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Supporting information

Nanoarchitecture of Gold cluster conjugated gold nanorod hybrid system and its application in fluorescence Imaging and Plasmonic photothermal therapy

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Keywords: hybrid nanomaterials, gold cluster, gold nanorod, tumor imaging and therapy

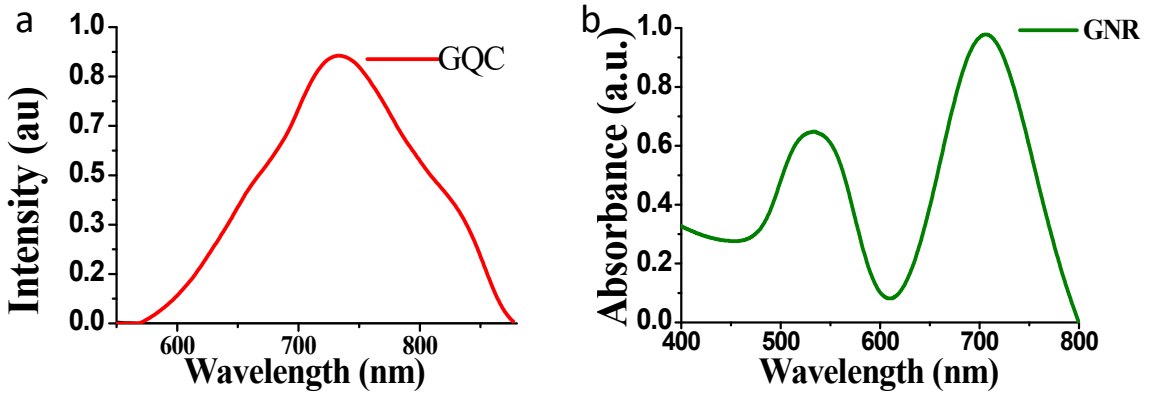


Fig. S1.(a) Emission spectra of GQC. (b) absorption spectra of GNR

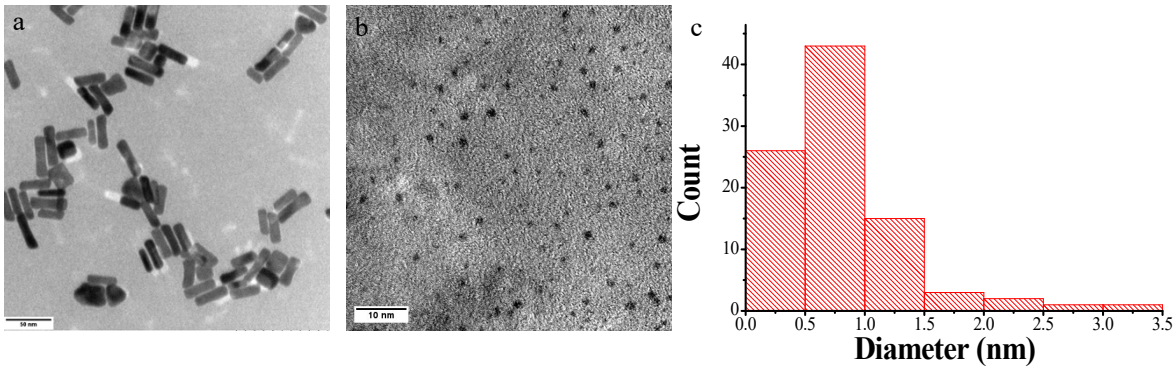


Fig.S2. Transmission electron micrographs of a) GNR, b)GQC and c) particle size distribution of GQC obtained from TEM image.

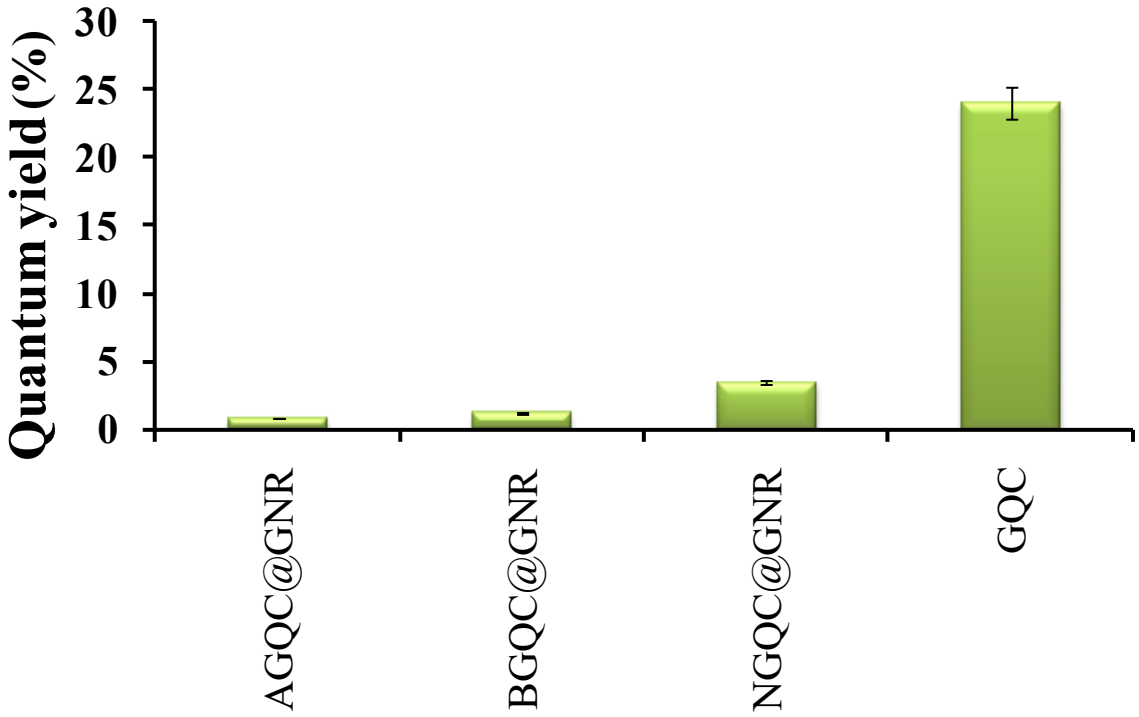


Fig. S3. Percentage quantum yield of AGQC@GNR, BGQC@GNR, NGQC@GNR and GQC.

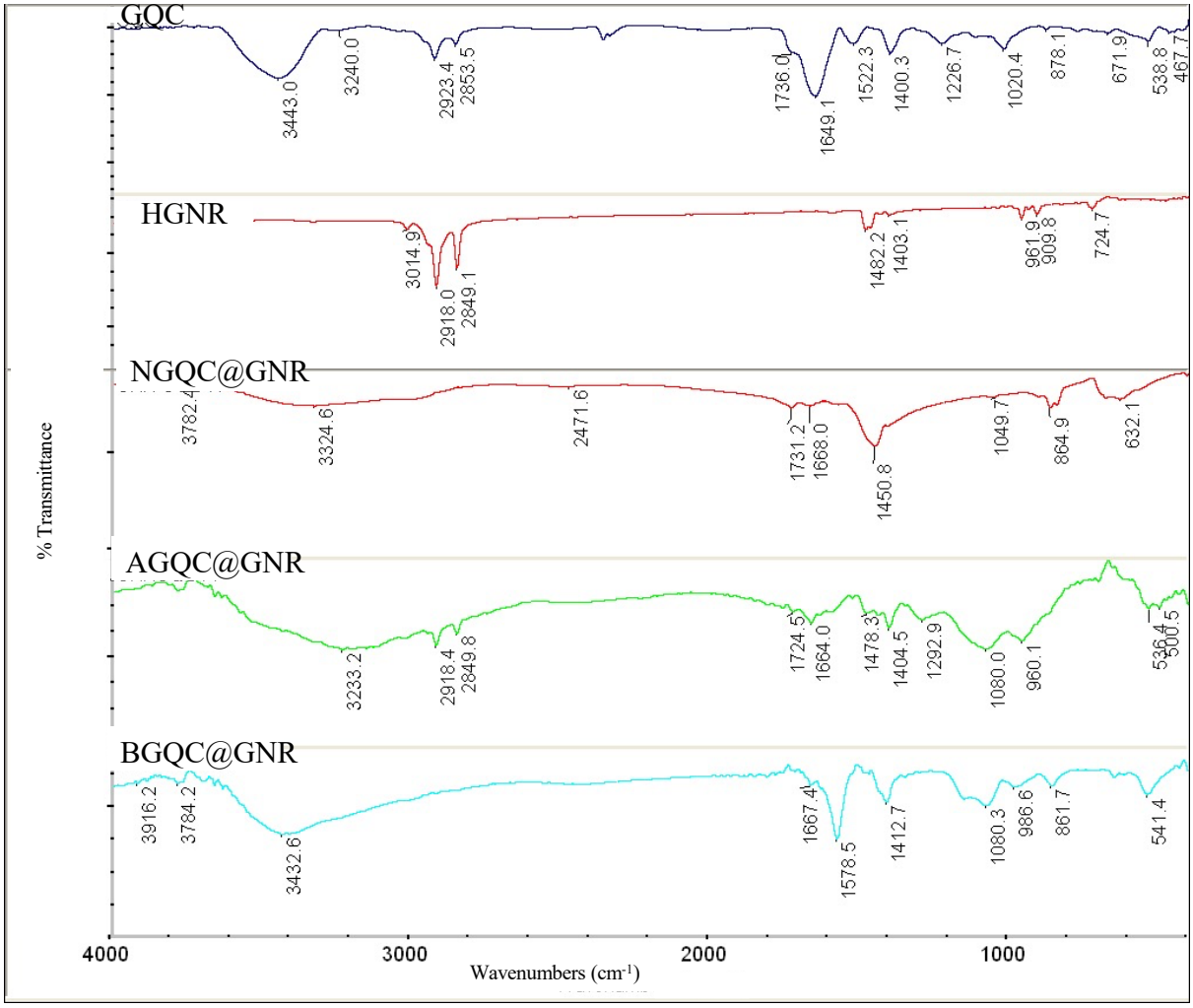


Fig.S4. FTIR spectrum of GQC, HGNR, NGQC@GNR,AGQC@GNR and BGQC@GNR

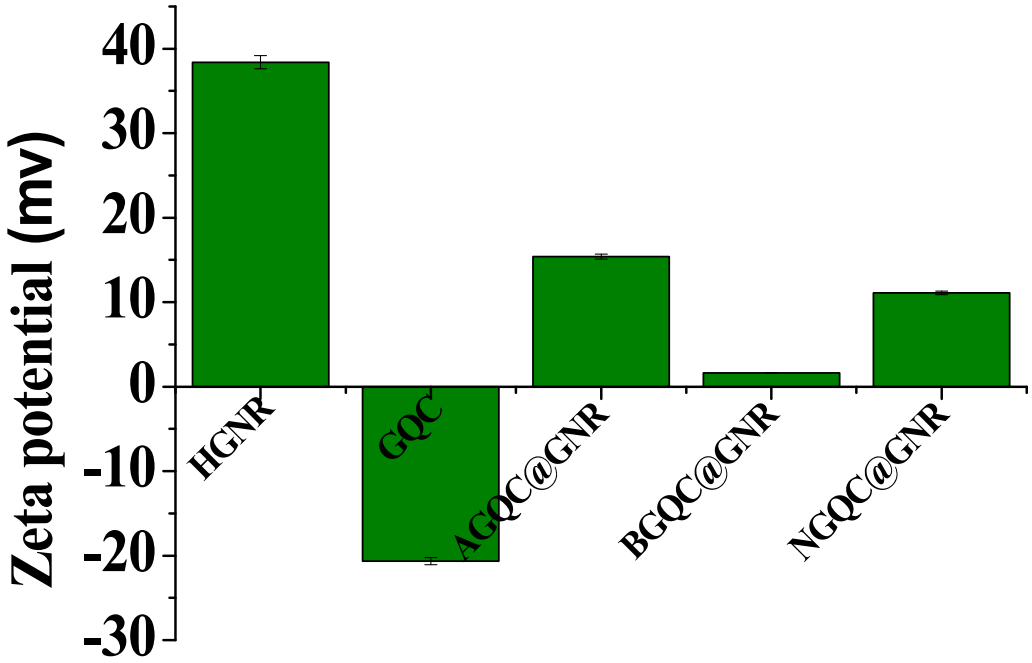


Fig. S5. Zeta potential of GQC, HGNR, NGQC@GNR,AGQC@GNR and BGQC@GNR.

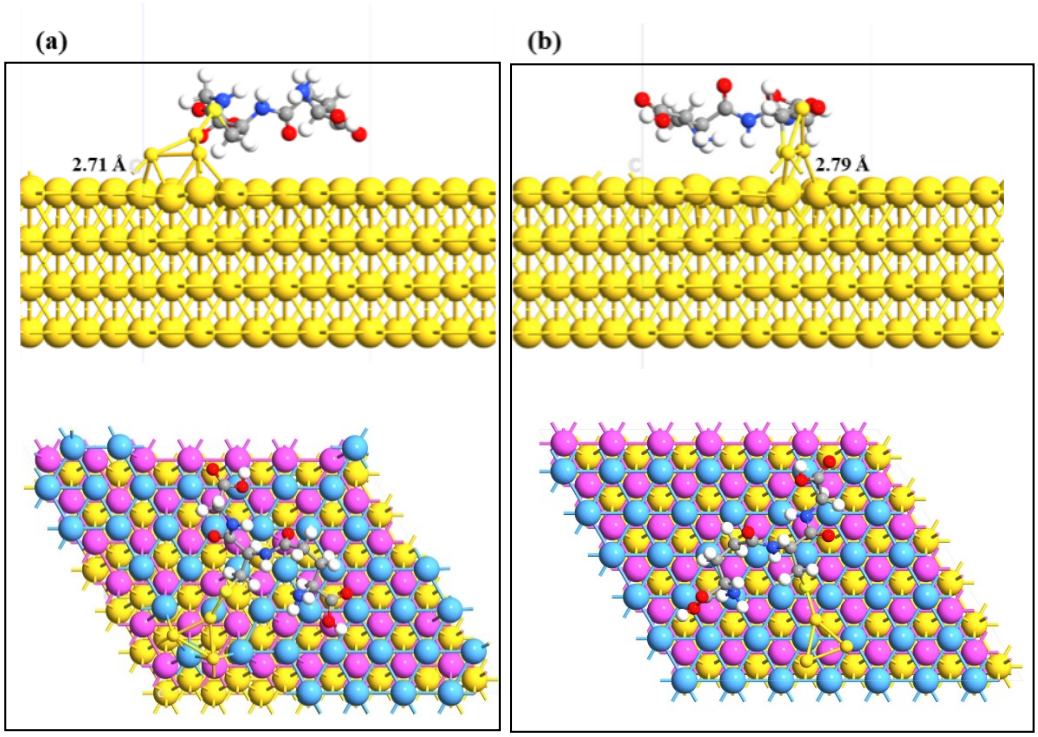


Fig. S6. Optimized Configuration of Au_3-GSH on GNR surface. (a) Conf-1, with O atom atop Au; (b) Conf-2, with N atom atop Au. In both configurations, the binding of GQC-GSH through the Au cluster is preferred. The upper row shows the side view and the lower row shows the top view. Gold atoms of different planes are given different color for easy identification.

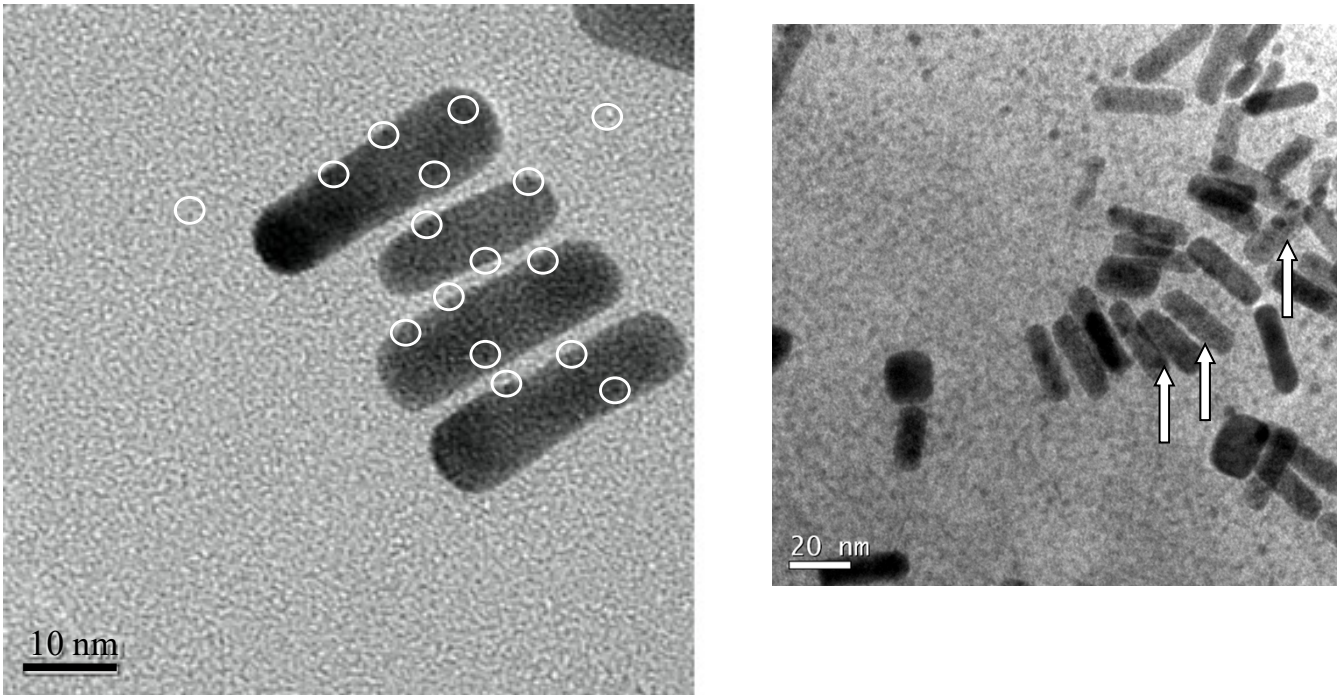


Fig.S7: High resolution TEM image of NGQC@GNR showing small clusters over GNR (White circles and arrows)

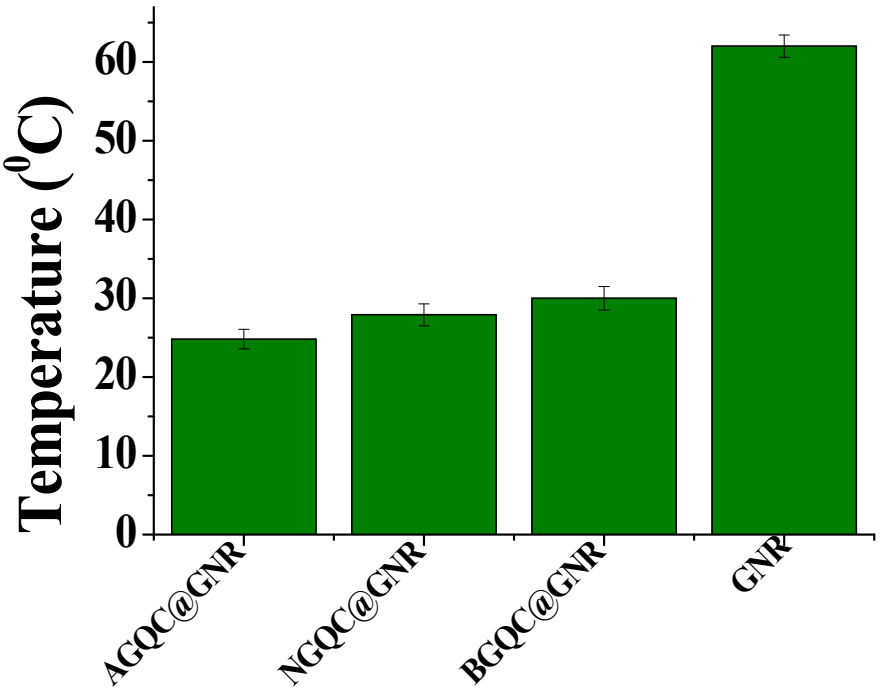
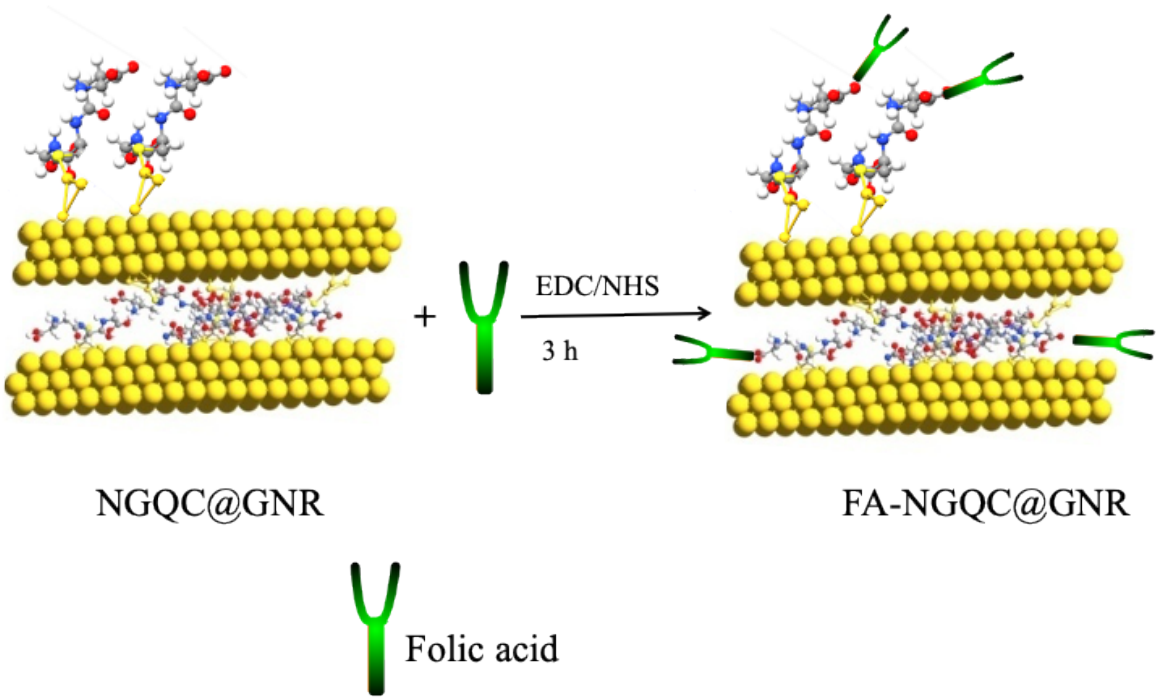


Fig. S8. Temperature generation efficacy of NGQC@GNR,AGQC@GNR and BGQC@GNR



Scheme S1: Schematic representation of folic acid conjugation on NGQC@GNR

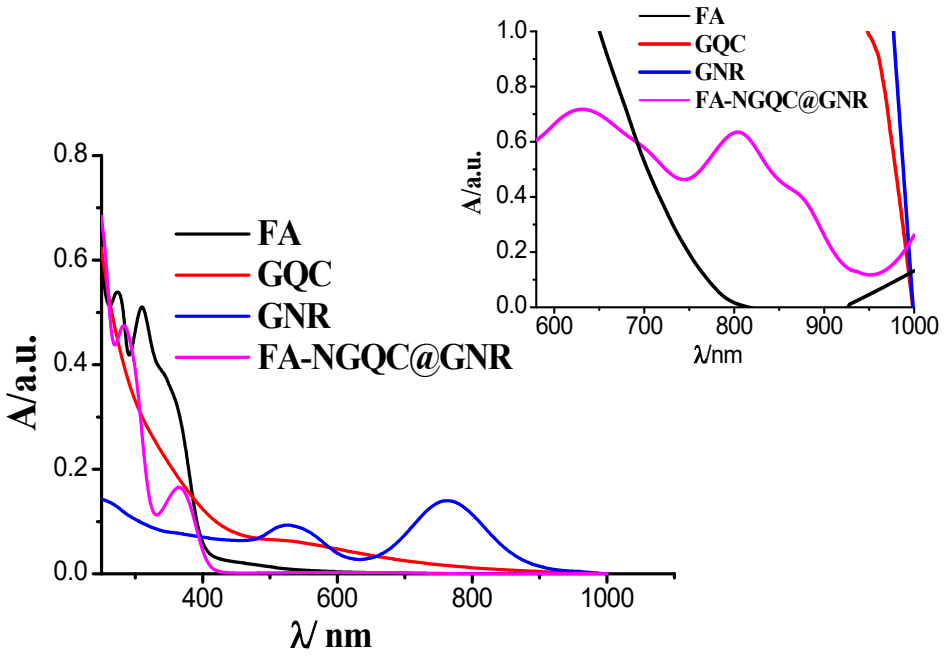


Fig. S9. Absorption spectra of GQC, GNR, FA and FA-NGQC@GNR. Inset shows the absorption in the range 400-900 nm.

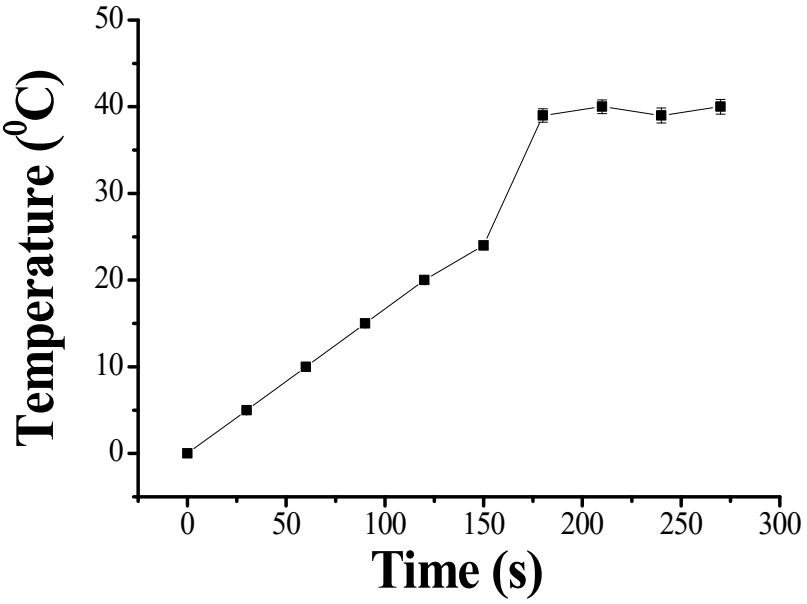


Fig. S10: Temperature generation of FA-NGQC@GNR with respect to time

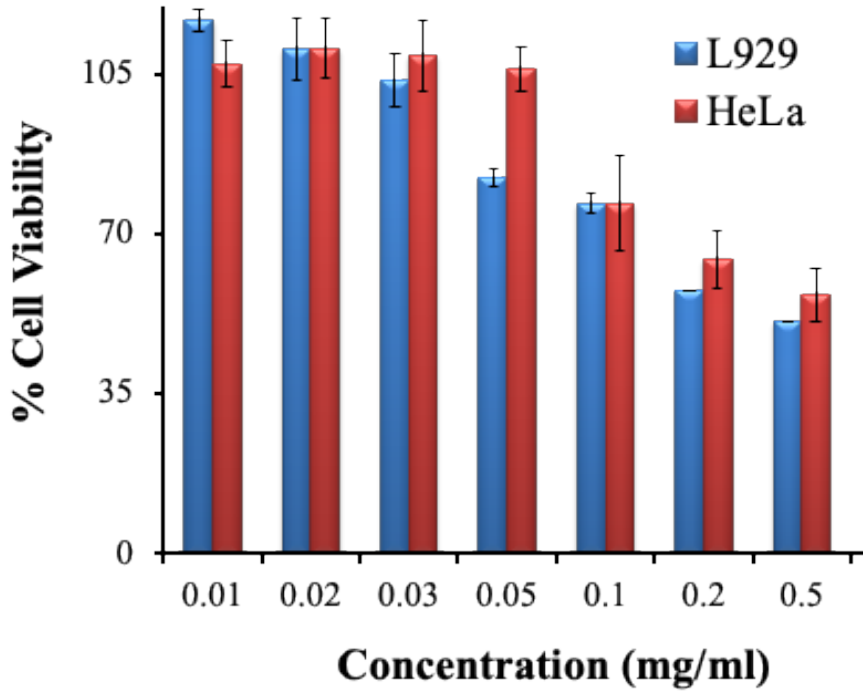


Fig. S11. Evaluation of cell viability in L929 and HeLa cells after treating with different concentrations (0.01,0.02,0.03,0.05,0.1,0.2,0.5 mg/mL) of FA-NGQC@GNR.

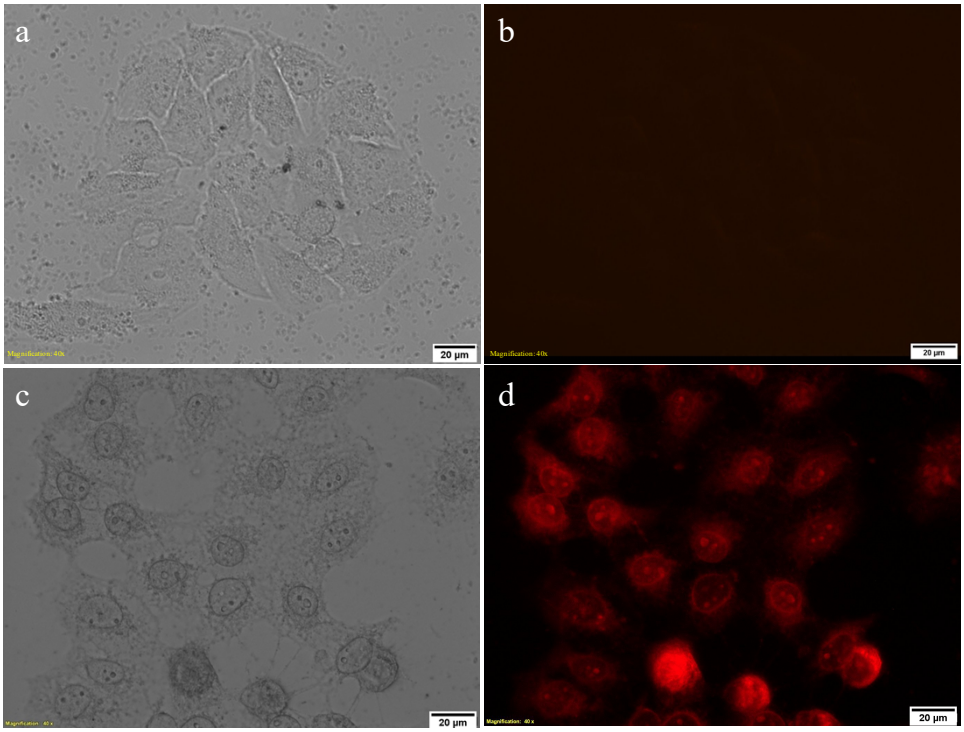


Fig. S12. Bright field and fluorescence images of HeLa cells incubated with NGQC@GNR (a & b) and FA-NGQC@GNR.

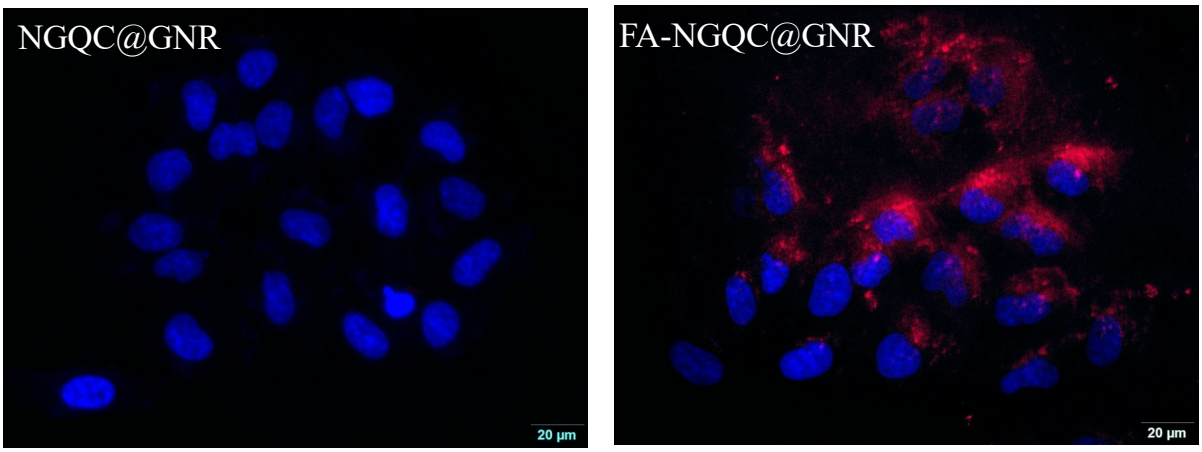


Fig. S13: Cellular internalisation of NGQC@GNR and FA-NGQC@GNR. Nucleus of the cells are stained with Hoechst.

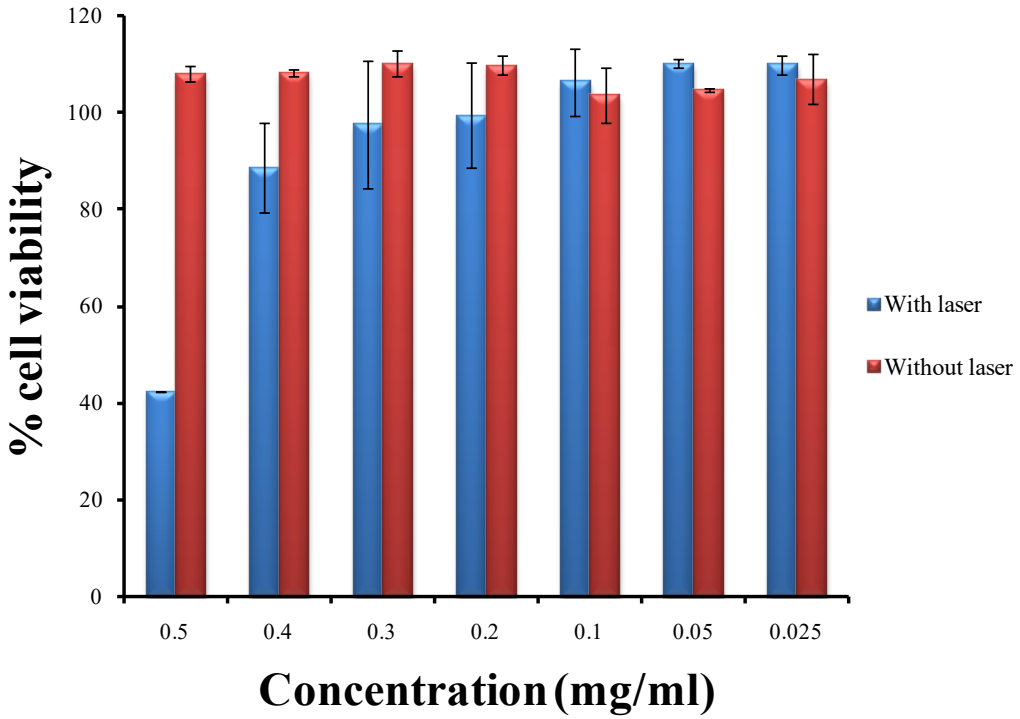


Fig. S14. Evaluation of cell viability in HeLa cells after treating with different concentrations (0.5,0.4,0.3,0.2,0.1,0.05,0.025 mg/mL) of FA-NGQC@GNR before and after irradiated with 808 nm laser.

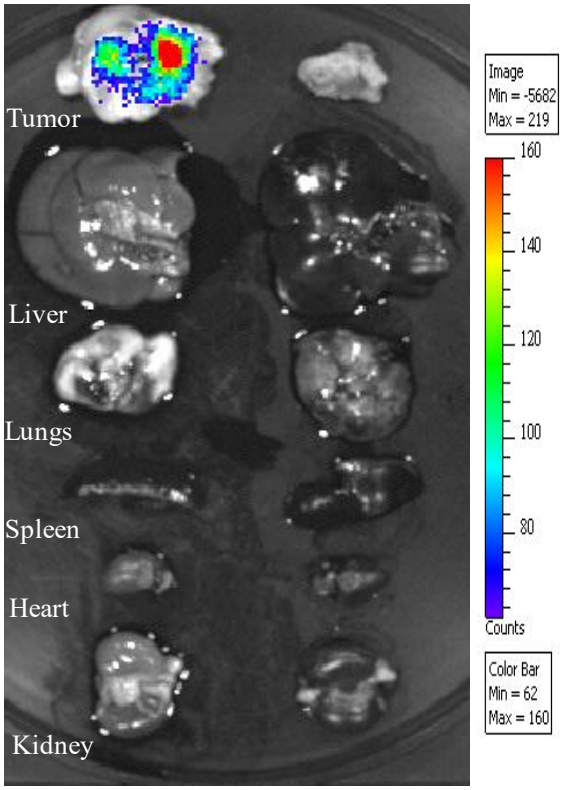


Fig. S15.Biodistribution of FA-NGQC@GNR in different organs of tumor bearing mice.