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Sphingolipids mediate polar sorting of PIN2 through phosphoinositide consumption at the trans-Golgi Network

Abstract:

The lipid composition of organelles acts as a landmark to define membrane identity and specify subcellular function. Phosphoinositides are anionic lipids acting in protein sorting and trafficking. In this study, we found that sphingolipids mediate the consumption of phosphatidylinositol-4-phosphate (PI4P) rather than local PI4P synthesis at the trans-Golgi network (TGN), and that this mechanism is involved in the polar sorting of the auxin efflux carrier PIN2 at the TGN. Our data identified a new mode of action of sphingolipids in lipid interplay at the TGN during protein sorting.



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