

Lignases and Reductases for Biomass Conversion

Track Code: 65927

Categories:

- Agriculture
- Green Technology

Keywords:

- Agriculture
- Biofuels
- Energy
- Ethanol
- Green Technology

Lignin is one of the most abundant natural polymers constituting one-fourth to one-third of the total dry weight of physiologically mature plants, however, it is currently a barrier to the production of second generation, non-food ethanol. Lignin limits access to plant cell wall sugars that can be fermented into bioethanol, and it has a negative impact on overall conversion efficiency.

Purdue University researchers have developed digestive enzymes from termites as lignin targets that enable greater release of fermentable sugars. Utilization of these enzymes has the capacity to increase the yield and conversion efficiency of biomass to ethanol. These enzymes can also have applications in the production of value-added byproducts, as well as more sustainable plant-based fossil fuel additives.

Advantages:

- Breaks lignocellulose down into more accessible sugars for ethanol fuel production
- Increases efficiency of biomass to ethanol conversion

People:

- Scharf, Michael Eric (Project leader)
- Sethi, Amit

Intellectual Property:

Application Date: August 20, 2014

Type: NATL-Patent

Country of Filing: United States

Patent Number: 9,441,256

Issue Date: September 13, 2016

Application Date: February 11, 2013

Type: PCT-Patent

Country of Filing: WO

Patent Number: (None)

Issue Date: (None)

Application Date: February 23, 2012

Type: Provisional-Patent

Country of Filing: United States

Patent Number: (None)

Issue Date: (None)

Contact OTC:

Purdue Office of Technology Commercialization
The Convergence Center
101 Foundry Drive, Suite 2500
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org