

GMOs and carbon fixation: Trapping CO₂ in engineered plants and trees to convert it to energy

Genetically modified organisms (GMOs) may outgrow Frankenfood production. Soon, they may take over Frankenfixation, the industrial conversion of atmospheric carbon dioxide (CO₂) to biomass. That's the word from the U.S. Department of Energy's Joint Genome Institute (JGI), which has overseen an effort to stitch together an artificial metabolism from the bits and pieces of biosynthetic pathways that were once scattered across the three kingdoms of life.

[S]cientists from the Max-Planck-Institute (MPI) have reverse engineered a novel pathway that is based on a new CO₂-fixing enzyme that is nearly 20 times faster than the most prevalent enzyme in nature responsible for capturing CO₂ in plants by using sunlight as energy.

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The broader significance...is to dramatically illustrate the increased role of "engineering thinking" in biotechnology as the accelerated characterization of the biological "parts list" emerging from high-throughput genome sequencing furnishes greater opportunities to reconstruct by design the capacities in living organisms that address DOE mission needs in bioenergy and environment.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [GMO for Carbon Fixation a Natural Destination for an Unnatural Pathway](#)