GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

# Influence of sugars and hormones on the genes involved in sucrose metabolism in maize endosperms

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Genet. Mol. Res. 14 (1): 1671-1678 (2015)
Received April 7, 2013
Accepted August 8, 2014
Published March 6, 2015
DOI http://dx.doi.org/10.4238/2015.March.6.13

**ABSTRACT.** Starch is the major storage product in the endosperm of cereals. Its synthesis is closely related to sucrose metabolism. In our previous study, we found that the expression of most of the genes involved in starch synthesis might be regulated by sugars and hormones in the maize endosperm. However, little is known regarding the transcriptional regulation of genes involved in sucrose metabolism. Thus, in this study, maize endosperms were treated with different sugars and hormones and the expression of genes involved in sucrose metabolism (including synthesis, degradation, and transport) were evaluated using real-time quantitative reverse transcription-polymerase chain reaction. We found that genes affected by different sugars and hormones were primarily regulated by abscisic acid. Sucrose and abscisic acid showed an additive effect on the expression of some genes. Differences in the transcriptional

 

regulation of genes involved in sucrose metabolism and starch biosynthesis were observed.

**Key words:** Endosperm; Gene expression; Hormone; Maize; Sugar

 