

A novel *Salmonella* Typhi protein as subunit vaccine

- The vaccine subunit is comprising of recombinant outer membrane protein T2544 of *Salmonella* Typhi, which confers humoral, cell-mediated and intestinal mucosal (secretory IgA) immunity against *Salmonella* Typhi.
- **Milestones achieved:**
 - **IP status:** An Indian patent has been granted and patent number is 283894.
 - **Validation:** Pre-clinical validation of the candidate vaccine has been done and results showed that
 - a. Candidate vaccine induces humoral immune response against *S. Typhi* in a mouse model (both serum IgG and IgA and intestinal secretory IgA);
 - b. Both active immunization (with T2544) and passive immunization (anti-T2544 antibodies) confers protection against *S. Typhi* challenge in a mouse model;
 - c. Candidate vaccine also induces cell mediated immune response (both B-cells and T-cells) against *S. Typhi* in a mouse model.
 - d. The immunological memory against *S. Typhi* is also generated in the vaccinated mice
 - **Up-scaling:** Standardization of recombinant protein expression in the medium containing no animal components and up-scaling of the expression is under process.
 - **USP of technology:**
 - i) This candidate vaccine is safe and efficacious, and expected to be strongly immunogenic in children due to its protein nature.
 - ii) The major advantage of the candidate vaccine over the available conjugate vaccines is that it will protect against Vi-negative *S. Typhi* strains and perhaps also against *S. Paratyphi* strains.
- Technology was developed at National Institute of Cholera and Enteric Diseases, Kolkata.