

#### ENG

**Title of the project:** The effect of Western diet modified with vegetable oils on the healing process of skin wounds in mice

Competition: OPUS 25

PI: dr hab. Joanna Wiśniewska

### **Project Information:**

The aim of the project is to study the effect of changing dietary habits by partially replacing animal fats with vegetable oils on skin wound healing. The study will compare the effect of a diet rich in canola and palm oil versus a standard Western diet . The experimental models will be wild-type C57BL/6 and CD36 KO mice, where in the latter the absence of the CD36 (fatty acid transporter) will allow direct evidenceof the effect of dietary fat on skin physiology. High-throughput molecular analyses (single cell RNA-seq and ATAC-seq), will provide detailed information at the molecular level on the effects of diet on specific skin cell populations during the wound healing process. The effect of diet on the phenotype and functional characteristics of macrophages will be determined, while *in vitro* experiments will investigate the mechanism of dietary effects on interactions between macrophages and dermis fibroblasts.

### The candidate will participate in the following tasks:

- 1. Participating in feeding experiments in vivo using a mouse model of skin wound healing;
- **2.** Laboratory analyses using molecular biology techniques, protein assay methods, *in vitro* cell cultures;
- 3. Collection, analysis and interpretation of the obtained results;
- **4.** Dissemination of research results through writing of scientific articles, participation in scientific conferences, popular science activities;
- 5. Preparation and defense of a doctoral thesis.

### **Requirements:**

- Completed a single master's degree or a second master's degree in biology, biotechnology or a related field (master's degree obtained before the project start – 1<sup>st</sup> October 2025);
- 2. Knowledge of the basics of animal physiology;
- 3. Knowledge of the basics of techniques: molecular biology, microscopic techniques and cell culture;
- 4. Fluent knowledge of spoken and written English;
- 5. Motivation for scientific work, ability to think analytically, good work organization, ability to work individually and in a team.



6. Experience in working with laboratory animals (including PolLASA certifications), confirmed internships in other scientific units, membership of scientific clubs, participation in conferences others that, according to the Candidate, are relevant to the consideration of his/her Application are welcome.

# Selection proces:

- Applications will be assessed in accordance with the criteria set out in the regulations for awarding research scholarships in research projects financed by the National Science;
- Only on-line applications will be considered;
- Candidates evaluated with the highest score will be invited to an actual interview, which will take place face-to-face or online;
- During the interview, the candidate will be asked to deliver a 10-minute speech. presenting his/her Master thesis and research interests;
- Final results of the recruitment will be published on IAR&FR PAS webpage within 10 days after final decision.

# Important information:

- Application deadline: June 30th, 2025, 23:59 (Eastern European Time)
- Application method: application form
- Interviews: July 1-11, 2025 (via Zoom)
- Location: Olsztyn, Poland
- Duration of the scholarship: 48 months
- Date of position opening: October 1st, 2025
- Number of positions: 1

Application form:

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