

**CHEMICAL CONSTITUENTS AND BIOLOGICAL  
ACTIVITIES OF *Vernonia scandens* AERIAL  
PARTS AND *Cleistocalyx nervosum*  
var. *paniala* SEEDS**



**ANURUK CHAILUNGKA**

**DOCTOR OF PHILOSOPHY**

**IN CHEMISTRY**

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**GRADUATE SCHOOL  
CHIANG MAI UNIVERSITY**

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**ANURUK CHAILUNGKA**

**A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY  
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THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF  
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*Nuchnipa Nuntawong* Co-advisor  
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(Asst. Prof. Dr. Nuchnipa Nuntawong)

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Anuruk Chailungka