



Modified Yeast Ferments Biomass Xylose

WARF: P120307US01

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a genetically engineered yeast strain better able to metabolize xylose.

Overview

Producing biofuel on a useful scale requires efficient fermentation of cellulosic plant material. The sugars glucose and xylose are the most abundant carbohydrates found in hemicellulose. The yeast most commonly utilized for industrial fermentation – *Saccharomyces cerevisiae* – can ferment glucose but not xylose.

By studying the genomes of wild strains of yeast capable of utilizing both sugars, researchers hope to identify genes capable of enhancing fermentation. The ultimate goal is to create a genetically modified 'super-strain' ideal for industrial ethanol production.

The Invention

A UW–Madison researcher and others have developed an *S. cerevisiae* strain genetically engineered with xylose utilization genes from another yeast, *Scheffersomyces stipitis*. The new strain (GLBRCY35) has been made to express *S. stipitis* genes *XYL1*, *XYL2* and *XYL3*, which are known to improve xylose fermentation.

Applications

- Further development for industrial ethanol production
- Plastics manufacturing and biomaterials

Key Benefits

- Strain is better at fermenting xylose than its non-modified parent.

Additional Information

Related Technologies

- [WARF reference number P100228US02 describes recombinant yeast strain with improved ethanol tolerance.](#)

Tech Fields

- [Clean Technology : Biobased & renewable chemicals & fuels](#)

For current licensing status, please contact Mark Staudt at mstaudt@warf.org or 608-960-9845