

In-vitro antiplatelet activity of silver nanoparticles synthesized using the microorganism *Gluconobacter roseus* : AFM based study

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SUPPLEMENTARY INFORMATION

Determination of nanoparticle concentration

The dosage of the nanoparticles to be administered was calculated by a method which has been previously reported.^{22,23} The calculation was made as follows:

The average number of atoms per nanoparticles, N was calculated using the formula below:

Number of atoms in a nanoparticle, $N_A = V_2/V_1$

where V_1 is the volume of a silver atom and V_2 is the average volume of a AgNPs.

$$V_1 = 4\pi(r)^3/3 = [4 \times 3.14 \times (144 \text{ pm})^3]/3$$

$$= 1.250 \times 10^{-29} \text{ m}^3$$

$$V_2 = a^3 = (10 \times 10^{-9})^3 = 1 \times 10^{-24} \text{ m}^3$$

Number of atoms in 1 nanoparticle = 8×10^4 atoms.

Number of atoms in 1mM solution (broth)

$$= 1 \times 10^{-3} \times 6.023 \times 10^{23} = 6.023 \times 10^{20} \text{ atoms.}$$

Number of nanoparticles in the broth

$$= \text{Total atoms}/N_A$$

$$= 6.023 \times 10^{20} / 80000$$

$$= 7.5287 \times 10^{15} \text{ nanoparticles}$$

Concentration of nanoparticle, C_{NP}

$$= \text{Number of nanoparticles}/\text{Avagadros number} = 7.5287 \times 10^{15} / 6.023 \times 10^{23}$$

$$= 1.2499 \times 10^{-8} \text{ nmol/dm}^3$$

$$= 12.499 \times 10^{-9} \text{ nmol/dm}^3$$

400, 800, 1200, 1600 and 2000 μl of the sample was taken as drug for 5 ml of PRP. So, the different dosages were as follows.

Concentration in 0.4mL

$$= 0.4 \text{ mL} \times 12.499 \text{ nM} / 5.4 \text{ mL} = 0.9 \text{ nM.}$$

Concentration in 0.8 mL

$$= 0.8 \text{ mL} \times 12.499 \text{ nM} / 5.8 \text{ mL} = 1.7 \text{ nM.}$$

Concentration in 1.2mL

$$= 1.2 \text{ mL} \times 12.499 \text{ nM} / 6.2 \text{ mL} = 2.4 \text{ nM.}$$

Concentration in 1.6mL

$$= 1.6 \text{ mL} \times 12.499 \text{ nM} / 6.6 \text{ mL} = 3.0 \text{ nM.}$$

$$\text{Concentration in 2mL} = 2.0 \text{ mL} \times 12.499 \text{ nM} / 7 \text{ mL} = 3.5 \text{ nM.}$$

Fig.S1: Particle size distribution of the *Gluconobacter roseus* synthesized AgNPs obtained from DLS measurement.

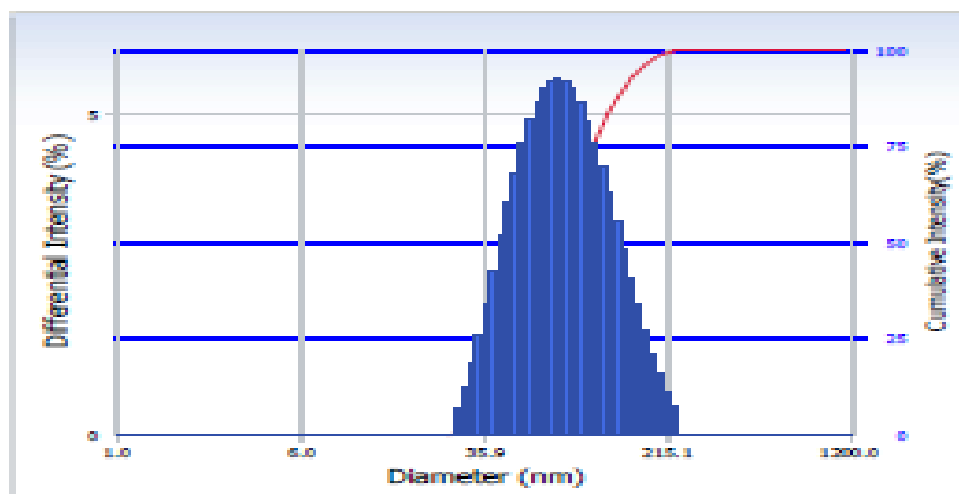


Fig.S2: Zeta potential distribution of the *Gluconobacter roseus* synthesized AgNPs.

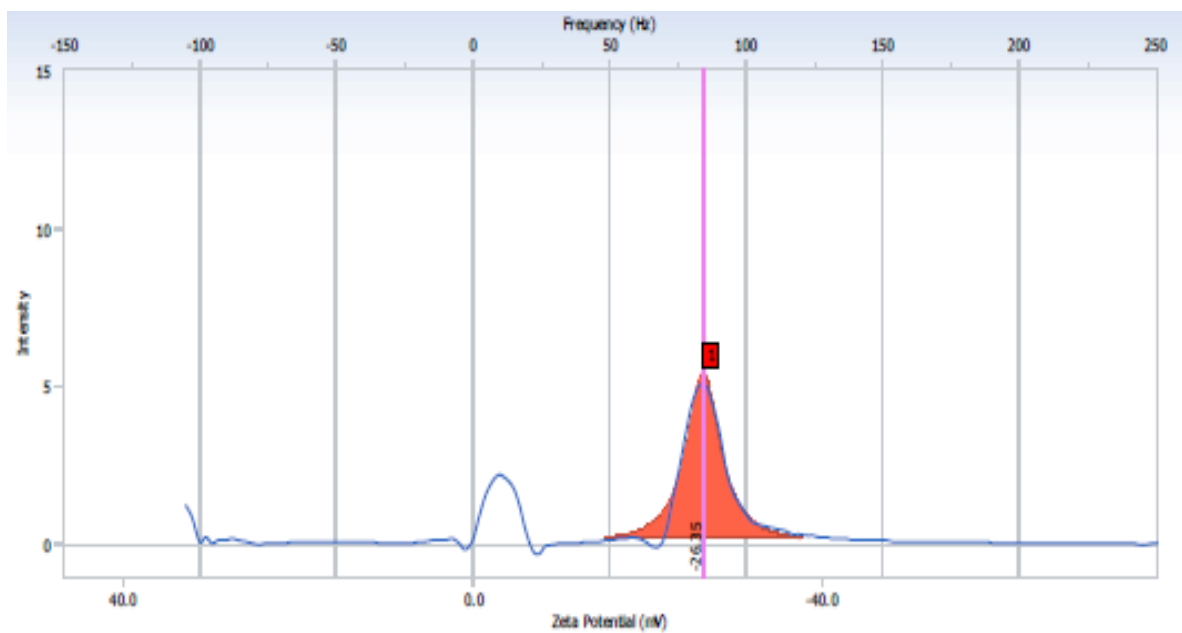


Fig.S3: EDAX spectrum of the *Gluconobacter roseus* synthesized AgNPs.

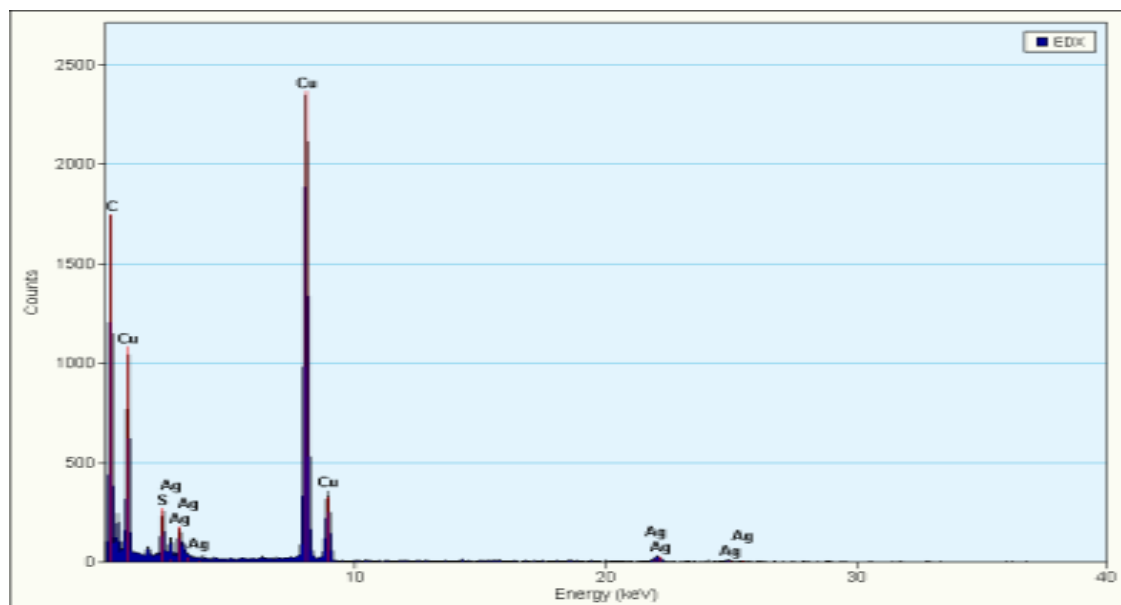


Fig.S4(A) Topographic images of platelets pretreated with ADP.

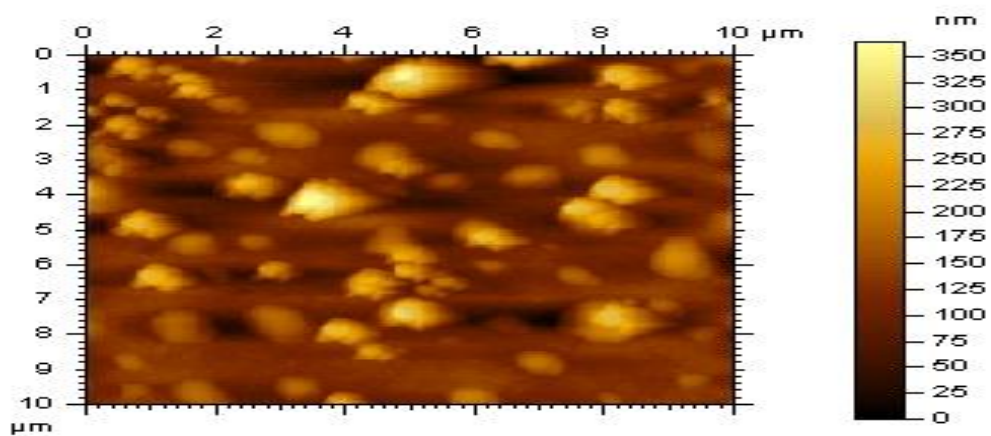


Fig.S4(B) Topographic images of AgNP treated platelets pretreated with ADP.

