Study of Biological and Pharmacological Activities of Bee Products

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The products of the hive

A hive (bee habitat) produced various materials

- honey
- wax
- Royal Jelly
- Propolis
- pollen
Since antiquity: we use bee products for healing.

In the Bible and the Koran, there are often references to bees and honey.

The Faraoons conserve their momies by using propolis.
20th century: the bee products have been scientifically studied to determine their properties (under health)

Birth of a new therapeutic class known as Apitherapy.
Benefits Apitherapy

- A little expensive pharmacopoeia
- No side effects (replace chemicals)
The generic name for the resinous substance collected by honeybees from various plant sources (CHMID, 1996)*
The word pro-polis is derived from the Greek pro-, for or in defence, and polis-, the city, that is, defence of the city (or the hive) (Ghisalberti, 1979)**

propolis

It may vary in color from light yellow to dark brown, because the composition varies with the source.

Light yellow propolis

Dark brown propolis
In general, it is composed of:
- 50% resin and vegetable balsam,
- 30% wax,
- 10% essential and aromatic oils,
- 5% pollen
- 5% various other substances, including organic debris (Cirasino et al., 1987; Monti et al., 1983).*

In traditional medicine it is used as a healing agent against oral infections, against infertility, and to soothe some pain (like toothache).
The aims

Study of the analgesic effect of Moroccan propolis in animal
mice, weighing 25–30 g, were used in this study. They were offered food and water ad libitum.

We used the water extract of propolis.
The toxicity study was carried out using male and female Swiss mice weighing 25–30 g each.

The animals were observed continuously for the following 48 h after administering of the extract, to observe any death or changes in general behaviour and other physiological activities (Shah et al., 1997; Bürger et al., 2005).
Wrinthng test

Mice were orally treated with 2.5% and 5% of the extract of propolis. One hour later, the acetic acid was injected and the positive group received acetylsalicylic acid (ASA) 30 min later.

Nociception was induced by an intraperitoneal injection of 0.6% acetic acid solution.

5 min after the administration of the acid, the number of writhes (contraction of the abdominal musculature) was counted over a 5 min for a period of 30 min.
Acute toxicity

no signs of toxicity
Effect of propolis extract on acid acetic induced writhing in mice
Water extract of Moroccan propolis has not a toxic effect.
The Preliminary studies show that propolis has an analgesic effect.
Thank You!