

Supplementary Material (ESI) for Journal of Materials Chemistry
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Supplementary Information

Antibiotic Mediated Synthesis of Gold Nanoparticles with Potent Antimicrobial Activity and Their Application in Antimicrobial Coatings

Akhilesh Rai*, Asmita Prabhune[§], Carole C. Perry*

*School of Science and Technology, Nottingham Trent University, Clifton Lane,
Nottingham, NG 11 8NS, United Kingdom

[§]Biochemical Sciences Division, National Chemical Laboratory,
Pune, 411008, India

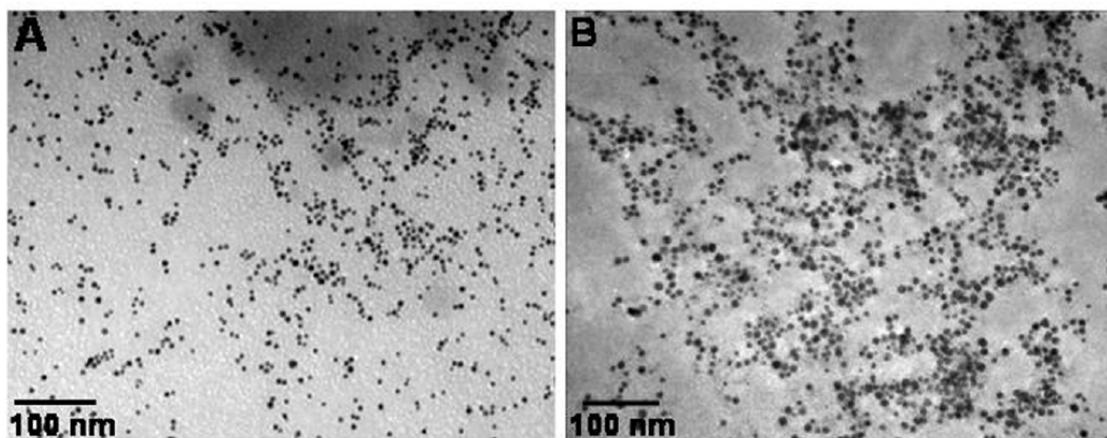


Figure S1: Representative TEM images of NaBH_4 reduced gold nanoparticles (A) and after surface modification of NaBH_4 reduced gold nanoparticles with cefaclor (B).

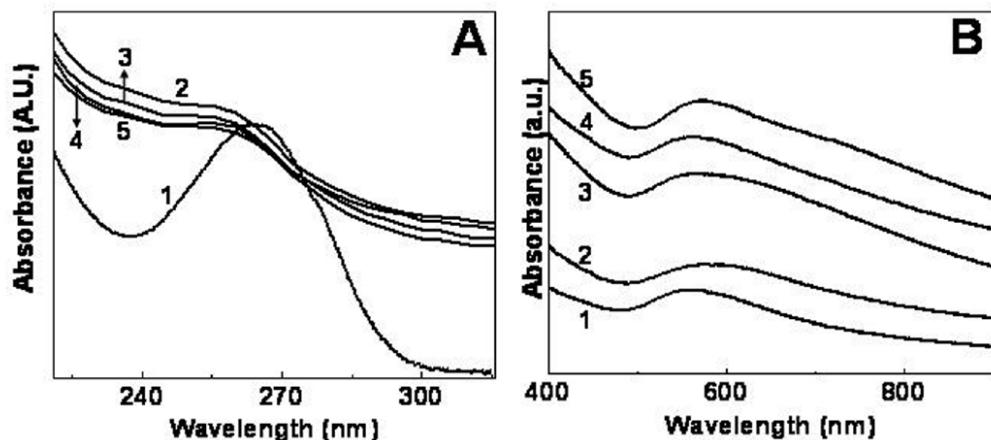


Figure S2: (A) UV-vis spectra of pure cefaclor solution (1), cefaclor reduced gold nanoparticle solution after 1 day (2), 60 days (3), 90 days (4) and 180 days (5). (B) UV-vis spectra of redispersed gold nanoparticle powders synthesized at 20°C (curve 1), 30°C (curve 2), 40°C (curve 3), 60°C (curve 4) and 70°C (curve 5), in water.

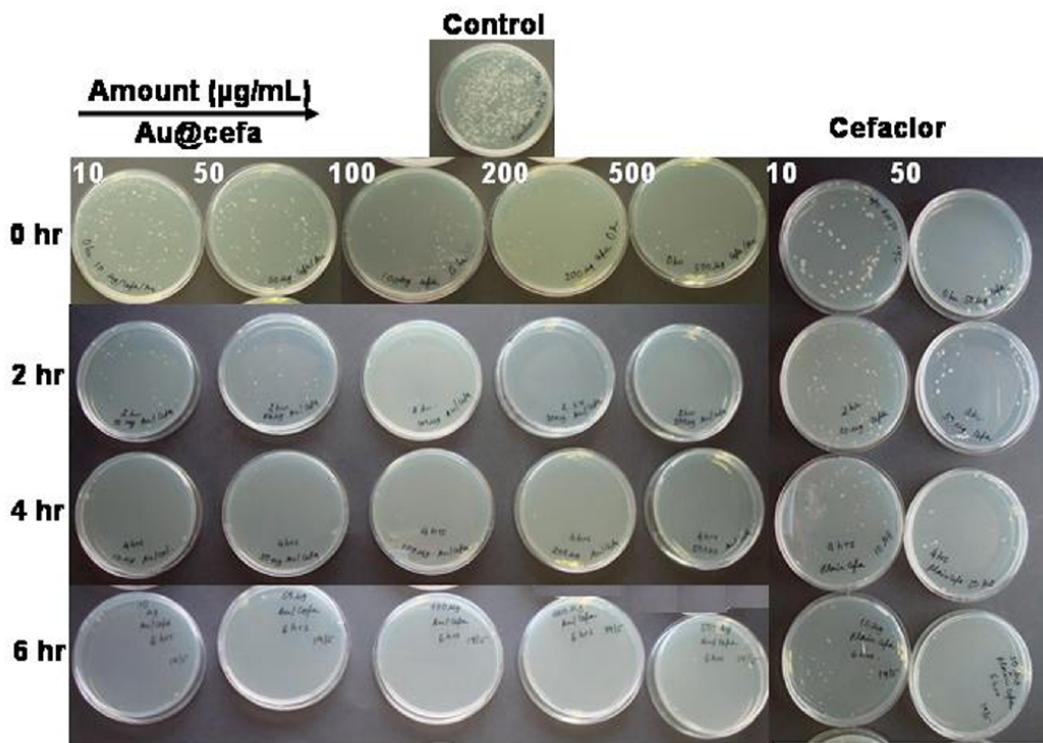


Figure S3: *S. aureus* colonies were treated with increasing amounts (10–500 $\mu\text{g/mL}$) of cefaclor reduced gold nanoparticles and cefaclor and 100 μL aliquots of bacterial suspensions after time intervals (0–6 h) were plated on LB agar plates. Digital images of the bacterial plates were recorded after 24 h of incubation.

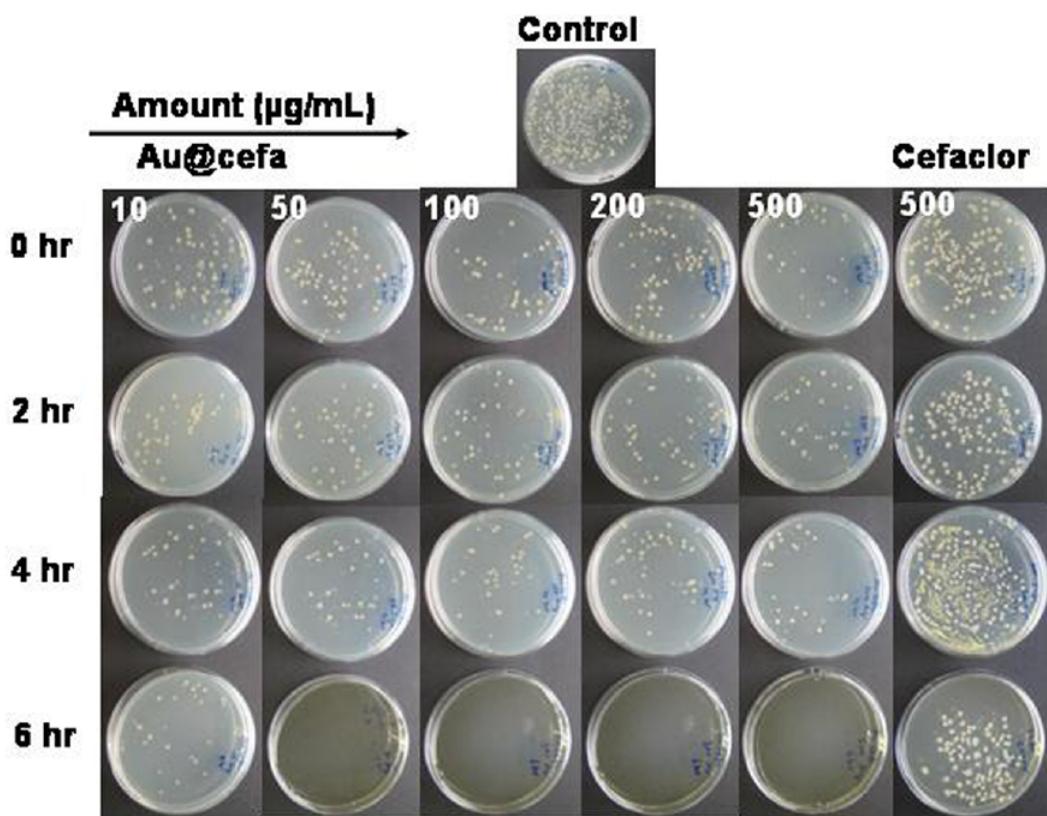


Figure S4: *E.coli* colonies were treated with increasing amount (10–500 $\mu\text{g/mL}$) of cefaclor reduced gold nanoparticles and cefaclor and 100 μL aliquots of bacterial suspensions after time intervals (0–6 h) were plated on LB agar plates. Digital images of the grown bacterial plates were recorded after 24 h of incubation.

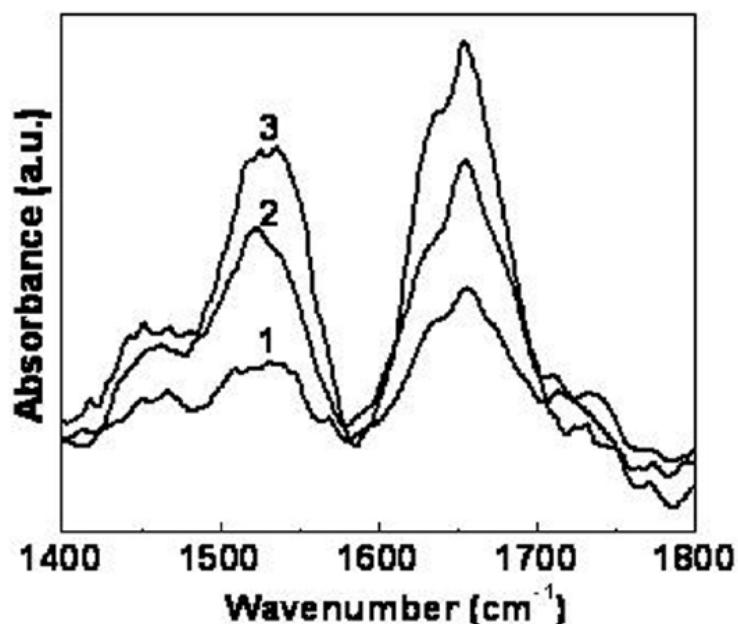


Figure S5: FTIR spectra of cefaclor reduced gold nanoparticles coated on PEI surface without treatment (curve 1), after treatment at pH 3 (curve 2) and at pH 10 (curve 3).