Fossil evidence from 150 million years ago proves that honeybees have been around longer than humans. This is probably also why they are the most studied creatures by humans after mankind. Ancient civilisations used honey in food and medicine and today it is still regarded as a product with many health benefits.

Honey spells natural goodness – we have summarised some of the information found in the review article 'Honey, Propolis, and Royal Jelly: A Comprehensive Review of Their Biological Actions and Health Benefits', published in 2017 by R.P. Visweswara et.al., to share some of the information with you.

Natural honey is composed of 82.4% carbohydrates, 38.5% fructose, 31% glucose, 12.9% other sugars, 17.1% water, 0.5% protein, organic acids, multi-minerals, amino acids, vitamins, phenols, and a selection of other minor bioactive compounds.

Ancient civilisations used honey in food and medicine and though it has traditionally been used to treat wounds, insect bites, burns, skin disorders, sores, and boils, clinical studies have proven its superior efficacy as a wound repair and antimicrobial agent. This is because honey contains various phenolic compounds which contribute to the functional properties that include antioxidant, antimicrobial, antiviral, anti-inflammatory, antifungal, wound healing, and cardioprotective activities.

Royal jelly, a milky secretion produced by worker honeybees**,** typically contains about 50% to 60% water, 18% proteins, 15% carbohydrates, 3% to 6% lipids, 1,5% mineral salts and vitamins. This superfood is the main reason for the longevity of the queen bee compared to the other bees. Royalactin is the most important protein present in royal jelly. This protein triggers the extreme differences seen between queen bees and the smaller worker bees, even though they share an identical genome. It has been shown that royalactin causes the cells to remain pluripotent, which means that they can become any cell in the body, under conditions that would normally trigger them to develop into specialised cells, i.e. similar to stem cells.
(https://med.stanford.edu/news/all-news/2018/12/honeybee-protein-keeps-stem-cells-youthful.html)

Similar to honey, royal jelly is widely used as a dietary nutritional complex to help combat various chronic health conditions in both traditional and modern medicine. It possesses many pharmacological activities such as antibacterial, antitumor, antiallergy, anti-inflammatory, and immunomodulatory properties. In wound-healing studies where royal jelly was used in *in vivo* and *in vitro* models, human fibroblasts were able to migrate and increase levels of sphingolipids by decreasing the secretion and formation of collagen. In

this way, royal jelly accelerated the overall healing process.

In another study, royal jelly exhibited protective action on human skin against ultraviolet B induced photoaging by promoting collagen production.

Propolis is composed of 50% resin, 30% wax, 10% essential oils, 5% pollen and 5% other organic compounds. The significant organic compounds are phenolic compounds including resveratrol, esters, twelve different types of flavonoids, terpenes, beta-steroids, aromatic aldehydes, and alcohols. Propolis also contains several vitamins, minerals and a few enzymes.

We offer two honey-based ingredients: **Bio-Apis®**, a complex of royal jelly associated with pure honey, propolis and wild pollen to restore the skin's vitality, and **CustoQuat Honey** (hydroxypropyltrimonium honey), which is an excellent moisturising and conditioning agent for hair.

As a vegan option, we offer **Seivamel®**, a natural, mimetic composition similar to honey and a 100% plant-origin biological active ingredient.