

P009 A key factor of translation re-initiation, ribosomal protein L24, is involved in gynoecium development in *Arabidopsis*
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Some upstream ORFs (uORFs) within the 5'-transcript leader regulate translation of downstream major ORF. In these cases, ribosome reinitiates translation at ATG codon of downstream ORF after translation termination of uORF. It was reported that plant ribosomal protein L24 (RPL24) is involved in translation reinitiation of downstream ORF on polycistronic CaMV 35S RNA. Here we report on an *Arabidopsis* mutant, *stv*, in which an *RPL24* gene was deleted. In *stv*, the basal region of the ovary is replaced by the gynophore, which is never seen in known mutants of other ribosome components. This suggests RPL24 has a specific role for gynoecium development. The gynoecium defects similar to those in *stv* have been shown in *ett* and *mp* mutants. It turns out that *ETT* and *MP* have uORFs, which raises the possibility that their uORFs regulate the translation of their downstream ORF. Based on the idea, we examined whether their uORFs affect the translation efficiency of downstream ORF by transient expression assay in protoplast with reporter genes placed at downstream of the 5'-transcript leaders. The results showed their uORFs repress the expression of downstream ORF. We hypothesize gynoecium phenotype shown in *stv* was caused by decrease of reinitiation efficiency of *ETT* and/or *MP* translation.