Exciting ERC-Funded Postdoctoral Research Position on Metallomics and ICP-MS

Are you an analytical chemist passionate about ICP-MS and metallomics? We have an exciting opportunity for you to delve deep into the analytical chemistry of metal ions and their roles in microbial systems.

We are seeking a highly motivated postdoctoral scientist to join our cutting-edge research project focusing on metallomics. This project utilizes Inductively Coupled Plasma Mass Spectrometry (ICP-MS) to explore the intricate world of metal ions and their influence on the action of antimicrobials, in particular antifungals.

Project description: Our work focuses on studying the intersection of metal ions, catalysis, and metabolic pathways, on microbial drug tolerance. The project aims to explore the crucial role of metal ions in the genetic networks that govern drug resistance and tolerance in fungal pathogens, in particular *Candida albicans*.

Our cutting-edge research project, which is conducted in collaboration with Judith Berman at Tel Aviv University has the potential to transform our understanding of fungal pathogenesis and pave the way for new therapeutic strategies.

Research environment: **The Ralser lab is part of the Institute of Biochemistry at Charité - Universitätsmedizin Berlin, Germany.** Located in the heart of Berlin, Charité is one of Europe's largest and most research-intensive medical universities. The candidates will have access to cutting edge technologies, and will be trained within an interdisciplinary research team consisting of biologists, data analysts, and analytical chemists with strong support from experienced technical staff. In our group, we are particularly interested in gaining a functional understanding of microbial and human metabolism, its regulation and dynamics, and its impact on disease. Ultimately, our goal is to use this knowledge to create innovative therapies and diagnostics. We mainly work with microbes, *in vitro* cell cultures, and human biofluids such as serum. We have a strong focus on mass spectrometry-based proteomics, which we routinely integrate with genomics data and phenotypic assays using various approaches of computational biology. The data-driven approaches are further complemented through molecular biology methods such as gain- or loss-of function assays.

Your tasks:

- Conducting ICP-MS analyses to investigate metal biology in microorganisms with a special focus on pathogenic fungi.
- Analysis of metal ion distributions in different microbial systems to investigate resistance mechanisms against antimicrobial substances.
- Development and optimization of methods for metal ion quantification in biological samples.
- Examination of the interactions between metal ions and antimicrobial agents and their influence on microbial growth and tolerance.
- Collaboration with interdisciplinary research teams for integration of metallomic data into comprehensive studies on microbial resistance and tolerance mechanisms.
- Presentation of research results at national and international conferences and publication in scientific journals.

Your profile:

- PhD in Natural Sciences, in particular Analytical Chemistry, or Chemical Biology
- Profound knowledge of ICP-MS technology and experience in conducting metallomic analyses
- Background in metal biology, with an interest in applying this knowledge to microbial resistance, antimicrobial agents, proteomics, or metabolomics
- Proficiency in biological data analysis or a strong motivation to obtain the required skills (e.g. basic scripting and programming) is desirable
- Strong analytical and problem-solving abilities
- High motivation and ability to work independently and collaboratively in a multidisciplinary team
- Excellent communication and teamwork skills
- Very good knowledge of English, both written and spoken
- Proven track record of publishing in peer-reviewed journals
- Strong work ethic

Contact. Please submit your interest preferably in one document, your CV, a cover letter, and contact details of at least two referees through the official application form https://karriere.charite.de/stellenangebote/detail/6980

For any inquiries, please visit our web page, https://ralser.group/e/, or contact Markus Ralser (markus.ralser@charite.de)