UNIVERSITETET I BERGEN

University of Bergen
Department of Biomedicine

Jobbnorge ID: 282182
Deadline: 6/25/2025
Website: https://www.uib.no/om/84775/ledige-stillinger-ved-uib
Scope: Fulltime
Duration: Temporary

Postdoctoral Research Fellow in Structure-Based Drug Design at the Department of Biomedicine

Postdoctoral Research Fellow

UiB - Knowledge that shapes society

Through robust and close interaction with the world around us - globally, nationally and locally - we shall be instrumental in building a society based on knowledge, skills and attitudes.

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Video: https://www.youtube.com/watch?v=oyaThmlq6Kg

Postdoctoral Research Fellow position

At the Faculty of Medicine, Department of Biomedicine, a full-time (100 %) position as postdoctoral research fellow is available for a period of three (3) years. The start date for the position is no later than 1 November 2025.The position is part of the project "Validating fatty acid synthesis enzymes as targets for antibiotics against Pseudomonas aeruginosa and other Gram-negative bacteria", financed by the Research Council of Norway.

There is an urgent need for new antibiotics to prevent the looming crisis of antimicrobial resistance. Fundamental knowledge on new targets for antibiotics is critically needed, as are compounds that will penetrate bacteria and act on these targets. This project we will tackle both challenges by 1) delivering potent inhibitors on two proposed bacterial protein targets (FabB and FabF) to evaluate their prospects as targets for future antibiotics and 2) establishing relationships between compound properties and uptake in bacteria. To reach these highly ambitious goals, we have assembled an interdisciplinary and international team of experts in antibiotic drug discovery, molecular simulations, structure-based drug design, covalent enzyme inhibition, organic synthesis, and medicinal chemistry. We will explore two essential enzymes involved in fatty acid synthesis in Gram-negative bacteria, with particular focus on Pseudomonas aeruginosa. We will use a structure-based approach to develop potent inhibitors for chemical target validation. Moreover, this process will be guided by experimental data on uptake into bacteria to ensure that our compounds reach their targets in the cell, a critical step in chemical target validation. This approach will allow us to provide crucial insight to the relationship between compound properties and uptake in Gram-negative bacteria, with far-reaching implications to antibiotic drug discovery well beyond the targets studied here.

The role of the position advertised here is to discover new covalent warheads by carrying out a fragment screen, to design improved inhibitors, to determine crystal structures to elucidate the binding modes of new inhibitors, and to carry out assays to determine the activity of new inhibitors. More information can be found here: https://www.uib.no/en/rg/brenk/178249/validating-fatty-acid-synthesis-enzymes-targets-antibiotics-against-pseudomonas

About the project/work tasks:

- To conduct a fragment screen by X-ray crystallography to identify covalent warheads
- To study the dynamics of FabF/FabF using MD simulations
- To design improved inhibitors
- To determine crystal structures to elucidate the binding modes of new inhibitors
- To carry out assays to determine the activity of new inhibitors

Qualifications and personal qualities:

- The applicant must hold a Norwegian PhD or an equivalent degree within medicinal chemistry, structure-based drug design or a related discipline or have the doctoral thesis submitted prior to the application deadline. It is a condition of employment that the PhD has been awarded at the latest within 5 months after the closing date for application
- The successful applicant must have experience in the following areas:
    - Recombinant protein expression and purification
    - Determination of protein-ligand complexes using X-ray crystallography or cryogenic electron microscopy (cryo-EM)
    - Determination of protein ligand binding using biophysical methods (SPR, ITC, or related methods)
- Experience in the following areas is an advantage:
    - Structure-based drug design using computational methods

    - Organic synthesis
    - MD simulations
    - Knowledge of a scripting language

- The candidate must demonstrate a structured approach to work, a strong commitment for hit discovery and optimization for antibiotics and research in general
- The applicant must be motivated for science in general and this position in particular, responsible, and also have a great work capacity
- Personal skills, including abilities to work independently and cooperate within a research group will be of importance
- The candidate must be fluent in written and oral English
- Experience with international collaboration is an advantage

The applicant's personal suitability for the position is a significant factor in the evaluation.

About the position of postdoctoral research fellow:

The position of postdoctoral research fellow is a fixed-term appointment with the primary objective of qualifying the appointee for work in top academic positions. You cannot be employed as a postdoctoral fellow for more than one fixed term period at the same institution.

The employee may be assigned required duties in the form of teaching and similar work at the department.

Upon appointment, applicants must submit a project proposal for the qualifying work including a work schedule. For postdoctoral research fellow positions associated with externally financed projects, the completion of the project proposal for the qualifying work will take place in consultation with the project/centre manager. It is a requirement that the project is completed in the course of the period of employment.

We can offer:

- Exciting development opportunities as part of your role in a strong professional environment
- Salary NOK 660 000 (code 1352) in the state salary scale.
- Enrolment in the Norwegian Public Service Pension Fund
- Good welfare benefits

Your application must include:

- A brief account of the applicant`s research interests and motivation for applying for the position
- Transcripts and diplomas (applicants with education from other countries than Norway must enclose witnessed diplomas in both the original language and authorized translations) and documentation of submitted doctoral thesis
- Complete list of publications
- Publications (in PDF) it is important that each of the scholarly works on which the committee should place special emphasis, is attached in its entirety
- Two references (name and contact information)

General information:

Detailed information about the position can be obtained by contacting: Professor Ruth Brenk, ruth.brenk@uib.no.

Diversity is a strength that enables us to solve our tasks even better. UiB therefore needs qualified employees regardless of gender, ethnicity, religion, worldview, disability, sexual orientation, gender identity, gender expression, and age.

The University of Bergen applies the principle of public access to information when recruiting staff for academic positions.

Information about applicants may be made public even if the applicant has asked not to be named on the list of persons who have applied. The applicant must be notified if the request to be omitted is not met.

We encourage applicants with disabilities, immigrant backgrounds, or gaps in their CV to apply. By indicating such circumstances in your application, you may receive favourable consideration. We ensure that at least one qualified applicant from each of these groups is invited for an interview as part of our commitment to inclusivity and equal opportunity.Further information about our employment process can be found here.

About The University of Bergen (UiB)

The University of Bergen is a renowned educational and research institution, organised into seven faculties and approximately 54 institutes and academic centres. Campus is located in the centre of Bergen with university areas at Nygårdshøyden, Haukeland, Marineholmen, Møllendalsveien and Årstad.

There are five departments and eight centres at Faculty of Medicine.Read More about the faculty and departments.

Additional information

Place of service:

Jonas Lies vei 91 5021 Bergen (Bergen Municipality)