# SUPPORTING INFORMATION

## Nanoparticles for Multimodal Antivascular Therapeutics: Dual Drug Release, Photothermal and Photodynamic Therapy.

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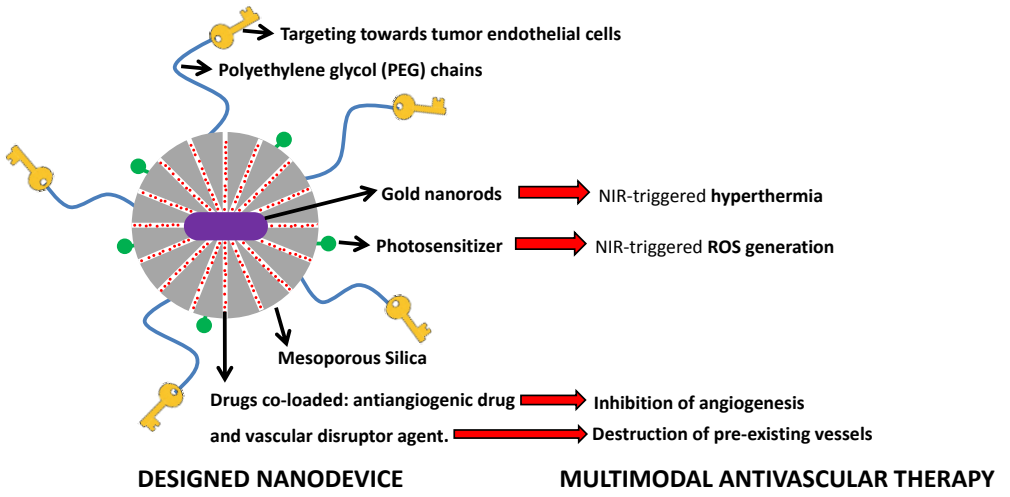
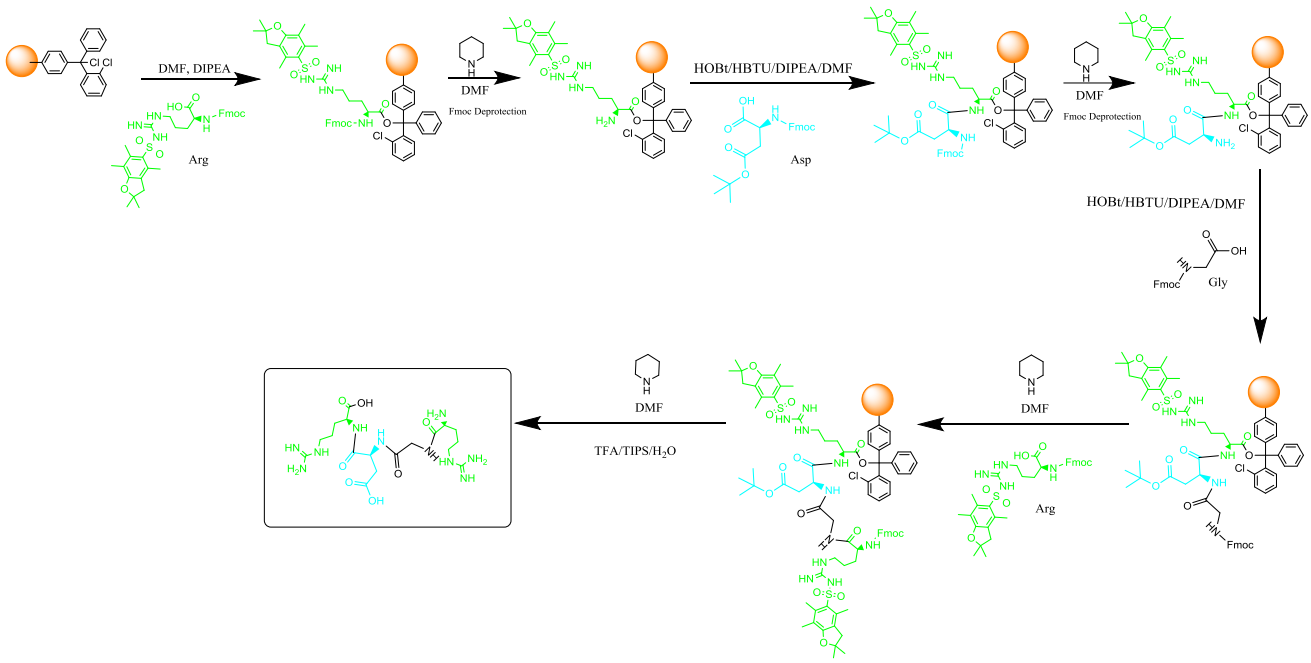
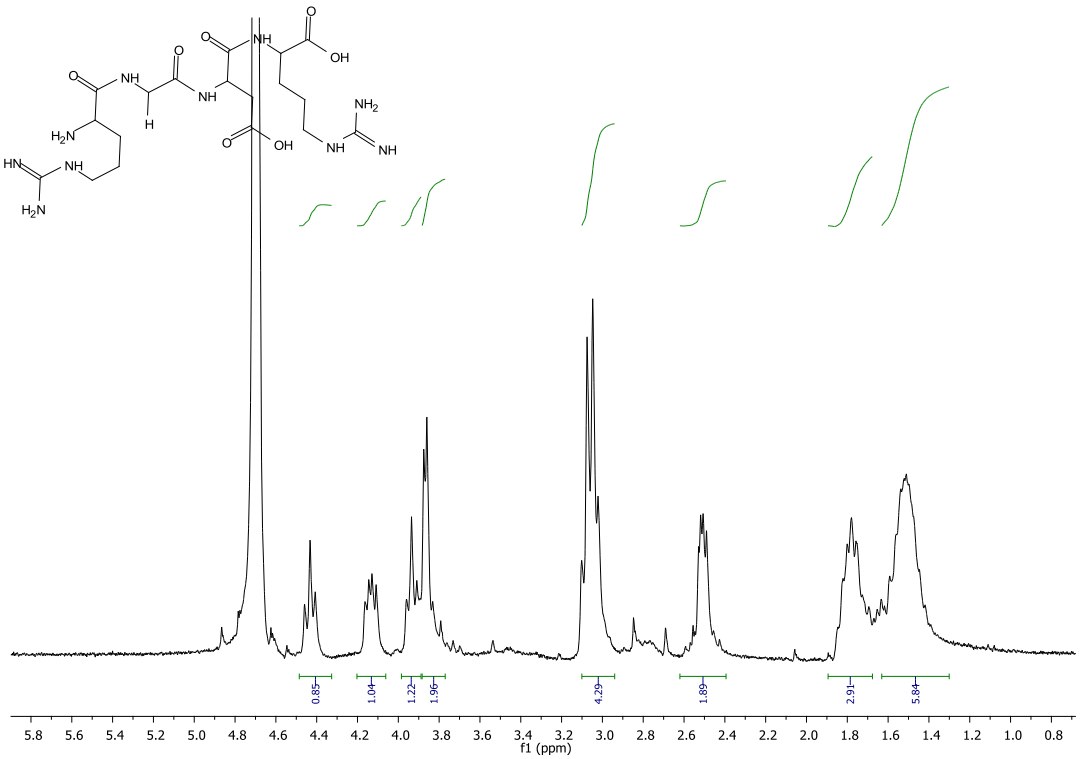
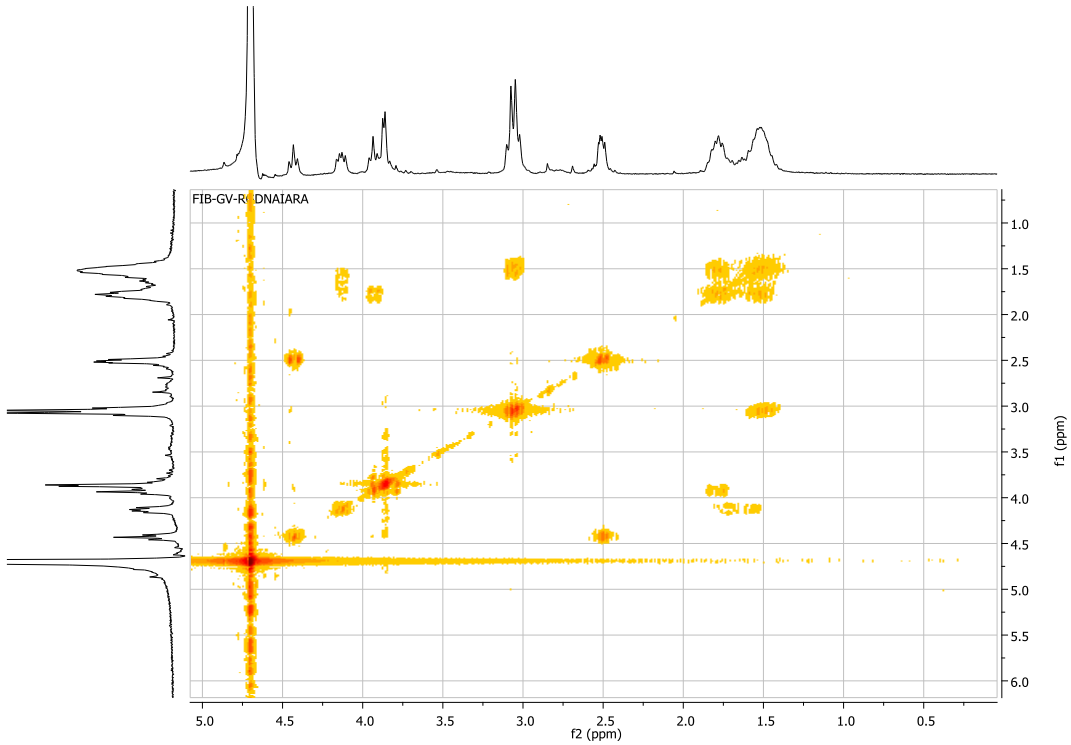



**Figure S1.** Schematic representation of the material designed in this work.



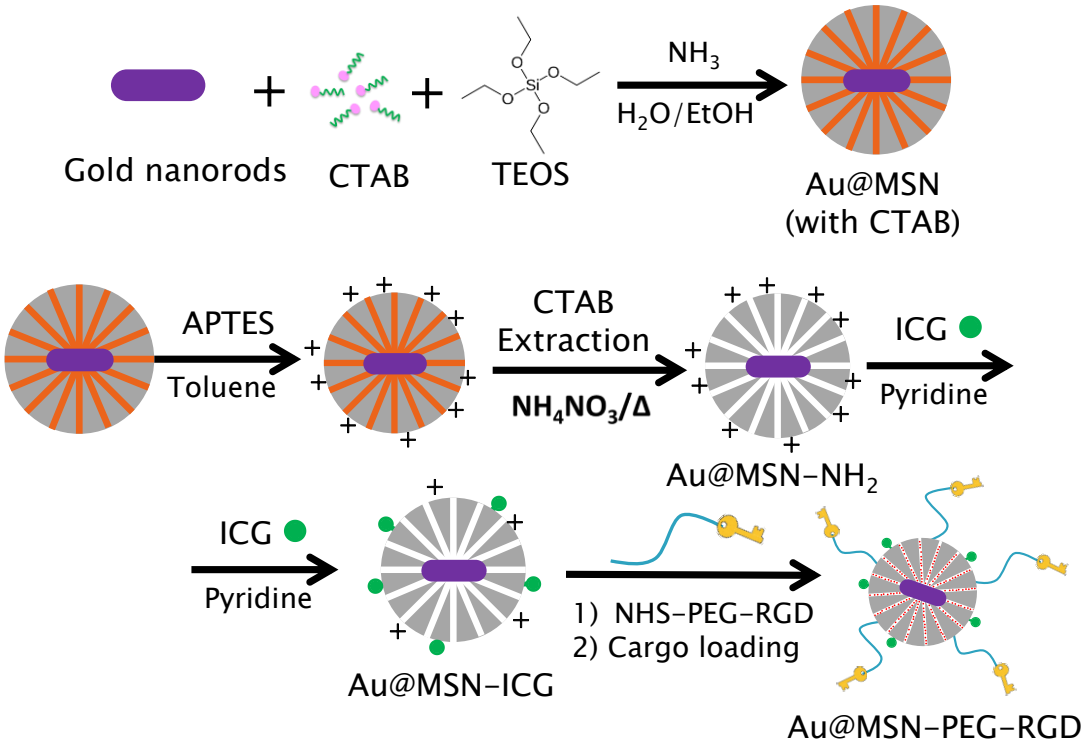

**Scheme S1.** Scheme of synthesis of RGDR peptide by solid-phase methodology.




$^{1}$H NMR (250 MHz, $D_2O$) δ 4.43 (t, *J* = 6.6 Hz, 1H, CH, Asp), 4.14 (dd, *J* = 8.8, 5.0 Hz, 1H, CH, Arg), 3.94 (t, *J* = 6.3 Hz, 1H, CH, Arg), 3.88 – 3.77 (m, 2H, $CH_2$, Gly), 3.13 – 2.94 (m, 4H, 2x$CH_2$, 2xArg), 2.52 (dd, *J* = 9.7, 6.7 Hz, 2H, $CH_2$, Asp), 1.89 – 1.68 (m, 4H, 2x$CH_2$, 2xArg), 1.63 – 1.30 (m, 4H, 2x$CH_2$, 2xArg).

**Figure S2**. $^{1}$H NMR spectra of the RGDR peptide prepared.




**Scheme S2.** Synthetic scheme to prepare the nanoparticles employed in this work.

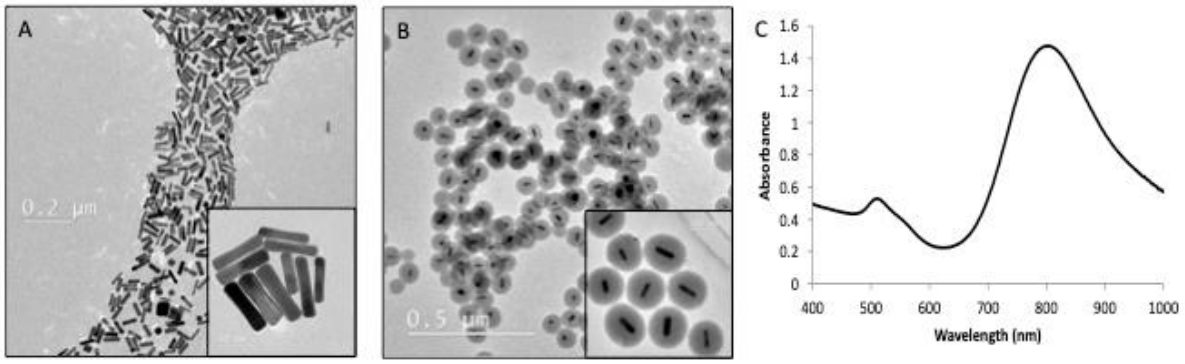



**Figure S3.** TEM micrograph of GNRs (A); TEM micrograph of the mesoporous silica coated GNRs (B), UV-VIS-NIR absorption spectrum of a suspension of the prepared GNRs (C).

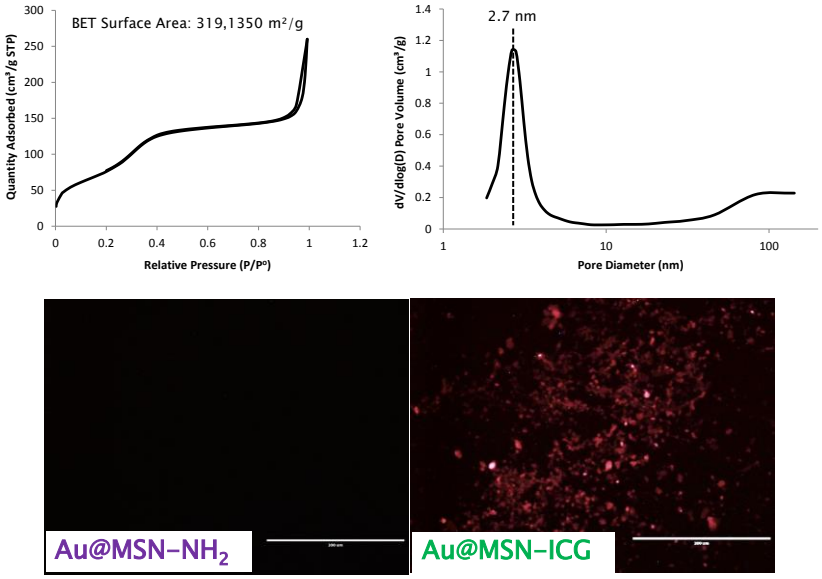



**Figure S4.** $N_2$ adsorption results from Au@MSN (top), NIR fluorescence microscopy images from Au@MSN-$NH_2$ and Au@MSN-ICG (bottom).

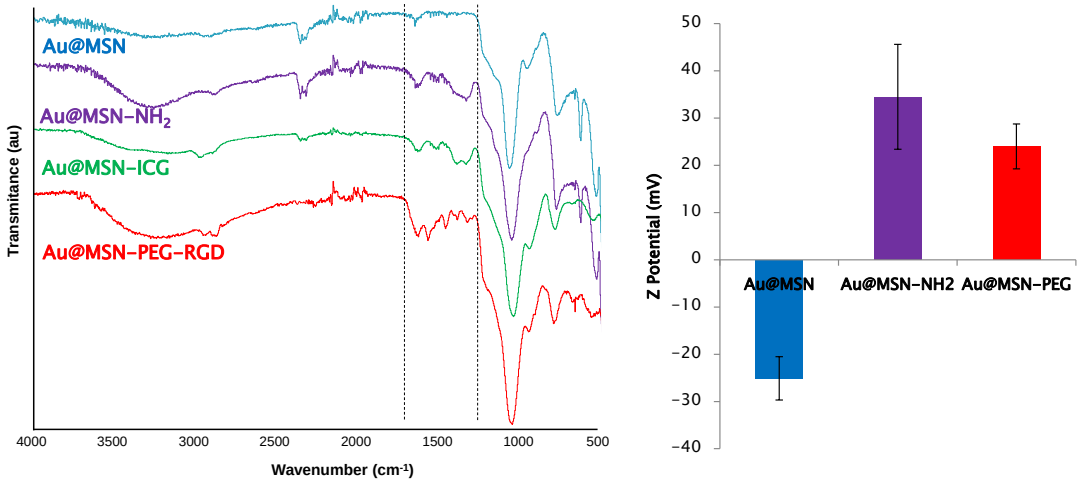



**Figure S5.** FTIR spectra (left) and Z Potential values (right) from different nanoparticles prepared. Data are Means±SD.

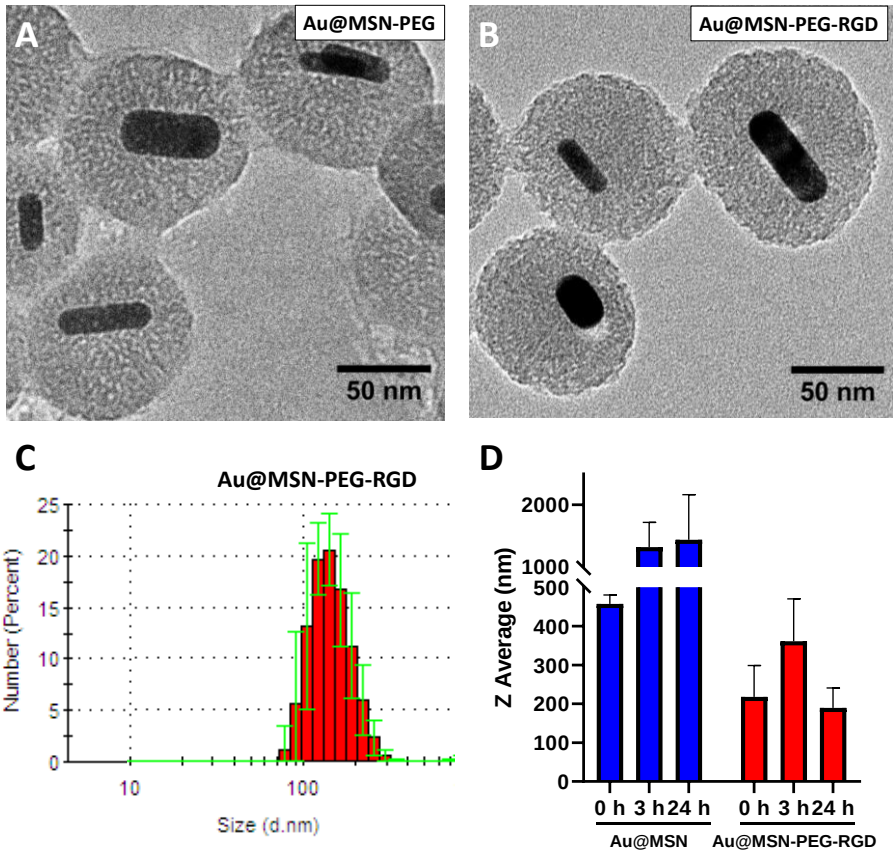



**Figure S6.** TEM micrographs of Au@MSN-PEG (A) and Au@MSN-PEG-RGD (B). Size distribution of Au@MSN-PEG-RGD determined by DLS (C), and suspension stability results of Au@MSN and Au@MSN-PEG-RGD in 10% Fetal Bovine Serum obtained by DLS (D).

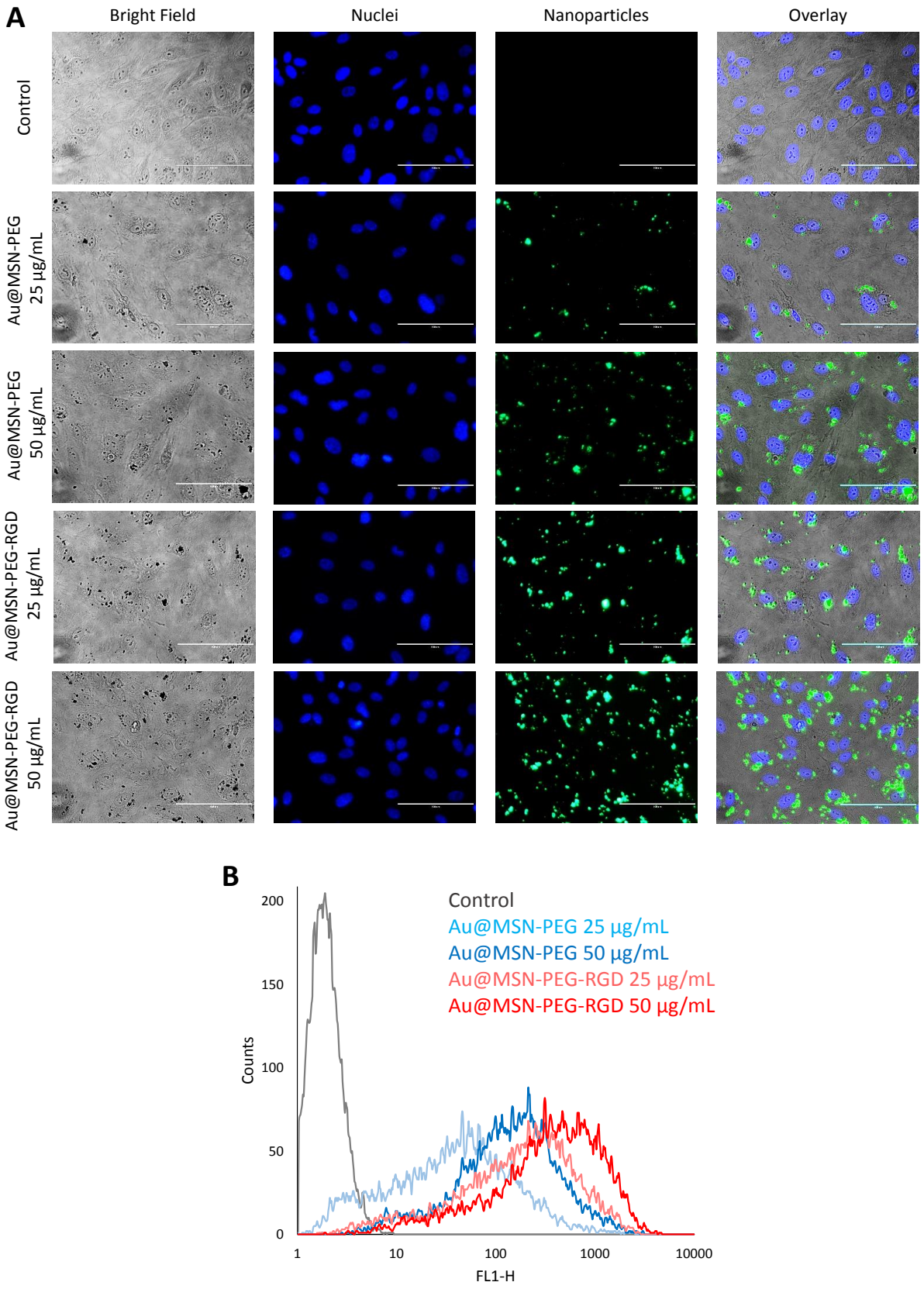



**Figure S7.** Nanoparticle uptake experiments of FITC-labeled Au@MSN-PEG and Au@MSN-PEG-RGD by HUVEC. A) Fluorescence microscopy images (bright field, blue fluorescence for cell nuclei stained with DAPI, green fluorescence for FITC-labeled nanoparticles and overlay of all the previous), B) Fluorescence intensity histograms obtained by flow cytometry.

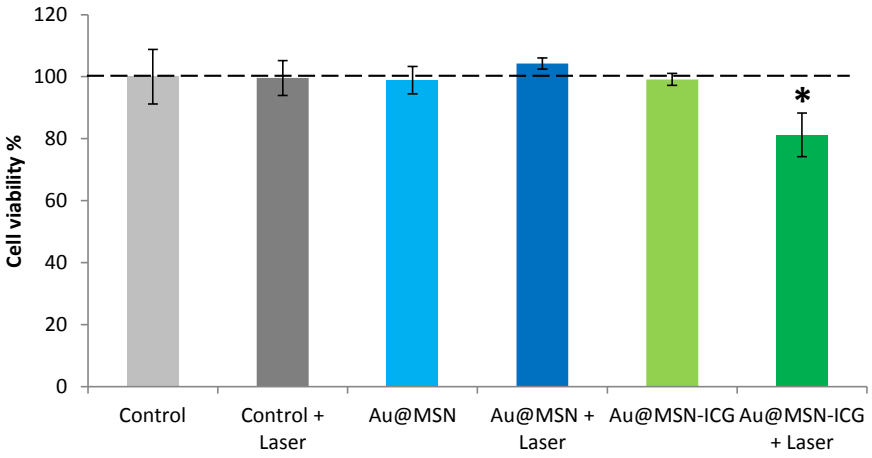



**Figure S8**. Cell viability data (measured by Alamar Blue assay) from HUVEC cells cultured with Au@MSN and Au@MSN-ICG without and with 5 min NIR laser irradiation (50 µg/mL nanoparticle suspension, 1 mL per well). Data are Means ±SD, N=3, *p<0.05.

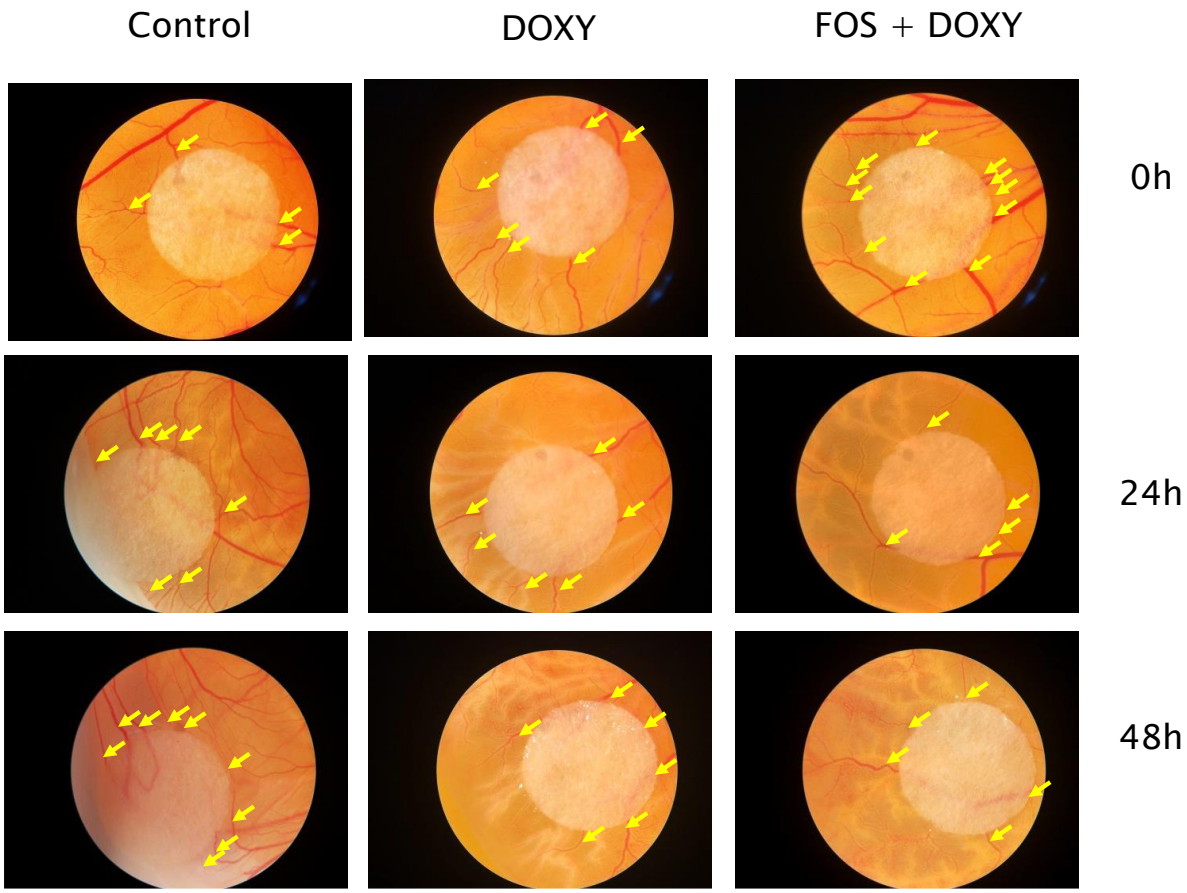



**Figure S9**. Stereomicroscopy images at different time points from CAM vasculature treated with cellulose disks soaked in the release media from DOXY-loaded and dual drug-loaded nanoparticles.