

TABLE OF CONTENTS

TITLE PAGE	i
APPROVAL PAGE	ii
AUTHENTICITY STATEMENT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	vi
LIST OF FIGURES	viii
LIST OF ENCLOSURES	ix
LIST OF ABBREVIATION	x
ABSTRACT	xiii
INTISARI	xiv
CHAPTER I: INTRODUCTION	1
I.1. Background	1
I.2. Problem Formulation	5
I.3. Study Objectives	5
I.3.1. General Objectives	5
I.3.2. Specific Objectives	6
I.4. Study Originality	6
I.5. Study Benefits	8
CHAPTER II: LITERATURE REVIEW	10
II.1. Literature Review	10
II.1.1. Liver	10
II.1.2. Diabetes Mellitus	15
II.1.3. Liver Fibrosis	19
II.1.4. Serum Glutamate-Oxaloacetate Transaminase (SGOT)	23
II.1.5. Chlorogenic Acid (CGA)	25
II.2. Theoretical Framework	29
II.3. Conceptual Framework	30
II.4. Hypothesis	30
CHAPTER III: RESEARCH METHOD	31

III.1. Research Type and Design.....	31
III.2. Research Time and Setting.....	31
III.3. Research Variables.....	31
III.4. Operational Definition.....	32
III.5. Research Tools and Materials.....	33
III.6. Research Procedures.....	36
III.6.1. Experimental Animals Preparation.....	36
III.6.2. Experimental Animals Treatment.....	38
III.6.3. Termination.....	39
III.6.4. SGOT Level Measurement.....	39
III.6.5. Sirius Red Staining.....	40
III.6.6. RNA Extraction.....	41
III.6.7. cDNA Synthesis.....	41
III.6.8. Examination of Collagen type 1 and Collagen type 3 mRNA Expression by RT-PCR.....	42
III.6.9. Electrophoresis.....	43
III.7. Data Analysis.....	43
CHAPTER IV: RESULT AND DISCUSSION.....	45
IV.1. Result.....	45
IV.1.1. Random Blood Glucose (RBG) Level.....	45
IV.1.2. Serum Glutamate-Oxaloacetate Transaminase (SGOT) Level.....	48
IV.1.3. mRNA Expression of Collagen Type 1.....	50
IV.1.4. mRNA Expression of Collagen Type 3.....	52
IV.1.5. Sirius Red Staining Result.....	55
IV.2. Discussion.....	56
CHAPTER V: CONCLUSION AND SUGGESTION.....	64
V.1. Conclusion.....	64
V.2. Suggestion.....	64
REFERENCE.....	66
ENCLOSURE.....	71