

The DFG funded multi-centre Collaborative Research Consortium CRC/TRR 205 offers the following position within its 2<sup>nd</sup> funding period:



## PhD Student (f/m/x) – life science

Starting October 1<sup>st</sup>, 2021 - initially limited to 3 years

### Our project

#### Adrenal stem cells under homeostatic and stress conditions

Adrenal insufficiency is a condition in which the adrenal gland does not produce adequate amounts of glucocorticoids and/or mineralocorticoids. Currently, hormone replacement therapies are the main treatment option for adrenal insufficiencies, but are often coupled with significant side effects; therefore, adrenal (stem) cell transplantation would be a desirable therapeutic alternative for these patients. The main objectives of this project are to establish the role of adrenal stem/progenitor populations in normal homeostasis and disease and to generate functional cells *in vitro*, trialling cell-replacement therapies.

Recently, we identified distinct stem/progenitor populations of the adrenal cortex (Nestin+) and medulla (SOX2+) and characterised their function and regulation during homeostasis and stress. These studies resulted in the identification of signalling pathways involved in adrenal development and a series of novel candidate stem cell markers. In the current project, we will build upon these achievements by utilising differentiated murine embryonic stem (ES) cells to restore adrenal insufficiency. Furthermore, we will address the behaviour of different adrenal progenitors following perturbation of the hypothalamic-pituitary-adrenal (HPA) axis in mice and humans. In addition, we will explore the potential impact of sex on the adrenal progenitor populations (sexual dimorphism). The molecular dynamics involved in the pathogenesis of stress-associated disorders will be studied utilising lipidomics and proteomics approaches during normal homeostasis and restraint stress, allowing us to identify molecular changes during stress.

### What we offer

- unparalleled platform of cutting-edge model systems (mice, pigs)
- comprehensive tissue, plasma, and clinical cohorts among the largest in the world
- dynamic, inspiring and supportive research environment
- broad range of tasks and responsibilities
- Excellent equipment
- Close interaction to benefit from the broad expertise of various groups of our institute as well as collaboration partners

### Contact Details:

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*The TRR205 is committed to increase the proportion of women in all areas and positions in which women are underrepresented. Qualified female applicants are therefore particularly encouraged to apply.*

*Among candidates with equal aptitude and qualification, a person with disabilities will be given preference.*

*Become part of a multi-disciplinary and international team:*

*We are looking forward to your application (CV, publications, references, motivation letter) – preferably per email to*

[charlotte.steenblock@](mailto:charlotte.steenblock@ukdd.de)

[ukdd.de](http://ukdd.de)



### What we offer

- Young Scientist and Clinician Scientist Programs with workshops, mentoring and peer group exchange
- Lab-rotation between the involved institutes
- Position according to the TV-L conditions (E13, 65%)

### What we expect

- Background in cell culture work, primary culture work, preferentially FELASA B certificate (or equivalent) allowing the execution of animal experiments, experience with mouse models, immunohistological and molecular biology techniques
- Master's degree (or Diploma) in relevant area
- Team working skills, interdisciplinary cooperation
- High degree of personal commitment and interest in an academic career
- Excellent communication skills, both in verbal and written English

### Relevant Publications

Steenblock, ... Bornstein, *Nat Commun.* 2021,  
PMID: 34112801

Bechmann.... Steenblock, *Mol Cell Endocrinol*, 2021,  
PMID: 3379863

Werdermann.... Steenblock, *Mol Metab.* 2021,  
PMID: 33157254

Steenblock....Bornstein, *Proc Natl Acad Sci U S A.* 2018,  
PMID: 30514817