

Postdoc position (m/f/d) (Fulltime for 3 years): starting 02.2024

Research topic in human reproduction genetics:

„Disturbances of the ovarian reserve - analysis of genetic influencing factors”

Research projects in my research group (AG Rehnitz) are focused on the molecular functional analyses of genetic and epigenetic regulatory mechanisms during human folliculogenesis and its putative distortion in some well-known women germline disorders such as Premature Ovarian Insufficiency/Failure (POI/POF) syndrome and Poor Ovarian Response.

The reserve and maturation of oocytes in their follicles (oocyte and surrounding somatic cells) within the ovary is a crucial factor for female fertility. Disturbances in this process (oocyte maturation and folliculogenesis disorders) can manifest themselves as premature ovarian exhaustion (“premature ovarian insufficiency”) or as a “poor response” to hormonal fertility treatment. The aim of our work is to identify molecular genetic connections and to recognize possible genetic causes and influencing factors for disorders of folliculogenesis and ovarian reserve in order to better adapt and improve the prognosis and therapeutic options of women who want to have children in the future.

The current position is funded by a project grant from the **EKFS (Else Kröner Fresenius Stiftung)** and limited to a maximum of 3 years.

Your profile

- PhD degree in molecular biology, biochemistry or equivalent
- Splendid expertise in all molecular biology techniques and extensive experience in human cell culture work. Especially: Western blotting, Immunoprecipitations, gene expression analysis, PCR, qPCR, cloning, sequencing, ELISA, Fluorescent microscopy, Next-Generation-Sequencing, CRISPR/CAS9, shRNA- mediated knock down techniques
- Excellent personal communication and organization skills.
- Extensive experience in the analysis of complex molecular data using data bases.
- Broad knowledge with ADOBE/COREL DRAW graphic programs, statistical software and bioinformatics online tools (PRISM, TRANSFAC, CLUSTAL, BLAST, etc).
- English (written and spoken) for publication work, participation in distinct student supervision work for MD, Bachelor and Master students and research interships

Contact & Application

Applications should be submitted per e-mail as one single PDF-file (max 5 MB) to PD Dr. **Julia Rehnitz (julia.rehnitz@med.uni-heidelberg.de)**.

Please include an extensive motivation letter, your scientific CV, academic certifications, complete list of publications; 2-3 references of your past supervisors and give your expected availability date.

Please do not send original documents by mail services, since they will not be returned.

Related Publications:

1. Xuan Phuoc Nguyen, Adriana Vilkaite, Birgitta Messmer, Jens E. Dietrich, Katrin Hinderhofer, Knut Schaekel, Thomas Strowitzki, Julia Rehnitz Expression of FMRpolyG in peripheral blood mononuclear cells of women with fragile X mental retardation 1 gene premutation; *Genes* 2022, 13, 451. <https://doi.org/10.3390/genes13030451>
2. Julia Rehnitz; Birgitta Messmer; Ulrike Bender; Xuan Phuoc Nguyen; Ariane Germeyer; Karin Hinderhofer; Thomas Strowitzki; Edison Capp Activation of AKT/mammalian target of rapamycin signaling in the peripheral blood of women with premature ovarian insufficiency and its correlation with FMR1 expression *Reproductive Biology and Endocrinology* (2022) 20:44; <https://doi.org/10.1186/s12958-022-00919-0>
3. Julia Rehnitz, Edison Capp, Birgitta Messmer, Xuan Phuoc Nguyen, Ariane Germeyer, Alexander Freis, Jens E. Dietrich, Katrin Hinderhofer, Thomas Strowitzki, Peter H. Vogt FMR1 and AKT/mTOR Signaling in Human Granulosa Cells: Functional Interaction and Impact on Ovarian Response *J Clin Med.* 2021 Aug 30;10(17):3892. doi: 10.3390/jcm10173892.
4. Julia Rehnitz*, Berthe Youness*, Xuan Phuoc Nguyen, Jens E Dietrich, Sabine Roesner, Birgitta Messmer, Thomas Strowitzki, Peter H Vogt FMR1 expression in human granulosa cells and variable ovarian response: control by epigenetic mechanisms *Molecular Human Reproduction*, Volume 27, Issue 2, February 2021, gaab001, <https://doi.org/10.1093/molehr/gaab001>
5. Rehnitz J, Alcoba DD, Brum IS, Dietrich JE, Hinderhofer K, Messmer B, Germeyer A, Freis A, Strowitzki T, Vogt PH; FMR1 expression in human granulosa cells increases with exon 1 CGG repeat length depending on ovarian reserve *Reprod Biol Endocrinol.* 2018 Jul 7;16(1):65. doi: 10.1186/s12958-018-0383-5.
6. Rehnitz J, Alcoba DD, Brum IS, Hinderhofer K, Youness B, Strowitzki T, Vogt PH FMR1 and AKT/mTOR signalling pathways: Potential functional interactions controlling folliculogenesis in human granulosa cells. *Reprod Biomed Online.* 2017 Aug 4. pii: S1472-6483(17)30373-5. doi: 10.1016/j.rbmo.2017.07.016.