

Research Theme: Cell Biology
Research Project Title: The effect of nutrient on the membrane trafficking
Principal Investigator/Supervisor: Asst. Prof. Lei Lu
Co-supervisor/ Collaborator(s) (if any):
Project Description
<p>a) Background:</p> <p>Nutrient, including amino acids, glucose and other carbon sources, is the most fundamental resource for the growth and proliferation of cells. Nutrient not only provides building materials for the biosynthesis but also initiates multiple signaling pathways such as mTOR pathway to regulate metabolic activities of cells. We recently discovered that amino acids can regulate the endocytic Golgi membrane trafficking via a cascade of signaling pathway (Shi et al., 2018). Now the question is that if amino acids can affect the endosomal membrane trafficking. Endosomal membrane trafficking plays important roles in the cell surface presentation of receptors, many of which are highly relevant to signal transduction and human diseases. Our work therefore can potentially link nutrient to signaling and diseases via the membrane trafficking.</p>
<p>b) Proposed work:</p> <p>There are two aims for this project.</p> <ol style="list-style-type: none">1) We will test if nutrient affects various endosomal trafficking pathways by using cell-based assays.2) Once the effect is confirmed, we will elucidate the signaling pathway behind.
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