

Supporting Information

Gratton *et al.* 10.1073/pnas.0801763105

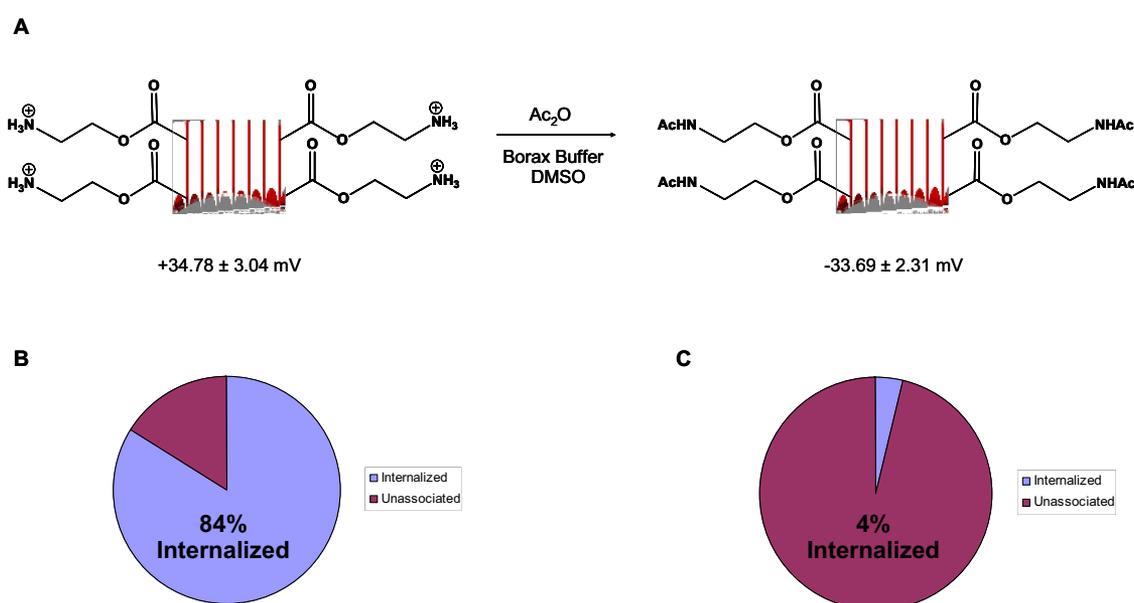


Fig. S1. Effect of charge on cellular internalization. (A) The chemical transformation, leading to changes in surface charge. (B) Particle internalization after 4 h of incubation with HeLa cells with *positively* charged particles. (C) Particle internalization after 4 h of incubation with HeLa cells with *negatively* charged particles.

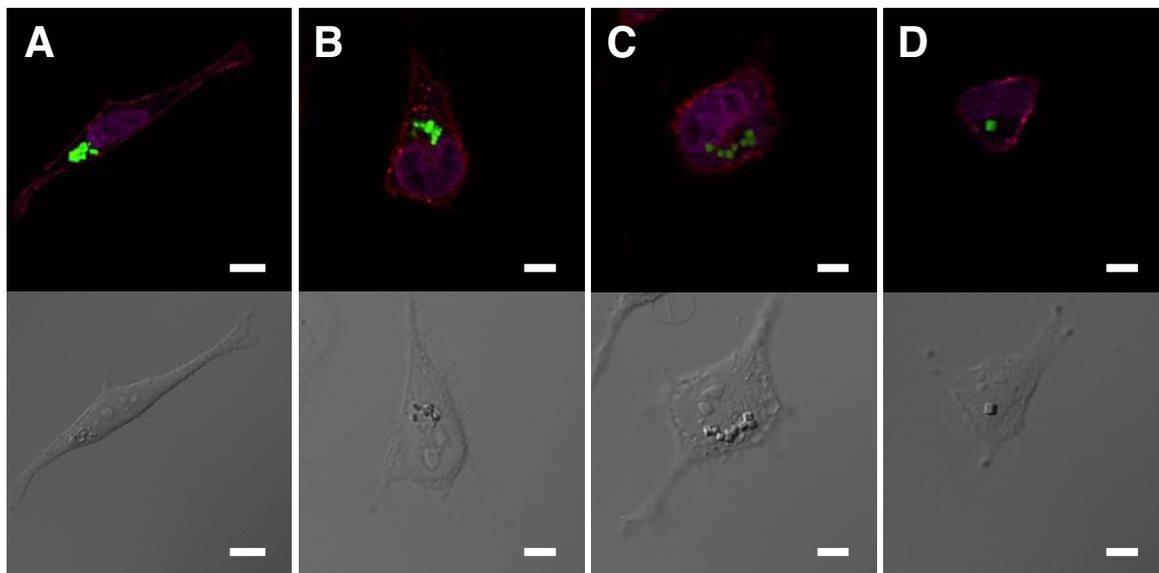


Fig. S2. Confocal laser scanning microscopy images of HeLa cells after a 1-h incubation period at 37°C with 200-nm cylindrical particles (A), 1- μm cylindrical particles (AR = 1) (B), 2- μm cubic particles (C), and 3- μm cubic particles (D) (scale bar: 10 μm .)

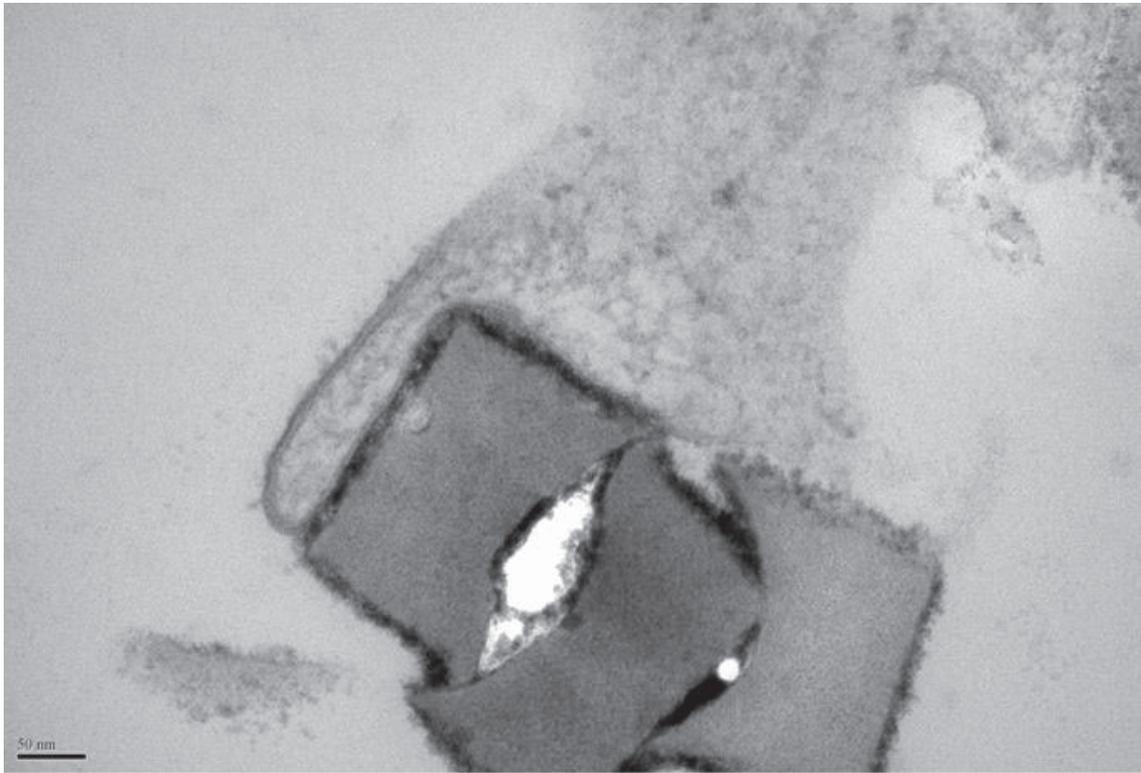


Fig. S3. Transmission electron microscopy image of HeLa cells at 37°C incubated with 200 nm (AR = 1) cylindrical particles (15-min incubation time).

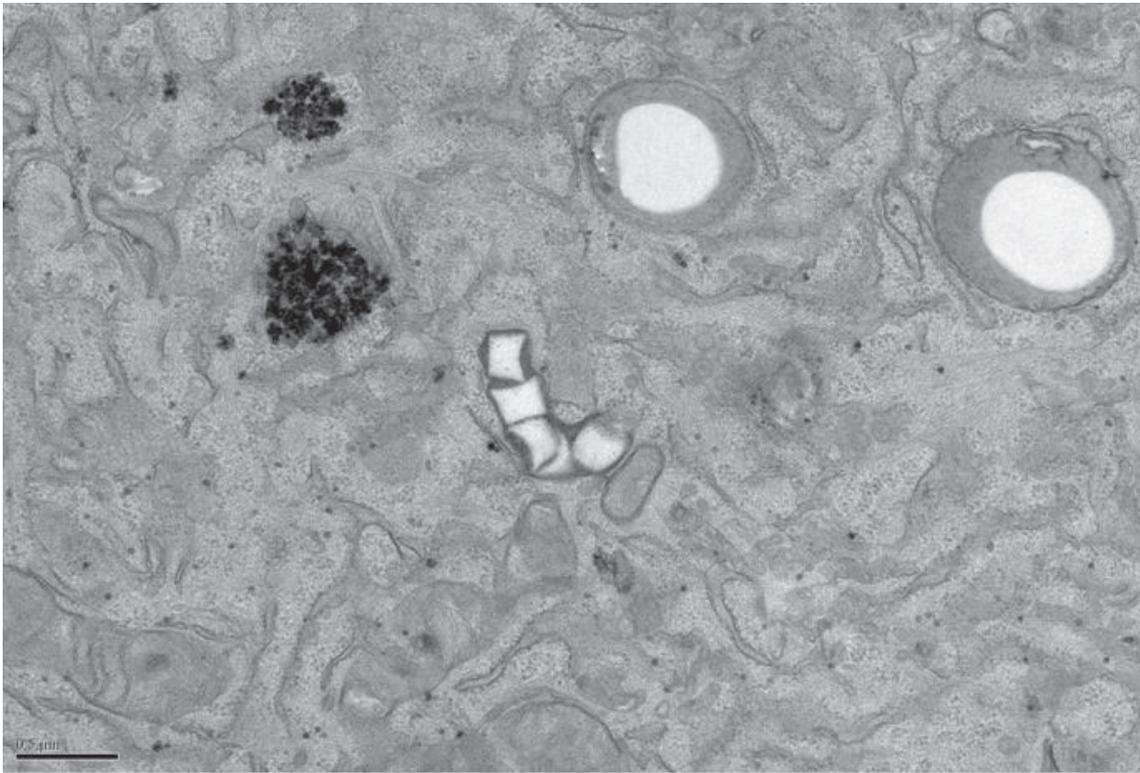


Fig. S4. Transmission electron microscopy image of HeLa cells at 37°C incubated with 200-nm (AR = 1) cylindrical particles (4-h incubation time).

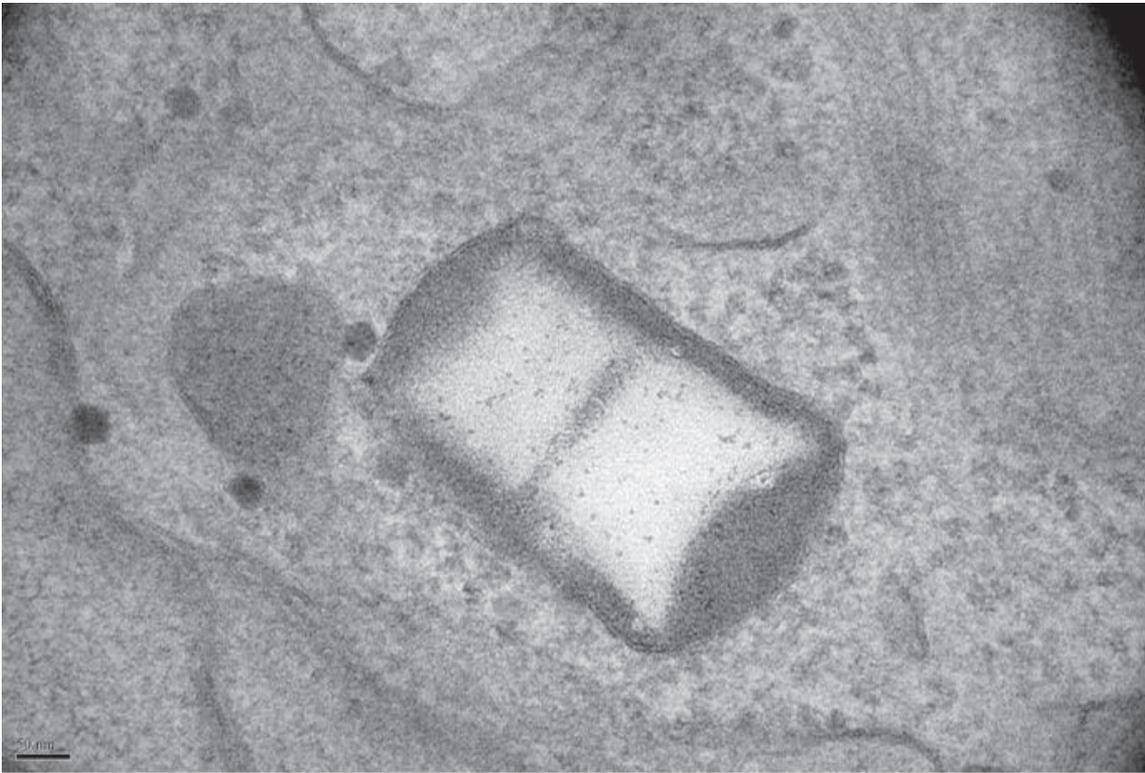


Fig. S5. Transmission electron microscopy image of HeLa cells at 37°C incubated with 200-nm (AR = 1) cylindrical particles (4-h incubation time).

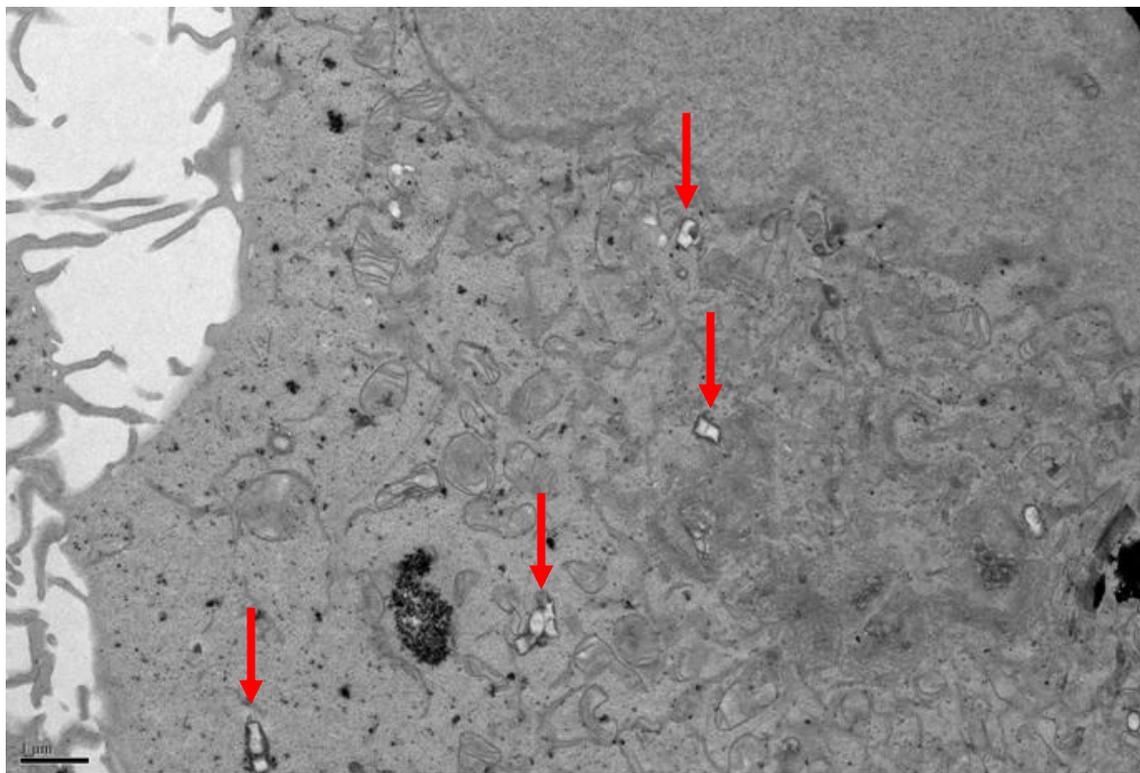


Fig. S6. Transmission electron microscopy image of HeLa cells at 37°C incubated with 200-nm (AR = 1) cylindrical particles (4-h incubation time). Red arrows depict particle location.



Fig. S7. Transmission electron microscopy image of HeLa cells at 37°C incubated with 150-nm (AR = 3) cylindrical particles (1-h incubation time). Red arrow depicts particle location.

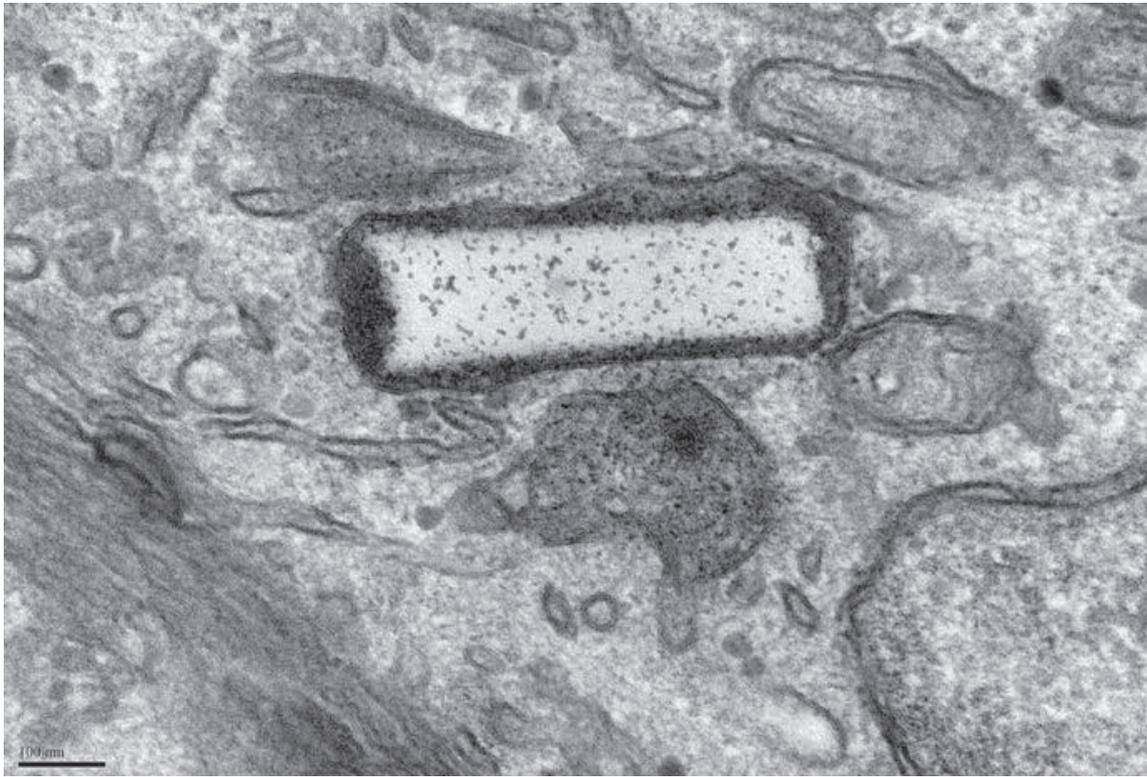


Fig. S8. Transmission electron microscopy image of HeLa cells at 37°C incubated with 150-nm (AR = 3) cylindrical particles (1-h incubation time).



Fig. S9. Transmission electron microscopy image of HeLa cells at 37°C incubated with 150-nm (AR = 3) cylindrical particles (4-h incubation time). Red arrow depicts particle location.



Fig. S10. Transmission electron microscopy image of HeLa cells at 37°C incubated with 150-nm (AR = 3) cylindrical particles (4-h incubation time). Red arrow depicts particle location.

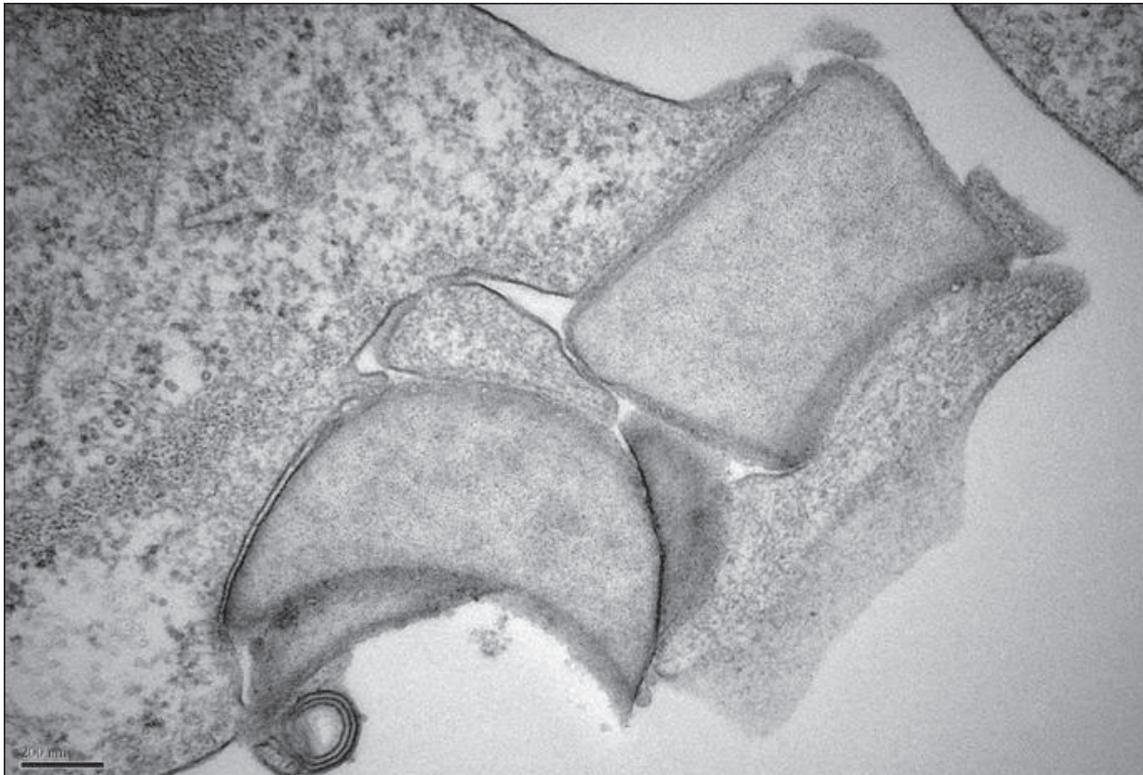


Fig. S11. Transmission electron microscopy image of HeLa cells at 37°C incubated with 1- μm (AR = 1) cylindrical particles (1-h incubation time).

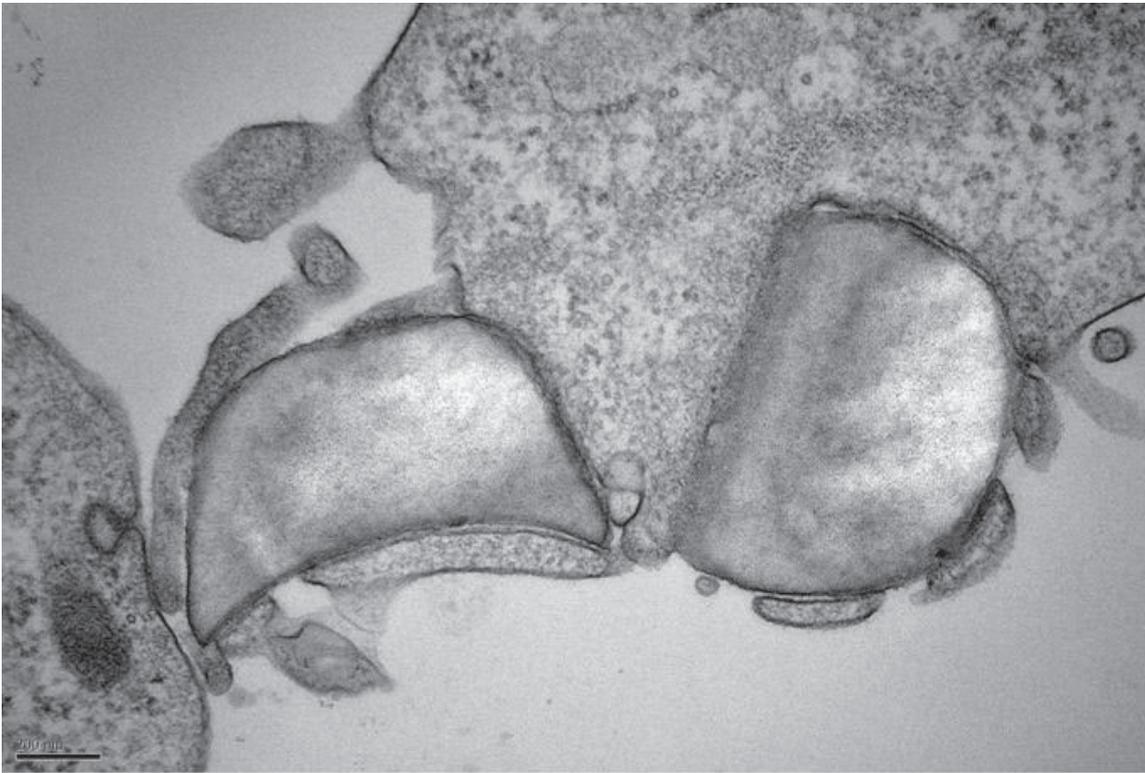


Fig. S12. Transmission electron microscopy image of HeLa cells at 37°C incubated with 1- μm (AR = 1) cylindrical particles (1-h incubation time).

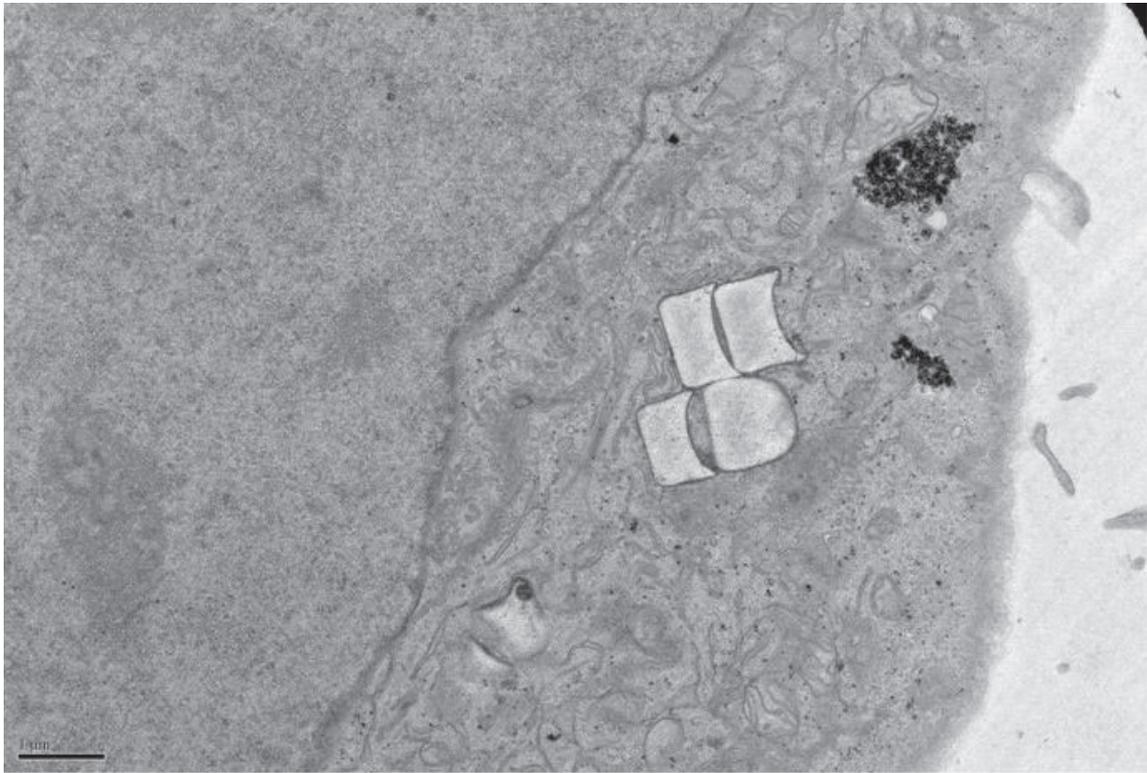


Fig. S13. Transmission electron microscopy image of HeLa cells at 37°C incubated with 1- μm (AR = 1) cylindrical particles (4-h incubation time).

Table S1. Particle size characterization as determined by scanning electron microscopy measurements

Particle size	Height, μm	Width, μm
5- μm cubes	4.60 ± 0.07	4.67 ± 0.20
3- μm cubes	2.50 ± 0.10	2.63 ± 0.09
2- μm cubes	1.56 ± 0.09	1.86 ± 0.04
1- μm cylinders (AR = 1)	0.58 ± 0.05	0.90 ± 0.01
0.5- μm cylinders (AR = 2)	0.38 ± 0.02	0.77 ± 0.09
0.2- μm cylinders (AR = 1)	0.217 ± 0.006	0.159 ± 0.007
0.15- μm cylinders (AR = 3)	0.479 ± 0.026	0.134 ± 0.026 (top)
		0.159 ± 0.012 (bottom)
0.1- μm cylinders (AR = 3)	0.277 ± 0.014	0.075 ± 0.003 (top)
		0.118 ± 0.005 (bottom)

Particle labels describe master cavity size.

Table S2. Characterization of the surface charge of PRINT particles

Particle size	Zeta potential, mV
5- μm cubes	+26 \pm 3
3- μm cubes	+21 \pm 3
2- μm cubes	+21 \pm 3
1- μm cylinders (AR = 1)	+22 \pm 3
0.5- μm cylinders (AR = 2)	+32 \pm 3
0.2- μm cylinders (AR = 1)	+42 \pm 3
0.15- μm cylinders (AR = 3)	+35 \pm 3
0.1- μm cylinders (AR = 3)	+41 \pm 3