

# CEITEC PhD School

## Study Programs

Life Sciences

- **Bio-omics**
- **Structural Biology**

Biomedical Sciences

- **Molecular  
Medicine**

- 4-year programs
- Above-standard **funding**
- State-of-the-art **core facilities**
- **International** and **interdisciplinary** environment
- Wide range of topics from **experienced supervisors**
- Coursework in **hard / soft / transferable skills** and **bioinformatics**
- Vibrant **campus life** with many events tailored for PhD students

**Information Session for Prospective PhD Students:  
18 January 2021 at 11:00 / online**

**Call SPRING 2021 starts on 1 December 2020**

## Structural Biology

*Open topic (supervisor)*

1. Structural studies of various states of direct and bridged transcription-translation coupling in vitro and in vivo (Gabriel Demo)
2. Determination of structural mechanism of coupled viral transcription and host translation in virus infected mammalian cells (Gabriel Demo)
3. RNA as a drug target (Peter Lukavsky)
4. Designing modified DNA fragments (Radek Marek)
5. Structure of parallel forms of nucleic acids studied by NMR spectroscopy and molecular modelling (Radek Marek)
6. Structural and time-resolved studies of phage replication in bacterial biofilm (Pavel Plevka)
7. Structural study of enterovirus replication in vivo (Pavel Plevka)
8. Structural Biology of WNT Signalling (Konstantinos Tripsianes)
9. Association of proteins in phospholipid membranes (Robert Vácha)
10. Selectivity of translocation across lipid membranes (Robert Vácha)
11. Structural characterization of hybrid proteins involved in neurodegenerative diseases (Jozef Hritz)
12. Structural properties of human carbonic anhydrase IX and design of its inhibitors (Jozef Hritz)

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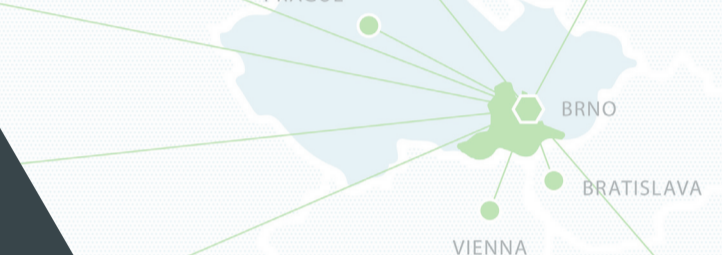
## Life in Brno

BERLIN ● WARSAW ●

*"I like the people at CEITEC, my group, the possibilities to attend workshops & trainings, and the accessibility of the Core Facilities."*

**Lilla (Hungary)**

PRAGUE ●



*"There's always something fun going on in the city. You can't get bored in Brno."*

**Anzer (India)**

**Deadline 28 February 2021**

## Bio-omics

*Open topic (supervisor)*

1. Characterization of cyclin-dependent kinase 12 (CDK12) substrates and their roles in regulation of transcription and tumorigenesis (Dalibor Blažek)
2. Functions of cyclin-dependent kinase 11 (CDK11) in regulation of gene expression (Dalibor Blažek)
3. Plant telomeres and telomerases (Jiří Fajkus)
4. Regulation of BCR signalling by DNA damage response and p53 protein (Miroslav Boudný)
5. Long non-coding RNAs (lncRNAs) in leukemias (Marek Mráz)
6. Regulation of cell migration in B cell leukemias and lymphomas (Marek Mráz)
7. Role of transcription factors in onset and progression of B-cell malignancies (Josef Večeřa)
8. Subcellular trafficking in plant survival lymphomas (Tomasz Nodzynski)
9. Investigating the regulation of the RNA modifying enzyme ADAR1 and how it regulates other biological pathways and diseases (Mary O'Connell)
10. Complexes maintaining chromatin structure (Jan Paleček)
11. Proteins involved in the regulation of telomeric repeats (Petra Prochazkova Schrupfova)
12. The use of CRISPR/Cas9 technology to develop innovative strategies for cellular therapy of hematological malignancies (Michal Šmída)

## Molecular Medicine

*Open topic (supervisor)*

1. Characterization of cyclin-dependent kinase 12 (CDK12) substrates and their roles in regulation of transcription and tumorigenesis (Dalibor Blažek)
2. Functions of cyclin-dependent kinase 11 (CDK11) in regulation of gene expression (Dalibor Blažek)
3. Prioritizing drug combinations in leukemia based on analysis of targeted therapy in vivo (Miroslav Boudný)
4. Long non-coding RNAs (lncRNAs) in the pathogenesis of B cell lymphomas (Marek Mráz)
5. The use of CRISPR/Cas9 technology to develop innovative strategies for cellular therapy of hematological malignancies (Michal Šmída)