



31. 10. – 1. 11. 2023

Fyziologický ústav AV ČR, v. v. i.

Vídeňská 1083

Prague, Czech Republic



TUESDAY OCTOBER 31, 2023

08:30 – 09:00 Poster setup

09:00 – 09:10 **Opening of the Conference**
Paleček Jiří

09:10 – 10:10 **Invited lectures**

Chairman: Paleček Jiří

What do we know about development of the clock in our brain?

Sumová Alena

Breaking habits: advancing the research of neurodevelopmental disorders with Drosophila

Fencková Michaela

10:10 – 10:30 **Coffee break**

10:30 – 12:00 **Molecular and cellular neurosciences I**

Chairman: Balaščík Martin

Studying the role of SORLA protein in Alzheimer's disease development

Bohačiaková Dáša

Nicotinic acetylcholine receptors expressed by specific neuronal populations control social and anxiety-like behavior

Janičková Helena

Deciphering glial cell diversity in health and disease by single-cell and spatial transcriptomics

Valihrač Lukáš

Morphological and Transcriptional Consequences of the Conditional Deletion of ISL1 in the Development and Survival of Spiral Ganglion Neurons

Tavakoli Mitra

Proyl isomerase FKBP12 binds to CRMP2A and regulates microtubule dynamics

Weissová Romana

Optogenetic modulation of neurons carrying somatic mTOR mutation in FCD-related epilepsy

Kylarová Salome

12:00 - 13:00

Lunch

13:00 - 14:00

Poster session I.

14:00 - 15:30

Molecular and cellular neurosciences II

Chairman: Horák Martin

Calcium-dependent modulation of synaptic NMDA receptor function

Smejkalová Tereza

Grin2Aa and grin2Ab knockout zebrafish larvae show behavioral differences compared to wild type larvae

Abramová Věra

Positive allosteric modulation of GABAA receptors by synthetic neurosteroids as the potential treatment of neuropathic pain

Szczurowská Ewa

Alterations of AQP4 and Cx43 protein levels in subpial astrocytes (glia limitans superficialis) of the medial prefrontal cortex in reaction to experimental neuropathic pain

Dubový Petr

Endogenous TRPV1 agonist N-oleoyldopamine can reduce the CCL2-induced desensitization of μ -opioid receptors in the spinal cord dorsal horn

Heleš Mario

Drug screening as an important tool for accelerating research

Stillerová Vendula

15:30 - 16:00

Coffee break

16:00 - 17:00

Molecular and cellular neurosciences III

Chairman: Janíčková Helena

Memory reactivation dynamics in Alzheimer's disease transgenic model TgF344-AD

Blahna Karel

Genes involved in mitochondrial physiology within 22q11.2 deleted region and their relevance to schizophrenia

Kolář David

The effect of manipulation of parvalbumin-positive interneurons in mPFC in anxious behavior

Hrůzová Karolína

Chronodisruption dampens circadian clock in choroid plexus via neuroinflammation-independent mechanism

Drapšin Milica

- 17:00 - 17:15 **Miniscopes: what for? Introduction to scientific applications where the Inscopix miniature microscopes can help address new scientific questions with a maximum of efficiency**
Přednáška podporovaná firmou Animalab, s.r.o.
- 18:00 - 22:00 **Welcome party (Na tý louce zelený – below IKEM)**

WEDNESDAY NOVEMBER 1, 2023

- 08:30 – 09:00 Poster setup
- 09:00 – 9:30 **Invited lecture**
Chairman: Syka Josef
- Network mechanisms of spatial memory pattern activation and update**
Jezek Karel
- 9:30 - 10:00 **Systems and clinical neurosciences I**
Chairman: Sumová Alena
- Disruption of extracellular matrix and perineuronal nets enhances extrasynaptic transmission due to increased brain diffusivity**
Syková Eva
- How to evaluate Blood – Brain barrier permeability with MRI**
Otáhal Jakub
- 10:00 – 10:30 **Coffee break**
- 10:30 - 12:00 **Systems and clinical neurosciences II**
Chairman: Otáhal Jakub
- Focal cortical dysplasia type I and II generate different interictal epileptiform activity**
Janča Radek
- Spatiotemporal transcriptomic map of ischemic brain injury**
Žucha Daniel
- Progress in intravital laboratory diagnostics of prion diseases: highly sensitive and specific detection of prions in cerebrospinal fluid using RT-QuIC**
Holada Karel
- Early warning signals of approaching seizures in iEEG of mice with focal cortical dysplasia**
Kudláček Jan
- Modulation of semantic memory using transcranial electrical stimulation**
Riečanský Igor

Apnoeas and diaphragm EMG during spontaneous tonic-clonic seizures in a rat model of temporal lobe epilepsy

Pant Aakash

12:00 - 13:00

Lunch

13:00 - 14:00

Poster session II.

14:00 - 16:00

Systems and clinical neurosciences III

Chairman: Ježek Karel

Impact of Epileptic Neuronal Activity on Myelination in a Mouse Model of Focal Cortical Dysplasia

Bogdanovič Adam

Mutated neurons in mouse model of focal cortical dysplasia display different firing profile than healthy pyramidal cells

Nguyenová Minh Thao

Decoding the impact of the reversed restricted feeding on the circadian clock in choroid plexus

Dočkal Tereza

Experience dependent specificity of place cell directionality in Alzheimer's disease rat model

Nataraj Athira

Tauopathy Subtypes and Their Cellular Implications: Unveiling the Role of R2 and R3 Aggregates in Seeding and Autophagy Clearance

Annadurai Narendran

Employing cortical functional structure for electrically induced perception in blind humans

Korvasová Karolína

Neurobehavioral consequences of APAP-induced hepatotoxicity

Renczés Emese

Interactions between auditory and cognitive impairments

Profant Oliver

16:00- 16:10

Conclusion of the meeting

Paleček Jiří

- 1. Opening New Horizons: Targeted Transcriptomic Profiling of Microglia in Fresh-Frozen Brain Tissue**
Abaffy Pavel
- 2. Cyclic AMP down-regulates tenascin-C expression after spinal cord injury and inhibits AAV-mediated expression in vivo**
Bachanová Lenka
- 3. Neuropsychiatric disease-associated mutations in the cytoplasmatic domain of GluN2A affect synaptic localization and function of NMDAR**
Balík Aleš
- 4. Characterization of microglia heterogeneity in experimental ischemic brain injury**
Dostalová Dominika
- 5. MicroRNA Biomarkers for Assessing Severity in Acute Spinal Cord Injury**
Klassen Ruslan
- 6. A new method of measuring NMDA receptor-mediated miniature excitatory postsynaptic currents**
Kořínek Miloslav
- 7. Tracking of individual NMDA receptors in live cultured neurones**
Kortus Štěpán
- 8. NEUROSTEROIDS: A novel promise for the treatment of neuropathic pain**
Kudová Eva
- 9. Subunit-dependent Mobility and Localization of NMDA Receptors Using uPAINT and dSTORM Single-molecule Localization Microscopy**
Ladislav Marek
- 10. Transcriptional and epigenetic role of NEUROD1 in neuronal development in the inner ear**
Lebron Mora Laura
- 11. Pathogenic mutation N650K in the GLUN1 subunit regulates transport and functional properties of NMDA receptors**
Marharyta Kolcheva
- 12. Transcriptional Profiling Revealed Impairment of Early Brain Development in hiPSC-derived Models of Alexander Disease**
Matúšová Zuzana
- 13. Structural changes of the ligand-binding domain in the GluN1 subunit regulate surface delivery and function of NMDA receptors**
Netolický Jakub
- 14. High resting potassium conductance keeps oligodendrocyte precursor cells in a low-proliferation state**
Pivonkova Helena

15. CB1R-mediated inhibition of nociceptive transmission is dependent on SGIP1 protein in inflammatory conditions

Pontearso Monica

16. Unlocking Brain Complexity: Harnessing the Potential of Single-Cell RNA Sequencing for Comprehensive Cellular Insights

Rohlová Eva

17. TRAK1 role in mitochondrial dynamics and neuronal development

Ruiz Estrada Maria Jose

18. Tubulin polyglutamylation regulates hippocampal axon and dendritic spine pruning

Rusková Michaela

19. Anandamide (AEA) synthesis from the precursor 20:4-NAPE has a stronger inhibitory effect on nociceptive synaptic transmission than direct AEA administration

Špicarová Diana

20. The role of the GDG motif of the GluN2 subunits for mechanism of NMDAR activation

Tomovic Eni

21. The timed sequence task in VPA mouse model of autism evaluates motor learning and cognitive flexibility

Urushadze Anna

22. The role of GABAB regulatory protein KCTD16 in nociceptive synaptic modulation

Vasconcelos Daniel

1. **LFP changes underlying vigilance-state instability in acute sepsis**
Baindur Siddhardth
2. **Utilization of RT-QuIC for analysis of prion seeding activity in tissues of siblings with genetic CJD**
Baranová Soňa
3. **Methamphetamine exposure during adolescence causes molecular and behavioral alterations**
Čechová Barbora
4. **Social cognition and parvalbumin interneurons are affected early in Alzheimer's disease in the TgF344-AD rat**
Černotová Daniela
5. **Pathological high frequency oscillations in a model of epilepsy due to focal cortical dysplasia type II have diagnostic and localization properties**
Chvojka Jan
6. **Sex-Specific Behavioral Consequences of Early Life Seizures Induced by Flurothyl**
Grígelová Andrea
7. **The temporoparietal junction processes the difference between self and other-related visuospatial perspectives**
Gunia Anna
8. **Transient destabilization of hippocampal network as a potential model of positive psychotic symptoms**
Karkušová Patricia
9. **Impact of poly(I:C) molecular weight on offspring behavior in the maternal immune activation model**
Kunčická Daniela
10. **Hippocampal representation of dynamic visual environments in rats**
Levčik David
11. **Mechanisms of cardiovascular dysfunction responsible for increased SUDEP risk in a rat model of temporal lobe epilepsy**
Liška Karolína
12. **A new method for automatic estimation of FWHM of PET scanner point spread function from FDG-PET images**
Macková Kateřina
13. **Chemogenetic manipulations of parvalbumin interneurons as an animal model of schizophrenia: implications on behavior**
Malenínská Kristýna
14. **Effect of paternal methamphetamine exposure on social interaction of offspring**
Mihalčíková Lýdia

- 15. Ventral and dorsal visual stream activity during immediate and delayed actions measured by intracranial EEG**
Moraresku Sofia
- 16. The effect of sulforaphane on cerebral cortical activity in immature rats with pilocarpine-induced status epilepticus**
Morenko Alevtyna
- 17. Responses of neurons in different subnuclei of the inferior colliculus of CBA mice to frequency-modulated tones and vocalizations**
Pysanenko Kateryna
- 18. A novel hippocampus-centric model of obsessive-compulsive disorder: comparative study**
Radostova Dominika
- 19. Effect of co-application of pregnanolone glutamate with haloperidol, risperidone, or clozapine on cognitive and positive symptoms in the MK-801 model of schizophrenia in rats**
Svoboda Jan
- 20. The Effects of Early Postnatal Noise Exposure on the Development of Perineuronal Nets in Rat Inferior Colliculus, Medial Geniculate Body, and Auditory Cortex**
Svobodová Burianová Jana
- 21. An afternoon nap helps in navigation using orientation marks**
Vlček Kamil
- 22. Colocalization of the most active part of the irritative network with the epileptogenic zone**
Vybulka Jakub