Antioxidative and antibacterial activities of Pangium edule seed extracts

Abstract

Phenolic and alkaloid extracts of Pangium edule Reinw (Flacourtiaceae) seed were investigated for their antioxidative activities using DPPH radical scavenging and β-carotene bleaching assays. The extracts were evaluated for antibacterial activity against Salmonella typhimurium and Listeria monocytogenes. The acetone extract with higher phenolic content (22.22±0.05 mg GAE g-1) showed the most potent antioxidative activity in both DPPH radical scavenging and β-carotene bleaching assays as compared to other extracts. The phenolic extract seems to have stronger inhibitory against L. monocytogenes than S. typhimurium. The free phenolic acid extract was found to have the highest Minimum Inhibition Concentration (MIC) among the seed extracts, indicates its weak antibacterial activity against both bacteria. Nevertheless, both tested pathogens were killed at the Minimum Bactericidal Concentration (MBC) of 30.3 and 55.5 mg mL-1, respectively, for the phenolic extracts. Significant correlation ($p<0.05$) was observed between the total phenolic content and its antioxidative activity ($r = 0.878$) as well as antibacterial ($r = 0.840$) activity suggesting that phenolics of the seed extract could be potential sources of natural antioxidant and antibacterial.