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### Effects of nano-/micro-tricalcium phosphate particles on the control of alginate film properties for bone tissue engineering and microfluidics

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The present study investigated the development of biocompatible and micro-thin hybrid film by using alginate,  $\alpha$ -tricalcium phosphate nano/micro-particle and calcium chloride through ionic crosslinking as a biomaterial for bone tissue engineering. Control of its diverse properties was developed by using micro-environments such as Screening processing, pHs, compositions of the hybrid films. Physicochemical and biological properties of the films were

evaluated by SEM, UV-VIS, NMR, swelling properties as well as drug delivery from the films. The hybrid films showed excellent biocompatibility as judged by in vitro bone cell tests at different pHs and cytotoxicity over time. Currently, applications of thin/flexible hybrid films to micro-fluidics and tissue engineering are under processing. Microfluidic tubing system has been fabricated by 3D bioprinting system and biodegradable polymers in our lab.

#### Biography

Insup Noh has completed his PhD from University of Texas at Austin, USA, in 1997 and Postdoctoral Studies from Division of Harvard University, MIT Health Science and Technology, USA. He is the Director of Functional Biomaterials and Tissue Engineering in Seoul National Univ. of Science and Technology, Korea. He has published more than 120 papers in reputed journals and has been serving as an Editor-in-Chief of Biomaterials Research from 2014.

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