

**CYTOTOXICITY STUDY OF SELECTED MALAYSIAN HONEY
ON CHANG CELL**

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TABLE OF CONTENTS

ACKNOWLEDGEMENT.....	i
TABLE OF CONTENTS.....	ii
LIST OF TABLES.....	iv
LIST OF FIGURES.....	v
CHAPTER 1	1
INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Significance of Study.....	2
1.4 Hypothesis	2
1.5 Objectives.....	3
 CHAPTER 2	 4
LITERATURE REVIEW	4
2.1 Cytotoxicity	4
2.2 Honey.....	5
2.2.1 Definition of Honey	5
2.2.2 Composition of Honey.....	6
2.2.3 Honey Health Benefit	8
2.2.4 Acacia, Tualang and Kelulut honey	9
2.3 Natural Sweetener.....	11
2.4 MTT Usage.....	12
2.5 Chang cell.....	13

CHAPTER 1

1.0 : INTRODUCTION

1.1 : RESEARCH BACKGROUND

. Honey is a natural sweet substance that produced from honey bees which comes from the nectar of plants, or excretions of living parts of plant. Over time, the collected honey will be ripen and mature in the honey comb and transform into honey (Codex Alimentarius, 2001). Honey is considered as multipurpose substance because apart from its usage as a sweetener in food, it also used in nutraceutical and therapeutics products. This is due to the presence of antioxidant in honey namely flavonoids and phenolic acids (Pichichero, Cicconi, Mattei, Muzi, & Canini, 2010). There are many studies on the benefits of honey. Honey able to slow down the proliferation of cancer cells (Pichichero *et al.*, 2010), inhibit cell lysis (Brudzynski & Sjaarda, 2014) and used as antiseptic for substance in wound dressing (Toit & Page, 2009). Although the benefits of honey have been highlighted by many researchers, the toxicity of the honey is not brightly explained. This is because, high toxicity of honey will affect the cell to undergo necrosis and cause the cell to stop growing and dividing which can lead to cell apoptosis.

1.2 : PROBLEM STATEMENT

Various type of honey have shown to have a very good effect based on investigation done in certain cancers studies, such as breast, liver, prostate, bladder, endometrial, kidney, skin, cervical, oral, bone and colorectal cell lines (Erejuwa, Sulaiman, & Wahab, 2014). This shows that many researches have been done to study the beneficial effects of honey. But most of the research neglected the cytotoxicity effects of different types of honey which also can affect other regular functions in the body.

1.3: SIGNIFICANCE OF STUDY

Cytotoxicity is the quality of being toxic to cell. The progression of cell is highly related to functions and ability to regenerate and replicate. The presence of high toxicity will absolutely interrupts the system. Thus, from this study, cytotoxicity of honey towards human liver can be known.

1.4: HYPOTHESIS

Honey does not have any cytotoxicity effect towards normal liver cells.