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Authors: Abid Nordin, Nur Qisya Afifah Veronica Sainik, Mohamed S. Zulfarina, Isa Naina-Mohamed, Aminuddin Saim, Ruszymah Bt Hj Idrus

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Honey and Epithelial to Mesenchymal Transition in Wound Healing: An Evidence-Based Review

Abid Nordin[a], Msc., Nur Qisya Afifah Veronica Sainik[a], PhD., Mohamed S Zulfarina[b], Bsc., Isa Naina-Mohamed[b], MD. PhD., Aminuddin Saim[c], MD., and *Ruszymah Bt Hj Idrus[a], MD. PhD.

[a]*Department of Physiology, Faculty of Medicine, Universiti Kebangsaan Malaysia (The National University of Malaysia), Cheras, Kuala Lumpur, 56000, Malaysia.*
[b]*Department of Pharmacology, Faculty of Medicine, Universiti Kebangsaan Malaysia (The National University of Malaysia), Cheras, Kuala Lumpur, 56000, Malaysia.*
[c]*Ear, Nose & Throat Consultant Clinic, Ampang Puteri Specialist Hospital, Ampang, Selangor, 68000, Malaysia*

HIGHLIGHTS

- A systematic review of empirical evidence on the effect on honey on EMT of wound healing.
- Honey influence wound healing positively by driving the EMT process.
- The effect of honey varies depending on the floral origin.

Abstract: This review inspects all the available report on association of honey and the epithelial mesenchymal transition (EMT) event in wound healing. A systematic review of the literature was conducted to identify relevant studies on honey and EMT. The search was done in Medline via Ebscohost and Scopus database to obtained relevant articles published between 1823 to 2017. The main inclusion criteria were research articles published in English that reported changes in the EMT markers in *in vitro* wound healing model when subjected to honey. The literature search identified 19 potentially relevant articles, whereby 8 met the inclusion criteria. Two types of *in vitro* wound healing model were included, cutaneous and corneal wound. All studies reported a positive effect of honey in wound healing. In terms of EMT markers, honey was shown to upregulate mesenchymal markers and downregulated epithelial markers providing the evidence of EMT activation by honey. However, the effects on EMT varied dependent on the floral origin of the honey. This review provides good evidence that honey regulates the process of EMT and has a positive impact on wound healing.

Keywords: honey; epithelial; mesenchymal; wound healing.