

Table S1 Associations between CHIP-seq data sets and Phylonet Matrices

ChIP-Seq Sample ¹	DNA-binding domain ²	Known_Specificity ³	PhyloNet Matrix	Cons_Seq ⁴
ALR1_L2	Homeobox	?	Y64G10A.6.5 C54D1.6.3 H06I04.2.10 F46H5.2b.3 Y65B4BR.1.1	tTTtCCTGTTTC tKCTTTTTCTT gAAAAGacMAAaGGA cAAAAGAAAA GaGATGAAgAACGa
BLMP1_L1	C2H2 ZF	GAAAGTGAAAGT Dm: Blimp-1	Y64G10A.6.5 H06I04.2.10 ZK563.5.1 C54D1.6.3 C04E6.2.1	tTTtCCTGTTTC gAAAAGacMAAaGGA GAacAAatGAAACGA tKCTTTTTCTT GAAAGTGACA
CEH14_L2	Homeobox	TAATTA Dm: Lim3	Y57G11C.47.3 B0213.8.1 Y17D7B.3.6 C54E4.3.1 C08G5.5.5	GtCRctgGCGGCG GCcKnggMGACagC ntGTGCTCggC gCGTGTCGGTG GCnCCGMGCcg
CEH30_Late_EMB	Homeobox	TAATtg Dm: B-H2	C48D5.3.10 R13H7.1.1 F40F9.1b.2 C41C4.4.7 C33A12.19.4	AGTGTgnRAGAnGaAGAG GCaGACGSG GACGCAGA GnaGAGanGGCaGA cGaAGGAcGCaccc
DPY27_EMB	RecF/RecN/SMC	?	Y104H12A.1.1 C52B9.1b.1 ZK1073.1.10 F57C7.4.1 C09B8.3.3	CcCGGGTTCgAtYCCCG GaAGAgGCRCCAGg CaaagCgGCCAcCc CaCGcggTTTCTC GgGRgCGaGG
EGL27_L1	GATA ZF	GATA	C48D5.3.10 F54C9.11.9 R107.1.4 Y47D3A.23b.2 F40F9.1b.2	AGTGTgnRAGAnGaAGAG GAGAGAKcaRnaSR cAGaCGAAGg CgcCttcntcncCgTCgcCntCnTC GACGCAGA
EGL5_L3	Homeobox	?	Y65B4BR.1.1 T06A1.3.8 C24A3.2b.5 F27B3.2.1 F26D11.11a.2	GaGATGAAgAACGa SCTCCtSCctC ttgTgCTTtTGcTCc CCnCCtCCCCg GnAGaAGMAGaAGMAGc
ELT3_L1	GATA ZF	GATA	Y64G10A.6.5 C54D1.6.3 F46H5.2b.3 ZK563.5.1 C01F1.4.1	tTTtCCTGTTTC tKCTTTTTCTT cAAAAGAAAA GAacAAatGAAACGA tTTtCCannTTTCC
EOR1_L3	C2H2 ZF	?	F53A9.3.1 R107.1.4 Y64G10A.6.5 C54D1.6.3	tTCGTTTTTCGTCGcg cAGaCGAAGg tTTtCCTGTTTC tKCTTTTTCTT

GEI11_L4	Myb	?	Y10G11A.2b.3 Y57G11C.23.10 Y57G11C.48.3 F55B11.2.8 T28F2.2.1 Y73F8A.11.10	GgCaatGGcaAGRAaG ggRncCGAgacgnncSGGS GnCcGGRGCacACA GGCnGAnggCggnnGg GccGcnGnCGaCnc GnGGCCGgca
HLH1_EMB	bHLH	CANNTG	M176.5.1 T23H2.5.1 R05H11.1.1 F55B11.2.1 F26F12.4.1	CAGCcGTcCcg caGCTGCTGTTC CYnCCaCCaGC CggCatCTgCCGg cgngGcAAccGGtgGg
LIN11_L2	Homeobox	TAATTA Dm: Lim1	F45E1.6.10 C08G5.5.5 R03C1.1.2 T26G10.1.3 C36C9.4.3	gcngngcgnGccGCGnCGcg GCnCCGMGCcg GCGnGnngcKCGnCGgC gGccRCgRnnGCGGncG cGCSGCCGCncSg
LIN13_EMB	C2H2 ZF	?	F58D5.2a.2 C09G4.5.7 R13H7.1.1 M01H9.5.1 F07A5.4.2	GSgGgggGgnGGGnGaGGG CGCgCSagCGc GCaGACGSG tgCGTTGGCGCG CnCCcnnnnCnSCtCCnCC
LIN15B_L3	C2H2 ZF	?	T08B6.6.2 C09G4.5.7 C06A8.4.1 M01H9.5.1 Y17G7B.5b.5	gggGCGCgtttGC CGCgCSagCGc gCaGTGGaGCG tgCGTTGGCGCG gnSGCGagSGCGC
LIN39_L3	Homeobox	?	F15A4.12.6 C05D2.1c.4 F07A5.4.2 F55C5.10.1 K02A6.2.4	cnCngnYnCCRctKCCnCC SgCSgCCnnCccCcnCCC CnCCcnnnnCnSCtCCnCC GGRaAgGGGcSG CnGcTCcnGCcgCtCC
MAB5_L3	Homeobox	tTAATga Dm: Dfd	F15A4.12.6 VC5.4.1 C05D2.1c.4 T26G10.1.3 B0213.8.1	cnCngnYnCCRctKCCnCC GnGGCcGncGcnnnGcGg SgCSgCCnnCccCcnCCC gGccRCgRnnGCGGncG GCcKnggMGACagC
MDL1_L1	bHLH	CANNTG	C33A11.2.1 T07D4.1.3 E04D5.1b.4 C54E4.3.1 R07B7.6.4	nGGGTACGtG CaCCACGTGC CGCCgTCTCGtg gCGTGTCGGTG CcnCCCCtCgnCc
MEP1_EMB	C2H2 ZF	?	R13H7.1.1 C09G4.5.7 M01H9.5.1 F22F7.7.4 Y17D7B.3.6	GCaGACGSG CGCgCSagCGc tgCGTTGGCGCG cTCGnCtCATTTg ntGTGCTCggC
PES1_L4	forkhead	?	C08G5.5.5 Y17G7B.5b.5 VC5.4.1	GCnCCGMGCcg gnSGCGagSGCGC GnGGCcGncGcnnnGcGg

PHA4_EMB	forkhead	TRTTKRY	F18E3.5.6 C09G4.5.7 Y17D7B.3.6 D1053.4.6 F36G3.3.5 R05H10.1.3 F58D5.2a.2	cStcSCGCGCC CGCgCSagCGc ntGTGCTCggC cCnCCtGcgCagtcnadc gCtCaCgCTGCTCgc gGcYGaGGRcGAG GSgGgggGgnGGGnGaGGG
PHA4_L1	forkhead	TRTTKRY	Y64G10A.6.5 H32C10.2.4 H42K12.1a.1 H06I04.2.10 Y17D7B.3.6	tTTtCCTGTTTC tgTtTG TGCTcgc TGTTTGT TGT gAAAAGacMAAaGGA
PHA4_L2	forkhead	TRTTKRY	Y64G10A.6.5 H32C10.2.4 Y17D7B.3.6 C39F7.1.7 F26A10.2.9	ntGTGCTCggC tTTtCCTGTTTC tgTtTG TGCTcgc ntGTGCTCggC gCTCTcCGcG GTTTcGCTtTCt
PHA4_Late_EMB	forkhead	TRTTKRY	Y17D7B.3.6 C26B9.1a.2 F27B3.2.1 C39F7.1.7 C48D5.3.10	ntGTGCTCggC GgaRnGGntGnGGntGtG CCnCCtCCCCg gCTCTcCGcG AGTGTgnRAGAnGaAGAG
PHA4_Starved_L1	forkhead	TRTTKRY	H32C10.2.4 Y64G10A.6.5 H42K12.1a.1 Y17D7B.3.6 H06I04.2.10	tgTtTG TGCTcgc tTTtCCTGTTTC TGTTTGT TGT ntGTGCTCggC gAAAAGacMAAaGGA
PHA4_YA	forkhead	TRTTKRY	F57B1.6b.1 T07D4.1.3 Y11D7A.4.3 C54E4.3.1 C01F1.4.1	GCACCAAAAagagn CaCCACGTGC tCTCGaCCTGC gCGTGTCGGTG tTTCCannTTTCC
PQM1_L3	C2H2 ZF	?	C17G1.3b.4 Y64G10A.6.5 C01F1.4.1 C04E6.2.1 C52A11.2.2	TCTTATCAg tTTtCCTGTTTC tTTtCCannTTTCC GAAAGTGACA SaGGTGATGAgAA
SKN1_L1	bZIP	?	C09G4.5.7 Y17G7B.5b.5 F18E3.5.6 T07G12.3.4 T26G10.1.3	CGCgCSagCGc gnSGCGagSGCGC cStcSCGCGCC gGGccCGCGgC gGccRCgRnnGCGGncG
UNC130_L1	forkhead	?	R05H11.1.1 C31E10.3.6 C33A11.2.1 F59B1.1.1 C03A7.5.1	CYnCCaCCaGC cCCnCCMcCncCnc nGGGTACAGtG CcCCaTCCnCC CnCCACCM

1. The TF name is given followed by information about the source of the sample. EMB refers to samples from embryos, Lx refers to samples taken from worms at larval stage x and YA refers to young adult.
2. DNA-binding domain class. ZF refers to zinc fingers
3. Known specificities. "Dm:" refers to inference of binding specificity based on the listed orthologous TF from *Drosophila melanogaster*.
4. Matches to the known motif are shown in bold.