

Inhibitory on cell proliferation and apoptosis induction of human breast cancer cells MCF-7 by aqueous leaf extract of *Carica papaya* L.

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Breast cancer is the most frequently diagnosed cancer in women. Chemotherapy is the main method of breast cancer treatment but there are side effects. *Carica papaya* leaves is vegetable foods consumed by most people of Indonesia have potential as anticancer. The aim of this study was to investigate anti-proliferative effects and apoptotic induced effect of aqueous papaya leaves extracts on human breast cancer cell lines MCF-7. Inhibitory on cell proliferation was measured by MTT assay while apoptosis induction was measured using Annexin V. The results showed that papaya leaf can inhibit the proliferation of human breast cancer cells MCF-7 with IC₅₀ in 1.319 µg/ml. IC₅₀ values of papaya leaf extract was higher than the IC₅₀ value quercetin and doxorubicin. Papaya leaf extract can also induce apoptosis of breast cancer cells MCF-7 about 22.54% for concentration 659.63 µg/ml and about 20.73% for concentration 329.81 µg/ml. The percentage of cell apoptosis of papaya leaf extract lower than doxorubicin but higher than quercetin. This study indicated that papaya leaf extract have potential as anticancer through mechanism anti-proliferation and apoptosis induction.

Biography

Fatma Zuhrotun Nisa is currently a PhD student in the Faculty of Agricultural Technology Gadjah Mada University. She is currently working as a Lecturer in Health and Nutrition Department, Faculty of Medicine, Gadjah Mada University. For approximately 13 years as a Lecturer, she has conducted research and published papers through national and international journals and international conferences in various countries.

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