Project Title: ***How are cell fates changed by nuclear reprogramming?***

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Your Project :

Vertebrate eggs have the remarkable ability to induce nuclear reprogramming of somatic cells to enable the production of any other cell type of an organism upon nuclear transfer. During this process, the 'memory' of cells, which is stabilised by epigenetic mechanisms, can be fully erased to generate totipotent cells. However, the molecular mechanisms that enable, drive or hinder the conversion of a differentiated cell to totipotency remain elusive. Your project will address the pressing question of how differentiated nuclei resist reprogramming to totipotency.

Reprogramming *via* nuclear transfer to eggs of the frog Xenopus laevis provides an excellent model for understanding how the memory of a specialised cell hinders the generation of totipotent cells. In your project, we will combine multi-omics approaches (RNAseq, ChIPseq, scRNAseq) with biochemical and cell biological assays to identify the chromatin signatures that prevent cell fate changes during reprogramming and to address the underlying molecular mechanisms.

Your profile:

- You have a Diploma or Master's degree in a life science field such as biology, biotechnology, biochemistry, or similar
- You are excited about Epigenetics, Development and Stem Cells
- You are interested in applying state of the art multi-omics approaches, are keen to work with a vertebrate model system and are motivated to learn programming for data analysis (e.g. 'R', 'Python').
- Previous experience with model systems including flies, fish, frog or mouse may be useful but is not a prerequisite
- You like to take initiatives, you are a creative thinker who thrives on solving puzzles
- You enjoy working in a multi-cultural, friendly and English-speaking scientific environment

For more details check:

H3K4 Methylation-Dependent Memory of Somatic Cell Identity Inhibits Reprogramming and Development of Nuclear Transfer Embryos. Hörmanseder E*, Simeone A, Allen GE, Bradshaw CR, Figlmüller M, Gurdon J, Jullien J. Cell Stem Cell. 2017 Jul 6;21(1):135-143.e6.

Epigenetic memory in reprogramming. Hörmanseder E. Current Opinion in Genetics & Development, 2021, Volume 70, Pages 24-31, ISSN 0959-437X, https://doi.org/10.1016/j.gde.2021.04.007.

Environment:

At the Helmholtz Zentrum München and within the collaborative research cluster 'Chromatin Dynamics', you can contribute together with leading researchers to the investigation of the development, prevention and treatment of environmental diseases such as diabetes, chronic lung diseases and allergies. In order to further promote your professional development, we offer extensive and targeted research training and career programmes. We support the reconciliation between work and private life with flexible working time models, occupational health management, day care facility for children, a childcare subsidy, Elder Care, as well as other counselling and support services.

Application:

Please submit your application including a cover letter, detailed CV, copies of your certificates, and contact details of 2 referees via the online application tool, found at **www.sfb1064.med.uni-muenchen.de/now-hiring/**

For further questions or inquiries, contact **eva.hoermanseder@helmholtz-muenchen.de**