

Isolation, Biosynthesis and Chemical Modifications of Rubterolones A-F: Rare Tropolone Alkaloids from *Actinomadura* sp. 5-2.

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Abstract

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* is reported. Rubterolones were identified by using fungus-bacteria challenge assays and a HRMS-based dereplication strategy, and characterised by NMR and HRMS analyses and by X-ray crystallography. Feeding experiments and subsequent chemical derivatisation led to a first library of rubterolone 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.

Identifier

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