

## Antimicrobial compounds from bacterial symbionts of *Acromyrmex* ants

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Microbial symbionts of insects are sources of novel and bioactive natural products. The ancient and complex relationship established between Attini ants and fungi cultivated by them for food is one of the best-known symbiotic associations. This association can be harmed by the specialized pathogenic fungi of the genus *Escovopsis*. Based on this ecological evidence, we aim to study natural products biosynthesized by symbiotic bacterial strains associated with *Acromyrmex* leaf-cutter worker ants and queen ants collected in remaining areas of Atlantic Forest in Brazil. We have screened bacterial strains against the specific fungal pathogen *Escovopsis* and the parasites *Trypanosoma cruzi* and *Leishmania donovani*. The actinobacteria coded as ICBG 171 was identified by 16S rRNA gene sequencing as *Streptomyces malaysiensis* and showed antifungal activity in antagonism assay and its extracts displayed antiprotozoal activity against *L. donovani* (94% of parasite inhibition). Bioguided fractionation of the extracts by Sephadex LH-20 and HPLC led to the identification of one polyether and three macrolide compounds. Analyses of HR-ESI-MS data, 1D and 2D NMR data, together with searches on databases, allowed the structure determination of compounds known as nigericin (1), elaiophylin (2), 11-*O*-methylelaiophylin (3) and 11,11'-*O*, *O*-dimethylelaiophylin (4). The antiprotozoal activity of these compounds has been already described in the literature; thus they might be responsible for the high antileishmanial activity displayed by the crude extract. Compounds also showed high active against Methicillin-resistant *Staphylococcus aureus*-MRSA.

