عنوان مقاله:

The role of ISCOMATRIX bilayer composition to induce a cell mediated immunity and protection against leishmaniasis in BALB/c mice

محل انتشار:

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خلاصه مقاله:

Objective(s):Development of new generation of vaccines against leishmaniasis is possible because long-term protection is usually seen after recovery from cutaneous leishmaniasis. ISCOMATRIX is particulate antigen delivery system composed of antigen, cholesterol, phospholipid and saponin. In this study, the role of ISCOMATRIX bilayer composition made by different phase transition temperature (Tc) to induce a type of immune response and protection against leishmaniasis was assessed. Materials and Methods:ISCOMATRIX formulations with different bilayer compositions consisting of EPC (Tc <۰ ◦C), DMPC (Tc ۲۳ ◦C) and DSPC (Tc ۵۴ ◦C) were prepared. Different ISCOMATRIX formulations were mixed with soluble Leishmania antigens (SLA). BALB/c mice were immunized subcutaneously, three times with ۲-week intervals. As criteria for protection, footpads swelling, parasite burden, determination of IgG isotypes and the level of IFN-γ and IL-۴ were assessed. Results: Although the groups of mice immunized with ISCOMATRIX DMPC or ISCOMATRIX DSPC showed the smallest footpad swelling and least parasite burden compared with the buffer group, the difference was not significant. Moreover, the highest level of IFN- γ and IL-۴ was observed in the splenocytes of mice immunized with ISCOMATRIX DMPC or ISCOMATRIX DSPC, respectively. After challenge, the mice immunized with ISCOMATRIX DSPC showed the highest elevation of IgG, IgG۱

and IgG۲a antibodies (P<۰.۰۱) compared with control group. However, our results indicated that ISCOMATRIX EPC, DMPC or DSPC generated a mixed Th۱/Th۲ response that was not protective. Conclusion: Our results showed that the adjuvanticity of prepared ISCOMATRIX doesn’t influence with different phospholipids at least in our mice model.

کلمات کلیدی:

Immune response, ISCOMATRIX, Leishmania major, Transition temperature