

Garcinia mangostana: a source of potential anti-cancer lead compounds against CEM-SS cell line

ABSTRACT

Our current interest in searching for natural anti-cancer lead compounds from plants has led us to the discovery that the stem and roots of *Garcinia mangostana* can be a source of such compounds. The stem furnished 2,8-dihydroxy-6-methoxy-5-(3-methylbut-2-enyl)-xanthone (1), which is a new xanthone. Meanwhile, the root bark of the plant furnished six xanthenes, namely α -mangostin (2), β -mangostin (3), γ -mangostin (4), garcinone D (5), mangostanol (6), and gartanin (7). The hexane and chloroform extracts of the root bark of *G. mangostana* as well as the hexane extract of the stem bark were found to be active against the CEM-SS cell line. γ -Mangostin (4) showed good activity with a very low IC₅₀ value of 4.7 μ g/ml, while α -mangostin (2), mangostanol (6), and garcinone D (5) showed significant activities with IC₅₀ values of 5.5, 9.6, and 3.2 μ g/ml, respectively. This is the first report on the cytotoxicity of the extracts of the stem and root bark of *G. mangostana* and of α -mangostin, mangostanol, and garcinone D against the CEM-SS cell line.

Keyword: *Garcinia mangostana*; xanthenes; cytotoxicity; CEM-SS cell line