

AC Royal Jelly Extract



Conditioning
 Increases Volume Radiant Skin Healthy
 Antioxidant Skin Preservation
 Anti-Aging

BACKGROUND

As we age, our skins cell regeneration and collagen production begins to diminish. Royal jelly extract was designed to offset this process by promoting natural collagen production and moisturization to protect our skin. This process can prevent our skin from becoming thinner and as a result, maintain flexibility to counteract the development of fine lines and wrinkles. Our skin is exposed to stress on a regular basis, conditions such as extreme weather or pollution will accelerate the aging process, accentuating the unwanted aged look.

AC Royal Jelly Extract is an elegant solution for younger looking skin. Royal Jelly is secreted by the salivary glands of young working bees. This jelly serves as food for young bees to develop them into queens, which is how "Royal" Jelly got its name. High doses of this jelly allows for bees to grow significantly larger and even extend their lives. We attribute this unique property of Royal Jelly to its concentrations of amino acids, fatty acids, vitamins, and minerals.

SCIENCE

The nutrients in Royal Jelly have been shown to enhance cellular and tissue regeneration, thus providing healing properties. Royal jelly was also found to act as an antibiotic. When given to certain bees, they developed immunity to a litany of different sicknesses, enhancing their overall longevity. Royal Jelly has also gained popularity as a nutritional supplement, this can be attributed to the fact that it has been shown to increase the immune response in humans and provide them with more energy.

Royal Jelly is comprised of powerful B vitamins as well as supporting vitamins C, D, & E, amino acids, simple sugars, proteins, water, and fatty acids.³ Vitamin C is a well-known antioxidant that is capable of neutralizing free radicals that would otherwise damage

Code Number: 20478

INCI Name: Butylene Glycol & 10-Hydroxydecanoic Acid & Sebacic Acid & 1,10-Decanediol

INCI Status: Conforms

REACH Status: Complies

CAS Number: 107-88-0 & 1679-53-4 & 111-20-6 & 112-47-0

EINCS Number: 203-529-7 & 216-848-1 & 203-845-5 & 203-975-2

Origin: Synthetic

Processing:

GMO Free

No Ethoxylation

No Irradiation

No Sulphonation

Additives:

Preservatives: None

Antioxidants: None

Other additives: None

Solvents Used: None

Appearance: Clear to Slightly Hazy Liquid

Soluble/ Miscible: N/A

Ecological Information:

100% Biodegradability

Microbial Count:

<100 opg, No Pathogens

Suggested Use Levels: 1.0 – 10.0%

Suggested Applications: Moisturizing, Conditioning, Anti-Aging

Benefits of AC Royal Jelly Extract

- Moisturizing skin and hair
- Marketable Origin
- Brand Differentiation
- Antioxidant properties
- Anti-aging potential

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our cells, accelerating the pace of aging. Vitamin E also acts as an antioxidant by protecting our body from damage and providing support for the immune system. Vitamin D helps to absorb calcium, a mineral that keeps our bones healthy and can in turn can help to prevent prevent the spread of germs. It also contains an excess of water soluble B vitamins, which are necessary for energy metabolism.⁴

BENEFITS

Historically, Royal Jelly was used by Ancient Egyptian royalty to maintain a healthy and fair complexion in an unforgivingly hot, dry, and sunny environment. It should also be noted that recent analyses conducted by bio-archaeologists have confirmed that Royal Jelly was used on mummies in the preservation process. Egypt may be known for its incredible landmarks, such as the pyramids; however ancient Egyptian women, like Cleopatra, are also legendary for their exceptional beauty.

When used on the skin Royal Jelly works to promote cell and tissue repair while simultaneously enhancing collagen production.^{1,2} The vitamins and minerals in royal jelly help to keep the skin hydrated and moisturized, an essential aspect of fighting wrinkles and aged, tired skin.

Royal jelly extracts have also been found to contain a powerful antibacterial protein, royalactin, a key component in the repair process of damaged skin, that is effective at fighting infections and keeping skin looking healthy.² **AC Royal Jelly Extract** has been conceptualized and engineered to rejuvenate the appearance of our skin and maintain its healthy glow.

EFFICACY DATA

As shown in figure 1, **AC Royal Jelly Extract** exhibited antioxidant activity comparable to 50µM Trolox®. The antioxidant capacity of **AC Royal Jelly Extract** increased as the concentration increased, as a result we can assure that its ability to minimize oxidative stress is dose dependent. With the present study we can confirm that this unique ingredient is capable of providing antioxidant benefits when added to cosmetic applications.

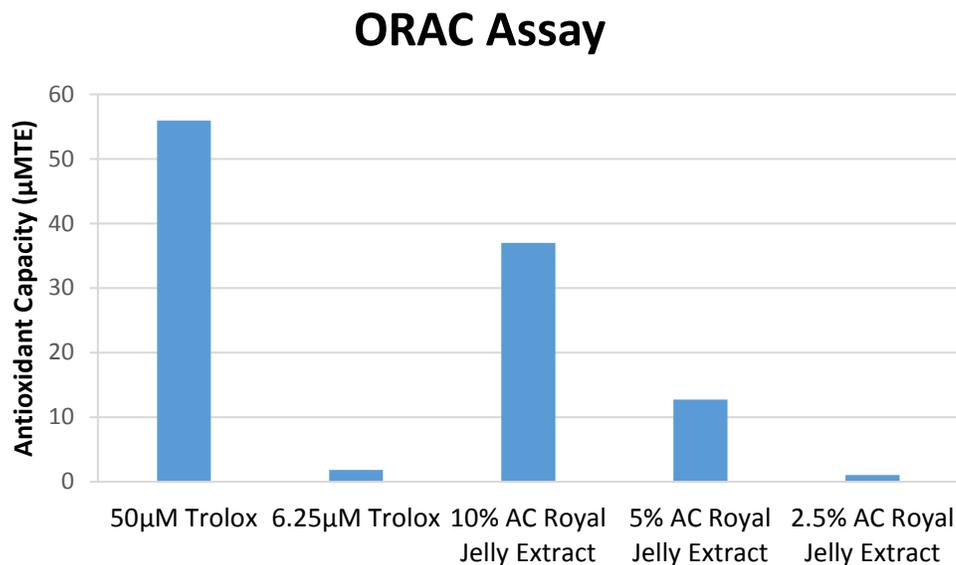


Figure 1. Antioxidant activity

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As shown in Figure 2, Royal Jelly has a rich overall vitamin composition, exhibiting particularly high levels of vitamins B5, Inositol, and B6. In addition, a litany of supporting vitamins that have lower concentrations but are necessary as complementary compounds for various metabolic interactions.

Vitamin Composition

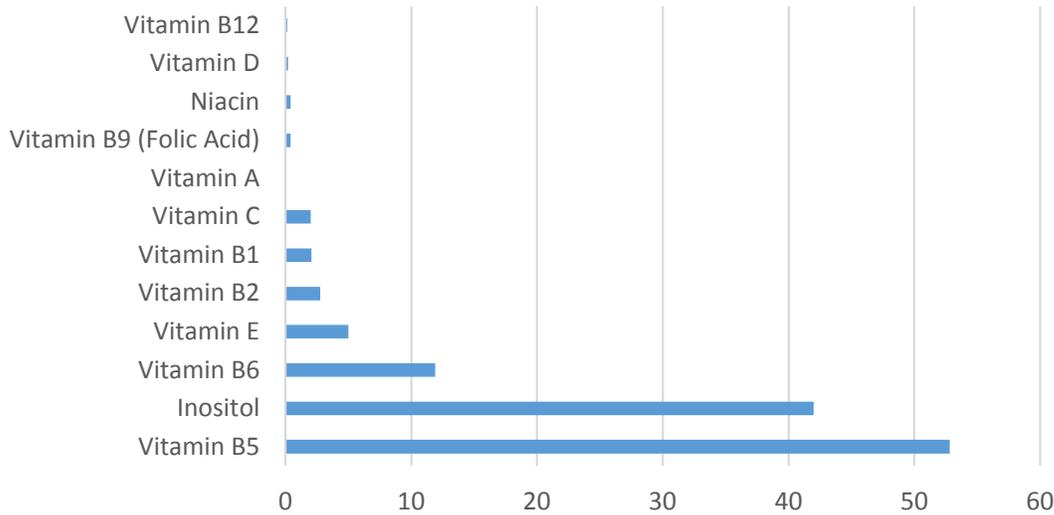


Figure 2. Typical Vitamin Compositional breakdown of Royal Jelly

Amino Acid Composition

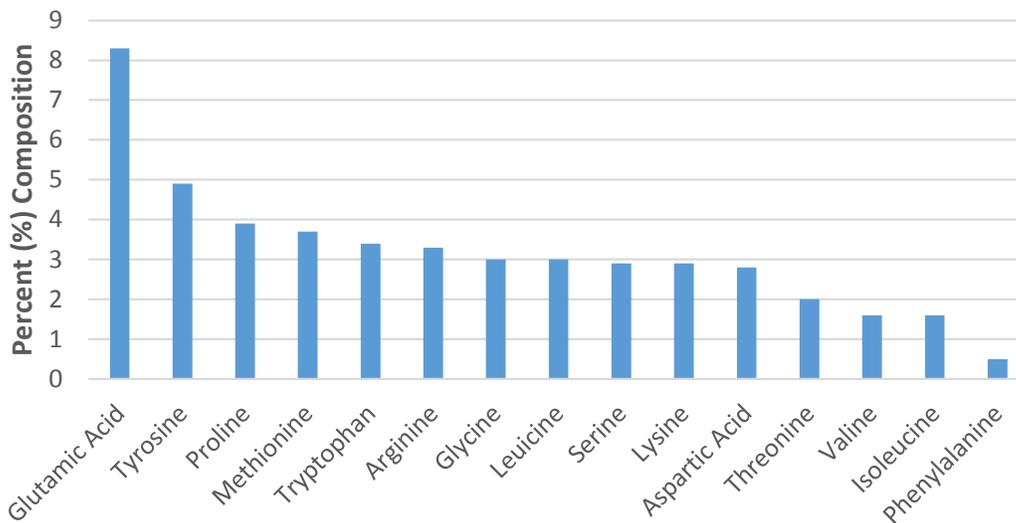


Figure 3. Typical Amino Acid Compositional breakdown of Royal Jelly

As seen in Figure 3, **AC Royal Jelly Extract** is high in nearly all of the essential amino acids. Exhibiting particularly high level of the Methionine based ones such as Glutamic Acid, Tyr, Pro, and Met. This diverse and fairly uniform breakdown of amino acids makes Royal Jelly particularly useful and balanced as a raw material source.

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Seen in Figure 4, as evidenced in a 4 week efficacy study of **AC Royal Jelly Extract** on skin, skin density improved by 5% after 1 week and by 19.96% after 4 weeks when compared to the base lotion control. **AC Royal Jelly Extract** improved skin density by 42.18% after 4 weeks compared to the base line measurements.

Collagen Ultrasound

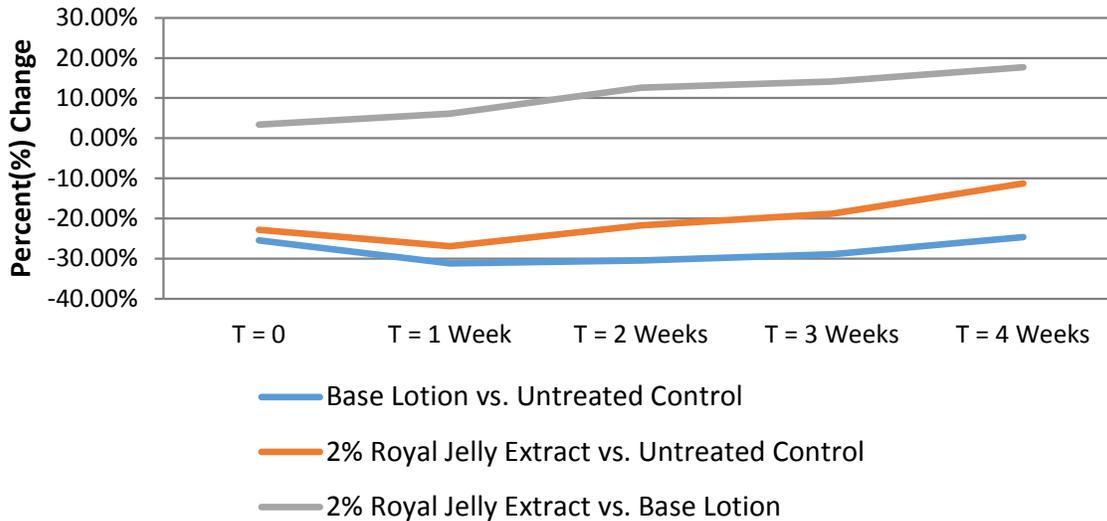


Figure 4. Comparative percent change in Collagen concentration vs. control and base

TransEpidermal Water Loss

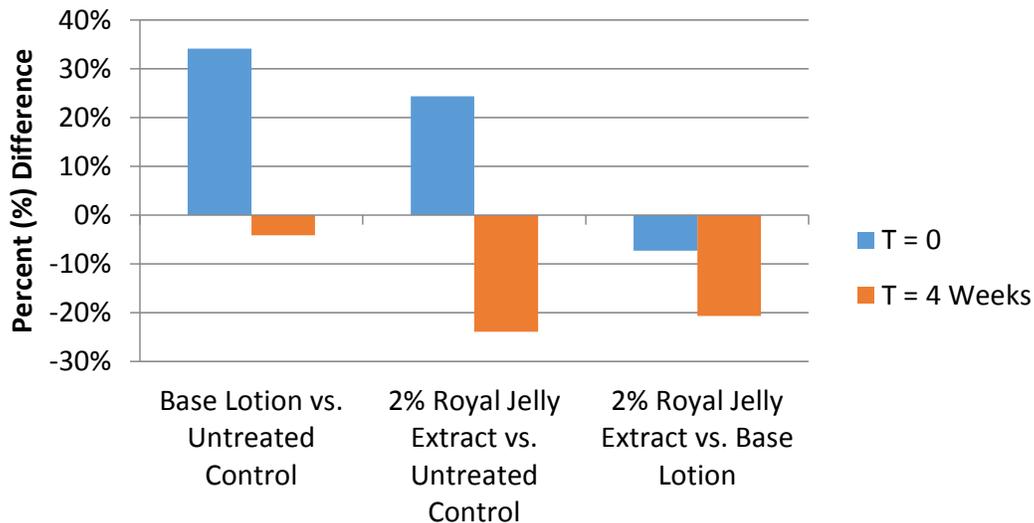


Figure 5. Percent change in TransEpidermal Water Loss

As seen in Figure 5, in a four week efficacy study, When compared to the base cream **AC Royal Jelly Extract** was shown to decrease transepidermal water loss by 34% and by 46% when compared to the untreated control after four weeks. Results indicate that **AC Royal Jelly Extract** is capable of reducing TEWL, which allows for moisture retention. with the present study we can confirm that this unique ingredient is not only capable of providing functional benefits but it is also capable of providing a decrease in transepidermal water loss therefore promoting moisture retention benefits when added to cosmetic applications.

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Average Moisturization

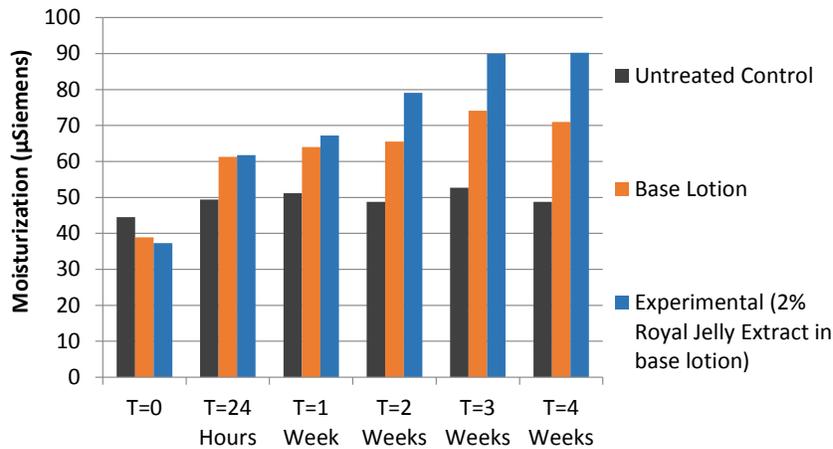


Figure 6. Moisturization change vs. control and base

As shown in figure 6 and 7, **AC Royal Jelly Extract** was utilized in a four-week efficacy study on the skin, moisture levels were improved by >15% after 24 hours and by >40% after four weeks when compared to the untreated control. When compared to the base lotion **AC Royal Jelly Extract** improved moisturization by 8% after 1 week and by 20% after four weeks. The Results indicate that **AC Royal Jelly Extract** is capable of increasing moisturization when compared to both the untreated control and the base lotion.

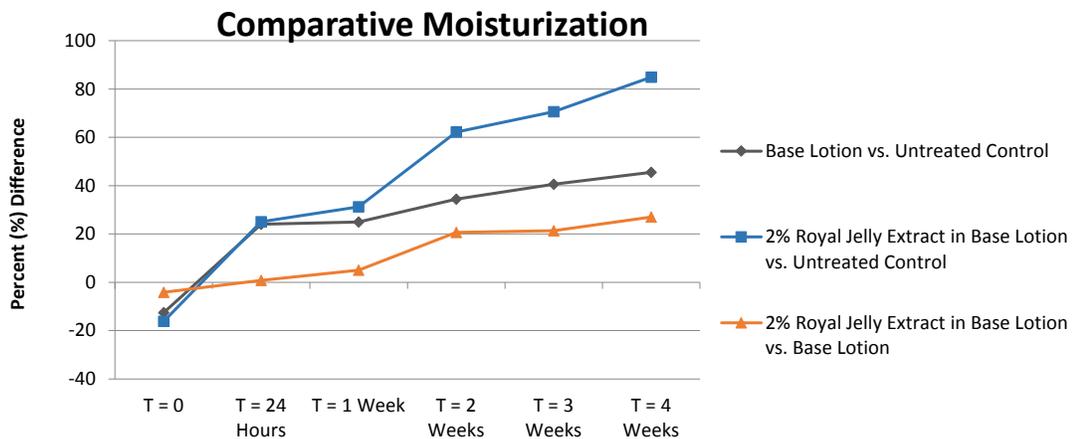


Figure 7. Overall percent change in Moisturization

References

- 1) Koya-Miyata S, Okamoto I, Ushio S, Iwaki K, Ikeda M, Kurimoto M. Bioscience, Biotechnology, Biochemistry. 2004 Apr;68(4):767-73.
- 2) Park HM, Hwang E, Lee KG, Han SM, Cho Y, Kim SY. Journal of Medicinal Food. 2011 Sep;14(9):899-906.
- 3) Detienne et al. 2014. Experimental Gerontology. Royalactin extends lifespan of Caenorhabditis elegans through epidermal growth factor signaling. 60: 129-145
- 4) Yamaura et al. 2013. Pharmacognosy Magazine. Topical royal jelly alleviates symptoms of pruritus in a murine model of allergin contact dermatitis. 9(33): 9-13