Bael Leaf Oil Promotes Wound Healing by Activating the Skin Repair Protein AQP3

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Budsarin Kesornnoi, Orawin Prangsaengtong, Duangratana Chuvisitkul and Worapan Sitthithaworn. Bael Leaf Oil Increases AQP3 Expression and Exerts Wound-Healing Effect in Human Immortalized Keratinocytes. Naresuan University Journal: Science and Technology 2023; (31)3.
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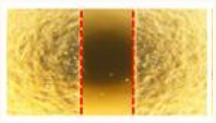
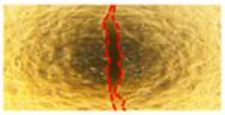


Wound was created.

Treated with bael leaf oil.



Wound healed and APQ3 mRNA expressed.

Background:

- **Bael** (*Aegle marmelos*) is a plant of the Rutaceae family.
- Its **volatile oil** distilled from leaves has been studied for its ability to help wounds heal.

Key Components:

- The important ingredients in bael leaf oil are **trans-caryophyllene** and **limonene**.
- These components were identified using a technique called **GC-MS analysis**.
- Researchers wanted to understand how bael leaf oil and its key components actually help wounds heal.
- They focused on a specific protein called **aquaporin-3 (AQP3)**, which plays a role in keeping our skin hydrated

Experiment Setup:

- They used **keratinocyte cells** (skin cells) grown in a lab dish.
- These cells were treated with bael leaf oil and its components.

Results:

- Both **trans-caryophyllene** and **bael leaf oil** had a positive effect:
  - They helped the skin cells close wounds faster.
  - They also increased the expression of **AQP3 mRNA**, which is related to skin hydration.

Conclusion:

- Among the components of bael leaf oil, **trans-caryophyllene** seems to be the superstar.
- It enhances wound healing, possibly by working through the water channel **AQP3**.

In simpler terms, bael leaf oil and trans-caryophyllene help our skin heal, and they do it partly by keeping our skin hydrated.