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Characterization of hypothesized outer membrane protein of *Leptospira interrogans* Copenhageni

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The focus of the present leptospiral research is the identification and characterization of the selective outer membrane proteins (OMPs). Due to their location, leptospiral OMPs are likely to be important in host–pathogen interactions as many of them are the interface for cellular communication and gatekeepers for ions or substrate transport across cell membranes. Key virulence factors for alive *Leptospira interrogans* in its host are OMPs and LPS layer which the host encounters as a foreign protein and evokes strong immune response. LIC20035, an outer membrane lipoprotein of 50 kDa size and LIC12693, an outer membrane efflux protein of 63.5 kDa have been previously shown to be expressed in the *in vitro* cultured *Leptospira* (IVCL). LIC20035 antigen was also found to be reactive with anti-outer membrane vesicle on the immunoblot of IVCL; thus both these genes were selectively targeted for characterization as a potential diagnostic candidate. In the present study, both these genes LIC20035 and LIC12693 from *Leptospira interrogans* serovar Copenhageni genome have been cloned and expressed in *Escherichia coli* using pET expression system. Recombinant proteins were purified using Ni-affinity chromatography and antibodies were generated against it in BALB/c mice. ELISA was performed using the raised serum to check the antibody titer before proceeding for characterization of these selective membrane proteins. The gene expression analysis of both the selective genes was done by performing RT-PCR and immunoblot at the transcription and translation level with the IVCL at 29^0C. Phase separation experiments performed with Triton X-114 gave an idea of the possible localization of the LIC20035 gene in the IVCL culture. The present study is aimed to identify a novel OMP which could serve as a vaccine or diagnostic candidate.

Biography

Karukriti Kaushik Ghosh has completed her MSc in Microbiology from R T M Nagpur University in 2012 and she was been awarded with INSPIRE Fellowship by Department of Science & Technology (DST), Govt. of India. She has taken summer training from Centre for Cellular & Molecular Biology (CCMB), Hyderabad in 2011. She is currently pursuing her PhD under the supervision of Dr. Manish Kumar in the Department of Biosciences & Bioengineering, Indian Institute of Technology-Guwahati, Assam.

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