

## Peer-reviewed publications during DK-period

2017

1. C. Knoglinger, A. Zich, **L. Traxler**, K. Poslední, G. Friedl, B. Ruttmann, A. Schorpp, K. Müller, **M. Zimmermann, H.J. Gruber**. Regenerative biosensor for use with biotinylated bait molecules, *Biosens. Bioelectron.* (2018) 99: 684-690.  
doi:<http://dx.doi.org/10.1016/j.bios.2017.07.033>.
  2. Sachelaru, L. Winter, D.G. Knyazev, **M. Zimmermann**, A. Vogt, R. Kuttner, N. Ollinger, C. Siligan, **P. Pohl**, H.-G. Koch, YidC and SecYEG form a heterotetrameric protein translocation channel, *Sci. Rep.* 7 (2017) 101. doi:10.1038/s41598-017-00109-8.
  3. E. Weichselbaum, **M. Österbauer**, D.G. Knyazev, O. V Batishchev, S.A. Akimov, T. Hai Nguyen, C. Zhang, **G. Knör**, N. Agmon, P. Carloni, **P. Pohl**. Origin of proton affinity to membrane/water interfaces, *Sci. Rep.* 7 (2017) 4553. doi:10.1038/s41598-017-04675-9.
  4. S. Auer, L. Azizi, **F. Faschinger**, V. Blazevic, T. Vesikari, **H.J. Gruber**, V.P. Hytönen. Stable immobilisation of His-tagged proteins on BLI biosensor surface using cobalt. *Sensors Actuators B Chem.* 243 (2017) 104–113.  
doi:<http://dx.doi.org/10.1016/j.snb.2016.11.090>.
  5. **Faschinger F**, Ertl M, **Zimmermann M**, Horner A, Himmelsbach M, Schöfberger W, Knör G, Gruber HJ. (2017) Stable europium(III) complexes with short linkers for site-specific labeling of biomolecules. *Chem Open*, doi:<http://dx.doi.org/10.1002/open.201700122>
  6. L.G. Stock, M. Leitner, **L. Traxler**, K. Bonazza, L. Leclercq, H. Cottet, G. Friedbacher, A. Ebner, H. Stutz. Advanced portrayal of SMIL coating by allying CZE performance with in-capillary topographic and charge-related surface characterization. *Anal Chim Acta.* 951 (2017) 1–15. doi:<http://dx.doi.org/10.1016/j.aca.2016.10.030>.
  7. **L. Traxler**, B. Taskinen, A. Schorpp, C. Knoglinger, A. Zich, D. Zauner, **M. Zimmermann**, B. Ruttmann, G. Friedl, V. P. Hytönen, H. J. Gruber. Reversible immobilization of biotinylated baits on regenerative sensor chips: comparison of switchable avidin mutants with wild-type streptavidin. *Advances in Sensors: Reviews, Book Series, Vol. 5*.
  8. **Chtcheglova LA, Hinterdorfer P**. Simultaneous AFM topography and recognition imaging at the plasma membrane of mammalian cells. *Semin Cell Dev Biol* (2017),  
<http://dx.doi.org/10.1016/j.semcdb.2017.08.025>
  9. **Traxler L, Rathner P, Fahrner M, Stadlbauer M, Faschinger F**, Charnavets T, **Müller N, Romanin C, Hinterdorfer P, Gruber HJ**. Detailed evidence for an unparalleled interaction mode between calmodulin and Orai proteins. 2017. *accepted to Angew. Chem. Int. Ed.*
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## BSP Meeting / Conference proceedings

10. **L. Traxler, F. Faschinger, P. Rathner, M. Stadlbauer**, T. Charnavets, C. Romanin, N. Müller, P. Hinterdorfer, H.J. Gruber, Characterization of the Orai-Calmodulin Interaction as Potential Mediator of Calcium-Dependent Orai-Channel Inactivation, *Biophys. J.* 112 (2017) 183a–184a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.1017>.
11. **Fis, A. Karner, R. Kuttner, J. Preiner, M. Zimmermann**, H.J. Gruber, P. Pohl, P. Hinterdorfer, Forces and Dynamics in Protein Translocation through the Bacterial Translocon, *Biophys. J.* 112 (2017) 167a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.918>.
12. **M. Zimmermann**, M. Janoschke, M. Spiess, Bip Binding Affects Integration of Transmembrane Domains, *Biophys. J.* 112 (2017) 500a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.2707>.
13. **M. Österbauer**, E. Weichselbaum, P. Pohl, G. Knör, Caged Protons as Tools for Studying Transport of Protons along Lipid Bilayers, *Biophys. J.* 112 (2017) 277a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.1501>.
14. E. Weichselbaum, **M. Österbauer**, G. Knör, P. Pohl, Regulation of Proton Migration along the Membrane Surface, *Biophys. J.* 112 (2017) 277a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.1500>.
15. **L. Traxler**, C. Knoglinger, K. Posledni, A. Zich, B. Ruttman, G. Friedl, P. Hinterdorfer, H.J. Gruber, Convenient Biological Interaction Analysis with a Regenerative Streptavidin Chip, *Biophys. J.* 112 (2017) 493a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.2668>.
16. Y. Jin Oh, M. Hubauer-Brenner, H. Gruber, Y. Cui, **L. Traxler**, C. Siligan, S. Park, P. Hinterdorfer, Curli Mediate Bacterial Adhesion to Fibronectin via a Tensile Collective Binding Network, *Biophys. J.* 112 (2017) 588a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.3165>.
17. **F. Faschinger, M. Zimmermann** G. Knör, H. J. Gruber, New Thiol-reactive Eu-Complex for Distance Measurements by LRET, *Biophys. J.* 112 (2017) 453a. doi:<http://dx.doi.org/10.1016/j.bpj.2016.11.2425>

18. F. Baumgart, A.M. Arnold, K. Leskovar, K. Staszek, **M. Fölser**, J. Weghuber, H. Stockinger, **G.J. Schütz**. Varying label density allows artifact-free analysis of membrane-protein nanoclusters, *Nat Methods*. 13 (2016) 661–664. doi:10.1038/nmeth.3897. (no open access)
19. D. Zauner, B. Taskinen, D. Eichinger, C. Flattinger, B. Ruttmann, C. Knoglinger, **L. Traxler**, A. Ebner, **H.J. Gruber**, V.P. Hytönen. Regenerative biosensor chips based on switchable mutants of avidin—A systematic study. *Sensors Actuators B Chem*. 229 (2016) 646–654. doi:http://dx.doi.org/10.1016/j.snb.2016.02.039.
20. M. Kasper, **L. Traxler**, J. Salopek, H. Grabmayr, A. Ebner, F. Kienberger. Broadband 120 MHz Impedance Quartz Crystal Microbalance (QCM) with Calibrated Resistance and Quantitative Dissipation for Biosensing Measurements at Higher Harmonic Frequencies. *Biosensors*. 6 (2016) 23. doi:10.3390/bios6020023.
21. M. Leitner, L.G. Stock, **L. Traxler**, L. Leclercq, K. Bonazza, G. Friedbacher, H. Cottet, H. Stutz, A. Ebner. Mapping molecular adhesion sites inside SMIL coated capillaries using atomic force microscopy recognition imaging. *Anal Chim Acta*. 930 (2016) 39–48. doi:http://dx.doi.org/10.1016/j.aca.2016.05.002.
22. W. Schöffberger, **F. Faschinger**, S. Chattopadhyay, S. Bhakta, B. Mondal, J.A.A.W. Elemans, S. Müllegger, S. Tebi, R. Koch, F. Klappenberger, M. Paszkiewicz, J. V Barth, E. Rauls, H. Aldahhak, W.G. Schmidt, A. Dey. A bifunctional electrocatalyst for oxygen evolution and oxygen reduction reactions in water. *Angew Chemie Int. Ed*. 55 (2016) 2350–2355. doi:10.1002/anie.201508404.
23. Y. Jin Oh, M. Hubauer-Brenner, H. Gruber, Y. Cui, **L. Traxler**, C. Siligan, S. Park, P.Hinterdorfer. Curli mediate bacterial adhesion to fibronectin via tensile multiple bonds, *Sci. Rep*. 6 (2016) 33909. doi:10.1038/srep33909

#### **BSP Meeting 2016 / Conference proceedings**

24. M. Fahrner, **M. Stadlbauer**, M. Muik, C. Romanin, Impact of STIM1 R304W Mutant on Intra- and Intermolecular Cytosolic Coiled-Coil Interactions, *Biophys. J*. 110 (2016) 265a–266a. doi:http://dx.doi.org/10.1016/j.bpj.2015.11.1448.

#### Manuscripts submitted or in preparation:

1. **Rathner P, Stadlbauer M**, Romanin C, Fahrner M, Derler I, Müller N. 2017. *submitted to Protein Expression and Purification*.
2. Fahrner M, **Stadlbauer M**, Muik M, **Rathner P**, Stathopoulos PB, Ikura M, Müller N, Romanin C. A novel mechanism promotes switching of the Stormorken STIM1 R304W mutant into the activated state. *submitted to Nature Communications (under revision)*
3. Slovakova J, Sikora M, **Caballero-Mancebo S**, Kaufmann W, Grigolon S, Salbreux G, **Heisenberg CP**. Tension-dependent immobilization of e-cadherin limits the ability of cortical tension in driving cell-cell contact expansion.
4. **Kopf A**, Kiermaier E, Hauschild R, Girkontaite I, Tedford K, Häcker H, Fischer K, Sixt M. 2017. Local microtubule dynamics mediate uropod retraction via RhoGEF Lfc.
5. Winkler K, Horner A, Karner A, Knyazev D, **Zimmermann M**, Kuttner R, Lents A, Siligan C, Bondar N, Preiner J, Pohl P. Visualisation of the first steps in post-translational protein translocation.
6. **Fis A, Zimmermann M**, Kuttner R, Winkler K, Gruber HJ, Pohl P, Hinterdorfer P. Combined recognition imaging and Force spectroscopy reveals a lipid induced binding mechanism of SecA to SecYEG.
7. **Fis A, Zimmermann M**, Gruber HJ, Pohl P, Hinterdorfer P. Forces and dynamics in protein translocation through the bacterial translocon.
8. Oberbichler E, **Wiesauer M, Faschinger F**, Krenn E, Stangl J, Knör G, Gruber HJ. Competitive binding assay for biotin and biotin derivatives, based on avidin and biotin-4-fluorescein.
9. **Wiesauer M**, Oberbichler E, Krenn E, Stangl J, **Faschinger F**, Böhm C, Knör G, Gruber HJ. Quantitation of biotin residues in proteins using various fluorescence-based assays.
10. **E. Sobakinskaya**, M. Schmidt am Busch, T. Renger. New approach to calculation of the FRET efficiency.
11. **E. Sobakinskaya**, T. Renger, **M. Zimmerman**, P. Pohl, et al, Dynamics and function of the H-bond network in translocation of a peptide by the SecY.
12. **E. Sobakinskaya**, T. Renger, **S. Nakov**, J. Kraus. Fast solvers for Poisson and Poisson-Boltzmann equations with application to electrostatic calculations in biomolecules.
13. **F. Faschinger**, M. Ertl, W. Schöfberger, M. Himmelsbach, **G. Knör** and **H. J. Gruber**. New highly stable Eu(III)-complex with short linker for site-specific labeling of biomolecules, designed for accurate distance measurements by LRET.
14. Knyazev D; Kuttner R; Siligan C; **Zimmermann M**; Pohl P. The capability of the active bacterial translocon SecYEG to maintain the barrier to small molecules depends on the strength of its voltage sensor.

15. **Nakov S.** Well Posedness of the Poisson-Boltzmann equation. A priori L-infinity estimates for a class of quasilinear problems that includes the Poisson-Boltzmann equation.
16. **Kraus J, Nakov S, Repin S,** Functional a posteriori error estimates for the Poisson-Boltzmann equation.