

**Table S1.** Species names and GenBank accessions of proteins from insect species used for multiple alignment and phylogenetic tree analysis.

Gene name	GenBank accessions
<i>TcTre1</i>	XP_015838405.1
<i>TcTre2</i>	XP_008200736.1
<i>TcTre3</i>	XP_015838404.1
<i>TcTre4</i>	XP_008197280.2
<i>TcTre5</i>	XP_973891.1
<i>TcTre6</i>	XP_008191350.2
<i>BmTre</i>	NP_001037458.1
<i>AglTre</i>	JQ246351
<i>SeTre</i>	EU427311
<i>HaTre1</i>	XP_021195450.1
<i>HaTre2</i>	XP_021194411.1
<i>AaTre</i>	XP_021705796.1
<i>AmTre1</i>	NP_001106141.1
<i>AmTre2</i>	XP_006560260.1
<i>DmTre</i>	NP_726024.1
<i>LmTre</i>	FJ795020.1
<i>NlTre1</i>	XP_022193105.2
<i>NlTre2</i>	XP_039290147.1
<i>NlTre3</i>	XP_039297459.1
<i>OfTre1</i>	EF426724.1
<i>OfTre2</i>	EF426723.1
<i>CmTre1</i>	KR149447.1
<i>CmTre2</i>	KR149447.1
<i>GpTre1</i>	MN915102.1
<i>GpTre2</i>	MN915101.1
<i>SfTre1</i>	XP_035432686.1
<i>SfTre2</i>	XP_035456757.1
<i>SfTre3</i>	XP_035432458.1
<i>SfTre4</i>	XP_035432458.1
<i>SfTre5</i>	XP_035433375.1
<i>SfTre6</i>	XP_035433201.1
<i>AgTre</i>	XP_320471.4

**Table S2.** Primers used for qRT-PCR of *Trehalase* genes in *Spodoptera litura*.

Gene name	Primer sequence (5'-3')	Product size(bp)
<i>Trehalase 1 F</i>	ATCGTTATAGTTTGGTCCCT	135
<i>Trehalase 1 R</i>	TTCTTTTAGCGGTTTCTT	
<i>Trehalase 2 F</i>	CCAATCACAAGGACCCAG	113
<i>Trehalase 2 R</i>	CAGCCGCAGCTTTCAACT	
<i>EF1 F</i>	GAAACCGCTAAATACTATGTCA	161
<i>EF1 R</i>	CGGGTCTGTCCGTTCTTC	
<i>GAPDH F</i>	CTGCTAAAGCCGTAGGAAA	113
<i>GAPDH R</i>	CTGCTAAAGCCGTAGGAAA	

**Table S3.** Oligonucleotide templates used to synthesize siRNA.

Gene Name	Primer sequence (5'-3')
<i>Oligo- 1 Trehalase 1</i>	GATCACTAATACGACTCACTATAGGGGGACACCACCGATTTC AATT
<i>Oligo-2 Trehalase 1</i>	AATTGAAATCGGGTGGTGTCCCCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo-3 Trehalase 1</i>	AAGGACACCACCGATTTC AACCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo-4 Trehalase 1</i>	GATCACTAATACGACTCACTATAGGGTTGAAATCGGGTGGTGTCTT
<i>Oligo- 1 Trehalase 2</i>	GATCACTAATACGACTCACTATAGGGCCAGCGAGATCGCTACTAATT
<i>Oligo- 2 Trehalase 2</i>	AATTAGTAGCGATCTCGCTGGCCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo- 3 Trehalase 2</i>	AACCAGCGAGATCGCTACTAACCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo- 4 Trehalase 2</i>	GATCACTAATACGACTCACTATAGGGTTAGTAGCGATCTCGCTGGTT
<i>Oligo-1GFP</i>	GATCACTAATACGACTCACTATAGGGGGGATGTCTCACATCTTGTTT
<i>Oligo-2GFP</i>	AAACAAGATGTGAGACATCCCCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo-3GFP</i>	AAGGGATGTCTCACATCTTGTCCTATAGTGAGTCGTATTAGTGATC
<i>Oligo-4GFP</i>	GATCACTAATACGACTCACTATAGGGACAAGATGTGAGACATCCCTT

**Table S4.** Statistical values of ANOVA in the present study.

		Treatment	F-value	df	p-value	95% C.I.		
						lower	upper	
Relative expression level	SITre1	0d	2.04	7	0.11	0.0688138	0.2936235	
		1d	14.89	7	0.0182	-0.2797636	-0.0456531	
		3d	12.14	7	0.0119	-0.3021293	-0.0534075	
		5d	421.4	7	3.33E-05	1.021293	1.340746	
	SITre2	0d	0.16	7	0.21	-0.5216307	-0.4145546	
		1d	91.19	7	0.00672	0.1262028	0.2296699	
		3d	12.78	7	0.0233	-0.4225094	-0.0531486	
		5d	402.3	7	3.70E-07	3.829535	4.180167	
	SITre1	24h	760.1	7	1.03E-05	-0.3590172	-0.3228618	
		48h	15.59	7	0.0168	-0.591325	-0.1030604	
	Glucose content	SITre2	24h	5.087	7	0.00871	-0.9055588	0.9374615
			48h	30.63	7	0.00521	-0.5638709	-0.1871251
SITre1		24h	6.695	7	0.0609	-0.5458466	0.01923859	
		48h	7.906	7	4.82E-02	-2.325425	-0.0146874	
SITre2		24h	7.578	7	0.0512	-0.4099499	0.0017479	
		48h	287	7	7.12E-05	-1.438494	-1.033362	
Trehalose content		SITre1	24h	9.326	7	3.79E-02	0.06202438	1.30374
			48h	0.156	7	0.713	-0.8726575	0.6551388
		SITre2	24h	5.386	7	0.0811	-0.160258	1.792689
			48h	0.144	7	7.23E-01	-0.294401	0.3876957
Trehalase activity	SITre1	24h	3454	7	5.02E-07	-35.71618	-32.49394	
		48h	321.2	7	5.70E-05	-15.21831	-11.13547	
	SITre2	24h	222.9	7	6.52E-04	-15.6124	-10.12573	
		48h	3589	7	4.65E-07	-30.86082	-28.12715	
Pupation rate	SITre1	0	28	1.00E+00	-13.08834	13.08834		
	SITre2	4	28	1.16E-01	-15.92152	2.58819		
cocoon weight	SITre1	20.75	28	3.03E-05	-1.440179	-0.559821		
	SITre2	24.39	28	7.45E-06	-1.923979	-0.8136405		
Emergence rate	SITre1	2	28	2.30E-01	-19.75501	6.421678		
	SITre2	8	28	4.74E-02	-26.42168	-0.2449888		
Proportion of abnormal adults	SITre1	2	28	2.30E-01	-6.421678	19.75501		
	SITre2	2	28	2.30E-01	-12.84336	39.51002		
Hind tibia length	SITre1	116.1	28	<2e-16	-0.159473	-0.1101348		
	SITre2	57.26	28	1.41E-12	-0.127004	-0.0744926		
Longevity	SITre1	2.728	28	1.05E-01	-0.9128567	9.424793		
	SITre2	0.5	28	4.83E-01	-4.340263	9.060263		