

EU Centre of Excellence

Institute of Experimental Medicine
Hungarian Academy of Sciences

XX. SCIENTIFIC SYMPOSIUM

PROGRAM GUIDE



September 16-17, 2016
Balatonfüred

**RESEARCH LABORATORIES OF THE INSTITUTE OF EXPERIMENTAL MEDICINE
&
HYPERLINKS TO THEIR IEM-AFFILIATED PUBLICATIONS**

I. DEPARTMENT OF PHARMACOLOGY – *BEÁTA SPERLÁGH*

Laboratory of Drug Research. *E. Sylvester Vizi*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=471&InstitutionMode=1&orderby=3D1a>

Laboratory of Molecular Pharmacology. *Beáta Sperlág*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=437&InstitutionMode=1&orderby=3D1a>

Laboratory of Cellular Neuropharmacology. *János Szabadics*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=497&InstitutionMode=1&orderby=3D1a>

Laboratory of 3D Functional Network and Dendritic Imaging. *Balázs Rózsa*

II. DEPARTMENT OF ENDOCRINE NEUROBIOLOGY – *ZSOLT LIPOSITS*

Laboratory of Endocrine Neurobiology. *Zsolt Liposits*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=422&InstitutionMode=1&orderby=3D1a>

Laboratory of Molecular Neuroendocrinology. *Krisztina Kovács*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=410&InstitutionMode=1&orderby=3D1a>

Laboratory of Integrative Neuroendocrinology. *Csaba Fekete*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=10118&InstitutionMode=1&orderby=3D1a>

Laboratory of Molecular Cell Metabolism. *Balázs Gereben*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=13155&InstitutionMode=1&orderby=3D1a>

III. DEPARTMENT OF CELLULAR AND NETWORK NEUROBIOLOGY – *TAMÁS F. FREUND*

Laboratory of Cerebral Cortex Research. *Tamás F. Freund*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=470&InstitutionMode=1&orderby=3D1a>

Laboratory of Thalamus Research. *László Acsády*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=443&InstitutionMode=1&orderby=3D1a>

Laboratory of Cellular Neurophysiology. *Zoltán Nusser*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=424&InstitutionMode=1&orderby=3D1a>

Laboratory of Network Neurophysiology. *Norbert Hájos*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=498&InstitutionMode=1&orderby=3D1a>

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=18163&InstitutionMode=1&orderby=3D1a>

Laboratory of Neuronal Signaling. *Judit Makara*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=12200&InstitutionMode=1&orderby=3D1a>

Lendület Laboratory of System-Neurobiology. *Balázs Hangya*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=16622&InstitutionMode=1&orderby=3D1a>

IV. DEPARTMENT OF GENE TECHNOLOGY AND DEVELOPMENTAL

NEUROBIOLOGY – *ISTVÁN KATONA*

Laboratory of Molecular Neurobiology. *István Katona*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=499&InstitutionMode=1&orderby=3D1a>

Laboratory of Neuroimmunology. *Ádám Dénes*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=18436&InstitutionMode=1&orderby=3D1a>

V. DEPARTMENT OF BEHAVIOURAL NEUROBIOLOGY – *JÓZSEF HALLER*

Laboratory of Behavioural and Stress Studies. *József Haller*

<https://vm.mtmt.hu/www/index.php?mode=html&InstitutionID=441&InstitutionMode=1&orderby=3D1a>

SEPTEMBER 16, FRIDAY

10:50-11:00 WELCOME

TAMÁS F. FREUND

SESSION 1

MODERATOR: TAMÁS F. FREUND

11:00-11:20

MÁTÉ NEUBRANDT, V.J. OLÁH, J. BRUNNER, J. SZABADICS

Single bursts of single hippocampal mossy fibers reorganize feedforward inhibition

Laboratory of Cellular Neuropharmacology

11:20-11:40

STEPHEN G. WOODHAMS, C. PONGOR, B. BARTI, B. DUDOK, M. KANO, K. SAKIMURA, M. WATANABE, I. KATONA

Automated 3D analysis of confocal microscopy images by 3D-ACE reveals widespread molecular and cellular adaptations in the spinal nociceptive circuitry of monoacylglycerol lipase knockout mice

Lendület Laboratory of Molecular Neurobiology

11:40-12:00

PETRA MOHÁCSIK, T. FÜZESI, M. DOLESCHALL, A. SZILVÁSY-SZABÓ, P. VANCAMP, V.M. DARRAS, CS. FEKETE, B. GERESEN

Regulation of the formation of thyroid hormone-dependent negative feedback in the developing hypothalamus

Laboratory of Molecular Cell Metabolism

12:00-12:20

ALBERT BARTH, A. DOMONKOS, T.F. FREUND, V. VARGA

The electrophysiological fingerprint of rearing in the hippocampus

Laboratory of Cerebral Cortex Research

12:20-12:40

DÁNIEL SCHLINGLOFF, V. TAKÁCS TRESÓNÉ, CS. CSERÉP, A. SZÖNYI, T.F. FREUND, G. NYÍRI, A. GULYÁS

Functional GABAergic transmission in the septo-hippocampal cholinergic system

Laboratory of Cerebral Cortex Research

12:40-14:30 LUNCH

SESSION 2

MODERATOR: BEÁTA SPERLÁGH

14:30-14:50

ÉVA MIKICS, E. SIPOS, B. ORSOLITS, Á. KERÉNYI, K. DEMETER, B. PÁSZTHY-SZABÓ, E. SOLYMOSI, P. BAKOS, P. POTTYONDI, M. SZABÓ, K. KAILA, A. FEKETE, Á. DÉNES

Perinatal asphyxia leads to rapid neuroinflammatory changes and lasting behavioral deficits in the absence of focal neuronal loss

Laboratory of Behavioural and Stress Studies and Laboratory of Neuroimmunology

14:50-15:10

CSABA VASTAGH, A. RODOLOSSE, N. SOLYMOSI, ZS. LIPOSITS

Footprint of positive estradiol feedback on hypothalamic centers regulating reproduction

Laboratory of Endocrine Neurobiology

15:10-15:30

MIKLÓS SZOBOSZLAY, Z. NUSSE

Distribution of ion channels on the somato-dendritic surface of CA1 PCs

Laboratory of Cellular Neurophysiology

15:30-15:50

NORBERT HÁJOS, T. ANDRÁSI, J. VERES, L. ROVIRA-ESTEBAN, R. KOZMA, A. VIKÓR

Synaptic organizing principles of principal neurons and perisomatic inhibitory interneurons in amygdala microcircuits

Lendület Laboratory of Network Neurophysiology

15:50-16:10

ÁDÁM MAGÓ, J. MAKARA

Input pattern dependent synaptic plasticity in dendrites of CA1 pyramidal neurons

Lendület Laboratory of Neuronal Signaling

16:10-16:30 COFFEE BREAK

SESSION 3

MODERATOR: ZOLTÁN NUSSE

16:30-16:50

ZOLTÁN PÉTERFI, E. FARKAS, K. NAGYUNYOMI-SÉNYI, T. FÜZESI, CS. FEKETE

Role of TRH/UCN3 neurons of the perifornical region in the regulation of the anorexigenic POMC neurons of the arcuate nucleus

Laboratory of Integrative Neuroendocrinology

16:50-17:10

HAJNALKA BOKOR, N. HÁDINGER, L. ACSÁDY

Specialized cortical control of basal ganglia recipient thalamic nuclei

Laboratory of Thalamus

17:10-17:30

ZSUZSANNA WINKLER, Á. POLYÁK, D. KUTI, D. KÖVÁRI, SZ. FERENCZI, K.J. KOVÁCS

Implication of microglia in hypothalamic control of metabolism.

Laboratory of Molecular Neuroendocrinology

17:30-17:50

LINDA JUDÁK, G. SZALAY, G. KATONA, P. MAÁK, K. ÓCSAI, M. VERESS, Z. SZADAI, T. TOMPA, B. CHIOVINI, B. RÓZSA

Fast 3D imaging of spine, dendritic, and neuronal assemblies in behaving animals

Laboratory of 3D Functional Network and Dendritic Imaging

SESSION 4

17:50-19:00

POSTERS

19:30- SYMPOSIUM DINNER & SOCIAL PARTY

17 SEPTEMBER, SATURDAY

SESSION 5

9:00-10:00

POSTERS

SESSION 6

MODERATOR: ISTVÁN KATONA

10:00-10:20

BARBARA ORSOLITS, B. MARTINECZ, R. FEKETE, N. LÉNÁRT, ZS. KÖRNYEI, Á. DÉNES

Molecular mechanisms of microglia-neuron interactions in the injured brain

Laboratory of Neuroimmunology

10:20-10:40

ANDOR DOMONKOS, NL. LEDRI, M. JELITAI, R. KARLOCAI, A. BARTH, K. DEISSEROTH, TF. FREUND, V. VARGA

The hippocampo-septal feedback and theta oscillations

Laboratory of Cerebral Cortex Research

10:40-11:00

KATINKA BEKŐ, B. KOVÁNYI, G. HORVÁTH, Á. DÉNES, ZS. KÖRNYEI, B. BOTZ, ZS. HELYES, C.E. MÜLLER, B. SPERLÁGH

Contribution of platelet P2Y₁₂ receptors to chronic complete Freund's adjuvant-induced inflammatory pain

Laboratory of Molecular Pharmacology

11:00-11:20

BARNA DUDOK, V. MICZÁN, K. KENESEI, M. LEDRI, K. KELEMEN, B. BARTI, M. KISFALI, M. WATANABE, I. KATONA

Molecular, morphological and physiological properties of different CB₁ cannabinoid receptor-expressing interneuron types of the hippocampus

Lendület Laboratory of Molecular Neurobiology

11:20-11:40 COFFEE BREAK

SESSION 7

MODERATOR: SZILVESZTER E. VIZI

11:40-12:00

GERGELY KOMLÓSI, F. MÁTYÁS, L. ACSÁDY

Specific arousal patterns by selective activation of midline thalamic neurons

Laboratory of Thalamus

12:00-12:20

PÉTER PAPP, ZS. KOVÁCS, P. SZOCSICS, G. JUHÁSZ, ZS. MAGLÓCZKY

Cortical and hippocampal alterations of interneurons in rat models of absence epilepsy

Laboratory of Cerebral Cortex Research

12:20-12:40

ZOLTÁN BALOGH, Z. KRISTÓF VARGA, L. SZENTE, L. BIRÓ, J. HALLER, M. ALICZKI

Interactions of anandamide and 2-arachidonoylglycerol signaling in the regulation of acquisition and extinction of traumatic memories - preliminary results

Laboratory of Behavioural and Stress Studies

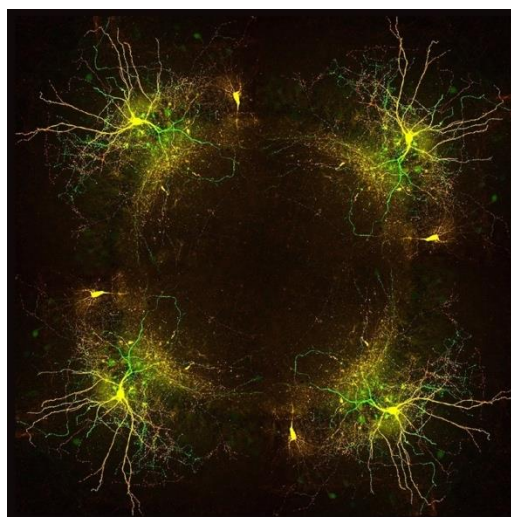
12:40-13:00

TAMÁS LASZLOVSZKY, A. KEPECS, B. HANGYA

Bursting cholinergic neurons of the basal forebrain show synchronous activity in an auditory detection task

Lendület Laboratory of System-Neurobiology

13:00-14:00 LUNCH



“WELCOME TO OUR GALAXY”

Courtesy of Dániel Schlingloff, Laboratory of Cerebral Cortex Research

POSTERS

1. PETRA MOHÁCSIK, R.M. LECHAN, B. GERESEN, CS. FEKETE
Infection-induced increase in type 2 deiodinase expression is accompanied by an increase in thyroid hormone action in the mediobasal hypothalamus
Laboratory of Integrative Neuroendocrinology
2. LEJLA FARADZS-ZADE, L. ACSÁDY
Selective activation of thalamic and extrathalamic inhibition in the same thalamic nucleus - distinct effects on cortical activity and behaviour
Laboratory of Thalamus
3. CSABA DÁVID, Z. NUSSE, L. ACSÁDY
LISA and the beauty of analyzing spatial clusters following immunostainings
Laboratory of Thalamus
4. VIKTOR OLÁH, Z. NUSSE, J. SZABADICS
State-dependent excitability of distinct CCK-expressing interneurons
Laboratory of Cellular Neuropharmacology
5. ENDRE L. MAROSI, J. SZABADICS
Competition between DSI and activity-dependent override of endocannabinoid-mediated inhibition during in vivo-relevant firing of CCK+ cells
Laboratory of Cellular Neuropharmacology
6. JÁNOS BRUNNER, J. SZABADICS
Recordings from thin axonal structures
Laboratory of Cellular Neuropharmacology
7. ESTILLA TÓTH, L. ERŐSS, J. VAJDA, S. CZIRJÁK, L. HAVAS, L. ENTZ, ZS. MAGLÓCZKY
Changes in the distribution of citrate synthase in parvalbumin positive interneurons of the hippocampi of patients with temporal lobe epilepsy
Laboratory of Cerebral Cortex Research
8. SÁRA SÁRAY, C.A. RÖSSERT, T.F. FREUND, SZ. KÁLI
Systematic comparison and automatic validation of models of dendritic integration and somatic spiking in CA1 pyramidal cells
Laboratory of Cerebral Cortex Research
9. TIBOR ANDRÁSI, J. M. VERES, R. KOZMA, N. HÁJOS
Characterization of the local excitatory inputs onto parvalbumin- and cholecystinin-expressing basket cells in the basolateral amygdala
Lendület Laboratory of Network Neurophysiology
10. LAURA ROVIRA-ESTEBAN, Z. PÉTERFI, A. VIKÓR, Z. MÁTÉ, G. SZABÓ, N. HÁJOS
Physiological and morphological properties of CCK/CB1-expressing interneurons in the mouse basolateral amygdala

11. NORBERT HÁJOS, A. VIKÓR, L. ROVIRA, T. ANDRÁSI, J. VERES, Z. PÉTERFI, K. MÜLLER
Morphological and electrophysiological comparison of principal cells in the different subnuclei of the mouse basolateral amygdala complex
Lendület Laboratory of Network Neurophysiology
12. ORSOLYA PAPP, T. ANDRÁSI, J. VERES, L. ROVIRA, J. M. BLASCO-IBANEZ, N. HÁJOS
GABAergic input from the basal forebrain controls fear generalization by regulating GABAergic interneurons in the mouse basolateral amygdala
Lendület Laboratory of Network Neurophysiology
13. IMRE FARKAS, CS. VASTAGH, E. FARKAS, E. HRABOVSKY, F. BÁLINT, K. SKRAPITS, CS. FEKETE, ZS. LIPOSITS
Glucagon-like peptide-1 excites firing and increases GABAergic miniature postsynaptic currents in gonadotropin-releasing hormone (GnRH) neurons of the male mice via activation of nitric oxide (NO) and suppression of endocannabinoid signaling pathways
Laboratory of Endocrine Neurobiology and Laboratory of Integrative Neuroendocrinology
14. CSABA FEKETE, CS. VASTAGH, E. HRABOVSKY, Á. DÉNES, I. KALLÓ, ZS. LIPOSITS, M. SÁRVÁRI
Inhibition of Nlrp3 inflammasome activation in a rat model of Alzheimer's disease
Laboratory of Integrative Neuroendocrinology and Laboratory of Endocrine Neurobiology
15. ZSUZSANNA BARDÓCZI, Á. DOBOLYI, I. KALLÓ
Input of TIP39-producing neurons to subpopulations of KP cells in the female mice
Laboratory of Endocrine Neurobiology
16. MARCELL LAKATOS, L. ERŐSS, S. NARDAI, Z. NAGY, E.S. VIZI
Hypothermia prevents ischemic condition to release 3H-dopamine from rat parietal cortex slices in a Ca²⁺ independent manner
Laboratory of Drug Research
17. GYULA BALLA, J. CERVENAK, B. DUDOK, C.M. HENSTRIDGE, A. ILIÁS, K. KENESEI, M. LEDRI, E. SZABADITS, M. LEDRI, L. BARNA, I. KACSKOVICS, I. KATONA
Clustered CB1 cannabinoid receptor distribution around the vesicle release sites of hippocampal excitatory axon terminals
Lendület Laboratory of Molecular Neurobiology
18. ZSOLT LELE, Z.I. LÁSZLÓ, Z. BALOGI, GM. SIMON, S.S. HU, I. KACSKOVICS, K. MACKIE, B.F. CRAVATT, I. KATONA
Critical role of the endocannabinoid-synthesizing enzyme (ABHD4) in cell death in a mouse model of fetal alcohol syndrome

19. ZOLTÁN BALOGH, D. BALÁZSFI, M. ALICZKI, H. HORVÁTH, Á. CSÁNOVA, D. JEZOVA, L. FARKAS, J. HALLER, D. ZELENÁ
Effects of vGluT3 deficiency on learning and memory in mice
Laboratory of Behavioural and Stress Studies
20. ZOLTÁN KRISTÓF VARGA, M. ALICZKI, J. HALLER, Á. ZSIGMOND, M. VARGA
Characterisation of age- and experience-dependent changes in avoidance behavior in a zebrafish model of anxiety
Laboratory of Behavioural and Stress Studies
21. BALÁZS UJFALUSSY, M. LENGYEL, T. BRANCO
Model-based analysis of dendritic computations
Lendület Laboratory of Neuronal Signaling
22. BERTALAN ANDRÁSFALVY, S. RAUS BALIND, J. MAKARA
Activity-dependent neuronal labelling with CaMPARI - first steps
Lendület Laboratory of Neuronal Signaling
23. KATALIN SKRAPITS, CS. VASTAGH, CS. MAURNYI, M. SÁRVÁRI, ZS. LIPOSITS, E. HRABOVSKY
Pubertal development coincides with a profound shift in the gene expression profile of mouse gonadotropin-releasing hormone neurons
Laboratory of Endocrine Neurobiology
24. ÁGNES POLYÁK, SZ. FERENCZI, D. KUTI, D. KÖVÁRI, ZS. WINKLER, M. TÓTH, CS. FEKETE, K. J. KOVÁCS
Effect of fractalkine receptor deficiency on metabolic phenotype of fat enriched dieted mice
Laboratory of Molecular Neuroendocrinology
25. DÁNIEL KUTI, Á. POLYÁK, D. KÖVÁRI, K. HORVÁTH, B. JUHÁSZ, Z. WINKLER, A. SZ. SZILVÁSY, CS. FEKETE, S. FERENCZI, K. J. KOVÁCS
Metabolic changes induced by chronic psychogenic stress in mice
Laboratory of Molecular Neuroendocrinology
26. DÓRA KÖVÁRI, Á. POLYÁK, D. KUTI, ZS. WINKLER, K.J. KOVÁCS, SZ. FERENCZI
Effects of a manno oligosaccharide prebiotic in DSS-induced ulcerative colitis
Laboratory of Molecular Neuroendocrinology
27. SZILAMÉR FERENCZI, R. KRISZT, ZS. WINKLER, Á. POLYÁK, D. KUTI, ZS. SZÓKE, K.J. KOVÁCS
Xenoestrogens ethinyl estradiol and Zearalenone cause precocious puberty in female rats via central kisspeptin signaling
Laboratory of Molecular Neuroendocrinology
28. KORNÉL DEMETER, J. HALLER
Validation and pitfalls of social recognition test
Laboratory of Behavioural and Stress Studies

29. KORNÉL DEMETER
Available methods and opportunities in the Behavioral Studies Unit
Laboratory of Behavioural and Stress Studies
30. GERGELY KOVÁCS, Zs. KÖRNYEI, J. BRUNNER, M. NEUBRANDT, J. SZABADICS, Á.
DÉNES, B. SPERLÁGH
Regulation of hippocampal P2X7 receptors by extracellular zinc
Laboratory of Molecular Pharmacology
31. FLÓRA GÖLÖNCSÉR, M. BARANYI, D. BALÁZSFI, R. D. ANDÓ, K. DEMETER, J.
HALLER, T. F. FREUND, D. ZELENÁ, B. SPERLÁGH
**Characterization of simultaneous 5-HT and glutamate release in response to a
behaviourally relevant optogenetic stimulation of median raphe terminals of
mice**
Laboratory of Molecular Pharmacology
32. GERGELY HORVÁTH, L. OTROKOCSI, K. BEKŐ, M. BARANYI, B. SPERLÁGH
**The role of purinergic mechanisms in maternal Poly(I:C) evoked rodent
model of autism**
Laboratory of Molecular Pharmacology
33. LILLA OTROKOCSI L, Á. KITTEL, B. SPERLÁGH
**P2X7 receptors drive spine synapse plasticity in the learned helplessness
model of depression**
Laboratory of Molecular Pharmacology
34. TIBOR LŐRINCZ, M. KISFALI, E.S. VIZI
**Ca²⁺ transients measured in different hippocampal GABAergic interneurons
using two-photon laser scanning microscopy**
Laboratory of Drug Research
35. AZAHARA OLIVA, A. FERNÁNDEZ-RUIZ, GY. BUZSÁKI, A. BERÉNYI
Synchronous CA2 activity precedes sharp-wave ripples in CA1
*MTA-SZTE 'Momentum' Oscillatory Neuronal Networks Research Group,
University of Szeged and NYU Neuroscience Institute, New York University*

Presentation sites

