

**FUNCTIONAL ANALYSIS OF *Penicillium marneffe*
sakA AND *atfA* GENES INVOLVED IN
OXIDATIVE STRESS RESPONSE**

PANJAPHORN NIMMANEE

**DOCTOR OF PHILOSOPHY
IN MICROBIOLOGY**

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**GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
SEPTEMBER 2014**

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

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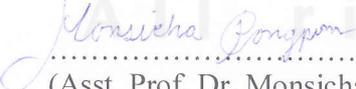
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26 September 2014

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To

My beloved father, Mr. Punya Nimmanee



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