

## Expression and Immunogenicity of Salmonella Typhi Outer Membrane Protein F (OmpF)

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**Background & Objectives:** Typhoid fever remains a major public health problem in developing countries. As yet, little is known about the microbial factors that determine pathogenicity and those that elicit a protective immune response in humans with typhoid infection. The outer membranes of gram-negative Enterobacteriaceae contain pore-forming proteins called porins. The current study was undertaken to assess the ability of the outer membrane protein F (OmpF) of *Salmonella typhi* to induce a humoral immune response in humans with typhoid fever by using enzyme-linked immunosorbent assay techniques (ELISA). Several investigators have shown that OmpF contains an important protective epitope therefore OmpF, like porins and LPS, is also a target of the host immune response.

**Methods:** OmpF protein of *S.typhi* PTCC 1609 was cloned, expressed and purified. Mice were immunized with 10mg of recombinant protein on days 0,15,30 and 45, by injecting 0.1ml of antigen/adjuvant mixture. Blood samples were collected 10 days post-injection. An additional 10 BALB/c mice served as a control group. Quantitation of antibodies raised against recombinant OmpF was performed by ELISA.

**Results:** Comparison of high titer anti OmpF IgG in control and test groups shows that the recombinant OmpF produced a high titer ( $P < 0.001$ ) of IgG in BALB/c in response to 3 injection routes of intraperitoneal, subcutaneous and intramuscular with intraperitoneal injection leading to higher antibody titer.

**Conclusion:** Marked IgG responses in mice immunized with OmpF support the immunogenic nature of recombinant OmpF suggestive of its application as a good immunogen for vaccine studies.

**Keywords:** *Salmonella Typhi*; Protein F (OmpF); Immunogenicity