

(05-1-30)

## **AGAMOUS-related MADS-box gene, *XOCHITL-1* (*AGL12*), controls hormone-mediated root development and flowering time in *Arabidopsis thaliana***

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### **Objectives**

We have tried to analysis of *AGAMOUS*-related MADS-box gene, *XOCHITL-1* (*AGL12*) during vegetative and reproductive growth.

### **Materials and Methods**

1. Material - Wild type and *xochitl-1* (ecotype - Col-O)
2. Methods - 1) Histochemical analysis of GUS expression, 2) Light and Confocal Microscopy, 3) Quantitative RT-PCR.

### **Results and discussion**

The MADS domain transcriptional factors are encoded by members of a large multigene family. *XOCHITL-1* is mainly expressed in the external cells of the columella and in the lateral root cap cells. In the proliferative region, the gene shows a punctuated expression pattern in atrichoblast cells. In the differentiated region of the root, *XOCHITL-1* was mainly expressed in the central cylinder. To confirm expression pattern at cellular level of *XOCHITL-1* in roots, we analyzed a construct that bears 2.8 kb of the *XOCHITL-1* promoter region fused to reporter genes GUS. *XOCHITL-1* is expressed mainly in the phloem and also expressed in the regions of active vascularization in flower. By confocal analysis, *xochitl-1* mutant presents abnormal cell division patterns at the columella and we also found abnormalities in the quiescent center. These results indicate that *AGL12* is activated and function in the growth of organ in both shoot and roots during vegetative and reproductive growth.