

Milforum

Plant part: Flowers

Scientific name: *Achillea millefolium*

INCI name: Achillea Millefolium Flower Extract

IECIC 2015 name: ACHILLEA MILLEFOLIUM FLOWER EXTRACT



Milforum

Product Name: Milforum

Plant Name: Yarrow

Achillea millefolium is an herbaceous perennial plant that is native to Europe and has adapted itself to other regions in the northern hemisphere.

A. millefolium was named after Achilles, the Greek mythical hero who was said to have used this herb to stop bleeding and heal his warriors' wounds. Yarrow flowers usually blossom from May to July and is known for its strong, sweet scent.



Harvesting Yarrow

Our yarrow is grown and harvested from an established organic UK farm.

The farmers are always looking for ways to achieve plants sustainability and produce as little waste as possible, in line with our company values.



Since the Ancient Greek times, yarrow was considered a universal medicine for wounds, due to its antibacterial and antimicrobial effects. It was used as a remedy for fever, to relieve eczema and rashes.

Yarrow ointments were used to soften and heal the skin and an infusion was used as a face wash to reduce pore size.

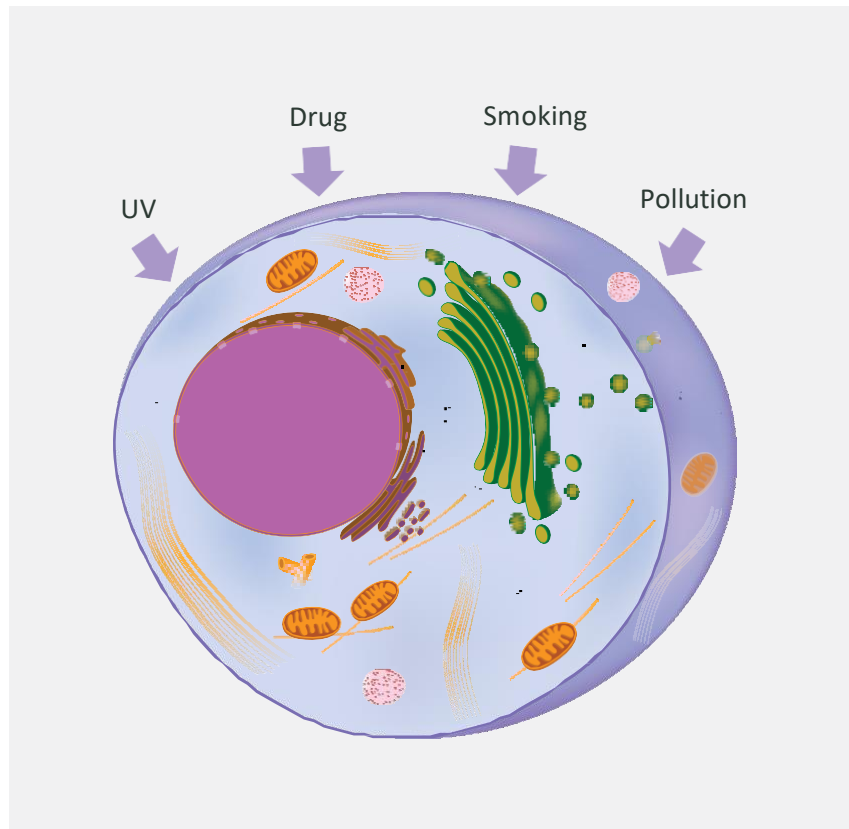
The anti-inflammatory effects of yarrow have been subject to many studies including the inhibition of LPS-induced nitric oxide production in macrophages. Yarrow extracts have also been shown to have a melanin synthesis inhibition effect by reducing tyrosinase activity. [1, 2, 3]

[1] *Achillea millefolium* L. essential oil inhibits LPS-induced oxidative stress and nitric oxide production in RAW 264.7 macrophages, Chou et al., Int J Mol Sci, 2013, 14, p. 12978-12993

[2] Antioxidant and antimicrobial activity of the essential oil and methanol extracts of *Achillea millefolium* subsp. *Millefolium* Afan. (Asteracea), Candan et al., J Ethnopharmacol, 2003, 87, p.215-220

[3] The melanogenesis alteration effects of *Achillea millefolium* L. essential oil and linalyl acetate: involvement of oxidative stress and the JNK and ERK signaling pathways in melanoma cells, Peng et al., Plos One, 2014, 9(4), e95186

Antioxidants



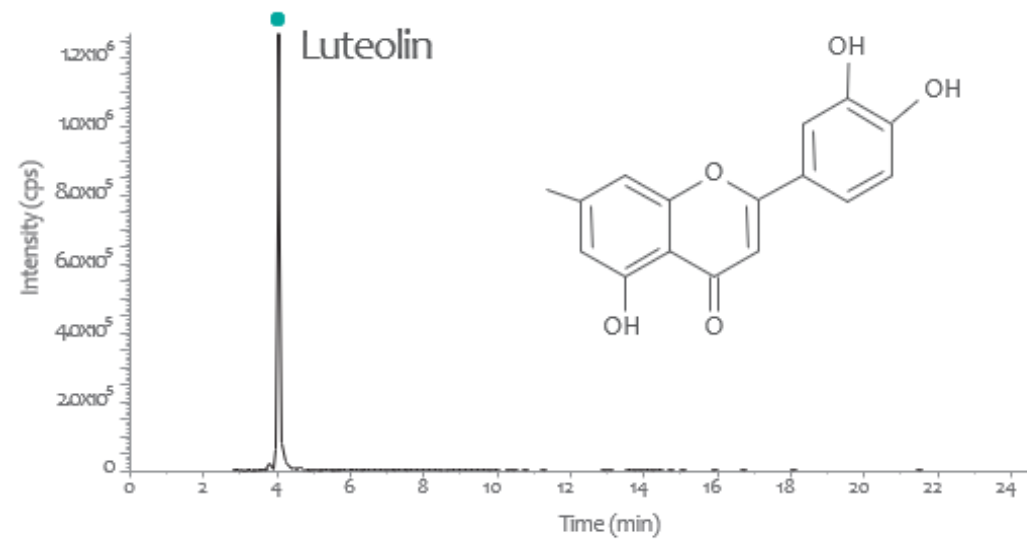
Why are they important?

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 Achillea Millefolium Flower Extract can inhibit the generation of ROS and in turn inhibit cellular damage.

Active compounds isolated in **Milforum** (*in vitro*)

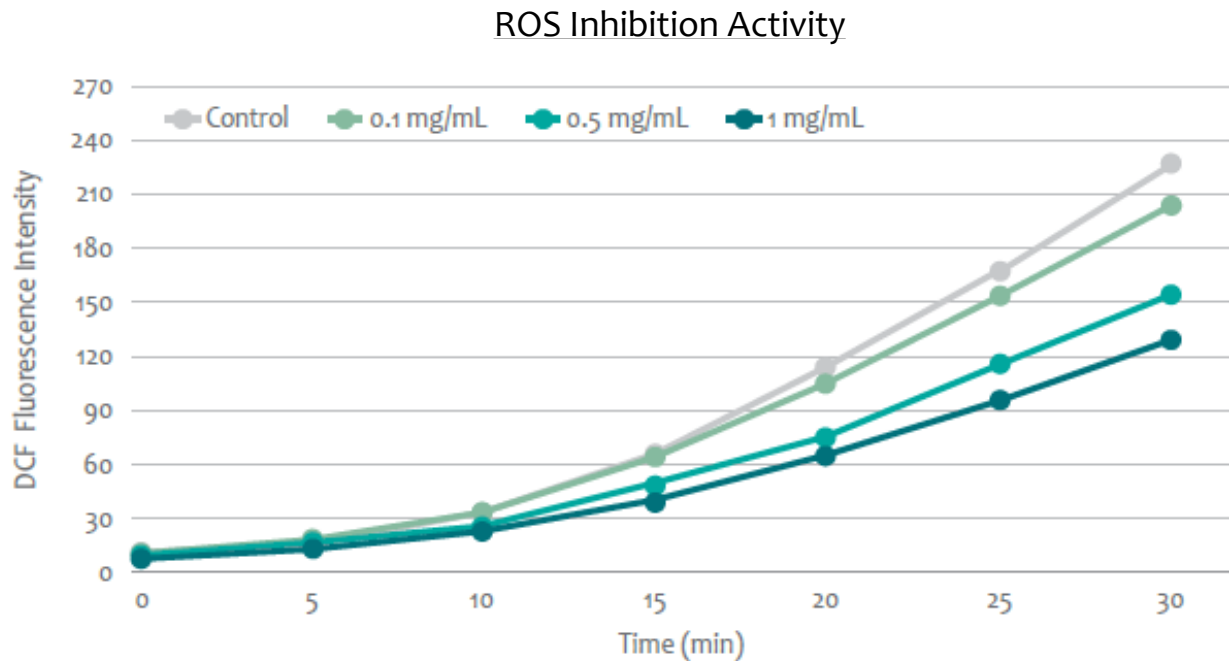
LC-MS/MS Analysis



Milforum analysis reports that luteolin, p-coumaric acid, caffeic acid, quercetin and isoquercitrin are present in the extract.

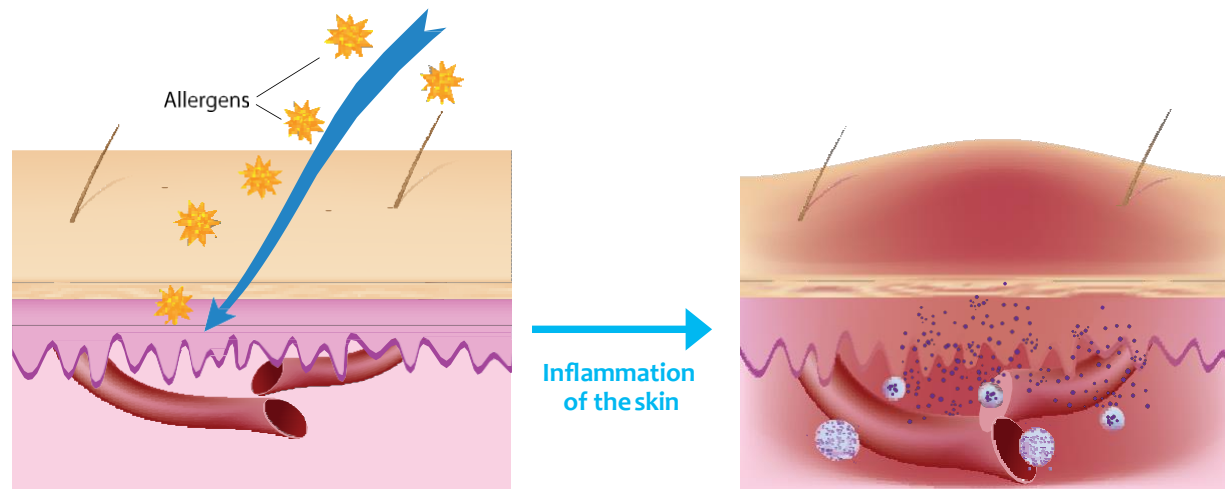
Studies have shown that luteolin possesses beneficial effects both *in vitro* and *in vivo*. It also has antioxidant and immunomodulatory properties.

Antioxidant Effects of Milforum (*in vitro*)



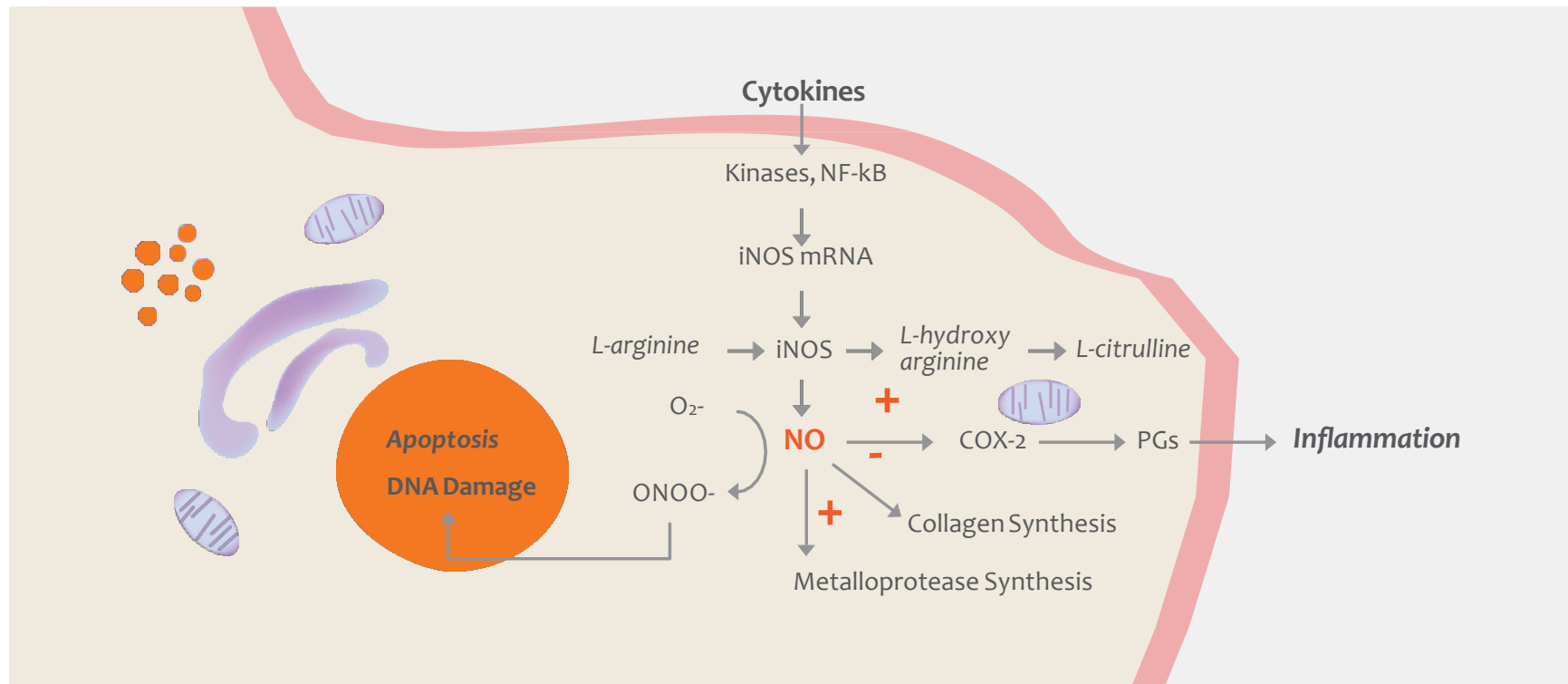
Milforum showed strong free radical scavenging activity. Good antioxidant activity is critical for anti-ageing efficacy in skin care products.

What is Inflammation?

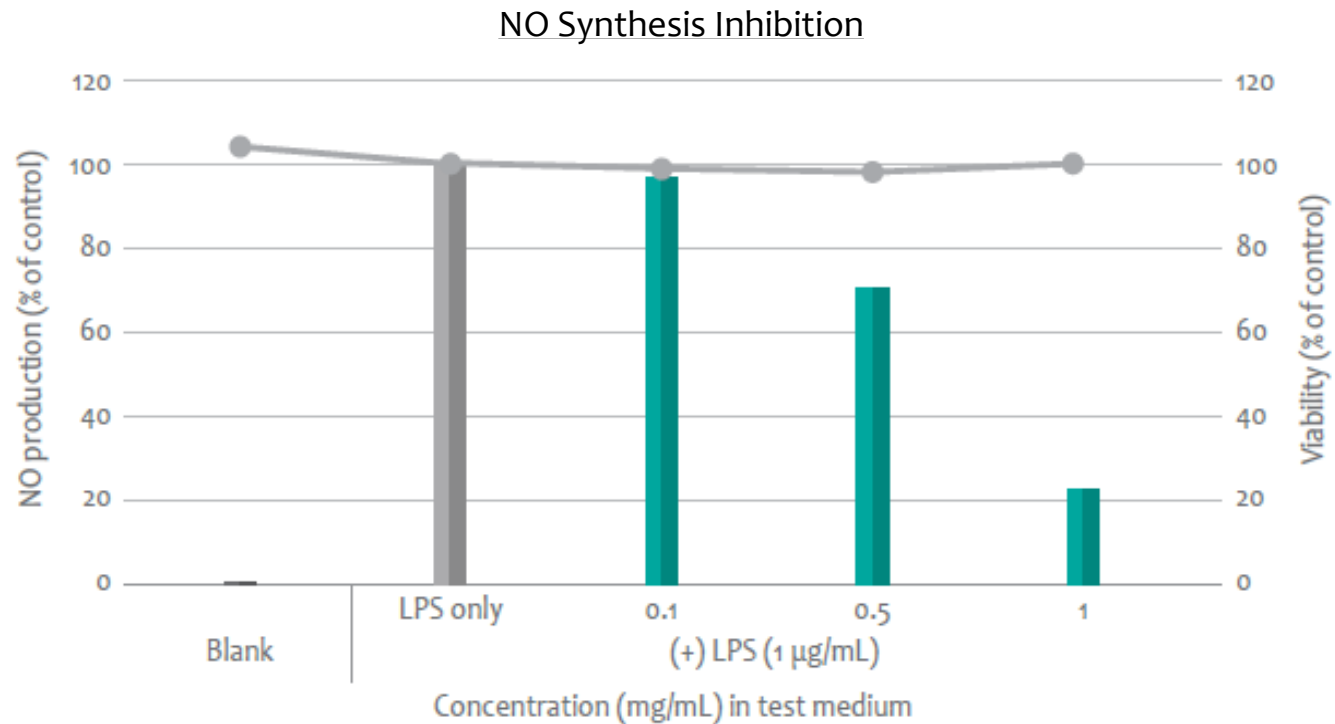


Inflammation is part of the complex biological responses to wide range of harmful stimuli including injury, tissue necrosis, infection, and irritants. The purpose of inflammation is to destroy (or contain) the damaging agent, initiate repair processes and return the damaged tissue to useful function. 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 *Milforum* (*in vitro*)



Nitric oxide generated by induced inflammation was measured in macrophage cells. *Milforum* significantly inhibited the response, displaying potential anti-inflammatory effects.

Reported functions

Ingredient : ACHILLEA MILLEFOLIUM FLOWER EXTRACT 

INCI Name	ACHILLEA MILLEFOLIUM FLOWER EXTRACT
Description	Achillea Millefolium Flower Extract is an extract obtained from the flowers of the Yarrow, Achillea millefolium L., Asteraceae
INN Name	
Ph. Eur. Name	
CAS #	84082-83-7
EC #	282-030-6
Chemical/IUPAC Name	
Cosmetic Restriction	
Other Restriction(s)	
Functions	<ul style="list-style-type: none"> • ANTIOXIDANT • HUMECTANT
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=82268]

Product Information

Product Name : Milforum


INCI name : Achillea Millefolium Extract
(China Compliant)

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.



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