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Neisseria lactamica antigens complexed with a novel cationic adjuvant

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Colonization of the nasopharynx by non-pathogenic Neisseria species, including *N. lactamica*, has been suggested to lead to the acquisition of natural immunity against *Neisseria meningitidis* in young children [1]. The aim of this study was to identify a model complex of antigens and adjuvant for immunological preparation against *N. meningitidis* B, based on cross reactivity with *N. lactamica* outer membrane vesicles (OMVs) antigens and the dioctadecyldimethylammonium bromide bilayer fragments (DDA-BF) adjuvant [2]. Complexes of 25 µg of OMVs in 0.1 mM of DDA-BF were colloidally stable, exhibiting a mean diameter and charge optimal for antigen presentation. Immunogenicity tests for these complexes were performed in mice. A single dose of OMV/DDA-BF was sufficient to induce a delayed type hypersensitivity (DTH) response, while the same result was achieved only after two doses of OMV/alum . In addition, to achieve total IgG levels that are similar to a single immunization with OMV/DDA-BF, it was necessary to give the mice a second dose of OMV/alum (Fig 1). Moreover, the antibodies induced from a single immunization with OMV/DDA-BF had an intermediate avidity, but antibodies with a similar avidity were only induced by OMV/alum after two immunizations. We evaluated the production of IgG1, IgG2a and IgG2b in immunized mice, 45 days after the first dose of the antigen (Fig 2) . The absorbance for each class of antibodies was subtracted from the mean absorbance of the non-immunized groupThe use of this novel cationic adjuvant for the first time with a *N. lactamica* OMV preparation revealed good potential for future vaccine design.

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2.Lincopan N, Espíndola NM, Vaz AJ, da Costa MH, Faquim-Mauro E, Carmona-Ribeiro AM.(2009). Novel immunoadjuvants based on cationic lipids: Preparation, characterization and activity in vivo. Vaccine 27:5760-71