

PD Dr. Carsten Kötting (*01.02.1971)

Scientific education

- 1990 – 1995 Study of Chemistry, Ruhr-University in Bochum, Germany
- 1995 – 1999 PhD student, Department of Chemistry, Ruhr-University in Bochum, Germany
- 2009 Habilitation (Chemical Biology), Department of Biology, Ruhr-University in Bochum, Germany

Academic positions

- 1999 – 1999 Postdoctoral research associate, Department of Chemistry, Ruhr-University in Bochum, Germany
- 1999 – 2001 Postdoctoral research associate, California Institute of Technology, Pasadena CA, USA
- 2001 – 2009 Research associate, Department of Biology, Ruhr-University in Bochum, Germany
- since 2009 Akademischer Rat (tenure), Department of Biology, Ruhr-University in Bochum, Germany

Fellowships and awards

- 1999 to 2001 Feodor Lynen fellowship, Humboldt Foundation
- 2014 Erfinderpreis der Ruhr-Universität Bochum

Reviewing (selection)

Deutsche Forschungsgemeinschaft (DFG), Czech Science Foundation, Singapur Agency for Science, Technology and Research, Nature Communications, Nature Protocols, JACS, J Phys Chem, Biochemistry, Analytical Chemistry, ChemPhysChem, ChemBioChem, Angewandte Chemie, Chemical Physics Letters, Proteins, Analyst.

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Ten selected publications

Kötting, C.; Kallenbach-Thieltges, A.; Suveyzdis, Y.; Wittinghofer, A.; Gerwert, K. The GAP Arginine Finger Movement into the Catalytic Site of Ras Increases the Activation Entropy. *Proceedings of the National Academy of Sciences of the United States of America* **2008**, *105* (17), 6260–6265. <https://doi.org/10.1073/pnas.0712095105>.

- Schartner, J.; Güldenhaupt, J.; Mei, B.; Rögner, M.; Muhler, M.; Gerwert, K.; Kötting, C. Universal Method for Protein Immobilization on Chemically Functionalized Germanium Investigated by ATR-FTIR Difference Spectroscopy. *Journal of the American Chemical Society* **2013**, *135* (10), 4079–4087. <https://doi.org/10.1021/ja400253p>.
- Gavriljuk, K.; Itzen, A.; Goody, R. S.; Gerwert, K.; Kötting, C. Membrane Extraction of Rab Proteins by GDP Dissociation Inhibitor Characterized Using Attenuated Total Reflection Infrared Spectroscopy. *Proceedings of the National Academy of Sciences of the United States of America* **2013**, *110* (33), 13380–13385. <https://doi.org/10.1073/pnas.1307655110>.
- Gavriljuk, K.; Schartner, J.; Itzen, A.; Goody, R. S.; Gerwert, K.; Kötting, C. Reaction Mechanism of Adenylyltransferase DrrA from Legionella Pneumophila Elucidated by Time-Resolved Fourier Transform Infrared Spectroscopy. *Journal of the American Chemical Society* **2014**, *136* (26), 9338–9345. <https://doi.org/10.1021/ja501496d>.
- Mann, D.; Teuber, C.; Tennigkeit, S.; Schröter, G.; Gerwert, K.; Kötting, C. Mechanism of the Intrinsic Arginine Finger in Heterotrimeric G Proteins. *Proceedings of the National Academy of Sciences of the United States of America* **2016**, *113* (50), E8041–E8050. <https://doi.org/10.1073/pnas.1612394113>.
- Rudack, T.; Teuber, C.; Scherlo, M.; Güldenhaupt, J.; Schartner, J.; Lübben, M.; Klare, J.; Gerwert, K.; Kötting, C. The Ras Dimer Structure. *Chemical science* **2021**, *12* (23), 8178–8189. <https://doi.org/10.1039/d1sc00957e>.
- Norahan, M. J.; Horvath, R.; Woitzik, N.; Jouy, P.; Eigenmann, F.; Gerwert, K.; Kötting, C. Microsecond-Resolved Infrared Spectroscopy on Nonrepetitive Protein Reactions by Applying Caged Compounds and Quantum Cascade Laser Frequency Combs. *Analytical chemistry* **2021**, *93* (17), 6779–6783. <https://doi.org/10.1021/acs.analchem.1c00666>.
- Labudda, K.; Norahan, M. J.; Hübner, L.-M.; Althoff, P.; Gerwert, K.; Lübben, M.; Rudack, T.; Kötting, C. A Second Photoactivatable State of the Anion-Conducting Channelrhodopsin GtACR1 Empowers Persistent Activity. *Communications biology* **2025**, *8* (1). <https://doi.org/10.1038/s42003-025-08560-4>.
- Kötting, C.; Rudack, T.; Gerwert, K. Mechanistic insights into Ras-catalyzed GTP hydrolysis: conformational dynamics, catalytic mechanisms, and emerging therapeutic strategies *Biological Chemistry* **2025**, *407*(1-3), 17-23. <https://doi.org/10.1515/hsz-2025-0227>.
- Höveler, A.; Mann, M.; Czarnetzki, M.; Simon, J.; Marpert, N.; Güldenhaupt, J.; Gerwert, K.; Kötting, C.; Kötting, C. A Reversible ATR-FTIR Biosensor with Single-Residue Sensitivity. *Analytical Chemistry* **2026**. <https://doi.org/10.1021/acs.analchem.6c00250>.