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Antioxidative activity of the crude extract and anthocyanin pigments isolated from *Hibiscus sabdariffa*, L. (roselle)

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The methanolic crude extract and the anthocyanins isolated from the dried calyces of *Hibiscus sabdariffa*, L. (roselle), which is a local soft drink material and medicinal herb, were studied for antioxidant bioactivity. The crude extract, when analyzed by high-performance liquid chromatography (HPLC) on a C18 column, yielded 3 major and several minor peaks of anthocyanins. 3 pigments, delphinidin-3-sambubioside (D-3-S), cyanidin-3-sambubioside (C-3-S) and delphinidin-3-glucoside (D-3-G) were isolated from the crude extract of roselle (HSC). Identities of pigments were established by means of thin layer chromatography (TLC), UV-visible spectra and hydrolysis products. The antioxidant capacity of HSC, D-3-S and C-3-S were assessed *in vitro*, using several antioxidant assays: the bleaching of the stable 2,2-diphenyl-1-picrylhydrazyl (DPPH), 2-deoxyribose oxidation method, reducing power and inhibiting lipid peroxidation in a linoleic acid system. The antioxidant activity, reducing power and the scavenging effects on OH• and DPPH radicals decreased in the order HSC>D-3-S>C-3-S. All of these compounds showed lower antioxidant properties than the synthetic antioxidant, BHA in all the systems tested except in the linoleic acid system where HSC showed higher inhibition than BHA. The results indicate that roselle is a good source of natural antioxidant and its protective effect is probably through the action of highly bioavailable anthocyanins.