ITbM Nagoya University

GTR Transformative Chem-Bio Research Nagoya University

KEPLR

Institute of Transformative Bio-Molecules (WPI-ITbM)

Graduate Program of Transformative Chem-Bio Research

Key-Molecular-Network in Plant Reproduction

ITbM-GTR-KEPLR Seminar

Date	**June 15th, 2026 (Mon) 14:45-15:45**
Time Language	**English**
Place	**Rm. 219, Sci. Bldg. C**

Prof. Ueli Grossniklaus

Department of Plant and Microbial Biology,
University of Zurich
Zurich-Basel Plant Science Center
Guest Professor, Kyoto University

Signaling Processes during Plant Reproduction

Research in our laboratory focuses on the developmental genetics of plant reproduction, with an emphasis on epigenetic gene regulation and cell-cell communication during double fertilization. Fertilization depends on the proper reception of the pollen tube by the synergid cells, involving a complex interplay mediated by calcium signaling. We have shown that receptor kinases of the *Cr*RLK1L subfamily play an important role in reproduction, with the FERONIA receptor kinase acting in the synergids to mediate proper pollen tube reception. The functions of *Cr*RLK1Ls are diverse and complex. We are currently investigating the events occurring immediately prior to fertilization once the pollen tube interacts with the synergid cell. Upon proper pollen tube reception, the pollen tube ruptures and releases the two sperm cells to effect double fertilization. Another topic we study is how exactly fertilization triggers the development of the two fertilization products, the embryo and endosperm, which is only poorly understood. We have recently shown that a paternally delivered factor plays a crucial role in activating endosperm development. In this seminar, I will report on our progress in deciphering the signals and underlying mechanisms that control these two important steps in plant reproduction.

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