

Characterising the healing power of honey

Honey has antioxidant and anti-inflammatory properties. It is used to treat recalcitrant wounds, ulcers, burns and pressure sores. Understanding the mechanisms by which honey helps healing will assist with the identification and handling of honey for use in healthcare.

Each year, more than 400,000 patients require chronic wound care, costing the Australian healthcare system \$2.6 billion per annum.

Australian honey has significant antimicrobial capacity. Some honey also contains antioxidants that scavenge free radicals in the body, helping protect cells. Free radicals are unstable molecules that can damage cells, causing illness and aging. Manuka honey, for example, has a high radical scavenging capacity.

The radical scavenging may explain the anti-inflammatory properties responsible for some monofloral honey's exceptional wound healing ability.

Researchers from the CRC for Honey Bee Products investigated the antioxidant activity and radical scavenging capacity of honey from different Eucalyptus species.



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Researchers comprehensively analysed 53 honey samples from 16 different Eucalyptus species from eastern and southern Australia. They also analysed four samples of New Zealand Manuka honey and a sugar mixture control.

As there is no single measurement of antioxidant potency that reveals the radical scavenging ability of a honey, researchers took measurements throughout the scavenging process.

Interleukin 6 (IL-6) is a chemical in the body associated with inflammation. Fibroblasts and macrophages, which occur in all tissues, release cytokines such as IL-6. Cytokines are small protein molecules that help stimulate the movement of cells towards sites of inflammation, infection and trauma.

CRC research identified the component of honey that stimulates IL-6 production and the mechanism by which it occurs. By measuring levels of IL-6, researchers were able to compare the anti-inflammation potential of different honey types.

With concern over the overuse of antibiotics, alternative treatments that can heal and fight bacterial infections are gaining attention. Understanding how honey affords its protection and additive healing power may well provide much needed new healthcare treatments.

CRC research has created a standard procedure that the industry can use to determine the free radical scavenging capacity of Australian honey.

This research has also added to knowledge of honey's health benefits. The data collected represent a valuable reference for future research on Australian honey.



CRC PhD student Soheila Beiranvand studied the anti-inflammation ability of different types of honey