Isolation, biosynthesis and chemical modifications of rubterolones A–F, rare tropolone alkaloids from *Actinomadura* sp. 5-2.

Guo H, Benndorf R, Leichnitz D, Klassen JL, Vollmers J, Görls H, Steinacker M, Weigel C, Dahse HM, Kaster AK, de Beer ZW, Poulsen M, Beemelmanns C (2017) Isolation, biosynthesis and chemical modifications of rubterolones A–F, rare tropolone alkaloids from *Actinomadura* sp. 5-2. *Chem Eur J* 23(39), 9338-9345.

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Abstract

We report the discovery of six new highly substituted tropolone alkaloids, rubterolones A–F, from Actinomadura sp. 5-2, isolated from the gut of the fungus-growing termite Macrotermes natalensis. Rubterolones were identified using fungus-bacteria challenge assays and a HRMS-based dereplication strategy, and characterized by NMR and HRMS analyses and X-ray crystallography. Feeding experiments and subsequent chemical derivatisation led to a first library of rubterolones derivatives (A–L). Genome sequencing and comparative analyses revealed their putative biosynthetic pathway, which was supported by feeding experiments. This study highlights how gut microbes can present a prolific source of secondary metabolites.

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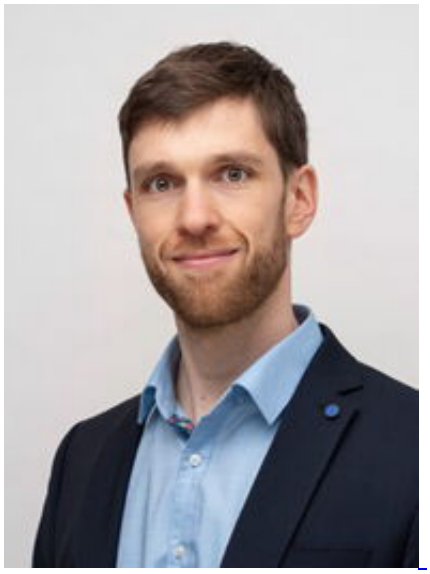

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Sekundärmetabolismus von Insekten-assoziierten Mikroben

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