Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B

Electronic Supplementary Information

for

Sensitive pH Probes of Retro Self-Quenching Fluorescent Nanoparticles

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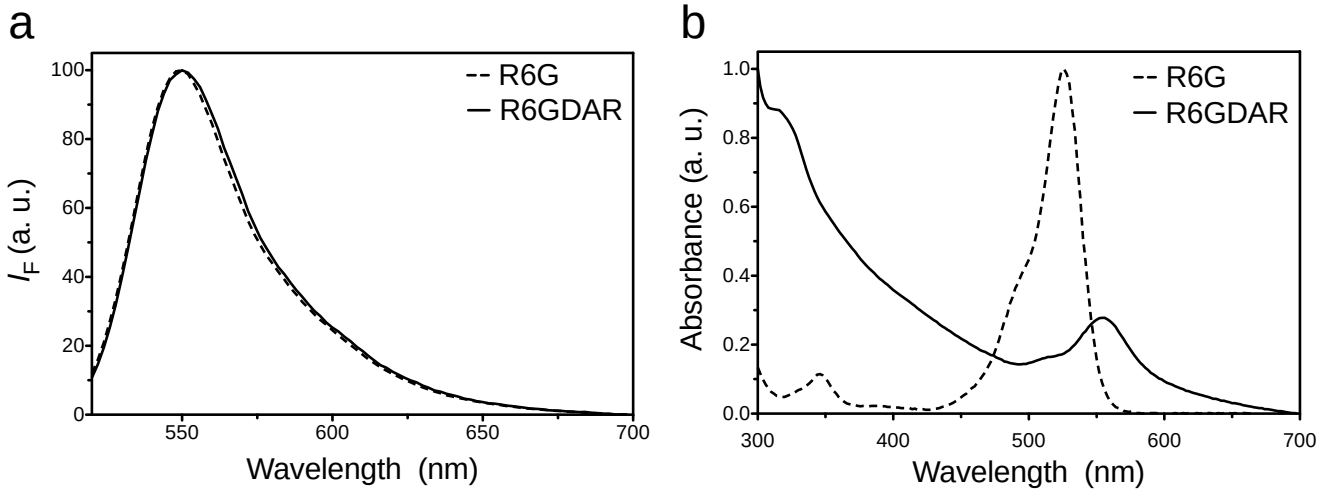

Fig. S1. (a) Fluorescence emission spectra (when excited at 500 nm) and (b) UV-Vis absorption spectra of R6G (dot lines) and R6GDAR (solid lines). Fluorescence and absorbance are plotted as an arbitrary unit (a. u.). The fluorescence data were normalized.

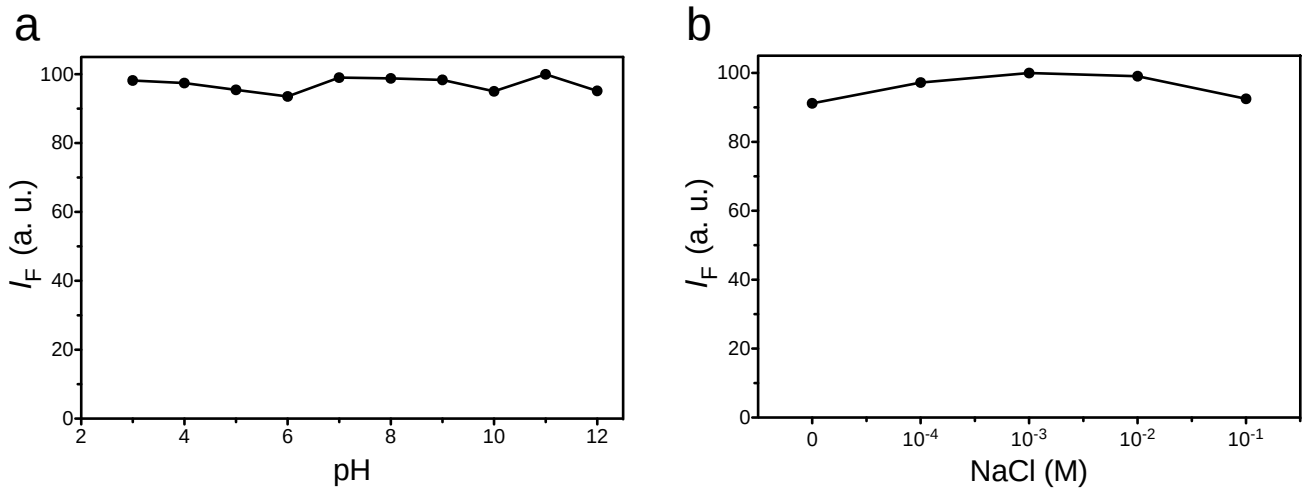

Fig. S2. Fluorescence intensity of R6G (1 μM) in (a) phosphate solution (5 mM) at pH 3.0−12.0 and (b) in ultrapure water containing various concentrations of NaCl (10^{-4}–10^{-1} M). Excitation and emission wavelengths are 500 and 550 nm, respectively.

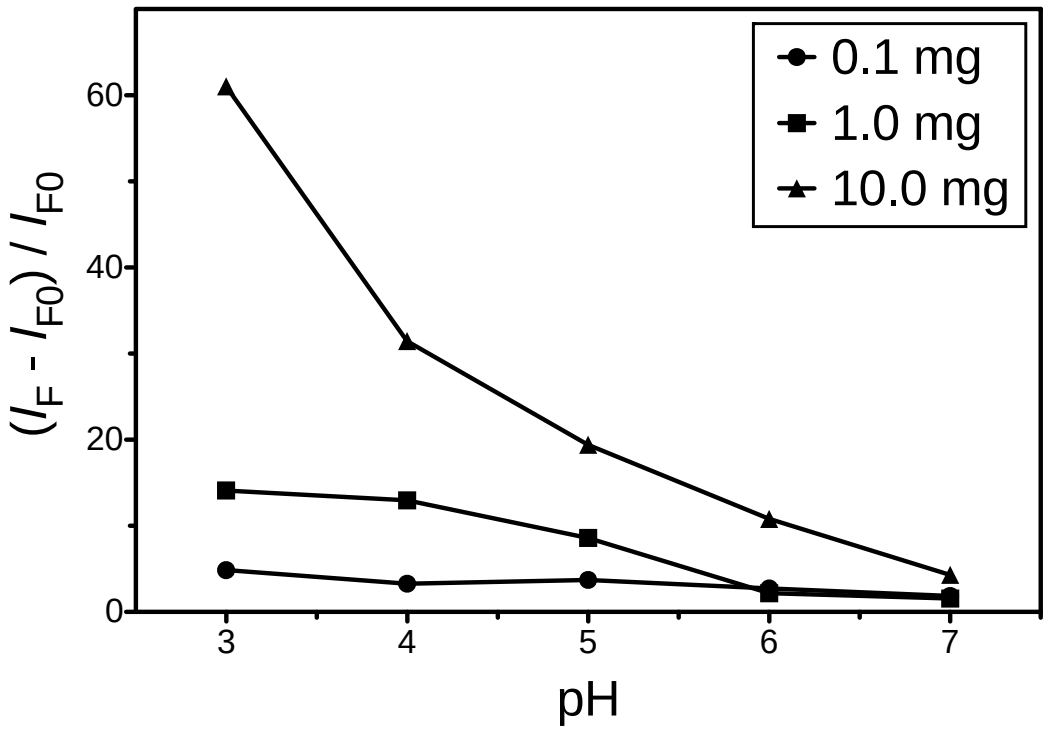

Fig. S3. pH dependence of fluorescence enhancement ratios of R6GDARs prepared from various amounts of R6Gs. I_{F0} is the fluorescence intensity of R6GDAR in ultrapure water. Excitation and emission wavelengths are 500 and 550 nm, respectively.

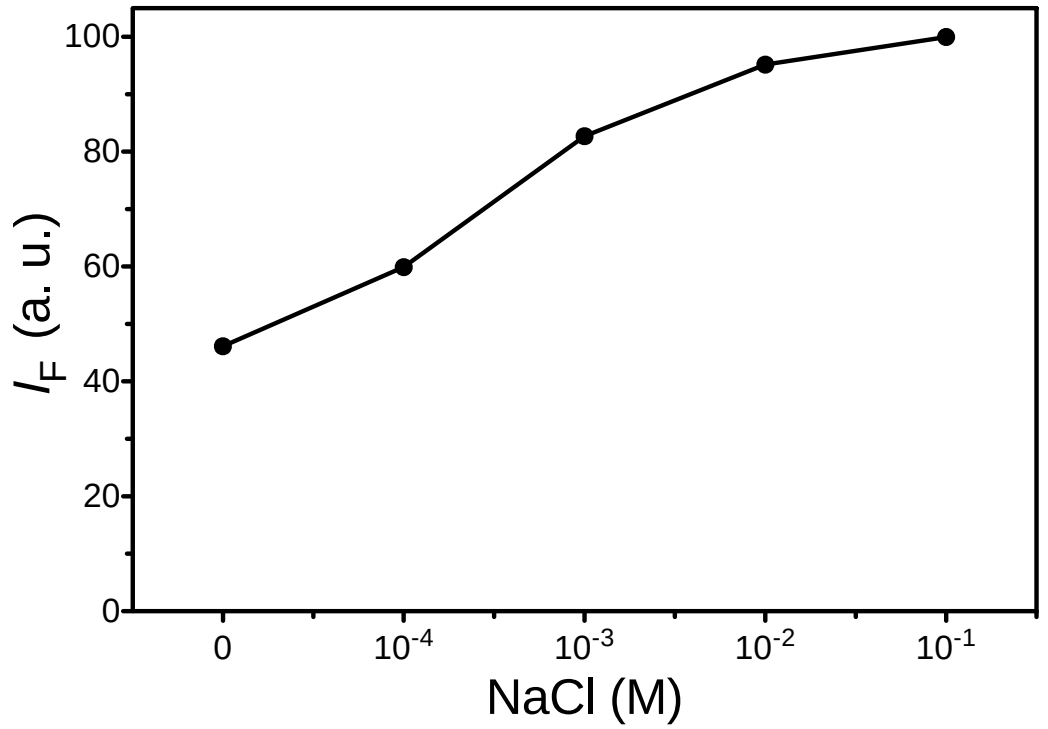

Fig. S4. Fluorescence intensity of R6GDARs at various NaCl concentrations. Excitation and emission wavelengths are 500 and 550 nm, respectively.

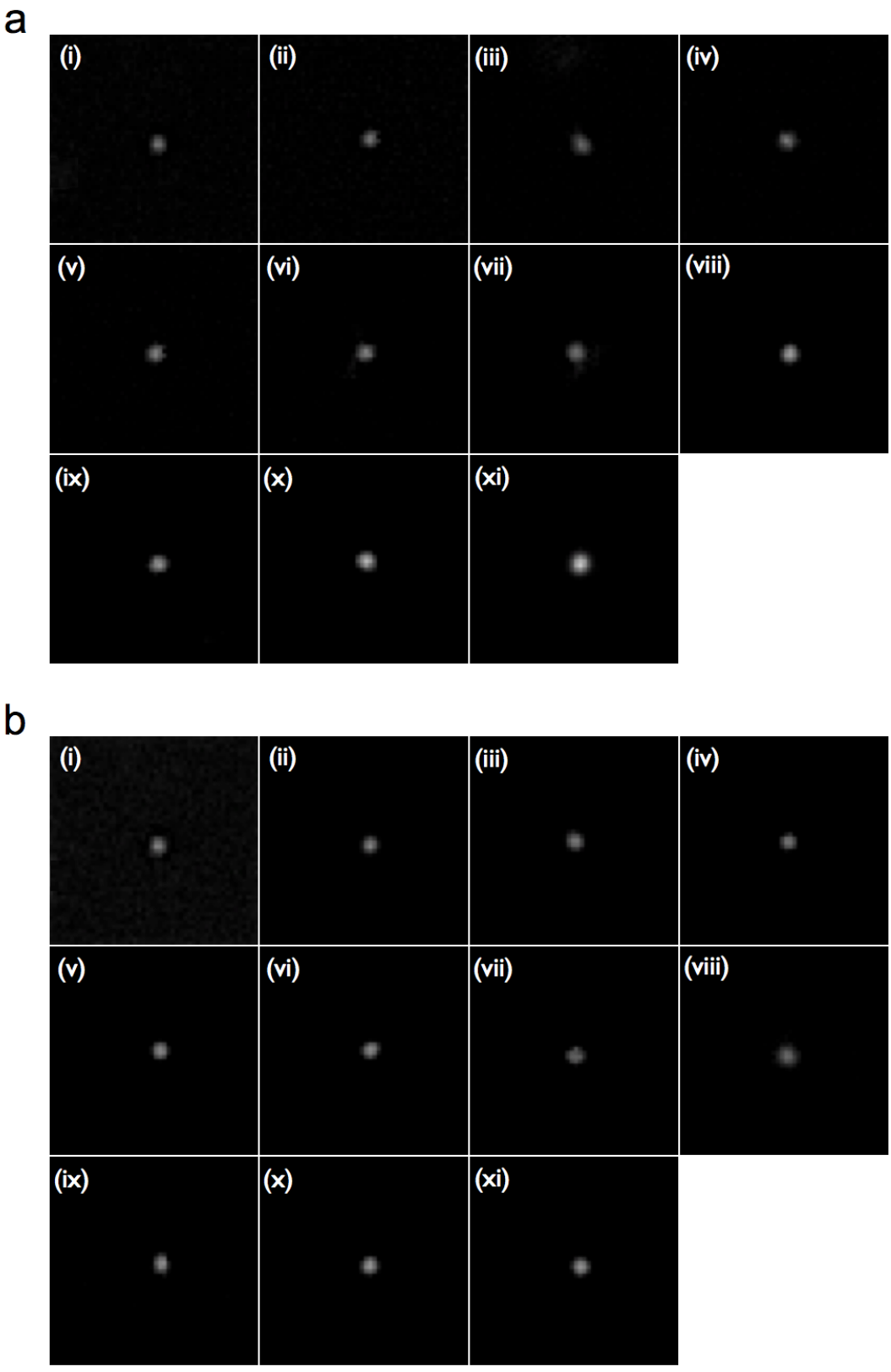

Fig. S5. Fluorescence time-lapsed images of individual R6GDAR particles at pH (a) 5.0 and (b) 7.0. The images from (i) to (xi) in each set were taken every 10 min for the same particle.

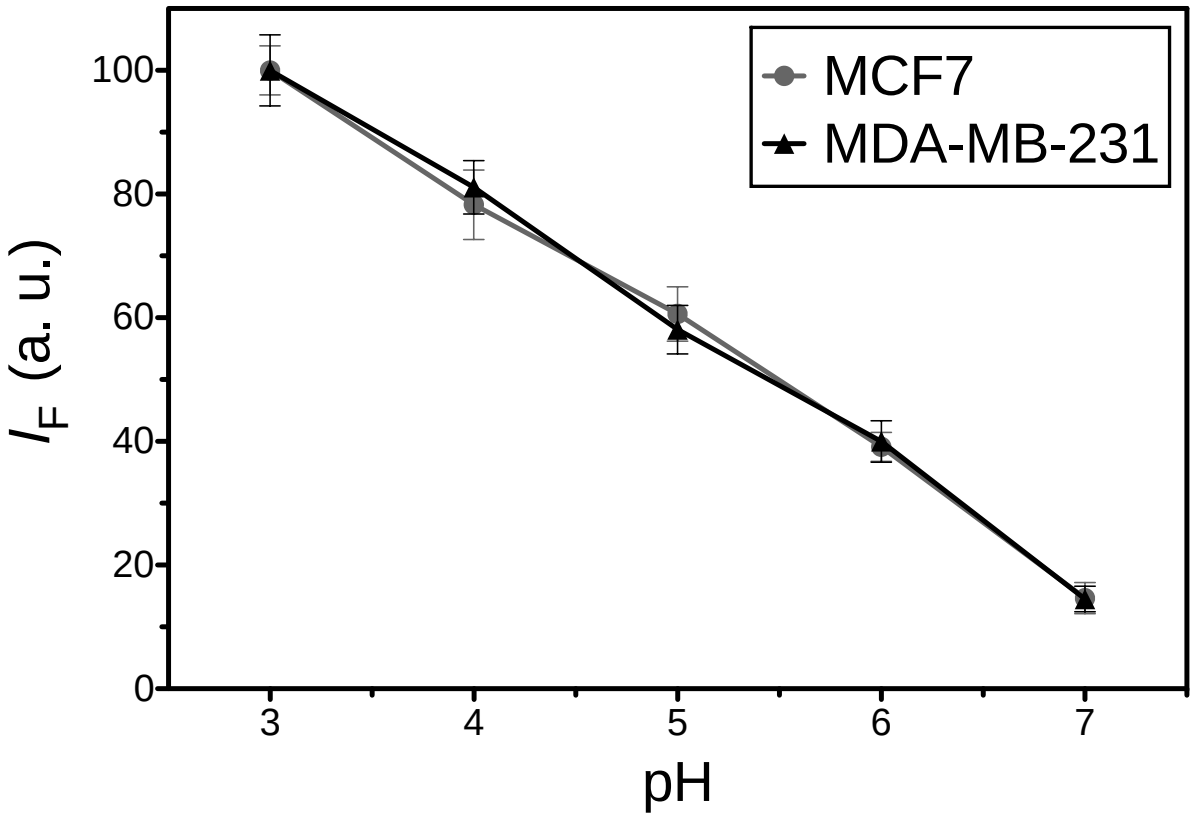

Fig. S6. *In vitro* calibration curves of R6GDARs mixed with the cytoplasm of either MCF7 or MDA-MB-231 cells at various pH values. Excitation and emission wavelengths are 500 and 550 nm, respectively. Results are presented as the mean ± SD of three independent experiments.

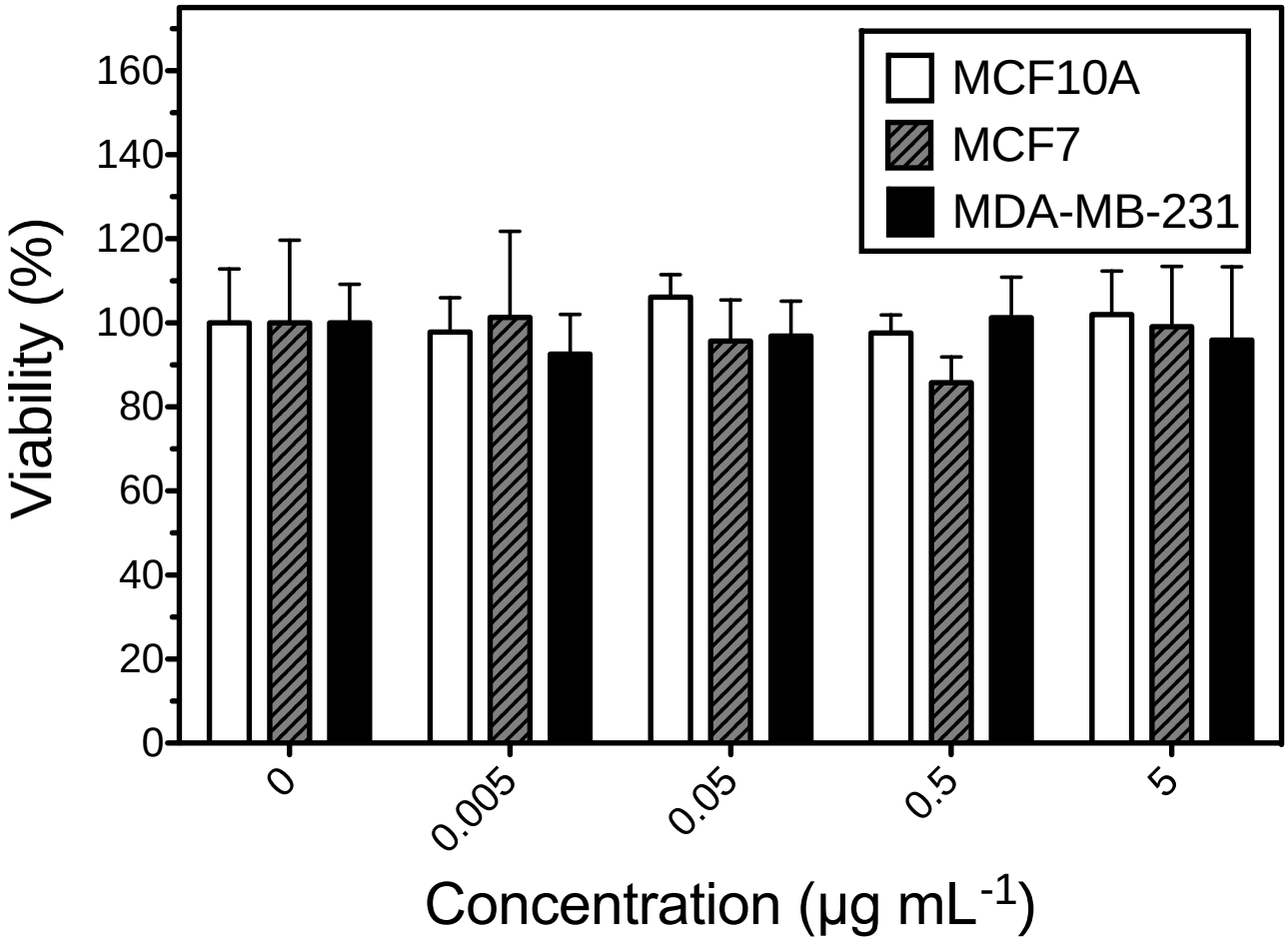

Fig. S7. Cell viability of MCF10A (normal), MCF7 (cancer) and MDA-MB-231 (cancer) cells in the presence of various concentrations of R6GDARs after administration of 24 h. The viability of the cells in the absence of R6GDARs is defined as 100%. Results are presented as the mean ± SD of three independent experiments.