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A Luminal Subtype of Breast Cancer is an Ideal Model for Elucidating the Progesterone-Specific Effects of T47D Cells

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Introduction

Eugenia uniflora Lam. is one of the natural anticancer products. The goal of this study was to see if an ethanolic extract of Eugenia Uniflora Lam. leaves (EEU) had an anti-proliferative impact on the breast cancer cell line T47D. The active ingredients in Eugenia uniflora Lam. leaves were extracted using a 96 percent ethanol maceration method. Thin layer chromatography was used to examine the extract (TLC). The MTT test was used to perform a cytotoxic assay of EEU. Double labeling with acridine orange and ethidium bromide revealed the apoptosis phenomena. T47D cells were cytotoxic to EEU, with an IC50 value of 65 g/ml. Apoptosis was also triggered by EEU 50g/ml and 100g/ml. TLC analysis revealed that the EEU utilized in this study contains phenolic, flavonoid, and saponin components, all of which have been linked to an anti-proliferative activity. More research into the molecular mechanisms behind EEU's anti-proliferative action is required.

Doxorubicin, a main chemotherapeutic agent used to treat breast cancer, is known to have a number of side effects, including the development of multidrug resistance (MDR). As a result, it is critical to perform research into co-chemotherapeutic agents in order to avoid MDR. Secang (Caesalpinia sappan L.) includes the active chemicals brazilin and brazilein, which have been shown to have anticancer properties.

The goal of this study is to see how effective Caesalpinia sappan L. ethanolic extract (CEE) is as a doxorubicin co-chemotherapeutic agent and how it works by inducing apoptosis in T47D breast cancer cells. The heartwood powder of Caesalpinia sappan L. was macerated in 70% ethanol. The MTT assay was used to assess the cytotoxic effect of CEE alone and in combination with doxorubicin. The flowcytometry-annexin V method was used to perform the apoptosis experiment. CEE had a cytotoxic effect on T47D cells with an IC50 of 35 g/ml, and a combinatorial test revealed that all CEE and doxorubicin combination dosages had a synergistic effect. The treatment of CEE caused doxorubicin-induced apoptosis, according to a flowcytometry-annexin V assay. Based on these findings, we believe Caesalpinia sappan L. heartwood ethanolic extract has the potential to be developed as a doxorubicin co-chemotherapeutic agent.

Women in menopause have a low level of oestrogen in their bodies. The absence of oestrogen alters physiological functions in women's bodies, affecting their health. The flavonoid quercetin found in the leaves of Carica papaya L. has an estrogenic action. The goal of this study is to see if papaya leaf extract (PLE) has an estrogenic impact in vivo and in silicon. Papaya leaves were extracted using a 70% ethanol maceration method. To get the docking score, the in silicon study used molecular docking between quersetin and Estrogen Receptor (ER and ER). Based on these findings, we believe Caesalpinia sappan L. heartwood ethanolic extract has the potential to be developed as a doxorubicin co-chemotherapeutic agent.

Women in menopause have a low level of oestrogen in their bodies. The absence of oestrogen alters physiological functions in women's bodies, affecting their health. The flavonoid quercetin found in the leaves of Carica papaya L. has an estrogenic action. The goal of this study is to see if papaya leaf extract (PLE) has an estrogenic impact in vivo and in silicon. Papaya leaves were extracted using a 70% ethanol maceration method. To get the docking score, the in silico study used molecular docking between quersetin and Estrogen Receptor (ER and ER). To cure breast and cervical cancers, effective and selective chemoterapeutic and chemopreventive agents are required. Mangosteen peel is one of the promising natural materials (Garcinia mangostana). The cytotoxic effect of ethanolic Extract of Mangosteen Peel (EMP) on HeLa and T47D cells was investigated in this work. The MTT assay was used to measure the cytotoxic effect. T47D cells and HeLa cells both displayed cytotoxicity, with IC50 values of 2.07 g/ml and 10.58 g/ml, respectively. The molecular mechanism of active compound in mangosteen peel extract, -mangostin, in the NFB pathway, which is one of the probable pathways to produce cytotoxicity in T47D and HeLa cells, was predicted using molecular docking modeling. The binding score between -mangostin and proteasom is -78, 12, whereas the binding score between -mangostin and IKK is -86.84, according to the PLANTS software. These findings revealed that mangostin peel extract containing -mangostin suppresses IKK activation in the NFB pathway. We conclude that mangosteen peel extract has the potential to be developed as a chemo preventive therapy for cervical and breast cancers based on the findings of this investigation.

Doxorubicin is a chemotherapeutic drug that suppresses the immune system. The goal of this study was to see how an ethanolic Extract of Taraxacum Oficinale (ETO) affected the immune system of a Sprague Dawley rat that had been stimulated by doxorubicin. Five groups of Sprague Dawley rats were used: control doxorubicin, doxorubicin dose 4,67 mg/kgBW+ ETO dose 1000 mg/kgBW, doxorubicin dose 4,67 mg/kgBW+ ETO dose 500 mg/kgBW, control extract group, and no therapy. The number of leukocytes, lymphocytes, and neutrophils was then determined using a hematology analyzer, while CD8+ T cells were determined using flowcytometry. In comparison to the control doxorubicin group, groups of doxorubicin combined with ETO doses of 1000 mg/kgBW and 500 mg/kgBW increased the number of leukocytes, lymphocytes, neutrophils, and cytotoxic CD8 + T cells T cells. These findings show that etanolic extract of Jombang leaves possesses immune stimulatory properties and could be used as a co-chemotherapy drug. The molecular mechanisms that underpin its immunological action must be further investigated.

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