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Abstract

Compartmentalization and Trafficking in Endoplasmic Reticulum Protein Quality Control †

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Abstract: Following translocation into the rough endoplasmic reticulum (ER), secretory proteins undergo a series of folding, maturation, compartmentalization and trafficking events. These are finely tuned to avoid misfolded protein accumulation and the consequent ER stress. Misfolded proteins and components of the ER quality control and ER-associated degradation (ERAD) machineries concentrate in mammalian cells in the pericentriolar ER-derived quality control compartment (ERQC), a staging ground for ERAD. We have recently determined that, surprisingly, trafficking to the ERQC and delivery to ERAD are dependent on COPII-coated vesicle transport and that they can be retrieved to the peripheral ER in COPI-coated vesicles.

Keywords: endoplasmic reticulum; ERAD; vesicular trafficking

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