

CURRICULUM VITAE DR. DANIEL RODERER

- since 11/2020 **Junior Research Group Leader**
Leibniz-Forschungsinstitut für Molekulare Pharmakologie, Berlin
Section of Structural Biology
Structural biology on the host-microbiome interaction
- 01/2015 – 10/2020 **Postdoctoral research scientist**
Max Planck Institute of Molecular Physiology, Dortmund
Group of Prof. Dr. Stefan Raunser
Structural biology (Cryo-EM) and biochemistry on *Photorhabdus*
toxin complex proteins
Organization of the institute's Postdoc retreat in 2017
- 01/2014 – 12/2014 **Postdoctoral research scientist**
ETH Zürich, Institute of Molecular Biology and Biophysics
Group of Prof. Dr. Rudi Glockshuber
Structural biology and biochemistry on bacterial toxins and
thioredoxin
- 09/2009 – 01/2014 **Ph.D. studies**
ETH Zürich, Institute of Molecular Biology and Biophysics
Thesis: "The assembly mechanism of the pore-forming toxin
ClyA from *Escherichia coli*."
Supervision: Prof. Dr. Rudi Glockshuber
Co-referees: Prof. Dr. Nenad Ban, Prof. Dr. Ben Schuler
Member of PhD program "Biomolecular Structure and
Mechanism"
Invitation of external speakers for the PhD program's lecture
series in 2011
- 07/2009 – 08/2009 **Scientific assistant (WHK)**
University of Regensburg
Chair of Biochemistry II (Prof. Dr. Reinhard Sterner)
- 08/2007 – 01/2008 **Geneart AG, D-93053 Regensburg**
Voluntary internship during studies of biology
Work in a molecular biology lab, processing of non-standard and
large-scale orders
- 10/2004 – 07/2009 **Studies of Biology (Diploma studies)**
University of Regensburg
Major subject: Biochemistry
Secondary subjects: Microbiology, Organic Chemistry
Diploma thesis (Biochemistry)
Supervision: Dr. Patrick Babinger, Prof. Dr. Reinhard Sterner

LIST OF PUBLICATIONS

Original research papers

D. Roderer, F. Bröcker, O. Sitsel, P. Kaplonek, F. Leidreiter, P. H. Seeberger and S. Raunser². **Glycan-dependent two-step cell adhesion mechanism of Tc toxins**. Nat Comm 11 (2694), 2020. doi: 10.1038/s41467-020-16536-7.

D. Roderer, E. Schubert, O. Sitsel and S. Raunser². **Towards the application of Tc toxins as a universal protein translocation system**. Nat Comm 10, 5263 (2019). doi: 10.1038/s41467-019-13253-8.

D. Roderer, O. Hofnagel, R. Benz and S. Raunser². **Structure of a Tc holotoxin pore provides insights into the translocation mechanism**. PNAS 116 (45), 2019. doi: 10.1073/pnas.1909821116.

F. Leidreiter¹, D. Roderer¹, D. Meusch, C. Gatsogiannis and S. Raunser². **Common architecture of Tc toxins from human and insect pathogenic bacteria**. Science Advances 5 (10), 2019. doi: 10.1126/sciadv.aax6497.

T. Wagner, F. Merino, M. Stabrin, T. Moriya, C. Antoni, A. Apelbaum, P. Hagel, O. Sitsel, T. Raisch, D. Prumbaum, D. Quentin, D. Roderer, S. Tacke, B. Siebolds, E. Schubert, T.R. Shaikh, P. Lill, C. Gatsogiannis and S. Raunser². **SPHIRE-crYOLO is a fast and accurate fully automated particle picker for cryo-EM**. Communications Biology 2: 218, 2019. doi: 10.1038/s42003-019-0437-z.

C. Gatsogiannis¹, F. Merino¹, D. Roderer¹, D. Balchin, E. Schubert, A. Kuhlee, M. Hayer-Hartl and S. Raunser². **Tc toxin activation requires unfolding and refolding of a β -propeller**. Nature 563 (209-213), 2018. doi: 10.1038/s41586-018-0556-6.

C. Gatsogiannis, F. Merino, D. Prumbaum, D. Roderer, F. Leidreiter, D. Meusch and S. Raunser². **Membrane insertion of a Tc toxin in near-atomic detail**. Nat Struct Mol Biol 23 (10), 2016. doi: 10.1038/nsmb.3281.

D. Roderer², S. Benke, B. Schuler and R. Glockshuber. **Soluble Oligomers of the Pore-forming Toxin Cytolysin A from Escherichia coli Are Off-pathway Products of Pore Assembly**. J Biol Chem 291 (11), 2016. doi: 10.1074/jbc.M115.700757.

D. Roderer, R. Glockshuber and M. Rubini². **Acceleration of the Rate-Limiting Step of Thioredoxin Folding by Replacement of its Conserved cis-Proline with (4S)-Fluoroproline**. ChemBioChem 16 (15), 2015. doi: 10.1002/cbic.201500342.

D. Roderer¹, M. Schärer¹, M. Rubini² and R. Glockshuber². **Acceleration of protein folding by four orders of magnitude through a single amino acid substitution**. SciRep 5 (11840), 2015. doi: 10.1038/srep11840.

S. Benke, D. Roderer, B. Wunderlich, D. Nettels, R. Glockshuber and B. Schuler². **The assembly dynamics of the cytolytic pore toxin ClyA**. Nat Comm 6 (6198), 2015. doi: 10.1038/ncomms7198.

D. Roderer, S. Benke, M. Müller, H. Fäh-Rechsteiner, N. Ban, B. Schuler and R. Glockshuber². **Characterization of variants of the pore-forming toxin ClyA from *Escherichia coli* controlled by a redox switch.** *Biochemistry* 53 (40), 2014. doi: 10.1021/bi5007578.

(1) equal contribution

(2) corresponding author

Reviews

D. Roderer and S. Raunser. **Tc toxin complexes: Assembly, membrane permeation and protein translocation.** *Annual Review of Microbiology* 73, 2019. doi: 10.1146/annurev-micro-102215-095531.

D. Roderer and S. Raunser. **Giftspritzen mit einzigartigem Injektionsmechanismus.** *Biospektrum* 05/2019. doi: 10.1007/s12268-019-1081-3

D. Roderer and R. Glockshuber. **Assembly mechanism of the α -pore-forming toxin cytolysin A from *Escherichia coli*.** *Philos Trans R Soc Lond B Biol Sci.* 5;372(1726), 2017. doi: 10.1098/rstb.2016.0211.

Selected oral presentations at conferences

70th Mosbacher Symposium, Germany, April 2019

7th Murnau Conference, Germany, September 2018

6th International Caesar Conference, Germany, September 2017

26th Regensburger Faltertage, Germany, October 2015

24th Regensburger Faltertage, Germany October 2013

GRK1026 Conformational Transitions in Macromolecular Interactions, 2nd International Meeting, Martin-Luther-Universität Halle-Wittenberg, Germany, March 2011