

# Encyclopedia of Ingredients

- Folia 06 Acerola (*malpighia punicifolia*) fruit extract
- Folia 07 Age Spot corrector (*Lepidium sativum*, soy isoflavones, lecithin)
- Folia 08 AHAs (Alpha Hydroxy Acids)
- Folia 09 Algae extract
- Folia 10 Allantoin
- Folia 11 Almond (*prunus amygdalus*) oil
- Folia 12 Aloe vera
- Folia 13 Aloe vera – Cosmetic efficacy
- Folia 14 Alp rose (*rhododendron ferrugineum*) stem cells
- Folia 15 *Althaea officinalis* (marshmallow) extract
- Folia 16 Anti sebum complex
- Folia 17 Apple (*malus domestica*) stem cells
- Folia 18 Apricot (*Prunus armeniaca*) kernel oil
- Folia 19 Aquaporin-Stimulating-Peptid (ASP)
- Folia 20 Arbutin
- Folia 21 *Arnica montana* extract
- Folia 22 *Aronia melanocarpa* fruit extract
- Folia 23 *Avena sativa* (oat) kernel extract
- Folia 24 *Avena sativa* (oat) kernel protein
- Folia 25 Avocado (*persea gratissima*) oil
- Folia 26 Avocado peptide
- Folia 27 Balloon vine (*cardiospermum halicacabum*) extract
- Folia 28 Barley (*Hordeum vulgare*) extract
- Folia 29 Bearberry (*arctostaphylos uva ursi*) leaf extract
- Folia 30 Beech (*fagus sylvatica*) bud extract
- Folia 31 Beta Glucan
- Folia 32 *Beta vulgaris maritima* extract
- Folia 33 Bilberry (*vaccinium myrtillus*) seed oil
- Folia 34 Bio-Bustyl™
- Folia 35 Bioferment consisting of green algae and white lupin proteins
- Folia 36 Biotin
- Folia 37 Birch (*betula alba*) leaf extract
- Folia 38 Bisabolol
- Folia 39 Boldo tree (*peumus boldus*) extract
- Folia 40 Borage (*borago officinalis*) seed oil

## Encyclopedia of Ingredients

- Folia 41 Butcher's broom (*ruscus aculeatus*) root extract
- Folia 42 Butyl avocadate
- Folia 43 Cacao (*theobroma cacao*) extracts
- Folia 44 Caffeine
- Folia 45 *Calendula officinalis* (Marigold)
- Folia 46 Castor (*Ricinus communis*) oil
- Folie 47 Caviar extract
- Folia 48 *Centella asiatica* extract
- Folia 49 Ceramides
- Folia 50 Champagne (*vitis vinifera*) fruit extract
- Folia 51 Chitosan
- Folia 52 *Chondrus crispus* extract
- Folia 53 Coconut (*cocos nucifera*) oil
- Folia 54 *Codium tomentosum* extract
- Folia 55 Coenzym Q10
- Folia 56 Collagen
- Folia 57 Colloidal platinum
- Folia 58 Cranberry (*vaccinium macrocarpon*) extract
- Folie 59 Cupuaçu (*theobroma grandiflorum*) butter
- Folia 60 Dead Sea Salt (*maris sal*)
- Folie 61 Decyl glucoside
- Folia 62 Diacetyl boldine solution
- Folia 63 Dihydroxyacetone
- Folia 64 *Echinacea purpurea*
- Folia 65 *Echium plantagineum* oil
- Folia 66 Ectoin
- Folia 67 Elastase inhibitor
- Folia 68 Erythrulose
- Folia 69 ESP: Elastin stimulating peptides
- Folia 70 ESP: Elastin stimulating peptides - COSMETIC EFFICACY
- Folia 71 *Euglena gracilis* extract
- Folia 72 Evening primrose (*Oenothera biennis*) oil
- Folia 73 Farnesol
- Folia 74 Gatuline® Expression

## Encyclopedia of Ingredients

- Folia 75 Ginseng (*panax ginseng*) extract
- Folia 76 Glycerol
- Folia 77 Glycolic acid
- Folia 78 Goji (wolfberry) extract
- Folia 79 Green tea (*camellia sinensis*) leaf extract
- Folia 80 Honey extract
- Folia 81 Horse chestnut (*aesculus hippocastanum*) seed extract
- Folia 82 Hyaluronic acid
- Folia 83 Hydrolyzed hibiscus *esculentus* L. seed extract (biological oligopeptides)
- Folia 84 Hydrolyzed lupin protein
- Folia 85 Hydrolyzed silk
- Folia 86 *Imperata cylindrica* root extract
- Folia 87 Inositol
- Folia 88 Instensyl®
- Folia 89 Iris florentina root extract
- Folia 90 Isostearyl Isostearate
- Folia 91 Jojoba (*simmondsia chinensis*) oil
- Folia 92 Jojoba wax pearls
- Folia 93 Kaolin
- Folia 94 Kombucha
- Folia 95 *Laminaria digitata* extract
- Folia 96 Lavender (*lavandula angustifolia*) oil
- Folia 97 Licorice (*glycyrrhizia glabra*) root extract
- Folia 98 Lipo aminoacid
- Folia 99 Macadamia (*macadamia ternifolia*) oil
- Folia 100 *Magnolia obovata* bark extract
- Folia 101 Mango (*mangifera indica*) butter
- Folia 102 Mangosteen extract
- Folia 103 Matrixyl™
- Folia 104 Matrixyl™3000
- Folia 105 Matrixyl™Synthe'6™
- Folia 106 MDI Complex ®
- Folia 107 Menthol
- Folia 108 Mineral water
- Folia 109 Mulberry (*morus alba* and *morus nigra*) root extract
- Folia 110 Murumuru (*Astrocaryum murumuru*) Butter

## Encyclopedia of Ingredients

- Folia 111 Mushroom (fomes officinalis) extract
- Folia 112 Nylon Powder
- Folia 113 Olive (olea europaea) leaf extract
- Folia 114 Olive (olea europaea) oil
- Folia 115 Oryza sativa (rice) extract
- Folia 116 Palmitoyl Oligopeptide
- Folia 117 Panthenol
- Folia 118 Orange (citrus aurantium) oil
- Folia 119 Peanut (arachis hypogaea) oil
- Folia 120 Pearl extract
- Folia 121 Peat extract
- Folia 122 PEG-6 Caprylic/Capric Glycerides
- Folia 123 Peptid complex against eye puffiness and dark circles
- Folia 124 Perfect bust complex
- Folia 125 Pisum sativum extract
- Folia 126 Plantbased cellulite active substance
- Folia 127 Polysaccharide  $\alpha$ -glucan
- Folia 128 Pomegranate (Punica granatum) flower extract
- Folia 129 Quince (cydonia oblonga) Hydrogel
- Folia 130 Radosia rubescens extract
- Folia 131 Raspberry Stem Cell Extract
- Folia 132 Red camellia (camellia japonica) flower extract
- Folia 133 Red vine (vitis vinifera) leaf extract
- Folia 134 RSL: Repair stimulating lipids
- Folia 135 RSL: Repair stimulating lipids - COSMETIC EFFICACY
- Folia 136 Rhyolite exfoliator
- Folia 137 Saccharides
- Folia 138 Salicylic acid
- Folia 139 Seabuckthorn (hippophae rhamnoides) fruit extract
- Folia 140 Sea Lavender (limonum vulgare)
- Folia 141 Sea Mud (maris limus) extract
- Folia 142 Sensitive-Complex
- Folia 143 Shea butter
- Folia 144 Sigesbeckia orientalis
- Folia 145 Silk acacia extract
- Folia 146 Skin Defense-Complex

## Encyclopedia of Ingredients

- Folia 147 Sodium PCA
- Folia 148 SORR
- Folia 149 Soy Isoflavone
- Folia 150 Squalene
- Folia 151 Subtilisin
- Folia 152 Tea tree (*melaleuca alternifolia*) oil
- Folia 153 *Thermus thermophilus* ferment
- Folia 154 *Trifolium pratense* (clover) flower extract
- Folia 155 *Ulva lactuca* extract
- Folia 156 Vitamin A / Retinol / Retinyl palmitate
- Folia 157 Vitamin C / L-Ascorbic Acid
- Folia 158 Vitamin C - Phosphate
- Folia 159 Vitamin E / Tocopherol / Tocopheryl acetate
- Folia 160 *Vitis Vinifera* (Grape) Seed Extract
- Folia 161 *Wakame* (*undaria pinnatifida*) extract
- Folia 162 *Waltheria indica* extract
- Folia 163 Wheat (*triticum vulgare*) bran lipids
- Folia 164 Wheat (*triticum vulgare*) proteins
- Folia 165 White tea (*camellia sinensis*) leaf extract
- Folia 166 Witch hazel (*hamamelis virginiana*) extract
- Folia 167 Yeast (*saccharomyces cerevisiae*) extract
- Folia 168 Yeast Extract (Demanding Skin)
- Folia 169 Yellow horned poppy (*glaucium flavum*) leaf extract
- Folia 170 Zinc oxide

## ACEROLA FRUIT EXTRACT (MALPIGHIA PUNICIFOLIA)

**Acerola fruit extract** is obtained from the fruit of the malpighia punicifolia tree. Acerola ranges from southern Texas south through Mexico and the Caribbean to Peru and Bahia in Brazil. Its red, cherry-like fruits are very rich in Vitamin C. Extracts of acerola are used for their antioxidant, skin-protecting and fortifying properties.

### Description:

*Malpighia glabra* is a tropical fruit-bearing shrub or small tree in the family Malpighiaceae. It grows to 3 m tall, with a dense, thorny crown. The leaves are evergreen, simple ovate-lanceolate, 5–10 cm long, with an entire margin. The flowers are produced in umbels of 2-5 together, each flower 1–1.5 cm in diameter, with five pink or red petals. The fruit is bright red, 1.5–2.5 cm diameter, containing 2-3 hard seeds. It is juicy, often as much sour as sweet in flavor, and very high in vitamin C and other nutrients.



**Acerola cherry**

### Constituents of Acerola fruit extract:

Acerola fruit extract is known for its high vitamin C content.

### Properties of Acerola fruit extract:

Acerola fruit extract has a high protection factor against free radicals.

### Cosmetic applications:

Anti-ageing products, sun care.

## AGE SPOT CORRECTOR

**Age Spot Corrector** targets and lightens age spots by combining two active substances into separate liposomes:

- An extract of Swiss garden cress sprouts which is rich in sulforaphane, a powerful antioxidant phytonutrient.
- Genistein, the biologically active form of the most abundant soy isoflavone.

### Description:

Age spots appear on UV-exposed areas of the body mainly after 50. They are characterized by an increased production of two pigments: melanin and lipofuscin. Age Spot Corrector prevents and regulates the formation of both pigments. It also inhibits the accumulation of lipofuscin in the skin by activating the proteasome, the cell's own cleaning system which degrades oxidized proteins.



Garden Cress (*Lepidium sativum*)

### Constituents of Age Spot Corrector:

*Lepidium sativum* sprout extract, soy isoflavones and lecithin.

### Key benefits – scientifically substantiated claims:

- Visibly lightens age spots.
- Equalizes the skin tone by fading age spots more than the surrounding, normally pigmented skin.

Age Spot Corrector can therefore be applied all over the face in contrast to classical whitening actives which have to be applied only to the spots.

### Cosmetic applications:

Anti-Aging products with correction of age spots, targeted treatment for dark spots, lightening formulations, discoloration, hand care products.

## AHAs (ALPHA HYDROXY ACIDS)

**AHAs** are well-known for their use in the cosmetic industry. Among the most important Alpha Hydroxy Acids are: Glycolic Acid – from sugar cane, Citric Acid - from citrus fruits, Tartaric Acid - from grapes, Malic Acid - from apples and Salicylic Acid - from the bark of willow trees. They help to exfoliate the cornified layers of the skin. The skin is immediately smoother, fresher and softer. Pigmentation spots become gradually lighter.

### Description:

$\alpha$ -hydroxy acids, or alpha hydroxy acids (AHAs), are a class of chemical compounds that consist of a carboxylic acid substituted with a hydroxy group on the adjacent carbon. They may be either naturally occurring or synthetic. Glycolic acid is the most widely used of out of the group and is usually manufactured from sugar cane. It is fairly well known and considered the most effective of the AHAs. Citric acid from citrus fruits, malic acid from apples and pears and tartaric acid from grapes are not as common and their effectiveness is still not clear.



**Sugar Cane**

### Properties of AHAs:

AHAs help to exfoliate the cornified layers of the skin. The skin is immediately smoother, fresher and softer. Pigmentation spots become gradually lighter.

### Cosmetic applications:

AHAs are often found in products claiming to reduce wrinkles or the signs of aging, and improve the overall look and feel of the skin. They are also used as chemical peels available in a dermatologist's office, beauty and health spas and home kits, which usually contain a lower concentration. Their effectiveness is documented.

## ALGAE EXTRACT

**Algae Extract** is obtained by extraction of sea algae. Algae contain vital trace elements for the skin, such as Iodine, Zinc, Magnesium, Copper, Silicon, that are decisive for the metabolic processes of the skin. Thanks to its water-binding properties, it supports other moisturizing factors. Algae extract smoothes the horny layer and makes it supple.

### Description:

Algae or Seaweeds are plants in primitive form. They do not possess the typical plant leaves, flowers, stems or roots but organs that resemble their shape and functions, such as shoots, rhizoids, haptera and holdfasts. There are approximately 25000 species of seaweeds. The size of plants vary from mono cellular organisms to giant kelps. Seaweeds absorb nutrients through their entire body surface from the surrounding water by osmosis. Algae contain amino acids, minerals, trace elements (Iodine) and vitamins (A, B2, B12, C, D, E und K). The rate of growth of seaweeds is influenced by ecological factors such as light density, sea currents, seasons, habitat and depth of the water. These factors have an effect on the color, texture and chemical composition of the seaweed.



**Green Seaweeds**

### Constituents of Algae extract:

Alginate acid, proteins, mannitol, iodine, carbohydrates, free amino acids and traces of vitamins and minerals.

### Properties of Algae extract:

Algae extract has a moisturizing effect. It is film-forming, skin-firming.

### Cosmetic applications:

Algae extract is commonly used in anti-cellulite products and in general for treatment of aging skin. Thalassotherapy and algotherapy are therapeutic applications using seaweeds.

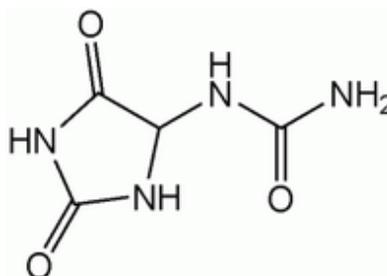
## ALLANTOIN

**Allantoin** is a protein metabolism product found in many animal and plant species and is for example extracted from the root of the comfrey (*Symphytum officinale*) and the horse chestnut (*Aesculus hippocastanum*). Chemically synthesized bulk allantoin is natural-identical, safe, non-toxic, compatible with cosmetic raw materials, and meets CTFA and JSCI requirements.

### Description:

Allantoin is a chemical compound with formula  $C_4H_6N_4O_3$ . It is also called 5-ureidohydantoin or glyoxyldiureide.

### Chemical structure:



### Cosmetic benefits:

Allantoin is a multifunctional active ingredient. It is used for: a moisturizing and keratolytic effect, increasing the water content of the extracellular matrix and enhancing the desquamation of upper layers of dead skin cells, increasing the smoothness of the skin, promotion of cell proliferation and wound healing; and a soothing, anti-irritant and skin protectant effect by forming complexes with irritant and sensitizing agents.

### Cosmetic applications:

Allantoin is frequently present in toothpaste, mouthwash and other oral hygiene products, in shampoos, lipsticks, anti-acne products, sun care products, clarifying lotions, various cosmetic lotions and creams and other cosmetic products.

## ALMOND (PRUNUS AMYGDALUS) OIL

**Almond oil** is obtained from the *Prunus dulcis* var. *dulcis* (Sweet Almond) or *Prunus dulcis* var. *amara* (Bitter Almond) or from a mixture of the two. It (cold-pressed almond oil) is obtained by cold-pressing ripe seeds from these trees or by extraction, followed immediately by refining (refined almond oil). It is of low viscosity, mild to taste and non-drying.

### Description:

The original wild almond trees is an extremely ancient cultivated plant that is native to the Mediterranean region (European variety). The second major cultivation area (American variety) is the USA, mainly California. The almond is a small deciduous tree, growing to between 4 and 10 metres in height, with a trunk of up to 30 centimetres in diameter. The leaves are 3-9 cm long and 1.2-4 cm broad, with a serrated margin and a 2.5 cm petiole. The flowers are white or pale pink, 3-5 cm diameter with five petals, produced singly or in pairs before the leaves in early spring.

The fruit is a drupe 3.5-6 cm long, with one seed ("almond"), which tastes sweet or bitter. The oil content in almonds is 47-61%.



### Constituents of Almond oil:

Almond oil is a rich source of Vitamin E and unsaturated fatty acids.

### Properties of Almond oil:

Emollient.

### Cosmetic applications:

Sweet almond oil is an excellent skin-softening oil used for centuries. It is a mild, lightweight oil, rich in unsaturated fats and essential fatty acids which is easily absorbed into the skin. Almond oil is also used in massage oils.

## ALOE VERA

**Aloe vera** “The lily of the desert” belongs to the botanical family of Liliaceae. Aloe’s relationship to the lily family is evident from the tubular yellow flowers. There are over 300 species around the world. However, only one species is grown today commercially, **Aloe Barbadosis Miller**. **Aloe vera** has a long history of cultivation throughout the drier tropical and subtropical regions of the world, both as an ornamental plant and for herbal medicine. The earliest users of **Aloe vera** were Arabs, Sumerians and Egyptians. About 2200 BC Sumerians had written about this “healing plant” on their stone tablets about its medical value. Egyptians have written about it in 1550 BC with formulas how to mix it and use it externally and internally for human disorders. Egyptian history has records that their queens Neferiti and Cleopatra used to bathe in Aloe juice to keep their skin soft and young.

### Description:

*Aloe vera* is a stemless or very short-stemmed succulent plant growing to 80–100 cm tall, spreading by offsets and root sprouts. The leaves are lanceolate, thick and fleshy, green to grey-green, with a serrated margin. The flowers are produced on a spike up to 90 cm tall, each flower pendulous, with a yellow tubular corolla 2–3 cm long.

**Parts used:** The cosmetic industry uses the fresh gel from the parenchyma tissue in the centre of the leaf.



**Aloe vera**

### Constituents of Aloe Vera:

Polysaccharides, Enzymes, Proteins (Amino Acids), Anthraquinones (Aloin), Saponins, Sterols, Vitamins, Minerals, Sugars.

### Properties of Aloe Vera:

Moisturizing, soothing, wound healing.

### Cosmetic applications:

**Aloe Vera** is used for moisturizers, sensitive skin care, dry skin care, body care, sunscreens and after sun care, after shave lotions, shampoos.

## ALOE VERA

### COSMETIC EFFICICAY:

**Aloe vera** has been used externally to treat various skin conditions such as cuts, burns and eczema. It is alleged that sap from **Aloe vera** eases pain and reduces inflammation. Evidence on the effects of **Aloe vera sap** on wound healing, however, is contradictory (Vogler and Ernst, 1999). A study performed in the 1990s showed that the healing time of a moderate to severe burn was reduced when the wound was treated on a regular basis with **Aloe vera gel**, compared to the healing of the wound covered in a gauze bandage (Farrar, 2005). In contrast, another study suggested wounds to which **Aloe vera gel** was applied were significantly slower to heal (Schmidt and Greenspoon, 1991).

## ALP ROSE (RHODODENDRON FERRUGINEUM) STEM CELLS

**Alp rose stem cells** (Rhododendron Ferrugineum Leaf Cell Culture Extract) is a liposomal preparation based on alpine rose stem cells. Thanks to a novel patent pending plant cell culture technology plant stem cells can be cultivated and incorporated into cosmetic products to ensure the longevity of skin cells. Alp Rose stem cells help to maintain the characteristics of skin stem cells and to protect these precious cells against UV-stress.

### Description:

The alpine rose (Rhododendron ferrugineum) is an evergreen cold-resistant shrub with spectacular, bell-shaped pink flowers, which grows at high altitudes in the Alps. The alpine rose can live for more than 100 years and is able to adapt to very challenging environmental conditions such as large variations in temperature, UV and dryness. High contents in various polyphenolic compounds protect the plant tissue against the attack of radicals.



**Swiss alp rose**

### Constituents of alp rose stem cells:

Dehydrin, a protein with a moisturizing effect.

### Properties of alp rose stem cells:

Improves the vitality of the stem cells of the skin, strengthens the skin barrier, protects the epidermal stem cells against UV stress

### Cosmetic application:

Skin care products to protect skin stem cells; real rejuvenation products for face and body care

## ALTHEA OFFICINALIS (MARSHMALLOW) EXTRACT

**Althea officinalis** (marshmallow) is obtained by extraction of marshmallow roots. The root of the marshmallow is particularly rich in mucilage which forms a protective layer on broken or inflamed areas of skin. It soothes the skin, gives it moisture and makes it soft and supple. The sweet known as marshmallow was once made from marshmallow root extract.

### Description:

**Althea officinalis L.** (Marshmallow) is a large-sized vigorous herbaceous plant. Within the genus *Althaea*, marshmallow exhibits its characteristic whitish stems up to 1 meter tall or even taller, and its characteristic leaves covered by abundant dense hairs. Stems are renewed every year, the long thick roots being perennial. Flowers are light pink to white, their structure being the typical one of the mallow flowers. This perennial herbaceous plant grows spontaneously in humid locations in the south of England and Europe. It is native of Europe, where it is widely distributed from Great Britain to Russia. The parts of plant usually employed are the roots and occasionally, the flowers and the leaves.



**Althea officinalis**

### Constituents of *Althea officinalis*:

Main constituents of *Althea officinalis* are a mixture of acidic polysaccharides comprising an arabinan, glucans and a rhamnogalacturonan. Also present are pectin, sugars, asparagin and small amounts of sterols.

### Properties of *Althea officinalis*:

*Althea officinalis* is a plant extract that provides emollient, moisturizing and anti-inflammatory effects for skin care and sun care.

### Cosmetic applications:

Skincare and body care products for dry skins, after sun care, against inflammations and skin irritations.

## ANTI SEBUM COMPLEX

The anti sebum complex used in Janssen cosmeceutical cosmetics is an association of oleanolic acid and nordihydroguaiaretic acid in an osmotic gel. It acts on all the causes of oily and acne-prone skin by reducing hyperseborrhoea, hyperkeratosis, inflammation and bacterial proliferation.

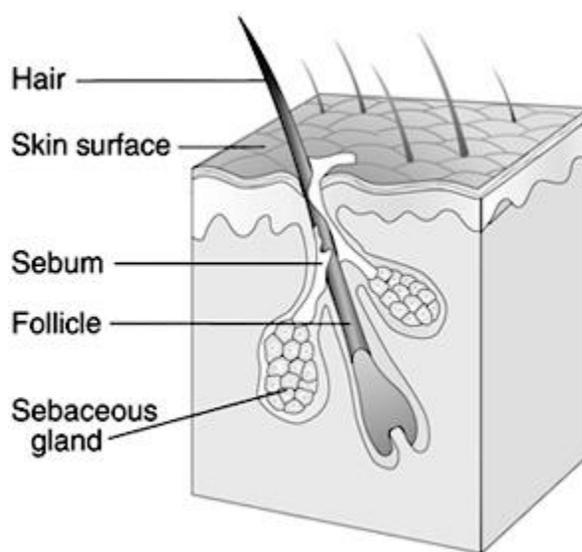
### Description:

To treat oily and acne-prone skin, there are three key parameters that should be looked at:

- Hyperseborrhea (over production of sebum - oil)
- Hyperkeratinization (blocking of the follicle and a build-up of waste material on the skin)
- Bacterial proliferation (bacterial and yeast infection and accompanying inflammation)

The anti sebum complex is an association of ingredients, which acts on all the causes:

- Oleanolic acid inhibits 5-alpha reductase to fight hyperseborrhoea.
- NDGA is a cell growth regulator that inhibits hyperkeratosis and inflammation.
- The osmotic gel helps to control bacterial growth.



**Normal hair follicle**

### Constituents of the anti sebum complex:

Oleanolic acid and nordihydroguaiaretic acid in an osmotic gel.

### Properties of the anti sebum complex:

Global treatment for oily and acne prone skin.

### Cosmetic applications:

The anti sebum complex is used in toners, emulsions, gels, masks, foundations, etc. for the global treatment of oily and acne-prone skin.

## APPLE (MALUS DOMESTICA) STEM CELLS

**Apple stem cells** (*Malus domestica* fruit cell culture) is a liposomal preparation based on the stem cells of a rare Swiss apple called Uttwiler Spätlauber. Thanks to a novel patent pending plant cell culture technology plant stem cells can be cultivated and incorporated into cosmetic products to ensure the longevity of skin cells. The application of plant cell cultures to maintain the function of skin stem cells is a breakthrough in anti-aging.

### **Description:**

The Uttwiler Spätlauber, which was first recorded in the 18th century, comes from canton Thurgau, in northern Switzerland. It was very famous for its excellent storability without shriveling. However, it has not been widely cultivated because of its sour taste and is now disappearing. Recently Swiss researchers set to work and found that the secret of the longevity of the apples lay in the apple's stem cells. Mibelle Biochemistry, which developed the apple ingredient, found that the apple stem cells were protecting the skin stem cells from ageing. The protection of human stem cells by apple stem cells has been shown by various in-vitro experiments. Other studies demonstrated its age-delaying and anti-wrinkle effects.



**The Uttwiler Spätlauber is little known and dying out.**

### **Constituents of apple stem cells:**

Apple stem cells are rich in epigenetic factors and metabolites which assure the longevity of skin cells.

### **Properties of apple stem cells:**

Protects longevity of skin stem cells, delays senescence of essential cells, combats chronological ageing, preserves the youthful look and the vitality of the skin.

### **Cosmetic applications:**

Skin care products to protect skin stem cells; real rejuvenation products for face and body care.

## APRICOT (PRUNUS ARMENIACA) KERNEL OIL

**Apricot kernel oil** is obtained from the fruit kernels of apricots (*Prunus armeniaca*), which have a fatty oil content of around 40-50%. It absorbs quickly and makes the skin soft and supple. Apricot kernel oil is suitable for all types of skin, but is recommended especially for dry skin as it helps to store the moisture.

### Description:

The apricot is a type of stone fruit (rose bush), which originates originally from Central and East Asia. The apricot tree is about 5-10 meters high with a reddish bark. The leaves are glossy, broadly egg-shaped and (abruptly) pointed, notched and sawn. The flowers of the apricot tree appear in spring before the foliage. They are relatively large, stand alone or two, are white or light pink and smell weak. The fruits of the apricot tree (apricots) are 4-8 centimeters thick, roundish, velvety hairy and yellow to orange.



**Apricots on the tree**

### Constituents of apricot kernel oil:

Oleic acid (about 65-70%), linoleic acid (about 21-25%) and palmitic acid (about 5%), palmitoleic acid (a maximum of 1%), Tocopherol.

### Properties of apricot kernel oil:

Apricot kernel oil is a universal base oil, which is well tolerated by sensitive skin and well absorbed.

### Cosmetic applications:

Sensitive, dry skin, baby skin. Excellent massage oil, cleaning oil, base oil for aromatherapeutic mixtures.

## AQUAPORIN-STIMULATING-PEPTID (ASP)

**ASP** is a hexapeptide that enhances aquaporin 3 (AQP3) expression, improving the water flux from the basal layer of the epidermis to the stratum corneum. Skin hydration is not only preserved but raised with **ASP**. Furthermore, it improves the barrier function and increases collagen I synthesis and cell proliferation, providing a complete treatment against skin aging.

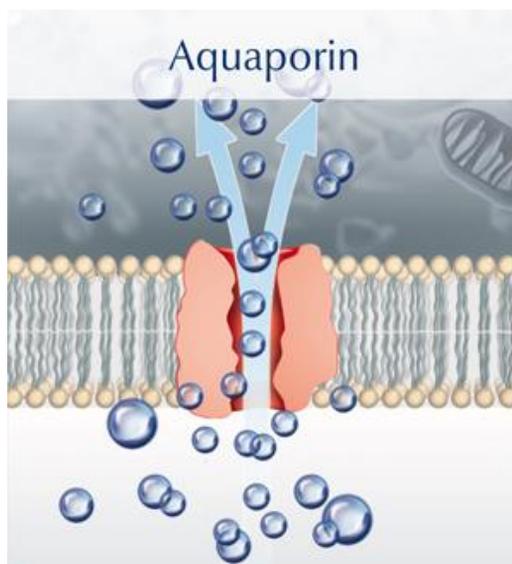
### Description:

Water is essential for the normal functioning of the skin, especially for the stratum corneum (SC) and skin barrier properties. Mechanism that control water transport are not fully understood, but there is an continuous exchange of water between the SC, the living cells in the underlying epidermis and the atmosphere.

Aquaporins are integral membrane proteins that act as water selective pores, facilitating water transport. AQP3 is the most abundant aquaglyceroporin in the human epidermis, facilitating the transport through membranes of water, glycerol and other small solutes.

Therefore, AQP3 improves transepidermal permeability, increasing water content in the skin surface and helping the barrier function. **ASP** increases the levels of Aquaporin 3 in keratinocytes, improves skin moisturization and maintains skin's youthful appearance.

**ASP** increases the levels of Aquaporin 3 in keratinocytes, improves skin moisturization and maintains skin's youthful appearance.



### Key benefits – scientifically substantiated claims:

**ASP** enhances skin hydration and rejuvenates the skin. An in-vivo study of 20 women between 30 and 50 years showed an increase in the moisture content of the skin by 131% after 2 months. In vitro studies in human keratinocytes and fibroblasts cell cultures showed an increase in cell viability, the collagen I synthesis and a stimulatory effect on keratinocyte proliferation.

### Cosmetic applications:

Moisturizing formulations where an additional anti-aging effect is desired.

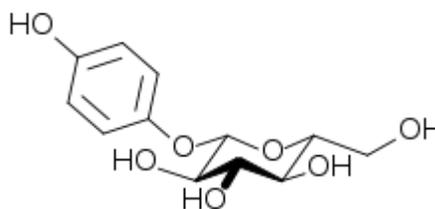
## ARBUTIN

**Arbutin** is found in the dried leaves of a number of different plant species including bearberry (*Arctostaphylos uva-ursi*). Arbutin is an inhibitor of melanin formation and is used in skin-lightening products. It inhibits the formation of melanin pigment by inhibiting Tyrosinase activity.

**Background:** The skin colour is determined by the interaction of different pigments. Indeed, the red staining agent of blood, haemoglobin, is responsible for reddish and bluish shades, while carotenoids are responsible for the basic yellow shade of skin. The brown coloration results from the pigments eumelanin and pheomelanin which are produced in special epidermal cells, so-called melanocytes. The enzyme tyrosinase, usually present in its inactive form, is produced in these melanocytes. Its activation by UV light triggers off melanogenesis, i.e. a complex series of enzymatic chemical reactions which finally lead to melanin formation. The efficient inhibition of tyrosinase interrupts the melanogenesis reaction chain. Today many developments target efficient and fast enzyme-blocking properties without any side effects.

### Description:

**Arbutin** is obtained by aqueous extraction from the aerial parts of bearberry (*Arctostaphylos uva ursi*). *Arctostaphylos uva ursi* is an evergreen perennial shrub flourishing in humus-rich soil of North America, Europe, and Asia. *Uva ursi* contains arbutin, polyphenolic tannins, free-form phenolic acids, flavonoids, triterpenes, monotropein, resin, volatile oil, and wax.



**Chemical structure of Arbutin**

### Properties of Arbutin:

Arbutin is designed to treat dark spots and to enlighten the skin thanks to its strong tyrosinase inhibition activity.

### Cosmetic applications:

Lightening gels and emulsions.

## ARNICA MONTANA EXTRACT

**Arnica montana** is a European flowering plant with large yellow capitula. It is native to the mountains of Europe and Siberia, and is cultivated in North America. Arnica has been used for medicinal purposes since the 1500s and remains popular today. Applied topically as a cream, ointment, liniment, salve, or tincture, arnica has been used by both Europeans and Native Americans to soothe muscle aches, reduce inflammation, and heal wounds. It is often the first remedy used for injuries such as sprains and bruises.

### Description:

**Arnica montana** has tall stems (20–60 cm), supporting usually a single flower head. Most of the leaves are in a basal rosette, but one or two pairs may be found on the stem and are, unusually for composites, opposite. The flower heads are yellow, approximately 5 cm in diameter, and appear from May to August. *A. montana* is endemic to Europe, from southern Iberia to southern Scandinavia and the Carpathians. *A. montana* grows in nutrient-poor siliceous meadows up to nearly 3000 m. It is rare overall, but may be locally abundant.



**Arnica montana flowers**

### Constituents of arnica montana extract:

The arnica flowers contain 0.2 to 1.5 percent of sesquiterpene lactones, especially helenaline, 0.4 to 0.6 percent flavonoids, tannins, coumarins, essential oil and fatty acids.

### Properties of arnica montana extract:

Arnica flowers contain essential oil, flavonoids and sesquiterpene lactones acting anti-inflammatory and antiseptic.

### Cosmetic applications:

Facial care (blotchy skin, irritated skin), body care (irritated skin), hair care (stimulating lotion for the scalp):

## ARONIA MELANOCARPA (BLACK CHOKEBERRY)

**Aronia melanocarpa** (black chokeberry) has attracted scientific interest due to its deep purple, almost black pigmentation that arises from dense contents of phenolic phytochemicals, especially anthocyanins. The plant produces these pigments mainly in the skin of the berries to protect the pulp and seeds from constant exposure to ultraviolet radiation. By absorbing UV rays in the blue purple spectrum, pigments filter intense sunlight and thereby have a role assuring regeneration of the species.

### Description:

**Aronia melanocarpa** (black chokeberry) is a deciduous shrub in the family Rosaceae, native to eastern North America. It grows to 1 m tall, rarely 3m and spreads readily by root sprouts. The leaves are 6cm wide with terminal glands on leaf teeth and a glabrous underside. The flowers are white, 1.5cm wide, with glabrous sepals. The fruit is black, 6–9 mm wide, with a very astringent, bitter flavor.



**Aronia melanocarpa**

### Constituents of Aronia melanocarpa extract:

Anthocyanins, proanthocyanidins.

### Properties of Aronia melanocarpa extract:

Anti-oxidant; reduces oxidative stress.

### Cosmetic applications:

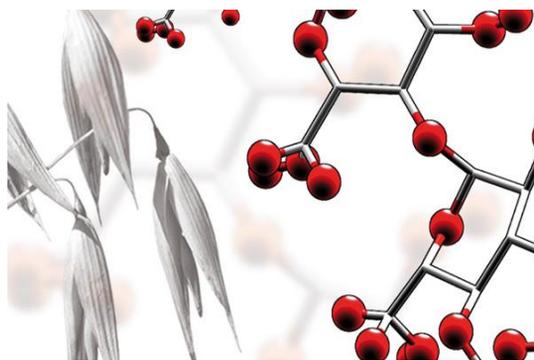
Anti-ageing products.

## AVENA SATIVA (OAT) KERNEL EXTRACT

**Avena sativa (oat ) kernel extract** is a purified fraction of branched natural polysaccharides obtained from oats. The extract helps to moisturize and soften the skin, while the sugars from the grain have an extreme firming power for an immediate smoothing effect.

### Description:

Avena sativa (oat) kernel extract is a sugar based tensor ingredient for the skin. Composed of linear chains of polyose molecules and stabilized by inter- and intra-chains hydrogen bonds, avena sativa kernel extract is organized in a three dimensional configuration. It favours a large number of interactions between its sugar chains and the intercellular lipids of the stratum corneum. It absorbs to the surface of the skin and forms a viscoelastic cohesive and continuous biological film.



**Polysaccharides obtained from oat**

### Key benefits – scientifically substantiated claims:

Avena sativa (oat) kernel extract has an lifting effect. This can be verified:

1. Sensorial evaluation: 82% of the volunteers on a trained panel felt a significant and immediate tensor effect sensation.
2. Instrumental evaluation: a cutometer study showed the immediate tensor effect 2h after a single application.

### Cosmetic applications:

Tensor and remodelling care products.

## AVENA SATIVA (OAT) KERNEL PROTEIN

**Avena sativa (oat) kernel** protein is an extract of the seeds of "Avena sativa L". This cosmetic ingredient is used to fight against a nutritive deficiency by supplying cells with all the nutrients essential to their development and regeneration. It covers the skin with a hydrophilic, tensing and softening polymer. Additionally it increases the plasticity of the epidermis, targets and fills the wrinkles and improves the microrelief.

### Description:

Avena sativa L. - commonly known as oat – is an annual herb – typically grows 0.70-1.25m tall; The fruit is a brown caryopsis. Oat is native to southern Europe and Asia. Nowadays, oat is cultivated in almost every temperate region in the world, especially in northern Latitudes.



Closeup of oat flowers

### Constituents of oat:

Oat is rich in proteins, polysaccharides, starch, saponins, lipids and vitamins (especially of the B.group), silicates, silicic acid, flavonoids and trace elements oligoelements (Calcium, Iron, Magnesium, Potassium, Zinc). Other constituents: 4,5%  $\beta$ -Glucan.

### Properties of avena sativa kernel protein:

Film-forming, moisturizing, tensing, targets and fills the wrinkles, improves microrelief.

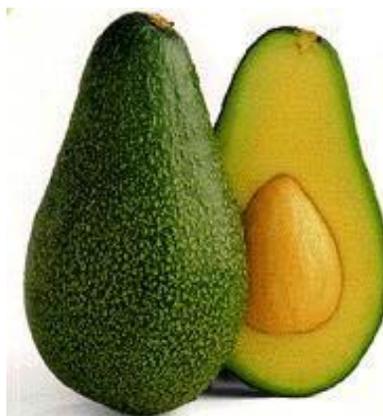
### Cosmetic applications:

Anti-aging, anti-wrinkle, cosmetics for sensitive skin.

## AVOCADO (PERSEA GRATISSIMA) OIL:

**Avocado oil** is obtained from the pressure of the fruits of *Persea gratissima*, containing vitamin A, vitamin D and vitamin E. The avocado is one of the most nutritive among fruits. The pulp has a buttery consistency, looks very much like cow's butter, and has a bland taste with a nutty flavor.

**Description:** The avocado (*Persea americana*) is a tree native to Mexico, Central America, and Guam, classified in the flowering plant family Lauraceae. The name "avocado" also refers to the fruit of the tree with an egg-shaped pit. *P. americana* has a long history of being cultivated in Central and South America; The tree grows to 20 metres, with alternately arranged leaves 12–25 centimetres long. The flowers are inconspicuous, greenish-yellow, 5–10 millimetres wide. The pear-shaped fruit is a true berry, from 7 to 20 centimetres long, weighs between 100 and 1000 grams, and has a large central seed, 5 - 6.4 centimetres long. An average avocado tree produces about 120 avocados annually.



**Avocado fruit**

### **Constituents of Avocado oil:**

The major fatty acid of avocado oil is always oleic, followed by palmitic and linoleic acids. The oil is rich in phytosterols, vitamin A, E and D and minerals like potassium, manganese and phosphorus.

### **Properties of Avocado oil:**

Avocado oil is an emollient, that is anti-aging and stimulates the skin. It also improves dermal metabolism.

### **Cosmetic applications:**

Avocado oil has a high moisturizing and emollient power, that smooth and relax the skin. It is used in daily skin care, body lotions, sun products, after sun products.

## AVOCADO PEPTIDE

**Avocado peptide** is produced by enzymatic hydrolysis of defatted Avocado pulp (cake). These highly active peptides have a detoxifying action. They stimulate the activity of the cell's own proteasome system and help to eliminate protein waste. Accumulated cellwaste obstructs the vitality of cells and causes them to age prematurely.

### Description:

Proteasomes are protein complexes which are located in the in the nucleus and the cytoplasm of all human cells. The main function of the proteasome is to degrade unneeded or damaged proteins by proteolysis, a chemical reaction that breaks peptide bonds. The degradation process yields peptides of about seven to eight amino acids long, which can then be further degraded into shorter amino acid sequences and used in synthesizing new proteins. We could describe proteasomes as a protein recycling station which protects the cell from suffocating in its own protein waste. Cell enzymes which are incorrectly synthesized, incorrectly folded or are worn out, but also those which are no longer required are broken down into small recyclable fragments.



**Avocado fruit**

### Key benefits – scientifically substantiated claims:

Avocado peptide stimulates protease activity. This can be verified: in comparison to younger cells, aged human fibroblasts (cells of the connective tissue) show a significantly reduced proteasome activity. A treatment with 0.005% avocado peptides over a period of 105 minutes causes the activity of proteasomes to increase by +43%, which means the cell detoxification is increased by 43%, thereby nearly reaching the activity level of young human fibroblasts.

### Cosmetic applications:

Anti-Ageing and detoxifying skincare.

## BALLOON VINE (CARDISPERMUM HALICACABUM)

**Balloon vine (cardiospermum halicacabum)** is a climbing plant, that grows in the tropics. Extractions of *Cardiospermum* flowers, leaves and vine are included in skin creams that claim to treat eczema and other skin conditions. This positive effect can be attributed to the content of phytosteroles and penta-cyclical terpenes.

### Description:

**Cardiospermum** with the English medical term “Balloon vine”, is a genus of approximately 14 species in the soapberry family, which are native to the American, Indian, and African tropics.. The small black-brown seed, marked by a heart shaped white spot, has given the entire plant species its name (cardio = heart, spermum = seed). The name “halicacabum” is derived from Greek and means “salt barrel” referring to the rounded, inflated seepod. The pharmaceutical application of *cardiospermum halicacabum* to work against itching and allergic reactions is well-known.



**Cardiospermum halicacabum fruits**

### Constituents of Balloon vine extract:

Phytosterols ( $\beta$ -sitosterole, campesterole and stigmasterole), penta-cyclical terpenes (glutinone,  $\beta$ -amyrenon,  $\beta$ -amyrin)

### Properties of Balloon vine extract:

Anti-inflammatory, anti-oxidativ.

### Cosmetic applications:

Balloon vine extract is recommended for sensitive skin care.

## BARLEY (HORDEUM VULGARE) EXTRACT

**Barley** is one of the oldest cultivated plants in the history of mankind. The Latin name for barley is *Hordeum vulgare* L.

### **Description:**

*Hordeum vulgare* L. is an herbaceous plant with cylindrical stems called canes, which present hermaphrodite flowers that gather in small ears and are surrounded by bracts. All of the ears are fertile and develop seeds that give rise to fruit called caryopsides. The fruit have a basic structure comprising a germ, endosperm and the pericarp. Each part of the seed contributes with a series of specific and characteristic components. The pericarp corresponds to the outer covers and is mainly formed by cellulose and other sugars, and small amounts of phenolic compounds have also been found. Furthermore, barley and malt contain flavonoids, phenolic acids and apolar esters.



**Barley (*Hordeum vulgare* L.)**

### **Constituents of barley extract:**

Flavonoids, trace elements.

### **Properties of barley extract:**

Barley extract has astringent and soothing properties. It aids skin repair.

### **Cosmetic applications:**

Sensitive and dry skin care.

## BEARBERRY (ARCTOSTAPHYLOS UVA URSI) LEAF EXTRACT

**Bearberry extract** is an extract of the leaves of the bearberry (*Arctostaphylos uva-ursi*). Leaves of bearberry contain arbutin which strongly inhibits tyrosinase activity (see Arbutin).

### Description:

Bearberry (*Arctostaphylos uva-ursi*) is a small evergreen shrub, 5-30cm high, found in North America and Central and Northern Europe. The leaves are evergreen, remaining green for 1-3 years before falling. The fruit is a red berry.



**Bearberry with fruits**

### Constituents of bearberry leaf extract:

The main components of the herbs are arbutin, bitterings, gallo tannins, flavonoids, allantoin, essential oils and phenolic components.

### Properties of bearberry leaf extract:

Skin whitening (Arbutin), Anti-inflammatory (Ursolic Acid), Astringent.

### Cosmetic applications:

Bearberry leaves extracts are cosmetically used in the treatment of skin whitening.

# Encyclopedia of Ingredients

## BEECH (FAGUS SYLVATICA) BUD EXTRACT

**Fagus sylvatica extract** is obtained from fresh beech tree buds stabilized according to a patented process. The unique stabilization process avoids enzymatic degradation of the active ingredients. The extract is rich in peptidic factors and improves cellular oxygen consumption and keratinocyte protein synthesis. It smoothes cutaneous microrelief and improves skin moisturization.

### Description:

The European Beech or Common Beech (*Fagus sylvatica*) is a deciduous tree belonging to the beech family Fagaceae. It is a large tree, capable of reaching heights of up to 50 m tall and 3m trunk diameter, though more typically 25-35 m tall and up to 1.5 m trunk diameter. It has a typical lifespan of 150 to 200 years, though sometimes up to 300 years. The leaves are alternate, simple, and entire or with a slightly crenate margin, 5-10 cm long and 3-7 cm broad, with 6-7 veins on each side of the leaf. The buds are long and slender, 15-30 mm long and 2-3 mm thick, but thicker (to 4-5 mm) where the buds include flower buds.



**Fagus sylvatica leaf in spring**

### Constituents of fagus sylvatica extract:

Water soluble peptide compounds, flavonoids, polyphenols, mineral salts (Ca, Mg, K, Si)

### Properties of fagus sylvatica extract :

Fagus sylvatica extract improves cellular oxygen consumption and keratinocyte protein synthesis. It smoothes cutaneous microrelief and improves skin moisturization.

### Cosmetic applications:

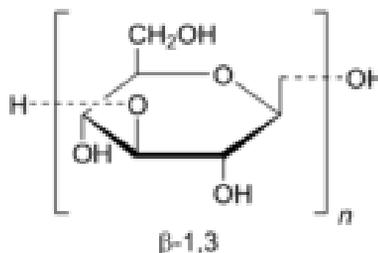
Fagus sylvatica extract is designed for anti-aging and anti-wrinkle treatments, and products that rejuvenate the body.

## BETA GLUCAN

**Beta glucan** is a natural yeast polysaccharide featuring immune-stimulating properties. Yeast Beta-Glucan was shown to have the most potent immune-enhancing capability. It can stimulate our immune system by enhancing the activity of macrophages and other immunocompetent cells. Besides, it is able to accelerate tissue repair. Beta glucan may be applied in dermo-cosmetics, pre and post-procedure formulations, in skin care for highly sensitive, damaged skin and in sun and after-sun care.

### Description:

Beta glucan isolated from yeast is insoluble in water and therefore not suitable for topical use. Therefore, a process has been developed to make beta-glucan available for cosmetics in a biologically active form. Carboxymethylation of beta-glucan results in a water-soluble granulate, which can be easily incorporated into formulations. Numerous clinical studies have demonstrated the efficacy of carboxymethyl beta-glucan for very sensitive or stressed skin.



**Beta Glucan**

### Properties of Beta Glucan:

Increases the skin's self-protecting capacity, accelerates skin recovery, restores the skin's moisture barrier.

### Cosmetic applications:

Skin care for highly sensitive, damaged skin, sun care, after sun care, pre and post-procedure formulations.

## BETA VULGARIS MARITIMA EXTRACT

**Beta vulgaris maritima extract** (wild beet or sea beet extract) was developed to fight against the over production of melanin. It inhibits melanin synthesis by slowing down the melanization process. The skin colour retains its natural pigmentation.

### Description:

The wild beet, *Beta vulgaris* subsp. *maritima* is a member of the family Amaranthaceae. The wild beet is native to the coasts of Europe, northern Africa, and southern Asia. It also lives in the wild along some shores in Great Britain. The wild beet is the wild ancestor of common vegetables such as beetroot, and sugar beet. Its leaves have a pleasant texture and taste when served raw or cooked, and because of this it is also known as wild spinach.

It is a perennial plant which grows up to 1.2 m, and flowers in the summer. Its flowers are hermaphroditic, and wind-pollinated. It requires moist, well-drained soils, and does not tolerate shade. However, it is able to tolerate relatively high levels of sodium in its environment.



**Beta vulgaris maritima**

### Constituents of Beta vulgaris maritima:

Peptides.

### Properties of Beta vulgaris maritima:

Wild beet peptides have a depigmenting effect by inhibiting melanin synthesis.

### Cosmetic applications:

Skin-whitening skin care.

## **BILBERRY (VACCINIUM MYRTILLUS) SEED OIL**

**Bilberry seed oil** is produced from the seeds of bilberry (European blueberry). The excellent combination of actives makes Bilberry seed oil a unique ingredient for anti-ageing purposes and for protecting and nourishing skin, body and hair.

### **Description:**

Bilberry, *Vaccinium myrtillus*, is a relative of blueberry in the heath family. Bilberries are found in very acidic, nutrient-poor soils throughout the temperate and subarctic regions of the world. One characteristic of bilberries is that they produce single or paired berries on the bush instead of clusters, as the blueberry does. The fruit is smaller than that of the blueberry but with a fuller taste.



**Bilberry (*Vaccinium myrtillus*)**

### **Constituents of Bilberry seed oil:**

Bilberry seed oil offers a full spectrum of natural isomers of tocopherols and tocotrienols. It is also very rich in essential fatty acids and phytosterols.

### **Properties of Bilberry seed oil:**

Skin smoothing, protecting and nourishing.

### **Cosmetic applications:**

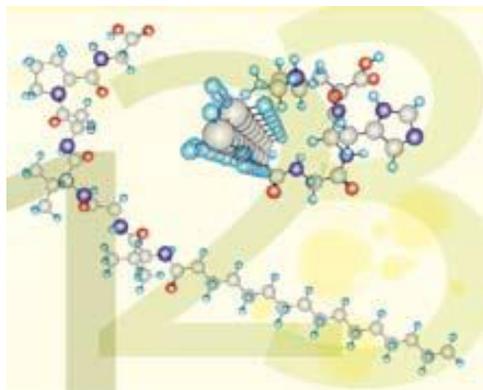
Anti-Ageing purposes.

## BIO BUSTYL™

**Bio Bustyl™** is a genuine firmness and tone concentrate for the bust. It deeply restructures and dynamises the skin and enhances bust firmness and tone.

### Description:

Bio Bustyl™ is an association of a biotechnological bacterial filtrate, rich in growth factors, and two lipopeptides (Pal-GHK, fragment of collagene and Pal-VGVAPG, “spring” fragment of elastine). The synergistic action of the three active ingredients provides the bust with a global firmness efficiency.



**Pal-GHK, Pal-VGVAPG & and bacterial filtrate**

### Constituents of Bio Bustyl™ (INCI Name):

Water (Aqua) – Rahnella / Soy Protein Ferment –Glycerin – Propylene Glycol– PEG-8 – Glyceryl Acrylate/Acrylic Acid Copolymer –Palmitoyl Oligopeptide

### Properties of Bio Bustyl™ :

Stimulates cell metabolism, promotes collagene synthesis and enhances fibroblasts proliferation.

### Cosmetic applications:

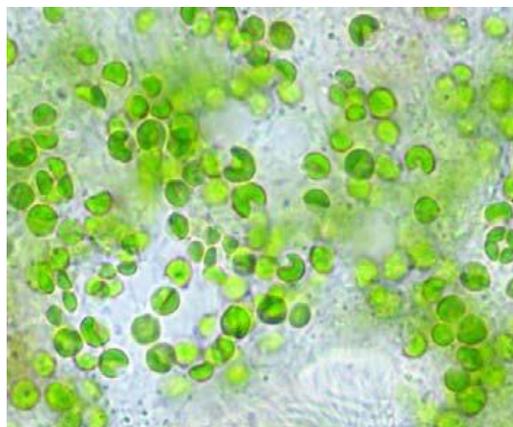
Body and bust care.  
Firming and energizing treatments.

## BIOFERMENT CONSISTING OF GREEN ALGAE AND WHITE LUPIN PROTEINS

This special bioferment is an active ingredient of the **Perfect bust complex**. It is made from the green algae *Chorella vulgaris* and proteins of the white lupine.

### Description:

This highly active bio-ferment from the green algae *Chlorella vulgaris* and proteins of the white lupine strengthens the cell bond and tightens the tissue. It promotes the formation of cell adhesion proteins. These proteins are the “glue” between neighboring keratinocytes. They stabilize the cell bonds and are the foundation for mechanical stability of the skin.



**The green algae *Chlorella vulgaris***

### Constituents of the bioferment:

Fermentation products from green algae and proteins of the white lupine.

### Properties of the bioferment:

The bioferment strengthens the cell bond and tightens the tissue.

### Cosmetic applications:

Anti-cellulite products, slimming products, anti-ageing.

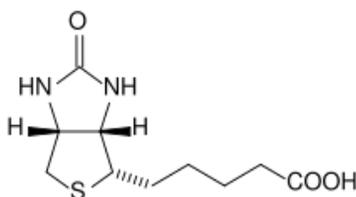
## BIOTIN

**Biotin** or Vitamin H is a naturally occurring vitamin, found in all living cells. As a vitamin of the B group Biotin plays important roles as a coenzyme. It is involved in the build-up and maintenance of the adhesive substances of the horny cells, the lipids of the skin as well as the synthesis of keratin. It has moisturizing and smoothing properties which are intensified by citric acid. It also improves brittle nails.

### Description:

Biotin, also known as vitamin H or B<sub>7</sub>, has the chemical formula C<sub>10</sub>H<sub>16</sub>N<sub>2</sub>O<sub>3</sub>S . It is a water-soluble B-complex vitamin. Biotin is a cofactor in the metabolism of fatty acids and leucine, and in gluconeogenesis.

### Chemical structure:



### Properties of biotin:

Biotin has moisturizing and smoothing properties. Anti-wrinkle.

### Cosmetic applications:

Biotin is used in day- and night creams, anti-wrinkle creams, anti-aging creams, shampoos, hair care and nail care products.

## BIRCH (BETULA ALBA) EXTRACT

Janssen cosmetics uses a complex of birch leaf extract and birch sap, prepared in propylenglycol and water. The birch leaves are aqueous-alcoholic extracted and filtrated. The filtrate is concentrated by distillation. The birch sap is harvested in the early spring by scarifying the bark, then mixed with ethanol and filtrated. Extract and sap are rediluted in a mixture of water, propylene glycol and preservatives.

### Description:

Birch (*Betula pendula* R., syn.. *Betula alba*) belongs to the Betulaceae plant family. The birch has a silver white bark and grows on moors and in light woods. The birch grows up to 20 m high and is found in North and Middle Europe and in North America.



**Birch leaves**

### Constituents:

Leaves: flavonoids, essential oil, amaroids, tannins, saponins, vitamin C

Birch sap: invert sugar, organic acids, salts, proteins, plant growth-promoting substances. Birch bark: betulinol ("birch camphor"), phytosterin, tannins, amaroids, essential oil, resins.

### Properties of Birch extract:

Tonic, astringent, soothing, cleansing.

### Cosmetic applications:

Hair and skin cosmetics, bath products.

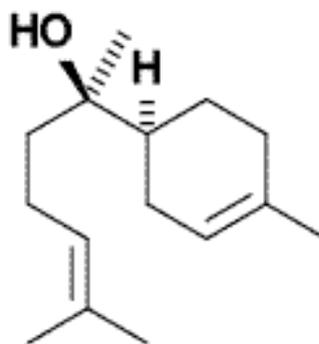
## BISABOLOL

**Bisabolol** is an ingredient found in the essential oil from German chamomile (*Matricaria recutita*) and *Myoporum grassifolium*. Bisabolol has a weak sweet floral aroma and is used in various fragrances. It has also been used for hundreds of years in cosmetics because of its perceived skin healing properties.

### Description:

Bisabolol or more formally  $\alpha$ -(-)-bisabolol is a natural monocyclic sesquiterpene alcohol. It is a colorless viscous oil that is the primary constituent of the essential oil from German chamomile (*Matricaria recutita*) and *Myoporum grassifolium*.

### Chemical structure:



### Properties of Bisabolol:

Bisabolol is known to have anti-irritant, anti-inflammatory and anti-microbial properties.

### Cosmetic applications:

Bisabolol is used in skin care, baby care, after sun products, after shave.

## BOLDO TREE (PEUMUS BOLDUS) BARK EXTRACT

### Description:

*Peumus boldus*, the only species in the genus *Peumus*, is commonly known as Boldo. The tree is native to the central region of Chile. Boldo has also been introduced to Europe and North Africa, though it is not often seen outside botanical gardens.

Boldo is a characteristic component of the sclerophyllous forest endemic to central Chile. Its leaves, which have a strong, woody and slightly bitter flavour and camphor-like aroma, are used for culinary purposes, primarily in Latin America. Although not well known, boldo fruits, which appear between December and February, are very tasty, nutritious, small, green, edible spheres.



**Peumus boldus**

### Constituents:

The bark and the leaves of *peumus boldus* contain boldine.

### Properties of boldine:

Anti-oxidative.

### Cosmetic applications:

Skin lightening products.

## BORAGE (BORAGO OFFICINALIS) SEED OIL

**Borage oil** (*Borago Officinalis Seed Oil*) is obtained from the seeds of *Borago officinalis* L.. The is oil rich in polyunsaturated fatty acids (PUFA), mainly linolic acid and gamma-linolenic acid (GLA). These are essential for the structure and flexibility of cell membranes. As they also are important for the construction of the epidermal lipid barrier they help normalize transepidermal water-loss (TEWL).

### Description:

Borage (*Borago officinalis* L.), also known as "starflower" is an annual herb originating in Syria, but naturalized throughout the Mediterranean region, as well as most of Europe, North Africa, and Iran. It grows to a height of 60-100 cm (2-3 feet), and is bristly-hairy all over the stems and leaves; the leaves are alternate, simple, and 5-15 cm (2-6 in) long. The flowers are small, blue or pink, with five narrow, triangular-pointed petals. It has an indeterminate growth habit allowing it to produce many seeds which may lead to it spreading prolifically beyond where it is first sown or planted. In milder climates, borage will bloom continuously for most of the year!



**Borago officinalis**

### Constituents of Borage oil:

Borage oil is the highest known plant based source of gamma-linolenic acid (18:3, cis 6,9,12-octadecatrienoic acid). It is also rich in oleic and palmitic acid.

**Properties of Borage oil:** Borage oil is said to be helpful in the treatment of many body disorders and has been used more recently in skin care and toiletries to help repair damaged skin.

### Cosmetic applications:

May be used in creams, lotions, balms and lipsticks, bar soaps or any anhydrous formulation where the therapeutic properties of Borage oil are desired. May also be used in nutraceutical (i.e. soft gel capsules).

## BUTCHER'S BROOM (*RUSCUS ACULEATUS*) EXTRACT

**Butcher's broom extract** is obtained from the roots of butcher's broom (*Ruscus aculeatus*). The main constituents of Butcher's Broom roots are saponosids and their genins (Ruscogenine) and some phenolic compounds. Ruscogenine is a powerful venous vasoconstrictor which gives it a great action against edemas. Cosmetically butcher's broom extracts are used due to their veinotonic and anti-inflammatory effects in the treatment of sensitive skin, anti-cellulite and anti-couperose creams.

### Description:

Butcher's broom (*Ruscus aculeatus*) is a low evergreen Eurasian shrub of the Asparagaceae family, with flat shoots known as cladodes that give the appearance of stiff, spine-tipped leaves. Small greenish flowers appear in spring, and are borne singly in the centre of the cladodes. The female flowers are followed by a red berry, and the seeds are bird-distributed, but the plant also spreads vegetatively by means of rhizomes.

*Ruscus aculeatus* occurs in woodlands and hedgerows, where it is tolerant of deep shade, and also on coastal cliffs. It is also widely planted in gardens, and has spread as a garden escape in many areas outside its native range.



**Butcher's broom (*Ruscus aculeatus*)**

### Constituents of butcher's broom:

The main components of the roots are saponins of the steroid type (mainly ruscin, ruscosid and the aglyca ruscogenin). Other components are flavonoids and essential oils.

### Properties of butcher's broom:

Anti-inflammatory and veinotonic effect (ruscogenine). Drainage, revitalizing.

### Cosmetic applications:

Sensitive skin care, anti-cellulite creams, anti-couperose creams.

## BUTYL AVOCADATE

**Butyl avocadate** is an original patented ingredient derived from avocado pears which combats the excessive sebum secretion characteristic of greasy skin and hair. The ingredient inhibits the activity of 5  $\alpha$  reductase, an enzyme which metabolises testosterone into DHT, a powerful androgen that stimulates the sebaceous glands. Its effectiveness has been verified in vitro and provides 49% inhibition from a level of 0.01%.

### Description:

Butyl avocadate is obtained from refined avocado oil through a biotechnological process, and is purified by molecular distillation.



**Avocado fruit**

### Constituents of Butyl avocadate:

Butyl avocadate is the ester of butyl alcohol and the fatty acids derived from Persea Gratissima (Avocado) Oil.

### Properties of Butyl avocadate:

Butyl avocadate combats excessive sebum secretion characteristic of greasy skin and hair.

### Cosmetic applications:

Products dedicated to the treatment of oily skin or oily hair.

## CACAO (THEOBROMA CACAO) EXTRACTS

In the Janssen Cosmetics series COCOA various extracts of cocoa tree are processed: cocoa butter with nourishing properties and protection against moisture loss, the cocoa bean, rich in polyphenols with soothing and anti-oxidant properties, and bowls of bean, crushed and pulverized as exfoliating body.

### Description:

***Theobroma cacao*** also **cacao tree** and **cocoa tree**, is a small (4–8 m) evergreen tree in the family Malvaceae, native to the deep tropical regions of Central and South America. The small, yellowish-white or reddish flowers appear in clusters from the trunk and out of the branches. The fruits are cucumber-shaped 10- 12 cm long, yellow or reddish brown and contain 30-50 whitish seeds (cocoa beans). The **cocoa bean** is the dried and fully fermented fatty seed of *Theobroma cacao*, from which cocoa solids and cocoa butter are extracted.



**Theobroma Cacao**

### Constituents of cacao extracts:

Cocoa beans contain theobromine, caffeine. The core contains about 50% fat (= cocoa butter), the shell tannic dyes.

### Properties of cacao extracts:

Theobromine stimulates the microcirculation of the skin, polyphenols act as radical scavengers, cocoa butter nourishes the skin.

### Cosmetic applications:

Body care, body peeling, wellness masks for the skin and the senses.

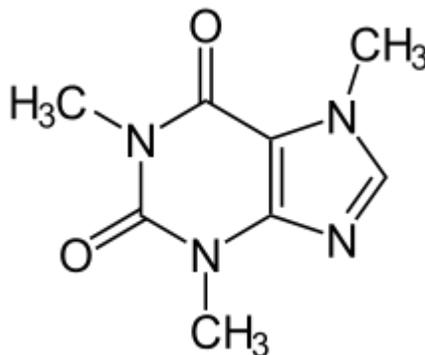
## CAFFEINE

**Caffeine**, occurring mainly in coffee beans, tea, cola nuts and cacao, increases micro-circulation and plays a role in the degradation of body fat.

### Description:

Caffeine is a bitter white crystalline xanthine alkaloid. It is also called guaranine when found in guarana, mateine when found in mate, and theine when found in tea; all of these names are synonyms for the same chemical compound.

### Chemical structure:



### Properties of Caffeine:

Increases micro-circulation.

### Cosmetic applications:

Anti-cellulite, slimming.

## CALENDULA OFFICINALIS (POT MARIGOLD)

The word calendula comes from the latin: calendulae, that is calendar in its general meaning: movement of the stars. This meaning is due to the fact, that the opening and closing of the Pot Marigold inflorescence are related to sunrise and sunset.

### Description:

*Calendula officinalis*, known as Pot Marigold or English Marigold, is a plant in the *Calendula* genus. It was used in ancient Greek, Roman, Arabic and Indian cultures as a medicinal herb as well as a dye for fabrics, foods and cosmetics.

The leaves and petals of the Pot Marigold are edible, with the petals added to dishes as a garnish and in lieu of saffron. The leaves can be sweet but are more commonly bitter, and may be used in salads.

*C. officinalis* is a cultivated herb and can be grown easily in sunny locations in most kinds of soils.



**Calendula officinalis flower**

**Constituents of Calendula officinalis:** The petals and pollen contain triterpenoid esters (anti-inflammatory) and the carotenoids flavoxanthin (antioxidants and the source of the yellow-orange coloration). The leaves and stems contain other carotenoids, mostly lutein (80%) and zeaxanthin (5%), and beta-carotene.

**Properties of Calendula officinalis:** *C. officinalis* is an efficient vulnerary and antiphlogistic active ingredient, it eases inflammations and favours a quick healing of wounds. Moreover it is an anti-bacterial product.

### Cosmetic applications:

*Calendula officinalis* is an excellent active ingredient for all soothing and repairing skin-care products.

## CASTOR (*RICINUS COMMUNIS*) SEED OIL

**Castor oil** is a vegetable oil obtained from the seeds of the castor bean plant (*Ricinus communis*). It is a colourless to very pale yellow liquid with mild or no odour or taste. Castor oil enhances the moisture content of the skin, smoothes and gives decorative cosmetics a soft, supple texture.

### Description:

The castor oil plant, *Ricinus communis*, is a plant species of the Euphorbiaceae. Its seed is the castor bean which, despite its name, is not a true bean. Castor seed is the source of castor oil, which has a wide variety of uses. The seeds contain between 40% and 60% oil that is rich in triglycerides, mainly ricinolein.



**Ricinus communis, fruit**

### Constituents of castor oil:

Castor oil is a triglyceride in which approximately ninety percent of fatty acid chains are ricinoleic acid. Oleic and linoleic acids are the other significant components.

### Properties of castor oil:

Castor oil is a skin moisturiser and softener.

### Cosmetic applications:

Skin care, decorative cosmetics.

## CAVIAR EXTRACT

**Caviar** is the name given to the roe of sturgeon (*Acipenser spp.*) extracted directly from the female fish. It is one of the most select and prized cosmetic ingredients with a high cosmetic value based on its essential amino acids, structuring peptides, proteins, essential fatty acids and oligoelements, with a strong repair and regenerative power. Therefore, it is generally used in products for aged-skin care. Aged skin requires intense nutrition in order to recover the elements it has lost with the passage of time.

### Description:

Caviar is the name given to the roe of sturgeon (*Acipenser spp.*) extracted directly from the female fish.



**Caviar**

### Constituents of caviar:

**Proteins:** Caviar is a protein-rich product mainly containing the following amino-acids: arginine, histidine, isoleucine, lysine and methionine.

**Lipids:** Caviar lipids mainly include cholesterol (25%) and lecithin (75%).

**Vitamins:** Vitamin A, vitamins B2, B6, B12, niacin, pantothenic acid and folic acid.

**Minerals:** Calcium, magnesium, phosphorus, potassium and sodium.

### Properties of caviar extract:

Skin repair activity, soothing, moisturizing.

### Cosmetic applications:

Caviar extract is highly recommendable to formulate cosmetic products with skin stimulating and revitalizing activity.

## CENTELLA ASIATICA EXTRACT

**Centella asiatica extract** is obtained from the leaves of *Centella asiatica*. *Centella asiatica* is particularly known for its healing properties. It is also nicknamed "Tiger's herb" because, in Bengal, tiger hunters used to follow these big games by observing the damaged *centella asiatica* bushes. The wounded tigers actually used to heal their injuries by rolling up in *centella*. This plant is considered in Indian Pharmacopoeia as an almost "magic herb". In cosmetology, it was discovered healing and soothing virtues.

### Description:

**Centella asiatica** is a creeping plant belonging to the Umbelliferae family. The plant grows on the marshy soils of South East Asia, India, Sri Lanka, parts of China and South Africa. Its slender, creeping stems produce small umbrella-shaped bunches of flowers.



**Centella asiatica**

### Constituents of centella asiatica:

Volatile Oil, Triterpenoids (asiatic acid, madecassic acid), alkaloids, triterpen glucosids (asiaticoside, madecassoside).

**Properties of centella asiatica:** The triterpenes of *Centella Asiatica*, and more particularly, asiatic acid, stimulate collagen and elastin biosynthesis. *Centella asiatica* is firming, regenerant and anti-irritations. *Centella asiatica* has also a soothing action on skin inflammation and a disinfiltrating action. It can be used in the care of "orange peel-like" skin. *Centella asiatica* it is therefore used in the drainage of water and adipous overloads.

### Cosmetic applications:

*Centella asiatica* is an important active ingredient in high-quality anti-aging cosmetics, such as body-firming and skin-strengthening products.

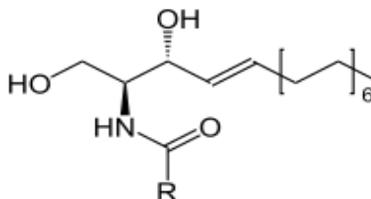
## CERAMIDES

**Ceramides** are skin lipids. They also exist in plants e.g. beans, flax seeds, sun flower seeds, rice grains, but also in cow's milk. They are the most important lipids that form the epidermal barrier and stick the horny cells together like bricks are held together by mortar. Thus the skin gets its smooth, intact surface and is protected from water loss.

### Description:

Ceramides are a family of lipid molecules. A ceramide is composed of sphingosine and a fatty acid. Ceramides are found in high concentrations within the cell membrane of cells. They are one of the component lipids that make up sphingomyelin, one of the major lipids in the lipid bilayer.

### Chemical structure:



### Constituents of ceramides:

A ceramide is composed of sphingosine and a fatty acid.

### Properties of ceramides:

Smoothing, protecting from water loss.

### Cosmetic applications:

Typical cases for the application of ceramide-containing products are dry skin, skin protection, i.e. the prevention of skin disorders and skin diseases. Furthermore they are used for the hair care where they are integrated into the hair interstices.

## CHAMPAGNE (VITIS VINIFERA) FRUIT EXTRACT

**Champagne extract** (Vitis Vinifera Fruit Extract) is extracted from grapes grown in the Champagne region of France. The primary grapes used in the production of Champagne are black Pinot noir and Pinot Meunier but also white Chardonnay. The extract is rich in fruit acids, sugars, minerals, pectin, tannins, proteins, anthocyanins, waxes, flavonoids, xanthophylls, carotene, vitamins, aromatic substances, and procyanidins. It boosts the energy metabolism, supports skin renewal, protects against free radicals and light-related skin aging.

### Description:

Vitis vinifera is a species of grape known as wine grape, European grape or grapevine. Ingredients made from grapes, such as Vitis Vinifera (Grape) Fruit Extract and Vitis Vinifera (Grape) Seed Extract are used in cosmetics and personal care products.



A glass of Champagne exhibiting the characteristic bubbles associated with the wine

### Constituents of champagne extract:

Fruit acids, sugars, minerals, pectin, tannins, proteins, anthocyanins, waxes, flavonoids, xanthophylls, carotene, vitamins, polysaccharides, aromatic substances, and procyanidins.

### Properties:

Boosts the energy metabolism, supports skin renewal, protects against free radicals and light-related skin aging.

### Cosmetic applications:

Luxurious skin care.

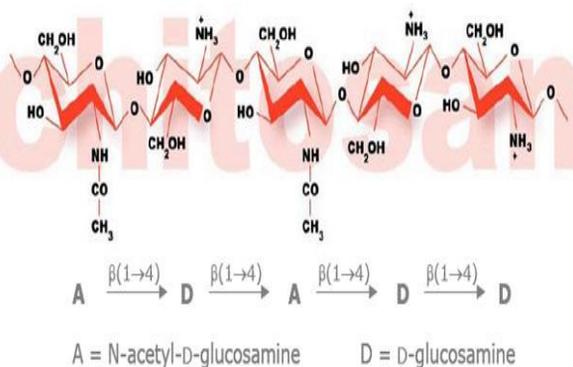
## CHITOSAN

**Chitosan** is a high molecular biopolymer of marine origin. It functions as a film former and has a high substantivity to the skin. The film formation on skin is used to regulate the transepidermal water loss and to bind moisture on skin. Furthermore, it has a positive influence on the sensorics of an emulsion and thus improves the following parameters: softness, smoothness and skin compatibility.

### Description:

**Chitosan** is a partially deacetylated chitin and belongs to the class of cationic biopolymers.

### Chemical structure:



### Properties of Chitosan :

Film-forming, moisturizing.

### Cosmetic applications:

**Chitosan** is an excellent active ingredient for the entire skin care range as well as in decorative cosmetics.

## CHONDRUS CRISPUS EXTRACT

**Chondrus crispus** extract is obtained from the red algae *Chondrus crispus*, also known as Carrageenan Moss or Irish Moss. Rich in trace elements, polysaccharides and micronutrients, this red seaweed is excellent for use in cosmetics. It is highly moisturizing, film-forming, emollient and it has shown to have anti-inflammatory and soothing properties.

### Description:

**Chondrus crispus**, known under the common name Irish moss, or carrageenan moss is a species of red alga which grows abundantly along the rocky parts of the Atlantic coast of Europe and North America. In its fresh condition the plant is soft and cartilaginous, varying in color from a greenish-yellow, through red, to a dark purple or purplish-brown. The principal constituent of Irish moss is a mucilaginous body, made of the polysaccharide carrageenan of which it contains about 55%. The plant also consists of nearly 10% protein and about 15% mineral matter, and is rich in iodine and sulfur.



**Chondrus crispus**

### Constituents of chondrus crispus extract:

50-70% carrageenan, 7-10% protein, amino acids, sterines, carotene, vitamins, sodium, potassium, calcium, iodine and trace elements.

### Properties of chondrus crispus extract:

Chondrus crispus extract is moisturizing, film-forming, emollient and it has shown to have anti-inflammatory and soothing properties.

### Cosmetic applications:

Chondrus crispus extract is used for moisturizing and soothing products.

## COCONUT (COCOS NUCIFERA) OIL

**Coconut oil**, also known as coconut butter, is a tropical oil with many applications. It is extracted from copra (derived from Malayalam word "kopra" which means dried coconut). Coconut oil is not fit for use as an edible fat until it has been refined and deodorised. Coconut oil constitutes seven percent of the total export income of the Philippines, the world's largest exporter of the product.

### Description:

The Coconut Palm (*Cocos nucifera*) is a member of the Family Arecaceae (palm family). It is the only species in the genus *Cocos*, and is a large palm, growing to 30 m tall, with pinnate leaves 4-6 m long, pinnae 60-90 cm long; old leaves break away cleanly leaving the trunk smooth. The term coconut refers to the fruit of the coconut palm.

The coconut palm is grown throughout the tropical world, for decoration as well as for its many culinary and non-culinary uses; virtually every part of the coconut palm has some human use.



### Constituents of Coconut oil:

Coconut oil is a fat consisting of about 90% saturated fat. The oil contains predominantly medium chain triglycerides, with roughly 92% saturated fatty acids, 6% monounsaturated fatty acids, and 2% polyunsaturated fatty acids. Of the saturated fatty acids, coconut oil is primarily 44.6% lauric acid, 16.8% myristic acid a 8.2% palmitic acid and 8% caprylic acid, although it contains seven different saturated fatty acids in total. Its only monounsaturated fatty acid is oleic acid while its only polyunsaturated fatty acid is linoleic acid.

### Properties of the oil:

Coconut oil is excellent as a skin moisturizer and softener.

### Cosmetic applications:

Coconut oil plays a particularly important part in the cosmetics industry as an ointment base, in sunscreens and in body care products.

## CODIUM TOMENTOSUM EXTRACT

**Codium tomentosum extract** is a marine moisturizing factor obtained from a green alga called codium tomentosum. Codium tomentosum extract normalizes and balances skin's moisture content. When formulated into creams or lotions, it rapidly hydrates the skin. Unlike normal moisturizing agents, the hydrating effect of Codium tomentosum extract is long lasting, and its moisturizing effects can still be observed several hours later.

### Description:

**Codium tomentosum** is a small green alga (up to 30 cm long) with a dichotomously branched, cylindrical frond. The frond is solid and spongy with a felt-like touch and has many colourless hairs which can be seen when the plant is immersed in water. The holdfast is disc-like and formed from many fine threads. Codium tomentosum demonstrates remarkable properties in its ability to maintain a constant hydration level, despite increases (or decreases) in salinity, or the drying effects of the sun and wind when left exposed in shoreline tide pools. These remarkable properties are due to the presence of highly sulphated polysaccharides in the cell membranes and "osmotic" molecules in the cytoplasm.



**Codium tomentosum**

### Constituents of Codium tomentosum extract:

Sulfated polysaccharides, Glucuronic acid, Sugars, Minerals, Proteins, Beta-hydroxy acid.

### Properties of Codium tomentosum extract:

Moisturizing regulating effect, long-term moisturizing, in-depth moisturizing, natural exfoliation.

### Cosmetic applications:

Moisturizing skin care, oily skin, masks.

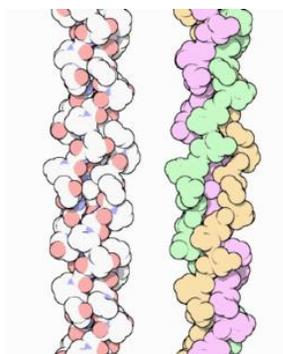


## COLLAGEN

**Collagen** is the main protein of connective tissue in animals and the most abundant protein in mammals, making up about 25% of the whole-body protein content. Collagen is subject to a continuous aging process in the skin, as, with age, collagen fibres are more and more cross linked. Collagen becomes tougher and increasingly loses its capacity to bind large quantities of water which is essential for the turgor of the skin. Consequently the skin looks flabby and older. From its application in medicine it is known that soluble collagen accelerates the healing of skin wounds and the spontaneous reepithelization of the skin. It is, therefore, logical to use soluble collagen in cosmetic preparations.

### Description:

Collagen is one of the most important scleroproteins of the connective tissue occurring as fibres. It is the main structure element of the skin and, therefore, largely responsible for its characteristic properties. One collagen unit is composed of three peptide chains with a relative molecular mass of about 95 000 each which are twisted together in form of a helix. These triple-helical peptide chains are synthesized in the fibroblasts, after which they are released to the extracellular space where they aggregate to fibrils, fibres and finally to plane flexible structures.



**Collagen Triple Helix**

### Cosmetic benefits:

Collagen supports the physical resistance and elasticity of the skin by its skin identical structure. It has excellent water retention and anti-wrinkle capacity.

### Cosmetic applications:

Collagen is used in skin care products, ampoules, body lotions, after sun lotions, hydro gels.

## COLLOIDAL PLATINUM

Janssen Cosmetics Platinum Care contains colloidal platinum, that is carried by a spherical polymethylsilsesquioxane powder. It releases the colloidal platinum through the contact of skin sebum and other available mediums. The white powder provides enhanced aesthetics to formulations. It delivers excellent slip, fluidity and overall skin feel. Furthermore it optimizes soft focus, light diffusion and wrinkle correction.

### Description:

Colloidal platinum is an ultrafine particle of elementary platinum or its liquid dispersions.

The colloidal platinum is carried by a spherical polymethylsilsesquioxane powder.

It offers a unique way to formulate platinum into all personal care formulations.



Platin nugget

### Properties of colloidal platinum and polymethylsilsesquioxane:

Excellent slip, fluidity and overall skinfeel.

Optimized soft focus, light diffusion and wrinkle Correction.

### Cosmetic applications:

High quality facial and body care. Also suitable for makeup, lipstick, eyeshadow, eyeliner, mascara and compact powder.

## CRANBERRY (VACCINIUM MACROCARPON)

In the Janssen Cosmetics Series CRANBERRY various cranberry ingredients are processed: fruit extract, rich in OPC`s (oligomeric procyanidins) with anti-oxidative effect, seed oil rich in essential fatty acids with nourishing properties and protection against moisture loss, and seeds, crushed and pulverized as exfoliating body.

### Description:

The Cranberry grows as a shrub or bush and prefers humid woody areas. The leaves are oval in shape and shiny reddish brown in colour. The flowers are small and white and look like little cranes. The berries are 0.5 – 1 cm in diameter and deep-red. The plant originally came from northern America and spread over time to northern Europe, Siberia and even parts of South America.



**Cranberry**

### Constituents of Cranberry:

The fruits contain fruit acids, flavonoids, OPC's, tannins (anthocyanin, catechin), vitamin C. Cranberry seed oil is rich in unsaturated linoleic acid and the linolenic acid.

### Properties of Cranberry:

Adstringent, anti-ageing.

### Cosmetic applications:

Skin care

## CUPUAÇU (THEOBROMA GRANIFLORUM) BUTTER

**Cupuaçu butter** is pressed from the fruit seed of the Cupuaçu tree (*Theobroma Grandiflorum*), found growing wild in the eastern subregion of the Brazilian Amazonia. The fruit of Cupuaçu is used to produce juices and sorbets in its native South America. The seeds contain approximately 48% of a sweet-smelling “butter” which is stable, and highly suitable for use in cosmetics and toiletries, as well as foods and confections. Cupuaçu Butter has a high capacity for water absorption and is therefore an excellent emollient for cosmetic formulations.

### Description:

The Cupuaçu tree (*Theobroma grandiflorum*) is a tropical rainforest tree, native to the Amazon, most notably to the northern region of Brazil. The tree is similar to the cocoa tree and typically reaches an average height of 10 meters. Unlike cocoa, the cupuacu does not contain caffeine. Cupuaçu trees have brown bark. Their leaves are 25–35 cm long and 6–10 cm across, with 9 or 10 pairs of veins. As they mature, their leaves change from pink-tinted to green, and eventually they begin bearing fruit. Cupuaçu fruits are oblong, brown, and fuzzy, 20 cm long, 1–2 kg in weight, and covered with a thick (4–7 mm), hard exocarp.



**Cupuaçu fruit**

### Constituents of Cupuaçu butter :

Cupuaçu butter is a soft solid triglyceride that presents a balanced composition of saturated and unsaturated fatty acids. It has a high concentration of the monounsaturated fatty acid Oleic acid (41.5%).

### Properties of Cupuaçu butter:

Cupuaçu butter has moisturizing properties. Studies illustrate that cupuacu butter offers the skin broad spectrum protection from damaging UV-A and UV-B rays.

### Cosmetic applications:

Moisturizing creams, Aftershave balm/lotion, Sun creams/lotions

## DEAD SEA SALT (MARIS SAL)

**Dead Sea Salt** refers to salt extracted or taken from the Dead Sea. The Dead Sea is a salt lake bordered by Jordan to the east, and Palestine and Israel to the west. The "Dead Sea salt" includes magnesium, calcium, potassium and bromides in unusually high concentrations (more than 10 times as much as the salt of normal seawater). The body is able to absorb these important minerals through the pores with the beneficial result that the skin feels smooth and supple.

### Description:

The Dead Sea also called the **Salt Sea** is bordered by Jordan to the east, and Palestine and Israel to the west. Its surface and shores are 428 meters below sea level. The mineral composition of the salt of the Dead Sea is significantly different from the salt composition of sea water. It contains about 50.8% magnesium chloride, 14.4% calcium chloride, 30.4% sodium chloride and 4.4% potassium chloride, based on the anhydrous salts. The concentration of sulfate ions ( $\text{SO}_4^{2-}$ ) is very low, and the concentration of bromide ions ( $\text{Br}^-$ ) is the highest of all waters on Earth.



**Salt along the shore of the Dead Sea**

### Constituents of Dead Sea Salt:

Dead Sea Salt is rich in minerals and trace elements.

### Properties of Dead Sea Salt:

Emollient.

### Cosmetic applications:

Dead Sea Salt is used in masks, especially for oily, blemished skin.

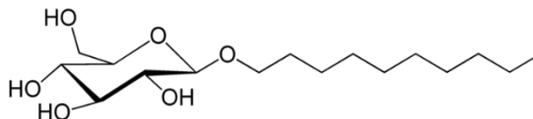
## DECYL GLUCOSIDE

**Decyl Glucoside** is a mild nonionic surfactant, ideal for foaming cleansing formulas. It is obtained from renewable raw materials: Fatty alcohols and glucose of plant origin.

### Description:

Decyl Glucoside is the product obtained from the condensation of decyl alcohol with a glucose polymer. It is based on vegetable raw materials: Coconut oil (decyl alcohol) and glucose from conventional crop sources.

### Chemical structure:



### Properties of Decyl Glucoside:

Decyl Glucoside has a good foaming power, it is mild but effective and it has good tolerance maintaining skin balance.

### Cosmetic applications:

Foaming cleansing formulas.

## DIACETYL BOLDINE SOLUTION

**Diacetyl boldine solution** enhances skin's lightening and is used in products with lightening or whitening properties. The complex contains diacetyl boldine, a derivate of boldine, which is naturally derived from the bark of the Chilean boldo tree. Diacetyl boldine blocks the transformation of inactive tyrosinase into active tyrosinase (only the active form of tyrosinase is able to catalyze the production of melanin from tyrosine). In that way diacetyl boldine inhibits melanin production in the skin.

### Description:

The brown coloration of the skin results from the pigment melanin which is produced in special epidermal cells, so-called melanocytes. The enzyme tyrosinase, usually present in its inactive form, is produced in these melanocytes. Its activation triggers off melanogenesis, a complex series of enzymatic chemical reactions which finally lead to melanin formation.

Diacetyl boldine blocks the transformation of inactive tyrosinase into active tyrosinase. It stabilizes tyrosinase in its inactive form and interrupts melanin synthesis.

### Constituents of diacetyl boldine solution:

Diacetyl boldine in C<sub>8</sub> C<sub>10</sub> triglycerides.

### Key benefits – scientifically substantiated claims:

Diacetyl boldine solution enhances skin lightening. In vitro tests on melanocyte B16 Line report a 53% drop in tyrosinase activity and a 51% decrease in the quantity of melanin. In another study, a diacetyl boldine solution treated 3D skin model was found to have a visible and significant reduction in epidermal pigmentation. In vivo colorimetric testing reported similar findings in that diacetyl boldine solution treatment produced a lower melanin index and a higher ITA (clarity). Over half of the panellists in a self-evaluation indicated their skin appeared to have less pigmented areas. Overall the consensus was that the skin was lighter and more radiant and their complexion more even.

### Cosmetic applications:

Skin brightening or whitening products.

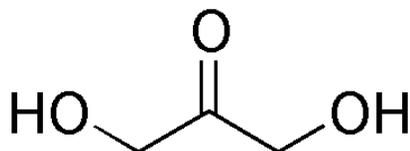
## DHA (DIHYDROXYACETONE)

**Dihydroxyacetone** (also known as DHA) is a simple carbohydrate that is primarily used as an ingredient in sunless tanning products. It is often derived from plant sources such as sugar beets and sugar cane, by the fermentation of glycerin. Dihydroxyacetone chemically combines with certain proteins found in the uppermost skin layers resulting in a tan-like coloration. The coloration develops 3-4 hours after application and lasts several days. The tan acquired does not protect from the harmful rays of the sun.

### Description:

DHA is a triose carbohydrate with the chemical formula  $C_3H_6O_3$ . It is a hygroscopic white crystalline powder. It has a sweet cooling taste and a characteristic odour.

### Chemical structure:



### Properties of DHA:

Dihydroxyacetone is the main active ingredient in all sunless tanning skincare preparations. It may be used alone or combined with other tanning components such as erythrose.

### Cosmetic applications:

Current sunless tanners are formulated into sprays, lotions, gels, mousses, and cosmetic wipes.

## ECHINACEA PURPUREA

**Echinacea**, commonly called Purple coneflower, is a genus of nine species of herbaceous plants in the Family Asteraceae. All are strictly native to eastern and central North America. The plants have large showy heads of composite flowers, blooming from early to late summer. Some species are used in herbal medicines. Echinacea is popularly believed to be an immunostimulator, stimulating the body's non-specific immune system and warding off infections.

### Description:

Echinacea purpurea are herbaceous, drought-tolerant perennial plants growing to 50 or 120 cm in height. The leaves are lanceolate to elliptic, 10–20 cm long and 1.5–10 cm broad. Like all Asteraceae, the flowers are a composite inflorescence, with purple (rarely yellow or white) florets arranged in a prominent, somewhat cone-shaped head; "cone-shaped" because the petals of the outer ray florets tend to point downward (are reflexed) once the flower head opens.



**Echinacea Purpurea**

### Constituents of Echinacea purpurea:

Echinacein, essential oil, phytosterins, alkylamides, polysaccharides, echinacosid.

### Properties of Echinacea purpurea:

Soothing, heals wounds, fights infection.

### Cosmetic applications:

Echinacea purpurea is an excellent active ingredient for all soothing and repairing skin-care products.

## ECHIUM OIL

**Echium oil** is extracted from the seeds of *Echium plantagineum*. The oil contains essential fatty acids (EFA), especially Gamma linolenic acid (GLA) and Stearidonic acid (SA), an EFA metabolite. Although the high levels of EFAs and GLA are undoubtedly of interest, it is the stearidonic acid content of echium oil that makes it unique among plant seed oils. Stearidonic acid is an omega-3 fatty acid that has been shown to exhibit strong anti-inflammatory properties.

### Description:

*Echium plantagineum* (Purple Viper's Bugloss) is a species of *Echium*, native to western and southern Europe (from southern England south to Iberia and east to the Crimea), northern Africa, and southwestern Asia. It is an annual or biennial plant growing to 20-60 cm tall, with rough, hairy, lanceolate leaves up to 14 cm long. The flowers are purple, 15-20 mm long.



**Echium plantagineum**

### Constituents of echium oil:

13% Stearidonic acid (omega-3), 10% Gamma-linolenic (omega-6).

### Properties of echium oil:

Stearidonic acid reduces skin inflammation by suppressing the release of arachidonic acid from triglycerides. Gamma-linolenic acid (GLA) is the immediate precursor of an anti-inflammatory eicosanoid, dihomogamma-linolenic acid.

### Cosmetic applications:

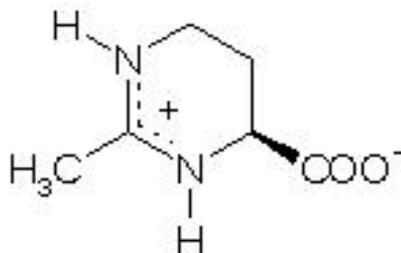
Anti-wrinkle creams, mature skin treatments, after suns products, soothing/calming products, sensitive/dry skin products, moisturizing creams and lotions, eye and neck treatments.

## ECTOIN

**Ectoin** is a natural active substance. It was discovered in halophilic bacteria e.g. Ectothiorhodospira halochloris, which survive and grow under extreme conditions in salt lakes, sea water and saline deserts. These halophilic bacteria are exposed to high dose UV-irradiation, dryness, extreme temperatures and high salinity but nevertheless manage to adapt to these inhospitable conditions: a special molecule, namely Ectoin, guarantees their survival. The biopolymers of the bacteria are stabilized by Ectoin and as a result are protected against damaging external stress factors. This protection concept developed by nature can be applied to cosmetics.

### Description:

Ectoin is a white crystalline powder. It stabilizes proteins and other cellular structures and protects the skin from stresses like UV irradiation and dryness.



**Molecular structure of Ectoin**

### Properties of ectoin:

Ectoin visibly counteracts the signs of aging, protects the immune system of the skin, protects the skin from damage from UV-A and UV-B radiation, protects and stabilizes the moisture balance in skin cells.

### Cosmetic applications:

Cosmetic products with photo-protection and anti-aging strategies.

## ELASTASE INHIBITOR

**Janssen cosmetics** uses a plant based protease inhibitor system, which inhibits skin enzymes (human leukocyte, elastase and trypsin) to minimize damage to skin from their unscheduled release.

**Background:** Elastin is the main component of the elastic fibres in the skin. Elastin allows skin to resume its shape after stretching or contracting.

Any irritation caused by either UV-exposure or by environmental stress leads to the release of elastase. Elastase is an enzyme from the class of serine proteases that break down proteins, in particular Elastin. Uncontrolled elastase activity endangers the integrity of the skin and leads to visible skin aging.

The elastase inhibitor helps the skin to defend against the symptoms of accelerated aging.

### **Description:**

Janssen cosmetics uses a plant based elastase inhibitor system sourced from Soybean protein  
INCI: Soybean (Glycine Soja) Protein. The raw material is selected from GMO free soy beans.



**Soybeans**

### **Properties of the Elastase Inhibitor:**

Anti-irritant, moisturizing.

### **Cosmetic applications:**

Anti-aging treatments that maintain skin elasticity and integrity, Cosmetic formula for sensitive skin, Sun care formula.

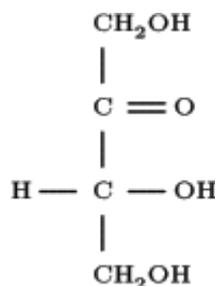
## ERYTHRULOSE

**Erythrulose** is a natural based keto-sugar which is biotechnologically obtained from the bacterium *Gluconobacter*. Erythrulose in combination with DHA produces a deep, uniform and natural skin tan. It reacts with the amino acids in the keratin protein on the outer or dead surface layer of the skin (the stratum corneum layer of the epidermis). This non-toxic reaction produces a temporary browning effect similar to the Maillard reaction. Thanks to its retardation effect, Erythrulose prolongs the tan and leaves the skin less dry and scaly. The tan acquired does not protect from the harmful rays of the sun.

### Description:

Erythrulose is a natural keto-sugar which reacts with free primary or secondary amino groups leading to the formation of a brownish polymer (Melanoidin).

### Chemical structure:



### Properties of Erythrulose:

Erythrulose leads to

- a uniform tan without streaks
- a more natural colour without harmful UV rays
- longer lasting tan
- less skin dehydration

### Cosmetic applications:

Self tanning products, sun care products, body lotions, skin care lines for healthy looking skin.

## ESP: ELASTIN STIMULATING PEPTIDES

**ESP** fights against skin sagging and improves resistance to gravity. It stimulates elastin synthesis and promotes a correct and functional elastic fibre architecture by inducing the most important elements involved in tissue structure. **ESP** is composed of the lipopeptide N-acetyl-Tyrosyl-Arginyl-O-hexadecylester. This peptide sequence is based on the dipeptide Tyr-Arg which is naturally present in the body.

### Description:

The skin is subject to a force (gravity). The sagging of the skin due to loss of elasticity becomes visible when the force of the elastic tissue (resistance) can no longer offset gravity; resilience (the ability to withstand aggression) is lost. One of the most visible and unsightly effects of the phenomenon is the emergence of jowls. The skin seems to sag from the jaws and the facial contours are deformed.

ESP helps the skin withstand the visible effects of gravity and thus recover resilience. The skin regains tone and the contours of the face are lifted.



sagging skin

### Constituents of ESP:

**ESP** consists of N-Acetyl-Tyr-Arg-O-Hexadecyl Ester, a dipeptide, linked to a lipophilic hexadecyl chain enabling enhanced bioavailability of the compound in the skin.

### Properties of ESP:

**ESP** helps ageing skin to fight against cutaneous sagging and decreases the visible effects of gravity on the skin. It promotes a face contour lifting effect perceptible by the consumer after just 1 month.

### Cosmetic applications:

Anti-ageing products.

## **ESP: ELASTIN STIMULATING PEPTIDES:**

### **COSMETIC EFFICACY: \***

#### **1. In vitro tests:**

Tests performed with 6ppm of **ESP(ELASTIN STIMULATING PEPTIDES)**.

- 1.1. Elastin synthesis
- 1.2. Elastin settlement
- 1.3. Elastic fibre architecture

#### **RESULTS:**

**ESP** does not only stimulate elastin synthesis but favors correct and functional elastic fibre architecture by inducing the most important elements involved in tissue structure.

#### **2. in vivo tests:**

Tests were carried out on 26 female volunteers aged 54 to 75 years old with sagging skin. Women applied twice a day a cream containing 4% **ESP** for 2 months versus placebo:

- 2.1. Cutaneous visco-elasticity
- 2.2. Resistance to sagging / Anti-gravity effect
- 2.3. Jowl Surface (Image analysis)
- 2.4. Jaw line /contouring effect
- 2.5. Self evaluation

#### **RESULTS:**

**ESP** helps ageing skin to fight against cutaneous sagging and decreases the visible effects of gravity on the skin. It promotes a face contour lifting effect by the consumer after just one month.

\* (References: Product information from the company Sederma)

## EUGLENA GRACILIS EXTRACT

**Euglena gracilis extract** is an energizing extract and one of the active ingredients in the plant-based cellulite active substance.

### Description:

**Euglena gracilis** is an unicellular microalgae. The organisms swim freely in fresh water using a natural impeller: the flagellum. Movement necessitates high energy input. The organisms have two types of energy factories: chloroplasts and mitochondria. This enables them to meet their energy requirements irrespective of the time of day or night. While the chloroplasts produce energy via photosynthesis, the mitochondria take over during the night.

**Euglena gracilis** is endowed with interesting properties with respect to the retriggering of skin cell energy production.



**Euglena gracilis**

### Properties of Euglena gracilis extract:

Euglena gracilis extract is an energizing extract. The extract could contribute to regulating the physiology of adipose tissue: upstream by retriggering ATP formation in hypoxic tissues as is the case for hypertrophied adipocytes; downstream by promoting the synthesis of fibronectin by adipocyte precursors, thus contributing to preventing their differentiation into adipocytes.

### Cosmetic applications:

Euglena gracilis extract is an active ingredient of the plant-based cellulite active substance.

## **EVENING PRIMROSE (OENOTHERA BIENNIS) OIL**

Evening primrose oil is extracted from the tiny black seeds of the Evening primrose (*Oenothera biennis*). Evening primrose oil is a natural source of essential fatty acids (EFA), including gamma-linolenic acid (~ 10%) and linoleic acid (~ 70%). Both belong to the polyunsaturated omega-6 fatty acids.

### **Description:**

The evening primrose got its name, because it opens its petals only in the evening, so that the pollination is by moth. The plant is up to 2m high, has hairy, angular, leafy stems and bright yellow flowers in an upright, grape-like inflorescence. The fruits are fuzzy capsules, dull four-edged and up to 3cm long. They contain up to 300 round seeds from which the evening primrose oil is extracted. Occurrence: The original home of the night candle is North America, but today it is present throughout Europe and grows preferentially on railway dams, road bumps, roadsides and wastelands.



**The Evening Primrose has large yellow blossoms which open at dusk**

### **Constituents of evening primrose oil:**

Gamma-linolenic acid (~ 10%) and linoleic acid (~ 70%).

### **Properties of evening primrose oil:**

Evening primrose oil is characterized by its particularly skin nurturing properties. Linoleic acid and gamma-linolenic acid (also known as vitamin F) increase the elasticity of the skin and protect it from dehydration.

### **Cosmetic applications:**

Skin care for mature skin, sensitive skin.

## FARNESOL

**Farnesol** is a natural organic compound that has specific antibacterial activity against gram positive microbes responsible for body odour. It is present in many essential oils such as citronella, neroli, cyclamen, lemon grass, tuberose, rose, musk, balsam and tolu.

### Description:

Farnesol is a nature identical sesquiterpene alcohol.

### Chemical structure:



### Properties of farnesol:

Deodorizing ingredient.

### Cosmetic applications:

Deodorants.

## GATULINE® EXPRESSION

**Gatuline® Expression** is a natural active ingredient that brings immediate improvement to the eye contour, reducing expression lines and wrinkles. A kind of "natural botox", Gatuline® Expression acts as a muscle relaxant to minimize the appearance of crow's feet - lines and wrinkles around the eye. Expression lines result from the accumulated effect on the skin of movements constantly imposed by the subcutaneous muscles. Gatuline® Expression has a myorelaxing effect. This activity has been traced back to Spilanthol, the active molecule in *Acmella oleracea*. The manufacturer has isolated this molecule and proven its activity in myorelaxation tests.

### Description:

**Gatuline® Expression** is extracted from the upper parts of the *Acmella oleracea* plant belonging to the Compositæ family (Compositæ-Helianthææ). This small plant, which blossoms all year long, has a broad geographical footprint, covering the whole tropical zone in South America, Africa and Asia. Originating from Peru and Brazil, *Acmella oleracea* is a cultivated non-endangered species, known and used for a very long time in Madagascar and La Réunion. Called "Mafane" in the Indian Ocean, this plant is used in food and as a medicinal plant. The manufacturer harvests it precisely in the wild region of La Réunion.



**Acmella oleracea**

### Constituents of Gatuline® Expression:

*Acmella oleracea* extract. The local anesthetic effect is attributed to spilanthol, a carboxamide.

### Properties of Gatuline® expression:

**Gatuline® expression** efficiently fights against the appearance of expression lines and visibly smoothes the skin's surface. Certified natural by COSMOS/ECOCERT. Substantiated in vivo. Preservative free.

### Cosmetic applications:

Ideal for anti-age and anti-wrinkle skin care lines. Emulsions, gels, serums.

## GINSENG (PANAX GINSENG) EXTRACT

**Panax ginseng** has its origins in the forests of Korea and Manchuria. For thousands of years it has been one of the medicines most appreciated by Traditional Chinese Medicine, which attributes the product with healing virtues for all kinds of disorders. For centuries, women collecting and selecting ginseng roots were noticed to have particularly nice hands, due to the fact that handling these roots has helped them to keep the skin of their hands young and smooth. This is most likely due to the increased blood perfusion, leading to improved delivery of nutrients to the skin.

### Description:

Ginseng is a lively, herbaceous plant from the Araliaceae family which grows to between 20 and 50 cm in height. Its leaves are divided into 5 folioles, its flowers gather in umbellae and its fruit is a berry. The active part of the plant is its root, which is yellow-cream and has a bitter taste and appears in a very characteristic form as it looks like the human body.



**Panax Ginseng**

### Constituents of Ginseng extract:

Ginseng has a large number of active ingredients which act synergically. The main components of the plant are the **ginsenosides**, polysaccharides (galactose, galacturonic acid, rhamnose, arabinose, glucose and fructose), up to 5% proteins, vitamins and mineral salts.

### Properties of Ginseng extract :

Ginseng extract provides radical scavenging, moisturizing and regenerating effects for anti-aging and skin care preparations.

### Cosmetic applications:

For dry skin, ageing skin, atone skin and dull hair.

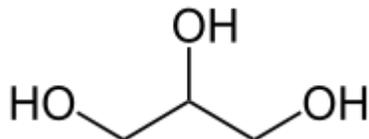
## GLYCEROL

**Glycerol** is a simple, trivalent alcohol that occurs in nature as a component of animal and vegetal fats. It is a colourless, odourless, viscous liquid that is widely used in cosmetic formulations. Glycerol is a sugar alcohol, and is sweet-tasting and of low toxicity. It is an excellent moisturizer. Glycerol is used as humectant and improves the spreadability of oil in water emulsions.

### Description:

Glycerol has three hydrophilic alcoholic hydroxyl groups that are responsible for its solubility in water and its hygroscopic nature.

### Chemical structure:



### Properties of Glycerol:

Moisturizing, humectant.

### Cosmetic applications:

Glycerol is used in cosmetic and pharmaceutical and personal care preparations. It is found in toothpaste, mouthwashes, skin care products, shaving cream, hair care products and soaps.

## GLYCOLIC ACID

**Glycolic acid** (or hydroxyacetic acid) is the smallest  $\alpha$ -hydroxy acid (AHA). It occurs in fruit juices, unripe grapes and sugar cane. Glycolic acid is used to improve the skin's appearance and texture. It may reduce wrinkles, acne scarring, hyperpigmentation and improve many other skin conditions. Once applied, glycolic acid reacts with the upper layer of the epidermis, weakening the binding properties of the lipids that hold the dead skin cells together. This allows the stratum corneum to be exfoliated, exposing live skin cells.

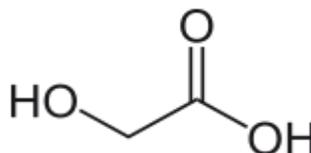
### Recommendation for use concentration:

Glycolic acid (hydroxyacetic acid) is the simplest  $\alpha$ -hydroxy carboxylic acid with the formula HOCH<sub>2</sub>-COOH.

The effectiveness of fruit acids is strongly pH and concentration dependent.

The SCCNFP (Scientific Committee on Cosmetic Products and Non-Food Products), suggested that glycolic acid may be used safely at a level of up to 4 % and a pH  $\geq$  3.8

### Chemische Formel:



### Properties of glycolic acid:

Fruit acids act keratolytic. They inhibit the cohesion of the corneocytes and support the natural renewal process of the skin. In addition, pigment spots can be lightened.

### Cosmetic application:

Fruit acids are used in anti-wrinkle products, in products for skin lightening and in products to improve the overall skin condition. Dermatologically they are used in higher concentrations than chemical peel for acne.

## GOJI (WOLFBERRY) EXTRACT

**Goji ("wolfberry", *Lycium barbarum* L.),** is a red-orange berry of the *Solanaceae* nightshade family that includes tomato, eggplant, chili pepper and potato. The Chinese revere wolfberry as a national treasure among the most nutrient dense of the nation's medicinal herbs. This reputation has stimulated scientific research about its potential health benefits and systematic cultivation, commercialization and now increasing export to the West.

### **Description:**

Goji berry (wolfberry) is the common name for the fruit of two very closely related species: *Lycium barbarum* and *L. chinense*. It is native to southeastern Europe and Asia. Wolfberry species are deciduous woody perennial plants, growing 1–3 m high. These species produce a bright orange-red, ellipsoid berry 1–2-cm deep. The berries ripen from July to October in the northern hemisphere.



**Goji berries**

### **Constituents of goji berry:**

Goji berries are known to be a rich source of several nutrients: polysaccharides, amino acids, minerals and trace elements (Calcium, Potassium, Iron, Selenium) vitamins (B2, C).

### **Properties of goji extract:**

Goji berries have a high protection factor against free radicals.

### **Cosmetic applications:**

Anti-ageing products.

## GREEN TEA (CAMELLIA SINENSIS) LEAF EXTRACT

**Green Tea extract** is an extract of the leaves of *Camellia sinensis*. The leaves contain large quantities of antioxidant substances which act against free radicals and protect our cells from everyday aggressions.

New pharmacological experiments have shown that tannins from green tea leaves have anti-microbial, anti-inflammatory and radical scavenging characteristics.

### Description:

***Camellia sinensis*** is a species of evergreen shrub or small tree whose leaves and leaf buds are used to produce tea. It is of the genus *Camellia* of flowering plants in the family Theaceae. Two major varieties are grown: *Camellia sinensis* var. *sinensis* for Chinese teas, and *Camellia sinensis* var. *assamica* for Indian Assam teas. White tea, yellow tea, green tea, oolong, pu-erh tea and black tea are all harvested from one or the other, but are processed differently to attain varying levels of oxidation.



**Camellia sinensis**

### Constituents of Green Tea:

Caffeine, theophylline, flavonoids (quercetin, rutin), catechin tannins.

### Properties of Green Tea:

Stimulant, lipolytic, radical scavenger, soothing, astringent, antioxidant

### Cosmetic applications:

Slimming treatment, cosmetics for tired skin, hair care to improve gloss and strength, bath and shower formulation.

## HONEY EXTRACT

**Honey extract** is a natural hydro-regulating complex, suitable for rough, dry skin, aged skin and prematurely aging. The complex acts specifically on epidermal horny layer as a NMF-like, hygroscopic factor. It prolongs moisturization, slows dehydration and smoothes and restructures the microrelief.

### Description:

Honey is created by bees as a food source. It is a mixture of sugars and other compounds. With respect to carbohydrates, honey is mainly fructose (about 38.5%) and glucose (about 31.0%). In addition, honey contains small amounts of sucrose, maltose, melezitose and other di- and oligosaccharides, pollen, minerals, proteins, enzymes, amino acids, vitamins, colourings and flavourings. The specific composition of any batch of honey depends on the flowers available to the bees that produced the honey.



**A honey bee on calyx of goldenrod.**

**Constituents of honey extract:** Honey extract contains oligosaccharides, amino acids, organic acids and mineral elements.

### Properties of honey extract:

Honey extract has excellent moisturizing properties.

### Cosmetic applications:

Honey extract is recommended for the use in softening, hydrating care for the face, body eyes and hands, sun care and after-sun properties.

## HORSE CHESTNUT (*AESCULUS HIPPOCASTANUM*) SEED EXTRACT

**Horse chestnut extract** is obtained from the seeds of horse chestnut (*aesculus hippocastanum*). The main constituents of horse chestnut seeds are saponins (aescin) and flavonoids. Aescin or escin is a mixture of saponins with anti-inflammatory, vasoconstrictor and vasoprotective effects. Cosmetically horse chestnut extracts are used due to their veinotonic and anti-inflammatory effects in the treatment of sensitive skin, anti-cellulite and anti-couperose creams and shampoos.

### Description:

Horse Chestnut belongs to the Hippocastanaceae plant family. Native to mountain woods in the Balkans and western Asia, this tree is cultivated in temperate regions world-wide.

The Horse Chestnut stout deciduous tree can grow to 25 m (80ft), with a large domed crown. It has leaves with 5-7 narrowly oval leaflets, and clusters of white and pink flowers, and spiny green fruit with up to 3 rounded, shiny brown seeds about 4 cm (1½ in) across.



*Aesculus hippocastanum*

### Constituents of horse chestnut extract:

Horse chestnut extract contains triterpenoid saponins (notably aescin) and flavonoids.

### Properties of horse chestnut extract:

Aescin the main active constituent, has anti-inflammatory, vasoconstrictor and vasoprotective effects.

### Cosmetic applications:

Preparations for sensitive skin, slimming treatments, anti-couperose creams and shampoos.

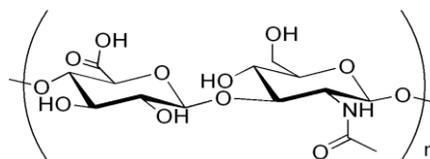
## HYALURONIC ACID

**Hyaluronic acid** is a non-sulfated glycosaminoglycan distributed widely throughout connective, epithelial, and neural tissues. It is one of the chief components of the extracellular matrix and binds water very strongly. In living tissue it serves as a water reservoir. Hyaluronic acid has a standard molecular weight between 1.5-1.8x10<sup>6</sup> Dalton. It is a very powerful hydration and film forming agent. Low molecular weight sodium salt of hyaluronic acid has a molecular weight below 1.0x10<sup>6</sup> Dalton. Due to its structure and lower molecular weight it is able to penetrate into the skin together with water and also with other substances attached. Low molecular weight hyaluronic acid can serve as an inner moisturizing agent or as a carrier of biological active substances.

### Description:

The chemical structure of hyaluronan was determined in the 1950s in the laboratory of Karl Meyer. Hyaluronan is a polymer of disaccharides, themselves composed of D-glucuronic acid and D-N-acetylglucosamine, linked together via alternating  $\beta$ -1,4 and  $\beta$ -1,3 glycosidic bonds.

### Chemical structure:



### Other names:

Sodium hyaluronate, hyaluronan.

### Source:

Hyaluronic acid is produced by fermentation.

### Cosmetic applications:

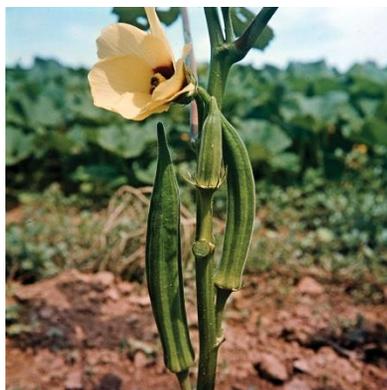
Hyaluronic acid is a common ingredient in skin care products. It is a very effective moisturizer and film forming agent. Hyaluronic acid and its sodium salt are recommended in all cosmetic formulations where skin hydration is needed: daily skin care, night and regenerating preparations, after sun, decorative cosmetics, pre shaves, after shaves, hair care products.

## HYDROLYZED HIBISCUS ESCULENTUS SEED EXTRACT

**Hydrolyzed Hibiscus esculentus seed extract** contains oligopeptides which have a Botox-like activity. In addition to inhibition of muscle cell contraction, demonstrated with an innovative in vitro model, the extract also protects cells and dermal macromolecules from oxidative stress. The Extract is a comprehensive, patented anti-aging active, suitable for a gentle topical treatment, effective against both mechanical and biological modes of wrinkle formation

### Description:

*Hibiscus esculentus* (okra) is a tropical plant native to Central Africa, India, Malaysia and the Philippines. A member of the mallow family, this annual plant has been cultivated as a food source for centuries. Its long, green, mucilaginous seedpods are commonly used in traditional recipes. The high nutritional value of Hibiscus seeds has recently been confirmed scientifically. Flour and milk prepared from these seeds contain lipids and proteins having a composition close to that of the casein fraction of milk. Hibiscus seeds are hence recommended as food supplement in Africa.



**Okra (*hibiscus esculentus*)**

### Constituents of hydrolyzed hibiscus esculentus seed extract:

Hydrolyzed hibiscus esculentus seed extract is rich in specific oligopeptides.

### Properties of hydrolyzed hibiscus esculentus seed extract:

Anti wrinkle activity, cell protection against free radicals, inhibition of muscle contraction.

### Cosmetic applications:

Facial anti-ageing products.

## HYDROLYZED LUPIN PROTEIN

**Hydrolyzed lupin protein** is an active ingredient, obtained from sweet white lupin. It is rich in low molecular weight glutaminated peptides and in oligosaccharides. Hydrolyzed lupin protein favors the synthesis of epidermal proteins and lipids and improves the barrier function of the skin.

### Description:

***Lupinus albus***, commonly known as the white lupin, is a member of the genus *Lupinus* in the family Fabaceae. It is a traditional pulse cultivated in the Mediterranean region. The white lupin is annual, more or less pubescent plant, 30 - 120 cm high. It occurs in meadows, pastures, and grassy slopes, predominantly on sandy and acid soils.



Lupinus albus

### Constituents of hydrolyzed lupin protein:

Hydrolyzed lupin protein is rich in glutaminated peptides and oligosaccharides.

### Properties of hydrolyzed lupine protein :

Stimulates the synthesis of structural proteins, favors the synthesis of epidermal lipids, reinforces the natural restructuring systems of the epidermis, maintains the epidermis hydration.

### Cosmetic applications:

Hydrolyzed lupin protein is recommended for all repairing, regenerating and hydrating products.

## HYDROLYZED SILK

**Silk** is a fiber obtained from the cocoons made by the larvae of the silkworm. These larvae feed on mulberry leaves. They have glands that produce protein material during the formation of the cocoon and throughout their life.

Silkworm is the common name for the silk-producing larvae of several moth species; however, these are not worms, but caterpillars. Several species are used in commercial silk production, although *Bombyxmori* is the best known. Hydrolyzed silk is produced by controlled hydrolysis of silk protein.

### Description:

Silk is a natural protein fiber containing about 70-75% fibroin, a fibrous elastic protein, and 25-30% sericin, an amorphous viscose protein, which acts as cement. Fibroin constitutes the internal core and sericin the external cover of the thread. Silk threads are very thin and long (300 to 900 meters), glossy white or creamy filaments. Silk is one of the most resistant fibers.



Cocoons

### Constituents of hydrolyzed silk:

Proteins.

### Properties of hydrolyzed silk:

Because of their polar nature, proteins easily bind water molecules through hydrogen bonds. When superficial moisturizing is involved, this action is almost not influenced by the molecular weight; however, if penetration and moisturizing of deeper skin layers is required, short-chain peptides – with lower molecular weights – are more effective.

### Cosmetic applications:

Hydrolyzed silk is recommendable to formulate cosmetic products with skin moisturizing and conditioning activity.

## IMPERATA CYLINDRICA ROOT EXTRACT

**Imperata cylindrica** extract is the hydroglycolic extract of imperata cylindrica roots. It provides the skin with considerable hydration and is used for dehydrated skin, make-up foundations and dry scalp treatment.

### Description:

*Imperata cylindrica* is a species of grass in the genus *Imperata*. It is a perennial rhizomatous grass native to east and southeast Asia, India, Micronesia and Australia. It grows from 0.6-3 m tall. The leaves are about 2 cm wide near the base of the plant and narrow to a sharp point at the top; the margins are finely toothed and are embedded with sharp silica crystals. The main vein is a lighter colour than the rest of the leaf and tends to be nearer to one side of the leaf. The upper surface is hairy near the base of the plant while the underside is usually hairless. Roots are up to 1.2 meters deep, but 0.4 m is typical in sandy soil.



Imperata cylindrica

### Constituents of Imperata cylindrica root extract:

Imperata cylindrica is rich in potassium and 3-dimethylsulfopropionate (DMSP).

### Properties of Imperata cylindrica:

Moisturizes the epidermis for 24 hours.

### Cosmetic applications:

Dehydrated skin (face and body), make up foundation, dry scalp treatments.

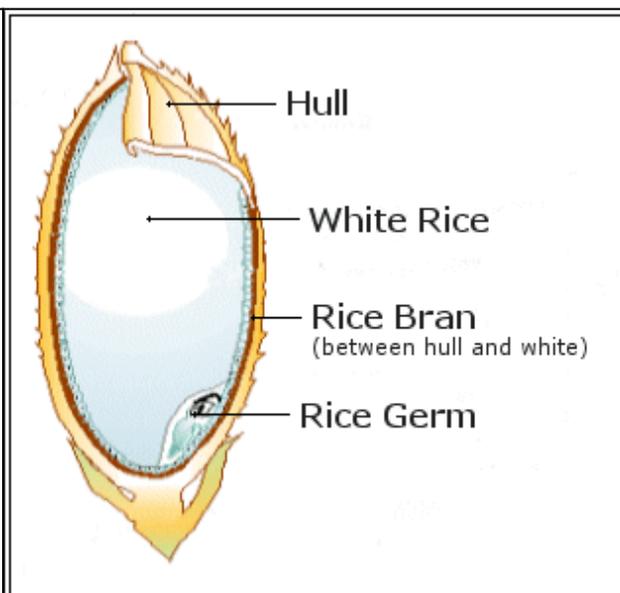
## INOSITOL

**Inositol** is a natural derived active compound found in rice bran as calcium phytate. It balances the sebaceous function of oily, dry and combined skin. The intelligent active ingredient can at the same time restore the hydrolipidic film of dry skin and reduce the sebum flow of oily skin.

### Description:

Inositol is a chemical compound with formula  $C_6H_{12}O_6$ , a sixfold alcohol (polyol) of cyclohexane. It exists in nine possible stereoisomers, of which the most prominent form, widely occurring in nature is *myo*-inositol. Inositol is a carbohydrate, though not a classical sugar. It is almost tasteless, with a small amount of sweetness.

Inositol exists in rice bran in high concentrations as calcium phytate or magnesium-mixed salts (phytin) and its isolation is possible by further decomposition and refinement of extracted phytin.



**Structure of the rice kernel**

### Properties of inositol:

Inositol is an intelligent active ingredient that balances the sebaceous functions of oily, dry and combination skin.

### Cosmetic applications:

Products for oily, dry or combination skin.

## INSTENSYL®

**Instensyl®** is a skin-tightening agent that is extracted from the manioc root (*Manihot Esculenta*). Due to the 3D molecular structure of Instensyl®, the plant biopolymer quickly adheres to the skin, spreads well and forms a viscoelastic film on the skin surface. The active substance produces an immediate lifting and smoothing effect.

### Description:

The Maniok (*Manihot esculenta*) is a plant species from the genus *Manihot* in the family of the Euphorbiaceae. It is extensively cultivated as an annual crop in tropical and subtropical regions for its edible starchy tuberous root, a major source of carbohydrates.

Originally from South America, it was used by Native Americans before the discovery of America by Europeans. In the meantime, it is grown worldwide in many parts of the tropics and subtropics.



Manihot esculenta

### Constituents of Instensyl®:

Hydrolyzed manihot esculenta tuber extract

### Properties of Instensyl®:

Tensor effect, smoothing effect, anti-wrinkle effect.

### Cosmetic applications:

**Instensyl®** can be incorporated into all face and body care products.

## IRIS FLORENTINA ROOT EXTRACT

**Iris florentina** extract is a hydroglycolic extract of iris florentina roots. The extract is rich in isoflavones and has a oestrogen-like activity. It helps to fight against wrinkle formation, dryness and skin slackening.

### Description:

**Iris** is a genus of between 200–300 species of flowering plants with showy flowers. It takes its name from the Greek word for a rainbow, referring to the wide variety of flower colours found among the many species. Iris florentina has large white flowers tinged with pale lavender and a bright yellow beard on the falls. Less commonly, a purple form occurs, of smaller growth.



**Iris florentina**

### Constituents of Iris florentina root extract:

Iris florentina roots are rich in isoflavones.

### Properties of Iris florentina root extract :

Iris florentina root extract inhibits the activity of enzymes causing the breakdown of proteins in the extracellular matrix (collagen and elastin) and favours the synthesis of DEJ (dermal-epidermal junction) anchor proteins. It reinforces the skin barrier and decreases the depth of wrinkles. The skin appears more hydrated and less wrinkled.

### Cosmetic applications:

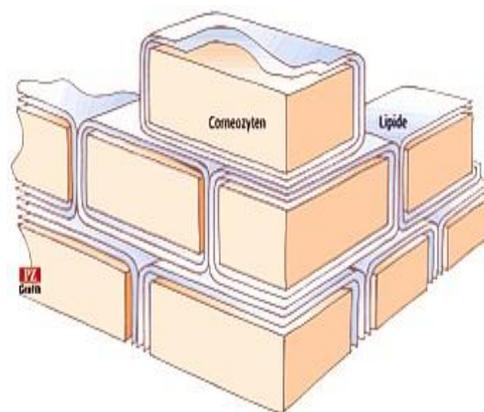
Iris florentina root extract can be incorporated in all anti-stress and anti-age formulations, in particular for the care of mature skin.

## ISOSTEARYL STEARATE

**Isostearyl stearate** is a 100% naturally derived ingredient that optimises the water holding potential of the natural skin barrier. Isostearyl stearate works in synergy with the lipid bilayers of the skin, stabilising them in a more tightly packed structure, optimising their effectiveness in preventing water loss.

### Description:

The stratum corneum is made up of corneocytes surrounded by lipids, providing a mechanical and chemical barrier to the environment. The lipids in the stratum corneum arrange themselves into bilayers. Within these lipid bilayers, the lipids can be organised into hexagonal or orthorhombic structures. The packing organisation determines how effective the bilayer is in controlling water loss and stopping the penetration of potential irritants. The orthorhombic structure provides much tighter packing of the lipids, thereby reducing the space between the lipids and preventing water from passing between them. Isostearyl stearate stabilises the orthorhombic packing of the lipids in the natural skin barrier to optimise the skin barrier's water holding capacity.



### Brick mortar model

(Source: Pharmazeutische Zeitung online)

### Properties of isostearyl isostearate:

Isostearyl isostearate is able to significantly boost the water holding potential of the natural skin barrier for soft, smooth and optimally hydrated skin.

### Cosmetic applications:

Moisturizers, anti-ageing, daily facial care, body care.

## JOJOBA (SIMMONDSIA CHINENSIS) OIL

**Jojoba oil** is obtained from the ripe seed of the jojoba bush (*Simmondsia chinensis*) by means of cold-pressing and filtration (cold-pressed jojoba oil). Mechanically pressed oil can then be refined (refined jojoba oil).

### Description:

The evergreen, drought-resistant jojoba bush grows to a height of between 50 cm and 6 m and has a lifespan of = 200 years. It grows in the wild in south-western parts of the USA (California, Arizona) and in north-western Mexico (Sonora, Baja California). There is a 50-60% oil content in the ripe, roughly olive-sized seeds, which are harvested manually by collecting brown capsules that have fallen from the bush.



**Simmondsia chinensis male flowers**

### Constituents of Jojoba oil:

Jojoba oil has the chemical composition of a liquid wax (consisting of long-chain C18-C22 esters of plain unsaturated fatty acids). The unique molecular configuration of this wax provides symmetry and extreme stability against oxidation.

### Properties of Jojoba oil:

Emollient.

### Cosmetic applications:

Jojoba Oil is used in the cosmetics industry, for hair-care products (shampoos, hair tonic), for skin-care products (moisturising creams, facial cleansing agents, body and shaving lotions), in sunscreens, in nail care products and in make-up products (lipsticks and make-up pencils, eye-liners), in bath-oils and in soaps.

## JOJOBA WAX PEARLS

**Jojoba wax pearls** are hard, free-flowing microspheres of jojoba esters delivering gentle yet effective exfoliation. They are just as effective as other commonly used mechanical exfoliants. However, jojoba wax pearls do not cause irritation or microlaceration as others. Jojoba wax pearls actually deposit jojoba esters onto the skin. The difference is a gentler skinfeel which users notice.

### Description:

The white, solid Jojoba wax is produced by hydrogenation of the unsaturated liquid wax. This process involves the addition of hydrogen to the fatty acids under heat and pressure. Jojoba wax pearls are available in a variety of colours and different sizes.



**Jojoba wax pearls**

### Properties of jojoba wax pearls:

Jojoba wax pearls provide gentle and effective exfoliation to the skin.

### Cosmetic applications:

Jojoba wax pearls are appropriate for body and facial scrubs, shower gels, hand and foot washes.

## KAOLIN

**Kaolin** (china clay, terra alba) is a soft, earthy, usually white mineral, produced by the chemical weathering of aluminum silicate minerals like feldspar. It is very absorbent and removes oils, toxic substances and impurities from the skin.

### Description :

**Kaolin** is found in nature comparatively rare, significant deposits are located in Brazil, USA, Germany, England, Czech Republic, Japan, China, India. The name Kaolin is derived from Gaoling or Kao-Ling ("High Hill") a village near Jingdezhen, Jiangxi province, China.



**Kaolin**

### Properties of Kaolin:

Kaolin is very absorbent and removes oils, toxic substances and impurities from the skin.

### Cosmetic applications:

Kaolin is a first choice ingredient for facial masks and products for dry, delicate or damaged skin.

## KOMBUCHA

**Kombucha** also called „long-life fungus“ is well known as a beverage in Russia and China and believed to confer longevity. It is a product of the fermentation of sweet black tea by the symbiosis of two microorganisms. Kombucha extract smoothes and freshens the skin and has a lipofilling effect. It is used in all skin products for 'radiance', anti-ageing, smoothing and re-densifying.

### Description:

**Kombucha** is the Western name for sweetened tea or tisane that has been fermented using a macroscopic solid mass of microorganisms called a "kombucha colony". The culture contains a symbiosis of *Acetobacter* (acetic acid bacteria) and yeast.



**A Kombucha culture fermenting in a jar**

### Constituents of Kombucha:

Kombucha contains many different cultures along with several organic acids, vitamins (group B), active enzymes, amino acids, and polyphenols.

### Properties of Kombucha:

Antiglycation activity, re-densifying effect on the adipocyte population (lipofilling effect), improves overall skin quality by enhancing skin smoothness, radiance and colour.

### Cosmetic applications:

Mature Skin, Anti-Ageing, face and neck modelling, lipofilling / liposculpture

## LAMINARIA DIGITATA EXTRACT

**Laminaria digitata** is a member of class Phaeophyceae, also called brown algae. Its richness in mineral salts, trace elements and vitamins make it an algae with eminently cosmetic applications.

### Description:

Laminaria digitata is a large, flexible brown algae with a rubbery texture. Colour ranges from light brown to dark brown. Laminaria grows in temperate and arctic waters generally on exposed rocky shores in the low intertidal and subtidal zones. It is also extensively cultivated on ropes in the sea in Japan, China and Korea.



**Laminaria digitata**

### Constituents of Laminaria digitata:

Laminaria digitata contains alginic acid, proteins, mannitol, iodine, carbohydrates, free amino acids and traces of vitamins and minerals.

### Properties of Laminaria digitata:

Moisturizing, soothing, anti-irritant, anti-cellulite, antiseptic.

Antiedema activity: Laminaria digitata contains organic iodine, which mobilizes the fluids retained in some body areas, stimulates blood circulation and helps eliminating toxins.

### Cosmetic applications:

Seaweed extracts are commonly used in anti-cellulite products and in general for treatment of aging skin. Thalassotherapy and algotherapy are therapeutic applications using seaweeds.

## LAVENDER OIL

**Lavender oil** is an essential oil obtained by distillation from the flower spikes of certain species of lavender. Two forms are distinguished, *Lavender Flower Oil*, a colorless oil, insoluble in water, and *Lavender Spike Oil*, a distillate from the herb *Lavandula latifolia*.

### Description:

*Lavandula angustifolia* (formerly *L. officinalis*) is a flowering plant in the family Lamiaceae, native to the western Mediterranean region, primarily in the Pyrenees and other mountains in northern Spain.

It is a strongly aromatic shrub growing to 1–2 m tall. The leaves are evergreen, 2–6 cm long and 4–6 mm broad. The flowers are pinkish-purple (lavender-coloured), produced on spikes 2–8 cm long at the top of slender, leafless stems 10–30 cm long.

The species name *angustifolia* is Latin for "narrow leaf".



**Lavendula angustifolia**

### Constituents of Lavender Oil:

The primary components of lavender oil are linalool (51%) and (35%) linalyl acetate. Other components include  $\alpha$ -pinene, limonene, 1,8-cineole, cis- and trans-ocimene, 3-octanone, camphor, caryophyllene, terpinen-4-ol and lavendulyl acetate

### Properties of Lavender Oil:

Lavender oil, which has long been used in the production of perfume can also be used in aromatherapy. The scent has a calming effect which may aid in relaxation and the reduction of anxiety.

### Cosmetic applications:

Lavender essential oil, when diluted with a carrier oil, is commonly used as a relaxant with massage therapy.

## LICORICE (GLYCYRRHIZIA GLABRA) ROOT EXTRACT

**Licorice** (US) or **liquorice** (UK) **extract** is produced from the roots of *Glycyrrhiza glabra*. Liquorice belongs to the Leguminosae plant family. The main components of the roots are triterpene saponins with the main component glycyrrhizin, flavonoids and coumarin derivatives. Cosmetically licorice root extracts are used due to their anti-inflammatory effects in skin and hair care.

### Description:

*Glycyrrhiza glabra* L., the licorice plant is a legume (related to beans and peas) and native to southern Europe and parts of Asia. It is an herbaceous perennial, growing to 1 m in height, with pinnate leaves about 7–15 centimetres long, with 9–17 leaflets. The flowers are 0.8–1.2 cm long, purple to pale whitish blue, produced in a loose inflorescence. The fruit is an oblong pod, 2–3 centimetres long, containing several seeds.



**Licorice roots**

### Constituents of licorice extract:

Glycyrrhizin (5-15%), flavonoids, coumarins, triterpenoids, essential oil.

### Properties of licorice extract:

Anti-inflammatory, skin lightening.

### Cosmetic applications:

Sensitive and refreshing skin care. Whitening products.

## LIPO AMINOACID

**Lipo aminoacid (INCI: undecylenoyl phenylalanine)** is an active ingredient that has been scientifically proven to have a very fast lightening effect on skin pigmentation. Chemically speaking it is a synthesized compound from phenylalanine and undecylenic acid. Lipo aminoacid has a novel mode of action, it blocks the receptors for the melanocyte-stimulating hormone alpha-MSH ( $\alpha$ -MSH), which plays an important role in skin pigmentation process. Lipo aminoacid acts as an  $\alpha$ -MSH antagonist.

### Description:

$\alpha$ -MSH (alpha-melanocyte-stimulating hormone) stimulates the production and release of melanin (melanogenesis) by melanocytes and plays an important role in skin pigmentation.

Lipo aminoacid works by „antagonizing“ alpha-MSH. It blocks the receptors for alpha-MSH on the surface of the melanocytes and inhibits the synthesis of melanin.

Additionally, lipo aminoacid reduces the activity of tyrosinase, the essential enzyme in the formation of melanin, by stabilizing it in its inactive form.

### Constituents of lipo aminoacid:

Undecylenoyl phenylalanine.

### Properties of lipo aminoacid:

Lipo aminoacid acts as an  $\alpha$ -MSH antagonist and has skin lightening properties.

### Key benefits – scientifically substantiated claims:

- Visible lightening effect after 2 months proved in vivo on Asian volunteers.
- Super-fast lightening effect (7 days) by combining AHAs.
- Excellent tolerance when used at recommended level.

### Cosmetic applications:

Skin lightening products.

## MACADAMIA (MACADAMIA TERNIFOLIA) OIL

**Macadamia oil** (or **Macadamia nut oil**) is the non-volatile oil expressed from the nut meat of the macadamia (*Macadamia ternifolia*) tree. Macadamia oil is sometimes used in food as a frying or salad oil, and in cosmetic formulations as an emollient.

### Description:

The Macadamia nut is also known as the 'Queensland nut'. As this name suggests, it is native to Australia, where it is a staple dietary component for Aboriginal peoples. The Macadamia nut was first cultivated in 1930, on Hawaii, since which time it has become the only plant of Australian origin to acquire commercial significance. Nowadays, these trees, which came originally from an area extending from Queensland to New South Wales and which grow to a height of 15 m, producing 8-15 ovaries per raceme, are cultivated all round the world and the (expensive) nuts are on sale everywhere. Major centres for cultivation are Australia, South Africa and the American state of Hawaii.



**Macadamia ternifolia**

### Constituents of Macadamia oil:

Macadamia nut oil covers a broad fatty acid spectrum, from myristic to tetracosanoic acid, dominated by oleic acid (53-67%), palmitoleic acid (16-24%) and palmitic acid (8-10%). Eicosanoic, eicos-9-enoic-, docosanoic, erucic and tetracosanoic acid amount to 1-3%.

### Properties of Macadamia oil:

Macadamia oil is excellent as a skin moisturiser and softener.

### Cosmetic applications:

Macadamia nut oil is an excellent oil for dry, chapped and sensitive skin, because its fatty acid composition is similar to human sebum. It smoothes the skin, and it is softening and regenerating.

## MAGNOLIA OBOVATA BARK EXTRACT

**Magnolia obovata extract** is obtained from the bark of *Magnolia obovata* (Japanese Bigleaf magnolia). The extract inhibits collagen destruction by matrix metalloproteinase (MMP) enzymes. Furthermore Magnolia extracts are said to care for the skin and prevent "UV-induced stress".

### Description:

**Magnolia obovata (Japanese Bigleaf Magnolia)** is a species of *Magnolia*, native to Japan, which grows in mixed broadleaf forests. It is a medium-sized deciduous tree 15-30 m tall, with slate grey bark. The leaves are large, 16-38 cm (rarely to 50 cm) long and 9-20 cm (rarely 25 cm) broad, leathery, green above, silvery or greyish pubescent below, and with an acute apex. The flowers are also large, cup-shaped, 15-20 cm diameter, with 9-12 creamy, fleshy tepals, red stamens; they have a strong scent, and are produced in early summer after the leaves expand. The fruit is an oblong-cylindric aggregate of follicles 12-20 cm long and 6 cm broad, bright pinkish red, each follicle containing one or two black seeds with a fleshy orange-red coating.



**Magnolia obovata**

### Constituents of Magnolia obovata bark extract:

Magnolol, Honokilol.

### Properties of Magnolia obovata bark extract:

Increase skin firmness and elasticity, reduce damage caused by sun exposure, decrease skin redness.

### Cosmetic applications:

Anti-ageing cosmetic for mature skin.

## MANGO (MANGIFERA INDICA) SEED BUTTER

**Mango butter** is a precious fat, which is obtained from the kernels of mango (*Mangifera indica*). Mango butter is solid at room temperature and melts at skin contact. It is distributed evenly, absorbs well and nourishes the skin with a delicate protective film. Native to India the mango tree has been cultivated in many tropical regions.

### Description:

The evergreen mango tree (*Mangifera indica*) can be up to 45 meters high, with a width of up to ten meters at the top. New leaves are initially salmon, but will soon be dark green. The small, white to pink flowers appear in upright panicles. When they open, they smell like lilies. After the flowers have wilted, it will take three to six months, until the fruit is ripe. The ripe mango fruit hangs on long stalks on the tree and can weigh up to two kilograms. The fruit has a thin, smooth skin, including a depending on the maturity soft to fibrous pulp that surrounds a large, flat stone core. The colouring of the fruit ranges from green to yellow to red, often there is a combination of all three colours. The peeled fruit has a strong aromatic odour and sweet taste.



**Mango butter**

### Constituents of Mango butter

Mango Butter contains 40-45% stearic acid (C18: 0), 40-50% oleic acid (C18: 1), 5-8% palmitic acid (C16: 0), 2-4% linoleic acid (C18: 2), 1-4% arachidonic acid (C20: 0).

### Properties of Mango butter:

Mango butter nourishes and protects the skin with a delicate protective film.

### Cosmetic applications:

Mango butter is used in creams, lotions and pure as lip balm or body butter.

## MANGOSTEEN EXTRACT

**Mangosteen extract** is an active ingredient in Perfect Bust Complex. Pericarp extracts of the Mangosteen fruit, composed uniquely of xanthonenes, flavonoids and alkaloids, are used in special care for breast enlargement to enhance the naturally provided capacity of lipid storage.

### Description:

The Mangosteen tree (*Garcinia mangostana*) is endemic to Malacca and grows in the tropics. The fruit of the tropical tree is revered in Asia as “Queen of fruits”. The flesh of the fruits is particularly valued for its tropical exotic flavour. It resembles fruit such as the grape, pineapple, grapefruit and peach.

The active ingredients in Perfect Bust Complex are extracted from the skin of the fruit (pericarp) by means of a patented procedure. The phytoagents are classed among the xanthonenes and flavonoids, well known amongst other things for their antioxidant and anti-inflammatory effects.



**Mangosteen fruit**

### Constituents of Mangosteen:

Xanthonenes, Flavonoids.

### Properties of Mangosteen:

Antioxidant, anti-inflammatory.

### Cosmetic applications:

Body Care.

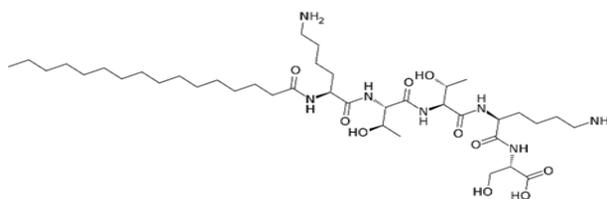
## MATRIXYL®

**Matrixyl®** is a trade mark of Sederma SAS. It designates an anti-wrinkle active ingredient for cosmetics containing a specific matrikine which cosmetic nomenclature denomination is palmitoyl pentapeptide-4. It contains a peptide of 5 aminoacids linked to a 16-carbon chain for improving the penetration of the molecule through the lipidic structures of the skin.

### Description:

#### Matrikine: the key to anti-ageing

In 1999, the French Professor Maquart and his team published their first article mentioning “matrikines”. What does this term designate? A matrikine is a small molecule composed of a short sequence of amino-acids, a peptide, derived from the surrounding extracellular matrix and constituting a signal in order to regulate cell activity. Matrikines play an important role in the wound healing process and connective tissue remodeling.



**Palmitoyl Pentapeptide-4**

### Constituents of Matrixyl®:

Palmitoyl Pentapeptide-4

### Properties of Matrixyl®:

Matrixyl® is a messenger which selectively increases the synthesis capacity of the fibroblasts. It activates fibroblasts to produce collagen and glycosaminoglycans IV (in particular hyaluronic acid) and thus counteracts premature skin aging.

### Cosmetic applications:

Anti-wrinkle products.

## MATRIXYL™3000

**Matrixyl™3000** has an anti-wrinkle and lifting effect. It contains two matrikines, Pal-GHK and Pal-GQPR which act in synergy to restore and maintain skin's youthful appearance. Its efficacy in restoring skin's metabolism of youth has been proven one more time with two new tests. After an in vivo study in 2011 demonstrating its protective and repairing effect against photo-induced ageing, it is Matrixyl® 3000's ability to reverse chronological ageing that has been verified at the beginning of 2013. Among other things Matrixyl® 3000 has been shown to regulate the expression of recently discovered marker of senescence: progerin.

### Description:

#### Matrikine: the key to anti-ageing

In 1999, the French Professor Maquart and his team published their first article mentioning "matrikines". What does this term designate? A matrikine is a small molecule composed of a short sequence of amino-acids, a peptide, derived from the surrounding extracellular matrix and constituting a signal in order to regulate cell activity. Matrikines play an important role in the wound healing process and connective tissue remodeling.



**45% less deep wrinkles  
after 2 months**

### Constituents of Matrixyl™3000:

Palmitoyl Tripeptide-1 and Palmitoyl Tetrapeptide-7

### Properties of Matrixyl™3000:

Matrixyl™3000 contains matrikines which are messengers of cutaneous restructuring and repair. They activate the neosynthesis of extracellular matrix macromolecules providing Matrixyl™3000 with a visible anti-wrinkle efficacy. It reduces the cutaneous photo damage by restructuring the fragile network of the papillary dermis. Furthermore Matrixyl™3000 helps to reverse the chronological ageing as attested by the regulation of senescence markers. Senescence is the biological phenomenon that most cells stop their growth after a certain number of cell divisions (mitoses) in cell culture.

Anti-ageing face care, men care, eye care, sun care.

## MATRIXYL™ SYNTHÉ'6™

**Matrixyl™ synthe'6™** is a wrinkle filler. It is derived from the tripeptid KMK, naturally found in collagen VI and laminin 5. Matrixyl® synthe'6® evens out skin relief and smoothes wrinkles from the inside by rebuilding the skin where it is needed, particularly on the forehead and the crow's feet. Thanks to its matrikine-like effect, Matrixyl® synthe'6® stimulates 6 major constituents of the skin matrix and the dermal-epidermal junction (DEJ) and ensures an optimal architecture of the tissue.

### Description:

#### Matrikine: the key to anti-ageing

In 1999, the French Professor Maquart and his team published their first article mentioning "matrikines". What does this term designate? A matrikine is a small molecule composed of a short sequence of amino-acids, a peptide, derived from the surrounding extracellular matrix and constituting a signal in order to regulate cell activity. Matrikines play an important role in the wound healing process and connective tissue remodeling.



#### Matrixyl™ synthe'6™

### Constituents of Matrixyl™ synthe'6™:

Palmitoyl Tripeptide-38. It is derived from the Tripeptide

### Properties of Matrixyl™ synthe'6™:

In vivo studies demonstrated that, after 2 months, the forehead and crow's feet wrinkles are visibly smoothed from the inside of the skin. Many parameters demonstrated this smoothing effect (wrinkle volume, depth, surface...) and more particularly the lifting effect and the wrinkle spread.

### Cosmetic applications:

Skincare and make-up designed to fight wrinkles.

## MDI Complex (FISH CARTILAGE EXTRACT)

**MDI Complex®** is composed of purified water and natural shark cartilage extract. The complex inhibits collagen destruction by matrix metalloproteinase (MMP) enzymes. With aging, often stressful lifestyles and exposure to harmful environmental irritants, the activity of these enzymes increases, affecting the extracellular matrix. MDI Complex® is recommended for the prevention of dark circles under and around the eyes, stellate veins, rosacea and varicose veins.

### Description:

The MDI Complex ® is an inhibitor of the enzymes that destroy the skin's collagen network. The exclusive patented manufacturing process, using state-of-the-art cell fractionation technology, is performed at low temperature with sophisticated ultra-filtration units to allow the selection of specific molecules and insures the maintenance of their potency. The product is aseptically filtered at the end of the manufacturing process and kept at room temperature. The fish must be captured and processed according to specific conditions established by the Canadian and the united states standards for processing fresh marine biomass.



**MDI complex** - a marine derived cosmetic ingredient (fish cartilage extract)

### Properties of the MDI Complex ® :

MDI Complex ® shows a strong in vitro inhibition of collagenase activity. This in vitro activity has also been confirmed by many clinical studies demonstrating reduction of spider veins of the face, maintenance of protective functions of the skin (TEWL) anti-irritancy effects and reduction of the dark circles around the eyes.

### Cosmetic applications:

Anti-aging formulations. MDI Complex® is recommended for the prevention of dark circles under and around the eyes, stellate veins, rosacea and varicose veins.

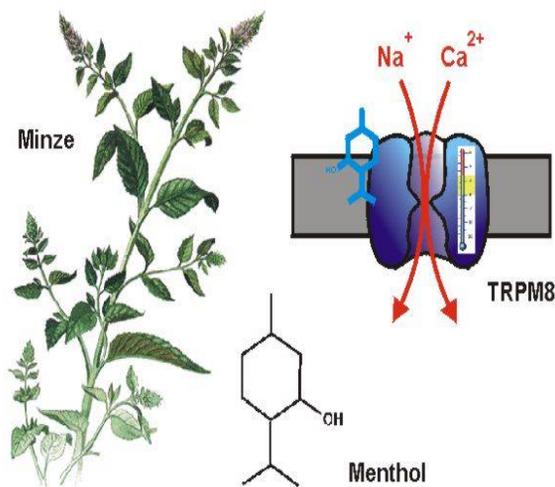
## MENTHOL

**Menthol** is an organic compound made synthetically or obtained from peppermint or other mint oils. It is a waxy, crystalline substance, clear or white in colour, which is solid at room temperature and melts slightly above. Menthol is used as a cooling agent.

### Description:

The main form of menthol occurring in nature is (-)-menthol.

Menthol's ability to chemically trigger the cold-sensitive TRPM8 receptors in the skin is responsible for the well known cooling sensation.



### Cooling sensation of menthol

### Properties of Menthol:

Cooling agent.

### Cosmetic applications:

Menthol is used as a cooling agent in shower gels, after sun products, lip balms.

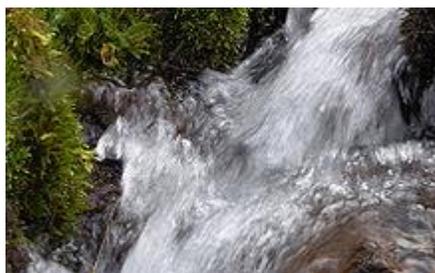
## MINERAL WATER

The Body Elixir “Eifel Moor” contains mineral water from the German Volcanic Eifel (RHODIUS-MINERAL-SPRING). RHODIUS Mineralquellen und Getränke GmbH is located amidst the Volcanic Park Brohltal / Sea of Laach. RHODIUS MINERAL WATER is one of the mineral waters containing the highest amount of magnesium throughout Germany. Magnesium plays an essential role in the cellular metabolism by participating in all the important mechanisms of consumption or production of energy.

### Description:

Mineral water is water containing minerals or other dissolved substances that alter its taste or give it therapeutic value.

Traditionally mineral waters would be used or consumed at their source, often referred to as taking the waters or taking the cure, and such sites were referred to as spas, baths or wells.



Mineral spring

### Constituents of mineral water (Rhodius Mineral Spring):

Cationic: calcium, magnesium, sodium, potassium;

Anionic: chloride, fluoride, sulfate, hydrocarbonate;

### Properties of mineral water:

Energizing.

### Cosmetic applications:

Spa products.

## MULBERRY (MORUS ALBA AND MORUS NIGRA) ROOT EXTRACT

**Mulberry** or *Morus* is a genus of 10–16 species of deciduous trees native to warm, temperate, and subtropical regions of Asia, Africa, and the Americas, with the majority of the species native to Asia. The most known species in Europe are morus alba and morus nigra. The extract of the bark and root contains substances that hinder the formation of melanin.

### Description:

The mulberry tree has sawed leaves and grows up to 15 m. Its leaves are the basic food for silk worms. The fruits of the black mulberry look like blackberries and are edible.



**Mulberry Tree (Morus nigra)**

### Constituents of mulberry extract:

The roots are rich in phenylflavons. The leaves are rich in asparaginic acid and vitamin C.

### Properties of mulberry extract:

The phenylflavons of mulberry would contribute in an effect of whitening, anti-inflammatory and moisturizing of the skin. The effect of whitening would be mainly the result of an inhibition of the activity of tyrosinase, an enzyme taking especially place in the synthesis of melanine.

### Cosmetic applications:

Mulberry extracts are used for their treatment of skin lightening.

## MURUMURU (ASTROCARYUM MURUMURU) BUTTER

**Murumuru Butter** is extracted from the seeds of the reddish-orange fruits of the Murumuru palm tree, which is native to the Amazon. The plant butter has a unique composition of essential fatty acids and forms a protective film on the skin.

### Description:

Murumuru (*Astrocaryum murumuru*) is a palm tree and native to the Amazon rainforest in Brazil. It grows on the floodplains in the Amazon basin and carries edible fruits. When the fruits are ripe, they fall to the ground. Its seeds are collected and cold-pressed between January and May.



**Murumuru fruit**

### Constituents of murumuru butter:

Murumuru butter contains vitamins and has a high content of lauric and myristic acid.

### Properties of murumuru butter:

Murumuru butter increases noticeably the elasticity of irritated and damaged skin and helps in the sustainable regeneration of the natural skin barrier.

### Cosmetic applications:

Facial and body care for mature skin, sensitive skin.

## MUSHROOM EXTRACT (FOMES OFFICINALIS)

**The mushroom extract** used in janssen cosmeceutical cosmetic products is extracted from the pulp of *Fomes officinalis*, a basidiomycete mushroom that grows in eastern Europe. The extract has astringent, pore tightening and moisturizing effects on the skin.

### Description:

*Fomes officinalis* is a bulky basidiomycete that grows on the bark of larch trees. It is shaped like a rounded cone, and is covered by a hard, cracked rind with yellow or brown spots.



**Fomes officinalis**

### Constituents of mushroom extract:

Polysaccharides, minerals.

### Properties of mushroom extract:

*Fomes officinalis* extract has astringent, pore tightening and moisturizing effects.

### Cosmetic applications:

Care for Oily skin with or without acneic tendency. Anti-Age care, astringent, skin firming care. Eye contour care, care for neck and bust..

## NYLON POWDER

**Nylon powder** is a micro-porous spheroidal powder characterized by a great affinity for the skin, providing very good remanence, and a velvety feeling. It can absorb its own weight in oil. It is recommended for oily skin and long lasting colour cosmetics for its efficiency to preserve a natural and even finish all day. It brings additional SOFT FOCUS effect. Its fine particle size around 5µm allows it to penetrate wrinkles and diffuse the light, reducing the appearance of the wrinkles.

### Description:

Nylon is a generic designation for a family of synthetic polymers known generically as polyamides and first produced on February 28, 1935 by Wallace Carothers at DuPont. Nylon is one of the most commonly used polymers. Chemistry: Nylons are condensation copolymers formed by reacting equal parts of a diamine and a dicarboxylic acid, so that peptide bonds form at both ends of each monomer in a process analogous to polypeptide biopolymers.



**Nylon powder**

### Constituents of Nylon powder:

Chemical elements included in nylon powder are carbon, hydrogen, nitrogen, and oxygen.

### Properties of Nylon powder:

Oil absorbing, long-lasting effect.

### Cosmetic applications:

Skin care products for oily skin, concealers, foundations.

## OLIVE (*OLEA EUROPAEA*) LEAF EXTRACT

**Olive leaf extract** is produced from the leaves of *Olea europaea*. While olive oil is well known for its flavor and health benefits, the natural olive leaf extracts are marketed as anti-aging substances. A liquid extract made directly from fresh olive leaves recently gained international attention when it was shown to have an antioxidant capacity almost double green tea extract and 400% higher than Vitamin C.

### Description:

The olive tree is an evergreen tree or shrub native to the Mediterranean, Asia and parts of Africa. It is short and squat, and rarely exceeds 8–15 meters in height. The silvery green leaves are oblong in shape, measuring 4–10 cm long and 1–3 cm wide. The trunk is typically gnarled and twisted.

The small white flowers, are borne generally on the last year's wood, in racemes springing from the axils of the leaves.

The fruit is a small drupe 1–2.5 cm long, thinner-fleshed and smaller in wild plants than in orchard cultivars. Olives are harvested at the green stage or left to ripen to a rich purple color (black olive).



**Olive tree**

### Constituents of Olive leaf extract:

Oleuropein or oleuropeoside, flavonoids (Luteolin).

### Properties of Olive leaf extract:

Phenolic compounds present in olive leaves and fruits have strong free-radical scavenging capacity. Further more olive leaf extract has an antioxidant activity and anti-inflammatory activity.

### Cosmetic applications:

Cosmetic products with anti-irritant activity, anti-ageing products.

## OLIVE (*OLEA EUROPAEA*) Oil

**Olive oil** is a fruit oil obtained from the olive (*Olea europaea*). It is suitable for use in a variety of cosmetics. Olive oil exhibits excellent spreadability on the skin, making it ideal as a massage oil or carrier for treatment products. It adds moisturizing attributes to creams, lotions and bar soaps.

### Description:

The olive tree is an evergreen tree or shrub native to the Mediterranean, Asia and parts of Africa. It is short and squat, and rarely exceeds 8–15 meters in height. The silvery green leaves are oblong in shape, measuring 4–10 cm long and 1–3 cm wide. The trunk is typically gnarled and twisted.

The small white flowers, are borne generally on the last year's wood, in racemes springing from the axils of the leaves.

The fruit is a small drupe 1–2.5 cm long, thinner-fleshed and smaller in wild plants than in orchard cultivars. Olives are harvested at the green stage or left to ripen to a rich purple color (black olive).



**Olives on a tree**

### Constituents of Olive Oil:

Olive oil is composed mainly of the mixed triglyceride esters of oleic acid and palmitic acid and of other fatty acids, along with traces of squalene (up to 0.7%) and sterols (about 0.2% phytosterol).

### Properties of Olive Oil:

Olive oil adds moisturizing attributes to creams, lotions and bar soaps and has an excellent spreadability.

### Cosmetic applications:

Creams, lotions, bar soaps, massage oil.

## ORANGE (CITRUS AURANTIUM) OIL

**Orange oil** is an essential oil produced by glands inside the rind of an orange fruit. It is extracted or steam distilled as a by-product of orange juice production. It is composed of mostly (approximately 95% d-limonene), and is therefore often used in place of pure d-limonene, which can be further extracted from the oil by distillation.

Limonene is what gives citrus fruit their familiar aroma, and is therefore used in perfume and aromatherapy for its fragrance.

### Description:

An **orange** - specifically, the **sweet orange** – is the citrus fruit *Citrus sinensis* (syn. *Citrus aurantium* L. var. *dulcis* L.) and its fruit. The orange is a hybrid of ancient cultivated origin, possibly between pomelo (*Citrus maxima*) and tangerine (*Citrus reticulata*). It is a small flowering tree growing to about 10 m tall with evergreen leaves, which are arranged alternately, of ovate shape with crenulated margins and 4–10 cm long. The orange fruit is a hesperidium, a type of berry. Oranges originated in Southeast Asia. The fruit of *Citrus sinensis* is called *sweet orange* to distinguish it from *Citrus aurantium*, the bitter orange. In a number of languages, it is known as a "Chinese apple" (e.g. Dutch *Sinaasappel*, "China's apple", or "Apfelsine" in German).



**Orange blossoms and oranges on tree**

### Constituents of Orange Oil:

Orange oil is rich in d-limonene (approximately 95 %), Terpeneol, alpha-Terpinen, D-Linalool, n-Nonylalcohol, d-Terpinol.

### Properties of Orange Oil:

Orange oil is an essential oil. It is uplifting, anti-stress/ anti-depressive, enhance your mood, relax you.

### Cosmetic applications:

Orange oil is used in perfume and aromatherapy.

## ORYZA SATIVA (RICE) EXTRACT

Botanical anti-aging ingredient obtained from Rice (*Oryza sativa*), resulting from the latest research in the area of longevity, calorie restriction and sirtuins activation. The rice extract is rich in sirtuin (SIRT-1)-modulating peptides that activates SIRT-1 expression in human skin. Sirtuins, also called longevity proteins, help to repair cell damages and protect the skin from stress and photodamage. Scientists see the Sirtuin as a kind of genetic reinsurance: it ensures the survival of cells in stressful situations, especially when nutrients are scarce.

### Description:

Rice (*Oryza sativa*), an annual plant from the grass family, is considered to be one of the oldest cultivated plants. Its home is South-East Asia; The rice plant can grow to 1,50 m tall and has long, slender leaves. The small wind-pollinated flowers are produced in a branched arching to pendulous inflorescence, 30–50 cm long. The edible seed is a grain (caryopsis). It consists like all cereals of a germ bud, flour body, aleurone layer, episperm and fruit wall. In the rice, the three last together form the so-called silver skins.



**Oryza sativa panicles**

### Constituents of rice extract:

Rice extract is rich in Sirtuin (SIRT-1)modulating peptides.

### Properties of Oryza sativa (rice) extract:

Rice extract increases the SIRT-1 content in the skin (in-vitro). Sirtuins, also called longevity proteins, help to repair cell damages and protect the skin from stress and photodamage.

### Cosmetic application:

Global anti-ageing products, anti-stress skin care products, day care products.

## PALMITOYL OLIGOPEPTIDE

**Palmitoyl Oligopeptide** is a natural peptide stabilized by being coupled to a palmitoyl chain. It stimulates collagen and glycosaminoglycan synthesis, in particular hyaluronic acid. This product is used in lip care and make-up applications. **Palmitoyl Oligopeptide** moisturises lips and makes them firmer, smoother and better defined. It has demonstrated its efficacy in restructuring the connective tissue by stimulating the synthesis of collagen and of glycosaminoglycans.

### Description:

Palmitoyl Oligopeptide has been developed from a natural tripeptide, Glycine-Histidine-Lysine, stabilized and rendered bio-available by being coupled to a Palmitoyl group.



**Palmitoyl oligopeptide makes  
lips better hydrated**

### Properties of Palmitoyl oligopeptide:

Moisturizes lips and makes them firmer, smoother, better defined.

### Cosmetic applications:

Lip care and make-up.

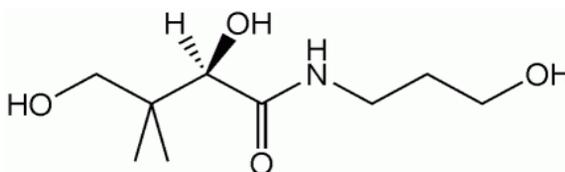
## PANTHENOL

**Panthenol** is the alcohol analog of pantothenic acid (vitamin B5), and is thus the provitamin of B5. In organisms it is quickly oxidized to pantothenate. Panthenol is a highly viscous transparent liquid at room temperature, but salts of pantothenic acid (for example sodium pantothenate) are powders (typically white). It is well soluble in water, alcohol and propylene glycol, soluble in ether and chloroform, and slightly soluble in glycerin.

### Description:

Panthenol comes in two enantiomers, D and L. Only D-panthenol (*dexpanthenol*) is biologically active, however both forms have moisturizing properties. For cosmetic use, panthenol comes either in D form, or as a racemic mixture of D and L (DL-panthenol).

### Chemical structure:



### Cosmetic benefits :

In cosmetics, panthenol is a humectant, emollient and moisturizer. It binds to hair follicles readily and is a frequent component of shampoos and hair conditioners (in concentrations of 0.1-1%). It coats the hair and seals its surface, lubricating follicles and making strands appear shiny.

In ointments it is mixed with allantoin, in concentrations of up to 2-5%, and is used for treatment of sunburns, mild burns and minor skin disorders.

Panthenol is not, however, absorbed through the skin and thus has limited effects that are not due to its provitamin character.

If ingested, panthenol is metabolized to pantothenic acid.

### Cosmetic applications:

Panthenol is used in skin care, hair care, nail care, sun products, after sun.

## PEANUT (ARACHIS HYPOGAEA) OIL

**Peanut oil** (*Arachis hypogaea* oil) is a vegetable oil derived from peanuts. In the UK it is marketed as 'Groundnut Oil'.

It is suspected that the wild form of groundnut, which was first domesticated during the 3rd-2nd millennium B.C., in the Colombian Andes, originated in Brazil. It was first described by the Spaniard, Oviedo, in 1547. In the 16th century, it reached Africa, with the slave trade, subsequently finding its way as far as Indonesia.

The groundnut did not catch on in Europe until the 19th century. Today, it is cultivated in India, China, the southern USA, West Africa and South America. Seeds contain approx. 45% oil.

### Description:

The peanut, or Groundnut (*Arachis hypogaea*), is a species in the legume family Fabaceae native to South America, Mexico and Central America. It is an annual herbaceous plant growing to 30 to 50 cm tall. The leaves are opposite, pinnate with four leaflets (two opposite pairs; no terminal leaflet), each leaflet 1 to 7 cm long and 1 to 3 cm broad. The flowers are a typical peaflower in shape, 2 to 4 cm across, yellow with reddish veining. After pollination, the fruit develops into a legume 3 to 7 cm long containing 1 to 4 seeds, which forces its way underground to mature.



*Arachis hypogaea*  
Cacahuete / Cacahuete

### Constituents of Peanut oil:

Peanut oil is rich in unsaturated fatty acids and Vitamin E. Its major component fatty acids are palmitic acid, oleic acid and linoleic acid. The oil also contains some 6-8% (total) of arachidic acid, arachidonic acid, behenic acid, lignoceric acid and other fatty acids.

### Properties of Peanut oil:

Moisturizing, soothing.

### Cosmetic applications:

Peanut oil is used for its soothing and moisturizing properties. At Spas Peanut oil is used as a massage oil.

## PEARL EXTRACT

**Pearl extract** is a natural marine complex, that may support the regulation of complexion and rejuvenation from dry to tired skin. All over the world pearls have a tremendous reputation as a symbol of perfect beauty. Pearls consist of the mineral aragonite ( $\text{CaCO}_3$ ) and traces of conchiolin, a silk fibroin like protein compound. Traditional Chinese medicine believe the valuable minerals and essential amino acids from pearl powder can nourish the skin and slow down aging processes by improving the metabolism, supporting moisturisation and protecting against environmental damage effects.

### Description:

Pearls are formed by the Oyster when it is confronted by a foreign body introduced into its tissues. In a defense reaction, the oyster secretes a fine Aragonite layer around this intruder over a period of time. Pearl extract is obtained by a special solubility of refined high quality freshwater pearl powder in a sea mineral water basis.



**Pearls**

### Constituents of pearl extract:

Aminoacids, minerals and trace elements.

### Properties of pearl extract:

Revitalisation, protection, hydration, remineralisation.

### Cosmetic applications:

Pearl extract is used as an additive in moisturizing creams, face masks, lotions and shower gels, for anti aging and fortifying hair care.

## PEAT EXTRACT

**Peat** has traditionally been used in the soothing baths that purify, regenerate and medicate the whole body. Peat extract is rich in humin acid, which enhances the blood circulation and makes the skin smooth and supple.

### Description:

Peat is an accumulation of partially decayed vegetation matter. Peat forms when plant material, usually in marshy areas, is inhibited from decaying fully by acidic and anaerobic conditions. It is composed mainly of marshland vegetation: trees, grasses, fungi, as well as other types of organic remains.



**Peat exploitation**

### Constituents of Peat:

Humin acid.

### Properties of Peat extract:

Peat extract contains humin acid. Humin acid enhances the blood circulation and makes the skin smooth and supple.

### Cosmetic applications:

Spa products, masks.

## PEG-6 CAPRYLIC/CAPRIC GLYCERIDES

**PEG-6 Caprylic/Capric Glycerides** is a surface active, water soluble clear liquid which serves as refatting and solubilizing agent in cosmetic formulations. It improves the pliance of the skin preserving its lipid content, especially after cleansing, which causes defatting of the skin.

### **Description:**

PEG-6 Caprylic/Capric Glycerides is a polyethylene glycol derivative of a mixture of mono-, di- and triglycerides of capric acids with an average of 6 moles of ethylene oxide.

### **Properties of PEG-6 Caprylic/Capric Glycerides:**

PEG-6 Caprylic/Capric Glycerides is recommended as a refatting agent in cosmetic and pharmaceutical preparations. In aqueous alcoholic formulations, such as after-shaves, it is able to prevent skin contraction. In aqueous formulations such as tonics it is able to solubilize fragrances and essential oils.

### **Cosmetic applications:**

Cleansing preparations, after shaves, tonics, mild foam bathes.

## PEPTIDE COMPLEX AGAINST EYE PUFFINESS AND DARK CIRCLES

The unique Peptide Complex used in Bi-Care Eye Cream consists of specially purified soy and rice peptides, and biotechnologically produced yeast protein. It reduces dark circles and unsightly puffiness around the eyes.

### Description:

The unique Peptide Complex used in Bi-Care Eye Cream exerts a positive, localized effect on the hemodynamic properties of blood to improve oxygen supply to the tissue. *In vitro* tests have shown a significant reduction in the rate of blood clotting. Because the complex inhibits elastase and collagenase, it reduces the harmful effects of chronic UV radiation on the connective tissue to help the skin retain its natural firmness. With the help of oxidoreductase, the amount of free radicals, and thus inflammation processes, are minimized, resulting in a visible reduction of puffiness around the eyes.



### Constituents of the peptide complex:

Hydrolyzed rice bran protein, oxido reductases, glycine soja (soy bean) protein

### Properties of the peptide complex:

Improves blood hemodynamics and microcirculation, reduces the proteolytic breakdown of the collagen and elastin matrix, reduces the presence of free radicals.

### Cosmetic applications:

Facial care products, anti-ageing eye care creams and gels

## PERFECT BUST COMPLEX

**Perfect Bust Complex** is a plant based complex of active ingredients supporting the natural process of lipid deposition lending fullness to the bust. The complex of active ingredients has been developed and tested specifically for application to the breast and cleavage area. Its active principle is based on the synergistic action of its ingredients; Mangosteen, Quince-Hydrogel and Chlorella Vulgaris/Lupinus Albus Protein Ferment. It re-shapes the contours of the cleavage area and optimally accentuates the feminine features.

### Description:

The breast consists largely of fatty- and connective tissue. Stimulating the formation and storage of additional fat reserves enlarges the volume of the breast. Pericarp extracts of the Mangosteen fruit, composed uniquely of xanthenes, flavonoids and alkaloids, were used to enhance the naturally provided capacity of lipid storage. In addition, the breast and cleavage assumes a support function which keeps the breast “in shape”. Quince-hydrogel – with its film-forming and holding properties – supports the “supporting” function of this skin area by enhancing elasticity. The Chlorella Vulgaris/Lupinus Albus Protein Ferment boosts the formation of cell adhesion proteins and improves the mechanical firmness of the skin.



The active ingredients of perfect bust complex support the natural process of lipid deposition lending fullness to the bust

### Constituents of Perfect Bust Complex:

Mangosteen, Quince –Hydrogel, Chlorella Vulgaris/Lupinus Albus Protein Ferment.

### Key benefits – scientifically substantiated claims:

1. Activation of lipid accumulation (in vitro) – Lipogenesis in human adipocytes.
2. Volume-Effect (in vivo) – Added breast volume accentuates femininity and lends fullness to the cleavage.
3. Firming Effect ( in vivo) – Improved skin elasticity in the cleavage area firms the breast and smoothes its surface.

### Cosmetic applications:

Special care for breast enlargement; cleavage care for firming the skin texture

## PISUM SATIVUM EXTRACT

**Pisum sativum extract** is obtained from the seeds of *Pisum sativum* L. (peas). It is an botanical anti-enzyme complex for firmness and elasticity. The peptidic active ingredient protects collagen and elastin against the deleterious effects of proteases activated during aging and stress. Besides

### Description:

A pea is most commonly the small spherical seed or the seed-pod of the legume *Pisum sativum*. Each pod contains several peas. Although treated as a vegetable in cooking, it is botanically a fruit. *Pisum sativum* is an annual plant, with a life cycle of one year. It is a cool season crop grown in many parts of the world; planting can take place from winter through to early summer depending on location. The average pea weighs between 0.1 and 0.36 grams. The wild pea is restricted to the Mediterranean basin and the Near East. The earliest archaeological finds of peas come from Neolithic Syria, Turkey and Jordan.



**Peas in a pod**

### Constituents of pisum sativum extract:

Peptides.

### Properties of pisum sativum extract:

Anti-elastase, anti-collagenase and anti-free radicals properties, strengthening skin elasticity, long-lasting hydroregulator.

### Cosmetic applications:

*Pisum sativum* extract can be used for anti-aging, firming, moisturizing care.

## PLANT-BASED CELLULITE ACTIVE SUBSTANCE

**Plant-based cellulite active substance** is an active ingredient designed for slimming treatment of stubborn adiposities. The complex is an association of three actives of vegetal origin: extract of *Glaucium flavum*, extract of *Euglena gracilis* and caffeine. It facilitates the gentle and selective shedding of adipocytes.

### Description:

Aesthetic medicine has developed powerful ultrasound instruments, which, when applied to the skin, induce destruction of cells and release of their contents in the form of a lysate. Once adipocytes have been disrupted, chemotactic signals activate the body's inflammatory response mechanisms. Macrophage cells are attracted to the area to engulf and transport the lipids and cell debris. This results in an overall reduction in local adipose tissue volume. Plant-based cellulite active substance is based on an approach derived from ultrasound technology. It promotes the unbinding of adipocytes from the extracellular matrix through the stimulation of specific protease involved in the 3-dimensional tissue remodelling.



The application of **plant-based cellulite active substance** leads to significant decrease in fat thickness and volume on the tights after 2 months.

### Constituents of plant-based cellulite active substance :

Extract of *Glaucium flavum*, extract of *Euglena gracilis* and caffeine.

### Key benefits – scientifically substantiated claims:

2. Lipolysis activation (glycerol release) - (in vitro)
3. Triglyceride stock reduction and adipocyte shedding (in vitro)
3. Prevention of adipocyte differentiation (in vitro)

### Cosmetic applications:

Slimming procuts, anti-cellulite products.

## POLYSACCARIDE $\alpha$ -GLUCAN

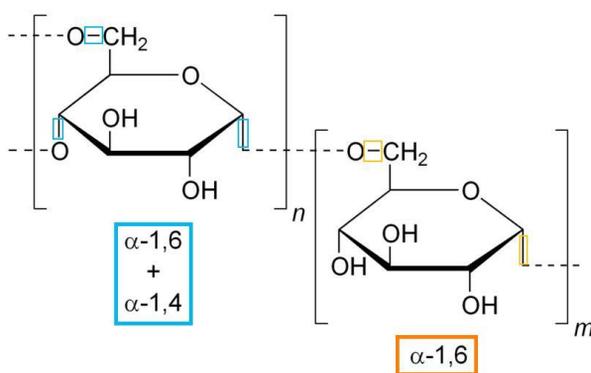
**Polysaccharide  $\alpha$ -glucan** is isolated and purified from a yeast called *Candida saitoana*. This natural active ingredient stimulates autophagy, the cellular detoxification system. It detoxifies cells by removing altered cell components (for example oxidative proteins and lipids). The detoxification process of the ingredient helps to reduce the signs of ageing and is recommended for regenerating and detoxifying skin care products.

### Description:

In order to maintain longevity, cells must rid themselves of superfluous and altered constituents. One biological pathway is the autophagy process.

Autophagy (from the Greek words, *auto* "self" and *phagein* "to eat"), is a mechanism that involves cell degradation of unnecessary or dysfunctional cellular components. It is responsible for the elimination of large-dimensioned bulky waste. One example is lipofuscin, a brownish matter composed of oxidized proteins and lipids. These conglomerates become visible on the surface of the skin and are known as age spots.

Polysaccharide  $\alpha$ -glucan boosts the autophagy system. It reduces level of oxidized proteins and lipids and improves skin complexion.



**Polysaccharide  $\alpha$ -glucan**

### Key benefits – scientifically substantiated claims:

Polysaccharide  $\alpha$ -glucan boosts the autophagy system: in vitro studies with cell cultures of human keratinocytes and fibroblasts show that polysaccharide  $\alpha$ -glucan is able to increase autophagy by 19% and to reduce the accumulation of the protein membrane complex lipofuscin by 35%. Tested in vivo at 3% the yeast extract was shown to improve skin radiance.

### Cosmetic applications:

Regenerating, repairing and detoxifying skincare.

## POMEGRANATE (PUNICA GRANATUM) FLOWER EXTRACT

**Pomegranate Flower Extract** is a concentrated extract of pomegranate flowers (*Punica granatum*). The extract inhibits the production of MMP-1, an enzyme in the human body, also known as interstitial collagenase and fibroblast collagenase. MMPs are involved in the breakdown of extracellular matrix in normal physiological processes. Specifically, MMP-1 breaks down the interstitial collagens, types I, II, and III.

### Description:

The pomegranate (*punica granatum*), which is located in Pakistan, India and China grows as a small green tree and reaches heights of up to 5 meters. It grows up to 3 meters wide and can reach a few hundred years. The bark is reddish brown to gray. The young branches are often quadrangular, later they become stalked and often end in a thorn. The more or less juicy leaves are divided into leaf blade and petiol. The flowering period is spring and summer. The flowers stand at the end individually at the twigs, with a length of 2 to 3 centimeters and a diameter of 1 to 1.5 centimeters they are relatively large, urn- to bell-shaped and orange-red. The apple-like, nearly spherical berry fruits reach a diameter up to 13 cm.



**Pomegranate flower and fruit**

### Constituents of pomegranate flower extract:

Tannins

### Properties of Pomegranate flower extract:

Pomegranate flower extract inhibits the production of MMP-1 which is a major protein involved in collagen breakdown. Reduces wrinkles.

### Cosmetic applications:

Skin care, anti-aging products.

## QUINCE (CYDONIA OBLONGA) HYDROGEL

Highly concentrated Quince-hydrogel, extracted from the seed of the fruit by means of a gentle extraction procedure, is an active ingredient in Perfect Bust Complex.

### Description:

The quince, or *Cydonia oblonga*, is the sole member of the genus *Cydonia* and native to warm-temperate southwest Asia in the Caucasus region. It is a small deciduous tree, growing 5–8 m tall and 4–6 m wide, related to apples and pears, and like them has a pome fruit, which is bright golden yellow when mature, pear-shaped, 7–12 cm long and 6–9 cm broad.

The quince became known as the fruit of the Goddess of Love, Aphrodite. Since antiquity to the present, the quince symbolises love, beauty and fertility. As a fruit, it is highly valued for its high content of polysaccharides, vitamins and minerals.



**The Quince**

### Constituents of Quince hydrogel:

Polysaccharides containing arabinose, xylose, and uronic acids partly esterified.

### Properties of Quince hydrogel:

Antiphlogistic effect, film forming properties, moisturizing properties.

### Cosmetic applications:

Moisturizing creams, conditioning creams.

## RABDOSIA RUBESCENS EXTRACT

**Rabdosia rubescens** is a commonly used herb in traditional Chinese medicine and contains diterpenoids (oridonin), triterpenoids and various other compounds. In China it is used as a remedy for insect bites, snakebites, and inflamed tonsils. Several laboratory studies have shown that oridonin has an anti-inflammatory and soothing action.

### Description:

*Rabdosia rubescens* (*dong ling cao*), formerly called *Isodon rubescens*, is a herbaceous perennial native to China. The plant is short, basil-like. *Rabdosia rubescens* is a source of the diterpenoid molecule oridonin. Extracts from *Rabdosia rubescens* exert anti-inflammatory by reducing inflammation mediators.



**Rabdosia rubescens**

### Constituents of rabdosia rubescens:

Diterpenoids (Oridinon), triterpenoids.

### Properties of rabdosia rubescens extract:

Anti-inflammatory.

### Cosmetic applications:

Anti-ageing, skin lightening.

## RASPBERRY (RUBUS IDAEUS) STEM CELL EXTRACT

Raspberry stem cell extract is a concentrated oil-soluble fraction from raspberry cell cultures. Raspberry stem cell extract stimulates hyaluronic acid synthesis, improves water circulation and reinforces skin barrier.

### Description:

The raspberry shrub is 1 to 2m high; It has herbaceous, often curved and slightly prickly stems. The leaves are hand-shaped, the end leaf is stalked. The egg-shaped leaflets are darker at the top than at the underside, where they are hairy white. The white to pink colored flowers are 5-fold and stand in loose grapes. Flowering period May to June. Occurrence: on sunny woodland shores, on forest edges and embankments.



**Rubus idaeus**

### Properties of raspberry stem cell extract:

- increases the dermal and epidermal hyaluronic acid content
- enhances water and glycerol transport in the epidermis
- helps maintain water and other moisturisers in the skin
- improves the production of ceramides in the stratum corneum

### Cosmetic applications:

Anti-aging, firming and moisturizing products.

## RED CAMELLIA (CAMELLIA JAPONICA) FLOWER EXTRACT

Red camellia extract is an anti-wrinkle agent for aged, sensitive and dry skin. The extract is taken from the red flowers of the *Camellia japonica*, which is native to Japan and Korea. It is an antioxidant, strengthens the skin's resistance to environmental pollutants, and improves skin density, hydration and roughness.

### Description:

*Camellia japonica*, known as common camellia or Japanese camellia, is one of the best known species of the genus *Camellia*. Sometimes called the Rose of winter, it belongs to the Theaceae family. It is a flowering tree or shrub, usually 1.5–6 metres tall. In the wilderness, flowering is between January and March. The flowers appear along the branches, particularly towards the ends, and have very short stems. They occur either alone or in pairs, and are 6–10 centimetres across.



**Camellia japonica**

### Properties of red camellia extract:

Red camellia extract shows a strong anti-aging effect. It has anti-oxidant effect, anti-wrinkle effect, and furthermore it shows an anti-pollution effect. Efficacy studies in vivo and in vitro are available.

### Cosmetic applications:

Red camellia extract is a water-soluble ingredient for aged, sensitive and dry skin.

## RED VINE (VITIS VINIFERA) LEAF EXTRAKT

**Red vine leaf extract** is a standardized dry extract from the leaves of specific varieties of vines (*Vitis vinifera* L.). The red vine leaf is harvested in autumn when the leaves have the highest content of nutrients, including polyphenols and flavonoids. Red vine leaf extract has been scientifically proven to help maintain healthy leg vein circulation, and reduce pain and swelling noticeably. It has a positive effect on the elasticity and density of vein walls, which is why it is used for treatment of heavy, achy and tired legs.

### Description:

***Vitis vinifera*** (common Grape Vine) is a species of *Vitis*, native to the Mediterranean region, central Europe, and south western Asia, from Morocco and Spain north to southern Germany and east to northern Iran. It is a liana growing to 35 m tall, with flaky bark. The leaves are alternate, palmately lobed, 5–20 cm long and broad. The fruit is a berry, known as a grape.

The red vine leaf is harvested in autumn when the leaves change their colour. After harvesting, a special process is used to dry the leaves and extract the nutrients.



**Red vine leaf**

### Constituents:

Red vine leaves contain four to five percent flavonoids, including the substances quercetin and rutin. In addition, tannins as gallocatechin, tartaric and malic acid, minerals and sugars are found.

### Properties:

Red vine Leaves have a positive effect on venous function.

### Cosmetic applications:

Skin care. Products for tired, heavy legs.

## **RSL: REPAIR STIMULATING LIPIDS**

**RSL** delays metabolic and nucleus senescence and encourages ageing cells to act as young cells. It is based on a complex biomimetic lipid, which prolongs cell lifespan by maintaining telomere length. Additionally it protects the cells from oxidative damage, smoothes wrinkles, restructures and densifies the dermis.

### **Telomers and ageing:**

Research has discovered that telomeres, the protective tips of our DNA chromosomes, shorten as we age. This ultimately results in the destruction of the chromosomes and leads to the physical signs of aging. So, if we can prevent the telomere from shortening, or increase telomerase activity, we can prevent the signs of aging.

The nobel prize 2009 in medicine was awarded for discovery of how chromosomes are protected by telomeres. In-vitro tests performed with **RSL** have demonstrated, that it limits telomere (DNA) shortening to ensure optimal replication as a young cell.



**Ageing skin in the eye area**

### **Constituents of RSL:**

Geranylgeranylisopropanol in an oil-soluble excipient.

### **Properties of RSL:**

Visibly reduces the signs of ageing on the face and décolleté. Smoothes wrinkles, restructures and densifies the dermis.

### **Cosmetic applications:**

Anti-ageing products.

## RSL: REPAIR STIMULATING PEPTIDES

### COSMETIC EFFICACY:\*

#### 1. in vitro:

Tests performed with 0,025% **RSL (REPAIR STIMULATING PEPTIDES)** :

**RSL** reduces oxidative Stress (production of intracellular peroxides reduced by 85%) and limits telomere (DNA) shortening to ensure optimal replication as a young cell.

It rebalances the mitochondrial activity, promotes ATP synthesis (+76%). The metabolism is reboosted, which is particularly visible for the cytoskeleton (by +20% of contraction of a collagen gel) and in the synthesis of molecules of the extracellular matrix with +483% of collagen I, +32% of decorin and +33% of hyaluronic acid (on fibroblast cultures).

#### 2. in vivo:

Twice daily application of a cream containing 2% **RSL** for 2 month on the face, arms and décolleté against Placebo.

The tests have shown that **RSL** helps reduce visible signs of ageing on the face and décolleté. It smoothes the wrinkles, restructures and redensifies the skin.

After just one month of treatment, the volume of main wrinkle is decreased by 26,5% and the depth is decreased by 21%. 80% of the panel consider that skin is less creased and much firmer after a 2-month treatment.

\* (References: Product information from the company Sederma)

## RHYOLITE EXFOLIATOR

**Rhyolite Exfoliator** is a fine powder manufactured from lava stones which are processed and accurately screened for cosmetic exfoliation. It is the ideal mineral to regenerate the skin and to smooth down the epidermis without affecting the hydrolipidic film.

### Description:

Rhyolite is a low density lava, rich in silica (71%) which is formed in the magma of Strombolian volcanoes.



**Rhyolite**

### Constituents of Rhyolite:

Rhyolite is rich in silica.

### Properties of Rhyolite powder:

Rhyolite is an exfoliant powder.

### Cosmetic applications:

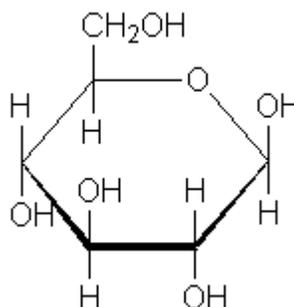
Rhyolite powder is very stable and adapted to any formulation type (cream, gel, paste, powder, soap bars).

## SACCHARIDES

A lot of Janssen cosmeceutical cosmetic formulas contain a highly effective moisturizer that is composed of naturally occurring saccharides. The composition of the saccharide complex is very similar to that of the natural carbohydrate fraction found in the stratum corneum of human skin. It is highly substantive to the skin and binds moisture like a water magnet.

### Description:

The saccharide complex is the outcome of a carefully designed process of isomerization of plant-derived D-Glucose.



**Alpha-D-Glucose**

### Properties of Saccharides:

The saccharide complex, used in the Janssen cosmeceutical cosmetic formulas, regulates and retains moisture in the skin under any conditions. It is highly substantive to skin, binding itself to Keratin like a magnet. Once bound to the skin surface, it cannot be washed off easily. Therefore the removal of the saccharides occurs only by the natural process of desquamation.

### Cosmetic applications:

Day and evening creams, formulations for treating problem dry skin, xerotic skin, UV-exposed skin and aging skin.

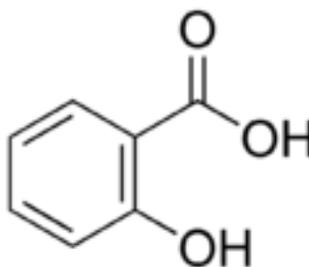
## SALICYLIC ACID

**Salicylic acid** is a beta hydroxy acid naturally found in willow bark, but usually synthesized. Salicylic acid works as a keratolytica. Keratolytica are agents which causes the softening and desquamation of horn cells and thus simplify access for active agents and treatment substances into the skin. It also has anti-inflammatory and anti-bacterial properties.

### Description:

Salicylic acid (from the Latin word for the willow tree, *Salix*, from whose bark it can be obtained) is a beta hydroxy acid (BHA) with the formula  $C_6H_4(OH)CO_2H$ , where the OH group is adjacent to the carboxyl group.

### Chemical structure:



### Properties of salicylic acid:

Salicylic acid provides a keratolytic effect. It works by causing the cells of the epidermis to shed more readily, preventing pores from clogging up, and allowing room for new cell growth.

### Cosmetic applications:

Salicylic acid is used in skin care (oily skin, problem skin) and hair care (anti-dandruff).

## SEA BUCKTHORN (HIPPOPHAE RHAMNOIDES) FRUIT EXTRACT

**Sea buckthorn fruit extract** is obtained from the berries of Sea buckthorn (*Hippophae Rhamnoides*). Sea buckthorn berries are very rich in vitamin C. They have principally been used to help improve resistance to infection. The berries are mildly astringent.

### Description:

Sea buckthorn (*Hippophae rhamnoides*) is one of the important natural resources of the mountainous regions of China and Russia. The plant grows naturally in sandy soil at an altitude of 0.5–6 m, rarely up to 10 m in central Asia. Common sea-buckthorn has branches that are dense and stiff, and very thorny. The leaves are a distinct pale silvery-green, lanceolate, 3–8 cm long and less than 7 mm broad. The female plants produce orange berries 6–9 mm in diameter, soft, juicy and rich in oils.



**Sea buckthorn berries**

### Constituents of Sea buckthorn:

Sea buckthorn is rich in Vitamin C, Vitamin E, Folic acid, Carotenoids, fatty acids, flavonoids.

### Properties of Sea buckthorn:

Local anti-inflammatory, free radical scavenger, astringent, veinotonic.

### Cosmetic applications:

Anti-ageing creams, sensitive skin care, after sun products.

## SEA LAVENDER (LIMONUM VULGARE) EXTRACT

To slow skin aging, *Limonium vulgare* (sea lavender) is utilized and takes aim at mature skin since it offers anti-inflammatory as well as a regenerating action. The ingredient generates better skin cohesion, increases skin defenses and provides a nourishing effect.

### Description:

Sea lavender has oval, erect leaves arranged at the woody plant base. The flower clusters are found only on upper branches of the strong, upright stems. The color of the flower varies from blue or purple to lilac. The rich lavender color gives this plant its name - it is not related to true lavenders, nor does it share their distinctive smell. However, sea-lavenders are much visited by bees, flies and other insects for their nectar.



**Sea Lavender**

### Constituents of Sea Lavender:

Rich in free radical scavengers.

### Properties of Sea lavender:

Anti-oxidant.

### Cosmetic applications:

Anti Ageing cosmetics, mature skin.

## SEA MUD EXTRACT (MARIS LIMUS)

**Sea mud extract (Maris Limus)** is rich in minerals and trace elements. Often sea mud from the Dead Sea is used as in the evaporation of sea water, the sludge takes valuable minerals from the water, including magnesium, calcium, potassium, iron, bromides and bicarbonates. Marine Mud is suitable for the care of all skin types. He is particularly fond applied supportive for skin problems and blemishes.

### Description:

Maris Limus Extract is an extract of marine sediments. The mineral composition of the salt of the Dead Sea is significantly different from the salt composition of sea water. It contains about 50.8% magnesium chloride, 14.4% calcium chloride, 30.4% sodium chloride and 4.4% potassium chloride, based on the anhydrous salts. The remainder is accounted for numerous trace elements. It contains little sulfate, however, a relatively large amount of bromide



**Dead Sea**

### Constituents of Sea Mud extract:

Sea mud is rich in beneficial ingredients, such as minerals and trace elements.

### Properties of Sea Mud extract:

Clarifying.

### Cosmetic applications:

Sea mud is used in masks, especially for oily, blemished skin.

## SENSITIVE-COMPLEX

**Sensitive-Complex** is a synergistic complex of a yeast extract, several botanical extracts and a hydrosoluble vitamin. Rich in saponosides and flavonoids, it strengthens the capillaries, reinforces their resistance and reactivates microcirculation. In addition it has an overall soothing, calming effect. As a result, spider veins and red blotches are reduced and dark circles are diminished. Skin complexion becomes more even, resulting in a younger and healthier appearance.

### Description:

**Sensitive-Complex** contains 1 yeast extract, 5 plant extracts and 1 hydrosoluble Vitamin that have anti-inflammatory, anti-edema, phlebotonic, sedative and healing properties. The skin benefits are the result of synergistic effects from the various components:

- Yeast extract (*Saccharomyces cerevisiae*)
- Butcher's broom (*Ruscus aculeatus*)
- Horse chestnut (*Aesculus hippocastanum*)
- Centella asiatica
- Calendula officinalis
- Licorice extract (*Glycyrrhizia glabra*)
- Panthenol



**Six raw materials from Sensitive-Complex**

**Constituents of Sensitive-Complex:** Panthenol, escin, ruscus aculeatus root extract, ammonium glycyrrhizate, centella asiatica extract and hydrolyzed yeast protein.

### Key benefits – scientifically substantiated claims:

- 1. Mild anti-irritant:** Sensitive-Complex moderates the reactions and soothes skin that overreacts to irritating stimuli of different origins (chemical: detergents; environmental: cold, heat, UV; mechanical; microbial).
- 2. Local anti-inflammatory and anti-edema:** Sensitive Complex has a preventive and repairing action on sensations of local warmth, diffuse redness.
- 3. Local soother:** Sensitive complex reduces the reactivity of sensitive skin.

### Cosmetic applications:

Sensitive complex is ideal for sensitive skin, sun or after sun preparations, after shave care, eye outline care.

## SHEA BUTTER (BUTYROSPERMUM PARKII)

**Shea butter** is obtained from the seeds of the Karité Tree (*Butyrospermum Parkii*) common to West Africa. From these seeds a soft, pliant “butter” is expeller pressed without the use of solvents, making it suitable for use in soaps, cosmetics, toiletries and OTC Pharmaceuticals.

The Ultra Refined grade of Shea Butter is deodorized and filtered using natural clays to render a “butter” which is nearly white and odorless.

### Description:

Shea ( *Butyrospermum parkii* ) is a tree indigenous to Africa, occurring in Mali, Cameroon, Congo, Côte d'Ivoire, Ghana, Guinea, Nigeria, Senegal, Sudan, Burkina Faso and Uganda. The shea fruit consists of a thin, tart, nutritious pulp that surrounds a relatively large, oil-rich seed from which is extracted shea butter.



**Shea nuts**

### Constituents of shea butter:

High content of unsaponifiables.

### Properties of shea butter:

Shea butter is widely used in cosmetics as a moisturizer and an emollient. It is also a known anti-inflammatory agent. Shea butter provides natural ultraviolet sun protection, although the level of protection is extremely variable, ranging from none at all to approximately SPF 6. Sun-sensitive persons should not rely on shea butter for protection. Shea butter absorbs rapidly into the skin without leaving a greasy feeling.

**Cosmetic applications:** Shea Butter melts at skin temperatures, making it ideal for lip and body balms as well as bar soaps, lotions and skin creams.

## SIGESBECKIA ORIENTALIS EXTRACT

**Sigesbeckia orientalis** is the primary source of darutosides. Darutoside enriched total extracts of *Sigesbeckia orientalis* help fight against cutaneous inflammatory processes and stimulate wound healing. They lead to more regular tissue renewal, to normal appearance of the scars and full restoration of elasticity.

### Description:

*Sigesbeckia* is a small shrub native to eastern Asia, which grows particularly well in hot climates. It usually consists of a large, greenish stem, from which shoot off green, oval- or triangular-shaped leaves; the top of the plant contains small, yellow flowers covered with sticky hairs. Its leaves exude a sap-like secretion, which contains a crystalline compound similar to aspirin. Both the aerial parts and the sap are used in herbal preparations.



**Siegesbeckia orientalis**

### Constituents of *Sigesbeckia orientalis*:

The principal active ingredient of *Sigesbeckia orientalis* is Daurososide. The trihydroxy-diterpene structure of Darutoside can be compared to the triterpene structure of asiatic acid (madecassol) extracted from *centellea asiatica*. Its structural similarity might explain its similar properties for the stimulation of collagen synthesis, matrix regeneration and wound healing activity.

### Properties of *Sigesbeckia orientalis*:

Darutoside enriched total extracts of *Sigesbeckia* have been shown to stimulate wound healing and tissue regeneration by way of collagen matrix build-up.

### Cosmetic applications:

Firming treatment, anti stretch mark treatment, anti-age treatment.

## SILK ACACIA (ALBIZIA JULIBRISSIN) BARK EXTRACT

Silk acacia extract is extracted from the bark of *Albizia julibrissin*, the Persian silk acacia. Silk acacia extract promotes a visible reduction in the cutaneous signs of fatigue: dark circles, under eye bags, dull complexion and drawn features. It protects the skin from damage that can be attributed to glycation and repairs this.

### Description:

The silk tree (*Albizia julibrissin*) is a species of tree in the family Fabaceae. Originally based in Southeast Asia, the decorative plant was brought to Europe in the 18th century by Filippo degli Albizia, a nobleman from Florence. The deciduous tree reaches a growth height of 6-8 m. The silk tree was given its name because of its many silky, cream-white, light to dark pink stamens, which look like silky eyelashes. Its leaves slowly close during the night and during periods of rain, the leaflets bowing downward.



**Silk acacia**

### Properties of Silk acacia extract:

Silk acacia extract acts as an anti-fatigue and radiance promoting agent. It promotes the visible reduction of signs of fatigue: dark circles, under eye bags, dull complexion and drawn features. It maintains the cell mechanical viability, optimal energy production, microvascular network integrity and limits the lipofuscin accumulation. Moreover, it regulates melatonin levels of glycation-stressed skin cells, ensuring an optimal repair process during sleep. It fights against glycation during the day and repairs protein structures damaged by glycation during the night, offering a 24-hour treatment.

### Cosmetic applications:

Facial care, personal care for men, eye care products.

## SKIN DEFENSE-COMPLEX

**SKIN DEFENSE-COMPLEX** was developed especially for the demands of sensitive skin. The Complex contains the extract of balloonvine (*cardiospermum halicacabum*), Echium oil cold pressed from the seeds of *Echium planagineum* and unsaponifiable elements of the sunflower. It has an excellent inflammatory effect and normalises sensitive skin.

### Description:

Sensitive skin is easily affected by environmental influences such as fluctuations in temperature, wind or UV radiation. As a result the skin tends to redness, dehydration and irritation. **Skin Defense-Complex** is an active ingredient concept which precisely meets the high demands of sensitive skin.

*Cardiospermum* is effective against itchy and allergenic inflammation of the skin. It harmonizes and protects irritated skin.

Thanks to its stearidonic content from echium oil, **Skin Defense-Complex** has an inflammation inhibitory effect, protects and strengthens the barriers of the skin. Unsaponified parts of sunflower oil provide valuable composition materials, such as phytosterols, tocopherols and squalene.



**Skin Defense-Complex** normalises sensitive skin

### Constituents of SKIN DEFENSE-COMPLEX:

Balloonvine (*cardiospermum halicacabum*) extract, echium plantagineum seed oil, sunflower (*helianthus annuus*) seed oil unsaponifiables.

### Properties of SKIN DEFENSE-COMPLEX:

The efficacy of Skin Defense-Complex is scientifically confirmed:

1. Rapid skin calming after physical irritation (*in-vivo* study)
2. Strengthening of the skin against chemical influences (*in-vivo* study)
3. Reduction of irritation and redness compared to hydrocortisone and panthenol (*in-vivo* study)

### Cosmetic applications:

Sensitive care products, after sun products, after shave products, baby care

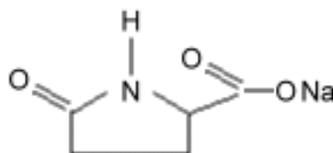
## SODIUM PCA

**SODIUM PCA** is the sodium salt of L-Pyrrolidone Carboxylic Acid (L-PCA). It is a moisturizer that is naturally found as part of the NMF (natural moisturizing factor) in the body.

### Description:

Sodium PCA is Physio-moisturizer obtained by cyclisation of Glutamic acid.

### Chemical structure



### Properties of Sodium PCA:

Sodium PCA has excellent moisturizing effects and safety to skin and eye mucosa. It provides, restores and maintains optimal hydration in the skin's stratum corneum.

### Cosmetic applications:

Moisturizing Creams, lotions, tonics, shower gels etc.

## SORR

**SORR** is a plant based complex of active ingredients that evens and rejuvenates skin complexion. The complex is an association of two plant extracts (*Rabdosia rubescens* and *Sigesbeckia orientalis*). It acts on the 3 visible skin chromophores, genuine ageing markers, by reducing melanin and haemoglobin and improving collagen.

### **Description:**

Skin chromophores are responsible for the colour our eyes perceive. The two main chromophores in the skin are melanin and haemoglobin. The distribution of these two chromophores in young skin is very homogenous. Thus, a young healthy skin has an even complexion. Oxidative stress generated by free radicals enhances skin aging processes and among others stimulates melanogenesis (melanin production and distribution) and affects blood capillaries and microcirculation. These processes result in pigmentation and skin redness. SORR reduces the heterogeneity of the chromophores melanin and haemoglobin and induces even skin tone. Improvement in collagen homogeneity leads to a smoother surface. The consequence is that light reflection is improved and so is skin radiance.

### **Constituents of SORR:**

Extract of *Rabdosia rubescens*, rich in Oridonin and *Sigesbeckia orientalis* extract, rich in Darutosides.

### **Key benefits – scientifically substantiated claims:**

SORR evens and rejuvenates skin complexion. It fights against chromophores aging and skin damage (collagen degradation, inflammation, brown spots) by protecting the skin from oxidative stress. Chromophore mapping revealed a significant decrease in redness and brown spots and improvement in collagen homogeneity.

### **Cosmetic applications:**

Anti-ageing products for face and body.

## SOY ISOFLAVONE

Some of Janssen cosmeceutical OPUS BELLE products contain pure isoflavone aglycones from soy with a high concentration of pure Genistein. Isoflavones are known as phytoestrogens that exert a slight estrogenic effect in humans. The isoflavone Genistein is a protein tyrosine kinase inhibitor. Both, the estrogenic effect and the inhibition of kinases might positively influence skin collagen content and so skin aging. In adipose tissue Genistein produces a lipolytic activity. It has therefore a potential in the treatment of cellulite.

### Description:

The soybean (*Glycine max*) is a species of legume native to East Asia. The plant is classed as an oilseed rather than a pulse. It is an annual plant that has been used in China for 5,000 years as a food and a component of drugs. Soy contains significant amounts of all the essential amino acids for humans, and so is a good source of protein.



**Glycine Soya**

### Properties of Soy Isoflavones:

Stimulation of collagen production, Stimulation of elastin production  
Inhibition of matrix metalloproteinases.

### Cosmetic applications:

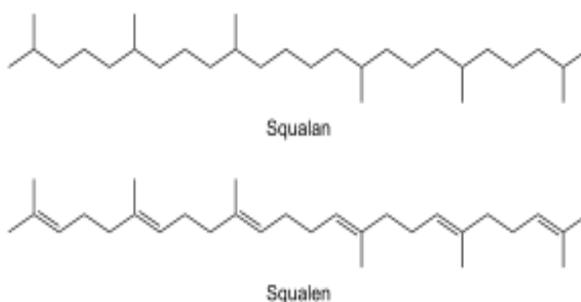
Anti-aging cosmetics, anti cellulite.

## SQUALANE

**Squalane** is an emollient for personal care products derived from olive oil. It is a clear, colorless and odorless oil and has a high stability against oxidation.

**Description:** Squalane (C<sub>30</sub>H<sub>62</sub>) is the saturated form of squalene. It does not contain any double bonds in its chemical structure and therefore is very stable against heat and oxidation. Squalene is an unsaturated hydrocarbon (C<sub>30</sub>H<sub>50</sub>) which is present in vegetable oils, and especially in fish oil. It was traditionally extracted from shark liver oil which, in dependence of the shark species, contains up to 60 per cent squalene. It is of large interest for cosmetics as it is found in human sebum at a level of 12 per cent. Squalene, however, is not suitable for cosmetic formulations because it is highly unsaturated and therefore oxidizes easily. Therefore, it was converted into squalane by hydrogenation and purification. Alternatively, squalane may be obtained from olive oil which has a significant squalane amount from 0.1-0.7 per cent. It has the identical chemical structure as squalane sourced from the shark liver with the benefit of being vegetal in origin.

### Chemical structure of squalane and squalene



### Properties of squalane:

Squalane is a very suitable emollient for cosmetic formulations, has an excellent compatibility with human skin and imparts an elegant non-greasy skin feel.

### Cosmetic applications:

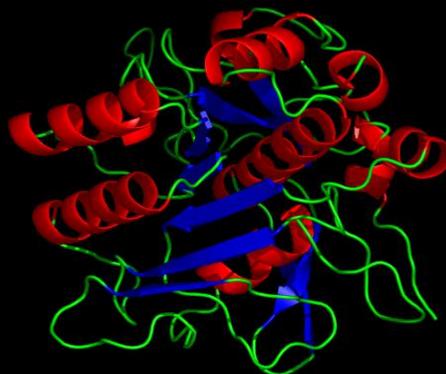
Skin care products, sun and after sun formulations, massage oils.

## SUBTILISIN

**Subtilisin** is an enzyme extracted from *Bazillus subtilis* and belongs to the group of proteases. Proteases may help to slow the visible signs of aging and the damaging effects of environment on the epidermis. They remove the dead cells at the skin surface and increase the cell turn over. Due to the cleansing effect and skin softening action of Subtilisin, skin nutrients such as vitamins or other ingredients can permeate through the surface of skin more easily giving a more healthy skin.

### Description:

Subtilisin (serine endopeptidase) is a protease (a protein-digesting enzyme) initially obtained from *Bacillus subtilis*. Subtilisin belongs to the group of serine proteases which initiate the nucleophilic attack on the peptide (amide) bond through a serine residue at the active site. They are physically and chemically well characterized enzymes. Subtilisins typically have molecular weights of about 20,000 to 45,000 dalton.



Crystal structure of subtilisin

### Properties of Subtilisin:

Moisturizing, keratolytic activity, anti-wrinkles.

### Cosmetic applications:

Moisturizing care, "skin radiance" base, anti-aging preparations.

## TEA TREE OIL

**Tea tree oil** or melaleuca oil is a clear to very pale golden colour essential oil with a fresh camphoraceous odour. It is taken from the leaves of the *Melaleuca alternifolia* which is native to the northeast coast of New South Wales, Australia. The oil has beneficial medical properties (including antiseptic and antifungal action), and also a lot of beneficial cosmetic properties. Aborigines used the leaves traditionally for many medicinal purposes, including chewing the young leaves to alleviate headache and for other ailments.

### Description:

*Melaleuca* is a genus of plants in the myrtle family Myrtaceae. There are well over 200 recognised species, most of which are endemic to Australia. One well-known melaleuca, is *Melaleuca alternifolia*. It is notable for its essential oil which is both anti-fungal, and antibiotic, while safely usable for topical applications.



**Melaleuca alternifolia**

### Constituents of Tea tree oil:

The main component of tea tree Oil is terpinen-4-ol.

### Properties of Tea tree oil:

Anti-microbial, anti-inflammatory, anti-dandruff, soothing, moisturizing, treating nail infections, treating insect bites.

### Cosmetic applications:

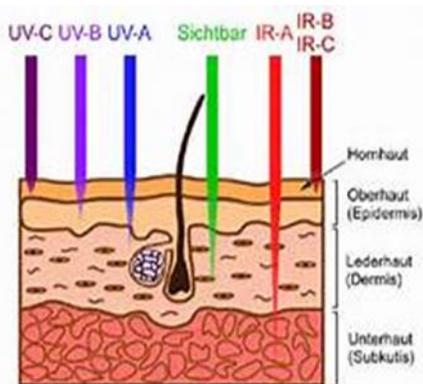
Tea tree oil is used in products against oily skin and acne, nail care, deodorants, oral care, hair care, shaving products.

## THERMUS THERMOPHILUS FERMENT

Thermus thermophilus ferment is a biotechnological enzyme derived from deep-sea organisms that combats IR-induced damage. It decreases inflammatory reactions, improves hydration and protects against oxidative stress. It becomes more effective as the temperature increases, which is why it is especially effective in sun protection products.

### Description:

Infrared radiation (IR) exposes almost half of the sunlight that is exposed to our skin every day. For a long time IR radiation was regarded as harmless. However, the short-wave portion of the infrared spectrum (IR-A) penetrates very deeply into the skin, even deeper than the UVA and UVB radiation. There it attacks the mitochondria, the power plants of the cells. As a result, so-called reactive oxygen species (ROS) are formed. These act like aggressive free radicals and can, for example, break down collagen. Thermus thermophilus ferment counteracts the formation of ROS and protects mitochondrial integrity, which is disturbed by IR radiation. The energy production and the water content in the mitochondria increase and lead to an improved hydration.



**Penetration depth of rays into the skin**

### Properties of thermus thermophilus ferment:

Prevents the visible signs of photo-ageing like spots, wrinkles, and dryness; reinforces cutaneous barrier, improves skin moisture and corneocyte cohesion, protects cells from UV damages, and reinforces skin integrity.

### Cosmetic applications:

Daily protection creams and lotions, sun products, make-up.

## TRIFOLIUM PRATENSE (CLOVER) FLOWER EXTRACT

**Trifolium pratense extract** is an hydroglycolic extract of red clover flowers rich in isoflavones. Isoflavones are non-steroidal hormones. The extract is intended for the treatment of mature skin characterized by dryness, loss of tone and decreased thickness.

### Description:

***Trifolium pratense* (Red Clover)** is a species of clover, native to Europe, western Asia and northwest Africa, but planted and naturalised in many other regions. It is an herbaceous, short lived perennial plant, variable in size, growing to 20-80 cm tall. The leaves are alternate, trifoliate (with three leaflets), each leaflet 15-30 mm long and 8-15 mm broad, green with a characteristic pale crescent in the outer half of the leaf; the petiole is 1-4 cm long, with two basal stipules. The flowers are dark pink with a paler base, 12-15 mm long, produced in a dense inflorescence.



**Trifolium pratense**

### Constituents of *Trifolium pratense* flower extract :

*Trifolium pratense* flower extract is rich in isoflavones.

### Properties of *Trifolium pratense* flower extract :

Anti-wrinkle effect. Improvement of the thickness of the skin. Skin moisturizing.

### Cosmetic applications:

Anti-ageing creams for mature skin.

## **ULVA LACTUCA (Hydrolyzed Ulva Lactuca extract):**

**Ulva lactuca** Linnaeus is a green alga in the Division Chlorophyta. *Ulva lactuca* is also known by the common name sea lettuce.

Hydrolyzed *Ulva lactuca* extract is the hydrolysate of *Ulva lactuca* extract, derived by acid, enzyme or other method of hydrolysis. It contains proteins and it is a botanical substitute for elastin.

### **Description:**

*Ulva lactuca* is a thin flat green alga growing from a discoid holdfast. The margin is somewhat ruffled and often torn. It may reach 18 cm or more long though generally much less and up to 30 cm across. The membrane is two cells thick, soft and translucent. and grows attached, without a stipe, to rock via a small disc-shaped holdfast. Green to dark green in color this species in the Chlorophyta is formed of two layers of cells irregularly arranged, as seen in cross section. The chloroplast is cup-shaped with 1 to 3 pyrenoids.



**Ulva Lactuca**

### **Constituents of Hydrolyzed Ulva Lactuca extract:**

Proteins.

### **Properties of Hydrolyzed Ulva Lactuca:**

Substitute for elastin, collagen precursor, protection of elastin /collagen capital, improvement of skin surface, reduction of wrinkles.

### **Cosmetic applications:**

Anti wrinkle products.

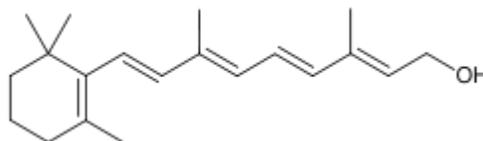
## VITAMIN A / RETINOL / RETINYL PALMITATE

Also called the anti-wrinkle vitamin. Due to its instability Vitamin A is present in nature as beta-carotene, its precursor, in which form it is taken up with food and transformed by the body into retinol. Pure Retinol is the original form of vitamin A which the body can use directly. In general a derivative of Vitamin A (retinyl palmitate) is used in skin care products because it is considerably more stable than its free form. The derivative has to be converted into retinol (Vitamin A) by the body prior to its use.

### Description:

Vitamin A actually refers to a family of similarly shaped molecules: the retinoids. Its important part is the retinyl group, which can be found in several forms. Vitamin A can also exist as an aldehyde (retinal), or as an acid (retinoic acid). Precursors to the vitamin (provitamins) are present in foods of plant origin as some of the members of the carotenoid family of compounds.

### Chemical structure:



### Properties of Vitamin A:

Vitamin A is responsible for the normal texture and functioning of skin and other tissues. It activates the natural regeneration of dermal tissue and improves its elasticity. It counteracts excessive cornification of the skin. Delays formation of premature wrinkles.

### Cosmetic applications:

Vitamin A /Vitamin A palmitate is used in anti-aging and anti-wrinkle products.

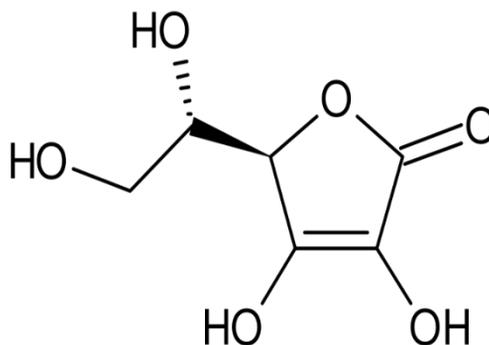
## VITAMIN C (L-ASCORBIC ACID)

**Vitamin C** (L-ascorbic acid) is found in most higher animals and in plants in different amounts. It is synthesized in its pure form but as it is very unstable it has to be protected from water, light, air and heat. It supports the action of vitamin E by regenerating and reactivating it as a radical scavenger. Has itself scavenging properties and is involved in the formation of collagen.

### Description:

**Ascorbic acid** is a sugar acid with antioxidant properties. Its appearance is white to light-yellow crystals or powder. It is water-soluble and must be formulated at low pH to stay active. The L-enantiomer of ascorbic acid is commonly known as vitamin C.

### Chemical structure:



### Properties of Vitamin C:

In clinical studies vitamin C has been found to act as an antioxidant and anti-inflammatory agent. In addition, vitamin C has been found to stimulate collagen synthesis and to reduce dark pigmentation of the skin (e.g. age spots). Thus, vitamin C is also considered an anti-aging ingredient.

### Cosmetic applications:

Skin care, sun care, regeneration, repair, skin whitening.

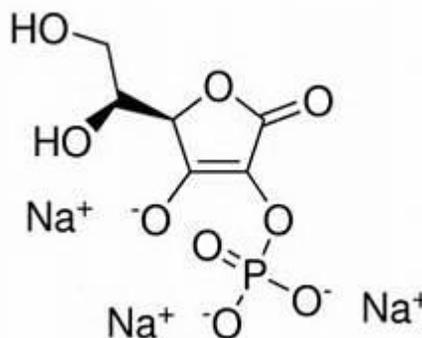
## VITAMIN C-PHOSPHATE (SODIUM ASCORBYL PHOSPHATE)

Stable, water-soluble form of vitamin C that functions as an antioxidant and is potentially effective for brightening an uneven skin tone. There is also research showing amounts of 1% and 5% concentrations of sodium ascorbyl phosphate can influence factors linked to breakouts. Thus, this form of vitamin C may be an effective ingredient for anti-acne products.

### Description:

The beige-colored, powdered sodium ascorbyl phosphate is a stable, water-soluble vitamin C derivative which also penetrates into deeper skin layers. There, skin-own enzymes release the vitamin C from the sodium ascorbyl phosphate. Vitamin C can thus have an extremely effective effect.

### Chemical structure:



### Properties of Vitamin C-Phosphate:

Whitening agent; promotes collagen synthesis; inhibits lipid peroxidation, acts against propionibacterium acnes.

### Cosmetic applications:

Skin care, sun care, regeneration, repair, skin whitening.

## VITAMIN E / TOCOPHEROL / TOCOPHERYL ACETATE

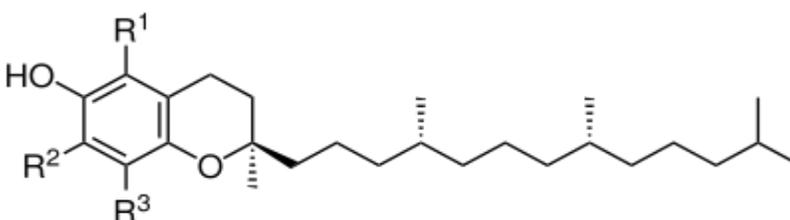
**Tocopherol** (Vitamin E) is a fat soluble vitamin, that reinforces the antioxidative defenses of cell membranes.

Tocopheryl Acetate is an ester of tocopherol and acetic acid, used to bind free radicals, and support cell renewal and cellular oxygen metabolism. In foods, the most abundant sources of vitamin E are vegetable oils such as palm oil, sunflower, corn, soybean, and olive oil. Nuts, sunflower seeds, seabuckthorn berries and wheat germ are also good sources.

### Description:

Tocopherol describes a series of organic compounds consisting of various methylated phenols. Natural vitamin E exists in eight different forms, four tocopherols and four tocotrienols.

### Chemical structure:



### Properties of Vitamin E:

Vitamin E binds free radicals and prevents their destructive action on lipids, cells and cell membranes. Vitamin E promotes the biological stability of the cells and smoothes and strengthens the skin. It has also moisturizing properties.

### Cosmetic applications:

Vitamin E is used in moisturizing creams, sun care, anti-aging products, after sun care, day creams, night creams, body care, hair care.

## VITIS VINIFERA (GRAPE) SEED EXTRACT

**Grapes** specially the red species such as Pinot Noir, are extraordinary rich in polyphenols. By far the biggest part of them are found in the seeds. In this most precious part of the fruit, these antioxidants protect the lipids of the germ bud against oxidative stress. Procyanidins, a group of polyphenols, show a broad spectrum of activity. In recent studies, they are reported to exert anti-inflammatory, anti-arthritic and anti-allergenic activities. Furthermore, procyanidins are very efficient radical scavengers and have therefore been studied as cosmetic ingredients.

### Description:

***Vitis vinifera*** (common Grape Vine) is a species of *Vitis*, native to the Mediterranean region, central Europe, and south western Asia, from Morocco and Spain north to southern Germany and east to northern Iran. It is a liana growing to 35 m tall, with flaky bark. The leaves are alternate, palmately lobed, 5–20 cm long and broad. The fruit is a berry, known as a grape.



**Vitis vinifera**

### Constituents of vitis vinifera seed extract:

The seeds of vitis vinifera are rich in procyanidins.

### Properties of vitis vinifera seed extract:

Protection of the skin from free radicals.

### Cosmetic applications:

Anti-aging, sun care.

## WAKAME EXTRACT (UNDARIA PINNATIFIDA)

**Wakame** (*Undaria pinnatifida*), is a thin and stringy seaweed, deep green in color and used in making seaweed salad and miso soup. Wakame is common in Japanese and other Asian cuisines. The extract of *undaria pinnatifida* is used in cosmetic applications. It maintains skin firmness, elasticity and supports skin regeneration, defends against environmental stress.

### Description:

*Undaria pinnatifida* is a brown seaweed that can reach an overall length of 1-3 metres. It is native to Japan, China and Korea where it is cultivated for human consumption.



**Wakame**

### Constituents of Wakame:

Wakame contains polysaccharides such as sulphated polyfructose, proteins, oligoelements, vitamins.

### Properties of Wakame:

Anti-hyaluronidase, anti-elastase effect, moisturizing, anti-oxidant, stimulation of fibroblasts.

### Cosmetic applications:

Texturing care, eye care, post lifting, sun and after sun care.

## WALTHERIA INDICA EXTRACT

**Waltheria indica** extract is an exotic plant extract rich in flavonoids, which is used for skin lightening products. The exotic plant extract significantly inhibits the tyrosinase activity. As a result, the production of melanin from tyrosinase is slowed down.

### Description:

*Waltheria indica* is a species of flowering plant in the mallow family, Malvaceae, that has a pantropical distribution. It is believed to have originated in Hawaii. The plant is a small shrub 2 to 6 feet tall with velvety hairs covering all parts of the plant. The oblong to oval leaves are up to 6 inches long and 2 inches wide with toothed edges and conspicuous veins. The fragrant yellow flowers grow in small, dense clusters in the leaf axils.



**Waltheria indica**

### Constituents of Waltheria indica extract:

Waltheria indica extract is rich in flavonoids.

### Properties of Waltheria indica extract:

The extract of Waltheria indica reduces the melanin-synthesis by inhibition of the tyrosinase, which is the key enzyme in this process.

### Cosmetic applications:

Anti-age and skin lightening preparations.

## WHEAT (TRITICUM VULGARE) BRAN LIPIDS

**Wheat bran lipids** are produced by a gentle lipophilic extraction process from the hard outer layer of the grain from triticum vulgare. They help to preserve the skin's smoothness and induce the formation of a natural protective film.

### Description:

**Wheat** (*Triticum* spp.) is a worldwide cultivated grass. Wheat is especially rich in lipids, proteins and carbohydrates, and also contains minerals and vitamins.



**Wheat grain**

### Constituents of wheat bran lipids:

Wheat bran lipids mainly contain lipids and liposoluble vitamins (vitamin E).

### Properties of wheat bran lipids:

Emollient, protective.

### Cosmetic applications:

Wheat bran lipids are used for antiaging and skin conditioning.

## WHEAT (TRITICUM VULGARE) PROTEINS

**Wheat protein** is a protein obtained from wheat (*triticum vulgare*). Wheat protein increases the moisture content of the skin, makes the skin smooth and soft and provides a comfortable skin feel.

### Description:

**Wheat** (*Triticum* spp.) is a worldwide cultivated grass. Wheat is especially rich in lipids, proteins and carbohydrates, and also contains minerals and vitamins.



**Triticum vulgare**

### Properties of wheat proteins:

Wheat proteins are strongly absorbed to the skin surface, forming a homogenous film and on drying, they have a tightening effect.

### Cosmetic applications:

Wheat proteins are recommendable to formulate cosmetic products with skin moisturizing and conditioning activity.

## WHITE TEA (CAMELLIA SINENSIS) LEAF EXTRACT

**White tea** is grown in the high mountains of South China in Fujian. A special name for white tea is Pai Mu Tan. Like green tea, white tea is an unfermented tea. However, the leaves are rapidly picked and dried resulting in a purer, more "natural" quality. White tea comes from a rare strain of the tea plant and is harvested only a few days of the year. Once harvested white tea is not oxidized or rolled, but simply withered and dried by steaming. White tea is reported to have a greater concentration of phenolic components than green tea because polyphenols are oxidized or destroyed to a lesser extent during processing. Tannins from tea leaves have anti-microbial, anti-inflammatory and radical scavenging characteristics.

### Description:

***Camellia sinensis*** is a species of evergreen shrub or small tree whose leaves and leaf buds are used to produce tea. It is of the genus *Camellia* of flowering plants in the family Theaceae. Two major varieties are grown: *Camellia sinensis* var. *sinensis* for Chinese teas, and *Camellia sinensis* var. *assamica* for Indian Assam teas. White tea, yellow tea, green tea, oolong, pu-erh tea and black tea are all harvested from one or the other, but are processed differently to attain varying levels of oxidation.



**Camellia sinensis**

### Constituents of Green Tea:

Caffein, theophylline, flavonoids (quercetin, rutin), Catechin tannins.

### Properties of Green Tea:

Stimulant, lipolytic, radical scavenger, soothing, astringent, antioxidant

### Cosmetic applications:

Slimming treatment, cosmetics for tired skin, hair care to improve gloss and strength, bath and shower formulation.

## WITCH HAZEL (HAMAMELIS VIRGINIANA) EXTRACT

**Witch hazel extract** is produced from the leaves of *Hamamelis virginiana*. It is rich in essential oils and tannins, which improve skin micro-circulation and causes a tonic, refreshing, and de-flushing effect.

### Description:

*Hamamelis virginiana* L., commonly known as witch hazel, is a small tree or shrub that grows between 1.5 and 3.5 m in height. The bark is brown and smooth. The leaves are deciduous, elliptic to ovate, margins wavy, asymmetrical at the base, between 7.5 and 12.5 cm long. The flowers are yellow outside and yellowish brown inside, with four characteristic thread-like, about 2 cm long petals. Blooming occurs by the end of Autumn, when the leaves fall. The fruit is a capsule. *Hamamelis* is native to North America. It is cultivated in the United States and Canada. In Europe, cultivation is at the small scale. The leaves must be harvested in Summer. The leaves are almost odourless and have an astringent, mildly bitter, aromatic taste.



**Hamamelis virginiana L.**

### Constituents of witch hazel extract:

Hamamelitannin, cholin, glycosides, acid saponins. Tannins are responsible for astringency.

### Properties of witch hazel extract:

Astringent.

### Cosmetic applications:

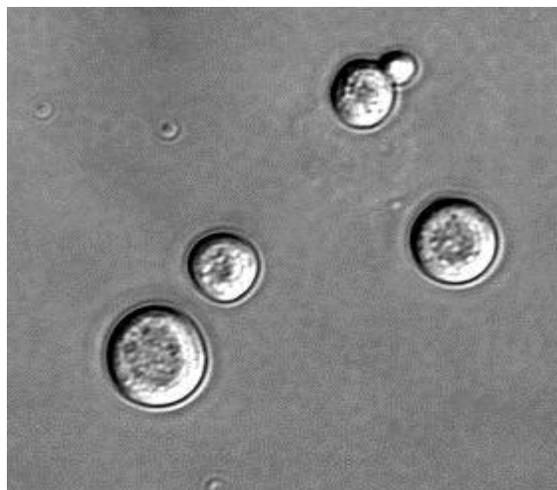
Witch hazel extract is used as an astringent in pre and after shaves, face and hair tonics.

## YEAST (*SACCHAROMYCES CEREVISIAE*) EXTRACT

**Yeasts** are a big group of very different fungi. Well known is the genus *Saccharomyces cerevisiae*, which is used for the production of food (bread) and beverages (beer). Yeasts are composed of many valuable substances like proteins, peptides and amino acids, storage compounds, enzymes and polysaccharides as well as vitamins of the B group. Yeast extract activates the metabolism of cells. It increases the production of ATP, the most important energy source of the cells.

### Description:

*Saccharomyces cerevisiae* is a species of budding yeast. It is perhaps the most useful yeast owing to its use since ancient times in baking and brewing. It is believed that it was originally isolated from the skins of grapes (one can see the yeast as a component of the thin white film on the skins of some dark-coloured fruits such as plums; it exists among the waxes of the cuticle). It is the microorganism behind the most common type of fermentation. *Saccharomyces cerevisiae* cells are round to ovoid, 5–10 micrometres in diameter. It reproduces by a division process known as budding.



*Saccharomyces cerevisiae*

### Constituents of Yeast extract:

*Saccharomyces cerevisiae* contains high proportions of biologically relevant proteins, amino acids, vitamins of the B-group, mineral salts and oligoelements.

### Properties of Yeast extract:

Yeast extract activates the metabolism of cells.

### Cosmetic applications:

Yeast extract is recommendable to formulate cosmetic products with skin stimulating and revitalizing activity.

## YEAST EXTRACT (DEMANDING SKIN)

**Yeast extract** is isolated and purified from a yeast called *Saccharomyces cerevisiae*. It reinforces the dermal-epidermal junction by stimulating the synthesis of anchoring molecules such as collagens and integrins. Because of this effect yeast extract reduces wrinkles, smoothes microrelief and harmoniously redesigns facial contours.

### Description:

In the course of aging, the rate of synthesis of cohesion molecules decreases and their functional properties change. Cells also lose their ability to mutually adhere. The link between the dermis and dermis is not very strong. Yeast extract stimulates the synthesis of “anchoring “ molecules such as

- Collagen IV, the genuine supporting structure of the epidermis
- Collagen VII, the main cohesion molecule
- Integrins, glycoproteins required for repair and tissue healing

Yeast extract maintains the integrity of the dermal-epidermal junction and thereby reduces wrinkles, smoothes skin microrelief and harmoniously remodels facial contours. It is a veritable anti-stress active ingredient for the skin and a must for fatigued skin. It returns tone and youth to the skin.



### Dermal-epidermal junction:

It separates dermis from the epidermis. The wave structure flattens with age. The dermal-epidermal junction has three main roles: it provides mechanical support for the epidermis, keeps contact between the dermis and the epidermis and provides the barrier function that acts as a selective filter.

### Key benefits – scientifically substantiated claims:

Yeast extract reduces the depth of wrinkles (-38%) and smoothes the microrelief of the skin (+20%). The skin has more tone (+8%) and is less fatigued (-30%).

### Cosmetic applications:

Anti-Age and anti-stress products.

## YELLOW HORNED POPPY (GLAUCIUM FLAVUM ) EXTRACT

**Yellow horned poppy (Glaucium flavum) extract** is an active ingredient of the plant-based cellulite active substance. Molecular studies showed that Glaucium flavum intervenes at several links involved in adipogenesis from the preadipocyte stage but also in the reduction of mature adipose storage and volume.

### Description:

**Yellow horned poppy (Glaucium flavum)** is a summer flowering plant in the Papaveraceae family, that may grow to a height of 90 cm. It has large (up to 9 cm ) yellow delicate flowers. The plant is common on beach sand in numerous regions world wide.

Crude extracts, diluted in Water, were used in traditional medicine for the treatment of biliary insufficiency, intestinal spasms and bronchospasm and as an antitussive.



**Yellow horned poppy**

### Constituents of Yellow horned poppy :

Glaucine

### Properties of Yellow horned poppy :

- Activate carnitine transport
- Detache adipocytes by stimulating specific proteases
- Trigger 3-dimensional remodelling of adipose tissue

### Cosmetic applications:

Slimming products

## ZINC OXIDE.

**Zinc oxide** is a mineral with astringent, antiseptic and covering effects. Because it absorbs both UVA and UVB rays of ultraviolet light, zinc oxide can be used in ointments, creams, and lotions to protect against sunburn and other damage to the skin caused by ultraviolet light. It is the broadest spectrum UVA and UVB absorber that is approved for use as a sunscreen by the FDA.

### Description:

**Zinc oxide** is a chemical compound with the formula ZnO.



**Zinc oxide**

### Properties of Zinc oxide:

Mineral UV protection in sun screens, wound healing effect in creams for babies.

### Cosmetic applications:

Sun screens; baby care.

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<b>Description:</b>	
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**Constituents of ...:**

**Properties of ...:**

**Cosmetic applications:**

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