

Study on the Stevioside Analogues of Steviolbioside, Steviol, and Isosteviol 19-Alkyl Amide Dimers: Synthesis and Cytotoxic and Antibacterial Activity

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Abstract

A new group of steviolbioside amide dimers 2a-g, derivatives 2h-i and their related steviol and isosteviol amide dimers 3a and 4a were prepared by reacting aliphatic alkylamine and alkyldiamines with PyBOP and DIEA. The synthesized compounds had cytotoxic effects on cancer and human embryonic lung cells. Compounds 3a, 4a, 2b and 2h were cytotoxic to cancer cells and to a lesser extent to human embryo lung cells. Compounds 2f, 2g and 4 of this series had favorable antibacterial effects, and were superior to penicillin G at inhibiting growth of *Bacillus subtilis* (BCRC 10029). The cytotoxicity and antibacterial effects may depend on the dimerization and derivative moieties in relation to the respective aglycons.