

POTENCY OF CITRUS SEED ETHANOLIC EXTRACT AS CHEMOPREVENTIVE AGENT THROUGH INHIBITION OF BREAST CANCER CELLS PROLIFERATION BY IN VITRO TEST

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Abstract

Citrus seeds besides easy to get, cheap, also can be obtained whenever and wherever. Citrus seeds that usually abandoned, actually have many advantage for health because citrus seeds contain D-limonene and vitamin C which can help to reduce the risk of cancer. D-limonene help to limit and prevent appearance of lung cancer, skin cancer, and also breast cancer. Vitamin C help to against radical cell which lead to DNA damage and can reduce the risk of cancer. As well, antioxidant that was found in citrus seeds can rise immunity by building a protective layer against cancer cells. Fiber content is also useful in fighting cancer. This research aims to determine the potential of citrus seeds ethanolic extract as a chemopreventive agent through inhibition of cancer cells by in vitro test. The in vitro culture of cancer cells carried out 2 stages of testing, these are toxicity power and apoptosis test of cancer cells. Data analyze done by descriptive-qualitative. test results for toxicity power proves that ethanolic extract of citrus seeds have strong toxicity against cancer cells. Apoptosis test for breast cancer cells proves that treatment with citrus seeds extract will repress proliferation of cancer cells significantly. Based on the results obtained can be concluded that ethanolic extract of citrus seeds can be used as chemopreventive agent through inhibition of cancer cells proliferation.

Key words: *citrus seeds, chemopreventive, toxicity, apoptosis*