OB-006 Antibacterial activity of Xanthones from Pericarp of Garcinia mangostana against persistent dental infection microorganism Enterococcus faecalis

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Background. As part of ongoing research on antibacterial agents from botanical dietary supplements, Garcinia mangostana L. (commonly known as Manggis in Indonesia) was selected for detailed study. Objective. To obtain the antibacterial activity of xanthones of pericarp of mangosteen against persistent dental infection microorganism. Methods. The dried and milled pericarp of G. mangostana was extracted by maceration with MeOH (3 x 5 L) at room temperature, for 3 days each. After filtration and evaporation of the solvent under reduced pressure, the combined crude methanolic extract (250 g) was suspended in H\(_2\)O (600 mL) to produce an aqueous solution, then partitioned in turn with n-hexane (3 x 500 mL), EtOAC (3 x 500 mL) and n-BuOH (3 x 500 mL) to afford dried n-hexane (32 g), EtOAC (40 g) and n-BuOH (60 g) extracts. Result. The EtOAC-soluble extract was found to have significant antibacterial activity against Enterococcus faecalis ATCC 29212. Therefore, the EtOAC extract was selected for detailed purification. Repeated chromatography on silica gel and ODS of a EtOAC-soluble extract of pericarp led to isolation of two prenylated xanthones, 1 and 2. The chemical structures of compound 1 and 2 were identified as 4-mangostin and 4'-mangostin on the basis of spectroscopic data and comparison to those related data previously reported. Conclusion. The antibacterial activities of these compounds were evaluated against E. faecalis, which performed using broth microdilution method. Compounds 1 and 2 exhibited antibacterial activity against E. faecalis with minimum inhibitory activity (MIC) ranging from 10-15 to 20-35 \(\mu\)g/mL, respectively.

Keywords: Garcinia mangostana; mangostin; antibacterial activity; Enterococcus faecalis

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