UNIVERSITI TEKNOLOGI MARA

DETECTING ALKALOIDS FROM THE CHLOROFORM EXTRACT OF *PAPAVER* SEEDS

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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.