



Figure S1. Generation and molecular confirmation of transgenic *Arabidopsis thaliana*. qRT-PCR identification of *GmGSTU23* transgenic *Arabidopsis* lines. WT: wild type; OE-1-OE-11: *GmGSTU23* transgenic *Arabidopsis* lines of T3 generation. ND: not detected. Data are means \pm SD of three biological replicates. Different letters in the column indicate significant differences among the treatments at $p < 0.05$.

Table S1. The sequencing information of *GmGSTU23*.

CDS:

ATGGCAGCTACTCAGGAAGATGTGAAGCTTTTGGGTATTGTGGGAAGCCCATTTGTGTG-
CAGGGTCCAGATTGCCCTTAAGTTGAAGGGAGTTGAATACAAATTTTGGGAAGAAAATTTGGG-
CAACAAGAGTGATTGCTTCTCAAATACAACCCTGTTCAACAAGAAGGTTCCAGTGTTT-
GTTCAATGAGCAGCCCATAGCAGAGTCTCTTGTGATTGTTGAATACATTGATGAGA-
CATGGAAGAACAACCCCATCTTACCTTCTGATCCTTACCAAAGAGCCTT-
GGCTCGTTTCTGGTCCAAATTCATTGATGATAAGATTGTGGGTGCTG-
TATCGAAATCTGTTTTACGGTTGATGAGAAAGAGCGTGAGAAGAATGTTGAAGAAACAT-
ATGAGGCTCTTCAGTTTCTTGAGAATGAGCTGAAGGACAAGAAGTTTTTGGAGGAGAG-
GAATTTGGGTGGTAGATATTGCTGCTGCTTCATAGCATTTTGGATCCCAATTTTTCAG-
GAAATAGCAGGGTTCAGTTATTCACCAAGTGAGAAATTCCTATACTCTACAAATGGAGCCAA-
GAATTCCTTAACCAACCCTTTTGTGCACGAAGTCCTTCCTCCTAGAGACCACTTTTGGC-
TACTTCAAAGCCCGCTATGAAAGTCTTTCTGCTTCAAATA

cDNA:

ATGGCAGCTACTCAGGAAGATGTGAAGCTTTTGGGTATTGTGGGAAGCCCATTTGTGTG-
CAGGGTCCAGATTGCCCTTAAGTTGAAGGGAGTTGAATACAAATTTTGGGAAGAAAATTTGGG-
CAACAAGAGTGATTGCTTCTCAAATACAACCCTGTTCAACAAGAAGGTTCCAGTGTTT-
GTTCAATGAGCAGCCCATAGCAGAGTCTCTTGTGATTGTTGAATACATTGATGAGA-
CATGGAAGAACAACCCCATCTTACCTTCTGATCCTTACCAAAGAGCCTT-
GGCTCGTTTCTGGTCCAAATTCATTGATGA-
TAAGGTAACCTAACATTTCAAAAATCTTCTTAGTTTTCATGATTGTGCTGATTGTGCAG-
CAAAACATCACGATGAAATCTATATATGTGAAATCTTTCTGGTGTG-
GAATATATATGTGAAATCTTTGAATATGTAGAGAACTCAAAAGTCAACAGCCAACCATGAT-
TTTTTTTAATGTATCAACTTTTGTAAACAATATTAGTGATT-
GAACTTTATGGAATCATATACTATGATTTTGGGA-
GAAATTTTATTTTATTTTACTATTTTATCTGGGTGGGGGATTCTGTCACGTATTTGTTTC-
TATATACTCGATCTAAATCTGTTTGTCTTAATCACTTTATGAAATAATTACTAATAAA-
TATTGTGATTGCGAAATCAGATTGTGGGTGCTGTATCGAAATCTGTTTTCACGGTTGATGA-
GAAAGAGCGTGAGAAGAATGTTGAAGAAACATATGAGGCTCTTCAGTTTCTTGA-
GAATGAGCTGAAGGACAAGAAGTTTTTGGAGGAGAGGAATTTGGGTGGTAGA-
TATTGCTGCTGCTTCATAGCATTTTGGATCCCAATTTTTCAGGAAATAGCAGGGTTGCAG-
TTATTCACCAAGTGAGAAATTCCTATACTCTACAAATGGAGCCAAGAATTCCTTAAC-

CACCCTTTTGTGCACGAAGTCCTTCCTCCTAGAGACCCACTTTTTGCCTACTTCAAAGCCCGC-
TATGAAAGTCTTCTGCTTCAAAATAG

Table S2. Primers used in the study.

Primer Name	Primer Sequence (5' to 3')	Purpose
Clone- <i>GmGSTU23</i> -F	CGCATTCATACGCAGCAATCA	<i>GmGSTU23</i> Cloning
Clone- <i>GmGSTU23</i> -R	AGCAATAACTCAACAAGACACAAGT	
pTF101.1- <i>GmGSTU23</i> -F	gagaacacgggggactctagaATGGCAGCTACTCAGGAAGATGTG	<i>GmGSTU23</i> -pTF101.1
pTF101.1- <i>GmGSTU23</i> -R	cgatcggggaaattcgagctcCTATTTTGAAGCAGAAAGACTTTCATAGC	
Detect-F	CCTTCGCAAGACCCCTTCCTC	Molecular identification
Detect-R	TCATCGCAAGACCGGCAAC	
Actin-F	GCACCACCGGAGAGAAAATA	qRT-PCR
Actin-R	GTGCACAATTGATGGACCAG	
q <i>GmGSTU23</i> - F	GAGCAGCCCATAGCAGAGTC	
q <i>GmGSTU23</i> - R	AGATTTTCGATACAGCACCCACA	