Agrobacterium infection : translocation of virulence proteins and role of VirF in host cells

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Stellingen

Behorende bij het proefschrijft

***Agrobacterium* Infection:**

Translocation of Virulence Proteins and Role of VirF in Host Cells

1. VirE3 and VirD2 are translocated effector proteins that carry a C-terminal translocation signal and require a functional T4SS for their translocation.

This thesis

2. Although protein translocation of VirD2 from *Agrobacterium* into host cells can be visualized by the addition of Cre sequences, the resulting recombinant Cre-VirD2 protein is hardly able to complement a wild type *virD2* mutant.

This thesis

3. The finding that VirD2 is transported into host cells even in the absence of a DNA substrate indicates that conjugation systems are actually protein transport systems, in which the DNA molecule is only transported because of its covalent linkage to the translocated relaxase protein.

This thesis

4. The capacity of VirF to interact *in vivo* with the two main core proteins of a plant assembled SCF complex, ASK1 and CUL1, strongly supports the hypothesis that VirF plays a role *in planta* as part of such SCF-complex, mediating the ubiquitination of proteins targeted for degradation via the proteasome.

This thesis

5. The subcellular localization of F-box proteins will also contribute to their substrate specificity *in vivo.*

Blondel et al., (2000) EMBO J 19: 6085-97; Tao et a.,l (2005) Plant Cell 17: 2369- 2383.

6. The finding by Tzfira *et al.* that VIP1 and VirE2 are destabilized in presence of VirF when coexpressed is yeast cells does not give yet enough evidence to conclude that VirF assists decoating of T-strands in plant cells.

Tzfira et al., (2004) Nature 431: 87-92.

7. Cha *et al.* provide not enough evidence to conclude that algal transformation by *Agrobacterium* is highly stimulated by coumarin.

Cha et al., (2011) J Microbiol Methods 84: 430-434.

8. The elimination, manipulation or redesign of specific UPS components, such as E3s, DUBs, ubiquitin receptors and the 26S proteasome, should offer powerful new strategies to improve agriculture.

Vierstra (2009) Nat Rev Mol Cell Biol 10: 385-97.

9. The impressive array of potential strategies developed in de laboratory for pest management in agriculture is in obvious contrast to the limited success in field applications.

Gust et al., (2010) Curr Opin Biotechnol 21:204-10.

10. Scientists should be aware about how their fundamental research may contribute one day to the sustainability and improvement of the quality of life of a community.

11. “Please laugh, laugh, because there is plenty of time to mourn”.

Mario Moreno “Cantinflas”

12. By knowing mediterranean people one can understand from where Latino American basic behavioural patterns, culture and family structure comes from.