

Antibiotic-loaded silica nanoparticles/collagen composite hydrogels with prolonged antimicrobial activity for wound infection prevention

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Supplementary information

Table S1. Conditions of silica nanoparticle synthesis by the St  ber Method

Size (nm)	V [mL]				Antibiotic [mg]
	Ethanol	TEOS	H ₂ O	NH ₄ OH	
100	100	3.78	3.4	3.1	25
300	100	3.52	3.5	6.7	25
500	74	5.6	10.8	9.8	25

Fig. S1: Typical N₂-sorption isotherms for synthesized Stöber silica nanoparticles (here, SiNP-500)

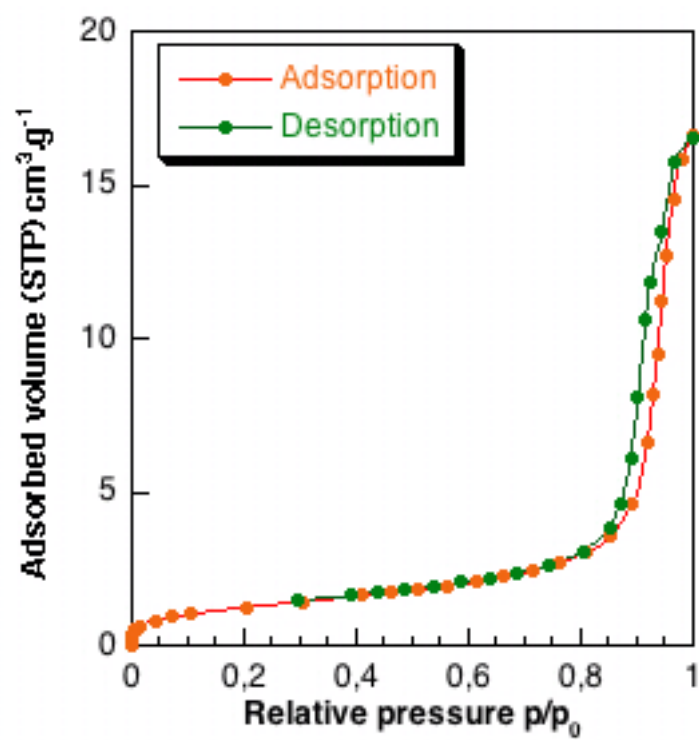


Fig. S2 : Scanning electron microscopy of SEM of collagen (5 mg mL⁻¹) hydrogels

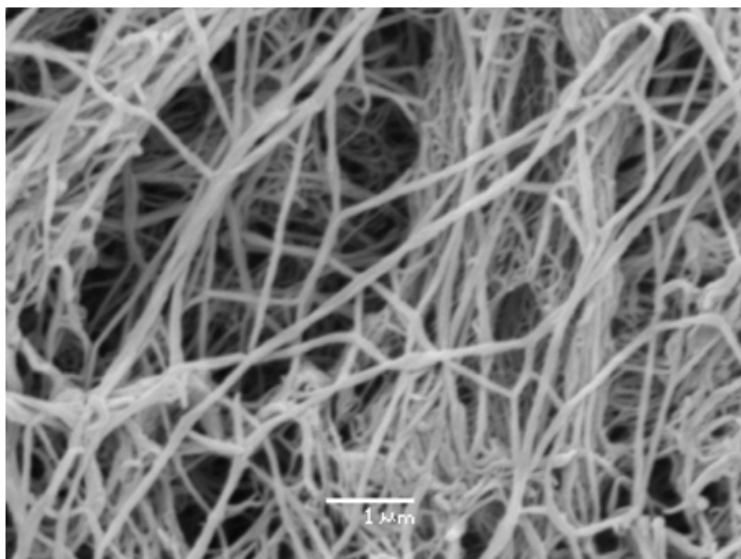


Fig. S3 : storage modulus G' and loss modulus G'' of: A) SiNPs-500 nanocomposites and B) SiNPs-100 nanocomposites. Results are expressed as mean $\pm$ SD from triplicates experiments. * indicates statistical significance ($p < 0.05$), ** indicates statistical significance ($p < 0.01$) and *** indicates statistical significance ($p < 0.001$).

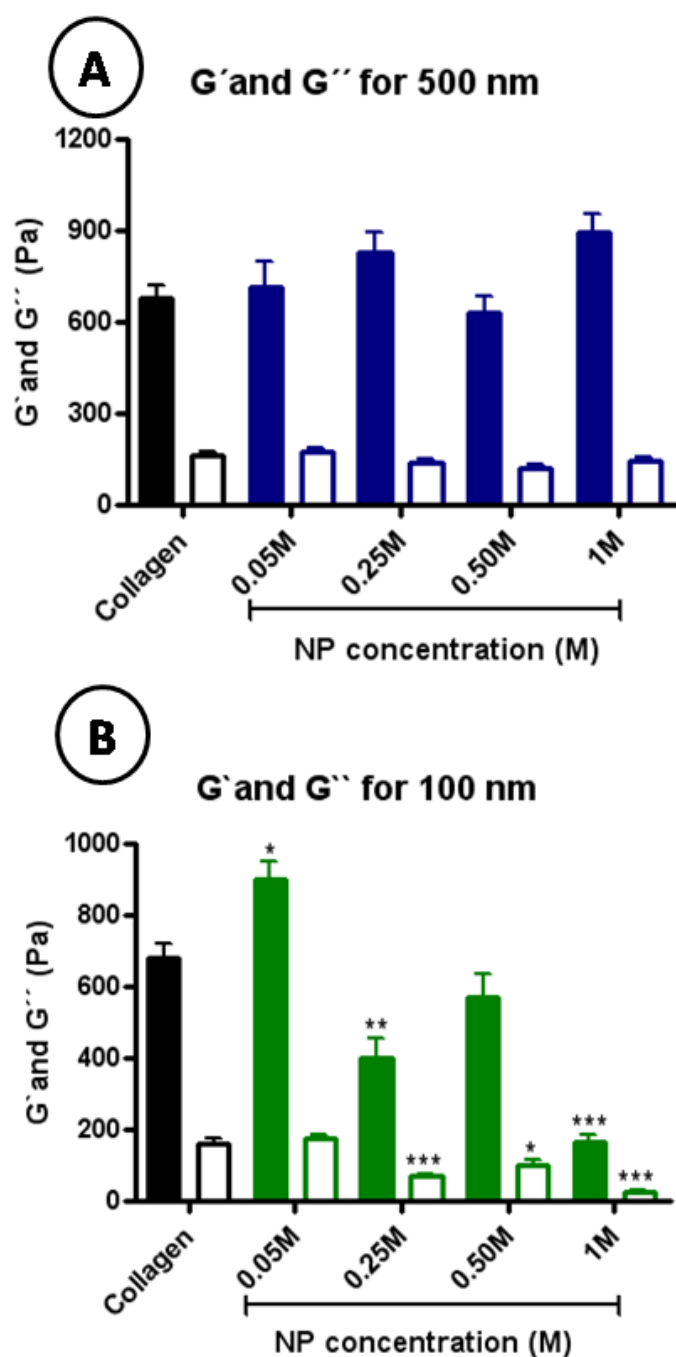


Fig. S4 : Gentamicin release from collagen hydrogels and nanocomposites with: A) 0.05M, B) 0.25M, C) 0.5M and D) 1M SiNPs-500

