A fusion construct containing Salmonella Typhi outer membrane protein as a candidate vaccine

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About the Technology: Cholera toxin B subunit was genetically fused with Salmonella Typhi/ Paratyphi outer membrane protein T2544, followed by expression of the recombinant fusion protein in E. coli and purification by affinity chromatography.

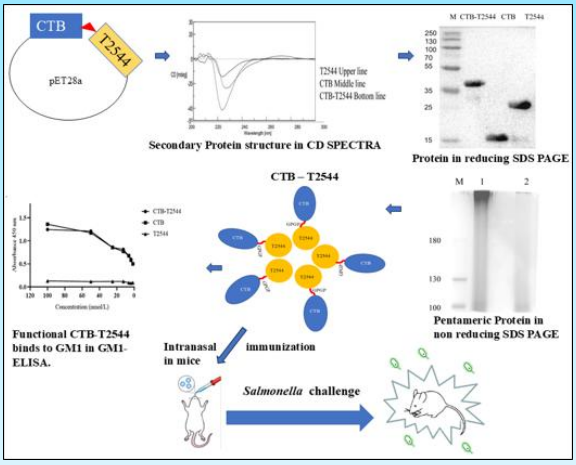
Technology ID: PM-TT-IM-2026-Apr-45
Lead Inventor: Dr. Santasabuj Das
Institute: ICMR – National Institute for Research in Bacterial Infections
Technology Domain: Vaccine
Disease Area (Broad): Enteric infections – Typhoid and Paratyphoid fever

Need and utility of the Technology from Public health perspective:

Current injectable vaccines induce limited mucosal immunity and do not protect against paratyphoid or Vi-negative strains. This intranasal vaccine addresses the need for strong mucosal and long-term protection in endemic regions.

Technology Readiness level (TRL):

TRL-4: Validated at in house laboratory



Validation Status and Study Outcome:

- Inhouse Validation –Complete
- Efficacy Outcome: Demonstrated 70% protection against S. Typhi and 80% against S. Paratyphi A. Induced strong mucosal IgA, systemic IgG, and memory T- and B-cell responses

Market Potential: A needle-free, mucosal vaccine offers strong potential for endemic countries and future public immunization programs.

Unmet need: High burden of typhoid and absence of paratyphoid vaccines create a major gap

Publication: NA

IP Filing: Patent application filed