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Cyanobacterium Capable of Secreting Fatty Acids

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Inventors

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Invention Description

Cheap renewable energy is a major goal of many countries. Although wind, solar, and hydro power are supplements to the power grid, they cannot be efficiently converted into the *liquid* biofuels needed for cars, ships, and planes. In contrast, photosynthetic microbes are not only the most efficient organisms for solar energy conversion, but they have been shown to be able to produce fatty acids capable of being made into liquid biofuels. Based on this, it is expected that there will be a high demand for microbes capable of producing fatty acids, especially ones with minimal processing and extraction costs.

Researchers at the Biodesign Institute of Arizona State University have developed a cyanobacterium that secretes fatty acids during the stationary growth phase and is capable of induced autolysis. Consequently, the invention also provides a method of producing and harvesting the fatty acids in the presence of sunlight and CO_2.

There is an understandable trend away from using foods crops as the primary feedstock for energy production. The use of photosynthetic bacteria that secret the fatty acid precursors to liquid biofuel represents an attractive alternative.

Potential Applications

- Biofuels
- Bioplastics

Benefits and Advantages

- Photosynthetic organisms typically out produce any plant based biofuel system.
- Production is regulated and controllable at the genetic level.
- Algae and cyanobacteria growth is renewable and efficient.

Intellectual Property Status:

Patent Pending

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