

UNIVERSITI TEKNOLOGI MARA

**DETECTING ALKALOIDS FROM THE CHLOROFORM
EXTRACT OF *PAPAVER* SEEDS**

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**Dissertation submitted in partial fulfillment of the requirements for the
Bachelor of Pharmacy (Hons.)**

Faculty of Pharmacy

February 2012

ACKNOWLEDGEMENT

First and foremost, I would like to express my most sincere gratitude to my research supervisors Dr. Ibtisam Abdul Wahab and Madam Hannis Fadzillah for their continuous support of my final year research, for their dedication, patience, motivation, enthusiasm, and immense knowledge in helping me to complete the research. Their guidance helped me tremendously throughout all the time of I was researching and writing this thesis. I could not have imagined having a better advisors and mentors.

I would also like to thank Miss Ruzianisra Mohamed for her encouragements, insightful comments, and hard questions.

My sincere thanks also go to my research partners Miss Nurul Intan Shafinas Binti Md Nasir and Miss Nur Hidayah Binti Zulkefli, for assisting me a lot throughout the research process.

Last but not the least; I would like to thank my family: my parents Md. Nasir Bin A. Hamid and Salmah Binti Abd. Hamid, for supporting me spiritually throughout my life.

Thank you all.

TABLE OF CONTENTS

	PAGE
TITLE PAGE	
APPROVAL SHEET	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
CHAPTER 1 (INTRODUCTION)	1
1.1 OBJECTIVES	3
1.2 SCOPE	3
1.3 HYPOTHESES	3
1.4 PROBLEM STATEMENT	3
CHAPTER 2 (LITERATURE REVIEW)	4
2.1 HISTORY OF OPIUM	4
2.2 CLASSIFICATION OF OPIUM	5
2.3 PHARMACOLOGICAL EFFECTS AND CLINICAL EFFICACY OF MORPHINE	5
2.4 POTENTIAL RISKS AND ADVERSE EFFECTS OF MORPHINE	8
2.5 PHARMACOLOGICAL EFFECTS AND CLINICAL EFFICACY OF CODEINE	9
2.6 POTENTIAL RISKS AND ADVERSE EFFECTS OF CODEINE	11
2.7 PHARMACOLOGICAL EFFECTS AND CLINICAL EFFICACY OF HEROIN	12

2.8	POTENTIAL RISKS AND ADVERSE EFFECTS OF HEROINE	13
2.9	PHARMACOLOGICAL EFFECTS AND CLINICAL EFFICACY OF PAPAVERINE	15
2.10	PHARMACOLOGICAL EFFECTS AND CLINICAL EFFICACY OF NOSCAPINE	16
2.11	BACKGROUND OF POPPY SEEDS	18
2.11.1	SAFETY ISSUES PERTAINING TO POPPY SEEDS	19
2.11.2	USES OF POPPY SEEDS IN FOOD CUISINE	20
2.11.3	MEDICINAL USAGE OF POPPY SEEDS	22
2.11.4	HEALTH BENEFITS OF POPPY SEEDS	23
2.11.5	ALLERGIC REACTION OF POPPY SEEDS	24
	CHAPTER 3 (METHODOLOGY)	25
3.1	MATERIAL	25
3.2	DETECTION OF ALKALOIDS IN POPPY SEEDS	25
3.3	EXTRACTION OF POPPY SEEDS	26
3.4	THN LAYER CHROMATOGRAPHY FOR CHLOROFORM EXTRACT	26
	CHAPTER 4 (RESULT & DISCUSSION)	27
4.1	POPPY SEEDS AS A SOURCE OF OPIATES	27
4.2	EXTRACTION OF POPPY SEEDS SAMPLES	28
4.3	THE DETECTION OF ALKALOIDS IN POPPY SEEDS SAMPLES	29
4.4	THIN LAYER CHROMATOGRAPHY (TLC) OF CHLOROFORM	31
	CRUDE EXTRACT	
	CHAPTER 5 (CONCLUSION)	34
	BIBLIOGRAPHY	35
	APPENDICES	

ABSTRACT

Poppy is known as one of a group of flowering plants which belongs to the *Papaveraceae* family. The extraction of poppy or botanically referred to *Papaver somniferum* may yield opium. Opium is a strongly addictive narcotic drug prepared from the dried juice of unripe pods of the poppy and contains alkaloids. The seeds of *Papaver somniferum* are an important food item. The poppy seed oil also has many uses. Because of the narcotic properties, extensive recreational use of opium has also occurred throughout history. Poppy seeds are frequently used in baked products like bagels, breads and are also sprinkled on salads. From the literature review, poppy seeds possess a large number of medicinal benefits which include curing insomnia and relieving symptoms of digestive disorders. On the other hand, the uses of opium includes as analgesia, sedative, cough relievers and anti-diarrhea treatment. The products of poppy seeds however, may contain opium in spite of claims by manufacturing or packaging companies, that poppy seeds are free from narcotics. Thus, this study was aimed to prove that the seed extracts of *Papaver somniferum* in this research could contain alkaloid and to analyze the effectiveness of chloroform in extracting the alkaloids of this research sample. The composition of the seed extracts from the *Papaver somniferum* will be examined by using thin layer chromatography (TLC) preparations. The experimental procedures involved standard laboratory techniques of the Europeans poppy seeds from a herbalist shop and a local bakery. In order to analyze their chemical components, the seeds were subjected to triple maceration of organic extraction by using chloroform. Following the screening method by using the Mayer, Dragendorff and Bouchardat reagents, the extract produced white, orange and brown reddish precipitates respectively. It was found that the herbalist sample produced the most significant precipitation. Based on the above detection method, it was concluded that positive results were shown and indicated the presence of alkaloids. However, despite of various solvent compositions used in the thin layer chromatographic evaluations, none of them produced a satisfactory profile as the tailing spots were observed on the silica aluminium sheets. Hence, High Performance Thin Layer Chromatography (HPTLC) was approached. The results were very much enhanced with HPTLC, as more than three spots were separated. Toluene:acetone (80:20) and toluene:ethyl acetate (70:30) were found to be the most suitable mobile phase for the chloroform extract. In conclusion, this research could prove that the poppy seed samples contain alkaloid from a successful chloroform extraction. It is hoped that this scientific investigation could offer the knowledge of *Papaver's* constituents, their uses and any abuse cases pertaining to the natural products.