

## Prof. Dr. Günter Mayer

### Personal Data

Title	Prof. Dr.
First name	Günter
Name	Mayer
Current position	Full Professor (W3)
Current institution(s)/site(s), country	LIMES-Institute, University of Bonn, c/o Chemical Biology & Medicinal Chemistry Unit, Rheinische Friedrich-Wilhelms-University Bonn, Gerhard-Domagk-Straße 1, 53121 Bonn, Germany
Identifiers/ORCID	<a href="https://orcid.org/0000-0003-3010-4049">orcid.org/0000-0003-3010-4049</a>

### Qualifications and Career

<u>Stages</u>	<u>Periods and Details</u>
Degree programme	Diploma in Chemistry, 1993 – 1998, LMU Munich, Germany
Doctorate	2001      Doctoral student, LMU Munich and University of Bonn, Germany
Stages of academic/professional career	2015      Offer of a position as Director of the Institute of Biochemistry, Leopold-Franzens-University Innsbruck, Austria (declined)
	2015      Offer of a position as Senior Vice President Research & Development, Caris LS, Phoenix, AZ, USA (declined)
	Since 2012      W3-Professor of Chemical Biology & Chemical Genetics, LIMES-Institute, University of Bonn, Germany
	2012      Offer of a Full Professorship for Chemical Biology, Rijksuniversiteit Groningen, Netherlands (declined)
	2010      W2-Professor of Chemical Biology & Chemical Genetics, LIMES-Institute, University of Bonn, Germany
	2009 – 2010      Reader, Translational Biology, University of Strathclyde, Glasgow, UK
	2004 – 2009      Group leader at the University of Bonn, LIMES-Institute, Germany
	2001 – 2004      Head of Department and Co-founder of NascaCell Technologies AG

## Activities in the Research System

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

2021 – 2022	Speaker of the Bonner Forum Biomedicine
Since 2019	Co-founder of Clickmer Systems at the Life Science Incubator, Bonn
Since 2018	Representative of Transfer at the University of Bonn
Since 2017	Head of the “Center of Aptamer Research and Development (CARD)”, University of Bonn
Since 2017	Founder and owner of “Aptamer Consulting”, Bonn
Since 2016	Member of the expert group ‘Patent strategy’ at the University of Bonn
2017 – 2020	Chairman of the Department of Molecular Biomedicine, University of Bonn
2010 – 2017	Erasmus Coordinator of the Department of Molecular Biomedicine, University of Bonn
2001 – 2004	Head of the Combinatorial Biotechnology Department and Co-founder of NascaCell Technologies AG, Munich

**Academic Distinctions:** ERC Advanced Grant (2024); Award for the outstanding start-up “Clickmer Systems” at the BioRiver Boost 2017 (2017); Awarded 1<sup>st</sup> place at the “ZukunftErfinden NRW” competition with the patent application “Aptathrombin” (together with B. Pötzsch & J. Müller) (2015); ERC Consolidator Grant, Acronym: “OptoRibo” (2013).

### Scientific Results

Citations: 12306, h-index: 52, i10-index: 119 ([Google Scholar](#), 21.03.2024)

#### Category A (\* corresponding author)

1. G. Pietruschka, A.T. Ranzani, A. Weber, T. Patwari, S. Pilsl, C. Renzl, D.M. Otte, D. Pyka, A. Möglich, **G. Mayer\*** “An RNA Motif That Enables Optozyme Control and Light-Dependent Gene Expression in Bacteria and Mammalian Cells” *Adv. Sci.* **2024**, 2304519. DOI: [10.1002/advs.202304519](https://doi.org/10.1002/advs.202304519).
2. C. Renzl, A. Kakoti, **G. Mayer\*** “Aptamer-Mediated Reversible Transactivation of Gene Expression by Light” *Angew. Chem. Int. Ed.* **2020**, 59, 22414–22418. DOI: [10.1002/anie.202009240](https://doi.org/10.1002/anie.202009240).
3. S. Pilsl, C. Morgan, M. Choukeife, A. Möglich, **G. Mayer\*** “Optoribogenetic control of regulatory RNA molecules” *Nat. Commun.* **2020**, 11, 4825. DOI: [10.1038/s41467-020-18673-5](https://doi.org/10.1038/s41467-020-18673-5).
4. A.M. Weber, J. Kaiser, T. Ziegler, S. Pilsl, C. Renzl, L. Sixt, G. Pietruschka, S. Moniot, A. Kakoti, M. Juraschitz, S. Schrottke, L. Lledo Bryant, C. Steegborn, R. Bittl, **G. Mayer\***, A. Möglich\* “A blue light receptor that mediates RNA binding and translational regulation” *Nat. Chem. Biol.* **2019**, 15, 1085–1092. DOI: [10.1038/s41589-019-0346-y](https://doi.org/10.1038/s41589-019-0346-y).
5. S.S. Tonapi, V. Pannu, J.E. Duncan, M. Rosenow, A. Helmstetter, D. Magee, Q. Zhang, T.T. Tinder, M. Richards, D.D. Halbert, M. Famulok, D. Spetzler, M.R. Miglarese, H.A. O’Neill\*, **G. Mayer\*** “Translocation of a Cell Surface Spliceosomal Complex Induces Alternative Splicing Events and Lymphoma Cell Necrosis” *Cell Chem. Biol.* **2019**, 26, 756–764. DOI: [10.1016/j.chembiol.2019.02.016](https://doi.org/10.1016/j.chembiol.2019.02.016).
6. F. Pfeiffer, F. Tolle, M. Rosenthal, G. Brändle, J. Ewers, **G. Mayer\*** “Identification and characterization of nucleobase-modified aptamers by click-SELEX” *Nat. Protoc.* **2018**, 13, 1153–1180. DOI: [10.1038/nprot.2018.023](https://doi.org/10.1038/nprot.2018.023).

7. F. Tolle, G.M. Brändle, D. Matzner, **G. Mayer\*** “A Versatile Approach Towards Nucleobase-Modified Aptamers” *Angew. Chem. Int. Ed.* **2015**, 54, 10971–10974. DOI: [10.1002/anie.201503652](https://doi.org/10.1002/anie.201503652).
8. C.E. Lünse, M.S. Schmidt, V. Wittmann\*, **G. Mayer\*** “Carba-sugars activate the glmS-riboswitch from *Staphylococcus aureus*” *ACS Chem. Biol.* **2011**, 6, 675–678. DOI: [10.1021/cb200016d](https://doi.org/10.1021/cb200016d).
9. J. Müller, T. Becher, J. Braunstein, P. Berdel, S. Gravius, F. Rohrbach, J. Oldenburg, **G. Mayer\***, B. Pötzsch\* “Profiling of Active Thrombin in Human Blood by Supramolecular Complexes” *Angew. Chem. Int. Ed.* **2011**, 50, 6075–6078. DOI: [10.1002/anie.201007032](https://doi.org/10.1002/anie.201007032).
10. A. Heckel\*, **G. Mayer\*** “Light regulation of aptamer activity: an anti-thrombin aptamer with caged thymidine nucleobases” *J. Am. Chem. Soc.* **2005**, 127, 822–823. DOI: [10.1021/ja043285e](https://doi.org/10.1021/ja043285e).

## Category B

### Publications

1. D.M. Otte, M. Choukeife, T. Patwari, **G. Mayer** \* “Nucleic acid aptamers: From basic research to clinical applications” in *Handbook of Chemical Biology of Nucleic Acids* (ed. N. Sugimoto) **2022**, 1–25. DOI: [10.1007/978-981-16-1313-5\\_25-1](https://doi.org/10.1007/978-981-16-1313-5_25-1).
2. S. Haßel\*, **G. Mayer** “Aptamers as Therapeutic Agents: Has the Initial Euphoria Subsided?” *Mol. Diagn. Ther.* **2019**, 23, 301–309. DOI: [10.1007/s40291-019-00400-6](https://doi.org/10.1007/s40291-019-00400-6).
3. O. Wolter, **G. Mayer\*** “Aptamers as Valuable Molecular Tools in Neurosciences” *J. Neurosci.* **37**, 2517–2523. DOI: [10.1523/JNEUROSCI.1969-16.2017](https://doi.org/10.1523/JNEUROSCI.1969-16.2017).
4. F. Pfeiffer, M. Rosenthal, J. Siegl, J. Ewers, **G. Mayer\*** “Customised nucleic acid libraries for enhanced aptamer selection and performance” *Curr. Opin. Biotechnol.* **2017**, 48, 111–118. DOI: [10.1016/j.copbio.2017.03.026](https://doi.org/10.1016/j.copbio.2017.03.026).
5. F. Pfeiffer, **G. Mayer\*** “Selection and Biosensor Application of Aptamers for Small Molecules” *Front. Chem.* **2016**, 4, 25. DOI: [10.3389/fchem.2016.00025](https://doi.org/10.3389/fchem.2016.00025).
6. D. Matzner, **G. Mayer\*** “(Dis)similar Analogues of Riboswitch Metabolites as Antibacterial Lead Compounds” *J. Med. Chem.* **2015**, 58, 3275–3286. DOI: [10.1021/jm500868e](https://doi.org/10.1021/jm500868e).
7. F. Tolle, **G. Mayer** “Dressed for success – Applying chemistry to modulate aptamer functionality” *Chem. Sci.* **2013**, 4, 60–67. DOI: [10.1039/C2SC21510A](https://doi.org/10.1039/C2SC21510A).

### Patents (8 granted and licensed patents)

1. F. Tolle, F. Friedrich, A. Heckel, **G. Mayer** “A method of identifying or producing an aptamer”, WO/2015/049356.
2. M. Hamann, N. Karnowski, T. Legen, **G. Mayer** “On blot Click-Selex”, PCT/EP2019/070363.
3. C. Blume, L. Phung Ngoc, J. Siegl, **G. Mayer** “Aptamers that target CXCL9”, PCT/EP2021/074003.