Immune response and protection assay of recombinant major surface glycoprotein of Leishmania (rgp٦٣) reconstituted with liposomes in BALB/c mice

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Abstract: In this study the ability of recombinant gp٦٣ entrapped in liposomes to induce immune response and protection against L. major infection in susceptible BALB/c mice was studied.. Liposomes containing rgp٦٣ (Lip-rgp٦٣) were prepared from egg lecithin and cholesterol using detergent solubilization method. Immunization of BALB/c mice with rgp٦٣ alone conferred a partial protection while entrapment of rgp٦٣ in liposomes significantly increased the rate of protection ($P < ٠,٠٥$). The parasite burden of spleen in mice challenged with L. major was significantly ($p < ٠,٠٠١$) lower in group of mice immunized with rgp٦٣ alone or Lip-rgp٦٣, however, the least parasite burden was seen in Lip-rgp٦٣ group. Both rgp٦٣ alone and Lip-rgp٦٣ elicited significant delayed-type hypersensitivity (DTH) response compared to controls ($p < ٠,٠١$), however, the DTH response of PBS-rgp٦٣ was less than the Lip-rgp٦٣. Titration of anti-Leishmania IgG isotypes (IgG٢a/IgG١) showed a preferential Th١ type of immune response only in mice immunized with Lip-rgp٦٣. The results indicate that liposomes might be used as a suitable immunoadjuvant for development of Leishmania vaccine. (c) ٢٠٠٦ Elsevier Ltd. All rights reserved.

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