

# Selection of Efficient Taq DNA Polymerase to Optimize T-DNA Genotyping Method for Rapid Detection of Mutant *Arabidopsis thaliana* Plants

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## Abstract

© 2016, Springer Science+Business Media New York. Plants harbor homologues of various animal genes involved in phosphorus metabolism, telomere biology and other cellular processes. Compared to experiments with many other multicellular organisms, research in the model plant *Arabidopsis thaliana* takes advantage of short generation time and an ever increasing arsenal of genetic and transgenic tools, including large collections of T-DNA knockout and activation lines. The availability of thousands of publicly available transgenic *Arabidopsis* lines provides a unique opportunity to address a number of important biological questions. However, identification of individual T-DNA mutant plants from a pool of seeds provided by a biological stock distribution center remains a laborious and time-consuming procedure. Here we compared a number of commercial Taq DNA polymerases commonly used for routine PCR genotyping to identify a single polymerase most suitable for genotyping T-DNA mutant plants. Our data indicate that Emerald Amp GT PCR Master Mix provides the most reliable, quick and simple DNA genotyping tool to determine the presence of a T-DNA insertion and to establish whether an individual *A. thaliana* plant is heterozygous or homozygous for the mutant allele.

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## Keywords

*Arabidopsis thaliana*, Genotyping, Mutants, PCR, T-DNA