meghívó

A Magyar Tudományos Akadémia
Szegedi Biológiai Kutatóközpontjának kutatói
tisztelettel meghívják Önt és munkatársait a

2014. május 28–29.

között megrendezésre kerülő

STRAUB-NAPOKRA

EMLÉKEZÉS STRAUB F. BRUNÓRA

TUDOMÁNYOS ÜLÉS

Elnök: ORMOS PÁL

10:00 – 10:05
Ormos Pál
(MTA Szegedi Biológiai Kutatóközpont, Szeged):
Megnyitó

10:05 – 10:15
Venetianer Pál
(MTA Szegedi Biológiai Kutatóközpont, Biokémiai Intézet, Szeged):
Mit köszönhet az SZBK Straub F. Brunónak?

10:15 – 10:45
Závodszky Péter
(MTA Természettudományi Kutatóközpont, Enzimológiai Intézet, Budapest):
Aki nemcsak mert, de tudott is nagynak lenni

10:45 – 11:05
Málnási-Csizmadia András
(Eötvös Loránd Tudományegyetem TTK, Biológiai Intézet, Biokémiai Tanszék, Budapest):
Az aktin felfedezése

11:05 – 11:25
Nyitrai Miklós
(Pécsi Tudományegyetem ÁOK, Biofizikai Intézet, Pécs):
Egy ezerarcú hungarikum; az aktin

11:25 – 11:45
Mihály József
(MTA Szegedi Biológiai Kutatóközpont, Genetikai Intézet, Szeged):
Aktin összeszerelődés a miofibrillumokban: egy hetven éves rejtély vizsgálata ecetmuslicában

11:45 – 12:05
Bánhegyi Gábor
(Semmelweis Egyetem, Orvosi Vegytani, Molekuláris Biológiai és Patobiokémiai Intézet, Budapest):
Két úr szolgája: C-vitamin az endoplazmás retikulumban.

12:05 – 12:15 Szünet

12:15 – 12:35
Ormos Pál átadja a Straub plakettet

A Straub plakett 2014. évi díjazottjának előadása:
Deli Mária
(*MTA Szegedi Biológiai Kutatóközpont, Biofizikai Intézet, Szeged):*
Vér-agy gát kutatás *in vitro* modellekkel: múlt, jelen, jövő

12:35 – 12:40
Vígh László kuratóriumi elnök bemutatja a „Straub Örökség" Alapítványt és átadja a Farkas Tibor emlékplakettet

12:40 – 13:00
A Farkas Tibor emlékplakett 2014. évi díjazottjának előadása:
Hegedüs Csilla
(*MTA Molekuláris Biofizikai Kutatócsoport, Semmelweis Egyetem, Budapest):*
A humán ABCG2 multidrog transzporter fehérje kölcsönhatása molekulárisan célzott daganatellenes gyógyszerekkel

13:00 – 15:00 Ebéd

Chairman: György Pósfai
(Institute of Biochemistry, BRC HAS, Szeged)

15:00 – 15:20
Andrea Nagy[1], Liza Hudoba[1] Gergely Imre[1], Dávid Pusztai[1], Katalin Jemnitz[2], Thomas Rülicke[3] and Lajos Mátés[1]
([1]Institute of Genetics, BRC HAS, Szeged;
[2]Institute of Molecular Pharmacology, Research Centre for Natural Sciences, HAS, Budapest;
[3]Institute of Laboratory Animal Science, University of Veterinary Medicine, Vienna, Austria):
Generation of a novel transgenic organ model

15:20 – 15:45
Tünde Tóth[1,2], Olga Chukhutsina[2], Ildikó Domonkos[1], Mihály Kiss[1], Josef Komenda[3], Herbert van Amerongen[2] and Zoltán Gombos[1]
([1]Institute of Plant Biology, BRC HAS, Szeged;
[2]Laboratory of Biophysics, Wageningen University, Wageningen, The Netherlands;
[3]Institute of Microbiology, University of South Bohemia, Třeboň, Czech Republic):
Role of carotenoids in structure and function of cyanobacterial pigment-protein complexes

15:45 – 16:10
Attila Gergely Végh, Csilla Fazakas, Imola Wilhelm, Béla Varga, Zsolt Szegletes, István A. Krizbai and György Váró
(Institute of Biophysics, BRC HAS, Szeged):
Insight into single cell nanomechanics

16:10 – 16:30 B r e a k

16:30 – 16:55
Péter Horváth
(Institute of Biochemistry, BRC HAS, Szeged):
Life beyond the pixels: image analysis and machine learning methods for high-content imaging

16:55 – 17:20
András Váradi[1], Viola Pomozi[1], Christopher Brampton[2], Krisztina Fülöp[1], Flóra Szeri[1], Hella Gyergyák[1], Natália Tőkési[1], Ailea Apana[2] and Olivier Le Saux[2]
([1]Institute of Enzymology, Research Centre for Natural Sciences, HAS, Budapest;
[2]Department of Cell and Molecular Biology, John A. Burns School of Medicine, University of Hawaii, Honolulu, HI, USA):
Assisted correction of misfolded protein cures the disease

17:20 – 17:40
Zoltán Bozsóki, Ernő Kiss, Boglárka Oláh, Andrea Borbola, Erzsébet Fehérné Juhász, Sándor Jenei and Gabriella Endre
(Institute of Genetics, BRC HAS, Szeged):
Evolutionary aspects of symbiotic genes and functions

17:40 – 19:00
POSTER SECTION

19:00
Dinner – BRC Restaurant

Chairman: IMRE VASS
(Institute of Plant Biology, BRC HAS, Szeged):

9:00 – 9:25
Petar H. Lambrev[1,2], Kym L. Wells[1], Zhengyang Zhang[1], Győző Garab[2] and Howe-Siang Tan[1]
([1]School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore;
[2]Institute of Plant Biology, BRC HAS, Szeged):
Multidimensional electronic spectroscopy reveals energy transfer pathways in the plant light-harvesting complex II

9:25 – 9:50
Alajos Bérczi and László Zimányi
(Institute of Biophysics, BRC HAS, Szeged):
Properties of the heme cofactors and interaction with substrates in cytochrome *b*561 proteins

9:50 – 10:15
Begüm Peksel, Imre Gombos, László Vígh Jr, Tim Crul, Péter Horváth, Mária Péter, Gábor Balogh, Ibolya Horváth, László Vígh and Zsolt Török
(Institute of Biochemistry, BRC HAS, Szeged):
Single cell heat stress response: cell profiling and lipidomics

10:15 – 10:40
András Zeke[1], Anita Alexa[1], Gergő Gógl[1], Csaba Hetényi[2], Tomas Bastis[3], Olga Kalinina[3], Eric L. Weiss[4] and **Attila Reményi[1]**
([1]Institute of Enzymology, Research Centre for Natural Sciences, HAS, Budapest;
[2]Institute of Biology, Eötvös Loránd University, Budapest;
[3]Max Planck Institute for Informatics, Saarbrücken, Germany;
[4]Northwestern University, Chicago, USA):
Linear motif binding surfaces on protein kinases

10:40 – 11:00 Break

11:00 – 11:20
Ferenc Jankovics, Zsanett Lakatos and Miklós Erdélyi
(Institute of Genetics, BRC HAS, Szeged):
Identification and *in vivo* analysis of genes required for microtubule function in epithelial closure processes

11:20 – 11:45
Imma Pérez-Salamó[1], Csaba Papdi[1], Gábor Rigó[1], Laura Zsigmond[1], Belmiro Vilela[2], Victoria Lumbreras[2], István Nagy[3], Balázs Horváth[3], Mónika Domoki[1], Zsuzsanna Darula[4], Katalin F. Medzihradszky[4], László Bögre[5], Csaba Koncz[1,6] and **László Szabados[1]**
([1]Institute of Plant Biology, BRC HAS, Szeged;
[2]Centre for Research in Agricultural Genomics, Bellaterra, Cerdanyola del Vallés, Spain;
[3]Sequencing Platform, BRC HAS, Szeged;
[4]Laboratory of Proteomics Research, BRC HAS, Szeged;
[5]School of Biological Sciences, Royal Holloway, University of London; Egham, U.K;
[6]Max-Planck Institute for Plant Breeding Research, Cologne, Germany):
The Heat Shock Factor HSFA4A confers salt tolerance and is regulated by oxidative stress and the MAP kinases, MPK3 and MPK6

11:45 – 12:10
Fruzsina Walter, András Kincses, Sándor Valkai, András Petneházi, Tamás Czeller, Pál Ormos, Mária A. Deli and András Dér
(Institute of Biophysics, BRC HAS, Szeged):
Lab-on-a-chip tool for modeling biological barriers

12:10 – 14:00 Lunch

Chairman: Miklós Erdélyi
(Institute of Genetics, BRC HAS, Szeged)

14:00 – 14:25
Krisztina Buzás[1,2], Annamária Marton[2], Csaba Vizler[2], Edina Gyukity-Sebestyén[2], Mária Harmati[2], Katalin Nagy[1], Ágnes Zvara[3], László Puskás[3], Róbert L. Katona[3], Vilmos Tubak[4], Valéria Endrész[5], István B. Németh[6], Judit Oláh[6], Tamás Bíró[7], Lajos Kemény[8]
([1]Department of Oralbiology and Experimental Dental Research, Faculty of Dentistry, University of Szeged, Szeged;
[2]Institute of Biochemistry, BRC HAS, Szeged;
[3]Institute of Genetics, BRC HAS, Szeged;
[4]Creative Laboratory Ltd., Szeged;
[5]Department of Medical Microbiology and Immunobiology, University of Szeged, Szeged;
[6]Department of Dermatology and Allergology, University of Szeged, Szeged;
[7]DE-MTA "Lendület" Cellular Physiology Research Group, Department of Physiology, Medical Faculty, University of Debrecen, Debrecen;
[8]Dermatological Research Group of the Hungarian Academy of Sciences, University of Szeged, Szeged):
Bacterial sepsis induces increased survival in metastatic melanoma

14:25 – 14:50
Judit Szabó[1], Rita Hírmondó[1], Kinga Nyíri[1,2], Gergely Róna[1], Ibolya Leveles[1,2], Judit Tóth[1] and **Beáta G. Vértessy[1,2]**
([1]Institute of Enzymology, Research Centre for Natural Sciences, HAS, Budapest;
[2]Department of Applied Biotechnology, Budapest University of Technology and Economics, Budapest):
Preservation of genome integrity in viral mobile genetic elements by a dUTP-controlled molecular switch

14:50 – 15:10

Péter Burkovics[1], Marek Sebesta[2], Lumir Krejci[2], Szilvia Juhász[1] and Lajos Haracska[1]

([1]Institute of Genetics, BRC HAS, Szeged;
[2]National Centre for Biomolecular Research and Department of Biology, Masaryk University, Brno, Czech Republic):

Recombination associated DNA synthesis

15:10 – 15:35

Csaba I. Nagy[1], Imre Vass[1], Gábor Rákhely[2,3], István-Zoltán Vass[1], András Tóth[2,3], Ágnes Duzs[3], Loredana Peca[1] and Péter B. Kós[1,2]

([1]Institute of Plant Biology, BRC HAS, Szeged;
[2]Department of Biotechnology, University of Szeged, Szeged;
[3]Institute of Biophysics, BRC HAS, Szeged):

Functional link between sulfide- and arsenic metabolism in cyanobacteria

15:35 – 16:00 B r e a k

16:00 – 16:25

Zoltán Násztor[1], Ferenc Bartha[2], László Fábián[1], Balázs Leitgeb[1], András Dér[1] and Ferenc Bogár[2]

([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Supramolecular and Nanostructured Materials Research Group, University of Szeged):

Computational study of the Hofmeister effect on the Trp-cage miniprotein

16:25 – 16:50
Viktória Lázár[1], Gajinder Pal Singh[1], Réka Spohn[1], István Nagy[2], Balázs Horváth[2], Balázs Bogos[1], Orsolya Méhi[1], Bálint Csörgő[1], György Pósfai[1], Gergely Fekete[1], Balázs Szappanos[1], Balázs Kégl[3], Balázs Papp[1] and Csaba Pál[1]
([1]Institute of Biochemistry, BRC HAS, Szeged;
[2]Sequencing Platform, BRC HAS, Szeged;
[3]Linear Accelerator Laboratory, University of Paris-Sud, CNRS, Orsay, France):
Bacterial evolution of antibiotic hypersensitivity

16:50 – 17:15
Orsolya Kolacsek, Kornélia Szebényi, András Füredi, Zsuzsa Erdei, Ágota Apáti, Balázs Sarkadi, **Tamás Orbán**
(Institute of Enzymology, Research Centre for Natural Sciences, HAS, Budapest):
Sleeping Beauty versus piggyBac: transgenesis using eukaryotic DNA transposon based gene delivery systems

17:15 – 17:35
Vamsi K. Gali, Éva Bálint and Ildikó Unk
(Institute of Genetics, BRC HAS, Szeged):
A novel function of DNA polymerase eta

INSTITUTE OF BIOPHYSICS

The usage of real-time PCR technique to monitor specific eubacteria in biogas producing system

Norbert Ács[1], Gábor Rákhely[1, 3], Zoltán Bagi[1] and Kornél L. Kovács[1, 2, 3]
([1]Department of Biotechnology, University of Szeged, Szeged;
[2]Department of Oral Biology and Experimental Dental Research, University of Szeged;
[3]Institute of Biophysics, BRC HAS, Szeged)

Transcriptomic analysis of sulfide oxidizing enzymes in a purple sulfur bacterium

Tímea Balogh[1], Ágnes Duzs[1], András Tóth[1, 2] and Gábor Rákhely[1,2]
([1]Department of Biotechnology, University of Szeged, Szeged;
[2]Institute of Biophysics, BRC HAS, Szeged)

Morphological changes reflecting estrogen effect on neuron-microglia communication in the mouse oculomotor and hypoglossal nucleus after unilateral axotomy

Bea Barabási, Andrea Csondor, László Siklós, Árpád Párducz and Zsófia Hoyk
(Institute of Biophysics, BRC HAS, Szeged)

Metabolic linkage of hydrogen, glycogen and sulfur metabolism in a purple sulfur photosynthetic bacterium

Rita Béres[1], Roland Tengölics[1], Kornél L. Kovács[1,2] and Gábor Rákhely[1,2]
([1]Department of Biotechnology, University of Szeged;
[2]Institute of Biophysics, BRC HAS, Szeged)

PN-159 peptide reversibly opens the intercellular junctions of intestinal epithelial cells

Alexandra Bocsik[1,4], Dóra Ludányi[4], Fruzsina R. Walter[1], Szilvia Veszelka[1], Ingolf Blasig[6], Lajos L. Nagy[5], Monika Vastag[2], Lívia Fülöp[3], Piroska Szabó-Révész[4] and Mária A. Deli[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Gedeon Richter Ltd., Budapest;
[3]Department of Medical Chemistry, University of Szeged, Szeged;
[4]Department of Pharmaceutical Technology, University of Szeged, Szeged;

[5]*Avidin Ltd., Szeged;*
[6]*Leibniz Institut für Molekulare Pharmakologie, Berlin-Buch, Germany)*

Estrogen effect on the immune functions of microglia in the oculomotor and hypoglossal nucleus of mice following peripheral axotomy

Andrea Csondor, Bea Barabási, László Siklós, Árpád Párducz and Zsófia Hoyk
(Institute of Biophysics, BRC HAS, Szeged)

Role of Rho-kinases (ROCK) in melanoma brain metastasis formation

Csilla Fazakas, Imola Wilhelm, Judit Molnár, Gergely A. Végh, János Haskó, Ádám Nyúl-Tóth, György Váró and István A. Krizbai
(Institute of Biophysics, BRC HAS, Szeged)

Organ sensitivity and gene expression of cationic amino acid transporter-1 in L-ornithine induced acute pancreatitis in rats

András Harazin[1], Fruzsina R. Walter[1], Andrea E. Tóth[1], Péter Hegyi[2], Zoltán Rakonczay Jr.[2], Balázs Kui[2], Zsolt Balla[2], Vilmos Tubak[3] and Mária A. Deli[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Pancreatic Research Group, 1st Department of Internal Medicine, University of Szeged, Szeged;
[3]Creative Laboratory Ltd., Szeged)

Role of cannabinoid receptor 2 in the formation of brain metastases of melanoma

János Haskó[1], Imola Wilhelm[1], Csilla Fazakas[1], Judit Molnár[1], Ádám Nyúl-Tóth[1], Péter Nagyőszi[1], Yuri Persidsky[2] and István Krizbai[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Temple University School of Medicine, Pathology and Laboratory Medicine, Philadelphia, USA)

Investigating bacterial chemotaxis in antibiotic gradients using a flow-free microfluidic device

Orsolya Hodula, Krisztina Nagy, Orsolya Sipos, Sándor Valkai, Ádám Kerényi, Pál Ormos and Péter Galajda
(Institute of Biophysics, BRC HAS, Szeged)

Development of quantum chemical protocol for parameterization of the non-standard residues of peptaibol molecules

János Horváth[1], Zoltán Násztor[1, 2] and Balázs Leitgeb[1,3]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Medical Chemistry, University of Szeged, Szeged;
[3]Department of Microbiology, University of Szeged, Szeged)

Calculating the partial atomic charges for the non-proteinogenic amino acids of peptaibols

János Horváth[1], Zoltán Násztor[1, 2] and Balázs Leitgeb[1,3]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Medical Chemistry, University of Szeged, Szeged;
[3]Department of Microbiology, University of Szeged, Szeged)

Investigation of sex differences in major depression using the learned helplessness paradigm in rats

Orsolya Huzián, Judith Baka, Nikoletta Dobos, Eszter Csákvári, László Siklós and Tibor Hajszán
(Institute of Biophysics, BRC HAS, Szeged)

Biochemical and kinetic analysis of flavocytochrome c enzyme variants in a purple sulfur bacterium, *Thiocapsa roseopersicina*

Enikő Kiss[1], András Tóth[1, 2], Ágnes Duzs[2], Brigitta Németh[1] and Gábor Rákhely[1,2]
([1]Institute of Biophysics, BRC HAS Szeged;
[2]Department of Biotechnology, University of Szeged, Szeged)

Sucrose esters as novel absorption enhancers to improve drug delivery

Lóránd Kiss[1,2], Éva Hellinger[3], Ana-Maria Pilbat[4], Ágnes Kittel[5], Zsolt Török[4], Béla Ózsvári[6], László G. Puskás[6], Monika Vastag[3], Piroska Szabó-Révész[2] and Mária A. Deli[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Pharmaceutical Technology, University of Szeged, Szeged;
[3]Division of Pharmacology and Drug Safety Research, Gedeon Richter Plc., Budapest;
[4]Institute of Biochemistry, BRC HAS, Szeged;

[5]Institute of Experimental Medicine HAS, Budapest;
[6]Avidin Ltd., Szeged)

Relationship between the substrate C/N ratio and the composition of microbial community in biogas reactor

Etelka Kovács[1], Zoltán Bagi[1], Gábor Rákhely[1,3] and Kornél L. Kovács[1,2,3]
([1]Department of Biotechnology, University of Szeged, Szeged;
[2]Department of Oral Biology and Experimental Dental Research, University of Szeged; Szeged;
[3]Institute of Biophysics, BRC HAS, Szeged)

Comparative whole cell transcriptomic analysis of the oil degrading bacterium, *Rhodococcus erythropolis* PR4

Krisztián Laczi[1], Ágnes Kis[1,2], Gergely Maróti[3], Katalin Perei[1,4] and Gábor Rákhely[1,2,4]
([1]Department of Biotechnology, University of Szeged; Szeged;
[2]Institute of Biophysics, BRC HAS, Szeged;
[3]Institute of Biochemistry, BRC HAS, Szeged;
[4]Intitute of Environmental Sciences, University of Szeged; Szeged)

Optimization of a yeast expression system for the tumor suppressor cytochrome *b*561 protein

Zsuzsanna Márton[1], Alajos Bérczi[1], László Zimányi[1], Gábor Rákhely[1,2] and András Tóth[1,2]
([1]Institute of Biophysics, BRC HAS Szeged;
[2]Department of Biotechnology, University of Szeged; Szeged)

High-speed all-optical logic operations with bacteriorhodopsin

Anna Mathesz[1], László Fábián[1], Sándor Valkai[1], Daniel Alexandre[2,3], Paulo V.S. Marques[2,4], Pál Ormos[1], Elmar K. Wolff[5] and András Dér[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]INESC-Porto, Porto, Portugal;
[3]Universidade de Trás-os-Montes e Alto-Douro, Vila Real, Portugal;
[4]Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, Porto, Portugal;
[5]Institute for Applied Biotechnology and System Analysis at the University of Witten/Herdecke, Witten, Germany)

Signal transduction pathways involved in the transmigration of melanoma cells through the blood-brain barrier
Judit Molnár, Imola Wilhelm, Csilla Fazakas, Ádám Nyúl-Tóth, Márta Volford, János Haskó and István A. Krizbai
(Institute of Biophysics, BRC HAS, Szeged)

The role of chemical gradients in the interaction of bacterial populations - a microfluidic study
Krisztina Nagy, Orsolya Sipos, Orsolya Hodula, Éva Gombai, Sándor Valkai, Ádám Kerényi, Pál Ormos and Péter Galajda
(Institute of Biophysics, BRC HAS, Szeged)

Interaction of antimicrobial peptides and biological membranes
Krisztina Nagy[1], Attila G. Végh[1], Kata R. Mikuláss[2], Attila Kereszt[2], Éva Kondorosi[2], György Váró[1] and Zsolt Szegletes[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Institute of Biochemistry, BRC HAS, Szeged)

Toll-like receptors in brain endothelial cells: expression and role in barrier regulation
Péter Nagyőszi, Ádám Nyúl-Tóth, Imola Wilhelm, Csilla Fazakas, János Haskó, Mihály Kozma, Judit Molnár and István A. Krizbai
(Institute of Biophysics, BRC HAS, Szeged)

Conformational analysis of the short-sequence peptaibols, hypomurocins by molecular dynamics methods
Zoltán Násztor[1,2], János Horváth[1] and Balázs Leitgeb[1,3]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Medical Chemistry, University of Szeged, Szeged;
[3]Department of Microbiology, University of Szeged, Szeged)

Exploring and characterizing the folding processes of long-sequence trichobrachin peptides
Zoltán Násztor[1,2], János Horváth[1] and Balázs Leitgeb[1,3]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Medical Chemistry, University of Szeged, Szeged;
[3]Department of Microbiology, University of Szeged, Szeged)

Biochemical and structural analysis of a membrane bound sulfide oxidase enzyme in a photosynthetic purple sulfur bacterium

Brigitta Németh[1], Ágnes Duzs[2], Enikő Kiss[1], Gábor Rákhely[1,2] and András Tóth[1,2]
([1]Institute of Biophysics, BRC HAS Szeged;
[2]Department of Biotechnology, University of Szeged; Szeged)

Standardization of the quantification and effect of an AMPA receptor antagonist, Talampanel, in motor nerve terminals of SOD1 mutant mice

Roland Patai[1], Tamara Horváth[1], Melinda Paizs[1], Béla Varga[1], József I., Engelhardt[2] and László Siklós[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Department of Neurology, University of Szeged; Szeged)

Morphological changes in the neurovascular unit induced by stress

Petra Sántha[1], Szilvia Veszelka[1], Mária Mészáros[1], Lóránd Kiss[1], Fruzsina R. Walter[1], Zita Oláh[2], Andrea E. Tóth[1], Alexandra Bocsik[1], András Kincses[1], Magdolna Pákáski[2], János Kálmán[2], András Dér[1], Ágnes Kittel[3] and Mária A. Deli[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Alzheimer's Disease Research Centre, Department of Psychiatry, University of Szeged, Szeged;
[3]Institute of Experimental Medicine, HAS, Budapest)

A microfluidic system for mammalian cell culturing and analysis

Orsolya Sipos, Judit Molnár, Krisztina Nagy, Csilla Fazakas, Imola Wilhelm, István Krizbai and Péter Galajda
(Institute of Biophysics, BRC HAS, Szeged)

Edaravone protects against acute carbonyl stress induced barrier damage in human brain endothelial cells

Andrea E. Tóth[1], Fruzsina R. Walter[1], Alexandra Bocsik[1], Szilvia Veszelka[1], Lajos L. Nagy[2], László G. Puskás[2], Pierre-Olivier Couraud[3,4,5], Shinya Dohgu[6], Yasufumi Kataoka[6] and Mária A. Deli[1]
([1]Institute of Biophysics, BRC HAS, Szeged;
[2]Avidin Ltd., Szeged;

[3]*Inserm, U1016, Institut Cochin, Paris, France;*
[4]*CNRS, UMR8104, Paris, France;*
[5]*Université Paris Descartes, Sorbonne Paris Cité, Paris, France;*
[6]*Department of Pharmaceutical Care and Health Sciences, Fukuoka University, Fukuoka, Japan)*

Indirect optical trapping of live cells for 3D imaging with arbitrary viewpoint

Gaszton Vizsnyiczai, Aekbote L. Badri, András Buzás, Lóránd Kelemen and Pál Ormos
(Institute of Biophysics, BRC HAS, Szeged)

Effects of L-ornithine, inducer of acute pancreatitis in rats, on cultured primary brain endothelial cells

Fruzsina R. Walter[1], Szilvia Veszelka[1], Péter Hegyi[2], Zoltán Rakonczay Jr.[2], József Maléth[2], Petra Pallagi[2], Ágnes Kittel[3] and Mária A. Deli[1]
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Role of PACAP in the regulation of survival and barrier properties of cerebral endothelial cells

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The structural basis for the electron transfer function of cytochrome *b*561 proteins

László Zimányi, László Fábián and Alajos Bérczi
(Institute of Biophysics, BRC HAS, Szeged)

INSTITUTE OF BIOCHEMISTRY

Temporal inactivation of DNA repair enables highly precise genome engineering

Ákos Nyerges, Bálint Csörgő, György Pósfai and Csaba Pál
(Institute of Biochemistry, BRC HAS, Szeged)

Testing potential adaptive mechanisms mitigating metabolite toxicity in *E. coli*

Ádám Györkei[1], Balázs Szappanos[1], Laurence D. Hurst[2] and Balázs Papp[1]
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General principles of transcriptomic changes following single-gene deletion and subsequent compensatory evolution

Károly Kovács[1], Gábor Boross[1], Béla Szamecz[1], Patrick Kemmeren[2], Frank C.P. Holstege[2], Richard Notebaart[3], Csaba Pál[1] and Balázs Papp[1]
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Varying environment facilitates the evolution of complex metabolic traits in *Escherichia coli*

Balázs Szappanos[1], Jonathan Fritzemeier[2], Viktória Lázár[1], Martin Lercher[2], Balázs Papp[1] and Csaba Pál[1]
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Network-level view and evolutionary potential of underground metabolism in *Escherichia coli*

Richard A Notebaart[1], Balázs Szappanos[2], Bálint Kintses[2], Ferenc Pál[2], Ádám Györkei[2], Balázs Bogos[2], Viktória Lázár[2], Réka Spohn[2], Bálint Csörgő[2], Allon Wagner[3], Eytan Ruppin[3], Csaba Pál[2] and Balázs Papp[2]
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Characterization of the human serum O-glycoproteome

Zsuzsanna Darula, Farkas Sarnyai, Éva Klement, Éva Hunyadi-Gulyás and Katalin F. Medzihradszky
(Laboratory of Proteomics Research, BRC HAS, Szeged)

Byonic: A highly efficient new bioinformatic tool for intact glycopeptide analysis

Éva Hunyadi-Gulyás[1], Zsuzsanna Darula[1], Katalin F. Medzihradszky[1,2] and Marshall Bern[3]
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Alternatives in PTM analysis of serum samples

Éva Klement[1] and Katalin F. Medzihradszky[1,2]
([1]Laboratory of Proteomics Research, BRC HAS, Szeged;
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Qualitative and quantitative comparison of Nodule-Specific Cysteine-Rich peptides (NCRs) in *Medicago truncatula* A17 mature nodules

Hajnalka Dürgő[1], Éva Klement[1], Éva Hunyadi-Gulyás[1], Attila Szűcs[1], Attila Kereszt[1], Éva Kondorosi[1,2] and Katalin F. Medzihradszky[1]
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Investigating the neuroprotective role of Hsp27 in transgenic mice

Melinda Erzsébet Tóth[1], Viktor Szegedi[1], Edina Varga[2], Gábor Juhász[2], János Horváth[2], Emőke Borbély[2], Balázs Csibrány[1], Róbert Alföldi[1], Nikolett Lénárt[1], Szilvia Gonda[1], Botond Penke[2], László Vígh[1] and Miklós Sántha[1]
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The genomic landscape of compensatory evolution

Béla Szamecz[1], Gábor Boross[1], Dorottya Kalapis[1], Károly Kovács[1], Gergő Fekete[1], Zoltán Farkas[1], Viktória Lázár[1], Mónika Hrtyan[1,2], Patrick Kemmeren[3], Marian J.A. Groot Koerkamp[3], Frank C.P. Holstege[3], Edit Rutkai[4], Balázs Papp[1] and Csaba Pál[1]
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Computing the bioactive conformation of endomorphin 2 with QSAR modelling and docking

Ferenc Ötvös and Sándor Benyhe
(Institute of Biochemistry, BRC HAS, Szeged)

Grounds on which cancer grows-NGS genotype analysis for cancer predisposing genes

László Bodai[1], Viktória Venglovecz[2], Péter Hegyi[2] and Imre M. Boros[1,3]
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INSTITUTE OF ENZYMOLOGY

New qPCR method to identify and quantify HotStart antibodies

Zsolt Lőrincz[1], Gabriella Fabó[1], István Hajdú[1], Sándor Cseh[1] and Mark Stevens[2]
([1]TargetEx Ltd., Dunakeszi;
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Spartan is required for PCNA ubiquitylation dependent translesion synthesis

Judit Gálicza[1], Szilvia Juhász[2], Lajos Haracska[2] and Dávid Szüts[1]
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The importance of K63-linked PCNA polyubiquitylation in DNA damage bypass

Judit Zsuzsanna Gervai and Dávid Szüts
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INSTITUTE OF GENETICS

TMEM203, a novel proinflammatory regulator of Toll-like receptor signalling pathways

Roberta Fajka-Boja[1], David H. Wyllie[2], Claire Wynne[3], Caroline A. Jefferies[3] and Endre Kiss-Tóth[1,4]
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Development of an *in vitro* RNAi efficiency monitoring system

Dávid Pusztai, Katalin Hegedűs, Ildikó Fekete and Lajos Mátés
(Institute of Genetics, BRC HAS, Szeged)

Nuclear function for the actin binding cytoskeletal protein, Moesin

Ildikó Kristó and Péter Vilmos
(Institute of Genetics, BRC HAS, Szeged)

In situ functional analysis of a maintenance element in the bxd cis-regulatory region of *Drosophila*

Dávid Farkas, Gabriella Kozma, Izabella Bajusz, Henrik Gyurkovics and László Sipos
(Institute of Genetics, BRC HAS, Szeged)

Identification of multiple segment-specific enhancer elements in *Drosophila melanogaster*

Péter Kaltenecker and László Sipos
(Institute of Genetics, BRC HAS, Szeged)

Characterization of the activity of human HLTF on stalled replication fork

Dávid Balogh, Yathish Jagadheesh Achar, Himabindu Gali, Szilvia Juhász, Mónika Mórocz and Lajos Haracska
(Institute of Genetics, BRC HAS, Szeged)

Analysis of axonal cytoskeleton in primary cell cultures from *Drosophila*
Szilárd Szikora, Krisztina Tóth and József Mihály
(Institute of Genetics, BRC HAS, Szeged)

Exploiting the European *Medicago truncatula* Tnt1 insertional mutant collection
Boglárka Oláh[1], Sándor Jenei[1], Ernő Kiss[1], Andrea Borbola[1], Marianna Nagymihály[2], Hilda Tiricz[2], Rui Maria Lima[2], Attila Kereszt[2], Beatrix Horváth[3], Ágota Domonkos[3], Pascal Ratet[4], Gabriella Endre[1] and Péter Kaló[3]
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[4]Institut des Siences du Vegetale, CNRS, Gif-sur-Yvette, France)

Identification and characterization of genes involved in embryonic dorsal closure in *Drosophila melanogaster*
Zsanett Lakatos, Miklós Erdélyi and Ferenc Jankovics
(Institute of Genetics, BRC HAS, Szeged)

Evaluation of genetic diversity of plant populations in the Pannonian Ecoregion using RAPD and gene-specific markers
Szilárd Kovács[1], Andrea Borbola[1], Barbara Lhotsky[2] and Gabriella Endre[1]
([1]Institute of Genetics, BRC HAS, Szeged;
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Site-specific mutagenesis by CRISPR-Cas9 system: Knocking out of the *Drosophila* dUTPase gene
László Henn[1], Margit Szathmári[1], Ildikó Krausz[1], Ferenc Jankovics[1], Beáta G. Vértessy[2] and Miklós Erdélyi[1]
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Why stem cell derived rybp deficient cardiomyocytes are not contractible?
Viktória Szabó, Flóra Vajda and Melinda Pirity
(Institute of Genetics, BRC HAS, Szeged)

Dosage dependent effect of Rybp on the retinoic acid mediated signalling pathway
Gergő Kovács, Árpád Varga, Viktória Szabó and Melinda Pirity
(Institute of Genetics, BRC HAS, Szeged)

In situ* study of embryonic enhancers flanking a chromatin silencer in *Drosophila
Viktória Kiss and László Sipos
(Institute of Genetics, BRC HAS, Szeged)

The role of Spartan (c1orf124) in DNA damage tolerance
Orsolya Berczeli, Mónika Mórocz, Szilvia Juhász, Péter Burkovics and Lajos Haracska
(Institute of Genetics, BRC HAS, Szeged)

Structural and functional analysis of the sessile hematopoietic tissue in *Drosophila melanogaster*
Viktor Honti*, Gábor Csordás*, Gergely I. B. Varga*, Ferenc Jankovics, Éva Kurucz and István Andó
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***In vivo* immunostaining of hemocyte compartments in *Drosophila* for live imaging**
Gábor Csordás*, Gergely I. B. Varga*, Viktor Honti*, Ferenc Jankovics, Éva Kurucz and István Andó
(Institute of Genetics, BRC HAS, Szeged;
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Spring, summer, autumn, winter: changes in honey bee hemocytes' number and in the rate of different cell types through the year
Erika Gábor[1], Tibor Török[2], János Zsámboki[1], Gyöngyi Cinege[1], Gábor Csordás[1], Viktor Honti[1], Éva Kurucz[1] and István Andó[1]
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Functional analysis of Vajk proteins in *Drosophila melanogaster*
Gyöngyi Cinege, János Zsámboki, Gábor Csordás, Viktor Honti, István Andó and Éva Kurucz
(Institute of Genetics, BRC HAS, Szeged)

A novel septic injury method for the identification of factors involved in host-pathogen interactions in *Drosophila melanogaster*
Beáta Kari, János Zsámboki, Viktor Honti, Gábor Csordás, Róbert Márkus, István Andó and Éva Kurucz
(Institute of Genetics, BRC HAS, Szeged)

INSTITUTE OF PLANT BIOLOGY

Developmental regulation of cell division by the RBR complex with E2FB in leaf pavement cells and meristemoids

Tünde Leviczky[1], Binish Mohammed[2], Aladár Pettkó-Szandtner[1], Beatrix Horváth[2], Safina Khan[2], Anita Kovács[1], Ben Scheres[3], László Bögre[2] and Zoltán Magyar[1]
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Kinetins switch E2FB from activator to repressor in differentiating root cells

Anikó Varga, Anita Kovács and Zoltán Magyar
(Institute of Plant Biology, BRC HAS Szeged)

Generation and characterization of the first ascorbate-deficient *Chlamydomonas reinhardtii* mutant strains

André Meireles[1], Juliane Neupert[2], Győző Garab[1], Ralph Bock[2] and Szilvia Zita Tóth[1,2]
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The macro-organisation of thylakoid membrane in *Chlamydomonas reinhardtii* studied by circular dichroism spectroscopy *in vivo*

Neha Rai, Tünde Tóth, Valéria Nagy, Győző Garab and László Kovács
(Institute of Plant Biology, BRC HAS Szeged)

Detergent, lipid and protein interaction effects on the CD spectrum of Light-Harvesting Complex II

Parveen Akhtar, Krzysztof Pawlak, Márta Dorogi, Győző Garab and Petar H. Lambrev
(Institute of Plant Biology, BRC HAS Szeged)

Non invasive plant phenotyping by using photosynthetic tools
Kenny Paul, Zsuzsanna Deák, László Sass and Imre Vass
(Institute of Plant Biology, BRC HAS Szeged)

Toward improved performance of cyanobacterial whole cell bioreporters
Dániel Solymosi[1,2], Imre Vass[1], Csaba I. Nagy[1] and Péter B. Kós[1,2]
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The genes of an organ development regulating transcription factor family in *Brachypodium distachyon*
Magdolna Gombos, Zoltán Zombori, Mária Szécsényi, Györgyi Sándor and János Györgyey
(Institute of Plant Biology, BRC HAS Szeged)

Studies on abiotic stress responses: regulatory roles of the Arabidopsis CRK5 protein kinase in root gravitropism and oxidativ stress
Gábor Rigó[1], Ferhan Ayaydin[1], Olaf Tietz[2], Laura Zsigmond[1], Hajnalka Kovács[1], Anikó Páy[1], Klaus Salchert[3], Zsuzsanna Darula[4], Katalin F. Medzihradszky[4,5], László Szabados[1], Klaus Palme[2], Csaba Koncz[1,6] and Ágnes Cséplő[1]
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The Arabidopsis ZFP3 protein integrates ABA and light signaling
Mary Prathiba Joseph[1], Csaba Papdi[1], László Kozma-Bognár[1], István Nagy[1], Marta López-Carbonell[2], Csaba Koncz[3] and László Szabados[1]
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TITLES OF THE POSTERS

In silico photosynthesis: computer assisted simulation of electron transport processes in photosystem II

László Sass, Zsuzsanna Deák and Imre Vass
(Institute of Plant Biology, BRC HAS, Szeged)

TITOKTARTÁSI FELHÍVÁS

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.

Tudnivalók:

Az előadások helye az SZBK nagy előadóterme
Az előadások időtartama a vita idejét is magában foglalja

Felelős kiadó: Páy Anikó