Abstract 6

IMMUNOMODULATION AND ANTIGENOTOXIC EFFECTS OF PROPOLIS IN PACLITAXEL-TREATED RATS

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The current study aimed to investigate the potential immunomodulatory and antigenotoxic impacts of propolis in paclitaxel (PTX)-treated rats. Twenty four male Sprague Dawley rats were used in the present study and randomly/equally divided into four groups; control group, PTX group that was intraperitoneally injected with 5 mg/kg PTX (once/week), propolis group that received orally/daily 50 mg/kg propolis, and the last group received both PTX and propolis. All treatments were given for four weeks. The results showed a significant upregulation in the nuclear factor kappa B (Nf-□b) gene expression in the spleen of PTX group, as compared with the control group. In addition, substantial increases in tumor necrosis factor-□, interferon-□, C-X-C motif ligand 10, CC motif ligand 2, and interleukin (IL)-4 concentrations, while a significant reduction in IL-10 concentration, were detected in the spleen of PTX group compared with the control group. Moreover, PTX resulted in a significant elevation in the frequency of micronucleated polychromatic erythrocytes in bone marrow cells compared with the control group. On the other hand, the treatment with propolis alone did not significantly affect all of these parameters, as compared with the control group. However, propolis decreased significantly all recorded side effects in the PTX-treated rats. In conclusion, propolis can be used as an adjunct with PTX to modulate the cytokines and chemokines release of splenic immune cells, as well as to counteract the genotoxic effect of PTX on bone marrow cells, through downregulating the splenic Nf-□b gene expression, and reducing the bone marrow micronuclei formation, respectively.

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