

P026 Calcium dialogue during gametophytic interactions of *Arabidopsis* pollen tube reception
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In flowering plants, proper intercellular interactions between the pollen tube and the synergid cells involve two programmed cell death events resulting in the successful delivery of the sperm cells for double fertilization. Mutants of the *feronia* (*fer*) class affect components underlying these interactions in the synergid cells, such that the pollen tube continues to grow inside the embryo sac and fails to rupture to release the sperm cells. We have simultaneously monitored calcium dynamics in the gametophytic cells involved in these interactions in *Arabidopsis* wild-type and mutant ovules. We have identified a pattern of calcium waves in the synergid cells with distinct phases and analyzed the cross-talk with calcium oscillations in the pollen tube tip. In *fer* class mutants, the calcium oscillation pattern was compromised, affecting pollen tube behavior and occasionally uncoupling the cell death events of the receptive synergid and the pollen tube. Thus, we postulate that calcium is an essential secondary messenger of the gametophytic dialog during pollen tube reception preceding double fertilization.