

BESC - Genes for Enhancing Drought and Heat Tolerance in Plants, and Methods of Use

Disclosure Number

201603693

Technology Summary

The invention provides a novel enzyme for CO₂ fixation in the crassulacean acid metabolism (CAM) pathway. This enzyme has no need for activation. It will facilitate the engineering of CAM into non-CAM plants to enhance water use efficiency and drought tolerance. Other genes encode proteins. These protein genes show constitutive change in transcript expression in two CAM species, with higher transcript abundance during morning or noon time. Temporally controlled expression of these genes during the morning or noon time in plants will increase heat tolerance in plants and also facilitate the engineering of CAM into non-CAM plants to enhance water use efficiency and drought tolerance.

Inventor

YANG, XIAOHAN
Biosciences Division

Licensing Contact

CALDWELL, JENNIFER T

UT-Battelle, LLC

Oak Ridge National Laboratory

Rm 137, Bldg 4500N6196

1 Bethel Valley Road

Oak Ridge, TN 37831

Office Phone: (865) 574-4180

E-Mail: CALDWELLJT@ORNL.GOV