

High Glucose Uptake E. Coli Strain

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TECHNOLOGY DESCRIPTION

In the push towards biofuels and biodegradable products, efficient growth within plant-based substrates will become more prevalent. Using a new strain design method, UC San Diego inventors have invented a new strain of *E. coli* that experiences high levels of glucose uptake fermentatively relative to other known strains with a weight yield of 98.4 ± 3.4 percent and with an uptake rate of 43.1 ± 1.3 mmol gDW-1 hr-1. An additional advantage is the strain's ability to uptake xylose (though not at the same high rate).

The utility of this new strain is in higher rate fermentation processes. The increase in the uptake of glucose potentially provides an increase in the production rate of D-lactic acid or other desired compounds. The production of D-lactic acid is a pre-cursor step to the production of biodegradable plastics (i.e. polylactic acid).

The research leading up to this invention is described in papers located at http://gcrg.ucsd.edu/Researchers/Feist_Publications.

The design methodology for this strain can also be applied to produce other strains with other attractive properties.

RELATED CASES

SD2009-239

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,932,598	04/03/2018	2009-238

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OTHER INFORMATION

KEYWORDS

fermentation, plastics

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Industrial/ Energy
- ▶ **Materials & Chemicals**
 - ▶ Biological
 - ▶ Other

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