WARSZAWSKI UNIWERSYTET MEDYCZNY

NATIONAL SCIENCE CENTRE POLAND

Call for Applications – PhD Student

Medical University of Warsaw

is seeking candidates for the position of: **PhD Student** at the Department of Immunopathology of Infectious and Parasitic Diseases

Application deadline: July 15th, 2025, 11:59 PM (CET)
Decision announcement: by July 25th, 2025
Planned start date: October 1st, 2025
Number of positions: 2
Reference number: This recruitment concerns the Sonata BIS project funded by the National Science Centre (NCN), agreement no. 2024/54/NZ6/00334, entitled: "T-cell exhaustion factors related to primary hepatocellular carcinoma development of the hepatitis C virus etiology."
The project leader and PhD supervisor will be Prof. Kamila Cortes-Fendorf.

Project Overview

HCV infections still represent an important global health problem, encompassing approximately 58 million of chronically infected individuals. Chronic course of infection (i.e., chronic hepatitis C, CHC) may lead to severe health consequences, such as fibrosis, cirrhosis, and primary hepatocellular carcinoma (HCC), one of the most common and lethal cancers.

WHO's global hepatitis elimination strategy provides a great potential for ending CHC epidemics by 2030 by employing tremendous advances in public health, including prevention, diagnostic and treatment services. However, the common latent course of infection and lack of nationwide HCV screening programs, especially in low- and middle-income countries, result in infection underdiagnosis. At the same time, despite numerous clinical trials, an effective vaccine protecting against the infection has not been developed.

Major advances in understanding HCV-related disease have been made since the virus discovery in 1989, including tremendous efforts in the implementation of highly effective treatment (i.e., direct acting antivirals, DAA). Nevertheless, the risk of HCC persists even in successfully treated patients, in particular in those with advanced fibrosis. Furthermore, the virus may persist in liver cells and/or blood immune cells, which may also represent a risk factor of HCC.

Currently, it is estimated that the number of CHC patients who are successfully treated outnumbers those infected and the proportion of post-DAA treatment HCC among newly diagnosed HCC patients is growing, increasing health burden year-by-year.

At the same time, there is still a lack of effective biomarkers and prognostic models of HCC that could be translated into individualized patients monitoring and treatment.

The determinants of HCV-related HCC are believed to be immune-related, including so called T-cell exhaustion, characteristic of chronic infections and cancer, in which these cells are

exposed to prolonged and high-level stimulation. Many of the mechanisms of exhaustion induction are shared between CHC and HCC, e.g., excessive, permanent co-expression of multiple inhibitory receptors (iRs) on T-cells, which prevent these cells from performing their effector functions, mainly via inhibiting their activation. Apart from the cell membrane-bound, soluble iRs are detectable in plasma and remain bioactive (i.e., are able to bind their respective ligands). Given the involvement of iRs in shaping T-cell exhaustion in CHC and HCC, it is crucial to characterize the immune dysfunction in CHC patients with advanced liver fibrosis cured by DAAs, explore the potential of iRs as well as the fact of the virus persistence in blood immune cells as prognostic markers of HCC development as well as capability of soluble iRs to enhance T-cell function in CHC and HCC.

The aims of the present study are to assess whether:
1) successful CHC treatment is related to change in the T-cell exhaustion profile in CHC patients with advanced liver disease, and whether this profile is different in patients with HCV-related HCC;
2) T-cell exhaustion parameters as well as the virus persistence in blood immune cells of CHC patients after successful antiviral treatment may be used as prognostic markers of HCV-related HCC;
3) T-cells functions may be restored upon in vitro treatment with soluble iRs in CHC patients before and after successful antiviral treatment and in patients with HCV-related HCC.

Identifying answers to the above questions will provide a basis for a better understanding of the factors underlying HCV-related carcinogenesis, which can be translated into individualized patient monitoring and treatment, reducing socioeconomic health burden, including treatment costs, hospitalizations, and premature deaths.

Key Responsibilities
- Literature review and analysis
- Execution of project tasks according to the research plan
- Performing ELISA tests
- Participation in flow cytometry-based experiments
- In vitro functional assays of T cells
- Detection of HCV genetic material in tissues (PCR)
- Data processing and visualization
- Preparation of abstracts for conferences and co-authorship of scientific papers

Candidate Requirements
- Master's degree in medical analytics, pharmacy, medicine, biology, biophysics, biotechnology, or bioengineering
- Laboratory research experience
- Authorship or co-authorship of a publication in an international journal is an asset
- Ability to write scientific texts and prepare presentations
- Proficiency in English (spoken and written)
- Excellent organizational skills and precision in laboratory work
- Motivation, responsibility, independence, and ability to work in a multidisciplinary team

We Offer:
- NCN research scholarship for 42 months (including a 6-month trial period) – 5000 PLN/month
- Additional doctoral scholarship if admitted to the MUW Doctoral School (within admission limits)
- Innovative research challenges and skill development
- Mentorship and career development support
- Opportunities to collaborate with national and international research teams
- Support for publishing and international conference presentations

Scholarship Terms
Scholarships will be awarded in accordance with NCN regulations for the Sonata BIS projects. The evaluation committee will rank candidates based on merit, research experience, and qualifications relevant to the project. The highest-ranking candidate will be selected. In the event of resignation, the next in line may be offered the position.
Candidates must meet one of the following eligibility criteria throughout the duration of the scholarship:
- Enrolled in undergraduate, graduate, or long-cycle studies in Poland
- Enrolled in doctoral studies
- Enrolled in a doctoral school

Application Process
- Send a single PDF application to: kcaraballo@wum.edu.pl
- Subject: Application PhD Student – NCN Scholarship
- Deadline: July 15th, 2025, 11:59 PM CET
- Only selected candidates will be contacted

Required documents:
- Motivation letter
- Signed CV detailing research experience, projects, research activities, publications, conferences, internships, awards, and technical skills
- Copy of diploma or proof of graduation
- At least one letter of recommendation from the academic professional (e.g., thesis supervisor, etc.)
- Completed candidate evaluation form available at: https://szkoladoktorska.wum.edu.pl/sites/szkoladoktorska.wum.edu.pl/files/zalacznik_nr_1_-_kwestionariusz_oceny_kandydata_eng_2.pdf

Additional Information
Further details on recruitment procedure to the MUW Doctoral School are available at: https://szkoladoktorska.wum.edu.pl/rekrutacja/documents-recruitment

Please provide also the signed GDPR statement that you grant us a permission to process your personal details for the recruitment process:
“I hereby give consent for my personal data included in the job offer to be processed for the purposes of recruitment conducted by the Medical University of Warsaw located in Warsaw”.

Results will be published on the MUW website. The decision of the scholarship committee is final.

The rules for the protection of personal data used by the Medical University of Warsaw

The administrator of personal data is the Medical University of Warsaw located in Warsaw, Żwirki i Wigury 61, 02-091 Warszawa,

1. Contact to the Data Protection Officer - email address: iod@wum.edu.pl.
2. Personal data will be processed in order to implement the recruitment process pursuant to art. 22^1 of the Labor Code, and in the case of providing a broader scope of data pursuant to art. 6 § 1a GDPR - consent expressed by the candidate.
3. Access to personal data within the University's organizational structure shall only have employees authorized by the Administrator in the necessary scope.
4. Personal data will not be disclosed to other entities, except for entities authorized by law.
5. Personal data will be stored for the period necessary to carry out the recruitment process, up to 12 months from the settlement of the recruitment process. After this period, they will be removed.
6. You have the right to access your data, the right to rectify, delete, limit processing, the right to transfer data, the right to object to the processing, the right to withdraw consent.
7. You have the right to withdraw consent to the processing of your personal data at any time, which will not affect the lawfulness of the processing that was carried out on the basis of consent before its withdrawal.
8. You have the right to lodge a complaint with the Office for Personal Data Protection when it is justified that his personal data are processed by the Administrator in breach of the general regulation on the protection of personal data of April 27, 2016.
9. Providing personal data is voluntary, but necessary to participate in the recruitment process to the extent specified in art. 22^1 § 1 of the Labor Code, voluntary in the remaining scope.
10. Decisions will not be taken in an automated manner and personal data will not be subject to profiling.