



***IN-VITRO* SUSCEPTIBILITY TESTING OF *Acanthamoeba* SPP.
FROM KERATITIS PATIENTS AGAINST GENTAMICIN,
CIPROFLOXACIN AND CHLORAMPHENICOL**

By

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DECLARATION

I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.

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ABSTRACT

Acanthamoeba is a small free-living amoeba that can cause *Acanthamoeba* keratitis, a serious eye infection which is recognized as most challenging ocular infections due to long-drawn-out painful clinical course and prevailing treatment failures. Treatment is possible when initiated early in the infection. The aims of this study are to determine the effectiveness and the minimum cysticidal concentration (MCC) value of gentamicin, ciprofloxacin and chloramphenicol against *Acanthamoeba* spp. isolates from keratitis patients that may helpful for early treatment management. Serial doubling dilutions of gentamicin from 3000 µg/ml to 1.465 µg/ml, ciprofloxacin from 3000 µg/ml to 1.465 µg/ml and chloramphenicol from 5000 µg/ml to 2.441 µg/ml were made in microtitre plate and tested against cyst suspensions from two *Acanthamoeba* isolates, respectively. All tests were performed in triplicates. After 24 hours incubation at 32 °C, the drugs were removed by centrifugal washing. The deposits (cysts) were cultured on non-nutrient agar seeded with heated-killed *Escherichia coli*. The growth of trophozoites from cysts exposed to each drugs were observed for 14 days to evaluate the MCC value of each drug. Gentamicin and ciprofloxacin successfully showed minimum cysticidal concentration (MCC) but not for chloramphenicol. The MCC of gentamicin ranged from 3000 µg/ml to 1500 µg/ml and ciprofloxacin ranged from 3000 µg/ml to 1500 µg/ml. The mean MCC value of gentamicin and ciprofloxacin are 2250 µg/ml and 2750 µg/ml, respectively. This study has demonstrated that gentamicin and ciprofloxacin have potential cysticidal effect on the *Acanthamoeba* spp. isolates tested and can be considered as potential anti-*Acanthamoeba* therapeutic agents for treatment of *Acanthamoeba* keratitis.