

# EverGreen

**Plant part:** Aerial Parts

**Scientific name:** *Hyssopus Officinalis*

**INCI name:** Hyssopus Officinalis Extract

**IECIC 2021 name:** HYSSOPUS OFFICINALIS EXTRACT



# EverGreen

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**Product Name: EverGreen**

**Plant Name: Hyssop**

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*Hyssopus officinalis*' name derived from the Greek meaning "to cleanse sacred places. It is a herbaceous plant of the genus Hyssopus native to Southern Europe, the Middle East, and the region surrounding the Caspian Sea.

Hyssop is a brightly coloured shrub or the during the summer produces bunches of pink, blue, or, more rarely, white fragrant flowers.



# Harvesting Hyssop

We work with local businesses to forage our products responsibly.

The hyssop sources we use at The Secrets of Caledonia are always looking for ways to achieve sustainability and produce as little waste as possible, in line with our company values.



HYSSOP

# Traditional Use

Hyssop has a long medicinal history where the leaf was used as a bathing agent to cleanse the skin and improve poor circulation. Antioxidant activities of hyssop were scientifically evaluated by identifying active compounds such as isoquercitrin, rutin and ferulic acid. Hyssop extracts have also shown antimicrobial activity against Gram (+) and (-) bacteria, as well as pathogenic fungi. Further research has shown that hyssop has an anti-inflammatory effect by regulating the secretion of IL-4, IL-17 and IFN- $\gamma$ .

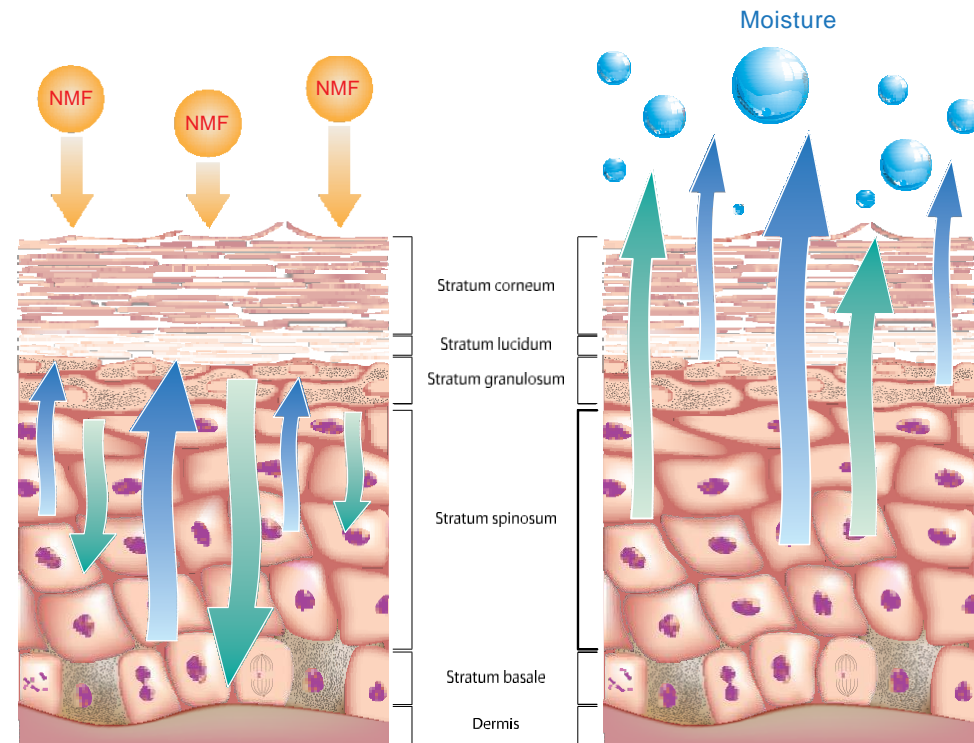
[1] Chemical composition, antimicrobial and antioxidant activities of hyssop (*Hyssopus officinalis* L.) essential oil, Kizil et al., Not Bot Hort Agrobot Cluj, 2010, 38(3), p.99-103

[2] Evaluation of antioxidant and antimicrobial activities and phenolic profile for *Hyssopus officinalis*, *Ocimum basilicum* and *Teucrium chamaedrys*, Vlase et al., Molecules, 2014, 19(5), p.5490-5507

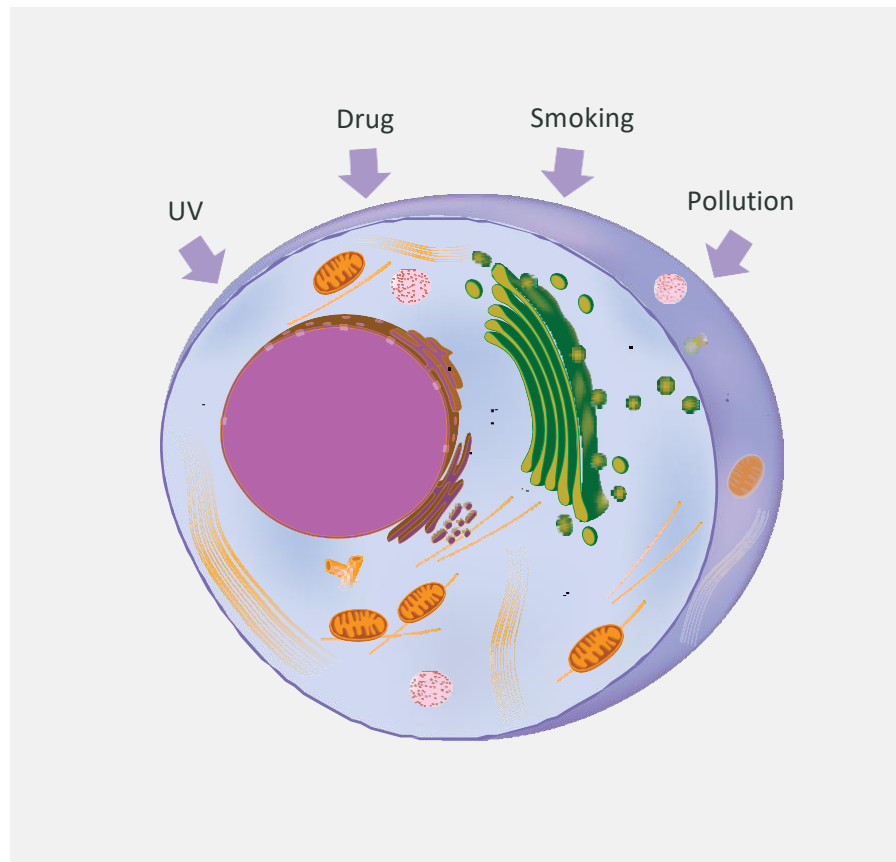
[3] Effect of *Hyssopus officinalis* L. on inhibiting airway inflammation and immune regulation in a chronic asthmatic mouse model, Ma et al., Exp Ther Med, 2014, 8(5), p. 1371-1374

# Skin Structure

The retention of water in the Stratum corneum (SC) is dependent on two major components: (1) the presence of natural hygroscopic agents within the corneocytes (collectively referred to as natural moisturizing factor) and (2) the SC intercellular lipids orderly arranged to form a barrier to transepidermal water loss (TEWL). The water content of the SC is necessary for proper SC maturation and skin desquamation. Increased TEWL impairs enzymatic functions required for normal desquamation resulting in the visible appearance of dry, flaky skin.



# Antioxidants

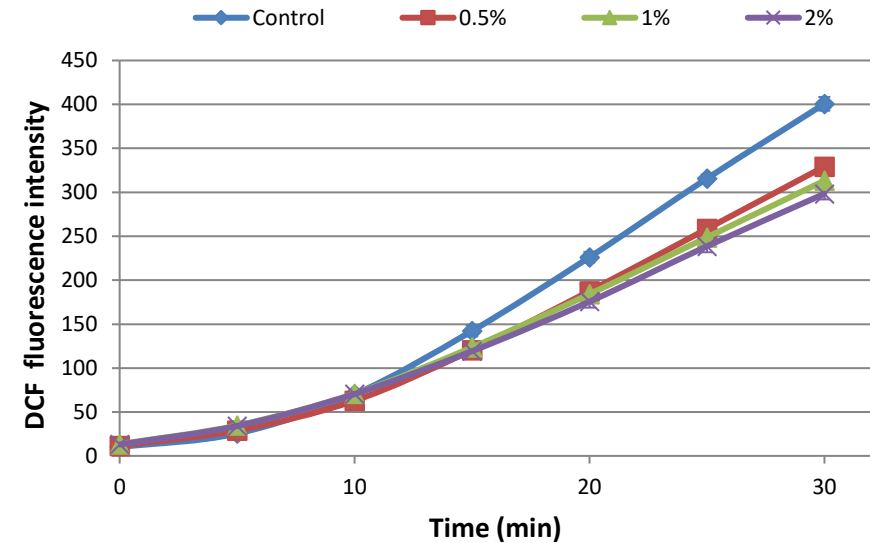
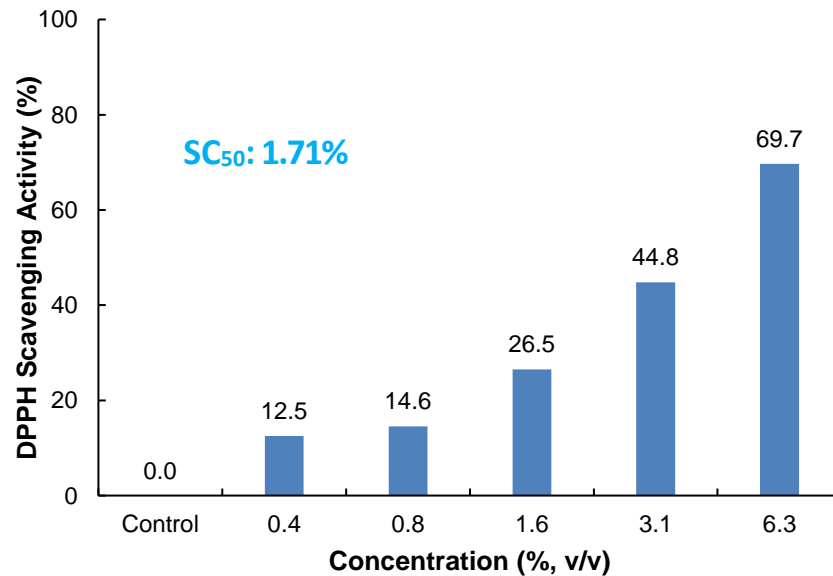


## ***Why are they important?***

Our skin is under attack from many factors in daily life, such as UV, pollution and smoking. These factors increase the Reactive Oxygen Species (ROS).

Antioxidants from *Hyssopus Officinalis* Extract can inhibit the generation of ROS and in turn inhibit cellular damage.

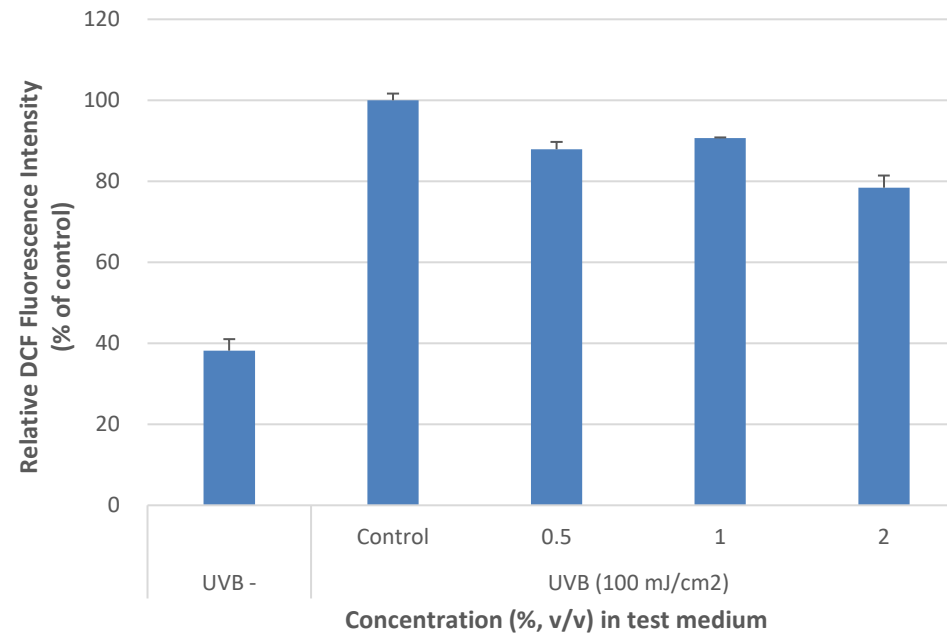
# Antioxidant Effects of EverGreen (*in vitro*)



Antioxidant effects are critical in protection of the skin from damage by external factors.

In our test, 1.71% concentration of EverGreen was able to remove 50% of DPPH free radicals.

# Anti-Photoageing Effects of EverGreen (*in vitro*)

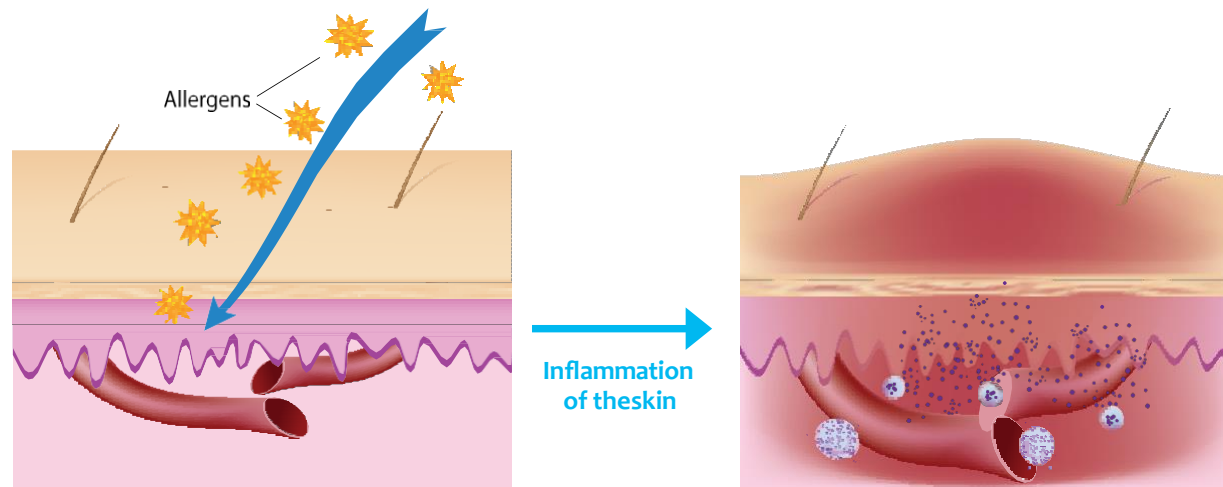


Similarly to anti-oxidation efficacies, anti-photoageing properties provide protection against outside sources – particularly UVB, which generates ROS.

This extract shows good antiphotageing effects, shown above.

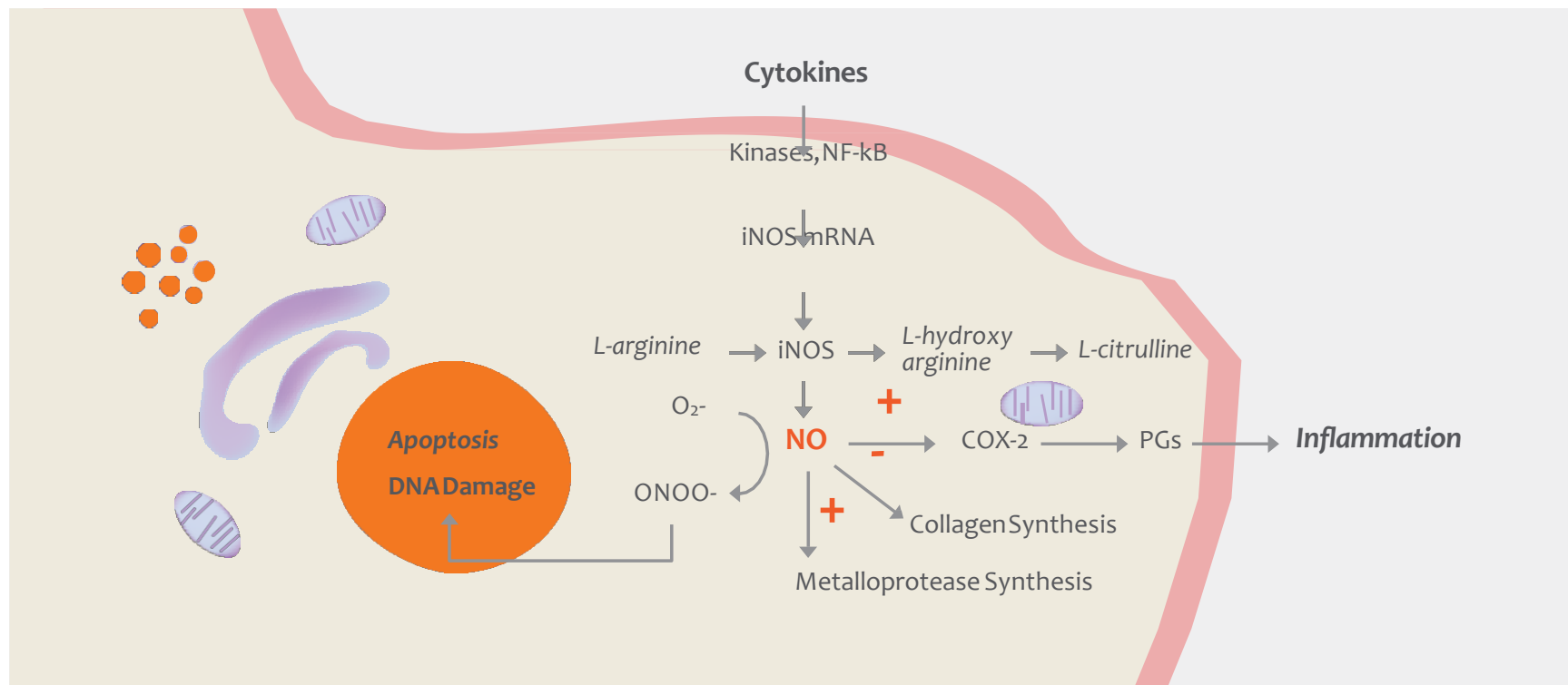


# What is Inflammation?

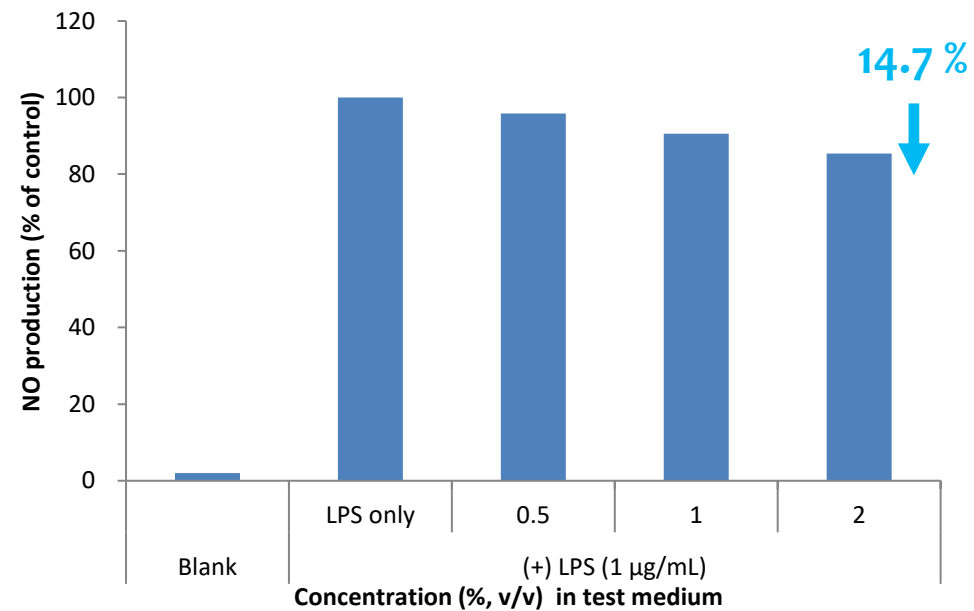


Inflammation is part of the complex biological responses to wide range of harmful stimuli including injury, tissue necrosis, infection, and irritants. The purpose of inflammation is to destroy (or contain) the damaging agent, initiate repair processes and return the damaged tissue to useful function. The symptoms of inflammation are redness, swelling, heat, and pain, which are caused by increased blood flow into tissue. The immune system is responsible of protecting our body from the harmful stimuli and of maintaining homeostasis. Disorders of the immune system can result in autoimmune diseases, inflammatory diseases, and cancer. In an attempt to protect the body, the immune system might overreact to the stimuli, and this might cause allergy or inflammatory reactions.

# Inflammation Mechanism



# Anti-inflammatory Effects of EverGreen (*in vitro*)



We tested EverGreen for anti-inflammatory effects, and it reduced nitric oxide (a type of ROS) production in the cells by 14.7%.

The viability control showed that the cells were not repressed by EverGreen.

# Modern Research

Tab. 2. Antimicrobial activity of *H. officinalis* essential oil

Test bacteria	Inhibition zone diameter (mm)	
	5 $\mu$ l	10 $\mu$ l
<i>S. pyogenes</i>	19.0 $\pm$ 0.1	23.6 $\pm$ 0.5
<i>S. aureus</i>	18.0 $\pm$ 1.7	21.7 $\pm$ 1.5
<i>E. coli</i>	20.3 $\pm$ 1.8	23.3 $\pm$ 1.7
<i>P. aeruginosa</i>	nd*	nd
<i>C. albicans</i>	15.0 $\pm$ 1.0	20.0 $\pm$ 1.1

\*nd: not detected

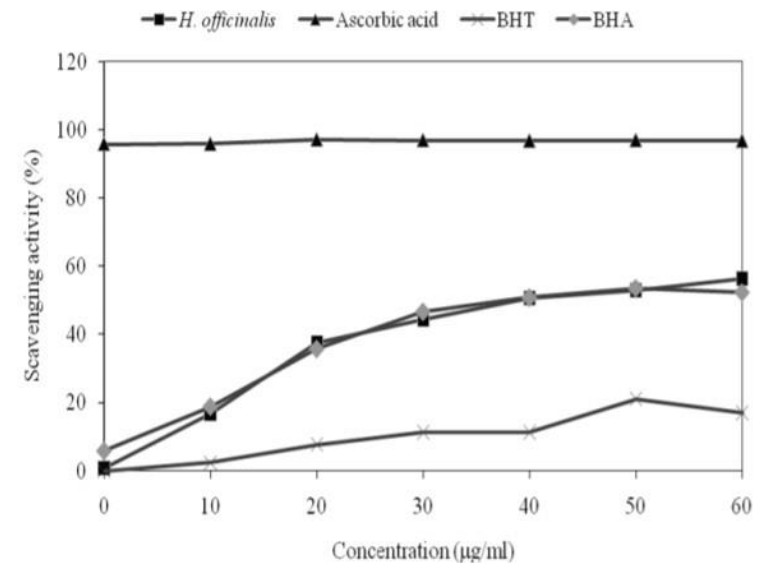


Fig. 1. The DPPH radical scavenging activity of some synthetic antioxidants and *H. officinalis* essential oil

GC-MS analysis of hyssop showed major compounds as isopinocampone,  $\beta$ -pinene, terpinene-4-ol, pinocarvone, carvacrole, p-cymene and pinocampone. There were many other compounds in minor amounts.

Hyssop possesses good antibacterial activity. Furthermore, the study also revealed that even low amounts of the hyssop had detectable antioxidant activity.

# Reported functions

Ingredient : HYSSOPUS OFFICINALIS EXTRACT 

INCI Name	HYSSOPUS OFFICINALIS EXTRACT
<b>Description</b>	Hyssopus Officinalis Extract is an extract of the leaves of the Hyssop, <i>Hyssopus officinalis</i> L., Labiatae
INN Name	
Ph. Eur. Name	
CAS #	84603-66-7
EC #	283-266-2
Chemical/IUPAC Name	
Cosmetic Restriction	
Other Restriction(s)	
Functions	<ul style="list-style-type: none"> <li>• <a href="#">MASKING</a></li> <li>• <a href="#">TONIC</a></li> </ul>
SCCS opinions	
Identified INGREDIENTS or substances e.g.	

Source: European Commission [ [http://ec.europa.eu/growth/tools-databases/cosing/index.cfm?fuseaction=search.details\\_v2&id=34561](http://ec.europa.eu/growth/tools-databases/cosing/index.cfm?fuseaction=search.details_v2&id=34561) ]

# Product Information

**Product Name :** EverGreen


**INCI name :** Hyssopus Officinalis Extract

**Dosage :** 1 – 3%

**Formulation :** Add to the formulation  
when the temperature is lower than 55°C.  
Recommended to add after the cooling process.

**Storage :** Avoid direct light or UV.  
Keep it in a cool and dry area.





## 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.



Tel  
0044 (0)131 629 9584



E-mail  
[marketing@tsocalledonia.co.uk](mailto:marketing@tsocalledonia.co.uk)



Address  
8F Edgefield Rd Ind Est, Loanhead, EH20  
9TB