

Supplementary Information

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Figure S1. Full-length gel for RT-PCR analysis of barley transposons.

Figure S2. Full-length gel for RT-PCR analysis of barley actin gene.

Table S1. The list of FLcDNAs related to transposons

FLcDNA	Size of FLcDNA (bp)	Tissue type for mRNA extraction	Transposons	E-Value
AK372440	5757	malting seed	Karma-AB081316	2E-141
AK356167	5441	seedling shoot in normal or dark	Karma-AB081316	1E-134
AK354043	4771	unknown	Karma-AB081316	4E-129
AK365543	3217	seedling shoot and root in salt treatment or abscission	Karma-AB081316	8E-92
AK376426	4460	unknown	Karma-AB081316	3E-53
AK365531	2699	unknown	Karma-AB081316	7E-50
AK376284	3750	malting seed	Karma-AB081316	7E-44
AK354591	3320	seedling shoot in normal or dark	Karma-AB081316	3E-37
AK363514	4238	seedling shoot and root on Aluminium stress	Karma-AB081316	2E-33
AK363820	2483	seedling shoot and root on Aluminium stress	Karma-AB081316	3E-22
AK357680	5883	unknown	Karma-AB081316	2E-20
AK372062	4347	seedling shoot and root with JA treatment	Karma-AB081316	1E-19
AK366636	3962	seedling shoot and root with ABA treatment	Karma-AB081316	2E-16
AK374558	4099	malting seed	Karma-AB081316	1E-14
AK249188	2006	mixture of seed, leaf, spike, stem and root	Karma-AB081316	3E-14
AK249315	2864	mixture of seed, leaf, spike, stem and root	Karma-AB081316	5E-14
AK356070	2233	seedling shoot in normal or dark	Karma-AB081316	3E-13
AK248406	4451	mixture of seed, leaf, spike, stem and root	Karma-AB081316	1E-11
AK356634	3397	seedling shoot in normal or dark	Karma-AB081316	4E-11
AK364073	2819	seedling shoot and root with JA treatment	Karma-AB081316	4E-11
AK377065	3964	malting seed	Karma-AB081316	6E-11
AK363651	1459	seedling shoot and root in salt treatment or abscission	Karma-AB081316	9E-11
AK370534	2597	seedling shoot and root with JA treatment	hAT	7E-97
AK357459	2720	flag leaf at vegetative stage	hAT	1E-89
AK251912	2614	mixture of seed, leaf, spike, stem and root	hAT	1E-85
AK372382	5232	young panicle	hAT	1E-78
AK370171	3013	seedling shoot and root with JA treatment	hAT	2E-41
AK355471	1364	flag leaf at vegetative stage	hAT	3E-20
AK374079	1243	malting seed	hAT	2E-18
AK366057	2840	seedling shoot and root with ABA treatment	hAT	9E-18
AK365622	2866	seedling shoot and root with JA treatment	hAT	7E-14
AK370562	1967	seedling shoot and root with JA treatment	hAT	4E-13
AK251670	4605	mixture of seed, leaf, spike, stem and root	MudrA	6E-82
AK366163	2661	seedling shoot and root on Aluminium stress	MudrA	5E-61
AK360693	2780	seedling shoot in normal or dark	MudrA	7E-61
AK365336	2760	unknown	MudrA	1E-59
AK374389	2927	adult flower	MudrA	2E-59
AK368677	3155	seedling shoot and root with JA treatment	MudrA	7E-50
AK376919	1887	malting seed	MudrA	5E-27
AK367806	2522	unknown	MudrA	6E-40
AK370391	1846	seedling shoot and root on Aluminium stress	Copia	3E-72
AK362345	1712	seedling shoot and root with ABA treatment	Copia	2E-45
AK375598	3057	adult flower	Copia	1E-51
AK375954	1764	young panicle	Copia	1E-26
AK353758	1441	flag leaf at vegetative stage	Copia	1E-30
AK358614	2555	germinated shoot	Copia	1E-12
AK376516	801	young panicle	Copia	3E-17
AK373117	4525	malting seed	Gypsy	3E-64
AK370921	5158	seedling shoot and root on Aluminium stress	Gypsy	1E-61

AK375533	3788	early flower	Gypsy	5E-55
AK374145	2316	adult flower	Gypsy	4E-51
AK367250	2596	seedling shoot and root in salt treatment or abscission	Gypsy	3E-45
AK368961	2925	seedling shoot and root on Aluminium stress	Gypsy	4E-40
AK376541	3409	malting seed	Gypsy	7E-34
AK250850	3351	mixture of seed, leaf, spike, stem and root	Gypsy	7E-28
AK366907	2957	seedling shoot and root in salt treatment or abscission	Gypsy	2E-23
AK357593	1252	germinated shoot	Gypsy	7E-19
AK371019	2548	seedling shoot and root on Aluminium stress	Gypsy	1E-11
AK376736	3972	malting seed	Pong	2E-49
AK376742	3762	young panicle	Pong	1E-46
AK364564	3188	seedling shoot and root in salt treatment or abscission	Pong	6E-24
AK360890	2229	flag leaf at vegetative stage	Helitron-Os	5E-16
AK373927	1853	malting seed	Helitron-Os	2E-15
AK376804	1826	malting seed	Helitron-Os	5E-15
AK368190	2576	seedling shoot and root with JA treatment	Helitron-Os	3E-14
AK372292	5154	seedling shoot and root with ABA treatment	ENSPM-6_ZM	6E-50
AK363092	5813	seedling shoot and root with ABA treatment	ENSPM-6_ZM	3E-44
AK373539	912	early flower	ENSPM-6_ZM	5E-19
AK373166	1062	young panicle	ENSPM-6_ZM	6E-18
AK248767	1823	mixture of seed, leaf, spike, stem and root	ENSPM-6_ZM	5E-11
AK376371	2237	early flower	mariner-CC	3E-31

Table S2. Seven intact barley transposons identified in this study

Name	Location	Target site duplication	FLcDNAs (Sequence identity to transposon)
Hvu_Copia1	NC_058518 (17528812-17533760)	ACCTG	AK358614 (99%)
Hvu_Gypsy1	NC_058523 (259571451- 259583492)	CCCCC/CCCAC	AK370921 (99%)
Hvu_LINE1	NC_058524 (530795908-530789076)	CACATTGGTACCAA	AK372440 (99%)
Hvu_LINE2	NC_058522 (403793638-403800375)	CAACCGAAGTTCC	AK356167 (99%)
Hvu_LINE3	NC_058523 (558013545-558008561)	CTGTTGTGTTTT	AK354043 (99%)
Hvu_CACTA2	NC_058518 (320338038-320328455)	ATG/AGG	AK363092 (97%)
Hvu_Mariner#	NC_058524 (594138754-594144988)	TA	AK376371 (100%)

Table S3. Summary of primers used for RT-PCR analysis

Transposon	Forward primer (5' to 3')	Reverse primer (5' to 3')
Hvu_Gypsy1	CAATACAGCCCTTCAAACCAA	GATTGACGCGCTCTCTATGTC
Hvu_LINE1	CGATCATGTGTTGGAACGTC	GTGGGAGGTTACGGTAGCAA
Hvu_LINE2	GCGTGCATAGCCTCCTAGTC	AACCTTCGCGAATAACATGG
Hvu_LINE3	CCGACGATGTGATGTTGTTC	CTGCTTCAGGGTTTCTTCG
Hvu_CACTA2	TATTCGCCAATAATGTTTGTT	TGGGTTTTTACTTCATCGTAA
Hvu_Mariner	CTGGAAAGTGACCCTAGAAAG	CATCTTCTCTCCTCTCTCCTC

Table S4. Genome-wide transposon comparisons between the 'Morex' genome and other three barley genomes

Complete transposons in the Morex genome				Distributions in Goden Promise	Distributions in Lasa Goumang	Distributions in BIK-04-12
Chromosome	Start	End	Transposon	P: presence; a: absence	P: presence; a: absence	P: presence; a: absence
1H	309844407	309863316	Hvu LINE2	p	p	p
3H	602481585	602488381	Hvu LINE2	p	p	p
4H	17197483	17204196	Hvu LINE2	p	p	p
4H	260023693	260030412	Hvu LINE2	p	p	p
4H	437686813	437693681	Hvu LINE2	p	p	p
5H	59377972	59384695	Hvu LINE2	p	p	p
5H	403793638	403800375	Hvu LINE2	p	p	p
1H	171143317	171149935	Hvu LINE3	?	p	p
1H	355945460	355951944	Hvu LINE3	p	p	p
1H	510942582	510949160	Hvu LINE3	p	p	p
2H	75899288	75905812	Hvu LINE3	p	p	p
2H	114606392	114612986	Hvu LINE3	p	p	p
2H	163879858	163886490	Hvu LINE3	p	p	p
2H	552394890	552401409	Hvu LINE3	p	p	p
3H	239110369	239117047	Hvu LINE3	p	p	p
3H	446476587	446482312	Hvu LINE3	p	p	p
3H	452403435	452409963	Hvu LINE3	p	p	p
4H	9990995	9997587	Hvu LINE3	p	p	a
4H	97443163	97449363	Hvu LINE3	p	p	p
4H	321266949	321272923	Hvu LINE3	p	p	p
4H	525572333	525578912	Hvu LINE3	a	p	a
4H	536004470	536010955	Hvu LINE3	p	p	p
5H	38528988	38535643	Hvu LINE3	p	a	p
5H	130102297	130107394	Hvu LINE3	p	p	p
5H	230334260	230339857	Hvu LINE3	p	p	p
5H	354880020	354886302	Hvu LINE3	p	p	p
6H	17790135	17795216	Hvu LINE3	p	?	p
6H	40106704	40113137	Hvu LINE3	p	p	p
6H	101811684	101816090	Hvu LINE3	p	p	p
6H	101821640	101823412	Hvu LINE3	p	p	p
6H	102715033	102721706	Hvu LINE3	p	p	p
6H	170799270	170805905	Hvu LINE3	p	p	p
6H	262353640	262360246	Hvu LINE3	p	p	p
6H	281126061	281132381	Hvu LINE3	p	p	p
6H	492312397	492318808	Hvu LINE3	p	p	p
6H	558008561	558013545	Hvu LINE3	p	a	p
7H	524754007	524760627	Hvu LINE3	p	a	a
7H	590503300	590509914	Hvu LINE3	p	p	p
5H	375591268	375598029	Hvu LINE1	?	p	a
6H	316513894	316520702	Hvu LINE1	p	p	p
7H	439825347	439832141	Hvu LINE1	p	p	p
7H	530789076	530795908	Hvu LINE1	a	p	p
6H	259571451	259583705	Hvu Gypsy1	p	p	p
1H	320328455	320338038	Hvu CACTA2	?	?	?
3H	579021343	579044428	Hvu CACTA2	?	?	?
2H	52277554	52323535	Hvu CACTA2	?	?	?
1H	9896016	9896306	Hvu Mariner	p	p	p
1H	24028919	24029208	Hvu Mariner	p	p	p
1H	167266599	167266888	Hvu Mariner	?	?	?
1H	231890183	231890463	Hvu Mariner	p	p	p
1H	253898977	253899266	Hvu Mariner	?	?	?
1H	256966147	256966437	Hvu Mariner	p	p	p
1H	283262758	283263048	Hvu Mariner	p	p	p
1H	407186484	407187105	Hvu Mariner	p	p	p
1H	409604413	409604704	Hvu Mariner	p	p	p
1H	456802705	456802994	Hvu Mariner	p	p	p
1H	476068598	476068886	Hvu Mariner	p	p	p
1H	488344399	488344689	Hvu Mariner	p	p	?
1H	512626967	512627253	Hvu Mariner	p	p	?
2H	2280620	2280911	Hvu Mariner	p	?	p
2H	4829879	4830170	Hvu Mariner	?	?	?
2H	19087776	19088067	Hvu Mariner	p	?	p
2H	34802410	34802701	Hvu Mariner	p	a	a
2H	55214428	55214719	Hvu Mariner	p	?	p
2H	63943194	63943485	Hvu Mariner	p	p	p
2H	130860135	130860424	Hvu Mariner	p	p	p
2H	132556833	132557124	Hvu Mariner	?	?	?
2H	172955654	172957938	Hvu Mariner	p	p	p
2H	180627219	180629506	Hvu Mariner	p	p	p
2H	222083611	222087337	Hvu Mariner	?	?	?
2H	277018467	277021438	Hvu Mariner	p	p	p
2H	282131346	282131633	Hvu Mariner	p	p	p
2H	395671441	395671733	Hvu Mariner	p	p	p
2H	432271982	432276585	Hvu Mariner	p	p	?

2H	450789223	450790377	Hvu Mariner	a	?	a
2H	507577985	507578275	Hvu Mariner	p	p	p
2H	508630018	508630309	Hvu Mariner	?	?	?
2H	511810085	511810376	Hvu Mariner	p	p	p
2H	563380506	563380797	Hvu Mariner	p	p	p
2H	565964831	565969195	Hvu Mariner	?	?	a
2H	567833432	567833723	Hvu Mariner	p	p	p
2H	583099723	583100014	Hvu Mariner	p	p	p
2H	584874148	584874439	Hvu Mariner	p	p	p
2H	599546736	599547027	Hvu Mariner	p	p	p
2H	600592564	600592959	Hvu Mariner	?	?	?
2H	611461194	611461485	Hvu Mariner	p	p	?
2H	612870461	612870752	Hvu Mariner	p	p	p
2H	613485486	613485776	Hvu Mariner	p	p	p
2H	619622251	619622542	Hvu Mariner	p	p	p
2H	636848116	636848404	Hvu Mariner	p	p	p
2H	638565220	638565510	Hvu Mariner	p	p	p
2H	643299904	643300193	Hvu Mariner	p	?	p
2H	646283527	646283818	Hvu Mariner	p	p	p
3H	5424610	5424977	Hvu Mariner	p	?	p
3H	14024319	14027144	Hvu Mariner	p	p	p
3H	23437953	23438242	Hvu Mariner	?	?	?
3H	137490381	137490673	Hvu Mariner	p	p	p
3H	155353654	155355042	Hvu Mariner	p	p	p
3H	445980551	445980842	Hvu Mariner	p	p	p
3H	487857072	487858350	Hvu Mariner	p	p	p
3H	502632178	502632469	Hvu Mariner	?	p	?
3H	511562408	511562699	Hvu Mariner	p	p	?
3H	523074104	523074502	Hvu Mariner	p	?	?
3H	529455651	529455941	Hvu Mariner	?	p	?
3H	548171429	548171720	Hvu Mariner	p	p	p
3H	555322919	555323316	Hvu Mariner	a	a	a
3H	561061219	561061508	Hvu Mariner	p	p	p
3H	561394327	561394696	Hvu Mariner	?	p	?
3H	565616716	565617005	Hvu Mariner	p	p	p
3H	595292113	595292406	Hvu Mariner	?	?	?
4H	24599428	24599718	Hvu Mariner	p	?	?
4H	26826416	26826706	Hvu Mariner	p	p	p
4H	41761789	41762078	Hvu Mariner	?	?	?
4H	97522372	97522772	Hvu Mariner	?	?	?
4H	100213458	100213748	Hvu Mariner	p	p	p
4H	161207113	161207422	Hvu Mariner	p	p	p
4H	219222437	219222726	Hvu Mariner	p	p	p
4H	253893232	253893522	Hvu Mariner	?	?	?
4H	321755818	321756107	Hvu Mariner	p	p	p
4H	381751603	381751894	Hvu Mariner	?	?	?
4H	430743229	430747062	Hvu Mariner	p	p	p
4H	483647398	483647689	Hvu Mariner	p	p	p
4H	495244761	495245052	Hvu Mariner	p	p	p
4H	504707047	504711662	Hvu Mariner	p	p	p
4H	522389719	522390009	Hvu Mariner	p	p	p
4H	542724302	542724591	Hvu Mariner	?	?	?
4H	549537977	549538266	Hvu Mariner	?	p	?
4H	560927586	560927877	Hvu Mariner	p	p	p
4H	574403961	574407327	Hvu Mariner	p	p	p
4H	581175448	581175528	Hvu Mariner	p	a	p
4H	582271120	582271417	Hvu Mariner	p	p	p
4H	602232565	602232855	Hvu Mariner	p	p	p
4H	602507556	602507847	Hvu Mariner	p	p	p
4H	608761850	608762139	Hvu Mariner	p	?	?
5H	8973267	8973559	Hvu Mariner	p	p	p
5H	71713018	71713308	Hvu Mariner	p	?	p
5H	126453461	126453873	Hvu Mariner	?	?	?
5H	190672295	190676430	Hvu Mariner	p	p	p
5H	248833829	248834120	Hvu Mariner	?	?	?
5H	305829851	305830142	Hvu Mariner	p	p	?
5H	345163549	345167875	Hvu Mariner	p	p	p
5H	345168095	345169430	Hvu Mariner	p	p	p
5H	349997599	350001680	Hvu Mariner	p	p	?
5H	401885803	401887191	Hvu Mariner	?	?	?
5H	437890757	437891046	Hvu Mariner	p	a	p
5H	454200607	454200898	Hvu Mariner	p	a	a
5H	467955146	467955517	Hvu Mariner	p	p	p
5H	498955173	498955463	Hvu Mariner	p	p	p
5H	540141407	540142527	Hvu Mariner	p	p	p
5H	567589426	567589717	Hvu Mariner	?	p	p
5H	569177072	569177553	Hvu Mariner	p	p	?

5H	571153096	571153387	Hvu Mariner	p	a	p
5H	581599896	581600265	Hvu Mariner	p	?	?
5H	586791238	586791529	Hvu Mariner	p	p	?
6H	15287510	15287877	Hvu Mariner	p	p	p
6H	16084677	16084968	Hvu Mariner	p	p	?
6H	22603564	22603855	Hvu Mariner	p	p	p
6H	44348180	44348468	Hvu Mariner	?	?	?
6H	45624645	45624992	Hvu Mariner	p	p	p
6H	111048818	111052584	Hvu Mariner	p	p	p
6H	151813028	151813314	Hvu Mariner	p	p	p
6H	373490334	373490625	Hvu Mariner	p	p	p
6H	402888693	402905335	Hvu Mariner	?	?	?
6H	495142879	495143170	Hvu Mariner	?	?	?
6H	514395760	514396118	Hvu Mariner	p	p	p
6H	530593641	530593932	Hvu Mariner	p	p	p
6H	531885773	531886073	Hvu Mariner	p	p	p
6H	556084259	556084548	Hvu Mariner	?	?	p
7H	6894556	6894845	Hvu Mariner	?	?	a
7H	9490156	9490446	Hvu Mariner	p	p	p
7H	12446521	12446811	Hvu Mariner	?	?	?
7H	12447372	12447663	Hvu Mariner	?	?	?
7H	17937672	17937964	Hvu Mariner	p	p	?
7H	78561733	78562024	Hvu Mariner	?	p	p
7H	85099722	85100013	Hvu Mariner	p	p	p
7H	132469567	132469858	Hvu Mariner	p	?	p
7H	164499227	164499516	Hvu Mariner	p	p	p
7H	222796464	222796905	Hvu Mariner	p	p	p
7H	395958786	395959078	Hvu Mariner	?	?	?
7H	449921017	449921309	Hvu Mariner	p	p	p
7H	451930821	451934800	Hvu Mariner	?	?	?
7H	489997131	489997529	Hvu Mariner	p	p	p
7H	524372772	524373062	Hvu Mariner	p	p	p
7H	564139716	564140004	Hvu Mariner	p	p	p
7H	586470302	586470593	Hvu Mariner	p	?	?
7H	594138754	594144988	Hvu Mariner	?	?	?
7H	597161082	597161372	Hvu Mariner	?	?	?
7H	598841338	598841766	Hvu Mariner	p	p	p
7H	601023636	601023926	Hvu Mariner	p	p	p
7H	620445694	620445985	Hvu Mariner	p	p	p

Table S5. The list of annotated barley genes which transcripts showed significant sequence identity to the six identified transposons

Transposons	Annotated genes	Functions	Targeted mRNA sizes (bp)	E-Values
Hvu LINE1	HORVU.MOREX.r3.1HG0024070.1	D-3-phosphoglycerate dehydrogenase	289	1.4E-116
Hvu LINE1	HORVU.MOREX.r3.1HG0027880.1	D-3-phosphoglycerate dehydrogenase	1258	7.56E-63
Hvu LINE1	HORVU.MOREX.r3.1HG0032170.1	Glycosyl hydrolases family 8	307	4E-35
Hvu LINE1	HORVU.MOREX.r3.1HG0042400.1	D-3-phosphoglycerate dehydrogenase	1169	0
Hvu LINE1	HORVU.MOREX.r3.1HG0046810.1	D-3-phosphoglycerate dehydrogenase	630	0
Hvu LINE1	HORVU.MOREX.r3.1HG0052910.1	D-3-phosphoglycerate dehydrogenase	950	0
Hvu LINE1	HORVU.MOREX.r3.1HG0053080.1	D-3-phosphoglycerate dehydrogenase	1040	8E-164
Hvu LINE1*	HORVU.MOREX.r3.1HG0056110.1	cortical cell-delineating protein-like	161	1.05E-16
Hvu LINE1	HORVU.MOREX.r3.2HG0100140.1	D-3-phosphoglycerate dehydrogenase	1518	2E-114
Hvu_CACTA2*	HORVU.MOREX.r3.2HG0116760.1	DEAD-box ATP-dependent RNA helicase 10	51	7.17E-08
Hvu LINE1	HORVU.MOREX.r3.2HG0135930.1	Histidyl-tRNA synthetase	296	6.63E-51
Hvu LINE1	HORVU.MOREX.r3.2HG0178070.1	D-3-phosphoglycerate dehydrogenase	619	3.92E-60
Hvu LINE1*	HORVU.MOREX.r3.2HG0178080.2	cortical cell-delineating protein-like	86	6.64E-13
Hvu LINE1	HORVU.MOREX.r3.2HG0194390.1	D-3-phosphoglycerate dehydrogenase	290	2.31E-50
Hvu LINE1	HORVU.MOREX.r3.3HG0227740.1	D-3-phosphoglycerate dehydrogenase	730	6.2E-140
Hvu LINE1	HORVU.MOREX.r3.3HG0241840.1	D-3-phosphoglycerate dehydrogenase	420	2.03E-95
Hvu LINE1	HORVU.MOREX.r3.3HG0252550.1	D-3-phosphoglycerate dehydrogenase	1022	1.9E-146
Hvu LINE1	HORVU.MOREX.r3.3HG0258980.1	D-3-phosphoglycerate dehydrogenase	687	6.21E-64
Hvu LINE1	HORVU.MOREX.r3.3HG0270850.1	D-3-phosphoglycerate dehydrogenase	813	0
Hvu LINE1	HORVU.MOREX.r3.3HG0274120.1	D-3-phosphoglycerate dehydrogenase	1939	0
Hvu LINE3*	HORVU.MOREX.r3.3HG0291190.1	isopentenyl phosphate kinase	77	2.06E-11
Hvu LINE1	HORVU.MOREX.r3.4HG0351810.1	D-3-phosphoglycerate dehydrogenase	583	4.46E-91
Hvu LINE1	HORVU.MOREX.r3.4HG0352640.1	D-3-phosphoglycerate dehydrogenase	1345	1.3E-167
Hvu LINE2	HORVU.MOREX.r3.4HG0367520.1	Serine/threonine-protein kinase SMG1	891	0
Hvu LINE1	HORVU.MOREX.r3.4HG0372510.1	D-3-phosphoglycerate dehydrogenase	197	8.63E-37
Hvu LINE3	HORVU.MOREX.r3.4HG0376340.1	putative ubiquitin-like-specific protease 1B	51	3.05E-09
Hvu_CACTA2	HORVU.MOREX.r3.4HG0391140.1	chorismate synthase 2, chloroplastic	68	7.17E-08
Hvu LINE1	HORVU.MOREX.r3.5HG0445060.1	D-3-phosphoglycerate dehydrogenase	682	0
Hvu Gypsy1*	HORVU.MOREX.r3.5HG0465690.1	probable phytol kinase 2	87	1.43E-11
Hvu LINE1	HORVU.MOREX.r3.5HG0470520.1	D-3-phosphoglycerate dehydrogenase	508	1.1E-111
Hvu Mariner *	HORVU.MOREX.r3.5HG0473680.1	probable protein phosphatase 2C 68	37	3.31E-08
Hvu LINE1	HORVU.MOREX.r3.5HG0474220.1	D-3-phosphoglycerate dehydrogenase	294	3.67E-54
Hvu Gypsy1*	HORVU.MOREX.r3.5HG0475900.2	disease resistance protein RPM1-like	60	6.07E-10
Hvu LINE3*	HORVU.MOREX.r3.5HG0504530.1	protein ELC-like	51	0.000000453
Hvu Gypsy1	HORVU.MOREX.r3.5HG0514590.1	disease resistance protein RGA5-like	65	9.01E-08
Hvu LINE1	HORVU.MOREX.r3.6HG0544570.1	D-3-phosphoglycerate dehydrogenase	963	0
Hvu LINE2*	HORVU.MOREX.r3.6HG0582910.1	protein CbxX	48	0.000000614
Hvu LINE1	HORVU.MOREX.r3.6HG0598480.1	D-3-phosphoglycerate dehydrogenase	1782	7E-171
Hvu LINE1	HORVU.MOREX.r3.6HG0599980.1	D-3-phosphoglycerate dehydrogenase	618	1.28E-53
Hvu_CACTA2	HORVU.MOREX.r3.6HG0603790.1	SPX domain-containing membrane protein OsI_08463	66	3.96E-11
Hvu LINE1	HORVU.MOREX.r3.6HG0603890.1	D-3-phosphoglycerate dehydrogenase	275	2.82E-49
Hvu LINE1	HORVU.MOREX.r3.6HG0619970.1	D-3-phosphoglycerate dehydrogenase	419	2.2E-101
Hvu LINE1	HORVU.MOREX.r3.7HG0657440.1	D-3-phosphoglycerate dehydrogenase	1342	0
Hvu LINE1	HORVU.MOREX.r3.7HG0699820.1	D-3-phosphoglycerate dehydrogenase	974	8E-164
Hvu LINE1	HORVU.MOREX.r3.7HG0700120.1	D-3-phosphoglycerate dehydrogenase	289	5.81E-58
Hvu LINE1	HORVU.MOREX.r3.7HG0720430.1	F-box/LRR-repeat protein 13-like	77	2.32E-31
Hvu LINE1	HORVU.MOREX.r3.7HG0684520.1	D-3-phosphoglycerate dehydrogenase	1924	0

Note: * indicated that transposons served as the UTRs of the annotated genes, other transposons served as the CDSs of the genes.

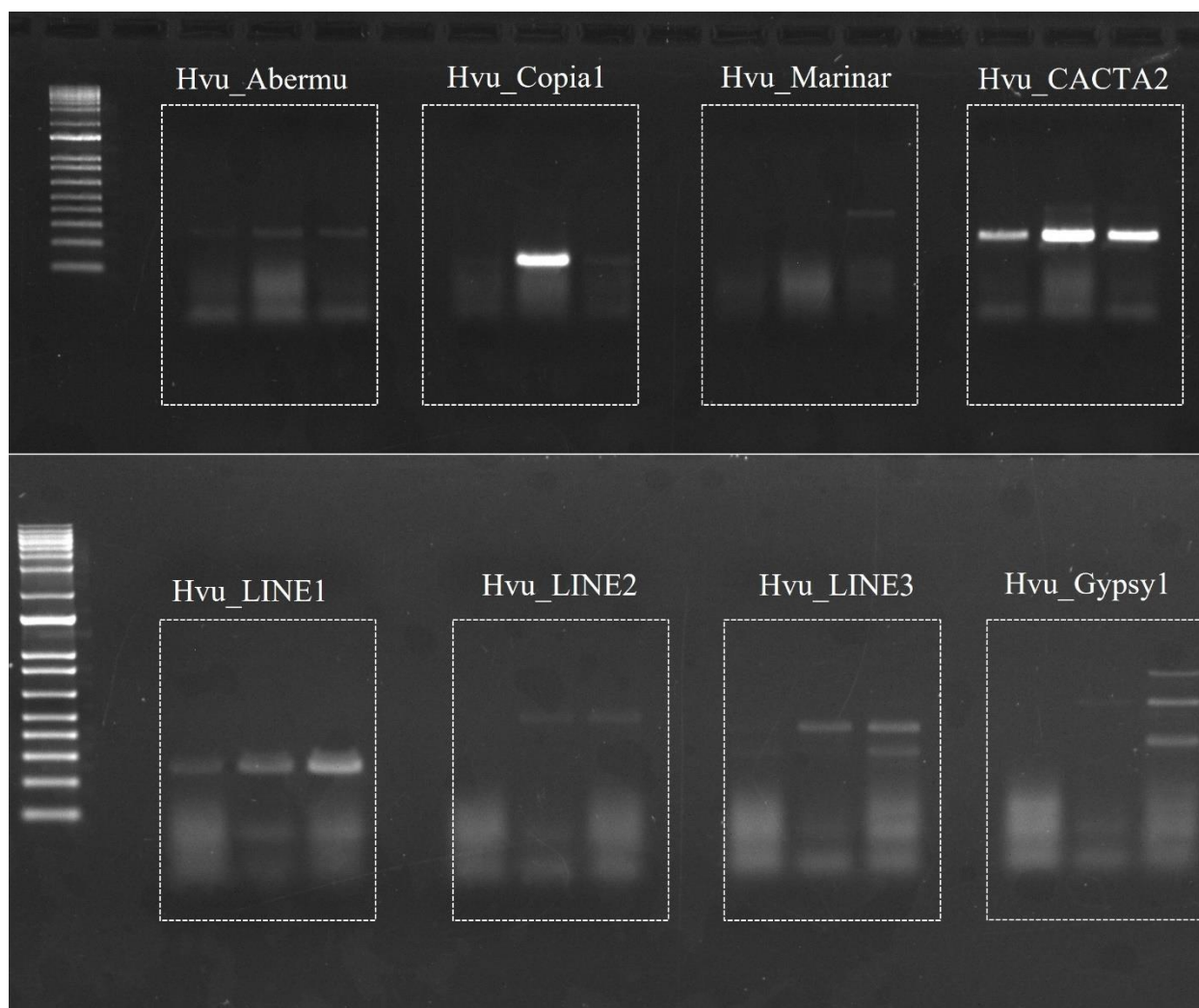


Figure S1 Full-length gel for RT-PCR analysis of eight transposons in barley. For each transposon, three types of tissues were collected, leaves, shoots and roots (from left to right).

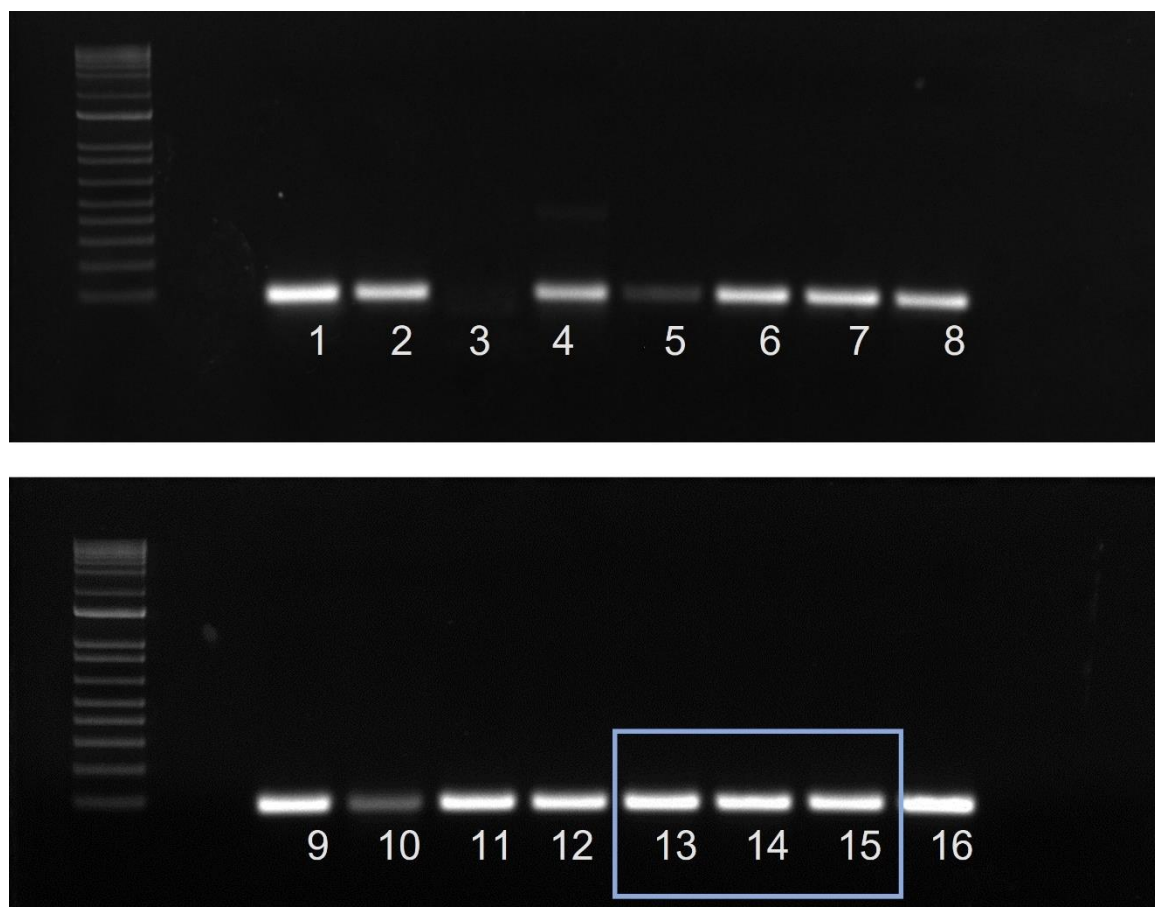


Figure S2 Full-length gel for RT-PCR analysis of actin gene in barley. The samples of 13-15 represent the cDNA from leaves, shoots and roots of 'Morex' which were then used to validate the expression of transposons.