

Figure S1. The three-dimensional structural models of IbSWEETs in *I. batatas*

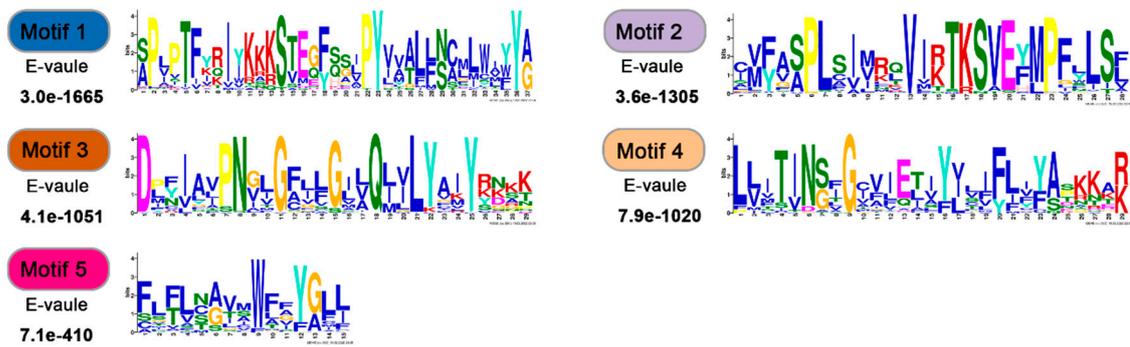


Figure S2. Conserved motifs analysis of IbSWEETs in *I. batatas*.

The Gene expression patterns of ItfSWEETs in response to different phytohormones;

The Gene expression patterns of ItbSWEETs in response to different phytohormones

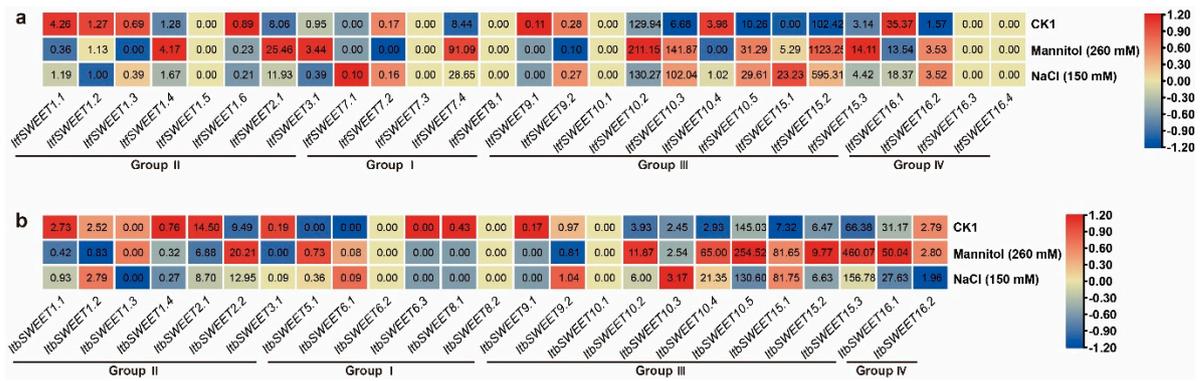


Figure S3. Gene expression patterns of SWEETs in response to different abiotic stress (Mannitol and NaCl) in *I. trifida* and *I. triloba* as determined by RNA-seq. Log₂ (FPKM+1) was shown in the boxes.

Tabel S1. Identification of SWEET family genes in *I. batatas*, *I. trifida*, and *I. triloba*.

<i>Arabidopsis</i>	Homologous gene in <i>I. batatas</i> / <i>I. trifida</i> / <i>I. triloba</i>	Gene ID	Gene name	Chromosome localization
Group I : <i>AT3G28007.1/AtSWEET4</i> <i>AT5G62850.1/AtSWEET5</i> <i>AT1G66770.1/AtSWEET6</i> <i>AT4G10850.1/AtSWEET7</i> <i>AT5G40260.1/AtSWEET8</i>	<i>I. batatas</i>	<i>g39263</i>	<i>IbSWEET6.1</i>	<i>LG10:7838441-7841375</i>
		<i>g39260</i>	<i>IbSWEET6.2</i>	<i>LG10:7816324-7818425</i>
		<i>g39262</i>	<i>IbSWEET6.3</i>	<i>LG10:7830865-7833765</i>
		<i>g5800</i>	<i>IbSWEET8.1</i>	<i>LG2:10784966-10786018</i>
		<i>g346</i>	<i>IbSWEET8.2</i>	<i>LG1:1808926-1810903</i>
		<i>g51687</i>	<i>IbSWEET8.3</i>	<i>LG13:3782061-3784597</i>
	<i>I. trifida</i>	<i>itf12g17160.t1</i>	<i>ItfSWEET7.1</i>	<i>Chr12:16815989-16818214</i>
		<i>itf08g07870.t1</i>	<i>ItfSWEET7.2</i>	<i>Chr08:5841213-5846012</i>
		<i>itf08g07860.t1</i>	<i>ItfSWEET7.3</i>	<i>Chr08:5831106-5834414</i>
		<i>itf08g07850.t2</i>	<i>ItfSWEET7.4</i>	<i>Chr08:5814193-5817068</i>
		<i>itf05g24560.t1</i>	<i>ItfSWEET8.1</i>	<i>Chr05:24311908-24313582</i>
		<i>I. triloba</i>	<i>itb02g13210.t1</i>	<i>ItbSWEET5.1</i>
	<i>itb12g17890.t1</i>		<i>ItbSWEET6.1</i>	<i>Chr12:20145343-20147563</i>
	<i>itb08g08270.t1</i>		<i>ItbSWEET6.2</i>	<i>Chr08:7215664-7220968</i>
	<i>itb08g08260.t1</i>		<i>ItbSWEET6.3</i>	<i>Chr08:7204389-7207714</i>
<i>itb02g23980.t1</i>	<i>ItbSWEET8.1</i>		<i>Chr02:24313432-24315665</i>	
<i>itb05g25360.t1</i>	<i>ItbSWEET8.2</i>		<i>Chr05:29797696-29799315</i>	
Group II : <i>AT1G21460.1/AtSWEET1</i> <i>AT3G14770.1/AtSWEET2</i> <i>AT5G53190.1/AtSWEET3</i>	<i>I. batatas</i>	<i>g42355</i>	<i>IbSWEET1.1</i>	<i>LG11:6571044-6572993</i>
		<i>g45970</i>	<i>IbSWEET2.1</i>	<i>LG11:34025564-34028429</i>
		<i>g37512</i>	<i>IbSWEET2.2</i>	<i>LG9:26404546-26407166</i>
		<i>g37574</i>	<i>IbSWEET2.3</i>	<i>LG9:26774560-26778764</i>
		<i>g20639</i>	<i>IbSWEET3.1</i>	<i>LG5:29266168-29267993</i>
	<i>I. trifida</i>	<i>itf01g30090.t1</i>	<i>ItfSWEET1.1</i>	<i>Chr01:28489958-28492016</i>
		<i>itf06g14370.t1</i>	<i>ItfSWEET1.2</i>	<i>Chr06:17600146-17603483</i>
		<i>itf05g11210.t1</i>	<i>ItfSWEET1.3</i>	<i>Chr05:13456959-13464258</i>
		<i>itf05g11180.t1</i>	<i>ItfSWEET1.4</i>	<i>Chr05:13426791-13433075</i>
		<i>itf05g10340.t1</i>	<i>ItfSWEET1.5</i>	<i>Chr05:12171409-12175054</i>
		<i>itf05g11190.t1</i>	<i>ItfSWEET1.6</i>	<i>Chr05:13438573-13447544</i>
		<i>itf01g06490.t1</i>	<i>ItfSWEET2.1</i>	<i>Chr01:4604929-4607829</i>
	<i>I. triloba</i>	<i>itf12g25940.t1</i>	<i>ItfSWEET3.1</i>	<i>Chr12:23179604-23181318</i>
		<i>itb01g29890.t1</i>	<i>ItbSWEET1.1</i>	<i>Chr01:33995339-33997526</i>
		<i>itb06g12580.t1</i>	<i>ItbSWEET1.2</i>	<i>Chr06:17231093-17234294</i>
<i>itb05g11560.t1</i>		<i>ItbSWEET1.3</i>	<i>Chr05:17666984-17675087</i>	
<i>itb05g11570.t1</i>		<i>ItbSWEET1.4</i>	<i>Chr05:17686534-17694593</i>	
<i>itb10g03630.t1</i>		<i>ItbSWEET2.1</i>	<i>Chr10:3402029-3404651</i>	
<i>itb01g07080.t1</i>		<i>ItbSWEET2.2</i>	<i>Chr01:5276517-5279474</i>	
<i>itb12g26330.t1</i>	<i>ItbSWEET3.1</i>	<i>Chr12:27293008-27295110</i>		
<i>I. batatas</i>	<i>g41769</i>	<i>IbSWEET9.1</i>	<i>LG11:2589559-2591471</i>	
	<i>g49942</i>	<i>IbSWEET9.2</i>	<i>LG12:22929904-22934939</i>	

Group III:		g33162	IbSWEET9.3	LG8:20422984-20425012
AT2G39060.1/AtSWEET9		g6315	IbSWEET10.1	LG2:14785339-14787649
AT5G50790.1/AtSWEET1		g33248	IbSWEET10.2	LG8:21098280-21101488
0		g55355	IbSWEET10.3	LG13:29379559-29381410
AT3G48740.1/AtSWEET1		g38390	IbSWEET10.4	LG10:1596906-1599570
1		g14486	IbSWEET10.5	LG4:12551915-12555045
AT5G23660.1/AtSWEET1		g14649	IbSWEET10.6	LG4:13860424-13864255
2		g4174	IbSWEET15.1	LG1:30131225-30133233
AT5G50800.1/AtSWEET1		g39828	IbSWEET15.2	LG10:12111176-12114109
3		g13599	IbSWEET15.3	LG4:5491975-5493755
AT4G25010.1/AtSWEET1		g13600	IbSWEET15.4	LG4:5496388-5498305
4		g13601	IbSWEET15.5	LG4:5501178-5502945
AT5G13170.1/AtSWEET		g61464	IbSWEET15.6	LG15:10703749-10705343
15		g61461	IbSWEET15.7	LG15:10669805-10675552
	<i>I. trifida</i>	<i>itf01g34820.t1</i>	<i>ItfSWEET9.1</i>	<i>Chr01:31439366-31444973</i>
		<i>itf11g15210.t1</i>	<i>ItfSWEET9.2</i>	<i>Chr11:11572968-11575147</i>
		<i>itf04g17080.t1</i>	<i>ItfSWEET10.1</i>	<i>Chr04:16136022-16138460</i>
		<i>itf11g18410.t1</i>	<i>ItfSWEET10.2</i>	<i>Chr11:15683610-15687029</i>
		<i>itf02g04770.t1</i>	<i>ItfSWEET10.3</i>	<i>Chr02:5937857-5939964</i>
		<i>itf08g02230.t1</i>	<i>ItfSWEET10.4</i>	<i>Chr08:1554537-1557236</i>
		<i>itf13g10090.t1</i>	<i>ItfSWEET10.5</i>	<i>Chr13:12482270-12485935</i>
		<i>itf13g17000.t2</i>	<i>ItfSWEET15.1</i>	<i>Chr13:19113650-19115066</i>
		<i>itf05g00920.t1</i>	<i>ItfSWEET15.2</i>	<i>Chr05:737228-739500</i>
		<i>itf08g10570.t1</i>	<i>ItfSWEET15.3</i>	<i>Chr08:8975012-8978094</i>
	<i>I. triloba</i>	<i>itb01g34620.t1</i>	<i>ItbSWEET9.1</i>	<i>Chr01:37215717-37221099</i>
		<i>itb11g16570.t1</i>	<i>ItbSWEET9.2</i>	<i>Chr11:14815811-14817710</i>
		<i>itb04g18880.t1</i>	<i>ItbSWEET10.1</i>	<i>Chr04:22666706-22668974</i>
		<i>itb13g13530.t1</i>	<i>ItbSWEET10.2</i>	<i>Chr13:20041045-20044131</i>
		<i>itb08g02250.t1</i>	<i>ItbSWEET10.3</i>	<i>Chr08:1811788-1814606</i>
		<i>itb02g00080.t1</i>	<i>ItbSWEET10.4</i>	<i>Chr02:66527-68913</i>
		<i>itb11g20660.t1</i>	<i>ItbSWEET10.5</i>	<i>Chr11:21859398-21862619</i>
		<i>itb13g20410.t1</i>	<i>ItbSWEET15.1</i>	<i>Chr15:27222781-27224625</i>
		<i>itb08g11840.t1</i>	<i>ItbSWEET15.2</i>	<i>Chr08:11826103-11828754</i>
		<i>itb05g00340.t1</i>	<i>ItbSWEET15.3</i>	<i>Chr05:266867-269193</i>
	<i>I. batatas</i>			
Group IV:		<i>itf04g18250.t1</i>	<i>ItfSWEET16.1</i>	<i>Chr04:18378337-18384219</i>
AT3G16690.1/AtSWEET1	<i>I. trifida</i>	<i>itf15g13030.t1</i>	<i>ItfSWEET16.2</i>	<i>Chr15:9811883-9815347</i>
6		<i>itf15g13020.t1</i>	<i>ItfSWEET16.3</i>	<i>Chr15:9799924-9802933</i>
AT4G15920.1/AtSWEET1		<i>itf15g13040.t1</i>	<i>ItfSWEET16.4</i>	<i>Chr15:9819185-9827065</i>
7	<i>I. triloba</i>	<i>itb04g18030.t1</i>	<i>ItbSWEET16.1</i>	<i>Chr04:21289222-21296312</i>
		<i>itb15g13360.t1</i>	<i>ItbSWEET16.2</i>	<i>Chr15:11360246-11362622</i>

Table S2 The Responses of *IbSWEETs* to hormones.

ID		ABA	GA	IAA	MeJA	SA
<i>IbSWEET1.1</i>		repressed	induced	repressed	induced	induced
<i>IbSWEET2.1</i>		induced	induced	repressed	induced	repressed
<i>IbSWEET2.2</i>	Group II	repressed	induced	repressed	induced	induced
<i>IbSWEET2.3</i>		induced	induced	repressed	induced	induced
<i>IbSWEET3.1</i>		repressed	induced	repressed	induced	induced
<i>IbSWEET6.1</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET6.2</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET6.3</i>	Group I	induced	induced	repressed	induced	induced
<i>IbSWEET8.1</i>		repressed	induced	repressed	induced	induced
<i>IbSWEET8.2</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET8.3</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET9.1</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET9.2</i>		repressed	induced	induced	induced	repressed
<i>IbSWEET9.3</i>		repressed	induced	repressed	induced	induced
<i>IbSWEET10.1</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET10.2</i>		induced	induced	repressed	induced	induced
<i>IbSWEET10.3</i>		induced	induced	repressed	induced	repressed
<i>IbSWEET10.4</i>		induced	induced	repressed	induced	induced
<i>IbSWEET10.5</i>	Group III	induced	induced	induced	induced	repressed
<i>IbSWEET10.6</i>		induced	induced	repressed	induced	repressed
<i>IbSWEET15.1</i>		induced	induced	repressed	induced	repressed
<i>IbSWEET15.2</i>		induced	induced	induced	induced	repressed
<i>IbSWEET15.3</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET15.4</i>		induced	induced	repressed	induced	repressed
<i>IbSWEET15.5</i>		induced	induced	repressed	induced	induced
<i>IbSWEET15.6</i>		repressed	induced	repressed	induced	repressed
<i>IbSWEET15.7</i>		induced	induced	repressed	induced	repressed

Table S3 The Responses of *ItfSWEET*s and *ItbSWEET*s to hormones.

ID	Groups	ABA	GA3	IAA
<i>ItfSWEET1.1</i>		repressed	induced	repressed
<i>ItfSWEET1.2</i>		repressed	induced	repressed
<i>ItfSWEET1.3</i>		-	induced	induced
<i>ItfSWEET1.4</i>	Group II	induced	repressed	repressed
<i>ItfSWEET1.5</i>		-	-	-
<i>ItfSWEET1.6</i>		induced	repressed	repressed
<i>ItfSWEET2.1</i>		induced	induced	-
<i>ItfSWEET3.1</i>		-	repressed	induced
<i>ItfSWEET7.1</i>		induced	repressed	-
<i>ItfSWEET7.2</i>		induced	induced	-
<i>ItfSWEET7.3</i>	Group I	repressed	induced	repressed
<i>ItfSWEET7.4</i>		induced	repressed	repressed
<i>ItfSWEET8.1</i>		-	-	-
<i>ItfSWEET9.1</i>		-	induced	repressed
<i>ItfSWEET9.2</i>		-	repressed	repressed
<i>ItfSWEET10.1</i>		-	-	-
<i>ItfSWEET10.2</i>		repressed	repressed	repressed
<i>ItfSWEET10.3</i>	Group III	induced	repressed	repressed
<i>ItfSWEET10.4</i>		repressed	induced	repressed
<i>ItfSWEET10.5</i>		induced	induced	repressed
<i>ItfSWEET15.1</i>		induced	-	induced
<i>ItfSWEET15.2</i>		induced	repressed	repressed
<i>ItfSWEET15.3</i>		repressed	-	-
<i>ItfSWEET16.1</i>		induced	induced	induced
<i>ItfSWEET16.2</i>	Group IV	-	-	-
<i>ItfSWEET16.3</i>		-	-	-
<i>ItfSWEET16.4</i>		-	-	-
<i>ItbSWEET1.1</i>			induced	induced
<i>ItbSWEET1.2</i>		repressed	repressed	repressed
<i>ItbSWEET1.3</i>		-	-	repressed
<i>ItbSWEET1.4</i>	Group II	-	repressed	repressed
<i>ItbSWEET2.1</i>		repressed	repressed	induced
<i>ItbSWEET2.2</i>		induced	repressed	repressed
<i>ItbSWEET3.1</i>		repressed	induced	repressed
<i>ItbSWEET5.1</i>		induced	-	repressed
<i>ItbSWEET6.1</i>		induced	induced	-
<i>ItbSWEET6.2</i>	Group I	-	-	-
<i>ItbSWEET6.3</i>		-	-	-
<i>ItbSWEET8.1</i>		-	induced	induced
<i>ItbSWEET8.2</i>		-	-	-

<i>ItbSWEET9.1</i>		-	-	-
<i>ItbSWEET9.2</i>		repressed	repressed	repressed
<i>ItbSWEET10.1</i>		-	-	-
<i>ItbSWEET10.2</i>		repressed	repressed	repressed
<i>ItbSWEET10.3</i>	Group III	repressed	induced	repressed
<i>ItbSWEET10.4</i>		induced	repressed	repressed
<i>ItbSWEET10.5</i>		repressed	-	induced
<i>ItbSWEET15.1</i>		repressed	induced	induced
<i>ItbSWEET15.2</i>		repressed	repressed	induced
<i>ItbSWEET15.3</i>		induced	induced	induced
<i>ItbSWEET16.1</i>	Group IV	repressed	repressed	repressed
<i>ItbSWEET16.2</i>		repressed	induced	induced

- indicates not found.

Table S4. Primers used in this study.

Gene	Forward Primer	Reverse Primer
<i>IbSWEET1.1</i>	TTTGGGTGTGGCTTAGGAGC	GCCATCAACTCCGACCATCT
<i>IbSWEET2.1</i>	GCCATTTTACCTCTCGCTTGC	CCGTTTGGGACGGAGATGAA
<i>IbSWEET2.2</i>	TTCCAGTTGGCATAACCTCACC	CAAACACAGCGAAAACGCCT
<i>IbSWEET2.3</i>	CCAGTTGGCATAACCTCACCA	CGAAAACGCCTAGCAACCAC
<i>IbSWEET3.1</i>	GTCGCCTCCGTGTCAATGTA	TCAGCAGCCATAAAGCCATC
<i>IbSWEET6.1</i>	TTGTACGCAATCCCCAGTGT	GGACGATGAGAGCAACCCTA
<i>IbSWEET6.2</i>	GAGGTTGTTTTCATGGCGGC	AGTGCTACCAACAATGGCAGA
<i>IbSWEET6.3</i>	TGCTCGTTTGTGACTGGTGT	TTGTGCCAATCCGGCTAGAG
<i>IbSWEET8.1</i>	GTTTCGCTGTCGGTTGTGTTT	CCGCGCTCTTGCTCTTAATC
<i>IbSWEET8.2</i>	ATCCACACAGCGTTCTCGTC	GAGCAAACCCGCCATTTTCC
<i>IbSWEET8.3</i>	GACCATCAAACTCTCGGCA	TTCCCCGAGTTTTGGCATT
<i>IbSWEET9.1</i>	GTTTCATGCCGCTCACTCTCT	AACGATTTGGGCGATTCCGA
<i>IbSWEET9.2</i>	TGCAACCAAACAGGCCAAGA	TAAGTCGCCTCTCACCCCTC
<i>IbSWEET9.3</i>	GTCGCTGGCTTCTCTACGG	CTGCCGTTTTCCGGTCTCTA
<i>IbSWEET10.1</i>	CCTCAAGCCGAGCCCATATT	TGCCCTACAATGCACAATGG
<i>IbSWEET10.2</i>	TTCTGGGCTTCATCTTCGGG	TGCTCCTTCACTGCGTCTTT
<i>IbSWEET10.3</i>	AGTCCAACGCCACACTTCTC	CGCCGAAACCAACAATCACC
<i>IbSWEET10.4</i>	GGCTGGTTTCTCTGGTCACT	TGACTGGAACCCTTCTGTCTG
<i>IbSWEET10.5</i>	TGGCTGCTTCATCGAAACCT	ATACCGACGCCCCAAGTAAC
<i>IbSWEET10.6</i>	CCCAGTTTCTGTTCAAAGGCG	TGGAGCCACAAATACGCACA
<i>IbSWEET15.1</i>	CGCTCCTCTTCTCATCACCA	AGAGTAGAGCCCTCCGACAA
<i>IbSWEET15.2</i>	GCAACCCCCGAATAACCTCA	CTCTTCGCGCACTAAAACCG
<i>IbSWEET15.3</i>	GCGAACAAAGCGAGGAATCA	AGGGAGAACGCCACACAAAT
<i>IbSWEET15.4</i>	ACGCATCAAAGAAAGCGAGG	GCGAATGCCACACAAATCCA
<i>IbSWEET15.5</i>	GCATCAAGTAAAGCAAGGCGT	TGCTCCCAGAAAGGAAACC
<i>IbSWEET15.6</i>	TTTTTCGCGGCTCATGGTTTC	AGCACTATGCCAATCGGTGA
<i>IbSWEET15.7</i>	TAGGAGTGTGGAGTTCTTGTC	TCCAACCACTCCCATCATCC
<i>Ibactin</i>	AGCAGCATGAAGATTAAGGTTGTAGCAC	TGAAAATTAGAAGCACTTCTGTGAAC

