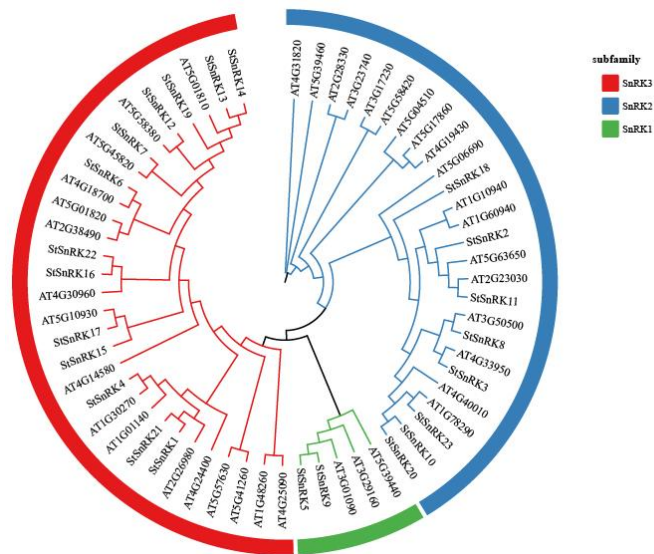
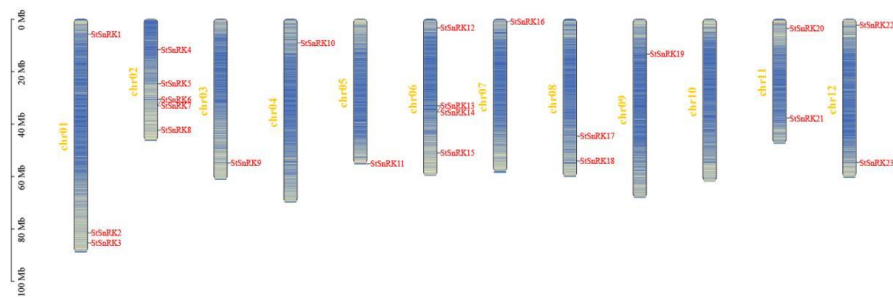




附图 1 马铃薯和拟南芥 *SnRK* 家族系统进化树

Supplementary Figure 1 Phylogenetic tree of the *SnRK* family in potato and *Arabidopsis thaliana*



Chr01-Chr12 表示 1-12 号染色体；黑线表示 *SnRK* 基因位于的染色体的位置

Chr01-Chr12 refer to chromosome 1 to 12; The black lines indicate the chromosomal locations of the *SnRK* genes

附图 2 *SnRK* 基因在染色体上的分布

Supplementary Figure 2 Distribution of *SnRK* genes on chromosomes

附表 1 RT-qPCR 引物序列

Supplementary Table1 Primers for RT-qPCR

基因名字	上游引物	下游引物
Gene name	Forward primer(5'-3')	Reverse primer(5'-3')
StSnRK1	TCACGTCTAAATGTCCGGCC	GGTCCCTTTTCTACCGGCT
StSnRK2	GTAGGCACCTTCTCTCTCGC	GCTGCTTCTGTCAACTCCCT
StSnRK3	TTAGCGAAGATGAGGCACGG	GGTGCAGGACTACCATCCAG
StSnRK4	ACTGGTGGCGAACTGTTTGA	CAGGCTTGAGGTCTCTGTGG
StSnRK5	CCAAACTATGCTGCCCCAGA	GGTGCCACAGAGAAGAGCAT
StSnRK6	GGCTTCTGTTGGCAGGTAT	TCGCTACGCTCTCATTCGTC
StSnRK7	CACCGTGATCTCAAGCCTGA	GTGGAGGAGACCATCTTGCC

StSnRK8	TGAAAACGTTTCAGCGGGAGA	CCCCACCAGATGCATACTCC
StSnRK9	TGCTTTTGGATGCAAGACGC	GACAACCTCAGGAGCTGCAT
StSnRK10	ACAGATCTTTGAGGCACCCG	CGTTCAAAAAGCTCTCCGCC
StSnRK11	GAAGTCCAGCACCTCGTCTT	CGGGTGCAATATAGGCTGGT
StSnRK12	CAAGACGGA CTCTCCACAC	ACAACCCACACGACCAAAT
StSnRK13	TATCCCTTGCGCTGTTGTGT	TCCATTCCGTCCTCTCTGT
StSnRK14	CCTCTTCTCCGACACCAAG	GTGAATCGCAGCTCTCTCTT
StSnRK15	CGAAATGCTCTGCCCTCAACG	GCCCATTGATGTTCTCTTGCA
StSnRK16	TGAGCTCCACGAAGTCATGG	ACATCCTCTCTCAGCTTGCC
StSnRK17	GAAGGATTTCGCGATGCCAC	AAATGCAGGGGATGAAGGGG
StSnRK18	CGTGTGGTCATGTGGAGTGA	GTCGGGTATGGAGTGTGGG
StSnRK19	GCCTGCACACTTGAATGCTT	GATTGTTTTCGCCGGTTGCT
StSnRK20	TGATAGCTCAAAACCGCTCT	GCGATATAGGCCGGAGTTCC
StSnRK21	TCTGGAGGACGAGTGGTTCA	ATGGGAGTTGGCTGCTCTTC
StSnRK22	GGGAGGAAAGGGAAGTTGGG	CTTGAGTGCTGGCCTAAGCT
StSnRK23	AGGGACACCAGCTTACGTTG	GCTCCGACCAGCATTACGTA
StEF1	ATTGGAACGGATATGCTCCA	TCCTTACCTGAACGCCTGTCA

附表 2 亚细胞定位引物序列

Supplementary Table 2 Primer sequences for subcellular localization

基因名字	上游引物	下游引物
Gene name	Forward primer(5'-3')	Reverse primer(5'-3')
StSnRK3	gagaacacgggggacgtcgacATGGATCGGAC GGCAGTGA	gctcaccatggatcctctagaCATTGCATAGAC AATCTCTCCACTG
StSnRK14	gagaacacgggggacgtcgacATGGTGAAAAA TGGAATGCATT	gctcaccatggatcctctagaTTGTTGATGAGAT TGCACACCTTG
StSnRK23	gagaacacgggggacgtcgacATGATAGAGGG TTATGAGTTTGTGAAGG	gctcaccatggatcctctagaCAAATAACAAAG AAAGTCACCACTTGT

附表 3 沉默效率引物序列

Supplementary Table 3 Primer sequences for silencing efficiency detection

基因名字	上游引物	下游引物
Gene name	Forward primer(5'-3')	Reverse primer(5'-3')
qRT-Nbef1	TGGACACAGGGACTTCATCA	CAAGGGTGAAAGCAAGCAAT
StSnRK3	ACAACCTCATATCTGGGGTCAGC	TCCTTAGCCTTGGTGCAGGG
StSnRK14	ACACCCACATGTTTTGCAGC	ATCTTCCTTGAGCCTCCCTT
StSnRK23	AGGAAGTTACCAATGCGTCGA	CGAGTTCCATACTGCCCCAA

附表 4 VIGS 沉默引物序列

Supplementary Table 4 Primer sequences for VIGS silencing

基因名字	上游引物	下游引物
Gene name	Forward primer(5'-3')	Reverse primer(5'-3')
StSnRK3	gtgagtaagggtaccgaattcAGAATGTCGTCA TCTAATCTCAAGGA	cgtagctcggtaccggtatccTCAGGGTCACTC TCCAAGTCTTCT

StSnRK14	gtgagtaagggtaccgaattcTTGGCAGAATCT	cgtgagctcgggtaccggatccTATCGAAATCCT
	AAGCGGCA	TGTATGAGGGTTT
StSnRK23	gtgagtaagggtaccgaattcGGCCACAAGATA	cgtgagctcgggtaccggatccCGGTGCAGCACT
	GATGAACATGTG	TCCGTC

附表 5 防御基因引物序列

Supplementary Table 5 Primer sequences for subcellular localization

基因名字	上游引物	下游引物
Gene name	Forward primer(5'-3')	Reverse primer(5'-3')
qNbef1	CCAAGCTGACTGTGCTGTCC	AAGCAAGCAATGCGTGCTC
qNbPR1a	GTGCCCAAAATTCTCAACA	AAATCGCCACTTCCCTCAG
qNbPR2	TTTGATGCCCTTTTGGATTC	CTGCCCCGCTTTTCACAT
qNbPR4	TGGGTGGACATATTACAGAG	GGCACGCCGACACATTT
qNbHIN1	TTCCGCCACCAGCAAAATC	TTAGGACGAAGAACGAGCCATA
qNbHSR203	AGGCGGCGGCTTTTGTGTCA	GAGAGGTCCCGGAGCCAGAGG

附表 6 马铃薯 *SnRK* 家族蛋白质基本特征及理化性质

Supplementary Table 6 Basic characteristics and physicochemical properties of the *SnRK* family Proteins in *Solanum tuberosum*

name	Sequence ID	Number of Amino Acid	Molecular Weight	Theoretical pI	Instability Index	Aliphatic Index	Grand Average of Hydropathicity
StSnRK1	DM8C01G05060.1	438	50234.58	6.72	38.77	82.76	-0.464
StSnRK2	DM8C01G40210.1	360	41491.03	5.52	53.74	80.69	-0.574
StSnRK3	DM8C01G44920.1	362	41109.69	4.96	38.04	88.59	-0.329
StSnRK4	DM8C02G02750.1	458	51513.52	9.18	37.3	88.52	-0.31
StSnRK5	DM8C02G09960.1	514	58884.99	8.47	42.29	90.62	-0.316
StSnRK6	DM8C02G16300.1	478	53761.78	8.6	43.4	88.31	-0.291
StSnRK7	DM8C02G16310.1	459	52275.13	9.05	31.83	79	-0.535
StSnRK8	DM8C02G29340.1	352	40204.83	4.73	44.32	86.68	-0.334
StSnRK9	DM8C03G30450.1	504	58032.13	8.4	50.79	92.62	-0.354
StSnRK10	DM8C04G07780.1	344	39206.66	5.48	32.45	83.05	-0.356
StSnRK11	DM8C05G27720.1	358	41165.68	6.17	54.54	77.04	-0.592
StSnRK12	DM8C06G02840.1	478	54630.78	8.45	44.07	91.57	-0.443
StSnRK13	DM8C06G10820.1	649	73124.96	9.15	32.08	94.95	-0.204
StSnRK14	DM8C06G10830.1	443	50070.77	9.03	37.89	94.58	-0.262
StSnRK15	DM8C06G23970.1	450	51021.79	8.92	36.25	79.69	-0.376
StSnRK16	DM8C07G00610.1	424	47664.08	9.08	33.68	80.94	-0.296
StSnRK17	DM8C08G16310.1	456	52350.54	8.63	36.68	79.08	-0.404
StSnRK18	DM8C08G23820.1	339	38497.09	5.88	41.54	85.96	-0.416
StSnRK19	DM8C09G09810.1	470	53036.24	8.59	27.27	87.55	-0.394
StSnRK20	DM8C11G03690.1	347	39480.04	5.05	35.48	89.6	-0.366
StSnRK21	DM8C11G18680.1	461	52575.39	6.75	34.95	81.82	-0.391

StSnRK22	DM8C12G02770.1	432	48600.35	9	36.68	82.57	-0.339
StSnRK23	DM8C12G23290.1	336	38381.03	5.58	37.76	88.15	-0.198