

ABSTRACT

Background: Irrigation is an important stage in root canal treatment, but irrigation have a risk of extrusion into the apical foramen which can cause periapical complications. Therefore, the irrigation solution must have minimal toxicity. Sodium hypochlorite (NaOCl) is the most commonly used irrigation solution, due to its antibacterial ability and dissolve necrotic tissue, vital pulp tissue, and organic components, but it cause damage if it is in contact with periapical tissue. The pericarp of Mangosteen (*Garcinia mangostana* L.) has biological activities such as anti-inflammatory, antioxidants, antibacterials which can be used as alternatives to irrigation solutions. **Purpose:** The aim of this study is to finding the cytotoxicity of sodium hypochlorite and ekstrak of mangosteen peel on human periodontal ligament fibroblast cell (HPDLFc). **Methods:** HPDLFc were cultured from the roots of premolars extracted for orthodontic reasons, then the cells were divided into groups and exposed to NaOCl and pericarp of Mangosteen in various concentrations then tested with MTT assay and read with Elisa reader. Calculation of cell death was performed and followed by calculating LC₅₀ with probit analysis. **Result:** NaOCl is toxic at concentration of 0,25µl/ml or greater, ekstrak of mangosteen peel was toxic at concentration of 2,099µl/ml or greater. **Conclusion:** NaOCl and ekstrak of mangosteen peel have cytotoxicity effect on HPDLFc at a certain concentration.

Keyword: Cytotoxicity, NaOCl, Ekstrak Of Mangosteen Peel, HPDLFc Counts, LC₅₀