We are looking to support our rapidly growing team as soon as possible two:

Doctoral Researchers (f/m/x)

Institut für Radiochemie und Experimentelle Molekulare Bildgebung

TV-L: 25 h/week (64,94%)

limited for 2 years according to WissZeitVG. Following this period, the successful candidate is expected to continue for at least one additional year at INM-5, Forschungszentrum Jülich.

Your salary will be based on TV-L EG 13

Your tasks

- Organic synthesis of precursor and reference compounds for the development of novel PET tracers for imaging estrogen receptors in the brain
- Synthesis and structural modification of steroidal and non-steroidal estrogen receptor ligands
- Development, optimization and performance of radiofluorination reactions for the preparation of ^{18}F-labeled PET tracers
- Investigation and optimization of radiochemical reaction conditions with regard to yield, reproducibility, molar activity and radiochemical purity
- Analytical and radiochemical characterization of the prepared compounds using HPLC, radio-HPLC, TLC/radio-TLC, MS and NMR
- Determination of relevant physicochemical and radiopharmaceutical properties, e.g. lipophilicity, stability and metabolite profiles
- Contribution to the establishment and documentation of suitable quality control and synthesis protocols
- Support in the automation of selected radiosyntheses and in the preparation of translational synthesis and quality control strategies

Your future with us

We are one of the leading university hospitals in Germany and network research, teaching and health care at the highest level. That's why many things are a lot bigger for us: the spectrum of exciting development opportunities. The limitless openness with which specialists from all over the world work together here. Or our commitment as an employer to support all employees as best we can in reconciling their job with their goals and life situations.

This is the University Hospital of Cologne: Everything but ordinary.

Your future in detail

The University of Cologne offers a broad spectrum of academic disciplines and internationally outstanding research areas across its six faculties. At the Faculty of Medicine, numerous scientists are engaged in research, teaching and patient care across a wide range of clinics, institutes and centers. The Faculty of Medicine and the University Hospital Cologne are part of the highly active Rhineland research region and closely collaborate with numerous university and non-university partners. This strong network enables

- Support of the biological and preclinical evaluation of tracer candidates, e.g., in *in vitro* assays, stability and binding studies, BBB models, *ex vivo* analyses and *in vivo* imaging studies
- Analysis, documentation and scientific presentation of experimental results in project reports, publications and presentations

Your profile

- Completed Master's or Diploma degree in chemistry, pharmacy, biochemistry, molecular biotechnology or a related natural science
- Sound knowledge of organic synthesis chemistry and preparative laboratory work
- Experience in the synthesis and characterization of bioactive molecules, ligands or radiopharmaceutical precursor compounds is advantageous
- Experience in radiochemistry, radiosynthesis and/or work with short-lived radionuclides, in particular fluorine-18, is desirable but not mandatory
- Experience in the application of analytical methods such as HPLC, LC-MS, NMR and TLC
- Interest in radiopharmaceutical tracer development, molecular imaging and translational research
- Willingness to work with unsealed radioactive substances and to become familiar with radiation protection-related workflows
- Willingness to support biological and preclinical experiments within an interdisciplinary team
- Good written and spoken English skills
- Structured, independent and conscientious working style
- Ability to work in a team, strong communication skills and interest in interdisciplinary collaboration between chemistry, radiochemistry, biology, medicine and imaging

Our offer

- **Everything but ordinary:** You can expect a secure job in a challenging, innovative environment – including company pension schemes and regular working hours without business trips.
- **Work-life balance:** Whether full-time or part-time, with or without children – with numerous support options, we will find the right path together.
- **Team spirit in R(h)ine culture:** You will be warmly welcomed by an interdisciplinary team that values mutual respect and helpfulness.
- **Strong perspectives:** We offer extensive training opportunities – so you can continuously grow and set new goals.

internationally competitive science ranging from basic research to clinical application and provides an excellent environment for the training of early-career scientists.

The Institute of Radiochemistry and Experimental Molecular Imaging (IREMB) is seeking two doctoral candidates for a translational research project in the field of radiopharmaceutical tracer development and molecular imaging. The doctoral positions will initially be embedded for two years in the internationally funded IMAGESTRO project. Subsequently, the doctoral projects will be continued for one additional year at Forschungszentrum Jülich, Institute of Neuroscience and Medicine: Nuclear Chemistry (INM-5). Depending on the further development of the project and the scientific profile of the doctoral candidates, the focus of the third year will be either on the development of ^{18}F-labeled PET radiotracers or ^{211}At-labeled radiotherapeutics for nuclear medicine applications.

The IMAGESTRO project aims to develop novel ^{18}F-labeled PET tracers for the non-invasive imaging of estrogen receptors in the brain, to characterize them preclinically, and to translate them into human applications. The project focuses on the organic synthesis of suitable precursor and reference compounds, the development and optimization of radiofluorination strategies, and the comprehensive analytical and preclinical characterization of the resulting radiotracers. The work will be carried out in close cooperation between the University Hospital Cologne and Forschungszentrum Jülich and offers an interdisciplinary research environment at the interface of organic chemistry, radiochemistry, radiopharmacy, molecular imaging, biology and neuroscience.

Applications from female candidates are expressly welcome and will be given priority in the event of equal

suitability, competence and professional performance. People with disabilities are welcome to apply and will be treated preferentially in the event of equal suitability and qualification.

Contact

Prof. Dr. Bernd Neumaier
Tel: +49 221 478-86807

Universitätsklinikum Köln AöR
Geschäftsbereich Personal
Kerpener Str. 62
50937 Köln

Uniklinik Köln Karriere

Application deadline: 2 August 2026

Job-ID: 0xpk1jyb

apply now

We look forward to receiving your application and getting to know you!