

Supporting Information

for

Fabrication, biofunctionalization, and simultaneous multicolor emission of hybrid “dots-on-spheres” structures for specific targeted imaging of cancer cell

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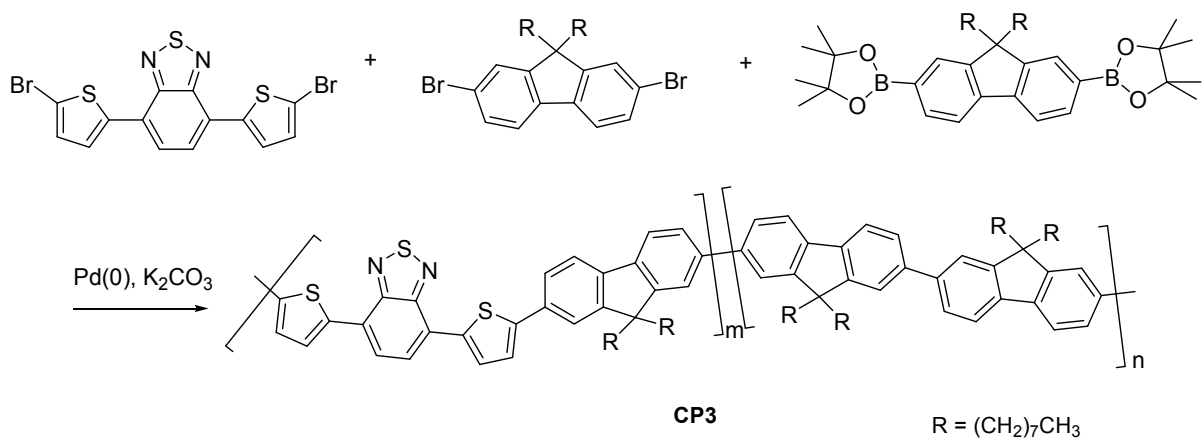
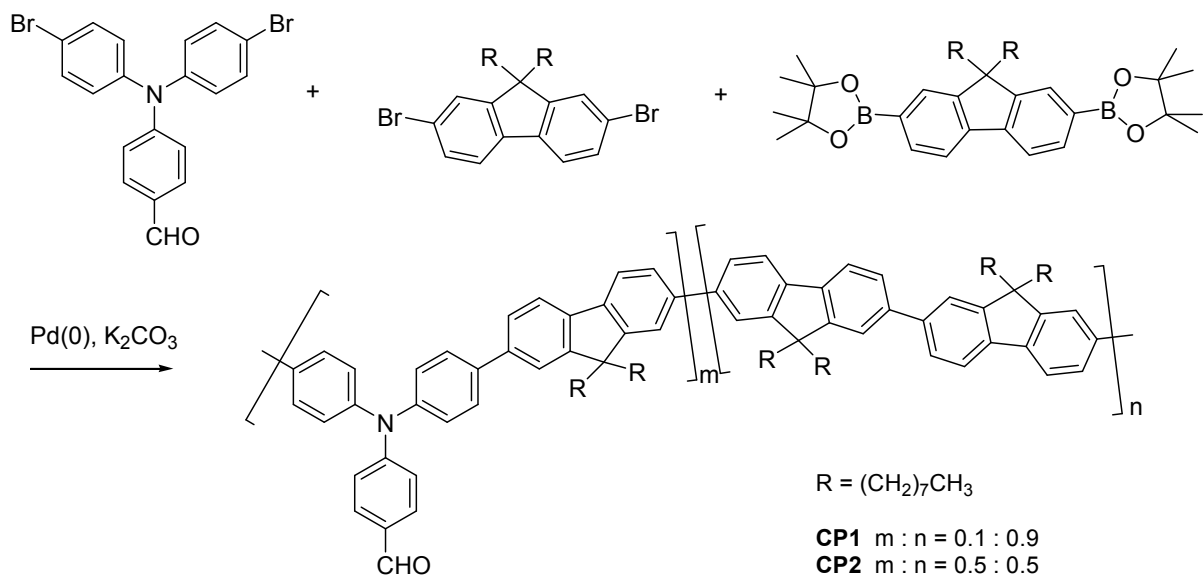
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Scheme S1. Synthetic routes to **CP1**, **CP2**, and **CP3**.

Table S1. Properties of Conjugated Polymers

	Feed Ratio (m:n)	Composition (m:n) ^a	Mn ^b	Mw ^b
CP1	0.1 : 0.9	0.10 : 0.90	3910	7680
CP2	0.5 : 0.5	0.40 : 0.60	10570	49470
CP3	0.3 : 0.7	0.43 : 0.57	6900	18210

^a determination by elemental analysis

^b determined by GPC

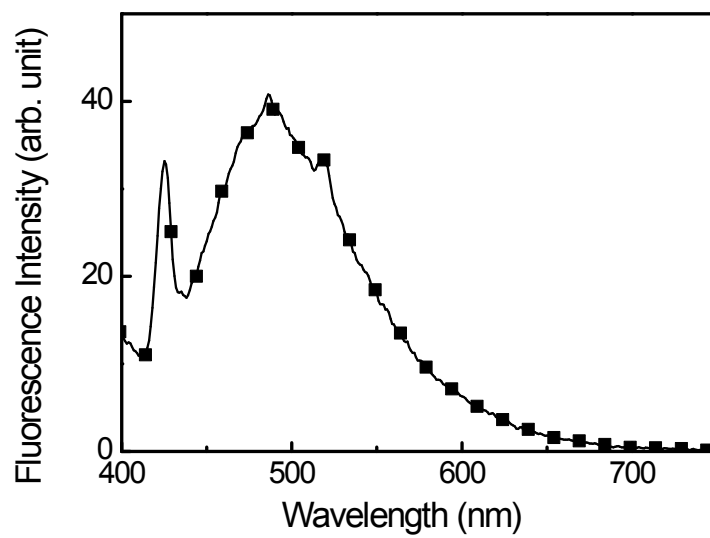


Figure S1. Emission spectrum of gDoS. Excitation wavelength $\lambda_{\text{ex}} = 380$ nm.

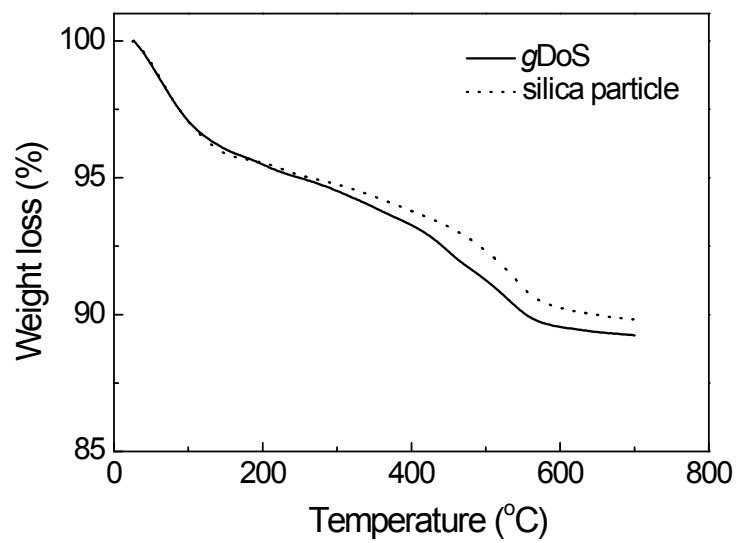
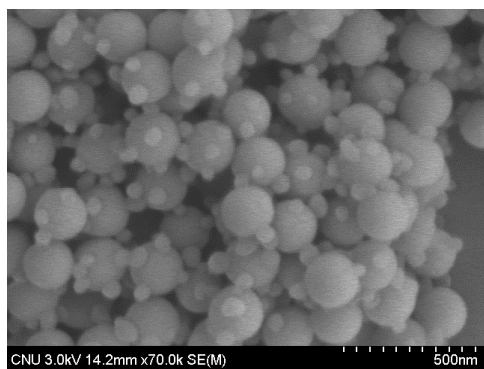
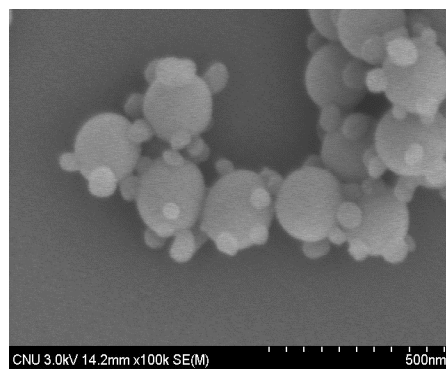


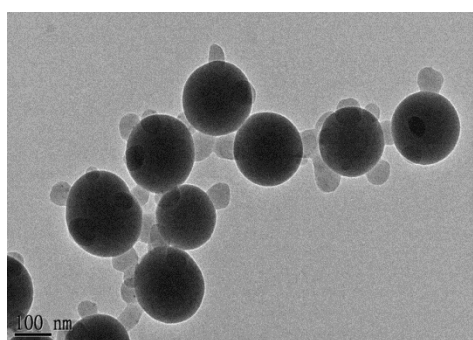
Figure S2. TGA thermogram of silica particle and gDoS.



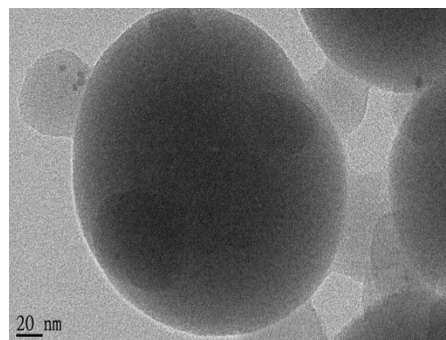
(a)



(b)



(c)



(d)

Figure S3. SEM (a) and (b) and TEM (c) and (d) images of *rDoS* with larger *rCPdots* than *gCPdots* in Figure 3.

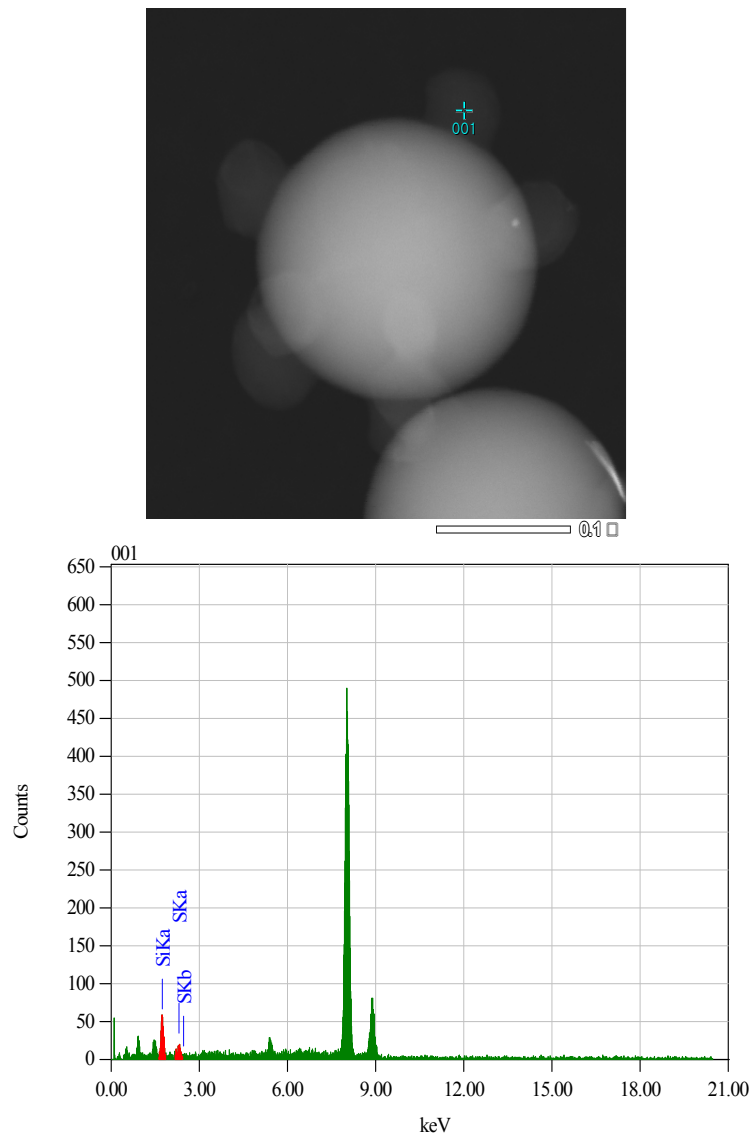
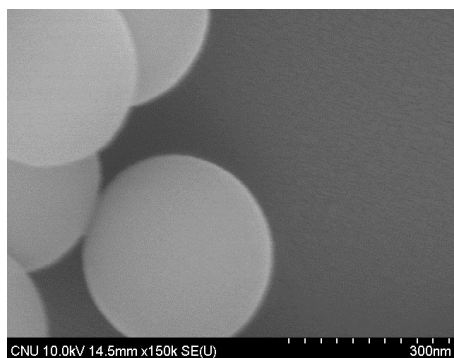
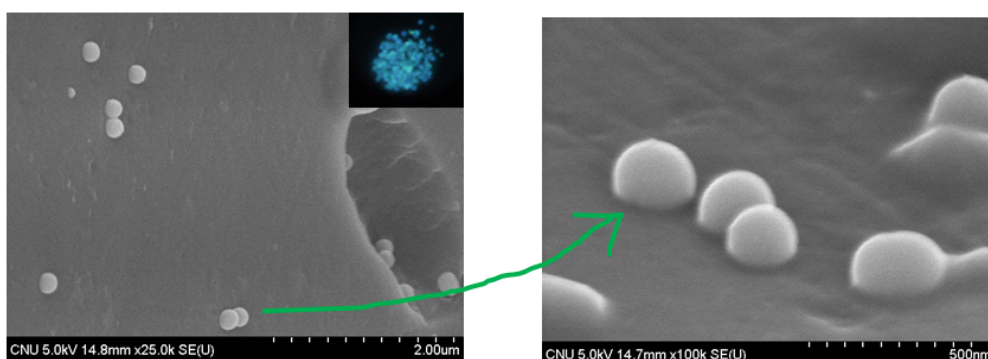


Figure S4. Energy dispersive X-ray analysis (EDAX) data of *rDoS*.

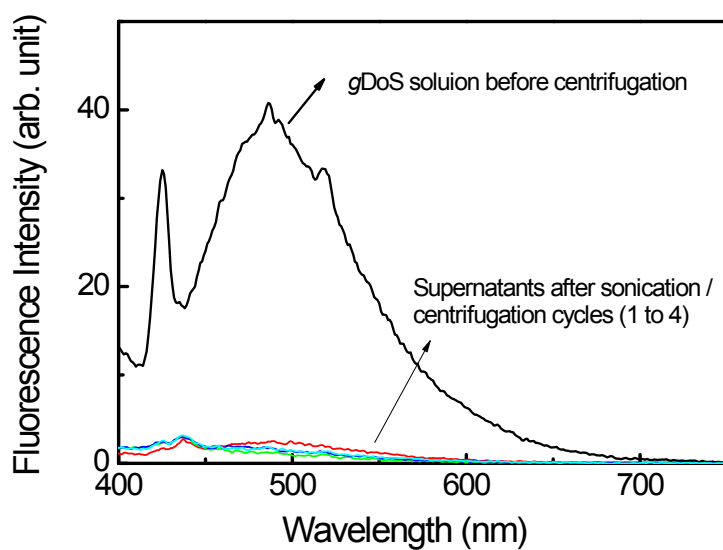


(a)

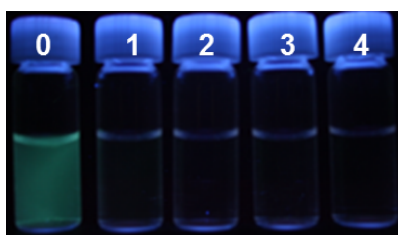


(b)

Figure S5. SEM images of (a) APTES-unmodified silica particles after treatment with *g*CPdots, (b) surface of anion exchange resin (Trilite SAR10 Ion Exchange Resin, Samyang Corp., Korea, size > 0.40 mm) in the presence of *b*CPdots (Inset photo represents fluorescent resin due to the immobilization of *b*CPdots).

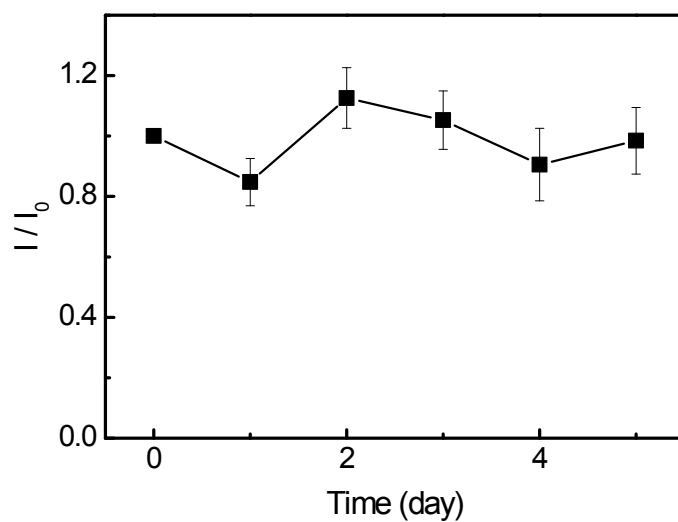


(a)

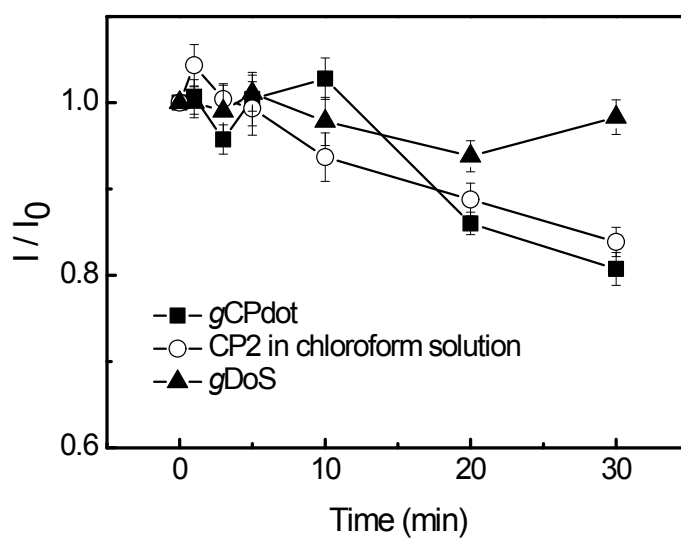


(b)

Figure S6. (a) Emission spectra of gDoS and supernatants of gDoS solution after sonication/centrifugation cycles of one to four times. (b) Photographs of gDoS solution (0) and supernatants of gDoS after sonication/centrifugation cycles. The number represent the number of the cycles. Each sonication time: 1 h.



(a)



(b)

Figure S7. Changes in fluorescence intensity of (a) gDoS in 20 mM HEPES buffer (pH 7.4) at room temperature and of (b) CP2 in chloroform solution, gCPdot, and gDoS upon UV lamp illumination (50 mW/cm^2) for 30 min.

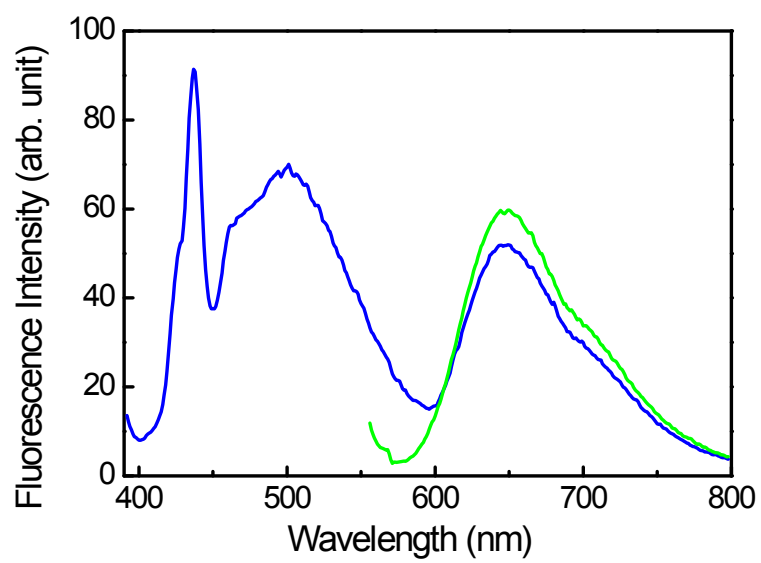
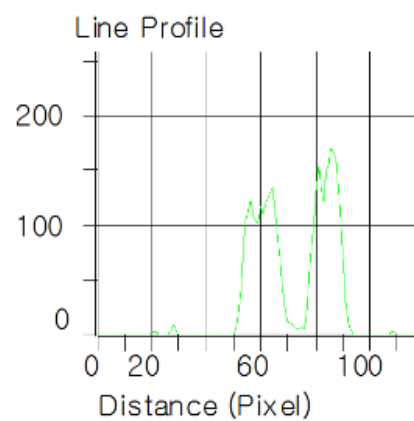
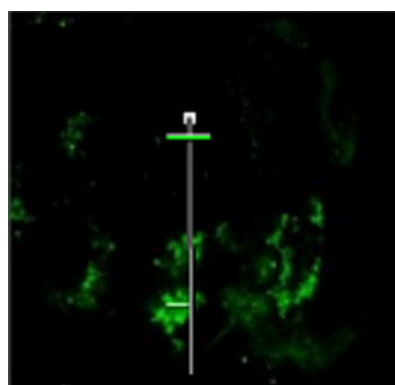
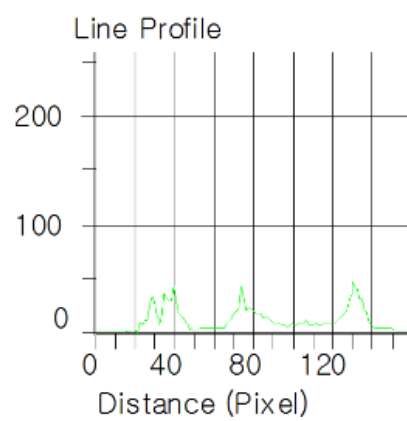
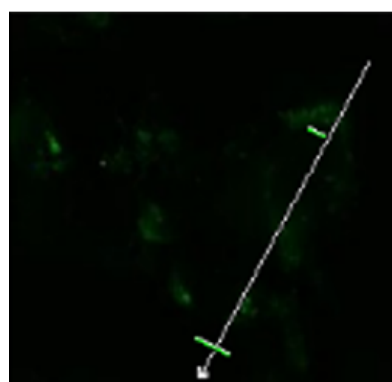


Figure S8. Emission spectra of *rgbDoS*. Blue line represents a spectrum excited at 380 nm and green line represents at 540 nm.



(a)



(b)

Figure S9. Emission intensity profiles of CLSM images of (a) SKBR-3 breast cancer cells and (b) of MDA-MB-231 cells after 24 h incubation with neu-Parg@gDoS.