Cytotoxic and antimicrobial xanthones from Cratoxylum arborescens (Guttiferae)

ABSTRACT

Phytochemical and biological studies were carried out the stem bark of Cratoxylum arborescens collected from Sarawak, Malaysia. Chromatographic separation of the plant extracts led to the isolation of three xanthones, a-mangostin (1), ß-mangostin (2) and fuscaxanthone C (3) together with the commom stigmasterol. The structural elucidation of the compound was determined by detail spectroscopic analysis and comparison with literature reports. a-Mangostin exhibited strong inhibition on the growth of bacteria, B. subtilis, B. cereus, S. typhimurium and S. aureus with inhibition zone of 16, 20, 17 and 20 mm, respectively. Both a-mangostin and ß-mangostin showed the most significant cytotoxic activity against MCF7 cells with IC50 values of 12.48 ε g/ml and 28.42 ε g/ml, respectively. However, when tested for antioxidant activity by using DPPH, the extracts and the xanthones failed to give good results.

Keyword: Ŭ-mangostin; Antimicrobial; Antioxidant; Cratoxylum arborescens; Cytotoxicity; Fuscaxanthone C; ɓ-mangostin