

## PhD student position

### Genetic code expansion in the search for novel substrates of histone deacetylase 6

**Project:** The genetic code expansion allows for the targeted incorporation of non-canonical amino acids into the primary sequence of proteins. The aim of the project is to use this methodology for biochemical and biophysical characterization of interactions between heat shock protein 90 (HSP90) and human histone deacetylase 6 (HDAC6). Biological data suggest that HDAC6 is a principal deacetylase and a client protein of HSP90, but structural basis of HSP90 (de)acetylation by HDAC6 and functional consequences of such interactions have not been studied. The project shall provide mechanistic underpinnings of how cellular functions of HSP90 are regulated by reversible lysine acetylation with the special focus on the involvement of HDAC6.

**Methodology:** Molecular biology techniques (cloning, site-directed mutagenesis), synthetic biology, heterologous expression of proteins variants in different hosts (e.g., *E.coli*, HEK293 cells) and target purification using advanced chromatography techniques. *In vitro* reconstitution and characterization of the system exploiting an array of biochemical and biophysical techniques (pull-down, microscale thermophoresis, analytical ultracentrifugation, X-ray crystallography). Cell-base assays (CRISPR/Cas9 knock-in/knock-out, fluorescent microscopy).

**Qualifications:** Applicants should have a solid background in molecular biology, biochemistry, or cell biology. We expect good communication skills, analytical thinking, and the ability for teamwork. The successful candidate will participate in a PhD program at the Charles University, Prague. The starting date is summer/fall 2022.

**How to Apply:** For more information, please contact Cyril Bařinka ([cyril.barinka@ibt.cas.cz](mailto:cyril.barinka@ibt.cas.cz)) directly.

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