

**AKTIVITAS ANTIBAKTERI NANOKURKUMIN TERHADAP  
SAMPEL SWAB LUKA PASIEN DIABETES**

**SKRIPSI**

**Diajukan sebagai salah satu syarat untuk memperoleh gelar  
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**ABSTRAK**  
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**Abstrak**

Luka diabetes menjadi kondisi ulserasi kronis yang terjadi pada kaki penderita diabetes melitus disebabkan oleh beberapa bakteri diantaranya adalah *Staphylococcus sp.* dan *Klebsiella sp.* Kitosan dan kurkumin memiliki karakteristik antimikroba namun kurkumin memiliki ketersediaan hayati yang sangat rendah. Menggabungkan kurkumin dengan kitosan merupakan salah satu cara potensial untuk meningkatkan mutu kelarutan dalam air kurkumin dan meningkatkan efektivitasnya yaitu dibuat dengan nanopartikel. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri nanokurkumin secara *in vitro*. Konsentrasi yang digunakan uji daya hambat nanokurkumin adalah 15%, 12.5%, 10%, 7.5%, 5%, 2.5% .Diperoleh hasil pada konsentrasi tertinggi 15% termasuk kategori kuat ( $13,5 \pm 0,2$  mm) dan pada konsentrasi paling rendah 2,5% termasuk kategori sedang ( $8,7 \pm 0,6$  mm). Hasil Uji *Minimum Inhibitory Concentration* (MIC) dengan menggunakan konsentrasi 2.5%, 1.25%, 0.625%, 0.313%, 0.156%, 0.078% diperoleh pada konsentrasi 1,25% artinya nanokurkumin ini baik dalam menghambat bakteri luka diabetes kemudian dilanjutkan uji *Minimum Bactericidal Concentration* (MBC) ada pada konsentrasi 2,5% artinya nanokurkumin memiliki daya bunuh yang cukup baik terhadap bakteri luka diabetes.

**Kata kunci:** luka diabetes, nanokurkumin, antibakteri, daya hambat, MIC. MBC.

**Abstract**

*Diabetic wounds become a chronic ulceration condition that occurs in the legs of people with diabetes mellitus caused by several bacteria including Staphylococcus sp. and Klebsiella sp. Chitosan is identified as an interesting biomaterials for wound treatment due to its general antimicrobial and biocompatibility characteristics. Curcumin has antibacterial activity but has very low biological availability. Combining curcumin with chitosan is one of the potential ways to improve the quality of solubility in curcumin water and increase its effectiveness that is made with nanoparticle systems. Particle size affects the effectiveness of nanocurcumins in inhibiting bacteria. This study aims to find out the antibacterial activity of nanocurcumin in vitro. The concentration used for nanocurcumin tasteless power test is 15%, 12.5%, 10%, 7.5%, 5%, 2.5%. Obtained results at the highest concentration of 15% belong to the strong category ( $13.5 \pm 0.2$  mm) and at the lowest concentration of 2.5% belongs to the moderate category ( $8.7 \pm 0.6$ mm). Minimum Inhibitory Concentration (MIC) test results using concentrations of 2.5%, 1.25%, 0.625%, 0.313%, 0.156%, 0.078% obtained at a concentration of 1.25% means that nanocurcumin is good at inhibiting diabetic wound bacteria then continued the Minimum Bactericidal Concentration (MBC) test is at a concentration of 2.5%. Based on the value of KBM nanocurcumin has a fairly good killing power against diabetic wound bacteria.*

**Keywords:** diabetic wound, nanocurcumin, antibacterial, inhibition, MIC. MBC.