INTISARI

Candida albicans merupakan salah satu mikroorganisme yang dapat ditemukan pada luka diabetes dan menyebabkan infeksi luka, gangren, amputasi bahkan kematian. *Patch* luka berbasis hidrogel sebagai perawatan luka modern dikembangkan dengan penambahan komponen zat aktif. Penelitian ini bertujuan untuk mengetahui pengaruh *patch* luka hidrogel nanokitosan dengan penambahan *Freeze-dried Platelet Rich Plasma* (FD-PRP), kalsium karbonat dan *cinnamaldehyde* terhadap pertumbuhan jamur *C.albicans.*

Penelitian dilakukan dengan metode *disc diffusion*. Terdapat tiga kelompok, yaitu kelompok kontrol positif berupa *hydrocolloid dressing by* Dermafix®; kelompok perlakuan yaitu *patch* luka hidrogel nanokitosan, *Freeze-dried Platelet Rich Plasma* (FD-PRP), kalsium karbonat, dan *cinnamaldehyde*; dan kontrol negatif berupa *base membrane* gelatin dan nanokitosan. *Patch* dipotong selebar 6 mm dan diletakkan di atas permukaan cawan petri yang sudah diinokulasi jamur *C.albicans*. Pengamatan dilakukan setelah inkubasi selama 24 jam pada suhu 36℃. Perhitungan zona hambat dilakukan dengan mengukur jarak horizontal, vertikal, dan diagonal pada zona hambat yang terbentuk.

Hasil uji *One-way* Anova menunjukkan adanya perbedaan signifikan pada rerata jumlah zona hambat kelompok perlakuan dan kelompok kontrol negatif. Perbedaan signifikan juga terdapat antara kelompok perlakuan dan kelompok kontrol positif. Kesimpulan penelitian ini adalah *patch* luka hidrogel nanokitosan dengan penambahan kalsium karbonat, *Freeze-dried Platelet Rich Plasma* (FD-PRP) dan *cinnamaldehyde* berpengaruh terhadap zona hambat pertumbuhan Jamur *C.albicans*.

Kata Kunci: *Patch* hidrogel nanoktiosan, *Freeze-dried Platelet Rich Plasma* (FD-PRP), *Cinnamaldehyde*, Kalsium karbonat, *Candida albicans*.

ABSTRACT

Candida albicans is a microorganism that can be found in diabetic wounds and causes wound infections, gangrene, amputation or death. Modern wound care hydrogel patches are developed added with active components. This study aims to determine the effect of hydrogel patch based on nanokitosan with the addition of Freeze-dried Platelet Rich Plasma (FD-PRP), calcium karbonat, and cinnamaldehyde on the growth of *C.albicans*.

The research was conducted using the disc diffusion method. There were three groups: the positive control group, which used hydrocolloid dressing by Dermafix; the treatment group, consisting of hydrogel patch with nanokitosan, Freeze-dried Platelet Rich Plasma (FD-PRP), calcium carbonate and cinnamaldehyde; and the negative control group, consisting of base membrane made of gelatin and nanokitosan. Patch samples were cut into discs of 6 mm diameter and placed on the surface of petri dishes inoculated with *C.albicans*. Observations were carried out after 24 hours of incubation at 36℃. The inhibitin zone was measured by assesing the horizontal, vertical, and diagnoal distances of the formed inhibition zone.

The result of the one-way ANOVA test showed significant differences in the mean inhibition zones bertween the treatment group and the negative control group. Significant differences were also found between the treatment group and the positive control group. The conclusionof this study is that hydrogel wound patches containing nanokitosan, calcium carbonate, Freeze-dried Platelet Rich Plasma (FD-PRP) and cinnamaldehyde influence the inhibition zone of *C.albicans* growth.

Keyword: Hydrogel nanokitosan patch, Freeze-dried Platelet Rich Plasma (FD-PRP), Cinnamaldehyde, Calcium Carbonate, *Candida albicans.*