

## **Phenolics, fatty acids composition and biological activities of various extracts and fractions of Malaysian *Aaptos aaptos***

### **ABSTRACT**

Objective: To investigate phenolics, fatty acids composition and biological activities of various extracts and fractions of Malaysian *Aaptos aaptos*. Methods: Fatty acid methyl ester was analyzed by gas chromatography-flame ionization detector. Antioxidant activity was determined using 2,2-diphenyl-picrylhydrazyl radical scavenging assay and total phenolics content by Folin-Ciocalteu procedure. Vero cells viability was evaluated using methyl thiazole tetrazolium and the inactivation of herpes simplex virus type 1 by neutral red uptake assay. p-Hydroxybenzamide isolated by column chromatography was characterized by utilizing nuclear magnetic resonance spectroscopy and electron impact mass spectrometry. Results: The chloroform, ethyl acetate and methanol extracts of *Aaptos aaptos* produced higher portions of straight-chain saturated fatty acid, while hexane extract mainly consisted of unsaturated fatty acid. The five majors of fatty acid methyl ester were identified as behenic acid, cis-10-heptadecenoic acid and cis-10-pentadecenoic acids, palmitic acid and tricosanoic acid. In addition, among all organic extracts, chloroform extract inactivated herpes simplex virus type 1 while exhibited weak cytotoxic activity against normal Vero cells and also exhibited strong cytotoxic activity on HL-60, MCF-7, K562, CEM-SS and WEHI-3B cells. A phenolic compound, p-hydroxybenzamide was also isolated from the sponge. Conclusions: *Aaptos aaptos* could be a source to derive the potential antiviral and anticancer agents. However, further studies are needed to determine the mechanism involved in the process.

**Keyword:** *Aaptos aaptos*; Fatty acid; p-Hydroxybenzamide; Antioxidant; Cytotoxicity; Antivirus