Repurposing the peroxisome to compartmentalize engineered metabolism

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Abstract:

I will discuss our efforts towards the long-term goal of constructing a synthetic organelle in yeast that can be designed to the needs of the engineer. We have specifically chosen to repurpose the peroxisome as this organelle is not required for cell viability using conventional fermentation media. Further, multiple organisms have evolved different uses for the peroxisome. We have engineered an improved, modular peptide targeting sequence for importing heterologous cargo, characterized the small molecule permeability of the peroxisome membrane, and employed the organelle for the functional compartmentalization of engineered metabolism.

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