

Insights: Publications

The *sugar-insensitive1* (*sis1*) Mutant of *Arabidopsis* Is Allelic to *ctr1*

Biochemical and Biophysical Research Communications, Vol. 280, 196-203

January 12, 2001

Soluble sugar levels affect a diverse array of plant developmental processes. For example, exposure to high levels of glucose or sucrose inhibits early seedling development of *Arabidopsis thaliana* (L.) Heynh. Media-shift experiments indicate that *Arabidopsis* seedlings lose their sensitivity to the inhibitory effects of high sugar levels on early development within approximately two days after the start of imbibition. The *sugar-insensitive1* (*sis1*) mutant of *Arabidopsis* was isolated by screening for plants that are insensitive to the inhibitory effects of high concentrations of sucrose on early seedling development. The *sis1* mutant also displays glucose and mannose resistant phenotypes and has an osmo-tolerant phenotype during early seedling development. The *sis1* mutant is resistant to the negative effects of paclobutrazol, an inhibitor of gibberellin biosynthesis, on seed germination. Characterization of the *sis1* mutant revealed that it is allelic to *ctr1*, a previously identified mutant with a constitutive response to ethylene.