

**UNIVERSITI TEKNOLOGI MARA**

***CLEOME GYNANDRA* LEAVES ANTICANCER ACTIVITY  
STUDY FROM METHANOL EXTRACT**

**MUHAMMAD `AFIF BIN OTHMAN**

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## ABSTRACT

Liver cancer has been identified as the sixth most often diagnosed cancer cases and third most common killer cancer in many countries of the world. Despite progressiveness in cancer treatment over the years, there is still no absolute cure to the disease and the present cancer therapy, such as radiotherapy and chemotherapy, give undesirable side effects to cancer patients. Therefore, it is quite important to find anticancer drugs that are potent and gives fewer side effects. Nowadays, plants have been the main focused research topic on the anticancer properties. *Cleome gynandra* is a plant that can be found on most countries in eastern and southern Africa as well as India. The plant traditionally has been used in the treatment of malaria, gonorrhoea and rheumatoid arthritis. The purpose of this study was to examine whether the plant, *Cleome gynandra* leaves extracts, affects the viability of liver cancer cells. Using MTT assays, it showed that the extracts have the ability to reduce the viability of HepG2 cancer cells in a dose-dependence manner with  $IC_{50} = 223.84 \pm 15.88 \mu\text{g/ml}$ . *Cleome gynandra* extract demonstrates weak cytotoxic effect on HepG2 cancer cells. Further study should be conducted on other type of cancer cells. Since the extract did not show toxic effect on normal cells, more study should be done on medicinal value of this plant.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

Cancer has been defined as malignant growth of cell and tissue which is abnormal to the body. It can be considered as threat to any person that lived. Because of this, cancer is one of the leading causes of death in the worldwide. There are a lot of treatments that has been developed to increase the survival of cancer patient. A number of agents have been used. However, chemotherapeutic agents may give unwanted side effect. Therefore, the searching of for safe and effective chemotherapeutic agents from natural plants has become an important aspect of anticancer research.

*Cleome gynandra* is also known as Cat's Whiskers in English and 'Karaila' and 'Hurhur' in India. In most countries in eastern and southern Africa as well as India, the part that involved in medicine usage is their leaves and seeds (Chweya & Mnzava, 1997). It has been traditionally used as an anthelmintic and antimicrobial. Recent studies show that the presence of free radical scavenging property of this plant can be contributed to its anti-cancer activity (Bala et al., 2011).