

ABSTRACT

**Test of Activity of Ciprofloxacin Microbial In Bone Implants Against
Escherichia coli ATCC 25922
(Composite Implant Chitosan-Bovine Hydroxyapatite
With Glutaraldehyde *Cross-linker*)**

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Osteomyelitis is an infection of the bone complications caused by bacteria, one of which is *Escherichia coli*. Ciprofloxacin can be given as a treatment, because ciprofloxacin is a broad-spectrum antibiotic and can penetrate into the tissues of the body. In a previous study, has made ciprofloxacin dosage form in implant to restore the infection with two concentrations of glutaraldehyde *cross-linker*, is 0.3% and 0.5%. Result of the released study shows that implant could release drug in controlled and included in the range terapeutik (2-50µg/mL)

In this research the microbial activity of the ciprofloxacin using a diffusion method to *Escherichia coli* ATCC 25922. This assay using sample result of release study, which was obtained in previous studies. Based on the results of the study, showed that the average potency antibiotics for 29 days on a formula of 0.3% was 112.76% and at 0.5% was 111.86%. Based on these results, the antibiotic ciprofloxacin in the implants demonstrated the ability to inhibit bacterial growth. The average value of the potential generated by each eligible antibiotic potency test that was 80% -125% and increasing concentration of *cross-linker* was not significantly affect to the potency of ciprofloxacin in bone implant in every day microbial assay.

Keyword : ciprofloxacin bone implant, chitosan, bovine hydroxyapatite, glutaraldehyde, microbial assay