

ANTIBACTERIAL ACTIVITIES OF THE CRUDE EXTRACT
FROM THE LIVING MICE

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ANTIBACTERIAL ACTIVITIES OF THE CRUDE EXTRACT
FROM FREE-LIVING AMOEBAS

By
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Research Report submitted in partial fulfillment of
the requirements for the degree of
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LIST OF ABBREVIATIONS

%	percentage
$^{\circ}\text{C}$	Degree Celcius
ANOVA	Analysis of Variance
g	gram
ml	milliliter
mg/ml	milligram
$\mu\text{g/ml}$	microgram per mililiter
μm	micrometer
L	liter
μL	microliter
mm	milimeter

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ABSTRACT

The effects of the extracts from free-living amoebae were studied on two types of pathogenic bacteria; *Staphylococcus aureus* and *Streptococcus agalactiae*. The amoebae extract used in this study were *Acanthamoeba sp.* (strain AK); a clinical isolate, and *Acanthamoeba sp.* (strain P1), isolated from marine environment. Antibacterial activities of the amoeba extracts were tested against these bacteria by disc diffusion following Kirby-Bauer method. The concentrations of extracts used in this study were 2.0, 4.0 and 8.0 mg/ml. Both of amoeba extracts; AK and P1 were observed to inhibit the growth of *S. aureus*, but not on *S. agalactiae* although its inhibition is small compare to Chloramphenicol (as a positive control). The minimal inhibitory concentration (MIC) value on *S. aureus* was 4.0 mg/ml protein of AK and 2.0 mg/ml protein of P1 extract. Extract from P1 was found to be more potent as antibacterial agent than AK extract.

AKTIVITI ANTIBAKTERIA DARIPADA EKSTRAK MENTAH AMEBA

ABSTRAK

Kajian ini dijalankan adalah untuk melihat kesan ekstrak ameba, ke atas pertumbuhan dua jenis bakteria patogenik; *Staphylococcus aureus* dan *Streptococcus agalactiae*. Ekstrak ameba yang digunakan adalah *Acanthamoeba sp.* (strain AK); daripada pengasingan klinikal dan *Acanthamoeba sp.* (strain P1), diasingkan daripada persekitaran marin. Aktiviti antibakteria daripada ekstrak amoeba ini diuji ke atas bakteria melalui kaedah peresapan cakera mengikut kaedah Kirby-Bauer. Kepekatan ekstrak yang digunakan dalam kajian ini adalah 2.0, 4.0 dan 8.0 mg/ml. Keputusan ujikaji ini menunjukkan kedua-dua ekstrak ini berpotensi merencat pertumbuhan *S. aureus*, tetapi tidak pada *S. agalactiae* walaupun diameter zon perencatan bagi kedua-dua ekstrak ini adalah kecil berbanding Chloramphenicol (sebagai kontrol positif) . Nilai minimum kepekatan yang merencat (MIC) pada pertumbuhan *S. aureus* adalah 4.0 mg/ml kepekatan protein oleh ekstrak AK, dan 2.0 mg/ml kepekatan protein oleh ekstrak P1. Ekstrak P1 didapati lebih berpotensi sebagai agen antibakteria berbanding ekstrak AK.