

Supplementary Materials: Development of Biocompatible Ciprofloxacin–Gold Nanoparticle Coated Sutures for Surgical Site Infections

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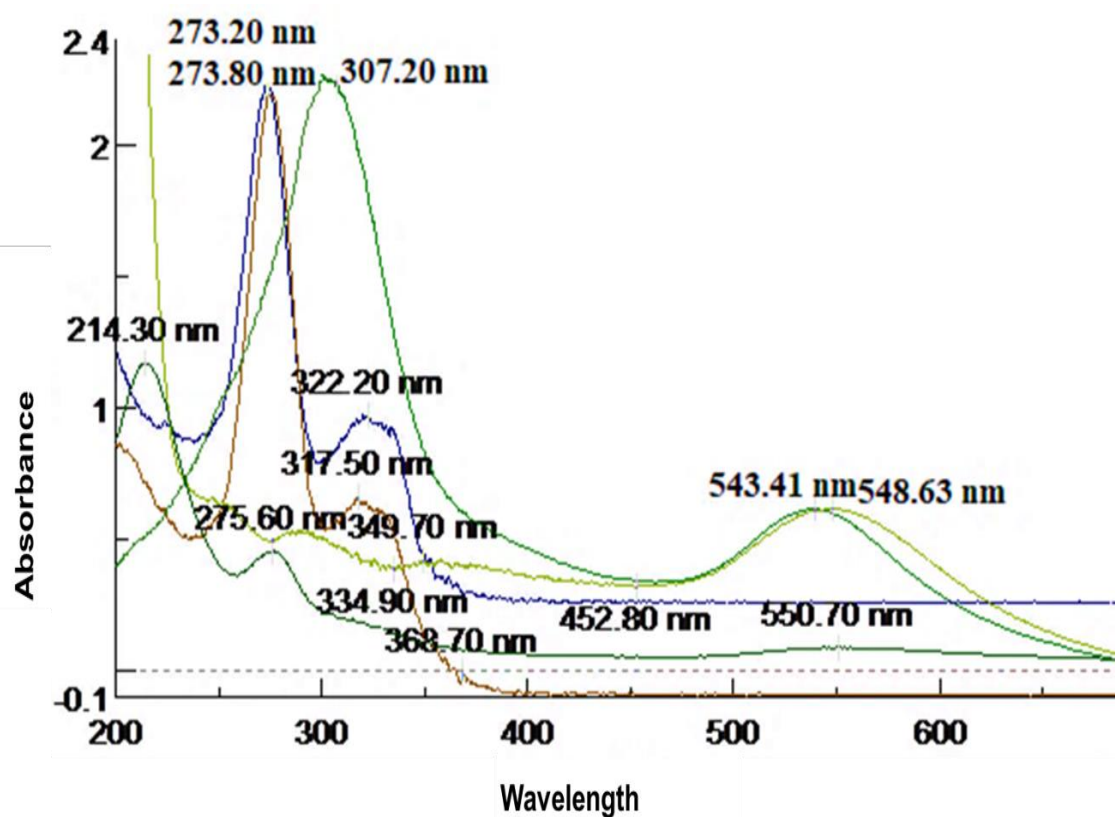


Figure S1. UV-Vis spectra of 1) G-NP (Black band) 2) PG-NP (yellow band) 3) CPG-NP (Dark green band) 4) CPH (dark blue band) 5) PVP capped CPH (Red band).

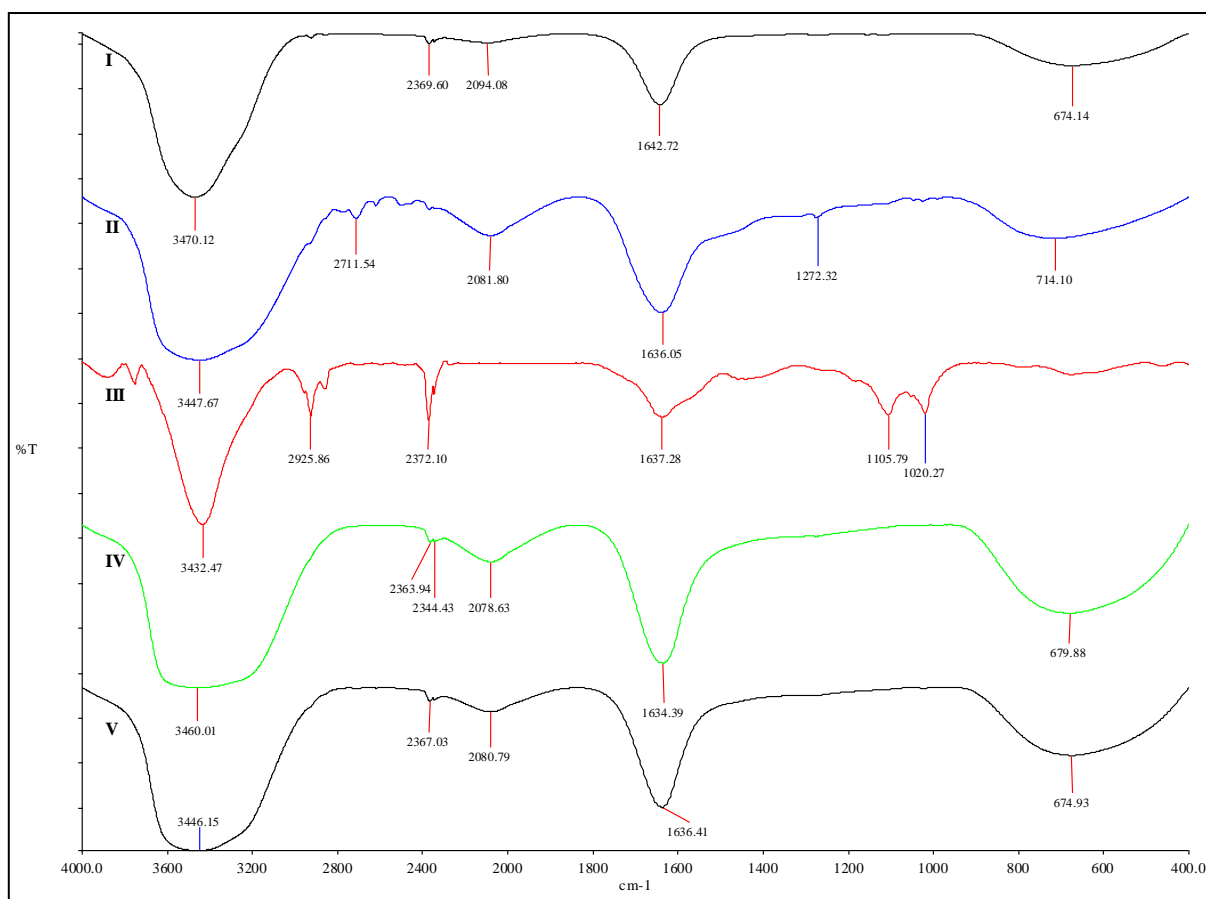
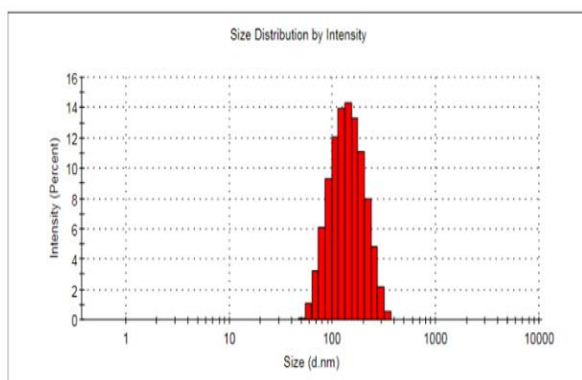


Figure S2. IR overlay of G-NP, CPH, PG-NP, physical mixture and CPG-NP (I-V order).

Results

	Size (d.n...)	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 126.2	Peak 1: 147.3	100.0	55.46
Pdl: 0.134	Peak 2: 0.000	0.0	0.000
Intercept: 0.949	Peak 3: 0.000	0.0	0.000

Result quality **Good**



Results

	Mean (mV)	Area (%)	Width (mV)
Zeta Potential (mV): -21.5	Peak 1: -21.5	100.0	6.30
Zeta Deviation (mV): 6.30	Peak 2: 0.00	0.0	0.00
Conductivity (mS/cm): 0.0139	Peak 3: 0.00	0.0	0.00

Result quality : **Good**

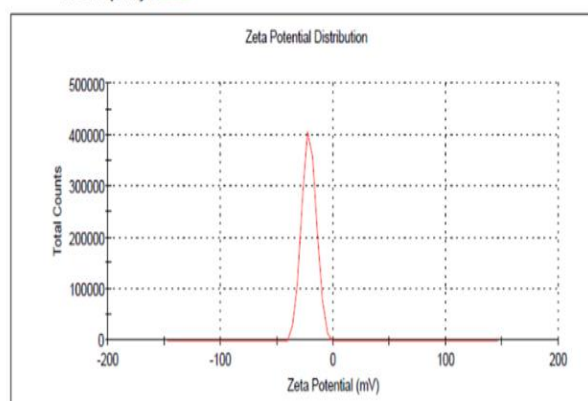


Figure S3. Particle size and zeta potential of optimized CPG-NP.

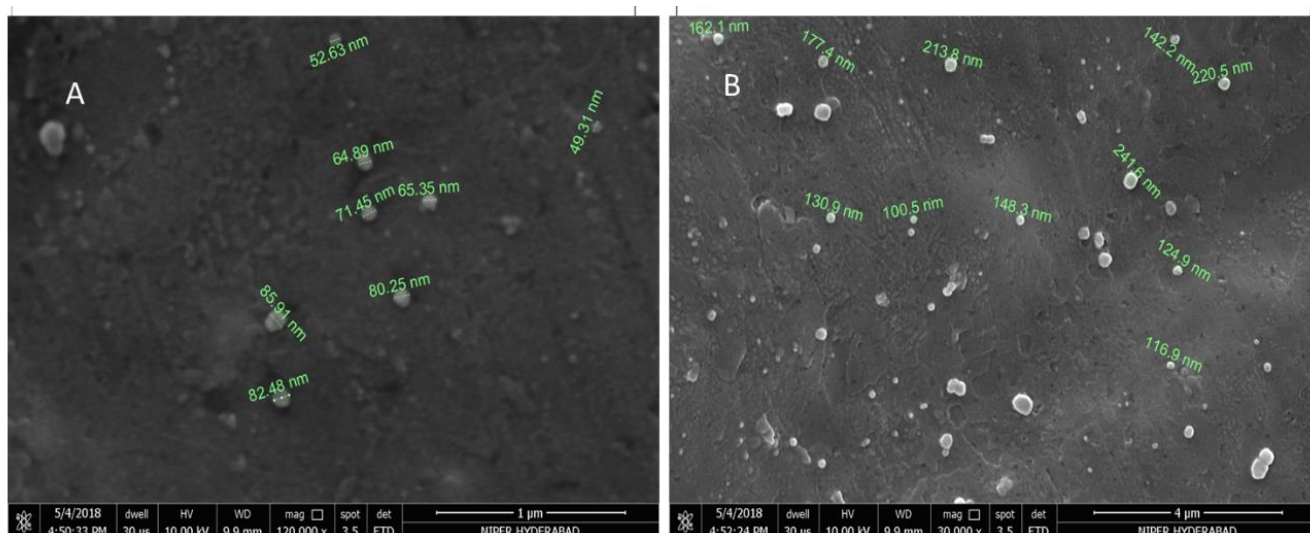


Figure S4. SEM image of plain G-NP (A) and CPG-NP (B) respectively.

Method S1: Preparation of standard curve of ciprofloxacin hydrochloride in Deionized water by UV-visible Spectrophotometer.

Ciprofloxacin hydrochloride primary stock solution of 1000 µg/mL was prepared in deionized water by dissolving 10 mg of drug in 10 mL of deionized water. From the primary stock, a secondary stock solution of 100 µg/mL was prepared. Aliquot of 1 mL was pipette out into a 10 mL volumetric flask and volume was made up to 10 mL with water to get concentration of 10 µg/mL. Sample was scanned using water as a blank within the wavelength range of 200 nm to 800 nm. The wavelength at which maximum absorption obtained was noted as λ_{max} .

From secondary stock solution (100 µg/mL) aliquots of 2 mL, 3 mL, 4 mL, 5 mL, 6 mL, 7 mL and 8 mL, 9 mL were pipette out into a series of 10 mL volumetric flasks and volume was made up to 10 mL with water to get concentrations in the range of 2 to 14 µg/mL. The absorbance of the resulting solution was then measured at 273 nm using UV-Visible spectrophotometer against respective solvent as blank. The standard curve was obtained by plotting absorbance versus concentration in µg/mL.

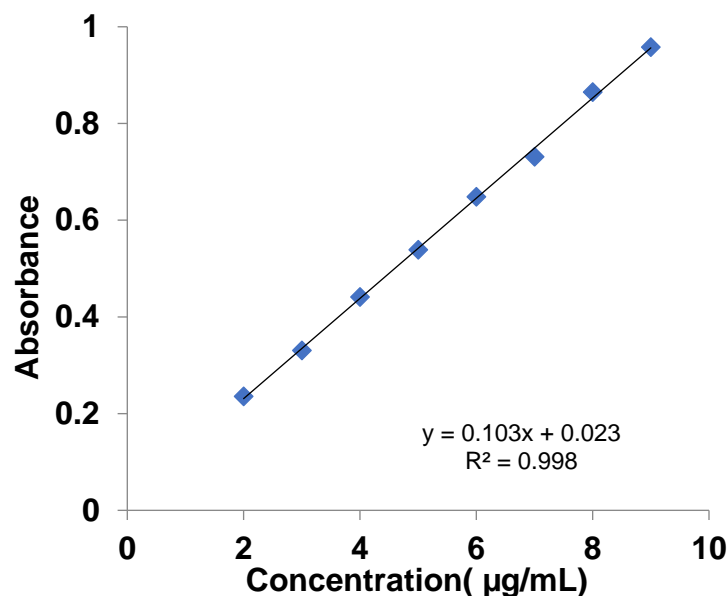


Figure S5. Standard curve of ciprofloxacin in Deionized Water.