ABSTRACT
Effect Salmon Calcitonin and Submaximal Exercise on Bone Density in Growing Rat

Bone mineralized always increase and decrease though the remodelling process. Remodelling bone consists of two processes, bone formatted by osteoblast and bone resorption by osteoclast. Growing period is the best period to increase bone density. The research purpose was to prove submaximal-intensity exercise and salmon calcitonin effect in the bone density. This research method used design of the randomized post test only control group design. We compared femur bone density in 24 male norvegicus rats aged six weeks that were divided into four groups: controls, calcitonin, exercise, combine. Exercise group swam once a day and three times a week, calcitonin group was given synthetic salmon calcitonin injection 2 IU/100 gram of rat weight everyday and combine group was treated both of exercise and calcitonin injection. After eight weeks, rat femur bone density measured using ultrasound and bone mass measured using analytical balance, length and diameter bone measured using vernier caliper. The result was the combine had higher bone density (p=0.001) and bone mass (p=0.004) compared to other groups and no effect in length bone and diameter bone. The conclusion was the combination of exercise and salmon calcitonin can increase bone density and bone mass in growing rat.

Keywords: submaximal exercise, calcitonin salmon, bone density.