

19.11.2024

IUF

LEIBNIZ-INSTITUT
FÜR UMWELT-
MEDIZINISCHE
FORSCHUNG

The IUF – Leibniz Research Institute for Environmental Medicine investigates the molecular mechanisms through which particles, radiation and environmental chemicals harm human health. The main working areas are environmentally induced aging of the pulmonary system and the skin as well as disturbances of the nervous and immune system. Through development of novel model systems, the IUF contributes to the improvement of risk assessment and the identification of novel strategies for the prevention / therapy of environmentally induced health damage. The core unit model development is offering two positions for a

Cell Biologist (f/m/d) (PhD student).

The positions are to be filled at IUF as of April 1st, 2025

We are seeking two highly motivated PhD candidates to join our research team for an innovative Leibniz-funded project, **EpiDish**, which investigates the impact of environmental pollution on human sensory functions, with a specific focus on taste perception and nutrient sensing. This project, titled ***Modeling Pollution-Induced Effects on Taste and Nutrient Sensing Using Taste Bud and Stomach Organoids***, aims to uncover the cellular and molecular mechanisms by which air- and foodborne pollutants may impair taste perception, disrupt nutrient sensing, and influence health outcomes related to appetite regulation and calorie intake.

The project involves cutting-edge research methods, including organoid models derived from human induced pluripotent stem cells (iPSCs). By generating 3D structures that mimic tongue and stomach tissues, we will assess how pollutants like traffic-related particulate matter and heavy metals alter taste receptor expression, signaling pathways, and nutrient uptake.

This will be paired with sensory trials and data from the NaKo cohort to explore associations between urban pollution exposure and dietary behaviors in different age groups.

The successful candidates will have the opportunity to work with advanced in-vitro models and exposure systems, integrating cellular biology with epidemiological research to address critical questions in public health. This research has the potential to promote healthier eating, reduce malnutrition, and improve well-being by providing evidence for mitigating the effects of pollution on sensory health.

Qualifications

We seek a highly motivated candidate (f/m/d) with a solid background in cell biology. Expertise in standard molecular biology techniques, cell culture and ex-vivo models is critical. Previous work with genome editing is a plus. The candidate is required to have strong skills in English and German. Motivation to work independently and be responsible for the daily management of his/her/their research project in coordination with other members of the group is expected. The candidate will also be actively involved in the training and co-supervision of other group members and students.

ROLE RESPONSIBILITIES

- The individual should apply their significant expertise in stem cell biology, cell culture and organoids, molecular biology-based techniques, along with their understanding such as plasmid cloning, gene editing, AAV vector production, electroporation, qPCR, RT-PCR, nucleic acid extraction and cloning, gel electrophoresis, macromolecule blotting and probing and mouse handling is highly desirable.
- Participate in the development and qualification of assays. Independently analyze data and provide conclusions. Critically evaluate own and others results and offer insights based on process and product understanding to help solve problems.
- Contribute to patents, regulatory documents or manuscript as required.
- Read scientific and technical literature in order to bring new and improved procedures to the laboratory, and to broaden understanding of disciplines outside area of training. Utilizes all appropriate experimental design methods needed for work in area of specialization. Conduct literature searches and apply knowledge to the approaches taken.
- Participate in scientific discussion with colleagues through informal and formal scientific seminars and meetings.

EDUCATION AND EXPERIENCE

- Experience with cell culture, iPSCs, ex-vivo models, organoids are highly preferred.
- In depth understanding of iPSCs, organoids and co-culture systems.
- Demonstrated competency in immunohistochemistry, western blotting and DNA cloning.
- Experience with sequence analysis using bioinformatics and genomics.
- Demonstrated proficiency in Microsoft Office, including Word, Excel, and PowerPoint.
- Strong verbal and written communication skills are required (English and German).

DESIRED KEY COMPETENCIES

- Self-motivated, highly organized, meticulous hands-on habits, keen to accuracy, and attention to detail.
- Positive can-do attitude, responsible and responsive, and maintain a high degree of ethical standard and trustworthiness.
- Strong quantitative and analytical skills, able to reach rational conclusions through complex processing of information.
- Energized by accomplishments and excellence in the workplace. Competent of high performance in independent work and coordinated efforts in implementing group projects.
- Maintain timely documentation of laboratory work and keep well organized records.
- Evaluate results, analyze and interpret data to prepare projects updates, meeting presentations and research reports for documentation and publication.

The position is limited for to 2 years with the option of one year extension. The weekly working time totals 25 hours and 54 minutes. Remuneration is given in accordance with the provisions of the collective agreement for the employees of the states (TV-L). Salary will be according to TV-L (E13).

We promote equal opportunities and diversity. Women are particularly invited to apply and will be given preferential consideration in accordance with the LGG NRW. Applications from people with severe disabilities and their peers are also expressly encouraged.

Please address your application (incl. letter of motivation, CV, references, qualification certificates), preferably electronically, to Bewerbung@IUF-Duesseldorf.de:

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Application documents submitted by post are not returned. Documents for applicants not considered are destroyed appropriately once the procedure is complete.

