Dissolution of silver nanoparticles in simulated biological fluids and environmental media

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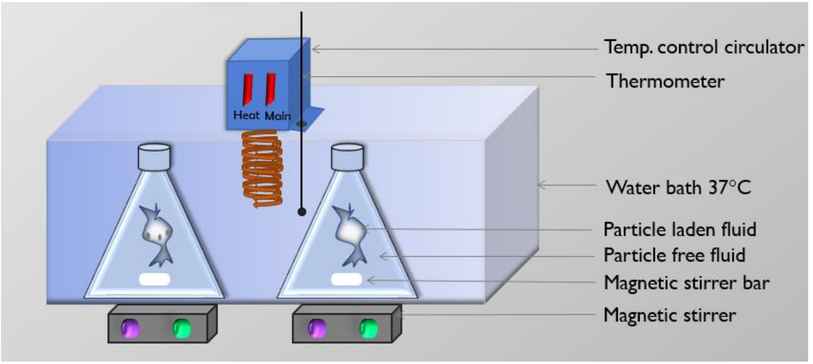
AIM

To determine dissolution of AgNPs exposed to simulated biological and environmental fluids to predict their behavior in real life situations.

METHODOLOGY



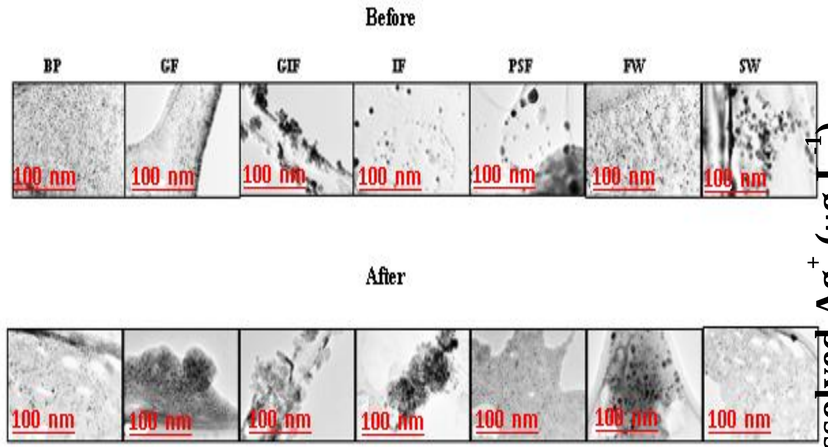


Figure 1: TEM images of AgNPs in biological and environmental fluids.

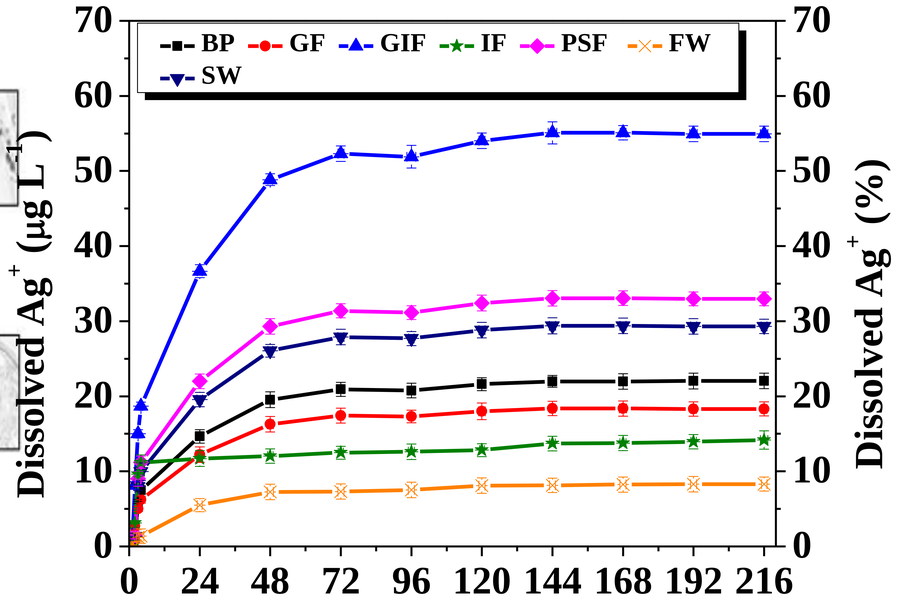


Figure 2: Dissolution curves of AgNPs in biological and environmental fluids.

RESULTS AND DISCUSSION

Following exposure to biological fluids and environmental media AgNPs underwent TEM (Figure 1) characterization to identify if basic morphology or primary size was altered upon exposure to the fluids.

CONCLUSION

- Low pH and high ionic strength accelerated the rate and degree of dissolution of AgNPs in simulated fluids
- Fast dissolution rates observed for AgNPs in simulated gastric and phagolysosomal fluid and synthetic seawater will be the cause of their short-term effects.
- Particles exposed to alkaline and soft water media would be expected to cause long-term effects.