

## عنوان مقاله:

The efficiency of Agrobacterium-mediated gene transfer in Arabidopsis thaliana mutants

## محل انتشار:

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## خلاصه مقاله:

A few small molecular weight signals, including jasmonic acid (JA), salicylic acid (SA), and ethylene (ET), regulate the expression of defense-related genes in plants. These signals serve to inhibit the activation of plant defense genes against aggressors and can manipulate the plant's defense signaling pathways. In this study, the impact of acetosyringone on the induction of virulence genes was examined in *Agrobacterium tumefaciens* A<sup>348</sup> (MX<sup>311</sup>) and A<sup>348</sup> (MX<sup>243</sup>) at three different levels: 0, 100, and 200  $\mu$ M. The concentration that demonstrated the highest induction of virulence genes was then used for transforming *Arabidopsis* mutants using *A. tumefaciens* EHA<sup>105</sup>, with the aim of inducing virulence genes. Results revealed that *virD2* expression reached its peak at 200  $\mu$ M acetosyringone, while *virB2* expression was highest at 0  $\mu$ M. Additionally, transformation experiments indicated that the SA mutants (*nahG*) exhibited the highest transformation efficiency, while the control plants (*Col-0*) displayed the lowest efficiency. Therefore, the efficiency of gene transfer in SA-suppression mutants suggests a more significant role for SA in plant defense against pathogens compared to the other hormones. Enhancing gene transfer efficiency in these mutants could unlock the potential for increased expression and production of recombinant proteins compared to the wild type.

## کلمات کلیدی:

Acetosyringone, In planta, salicylic acid mutant, jasmonic acid mutant, ethylene mutant, PCR

## لینک ثابت مقاله در پایگاه سیویلیکا:

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