TEMASEK LIFESCIENCES LABORATORY

25 MARCH 2025 TUESDAY 3:00 PM TLL AUDITORIUM LEVEL 1

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Scan for Address

ALL ARE WELCOME

OSH PROTEIN-MEDIATED PLASMA MEMBRANE ERGOSTEROL FOR CELL POLARITY IN SCHIZOSACCHAROMYCES POMBE

Lipid transfer proteins (LTPs) play a significant role in transporting lipid molecules across cellular compartments. The oxysterol-binding protein-related (Osh) proteins constitute a key family of LTPs in eukaryotes. Structural analyses have elucidated the capacity of Osh proteins to mediate the exchange of diverse lipid species, including phosphoinositides, phospholipids, and sterols. While the lipid transfer activity of Osh proteins is crucial for maintaining lipid homeostasis, its precise mechanistic link to cellular function remains unclear. My findings emphasize the significance of Kes1 in maintaining the sterol pool within the plasma membrane (PM). Interestingly, cells deficient in both Kes1 and Osh2 exhibit compromised viability, and my analysis reveals a clear defect in polarized growth. Furthermore, additional evidence suggests a correlation between reduced sterol levels and defects in cell polarity. In conclusion, my study underscores the critical role of Osh proteins in preserving sterol homeostasis, thereby influencing cell morphology and growth in fission yeast.