

UNIVERSITI TEKNOLOGI MARA

**INVESTIGATION ON EMF DURING
SOLUBILISATION OF GRISEOFULVIN**

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**Dissertation submitted in partial fulfilment of the requirement for
the degree of Bachelor of Pharmacy (Hons.)**

Faculty of Pharmacy

November 2008

ACKNOWLEDGEMENT

I would like to take this opportunity to express my deepest gratitude and appreciation to my lecture preceptor, Dr. Minaketan Tripathy, of the Faculty of Pharmacy, University Teknologi MARA (UiTM) for his guidance, advice and encouragement right from the first stage of this study being conducted. If not for his support, encouragements and advise wherever required it would not have been possible for me to complete this study as good as possible. I also would like to wish my appreciation to my labmates , Shairah and Raudhah ;laboratory assistant ,Mr. Mohd Hafiz; research assistance, Ms. Noreen for their kind assistance and cooperation.

Special thanks to Dr. Zainul Amiruddin Zakaria, the coordinator for the Research Instrumentation (PHM 555) for his continuous support and in making this study as a complete success. Special thanks also to faculty of Pharmacy UiTM for their financial support as well as providing the well equipped facilities.

Last but not least, my gratitude toward all the lecturers, course mate, family members and friend for their encouragement and support I making this final year research project possible.

Thank you very much.

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ABSTRACT

Solubility is an essential physicochemical property that has to be evaluated during the drug discovery and development process. Our study of interest is to investigate the pattern of electromotive force changes during solubilisation of aqueous insoluble drug, Griseofulvin in the presence of solubility enhancer. The solubility measurements were done by using UV-visible spectroscopy, whereas the emf and pH was analysed by using Automatic Potentiometric Titrator. The experimental data of the solubility study of Griseofulvin in presence of the three different agents (PEG 1500, PEG 4000, PEG 6000) showed varied response in regard to solubility enhancements. It was observed that higher solubility enhancement will correspond to lower value of emf.

CHAPTER 1

INTRODUCTION

1.1 Background

Solubility is an essential physicochemical property that has to be evaluated during the drug discovery and development process (Alsenz and Kansy, 2007; Kerns and Di, 2004). Experimentally, solubility can be measured either thermodynamically or kinetically. Thermodynamic solubility can be defined as the concentration in solution of a compound in equilibrium with an excess of solid material at the end of the dissolution process, and is often considered as the “true” solubility of a compound. Solubility of the compound is being affected by several factors including the polarity of the compound which related to its atomic composition, geometry and size.

Solubility of polar solute will be increase in the polar solvent such as water due to increase in capacity of solute to form Hydrogen bonding with the solvents. Polar solvent will have high dielectric constants, which will enhance the solubility of polar solute. Polar solvents will dissociate into ions (electrolyte) which allowed measurement of the electromotive force of the solvents systems.