

## ELECTRONIC SUPPLEMENTARY INFORMATION

### **Inhibition of Fibrillation of Human Serum Albumin through Interaction with Chitosan-Based Biocompatible Silver Nanoparticles**

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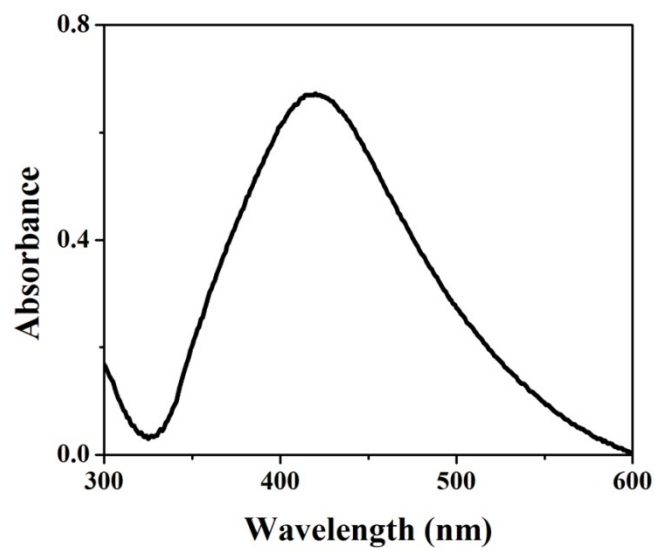
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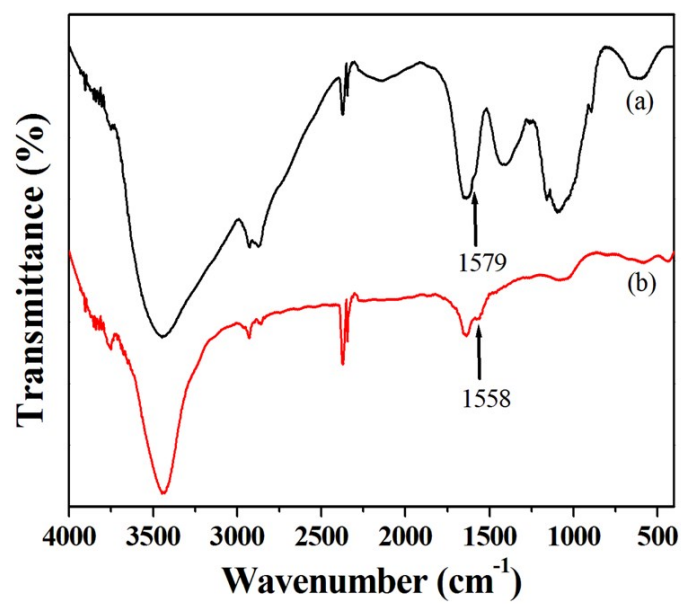
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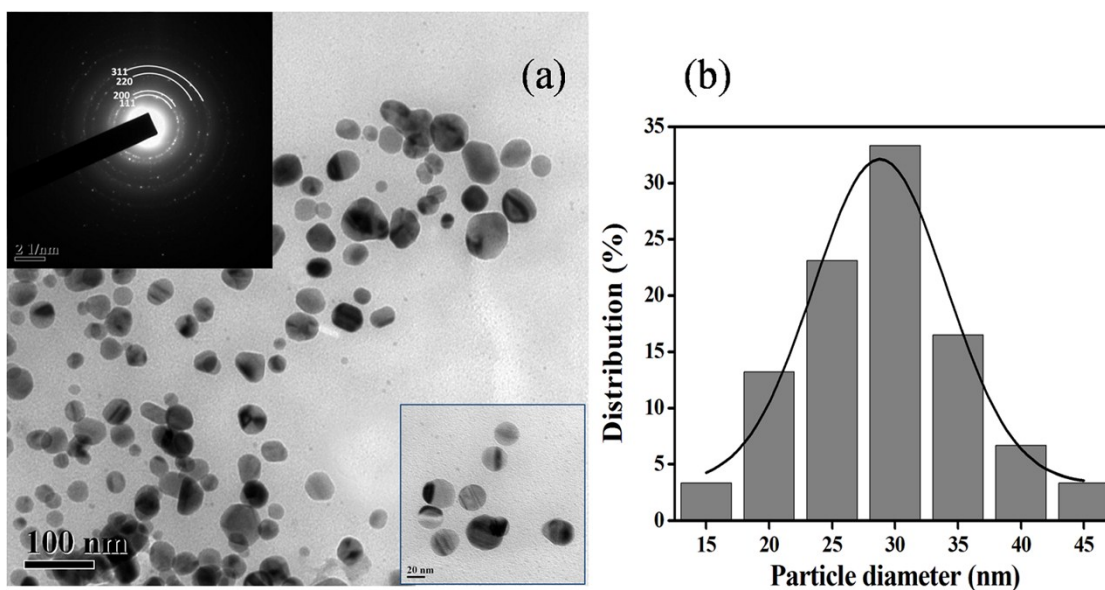
\* Email: [sunando@che.iitkgp.ernet.in](mailto:sunando@che.iitkgp.ernet.in), Phone: +91 3222 283922; Fax: +91 3222 255303



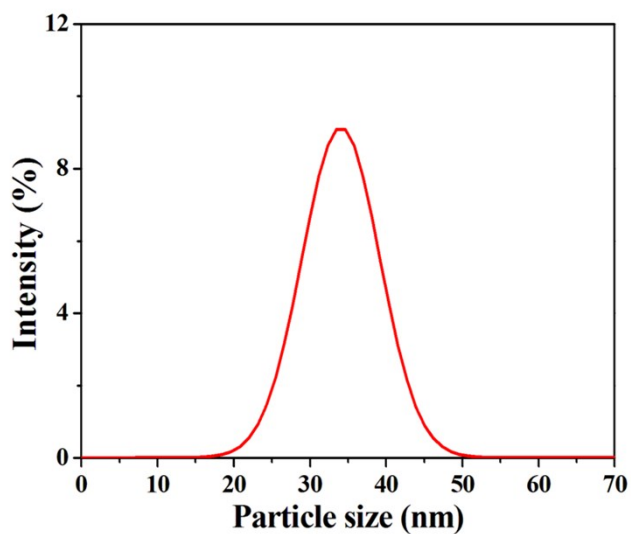
**Figure S1.** UV-vis absorption spectrum of chitosan-based silver nanoparticles (SNPs)



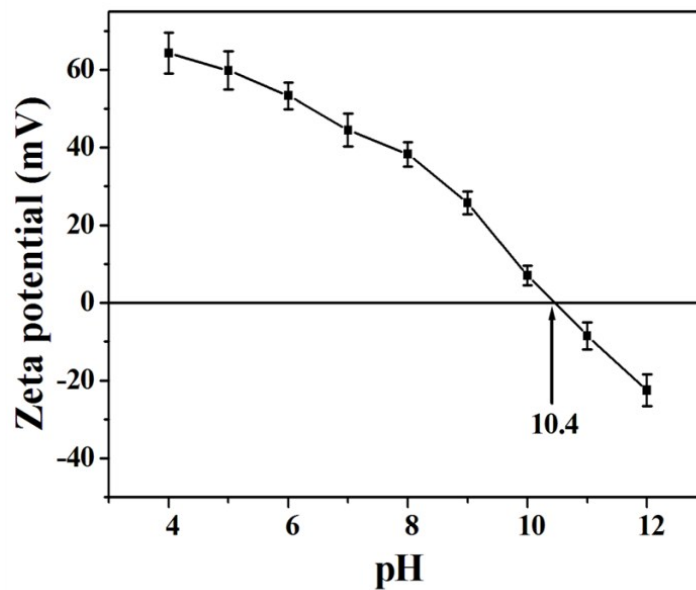
**Figure S2.** FTIR spectra of (a) chitosan (b) chitosan-mediated silver nanoparticles



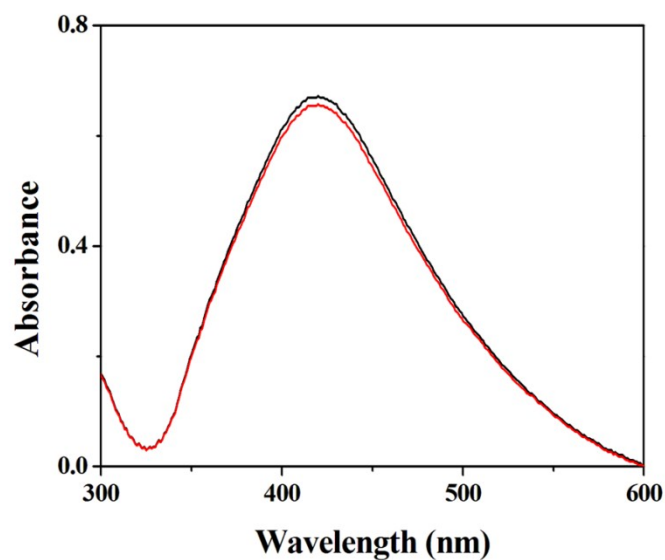
**Figure S3.** (a) HRTEM image of SNPs (scale bar=100 nm). The inset shows the SAED pattern of SNPs. Higher magnification HRTEM image of SNPs are also shown in the inset of figure a. (b) The size distribution histogram of SNPs corresponding to HRTEM image.



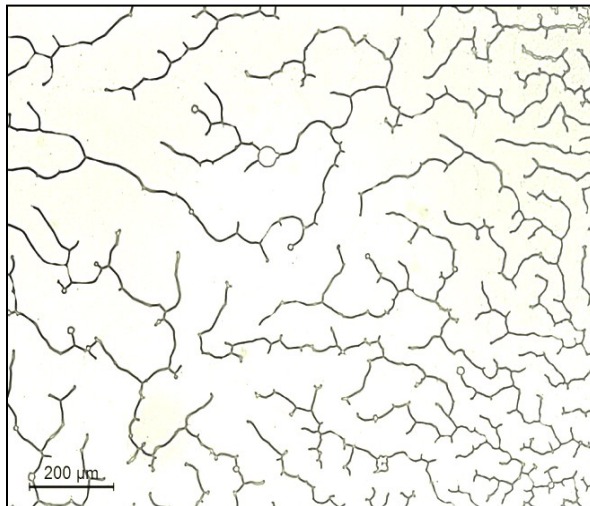
**Figure S4.** DLS size distribution measurement of SNPs (pH 7.4) at 25 °C



**Figure S5.** Change in zeta potentials of SNPs at different pH values measured at 25 °C. Error bars represent the standard errors (S.E.) of the mean estimated from at least three individual measurements.



**Figure S6.** UV-vis absorption spectra of SNPs at pH 4.5 (black line) and pH 7.4 (red line)



**Figure S7.** Bright field image of HSA fibrils in absence of SNPs

### **1. Calculation of effective surface coverage<sup>64, 65</sup>**

Surface area of the HSA-bound SNP at half a protein diameter above the particle = 4347 nm<sup>2</sup>

HSA cross-section area when binding by side-on mode = 49.5 nm<sup>2</sup>

Number of HSA molecules needed to theoretically cover SNP surface = 88

Number of HSA molecules over the SNP surface, as obtained from ITC = 5

Effective surface coverage = (Experimental surface coverage / Theoretical surface coverage)  
= 5.7%