

**A REVIEW ON THE PROBIOTIC TREATMENT OF
Lactobacillus plantarum IN MITIGATING SCARS**

MOHAMAD FOUZUL BIN MOHD YUSOFF

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Noor Hafizah Binti Uyup
Supervisor
B. Sc. (Hons.) Applied Chemistry
Faculty of Applied Science
Universiti Teknologi MARA
02600 Arau
Perlis

Syukri Bin Noor Azman
Project Coordination
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

Zalina Binti Zainal Abidin
Head of Programme
B. Sc. (Hons.) Biology
Faculty of Applied Sciences
Universiti Teknologi MARA
02600 Arau
Perlis

Date: _____

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iv
LIST OF FIGURES	v
LIST OF SYMBOLS	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	ix
CHAPTER 1 INTRODUCTION	
1.1 Background of study	1
1.2 Problem statement	3
1.3 Significance of study	5
1.4 Objectives of study	6
1.5 Research questions	6
CHAPTER 2 LITERATURE REVIEW	
2.1 Isolation of <i>Lactobacillus plantarum</i> from pickled <i>Cucumis sativus</i>	
2.1.1 Probiotics	8
2.1.2 Lactic acid bacteria (LAB)	10
2.1.3 <i>Lactobacillus plantarum</i>	14
2.1.4 Pickled <i>Cucumis sativus</i>	15
2.1.5 Morphological characteristics of <i>L. plantarum</i> isolates	16
2.1.6 Physiological characteristics of <i>L. plantarum</i> isolates	18
2.1.7 Biochemical characteristics of <i>L. plantarum</i> isolates	19
2.2 Identification of <i>Lactobacillus plantarum</i> by using polymerase chain reaction (PCR) technique	
2.2.1 PCR technique	20
2.2.2 Analysis of <i>L. plantarum</i> strains	22
2.2.3 Genetical characteristics of <i>L. plantarum</i> strains	24
2.3 Formulation of probiotic-based scars cream	
2.3.1 Safety of <i>L. plantarum</i> strains	25
2.3.2 Mechanisms of probiotics toward scars	26
2.3.3 Evaluation of scars cream	30
2.3.3.1 Physical appearance	31
2.3.3.2 Organoleptic characteristics	32
2.3.3.3 Determination of pH	32
2.3.3.4 Measurement of particle size	33

2.3.3.5	Viscosity	33
2.3.3.6	Spreadability	34
2.3.3.7	Stability	34
CHAPTER 3 CONCLUSION AND RECOMMENDATIONS		
3.1	Conclusion	36
3.2	Recommendations	37
CITED REFERENCES		38
<i>CURRICULUM VITAE</i>		48

ABSTRACT

A REVIEW ON THE PROBIOTIC TREATMENT OF *Lactobacillus plantarum* IN MITIGATING SCARS

Probiotics are sentient microbes, where these living microorganisms can give benefit in health of the host when suitable dosage is administered, highlightedly can mitigate scars. The numerous probiotics that had been used in medical treatment are lactic acid bacteria (LAB). LAB are Gram-positive, non-spore-forming, non-respiring but tolerant toward air, where these bacteria have specific strain in showing their probiotics properties and undergoing different function activities. *Lactobacillus plantarum* is a widespread member of the LAB that had been used as probiotic microorganism, which shows as a therapeutic agent on treating scars with the presence and absence of infection. *L. plantarum* can control the production of type I collagen messenger RNA (mRNA) and total collagen protein that needed for promoting scars on the human skin. The wound healing is a progression in skin or organs that happens after injury. This curing process is natural to the body in order to regenerate dermal and epidermal tissue in skin. Scars take a longer time for the wound to successfully undergo the repair process naturally. In relation to this condition, *L. plantarum* should be applied in treating scars as it not only enhance the curing wound by promoting collagen synthesis, but also accumulate the quantity of fibroblasts and fibrocytes and arised transforming growth factor (TGF- β) level for reducing the risk of infection. This study is initiated with the review on an isolation process of *L. plantarum* from pickled cucumber (*Cucumis sativus*) and the identification process of this probiotic with polymerase chain reaction (PCR) technique. Additionally, the formulation process of a probiotic-based cream from *L. plantarum* as a potential scar treatment are also reviewed.