

The **University of Bonn** is an international research university with a wide education and research profile. With a 200-year history, approximately 31,500 students, more than 6,000 staff, and an excellent reputation at home and abroad, the University of Bonn is one of the most important universities in Germany and is recognized as a university of excellence.

The research group of Prof. Günter Mayer at the Life and Medical Sciences Institute (LIMES) of the Faculty of Mathematics and Natural Sciences of the University of Bonn is inviting applications for a

DFG-funded PhD student position (m/f/d) from the earliest possible date.

Project description

Complexes consisting of aptamers, regulatory RNA molecules (e.g. siRNAs), and photoreceptor proteins enable light-controlled regulation of gene expression – this is optoribogenetics. The aptamer binds to the light-activated form of the photoreceptor and induces conformational changes in the regulatory RNA, thereby modulating gene expression [Weber *et al.* Nat Chem Biol 2019; Renzl *et al.* Angew Chem 2020; Pietruschka *et al.* Adv Sci 2024]. The DFG-funded project is conducted in close collaboration with Dr. Manuel Etzkorn (www.etzkornlab.de) and aims to elucidate the molecular structure and dynamics of *Nm*PAL photoreceptor-aptamer complexes. To better understand the light-triggered conformational activation, the kinetics and thermodynamics of the complexes will be tested *in vitro* and under cellular conditions. The work will explore diverse complex variants to systematically optimize optoribogenetics and to derive general principles for light-controlled regulation of gene expression.

Qualification profile

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| Required skills | <ul style="list-style-type: none">• Enthusiasm for learning and a cooperative work attitude are a must• Strong interest in molecular biology, chemical biology and cell biology• Experience in molecular biology methods and cell culture techniques is highly desirable• Excellent communication skills• Highly motivated to conduct interdisciplinary research• Very good command of English |
| Your profile: | <ul style="list-style-type: none">• A solid background (master or diploma) in biology, chemistry, pharmacy, or its subdisciplines biomedicine, chemical biology and molecular (cell) biology |
| We offer: | <ul style="list-style-type: none">• Supportive mentoring and career development plans• An excellently equipped workspace and vibrant scientific environment• An international team of scientists• Salary according to the German salary scale TV-L E13 (65%)• "Jobticket" (subsidized public transport)• Wide range of University Sports• Day care center |

The University of Bonn is committed to diversity and equal opportunities. It is certified as a family-friendly university. Its aim is to increase the proportion of women in areas where women are under-represented and to particularly promote their careers. It therefore urges women with relevant qualifications to apply. Applications are treated in accordance with the Land Equality Act. The application of suitable people with proven severe disabilities and persons of equivalent status is particularly welcome.

If you are interested in this position, please send your application documents with cover letter, CV and certificates in one PDF file to gmayer@uni-bonn.de and silvana.hassel@uni-bonn.de. If you have any questions about the position, please contact Prof. G. Mayer and/or Dr. S. Hassel at the same email addresses.