COMPARISON OF THE IMMUNE RESPONSE ELICITED BY IMMUNIZATION WITH PSPA (PNEUMOCOCCAL SURFACE PROTEIN A) AS RECOMBINANT PROTEIN OR DNA VACCINE

Ferreira DM, Darrieux M, Leite LCC, Miyaji EM

Centro de Biotecnologia, Instituto Butantan -São Paulo – SP, Brazil

We have previously shown that immunization of mice with a PspA (Pneumococcal surface protein A) fragment as recombinant protein using alum as adjuvant or DNA vaccine elicited similar levels of protection against intraperitoneal challenge, despite the induction of a significantly higher IgG response by the protein. We have therefore analyzed the differences in the humoral and cellular immune responses induced by both vaccination strategies. DNA vaccination elicited a balanced humoral response with the induction of similar levels of IgG1 and IgG2a, while recombinant protein showed preferential induction of IgG1. The sera were also analyzed for the ability to mediate complement deposition onto the surface of pneumococci. Once again, despite lower total IgG levels, sera from animals immunized with the DNA vaccine were able to mediate complement deposition at levels similar to the recombinant protein. We have also analyzed the induction of IFN-? after stimulation of splenocytes with PspA *in vitro* and were able to detect a marked increase in IFN-? secretion after intraperitoneal challenge with virulent pneumococci only in mice immunized with the DNA vaccine. These results thus show that both strategies induce similar protection through different responses: recombinant protein with a Th2 profile, or towards a Th1 response elicits by DNA vaccines. Financial Support: FAPESP, Fundação Butantan, Millenium Institute-Gene Therapy Network (MCT-CNPq)