

Medicinal Uses of Honeybee Products ~ APITHERAPY ~

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The content of this presentation is not intended to be a substitute for professional medical advice, diagnosis, or treatment.

Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition.



Outline

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Pollen / Bee Bread

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Beeswax / Comb

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Bee Venom



HoneyBee Products: Apitherapy



Dr. Stefan Stângaciu

<https://apitherapy.com/hive-presentation/>



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Bee Venom

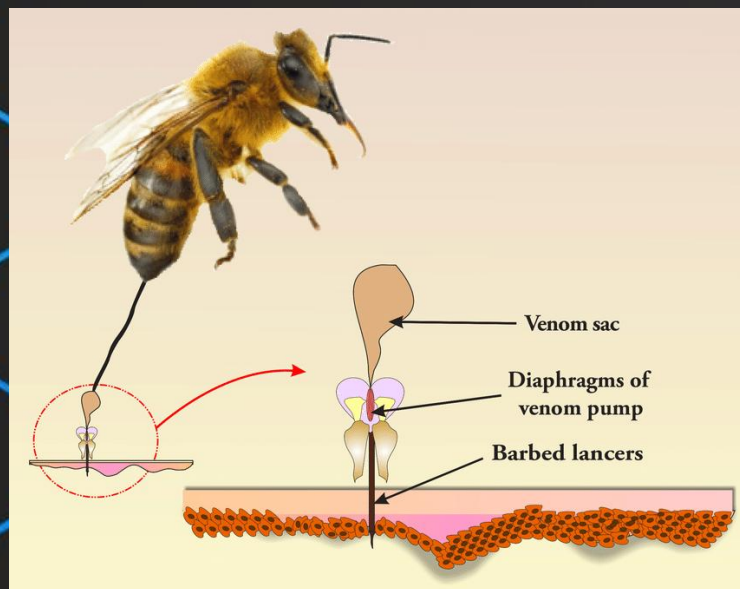
The stingy thingy

What is Bee Venom?

Produced by two glands associated with the sting apparatus of worker bees

- Production of bee venom increases during the first two weeks of the adult worker's life
- Reaches a maximum when the worker bee becomes involved in hive defense and foraging

When a bee stings, it does not normally inject all the 0.15 to 0.3 mg of venom held in a full venom sac



Bee Venom: A Complex Biological Secretion

- **Defensive secretion from worker honeybees**
- **Pharmacologically active at microgram doses**
- **Not a single compound, but a biologically coordinated mixture**



How does the honeybee sting?

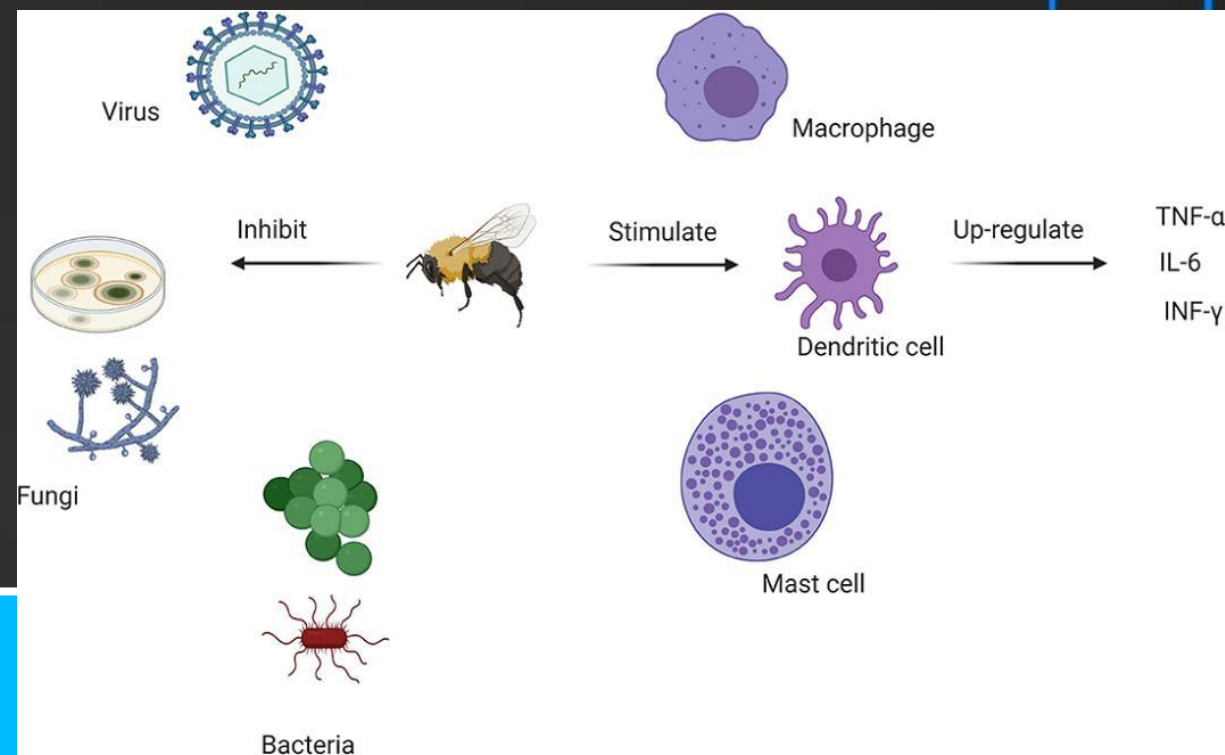


Bee Venom BioActivity

- Melittin
- Phospholipase A2 (PLA2)
- Apamin
- Adolapin
- Mast cell–degranulating peptide

Anti-Inflammatory Pathways

- **Downregulation of NF- κ B**
- **Reduced TNF- α , IL-1 β , IL-6 signaling**
- **Impact on chronic inflammatory diseases**



Bee Venom BioActivity

Immunomodulation

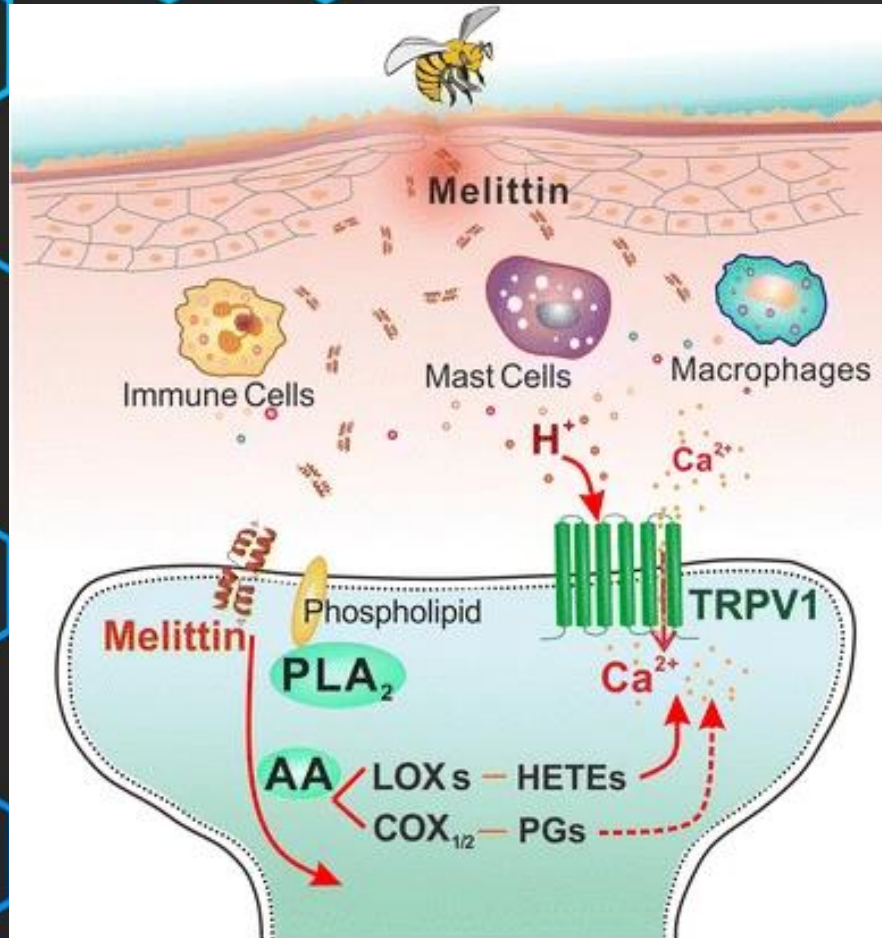
- **Immune regulation rather than suppression**
- **Effects on Th1/Th2 balance and regulatory T cells**

Neurological & Analgesic Effects

- **Apamin and ion channel modulation**
- **Pain signaling alteration**
- **Experimental neuroprotective effects**

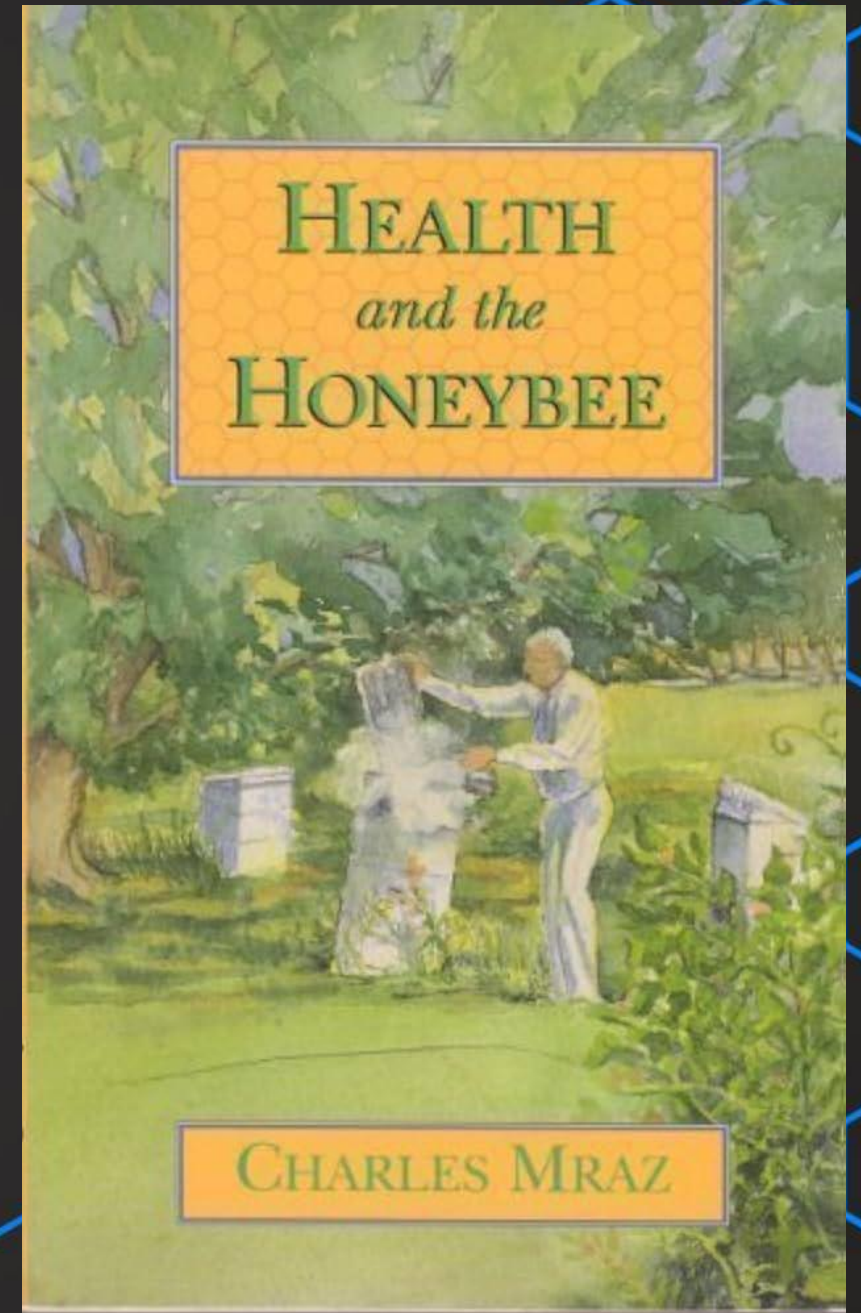
Melittin:

The Major Pain-Producing Substance of Bee Venom



<https://www.youtube.com/shorts/cIE9xXzySsl?feature=share>

History of the BVT



What Should Consumers Ask Practitioners?

- **What formal training do you have in BVT?**
- **How do you screen for venom allergy?**
- **What emergency protocols are in place?**
- **What conditions should not be treated?**
- **How is dosing determined and documented?**



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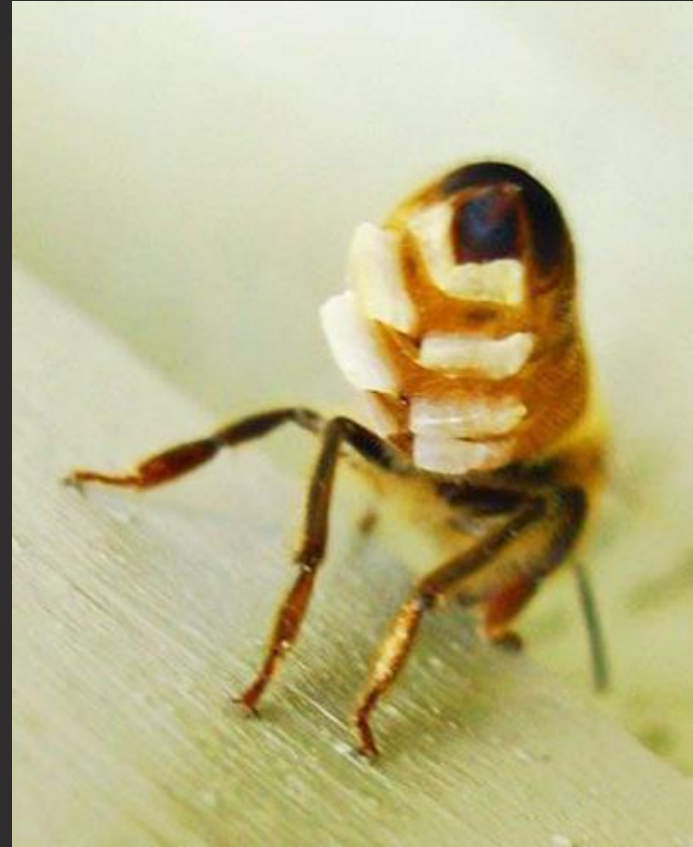


Beeswax / Comb

The waxy stuff

What is BeesWax?

Young bees in the hive, after feeding the young brood with royal jelly, in their third week of life, take part in the construction of the hive



8 wax glands on the underside of the abdomens of the young bees' secret small wax platelets



These are scraped off by the bee, chewed and masticated into pliable pieces with the addition of saliva and a variety of enzymes

TOP BEESWAX BENEFITS & USES

BeesWax BioActivity



Skin Enhancer

Beeswax inhibits the growth of bacteria, which can prevent and treat skin conditions like dermatitis, psoriasis and eczema.



Skin Moisturizer

It helps protect and repair rough, dry or chapped skin because it has the ability to lock in moisture.



Liver Protector

Beeswax helps normalize liver function and improve symptoms of fatty liver disease.



Cholesterol Stabilizer

Its compounds lower bad cholesterol and raise good cholesterol.



Pain Reliever & Anti-Inflammatory

Its anti-swelling effects help reduce inflammation and relieve pain.



Acne Treatment

It has strong antiseptic, healing and anti-inflammatory properties making it effective in the treatment of acne.



Lip Healer

The natural moisturizers in beeswax make it the perfect lip balm to heal dry, cracked lips.



Stretch Mark Eliminator

The vitamin A in beeswax helps produce collagen, which fights stretch marks.



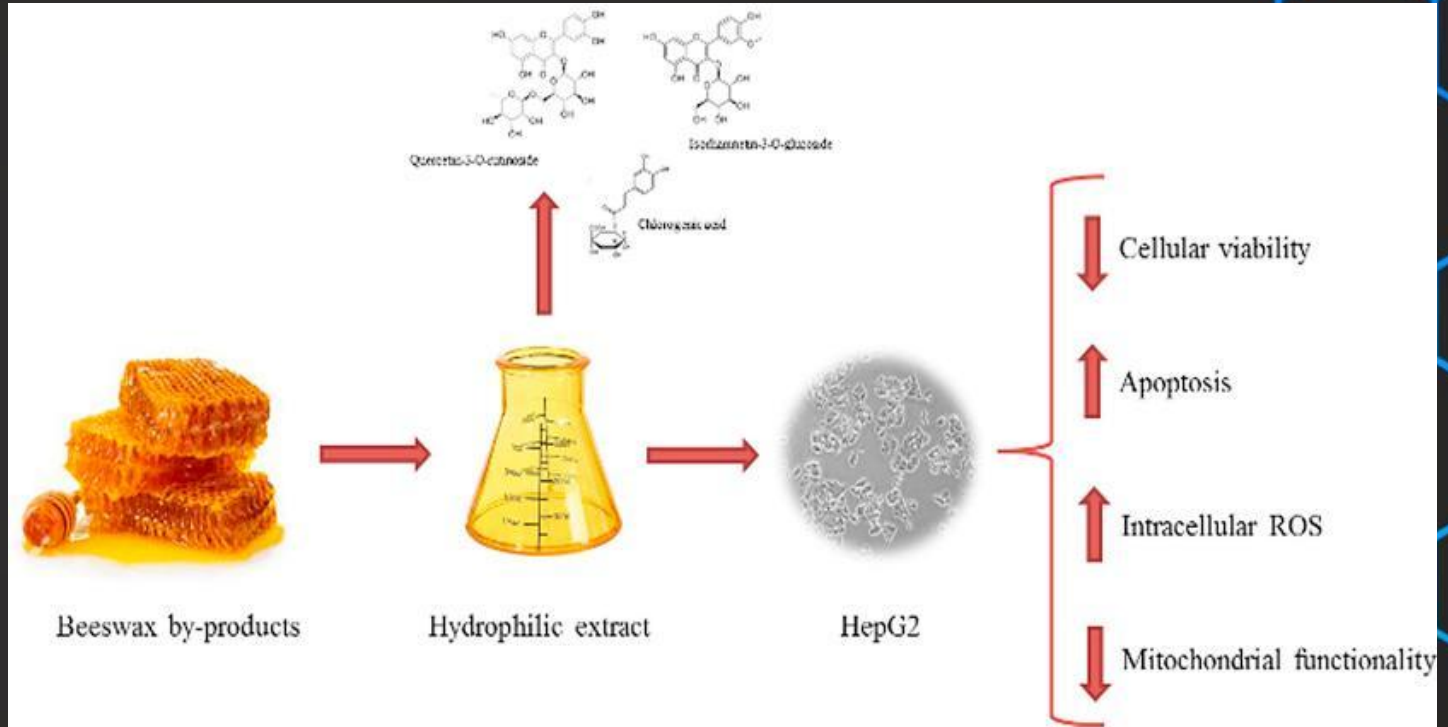
Jock Itch & Fungal Skin Infection Reliever

It helps reduce inflammation, pain and itching associated with fungal infections.



Relaxer

Beeswax candles are great aromatherapy agents.





4



Royal Jelly

The milky substance



What is Royal Jelly?

a milky substance produced by the hypopharyngeal and mandibular glands of nurse bees between their 5th and 15th days of age



All bee larvae are fed royal jelly for the first three days after being laid.



After that only the larvae designated to be the queen are fed royal jelly.

- The components of royal jelly help the queen mature into a large, fertile and longer-living bee.

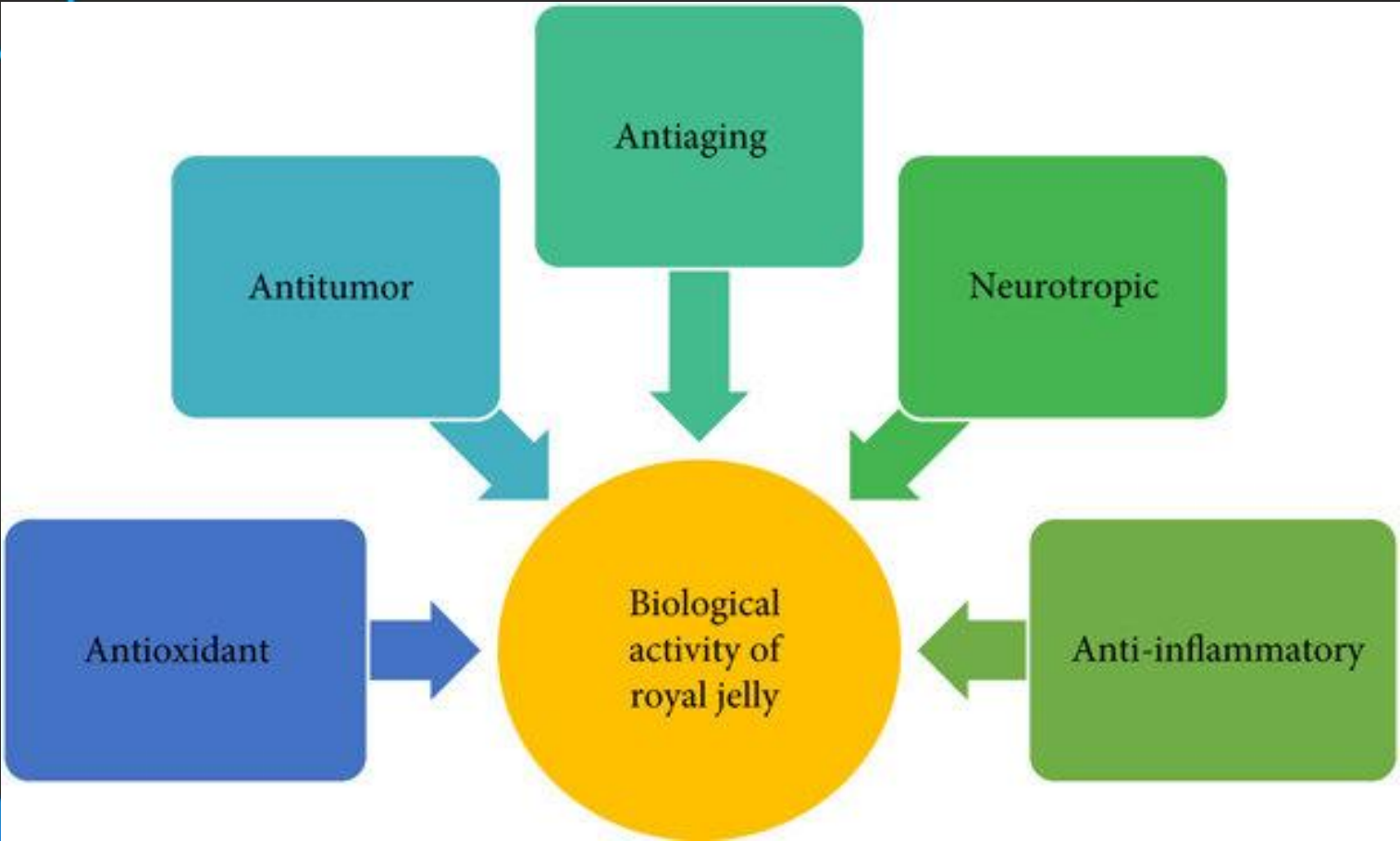
ROYAL JELLY COMPOSITION

Most of the proteins in royal jelly are classified as Major Royal Jelly Proteins (MRJPs).

The main bioactive compound in royal jelly is 10-HDA.



BioActivity of Royal Jelly



Pasupuleti VR, Sammugam L, Ramesh N, Gan SH.

Honey, Propolis, and Royal Jelly: A Comprehensive Review of Their Biological Actions and Health Benefits.

Oxid Med Cell Longev. 2017



Royal Jelly

Humans

Model organisms

In vivo:
↑ Fertility
↓ Metabolic disorders

In vitro:
↑ Proliferation
↓ Senescence
↑ Telomeres

↑ Fertility
↑ Body composition
↑ Healthspan
↑ Lifespan

Effect on healthspan and lifespan

Royal Jelly
as an
AntiAging
Product



3



Pollen / Bee Bread / Perga

source of dietary protein for bees

What is Pollen and Bee Bread?

Pollen, the male seed of a plant, is the primary source of dietary protein for bees.

Bees collect pollen to make Beebread
Mixing with honey and
Adding microorganisms to ferment it.

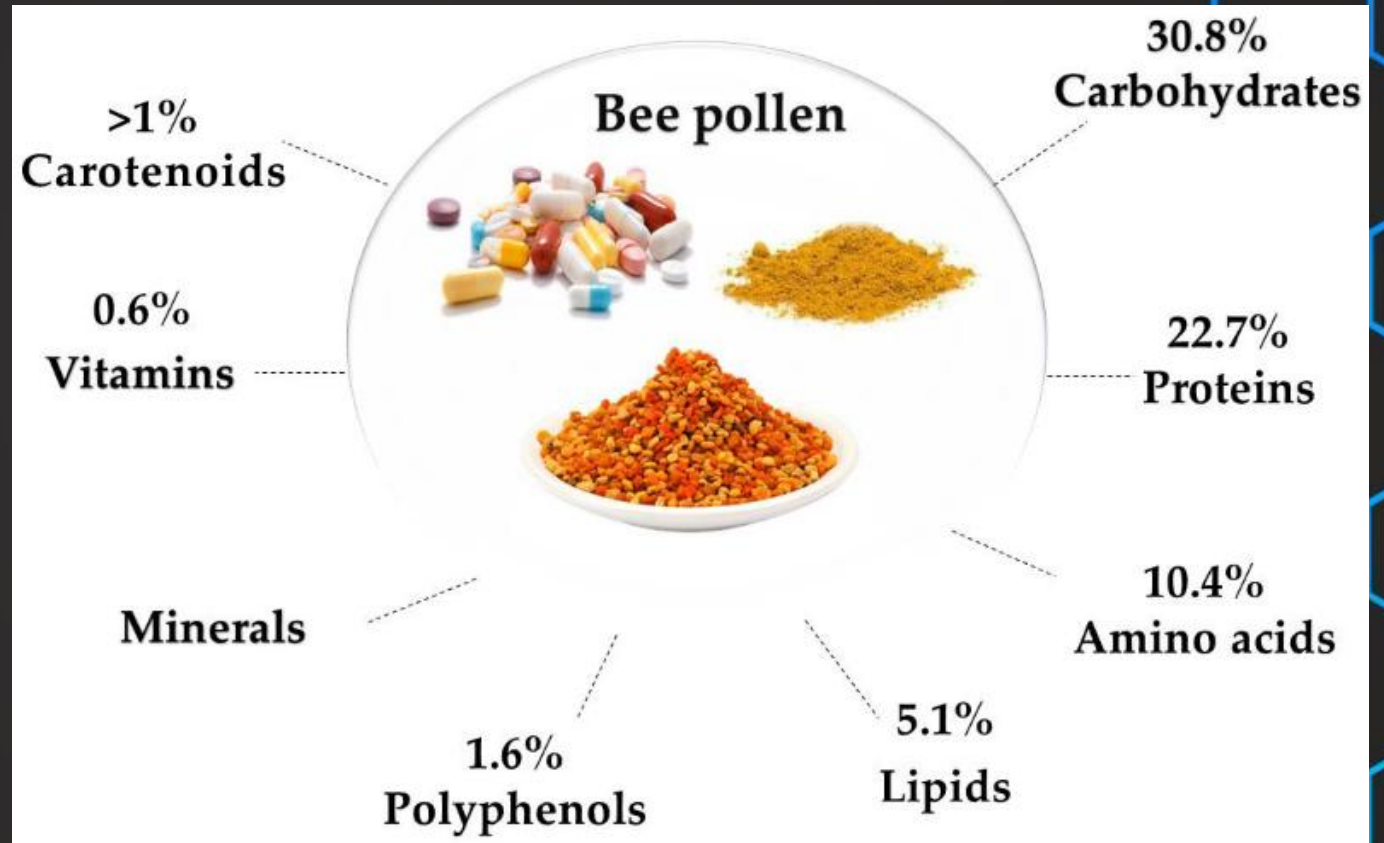


How Bees Make
Bee Bread?



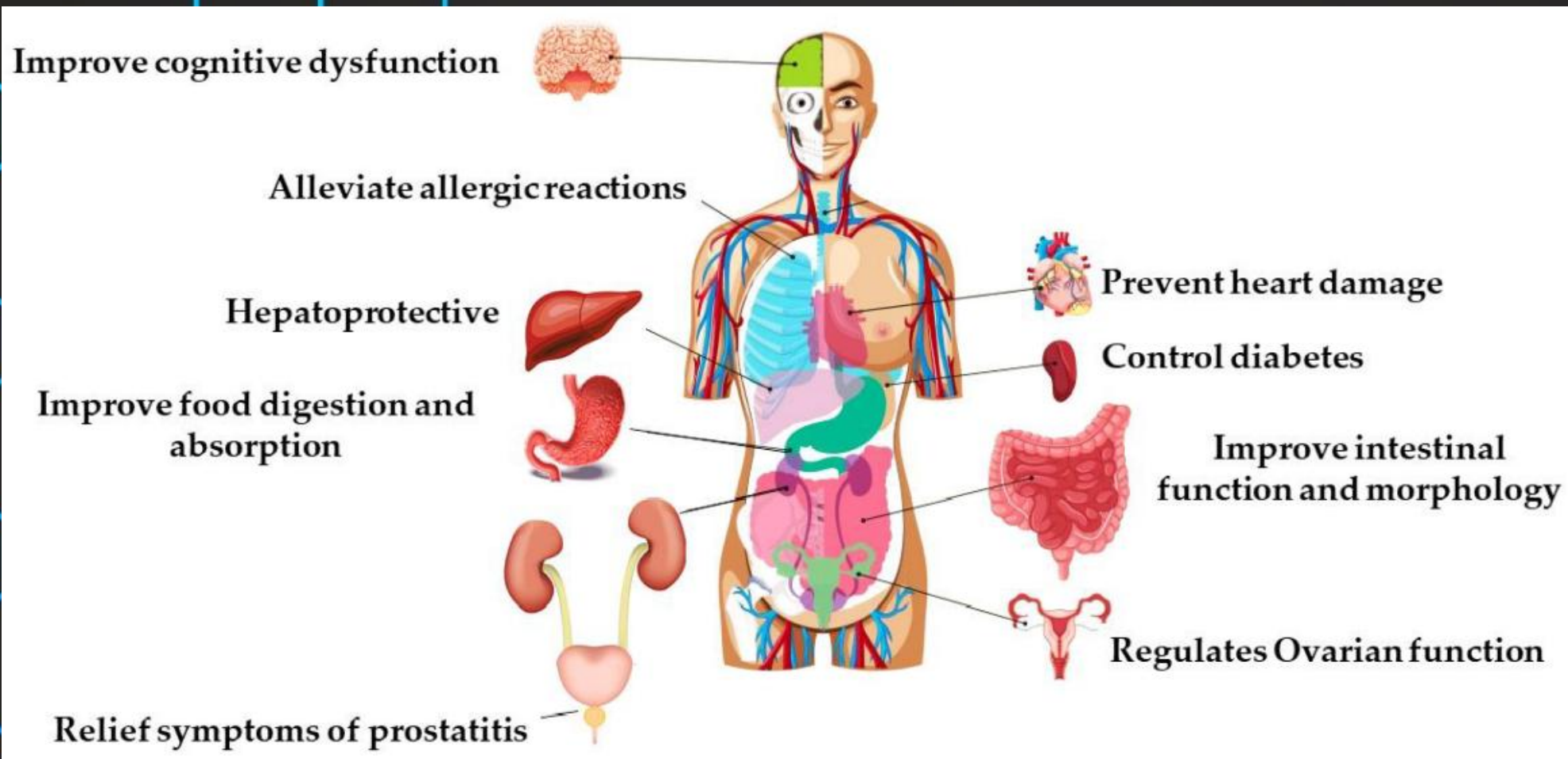
Bees consume bee bread to secrete Royal Jelly and Wax

Components of Bee Pollen



Bee Pollen: Current Status and Therapeutic Potential
<https://doi.org/10.3390/nu13061876>

Pollen in Human Health



Bee Pollen: Current Status and Therapeutic Potential
<https://doi.org/10.3390/nu13061876>



2



Propolis

The Resin
/
Bee Glue

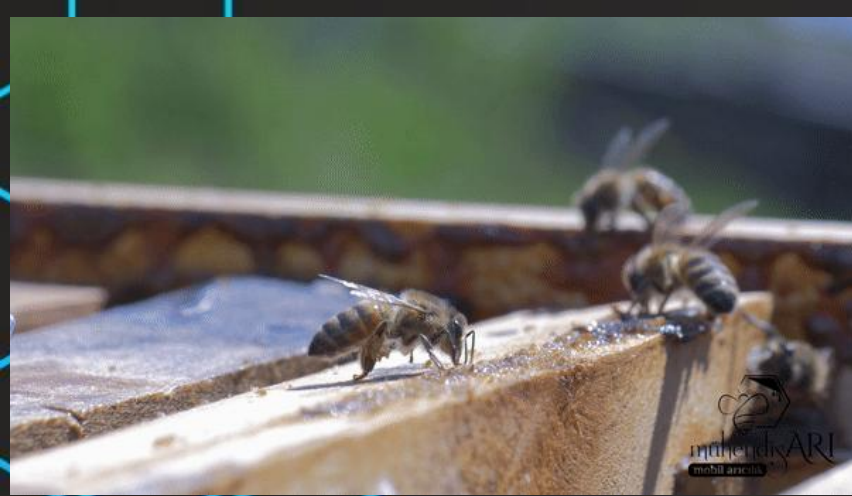
What is Propolis?

a sticky substance that bees make from tree and other plant resins

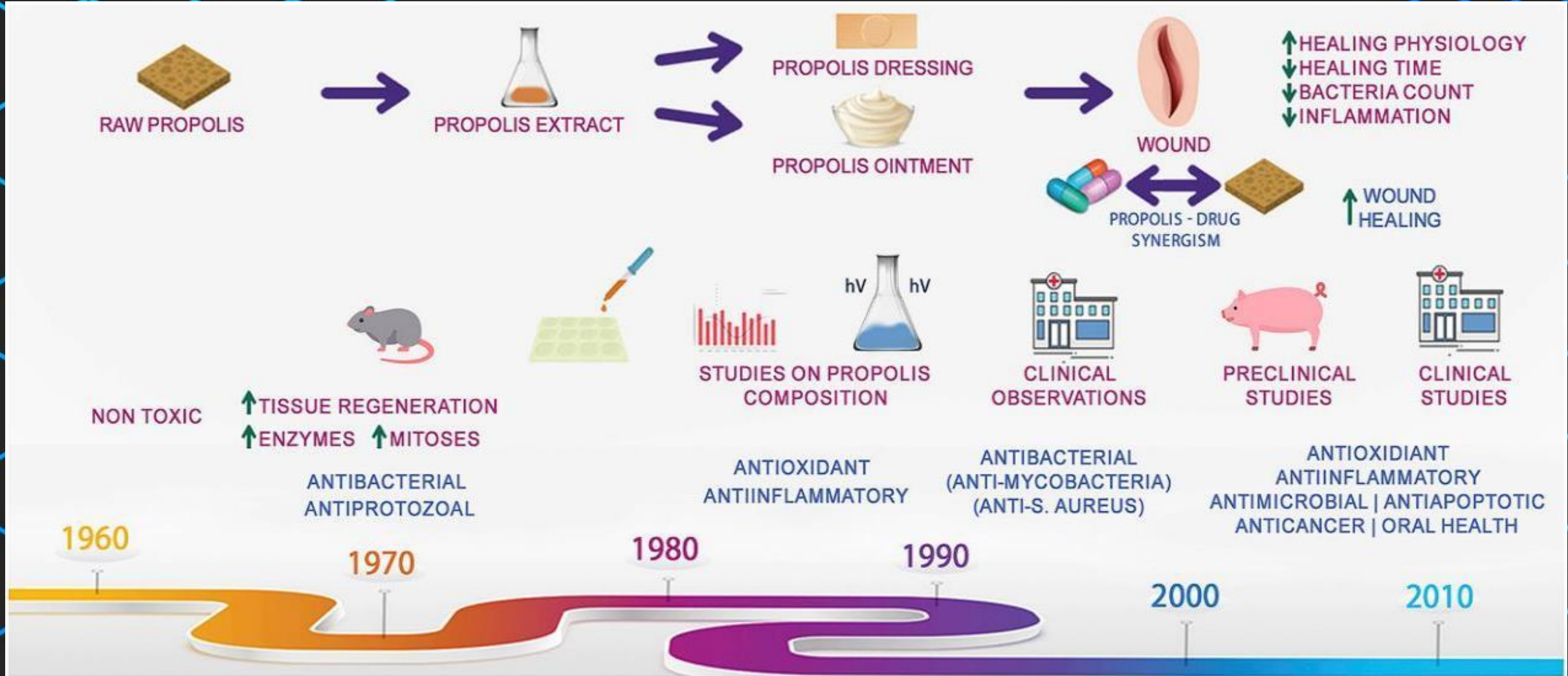
Bees coat the inside of the hive with propolis
Prevent the spread of bacteria and fungi - detrimental to the well-being of the colony.



Propolis from different regions of the world exhibit slightly different properties depending on the types of tree and plant resins available in the area.



Propolis as a Medicine



Propolis BioActivity

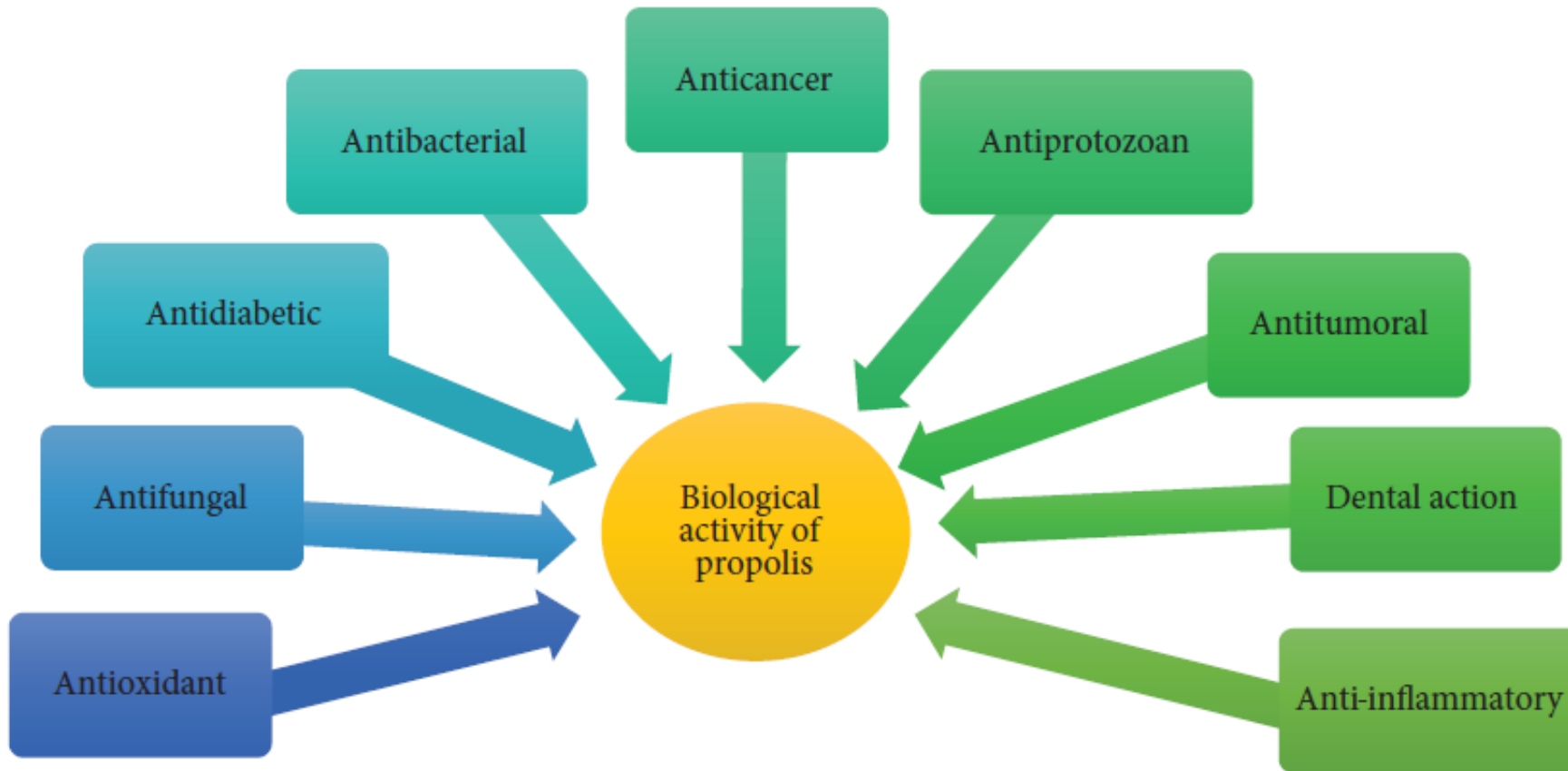


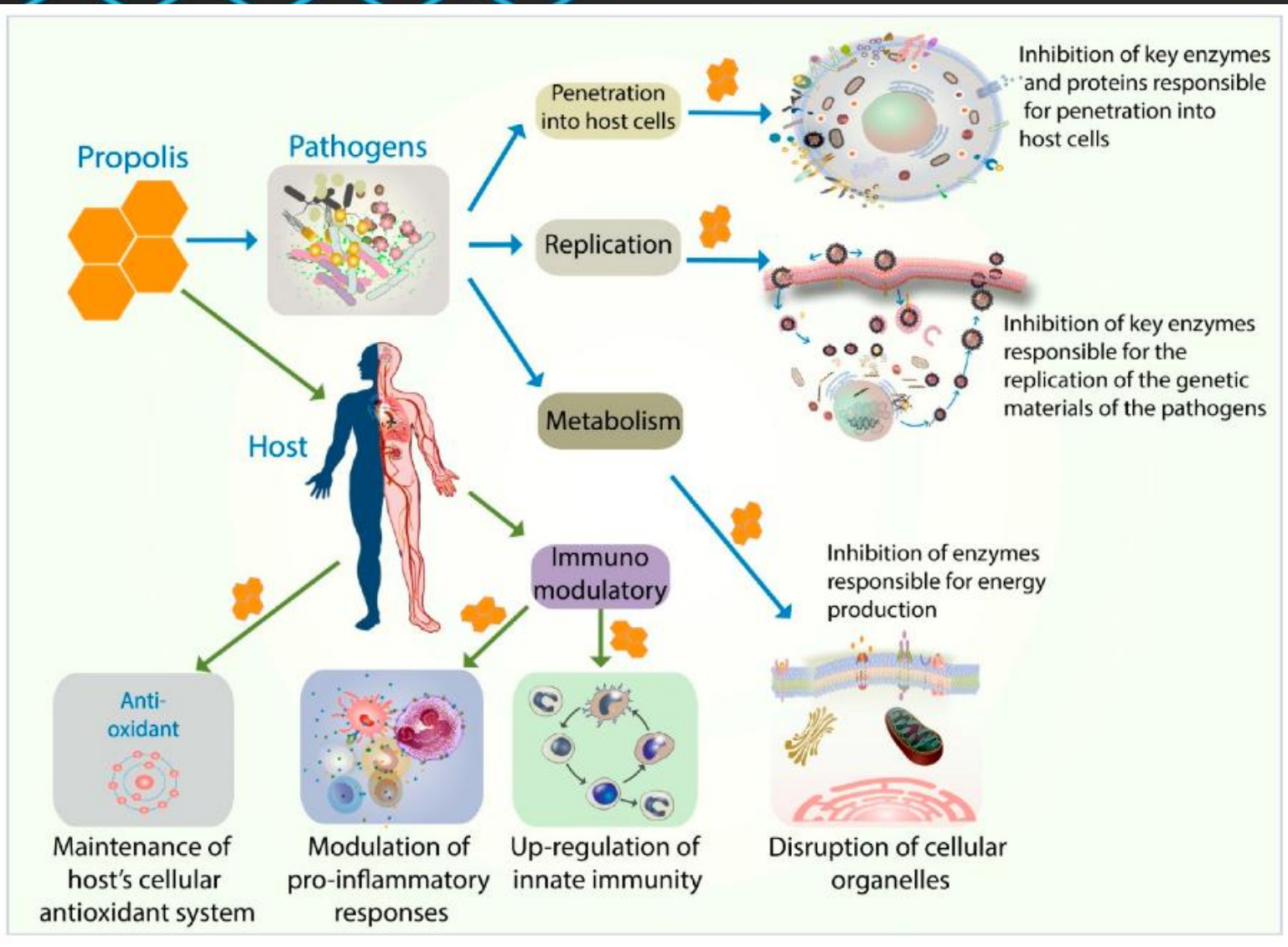
FIGURE 3: The biological activities of propolis.

Pasupuleti VR, Sammugam L, Ramesh N, Gan SH.

Honey, Propolis, and Royal Jelly: A Comprehensive Review of Their Biological Actions and Health Benefits.

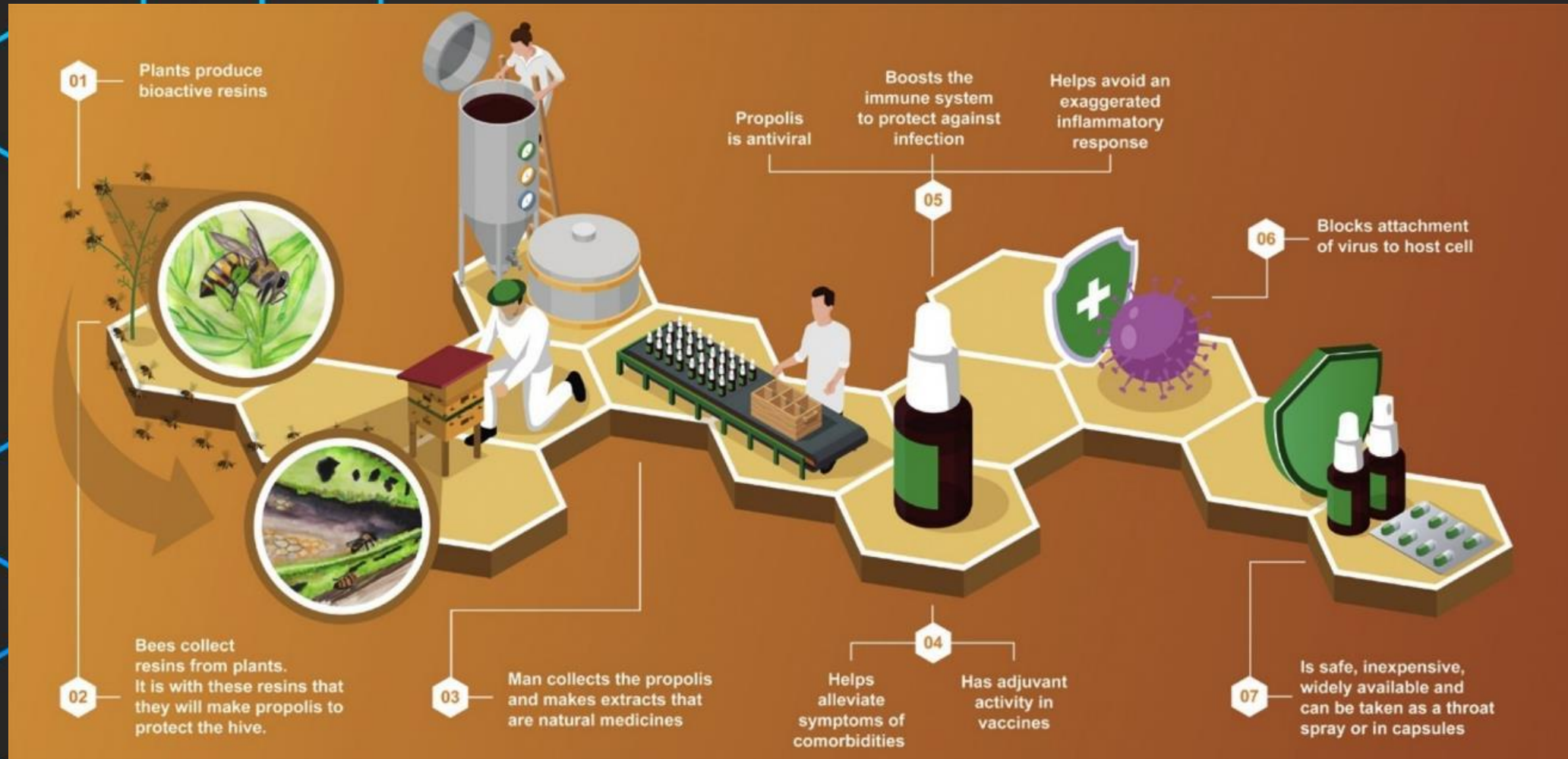
Oxid Med Cell Longev. 2017





Propolis as an Antibacterial Agent

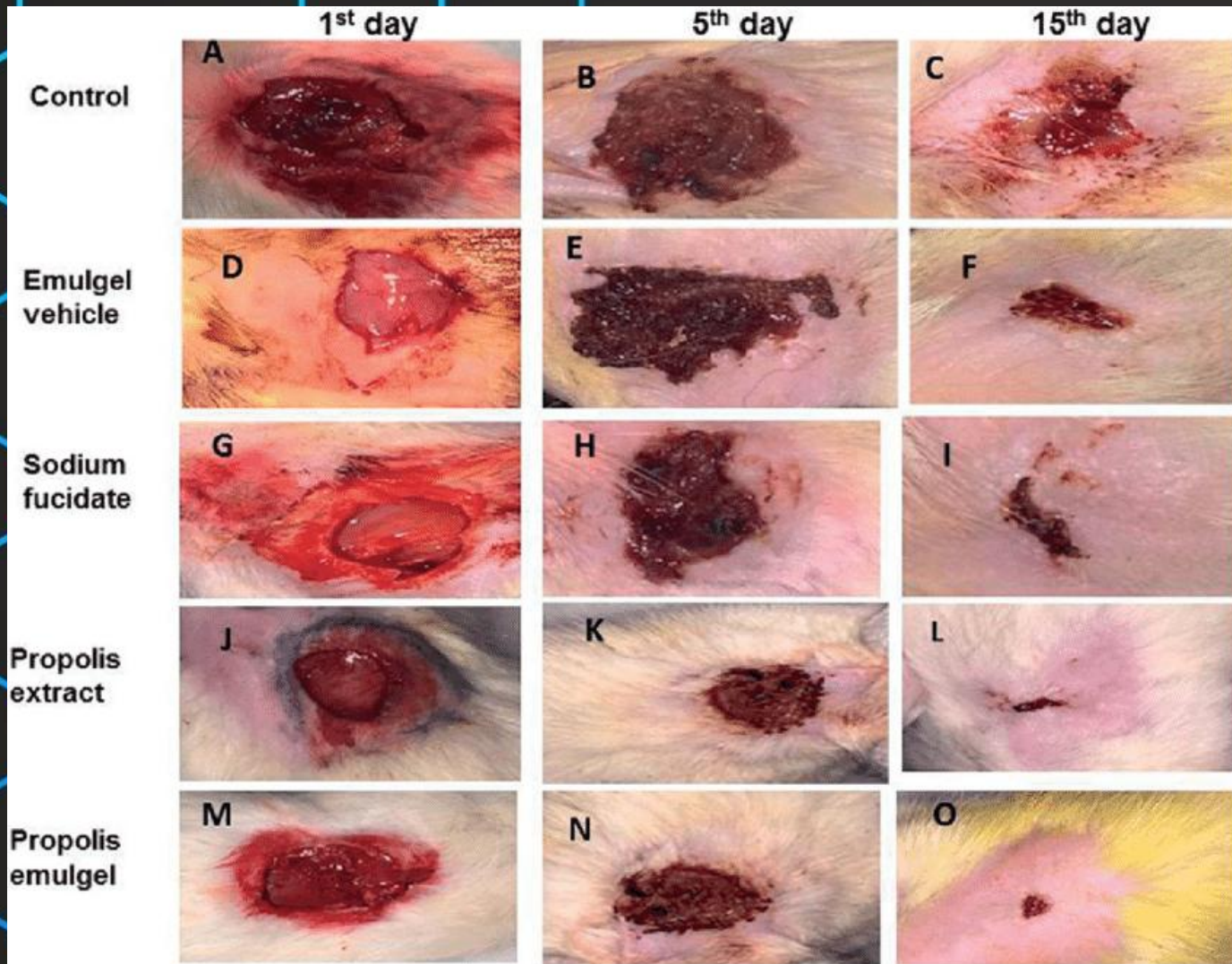
Propolis as an Antiviral Agent



Propolis against SARS-CoV-2 infection

<https://doi.org/10.1016/j.biopha.2020.110622>

Propolis for Wound Healing



**Propolis emulgel:
A natural remedy for
burn and wound (in
Rat Incision Model)**

1



Honey

The sweetest stuff

Is honey just a sugary food?



Where does Honey come from?

BLOSSOM HONEY



HONEYDEW HONEY



Spotted Lanternfly & Aphids



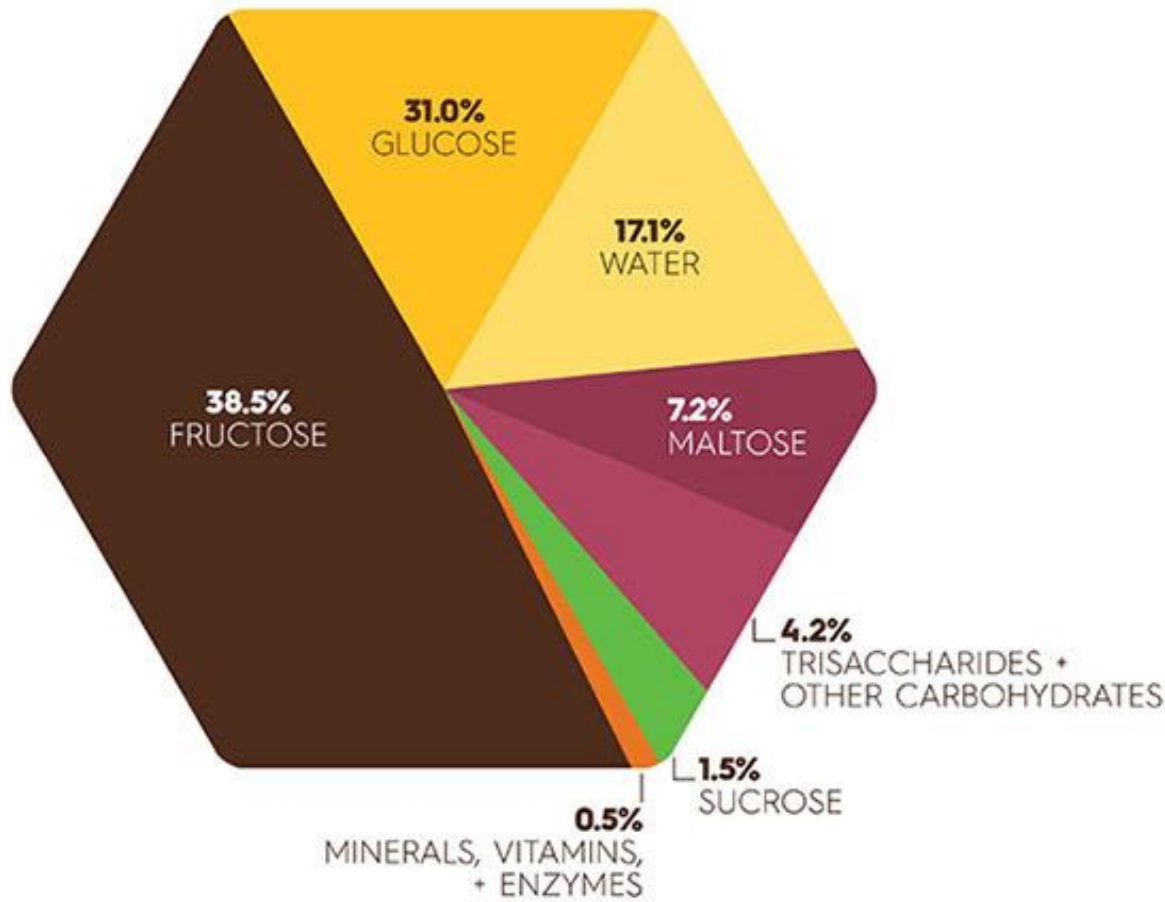
**Fir, Pine, Spruce, Salix,
Castanea, Oak, Olea, Tilia,
Betula, Aesculus**



HONEY

A Natural **Therapeutic** Agent

HONEY'S NUTRITIONAL PROFILE



Honey can contain over **3500** compounds



HONEY
PATHWAY

**Phenolic
Acids**

UTSA
The University of Texas at San Antonio
College of Sciences

BioActivity

Flavonoids

Tannins

Enzymes

Vitamins

Minerals

Fructose

Sucrose

Therulose

Glucose

Maltose

Turanose

Erlucose

Invertase

Diastase

Nigerose

**Glucose
Oxidase**

Catalase

Enzymes

Aluminum

Phosphorus

Zinc

Iron

Potassium

Elements

Magnesium

**Aspartic
Acid**

Manganese

Proline

Lysine

Proteins



Sugars

HONEY Contents



Honey is Medicine



Not every honey is created equal?





3

Practical Applications of Honey for Health



Honey for Sore Throat

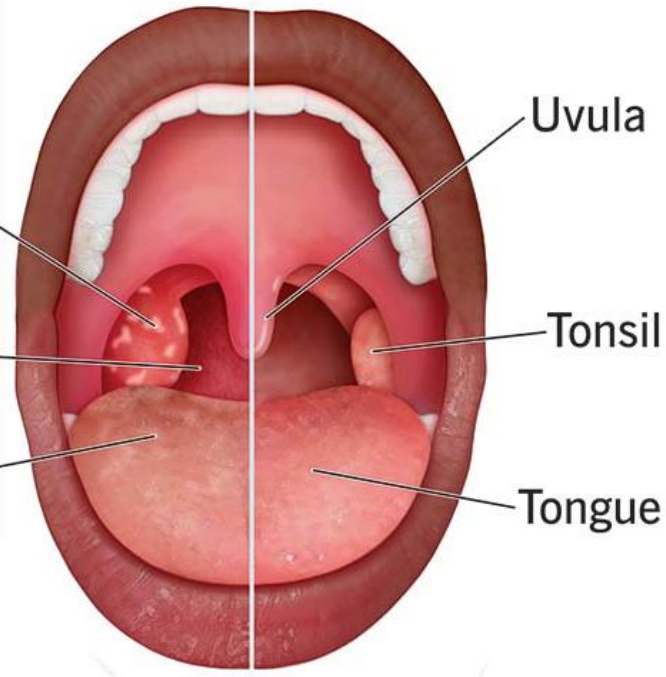
Sore Throat *Pharyngitis*

Possible signs
of a sore throat

White patches

Redness
and swelling

Pale tongue



Before
Honey
Treatment

Honey for Acne Treatment - UTSA Student

After Honey
Treatment
(6-7 weeks)

Plate. 1

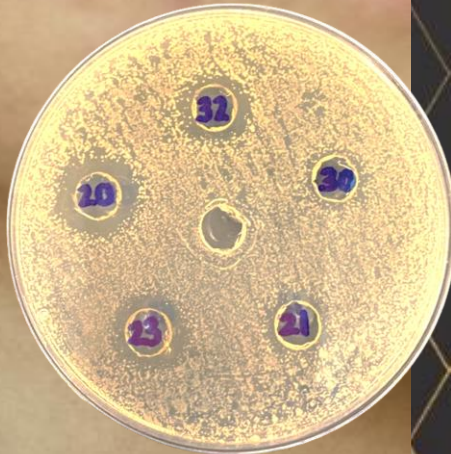
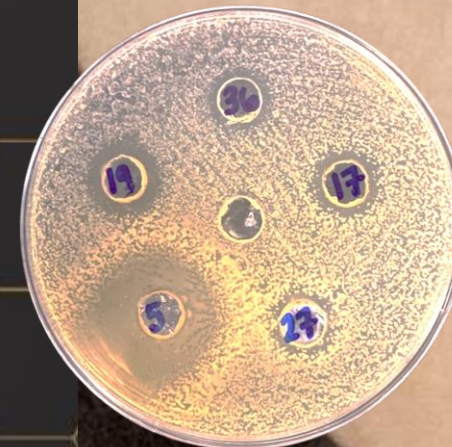


Plate. 2

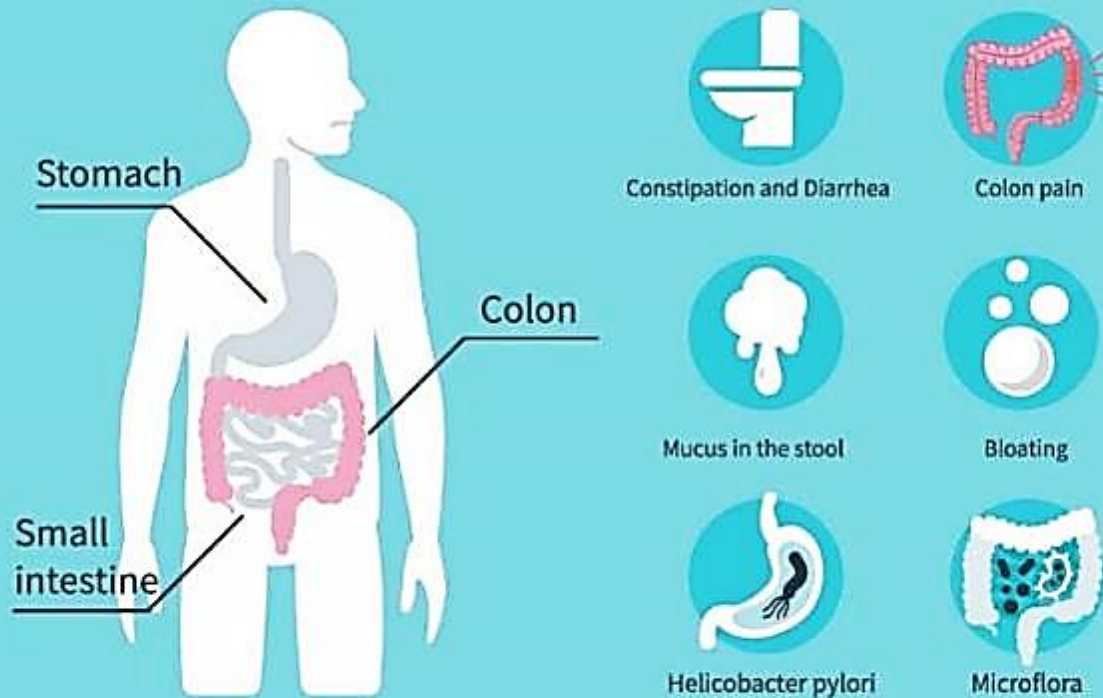


Plate. 3



Honey for Gastrointestinal Diseases

IBS SIGNS AND SYMPTOMS Irritable Bowel Syndrome

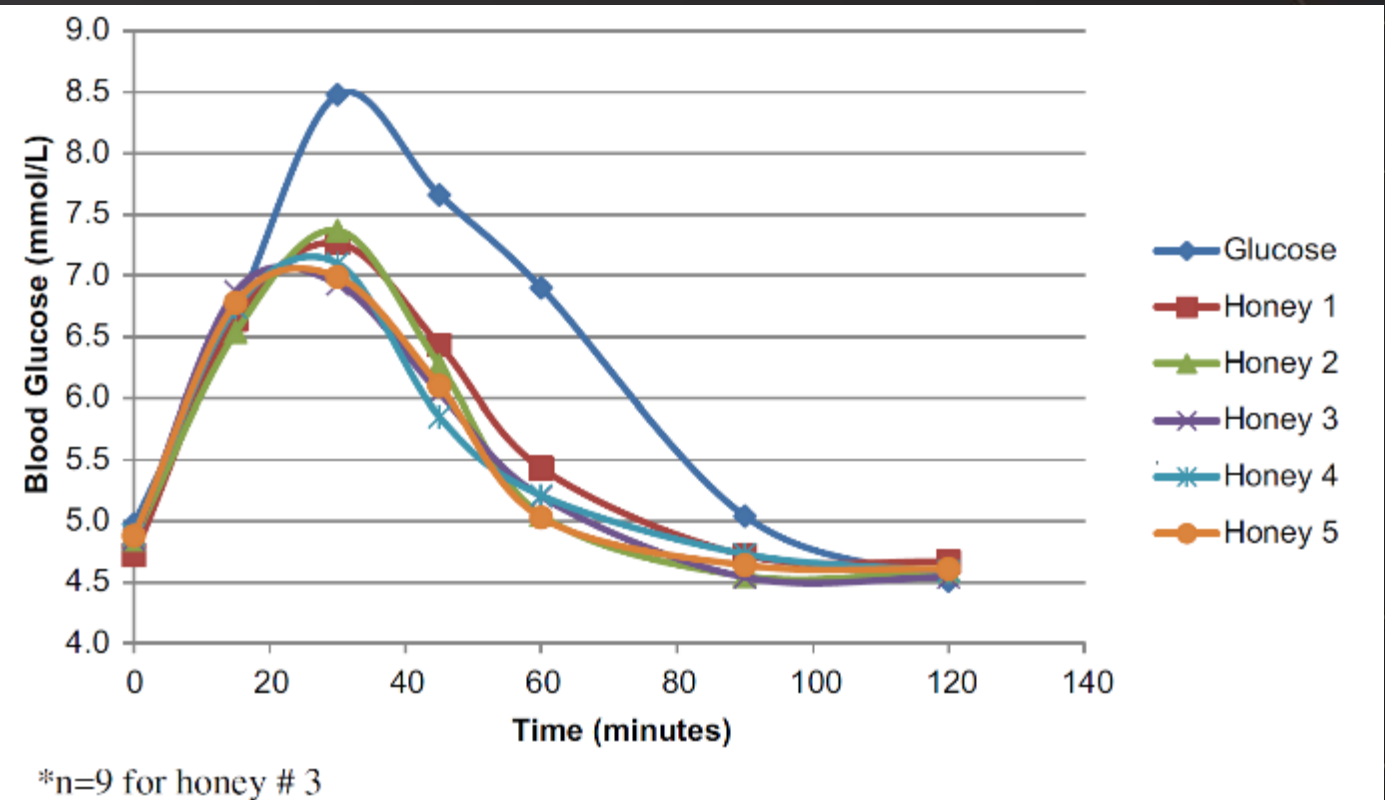
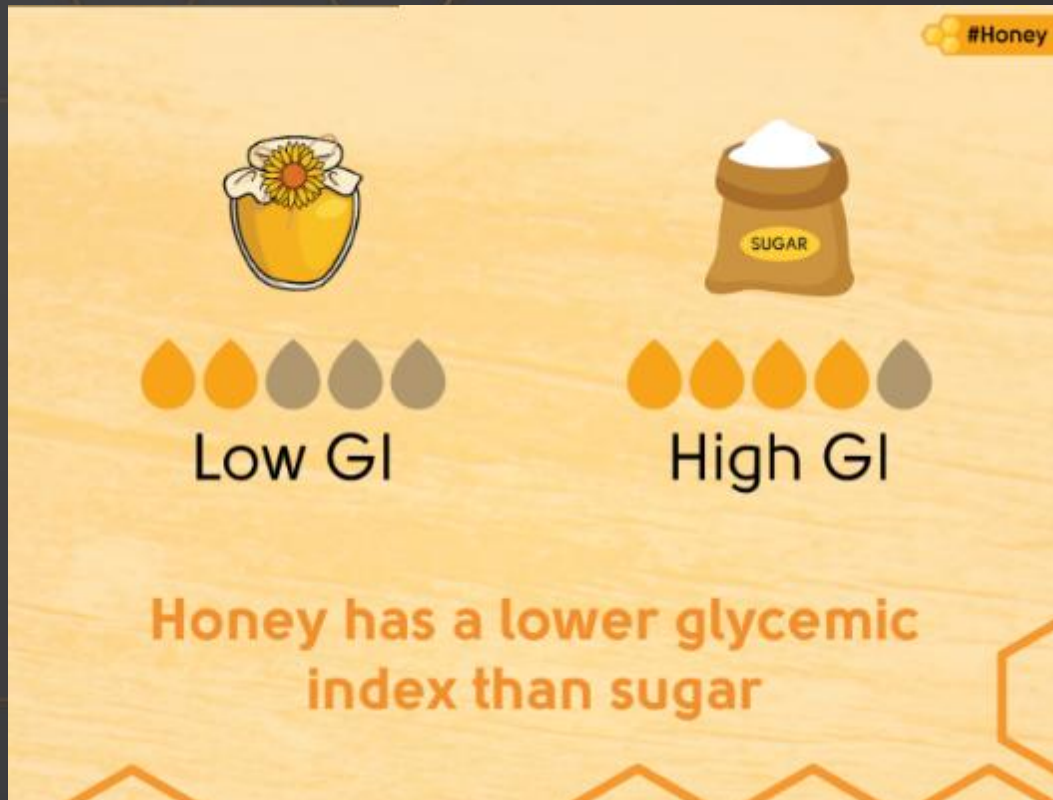


**Warm honey drink
for constipation**

**Cold honey drink
for diarrhea**

**Honey into empty
stomach for ulcer**

Honey and Diabetes



The glycaemic index of Manuka honey

February 2013 · e-SPEN Journal 8(1):e21-e24

DOI: [10.1016/j.clinme.2012.11.002](https://doi.org/10.1016/j.clinme.2012.11.002)

Lynne Chepulis · Evelyn Francis

Glycemic Index and Fructose Content of Honey

Glycaemic and insulinaemic properties of some German honey varieties

P Deibert, D König, B Kloock, M Groenefeld and A Berg
European Journal of Clinical Nutrition (2010) 64, 762–764

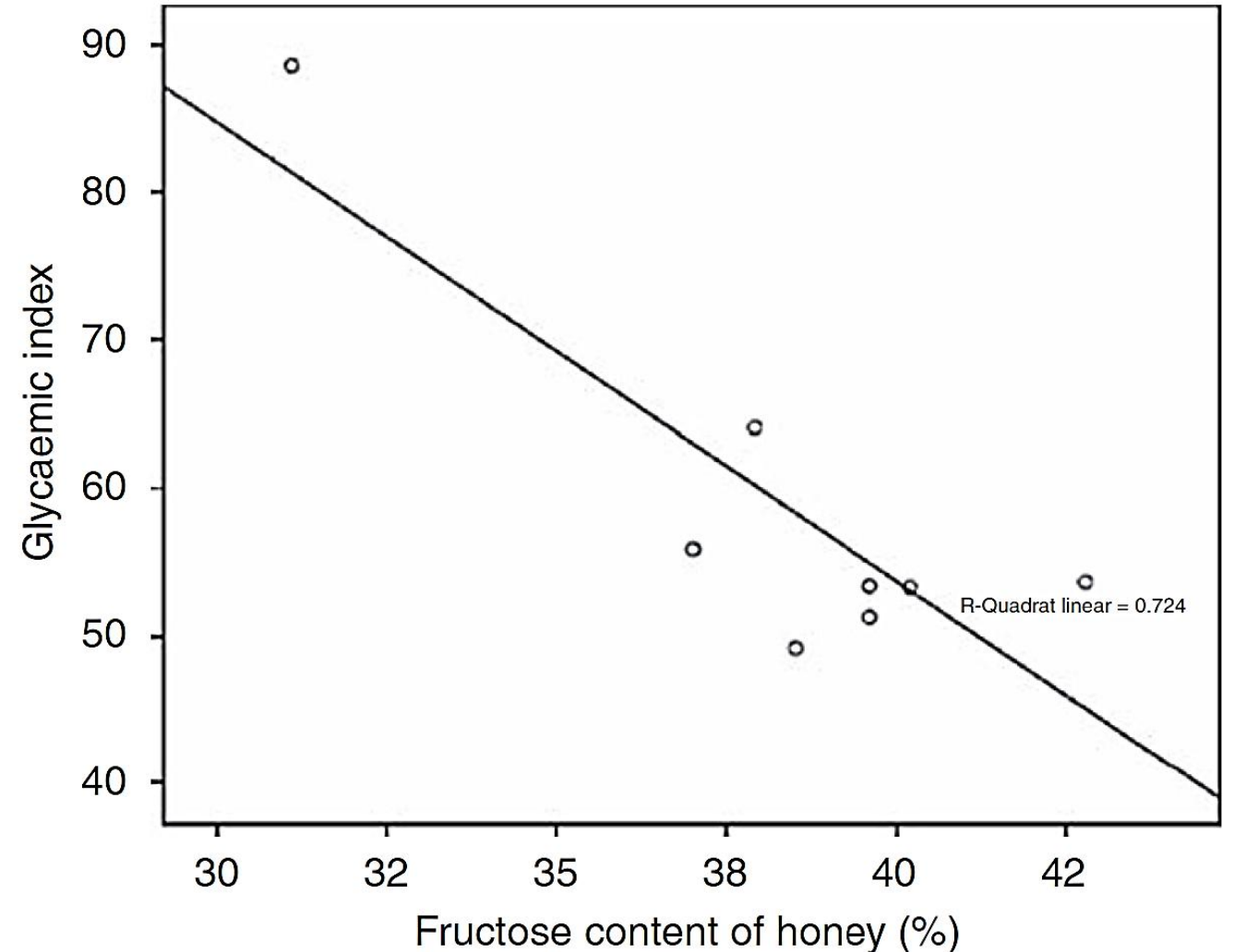


Figure 2 Correlation between fructose content and GI in the eight honey varieties tested.

Which honeys have more medicinal potential (in general)?



- Local
 - Dark
 - Comb
- Honey**

Thank You Questions?



Access HONEY Pathway

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