

Supporting Information

Antibacterial and Hydroxyapatite-Forming Coating for Biomedical Implants Based on Polypeptide-Functionalized Titania Nanospikes

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Keywords: biomimetic nanostructure; antibacterial coating; *N*-carboxyanhydride (NCA); polypeptide; hydroxyapatite

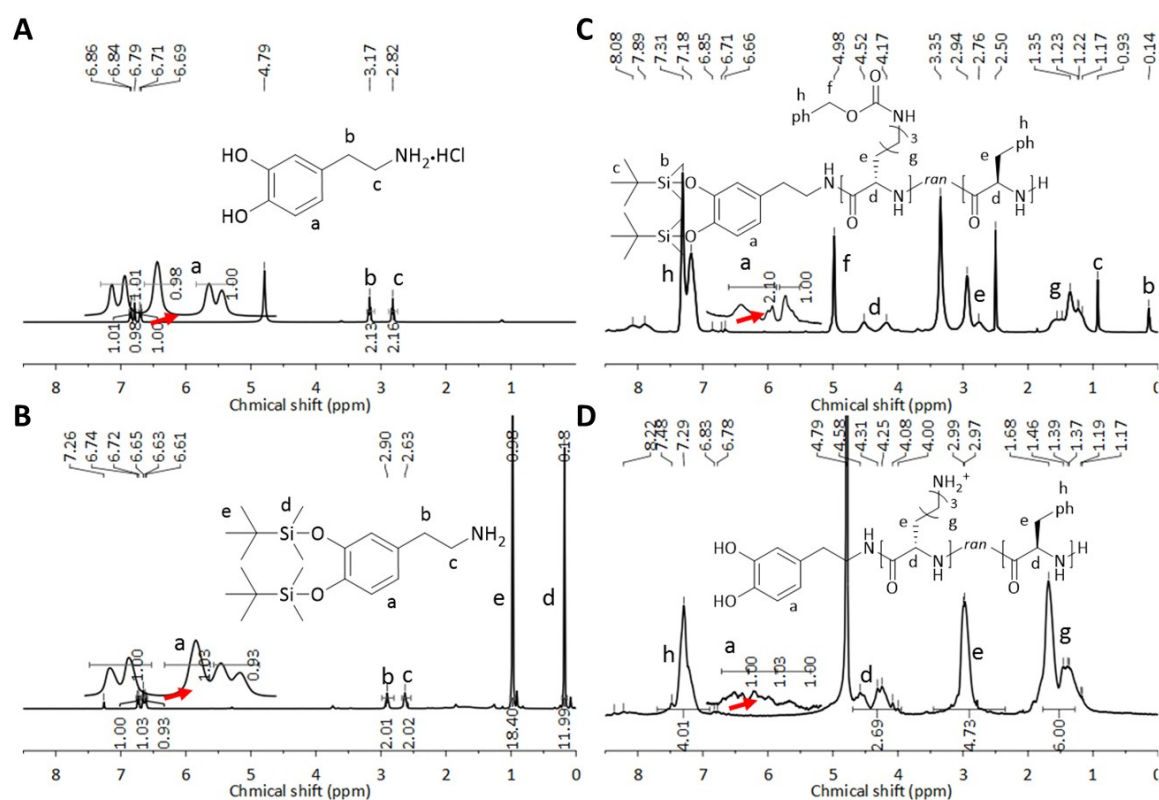


Fig. S1. ¹H-NMR spectra of A) dopamine in D₂O, B) TBS-protected dopamine in CDCl₃, C) TBScPep(z) in DMSO-*d*₆ and D) cPep in D₂O.

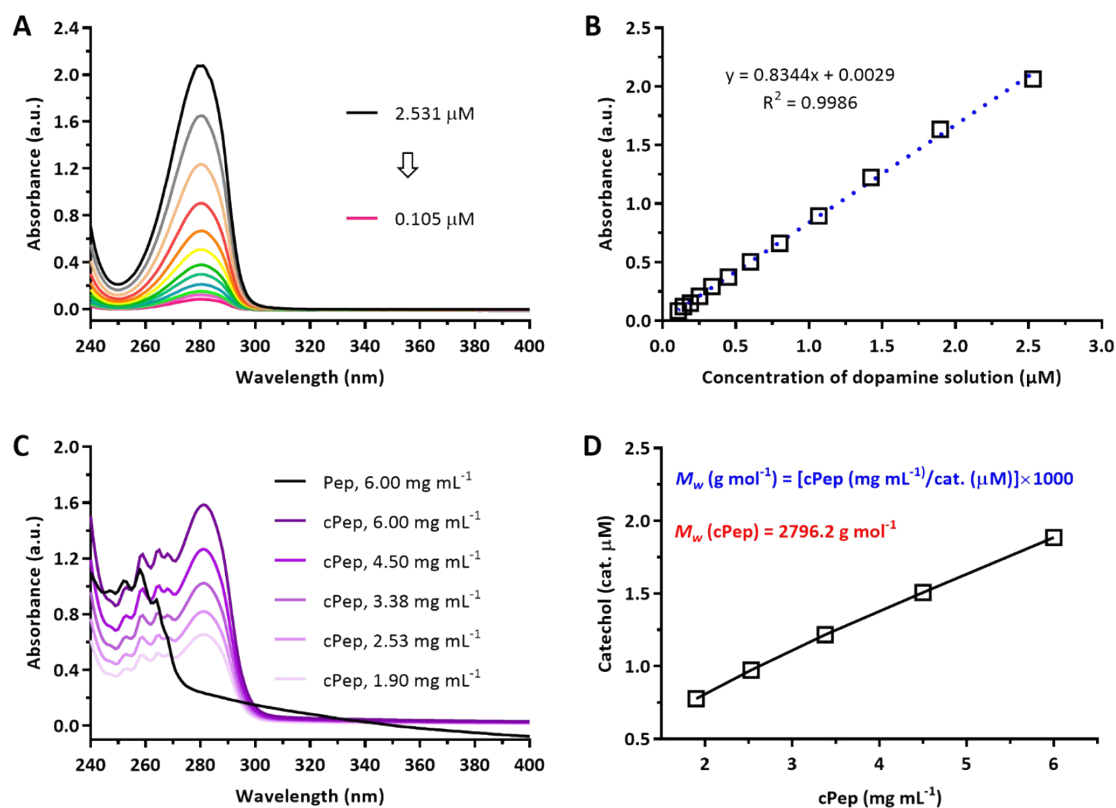


Fig. S2. A) UV-vis spectra of the dopamine solution. B) Standard curve of the dopamine solution. C) UV-vis spectra of the Pep (black) and cPep (violet) solution. D) The formula for calculating the molecular weight of cPep.

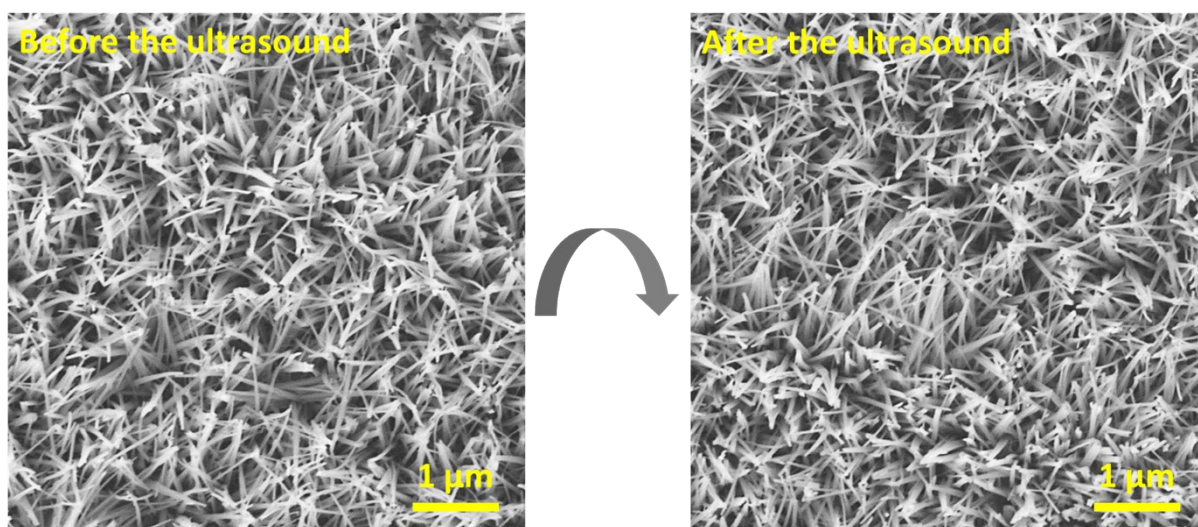


Fig. S3. SEM images of the TNC surface before and after the ultrasound treatment (30 min, ambient temperature).

Table S1. MIC of the Pep and cPep against different types of bacteria.

Polymers	MIC ($\mu\text{g mL}^{-1}/\mu\text{M}$) ^a		
	Gram-positive	Gram-negative	
	<i>S. aureus</i>	<i>E. coli</i>	<i>P. aeruginosa</i>
Pep ^b	31/9	31/9	31/9
cPep	31/9	31/9	31/9

^aThe lowest compound concentration that inhibits bacteria growth, ^bPep: Lys(NH₃⁺)_{12.5}-*r*-Phe_{12.5}).