

Evaluating the Immunomodulatory Potential of the Aqueous Leaf Extract of Sennamimosoides in Wistar Albino Rats

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Abstract:

Sennamimosoides formerly known as Cassia mimosoides belongs to the family Caesalpinacea and the genus senna. The leaf is used in folklore medicine for the treatment of oedema and breastmilk toxicity in neonates. In the present study, the immunomodulatory activity of the aqueous leaf extract of *S. mimosoides* was evaluated. For the animal model experiment, a total of fifty (50) Wistar albino rats used in delayed type hypersensitivity reaction and humoural antibody titre (twenty five (25) rats for each parameter) were grouped as follows. Rats in group A (control) were administered 0.2 ml of normal saline; rats in groups B, C and D were treated with 50, 250 and 500 mg/kg of the aqueous extract of *S. mimosoides* respectively while group E rats received 25 mg/kg of levamisol a standard drug. Administration of 50, 100 and 250 mg/kg of the extract resulted in a dose dependent significant ($p < 0.05$) increase in primary antibody titre with a value of 6, 8, 13, and secondary antibody titre with a value of 11, 26, 34. Delayed type hypersensitivity (DTH) response shows that the extract produced a dose and time dependent increase in footpad swelling of the rats. The extract (50, 100 and 250 mg/kg) and levamisol (25 mg/kg) at 24 hr after challenge, significantly ($p < 0.05$) boosted DTH reactions observed respectively as 1.412, 1.504, 1.816 and 1.827 mm difference in thickness of footpad before challenge and 24 hr after challenge while the control showed a slight non-significant ($p < 0.05$) increase with a difference of 0.614 mm. At 48hr after challenge, there was an additional increase in footpad swelling observed as 1.908, 1.918, 2.304 and 2.326 mm for the extract and levamisol respectively. The Humoural antibody (HA) titre and DTH response compare well with that of levamisol a standard immunostimulatory drug at 25 mg/kg. This result shows that the extract has immunostimulatory effect and could be used in boosting immune response.

Keywords: Sennamimosoides, Immunostimulatory, HA, DTH, Levamisole