

### Characterization of pyrenyl dextran and DGNPs

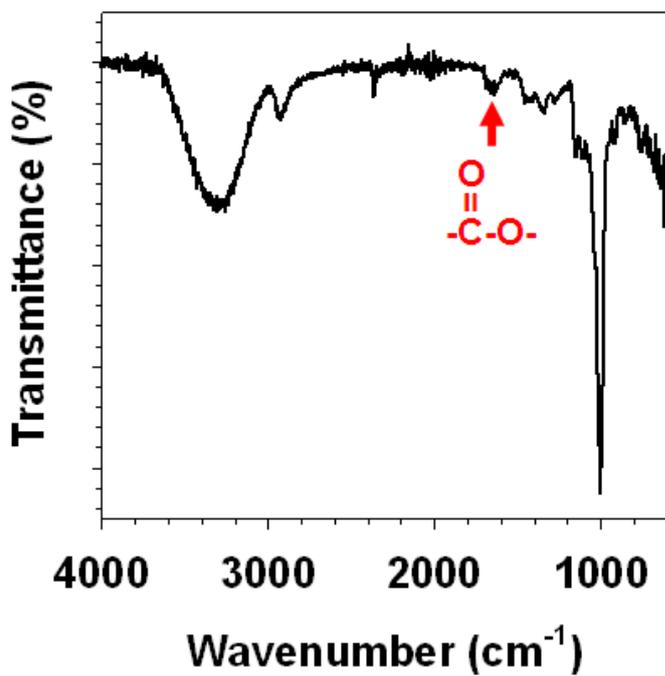


Figure S1. FT-IR spectrum (red arrow: ester groups) of pyrenyl dextran.



Figure S2. Atomic force microscopy (AFM) image of DGNPs at 30min.

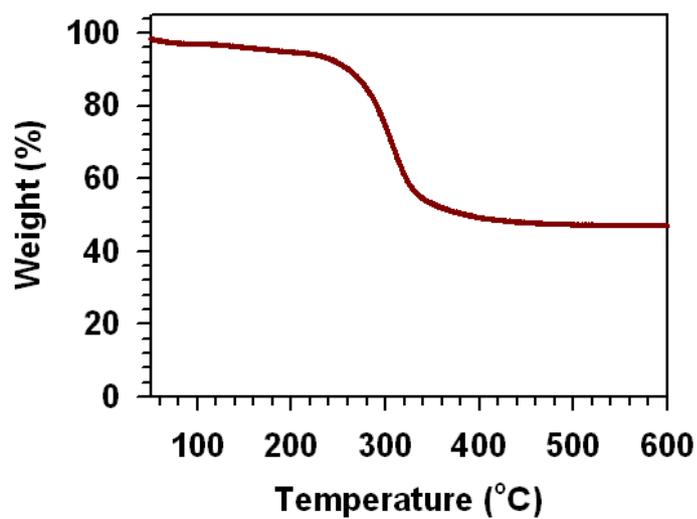


Figure S3. Thermogravimetry analysis (TGA) of DGNNPs at .

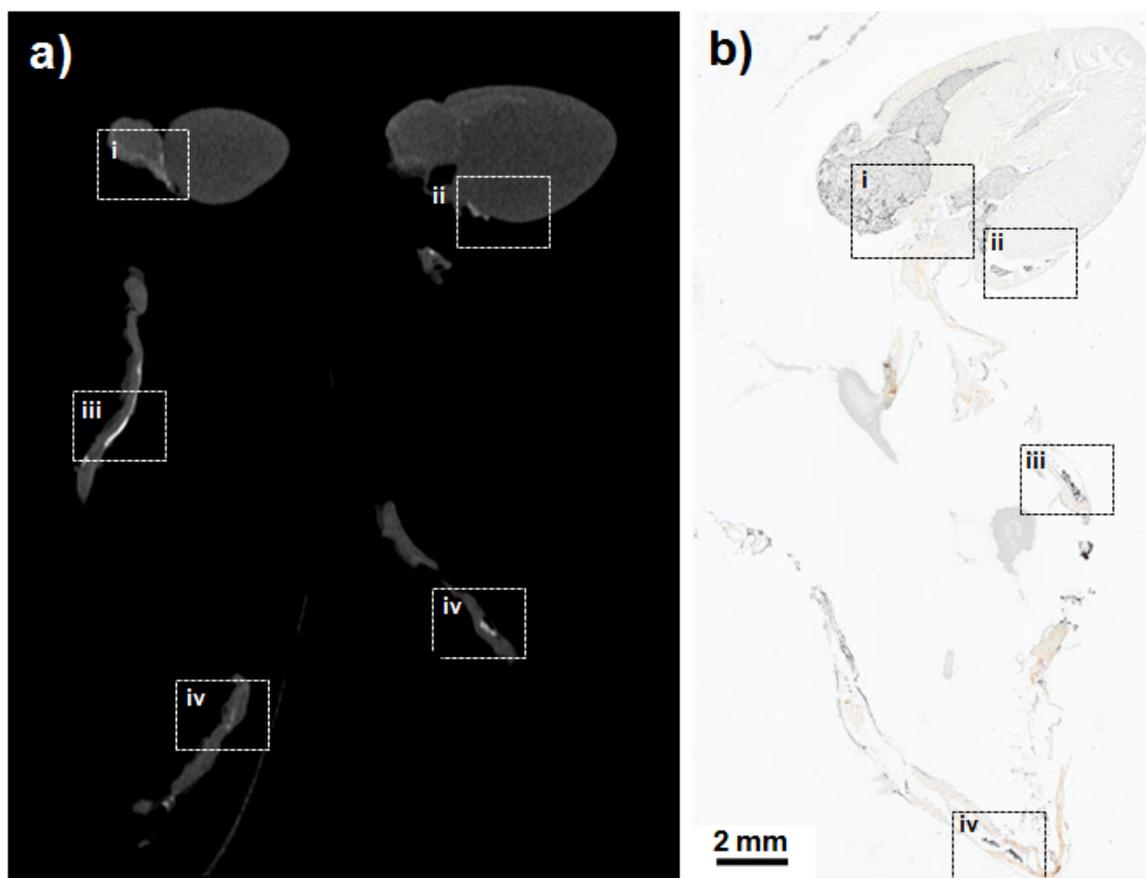


Figure S4. a) Ex vivo micro CT images and b) silver stained image of a tissue (aorta) slide treated with DGNNPs.