



The Molecular Cell Biology Division at Osnabrück University invites applications for

## 1 PhD Researcher

to work on

### “Unraveling the working mechanism of a tumor suppressor lipid”

**PROJECT BACKGROUND** – Ceramides draw wide attention as tumor suppressor lipids that act directly on mitochondria to trigger apoptotic cell death. However, molecular details of the underlying mechanism are scarce. In a recent study, we combined the application of a photoactivatable ceramide probe with computer simulations and functional studies in cells to identify the voltage-dependent anion channel VDAC2 as a critical effector of ceramide-mediated cell death. Other work revealed that VDAC2 serves as a dynamic platform for mitochondrial recruitment of apoptotic machinery. The current PhD project aims to unravel how VDAC2 enables ceramides to commit cells to death. Toward this end, the impact of ceramides on VDAC2-mediated recruitment of pro- and apoptotic proteins will be analyzed in model membrane systems using photoswitchable lipid analogs as novel tools. Fundamental principles uncovered will be validated in CRISPR engineered cells. Collectively, these studies should provide a detailed molecular framework for how ceramides exert their anti-neoplastic activities. Refs: Dadsena et al., 2019, *Nature Communications* 10, 1832; Kol et al., 2019, *eLife* 8, e43230; Holthuis & Menon, 2014, *Nature* 510, 48-57.

**HOST INSTITUTE** - The successful candidate will join an international team of researchers with expertise in lipid and protein chemistry, membrane biophysics, molecular biology and live cell imaging. The UOS is a young university located in the historical town of Osnabrück, the only German city situated in a national park. The Molecular Cell Biology Division, headed by Joost Holthuis, is embedded in the recently established interdisciplinary Research Institute CellNanOS ([www.cellnanos.uni-osnabrueck.de](http://www.cellnanos.uni-osnabrueck.de)) and the Collaborative Research Center “SFB944: Physiology and Dynamics of Cellular Microcompartments”, which comprises 14 research groups from the Universities of Osnabrück and Münster whose common focus is thematically and methodologically linked to the project. The Division and Research Centers offer outstanding scientific environments as well as direct access to state-of-the-art facilities in synthetic chemistry, chemical biology, biomolecular mass spectrometry and super-resolution microscopy.

**REQUIREMENTS** - We are looking for an ambitious and interactive individual with a master degree in molecular cell biology, (bio)chemistry or biophysics. A solid background in assay development and expertise in membrane biochemistry and/or CRISPR technology would be advantageous. Perseverance and the aspiration to work in a strongly interdisciplinary research environment are essential.

**CONDITIONS OF EMPLOYMENT** - The application deadline is **15 November 2019**. The position will be filled as soon as possible. The initial period of employment is 3 years. A 1-year extension is anticipated. Salary is at the E13/65% level according to the German TV-L scale. The UOS is an equal-opportunity employer and especially encourages women to apply. Applications from handicapped persons will be favored if all other qualifications are equal.

**HOW TO APPLY** - Please send applications including Curriculum Vitae, a cover letter describing your motivation to pursue the project and contact details of three academic references as **a single PDF file** by 15 November 2019 to: [holthuis@uos.de](mailto:holthuis@uos.de). Further information can be obtained from Prof. J. Holthuis, phone: +49 (0) 541969 7140 or by visiting our website: [www.holthuis-lab-uos.de](http://www.holthuis-lab-uos.de).



H o l t h u i s L a b  
Molecular Cell Biology division

