Debaki R Howlader, J Vaccines Vaccin 2018, Volume 9
DOI: 10.4172/2157-7560-C1-062

Bivalent outer membrane vesicles based immunogen of *S. typhi* and Paratyphi A induce adaptive immunity and protective efficacy in mice

Debaki R Howlader
National Institute of Cholera and Enteric Diseases, India

Salmonella typhi and *Salmonella* Paratyphi A are the leading causative agents of enteric fever which causes morbidity and mortality worldwide. In this paper, we are focusing on the development of a novel bivalent typhoidal Outer Membrane Vesicles (OMVs) based immunogen against enteric fever. We have isolated *Salmonella typhi* and Paratyphi A OMVs and also characterized OMVs associated antigens. Then we immunized the adult mice with three doses of our newly formulated bivalent immunogen orally (25 µg/200 µl). After three doses of oral immunization, we found our immunogen can significantly induce humoral response; LPS, Vi-polysaccharide specific serum IgG, IgA, IgM as well as induce Th1 and Th17-cell mediated immunity. We also found bivalent OMVs immunization can prevent heterologous Salmonella strains mediated systemic infection in adult mice model. We determined that the protective immune responses depend on the humoral and cell-mediated immune response. Furthermore, we have evaluated the mode of protective immune response which was carried out by anti-OMVs antibody by significantly inhibiting bacterial motility and mucin penetration. Taken together these findings suggest our bivalent immunogen could be used as a novel candidate vaccine against enteric fever.

Biography

Debaki R Howlader completed his MSc in Microbiology and joined National Institute of Cholera and Enteric Diseases (NICED), India as a Junior Research Fellow to carry out PhD in October, 2014. He is a Senior Research Fellow in the same institute since January, 2017. Currently, he is working in the Department of Veterinary Medicine, University of Cambridge as a Visiting Research Scholar. His research interest is to use Outer Membrane Vesicles (OMV) from typhoidal salmonellae and to check their ability to be used as a vaccine.

debaki.r.howlader@gmail.com

Notes: