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Agrobacterium Strains to Generate Transgenic Plants with Low Transgene Copy Number and Lacking Vector Backbone Sequences

Novel Agrobacterium strains simplify genetic modification, delivering cleaner, single-copy transgenic plants without unwanted bacterial DNA.

For decades, a major goal of scientists working in agricultural biotechnology has been to design transgenic plants with low transgene copy numbers and no T-DNA vector backbone integration. T-DNA vector backbones usually harbor bacterial antibiotic resistance genes, leading to a variety of regulatory issues. Also, plants with high transgene copy numbers will often silence the expression of important genes. Current methods generate a large number of transgenic plants, subject them to a variety of tests, and then discard those with multiple transgenes and vector backbone sequences. These methods are both time consuming and expensive.

Researchers at Purdue University have developed a system to generate transgenic plants with low transgene copy numbers and have almost eliminated the presence of T-DNA binary backbone sequences in these plants. This system will be very useful for the transformation of plants and offers improved quality of transformed plants, without regulatory issues or inhibiting gene expression.

Advantages:

-Low transgene numbers

-Faster and less expensive

-No T-DNA backbones

Potential Applications:

-Industrial biotechnology

Technology ID

64667

Category

Agriculture, Nutrition, & AgTech/Crop Genetics & Breeding

Biotechnology & Life Sciences/Synthetic Biology & Genetic Engineering

Authors

Bronwyn Frame

Stanton Gelvin

Lan-Ying Lee

Heiko Oltmanns

Kan Wang

Further information

Raquel Peron

rperon@prf.org

View online

-Improving the quality of transgenic plants

-Academic research

TRL: 3

Intellectual Property:

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