Supporting Information for
Polydopamine-induced nanocomposite Ag/CaP coatings on titania nanotubes surface for antibacterial and osteointegration function

Ming Li\textsuperscript{a}, Qian Liu\textsuperscript{a}, Zhaojun Jia\textsuperscript{a}, Xuchen Xu\textsuperscript{a}, Yuying Shi\textsuperscript{a}, Yan Cheng\textsuperscript{a*}, Yufeng Zheng\textsuperscript{a,b}

\textsuperscript{a}Center for Biomedical Materials and Tissue Engineering, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing 100871, People’s Republic of China.
\textsuperscript{b}Department of Materials Science and Engineering, College of Engineering, Peking University, Beijing 100871, People’s Republic of China.
* Corresponding author email: chengyan@pku.edu.cn

1. Materials and Methods
XRD analysis of the samples was conducted by using a Rigaku DMAX 2400 diffractometer with CuK\textalpha radiation (\(\lambda=1.540598\) Å) at 40 kV. The diffraction angles (2\(\theta\)) were set between 10° and 80°, incremented with a step size of 4°/min.

2. Results and discussions

Fig. S1 The XRD patterns of Ti, TNT, TNT-D, TNT-D-Ag, Ag-D-1CaP and Ag-D-3CaP

The pristine and surface-functionalized Ti samples were subjected to XRD analysis. Except for the typical Bragg diffraction peaks of Ti substrate at 20 values of
38° and 40°, the ones assigned for anatase (TNT) were also observed after the anodization and heat treatment. And the XRD analysis results of the TNT and TNT-D samples had no obvious differences. The successful reduction of Ag by the dopamine that polymerized on TNT surface was also verified by the observation of XRD peaks at 2θ=31.7°, 44.5° and 64.6°, which could be indexed to (100), (200) and (220) planes of Ag.\(^1\,^2\). The Ag-D-3CaP samples displayed predominantly a hydroxyapatite phase peak around 31°, and the peak intensity became much stronger than that of Ag-D-1CaP samples. To be specifically, the XRD peaks located at 25.9°, 31.8°, 46.7°, 59.5° and 53.2° were assigned to the (002), (211), (222), (213) and (004) planes of hydroxyapatite, respectively\(^3\); meanwhile, those broad diffraction peaks suggested the low crystallinity of the deposited hydroxyapatite\(^4\).

3. References