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Lipid droplet degradation by autophagy

Lipid droplets play a crucial role in storing energy in cells, and their breakdown is essential during times of scarcity to provide necessary lipids for energy and membrane construction. While pathways such as lipolysis and lipophagy are known to mediate lipid droplet degradation, recent research has revealed yet another pathway, where lysosomes directly target and degrade lipid droplets. This indicates the possible existence of other degradation mechanisms to be uncovered. Our current study identified indeed another mechanism for lipid droplet degradation, which is triggered by prolonged starvation and targets large micrometric droplets. This pathway is mediated by the direct action of autophagic proteins on the surface of lipid droplets. In this presentation, I will discuss our findings on this novel mechanism and explore the questions it raises about the interplay between autophagy and lipid droplets.