UNIVERSITY TEKNOLOGI MARA

FORMULATION AND EVALUATION OF FLUCONAZOLE IN EMULGEL TOPICAL APPLICATION

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Dissertation submitted in partial fulfilment of the requirements for the Bachelor of Pharmacy (Hons.)

Faculty of Pharmacy

2015

ACKNOWLEDGEMENT

Firstly, I would like to give my deepest gratitude to my supervisor Prof Mohamed Salama for the aspiring support, guidance and advice throughout the preparation of this thesis. He has inspired me greatly to work on this project. His willingness to motivate me contributes tremendously to this project.

Furthermore, I also want to give my gratitude to all lab technicians for their kind support and help in facilitating my research project.

Last but not least, I would like to express my greatest thank to my family members and friends for their invaluable assistance and understanding.

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ABSTRACT

The aim of the following research was to formulate fluconazole in emulgel form and to evaluate the release of the medicament from it. Emulgel containing 1% w/w of fluconazole was prepared by addition of a gelling agent; Carbopol 934 to an emulsion using Span 80 as emulsifying agent. The release of fluconazole was determined by Franz diffusion cell using cellulose acetate membrane for a period of 3 hours at 32°C. Fluconazole was analyzed by ultra-violet (UV) Spectrophotometer at 261 nm. The prepared formula of fluconazole emulgel proved to be more efficient than other externally applied topical preparations as lotion, ointment and gel.

Keywords:Fluconazole; Carpopol 934; emulgel; Franz diffusion cell

CHAPTER ONE

INTRODUCTION

1.1 Background

The common dermatological problem is due to the fungal infections to the skin. There are many choices of treatment for fungal infection from a solid dosage form to semisolid and to liquid formulations (Shah, Magdum, Wadkar, & Naikwade, 2009).

Transparent gels which are semisolid preparation have been used both in pharmaceutical and cosmetic fields. Gels can be categorized as newer class of dosage form produced by entrapment of the great quantity of aqueous or hydro alcoholic liquid in a network of colloidal solid particles. In general, faster drug release is offered in gel formulation compared with creams and ointments. Irrespective of the many advantages of gels, there is a restriction in the delivery of hydrophobic drugs. This restriction can be overcome by formulating the hydrophobic drug in emulgels and at same time can have the unique properties of gels (Singla, Saini, Joshi, & Rana, 2012).

Emulgel refers to the formulations when gels and emulsion are used in combined form in dosage forms. The inclusion of a gelling agent in the aqueous phase