

**THE EFFECT OF STANDARDIZED POMEGRANATE EXTRACT (*Punica granatum*) WITH 40% ELLAGIC ACID AS TOPICAL OINTMENT FOR BURN WOUND IN RAT (*Rattus norvegicus*) ON COLLAGEN FORMATION**

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**ABSTRACT**

The aim of this study was to determine the effect of standardized pomegranate extract with 40% ellagic acid (SPE) ointment on collagen formation for deep second degree burn wound treatment in rat. Twenty five rats (*Rattus norvegicus*) in three months of age, with the 150-180 gram body weight were used. Treatments were consist of five groups (T0, T1, T2, T3 and T4). T0 (control -) were used cream base, T1 (control +) were used 1% silver sulfadiazine, T2 were used 2.5% SPE, T3 were used 5% SPE and T4 were used 10% SPE. Treatments had been given topically for 14 days, two times a day, started at the time after burn wound application. The histopathological analysis were used two variables, collagen density and arrangement. The result were analyzed with ANOVA *Kruskall-Wallis*, followed with *Mann-Whitney* test. The treatment result showed statistically significant means of all the groups ( $p < 0.05$ ). SPE treatments were significantly different compared to silver sulfadiazine treatment. The result showed that T4, 10% SPE, conduced the highest score in both collagen density and collagen arrangement. Standardized pomegranate extract with 40% ellagic acid influenced collagen formation result through its antibacterial, antiinflammatory and antioxidant effects during the healing process of burn wound. The conclusion of this study was the dosage of 10% standardized pomegranate extract with 40% ellagic acid (SPE) ointment can significantly promote collagen formation result in deep second degree burn wound in rat.

**Keywords:** burn wound, standardized pomegranate with ellagic acid, silver sulfadiazine, collagen formation