

S5-02

**QUI-GON JINN, a member of the YODA family, plays a role during female reproduction in *Arabidopsis thaliana***

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*Paspalum notatum*, a subtropical forage grass native to South America, has proven to be a fruitful model for studying apomixis in plants. Several genes associated with apomixis have been identified through genetic mapping and comparative mRNA analyses, including *QUI-GON JINN (QGJ)* encoding a MAPK3 protein of the YODA family. Interestingly, the downregulation of QGJ in *P. notatum* apomictic genotypes has been associated with a decrease in the number of unreduced (aposporous) embryo sacs. To disclose QGJ function during sexual development, we have undertaken its functional characterization in the model plant *Arabidopsis thaliana* using genetic and cellular approaches. The protein accumulation generated by GUS reporter lines indicated that QGJ is expressed during ovule development and accumulates in the L1 cell layer of the ovule primordium, but not in the placenta. QGJ is also expressed in degenerating megaspores, while functional megaspores completely lack signal. Finally, in developing seeds, the endosperm showed GUS accumulation, but the zygote and growing embryos were completely devoid of signal. Furthermore, *qgj* defective mutants led to reproductive alterations of the female development, in a manner reminiscent of apomixis. Furthermore, *qgj* mutants showed alterations during female meiosis, female gametophytic development and early seed development. These results indicate that *QGJ* is expressed during megasporogenesis and endosperm development, and suggest that its function is related with megaspore degeneration in the tetrad, gametophyte development and non-cell autonomous control of embryo development.

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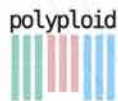
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## BOOK OF ABSTRACTS

Program - Abstracts  
List of posters  
List of participants

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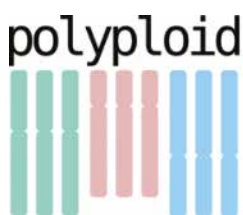
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