# LUXEMBOURG INSTITUTE OF HEALTH

The Luxembourg Institute of Health (LIH) is a public biomedical research organisation focused on precision health and invested in becoming a leading reference in Europe for the translation of scientific excellence into meaningful benefits for patients. LIH places the patient at the heart of all its activities, driven by a collective obligation towards society to use knowledge and technology arising from research on patient-derived data to have a direct impact on people's health. Its dedicated teams of multidisciplinary researchers strive for excellence, generating relevant knowledge linked to immune related diseases and cancer. The institute embraces collaborations, disruptive technology and process innovation as unique opportunities to improve the application of diagnostics and therapeutics with the long-term goal of preventing disease.

# PhD Student position in Human Biomonitoring

**2-year fixed-term contract (renewable for 2 years), full-time; start date: ASAP**

## Biomonitoring of children exposure to pollutants based on hair analysis

Growing evidence support that human exposure to pollutants is associated with several chronic diseases such as cancer, metabolic diseases, infertility or neurological disorders. Recent data suggest that childhood would represent a particularly vulnerable period during which exposure to pollutants possibly acting as endocrine disruptors, could lead to short-term affections as well as to diseases in the adult.

The study of exposure-associated diseases requires accurate assessment of the exposure that can be conducted through different approaches. Biomonitoring, consisting in the determination of pollutants and their byproducts in biological samples directly collected from the individuals, represents one of the most relevant approaches, integrating all the different sources and routes of exposure.

In parallel to urine and blood, which have been classically used for the biomonitoring of exposure, increasing interest has been observed for hair analysis. In this context, our team published several studies demonstrating the possibility to detected pollutants from different chemical classes in hair. More recently, we also demonstrated in animal models that concentration of chemicals in hair was significantly associated with the level of exposure, which further strengthens the relevance of hair for assessing exposure.

Based on hair analysis, the present PhD project aims at assessing exposure to various pollutants including pesticides and other endocrine disruptors in several children populations from different geographical areas.

The PhD work will consist in the collection of samples, the analysis using the most efficient analytical techniques currently available, the interpretation of the data and their statistical analysis.

Results will be used to highlight differences in the exposure between different areas but also between children within each area. Results will help to document public databases focused on biomonitoring where such information is still needed.

## Key Skills, Experience and Qualifications

- Theoretical background in analytical toxicology / Epidemiology / Environmental health Identification of post-translational modifications
- Preliminary experience in analytical chemistry applied to the analysis of biological samples would be highly recommended
- Highly motivated person with good organizational skills
- Good communication would be necessary to deal with the different partners involved in this project, at national and international level, as well as for restitution of the results to partners
- **Fluency in English is mandatory. Additional languages would be a plus.**
- **Excellent writing skills is mandatory. Previous publications would be an asset.**

**More information about the unit can be found here**: https://www.lih.lu/page/departments/hbru-human-biomonitoring-research-unit-800

**Researchers are supported by easy access to scientific expertise, well-equipped facilities, an active seminar program as well as the possibility for close collaborations with the university and other research institutes**.

Located in Luxembourg, LIH offers the opportunity to work in a dynamic, international and multilingual environment that values personal respect and professional achievement based on the highest intellectual and ethical standards. The remuneration for this position shall be based on qualification and experience.

**Applications including a cover letter and a curriculum vitae should be sent via our website www.LIH.lu/jobs with the ref: JA/PHDHBM0822/BA/HBRU**

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**www.lih.lu**