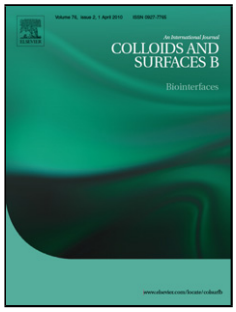
# Accepted Manuscript

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# Antibacterial and anti-biofouling coating on hydroxyapatite surface based on peptide-modified tannic acid

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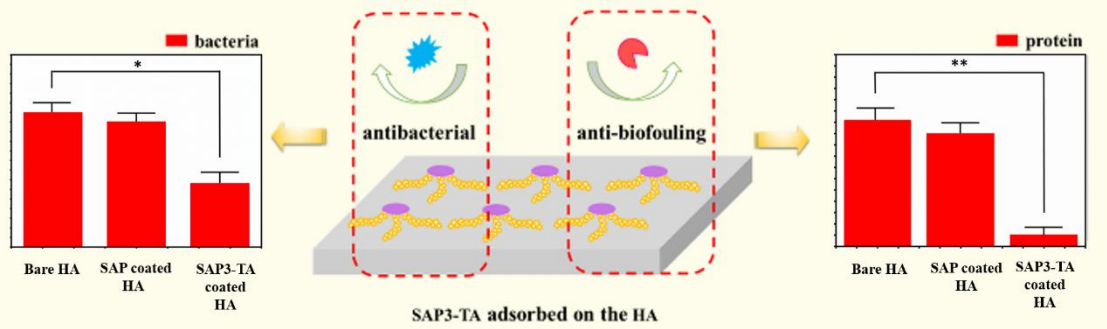
## Graphical Abstract

A bio-inspired peptide-modified tannic acid exhibits specific adsorption on hydroxyapatite and antibacterial / anti-biofouling properties.




## Hightlights

- DDDEEKC modified tannic acid can effectively coat on hydroxyapatite (HA) surface.
- SAP3-TA coated HA surface can reduce current implant infection problem.
- Super-hydrophilic is the antibacterial and anti-biofouling mechanism of SAP3-TA.

Hydroxyapatite-based implant is widely used in the fields of artificial teeth and bones. However, the problem of microbial communities on hydroxyapatite surfaces remain a great challenge. In order to inhibit bacterial adhesion and activity in a long term, a salivary acquired pellicle (SAP) bioinspired tannic acid (SAP3-TA) is synthesized and characterized. The SAP inspired peptide sequence DDDEEK has a good adsorption performance on the surface of hydroxyapatite (HA). Tannic acid (TA) is a natural polyphenolic compound that can be extracted from green tea, and it has been proved to have an effective antibacterial property. After the coating of SAP3-TA on HA slices, the water contact angle is decreased to 14.2° and the HA surface becomes super-