

Fabrication of alendronate incorporated calcium phosphate microspheres

고일환^{1,2}, 이진형^{1,*}, 장정호¹

¹한국세라믹기술원; ²인하대학교

(leejinh1@kicet.re.kr*)

This work will present the synthesis of alendronate incorporated CaP at room temperature for applying to bone engineering. The key process for the fabrication of hydroxyapatite microsphere is the use of urease to adjust the reaction pH upto neutral through the decomposition of urea. The acidic reaction solution is mixed with dissolved hydroxyapatite, urea, urease, and alendronate, and then form the water-in-oil emulsion by addition of the mixture solution into mineral oil. This emulsion is homogenized, and then collected by the centrifugation. Obtained alendronate incorporated hydroxyapatite microspheres are shown the homogeneous particles sizes in the range of 200-300 μ m. This preliminary result should be applied to biomedical field as an injectable bone filler with the controlled drug release materials.