

SFB 924-/BZR – Kolloquium

Thursday, December 08, 2022

5 pm, H 53



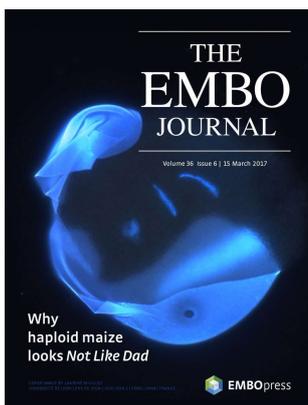
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Maize reproduction: Focus on pollen and seed development



In flowering plants, sexual reproduction is characterized by a unique biological process called double fertilization. It consists of two synchronized fusion events between male and female gametes: two sperm cells (from the same pollen grain) fused separately with the two female gametes: egg cell and central cell. This double fertilization gives rise to two different individuals/tissues: the embryo and the endosperm, which are enclosed by maternal tissues. A coordinated development of these three genetically distinct tissues, organized like a Russian doll, lead to the seed.



By using maize and combining OMICs, genetics (mutants and CRISPR/cas9) and cell biology approaches, our work aims to tackle questions on plant reproduction. How is the synchronization of double fertilization ensured? How is the communication between the three seed compartments established to ensure proper seed development? I will illustrate our research focusing on two aspects: (1) On the pollen side, we are using a specific maize line called haploid inducer line. I will present the characterization of a still enigmatic interface: the endo-plasma membrane (endo-PM) that originates from the pollen vegetative cell and wraps the two sperm cells, forming a unique “cell within a cell” structure. (2) On the seed development side, I will present the characterization of a new embryo/endosperm interface: the endosperm adjacent to scutellum (EAS).

Host: Prof. Dr. Stefanie Sprunck