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Resolving plant transformation recalcitrance by Agrobacterium-mediated protein translocation

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Stellingen

Behorende bij het proefschrift

Resolving plant transformation recalcitrance by *Agrobacterium*-mediated protein translocation

1. The split-Cherry system does not permit visualisation of the translocation of proteins of interest into plant cells via the *Agrobacterium tumefaciens* type IV secretion system.

   (Dit proefschrift, Hoofdstuk 2)

2. Using a standardized, plate reader–based assay in multi-well format, rather than microscopy, enables more accurate quantification of *Agrobacterium*-mediated protein translocation.

   (Dit proefschrift, Hoofdstuk 3)

3. The type IV secretion system of *Agrobacterium tumefaciens* can deliver functional proteins that modulate plant cell physiology.

   (Dit proefschrift, Hoofdstuk 4)

4. *Agrobacterium*-mediated transformation can be enhanced by the co-translocation of AvrPto or NahG.

   (Dit proefschrift, Hoofdstuk 4)

5. Protein delivery by *Agrobacterium tumefaciens* offers a strategy to obtain transgene-free genome-edited plants.

   (Schmitz et al., 2020)

6. The detrimental effects of constitutive expression of the regeneration-enhancing transcription factors WUS and BBM on subsequent plant development can be mitigated by excising the overexpression construct after regeneration.

   (Lowe et al., 2016)

7. Optimizing co-cultivation conditions for *Agrobacterium*-mediated transformation is constrained by the release of salicylic acid by *Agrobacterium* after successful T-DNA transfer, which activates the host plant's defense responses.

(Wang et al., 2019)

8. Despite numerous documented cases of natural horizontal gene transfer into plants from viruses, fungi, and bacteria, strong resistance to crop genetic modification persists in Europe

(Aubin et al., 2021)

9. What a PhD brings about is aptly captured in the words: *'In nova fert animus mutatas dicere formas corpora; di, coeptis (nam vos mutastis et illas) adspirate meis primaque ab origine mundi ad mea perpetuum deducite tempora carmen!'*.

(p. ovidi nasonis, metamorphoseon liber primus)

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