

Biosurfactants from marine Cyanobacteria collected in Malaysia, Sabah

ABSTRACT

Chemical investigation of the organic extract from *Moorea bouillonii*, collected in Sabah, Malaysia, led to the isolation of three new chlorinated fatty acid amides, columbamides F (1), G (2), and H (3). The planar structures of 1–3 were established by a combination of mass spectrometric and NMR spectroscopic analyses. The absolute configuration of 1 was determined by Marfey's analysis of its hydrolysate and chiral-phase HPLC analysis after conversion and esterification with Ohri's acid, (1*S*,2*S*)-2-(anthracene-2,3-dicarboximido) cyclohexanecarboxylic acid. Compound 1 showed biosurfactant activity by an oil displacement assay. Related known fatty acid amides columbamide D and serinolamide C exhibited biosurfactant activity with critical micelle concentrations of about 0.34 and 0.78 mM, respectively.