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Penulis

ABSTRACT**UJI SITOTOKSISITAS CHITOSAN SCAFFOLD TERHADAP KULTUR HUMAN ADIPOSE-DERIVED MESENCHYMAL STEM CELL (HADMSC)**

Background: Bone defects in alveolar bone are often found in cases with treatment of hemisection and apex resection. Autologous bone graft is a clinical gold standard in the treatment of bone defect. However, the use of bone graft has a limited number of growth factors produced. Tissue engineering has three main components; stem cells, growth factor, and scaffold. Chitosan has a chemical structure similar to glycosaminoglycans, which is one of the main components connected with collagen fibers in the extracellular matrix. In order to be applied as an alternative candidate of bone scaffold material in conservative treatment, the authors are interested in performing cytotoxicity tests on HADMSC. **Objective:** To explain the toxicity of chitosan scaffold against on HADMSC. **Methods:** This research was a laboratory experimental study. In vitro tests were carried out with MTT-assay as a cytotoxicity test. The study was applied into 3 groups of 5 medium each. Group I: medium control, Group II: Cells control group and Group III: HADMSC with chitosan scaffold. The absorbance is read using an ELISA reader. **Results:** There is no significant difference between the cell control group and the treatment group, but both have significant differences with the media control group. This shows that chitosan scaffold is not toxic. **Conclusion:** chitosan scaffold has been proven to be non-toxic towards HADMSC, that it can be candidate as bone scaffold substitute

Key words: chitosan, scaffold, HADMSC, cytotoxicity, tissue engineering