

Supplementary Material 2

Supplementary Table S1. Information of the *IRE1* genes identified in 90 different plant species. Details such as name of species, number of IRE genes, gene ID, chromosomal location, protein length and category of the organism are summarized in this table.

S.No.	Plant Species	No. IREs	Names	Protein Len	Category	Gene ID	Location
1	<i>Arabidopsis thaliana</i>	3	<i>AtIRE1a</i>	841	Eudicotyledons	AT2G17520	2:7617151-7621129
			<i>AtIRE1b</i>	887		AT5G24360	5:8316388-8319981
			<i>AtIRE1c</i>	554		AT3G11870	3:3746998-3749093
2	<i>Actinidia chinensis</i>	2	<i>AccIRE1</i>	921	Eudicotyledons	CEY00_Acc23473	LG21:523477-530283
			<i>AccIRE2</i>	938		CEY00_Acc24338	LG21:14568736-14578826
3	<i>Aegilops tauschii</i>	1	<i>AetIRE1</i>	939	Liliopsida	AET6Gv20921300	6D:474004177-474013085
4	<i>Amborella Trichopoda</i>	3	<i>AtrIRE like 1</i>	248	Amborellales	AMTR_s00001p00257570	AmTr_v1.0_scaffold00001:7188302-7189423
			<i>AtrIRE like 2</i>	246		AMTR_s00001p00257110	AmTr_v1.0_scaffold00001:7135633-7136759
			<i>AtrIRE1</i>	942		AMTR_s00044p00131780	AmTr_v1.0_scaffold00044:1816599-1834217
5	<i>Ananas comosus</i>	1	<i>AcoIRE1</i>	967	Liliopsida	Aco015782.1.path1	contig10:10668672-10677772
6	<i>Arabidopsis halleri</i>	4	<i>AhIRE like 1</i>	878	Eudicotyledons	g03669	FJVB01000005.1:2936997-2940981
			<i>AhIRE1</i>	839		g22188	FJVB01000110.1:244279-248164
			<i>AhIRE2</i>	888		g25309	FJVB01000153.1:381079-384756
			<i>AhIRE like 2</i>	491		g18372	FJVB01000068.1:338599-340798
7	<i>Arabidopsis lyrata</i>	4	<i>AlIRE1</i>	554	Eudicotyledons	fgenes1_pm.C_scaffold_3000983	3:4774810-4777026
			<i>AlIRE like 1</i>	839		fgenes2_kg.3_3338_AT2G17520.1	3:22103160-22106994
			<i>AlIRE2</i>	871		fgenes2_kg.6_2434_AT5G24360.1	6:10624584-10628206
			<i>AlIRE like 2</i>	363		scaffold_12600006.1	scaffold_126:17650-19023
8	<i>Arabis alpina</i>	1	<i>AaIRE1</i>	878	Eudicotyledons	AALP_AA8G420200	8:35173647-35177156
9	<i>Asparagus officinalis</i>	1	<i>AoIRE1</i>	750	Liliopsida	A4U43_C04F4270	4:10546875-10553097
10	<i>Beta vulgaris</i>	2	<i>BvIRE1</i>	893	Eudicotyledons	BVRB_1g014280	1:31904226-31911617

			<i>BvIRE2</i>	888		<i>BVRB_6g135950</i>	6:10704095-10717199
11	<i>Brachypodium distachyon</i>	1	<i>BdIRE1</i>	892	Liliopsida	<i>BRADI_1g28280v3</i>	1:23504215-23509820
12	<i>Brassica napus</i>	6	<i>BnIRE1</i>	1176	Eudicotyledons	<i>GSBRNA2T00103275001</i>	LK031797:785430-791600
			<i>BnIRE2</i>	850		<i>GSBRNA2T00133512001</i>	LK031821:450831-453885
			<i>BnIRE3</i>	846		<i>GSBRNA2T00147526001</i>	LK031854:586921-590215
			<i>BnIRE4</i>	797		<i>GSBRNA2T00124993001</i>	LK031981:409453-413297
			<i>BnIRE5</i>	797		<i>GSBRNA2T00042065001</i>	LK032233:10643-14022
			<i>BnIRE6</i>	781		<i>GSBRNA2T00060223001</i>	LK032371:341960-345987
13	<i>Brassica oleracea</i>	3	<i>BoIRE1</i>	821	Eudicotyledons	<i>Bo3g093490</i>	C3:34046317-34049732
			<i>BoIRE2</i>	742		<i>Bo7g078860</i>	C7:30158391-30162890
			<i>BoIRE3</i>	850		<i>Bo7g096940</i>	C7:37586838-37589892
14	<i>Brassica rapa</i>	3	<i>BraIRE2</i>	846	Eudicotyledons	<i>Bra009754</i>	A06:17035292-17038343
			<i>BraIRE1</i>	846		<i>Bra024511</i>	A06:16329168-16332401
			<i>BraIRE like 1</i>	190		<i>Bra038494</i>	A01:10866187-10867080
15	<i>Camelina sativa</i>	10	<i>CamsIRE3</i>	878	Eudicotyledons	<i>Csa08g018830</i>	8:8791125-8794666
			<i>CamsIRE like 3</i>	338		<i>Csa19g003170</i>	19:543236-546211
			<i>CamsIRE4</i>	879		<i>Csa13g029050</i>	13:11437678-11441257
			<i>CamsIRE2</i>	831		<i>Csa04g004180</i>	4:1390110-1395345
			<i>CamsIRE like 1</i>	559		<i>Csa07g013670</i>	7:6539678-6545582
			<i>CamsIRE1</i>	907		<i>Csa01g032260</i>	1:14674102-14678132
			<i>CamsIRE5</i>	847		<i>Csa15g075760</i>	15:26131457-26135700
			<i>CamsIRE like 2</i>	631		<i>Csa09g096630</i>	9:36660117-36662737
			<i>CamsIRE like 4</i>	846		<i>Csa19g054360</i>	19:24018034-24022214
			<i>CamsIRE6</i>	878		<i>Csa20g040790</i>	20:14743995-14747666
16	<i>Cannabis sativa female</i>	1	<i>CansIRE1</i>	909	Eudicotyledons	<i>evm.TU.09.318</i>	9:7021317-7025654
17	<i>Capsicum annuum</i>	1	<i>CaIRE1</i>	937	Eudicotyledons	<i>T459_13505</i>	4:239413566-239420093
18	<i>Chenopodium quinoa</i>	3	<i>CqIRE1</i>	849	Eudicotyledons	<i>AUR62003738</i>	C_Quinoa_Scaffold_2370:4098628-4108304
			<i>CqIRE2</i>	882		<i>AUR62016567</i>	C_Quinoa_Scaffold_3514:3690989-3699196
			<i>CqIRE3</i>	863		<i>AUR62042588</i>	C_Quinoa_Scaffold_4132:133939-140322
19	<i>Chlamydomonas</i>	1	<i>CreIRE1</i>	1597	Chlorophyta	<i>CHLRE_08g371052v5</i>	8:2397038-2410519

	<i>reinhardtii</i>						
20	<i>Chondrus crispus</i>	1	<i>ChcIRE1</i>	1007	Rhodophyta	<i>CHC_T00009066001</i>	HG002125:10050-13126
21	<i>Citrullus lanatus</i>	2	<i>CIIRE1</i>	944	Eudicotyledons	<i>Cla97C01G014780</i>	1:28553404-28558754
			<i>CIIRE2</i>	917		<i>Cla97C01G020490</i>	1:33107764-33111990
22	<i>Citrus clementina</i>	2	<i>CclIRE2</i>	844	Eudicotyledons	<i>CICLE_v10027213mg</i>	KI536925:165372-169291
			<i>CclIRE1</i>	934		<i>CICLE_v10000190mg</i>	KI536799:42869525-42873428
23	<i>Coffea canephora</i>	2	<i>CofcIRE1</i>	911	Eudicotyledons	<i>GSCOC_T00036933001</i>	7:8841747-8848652
			<i>CofcIRE2</i>	922		<i>GSCOC_T00024492001</i>	10:343893-349002
24	<i>Corchorus capsularis</i>	2	<i>CorcIRE2</i>	924	Eudicotyledons	<i>CCACVL1_27089</i>	contig14607:3663-7804
			<i>CorcIRE1</i>	832		<i>CCACVL1_11399</i>	contig09884:2399-6183
25	<i>Cucumis melo</i>	2	<i>CucmIRE1</i>	807	Eudicotyledons	<i>MELO3C007978.2</i>	contig9:6511085-6515919
			<i>CucmIRE2</i>	934		<i>MELO3C008016.2</i>	contig9:6722425-6728951
26	<i>Cucumis sativus</i>	2	<i>CucsIRE1</i>	942	Eudicotyledons	<i>Csa_6G486760</i>	6:22594296-22600877
			<i>CucsIRE2</i>	898		<i>Csa_6G509680</i>	6:26154971-26159962
27	<i>Cyanidioschyzon merolae</i>	1	<i>CyamIRE1</i>	1264	Rhodophyta	<i>CMM326C</i>	13:834839-838630
28	<i>Cynara cardunculus</i>	2	<i>CyncIRE2</i>	883	Eudicotyledons	<i>Ccrd_018709</i>	scaffold_373:251696-263887
			<i>CyncIRE1</i>	629		<i>Ccrd_013974</i>	scaffold_310:74241-82476
29	<i>Daucus carota</i>	2	<i>DcIRE2</i>	913	Eudicotyledons	<i>DCAR_016789</i>	5:7628477-7634999
			<i>DcIRE1</i>	750		<i>DCAR_002960</i>	1:34365473-34372012
30	<i>Dioscorea rotundata</i>	1	<i>DrIRE1</i>	949	Liliopsida	<i>DRNTG_26578</i>	14:20173656-20178924
31	<i>Eragrostis tef</i>	2	<i>EtIRE2</i>	890	Liliopsida	<i>Et_s4582-0.7-1.path1</i>	scaffold4582:3183-11740
			<i>EtIRE1</i>	931		<i>Et_s466-0.33-1.path1</i>	scaffold466:274-6817
32	<i>Eucalyptus grandis</i>	11	<i>EgrIRE2</i>	720	Eudicotyledons	<i>EUGRSUZ_J02546</i>	KK198762:31344228-31349190
			<i>EgrIRE like 8</i>	467		<i>EUGRSUZ_J02548</i>	KK198762:31378545-31381842
			<i>EgrIRE like 1</i>	417		<i>EUGRSUZ_C01997</i>	KK198755:35231004-35235840
			<i>EgrIRE like 3</i>	488		<i>EUGRSUZ_C02031</i>	KK198755:36311889-36316779
			<i>EgrIRE like 2</i>	532		<i>EUGRSUZ_C02029</i>	KK198755:36273543-36277705
			<i>EgrIRE like 4</i>	598		<i>EUGRSUZ_C02042</i>	KK198755:36617859-36622241
			<i>EgrIRE like 7</i>	423		<i>EUGRSUZ_C02118</i>	KK198755:38270661-38274035
			<i>EgrIRE1</i>	929		<i>EUGRSUZ_J02541</i>	KK198762:31300036-31306939
			<i>EgrIRE_like_9</i>	483		<i>EUGRSUZ_J02572</i>	KK198762:31584136-31587632
			<i>EgrIRE like 6</i>	310		<i>EUGRSUZ_C02116</i>	KK198755:38237870-38245527

			<i>EgrIRE like 5</i>	556		<i>EUGRSUZ_C02048</i>	KK198755:36728455-36732560
33	<i>Eutrema salsugineum</i>	2	<i>EsIRE2</i>	770	Eudicotyledons	<i>EUTSA_v10003683mg</i>	KI517748:3197614-3200866
			<i>EsIRE1</i>	826		<i>EUTSA_v10022558mg</i>	KI517392:1799055-1802932
34	<i>Fragaria vesca</i>	2	<i>FvIRE1</i>	926	Eudicotyledons	<i>FvH4_1g10190.t1_v4.0.a2</i>	<u>Fvb1_v4.0.a1:5545265..5549583</u>
			<i>FvIRE2</i>	880		<i>FvH4_5g25750.t1_v4.0.a2</i>	<u>Fvb5_v4.0.a1:17241697..17245856</u>
35	<i>Galdieria sulphuraria</i>	1	<i>GsIRE1</i>	918	Rhodophyta	<i>Gasu_43970</i>	scaf_40:41736-44650
36	<i>Glycine max</i>	4	<i>GmIRE2</i>	887	Eudicotyledons	<i>GLYMA_09G197000</i>	9:42169740-42181543
			<i>GmIRE4</i>	893		<i>GLYMA_16G111800</i>	16:24720965-24731678
			<i>GmIRE3</i>	879		<i>GLYMA_11G087200</i>	11:6540562-6546821
			<i>GmIRE1</i>	895		<i>GLYMA_01G157800</i>	1:49583432-49590446
37	<i>Gossypium hirsutum</i>	4	<i>GhIRE1-A1</i>	884	Eudicotyledons	<i>Ghcr24_A01G109100.1</i>	A01:20000812..20004600
			<i>GhIRE1-D1</i>	882		<i>Ghcr24_D01G102400.1</i>	D01:15321739..15325521
			<i>GhIRE1-D3</i>	907		<i>Ghcr24_D03G000700.1</i>	D03:93388..98072
			<i>GhIRE1-A2</i>	678		<i>Ghcr24_A02G212000.1</i>	A02:104180294..104185039
38	<i>Gossypium raimondii</i>	2	<i>GrIRE1</i>	882	Eudicotyledons	<i>B456_002G114100</i>	2:16113205-16117138
			<i>GrIRE2</i>	907		<i>B456_003G001300</i>	3:80706-86351
39	<i>Helianthus annuus</i>	4	<i>HaIRE like 1</i>	552	Eudicotyledons	<i>HannXRQ_Ch15g0482881</i>	15:73736672-73771887
			<i>HaIRE2</i>	852		<i>HannXRQ_Ch16g0531931</i>	16:182893575-182899834
			<i>HaIRE like 2</i>	454		<i>HannXRQ_Ch15g0482891</i>	15:73771938-73775718
			<i>HaIRE1</i>	841		<i>HannXRQ_Ch14g0427841</i>	14:8261810-8268273
40	<i>Hordeum vulgare</i>	1	<i>HvIRE1</i>	887	Liliopsida	<i>HORVU0Hr1G017510</i>	chrUn:92680825-92689390
41	<i>Ipomoea triloba</i>	2	<i>ItrIRE1</i>	847	Eudicotyledons	<i>itb12g01020</i>	12:716804-723031
			<i>ItrIRE2</i>	918		<i>itb15g10390</i>	15:8196305-8201116
42	<i>Juglans regia</i>	3	<i>JrIRE2</i>	852	Eudicotyledons	<i>Jr11_00270</i>	11:314730-324190
			<i>JrIRE1</i>	889		<i>Jr11_00260</i>	11:314482-324877
			<i>JrIRE3</i>	903		<i>Jr11_18320</i>	11:27399811-27405252
43	<i>Kalanchoe fedtschenkoi</i>	2	<i>KfIRE2</i>	913	Eudicotyledons	<i>Kaladp0067s0189.v1.1</i>	Scaffold_67:1375376-1385689
			<i>KfIRE1</i>	928		<i>Kaladp0042s0387.v1.1</i>	Scaffold_42:3537768-3543194
44	<i>Leersia perrieri</i>	1	<i>LpIRE1</i>	900	Liliopsida	<i>LPERR07G11640</i>	7:12118213-12123886
45	<i>Lupinus angustifolius</i>	1	<i>LaIRE1</i>	814	Eudicotyledons	<i>TanjilG_28215</i>	LG06:22133678-22141709
46	<i>Malus domestica Golden</i>	2	<i>MdIRE1</i>	910	Eudicotyledons	<i>MD02G0097300</i>	2:9295174-9299617

			<i>MdIRE2</i>	889		<i>MD06G0005900</i>	6:717472-721979
47	<i>Manihot esculenta</i>	2	<i>MeIRE2</i>	910	Eudicotyledons	<i>MANES_05G125100</i>	LG5:14983093-14992797
			<i>MeIRE1</i>	919		<i>MANES_01G156400</i>	LG1:26404218-26410944
48	<i>Marchantia polymorpha</i>	1	<i>MpIRE1</i>	873	Bryomorpha	<i>MARPO_0028s0145</i>	KZ772700:1695631-1701153
49	<i>Medicago truncatula</i>	2	<i>MtIRE1</i>	904	Eudicotyledons	<i>MTR_5g024510</i>	5:9855159-9861863
			<i>MtIRE2</i>	844		<i>MTR_8g073190</i>	8:30973245-30981996
50	<i>Musa acuminata</i>	3	<i>MaIRE like 1</i>	440	Liliopsida	<i>Ma03_g30230</i>	CAJGYN010000003.1:32953680-32956683
			<i>MaIRE1</i>	992		<i>Ma03_g30430</i>	CAJGYN010000003.1:33056089-33062055
			<i>MaIRE2</i>	968		<i>Ma09_g22090</i>	CAJGYN010000009.1:34089952-34097937
51	<i>Nicotiana attenuata</i>	2	<i>NaIRE like 1</i>	526	Eudicotyledons	<i>A4A49_28095</i>	4:830887-834861
			<i>NaIRE1</i>	881		<i>A4A49_16224</i>	scaffold00509:281652-290586
52	<i>Nymphaea colorata</i>	2	<i>NcIRE1</i>	1060	Nymphaeales	<i>NC2G0285290</i>	2:18676798-18684845
			<i>NcIRE2</i>	1011		<i>NC9G0173320</i>	9:12140350-12146649
53	<i>Olea europaea var. sylvestris</i>	2	<i>OeIRE like 1</i>	324	Eudicotyledons	<i>Oeu004299</i>	scaffold1156:180633-182608
			<i>OeIRE1</i>	919		<i>Oeu035852</i>	14:16997929-17003070
54	<i>Oryza barthii</i>	1	<i>ObarIRE1</i>	879	Liliopsida	<i>OBART07G13920</i>	7:13476852-13481638
55	<i>Oryza brachyantha</i>	1	<i>ObraIRE1</i>	619	Liliopsida	<i>OB07G19930</i>	7:9100233-9104038
56	<i>Oryza glaberrima</i>	1	<i>OglaIRE1</i>	893	Liliopsida	<i>ORGLA07G0117300</i>	7:13306762-13311158
57	<i>Oryza glumipatula</i>	1	<i>OgluIRE1</i>	896	Liliopsida	<i>OGLUM07G12930</i>	7:15314686-15319890
58	<i>Oryza longistaminata</i>	1	<i>OliIRE1</i>	820	Liliopsida	<i>KN538907.1_FG004</i>	KN538907.1:121505-125070
59	<i>Oryza meridionalis</i>	1	<i>OmIRE1</i>	925	Liliopsida	<i>OMERI06G02660</i>	6:2259143-2265654
60	<i>Oryza punctata</i>	1	<i>OpIRE1</i>	896	Liliopsida	<i>OPUNC07G12490</i>	7:17904241-17909135
61	<i>Oryza rufipogon</i>	1	<i>OrIRE1</i>	893	Liliopsida	<i>ORUF107G14030</i>	7:14486773-14491652
62	<i>Oryza sativa Japonica Group</i>	1	<i>OsIRE1</i>	893	Liliopsida	<i>Os07g0471000</i>	7:16870468-16875323
63	<i>Ostreococcus lucimarinus</i>	1	<i>OstIRE like 1</i>	457	Chlorophyta	<i>OSTLU_48805</i>	2:167635-169195

64	<i>Panicum hallii</i> <i>FIL2</i>	1	<i>PhIRE1</i>	766	Liliopsida	<i>PAHAL_2G369300</i>	2:49684809-49690511
65	<i>Papaver</i> <i>somniferum</i>	2	<i>PsIRE2</i>	859	Eudicotyledons	<i>C5167_050553</i>	8:147099621-147105032
			<i>PsIRE1</i>	661		<i>C5167_034613</i>	7:217266058-217271515
66	<i>Phaseolus</i> <i>vulgaris</i>	2	<i>PhvIRE2</i>	875	Eudicotyledons	<i>PHAVU_003G271000g</i>	3:49683146-49690613
			<i>PhvIRE1</i>	875		<i>PHAVU_002G117600g</i>	2:23805428-23812137
67	<i>Physcomitrium</i> <i>patens</i>	2	<i>PhpIRE2</i>	874	Bryomorpha	<i>Pp3c17_18370</i>	17:12320374-12327371
			<i>PhpIRE1</i>	924		<i>Pp3c14_20430</i>	14:13384308-13391318
68	<i>Pistacia vera</i>	2	<i>PivIRE2</i>	907	Eudicotyledons	<i>EVM0001052</i>	Contig200:1767403-1771330
			<i>PivIRE1</i>	926		<i>EVM0018251</i>	Contig195:813600-818763
69	<i>Populus</i> <i>trichocarpa</i>	3	<i>PtIRE2</i>	886	Eudicotyledons	<i>POPTR_007G059000v3</i>	7:6313801-6319337
			<i>PtIRE1</i>	905		<i>POPTR_005G254000v3</i>	5:25511411-25515662
			<i>PtIRE like 1</i>	519		<i>POPTR_002G007200v3</i>	2:388639-391528
70	<i>Prunus avium</i>	2	<i>PaIRE1</i>	927	Eudicotyledons	<i>Pav_sc0000113.1_g350.1.mk</i>	Pav_sc0000113.1.:172680-176858
			<i>PaIRE2</i>	1193		<i>Pav_sc0001461.1_g080.1.mk</i>	Pav_sc0001461.1.:60173-67860
71	<i>Prunus dulcis</i>	2	<i>PdIRE2</i>	901	Eudicotyledons	<i>Prudul26B017079</i>	pdulcis26_s0886:19977-24391
			<i>PdIRE1</i>	901		<i>Prudul26B002332</i>	pdulcis26_s0002:2710-7001
72	<i>Prunus persica</i>	2	<i>PrpIRE1</i>	901	Eudicotyledons	<i>PRUPE_5G008100</i>	G5:859926-864488
			<i>PrpIRE2</i>	901		<i>PRUPE_7G185000</i>	G7:17939389-17943139
73	<i>Quercus lobata</i>	2	<i>QlIRE1</i>	908	Eudicotyledons	<i>QL02p015199</i>	CM012294:15195489-15201673
			<i>QlIRE2</i>	927		<i>QL06p053171</i>	6:53165939-53175310
74	<i>Rosa chinensis</i>	2	<i>RcIRE2</i>	894	Eudicotyledons	<i>RchiOBHm_Ch7g0216101</i>	7:33743527-33747995
			<i>RcIRE1</i>	852		<i>RchiOBHm_Ch2g0096971</i>	2:9701614-9706352
75	<i>Saccharum</i> <i>spontaneum</i>	5	<i>SsIRE2-2A</i>	931	Liliopsida	<i>Sspon.02G0007840-1T</i>	2A:22865590-22870722
			<i>SsIRE1-2A</i>	931		<i>Sspon.02G0007840-1A</i>	2A:22789759-22794891
			<i>SsIRE1-2B</i>	930		<i>Sspon.02G0007840-2B</i>	2B:22043136-22049758
			<i>SsIRE1-2C</i>	927		<i>Sspon.02G0007840-3C</i>	2C:25477063-25482668
			<i>SsIRE1-2D</i>	924		<i>Sspon.02G0007840-4D</i>	2D:16451777-16457288
76	<i>Sesamum</i> <i>indicum</i>	3	<i>SinIRE3</i>	861	Eudicotyledons	<i>SIN_1000251</i>	C00474:1096-9351
			<i>SinIRE2</i>	758		<i>SIN_1006440</i>	LG13:546439-550734
			<i>SinIRE1</i>	911		<i>SIN_1007448</i>	LG2:3205087-3210160
77	<i>Setaria viridis</i>	1	<i>SvIRE1</i>	938	Liliopsida	<i>SEVIR_2G321600v2</i>	2:39025732-39031126
78	<i>Solanum</i> <i>lycopersicum</i>	2	<i>SlIRE1</i>	913	Eudicotyledons	<i>Solyc02g082470.3</i>	2:46729449-46736906
			<i>SlIRE2</i>	900		<i>Solyc04g082620.3</i>	4:66323886-66335827

79	<i>Solanum tuberosum</i>	2	<i>StIRE2</i>	904	Eudicotyledons	<i>PGSC0003DMG400009991</i>	4:71816633-71824387
			<i>StIRE1</i>	897		<i>PGSC0003DMG400001509</i>	2:38308474-38315691
80	<i>Sorghum bicolor</i>	1	<i>SbIRE1</i>	923	Liliopsida	<i>SORBI_3002G299000</i>	2:67463254-67468843
81	<i>Theobroma cacao</i> Belizian Criollo B97-61/B2	2	<i>TcIRE1</i>	926	Eudicotyledons	<i>Tc01v2_g000290</i>	I:190775-195880
			<i>TcIRE2</i>	886		<i>Tc08v2_g005400</i>	VIII:2858497-2862687
82	<i>Trifolium pratense</i>	2	<i>TpIRE2</i>	933	Eudicotyledons	<i>Tp57577_TGAC_v2_gene13732</i>	LG4:9233329-9240707
			<i>TpIRE1</i>	919		<i>Tp57577_TGAC_v2_gene33891</i>	LG2:15880959-15886147
83	<i>Triticum dicoccoides</i>	2	<i>TdIRE1-6A</i>	827	Liliopsida	<i>TRIDC6AG055930</i>	6A:597746344-597753881
			<i>TdIRE1-6B</i>	809		<i>TRIDC6BG065420</i>	6B:668747747-668755793
84	<i>Triticum spelta</i>	3	<i>TsIRE1-6A</i>	883	Liliopsida	<i>TraesTSP6A01G363200</i>	6A:560932796-560940231
			<i>TsIRE1-6B</i>	882		<i>TraesTSP6B01G448500</i>	6B:670283710-670291336
			<i>TsIRE1-6D</i>	886		<i>TraesTSP6D01G384300</i>	6D:449461175-449469674
85	<i>Triticum turgidum</i>	2	<i>TtIRE1-6B</i>	879	Liliopsida	<i>TRITD6Bv1G213900</i>	6B:662284434-662292058
			<i>TtIRE1-6A</i>	976		<i>TRITD6Av1G215350</i>	6A:592366031-592373781
86	<i>Triticum urartu</i>	1	<i>TuIRE1</i>	931	Liliopsida	<i>TRIUR3_08115</i>	scaffold23242:77836-90151
87	<i>Vigna radiata</i>	2	<i>VrIRE like 1</i>	211	Eudicotyledons	<i>Vradi07g01980</i>	7:3370684-3372369
			<i>VrIRE1</i>	838		<i>Vradi11g07260</i>	11:7354246-7361089
88	<i>Vitis vinifera</i>	2	<i>VvIRE1</i>	926	Eudicotyledons	<i>VIT_07s0031g02180</i>	7:18319743-18327048
			<i>VvIRE2</i>	925		<i>VIT_18s0122g00970</i>	18:686144-690657
89	<i>Zea mays</i>	2	<i>ZmIRE1</i>	907	Liliopsida	<i>Zm00001eb104810</i>	2:205426380-205431877
			<i>ZmIRE2</i>	925		<i>Zm00001eb320100</i>	7:150792596-150799468
90	<i>Triticum aestivum</i>	3	<i>TaIRE1-6A</i>	883	Liliopsida	<i>TraesCS6A02G374700</i>	6A: 597,350,948-597,358,981
			<i>TaIRE1-6B</i>	882		<i>TraesCS6B02G412400</i>	6B: 685,978,642-685,986,735
			<i>TaIRE1-6D</i>	886		<i>TraesCS6D02G358600</i>	6D: 451,538,374-451,547,271

Supplementary Table S2. Summary information regarding details of *TaIRE1* genes. Details such as gene ID, chromosomal location, transcript length, number of exons, protein length and GO details are presented in this table.

S. N o.	Gene Name	Gene Id	Chr. location	Transcript Length (bp)	Exons	Protein Length (aa)	Gene Ontologies		
							Biological process	Cellular Component	Molecular Function
1.	<i>TaIRE1- 6A</i>	TraesCS6A02G374700	6A	3250	7	883	mRNA processing, ProteinPhosphorylation, Responseto unfolded protein, phosphorylation, response to endoplasmic reticulum stress, IRE1-mediated unfolded protein response,RNA phosphodiester bond hydrolysis, RNA phosphodiester bond hydrolysis, endonucleocytic.	Endoplasmic Reticulum Membrane, Membrane, Integral component of membrane, IRE1- TRAF2-ASK1 complex	Nucleotide Binding, Endoribonuclease Activity, Ribonuclease Activity, Protein Kinase Activity, Protein Serine/Threonine Kinase Activity, Protein Binding, ATP Binding, Kinase Activity, Transferase Activity,Unfolded protein binding, Protein serine kinase activity, Protein threonine kinase activity
2.	<i>TaIRE1-6B</i>	TraesCS6B02G412400	6B	3115	7	882	mRNA processing, Protein Phosphorylation	N/A	Ribonuclease Activity, Protein Kinase Activity, Protein Binding, ATP Binding
3.	<i>TaIRE1-6D</i>	TraesCS6D02G358600	6D	2974	8	886	mRNA Processing, ProteinPhosphorylation.	N/A	Ribonuclease Activity, Protein kinase Activity, Protein binding, ATP Binding.

Supplementary Table S3. Raw RT-qPCR data showing CT values of *TaHSP17*, *TaHSP70*, and *TaHSP90* genes in heat-sensitive (HD2329) and heat-tolerant (HD2985) wheat cultivars following heat stress treatment.

Treatment	Sample Name	Bio. Rep.	Tech. Rep.	Target Gene Name	Task	CT
Control	HD2329	B1	T1	ACTIN	UNKNOWN	19.720
	HD2329	B1	T2	ACTIN	UNKNOWN	19.486
	HD2329	B1	T3	ACTIN	UNKNOWN	20.083
	HD2329	B2	T1	ACTIN	UNKNOWN	19.469
	HD2329	B2	T2	ACTIN	UNKNOWN	19.490
	HD2329	B2	T3	ACTIN	UNKNOWN	19.418
	HD2329	B3	T1	ACTIN	UNKNOWN	24.246
	HD2329	B3	T2	ACTIN	UNKNOWN	24.137
	HD2329	B3	T3	ACTIN	UNKNOWN	24.271
	-	-	-	ACTIN	NTC	33.813
	-	-	-	ACTIN	NTC	35.243
	-	-	-	ACTIN	NTC	Undetermined
	HD2329	B1	T1	HSP70	UNKNOWN	26.832
	HD2329	B1	T2	HSP70	UNKNOWN	26.808
	HD2329	B1	T3	HSP70	UNKNOWN	26.570
	HD2329	B2	T1	HSP70	UNKNOWN	28.079
	HD2329	B2	T2	HSP70	UNKNOWN	28.331
	HD2329	B2	T3	HSP70	UNKNOWN	28.947
	HD2329	B3	T1	HSP70	UNKNOWN	34.309
	HD2329	B3	T2	HSP70	UNKNOWN	34.320
	HD2329	B3	T3	HSP70	UNKNOWN	32.660
	-	-	-	HSP70	NTC	32.322
	-	-	-	HSP70	NTC	32.141
	-	-	-	HSP70	NTC	32.053
	HD2329	B1	T1	HSP90	UNKNOWN	22.993
	HD2329	B1	T2	HSP90	UNKNOWN	22.973

	HD2329	B1	T3	HSP90	UNKNOWN	22.945
	HD2329	B2	T1	HSP90	UNKNOWN	23.366
	HD2329	B2	T2	HSP90	UNKNOWN	23.318
	HD2329	B2	T3	HSP90	UNKNOWN	23.393
	HD2329	B3	T1	HSP90	UNKNOWN	27.887
	HD2329	B3	T2	HSP90	UNKNOWN	27.806
	HD2329	B3	T3	HSP90	UNKNOWN	27.793
	-	-	-	HSP90	NTC	34.017
	-	-	-	HSP90	NTC	34.267
	-	-	-	HSP90	NTC	33.668
	HD2329	B1	T1	HSP17	UNKNOWN	30.181
	HD2329	B1	T2	HSP17	UNKNOWN	30.175
	HD2329	B1	T3	HSP17	UNKNOWN	30.194
	HD2329	B2	T1	HSP17	UNKNOWN	30.183
	HD2329	B2	T2	HSP17	UNKNOWN	30.401
	HD2329	B2	T3	HSP17	UNKNOWN	31.088
	HD2329	B3	T1	HSP17	UNKNOWN	27.544
	HD2329	B3	T2	HSP17	UNKNOWN	27.680
	HD2329	B3	T3	HSP17	UNKNOWN	27.373
	-	-	-	HSP17	NTC	34.320
	-	-	-	HSP17	NTC	32.510
	-	-	-	HSP17	NTC	32.973
	HD2329	B1	T1	ACTIN	UNKNOWN	21.282
	HD2329	B1	T2	ACTIN	UNKNOWN	21.200
	HD2329	B1	T3	ACTIN	UNKNOWN	21.387
	HD2329	B2	T1	ACTIN	UNKNOWN	21.587
	HD2329	B2	T2	ACTIN	UNKNOWN	21.655
	HD2329	B2	T3	ACTIN	UNKNOWN	21.589
	HD2329	B3	T1	ACTIN	UNKNOWN	21.522
	HD2329	B3	T2	ACTIN	UNKNOWN	21.437
	HD2329	B3	T3	ACTIN	UNKNOWN	21.401

Heat stress	HD2329	B1	T1	HSP70	UNKNOWN	21.077
	HD2329	B1	T2	HSP70	UNKNOWN	21.080
	HD2329	B1	T3	HSP70	UNKNOWN	21.073
	HD2329	B2	T1	HSP70	UNKNOWN	21.019
	HD2329	B2	T2	HSP70	UNKNOWN	21.044
	HD2329	B2	T3	HSP70	UNKNOWN	20.977
	HD2329	B3	T1	HSP70	UNKNOWN	21.822
	HD2329	B3	T2	HSP70	UNKNOWN	21.950
	HD2329	B3	T3	HSP70	UNKNOWN	21.947
	HD2329	B1	T1	HSP90	UNKNOWN	20.202
	HD2329	B1	T2	HSP90	UNKNOWN	20.059
	HD2329	B1	T3	HSP90	UNKNOWN	20.458
	HD2329	B2	T1	HSP90	UNKNOWN	20.403
	HD2329	B2	T2	HSP90	UNKNOWN	20.274
	HD2329	B2	T3	HSP90	UNKNOWN	20.240
	HD2329	B3	T1	HSP90	UNKNOWN	20.720
	HD2329	B3	T2	HSP90	UNKNOWN	20.724
	HD2329	B3	T3	HSP90	UNKNOWN	20.710
	HD2329	B1	T1	HSP17	UNKNOWN	20.684
	HD2329	B1	T2	HSP17	UNKNOWN	19.542
	HD2329	B1	T3	HSP17	UNKNOWN	19.566
	HD2329	B2	T1	HSP17	UNKNOWN	19.702
	HD2329	B2	T2	HSP17	UNKNOWN	19.620
	HD2329	B2	T3	HSP17	UNKNOWN	19.614
	HD2329	B3	T1	HSP17	UNKNOWN	19.494
	HD2329	B3	T2	HSP17	UNKNOWN	19.513
	HD2329	B3	T3	HSP17	UNKNOWN	19.607
	HD2985	B1	T1	ACTIN	UNKNOWN	19.611
	HD2985	B1	T2	ACTIN	UNKNOWN	19.551
	HD2985	B1	T3	ACTIN	UNKNOWN	19.469
	HD2985	B2	T1	ACTIN	UNKNOWN	19.612

Control	HD2985	B2	T2	ACTIN	UNKNOWN	19.576
	HD2985	B2	T3	ACTIN	UNKNOWN	19.599
	HD2985	B3	T1	ACTIN	UNKNOWN	19.821
	HD2985	B3	T2	ACTIN	UNKNOWN	19.750
	HD2985	B3	T3	ACTIN	UNKNOWN	19.762
	-	-	-	ACTIN	NTC	32.671
	-	-	-	ACTIN	NTC	33.479
	-	-	-	ACTIN	NTC	34.104
	HD2985	B1	T1	HSP70	UNKNOWN	23.962
	HD2985	B1	T2	HSP70	UNKNOWN	23.926
	HD2985	B1	T3	HSP70	UNKNOWN	23.907
	HD2985	B2	T1	HSP70	UNKNOWN	23.829
	HD2985	B2	T2	HSP70	UNKNOWN	23.766
	HD2985	B2	T3	HSP70	UNKNOWN	23.852
	HD2985	B3	T1	HSP70	UNKNOWN	23.179
	HD2985	B3	T2	HSP70	UNKNOWN	23.185
	HD2985	B3	T3	HSP70	UNKNOWN	23.208
	-	-	-	HSP70	NTC	31.747
	-	-	-	HSP70	NTC	30.232
	-	-	-	HSP70	NTC	31.289
	HD2985	B1	T1	HSP90	UNKNOWN	22.382
	HD2985	B1	T2	HSP90	UNKNOWN	22.276
	HD2985	B1	T3	HSP90	UNKNOWN	22.343
	HD2985	B2	T1	HSP90	UNKNOWN	22.598
	HD2985	B2	T2	HSP90	UNKNOWN	22.568
	HD2985	B2	T3	HSP90	UNKNOWN	22.547
	HD2985	B3	T1	HSP90	UNKNOWN	21.807
	HD2985	B3	T2	HSP90	UNKNOWN	22.027
	HD2985	B3	T3	HSP90	UNKNOWN	21.851
	-	-	-	HSP90	NTC	33.429
	-	-	-	HSP90	NTC	32.881

	-	-	-	HSP90	NTC	32.956
Heat stress	HD2985	B1	T1	HSP17	UNKNOWN	25.188
	HD2985	B1	T2	HSP17	UNKNOWN	25.217
	HD2985	B1	T3	HSP17	UNKNOWN	25.096
	HD2985	B2	T1	HSP17	UNKNOWN	25.441
	HD2985	B2	T2	HSP17	UNKNOWN	25.455
	HD2985	B2	T3	HSP17	UNKNOWN	25.909
	HD2985	B3	T1	HSP17	UNKNOWN	25.482
	HD2985	B3	T2	HSP17	UNKNOWN	25.513
	HD2985	B3	T3	HSP17	UNKNOWN	25.484
	-	-	-	HSP17	NTC	30.929
	-	-	-	HSP17	NTC	31.314
	-	-	-	HSP17	NTC	28.354
	HD2985	B1	T1	ACTIN	UNKNOWN	22.480
	HD2985	B1	T2	ACTIN	UNKNOWN	22.150
	HD2985	B1	T3	ACTIN	UNKNOWN	22.692
	HD2985	B2	T1	ACTIN	UNKNOWN	21.048
	HD2985	B2	T2	ACTIN	UNKNOWN	20.994
	HD2985	B2	T3	ACTIN	UNKNOWN	21.011
	HD2985	B3	T1	ACTIN	UNKNOWN	21.372
	HD2985	B3	T2	ACTIN	UNKNOWN	21.294
	HD2985	B3	T3	ACTIN	UNKNOWN	21.354
	HD2985	B1	T1	HSP70	UNKNOWN	21.374
	HD2985	B1	T2	HSP70	UNKNOWN	21.297
	HD2985	B1	T3	HSP70	UNKNOWN	21.310
	HD2985	B2	T1	HSP70	UNKNOWN	19.962
	HD2985	B2	T2	HSP70	UNKNOWN	19.912
	HD2985	B2	T3	HSP70	UNKNOWN	19.903
	HD2985	B3	T1	HSP70	UNKNOWN	19.976
	HD2985	B3	T2	HSP70	UNKNOWN	19.972
	HD2985	B3	T3	HSP70	UNKNOWN	19.965

	HD2985	B1	T1	HSP90	UNKNOWN	19.980
	HD2985	B1	T2	HSP90	UNKNOWN	19.906
	HD2985	B1	T3	HSP90	UNKNOWN	20.105
	HD2985	B2	T1	HSP90	UNKNOWN	18.846
	HD2985	B2	T2	HSP90	UNKNOWN	18.756
	HD2985	B2	T3	HSP90	UNKNOWN	18.733
	HD2985	B3	T1	HSP90	UNKNOWN	18.939
	HD2985	B3	T2	HSP90	UNKNOWN	18.878
	HD2985	B3	T3	HSP90	UNKNOWN	18.879
	HD2985	B1	T1	HSP17	UNKNOWN	19.832
	HD2985	B1	T2	HSP17	UNKNOWN	19.811
	HD2985	B1	T3	HSP17	UNKNOWN	19.761
	HD2985	B2	T1	HSP17	UNKNOWN	19.145
	HD2985	B2	T2	HSP17	UNKNOWN	19.094
	HD2985	B2	T3	HSP17	UNKNOWN	19.077
	HD2985	B3	T1	HSP17	UNKNOWN	19.343
	HD2985	B3	T2	HSP17	UNKNOWN	19.418
	HD2985	B3	T3	HSP17	UNKNOWN	19.436

NTC, No template control; Bio. Rep., Biological replications; Tech. Rep., Technical replication

Supplementary Table S4. Raw RT-qPCR data showing CT values of TaIRE1-6A gene in heat-sensitive (HD2329) and heat-tolerant (HD2985) wheat cultivars following heat stress treatment.

Treatment	Sample Name	Bio. Rep.	Tech. Rep.	Target Gene Name	Task	CT
Control	HD2329	B1	T1	ACTIN	UNKNOWN	20.962
	HD2329	B1	T2	ACTIN	UNKNOWN	20.591
	HD2329	B1	T3	ACTIN	UNKNOWN	20.490
	HD2329	B2	T1	ACTIN	UNKNOWN	20.436
	HD2329	B2	T2	ACTIN	UNKNOWN	19.753

	HD2329	B2	T3	ACTIN	UNKNOWN	19.577
	HD2329	B3	T1	ACTIN	UNKNOWN	21.741
	HD2329	B3	T2	ACTIN	UNKNOWN	20.478
	HD2329	B3	T3	ACTIN	UNKNOWN	20.183
	-	-	-	ACTIN	NTC	34.811
Control	HD2329	B1	T1	IRE1	UNKNOWN	27.238
	HD2329	B1	T2	IRE1	UNKNOWN	27.253
	HD2329	B1	T3	IRE1	UNKNOWN	27.124
	HD2329	B2	T1	IRE1	UNKNOWN	26.325
	HD2329	B2	T2	IRE1	UNKNOWN	26.146
	HD2329	B2	T3	IRE1	UNKNOWN	26.371
	HD2329	B3	T1	IRE1	UNKNOWN	26.576
	HD2329	B3	T2	IRE1	UNKNOWN	26.719
	HD2329	B3	T3	IRE1	UNKNOWN	26.645
	-	-	-	ACTIN	NTC	34.817
Heat Stress	HD2329	B1	T1	ACTIN	UNKNOWN	22.379
	HD2329	B1	T2	ACTIN	UNKNOWN	21.771
	HD2329	B1	T3	ACTIN	UNKNOWN	21.623
	HD2329	B2	T1	ACTIN	UNKNOWN	23.282
	HD2329	B2	T2	ACTIN	UNKNOWN	21.985
	HD2329	B2	T3	ACTIN	UNKNOWN	21.641
	HD2329	B3	T1	ACTIN	UNKNOWN	24.238
	HD2329	B3	T2	ACTIN	UNKNOWN	22.440
	HD2329	B3	T3	ACTIN	UNKNOWN	21.712
	-	-	-	ACTIN	NTC	Undetermined
Heat Stress	HD2329	B1	T1	IRE1	UNKNOWN	25.632
	HD2329	B1	T2	IRE1	UNKNOWN	25.558
	HD2329	B1	T3	IRE1	UNKNOWN	25.393
	HD2329	B2	T1	IRE1	UNKNOWN	25.775
	HD2329	B2	T2	IRE1	UNKNOWN	25.609
	HD2329	B2	T3	IRE1	UNKNOWN	25.837

	HD2329	B3	T1	IRE1	UNKNOWN	26.169
	HD2329	B3	T2	IRE1	UNKNOWN	26.324
	HD2329	B3	T3	IRE1	UNKNOWN	26.220
	-	-	-	IRE1	NTC	Undetermined
Control	HD2985	B1	T1	ACTIN	UNKNOWN	19.422
	HD2985	B1	T2	ACTIN	UNKNOWN	19.193
	HD2985	B1	T3	ACTIN	UNKNOWN	18.945
	HD2985	B2	T1	ACTIN	UNKNOWN	20.547
	HD2985	B2	T2	ACTIN	UNKNOWN	19.775
	HD2985	B2	T3	ACTIN	UNKNOWN	19.852
	HD2985	B3	T1	ACTIN	UNKNOWN	21.048
	HD2985	B3	T2	ACTIN	UNKNOWN	20.249
	HD2985	B3	T3	ACTIN	UNKNOWN	20.089
	-	-	-	ACTIN	NTC	34.811
Control	HD2985	B1	T1	IRE1	UNKNOWN	26.495
	HD2985	B1	T2	IRE1	UNKNOWN	26.409
	HD2985	B1	T3	IRE1	UNKNOWN	26.593
	HD2985	B2	T1	IRE1	UNKNOWN	26.323
	HD2985	B2	T2	IRE1	UNKNOWN	26.176
	HD2985	B2	T3	IRE1	UNKNOWN	26.067
	HD2985	B3	T1	IRE1	UNKNOWN	27.442
	HD2985	B3	T2	IRE1	UNKNOWN	27.368
	HD2985	B3	T3	IRE1	UNKNOWN	27.415
	-	-	-	IRE1	NTC	Undetermined
Heat Stress	HD2985	B1	T1	ACTIN	UNKNOWN	23.479
	HD2985	B1	T2	ACTIN	UNKNOWN	22.326
	HD2985	B1	T3	ACTIN	UNKNOWN	21.927
	HD2985	B2	T1	ACTIN	UNKNOWN	22.962
	HD2985	B2	T2	ACTIN	UNKNOWN	22.325
	HD2985	B2	T3	ACTIN	UNKNOWN	21.478
	HD2985	B3	T1	ACTIN	UNKNOWN	25.687

	HD2985	B3	T2	ACTIN	UNKNOWN	23.740
	HD2985	B3	T3	ACTIN	UNKNOWN	22.224
	-	-	-	ACTIN	NTC	Undetermined
Heat Stress	HD2985	B1	T1	IRE1	UNKNOWN	26.638
	HD2985	B1	T2	IRE1	UNKNOWN	26.460
	HD2985	B1	T3	IRE1	UNKNOWN	26.468
	HD2985	B2	T1	IRE1	UNKNOWN	25.304
	HD2985	B2	T2	IRE1	UNKNOWN	25.298
	HD2985	B2	T3	IRE1	UNKNOWN	25.266
	HD2985	B3	T1	IRE1	UNKNOWN	26.290
	HD2985	B3	T2	IRE1	UNKNOWN	25.764
	HD2985	B3	T3	IRE1	UNKNOWN	25.319
	-	-	-	IRE1	NTC	Undetermined

NTC, No template control; Bio. Rep., Biological replications; Tech. Rep., Technical replication

Supplementary Table S5. Raw RT-qPCR data showing CT values of TaIRE1-6A gene in heat-sensitive (HD2329) and heat-tolerant (HD2985) wheat cultivars after 1 and 6 hours of DTT treatment.

Treatment	Sample Name	Bio. Rep	Tech. Rep	Target Gene Name	Task	CT
Control	HD2329	B1	T1	ACTIN	UNKNOWN	21.984
	HD2329	B1	T2	ACTIN	UNKNOWN	21.662
	HD2329	B1	T3	ACTIN	UNKNOWN	21.589
	HD2329	B2	T1	ACTIN	UNKNOWN	21.391
	HD2329	B2	T2	ACTIN	UNKNOWN	21.084
	HD2329	B2	T3	ACTIN	UNKNOWN	20.974
	HD2329	B3	T1	ACTIN	UNKNOWN	21.471
	HD2329	B3	T2	ACTIN	UNKNOWN	21.432
	HD2329	B3	T3	ACTIN	UNKNOWN	21.285

	-	-	-	ACTIN	NTC	33.836
Control	HD2329	B1	T1	IRE1	UNKNOWN	30.448
	HD2329	B1	T2	IRE1	UNKNOWN	31.961
	HD2329	B1	T3	IRE1	UNKNOWN	31.206
	HD2329	B2	T1	IRE1	UNKNOWN	31.158
	HD2329	B2	T2	IRE1	UNKNOWN	32.177
	HD2329	B2	T3	IRE1	UNKNOWN	30.749
	HD2329	B3	T1	IRE1	UNKNOWN	31.574
	HD2329	B3	T2	IRE1	UNKNOWN	32.328
	HD2329	B3	T3	IRE1	UNKNOWN	31.853
	-	-	-	ACTIN	NTC	32.326
Control	HD2985	B1	T1	ACTIN	UNKNOWN	20.432
	HD2985	B1	T2	ACTIN	UNKNOWN	19.933
	HD2985	B1	T3	ACTIN	UNKNOWN	19.826
	HD2985	B2	T1	ACTIN	UNKNOWN	19.532
	HD2985	B2	T2	ACTIN	UNKNOWN	19.446
	HD2985	B2	T3	ACTIN	UNKNOWN	19.481
	HD2985	B3	T1	ACTIN	UNKNOWN	19.623
	HD2985	B3	T2	ACTIN	UNKNOWN	19.477
	HD2985	B3	T3	ACTIN	UNKNOWN	19.463
	-	-	-	ACTIN	NTC	33.161
Control	HD2985	B1	T1	IRE1	UNKNOWN	28.481
	HD2985	B1	T2	IRE1	UNKNOWN	28.516
	HD2985	B1	T3	IRE1	UNKNOWN	28.437
	HD2985	B2	T1	IRE1	UNKNOWN	27.735
	HD2985	B2	T2	IRE1	UNKNOWN	27.706
	HD2985	B2	T3	IRE1	UNKNOWN	27.661
	HD2985	B3	T1	IRE1	UNKNOWN	26.677
	HD2985	B3	T2	IRE1	UNKNOWN	26.582
	HD2985	B3	T3	IRE1	UNKNOWN	26.724
	-	-	-	IRE1	NTC	Undetermined

1 hr DTT	HD2329	B1	T1	ACTIN	UNKNOWN	19.545
	HD2329	B1	T2	ACTIN	UNKNOWN	19.368
	HD2329	B1	T3	ACTIN	UNKNOWN	19.352
	HD2329	B2	T1	ACTIN	UNKNOWN	18.744
	HD2329	B2	T2	ACTIN	UNKNOWN	18.700
	HD2329	B2	T3	ACTIN	UNKNOWN	18.711
	HD2329	B3	T1	ACTIN	UNKNOWN	18.454
	HD2329	B3	T2	ACTIN	UNKNOWN	18.291
	HD2329	B3	T3	ACTIN	UNKNOWN	18.384
	-	-	-	IRE1	NTC	Undetermined
1 hr DTT	HD2329	B1	T1	IRE1	UNKNOWN	27.585
	HD2329	B1	T2	IRE1	UNKNOWN	27.484
	HD2329	B1	T3	IRE1	UNKNOWN	27.330
	HD2329	B2	T1	IRE1	UNKNOWN	26.977
	HD2329	B2	T2	IRE1	UNKNOWN	27.026
	HD2329	B2	T3	IRE1	UNKNOWN	27.018
	HD2329	B3	T1	IRE1	UNKNOWN	25.984
	HD2329	B3	T2	IRE1	UNKNOWN	25.968
	HD2329	B3	T3	IRE1	UNKNOWN	26.024
	-	-	-	IRE1	NTC	Undetermined
1 hr DTT	HD2985	B1	T1	ACTIN	UNKNOWN	19.443
	HD2985	B1	T2	ACTIN	UNKNOWN	19.278
	HD2985	B1	T3	ACTIN	UNKNOWN	18.879
	HD2985	B2	T1	ACTIN	UNKNOWN	18.317
	HD2985	B2	T2	ACTIN	UNKNOWN	18.368
	HD2985	B2	T3	ACTIN	UNKNOWN	17.475
	HD2985	B3	T1	ACTIN	UNKNOWN	20.496
	HD2985	B3	T2	ACTIN	UNKNOWN	19.990
	HD2985	B3	T3	ACTIN	UNKNOWN	19.893
	HD2985	B1	T1	IRE1	UNKNOWN	27.304
	HD2985	B1	T2	IRE1	UNKNOWN	27.184

1 hr DTT	HD2985	B1	T3	IRE1	UNKNOWN	27.295
	HD2985	B2	T1	IRE1	UNKNOWN	24.808
	HD2985	B2	T2	IRE1	UNKNOWN	24.663
	HD2985	B2	T3	IRE1	UNKNOWN	24.717
	HD2985	B3	T1	IRE1	UNKNOWN	26.170
	HD2985	B3	T2	IRE1	UNKNOWN	26.654
	HD2985	B3	T3	IRE1	UNKNOWN	26.572
6 hr DTT	HD2329	B1	T1	ACTIN	UNKNOWN	20.599
	HD2329	B1	T2	ACTIN	UNKNOWN	20.734
	HD2329	B1	T3	ACTIN	UNKNOWN	20.210
	HD2329	B2	T1	ACTIN	UNKNOWN	21.677
	HD2329	B2	T2	ACTIN	UNKNOWN	21.734
	HD2329	B2	T3	ACTIN	UNKNOWN	20.769
	HD2329	B3	T1	ACTIN	UNKNOWN	24.563
	HD2329	B3	T2	ACTIN	UNKNOWN	24.505
	HD2329	B3	T3	ACTIN	UNKNOWN	24.526
6 hr DTT	HD2329	B1	T1	IRE1	UNKNOWN	28.220
	HD2329	B1	T2	IRE1	UNKNOWN	28.248
	HD2329	B1	T3	IRE1	UNKNOWN	28.192
	HD2329	B2	T1	IRE1	UNKNOWN	29.216
	HD2329	B2	T2	IRE1	UNKNOWN	29.272
	HD2329	B2	T3	IRE1	UNKNOWN	29.160
	HD2329	B3	T1	IRE1	UNKNOWN	32.532
	HD2329	B3	T2	IRE1	UNKNOWN	32.355
	HD2329	B3	T3	IRE1	UNKNOWN	31.988
6 hr DTT	HD2985	B1	T1	ACTIN	UNKNOWN	21.473
	HD2985	B1	T2	ACTIN	UNKNOWN	21.343
	HD2985	B1	T3	ACTIN	UNKNOWN	21.220
	HD2985	B2	T1	ACTIN	UNKNOWN	20.896
	HD2985	B2	T2	ACTIN	UNKNOWN	20.806
	HD2985	B2	T3	ACTIN	UNKNOWN	20.797

	HD2985	B3	T1	ACTIN	UNKNOWN	Undetermined
	HD2985	B3	T2	ACTIN	UNKNOWN	20.409
	HD2985	B3	T3	ACTIN	UNKNOWN	20.338
6 hr DTT	HD2985	B1	T1	IRE1	UNKNOWN	29.333
	HD2985	B1	T2	IRE1	UNKNOWN	29.346
	HD2985	B1	T3	IRE1	UNKNOWN	29.454
	HD2985	B2	T1	IRE1	UNKNOWN	27.504
	HD2985	B2	T2	IRE1	UNKNOWN	27.317
	HD2985	B2	T3	IRE1	UNKNOWN	27.253
	HD2985	B3	T1	IRE1	UNKNOWN	27.292
	HD2985	B3	T2	IRE1	UNKNOWN	27.570
	HD2985	B3	T3	IRE1	UNKNOWN	27.425
1 hr DTT	-	-	-	ACTIN	NTC	33.222
6 hr DTT	-	-	-	ACTIN	NTC	33.422
6 hr DTT	-	-	-	ACTIN	NTC	33.589
1 hr DTT	-	-	-	IRE1	NTC	Undetermined
6 hr DTT	-	-	-	IRE1	NTC	Undetermined
6 hr DTT	-	-	-	IRE1	NTC	Undetermined

NTC, No template control; Bio. Rep., Biological replications; Tech. Rep., Technical replication

Supplementary Table S6. List of bioinformatics tools and databases utilized in this research, including their names, URLs and access dates.

Bioinformatics Tools/Databases	Website	Date Accessed
UniProt	https://www.uniprot.org/	June 22, 2022
Pfam	http://pfam.xfam.org/	July 23, 2022
Ensembl Plants	https://plants.ensembl.org/index.html	November 23, 2023
iTOL v6	https://itol.embl.de/	November 28, 2023
TimeTree	http://www.timetree.org/	August 02, 2022
Gene Structure and Display Server 2.0 (GSDS)	https://gsds.gao-lab.org/	July 13, 2022
MEME) Software	https://meme-suite.org/meme/	August 13, 2022
PlantCARE	https://bioinformatics.psb.ugent.be/webtools/plantcare/html/	September 05, 2023
TBTools	https://github.com/CJ-Chen/TBtools/releases	Multiple times June 2022 to December 2023
Plant-mSubP	http://bioinfo.usu.edu/Plant-mSubP/	June 08, 2023
ShinyGO v0.741	http://bioinformatics.sdstate.edu/go74/	August 23, 2023
TMHMM Server, v2.0	https://services.healthtech.dtu.dk/services/TMHMM-2.0/	February 14, 2023
DOG 1.0	http://dog.biocuckoo.org/	October 14, 2023
Genevestigator	https://genevestigator.com/support/plantbiology/	September 13, 2022
BioMart	https://asia.ensembl.org/info/data/biomart/index.html	Multiple times June 2022 to December 2023