The Effect of the Application of Mangosteen Peel Extract (Garcinia *mangostana Linn.) towards TGFβ*-1 Expression on Human Gingival Fibroblast Cell Culture
(in vitro study)

ABSTRACT

Background: Tooth extraction caused an injury to the tooth socket and the process of wound healing which has four phases: hemostasis, inflammation, proliferation, and remodeling. Inflammation phase will stimulate the migration *and the expression of TGFβ*-1 which can accelerate the proliferation of fibroblast. Mangosteen peel extract contain saponin that has activity as an anti-inflamatory that can help the process of fibroblast proliferation. **Purpose:** The aim of this study was to investigate the effect of the application of mangosteen peel extract *towards TGFβ*-1 expression on human gingival fibroblast cell culture. **Methods:** Human gingival fibroblast cell culture divide on 6 well plates for each category: control 24 and 48 hours, the treatment of 24 and 48 hours. The treatment groups were given mangosteen peel extract at concentration 800µg/ml. then the extraction of the RNA was done and the RNA were processed by PCR assay. **Results:** Group of the treatment 24 and 48 hours show a brighter band than the control group 24 and 48 hours. The score of 24 hours group not as significant as the 48 hours group. **Conclusion:** The application of the mangosteen peel extract *can increase the expression of TGFβ*-1 on human gingival fibroblast cell culture.

Keywords: *Mangosteen peel extract, growth factor, TGFβ*-1,PCR assay, human gingival fibroblast.