

Table S3. Conserved MEME motifs in sunflower CNL family of proteins. The motif logos represented in column three are shown in Supplementary File S1a.

Domain	Motif number	Motif	Motif Sequence	Length	E value
CC	Motif 14	C1	MA[ED][TA][LAI]A[SN][EA]L[LV]KV[LV][FV][KE]K[LM]T[DS]EAFKR[IF]AR[AS]Q	29	7.5e-1109
	Motif 3	C2	[TD][LF]S[RQ]IQ[DA][LV]LNDA[SE][QE]KE[VI][TK][HE][KE][SA]VK[LSE]WLNAL[QR][HS][LA][AS]YD[IV][DE][DN]VLDD[LVI][AS]TE[AD][ML][HL]R	50	1.0e-2772
	Motif 10	C3	P[ST]CCTNFSL[TS]HR[LM][SH][PH]KLDSI[NT][RT][EK]L[EQ][ND]LEK[RQE]KTDLGL	36	3.0e-1407
NBS	Motif 2	P loop	[VI][LV]PI[VW]GMGG[VL]GKTTLARL[LV]YN	21	8.7e-1518
	Motif 8	RNBS A	[HY]FE[LP]KAWV[CY]VSDDF[DQ][IV]FKI[ST][KD][TA][LFI]Q	25	3.8e-1315
	Motif 4	Kinase 2+RNBS B	KRFLLV[LV]DDVWSENY[GD]DWE[NT]LVRPF[LH]SCAPGS[RK]IIMTTRKE	41	4.2e-2089
	Motif 15	RNBS C	LS[HNE]ED[AS][LW][RSL]LF[AK][LVK]HA[LF]	15	4.0e-599
	Motif 7	GLPL	PIG[ER]GIVKKCGGLPLA[LI]K[TVA][IL][GA]R[LS][LM]R	25	6.7e-183
	Motif 5	RNBSD+CNBS1	YH[DE]LS[AP][DH]LK[QR][LC]FAY[CF]SLFPK[DG][FY]LFDK[ED]EL[VI][LS]LW[MV]AEGF[LI]NP	41	3.1e-2273
	Motif 1	MHDL	RSFFQHAPNDESLF[IV]MHDLMNDLAT[FS]VAGEFFLRFDN[HE]M[KE]T	41	3.7e-1966
LRR	Motif 18	L1	[FCY]YLS[SN]KIL[DV]DLLPEL[TP]LLRVLS	22	3.3e-761
	Motif 6	L2	PE[FS]IG[ST]LKHLRYLNLSRTNI[KE]ELPE[NS][VI]GNLYNLQTLI[VL][SF]GC	41	1.1e-2102
	Motif 16	L3	[GS]LTKLP[KN][SG][FL][LS][KN]LK[NRK]LRH[LF]DIR[DG]T	23	6.9e-735
	Motif 9	L4	GFAI[NT]ELK[GD]LTNLHG[EK][VI]SIEGLHKVQSA[KM]HAREANL	36	2.8e-1446
	Motif 17	L5	CL[KR]ELV[IV][KR][ND]CP[NQ]L[IV][DQN]VS[LP][EQ]ALPSL[NKR]VLEI[DYS][RKE]C[GD][SD]GVLRLVQ[VA]AS[SG]VTKL	50	6.9e-801
	Motif 19	L6	[KE]I[ES]SISGL[TDN][DY][VE]VWRGVIEYL[GK][AE]VE[EY]L[SR]IKNCNEI[RK]YLWES[EM][AT][ES][AK][SA][KL][VIL]L[VL][RN]	50	5.2e-625

Table S4. Conserved MEME motifs in sunflower TNL family of proteins. The motif logos represented in column three are shown in Supplementary File S1b.

Domain	Motif number	Motif	Motif Sequence	Length	E value
TIR	Motif 1	TIR 1	FRGEDTRK[TNS]F[VT]DHLY	15	1.7e-836
	Motif 2	TIR 4	[[IV][IV]V[FL]SKNYASSSWCLDEL[VA][KL]I[ML]E[CQ][QK]	25	6.4e-1078
	Motif 3	TIR2	[HQ][TI][VA]YP[VI]FY[DH]V[ED]P[ST][DE]VR[KN]Q[SK]GS[VF]GEA	25	1.0e-1170
	Motif 9	TIR 3	W[RK][KN]AL[KT]E[AV]A[ND]L[SA]GW[EVD]LK[NG]TA[ND]GHEA	25	4.3e-816
NBS	Motif 4	P loop	VR[MI][ILV]GI[KWC]G[MI]GG[GIS]GKTTLA[RK][AY][VI][FY][DN]xI	25	1.6e-1149
	Motif 20	RNBS A	[GD]L[LK]KLQ[KE][QK][LI]L[SK]D[IVL]L[KNG]	25	2.5e-291
	Motif 5	Kinase 2	[KR]VL[VIL]VLDD[VI]DDI[DE]QLEALAG[TS][HP]NWF	25	2.3e-1000
	Motif 10	RNBS B	[KG][PS]GSRIITTRDE[QH][VL]LIAH[RK]V	21	7.3e-631
	Motif 11	RNBS C	L[SN]D[ED]E[AS][IL]EL[FL][SN][RK][HY]AF	15	1.8e-486
	Motif 6	GLPL	VV[HS]Y[AC][AG]GLPL[AT][LI]KVLGS[FS]L[CY][GD]	21	2.3e-843
	Motif 17	TNBS I	[RK]LKTIP[LNE]KE[TIV]L[KE][KR]L[EK][LI]S[YF]DGL	21	2.4e-378
	Motif 12	RNBS D	[EQY]KE[LI]FL[DH][IV]AC[FI][FL][KRV]G[EW]	21	7.2e-415
	Motif 7	MHDL	MHD[LH][LI][QE]EMG[RK]NIVRR[EL][SH]P[DN]EP	15	1.2e-522
LRR	Motif 18	L1	[KR][HR]SR[LV]WIKL[ED][IS][EY]D[VI]L	15	1.6e-376
	Motif 16	L2	L[RQ][WY]LCWHG[YF]P[LF][SK][CS][LIF]P[KS][TD][FL]Q[AMP][NE]	21	5.6e-472

Table S5. Conserved MEME motifs in sunflower RPW8 family of proteins. The motif logos represented in column three are shown in Supplementary File S1c.

Domain	Motif number	Motif	Motif Sequence	Length	E value
RPW8	Motif 19	RPW8-1	DR[PR][EK]EET[EDTK][MR]F[IM][FIS][HLY]L[EK][QNK][GA][KE][EK]LV[VL]KC[SE]	25	1.5e-055
	Motif 8	RPW8-2	WN[VL]Y[KQ][KR][FY]V[HY][AS][NS]KL[ID][RK]L[ND][KNH][ESK]LLR[FY][FV]Q	25	3.3e-092
NBS	Motif 1	P loop	V[VL]VVS[AG][PA]GG[CS]GKTTL[VA][KTR][ML][LF]C[HR]D[NPD][ED][IV]	25	4.4e-166
	Motif 14	RNBS A	[KQ][GE]IFG[ED]NI[LFY][FY]VT[VI]S[RE]T[TPY][SND]LK[VT]	21	2.0e-062
	Motif 18	Kinase 2	LLVLDDVW[SA]ES	11	3.4e-052
	Motif 5	RNBS B	IQD[LF][KM]F[KQ][IS]PG[YC]K[IV]LVTSR[FI][LT]F	21	2.2e-110
	Motif 6	RNBS C	TY[EK]L[GS]LLND[EQ]DA[RT][TS]L[FL]C[HY]SAF[PS][REC]D[GS]	25	1.4e-109
	Motif 3	GLPL	KCKKG[HLF]PLAL[TSK]V[IV]G[AG]SL[RCK][GD]QP[EV][LA]KW	25	6.6e-141
	Motif 2	RNBS D	C[FY]LDLG[SL]FPED[QEK][KR]I[ASP]A[TS][AVT]LMDMW[VA][EH]	21	7.2e-415
	Motif 4	QHDL	VTQHD[LVM][LM]R[ED]LAIH[LM]SSQE[PS]	19	3.8e-104
LRR	Motif 12	L1	LK[VA]L[NIV][IV]T[NS]Y[GS][YI]Y[PF][ST]E[LI][HQ][NE][LF][PS]	20	1.5e-071
	Motif 17	L2	NL[QR]KLS[LF]IMC[KE]IGNA[FL][EN]SCT	20	3.0e-057
	Motif 9	L3	C[DY]D[LM][KV][TE][FL]P[STA][SM]LCN[LV][VK]RLKKLSITNC	25	7.1e-101
	Motif 11	L4	[FL]G[NS]L[SL]NLE[IV]LR[LV][HA]SCT[KR]LK[TK]LPES[IM]	25	8.2e-083
	Motif 13	L5	PE[HEQ]IGELG[GS]LR[TV][IL][DK]M[RS]GC[TH]GL[EH]ELP	25	8.06e-064

