

## LIST of PUBLICATIONS

### **FWF Project P33059**

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**Prof. Dr. Bernhard Kräutler**

<https://www.uibk.ac.at/en/organic/kraeutler/>

- Florian J. Widner, Naziyat I. Khan, Evelyne Deery, Martin J. Warren, Michiko E. Taga and Bernhard Kräutler  
Repression of bacterial gene expression by antivitamin B<sub>12</sub> binding to a cobalamin riboswitch  
*RSC Chemical Biology* 7, 498-504 (2026) <https://doi.org/10.1039/D5CB00308C>
- Florian J. Widner, Klaus Wurst, Markus Ruetz, Christoph Kieninger, Christoph Kreutz, Michael D. Paxhia, Evelyne Deery, Martin J. Warren and Bernhard Kräutler  
B<sub>12</sub>-Cofactor Inactivation by Cobalt to Rhodium Mutation in Methylrhodibalamin – an Antivitamin B<sub>12</sub> and Antibiotic  
*ChemistryEurope* 3, e202500157 (2025) <https://doi.org/10.1002/ceur.202500157>
- Michael D. Paxhia, Freya L. Hartshorn, Evelyne Deery, Bernhard Kräutler, Martin J. Warren  
Engineering biology and chemical approaches to the construction of vitamin B<sub>12</sub> analogues and antivitamins B<sub>12</sub> as probes and therapeutic agents  
*Advances in Microbial Physiology* 87, 257–298 (2025)  
<https://doi.org/10.1016/bs.ampbs.2025.07.003>
- Christoph Kieninger, Klaus Wurst, Daniel Leitner, Luis P. Peters, Dennis F. Dinu, Markus Wiedemair, Marc-Kevin Zaretzke, Martin Bröring, Stephan Hohloch, Klaus R. Liedl and Bernhard Kräutler  
Encasing the Paramagnetic Copper(II)-Ion by the Ring-Contracted Corrin Ligand of Vitamin B<sub>12</sub>  
*Chemical Communications* 61, 10606-10609 (2025)  
<http://dx.doi.org/10.1039/D5CC02129D>  
*Dedicated to the memory of Albert Eschenmoser on the occasion of his 100<sup>th</sup> birthday*
- Florian J. Widner, Christoph Kieninger and Bernhard Kräutler  
Adenosylrhodibinamide and methylrhodibinamide – organometallic rhodium analogues of the natural cobinamides  
*J. Porphyrins & Phthalocyanines* 29, 408-417 (2025)  
<https://doi.org/10.1142/S1088424625500348>  
*Dedicated to Prof. Karl Kadish on the occasion of his 80<sup>th</sup> birthday*

Steffen Jockusch and Bernhard Kräutler

H/D-Isotope sensitive dual fluorescence of the corrin-ligand of vitamin B<sub>12</sub>

*Chemical Communications* **61**, 3904-3907 (2025)

<https://doi.org/10.1039/d4cc06373b>

Markus Ruetz, Romilla Mascarenhas, Florian J. Widner, Christoph Kieninger, Markos Koutmos, Bernhard Kräutler, & Ruma Banerjee

A Noble Metal Substitution Leads to B<sub>12</sub> Cofactor Mimicry by a Rhodibalamin.

*Biochemistry* **63**, 1955–1962 (2024) <https://doi.org/10.1021/acs.biochem.4c00216>

Ricardo Pérez-Castaño, Juan Aranda, Florian J. Widner, Christoph Kieninger, Evelyne Deery, Martin J. Warren, Modesto Orozco, Montserrat Elías-Arnanz, S. Padmanabhan, and Bernhard Kräutler

The Rhodium Analogue of Coenzyme B<sub>12</sub> as an Anti-Photoregulatory Ligand

Inhibiting Bacterial CarH Photoreceptors

*Angew. Chem. Int. Ed.* **63**, e202401626 (2024)

<https://doi.org/10.1002/anie.202401626>

*Dedicated to the memory of Professor Albert Eschenmoser*

Alexandra Tsybizova, Lukas Fritsche, Larisa Miloglyadova, Bernhard Kräutler and Peter Chen

Cryogenic Ion Vibrational Predissociation (CIVP) Spectroscopy of Aryl Cobinamides in the Gas Phase: How Good Are the Calculations for Vitamin B<sub>12</sub> Derivatives?

*J. Am. Chem. Soc.* **145**, 19561-19570 (2023)

<https://doi.org/10.1021/jacs.3c03001>

Christoph Kieninger, Evelyne Deery, Andrew D. Lawrence, Martin J. Warren and Bernhard Kräutler

Hydrogenobinamide and Nibinamide - Metal-Free Ligand and Ni(II)-Analogue of the Vitamin B<sub>12</sub> Precursor Cobinamide *J. Porphyrins & Phthalocyanines* **27**, 627-633

(2023) <https://doi.org/10.1142/S1088424623500463>

*Dedicated to Prof. Tomás Torres on the occasion of his 70<sup>th</sup> birthday*

Markus Wiedemair, Christoph Kieninger, Klaus Wurst, Maren Podewitz, Evelyne Deery, Martin J. Warren & Bernhard Kräutler

Solution, Crystal and in-Silico Structures of the Organometallic Vitamin B<sub>12</sub>-Derivative Acetylcobalamin and of its Novel Rhodium-Analogue AcetylRhodibalamin

*Helv. Chim. Acta* **106**, e202200158 (2023) <http://dx.doi.org/10.1002/hlca.202200158>

*Dedicated to the memory of Prof. Jack D. Dunitz*

Naoki Shibata, Yoshiki Higuchi, Bernhard Kräutler, and Tetsuo Toraya

Structural Insights into the Very Low Activity of the Homocoenzyme B<sub>12</sub>

Adenosylmethylcobalamin in Coenzyme B<sub>12</sub>-Dependent Diol Dehydratase and

Ethanolamine Ammonia-Lyase

*Chemistry - Europ. J.* **28**, e202202196 (2022) <https://doi.org/10.1002/chem.202202196>

Karl Gruber, Vanessa Csitkovits, Andrzej Łyskowski, Christoph Kratky and Bernhard Kräutler

Structure-Based Demystification of Radical Catalysis by a Coenzyme B<sub>12</sub>-dependent Enzyme – Crystallographic Study of Glutamate Mutase with Cofactor Homologues  
*Angewandte Chemie Int. Ed.* **61**, e202208295 (2022)

<https://doi.org/10.1002/anie.202208295>

*Dedicated to Prof. Albert Eschenmoser on the occasion of his 97<sup>th</sup> birthday*

Markus Ruetz, Markos Koutmos and Bernhard Kräutler

Antivitamins B<sub>12</sub> – Synthesis and Application as Inhibitory Ligand of the B<sub>12</sub>-Tailoring Enzyme CblC

Coenzyme B<sub>12</sub> Enzymes, N.E.Marsh (ed.), *Methods in Enzymology*, vol. 668, pp. 157-178 (2022), Academic Press

<https://www.sciencedirect.com/science/article/pii/S007668792100522X>

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Antivitamins B<sub>12</sub>

*Vitamins & Hormones*, vol. 119, G. Litwack (Ed.), p.221-240 (2022) Academic Press,

<https://doi.org/10.1016/bs.vh.2022.01.003>

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Bioorganometallic Chemistry of Vitamin B<sub>12</sub>-Derivatives

*Comprehensive Organometallic Chemistry IV*, Vol. 15, pp 73-95 (2022)

Elsevier, <https://doi.org/10.1016/B978-0-12-820206-7.00014-7>

Alexandra Tsybizova, Christopher Brenig, Christoph Kieninger, Bernhard Kräutler & Peter Chen

Surprising Homolytic Gas Phase (Co-C)-Bond Dissociation Energies of Organometallic Aryl-Cobinamides Reveal Notable Non-Bonded Intramolecular Interactions

*Chem.- Eur. J.* **27**, 7252-7264 (2021) <https://doi.org/10.1002/chem.202004589>

*Dedicated to the memory of Prof. François Diederich*

Florian J.Widner, C. Kieninger, K. Wurst, Evelyne Deery, Andrew D. Lawrence, Martin J. Warren and Bernhard Kräutler

Synthesis, Spectral Characterization and Crystal Structure of Chloro-Rhodibalamin – A Synthesis Platform for Rhodium Analogues of Vitamin B<sub>12</sub> and for Rh-Based Antivitamins B<sub>12</sub>

*Synthesis* **53**, 332-337 (2021) <https://doi.org/10.1055/s-0040-1707288>

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Antivitamins B<sub>12</sub> – Some Inaugural Milestones

*Chem. – Eur. J.* **26**, 15438-15445 (2020)

<https://doi.org/10.1002/chem.202003788>

*Dedicated to the memory of Prof. Duilio Arigoni*

Christoph Kieninger, Klaus Wurst, Maren Podewitz, Maria Stanley, Evelyne Deery, Andrew Lawrence, Klaus R. Liedl, Martin J Warren and Bernhard Krätler  
Replacement of the Cobalt-Center of Vitamin B<sub>12</sub> by Nickel - Nibalamin and Nibyrlic Acid Prepared from Metal-Free B<sub>12</sub>-Ligands Hydrogenobalamin and Hydrogenobyric Acid

*Angew.Chem.Int.Ed.* **59**, 20129-20136 (2020) *Angew.Chem.* **132**, 20304-20311 (2020)  
<https://doi.org/10.1002/anie.202008407>

*Dedicated to Professor Albert Eschenmoser on the occasion of his 95<sup>th</sup> birthday*