RESEARCH ARTICLE

IMMUNOLOGIC ADJUVANT ACTIVITY OF NEEM LEAF EXTRACT IN RATS WITH SPLENECTOMY

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Abstract: Introduction: Immunologic adjuvants are substances of very varied chemical structure that are used to reinforce the immune response against an antigen administered simultaneously in immunization schemes when the antigen's immunogenicity is low. On the other hand, splenectomy is an intervention that consists in the total removal of the spleen with the intention of suppressing the immune response. So that, the aim of this work was to evaluate an immunosuppressant model of rats with splenectomy and the immunologic adjuvant activity of Neemaqueous leaf extract in that model. Material and methods: Cytotoxicity tests and phytochemical composition were performed on the extract to stablish the extract concentrations to be tested. Later, 16 rats were immunized in a 30-day immunization scheme with bovine serum albumin as an antigen, and three Neem-based adjuvants (10, 100 and 1000 µg/mL). Afterdoing the experiments, leukocytes were counted by manual method with Turk's liquid and Neubauer'schamber; and total proteinsin serum were quantified by Bradford method as an indicative of immunoglobulin production among experimental groups. Hepatic enzymes were analyzed by automated biochemical analysis. Results: The biotoxicity assay of the extract showed a 1077 µg/mL concentration as a LD50.A significant increase in leukocyte counts and protein concentration was observed between the beginning and end of the experiments. While the hepatic enzymes showed a normal profile. Conclusions: Neem aqueous leaf extract at concentration of 10 µg/mL exhibits immunologic adjuvant activity by enhancing leukocyte counts.

Keywords: Immunologic adjuvant, Neem, *Azadirachta* indica, Splenectomy, Leukocytes

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