

Ary Andini, 2012. Potency of Collagen from Sangkuriang Catfish (*Clarias gariepinus var*) Skin as Collagen-Hydroxyapatite Scaffold for Bone Tissue Engineering. Skripsi under guidance by Dyah Hikmawati, S.Si, M.Si and Dr. Sri Sumarsih, M.Si, Physics Departement of Faculty of Sains and Technology, University of Airlangga, Surabaya

The research has been synthesized of collagen-hydroxyapatite based on collagen from Sangkuriang Catfish. The purpose of the study was to determine the percentage of collagen from Sangkuriang Catfish (*Clarias gariepinus var*) skin and discovers of collagen-hydroxyapatit scaffold characterization based collagen from Sangkuriang Catfish skin. Skin of Sangkuriang Catfish was extracted by acetic acid for 24 hour, was divided into 0%, 5%, 10%, 15%, 20% and 25% against hydroxyapatite. Collagen-hydroxyapatit scaffold was carried out by in situ method. Characterization of collagen-hydroxyapatit scaffold was tested by porosity, density, FTIR, SEM, and for cytotoxicity was used MTT Assay. The percentage of collagen from Sangkuriang Catfish skin was 25,18%, and the results showed that collagen has an influence on the collagen-hydroxyapatit scaffold properties, exactly density, porosity and compressive strength. The best collagen-hydroxyapatite scaffold properties for density and compressive strength belongs to 10% collagen-hydroxyapatit scaffold which has 0,1867 gr/cm³ of density, and 14,950 KPa of compressive strength. The best porosity of scaffold belongs to 25% collagen-hidroxyapatite scaffold. FTIR spectrum analysis proved that composition of scaffold were hydroxyapatit and collagen, image of SEM ilustrated the surface of scaffold was founded makroporous of scaffold was $\pm 3,316\mu\text{m}$, and depend on MTT assay, it was not toxic as medical application. Hence, collagen from Sangkuriang Catfish can be used for collagen-hydroxyapatit scaffold as implant for bone tissue *engineering*.

Key Word: Scaffold, Collagen-Hydroxyapatite, Tissue Engineering, Clarias gariepinus var, Bone Tissue Engineering