Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary information

Combining autophagy-inducing peptides and Brefeldin A delivered by perinuclear-localized mesoporous silica nanoparticles: a manipulation strategy for ER-phagy

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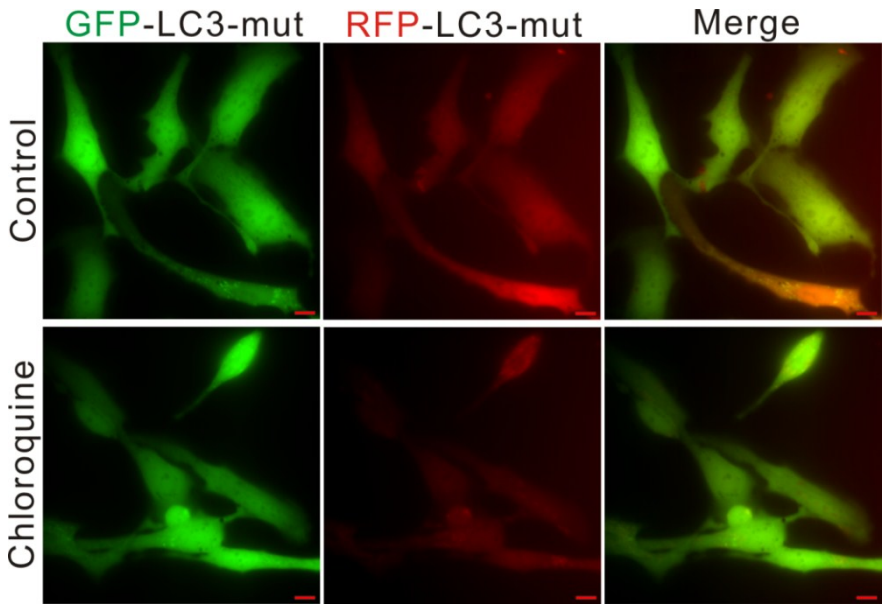

Fig. S1 U2OS cells expressing a scramble negative vector of RFP-GFP-LC3-mut were treated with or without 50 μM Chloroquine for 8 h. Scale bar, 10 μm.

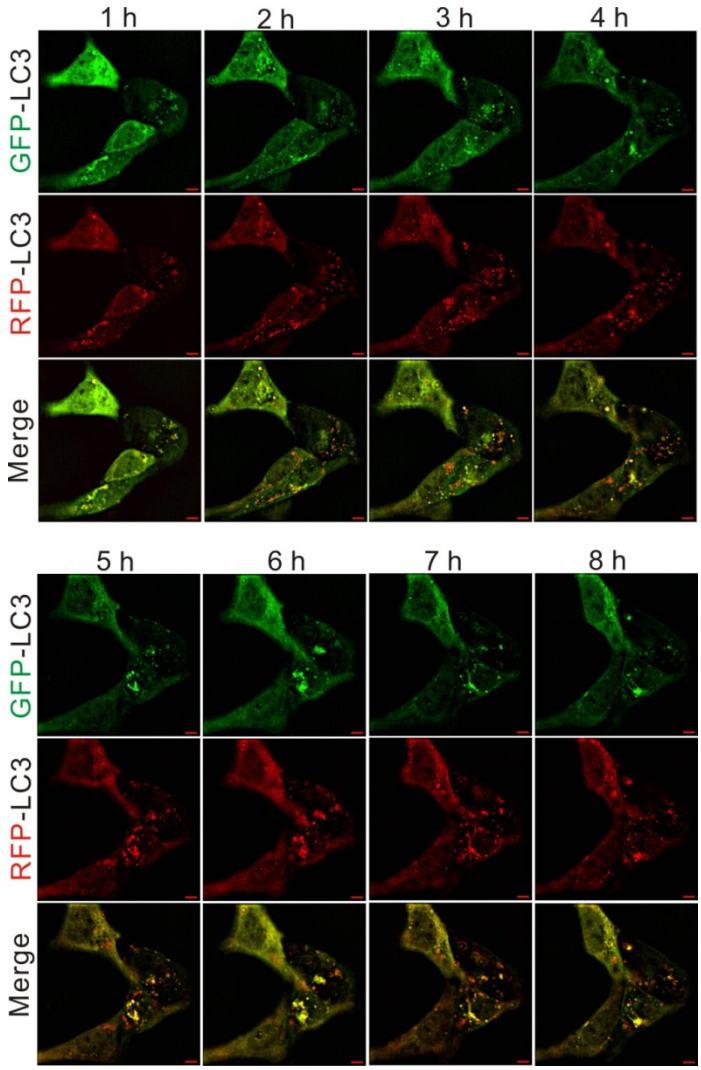

Fig. S2 Time-lapse observation during the first 8 h of live-cell imaging of RFP-GFP-LC3 expressing U2OS cells treated with 10 μg/mL BFA. Scale bars, 5 μm.

Movie S1 Time-lapse video. U2OS cells stably expressing RFP-GFP-LC3 treated with 10 μg/mL free BFA for 12 h.

Movie S2 Time-lapse video. U2OS cells stably expressing RFP-GFP-LC3 were treated with 10 μg/mL of MSNs-BFA.

Movie S3 Time-lapse video. U2OS cells stably expressing RFP-GFP-LC3 were co-treated with 10 μg/mL of MSNs-BFA and 100 nM BafA1.

Table S1 siRNA candidates against *FAM134b*.

Name	Sequences (5'→3')
siRNA1 sense	CCUGCUGUUCUGGUUCCUUTT
siRNA1 antisense	AAGGAACCAGAACAGCAGGTT
siRNA2 sense	GGACUGAUAAUGGGACCUUTT
siRNA2 antisense	AAGGUCCCAUUAUCAGUCCTT
siRNA3 sense	CCCACUGAGCUCAAGAGAATT
siRNA3 antisense	UUCUCUUGAGCUCAGUGGGTT
Scrambled siRNA sense	UUCUCCGAACGUGUCACGUTT
Scrambled siRNA antisense	ACGUGACACGUUCGGAGAATT

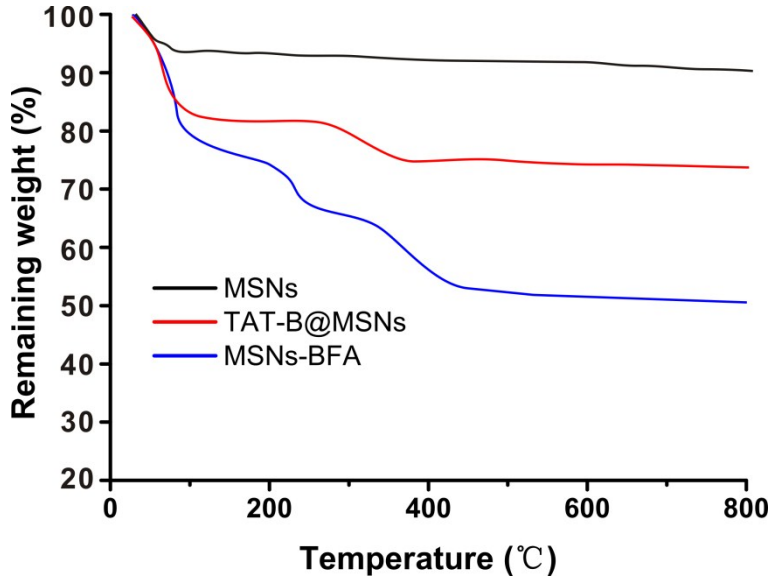

Fig. S3 Thermogravimetric analysis of MSNs (black), TAT-B@MSNs (red), and MSNs-BFA (blue).

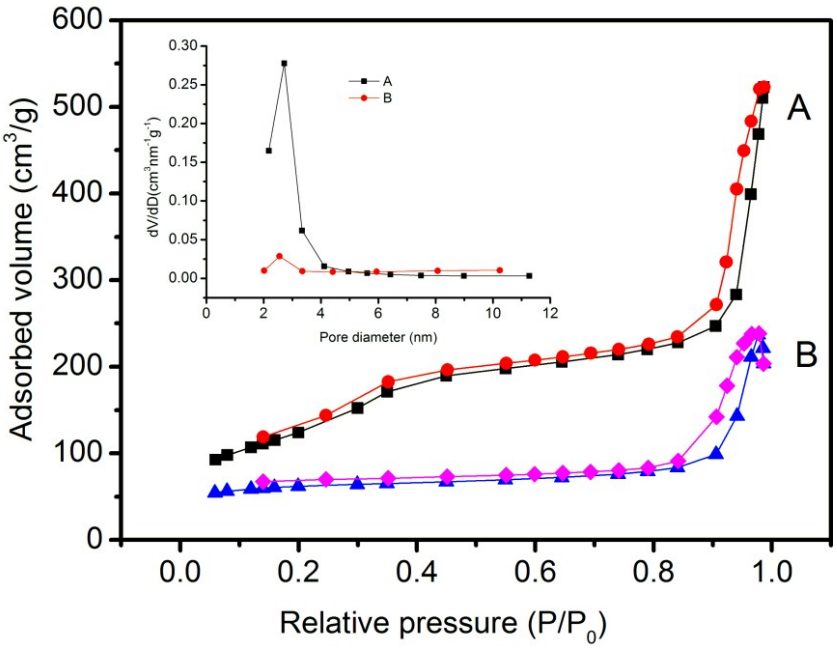

Fig. S4 BET N_2 adsorption-desorption curves of TAT-B@MSNs (A) and MSNs-BFA (B), Insert, corresponding pore size distributions of TAT-B@MSNs and MSNs-BFA based on BJH method.

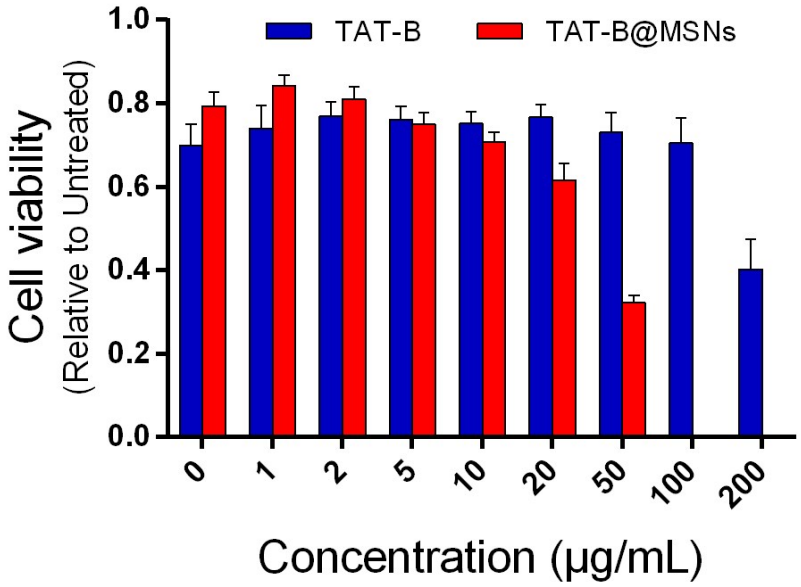

Fig. S5 Cytotoxicity evaluation of U2OS cells treated with TAT-B peptides (blue) and TAT-B@MSNs (red) for 24 h.

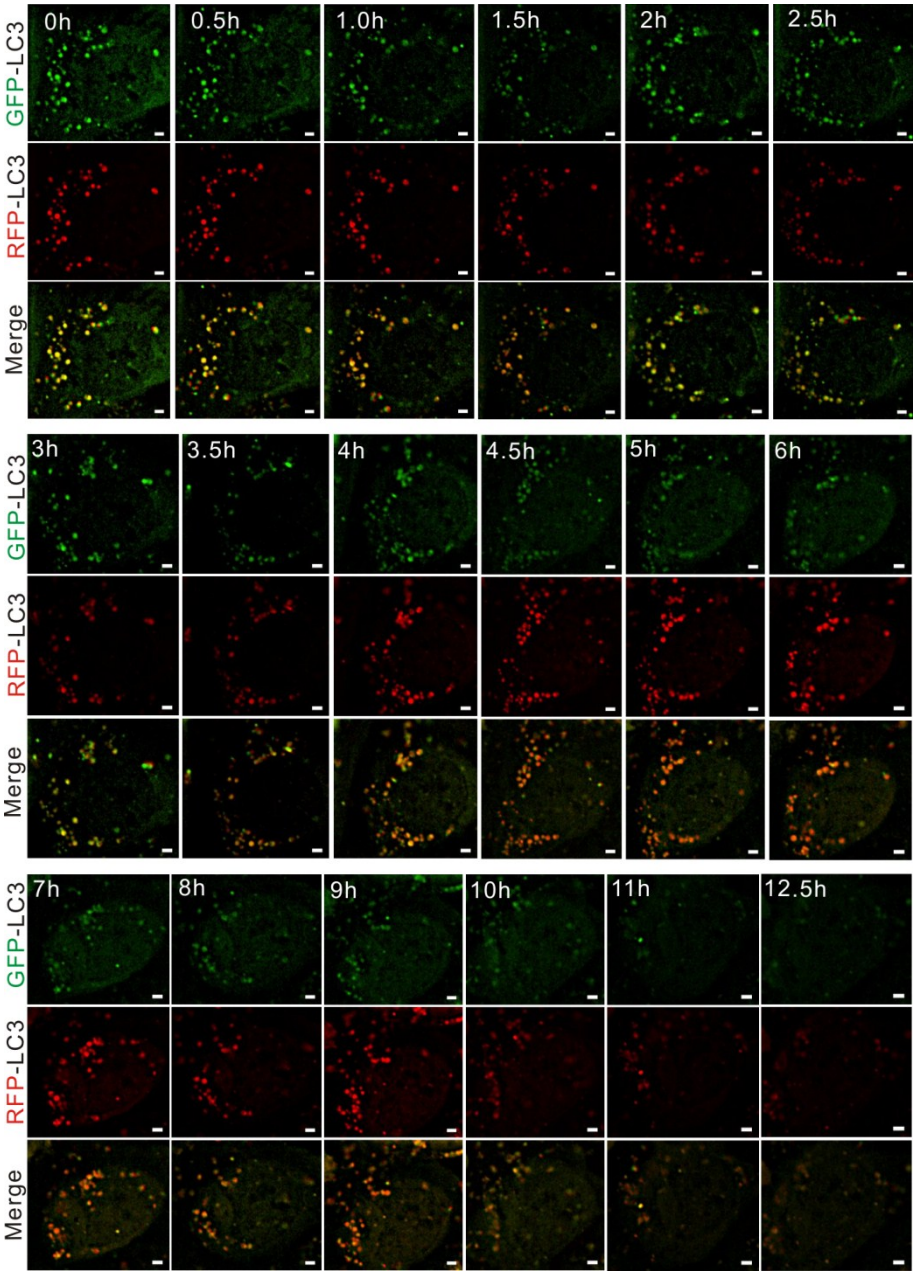

Fig. S6 Time-lapse video pictures. Huh-7 cells stably expressing RFP-GFP-LC3 were treated with 10 μg/mL of MSNs-BFA. Scale bar, 2 μm.