

4th African Pharma Congress

June 20-21, 2016 Cape Town, South Africa

Anti-cariogenic activity of garcinone B from *Garcinia mangostana* Linn

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Objective: The aim of the present study was to evaluate anti-bacterial activities of xanthones (8-deoxygartanin, garcinone B, garcinone C, garcinone D, α -mangostin, β -mangostin and γ -mangostin) from *Garcinia mangostana* Linn pericarp extract to cariogenic bacteria. Time-kill assay, acid production and surface hydrophobic inhibition activities to *S. mutans* ATCC 25175 were also reported.

Method: The fresh green fruit hulls of *G. mangostana* were extracted with ethyl acetate. The crude extracts were then isolated to 7 xanthones; 8-deoxygartanin, garcinone B, garcinone C, garcinone D, α -mangostin, β -mangostin and γ -mangostin as previously described (Seesom, 2013). *In vitro* anti-bacterial activity against cariogenic bacteria (*Streptococcus mutans* ATCC 25175, *Streptococcus mutans*, *Streptococcus sobrinus*, *Lactobacillus acidophilus* and *Lactobacillus casei* of 7 xanthones were evaluated by dilution anti-microbial susceptibility test.

Results: The range of minimum inhibitory concentration (MIC) of xanthones against cariogenic bacteria in this study was found to be varies from 0.25-30 μ g/ml. The most active was garcinone B which showed MIC of 0.25-0.75 mg/ml to all of the bacterial tests. Assay for the rate of killing of *S. mutans* ATCC 25175 by the garcinone B was determined by viability studies. The bactericidal effect of garcinone B 1 μ g/ml was very effective by completely killed the bacteria within 1 hour. The garcinone B also reduced the rate of acid production and decreased cell surface hydrophobicity of *S. mutans* ATCC 25175 at 1 μ g/ml.

Conclusions: These finding reveal that garcinone B has potential to treat dental caries. Further clinical study is needed to support for therapeutic used of garcinone B.

Biography

Nuntana Aroonrerk has completed her PhD from Microbiology Department, Mahidol a University, Thailand She is a lecturer and researcher in medical Immunology/ microbiology since she was 34 year olds (1980) at Stomatology Department, Faculty of Dentistry, Srinakharinwirot University, Bangkok, Thailand. She has published more than 15 papers in reputed journals. Now, she is Associate Professor.

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