

Terpenoids and meroterpenoids from cultures of two grass-associated species of *Amylosporus* (Basidiomycota)

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ABSTRACT:

An investigation of the chemical components of the fermentation extract of two cultures of *Amylosporus* cf. *graminicola* and *Amylosporus* cf. *campbellii* from Cuba and Zimbabwe, respectively, led to the isolation of seven previously undescribed secondary metabolites for which we proposed the trivial names amylosporanes A–G along with the known compounds orsellinic acid, colletorin D acid, colletorin B, colletochlorin B, and the β -lactam cyclo-(S-Pro-R-Leu). Three additional compounds previously unknown from a fungal source were also characterized for the first time, and two of them were assigned the trivial names amylosporanes H–I while the other was identified as cannabigerorcinic acid. The structures of the isolated compounds were determined based on their high-resolution electrospray ionization mass spectrometry (HR-ESIMS) spectra and an extensive analysis of their 1D (one Dimensional) and 2D (two Dimensional) Nuclear Magnetic Resonance (NMR) spectroscopic data. Based on literature searches, we hypothesized that a majority of the isolated metabolites have orsellinic acid as a biosynthetic precursor following a combined route of mevalonate-associated and orsellinic acid-associated pathways. Colletochlorin B, the only compound possessing chlorine in its structure, exhibited significant activity against *Bacillus subtilis* (minimum inhibitory concentration, 2 $\mu\text{g}/\text{mL}$), stronger than that of oxytetracycline, and significant cytotoxicity against A431 cells with an IC_{50} (half-Inhibitory Concentration) value of 4.6 μM .

KEYWORDS:

Amylosporus sp.; antimicrobial; cytotoxicity; meroterpenoids; terpenoids.