Table S1. EST components for each BnaMYB gene identified

Gene name	EST list(GB#)	numbers
BnaMYB1	FG562006,EV105180,EV104795,EV104301,EV104487,EV217986,EV218259,EV017370,EV007116,EV171276,EV171275,GT080535,GT080173	13
BnaMYB2	EV108364,EV108088,EV107499,EV107802,EV107824	5
BnaMYB3	EV036085,EV137123,CD829890,EV136892,ES267811,EV217210,EV217001,EE392356,EE447724,EV102195,EV176932,EV102118,EV084554,EV113081,	15
BnaMYB4	FG579280,EE432096,FG569527,EV107955,EE554982,CD824305,FG569361,EV001261,EV107589,EV069542,EV053883,CD820923	12
BnaMYB5	FG557455,FG559446,EV066471,FG573585,DY011724,EV029074,EL628966,	8
BnaMYB6	EE426716	1
BnaMYB7	CD814497,EV068015,EV054074,EV056383,EV045384,EV135986,EV135722,EE455594,EV142432,EV142168,EV015761	11
BnaMYB9	EE444903,CN726972	2
BnaMYB10	EE568790	1
BnaMYB12	EV052963,EV214117,FG559530,EV171434,EV171441,EV171478	6
BnaMYB13	DY000543,GR446781	2
BnaMYB15	CX278128,CD834677,ES909302,CJ999528,EV227400,EV226989	6
BnaMYB16	EE469504,EE474289,EV201981,EV186736,EV186534,EV201893	6
BnaMYB17	EG020679,CD813379,CX187948,CD813183,EV028628,EV033184	6
BnaMYB18	EE432793,EG020345	2
BnaMYB21	CX187597,GR441028,EV131386,EV131621,GR440457,EV225302,GR442541,GR449144,EV224973, EV133221,EV133479	11
BnaMYB27	ES900986,	1
BnaMYB28	EV205917,EV019009,GT084146	3
BnaMYB30	ES967084,ES985544,GH709300,CX192819,CN829495,CN829494,CN830411,CN830410,CN830379,CN830378,DY016733,FG567228,EV039358,EV033495,	16
BnaMYB31	EV052208,EV021453,EV055620,EV030145,EL627642,EE414354	6
BnaMYB32	EE460070,FG567004,EE464782,EV163324,EV058208,CD813645,ES996448,EV169541,EV034892,CD815735,EV136510,EV136143,EV162956,EV169537,ES978442,ES903579, GR441366,EV027493,EE421958,EV022772,EV026639	21
BnaMYB34	ES902202,ES901674,ES907416,GT082302,ES913933,EV217367,EV131951,EV132263,ES902202,EE435715,EV217667	11
BnaMYB37	EV050408	1
BnaMYB38	EV047434,EV043318,EE542063	3
BnaMYB41	FG576099	1
BnaMYB43	ES913743	1
BnaMYB44	EE454244,EE408115,EE460613,DY012865,GR449006,GT083755,EE453513,GR444848,EV029474,EV146101,EV029025,ES966920,EV182779,EV164288,EV185978,EV124448,EV124281,EV124528,EV124361,EV182860,FG564972,EE436724,EV186186,CX279215,DY006419,FG556542,GT079317,EV146335,EV164606,EV226115,EE409588,EE474422,DY010719,CX279103,EE420841,ES928719,FG569627,EE478191,CD815989,FG568454,EE482310,FG570148,EV062607,EE426643,CN730439,EE482375,FG557223,EV047348,EE549228,	50
BnaMYB45	ES910249	1

BnaMYB46	EV127369, EV127154, FG562990	3
BnaMYB47	CX281630, EE558066	2
BnaMYB48	EE557265, EE557253, EV021911, EV219591, EV219351, EV218206	6
BnaMYB51	EE441525, EV221769, EV222159, GT083698, ES900783	5
BnaMYB55	EV053995, EV051174	2
BnaMYB56	EE468140, ES994945, EV072908, EV009610, FG560099, FG575184, EV084645, CN727379, DY000266, EV025748, EV217687, EE514247, EE561644, ES994208	14
BnaMYB57	CN727183	1
BnaMYB58	ES903149, EV127893, EV127723	3
BnaMYB59	CN734145, EE432821, EV041668, EE550309, ES956099, EV134091, EV133852, EV102946, ES900670, EV218708, ES982160	11
BnaMYB60	EV201821, CN726921, EG019425, EV201738, EG019781, FG574548	6
BnaMYB61	EV044996, ES909631, EV122101, EV044013, EV059923, EV122017, EV044304, EV042041, EE464021, EV076842, EV073819, EV088869, EV027982, EV026308,	15
BnaMYB62	DY017568, DY017568	2
BnaMYB63	EV085491, EE472135,	2
BnaMYB65	CX190346, CX191895, CX193810, ES905996, EV087133	5
BnaMYB68	ES909381, CX191605, ES909697, ES911294, EE470630, ES900275, EV070292	7
BnaMYB70	ES988352, EV126496, EV126569	3
BnaMYB71	EE463219, ES912837, EL626888	3
BnaMYB73	EV117185, EV118175, EV124377, EV184889, EV226584, EV117101, EV117019, DY002016, ES959932, EV016569, EV226382, EV057240, EV118093, FG576493, EL588855, EV184806, EL591252, DY002002, EV124296, EV225159, EV068002, EV224965, EV019487, EV040914, ES904772, EV047845, EL626849	27
BnaMYB75	ES976916, ES976894	2
BnaMYB77	CD835413, CD814996, CD835248, FG565094, EE455241, EV041049, EE460766, EV059427, CD828382, EL587880, EL587506, EV066198, CD823048, CD831049, EV021763, GT081972, ES979958, EE562286, EV124030, EE467152, FG578598, EV123952, ES988901, ES267253, EV018619, CN732778, EV163421, EE410941, ES979621, ES979658, ES264989, EL625057, EE565075, CN727364, EV061577,	37
BnaMYB78	EX130477	1
BnaMYB81	CX195622, EE445112	2
BnaMYB85	EV075547	1
BnaMYB86	FG555601, EV039089	2
BnaMYB88	EV215661, ES904057, EV204258, EV204013	4
BnaMYB90	EV194857, ES976894, ES976916, EV194929	4
BnaMYB91	GR444849, CN736467, EV034590, EV014478, CN826196, EE441718, CB686393, EV100193, EV100123, EE515947, EE512329, EE553868, EE551924, ES963899, ES965570, ES964808, ES965020, ES965699, ES963678, ES964885, ES963886, ES963998, EE443576, ES964722, ES965468, ES965296, ES965009, ES964883, ES965836, ES964704, ES964909, ES965408, ES965676, ES965619	34
BnaMYB92	ES903861	1
BnaMYB95	EE473909, ES921824, GR442066, CD841264, DY030638, EV019898, ES968873, GR440287, EV038136, EV030103, EV029563, EV026741, EE565640, EE454667, CD815189, GT084601, EE454192	17

BnaMYB96	EV145404, EE561829, EE474153, EV014976, ES898274, EV173476, EV173463, EV169763, EV169753, EG021274	10
BnaMYB99	EV159202, EV159072, EV159317	3
BnaMYB101	GR453309, EE552862	2
BnaMYB102	EV216621	1
BnaMYB103	CX192517, FK252590, EE392431, EV128652, EV128386, FG561365	6
BnaMYB104	EE477460, EL587234	2
BnaMYB105	EV151423	1
BnaMYB106	EL627196, EE502449, EE492636, EE555080, EE453474, EV060957, EV030094, EV154290, EV154349	9
BnaMYB108	ES911647	1
BnaMYB109	EE435105, EV021934, CX189597	3
BnaMYB110	FG568063, EE472472, EE483738, EV003085, FG569763, EE565229	6
BnaMYB111	ES920481, EV197885, EL630384, EV197794, CD838538, CD839606	6
BnaMYB114	EE489982, EE489704, EE490079	3
BnaMYB116	EV100953	1
BnaMYB117	CD841933, CD841114	2
BnaMYB118	CD827885, CD828164, CD828310, CD819510, CD819263, FG561180, FG565690, EV004266, EE500621, EE500392, EE499150, EV005206, EE472461, CD823403,	15
BnaMYB122	ES903348	1
BnaMYB123	FG562315, EV033254, CD821188, EV060679, EV048548, EV027398, EV044112, CD824329, EV079072	9
BnaMYB124	CX189696, DY011287	2

Table S2. Primers used in this study

gene	forward primer sequence(5->3')	reverse primer sequence(5->3')	purpose
BnaMYB1	TTAGGTCATGATCGAGAGAGAGATGTGGGGACG	CGCGTCGACTGTAGACAGGACATTGGTTCTGC	cDNA cloning
	TTAGGTCATGATCGAGAGAGAGATGTGGG	CGCGTCGACTGTAGACAGGACATTGGTTCTGC	transactivation assay
BnaMYB3	GGAACCCTCTTCCTTCCTTG	GCATTACAAGACATTAAAGGCACA	cDNA cloning
	CGCCATGGGAAGGTCACCATGC	CCCCCGGGCTAAAGAATTTTCGATTCCCA	transactivation assay
	TCCAGCGACGACCAAGAGTTA	AAGTACGACAATTCCGACACGAC	qRT-PCR
BnaMYB4	CGCCATGGGAAGGTCACCATGTTGT	CGCGTCGACTATCATCTCCAAGCTTCGAAAACCTAA	cDNA cloning
	CGCCATGGGAAGGTCACCGTGTTGTGAG	CGCGTCGACTTTCATCTCCAAGCTTCTAAAACCAAAA	cDNA cloning
	CGCCATGGGAAGGTCACCATGTTGT	CGCGTCGACTATCATCTCCAAGCTTCGAAAACCTAA	transactivation assay
	GGACTAGTATGGGAAGGTCACCATGTTG	CGCGTCGACTATCATCTCCAAGCTTCGAAAACC	protoplast assay
BnaMYB7	GGAATTCCATATGGGAAGATCTCCCTGCTG	CGCGTCGACGTTCATTTCCAAGCTCCGAAAATC	cDNA cloning
	GGAATTCCATATGGGAAGATCTCCCTGCTG	CGCGTCGACGTTCATTTCCAAGCTCCGAAAATC	transactivation assay
BnaMYB12	TCCATTGCTCGAGTCTTGTG	TCACATACAATACGGTGCTCAA	cDNA cloning
	CGCCATGGGAAGAGCGCCGTG	CGCGTCGACAGAGAGAAGCCATGCGAC	transactivation assay
	GAGGCCACGATCGGGAAAAG	AGAGAAGCCATGCGACCAAC	qRT-PCR
BnaMYB13	TTAGGTCATGATCGGGAGAAGACCATGCTGTGA	CGCGTCGACGAAAATGTCGGAATTTTCTCCAGTTG	cDNA cloning
	TTAGGTCATGATCGGGAGAAGACCATGCTGTGA	CGCGTCGACGAAAATGTCGGAATTTTCTCCAGTTG	transactivation assay
	CCCAACAACAATCTAGCAGCAGTA	ACGTCGCAGAGTCTTTGATGTT	qRT-PCR
BnaMYB15	TTAGGTCATGATCGGAAGAGCTCCATGCTG	CGCGTCGACGAGCCCAGCTAGTAGATCTTG	cDNA cloning
	TTAGGTCATGATCGGAAGAGCTCCATGCTG	CGCGTCGACGAGCCCAGCTAGTAGATCTTG	transactivation assay
BnaMYB16	GCCAAAAACACCATTCCTTTG	TCATTTCGTGGAACATTCATCC	cDNA cloning
	GGAATTCATGGGTAGATCACCGTGC	CGCGTCGACGAACATAGGCGTTGAATCG	transactivation assay
	AGGGCTCACGGGTCTCTTG	GCCGGCCGTCTCGTTTTTAT	qRT-PCR

	GGACTAGTGGTAGATCACCGTGCTGT	CGCGTCGACGAACATAGGCGTTGAATCG	GFP fusion
BnaMYB28	GGAATTCATGTCAAGAAAGCCATGTTGTGT	CGCGTCGACTTCAGAGGGAATCATAATCCATG	cDNA cloning
	GGAATTCATGTCAAGAAAGCCATGTTGTGT	CGCGTCGACTTCAGAGGGAATCATAATCCATG	transactivation assay
BnaMYB30	GCAAAAAGAGAAAAGGGAGTGA	TTTCAGGCCCCTAGTGATTTT	cDNA cloning
	GGAATTCATGGTGAGACCCCCTTGT	CGCGTCGACGAAGAAATTAGGGTTTTCATC	transactivation assay
BnaMYB31	GGAATTCCATATGGGTAGACCACCTTGTTG	CGCGTCGACGGACAAATCTTGACCGTTGTTGC	cDNA cloning
	GGAATTCCATATGGGTAGACCACCTTGTTG	CGCGTCGACGGACAAATCTTGACCGTTGTTGC	transactivation assay
BnaMYB32	TTAGGTCATGATCGGGAGGTCTCCATGCTGC	CGCGTCGACGTTCATTTCCAAGCTAGTATAATCCAAG	cDNA cloning
	TTAGGTCATGATCGGGAGGTCTCCATGCTGC	CGCGTCGACGTTCATTTCCAAGCTAGTATAATCCAAG	transactivation assay
	AAGGAGGAAAGTTCTAGGGAGGAG	CCATGGCGGGCTGATTCT	qRT-PCR
	CGGGATCCATGGGGAGGTCTCCATGCTG	CGCGTCGACGTTCATTTCCAAGCTAGTATAATC	protoplast assay
BnaMYB34	CGCCATGGTGAGAACACCATGCTGC	CCCTCGAGGACAAAGACACCAATCTTGGAATCTAA	cDNA cloning
	CGCCATGGTGAGAACACCATGCTGC	CCCTCGAGGACAAAGACACCAATCTTGGAATC	transactivation assay
	CGCCATGGTGAGAACACCATGCTGC	CCCTCGAGGACAAAGACACCAATCTTGGAATC	GFP fusion
BnaMYB38	CGGAATTCATGGGAAGGGCTCCATGTTGTG	CGCGTCGACATAGTACAACATGAACGTATCAT	cDNA cloning
	CGGAATTCATGGGAAGGGCTCCATGTTGTG	CGCGTCGACATAGTACAACATGAACGTATCAT	transactivation assay
	GGACTAGTGGAAGGGCTCCATGTTGTG	CGCGTCGACATAGTACAACATGAACGTATCAT	GFP fusion
BnaMYB41	TTAGGTCATGATCGGAAGATTACCTTGTTG	CGCGTCGACAAGCAACCCCATAAAGTCATCAA	cDNA cloning
BnaMYB43	GGAATTCCATATGGGGAGGCAGCCATGTTGT	CGCGTCGACATCTAAAACCATTCTTGAACATCCGC	cDNA cloning
	GGAATTCCATATGGGGAGGCAGCCATGTTGT	CGCGTCGACATCTAAAACCATTCTTGAACATCCGC	transactivation assay
BnaMYB44	TCACAACAAAACAGAGCTTCTCA	CGAGATCGCTCACTCGATTT	cDNA cloning
	TTAGGTCATGATCGCGGATCGTATTAAAGG	CCCTCGAGCTACTCGATTCTTCCAACTCC	transactivation assay
	CAGCGAGGAGTCAAACCGTAGTCA	TCACCTCCGCCTTAATCATCTCCT	qRT-PCR
BnaMYB46	CGCCATGGTAAGGAAACCAGAGGTAGGAA	CGCGTCGACTGTGCTTTGTTTGAAGTTGAAGTG	cDNA cloning
	CGCCATGGTAAGGAAACCAGAGGTAGGAA	CGCGTCGACTGTGCTTTGTTTGAAGTTGAAGTG	transactivation assay

	CAGGGCTACAAGGGGAACTCTACT	GGTCCCAATATTCTTCCACTCTCA	qRT-PCR
BnaMYB47	CGCCATGGGGAGGAAGACGTGG	CGCGTCGACGAAGAGATAATCAAGTATCTGAG	cDNA cloning
	CGCCATGGGGAGGAAGACGTGG	CGCGTCGACGAAGAGATAATCAAGTATCTGAG	transactivation assay
BnaMYB48	GAAGAAAGAGGATGAATATGATGCAAGAG	TTTTCAACGAATGAATGGAATCCT	cDNA cloning
BnaMYB51	CGCCATGGTGCGGACACCGTGTTGC	CGCGTCGACTGCAAAATAGTTATCAATATCTTC	cDNA cloning
	CGCCATGGTGCGGACACCGTGTTGC	CGCGTCGACTGCAAAATAGTTATCAATATCTTC	transactivation assay
BnaMYB56	GAAAGAAAATGAATCCAAATCTCCTTGAG	TCCTACCCCGGCTAACTTCT	cDNA cloning
	TTAGGTCATGAATCCAAATCTCCTTGA	CGCGTCGACAGAAGCTCCAACTCCAAG	transactivation assay
	GTGGCCATTACTTCTTTGATTTTC	CCTACCCCGGCTAACTTCTACC	qRT-PCR
BnaMYB58	GGAATTCCATATGGGCAAAGGGAGAGCTCCA	CGCGTCGACATGATTTATCAGGACCTCATAACTCTC	cDNA cloning
BnaMYB59	TGAGATGAAAAATGTGCAAGAAGA	TTTTGAGAAAAAGGGAGATGGA	cDNA cloning
BnaMYB61	TCCCTCCTTAGCACAGCATT	ACCCCATGAATACCACTTGAA	cDNA cloning
	TTAGGTCATGATCGGTAGACATTCTTGCTG	CGCGTCGACAAGAGACTGACCAAAAGAGAC	transactivation assay
	GAGCCAAAGCCAGAACGAGAAT	ACCCCATGAATACCACTTGAACC	qRT-PCR
BnaMYB62	CGCCATGGAAAATTCAATGAAGAACAAGA	CGCGTCGACCTCCCTAAACTGCCAAATGTCATC	cDNA cloning
	CGCCATGGAAAATTCAATGAAGAACAAGA	CGCGTCGACCTCCCTAAACTGCCAAATGTCATC	transactivation assay
	CGCCATGGAAAATTCAATGAAGAACAAGA	CGCGTCGACCTCCCTAAACTGCCAAATGTCATC	GFP fusion
BnaMYB73	CAGAAGACGTGTTGAGAAGAAAAA	TTTGCTTCCTTGTTCTGTCTCTC	cDNA cloning
	GGAATTCCATATGTCAGGTCCGTCTAGAAA	CGCGTCGACCTCCATCTTCCCAATACCGA	transactivation assay
	AGTTACATGGCGGATTTACAGAGA	TTGCCCGAGAAACAGAGTGAAAAA	qRT-PCR
	GGACTAGTTCAGGTCCGTCTAGAAAGAA	CGCGTCGACCTCCATCTTCCCAATACCGA	GFP fusion
BnaMYB77	GTGACCTCACTCCTGTCATTCG	CATTTGACCACAACCCAAATCTG	cDNA cloning
	TTAGGTCATGATCGCGGATCGCGTGAAAG	CGCGTCGACCTCAACCTTAGGTGTGATTC	transactivation assay
	GGCGCGTAGAGCTGAGTTTATGAC	ATCCACCACCGTTGTTTCTCTGC	qRT-PCR
	TTAGGTCATGATCGCGGATCGCGTGAAAG	CGCGTCGACCTCAACCTTAGGTGTGATTC	GFP fusion
	GGACTAGTATGGCGGATCGCGTGAAAGGT	CGCGTCGACCTCAACCTTAGGTGTGATTC	protoplast assay
BnaMYB78	TTAGGTCATGATCGACGGCAAAAGAAGCTTAGAGATC	CGCGTCGACGAAGCTTCCATTGTTGAGGAGC	cDNA cloning
	GGACTAGTATGGACGGCAAAAGAAGCTTA	CGCGTCGACGAAGCTTCCATTGTTGAGGAGC	overexpression

	GGACTAGTATGGACGGCAAAAGAAGCTTA	CGCGTCGACGAAGCTTCCATTGTTGAGGAGC	GFP fusion
	GGAATTCCATATGGACGGCAAAAGAAGCT	CGCGTCGACGAAGCTTCCATTGTTGAGGAGC	transactivation assay
	GGACTAGTATGGACGGCAAAAGAAGCTTA	CGCGTCGACGAAGCTTCCATTGTTGAGGAGC	protoplast assay
BnaMYB81	TTAGGTCATGATCGGTAAAGTTCGCCATGA	CGCGTCGACCTTGGTGTAGTCCCTATCCTCAC	cDNA cloning
	TTAGGTCATGATCGGTAAAGTTCGCCATGA	CGCGTCGACCTTGGTGTAGTCCCTATCCTCAC	transactivation assay
BnaMYB88	GGAATTCCATATGGAAGAGACAAGGAAGA	CGCGTCGACGTATCCGGGTTTGACCCTAAA	cDNA cloning
	GGAATTCCATATGGAAGAGACAAGGAAGA	CGCGTCGACGTATCCGGGTTTGACCCTAAA	transactivation assay
BnaMYB90	TTAGGTCATGATCGAGGATTCGTCCAAAGG	CGCGTCGACATCAAGTTCTACAGTCTCTCCATC	cDNA cloning
	TTAGGTCATGATCGAGGATTCGTCCAAAGG	CGCGTCGACATCAAGTTCTACAGTCTCTCCATC	transactivation assay
	GGTGGGAGAGTTTGCTAGAGGAGAG	AAGGTTGCCCCCATTTTTGTTG	qRT-PCR
BnaMYB91	TTAGGTCATGAAGGAGAGGCAACGTTGGA	CGCGTCGACTGGCCGGTCTAATAGCCTCTG	cDNA cloning
	TTAGGTCATGAAGGAGAGGCAACGTTGGA	CGCGTCGACTGGCCGGTCTAATAGCCTCTG	transactivation assay
	GGACTAGTATGAAGGAGAGGCAACGTTGG	CGCGTCGACTGGCCGGTCTAATAGCCTCTG	protoplast assay
BnaMYB92	CGCCATGGGAAGATCTCCTTGTAGTGATGA	CGCGTCGACAAGAATGTTGGAAAATATGGAAT	cDNA cloning
	CGCCATGGGAAGATCTCCTTGTAGTGATGA	CGCGTCGACAAGAATGTTGGAAAATATGGAAT	transactivation assay
BnaMYB95	CGGAATTCATGGGGAGGACGACGTG	CGCGTCGACAAGGAGGAACAGGTCAAGTTG	cDNA cloning
	CGGAATTCATGGGGAGGACGACGTG	CGCGTCGACAAGGAGGAACAGGTCAAGTTG	transactivation assay
	TAGGCAAGGAAGATGAGGAAGTGA	CAGCGACGAAGCCAGGTGTAT	qRT-PCR
BnaMYB96	GGAATTCCATATGGGAAGACCACCTTGTTG	CGCGTCGACGAAAATTGCTTCTTGTCCTTCTAA	cDNA cloning
	GGAATTCCATATGGGAAGACCACCTTGTTG	CGCGTCGACGAAAATTGCTTCTTGTCCTTCTAA	transactivation assay
BnaMYB106	GGTGGACCATCATGATCATCTAATG	TTGGGAAGCTATCGACATTACA	cDNA cloning
	TTAGGTCATGATCGGAAGATCGCCGTGCTG	CCCTCGAGGAACATGGTTGATGAATCG	transactivation assay
	CGGCAGAAGGAATTGAAGAAGG	ATGAATCGGACGGTGTGGAATC	qRT-PCR
BnaMYB108	GGAATTCCATATGGATGAGAAAGGAAGAAGCTTC	CGCGTCGACGAAGTCGTTATTATTGTTGAACTGTTG	cDNA cloning
	GGAATTCCATATGGATGAGAAAGGAAGAAGCTTC	CGCGTCGACGAAGTCGTTATTATTGTTGAACTGTTG	transactivation assay
	GCCTCCGCCGCATCATTA	GTTCGGTTTTGGAGCGTTGTAGTA	qRT-PCR
	GGACTAGTGATGAGAAAGGAAGAAGCTT	CGCGTCGACGAAGTCGTTATTATTGTTGAACTG	GFP fusion
BnaMYB109	CGCCATGGATCGATCGGAGCCGTTAC	CGCGTCGACGCTTCTTGCACAAAAGAAATGTT	cDNA cloning

	CGCCATGGATCGATCGGAGCCGTTAC	CGCGTCGACGCTTCTTGCACAAAAGAAATGTTG	transactivation assay
BnaMYB111	CGCCATGGGAAGGGCTCCTTGTTGT	CGCGTCGACTATGCTATCCACTTGCTGTATTTCTC	cDNA cloning
	CGCCATGGGAAGGGCTCCTTGTTGT	CGCGTCGACTATGCTATCCACTTGCTGTATTTCTC	transactivation assay
BnaMYB116	TTAGGTCATGATCTCAAATATAATGAAGAA	CGCGTCGACAACATCCATTTCAATGGGTTCC	cDNA cloning
	TTAGGTCATGATCTCAAATATAATGAAGAA	CGCGTCGACAACATCCATTTCAATGGGTTCC	transactivation assay
BnaMYB122	CGCCATGGTACGGACACCGTGTTGC	CGCGTCGACCCAAACCAGTTGTCAATCCC	cDNA cloning
	CGCCATGGTACGGACACCGTGTTGC	CGCGTCGACTCCAAACCAGTTGTCAATCCC	transactivation assay
BnaMYB123	CGCCATGGTAATGAGAAAGAGAGAAAGTAGTAAGGTGA	CGCGTCGACACAATTAAAGTCCCAGAGACAATCTTC	cDNA cloning
BnaMYB124	CGCCATGGAAGATACGAAGAAGAAAAAGA	CGCGTCGACTTAGGGATGATGATGGATCAGAG	cDNA cloning
	CGCCATGGAAGATACGAAGAAGAAAAAGA	CGCGTCGACTTAGGGATGATGATGGATCAGAG	transactivation assay
BnaUP1	AGCCTGAGGAGATATTAGCAGGAA	ATCTCACTGCAGCTCCACCAT	qRT-PCR, reference gene
BnaUBC9	GCATCTGCCTCGACATCTTGA	GACAGCAGCACCTTGGAAATG	qRT-PCR, reference gene
GUS	CGCCATGGTAGATCTGAGGGTAAA	CGCGTCGACCACGTGATGGTGATGGTGAT	overexpression
NbRbohA	GGCAAGCAGGAAAGATCAGACACG	CGCAAAAGCAAAAGAAGAAGAAAA	qRT-PCR
NbRbohB	CAGTCTCTTCACCATGCCAAAAA	CCCACAATAGAAGACCCCAACT	qRT-PCR
NbAOX1a	TGAGACGGCAGTAGAGCACAATG	AAGGGCAATCAATCAATCAAAACA	qRT-PCR
NbAPX1	GGAGTGGTTGCTGTTGAAGTC	GGAGAGCCTTGTCTGATGG	qRT-PCR
NbAPX6	TTCCCGATGCTGGTCCTCCTTCC	TGCCCCAACCACTACGCTCTG	qRT-PCR
NbCAT3	TGCGCATCACAATAATCACCAT	TGTCGCGCTTTCCTGTCAA	qRT-PCR
NbGPX2	TTGTTTTGCCACTACCTTGTTCAG	TTCATTTGGGGGTGTCAGATTAG	qRT-PCR
NbGST	TGAAGGAAAGCGAAGCACAAT	ACGACGGCGCGAATCAAACA	qRT-PCR
NbSOD	GCCGTCCTTAGCAGCAGTGAA	CCGGGTTTTAGGCCAGAGACAT	qRT-PCR
NbMC4	TGGTAACGGGGAGGGTGAAAGTGG	TCCTGAACCGGCATAAACCTCCTG	qRT-PCR
NbMC8	CTGCAGGCGGAGACTCTTATGGTG	GCCTGGGCGTTGCGTGTAGC	qRT-PCR
NbVPE1a	ACAGGGTAGAAGCGCATCATTAT	AGCTTACATTCCCTTCCAAACTG	qRT-PCR

NbVPE1b	TCCCAGCGTCCCATCCAATACTT	CAATAATGATGCGCTTCTAACCTGT	qRT-PCR
NbVPE3	CTCTGTTGGCATAATGGCTTCTCT	CTGCATACCTTCTTTCTCCCTCTG	qRT-PCR
NbACRE31	AAGGTCCCGTCTTCGTCGGATCTTCG	AAGAATTCGGCCATCGTGATCTTGGTC	qRT-PCR
NbACRE132	AAGGTCCAGCGAAGTCTCTGAGGGTGA	AAGAATTCCAATCCTAGCTCTGGCTCCTG	qRT-PCR
NbCYP71D20	AAGGTCCACCGCACCATGTCCTTAGAG	AAGAATTCCTTGCCCCTTGAGTACTTGC	qRT-PCR
NbCP23	GCTGTGGGTTACGGTGTTGAAAATGGT	AAACTCAGGCAACGACAGGGTAGGATG	qRT-PCR
NbHIN1	CTTCCATACCGCCACCAGCAAAATCC	GCAAAGGCAGCCGAAGAGACAGC	qRT-PCR
NbPR2	AAGCCTGGACCTATTGAAACCTAT	AACCGAACTGTCCCAAACTCCAC	qRT-PCR
NbPR5	CCCGGCGCAACTATCCAACTCTCC	GCCGCCACCGATGCACTTCAAT	qRT-PCR
NbSAG12	ATATGGGATGTGAGGGAGGTCTTA	TCAATGGCAACGGATACAGGT	qRT-PCR
NbSAG101	TGGAAGAGGCTGGGTATTATGACA	GCCAACGCTTTCGGAGATTTC	qRT-PCR
NbZAT12	CGGTCGTCGGAAAGAAGATGATA	TCGCAAAACCGGAGATGAAAC	qRT-PCR
NbPP2A	GACCCTGATGTTGATGTTCGCT	GAGGGATTTGAAGAGAGATTTC	qRT-PCR, reference gene
NbL23	AAGGATGCCGTGAAGAAGATGT	GCATCGTAGTCAGGAGTCAACC	qRT-PCR, reference gene
NbF-box	GGCACTCACAAACGTCTATTTC	ACCTGGGAGGCATCCTGCTTAT	qRT-PCR, reference gene
ProNbRbohB	GGGGTACCCCTGCTAAAAATAAAGATTTCTTGAAATTTC	CGCCATGGCTATAGTTTTTTCTTTGAGAAATAATA	fLUC fusion
ProNbHIN1	GGGGTACCAACCACGTACACAAGATTTCAACA	CGCCATGGCTCAAGAAAAATAAAGTACAGATTATATTGCTT	fLUC fusion
ProNbGST	GGGGTACCCACCCCCCCTTTTTTTTTTTTAAA	CGCCATGGTTTCTGGATATACAGCTAAAGATAAAGAAT	fLUC fusion
ProBnaRbohA	GGGGTACCCTATTTGTCTAACCAAAAATTTAACATAAAGCT	CGCCATGGGAAGATCCAGCGAACACTAGGGAT	fLUC fusion
ProBnaRbohB	GGGGTACCGCAAACTTTTAATATACCTTTTCAACGGTT	CGCCATGGTGTTTCAAAGGATGAAAAAAAGAGATAATCAC	fLUC fusion
ProBnaGST1	GGGGTACCGGTGGTTGATTATTTCTCTGATTTTAATGT	CGCCATGGACTAATGCTTGTTTTTGTTTTGTTTTTCTT	fLUC fusion

ProBnaHIN1	GGGGTACCAATCCCAACTTGGGTCCACATT	CGCCATGGTTCAGGTTGTGGAGGTTAGAATTAATG	fLUC fusion

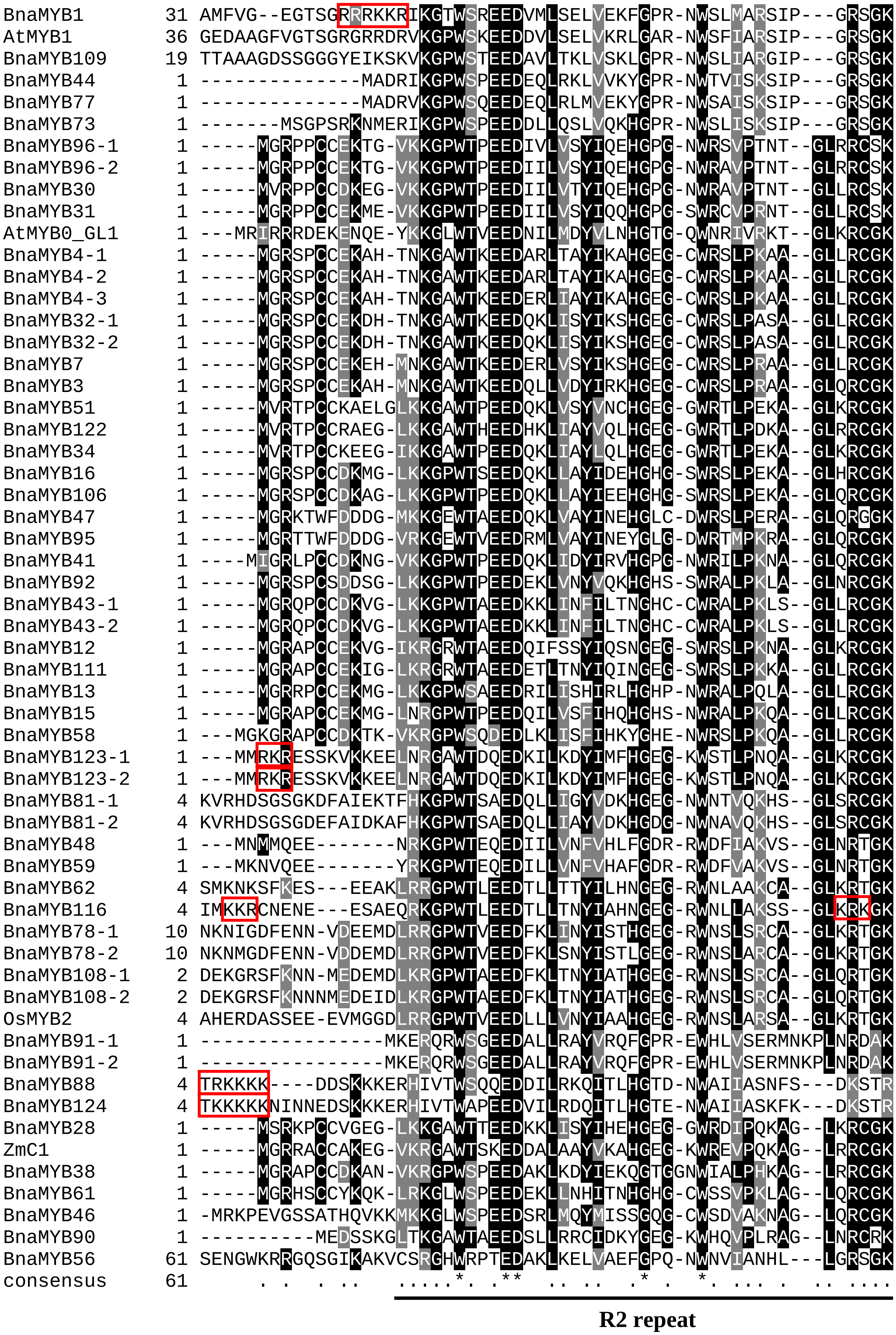
Restriction sites were underlined.

Table S3: R2R3 type MYB genes identified from lower species

species	Gene model	Description	Type	code
Ostreococcus tauri	17156	e_gw1.05.00.32.1	R2R3	OtMYB1
	23487	estExt_fgenesh1_pg.C_Chr_0	R2R3	OtMYB2
	36773	1500010069	R2R3	OtMYB3
Chlamydomonas reinhardtii	205725	OVA_Chlre2_kg.scaffold_500	R2R3	CrMYB1
	376761	estExt_fgenesh1_pm.C_chrom	R2R3	CrMYB2
	377858	estExt_fgenesh1_pm.C_chrom	R2R3	CrMYB3
Selaginella moellendorffii	100734	e_gw1.23.519.1	R2R3	SmMYB1
	113921	e_gw1.47.324.1	R2R3	SmMYB2
	140962	estExt_Genewise1.C_11907	R2R3	SmMYB3
	179572	estExt_Genewise1Plus.C_540	R2R3	SmMYB4
	233652	fgenesh1_pm.C_scaffold_470	R2R3	SmMYB5
	437219	estExt_fgenesh2_pg.C_00034	R2R3	SmMYB6

Note: The respective sequences were idendtified from Phytozome database and subjected to domain analysis in the SMART program.

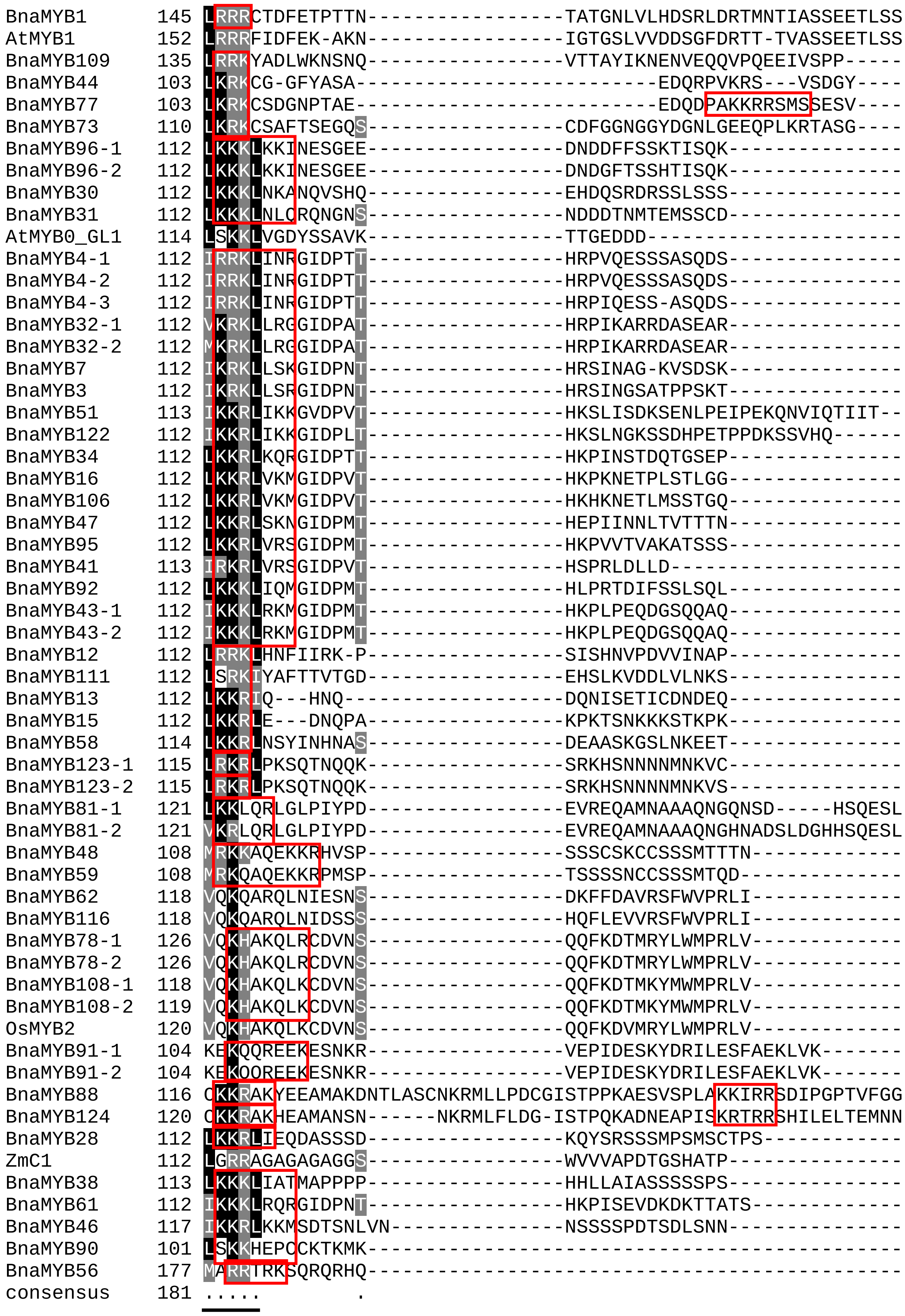
```
BnaMYB1        1 -------------------------MEREMWGRSGIG----EIEEAVAG-GRRDEHDGGV
AtMYB1         1 -------------------------MEAEIVRRSEVTGLRREVEESSIGRGDCDGDGGDV
BnaMYB109      1 ------------------------------------------MDRSEPLPFPSSADSVKV
BnaMYB44       1 ------------------------------------------------------------
BnaMYB77       1 ------------------------------------------------------------
BnaMYB73       1 ------------------------------------------------------------
BnaMYB96-1     1 ------------------------------------------------------------
BnaMYB96-2     1 ------------------------------------------------------------
BnaMYB30       1 ------------------------------------------------------------
BnaMYB31       1 ------------------------------------------------------------
AtMYB0_GL1     1 ------------------------------------------------------------
BnaMYB4-1      1 ------------------------------------------------------------
BnaMYB4-2      1 ------------------------------------------------------------
BnaMYB4-3      1 ------------------------------------------------------------
BnaMYB32-1     1 ------------------------------------------------------------
BnaMYB32-2     1 ------------------------------------------------------------
BnaMYB7        1 ------------------------------------------------------------
BnaMYB3        1 ------------------------------------------------------------
BnaMYB51       1 ------------------------------------------------------------
BnaMYB122      1 ------------------------------------------------------------
BnaMYB34       1 ------------------------------------------------------------
BnaMYB16       1 ------------------------------------------------------------
BnaMYB106      1 ------------------------------------------------------------
BnaMYB47       1 ------------------------------------------------------------
BnaMYB95       1 ------------------------------------------------------------
BnaMYB41       1 ------------------------------------------------------------
BnaMYB92       1 ------------------------------------------------------------
BnaMYB43-1     1 ------------------------------------------------------------
BnaMYB43-2     1 ------------------------------------------------------------
BnaMYB12       1 ------------------------------------------------------------
BnaMYB111      1 ------------------------------------------------------------
BnaMYB13       1 ------------------------------------------------------------
BnaMYB15       1 ------------------------------------------------------------
BnaMYB58       1 ------------------------------------------------------------
BnaMYB123-1    1 ------------------------------------------------------------
BnaMYB123-2    1 ------------------------------------------------------------
BnaMYB81-1     1 ---------------------------------------------------------MIG
BnaMYB81-2     1 ---------------------------------------------------------MIG
BnaMYB48       1 ------------------------------------------------------------
BnaMYB59       1 ------------------------------------------------------------
BnaMYB62       1 ---------------------------------------------------------MEN
BnaMYB116      1 ---------------------------------------------------------MSN
BnaMYB78-1     1 ---------------------------------------------------MDGKRSLEM
BnaMYB78-2     1 ---------------------------------------------------MDGKRSLEI
BnaMYB108-1    1 -----------------------------------------------------------M
BnaMYB108-2    1 -----------------------------------------------------------M
OsMYB2         1 ---------------------------------------------------------MDM
BnaMYB91-1     1 ------------------------------------------------------------
BnaMYB91-2     1 ------------------------------------------------------------
BnaMYB88       1 ---------------------------------------------------------MEE
BnaMYB124      1 ---------------------------------------------------------MED
BnaMYB28       1 ------------------------------------------------------------
ZmC1           1 ------------------------------------------------------------
BnaMYB38       1 ------------------------------------------------------------
BnaMYB61       1 ------------------------------------------------------------
BnaMYB46       1 ------------------------------------------------------------
BnaMYB90       1 ------------------------------------------------------------
BnaMYB56       1 MNPNLLEKDQTSNETIHGSRRFKEANNFRSSPKSHTNFSLARNHPLNKTFPVLKSEDEHE
consensus      1
```



```
BnaMYB1       31 AMFVG--EGTSGRRRKKRIKGTWSREEDVMLSELVEKFGPR-NWSLMARSIP---GRSGK
AtMYB1        36 GEDAAGFVGTSGRGRRDRVKGPWSKEEDDVLSELVKRLGAR-NWSFIARSIP---GRSGK
BnaMYB109     19 TTAAAGDSSGGGYEIKSKVKGPWSTEEDAVLTKLVSKLGPR-NWSLIARGIP---GRSGK
BnaMYB44       1 --------------MADRIKGPWSPEEDEQLRKLVVKYGPR-NWTVISKSIP---GRSGK
BnaMYB77       1 --------------MADRVKGPWSQEEDEQLRLMVEKYGPR-NWSAISKSIP---GRSGK
BnaMYB73       1 -------MSGPSRKNMERIKGPWSPEEDDLLQSLVQKHGPR-NWSLISKSIP---GRSGK
BnaMYB96-1     1 -----MGRPPCCEKTG-VKKGPWTPEEDIVLVSYIQEHGPG-NWRSVPTNT--GLRRCSK
BnaMYB96-2     1 -----MGRPPCCEKTG-VKKGPWTPEEDIILVSYIQEHGPG-NWRAVPTNT--GLRRCSK
BnaMYB30       1 -----MVRPPCCDKEG-VKKGPWTPEEDIILVTYIQEHGPG-NWRAVPTNT--GLLRCSK
BnaMYB31       1 -----MGRPPCCEKME-VKKGPWTPEEDIILVSYIQQHGPG-SWRCVPRNT--GLLRCSK
AtMYB0_GL1     1 ---MRIRRRDEKENQE-YKKGLWTVEEDNILMDYVLNHGTG-QWNRIVRKT--GLKRCGK
BnaMYB4-1      1 -----MGRSPCCEKAH-TNKGAWTKEEDARLTAYIKAHGEG-CWRSLPKAA--GLLRCGK
BnaMYB4-2      1 -----MGRSPCCEKAH-TNKGAWTKEEDARLTAYIKAHGEG-CWRSLPKAA--GLLRCGK
BnaMYB4-3      1 -----MGRSPCCEKAH-TNKGAWTKEEDERLIAYIKAHGEG-CWRSLPKAA--GLLRCGK
BnaMYB32-1     1 -----MGRSPCCEKDH-TNKGAWTKEEDQKLISYIKSHGEG-CWRSLPASA--GLLRCGK
BnaMYB32-2     1 -----MGRSPCCEKDH-TNKGAWTKEEDQKLISYIKSHGEG-CWRSLPASA--GLLRCGK
BnaMYB7        1 -----MGRSPCCEKEH-MNKGAWTKEEDERLVSYIKSHGEG-CWRSLPRAA--GLLRCGK
BnaMYB3        1 -----MGRSPCCEKAH-MNKGAWTKEEDQLLVDYIRKHGEG-CWRSLPRAA--GLQRCGK
BnaMYB51       1 -----MVRTPCCKAELGLKKGAWTPEEDQKLVSYVNCHGEG-GWRTLPEKA--GLKRCGK
BnaMYB122      1 -----MVRTPCCRAEG-LKKGAWTHEEDHKLIAYVQLHGEG-GWRTLPDKA--GLRRCGK
BnaMYB34       1 -----MVRTPCCKEEG-IKKGAWTPEEDQKLIAYLQLHGEG-GWRTLPEKA--GLKRCGK
BnaMYB16       1 -----MGRSPCCDKMG-LKKGPWTSEEDQKLLAYIDEHGHG-SWRSLPEKA--GLHRCGK
BnaMYB106      1 -----MGRSPCCDKAG-LKKGPWTPEEDQKLLAYIEEHGHG-SWRSLPEKA--GLQRCGK
BnaMYB47       1 -----MGRKTWFDDDG-MKKGEWTAEEDQKLVAYINEHGLC-DWRSLPERA--GLQRGGK
BnaMYB95       1 -----MGRTTWFDDDG-VRKGEWTVEEDRMLVAYINEYGLG-DWRTMPKRA--GLQRCGK
BnaMYB41       1 ----MIGRLPCCDKNG-VKKGPWTPEEDQKLIDYIRVHGPG-NWRILPKNA--GLQRCGK
BnaMYB92       1 -----MGRSPCSDDSG-LKKGPWTPEEDEKLVNYVQKHGHS-SWRALPKLA--GLNRCGK
BnaMYB43-1     1 -----MGRQPCCDKVG-LKKGPWTAEEDKKLINFILTNGHC-CWRALPKLS--GLLRCGK
BnaMYB43-2     1 -----MGRQPCCDKVG-LKKGPWTAEEDKKLINFILTNGHC-CWRALPKLS--GLLRCGK
BnaMYB12       1 -----MGRAPCCEKVG-IKRGRWTAEEDQIFSSYIQSNGEG-SWRSLPKNA--GLKRCGK
BnaMYB111      1 -----MGRAPCCEKIG-LKRGRWTAEEDETLTNYIQINGEG-SWRSLPKKA--GLLRCGK
BnaMYB13       1 -----MGRRPCCEKMG-LKKGPWSAEEDRILISHIRLHGHP-NWRALPQLA--GLLRCGK
BnaMYB15       1 -----MGRAPCCEKMG-LNRGPWTPEEDQILVSFIHQHGHS-NWRALPKQA--GLLRCGK
BnaMYB58       1 ---MGKGRAPCCDKTK-VKRGPWSQDEDLKLISFIHKYGHE-NWRSLPKQA--GLLRCGK
BnaMYB123-1    1 ---MMRKRESSKVKKEELNRGAWTDQEDKILKDYIMFHGEG-KWSTLPNQA--GLKRCGK
BnaMYB123-2    1 ---MMRKRESSKVKKEELNRGAWTDQEDKILKDYIMFHGEG-KWSTLPNQA--GLKRCGK
BnaMYB81-1     4 KVRHDSGSGKDFAIEKTFHKGPWTSAEDQLLIGYVDKHGEG-NWNTVQKHS--GLSRCGK
BnaMYB81-2     4 KVRHDSGSGDEFAIDKAFHKGPWTSAEDQLLIAYVDKHGDG-NWNAVQKHS--GLSRCGK
BnaMYB48       1 ---MNMMQEE-------NRKGPWTEQEDIILVNFVHLFGDR-RWDFIAKVS--GLNRTGK
BnaMYB59       1 ---MKNVQEE-------YRKGPWTEQEDILLVNFVHAFGDR-RWDFVAKVS--GLNRTGK
BnaMYB62       4 SMKNKSFKES---EEAKLRRGPWTLEEDTLLTTYILHNGEG-RWNLAAKCA--GLKRTGK
BnaMYB116      4 IMKKRCNENE---ESAEQRKGPWTLEEDTLLTNYIAHNGEG-RWNLLAKSS--GLKRKGK
BnaMYB78-1    10 NKNIGDFENN-VDEEMDLRRGPWTVEEDFKLINYISTHGEG-RWNSLSRCA--GLKRTGK
BnaMYB78-2    10 NKNMGDFENN-VDDEMDLRRGPWTVEEDFKLSNYISTLGEG-RWNSLARCA--GLKRTGK
BnaMYB108-1    2 DEKGRSFKNN-MEDEMDLKRGPWTAEEDFKLTNYIATHGEG-RWNSLSRCA--GLQRTGK
BnaMYB108-2    2 DEKGRSFKNNNMEDEIDLKRGPWTAEEDFKLTNYIATHGEG-RWNSLSRCA--GLQRTGK
OsMYB2         4 AHERDASSEE-EVMGGDLRRGPWTVEEDLLLVNYIAAHGEG-RWNSLARSA--GLKRTGK
BnaMYB91-1     1 ---------------MKERQRWSGEEDALLRAYVRQFGPR-EWHLVSERMNKPLNRDAK
BnaMYB91-2     1 ---------------MKERQRWSGEEDALLRAYVRQFGPR-EWHLVSERMNKPLNRDAK
BnaMYB88       4 TRKKKK----DDSKKKERHIVTWSQQEDDILRKQITLHGTD-NWAIIASNFS---DKSTR
BnaMYB124      4 TKKKKKNINNEDSKKKERHIVTWAPEEDVILRDQITLHGTE-NWAIIASKFK---DKSTR
BnaMYB28       1 -----MSRKPCCVGEG-LKKGAWTTEEDKKLISYIHEHGEG-GWRDIPQKAG--LKRCGK
ZmC1           1 -----MGRRACCAKEG-VKRGAWTSKEDDALAAYVKAHGEG-KWREVPQKAG--LRRCGK
BnaMYB38       1 -----MGRAPCCDKAN-VKRGPWSPEEDAKLKDYIEKQGTGGNWIALPHKAG--LRRCGK
BnaMYB61       1 -----MGRHSCCYKQK-LRKGLWSPEEDEKLLNHITNHGHG-CWSSVPKLAG--LQRCGK
BnaMYB46       1 -MRKPEVGSSATHQVKKMKKGLWSPEEDSRLMQYMISSGQG-CWSDVAKNAG--LQRCGK
BnaMYB90       1 ----------MEDSSKGLTKGAWTAEEDSLLRRCIDKYGEG-KWHQVPLRAG--LNRCRK
BnaMYB56      61 SENGWKRRGQSGIKAKVCSRGHWRPTEDAKLKELVAEFGPQ-NWNVIANHL---LGRSGK
consensus     61      . .  . ..   .....*. .**  .. ..  .* .  *. ... .  .. ....
```

R2 repeat

```
BnaMYB1         85 SCRLRWCNQLDPSLKRNPFTEVEDEAIITAHAIHGNKWSIIAKLLPGRTDNAIKNHWNAT
AtMYB1          92 SCRLRWCNQLNPNLIRNSFTEVEDQAIIAAHAIHGNKWAVIAKLLPGRTDNAIKNHWNSA
BnaMYB109       75 SCRLRWCNQLDPCLKRKPFSDEEDHMIISAHAIHGNKWAVIAKLLPGRTDNAIKNHWNST
BnaMYB44        43 SCRLRWCNQLSPQVEHRPFSAEEDETIARAHAQFGNKWATIARLLNGRTDNAVKNHWNST
BnaMYB77        43 SCRLRWCNQLSPEVEHRPFSPEEDETIVSARAKFGNKWATIARLLNGRTDNAVKNHWNST
BnaMYB73        50 SCRLRWCNQLSPEVEHRAFTAEEDETIIRAHARFGNKWATISRLLNGRTDNAIKNHWNST
BnaMYB96-1      52 SCRLRWTNYLRPGIKRGNFTEHEEKMIVHLQALLGNRWAAIASYLPERTDNDIKNYWNTH
BnaMYB96-2      52 SCRLRWTNYLRPGIKRGNFTEHEEKMIVHLQALLGNRWAAIASYLPERTDNDIKNYWNTH
BnaMYB30        52 SCRLRWTNYLRPGIKRGNFTEHEEKMIVHLQALLGNRWAAIASYLPQRTDNDIKNYWNTH
BnaMYB31        52 SCRLRWTNYLRPGIKRGNFTEHEDKTIIHLQALLGNRWAAIASYLPQRTDNDIKNYWNTH
AtMYB0_GL1      54 SCRLRWMNYLSPNVNKGNFTEQEEDLIIRLHKLLGNRWSLIAKRVPGRTDNQVKNYWNTH
BnaMYB4-1       52 SCRLRWINYLRPDLKRGNFTEDEDELIIKLHSLLGNKWSLIAGRLPGRTDNEIKNYWNTH
BnaMYB4-2       52 SCRLRWINYLRPDLKRGNFTEDEDELIIKLHSLLGNKWSLIAGRLPGRTDNEIKNYWNTH
BnaMYB4-3       52 SCRLRWINYLRPDLKRGNFTEEEDELIIKLHSLLGNKWSLIAGRLPGRTDNEIKNYWNTH
BnaMYB32-1      52 SCRLRWINYLRPDLKRGNFTLEEDDLIIKLHSLLGNKWSLIATRLPGRTDNEIKNYWNTH
BnaMYB32-2      52 SCRLRWINYLRPDLKRGNFTLEEDDLIIKLHSLLGNKWSLIATRLPGRTDNEIKNYWNTH
BnaMYB7         52 SCRLRWINYLRPDLKRGNFTRDEDEVIINLHSLIGNKWSLIAARLPGRTDNEIKNYWNTH
BnaMYB3         52 SCRLRWMNYLRPDLKRGNFTEEEDELIIKLHSLFGNKWSLIAGRLPGRTDNEIKNYWNTH
BnaMYB51        53 SCRLRWANYLRPDIKRGEFTEDEERSIISLHALHGNKWAAIARGLPGRTDNEIKNHWNTH
BnaMYB122       52 SCRLRWANYLRPDIKRGEFSQEEEDSIIRLHAIHGNKWSAIARRLPGRTDNEVKNHWNTH
BnaMYB34        52 SCRLRWANYLRPDIKRGEFTPEEDDTIIKLHALKGNKWAAIATCLAGRTDNEIKNYWNTN
BnaMYB16        52 SCRLRWTNYLRPDIKRGKFNLQEEQTIIQLHALLGNRWSAIATHLPKRTDNEIKNYWNTH
BnaMYB106       52 SCRLRWTNYLRPDIKRGKFTVQEEQTIIQLHALLGNRWSAIATHLAKRTDNEIKNYWNTH
BnaMYB47        52 SCRLRWLNYLRPGIRRGKFTPQEEEAIIKLHAVLGNRWAAIAKEMENRTDNDIKNHWNSC
BnaMYB95        52 SCRLRWLNYLRPGIKRGKFTPQEEEDIIKFHSLLGNRWAAIAKQMPNRSDNDIKNHWNSC
BnaMYB41        53 SCRLRWTNYLRPDIKRGRFSFEEEETIIQLHSVMGNKWSAIAARLPGRTDNEIKNHWNTH
BnaMYB92        52 SCRLRWTNYLRPDIKRGKFSPDEEQTILNLHAVLGNKWSTIANHLPGRTDNEIKNFWNTH
BnaMYB43-1      52 SCRLRWINYLRPDLKRGLLSECEEQMVIDLHAQLGNRWSKIASHLPGRTDNEIKNHWNTH
BnaMYB43-2      52 SCRLRWINYLRPDLKRGLLSECEEQMVIDLHAQLGNRWSKIASHLPGRTDNEIKNHWNTH
BnaMYB12        52 SCRLRWINYLRSDLKRGNITLEEEELVVKLHSTLGNRWSLIASHLPGRTDNEIKNYWNSH
BnaMYB111       52 SCRLRWINYLRRDLKRGNITAEEEETIVKLHSLLGNRWSHIATHLPGRTDNEIKNYWNSH
BnaMYB13        52 SCRLRWINYLRPDIKRGNFTPQEEETIINLHQSLGNRWSAIAAKLPGRTDNEIKNVWHTH
BnaMYB15        52 SCRLRWMNYLKPDIKRGNFTQAEEDAIISLHQILGNRWSAIAAKLPGRTDNEIKNVWHTH
BnaMYB58        54 SCRLRWINYLRPDLKRGNFTLEEEETIIKLHQSFGNKWSKIASKLPGRTDNEIKNVWHTH
BnaMYB123-1     55 SCRLRWKNYLRPGIKRGNISSDEEELIIRLHNLLGNRWSLIAGRLPGRTDNEIKNHWNSN
BnaMYB123-2     55 SCRLRWKNYLRPGIKRGNISSDEEELIIRLHNLLGNRWSLIAGRLPGRTDNEIKNHWNSN
BnaMYB81-1      61 SCRLRWVNHLRPSLKKGSFTDKEEQRVVELHASMGNKWARMAAQLPGRTDNEIKNFWNTR
BnaMYB81-2      61 SCRLRWVNHLRPDLKKGSFTDKEEQRVIELHASMGNKWARMATELPGRTDNEIKNFWNTR
BnaMYB48        48 SCRLRWVNYLHPGLKRGKMTPQEERLVTELHAKWGNRWSKIARKLPGRTDNEIKNYWRTH
BnaMYB59        48 SCRLRWVNYLHPGLKRGKMTHQEERLVLELHAKWGNRWSKIAKKLPGRTDNEIKNYWRTH
BnaMYB62        58 SCRLRWLNYLKPDIRRGNLTPQEQLLILELHSKWGNRWSKIAQYLPGRTDNEIKNYWRTR
BnaMYB116       58 SCRLRWLNYLKPDIKRGNLTPQEQLLILELHCKWGNRWSKIAQYLPGRTDNEIKNYWRTR
BnaMYB78-1      66 SCRLRWLNYLRPDVRRGNITLEEQLLILELHSRWGNRWSKIAQYLPGRTDNEIKNYWRTR
BnaMYB78-2      66 SCRLRWLNYLRPDVRRGNITLEEQLLILELHSRWGNRWSKIAQYLPGRTDNEIKNYWRTR
BnaMYB108-1     58 SCRLRWLNYLRPDVRRGNITLEEQLLILELHSRWGNRWSKIAQYLPGRTDNEIKNYWRTR
BnaMYB108-2     59 SCRLRWLNYLRPDVCRGNITLEEQLLILELHSRWGNRWSKIAQYLPGRTDNEIKNYWRTR
OsMYB2          60 SCRLRWLNYLRPDLRRGNITPQEQLLILELHSRWGNRWSKIAQHLPGRTDNEIKNYWRTR
BnaMYB91-1      44 SCLERWKNYLKPGIKKGSLTEEEQRLVIRLQEKHGNKWKKIAAEVPGRTAKRLGKWWEVF
BnaMYB91-2      44 SCLERWKNYLKPGIKKGSLTEEEQRLVIRLQEKHGNKWKKIAAEVPGRTAKRLGKWWEVF
BnaMYB88        56 QCRRRWYTYLNSDFKTGGWSPEEDTLLCEAQRVFGNRWTEIAKVVSGRTDNAVKNRFTTL
BnaMYB124       60 QCRRRWYTYLNSDFKRGGWSPEEDILLCEAQRVFGNRWTEIAKVVSGRTDNAVKNRFTTL
BnaMYB28        52 SCRLRWTNYLKPEIKRGEFSSEEEQIIIMLHASRGNKWSVIARHLPRRTDNEIKNYWNTH
ZmC1            52 SCRLRWLNYLRPNIRRGNISYDEEDLIIRLHRLLGNRWSLIAGRLPGRTDNEIKNYWNST
BnaMYB38        53 SCRLRWLNYLRPNIRHGDFSEEEDKIIFSLFSSIGSRWSVIAAHLHGRTDNDIKNYWNTK
BnaMYB61        52 SCRLRWINYLRPDLKRGAFSPEEENLIVEIHSVLGNRWSQIAARLPGRTDNEIKNLWNSS
BnaMYB46        57 SCRLRWINYLRPDLKRGAFSPQEEELIIRFHSILGNRWSQIAARLPGRTDNEIKNFWNST
BnaMYB90        48 SCRLRWLNYLKPTIKRGKLSSDEVDLLLRLHKLLGN-------RLPGRTANDIKNYWNTH
BnaMYB56       117 SCRLRWFNQLDPRINKTAFTEEEELRLLAVHRAYGNKWALISRLFPGRTDNAVKNHWHVI
consensus      121 .*..**...*....... .. .*. ... .. ..*.... .. ....*............
```



```
BnaMYB1      145 LRRRCTDFETPTTN-----------------TATGNLVLHDSRLDRTMNTIASSEETLSS
AtMYB1       152 LRRRFIDFEK-AKN-----------------IGTGSLVVDDSGFDRTT-TVASSEETLSS
BnaMYB109    135 LRRKYADLWKNSNQ-----------------VTTAYIKNENVEQQVPQEEIVSPP-----
BnaMYB44     103 LKRKCG-GFYASA--------------------------EDQRPVKRS---VSDGY----
BnaMYB77     103 LKRKCSDGNPTAE--------------------------EDQDPAKKRRSMSSESV----
BnaMYB73     110 LKRKCSAFTSEGQS-----------------CDFGGNGGYDGNLGEEQPLKRTASG----
BnaMYB96-1   112 LKKKLKKINESGEE-----------------DNDDFFSSKTISQK---------------
BnaMYB96-2   112 LKKKLKKINESGEE-----------------DNDGFTSSHTISQK---------------
BnaMYB30     112 LKKKLNKANQVSHQ-----------------EHDQSRDRSSLSSS---------------
BnaMYB31     112 LKKKLNLQRQNGNS-----------------NDDDTNMTEMSSCD---------------
AtMYB0_GL1   114 LSKKLVGDYSSAVK-----------------TTGEDDD----------------------
BnaMYB4-1    112 IRRKLINRGIDPTT-----------------HRPVQESSSASQDS---------------
BnaMYB4-2    112 IRRKLINRGIDPTT-----------------HRPVQESSSASQDS---------------
BnaMYB4-3    112 IRRKLINRGIDPTT-----------------HRPIQESS-ASQDS---------------
BnaMYB32-1   112 VKRKLLRGGIDPAT-----------------HRPIKARRDASEAR---------------
BnaMYB32-2   112 MKRKLLRGGIDPAT-----------------HRPIKARRDASEAR---------------
BnaMYB7      112 IKRKLLSKGIDPNT-----------------HRSINAG-KVSDSK---------------
BnaMYB3      112 IKRKLLSRGIDPNT-----------------HRSINGSATPPSKT---------------
BnaMYB51     113 IKKRLIKKGVDPVT-----------------HKSLISDKSENLPEIPEKQNVIQTIIT--
BnaMYB122    112 IKKRLIKKGIDPLT-----------------HKSLNGKSSDHPETPPDKSSVHQ------
BnaMYB34     112 LKKRLKQRGIDPTT-----------------HKPINSTDQTGSEP---------------
BnaMYB16     112 LKKRLVKMGIDPVT-----------------HKPKNETPLSTLGG---------------
BnaMYB106    112 LKKRLVKMGIDPVT-----------------HKHKNETLMSSTGQ---------------
BnaMYB47     112 LKKRLSKNGIDPMT-----------------HEPIINNLTVTTTN---------------
BnaMYB95     112 LKKRLVRSGIDPMT-----------------HKPVVTVAKATSSS---------------
BnaMYB41     113 IRKRLVRSGIDPVT-----------------HSPRLDLLD--------------------
BnaMYB92     112 LKKKLIQMGIDPMT-----------------HLPRTDIFSSLSQL---------------
BnaMYB43-1   112 IKKKLRKMGIDPMT-----------------HKPLPEQDGSQQAQ---------------
BnaMYB43-2   112 IKKKLRKMGIDPMT-----------------HKPLPEQDGSQQAQ---------------
BnaMYB12     112 LRRKLHNFIIRK-P-----------------SISHNVPDVVINAP---------------
BnaMYB111    112 LSRKIYAFTTVTGD-----------------EHSLKVDDLVLNKS---------------
BnaMYB13     112 LKKRIQ---HNQ-------------------DQNISETICDNDEQ---------------
BnaMYB15     112 LKKRLE---DNQPA-----------------KPKTSNKKKSTKPK---------------
BnaMYB58     114 LKKRLNSYINHNAS-----------------DEAASKGSLNKEET---------------
BnaMYB123-1  115 LRKRLPKSQTNQQK-----------------SRKHSNNNNMNKVC---------------
BnaMYB123-2  115 LRKRLPKSQTNQQK-----------------SRKHSNNNNMNKVS---------------
BnaMYB81-1   121 LKKLQRLGLPIYPD-----------------EVREQAMNAAAQNGQNSD-----HSQESL
BnaMYB81-2   121 VKRLQRLGLPIYPD-----------------EVREQAMNAAAQNGHNADSLDGHHSQESL
BnaMYB48     108 MRKKAQEKKRHVSP-----------------SSSCSKCCSSSMTTTN-------------
BnaMYB59     108 MRKQAQEKKRPMSP-----------------TSSSSNCCSSSMTQD--------------
BnaMYB62     118 VQKQARQLNIESNS-----------------DKFFDAVRSFWVPRLI-------------
BnaMYB116    118 VQKQARQLNIDSSS-----------------HQFLEVVRSFWVPRLI-------------
BnaMYB78-1   126 VQKHAKQLRCDVNS-----------------QQFKDTMRYLWMPRLV-------------
BnaMYB78-2   126 VQKHAKQLRCDVNS-----------------QQFKDTMRYLWMPRLV-------------
BnaMYB108-1  118 VQKHAKQLKCDVNS-----------------QQFKDTMKYMWMPRLV-------------
BnaMYB108-2  119 VQKHAKQLKCDVNS-----------------QQFKDTMKYMWMPRLV-------------
OsMYB2       120 VQKHAKQLKCDVNS-----------------QQFKDVMRYLWMPRLV-------------
BnaMYB91-1   104 KEKQQREEKESNKR-----------------VEPIDESKYDRILESFAEKLVK-------
BnaMYB91-2   104 KEKQQREEKESNKR-----------------VEPIDESKYDRILESFAEKLVK-------
BnaMYB88     116 CKKRAKYEEAMAKDNTLASCNKRMLLPDCGISTPPKAESVSPLAKKIRRSDIPGPTVFGG
BnaMYB124    120 CKKRAKHEAMANSN------NKRMLFLDG-ISTPQKADNEAPISKRTRRSHILELTEMNN
BnaMYB28     112 LKKRLIEQDASSSD-----------------KQYSRSSSMPSMSCTPS------------
ZmC1         112 LGRRAGAGAGAGGS-----------------WVVVAPDTGSHATP---------------
BnaMYB38     113 LKKKLIATMAPPPP-----------------HHLLAIASSSSSPS---------------
BnaMYB61     112 IKKKLRQRGIDPNT-----------------HKPISEVDKDKTTATS-------------
BnaMYB46     117 IKKRLKKMSDTSNLVN---------------NSSSSPDTSDLSNN---------------
BnaMYB90     101 LSKKHEPQCKTKMK----------------------------------------------
BnaMYB56     177 MARRTRKSQRQRHQ----------------------------------------------
consensus    181 .....        .
```

R3 repeat (continued)

```
BnaMYB1      188 GGG--------------------GGGGGHITTPLVSSDGKEATS-MEISEEQPSDKANEE
AtMYB1       193 GG------------------------GCHVTTPIVSPEGKEATTSMEMSEEQCVEKTNGE
BnaMYB109    173 ----------------------------QVVDVPMYDEPTQVLDDVTMDDASPNEPQEQA
BnaMYB44     129 --------------------------PPVANGLLMSPGSPTGSDVSDSSTLPVLTSVEVF
BnaMYB77     133 --------------------------PPVDTGLYMSPESPT-DVGSDSSAVPPQR----F
BnaMYB73     149 --------------------------GGVSTGLYMSPGSPSGSDVSEQSCGVPHV----F
BnaMYB96-1   140 -----------------------------------QHQSSN---------KGQWERRLQT
BnaMYB96-2   140 -----------------------------------QHHSSN---------KGQWERRLQT
BnaMYB30     140 -----------------------------------PSSSSANSNSNINIARGQWERRLQT
BnaMYB31     140 -----------------------------------NNNNTNRRSVN----KGQWEKKLQT
AtMYB0_GL1   135 ------------------------------------------------------------
BnaMYB4-1    140 --------------------------KPTQLAEAITSNNTINISFTN---TPKMES---T
BnaMYB4-2    140 --------------------------KPTQLIEAITSNNTINISFTS---TPKMES---T
BnaMYB4-3    139 --------------------------KPTHL-EAITSN-TINISFASSSSTPKMEIFQES
BnaMYB32-1   140 --------------------------ETEDSLVKVLSFGPQLEKEES----SREEG----
BnaMYB32-2   140 --------------------------ETEDSLVKVISFGPQLEKEES----SREEG----
BnaMYB7      139 --------------------------KTEDQVVKDVSFGYLFDKTEK----SEEQK----
BnaMYB3      140 --------------------------TTPSLQNDEPVRFDFSGPDQQ--RTVKPEPMLLD
BnaMYB51     154 -------SDDDLDNEKVKNNNEKPGLSSAKFLNRVANRFGKRINQSVLSEIIGSGGPLTT
BnaMYB122    149 -----------DDDDQKSNKNNALGSLSARFLNRVANRFGKRINQSVLSDIIGSGDPFTS
BnaMYB34     140 ------------------KHHKLGSSGSARLLNRVASKYSVDSNRDLLTGIIIGNSTNIA
BnaMYB16     140 -------------------------LSKNAATLSHMAQWESARLEAEAR-LARESKLLHY
BnaMYB106    140 -------------------------SKSAAATLSHMAQWESARLEAEAR-LARESKLLHY
BnaMYB47     140 -------------------------EEECGSSPTNTSLTTEGHFSSSPSGLARLLNKLAA
BnaMYB95     140 -------------------------TTSSPTPTPSSSSSSS--FSSTSS--ARLLNKLAA
BnaMYB41     136 ---------------------------LSSLLAAIFNQPKFSSVATNASSLLNPDVLRLA
BnaMYB92     140 -------------------------MSLSSNLRGFVDMQQQFPNGQDQTILKLQTEMAKL
BnaMYB43-1   140 -------------------------GSKSLVPHDDKNKKQDQEDKQTKEKQEHHQLGIDL
BnaMYB43-2   140 -------------------------GSKSLVPHDDKNKKQDQEDKQTKEKQEHHQLGIDL
BnaMYB12     139 --------------------------PRSPR-----PPTKRRPGRTSRSTMKPKTHHANI
BnaMYB111    140 --------------------------SSSSLGAKNTNKTKKKKGRTSRSSMKKHKQMVTA
BnaMYB13     135 --------------------------LVSVM--------DEKRPSSPQQQSSSSTNISAV
BnaMYB15     137 --------------------------SQSVP--------AKSKSTKTESELASSSNPSFE
BnaMYB58     142 --------------------------SQESS--------PNASRSFGGSNIVSKEEEDDV
BnaMYB123-1  143 ------------------------------------VIRPKAIRFPKALTFQNQSSIGST
BnaMYB123-2  143 ------------------------------------VIRPKAIRCPKALTFQKQSSIGST
BnaMYB81-1   159 EPDCLEIPEFDFKYLQLN---NYQSVLLRNVPMGNMMKHCS--FQPNMYNLIGSPYMSP-
BnaMYB81-2   164 ELDCLEIPELNFKHLQLNGGSSFLQSMLSSVPTGNQMRQNPGLFQPNIYNVIASPYHQPP
BnaMYB48     138 -------------------------TQDVSFE-------SRMSSGKVSFYDTGGNREMNQ
BnaMYB59     137 --------------------------------------------------TGGSNGKMNQ
BnaMYB62     148 -------------------------EKMEQNSSTTYACPQNNNNNNNNNSSLLPPSQTFE
BnaMYB116    148 -------------------------HKMKDYS--------------NTNSKAPPTDSLGP
BnaMYB78-1   156 -------------------------ERIQASA------STSTGSATTSSCVTTPSDQFLM
BnaMYB78-2   156 -------------------------ERIQAAS------ASSTTGSAAKSCVTTTTDQFVI
BnaMYB108-1  148 -------------------------ERIQSASASAASLISTTGSATTSSCITTSNNEFMT
BnaMYB108-2  149 -------------------------ERIQSA---AASLTSTTGSATTSSCITTSNNEFMT
OsMYB2       150 -------------------------ERIQAAAAGQQQ-QQEGGTDTPPLSWQHGGSDGLY
BnaMYB91-1   140 ---------------------ERSSVPSAVMASSNGGFQQAPPNNNNNNNNNNNNHVIPP
BnaMYB91-2   140 ---------------------ERSSVP-AVMASSNGGFQQAPPPPN-------NNHVIPP
BnaMYB88     176 YGDRSHIKVNSGVNQHSSYGDRSHIKVVNQQIRPPFWVIAHNEEKIQKDSAKESEGEDKE
BnaMYB124    173 YGN-----VEPCLNQQA----RSPFSVLAHNATG----IDSLEEQYQTSNVKESDGEG--
BnaMYB28     143 -------------------------SGFNTVFENTSKDGTPVREDDSLSRKKRLKKSSST
ZmC1         140 -------------------------------------AATSGACETGQNSAAHRADPDSA
BnaMYB38     141 ----------------------------SSHYNMTNSLPPYNPSISTNELLTPHQEMMMT
BnaMYB61     142 ---------------------------NNNNHKSPPSSSSPTNQDFFLERPSDFSDYFGL
BnaMYB46     147 ------------------------------------TTSSLELKDIIGSFMSLQEQGFIN
BnaMYB90     115 ---------------------------------------------KRNVTFSSTTPAQKI
BnaMYB56     191 -----------------------------------PPQAPSGNAEMAVSSSYNHGDEFFG
consensus    241
```

```
BnaMYB1      227 DISRQECNNDPPTLFRPVAKLSSFN----------------PYNHMEGSSTPHTLNQNK-
AtMYB1       229 GISRQD-DKDPPTLFRPVPRLSSFN----------------ACNHMEGSPSPHIQDQNQ-
BnaMYB109    205 PIEKSSIPVFRPVARAGAFRVYNPT----------------SQRNGYRDHNVVPCEGPL-
BnaMYB44     163 KPVPRAGGVMLPLPIETSTFCDDPA----------------TSLSLSLPGADVSEESNR-
BnaMYB77     162 KPMTSSS-------------EEDPA----------------TTLSLSLS-VPVSQESRN-
BnaMYB73     179 KPTARSG---AVTEVTASTSGEDPP----------------TCLSLSLPWNNRCETETV-
BnaMYB96-1   156 DINMAKQALSEALSLDKKPSSSPVIIPQNIPSFSSVLLDNCHDPSSSSSSTTTTTTTTS-
BnaMYB96-2   156 DINMAKQALCEALSLDKKPSS------KFSPSSSSLSIIPQNIPSFSSSSSTTTTITT--
BnaMYB30     165 DIHLAKKALSEALSP-------------------AVAPINTATTSSSAESRLTTSSASG-
BnaMYB31     161 DINMAKQALFQALSLD-----------------------------QASSSITPDPDSPK-
AtMYB0_GL1   135 -----------------------------------------------SPPSLFITAATP-
BnaMYB4-1    168 SCFQVKPEKISMLTFKEEKDE------------------FLIEEKLPDLNLELRISLPD-
BnaMYB4-2    168 SCFQVKPEKISMLTFKEEKDE------------------FLTEEKLPDLNLELRISLPD-
BnaMYB4-3    171 TSFPGKQEKISMVTFKEEKDE------------------CPVEENFPDLNLELRISLPD-
BnaMYB32-1   166 RFKKS-------LTCKTK---------------------------SLDLNLELRISPPW-
BnaMYB32-2   166 RFKKS-------LTCKTK---------------------------SLDLNLELRISPPW-
BnaMYB7      165 QNKKQKQNLINGLVCKEERVEHHP-------------AVVVQEIFCPNLNLELRISPPW-
BnaMYB3      172 REETNNNNINNCTSSGTTSEK------------------DIQTDDDWVLNLELSVGPAT-
BnaMYB51     207 TTTSHTATTTSVTVNSESDKSTSS-------------SFTPTSDLLCQMTVNGNATSSP-
BnaMYB122    198 FTTPTTSASECEKSSSSFSKPNSS-------------DLLINENMILDATSLSSSTFS--
BnaMYB34     182 DISQNTGDVDSPTKNSTSTLLN---------------QMAAASSGFISILTNNTSTSPG-
BnaMYB16     174 QTKVSSSHHDHLNIISSDQ---------------------QKQQQLESPTSTVSFSEAKT
BnaMYB106    174 QNNKAAAPNNCLSHKASSTNWTKP-------------NQGKGDQQLESPTSTVTFSENLH
BnaMYB47     175 GIASRQHDLDRIKNILLDR-----------------------------------------
BnaMYB95     171 GISSRKHELDRIKNVIMSE-----------------------------------------
BnaMYB41     169 SLLLPPQQPLQNPNTLYAS---------------------NLDQNLQTPNTSVSSQDS--
BnaMYB92     175 QLFQYLLQPPTMSNNIRNP---------------------NDFDILSLLNSIASFKEI--
BnaMYB43-1   175 DKSNKTISTDDGFCIDEVP-------------------------LLDPHEILLDIS----
BnaMYB43-2   175 DKSNKTISTDDGFCIDEVP-------------------------LLDPHEILLDIS----
BnaMYB12     168 RKMKKTSEPPEPEASAAVKAGEETLMMELNGAEAELGPCNYYVTCHEGGACRNNNNNNS-
BnaMYB111    174 SQCLPQPKELESEISEGWNS------------------GNYEGKSLGAYEWLDGEIERL-
BnaMYB13     161 TTSSNNNDVSNNNIKDSATS---------------------PED----------------
BnaMYB15     163 SLFSASLSASDEVSSETLTS---------------------HEDHSKEAQMDNKLREMI-
BnaMYB58     168 QIGETFEYFQDYSELAGLLQ---------------------EVDKPELLEIP--------
BnaMYB123-1  167 SLLTVKENVIDHQAGSPSLLG---------------------------------------
BnaMYB123-2  167 SLLTVKENVIDQQASSPSSLG---------------------------------------
BnaMYB81-1   213 NRKRVREQETDFLDTGDYATNEQSAQLWNQ-------KQFHVVPESHLLGNATTYSSP--
BnaMYB81-2   224 NRKRFREPETAFPYTGGYATDEHSAQLWNSPFVESTPGQFNVAPDSHFLGNATTYSSPSE
BnaMYB48     166 EETKDGYSMDDIWKEIDHSAVNIIQ--------------PVKDIYL-EQSYCLSYPNL--
BnaMYB59     147 ECDDGNYSMDDIWREIDQSGANIIK--------------PVKDIYYSEQSCYFNFPPLP-
BnaMYB62     183 SMSTQTYQDLSGLSNMDGSSSSS-----------------AFMPDLMTVPHFMDPN-TI-
BnaMYB116    169 VVQDNNFSHNSGLNNIDCSTSMSQD--------------LAKISQLMDLSDLETTNSMC-
BnaMYB78-1   185 TSYDAGLNNNNNTNMDHLSFMSNP----------------NGYVTQETSSVSVSPTSGL-
BnaMYB78-2   185 TSYDDGANNNN-TSIDHLGLTNNP----------------NGYVTSGTSSVTVSPASGL-
BnaMYB108-1  183 YDY-----NNNNSIGERLGVMNN-----------------NNYITLENSSVAVSPVSDL-
BnaMYB108-2  181 YDY-----NNNNFIGERLGVMNN-----------------NDYITPENSSVAVSPVSDL-
OsMYB2       184 ESPELPAPDASCWPAEYCAAAGGAQ--------------SGGTPAPELSSTTAGSSSLS-
BnaMYB91-1   179 WLATSNNGSNVVARPPSVTLTLSPSVAATPPQQQPIPWLQQQQPEASPGGLVLGSMIPSC
BnaMYB91-2   171 WLATSNNGNNVVARPPSVTLTLSPSVAATPPQQ-PIPWLQQQQPEASPGGLVLGSMIPSC
BnaMYB88     236 MFLKKDDPKVTSLMQQAELLSSLAQKVN---TEQSMENAWKVLQDFFNKSKENDIFRYG-
BnaMYB124    218 MFLKKDDPKVTALMQQAELLSSLAQKVNADNTEQSMENAWKVLQDFLNKGKENDLLRYG-
BnaMYB28     178 SRLLNKVAAKATSMKEALSASMEGS--------------LNANTSFSNGYSEQILNEDD-
ZmC1         163 GTTTTSAAAVWAPKAVRCTGG------------------------LFFFHRDTTPAHAG-
BnaMYB38     173 MMDQQQQQLLYQEAVDSLVNS------------------------PNSNKLIMSHQEDS-
BnaMYB61     175 QKLNFNSNLGLSVTADSSPLCSMIP------------------SQFSTGNMVGSVFQTP-
BnaMYB46     171 PSFTNTPITNNNPFPAPHMIS---------------------------------------
BnaMYB90     130 DVFKPRPRLFTVNNGCSHLHG---------------------LPEVDVVPPCLGLNNIN-
BnaMYB56     216 TVVNGTFVNEEDDEAGDDDGS-----------------------TVSTCTTELSLTPPS-
consensus    301
```

```
BnaMYB1      270 -------------------------FQSCKQDTAMLRLLEGAYSERFVPQKCGSGCCSVS
AtMYB1       271 -------------------------LQSSKQDAAMLRLLEGAYSERFVPQTCGGGCCSNN
BnaMYB109    248 -------------------------IQAAKPDSLAGKFLQSLCGEPNIPSKCGHGCSTHP
BnaMYB44     206 -------------------------SHESTNNNTSRSHNTNTMSLMQFSGGFRGAIEEMG
BnaMYB77     191 -------------------------TGSSDN----------SLPFPRFERQMKINVEERG
BnaMYB73     219 -------------------------RVNEPTQVNENTVTDGGYTAELFPVRKEEVEEEKG
BnaMYB96-1   215 -------------------------NTTNIYPSGVYASSAENIARLLQDFMKDTPKPLTL
BnaMYB96-2   208 ---------------------------TTQCLSGVYASSAENIARLLQDFMKDTPKSLTL
BnaMYB30     205 -------------------------FLRTQETSTTYASSIENIAKLLKGWVKKSPTQNSA
BnaMYB31     191 -------------------------PHDHHSTTAIYASSTDNISKLLQNWTSSS--SLMP
AtMYB0_GL1   147 -------------------------SSCHHQQENIYENIAKSFNGVVSASYEDKPKQELA
BnaMYB4-1    209 --------------------------VVE---------GKSTRER-CFKCSLGMINGMEC
BnaMYB4-2    209 --------------------------VVE---------GKSTRAR-CFRCSLGMINGMEC
BnaMYB4-3    212 --------------------------VVDHHHQGFVGEGKTTTPRRCFKCSLGTINGMEC
BnaMYB32-1   191 --------------------------QDQQQ-RDERKLLFGREKYLCSACRFGLGNGKEY
BnaMYB32-2   191 --------------------------QDQHR-RDERKLLFRKEKYLCSACRFGLGNGKEC
BnaMYB7      211 --------------------------HNKNH-DDN----TREKSTTYTTSRLYVQNGMES
BnaMYB3      213 --------------------------TKSYR-YELTRKANPDLAESTRRWSFELLGAQAE
BnaMYB51     253 --------------------------STFSEASVNDSLMYCDNEDNLGFSN-FLN-----
BnaMYB122    243 --------------------------SDTSDPSVYD-HIFDDLEDMTAFSSRFLNDVVSH
BnaMYB34     226 --------------------------FSDNCSFSDGFTEFFSNEEISGMYTNVDNVGLME
BnaMYB16     213 EFVGSS-------------------STCLNMIKETENDWISSTIHEFERVEEGLTGLLLG
BnaMYB106    221 LMIMPSGENNNESSEIQNMTEFALSSSTSSDVKDSDQDWMRQINCPAEGIEEGFTSLLLL
BnaMYB47     194 ----------------------------KITINDQDEEGGLRRDQKIG----EEDDFLIW
BnaMYB95     190 ----------------------------PRQAVEEDKMMIGKEDEEVTGCSMEIDENLIS
BnaMYB41     206 -------------------------QPQAECTAPTKDETSYFEPIMNARLEVGPSDVLPP
BnaMYB92     212 -------------------------TSNNLDLGSNLQDFNSLPSLKTLNSNIGPSSVLPQ
BnaMYB43-1   206 ----------------------------FADHHTSDENAHINISNSTSPSSSSTSSCISS
BnaMYB43-2   206 ----------------------------FAQHHTSDENAHINISNSTSPSSSSTSSCISS
BnaMYB12     227 -------------------------IDGDKGVSSFDEDIIDLLLDESAPSHVLTSCGGNA
BnaMYB111    215 -------------------------MSSFVWECASEEAVISMNDDDPDQNKVCESGDNIS
BnaMYB13     184 -------------------------------------VLPLIDESFWSEVVS---MDYNI
BnaMYB15     201 -------------------------TTTDQDSFSFINFGEDIDESFWNETLYSQDEENHT
BnaMYB58     199 --------------------------------FDIDPDVWNFLEGFQQPENSLTPKDHQE
BnaMYB123-1  188 ----------------------------------------DLKIDFDKIQSEYLFSDLMD
BnaMYB123-2  188 ----------------------------------------DLKIDFDKIQSEYLFSDLMD
BnaMYB81-1   264 PSEPE----------------AEKLELPSFQCFDP---PGDWETQHSNPMPAVESDRTLV
BnaMYB81-2   284 PLIHG----------------AEKLELPSFQCFDTQEEPGDWEAQHSNPMQAIESDNTLV
BnaMYB48     209 -------------------------ASPSWESS--------LDSIWKMEEDKSKMSSFAN
BnaMYB59     192 ------------------------QASPTWESS--------LESTWNMDAYESKMSSFAI
BnaMYB62     224 ------------------------IDGSMCYHE---------DNAQELSGYILGTEEYYY
BnaMYB116    214 ------------------------LEGSRGSSN---------QYVNEDHRCLEEEYIVTT
BnaMYB78-1   228 ------------------------TEYHIGSEVEKVEN--NQDQSLVGPQIMSPPENYLD
BnaMYB78-2   227 ------------------------TEYNIGSEVGKIETSFDPDQSLVGPQILLPSQNYLD
BnaMYB108-1  220 ------------------------TDYYNAPKP-------NPDQNLVGPQMLP--DNYFD
BnaMYB108-2  218 ------------------------TDYYNAPKP-------NPDQNLVGPQMLP--DNYFD
OsMYB2       229 ------------------------TDSGAGAQPSWPTQADGAEWFTTACDASSATGGVAM
BnaMYB91-1   239 S-----------------------GSNESVFMSELVECCRELEEGHRAWAEHKKEAAWRL
BnaMYB91-2   230 S-----------------------GSNESVFMSELVECCRELEEGHRAWAEHKKEAAWRL
BnaMYB88     292 --------LPDIDFQLEEFKDLVEDLRSSNEDSQASWRQPDLHDSPASSDYSSGSTTMPH
BnaMYB124    277 --------FPDIDFQLEEFRDLIGDLRSSYEDNDPSWRQPDLHDSPASSENSSGSTILLD
BnaMYB28     223 --------------------------SSNASLINTLAEFDPFLQTTFYPENEMNTTSDLD
ZmC1         198 ------------------------------------------ETATPMAGGGGGGGGEAG
BnaMYB38     208 ----------------------------------------REQSTNKGIMLLSDVRSGSS
BnaMYB61     216 ----------------------VCVKPSVTLAPDNTSNFFDNGGFSWSGPNSSSSSSLVK
BnaMYB46     192 ----------------------------HPCIDDFTPYVDGLYGVNTGLQGELYFPPLEC
BnaMYB90     168 ---------------------------------------NVCENSMTYCNKAGEKYELFS
BnaMYB56     252 --------------------------------------------STHQLRFFNYDSTLAP
consensus    361
```

```
BnaMYB1      305 -----QKDSLLGPEFVDYLDPPTFPSYELAAIATDISSLAWLRSGLESSSVRTMEEAAGR
AtMYB1       306 PDGSFQQESLLGPEFVDYLDSPTFPSSELAAIATEIGSLAWLRSGLESSSVRVMEDAVGR
BnaMYB109    283 AE---PGKSVLGAEFVDYEEPCPVFNQELISIATDLNNIAWIKSGLDNAIVREAEQNLKM
BnaMYB44     241 RSF-----GGNGGEFMAVVQEMIK-----AEVRSYMAEMQRNHSGGGFVGGGFRDNG---
BnaMYB77     216 G-------EARRAEFMTVVHEMVK-----AEVRSYMAEMQRNN-GGGFVVGGFYDSG---
BnaMYB73     254 IS-------GFGGEFMTVVQEMIR-----TEVRSYMADLQRGNVGGGGSIGGSGGGGGGS
BnaMYB96-1   250 TSSS-PISETGPLASAASEEGGEGFEQSFFSFNSMEETQNLTQETNFFHDQESKPAITMD
BnaMYB96-2   241 TSSSSPVSETGPLVSAATEEGGEGFEQSFFSFNSMEETHNLTQETSFFHDQESKPVITME
BnaMYB30     240 DQMVSPDSEAKEVIKSNVEKDCAGAFQSFSGFDHLKDRD----SAGVSPDHETKPDITG-
BnaMYB31     224 NTSSLSNNRSSSTGEGGVLDHQCSLFSPNSESGSVDERLNIMTETNIFKG-ESKSNVDRE
AtMYB0_GL1   182 QKDVLMATTNDPSHYYG--NNALWVHDDDFELSSLVMMNFASGDVEYCL-----------
BnaMYB4-1    233 RCGSMRCDVVGGSSGSTGKGGDIS---HGFDFLGLATKETTTS-LLGFRSLEMI------
BnaMYB4-2    233 RCGSIRCDVVGGSSGSTGNGGDIS---HGFDFLGLATKETTTTSLLGFRSLEMI------
BnaMYB4-3    246 RCGRMRCDVVGGSKGS-GKGSDMS---NGFDFLGLAKKETNTC-LFGFRSLEMK------
BnaMYB32-1   224 SCENVRCHIDDSSSSSYSSSDISS-SVVGFDFLGLNTSS-----VLDYTSLEMN------
BnaMYB32-2   224 SCENVRCHIDDSSSSSYSSSDISS-SVVGFDFLGLNTSS-----VLDYTSLEMN------
BnaMYB7      240 SSDTAKCQTEDSSSISHSSLDISSISSVGYDFLGLNTR------FMDFRSLEMN------
BnaMYB3      246 VCLCCRIGSHNESCRNCRTSDVLT----------------------TWESKIL-------
BnaMYB51     281 -DEDFMMLEESSVDNTEFMKELSRFLEED-----VNDDVEVMPVYEHQDNIEDIDNYFA-
BnaMYB122    276 DDEDFLMLDESCLEKTSFMRELTRILQDDKIETTMCSDSRVTPISEVDVSFEGIDNWFG-
BnaMYB34     260 ELEDILSYDGADVGDIKDSPEVDVTDDMDFLDSWNKEDD--LDLEKFVSSLDSKIGVFV-
BnaMYB16     254 G-GGSLGLSFSADKNETAGESSGGGGGECNDYYEDNKNYLESIFSFVDPSPSDSTPMF--
BnaMYB106    281 GDSGDRSLSIGKKDEETVAGAVEVNESDY-SYYEDNKNYWNSILNLVDSTPSDSSTMF--
BnaMYB47     222 DD----------------GEVRRYMDIDPMEYETTPY------DSVLYESTQILDYLF--
BnaMYB95     222 TTSSYEYLTCDFTPTYTPGFVAAFDDYSLVEPYDLYR------SDFYHETSDDQLDLFLL
BnaMYB41     241 LS-----------ESFDLDSLMSTPYYSPQQNNIEAEANSSSLFDFRFPDNFTFDDFMGL
BnaMYB92     247 IPEDNHFKFCNERENLPVSPIWLSDPTNSNQHMLPSLDPSSAVSDDMIRNQYVIEHVNSN
BnaMYB43-1   238 VPGEEFSKFLDEMDTIDLKWLSSDHSSEDNIIYKDDKFHNNVDTMNLWDINYLSSLELFM
BnaMYB43-2   238 VPGEEFSKFLDEMETIDLKWLSSDHSSGDNIIYKDDKFHNNVDTMNLWDINYLSSLELFM
BnaMYB12     262 ELNHLGDSEEAKRSSEILNQESIDCLQSCPSMESFLNYEHQVNNNAFTDEFIDWDCVWQQ
BnaMYB111    250 CCVDLFEEEQGKLGSLHVDQDMNIEKEREESILSSNSNESGDKD-WWVGLCDSSEVGFGI
BnaMYB13     204 SGDEEIKIEDWESSLDSNIKGYNHDMESWFDNLLTSNLTTGENSDIF-------------
BnaMYB15     236 SNLDEMQQEFQHLRSVGNEMIFDSEMDFWFDVLPRSGGEQDLLAGL--------------
BnaMYB58     227 SEEDEVDKWFKNLESELGLEEDDSQQQQEQNNEAKEDSPSPSLLESYEVLINH-------
BnaMYB123-1  208 FDGLGCGNVMSLVSSDEVLGDYVSADTSCLGNLDLNRPFTSCLQEDCLWDFNC-------
BnaMYB123-2  208 FDGLGCGNVMSLVSSDEVLGDYVSADASCLGNLDLNRPFTSCLQEDCLWDFNC-------
BnaMYB81-1   305 QS-PLTD-----CPS---SGLLESVVYGSSGEKQATNSTDPDSPLLLQSSLFGHIELTPA
BnaMYB81-2   328 LSSPLTDPTPSECPSSFCDGLLESVVYGSSGEKQTT-TTDPDSP-LLQSSLLGHIDITPA
BnaMYB48     236 DQFPFCFQHSRSPWSSG-------------------------------------------
BnaMYB59     220 DQFPLSVLNMVDHHGRL-------------------------------------------
BnaMYB62     251 MENSDIS--TECQVAEAY----ENVTQDPMWN------------MDDIWQFRE-------
BnaMYB116    241 MGNSDILPLQDCHVGVAYSTYEEDVTQDPMWN------------MDDIWQFEEYAPFN--
BnaMYB78-1   262 VNGGLLS----EDLTQSYHNWFENDN-GMIPPYSDSFWNIG-SDED-FWLLLQQQQQLVN
BnaMYB78-2   263 DKSGLLNGGLRDMQEQSYHNLFENIN-GMIPSYSDSFWNIG-SDED-FWLLQQQQQQLLN
BnaMYB108-1  247 YS-GLLDEDLTATHEQSNLDWFENID-EVVSSSSESLWNIGESDED-FWFCQQQQQ-FNN
BnaMYB108-2  245 YS-GLLDEDLTATHEQSNLHWFENID-EVVSSSSESLWNIGESDED-FWFCQQQQQ-FNN
OsMYB2       265 RDTELELAQPPCQGGQTWTTSESSLPGLTFPDLAVADFEIGGFDVDSFWTSMEDDQLWCP
BnaMYB91-1   276 RRLELQLESEKTSRQREKTEEIEAKMKALREEQKMAMEKIEGEYREQLVGLRRDAEAKDQ
BnaMYB91-2   267 RRLELQLESEKTSRQREKTEEIEAKMKALREEQKMAMEKIEGEYREQLVGLRRDAEAKDQ
BnaMYB88     344 SSGDQTQQPMLLP-----DNEQVDLLSTCHEIVP-------MSVEEEFNSPVQVTPLFRS
BnaMYB124    329 QSGDKTQPSLPDPPQTEHKESGEDFLSTCDVLKNPDENKPISGDEENFSSPIQVTPLFRS
BnaMYB28     257 IDQDYFSHFLENFGRDDDHNEEHYMNHNYGHDLLMSDVSQEVSSTSVDDQDNTNEGWSNY
ZmC1         216 SSDDCSSAASVSLRVGSHDEPCFSGDGDGDWMDDVRALASFLESDEDWLRCQTAGQLA--
BnaMYB38     228 TTSTVTRVKMEQHDHHHEERSMEDYGMEEINHLINSSCTSSSSNSLWFDENKTDDTFMLY
BnaMYB61     254 PNHNLEEMKWSEYSMNTPFFNRSTLNSQPIYIKSEAEYLADVSNITDPWSQSQNENLNTP
BnaMYB46     224 QEGDWYKADINSHVAEMKTNGAGNVPAESMRVEEYWDLDQLMSTEVPSFHFNFKQST---
BnaMYB90     189 NLMDGENMWWESLLEESKQPDGLVPKGTATKMGATFAFDVEQLWNMLDGETVELD-----
BnaMYB56     268 GKAGQCVQRAEVSGKYSKKLDHQNHHTITVSERKVEVKMKSGHYFFDFLGVGAS------
consensus    421
```

```
BnaMYB1      360 LRPQGTRGHRDHCLVSEQGKSRTNVLST----------------------------
AtMYB1       366 LRPQGSRGHRDHYLVSEQGTNITNVLST----------------------------
BnaMYB109    340 DQITFNDPRIRFSGMMPRQHFFCARS------------------------------
BnaMYB44     288 --------------MIPMSQVGVGRIE-----------------------------
BnaMYB77     260 --------------ITPKVE------------------------------------
BnaMYB73     302 CMPQSVNSRRVGFREFIVNQIGIGKME-----------------------------
BnaMYB96-1   309 HDFGLISQG---SLSLLEKWLFDEN------------MVGMSLEGQEAIF------
BnaMYB96-2   301 QDPGLISQG---SLSLFEKWLFDEN------------MVAMSLEGQEAIF------
BnaMYB30     295 ----YSNQS---QWSLFEKWLFEDSG----------GQVGDILLDENPNFF-----
BnaMYB31     283 ATNNVTTDDPAGSLSLIEQWLYDDQGLVDQCDDVQEDLIDVSLEGKNNGNNGQDLS
AtMYB0_GL1       --------------------------------------------------------
BnaMYB4-1        --------------------------------------------------------
BnaMYB4-2        --------------------------------------------------------
BnaMYB4-3        --------------------------------------------------------
BnaMYB32-1       --------------------------------------------------------
BnaMYB32-2       --------------------------------------------------------
BnaMYB7          --------------------------------------------------------
BnaMYB3          --------------------------------------------------------
BnaMYB51         --------------------------------------------------------
BnaMYB122        --------------------------------------------------------
BnaMYB34         --------------------------------------------------------
BnaMYB16         --------------------------------------------------------
BnaMYB106        --------------------------------------------------------
BnaMYB47         --------------------------------------------------------
BnaMYB95     276 --------------------------------------------------------
BnaMYB41     290 L-------------------------------------------------------
BnaMYB92     307 LTSSSQESGASASAAWPDHLLDDSIFSNIL--------------------------
BnaMYB43-1   298 NDHDDGFVGSGCSRMVLD--------------------------------------
BnaMYB43-2   298 NDHDDGFVGSGCSRMVLD--------------------------------------
BnaMYB12     322 GDDNNIFDEKEGSDSMVSWLLDGEDEATIGKSNCENSGEPLDHDEENALVAWLLS-
BnaMYB111    309 NDELLGWEFQGGLTCQTDDLWDLSDFGEIQQVDSI---------------------
BnaMYB13         --------------------------------------------------------
BnaMYB15         --------------------------------------------------------
BnaMYB58         --------------------------------------------------------
BnaMYB123-1      --------------------------------------------------------
BnaMYB123-2      --------------------------------------------------------
BnaMYB81-1   356 FEN------NTETDMFPFGPTSSSERGTSLESGDWIRQLLGEDRDYTK--------
BnaMYB81-2   386 TANTAGHNSSAETDLVHFGPTFSNERRTSFEGGDWIRQLLGEDRDYTK--------
BnaMYB48         --------------------------------------------------------
BnaMYB59         --------------------------------------------------------
BnaMYB62         --------------------------------------------------------
BnaMYB116        --------------------------------------------------------
BnaMYB78-1   315 NGSF----------------------------------------------------
BnaMYB78-2   320 NGSF----------------------------------------------------
BnaMYB108-1  303 NNDF----------------------------------------------------
BnaMYB108-2  301 NNDF----------------------------------------------------
OsMYB2       325 TQAAV---------------------------------------------------
BnaMYB91-1   336 KLADQWTSKHIRLTKFLEQHIGCRQRLLDRP-------------------------
BnaMYB91-2   327 KLADQWTSKHIRLTKFLEQHIGCRQRLLDRP-------------------------
BnaMYB88     392 LAAGIPSPQFSESERNFVLKTLGVESPCPS-ATNLSQPPPCKRVLLDSL-------
BnaMYB124    389 LADGIPSPQFSESERSFLLKTLGIESSSPCPSANPSQPPPCKRVLLHSL-------
BnaMYB28     317 LLDHADFIHDMDYDSL----------------------------------------
ZmC1             --------------------------------------------------------
BnaMYB38     288 Y-------------------------------------------------------
BnaMYB61     314 EDSDVFSKDLQRMAVSFGQSL-----------------------------------
BnaMYB46         --------------------------------------------------------
BnaMYB90         --------------------------------------------------------
BnaMYB56         --------------------------------------------------------
consensus    481
```

Figure S1. Multiple sequence alignment and comparison of R2R3-MYB proteins from canola. Identical amino acids are shaded in black, and similar amino acids are shaded in gray. The amino-terminal R2 and R3 repeats of MYB domains for DNA-binding are shown below the alignment. The conserved repression motif LxLxL in BnaMYB3, -4, -7, -32, -44, -73, -77 and -91 is highlighted in blue. The nuclear localization sequence (NLS) predicted by NucPred (http://www.sbc.su.se/~maccallr/nucpred/cgi-bin/multi.cgi) and PredictNLS (https://www.predictprotein.org/home) are shown in red boxes. The carboxy-terminal region is highly variable and no conserved motif could be detected.

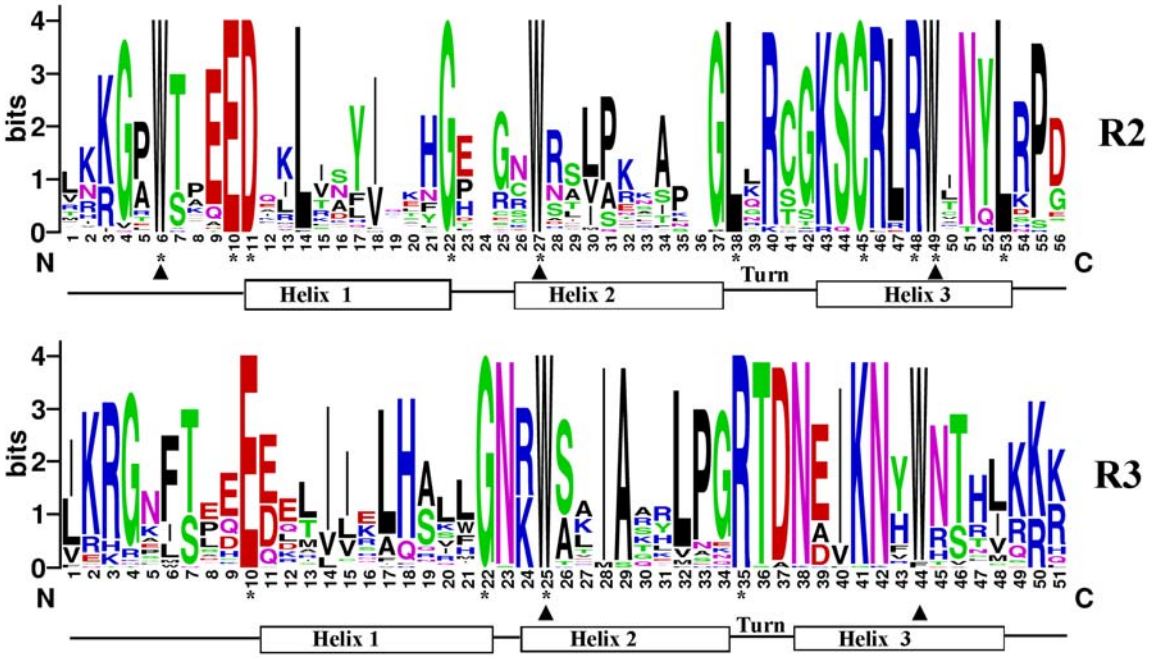


Figure S2. Sequence conservation of the R2R3-MYB domain.

The R2 and R3 MYB repeats are highly conserved across all R2R3-MYB proteins. The sequence logos of the R2 (Top) and R3 (Bottom) MYB repeats are based on full-length alignments of all canola R2R3-MYB proteins. The overall height of each stack indicates the conservation of the sequence at that position, whereas the height of letters within each stack represents the relative frequency of the corresponding amino acid. The asterisks indicate the position of the conserved amino acids that are identical among all the 53 canola R2R3-MYB proteins. Arrowheads show the typical, conserved tryptophan (W) residues in the MYB domain. The positions of the three α-helices that form each of the two MYB repeat are marked as Helix 1 to Helix 3. The sequence logos were generated by Weblogo (http://weblogo.berkeley.edu/).

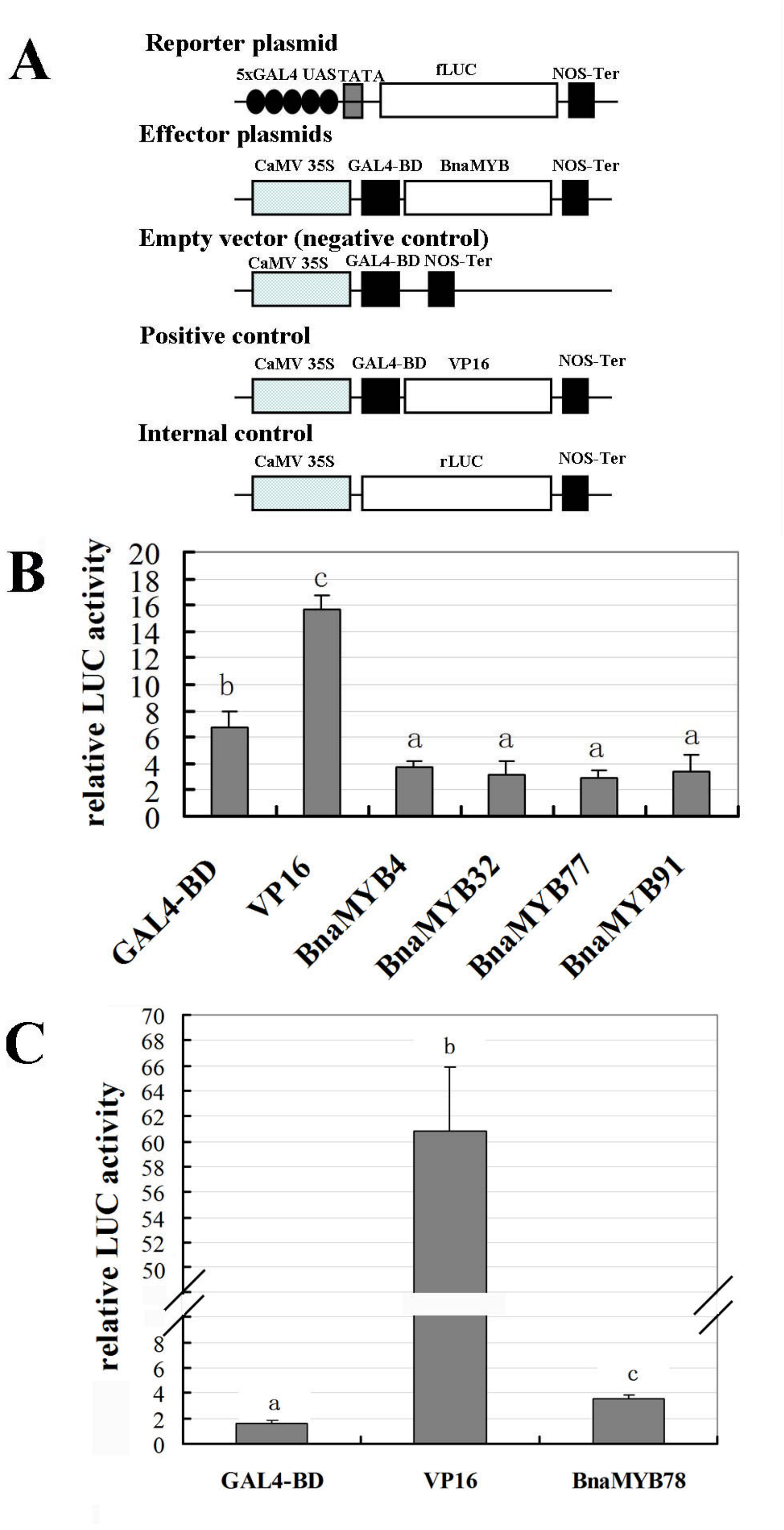


Figure S3. Transcriptional regulation activity of BnaMYBs in protoplast assay.

(A) Schematic representation of constructs used in Arabidopsis protoplast transient expression assay. The reporter plasmid contains five copies of the GAL4 responsive element, minimal TATA box region (starting at position -46) of CaMV 35S promoter, the firefly luciferase (fLUC) gene, and a nopaline synthase (NOS) terminator. Each of the effectors contains a GAL4 DNA-binding domain (GAL4-BD). The vector GAL4-BD was also used as a negative control. The GAL4-BD fused with viral protein VP16 was used as a positive control. All the effector constructs or internal control were driven by CaMV 35S promoter and ended by NOS terminator sequence. (B) Effects of the BnaMYBs on reporter gene expression as revealed by relative LUC activity. The GAL4-BD and VP16 were used as negative and positive controls respectively. Identical and different letters indicate non- and significant differences. (C) Effect of the BnaMYB78 on reporter gene expression as revealed by relative LUC activity. The GAL4-BD and VP16 were used as negative and positive controls respectively. Identical and different letters indicate non- and significant differences.

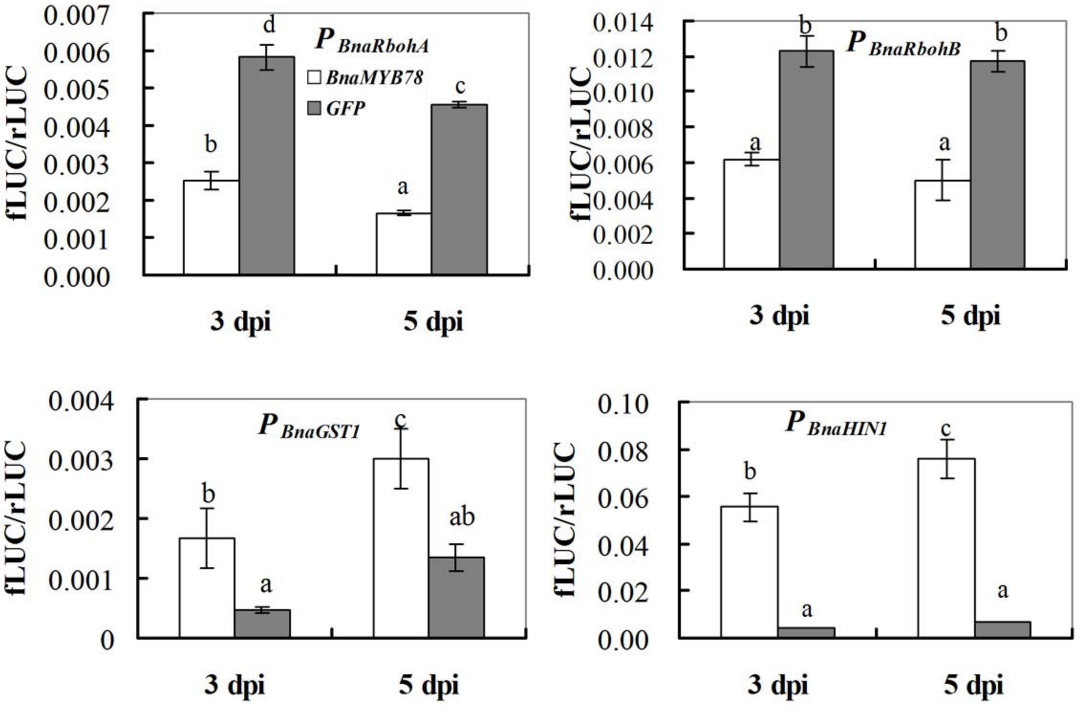


Figure S4. Dual LUC assay of downstream genes of BnaMYB78.

Promoter regions of genes were cloned and fused to upstream of firefly luciferase (fLUC) in the pGreenII0800-LUC vector, in which renilla luciferase (rLUC) under the control of the 35S promoter was used as the endogenous control. The effector plasmid is pYJHA-BnaMYB78 and the control plasmid is pYJGFP. Agrobacterial suspensions harboring the respective plasmids were coinfiltrated into *N.benthamiana* leaves, with enzymatic activity assayed 3 and 5 days post-infiltration (dpi). The ability of BnaMYB78 transcription factor to activate the reporter *fLUC* gene was indicated by the ratio of fLUC to rLUC. Error bars indicate the S.E. of three biological replicates. Identical and different letters represent non- and significant differences.

Supplemental methods:

1. Protoplast transactivation assay in Arabidopsis

The coding regions of BnaMYB genes were amplified by high-fidelity PCR with primers included in Table S2. The PCR products were digested and then cloned into pRT107-BD plasmid [1] to yield 35S::GAL4BD-BnaMYBs. Reporter plasmid GAL4UAS::LUC contains five copies of GAL4 binding element and minimal TATA region of 35S promoter of cauliflower mosaic virus (CaMV), which are located upstream of the firefly luciferase (fLUC) gene. Internal control pPTRL contains *Renilla* Luciferase (rLUC) driven by 35S promoter was described previously [2]. All plasmids were isolated and purified through an Endofree Plasmid Maxi Kit (CWBiotech, Beijing).

The isolation and transfection of Arabidopsis mesophyll protoplast were based on the protocol described previously [3]. For co-transfection assays, 6 μg of fLUC reporter and 6 μg of effector plasmids were used for each PEG transfection. For normalization values, 1 μg of pPTRL plasmid were used as internal control. After cultured for 16 h, luciferase activities were examined with using a dual-LUC reporter assay system (Promega, E1910) on a GloMax™20-20 luminometer. Each transfection was repeated three times.

2. Quantification of hydrogen peroxide in leaf tissues

Hydrogen peroxide was extracted and determined according to [4, 5] with modifications. Briefly, 0.1 g leaf discs was ground in liquid nitrogen and extracted with 5 ml of 5% (w/v) trichloroacetic acid (TCA), followed by extraction in chloroform and isoamylol (24:1, v/v) and then centrifuged at 16 000 *g* for 10 min. The supernatant was neutralized to pH 7.5 with 1 M ammonium hydroxide (NH_4OH), and then the supernatant was divided into two aliquots of 100 μl. 0.4 ml of 100 mM Tris–HCl (pH 8.5) was added into both aliquots. Afterwards, 25 units of catalase (CAT, EC 1.11.1.6, Sigma) was added to one aliquot (blank) and equal amount of ddH_2O was added to the other aliquot and then kept at room temperature for 30 min. Finally, 0.5 ml colorimetric reagent (0.3 mM potassium titanium oxalate and 0.3 mM 4-(2-pyridylazo) resorcinol monosodium salt, freshly made and mixed at 1:1, v/v) was added and kept at room temperature for 10 min. Then the absorbance at 508 nm was monitored and concentration of H_2O_2 was calculated against a standard curve of H_2O_2 (Alfa Aesar, France).

References:

1. Wei, W. et al. Soybean GmPHD-type transcription regulators improve stress tolerance in transgenic Arabidopsis plants. PLoS One 4, e7209 (2009).
2. Ohta, M., Ohme-Takagi, M. & Shinshi, H. Three ethylene-responsive transcription factors in tobacco with distinct transactivation functions. Plant J 22, 29-38 (2000).
3. Yoo, S. D., Cho, Y. H. & Sheen, J. Arabidopsis mesophyll protoplasts: a versatile cell system for transient gene expression analysis. Nat Protoc 2, 1565-72 (2007).
4. Chen, C., Li, H., Zhang, D., Li, P. & Ma, F. The role of anthocyanin in photoprotection and its relationship with the xanthophyll cycle and the antioxidant system in apple peel depends on the light conditions. Physiol Plant 149, 354-66 (2013).
5. Patterson, B. D., MacRae, E. A. & Ferguson, I. B. Estimation of hydrogen peroxide in plant extracts using titanium(IV). Anal Biochem 139, 487-92 (1984).