



Functional characterization of UBA-like domains of MyosinXXI from *Leishmaniadonovani*

Name: Rani Bajaj^{1,2}, S. Thiyagarajan¹, Chittar M. Gupta¹¹ Institute of Bioinformatics and Applied Biotechnology, Bengaluru, Karnataka, India.² Manipal Academy of Higher Education, Manipal, Karnataka, India.

Myosins are a superfamily of actin dependent molecular motors, which in general are composed of a conserved N-terminus motor domain which interacts with actin and has ATPase activity, Neck region and C-terminus tail domain of varying sequence, length and motif/domain composition. Generally, tails of myosin determine their localization and function by interacting with other proteins/vesicles. *Leishmania* are microscopic, unicellular protozoa which causes Leishmaniasis, a disease transmitted to humans by the bite of infected sandflies. *Leishmania* promastigotes express an unconventional myosin, myosinXXI, which distributes throughout the cell with predominant localization at the proximal end of flagellum, which in turn is solely determined by its tail region. MyosinXXI is essential for its survival where it is involved in growth, morphogenesis, flagellum assembly, motility and trafficking activities. The tail region of myosinXXI possesses two ubiquitin associated (UBA)-like domains of unknown functions. Generally, UBA domain is a stretch of about 35 - 45 amino acids and are found in various proteins known to participate in ubiquitin/proteasome pathways, cell cycle regulation and DNA repair. A rational approach with deletion constructs has been applied to dissect the role of UBA-like domains in localization and function of myosinXXI. The detailed analysis of GFP-myosinXXI tail deletion constructs by fluorescent microscopy revealed that UBA-like domains determine flagellar base localization of myosinXXI. Further, it was elucidated that UBA-like domains are crucial for growth, flagellum assembly and dynamics, and cell division cycle of the parasite, where they are involved mainly in G2/M phase progression.

Biography Rani Bajaj is a senior research fellow working at IBAB, Bengaluru under the guidance of Prof. C.M. Gupta. She is registered for Ph.D. at MAHE, Manipal with Dr. S. Thiyagarajan being her guide. She was a recipient of fellowship from university grant commission, India.
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