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Supplementary Information

Size- and Surface Chemistry-Dependent Intracellular Localization of Luminescent Silicon Quantum Dot Aggregates

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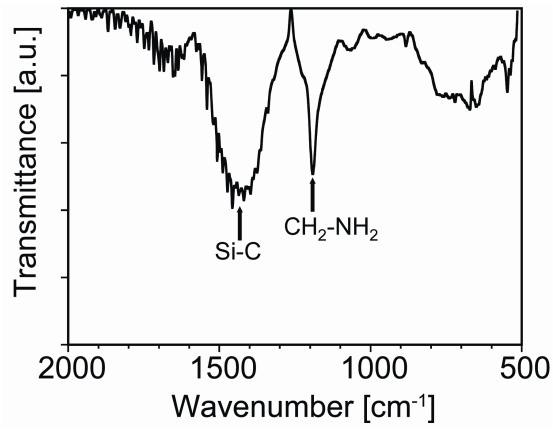

Figure S1. ATR-IR spectrum of Si-QDs after allylamine modification. The peak at 1460 cm^{-1} corresponds to the vibrational scissoring of Si-C and the peaks at 1100 ~ 1200 cm^{-1} correspond to stretching vibration of CH_2-NH_2. These results confirm the formation of covalent bonds between allylamine molecules and surface of Si-QDs.

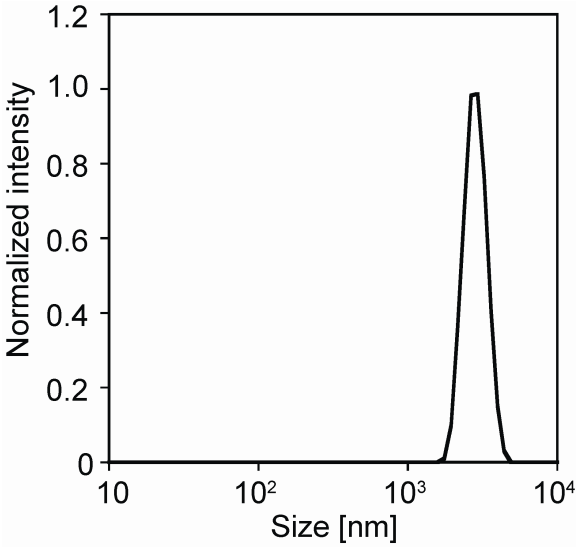

Figure S2. Aggregate size distribution of Si-QDs treated with F127 below CMC. Si-QDs were treated with F127. The concentration of F127 was 5 × 10^{-3} wt%, which is below CMC (1.2 × 10^{-2} wt% at 37 ºC).

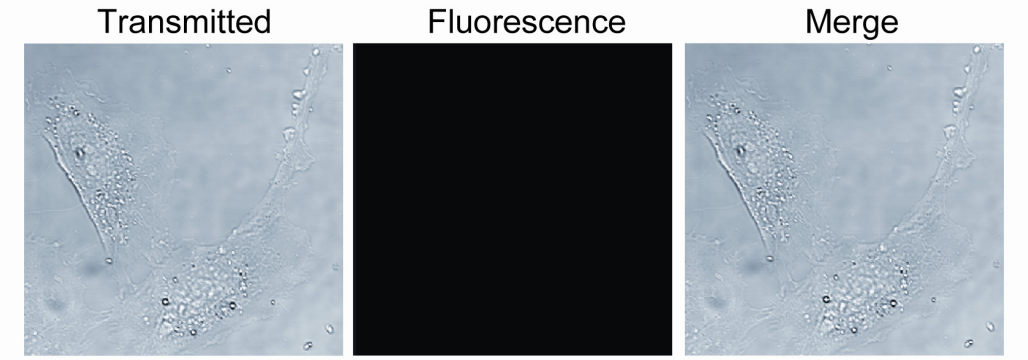

Figure S3. Confocal microscopic images of HUVECs exposed to a dispersion of Si-QDs treated with F127 below CMC shown in Fig. S2. HUVECs were incubated in Si-QD medium solution, which is the mixture of 1 ml of Si-QD dispersion (0.4 mg/ml) and 4 ml of the medium solution, for 4 hours in the incubator and washed twice with PBS. Images were observed using a diode laser (405 nm) with a detection range of 430-530 nm.

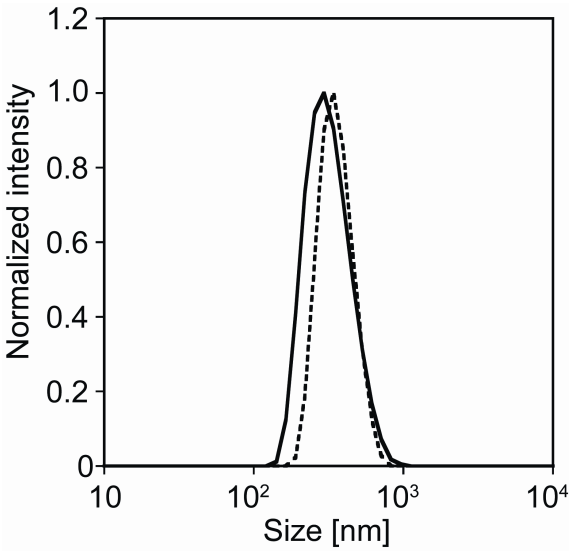

Figure S4. Aggregate size distributions of allylamine-modified Si-QDs dispersed in water (solid line) and serum free medium (dashed line).