

PhD candidate

in the Laboratory of Structural Biology (<http://lsb.avcr.cz/>), with the focus on

Mechanistic insights into functions of tubulin tyrosine ligase-like 11 (TTL11)

Job description:

While polyglutamylation of microtubules is a dominant posttranslational modification catalyzed by the TTL family members, other proteins are believed to be substrates of these enzymes. The project is aimed at the structural and functional characterization of TTL11, the least studied representative of the TTL family. The successful candidate will use heterologous expression to prepare TTL11s variants from different organisms to reconstitute the TTL11/tubulin system *in vitro* and to provide structural insights into tubulin recognition by TTL11. TIRF microscopy will be used to analyze the influence of polyglutamylation on microtubule characteristics and their interactions with microtubules associated proteins. Generation of CRISPR/Cas9 TTL11-targeted knock-in cell lines will be exploited to shed a light onto phase separation of TTL11 as well as to identify novel TTL11 physiological substrates *via* proximity-based labeling. The candidate will also contribute to manuscript writing and present results at international meetings. (S)he will be enrolled in a PhD program at the Charles University in Prague.

Basic education, experience, and skills required for consideration:

- MSc in molecular biology, biochemistry, biophysics or related subjects (as of June 2023)
- Teamwork, enthusiasm to learn new skills, analytical thinking
- Good English command (oral and written)
- Prior experience with heterologous protein expression and purification, biophysics, structural methods, and enzyme kinetics is a plus

We offer:

- A dynamic, multidisciplinary and highly collaborative international team
- Access to state-of-the-art technologies in structural biology, biophysics, and omics
- Excellent training conditions in preparation for your future career
- Extensive network of collaborators

Institute and workplace:

The Institute of Biotechnology (IBT, www.ibt.cas.cz), a constituent of the BIOCEV center of excellence (www.biocev.eu), is a multi-disciplinary research center focused on cancer and developmental biology, metabolism, gene expression, and structural biology & protein engineering. IBT/BIOCEV brings together >500 international scientists and students in >50 research groups. Research is supported by state-of-the-art core facilities (gene core, molecular structure and biophysics, animal clinic, flow cytometry & imaging, and omics). Located in Vestec, approximately 30 minutes (public transport) from the Prague center.

Additional information:

- **Application deadline: March 15, 2023. Start: September/October 2023 (or sooner)**
- For more information, please, contact Dr. Cyril Bařinka (cyril.barinka@ibt.cas.cz).
- To apply please submit your CV, motivation letter, and 2 references to hr@ibt.cas.cz.

More details on the processing of personal data are available on the website: <https://www.ibt.cas.cz/cs/o-ustavu/oficialni-dokumenty/qdpr/>.