



 **indena**[®]
INDUSTRIA
DERIVATI
NATURALI

PERSONAL CARE

SKINCARE

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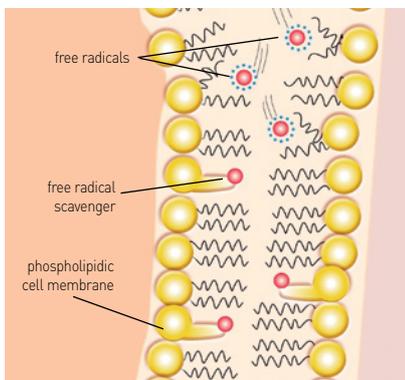
WHAT ABOUT SKIN CARE

Under the general definition of "skin care" fall most of the skin care applications targeting the face. Being the most communicative and expressive part of our body, always visible, the face deserves a special care.

This proposed scheme to skin care may be thought to as a thorough approach addressing some of the most commons signs of ageing. It refers to three different targets as the free radicals causing imbalances to cells membranes, the protection of connective tissue and skin restructurants. Additional and most up to date findings as collagen glycation or inflammaging are also managed.

Aim of this brochure is to provide a comprehensive overview of the botanical active ingredients suitable for any antiageing application. It contains several options addressed to multiple biological targets to offer a multifunctional approach in the project of finished dosage forms containing natural active ingredients from plants.

ANTIOXIDANT, FREE RADICAL SCAVENGER, UV-PROTECTANT



SILIPHOS®: is the Phytosome® form of silybin, the most active of the flavanolignans contained in milk thistle. A well-established free radical scavenger, Siliphos® has also shown similar properties to retinoic acid, but without irritation. It reduces the expression of keratinocytes and stimulates base membrane protein expression while modulating the proinflammatory response markers, thus exerting an effective skin ageing control.

Level of use 0.1-1%

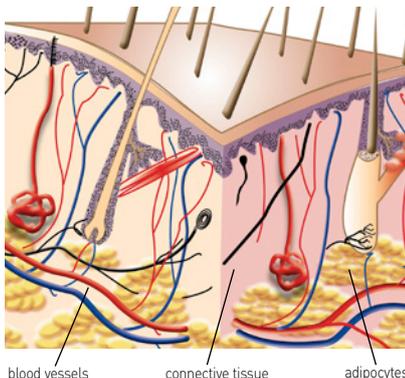


REXATROL®: is the most bioavailable Phytosome® form of resveratrol, a broadly known and active polyphenol commonly present in the skin of grape. Resveratrol has shown a protective activity against the UV-induced oxidative stress and cutaneous damages and qualifies as an effective active ingredient to counteract photoaging.

Level of use 0.1-1%



CONNECTIVE TISSUE PROTECTANT / ELASTICIZING



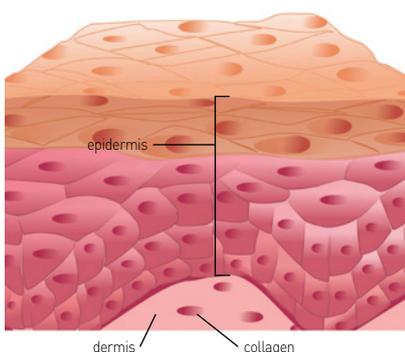
XILOGEL®: is an extremely well characterized polysaccharide obtained from the seed of tamarind, Ecocert and Cosmos validated. It forms viscous gels with a unique and sensory feeling and also has been shown *in vitro* to reduce the markers of aging in aged keratinocytes and to improve the expression of filaggrin, a protein associated with moisture maintenance. Clinically, it has shown strong hydrating, elasticizing, anti wrinkle and re-densifying properties. It is also endowed with a unique sensoriality.

Level of use 0.1-2%

XILOGEL®HS: a highly purified polysaccharide from the seed of Tamarind endowed with a potent hydrating activity overperforming HA and betaglukan in short-term clinical trials. Recommended for clear gels and high concentration serum. It provides a unique velvety and silky sensorial feel.

Level of use 0.1-2%

RESTRUCTURANTS



OMEGABLU®: is an Ecocert and Cosmos validated bilberry seed oil, containing similar amount of polyunsaturated fatty acids from the omega-6 and omega-3 series, combining the structural properties of omega-6 fatty acids with inflammation response modulation activity of those from the omega-3 series. It has been clinically shown to be endowed with restructuring properties on challenged skin, improving skin hydration and skin integrity.

Level of use 2-10%

MILLET: this Cosmos validated 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.

Level of use 0.5-2%

THE BOTANICALS' OPTIONS

Several botanical active ingredients have been reported effective in addressing, by various mechanisms of action, the physiological functions our organism uses to maintain a healthy status and appearance of the skin.

In particular, it is worth mentioning antioxidants and free radical scavengers which have been long ago assessed as counteracting one of the most common and invasive mechanism of skin ageing.

Moisturizers are a key component of basic skin care especially when there is alteration of the epidermal barrier and a reduced water content in the epidermis. They are used to restore the barrier function of the epidermis, to cover tiny fissures of the skin and to provide a soothing and protective film. They may thus slow down evaporation of the skin's moist improving the tactile properties of dry and ageing skin. Water originates in the deeper layers to the skin and moves upward to hydrate cells in the stratum corneum that has eventually been lost by evaporation. Corneocytes are the physical barrier of the stratum corneum and, when hydrated, contribute to a physiological skin elasticity. Skin barrier restructurants, apart from direct moisturization, contribute to modulate trans epidermal water loss (TEWL) and restore the lipids' barrier ability to attract, hold and redistribute water thus contributing to maintain skin integrity and healthy appearance. They also provide an increased level of fatty acids, crucial lipids in the formation of the skin barrier. Additional novel findings also refer to mechanisms as collagen glycation and inflammaging, also manageable by botanical active ingredients.

LEUCOSELECT®: (Grape Seed extract) exerts its activity through multiple mechanisms: as a free radical scavenger, through chelation of transition metals, and by inhibition of proteolytic enzymes, etc. When topically applied on the skin, it has been shown to reduce skin sensitivity to UVB irradiation. The oligomeric procyanidins contained in the extract are the active small molecular size polyphenols responsible for the biological activity. Leucoselect® has also been formulated in the most bioavailable Phytosome® form.

Level of use up to 1%



GREENSELECT®: Green Tea (*Camellia sinensis*) extract is extremely rich in biologically active polyphenols, the most representative of which is Epigallocatechin 3-O gallate (EGCG), but it also contains other polyphenols belonging to the same chemical group. When topically applied on the skin in human clinical testing, green tea polyphenols have been reported to prevent UVB induced erythema and DNA damage. Greenselect® has also been formulated in the most bioavailable Phytosome® form.

Level of use up to 1%



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 established *in vitro* by totally suppressing the release of reactive oxygen species by stimulated leukocytes, while in humans, Silymarin Phytosome® (the Phytosome® delivery system form) reduced the incidence of UVB induced erythema. Silymarin has also been formulated in the most bioavailable Phytosome® form.

Level of use up to 3%



CENTELLA ASIATICA SELECTED TRITERPENES: the triterpenes obtained from *Centella asiatica*, also known as gotu kola, exert their activity by stimulating collagen biosynthesis and increasing the incorporation of hydroxyproline into this protein, thus modulating the metabolism of connective tissue. Centella asiatica selected triterpenes also exert a protective effect on microcirculation, reducing abnormally increased capillary permeability. Centella asiatica selected triterpenes has also been formulated in the most bioavailable Phytosome® form.

Level of use 0.1-1%



ASIATICOSIDE: is a terpenoid component extracted from *Centella asiatica*. It has been shown to increase collagen synthesis and therefore anti-wrinkle activity. Skin aging appears to be principally related to a decrease in the levels of type I collagen, the primary component of the skin dermis. Type I collagen is also known to impart tensile strength to skin. *In vitro* evaluations have demonstrated the receptor activity of Asiaticoside on collagen synthesis. Clinical evaluations confirm its anti-wrinkle efficacy.

Level of use 0.1-0.5%

CENTEVITA®: this Ecocert and Cosmos validated extract contains both the well known tripetrenic fraction and another polyphenolic fraction from the *Centella asiatica* leaves. It mimics very closely the content of biologically active molecules contained in the leaf. It has demonstrated optimal DNA protection properties *in vitro*, as well as a clear anti-glycation effect which causes the extract to be an efficient and long-acting anti-aging ingredient.

Level of use 0.1-1%

IMMEDIATE EFFECT

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.

Level of use up to 2%



ZANTHALENE®: Zanthalene® is an Ecocert and Cosmos validated CO₂ extract obtained from the fruit of Sichuan pepper, a chinese spice known for its chemesthetic properties. Besides being a lenitive and soothing ingredient, it has been shown *in vivo*, to induce an immediate anti-wrinkle and lifting effect with a short-term action in relaxing fine wrinkles, already visible within 15 to 30 minutes.

Level of use 0.5-1%

PHYTOSOME
MORE
BIOAVAILABLE





OPEXTAN®: is an innovative olive fruit extract. Its characteristic ingredient, among other polyphenols, is verbascoside, a potent free radical scavenger. Opextan® has been demonstrated to reduce skin sensitivity to UV irradiation, to reduce lipid peroxidation and oxidative stress. It may be used both orally and topically, for a novel approach to beauty. Olive is the symbol of the Mediterranean culture, and epidemiological studies have since long suggested the supportive properties of olives and olive oil with respect to human health

Level of use 0.5-2.5%

GINKGOSELECT®: *Ginkgo biloba* extract contains two families of molecules, of which the flavonoid components are responsible for the anti-oxidant and free radical scavenger properties of the plant. When topically applied, Ginkgoselect® has been shown to reduce skin sensitivity to UVB irradiation, and to promote blood flow and provide capillary protection. Ginkgoselect® has also been formulated in the most bioavailable Phytosome® form.

Level of use up to 1%



VITACHELOX™: standardized extracts from oak wood, green tea and grape seed are blended together to produce a synergistic botanical combination. When topically applied, Vitachelox™ has been shown to protect from oxidation-related stress the skin exposed to air pollutants.

Level of use 0.1-1%

SERICOSIDE: is a pure molecule obtained from *Terminalia sericea*. Many trials have been performed and Sericoside has been shown to have skin restructuring activity, capillary protection activity, skin regeneration and anti-oedema properties. This is due to a remarkable reduction of capillary permeability exerted by the active ingredient. Significant inflammation response modulation qualities have also been demonstrated by Sericoside and its Phytosome® form as well.

Level of use up to 0.5%



PA2: PA2 (Proanthocyanidin A2) is a molecule present in the bark of the Horse Chestnut tree. It has potent anti-enzymatic activity (mainly anti-elastase and anti-collagenase), is a free radical scavenger, and also normalizes impaired capillary permeability and fragility. The Phytosome® form has also been developed. This delivery system clinically has been reported to promote skin firmness and to reduce fine wrinkles.

Level of use 0.5-1.5%



RUSCOGENINS: Ruscogenins (mainly ruscogenin and neoruscogenin) are steroid saponins typical of *Ruscus aculeatus* L. Their biological activity promotes venous circulation by modulating smooth muscle vascular contractions. Moreover, they inhibit the enzyme elastase maintaining the integrity of the constituents of the connective tissue, thereby exerting anti-ageing effect.

Level of use 0.1-1%

Also in more bioavailable PHYTOSOME® form.

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APPLICATIONS

XILOGEL® - MOISTURIZER, ANTIWRINKLES

ZANTHALENE® - IMMEDIATE LIFTING, ANTI-ITCHING, SKIN SENSITIVITY MODULATOR

SILIPHOS® - ANTIWRINKLES, RETINOIC ACID-LIKE ACTIVITY

RUSCOGENINS C - VASOPROTECTANT

ASIATICOSIDE - ANTIWRINKLES

PA2 PHYTOSOME® - FIRMING, ANTIWRINKLES, OVAL RESHAPING



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