

**THE POTENCY OF GARDENIA JASMINOIDES EXTRACT IN  
INCREASING ANTIBODY SECRETING PLASMA CELL COUNTS IN  
WOUND HEALING PROCESS AFTER WISTAR RATS TOOTH  
EXTRACTION**

**POTENSI EKSTRAK GARDENIA JASMINOIDES DALAM  
MENINGKATKAN JUMLAH SEL PLASMA AKTIF PADA PROSES  
PENYEMBUHAN LUKA PASCA PENCABUTAN GIGI TIKUS WISTAR**

**ABSTRACT**

**Background.** Wound healing process after tooth extraction can result in pain and discomfort that disrupt the function of mastication. A number of treatments such as delivering additional topical drug are necessary to give positive role that can speed up the healing process at the wound site. Plasma cells are components of the humoral immune system, which provide protective immunity at the wound area through the secretion of antibodies. Gardenia jasminoides is one of the herbal plant that contain bioactive compounds which have been studied to show therapeutic effect such as anti-inflammatory, analgesic and antibacteria that may play a positive role in wound healing. **Purpose.** The aim of this study was to identify the potency of Gardenia jasminoides extract in increasing antibody-secreting plasma cells count in the process of wound healing after rat tooth extraction. **Method.** This research is an experimental with post test only control group design. Left mandibular incisor teeth of rats was extracted, then the extract of Gardenia jasminoides gel 3% was applied in tooth extraction's wound in the experimental group, and the PEG gel base in the control group. Furthermore, the antibody-secreting plasma cells count were identified using Immunohistochemistry (IHC) staining method and were observed using a light microscope with 400x magnification on days 3 and 5 after the tooth extraction. then were analyzed using SPSS statistical test. **Results.** Activated plasma cells counts that express IgG were increase on days 3 and 5 after the tooth extraction and the number of activated plasma cells which treated using extract of Gardenia jasminoides gel was higher on day 5 compared to day 3. **Conclusion.** Application of Gardenia jasminoides extract can increase antibody-secreting plasma cells count on days 3 and 5 after the tooth extraction.

**Keywords:** antibody-secreting plasma cells counts, Gardenia jasminoides, tooth extraction, wound healing