged)*

54.

LINE1 RETROTRANSPOSITION, A MAJOR CHARACTER IN HUMAN CARCINOGENESIS? - A STUDY BASED ON HUMAN TUMOR BANK DATAKhaldoon Sadiq Ahmed Abdullah^{1,2}, Réka Karkas^{1,2}, Gabriella Pankotai-Bodó³, Sükösd Farkas³, Mátés Lajos¹¹*Institute of Genetics, BRC, Szeged;*²*Doctoral School of Multidisciplinary Medical Sciences, Faculty of Medicine, University of Szeged, Szeged;*³*Department of Pathology, Faculty of Medicine, University of Szeged, Szeged)*

55.

A NEW ROLE FOR MYELOID LEUKEMIA FACTOR (MLF) IN CONTROLLING LAMELLOCYTE FATE IN DROSOPHILA MELANOGASTERBayan Kharrat^{1,3}, Nikolett Virág^{1,2} and Viktor Honti¹¹*Drosophila Blood Cell Differentiation Group, Institute of Genetics, BRC, Szeged;*²*Department of Biology, Faculty of Science and Informatics, University of Szeged, Szeged;*³*Doctoral School of Biology, Faculty of Science and Informatics, University of Szeged, Szeged)*

56.

CELL FATE DEFINING ROLE OF RYBP IN EARLY STAGE OF CARDIAC DIFFERENTIATIONLilla Kókity^{1,2}, Surya Henry¹, Melinda Katalin Pirty¹¹*Institute of Genetics, BRC, Szeged;*²*Doctoral School in Biology, Faculty of Science and Informatics, University of Szeged, Szeged)*

57.

NUCLEAR IMPORT DYNAMICS OF THE DROSOPHILA MOESIN PROTEIN

Zoltán Kovács, Ildikó Kristó, Péter Borkúti and Péter Vilmos

(Institute of Genetics, BRC, Szeged)

58. **ASSESSING THE PERFORMANCE OF TEN PATHOGENICITY PREDICTION ALGORITHMS ON A DATASET OF MISSENSE BRCA1 AND BRCA2 MUTATIONS**
Erda Qorri¹, Bertalan Takács¹, Alexandra Gráf¹, Márton Zs. Enyedi², Lajos Pintér², Ernő Kiss¹, Lajos Haracska^{1,2}
(¹HCEMM-BRC Mutagenesis and Carcinogenesis Research Group, Institute of Genetics, BRC, Szeged;
²Delta Bio ²⁰⁰⁰ Ltd., Szeged)

59. **STUDYING DROSOPHILA BLOOD CELL PLASTICITY USING PRIMARY BLOOD CELL CULTURES**
Enikő Sutus¹, Erika Gábor¹, Bayan Kharrat¹, Ferenc Jankovics², Rita Sinka³ and Viktor Honti¹
(¹Drosophila Blood Cell Differentiation Group, Institute of Genetics, BRC, Szeged;
²Laboratory of Drosophila Germ Cell Differentiation, Institute of Genetics, BRC, Szeged;
³Department of Genetics, Faculty of Science and Informatics, University of Szeged, Szeged)

INSTITUTE OF PLANT BIOLOGY

60. **TWO-DIMENSIONAL ELECTRONIC SPECTROSCOPY OF A MINIMAL PHOTOSYSTEM I COMPLEX REVEALS THE RATE OF PRIMARY CHARGE SEPARATION**
Parveen Akhtar^{1,2,3}, Ido Caspy⁴, Nathan Nelson⁴, Howe-Siang Tan² and Petar H. Lambrev¹
(¹Institute of Plant Biology, BRC, Szeged;
²School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore;
³ELI-ALPS, ELI-HU Nonprofit Ltd., BRC, Szeged;
⁴The George S. Wise Faculty of Life Sciences, Tel Aviv University, Israel)

61. **METAGENOMIC INVESTIGATION OF THE BACTERIAL CONSORTIUM OF A THERMAL WATER RESERVOIR**
Csenge Bakó^{1,2}, Krisztián Laczi^{1,2} and Péter B. Kós^{1,2}
(¹Department of Biotechnology, Faculty of Science and Informatics, University of Szeged, Szeged;
²Institute of Plant Biology, BRC, Szeged)

62. **THE INVESTIGATION OF NITROGEN FIXATION IN AMORPHA FRUTICOSA**
Benedikta Balla^{1,2}, Rui Lima¹ and Attila Kereszt¹
(¹Institute of Plant Biology, BRC, Szeged;
²Doctoral School of Biology, University of Szeged, Szeged)

63. **AROMATIC HYDROCARBON TOLERATING, HALOTOLERANT BACTERIA FROM A THERMAL WATER RESERVOIR**
Boglárka Bereczky^{1,2}, Gábor Patyi¹, Lilla Futó-Dékány¹, Krisztián Laczi^{1,2} and Péter B. Kós^{1,2}
(¹Institute of Plant Biology, BRC, Szeged;
²Department of Biotechnology, Faculty of Science and Informatics, University of Szeged, Szeged)

64. **ENERGY TRANSFER FROM PHYCOBILISOMES TO PHOTOSYSTEM I IN A MODEL SYSTEM**
Avratanu Biswas^{1,2}, Zita Szegletes^{1,3}, Petar H. Lambrev¹ and Parveen Akhtar¹
(¹Institute of Plant Biology, BRC, Szeged;
²Doctoral School of Biology, University of Szeged, Szeged;
³Institute of Chemistry, Faculty of Sciences and Informatics, University of Szeged, Szeged)

65. **THE ATCRK5 PROTEIN KINASE IS REQUIRED TO MAINTAIN THE ROS NO BALANCE AFFECTING THE PIN2-MEDIATED ROOT GRAVITROPIC RESPONSE IN ARABIDOPSIS**
Ágnes Cséplő¹, Laura Zsigmond¹, Norbert Andrási¹, Imran Abou^{1,2}, Nitin Labhane³, Andrea Pető^{4,5}, Zsuzsanna Kolbert⁴, Hajnalka Kovács¹, Gábor Steinbach^{1,6}, László Szabados¹, Attila Fehér^{1,4} and Gábor Rigó¹
(¹Institute of Plant Biology, BRC, Szeged;
²Department of Forest Genetics and Plant Physiology, Swedish University of Agricultural Sciences, Umeå, Sweden;
³Department of Botany, Bhavan's College Andheri West, Mumbai, India;
⁴Department of Plant Biology, University of Szeged, Szeged;
⁵Food Chain Safety Center Nonprofit Ltd., Budapest;
⁶Cellular Imaging Laboratory, BRC, Szeged)

66. **SYNTHESIS AND CHARACTERIZATION OF THE SECONDARY STRUCTURE OF OLIGONUCLEOTIDES CONTAINING 2'-DEOXY-5-HYDROXYURIDINE**
Györgyi Ferenc¹, Zoltán Kupihár², Zoltán Váradi², Éva Klement³, Attila Borics³, Zoltán Lipinszki³, Zsuzsanna Réthi-Nagy³, Gábor Paragi^{4,5} and Lajos Kovács²
(¹Institute of Plant Biology, BRC, Szeged;
²Department of Medicinal Chemistry, University of Szeged, Szeged;
³Institute of Biochemistry, BRC, Szeged;
⁴Biomimetic Systems Research Group, MTA-SZTE, Szeged;
⁵Institute of Physics, University of Pécs, Pécs)

67. **ROLE OF ARABIDOPSIS E2F TRANSCRIPTION FACTORS IN ROOT AND SHOOT DEVELOPMENTAL PROCESSES**
Katalin Gémes^{1,2}, Nikolett Kaszler^{1,2}, Márta Szabó², Péter Benkő¹, Zoltán Magyar¹ and Attila Fehér^{1,2}
(¹Institute of Plant Biology, BRC, Szeged;
²Department of Plant Biology, University of Szeged, Szeged)

68. **E2FS REGULATE A CELL SIZE CONTROLLER THROUGH MODULATING THE EXPRESSION OF MYB3R4**
Magdolna Gombos¹, Dóri Bernula¹, Masaki Ito², Moussa Benhamed³, Cécile Raynaud³, László Bögre⁴ and Zoltán Magyar¹
(¹Institute of Plant Biology, BRC, Szeged;
²School of Biological Science and Technology, College of Science and Engineering, Kanazawa University, Kanazawa, Japan;
³Institute of Plant Sciences Paris Saclay, France;
⁴Royal Holloway University of London, Egham, UK)

69. **PREDICTED PHOSPHORILATION AND DIMERIZATION OF CERTAIN LBD TRANSCRIPTION FACTORS EXPRESSED IN BRACHYPODIUM DISTACHYON BASED ON MOLECULAR DYNAMICS**

Attila Hlacs^{1,3}, Magdolna Gombos¹, Attila Borics² and János Györgyey¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Institute of Biochemistry, BRC, Szeged;*

³*Doctoral School of Biology, University of Szeged, Szeged)*

70. **THE DEVELOPMENT OF IMAGING SETUP FOR WHOLE CELL-BASED BIOSENSOR**

Shyam Jee^{1,2}, Kamal Kant², Ildikó Valkony², Ranti Dev Shukla³, Tamás Fehér³, Evrim Elcin⁴, Hüseyin Avni Öktem⁴ and Ferhan Ayaydin^{1,2}

¹*Hungarian Centre of Excellence for Molecular Medicine (HCEMM) Nonprofit Ltd., Szeged;*

²*Cellular Imaging Laboratory, BRC, Szeged;*

³*Institute of Biochemistry, BRC, Szeged;*

⁴*Department of Biotechnology, Middle East Technical University, Ankara, Turkey)*

71. **THE ROLE OF ARABIDOPSIS THALIANA MITOCHONDRIAL PROTEINS IN STRESS RESPONSES**

Annabella Juhász-Erdélyi¹, Ildikó Valkai¹, Gábor Rigó¹, Ágnes Szepesi², Dávid Alexa¹, Niklas Körber³, Fabio Fiorani³, László Szabados¹ and Laura Zsigmond¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Department of Plant Biology, University of Szeged, Szeged;*

³*Forschungszentrum Jülich, Jülich, Germany)*

72. **SALT-STRESS INDUCED CHANGES IN THE SUPRAMOLECULAR ORGANIZATION OF THE PHOTOSYNTHETIC MEMBRANES OF CHLAMYDOMONAS REINHARDTII AND EUGLENA GRACILIS**

Sai Divya Kanna^{1, 2}, Parveen Akhtar¹, Satyabala Neelam³, Elsin Raju³, Srilatha Nama³, Petar H. Lambrev¹, Tímea Ottília Kóbori⁴, Ágnes Dergez⁴, Ildikó Domonkos¹, Győző Garab¹, Rajagopal Subramanyam³ and Bettina Ughy¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Biological Doctoral School, University of Szeged, Szeged;*

³*Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad, India;*

⁴*Division for Biotechnology, Bay Zoltán Nonprofit Ltd. for Applied Research, Szeged)*

73. **ANALYSIS OF ABIOTIC STRESS TOLERANCE IN SELECTED GENES OF ARABIDOPSIS THALIANA**

Kamal Kant, Gábor Rigó, Norbert András, László Szabados and Laura Zsigmond

(Institute of Plant Biology, BRC, Szeged)

74. **NMD MEDIATED RNA QUALITY CONTROL IN CHLAMYDOMONAS REINHARDTII**

Soujanya Kuntam¹, André Vidal-Meireles¹, Csaba Péter^{1,2}, Szilvia Z. Tóth¹ and Dániel Silhavy¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Doctoral School of Biology, University of Szeged, Szeged)*

75. **CHARACTERIZATION OF ACTIVITIES OF LIGNIN SYNTHETIC GENES FOR MONITORING TRIPLOID HETEROSIS IN WILLOW (SALIX SP.) SHOOTS IN RELATION TO BIOGAS FERMENTATION PRODUCTIVITY FROM WOODY TISSUES**

Nikolett László^{1,3}, Zoltán Zombori¹, András Cseri¹, László Sass¹, Györgyi Ferenc¹, Zoltán Bagi², Kornél L. Kovács² and Dénes Dudits¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Department of Biotechnology, University of Szeged, Szeged;*

³*Department of Plant Biology, University of Szeged, Szeged)*

76. **FUNCTIONAL ANALYSIS OF PHYTOCHROME B PHOSPHORYLATION IN ARABIDOPSIS THALIANA**

Valentina Madár^{1,2}, Éva Ádám¹, Ferenc Nagy¹ and András Viczián¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Department of Plant Biology, Faculty of Sciences and Informatics, University of Szeged, Szeged)*

77. **DEPENDENCE OF THE RATE-LIMITING STEPS IN THE DARK-TO-LIGHT TRANSITION OF PHOTOSYSTEM II ON THE LIPIDIC ENVIRONMENT OF THE REACTION CENTER**

Melinda Magyar¹, Parveen Akhtar¹, Gábor Sipka¹, Wenhui Han², Xingyue Li², Guangye Han², Jian-Ren Shen^{2,3}, Petar H. Lambrev¹ and Győző Garab^{1,4}

¹*Institute of Plant Biology, BRC, Szeged;*

²*Photosynthesis Research Center, Key Laboratory of Photobiology, Institute of Botany, Chinese Academy of Sciences, Beijing, China;*

³*Research Institute for Interdisciplinary Science and Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan;*

⁴*Faculty of Science, University of Ostrava, Ostrava, Czech Republic)*

78. **THE LACK OF E2FA BUT NOT E2FB FULLY RESTORES THE RBR1-2 MUTANT PHENOTYPE**

Eszter Molnár¹, Rasik Shiekh^{1,2}, Fruzsina Nagy¹ and Zoltán Magyar¹.

¹*Institute of Plant Biology, BRC, Szeged;*

²*Biological Doctoral School, University of Szeged, Szeged)*

79. **THE BRASSICA E2FB UNDER THE CONTROL OF ITS OWN RAPESEED PROMOTER COULD REPLACE ARABIDOPSIS E2FB**

Fruzsina Nagy¹, Tünde Vaskó-Leviczky¹, Aladár Pettkó-Szandtner² and Zoltán Magyar¹

¹*Institute of Plant Biology, BRC, Szeged;*

²*Institute of Biochemistry, BRC, Szeged)*

80.

BACTERIAL GROWTH PHASES IN SYNECHOCOCCUS ELONGATUS PCC7942

Sarolta Nagyapati^{1,2}, Kinga Böde^{1,2}, Sai Divya Kanna¹, Aladár Pettko-Szandtner³, László Szilak⁴ and Bettina Ughy¹

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Biological Doctoral School, University of Szeged, Szeged;*

⁽³⁾ *Laboratory of Proteomics Research, BRC, Szeged;*

⁽⁴⁾ *Szilak Laboratory Ltd., Szeged)*
81.

CHARACTERIZATION OF THE WAVE PHENOMENON IN FLASH-INDUCED FLUORESCENCE RELAXATION AND ITS APPLICATION TO STUDY CYCLIC ELECTRON PATHWAYS IN MICROALGAE

Priyanka Patil, Milán Szabó and Imre Vass

(Institute of Plant Biology, BRC, Szeged)
82.

THE ROLE OF MINOR PHYTOCHROMES IN RED LIGHT REGULATED PHOTOMORPHOGENESIS

Csaba Péter¹, Éva Ádám¹, Gábor Grézal², Anita Hajdu¹, László Kozma-Bognár^{1,3}, Dániel Silhavy¹, András Viczián¹ and Ferenc Nagy¹

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Institute of Biochemistry, BRC, Szeged;*

⁽³⁾ *Department of Genetics, Faculty of Sciences and Informatics, University of Szeged, Szeged)*
83.

ELECTRIC CURRENT PRODUCTION BY PARACHLORELLA KESSLERI STRAINS IS CORRELATED TO THEIR PHOTOSYNTHETIC PERFORMANCE

Nia Petrova, Tünde Tóth, Gergely Maróti and Szilvia Z. Tóth

(Institute of Plant Biology, BRC, Szeged)
84.

THE ARABIDOPSIS RETINOBLASTOMA-RELATED (RBR) AND ITS INTERACTIONS: A PROTEOMIC VIEW OF A MAJOR PLANT GROWTH REGULATOR.

Aladár Pettkó-Szandtner¹, Éva Hunyady-Gulyás¹, László Bögre² and Zoltán Magyar³

⁽¹⁾ *Laboratory of Proteomics Research, BRC, Szeged, Hungary;*

⁽²⁾ *Royal Holloway University of London, Egham, UK;*

⁽³⁾ *Institute of Plant Biology, BRC, Szeged)*
85.

HEAT-INDUCED RESPONSES IN DIFFERENT CLADES OF THE CORAL ENDOSYMBIONT ALGAE, SYMBIODINIACEAE

Sabit Mohammad Aslam^{1,2}, Milán Szabó¹ and Imre Vass¹

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Doctoral School of Biology, University of Szeged, Szeged)*
86.

ALGAL-BACTERIAL CO-CULTIVATION STRATEGIES TO IMPROVE ALGAL BIOMASS AND BIOHYDROGEN PRODUCTION

Prateek Shetty, Bernadett Pap, Attila Farkas, Bettina Hupp and Gergely Maróti

(Institute of Plant Biology, BRC, Szeged)
87.

THE RETINOBLASTOMA-RELATED (RBR) CONTROLS THERMOMORPHOGENESIS BY REGULATING CELL PROLIFERATION AND CELL ENLARGEMENT IN A TEMPERATURE DEPENDENT MANNER

Rasik Shiekh^{1,2}, Fruzsina Nagy¹, Magdolna Gombos¹, Aladár Pettkó-Szandtner³, Attila Fehér^{1,4} and Zoltán Magyar¹.

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Biological Doctoral School, University of Szeged, Szeged;*

⁽³⁾ *Laboratory of Proteomics Research, BRC, Szeged;*

⁽⁴⁾ *Department of Plant Biology, University of Szeged, Szeged)*
88.

LIGHT-ADAPTED CHARGE-SEPARATED STATE OF PHOTOSYSTEM II. STRUCTURAL AND FUNCTIONAL DYNAMICS OF THE CLOSED REACTION CENTER

Gábor Sipka¹, Melinda Magyar¹, Parveen Akhtar^{1,2}, Stefano Santabarbara³, Pavel Müller⁴, Klaus Brettel⁴, Petar H. Lambrev¹ and Győző Garab^{1,5}

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *ELI-ALPS, ELI-HU Nonprofit Ltd., Szeged;*

⁽³⁾ *Institute of Biophysics, NRC, Milano, Italy;*

⁽⁴⁾ *Institute for Integrative Biology of the Cell, CEA, CNRS, Gif-sur-Yvette, France;*

⁽⁵⁾ *Faculty of Science, University of Ostrava, Ostrava, Czech Republic)*
89.

THE CHLOROPLASTIC PHOSPHATE TRANSPORTER CRPHT4-7 SUPPORTS PHOSPHATE HOMEOSTASIS AND PHOTOSYNTHESIS IN CHLAMYDOMONAS REINHARDTII

Dávid Tóth^{1,2}, Soujanya Kuntam¹, Áron Ferenczi³, André Vidal-Meireles¹, László Kovács¹, Lianyong Wang⁴, Zsuzsa Sarkadi⁵, Ede Migh⁵, Juliane Neupert⁶, Ralph Bock⁶, Martin C. Jonikas⁴, Attila Molnar³ and Szilvia Z. Tóth¹

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Doctoral School of Biology, University of Szeged, Szeged;*

⁽³⁾ *Institute of Molecular Plant Sciences, University of Edinburgh, United Kingdom;*

⁽⁴⁾ *Department of Molecular Biology, Princeton University, Princeton, United States;*

⁽⁵⁾ *Institute of Biochemistry, BRC, Szeged;*

⁽⁶⁾ *Max Planck Institute of Molecular Plant Physiology, Potsdam-Golm, Germany)*
90.

COMPARISON OF DIFFERENT GENOME-EDITING TECHNOLOGIES FOR HERBICIDE TOLERANCE IN MAIZE (ZEA MAYS) CELL CULTURES.

Szabolcs Török^{1,2}, Zoltán Zombori¹, Katalin Török¹, Györgyi Ferenc¹ and Dénes Dudits¹

⁽¹⁾ *Institute of Plant Biology, BRC, Szeged;*

⁽²⁾ *Departement of Plant Biology, University of Szeged, Szeged)*

EGYÜTTMŰKÖDŐ PARTNEREINK

ARANYFOKOZATÚ TÁMOGATÓINK



EZÜSTFOKOZATÚ TÁMOGATÓINK



ABL&E-JASCO
Magyarország Kft.



Titoktartási egyezmény

A Straub-napok konferencia valamennyi előadásán elhangzó, nyomtatott anyagban megjelenő vagy egyéb módon ismertetett, nem publikált kutatási eredmény, találmány, egyéb műszaki információ és adat a konferencia résztvevőire korlátozott számú személynek kerül átadásra. Az itt elhangzottak, vagy leírtak törvényes jogosultjaik kizárólagos szellemi tulajdonát képezik, és a konferencia zárónapjától számított 30 napon belül csak a jogosultak engedélyével használhatók fel, vagy hozhatók nyilvánosságra. Az engedély nélküli felhasználás, vagy nyilvánosságra hozatal a találmányok szabadalmi oltalmáról szóló 1995. évi XXXIII. tv. 3. § (2) bekezdésének a) pontja értelmében nem jelenthet újdonságrontást későbbi szabadalmi bejelentésekkel szemben.

CONFIDENTIALITY NOTICE

Please be informed that any and all research results, inventions, other technical information and data mentioned in any of the presentations delivered at the Straub Days Conference, described in any printed material or made available otherwise but not yet officially published are meant to be transferred only to the people who participate in the conference. All such result, inventions, etc. mentioned at the conference and/or written in any of its documents form the exclusive intellectual property of their legal holders and, within 30 days from the closing day of the conference, may be used or published only with the permission of their of the said holders. Any unauthorised use of publication may not be novelty destroying against future patent applications, as the same is defined in Paragraph a) Section (2) of Article 3 of Act 33 of 1995 of Hungary (Protection of Inventions by Patents Act).