Position:

PhD stipend in the project OPUS 24 NCN entitled: "Painting or Spots? – Unravelling the Mechanism of Formation and the Functional Significance of the Novel, Glioblastoma-Specific Localization Pattern of HCMV (Human Cytomegalovirus) IE1 (immediate early 1) Protein"

Project description:

Glioblastoma multiforme (GBM) is a malignant brain tumor. The prognosis for GBM patients after extensive treatment is very poor – 5 year survival rate is less than 10%. Additionally, the etiology and pathogenesis of this disease are still not understood. High percentage of glioblastomas were found to be positive for human cytomegalovirus (HCMV), which was found to be associated with worse prognosis for the patients. Adjuvant anti-HCMV treatments have shown increase in survival rates for GBM patients, confirming influence of HCMV infection on the outcome of the disease. The HCMV gene products were shown to influence glioblastoma proliferation and angiogenesis, induce apoptosis-resistance and immune evasion, suggesting an oncomodulatory role of HCMV in this disease. One of the HCMV proteins found in high percentage of glioblastomas is immediate early protein 1 (IE1). We detected a novel localization pattern of IE1 on mitotic chromosomes in glioblastoma cells. In addition to the known "chromosome painting" pattern we observed chromosome-associated spots (CAS) of IE1. This localization pattern was not present in other cell types of neural origin or other cells that support HCMV replication or latency, which are two known characteristics of the glioblastoma cells we used. We did, however detect it in another glioblastoma cell line, suggesting that the CAS localization of IE1 might be specific to glioblastoma. The goal of this project is to study chromatin association of HCMV IE1 protein in glioblastoma cells. Project will combine methods of virology, cell and molecular biology. We would like to study the possible function of the novel IE1 localization pattern. We believe that unravelling the function of IE1 CAS localization will not only further our understanding of the role that HCMV plays in glioblastoma, but may aid in future development of new therapeutic approaches targeting viral persistence.

Description of the tasks:

The selected candidate will be responsible for the follwoing tasks:

1 Cloning of lentiviral vectors.

2 Generation and validation of stable cell lines – based on lentiviral transduction.

3 Isolation of protein complexes

4 Quantitative MS analysis and processing and filtering of MS data.

5 Validation of the top hits from MS analysis.

Successful candidate will also be responsible for data analysis, writing publications and presenting results at seminars and conferences.

TYPE of NCN grant: OPUS24 – NZ6

Form of application: per post or *via* e-mail

Employment conditions:

- **the doctoral scholarship:** PLN 4 200 gross (about PLN 3 800 net)
- **place of employment:**
  Institute of Animal Reproduction and Food Research
  of Polish Academy of Sciences,
  Department of Reproductive Immunology and Pathology,
  ul. Bydgoska 7,
  10-243 Olsztyn, Poland
- **employment starting date:** October 2023
- **length of employment (scholarship):** 48 months

Qualifications:

1. Masters in microbiology, biotechnology, biology or related discipline.
2. Solid knowledge of molecular and cell biology techniques is required.
3. Knowledge in the field of virology or microbiology and *in vitro* cultures is advantages;
4. Ability to communicate easily in English;
5. Ability to communicate well and work in a group.

Interested candidates are asked to provide the following documents:

1. Motivation letter;
2. CV including list of publications, conference presentations, technical expertise and awards;
3. MS degree certificate, PhD diploma or certificate of participation in studies at the moment;
4. Recommendation letter from at least two scientific mentors, confirming skills necessary for completing the project;
5. Documents confirming proficiency in foreign languages;
6. Other documents, that in the opinion of the candidate are important when considering him/her for the position;
7. Signed statement: *I hereby authorize you to process my personal data included in my job application for the needs of the recruitment process in accordance with the Personal Data Protection Act dated 29.08.1997 (uniform text: Journal of Laws of the Republic of Poland 2002 No 101, item 926 with further amendments).*

Applications should be sent to: dr. Magdalena Weidner-Glunde (m.weidner-glunde@pan.olsztyn.pl)