ABSTRACT

Background: Garcinia mangostana L is tropical fruit that can be found in forest of Southeast Asian countries. Garcinia mangostana is alternative medicine because it have antioxidant, antibacterial, anti inflammatory and antitumor. Garcinia mangostana used as herbal materials due to containing important material such as mangostine, tanin, xanthone and flavonoid. Flavonoid has reported to have antioxidant, antiviral, antibacterial and anti inflammatory that effective as root canal irrigation alternative medicine. Viability assay was one of the biocompatibility test conducted to determine the effect of flavonoid on cell before used as herbal drugs material. Purpose: this study was aimed to knowing the concentration of extract flavonoids of mangosteen pericarp that is able to maintain the viability of fibroblasts BHK-21 cells. Method: this study was design as post test only control group laboratory experiment. Garcinia mangostana pericarp was extracted using maceration method with 96% ethanol solvent and flavonoid was took from extract using acetone benzene. Before the viability test, flavonoid mangosteen pericarp extract was made in a series concentration by method of dilution with into 100%, 50%, 25%, 12.5%, 6.25%, 3.125%, 1.56%, 0.78% and 0.39% concentration. Viability was observed after 24 hours using MTT assay technique. Viable cell were measured by optical density of their MTT absorbency, and observed by ELISA reader. Result: this study showed that he extract at concentrations of 100%, 50%, and 25% have false postitve result because the value of absorbancy was high but many of the fibroblast cell were died. At concentration 12.5% and 6.25% had viability cell values below 50% from control cell. At concentration 3.125% and 1.56% had had viability cell values almost same with the control cell. And at concentration 0.78% and 0.39% had viability cell values more than control cell. Conclusion: It can be conclude that the flavonoid mangosteen pericarp extract can maintained the viability of BHK-21 fibroblast cell at a concentration 3.125% and 1.56%.

Keywords : Garcinia mangostana, viability, BHK-21 fibroblast cell