

UNT SEMINAR

Presented by the Department of Biological Sciences

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Trafficking of Tumor Suppressors



Cell polarity is a fundamental process required for the function of many cell types. Its misregulation frequently leads to developmental abnormalities and diseases such as cancer. A key question arises: what determines this polarity? PIP₃ has emerged as an essential cellular polarity-determining factor in many cell types, including neurons, epithelial cells, and migrating cells. Recently, we demonstrated that PIP₃ is transported by a molecular motor-dependent trafficking mechanism. GAKIN/KIF13B, a kinesin-3 family protein, contributes the PIP₃ vesicle trafficking along microtubules, and the transport of PIP₃ is essential for the maintenance of the functional asymmetry of the neurons. Further understanding of the molecular mechanisms of cell polarity is likely to identify novel pharmacological targets of therapeutic importance for neurodegenerative diseases as well as brain tumors.

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