

**THE EFFECT OF POMEGRANATE FRUIT EXTRACT STANDARDIZED
40% ELLAGIC ACID TOPICALLY TO THE COLLAGEN DENSITY ON
INCISION WOUND IN ALBINO RAT (*Rattus norvegicus*)**

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ABSTRACT

The aim of this research was to determine the effect of pomegranate fruit extract (PFE) standardized 40% ellagic acid ointment to collagen density on incision wound in rat. Twenty five rats (*Rattus norvegicus*) with 60-90 day ages and 150-180 grams average of body weight were divided into five groups (P0, P1, P2, P3, and P4). P0 (control -) was not treated, P1 (control +) was treated with 10% povidone iodine, P2 was treated with PFE 40% ellagic acid 2,5%, P3 was treated with PFE 40% ellagic acid 5%, and P4 was treated with PFE 40% ellagic acid 7,5%. Treatment had been given directly on incision area topically for fourteen days. The data of histopathological appearance were analyzed with Kruskal-Wallis and continued with Mann-Whitney. Result showed there were significant ($p < 0,05$) different between treatment group. Highest collagen density incision wound occurred in P4 significantly different with other group ($p < 0,05$), giving PFE 7,5% increasing collagen density into score 4-5. Based on the result that the average increasing of collagen density is on PFE 40% ellagic acid treatment, more high PFE 40% ellagic acid concentration more higher the compounds of flavonoid, saponin, alkaloid, tannin, anthocyanidin that contains antibiotic, antiseptic, antioxidant. Ellagic acid when combined with other compositions of pomegranate also serves as a powerful antioxidants specifically anthocyanidin, is an antioxidants that can help improve blood vessels. This research concluded that pomegranate fruit extract (PFE) 40% ellagic acid ointment concentration 7,5% can increased significantly collagen density on incision wound in rat.

Key words : pomegranate fruit, wound healing, collagen