

## **Electrophysiological Analysis of Rice OsHKT1;1 Variants**

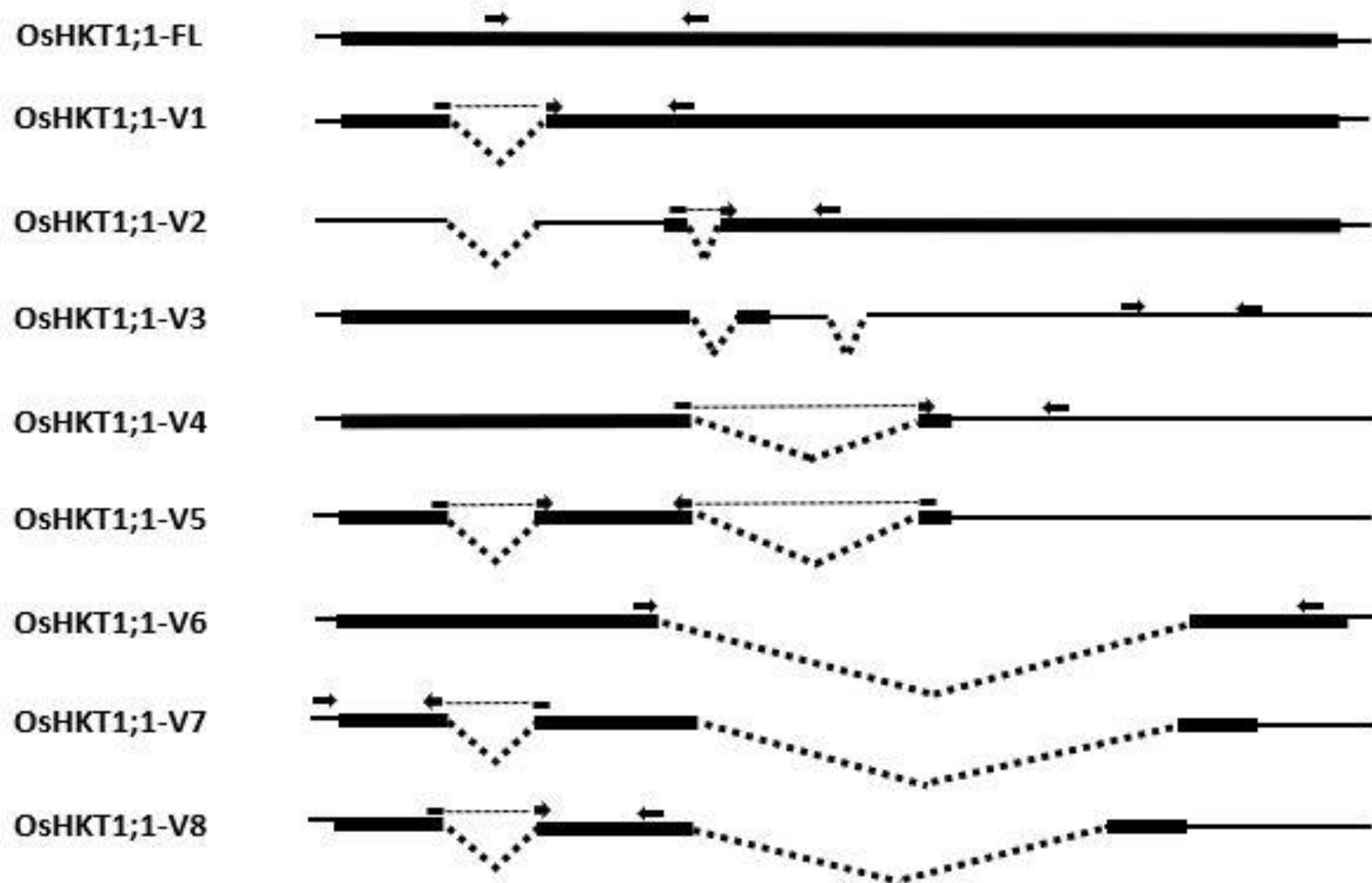
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**Supplementary Materials:** Table S1: Gene-specific primer pairs used for the cloning and in the real-time PCR experiments, Figure S1: Specific primer position of OsHKT1;1-FL and its eight variant for qPCR assay, Figure S2: Nucleotide sequence alignment of Pokkali OsHKT1;1 genomic DNA and full-length cDNA, Figure S3: Nucleotide sequence alignment of OsHKT1;1-FL and its eight variant, Figure S4; Protein sequence alignment of OsHKT1;1-FL and its eight variant, Figure S5: Expression analyzed with RT-PCR.

Supplementary Table S1.

Gene-specific primer pairs used for the cloning and in the real-time PCR experiments.

	5' → 3'	For full-length cloning	For RT-PCR and real-time RT-PCR
OsHKT1;1-FL	Forward	GTTGAAGAATGCATCCACCAAG	
	Reverse	CTCATTTTCAGGATGAACTCCTTG	
OsHKT1;1-FL	Forward		CCCTTTGGTAGTTCAGCTCGTTT
	Reverse		GATGACAGAACTGGAAATGACAG
OsHKT1;1-V1	Forward		AGATGTGTGAATCTCAAGCCCCAG
	Reverse		ATAACCTGTCACTATGCGAACCAA
OsHKT1;1-V2	Forward		CGCAAAACCAGATGCAAGAAATG
	Reverse		CCTCACATGCAAATGTTTGTAGCC
OsHKT1;1-V3	Forward		GCTACAAACATTTGCATGTACCTTCC
	Reverse		AACTTCTGGCAACTGTATCCTAGTG
OsHKT1;1-V4	Forward		AAACCAGGTACCTTCCTTCCGAT
	Reverse		GGCAACTGTATCCTAGTGAGTAGC
OsHKT1;1-V5	Forward		CCAGATGTGTGAATCTCAAGCCCC
	Reverse		CATCGGAAGGAAGGTACCTGGTTTT
OsHKT1;1-V6	Forward		ATGCTTCCTACGGGTTTCGTCCGGCAGGT
	Reverse		TTATTAGGAGCAGATACGAATGGC
OsHKT1;1-V7	Forward		CCCTCACTAAAGGGAACAAAAGC
	Reverse		GGGGCTTGAGATTCACACATCTG
OsHKT1;1-V8	Forward		GTCGCAAAACCAGAAAGGAAGTCAA
	Reverse		GGATAACTATCAGCTTACCCTCCTC
Actin	Forward		CTAGCCTCACTCAGCACTTT
	Reverse		CGTGGAGATCAGAAGCAC



**Supplementary Figure S1.**

Specific primer position of OsHKT1;1-FL and its eight variant for qPCR assay. Right arrows indicate forward primers, and left arrows indicate reverse primer.

Pokkali OsHKT1;1 Genomic DNA	0	-----	0
OsHKT1;1-FL	1	GGGCCCCCTCGAGTGCACGGTATCGATAAGCTTGGCTTCTCTTTTTCGAGAAGCTCAGA	60
Pokkali OsHKT1;1 Genomic DNA	1	-----	8
OsHKT1;1-FL	61	ATAAAGCGTCAACTTTGGCAGAACCATGCATCCACCAAGTTAGTGTAGATACCTTGAA	120
Pokkali OsHKT1;1 Genomic DNA	9	CGGTATCAA-CTATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGTGCTTCGGAT	67
OsHKT1;1-FL	121	GCGTATCAAACATAACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGTGCTTCGGAT	180
Pokkali OsHKT1;1 Genomic DNA	68	CTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCCATGAAGCTCATTCCAGAGC	127
OsHKT1;1-FL	181	CTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCCATGAAGCTCATTCCAGAGC	240
Pokkali OsHKT1;1 Genomic DNA	128	CAGATGTGTGGCAAGTCTGTCAAACAATCTTACAGTTTCTGGTTTGCAAAGTAACCC	187
OsHKT1;1-FL	241	CAGATGTGTGGCAAGTCTGTCAAACAATCTTACAGTTTCTGGTTTGCAAAGTAACCC	300
Pokkali OsHKT1;1 Genomic DNA	188	TTTGGTAGTTCAGCTCGTTTACTTTTGTGATAATCTCATTGCTGGTTTCTTGTCTGAA	247
OsHKT1;1-FL	301	TTTGGTAGTTCAGCTCGTTTACTTTTGTGATAATCTCATTGCTGGTTTCTTGTCTGAA	360
Pokkali OsHKT1;1 Genomic DNA	248	GAATCTCAAGCCCCAGGGTAAGCCAGGTCCAAGGATTTGGACCTGTTGTTACCTCTGT	307
OsHKT1;1-FL	361	GAATCTCAAGCCCCAGGGTAAGCCAGGTCCAAGGATTTGGACCTGTTGTTACCTCTGT	420
Pokkali OsHKT1;1 Genomic DNA	308	GTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATCTGACAGGCA	367
OsHKT1;1-FL	421	GTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATCTGACAGGCA	480
Pokkali OsHKT1;1 Genomic DNA	368	ACTCTGGGTTCTGATCCTTCTGATGCTAATGGGAGGAGAGTGTTCACATCAATGCTAGG	427
OsHKT1;1-FL	481	ACTCTGGGTTCTGATCCTTCTGATGCTAATGGGAGGAGAGTGTTCACATCAATGCTAGG	540
Pokkali OsHKT1;1 Genomic DNA	428	GCTCTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAGTTACCTTC	487
OsHKT1;1-FL	541	GCTCTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAGTTACCTTC	600
Pokkali OsHKT1;1 Genomic DNA	488	AATCAGCTTGGACATTGAATCCAACAGTCTCCGAAACAATGGGGATCACAATAACGGA	547
OsHKT1;1-FL	601	AATCAGCTTGGACATTGAATCCAACAGTCTCCGAAACAATGGGGATCACAATAACGGA	660
Pokkali OsHKT1;1 Genomic DNA	548	ATGTGGCCAATCAGAAGAACTATGTGCAAAACCCAGGTACAGCAAAAACAAAAGCATAAC	607
OsHKT1;1-FL	661	ATGTGGCCAATCAGAAGAACTATGTGCAAAACCCAGGTACAGCAAAAACAAAAGCATAAC	720
Pokkali OsHKT1;1 Genomic DNA	608	ATATAATCCTTGGCTGTGTTGGTTCGATAGTGACAGGTTATTTTCGTAGTACTGTCAAT	667
OsHKT1;1-FL	721	ATATAATCCTTGGCTGTGTTGGTTCGATAGTGACAGGTTATTTTCGTAGTACTGTCAAT	780
Pokkali OsHKT1;1 Genomic DNA	668	TTCCAGTTCGTGATCATTATTTTACTTTTGGATTGATTCAGATGCAAGAAATGTACT	727
OsHKT1;1-FL	781	TTCCAGTTCGTGATCATTATTTTACTTTTGGATTGATTCAGATGCAAGAAATGTACT	840
Pokkali OsHKT1;1 Genomic DNA	728	GAAAAGTAAGGAGATCAGTATGTATACCTTTTGCATCTTCACAGCAGTGTCTCGTTCGC	787
OsHKT1;1-FL	841	GAAAAGTAAGGAGATCAGTATGTATACCTTTTGCATCTTCACAGCAGTGTCTCGTTCGC	900
Pokkali OsHKT1;1 Genomic DNA	788	AAACTGTGGCTTCACGCCACTAAATAGTAACATGCAACCCCTTCAGAAAAGACTGGGTCT	847
OsHKT1;1-FL	901	AAACTGTGGCTTCACGCCACTAAATAGTAACATGCAACCCCTTCAGAAAAGACTGGGTCT	960
Pokkali OsHKT1;1 Genomic DNA	848	TTTGCTCCTAGTATCCCGCAGATTCTAGCAGGCAATACCTTGTTTTACCACCTCTTGGC	907
OsHKT1;1-FL	961	TTTGCTCCTAGTATCCCGCAGATTCTAGCAGGCAATACCTTGTTTTACCACCTCTTGGC	1020
Pokkali OsHKT1;1 Genomic DNA	908	GCTATGCGTATGGGTTTGGGGAAGGTGAGTGGAAAAGCAGAGTATGCTTACATCCTTCA	967
OsHKT1;1-FL	1021	GCTATGCGTATGGGTTTGGGGAAGGTGAGTGGAAAAGCAGAGTATGCTTACATCCTTCA	1080
Pokkali OsHKT1;1 Genomic DNA	968	GCATCCTGGGAGACTGGCTACAACATTTGCATGTGAGGAGAAATCTGTTTACATTGT	1027
OsHKT1;1-FL	1081	GCATCCTGGGAGACTGGCTACAACATTTGCATGTGAGGAGAAATCTGTTTACATTGT	1140
Pokkali OsHKT1;1 Genomic DNA	1028	TCTGAGTGTACTGGACTGATTTCTACTGCAAGTAAATGTTTATTTGCTCGTTGAGTGGAA	1087
OsHKT1;1-FL	1141	TCTGAGTGTACTGGACTGATTTCTACTGCAAGTAAATGTTTATTTGCTCGTTGAGTGGAA	1200
Pokkali OsHKT1;1 Genomic DNA	1088	CTCAGAGAGCTTAGAGGGAATGAATGGTTACAGAAATGGTAGGATTAATTTCCAGAG	1147
OsHKT1;1-FL	1201	CTCAGAGAGCTTAGAGGGAATGAATGGTTACAGAAATGGTAGGATTAATTTCCAGAG	1260
Pokkali OsHKT1;1 Genomic DNA	1148	TGTTAATACAAGACAAGCCGGTGAATCTATCCTTTGATATATCAACACTTTCTCCATCAAC	1207
OsHKT1;1-FL	1261	TGTTAATACAAGACAAGCCGGTGAATCTATCCTTTGATATATCAACACTTTCTCCATCAAC	1320
Pokkali OsHKT1;1 Genomic DNA	1208	TCTGTTGCTATTTGCAGTGTGATGATGATCTCTCCAAACCCCTGTCTTAAATGAAT	1267
OsHKT1;1-FL	1321	TCTGTTGCTATTTGCAGTGTGATGATGATGATCTCTCCAAACCCCTGTCTTAAATGAAT	1346
Pokkali OsHKT1;1 Genomic DNA	1268	TTAACTAAATCAGTAGAACACTTAGATTAGTTATTTACTGGAACATAACAATAATCAGGA	1327
OsHKT1;1-FL	1346	TTAACTAAATCAGTAGAACACTTAGATTAGTTATTTACTGGAACATAACAATAATCAGGA	1346
Pokkali OsHKT1;1 Genomic DNA	1328	GAAACTGTTGGAAAATTTGATAGCTTCATCATTATAAAGTTGAAGATTACTAAACACAT	1387
OsHKT1;1-FL	1346	GAAACTGTTGGAAAATTTGATAGCTTCATCATTATAAAGTTGAAGATTACTAAACACAT	1346
Pokkali OsHKT1;1 Genomic DNA	1388	GCATTCATGACCACTGCAGCTTGCTAGGTTTATCGATTTTATACGTCACCGAAATAGTA	1447
OsHKT1;1-FL	1346	GCATTCATGACCACTGCAGCTTGCTAGGTTTATCGATTTTATACGTCACCGAAATAGTA	1346
Pokkali OsHKT1;1 Genomic DNA	1448	GTTATGAACCTCAAATCTGCATCTAAATAACTACTGTTGAATAGAGAAAGTGAGACTACT	1507
OsHKT1;1-FL	1346	GTTATGAACCTCAAATCTGCATCTAAATAACTACTGTTGAATAGAGAAAGTGAGACTACT	1346
Pokkali OsHKT1;1 Genomic DNA	1508	TTGAACAAATAGGACAGAACTTCTGACAAGGTTTAAATGAAAAGTAGGCAGCATAACAAC	1567
OsHKT1;1-FL	1346	TTGAACAAATAGGACAGAACTTCTGACAAGGTTTAAATGAAAAGTAGGCAGCATAACAAC	1346
Pokkali OsHKT1;1 Genomic DNA	1568	ATGTTTTATGTGGAAACAGCATGTTTCTACTCCTTGTTTAACAGATAATCAACTTGCTTGC	1627
OsHKT1;1-FL	1346	ATGTTTTATGTGGAAACAGCATGTTTCTACTCCTTGTTTAACAGATAATCAACTTGCTTGC	1346
Pokkali OsHKT1;1 Genomic DNA	1628	AGGTACCTTCCCTCCGATGCTTCATTTCTCAGTCCCAATGCTGATAACCGCCCTTGACA	1687
OsHKT1;1-FL	1347	----ACCTTCCCTCCGATGCTTCATTTCTCAGTCCCAATGCTGATAACCGCCCTTGACA	1402
Pokkali OsHKT1;1 Genomic DNA	1688	GATAAAAAGACAACCTCGATTAGCAGAGCACTGTGGAGGAATTTACCGTTAACAAAGCTT	1747
OsHKT1;1-FL	1403	GATAAAAAGACAACCTCGATTAGCAGAGCACTGTGGAGGAATTTACCGTTAACAAAGCTT	1462
Pokkali OsHKT1;1 Genomic DNA	1748	TCTTGTGTTAGCAATGTTCAATTTCTGGCATGCATAACAGAAAGGAGTCAATTTCTTCT	1807
OsHKT1;1-FL	1463	TCTTGTGTTAGCAATGTTCAATTTCTGGCATGCATAACAGAAAGGAGTCAATTTCTTCT	1522
Pokkali OsHKT1;1 Genomic DNA	1808	GATCCACTAAATTTCAACATCTTCAGCATAGTTTTTGGAGATAATCAGGCAAGTTACATC	1867
OsHKT1;1-FL	1523	GATCCACTAAATTTCAACATCTTCAGCATAGTTTTTGGAGATAATCAGGCAAGTTACATC	1569
Pokkali OsHKT1;1 Genomic DNA	1868	CTTTTTTTTGTGCTGCCATAACAGAAACTATGGCTACATCAAATTACATCACTGAAA	1927
OsHKT1;1-FL	1569	CTTTTTTTTGTGCTGCCATAACAGAAACTATGGCTACATCAAATTACATCACTGAAA	1569
Pokkali OsHKT1;1 Genomic DNA	1928	TCCGAATTGCCTAGTATGATCACTAAGAACCAGTGAACCCAGCATAATTAATTTGCAAGA	1987
OsHKT1;1-FL	1569	TCCGAATTGCCTAGTATGATCACTAAGAACCAGTGAACCCAGCATAATTAATTTGCAAGA	1569
Pokkali OsHKT1;1 Genomic DNA	1988	ACATATCAAATCTACGACCTGTCATTTTTTTTCTTTTTTGGTTGCTTACAAGCAACAG	2047
OsHKT1;1-FL	1569	ACATATCAAATCTACGACCTGTCATTTTTTTTCTTTTTTGGTTGCTTACAAGCAACAG	1569
Pokkali OsHKT1;1 Genomic DNA	2048	AAATAACGCCATTTTATTTCCACAGCGCTTTCGCAATGTAGGCTACTACTAGGATACA	2107
OsHKT1;1-FL	1570	-----CGCTTTCGCAATGTAGGCTACTACTAGGATACA	1604
Pokkali OsHKT1;1 Genomic DNA	2108	GTTGCCAGAAGTGTGTAAGCCTGATGCCAATTCGAAAGATGCTTCCTACGGGTTCTGTCG	2167
OsHKT1;1-FL	1605	GTTGCCAGAAGTGTGTAAGCCTGATGCCAATTCGAAAGATGCTTCCTACGGGTTCTGTCG	1664
Pokkali OsHKT1;1 Genomic DNA	2168	GCAGGTGGACCCGAGGAGGTAAGCTGATAGT-----	2198
OsHKT1;1-FL	1665	GCAGGTGGACCCGAGGAGGTAAGCTGATAGT-----	1724
Pokkali OsHKT1;1 Genomic DNA	2198	-----	2198
OsHKT1;1-FL	1725	AGGAGTTCATCCTGAAATGAAGCGCCGCGACGGTACCACATAAACCCGCTCAAGAACAC	1784
Pokkali OsHKT1;1 Genomic DNA	2198	-----	2198
OsHKT1;1-FL	1785	CCGAATGGAGTCTCTAAGCTACATAATACCAACTTACACTTACAAAA	1831

## Supplement Figure S2.

Nucleotide sequence alignment of Pokkali OsHKT1;1 genomic DNA and full-length cDNA. GENETYX ver. 13 was used for exon-intron analysis.

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OshKT1,1-FL 0 ----- 0
OshKT1,1-V1 0 ----- 0
OshKT1,1-V2 0 ----- 0
OshKT1,1-V3 0 ----- 0
OshKT1,1-V4 0 ----- 0
OshKT1,1-V5 0 ----- 0
OshKT1,1-V6 1 AACAGCTATGACCATGATACGCCAAGCGCGCAATTACCTTCACTAAAGGGAACAAAAGCT 60
OshKT1,1-V7 1 -----ACCTTCACTAAAGGGAACAAAAGCT 25
OshKT1,1-V8 0 ----- 0

OshKT1,1-FL 1 -----GGGCCCCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 51
OshKT1,1-V1 1 -----CCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 47
OshKT1,1-V2 1 -----CCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 49
OshKT1,1-V3 1 -----GGGCCCCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 51
OshKT1,1-V4 1 -----CCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 48
OshKT1,1-V5 1 -----CCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 45
OshKT1,1-V6 61 GGGTACCGGGCCCCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 120
OshKT1,1-V7 26 GGGTACCGGGCCCCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 85
OshKT1,1-V8 1 -----CCCTCGAGGTCGACGGTATCGATAAGCTTGCTTGTCTTTTTCGAG 46

OshKT1,1-FL 52 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 111
OshKT1,1-V1 48 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 107
OshKT1,1-V2 50 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 109
OshKT1,1-V3 52 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 111
OshKT1,1-V4 49 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 108
OshKT1,1-V5 46 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 105
OshKT1,1-V6 121 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 180
OshKT1,1-V7 86 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 145
OshKT1,1-V8 47 AAGCTCAGAATAAACGCTCAACTTTGGCAGAACCATGCAATCCACCAAGTTTAGTGCTAGA 106

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OshKT1,1-V1 108 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 167
OshKT1,1-V2 110 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 169
OshKT1,1-V3 112 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 171
OshKT1,1-V4 109 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 168
OshKT1,1-V5 106 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 165
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OshKT1,1-V7 146 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 205
OshKT1,1-V8 107 TACCTTGAAGCGTATCAAACATACATAGCCATGAAGCTCCTGTTACCGAATTCGGAGGT 166

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OshKT1,1-V1 168 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 227
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OshKT1,1-V3 172 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 231
OshKT1,1-V4 169 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 228
OshKT1,1-V5 166 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 225
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OshKT1,1-V7 206 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 265
OshKT1,1-V8 167 GCTTCGGATCTATTGGGAGAAAGCTCAGCATCTCTGTGGGTTCTCTCCATGAAGCTCAT 226

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OshKT1,1-V3 232 TTCCAGAGCCAGATGTGTGGCAAGTTCTGTCAACAATCTTACAGTTTTCTGGTTTGC 291
OshKT1,1-V4 229 TTCCAGAGCCAGATGTGTGGCAAGTTCTGTCAACAATCTTACAGTTTTCTGGTTTGC 288
OshKT1,1-V5 226 TTCCAGAGCCAGATGTGT----- 243
OshKT1,1-V6 301 TTCCAGAGCCAGATGTGTGGCAAGTTCTGTCAACAATCTTACAGTTTTCTGGTTTGC 360
OshKT1,1-V7 266 TTCCAGAGCCAGATGTGT----- 283
OshKT1,1-V8 227 TTCCAGAGCCAGATGTGT----- 244

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OshKT1,1-V1 245 ----- 245
OshKT1,1-V2 248 ----- 248
OshKT1,1-V3 292 AAGTAACCCCTTTGGTAGTTCAGTCGTTTACTTTGTGATAAATCTCATTGGCTGGTTTCC 351
OshKT1,1-V4 289 AAGTAACCCCTTTGGTAGTTCAGTCGTTTACTTTGTGATAAATCTCATTGGCTGGTTTCC 348
OshKT1,1-V5 243 ----- 243
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OshKT1,1-V7 283 ----- 283
OshKT1,1-V8 244 ----- 244

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OshKT1,1-V6 421 TGCTCTGAAGAATCTCAAGCCCCAGGGTAAGCCAGGTCCAAAGGATTTGGACCTGTTGTT 480
OshKT1,1-V7 284 -----GAATCTCAAGCCCCAGGGTAAGCCAGGTCCAAAGGATTTGGACCTGTTGTT 334
OshKT1,1-V8 245 -----GAATCTCAAGCCCCAGGGTAAGCCAGGTCCAAAGGATTTGGACCTGTTGTT 295

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OshKT1,1-V2 299 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 358
OshKT1,1-V3 412 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 471
OshKT1,1-V4 409 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 468
OshKT1,1-V5 295 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 354
OshKT1,1-V6 481 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 540
OshKT1,1-V7 335 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 394
OshKT1,1-V8 296 CACCTCTGTGTCTACACTTACTGTCTCGAGCATGGCAACAGTAGAGATGGAAGACTTATC 355

OshKT1,1-FL 472 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 531
OshKT1,1-V1 357 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 416
OshKT1,1-V2 359 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 418
OshKT1,1-V3 472 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 531
OshKT1,1-V4 469 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 528
OshKT1,1-V5 355 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 414
OshKT1,1-V6 541 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 600
OshKT1,1-V7 395 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 454
OshKT1,1-V8 356 TGACAGGCAACTCTGGGTTCTGATCCTCTGATGCTAATGGGAGGAGAGGTTTCCACATC 415

OshKT1,1-FL 532 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 591
OshKT1,1-V1 417 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 476
OshKT1,1-V2 419 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 478
OshKT1,1-V3 532 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 591
OshKT1,1-V4 529 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 588
OshKT1,1-V5 415 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 474
OshKT1,1-V6 601 AATGCTAGGGCTTACTTCAACA----- 623
OshKT1,1-V7 455 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 514
OshKT1,1-V8 416 AATGCTAGGGCTTACTTCAACAATGCCAATGCCAACAGAAATGAGAACAGCCAGAGAAG 475

OshKT1,1-FL 592 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 651
OshKT1,1-V1 477 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 536
OshKT1,1-V2 479 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 538
OshKT1,1-V3 592 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 651
OshKT1,1-V4 589 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 648
OshKT1,1-V5 475 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 534
OshKT1,1-V6 623 ----- 623
OshKT1,1-V7 515 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 574
OshKT1,1-V8 476 TTTACCTTCAATCAGCTTGGACATTGAATCCAAACAGTCTTCCAAACAATGGGGATCACAA 535

OshKT1,1-FL 652 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 711
OshKT1,1-V1 537 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 596
OshKT1,1-V2 539 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 581
OshKT1,1-V3 652 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 707
OshKT1,1-V4 649 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 698
OshKT1,1-V5 535 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 580
OshKT1,1-V6 623 ----- 623
OshKT1,1-V7 575 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 620
OshKT1,1-V8 536 AATTACGGAAATGTGGCCAAATCAGAAAGAACTATGTCCGAAAACAGGTACAGCAAAACAA 571
```

OsHKT1;1-FL 712 AAGCATAACATATAATCCTTGGCGTGTGTTGGTTCCGATAGTGACAGGTTATTTCGTAGC 771 M3  
OsHKT1;1-V1 597 AAGCATAACATATAATCCTTGGCGTGTGTTGGTTCCGATAGTGACAGGTTATTTCGTAGC 656  
OsHKT1;1-V2 581 ----- 581  
OsHKT1;1-V3 707 ----- 707  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 772 TACTGTCATTTCCAGTTCTGTGCATCATTATTATTACTTTGGATTGATTCAGATGCAAG 831  
OsHKT1;1-V1 657 TACTGTCATTTCCAGTTCTGTGCATCATTATTATTACTTTGGATTGATTCAGATGCAAG 716  
OsHKT1;1-V2 582 ----- 591  
OsHKT1;1-V3 707 ----- 707  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 832 AANTGTACTGAAAAGTAAGGACATCAGTATGTATACCTTTTGCATCTTCACAGCAGCTCTC 891 Stop codon M4  
OsHKT1;1-V1 717 AANTGTACTGAAAAGTAAGGAGATCAGTATGTATACCTTTTGCATCTTCACAGCAGCTCTC 776  
OsHKT1;1-V2 592 AANTGTACTGAAAAGTAAGGAGATCAGTATGTATACCTTTTGCATCTTCACAGCAGCTCTC 651  
OsHKT1;1-V3 708 ---TGTACTGAAAAGTAAGGAGATCAGTATGTATACCTTTTGCATCTTCACAGCAGCTCTC 764  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 892 CTCGTTGCAAACTGTGGCTTCAGCCACTAAATAGTAACATGCAACCCCTCAGAAAACA 951  
OsHKT1;1-V1 777 CTCGTTGCAAACTGTGGCTTCAGCCACTAAATAGTAACATGCAACCCCTCAGAAAACA 836  
OsHKT1;1-V2 652 CTCGTTGCAAACTGTGGCTTCAGCCACTAAATAGTAACATGCAACCCCTCAGAAAACA 711  
OsHKT1;1-V3 765 CTCGTTGCAAACTGTGGCTTCAGCCACTAAATAGTAACATGCAACCCCTCAGAAAACA 824  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 952 CTGGTCCCTTTTGGCTCCTAGTATCCCGCAGATCTAGCAGGCAATACCTTGTTCACCC 1011 M5  
OsHKT1;1-V1 837 CTGGTCCCTTTTGGCTCCTAGTATCCCGCAGATCTAGCAGGCAATACCTTGTTCACCC 896  
OsHKT1;1-V2 712 CTGGTCCCTTTTGGCTCCTAGTATCCCGCAGATCTAGCAGGCAATACCTTGTTCACCC 771  
OsHKT1;1-V3 825 CTGGTCCCTTTTGGCTCCTAGTATCCCGCAGATCTAGCAGGCAATACCTTGTTCACCC 884  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1012 ACTCTTTCGGCTATGCGTATGGGTTTTGGGAAGTCAAGTGGAAAAGCAGAGTATGCTTA 1071  
OsHKT1;1-V1 897 ACTCTTTCGGCTATGCGTATGGGTTTTGGGAAGTCAAGTGGAAAAGCAGAGTATGCTTA 956  
OsHKT1;1-V2 772 ACTCTTTCGGCTATGCGTATGGGTTTTGGGAAGTCAAGTGGAAAAGCAGAGTATGCTTA 831  
OsHKT1;1-V3 885 ACTCTTTCGGCTATGCGTATGGGTTTTGGGAAGTCAAGTGGAAAAGCAGAGTATGCTTA 944  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1072 CATCCTTCAGCATCCTGGGGAGACTGGCTACAAACATTTGCATGTGAGGAGAAATCTCTGT 1131  
OsHKT1;1-V1 957 CATCCTTCAGCATCCTGGGGAGACTGGCTACAAACATTTGCATGTGAGGAGAAATCTCTGT 1016  
OsHKT1;1-V2 832 CATCCTTCAGCATCCTGGGGAGACTGGCTACAAACATTTGCATGTGAGGAGAAATCTCTGT 891  
OsHKT1;1-V3 945 CATCCTTCAGCATCCTGGGGAGACTG----- 970  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1132 TTACATTCGTTCTGAGTGTACTGGACTGATTCTACGCAAGTAATGTTTATTTGGCTCGTT 1191 M6  
OsHKT1;1-V1 1017 TTACATTCGTTCTGAGTGTACTGGACTGATTCTACGCAAGTAATGTTTATTTGGCTCGTT 1076  
OsHKT1;1-V2 892 TTACATTCGTTCTGAGTGTACTGGACTGATTCTACGCAAGTAATGTTTATTTGGCTCGTT 951  
OsHKT1;1-V3 970 ----- 970  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1192 TGAGTGGAACTCAGAGACTTAGAGGGAATGAATGGTTACAGAAATGGTAGGATTATT 1251  
OsHKT1;1-V1 1077 TGAGTGGAACTCAGAGACTTAGAGGGAATGAATGGTTACAGAAATGGTAGGATTATT 1136  
OsHKT1;1-V2 952 TGAGTGGAACTCAGAGACTTAGAGGGAATGAATGGTTACAGAAATGGTAGGATTATT 1011  
OsHKT1;1-V3 970 ----- 970  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1252 ATTCAGAGTGTAAATACAAGACAAGCCGGTGAATCTATCCTTGATATATCAACACTTTC 1311  
OsHKT1;1-V1 1137 ATTCAGAGTGTAAATACAAGACAAGCCGGTGAATCTATCCTTGATATATCAACACTTTC 1196  
OsHKT1;1-V2 1012 ATTCAGAGTGTAAATACAAGACAAGCCGGTGAATCTATCCTTGATATATCAACACTTTC 1071  
OsHKT1;1-V3 970 ----- 970  
OsHKT1;1-V4 698 ----- 698  
OsHKT1;1-V5 580 ----- 580  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1312 TCCATCAACTCTGTGCTATTTGCACTCGTCATGTACCTTCCTCCGATGCTTCATTCTC 1371 M7  
OsHKT1;1-V1 1197 TCCATCAACTCTGTGCTATTTGCACTCGTCATGTACCTTCCTCCGATGCTTCATTCTC 1256  
OsHKT1;1-V2 1072 TCCATCAACTCTGTGCTATTTGCACTCGTCATGTACCTTCCTCCGATGCTTCATTCTC 1131  
OsHKT1;1-V3 971 -----GTCACAAACATTG-CATGTACCTTCCTCCGATGCTTCATTCTC 1014  
OsHKT1;1-V4 699 -----CTTCTCCGATGCTTCATTCTC 721  
OsHKT1;1-V5 581 -----CTTCTCCGATGCTTCATTCTC 607  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1372 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 1431 Stop codon  
OsHKT1;1-V1 1257 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 1316  
OsHKT1;1-V2 1132 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 1191  
OsHKT1;1-V3 1015 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 1074  
OsHKT1;1-V4 722 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 781  
OsHKT1;1-V5 608 CACTGCCAATGCTGATAACCGCCCTTGACAGATAAAAAGACAACCTCGATTAGCAGAGC 667  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571  
OsHKT1;1-FL 1432 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 1491 M8  
OsHKT1;1-V1 1317 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 1376  
OsHKT1;1-V2 1192 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 1251  
OsHKT1;1-V3 1075 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 1134  
OsHKT1;1-V4 782 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 841  
OsHKT1;1-V5 668 ACTGTGGAGGAATTTACCCTTAACAAGCTTCTTCTTTAGCAATGTTACACTTCCTGGC 727  
OsHKT1;1-V6 623 ----- 623  
OsHKT1;1-V7 620 ----- 620  
OsHKT1;1-V8 571 ----- 571

Stop codon

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OsHKT1;1-FL 1492 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 1550
OsHKT1;1-V1 1377 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 1435
OsHKT1;1-V2 1252 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 1310
OsHKT1;1-V3 1135 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 1193
OsHKT1;1-V4 842 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 900
OsHKT1;1-V5 728 ATGCATAAC-AGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 786
OsHKT1;1-V6 624 -----TCTTCAGCA 632
OsHKT1;1-V7 620 -----TCTTCAGCA 620
OsHKT1;1-V8 572 --GCAAAACCAGAAAGGAAGTCAATTCTTCTGATCCACTAAATTTCAACATCTTCAGCA 629
                                     M9
OsHKT1;1-FL 1551 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 1610
OsHKT1;1-V1 1436 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 1495
OsHKT1;1-V2 1311 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 1370
OsHKT1;1-V3 1194 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 1253
OsHKT1;1-V4 901 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 960
OsHKT1;1-V5 787 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 846
OsHKT1;1-V6 633 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 692
OsHKT1;1-V7 621 -----CGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 661
OsHKT1;1-V8 630 TAGTTTTGAGATAATCAGCGCTTTCGGCAATGTAGGCTACTCACTAGGATACAGTTGCC 689
                                     Stop codon
OsHKT1;1-FL 1611 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 1670
OsHKT1;1-V1 1496 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 1555
OsHKT1;1-V2 1371 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 1430
OsHKT1;1-V3 1254 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 1313
OsHKT1;1-V4 961 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 1020
OsHKT1;1-V5 847 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 906
OsHKT1;1-V6 693 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 752
OsHKT1;1-V7 662 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 721
OsHKT1;1-V8 690 AGAAGTTGTTGAAGCCTGATGCCACTTGCAAAAGATGCTTCCTACGGGTTCTCGCCGAGGT 749

OsHKT1;1-FL 1671 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 1730
OsHKT1;1-V1 1556 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 1615
OsHKT1;1-V2 1431 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 1490
OsHKT1;1-V3 1314 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 1373
OsHKT1;1-V4 1021 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 1080
OsHKT1;1-V5 907 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 966
OsHKT1;1-V6 753 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 812
OsHKT1;1-V7 722 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 781
OsHKT1;1-V8 750 GGACCGAGGAGGGTAAGCTGATAGTTATCCCTGGTGTATGTTCCCTGGGAGGCTCAAGGAGT 809
                                     Stop codon
OsHKT1;1-FL 1731 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1790
OsHKT1;1-V1 1616 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1675
OsHKT1;1-V2 1491 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1550
OsHKT1;1-V3 1374 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1433
OsHKT1;1-V4 1081 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1140
OsHKT1;1-V5 967 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 1026
OsHKT1;1-V6 813 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 872
OsHKT1;1-V7 782 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 841
OsHKT1;1-V8 810 TCATCCTGAAATGAGCGGCCGCGACGGTACCCTAAACCAGCCTCAAGAACACCCGAAT 869

OsHKT1;1-FL 1791 GGAGTCTCTAAGCTACATAATACCAACTTACACTT-AC-AAAA----- 1831
OsHKT1;1-V1 1676 GGAGTCTCTAAGCTACATAATACCAACTTACACTT-AC-AAAA----- 1716
OsHKT1;1-V2 1551 GGAGTCTCTAAGCTACATAAT----- 1571
OsHKT1;1-V3 1434 GGAGTCTCTAAGCTACATA----- 1452
OsHKT1;1-V4 1141 GGAGTCTCTAAGCTACATAATACCAACTTACACTT-AC-AAAA----- 1181
OsHKT1;1-V5 1027 GGAGTCTCTAAGCTACATAATACCAACTTACACTT-AC-AAAA----- 1067
OsHKT1;1-V6 873 GGAGTCTCTAAGCTACATAATACCAACTTACACTTACAAAATGTTGTCCTCCCAAAATGTA 932
OsHKT1;1-V7 842 GGAGTCTCTAAGCTACATAATACCAACTTACACTTACNAAATGTTGTCCTCCCAAAATGTA 901
OsHKT1;1-V8 870 GGAGTCTCTAAGCTACATAATACCAACTTACACTTTAC-AAAATGTTGTCCTCCCAAAATGTA 928

OsHKT1;1-FL 1831 ----- 1831
OsHKT1;1-V1 1716 ----- 1716
OsHKT1;1-V2 1571 ----- 1571
OsHKT1;1-V3 1452 ----- 1452
OsHKT1;1-V4 1181 ----- 1181
OsHKT1;1-V5 1067 ----- 1067
OsHKT1;1-V6 933 GCCATTCGTATCTGCTCTAATAAAA 958
OsHKT1;1-V7 902 GCCATTCGTATCTGCTCT----- 920
OsHKT1;1-V8 929 GCC----- 931

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**Supplementary Figure S3.**

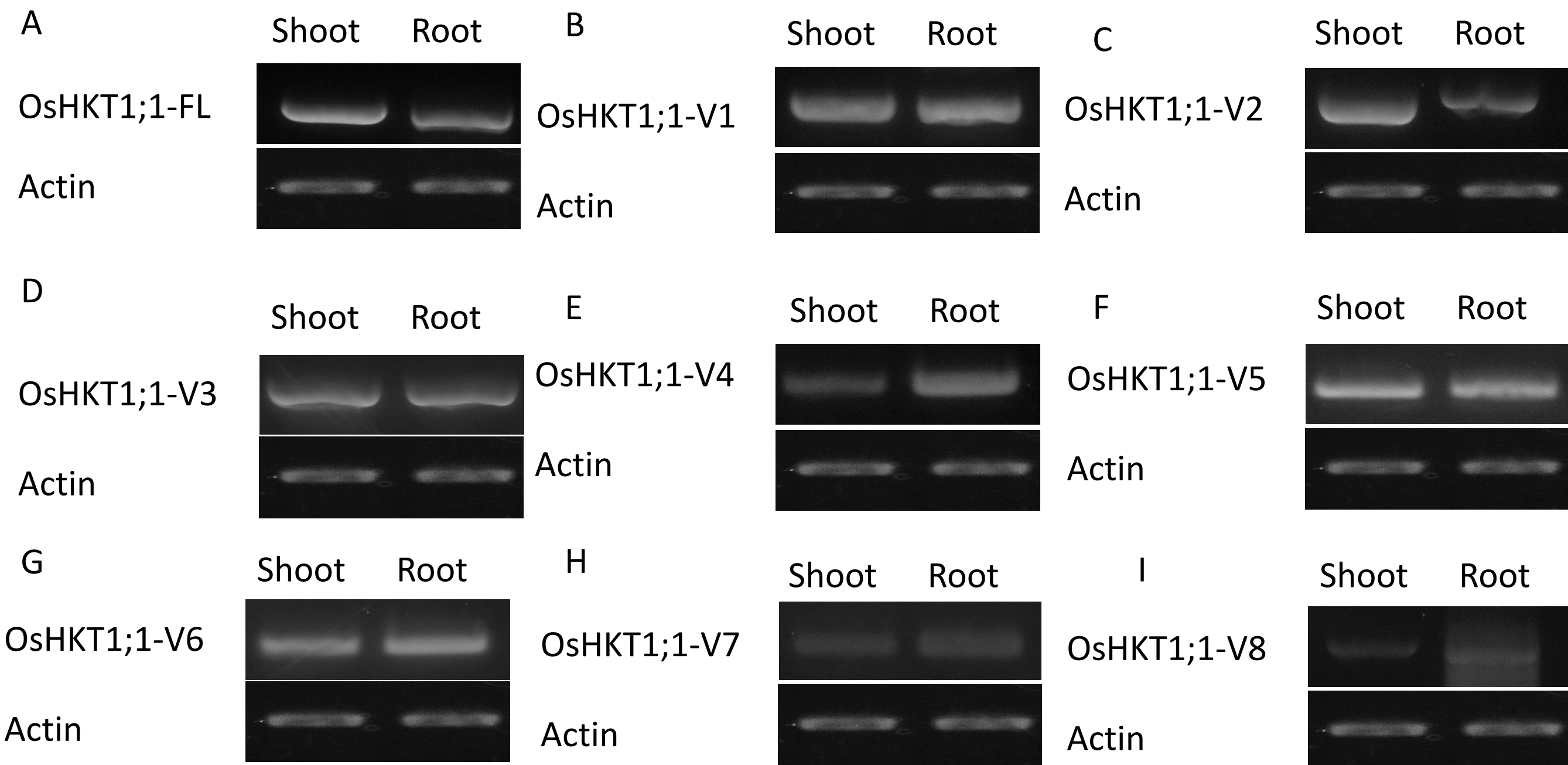
Nucleotide sequence alignment of OsHKT1;1-FL and its eight variant using GENETYX ver. 13. Presumed membrane-spanning regions of OsHKT1;1-FL, and positions of start and stop codon for the full-length and variants are indicated.

OsHKT1;1-FL	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	60
OsHKT1;1-V1	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	55
OsHKT1;1-V2	0	-----	-----	-----	-----	0
OsHKT1;1-V3	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	60
OsHKT1;1-V4	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	60
OsHKT1;1-V5	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	55
OsHKT1;1-V6	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	60
OsHKT1;1-V7	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	55
OsHKT1;1-V8	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLR	IYWEKAQHLCGFLSMKLI	SRARC	VSSVK	55
<b>M1</b>						
OsHKT1;1-FL	61	QSYSFLVCKSN	PLVVQLVYFV	IISFAGFLAL	KNLKPQ	60
OsHKT1;1-V1	56	-----	-----	-----	-----	83
OsHKT1;1-V2	0	-----	-----	-----	-----	0
OsHKT1;1-V3	61	QSYSFLVCKSN	PLVVQLVYFV	IISFAGFLAL	KNLKPQ	60
OsHKT1;1-V4	61	QSYSFLVCKSN	PLVVQLVYFV	IISFAGFLAL	KNLKPQ	60
OsHKT1;1-V5	56	-----	-----	-----	-----	83
OsHKT1;1-V6	61	QSYSFLVCKSN	PLVVQLVYFV	IISFAGFLAL	KNLKPQ	60
OsHKT1;1-V7	56	-----	-----	-----	-----	83
OsHKT1;1-V8	56	-----	-----	-----	-----	83
<b>M2</b>						
OsHKT1;1-FL	121	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	180
OsHKT1;1-V1	84	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	143
OsHKT1;1-V2	0	-----	-----	-----	-----	0
OsHKT1;1-V3	121	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	180
OsHKT1;1-V4	121	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	180
OsHKT1;1-V5	84	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	143
OsHKT1;1-V6	121	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	156
OsHKT1;1-V7	84	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	143
OsHKT1;1-V8	84	ATVEMEDLSDRQ	LWVLILLMLMGGEVFT	SMLGLYF	NNANANRN	143
<b>M3</b>						
OsHKT1;1-FL	181	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	VLVR	240
OsHKT1;1-V1	144	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	ALVR	203
OsHKT1;1-V2	1	-----	-----	-----	-----	6
OsHKT1;1-V3	181	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	VLVR	209
OsHKT1;1-V4	181	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	ALVR	217
OsHKT1;1-V5	144	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	ALVR	180
OsHKT1;1-V6	156	-----	-----	-----	-----	156
OsHKT1;1-V7	144	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	ALVR	186
OsHKT1;1-V8	144	SPANNGDHKITECGSEETMSQ	NQVQONKSI	TYNPCA	ALVR	176
<b>M4</b>						
OsHKT1;1-FL	241	YFWIDSDARNVLKSKETISMYTFC	IFTAVSSF	ANCGFTPL	NSNMQ	300
OsHKT1;1-V1	204	YFWIDSDARNVLKSKETISMYTFC	IFTAVSSF	ANCGFTPL	NSNMQ	263
OsHKT1;1-V2	7	NYVAKPDARNVLKSKETISMYTFC	IFTAVSSF	ANCGFTPL	NSNMQ	66
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	156	-----	-----	-----	-----	156
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176
<b>M5</b>						
OsHKT1;1-FL	301	LAGNTLFSPLLRL	LCVWVLGKVS	GKAEYAYILQHPGET	GYKHLHVR	360
OsHKT1;1-V1	264	LAGNTLFSPLLRL	LCVWVLGKVS	GKAEYAYILQHPGET	GYKHLHVR	323
OsHKT1;1-V2	67	LAGNTLFSPLLRL	LCVWVLGKVS	GKAEYAYILQHPGET	GYKHLHVR	126
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	156	-----	-----	-----	-----	156
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176
<b>M6</b>						
OsHKT1;1-FL	361	LQVMFICSEFNSE	SLEGMNWLQKLVGLL	FQSVNTRQ	AGESILD	420
OsHKT1;1-V1	324	LQVMFICSEFNSE	SLEGMNWLQKLVGLL	FQSVNTRQ	AGESILD	383
OsHKT1;1-V2	127	POVMFICSEFNSE	SLEGMNWLQKLVGLL	FQSVNTRQ	AGESILD	186
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	156	-----	-----	-----	-----	156
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176
<b>M7</b>						
OsHKT1;1-FL	421	YLFSDASFILTANADN	QPLTDKKTNS	ISRALWRNFT	VNKL	480
OsHKT1;1-V1	384	YLFSDASFILTANADN	QPLTDKKTNS	ISRALWRNFT	VNKL	443
OsHKT1;1-V2	187	YLFSDASFILTANADN	QPLTDKKTNS	ISRALWRNFT	VNKL	246
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	156	-----	-----	-----	-----	156
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176
<b>M8</b>						
OsHKT1;1-FL	481	PLNFN	IFSIVFEIISAFGNV	GYSLGYSC	QKLLKPDAT	540
OsHKT1;1-V1	444	PLNFN	IFSIVFEIISAFGNV	GYSLGYSC	QKLLKPDAT	503
OsHKT1;1-V2	247	PLNFN	IFSIVFEIISAFGNV	GYSLGYSC	QKLLKPDAT	306
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	157	-----	-----	-----	-----	211
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176
<b>M9</b>						
OsHKT1;1-FL	541	MFLGRLKEFILK	-----	-----	-----	552
OsHKT1;1-V1	504	MFLGRLKEFILK	-----	-----	-----	515
OsHKT1;1-V2	307	MFLGRLKEFILK	-----	-----	-----	318
OsHKT1;1-V3	209	-----	-----	-----	-----	209
OsHKT1;1-V4	217	-----	-----	-----	-----	217
OsHKT1;1-V5	180	-----	-----	-----	-----	180
OsHKT1;1-V6	212	MFLGRLKEFILK	-----	-----	-----	223
OsHKT1;1-V7	186	-----	-----	-----	-----	186
OsHKT1;1-V8	176	-----	-----	-----	-----	176

### Supplementary Figure S4.

Protein sequence alignment of OsHKT1;1-FL and its eight variant using GENETYX ver. 13. Presumed membrane-spanning regions of OsHKT1;1-FL and its eight variants are indicated.





**Supplementary Figure S5.**

Expression analyzed with RT-PCR. OsHKT1;1-FL (A), OsHKT1;1-V1 (B), OsHKT1;1-V2 (C), OsHKT1;1-V3 (D), OsHKT1;1-V4 (E), OsHKT1;1-V5 (F), OsHKT1;1-V6 (G), OsHKT1;1-V7 (H), and OsHKT1;1-V8 (I) in “Pokkali” plants. Actin was used as an internal control.

OsHKT1;1-FL	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLRRIYWEKAQHLCGFLSMKLISRARCVA	60
OsHKT1;1-V1	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLRRIYWEKAQHLCGFLSMKLISRARC	55
OsHKT1;1-FL (ΔA56-K92)	1	MHPPSLVLDTLKRIKLYIAMKLLLPNSEVLRRIYWEKAQHLCGFLSMKLISRARC	55
OsHKT1;1-FL	61	QSYSFLVCKSNPLVVQLVYFVVIISFAGFLALKNLKPQKPGPKDLLLFTSVSTLTVSSM	120
OsHKT1;1-V1	56	-----NLKPQKPGPKDLLLFTSVSTLTVSSM	83
OsHKT1;1-FL (ΔA56-K92)	56	-----NLKPQKPGPKDLLLFTSVSTLTVSSM	83
OsHKT1;1-FL	121	ATVEMEDLSDRQLWVLIILLMLMGGEVFTSMLGLYFNNANANRNENSQRSLPSISLDIESN	180
OsHKT1;1-V1	84	ATVEMEDLSDRQLWVLIILLMLMGGEVFTSMLGLYFNNANANRNENSQRSLPSISLDIESN	143
OsHKT1;1-FL (ΔA56-K92)	84	ATVEMEDLSDRQLWVLIILLMLMGGEVFTSMLGLYFNNANANRNENSQRSLPSISLDIESN	143
OsHKT1;1-FL	181	SPANNGDHKITECGQSEETMSQNQVQQNKSIYINPCAVLVRIVTGYFVATVISSSVIIII	240
OsHKT1;1-V1	144	SPANNGDHKITECGQSEETMSQNQVQQNKSIYINPCAAALVRIVTGYFVATVISSSVIIII	203
OsHKT1;1-FL (ΔA56-K92)	144	SPANNGDHKITECGQSEETMSQNQVQQNKSIYINPCAVLVRIVTGYFVATVISSSVIIII	203
OsHKT1;1-FL	241	YFWIDSDARNVLKSKEISMYTFCIFTAVSSFANCGFTPLNSNMQPFRKNWVLLLLLVIPQI	300
OsHKT1;1-V1	204	YFWIDSDARNVLKSKEISMYTFCIFTAVSSFANCGFTPLNSNMQPFRKNWVLLLLLVIPQI	263
OsHKT1;1-FL (ΔA56-K92)	204	YFWIDSDARNVLKSKEISMYTFCIFTAVSSFANCGFTPLNSNMQPFRKNWVLLLLLVIPQI	263
OsHKT1;1-FL	301	LAGNTLFSPLLRLCVVVLGKVSQKAEYAYILQHPGETGYKHLHVRNRSVYIVLSVTGLIL	360
OsHKT1;1-V1	264	LAGNTLFSPLLRLCVVVLGKVSQKAEYAYILQHPGETGYKHLHVRNRSVYIVLSVTGLIL	323
OsHKT1;1-FL (ΔA56-K92)	264	LAGNTLFSPLLRLCVVVLGKVSQKAEYAYILQHPGETGYKHLHVRNRSVYIVLSVTGLIL	323
OsHKT1;1-FL	361	LQVMFICSFEWNSESELEGMNWLQKLVGLLFQSVNTRQAGESILDISTLSPSTLLLFVVM	420
OsHKT1;1-V1	324	LQVMFICSFEWNSESELEGMNWLQKLVGLLFQSVNTRQAGESILDISTLSPSTLLLFVVM	383
OsHKT1;1-FL (ΔA56-K92)	324	LQVMFICSFEWNSESELEGMNWLQKLVGLLFQSVNTRQAGESILDISTLSPSTLLLFVVM	383
OsHKT1;1-FL	421	YLPDASFLTANADNQPLTDKKTNSISRALWRNFTVNKLSCLAMFTFLACITERKSISSD	480
OsHKT1;1-V1	384	YLPDASFLTANADNQPLTDKKTNSISRALWRNFTVNKPSCLAMFTFLACITERKSISSD	443
OsHKT1;1-FL (ΔA56-K92)	384	YLPDASFLTANADNQPLTDKKTNSISRALWRNFTVNKLSCLAMFTFLACITERKSISSD	443
OsHKT1;1-FL	481	PLNFNIFSIVFEIISAFGNVGYSLGYSCQKLLKPDATCKDASYGFVGRWTEEGKLIVILV	540
OsHKT1;1-V1	444	PLNFNIFSIVFEIISAFGNVGYSLGYSCQKLLKPDATCKDASYGSGRWTEEGKLIVILV	503
OsHKT1;1-FL (ΔA56-K92)	444	PLNFNIFSIVFEIISAFGNVGYSLGYSCQKLLKPDATCKDASYGFVGRWTEEGKLIVILV	503
OsHKT1;1-FL	541	MFLGRLKEFILK	552
OsHKT1;1-V1	504	MFLGRLKEFILK	515
OsHKT1;1-FL (ΔA56-K92)	504	MFLGRLKEFILK	515

### Supplement Figure S6.

Amino acid comparison among OsHKT1;1-FL, native OsHKT1;1-V1 and OsHKT1;1-FL (ΔA56-K92). GENETYX ver. 13 was used for exon-intron analysis.