

Table S1: Nomenclature, Identification, chromosomal location, CDS and peptide length and weight of BBX gene family in seven Rosacea species.

Name	Gene Id	Location	CDS	Molecular weight(KD)	Peptide
MdBBX1	MDP0000202669	chr1:26862700..26863811	1023	38.14	340
MdBBX2	MDP0000294359	chr2:19905176..19906517	1224	44.10	407
MdBBX3	MDP0000172036	chr3:28997567..28999608	450	16.32	149
MdBBX4	MDP0000820175	chr3:31899712..31900798	375	13.83	124
MdBBX5	MDP0000315396	chr3:33580850..33589540	780	29.71	259
MdBBX6	MDP0000316084	chr3:33595541..33598751	804	30.46	267
MdBBX7	MDP0000289278	chr5:2765013..2765447	435	15.89	144
MdBBX8	MDP0000939920	chr5:2779394..2779828	435	15.89	144
MdBBX9	MDP0000761905	chr5:2792867..2793301	435	15.89	144
MdBBX10	MDP0000598183	chr5:5786734..5786946	213	7.69	70
MdBBX11	MDP0000280947	chr5:20737133..20745836	2577	94.70	858
MdBBX12	MDP0000140460	chr5:20744637..20745869	546	20.25	181
MdBBX13	MDP0000733075	chr6:16920878..16921438	561	20.68	186
MdBBX14	MDP0000271388	chr6:22904175..22906599	1341	49.54	446
MdBBX15	MDP0000283949	chr7:11349283..11353918	1458	53.05	485
MdBBX16	MDP0000242475	chr7:14787088..14787441	354	12.80	117
MdBBX17	MDP0000264228	chr7:25836126..25837798	1374	49.79	457
MdBBX18	MDP0000264845	chr7:25837817..25839485	1443	52.27	480
MdBBX19	MDP0000551876	chr8:1381940..1386799	1335	49.06	444
MdBBX20	MDP0000297093	chr9:4850373..4852477	1179	43.56	392
MdBBX21	MDP0000194889	chr9:6486783..6487555	693	24.71	230
MdBBX22	MDP0000198531	chr9:6495007..6495595	558	20.07	185
MdBBX23	MDP0000232355	chr9:6833588..6836630	1371	49.64	456
MdBBX24	MDP0000177126	chr9:9619025..9620952	1248	40.52	415
MdBBX25	MDP0000587860	chr9:12133412..12133600	189	6.74	62
MdBBX26	MDP0000222881	chr9:24121313..24122788	990	35.22	329
MdBBX27	MDP0000800387	chr10:10605557..10606492	627	23.26	208
MdBBX28	MDP0000901915	chr11:33378342..33379421	1080	39.41	359
MdBBX29	MDP0000208320	chr11:33997775..34000066	996	36.57	331
MdBBX30	MDP0000915501	chr12:21541142..21542428	909	33.25	302
MdBBX31	MDP0000383112	chr13:2085719..2086194	192	7.10	63
MdBBX32	MDP0000131980	chr13:2544446..2546146	1365	50.48	454
MdBBX33	MDP0000314259	chr13:2562817..2564517	1365	50.48	454
MdBBX34	MDP0000247810	chr13:2563965..2564201	237	8.57	78
MdBBX35	MDP0000458656	chr13:2569771..2570873	558	20.55	185
MdBBX36	MDP0000697407	chr13:3060206..3061697	906	32.35	301
MdBBX37	MDP0000302297	chr13:8847122..8862470	2772	101.43	923
MdBBX38	MDP0000565292	chr13:15864540..15876017	1980	71.94	659
MdBBX39	MDP0000151848	chr13:33621832..33624451	759	27.98	252

MdBBX40	MDP0000157816	chr14:9991925..9992740	816	29.64	271
MdBBX41	MDP0000273201	chr14:27661064..27667646	2220	83.53	741
MdBBX42	MDP0000298575	chr16:774671..782658	2307	86.28	768
MdBBX43	MDP0000321380	chr16:1224658..1229786	1752	64.67	583
MdBBX44	MDP0000185616	chr16:1224811..1226412	1362	50.29	453
MdBBX45	MDP0000713113	chr16:20659246..20667253	1404	50.37	467
MdBBX46	MDP0000140484	chr17:5396728..5398846	1182	43.56	393
MdBBX47	MDP0000298635	chr17:5396890..5398976	1182	43.56	393
MdBBX48	MDP0000241871	chr17:5399009..5401138	828	30.91	275
MdBBX49	MDP0000321180	chr17:6874441..6877832	945	34.65	314
MDBBX50	MDP0000198072	chr17:6874660..6875470	729	26.37	242
MdBBX51	MDP0000782323	chr17:9847401..9849311	1230	44.49	409
MdBBX52	MDP0000759984	chr17:12792679..12793491	813	29.42	270
MdBBX53	MDP0000398010	chr17:20057435..20058249	603	21.97	200
MdBBX54	MDP0000128008	unanchored:7356965..7358489	609	22.77	202
MdBBX55	MDP0000664576	unanchored:12855188..12856983	732	26.66	243
MdBBX56	MDP0000321735	unanchored:12861348..12862789	561	20.48	187
MdBBX57	MDP0000189746	unanchored:24652531..24654252	1371	50.30	456
MdBBX58	MDP0000127949	unanchored:30937667..30939034	1062	38.78	353
MdBBX59	MDP0000232445	unanchored:34963592..34966330	900	32.93	299
MdBBX60	MDP0000313949	unanchored:63077159..63081560	1920	72.36	639
MdBBX61	MDP0000686172	unanchored:64578669..64579103	435	15.89	144
MdBBX62	MDP0000128581	unanchored:66464234..66465313	1080	39.41	359
MdBBX63	MDP0000244238	unanchored:66464516..66465595	1080	39.41	359
MdBBX64	MDP0000272743	unanchored:74236542..74238208	1368	49.59	455
MdBBX65	MDP0000488955	unanchored:76682982..76683170	189	6.70	62
MdBBX66	MDP0000697109	unanchored:100056446..100056917	237	8.35	78
MdBBX67	MDP0000122414	unanchored:116968393..116968930	366	12.55	121

(Pear, *Pyrus communis*)

PcBBX1	PCP009714.1	scaffold00007:169646..171470	1356	49.37	452
PcBBX2	PCP043963.1	scaffold00007:519721..521820	1398	51.07	466
PcBBX3	PCP016214.1	scaffold00011:692760..694164	1020	38.73	340
PcBBX4	PCP035867.1	scaffold00014:563819..564244	423	15.92	141
PcBBX5	PCP005095.1	scaffold00024:549462..550506	810	29.32	270
PcBBX6	PCP022591.1	scaffold00035:232464..233907	906	33.34	302
PcBBX7	PCP014647.1	scaffold00070:241159..249737	504	18.25	168
PcBBX8	PCP024261.1	scaffold00076:130476..133225	1161	42.36	387
PcBBX9	PCP036200.1	scaffold00095:68171..76508	2784	101.6	928
PcBBX10	PCP011581.1	scaffold00128:258610..260887	1194	44.38	398
PcBBX11	PCP030625.1	scaffold00180:63246..66485	393	13.10	131
PcBBX12	PCP030637.1	scaffold00180:214739..216317	870	31.94	290
PcBBX13	PCP005365.1	scaffold00204:137886..139947	603	22.89	201
PcBBX14	PCP005445.1	scaffold00264:269670..275747	1932	72.89	644

PcBBX15	PCP016580.1	scaffold00271:22086..23080	744	26.03	248
PcBBX16	PCP042842.1	scaffold00317:112198..114125	1245	45.99	415
PcBBX17	PCP005533.1	scaffold00364:92726..95120	1074	39.06	358
PcBBX18	PCP033159.1	scaffold00365:188908..191817	1374	50.82	458
PcBBX19	PCP016741.1	scaffold00411:124538..125217	441	16.47	147
PcBBX20	PCP018295.1	scaffold00452:206496..207931	903	32.93	301
PcBBX21	PCP039894.1	scaffold00467:78987..81027	666	24.88	222
PcBBX22	PCP021617.1	scaffold00594:143726..146870	780	27.59	260
PcBBX23	PCP023237.1	scaffold00635:23866..29654	1245	45.47	415
PcBBX24	PCP044704.1	scaffold00702:47152..50034	891	32.21	297
PcBBX25	PCP028057.1	scaffold00738:58516..63937	1689	61.37	563
PcBBX26	PCP012120.1	scaffold00748:102457..103657	813	29.73	271
PcBBX27	PCP007365.1	scaffold00765:1816..2690	738	26.42	246
PcBBX28	PCP015430.1	scaffold00990:92630..93637	564	21.85	188
PcBBX29	PCP009084.1	scaffold01146:64216..65974	1230	44.98	410
PcBBX30	PCP010729.1	scaffold01267:21807..27157	720	25.79	240
PcBBX31	PCP017205.1	scaffold01311:34630..35897	1020	37.49	340
PcBBX32	PCP028298.1	scaffold01398:71203..78157	615	22.81	205
PcBBX33	PCP014014.1	scaffold01509:68826..74781	1293	48.10	431
PcBBX34	PCP022040.1	scaffold01674:47276..48600	1008	36.11	336
PcBBX35	PCP035132.1	scaffold01811:37244..38937	1323	49.13	441
PcBBX36	PCP026940.1	scaffold02017:12727..25097	3273	121.1	1091
PcBBX37	PCP025314.1	scaffold02096:136..1889	1362	50.17	454
PcBBX38	PCP045197.1	scaffold05997:857..2571	597	21.90	199
PcBBX39	PCP022283.1	scaffold07834:1367..3297	726	26.88	242
PcBBX40	PCP040624.1	scaffold17349:177..2057	921	33.13	307

Rosa Chinesis (Rose)

RcBBX1	RC0G0003800	Chr00:350774..354991	1251	45.19	417
RcBBX2	RC0G0110200	Chr00:13204519..13205726	1074	39.09	358
RcBBX3	RC0G0138600	Chr00:17414184..17416216	717	26.53	239
RcBBX4	RC2G0139900	Chr02:11653012..11655635	561	20.34	187
RcBBX5	RC2G0315700	Chr02:33096974..33097822	639	22.80	213
RcBBX6	RC2G0491300	Chr02:57402185..57405076	696	25.77	232
RcBBX7	RC2G0501900	Chr02:58418265..58419568	792	28.46	264
RcBBX8	RC2G0550600	Chr02:63202976..63205538	1350	49.28	450
RcBBX9	RC2G0550700	Chr02:63205797..63207626	270	10.74	90
RcBBX10	RC2G0558900	Chr02:64087302..64088912	765	28.49	255
RcBBX11	RC2G0585400	Chr02:66344092..66346528	882	32.77	294
RcBBX12	RC4G0386100	Chr04:49891627..49894003	1359	51.58	453
RcBBX13	RC4G0385900	Chr04:49862326..49862904	576	20.01	192
RcBBX14	RC4G0386000	Chr04:49863689..49867711	1041	38.42	347

RcBBX15	RC4G0394000	Chr04:50602599..50604335	1338	49.92	446
RcBBX16	RC5G0261500	Chr05:22136743..22140055	855	30.09	285
RcBBX17	RC5G0319200	Chr05:29061736..29062603	723	26.01	241
RcBBX18	RC6G0195500	Chr06:22416546..22417889	648	24.34	216
RcBBX19	RC6G0423000	Chr06:53394265..53397720	1167	43.11	389
RcBBX20	RC6G0448100	Chr06:55381121..55382633	1203	44.00	401
RcBBX21	RC6G0508800	Chr06:60256429..60257878	891	32.19	297
RcBBX22	RC7G0081000	Chr07:5581172..5583667	1539	57.77	513

Prunus Avioum (Sweet Cherry)

PaBBX1	Pav_sc0004527.1_g080.1.mk	PAV_r1.0chr1:17737787..17743220	717	26.43	239
PaBBX2	Pav_sc0001051.1_g030.1.mk	PAV_r1.0chr1:24564167..24566102	999	35.19	333
PaBBX3	Pav_sc0001181.1_g240.1.mk	PAV_r1.0chr1:24997238..24998521	1950	71.18	650
PaBBX4	Pav_sc0000131.1_g850.1.mk	PAV_r1.0chr1:29989611..29991028	1350	49.26	450
PaBBX5	Pav_sc0002456.1_g010.1.mk	PAV_r1.0chr1:43036607..43051043	891	33.28	297
PaBBX6	Pav_sc0000293.1_g410.1.mk	PAV_r1.0chr3:661262..662056	1029	38.77	343
PaBBX7	Pav_sc0000592.1_g560.1.mk	PAV_r1.0chr3:11351478..11353057	1644	59.04	548
PaBBX8	Pav_sc0000488.1_g110.1.mk	PAV_r1.0chr3:14498374..14502886	792	28.08	264
PaBBX9	Pav_sc0000405.1_g160.1.mk	PAV_r1.0chr3:16146055..16148421	672	24.55	224
PaBBX10	Pav_sc0000405.1_g200.1.mk	PAV_r1.0chr3:16170043..16170396	1254	45.29	418
PaBBX11	Pav_sc0001859.1_g200.1.mk	PAV_r1.0chr3:16934620..16935833	1197	42.79	399
PaBBX12	Pav_sc0000051.1_g110.1.mk	PAV_r1.0chr3:18112949..18115389	351	13.82	117
PaBBX13	Pav_sc0000598.1_g150.1.mk	PAV_r1.0chr4:1931059..1932064	456	17.06	152
PaBBX14	Pav_sc0000352.1_g070.1.mk	PAV_r1.0chr4:11752866..11755126	972	35.87	324
PaBBX15	Pav_sc0000124.1_g140.1.mk	PAV_r1.0chr4:14560239..14561009	612	23.58	204
PaBBX16	Pav_sc0000383.1_g410.1.mk	PAV_r1.0chr5:15713586..15715861	900	31.31	300
PaBBX17	Pav_sc0000044.1_g810.1.mk	PAV_r1.0chr7:13871819..13874309	576	21.37	192
PaBBX18	Pav_sc0000175.1_g260.1.mk	PAV_r1.0chr8:8049172..8053512	1440	53.68	480
PaBBX19	Pav_sc0001518.1_g660.1.mk	PAV_r1.0chr8:8383526..8384850	687	25.08	229
PaBBX20	Pav_sc0000848.1_g470.1.mk	PAV_r1.0chr8:19897720..19900725	546	20.75	182
PaBBX21	Pav_sc0004527.1_g080.1.mk	PAV_r1.0chr1:17737787..17743220	624	23.66	208
PaBBX22	Pav_sc0001051.1_g030.1.mk	PAV_r1.0chr1:24564167..24566102	1173	43.97	391

Rubus occidentalis (Black raspberry)

RoBBX1	Bras_T01148	chr1_v1.1:19757119..19760254	747	27.66	249
RoBBX2	Bras_T23037	chr2_v1.1:5029153..5033176	624	23.86	208
RoBBX3	Bras_T14233	chr2_v1.1:5300809..5302758	645	24.04	215
RoBBX4	Bras_T02515	chr2_v1.1:9603227..9604828	1017	37.33	339
RoBBX5	Bras_T02294	chr2_v1.1:10747166..10748922	900	32.76	300
RoBBX6	Bras_T07074	chr2_v1.1:17881853..17884695	1185	43.45	395
RoBBX7	Bras_T18105	chr3_v1.1:20008409..20009743	741	27.93	247
RoBBX8	Bras_T18591	chr3_v1.1:23954027..23956321	846	30.88	282
RoBBX9	Bras_T05889	chr3_v1.1:31762193..31767034	684	25.37	228

RoBBX10	Bras_T02680	chr4_v1.1:4650595..4652026	1302	48.18	434
RoBBX11	Bras_T23114	chr4_v1.1:7464873..7467556	1437	52.30	479
RoBBX12	Bras_T25113	chr4_v1.1:11937754..11939524	1095	40.34	365
RoBBX13	Bras_T16297	chr5_v1.1:3211002..3213352	1359	50.09	453
RoBBX14	Bras_T03753	chr6_v1.1:228708..229566	648	23.07	216
RoBBX15	Bras_T04853	chr6_v1.1:4550295..4552732	1188	43.48	396
RoBBX16	Bras_T23364	chr6_v1.1:5339364..5340269	795	28.96	265
RoBBX17	Bras_T22204	chr6_v1.1:5605179..5605529	348	13.29	116
RoBBX18	Bras_T22203	chr6_v1.1:5607139..5609397	1359	49.44	453
RoBBX19	Bras_T26276	chr6_v1.1:15029911..15032044	546	19.54	182
RoBBX20	Bras_T24206	chr6_v1.1:15618605..15619375	768	27.22	256
<i>Prunus Persica (Peach)</i>					
PpBBX1	ppa007083m	scaffold_1:6788512..6789796	1149	41.82	383
PpBBX2	ppa010704m	scaffold_1:17830935..17834763	717	26.54	239
PpBBX3	ppa004756m	scaffold_1:22447084..22450267	1479	53.48	493
PpBBX4	ppa005713m	scaffold_1:29244300..29245928	1341	49.78	447
PpBBX5	ppa022195m	scaffold_1:29624131..29626487	1380	51.78	460
PpBBX6	ppa011525m	scaffold_1:32859280..32860179	621	22.30	207
PpBBX7	ppa008143m	scaffold_1:34301935..34303374	1029	38.51	343
PpBBX8	ppa026514m	scaffold_3:611907..612413	507	17.98	169
PpBBX9	ppa010493m	scaffold_3:12066729..12068386	741	27.48	247
PpBBX10	ppa006303m	scaffold_3:15262568..15266469	1254	45.27	418
PpBBX11	ppa025622m	scaffold_3:16815877..16818464	1353	49.75	451
PpBBX12	ppa022228m	scaffold_3:16836056..16836409	351	13.94	117
PpBBX13	ppa009942m	scaffold_3:17290319..17291325	813	29.29	271
PpBBX14	ppa007007m	scaffold_3:18343501..18345686	1158	42.31	386
PpBBX15	ppa010671m	scaffold_4:11588344..11589492	720	26.90	240
PpBBX16	ppa017267m	scaffold_5:17214327..17217139	1320	49.99	440
PpBBX17	ppa012724m	scaffold_7:17379028..17381072	471	17.07	157
PpBBX18	ppa011488m	scaffold_8:11063691..11065316	624	22.95	208
PpBBX19	ppa026391m	scaffold_8:11362565..11363292	624	23.75	208
PpBBX20	ppa006893m	scaffold_8:20983651..20985809	1173	43.28	391
<i>Fragaria vesca (Strawberry)</i>					
FvBBX1	FvH4_1g12110.1	Fvb1_v4.0.a1:6615402..6618534	558	20.20	186
FvBBX2	FvH4_2g10070.1	Fvb2_v4.0.a1:8897464..8898927	636	23.62	212
FvBBX3	FvH4_2g24910.1	Fvb2_v4.0.a1:20252285..20254597	1221	45.37	407
FvBBX4	FvH4_2g38990.1	Fvb2_v4.0.a1:28109209..28111377	939	34.57	313
FvBBX5	FvH4_2g41420.1	Fvb2_v4.0.a1:29305066..29306602	936	34.73	312
FvBBX6	FvH4_3g03640.1	Fvb3_v4.0.a1:2045334..2045885	549	20.61	183
FvBBX7	FvH4_3g17750.1	Fvb3_v4.0.a1:11299511..11301015	861	30.6	287
FvBBX8	FvH4_3g21230.1	Fvb3_v4.0.a1:14224437..14225826	741	27.5	247

FvBBX9	FvH4_4g08980.1	Fvb4_v4.0.a1:10078078..10079648	1068	38.97	356
FvBBX10	FvH4_4g10930.1	Fvb4_v4.0.a1:14597113..14598985	714	26.62	238
FvBBX11	FvH4_4g23090.1	Fvb4_v4.0.a1:25667550..25687393	3483	126.05	1161
FvBBX12	FvH4_4g26540.1	Fvb4_v4.0.a1:27897258..27898373	489	17.56	163
FvBBX13	FvH4_4g26550.1	Fvb4_v4.0.a1:27899035..27902637	1413	52.81	471
FvBBX14	FvH4_4g27390.1	Fvb4_v4.0.a1:28409275..28411534	1350	50.90	450
FvBBX15	FvH4_5g12150.1	Fvb5_v4.0.a1:6852197..6854626	1371	51.43	457
FvBBX16	FvH4_6g37140.1	Fvb6_v4.0.a1:29197326..29198120	792	28.63	264
FvBBX17	FvH4_6g37790.1	Fvb6_v4.0.a1:29751710..29755900	210	7.93	70
FvBBX18	FvH4_6g40380.1	Fvb6_v4.0.a1:31931440..31935769	1251	45.46	417
FvBBX19	FvH4_6g43570.1	Fvb6_v4.0.a1:33682892..33686067	1332	48.65	444
FvBBX20	FvH4_6g43580.1	Fvb6_v4.0.a1:33686668..33687006	336	12.81	112
FvBBX21	FvH4_6g44270.1	Fvb6_v4.0.a1:34125442..34128499	756	27.25	252

Table S2: The detail information about physiochemical characteristics of BBX Gene family in seven *Rosacea* species.

Name	Isoelectric Point	Instability Index	GRAVY	Major Amino Acid ^a	Aliphatic Index	Strand
MdBBX1	5.74	48.93	-0.571	A(10.6%)、S(10%)、V(7.4%)	65.18	+
MdBBX2	8.11	47.83	-0.295	S(10.8%)、A(10.6%)、P(7.9%)	71.47	-
MdBBX3	5.35	45.68	-0.372	L(10.7%)、G(9.4%)、A(8.1%)	74.63	-
MdBBX4	6.55	40.02	-0.128	L(10.5%)、G(8.9%)、R(8.1%)	76.21	+
MdBBX5	6.75	51.71	0.62	L(9.3%)、V(8.9%)、P(8.5%)	95.56	-
MdBBX6	9.53	49.57	-0.203	V(9.0%)、L(8.6%)、P(8.2%)	84.64	+
MdBBX7	4.58	69.35	-0.791	S(13.2%)、D(9.7%)、E(9.7%)	56.11	+
MdBBX8	4.58	69.35	-0.791	S(13.2%)、D(9.7%)、E(9.7%)	56.11	+
MdBBX9	4.58	69.35	-0.791	S(13.2%)、D(9.7%)、E(9.7%)	56.11	+
MdBBX10	7.50	27.50	0.187	A(12.9%)、C(12.9%)、L/K(10%)	94.86	+
MdBBX11	6.13	41.54	-0.173	L(8.9%)、G(8.3%)、S(7.7%)	82.49	-
MdBBX12	8.41	60.04	-0.618	A(9.4%)、R(8.3%)、P(7.7%)	66.85	+
MdBBX13	4.55	49.07	-0.864	E(12.9%)、D(9.7%)、S(9.7%)	52.96	+
MdBBX14	5.21	54.60	-0.574	A/E(9.8%)、G/L(7.8%)	71.79	-
MdBBX15	7.14	44.83	-0.449	A(9.7%)、G(8.5%)、L(8.2%)	65.67	-
MdBBX16	8.88	57.75	-0.342	A(12%)、S(11%)、P/T(8.5%)	60.94	+
MdBBX17	6.54	48.50	-0.215	S(10.7%)、A(9.8%)、L(8.5%)	75.21	+
MdBBX18	8.44	47.81	-0.219	S(10.6%)、A(10.4%)、L(8.8%)	78.31	+
MdBBX19	6.28	49.36	-0.381	L(9.0%)、S(8.8%)、A(7.9%)	71.44	-
MdBBX20	5.76	40.53	-0.602	A(9.7%)、S(8.4%)、E(7.1%)	62.02	-
MdBBX21	4.37	60.15	-0.906	D(14.8%)、S(12.6%)、A(8.3%)	50.13	-
MdBBX22	4.11	53.65	-0.837	D(15.7%)、S(11.9%)、G(7.0%)	50.65	+
MdBBX23	5.70	46.68	-0.494	S(12.5%)、G(7.5%)、L(7.5%)	61.43	-
MdBBX24	5.90	54.05	-0.651	S(13.2%)、A(9.1%)、G(7.0%)	54.89	+

MdBBX25	6.68	63.24	-0.044	A(12.9%)、C(12.9%)、S(9.7%)	75.65	-
MdBBX26	5.28	45.97	-0.221	S(10.6%)、G(9.4%)、A(7.9%)	68.18	+
MdBBX27	6.44	61.80	-0.503	S(16.8%)、L(8.7%)、E/ K(6.7%)	64.76	+
MdBBX28	5.59	42.24	-0.460	A(9.2%)、S(9.2%)、D(8.1%)	73.87	-
MdBBX29	7.52	48.65	-0.617	S(9.4%)、G(8.5%)、E(7.6%)	56.89	-
MdBBX30	6.59	50.47	-0.485	S(11.9%)、A(7.6%)、P(7.3%)	59.14	-
MdBBX31	6.48	60.25	-0.652	T(11.1%)、L(9.5%)、A(9.5%)	71.27	+
MdBBX32	5.22	49.84	-0.816	D(10.6%)、A(9.3%)、S(8.6%)	56.59	-
MdBBX33	5.22	49.81	-0.816	D(10.6%)、A(9.3%)、S(8.6%)	56.59	+
MdBBX34	9.77	52.59	-0.457	A(16.7%)、K(11.9%)、S(10.3%)	75.26	-
MdBBX35	8.92	57.56	-0.638	L(11.4%)、S(9.7%)、G(9.2%)	70.16	-
MdBBX36	5.71	52.51	-0.230	S(11.6%)、A(8.0%)、G(7.3%)	67.08	+
MdBBX37	5.94	41.22	-0.440	L(10.8%)、S(9.9%)、G(8.8%)	80.34	+
MdBBX38	5.58	44.52	-0.402	L(11.2%)、G(9.6%)、S(9.3%)	76.19	+
MdBBX39	5.56	46.47	-0.544	G(8.3%)、V(8.3%)、A(7.1%)	71.90	+
MdBBX40	8.72	55.70	-0.280	S(14.0%)、R(9.2%)、A(8.9%)	65.87	+
MdBBX41	4.77	57.32	-0.612	E(10.3%)、L(7.8%)、D(7.2%)	69.23	-
MdBBX42	5.65	57.84	-0.383	L(10.4%)、S(9.6%)、E/A(6.9%)	82.03	-
MdBBX43	6.03	43.45	-0.738	S(8.7%)、G(8.6%)、D(8.6%)	59.91	-
MdBBX44	5.33	44.40	-0.808	D(10.6%)、S(9.1%)、G(8.2%)	58.59	+
MdBBX45	6.07	47.10	-0.268	S(10.9%)、A(10.1%)、P(7.7%)	72.53	+
MdBBX46	5.40	36.26	-0.611`	A(10.4%)、S(8.1%)、E(6.9%)	61.88	-
MdBBX47	5.40	36.26	-0.611`	A(10.4%)、S(8.1%)、E(6.9%)	61.88	-
MdBBX48	6.50	26.90	-0.760	S(8.0%)、A(8.0%)、Q(7.6%)	57.45	-
MdBBX49	4.90	64.29	-0.901	S(13.4%)、D(11.5%)、R(9.6%)	55.03	-
MdBBX50	4.53	73.41	-0.997	S(13.6%)、D(13.2%)、R(9.5%)	49.63	-
MdBBX51	6.15	56.20	-0.625	S(14.4%)、A(9.0%)、G(6.8%)	56.36	-
MdBBX52	8.80	52.51	-0.297	S(13.3%)、A(10.4%)、R(9.3%)	66.89	-
MdBBX53	4.58	37.86	-0.320	S(11.5%)、A(8.5%)、L(8.5%)	73.70	-
MdBBX54	5.88	52.74	-0.352	L(10.9%)、R(7.9%)、D(7.4%)	89.31	-
MdBBX55	4.95	40.12	-0.328	S(10.3%)、A(9.5%)、L(8.6%)	76.34	+
MdBBX56	4.79	46.27	-0.150	S(12.8%)、L(10.2%)、A(8.6%)	84.55	+
MdBBX57	3.33	58.69	-0.276	L(12.5%)、S(11.4%)、P(8.3%)	83.49	+
MdBBX58	9.91	37.04	-0.133	A(10.5%)、L(8.8%)、S(7.9%)	85.47	-
MdBBX59	5.00	44.38	-0.307	S(10.7%)、L(10.0%)、A(9.0%)	81.30	+
MdBBX60	7.16	54.70	-0.710	S(11.1%)、L(7.5%)、R(6.9%)	62.88	-
MdBBX61	4.58	69.35	-0.791	S(13.2%)、D(9.7%)、E(9.7%)	56.11	+
MdBBX62	5.59	42.24	-0.460	A(9.2%)、S(9.2%)、V(9.2%)	73.87	+
MdBBX63	5.59	42.24	-0.460	A(9.2%)、S(9.2%)、V(9.2%)	73.87	+
MdBBX64	6.45	48.28	-0.209	S(10.8%)、A(9.9%)、L(8.6%)	76.18	+
MdBBX65	6.68	63.56	-0.015	A(14.5%)、C(12.9%)、S(9.7%)	77.26	-
MdBBX66	5.91	40.69	0.168	A(14.5%)、C(12.8%)、L(12.8%)	95.26	-
MdBBX67	4.61	40.93	-0.465	G(18.2%)、E(13.2%)、V(10.7%)	61.98	+
PcBBX1	5.23	47.38	-0.782	D (10.4), A (7.7), G (8.2)	60.88	+
PcBBX2	5.42	58.32	-0.44	S (13.5), L (9.3), D (6.9)	70.99	-
PcBBX3	5.96	46.7	-0.538	A (10.9), S (10.0), D (7.6)	67.18	+
PcBBX4	4.7	72.38	-0.785	S (13.5), E (9.9), D (8.5)	57.3	-
PcBBX5	8.85	51.52	-0.327	A (10.4), S (13.0), R (10.0)	66.52	+

PcBBX6	6.85	50.96	-0.465	S (11.6), A (8.9), P (7.0)	59.5	-
PcBBX7	4.33	55.09	-0.931	E(14.3), S (11.3), D (10.7)	49.88	-
PcBBX8	5.93	53.77	-0.64	G (9.3), S (9.8), E (7.8)	54.7	+
PcBBX9	5.42	36.04	-0.305	L (12.6), N (8.1), S (9.3)	88.74	-
PcBBX10	5.83	40.32	-0.619	A (9.3), E (7.0), V (6.5)	62.54	-
PcBBX11	4.81	33.55	-0.106	G (13.7), A (9.9), S (9.2)	68.47	+
PcBBX12	5.28	55.89	-0.31	S(12.1), A (7.9), V (6.6)	64.59	-
PcBBX13	6.04	44.86	-0.517	L (9.0), D (8.0), N (7.5)	80	-
PcBBX14	6.41	55.99	-0.707	S (11.7), L (7.8), E (7.0)	64.66	-
PcBBX15	4.58	74.24	-0.931	D (13.3), R (9.3), A (7.7)	50.77	+
PcBBX16	6.08	52.45	-0.608	S(14.2), A (8.7), L (7.0)	59.52	-
PcBBX17	5.82	42.58	-0.573	A (10.6), S (9.2), E (6.7)	63.3	+
PcBBX18	5.70	44.91	-0.518	G (7.4), S (12.0), L (7.4)	59.43	-
PcBBX19	4.08	83.51	-1.19	E(12.9), S (13.6), D (12.9)	42.99	-
PcBBX20	5.93	55.99	-0.408	S (10.6), A (9.6), L (7.0)	63.62	+
PcBBX21	6.66	51.01	-0.377	A (9.9), R (7.7), L (7.7)	77.79	-
PcBBX22	5.25	46.84	-0.074	S 99.6), A (8.5), V (8.1)	76.88	+
PcBBX23	5.91	59.53	-0.617	S (13.7), A (8.2), G (7.0)	53.88	+
PcBBX24	4.94	45.74	-0.242	L (11.1), A (9.1), S (9.4)	85.79	-
PcBBX25	5.61	48.54	-0.518	S (10.3), G (9.8), L (8.5)	67.39	-
PcBBX26	9.14	57.46	-0.314	S (13.3), R (9.6), A (9.2)	66.61	-
PcBBX27	4.55	67.97	-0.933	D (13.4), S (13.0), G (7.7)	49.63	+
PcBBX28	4.36	67.71	-0.112	E(16.5), S 911.2), D (11.2)	48.24	-
PcBBX29	6.51	50.96	-0.367	S (11.5), A (10.0), P (8.0)	69.54	+
PcBBX30	6.1	43.22	0.006	S (11.2), A (7.5), L (9.6)	85.29	-
PcBBX31	5.95	43.84	-0.451	S (10.6), A (10.6), R (7.1)	72.29	-
PcBBX32	5.19	42.18	-0.338	A (10.2), E (8.8), L (7.8)	72.88	-
PcBBX33	5.21	45.91	-0.686	E (9.0), A (8.1), D (8.1)	68.84	+
PcBBX34	5.2	42.96	-0.123	S (11.0), A (10.4), L (8.9)	80.18	+
PcBBX35	5.32	56.21	-0.596	A (9.1), E (9.3), G (7.9)	70.16	+
PcBBX36	5.97	29.57	-0.352	A (8.0), S (8.4), L (7.7)	72.58	-
PcBBX37	5.5	46.64	-0.797	D (10.4), A (8.8), G (7.5)	57.2	+
PcBBX38	6.06	46.05	-0.36	V (10.1), L (8.5), N (8.0)	86.63	+
PcBBX39	5.09	44.18	-0.383	S (11.6), A (9.5), L (7.9)	71.82	-
PcBBX40	4.87	48.94	-0.352	S (11.4), N (9.4), G (8.5)	67.33	+
RcBBX1	5.17	54.22	-0.471	A (10.1), S (13.9), G (7.2)	60.91	+
RcBBX2	6.24	45.62	-0.302	S (11.5), A (10.3), V (7.3)	72.79	+
RcBBX3	4.79	43.02	-0.29	S (10.9), A (9.6), D (7.9)	79.25	-
RcBBX4	6.87	51.57	-0.584	A(10.2), R (8.0), D (8.0)	68.41	+
RcBBX5	4.85	47.63	0.125	G (11.7), S (10.3), A (8.0)	80.09	+
RcBBX6	6.64	41.04	-0.237	S (11.6), L (8.6), A (6.5)	79.01	+
RcBBX7	9.57	56.47	-0.02	S (14.8), R (9.1), G (8.7)	76.06	+
RcBBX8	5.51	57.79	-0.562	S (13.1), L (7.6), G (6.7)	61.13	+
RcBBX9	8.70	32.57	0.038	L (12.2), C (11.2), R (9.2)	92.45	-
RcBBX10	4.83	60.87	-0.924	D (13.7), S (10.2), R (11.0)	58.98	+
RcBBX11	8.59	36.62	-0.459	A (10.5), S (9.2), R (7.8)	63.78	+
RcBBX12	5.52	61.53	-0.674	S (13.0), D (9.1), L (7.1)	59.62	-
RcBBX13	6.36	35.32	0.222	S (11.5), L (11.5), H (7.3)	100.0	-
RcBBX14	7.01	53.61	-0.481	S (13.3), L (8.1), A (6.6)	75.88	-
RcBBX15	5.78	54.12	-0.767	S (11.4), E (8.3), A (8.1)	58	-
RcBBX16	4.91	61.87	-0.313	S (11.6), A (9.1), G (8.8)	60.95	+
RcBBX17	4.31	57.12	-0.815	E (14.1), S (10.8), D (9.5)	58.22	-
RcBBX18	5.98	50.53	-0.47	S (13.0), D (8.3), C (7.4)	65.93	+
RcBBX19	5.79	62.41	-0.671	S (11.3), E (8.0), L (7.7)	58.43	-

RcBBX20	6.09	44.85	-0.628	S (10.5), A (9.0), R (7.7)	67.41	+
RcBBX21	6.11	55.25	-0.523	S (14.1), A (6.7), N (6.7)	62.76	+
RcBBX22	5.74	48.36	-0.686	E (8.8), G (7.8), L (7.6)	66.71	+
PaBBX1	4.77	40.44	-0.315	A (10.9), E (8.4), L (7.9)	74.81	+
PaBBX2	4.95	51.92	-0.046	S (13.2) A (10.8), D (7.5)	82.97	+
PaBBX3	6.80	43.03	-0.458	L (10.5) G (9.5), D (7.2)	74.68	-
PaBBX4	5.15	55.27	-0.79	A (8.7), E (8.4), D (8.7)	56.84	+
PaBBX5	6.88	52.15	-0.818	S (10.8), L (8.8), Q (7.7)	59.43	+
PaBBX6	5.47	46.48	-0.539	S (10.7), A (9.3) V (9.3)	65.95	+
PaBBX7	5.29	48.01	-0.758	G (9.9), S (9.1), R (7.8)	62.06	-
PaBBX8	9.32	53.95	-0.246	S (13.6) A (11.4), G (8.3)	72.16	+
PaBBX9	5.13	41.15	-0.426	A (8.9), L (9.8), S (9.8)	72.37	+
PaBBX10	5.52	56.34	-0.508	S (13.2), A (8.9), L (6.9)	60.02	-
PaBBX11	5.07	57.97	-0.485	S (13.8), G (8.5), N (7.5)	63.13	-
PaBBX12	9.13	59.62	-0.161	C (10.3), L (11.1), R (11.1)	77.44	-
PaBBX13	9.09	88.73	-0.849	R (12.5), S (13.2), A (9.2)	60.46	+
PaBBX14	5.78	43.12	-0.482	A (11.4), S (9.3), E (7.1)	67.25	-
PaBBX15	4.51	60.61	-1.254	D (12.3), S (12.3), E (10.3)	38.58	+
PaBBX16	5.53	63.35	-0.327	S (12.7), G (10.7), A (8.3)	63.03	+
PaBBX17	4.78	58.79	-0.698	D (10.9), R (8.9), E (9.9)	73.7	+
PaBBX18	5.12	48.46	-0.77	D (8.5), E (8.5), A (8.1)	62.23	-
PaBBX19	8.51	48.36	-0.387	A (9.2), R (8.3), S (7.0)	74.1	+
PaBBX20	8.71	56.35	-0.329	L (9.3), R (7.7), S (7.7)	83.41	+
PaBBX21	5.97	58.23	-0.462	S (13.9), A (7.2), C (6.7)	58.17	+
PaBBX22	6.91	51.57	-0.661	S (11.8), A (7.2), G (7.4)	58.9	-
RoBBX1	6.59	51.14	-0.404	(L)8.4, (R)7.6, (A)7.2	75.58	-
RoBBX2	6.14	46.38	-0.502	(N)8.7, (V)8.2, (L)7.2	73.99	-
RoBBX3	5.69	44.14	-0.461	(S)11.6, (D)8.8, (L)7.4	68.47	+
RoBBX4	5.69	42.44	-0.448	(S)10.6, (A)8.6, (D)8.0	71.33	-
RoBBX5	5.97	53.09	-0.331	(S)13.6, (A)7.3, (D)7.0	69.37	-
RoBBX6	5.33	56.75	-0.76	(S)11.6, (L)8.1, (G)7.3	54.63	+
RoBBX7	4.39	58.98	-0.936	(E)13.0, (S)10.5, (D)10.1	58.79	+
RoBBX8	5.17	59.8	-0.311	(S)12.8, (A)9.2, (G)7.8	59.86	-
RoBBX9	4.46	75.87	-1.046	(S)12.3, (E)11.8, (D)8.8	44.87	+
RoBBX10	5.46	54.7	-0.724	(S)10.6, (D)9.2, (A)9.0	59.84	+
RoBBX11	6.17	39.79	-0.663	(G)9.0, (L)7.9, (N)7.3	64.55	+
RoBBX12	6.50	47.22	-0.308	(S)11.0, (A)8.8, (P)8.2	71.34	-
RoBBX13	5.11	49.66	-0.746	(E)10.8, (G)8.4, (L)8.2	63.11	+
RoBBX14	8.43	53.94	-0.377	(S)12.5, (A)8.8, (R)8.3	77.22	+
RoBBX15	5.39	35.9	-0.588	(A)9.8, (S)8.8, (D)7.3	60.91	+
RoBBX16	4.58	58.52	-0.927	(D)14.0, (S)11.7, (R)9.4	56.04	-
RoBBX17	6.69	49.97	-0.093	(L)12.9, (C)9.5, (E)7.8	86.55	-
RoBBX18	5.26	55.72	-0.484	(S)12.6, (L)8.2, (G)7.1	67.17	+
RoBBX19	7.95	40.25	-0.086	(S)11.0, (L)8.2, (A)7.7	78.24	-
RoBBX20	9.17	58.61	-0.155	(S)12.9, (A)10.5, (R)9.4	72.07	+
PpBBX1	5.94	47.97	-0.304	(S)11.7, (A)10.7, (D)6.5	73.92	+
PpBBX2	4.70	43.55	-0.279	(A)11.3, (S)9.6, L (8.8)	78.49	+
PpBBX3	5.53	48.83	-0.651	(G)11.2, (L)8.9, (D)7.7	63.67	-
PpBBX4	5.07	55.85	-0.801	(E)9.2, (S)8.5, (G)8.3	53.27	+
PpBBX5	5.78	64.19	-0.468	(S)13.5, (L)9.8 (D) 7.6	68.48	+
PpBBX6	7.56	45.64	-0.287	(S)12.1, (T)8.7, (A) 8.2	72.61	+
PpBBX7	5.56	43.24	-0.497	(A)10.8, (S)10.5, (V)9.0	66.56	-
PpBBX8	8.94	46.95	-0.374	(S)16.6, (A)10.7, (C)7.7	54.97	-
PpBBX9	5.06	39.46	-0.38	(S)10.1, (A)8.9, (D)7.7	71.54	+

PpBBX10	5.63	55.89	-0.485	(S)12.9, (A)9.6, (G)7.4	60.74	+
PpBBX11	5.74	53.96	-0.556	(S)12.2, (G)8.4, (N)7.3	58.4	+
PpBBX12	9.32	59.93	-0.247	(R)12.0, (L)11.1, (C)9.4	77.44	+
PpBBX13	4.73	74.93	-1.067	(S)14.4,(D)11.1, (R)8.5	49.37	-
PpBBX14	5.22	46.66	-0.588	(A)9.8, (S)8.8, (E)7.3	63.99	+
PpBBX15	4.38	63.21	-0.765	(E)13.3, (S)10.8 (D) 10.0	68.29	+
PpBBX16	4.94	47.44	-0.774	(E)9.3, (D)8.9, (L)8.0	64.77	-
PpBBX17	7.11	49.07	-0.704	(R)8.3, (D)7.6, (G)7.0	67.64	
PpBBX18	5.75	59.38	-0.377	(V)9.1, (L)7.7, (A)7.2	78.7	-
PpBBX19	6.64	56.08	-0.471	(S)13.9, (A)7.2, (L)6.7	56.78	+
PpBBX20	6.03	50.38	-0.654	(S)11.3, (L)8.2, (E)7.7	67.64	-
FvBBX1	6.74	51.56	-0.570	(A)10.2, (D)8.6, (R) 8.1	68.23	+
FvBBX2	6.17	47.96	-0.622	(S)13.7, (D)7.5, (A)6.6	58.44	+
FvBBX3	5.34	56.44	-0.506	(S)10.3, (G)8.8, (A)6.1	60.39	-
FvBBX4	6.62	49.21	-0.461	(S)14.1, (T)7.3, (N)6.1	66.36	+
FvBBX5	6.33	48.1	-0.512	(S)11.9, (A)10.9, (D)7.4	69.49	-
FvBBX6	4.37	65.89	-1.086	(S)12.6, (D)12.0,(E)10.9	44.75	+
FvBBX7	5.12	56.32	-0.313	(S)10.8, (G)9.1, (A) 8.7	67.28	+
FvBBX8	4.30	54.21	-0.756	(E)14.6, (D)10.1, (S)8.9	63.52	-
FvBBX9	5.63	55.03	-0.304	(S)12.4, (A)10.4, (P)7.9	68.29	+
FvBBX10	4.71	39.45	-0.318	(S)9.7, (D)8.4, (E)6.7	76.72	-
FvBBX11	6.51	30.39	-0.186	(L)13.4, (S)9.0, (N)8.0	91.95	+
FvBBX12	5.87	56.74	-0.006	(S)13.5, (L)12.3, (A)8.0	88.59	-
FvBBX13	5.62	56.7	-0.654	(S)12.3, (D)8.5, (L)6.8	61.87	-
FvBBX14	5.56	58.44	-0.799	(E)9.1, (A)8.4, (R)8.0	55.56	-
FvBBX15	5.56	48.82	-0.781	(E)9.4, (G)7.9, (D)7.7	62.36	-
FvBBX16	8.99	54.72	-0.161	(S)13.6,(R)10.6, (A)9.8	73.9	-
FvBBX17	5.51	53.63	0.019	(C)12.9,(A)11.4, (L)8.6	79.57	-
FvBBX18	5.45	54.48	-0.502	(S)12.9, (A)9.1, (L)7.4	60.19	+
FvBBX19	5.43	57.31	-0.524	(S)12.2,(L)8.1, (G)7.0	63.04	+
FvBBX20	8.75	54.05	0.008	(L)10.7, (R)9.8, (C)8.9	95.8	-
FvBBX21	4.71	51.57	-0.902	(D)13.9, (S)11.1,(R)9.5	60.08	+

Table S2. Abbreviations: Pl, protein length; pIs, isoelectric point; Ii, index instability; Ai, aliphatic index; GRAVY, grand average of hydropathicity; (A, Ala; P, Pro; S, Ser; G, Gly; L, Leu; N, ASN; T, Thr). The information about protein was taken from ExPASy (<http://web.expasy.org/protparam/>)

Figure S1a: Detail alignment sequences of B-BOX1 domain of BBX gene family of seven *Rosacea* species.












































Figure S1c: Detail alignment sequences of CCT domain of BBX gene family of seven *Rosacea* species.

MdBBX1	.. REARVLR	RYEKRN	NRKFEKTI	RYASRK	AYAETRPRI	KG	38
MdBBX2	..		FCKTI	RYASRK	AYAETRPRI	KG	22
MdBBX14	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
MdBBX20	.. REARVLR	RYEKKK	TRKFEK	TI RYAS	RK	AYAETRPRI	KG
MdBBX23	.. RDKAKM	RYEK	KKTRTF	GKCI	RYAS	RK	ARADTRKRVK
MdBBX24	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
MdBBX29	.. RETAL	SRYKE	KKTRR	YEKHI	RYES	RK	VRAESRTRI
MdBBX32	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
MdBBX33	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
MdBBX37	.. RCNAML	RYKE	KKTRR	YDKHI	RYES	RK	ARADTRKRVK
MdBBX38	.. RCNAML	RYKE	KKTRR	YEKHI	RYES	RK	ARADTRM
MdBBX43	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
MdBBX44	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
MdBBX45	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
MdBBX46	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
MdBBX47	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
MdBBX48	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
MdBBX51	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
FvBBX3	.. RESAL	TRYKE	KKTRR	YCNLI	NSG	SR	RFV
FvBBX5	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
FvBBX11	.. RCNAML	RYKE	KKNRR	YDKHI	RYES	RK	ARADTRKRVK
FvBBX13	.. RANSL	MRYKE	KKQSRL	TEK	FP	PY	SPRKATVDVHRRGRG
FvBBX14	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
FvBBX15	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
FvBBX18	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
FvBBX19	.. RDKAKM	RYE	EKKTR	TFGK	CI	RYAS	RK
PcBBX1	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PcBBX3	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
PcBBX8	.. RETAL	SRYKE	KKTRR	YEKHI	RYES	RK	VRAESRTRI
PcBBX9	.. RCNAML	RYKE	KKTRR	YDKHI	RYES	RK	ARADTRKRVK
PcBBX10	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
PcBBX16	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
PcBBX17	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
PcBBX18	.. RDKAKM	RYE	EKKTR	TFGK	CI	RYAS	RK
PcBBX23	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
PcBBX25	.. RCNAML	RYKE	KKTRR	YDKHI	RYES	RK	ARADTRKRVK
PcBBX29	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
PcBBX30	.. RVARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
PcBBX33	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PcBBX35	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PcBBX37	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
RcBBX1	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
RcBBX2	.. REARVM	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
RcBBX8	.. RDKAKM	RYE	EKKTR	TFGK	CI	RYAS	RK
RcBBX11	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
RcBBX12	..	MRYKE	KKHSRL	TEK	KL	PY	PSRKATTINIHKL
RcBBX14	.. RAKAN	I RYKE	KKRS	RS	SHAK	TI RY	PNRKARA
RcBBX15	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
RcBBX19	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
RcBBX22	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PaBBX3	.. RCNAML	RYKE	KKTRR	YDKHI	RYES	RK	ARADTRKRI
PaBBX4	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PaBBX6	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
PaBBX7	.. RI	ASL	VR	FR	EKR	KER	CFD
PaBBX10	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
PaBBX11	.. RDKAKM	RYE	EKKTR	TY			
PaBBX14	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
PaBBX15	.. HMPK	CDI	CQE	AV	GY	FF	CLE
PaBBX18	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PaBBX22	.. RETAL	SRYK	AKKTRR	YEKHI	RYES	RK	VRAESRTRI
RoBBX3	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
RoBBX5	.. RESAL	TRYKE	KKTRR	YDKHI	RYES	RK	VRAESRTRI
RoBBX8	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
RoBBX11	.. RDKAKM	RYE	EKKTR	TFGK	CI	RYAS	RK
RoBBX14	.. RCNAML	RYKE	KKNRR	YDKHI	RYES	RK	ARADTRKRVK
RoBBX17	.. REARVM	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
RoBBX19	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
RoBBX20	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
PpBBX8	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PpBBX9	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PpBBX11	.. RDKAKM	RYE	EKKTR	TFGK	CI	RYAS	RK
PpBBX14	.. RCNAML	RYKE	KKTRR	YDKHI	RYES	RK	ARADTRKRVK
PpBBX15	.. REARVSR	RYEKRR	TRLFSK	KI RYEV	RKLN	AEKRP	RMKG
PpBBX16	.. RSNAMR	RYEK	KKARKF	EKRV	RYAS	RK	ARADV
PpBBX17	.. RETAL	SRYKE	KKTRR	YEKHI	RYES	RK	VRAESRTRI
PpBBX18	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
PpBBX19	.. REARVLR	RYEK	KKTRK	FEKTI	RYAS	RK	AYAETRPRI
PpBBX20	.. REARVLR	RYEKRN	NRKFEK	TI RYAS	RK	AYAETRPRI	KG
Consensus	..						

Figure S2: Structures of the BBX proteins. The length and order of the domains represent their actual location within each protein.














Name	Domains	BBX1	BBX2	CCT	Protein structure
MdBBX1	1BBX+CCT	3-36		252-293	
MdBBX2	2BBX+CCT	19-61	67-104	350-377	
MdBBX3	1BBX	51-76			
MdBBX4	1BBX	10,35			
MdBBX5	1BBX	57-97			
MdBBX6	1BBX	139-186			
MdBBX7	1BBX	1-45			
MdBBX8	1BBX	1-45			
MdBBX9	1BBX	1-45			
MdBBX10	1BBX	5-47			
MdBBX11	2BBX	2-45	84-108		
MdBBX12	1BBX	2-45			
MdBBX13	1BBX	4-45			
MdBBX14	1BBX+CCT	23-65		377-419	
MdBBX15	2BBX	17-63	70-92		
MdBBX16	1BBX	28-54			
MdBBX17	1BBX	19-66			
MdBBX18	1BBX	19-66			
MdBBX19	2BBX	5-47	53-100		
MdBBX20	2BBX+CCT	16-49	58-105	323-365	
MdBBX21	1BBX	4-45			
MdBBX22	1BBX	4-45			
MdBBX23	1BBX+CCT	2-47		400-443	
MdBBX24	2BBX+CCT	4-47	47-90	356-399	
MdBBX25	1BBX	5-47			
MdBBX26	2BBX	5-47	51-97		
MdBBX27	2BBX	4-47	56-100		
MdBBX28	2BBX	1-48	45-91		
MdBBX29	2BBX+CCT	14-60	57-92	287-330	
MdBBX30	2BBX	5-47	53-100		
MdBBX31	1BBX	3-35			
MdBBX32	1BBX+CCT	16-61		399-441	
MdBBX33	1BBX+CCT	16-61		399-441	
MdBBX34	1BBX	16-61			
MdBBX35	1BBX	16-61			

MdBBX36	2BBX	5-47	51-97		
MdBBX37	2BBX+CCT	10-56	56-99	335-377	
MdBBX38	2BBX+CCT	10-56	56-99	436-505	
MdBBX39	2BBX	26-56	97-140		
MdBBX40	1BBX	8-49			
MdBBX41	1BBX	429-474			
MdBBX42	1BBX	278-307			
MdBBX43	1BBX+CCT	146-191		528-571	
MdBBX44	1BBX+CCT	16-61		398-441	
MdBBX45	2BBX+CCT	59-104	110-147	394-436	
MdBBX46	2BBX+CCT	17-62	68-105	324-366	
MdBBX47	2BBX+CCT	17-62	68-105	324-366	
MdBBX48	1BBX+CCT	18-39		206-248	
MdBBX49	1BBX	76-117			
MdBBX50	1BBX	4-45			
MdBBX51	2BBX+CCT	4-47	47-82	90-93	
MdBBX52	1BBX	8-49			
MdBBX53	1BBX	21-58			
MdBBX54	2BBX	2-33	54-96		
MdBBX55	2BBX	5-34	55-100		
MdBBX56	2BBX	5-34	91-122		
MdBBX57	1BBX	1-35			
MdBBX58	2BBX	287-321	329-353		
MdBBX59	2BBX	5-47	53-98		
MdBBX60	2BBX	2-47	49-77		
MdBBX61	1BBX	1-45			
MdBBX62	2BBX	1-48	45-91		
MdBBX63	2BBX	1-48	45-91		
MdBBX64	1BBX	19-66			
MdBBX65	1BBX	5-47			
MdBBX66	1BBX	5-34			
MdBBX67	1BBX	13-47			
PcBBX1	1BBX+CCT	17-57		397-440	
PcBBX2	1BBX	3-35			
PcBBX3	2BBX+CCT	5-58	44-91	279-321	
PcBBX4	1BBX	1-45			
PcBBX5	1BBX	6-49			
PcBBX6	2BBX	3-47	53-100		
PcBBX7	1BBX	1-45			
PcBBX8	2BBX+CCT	14-60	60-89	343-386	
PcBBX9	2BBX+CCT	10-56	56-99	439-481	

PcBBX10	2BBX+CCT	16-52	58-105	309-371	
PcBBX11	1BBX	7-35	55-97		
PcBBX12	1BBX	3-35			
PcBBX13	1BBX	2-47			
PcBBX14	2BBX	2-40	43-88		
PcBBX15	1BBX	4-45			
PcBBX16	2BBX+CCT	4-47	47-90	356-399	
PcBBX17	2BBX+CCT	18-62	58-105	289-331	
PcBBX18	2BBX+CCT	2-47	47-81	402-445	
PcBBX19	1BBX	1-31			
PcBBX20	2BBX	3-47	53-100		
PcBBX21	1BBX	2-45			
PcBBX22	2BBX	5-47	51-97		
PcBBX23	2BBX+CCT	4-47	47-90	356-399	
PcBBX24	2BBX	4-45	53-98		
PcBBX25	2BBX+CCT	10-56	56-99	434-476	
PcBBX26	1BBX	6-49			
PcBBX27	1BBX	4-45			
PcBBX28	1BBX	4-31			
PcBBX29	2BBX+CCT	18-61	57-104	335-378	
PcBBX30	2BBX+CCT	4-47	53-99	279-321	
PcBBX31	2BBX	5-48	45-91		
PcBBX32	2BBX	5-47	55-100		
PcBBX33	1BBX+CCT	17-61		362-404	
PcBBX34	1BBX	18-56	52-99		
PcBBX35	1BBX+CCT	19-61		372-421	
PcBBX36	1BBX	2-45			
PcBBX37	1BBX	17-61			
PcBBX38	2BBX	2-33	53-99		
PcBBX39	2BBX	5-47	55-100		
PcBBX40	1BBX	2-47			
RcBBX1	2BBX+CCT	5-47	47-90	358-401	
RcBBX2	2BBX+CCT	16-59	59-102	285-327	
RcBBX3	2BBX	5-47	53-96		
RcBBX4	2BBX	2-45	52-96		
RcBBX5	1BBX	46-63			
RcBBX6	2BBX	21-62	73-116		
RcBBX7	1BBX	4-47			
RcBBX8	1BBX+CCT	1-43		394-437	
RcBBX9	1BBX	21-48			
RcBBX10	1BBX	4-45			

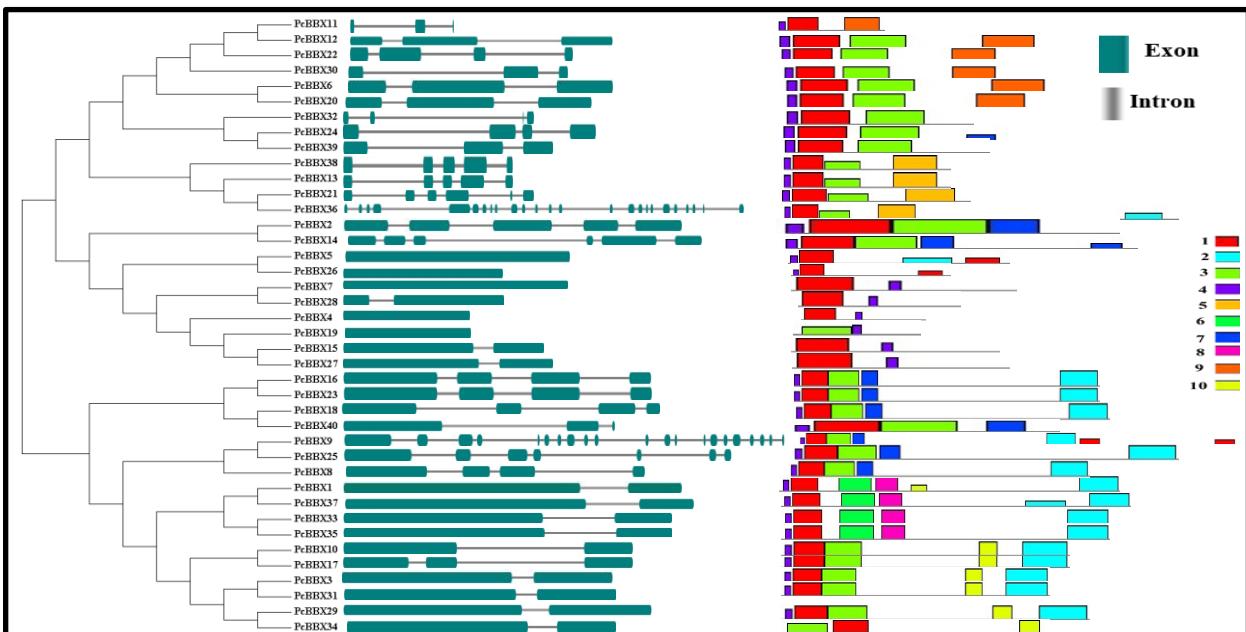
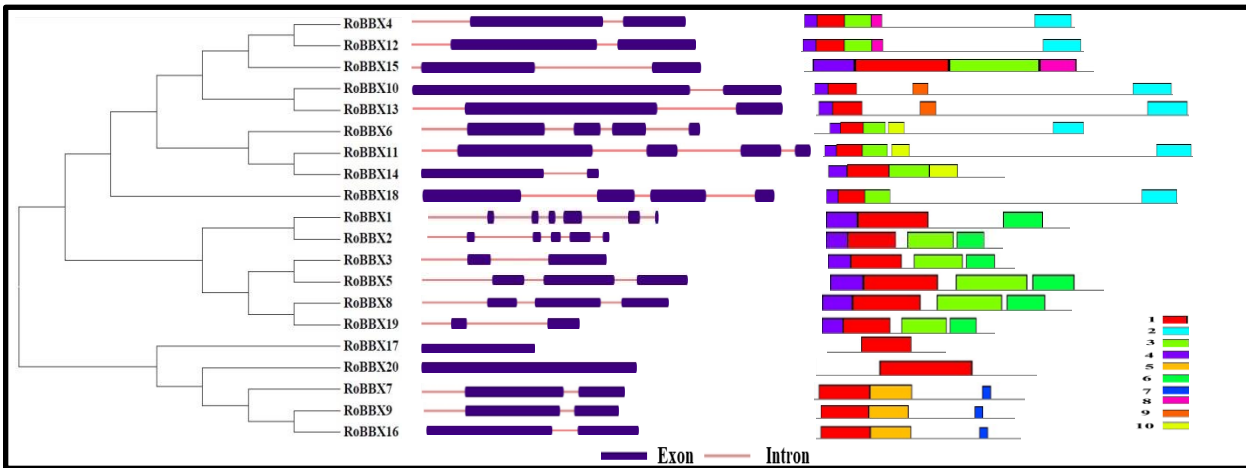
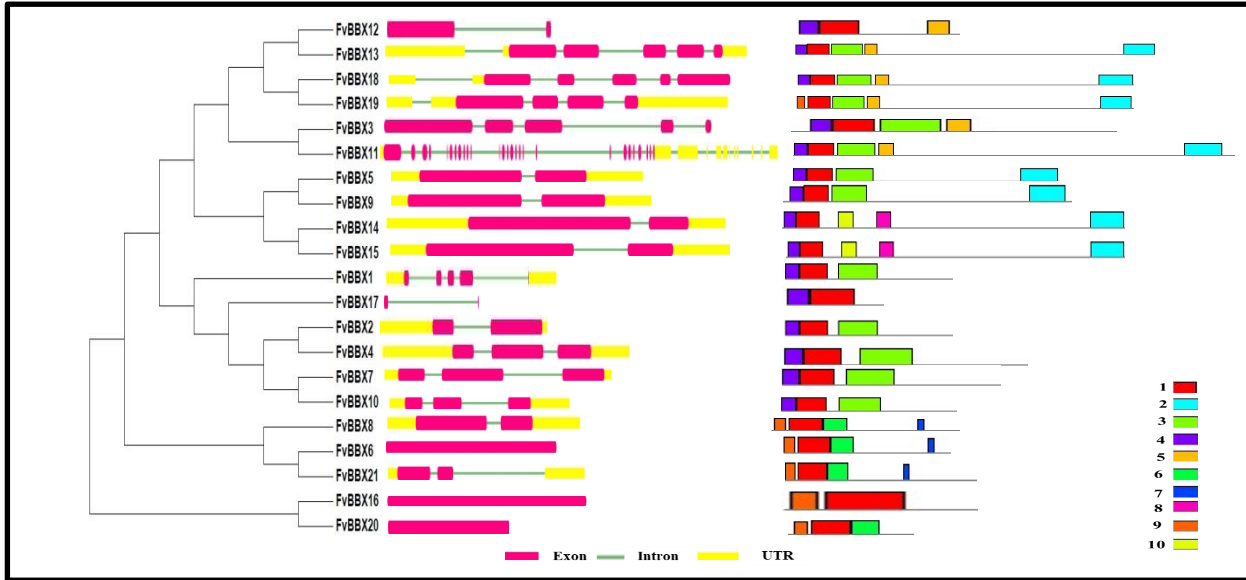
RcBBX11	2BBX+CCT	18-62	58-105	225-267	
RcBBX12	2BBX+CCT	5-39	43-78	401-439	
RcBBX13	1BBX	1-47			
RcBBX14	1BBX+CCT	4-44		307-347	
RcBBX15	1BBX+CCT	25-69		384-426	
RcBBX16	2BBX	5-47	51-97		
RcBBX17	1BBX	4-45			
RcBBX18	2BBX	4-47	56-100		
RcBBX19	2BBX+CCT	21-67	67-109	345-386	
RcBBX20	2BBX	72-119	115-164		
RcBBX21	2BBX	5-47	54-100		
RcBBX22	1BBX+CCT	71-115		442-484	
PaBBX1	2BBX	5-47	53-98		
PaBBX2	2BBX	19-62	58-100		
PaBBX3	2BBX+CCT	9-56	56-99	443-485	
PaBBX4	2BBX+CCT	17-61	43-90	395-437	
PaBBX5	1BBX	5-47			
PaBBX6	2BBX+CCT	5-72	44-91	282-324	
PaBBX7	1BBX	202-259			
PaBBX8	1BBX	4-35			
PaBBX9	1BBX	5-44			
PaBBX10	2BBX+CCT	5-47	47-90	407-441	
PaBBX11	1BBX	2-47			
PaBBX12	1BBX	24-51			
PaBBX13	1BBX	4-45			
PaBBX14	2BBX+CCT	17-61	57-100	255-297	
PaBBX15	1BBX+CCT	2-46		51-97	
PaBBX16	1BBX	5-47			
PaBBX17	1BBX	1-45			
PaBBX18	1BBX+CCT	17-61		140-452	
PaBBX19	2BBX	2-45	52-96		
PaBBX20	1BBX	37-70			
PaBBX21	2BBX	4-45	56-100		
PaBBX22	2BBX+CCT	19-66	66-108	347-390	
RoBBX1	1BBX	2-45			
RoBBX2	2BBX	5-47	58-100		
RoBBX3	2BBX+CCT	5-48	44-91	278-320	
RoBBX4	1BBX	5-35	44-76		
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RoBBX6	1BBX	1-45			
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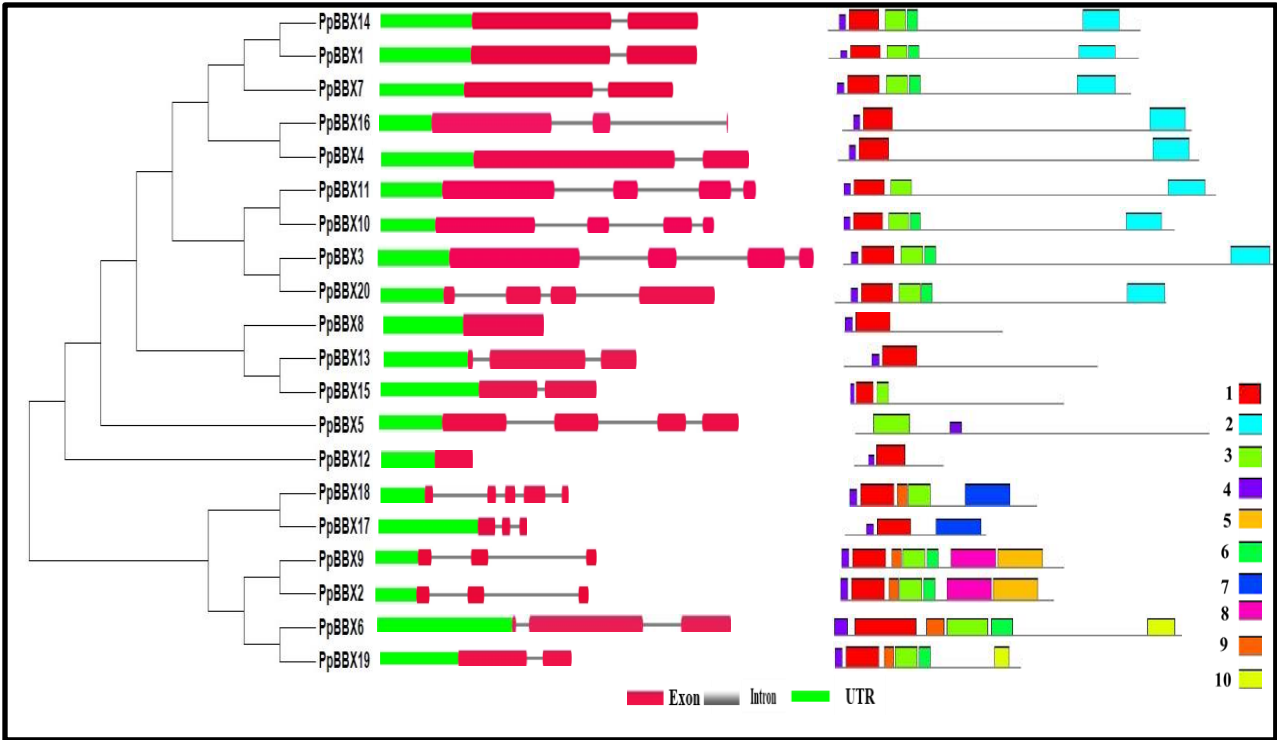
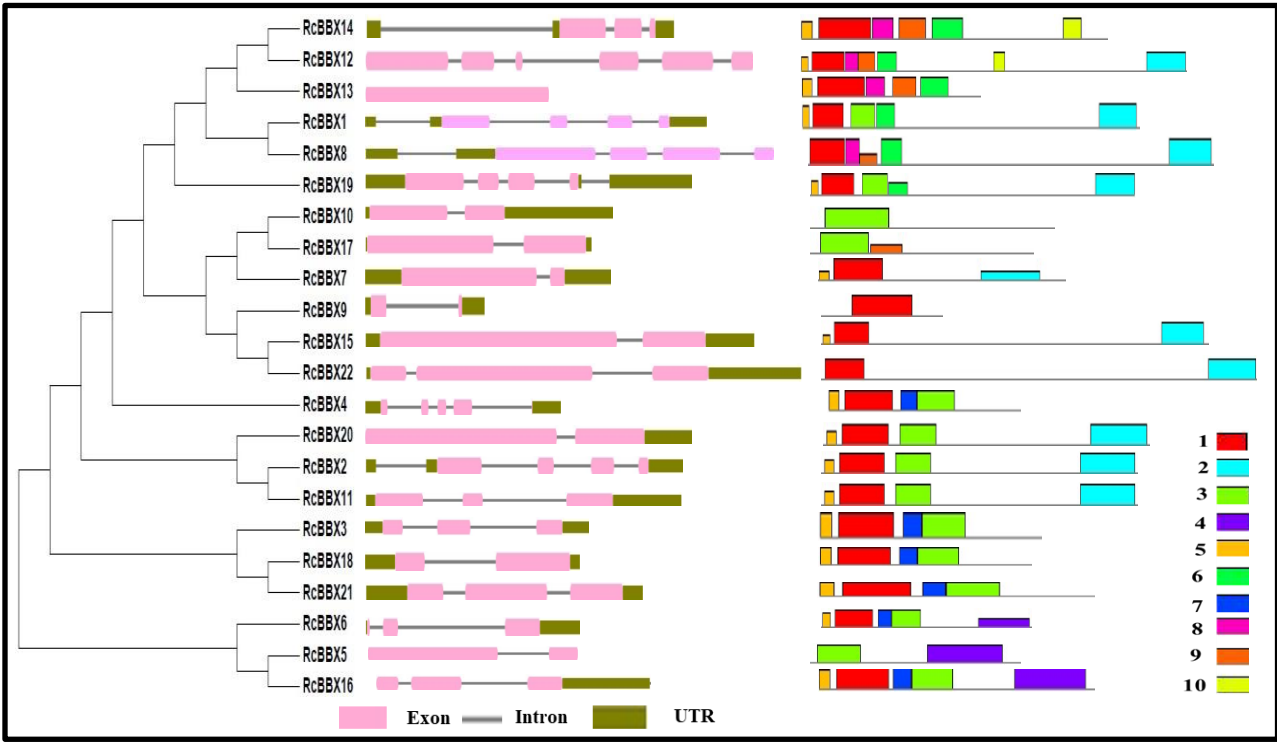
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RoBBX12	1BBX	19-62			
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RoBBX16	1BBX	1-47			
RoBBX17	2BBX+CCT	14-59	55100	292-334	
RoBBX18	2BBX	5-47	52-98		
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PpBBX6	2BBX	5-47	56-100		
PpBBX7	1BBX	25-69			
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PpBBX16	2BBX+CCT	5-47	47-90	359-402	
PpBBX17	2BBX+CCT	19-66	66-108	347-390	
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PpBBX19	2BBX+CCT	17-61	57-104	317-359	
PpBBX20	2BBX+CCT	20-62	58-105	311-353	
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FvBBX2	2BBX	4-47	52-100		
FvBBX3	2BBX+CCT	27-75	76-105	349-377	
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FvBBX5	2BBX+CCT	8-51	47-94	251-393	
FvBBX6	1BBX	1-45			
FvBBX7	2BBX	5-45	53-97		
FvBBX8	1BBX	1-47			

FvBBX9	2BBX	15-59	55-102		
FvBBX10	2BBX	5-47	53-98		
FvBBX11	2BBX+CCT	9-56	56-99	430-472	
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FvBBX13	2BBX+CCT	5-39	56-99	427-470	
FvBBX14	1BBX+CCT	25-69		393-435	
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FvBBX19	1BBX+CCT	1-45		388-431	
FvBBX20	1BBX	2-63			
FvBBX21	1BBX	4-45			

Listed abbreviations: B1=B-box1, B2=B-box2

Figure S3. The exon/intron structures and identified motifs of BBX family genes. The structure of individual *BBX* gene was obtained through the Gene Structure Display Server (<http://gsds.cbi.pku.edu.cn>) by aligning the coding or cDNA sequences with their corresponding genomic DNA sequence. 10 motifs were identified through online meme tool.





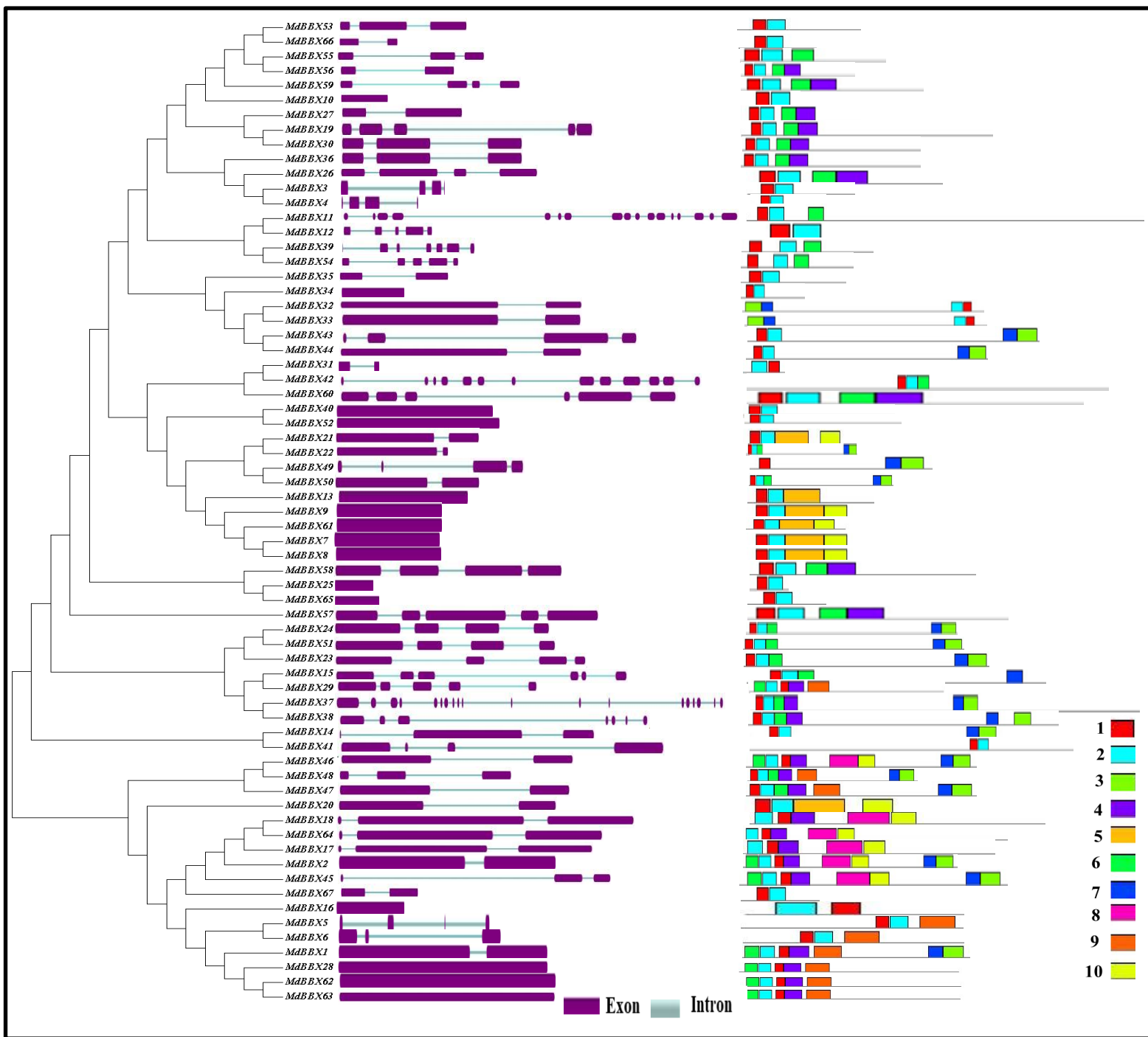


Table S3: List of primers used for qRT-PCR

Name	Id	Forward Primer	Reverse primer
BBX1	MDP0000202669	CTTCTACGACTCGGTGAACTC	CGGATTCTCCATCGCCTTG
BBX7	MDP0000289278	ATGAAGAAGTGCGATCTGTGT	GATTGGCAGACATGGCAGAG
BBX14	MDP0000271388	TGGAGATTCAGCAGGATGTGTA	CCGCAGGAGCATTACTACTACT
BBX20	MDP0000297093	ATCCACTCTGCCAATCCTCTG	GCCTCATCCTCATCTTCCTCAT
BBX22	MDP0000198531	TGACGACGACGACGATGAG	CACCTCCATCACCATTGTTGAA
BBX26	MDP0000222881	AGGAGGAACTGGACGATTATGA	GAGTGGCAGATGTCTGGAAC
BBX27	MDP0000800387	TCTTCTGCTCTGCCGATGAA	CCTGCTGTGTTTCTGTGTGT
BBX30	MDP0000915501	AGCATCAACCTTCAACCAAGAA	CGGAAGCGTCTCTATCAAGTAC
BBX37	MDP0000302297	GGTTCTGGTGCTTCTAATGACA	TCTTGCCTTCCTTGACTCGTA
BBX38	MDP0000565292	CCGTTCCACCATCACCGTAT	ACAGAGAAGCATCAGGAGCAT
BBX39	MDP0000151848	CTAGTGATGTTCTTGTGTGA	GGTTGAAGCCCTAGTTCCTCT
BBX41	MDP0000273201	AGGTTGAAGAGGAAGTTGAAGG	TCATCACCATCTGCTTGTTCCTC
BBX42	MDP0000298575	GCGATGCGAAGGTCCATTC	ACCTGTGTAAGTCTGATTGC
BBX43	MDP0000321380	TCTGCTTCCGAGCGACAT	CCTCCTCTAACTTCACTCTACC
BBX45	MDP0000713113	AGAAGAGGAAGAACCGCAAGT	GGAACGACGCCGAATTGTG
BBX47	MDP0000298635	TGACCAGCAGCAGCAACA	TGTGACTTAGCGAACCATTGTA
BBX49	MDP0000321180	GGTGAGCCAGGACGGTAAT	ACTATCTCCATCGCCATTGTTG
BBX51	MDP0000782323	CTCCCTGAAGACGATGACCTT	CAGCAACCGCATCTTGACAA
BBX52	MDP0000759984	GTCGTCATCGTCGGATTGTT	TCCATAGCATATTCCTCTTCGC
<i>EF-1α</i>	DQ341381	ATTCAAGTATGCCTGGGTGC	CAGTCAGCCTGTGATGTTC