

Characterization of recombinant flagellin (rFliC) produced by *Lactobacillus rhamnosus*

Richard P^{1*}, Nirmala P^{1*}

¹PG and Research Department of Microbiology, Mohamed Sathak College of Arts and Science, Chennai – 600119, Tamilnadu, India.

*Corresponding author e.mail: nirmala_dineshkumar@yahoo.com, microsrich@gmail.com

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ABSTRACT

Flagellin is the major protein constituent of *Salmonella sp.* flagella, and a mammalian toll-like receptor 5 (TLR5) agonist. Previous research indicates that antibodies against the FliC protein can provide protection against *Salmonella* challenge in mice. In our study we cloned the flagellin (FliC) gene of *Salmonella enterica serovar Typhi* into *Lactobacillus rhamnosus* (MTCC 1408). In the present study, we characterized the recombinant flagellin (rFliC) produced by *L. rhamnosus*. The rFliC protein was secreted in the culture medium. It was purified and separated by SDS-PAGE. The results indicated that the rFliC containing 527 amino acids with a predicted molecular mass of 55.3 kDa. The immunogenicity of the protein was recognized by the reaction with antibodies produced by typhoid patients. rFliC protein was reacted with the typhoid antiserum. The findings of the present study indicated that the *L. rhamnosus* expressing the FliC protein could be used as a vaccine against *Salmonella* infections. Preclinical studies are in progress to test the in vivo efficacy and safety profiles of the recombinant FliC-expressing *L. rhamnosus* as an oral typhoid vaccine.