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A MYB Transcription Factor Regulates Plant Transformation Susceptibility

A gene factor has been identified that controls how receptive plants are to genetic modification techniques.

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

TRL: 5

Intellectual Property:

Technology ID
65676

Category
Agriculture, Nutrition, & AgTech/Crop Genetics & Breeding
Biotechnology & Life Sciences/Synthetic Biology & Genetic Engineering

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