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## 7<sup>th</sup> Malaysia Indonesia Brunei Medical Sciences Conference "TOWARDS A HOLISTIC AND INTEGRATIVE APPROACH IN HEALTHCARE"



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Deputy Minister of Health Malaysia

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## EFFECTS OF *MOMORDICA CHARANTIA* AQUEOUS EXTRACT ON CUTANEOUS WOUND HEALING IN DIABETIC RATS

Normaliza O<sup>1,2</sup>, Norhazilah M<sup>1</sup>, Noor Fadzilah Z<sup>2</sup>, Mohamad Fairuz Y<sup>1</sup>, Azian AL<sup>1</sup>

<sup>1</sup>*Department of Anatomy, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*

<sup>2</sup>*Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Kuala Lumpur, Malaysia*

### Background:

Diabetes mellitus is a chronic disorder that affects an increasing number of people worldwide. Impaired wound healing is one of the complications that can lead to infection, gangrene and amputation. Besides current standard medication, some traditional herbs have been used to treat this disease. *Momordica charantia* or bitter gourd is known to possess antioxidant, antibacterial and antihyperglycaemic properties. It has also been used for wound healing.

### Materials and Methods:

A total of 24 male *Sprague Dawley* rats were used in the study. They were divided into a control group (n=8), a diabetic non-treated group (n=8) and a diabetic-treated *Momordica charantia* aqueous extract group (n=8). A single intravenous injection of 50mg/kg streptozotocin was used for induction of diabetes while the control group received normal saline intravenously. Four full thickness wounds were created on the dorsal aspect of the thoracolumbar area of each rat using a six millimetres punch biopsy needle. The treated group received 50mg aqueous extract of *Momordica charantia* while the diabetic non-treated and control group received normal saline topically. The treatment was given daily and serial photographs were taken on day 0 and day 10 following wound creation. Wound areas were measured using image analyzer software and the wound closure rate was calculated. At day 10, the wounded skin were excised and processed for hematoxylin and eosin staining.

### Results:

On day 10, the wound closure rate among the diabetic-treated *Momordica charantia* aqueous extract group was better than the diabetic non-treated group. Histologically, epithelization, keratinization, granulation tissues and collagen fibres were well formed and organized in the diabetic-treated *Momordica charantia* aqueous extract group as compared to the diabetic non treated group.

### Conclusion:

*Momordica charantia* aqueous extract seems to accelerate wound healing in the diabetic induced rats at the above dose.

### Keywords:

Wound healing, Wound closure rate, *Momordica charantia* aqueous extract