Ingredients Information
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 1.5-1.8x10^6 Dalton. It is a very powerful hydration and film forming agent. Low molecular weight sodium salt of hyaluronic acid has a molecular weight below 1.0x10^6 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-glucuronicacid and D-N-acetylglucosamine, linked together via alternating β-1,4 and β-1,3 glycosidic bonds.

**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.
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.

Copyright: Janssen Cosmetics GmbH D-52005 Aachen (Germany) www.janssen-cosmetics.com 12/04/2011
SENSTIVE-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 (Glycyrrhiza glabra)
- Panthenol

**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-edemal:** 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.

Copyright: Janssen Cosmetics GmbH  D-52005 Aachen (Germany)  www.janssen-cosmetics.com  05/10/2012
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 plantagineum 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 phytosteroles, tocopherols and squalene.

**Constituents of SKIN DEFENSE-COMPLEX:**
Balloonvine (cardispermum 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
**Encyclopedia of Ingredients**

**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.

<table>
<thead>
<tr>
<th>Description:</th>
<th>Chemical structure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisabolol or more formally α-(-)-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 (<em>Matricaria recutita</em>) and <em>Myoporum grassifolium</em>.</td>
<td><img src="image" alt="Chemical structure of Bisabolol" /></td>
</tr>
</tbody>
</table>

**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.
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.

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.
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.

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.
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.

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.
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 C6H4(OH)CO2H, where the OH group is adjacent to the carboxyl group.

**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).
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 Barbadensis 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.

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.
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 und 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.

**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 und protect the skin from stress and photodamage.

**Cosmetic application:**
Global anti-ageing products, anti-stress skin care products, day care products.
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.

**Constituents of apple stem cells:**
Apple stem cells are rich in epigenic 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.
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.

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.
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 (α-MSH), which plays an important role in skin pigmentation process. Lipo aminoacid acts as an α-MSH antagonist.

Description:

α-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 α-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.
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 Siegesbeckia 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 melanogonesis (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.

<table>
<thead>
<tr>
<th>Constituents of SORR:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extract of Rabdosia rubescens, rich in Oridonin and Sigesbeckia orientalis extract, rich in Darutosides.</td>
</tr>
</tbody>
</table>

**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.
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 α-glucan boosts the autophagy system. It reduces level of oxidized proteins and lipids and improves skin complexion.

**Key benefits – scientifically substantiated claims:**
Polysaccharide α-glucan boosts the autophagy system: in vitro studies with cell cultures of human keratinocytes and fibroblasts show that polysaccharide α-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.
ALGAE EXTRACT

Algae Extract is obtained by extraction of sea algaes. 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.

Constituents of Algae extract:
Alginic 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.
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.

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.
SACCHARIDES

A lot of Janssen Cosmetics 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.

Properties of Saccharides:
The saccharide complex, used in the Janssen Cosmetics 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.
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 cell waste obstructs the vitality of cells and causes them to age prematurely.

Description:
Proteasomes are protein complexes which are located 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.

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.
Yeast (Saccharomyces cerevisiae) Extract

Yeast 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.

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.