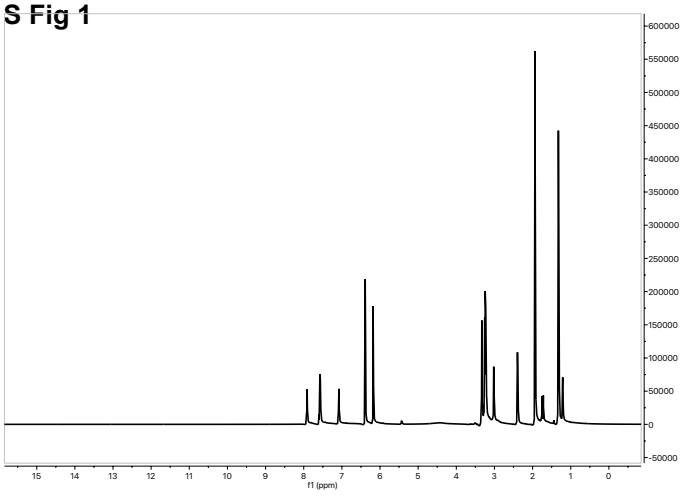
Electronic Supplementary Material (ESI) for RSC Chemical Biology.

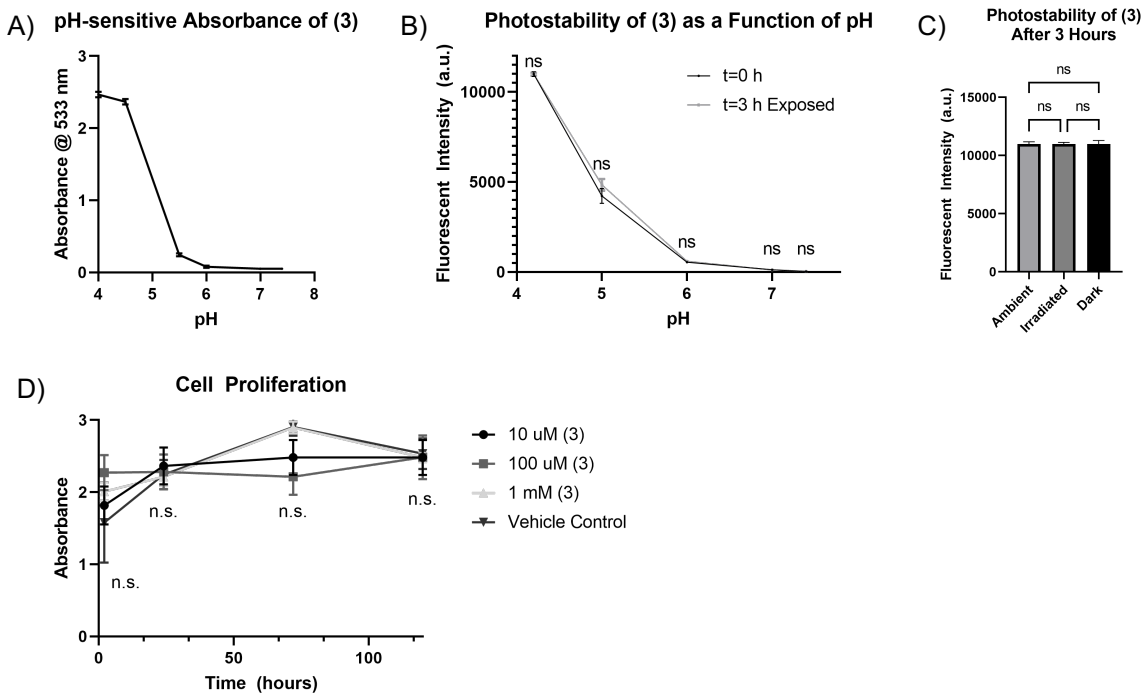
Supplementary Figures
Swanson et al, 2022. *RSC Chemical Biology*

S Fig 1



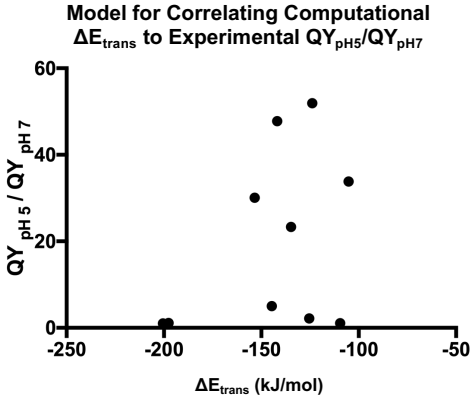
S Fig 1: 1H NMR spectrum of (3). Detailed spectroscopic characterization of all compounds is listed in the Supplemental Methods.

S Fig 2



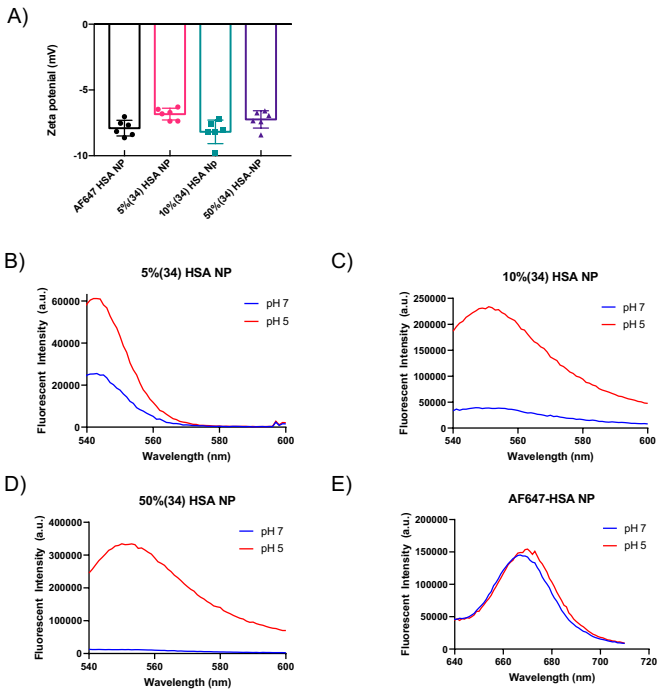
S Fig 2: Absorbance of (3) changes with pH similar to fluorescence (A). After exposure to direct irradiation at 560 nm, (3) maintains its pH-sensitive fluorescent properties compared to freshly prepared solution at t=0 hours (B). After three hours of aging, we observed no difference between solutions of (3) exposed to ambient light, direct irradiation, or kept in the dark (C). Up to 1 mM concentration in cell culture media, (3) does not affect proliferation of RAW264.7 cells (D).

S Fig 3



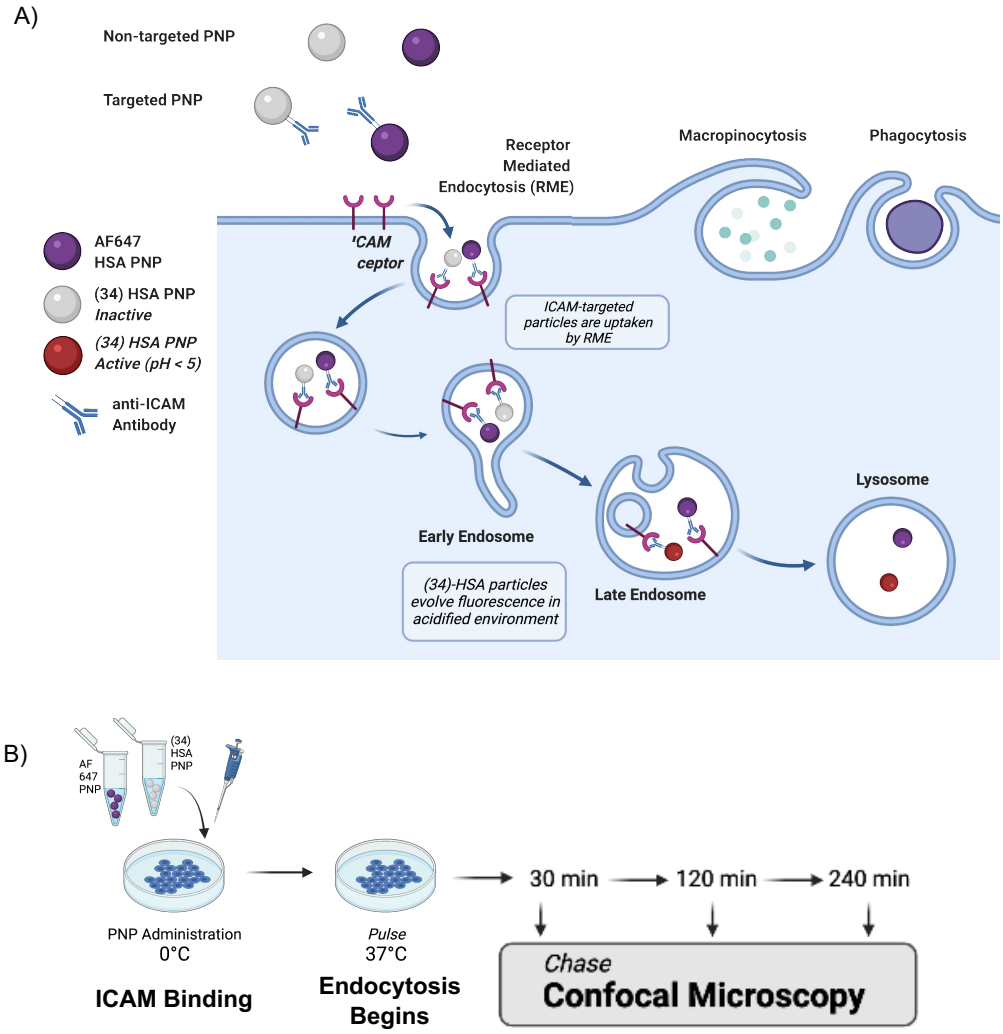
S Fig 3: Calculated Gibbs free energy of transition is plotted against experimentally observed quantum yield sensitivity ratio.

S Fig 4



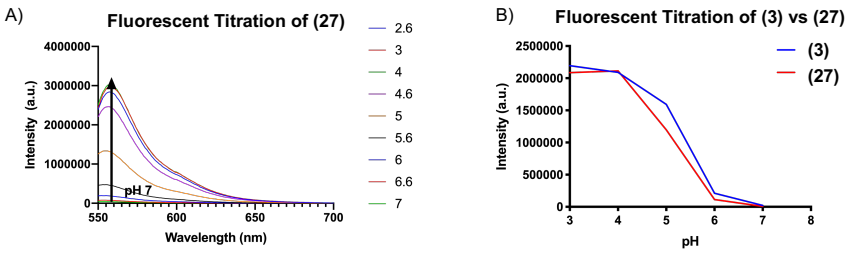
S Fig 4: (34)-HSA NPs were fabricated at three compositions (5%, 10%, 50%) compared to AF-647 HSA control. Particle surface charge is measured by zeta potential (A). Fluorescence spectra of particles in solution (5 ug/mL) were recorded at pH 7 and 5 to determine pH-sensitive properties (B-E).

S Fig 5



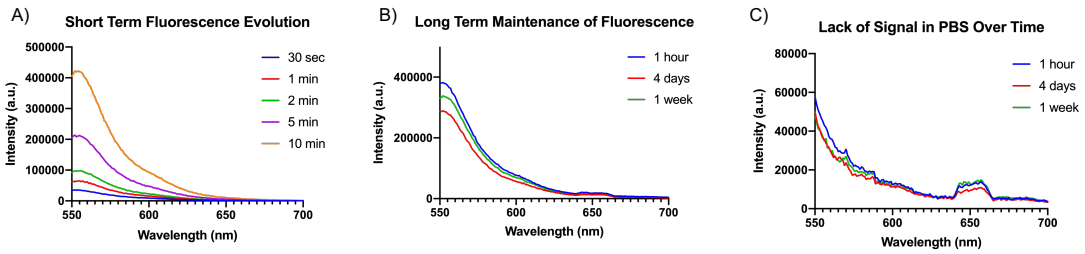
S Fig 5: Schematic overview of receptor mediated endocytosis targeting (A) and pulse chase experiment (B).

S Fig 6



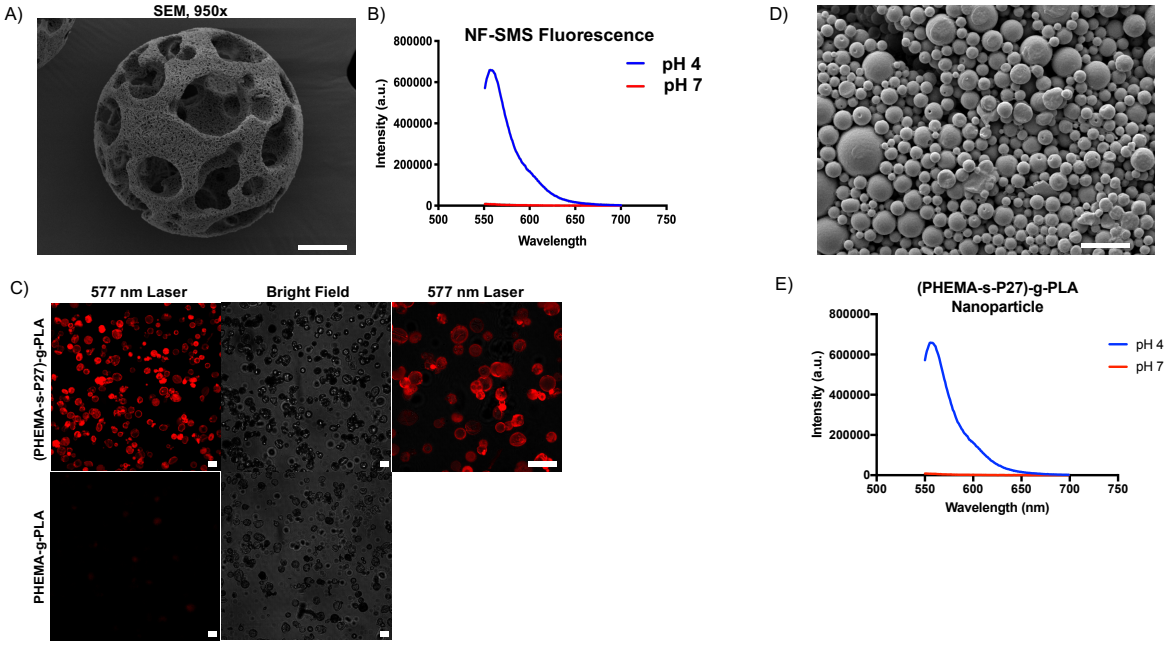
S Fig 6: Fluorescence spectroscopy titration of (27) as a function of pH (A) and compared to (3) (B).

S Fig 7



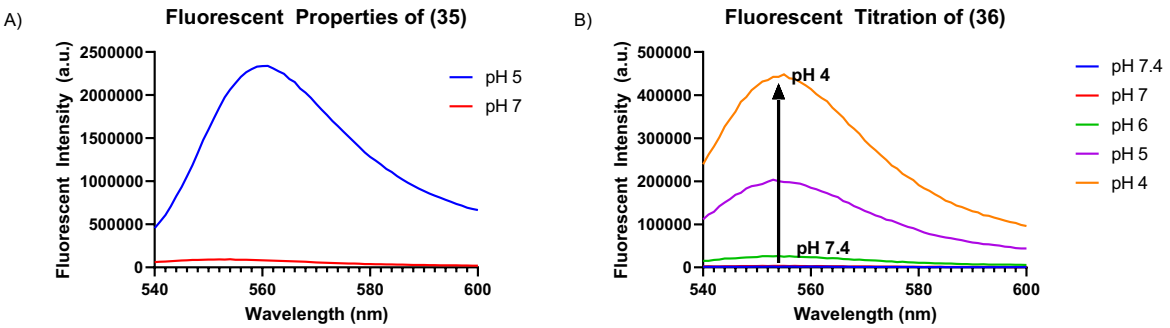
S Fig 7: Fluorescence spectra of (28)-films in pH 4 solution are recorded over time to demonstrate rapid signal evolution (B) and maintenance of signal (C). When incubated in PBS, only minimal background signal is observed up to 1 week in vitro (D).

S Fig 8



S Fig 8: (27)-functionalized PLA is fabricated into highly porous nanofibrous spongy microspheres (NF-SMS, A, scale = 15 um), and maintain the fluorescent properties of (27) at pH 4 and 7 (B). Microspheres in solution are observed by confocal laser microscopy at pH 4 compared to non-functionalized PLA control (C, scale = 50 um). (27)-functionalized PLA is also fabricated into nanoparticles by a double emulsion sonication method (D, scale = 500 nm), which also maintain the fluorescent properties of (27) at pH 4 and 7 (E).

S Fig 9



S Fig 9: Fluorescence spectra of (35) and (36) are recorded at pH 5 and pH 7.