

임플란트용 골유착 유무기 하이브리드 코팅 기술 (Technology of osseointegration organic-inorganic hybrid coating for dental implants)

박경희<sup>†</sup>

전남대학교 치의학전문대학원 치과재료학교실

(see0936@chonnam.ac.kr<sup>†</sup>)

In this study, nucleation and growth of bone-like hydroxyapatite (HAp) mineral in modified simulated body fluids (m-SBF) were induced on chitosan substrates, which were prepared by spin coating of chitosan on the Ti substrate. The m-SBF showed a two fold increase in the concentrations of calcium and phosphate ions compared to SBF, and the post-NaOH treatment provided stabilization of the coatings. The calcium phosphate/chitosan composite prepared in m-SBF showed homogeneous distribution of approximately 350 nm-sized spherical clusters composed of octacalcium phosphate (OCP;  $\text{Ca}_8\text{H}_2(\text{PO}_4)_6 \cdot 5\text{H}_2\text{O}$ ) crystalline structure. Chitosan provided a control over the size of calcium phosphate prepared by immersion in m-SBF, and post-NaOH treatment supported the binding of calcium phosphate compound on the Ti surface. Post-NaOH treatment increased hydrophilicity and crystallinity of carbonate apatite, which increased its potential for biomedical application.