

UNIVERSITI TEKNOLOGI MARA

**HISTOLOGICAL CHANGES IN MALE
REPRODUCTIVE SYSTEMS OF TIME RESPONSES
BISPHENOL A TREATED SPRAGUE DAWLEY
RATS**

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ABSTRACT

Bisphenol A (BPA) that is extensively used in food packaging industries is actually an estrogen-mimicking chemical that can bind to androgen receptors and inhibit the action of androgen. According to previous studies, BPA has been shown to have estrogenic activity and therefore, this study was designed to examine the time response effect of BPA on male reproductive system by using SD rats that had been exposed to BPA since juvenile age. BPA of 100mg/kg body weight/ daily was forced-fed to SD rats for three different periods of 7 days, 14 days and 28 days. After each treatment, all the treated rats were sacrificed and the testes were removed and processed for histological analysis. The obtained result showed some histological changes in seminiferous tubules of testes in adult rats, such as loss of luminal space of the seminiferous tubules, accumulation of amorphous material in the tubes, reduction in the number of maturing spermatids and aberrant distribution of spermatogenic cells within the epithelium. In conclusion, the result obtained indicates that exposure or consumption of BPA since juvenile age might has profound effects on the tissue arrangement in testes as well as on the spermatogenesis.

Key Words: Bisphenol A, seminiferous tubules, spermatogenesis, testes, histology

CHAPTER 1

INTRODUCTION

1.1 Introduction

Bisphenol A, which is commonly abbreviated as BPA is an industrial chemical and also is an organic compound with two phenol functional groups. It is prepared by the condensation of acetone with two equivalents of phenol. The reaction is catalyzed by an acid, such as hydrochloric acid or sulfonated polystyrene resin.

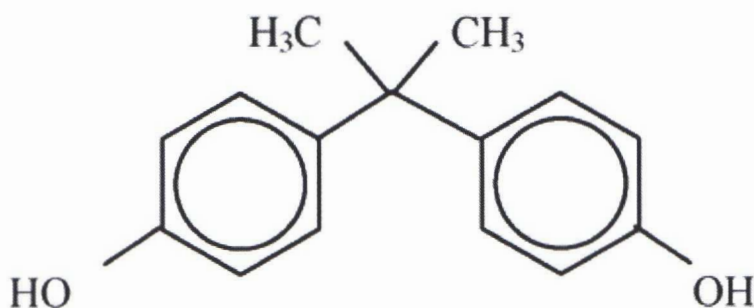


Figure 1.1: Chemical structure of Bisphenol A (BPA)