

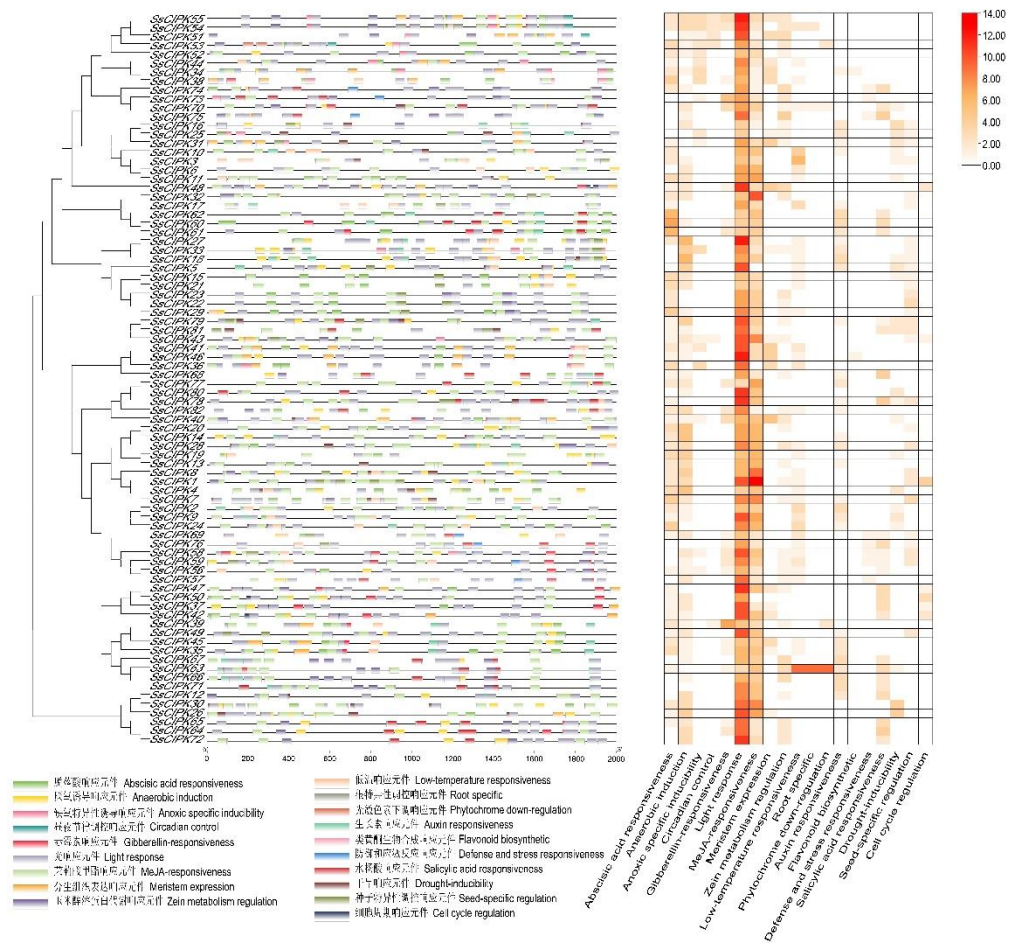


A: 甘蔗 CBL 家族成员蛋白多序列比对; B: 甘蔗 CIPK 家族成员蛋白多序列比对

A: Multiple sequence comparison of sugarcane CBL family member proteins; B: Multiple sequence comparison of sugarcane CIPK family member proteins

补充图 S1 CBL-CIPK 基因家族成员蛋白多序列比对

Fig. S1 Multiple sequence comparison of proteins of CBL-CIPK gene family members



补充图 S2 甘蔗 CIPK 基因家族顺式作用元件预测统计

Fig. S2 Predicted statistics for cis-acting elements of the sugarcane CIPK gene family

补充表 S1 SsCBL/SsCIPK 基因家族 qRT-PCR 引物序列

Table S1 qRT-PCR primers for SsCBL/SsCIPK gene family

基因名称	正向引物序列	反向引物序列
Gene name	Forward primer sequence 5'-3'	Reserve primer sequence 5'-3'
<i>SsCBL7</i>	GTCTTGAGGCATCCATCT	CACGCATCCTCTACTTGA
<i>SsCBL9</i>	TTTAGTAGTGAGGCATCCC	CGACCTGAGAATGGAAGA
<i>SsCBL12</i>	CCGAGTCAGGAATGAATCT	AAGGATGGATGCCGAATG
<i>SsCBL15</i>	TTTAGTAGTGAGGCATCCC	CGACCTGAGAATGGAAGA
<i>SsCIPK1</i>	GTTGCTCCATCACTTAC	CTTACTTGCCTCAGATTCAG
<i>SsCIPK5</i>	CAAGCTCGGCTACTTCAT	TCAGCTCCACTAGCATCA
<i>SsCIPK38</i>	CGCTAATGACTGGACTCTAT	CGCAAGTAACAGGATGAAC
<i>SsCIPK74</i>	CTCAGGATAAGGAAGAAGGA	GAGATGGTAGGATGGTGTA
<i>SsGAPDH</i>	AAGGGTGGTGCCAAGAAGG	CAAGGGGAGCAAGGCAGTT

补充表 S2 SsCBL/SsCIPK 基因家族的 Y2H 相互作用引物

Table S2 Y2H interaction primers for SsCBL/SsCIPK gene family

基因名称	正向引物序列	反向引物序列
Gene name	Forward primer sequence 5'-3'	Reserve primer sequence 5'-3'
<i>SsCBL1-AD</i>	GTGGGCATCGATACGGGATCCATGGGGTGCTTCCATTCCA	CAGCTCGAGCTCGATGGATCCTTACTTGAGGTATGGCAGAGTCATTAT
<i>SsCBL1-BD</i>	AGGCCGAATCCCAGGGGATCCATGGGGTGCTTCCATTCCA	CCGCTGCAGGTCGACGGATCCTTACTTGAGGTATGGCAGAGTCATTAT
<i>SsCBL8-AD</i>	GTGGGCATCGATACGGGATCCATGGTGCAAGTGCCTGGACG	CAGCTCGAGCTCGATGGATCCTCAGTTATCATCGACTTGAGAGTGAA
<i>SsCBL8-BD</i>	AGGCCGAATCCCAGGGGATCCATGGTGCAAGTGCCTGGACG	CCGCTGCAGGTCGACGGATCCTCAGTTATCATCGACTTGAGAGTGAA
<i>SsCIPK47-AD</i>	GTGGGCATCGATACGGGATCCATGGTGAGGACGATGGTAGGC	CAGCTCGAGCTCGATGGATCCTCATAGGCTCCGAGAGCGC
<i>SsCIPK81-AD</i>	GTGGGCATCGATACGGGATCCATGGGGGCGAGGGGAAA	CAGCTCGAGCTCGATGGATCCTCATAGAGATGGAAGCCATGC

补充表 S3 甘蔗 82 个 CIPKs 的理化性质统计表

Table S3 Statistical table of physico-chemical properties of 82 CIPKs of sugarcane

基因名称	基因 ID	基因长度	正负链	mRNA 长度	氨基酸数目	等电点	外显子个数	染色体定位	相对分子质量	亚细胞定位预测
Gene name	Gene ID	Gene length (bp)	Strand	mRNA length (bp)	Amino acid (aa)	PI	Exon number	Chromosome	Molecular weight (KD)	Subcellular localization
<i>SsCIPK1</i>	Sspon.01G0001600-1A	7226	-	1374	458	8	14	Chr.1A	51.43303	chlo
<i>SsCIPK2</i>	Sspon.01G0008500-1A	6551	-	1227	409	7.6	13	Chr.1A	46.21510	chlo
<i>SsCIPK3</i>	Sspon.01G0009190-1A	7809	+	1446	482	9.21	3	Chr.1A	54.95800	chlo
<i>SsCIPK4</i>	Sspon.01G0034400-1B	6627	+	1263	421	7.62	13	Chr.1B	47.28409	chlo
<i>SsCIPK5</i>	Sspon.01G0023830-2B	6585	-	1290	430	8.67	1	Chr.1B	46.60371	mito
<i>SsCIPK6</i>	Sspon.01G0009190-2B	13825	-	2676	892	8.47	10	Chr.1B	98.00577	plas
<i>SsCIPK7</i>	Sspon.01G0034400-2D	6705	+	1275	425	8.23	14	Chr.1D	47.87179	chlo
<i>SsCIPK8</i>	Sspon.01G0001600-2D	7020	-	1335	445	7.24	14	Chr.1D	50.06538	chlo
<i>SsCIPK9</i>	Sspon.01G0008500-1P	6321	-	1215	405	5.19	13	Chr.1D	44.73919	chlo
<i>SsCIPK10</i>	Sspon.01G0009190-3D	7817	+	1446	482	9.21	3	Chr.1D	54.98010	chlo
<i>SsCIPK11</i>	Sspon.01G0009200-3D	9098	+	1725	575	8.77	4	Chr.1D	64.14631	plas
<i>SsCIPK12</i>	Sspon.02G0001070-1A	6551	+	1296	432	7.68	1	Chr.2A	46.49120	chlo
<i>SsCIPK13</i>	Sspon.02G0024240-1A	8915	-	1686	562	9.45	14	Chr.2A	63.13430	chlo
<i>SsCIPK14</i>	Sspon.02G0024240-1P	7174	-	1347	449	9.22	14	Chr.2A	50.67327	chlo
<i>SsCIPK15</i>	Sspon.01G0023830-1P	6684	-	1299	433	8.83	1	Chr.2A	47.33461	cyto
<i>SsCIPK16</i>	Sspon.02G0033090-1B	7077	-	1314	438	9.16	1	Chr.2B	49.85682	chlo
<i>SsCIPK17</i>	Sspon.06G0005650-2B	6835	-	1341	447	9.10	1	Chr.2B	48.29544	plas

<i>SsCIPK18</i>	Sspon.02G0037890-1B	7225	+	1407	469	8.95	1	Chr.2B	51.29771	E.R.
<i>SsCIPK19</i>	Sspon.02G0024240-2B	7174	+	1347	449	9.22	14	Chr.2B	50.67327	chlo
<i>SsCIPK20</i>	Sspon.02G0042500-1B	9749	+	1863	621	9.54	15	Chr.2B	69.04502	chlo
<i>SsCIPK21</i>	Sspon.01G0023830-3P	6657	+	1299	433	9.09	1	Chr.2B	47.12138	cyto
<i>SsCIPK22</i>	Sspon.01G0023830-2P	6344	+	1233	411	9.43	1	Chr.2B	44.72982	E.R.
<i>SsCIPK23</i>	Sspon.02G0044920-1B	6229	-	1209	403	9.41	2	Chr.2B	43.98379	E.R.
<i>SsCIPK24</i>	Sspon.02G0000740-2C	7141	+	1344	448	7.13	14	Chr.2C	50.60595	chlo
<i>SsCIPK25</i>	Sspon.02G0033090-2C	8533	+	1593	531	8.96	4	Chr.2C	60.39593	chlo
<i>SsCIPK26</i>	Sspon.02G0001070-3C	6475	-	1278	426	7.71	1	Chr.2C	45.88558	chlo
<i>SsCIPK27</i>	Sspon.02G0037890-2C	7262	-	1419	473	8.71	1	Chr.2C	51.58395	E.R.
<i>SsCIPK28</i>	Sspon.02G0024240-3C	9114	-	1749	583	9.27	14	Chr.2C	64.59080	chlo
<i>SsCIPK29</i>	Sspon.01G0023830-4P	6677	+	1296	432	8.89	1	Chr.2C	47.24348	E.R.
<i>SsCIPK30</i>	Sspon.02G0001070-1T	6575	-	1302	434	7.71	1	Chr.2D	46.64732	chlo
<i>SsCIPK31</i>	Sspon.02G0033090-3D	7885	-	1464	488	9.18	2	Chr.2D	55.58856	chlo
<i>SsCIPK32</i>	Sspon.06G0005650-1P	6837	-	1341	447	8.99	1	Chr.2D	48.32345	plas
<i>SsCIPK33</i>	Sspon.02G0037890-3D	7228	+	1410	470	8.84	1	Chr.2D	51.31070	E.R.
<i>SsCIPK34</i>	Sspon.03G0003630-1A	9225	+	1743	581	6.94	4	Chr.3A	65.21982	chlo
<i>SsCIPK35</i>	Sspon.03G0006080-1A	7963	+	1536	512	9.02	1	Chr.3A	56.30600	chlo
<i>SsCIPK36</i>	Sspon.03G0015890-1A	7336	-	1389	463	6.38	13	Chr.3A	51.96163	nucl
<i>SsCIPK37</i>	Sspon.03G0023620-1A	8023	+	1551	517	8.36	1	Chr.3A	57.18020	chlo
<i>SsCIPK38</i>	Sspon.03G0003630-2B	15430	+	2946	982	6.9	6	Chr.3B	108.72099	plas
<i>SsCIPK39</i>	Sspon.03G0006080-2B	8768	+	1686	562	9.25	2	Chr.3B	62.13053	chlo

<i>SsCIPK40</i>	Sspon.03G0013670-2B	6351	—	1215	405	5.3	13	Chr.3B	45.24128	cyto
<i>SsCIPK41</i>	Sspon.03G0015890-2B	7894	—	1488	496	6.1	13	Chr.3B	55.96140	nucl
<i>SsCIPK42</i>	Sspon.03G0023620-2B	7920	+	1536	512	7.19	1	Chr.3B	56.49633	chlo
<i>SsCIPK43</i>	Sspon.03G0028160-2C	13332	—	2601	867	8.48	14	Chr.3C	95.09696	E.R.
<i>SsCIPK44</i>	Sspon.03G0003630-3C	20792	—	3984	1328	6.77	5	Chr.3C	145.88004	plas
<i>SsCIPK45</i>	Sspon.03G0006080-3C	8069	+	1557	519	8.75	1	Chr.3C	57.11185	chlo
<i>SsCIPK46</i>	Sspon.03G0015890-3C	7344	—	1389	463	6.26	13	Chr.3C	52.00163	nucl
<i>SsCIPK47</i>	Sspon.03G0023620-3C	8015	+	1551	517	8.05	1	Chr.3C	57.11113	chlo
<i>SsCIPK48</i>	Sspon.03G0023630-3C	7741	—	1485	495	9.25	2	Chr.3C	55.00200	chlo
<i>SsCIPK49</i>	Sspon.03G0006080-4D	8735	—	1683	561	9.25	2	Chr.3D	61.84820	chlo
<i>SsCIPK50</i>	Sspon.03G0023620-4D	8027	+	1551	517	8.36	1	Chr.3D	57.16418	chlo
<i>SsCIPK51</i>	Sspon.04G0017790-1A	9103	+	1722	574	9.02	3	Chr.4A	64.49081	chlo
<i>SsCIPK52</i>	Sspon.04G0017790-2B	6955	—	1290	430	9.26	1	Chr.4B	48.89949	chlo
<i>SsCIPK53</i>	Sspon.04G0017790-2P	6830	—	1269	423	9.10	1	Chr.4C	48.12640	chlo
<i>SsCIPK54</i>	Sspon.04G0017790-3C	8813	—	1688	556	9.08	3	Chr.4C	62.37939	chlo
<i>SsCIPK55</i>	Sspon.04G0017790-1P	8813	+	1688	556	9.08	3	Chr.4C	62.37939	chlo
<i>SsCIPK56</i>	Sspon.05G0020210-1A	9746	+	1845	615	5.34	14	Chr.5A	68.91205	plas
<i>SsCIPK57</i>	Sspon.05G0020210-2B	9746	+	1845	615	5.34	14	Chr.5B	68.91205	plas
<i>SsCIPK58</i>	Sspon.05G0036030-1C	7136	—	1320	440	7.15	14	Chr.5C	50.40889	chlo
<i>SsCIPK59</i>	Sspon.05G0020210-4D	8012	+	1509	503	5.20	14	Chr.5D	56.63088	chlo
<i>SsCIPK60</i>	Sspon.06G0005650-1A	6916	—	1353	451	9.09	1	Chr.6A	48.86618	plas
<i>SsCIPK61</i>	Sspon.06G0005650-3C	6916	—	1353	451	9.09	1	Chr.6C	48.86618	plas

<i>SsCIPK62</i>	Sspon.06G0005650-4D	6916	—	1353	451	9.09	1	Chr.6D	48.86924	plas
<i>SsCIPK63</i>	Sspon.07G0004410-1A	8996	—	1701	567	8.67	4	Chr.7A	64.05013	chlo
<i>SsCIPK64</i>	Sspon.07G0010390-1A	6799	+	1320	440	8.35	1	Chr.7A	48.24019	nucl
<i>SsCIPK65</i>	Sspon.07G0010390-1P	6283	—	1242	414	9.88	1	Chr.7A	44.63207	nucl
<i>SsCIPK66</i>	Sspon.07G0022730-1P	7973	—	1515	505	7.71	1	Chr.7B	56.71371	chlo
<i>SsCIPK67</i>	Sspon.07G0022730-1B	7561	+	1434	478	8.66	1	Chr.7B	53.70435	chlo
<i>SsCIPK68</i>	Sspon.07G0026860-1B	7259	—	1377	459	6.48	11	Chr.7B	51.64286	chlo
<i>SsCIPK69</i>	Sspon.05G0020210-1P	7063	—	1302	434	8.54	13	Chr.7B	49.77542	chlo
<i>SsCIPK70</i>	Sspon.05G0021220-2B	7781	—	1446	482	9.22	4	Chr.7B	54.75445	plas
<i>SsCIPK71</i>	Sspon.07G0022730-2C	8943	+	1692	564	9.07	4	Chr.7C	63.82091	chlo
<i>SsCIPK72</i>	Sspon.07G0010390-2C	6080	—	1179	393	8.57	2	Chr.7C	43.07753	nucl
<i>SsCIPK73</i>	Sspon.05G0021220-3C	7198	—	1335	445	9.28	1	Chr.7C	50.57048	chlo
<i>SsCIPK74</i>	Sspon.05G0021220-2P	7192	—	1335	445	9.36	1	Chr.7D	50.49546	chlo
<i>SsCIPK75</i>	Sspon.05G0021220-4D	30944	—	6075	2025	9.18	17	Chr.7D	220.47149	plas
<i>SsCIPK76</i>	Sspon.05G0020210-2P	6506	—	1200	400	8.11	12	Chr.7D	45.84170	chlo
<i>SsCIPK77</i>	Sspon.08G0006260-1A	6390	+	1191	397	9.30	13	Chr.8A	45.07107	cyto
<i>SsCIPK78</i>	Sspon.08G0006260-2B	7019	—	1317	439	8.80	14	Chr.8B	49.62420	cyto
<i>SsCIPK79</i>	Sspon.08G0020630-1B	7485	+	1443	481	8.86	1	Chr.8B	53.19136	nucl
<i>SsCIPK80</i>	Sspon.08G0006260-3C	7674	—	1446	482	9.40	14	Chr.8C	54.25946	chlo
<i>SsCIPK81</i>	Sspon.08G0020630-2C	7395	—	1443	481	7.57	7	Chr.8C	52.61250	chlo
<i>SsCIPK82</i>	Sspon.08G0006260-4D	6998	+	1317	439	8.68	14	Chr.8D	49.46697	cyto
