

To strengthen our team, we are offering 2

PhD positions on non-coding RNA in cardiovascular research

About the institute

The Institute of Pharmacology and Toxicology is part of the Medical Faculty of the Technical University of Munich (TUM), one of the leading universities of Germany (rewarded with one of three clusters of excellence). The focus of our research is the mechanism of action of noncoding RNAs and their therapeutic applicability in cardiac disease. Our team excels in the preparation as well as the targeting of specific cells in heart-innervating sympathetic ganglia in vitro and in vivo ^{1,2}. We have a longstanding expertise in the noncoding RNA field that is documented by a number of high-profile publications ³⁻⁵. The newly established SFB (Sonderforschungsbereich) on "Non-coding RNA in the cardiovascular system" aims to elucidate the function and mechanism-of-action of non-coding RNAs. To expand further into the analysis of non-coding RNAs, we are looking for two motivated PhD students to join our group.

Our offer

The position is available as of now, we plan a PhD project to last between 3 and 4 years.

We offer thorough training in:

- Performing a wide spectrum of molecular, cell biology-related and computational methodologies and techniques, such as primary cell isolation (heart, ganglia), DNA cloning, viral transduction, RNA-detection methods, flow cytometry, generation and analysis of RNA-Seq data etc.
- Development of new methods and experimental plans.
- Writing and presenting your scientific work.
- Within the framework of the SFB, you will be able to attend to workshops (e.g. analysis of Next Gen sequencing data) and perform experiments in collaborating labs

In addition, you will

- Work closely with the project-leading principle investigator.
- Join a highly motivated and international team with a high PostDoc to student ratio.
- Operate state-of-the-art technologies and instruments, such as the Chromium (10x Genomics) for single cell sequencing, high content imaging system or a cell sorter.
- Join the TUM Graduate School and benefit from educational programs etc.
- Receive a 3-year contract with the possibility to prolong, payment according to TV-L (E13 / 65%).

Your qualifications

- You are a highly motivated student that takes great interest in research, is curious and excited to learn and optimize new methods and experimental approaches.
- Practical experience in molecular biology, cell culture and, ideally, RNA methodologies.
- You have a high degree of responsibility, are independent and enjoy working in a team.
- Good command of English (written and oral).
- M.Sc. or Diploma in Biochemistry, Biology, Molecular Biotechnology or a related discipline.

Your application

The TUM aims to increase the diversity of its staff substantially. As an equal opportunity and affirmative action employer, the TUM explicitly encourages nominations of and applications from women and all others who would bring additional diversity dimensions to the university's research and teaching strategies. The position is suitable for people with disabilities. Applications from people with disabilities with essentially the same qualifications will be given preference.

Notes on data protection:

As part of your application for a position at the Technical University of Munich (TUM), you submit personal data. Please note our privacy policy in accordance with Art. 13 General Data Protection Regulation (DSGVO) <http://go.tum.de/554159> for the collection and processing of personal data in the context of your application. By submitting your application, you confirm that you have read the data protection notices of TUM.

Please send your complete application documents (cover letter, C.V., recommendations/references, certificates) as a pdf file via email to the following address:

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1. Ziegler, K. A. *et al.* Local sympathetic denervation attenuates myocardial inflammation and improves cardiac function after myocardial infarction in mice. *Cardiovasc. Res.* **114**, 291–299 (2018).
2. Ziegler, K. A. *et al.* Immune-mediated denervation of the pineal gland underlies sleep disturbance in cardiac disease. *Science* **381**, 285–290 (2023).
3. Thum, T. *et al.* MicroRNA-21 contributes to myocardial disease by stimulating MAP kinase signalling in fibroblasts. *Nature* **456**, 980–984 (2008).
4. Ganesan, J. *et al.* MiR-378 Controls Cardiac Hypertrophy by Combined Repression of Mitogen-Activated Protein Kinase Pathway Factors. *Circulation* **127**, 2097–2106 (2013).
5. Ramanujam, D., Sassi, Y., Lagerbauer, B. & Engelhardt, S. Viral vector-based targeting of miR-21 in cardiac non-myocyte cells reduces pathologic remodeling of the heart. *Mol. Ther.* 1–10 (2016) doi:10.1038/mt.2016.166.