

ABSTRACT

Gentamicin Released Profile from Implant [BHA-GEL-GA-GEN] as Drug Delivery System to Osteomyelitis by In Vitro

Osteomyelitis (OM) is a progressive infection of the bone marrow and cortex resulting in inflammatory destruction of the bone. Osteomyelitis is a disease with causative micro-organisms. 70-90% infections of osteomyelitis in every age caused by *Staphylococcus aureus*. These infections difficult to treat because tissue devascularitation , so need high doses of systemic antibiotic with standart duration is 4-6 weeks. With local antibiotic can result high concentration of antibiotic in bone without systemic toxicity. Controlled released of drug can give constant concentration in a long time.

This study is designed to observe gentamicin released profile from implant [BHA-GEL-GA-GEN] that formulated controlled release for local use. Gentamicin released observed with dissolution methods and concentration observed by microbiological methods.

In this study, from 10 implants have average of weight is 100.68 mg with % KV 0.31 and contains 5.91 mg of GEN with % KV 5.18. Gentamisin released profile show that in 1st hour relased 23,77 µg/mL of gentamisin that over MIC of *Staphylococcus aureus*.

Keyword. Gentamicin, Implant [BHA-GEL-GA-GEN], Drug Delivery System, Osteomyelitis