

DETECTION OF EMBRYAL GENE OF *Pasteurella*
multocida IN WHITE RATS BY PCR METHOD

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2008

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**DETECTION OF FIMBRIAL GENE OF *Pasteurella multocida* IN WHITE RATS
BY PCR METHOD**

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A research report submitted in partial fulfillment of
the requirements of the award of the degree of
Bachelor of Science (Biological Sciences)

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UNIVERSITI MALAYSIA TERENGGANU
2008**

1100057822

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PENGAKUAN DAN PENGESAHAN LAPORAN PITA I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

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DECLARATION

I hereby declare that his thesis entitled Detection of Fimbrial Gene of *Pasteurella Multocida* in White Rats by PCR Method is the result of my own research except as cited in the references.

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ACKNOWLEDGEMENT

The path which led to the completion of this thesis incorporated support and contribution from various sources. This path was occupied with enriching, momentous and enlightening experiences which paved the way for me to wade through all the difficulties to arrive at the finish line. Firstly, I would like to express my gratitude to my supervisor, Assoc. Prof. Dr Mohd Effendy Abd. Wahid for his invaluable academic knowledge and experiences. His continued support, kindness and encouragement towards the accomplishments of this thesis can not be forgotten.

I also extremely indebted to Mr. Vijay who always guides me through the lab work especially when it's come to molecular subject. Miss Athirah, who also guides me through lab work and draft, always gives me the inspiration to love what I'm doing so that my project will be a success. I really appreciate your consistent support. Master students, Suvik, Amy, Azrul and Rawaidah even though they are busy with their own project, they still give me consistent support.

My gratitude also goes to science officers and laboratory assistants at FST, IMB and INOS. Many thanks for your precious continuous support especially in supplying the apparatus and chemical equipments for the lab work.

Finally I am grateful to my friends and entire family for their continuous moral support, patience, encouragement and love. Especially my beloved parent who always been there for me, and above all, God, my ultimate source of strength.

ABSTRACT

P. multocida B:2 is a bacterium that have a potential to cause an outbreak, mortality to the animal and specifically can cause economic loss to the farming sector. Due to this fact, rapid detection of *P. multocida* B:2 are really important. The aims of this study were to detect the presence of fimbrial gene in *P. multocida* B:2's infected tissue of white rat's (*Sprague dawley*) organs by using the PCR technique and to test the specificity of the primers. Three sets of fimbriae gene primers were used which namely as pair 1; EZ1(F) and EZ2(R), pair 2; EZ3(F) and EZ4(R), pair 3; EZ5(F) and EZ6(R). The presence of fimbrial gene in infected tissues (lung, liver, kidney, blood from heart) was successfully identified by using PCR technique. From this finding, it was suggested that there was a presence of *P. multocida* B:2 in the tissue organs. This study also has tested the specificity of primer to various types of fimbriae using animal model introduced with *Escherichia coli* which is type 1 fimbriae. Results also indicated that all three sets of primers were generated amplified product of fimbriae gene with size ranging from 400-500bp from isolated *P. multocida* B:2 and white rats that have been introduced with *P. multocida* B:2. This study truly demonstrated PCR technique as a liable method to identify the presence of *P. multocida* B:2 in animal model.

ABSTRAK

P. multocida B:2 adalah bakteria patogenik yang mempunyai potensi wabak dan kematian kepada haiwan ternakan dan seterusnya menyebabkan kerugian dari segi ekonomi kepada sektor perternakan haiwan. Disebabkan faktor ini, pengesanan bakteria *P. multocida* B:2 dengan pantas adalah amat penting. Sasaran kajian ini adalah untuk mengenal pasti kehadiran gen fimbrial bakteria *P. multocida* B:2 di dalam tisu organ tikus yang dijangkiti dan menguji ketepatan primer yang digunakan dengan menggunakan teknik PCR. Tiga set primer telah digunakan iaitu P1; EZ1(F) dan EZ2(R), P2; EZ3(F) dan EZ4(R), P3; EZ5(F) dan EZ6(R). Kehadiran gen fimbria di dalam tisu yang dijangkiti (peparu, hati, ginjal, darah daripada jantung) telah berjaya dikenalpasti, ini menunjukkan kehadiran *P. multocida* B:2 di dalam tisu tersebut dengan menggunakan teknik PCR. Manakala ketepatan primer yang digunakan telah diuji dengan menggunakan *E. coli* yang mana ianya adalah fimbria *type 1*. Keputusan juga menunjukkan tiga set primer yang telah digunakan telah menghasilkan produk gen fimbria dengan saiz diantara 400-500bp. Kajian ini membuktikan teknik PCR boleh digunakan dalam mengesan kehadiran *P. multocida* B:2 dalam haiwan ternakan secara pantas dan efisien.