Mohammad Ahanjan et al., Madridge J Vaccines. 2017
http://dx.doi.org/10.18689/2638-1966.a1.008

2nd International Conference and Expo on
Vaccines and Vaccination
November 20-21, 2017 Dubai, UAE

Preparation and Immunological Characterization of Conjugated PIA-rSesC as candidate vaccine against biofilm forming Staphylococcus epidermidis

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Staphylococcus epidermidis as an opportunistic pathogen and the leading cause of morbidity and premature mortality in patients with medical .Developing a strategy to raise opsonic antibodies against polysaccharide intracellular adhesion (PIA) could be promising for elimination of colonizing and biofilm forming S.epidermidis. Following the purification of truncated resist protein and PIA, for the first time, PIA were conjugated to recess as a safe carrier to increase the immunogenicity of PIA and we evaluated it efficacy in mice. Construction of the conjugate was analyzed by using Fourier Transform Infrared spectroscopy (FTIR) and Proton Nuclear Magnetic Resonance spectroscopy (H1- NMR) methods. Afterwards, the immune response was evaluated by measuring total IgG, IgG2a, and IgG2b titers. Immunization of mice with the PIA-rSesC conjugate raised the levels of opsonic antibodies, and the vaccinated mice were protected.when challenged intravenously by wild type S. epidermidis strain 1457. Further studies indicated that the conjugated vaccine could eliminate S. epidermidis biofilm formation in in vitro and in vivo assays. This survey confirms the proposal that immunization of mice with PIA-rises conjugate vaccine could be secure and protected against Staphylococcus epidermidis infection.

Biography:

Dr. Mohammad Ahanjan, born in 1963, Ph.D of Microbiology, associate professor and scientific member of Microbiology and Virology department of medicine faculty of Mazandaran university of medical sciences and member of Infectious Diseases Research Center with focus on nosocomial infection.Manager of Education development office (EDO) of medicine faculty and referee of some scientific journals.Submitted some antibacterial resistant new Genes in NCBI (AHJ.MAZUMS, TOILEE.IR).