

UNIVERSITI TEKNOLOGI MARA

**USE OF NIGELLA SATIVA IN PREVENTING
HYPERTROPHIC SCAR FORMATION**

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ABSTRACT

This study was primarily attempted to develop the formation of hypertrophic scar by means of mechanical stress on the burn wound area. Additionally, *Nigella Sativa* oil was applied on the wound in order to examine its ability to prevent the scar formation. Partial thickness burn wound was induced on the dorsal region of rats. Three groups of rats were randomly divided into 6 per group as normal, control and rats receiving *Nigella Sativa* oil. Wound morphology, wound size and histological evaluation were performed. Formation of hypertrophic scar was delayed due to inadequate mechanical stress and limited duration of study. However, rats that treated with *Nigella Sativa* oil showed the ability to minimize the formation of normal scar.

CHAPTER 1

INTRODUCTION

1.1 RESEARCH BACKGROUND

The largest organ of the body is skin. Skin consists of three layers which are epidermis, dermis and subcutaneous fatty tissue (Finzgar et al., 2014). Epidermis is composed of epithelial tissue that represents the superficial and thinner layer of the skin. The epidermis has five layers that are stratum basale, stratum spinosum, stratum granulosum, stratum lucidum and stratum corneum. Meanwhile, dermis is the deeper and thicker portion which consists of connective tissue. Dermis can be divided into two parts which are thin superficial papillary region and thick deeper reticular region. Subcutaneous fatty tissue is made up of areolar and adipose tissue. There are numerous function of skin such as thermoregulation, blood reservoir, protection, cutaneous sensations, excretion and absorption and synthesis of vitamin D. One of the main functions of the skin is protection from microbes, abrasions, heat and chemicals.

Wound is an injury or damage, usually restricted to those caused by physical means with disruption of normal continuity of structures. There are many types of wound include non-penetrating wounds, penetrating wounds and miscellaneous wounds (Yates et al., 2012). Non-penetrating wound is the wound that does not causes the damage of the surface of the body. Abrasions, lacerations, contusions and concussions are under non-penetrating wounds. Unlike non-penetrating wound, penetrating wound can cause disruption of the surface of the body and somehow the damage can extend to the tissue and the body cavity. Penetrating wounds may include