Appendix A Information of the tested zinc finger family genes in wheat

Member category	Name in the chip	Accession number	Name designated	Corresponding to *B. distachyon* or *O. sativa* (accession number)	Alignment to *Triticum aestivum*	Identity (%)	Accession number
WRKY (35)	A_99_P011249	EF368365	*TaWRKY*	*B. distachyon WRKY* (XM_003557976)	*WRKY46*	100	EF368365.1
	A_99_P196433	TC380591	*TaWRKY;1*	*B. distachyon WRKY* (XM_003557976)	*WRKY40*	98	EU665455.1
	A_99_P524832	TC442459	*TaWRKY;2*	*B. distachyon WRKY* (XM_003557976)	*WRKY40*	94	EU665455.1
	A_99_P097620	TC400941	*TaWRKY;3*	*B. distachyon WRKY* (XM_003572801)	*T. aestivum cDNA*	100	AK334437.1
	A_99_P112595	EF397614	*TaWRKY;4*	*B. distachyon WRKY* (XM_003569769)	*WRKY13*	100	EF397614.1
	A_99_P196651	EU665453	*TaWRKY;5*	*B. distachyon WRKY* (XM_003567963)	*WRKY38*	100	EU665453.1
	A_99_P343221	TC436923	*TaWRKY;6*	*B. distachyon WRKY*(XM_003565803)	*WRKY22*	99	EU665444.1
	A_99_P382212	TC444916	*TaWRKY;7*	*B. distachyon WRKY*(XM_003564449)	*WRKY12*	71	EU665441.1
	A_99_P479037	TC421608	*TaWRKY;8*	*B. distachyon WRKY*(XM_003572801)	*T. aestivum cDNA*	95	AK334437.1
	A_99_P540762	TC448784	*TaWRKY;9*	*B. distachyon WRKY* (XM_003572801)	*WRKY13*	83	EF397614.1
	A_99_P112645	EU665430	*TaWRKY3*	*B. distachyon WRKY3* (XM_003562717)	*WRKY19*	100	EU665430.1
	A_99_P198541	TC436570	*TaWRKY4*	*B. distachyon WRKY4* (XM_003571558)	*The Small Subunit Rna Based On A 5.5*	100	3J5Z_DD
	A_99_P196318	EF368360	*TaWRKY11*	*B. distachyon WRKY11*(XM_003580399)	*WRKY68-a*	100	EF368360.1
	A_99_P196656	EU665445	*TaWRKY11;1*	*B. distachyon WRKY11*(XM_003580399)	*WRKY20*	100	EU665445.1
	A_99_P520517	TC440720	*TaWRKY11;2*	*B. distachyon WRKY11*(XM_003580399)	*WRKY68-b*	95	EF397617.1
	A_99_P291631	EU665438	*TaWRKY11;3*	*B. distachyon WRKY11*(XM_003580399)	*WRKY9*	100	EU665438.1
	A_99_P021170	EU665431	*TaWRKY20*	*B. distachyon WRKY20* (XM_003564464)	*WRKY27*	100	EU665431.1
	A_99_P106480	EU665436	*TaWRKY22*	*B. distachyon WRKY22*(XM_003571137)	*WRKY7*	100	EU665436.1
	A_99_P010624	CK201266	*TaWRKY26*	*B. distachyon WRKY26* (XM_003566743)	*WRKY53-a*	99	EF368357.1
	A_99_P148632	EF368364	*TaWRKY26;1*	*B. distachyon WRKY26* (XM_003566742)	*WRKY53-b*	100	EF368364.1
	A_99_P312581	TC398465	*TaWRKY39*	*B. distachyon WRKY39* (XM_003577834)	*WRKY16*	75	EU665428.1
	A_99_P148647	TC427131	*TaWRKY40*	*B. distachyon WRKY40* (XM_003570693)	*WRKY8*	98	DQ323885.1
	A_99_P196273	EF368356	*TaWRKY40;1*	*B. distachyon WRKY40* (XM_003570693)	*WRKY71*	100	EF368356.1
	A_99_P426057	TC385517	*TaWRKY40;2*	*B. distachyon WRKY40* (XM_003570693)	*WRKY8*	91	DQ323885.1
	A_99_P012744	TC425788	*Ta WRKY41*	*B. distachyon WRKY41*(XM_003565396)	*WRKY19-b*	100	EF397616.1
	A_99_P554727	TC454099	*TaWRKY41;1*	*B. distachyon WRKY41*(XM_003565840)	*WRKY19-b*	72	EF397616.1
	A_99_P148642	EF368361	*TaWRKY50*	*B. distachyon WRKY50* (XM_003565396)	*WRKY10*	100	EF368361.1
	A_99_P022039	EF397613	*TaWRKY70*	*B. distachyon WRKY70* (XM_003566864)	*WRKY45*	100	EF397613.1
	A_99_P043856	EF368359	*TaWRKY70;1*	*B. distachyon WRKY70* (XM_003576383)	*WRKY74-a*	100	EF368359.1
	A_99_P298826	TC399367	*TaWRKY70;2*	*B. distachyon WRKY70* (XM_003576383)	*WRKY5*	79	EU665434.1
	A_99_P385767	TC450778	*TaWRKY70;3*	*B. distachyon WRKY70* (XM_003576383)	*WRKY5*	87	EU665434.1
	A_99_P455767	DQ286566	*TaWRKY70;4*	*B. distachyon WRKY70* (XM_003576383)	*T. aestivum WRKY mRNA*	100	DQ286566.1
	A_99_P476967	TC420518	*TaWRKY70;5*	*B. distachyon WRKY70* (XM_003577086)	*WRKY32*	91	EU669662.1
	A_99_P294156	TC395275	*TaWRKY74*	*B. distachyon WRKY74* (XM_003562202)	*WRKY16*	99	EU665428.1
	A_99_P389042	TC397456	*TaWRKY75*	*B. distachyon WRKY75* (XM_003577518)	*WRKY72-a*	93	EF368363.1
C3HC4(RING)(30)	A_99_P272891	TC369926	*TaRING*	*B. distachyon RING* (XM_003570038)	*none*		
	A_99_P419817	TC380550	*TaRING;1*	*B. distachyon RING* (XM_003557309)	*T. aestivum cDNA,*	96	AK335508.1
	A_99_P424667	TC384444	*TaRING;2*	*B. distachyon RING* (XM_003559611)	*T. aestivum cDNA*	74	AK334251.1

	A_99_P455637	CK200537	*TaRING;3*	*B. distachyon RING* (XM_003579198)	*T. aestivum cDNA*	96	AK336161.1
	A_99_P469552	BJ321304	*TaRING;4*	*B. distachyon RING* (XM_003577328)	*none*		
	A_99_P285726	CK154636	*TaRING;5*	*B. distachyon RING* (XM_003577328)	*none*		
	A_99_P484512	CA640511	*TaRING;6*	*B. distachyon RING* (XM_003569479)	*T. aestivum cDNA*	98	AK335440.1
	A_99_P518432	TC439894	*TaRING;7*	*B. distachyon RING* (XM_003578424)	*T. aestivum cDNA*	93	AK335812.1
	A_99_P348556	TC407747	*TaRING;8*	*B. distachyon RING* (XM_003578424)	*T. aestivum cDNA*	93	AK335812.1
	A_99_P549142	BQ161686	*TaRING;9*	*B. distachyon RING* (XM_003580427)	*T. aestivum cDNA*	74	AK334271.1
	A_99_P363606	CK169148	*TaRING;10*	*B. distachyon RING* (XM_003576344)	*none*		
	A_99_P361231	TC405700	*TaRING;11*	*B. distachyon RING* (XM_003558631)	*none*		
	A_99_P352586	DR733074	*TaRING;12*	*B. distachyon RING* (XM_003578677)	*T. aestivum cDNA*	92	AM989326.1
	A_99_P331041	TC428319	*TaRING;13*	*B. distachyon RING* (XM_003571401)	*none*		
	A_99_P316646	TC403254	*TaRING;14*	*B. distachyon RING* (XM_003568469)	*T. aestivum cDNA*	96%	BT009321.1
	A_99_P300996	TC373741	*TaRING;15*	*B. distachyon RING* (XM_003574627)	*none*		
	A_99_P281491	BJ318691	*TaRING;16*	*B. distachyon RING* (XM_003558163)	*none*		
	A_99_P210331	TC383537	*TaRING;17*	*B. distachyon RING* (XM_003574088)	*none*		
	A_99_P304036	TC436001	*TaRING;18*	*O. sativa C3H4* (HQ324822)	*T. aestivum cDNA*	74	AK332538.1
	A_99_P371812	TC454123	*TaRING;19*	*O. sativa C3H4* (HQ324822)	*T. aestivum cDNA*	65	AK332538.1
	A_99_P324101	TC405876	*TaRING;20*	*Oryza sativa C3H4 type RING* (KC004026)	*T. aestivum cDNA*	83	AK330632.1
	A_99_P393807	TC453924	*TaRING1*	*B. distachyon RING1* (XM_003567046)	*T. aestivum cDNA*	92	AK334367.1
	A_99_P328781	DR741690	*TaRING1;1*	*B. distachyon RING1* (XM_003562580)	*T. aestivum cDNA*	95	AJ867392.1
	A_99_P415252	DR741348	*TaRING1;2*	*B. distachyon RING1* (XM_003559537)	*T. aestivum cDNA*	89	AK332538.1
	A_99_P420077	TC380764	*TaRING1;3*	*B. distachyon RING1* (XM_003564367)	*none*		
	A_99_P320271	TC437541	*TaRING-H2-ATL10*	*B. distachyon RING-H2 –ATL10* (XM_003572530)	*T. aestivum cDNA*	99	AK335185.1
	A_99_P230426	TC406336	*TaRING-H2-ATL48*	*B. distachyon RING-H2 –ATL48* (XM_003578010)	*none*		
	A_99_P453712	TC406228	*TaRING-H2-ATL48;1*	*B. distachyon RING-H2 –ATL48* (XM_003578010)	*none*		
	A_99_P197826	TC387238	*TaRING-H2-ATL67*	*B. distachyon RING-H2* -ATL67 (XM_003570372)	*T. aestivum cDNA*	92	AK334661.1
	A_99_P159357	TC421979	*TaRING-H2-ATL79*	*B. distachyon RING-H2*-ATL79 (XM_003571995)	*T. aestivum cDNA*	100	EF190323.1
AN1 A20(10)	A_99_P225066	TC379120	*TaAN1AN20-4*	*B. distachyon AN1AN20-4* (XM_003571022)	*T. aestivum cDNA*	97	JQ768347.1
	A_99_P225101	TC405507	*TaAN1AN20-4;1*	*B. distachyon AN1AN20-4* (XM_003571022)	*T. aestivum cDNA*	99	AK330210.1
	A_99_P014034	TC440355	*TaAN1AN20-5*	*B. distachyon AN1AN20-5* (XM_003575017)	*T. aestivum cDNA*	75	AK334847.1
	A_99_P154732	TC422129	*TaAN1AN20-8*	*B. distachyon AN1AN20-8* (XM_003563581)	*T. aestivum cDNA*	98	AK333231.1
	A_99_P408102	CK161869	*TaAN1AN20-8;1*	*B. distachyon AN1AN20-8* (XM_003563581)	*T. aestivum cDNA*	97	AK330210.1
	A_99_P412192	CK161708	*TaAN1AN20-8;2*	*B. distachyon AN1AN20-8* (XM_003563581)	*T. aestivum cDNA*	96	AK330210.1
	A_99_P444632	TC448065	*TaAN1AN20-8;3*	*B. distachyon AN1AN20-8* (XM_003563581)	*T. aestivum cDNA*	95	AK330210.1
	A_99_P419187	DR740403	*TaAN1AN20-11*	*B. distachyon AN1AN20-11* (XM_003574690)	*T. aestivum cDNA*	74	AK330210.1
	A_99_P479222	CD882023	*TaAN1AN20-11;1*	*B. distachyon AN1AN20-11* (XM_003574690)	*none*		

	A_99_P542852	TC449518	*TaAN1AN20-11;2*	*B. distachyon AN1AN20-11* (XM_003574690)	*T. aestivum cDNA, clone*	75	AK330210.1
C2H2 (8)	A_99_P321271	TC405037	*TaC2H2*	*B. distachyon C2H2* (XM_003562026)	*none*		
	A_99_P519027	TC440118	*TaC2H2;1*	*O. sativa C2H2* (HQ858846)	*T. aestivum C2H2 zinc finger protein (ZFP2)*	77	EU253554.1
	A_99_P403617	TC417598	*TaC2H2-ZAT1*	*B. distachyon C2H2-ZAT1*(XM_003569985)	*none*		
	A_99_P502642	TC432857	*TaC2H2-ZAT5*	*B. distachyon C2H2-ZAT5*(XM_003568246)	*none*		
	A_99_P167739	CA654895	*TaC2H2-ZAT10*	*B. distachyon C2H2-ZAT10* (XM_003559971)	*T. aestivum zinc-finger protein WZF1*	94	D16416.1
	A_99_P518362	CK211677	*TaC2H2-ZAT10;1*	*B. distachyon C2H2-ZAT10* (XM_003559971)	*T. aestivum zinc-finger protein WZF1*	88	D16416.1
	A_99_P493002	CK204293	*TaC2H2-ZAT11*	*B. distachyon C2H2-ZAT11*(XM_003559190)	*T. aestivum C2H2 zinc finger protein (ZFP34)*	79	EU408224.1
	A_99_P294421	TC370339	*TaC2H2-STOP1*	*B. distachyon C2H2-STOP1*(XM_003564671)	*T. aestivum cDNA*	99	KF034793.1
CCCH (8)	A_99_P435507	CK201352	*TaCCCH-Protein 6*	*B. distachyon CCCH-Protein6* (XM_003566497)	*T. aestivum cDNA*	100	HE996310.1
	A_99_P278891	TC391108	*TaCCCH-Protein 8*	*B. distachyon CCCH-Protein8* (XM_003569315)	*none*		
	A_99_P327986	TC432787	*TaCCCH-Protein 8;1*	*B. distachyon CCCH-Protein8* (XM_003569315)	*T. aestivum cDNA*	86	AK332589.1
	A_99_P197986	TC383580	*TaCCCH-Protein 12*	*B. distachyon CCCH-Protein12* (XM_003564877)	*T. aestivum cDNA*	98	HE996424.1
	A_99_P290816	CA652226	*TaCCCH-Protein 15*	*B. distachyon CCCH-Protein15* (XM_003572054)	*none*		
	A_99_P506982	CD932013	*TaCCCH-Protein 18*	*B. distachyon CCCH-Protein18* (XM_003570237)	*T. aestivum cDNA*	87	AK331677.1
	A_99_P319296	TC377176	*TaCCCH-Protein 50*	*B. distachyon CCCH-Protein50* (XM_003562857)	*none*		
	A_99_P339781	TC376438	*TaCCCH-Protein 65*	*B. distachyon CCCH-Protein65* (XM_003576851)	*T. aestivum cDNA*	99	AK335212.1
GATA(7)	A_99_P452662	TC405560	*TaGATA*	*B. distachyon GATA* (XM_003580215)	*none*		
	A_99_P285541	TC423400	*TaGATA2*	*B. distachyon GATA-2*(XM_003579065)	*none*		
	A_99_P325821	TC399874	*TaGATA9*	*B. distachyon GATA-9*(XM_003565980)	*T. aestivum cDNA*	88	FN564436.1
	A_99_P340746	TC415152	*TaGATA16*	*B. distachyon GATA-16* (XM_003565148)	*none*		
	A_99_P346131	TC392511	*TaGATA16;1*	*B. distachyon GATA-16* (XM_003563274)	*none*		
	A_99_P037629	TC380017	*TaGATA24*	*B. distachyon GATA-24* (XM_003559523)	*T. aestivum GATA-type mRNA*	98	EF423871.1
	A_99_P483802	CJ561481	*TaGATA28*	*B. distachyon GATA-28* (XM_003559408)	*T. aestivum GATA-type mRNA*	93	EF423871.1
C4HC3(9)	A_99_P416167	TC377455	*TaC4HC3*	*B. distachyon C4HC3* (XM_003574027)	*none*		
	A_99_P437707	TC394609	*TaC4HC3;1*	*B. distachyon C4HC3* (XM_003574027)	*none*		
	A_99_P325921	TC453334	*TaC4HC3;2*	*B. distachyon C4HC3* (XM_003574027)	*none*		
	A_99_P468757	TC415860	*TaC4HC3;3*	*B. distachyon C4HC3* (XM_003563360)	*none*		
	A_99_P329746	CK214424	*TaC4HC3;4*	*B. distachyon C4HC3* (XM_003563360)	*none*		
	A_99_P525027	BJ260614	*TaC4HC3;5*	*B. distachyon C4HC3* (XM_003574054)	*none*		
	A_99_P205046	TC445795	*TaC4HC3;6*	*B. distachyon C4HC3* (XM_003577338)	*T. aestivum cDNA*	97	AK333282.1

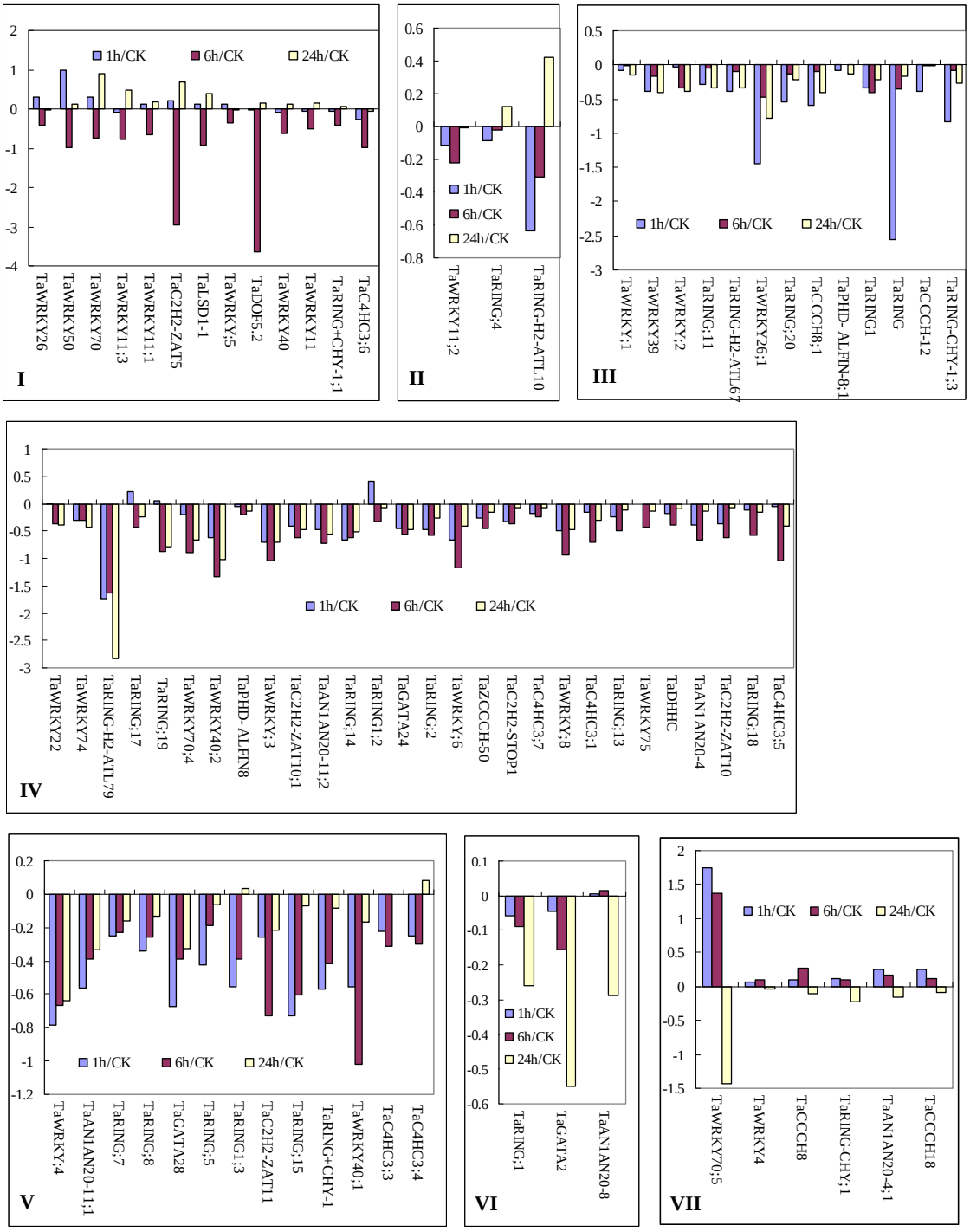
	A_99_P203551	TC370412	*TaC4HC3;7*	*B. distachyon C4HC3* (XM_003577338)	*T. aestivum cDNA*	98	AK333282.1
	A_99_P157547	TC377709	*TaC4HC3;8*	*B. distachyon C4HC3* (XM_003577338)	*T. aestivum cDNA*	96	AK333282.1
RING-CHY(6)	A_99_P444137	CJ641955	*TaRING-CHY*	*B. distachyon RING-CHY* (XM_003569542)	*T. aestivum cDNA*	81	AK335087.1
	A_99_P452972	TC453651	*TaRING-CHY;1*	*B. distachyon RING-CHY* (XM_003569542)	*T. aestivum cDNA*	99	AK331315.1
	A_99_P224391	TC413487	*TaRING-CHY-1*	*B. distachyon RING-CHY-1* (XM_003569645)	*none*		
	A_99_P263336	TC379936	*TaRING-CHY-1;1*	*B. distachyon RING-CHY-1* (XM_003573953)	*T. aestivum CHY-type zinc finger protein*	94	GU227147.1
	A_99_P263341	TC391030	*TaRING-CHY-1;2*	*B. distachyon RING-CHY-1* (*XM_003573953*)	*T. aestivum CHY-type zinc finger protein*	87	GU227147.1
	A_99_P453777	CN010981	*TaRING-CHY-1;3*	*B. distachyon RING-CHY-1* (*XM_003573953*)	*T. aestivum CHY-type zinc finger protein mRNA*	97	GU227147.1
DOF(3)	A_99_P464792	TC413537	*TaDOF*	*B. distachyon DOF* (XM_003560118)	*T. aestivum cDNA*	97	AK335922.1
	A_99_P398337	TC377014	*TaDOF1.7*	*B. distachyon DOF1.7* (XM_003580780)	*T. aestivum cDNA*	83	AK330994.1
	A_99_P360276	CJ616808	*TaDOF5.2*	*B. distachyon DOF5.2* (XM_003558674	*T. aestivum cDNA*	94	FN564434.1
PHD(3)	A_99_P237241	TC390263	*TaPHD-ALFIN-LIKE8*	*B. distachyon PHD-ALFIN-LIKE 8* (XM_003577600)	*T. aestivum cDNA*	99	AK333859.1
	A_99_P421177	CK196835	*TaPHD-ALFIN-LIKE8;1*	*B. distachyon PHD-ALFIN-LIKE 8* (XM_003577600)	*T. aestivum cDNA*	96	AK333859.1
	A_99_P197086	TC405735	*TaPHD-ALFIN-LIKE9*	*B. distachyon PHD-ALFIN-LIKE 9* (XM_003562661)	*T. aestivum cDNA*	95	BT009102.1
DHHC(2)	A_99_P530547	BJ249313	*TaDHHC*	*B. distachyon DHHC* (XM_003570362)	*T. aestivum cDNA*	96	AK333102.1
	A_99_P348106	TC446296	*TaDHHC;1*	*B. distachyon DHHC* (XM_003578611)	*T. aestivum cDNA*	66	AK333041.1
CCHC(1)	A_99_P539547	TC448302	*TaCCHC*	*B. distachyon CCHC* (XM_003563178)	*none*		
LSD1(1)	A_99_P016003	BE418205	*TaLSD1-1*	*B. distachyon LSD1-1* (XM_003573412)	*T. aestivum cDNA*	92	EF553327.1
HIT(1)	A_99_P331371	TC427176	*TaHIT-2*	*B. distachyon HIT-2* (XM_003574163)	*none*		
CW(1)	A_99_P563977	TC457604	*TaCW*	*B. distachyon CW* (NM_001064631)	*T. aestivum cDNA*	98	AK336246.1
Ran-bind-ing(1)	A_99_P393147	TC393540	*TaRan-binding*	*B. distachyon Ran-binding* (XM_003560733)	*T. aestivum cDNA*	76	AK334676.1

Appendix B The expression characterization of the tested wheat ZFP genes

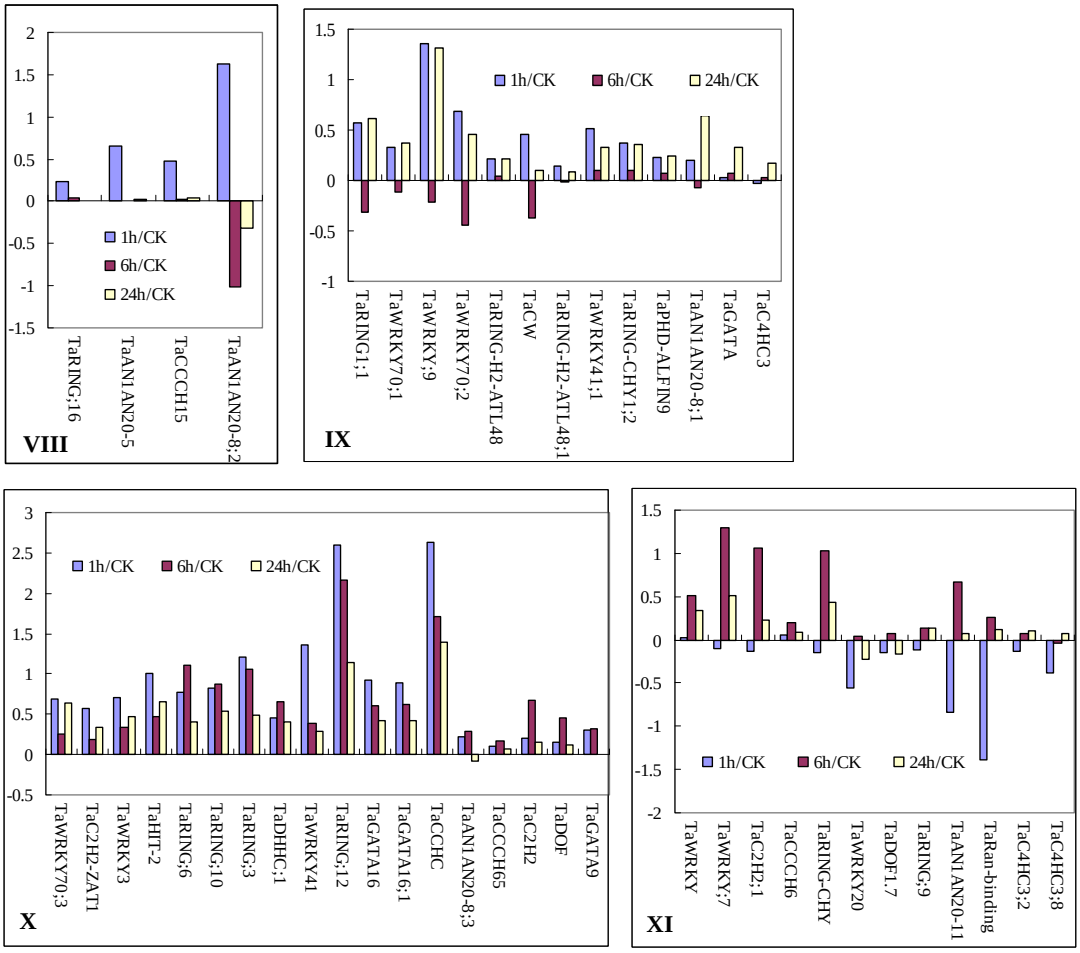
Accession number	Name designated	Normalized Intensity				Ratio			log_2 ratio		
		CK	1h	6h	24h	1h/CK	6h/CK	24h/CK	1h/CK	6h/CK	24h/CK
EF368365	*TaWRKY*	201.69	192.74	297.96	261.11	0.96	1.48	1.29	0.03	0.51	0.33
TC380591	*TaWRKY;1*	7424.18	6657.44	7138.67	6530.01	0.90	0.96	0.88	-0.09	-0.01	-0.15
TC442459	*TaWRKY;2*	30.33	24.97	29.27	25.25	0.82	0.96	0.83	-0.03	-0.33	-0.38
TC400941	*TaWRKY;3*	1244.44	748.76	612.49	757.48	0.60	0.49	0.61	-0.71	-1.03	-0.71
EF397614	*TaWRKY;4*	44151.57	24193.54	27913.09	29885.07	0.55	0.63	0.68	-0.78	-0.66	-0.64
EU665453	*TaWRKY;5*	79.37	77.95	68.09	80.54	0.98	0.86	1.01	0.12	-0.36	-0.03
TC436923	*TaWRKY;6*	129.01	74.28	62.17	100.52	0.58	0.48	0.78	-0.66	-1.18	-0.41
TC444916	*TaWRKY;7*	1.23	1.14	3.02	1.75	0.93	2.46	1.42	-0.11	1.30	0.51
TC421608	*TaWRKY;8*	1946.76	1360.37	1018.30	1387.30	0.70	0.52	0.71	-0.50	-0.95	-0.47
TC448784	*TaWRKY;9*	1.11	2.29	1.52	3.54	2.06	1.37	3.19	1.36	-0.21	1.31
EU665430	*TaWRKY3*	36.76	52.51	54.09	53.60	1.43	1.47	1.46	0.71	0.34	0.48
TC436570	*TaWRKY4*	3470.79	3540.78	3681.93	3322.56	1.02	1.06	0.96	0.06	0.10	-0.04
EF368360	*TaWRKY11*	5948.53	5506.82	4116.91	6449.38	0.93	0.69	1.08	-0.06	-0.50	0.16
EU665445	*TaWRKY11;1*	160.41	163.78	108.46	186.37	1.02	0.68	1.16	0.13	-0.66	0.17
TC440720	*TaWRKY11;2*	51810.67	44621.32	45897.22	55618.35	0.86	0.89	1.07	-0.12	-0.22	0.00
EU665438	*TaWRKY11;3*	1548.94	1429.13	914.46	2139.49	0.92	0.59	1.38	-0.10	-0.77	0.48
EU665431	*TaWRKY20*	65.96	39.69	74.80	58.19	0.60	1.13	0.88	-0.55	0.04	-0.23
EU665436	*TaWRKY22*	54.52	48.09	48.03	43.24	0.88	0.88	0.79	0.00	-0.37	-0.40
CK201266	*TaWRKY26*	71.32	79.63	59.58	72.22	1.12	0.84	1.01	0.31	-0.41	-0.04
EF368364	*TaWRKY26;1*	147.23	48.92	113.81	88.45	0.33	0.77	0.60	-1.44	-0.47	-0.79
TC398465	*TaWRKY39*	2874.85	2182.33	2546.53	2136.98	0.76	0.89	0.74	-0.38	-0.17	-0.41
TC427131	*TaWRKY40*	9620.79	8466.24	6033.56	10263.35	0.88	0.63	1.07	-0.10	-0.63	0.12
EF368356	*TaWRKY40;1*	80.94	49.15	44.89	74.93	0.61	0.55	0.93	-0.55	-1.02	-0.17
TC385517	*TaWRKY40;2*	965.96	616.32	391.96	481.39	0.64	0.41	0.50	-0.63	-1.33	-1.02
TC425788	*TaWRKY41*	57.56	134.14	83.68	72.88	2.33	1.45	1.27	1.36	0.40	0.29
TC454099	*TaWRKY41;1*	160.38	214.59	182.72	207.30	1.34	1.14	1.29	0.52	0.09	0.33
EF368361	*TaWRKY50*	163.10	307.06	88.02	182.71	1.88	0.54	1.12	1.00	-1.00	0.12
EF397613	*TaWRKY70*	310.94	366.40	191.61	593.94	1.18	0.62	1.91	0.29	-0.76	0.90
EF368359	*TaWRKY70;1*	89.93	102.57	89.52	120.51	1.14	1.00	1.34	0.32	-0.11	0.37
TC399367	*TaWRKY70;2*	9.40	12.35	10.28	15.25	1.31	1.09	1.62	0.68	-0.45	0.45
TC450778	*TaWRKY70;3*	19.69	26.45	29.71	33.39	1.34	1.51	1.70	0.69	0.26	0.63
DQ286566	*TaWRKY70;4*	1582.44	1350.11	852.51	985.21	0.85	0.54	0.62	-0.21	-0.90	-0.67
TC420518	*TaWRKY70;5*	1.66	4.50	6.69	0.79	2.71	4.03	0.48	1.75	1.37	-1.44
TC395275	*TaWRKY74*	2992.37	2383.90	2429.80	2198.52	0.80	0.81	0.73	-0.31	-0.30	-0.43
TC397456	*TaWRKY75*	88.31	79.53	71.79	83.26	0.90	0.81	0.94	-0.01	-0.42	-0.14
TC369926	*TaRING*	18076.60	2978.43	13850.71	16162.59	0.16	0.77	0.89	-2.56	-0.36	-0.17
TC380550	*TaRING;1*	2855.66	2707.37	2680.31	2361.14	0.95	0.94	0.83	-0.06	-0.09	-0.26
TC384444	*TaRING;2*	1891.90	1350.29	1277.47	1550.00	0.71	0.68	0.82	-0.47	-0.57	-0.27
CK200537	*TaRING;3*	1.95	3.63	6.37	3.55	1.86	3.26	1.82	1.20	1.06	0.50
BJ321304	*TaRING;4*	1629.69	1517.53	1602.35	1752.87	0.93	0.98	1.08	-0.09	-0.02	0.12
CK154636	*TaRING;5*	4837.31	3520.68	4177.03	4538.28	0.73	0.86	0.94	-0.42	-0.19	-0.06
CA640511	*TaRING;6*	1.86	3.20	3.99	2.46	1.72	2.15	1.32	0.78	1.10	0.40
TC439894	*TaRING;7*	776.95	646.29	669.06	701.20	0.83	0.86	0.90	-0.25	-0.23	-0.16
TC407747	*TaRING;8*	1157.67	899.02	981.26	1050.97	0.78	0.85	0.91	-0.34	-0.26	-0.13
BQ161686	*TaRING;9*	825.28	755.10	922.18	904.87	0.91	1.12	1.10	-0.11	0.14	0.13
CK169148	*TaRING;10*	950.12	1660.43	1760.76	1367.47	1.75	1.85	1.44	0.82	0.88	0.53
TC405700	*TaRING;11*	831.67	673.11	810.39	664.01	0.81	0.97	0.80	-0.29	-0.05	-0.33

DR733074	*TaRING;12*	157.63	908.81	736.69	357.62	5.77	4.67	2.27	2.59	2.17	1.14
TC428319	*TaRING;13*	899.36	751.09	646.30	833.05	0.84	0.72	0.93	-0.24	-0.49	-0.11
TC403254	*TaRING;14*	2879.38	1792.62	1857.97	1986.52	0.62	0.65	0.69	-0.67	-0.63	-0.52
TC373741	*TaRING;15*	783.83	466.81	521.99	750.69	0.60	0.67	0.96	-0.73	-0.60	-0.07
BJ318691	*TaRING;16*	2953.84	3404.97	3012.84	2924.80	1.15	1.02	0.99	0.23	0.03	0.00
TC383537	*TaRING;17*	21.56	20.85	20.55	20.34	0.97	0.95	0.94	0.22	-0.44	-0.24
TC436001	*TaRING;18*	7130.58	6267.94	4646.23	6218.00	0.88	0.65	0.87	-0.12	-0.58	-0.16
TC454123	*TaRING;19*	19.81	17.07	14.51	13.12	0.86	0.73	0.66	0.05	-0.88	-0.79
TC405876	*TaRING;20*	3990.14	2703.64	3605.44	3384.17	0.68	0.90	0.85	-0.53	-0.13	-0.21
TC453924	*TaRING1*	33.68	22.39	30.74	30.90	0.66	0.91	0.92	-0.34	-0.40	-0.22
DR741690	*TaRING1;1*	95.65	130.11	83.10	152.63	1.36	0.87	1.60	0.57	-0.31	0.62
DR741348	*TaRING1;2*	18076.60	49.31	39.22	42.39	0.00	0.00	0.00	0.41	-0.34	-0.07
TC380764	*TaRING1;3*	862.27	578.06	664.93	884.45	0.67	0.77	1.03	-0.56	-0.39	0.03
TC437541	*TaRING-H2-ATL10*	51.50	28.57	47.69	71.52	0.55	0.93	1.39	-0.64	-0.31	0.42
TC406336	*TaRING-H2-ATL48*	12907.67	14063.74	12940.82	14801.47	1.09	1.00	1.15	0.21	0.04	0.21
TC406228	*TaRING-H2-ATL48;1*	562.54	612.05	564.91	604.17	1.09	1.00	1.07	0.14	-0.01	0.08
TC387238	*TaRING-H2-ATL67*	3498.55	2627.39	3254.29	2746.24	0.75	0.93	0.78	-0.39	-0.09	-0.33
TC421979	*TaRING-H2-ATL79*	97.33	25.62	35.45	14.95	0.26	0.36	0.15	-1.73	-1.63	-2.83
TC379120	*TaAN1AN20-4*	717.42	542.58	456.97	660.90	0.76	0.64	0.92	-0.39	-0.67	-0.13
TC405507	*TaAN1AN20-4;1*	654.14	768.93	737.99	593.84	1.18	1.13	0.91	0.25	0.16	-0.16
TC440355	*TaAN1AN20-5*	183.75	271.34	196.03	192.81	1.48	1.07	1.05	0.65	0.01	0.03
TC422129	*TaAN1AN20-8*	138.08	128.04	149.66	117.22	0.93	1.08	0.85	0.01	0.02	-0.29
CK161869	*TaAN1AN20-8;1*	10.72	10.10	14.60	19.47	0.94	1.36	1.82	0.21	-0.07	0.65
CK161708	*TaAN1AN20-8;2*	3.04	7.56	2.40	3.16	2.48	0.79	1.04	1.62	-1.01	-0.31
TC448065	*TaAN1AN20-8;3*	52675.71	57643.47	68402.91	53576.36	1.09	1.30	1.02	0.22	0.28	-0.08
DR740403	*TaAN1AN20-11*	178.75	91.99	297.90	193.37	0.51	1.67	1.08	-0.84	0.68	0.07
CD882023	*TaAN1AN20-11;1*	2099.61	1406.77	1603.07	1649.47	0.67	0.76	0.79	-0.56	-0.39	-0.33
TC449518	*TaAN1AN20-11;2*	2012.97	1441.61	1216.52	1347.26	0.72	0.60	0.67	-0.47	-0.73	-0.56
TC405037	*TaC2H2*	2916.65	3304.41	4581.21	3209.32	1.13	1.57	1.10	0.21	0.67	0.16
TC440118	*TaC2H2;1*	76.73	62.50	172.85	93.78	0.81	2.25	1.22	-0.14	1.06	0.23
TC417598	*TaC2H2-ZAT1*	23.52	29.23	33.02	32.16	1.24	1.40	1.37	0.56	0.19	0.33
TC432857	*TaC2H2-ZAT5*	17.77	17.04	3.30	31.55	0.96	0.19	1.78	0.21	-2.97	0.69
CA654895	*TaC2H2-ZAT10*	1231.18	941.78	810.09	1166.19	0.76	0.66	0.95	-0.36	-0.62	-0.07
CK211677	*TaC2H2-ZAT10;1*	487.05	361.17	323.97	357.86	0.74	0.67	0.73	-0.40	-0.62	-0.48
CK204293	*TaC2H2-ZAT11*	17.63	12.15	14.49	17.28	0.69	0.82	0.98	-0.26	-0.73	-0.21
TC370339	*TaC2H2-STOP1*	4133.93	3238.97	3155.26	3853.18	0.78	0.76	0.93	-0.32	-0.38	-0.08
CK201352	*TaCCCH-Protein6*	52.33	47.81	67.54	57.73	0.91	1.29	1.10	0.05	0.20	0.09
TC391108	*TaCCCH-Protein8*	3665.36	3818.31	4338.81	3338.99	1.04	1.18	0.91	0.09	0.26	-0.11
TC432787	*TaCCCH-Protein8;1*	1091.61	716.37	1035.55	823.37	0.66	0.95	0.75	-0.58	-0.10	-0.41
TC383580	*TaCCCH-Protein12*	7957.63	5800.86	7625.28	7683.92	0.73	0.96	0.97	-0.39	-0.01	-0.02
CA652226	*TaCCCH-Protein15*	407.17	556.88	421.67	430.30	1.37	1.04	1.06	0.47	0.02	0.05
CD932013	*TaCCCH-Protein18*	2425.27	2833.36	2637.34	2273.17	1.17	1.09	0.94	0.24	0.12	-0.08
TC377176	*TaCCCH-Protein50*	7125.68	5652.00	5065.33	6179.33	0.79	0.71	0.87	-0.27	-0.45	-0.17
TC376438	*TaCCCH-Protein65*	4243.40	4452.19	4685.74	4350.16	1.05	1.10	1.03	0.11	0.17	0.06
TC405560	*TaGATA*	784.72	791.43	837.91	985.01	1.01	1.07	1.26	0.03	0.08	0.33
TC423400	*TaGATA2*	6165.61	5740.72	5397.69	4115.10	0.93	0.88	0.67	-0.04	-0.15	-0.55
TC399874	*TaGATA9*	946.24	1140.45	1200.30	950.54	1.21	1.27	1.00	0.30	0.32	0.01
TC415152	*TaGATA16*	2628.09	4879.47	3950.25	3484.16	1.86	1.50	1.33	0.93	0.60	0.42
TC392511	*TaGATA16;1*	3036.53	5453.39	4601.88	3993.61	1.80	1.52	1.32	0.88	0.62	0.42
TC380017	*TaGATA24*	855.34	620.90	584.40	623.79	0.73	0.68	0.73	-0.44	-0.57	-0.47
CJ561481	*TaGATA28*	1043.71	643.94	808.37	833.40	0.62	0.77	0.80	-0.67	-0.39	-0.32
TC377455	*TaC4HC3*	1686.08	1634.00	1715.36	1873.00	0.97	1.02	1.11	-0.03	0.03	0.17
TC394609	*TaC4HC3;1*	90.11	72.69	60.34	76.13	0.81	0.67	0.84	-0.16	-0.71	-0.30
TC453334	*TaC4HC3;2*	1930.06	1750.99	2032.09	2050.61	0.91	1.05	1.06	-0.13	0.08	0.10
TC415860	*TaC4HC3;3*	1163.37	977.31	950.77	1151.68	0.84	0.82	0.99	-0.22	-0.31	0.00

CK214424	*TaC4HC3;4*	1762.14	1469.48	1430.06	1843.74	0.83	0.81	1.05	-0.25	-0.30	0.08
BJ260614	*TaC4HC3;5*	67.52	58.19	37.75	53.12	0.86	0.56	0.79	-0.05	-1.03	-0.40
TC445795	*TaC4HC3;6*	502.57	411.58	259.48	496.02	0.82	0.52	0.99	-0.27	-0.98	-0.04
TC370412	*TaC4HC3;7*	12181.14	10123.43	10018.51	11342.58	0.83	0.82	0.93	-0.17	-0.23	-0.08
TC377709	*TaC4HC3;8*	9.21	5.72	13.12	11.71	0.62	1.42	1.27	-0.39	-0.03	0.08
CJ641955	*TaRING+CHY*	67.03	53.75	148.29	93.73	0.80	2.21	1.40	-0.15	1.02	0.43
TC453651	*TaRING+CHY;1*	930.29	988.88	1009.01	800.23	1.06	1.08	0.86	0.11	0.09	-0.22
TC413487	*TaRING+CHY-1*	987.29	656.11	749.20	931.16	0.66	0.76	0.94	-0.57	-0.42	-0.08
TC379936	*TaRING+CHY-1;1*	433.09	406.75	331.22	457.19	0.94	0.76	1.06	-0.07	-0.42	0.05
TC391030	*TaRING+CHY-1;2*	1096.88	1389.10	1189.55	1393.00	1.27	1.08	1.27	0.37	0.10	0.36
CN010981	*TaRING+CHY-1;3*	97.96	49.01	98.58	84.33	0.50	1.01	0.86	-0.84	-0.09	-0.27
TC413537	*TaDOF*	617.24	675.34	855.94	677.57	1.09	1.39	1.10	0.15	0.46	0.12
TC377014	*TaDOF1.7*	52.50	41.60	62.32	48.90	0.79	1.19	0.93	-0.15	0.07	-0.16
CJ616808	*TaDOF5.2*	1759.13	1697.83	145.76	1942.72	0.97	0.08	1.10	-0.04	-3.64	0.16
TC390263	*TaPHD- ALFIN-LIKE8*	1373.25	1293.84	1201.61	1244.13	0.94	0.88	0.91	-0.06	-0.20	-0.13
CK196835	*TaPHD- ALFIN-LIKE8;1*	371.90	340.77	380.85	347.86	0.92	1.02	0.94	-0.08	0.00	-0.13
TC405735	*TaPHD- ALFIN-LIKE9*	2550.68	2946.93	2689.49	3001.28	1.16	1.05	1.18	0.23	0.08	0.25
BJ249313	*TaDHHC*	1381.04	1194.94	1061.45	1279.95	0.87	0.77	0.93	-0.18	-0.39	-0.09
TC446296	*TaDHHC;1*	283.21	373.66	458.15	386.18	1.32	1.62	1.36	0.46	0.66	0.41
TC448302	*TaCCHC*	111.25	653.38	378.21	299.89	5.87	3.40	2.70	2.62	1.70	1.38
BE418205	*TaLSD1-1*	233.57	240.88	130.56	314.15	1.03	0.56	1.34	0.13	-0.91	0.39
TC427176	*TaHIT-2*	28.52	49.42	46.68	47.84	1.73	1.64	1.68	1.01	0.46	0.66
TC457604	*TaCW*	18.23	20.86	18.70	22.01	1.14	1.03	1.21	0.46	-0.37	0.11
TC393540	*TaRan-binding*	7.79	2.40	13.70	10.35	0.31	1.76	1.33	-1.39	0.27	0.12



Appendix C Expression levels of the wheat ZFP genes of gene class I to VII under Pi deprivation. Note: 1 h, 6 h, and 24 h mean 1 h, 6 h, and 24 h of Pi deprivation, respectively. CK represents the control group. I to VII, seven distinct gene classes classified based on the expression patterns.



Appendix D Expression levels of the wheat ZFP genes of gene class VIII to XI under Pi deprivation. Note: 1 h, 6 h, and 24 h mean 1 h, 6 h, and 24 h of Pi deprivation, respectively. CK represents the control group. VIII to XI, distinct gene classes classified based on the expression patterns.

Appendix E Primers used for expression analysis of the differentially expressed ZFP genes

Gene name	Accession number	Forward primer (5′-)	Reversed primer (5′-)	Product (bp)
TaWRKY;3	TC400941	CATACCAGGCTTGCACCATC	CTAGATCATCTTCAACAAACC	211
TaWRKY;6	TC436923	CGAACTGACAGACACAGGGT	GCAACATATCCTATACATAGCA	220
TaWRKY;7	TC444916	GGAGATCAAGTCACTTTTTAGC	CATTTCTTGTACTTGTGCTGTC	211
TaWRKY;9	TC448784	TGGGTTATTACAGTGACCATCT	CATGATATGAACCAAGTGTCC	214
TaWRKY26;1	EF368364	GGCGTCATCTTCCTCCGACA	ACCCACATGTAAACGCCACA	205
TaWRKY40;1	EF368356	GCAGCAGCACAAGCAGGAAG	ATTGATGTCCCTGGTCGGC	193
TaWRKY40;2	TC385517	GCTGCTCCTGCTGCTCGT	AATCGAATCGAGTTCCATGG	182

TaWRKY41	TC425788	GCTGAGTTCGTCGAGATGT	GCTAACAGGCTATCATCCTT	236
TaWRKY70;5	TC420518	TCCAGGAGATGGACTTCG	CCTTTTTATTCCACTGCATAC	245
TaRING	TC369926	CCAACTTGAGAATGCCATCG	AGGGGGATATAGTATGAATCG	234
TaRING;3	CK200537	CCGATACGAACTTGGTAGC	TTTGGCACCTTCACAAGCT	184
TaRING;6	CA640511	GGCTGACGGTAAAGAACTA	GACGTTTGACCGGTATCC	172
TaRING;12	DR733074	CATTTTGGGCACCGCTTTT	TAATACGACTCACTATAGGG	226
TaRING-H2-ATL79	TC421979	CTAGAGCCGATGATGGTG	CAAAAGAATTTTCTGTCACTG	229
TaAN1AN20-8;2	CK161708	GTCTCCTTGTTGGCTATGTC	CCTTCCTTATATTCGACTCAC	204
TaC2H2;1	TC440118	CTCAGTAGTTCTAGACTTTAG	CCAATGGTTAACACCTACTC	192
TaC2H2-ZAT5	TC432857	GGATTAGTGCTACTGTCTATA	TTATTAAGCACATCTCCAAGC	239
TaC4HC3;5	BJ260614	GTGATCAGGAAGAAGTGTCAG	TCATTATCAAGGCAAATCCG	196
TaRING-CHY	CJ641955	CGGATCCAAGATCAGAAGAGT	TTCCATTGTATGGTCGCTAAC	191
TaCCHC	TC448302	GGTGTAAAATCCAAAGAACCTT	TGTCTCAAGGTTGCAATCAGG	198
TaHIT-2	TC427176	GGTGACGAAATCAAGCTTGAG	TATCTGTCTGATAAGCTGGC	174
TaRan-binding	TC393540	CTGCTTCATTGTTCTCTGAAA	ATGAAACCGTTAAACTGGC	221