

Cyanobacterial Strain and Culture Method for Photoautotrophic L- Phenylalanine Production

Track Code: 2021-MORG-69501

Categories:

- Biotechnology
- Chemical Engineering

Keywords:

- Biochemical Production
- Chemical Engineering
- L-Aromatic Amino Acid
- L-Phenylalanine
- Random Mutagenesis

Researchers at Purdue University have discovered a new resource-efficient, environmentally friendly, and cost-effective method to produce L-phenylalanine. L-phenylalanine is an amino acid used in animal feed and artificial sweeteners. Currently, L-phenylalanine is produced by fermentation of glucose using *E. coli* and *C. glutamicum* bacteria. This method relies on agriculture for its supply of raw materials such as glucose thereby competing with resource availability for food production. The method developed by Purdue researchers does not rely on glucose obtained from production agriculture. Instead, it permits production of L-phenylalanine using liquid waste, in non-arable areas like raceway ponds. This method uses an engineered fast growing blue green algae strain that can produce 7-times more L-phenylalanine compared to the other cyanobacteria.

Advantages:

- Inexpensive raw material
- Environmentally friendly
- Resource-efficient

Potential Applications:

- Biochemicals
- Biofuel precursor
- Animal feed
- Aquaculture

Technology Validation: The researchers tested and selected the bacterial strain that produces the most L-phenylalanine.

People:

- Morgan, John A (Project leader)
- Deshpande, Arnav

Intellectual Property:

Application Date: July 8, 2021
Type: Provisional-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Application Date: (None)
Type: Utility Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

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