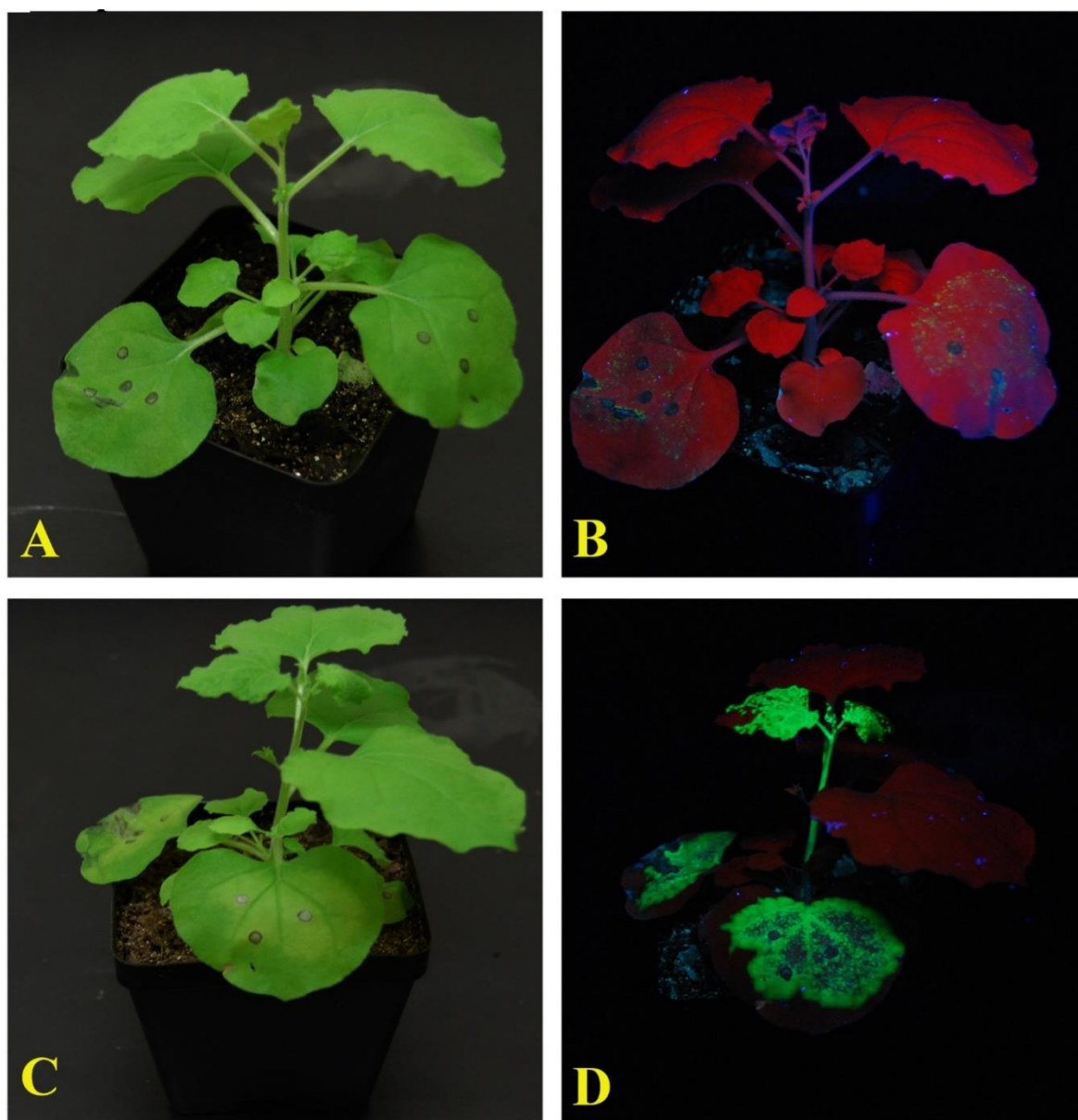
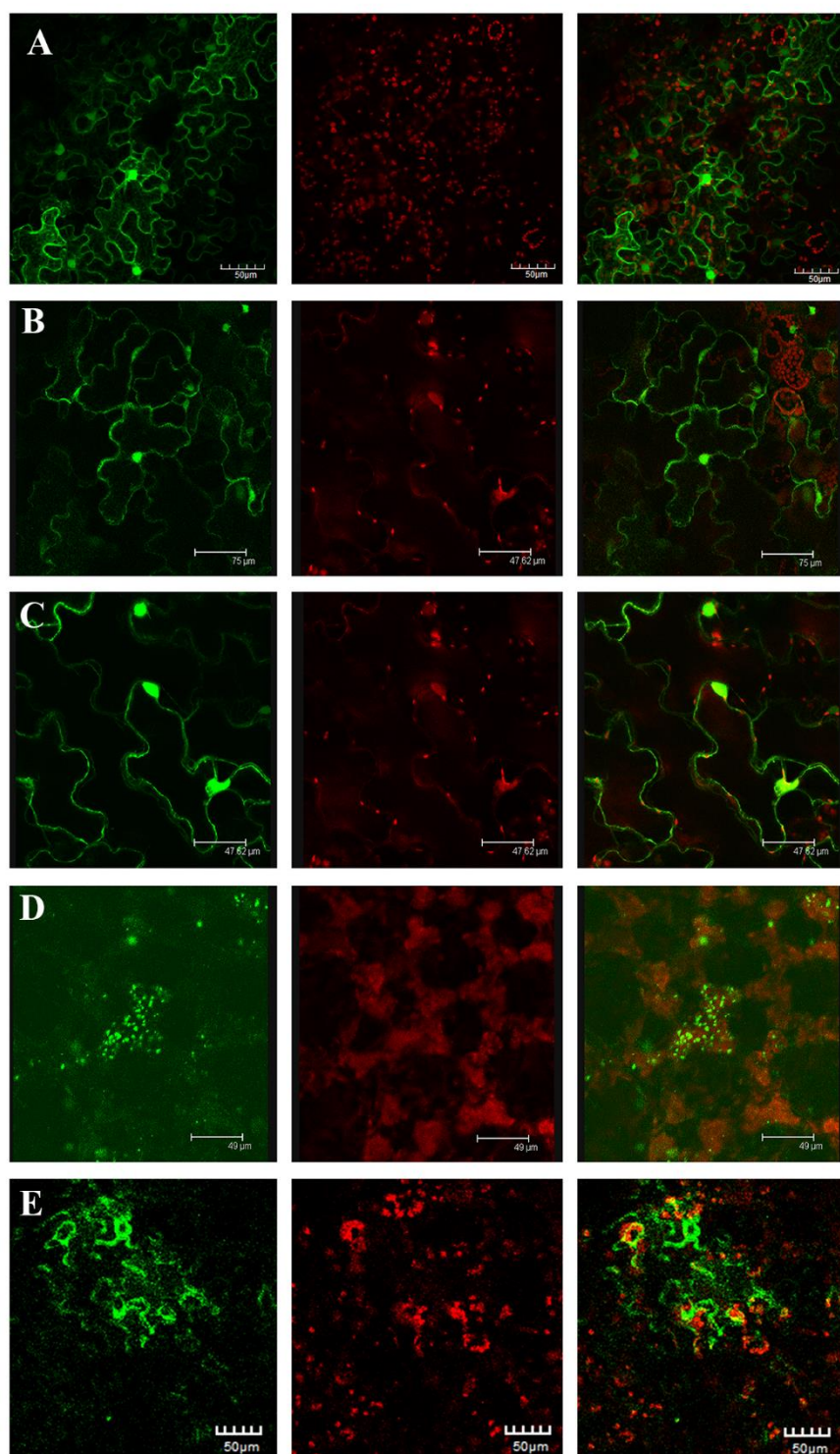


Supplementary Materials



Supplementary Figure 1. TMV-GFPC3 could replicate in infiltrated *N. benthamiana* leaves and move to systemic leaves by agroinfiltration.

N. benthamiana was infiltrated with EHA105 harboring pBI121-30B-GFPC3. (A) and (B) were taken at 5 DPI, (A) under normal light and (B) under UV light. (C) and (D) were taken at 10 DPI, (C) under normal light and (D) under UV light. GFP was observed in the infiltrated leaves under UV light (B), and systemic leaves were green under UV light at 10 DPI (D).



Supplementary Figure 2. Distribution patterns of free GFP, CLIBASIA_00470-GFP, CLIBASIA_04025-GFP, CLIBASIA_05150-GFP and CLIBASIA_04065-GFP in *N. benthamiana*. CLIBASIA_00470-GFP (B) and CLIBASIA_04025-GFP (C) distributed similarly in *N. benthamiana* to free GFP (A), but CLIBASIA_05150-GFP (D) and CLIBASIA_04065-GFP (E) distributed differently. Left row showed GFP, middle showed chloroplast, right showed overlay of GFP and chloroplast. Free GFP distribute in in the cytosol and to the nuclear lumen; CLIBASIA_05150-GFP showed small green dots; CLIBASIA_04065-GFP showed green dots, cycles, and grain-like shape.



Supplementary Table 1. Primers used in this research.

1. Primers for Screening the Putative Virulence Factors	
1A. Primers for Construction Intermediate Vector	
35S-F	<u>AAGCTT</u> CCCCAGATTAGCCTTTTCAATTC
35S-TMV R	GTTTGTGTTGTTGGTAATTGTTGTAAAAATACTTCTCTCCAAATGAAATGAACTTC
TMV 5' F	GAAGTTCATTTTCATTTGGAGAGAAGTATTTTTACAACAATTACCAACAACAACAAAC
TMV 5' R	<u>CTCGAGGTAATTTGGAATTCTGGATACG</u>
30B 3'-F	<u>CTCGAGCGGTAGTCAAGATGCATAATAA</u>
30B 3'-R1	CTTTAGGGACTCGTCAGTGTACTGATATAAGTACAGACTGGGCCGCTACCCGCGGTTAG
30B 3'-R2	<u>GAGCTCTGCAGATATCCAGTTTCGTCCTTTAGGGACTCGTCAGTGTACTGATATAAG</u>
1B. Primers for Expression the Selected Putative Virulence Factors with TMV via Agroinfiltration	
CLIBASIA_00070 F	<u>TTAATTAAT</u> GGAATGTTGTGGTAGATCAGGTGACGGTG
CLIBASIA_00070 R	<u>CTCGAGCTAGCTATCGACCACAGTAATTGTAAACTGAC</u>
CLIBASIA_00100 F	<u>TTAATTAAT</u> GAAATCCTGTAAATATATACGATTTAAC
CLIBASIA_00100 R	<u>CTCGAGCTAATTGTCACTTAAAGGAAGAGATG</u>
CLIBASIA_00420 F	<u>TTAATTAAT</u> TGGCCATAGCTGTGGTTTCTTGTAGTGC
CLIBASIA_00420 R	<u>CTCGAGCTATTTATAAAATATGATTGACGTAG</u>
CLIBASIA_00460 F	<u>TTAATTAAT</u> GCAAGTTTATCATATCCATTGCGCTC
CLIBASIA_00460 R	<u>CTCGAGCTATTTTTTATCTTCTTCAAATAAAATATTG</u>
CLIBASIA_00470 F	<u>TTAATTAAT</u> TGGGTGGGCTATGCTTTAACCGCCCCAAAAG
CLIBASIA_00470 MF	<u>TTAATTAAT</u> AAGGTGGGCTATGCTTTAACCGCCCCAAAAG
CLIBASIA_00470 R	<u>CTCGAGTTATTGGTAGCGCCTTTCTCTTGCTTC</u>
CLIBASIA_00525 F	<u>TTAATTAAT</u> TGTATGAAGATGCGATCAGGTCTCAATTTG
CLIBASIA_00525 R	<u>CTCGAGTTACTCTTTCTCATTTTGCTCAATGG</u>
CLIBASIA_00530 F	<u>TTAATTAAT</u> TGGATGACAGGATTACGGAATTAAATAC
CLIBASIA_00530 R	<u>CTCGAGTTATTGTTCAAGGGTTGTGGTTTTAC</u>
CLIBASIA_00965 F	<u>TTAATTAAT</u> TGGTAACGCAACCTAAGAAAGCAACAAC
CLIBASIA_00965 R	<u>CTCGAGTTATGTATCGTATCCTTTTCTTATTG</u>
CLIBASIA_01135 F	<u>TTAATTAAT</u> TGAGAGATGCCGATTCTTGTACGCC
CLIBASIA_01135 R	<u>CCTCGAGTTAATTATTCATAAATCTCTCTAGTTG</u>
CLIBASIA_01345 F	<u>ATTAATTAAT</u> TGCATAATATAAAACCGGTTTATAC

CLIBASIA_01345 R	<u>CCTCGAGTCAGGAAAAATCATGATTTATATCATG</u>
CLIBASIA_01555 F	<u>ATTAATTAAT</u> GATGAGCGATTTTAAAATAAATTCATC
CLIBASIA_01555 R	<u>CCTCGAGTTAATTTTAAAATGAACAAGACGTC</u>
CLIBASIA_01640 F	<u>TTAATTAAT</u> GGGTTTTTCGGGTTTGTAATGGCAC
CLIBASIA_01640 R	<u>CTCGAGTTATCTCCTATCTTGTGCAGGCTCAG</u>
CLIBASIA_02075 F	<u>TTAATTAAT</u> GACGGATCAGGATTTGGTTCGTACTATTG
CLIBASIA_02075 R	<u>CTCGAGTCATCTCGCTTCTGCAAGCAAAACATC</u>
CLIBASIA_02120 F	<u>TTAATTAAT</u> GACGACACAAAAAAAAGTAGTATTATCCAG
CLIBASIA_02120 R	<u>CTCGAGTCAAAATAAAGTATCCACAATTTTCG</u>
CLIBASIA_02145 F	<u>TTAATTAAT</u> GGCTAGATTTCGCAAATAAAGTAGCCG
CLIBASIA_02145 R	<u>CTCGAGCTATTTGCTGATCTGAACGTCATTATG</u>
CLIBASIA_02180 F	<u>ATTAATTAAT</u> GCGGTTAGAGAATGGTCTTGCAATATC
CLIBASIA_02180 R	<u>CCTCGAGTTACATTTTGTATGGCACAAAAAAAAGTG</u>
CLIBASIA_02215 F	<u>TTAATTAAT</u> GGAAGACAACAGGATAGAGAGTTTG
CLIBASIA_02215 R	<u>CCTCGAGTTAGTAATCCGATACTTTCTCCCCA</u>
CLIBASIA_02250 F	<u>TTAATTAAT</u> GACGGAAAATACTACCAAATATTTG
CLIBASIA_02250 R	<u>CCTCGAGCTATCGCTTGTATTTGGTCAATATC</u>
CLIBASIA_02275 F	<u>TTAATTAAT</u> GATTCAAATTTATTCTCCTATATCTG
CLIBASIA_02275 R	<u>CTCGAGTTATTTGACAAAAGATCCCCTCAG</u>
CLIBASIA_02305 F	<u>TTAATTAAT</u> GGATCATTTCAGATTCACAGCATCCTCCAG
CLIBASIA_02305 R	<u>CTCGAGTTATTCTTCCATTTTCGGTGGATCCTG</u>
CLIBASIA_02425 F	<u>TTAATTAAT</u> GGCTGATCCTGTGCGTCGTGCTCATC
CLIBASIA_02425 R	<u>CTCGAGTTAAACTTCATTCTACACCCAAAG</u>
CLIBASIA_02470 F	<u>TTAATTAAT</u> GCTTAATTGCAACGAACTTTAATGCAAG
CLIBASIA_02470 R	<u>CTCGAGTCAATTATTTATAAATGGGCAGAGCAG</u>
CLIBASIA_02845 F	<u>TTAATTAAT</u> GAAATACAGCAAATATCTTAATCCCATC
CLIBASIA_02845 R	<u>CCTCGAGTTACTGACAGTGTAGGCGTGG</u>
CLIBASIA_02935 F	<u>TTAATTAAT</u> GTTAGAGGCTAAGCTTCCCCCATCC
CLIBASIA_02935 R	<u>CTCGAGTTATTTGTCAATTTTATAGAGAAACG</u>
CLIBASIA_03020 F	<u>TTAATTAAT</u> GATACTTATATTTCTTTTTTTTATATTG
CLIBASIA_03020 R	<u>CTCGAGCTAAGAACAGTTCTTAGCTATTGAAT</u>
CLIBASIA_03070 F	<u>TTAATTAAT</u> GAAAGTTACCACCAATTAAAGAGGCAAATGC

CLIBASIA_03070 R	<u>CTCGAGTCATTTATAAATAAAACCAATTGCACC</u>
CLIBASIA_03085 F	<u>TTAATTAATGGATAGGATGAAAGGTGTTTACCAG</u>
CLIBASIA_03085 R	<u>CTCGAGTCACGAGCTTTTATTTGGCTTAAC</u>
CLIBASIA_03120 F	<u>TTAATTAATGCAAGATGAAATTAAGAAGAATAATCC</u>
CLIBASIA_03120 R	<u>CTCGAGTTACGATGCAAAGGAGGTAAAGGCGGC</u>
CLIBASIA_03230 F	<u>TTAATTAATGCTTCTTACGAAAAAGATTGAAAGTG</u>
CLIBASIA_03230 R	<u>CTCGAGTCAGGGACATAAACCCCTTGACGTCG</u>
CLIBASIA_03515 F	<u>TTAATTAATGAATGAACGAAAAACAAAAGATTCTTG</u>
CLIBASIA_03515 R	<u>CTCGAGTTAAATCTTCTCCGAACGTACAGTT</u>
CLIBASIA_03695 F	<u>TTAATTAATGTTTGAAAAATATAAAGCGCC</u>
CLIBASIA_03695 R	<u>CTCGAGTCAGAAGCTATAATATTGGGTA</u>
CLIBASIA_03915 F	<u>TTAATTAATGTGGAATCTAAAGCACGCAATTAGAAAG</u>
CLIBASIA_03915 R	<u>CTCGAGTTATTGTTCTTTATTGCTATTTT</u>
CLIBASIA_03975 F	<u>TTAATTAATGCAAAATTTTCATGCAGTAGTGCC</u>
CLIBASIA_03975 R	<u>CTCGAGTTATGTCGCATTCATTGGCTGTTT</u>
CLIBASIA_04025 F	<u>TTAATTAATGGAATACTCTCTCTGACTCTAAGCAAC</u>
CLIBASIA_04025 MF	<u>TTAATTAATAAGATACTCTCTCTGACTCTAAGCAAC</u>
CLIBASIA_04025 R	<u>CTCGAGTTATCTTTCCCATCTCTAACGTATCTTTC</u>
CLIBASIA_04030 F	<u>TTAATTAATGTCTGACCCCGCTAAAAAGAGTAACATC</u>
CLIBASIA_04030 R	<u>CTCGAGTTAGGCTCCTTCTTTTTTATCCTCTTTTG</u>
CLIBASIA_04040 F	<u>TTAATTAATGGATCCTGTAGCTCCACCACCACC</u>
CLIBASIA_04040 R	<u>CTCGAGCTAATCCTCTTTTGTGTTTCTGC</u>
CLIBASIA_04065 CF	<u>TTAATTAATGTCACAAATTCCTTATAAAAAATTC</u>
CLIBASIA_04065 R	<u>CTCGAGCTAGCTATCGACCACAGTAATTGTAAAC</u>
CLIBASIA_04065-HA R	<u>CTCGAGCTAAGCGTAATCTGGAACATCGTATGGGTAGCTATCGACCACAGTAATTG</u>
CLIBASIA_04065 CFSF	<u>TTAATTAATGCCTCACAAATTCCTTATAAAAAATTC</u>
CLIBASIA_04065 FSR	<u>CTCGAGCTACAGCGTAATCTGGAACATCGTATGGGTAGCTATCGACCACAGTAATTG</u>
CLIBASIA_04140 F	<u>TTAATTAATGGATGTTGTGGTAGATCAGGTGAC</u>
CLIBASIA_04140 R	<u>CTCGAGCTAGCTATCGACCACAGTAATTGTAAACTGAC</u>
CLIBASIA_04250 F	<u>TTAATTAATGTGTTCTTCTAAAAAAGGAGGTG</u>
CLIBASIA_04250 R	<u>CTCGAGCTATCTTCTGGATTGATTTTTACCAT</u>
CLIBASIA_04320 F	<u>TTAATTAATGCATGAGGATGAATTAAAGGTC</u>

CLIBASIA_04320 R	<u>CTCGAGTTAGAATTTATAAACATAATCAAGAC</u>
CLIBASIA_04330 F	<u>TTAATTAATGACTCCACAAAACCATCTTCTCTTTTTTTC</u>
CLIBASIA_04330 R	<u>CTCGAGTTATATAAAGAAGTGCATAGGATATTTTGC</u>
CLIBASIA_04405 F	<u>TTAATTAATGGACATTGTCAATTGGTAGAACAGAGG</u>
CLIBASIA_04405 R	<u>CTCGAGCTAATTTGATGGGGGCACAGTGATTTTTTTAAC</u>
CLIBASIA_04410 F	<u>TTAATTAATGCCGTGCGGCATAGAGGAAGATAAC</u>
CLIBASIA_04410 R	<u>CTCGAGTTAGTAGCGGTGTCCGTTGTTTTGTG</u>
CLIBASIA_04425 F	<u>TTAATTAATGTATGATGCGAAAGCAAGAAGATTTC</u>
CLIBASIA_04425 R	<u>CTCGAGTTACTGGGATCGGTAGTTTCGATAATATC</u>
CLIBASIA_04470 F	<u>TTAATTAATGTACGATTTATTATATAATTTTTC</u>
CLIBASIA_04470 R	<u>CTCGAGTTACGCAAAAACAAAGGATGTGG</u>
CLIBASIA_04520 F	<u>TTAATTAATGCAAAAAGTTAGACTTGTGTCTGTGG</u>
CLIBASIA_04520 R	<u>CTCGAGTCAAAAATCATAATCGATGCTGATAG</u>
CLIBASIA_04530 F	<u>TTAATTAATGTTAGATCCGGAGAATGGAATAAG</u>
CLIBASIA_04530 R	<u>CTCGAGTTATTTTCTTAAAAAATTTTGTGATCTAAG</u>
CLIBASIA_04540 F	<u>TTAATTAATGGATGTTGTGGTAGATCAGGTGACGGTG</u>
CLIBASIA_04540 R	<u>CTCGAGTTACCGCCTCCAGCTATCGACCACAGTAATTG</u>
CLIBASIA_04560 F	<u>TTAATTAATGGATTCCATTGCAAAAAAAGAAATAC</u>
CLIBASIA_04560 R	<u>CTCGAGTTAAAATGCTACGTCCCATAGCTTTAAC</u>
CLIBASIA_04580 F	<u>TTAATTAATGCAACCTTTTTTGGAAGAGACGG</u>
CLIBASIA_04580 R	<u>CTCGAGCTAATGATGCGACGGCAAAGGAGG</u>
CLIBASIA_04735 F	<u>TTAATTAATGTGTACACAAATAGATTTCGGAAAT</u>
CLIBASIA_04735 R	<u>CTCGAGCTACCGAGAAATTATAACTTTATCACTTTC</u>
CLIBASIA_05050 F	<u>TTAATTAATGATCGATTTAGCGCACATTATGTAC</u>
CLIBASIA_05050 R	<u>CTCGAGTTATCTATTAGGTGCAATTCTCACAC</u>
CLIBASIA_05060 F	<u>TTAATTAATGCATTTATTAAGTAGATTCCG</u>
CLIBASIA_05060 R	<u>CTCGAGTTATCCTTTGAGGATTACACTATATTTAC</u>
CLIBASIA_05115 F	<u>TTAATTAATGTCACAACCTGAGCCTACATTACG</u>
CLIBASIA_05115 R	<u>CTCGAGTTAATTACATTTACGAATATCTGCC</u>
CLIBASIA_05150 F	<u>TTAATTAATGGACTATGGGTATTCTCCCCAGTTTC</u>
CLIBASIA_05150 MF	<u>TTAATTAATAAGACTATGGGTATTCTCCCCAGTTTC</u>
HA-CLIBASIA_05150 F	<u>TTAATTAATGTACCCATACGATGTTCCAGATTACGCTGACTATGGGTATTCTCCCCAG</u>

CLIBASIA_05150 R	<u>CTCGAGT</u> TAAAAGCGTAAAACCAACCAGCTGTG
CLIBASIA_05320 F	<u>TTAATTAAT</u> GGCCAATGAGCACTCTTCTGTATC
CLIBASIA_05320 R	<u>CTCGAGT</u> CAATTGTTTAAGCCTCCAAAGAGC
CLIBASIA_05330 F	<u>TTAATTAAT</u> GCTTCCACAAATTTTCTCTCTTATTAT
CLIBASIA_05330 R	<u>CTCGAGT</u> CAATATGTTGCAAAAAAGAATCAAG
CLIBASIA_05480 F	<u>TTAATTAAT</u> GGCGGCTCTGGCAACTCCTATAGG
CLIBASIA_05480 R	<u>CTCGAGT</u> TATCTTTGGGATCTTCGATTAAGC
CLIBASIA_05570 F	<u>TTAATTAAT</u> GGCGGCTCTGGCAACTCCTATAGG
CLIBASIA_05570 R	<u>CTCGAGT</u> CAGTAGTTTTTCTGTCTCTTTAATC
CLIBASIA_05640 F	<u>TTAATTAAT</u> TGGATGAACCAAAGAAGCTGAATC
CLIBASIA_05640 R	<u>CTCGAGT</u> TAATCACTAGATAGTTTCGCACCCT

2. Primers for Subcellular Localization

GFP F	<u>TCTAGA</u> ATGGCTAGCAAAGGAGAAGAACTTTTC
GFP R	<u>GAGCTC</u> TATTTGTAAAGTTCATCCATGCCATGTGT
GFP FF	<u>CCCGGGG</u> CTAGCAAAGGAGAAGAACTTTTC
GFP FR	<u>GAGCTC</u> TATTTGTAAAGTTCATCCATGCCATGTGT
CLIBASIA_00470 FF	<u>TCTAGAT</u> GGGTGGGCTATGCTTTAACCG
CLIBASIA_00470 FR	<u>CCCGGGT</u> TGGTAGCGCCTTTCTCTTGCTTC
CLIBASIA_04025 FF	<u>TCTAGAT</u> GGATACTCTCTCTGACTCTAAGC
CLIBASIA_04025 FR	<u>CCCGGGT</u> CTTTCCCATCTCTAACGTATCTTTC
CLIBASIA_04065 FF	<u>TATAGAT</u> TGGATGTTGTGGTAGATCAGGTG
CLIBASIA_04065 FR	<u>CCCGGGG</u> CTATCGACCACAGTAATTGTAAAC
CLIBASIA_05150 FF	<u>TCTAGAT</u> TGGACTATGGGTATTCTCCCCAGTTTC
CLIBASIA_05150 FR	<u>CCCGGGG</u> AAAGCGTAAAACCAACCAGCTGTG
RFP-NLS F	<u>GGATCC</u> ATGGCCTCCTCCGAGGACGTCATC
RFP-NLS R	<u>GAGCTC</u> TCTAGATCAGGTCGATCCCGACGCTATTTCCGAAG

3. Primers for Yeast Two-Hybrid

CLIBASIA_00470 F	<u>GAATTC</u> ATGCCGTCTAAAGAAGAACAAGCACG
CLIBASIA_00470 R	GCAGGTCGAC <u>GATCCT</u> TATTGGTAGCGCCTTTCTCTTGC
CLIBASIA_04025 F	CATGGAGGCC <u>GAATTC</u> GATACTCTCTCTGACTCTAAGCAAC
CLIBASIA_04025 R	<u>GGATCCT</u> TATATATTGTTCTTTATCTTTATGGATG
CLIBASIA_04065 F	GGCC <u>GAATTC</u> GATGTTGTGGTAGATCAGGTGACGGTG

CLIBASIA_04065 R	CGACGGATCCCTAGCTATCGACCACAGTAATTGTAAACTG
CLIBASIA_05150 F	CATGGAGGCCCGAATTCGACTATGGGTATTCTCCCCAGTTTC
CLIBASIA_05150 R	GCAGGTCTGACGGATCCTTAAAAGCGTAAAACACACCAGC

F for forward; R for reverse; MF for mutation forward; CFSF for C-terminal part frameshifting forward; FSR for frameshifting reverse; FF for fusion forward; FR for fusion reverse. Italic letters were for added sequences, underline for enzyme site.

Supplementary table 2. The height of *N. benthamiana* expression of *CLIBASIA_00470*, *CLIBASIA_04025*, *CLIBASIA_00470N*, *CLIBASIA_04025N* and green fluorescent protein (*GFPC3*) at 5 dpi and 15dpi.

5 dpi					15 dpi				
<i>CLIBASIA_00470</i>	<i>CLIBASIA_00470N</i>	<i>CLIBASIA_04025</i>	<i>CLIBASIA_04025N</i>	<i>GFPC3</i>	<i>CLIBASIA_00470</i>	<i>CLIBASIA_00470N</i>	<i>CLIBASIA_04025</i>	<i>CLIBASIA_04025N</i>	<i>GFPC3</i>
5	4.5	5	5	5	6.5	10.5	10	14	15
4.8	5	5.5	5.5	5	10	12.5	9.5	15	17
4.5	4.6	5.5	5.5	6	10	17	9.5	17	16
5	5	5	5.5	5	11.3	15	13	19	16
5.5	4.7	4.5	4.5	5	10.3	15	12	15	16
4.5	4.5	5	5	5	8.6	11.5	10	16	16

The height of plant measured in centimeter (cm). Six plants were used for each vector expressing *CLIBASIA_00470*, *CLIBASIA_04025*, *CLIBASIA_00470N*, *CLIBASIA_04025N* and control *GFPC3* via TMV. At 5 DPI, *N. benthamiana* infiltrated with different constructs were at similar height; *N. benthamiana* infiltrated with 30B-*GFPC3*, 30B-*CLIBASIA_04025N*, and 30B-*CLIBASIA_00470N* were at similar height and were much higher than plant infiltrated with 30B-*CLIBASIA_00470* and 30B-*CLIBASIA_04025* at 15 DPI. *CLIBASIA_00470N*: convert start codon of *CLIBASIA_00470* to stop codon (TGA); *CLIBASIA_04025N*: convert start codon of *CLIBASIA_04025* to stop codon TGA.