

## SUPPORTING INFORMATION

### **Strontium-incorporated Nanoporous Titanium Implant Surface for Rapid Osseointegration**

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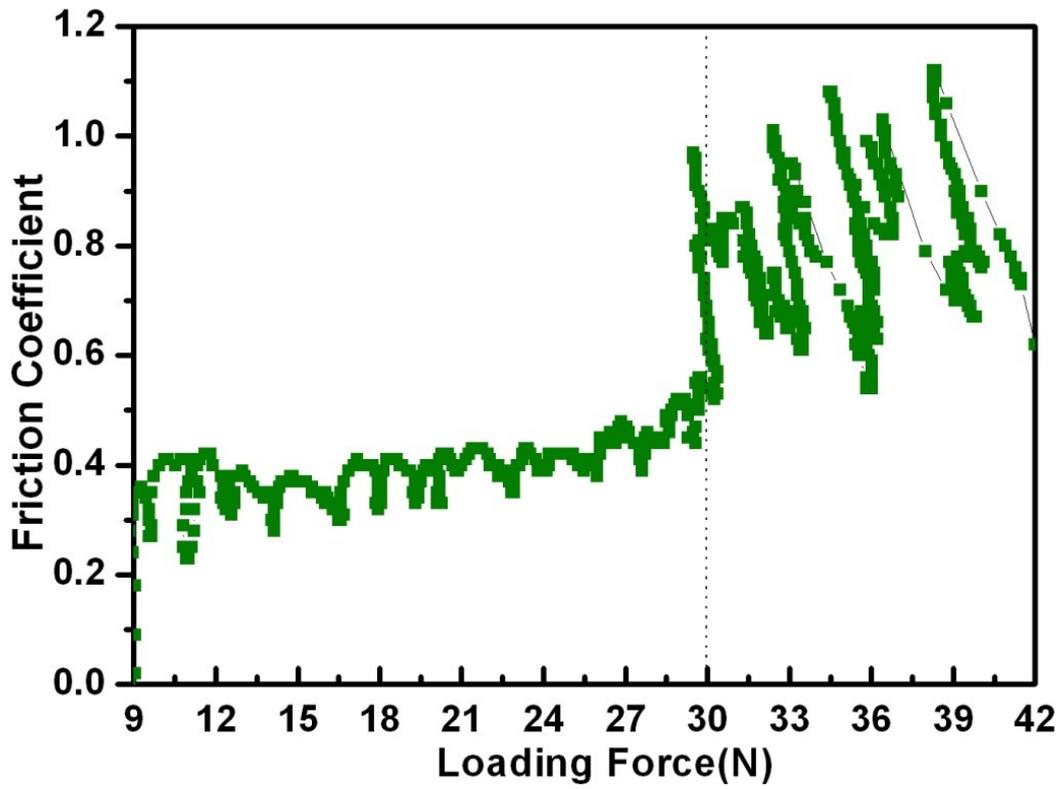
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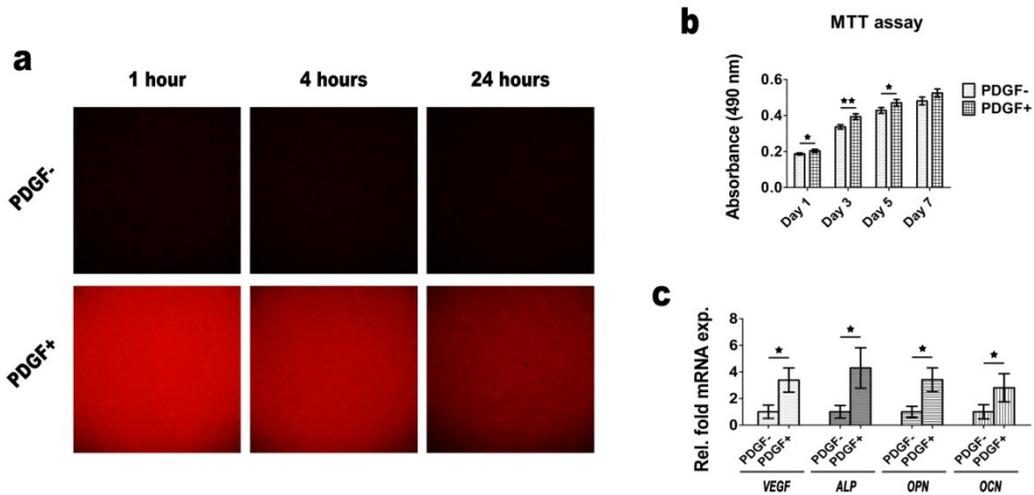
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**Table S1:** Primers for RT-PCR assay.

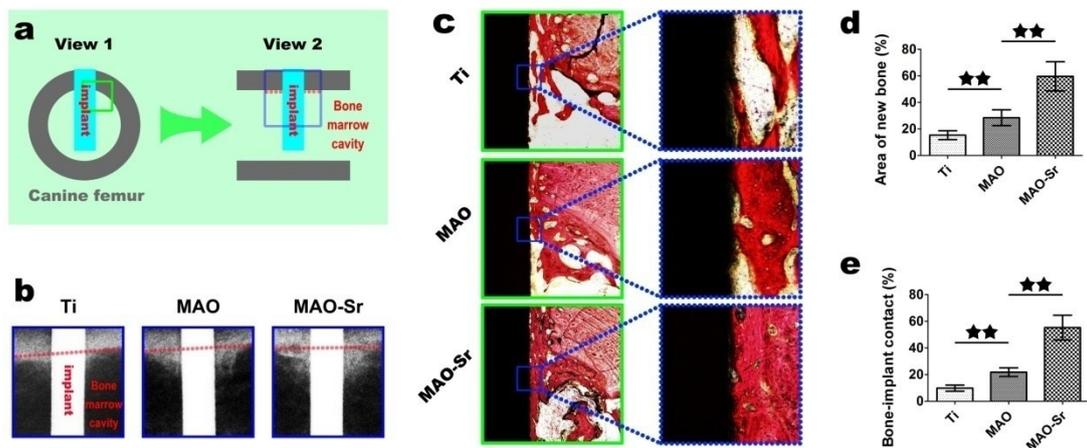
<b>Gene</b>	<b>Prime sequence (F, forward; R, reverse; 5' to 3')</b>	<b>Product length (bp)</b>	<b>Accession number</b>
<b>GAPDH</b>	F: TTCGACAGTCAGCCGCATCTT R: ATCCGTTGACTCCGACCTTCA	79	XM_848580.1
<b>Integrin <math>\beta</math>1</b>	F: AATGTAACCAACCGTAGC R: TTCGGAAGTCTGAAGTAATC	265	XM_535143.3
<b>VEGF</b>	F: CCCGGTATAAACCTGGAGC R: ACGCGAGTCTGTGTTTTTGC	113	NM_001003175.2
<b>PDGF-BB</b>	F: CGCTCTTCCTGTCTCTCTGC R: TCTCCAGAATGGGATCGGGT	196	NM_001003383.1
<b>ALP</b>	F: CAGACAGGTGCCAGATAGCG R: GCGTCCGAGTACCAGTTGC	258	XM_534605.4
<b>OPN</b>	F: CACTGACATTCCAGCAAC R: CTTCCATACTCGCACTTT	188	XM_535649.2
<b>OCN</b>	F: GTCCAGCAGATGCAAAGCC R: CCAGCCCAGAGTCCAGGTAG	120	XM_547536.2



**Fig. S1.** Friction coefficient vs. loading force curve acquired in MAO-Sr group by scratching the fabricated coating with a loading speed of 100N/min. A break point of friction coefficient was identified at about 30N, indicating that the coating was broken at this loading point. Therefore, this force was identified as the adhesion strength of the coating.



**Fig. S2.** The bioactive effects of rhPDGF-BB loaded MAO coating. (a) Enhanced fibronectin aggregation on the rhPDGF-BB loaded coating was detected by immunofluorescence assay. (b) MTT assay results showed the proliferation activity of canine BMSCs seeding on the coatings with or without rhPDGF-BB. Error bars represent SD (n=3). (c) RT-PCR results displayed the expression of VEGF, ALP, OPN, and OCN in canine BMSCs after 3 days culture on different coatings. Error bars represent SD (n=3). (★, represents  $p < 0.05$ ; ★★, represents  $p < 0.01$ ).



**Fig. S3.** The rapid osseointegration evaluation in the canine femur implantation model. (a) Schematic representation of the selected observation regions (green rectangular area in view 1 and the blue one in view 2). (b) X-ray images showed newly- formed bones protruding into the bone marrow cavity (red dash lines indicated the border of the cavity). (c) Histological sections stained with Van Gieson's picro fuchsin solution. (d-e) The statistical results of the percent of BIC and the area of newly-formed bones around the implants. Error bars represent SD (n=3). (★★, represents  $p < 0.01$ ).