

**MOLECULAR CHARACTERIZATION OF EXTENDED  
SPECTRUM  $\beta$ -LACTAMASES AND AMPC  $\beta$ -LACTAMASES  
OF *Escherichia coli* ISOLATES FROM PATIENTS  
TREATED AT MAHARAJ NAKORN  
CHIANG MAI HOSPITAL**



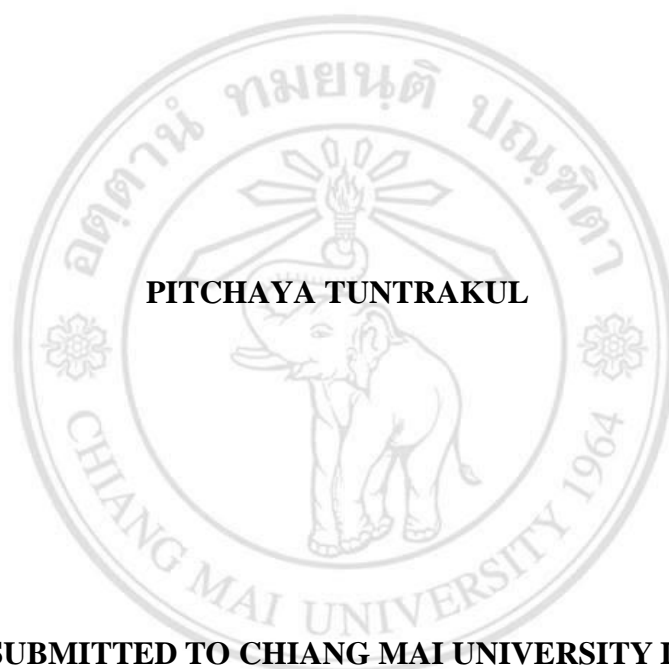
**PITCHAYA TUNTRAKUL**

**MASTER OF SCIENCE  
IN MICROBIOLOGY**

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**GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY  
AUGUST 2014**

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**PITCHAYA TUNTRAKUL**

**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF SCIENCE  
IN MICROBIOLOGY**

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PITCHAYA TUNTRAKUL


THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
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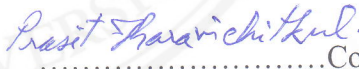
  
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Pitchaya Tuntrakul