JEFF1 and JEFF2 facilitate jasmonate efflux and affect the wound response in Ararbidopsis thaliana.

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Plants critically depend on defense mechanisms that are systemically induced upon herbivore attack. The systemic induction initially relies on electrical wound-signals transmitted from the site of attack to the whole plant body. In distal tissues electrical signals are presumably decoded into a chemical jasmonate borne signal, which is detected as dramatically increased accumulation of jasmonates. This decoding takes place in so-called xylem-contact cells, where either precursors are released or jasmonates are *de novo* synthesized. Propagation of the jasmonate signal from xylem-contact cells to extravascular cells were proposed to proceed through the physical movement of jasmonate. Such movement would require the activity of jasmonate export. However, no jasmonate exporters have been identified yet.

Here, we screened the NPF family for jasmonate export activity and identified, three related transport proteins that facilitate efficient jasmonate efflux (*JEFF1, 2* and *3)* in the *Xenopus laevis* heterologous expression system. Localization by promoter GUS reporter constructs show that *JEFF1* and *JEFF2* are expressed in vascular tissue of *Arabiopsis thaliana* aerial and root tissue. In preliminary wounding assays of seedlings of the *jeff1jeff2* dko mutant, a lower JAZ10 transcript induction was detected.

Additionally, bioassays with *Spodoptora littoralis* indicate a reduction in resistance of *jeff* kos compared to WT plants. This indicates that export of jasmonate mediated by *JEFF1* and *JEFF2* may be a critical component of the jasmonate response associated with plant-herbivore interactions.