Electronic Supplementary Material (ESI) for Biomaterials Science.
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Supplementary Data

Supplementary Experimental

In Vitro Cell Viability Tests. HEK and 3T3 cells were plated for calibration and for cytotoxicity which were seeded and incubated in 96-well plates. For calibration, luminescence was measured for 0 (culture media only), 600, 1,250, 2,500, 5,000, 10,000, and 20,000 cells. For cytotoxicity, 2,000 HEK and 5,000 3T3 cells were seeded for each phospholipid-iodinated polymer conjugate concentration. For calibration and cytotoxicity measurements, cells and CellTiter-Glo 2.0 were brought to room temperature for 30 minutes at the end of the test period and 100 μL of CellTiter were added to each well. Each plate was placed on a rotator for at least 2 minutes to mix CellTiter and incubated cell solutions to lyse cells. 100 μL of each lysed cell solution were pipetted to a new opaque white plate, followed by luminescence reading in a BioTek Synergy HTX Plate Reader. For calibration, the average luminescence was plotted vs. cell number and fitted with a linear equation (Fig. S6). This linear equation was used to convert the luminescence to cell number for the cytotoxicity measurements.

Stability Test in Serum. Human serum (MilliporeSigma) was diluted to 50 times by 1 × phosphate buffer saline (pH 7.4). 10 μL samples (100% conjugate concentration) were dissolved into the diluted human serum and their UV-Vis absorbance was monitored by UV-Vis spectrophotometer (Agilent Cary 6000i) on a daily basis. The particle size of the samples was measured at different time points such as 0 hour, 24 hours, and 48 hours interval using a zeta potentiometer (Malvern Zetasizer ZEN3600).

Supplementary Figures

Fig. S1 (A) ^{1}H NMR spectrum and (B) ^{13}C NMR spectrum of iodinated monomer 2,2-bis(iodomethyl)-1,3-propanediol. Acetone-d_6 was used as the solvent.

Fig. S2 (A) ^{1}H NMR spectrum and (B) ^{13}C NMR spectrum of iodinated polymer poly(2,2-bis(iodomethyl)-1,3-propylene sebacate). $CDCl_3$ was used as the solvent.

Fig. S3 Picture of iodinated polymer coupled with azido group precipitation and two layers formation.

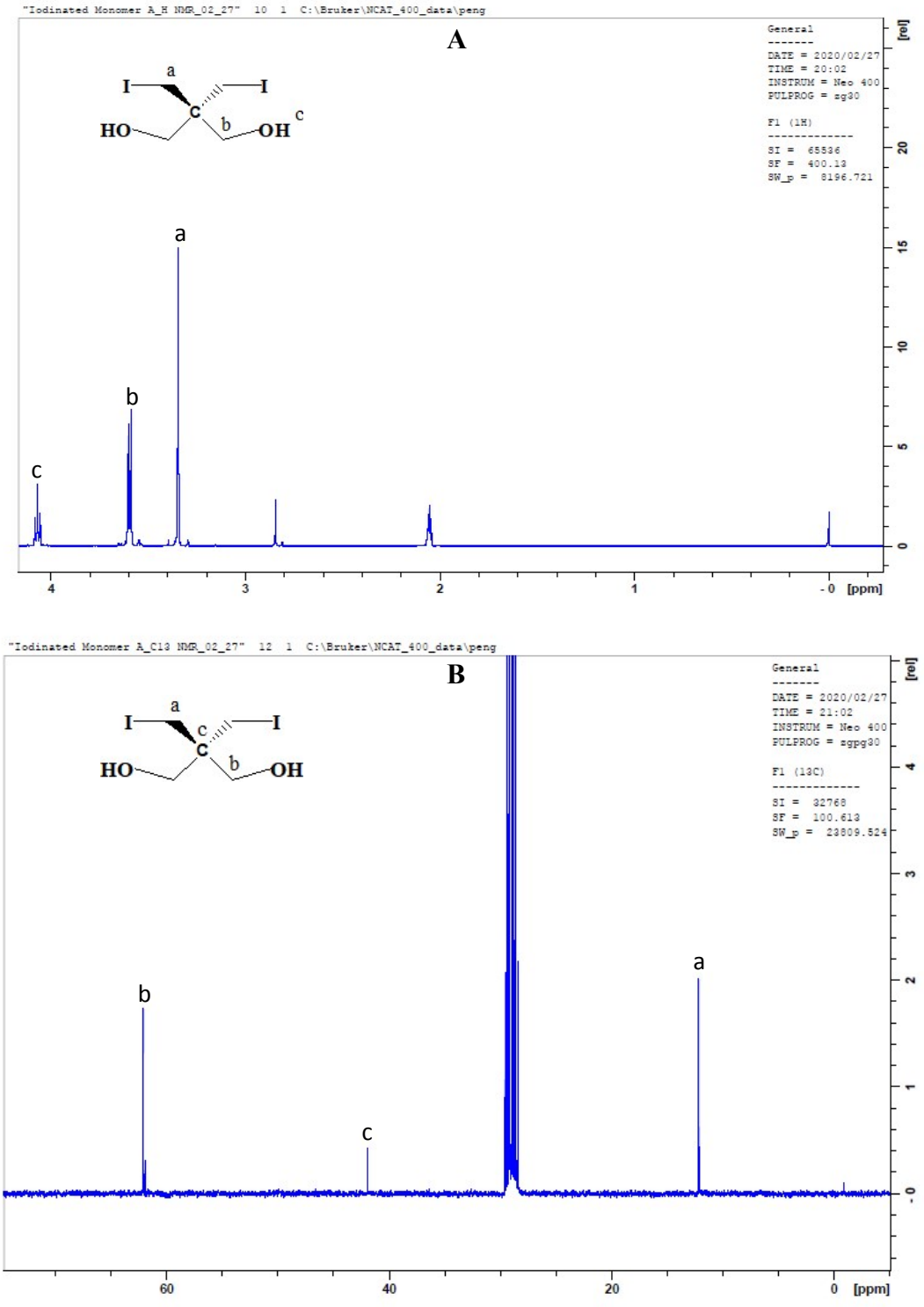
Fig. S4 EDX spectra of iodinated monomer 2,2-bis(iodomethyl)-1,3-propanediol.

Fig. S5 X-ray density of iodinated polymers in comparison with water and Omnipaque 300.

Fig. S6 Luminescence to cell number linear calibrations for (A) HEK and (B) 3T3 cells.

Fig. S7 TEM images of vesicles from self-assemblies of amphiphilic phospholipid-iodinated polymer conjugates with (A) 1:1 and (B) 1:5 coupling ratio of polymers to phospholipids.

Fig. S8 Stability measurements of amphiphilic phospholipid-iodinated polymer conjugates in serum: (A) UV-Vis measurement and (B) particle size measurement by dynamic light scattering with size distribution report by intensity after 48-hr incubation.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A
General
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INSTRUM = Neo 400
PULPROG = zg30
F1 (1H)
SI = 65536
SF = 400.13
SW_p = 8196.721
a
b
c
[rel]
[ppm]
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TIME = 21:02
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PULPROG = zgpg30
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SI = 32768
SF = 100.613
SW_p = 23809.524
a
b
c
[rel]
[ppm]

Figure S1

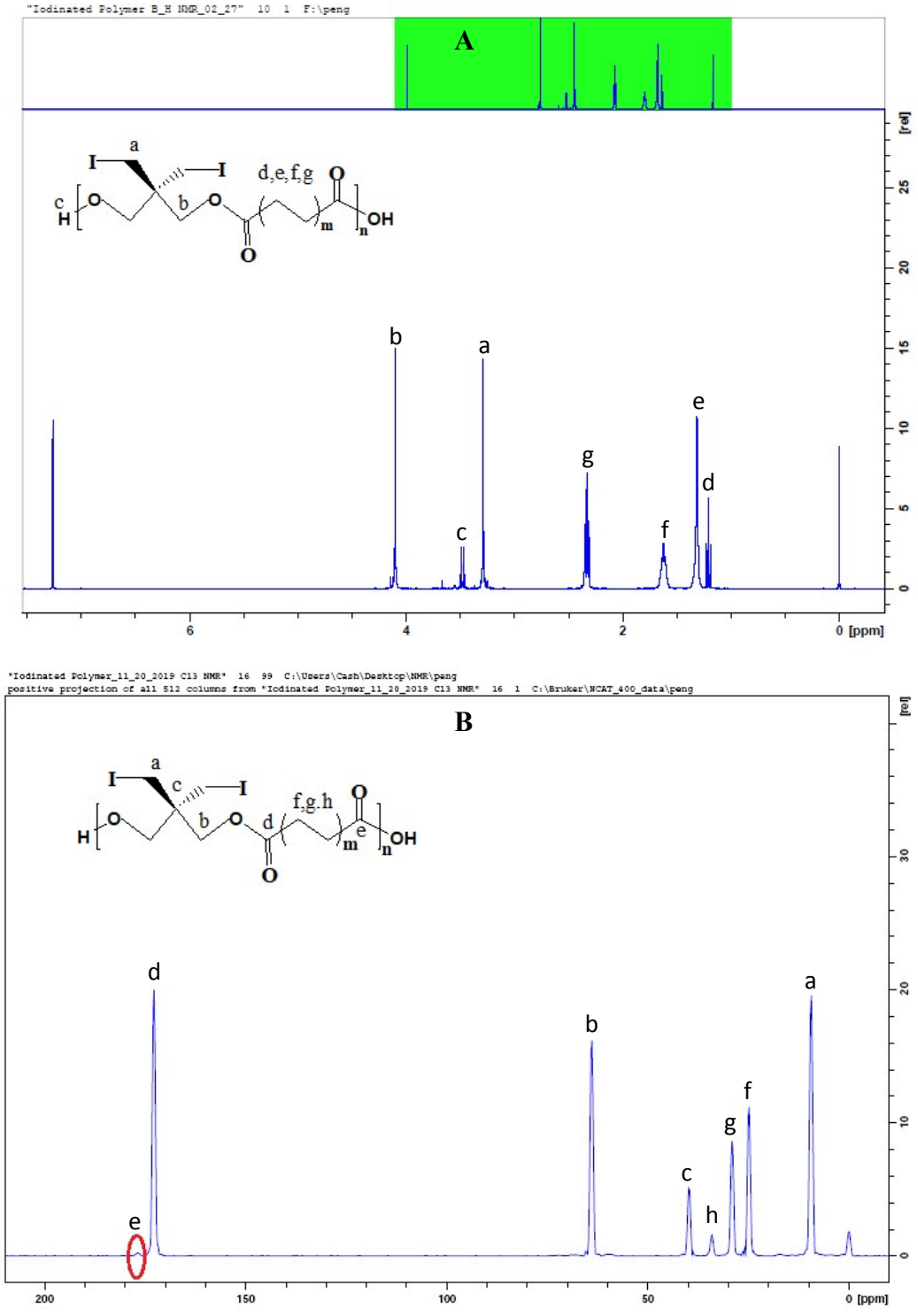

"Iodinated Polymer B_H NMR_02_27" 10 1 F:\peng
A
a
I
I
d,e,f,g
O
c
H
O
b
O
m
n
OH
O
b
a
e
g
d
c
f
[rel]
25
20
15
10
5
0
6
4
2
0 [ppm]
Iodinated Polymer_11_20_2019 C13 NMR 16 99 C:\Users\Cash\Desktop\NMR\peng
positive projection of all 512 columns from *Iodinated Polymer_11_20_2019 C13 NMR* 16 1 C:\Bruker\NCAT_400_data\peng
B
a
I
c
I
f,g,h
O
H
O
b
O
d
e
m
n
OH
O
d
a
b
f
g
c
h
e
[rel]
30
20
10
0
200
150
100
50
0 [ppm]

Figure S2

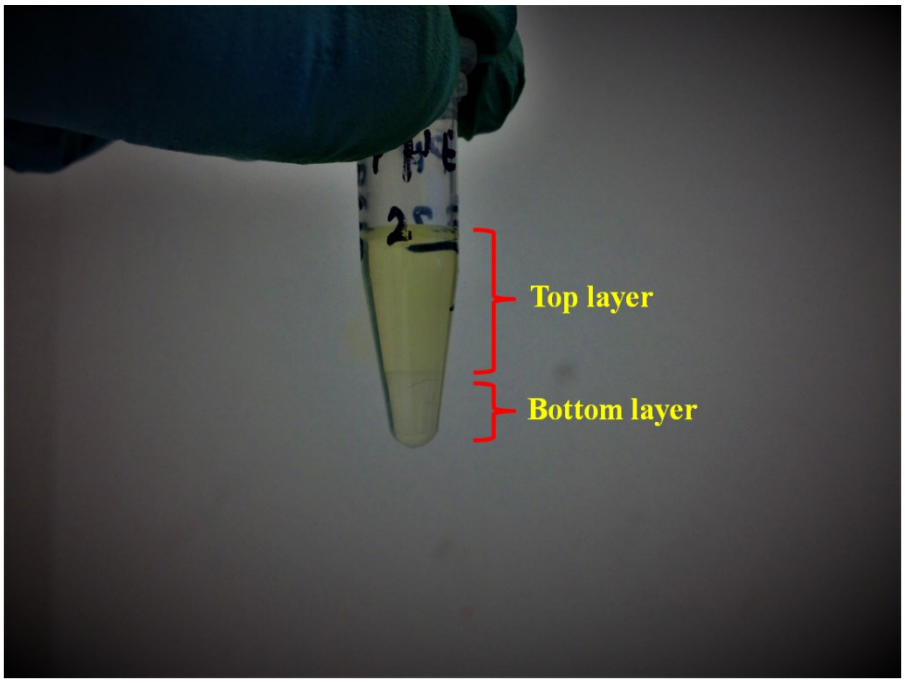
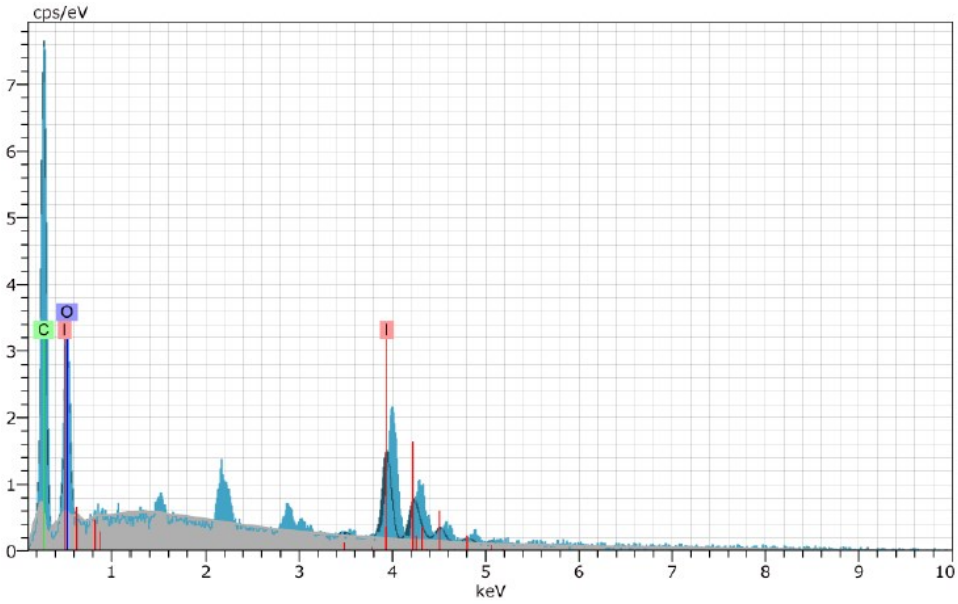


Figure S3



Element	Series	unn. C [wt.%]	norm. C [wt.%]	Atom. C [at.%]	Error (1 Sigma) [wt.%]
Iodine	L-series	32.05	70.25	19.56	1.32
Carbon	K-series	9.19	20.14	59.23	1.47
Oxygen	K-series	4.38	9.61	21.21	0.83
	Total:	45.62	100.00	100.00	

Figure S4

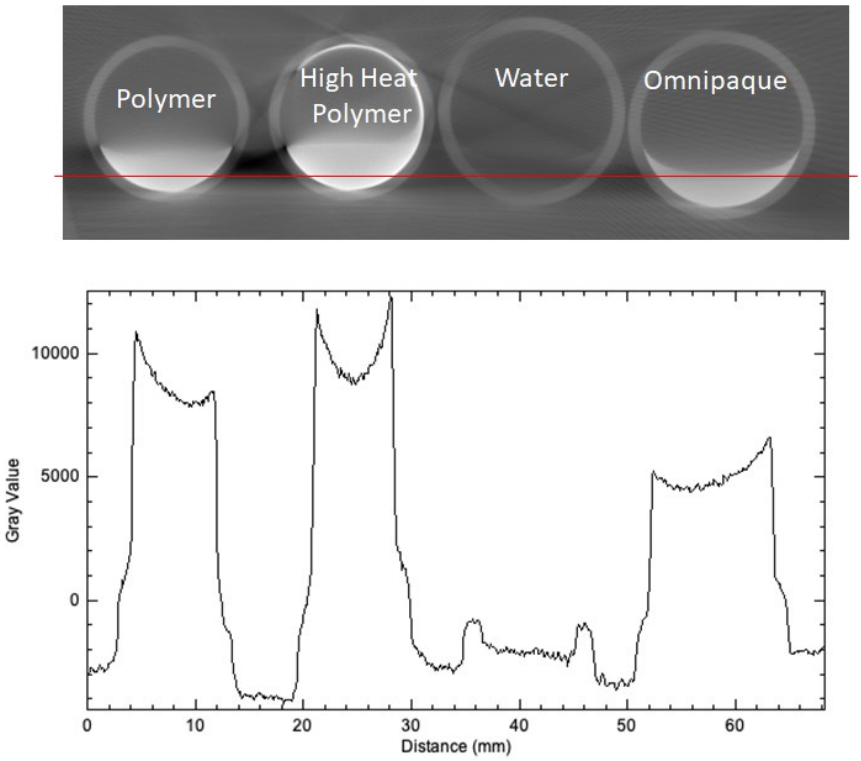

Polymer
High Heat Polymer
Water
Omnipaque
Gray Value
10000
5000
0
0
10
20
30
40
50
60
Distance (mm)

Figure S5

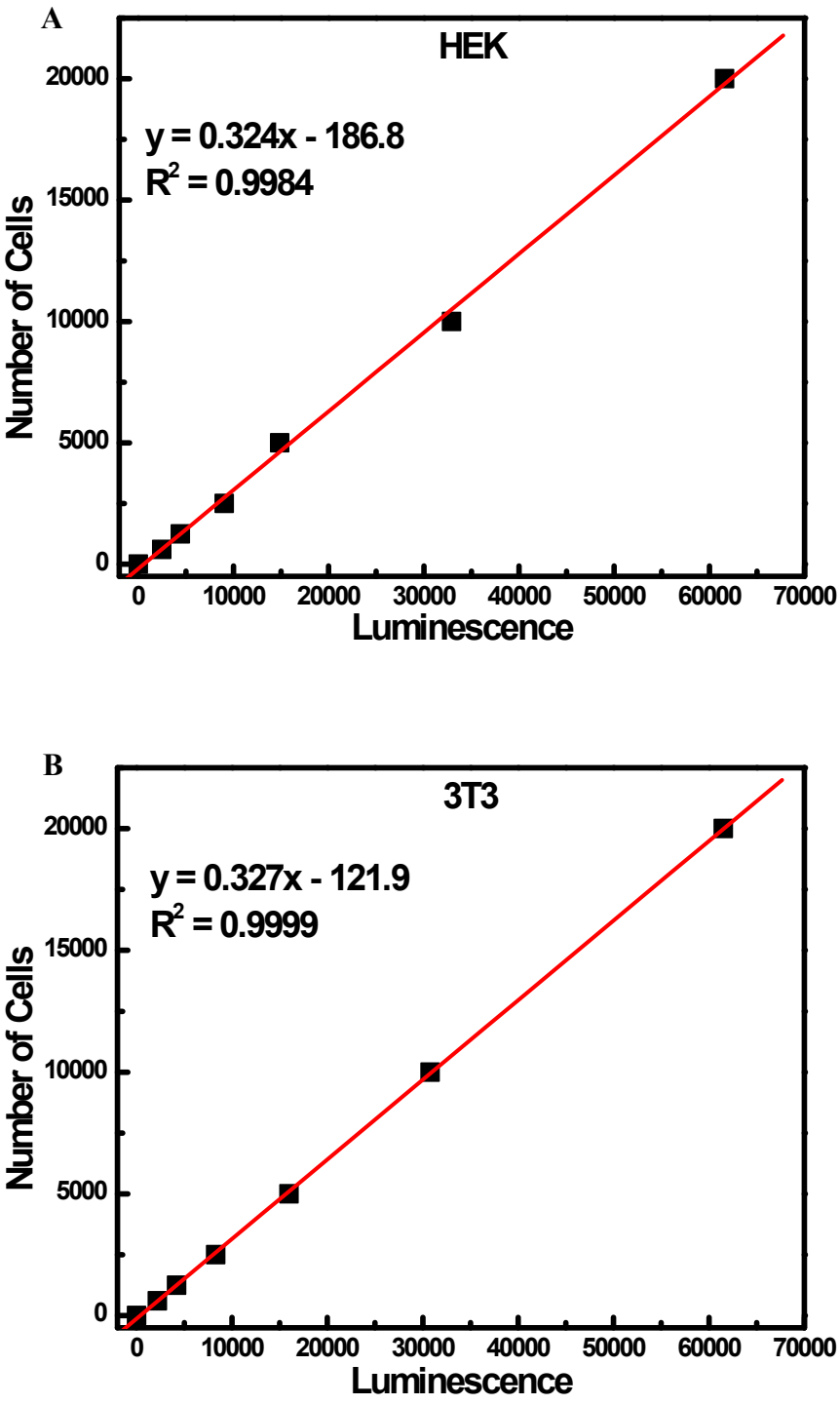

A
HEK
y = 0.324x - 186.8
R2 = 0.9984
Number of Cells
Luminescence
0
5000
10000
15000
20000
0
10000
20000
30000
40000
50000
60000
70000
B
3T3
y = 0.327x - 121.9
R2 = 0.9999
Number of Cells
Luminescence

Figure S6

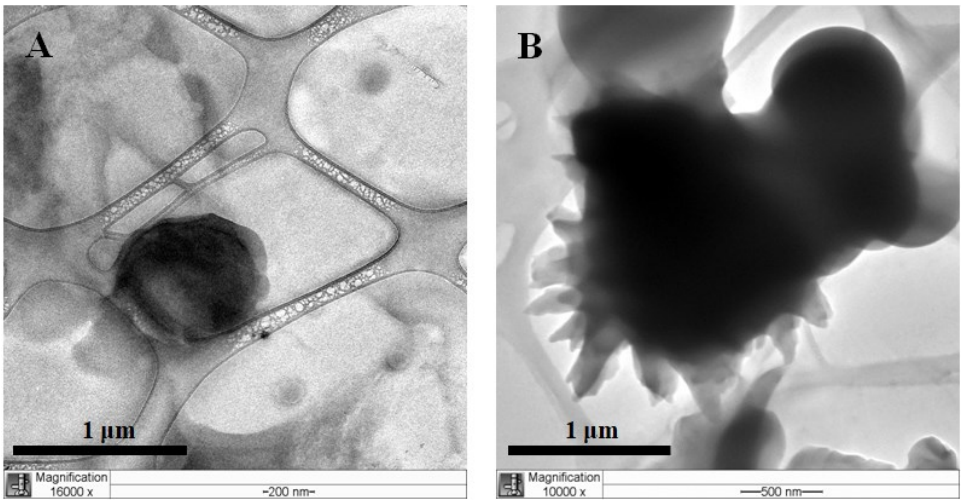
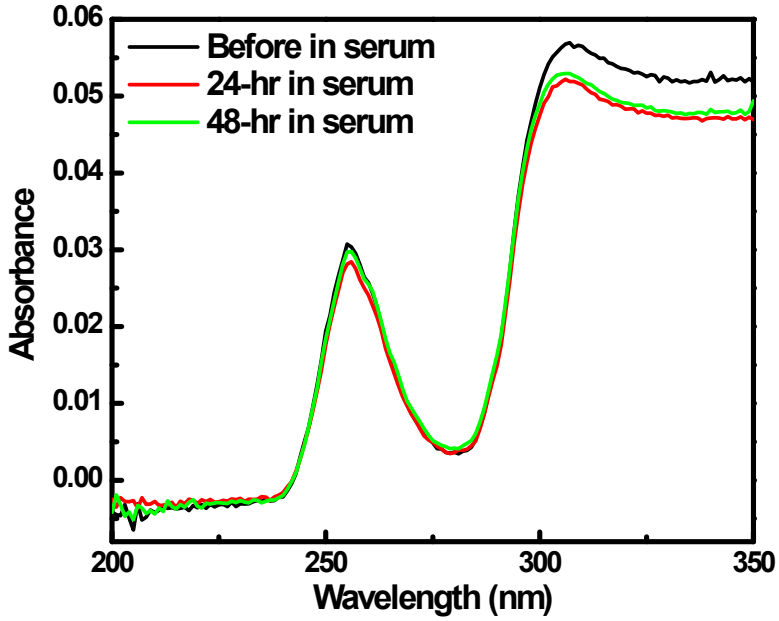
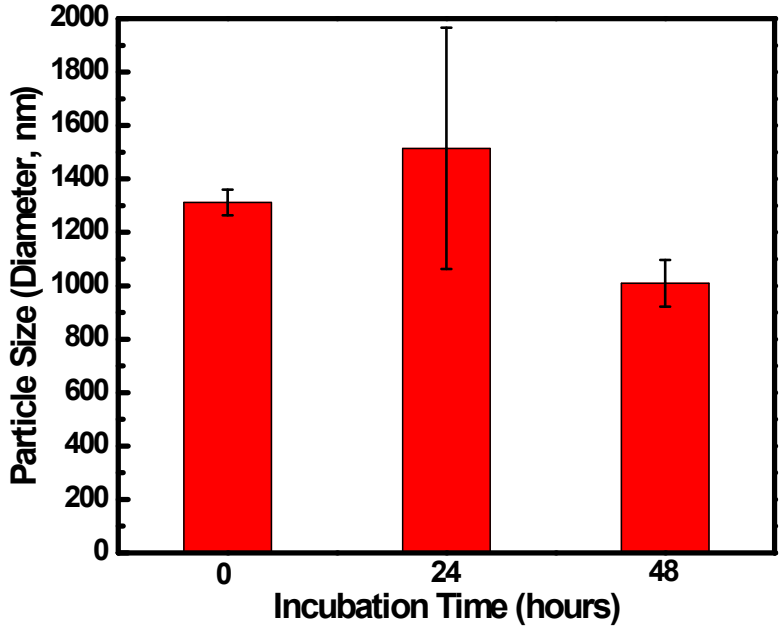

A
1 µm
Magnification
16000 x
200 nm
B
1 µm
Magnification
10000 x
500 nm

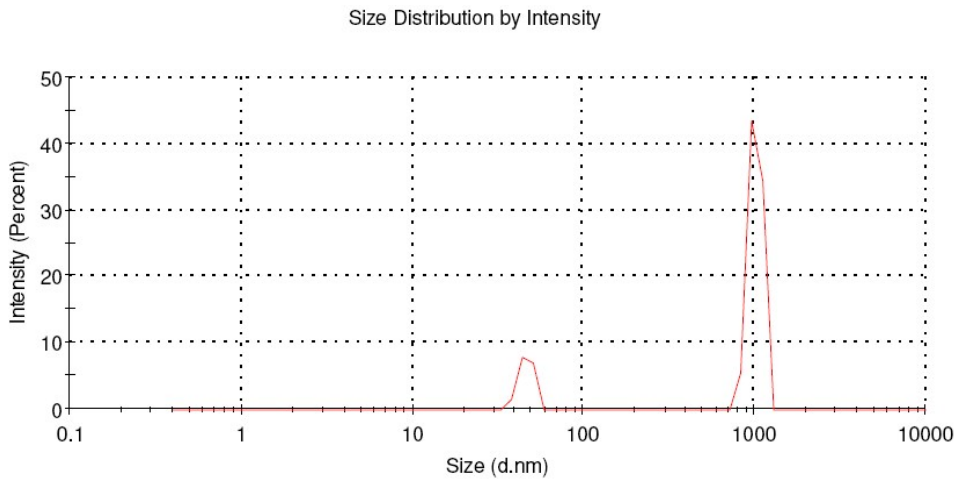
Figure S7

A


Before in serum
24-hr in serum
48-hr in serum
Absorbance
0.06
0.05
0.04
0.03
0.02
0.01
0.00
200
250
300
350
Wavelength (nm)

B


Particle Size (Diameter, nm)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0
24
48
Incubation Time (hours)



	Size (diameter, nm)	% Intensity	Standard Deviation (diameter, nm)
Peak 1	1,009	83.4	87.56
Peak 2	46.20	16.6	4.271

Figure S8