

TOXICITY OF TANNINS FROM MANGOSTEEN (*Garcinia mangostana* *L.*) PERICARP TO FIBROBLAST BHK - 21

ABSTRACT

Background. Oral disease is a problem suffered by 90% of the population in Indonesia. Problems encountered in the field of dentistry today is almost all materials used in dental root canal treatment is a chemical and have harmful side effects of material which is a therapeutic agent or active and toxic chemicals. One alternative materials that can be used is mangosteen (*Garcinia mangostana* L.). Active compound content of the mangosteen pericarp extract has good potential in supporting the success of root canal treatment, but any materials used in dentistry must fulfill the terms of biocompatibility. **Purpose.** The aim of this study was to find out the toxicity of tannin from mangosteen pericarp extract to BHK – 21 fibroblast cell. **Method.** 35,22% tannins that obtained from the extraction of mangosteen pericarp equated to 100%. Tannin from mangosteen pericarp extract at the concentration 1,5%, 3,125%, 6,25%, 12,5%, 25%, 50% and 100% applied on BHK – 21 fibroblast cell. Toxicity of the substance can be seen from the ability of cells to proliferate after treatment and was calculate by the percentage of viable cell formula. Cell which capable to proliferate will produce mitochondrial enzyme through the respiration process that can be measured using MTT assay method by ELISA reader. **Result.** Percentage of viable cell BHK – 21 fibroblast cell culture exposed to the concentration of 1,5%, 3,125%, 6,25%, 12,5%, 25%, 50% and 100% were 110,7%, 110,7%, 68%, 76,8%, 81,6%, 99,6% and 90,5%. **Conclusion.** Tannins from the mangosteen peel extract exhibits slightly toxic at concentrations of 2,2% and is not toxic at concentrations of less than 2,2%..

Keywords: Tannins, Mangosteen pericarp extract, toxicity