

Supplementary Figure S1. The relative accumulation of PVX and CMV coat proteins in inoculated leaves of *NbATG8f*-knockdown plants. The knockdown plants were inoculated with (A) PVX and (B) CMV. The coat proteins (CP) in *Luciferase* (*Luc*)-knockdown and *NbATG8f*-knockdown (*NbATG8f*) plants were quantified by western blot analysis at 3 days post-inoculation (dpi). The Rubisco large subunit (*rbcL*) stained with Coomassie brilliant blue was a loading control for normalization. CP accumulated in *Luc*-knockdown plants was set to 100%. All results were derived from three independent experiments with at least three individual plants for each experiment.

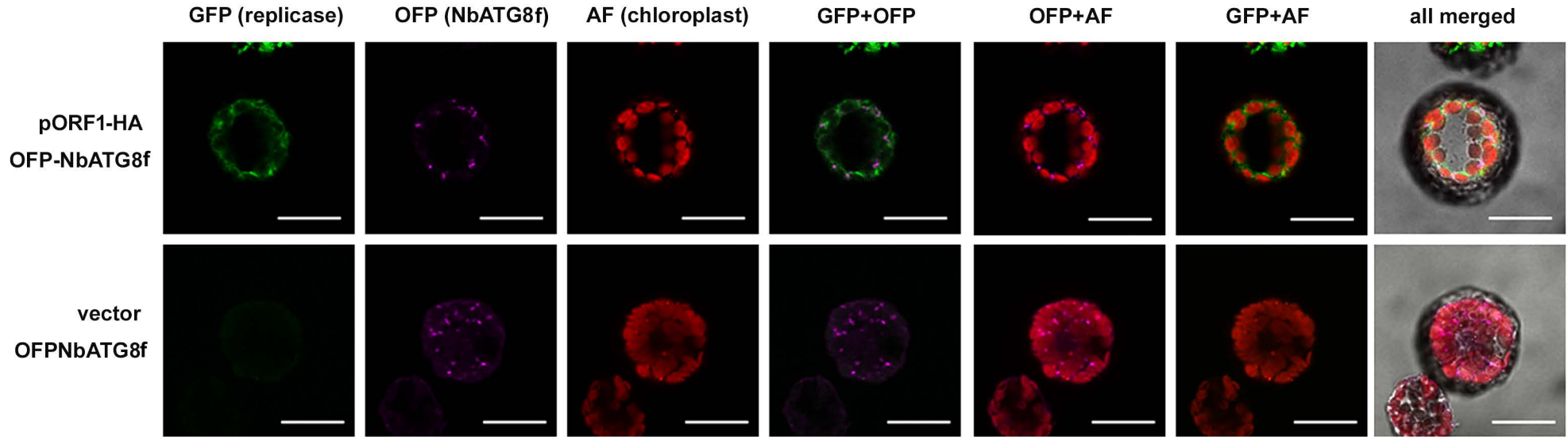
	1	10	20	30	40	55					
NbATG8f	MAKS	SFKQE	HDFE	KRRAE	AAARI	REKYS	DRIPVI	VEKAE	KSDIPN	IDKK	KKYLVPAD
AtATG8f	MAKS	SFKQE	HDLE	KRRAE	AAARI	REKYP	DRIPVI	VEKAE	KSDIPT	IDKK	KKYLVPAD
ScATG8	-MKST	FKSE	YPFE	EKRKA	ESERI	ADRFKN	RIPVIC	EKAEK	SDIPE	IDKR	RKYLVPAD

	56	70	80	90	100	110					
NbATG8f	LTIG	QFVYVIRKRI	KL	SAEKAI	FIFID	DNVLP	PPTGA	IMS	AIYDE	KKDE	DGFLYVTY
AtATG8f	LTIG	QFVYVIRKRI	KL	SAEKAI	FIFVD	DNVLP	PAGAL	MS	SVYEE	KKDD	DGFLYVTY
ScATG8	LTIG	QFVYVIRKRI	ML	PPEKAI	FIFV	NDTLP	PPTAA	LMS	AIYQE	HKDK	DGFLYVTY

	111	122
NbATG8f	SGENTFG	DLNKL
AtATG8f	SGENTFG	FGSP-
ScATG8	SGENTFG	R----

Supplementary Figure S2. The amino acid sequence alignment of ATG8 genes from different species.

NbATG8f from *Nicotiana benthamiana* (EH369475.1), AtATG8f from *Arabidopsis thaliana* (AB073180), and ScATG8 from *Saccharomyces cerevisiae* (AY692870). Identical amino acids among all three species are shown in yellow and amino acids identical only in two species are in blue.



Supplementary Figure S3. The subcellular localization of NbATG8f and BaMV replicase transiently expressed in *N. benthamiana* protoplasts. The orange fluorescent protein (OFP)-NbATG8f and BaORF1-HA or vector only were transiently expressed in *N. benthamiana* leaves. The protoplasts were isolated from treated leaves, fixed on slides, and probed with antibody against HA-tag for BaMV replicase and OFP for NbATG8f, then with Alexa Fluor 488-conjugated goat anti-mouse IgG (Invitrogen) for replicase shown as the GFP channel in green and Alexa Fluor 555-conjugated goat anti-rabbit IgG (Invitrogen) for the OFP channel shown in magenta. The autofluorescence of chloroplast is in red. Scale bar = 20 μ m.

Table S1. List of primers

Gene	Forward	Reverse
<i>NbATG3</i>	ATG3F 5'-GGAAACTGACAATCTTATAG-3'	ATG3R 5'-GACATCCTCAAGTACAAGC-3'
<i>NbATG7</i>	ATG7F 5'-GGATTCAATTGTTACTCTCA-3'	ATG7R 5'-GAGATATTTTCAGCTTCTCC-3'
<i>NbATG8f</i>	ATG8fF 5'-GACAAGAAAAAGTATCTCGTG-3'	ATG8fR 5'-GTGTTTTCTCCACTGTAAGTAA-3'
<i>NbATG12A</i>	ATG12AF 5'-ATGGCGACGGAGTCGTCGTCC-3'	ATG12AR 5'-TTAGCCCCATGCCATGGAACA-3'
<i>NbATG12B</i>	ATG12BF 5'-ATGGCGACCGAATCTCCGAA-3'	ATG12BR 5'-TTAACCCCATGCCATGGAACA-3'
<i>NbPI3K</i>	PI3KF 5'-GTATTAGCAACTGGGCACGATG-3'	PI3KR 5'-GGAAAGGGCTTAGGATCTCGAC-3'
<i>NbBeclin1</i>	BCNF 5'-GGATCCGCTAGCATGACGAAAAATAGCAGCAGT-3'	BCNR 5'-GCTCGAGTCACTTAAGAGATTGAAACTTGGAATA-3'
<i>NbmTOR</i>	mTORF 5'-GGTGATCGACATCCTAGTAACCTC-3'	mTORR 5'-AGGCCTCCATCATAGCCATAA-3'
<i>Actin</i>	actinF 5'-GATGAAGATACTCACAGAAAGA-3'	actinR 5'-GTGGTTTCATGAATGCCAGCA-3'
<i>ATG8fKD</i>	ATG8fKDF 5'-TTCTAGAATGGCTAAGAGCTCATT-3'	ATG8fKDR 5'-ATGACATAGACAAATTGCC-3'
<i>ATG8fcDNA</i>	ATG8fcDNAF 5'-TTCTAGAATGGCTAAGAGCTCATT-3'	ATG8fcDNAR 5'-GGTACCCTACAGCTTGTTTCAGGTC-3'
<i>ATG5cDNA</i>	ATG5cDNAF 5'-GTCTAGAATGGGAAGTAAAGGGGCAGG-3'	ATG5cDNAR 5'-GGTACCTATGGTGATGGGTTCTTGAAT-3'