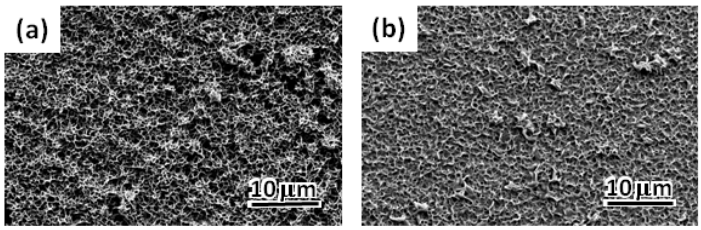

Fig. S1

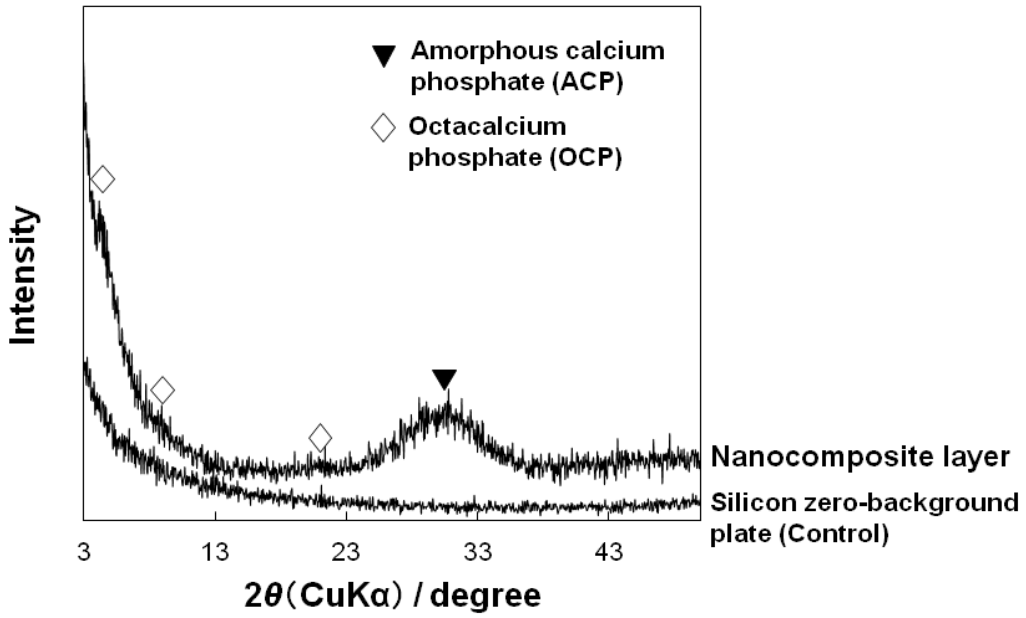

Fig. S2

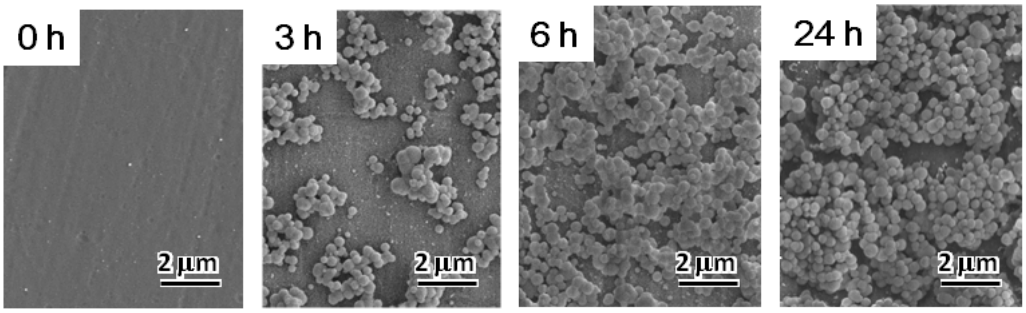

Fig. S3

Table S1 Chemical composition of the labile CaP solution.

Constituent	Concentration
Na^+	131.42 mM
K^+	7.17 mM
Ca^{2+}	3.68 mM
Mg^{2+}	0.22 mM
Cl^-	126.68 mM
$H_2PO_4^-$	1.83 mM
HCO_3^-	15.15 mM
CH_3COO^-	1.80 mM
Xylitol	29.53 mM
DNA	40 µg mL^{-1}

Table S2 Source solutions to prepare the labile CaP solution.

Source solution	Reagents used for source solution	Concentration	vol %
DNA solution	• Plasmid including luciferase cDNA	DNA 0.8 mg mL^{-1}	5.00
Calcium solution	• Ringer's solution OTSUKA • Calcium Chloride Corrective Injection 1 mEq mL^{-1}	Ca^{2+} 4.792 mM	76.74
Phosphate solution	• Klinisalz® • Dipotassium Phosphate Corrective Injection 1mEq mL^{-1}	$H_2PO_4^-$ 20.0 mM	9.17
Carbonate solution	• MEYLON® Injection 7% • Water for Injection	HCO_3^- 166.6 mM	9.09

Table S3 Dimension and preparation protocol of the PS, pPS, and sAp substrates.

Substrate	Thickness	Shape	Preparation protocol
PS	1 mm	Square (10 mm x 10 mm)	PS pellets (Aldrich Chemical) were hot-pressed into a 1 mm plate. The plate was cut into squares, polished, washed, and dried at 80^0C under vacuum for 24 h.
pPS	1 mm	Square (10 mm x 10 mm)	The PS substrate was treated with oxygen plasma (30 Pa, 0.5 W cm^{-2}, 13.56 MHz, 30 s)[10] using a compact ion etcher (FA-1, SAMCO Inc).
sAp	1 mm	Circle (ϕ = 12.85 mm)	Pure Ap powders (Advance) supplemented with 3 mass% poly(vinyl alcohol) and 1 mass% poly(ethylene glycol) were molded and sintered at 1150^0C for 1 h.