

## Dr. Manuel Etzkorn

### Personal Data

Title	Dr.
First name	Manuel
Name	Etzkorn
Current position	Heisenberg Group Leader
Current institution(s)/site(s), country	Institute of Physical Biology, Heinrich-Heine-University Düsseldorf, 40225 Düsseldorf, Germany
Identifiers/ORCID	<a href="https://orcid.org/0000-0002-9796-3246">orcid.org/0000-0002-9796-3246</a>

### Qualifications and Career

<u>Stages</u>	<u>Periods and Details</u>
Degree programme	Diploma in Physics, 1999 – 2004, University of Göttingen, Germany
Doctorate	2008 Supervisors: Christian Griesinger and Marc Baldus, Biophysics, Georg-August University Göttingen, Germany
Stages of academic/professional career	Since 2021 Heisenberg group leader, Institute of Physical Biology, University of Düsseldorf (eligible to supervise PhD students)
	Since 2020 Group leader, Biophysical Chemistry of Complex Systems, Institute of Physical Biology, University of Düsseldorf
	2013 – 2020 Head of Emmy Noether group: “Time-optimized spectroscopy for the investigation of challenging biological systems”
	2012 – 2013 Research associate, Institute of Complex Systems, Research Centre Jülich, Germany
	2009 – 2012 Postdoc, Harvard Medical School, Boston (G. Wagner) and MIT/Harvard Center of Magnetic Resonance, Cambridge, USA
	2008 – 2009 Postdoc, Max-Planck-Institute of Biophysical Chemistry (A. Lange), Göttingen, Germany

## Activities in the Research System

### Committee involvement & activities in the field of academic self-governance:

2023	(Co-)organizer “GNMR Summer School” (140 participants)
Since 2022	Speaker Collaborative Research Network to develop innovative antiviral strategies (Volkswagen Foundation)
Since 2021	Editorial Board member, Journal Frontiers in Molecular Biosciences
2017	Panel member and expert reviewer, Agence nationale de la recherche (ANR)
2017	(Co-)organizer “Helmholtz Structural Biology Meeting” (100 participants)
2016	(Co-)organizer, Scientific Board member “FGMR-Meeting” (250 participants)
Since 2013	Reviewer/Examiner for: DFG, NWO, ARN, Alexander von Humboldt Foundation, University of Cambridge, University of Melbourne, India Alliance Wellcome Trust, EU Horizon 2020 and ERC

**Academic Distinctions:** Finalist – Falling Walls Science Breakthrough of the Year 2023 (global call – Life Science) (2023); “Heisenberg”-Fellow (DFG) (2021); Felix-Bloch-Award of the GDCh (for outstanding achievements in the field of magnetic resonance) (2018), Ulrich-Hadding-Research Award (for excellent young scientist in the field of biomedical research) (2017); Emmy Noether Fellowship (DFG) (2013 – 2019); Postdoctoral Fellowship (DAAD) (2009 – 2011).

## Scientific Results

Citations: 2771, h-index: 24, i10-index: 35 ([Google Scholar](#), 21.03.2024)

### Category A (\* corresponding author)

1. J. Borggräfe, C.G.W. Gertzen, A. Viegas, H. Gohlke\*, **M. Etzkorn\*** “The architecture of the 10-23 DNase and its implications for DNA-mediated catalysis” *FEBS J* **2023**, 290, 2011–2021. DOI: [10.1111/febs.16698](https://doi.org/10.1111/febs.16698).
2. J. Borggräfe, J. Victor, H. Rosenbach, A. Viegas, C.G.W. Gertzen, C. Wuebben, H. Kovacs, M. Gopalswamy, D. Riesner, G. Steger, O. Schiemann, H. Gohlke, I. Span, **M. Etzkorn\*** “Time-resolved structural analysis of an RNA-cleaving DNA catalyst” *Nature* **2022**, 601, 144–149. DOI: [10.1038/s41586-021-04225-4](https://doi.org/10.1038/s41586-021-04225-4).
3. D. Glueck, A. Grethen, , M. Das, O.P. Mmeka, E. Pérez Patallo, A. Meister, R Rajender, S. Kins, M. Räsche, J. Victor, C. Chu, **M. Etzkorn**, Z. Köck, F. Bernhard, J. Oyebamiji Babalola, C. Vargas, S. Keller\* “Electroneutral polymer nanodiscs enable interference-free probing of membrane proteins in a lipid-bilayer environment” *Small* **2022**, 18, 2202492. DOI: [10.1002/smll.202202492](https://doi.org/10.1002/smll.202202492).
4. A. Dubey, N. Stoyanov, T. Viennet, S. Chhabra, S. Elter, J. Borggräfe, A. Viegas, R.P. Nowak, N. Burdzhiev, O. Petrov, E.S. Fischer, **M. Etzkorn\***, V. Gelev\*, H. Arthanari\* “Local deuteration enables NMR observation of methyl groups in proteins from eukaryotic and cell-free expression systems” *Angew. Chem. Int. Ed.* **2021**, 60, 13783–13787. DOI: [10.1002/anie.202016070](https://doi.org/10.1002/anie.202016070).
5. A. Viegas, D.M. Yin, J. Borggräfe, T. Viennet, M. Falke, A. Schmitz\*, M. Famulok, **M. Etzkorn\*** “Molecular Architecture of a Network of Potential Intracellular EGFR Modulators: ARNO, CaM, Phospholipids, and the Juxtamembrane Segment” *Structure* **2020**, 28, 54–62. DOI: [10.1016/j.str.2019.11.001](https://doi.org/10.1016/j.str.2019.11.001).

6. T. Viennet, M.M. Wördehoff, B. Uluca, C. Poojari, H. Shaykhalishahi, D. Willbold, B. Strodel, H. Heise, A.K. Buell, W. Hoyer, **M. Etzkorn**\* “Structural insights from lipid-bilayer nanodiscs link  $\alpha$ -Synuclein membrane-binding modes to amyloid fibril formation” *Commun. Biol.* **2018**, 1, 44. DOI: [10.1038/s42003-018-0049-z](https://doi.org/10.1038/s42003-018-0049-z).
7. T. Viennet, A. Viegas, A. Kuepper, S. Arens, V. Gelev, O. Petrov, T.N. Grossmann, H. Heise, **M. Etzkorn**\* “Selective Protein Hyperpolarization in Cell Lysates Using Targeted Dynamic Nuclear Polarization” *Angew. Chem. Int. Ed.* **2016**, 55, 10746–10750. DOI: [10.1002/anie.201603205](https://doi.org/10.1002/anie.201603205).
8. T. Yi, B. Zhai, Y. Yu, Y. Kiyotsugu, T. Raschle, **M. Etzkorn**, H.-C. Seo, M. Nagiec, R.E. Luna, E.L. Reinherz, J. Blenis, S.P. Gygi\*, G. Wagner\* “Quantitative phosphoproteomic analysis reveals system-wide signaling pathways downstream of SDF-1/CXCR4 in breast cancer stem cells” *Proc. Natl. Acad. Sci. USA.* **2014**, 111, E2182–E2190. DOI: [10.1073/pnas.1404943111](https://doi.org/10.1073/pnas.1404943111).
9. **M. Etzkorn**, T. Raschle, F. Hagn, V. Gelev, A.J. Rice, T. Walz, G. Wagner\* “Cell-Free Expressed Bacteriorhodopsin in Different Soluble Membrane Mimetics: Biophysical Properties and NMR Accessibility” *Structure* **2013**, 21, 394–401. DOI: [10.1016/j.str.2013.01.005](https://doi.org/10.1016/j.str.2013.01.005).
10. F. Hagn, **M. Etzkorn**, T. Raschle, G. Wagner\* “Optimized phospholipid bilayer nanodiscs facilitate high-resolution structure determination of membrane proteins” *J. Am. Chem. Soc.* **2013**, 135, 1919–1925. DOI: [10.1021/ja310901f](https://doi.org/10.1021/ja310901f).

## Category B

### Publications

1. I. Span\*, **M. Etzkorn**\* “RNA-processing DNAzymes” in *RNA Structure and Function. RNA Technologies* (Ed.: J. Barciszewski) **2023**, vol 14, 629–643. DOI: [10.1007/978-3-031-36390-0\\_28](https://doi.org/10.1007/978-3-031-36390-0_28).
2. J. Borggräfe, **M. Etzkorn**\* “Solution NMR Spectroscopy as a Tool to Study DNAzyme Structure and Function” *Methods in Molecular Biology* **2022**, 2436, 131–151. DOI: [10.1007/978-1-0716-2047-2\\_10](https://doi.org/10.1007/978-1-0716-2047-2_10).
3. **M. Etzkorn**\* “Atomare Einblicke in die Dynamik der Membransysteme und der Biokatalyse“ *BIOspektrum* **2022**, 28, 30–33. DOI: [10.1007/s12268-022-1707-8](https://doi.org/10.1007/s12268-022-1707-8).
4. A. Viegas, T. Viennet, **M. Etzkorn**\* “The power, pitfalls and potential of the nanodisc system for NMR-based studies” *Biol. Chem.* **2016**, 397, 1335–1354. DOI: [10.1515/hsz-2016-0224](https://doi.org/10.1515/hsz-2016-0224).
5. T. Raschle, S. Hiller, **M. Etzkorn**, G. Wagner\* “Non-micellar systems for solution NMR spectroscopy of membrane proteins” *Curr. Opin. Struct. Biol.* **2010**, 20, 471–479. DOI: [10.1016/j.sbi.2010.05.006](https://doi.org/10.1016/j.sbi.2010.05.006).
6. J.F. Schmuck, J. Borggräfe, **M. Etzkorn**\* “The dynamic world of the 8–17 DNAzyme” *Nat. Commun.* **2024**, 15, 5145. DOI: [10.1038/s41467-024-49500-w](https://doi.org/10.1038/s41467-024-49500-w).