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### Optimal Protein Reclamation with Maxmass

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#### Abstract Text:

Macromolecular crowding and ribosomal capacity are biophysical constraints on the ability of microbial cell factories to produce proteins of interest at sufficient titer, rate and yield to become economically viable [1,2]. To address these issues directly, the Cellular Capacity Optimization project aims to iteratively knock out nonessential regions of the genome that code for highly expressed proteins in order to reclaim that protein capacity for engineered proteins. In order to rationally guide this process, we have developed MaxMass, an algorithm for iterative reduction of the host proteome without replacement. MaxMass automatically calculates which genes are essential for the current environment and iteration, and uses these essential genes as constraints on the size of the knockout region [3], while optimizing for maximum protein mass reclamation.

Title:

Optimal Protein Reclamation with Maxmass

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Preferred Presentation Format:

Rapid Fire

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