Supporting Information

Preventing Protein Adsorption and Macrophage Uptake of Gold Nanoparticles via a Hydrophobic Shield

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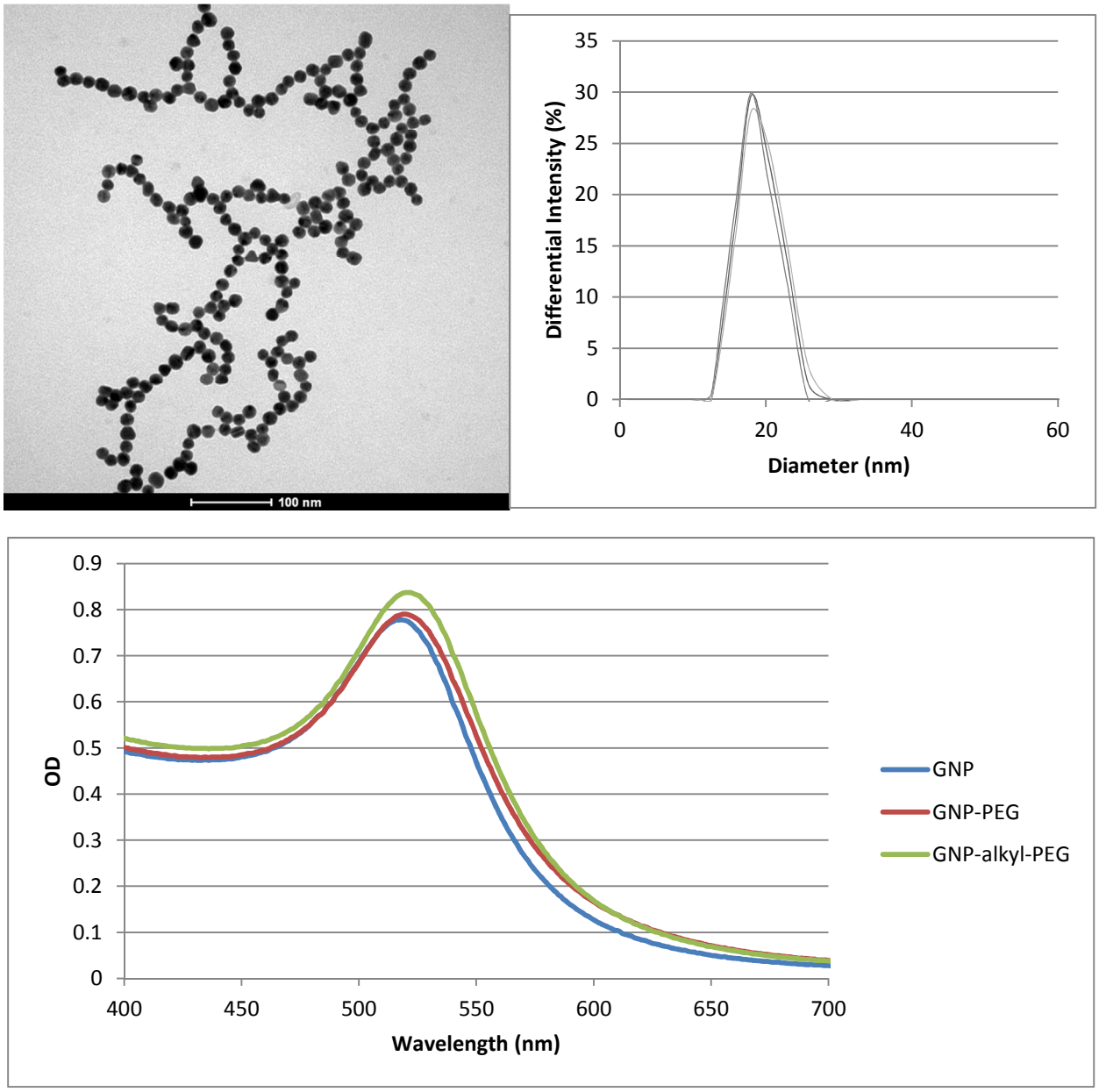


Figure S1. Top left: TEM image of GNP. The average size by TEM was 17.1 +/- 1.33. Top right: Three reconstructed size distributions of stock particles via DLS. The cumulants analysis of DLS for the same sample shows a diameter of 19.7 +/- 0.15 and a polydispersity of .068 +/- .003. Bottom: UV-Vis spectra of the stock GNP, GNP-PEG, and GNP-alkyl-PEG.

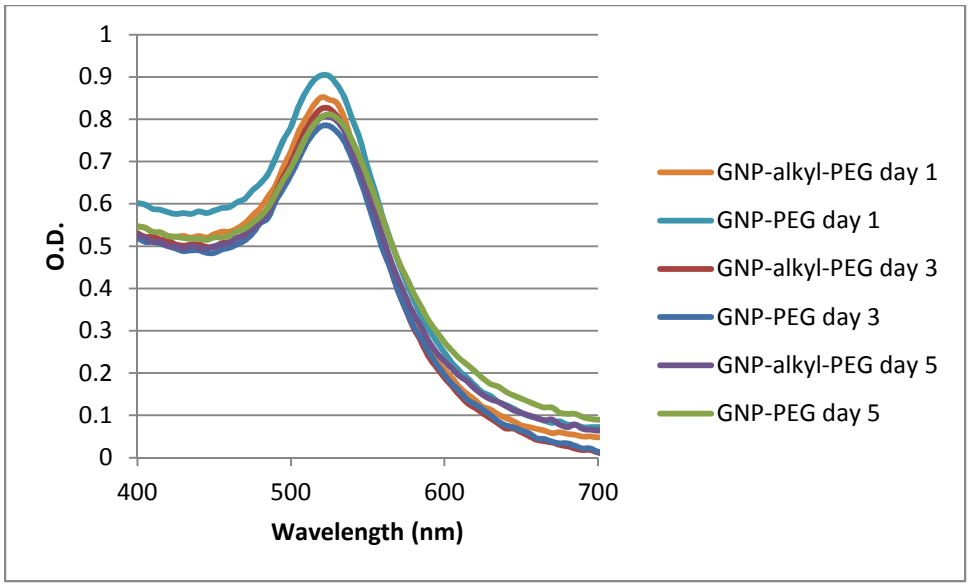


Figure S2. UV-Vis spectra of gold nanoparticle solutions in complete media after 1, 3, and 5 days. The spectra demonstrate that there is no significant aggregation of the particles in the media.

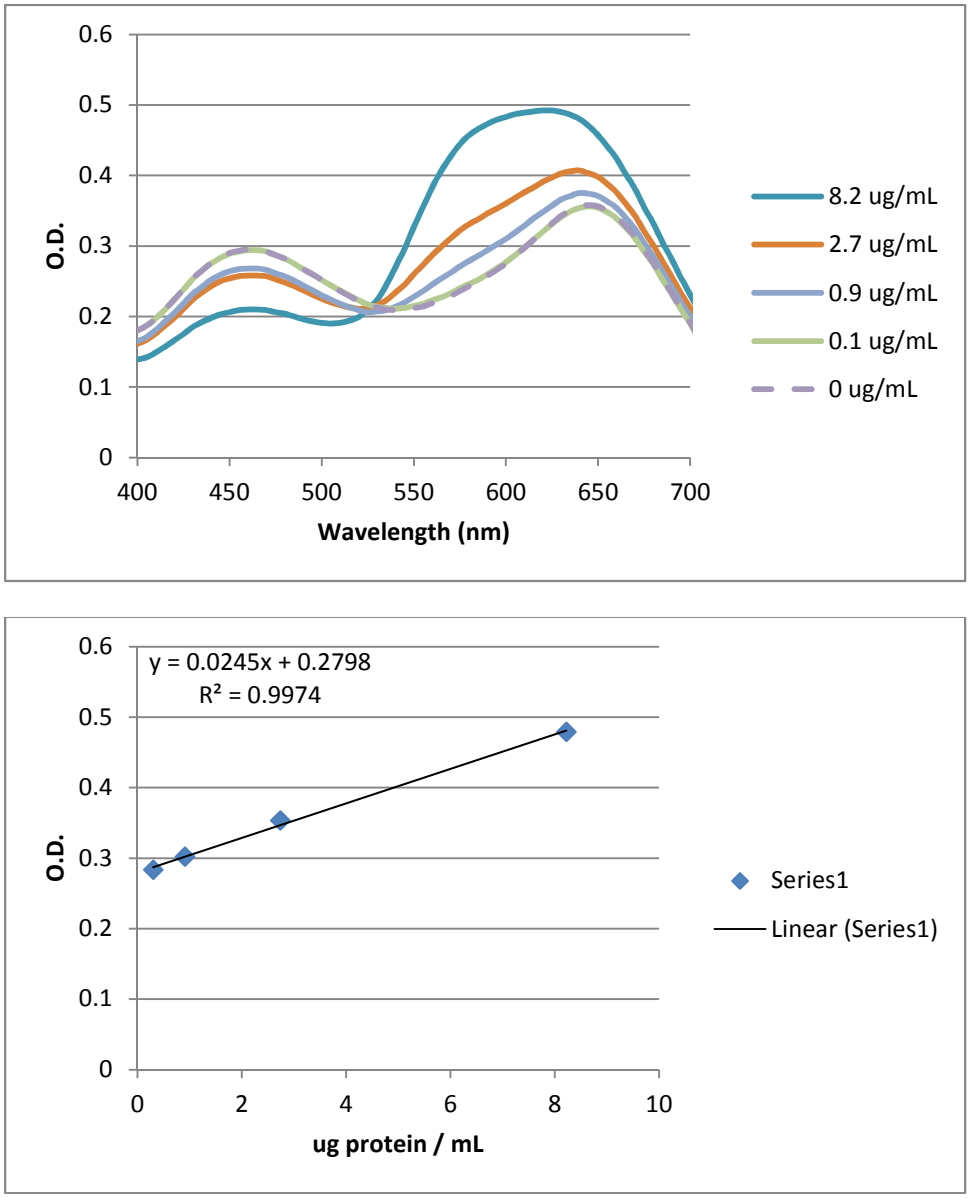


Figure S3. Top: Sample spectral curves from known quantities of serum albumin mixed with Coomassie Blue. The amount of protein is determined from an increase in the absorption of the dye at 595 nm. Bottom: A calibration curve of the OD at 595 nm with a linear fit to the curve over the protein concentration range of interest. A calibration curve was generated for every experiment.

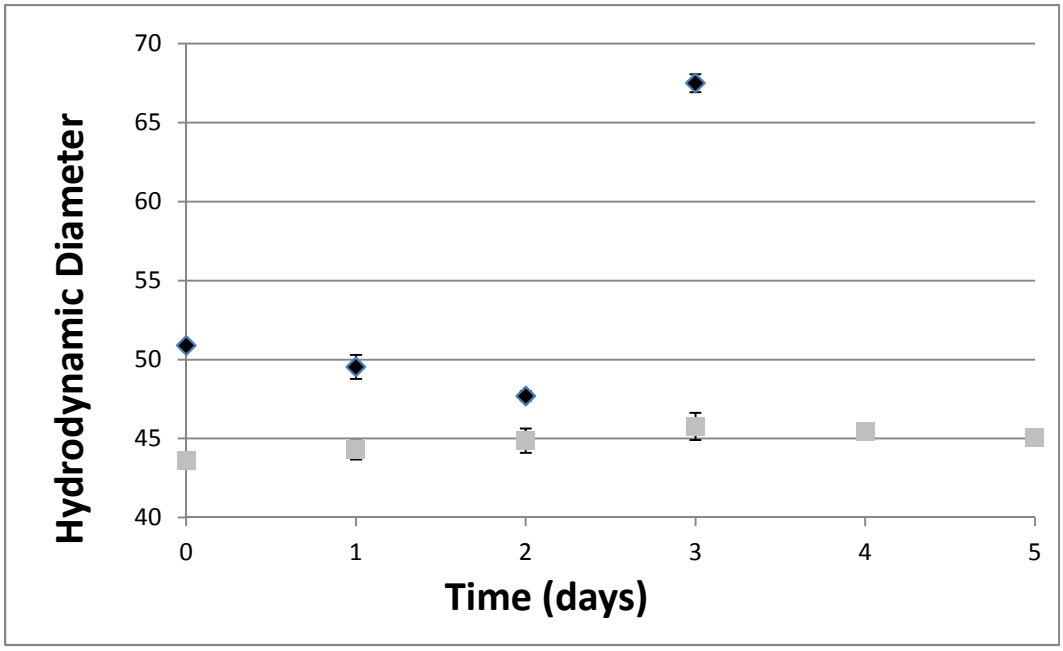


Figure S4. Hydrodynamic diameter of GNP-PEG (black) and GNP-alkyl-PEG (grey) as a function of time over 5 days period in complete media (DMEM) with 5% FBS. The error bars are visible at this scale, and the GNP-PEG data is outside of the displayed size range on days 4 and 5.

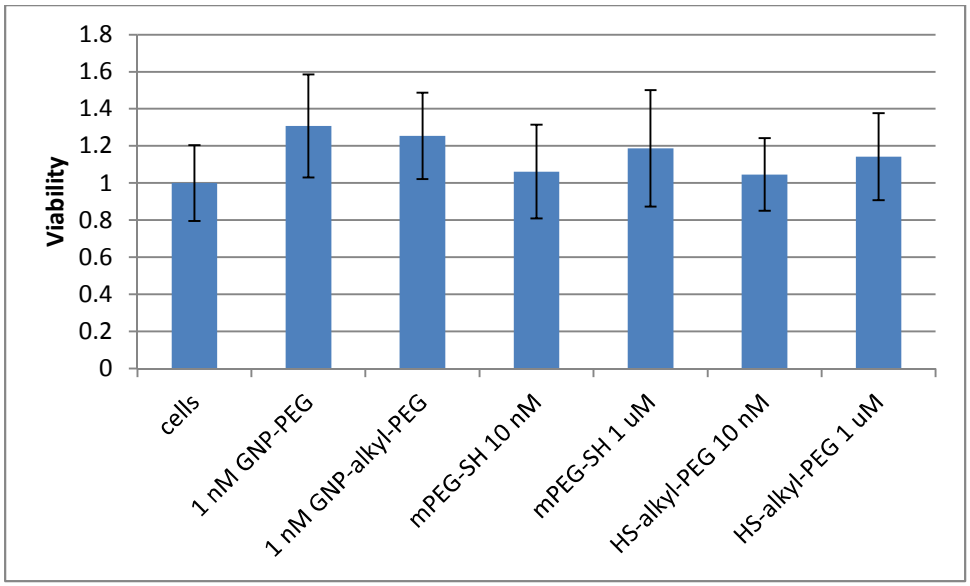
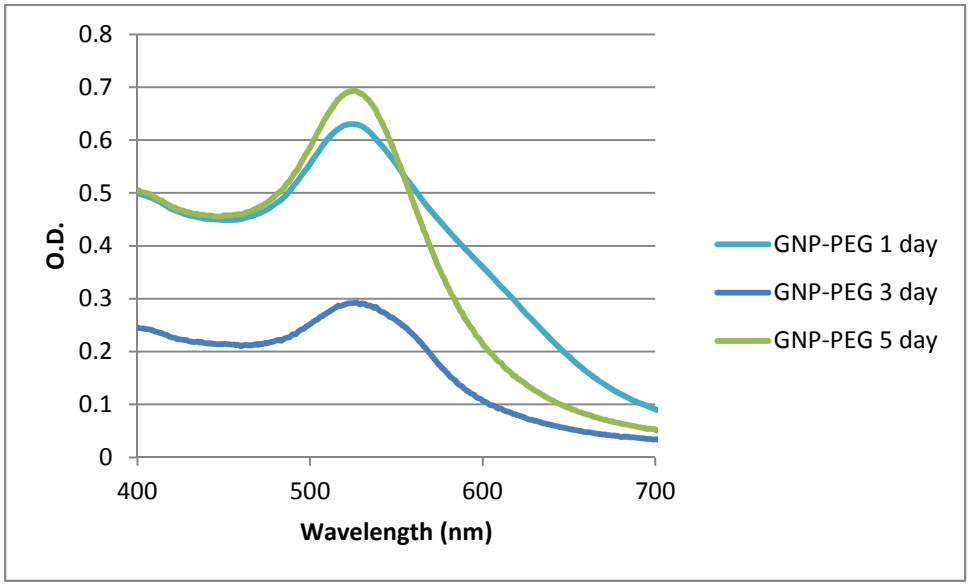


Figure S5. Viability Assay conducted using MTS reagent. No significant difference was found between any of the samples. Each sample is normalized relative to the cell only control.



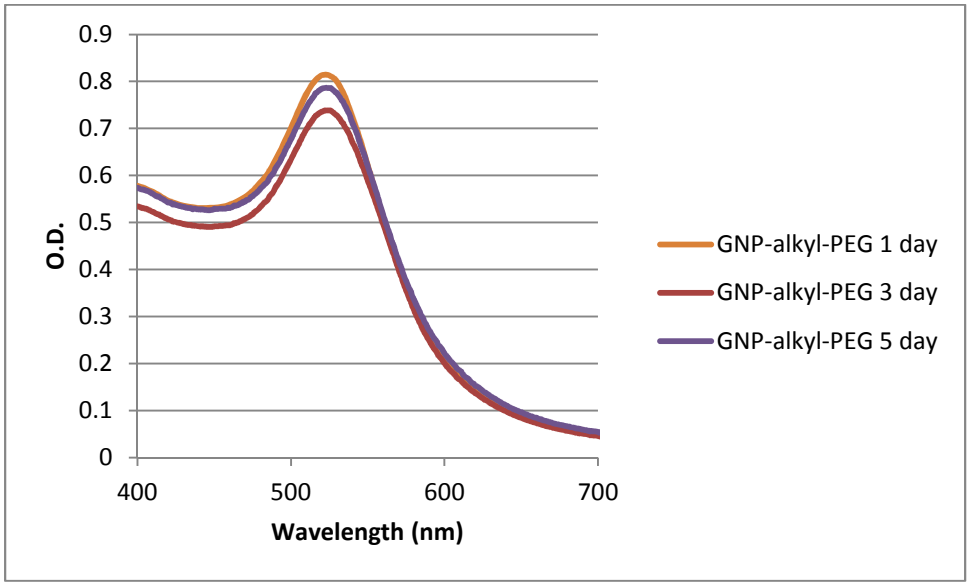
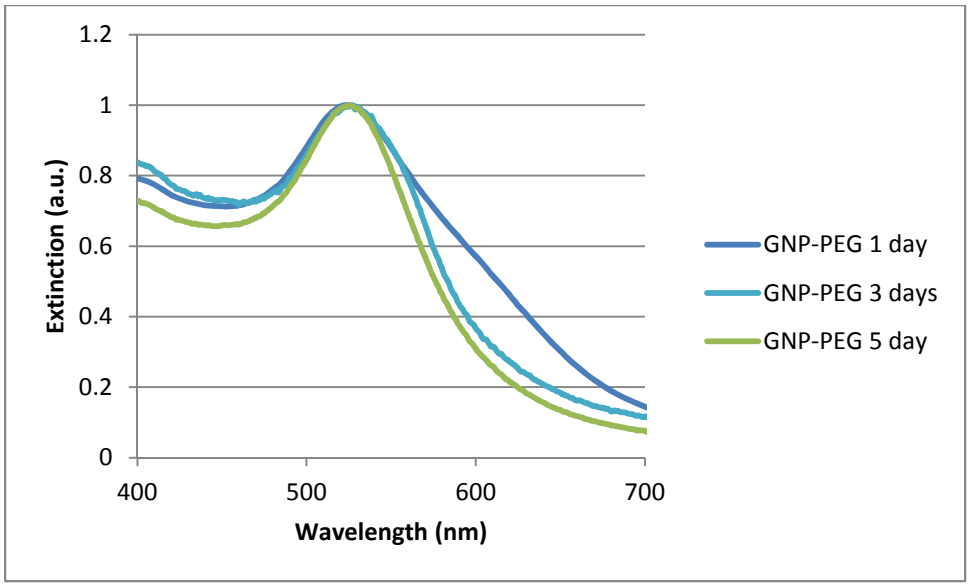


Figure S6. Raw absorbance spectra of GNP-PEG and GNP-alkyl-PEG after incubation with cells. The time indicates how long the particles were pre-incubated in media before adding particles to cells. The aggregation of the 1 day GNP-PEG sample is noticeable, while the 3 day GNP-PEG sample indicates significantly higher uptake than all other samples.



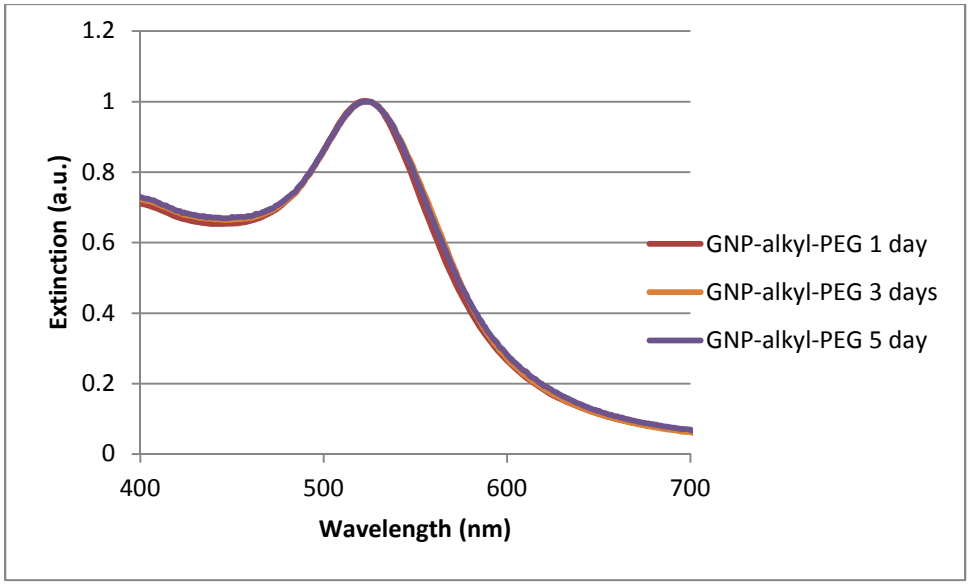


Figure S7. Spectra of nanoparticles after incubation with cells normalized to one at the absorption maximum. The time indicates how long the particles were pre-incubated in media before adding particles to cells. The normalization makes the aggregation of the GNP-PEG particles at 1 day and 3 days more noticeable. There is no noticeable aggregation in GNP-alkyl-PEG.