



**Supplementary information, Figure S3** The other phenotypes of *tpl-1* plants.

(A) to (F) The development of *tpl-1* ovules carrying megasporocytes were frequently arrested at different ovule stages during megagametogenesis. (A) and (B) The functional haploid megaspores were also degenerated. (C) and (D) No vacuole formation was found in these aborted ovules. (E) and (F) No normal egg cells, central cells, synergid cells and antipodal cells were found in these aborted ovules. (G) and (H) The Alexander's staining showed normal mature pollens in wild-type (G) and abnormal pollens in *tpl-1* (H). Bars, 10  $\mu\text{m}$  in (A) to (F) and 50  $\mu\text{m}$  in (G) and (H).