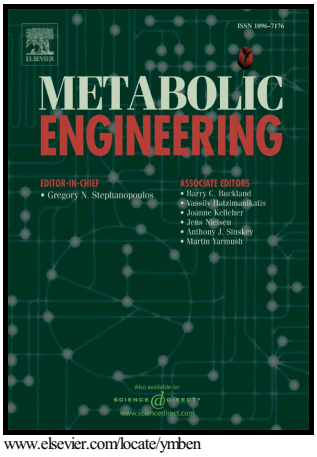

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A Mathematical model to guide Genetic Engineering of Photosynthetic Metabolism

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Abstract

The optimization of algae biomass productivity in industrial cultivation systems requires genetic improvement of wild type strains isolated from nature. One of the main factors affecting algae productivity is their efficiency in converting light into chemical energy and this has been a major target of recent genetic efforts. However, photosynthetic productivity in algae cultures depends on many environmental parameters, making the identification of advantageous genotypes complex and the achievement of concrete improvements slow.