

CEITEC PhD CONFERENCE

29 May 2023

B11/205

8:30 - 9:00	Registration
9:00 - 9:10	WELCOME

Pavel Tomančák
Kateřina Ornerová

9:10 - 10:30	Session 1	PRESENTATIONS Life Sciences	CHAIR: Michaela Wimmerová
--------------	-----------	-----------------------------	---------------------------

9:10 - 9:30	Petra Itterheimová (P. Kubáň)	Development of portable capillary electrophoresis instrumentation for medical diagnostic
9:30 - 9:50	Zhengyue Zhang (J. Šponer)	Collective Variables based enhanced MD promotes the sampling of non-canonical DNA dynamics
9:50 - 10:10	Michaela Medková (M. Mráz)	The role of long non-coding RNAs in the microenvironmental interactions of malignant B cells
10:10 - 10:30	Lucie Valentová (P. Plevka)	Hunting strategy of phage JBD30 revealed by combination of cryo-electron and fluorescent microscopy

10:30 - 11:00	Coffee break
---------------	--------------

11:00 - 12:20	Session 2	PRESENTATIONS Life Sciences	CHAIR: Lukáš Žídek
---------------	-----------	-----------------------------	--------------------

11:00 - 11:20	Alžběta Dikunová (R. Štefl)	Assembly of torpedo termination complexes in thermophilic and mesophilic organisms
11:20 - 11:40	Marek Korsák (M. Wimmerová)	Characterization of lectin PluLec from <i>Photorhabdus luminescens</i>
11:40 - 12:00	Huma Shakoor (P. Lukavský)	Staufen1 interaction with target 3' UTR and influence of SSM and other domains on Staufen1 oligomeric state
12:00 - 12:20	Jana Faturová (K. Říha)	TDM3 is a novel component of Cajal bodies involved in mitotic progression

12:20 - 13:20	Lunch break – participants on their own
---------------	---

13:20 - 15:00	Session 3	PRESENTATIONS Life Sciences	CHAIR: Jan Havliš
---------------	-----------	-----------------------------	-------------------

13:20 - 13:40	Evelína Gahurová (M. Šámalová)	Exploring the role of cell-type specific expansin overexpression in the control of cell wall biomechanical properties and root growth of <i>Arabidopsis</i>
13:40 - 14:00	Katrina Leslie Nicolas (J. Hejálko)	Natural genetic variability in multistep phosphorelay as a tool for elucidating drought adaptation in <i>Arabidopsis thaliana</i>
14:00 - 14:20	Unnikannan Prabhullachandran (H. Robert Boisvion)	Unraveling the process of thermoregulation during the seed development in <i>Brassica napus</i> under heat stress
14:20 - 14:40	Sajid Ullah (J. Hejálko)	Automated analysis of grain spikes in greenhouse images using deep learning models

14:45 - 15:00	Coffee break
E35/atrium	

E35/atrium

15:00 - 17:00

Session 4

POSTER SESSION

CHAIR: Jan Hejátko & Michal Šmída

Structural Biology (15:00 - 15:30)

1. Zuzana Trebichalská (*P. Plevka*) In-situ cryo-electron tomography of Enterovirus replication
2. Sepideh M. Koubjari (*P. Lukavsky*) 3'UTR-mediated regulatory partners in MYC mRNA across different cell lines
3. Gytis Kučinskas (*J. Hritz*) Structural analysis of phosphorylated full length Tau protein fibrils without enhancers
4. Krishnendu Bera (*J. Hritz*) Conformational changes upon phosphorylation of proline-rich region of tau(210-240) peptide using molecular dynamic simulation
5. Peter Pajtinka (*R. Vácha*) Amphipathic helices can sense negative membrane curvature
6. Sushmita Pal (*R. Vácha*) Peptide sensitivity on membrane curvature and dependence on lipid unsaturation
7. Sofia Blasco Puyelo (*R. Vácha*) Protein motif for bacterial affinity
8. Mohd Isar (*P. Lukavsky*) RNA as a therapeutic target
9. *Martin Černý (*L. Židek*) δ -subunit of prokaryotic RNA polymerase C-terminal domain has sequence-specific role in transcription
10. Subhash Narasimhan (*L. Židek*) Integrative structural biology approaches to characterize roles of intrinsically disordered MAP2c and Sigma-A
11. Filip Melicher (*M. Wimmerová*) Hexameric lectin from *Photorhabdus laumondii*
12. Ján Bíňovský (*P. Plevka*) Baseplate structure and its conformational changes required for genome delivery of *S. aureus* phage phi812
13. Miroslav Homola (*P. Plevka*) Structural insight into a virus of climate modulating alga *Emiliania huxleyi*
14. Veronika Klápšťová (*R. Štefl*) Structural characterization of the interaction between BRCA1-BARD1 and RNA polymerase II
15. Jitender Kumar (*K. Tripsianes*) Dual binding mode of Dishevelled PDZ domain
16. Kateřina Linhartová (*R. Štefl*) Recognition of RNA Polymerase II C-terminal domain by RPRD2

Plants (15:30 - 15:45)

17. Lucia Baďurová (*J. Hejátko*) PHD-HD proteins: an enigmatic plant-specific transcription factor family
18. Alesia Melnikava (*J. Hejátko*) Cytokinin-induced *dirigent13* gene involves in the lignan production and mediates plant responses to the stresses
19. Shekoufeh Ebrahimi Naghani (*H. Robert Boisivon*) Study of the involvement of the PHYB-PIF4 pathway in high-temperature responses during the reproductive phase and embryogenesis of *Arabidopsis thaliana*
20. *Juan Francisco Sánchez López (*H. Robert Boisivon*) HSP101 and HSBP mediate gamete and embryo development during thermal adaptation
21. Surendra Saddala (*K. Říha*) Unravelling the molecular function of CDM1 zinc-finger protein in meiotic progression in *Arabidopsis thaliana*
22. Darya Volkava (*K. Říha*) Deciphering the global proliferative arrest: an elusive link between plant reproduction and longevity
23. Elena Zemlyanskaya (*K. Růžička*) mRNA N⁶-adenosine methylation (m⁶A) integrates multilevel auxin response and ground tissue development
24. Yewubnesh Wendimu Seifu (*T. Nodzynski*) The intracellular auxin homeostasis regulators PIN5 and PIN8 have a divergent membrane topology in *Arabidopsis thaliana* root cells

Molecular Medicine (15:50 - 16:15)

- | | | |
|-----|--|--|
| 25. | Tomáš Reigl (<i>K. Plevová</i>) | Exploring patterns in clinical, biological, and molecular data of leukemia patients with CLLue |
| 26. | Ahmadreza Lagzian (<i>V. Rotrekl</i>) | DNA damage altered the fate determination in stem cells |
| 27. | Lenka Dostálová (<i>M. Šmída</i>) | Genome-wide CRISPR/Cas9 knockout screening revealed genes involved in CD20 regulation in rituximab-resistant cells |
| 28. | Anna Hřčková (<i>Š. Vaňáčková</i>) | Searching for new factors involved in RNA tailing and decay |
| 29. | Marie Mądryk (<i>O. Slabý</i>) | Sequencing of long non-coding RNAs in exosomes in patients with colorectal cancer |
| 30. | Adriana Ladungová (<i>M. Šmída</i>) | Investigating the therapeutic potential of clinically-approved drugs for chronic lymphocytic leukemia (CLL) and acute myeloid leukemia (AML) <i>in vitro</i> |
| 31. | Helena Peschelová (<i>M. Šmída</i>) | CRISPR/Cas9 technology as a useful tool in the study of chronic lymphocytic leukemia |
| 32. | Pedro Faria Zeni (<i>M. Mráz</i>) | The role of long non-coding RNAs in BCR-mediated CLL activation |
| 33. | Karolína Trachtová (<i>O. Slabý</i>) | Bioinformatic Pipeline for Comprehensive Analysis of Small RNA-seq Data |
| 34. | Eva Hoferková (<i>M. Mráz</i>) | Coculture model with CD40L, IL4 and IL21 for study chronic lymphocytic leukemia proliferation |
| 35. | *Veronika Rájecká (<i>Š. Vaňáčková</i>) | An unbiased analysis of interplay between adenosine methylation and editing |
| 36. | Ketty Sinigaglia (<i>M. A. O'Connell</i>) | Exploring the interplay between ADAR1, MAVS, and PKR in innate immune responses |
| 37. | Anastasiya Volakhava (<i>Š. Pospíšilová</i>) | Uncovering retroelement activity in hematological malignancies |

Bioinformatics (16:15 - 16:20)

- | | | |
|-----|---|--|
| 38. | David Čechák (<i>P. Alexiou</i>) | Transcriptome-wide prediction of Ago2:miRNA-mRNA interactions using Deep Learning |
| 39. | Kateřina Jurásková (<i>V. Bystrý</i>) | Bioinformatics multi-omics approach for data integration from various diagnostic types in pediatric oncology |
| 40. | *Kriti Bhagat (<i>P. Alexiou</i>) | topic not provided by deadline |

17:00 - 17:45 RECEPTION
17:45 - 18:15 Announcement of the best presentation/poster
Michaela Wimmerová
E35/ATRIUM Closing remarks

*not present in person