

A Mutation Causing Imidazolinone Resistance Maps to the Csrl Locus of *Arabidopsis thaliana*

George W. Haughn* and Christopher R. Somerville

ABSTRACT

A mutant of *Arabidopsis thaliana*, two hundred times more resistant to the imidazolinone herbicide imazapyr than wild-type plants, was isolated by direct selection of seedlings from a mutagenized population. Genetic analysis showed that resistance is due to a single dominant nuclear mutation that could not be separated by recombination from a mutation in the CSR1 gene encoding acetohydroxy acid synthase. Acetohydroxy acid synthase activity in extracts isolated from the mutant was 1000-fold more resistant to inhibition by imazapyr than that of the wild type. The resistant enzyme activity cosegregated with whole plant resistance. These data strongly suggest that the mutation is an allele of CSR1 encoding an imazapyr-resistant AHAS.