Supplementary Material (ESI) for Journal of Materials Chemistry

Supporting Information

Carbon Nanotube-based Magnetic-fluorescent Nanohybrids as Highly Efficient Contrast Agents for Multimodal Cellular Imaging

Bingdi Chen,[ab] Hui Zhang,[a] Chuanxin Zhai,[a] Ning Du,[a] Chen Sun,[a] Jingwen Xue [a] and Deren Yang [*a]

[a]State Key Lab of Silicon Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, People's Republic of China

[b]The Institute for Advanced Materials and Nano Biomedicine, Tongji Univerisity, Shanghai 20092, People's Republic of China

Hai Huang,[c] Bo Zhang,[c] Qiuping Xie[c] and Yulian Wu [*c]

[c]Department of Surgery, the Second Affiliated Hospital, School of Medicine, Zhejiang University, Hangzhou 310027, People's Republic of China.

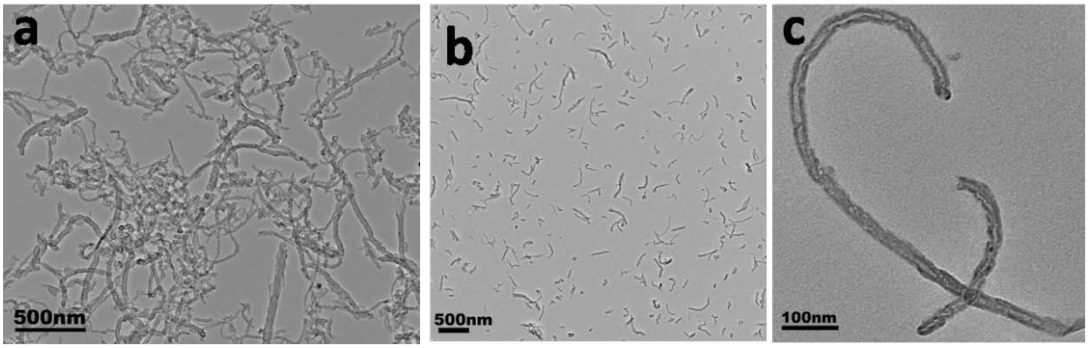

Figure S1 TEM images of (a) CNTs before cut short; (b) CNTs cut short by sonicating

in concentrated sulfuric acid and nitric acid mixture and further polished by sulfuric acid and hydrogen peroxide; (c) magnified image.

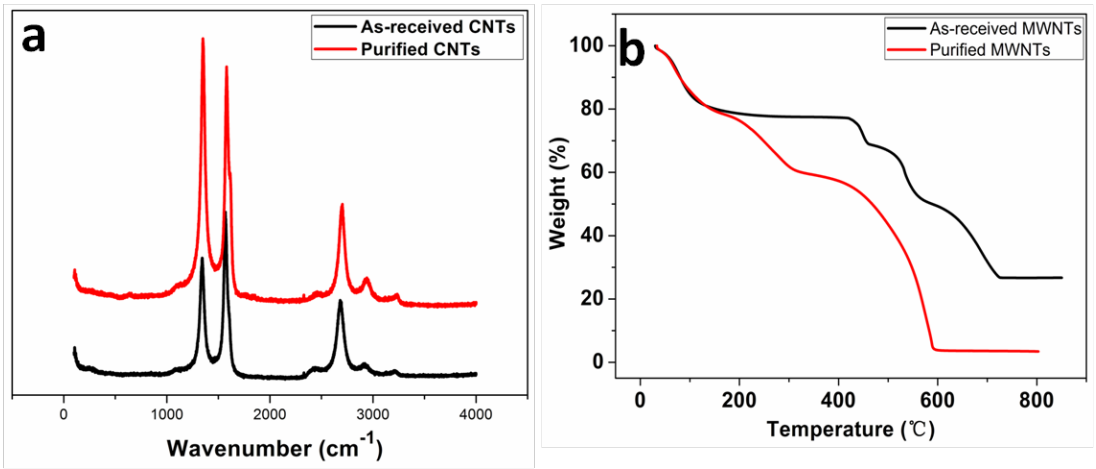

Figure S2 Raman spectra (a) and TGA spectra (b) of as-received CNTs and purified CNTs.

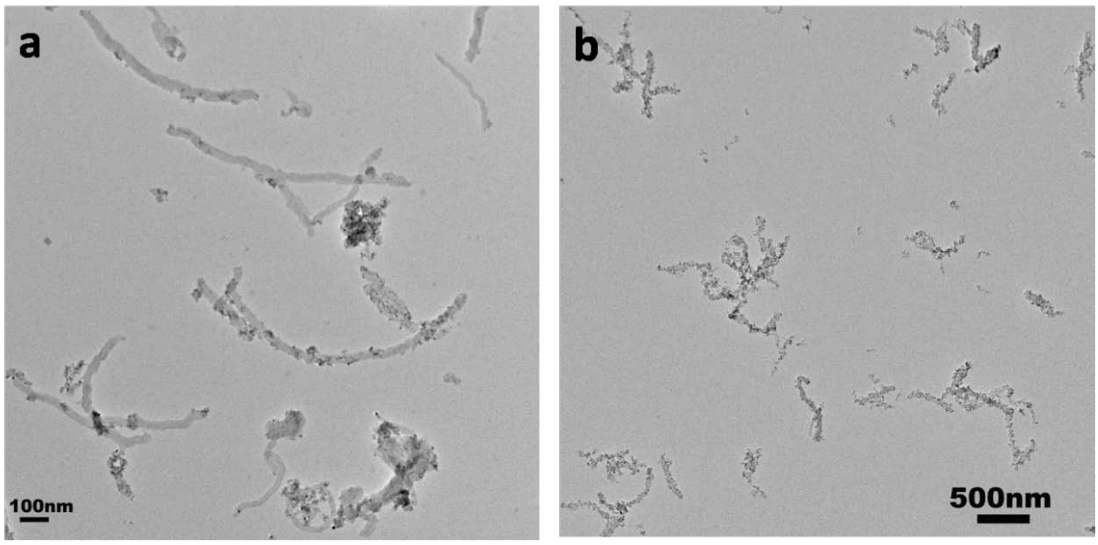

Figure S3 TEM images of CNT-SPIO with different ratio of SPIO and CNTs.

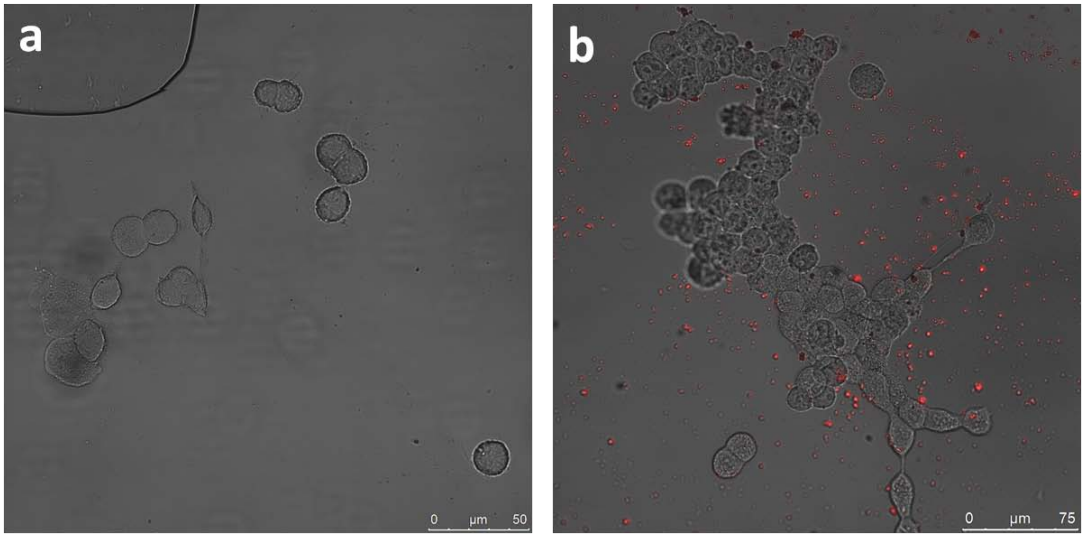

Figure S4 Confocal fluorescence images of (a) unlabeled and (b) SPIO-CdTe labeled HEK 293T cells.

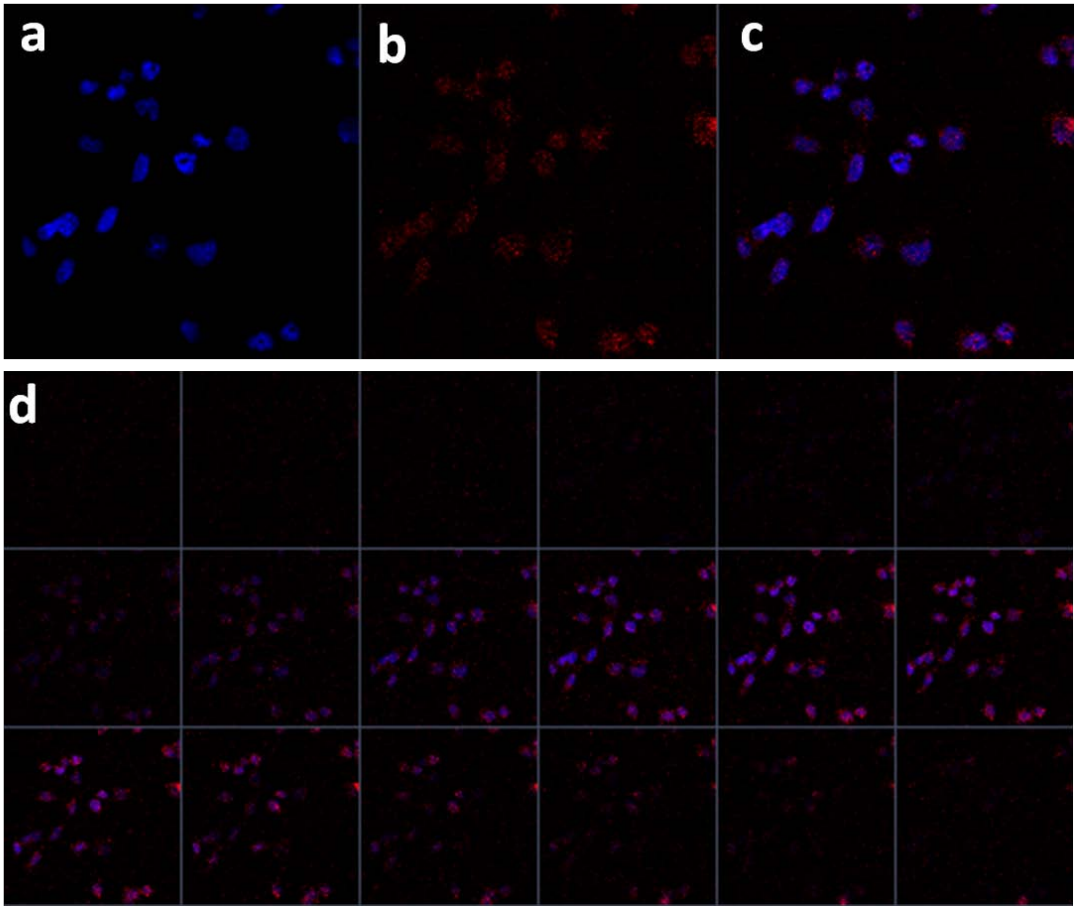

Figure S5 Confocal fluorescent images of HEK 293T cells incubated with CNT-SPIO-CdTe nanohybrids with Cd concentration of 5 μg/ml: (a) fluorescence

image of nuclei illuminated with blue; (b) fluorescence image showing CNT-SPIO-CdTe color only; (c) overlaid image of HEK 293T cells; (d) Z-stack image of interiors of cells.

Table 1 Quantum yield of the hybrid and pure CdTe

Sample	λ_{ex} (nm)	λ_{em} (nm)	A	F	Gx/Gs	QY (%)
Rhodamine B	325	576	0.041	412409		97
CdTe	325	695	0.067	201462	0.299	29
CNT-SPIO-CdTe	325	720	0.081	121340	0.149	14

A: Absorption intensity; F: Integrated fluorescence intensity; G=F/A. $\Phi x = \Phi s \left(\frac{Gx}{Gs}\right)\left(\frac{\eta x}{\eta s}\right)^2$