

**Enzyme-directed Biomineralization Coating on TiO₂ Nanotubes
and its Positive Effect on Osteogenesis**

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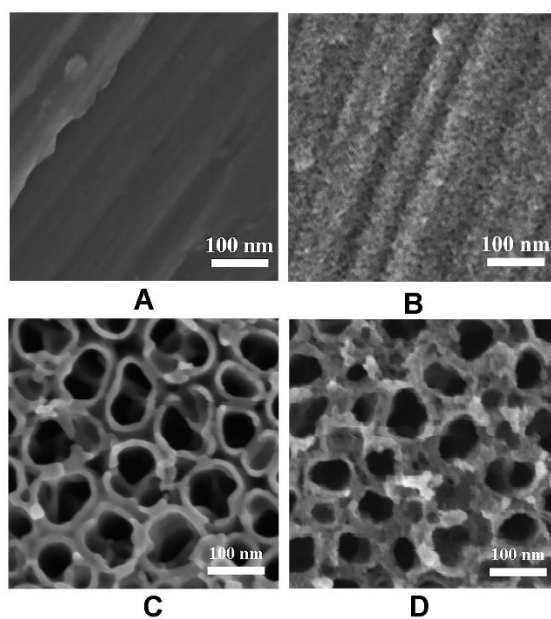


Fig. S1 SEM images of different titanium surfaces before and after mineralization.

(A) pure Ti, (B) mineralized Ti, (C) 85nmTNT, and (D) mineralized 85nmTNT.

Table. S1 The chemical elements of mineralized Ti and mineralized 85nmTNT

Element	Atom (%)	
	Mineralized Ti	Mineralized 85nmTNT
Ti	95.01	34.28
C	4.48	5.03
Ca	0.36	2.43
P	0.15	1.63
O	-	56.63
	100.00	100.00

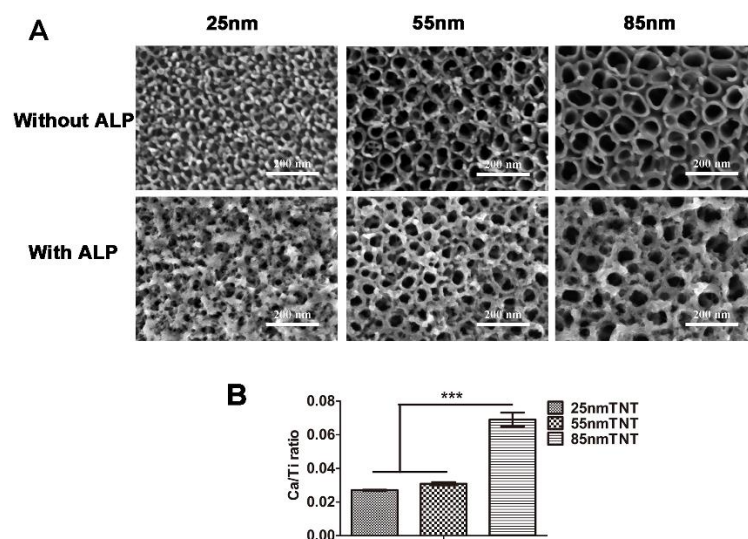


Fig. S2 Surface characterizations of TNTs in mineralizing solutions with/without ALP. (A) SEM images of TNTs with different diameters after immersion in the mineralizing solution with/without ALP for 6 d (Scale bar = 100 μm). (B) Ca/Ti ratio of TNTs with different diameters after mineralization for 6 d in solution containing ALP. (***) indicates $P < 0.001$)

Table. S2 The chemical elements of TNTs in mineralizing solutions with/without ALP

Element	Atom (%)					
	25nmTNT		55nmTNT		85nmTNT	
	Without	With	Without	With	Without	With
	ALP	ALP	ALP	ALP	ALP	ALP
Ti	40.63	45.00	39.87	41.01	37.44	34.61
O	53.42	49.29	54.55	52.96	56.77	56.14
C	5.95	3.59	5.56	3.85	5.78	5.10
Ca	-	1.23	-	1.27	-	2.46
P	-	0.89	-	0.91	-	1.68
	100.00	100.00	100.00	100.00	100.00	100.00

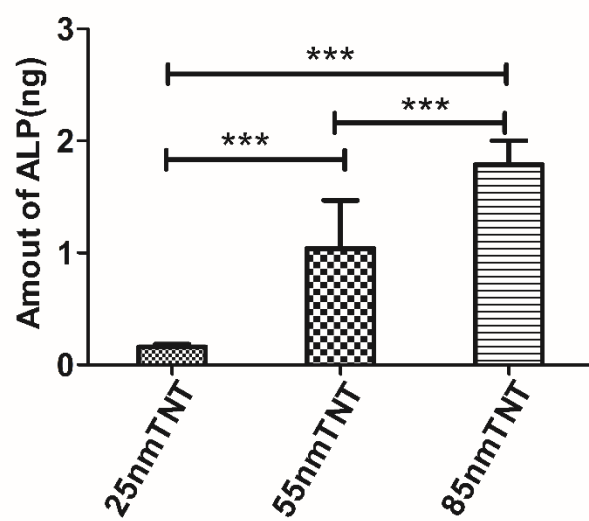


Fig. S3 Amount of adsorbed ALP on TNTs with different diameters after 4h's immersion. (***)indicates $P < 0.001$)