



HEADQUARTERS

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

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 0148 - 07/2009 printed by Maspero&Fontana Milano

ANTI-CELLULITE



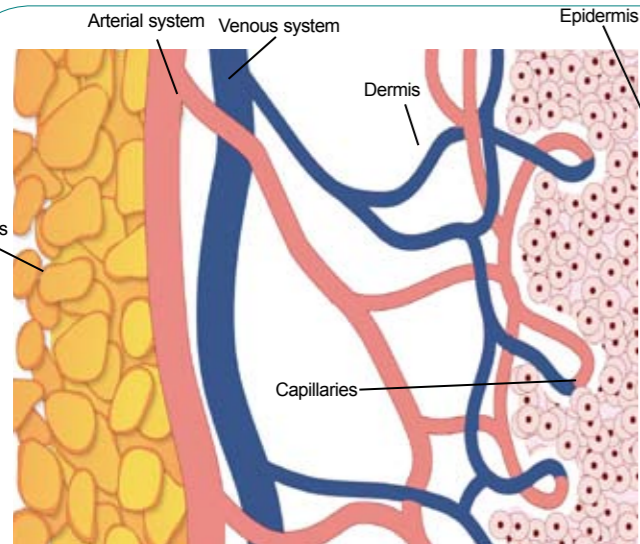
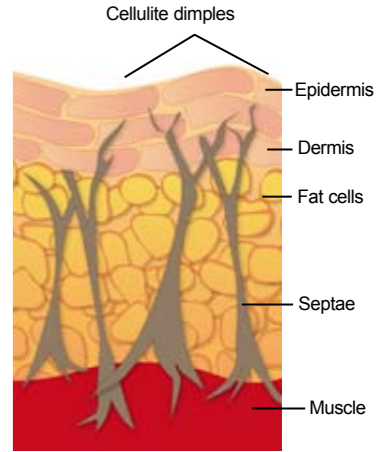
CELLULITE

Cellulite is an inesthetism affecting the majority of adult women, and known as oedematous-fibro-sclerotic lipodystrophy in the medical terminology. It is due to multiple factors which contribute to this inaesthetic condition. On a metabolic standpoint, adipocytes may become engorged with lipids and cluster together, while an excess of fluid is retained and fiber inflammation and connective fibers digestion occurs. For all these reasons, it is necessary to counteract cellulite by acting on different targets, employing ingredients with different and synergistic biological activity. Circulation of the lymphatic system and of the venous system, blood flow and capillary integrity are crucial to improve the situation.



DID YOU KNOW?

Cellulite is a physiological mechanism aimed at storing energy to sustain pregnancy and lactation. In fact, it starts with the retention of subcutaneous fat, and next evolves to the dermis and epidermis, eventually becoming externally evident. Cellulite is more visible in women mainly because a woman's connective tissue is very inflexible, so as females gain weight their fat cells expand, and tend to bulge upwards towards the surface of the skin, giving the classic orange-peel appearance of cellulite. Men usually have less fat on their thighs and a thicker outer skin which obscures any exceeding fat below. Compared to men, women also have a higher number of septae which, for hormonal imbalances, may loose elasticity. This mechanism is at the base of the appearance of dimples, the hallmark of cellulite.



VASOACTIVE

Ximilene® and Ximenoil®: Ximenoil® is Ximenynic acid extracted from *Santalum album*. It stimulates the conversion of arachidonic acid into eicosanoids in the dermis, and an increased level of eicosanoids is correlated with a vasokinetic action and increase in microcirculation. It was shown to improve skin blood flow and blood perfusion in subjects with cellulite. Ximilene® is an oily ethyl ester obtained from ximenynic acid with a similar biological activity.

Esculoside: It is a glycosidated coumarin obtained from *Aesculus hippocastanum*, which favours capillary protection through inhibition of catabolic enzymes such as hyaluronidase and collagenase, thus preserving the perivascular connective tissue integrity. In addition, an anti-oxidant and anti-inflammatory profile has been reported.

Visnadin*: It has a strong vasokinetic activity, not related to vasodilating properties. It enhances the inotropic activity of the wall myocytes in microcirculatory vessels, improving the pumping function of the arteries by increasing the release of prostacyclin, thus inducing the rhythmic contractions of the vessels smooth muscular cells. Visnadin has also been reported to increase lipolysis by inhibiting phosphodiesterase and increasing the intracellular concentration of cAMP.

Mirtoselect®: It strengthens capillary walls by linking with endothelial cells membranes, thus increasing their resistance, and reduces capillary permeability by stimulating the synthesis of perivascular tissue constituents. It also inhibits phosphodiesterases thus improving blood circulation.

Leucoselect®: Since ever considered one of the most effective antioxidants, this Grape Seed extract exerts its activity through multiple mechanisms: free radical scavenging, chelation of transition metals, inhibition of proteolytic enzymes, etc. The low molecular weight oligomeric procyanidins contained in the extract are considered its active constituents.

Ruscogenins: This group of saponins extracted from *Ruscus aculeatus* exerts a vasoconstricting effect by promoting smooth muscle contractions. The observed anti-elastase activity is useful to maintain blood vessels functionality. In addition, the product exerts an anti-inflammatory activity.

Oral 60 - 120 mg/die
Topical 0.5%

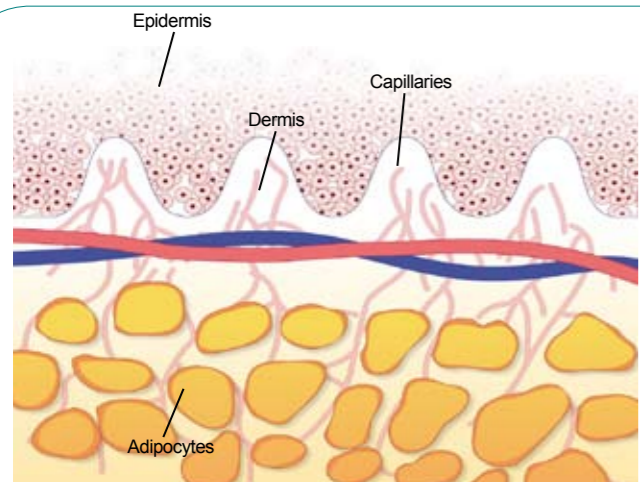
Oral 60 - 120 mg/die
Topical up to 3%

Oral 80 - 160 mg/die
Topical up to 1%

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

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

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



LIPOLITIC AND ANTIOEDEMA

Ginkgo Biloba Dimeric Flavonoids*: Act on capillary blood flow. This extract inhibits cAMP-PDE thus increasing lipolysis. It also stimulates the rhythmic contractions of the precapillary arterioles, due to a specific microvasculokinetic action, increasing smooth muscle cell contractions. In addition, the number of open capillaries increases, exerting a vasoactive activity.

Coleus: This extract of *Coleus forskohlii* contains the diterpenoid forskolin, a compound that stimulates the activity of adenylate-cyclase, thus increasing the concentration of the second messenger cAMP. By means of a protein-kinase mediated stimulation of the active form of hormone-sensitive lipase, this results in an improved release of fatty acids from the body adipose tissue.

Lymphaselect®: This *Mellilotus officinalis* extract shows a marked action on the lymphatic system, thanks to its myotropic activity resulting in a stimulation of the rhythm and tonus of the lymphatic vessels. At the venous system level, Lymphaselect® increases blood flow, improves the venous return quality reducing the oedema.

Escin*: from *Aesculus hippocastanum*, it acts principally in capillaries, mainly by modifying the vascular permeability. Escin reduces the number and the diameter of the small pores of the capillary walls through which water exchange normally occurs. The final result is a strong reduction of oedema. A **Horse Chestnut** extract is also available.

Guarana: Known as an energetic plant, guarana extract is endowed with a thermogenic stimulation that leads to lipolysis, due to its caffeine content. Indeed, as caffeine inhibits cAMP phosphodiesterase, the increased level of cAMP improves lipolysis from adipocytes.

Green Tea: The amount of caffeine present in green tea is responsible for the lipolytic properties of green tea extract. Caffeine also participates in combination with green tea polyphenols to mechanisms, still to be investigated, leading to weight loss.

Oral 20 - 50 mg/die
Topical up to 3%

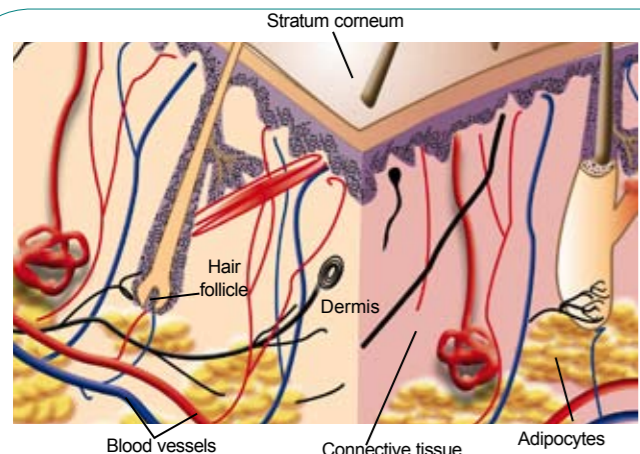
Oral 100 - 150 mg/die
Topical up to 1%

Oral 20 - 50 mg/die
Topical up to 2%

Oral 50 - 200 mg/die
Topical up to 0.4%

Oral 400-800 mg/die
Topical up to 1%

Oral 400-800 mg/die
Topical up to 2%



CONNECTIVE TISSUE PROTECTANT

Centella asiatica selected triterpenes*: Stimulate collagen biosynthesis and increase the incorporation of proline, 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.

Asiaticoside: This pure triterpene from *Centella asiatica* is known to stimulate vascular and perivascular collagen biosynthesis, with a specific activity on collagen type I, whose reduction is significant in aging. Asiaticoside upregulates the enzymes encoding for the proteins playing a role in the synthesis of extracellular matrix collagen.

Sericoside*: This triterpenoid is extracted from *Terminalia sericea* (branches, bark and roots). Its capability of reducing capillary permeability exerts a restructuring effect on the connective tissue. Significant anti-inflammatory qualities have also been demonstrated both by Sericoside and its Phytosome®.

*Also in more bioavailable Phytosome® formulations.

Phytosome® technology is used to improve the bioavailability of active ingredients, as well as skin absorption. Both orally and topically, phytosome® 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.

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

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

Oral 30 - 60 mg/die
Topical up to 0.5%

