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Cytotoxic Activity of Extracts from Hibiscus sabdariffa Leaves against Women's Cancer Cell Lines

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Abstract : Hibiscus sabdariffa (HS) leaves are vegetables which are extensively used as blood tonic and laxatives in Thai traditional medicine. They are popularly used as healthy sour soup for prevention of chronic diseases such as cancer. Therefore, the cytotoxic activity of different extracts of fresh and dried Hibiscus sabdariffa leaves were investigated via the sulforhodamine B (SRB) assay against three types of women's cancer cell lines, namely the human cervical adenocarcinoma cell line (HeLa), the human ovarian adenocarcinoma cell line (SKOV-3), and the human breast adenocarcinoma cell line (MCF-7). Extraction methods were squeezing, boiling with water and maceration with 95% or 50% ethanol. The 95% ethanolic extracts of Hibiscus sabdariffa dry leaves (HSDE95) showed the highest cytotoxicity against all types of women's cancer cell lines with the IC50 values in range 7.51±0.33 to 12.13±1.85 µg/ml. Its IC50 values against SKOV-3, HeLa and MCF-7 were 7.51±0.33, 9.44±1.41 and 12.13±1.85 µg/ml, respectively. In these results, this extract can be classified as "active" according to the NCI guideline which indicated that IC50 values of the active cytotoxic plant extracts have to be beneath 20 µg/ml. Thus, HSDE95 was concluded to be a potent cytotoxic drug for all women's cancer cells. This extract should be further investigated to isolate active compounds against women's cancer cells.

Keywords : breast adenocarcinoma, cervical adenocarcinoma, cytotoxic activity, Hibiscus sabdariffa, ovarian adenocarcinoma
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