Supporting information

Nano Ag/ZnO Incorporated Hydroxyapatite Composite Coatings: Highly Effective Infection Prevention and Excellent Osteointegration

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Keywords: Antibacterial; Implant; Osteointegration; Laser cladding; Composite coating; Infection prevention

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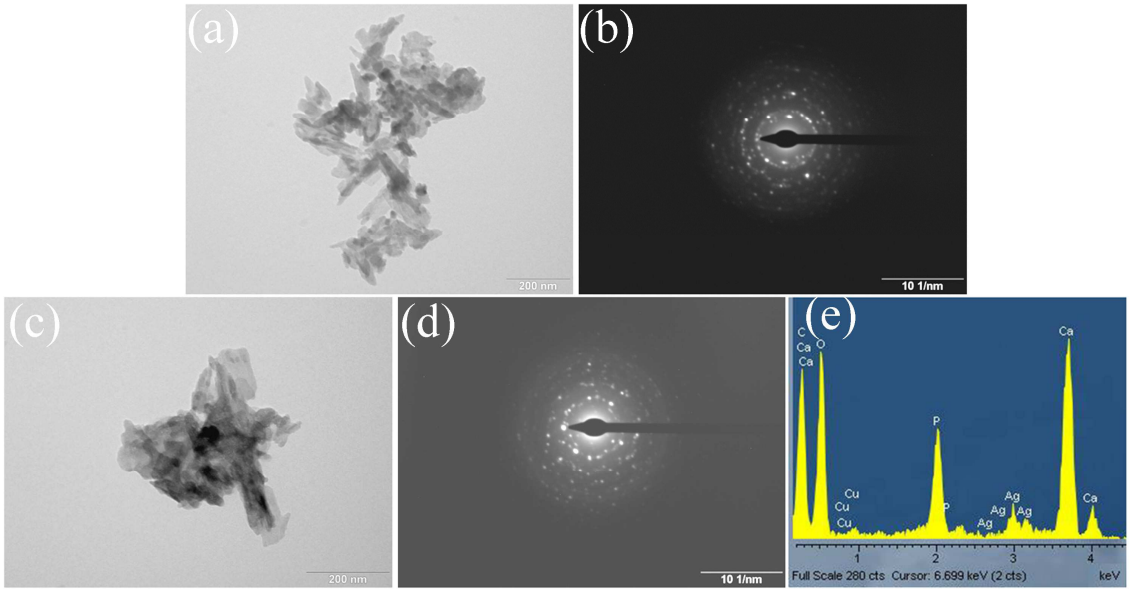

Figure S1. (a) TEM image of HA powders;(b) Selected-area electron diffraction (SAED) pattern of HA powders; (c) TEM image of Ag10ZnO0HA powders; (d) SAED pattern and (e) EDS scan of Ag10ZnO0HA powders.

Section S2. The Contact angles of samples

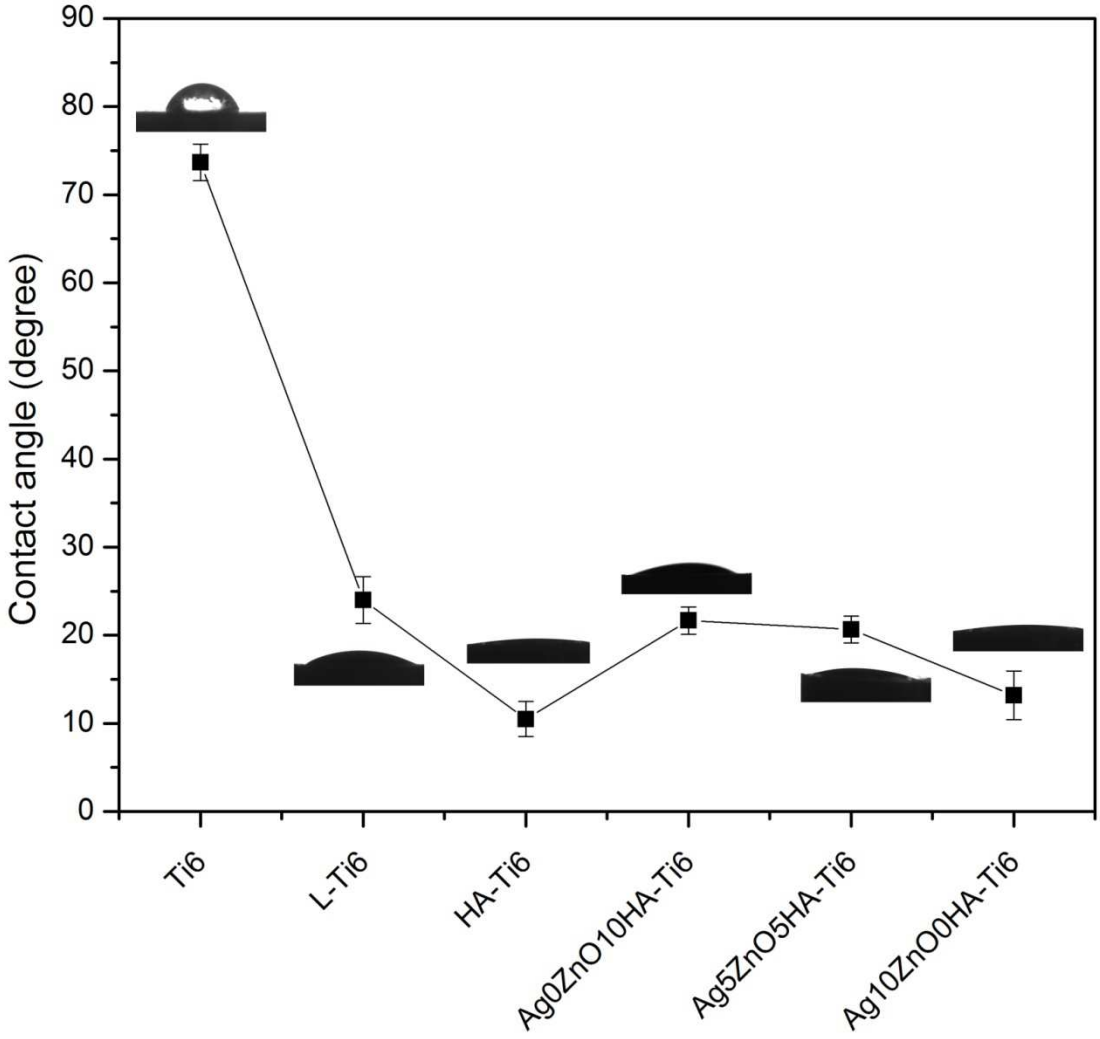

Figure S2. Contact angles on Ti6, L-Ti6, HA-Ti6, Ag0ZnO10HA-Ti6, Ag5ZnO5HA-Ti6, and Ag10ZnO0HA-Ti6.

Section S3. The antibacterials tests for *E. coli* and *S. aureus*.

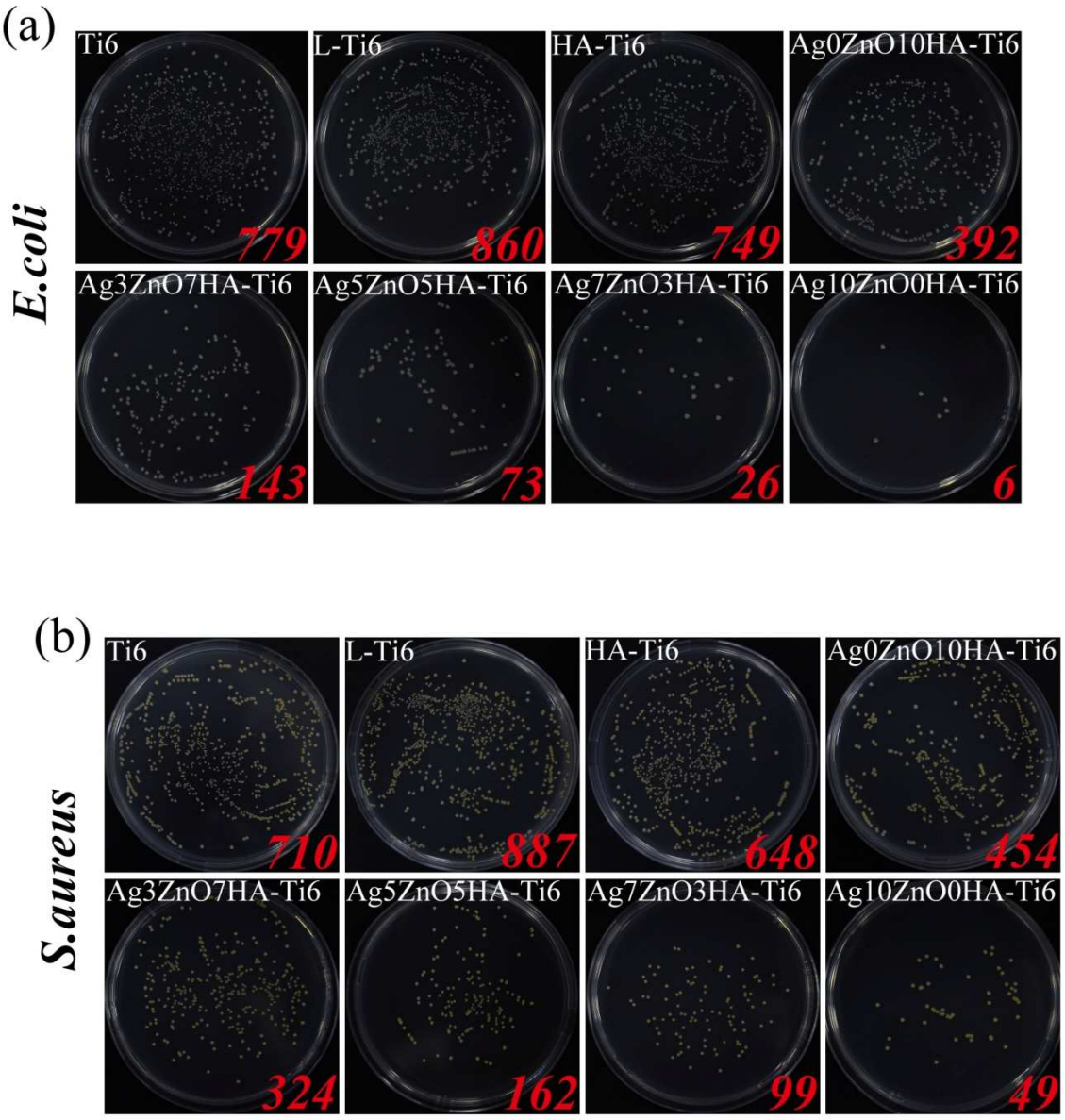

Figure S3. Plate counting of all samples for (a) *E. coli* and (b) *S. aureus*.

Section S4. The surface analysis of materials by SEM

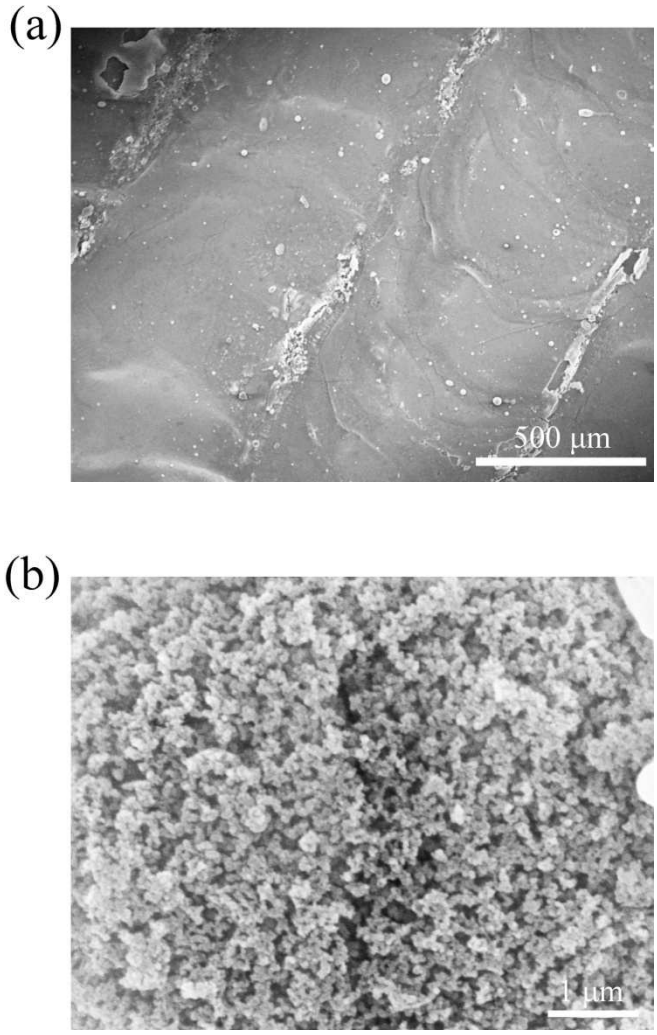

Figure S4. (a) Low-magnification SEM image of L-Ti6 and (b) High-magnification SEM image of L-Ti6.

Section S5. The non-mineralized section of MC3T3-E1 cell

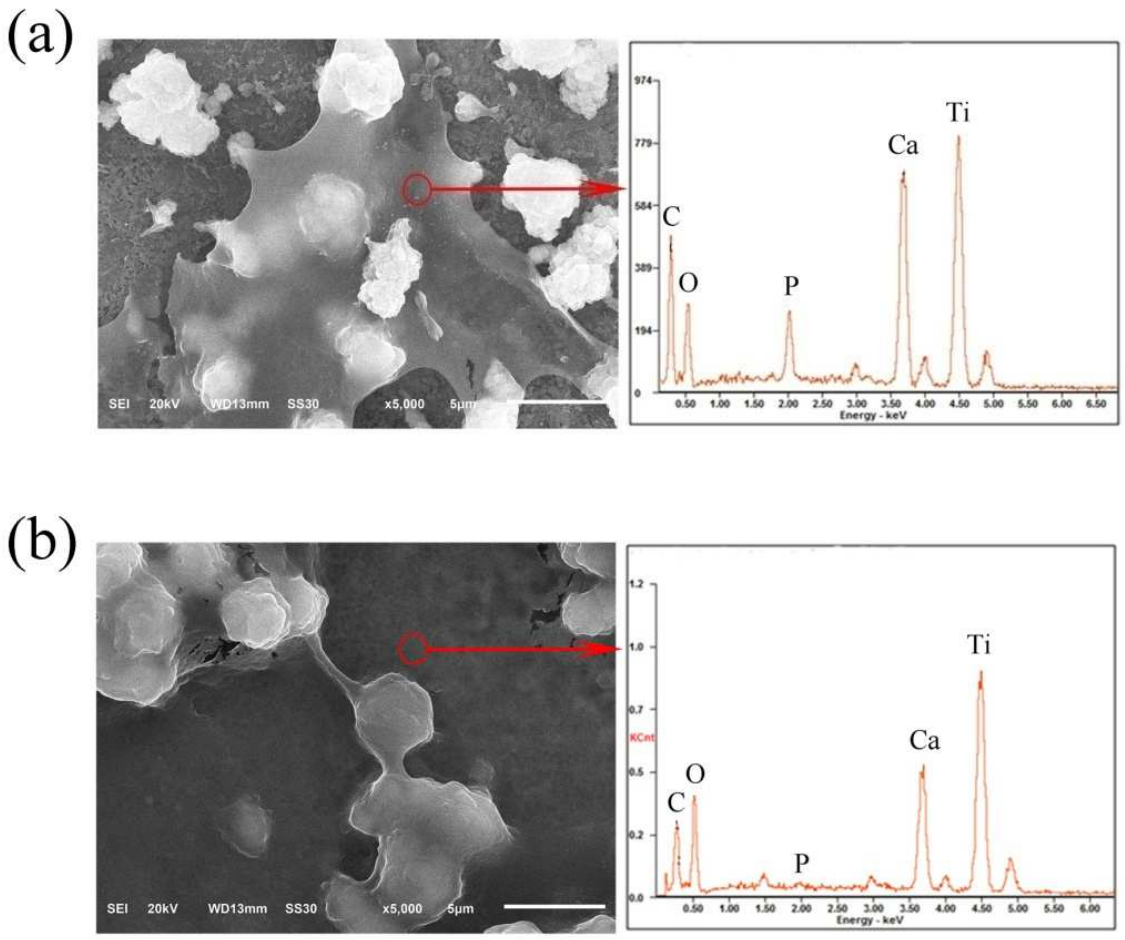

Figure S5. SEM images of MC3T3-E1 cell incubated on Ag7ZnO3HA-Ti6 (7:3:90, wt%) and EDS scan of the non-mineralized section after (a)10 days and (b) 20 days.

Section S6. The osteogenesis effect of samples

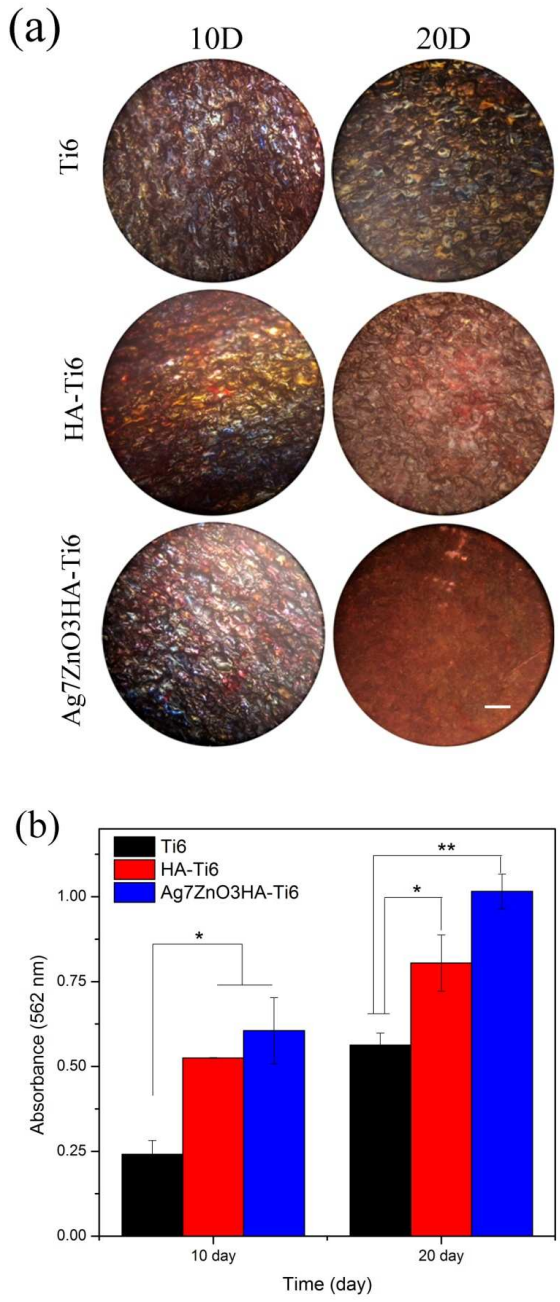

Figure S6. (a) Alizarin red staining of cell seeded on Ti6, HA-Ti6, and Ag7ZnO3HA-Ti6 (7:3:90, wt%) after 10 days and 20 days (scale bar = 200 μm); (b) Quantitative analysis of the Alizarin red staining samples cultured for 10 days and 20 days.

Section S7. The sample implanted effect

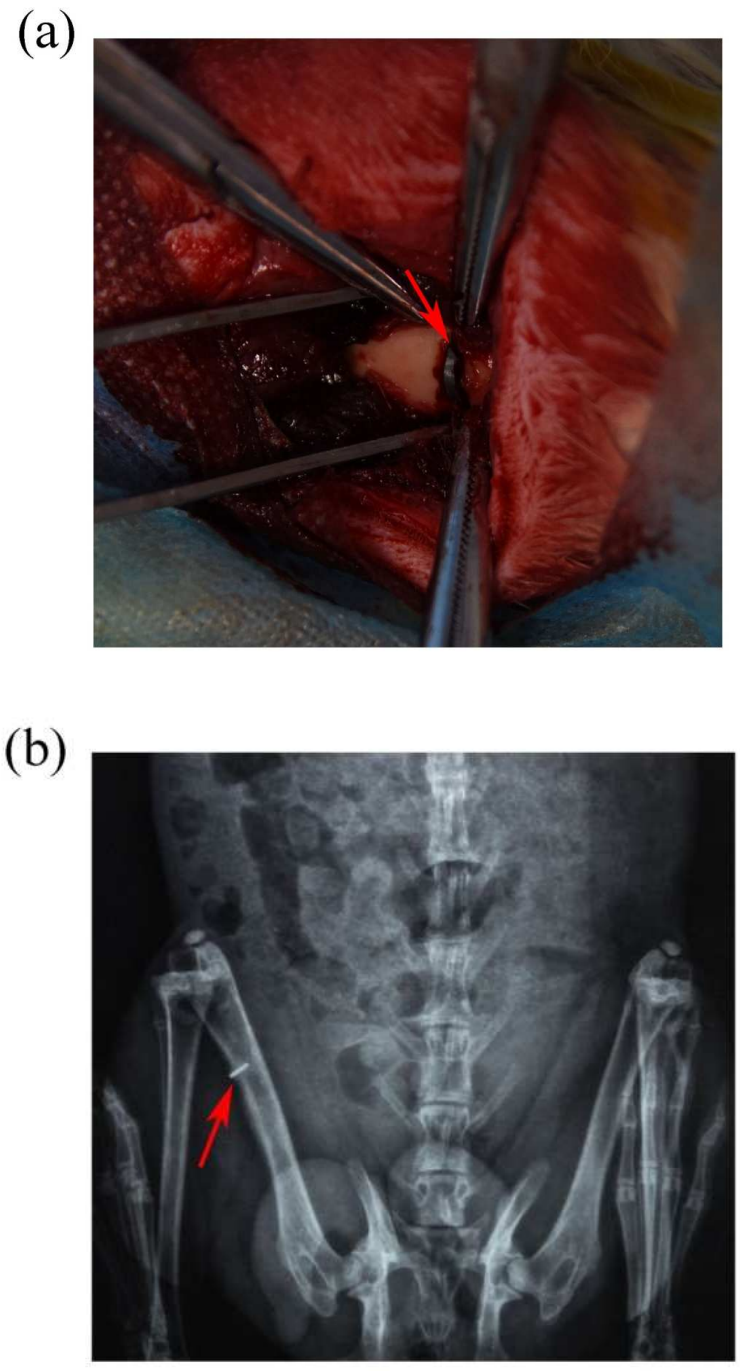

Figure S7. (a) Image of the sample implanted in the rabbit femur and (b) X-ray photo after 5 weeks.