

**ABSTRACT**

**Background:** Diabetes mellitus can cause delayed wound healing includes at in oral cavity because TGF  $\beta$  expression and fibronectin formation decreases. Propolis is one of the herbal medicines using as an alternative therapy of oral ulcer. **Objective:** to analyze the role of propolis extract gel application from bee husbandry Malang Lawang Regency on the expression of TGF  $\beta$  and fibronectin in the healing process on Wistar rats traumatic oral ulcer with diabetic. **Methods:** The study was conducted on 27 male Wistar rats divided into three groups. Two groups were induced by 50mg/kg of Streptozotocin, intraperitoneally to provoke hyperglycemia for positive control and treatment groups. One groups without Streptozotocin for negative control. All of the rats were suffered from traumatic ulcer on their lower labial mucosa. The control groups were given with HPMC 5% gel and propolis extract gel was applied on treatment groups. The expression of TGF  $\beta$  and fibronectin was observed on day 3, 5, and 7. Furthermore, rats sacrificed and the lower labial mucosa tissue of rats had been taken for the histopathological anatomy preparation in order to examined of immunohistochemical examination with monoclonal antibodies anti TGF  $\beta$  and monoclonal antibodies anti-fibronectin. **Results:** This study revealed the expression of TGF  $\beta$  and fibronectin increased in the treatment group rather than positive controls resembling expressions in normal conditions. **Conclusion:** Propolis extract gel increasing the expression of TGF  $\beta$  and fibronectin during the healing process of traumatic ulcers on the oral mucosa of diabetic Wistar rats.

**Keywords:** diabetes mellitus, ulcer healing process, TGF  $\beta$  expression, fibronectin expression