

Improved Xylan Extraction

Tech ID: 23950 / UC Case 2010-975-0

FULL DESCRIPTION

Pam Ronald and a team of researchers at the Joint BioEnergy Institute (JBEI) have identified a rice acyltransferase gene that, with increased expression, improves both the extraction of xylan and saccharification without significant changes in plant health, seed mass and biomass, compared to wild type plants.

Xylan, an abundant polysaccharide, offers a significant amount of stored energy for biofuel production. Yet, most of the enzymes that synthesize xylan have not been identified, and none of the enzymes specific to grass xylan synthesis have been identified. This technology is the first demonstration that increased expression of a native plant gene modifies cell wall content and affects cell wall digestibility.

The Joint BioEnergy Institute (JBEI, www.jbei.org) is a scientific partnership led by the Lawrence Berkeley National Laboratory and including the Sandia National Laboratories, the University of California campuses of Berkeley and Davis, the Carnegie Institution for Science and the Lawrence Livermore National Laboratory. JBEI's primary scientific mission is to advance the development of the next generation of biofuels.

APPLICATIONS

- Biofuel production

FEATURES/BENEFITS

- Facilitates xylan extraction

RELATED MATERIALS

- Yarris, Lynn. A Better Route to Xylan. Berkeley Lab News Center, November 12, 2012. - 11/12/2012
- Chiniquy, D., Sharma, V., Schultink, A., Baidoo, E., Rautengarte, C., Cheng, K., Carroll, A., Ulvskov, P., Harholt, J., Keasling, J.D., Pauly, M., Scheller, H.V., Ronald, P.C. XAX1 from glycosyltransferase family 61 mediates Xylosyl transfer for rice xylan. Proceedings from the National Academy of Sciences (PNAS), October 16, 2012, Vol. 109, No. 42, 17117-17122. - 10/16/2012

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,193,133	12/07/2021	2010-975
United States Of America	Issued Patent	10,450,578	10/22/2019	2010-975
United States Of America	Issued Patent	9,708,624	07/18/2017	2010-975

Additional Patent Pending

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Novel Peptide Capable of Stimulating Disease Resistance in Plants
- Improved Saccharification Efficiency by Inhibiting a Xylosyltransferase
- Energy Crops Engineered for Increased Sugar Extraction through Inhibition of snl6 Expression

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OTHER INFORMATION

KEYWORDS

xylan extraction,
saccharification, biofuel

CATEGORIZED AS

- Agriculture & Animal Science
- Plant Traits

RELATED CASES

2010-975-0

