

UNIVERSITI TEKNOLOGI MARA

**Hydrodistillation Extraction of *Mariposa Christia*
Vespertilionis (Butterfly Wing) Plant**

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ABSTRACT

In this study, *Mariposa Christia Vespertilionis* (MCV) were extracted by using hydrodistillation extraction method. Four types of extraction being used; fresh leaves (distillate), fresh leave (condensate), dry leave (distillate), and dry leave (condensate). The phytochemical tests were performed to identify different phytochemical compounds present in the MCV extract. Fourier transform infrared spectroscopy (FTIR) and Gas chromatography–mass spectrometry (GC-MS) analysis were done to identify the presence of functional groups and bioactive compounds. The FTIR results revealed the presence of phenol, alcohol, alkanes, aromatic carboxylic acid, halogen compound, alkyl halide, ester, and ether. The GC-MS results identified a total of 12 compounds in dry leaves (distillate), 15 in dry leaves (condensate), while 18 in fresh leaves (distillate), and 11 in fresh leaves (condensate) where all of the compound known to have a potent activity against cancer cells, anti-inflammatory, anticonvulsant, anti-bacterial and anti-oxidant. Overall, this study offer a platform by using CMV leaves as an option approaches to treat different illnesses.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND STUDY

In 2012 the cancer disease is creating a new cancer cases with an estimated number of 14.1 million and 8.2 million cancer deaths worldwide and are estimated to increase to 21.7 million new cancer cases and about 13 million cancer deaths globally in 2030 [1]. Cancer is caused by the changing of the lifestyle such as an unhealthy diet, smoking, infectious organisms and may be inherit from the genetic of the family [2]. Until now, no exact medicine have been found to be effectively as an anti-cancer drug.

The uses of medicinal plant have being used since long time ago even starting from the ancient time backwards. So it is familiar for the people nowadays. The evidence that proved that ancient people had already dealing with those plant are through the finding of; written documents, preserved monuments, and even original plant medicines. Back in the time, the tools or the equipment used are not as highly sophisticated as this modern day. The uses of the method to extract and the yield obtain are much safer now with the passage of time. As time passing by, the number of medicinal plant discovered are keep increasing due to the increasing of diseases. Recently the use of medicinal plant *Christia Vespertilionis* as anti-cancer obtained a lot of attention in Malaysia as an alternative medicine to the modern treatment.

The cancer therapy compound of medicinal plant *Mariposa Christia Vespertilionis* will be extracted by using hydro-distillation extraction method. This is the standard method for extracting essential oils for quality control. Extraction may be defined as the process of removal of desirable soluble molecule form a substance, leaving out those which are not required with the help of solvent. In this method, the material is completely immersed in water, and the heat is supply by heating mantle, direct contact is create between boiling water and the plant material. The essential oil obtain are then will be analyze by using Fourier transform infrared spectroscopy (FTIR) to determine the cancer therapy compounds from medicinal plant *Mariposa Christia Vespertilionis*.