

INTISARI

Proses penyembuhan luka terjadi melalui empat fase: hemostasis, inflamasi, proliferasi, dan *remodeling*, dengan fibroblas berperan utama pada fase proliferasi. *Nanospray* kombinasi ekstrak bunga telang (*Clitoria ternatea L.*), biji kecubung (*Datura metel L.*), dan kitosan mengandung zat aktif yang berpotensi meningkatkan proliferasi fibroblas. Penelitian ini bertujuan untuk mengetahui pengaruh *nanospray* ekstrak kombinasi bunga telang, biji kecubung, dan kitosan terhadap jumlah sel fibroblas pada penyembuhan luka gingiva tikus *Sprague Dawley*.

Subjek merupakan tikus *Sprague Dawley* jantan dengan berat 250-300 gram berusia 2,5-3 bulan. Tikus sebanyak 45 ekor dibagi menjadi 3 kelompok perlakuan yaitu kitosan *spray* sebagai kontrol negatif, *nanospray* sebagai perlakuan, dan aloclair *spray* sebagai kontrol positif. Pengamatan sel fibroblas dilakukan pada hari ke-1, 3, 5, 7, dan 14 pasca perlakuan. Analisis data menggunakan *Shapiro Wilk* dan *Levene's Test*, *Two-Way ANOVA* dan *Post-Hoc LSD* pada tingkat signifikansi 95%.

Hasil *Two-Way ANOVA* menunjukkan terdapat pengaruh signifikan jenis *spray* ($p < 0,05$) dan durasi pemberian *spray* ($p < 0,05$), sedangkan interaksi antara jenis *spray* dan durasi pemberian *spray* tidak berpengaruh secara signifikan terhadap jumlah sel fibroblas ($p > 0,05$). Hasil uji *Post-Hoc LSD* menunjukkan adanya perbedaan yang signifikan antara *nanospray* dan aloclair, serta antar semua durasi pemberian. Kesimpulan dari penelitian ini adalah *nanospray* kombinasi ekstrak bunga telang, biji kecubung, dan kitosan berpengaruh terhadap jumlah sel fibroblas pada proses penyembuhan luka gingiva tikus *Sprague Dawley*.

Kata Kunci: *Nanospray*, Bunga Telang, Kecubung, Kitosan, Fibroblas, Luka Gingiva

ABSTRACT

The wound healing process occurs in four phases: hemostasis, inflammation, proliferation, and remodeling, with fibroblasts playing a major role in the proliferation phase. Nanospray, made from extracts of butterfly pea flower (*Clitoria ternatea* L.), thorn apple seed (*Datura metel* L.), and chitosan, contains active substances that have the potential to increase fibroblast proliferation. This study aimed to determine the effect of nanospray with these extracts on the number of fibroblast in the healing of *Sprague Dawley* rats gingival wounds.

The subjects were male *Sprague Dawley* rats weighing 250-300 grams and aged 2.5-3 months. A total of 45 rats were divided into three treatment groups, namely chitosan spray as negative control, nanospray as treatment, and aloclair spray as positive control. Fibroblast cell observation was conducted on days 1, 3, 5, 7, and 14 after treatment. Data analysis was performed using Shapiro-Wilk and Levene's Test, Two-Way ANOVA, and Post-Hoc LSD at a significance level of 95%.

Two-Way ANOVA results showed that there was a significant effects of spray type ($p < 0.05$) and duration of spray administration ($p < 0.05$), while the interaction between spray type and duration of spray administration has no significant effect ($p > 0.05$) on the number of fibroblasts. The Post-Hoc LSD test revealed significant differences between nanospray and aloclair, as well as on all observation days. The conclusion of this study is that nanospray combining butterfly pea flower, thorn apple seed, and chitosan extracts has an effect on the number of fibroblasts in the gingival wound healing process of *Sprague Dawley* rats.

Keywords: Nanospray, Butterfly Pea Flower, Thorn Apple, Chitosan, Fibroblasts, Gingival Wound