

**ABSTRACT****Comparison of *Nano Hydroxyapatite and Bovine Hydroxyapatite* as  
*Bone Graft*  
*Literature Review***

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Bone is a part of skeleton in human body. Bone is a heterogen material consist of hydroxyapatite mineral. Fracture mostly caused by an injury or trauma. Bone grafting is a treatment which is used to repair damaged bone structure with spesific materials, synthetic or natural minerals. The search of bone graft material is to obtain cost effective, safe, easy to process, and simple material. This literature review aims to compare the proliferation of bone cell with nano hydroxyapatite and bovine hydroxyapatite (BHA). This study uses the literature review method. Keyword used in article search include nano hydroxyapatite, bovine hydroxyapatite, bone cell proliferation and bone graft. This literature review by reviewing six scientific articles containing the result of characterization and bone cell proliferation bonegraft from nano hydroxyapatite and BHA. Nano hydroxyapatite has a large surface area. This matter affects the amount of protein adsorbed on the surface of the particles is getting bigger, it can bind faster to proteins so that the process of healing is faster. BHA has the chemical elements sodium, magnesium and carbonate groups that can speed up the bone remodeling process. From these data, it was found that both materials can increase bone cell proliferation. Both materials have the ability to increase osteoblastic activity as indicated by the expression of genes that indicate osteoblast differentiation activity namely ALP, OCN and osteocyte formation in defective bone. The difference in ability bone cell proliferation is influenced by the physicochemical properties of the two materials as bone graft.

**Keyword:** *bovine hydroxyapatite, nano hydroxyapatite, bone graft, bone proliferation.*