TECHNOLOGY

A Guard Cell-Specific Tool for Molecular Manipulation of Drought Tolerance/Water Loss in Plants

OVERVIEW

In response to sunlight, drought and other stimuli, guard cells control the opening and closing of microscopic stomatal pores on leaves of plants through which the plant gives off water vapor and oxygen to the atmosphere and takes in carbon dioxide for photosynthesis. Guard cells thereby moderate the amount of water and carbon dioxide in plants.

Researchers at the University of Maryland have identified a gene that plays a very important role in mediating guard cell movement. The advantages of this gene include the ability to manipulate crop plants that have enhanced tolerance to water stress (drought, salt) and more sustainable water use, and to engineer crop plants more effective in photosynthesis and thus producing increased biomass. Additionally, the gene provides a powerful tool to purify guard cell easily from transgenic plants expressing markers under the control of this DNA sequence.

For additional information please contact the Office of Technology Commercialization, University of Maryland. Phone: 301-405-3947. Email: otc@umd.edu

CONTACT INFO

UM Ventures
0134 Lee Building
7809 Regents Drive
College Park, MD 20742
Email: umdtechtransfer@umd.edu
Phone: (301) 405-3947 | Fax: (301) 314-9502

Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Available for exclusive or non-exclusive license

CATEGORIES

- Agricultural

EXTERNAL RESOURCES

- US Patent 7,993,926