Mucosal immunization of BALB/c mice with DNA vaccines encoding the SEN1002 and SEN1395 open reading frames of Salmonella enterica serovar Enteritidis induces protective immunity

Por: Bello, J (Bello, J.)[1]; Saez, D (Saez, D.)[1]; Escalona, E (Escalona, E.)[1]; Velozo, P (Velozo, P.)[2]; Santiviago, CA(Santiviago, C. A.)[2]; Contreras, I (Contreras, I.)[2]; Onate, A (Onate, A.)[1]

EPIDEMIOLOGY AND INFECTION
Volumen: 144
Número: 2
Páginas: 247-256
DOI: 10.1017/S095026881500120X
Fecha de publicación: JAN 2016
Ver información de revista

Resumen

Salmonella Enteritidis is the main cause of foodborne salmonellosis worldwide. The limited effectiveness of current interventions against this pathogen has been the main incentive to develop new methods for the efficient control of this infection. To investigate the use of DNA vaccines against S. Enteritidis in humans, immune responses stimulated by two plasmids containing the genes designated SEN1002, located in the pathogenicity island SPI-19 and encoding a Hcp protein involved in transport mechanisms, and SEN1395, located in the genomic island Phi SE14 and encoding a protein of a new superfamily of lysozymes, were evaluated. Humoral and cellular responses following intranasal immunization of two groups of BALB/c mice with the plasmids pV1002 and pV1395 plus adjuvant were evaluated and it was observed that the IgG2a/IgG1 ratios were sixfold higher than control groups. Both plasmids stimulated specific secretory IgA production. Increased proliferation of lymphocytes and IFN-gamma production were detected in both experimental groups. DNA-vaccinated mice developed protective immunity against a virulent strain of S. Enteritidis, with nearly 2 logs of protection level compared to the negative control values in the spleen. Therefore, DNA vaccines are efficient at stimulating cellular and humoral immune responses at systemic and mucosal levels.

Palabras clave

Palabras clave de autor:DNA vaccines; immune response; Salmonella Enteritidis; SEN1002; SEN1395
KeyWords Plus:VI SECRETION; SUPEROXIDE-DISMUTASE; BRUCELLA-ABORTUS; TYPHIMURIUM; INFECTION;LYMPHOCYTES; VACCINATION; ADJUVANTS; RESPONSES; VIRULENT

Información del autor

Dirección para petición de copias: Onate, A (autor para petición de copias)

Univ Concepcion, Fac Biol Sci, Dept Microbiol, Lab Mol Immunol, Concepcion, Chile.

Direcciones:

[1] Univ Concepcion, Fac Biol Sci, Dept Microbiol, Lab Mol Immunol, Concepcion, Chile

[2] Univ Chile, Sch Chem & Pharmaceut Sci, Dept Biochem & Mol Biol, Microbiol Lab, Santiago, Chile

Direcciones de correo electrónico:aonate@udec.cl

Financiación

Entidad financiadora	Número de concesión
PBCT (CONICYT, Chile)	ADI-08/2006
World Bank	
FONDECYT	1130093 1110172 1100092

Ver texto de financiación

Editorial

CAMBRIDGE UNIV PRESS, 32 AVENUE OF THE AMERICAS, NEW YORK, NY 10013-2473 USA

Categorías / Clasificación

Áreas de investigación: Public, Environmental & Occupational Health; Infectious Diseases

Categorías de Web of Science: Public, Environmental & Occupational Health; Infectious Diseases

Información del documento

Tipo de documento: Article

Idioma: English

Número de acceso: WOS:000368638100004

ID de PubMed: 26113459

ISSN: 0950-2688

eISSN: 1469-4409

Información de la revista

- **Impact Factor:** Journal Citation Reports®

Otra información

Número IDS: DB6PW

Referencias citadas en la Colección principal de Web of Science: 38

Veces citado en la Colección principal de Web of Science: 0