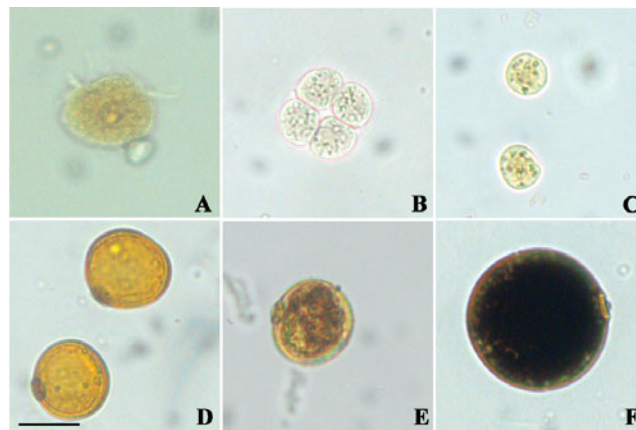


**Supplemental Figure 1.** PAS-negative stain reaction (six stages of Zhenshan97B). The six images showed the negative control trial during six stages of pollen development in Zhenshan97B (an FML), omitting the oxidation step by periodic acid. The developing pollens were NOT stained by PAS-negative reaction during all the six developmental stages in Zhenshan97B. Bar = 20  $\mu$ m. (A) microspore mother cell stage; (B) tetrad stage; (C) early microspore stage; (D) late microspore stage; (E) bicellular pollen grain stage; (F) mature pollen grain stage.



**Supplemental Figure 2.** I<sub>2</sub>-KI stain reaction (six stages of Zhen-shan97 B). The six images showed the starch assay during six stages of pollen development in Zhen-shan97B (an FML), using the I<sub>2</sub>-KI reaction. Starch was ONLY detected by I<sub>2</sub>-KI in the mature pollen grains of Zhen-shan97B, showing intensive positive reaction of deep blue. In contrast, no starch was detected in the rest five stages. Bar = 20  $\mu$ m. (A) Microspore mother cell stage; (B) tetrad stage; (C) early microspore stage; (D) late microspore stage; (E) bicellular pollen grain stage; (F) mature pollen grain stage.