Osteoporosis or often referred to as bone loss is one of the diseases with the highest prevalence at the age of postmenopausal. Treatment using conventional medicines to treat osteoporosis has many side effects. Therefore, alternatives are sought by using plants that have potential as antiosteoporosis to minimize the side effects of conventional medicines. This study aimed to study the antiosteoporosis activity of 96% ethanol extract and the fractions of n-hexane, ethyl acetate, butanol, and aqueous of \textit{Elaeocarpus serratus} L leaves that were tested on 7F2 osteoblast cells to determine viability and proliferation. Based on the results, the highest proliferation activity found on the butanol fraction with the value of 136.62 ± 12.48 at 10 \( \mu \text{g/ml} \); 143.64 ± 12.45 at 100 \( \mu \text{g/ml} \) and aqueous fraction with the value of 131.79 ± 2.94 at 10 \( \mu \text{g/ml} \); 144.51 ± 15.19 at 100 \( \mu \text{g/ml} \). It expressed by the % stimulation of ALP enzymes on osteoblast cells. So, the aqueous and butanol fractions of \textit{Elaeocarpus serratus} L leaves to be the candidates as an antiosteoporosis drug by increasing bone mass through an increase in the ALP enzyme. Keywords: Bone mass, 7F2 Cell, Osteoblast, \textit{Elaeocarpus serratus} L.

Plants had been widely used by people, which is used as traditional medicine without known the chemical content of it [5]. So, it was necessary to explore many plants, especially in forest that had potential activity. Forest plants were obtained from the Baung Purwodadi Forest (Pasuruan, East Java, Indonesia). Ethanol 96% extract from \textit{Elaeocarpus serratus} L leaves had the highest activity of increased the ALP enzyme [6]. So, after obtained the ethanol 96% extract, we continued with fractionation liquid-liquid partition method (n-hexane, ethyl acetate, butanol and water). The solvents were selected based on the degree of polarity [4]. For cellular ALP activity assay on 7F2 osteoblast cells, we used ALP enzyme as the biochemical marker because it was represented the bone formation process of osteoblasts which can increased bone mass with an easy and cheap method. Ethanol 96% extract, n-hexane, ethyl acetate, butanol and water fractions had the same activity on the increase in the ALP enzyme but aqueous and butanol fractions the ones of had the highest activity on increased ALP enzyme that can be the marker of bone formation.

\textbf{REFERENCE}