

Prof. Dr. Silja Wessler
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Division of Microbiology
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Open position for a

Postdoc or PhD student

3 years

Cellular Microbiology

How Gram-positive pathogens impair E-cadherin functions

The functional integrity of the human epithelium is crucially important for the protection against intruding pathogens. The cell-adhesion molecule and signaling protein E-cadherin plays a central role in the establishment of the epithelial barrier function. Our group pioneered a novel function for the bacterial serine protease HtrA expressed by the class-I carcinogen *Helicobacter pylori*, which directly cleaves the ectodomain of E-cadherin. Most research was performed with HtrA expressed by Gram-negative bacteria; however, Gram-positive pathogens express a structurally different class of HtrA proteins exhibiting different specificities and activities.

In an international project together with **Prof. Dr. Boris Turk** (Ljubljana, Slovenia), the successful candidate will investigate (i) the activation and substrate specificity of HtrA proteases expressed by selected Gram-positive pathogens and (ii) the functional role of HtrA and E-cadherin truncation in the infection process using *Listeria monocytogenes* and *Staphylococcus aureus* as model organisms. Novel methods and techniques will be employed: **DIPPS** (Direct In-gel Profiling of Protease Specificity), **FPPS** (Fast Profiling of Protease Specificity), **organoids** as advanced novel *in vitro* infection models, **Next Generation Sequencing**, and **CRISPR/Cas9** gene editing.

Publications: Hoy et al., EMBO Rep, 2010; Schmidt et al., Sci Rep, 2016, Vidmar et al., EMBO J, 2017

Candidates:

- should have a strong background in protease biochemistry, cell and/or infection biology
- are expected to be independent, scientific-orientated and self-motivated
- have excellent communication and interpersonal skills
- collaborate with internal and external collaborators and support other group members
- Employ cutting-edge technologies and standard molecular biology tools in combination with infection biology and protease function in pathogen-host interaction
- as a Postdoc: must have received the PhD within the last five years with a proven publication record (at least one first author paper).

We hold a state-of-the art laboratory at the Paris-Lodron University of Salzburg in Austria, a beautiful place at the northern boundary of the Alps. The Department of Biosciences provides broad possibilities for interaction and support. Our group is member of the international "PhD program ICA" (University of Salzburg/FWF), Cancer Cluster Salzburg (www.cancercluster-salzburg.at), and member of the priority program "Allergy-Cancer-BioNano Research Centre" (University of Salzburg).

Please send your CV, publication list and letter of interest to **Silja Wessler** (silja.wessler@sbg.ac.at). The duration of the position is three years with the possibility of extension. Closing date: **October 31, 2019**