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Fine aAnalysis of tTissue-specific promoters from *Arabidopsis thaliana*

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Objectives

The purpose of this study is to find tissue-specific core promoters of Arabidopsis.

Materials and Methods

1. Material

Plant - Arabidopsis ecotype - Columbia (Col)

Agrobacterium strain - *GV3101*

ABI PRISM 7700 Real-Time PCR

2. Methods

Deletion of different portions of the upstream regions of Arabidopsis genes was established on the basis of MotifScanner that can be used to screen DNA sequences with precompiled motif models. Analysis of the core promoters is in progress with T_2 promoter deletion lines by observing Green fluorescent protein (GFP) and β-glucuronidase (GUS) expression.

Results and Discussion

As a first step towards identifying core Arabidopsis promoters, we selected genes that are specifically expressed in leaf, root, or seed based on the information from TIGR Arabidopsis thaliana database. We are now searching for the tissue-specific core promoters as soon as the candidate promoters are confirmed by GFP/GUS expression. Each fragment constructed by the pre-defined motif models in DNA sequences was subcloned to a final binary vector pBGWFS7 using Gateway cloning system. Reporter gene analysis in Arabidopsis plants showed differential expression levels driven by the four upstream regions. To compare GUS expression with transcript levels, we are now developing a real-time reverse transcription (RT)-PCR for quantitative activity of the tissue-specific promoters in Arabidopsis.

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