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One step emission tunable synthesis of PEG coated Ag_2S NIR quantum dots and the development of receptor targeted drug delivery vehicles thereof

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Table S1. Size distribution and zeta potential of Ag_2S-PEG QDs in water.

Rxn Code	Hydrodynamic Size (Dh)[a] (nm)			PDI[b]	Zeta Pot. (mV)
	Intensity	Volume	Number		
QD1	14.87	8.37	6.19	0.216	-1.23
QD2	21.50	2.78 (83 %)	2.47	0.357	-21.5 (50 %)
		11.06 (16.9 %)			+3.88 (50 %)
QD3	15.24 (75.5 %)	9.45	2.70	0.444	-5.66
	298 (17.3 %)				
QD4	16.39	3.65	1.77	0.257	-12.1 (49.1 %)
					+2.42 (34.5 %)
QD5	12.73	7.22	5.36	0.197	-4.10
QD6	42.60	11.91	8.04	0.449	-1.01
QD7	169.7 (88 %)	18.09	11.90	0.479	-7.55 (83.3 %)
	18.89 (10 %)				-32.1 (16.7 %)

[a] Hydrodynamic diameter measured by DLS. [b] Size distribution calculated by DLS

Table S2. Size distribution and zeta potential of Ag_2S-PEG QDs before and after DOX loading in water.

Sample	Zeta Potential (mV)	Hydrodynamic size by DLS (nm)
QD	-13 (st. dev. 6.31)	10.45/St.Dev: 2.86 (N)* 13.08/St.Dev: 4.47 (V)**
QD-DOX	-10.8 (st. dev: 6.83)	10.84/St.Dev:2.9(N)* 13.40/St.Dev:4.7(V)**

* Number average, ** Volume average

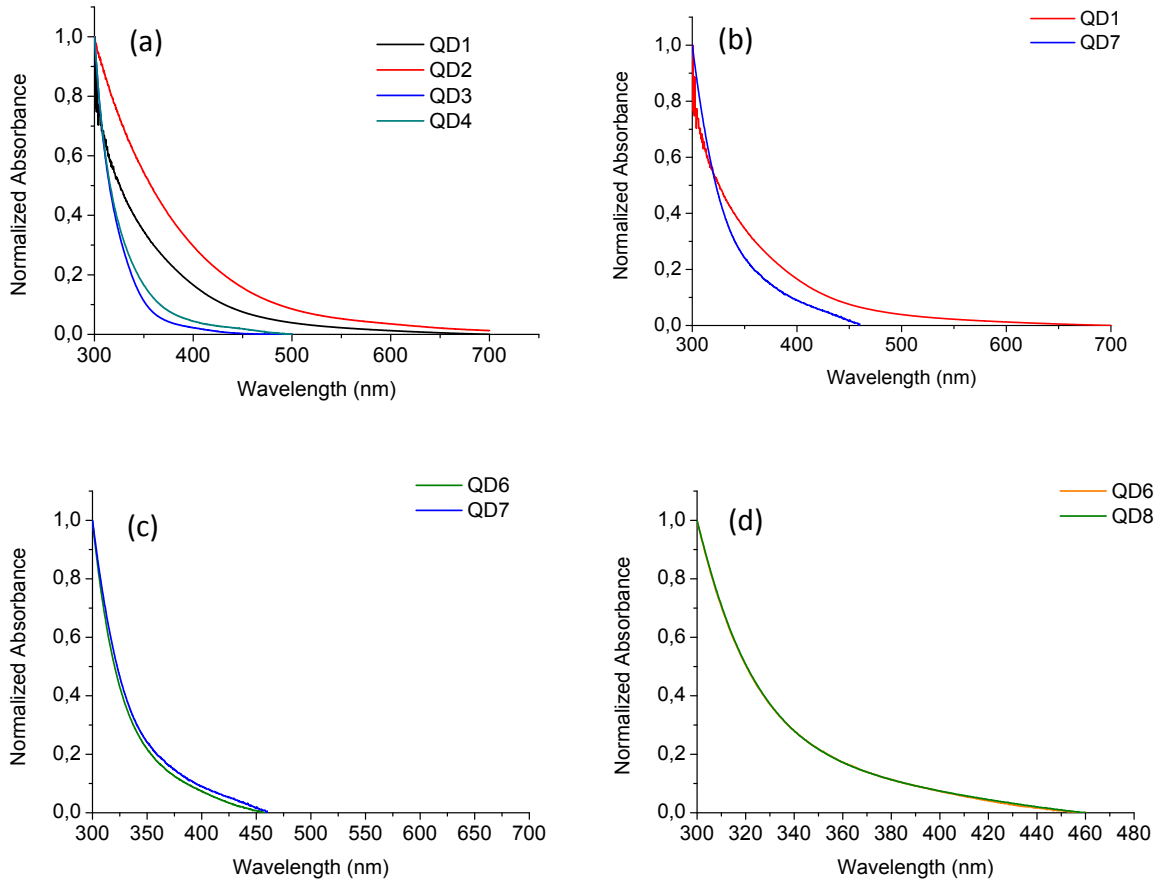

Figure S1. Normalized absorbance spectra of Ag_2S-PEG QDs.

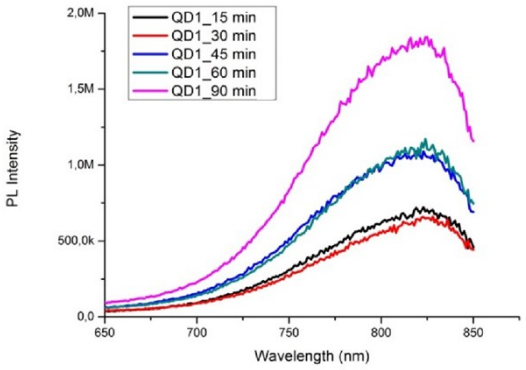

Figure S2. Photoluminescence spectra of QD1 at different reaction times (15, 30, 45, 60 and 90 minutes).

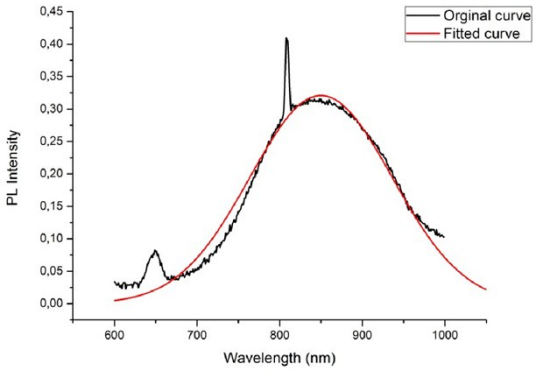

Figure S3. Original and fitted photoluminescence spectrum of QD1. Original curve was fitted by OriginPro 9.0 software equation (y=y0+A*exp(-0.5*((x-xc) /w)^2).

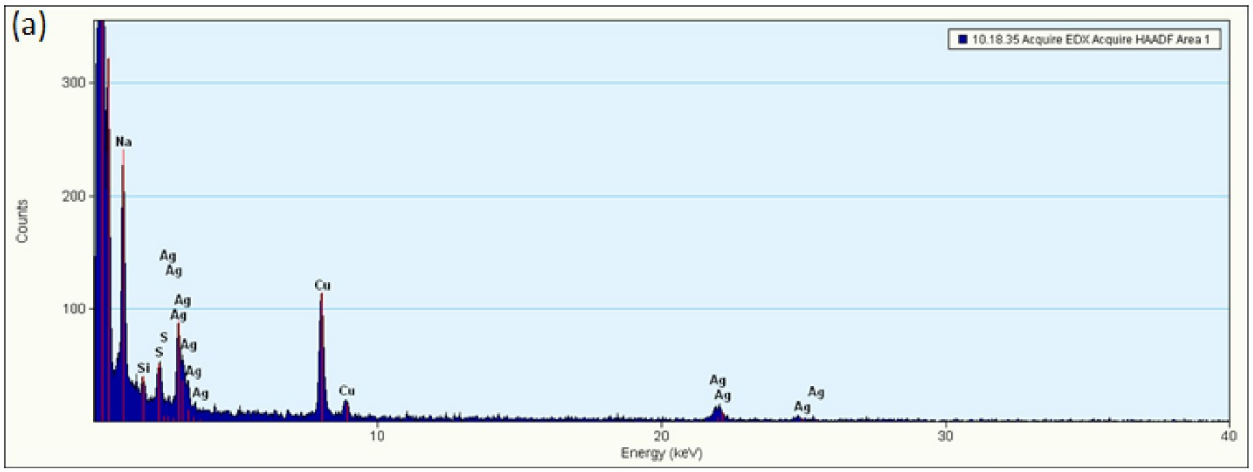

Figure S4. The EDX image of QD8 .

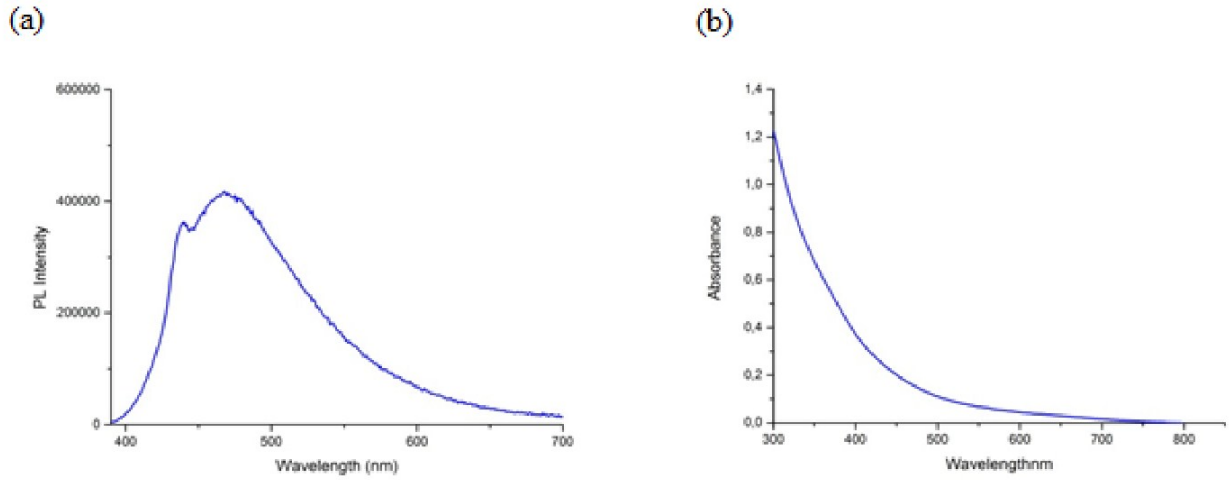

Figure S5. Photoluminescence (a) and absorbance (b) spectrum of folic acid tagged Ag_2S-PEG QD (QD-FA).

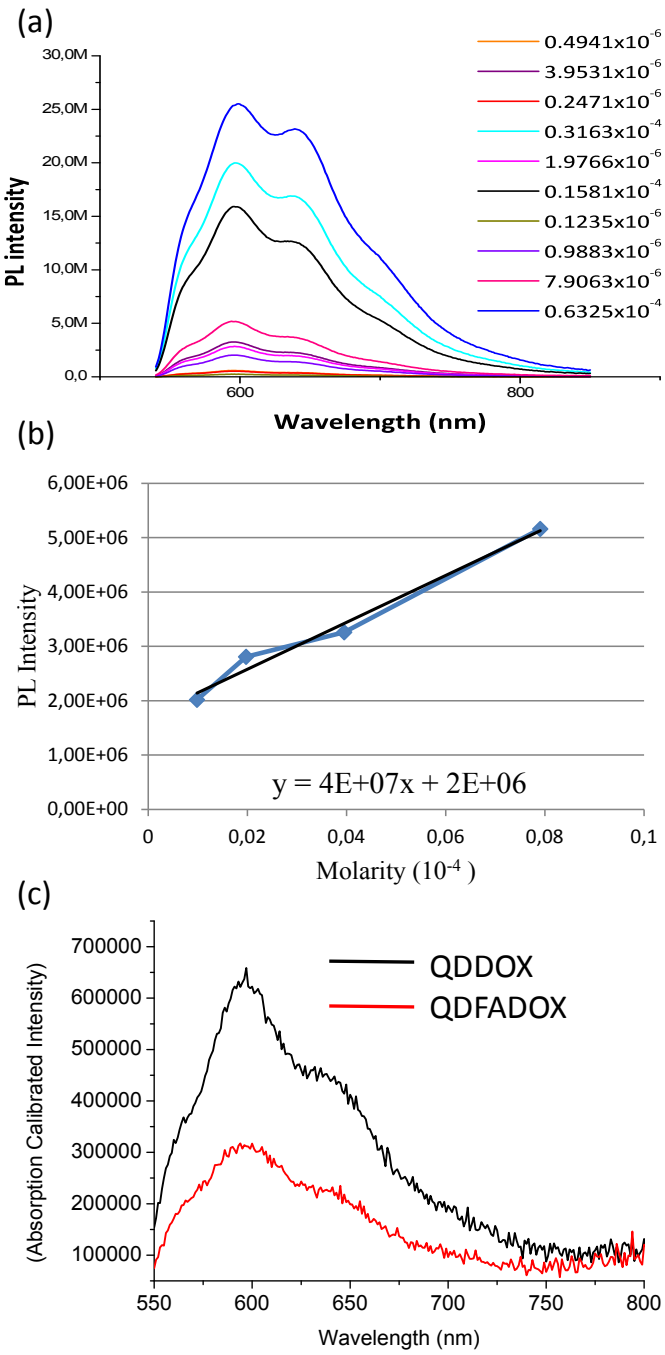

Figure S6. (a) Photoluminescence spectra (λ_{exc}: 520 nm) of Doxorubicin hydrochloride at different concentration (0.1235×10^{-6} to 0.6325×10^{-4} M). (b) Concentration dependence of DOX.HCl luminescence intensity at 595 nm. (c) Photoluminescence spectra of QD-FA-DOX and QD-DOX between 550-800 nm.

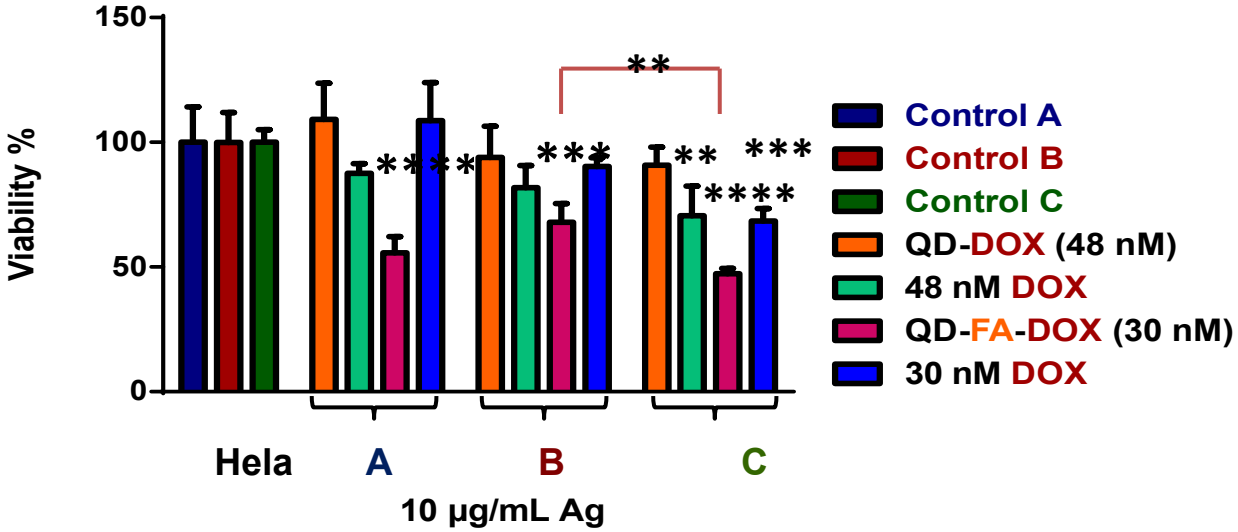

Figure S7. In vitro viability of HeLa cells incubated 24 hours with QD-FA-DOX at 10 µg Ag /mL (0.836 mg QD/mL), QD-DOX at 10 µg Ag /mL (0.672 mg QD/mL) and with free DOX (30-48 nM). In vitro cell viability studies were performed in (I) complete DMEM, (II) folic acid free medium with 2 mM folic acid, and (III) folic acid free medium. Significant difference was observed between control groups and QD treated cells (one-way ANOVA with Tukey's multiple comparison at $p < 0.05$(*), $p < 0.01$ (**), $p < 0.001$ (***) and $p < 0.0001$(****).