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ePoster Viewing
Antiparasitic susceptibility & resistance

Immuno-reactivity of Leishmania major TSA recombinant protein vaccine candidate formulated with Freund's adjuvant, Chitosan and BCG-Alum

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Background: *Leishmania major* is obligate intracellular parasite . Leishmaniasis is an important disease in humans.There is no effective vaccine for Leishmaniasis. In this regard , Designing of potential vaccine candidates is highly demanded . In present study TSA(Thiol –specific – antioxidant) recombinant protein was expressed in *E.coli* and its immunogenicity in combination with different formulation of adjuvants was evaluated in BALB/c mice initially.

Material/methods: Plasmid encoding TSA gene was sub-cloned into the PET28a expression vector and recombinant TSA was over expressed in BL21 *E. coli* by addition of IPTG and confirmed with western-blotting and purification carried out with Ni-NTA column . Groups of BALB/c mice (n=10) were immunized with candidate vaccine adjuvanted in Complete Freund's adjuvant , BCG-Alum

and Chitosan and 21 days after final immunization challenged with parasite. Lymphocyte proliferation was evaluated with Brdu and IL-4, IFN-ɣ cytokines and total antibody evaluated

with ELISA test . The wound diameter was measured with calipers and the parasite burden was assessed by spleen culture.

Results: Immunization of mice with the vaccinated groups led to a significant increase in IFN-γ cytokine level , lymphocyte proliferation and antibody responses. There was considerable reduction in lesion diameter in the TSA/chitosan group in comparison to the control groups. A significant differences observed in all the vaccinated groups in parasite burden after 8 weeks challenge with the parasite as compared to the control groups.

Conclusions: This study showed that immunization with TSA antigen with different adjuvants is suitable for further study as vaccine candidate against Leishmaniasis.