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Exploiting the Protein Corona around Gold Nanorods for Low-Dose Combined Photothermal and Photodynamic Therapy

Eugenia Li Ling Yeo[1], Dawn Jing Hui Neo[1], Joshua U-Jin Cheah[1], Wah Ing Goh[2], Pakorn Kanchanawong[1,2], Khee Chee Soo[3], Patricia Soo Ping Thong[3], James Chen Yong Kah[1,4,]*

[1]Department of Biomedical Engineering, National University of Singapore

[2]Mechanobiology Institute, Singapore

[3]Division of Medical Sciences, National Cancer Centre Singapore

[4]NUS Graduate School for Integrative Sciences and Engineering

*AUTHOR EMAIL ADDRESS biekahj@nus.edu.sg

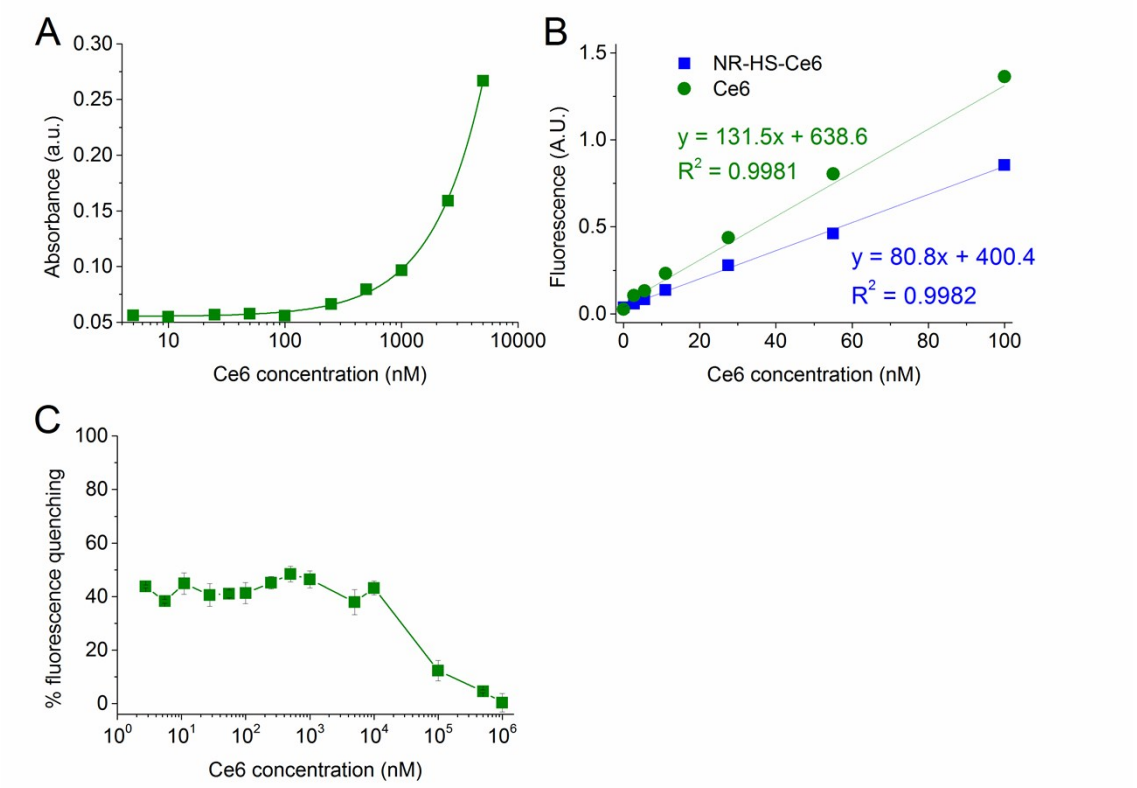

Figure S1. (A) Absorbance of Ce6 at 405 nm, and (B) fluorescence of Ce6 at 665 nm with increasing Ce6 concentration. The use of Ce6 absorbance to quantify amount of Ce6 loaded on NR-HS-Ce6 resulted in poor sensitivity as Ce6 absorbance was negligible at concentrations < 100 nM, while strong Ce6 fluorescence could still be detected. However, loading of Ce6 onto NR-HS-Ce6 resulted in fluorescence quenching. The amount of Ce6 loaded on NR-HS-Ce6 could still be determined by measuring the fluorescence of NR-HS-Ce6 directly and correcting for the (C) Ce6 fluorescence quenching which remained constant at 42.8 ± 1.0 % at 10 μM of Ce6 and below.

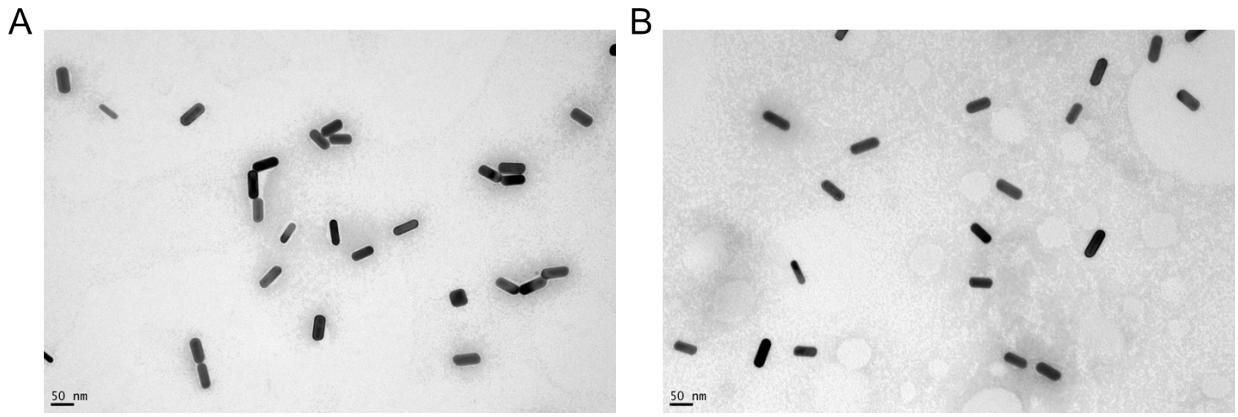

Figure S2. TEM images of (A) as-synthesized NR-CTAB, and (B) NR-HS-Ce6. NRs were observed to be stable, isolated and monodisperse before and after HS protein corona formation and Ce6 loading without aggregation.

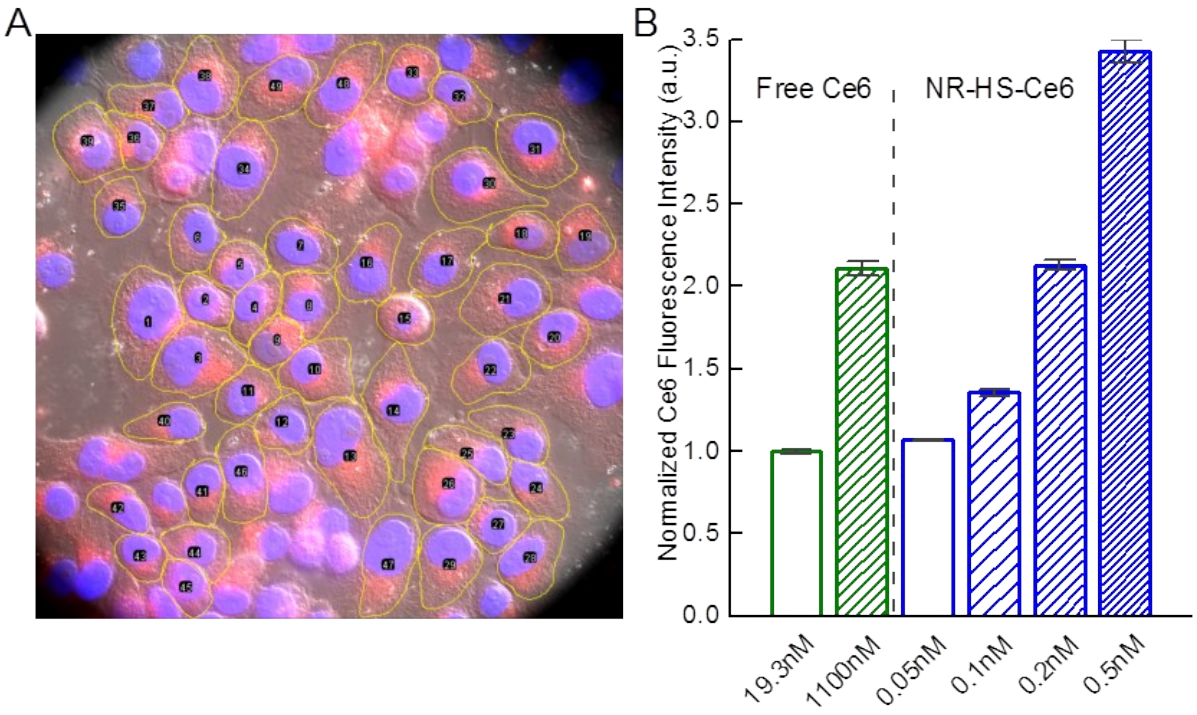

Figure S3. Quantification of Ce6 uptake from fluorescence analysis. (A) Regions of interest (ROIs) were defined based on the boundary of each cell, before calculating the mean Ce6 fluorescence intensity within the cell. The mean Ce6 fluorescence intensity of all samples was then normalized to that of 19.3 nM free Ce6 for comparison. (B) Cells dosed with 0.2 nM NR-HS-Ce6 containing an equivalent of 19.3 nM Ce6 had similar fluorescence intensity to cells dosed with 1100 nM free Ce6. Increasing dose concentration of NR-HS-Ce6 also resulted in a corresponding increase in Ce6 fluorescence intensity in cells. All analyses were done with ImageJ 1.48v software.