

# Effector MiSSP7 of the mutualistic fungus *Laccaria bicolor* stabilizes the *Populus* JAZ6 protein and represses jasmonic acid (JA) responsive genes

**Contact:** Francis Martin, +33 383 39 40 80, [fmartin@nancy.inra.fr](mailto:fmartin@nancy.inra.fr)

**Funding Sources:** This work was supported in part by the European Commission within the Project ENERGYPOPLAR (FP7-211917), the US Department of Energy Genomic Science Program (Plant-Microbes Interactions SFA, contract DEAC05-00OR22725), the Laboratory of Excellence ARBRE (ANR-11-LABX-0002-01), and the Agence Nationale de Recherche project FungEffector.

- We demonstrate that the effector protein MiSSP7 of the mutualistic fungus *Laccaria bicolor* interacts with the transcriptional repressor protein PtJAZ6 in the nuclei of the host plant *Populus trichocarpa*
- Interaction with MiSSP7 *in planta* protects PtJAZ6 from JA-induced degradation
- MiSSP7 is able to counter the negative impacts of JA on fungal colonization of host tissues by repression of JA-induced gene transcription, likely through its interaction with JAZ proteins.
- Our results further the concept that, like pathogenic organisms, mutualistic fungi use effectors to target plant host hormone pathways to foster fungal colonization.

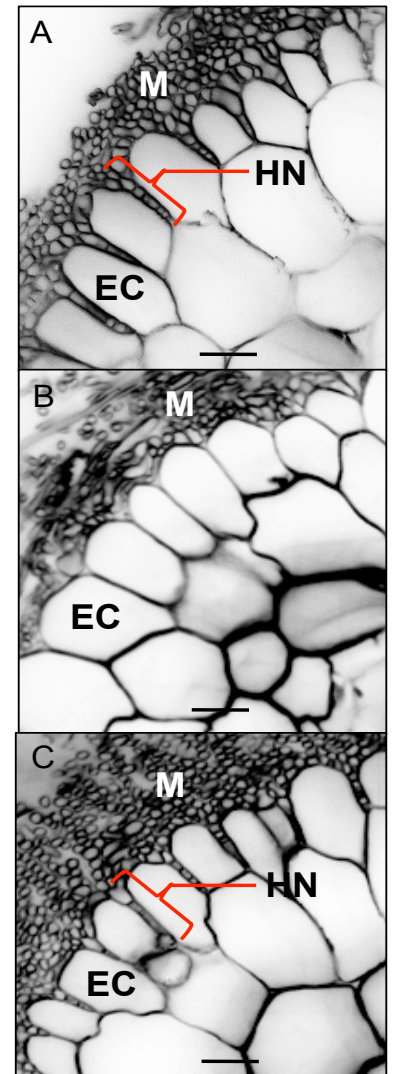


Figure: (A) Transverse cross-section of control ECM roots with no altered expression of PtJAZ6 exhibit normal mantle formation (M) and formation of a Hartig net (HN). (C) PtJAZ6-RNAi ECM root with no visible Hartig net. (D) 35S::PtJAZ6 ECM root with normal Hartig net development.