

Mucosal genetic immunization through microsphere-based oral carriers.

ABSTRACT

Polymeric carriers in the form of cellulose acetate phthalate (CAP) and alginate (ALG) microspheres were used for encapsulation of plasmid DNA for oral mucosal immunization. Access into the intestinal mucosa by pVAXI eukaryotic expression plasmid vectors carrying gene-coding sequences, either for the cholera enterotoxin B subunit (ctxB) immunostimulatory antigen or the green fluorescent protein (GFP), delivered from both types of microsphere carriers were examined in orally immunized BALB/c mice. Demonstration of transgene protein expression and IgA antibody responses at local mucosal sites suggest immunological response to a potential oral DNA vaccine formulated within the microsphere carriers.

Keyword: Alginate; Cellulose acetate phthalate; Encapsulation; IgA; Microspheres; Mucosal immunization; Plasmid DNA