

UNIVERSITI TEKNOLOGI MARA

**MORPHOLOGICAL AND HISTOLOGICAL
ANALYSIS OF OVARY AND UTERUS
FOLLOWING TREATMENT WITH ALPHA-
TOCOPHEROL IN NICOTINE INJECTED MICE**

MOHD AZMIL BIN AMIRUDIN

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ABSTRACT

Vitamin E can be classified into eight different lipophilic isoforms molecules which are alpha (α), beta (β), delta (δ) and gamma (γ) form of tocopherol, and alpha (α), beta (β), delta (δ) and gamma (γ) of tocotrienol. The purpose of this study was to evaluate the role of alpha-tocopherol in inhibiting the adverse effects of nicotine that causes the follicular and endometrial degeneration. Thirty ICR female mice were divided into five groups consisting group A treated with 0.1 ml corn oil, group B treated with 0.1 ml normal saline 0.9%, group C treated with 3 mg/kg/day nicotine, group D treated with 60 mg/kg/day alpha-tocopherol and lastly group E treated concurrently with 3 mg/kg/day nicotine and 60 mg/kg/day alpha-tocopherol. The results were obtained by analyzing the possible outcome by counting the number of follicles in the ovary and predict the thickness of endometrium and myometrium of the uterus. Exposure towards the nicotine resulted in the reduction in numbers of the follicles and endometrium thickness in the group C mice but not seen clearly in group E mice due to present of alpha-tocopherol. It can be concluded that alpha-tocopherol was able to minimize the adverse effects of the nicotine in the ovaries and the uterus.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

1.1.1 Background of study

Vitamins are organic compounds and are vital nutrients that is required in limited amount by organism. In 1912, Polish-born biochemist Casimir Funk coined the term “vitamin” (obtained from vital and amine, meaning amine of life) as it was hypothesized that vitamin was the chemical amines that present as micronutrient food factors which prevented beriberi and other dietary-deficiency diseases (Funk, 1912). It was validated subsequently that not all vitamin, such as vitamin C and vitamin E, contained amine group in their structure, thus the “e” at the end of “vitamine” was later removed and shortened to “vitamin” in English (Funk, 1912).

The discovery of vitamin E began in 1922 by Herbert McLean Evans and Katherine Scoot Bishop when they isolated an uncharacterized fat-soluble compound from green leafy vegetables which was required for reproduction (Evan & Bishop, 1922). Upon