New insights into the evolution and functional divergence of the *CIPK* gene family in *Saccharum*

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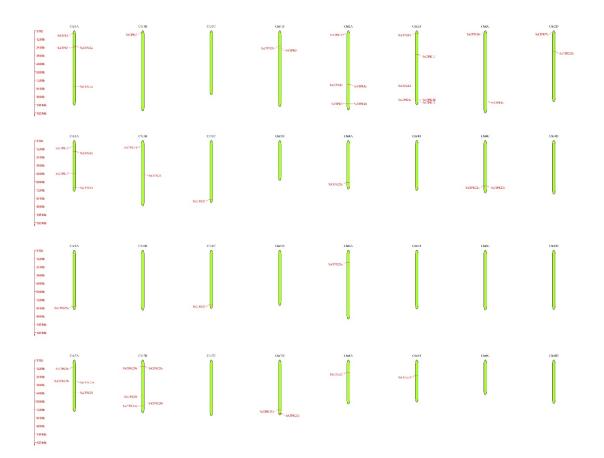


Fig. S1 Chromosomal distribution of *SsCIPKs*. The scale bar on the left indicated the length (Mb) of sugarcane chromosomes.

	Logo	E-value 🕅	Sites 🙁 🕔	Width 🕐	More 🙎	Submit/Download 🕐
1.	Bisg DGakadliNSCGVULFVLAAGVL?F;D;Dtw.w18K1;BBEFBE?WES;BCRBLtvBLD?N?;JRLilesLissieWEb	1.9e-2483	44	83	Ŧ	<u></u>
2.	^l QLjeAyrzCieRGY <u>xi</u> RDL <mark>K</mark> CENLLLDe-GrlKysDFGLSA	8.7e-1352	43	41	Ī	<u></u>
3.	-mx==91kRE1=10Reye=10NYxe1=EVWA3K=K1YzVYE=X=G	4.3e-1086	41	42	ī	<u></u>
4.	ILELGELLGGGEEKVVERABREETSEEXAL	1.3e-733	45	29	ī	<u></u>
5.	⁻ Is.,DGLLUT∠ <mark>CGTP</mark> eYvA ^C EVL	1.7e-673	45	21	Ī	<u></u>
6.	³ kee=beses <mark>0</mark> =k=vopEVEEVA <mark>?</mark> s1=gYEveKee0D1+E7=be	3.1e-592	31	43	Ŧ	<u></u>
7.	the version ANAFRI I Sesser Bar Fr	6.0e-570	46	25	ī	<u></u>
8.	are Reed is so the strate of the contract of t	3.9e-400	27	41	$\overline{1}$	<u>_</u>
9.	de <mark>gRee</mark> Eee <mark>AR</mark> eyFe	1.5e-251	42	15	Ī	<u></u>
10.	⁻ igenRe&RFNTTA <mark>SPE</mark> bTleelgraggklgvyvigkkgveclelggleglaantxenseva?#LnlvelrlevxDgDgrge	1.4e-214	6	80	Ī	<u></u>
11.	*KytDKexy+#~	1.8e-130	43	11	Ŧ	=
12.	Land Breit Koyying Harasa area	2.5e-119	21	21	Ī	<u></u>
13.	[™] E¢ĕB¥øLDDVQ&∲FB₽ŞEB _₩ ÷X	1.1e-112	14	22	Ī	
14.	RSLSYDSQLGGLLNGQQERAL	3.3e-062	7	21	ī	⇒
15.	Sosjvar lakjeelanyksfoxRkkva	7.4e-058	8	29	ī	<u> </u>
16.	^A Kiesziikkev <mark>CogeziyaSrSzzeSe</mark>	3.7e-053	10	29	Ŧ	±
17.		1.1e-038	30	6	Ī	<u>-</u>
18.	Mernesselxwzevfel <mark>s</mark> ?sl!vvelkks-gdeal!rqecerlsrelgxekweq1.getr:laddlasld	9.4e-038	3	69	ī	<u>_</u>
19.	DVWA8GVYLFALVAG917FN,KDTSL11N1RCD11CttWFSTGLVaLyRR1LC781x8R1x17GKKN4WFKKDFKE17RSL8EFeLRDSDSDSDDE	7.4e-035	2	98	ī	⇒
20.	Korster	8.0e-035	18	8	Ŧ	<u></u>

Fig. S2 Analysis and distribution of conserved motifs in SsCIPK proteins.

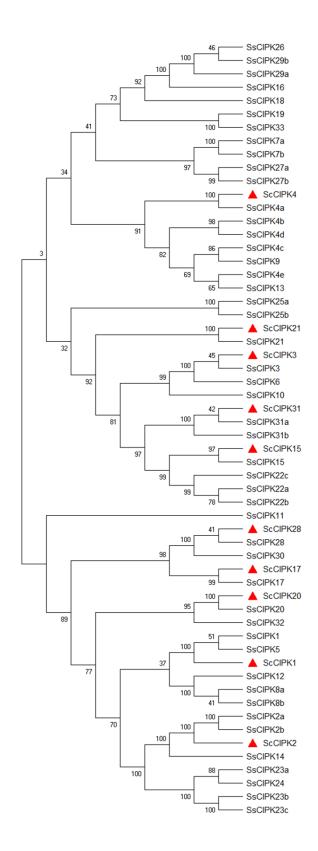


Fig. S3 Phylogenetic analysis of CIPK proteins from *S.spontaneum* and *Saccharum* spp. hybrid (ROC22). Red triangles represent ScCIPK proteins.

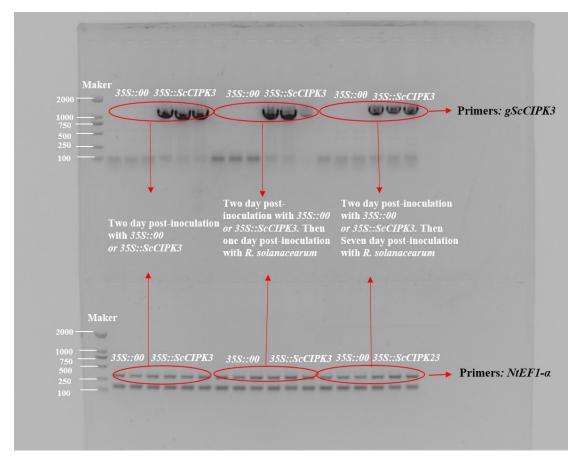


Fig. S4 RT-PCR analysis of *ScCIPK3* in the *N. benthamiana* leaves 2 days after infiltration with *Agrobacterium* strain GV3101 that carried the vector *35S::00* or *35S::ScCIPK3*, in the *ScCIPK3* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for one day, and in the *ScCIPK3* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for seven days. Note: *35S::00* stands for the control templet, *35S::ScCIPK3* stands for the template of instantaneous expression *ScCIPK3*. *gScCIPK3* and *NtEF1-α* represented the primers used in the RT-PCR.

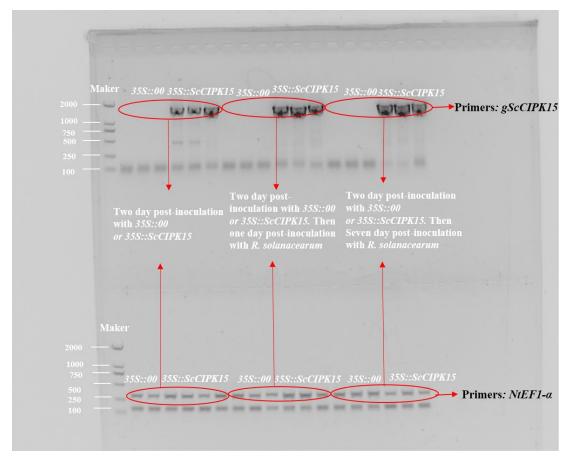


Fig. S5 RT-PCR analysis of *ScCIPK15* in the *N. benthamiana* leaves 2 days after infiltration with *Agrobacterium* strain GV3101 that carried the vector 35S::ScCIPK15, in the *ScCIPK15* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for one day, and in the *ScCIPK15* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for seven days. Note: 35S::00 stands for the control templet, 35S::ScCIPK15 stands for the template of instantaneous expression *ScCIPK15*. *gScCIPK15* and *NtEF1-a* represented the primers used in the RT-PCR.

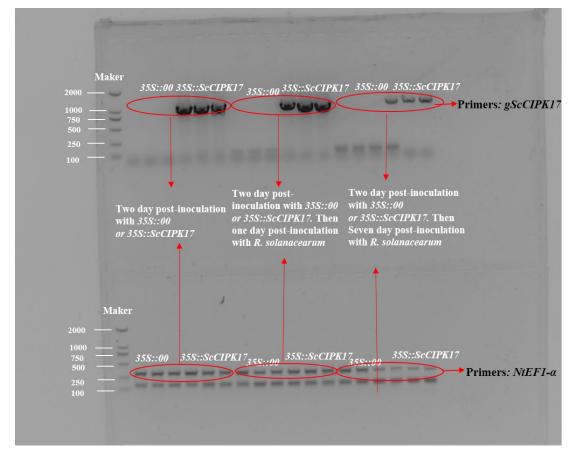


Fig. S6 RT-PCR analysis of *ScCIPK17* in the *N. benthamiana* leaves 2 days after infiltration with *Agrobacterium* strain GV3101 that carried the vector 35S::ScCIPK17, in *the ScCIPK17* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for one day, and in *the ScCIPK17* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for seven days. Note: 35S::00 stands for the control templet, 35S::ScCIPK17 stands for the template of instantaneous expression *ScCIPK17*. *gScCIPK17* and *NtEF1-a* represented the primers used in the RT-PCR.

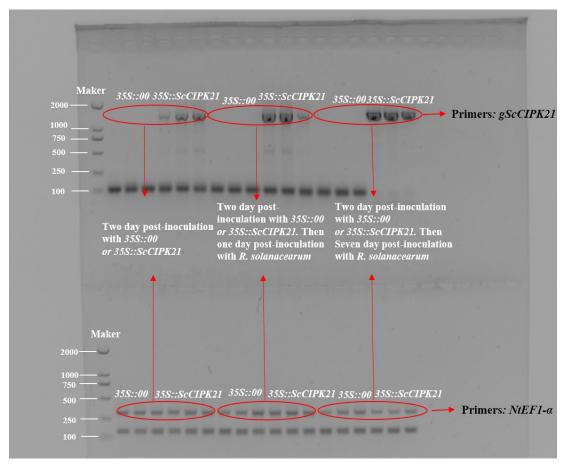


Fig. S7 RT-PCR analysis of *ScCIPK21* in the *N. benthamiana* leaves 2 days after infiltration with *Agrobacterium* strain GV3101 that carried the vector 35S::00 or 35S::ScCIPKs, in the *ScCIPK21* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for one day, and in the *ScCIPK21* transiently expressed *N. benthamiana* challenged by *R. solanacearum* for seven days. Note: 35S::00 stands for the control templet, 35S::ScCIPK21 stands for the template of instantaneous expression *ScCIPK21. gScCIPK21* and *NtEF1-a* represented the primers used in the RT-PCR.