

Supplementary Materials:

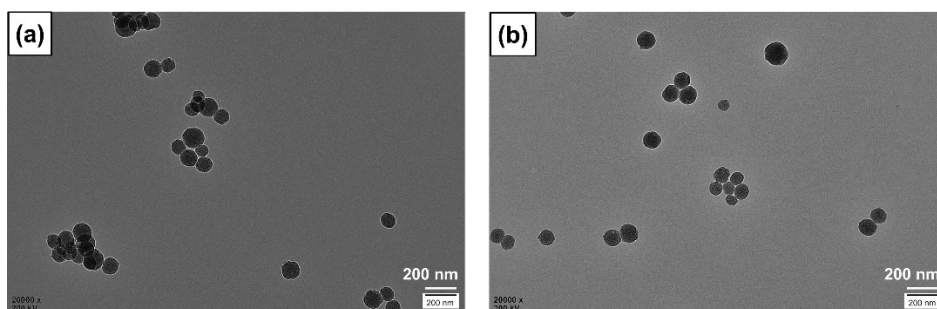


Figure S1. TEM images of (a) SiO₂ NPs loaded ICG (average diameter is 107 nm), (b) SiO₂-NH₂ NPs loaded ICG (average diameter is 102 nm).

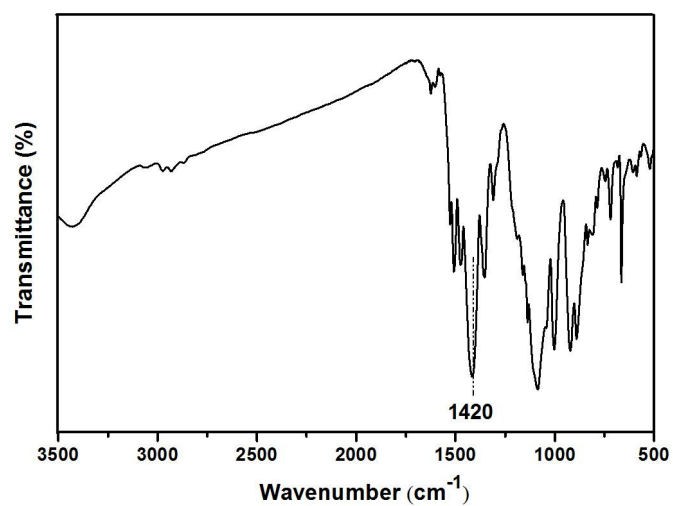


Figure S2. FTIR spectra of ICG.

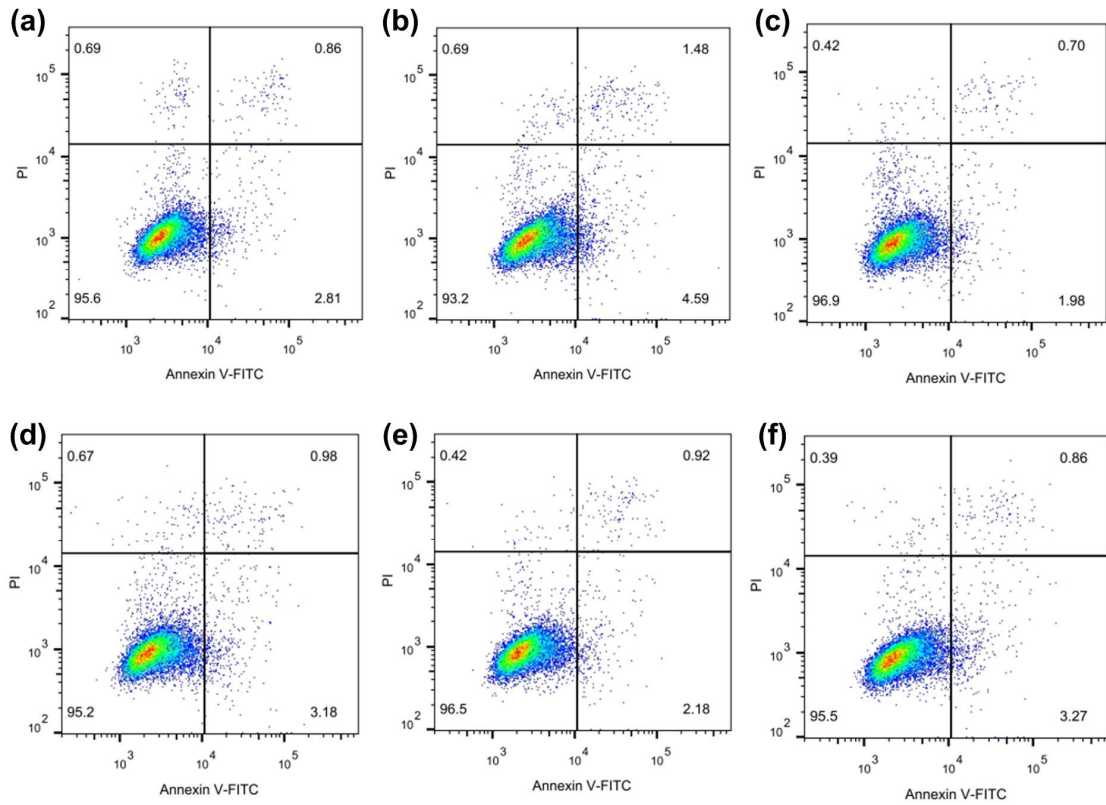


Figure S3. The HepG2 cell apoptosis after treatment with (a) normal media, (b) SiO₂, (c) SiO₂-NH₂, (d) SiO₂@ICG, (e) SiO₂-NH₂@ICG NPs, (f) free ICG. ICG concentration was fixed at 8 μg/mL, NPs concentration was fixed at 100 μg/mL.

Table S1. ICG loading efficiency (LE) of SiO₂ and SiO₂-NH₂.

Sample	SiO ₂	SiO ₂ -NH ₂
LE (%)	21.60 ± 1.5	99.87 ± 0.7

Table S2. HepG2 cell apoptosis results.

Sample	Normal Media	SiO ₂	SiO ₂ -NH ₂	SiO ₂ @ICG	SiO ₂ -NH ₂ @ICG	Free ICG
Apoptosis rate (%)	2.81 ± 0.12	4.59 ± 0.22	1.98 ± 0.09	3.18 ± 0.30	2.18 ± 0.19	3.27 ± 0.19
Necrosis rate (%)	0.86 ± 0.07	1.48 ± 0.10	0.70 ± 0.03	0.98 ± 0.11	0.92 ± 0.08	0.86 ± 0.05
Live cell rate (%)	95.6 ± 3.40	93.2 ± 3.10	96.9 ± 2.52	95.2 ± 4.17	96.5 ± 3.23	95.5 ± 2.74