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CONFOCAL MICROSCOPIC ANALYSIS OF HUMAN COLORECTAL ADENOCARCINOMAS CELL LINES (HT-29) AGAINST BANANA SOFT PITH (BSP) HEXANE EXTRACT BY USING AO/PI STAINING

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TABLE OF CONTENTS

ABSTRACT

Colorectal cancer (CRC) is a cancer that arises within the colon or rectum internal lining. In a previous study on CRC, data has indicated that CRC placed as second most cancer patients being diagnosed with, and is rendered as major causative of death among cancer (Wu *et al.,* 2013). In Malaysia, total cases of CRC are about 2,866 in 2006 which bring to 13.2% cases from all cancer cases in Malaysia. In addition, incidences of cases are almost the same for both male and female citizens in Malaysia (National Cancer Registry of Malaysia, 2006). This cancer is believed to be increasing in incidence because the underlying causes of CRC are very much related with the westernised lifestyle being adapted by most of Malaysia citizens.

Majority of anticancer therapy that available in this present year such as chemotherapy exhibit significance adverse effects, toxicity and death associated with cancer. Therefore, researchers are focusing to develop plant-based anticancer that posses fewer side effect. Banana soft pith (BSP) is the soft fibrous tissue lining the banana trunk and located in the deepest layer of the banana trunk. In this experiment, the significant morphological effect of banana soft pith (*Musa Paradisiaca*) hexane extract against human colorectal cell lines (HT-29) were studied. Former studies performed by colleagues (unpublished), indicated that BSP exhibited cytotoxic effect towards colorectal cell lines (HT-29).

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Cancer is known as an important public health concern in the world since many years ago. Generally, new cases of cancer increase years by years and is categorized as one of the factor that leads to death worldwide. Based on data information from World Health Organization (WHO), it is estimated that 7.6 million of death due to cancer in 2008 were reported. It is also predicted that death due to cancer will continue to increase, with approximate7ly 13.1 million deaths are estimated in year 2030. This estimation about cancer death is projected to happen especially in the developing countries because of encouraging-cancer development life style like low physical activity, smoking and also bad diet (Rodzi *et al.,* 2013).

In general, cancer is the abnormal and uncontrolled growth or development of cells that can contribute to death. Due to this uncontrolled growth of cells, the cells will be highly mutating and eventually will interfere and destroys other healthy cells (Unnati *et al.,* 2013). Without any pathological conditions, cell divisions take place in a control manner in order to keep our body in a balance state of proliferation and apoptosis. Once this equilibrium state is interrupted, for an instance, exposure to carcinogen to the body like radiation that causes some defect in DNA, hence the cells divisions become exaggerate