Lysosomal-driven clearance of ER subdomains

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The endoplasmic reticulum (ER) is site of proteins, lipids and oligosaccharides synthesis, calcium storage and detoxification of harmful products. It is a plastic organelle, whose size and activity can be adapted to cellular needs. Unfolded protein responses (UPR) enlarge the ER and fill it with biosynthetic enzymes, molecular chaperones, folding and degradation factors. Reticulophagy/ER-phagy ensures lysosomal clearance of excess ER or of ER portions that contain toxic or aged material.

Here, I will give an overview on our attempts to better understand and mechanistically dissect the receptor-regulated ER-phagy pathways activated by mammalian cells to remove excess ER during recovery from ER stresses (recov-ER-phagy) and to remove ER portions containing toxic polypeptides (ER-to-lysosome-associated degradation, ERLAD).