



Dr. Gerald Lackner

[Synthetic Microbiology · Head](#)

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Curriculum vitae

Professional Career

2016 -today

2014 - 2016

2011 - 2014

2006 - 2011

Junior Group Leader

PostDoc (Feodor Lynen Research Fellowship)

ETH Zurich (Jörn Piel)

Research focus: Genomics of uncultured natural product producers, biosynthesis of ribosomally produced small molecules

PostDoc

FSU Jena (Dirk Hoffmeister)

Research focus: Polyketide and nonribosomal peptide biosynthesis in mushrooms.

PhD student

HKI Jena (Christian Hertweck)

2001 - 2006

Research focus: Genomics of natural product-producing bacterial endosymbionts of fungi.
Studies of Biochemistry
FSU, Jena

Publications

Ehinger F, Niehs S, Dose B, Dell M, Krabbe J, Pidot SJ, Stinear TP, Scherlach K, Ross C, Lackner G, Hertweck C (2023) Analysis of rhizonin biosynthesis reveals origin of pharmacophoric furylalanine moieties in diverse cyclopeptides. *Angew Chem Int Ed Engl* 62(42), e202308540.

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Löhr NA, Rakhmanov M, Wurlitzer JM, Lackner G, Gressler M, Hoffmeister D (2023) Basidiomycete non-reducing polyketide synthases function independently of SAT domains. *Fungal Biol Biotechnol* 10(1), 17.

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Ellerhorst M, Barth SA, Graça AP, Al-Jammal WK, Peña-Ortiz L, Vilotijevic I, Lackner G[#] (2022) S-Adenosylmethionine (SAM)-dependent methyltransferase MftM is responsible for methylation of the redox cofactor mycofactocin. *ACS Chem Biol* 17(11), 3207-3217.

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PubMed

OPEN ACCESS

PAPER

Hasan M, Schulze S, Berndt L, Palm G J, Braga D, Richter I, Last D, Lammers M, Lackner G[#] (2022) Diversification by CofC and control by CofD govern biosynthesis and evolution of coenzyme F420 and its derivative 3PG-F420. *mBio* 13(1), e03501-21.

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OPEN ACCESS

PAPER

Last D, Hasan M, Rothenburger L, Braga D, Lackner G[#] (2022) High-yield production of coenzyme F420 in *Escherichia coli* by fluorescence-based screening of multi-dimensional gene expression space. *Metab Eng* 73, 158-167.

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PubMed



Um S, Guo H, Thiengmag S, Benndorf R, Murphy R, Rischer M, Braga D, Poulsen M, de Beer ZW, Lackner G, Beemelmans C (2021) Comparative genomic and metabolic analysis of *Streptomyces* sp. RB110 morphotypes illuminates genomic rearrangements and formation of a new 46-membered antimicrobial macrolide. *ACS Chem Biol* 16(8), 1482-1492.

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Braga D, Hasan M, Kröber T, Last D, Lackner G (2020) Biosynthesis of the redox coenzyme F420 in *Thermomicrobia* involves reduction by standalone nitroreductase superfamily enzymes. *Appl Environ Microbiol* 86(12), e00457-20.

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Lenz C, Wick J, Braga D, Garcia-Altares M, Lackner G, Hertweck C, Gressler M, Hoffmeister D (2020) Injury-triggered blueing reactions of *Psilocybe* "magic" mushrooms. *Angew Chem Int Ed* 59(4), 1450-1454.

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Peña-Ortiz L, Graça AP, Guo H, Braga D, Köllner TG, Regestein L, Beemelmans C, Lackner G (2020) Structure elucidation of the redox cofactor mycofactocin reveals oligo-glycosylation by MftF. *Chem Sci* 11, 5182-5190.

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Peña-Ortiz L, Schlembach I, Lackner G, Regestein L (2020) Impact of oxygen supply and scale up on *Mycobacterium smegmatis* cultivation and mycofactocin formation. *Front Bioeng Biotechnol* 8(1399), 593781.

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