**Abstract**

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|  | Endocytic trafficking is a multistep process where cargo initially gets internalized at the plasma membrane and eventually enters early endosomes. The cargo from here either moves to late endosomes/lysosomes for degradation or gets recycled back to the plasma membrane. Cargo packaging in vesicles, budding of vesicles from different endocytic compartments, and fusion of these vesicles with early or late endocytic compartments take place in a highly dynamic and regulated manner. The various steps of endocytic trafficking regulated by small G proteins of Ras superfamily, which includes Rabs, Arfs, and Arf-like proteins (Arls). Our lab is mostly exploring the role of Arf like small G protein Arl8b and its effector in regulating cargo trafficking to lysosomes. A subset of Arl8b effectors contain RUN-domain via which it interacts with Arl8b. We have recently identified a novel RUN domain-containing Arl8b effector, which regulates lysosome composition and in turn, its function. Upon knockdown of this gene, we could see enlarged lysosomes along with the change in lysosomal hydrolases expression and levels implicating a lysosomal stress condition. Cation independent mannose-6-phosphate receptor (CI-M6PR) positioning also seems to be changed upon depletion of the effector, which depicts that the recycling of the receptor is being hampered. Therefore, our study signifies the importance of this effector in the sorting of CI-M6PR.Our data also suggests that the recycling of CI-M6PR mediated by this effector is dynein-dynactin complex dependent |

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