

**Catalytic performance and antibacterial behaviour with molecular docking analysis of
Silver and Polyacrylic acid doped Graphene quantum dots**

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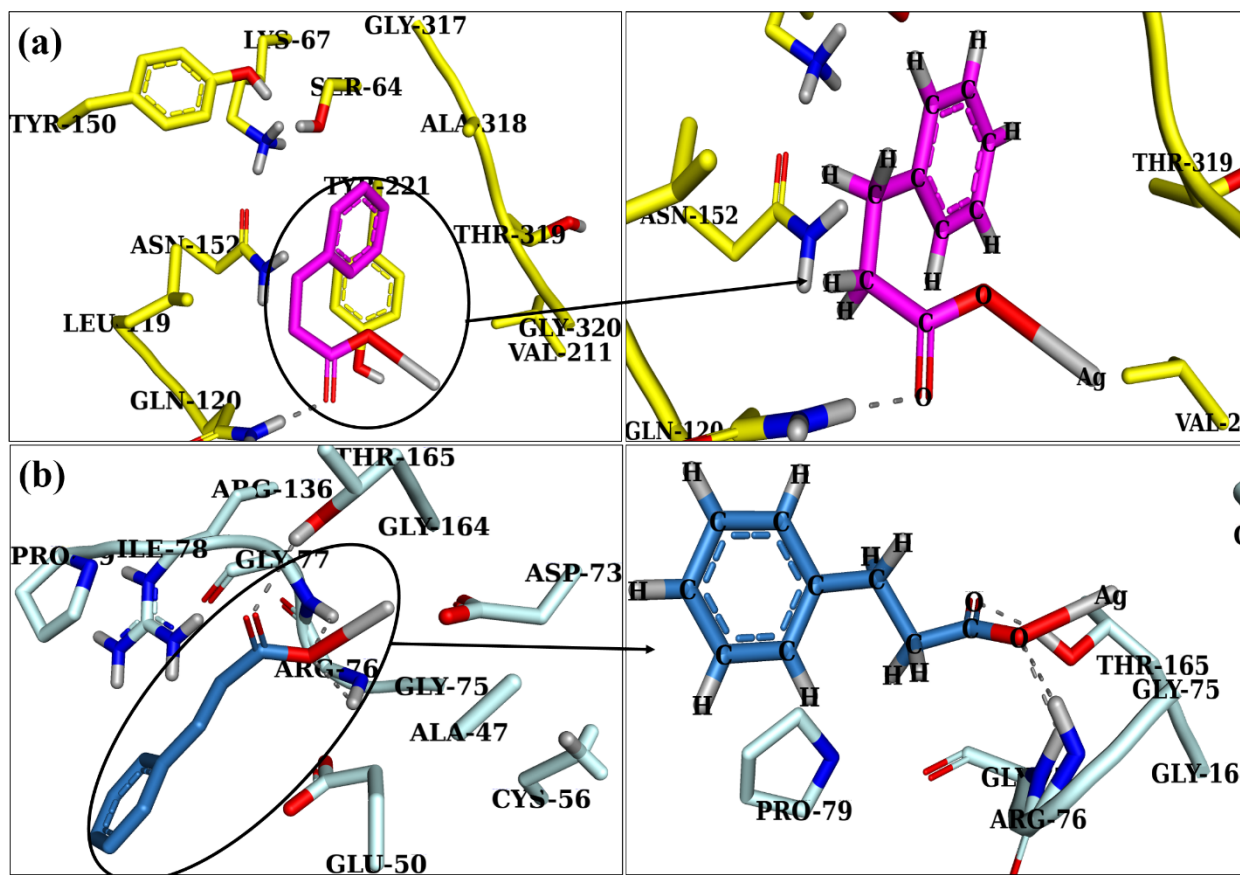


Fig S1. Binding interaction pattern of ligand with active site residues of β -lactamase (a) and DNA gyrase (b) enzyme from *E. coli*.

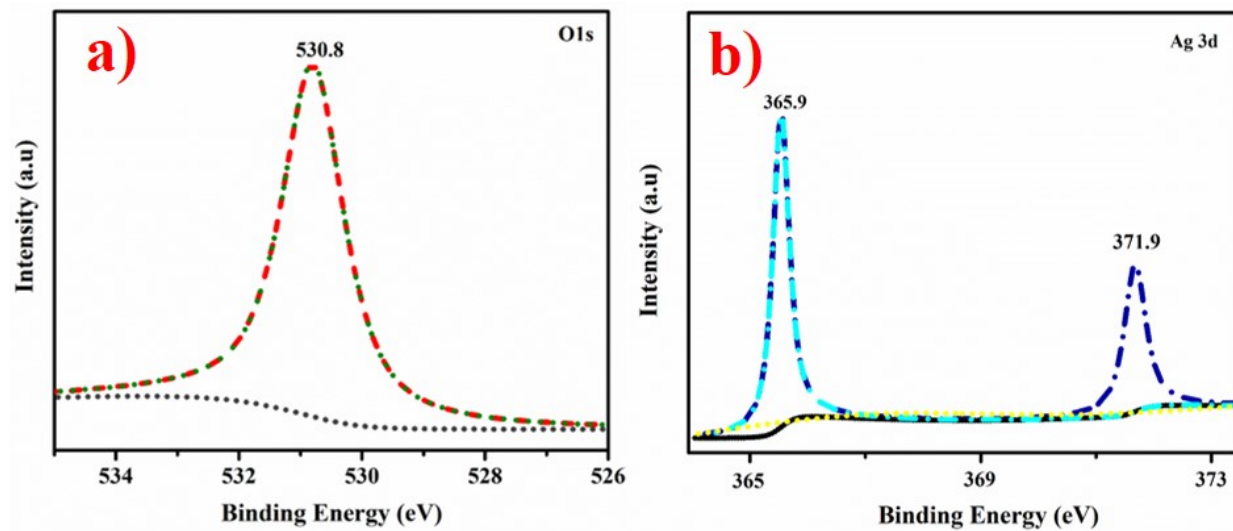


Fig S2. XPS spectra of as PAA/Ag-GQDs (a) O1s (b) Ag 3d

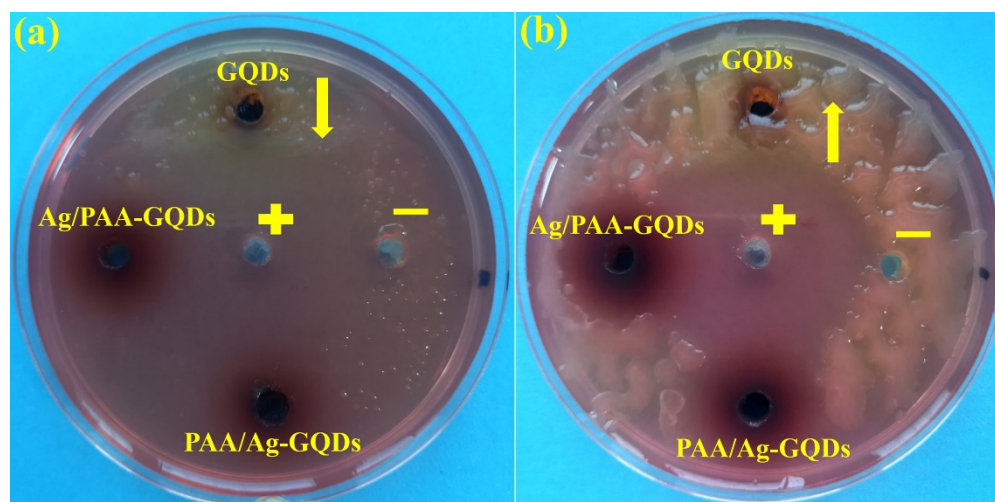


Fig S3. In vitro antimicrobial activity of the prepared sample against (a) *S. Aureus* at low dose (b) *S. Aureus* at high dose.

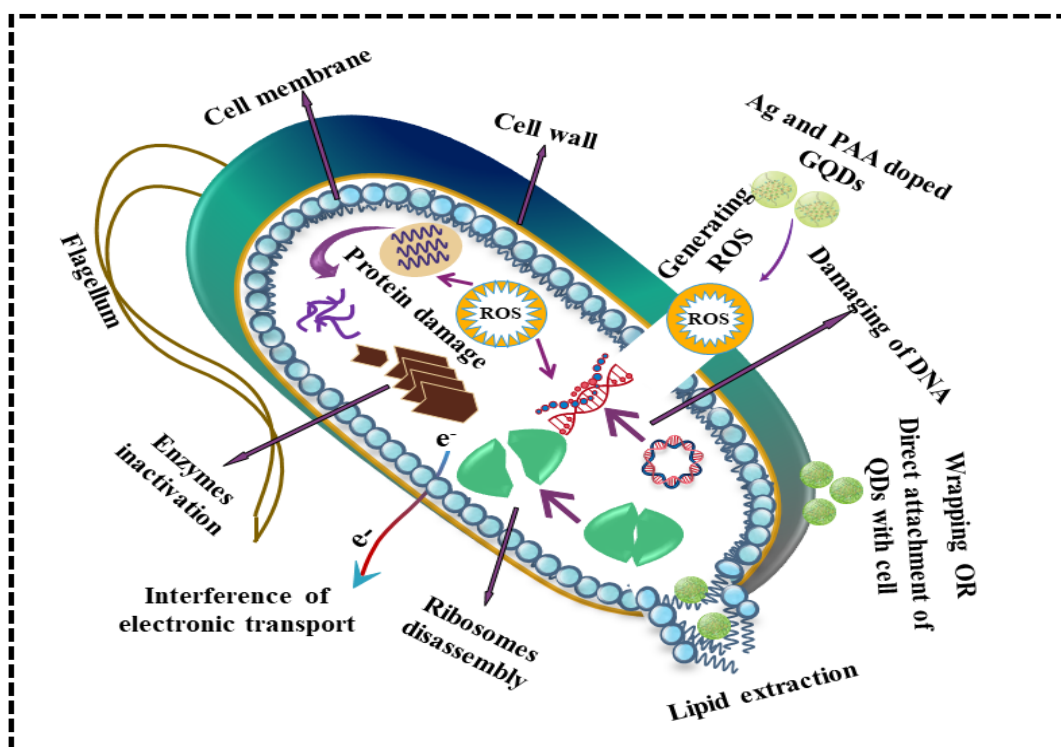


Fig S4. Antibacterial mechanism of GQDs, Ag: PAA GQDs, and PAA: Ag GQDs