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Effect of papaya leaves extract (*Carica papaya* L.) on TLR 7, TLR 9 and COX-2 in rats induced DMBA (7,12-Dimetilbenz(a)anthracene)

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Breast cancer is a major public health issue for women worldwide. Toll-like receptor (TLR) pathway plays a crucial role in the innate immune system. TLR signaling pathways promote survival, proliferation and apoptosis, as well as interferon (IFN), cytokine and chemokine production. Several TLR agonists have been demonstrated to produce antitumor effects. Cyclooxygenase-2 (COX-2) is often overexpressed in breast cancer. The aim of this study was to investigate the expression of TLR-7, TLR-9 and COX-2 in breast cancer. Sample of this study is papaya leaves extract. This study used 50 Sprague Dawley female rats and age more less 50 days. Rats were divided into 3 groups: control, DMBA and papaya leaves extract. The study was conducted for 13 weeks. DMBA induction performed for 5 weeks with administration of 2 times per week. Observations were made three times that are at week 5, week 9 and week 13. For observation, three rats were killed for taking blood. Expression of TLR-7, TLR-9 and COX-2 plasma was analyzed by Fine Test Kit. The results showed that papaya leaf extract can increase the expression of TLR-7, TLR-9 and decrease the expression of COX-2 compared with DMBA group. Base on this result can concluded that papaya leaves extract has potent as anti-cancer.

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