



#### HEADQUARTERS

VIALE ORTLES, 12  
20139 MILAN - ITALY  
TEL. +39.02.574961  
FAX +39.02.57404620

[www.indena.com](http://www.indena.com)

#### INTERNATIONAL BRANCHES

INDENA FRANCE S.A.S.  
23, RUE DE MADRID  
75008 PARIS - FRANCE  
TEL. +33.1.45229128  
FAX +33.1.45220291

INDENA USA INC.  
811 FIRST AVENUE  
SUITE 218  
SEATTLE, WA 98104 - USA  
TEL. +1.206.340.6140  
FAX +1.206.340.0863

INDENA JAPAN CO., LTD.  
KDDI BLD 21F 1-8-1, OHTEMACHI  
CHIYODA-KU TOKYO 100-0004 - JAPAN  
TEL. +81.3.3243.9924  
FAX +81.3.3243.9925

INDENA BIOTECHNOLOGY (SHANGHAI) CO., LTD.  
CENTRAL PLACE, ROOM 216  
16 SOUTH HENAN ROAD  
SHANGHAI 200002 - CHINA  
TEL. +86.21.62747220  
FAX +86.21.63743798

Sales  
agents/distributors

Argentina, Australia, Austria,  
Belgium, Brazil, Canada,  
Chile, China, Colombia,  
Denmark, Egypt, Finland,  
Germany, Greece,  
India, Indonesia,  
Ireland, Israel, Jordan,  
Malaysia, Mexico,  
Norway, Poland, Portugal,  
Rumania, Russia,  
South Africa, South Korea,  
Sweden, Switzerland,  
Taiwan, Thailand, Ukraine,  
United Kingdom,  
Venezuela

Cod. DPR 0147 - 03/2009 - printed by Maspéro&Fontana Milano

A N T I - A G I N G

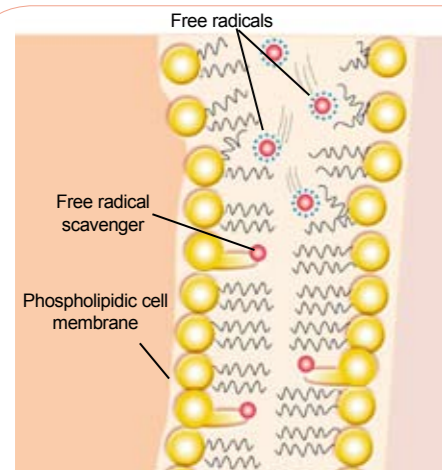


## AGING

Ever since the most ancient times mankind, women in particular, looked for different ways to maintain a healthy and beautiful skin. Even in the days of the Pharoas, queen Nefertiti used natural extracts obtained from the rich variety of plants growing alongside the Nil river to maintain her skin healthy and beautiful.

We are now finally learning to consider our skin not as a shell, but as a real organ that needs to be taken care of, day after day. And our skin, actually, is a vital organ with crucial functions for our organism: modulating body temperature, sensitive sensor by perceiving pressure, temperature and even pain, skin is a fundamental barrier against pollution and environmental insults. In few words, it is a mirror of the body, reflecting our well being or our imbalances.

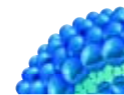
Free radicals are now recognized as the main cause of cells aging; they are generally extremely reactive oxygen molecules that target the cells constituents. Collagen is a constituent of the skin, targeted by free radicals. Once free radicals have interacted with the collagen molecules, a crosslinking reaction takes place and the main molecule responsible for our skin elasticity loses tone, and so does our skin.



## ANTIOXIDANT, FREE RADICAL SCAVENGER, UV-PROTECTANT

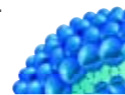
**Greenselect®\***: Green Tea (*Camellia sinensis*) extract is rich in polyphenols, the most representative of which is Epigallocatechin 3-O gallate (EGCG). Topically applied on the skin of human volunteers, green tea polyphenols are able to prevent UVB induced erythema and DNA damage. When orally administered, Greenselect® was demonstrated to reduce the level of oxidative markers.

Oral 100 - 300 mg/die  
Topical up to 1%



**Leucoselect®\***: Leucoselect® (Grape Seed extract) exerts its activity through multiple mechanisms: free radical scavenger, chelation of transition metals, inhibition of proteolytic enzymes, etc. Topically applied on the skin, it was shown to reduce skin sensitivity to UVB irradiation. By oral route, it improves the antioxidant defenses of the organism. The oligomeric procyanidins contained in the extract are the active small molecular size polyphenols responsible for the biological activity.

Oral 150 - 300mg/die  
Topical up to 1%



## AND ANTIAGING

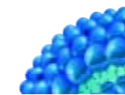
How is it possible to counteract the signs of aging with botanical extracts?

Antiaging products represent the largest sector of the cosmetic market. The aging population of baby boomers, in fact, expects to feel and look younger. The aging process promoted and sustained by free radicals, needs to be counteracted by the constant use of antioxidants and free radical scavengers. Other targets, such as connective tissue protection, restructuring characteristics and elasticity promoters, act synergically to prevent and reduce the skin aging process.

The combination of different active ingredients that provide protection at different levels of the aging process and the synergism of the different mechanisms of action are nowadays considered as the most powerful approach to counteract the signs of aging on the skin.

**Silymarin®\***: The *Silybum marianum* extract is known as Silymarin, which is composed by the flavolignans silybin, silydianin and silycristin. The free radical scavenging capacity of the extract was shown because it totally suppressed the release of reactive oxygen species by stimulated leukocytes, while on volunteers Silymarin Phytosome® reduced the rise of an UVB induced erythema.

Oral 100 - 320mg/die  
Topical up to 3%

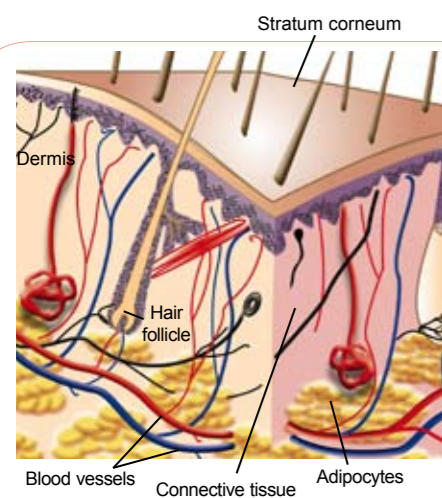
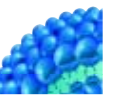


**Opextan®\***: The free radical scavenging properties of Opextan® and olive polyphenols have been assessed in different models in this olive fruit extract obtained from a selected variety of Italian olives. Opextan®, when orally administered, has been shown to decrease skin sensitivity to harmful UV radiation and to protect from UV damage, as well as to decrease the amount of oxidative markers. Topically, it was shown to reduce the amount of lipoperoxides as well.

Oral 160 - 400 mg/die  
Topical 0.5 - 2%

**Hawthorn®\***: It is an extract from *Crataegus monogyna* which contains flavonoids, endowed with free radical scavenging properties. The rate of hydration and skin roughness have been evaluated in human volunteers, and resulted improved after topical treatment. Favourable influence on skin elasticity have been observed as well.

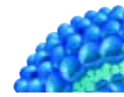
Oral 250 - 750 mg/die  
Topical up to 1%



## CONNECTIVE TISSUE PROTECTANT

**Sericoside®\***: It is a triterpene extracted from *Terminalia sericea*. Its capability of reducing capillary permeability exerts a restructuring effect on connective tissue. Its antiwrinkle efficacy was tested and confirmed in healthy volunteers, as well as the restructuring effect demonstrated by skin becoming smoother on human reconstructed epidermis.

Topical up to 0.5%

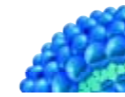


**Asiaticoside®\***: This pure triterpene is extracted from *Centella asiatica*. It is known to stimulate vascular and perivascular collagen biosynthesis, with a particular activity on collagen type I, whose reduction is significant in aging. Asiaticoside cell stimulation upregulated the encoding enzymes playing a role in extra cellular matrix collagen synthesis.

Oral 30 - 60 mg/die  
Topical up to 1%

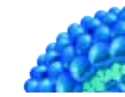
**PA2®\***: PA2 (Proanthocyanidin A2) is a molecule present in the *Aesculus hippocastanum* bark endowed with a potent anti-enzymatic activity (mainly anti-elastase and anti-collagenase). It also exerts a free radical scavenging activity and also normalizes the conditions of impaired capillary permeability and fragility.

Oral 150 - 300 mg/die  
Topical up to 1%



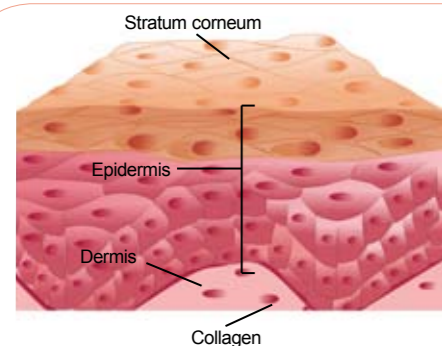
**Centella asiatica®\***: Exerts its activity on stimulating collagen biosynthesis and increasing proline incorporation, thus modulating the metabolism of connective tissue. *Centella asiatica* selected triterpenes also exert a protective effect on microcirculation, with reduction of the abnormally increased capillary permeability.

Oral 30 - 60 mg/die  
Topical up to 1%



**Ruscogenins®\***: Butcher's broom contains steroidal saponins (namely ruscogenin and neoruscogenin) performing anti-elastase activity and maintaining the integrity of the connective tissue, overall exerting an anti-aging effect. They also improve microcirculation by promoting smooth muscle contractions.

Oral 10 - 20 mg/die  
Topical up to 1%



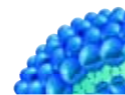
## RESTRUCTURANT

**Millet®\***: The extract of *Panicum miliaceum* contains fatty acids crucial to the integrity of the skin hydro-lipidic barrier. In human volunteers, a remarkable restructuring effect on lipid barrier was observed after single application on stripping-damaged skin, suggesting an important restructuring property of the extract.

Topical up to 1%

**Ginselect®\***: Ginselect possesses a transdermic action which can be ascribed to the ginseng saponins. The objective improvement in cutaneous elasticity and tone, related to increased blood perfusion, leads to improved delivery of micronutrients to the skin. Various dermatological parameters as hydration, trophism, elasticity are ameliorated by topical application.

Oral 100 - 200 mg/die  
Topical up to 1%



## \*Also in more bioavailable Phytosome® formulations.

Phytosomes are **complexes** of natural ingredients and phospholipids. They are used to **improve the bioavailability** of active ingredients, as well as **skin absorption**. Both orally and topically, phytosomes demonstrated a **higher biological activity** compared to an equal amount of the active ingredient or extract. The complex is a structure in which the active ingredient is anchored to the polar head of the phospholipid and becomes an **integral part of the micellar membrane**.

