



**Figure S1** Pollen viability in *sped1-D*, *SPED1-RNAi* and control plants. Pollen viability was effected in *sped1-D* (a, 1 spikelet; b, 2 spikelets; c, 3 spikelets) and in TP309 plants containing *sped1-D-OX* plasmid (h, 1 spikelet; i, 2 spikelets; j, 3 spikelets) compared with that of the wild type (d, TP309 and e, 9311); *SPED1*-silenced plants had very low pollen viability (f, miR528-*sped-1* and g, miR528-*sped-2*). The pollen had low viability and appeared light brown when assessed by staining the starch in the pollen with a 1% I-KI solution; the mature pollen grains from the control and *sped1-D* plants were stained dark brown.