



English Hop

Scientific name: *Humulus lupulus*

Common name: Hop

INCI name: Humulus Lupulus (Hops) Extract

IECIC 2015 name: Humulus Lupulus (Hops) Extract

What is Hop?

English Hop

- Hops is one of the most commonly consumed medicinal herbs.
- Hops or *Humulus lupulus* belongs to the Cannabaceae family and is a climbing perennial vine that produces green cones or “hops” surrounding the female flowers.
- Contained in hops are glands that hold resins and volatile oils, responsible for the flavor and medicinal offerings of the plant.
- Hops are ready to be harvested in the late summer or early fall when they begin to look dry and papery.



Reference: <https://www.pacificrimcollege.com/2017/11/plant-feature-hops-humulus-lupulus/>

Hops medicinal benefits and uses

English Hop

An essential ingredient in beer brewing for well over 1,000 years, hops have been used medicinally since medieval times.

Today, herbalists and supplement manufacturers claim that adding hops to a diet can improve your overall health and even prevent certain diseases.



Reference: <https://www.verywellhealth.com/the-health-benefits-of-hops-89058>

Skin benefits of Hop

English Hop

Recent studies have found that the compounds isolated from Hops exert a broad variety of bioactivity.

Anti-inflammation

Anti-aging

Anti-microbial

Hair Growth

Anti-oxidation



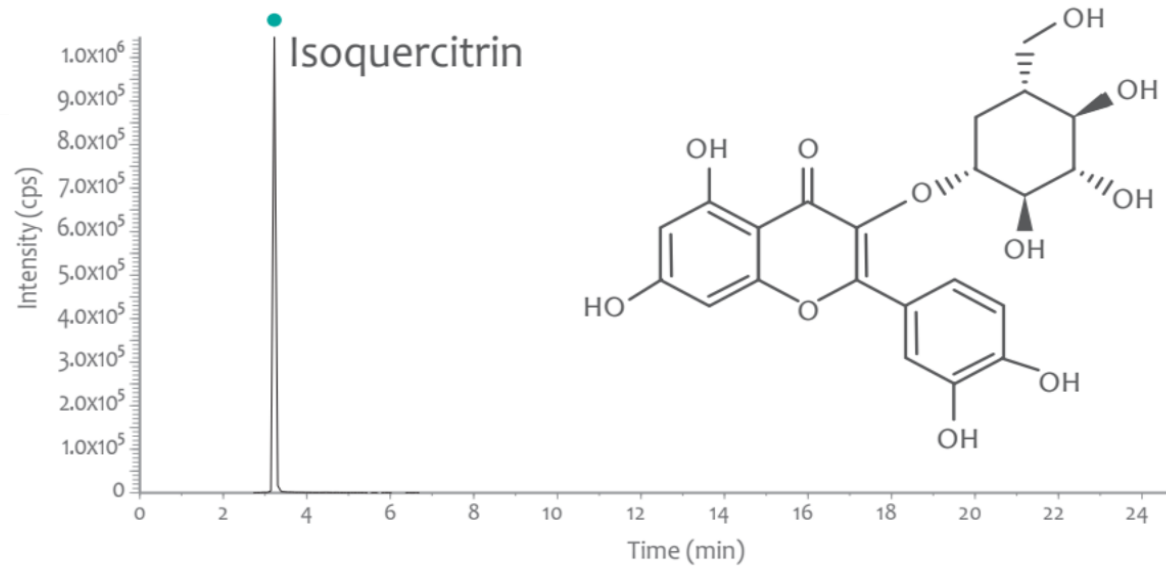
Reference:

- Weber, N., Biehler, K., Schwabe, K., Haarhaus, B., Quirin, K. W., Frank, U., ... & Wölfe, U. (2019). Hop extract acts as an antioxidant with antimicrobial effects against *Propionibacterium acnes* and *Staphylococcus aureus*. *Molecules*, 24(2), 223.
- Binic, I., Lazarevic, V., Ljubenovic, M., Mojsa, J., & Sokolovic, D. (2013). Skin ageing: natural weapons and strategies. *Evidence-Based Complementary and Alternative Medicine*, 2013.

Flavonoids found in English Hop

English Hop

Through LC-MS/MS Analysis, we found out that English Hops contains Isoquercitrin, which is a major flavonoid in hops that contributes to its anti-allergic properties.



References: Segawa, S., Yasui, K., Takata, Y., Kurihara, T., Kaneda, H., & Watari, J. (2006). Flavonoid glycosides extracted from hop (*Humulus lupulus* L.) as inhibitors of chemical mediator release from human basophilic KU812 cells. *Bioscience, biotechnology, and biochemistry*, 70(12), 2990-2997.



***in vitro* efficacy**

- Antioxidant
- Anti-inflammatory
- Hair growth

***Microbial* efficacy**

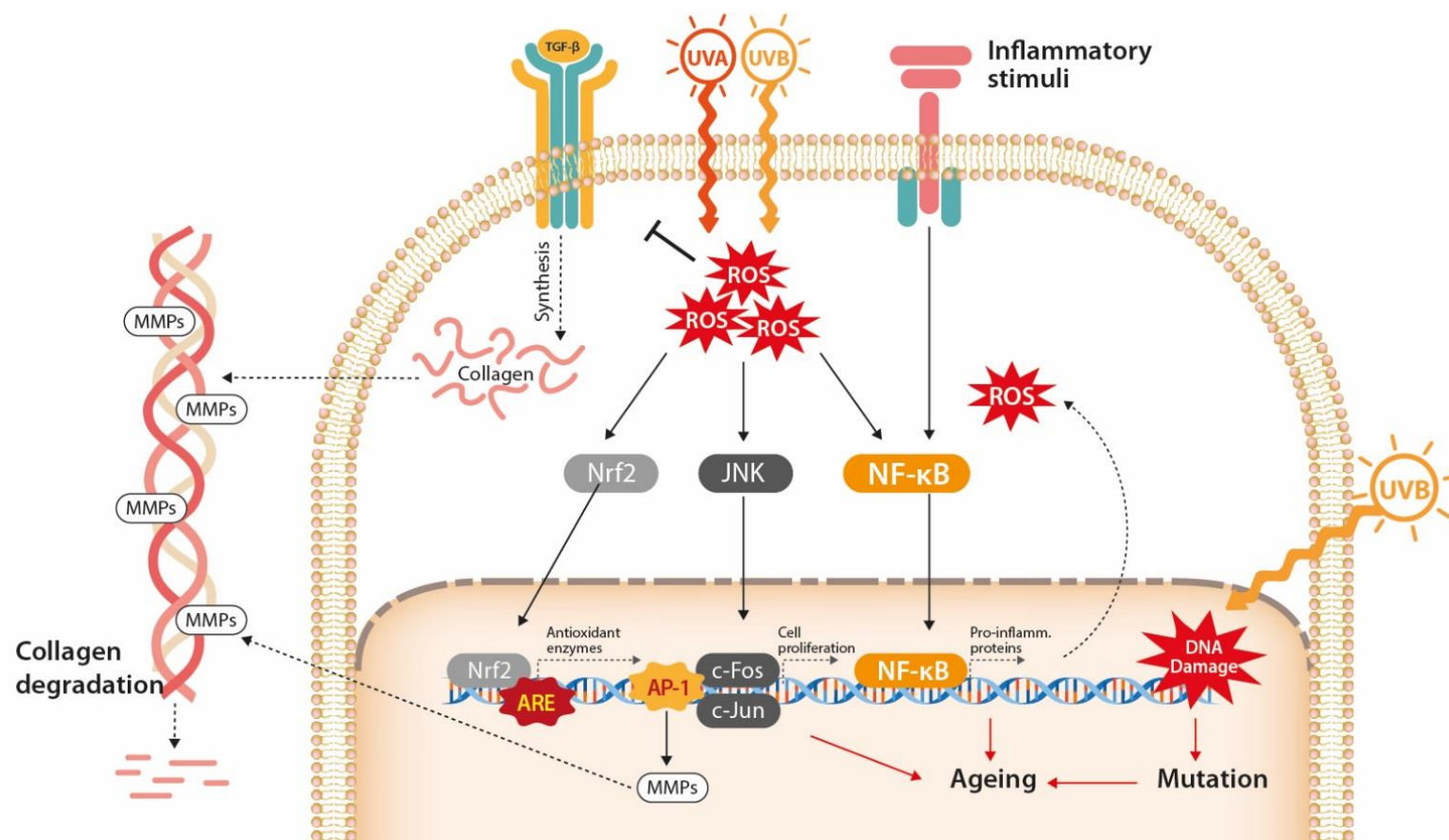
- Anti-acne
- Anti-bacterial

***Clinical* efficacy**

- Hair shine
- Hair elasticity

Oxidative stress mechanism

Our skin is under attack from many factors in daily life, such as UV, pollution and stress. These factors increase the Reactive Oxygen Species, which plays a major role in the skin aging process.

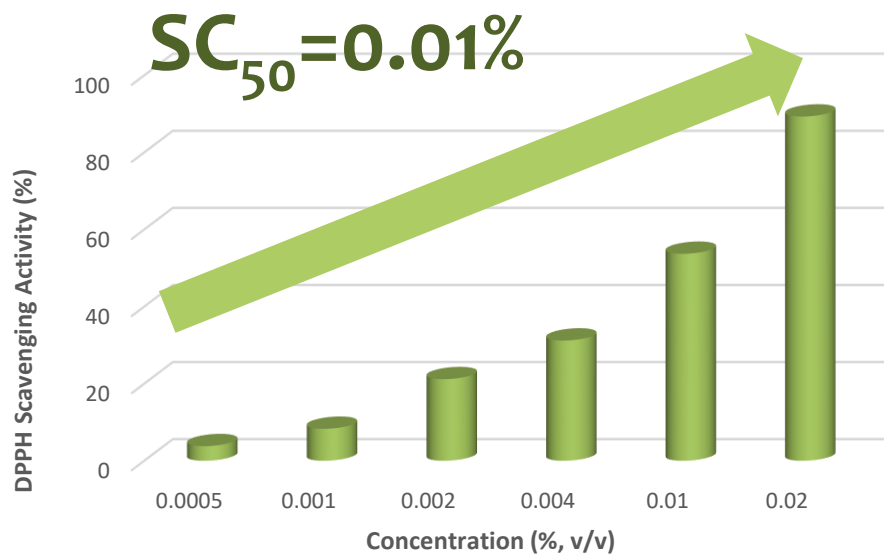


Antioxidant effects of English Hop

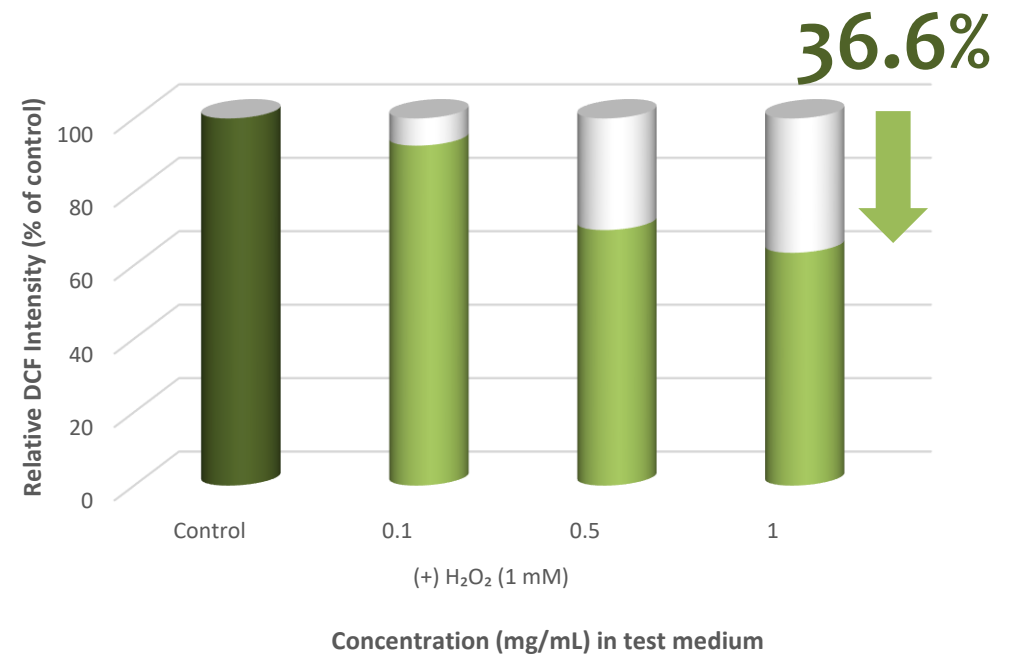
English Hop

When testing for free radical scavenging activity, it was confirmed that as the concentration of the English Hop increases, the inhibition activity also increases along with it. English Hop was also found to reduce oxidative stress by 36.6%.

Free Radical Scavenging Activity (*in tubo*)



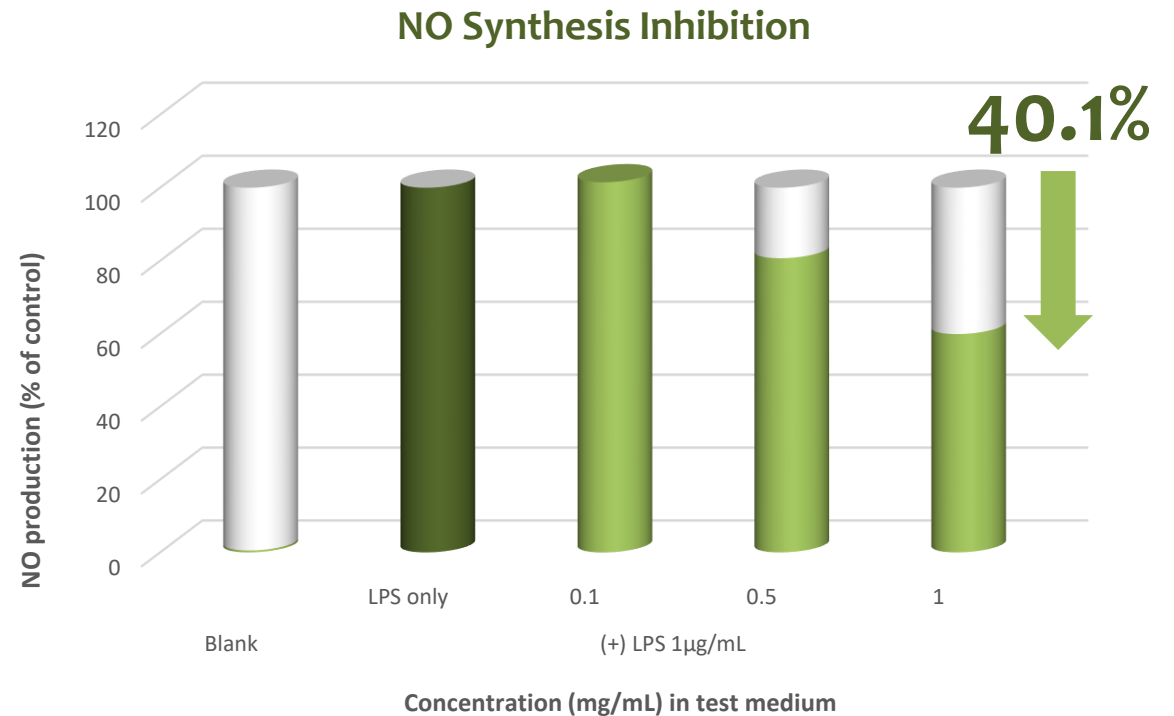
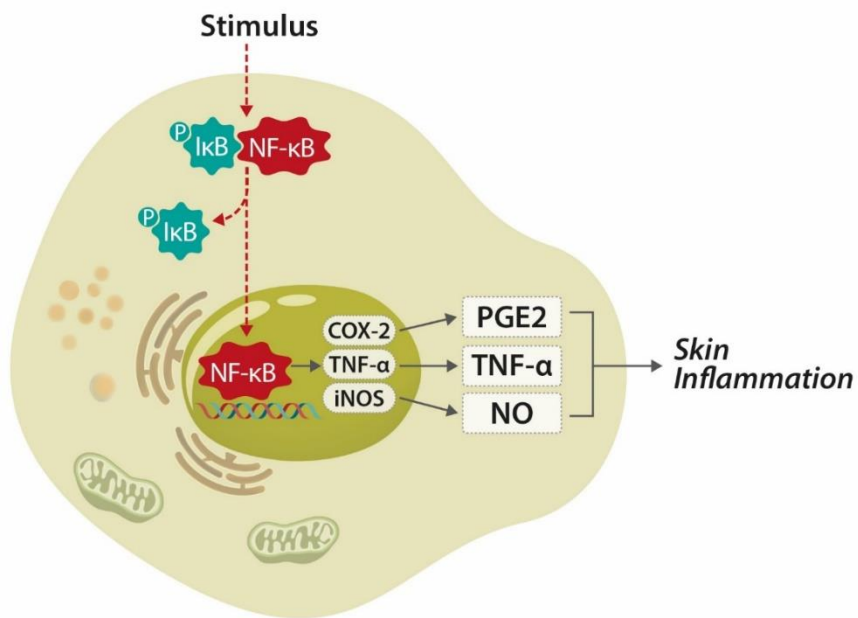
ROS Inhibition Activity (*in vitro*)



Anti-inflammatory effects of English Hop

English Hop

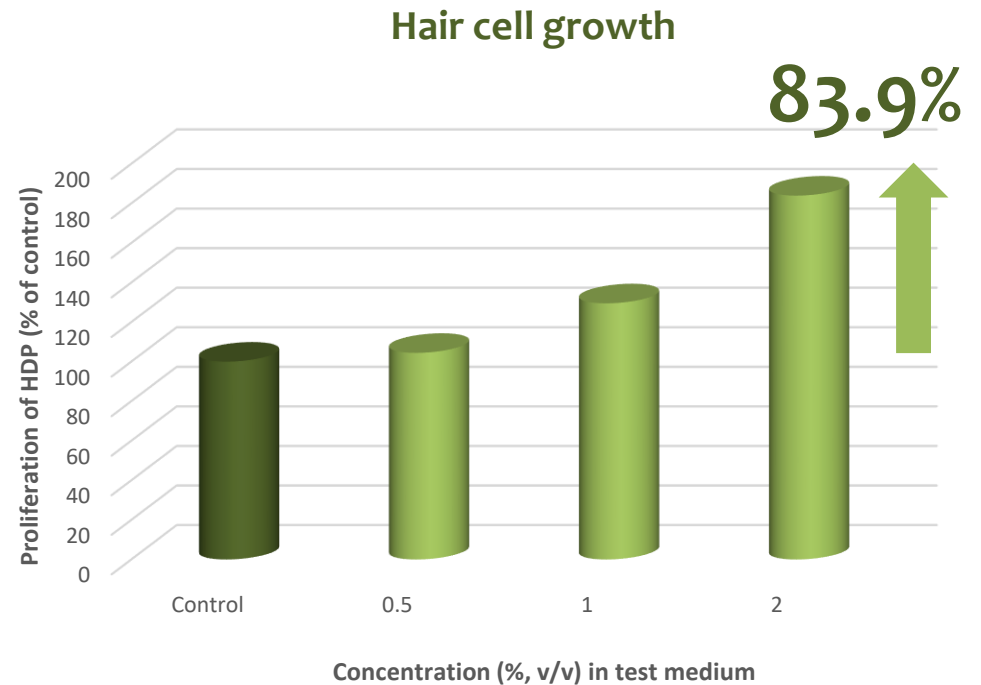
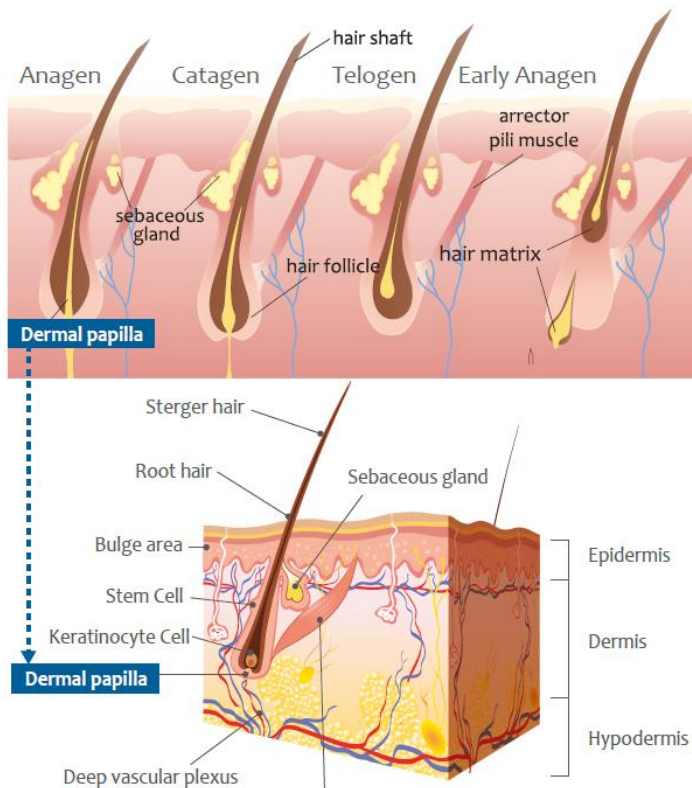
The immune system is responsible of protecting our skin from the harmful stimuli and of maintaining homeostasis. Inflammation impacts the homogeneity of the skin tomes. English Hop showed anti-inflammatory efficacy by inhibiting Nitric Oxide (NO) synthesis.



Hair growth effect of English Hop

English Hop

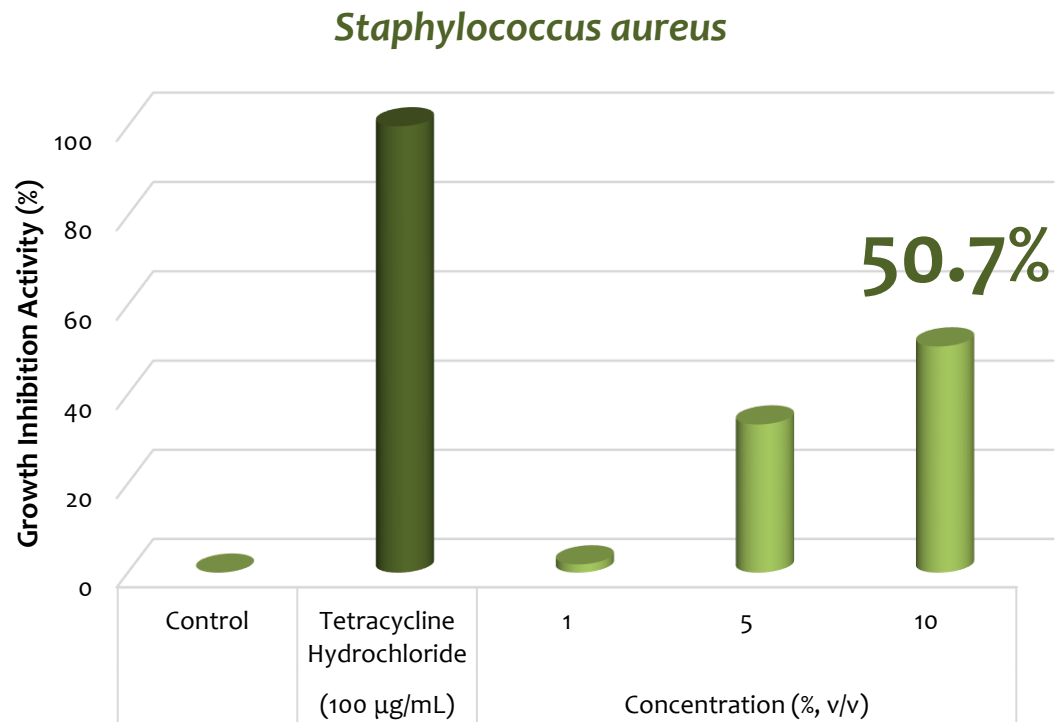
Human hair growth has a unique repetitive cycle composed of the anagen, catagen, telogen phases, and early anagen. And in this hair growth, Human Dermal Papilla (HDP) cells play a critical role in regulating hair follicle development and period regeneration. Therefore, this cycle clearly shows the importance of hair cell regeneration, which is the fundamental method to restore lost hair cells. English Hop was shown to have excellent hair-growth efficacy by increasing hair cells to 83.9%.



Anti-bacterial effect of English Hop

English Hop

English Hop have an anti-bacterial efficacy by inhibiting the growth of *S. aureus*.

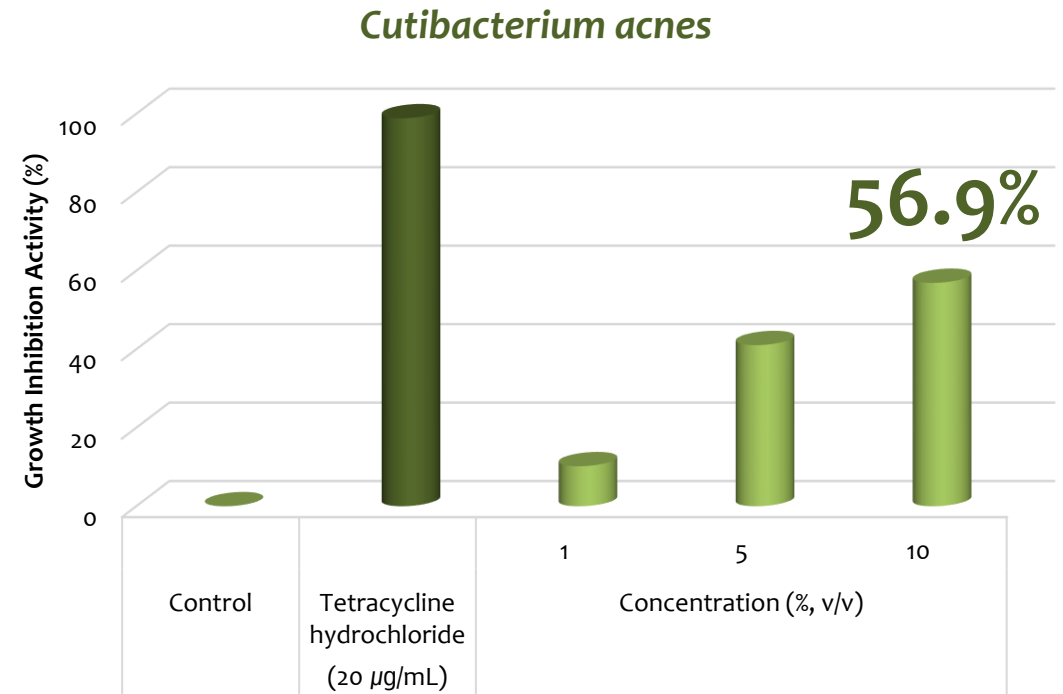
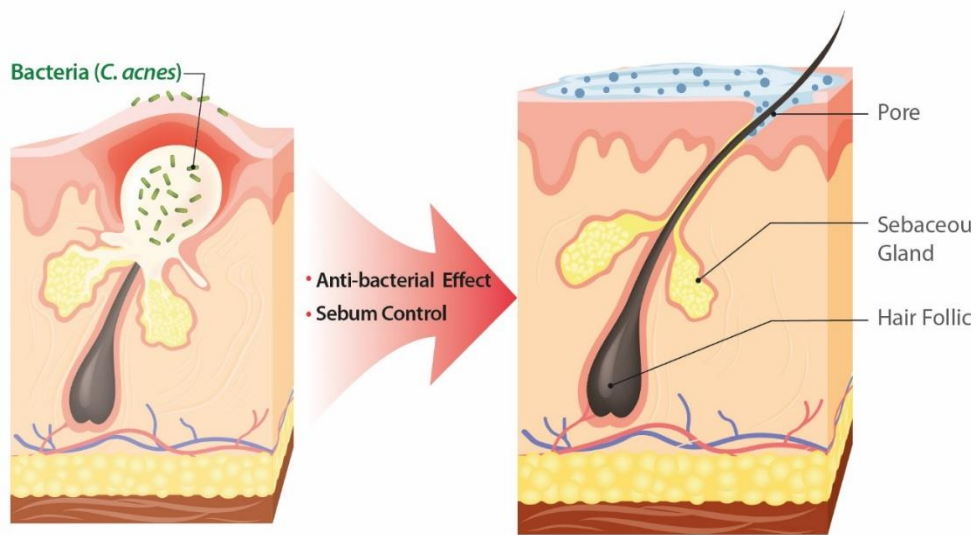


Anti-acne effect of English Hop

English Hop

Acne is a skin condition that occurs when the hair follicles are infected by bacteria which causes skin inflammation.

According to the test result, when 10% of English Hop was added to the culture medium of *C. acnes*, the growth of *C. acnes* was inhibited by 56.9%.

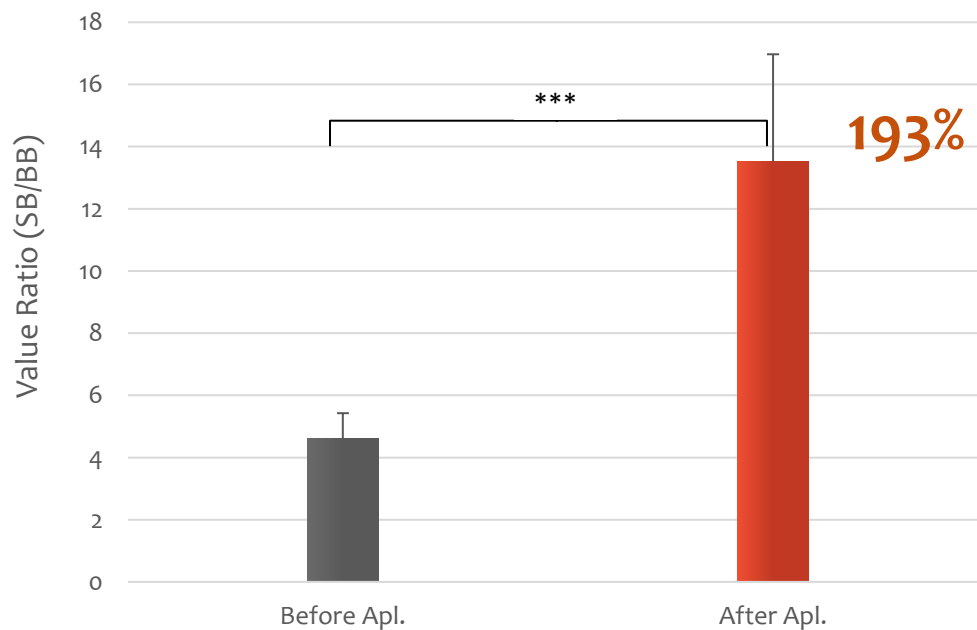


Hair shine effect of English Hop

English Hop

After the application of hair essence containing 3% of English Hop, the test result shows that the hair gloss increased by 193% through Shining band and Black band analysis.

Probability p (Paired t-test, Significant: $***p < 0.001$)



Before



4.606 ± 0.820
(Average ± Standard deviation)

After



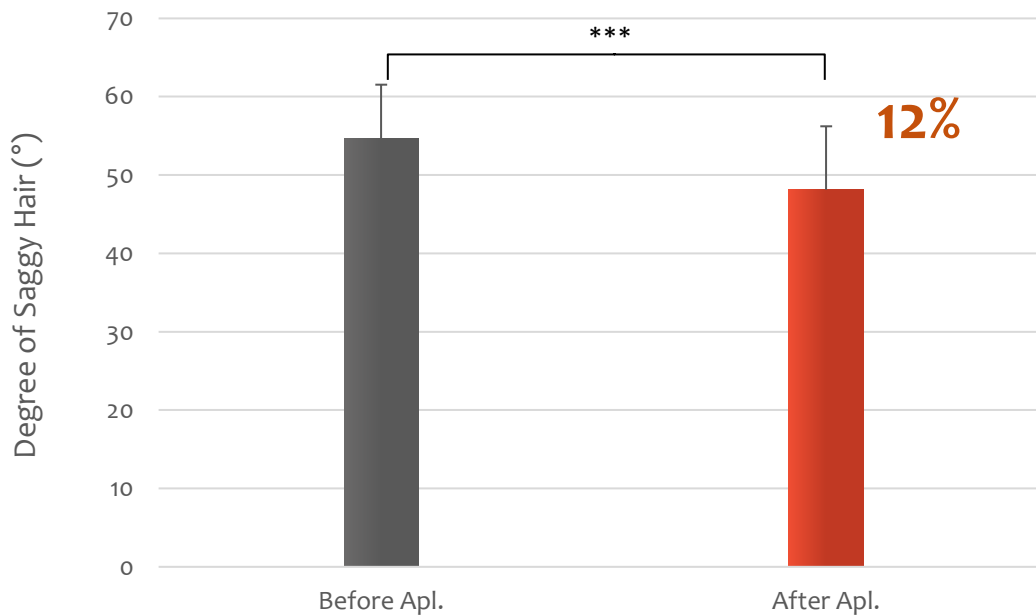
13.511 ± 3.460
(Average ± Standard deviation)

Hair elasticity effect of English Hop

English Hop

Applying hair essence containing 3% of English Hop give vitality to the weak hair and restores 12% elasticity.

Probability p (Paired t-test, Significant: *** $p < 0.001$)





Inclusion of polyphenol

Multi-function on skin

Improvement of hair shine & elasticity

Product information

English Hop

- **Product Name** : English Hop
- **INCI name** : Humulus Lupulus (Hops) Extract
- **IECIC 2015** : Humulus Lupulus (Hops) Extract
- **CAS No.** : 8060-28-4
- **EINECS (I) / ELINCS (L)**: 232-504-3 (I)
- **Dosage**: 1-3 %





The Secrets of Caledonia

The Secrets of Caledonia (TSOC) is a supplier of natural cosmetic ingredients inspired by Scottish traditional herbal medicine. Taking advantage of Scotland's biodiversity and working in collaboration with established Scottish herbalists, we aim to provide the most effective and innovative natural ingredients at the highest quality.



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