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RESEARCH EXPERIENCE

- Since 07/2015: **Group leader**
Max Planck Institute of Colloids and Interfaces, Potsdam/Berlin
Department of Biomolecular Systems, Prof. Peter Seeberger
- Fundamental mechanisms of protein-glycan recognition
 - Structural glycobiology of viral and bacterial pathogenesis
- 05/2013-06/2015: **Postdoctoral fellow**
The Francis Crick Institute and MRC National Institute for Medical Research, London, UK, Lab of Dr. Sir John J. Skehel and Dr. Steven J. Gamblin
- Membrane interactions of influenza hemagglutinin
 - Structure and function of fusion-inhibiting anti-influenza antibodies
- 01/2011-05/2013: **Postdoctoral fellow**
Institute for Biochemistry, University of Tübingen, Lab of Prof. Thilo Stehle
- Carbohydrate specificity and carbohydrate affinity of newly discovered human polyomaviruses
 - Structural studies on proteins involved in RNA degradation (independent of Thilo Stehle)
- 06/2006-12/2010: **PhD thesis** (summa cum laude)
Institute for Biochemistry, University of Tübingen, Lab of Prof. Thilo Stehle
- Structure and function of polyomavirus attachment to carbohydrate receptors
- 10/2000-05/2006: **Studies in Biochemistry (Diplom)**, with minors in Physical Chemistry and Cell Biology, University of Tübingen (grade 1.0, with honors)
- 09/2003-07/2004: **Studies in Biochemistry** and Molecular Biology, University of Massachusetts, Amherst, USA, incl. 9-month research internship on the biophysics of protein folding with Prof. Lila M. Gierasch

FUNDING AND AWARDS

- Associated member of the Sonderforschungsbereich 765 "Multivalency" (since 2016)
- Emmy Noether Programme of the German Research Foundation (since 2016)
- Marie Curie Actions Postdoctoral Fellowship (2014-2015)
- EMBO Postdoctoral Fellowship (awarded 2013, declined)
- Travel awards of the Protein Society (2011) and the American Society for Virology (2008, 2010)
- Scholarship of the German National Scholarship Foundation (2001-2006)

LIST OF PUBLICATIONS

* equal contribution first authors

+ equal contribution corresponding authors

RESEARCH ARTICLES

1. Kallewaard-Lelay N.*, Corti D.*, Collins P.J.*, **Neu U.***, McAuliffe J., Benjamin E., Watcher L., Palmer-Hill F., Yuan A., Walker P.A., Vorlaender M.K., Bianchi S., Guarino B., De Marco A., Vanzetta F., Agatic G., Foglierini M., Pinna D., Fernandez-Rodriguez B., Fruehwirth A., Silacci C., Ogrodowicz R.W., Martin S.R., Sallusto F., Suzich J., Lanzavecchia A.⁺, Zhu Q.⁺, Gambelin S.J.⁺, and Skehel J.J.⁺ (2016) Structure and function analysis of a therapeutic monoclonal antibody that recognizes all subtypes of influenza A. *Cell* 166(3):596-608
2. Blaum B.S., Martin F., Walker R.C., **Neu U.**, and Stehle T. (2015) Complement factor H and Simian Virus 40 bind the GM1 ganglioside in distinct conformations. *Glycobiology*, doi: 10.1093/glycob/cwv170
3. Buch M.H.C.*, Liaci A.M.*, O'Hara S.D., Garcea R.L., **Neu U.**⁺, and Stehle T.⁺ (2015) Structural and Functional Analysis of Murine Polyomavirus Capsid Proteins Establish the Determinants of Ligand Recognition and Pathogenicity. *PLoS Pathogens* 11(10):e1005104
4. Neu A., **Neu U.**, Fuchs A.L., Schlager B., and Sprangers, R. (2015) An excess of catalytically required motions inhibits the scavenger decapping enzyme. *Nat. Chem. Biol.* 11(9):697-704
5. Ströh L.J., Maginnis M.S., Blaum B.S., Nelson C.D.S., **Neu U.**, Gee G.V., O'Hara B.A., Motamedi N., DiMaio D., Atwood W.J., and Stehle T. (2015) The Greater Affinity of JC Polyomavirus Capsid for α 2,6-Linked Lactoseries Tetrasaccharide c than for Other Sialylated Glycans Is a Major Determinant of Infectivity. *J. Virol.* 89(12):6364-75
6. Ströh L.J., **Neu U.**, Blaum B.S., Buch M.H.C., Garcea R.L., and Stehle T. (2014) Structure analysis of the major capsid proteins of human polyomaviruses 6 and 7 reveals an obstructed sialic acid binding site. *J. Virol.* 88(18):10831-9
7. Khan Z.M.*, Liu Y.*, **Neu U.**, Gilbert M., Ehlers B., Feizi T.⁺, and Stehle T.⁺ (2014) Crystallographic and glycan microarray analysis of Human Polyomavirus 9 VP1 identifies N-glycolyl neuraminic acid as a receptor candidate. *J. Virol.* 88(11):6100-11
8. **Neu U.***, Khan Z. M.*, Schuch B.*, Sá Palma A., Liu Y., Pawlita M., Feizi T., and Stehle T. (2013) Structures of B-lymphotropic Polyomavirus VP1 in complex with oligosaccharide ligands. *PLoS Pathog.* 9(10):e1003714
9. **Neu U.***, Allen S.*, Blaum B.S., Liu, Y., Frank, M., Sá Palma, A., Ströh, L.J., Feizi, T., Peters T., Atwood W.J., and Stehle, T. (2013) A structure-guided mutation in the major capsid protein retargets BK Polyomavirus. *PLoS Pathog.* 9(10):e1003688
10. **Neu U.***, Hengel H.*, Blaum B.S., Schowalter R.M., Macejak D., Gilbert M., Wakarchuk W.W., Imamura A., Ando H., Kiso M., Arnberg N., Garcea R.L., Peters T., Buck C.B., and Stehle T. (2012) Structures of Merkel Cell Polyomavirus VP1 complexes define a sialic acid binding site required for infection. *PLoS Pathog.* 8(7):e1002738
11. Magaldi T.G., Buch M.H.C., Murata H., Erickson K.D., **Neu U.**, Garcea R.L., Peden K., Stehle T., and DiMaio D. (2012) Mutations in the GM1 binding site of SV40 VP1 alter receptor usage and cell tropism. *J. Virol.* 86(13):7028-42
12. Mund M.*, Neu A.*, Ullmann J., **Neu U.**, and Sprangers R. (2011) Structure of an assembly intermediate of the eukaryotic LSM complex. *J. Mol. Biol.* 414(2): 165-76
13. **Neu U.**, Wang J., Macejak D., Garcea R.L., and Stehle T. (2011) Structures of the Major Capsid Proteins of the Human Karolinska Institutet and Washington University Polyomaviruses. *J. Virol.* 85(14):7384-7392

14. **Neu U.***, Maginnis M.S.*, Sá Palma A., Ströh, L., Nelson, C.D.S., Feizi T., Atwood W.J., and Stehle T. (2010) Structure-function analysis of the human JC polyomavirus establishes the LSTc pentasaccharide as functional receptor. *Cell Host & Microbe* 8(4):309-319. *Cover story*.
15. **Neu U.**, Woellner K., Gauglitz G., and Stehle T. (2008) Structural basis of gangliosides GM1 receptor recognition of simian virus 40. *Proc. Natl. Acad. Sci. USA* 105(13):5219-24

REVIEW ARTICLES

16. **Neu, U.**, Bauer J., and Stehle T. (2011) Viruses and sialic acids: Rules of engagement. *Curr. Opin. Struct. Biol.* 21(5):610-618.
17. **Neu U.**, Stehle T., and Atwood W.J. (2009) The Polyomaviridae: Contributions of virus structure to our understanding of virus receptors and infectious entry. *Virology* 384(2):389-99.

INVITED TALKS

- Structural biology of protein-glycan interactions. 5th annual symposium of the RIKEN-Max Planck Joint Research Center, Berlin, April 17-20, 2016
- Attachment strategies of glycan-binding viruses. Free University Berlin, Lise Meitner Kolloquium, February 5, 2016
- JC Polyomavirus Structure and Receptor Binding. The PML Consortium Research Conference, Mölndal, Sweden, August 25-26, 2015
- Viruses like it sweet: How polyomaviruses recognize carbohydrates for infection. University of Potsdam, Seminar Series of the Institute for Biochemistry and Biology, March 7, 2013
- *Substitute for Thilo Stehle*: Structural basis of the receptor specificity of Simian Virus 40 and BK Virus. 237th ACS National Meeting and Exposition, Satellite Symposium on Carbohydrate Sensors, March 22-26, 2009, Salt Lake City, USA

CONFERENCE PROCEEDINGS

- Structures of Merkel Cell Polyomavirus VP1 complexes define a sialic acid binding site required for infection. 26th International Carbohydrate Symposium, July 22-27, 2012, Madrid, Spain
- Structural basis for JC polyomavirus recognition of its receptor motif LSTc. 29th Annual Meeting of the American Society for Virology, July 17-21, 2010, Bozeman, USA
- Structural studies on carbohydrate receptor recognition by polyomaviruses. 22nd Rhine-Knee RegioMeeting on Structural Biology, September 10-12, 2008, Freudenstadt, Germany
- Structural studies on carbohydrate receptor recognition by Simian Virus 40 and BK Virus. 27th Annual Meeting of the American Society for Virology, July 12-16, 2008, Ithaca, USA
- Crystal structure of SV40 VP1 complexed with its receptor ganglioside GM1. Third European Congress of Virology, September 1-5, 2007, Nuremberg, Germany
- Crystal structure of SV40 VP1 complexed with its receptor ganglioside GM1. Workshop on the Structural Biology of Small DNA Tumor Viruses, May 11-16, 2007, Siena, Italy