Natalamycin A, an ansamycin from a termite-associated Streptomyces sp

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Abstract

We report a preliminary functional and complete structural characterization of a highly unusual geldanamycin analog, natalamycin A, that was isolated from *Streptomyces* strain M56 recovered from a South African nest of *Macrotermes natalensis* termites. Bioassay-guided fractionation based on antifungal activity led to the isolation of natalamycin A, and a combination of NMR spectroscopy and X-ray crystallographic analysis, including highly-accurate quantum-chemical NMR calculations on the largest and most conformationally-flexible system to date, revealed natalamycin A's three-dimensional solid- and solution-state structure. This structure along with the structures of related compounds isolated from the same source suggest a geldanamycin-like biosynthetic pathway with unusual post-PKS modifications.

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