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, \( N = \frac{V_2}{V_1} \)

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

\[
V_1 = \frac{4\pi r^3}{3} = \frac{4\pi (3.14 x 144 pm)^3}{3} = 1.250 \times 10^{-29} m^3
\]

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

Number of atoms in 1 nanoparticle = \( 8 \times 10^4 \) atoms.

Number of atoms in 1 mM solution (broth) = \( 1 \times 10^{-3} \times 6.023 \times 10^{23} = 6.023 \times 10^{20} \) atoms.

Number of nanoparticles in the broth = \( \frac{Total \text{ atoms}}{N_A} = \frac{6.023 \times 10^{20}}{80000} = 7.5287 \times 10^{15} \) nanoparticles.

Concentration of nanoparticle, \( C_{NP} \) = \( \frac{Number \text{ of nanoparticles}}{Avagadros \text{ number}} = \frac{7.5287 \times 10^{15}}{6.023 \times 10^{23}} \)

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

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

400, 800, 1200, 1600 and 2000 \( \mu \)l 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
\( = 1.6 \text{mL} \times 12.499 \text{ nM} / 6.6 \text{mL} = 3.0 \text{ nM} \).

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.