ABSTRACT

**Background.** Most cases of dental problems in Indonesia had been identified, and the result is dental caries. On the other side, Indonesia has a high level of variates biodiversity, especially many natural products can be used efficiently and effectively. Moreover, Sepuluh Nopember Institute of Technology Surabaya invented an alternative materials restoration to fill the cavity. Materials that used in this research are a filling material that consists of BIS – GMA and MMA as matrix resin with chitosan and hydroxyapatite as the filler. Chitosan is a biomedicine application which is extracted from processed waste shrimp shell and hydroxyapatite were processed from wasted eggshell. **Purpose.** The aim of this study was to know the cytotoxicity of alternative materials restoration chitosan – hydroxyapatite towards the growth of cell BHK - 21 using MTT assay. **Method.** This research was done towards the culture cell line BHK – 21. Cytotoxic activity of alternative materials restoration chitosan – hydroxyapatite was determined using MTT assay. Living cells were quantified after treatment by ELISA Reader 620 nm. **Results.** Treatment of BHK – 21 living cells after exposure were between 92 – 100 %. **Conclusion.** Alternative materials restoration chitosan – hydroxyapatite have no toxic effect toward culture cell lines BHK – 21 using MTT assay. **Keywords:** Alternative materials restoration, chitosan, hydroxyapatite, cytotoxicity, MTT assay.