UNIVERSITI TEKNOLOGI MARA

THE EFFECT OF *HIBISCUS ROSA-SINENSIS* LEAVES EXTRACT ON LIVER CANCER CELL

MUHAMAD SOLEHUDDIN BIN MOHAMAD NOOR

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ABSTARCT

Liver cancer is sixth most often diagnosed cancer cases and third most common killer cancer in many countries of the world, especially in developing countries. Despite progressiveness in cancer treatment over the years, there is still no absolute cure to the disease and the present cancer therapy give undesirable side effects to cancer patients. It is important to find anticancer drugs that are potent and gives less side effects. In recent years, plants have been focused research topic on the anticancer properties. *Hibiscus rosa-sinensis* (Malvaceae), an attractive plant believed to be native to China, India and Philippines. The purpose of this study was to examine whether the plant, *Hibiscus rosa-sinensis* leaves extracts, affects the viability of liver cancer cells. Four types of solvent extraction (methanol, acetone, ethyl acetate and petroleum ether) were used in this study. Using MTT assays, it showed that the extracts have the ability to reduce the viability of cancer cells in a dose dependence manner. From the result, it has been concluded that methanol extract of *Hibiscus rosa-sinensis* is the most potent in reducing the viability of cancer cells. According to these results, methanol extract of *Hibiscus rosa-sinensis* is a promising agent to be further investigated as a natural source for a novel anticancer agent.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

In year 2008, there was 12.7 million new cancer cases were estimated worldwide, which is 6.6 million cases in the male population and 6.0 million in the female population. These statistics are expected to increase to 21 million by 2030. In those new cases, human liver cancer or hepatocellular carcinoma was the fifth most often diagnosed cancer in men which 522,000 cases reported and the seventh in woman which 226,000 cases reported It ranked as the sixth most often diagnosed cancer cases where represent 5.9% of all cancer cases. Most of the cases were reported in developing country such as Eastern and South-Eastern Asia, Middle and Western Africa. It reported 0.7 million number of liver cancer cases result in death (Ferlay et al., 2010).

The majority of patients appear with advanced, unresected or metastatic cancer, and only about 10% of the cancer cases were diagnosed at early stage where surgery can help in removing the tumour. Currently surgery, liver transplant and chemotherapy are still the standard treatment method. Despite progressiveness in cancer treatment over the utmost 30 years, the UK 5-year survival rate of 5.5% has