

**UNIVERSITI TEKNOLOGI MARA**

**VOLUME-SPECIFIC EYE DROPS CONTAINER DESIGN**

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Dissertation submitted in partial fulfillment of the requirements  
for the degree of

Bachelor of Pharmacy (Hons)

2013

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## **ACKNOWLEDGMENT**

First of all, I would give my greatest appreciation to Allah S.W.T because of His blessing; I am able to finish this study successfully. I wish to that to my supervisor Associate Professor Dr. Wong Tin Wui for sincere supervision, for the guidance in this study and for being supportive throughout research being done. Also, I would like to thank my colleague Nurul Asyikin Binti Zohari and Hayatun Nufus Bin Othaman for the uttermost cooperation and the ideas and knowledge we shared. I would want to dedicate this success to my parents, Shamsudin Abdul Rahman and Ruswati Basirun who never stopped having faith to me in completing my research and to finish my study. I thank my friends for always being on my side to get through thick and thin of the study. Last but not least, I thank all the lecturers and staffs of Faculty of Pharmacy, UiTM for their guidance and kindness to assist me in the study.

## **ABSTRACT**

Eye is one of important route for medication to treat eye infection. Eye drops are used to administer the medication into the eye. Eye drops are saline-containing drops. One drop of eye drops can varies in the volume. This will affect the concentration of drugs or content in a drop. The objective of the study is to identify a suitable design for eye drop container that can help in controlling the volume of its drops without any streaming effect and reduce the wastage of medications. Improvements are made from the existing eye drop containers in the market. To achieve that objective, a special aspect of the container been discovered in the study.

# **CHAPTER ONE**

## **1.0 INTRODUCTION**

### **1.1 Research Background:**

Eye drops are saline-containing drops administered via ocular route. Depending on the condition being treated, they may contain steroids, antihistamines, sympathomimetic, beta receptor blockers, parasympathomimetics, parasympatholytics, prostaglandins, non-steroidal anti-inflammatory drugs (NSAIDs) or topical anesthetics. Eye drops sometimes do not have medications in them and are only acted as lubricating and tear-replacing solutions. Eye drops have less of a risk of side effects than do oral medicines, and such risk can be minimized by occluding the lacrimal punctum. Different pharmacological classes of eye drops can be recognized by patients by their different colored tops. For instance the tops to dilating drops have a different color from anti-allergy drops. Syringe designed saline drops (Wallace Cameron Ultra Saline Minipod) are distributed in modern needle-exchange programs as they can be used efficiently either by injection or ophthalmic (if the drug is potent in small doses) route of administration. Steroid and antibiotic eye drops are used to treat eye infections. They also have prophylactic properties and are used to prevent infections after eye surgeries. They should be used for the entire time prescribed without interruptions. The infection of the eye problems may relapse if the use of the medication is stopped. Eye drops used in managing glaucoma help the eye's fluid to drain better and decrease the amount of fluid made by the eye which decreases eye pressure. They are