Supplemental Table 1. *pal* mutants analyzed in the study

Gene	Locus	Mutant	Expression compared with WT (Real time PCR)
PAL1	At2g37040	*pal1-2*	0.005
		pal1-3	0.000
		pal1-2 pal2-2 pal3-1 pal4-1	0.007
		pal1-3 pal2-3 pal3-2 pal4-2	0.004
PAL2	At3g53260	*pal2-2*	0.009
		pal2-3	0.008
		pal1-2 pal2-2 pal3-1 pal4-1	0.011
		pal1-3 pal2-3 pal3-2 pal4-2	0.006
PAL3	At5g04230	*pal3-1*	0.012
		pal3-2	0.009
		pal1-2 pal2-2 pal3-1 pal4-1	0.011
		pal1-3 pal2-3 pal3-2 pal4-2	0.010
PAL4	At3g10340	*pal4-1*	0.010
		pal4-2	0.003
		pal1-2 pal2-2 pal3-1 pal4-1	0.009
		pal1-3 pal2-3 pal3-2 pal4-2	0.005

Supplemental Table 2. Pollen numbers of WT and *pal1 pal2* mutants

Plants	Pollens number released per flower[a]	
	120 μE m^{-2} s^{-1}	50 μE m^{-2} s^{-1}
WT	893±165	435±78
pal1-2/- pal2-2/-	101 ±23	TFTC[b]
pal1-3/- pal2-3/-	98 ±34	TFTC

[a] Average pollen numbers released per flowers and standard errors were calculated from 12 flowers per genotype per condition (light intensity). According to Duncan's multiple range test (P=0.05), means of pollen numbers per flower grown under 120 μE m^{-2} s^{-1} differ significantly between wild type and the two *pal* double mutants but not significant between the two *pal* double mutants. The *pal* double mutants produced too few pollens under 50 μE m^{-2} s^{-1} and, therefore, statistical analysis for comparing pollen numbers between wild type and the mutants was not performed.

[b] TFTC, too few to count.

Supplemental Table 3. Primers used for mutant identification and Real time PCR

Gene	Mutant identification	Real time PCR
PAL1	5'-CTGCAGCGGAGCAAATGA-3' 5'-CACTCATCACCTCTGCGAAA-3'	5'-GTGTCGCACTTCAGAAGGAA-3' 5'-GGCTTGTTTCTTTCGTGCTT-3'
PAL2	5'-CAATGGATCAAATCGAAGCA-3' 5'-TATTCCGGCGTTCAAAAATC-3'	5'-GTGCTACTTCTCACCGGAGA-3' 5'-TATTCCGGCGTTCAAAAATC-3'
PAL3	5'-AACCCCATTGTTTTCCCTCT-3' 5'-GCTCTTTTTGAAGAGCAGCA-3'	5'-CAACCAAACGCAACAGCA-3' 5'-CTCCAGGTGGCTCCCTTTTA-3'
PAL4	5'-TCAAATACCGAATCGAAGCA-3' 5'-TATTCCGGCATTCAAGAACC-3'	5'-GGTGCACTTCAAAATGAGCT-3' 5'-CAACGTGTGTGACGTGTCC-3'