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Identification of Arglecins B and C and Actinofuranosin A from a Termite Gut-Associated Streptomyces Species

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Abstract : A high-throughput and automated 1H NMR metabolic fingerprinting dereplication approach was used to accelerate the discovery of unknown bioactive secondary metabolites. The applied dereplication strategy accelerated the discovery of natural products, provided rapid and competent identification and quantification of the known secondary metabolites and avoided time-consuming isolation procedures. The effectiveness of the technique was demonstrated by the isolation and elucidation of arglecins B (1), C (2) and actinofuranosin A (3) from a termite-gut associated Streptomyces sp. (USC 597) grown under solid state fermentation. The structures of these compounds were elucidated by extensive interpretation of 1H, 13C and 2D NMR spectroscopic data. These represent the first report of arglecin analogs isolated from a termite gut-associated Streptomyces species.

Keywords : actinomycetes, actinofuranosin, antibiotics, arglecins, NMR spectroscopy
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