Atlastin Mediated Membrane Tethering is Critical for Cargo Mobility and Exit from the Endoplasmic Reticulum

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In the early secretory pathway, newly synthesized proteins undergo folding and modifications and then leave the ER through COPII-coated vesicles. How these processes are coordinated and maintained are important but mostly unclear. We show here that ATL, a GTPase that connects ER tubules, controls ER protein mobility and regulates cargo packaging and coat assembly of COPII vesicles. The tethering and fusion activity by ATL likely maintains tension and other necessary parameters for COPII formation in ER membranes. These findings reveal a role of ER shaping in the early secretory pathway and provide insight into behaviors of ER exportation.