Distinct autophagy-inducing abilities of similar-sized nanoparticles in cell culture and live *C. elegans*

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Additional data:

Fig. S1 Representative confocal images of autophagosomes labeled by anti-LC3 immunostaining (a) and the fluorescence of SiNPs (b) in SiNP-treated cells corresponding to Fig. 2.
Fig. S2 Autophagosomes formation in HeLa cells after exposure to different doses of blue- or green-emitting SiNPs. (a-g) Representative confocal images of autophagosomes labeled by anti-LC3 immunostaining in cells treated with de-ionized H$_2$O (a), blue-emitting SiNPs with 15 μg/mL (b), 150 μg/mL (c), 1500 μg/mL (d), or green-emitting SiNPs with 15 μg/mL (e), 150 μg/mL (f), 1500 μg/mL (g) for 24 h. (a’-g’) are enlarged views of the boxed areas in (a-g), respectively. (h) Quantitative analysis of the number of LC3 puncta corresponding to the experimental groups in (a-g). The scale bar represents 25 μm. N ≥ 4 for each data set. Error bars, ± SEM; ns, p > 0.05.
Fig. S3 Autophagosomes formation in HEK293T cells after exposure to different doses of blue- or green-emitting SiNPs. (a-g) Representative confocal images of autophagosomes labeled by anti-LC3 immunostaining in cells treated with de-ionized H$_2$O (a), blue-emitting SiNPs with 15 μg/mL (b), 150 μg/mL (c), 1500 μg/mL (d), or green-emitting SiNPs with 15 μg/mL (e), 150 μg/mL (f), 1500 μg/mL (g) for 24 h. (a’-g’) are enlarged views of the boxed areas in (a-g), respectively. (h) Quantitative analysis of the number of LC3 puncta corresponding to the experimental groups in (a-g). The scale bar represents 25 μm. N ≥ 4 for each data set. Error bars, ± SEM; ns, p > 0.05.
Fig. S4 Autophagosomes formation in *C. elegans* after CDs, AuNPs, QDs, or SiNPs microinjection. (a-f) Representative confocal images of autophagosome marked by LGG-1::mCherry in worms after 6-h injection of H$_2$O (a, negative control), starvation (b, positive control), CDs (c), AuNPs (d), QDs (e) or SiNPs (f) into *C. elegans* intestinal cells. (g) The fluorescence of SiNPs in the same region corresponding to (f). (h) Quantitative analysis of the number of mCherry::LGG-1 aggregates corresponding to the experimental groups in (a-f). N ≥ 4 for each data set. Error bars, ± SEM; **p < 0.01; *p < 0.05; ns, p > 0.05.
Fig. S5 Zeta potentials of CDs, AuNPs, SiNPs and QDs. Three experimental repeats for each data set. Error bars, ± SEM.