

UNIVERSITI TEKNOLOGI MARA

STUDY ON PROTEIN CONCENTRATION CHANGES AND
BODY WEIGHT CHANGES IN MALE BISPHENOL A –
TREATED SPRAGUE DAWLEY RATS IN RELATION TO
TIME RESPONSE

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ABSTRACT

Bisphenol A (BPA) is one of the most widely used chemical component nowadays. Human beings are highly exposed to BPA, thus any significant adverse effects due to exposure to the BPA become a main concern among the researchers. Purposes of this study are to study effects of BPA towards body weight, weight of male reproductive organs and plasma protein concentration in relation to time response. Male rats were administered daily dose of BPA (100 mcg/kg/day), ethinyl estradiol and Tween-80 for duration ranging from 7 days, 14 days and 28 days. BPA exposure up to 28 days caused significant increase in body weight of rats, however there are lack of evidence on effects of BPA towards weight of prostate gland and testes. BPA caused significant increase in plasma protein concentration when rats were exposed to BPA up to 14 days, further exposure more than 14 days did not cause any increment in plasma protein concentration. The present study showed BPA will increase rate of weight gain of rats when exposed for a long period of time and increase in plasma protein concentration when exposed up to 14 days.

CHAPTER 1

INTRODUCTION

1.1 Introduction

An increase in usage of chemicals in industry since the past 100 year gives a lot of effects to the living organisms and environment. Certain chemical which originates from industrial source gives several drawbacks to human, especially when the structure of the chemical mimic to the structure of certain hormone which present in human body.

Bisphenol A (BPA) is one of the most widely used chemical component (Le, et. al., 2007). It has been used extensively in production of epoxy resin and polycarbonate plastic (BPA Global Group, 2007). Polycarbonate is also broadly used in production of hardwares and devices such as medical devices, water and infant bottles and drink containers (NTP-CERHR., 2008) whereas epoxy resins is used as protective coatings in the interior of metal canister to provide protection from corrosion and contamination from microorganisms. Epoxy resins are also applied on production of paints, adhesives and circuit board laminates. It was estimated that production of bisphenol A in United