

## Online Resource 9: Details of some of the motifs found in the promoter sequences of CarB3 genes

Motifs	Motif sequence	Brief description of motif	CarB3 genes containing motifs
2SSEEDPROTBANAPA	CAAACAC	Conserved in many SSP gene promoters	CarB3_5,7,10,14,15,16,18,20,22,23,28,30,31,32,33,34,39,45,48,49
-300CORE	TGTAAAG	Present in alpha-zein genes of maize	CarB3_4,5,20,22,24,25,26,32,38,39,43,47
-300ELEMENT	TGAAAAAA	Elements found in the promoter of barley hordein, and gliadins, glutenin genes of wheat	CarB3_5,6,7,8,11,12,13,15,16,24,27,28,29,32,34,37,38,39,41,42,44,45,48,50,51
AACACOREOSGLUB1	AACAAAC	Found in oryza glutelin genes; Involved in conferring endosperm-specific expression	CarB3_1,3,4,5,6,7,8,9,10,12,13,15,16,17,18,21,22,23,24,25,26,28,29,30,32,34,35,36,38,39,40,41,44,46,47,48,50,
ABRELATERD1	ACGTG	Element found in erd1 (early responsive to dehydration); required for dehydration stress and for etiolated-induced senescence	CaB3_1,2,5,7,8,12,14,16,18,19,20,21,23,28,29,31,33,34,35,36,37,39,44,45,47,48,49,50,51
ACGTATERD1	ACGT	-do-	All except CarB3_4,24,43
AMYBOX1	TAACAAA	Cis-elements present in the 5'-upstream region of $\alpha$ -amylase gene family of rice, wheat, barley	CaB3_1,3,7,8,9,10,13,14,15,17,18,19,21,22,23,24,26,28,29,30,31,34,35,36,37,38,41,45,46,47,49,50,51
AMYBOX2	TATCCAT	Present in the $\alpha$ -amylase gene of rice, barley and wheat	CarB3_1,2,3,4,5,16,23,32,36,41,41,43,47
ARFAT	TGTCTC	ARF binding site, found in the promoters of genes up-regulated by auxin hormone	CaB3_1,4,5,9,11,12,14,15,16,19,21,23,25,27,28,30,31,32,33,34,37,38,39,42,43,44,45,46,48,50,51
CBFHV	AACGAC	Binding site of DREBs, dehydration responsive element binding proteins	CaB3_3,6,7,13,14,15,18,20,25,26,33,34,38,39,40,42,43,45,46,47,48,51
DRECRTCOREAT	ACCGAC	Core motif of DRE/CRT (dehydration-responsive element/C-repeat) cis-acting element found in many genes in <i>Arabidopsis</i>	CarB3_13,17,33,43,44,45,50
GBOXLERBCS	ACACGTGGC	Required for light-regulated gene expression	CarB3_23
GCCCORE	GCCGCC	Core of GCC-box found in many pathogen-responsive genes and has been shown to function as ethylene-responsive element	CarB3_3,5,23,38,39,40
GCN4OSGLUB1	TGAGTCA	Found in the rice GluB-1 gene and required for endosperm specific	CarB3_16,20,21,22,23,38,42,43,47,50

		expression	
MYB1AT	AAACCA	Cis-acting elements present in the promoters of dehydration-responsive gene ( <i>Atrd22</i> ) and serve as binding site for MYB TF.	All except CarB3_2,5,6,13,22,23,24
MYBATRD22	CTAACCA	MYB binding site in <i>Atrd22</i> gene	CarB3_11,15,18,20,21,26,35,39,40,44,45
MYB2CONSENSUSAT	AAACAG	MYB recognition site found in the promoters of the dehydration-responsive gene <i>rd22</i> and many other genes in <i>Arabidopsis</i>	CarB3_1,2,4,5,7,8,9,10,12,13,15,16,18,19,20,23,24,25,26,27,29,30,31,32,33,34,36,38,39,40,41,42,43,44,45,46,47,
NAPINMOTIFBN	TACACAT	Element found in 5' upstream region of napin gene	CaB3_2,3,5,13,17,24,27,29,31,32,33,34,37,40,41,51
RAV1BAT	CAACA	Binding consensus sequence of AtRAV1	CarB3_1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51
RYREPEATBNNAPA	CATGCA	Observed in the "RY/G box" of napin promoter. Required for seed specific expression	All except CarB3_6,7,8,11,14,15,16,17,19,22,23,24,25,29,30,37,41,44,45,47,50,51
SEF1MOTIF	ATATTTAAA	Element found in 5' upstream region of $\beta$ -conglycinin gene	1,4,5,9,10,15,16,19,21,22,24,25,28,29,31,35,36,37,39,44,48,49
SEF3MOTIFGM	AACCCA	Element found in 5' upstream region of $\beta$ -conglycinin gene	2,4,6,7,8,9,13,14,15,16,17,18,19,22,23,25,26,27,28,29,33,34,36,40,42,45,46,47,49,50
SEF4MOTIFGM7S	ATTTTA	Element found in 5' upstream region of $\beta$ -conglycinin gene	All except CarB3_3
NODCON1GM/NODCON2GM	AAAGAT/CTCT T	One of two putative nodulin consensus sequences	All
OSE1ROOTNODULE/OSE2ROOTNODULE	AAAGAT/CTCT T	Found in the promoters of genes expressed in the infected cells of root nodules	All
WUSATAg	TTAATGG	WUSATAg Target sequence of WUS in the intron of <i>AGAMOUS</i> gene in <i>Arabidopsis</i>	CaB3_1,5,9,11,12,13,14,21,23,25,26,29,30,44,47,50,51