

Genetically Engineered Plants Using MYB Transcription Factor

Track Code: 65676

Categories:

- Agriculture

Keywords:

- Agriculture
- Agrobiosciences
- Biotechnology
- Plant Genetics

Agrobacterium-mediated transformation is the most widely used technique for generating transgenic plants; however, transformation efficiency has not advanced, further limiting the enhancement of major crops through biotechnology. This is due to inhibitors that resist foreign means of genetic transformation. This prohibits the development of crop plants with important traits that could increase crop productivity under less than optimal growth conditions.

Researchers at Purdue University have developed the first known regulator of plant transformation. An Arabidopsis MYB transcription factor (MTF) increases the susceptibility of Agrobacterium transformation, allowing for more efficient plant transformation to generate genetically engineered plants. Since MTF is a diverse family of transcription factors, this technology could be used in diverse plant species to generate resilient plants that are suitable for growth under a variety of environmental conditions.

Advantages:

- Easier genetic transformation
- Increased transformation efficiency

Potential Applications:

- Generation of genetically modified crop plants
- Discovery of MTFs across diverse species

People:

- Gelvin, Stanton B. (Project leader)

Intellectual Property:

Application Date: January 22, 2016

Type: DIV-Patent
Country of Filing: United States
Patent Number: 10,150,969
Issue Date: December 11, 2018

Application Date: October 31, 2018
Type: CIP-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Application Date: May 9, 2013
Type: NATL-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Application Date: November 9, 2011
Type: PCT-Patent
Country of Filing: WO
Patent Number: (None)
Issue Date: (None)

Application Date: October 27, 2011
Type: Provisional-Patent
Country of Filing: United States
Patent Number: (None)
Issue Date: (None)

Application Date: November 11, 2010
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