

Postdoctoral researcher in hemato-oncology

Institute

BIOCEV (Biotechnology and Biomedicine Centre of the Academy of Sciences and Charles University, <https://www.biocev.eu/en>) is one of the leading research centers in the Czech Republic which provides a unique environment formed by the Academy of Sciences, 1st Faculty of Medicine and Faculty of Science of Charles University. It has a concept of modern research institutes equipped with state-of-art instruments operated by service laboratories.

Group

The hematology laboratories (<https://hematologylaboratories.lf1.cuni.cz/>) combine experimental biology and clinical expertise in hemato-oncology research. We utilize genomic and proteomic technologies, molecular biology, and biochemical approaches to cellular models and personalized mouse models of tumorigenesis - patient-derived xenografts (PDX) to understand the biology of cancer stem cells and to untangle the network of pathways leading to therapeutic resistance. The laboratories investigate issues of therapeutic resistance of cancer stem cells and their clonal selection, as well as the specific mechanisms by which tumor bypasses the antitumor effect.

About the project

Treatment of onco-hematological diseases is often complicated by the development of resistance. Cells that resist the therapy are the cause of aggressive relapse. What these cells are and how they gain the properties that allow them to overcome drug toxicity remains unclear. Elimination of these resistant leukemia cells is one of the greatest challenges in the treatment of onco-hematological diseases such as Myelodysplastic syndrome, Acute myeloid leukemia, and Multiple myeloma.

The molecular mechanism of 5-azacytidine (AZA) and Venetoclax (VEN) resistance is still unknown. Increasing evidence shows that resistance is mediated by chemoresistant leukemic cells (RLCs) which are leukemic cells that gain an advantage by remodeling their cellular environment enabling them to survive chemotherapy. **The aim of the project is to define programs that lead to the emergence of RLCs by redox and spatial proteomic and transcriptomic screening of primary patient samples as PDX models.**

The successful candidate will work closely with a dynamic team of researchers within the department of the First Medical Faculty in BIOCEV and clinicians from the General University hospital to ensure translational relevance. The role will also benefit from access to service state-of-the-art facilities at BIOCEV, including the Gene core facility, Proteomic facility, Imaging facility, and Protein production facility. **Key responsibilities are:** to validate single-cell multi-omics data using gene editing, to develop a model of resistant cell lines to AZA/VEN, to test modulation of cellular metabolism on the development of resistance, to implement cellular barcoding, and to evaluate clonality of resistance.



Eligibility and assessment criteria

To be eligible for appointment as a postdoc, the applicant is required to have a doctoral degree in stem cell biology, hematology, molecular biology, or related disciplines.

The ideal candidate will have extensive experience in hematopoietic stem/progenitor cell biology and developmental hematopoiesis and in CRISPR/Cas9-mediated gene editing. Experience with clonal tracking methods (cellular barcoding), flow cytometry, and proliferation assays and familiarity with multi-OMICs technologies and analysis pipelines will be considered as merits in support of an application. Great emphasis will be placed on the candidate's personal suitability for the position and clear interest in the subject area. An advanced level of English written and spoken is essential.

Employment

Full-time, fixed-term, two-year employment. The contract will begin on 1st May 2025. We fully support personal career development, such as internships, and mobility, help with creating your project to build independence, and your grant applications. The health and social insurance are fully covered. Meal vouchers are provided. Five weeks of vacation.

Application deadline: 21.3.2025

Location: BIOCEV, Průmyslová 595, Vestec, 25250

The position is available from 1st May for two years with a possible extension.

For more information, please, contact Dr. Kristyna Gloc Pimkova (kristyna.pimkova@lf1.cuni.cz).

To apply send your application including a motivation letter, CV, and 2 reference letters to kristyna.pimkova@lf1.cuni.cz.

Please fill in the attached form:

https://docs.google.com/forms/d/e/1FAIpQLSep8e0ghdslH_xFhvVM-tk5UphxEoPlhj5snLo_WZjZ6o87rQ/viewform?usp=header

