Supplementary Table S1 GUS expression pattern in Group I.

		anther stage				
line	others tissues	tetrads	uni	bi	pollen	filament
KG741	-	+	+	+	-	-
KG1137	-	-	+	+	-	-
KG1170	-	-	+	+	-	-
KG4183	-	-	+	+	-	-
KG12178	-	-	+	+	-	-
KG17719	-	+	+	+	-	-
KG17333	-	-	+	+	-	-

Supplementary Table S2 GUS expression pattern in Group II.

		anther stage				
line name	others tissues	tetrads	uni	bi	pollen	filament
KG801	-	-	-	+	+	-
KG1210	-	+	+	+	+	-
KG1299	-	-	-	-	+	-
KG2126	-	-	-	+	+	-
KG2248	-	-	-	+	+	-
KG2310	-	-	-	N.D.	+	-
KG2324	-	-	-	+	+	-
KG2660	-	-	-	N.D.	+	-
KG3413	-	-	-	N.D.	+	-
KG3548	-	-	-	N.D.	+	-
KG4092	-	-	-	N.D.	+	-
KG4103	-	-	-	N.D.	+	-
KG4442	-	-	-	-	+	-
KG4702	-	N.D.	+	+	+	-
KG4797	-	-	-	-	+	-
KG8444	-	-	-	+	+	-
KG9358	-	-	-	-	+	-
KG10046	-	-	-	+	+	-
KG10659	-	-	-	+	+	-
KG10805	-	-	-	-	+	-
KG13170	-	-	-	-	+	-
KG13624	-	-	-	-	+	-
KG14012	-	-	-	-	+	-
KG14382	-	-	-	-	+	-
KG14420	-	-	-	+	+	-
KG18257	-	-	-	+	+	-
KG18549	-	-	-	+	+	-
KG18566	-	-	-	+	+	-
KG18633	-	-	-	+	+	-
KG19729	-	-	-	+	+	-

Supplementary Table S3 GUS expression pattern in Group III.

		anther stage				
line	others tissues	tetrads	uni	bi	pollen	filament
KG825	-	-	-	-	-	+
KG6115	-	-	-	-	-	+
KG7151	-	-	-	-	-	+
KG9617	-	-	-	-	-	+
KG14589	-	-	-	-	-	+

tetrads, tetrad stage

uni, uninucleate microspore stage

bi, bicellular pollen stage

Supplementary Table S4 The number of GUS positive and negative pollen grains and predicted number of T-DNA insertion

Line	The number of pollen grains			Predicted number of T-DNA insertion
	GUS positive	GUS negative	Total number	
KG801	12	11	23	1
KG1299	18	16	34	1
KG2248	344	298	642	1
KG3413	233	198	431	1
KG4092	152	229	381	1
KG4702	44	61	105	1
KG4797	33	26	59	1
KG10659	23	19	42	1
KG10805	44	34	78	1
KG13170	11	11	22	1
KG14012	55	50	105	1
KG18257	25	31	56	1
KG18633	65	59	124	1
KG19729	42	39	81	1
KG1210	200	67	267	2
KG2310	33	9	42	2
KG2324	62	20	82	2
KG3548	15	6	21	2
KG8444	53	16	69	2
KG9358	23	7	30	2
KG14382	62	20	82	2
KG18566	41	13	54	2
KG2660	44	5	49	>3
KG4103	39	6	45	>3
KG4442	77	4	81	>3
KG1006	56	10	66	>3
KG14420	23	3	26	>3
KG18549	87	10	97	>3