



اَوْنِيُوْ تِكْنُوْلُوْجِي مَارَا
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**DETERMINATION OF TISSUE MORPHOLOGY
AND RNA INTEGRITY FROM RABBIT'S HEART
ARCHIVE SAMPLE IN LONG TERM TISSUE STORAGE**

By

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DECLARATION

“I hereby declare that this thesis is based on my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.”

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TABLE OF CONTENTS

DECLARATION	ii
INTELLECTUAL PROPERTIES	iii
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
ABSTRACT	xii
CHAPTER 1	1
INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	3
1.3 Objectives	4
1.3.1 General Objective	4
1.3.2 Specific objective	4
CHAPTER 2	5
LITERATURE REVIEW	5
2.1 RNA	5
2.2 microRNA	7
2.3 Rabbit	9
2.4 Formalin Fixed Tissue	10
2.5 The Histology of Heart	12
CHAPTER 3	15
MATERIALS AND METHOD	15

ABSTRACT

Determination of Tissue Morphology and RNA Integrity from Rabbit's Heart Archive Sample in Long Term Tissue Storage

Formalin fixed samples become a valuable tool for detection of gene expression marker upon diagnosing a diseases. The used of 10 % formalin become a gold standard for histopathological analysis but the effect of formalin fixation in prolong tissue storage influence the credibility of the molecular marker to be extracted. In addition, with the characteristic of molecular marker that easily degrading becomes a challenging step to obtain pure marker. As formalin used to preserve the morphology of tissue, their effectiveness to preserve tissue and also the molecular compartment in the tissue were studied. Two approaches were taken to determine the association of tissue morphology with RNA and miRNA quality. Samples undergo histology processing and visualization under light microscope before being proceed with RNA extraction and quantification with Eppendorf Biophotometer Plus and Agilent 2100 bioanalyser to evaluate the quantity and quality of isolated material. The morphology of all samples were generally similar even though from different year which showed marked changes of cellular characteristics displayed as;- elongated, loss of nucleus and faded cytoplasm border. It then supported with the RNA and miRNA concentration present, which showed low level for both years. Eventhough the quality and quantity of both markers were unsatisfied, but the availability of those markers in long-term tissue storage is still accessible. The morphological effects of formalin fixed sample do have associated with integrity of both RNA and miRNA as the result are in linear correlation.