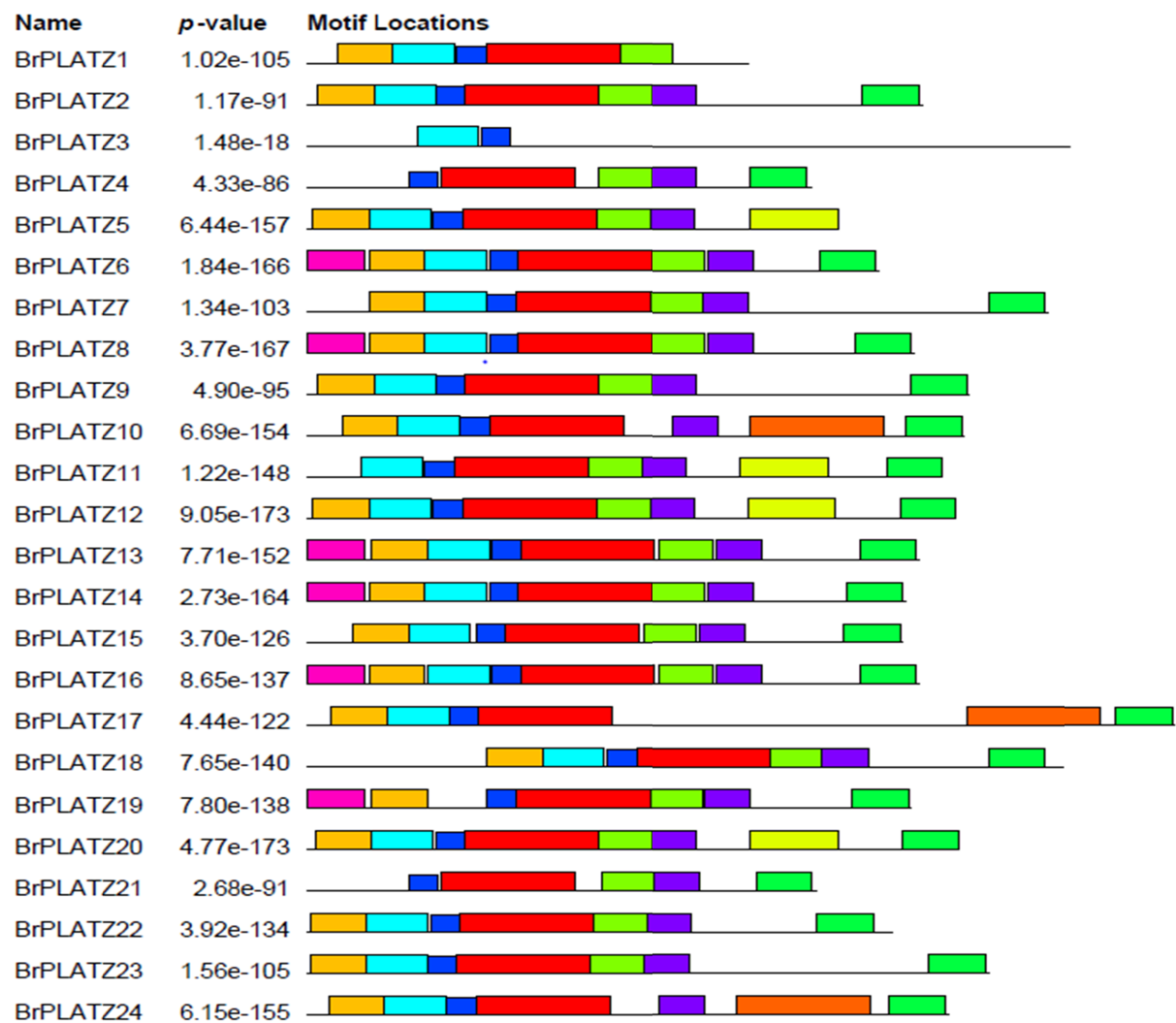


Supplementary Materials:

Genome-Wide Characterization and Expression Profiling of Plant-specific *PLATZ* Transcription Factor Family Genes in *Brassica rapa* L.



Motif	Symbol	Motif Consensus
1.		HKDHLRJJQIRSSYHDVVRVNEIQKYJDISGVQTYVINSKVVFLNERPQ
2.		FFVQCKIHADSHKSECNMYCLDC
3.		PRPGKGVNTCEVCYRSLLD
4.		SFRPCSLGCKVAGMSRG
5.		GGEEDNRWPPWLKPLLKEK
6.		LPASVSRISRRRKGIPHRAPL
7.		NGSLCSLCLPS
8.		MAIEDQENPIREIKPKNRRIM
9.		ESDPTFASLRMDGHDQLGEISTMEDTDDIMVISDQSEQGNNSNKKEKKK
10.		ESDEATTPTKLRKTNAFNRLMSGLSISTVRFDD

Supplementary Fig. S1. Schematic representation of the 10 conserved motifs identified in the *B. rapa* *PLATZ* proteins. Different colors represent different motifs. The motif order in the figure corresponds to their position in the individual protein sequences. The name of each member is shown on the left side of the figure. The consensus sequences of the motifs are also given below.

Supplementary Table S1. Identification of protein domains of 24 BrPLATZ proteins by SMART database

Family members	Signal peptide	BBOX domain	Transmembrane region	PLATZ domain	Homeobox domain	coiled coil	Low Complexity Region
<i>BrPLATZ1</i>				77-148			6-16
<i>BrPLATZ2</i>				69-140			
<i>BrPLATZ3</i>	1-17		92-114		180-235	233-268	
<i>BrPLATZ4</i>		17-59		60-140		135-163	141-161
<i>BrPLATZ5</i>		23-67		68-139			
<i>BrPLATZ6</i>		44-88		89-161			186-197
<i>BrPLATZ7</i>				88-159			213-221
<i>BrPLATZ8</i>		44-88		89-161			183-189, 200-210
<i>BrPLATZ9</i>				69-140			
<i>BrPLATZ10</i>				78-148			207-223
<i>BrPLATZ11</i>		20-64		65-136			
<i>BrPLATZ12</i>		27-67		68-139			
<i>BrPLATZ13</i>		45-89		90-164			22-31, 181-189, 198-214
<i>BrPLATZ14</i>		44-88		89-161			179-189
<i>BrPLATZ15</i>		38-83		84-158			
<i>BrPLATZ16</i>		45-89		90-164			
<i>BrPLATZ17</i>				74-127			
<i>BrPLATZ18</i>		92-132		133-204			110-130, 137-155, 167-186, 288-302
<i>BrPLATZ19</i>		45-87		88-160			219-234
<i>BrPLATZ20</i>		24-68		69-140			
<i>BrPLATZ21</i>		14-59		60-141			145-162
<i>BrPLATZ22</i>		26-66		67-138			157-169
<i>BrPLATZ23</i>				66-137			
<i>BrPLATZ24</i>	1-62			73-143			1-14, 202-217

Supplementary Table S2. Sequence identity (%) among the 24 PLATZ proteins of *B. rapa*.

Protein	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
BrPLATZ1 (A)	100																								
BrPLATZ2 (B)	42	100																							
BrPLATZ3 (C)	45	39	100																						
BrPLATZ4 (D)	56	39	35	100																					
BrPLATZ5 (E)	84	39	45	49	100																				
BrPLATZ6 (F)	66	45	82	44	66	100																			
BrPLATZ7 (G)	46	43	38	39	43	46	100																		
BrPLATZ8 (H)	68	45	82	44	67	87	47	100																	
BrPLATZ9 (I)	44	81	41	39	43	48	45	48	100																
BrPLATZ10 (J)	44	52	32	32	43	44	59	44	57	100															
BrPLATZ11 (K)	83	39	49	49	82	47	35	49	41	35	100														
BrPLATZ12 (L)	85	31	45	48	92	48	34	49	43	32	81	100													
BrPLATZ13 (M)	62	45	76	42	60	68	47	71	46	44	63	60	100												
BrPLATZ14 (N)	66	43	78	41	65	87	45	88	46	42	47	66	69	100											
BrPLATZ15 (O)	58	45	69	39	58	63	46	64	46	43	59	47	75	62	100										
BrPLATZ16 (P)	57	41	69	40	55	62	42	66	43	40	56	54	74	62	81	100									
BrPLATZ17 (Q)	41	59	42	42	38	43	64	43	63	83	46	38	43	44	38	36	100								
BrPLATZ18 (R)	67	43	43	43	69	65	48	67	47	32	49	49	57	68	58	52	37	100							
BrPLATZ19 (S)	63	43	65	41	61	69	47	71	45	42	67	61	80	71	70	70	43	59	100						
BrPLATZ20 (T)	83	41	45	48	95	48	34	49	45	32	82	93	59	47	57	54	39	49	43	100					
BrPLATZ21 (U)	53	41	37	90	46	45	42	45	42	34	41	41	43	43	41	40	46	46	40	39	100				
BrPLATZ22 (V)	60	45	35	43	65	65	48	66	47	34	48	47	60	68	53	51	40	89	58	46	45	100			
BrPLATZ23 (W)	47	42	36	39	43	49	94	50	45	44	34	35	45	49	45	43	66	46	47	35	41	35	100		
BrPLATZ24 (X)	43	55	33	33	38	45	61	45	50	92	36	34	45	46	43	42	45	33	46	34	34	35	42	100	

Supplementary Table S3. Pairwise identities and divergence between 20 paralogous pairs of PLATZ genes from *Brassica rapa* and details about the duplication of those genes

Gene name	Duplicated genes	Query cover (%)	Identity (%)	Ks	Ka	Ka/ks	Date (Mya)	Duplication type
<i>BrPLATZ1</i>	<i>BrPLATZ11</i>	91	83	0.323	0.131	0.406	10.78	Segmental
	<i>BrPLATZ20</i>	84	83	0.945	0.160	0.170	31.50	Segmental
	<i>BrPLATZ12</i>	83	85	0.934	0.165	0.177	31.15	Segmental
	<i>BrPLATZ5</i>	82	84	1.175	0.177	0.151	39.17	Segmental
<i>BrPLATZ2</i>	<i>BrPLATZ9</i>	100	81	0.273	0.067	0.245	9.11	Segmental
<i>BrPLATZ4</i>	<i>BrPLATZ21</i>	100	90	0.164	0.046	0.279	5.48	Segmental
<i>BrPLATZ5</i>	<i>BrPLATZ20</i>	100	95	0.341	0.022	0.066	11.39	Segmental
	<i>BrPLATZ12</i>	100	92	0.302	0.035	0.116	10.09	Segmental
	<i>BrPLATZ11</i>	99	82	0.707	0.111	0.157	23.60	Segmental
<i>BrPLATZ6</i>	<i>BrPLATZ8</i>	100	87	0.279	0.037	0.133	9.32	Segmental
	<i>BrPLATZ14</i>	100	87	0.258	0.045	0.177	8.61	Segmental
<i>BrPLATZ7</i>	<i>BrPLATZ23</i>	89	94	0.229	0.050	0.220	7.65	Segmental
<i>BrPLATZ8</i>	<i>BrPLATZ14</i>	100	88	0.241	0.055	0.228	8.05	Segmental
<i>BrPLATZ10</i>	<i>BrPLATZ24</i>	91	92	0.253	0.052	0.207	8.44	Segmental
	<i>BrPLATZ17</i>	82	83	0.456	0.191	0.420	15.20	Segmental
<i>BrPLATZ11</i>	<i>BrPLATZ20</i>	100	82	0.708	0.098	0.139	23.61	Segmental
	<i>BrPLATZ12</i>	100	81	0.687	0.101	0.148	22.92	Segmental
<i>BrPLATZ12</i>	<i>BrPLATZ20</i>	100	93	0.319	0.033	0.104	10.63	Segmental
<i>BrPLATZ13</i>	<i>BrPLATZ19</i>	100	80	0.392	0.102	0.260	13.09	Segmental
<i>BrPLATZ15</i>	<i>BrPLATZ16</i>	100	81	0.105	0.076	0.727	3.51	Segmental

Supplementary Table S5. Putative functions and cellular localizations of *Brassica rapa* proteins

Family members	GO: Molecular function	GO: Biological process	GO: Cellular component
<i>BrPLATZ1</i>	zinc ion binding	-	-
<i>BrPLATZ2</i>	zinc ion binding	-	-
<i>BrPLATZ3</i>	lipid binding, sequence-specific DNA binding	Regulation of transcription	Nucleus
<i>BrPLATZ4</i>	zinc ion binding	-	-
<i>BrPLATZ5</i>	zinc ion binding	-	-
<i>BrPLATZ6</i>	zinc ion binding	-	Membrane
<i>BrPLATZ7</i>	protein binding, zinc ion binding	-	-
<i>BrPLATZ8</i>	zinc ion binding	-	Membrane
<i>BrPLATZ9</i>	zinc ion binding	-	-
<i>BrPLATZ10</i>	zinc ion binding	Leaf senescence	Nucleus
<i>BrPLATZ11</i>	zinc ion binding	-	-
<i>BrPLATZ12</i>	zinc ion binding	-	-
<i>BrPLATZ13</i>	zinc ion binding	-	-
<i>BrPLATZ14</i>	zinc ion binding	-	-
<i>BrPLATZ15</i>	zinc ion binding	-	-
<i>BrPLATZ16</i>	zinc ion binding	-	-
<i>BrPLATZ17</i>	zinc ion binding	Leaf senescence	Nucleus
<i>BrPLATZ18</i>	protein binding	-	Membrane
<i>BrPLATZ19</i>	zinc ion binding	-	-
<i>BrPLATZ20</i>	zinc ion binding	-	-
<i>BrPLATZ21</i>	zinc ion binding	-	-
<i>BrPLATZ22</i>	protein binding	-	Membrane
<i>BrPLATZ23</i>	zinc ion binding	-	-
<i>BrPLATZ24</i>	zinc ion binding	Leaf senescence	Nucleus