Optical Microscopy on Agrobacterium-mediated transient transformated Arabidopsis Nahg plants.

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Keywords: Arabidopsis, NahG, transient transformation, BiFC, subcellular localization, GUS staining.

Agrobacterium tumefaciens-mediated transient transformation has demonstrated to be an invaluable tool in plant cell biology. However, low efficiency and inconsistency of this method in *Arabidopsis* has forced the implementation of *Nicotiana benthamiana* as a surrogate system, limiting applicability. Previous results suggested that hormone-mediated defence responses against bacteria might be responsible for the low efficiency of *Agrobacterium*-mediated transient transformation in Arabidopsis.

In this work, we evaluate the efficiency of *Agrobacterium*-mediated transient transformation in *Arabidopsis* genotypes affected in JA perception or signalling (*coi1*, *jin1*), or with low SA or JA content (*sid2*, *NahG, aos*). We demonstrate that expression of the *NahG* transgene dramatically improves this process. Arabidopsis *NahG* plants can be efficiently used for transient expression-based optical microscopy assays routinely performed in *N. benthamiana*, such as determination of subcellular localization of GFP-fused proteins or analysis of protein-protein interactions by Bimolecular Fluorescent Complementation. Considering the wide-spread use of *Agrobacterium*-mediated transient transformation, this system can enormously facilitate research in the model plant *Arabidopsis*, allowing for an efficient use of the full potential of the numerous tools and resources currently available to the community.

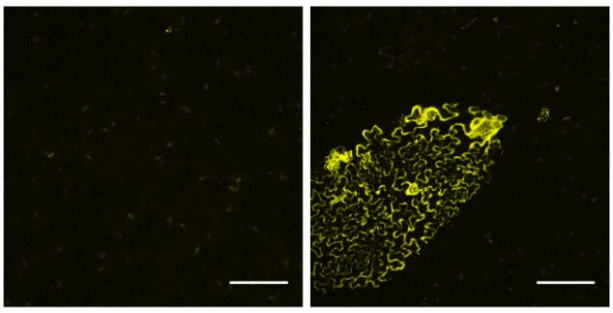

Figure 1. Bimolecular fluorescence complementation in NahG plants. BiFC in agrobacterium mediated transformated Columbia plants (Left) and NahG plants (Right).