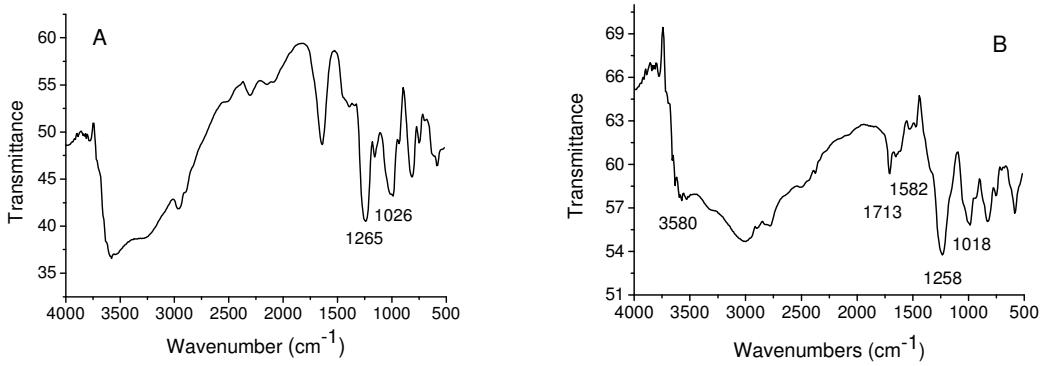
Paramagnetic, silicon quantum dots for magnetic resonance and two photon imaging of macrophages

Chuqiao Tu,[†] Xuchu Ma,[†, ‡] Periklis Pantazis,[§] Susan M. Kauzlarich,[‡,*] and Angelique Y. Louie[†,*]

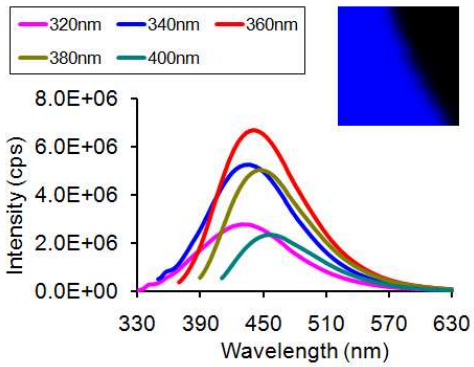
[†]*Department of Biomedical Engineering,* [‡]*Department of Chemistry, University of California, Davis, CA 95616, USA.* [§]*Biological Imaging Center, Beckman Institute, California Institute of Technology, Pasadena, CA 91125, USA.*

E-mail: aylouie@ucdavis.edu; smkauzlarich@ucdavis.edu

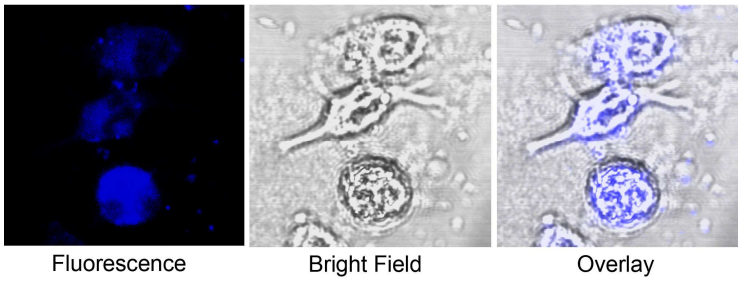
Supporting Information



Supplementary Figure 1. Infrared spectra of dextran sulfate (A) and dextran sulfate coated manganese doped silicon nanoparticles (B).



Supplementary Figure 2. Single-photon fluorescence spectra of DS Si_{Mn} QDs ($[Mn^{2+}]$ = 1.72×10^{-5} M) at different excitation wavelengths in water. Inset: optical imaging of the same quantum dots on Confocal microscopy when excited at 405 nm.



Supplementary Figure 3. Confocal imaging of DS Si_{Mn} QDs in P388D1 macrophage cells demonstrates that DS Si_{Mn} QDs accumulate in vesicles of the cells. ($[Mn^{2+}] = 2 \times 10^{-5}$ M, excitation at 405 nm).