

**GmBTB/POZ promotes the ubiquitination and degradation of
LHP1 to regulate the response of soybean to *Phytophthora sojae***

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Supplementary Figure 1 Nucleotide and amino acid sequences of GmLHP1. The chromo domain and chromo shadow domain are shown in shadow.

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241    GGGTTGCTCCTTTTCGATTCTGTTGCGTTTTGTTGTTGTTGTTGTTGTTGTTGTTG
301    TGGTCTGCTGCTGCTCAATGAAGGGTGGTGGGAAGAGAAAGGCTTACCTCGGA
1      M K G G G G K R K A S T S E

361    GGCTCCGAACGATGTTGTTGTTGTTGCTGCTTCTGCTCTTCTGATGATGCTGA
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481    CCAGTTGCGGAATACTGAAGAACAGGAAGAAGAACCCACCACGTGGAGGTGATGAAG
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                               Chromo domain →
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                               ← Chromo domain
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1261   GGCTTGATGGAACAAGTGAAGTGACCGCTGCCGGGATCCAAAAGGAGAAAATGTGG
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1321   TTCGTAAGAGGTTCAAGAAAGAACTATATGCTAATGAGCCTGCTAATCGGAAAATCC
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1381   AGTTAGCATGCCTGTTGGTACAGCTGAGCCAGAACAAGAGATGCTGTTAGTGGTGG
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                               Chromo shadow domain →
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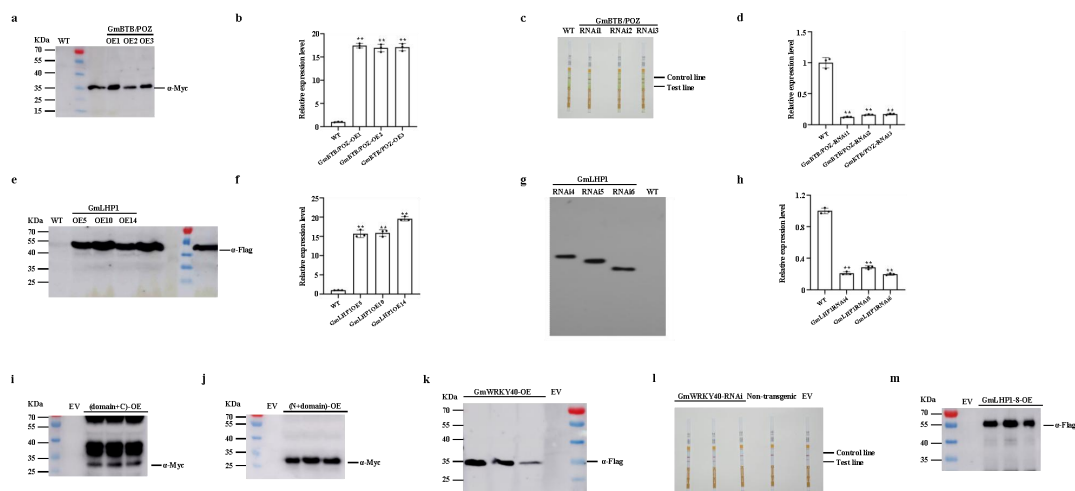
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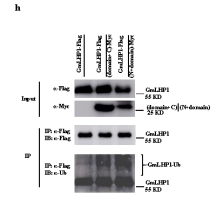
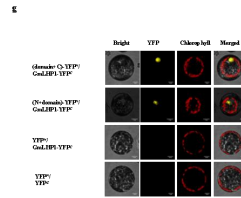
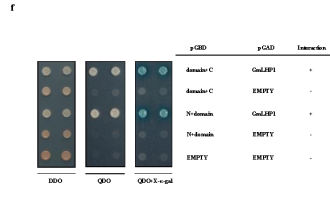
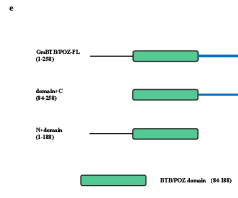
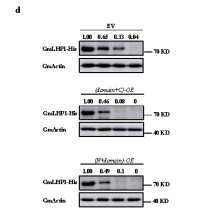
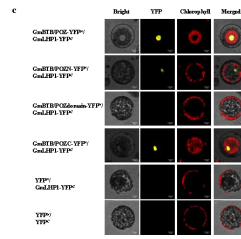
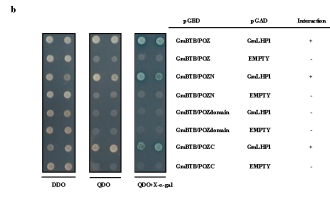
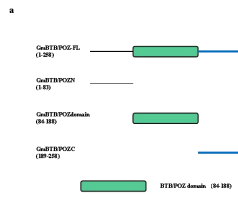
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435   I N F Y E Q H L R Y S P T L *
                               ← Chromo shadow domain
1681   GAAGGTGCTTTTGAGTTGTAGTTAGTTTACACGATTGTGCTTAGTTAGTAGTTTGTGTT
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1801   TTAGTTACACCTAGGTATGATTTAACAAGTGGTTGTCAGTGGCTATATACTGACTGA
1861   TGCATGCTGATGGCATAAATACTATATTTGAATGCTCAACACACAGGAGATAGACA
1921   ATAGTTCTTAGGAGTTAGTCAAGAATGAAAACTATTTGGATTAATGTAATTTTAT
1981   GGAAGTCTTGGCTATTCTGAGCAGATTGTTGCTATTATAATTTGAATACTGATTGG
2041   TTGATTGATTGACATGATTCTAAAGGAAAATCCACAATTAACGTGTTAA

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Supplementary Figure 2 Detection of transgenic soybean lines in this study. (a) Immunoblots showing the expression of GmBTB/POZ-Myc fusion protein in three independent T4 *GmBTB/POZ-OE* soybean plants and the WT controls. The total protein extracts were analyzed in a 12% SDS-PAGE gel for the immunoblot probed with anti-Myc antibody. **(b)** Relative *GmBTB/POZ* expression levels in T4 *GmBTB/POZ-OE* soybean plants. **(c)** The three independent T4 *GmBTB/POZ-RNAi* and WT soybean plants were tested using Quickstix Kit for Liberty Link bar strips. **(d)** Relative *GmBTB/POZ* expression levels in T4 *GmBTB/POZ-RNAi* soybean plants. **(e)** Immunoblots showing the expression of GmLHP1-Flag fusion protein in three independent T4 *GmLHP1OE* soybean plants and the WT controls. The total protein extracts were analyzed in a 12% SDS-PAGE gel for the immunoblot probed with anti-Flag antibody. **(f)** Relative *GmLHP1* expression levels in T4 *GmLHP1OE* soybean plants. **(g)** Southern blot analysis of T4 *GmLHP1RNAi* and WT soybean plants. Twenty micrograms of genomic DNA digested by the restriction enzyme Hind III was hybridized with the probe derived from the bar-specific fragment (354 bp). **(h)** Relative *GmLHP1* expression levels in T4 *GmLHP1RNAi* soybean plants. **(i)** Immunoblots showing the expression of (domain+C)-Myc fusion protein in three independent (*domain+C*)-*OE* soybean hairy roots and the EV controls. The total protein extracts were analyzed in a 12% SDS-PAGE gel and probed with an anti-Myc antibody for the immunoblot. **(j)** Immunoblots showing the expression of (N+domain)-Myc fusion protein in three independent (*N+domain*)-*OE* soybean hairy roots and the EV controls. The total protein extracts were analyzed in a 12% SDS-PAGE gel and probed with an anti-Myc antibody for the immunoblot. **(k)** Immunoblots showing the expression of GmWRKY40-Flag fusion protein in three independent *GmWRKY40-OE* soybean hairy roots. The total protein extracts were analyzed in a 12% SDS-PAGE gel and probed with an anti-Flag antibody for the immunoblot. **(l)** The *GmWRKY40-RNAi* transgenic soybean hairy roots were tested using Quickstix Kit for Liberty Link bar strips. **(m)** Immunoblots showing the expression of GmLHP1-8-Flag fusion protein in three independent *GmLHP1-8-OE* soybean hairy roots and the EV controls. The total protein extracts were analyzed in a 12% SDS-PAGE gel and probed with an anti-Flag antibody for the immunoblot.

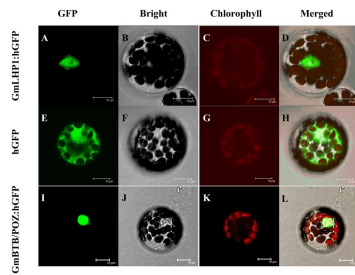


Supplementary Figure 3 The active region of GmBTB/POZ involved in interaction and ubiquitination of GmLHP1. (a) Scheme of GmBTB/POZ different regions inserted into yeast vectors pGBD. (b) GmLHP1 interacts with GmBTB/POZ different regions in yeast cells. The yeast cells were selected on SD medium lacking Leu and Trp (DDO), and interaction was assessed based on their ability to grow on selective SD medium lacking Leu, Trp, His, and Ade (QDO) or SD medium lacking Leu, Trp, His, and Ade (QDO) but containing X- α -Gal for 3 days at 30°C. (c) BiFC analysis of the interaction of GmLHP1 with GmBTB/POZ different regions. The bright-field, YFP fluorescence (yellow), chlorophyll autofluorescence (red), and combined images were visualized under a confocal microscope at 16 h after transfection. Scale bars indicate 10 μ m. (d) *In vitro* cell-free degradation assays of GmLHP1-His in protein extracts from (*domain+C*)-OE and (*N+domain*)-OE transgenic soybean hairy roots. (e) Scheme of GmBTB/POZ (*domain+C*) and (*N+domain*) regions inserted into yeast vectors pGBD. (f) GmLHP1 interacts with the (*domain+C*) and (*N+domain*) regions of GmBTB/POZ in yeast cells. (g) BiFC analysis of the interaction of GmLHP1 with GmBTB/POZ (*domain+C*) and (*N+domain*) regions. (h) The (*domain+C*) and (*N+domain*) of GmBTB/POZ promotes the ubiquitination of GmLHP1 *in vivo*. GmLHP1-Flag was immunoprecipitated using anti-Flag-Tag Mouse mAb (Agarose Conjugated) from *GmLHP1-OE*, *GmLHP1-OE/(domain+C)-OE* and *GmLHP1-OE/(N+domain)-OE* transgenic soybean hairy roots by high-efficiency *A. rhizogenes*-mediated transformation. The transgenic hairy roots were treated with 100 μ M MG132 for 8 h before extraction. The immunoprecipitated protein was examined using anti-Flag and anti-ubi antibodies.

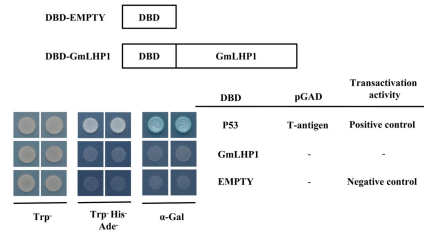


Supplementary Figure 4 Subcellular localization and transcriptional activation analysis of GmLHP1. (a) Subcellular localization analysis of GmLHP1. (b) Transcriptional activation analysis of GmLHP1.

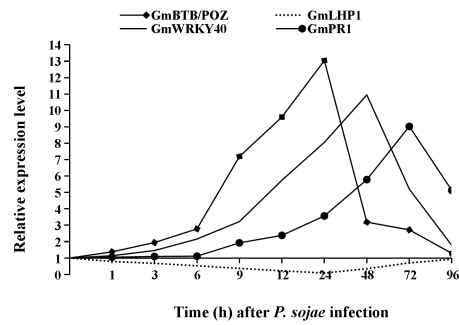
a



b



Supplementary Figure 6 Expression kinetics of *GmBTB/POZ*, *GmLHP1*, *GmWRKY40*, and *GmPRI* in response to *P. sojae* infection in resistant soybean cultivar ‘Suinong 10’. The relative expression levels are expressed as fold changes relative to the transcript level of each gene at the 0 h time point. Fourteen-day-old soybean plants were used for analysis. The housekeeping gene *GmEF1* was used as an internal control to normalize the data.



Supplementary Figure 7 Nucleotide and amino acid sequences of GmWRKY40.
The WRKY domain is shown in shadow.

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1      AAACAAGTAGCGGATATATTCGCATGTGTCTTTTTCTCACTCTCTTTCTCTCAGTT
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1      M L L

121    TCACCTCACAACTTAATTTGAACCTCTCACCTTGCTCATCATCTGGAATTTATTTGGCA
4      S L H K L N L N L S P C S S S G I Y L A

181    GTCATGGATTATTCATCATGGATTAACACTTCCTTGGATCTCAACATTAATCCATAGG
24     V M D Y S S W I N T S L D L N I N L H R

241    GTTCAOGAAGAACTCCCAAAAAGCAGGTGAAAAACAATTTTTCTCATTGGATTGGAG
44     V H E E L P K K Q V E N N F F S L D L E

301    GTGAAGAAATCTTCTGTAAAAAAGAGTCAGCAGGTGCCTTGGCGGAGAACTGAAGCGG
64     V K K S S V K Q E S A G A L A E E L K R

361    GTGAGTGCAGAAAACAAGAAGTTAACCGAAATGCTCACAGAGATGTGTGAGAACTACAAC
84     V S A E N K K L T E M L T E M C E N Y N

421    ACTTTGCGAAGCAATTTGATGGAATACATGAGGAAGAATCCTGATAAGGAGCTCAGCTCA
104    T L R S N L M E Y M R K N P D K E L S S

481    TCAAGAAAAGGAAGTCTGCAAGCAGCAACAACAATAGTACTATTCCAATGGGAGTCAAC
124    S R K R K S A S S N N N S T I P M G V N

541    GGAACCTCTGAAGCAGCTCAACCGATGAGGAATCCTGCAAGAATCCAAGGAAGACATG
144    G T S E S S S T D E E S C K N P K E D M

601    AAGACAAAATTTCAAGAGTTTATATGAGGACAGAAGCATGTGATACAAGCCTTATTGTG
164    K T K I S R V Y M R T E A S D T S L I V
                                WRKY domain→
661    AAAGATGGATATCAATGGAGAAATATGGACAAAAGGTGACCAGAGATAACCTTCTCCA
184    K D G Y Q W R K Y G Q K V T R D N P S P

721    AGAGCATATTTCAAGTCTCTTTGCTCCAAGCTGCCCGGTCAAAAAGGAGTCAAAAGA
204    R A Y F K C S F A P S C P V K K K V Q R

781    AGTGTGGATGATCAATCTGTTCTGGTTGCAACTTATGAAGGAGAGCACAAATACACAC
224    S V D D Q S V L V A T Y E G E H N H T H

841    CCTTCTCAAATGGAGGTAACAACAGGTCCAACCGTTCAGTATCATGTTACAGCTCTCTT
244    P S Q M E V T T G S N R S V S C S A S L
←WRKY domain
901    AGCTTCTCCGACCAACAGTTACCTTGAAGTGGACAAAATCCAAGTCCAGCAGTGAAGTCT
264    S S S A P T V T L D W T K S K S S S E S

961    AAGAATGTAATCCAAAACGAATCACCAGAAGTCCCGCAGGTTTGGTAGAACAGATG
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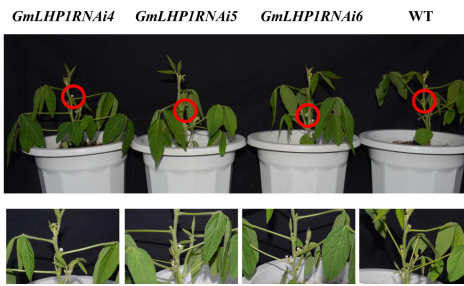
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324    K M L H N N N *

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1441   AGTATTGAGTATTGACAATAACAATATCTCTTGTGATTTTCCAAGTGCATTTGGAACA
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Supplementary Figure 8 The early-flowering phenotype of *GmLHP1RNAi* soybean plants (43-d-old plants) under artificial long-day conditions.



Supplementary Figure 9

Figure 2a

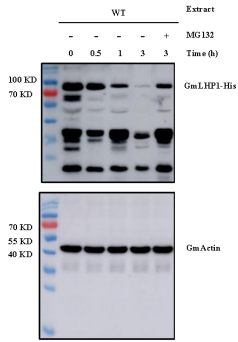


Figure 2c

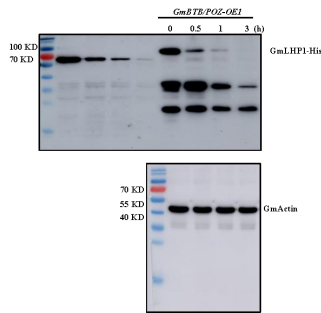


Figure 2d

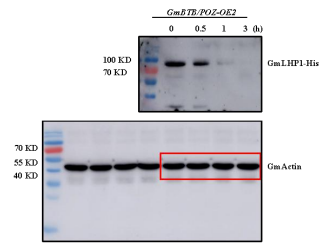


Figure 2e

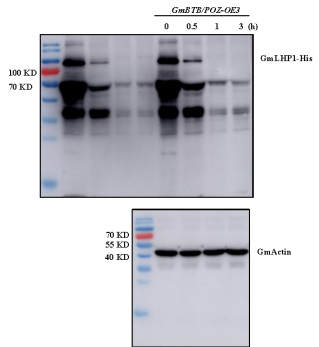


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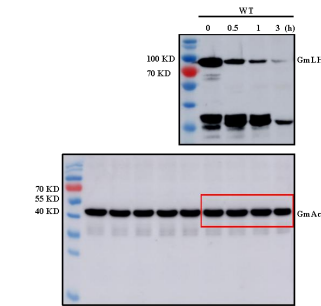


Figure 2g

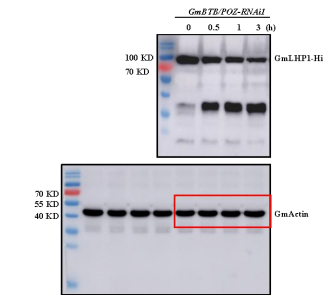


Figure 2h

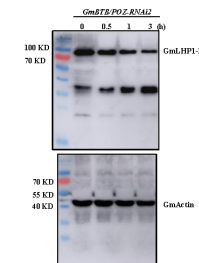


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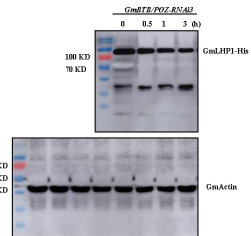


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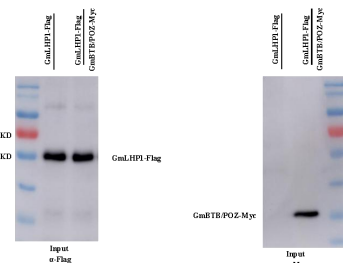


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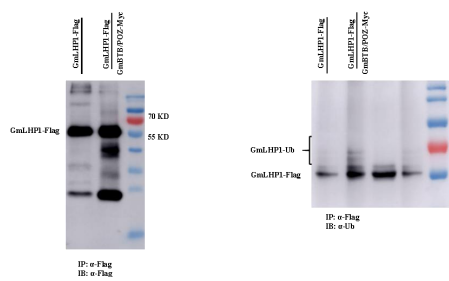


Figure 7g

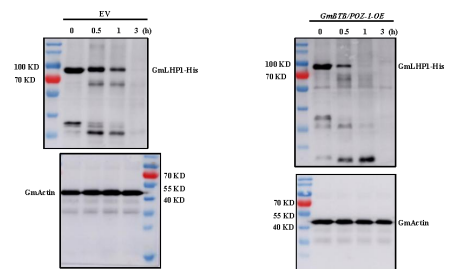
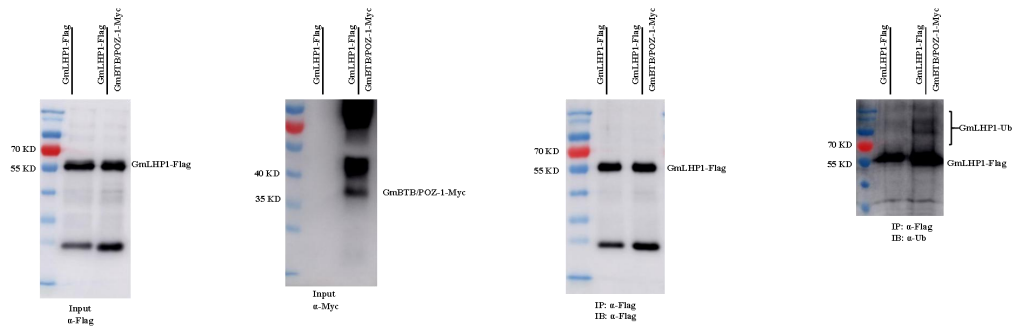


Figure 7h



Supplemental Table 1. List of primers used in this study.**Primers for quantitative real-time PCR**

Primer name	Primers (5'-3')
<i>GmLHP1-qPCR</i>	F: AAGGTTTTCTGCTCTTGGTGA R: CCGCTTCTTGGGTTGAGTATG
<i>GmPRI-qPCR</i>	F: TGAAAATGTGGGTTGATGAGAAAT R: AAGTGATGAAAGTGCCTCCGTT
<i>GmMEKK2-qPCR</i>	F: CGGGAATACACGAGGGACAT R: GCACATCCCAAAGCCCAT
<i>GmWRKY40-qPCR</i>	F: GAGGAACTGAAGCGGGTGA R: AGGTTCCGTTGACTCCCAT
<i>GmCRK2-qPCR</i>	F: GCGGCTCAATCAACCAGTG R: GTGGAGCAGTTGCGGATA
<i>GmNAC90-qPCR</i>	F: GCCATAGACAGAGTTATCCCAGTTA R: CCTGTTGCTTTCCAATACCCA
<i>GmNAC29-qPCR</i>	F: ACCAAGCCACATCAAGACCAT R: ATACCCAGACACGGTTGCTC
<i>GmERF104-qPCR</i>	F: AGCCTCCAAGTCCTCATCA R: CTATTAGGGTCACGGATTTCTGC
<i>GmbHLH35-qPCR</i>	F: AACGATAGGCTTTTGGCACTTA R: CAGAATAGGGAGGTCCTGGTCA
<i>GmMYB70-qPCR</i>	F: AGGGCTCACGCCAGGTTC R: CGATGGGCTGCCAGGGTT
<i>GmMLP34-qPCR</i>	F: TAAAGGTGAATGGGGCAAAGA R: ATGAGCGTCAGGAATGTGGTC
<i>GmBTB/POZ-qPCR</i>	F: CTCCGACGACGCTCCCAT R: GGTGCCACTCCGCCTTTC
<i>GmEF1-qPCR</i>	F: CCACTGCTGAAGAAGATGATGATG R: AAGGACAGAAGACTTGCCACTC
<i>TEF1-qPCR</i>	F: TGATCGTGCTGAACCACCC R: CGAGCGACGGTCCATCTT
<i>GmLHP1-8-qPCR</i>	F: AAGGTTTTCTGCTCTTGGTGA R: AAAAACGCCGAAGGCTGTAA
<i>GmBTB/POZ-1-qPCR</i>	F: CTCCGACGACGCTCCCAT R: GGTGCCACTCCGCCTTTC

Primers for constructs in soybean genetic transformation

Primer name	Primers (5'-3')
<i>GmLHP1-Flag</i>	F: ctcttgaccatggtaGATTACAAGGATGACGACGATAAGATGAAGGG TGGTGGTGGG R: gtcacctgtaattcacacgtgTCACAATGTAGGGCTGTAGC
<i>GmLHP1RNAi1</i>	F: CCGCTCGAGGATCCAAAAGGAGAAAATGTG R: CATGCCATGGCAATGTAGGGCTGTAGCGAA
<i>GmLHP1RNAi2</i>	F: GCTCTAGAGATCCAAAAGGAGAAAATGTG

	R: <u>CGGGATCCCAATGTAGGGCTGTAGCGAA</u>
<i>GmBTB/POZ-Myc</i>	F: <u>CCATGGTGATGCCTCCGCGGCGGTGCAC</u>
	R: <u>CACGTGAAATGCGCCTGCAGTATTTA</u>
<i>GmBTB/POZRNa1</i>	F: <u>CCGCTCGAGGAGCGTGAGAGCACAG</u>
	R: <u>CATGCCATGGCTCGTTGGCCTCCTGG</u>
<i>GmBTB/POZRNa2</i>	F: <u>GCTCTAGAGAGCGTGAGAGCACAGC</u>
	R: <u>CGGGATCCCTCGTTGGCCTCCTGGTA</u>

Primers for constructs in transformation of soybean hairy roots

Primer name	Primers (5'-3')
<i>GmLHP1-Flag</i>	F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u> TGGTGGTGGGA R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u>
<i>GmLHP1RNAi1</i>	F: <u>CCGCTCGAGGATCCAAAAGGAGAAAATGTG</u> R: <u>CATGCCATGGCAATGTAGGGCTGTAGCGAA</u>
<i>GmLHP1RNAi2</i>	F: <u>GCTCTAGAGATCCAAAAGGAGAAAATGTG</u> R: <u>CGGGATCCCAATGTAGGGCTGTAGCGAA</u>
<i>GmBTB/POZ-Myc</i>	F: <u>CCATGGTGATGCCTCCGCGGCGGTGCAC</u> R: <u>CACGTGAAATGCGCCTGCAGTATTTA</u>
<i>GmBTB/POZRNa1</i>	F: <u>CCGCTCGAGGAGCGTGAGAGCACAG</u> R: <u>CATGCCATGGCTCGTTGGCCTCCTGG</u>
<i>GmBTB/POZRNa2</i>	F: <u>GCTCTAGAGAGCGTGAGAGCACAGC</u> R: <u>CGGGATCCCTCGTTGGCCTCCTGGTA</u>
<i>GmLHP1-Flag+GmBTB/POZ-Myc2</i>	F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u> TGGTGGTGGGA R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u>
<i>GmWRKY40-Flag</i>	F: <u>caaatctatctctctcgagATGGATTACAAGGATGACGACGATAAGATG</u> CTTCTCTCACTTCACAACTT R: <u>attattatggagaaactcgagTTAATTATTATTGTGCAACATTTTTCCA</u>
<i>GmWRKY40RNAi1</i>	F: <u>CCGCTCGAGTAACCGAAATGCTCACAGA</u> R: <u>CATGCCATGGGTTGGAACCTGTTGTTACCTC</u>
<i>GmWRKY40RNAi2</i>	F: <u>GCTCTAGATAACCGAAATGCTCACAGA</u> R: <u>CGGGATCCGTTGGAACCTGTTGTTACCTC</u>
<i>(domain+C)-Myc</i>	F: <u>ctcttgaccatggtgagatctGCTTCCACCGCCGATGTC</u> R: <u>accgtaattaaccccactgAAATGCGCCTGCAGTATTTAATAG</u>
<i>GmLHP1-Flag+(domain+C)-Myc2</i>	F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u> TGGTGGTGGGA R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u>
<i>(N+domain)-Myc</i>	F: <u>ctcttgaccatggtgagatctATGCCTCCGCGGCGGTGC</u> R: <u>accgtaattaaccccactgCATTTTGGCGATCAAATACTTTTC</u>
<i>GmLHP1-Flag+(N+domain)-Myc2</i>	F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u> TGGTGGTGGGA R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u>
<i>GmBTB/POZ-1-Myc</i>	F: <u>ctcttgaccatggtgagatctATGCCTCCGCGGCGGTGC</u>

<i>GmLHP1-Flag+</i>	R: accgtaattaaccccacgtgTGTTTCATATATTTCCACAACAAGACG F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u>
<i>GmBTB/POZ-1-Myc2</i>	TGGTGGTGGGA
<i>GmLHP1-8-Flag</i>	R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u> F: <u>CTCGAGATGGATTACAAGGATGACGACGATAAGATGAAGGG</u> TGGTGGTGGGA R: <u>CTCGAGTCACAATGTAGGGCTGTAGCGA</u>

Primers for constructs in yeast two-hybrid assays

Primer name	Primers (5'-3')
<i>GmLHP1-BD</i>	F: <u>GAATTCATGAAGGGTGGTGGTGGGA</u> R: <u>GTCGACTCACAAATGTAGGGCTGTAGCGA</u>
<i>GmLHP1-AD</i>	F: <u>GAATTCATGAAGGGTGGTGGTGGGAA</u> R: <u>GAGCTCTCACAAATGTAGGGCTGTAGCGA</u>
<i>GmBTB/POZ-BD</i>	F: atggccatggaggccgaattcAATTGGGATAAAGCTATTTCTAACTATGC R: ccgctgcaggtcgacggatccAAATGCGCCTGCAGTATTTAATAG
<i>GmBTB/POZ-AD</i>	F: gccatggaggccgatgaattcAATTGGGATAAAGCTATTTCTAACTATGC R: cagctcgagctcgatggatccAAATGCGCCTGCAGTATTTAATAG
<i>GmBTB/POZN</i>	F: atggccatggaggccgaattcATGCCTCCGCGGCGGTGC
<i>-BD</i>	R: ccgctgcaggtcgacggatccGTTAAGATTGGGAGAGGGGAGAG
<i>GmBTB/POZ</i>	F: atggccatggaggccgaattcGCTTCCACCGCCGATGTC
<i>domain -BD</i>	R: ccgctgcaggtcgacggatccCATTTTGGCGATCAAATACTTTTC
<i>GmBTB/POZC</i>	F: atggccatggaggccgaattcAATTGGGATAAAGCTATTTCTAACTATGC
<i>-BD</i>	R: ccgctgcaggtcgacggatccAAATGCGCCTGCAGTATTTAATAG
<i>(domain+C)-BD</i>	F: atggccatggaggccgaattcATGGCTTCCACCGCCGAT R: ccgctgcaggtcgacggatccCTAAAATGCGCCTGCAGTATTTAA
<i>(N+domain)-BD</i>	F: atggccatggaggccgaattcATGCCTCCGCGGCGGTGC R: ccgctgcaggtcgacggatccCTACATTTTGGCGATCAAATACTTTT

Primers for constructs in pull-down assays

Primer name	Primers (5'-3')
<i>GmLHP1-His</i>	F: <u>GGAATTC</u> AATGAAGGGTGGTGGTGG R: <u>GGTCGACCAATGTAGGGCTGTAGCGAA</u>
<i>GmBTB/POZ-GST</i>	F: ccgctggatccccgaattcATGCCTCCGCGGCGGTGC R: gtcacgatgcggccgctcgagCTAAAATGCGCCTGCAGTATTTAA

Primers for constructs in LCI assays

Primer name	Primers (5'-3')
<i>GmLHP1-nLUC</i>	F: gagctcggtagctccggatccATGAAGGGTGGTGGTGGGA R: gatctggtgactccactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmBTB/POZ-ccLUC</i>	F: cggggcggtacctccggatccATGCCTCCGCGGCGGTGC R: ctgcaggtgactccactagtCTAAAATGCGCCTGCAGTATTTAA

Primers for constructs in BiFC assays

Primer name	Primers (5'-3')
<i>GmBTB/POZ-NYFP</i>	F: <u>GGAATTC</u> GAGCGTGAGAGCACAGCA R: <u>GGGTACCAAAATGCGCCTGCAGTAT</u>
<i>GmLHP1-CYFP</i>	F: <u>GAATTC</u> ATGAAGGGTGGTGGTGGG R: <u>CGACACAATGTAGGGCTGTAGCGAA</u>
<i>GmBTB/POZN</i>	F: <u>CTCGAGCATGCCTCCGCGGCGGTGC</u>
<i>-NYFP</i>	R: <u>GAATTC</u> GTTAAGATTGGGAGAGGGGAG
<i>GmBTB/POZ</i>	F: <u>CTCGAGCATGGCTTCCACCGCCGAT</u>
<i>domain-NYFP</i>	R: <u>GAATTC</u> ATTTTGGCGATCAAATACTTTT
<i>GmBTB/POZC</i>	F: <u>CTCGAGCATGAATTGGGATAAAGCTATTTCTAACT</u>
<i>-NYFP</i>	R: <u>GAATTC</u> AAATGCGCCTGCAGTATTTAA
<i>(domain+C)</i>	F: <u>CTCGAGCATGGCTTCCACCGCCGAT</u>
<i>-NYFP</i>	R: <u>GAATTC</u> AAATGCGCCTGCAGTATTTAA
<i>(N+domain)</i>	F: <u>CTCGAGCATGCCTCCGCGGCGGTGC</u>
<i>-NYFP</i>	R: <u>GAATTC</u> ATTTTGGCGATCAAATACTTTT

Primers for subcellular localization

Primer name	Primers (5'-3')
<i>GmLHP1-1302</i>	F: catctagtcacatgccatggca ATGAAGGGTGGTGGTGGGA R: cgacctcgaggaagatct AATGTAGGGCTGTAGCGAAGATGC
<i>GmLHP1-1-1302</i>	F: actcttgaccatggtagatctgGAAAATTTCTTTGAAGTTGAAGCCA R: aagttctctcctttactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmLHP1-2-1302</i>	F: actcttgaccatggtagatctgATGAAGGGTGGTGGTGGGA R: aagttctctcctttactagtACCACTACCAGCATCTCTTGTTCG
<i>GmLHP1-3-1302</i>	F: actcttgaccatggtagatctgAAGAAAGAAGCTATATGCTAATGAGCCTG R: aagttctctcctttactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmLHP1-4-1302</i>	F: actcttgaccatggtagatctgATGAAGGGTGGTGGTGGGA R: aagttctctcctttactagtGTCACCTTCACTTGTTCATGCA
<i>GmLHP1-5-1302</i>	F: actcttgaccatggtagatctgACAACCTTACAGCCTTCGGC R: aagttctctcctttactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmLHP1-6-1302</i>	F: actcttgaccatggtagatctgAAACGCAAGCATGTAGTGCATC R: aagttctctcctttactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmLHP1-7-1302</i>	F: actcttgaccatggtagatctgATGAAGGGTGGTGGTGGGA R: aagttctctcctttactagtCTCCTCAAAAGCTTCAACAACATC
<i>GmLHP1-8-1302</i>	F: actcttgaccatggtagatctgATGAAGGGTGGTGGTGGGA R: aagttctctcctttactagtCAATGTAGGGCTGTAGCGAAGA
<i>GmBTB/POZ</i>	F: <u>CCATGGTTATGCCTCCGCGGCGGTGC</u>
<i>-1302</i>	R: <u>ACTAGTAAATGCGCCTGCAGTATTTAAT</u>
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgATGCCTCCGCGGCGGTGC
<i>-1-1302</i>	R: aagttctctcctttactagtTGTTTCATATATTTCCACAACAAGACG
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgATGCCTCCGCGGCGGTGC
<i>-2-1302</i>	R: aagttctctcctttactagtATAGTTAGAAATAGCTTTATCCCAATTCA
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgATGCCTCCGCGGCGGTGC

-3-1302	R: aagttcttcctttactagtCATTTTGGCGATCAAATACTTTTC
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgATGCCTCCGCGGGCGGTGC
-4-1302	R: aagttcttcctttactagtATTATCAAGGGACGCTTCAGCA
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgGCTTCCACCGCCGATGTC
-5-1302	R: aagttcttcctttactagtAAATGCGCCTGCAGTATTTAATAG
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgGCCGATGTCGTCTCGTTC
-6-1302	R: aagttcttcctttactagtAAATGCGCCTGCAGTATTTAATAG
<i>GmBTB/POZ</i>	F: actcttgaccatggtagatctgAATTGGGATAAAGCTATTTCTAACTATGC
-7-1302	R: aagttcttcctttactagtAAATGCGCCTGCAGTATTTAATAG

Primers for transient expression assay

Primer name	Primers (5'-3')
<i>GmLHP1-BD</i>	F: GAATTCATGAAGGGTGGTGGTGGGA R: GTCGACTCACAAATGTAGGGCTGTAGCGA

Primers for ChIP assays

Primer name	Primers (5'-3')
<i>GmWRKY40-a</i>	F: ATGATTGCCTGCCCTCG R: CCATCAAGTCGGGATAGAAGT
<i>GmWRKY40-b</i>	F: AGACAGACTTCTATCCCGACTT R: TTTTCTTGGGGATTAGGTTT
<i>GmWRKY40-c</i>	F: CAGAAAACCTAATCCCCAAG R: GCTGGAAAAGGAAGGGAAT
<i>GmWRKY40-d</i>	F: TTCCCTTCTTTTCCAGC R: TGAGTAACACGGAAGTAGATGC
<i>GmEF1-a</i>	F: AGAGAGACTTATGGCAAAGACAA R: CTCCTTCTTCTCCCCGC
<i>GmEF1-b</i>	F: GATGCGGGGAGAAGAAGG R: TCACTTTTGGTTCCTTTATCTT
<i>GmEF1-c</i>	F: TCGGGTCAGATGTCGGATG R: TACAGTGCGAGCGAGCGT

Primers for transient transcription dual-luciferase assay

Primer name	Primers (5'-3')
<i>GmWRKY40-LUC</i>	F: GGAAGCTTAATTTCTTGCAGACCAACTGAC R: GGGATCCCAAAGCTGGCATTCTTTATTTT

Primers for Promoter-GUS analysis

Primer name	Primers (5'-3')
<i>GmWRKY40-GUS</i>	F: GGAAGCTTAATTTCTTGCAGACCAACTGAC R: GGGATCCCAAAGCTGGCATTCTTTATTT
