

**BIOLOGICAL ACTIVITIES OF PURPLE RICE EXTRACT  
ON INHIBITION OF LIPID ACCUMULATION AND  
ANTI-INSULIN RESISTANCE IN FAT CELLS**

**NAREEYA WALOH**

**MASTER OF SCIENCE  
IN BIOCHEMISTRY**

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**GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY  
NOVEMBER 2014**

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**NAREEYA WALOH**

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

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THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT  
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