In-vivo Fluorescence Imaging in the NIR-II with Long Circulating Carbon Nanotubes Capable of Ultra-High Tumor Uptake

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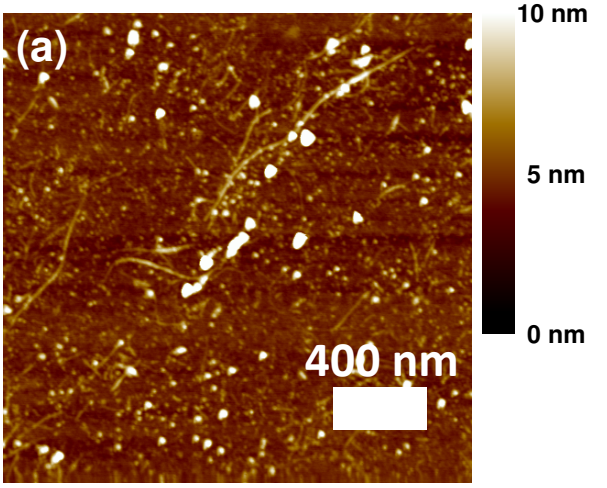
Supporting Information

Supplementary Movie 1. Back view video of intravenous injection. View of the back of a mouse in the second near infrared (NIR-II) window (1.1~1.4 μm) is shown in the movie with the head of mouse located at the top of the screen. The video frame rate is 8.4 frames per second.
Supplementary Movie 2. 3D reconstruction of tumor with free rotation. A 360 degree free rotation of the 3D reconstructed tumor is shown in this movie, showing the location of SWNTs (coded in red) and Cy5-labeled anti-mouse CD31 (coded in green), and their colocalization (yellow).
Supplementary Movie 3. 3D reconstruction of tumor with zoom-in view. A zoom-in view of the 3D reconstructed tumor is shown in this movie, showing the location of SWNTs (coded in red) and Cy5-labeled anti-mouse CD31 (coded in green), and their colocalization (yellow). Vascular structures color-coded in yellow can be seen as zoomed in, indicating higher degree of colocalization of SWNTs and blood vessels.

Supplemental Figures



(b)

Surfactant-SWNT	Hydrodynamic Radius
DSPE-mPEG + SWNT	21.7 nm
90 kDa C_{18}-PMH-mPEG + SWNT	41.6 nm
1-2 MDa C_{18}-PMH-mPEG + SWNT	54.1 nm

Figure 1. Characterization of the size of SWNTs (a) AFM image of 90 kDa C_{18}-PMH-mPEG SWNT solution after washing. Note that some excess 90k C_{18}-PMH-mPEG polymer remains b) Hydrodynamic radius, based on Dynamic Light Scattering, of SWNTs coated with various surfactants. Since SWNTs are not spherical, this data should be interpreted as relative radius instead of absolute radius.

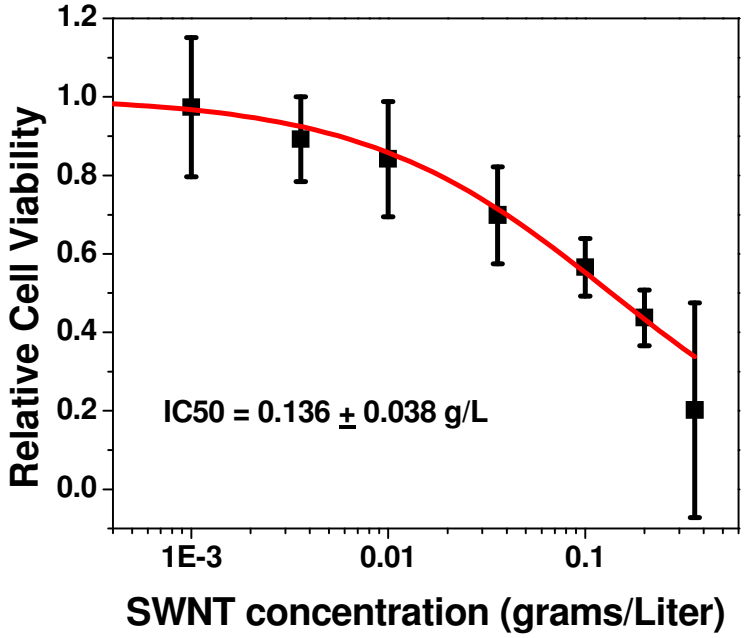


Figure 2. Characterization of the toxicity of SWNTs. SWNTs have low toxicity to 4T1 murine breast cancer cells *in vitro*. The IC50 is much higher than any SWNT concentrations that would be encountered *in vivo* at an injection dose of 3.5 mg/kg.