Nutrition
STANDARDIZED PLANT EXTRACTS
**Zynamite®**
**Boosting mental and physical energy**

Zynamite® increases alertness and mental activation, and boost physical energy, without the undesirable side-effects of the caffeine.

Zynamite® is the healthy way to replace caffeine with a botanical ingredient without the side-effects of caffeine and actually works better than caffeine, while retaining the experiential effect. Zynamite® is the Nektium’s patent-pending proprietary Mangifera indica extract, launched at vitafoods Europe 2018, and getting the Nutraingredient award.

**Cognitive health (clinical studies)**
- Rapid onset of mental activation
- Faster reaction time
- Increase performance

**Sport Performance (clinical studies)**
- Sustained energy
- Increase power
- Doping free

**Safety & Information**
- Own safety data: AMES, 14-day and 90-day Repeated Dose oral gavage toxicity study, NOAEL..., and new soon coming.
- GMO, BSE/TSE free, Doping free, DNA barcode, Vegan, Kosher, Halal, traditionally used in food, registered in different countries in Europe, Australia, New Zealand, USA (self GRAS i.p.)

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**Newsroom**

**Latest news or studies published**

**Zynamite®**: Zynamite® (Mangifera indica Leaf Extract) and Caffeine Act in a Synergistic Manner on Electrophysiological Parameters of Rat Central Nervous System

**Zynamite®**: Enhancement of Exercise Performance by 48 Hours, and 15-Day Supplementation with Mangiferin and Luteolin in Men


**Shagandha®**: Sabinsa Shagandha® Ashwagandha Root Extract 2.5% Designed to Meet USP Monograph, Verified by Prominent Botanical Testing Expert Alkemist Labs

**Nigellin®**: Comparative immunomodulatory activity of Nigella sativa L. preparations on proinflammatory mediators, Asthma Potent Favorable Immunomodulation in Asthma Inflammation

**Lactospore®**: Probiotic LactoSpore® may improve cholesterol levels, study suggests

**Lactospore®**: Irritable bowel syndrome: a randomised, double-blind, placebo controlled, multi-centre, pilot clinical study

**C3 Complex®**: New Diabetic Research on C3 Complex® and Bio-Perine® Combination Published

**C3 Complex®**: Research on Curcumin’s Positive Effects on Microbiome

**DigeZyme®**: Demonstrated Efficacy in Management of Dyspeptic Symptoms with Functional Dyspepsia: Published Clinical Study

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**Immune & Joint health**

**Red Marine Algae**

Traditionally consumed as a sea vegetable, red marine algae is celebrated for its health benefits.

The Red Marine Algae extract from Gigartina skottsbergii is rich in carrageenans and sulfated polysaccharids including fucoidan and is standardized to over 30% total polysaccharides (incl. sulfopolysaccharides).

Publications indicate neuroprotection, reduced inflammation and degeneration of cartilage, improved sports performance, anti-fatigue activity (neuroprotection), prevention of obesity, immune stimulatory activity. It has also been shown to be a potent inhibitor of the in vitro replication of Herpes simplex virus.

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**Lycopene 10% / Tomato**

Lycopene 10% UV from Lycopersicon esculentum (tomato), from a reliable and cost effective source

Lycopene, a carotenoid, is transported by the lipids of the blood and accumulates in certain organs, in particular in the liver and the prostate. Epidemiological studies have shown that lycopene are powerful antioxidants that can provide protection against oxidative damage and limit the development and progression of many tumors.
Nektium’s new facility and ID Testing Program

Nektium opened on 2018 its new facility in Las Palmas area. 10,000 m² manufacturing facility with a processing capacity of up to 20mT raw material per day and 350 m² in 3 laboratories (physico-chemical, cell and molecular biology).

ID Testing Assessment Program & Quality

- Nektium conducts rigorous identity procedures to each lot of plant material, including macroscopic, sensorial and UHPLC chromatographic profiles, combined with identity confirmation by DNA-barcode analysis.
- The PhD-qualified analytical chemists work in a dedicated physico-chemical laboratory with advanced analytical instrumentation, including UHPLC-DAD/MS and GC-MS.
- They have cGMP certification for the manufacturing of nutraceutical ingredients, and current Food Safety System Certification, FSSC 22000.
- Their products are Kosher and Halal certified.

Promond™
Almond protein powder for sport

Promond™ almond protein is a water-soluble 50% protein sourced from Indian variety of almonds.

Promond™ is a water extract with a complete array of amino acids, including high levels of branched-chain amino acids (BCAAs). Although its amino acid profile is similar to whey and pea protein, it is particularly high in glutamate, arginine, aspartate, and phenylalanine.

Those concerned about almonds grown in California because of heavy water use in drought conditions won’t have to worry, Promond™ is made from almonds sourced in northern India.

Papain / Bromelain

Papain and Bromelain enter our catalogue, processed in India by a dedicated company specialized on enzymes.

Papain is well known for improving digestion and treating infections, diarrhea, and allergies. It has also been used, with other protease to reduce pain, inflammation, and swelling. Grades: 1.5 to 3.5 FIP

Bromelain is a cysteine protease isolated from pineapple stem, for digestion, allergy and inflammation. In vitro and in vivo studies demonstrate that bromelain exhibits various fibrinolytic, anti-edematous, antithrombotic, and anti-inflammatory activities. Grades: 200 to 5 000 GDU

Correspondence in between the different units are mentioned in this brochure

BECARRE Natural gets Organic Certification

BECARRE Natural is proud to announce that Organic certified plant extracts are now part of our portfolio.

In the respect of our marketing view, we’ll still focus on standardized plant extracts, with high assay of actives, although we know that this will limit the number of available plant extracts to be promoted.

enXtra™ / Alertness and Focus

Clinically proven to improve alertness and focus up to 5 hours with and without caffeine

EnXtra™ can either replace caffeine, providing a non-caffeinated mental energy boost or it can accompany caffeine to Amplify Caffiene benefits and reduce caffeine induced crash. EnXtra™ is fully water soluble with mild taste and lovely tea color.

Extracted from rhizomes of Alpinia galanga, grown in pollution free hilly terrain, is a DNA-authenticated. EnXtra™ is ideal functional ingredient for energy drinks (with or without caffeine), and many other various forms.

Nigellin® / Asthma
A time honored remedy

Sabinsa’s Nigellin® BCS is obtained from the seeds of Nigella sativa (Black Cumin) and standardized to contain Thymoquinone, Thymohydroquinone, Hederagenin with added Rosmarinic acid.

A study has been published on end 2018 on the anti-inflammatory and immunomodulating properties, where Nigellin® is among the most valued in anti-asthma herbal products. Nigellin had the highest effects in suppressing the release of cytokines IL-2, IL-6 and PGE2 in T-lymphocytes and also in monocytes hindering the expression on IL-2 and PGE2. These are among the most active cytokines involved in asthmatic conditions. The investigators noted a positive relationship between the TQ level in the preparations and its inhibitory potency on IL-6 and PGE2... besides existing and proved properties: glycemic control, healthy blood pressure, lipid profile, male fertility.
Becarre Natural represents, distributes and develops natural actives supported by sciences for nutrition, cosmeceutical and pharmaceutical purposes from manufacturers selected for their seriousness, quality and competencies.

Becarre Natural acts as the centralized European sales and marketing organization for selected manufacturers of plants extracts, either as your local contact or through appointed distributors who are then in direct contact with the manufacturers but followed up by Becarre Natural.

Because industrials are more looking for reliability and know-how than an immeasurable list of products, Becarre Natural focuses on a specific origin of activities: standardized actives extracted from the nature under very strict process of production, with proven efficacy and sustainable resources. As per today, Becarre Natural represents by agreement different manufacturers, including Nektium, Sabinsa Corp., Isocell, Inoreal, … besides few others specific extracts from reputed sources selected by us.

As the right note at the right time makes the music, the right product in the right formulation makes your success. ‘Becarre’ - that you may pronounce ‘be care’ - is the French word for the musical mark which cancels the alterations such sharp sign or flat signs. The English translation is ‘the natural sign’.
Especially recommended for sport, performances, muscles recovery (elderly, post-surgery) or muscles body mass or recovery. As sport induces a post-effort deficiency of the immune health, it may be interested to work on energy, power and after sport.

- **Rhodiolife** [Rhodiola rosea] Immunity post-exercise, protects muscle cells, improves endurance & recovery, adaptogenic, reduces fatigue, neurotransmission
- **Zynamite** [Mangifera indica] Nutraingredient award 2018, higher peak power output, VO2 max and oxygenation, no jitters, nervousness, agitation
- **Promond** [Prunus amygdalus] 50% protein from Indian almonds, 100% natural and vegan, free-flowing powder, good taste, Glu, Arg, Asp, Phc
- **Digizeyme** [Enzymes] Improves proteins intake, benefits on delayed onset muscle soreness
- **Beetroot** [Beta vulgaris] Natural nitrate, betalains & polyphenols (no nitrates nor synthetic nitrates), performance during heavy resistance exercise, stress tolerance
- **enXtra** [Alpinia galanga] Energy booster by blocking adenosine (caffeine-like without side effects), release of dopamine, increases blood flow
- **C3 Complex** [Curcuma longa] Anti-inflammatory, reduces muscle damage during exercise, optimizes recovery processes, weight and cholesterol
- **GlisODin** [Curcumin melo, Gladiine] Immune system, protects against inflammation, DNA damages and induced lactate production, anti-inflammatory cytokine
- **Capsaicin** [Capsicum annuum] Aches & pains in muscles / joints (TRPV1), pain endurance, increases muscle protein synthesis and adrenaline secretion
- **Cococin** [Cocos nucifera] Unique profile of nutrients from tender coconut, isotonic nutrients, blood circulation
- **Fenugester** [Trigonella foenum graecum] Use of proteins in muscles rebuilt (increase deposition of prot., increasing muscle mass), muscle power, libido
- **Hesperidin** [Citrus sinensis] Inflammation reduction (5-LO, TNF-α, HLE), vasodilator, better blood flow, improves exercise performance (NO production)
- **Bromelain** [Ananas comosus] Protein digestion, muscle repairment, inflammation management
- **Boswellin** [Boswellia serrata] Decrease of inflammation, stimulation of immunity after exercise, muscle recovery, acts on 2 pro-inflammatory enzymes
- **Bioperine** [Piper nigrum] Ultimate nutrient enhancer, only 5mg per dose to boost by 150% to 1 000% the bio assimilation
- **CaroTex** [Daucus carota] Beta-carotene formulation with superior bioavailability for increased performance
- **Punicin** [Punica granatum] Adipose in muscles, anti-inflammatory (decrease in triacylglycerol deposits), produces a surge in testosterone, ClNa body weight
- **Resveratrool** [Polygonum cuspidatum] Antioxidant, inflammation, detoxifying
- **FruitDx** [Formulation] Strong and natural in-vivo antioxidant
- **Fucoxanthin** [Undaria] Fat burning in white adipose tissue, thermogenin
- **BGVO bis-glycinato xoo vanadium, organic complex. Building material of bones and teeth. Increases energy / endurance (body builders)
- **Chrysin** 97% Dihydroxyflavone, Anti-inflammatory, Anxiolytic as well
- **Bacoside** [Bacopa moniera] microcirculation / neurotransmission
- **Tribullus terrestris** 45% saponins

**Mental, Alertness**

The effects of stress on memory include interference with a person’s capacity to encode memory and the ability to retrieve information. Age, daily stress and daily needs of attention lead us to seek support to fight anxiety, and strengthen brain alertness. Also includes mental alertness and performance.

- **Zynamite** [Mangifera indica] Nutraingredient award 2018, alertness, focus & concentration, faster reaction time, caffeine-like with no jitters, nervousness, agitation
- **Rhodiolife** [Rhodiola rosea] Cognitive function under stress and fatigue, antidepressant effects, good mood, adaptogenic
- **Centellin** [Centella asiatica] Memory and concentration while reducing anxiety, slows brain aging and helps regenerate neurons (cognitive impairment)
- **Satireal** [Curcica sativa] Acts on the production of neurotransmitters and hormones (serotonin, melatonin and dopamine) via the adrenal glands (SRI)
- **EnXtra** [Alpinia galanga] Caffeine amplifier, focus and mental energy, alertness (sharpens alertness and focus for up to 5 hours), dopamine release
- **GlisODin** [Curcumin melo L. + Gladiine] Prevents impairment memory induced by stress, promotes antioxidant defences in the brain
- **Bacopin** [Bacopa moniera] Memory and neurotransmission enhancer, decrease anxiety level, increase dopamine level, neuroprotector effect
- **Shagandha** [*Withania somnifera*] Increase GABA & receptors activity, reduces stress and relieve anxiety, neuromucous
- **Mucuna** [Mucuna prurens] Natural source of L-dopa, precursor of dopamine, action on the nervous balance (mood disorders, age-related tremors, sleep ...)
- **Curcuma C3 Complex** [*Curcuma longa*] Protective action (reduce inflammation in the brain), associated with Alzheimer’s disease / depression improvements
- **Saberry® / Amla** [Emblica officinalis] Excellent brain tonic, central nervous system
- **Alpha-lipoic acid** Powerful antioxidant, heavy metal chelator, essential cofactor
- **5-HTP** [Griffonia simplicifolia] Serotonin precursor (the ‘happiness hormone’), involved in the regulation of sleep, appetite and mood
- **Ginkgo** [Ginkgo biloba] Reduces the symptoms of anxiety / dementia of vascular or degenerative origin, including memory loss, attention disorders and depression
- **SelenoMethionine** Low plasma Se associat. senility and cognitive decline
Inflammation is a complex process involving a series of actions and/or reactions and a broad range of biologically active substances triggered by the body's immunological response to tissue damage.  

- Boswellin® (Boswellia serrata) Inhibits the synthesis of leukotrienes, constriction of the bronchi in response to allergens, AKBA reduced proliferation of leukemic cells  
- C3 Complex® (Curcuma longa) Anti-inflammatory (COX-2 inhibitor, without side effects unlike NSAIDs), increases the speed of remission of cancerous cells (INF-κB)  
- Nigellin® (Nigella sativa) Anti-inflammatory, positive effect in the context of asthmatic (stud.), anti-bacterial (Gram + germs), anti-fungal, anti-parasitic and anti-viral  
- GliSODin® (Curcumin melo, Gladiine) Immune system, induction Th-1, INF-α-IL-4, regulate cytokines productions, DNA damage, red. allergic asthma and house dust  
- Lactosper® [Bacillus coagulans] Improves Gut Microflora, production of Short-chain Fatty Acids, beneficial activities in gastroenteritis or irritable bowel syndrome  
- Hesperidin® (Citrus sinensis) Inhibition pain, oxidative stress, inflammatory cytokine production and TRPV1, reduction of allergy and hay fever symptoms  
- Bromelain (Ananas comosus) Inflammation management of the gut and joints  
- Andrographis [Andrographis paniculata] Stimulates effects on the immune system, anti-inflammatory and antipruritic properties  
- Mango (Mangifera indica) inhibition of inflammatory modulators in the synovial tissues, hypouricemic effect (decrease serum urate levels).  
- Punicic [Punica granatum] Anti-inflammatory (decrease in triacylglycerol deposits), inhibit prostate cancer metastasis, pro-apoptotic  
- Resveratrol (Polygonum cuspidatum ) Antioxidant, anti-inflammatory effects (inhibition of NFκB and AP-1), mitochondrial activ., activation of the PPARγ pathway  
- Capsaicin (Capsicum annuum) Relieves pain by activating the TRPV1 receptor  
- Ginger [Zingiber officinale] Anti-inflammatory effect (leukotrienes, prostaglandins)  
- Eldeberry [Sambucus nigra] Boosts immune system, sinus pain, excellent sources of antioxidants, helps reduce inflammation and oxidative tissue damage  
- Polysal helps manage inflammation and anti-inflammatory mechanicals strengths of bones  
- Ursolic /Ursolate Inhibition of histamine, lipoygenase and COX  
- Pygeum alleviate discomfort caused by prostatic inflammation  
- Xymenyic stimulates conversion of arachidonic into eicosanoids in the dermis  

Protection, Allergy  

The immune system's ability to fight infectious disease may be compromised by fatigue, aging, stress diseases (and some related medications), and even sport. Different plant extracts exist to strengthen the immune system and assist the body to increase its defenses.  

- Rhodiola® [Rhodia rosea] Stimulates and protects the immune system (homeostasis), increases the natural killer cells (NK), adaptogenic  
- GliSODin® (Curcumin melo, Gladiine) regulate the immune response induction of Th1, in-vivo studies on FIV infected system and children (allergy)  
- Andrographis [Andrographis paniculata] Indian Ph. for colds, flu, fever (even cancer), powerful antioxidant, anti inflammatory and immune  
- C3 Complex® (Curcuma longa) antiinflammatory and immune modulating (tyrosine)  
- Nigellin® (Nigella sativa) Anti-inflammatory, positive effect in the context of asthmatic (stud.), anti-bacterial (Gram + germs), anti-fungal anti-parasitic and anti-viral  
- Hesperidin® (Citrus sinensis) Inhibition pain, oxidative stress, inflammatory, reduction of allergy and hay fever symptoms (inhib, histamine release)  
- Hot Sip [Adhatoda vasica, Alpinia galanga, Gynychiza glabra, Piper longum] Ayurvedic formulation cold and cough  
- Red Marine Algae [Gigartina skottsbergii] Improve functions of the human immune response by the sulfated polysaccharides  
- Adhatoda management of breathlessness, cold and coughs, antimicrobial  
- Eldeberry [Sambucus nigra] Boosts immune system, sinus pain, excellent sources of antioxidants, helps reduce inflammation and oxidative tissue damage  
- Barley β-glucans [Hordeum vulgare] immunomodulator  
- Lactosper® [Bacillus coagulans] Improves Gut Microflora, production of Short-chain Fatty Acids, beneficial activities in gastroenteritis or irritable bowel syndrome  
- Selenomethione Bioavailable and unique composition of selenium  
- Ginger [Zingiber officinale] Anti-inflammatory (leukotrienes and prostaglandins)  
- Fenestrol® [Trigonella foenum graecum] Expectorant, anti fungal and antiparasitic properties  
- Shaganda® [Withania somnifera] Adaptogenic  

Digestion  

Digestion may mean different actions, with possible combinations : Maximize the uptake of nutrients, Improvement of the digestive wellness, as well as the welfare of the intestinal tract, Allow people eating less or just make the most of their diet, Prevent heartburn, ulcers, fatigue, nausea and irritations related to weak digestion + all adaptogenic products :  

- Bromelain (Ananas comosus) Proteolytic activity, helps to better digest., reduces gastric acidity, reduces swelling and flatulence, reduces cellulite (anti-oedematosus)  
- Papain [Carica papaya] Proteolytic activity, helps digest proteins and fats, diuretic and antioxidant properties  
- Lactosper® [Bacillus coagulans] Improves gut microflora, production of Short-chain Fatty Acids, beneficial activities in gastroenteritis or irritable bowel syndrome  
- Licorice DGL® [Glycyrrhiza glabra] Decreases the acidity of the stomach, calms the irritation of the lining of the stomach  
- ElimRe® [Formulation] Help to detoxify the body, assist renal elimination, increase urinary elimination and volume  
- Berberine [Berberis aristata] Indolent ulcers, stomach concerns (supports the healthy bacteria)  
- Triphala [Terminalia bellerica, Terminalia chebula & Emblica officinalis] support digestion  
- Pomegranate (Punica granatum) useful againstFlatulence, difficult digestion, diarrhoea, bloating  
- Nigellin® (Nigella sativa) Draining effect helps in the elimination of toxins in the intestines and lungs, stimulates the digestive and intestinal systems  
- Saberry® / Amla [Emilia officinalis] Stimulates gastric, juices and also support detoxification, protect against the presence, anticancer, antulcer, and cytoprotective properties  
- Curcuma C3 Complex® [Curcuma longa] Allows to make fat soluble for digestion and elimination of fat cells, helps cells with glucose absorption, remove gallstones  
- Capsaicin [Capsicum annum] Stimulates metabolism, increases fat burning, decreases appetite (inc. of GLP-1), anti-inflammatory on H, pylori-induced gastritis  
- Fenufiber and galactomannans stimulates digestion  
- Anticissus protection against ulcers  
- Citrin slow conversion of sugars  
- Boswellia inflammation of intestinal tract  
- Asparagus gastric secretion / ulcers  

Weight, Detox  

Weight may be managed through different ways:  
- Decrease of the amount of certain nutrients, especially fats (less intake, different degradation and digestion/absorption),  
- Reduction of the bio transfer to the cells and muscles (education of the body),  
- Decrease of the storage of the fats, including in the liver,  
- Use of the stored fats.  

- Satireal® [Curcus sativus] Moderate appetite, reduce compulsive snacking, significant and progressive reduction of weight  
- Fuxoxanthin [Undaria pinnatifida] Increase fat metabolism, detoxify the digestive system, facilitating transit, help reduce appetite  
- Elim® [Plant Formulation] Help to detoxify the body, assist renal elimination, increase urinary elimination and volume  
- Bromelain (Ananas comosus) Proteolytic activity, helps to better digest., reduces gastric acidity, reduces swelling and flatulence, reduce cellulite (anti-oedematosus)  
- Papain [Carica papaya] Proteolytic activity, helps digest proteins and fats, diuretic and antioxidant properties  
- Forslean® [Coleus forskohlii] Decreased Body Fat, increased Lean Body Mass by increasing the production of Adenylate cyclase enzyme - CAMP  
- Citrin® / Garcticin® [Garcinia cambogia] Reduction of carbohydrates in stored fat (slow down the conversion of carbohydrates), increases the use of fat  
- Lactosper® [Bacillus coagulans] Improves gut microflora, production of Short-chain Fatty Acids, beneficial activities in gastroenteritis or irritable bowel syndrome  
- Gymnema [Gymnema sylvestre] Promotes the bodies production of insulin, also works on weight management ("sugar blocking" property), sweetness inhibitors  
- Lemon fiber [Citrus limon] Dietary fiber, prebiotic, prevents and relieve constipation, normalizes bowel movements  
- Fabenol® [Phasoleus vulgaris] Alpha-amylyase inhibitor, "starch blocker", benefits in the maintenance of healthy blood sugar levels and optimal body composition  
- Nigellin® [Nigella sativa] Draining effect helps in the elimination of toxins in the intestines and lungs, stimulates the digestive and intestinal systems  
- Saberry® / Amla [Emilia officinalis] Stimulates gastric, juices and also support detoxification, protect against the presence, anticancer, antulcer, and cytoprotective properties  
- Curcuma C3 Complex® [Curcuma longa] Allows to make fat soluble for digestion and elimination of fat cells, helps cells with glucose absorption, remove gallstones  
- Capsaicin [Capsicum annum] Stimulates metabolism, increases fat burning, decreases appetite (inc. of GLP-1), anti-inflammatory on H, pylori-induced gastritis  
- Boswellia inflammation of intestinal tract  
- Asparagus gastric secretion / ulcers
**Cardiovascular**

Some products have been especially studied for their action on Metabolic Syndrome, besides those with properties against oxidative stress, cholesterol, blood sugar level and globally over-weight.

- **GliSODin** ([Curcumin mело, Gliadine]) reduces risk factor of cardiovascular disease, decrease carotid intima-media thickness
- **Berberine** ([Berberis aristata]) Lower cholesterol similar to statins, reduces blood sugar levels in Type II, lowers blood pressure by acting on AMPK
- **Venicin** ([Aesculus hippocastanum]) Helps maintain healthy blood circulation and strengthen the capillaries and veins
- **Curcuma C3 Complex** ([Curcuma longa]) reduces serum concentration of LDL-C, non-HDL-C, total cholesterol, TG and Lp(a), helps cells with glucose absorption
- **Centellin** ([Centella asiatica]) Triterpenic fraction has beneficial effects in people with venous insufficiency and varicose veins, venotoxic activity
- **Hesperidin** ([Citrus sinensis]) Vasodilator action, improves the integrity of the blood vessels
- **Gymnema** ([Gymnema sylvestre]) hypoglycemic effect, hypopilic effect (improves lipids metabolism)
- **Sabbery** ([Emilia officianalis]) Hypocholesterolemia (reduction of LDLc and TH, with high increase in HDL), improves glucose metabolism in Type II
- **Capsaicin** ([Capsicum annuum]) Increases the level of nitric oxide, reduction of sodium retention by the kidneys
- **Resveratrol** ([Polygonum cuspidatum]) Permits reduction of serum concentration of LDL-anti oxidant effect
- **Fenunmannans** ([Trigonella foenum graecum]) improves the blood profile: reduction of LDL cholesterol and triglycerides
- **Ellagic acid** ([Punica granatum]) Decreases the oxidation of LDLc, antioxidant effect, prevents the formation of atherosclerotic plaque (act on paraoxonase (PON 1))
- **Alpha Lipoic** ([Synthesis]) Sugar level, prevents from retinopathy and cardiopathy

**Nutricosmetics**

The skin is the single largest organ of the body. Different factors can cause skin problems: heat, cold, sun... Below is a very short list of available active, without here speaking of the skin lightener / whitener, or only topical.

- **GliSODin** THE most dedicated oral protection of the skin. Increase of the MED (resistance to UV induced erythema or redness), improves tanning speed and quality, drastically decreases the oxidative stress (more than 20 published studies)
- **Melaline** ([black sheep wool hydrolyzate]) reduction of wrinkles and fine lines, increase keratin production, smoother and hydrated skin, sun exposure prep
- **Sabbyer from Ama [Emilia officinalis],** rejuvenative properties. UV protection. Melanogenesis inhibition (In vitro study). Antioxidant activity
- **Lycopene** ([Lycopersicon esculentum]) antioxidant, protects the skin from UV rays
- **Ellagic acid** Inhibits melanin formation (In vit. st.), hyperpigmentation (Clin. st.)
- **Seleno Methionine** bioavailable selenium and methionine, important in the synthesis of keratin and collagen for the structure of skin, nails and hair
- **Hesperidin** ([Citrus sinensis]) inhibits the development of cutaneous edema, neutrophil recruitment, matrix metalloproteinase activity, powerful antioxidant
- **Rosemary Extract** and its conversion into intermediates like rosmanol and galdo-
- **Silbinol from dried heart wood of Pterocarpus marsupium for pterostilbene, potent suppressor of advanced glycation endproducts (AGEs) (In vitro)
- **Punicic from pomegranate, heal, protect, and moisturize dry, cracked, mature, and imitated skin
- **Brown seaweeds, Fucoxanthin** Inhibition of hyperplasia and induce apoptosis And all others showing great antioxidant properties : Fruit Ox, Curcma, etc...

**Blood Sugar**

Malfunction of the regulation of the blood sugar levels can have various causes (Insulin secretion or insulin response, also related to the ingestion of sugar.). Types of diabetes are rated «I» (IDDM: insulin by the pancreas, insulin dependent), «II» (NIDDM, resistance to insulin / non-insulin dependent) or «gestational». Other products may be recommended to manage the consequences (cardiovascular, neuropathy, nephropathy, ...).

- **Gymnema** ([Gymnema sylvestre]) hypoglycemic effect by promoting the bodies production of insulin, clinical studies on Type I and II, hypopilic effects
- **Fabonol** ([Phasorus vulgaris]) Alpha-amylase inhibitory that blocks the digestion of dietary starch, permits maintenance of healthy blood sugar levels
- **Berberine** ([Berberis aristata]) blood sugar levels in people with Type II diabetes (inhibition of α-glucoisudate), and lowering blood pressure by acting on AMPK
- **Cinnamom** ([Cinnamom cassia]) avoid the peak of sugar for longer satiety
- **Lactospore** ([Bacillus coagulans]) Production of Short-Chain Fatty Acids, used for lipogenesis and gluconeogenesis, insulin-glucose through glucagon-like peptide 1
- **Fenunmannans** ([Trigonella foenum graecum]) Fibers or Glucosamantans - Regula-
- **Nigellin** ([Nigella sativa]) Regular consumption can reduce blood sugar levels and insulin resistance, making it an effective remedy for avoiding Type II diabetes
- **Curcuma C3 Complex** ([Curcuma longa]) Effect of curcuminoids on Metabolic Syndrome, helps cells with glucose absorption
- **Ginger** ([Zinger officinale]) Decreases fasting blood glucose and hemoglobin-
- **Curcumic** ([Curcuma longa]) liver detox / sugar level / insulin & sugar (αα-glucoisidase) / insulin & sugar (αα-glucoisidase) / insulin & sugar (αα-glucoisidase) / insulin & sugar (αα-glucoisidase) / insulin & sugar (αα-glucoisidase)
- **Momordin** ([Momordica charantia]) helps cells with glucose absorption
- **Rosemary Extract** and its conversion into intermediates like rosmanol and galdo-
- **Silbinol from dried heart wood of Pterocarpus marsupium for pterostilbene, potent suppressor of advanced glycation endproducts (AGEs) (In vitro)
- **Punicic from pomegranate, heal, protect, and moisturize dry, cracked, mature, and imitated skin
- **Brown seaweeds, Fucoxanthin** Inhibition of hyperplasia and induce apoptosis And all others showing great antioxidant properties : Fruit Ox, Curcma, etc...

**Prostate, Oncology, Tumor**

This is for information only based on available studies and literature, and has no purpose to suggest claim as we here speak of diseases.

- **Boswellin** ([Boswellia serrata]) AKBA reduced viability and proliferation of leukemia cells, inhibits DNA synthesis and cell growth of HL-60 and topoisomerase I and II
- **C3 Complex** ([Curcuma longa]) anti-inflammatory, increases the speed of remission of cancerous cells (downregulation of NF-kB, AP-1, IKK)
- **GliSODin** ([Curcuma mela, Gliadine]) strong action on immune system, recent study on impact on radiation-induced Fibrosis (colon cancer)
- **Phyto** ([Phytochlorella foenum graecum]) protects against diseases related to premature aging of cells such as breast, prostate, colon and gallbladder cancer
- **Ama [Emilia officinalis] Studies on growth of cancer cells in mammary, pancreatic or prostate tumors (cell lines A549, HepG2, HeLa, MDA-MB-231 etc...)
- **Punicic [Punica granatum]** inhibitory effects on prostate cancer growth, angio-
- **Punicic [Punica granatum]** action on PC2 apatity to arrest proliferation and stimulate apoptosis
- **Capsaicin** ([Capsicum annum]) triggers apoptosis of cancer cells in the stomach, pancreas and colon
- **Shagandha** ([Withania Somnifera]) Adaptogenic, delay the process of cellular aging, decrease the activity of acetylcholinesterase and slow down tumor cells division
- **Centellin** ([Centella asiatica]) Slowsl the development of solid and ascites tumors, induce apoptosis in different cancer cell lines (esp. MCF-7, breast)
- **Medicinal Plants and Cancer Chemoprevention**
- **Salaretin** ([Salvia officinalis]) Reduces the risk of cancer.
- **Ginger** ([Zingiber officinale]) Increases the speed of remission and stimulates apoptosis
- **Shagandha** ([Withania Somnifera]) Adaptogenic, reduces blood levels cancer
- **Sabbery** ([Emilia officinalis]) Hypocholesterolemia, improves glucose metabolism in Type II, reduces biomarkers of oxidative stress and inflammation
- **Alpha Lipoic** ([Synthesis]) Sugar level, prevents from retinopathy and cardiopathy
- **Momordicin** sugar level / insulin / Mango sugar (αα-glucosidase) / Silbinol insulin and sugar / Salaretin insulin & sugar / Tulsi sugar level

**Adaptogen**

Adaptogenic herbs demonstrate a nonspecific enhancement of the body’s ability to resist a stressor. Only the most common here:

- **Rhodiola**
- **Ashwagandha & Shagandha**
- **Asparagus (Shatavari)**
- **Ama [Emilia officinalis] or Indian gooseberry**

**Minerals & Others**

You may find the full list by properties or by sectors on the website. Just a quick look at some activities, not mentioned in others.

- **Bioperine:** the ultimate nutrient enhancer, only 5mg per dose to boost by 150% to 1000% the bio assimilation
- **Minerals:** not the common... molybdenum, chromium, vanadium, ...
- **Respiratory support:** Androgaphis, Centella, Elderberry, Adhatoda, Coleus, ...
- **Oils:** Cenoul Forskohlii Oil, Rosemarinic acid, Curcuma Turmeric Oil, Vitek Oil (Artem-
- **Meditarsis, Mustard seed, Policosanol, ...**
**The Natural Sign: Study Plant Extracts**

Our products, whether online or in stores, can be found at over 1000 websites. Double click on the products, which are ready for use at any time, through a web link with quality assurance. Ask for the ticket at the store!

**Best Natural Extract Product Provider – France**

become Natural reporters and develop natural values for nutrition and pharmaceutical purposes. We include Genetic Cultivation to maximize the benefits and the seating effects.

**Rhodiolife®**

Rhodiola rosea is the essential Rhodiola component from the unique Scleractin Abati region with significant phytochemical and therapeutic effects. It is available in three different grades of extract (98% to 100%) and is used in dietary supplements.

Preliminary studies with Rhodiolife® show protection of vitamin A, E, and other antioxidants and stress resistance, as well as increased mental energy.

**NUTRITION**

**Ultimate Anti-aging Ingredient**

proven in published clinical research

Protects against DNA damage, preparation to the sun, anti-aging...

Gisho® (1% patented natriumolotol) ingredient has been shown in clinical research - mostly in vitro - to work on the different facets induced by aging. Gisho® is an easy-to-use proven bio-effective 50% thanks to its unique carrier and protection.

Studies are available at www.nectar-natural.com and www.gisho.org

**Zynamite®**

Caffeine replacement

Innovation launched at Vitafoods 2018

nar 12 billion NKHD

www.zynamite.com

**Natural actives for physical improvements**

Eucarre natural extracts combine and develop standardized natural actives for pharmaceutical, therapeutic and nutritional purposes. All are produced using the highest quality and safety standards.
KEY PRODUCTS

Zynamite®

Mental alertness, Performance, Power, Weight, Caffeine replacement
Nutrainingredient Award Vitafoods 2018
Origin: Nektium (Spain)

Source: Mangifera indica, Leaves
Bio-active ingredients: Mangiferine
Dose: 2 mg to replace 1 mg caffeine, up to 2 x 300 mg
Zynamite is the new product from Nektium, with proven efficacy on mental alertness and performance, as well as for sport, without jitters, nervousness, agitation usually linked to caffeine (2 mg to replace 1 mg).

Mental: improves the alertness, focus and concentration - with faster reaction time, and with no jitters, nervousness, agitation. It activates brain waves and increases Long Term Potentiation in a remarkably similar pattern to caffeine, but without any of the known side-effects.

Sport: higher peak power output, VO2 max and oxygenation, without change in blood pressure or hearth rate.

Other beneficial effects of Mangifera indica: Preclinical studies suggest that it may prevent tumor necrosis factor, with expression of some mediators and enzymes involved in inflammation, pain, oxidative stress and synaptic plasticity. Also reported: Weight management, antidiabetic, anti-infective, antimicrobial, and antioxidant. Inhibition of 5-α- reducetase. Promote endothelial cell migration.

Rhodiolirose®

Immunity, Adaptogen, Memory and attention
Energy, Aids in sports performance
Origin: Nektium (Spain)

Source: Rhodiola rosea – roots from Altai mountains
Bio-active ingredients: rosavins 3-15%, salidroside 1-7%, spray dried or collected profile from the roots to the end-extract.

Dose: 2 to 3 x 200 mg based on 3%. Some studies starting from 50 mg.

Rhodiola rosea has been considered a potent adaptogen for decades. Adapto-genic compounds help the body counteract the effects of stress, they are mostly not toxic to the body and their mechanism of action is non-specific meaning that various organs and systems are impacted upon to restore the body’s balance. Studies available and a complete monograph published by Nektium describes the origin and the efficacy.

Clinical trials with Rhodiola rosea extracts have shown significant improvements in fatigue, exercise capacity and mental performance under stressful conditions. It also reduce the level of C-reactive protein and creatinine kinase in the blood, and assists the immune system (2015) and improve memory and attention (2017).

Nigellin®

Blood Sugar, Liver, gut health, anti-inflammatory, productivity
Origin: Sabinsa (India)

Bio-active ingredients: Thymoquinone (TQ), Thymohydroquinone(THQ) and Hederagenin (H)

Nigellin® from Sabinsa, is a black cumin seed extract obtained by supercritical fluid extraction, standardized in thymoquinone.

Traditionally used in cases of nasal congestion, immune deficiency (and anti-cancer action by Cancer Immuno-Biology Laboratory of Hilton) of the liver, or still headache / throat / tooth. Sabinsa studied various activities including antimicrobial and antiulcer activity (reported synergy with various antibiotics) as well as anti-parasitism, activity on the respiratory system (would act as a natural anti-elastase), or anti-Inflammatory and analgesic. Black cumin is traditionally used in patients with diabetes. Rachid H and col. (2005) have shown that cumin seed has an effect on insulin secretion.

Another activity reported is the help with digestion: Carminative activities facilitate digestion and relieve gas problems in the stomach and intestines. It helps peristalsis and therefore elimination.

New Sabinsa study: Anti-inflammatory and immunomodulating properties are among the most valued in anti-asthma herbal products. Nigellin had the highest effects in suppressing the release of cytokines IL-2, IL-6 and PGE2 in T-lymphocytes and also in monocytes hindering the expression on IL-2 and PGE2. These are among the most active cytokines involved in asthmatic conditions. The investigators noted a positive relationship between the TQ level in the preparations and its inhibitory potency on IL-6 and PGE2.

Nigellin is available as oil (Nigellin BCS - Amber), and defatted black and white powders (Nigellin BCS - Onyx and Nigellin BCS - Pearl, respectively).

Papain

Digestive aid, Antimicrobial, Inflammation
Origin: India

Source: Carica papaya
Bio-activity: 1.5 to 3.5 FIP / mg

Units: 1 FIP = 10 to 12 000 USP = 160-180 TU / 100 TU = 6 000 USP = 0.6 FIP

Papain, a papaya (Carica papaya) fruit latex extract, is a cysteine protease that catalyzes the cleavage of peptide bonds using a catalytic triad involving a deprotonated cysteine residue. Papain is well known for improving digestion and treating infections, diarrhea, and allergies. It has also been used, with other protease to reduce pain, inflammation, and swelling.

It’s also being studied for potential use in cancer and other diseases.

Berberine

Statin-like, Prostate, antimicrobial
Origin: India

Bio-active ingredients: Berberis aristata
Dose: 50 mg three times a day

Traditionally used for more than 2500 years in Chinese pharmacopoeia and Ayurvedic medicine, the berberine was traditionally recommended to reduce blood sugar levels and to lose weight. But berberine also has many other benefits, including acting on the cardiovascular system and intestinal flora. The therapeutic effects of statins and berberine on the hyperlipemia have been widely studied.

Promond®

100% natural and vegan protein obtained from almonds
Origin: Sabinsa (India)

Bio-active ingredients: 50% Proteins

Promond almond protein is a water-soluble 50% protein sourced from Indian variety of almonds (water extract). It has a complete amino acid profile. It is having a complete array of amino acids, including high levels of branched-chain amino acids (BCAAs). Although its amino acid profile is similar to whey and pea protein, it is particularly high in glutamate, arginine, aspartate, and phenylalanine. Those concerned about almonds grown in California because of heavy water use in drought conditions won’t have to worry, Promond is made from almonds sourced in northern India.
**Lycopene**

**Prostate, cardiovascular, antioxidant, sun protection**

**Origin**: India  

**Source**: Tomato, *Lycopersicon esculentum* - Fruit  

**Bio-active ingredients**: Lycopene 10% by UV  

**Dose**: 250mg twice a day in capsule form

Lycopene, a Carotenoid, is transported by the lipids of the blood and accumulates in certain organs, in particular in the liver and the prostate. Epidemiological studies have shown that lycopene are powerful antioxidants that can provide protection against oxidative damage and limit the development and progression of many tumors (including prostate, lung, colon, breast). Insoluble in water, liposoluble.  

**Prostate**: Studies showed that supplementation of 15mg of lycopene twice a day reduced the proliferation of the cancerous tumor. Lycopene would reduce the symptoms that are associated with prostate cancer, such as pain and urination disorders.  

**Cardiovascular**: Like other antioxidants, it prevents LDL (bad cholesterol) from oxidizing. Oxidized LDL is known to promote atherosclerosis or clogging of the arteries and may lead to myocardial infarction and stroke.  

**Sun**: Lycopene, in combination with other carotenoids, reduces the harmful effects of ultraviolet radiation on the skin. It is known that excessive exposure to sunlight can damage skin cells and even lead to skin cancer.

**GliSODin®**

*First orally proven effective SOD*: Sun protection, Antiaging, Metabolic syndrome, Oxidative stress  

**Origin**: Isocell (France)  

**Source**: *Curcumin melo L*, Gliadine  

**Bio-active ingredients**: SOD, Gliadine  

Enzymatic activity of oral free SOD in the body is mainly to totally destroy oxidized LDL, due to its specific bio-adhesive properties with the epithelial cells in the small intestine. The recommended daily dose is 2 x 100mg to 2 x 250mg a day.  

GliSODin® is supported by more than 20 – mostly published - studies:  

- Comparison of the GliSODin versus SOD alone, Protection of cellular DNA 
- Increase of the MED (resistance to UV induced erythema or redness), Skin’s protection against sun and improved tanning speed and quality 
- Regulation of inflammation and decreases oxidative stress 
- Significant decline in lactic acid levels 

**enXtra®**

**Energy, Performance, Focus - Caffeine Amplifier**  

**Origin**: India  

**Source**: *Alpinia galanga*  

**Bio-active ingredients**: Polyphenols, Flavonoids, Tannins  

**Dose**: 300 mg  

EnXtra™ can either replace caffeine, providing a non-caffeenated mental energy boost or it can accompany caffeine to Amplify Caffeine benefits and reduce caffeine induced crash. EnXtra™ is fully water soluble with mild taste and lovely tea color. Extracted from rhizomes of *Alpinia galanga*, grown in pollution free hilly terrain, is a DNA-authenticated.  

**Application**: EnXtra™ is ideal functional ingredient for energy drinks (with or without caffeine), ready to drink beverages of all types, sports nutrition and workout formulas, energy bars, snacks, gummies, fruit juices, chewing gum and stick packs.  

**Studies**: EnXtra™ is supported by 2 human clinical trials. In a 53-person, double-blind, double-dummy human clinical trial, EnXtra™ was shown to improve mental alertness and acuity for up to 5 hours without increasing heart rate or blood pressure.

**Satiereal®**

**Innovative, patented, natural and safe appetite suppressor**  

**Weight losses and good mood**  

**Origin**: Inoreal (France)  

**Source**: *Crocus sativus L.* stigmas, Mediterranean region  

**Bio-active ingredients**: Specific and studied unique profile of crocin, picrocrocin and safranal - it’s more than a saffron extract  

**The daily dose** is 176.5mg (2 x 88.25mg/d) used in tablets, capsules, beverages and instant drinks, confectioneries, etc... Satiereal® is the patented clinically proven satiety ingredient from saffron. The satiety feeling induced by Satiereal® encourages weight loss while eliminating frustration. This product has a unique mechanism that not only creates safety but helps avoid snacking and compulsive eating behaviors, which in turn leads to reduction in weight and inches. Satiereal® is a Serotonin Reuptake Inhibitor (SRI), working so on the general good mood. New studies regularly published.

**Bromelain**

**Inflammation, Allergy, Digestive aid**  

**Origin**: India  

**Source**: *Ananas comosus* - Stem  

**Bio-activity**: 1 200 to 5 000 GDU / g = 2.4 to 10 FIP / mg  

**Units**: 1 FIP/mg = 500 GDU/g  

**Dose**: 200 mg to 2g  

Bromelain is a cysteine protease isolated from pineapple stem, *Ananas comosus*. Bromelain is a mixture of different thiol endopeptidases and other components like phosphatase, glucosidase, peroxidase, cellulase, escharase, and several protease inhibitors. In vitro and in vivo studies demonstrate that bromelain exhibits various fibrinolytic, antiedematous, antithrombotic, and anti-inflammatory activities. When given to treat pain, it must be administered away from food, because it will act as a protein digestive enzyme if consumed with food.

**Fucoxanthin**

**Support healthy body weight / Liver, Antioxidant**  

**Origin**: Nektium (Spain)  

**Source**: Wakame  

**Bio-active ingredients**: Fucoxanthin by UPLC, Fatty acids (PUFA), Fucoxanthin 10% UV powder  

**Dose**: 15 mg fucoxanthin  

The scavenging activity of fucoxanthin is almost 8 times higher than that by fucoxanthinol, and more than 13 times higher than that by alpha-tocopherol. Addition of Fucoxanthin to the diet in rats significantly suppressed the peroxidation level by 785% (plasma) and 24-72% (liver) as compared to beta-carotene (51-76%, 33-65%) over a period of 8 h. Fucoxanthin given topically or orally to mice once a day and UVB irradiation was applied for 14 days. Its topical application (1%) significantly suppressed mRNA expression of inflammation mediators. Oral application of fucoxanthin (10 mg/kg) significantly suppressed expression of COX-2, p53NTR, EP1 and MC1R. Also related - anti-inflammatory, anticancer, anti-obese, antiabetic, antiangiogenic and antimarial activities.

**DigeZyme®**

**Multi-enzyme complex for Digestion and Nutrients**  

**Origin**: Sabirina (India)  

**Dose**: 50 mg per dose, before eating  

A multi-enzyme complex consisting of Amylase (starch digesting), Lipase (fat digesting enzyme), Cellulase, Protease (protein digesting enzyme) and an additional component is the enzyme lactase, which is useful for people suffering from lactose intolerance (positive opinion from EFSA). DigeZyme helps in the digestion of carbohydrates, proteins and fats, which are poorly assimilated by our bodies in cases of unbalanced diets and impaired pancreatic function.
**BioPerine®**

**The anti-inflammatory power of AKBBA**

**Origin:** Sabinsa (India)

**Source:** Boswellia Serrata—Gum resin exudate from the tree

**Bio-active ingredients:** Acetyl-11-keto-b-boswellic acid, b-boswellic acids, boswellic acids

**Dose** is 75 to 200 mg once or twice a day depending on grades

BioPerine® is the most powerful anti-inflammatory extract of Boswellia serrata gum, standardized for its content in not only boswellic acid but mainly AK-BBA, acting on two pathways: 5-lipoxygenase and HLE (Human Leukocyte elastase). Oral or topical use (anti-inflammatory of course, but also anti-wrinkle and skin firmness).

Grades are not titled as «total boswellic acid» - which means nothing in either since all acids are included - but specifically each beta-boswellic and AKBBA (Super grade is even up to 30% AKBBA).

**Curcuma C3 Complex**

**Antioxidant, Preservative, Antimicrobial, Immune system, Anti-inflammatory, Metabolic Syndrome**

**The original, and most studied Curcuma**

**Origin:** Sabinsa (India)

**Source:** Curcuma longa—roots

**Bio-active ingredients:** FREE Curcuminoids (3 fractions) - and not the inactive metabolites as sulphate or glucuronides

**Usual dose** is 3 x 400mg (alone) to 2 x 50mg, with possibly 5mg Bioperine.

**Standard, Direct Compression or even Beadlets grades**

The grade with its own safety data, and more than 100 published studies, mostly available on curcuminoids.com/index.php/benefits/clinical-evidence.

Sabinsa is the world leading manufacturer of Curcuma extract 95%, process- ing in their dedicated plant (2 continuous batch extractors with food solvents), processing roots from their contracted fields. They control the 3 curcumin extracts and their control adulteration with synthetic curcuminoids (a 95% extract includes curcuminoid (70-75%), demethoxy (15-25%) and bis-demethoxy (2.5-6.5%).

Curcuma C3 Complex contains free curcuminoids only, and no inactive metabolites (glucoronic for instance), because all form of curcuminoids are not equal. Some forms can be bioavailable, but unfortunately inactive.

BioPerine® - and its history of more than 20 years of use without any safety alert - improves the availability without changing the form.

Another significant study on Curcumin C3 Complex® (in combination with Bio-Perine®) has been published on end of 2014, showing the significantly greater effect of Curcuminoids in reducing the serum concentrations of LDL-C, non-HDL-C, total cholesterol, triglycerides and Lp(a), when serum HDL-C concentra- tion was elevated significantly. Serum sdLDL levels were comparable and usually referred as the highest quality (and the lowest oxalic content, causing kidney stones, heavy metals).

**Venocin Horse Chestnut**

**Anti-inflammatory, Blood circulation**

**Origin:** Sabinsa (India)

**Source:** Aesculus Hippocastanum (seeds)

**Bio-active ingredients:** Escin (or aescin)

Escin is a mixture of saponins that is known to help maintain healthy blood circulation and strengthen the capillaries and veins.

**ElimReal®**

**Water elimination and detox, weight management**

**Origin:** Inoreal (France)

**Source:** Plant formulation

**Dose**: 805 mg per day

Elim’Real is a patented extract of different plants with complementary activities in detoxifying the body and assisting the renal elimination, which has clinically demonstrated its effectiveness (study on 95 women over 28 days, double-blind against placebo) and allows healthy allegations thanks to some of its compo- nents. It’s a plant formulation from Carvi’s seeds (Carum carvi), Meadowsweet Flower buds (Spirea ulmaria), Guaran’a seeds (Paullinia cupana), Goldendro’s plant (Solidago virgaurea), Fennel’s fruits (Foeniculum vulgare) and Dandelion’s leaves (Taraxacum dens leonis).

ElimReal is easy soluble in water, and may be used in any form of dietary sup- plements.

**Shagandha®**

**Adaptogenic, Rejuvenative tonic, also Antispasmodic and Anti inflammation, Psychological endurance (NSIR), Hair**

**Origin:** Sabinsa (India)

**Source:** Withania somnifera roots

**Bio-active ingredients:** Withanolides (>2.5% HPLC)

**Dose**: 300 mg per day

Ashwagandha, Withania somnifera, is one of the best-known Indian botanicals that has been used in Ayurvedic preparations since the Vedic era, dating back 3000-4000 years. In Ayurveda, ashwagandha is classified as a rasayana, meaning “rejuvenative tonic”. Also referred to by the common name of Indian ginseng (but nothing to see with).

Ashwagandha have multiple therapeutic properties: tonic action, reduce stress and relieve anxiety, neurons protection, increase GABA A receptors activity, de- lay the process of cellular aging, reduce blood sugar levels, improve libido and decrease the activity of acetylcholinesterase and slow down development of tumor cells. Strengthen the cerebral cortex, the adrenals, the hypothalamus, the heart and the liver.

With Shagandha™, Sabinsa assure the authenticity of its ashwagandha ex- tract by complying with the US Pharmacopeia-National Formulary monograph (USP-NF). The company has selected Akemist Labs, botanical specialist, to test the ingredient and confirm its compliance with the USP monograph.

**Centellin®**

**Respiratory, Stress, Blood circulation**

**Origin:** Sabinsa (India)

**Source:** Centella asiatica

**Bio-active ingredients:** Terpenes and asiaticosides

Traditionally use (also known as Gotu kola). Recent studies have validated its uses, especially as a psychotropic in the treatment of various mental disorders, such mental fatigue, epilepsy and hysteria. Centella asiatica could significantly improve the IQ of children and reduce the level of anxiety in adults. Venotonic activity linked to triterpenes.
NUTRITION

Red Marine Algae

Neuroprotection, Inflammation, Immune, Joint, Sport
Origin: Nektium (Spain)
Source: Gigartina skottsbergii – whole seaweed
Bio-active ingredients: polysaccharides (Sulfo-P)
Traditionally consumed as a sea vegetable, red marine algae is celebrated for its health benefits. This red marine algae extract is rich in carrageenans and sulfated polysaccharides including fucoidan and is standardized to over 30% total polysaccharides. Publications indicate neuroprotection, reduced inflammation and degeneration of cartilage, improved sports performance, anti-fatigue activity, prevention of obesity, immune stimulatory activity, ...

Fenugreek

Digestion, Blood Sugar
Origin: Sabinsa (India)
Source: Trigonella foenum graecum
Dose: 25g (Fenubifers), 1-5g (Fenummannans), 100-200mg (Fenustersols)
Sabinsa extracts different products from fenugreek:
• Fenustersols (steroidal saponins (men & women, muscles,...)
• Fenummannans Galactomannan (blood sugar)
• Fenubifers (diabetes, serum cholesterol, TGL, VLDL): nutritive & restorative properties, stimulates digestive process

Orange Hesperidin / Flavonoids

Blood circulation, Antioxidant
Origin: Nektium (Spain)
Source: Citrus sinensis – fruit skin (from organic orange)
Bio-active ingredients: 80% Hesperidin or 35% Flavonoids
The flavon-3-0-glycoside hesperidin is known for its use for the treatment of the fragility of the blood capillaries (varicose veins, hemorrhoids, poor circulation venous stagnation, venous thrombosis) by preservation of the integrity of the blood vessels as well as the reinforcement of the network of capillaries, and increase the blood volume. It may also reduce inflammation.
It is a powerful antioxidant, which makes it very interesting to optimize the ocular health and to protect the cardiovascular system from the oxidative attacks. Processed from orange organic.

Pomegranate Punicic CLnA

Punicic acid to support healthy body weight
Origin: Nektium (Spain)
Source: Punica granatum – seeds
Bio-active ingredients: Punicic acid ≥ 70% or 80%
Dose: 2-3 x 150mg
Punicic Acid (PA) is structurally related to Conjugated Linoleic Acid (CLA). Conjugated fatty acids have attracted quite an interest because of their potential beneficial biological effects. Obese rats with hypertriacylglycerolemia experienced a significant decrease in hepatic triacylglycerol deposits, as well as levels of monounsaturated fatty acids, when fed with diets rich in Punicic acids.

Lactospore®

Health of the intestinal tract, Probiotic
Origin: Nektium (Spain)
Source: Lactobacillus sporogenous (also called coagulans), in a 100% dedicated plant. Formulation with fibers (Lactowize®)
Bio-active ingredients: 6 to 15 billion spores
Dose: 100 to 200 Millions organisms per doses, 2-3 times a day, in tablets, capsules, chewing tablets, etc...
Digestion, cholesterol management, health of the intestinal tract, ... and can be formulated with probiotic easily, or choose our Lactowize® (15 Bll spores and >35% galacto-mannans)
After ingestion (medium for awakening), the spores revive and produce acid L (+)
Lactic, with the positive action on other micro-organisms. Virtually 100% of spores are revived, one reason for the choice of Bacillus coagulans, and specific drying method. Spores will not grow during their action, and disappear by natural ways after working, hence the need for regular intake.
Extra protection: Sabinsa provides a grade "EC" Billions of Lactspore 15 ("EC" for Enteric Coated), a protected form for more targeted action.
It is used in dietary supplements in dairy products (studies currently being finalized), bakery products, or in tablets or vaginal ovules.

Pomegranate is lauded since old ancient times as having many health benefits. Pomegranate’s potential benefits span many areas such as cardiovascular disease, diabetes, and cancer to name a few. It is widely accepted nowadays that the beneficial health effects of fruits and vegetables in the prevention of disease are due to the bioactive compounds they contain. Pomegranates contain significant amounts of said substances, such as phenolic acids, flavonoids, and tannins assuring them considerable nutritional value. Nektium extracts from mashed fruits taking care to preserve the Punicalagin - as in the fruit - and not Ellagic in the P40P (one molecule of punicalagin is hydrolyzed to two ellagic acids).
Additional studies show a stimulation of the growth of healthy bacteria in the gut, and an anti-inflammatory properties (action on COX-2 and lipoxigenase).

FruitOx®

In-vivo cellular antioxidant, ORAC > 1 000 000 µmol TE / 100g
Water soluble, no carrier
Origin: Nektium (Spain)
Source and Bio-active ingredients: polyphenols and other actives compounds from plum, blueberry, apple, pomegranate, grape Leaves
Dose from 3 x 100mg to 3 x 900mg (full spectrum for total lack of antioxidant)
FruitOx® is a formulation based on polyphenols from different fruits and plants, developed by Nektium with the idea of a soluble product, fruits based, antioxidant, and a anti-inflammatory properties (action on COX-2 and lipoxigenase)
Cococin®

**The ultimate nutrient**

**Healthy cell growth, Blood circulation, Nutrient**

**Origin:** Sabinsa (India)

**Source:** Cocos nucifera

Freeze dried coconut water solids (obtained from tender green coconuts), Cococin is a natural reservoir of isotonic nutrients to promote tissue growth in the developing endosperm.

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Amla Saberry™

**Digestion, Blood sugar and Adaptogen**

**Nutricosmetics : Melanogenesis inhibition, UV Protection**

**Origin:** Sabinsa (India)

**Source:** Emblica officinalis - fruits (Amla)

**Bio-active ingredients:** 10% β-Glucogallin, 50% gallates (tanins)

**Dose:** 90mg three times a day

Water extract of Emblica officinalis (Amla). The extract is widely used in digestive support and immune support applications (adaptogen). Blood sugar level. Liver support - β-Glucogallin has been studied by Sabinsa (metallo-proteinase inhibitor, studies : detoxification, e.g. heavy metals, pesticides), Amla helps in maintaining the anti-oxidant enzyme levels in the system.

A beautiful fruit, well known for its rejuvenative properties. A light-colored powder prepared from the fruits of Emblica officinals, commonly known as amla, and standardized to contain 10% β-glucogallin. Benefits of this component can largely be attributed to its potent antioxidant capabilities which is substantiated by its oxygen radical absorbance capacity (ORAC) value

ORAC hydro: 267 800 µmol TE/100g / Orac lipo: 400 µmol TE/100g

HORAC: 34 500 µmol CAE/100g / NORAC: 90 000 µmol TE/100g

SORAC: 10 200 µmol kunits SODeq/100g / SOAC: 135 100 µmol VTE/100g

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Capsallyl® / Capsaicin

**Support healthy muscle mass**

**Origin:** Sabinsa (India)

**Source:** Capsicum annuum, Brassica

**Bio-active ingredients:** Capsaicinoids (Allylisothiocyanate)

**Dose:** 250mg twice a day in capsule form

Capsaicinoids from Capsicum annum (with 1% Allylisothiocyanate in AITC), for weight management (actives are both pungent ingredients, well known to induce thermogenesis and decrease adipose tissue weight and TG) and to treat aches & pains in muscles & joints. Capsallyl is supplied in Beadlets, enteric coated. Capsaicin beedlets 2% enteric coated, to 90% total capsaicinoids HPLC

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Garcitrin® & Citrin®

**Slows conversion of carbohydrates to fat**

**Origin:** Sabinsa (India)

**Source:** Garcinia cambogia—fruits

**Bio-active ingredients:** up to 60% Hydroxy citric acid

**Dose:** 250mg of (-) HCA before meals

Citrin® and Garcinritin® are two grades extracted from the fruit Garcinia cambogia. Sabinsa has highlighted the active (HCA) and its use several years ago already. Citrin is a salt of the Hydroxycitric acid, named (-) HCA, and reduces the conversion of carbohydrates in stored fat and increasing the use of fat. Sabinsa has conducted numerous studies under the name Citrin 9b, proving its effectiveness and safety. After initial use in the field of sports products (induced action on amino acids, detoxifying the liver, etc ...), its properties have led to slimming and weight management. Another reported activity of the Citrin is the prevention of uritary tract stones.

A beverage grade is available : Citrin K BG (potassium salt)

Sabinsa has highlighted another molecule from Garcinia cambogia: the Garcinol, showing at a first glance anti-oxidant, anti carcinogenic or antimicrobial properties. Sabinsa has shown that the use of combined HCA and garcinol improves further the efficiency of HCA, the garcinol acting as a vector for the HCA to target cells.

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DGL Deglycyrrhizinated

**Digestion, Immunity**

**Origin:** Sabinsa (India)

**Source:** Glycyrrhiza glabra

**Dose:** 380 mg 2-3 times / day

Treatment of gastric and duodenal ulcers. It is made from licorice from which the glycyrrhizin has been removed. Immune support and management of gastrointestinal problems.

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Gymnema

**Weight Management, Blood glucose**

**Origin:** Sabinsa (India)

**Source:** Gymnema sylvestre leaves

**Bio-active ingredients:** Gymnemic acids 25% or 75%

**Dose:** 75mg (based on 75%) twice a day

Gymnema sylvestre is an herb native to the tropical forests of southern and central India. Chewing the leaves suppresses the sensation of sweet. It may suppress levels of lepthin, insulin, dyslipidemia, apolipoproteins, lipids, visceral fat pad weights, and oxidative stress in obese rats fed with HFD.

This effect is attributed to the presence of the eponymously named gymnemic acids. G. sylvestre has been used as a natural treatment for diabetes for nearly two millennia. Gymnemic acids have antidiabetic, antisweetener and anti-inflammatory activities. The antidiabetic array of molecules has been identified as a group of closely related gymnemic acids after it was successfully isolated and purified from the leaves of Gymnema sylvestre. Later, the phytoconstituents of Gymnema sylvestre were isolated, and their chemistry and structures were studied and elucidated. Increase production of Insulin in pancreas.

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Bacopin®

**Attention, stress, memory, circulation**

**Origin:** India

**Source:** Bacopa monniera

**Bio-active ingredients:** 20% and 50% total Bacosides (as A & B), ethanolic extract

**Dose:** 3 x 50 mg (children) to 3 x 100 mg (adult)

- Bacosides can revitalize the intellectual functions in children and calm down the stressed mind, allowing for better brain function
- an be effective in elevating brain function by increasing concentration and more finely honing mental focus
- Anti-Convulsant and anti-cataleptic actions. Anxiety Neurosis
- Ayurvedic uses : Memory Enhancing, Anti-inflammatory, Analgesic, Anti-pyretic, Sedative, Anti-ulcerogenic, Anti-epileptic.

---

Fabenol®

**Amylase inhibitory activity**

**Origin:** Sabinsa (India)

**Source:** Phaseolus vulgaris

**Bio-active ingredients:** 8 000 units/g (Fabenol) or 20 000 units / g (Fabenol Max)

**Dose:** usually 1 000 - 5 000 units per dose, depending upon the starch content of the meal.

Fabenol® is an alpha-amylose inhibitory naturally extract obtained from Phaseolus vulgaris (common bean, kidney bean) that blocks the digestion of dietary starch, thereby offering potential benefits in the maintenance of healthy blood sugar levels and optimal body composition. The seeds of Phaseolus vulgaris contain an inhibitor of alpha-amylose (two glycosylated protomers of 30 kDa, which are cleaved into two polyepitides of 16 and 14 kDa, respectively), identified in the protein fraction of the bean. This protein binds with the active sites of alpha-amylose and prevents the starch metabolizing activity, hence it is also called as «Starch Blocker». 
**Andrographis**

*Cold, Jaunice, Liver, respiratory*

**Origin:** Sabinsa (India)

**Source:** Andrographis paniculata - leaves

**Bio-active ingredients:** 10% Andrographolides (50% and 90% available)

**Dose:** 250mg (of 10%) three times a day

Used in the treatment of the common cold - paracetamol like - to reduce its symptoms and duration. Inhibitor of Nitric oxide production and synthesis of Endotoxin (spot and pigmenting).

**Acticissus**

*Anti-osteoporotic, bones repair, Weight, Tonic*

**Origin:** Sabinsa (India)

**Source:** Cissus quadrangularis - aerial part

**Bio-active ingredients:** 10% Ketosterones, 1% Natural Calcium

**Dose:** 200 to 500mg per day

Also named "devil's bones" because it "joins" bones much quicker after fracture, Cissus q. is used in Ayurveda medicine as a general tonic, analgesic and to heal bone fractures.

- Anabolic and/or androgenic properties (glucocorticoid receptors)
- Weight loss (in combination with Irvingia g.)
- Analgesic : effective Analgesic vs aspirin; Cortisol reducer (Cortisol Antagonist)
- Anti-osteoporotic : femur ossification, mineralization, osteoblastic activity
- Anti-ulcerogenic : comparison with Ranitidine, decrease gastric secretions
- Anti-oxidant : comparison to BHT, inhibition of DPPH, in-vivo trials
- Anti-microbial : trials versus tetracyclin

**R-α / α-Lipoic acid**

*Co-factor for number of key enzymes, Antioxidant*

**Origin:** Sabinsa (India)

**Source:** Synthesis (pure)

**Dose:** 25-50 mg Three times / day

Alpha-Lipoic acid plays as a co-factor for a number of key enzymes that help in the conversion of glucose, fatty acids and other energy sources into ATP. It helps to regulate blood sugar and prevent diabetic retinopathy & cardiopathy.

Alpha-Lipoic acid is an antioxidant that prevents free-radical damage, and is thus important in the life processes of all living organisms. R-α-Lipoic acid is the racemic form in which alpha lipoic acid is produced naturally in the body, and the anti-inflammatory activity of the R form could be up to 10 times higher than that other alpha lipoic acid.

**Echinacea**

*Common cold, Immune system*

**Origin:** Nektium (Spain)

**Source:** Echinacea angustifolia – root

**Bio-active ingredients:** Echinacosides 4 to 12% (HPLC)

The European Medicines Evaluation Agency (EMEA) has evaluated a consolidated list of over 100 published reports on Echinacea angustifolia. The available information covers non-clinical and clinical safety and efficacy. The expert panel agrees there is enough evidence to accept on its use for the indication of common cold.

**LeanGard**

*Healthy body composition, Weight management*

**Origin:** Sabinsa (India)

**Composition:** Forskolin, GarCitrin and BioPerine

**Bio-active ingredients:** Forskolin, hydroxyxctric acid, garcinol, piperine

**Dose:** 500 mg per dose twice a day

LeanGard is a proprietary blend of natural extract :Forskolin build lean body mass maintain healthy body composition

- Garcitrin supports satiety, weight management and lean body mass

**Organic elements**

*L-Selenomethionine, Chromium, Vanadium, Zinc, Magnesium, Cooper, Molybdenum*

**Origin:** Sabinsa

**L-Selenomethionine**

**Source:** Nektium (Spain)

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<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Common Actives</th>
<th>Plant Name</th>
<th>Common Actives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhatoda vasia</td>
<td>Vasicine, Alkaloids</td>
<td>Phaseolus vulgaris</td>
<td>Fabenol, Enzymes Inhibitor</td>
</tr>
<tr>
<td>Aesculus hippocastanum</td>
<td>Venocin, beta Escin, Terpenes</td>
<td>Phyllanthus amarus</td>
<td>Bitter Principles, Phyllanthin, Tannins</td>
</tr>
<tr>
<td>Allium sativum</td>
<td>Garlic</td>
<td>Picrorhiza kurrooa</td>
<td>Picroliv, Apocynin, Kutkin, Bitter Principles</td>
</tr>
<tr>
<td>Amaranthus caudatus</td>
<td>Squalene</td>
<td>Piper longum</td>
<td>Pepper, Piperine</td>
</tr>
<tr>
<td>Andrographis paniculata</td>
<td>Andrographolides</td>
<td>Piper nigrum</td>
<td>BioPerine, Piperine</td>
</tr>
<tr>
<td>Anethum sowa</td>
<td>Dill</td>
<td>Plant Formula</td>
<td>Fruit Ox, Antioxidant Polyphenols</td>
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<tr>
<td>Apium graveolens</td>
<td>Celery</td>
<td>Plant Formula</td>
<td>AnthrillBlend, Glucosamine, Boswellic Acids, Curcuminoids, Piperine</td>
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<tr>
<td>Asparagus racemosus</td>
<td>Shatavari, Saponins</td>
<td>Plant Formula</td>
<td>Hot Sip, Glycyrrhizinic, Piperine, Alkaloids</td>
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<tr>
<td>Bacillus coagulans</td>
<td>LactoSpore</td>
<td>Plant Formula</td>
<td>LeanGard, Forskolin, Garcinol, Piperine</td>
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<td>Baccopa monniera</td>
<td>Bacopin, Bacosides</td>
<td>Plant Formula</td>
<td>Triphala, Tannins, Polyphenols</td>
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<tr>
<td>Berberis aristata</td>
<td>Berberine</td>
<td>Polygonum cuspidatum</td>
<td>Resvinox, Resveratrol, Stilbans</td>
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<tr>
<td>Beta vulgaris</td>
<td>Beet Root</td>
<td>Prunus afrucanis</td>
<td>Pygeum, Sterols</td>
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<tr>
<td>Boswellia serrata</td>
<td>Boswellin</td>
<td>Pterocarpus marsupium</td>
<td>Pterowhithe, Tannins, Stilbens, Pterocarposide</td>
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<td>Brassica juncea</td>
<td>Cabbage</td>
<td>Punica granatum</td>
<td>Pomegranate, Ellagic Acid</td>
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<td>Camellia sinensis</td>
<td>Green Tea</td>
<td>Punica granatum</td>
<td>Pomegranate, Punicosides, Punicalagins, Polyphenols, Ellagic, Punicic acid CleA</td>
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<td>Capsicum annuum</td>
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<td>Rhodiola rosea</td>
<td>Rhodolife, Rosavins, Salidrose</td>
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<td>Cinnamomum cassia</td>
<td>Cinnamon</td>
<td>Rosmarinus officinalis</td>
<td>Rosemary, Carnosic, Ursolic, Rosmarinic Acids</td>
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<td>Citrus sinensis</td>
<td>Hesperidin</td>
<td>Saccharum officinum</td>
<td>Policosanol, Policosanol</td>
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<td>Cocos nucifera</td>
<td>Carbohydrate, Minerals, Proteins</td>
<td>Saliacia reticulata</td>
<td>Salaretin, Mangiferin, Terpen, Saponins</td>
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<td>CoEnzyme Q10</td>
<td>CoQ10</td>
<td>Salvia officinalis</td>
<td>Sage, Ursolic Acid, Na Ursolate</td>
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<td>Coleus forskohlii</td>
<td>Forslean, Forskolin</td>
<td>Serenoa repens</td>
<td>Sav Palmetto, Fatty Acids</td>
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<tr>
<td>Coleus forskohlii Oil</td>
<td>Forslean, Oil, Pines</td>
<td>Synthesis</td>
<td>Alpha Lipoic, Alpha Lipoic Acid</td>
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<tr>
<td>Commiphora mukul</td>
<td>Guggulipid, Guggulerones</td>
<td>Synthesis</td>
<td>Chrysin, Dihydroxyflavone</td>
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<tr>
<td>Crapea nurvala</td>
<td>Crapatin, Saponins, Tannins</td>
<td>Synthesis</td>
<td>DIM, Diindolylmethane</td>
</tr>
<tr>
<td>Cucurbita pepo</td>
<td>Pumpkins</td>
<td>Synthesis</td>
<td>Glucosamine, Glucosamine</td>
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<tr>
<td>Cuminum cyminum</td>
<td>Cumin</td>
<td>Synthesis</td>
<td>I3C, Indole - 3 - Carbinol (I3C)</td>
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<tr>
<td>Curcuma longa</td>
<td>Curcumin</td>
<td>Synthesis</td>
<td>Ipirflavone, Ipirflavone</td>
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<td>Curcumin melo, Glidion</td>
<td>GlisODin, Superoxydismutase, Enzymes</td>
<td>Tagetes erecta</td>
<td>Lutein, Lutein</td>
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<tr>
<td>Echinacea Angustifolia</td>
<td>Echinacine, Echinacodies</td>
<td>Terminalla arjuna</td>
<td>Arjunolic, Arjunolic Acid, Saponins</td>
</tr>
<tr>
<td>Eclipta alba</td>
<td>Eclipta, Wedelolactone</td>
<td>Terminalia belseica</td>
<td>Terminalia, Tannins</td>
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<tr>
<td>Embelia ribes</td>
<td>Embelia</td>
<td>Tinospora cardifolia</td>
<td>Tinosolin, Bitter Principles</td>
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<tr>
<td>Emblica officinalis</td>
<td>Saberry, Amla, beta-Glucogallin, Tannins, Fibers</td>
<td>Tribulus terrestris</td>
<td>Tribullus, Saponins, Protodioscin, Steroids</td>
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<tr>
<td>Enzymes</td>
<td>Digezyme, Dedicated enzymes formulation</td>
<td>Trigonella foenugr.</td>
<td>FenuFiber, Fibers</td>
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<tr>
<td>Foeniculum vulgare</td>
<td>Fennel</td>
<td>Trigonella foenugr.</td>
<td>Fenumellan, Galactomannans, Fenumennans</td>
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<tr>
<td>Garcinia cambogia</td>
<td>Citrin, Hydroxyctric Acid (Ca, Mg, K, …)</td>
<td>Trigonella foenugr.</td>
<td>Fenusteral, Saponins, Steroids, Protodioscin</td>
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<tr>
<td>Ginkgo biloba</td>
<td>Ginkgo Biloba, Flavone, Terpen, Lactones</td>
<td>Tylaphora indica asth.</td>
<td>Tylaphora, Alkaloids</td>
</tr>
<tr>
<td>Glycine max</td>
<td>Soy, Isoflavones</td>
<td>Undaria pinnatifida</td>
<td>Fucoxanthin, Fucoxanthis</td>
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<tr>
<td>Glycyrrhiza glabra</td>
<td>DGL, Deglycyrrhizinated Licorice</td>
<td>Vaccinium angustifolium</td>
<td>Blueberry, Chlorogenic Acid</td>
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<tr>
<td>Griffonia simplicifolia</td>
<td>Griffonia, S-HT Hydroxyprotoporphyan</td>
<td>Vitex negungo</td>
<td>Vitex, Aegriside</td>
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<tr>
<td>Gymnema sylvestre</td>
<td>Gymnema, Gymnemic Acids (25-75%)</td>
<td>Withania somnifera</td>
<td>Ashwagandha, Withanolides, Alkaloids, Withaferin</td>
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<tr>
<td>Hordeum vulgare</td>
<td>Hordeum, beta-Glucans</td>
<td>Zingiber officinalis</td>
<td>Ginger, Gingerols</td>
</tr>
<tr>
<td>Kaempferia galanga</td>
<td>Galanga, Cinnamate</td>
<td>Minerals</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
</tr>
<tr>
<td>Laminaria japonica</td>
<td>Fucoidan</td>
<td>Synthetic or enriched plants</td>
<td>Chromium Plicinate, L-Seleno-Methionine, Methyl Selencysteine, Molybden Methionate, Gamma-Glutamyl-L-Selenomethionine, N-Acetyl L-Cyst, etc.</td>
</tr>
<tr>
<td>Linum usitatissimum</td>
<td>Flaxseed</td>
<td>Flavors</td>
<td>Damascenone, Allyl, Apollitene, isougenol, Citronellyl, Galbafer, Geranyl, Karanaoga, Melonal, Naturanate, Safranal, Sandanol, Super Santol, 1,2-Decandioi / 1,2 Hexandioi / 1,2-Octanediol, Metomy Melonal</td>
</tr>
<tr>
<td>Mangifera indica</td>
<td>Mango</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
<td></td>
</tr>
<tr>
<td>Melia azadachtra</td>
<td>Neem</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
<td></td>
</tr>
<tr>
<td>Melissa officinalis</td>
<td>Lemon Balm</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
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<tr>
<td>Mineral pitch</td>
<td>Shilajit</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
<td></td>
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<tr>
<td>Momordica charantia</td>
<td>Momordica, Bitter Principles, Charantin</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
<td></td>
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<tr>
<td>Momordica chinesis</td>
<td>Momordica, Lycopin, beta-Caroten</td>
<td>Seleno-methionine, Methyl Selencysteine</td>
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</tr>
</tbody>
</table>
Satiereal® is a patented clinically proven satiety ingredient derived from saffron stigmas. The satiated feeling induced by Satiereal® encourages weight loss while eliminating frustration. This product has a unique mechanism that not only creates satiety but helps avoid snacking and compulsive eating behaviors, which in turn leads to reduction in weight and inches.

What is unique about Satiereal® saffron extract is that it targets emotional behaviors:
- It decreases your desire to snack
- It decreases your desire for sugary foods
- It increases your sense of satiety or fullness (resulting in better portion control)
- It provides a good mood
- It can be used in any form or food

Satiereal® is derived from the stigma of saffron crocus, Crocus sativus L, which is cultivated throughout the Mediterranean region. Historically, saffron was prized as a culinary spice, colorant and dye, and as a medicinal herb to ease digestion or to treat depression. These medicinal uses are usually curtailed when cultivated for use in beverages or food colorants.

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**Clinical Trials**

**Clinical vs placebo**
16 women, checked efficacy and tolerability of Satiereal® (2 x 88.25mg). 100% of supplemented women express the decrease of their food intake associated to a satiety feeling, to a decrease of the hunger feeling in the beginning of meals and a decrease of the meals duration. This is still persistent until dinner when Placebo shows an increase compulsive and reactive desire to eat. Decrease of body weight and fat mass for the supplemented subjects versus the placebo group.

Decrease of the desire and pleasure associated to the food intake mass for the supplemented subjects versus the placebo group.

**Double Blind vs placebo** (Publ. Nutrition Research)
Randomized double-blind versus placebo showed the efficacy of Satiereal® on weight management in 60 women at the dose of 176.5mg/day; it shows that Satiereal® increases satiety, decreases hunger, reduces sugar cravings (~78%), and reduces compulsive snacking between meals. Women taking Satiereal report decreased hunger. 80.7% of women taking Satiereal® lost weight in two months. Notably, Satiereal® group lost preferentially fat mass, instead of lean mass.

Dosage: 2 x 88.25mg a day
Two grades available:
- **Satiereal C**: non water soluble, for tablets and hardgel capsules
- **Satiereal AWS**: water soluble, homogenous without change after heat treatment (110°C, 20mins for instance) for beverages...

Trademark awareness: SATIEREAL® - on internet, plenty of testimonials, YouTube videos… consumer will search before purchasing and will rely on and look for the brand.

**Satiety and Good Mood**

Satiereal®, a specific Saffron extract, works as a hunger suppressant and seems to curb appetites by boosting serotonin levels. The satiated feeling induced by Satiereal® encourages weight loss while eliminating frustration.

Capsules and Tablets with Satiereal®
Instant stick for instance coffee or coated tea, with 9.81% of Satiereal® AWS per stick of 1.8g (formulation checked by Inoreal).

Meal replacement: problems with meal substitute is the snacking in between! Satiereal® provides a long feeling of satiety... better mood so feel better
- Replacing 1 meal/day « weight management after weight loss »
- Replacing 2 meals/days « weight loss contribution »

**Serotonin Reuptake Inhibitor**
Stress, anxiety, depression... influence food behavior, generally leading to compulsive overeating in reaction to stress. This phenomenon induces weight gain, subject feel guilty, trying to stop, thus generating stress for those who need consolation in carbohydrates intake!

This is mostly due to low Serotonin levels.

Satiereal® has been demonstrated to keep the neurotransmitter serotonin signal active, in otherwords serotonin reuptake inhibition in neurons (mechanism of many antidepressants). It is probable that this serotonin reuptake inhibition accounts for saffron’s use in treating depression and “melancholia” in the medicinal traditions. Saffron extract has been shown to be as effective as the tricyclic antidepressant drug imipramine and the SSRi fluoxetine (Prozac) in managing depression — with no side effects.

Pharmacological SSRIs have varying effects on weight, but Satiereal helps keep excess body weight from accumulating. This is one advantage of Satiereal® over other dietary satiety ingredients: it needs only be used in small quantities, it is potent, it acts directly on neurotransmitters to relieve the cause of nibbling and hyperphagia, instead of just delaying it.

**Hyperprotein milk beverage**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk protein</td>
<td>6.9%</td>
</tr>
<tr>
<td>Sugar</td>
<td>2.7%</td>
</tr>
<tr>
<td>Cocoa powder</td>
<td>3.0%</td>
</tr>
<tr>
<td>Caramel flavor</td>
<td>0.4%</td>
</tr>
<tr>
<td>Satiereal®</td>
<td>0.085%</td>
</tr>
</tbody>
</table>

**Cereals Bars, biscuits, 11.8% of Satiereal® / bar of 14.9 g**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>31.0%</td>
</tr>
<tr>
<td>Brown sugar</td>
<td>8.2%</td>
</tr>
<tr>
<td>Apple powder</td>
<td>7.5%</td>
</tr>
<tr>
<td>Baking powder</td>
<td>0.4%</td>
</tr>
<tr>
<td>Satiereal®</td>
<td>0.353%</td>
</tr>
</tbody>
</table>

**Candies, Chewing gums, chews**: Better use them instead of snacking

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia gum</td>
<td>10.0%</td>
</tr>
<tr>
<td>Powder sugar</td>
<td>10.0%</td>
</tr>
<tr>
<td>Artich gum</td>
<td>19.0%</td>
</tr>
<tr>
<td>Orange powder</td>
<td>4.0%</td>
</tr>
<tr>
<td>Citric acid</td>
<td>0.1%</td>
</tr>
<tr>
<td>Lemon flavor</td>
<td>0.05%</td>
</tr>
<tr>
<td>Winter</td>
<td>1.9%</td>
</tr>
<tr>
<td>Satiereal®</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

**Beverages and instant drinks**: 0.088% of Satiereal® AWS per bottle of 200g gives a clear, pleasant and efficient drink. Formulations with Raspberry, Hibiscus, Apple juice, Cranberry, Iced tea, ... or even only water (yellow translucide solution).

Other possible associations (additional claims) with for instance 500mg of Garcinia cambogia extract standardized to HCA (= Weight management, also in beverages), 200mg of Fucus powder.
Zynamite® is the healthy way to replace caffeine with a botanical ingredient without the side-effects of caffeine and actually works better than caffeine, while retaining the experiential effect. Zynamite® is the Nektium’s patent-pending proprietary Mangifera indica extract, launched at Vitafoods Europe 2018, and getting the Nutraingredient award.

Zynamite® gives sustained mental and physical energy and focus without any negative side effects.

What do tired people need?
Stressed or fatigued people lack enthusiasm and mostly feel exhausted and desperate. What they desire is a sustained boost of energy that improves physical performance, concentration, attention, alertness and mood.

The problem with caffeine
Because of the mental energy and focus provided by caffeine, billions of cups of coffee are consumed daily to assist people to cope. However, caffeine is addictive and most people consume too much of it and suffer from its negative side effects and withdrawal symptoms.

Caffeine in Sports Products
Many sports products contain caffeine to increase alertness and boost physical energy but these products inevitably lead people to experience jitters, anxiety, irregular pulse, insomnia and nausea - all physical and mental issues for concern, especially for sports performers. Zynamite® is the ideal alternative.

What is Zynamite®?
Zynamite® is Nektium’s patent-pending proprietary Mangifera indica extract standardized to ≥ 60% mangiferin. Mangifera indica, the common mango tree, is cultivated extensively in the tropical and subtropical regions of the world. Infusions and decoctions of mango leaves are used extensively in traditional health systems and have been known for centuries for their health benefits.

How does Zynamite® work?
Zynamite® activates brain waves and increases Long Term Potentiation in a remarkably similar pattern to caffeine. While caffeine antagonizes adenosine receptors, Zynamite® acts non-selectively to stimulate brain activity. The key active, mangiferin acts non-selectively to modulate multiple physiological and CNS targets.

Bio-actives of Zynamite®
The active principle of Zynamite® is mangiferin, a natural flavone polyphenol. Ultra-high-performance liquid chromatography (UHPLC) with photodiode array detection (PDA) is used to provide high-resolution separation, identification and quantification.

Benefits
Cognitive health (clinical studies)
+ Rapid onset of mental activation
+ Faster reaction time
+ Increase performance
+ Focus and concentration

Sport Performance (clinical studies)
+ Sustained energy
+ Increase power
+ Dopine free

Safety & Information
+ Own safety data: AMES, 14-day and 90-day oral toxicity, NOAEL... and new soon coming.
+ GMO, BSE/TSE free, Doping free, DNA barcode, Vegan, Kosher, Halal, traditionally used in food, registered in different countries in Europe, Australia, New Zealand, USA (self GRAS l.p.)

Mental Activity
Zynamite® has remarkably similar mental activation activity to caffeine in studies of brain electrical activity in vivo. The pattern of electrical activation for both Zynamite® and caffeine are remarkably similar in the brain frontal cortex and in the hippocampus. (Preliminary study. Collaboration with Professor Wilfried Dimpfel, Justus–Liebig - University, Giessen, Germany)

Mental Energy
The effect of a single dose of Zynamite® as caffeine replacement was tested in 32 participants in a double-blind, randomized, placebo-controlled, 2-armed study with parallel design. Calculation performance Significantly improved cognitive performance. Reaction time Significantly faster reaction compared to placebo. (two clinical studies. Collaboration with Professor Wilfried Dimpfel, Justus–Liebig - University, Giessen, Germany)

Sport Performance
The effect of 48 hour intake of Zynamite® on performance was tested in two sports formulations in a double-blind, placebo controlled cross-over cycling trial in 30 young physically active athletes. Mean peak power output reached in each sprint was significantly higher for both Zynamite® formulations compared to placebo. Peak power output developed in the 15-s sprint performed immediately after ischaemia was significantly higher for Zynamite®. Brain oxygenation measured with spatially resolved near-infrared spectroscopy in the female group of thirteen women was significantly higher for both Zynamite® formulations. (two clinical studies, Collaboration with Professor Jose Antonio López Cabet, University of Las Palmas, Spain)

References
1. Dimpfel, W. et al. Synergy between Mango leaf extract (Zynamite®) and caffeine with respect to stimulation of the central nervous system in rats. Synergy Forum, 9-10 March 2018, Bonn, Germany
2. Miriam Gelabert-Peláte, Jose A. L. Cabet, Mangifera indica L. leaf extract (Zynamite®) in combination with luteolin or quercetin enhances VO2peak and peak power output and preserves skeletal muscle function during ischemia-reperfusion in Humans. 23. European College of Sports Science ECSS, 4-7 July 2018, Dublin, Ireland

Zynamite®

Zynamite® is the lean label ingredient to increase alertness and mental activation, and boost physical energy, without the undesirable side-effects of the caffeine.
Rhodiola: Memory, Immunity & Energy

A wide array of human health benefits related to mental health and physical performance has been clinically demonstrated using the unique phytochemical form of *Rhodiola rosea* extract specifically standardized to rosavins. *Rhodiola rosea* possesses valuable anti-fatigue, anti-stress, and anti-depressant properties; it stimulates the bioelectrical activity of the brain and improves memory and mental performance. In addition, it also increases stamina and accelerates the physical recovery processes after intense training workloads; it stimulates muscle energy status, improves glycogen synthesis in the muscles and liver and increases muscle protein synthesis and anabolic activity.

The right product from the right place at the right time

While *Rhodiola* as a genus may have originated in the mountainous regions of Southwest China and the Himalayas, botanists have established that *Rhodiola rosea* naturally displays a circumpolar distribution in mountainous regions in the higher latitudes and elevations of the Northern Hemisphere. In central and Northern Asia, the genus is distributed from the Altai Mountains across Mongolia into many parts of Siberia. *Rhodiola rosea* used for the production of RhodiLife® is wildcraft collected from this part, under the Russian Government License. Altai Mountains represents a pristine area free from contamination in of the most well preserved and remote natural environments. Nektium is involved from the early beginning in the collection practices, with SOPs describing the stage of the plant growth, best time of collection and ecologically non-destructive systems.

Active Ingredients

Activities related to *Rhodiola rosea* have been traditionally attributed to the presence of four principal active ingredients: salidroside, rosin, rosavin and rosarin (Sokolov, 1985; Furmanowa, 1998).

The root of *R. rosea* shows six distinct groups of chemical compounds. The Phenylalkanoids are the main contributors, incl.:

- **Phenylpropanoid**: Rosavins are products of the phenylpropanoid metabolism. Rosavins (ie. rosavin, rosin and rosarin) are specific to the root from *Rhodiola rosea*. The rosavins are the constituents currently most often selected as the marker compounds for standardization of extracts, although they are not necessarily the only pharmacologically active ingredients for its medicinal properties.

- **Principal phenylethanoids** consist of glycosides and salidroside has been reported as the most active tyrosol glycoside, being associated, together with rosavins, to the anti-depressive and anxiolytic effects (Maslowa, 1994; Tölonen, 2003). Other phenylethanoids have also been isolated but with today limited scientific literature concerning the bioactivity (Jiménez 1994).

All Rhodiola extracts are not equal

Nektium is one of the very few Nutraceutical companies which has been granted an Export License by the Russian Government for the exportation of *Rhodiola rosea* roots from the Altai (Altay) region (Siberia). Nektium closely collaborates with its supplier implementing operating procedures that provide general technical guidance for the sustainable collection and processing of *Rhodiola rosea* roots, following the overall context of quality assurance and the WHO guidelines on Good Agricultural and Collection Practices (GACP). This includes the collection of the plants in the wild, as well as primary processing of the plant material, such as drying, packaging in bulk, storage and transport of the raw materials until it arrives to the Nektium factory. The impact of collection on the environment and ecological processes, and the welfare of local communities are also considered.

Then the salidroside and the 3 actives rosavins only are controled (rosavin, rosin, rosarin) by Ultra HPLC, and no other molecules as rosiridin or tyrosol for instance.

Grades are from 3% Rosavins (and related 1/3 salidroside), to 15%.

Rhodiola rosea, also known historically as “Golden Root” from the “Golden Montains” (Mongolian word ‘Altan’), is the most popular phyto-medicine traditional used to increase physical endurance, work productivity, longevity, memory and attention, resistance to high altitude sickness, fatigue, depression, and disorders of the nervous system.

Attention and Memory Cerebral activity

Rhodiola rosea is know to improve attention and cerebral performances.

On 2017, Nektium has conducted new studies: Electroencephalographic tests (EEG) showed that animal supplemented with Rhodiolife® has an increased neurotransmitter production in the studied areas.

This effect lasts at least for 5 hours until the end of measurements, and so even more.

Besides of a stimulatory effect, the results indicate an improve of memory and an increased activity in brain regions related to motivation and reward.

R. Rosea increases the bioelectrical activity of the brain which improves memory and brain energy. Another study also described the Acetylcholine Esterase Inhibitors in *Rhodiola rosea*. It helps the body adapt to stress by affecting the levels and activity of serotonin, dopamine, and norepinephrine, neurotransmitters found in different structures in the brain and influencing the central nervous system. Rhodiola inhibits the breakdown of these chemicals and facilitates the neurotransmitter transport within the brain. In addition to its impact on the central nervous system, it increases the chemicals that provide energy to the muscle of the heart and prevent the depletion of adrenal hormones induced by acute stress. (Tori Hudson, 2006)
Immune System

The Rhodiola extract Rhodiolife® has clearly demonstrated its ability to protect cells from viral infection. This is the first time shown to be effective in the activation of the human immune system, (launch and human in-vivo study April 2015 - Ahmed M, et al (2015) «Rhodiola rosea Exerts Antiviral Activity in Athletes Following a Competitive Marathon Race». Front Nutr. Jul 31;2:24). It stimulates and protects the immune system (homeostasis), and increases the natural killer cells (NK) in the stomach and spleen. This action may be due to its ability to normalize hormones. Cardiovascular: Linked to the anti-stress action (and decrease of catecholamines and corticosteroids released by the adrenal glands during stress), R. rosea decreases the amount of cyclic-AMP (c-AMP) released into cardiac cells, and so assist the uptake if free intracellular calcium for greater heart muscle contraction (regular beat).

Response to Stress

Rhodiola rosea balance the body’s stress-response system. Adaptogenic plants naturally increase the body's non-specific resistance and normalise the functions of the body, with a more resourceful manner when facing stressful situation. R. rosea impacts central monoamine levels. R. rosea is said to assist the transport of serotonin precursors, tryptophan and 5-HTP into the brain. (Studies shows that serotonin brain neurotransmitter is involved in many functions such as pain perception, behavior, smooth muscle contraction, temperature regulation, appetite, etc... Case studies have reported that R. rosea helps with depressive syndromes, memory loss, anxiety, cognitive dysfunction and menopause related symptoms

ATP & Energy

The effect of Rhodiola rosea (RR) supplementation on ATP content in muscles was studied in Sprague-Dawley rats, where 24 adult rats were divided 3 groups equally: control group, RR (50mg/ Kg) and Rhodiola crenulata (50mg/Kg). Two sessions of forced swimming with 30-min intervals were carried out every day. The decrease in ATP content in rats receiving R. rosea extract was statistically significantly less pronounced than the other groups (1). In a human trial, a total of 36 healthy untreated volunteers (21-24 years of age) were randomly, equally divided in 3 groups (control, placebo and RR extract). Individuals in the placebo and RR extract groups received 2 capsules a day of each treatment (placebo or 340 mg of RR extract) for 30 days before and 6 days after exhausting physical exercise was performed (computer aided bicycle ergometer with gradual increases of workload). Changes in biochemical markers of muscle damage and inflammation were significantly less pronounced in those taking RR supplementation (2).


Bacopasides extracted from Bacopa moniera (Brahmi) can revitalize the intellectual functions (in children) and calm down the stressed mind, allowing for better brain function.

In India, Bacopa moniera, known as «Brahmi», is revered in the indigenous system of medicine as a nerve tonic. The traditional use of the plant, of particular relevance to contemporary medicine, is its validated efficacy in promoting memory functions and providing relief to patients with anxiety neurosis. In Ayurveda, Brahmi is described as «medhya rasayana» or brain tonic with the ability to promote mental functioning, along with providing general rejuvenative effects. In early literature, the name Brahmi was also used to refer to another plant species, Centella asiatica, but both are distinctly different.

Chemical constituents

The pharmacological effects of Bacopa moniera are attributed to the presence of a number of biologically active compounds, including alkaloids, saponins and sterols. The compounds responsible for the memory enhancing effects of are triterpenoid saponins called “bacosides” (Bacoside A3, bacopaside 1, bacopaside 2, jujubogenin, bacosaponine C).

Properties

The biological effects of Bacopa moniera are well documented in traditional as well as scientific literature. The most important of these are the effects of the plant, plant extracts and isolated bacosides on cognition and memory functions, their anxiolytic effects and their role in the management of converulsive disorders. On receiving signals, receptors of the hippocampus trigger an electric pulse, mediated through a change in protein composition. The pulse is transmitted to the next neuron through the synapse. The process continue till the bond between neurons become strong and the memory is created. However, continuous electrical activity wears out the synapses, impairing a new memory creation and causing loss of memory. The bacosides help in restoring the synaptic activity of neurons.

Bacopin is a cognitive enhancer in cases of: Declining Memory Poor Concentration Attention Deficit Hyperactivity Disorder Anti-convulsive or Anxiety Neurosis

Dosage: 15 to 30 mg of Bacosides 3 times daily for 20% extract (dosage must be adapted to the grades 20% or 50%)
**Bromelain / Papain**

**Natural proteolytic enzymes**

Bromelain and Papain are part of the family of proteolytic enzymes. They are systemic enzymes, designed to survive the acidity of the stomach and to go into the small intestine where they are absorbed into the bloodstream. There, they degrade proteins, thus exerting multiple beneficial effects for health, including platelet aggregation inhibition, digestive aid and anti-inflammatory effects.

**Bromelain**

*Source:* Ananas comosus - Stem

**Bio-activity:** 1,200 to 5,000 GDU / g

Units correspondence: 1 FIP/mg = 2,4 to 10 FIP / mg

**Papain**

*Source:* Carica papaya

**Bio-activity:** 1.5 to 3.5 FIP / mg

Units: 1 FIP = 10 to 12,000 USP = 160-180 TU / 100 TU = 6,000 USP = 0.6 FIP

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**FOCUS HINTS**

**Bromelain** is a cysteine protease isolated from pineapple stem, *Ananas comosus*. Bromelain is a mixture of different thiol endopeptidases and other components like phosphatase, glucosidase, peroxidase, cellulase, escharase, and several protease inhibitors. In vitro and in vivo studies demonstrate that bromelain exhibits various fibrinolytic, antiedematous, antithrombotic, and anti-inflammatory activities.

**Properties**

Its effects are mainly a product of its proteolytic activity, which stimulates fibrinolysis by increasing plasmin, but bromelain also has been shown to prevent kinin production and to inhibit platelet aggregation. It is also used for preventing muscle soreness after intense exercise, and for facilitate digestion.

**Effect of Bromelain on inflammatory**

Bromelain have the ability to modulate surface adhesion molecules on T cells, macrophages and natural killer cells and also induce the secretion of IL-13, IL-6, TNFα by peripheral blood mononuclear cells. Bromelain can block Ral-A and ERK-2 pathways by inhibiting the T cell signal transduction. This induces the decrease of the activation of CD4 T cell and reduce the expression of CD25.

**Osteoarthritis**

Bromelain is a food supplement that may provide an alternative treatment to nonsteroidal antiinflammatory drug (NSAIDs). It plays an important role in the pathogenesis of arthritis. Bromelain has analgesic properties which are thought to be the result of its direct influence on pain mediators such as bradykinin.

**Allergic airway disease**

Bromelain was found to attenuate development of allergic airway disease (AAD), while altering CD4+ to CD8+T lymphocyte populations. From this reduction in AAD outcomes it was suggested that bromelain may have similar effects in the treatment of human asthma and hypersensitivity disorders.

**Inflammatory bowel disease**

Investigation on bromelain’s anti-inflammatory action as a potential therapy for ulcerative colitis and Crohn’s disease, 2 types of inflammatory bowel disease. Bromelain discourages the release of inflammatory chemicals called cytokines and chemokines from diseased tissue (Test tube study; Duke University gastroenterology).

**Digestive Aid**

Bromelain is best known for its ability to break down proteins — making this enzyme a popular digestive aid. Bromelain has been used successfully as a digestive enzyme following pancreatectomy, in cases of exocrine pancreas insufficiency and in other intestinal disorders. Because of its wide pH range, bromelain has activity in the stomach as well as the small intestine. It has also been shown to be an adequate replacement for pepsin and trypsin in cases of deficiency.

**Papain**, a papaya (Carica papaya) fruit latex extract, is a cysteine protease that catalyzes the cleavage of peptide bonds using a catalytic triad involving a deprotonated cysteine residue. Papain is well known for improving digestion and treating infections, diarrhea, and allergies. It has also been used, with other protease to reduce pain, inflammation, and swelling. It’s also being studied for potential use in cancer and other diseases.

**Antimicrobial action**

Papain has shown antimicrobial activity against a number of microorganisms such as *Bacillus subtilis, Enterobacter cloacae, E. coli, Salmonella Typhi, Staphylococcus aureus and Proteus vulgaris*.

**Digestion / Slimness**

Papain is used to promote digestion: discomfort, ballooning. This use is based on in vivo studies of hydrolysis of different proteins in the presence of papain. This demonstrated a specificity of action of papain towards the peptide bonds containing lysine or arginine in acid medium (pH 3-5).

*By diffusing in the body the papain would allow the fractionation of the abnormally secreted proteins, like the collagen fibers of the cellullite, and facilitate their elimination as well as that of the greasy cellullite.*

**Uses in association of systemic enzymes**

Accelerate recovery and healing of muscle damage

Numerous studies in Europe show that supplementation with proteolytic enzymes effectively speeds up recovery after physical exercise and injuries in athletes. It also speeds up tissue repair in patients who have undergone surgery.

In a study of footballers with ankle injuries, supplementation with proteolytic enzymes were three times higher in the control group. Patients took this mixture before and after a dental operation and showed the anti-inflammatory effects of a mixture of 100 mg pancreatin, 45 mg bromelain, 60 mg papain, 10 mg lipase, 24 mg trypsin and 1 mg of chymotrypsin. Patients took this mixture before and after a dental operation for several days. Three days after the operation, levels of C-reactive protein, a marker of inflammation, were three times higher in the control group.

**Other enzymes**

DigeZyme® is a unique proprietary blend of specific digestive enzymes that offers much more than just aiding proper digestion and better absorption of nutrients.

DigeZyme® consists of five GMO-free broad acting enzymes obtained from the fermentation process:

- **Amylase**: breaks down carbohydrates such as starch and glycogen, into smaller units
- **Protease**: Breaks down protein and supports immune function
- **Lactase**: Breaks down lactose (milk sugar) and useful for lactose intolerance
- **Cellulase**: Breaks down cellulose and chitin. It helps free nutrients in both fruits and vegetables
- **Lipase**: Breaks down lipids and improves fat utilization and also supports the most healthy gallbladder function

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**FOCUS HINTS**

**Properties**

- **Bromelain**: Breaks down lipids and improves fat utilization and also supports the most healthy gallbladder function
- **Lactase**: Breaks down lactose (milk sugar) and useful for lactose intolerance
- **Cellulase**: Breaks down cellulose and chitin. It helps free nutrients in both fruits and vegetables
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**Effects**

- **Bromelain**: Used successfully as a digestive enzyme following pancreatectomy, in cases of exocrine pancreas insufficiency and in other intestinal disorders. Because of its wide pH range, bromelain has activity in the stomach as well as the small intestine. It has also been shown to be an adequate replacement for pepsin and trypsin in cases of deficiency.
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**Inflammatory**

- **Bromelain**: Exhibits various fibrinolytic, antiedematous, antithrombotic, and anti-inflammatory activities.
- **Papain**: Exhibits antimicrobial action against a number of microorganisms such as *Bacillus subtilis, Enterobacter cloacae, E. coli, Salmonella Typhi, Staphylococcus aureus and Proteus vulgaris*.

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**Uses**

- **Bromelain**: Used as a digestive enzyme following pancreatectomy, in cases of exocrine pancreas insufficiency and in other intestinal disorders. Because of its wide pH range, bromelain has activity in the stomach as well as the small intestine. It has also been shown to be an adequate replacement for pepsin and trypsin in cases of deficiency.
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**Summary**

Bromelain and Papain are part of the family of proteolytic enzymes. They are systemic enzymes, designed to survive the acidity of the stomach and to go into the small intestine where they are absorbed into the bloodstream. There, they degrade proteins, thus exerting multiple beneficial effects for health, including platelet aggregation inhibition, digestive aid and anti-inflammatory effects.
Nigellin - Elixir for Overall Health and Wellness

Sabinsa’s Nigellin™ is obtained from the seeds of Nigella sativa (Black Cumin) and standardized to contain Thymoquinone, Thymohydroquinone, Hederagenin.

Sabinsa’s Nigellin represents patent pending, solvent-free, supercritical fluid extraction (SCFE) black cumin seed extracts, standardized to contain thymoquinone. Nigellin is available as oil (Nigellin BCS - Amber), and defatted black and white powders (Nigellin BCS - Onyx and Nigellin BCS - Pearl, respectively).

Nigella sativa, popularly known as ‘black seed;’ or ‘black cumin,‘ one of the most revered medicinal seeds in history of mankind, is indeed a gift from the Mother Nature—owing to its well-established, sanctified, and miraculous uses for over 3,000 years. Various medicinal and healing properties of black seed are directly mentioned in the Qur’an as ‘blessed food!’ Black seed has also been mentioned in the Bible as the ‘curative’ used by Asian herbalists and the Romans for culinary purposes for centuries. Thus, it is not surprising that Prophet Muhammad had praised black cumin by saying that “Hold on to the use of the black seed for indeed it has a remedy for every disease except death.”

Chemical constituents
One of the reasons for considering black seeds as the main sources of nutrition and healthcare might be due to the complex chemical structure of the seeds. These little seeds contain more than 100 different chemical constituents, including carbohydrates, proteins, volatile and fixed oils, and are also an abundant source of all the essential fatty acids. Thymoquinone is proved to be the main active constituent of the volatile oil of the black seed and is known to have several medicinal properties.

A time-honored remedy
Though black seed has been recognized as one of the most popular herbs in many parts of the world for centuries, extensive research during last 40 years has further validated its potential health benefits, viz. maintain healthy inflammatory response (Muhdavi et al., 2016), asthma control support (Lo-shak et al., 2017), improved glycemic control in diabetic patients (Ramosa et al., 2016), protective role in diabetic nephropathy (Aniar et al., 2017), healthy blood pressure (Dehkordi and Kamkhal, 2008) and lipid profile management (Salzgha-bae et al., 2012), helps boost male fertility (Marbat et al., 2013; Kishlhoz et al., 2014).

Asthma
Recent research published in Frontiers of Pharmacology identified Nigellin™ BCS - Amber, Sabinsa’s Black Cumin (Nigella sativa) seed extract, as being the most effective of the 10 Nigella sativa (NS) extracts used in an in vitro study which suppressed the release of the most active cytokines and identified a prostanoid with inflammatory properties which may possess a favorable effect in the context of asthmatic conditions (Comparative Immunomodulatory Activity of Nigella sativa L. Preparations on Proinflammatory Mediators: A Focus on Asthma, Front. Pharmacol., 02 October 2018). Researchers evaluated 10 different NS extracts, and top ranked the extract provided by Sabinsa’s parent company and manufacturing arm, Sami Labs. It surpassed the second ranking extract in terms of the active constituent, thymoquinone (TQ), by more than 300%.

Anti-inflammatory and immunomodulating properties are among the most valued in anti-asthma herbal products. Nigellin had the highest effects in suppressing the release of cytokines IL-2, IL-6 and PGE2 in T-lymphocytes and also in monocytes hindering the expression on IL-2 and PGE2. These are among the most active cytokines involved in asthmatic conditions. The investigators noted a positive relationship between the TQ level in the preparations and its inhibitory potency on IL-6 and PGE2.

However, PGE2 does exhibit beneficial bronchodilatory effects in human lung epithelial cells and Sabinsa’s extract showed an enhanced PGE2 expression in A549 human epithelial cells lines, demonstrating an interesting activity behavior of the maximum-TQ containing Sabinsa’s extract. The results presented in this paper formed the biochemical basis of a subsequently conducted clinical trial. Asthma is a debilitating disease affecting 25 million people in the USA, alone and 334 million globally according to some estimates. It tends to flare up sharply due to external factors such as pollution and allergens.

Nigella sativa and its preparations have been referenced extensively in traditional health-care systems ranging from Ayurvedic and Unani to Arabic and Prophetic for prevention and treatment of asthma, making it a candidate for study by modern researchers. Lack of standardization has, however, hampered researchers in evaluating the material’s efficacy in the past.

“This emerging antioxidant ingredient has traditionally been used in the management of numerous health conditions, with recent research beginning to validate historically reported benefits,”

Elixir for Overall Health and Wellness

Ellagic Acid is traditionally extracted from Pomegranate or Terminalia. Ellagic acid is known as skin lightening and brightening, repairing from sun damage, besides strong antioxidant properties and skin elasticity improver

Ellagic acid is used in topical formulation for its lightening effect on UV induced hyperpigmentation. It’s know that Ellagic inhibits melanin forma-
tion by acting on tyrosinase.

Oral Administration of Ellagic Acid for skin lightening Oral administration of ellagic acid (alcoholic extraction followed by acid hydrolysis) has been studied, and its metabolites have been detected in urines and feces. A whitening effect on UV-induced pigmentation was observed, with a reduction on the number of DOPA-positive melanocytes (Mineka Yoshimura, 2006).

A double blind vs placebo clinical trials has evaluated the protective and ameliorative effect at 200mg and 100mg of ellagic acid per day, orally, followed by UV radiations. It’s so suggested that Ellagic acid orally administrated is absorbed into the body and the ellagic acid/or its metabolites inhibits the proliferation of melanocytes in the skin.

Those studies have been performed in Japan, with products offered by Sabinsa Japan Corp. Effects or Oral Administration of Ellagic Acid-rich pomegranate Extracts on UV induced pigmentation in the human skin, Kouichi Kasai, Mineka Yoshimura, Takuro Koga, Masayuki Arii, Satoru Kawakasi, J Nutr Sci Vitaminol 52, March 2006.

Inhibitory Effect of an Ellagic Acid-rich Pomegranate Extract on Tyrosinase Activity and UV-Induced pigmentation, Mineka Yoshimura, Yoko Tanabe, Kouichi Kasai, Yuan Yamakoshi, Taguro Koga, Biosci. Biotechnol. Biochem 69, 2005
FOCUS

The Effective SOD for Health & Skin

Production of reactive oxygen species (ROS) is a normal process in oxygen-breathing organisms. Under normal physiological conditions, a balance between these species and the body's anti-oxidant defenses exists. However, certain conditions can increase the production of Reactive Oxygen Species (ROS) such as the superoxide ion (O2-) and the hydroxyl ion (OH-). This can disrupt the natural balance and lead ultimately to oxidative stress.

Cells defend themselves? Superoxide dismutase (SOD), along with catalase and glutathione peroxidase, form the front line of the body's antioxidant enzyme defenses[4]. The superoxide anion is the starting point of the cascade of reactions of free radical production. SOD, dubbed the “enzyme of life” on discovery in 1968, is the first antioxidant mobilized by the cell as defense against oxidative stress. The enzyme reacts with the superoxide ion and turns it into hydrogen peroxide (H2O2). This is then catabolized by catalase and glutathione peroxidase to produce molecular oxygen (O2) and water (H2O).

These antioxidant enzymes have a distinct advantage over the antioxidants consumed from the diet or nutritional supplements, like the vitamins A, C, and E, carotenoids, and thiols since the enzymes are biological antioxidants, rapidly and repeatedly reducing reactive oxygen species without being consumed themselves. Like most other protective mechanisms in the body, the production of SOD decreases with age[5], while a cell’s susceptibility to oxidants increases, putting the cells under increasing oxidative stress.

Oral administration Oral administration of SOD and the other antioxidant enzymes present in many plant extracts is, under normal conditions, not effective. During passage through the gastrointestinal pathway the enzyme is denatured (deactivated) rendering it ineffective as an antioxidant. However, studies have shown that combining SOD with a wheat gliadin polymer system temporarily protects the SOD during its passage through the gastrointestinal tract. One explanation of this efficiency was presented by Clemente et al. who showed that gliadin increases the permeability of the intestinal wall by promoting the release of a zonulin, thereby allowing the transport of the macromolecule SOD across the intestinal barrier.

The combination of SOD extracted from cantaloupe melon (Cucumis melo L.C.) with the wheat gliadin biopolymer (GliSODin®) significantly improves the delayed release of SOD as evidenced in vitro by the progressive increase of its activity in a medium mimicking the digestive conditions.

Thanks to its gliadin matrix, GliSODin® is orally effective unlike most existing SOD supplements. The gliadin is not only an enteric protection but more: a real vehicle for the SOD, thanks to its specific bio-adhesive properties with the epithelial cells in the small intestine.

Vouloudakis et al. have shown ex vivo that prime activation of macrophages isolated from rodents with interferon-gamma (INF-gamma) subsequently challenged with IgG/anti-IgG1 immune complexes leads to the significant production of superoxide anions. This production may be regulated, in a dose-dependent manner, in macrophages originating from rodents previously supplemented with GliSODin®. These results prove the potent in vivo activation of antioxidant activities made by the SOD-containing melon extract/gliadin biopolymer combination.

An important proof of concept in vivo study by Vouloudakis et al. using Balb/c mice receiving the SOD melon extract orally, either alone or combined with wheat gliadin (GliSODin®) for 28 weeks showed that only the gliadin-SOD complex resulted in a significant increase in circulating antioxidant levels. At the end of the study, the animals supplemented with GliSODin® had significantly lower levels of oxidative-stress induced DNA damage. Furthermore, the researchers found lower levels of apoptotic cells in the spinal fluid, thus showing a marked protective benefit.

Oxidative stress & DNA damages GliSODin®s protective benefits have been demonstrated in human interventional studies. GliSODin® was shown to protect against cellular oxidative stress damage in a dramatic human model. In this double-blind, placebo-controlled trial, twenty healthy volunteers were given pure oxygen in a hyperbaric chamber (HBO), which increased atmospheric pressure to 2.5 times normal, inducing intense oxidative stress. A measure of blood cell protection, looking at the integrity of the cellular DNA, was taken before and after exposure to measure the effect of oxidative stress. The GliSODin® group had significantly lower cellular DNA damage as evidenced by a test called “Comet Assay.” Also, these findings coincided with reduced blood isoprostane levels, another marker of oxidative stress. In the GliSODin group, the cell nucleus is intact, while the placebo group shows progressive nucleus damage with pronounced "comet tail".

www.glisodin.org & www.glisodin.org

First orally effective SOD, GliSODin® is the new oral active for skin health, immune system and free radicals protection developed by Isocell and supported by more than 25 mostly published studies.

- GliSODin® is both a protected and targeted SOD, supported by more than 25 clinical and scientific studies.
- GliSODin®, a patented nutraceutical ingredient, has been shown in clinical research to:
  - Promote the production of the body’s own, natural antioxidants
  - Help maintain cellular health and protect against damage caused by oxidative stress
  - Support skin health against photo-oxidative stress
  - Reduce lactic acid buildup in humans under physical stress
  - Support healthy immune function
  - Prevent stress induced impairment of spatial memory (neuroprotection)

Anti-aging

- Protects against DNA damage
- Prevents oxidative stress
- Decreases troubles induced by ageing
- Improves cognitive functions
- Protects against photo aging
- Supports healthy immune function
- Reduces risk factors of cardiovascular disease
- Helps prevent light sun allergies

The enzymatic activity of oral free SOD in the body is mainly to totally destroyed within few minutes, despite the source, and can so not promote the production of the SOD cascade by the cells and the related expected optimal activities. For this reason, usual studies based on free SOD cannot prove the efficacy, or at an incredibly high use (in-vivo).

Dose: 2 x 100mg to 2 x 250mg a day

20 Healthy volunteers exposed to hyperbaric pressure + oxygen

GliSODin Nucleus without deletions “Comet tail”

Placebo Nucleus damage with pronounced “Comet tail”

GliSODin increases the 3 essential enzymes of ET28 (%)

Cognitive troubles induced by ageing

*The enzymatic activity of oral free SOD in the body is mainly to totally destroyed within few minutes, despite the source, and can so not promote the production of the SOD cascade by the cells and the related expected optimal activities. For this reason, usual studies based on free SOD cannot prove the efficacy, or at an incredibly high use (in-vivo).
Immunity
- Supports healthy immune function
- Immune-modulating properties shown to be effective in children
- Acts as immune-modulator
- Regulates pro- and anti-inflammatory cytokines production
- Induction of Th1 immune response

A newly published study with GliSODin® in the present randomized, placebo-controlled, double-blind clinical trial, the clinical efficacy of GliSODin® in accelerating symptom relief in children with allergic asthma and house dust mite allergy (receiving house dust mite immunotherapy) was demonstrated. In summary, GliSODin® accelerates the symptom relief in asthmatic children allergic to house dust mite receiving house dust mite immunotherapy. For the first time GliSODin’s immune-modulating properties were shown to be effective in children!

Cardiovascular health
- Reduces risk factors of cardiovascular disease
- Decreases carotid Intima-Media thickness (IMT)
- Prevents metabolic syndromerelated diseases

A randomized double-blind clinical trial by Mac-Mary et al. showed that GliSODin® supplementation reduced skin reddening when healthy fair-skinned volunteers were exposed to UV radiation. Fifty subjects were randomly assigned to receive a daily dose of GliSODin® (500 mg) or placebo for four weeks. Subjects were exposed to UV radiation to induce sunburn on the inner forearms, and the susceptibility of the participants to sunburn (defined as the minimum erythematous dose – MED) and a measure of the resulting redness (actinic erythema). Supplementation with GliSODin® results in an increase in the minimum exposure to UV rays necessary to produce skin burn for fair-skinned people (phenotype II), compared to placebo. The induced redness also decreased quicker in the GliSODin®-supplemented group over the four-week period. These results confirmed the efficacy of the SOD-gliadin combination against the consequences of oxidative stress produced by exposure to UV radiation. In a later study of similar design with Type II (fair-skinned) participants, GliSODin significantly increased the MED in two weeks’ time with a dose of just 250mg.

Sport & inflammation
- Anti-inflammatory effect: control C-Reactive Protein
- Decreases in-exercise lactate production
- Supports post-exercise immune function
- Improves recovery after strenuous exercise

In an in vivo study, Vouloudakis et al. compared the effects on production of pro- and anti-inflammatory cytokines with SOD, Glutathione, heat inactivated GliSODin® and GliSODin®. Only GliSODin® reduced the production of the pro-inflammatory cytokine, tumor necrosis factor-alpha (TNF-α) and promoted production of the anti-inflammatory cytokine interleukin-10 (IL-10), compared to the other treatments.

The anti-inflammatory effects of GliSODin® are significant since chronic inflammation is associated with the onset and progression of many chronic diseases. Ökada et al. reported that administration of the gliadin-SOD complex could prevent cancer progression, promoted by inflammation. This result indicated that the antioxidant and anti-inflammatory properties of GliSODin® might have significant benefits for the prevention of tumor development and progression.

A double-blind study included 19 participants who were participating in a training camp (2 capsules [total 500 mg] of GliSODin®). SOD activity was significantly higher (p <0.01) in the supplemented group at all measurement times, and post-exercise C-reactive protein was significantly lower in athletes receiving GliSODin®. Supplementation with an extract rich in SOD activity promoted antioxidant status and protected against increased inflammation in the serum of professional rowers. Hong et al. recruited 44 healthy individuals and assigned them to receive a daily GliSODin® dose of 1500 IU for four weeks. Healthy volunteers were then submitted to cycling or treadmill exercise but assigned into two distinctive groups: the severe exercise group (27 subjects) or the moderate exercise group (17 subjects). Only volunteers ranging from the severe exercise group showed a significant reduction in the exercise-induced lactate production, after the four-weeks of SOD supplementation.

Sun & skin health
- Increases the MED (Minimal Erythema Dose)
- Helps prevent light sun allergies
- Prepares the skin for sun exposure
- Reduces sunburn redness
- Faster recovery after sunburn and photo-oxidative stress

GliSODin® was studied for its ability to regulate the immune response. Supplementation with GliSODin® had increased production of type1 helper T lymphocytes (Th1) and INF-α and IL-4. The immunoglobulin G (IgG) response – the predominant antibody used by the body to identify and neutralize foreign objects, while the response of IgE, the immunoglobulin associated with an allergic response, was only marginally affected. Vouloudakis et al. proposed that the mechanism behind these effects was due to an activation of antigen presenting cells (APC), which results in the production of hydrogen peroxide (H2O2) and nitric oxide (NO), both of which are reactive oxygen species and upset the oxidant-antioxidant balance. In response to this, production of the antioxidant enzymes catalase and glutathione peroxidase is induced. This results in a polarized adaptive immune system, highlighting the benefits of GliSODin® since this polarization is a sign of the natural equilibrium of antioxidants in the cells. Rahman et al. investigated the effect of receiving GliSODin®-containing supplements on quality of life and performance of 23 AIDS patients on HAART (significant benefits for the millions of people infected with the HIV-1 virus and receiving anti-retroviral therapy).

Cardiovascular health
- Reduces carotid intima-media thickness (IMT)
- Prevents metabolic syndrome-related diseases

Using ultrasound-B imaging to measure carotid artery intima thickness (IMT), a sign of hardening of the arteries (atherosclerosis), the researchers found a reduction in the progression of IMT in the SOD-supplemented group, compared to the group with the prescribed diet and lifestyle. This study showed that supplementation with GliSODin® could impact the antioxidant status and the inflammatory process. The study also showed clear benefits against atherosclerosis, which is a major risk factor for cardiovascular disease. GliSODin® promoted arterial health and function compared to the control group as measured by the thickness of the participants’ carotid arteries. Further, GliSODin® significantly improved the antioxidant status and provided a reduction in measures of lipid oxidation. The researchers called the results “remarkable.” (Naito et al.) No significant differences in blood glucose levels or body weight were observed between the diabetic mice in the SOD-gliadin-supplemented group and the control group. In terms of kidney health, significant reductions in the levels of 8-hydroxydeoxyguanosine (8-OHdG), a marker of oxidative stress, had been observed in the SOD-gliadin-supplemented group.

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**FOCUS**

A rich source of all-natural, vegan, and versatile protein
- Free-flowing
- Water Extract, water Soluble
- Good taste

**Promond®**

Promond™ is a 100% natural and vegan protein obtained from almonds and standardized to contain not less than 50% protein. This off-white to cream, free-flowing powder has good taste compared to other protein powders.

It is having a complete array of amino acids, including high levels of branched-chain amino acids (BCAAs). Although its amino acid profile is similar to whey and pea protein, it is particularly high in glutamate, arginine, aspartate, and phenylalanine.

Almonds (*Prunus amygdalus*) are incredibly popular nuts worldwide, which belong to species related to cherries and plums, and are native to Middle East and South Asia. These highly nutritious and extremely healthy nuts are a rich source of proteins, dietary fiber, and other micronutrients.

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<td>Glu 26.3</td>
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In recent years, extensive research on almonds has proved that this versatile nutrient food exerts an array of health benefits, including healthy heart support (maintaining healthy cholesterol levels [Wen et al., 2010, Berryman et al., 2015]), it may reduce risk of coronary artery diseases [Jenkins, 2002 & 2006, Hu et al., 1998] and oxidative stress [Li et al., 2007], healthy blood sugar levels [Jenkins et al., 2006] and healthy weight management, and related complications [Wen et al., 2003, Berryman et al., 2015, Abazarfard et al., 2014].

**enXtra™**

Clinically proven to improve alertness and focus up to 5 hours with and without caffeine

EnXtra™ from *Alpinia galanga* is a DNA-authenticated, stim-free energy ingredient that provides fast, effective and safe energy with no crash. In a 53-person, double-blind, double-dummy human clinical trial, it was shown to improve mental alertness & acuity for up to 5 hours without increasing heart rate or blood pressure. It can be used as a replacement for caffeine or used with caffeine to prevent crash and prolong benefits. EnXtra is easy to formulate with, water soluble and has a pleasant taste profile.

EnXtra™ is a DNA-authenticated galangal extract that delivers fast, effective and safe results for improving mental alertness & acuity. It does not increase heart rate or blood pressure and is safe & effective for 5 hours without the caffeine crash.

EnXtra™ is water soluble and can be formulated with or without caffeine

Supported by 2 human clinical trials

**Pilot Study : Human Safety & Efficacy**

300 mg of EnXtra *Alpinia galanga* demonstrated optimal improvement in alertness for up to 5 hours when compared to other extract groups (70 caffeine habituated subjects)

**Second Human Study**

Randomized, double blind, double dummy, placebo controlled crossover study design : 53 caffeine habituated individuals with 4 study arms
- Placebo
- Caffeine (200mg)
- EnXtra (300 mg)
- EnXtra (300 mg) + Caffeine (200mg)

Assessments were taken at 1-hour, 3-hour and 5-hour time intervals

Standard assessment tools :
- Attention Network Test
- Psychomotor Vigilance Task
- Karolinska Sleep Scale score

**Study Findings**

- Maximum increase in alertness from baseline was observed at 3 hour interval
- The combination of caffeine with EnXtra significantly reduced mean response time as compared to placebo
- Improved ability to achieve and maintain high arousal levels to better process new information.

**Manufacturing**

Gentle, solvent free extraction. Proprietary process controls for optimum bioactives. More than 99% DNA match with authentic galangal

**Sharpen alertness and focus for up to 5 hours**

No increase in blood pressure or heart rate

Amplifies caffeine benefits without the “crash”
- Blocks Adenosine
- Dopamine Release
- Increase Blood Flow

**Responsible Sourcing**
- Skillful hands cultivating galanga for more than three generations
- Plants grown in hilly terrain away from industrial pollution
- Cultivated without pesticides
- Hand picked at optimal daytime temperature
- Natural drying on high altitude, stony land near farm
Two Ways Anti-Inflammatory Boswellin®

One of the most famous and powerful anti-inflammatory, Boswellic acids - and especially AKBBA - have been found to inhibit 5-lipoxygenase by one of two ways (direct interaction with 5-LO and Interacting with 5-LO activating proteins FLAP) as well as human leukocyte elastase (HLE).

What effective Boswellic Acid?
Boswellia extracts contain Boswellic acids. Grades of Boswellia are not titled as “total boswellic acid” which means nothing since all acids would be included. It’s important to see the real content of the actives acids: the β boswellic acids (by HPLC) and more specifically the more potent Acetyl-11-keto-β-boswellic

Dual Inhibitory Action
Boswellia extract inhibits 5-LO by one of two ways:
- Directly interacting with 5-LO
- Interacting with the five-lipoxygenase-activating protein (FLAP).

As well as, human leukocyte elastase (HLE), the serine protease produced and released by polymorphonuclear leukocytes (PMNLs) which has been suggested to play a role in several diseases (pulmonary emphysema, cystic fibrosis, chronic bronchitis, acute respiratory distress syndrome, glomerulonephritis, and rheumatic arthritis) due to its aggressive and destructive properties.

This dual inhibitory action of two pathophysiologically important enzyme activities (HLE and 5-LO) is unique to the pentacyclic triterpenes from the boswellia series. Several leukotriene biosynthesis inhibitors furnished no HLE inhibitory activity: β-Boswellic acid, AKBA, ursolic acid, and amyrin significantly inhibited HLE. The HLE inhibitory activity of AKBA and ursolic acid were comparable; however, ursolic acid’s mode of inhibition is competitive.

Recommended dosage
Topical: 3% to 5%

As it acts as a strong anti-inflammatory agent, BS extract may be used in stand alone or in combination with COX-2 inhibitors or nutrient enhancer (Bioperine®).
Pomegranate P40P

P40p™ is a unique product, carrier free, soluble in water and is standardized to a full spectrum of all of the essential compounds responsible for specific health promoting benefits of pomegranate juice, manufactured under strict GMP procedures.

The P40p™ extract is standardized to 40% punicalagins with a minimum concentration of 30% punicalagins. Additionally, P40p™ guarantees a total polyphenol content of no less than 50% (Table 1). The final product is free of yeast and bacterial contamination, allergens, gluten, BSE, GMO and irradiated products. P40p™ is Kosher certified and suitable for vegans.

Approximately, 30 mg of P40p™ provides an equivalent amount of bioactives than 50 ml of pomegranate juice.

Chemical Profile

The key bioactive compounds in pomegranate fruit are a group of hydroxylable ellagitannins generally called punicosides, including punicinins, punicalagins (A+B), ellagic acid glycoside and ellagic acid. Ellagic acid is commonly used to standardize commercial pomegranate extracts but this approach is unreliable, potentially misleading and vulnerable to adulteration (Zhang, 2009). Punicalagins have been identified as being responsible for most of the antioxidant activity present in the pomegranate fruit (Gil, 2000) and represent a more reliable means of standardization of commercially produced pomegranate extracts (Jimenez Del Rio, 2006).

Animal studies have shown that both ellagic acid and punicalagins are absorbed by the gastrointestinal track after oral ingestion of pomegranate juice or extract, with the concentration of the latter being higher. Punicalagins are not absorbed in vivo directly but reach the colon and release EA that is metabolised by the human microflora (Jarrosa, 2006).

Cardiovascular Health

Atherosclerosis is a collection of patchy plaques (called atheromas) in medium-sized and large arteries. These plaques contain lipids, inflammatory cells, smooth muscle cells, and connective tissue. Several investigators have studied the influence on cardiovascular health of pomegranate supplementation. They have measured how pomegranate affects several markers involved in the development of atherosclerosis, such as plasma lipid profiles, lipid-oxidation status, platelet aggregation, interaction between macrophages lipids, and stress to the arterial wall.

More recently Rosemblat has also confirmed that pomegranate juice daily consumption improves plasma lipid oxidant profile in patients with diabetes by reducing lipid peroxide and cellular peroxides and increasing glutathione levels, factors that all contribute to development of atherosclerosis in these patients (Rosemblat, 2006).

Cancer

Cancer is an unregulated proliferation of cells which lose their normal controls, resulting in unregulated growth, lack of differentiation, local tissue invasion, and, often, metastasis. Dozens of information (angiogenesis, apoptosis, cells differentiation and signaling) gathered on cellular cultures and animal models have been collected. Pantuck et al found that daily supplementation with pomegranate juice (PJ) led to a significant decrease in tumor progression in patients with prostate cancer that had undergone surgery or radiotherapy. They were able also to confirm in in vitro investigations that PJ induced apoptosis and decreased cell proliferation (Pantuck, 2006).

Nektium offers a range of Pomegranate extracts looking to preserve the totum of the fruits, as in the famous P40P, and not only ellagic acids which is finally in a very small amount in the fruits. From the seeds, they extract punicin acids, studied then for healthy body weight.

Pomegranate Seed Oil

Pomegranate seed oil (PSO) is rich in Punic Acid (PA) and contains other actives such as ellagic acid, other fatty acids and sterols (Schubert, 1999; Amakura, 2000; Abd El Wahab, 1999). Nektium manufactures PSO with at least 80% content of PA.

Punicic acid

Punicic Acid (PA) is structurally related to Conjugated Linolenic Acid (CLNA), and their potential beneficial biological effects (for instance significant decrease in hepatic tryacylglycerol deposits, as well as levels of monounsaturated fatty acids).

In fact PA has been found in animal models to accumulate in liver and perirenal fat, increasing serum levels of tryacylglycerol and phospholipids, which suggest PA mobilizes fat out of their storage sites into the blood (Yamasaki, 2006), corroborated later on in ICR CD-1 mice.

At the molecular level, investigators have found that PA activates a class of receptors (PPARY) also activated by oral antidiabetic agents, which in principle could play an important role in glucose homeostasis and obesity related inflammation.

In summary, PSO has shown beneficial effects on the lipid storage and lipid serum profile in obesity animal models with a strong suggestion that it may also help uncontrolled blood glucose levels.

Pomegranate Seed Oil in Weight Management

PSO has been used in a formulation intended for weight management, together with fucoxanthin. In a clinical trial, investigators found that PSO acted synergistically with a fucoxanthin, increasing the resting energy expenditure (REE). Increase in REE leads to losing weight (Abidov, 2010). More recently, investigators have reported that PSO can down-regulate the expression of adipogenic genes (PPARy) in fat cells.
Sabinsa has developed a reputation for being a trusted and valued resource to academic and medical communities in providing C3 Complex® for a variety of research initiatives.

Feel quiet when using the Curcuma longa from the leading Cie

New Metabolic syndrome

A significant study on Curcumin C3 Complex® (in combination with Bioperine®) in patients with metabolic syndrome has been published on end of 2014, showing the significantly greater effect of Curcuminoids in reducing the serum concentrations of LDL-C, non-HDL-C, total cholesterol, triglycerides and Lp(a), when serum HDL-C concentration was elevated significantly. Serum sdLDL levels were comparable (randomized, double-blind, placebo, 117 patients, 8 weeks).

New - Osteoarthritis

Another study on 53 subjects for 8 weeks with C3 Complex and Bioperine shows that this combination brought a significant improvement in arthritic indices such as VAS (SVisual Analogue Scale), WOMAC (WOM Osteoarthritis Index) and LPFI (Pain Index).

Sabinsa’s Curcumin C3 Complex® enjoys a special place among curcumin extracts. C3 Complex is obtained from the dried rhizomes of Curcuma longa (turmeric) and standardized to min. 95% Curcuminoids. The name C3 Complex has reference to its three main chemical compounds – Curcumin (75-85% of the composition), Demethoxycurcumin and Bisdemethoxycurcumin – collectively known as Curcuminoids.

Traditional knowledge

The rhizome of turmeric has a rich history in India as a spice, food preservative and coloring agent, and has been used for centuries in the Ayurvedic system of medicine: well-documented for treatment of various respiratory conditions (e.g. asthma, bronchial hyperactivity and various allergies), liver disorders, poor appetite, rheumatism and influenza symptoms.

Pharmacological activity

Turmeric and more appropriately the components curcuminoids have been preclinically and/or clinically validate for their role in maintaining health and wellness. At the molecular level, the curcuminoids have been showed to inhibit nuclear factor kappaB (NFkB), a transcription factor that triggers inflammatory mediators.

Curcumin C3 Complex counteract free radicals in 2 ways:
- Prevention of free radical formation
- Intervention whereby already preformed radicals are quenched by the curcuminoids.

Curcuminoids offer antioxidant, anti-inflammatory, and a healthy immune system support, and potential prevent connective tissue break down through inhibiting destructive enzymes, with benefits in healthy aging and all-related oxidative stress (including diabetes mellitus (and the secondary complications of the disease). Studies reported it protects the liver against several toxicants both in vitro and in vivo.

Various other researches are conducted especially against metabolic syndrome (see below), as well as Alzheimer (anti-amyloid b), and cancers (breast, bladder, pancreatic, skin) where curcuminoids act by inhibiting several processes.

Full and Clear Water-Soluble now Available

Sabinsa introduce in 2015 a new form of Curcumin which is completely water soluble, a major breakthrough in Curcumin technology: uC3 CLEAR™, the nano-free water soluble curcumin. Poor curcumin solubility and resulting sedimentation in beverage make it visually unappealing.

C3 CLEAR™ not only provides an improved, more convenient delivery system for Curcumin but also overcomes the challenges and limitations that can be present with solid dosage delivery systems such as poor disintegration, slow dissolution, or difficulty swallowing, thus enhancing the uptake of curcumin.

Why Curcumin C3 Complex stands out from the crowd?
- Most clinically studied Curcumin brand: more than 65 scientific publications, including clinical trials, have been published, and more than 100 articles.
- Free curcuminoids only, and no inactive metabolites
- Most active form (independent comparison of various Curcuma 95)
- Most safety data conducted with C3 Complex and not another curcuma extract. Only Curcumin in the market that has been reviewed and acknowledged by US FDA for GRAS status, a process which includes a comprehensive review of safety and toxicological data
- Most Patent-IP protection: Holds patent covering composition of curcuminoids, method of manufacture and uses
- Most consistent quality: C3 Complex has the same composition of the three Curcuminoids consistently in the same ratio in every batch
- It is known for its very low oxalic acid content (what caused kidney stones), heavy metal, ...
- Most stable supply chain: C3 Complex is promptly delivered from European buffer stock
- More proven bioavailability
- Dedicated unit: C3 Complex is processed all over the year in its dedicated unit on a continuous batch extractor, without risk of cross contamination, from known fields (traceability)
- Various awards
- Grades available
  - Curcumin C3 Complex 95% Curcumin C3 Complex 95% DC (Direct Compression)
  - Curcumin C3 Complex BWs (with Bacosides)
  - Curcumin C3 Complex Beadlets
  - Water Soluble : uC3 CLEAR™ (New)
LactoSpore® is a lactic acid producing Bacillus preparation providing 15 billion of spores per gram.

After ingestion (medium for awakening), the spores revive and produce acid L (+) Lactic, with the positive action on other micro-organisms. Lactospore is used in dietary supplements, in dairy products, bakery products, in tablets or vaginal ovules and in veterinary products.

Bacillus coagulans as a probiotic

Clinical studies have revealed that L. sporogenes can be successfully implanted in the intestine: it satisfies the essential requirements of an efficient probiotic. Preparations of L. sporogenes in pharmaceutical dosage forms such as tablets, capsules, dried granules or powder have the following characteristics:

- Contain a large number of viable lactobacilli that retain viability during preparation in pharmaceutical dosage forms and during storage before consumption. The spores are thermostable as against viable L. acidophilus cells which may not withstand spray drying. Survive in gastric secretions and bile of the upper digestive tract and reach the intestine safely.
- Settle in the digestive tract and produce enough lactic acid and other antagonistic substances to inhibit the growth of pathogenic bacteria.
- Being sporulated, they germinate under favorable conditions and produce sufficient viable cells which proliferate and perform vital healthful functions as described earlier. In addition, L. sporogenes spores are semi-resident and are slowly excreted out of the body (7 days after discontinuation of administration).

Clinical Studies

Different studies are available, and detailed on the website. We just mention few of them.

Gastro-intestinal and associated effects: administration of L. sporogenes markedly improved the general clinical condition of the subjects and provided relief from intestinal disorders and allergic skin conditions. Studies performed on patients suffering of gastrointestinal disorders proved the efficacy on:
- Acute and chronic intestinal catarrh
- Diarrhea
- Constipation
- Abnormal intestinal fermentation
- Dyspepsia infantum
- Allergic skin diseases
- Etc...

Hypocholesterolemic effects: Total serum cholesterol, LDL-cholesterol and total cholesterol to HDL-cholesterol and LDL-cholesterol to HDL-cholesterol ratios (p < 0.001) was reduced significantly over a period of three months.

Non-specific vaginitis: increase the vaginal acidity by the action of the lactic acid produced by Lactobacillus

Veterinary probiotic (weight gain, feces)

Recommended dosage

Stability

The daily recommended dose is 100 to 200 Million organisms per dose. 3 times daily, in tablets, capsules, chewable tablets, vaginal tablets or ovules, etc. Recommended dosage in feed and veterinary products are upon request.

Sabinsa has studied the heat stability at 90°C and 140°C (stability on viable count of Lactospore with high temperature) and the viable counts remain over 90% even after 150 sec at 90% or 30 sec at 140°C. Virtually 100% of spores are revived, one reason for the choice of Bacillus coagulans (sporogenes), and specific drying method. Spores will not grow during their action, and disappear by natural ways after working, hence the need for regular intake.

New Safety, Stability And Efficacy Studies Published


The effect of Bacillus coagulans MTCC 5856 (LactoSpore) on castor oil induced diarrhoea and gastrointestinal (GI) motility using well established in vivo studies found LactoSpore exerted dose dependent anti-diarrhea activity and reduced the faecal output (33%). It also inhibited the gastrointestinal motility. The results suggested that LactoSpore possess significant anti-diarrhoeal activity and therefore could be a potential agent in the management of diarrhea.


A double blind placebo controlled multi-centered trial was conducted to evaluate the safety and efficacy of LactoSpore in diarrhea predominant Irritable Bowl Syndrome (IBS) patients. Thirty-six newly diagnosed diarrhea predominant IBS patients were enrolled in three clinical centers. Along with standard care of treatment, 18 patients in group one received placebo while in group two, 18 patients received LactoSpore for 90 days. The study concluded that LactoSpore along with standard care of treatment was found to be safe and effective in diarrhea predominant IBS patients for 90 days of supplementation. Hence, LactoSpore could be a potential agent in the management of diarrhea predominant IBS patients.

LactoSpore: Genetic and Phenotypic Consistency Findings (World Journal of Microbiology and Biotechnology 32:60. 2016)

That B. coagulans strain is stable over multiple years of commercial production was clearly demonstrated through this study designed to evaluate probiotic potential, in-vitro safety, product stability, genetic and phenotypic consistency of the probiotic strain used for production of LactoSpore. Phenotypic and genotypic studies proved that the commercial preparations of LactoSpore contained the same strain of B. coagulans MTCC 5856 over multiple years of commercial production. B. coagulans MTCC 5856 strain showed probiotic potential and found to be non-mutagenic, non-cytotoxic, negative for enterotoxin genes and stable at ambient temperature (25 ± 2°C) for 36 months. Findings of this study provide confidence to use B. coagulans MTCC 5856 as a probiotic ingredient in various dietary and functional foods and health products.

LactoSpore Safety Study (Journal of Clinical Toxicology 6: 283. 2016)

A Double-Blind, Placebo-Controlled, Parallel clinical trial was conducted to evaluate the Safety and tolerability of B. coagulans MTCC 5856 at a dose of 2 billion spores per day in healthy adults. Safety and tolerability of B. coagulans MTCC 5856 was assessed over 30 days by safety laboratory parameters (blood hematollog and clinical chemistry parameters), anthropometric measures (weight, BMI, blood pressure and heart rate), adverse events, Bristol stool score, tolerability questionnaire and bowel habit diary.

LactoSpore has recently obtained the approval as Natural Health Product (NHP) that allows formulators and marketing companies to market LactoSpore in Canada as NHP. This approval renders Canadian market readily accessible by US and Canadian marketing companies. Pre-approved NHP ingredients can reduce the review period of Product License application in Canada, where a pre-market approval system precedes actual marketing. LactoSpore’s approval in natural health products in Canada is also supported by Sabinsa’s Utah facility, a registered foreign site for manufacturing the NHP for the Canadian market.
BioPerine® is the product sourced out of piperine studied for its ability to increase the bioavailability of nutritional compounds. It is also the only source from piperine to have undergone clinical studies to substantiate its safety and efficacy for nutritional use.

Bioavailable curcuminoids
Effect of BioPerine® on Serum Concentrations of Curcumin in Human Volunteers. The relative bioavailability is improved by more than 20 times when therapeutic effectiveness of curcumin is often limited due to its poor absorption from the GI tract.

Bioavailable β-Caroten
BioPerine® increased the absorption of co-administered beta-carotene in human volunteers by 160%, using 5mg Bioperine®.

Bioavailable Selenium
Effect of BioPerine® on serum selenium levels during a 6 week supplementation trial in human volunteers: increase by 145% of the selenium levels over the pre-supplementation value (50 µg of elemental selenium in the form of Selenomethionine versus 50µg+5mg Bioperine®).

Bioavailable vitamins
Efficacy of BioPerine® (5 mg) on the bioavailability of Vitamin B6 absorption in human volunteers: increase by 250% of the vitamin B6 serum level after 2 hours compared to control (100mg B6 / 100mg B6+Bioperine®).

Bioavailable Resveratrol
Many other studies have been conducted, the most recent one on the resveratrol: “We found that the degree of exposure (i.e. AUC) to resveratrol was enhanced to 229% and the maximum serum concentration (C max ) of exposure (i.e. AUC) to resveratrol was enhanced to 21 day supplementation trial (+150% in serum, 90mg CoQ10+5mg Bioperine®).

BioPerine®:
- is a standardized extract from the fruit of Piper nigrum L (black pepper)
- contains 95% of piperine
- may be co-administered with various nutrients for both human and animal health.
- is Nature’s Bioavailability Enhancing
If you lack the one ingredient that can change the way your body looks, just go for BioPerine®
- has been studied by Sabinsa and many external labs
- is provided with full safety data

How does BioPerine® work?
The metabolic process that generates energy at the cellular level in the human body is called thermogenesis. Though thermogenesis has been identified as a key factor in maintaining weight loss, it has also been identified as playing an integral role in utilizing the daily food and nutrients that the human body consumes. It sets in motion the mechanisms that lead to digestion and subsequent gastrointestinal absorption. Piperine, in the patented form of BioPerine® enhances the body’s natural thermogenic activity-hence the term Thermonutrient®. This enhancement may be explained as a means of increasing the thermal energy sufficient to ‘power up’ the mechanism related to thermogenesis. This in turn results in increased metabolic processes that creates a «demand» for «supply» of a broad range of nutrients that contribute to metabolism, i.e. vitamins, minerals, herbls, amino acids, etc. It is as if BioPerine® activates a metabolic paddle wheel, of sorts, that selectively provides a more efficient mode of nutrient transportation into the blood. Non specific possible mechanisms promoting rapid absorption of nutrients:
- Increases blood supply to the GI tract
- Increases emulsifying content of the gut
- Increases active nutrient transport

Advantages of BioPerine®
BioPerine® is the only product sourced out of piperine to obtain a patented status for its ability to increase the bioavailability of nutritional compounds. Secondly, it is the only source from piperine to have undergone clinical studies in the U.S. and in other countries to substantiate its safety and efficacy for nutritional use. It’s an objectivated product, with a lot of sciences behind, for your kind support.

Bioavailability Enhancer
Bioavailability is “the quantity of a substance, either nutrient, drug, or toxicant, that effectively reaches the target cells where it modifies, for good or bad, their metabolism and consequently their fate” (Basu, T.X). The nutritional materials which may be co-administered with BioPerine® are the following groups:

- Herbal extracts: (e.g. Curcumin, Boswellic acids, Ashwagandha, Ginkgo biloba and Capsaicin)
- Water-soluble vitamins: (e.g. Vitamin B1, Vitamin B2, Niacinamide, Vitamin B6, Vitamin B12, Folic acid and Vitamin C)
- Fat-soluble vitamins: (e.g. Vitamin A, Vitamin D, Vitamin E, and Vitamin K)
- Antioxidants: (e.g. Vitamin A, Vitamin C, Vitamin E, alpha-carotene, beta-carotene, beta-cryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonoids complex, germanium, selenium and zinc)
- Amino acids: (e.g. Lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, and methionine)
- Minerals: (e.g. calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium).

If one believes that since Bioperine® is sourced out of black pepper, all one need to do is increase the consumption of black pepper. Again you have gone wrong, for the direct intake of black pepper will not help achieve enhanced nutrient absorption.

Doseage
The recommended dosage is 5mg per serving dose.
Acute, subacute and chronic toxicity studies of piperine in laboratory animals indicate that piperine used even in a broad range of doses does not cause abnormalities in the general growth pattern, body to organ weight ratio, clinical symptomatology, or blood chemistry.
The dose of piperine considered to be bio enhancing for absorption of nutrients is calculated as 0.04 to 0.08 mg piperine/kg body weight. That dose is 4,000 times lower than the LD50 dose (dose toxic to 50% animals tested) of piperine established in mice and rats. Incidentally, the dose of piperine, which increased the bioavailability of the actives studied, was several times lower than the estimated amount of piperine consumed daily in the diet by an average individual in the USA (Majeed, M. et al., 1999).

Bioavailable CoQ10
Effect of Bioperine® on serum CoQ10 levels during a 21 day supplementation trial (+150% in serum, 90mg CoQ10+5mg Bioperine®).
FOCUS

In-vivo Antiox with Incredible Orac

FruitOx™ is the ingredient developed by Nektium with the idea of a fruits-based, water soluble and antioxidant natural extract, and offering a wide and effective spectrum of anti-radical properties and stimulation of cellular defenses. FruitOx™ can be easily used in all types of formulations for nutrition, or personal care.

Key genes expression
FruitOx™ positively promotes the antioxidant genes while the genes causing oxidative stress were suppressed.

FruitOx™ is all that, and even more
It has been the subject of several studies and research such as the upregulation of the expression of opioid receptors in brain cells (OPRD1)

Digezyme
Digezyme is an easy-ready-to-use multi enzyme complex to help in the digestion of components, and against muscle soreness

The process of enzymatic digestion of food in the body may be impaired by several factors: Stress due to sudden changes in food consumption patterns, exposure to environmental pollutants, vagaries of the weather, extensive travel. Somatic diseases that necessitate treatment with surgical procedures, antibiotics and immuno-suppressive drugs.

The sites of enzyme-production, such as the pancreas could also be damaged, by disease or injury, leading to enzyme insufficiency.

Some individuals may suffer from an inherent lack of specific enzyme generation systems, due to genetic factors, resulting in digestive and metabolic disorders

Five enzymes
DigeZyme consists of five GMO-free broad acting enzymes obtained from the fermentation process:

- **Protease**: Breaks down protein and supports immune function
- **Lactase**: Breaks down lactose (milk sugar) and useful for lactose intolerance
- **Cellulase**: Breaks down cellulose and chitin. It helps free nutrients in both fruits and vegetables
- **Lipase**: Breaks down lipids and improves fat utilization and also supports healthy gallbladder function

This group of enzymes breaks carbohydrates, proteins and fats and all three groups of enzymes are resistant to the action of gastric juices, while retaining their digestive activity. DigeZyme is referenced in The Complete Book of Enzyme Therapy by Anthony J. Chichoke (Ref. 1). DigeZyme was also clinically evaluated for enhanced absorption of minerals and vitamins.

Why Digezyme?
This multi enzyme complex help in the digestion of components when poorly assimilated by our bodies in cases of unbalanced diets, fatigue, or impaired pancreatic function - or in case of intolerance. Digezyme helps to improve overall health and nutritional status:

- Reduce toxic load generated by undigested food materials
- Cleanse the colon
- Strengthen the immune system
- Facilitate restful sleep
- Benefits for Delayed Onset Muscle Soreness

And other activities related to a good digestion:

- Enhance mental capacity
- Help shed excess weight and fat
- Prevent aging of the skin

Digezyme is so not only used to for those who experience a chronic gastrointestinal discomfort (e.g. gas, constipation, diarrhea, cramps) or preventive in the middle age and elderly individuals.

Dose & Quality
The daily dose is 50mg per dose, three times daily, in tablets, capsules or even powdered diet mixes. Digezyme is easy to use: the activity starts when the enzymes meet the specific conditions (humidity, pH, substrate...) they need, with enough reaction time in presence.

Digezyme is a formulation of food enzymes (non-animal origin). It contains Lactase, what got an approval by Efsa (extra lactase may be needed for the claim, depending on the dosage of Digezyme).
Slimming with Forslean

Forslean® is manufactured by a proprietary process and is a standardized extract from the roots of the Coleus forskohlii plant, the only known plant source of forskohlin. Fors-Lean® is a registered trademark of Sabinsa Corporation and is the only Coleus forskohlii preparation supported commonly by Patent.

Forslean® is Sabinsa’s new proprietary composition extract of Coleus forskohlii root, standardized for Forskolin. Forslean® has shown promising results in three areas; enhancing lean body mass, promoting fat loss and promoting weight loss. In September of 1998 Sabinsa was granted a use patent for this application of Forskolin in its Forslean® composition.

Intended Application
The importance of maintaining or regaining lean body mass has recently come to light for two important reasons. First is the increased recognition that lean body mass plays a vital role in any successful weight training regimen, and second, there is a growing awareness that lean body mass is proportionate to the overall health of an individual.

Lean body mass is composed of muscle, vital organs, bone and bone marrow, connective tissue and body water. The percentage of lean body mass to fat not only determines the body’s aesthetic appearance, but more importantly, it is also an index of physical fitness, health status, susceptibility to disease and premature mortality. Because the body’s metabolic rate is directly proportional to the amount of lean body mass, there is substantial interest in products that safely increase lean body mass because they are most likely to work. The use of Forslean® may help to increase lean body mass and optimize body composition with one of the side effects being fat loss and/or weight loss.

A sluggish metabolic rate is an undesired effect of many weight-loss regimens. It was observed in one study that formerly obese subjects had a 3-5% lower resting metabolic rate than control subjects. The occurrence of a low resting metabolic rate is likely to contribute to the high rate of weight regain in formerly obese persons.

Clearly, we need to change and broaden our thinking on the objectives of weight management regimens for both active and not-so-active individuals. In particular, it should be emphasized that healthy functioning of the body depends not so much on a lower fat content, but rather on obtaining a higher percentage of lean body mass.

Again, it should be kept in mind that it is not only fat, but also lean body mass that is, or can be, lost through dieting. This fact often escapes our attention when we reduce our total body weight. The loss of lean body mass offsets any benefits derived from the reduction of body weight, and can potentially increase one’s chances for diabetes, cardiovascular disease and possibly some forms of cancer due to poor metabolic activity.

Mechanism of Action
The mechanism of action on how Forslean® works is well defined: Forskolin, the active compound in Forslean®, is recognized as an adenylyl cyclase activator. Adenylyl cyclase is the enzyme involved in the production of cyclic adenosine monophosphate (cAMP), a significant biochemical agent in metabolic processes. The role of cyclic AMP is indispensable to many body functions. It induces a chain reaction of biochemical events that trigger metabolic processes and diet induced thermogenesis thereby providing the means to maintain healthy body composition and lean body mass levels.

Double blind studies
Dozen studies are available. In one on 12 weeks, 25-45 y, 60 obese males and female volunteers, Forslean® treated volunteers shed an average of 1.73 kg from their body weight, in comparison placebo group gained 0.25 kg. During the 12 week period of treatment volunteers treated with placebo gained 0.68% of body fat. On the other hand, the Forslean® treated group lost 0.46% of body fat.

In the group of volunteers that received Forslean®, there was an increase in the LBM as compared to the placebo group where, there was a decrease in LBM. HDL cholesterol showed a statistically significant increase in volunteers treated with Forslean®. Other serum lipid profiles remained statistically unaltered in the Forslean® and Placebo treated groups.

50 subjects, male and female, were randomized to receive 250 mg of ForsLean® capsules a day for 12 weeks. A significant decrease in body weight and fat content and a significant increase in lean body mass were observed (Kamath, M.S. et al (2004)).

The mean percentage lean body mass increased by 1.78% in the ForsLean® group, while the placebo group showed a mean decrease of 0.2% of LBM from baseline values. The mean percentage body fat content in the Forslean® group was 34% as compared to 39% in placebo receiving group at the end of the 12-week trial

Dosage Form
Forslean® has been clinically evaluated at one dose, 250 mgs twice daily. This provides 50 mgs of forskolin, the primary active compound in Forslean®. Dosage has been in the form of a two piece, hard shell capsule.

Toxicity
Acute toxicity LD50 : 2g / kg
Chronic toxicity : none at 1g / kg on 6 months
Mutagenicity : non-mutagenic (AMES). Salmonella t., and E. Coli also controlled.
Safety : A number of clinical studies investigating the efficacy of Forslean® for body composition management have been conducted, and parameters related to safety have been monitored.

No significant changes in average systolic and diastolic pressures (12 weeks, 60 volunteers). None even on thyroid hormones.

There is a significant positive change (p<0.05) in the concentration of HDL.
Coconut water is often described as a "natural isotonic sports drink," providing higher amounts of electrolytes such as potassium and magnesium than conventional sports drinks. Coconut water solids also have a prebiotic role, and beneficially influence the balance of microflora in the gastrointestinal tract. When topically applied, coconut water solids nourish the skin and hair, supporting healthy cell growth.

Cococin®, The Nourishment Factor® captures the goodness of coconut water in a convenient, free flowing, and powder form. Recently affirmed GRAS for use in foods and clinically validated for its topical benefits, Cococin finds multifunctional applications in cosmetic, personal care and food and beverage compositions. Produced under a patented lyophilization process, the amorphous nature of the solid produced by this process protects the protein components and environment sensitive actives during subsequent pulverization and storage. During storage, the material transforms to the more stable, less hygroscopic, crystalline state.

Cococin blends seamlessly with cosmetic compositions, and easily disperses in water, making it a compact and versatile nutrient pool for use in topical formulations, as well as in functional foods & beverages that nurture from the inside out.

Nutritionally versatile
It is important to differentiate between coconut milk and coconut water. The ratio of RNA-phosphorus to DNA-phosphorus is significantly lower in the liquid endosperm of mature coconuts as compared to that of green coconuts. RNA plays an important role in amino acid transport and respiratory metabolism in living cells. Coconut water used to make Cococin is obtained from green coconuts at the optimal stage of maturity, to ensure a high content of RNA and growth factors, including shikimic acid, quinic acid and indole-3-acetic acid, along with essential vitamins, amino acids, and minerals. At the completion of growth, the solid endosperm and the last of the coconut water provide nourishment for the forming embryo and seedling. Thus, coconut water serves the role as a reservoir of nutrients to support tissue growth.

Coconut water, the liquid endosperm of green coconuts (Cocos nucifera), is a refreshing natural beverage, an oral re-hydrating agent, and a supplement in nutrient media for tissue culture. Cococin is even more than that...

The double-blind clinical study against placebo on 95 women (10,69% of the women who took ELIMREAL® under its tablet form observed an increase of their daily urination after 28 days.

ElimReal is supported by very strong allegations, especially linked to the contribution of fennel extract. Recommended dosage / proofs of efficacy: a randomized clinical double blind versus placebo study demonstrated the efficacy of Elimreal at the dose of 805 mg/day.

FOCUS

Cococin - Nourishing Factor

The natural patented proprietary formulation of 6 plant extracts (seeds and flowers), clinically proved for water elimination and detoxification. Water soluble, it’s the new solution for uses in beverages, sticks, as well as - or course - tablets.

ElmReal® is an exclusive and patented combination of extracts from:

- Carvi’s seeds (Carum carvi)
- Meadowsweet Flower buds (Spirea ulmaria)
- Guarana’s seeds (Paullinia cupana)
- Goldenrod’s plant (Solidago virgaurea)
- Fennel’s fruits (Foeniculum vulgare)
- Dandelion’s leaves (Taraxacum dens leonis)

ElimReal is covered by a patent for slimming applications, and promotes renal elimination functions (excretory function of the kidneys) / urinary elimination / urinary volumes, so works on detoxification and slimming.

The double-blind clinical study against placebo on 95 women for 1 month demonstrates its effectiveness:

- Increase urinary frequency: (the subjects go to the toilet more often, a perfect marker of efficacy for subjects) 76,92% of the women who took ELIMREAL® under its tablet form observed an increase of their daily urination after 28 days.
- Increase of the volume of urinary excretion of the day, thus participating in decongesting and detoxifying the body: 58,34% of the women who took ELIMREAL® under its tablet form observed an increase of their 24h urinary volume after 14 days.

- Increase sodium excretion, analytical objective marker of efficiency: Significant Increase of Sodium excretion for both groups which receive ElmReal * (10,69 % and 8,78 % in the groups 1 and 2 respectively) in opposition to a decrease of -15,97% in the placebo group.

Elmreal is supported by very strong allegations, especially linked to the contribution of fennel extract.

Recommended dosage / proofs of efficacy: a randomized clinical double blind versus placebo study demonstrated the efficacy of Elimreal at the dose of 805 mg/day.

ElmReal®

Elimination & Detoxification

- Increase sodium excretion, analytical objective marker of efficiency: Significant Increase of Sodium excretion for both groups which receive ElmReal * (10,69 % and 8,78 % in the groups 1 and 2 respectively) in opposition to a decrease of -15,97% in the placebo group based on plants extracts with an authorization of the components inmost members of the European Union.

Elmreal is supported by very strong allegations, especially linked to the contribution of fennel extract.
A selection of our previous news and innovations

BECARRE Natural get the Award as “Best Natural Extract Product Provider”

BECARRE Natural got the award as “Best Natural Extract Product Provider - France”. GHP (Global Health and Pharma) has announced the winners of the 2017 International Life Sciences Awards. The International Life Sciences Awards focus on a myriad of disciplines that fall under the ‘life sciences’ umbrella. Becarre Natural is proud to have been recognized for its work and continuous involvement in quality and information.

DigeZyme® and Muscle Soreness

Sabinsa’s DigeZyme® shows benefit for delayed onset muscle soreness in published study. It was shown to have the potential for more rapid recovery from Delayed Onset Muscle Soreness (DOMS) in a study published in Sports Nutrition and Therapy: Multi-Enzyme Complex for the Management of Delayed Onset Muscle Soreness after Eccentric Exercise. A Randomized, Double Blind, Placebo Controlled Study. DigeZyme® is the proprietary well-known blend of non-animal enzymes. Beside the use to assist digestion, it was shown to have the potential for more rapid recovery from Delayed Onset Muscle Soreness (DOMS) in a study published in Sports Nutrition and Therapy (20 healthy male subjects, DOMS compared to placebo).

Boswellin® osteoarthritis of the knee

Boswellin Super, our Boswellia serrata extract at 30% AKBBA, was found to alleviate knee pain in healthy adults in a new study. Results of the randomized, double-blind, placebo-controlled trial, published in The European Journal of Biomedical and Pharmaceutical Sciences, also suggest the boswellia extract inhibited production of hyaluronic acid into blood. In a double blind vs placebo controlled trial, results with Boswellin® shows great efficacy in the management of osteoarthritis of the knee. X-Ray of knee shows it increase the space between the knee joints. The pain also decreased, more and longer than with Valdecoxib. Different other parameters have been controlled (WOMAC, HS-CRP, etc...)..

Rhodiola rosea and the immune system

The Rhodiola extract Rhodiolife® has clearly demonstrated its ability to protect cells from viral infection. This is the first time shown to be effective in the activation of the human immune system - Ahmed M, et al (2015) «Rhodiola rosea Exerts Antiviral Activity in Athletes Following a Competitive Marathon Race». Front Nutr. Jul 31:2.24. RS

Rhodiola rosea is known to improve attention and cerebral performances.

On 2016, Polinat has conducted new studies: Electroencephalographic studies (EEG) showed that animal supplemented with Rhodiola rosea exhibited an increased neurotransmitter production in the studied areas. This effect last at least for 5 hours until the end of measurements, and so even more. Besides of a stimulatory effect, the results indicate an improvement of memory and an increased activity in brain regions related to motivation and reward.

Preserved actives from Pomegranate

P40P™ is the unique carrier-free Pomegranate extract standardized to the whole spectrum of the real actives offered in pomegranate. P40P™ brings the punicosides and more specifically the highly potent punicagalinolic (ellagic acids are only the metabolized compounds of those ellagitannins across the mitochondrial membrane), the highly active carbonic anhydrase inhibitor and the major player behind the antioxidant capacity of pomegranate juice. P40P™ is soluble in water and has high bioavailability.

Bio-efficace SOD GliSODin® and oncology

Different studies have shown the great interest of our clinically proven enhanced SOD and oncology / radiations. It includes recent published ! "Impact of Superoxide Dismutase-Gladiolin on Radiation-induced Fibrosis" and "stress to γ-radiation". GliSODin® has been also evaluated for its prevention of inflammation of benign fibrosarcoma cells, and effective role in azoxymethane-induced colon cancer in animal model suggesting it can act as an effective chemo-preventive agent.

GliSODin® in accelerating symptom relief in children with allergy

In the present randomized, placebo - controlled, double-blind clinical trial, the clinical efficacy of GliSODin® in accelerating symptom relief in children with allergic asthma and house dust mite allergy (receiving house dust mite immunotherapy) was demonstrated. Forty subjects aged 6-17 years old with asthma, tested positive for house dust mite allergy on skin prick test, and received immunotherapy were enrolled in this study. "Use of Superoxide Dismutase in Accelerating Symptom Relief in Asthmatic and House Dust Mite Allergic Children Receiving House Dust Mite Immunotherapy", Anang Endaryanto, Zahrah Hikmah, Ariyanto Harsono

Curcuma C3 Complex and omega-3

An excellent complementary supplement: while curcumin is a well-recognized anti-inflammatory agent, Omega-3 acids are known precursors of several biosynthetic inflammatory resolvers. It was found that C3 Complex attenuates muscle wasting (cachexia) that usually accompanies certain disease conditions [British J Nutrition (2009)]. Recent mechanistic studies revealed that the synergistic effect of C3 Complex® and Eico-sapentaenoic acid, an Omega3 component, against the degradations caused by both TNF-α and PIF (Proteolysis inhibiting Factor) by ameliorating protein synthesis and halting protein degradation. [In Vitro Cell. Dev. Biol.]

Experiments presented in Experimental Biology Meeting 2016, San Diego showed a clear synergy in action in reducing cancer cachexia in MAC-16 colon tumor-bearing mice. This combination Omega3-3 EPA and C3 Complex is expected to attenuate weight loss caused by health conditions, and improve quality of life. [Abstract, the FASEB Journal]

Curcuma C3 Complex® - Body fat and interleukin-1ß

In an animal study on HFD (high fat diet)-fed mice extending 53 weeks, the scientists concluded that the nutrient combination, curcumin-piperine, works well to reduce total body fat, reduces cellular aging as indicated by preserving telomere length, and enhance the CR effects for the prevention of metabolic syndrome by reducing the low grade chronic inflammation that always persists in obese conditions.

Curcuma C3 Complex and metabolic syndrome

A significant study on Curcumin C3 Complex® (in combination with Bioperine®) in patients with metabolic syndrome has been published on end of 2014, showing the significantly greater effect of Curcuminoids in reducing the serum concentrations of LDL-C, non-HDL-C, total cholesterol, triglycerides and Lp(a), when serum HDL-C concentration was elevated significantly. Serum sdLDL levels were comparable (randomized, double-blind, placebo, 117 patients, 8 weeks).

100% Natural and ORAC > 1 200 000

Curcuma C3 Complex® is expected to at least preserved actives from Pomegranate and improve quality of life. [Abstract, the FASEB Journal]

DigeZyme

Some of the last Sabinsa’s newsroom

Shagandha

Shagandha™ Ashwagandha Root Extract 2.5% Designed to Meet USP Monograph, Verified by Prominent Botanical Testing Expert Alkemist Labs

Nigellin

Sabinsa’s Nigellin™ Black Cumin Seed Extract Identified as a Potent Favorable Immunomodulation in Asthma Inflammation

Lactospore

Sabinsa’s Shelf Stable Probiotic LactoSpore® May Improve Cholesterol Levels, Study Suggests

Research on Flow Cytometry as an Effective Test Method to Assess Viable Spore Count in LactoSpore®

C3 Complex

New Diabetic Research on C3 Complex® and BioPerine® Combination Published

Research on Curcumin’s Positive Effects on Microbiome

DigeZyme

Demonstrated Efficacy in Management of Dyspeptic Symptoms with Functional Dyspepsia: Published Clinical Study

NEWS

BECARRE Natural - May 2019 - 35
The plants decree was published on July 17, 2014 in the official journal, laying down the list of plants, other than mushrooms, authorized in food supplements and their conditions of use. Its implementation is January 2015, 1st. The list of fungi, and probably essential oils, will be the subject of further publication.

This decree includes 14 articles, describing the terms used and the applications, and 3 annexes.

This text is intended for all players acting in the production, processing and distribution of food supplements. It refers to the other decrees of this sector, such as the European Directive 2002/46 / EC and its amendments, including national decrees (2006/352, 1170/2009). It gives the list of plants authorized on the market and / or mutual recognition by Article 16.

Annex I
Annex I lists the 540 authorized plants (at the date of June 2014), with:
- Their scientific name and family : synonyms exist in several cases. If necessary, you can also visit the website www.theplantlist.org
- Their vernacular name
- The part(s) used
- The substances to be monitored: it is not necessarily substances to be absent or undetectable, but substances that the decree specifically request to be checked.
- The restrictions of use: mainly specific labeling warnings (child, pregnant women), sometimes about the process.

Annex II
Annex II contains information that may be provided by operators in the sector in order to understand the preparation. As such, a model was proposed by Synadet and Food Supplements Europe. This model is split into several parts. There is no obligation to complete each field, as indeed it's just a model-form:
- Plant (ie. Raw Material)
- Plant Description : Scientific name, vernacular name, family, existing monograph, risk of falsification (by another similar plant for example)
- Culture method (geographical origin, method of cultivation, specific agreements, licensing, 338/97) and collection (collected plant parts, mechanical or manual cleaning, drying)
- Parts of the plant used and its identification (controls, markers, purity)
- Production process (starting from the plant)
- Geographical location of the process (unit), manufacturer, preparation before process (grinding, separation, ...)
- Description of the extraction process from the raw material (ex. if it is extracted from an oleoresin, it is necessary to mention the process from the plant): solvent (concentration and quality) for extraction, purification, and any other step (elimination of compounds or hazardous compounds).
- Other information related to the process, definition of a batch, size
- Plant preparation (ex. Plant extract for BECARRE Natural)
- Name , PER (Plant Extract Ratio: final ratio after extraction and before any other addition and the initial amount of extracted plant - dry /dry if it is a dry extract), DER (Drug Extract Ratio: ratio between the final ratio of the preparation and the initial amount, so after addition any additives or carrier ...). A product without carrier shows a PER = DER. Sometimes indicated, the NER is the native ratio
- Full composition (in %, with the nature and purpose of each component, purity criteria additives - 231/2012)
- Standardization (markers, actives) with a detailed method of analysis (validated / internal validation) and the standard used as a reference
- Substances to be monitored : with reference to Annex I or any other molecule needing to be monitored
- Impurities (eg 2009/32), contaminants, bacteriological controls, other controls, see ... 1881/2006, 629/2008, 1259/2011, etc
- Statements, other data : nutritional data, GMO (1829 and 1830/2003) Irradiation (1999/2, 1883/2003), allergens (2007/68, 2000/13), ...
- Stability data with the reference (ICH ?), does it need homogenization, ...

In addition, BECARRE Natural completed the form of a preparation to additional food safety information when available, although Annex III is not needed:
- Exposure Level : consumption of the plant, of the extract
- Risk analysis : toxicity studies, genotoxicity, mutagenicity, safety, NOAEL
- Traditional use
- Possible evolution of the process

Annex III
This third part relates to the safety of the plant preparation, and it must be completed when there is a doubt, or when the plant preparation does not have enough history to justify its safety. Regarding the safety for the consumer, it is provided by the manufacturer of the food supplements, with the support in our view - of each manufacturer involved. Annex III may correspond to a 'simple' analysis of the literature of available toxicological data and / or made by the producer, as an extensive risk analysis in the case of conflicting studies, or molecules interaction, or whenever the specific analysis needs.

Which products are concerned by Annex III?
All products are concerned since the risk analysis must be done on all extracts but not all require an Annex III.

It is important to understand that Annex III is applicable when the plant preparation cannot refer to an existing and traditional use enough to guarantee the safety of a plant preparation (or food supplements), as it exists and has existed on the market. Thus, a plant extract may be traditionally produced in a PER of 15:1 and by using a high solvent (eg, pure ethanol). It is this extract which is known, and can prove its safety - and so would not need an Annex III. Speaking of food safety, we can refer only to what is clearly known.

Collect of information
The traditional use can be justified by various ways, including probably monographs, references in pharmacopoeia (with specific description of the extract and not only of the plant), references to EMA, relation to the WEL (Well Established Use), or from pharmaceutical agency, etc ... describing the extract (plant part, solvents and concentration processes, ratio), and with the Annex II to confirm that the plant extract that is offered is conform to traditional extract.

From Risk analysis to Annex III
3 possible cases
The preparation is described in the literature to demonstrate the history of use and safety. It is sufficient to indicate.

The preparation is not described in the literature but the argument shows that the extract is equivalent to one described preparation. It should provide the rationale for comparing the described preparation and its extract.

The preparation is not described in the literature and no equivalent that can be demonstrated: it is necessary to bring the safety analyzes - including toxicology - in relation to the identified hazards to be indicated in Annex III.
L'arrêté plantes a été publié le 17 juillet 2014 : « Arrêté du 24 juin 2014 établissant la liste des plantes, autres que les champignons, autorisées dans les compléments alimentaires et les conditions de leur emploi ». Nous reprenons ici une lecture du texte - notamment des annexes II et III

Quels produits sont concernés par l’Annexe III ?

L’Annexe III est applicable dès lors que la préparation de plante n’a pas un usage existant et traditionnel suffisant pour justifier de la sécurité d’une préparation de plantes, tel qu’elle existe et existait.

La traditionnalité porte donc sur l’extrait tel qu’il est connu ou défini – et il convient de démontrer que la préparation de plante est bien conforme à la préparation traditionnelle. Le texte de l’annexe III démontre qu’il est faux de penser qu’un extrait à l’eau ou à l’éthanol faible, ou avec un faible PER (alors que l’extrait dit traditionnel serait obtenu par une autre voie), permettrait de s’affranchir d’une Annexe III —l’inverse étant tout aussi vrai.

Quelque soient les cas, l’analyse de risque doit être effectuée.

Il est impossible de fournir une règle stricte applicable à tous extraits de plantes existants, mais une bonne explication de votre position bien étayée de données (techniques, chimiques, réglementaires) et en accord avec le texte publié ne peut que tomber dans une oreille réceptive. Synadiet a travaillé à un guide ainsi qu’à une aide à la décision.

Collecte des informations

L’usage traditionnel peut être justifié par différents moyens, dont les monographies, les rapports de ventes en quantité suffisamment significatives depuis - peut-être - plus d’une ‘une génération’, le référencement dans des pharmacopées nationales (avec description spécifique de l’extrait et pas seulement de la plante), des références EMA, en rapport au WEU (Well established Use), voire des journaux de l’agence (cahiers n°3), etc… décivant l’extrait (partie de plante, solvants et leurs concentration, process, ratio). L’annexe II permettra de confirmer que l’extrait de plante qui vous est proposé est bien conforme à l’extrait traditionnel.

De l’analyse de risque à l’Annexe III : 3 cas

La préparation est décrite dans la littérature, permettant de démontrer le recul d’utilisation et sa sécurité. Il suffit alors de l’indiquer.

La préparation n’est pas décrite dans la littérature mais l’argumentaire démontre que l’extrait proposé est équivalent à une préparation décrite. Il convient d’apporter l’argumentaire permettant la comparaison à la préparation décrite.

La préparation n’est pas décrite dans la littérature et aucune équivalence ne peut être démontrée – il convient d’apporter les analyses de sécurité - notamment toxicologiques - en rapport avec les dangers identifiés, à indiquer dans l’annexe III.

Notre Lecture de l’Arrêté Plante


Annexe I

L’Annexe I liste les 540 plantes autorisées (à la date de Juin 2014), avec :

Leur nom scientifique et la famille : plusieurs cas de synonymes existent. Au besoin, vous pouvez également vous aider du site www. theplantlist.org

Leur nom vernaculaire

Les parties utilisées

Les substances à surveiller : il ne s’agit pas nécessairement de substances qui doivent être absentes ou non détectables, mais des substances que l’arrêté demande de vérifier spécifiquement.

Les restrictions d’utilisation : essentiellement des étiquetages spécifiques de mise en garde (enfant, femmes enceintes), parfois des process.

Annexe II

L’Annexe II présente les informations susceptibles d’être communiquées par les opérateurs du secteur afin de bien comprendre la préparation. A ce titre, une modèle a été proposé par Synadiet et Food Supplements Europe. Le modèle est décomposé en plusieurs parties. Il n’y a pas obligations de compléter ce modèle. Le livre est décomposé en plusieurs sections. Il est possible de vérifier ce modèle en particulier, il convient de mentionner le process avant : solvants (concentration, qualité) pour l’extraction, purification, ainsi que toute autre étape (élimination de composés ou de risques).

Autres informations liées au process, lots

La « Préparation de plante »

Dénomination, PER (Plant Extract Ratio : rapport entre le ratio final après extraction et avant tout autre ajout, et la quantité initiale de plante extraite, en rapport sec/sec s’il s’agit d’un extrait sec), DER (Drug Extract Ratio : rapport entre le ratio final de la préparation et la quantité initiale, donc après ajout des supports, …). Un produit sans support à un PER=DER. Parfois indiqué, le NER correspond au ratio natif.

Composition intégrale (en %, avec la nature et l’objet de chaque constituant, critère de pureté des additifs - 231/2012)

Standardisation (marqueurs, actifs) avec pour chacun la méthode d’analyse détaillée (validée ou non) et le standard utilisé comme référence

Substances à surveiller : en référence à l’Annexe I ou tout autre molécule susceptible d’être surveillée


Stabilité avec indication du référentiel (ICH), besoin ou non d’homogénéisation, …

En outre, BECARRE Natural a complété le formulaire d’une préparation aux informations de sécurité alimentaire, même si une annexe III détaillée n’est pas exigible.

- Niveau d’exposition : plante et extrait
- Analyse de risque : toxicités, génotoxicité, mutagénicité, innocuité, NOAEL
- Usage traditionnel trouvé
- Evolution possible du process

Annexe III

Quelque-soient les cas de figure, l’intérêt est de garantir la sécurité aux consommateurs. L’Annexe III peut tout aussi bien correspondre à une ‘simple’ analyse bibliographiques des données toxicologiques connues et/ou effectuées par le producteur, qu’a une analyse poussées des risques

Il est impossible de fournir une règle stricte applicable à tous les cas des très nombreux extraits de plantes existants, mais une bonne explication de votre position bien étayée de données (techniques, chimiques, réglementaires) et en accord avec le texte publié ne peut que tomber dans une oreille réceptive. Synadiet a travaillé à un guide ainsi qu’à une aide à la décision.
FOCUS HINTS

FOCUS

Part of the Regulatory Decrees

This is a non-exhaustive list of the number of decrees published by the European members, the European Parliament, the Council and Commission Regulations relating to food supplements. Each link of the chain from the early grower of the plants to the end-product must carefully check that its product fulfills the regulation and totally satisfy the safety needs.

Plant names

Different countries, associations, working groups, etc... are working on the harmonization of plant and plant extracts in Europe, as for instance Syndiet, Federsalus, EHPM, etc... It works towards developing an appropriate regulatory framework throughout the EU for its members' products.

Synonyms accepted for plant

The Plant List is a working list of all known plant species. It aims to be comprehensive for species of Vascular plant (flowering plants, conifers, ferns and their allies) and of Bryophytes (mosses and liverworts): see www.theplantlist.org

Protection (Cites)

EC No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein

Food supplements

Directive 2002/46/EC

This main directive of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements Infants, young children, special medical purposes, total diet replacement, etc... are working on the harmonization of plant and plant extracts in Europe, as for instance Syndiet, Federsalus, EHPM, etc... It works towards developing an appropriate regulatory framework throughout the EU for its members' products.

Contaminants

General purposes

EC 1881/2006 of 19 December 2006 setting maximum levels for certain contaminants in foodstuffs

Toxins

EU 1259/2011 of 2 December 2011 amending Regulation EC 1881/2006 as regards maximum levels for dioxins, dioxin-like PCBs and non dioxin-like PCBs in foodstuff - aflatoxin B1, total aflatoxins, Ochratoxin A, Patulin, Zearalenone, Fumonisin - and most of other toxins are in 1881/2006.

PAH

EU 2015/333 of 27 October 2015 amending Regulation EC No 1881/2006 as regards maximum levels for polycyclic aromatic hydrocarbons in cocoa fibre, banana chips, food supplements, dried herbs and dried spice. Usually:

- Benzo(a)pyrene ≤10 ppb
- Sum of Benzo(a)pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene and Chrysene) ≤50 ppb

Heavy Metals


However, we usually refer to:

- Total Heavy metals : usually 10 ppm
- Lead : usually 1 or 3 ppm (3 ppm in subsection 3.1.18)
- Arsenic : usually 1.0 ppm
- Cadmium : usually 1.0 ppm (3.0 for seaweed derivatives)
- Mercury : usually 0.1 ppm

Pesticides


Other Quality specificities

Allergen


Bacteriology

Usually Eur. Ph. 5.1.8 (limits) and 2.6.12/2.6.31 (methods)

GMO


Nano technology / material

Commission recommendation of 18 November 2011 on the definition of nanomaterial - 2011/696/EU

Novel Food

Novel Food is defined as food that had not been consumed to a significant degree by humans in the EU before 15 May 1997, when the first Regulation on novel food came into force. ‘Novel Food’ can be newly developed, innovative food, food produced using new technologies and production processes, as well as food which is or has been traditionally eaten outside of the EU.

The Novel Food Catalogue is a non-exhaustive list and serves as orientation. A plant may be not novel food when its extract is.

EC 2002/46 of 10 June 2002,

Substances

Substances are more and more concerned in Europe, although each country may still have its own considerations, and although the definition of a substance is not fully clear yet. France publishes its Order regarding the use of other substances in supplements. It confirms that the use of substances other than those listed in Annex I, which lays down specific conditions of use for four ingredients, may be used in supplements provided they are not novel.

NOR: ECFC1518714A on legifrance.gouv.fr

Other limits

Solvents and Residual solvents

Directive EU 2016/1855 of 19 October 2016 amending 2009/32/EC on extraction solvents used in the production of foodstuffs and food ingredients, amending EC 2009/32 of 23 April 2009 on extraction solvents used in the production of foodstuffs and food ingredients. You may also refer in certain cases to Eur. Ph. 2.4.24 (methods) or 5.4 (limits).
Sabinsa manufactures and markets phytonutrients and standardized herbal extracts, specialty & fine chemicals, and organic intermediates used in the nutritional, cosmetics, pharmaceutical, intermediary chemicals and food industries.

Founded in 1988 by Dr. Muhammed Majeed, Ph.D., Sabinsa is a company dedicated to the principles of tradition, innovation and research. Sabinsa's efforts have begun to earn the company vast recognition, in addition to growing sales. Sabinsa confirms everyday its position of leader on botanical extract, and at the origin of so many objectivized products (Bioperine from Black Pepper, Garcinia Cambodgia, Coleus Forslean, etc...).

Sabinsa is a group which includes all the needed activities to provide high quality botanical extracts - and not only ayurvedic plants. Sabinsa has a research and development facility in India and near Princeton, NJ and six manufacturing facilities in and around Bangalore, India, and in Utah. Today, Sabinsa manufactures over 100 such plant-derived products, besides some synthetic and hemisynthetic products for perfumery. Sabinsa also provides custom manufacturing from lab scale to pilot / semi-commercial scale, and process development.


Inoreal® is a firm created in 2006 which help nutrition and health manufacturer to be at the cutting edge of innovation by providing new ingredients, which demonstrated their efficacy.

Supported by a meticulous sourcing, exclusive extraction process, clinical studies of safety and efficacy, Inoreal®’s products are formulated to allow innovation by having the agreement of international administrations, and are allowed for selling all across the world.


Synadiet is the Food Supplement Association and supports the interests of the French food supplements industry at all levels of the legislative and regulatory process. SYNADIET is a member of relevant organizations: EHPM (European Federation), IADSA (International Federation) and EBF (European Botanical Forum).

SYNADIET represents more than 250 members which most of them export worldwide.

www.synadiet.org

In 2018, Nektium has inaugurated the new Nektium facility, 10 000 m2 devoted to the new product development and production.

www.nektium.com

Laboratoires ISOCELL is at the cutting edge of scientific research in the field of aging, and oxidative stress in particular. That’s how they developed GlisODin®, an oral grade of improved SOD. Based in Paris, Founded in 2001, ISOCELL has an international dimension, being present in over 30 countries. ISOCELL also hold several international patents (Europe, US, Japan) in these areas of research and development. Innovative products have been developed to strengthen the antioxidant and immune systems and protect the body at the cellular level against external stresses and aging. The products of the GlisODin® line are manufactured in accordance with Good Manufacturing Practices (GMP)

A plant extract is a substance or an active with desirable properties that is removed from the tissues of a plant, usually by treating it with a solvent, to be used for a particular purpose. Extracts may be used in various sectors of activities: Food and functional properties for foodstuffs (antioxidant, texturizing...), pharmaceuticals – chemical replacements, pharmacological for therapeutic properties - preventive and/or curative – cosmetic for functional properties for beauty and well-being, etc... Some sectors of activities clearly define an extract. For cosmetic uses, for instance, a "cosmetic product" shall mean any substance to be placed in contact with the various external parts of the human body (epidermis, hair system, nails and external genital organs) or with the teeth and the mucous membranes of the oral cavity with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance and/or correcting body odors and/or protecting them or keeping them in good conditions.

An extract may be common to different sectors based on its chemical description, although different sectors mean different technologies (different forms, solubility, stability), different regulation, different claim, different problematic. As representing manufacturers, we feel very concerned by the request of the end-users and may adapt its proposal.

An extract must also respect:
- The quality constraints in terms of irradiation, allergens, toxicity, adulation, activity, stability, sustainable resources, traceability, etc...
- The chemical and physical request in terms of description (TLC, physical recognition, genotype) as well as heavy metals, nitrates, solvents, residues such as pesticides or residual solvents, additives, foreign bodies, etc...
- The regulation in terms of assay, solvent, environmental components, legal uses, registration or notification (reach, organic grades, ...), labeling, claims, certification (GMP, ISO, etc...)

Raw Material
It’s important to understand that an extract starts from the raw material: the plants. The identification of a good source includes the description of areas and type of collect, the capacity of collect, the use and not-used area and the impact of our needs for extraction to guarantee a sustainable source. It’s so important to analyze the supply chain starting from the collect, including the exporters and the different middle men, which may cause variability on the quality besides the natural variability linked to the weather and the soils. Finally, an overview of the needs of the local citizens and the risk (government, wars, weather, etc...) allows to find the right partners for the long term, and minimize the impact on the nature while checking the return to the people.

Preparation
All equipment may not use the same materials, and the quality of the extraction may vary depending on the preparation of the raw materials. This goes from the cleaning to avoid foreign bodies to the cut or grinding. Dried herbs are more common, with the risk to put out some gaseous components and the benefit that the plant does not start to hydrolyze or produce non needed metabolites. Preparation may also consist in thawing (fruits may be frozen for instance), cooking (to produce aromas for instance), decoating, destemming, or even enzymatic reaction before the extraction.

Solvents
A solvent must comply with the local regulation, be effective and be selective enough (when needed). Most common are Water, Ethanol, Ethyl acetate, CO2, Methanol, Aceton, Acetic acid, Hexane... the choice of the solvent will impact on the yield of extraction (acquaintance with the targeted actives) in the full respect of the request from customers and environmental conditions (depletion of the ozone layer, solvent in atmosphere, groundwater pollution, air pollution).

On a chemical point of view, the best solvent may be chosen after looking at the polarity of the dipolar moment: an electric dipole is a separation of positive and negative charges, characterized by their dipolar moment, a vector quantity (Coulomb, meter or Debye), subject to continuous electrostatic attraction and repulsion. Each solvent may be classified based on its dipolar moment (cf. : Ven der Waals Forces).

- Apolar and low polar solvent, mainly liophilic characteristic, with a moment from 0 to 1.5 (Hexane, cyclohexane, dimethoxymethane, Chloroform, Ethylic ether, phenol)
- Polar apotropic solvent, mainly hydrophilic characteristic
- Prootic solvent (a prootic solvent is a solvent that has a hydrogen atom bound to an oxygen as in a hydroxyl group or a nitrogen as in an amine group). Polariotic solvents are solvents that share ion dissolving power with apotropic solvents but have an acidic hydrogen. These solvents generally have high dielectric constants and high polarity)

- Moment of most common solvents: Hexane (0), Ethanol (1,69), Methanol (1,70), Ethyl acetate (1,78), water (1,85), aceton (2,88). Depending on their miscibility, solvents may be used together (combined solvents, or separation from one solvent to another solvent).

Extraction process
The process must generally be simple, fast, economic, in compliance with the local regulation, effective and selective when needed. However, certain steps may require a long time of process.

Pressing: One of the more usual extraction (the morning orange juice), pressing may be used complementary or prior to other process, for instance to prepare the materials, defat it, etc... It causes mechanical perturbation and gives a liquid product.

Distillation and hydro-distillation: By direct heating or steam, this process is mainly used for oils and volatile components. It may cause degradation (oxidation, hydrolysis, enzymatic reaction, ...)

Solid / Liquid extraction: It consist in the extraction or separation of one active or more from solid materials working on the solubility in a liquid to obtain the soluble part and the insoluble part, or fractionation of an homogenous solution. The typical Solid / Liquid extractions are:

- Maceration: solid in solvent, room temperature, below ebullition
- Digestion: solid in solvent, over room temperature, below ebullition
- Decoction (infusion): solid in solvent, temperature of ebullition, then cooling of the suspension
- Elution, leaching (Lixiviation): solvent goes through the solid
- Percolation: solvent goes on and through the solid

Concentration
This step consists in the increase of the dry matter content to facilitate the further steps, using for instance evaporation.

Separation / Purification
Different type of separation, based on size, weight, charge, hydrophilic / lipophilic capacity (separation liquid / liquid), solubility, volatility (liquid / steam), etc...

Filter press: the filter press uses increased pressure to maximize the rate of filtration and produce a final filter cake with a low water content.

Membranes, Ultra filtration, Nano filtration: membrane filtration or cross-flow filtration technology which ranges between ultrafiltration (UF) and reverse osmosis (RO). The fundamental principle of Nanofiltration membrane technology is the use of pressure to separate soluble ions through a semi permeable material.

Liquid / Liquid: Liquid-Liquid Extraction (LLE) is a method used in the recovery of a key component from a multi-component stream using an immiscible solvent. The two steams are contacted and separated. The solvent absorbs the key component stripping it from the original stream.

Crystallization
Crystallization is the (natural or artificial) process of formation of solid crystals precipitating from a solution. Crystallization is also a chemical solid-liquid separation technique, in which mass transfer of a solute from the liquid solution to a pure solid crystalline phase occurs. The crystallization process consists of two major events, nucleation (the solute molecules dispersed in the solvent start to gather into clusters, on the nanometer scale) and crystal growth (subsequent growth of the nuclei that succeed in achieving the critical cluster size). Nucleation and growth continue to occur simultaneously while the supersaturation exists.

- Single-solvent recrystallization: «compound A» and «impurity B» are dissolved in the smallest amount of hot solvent to fully dissolve the mixture, thus making a saturated solution. The solution is then allowed to cool => different solubility of compounds in solution drops => compound dropping (recrystallizing) from solution. The
slower the rate of cooling, the bigger the crystals formed. The solid crystals are collected by filtration.

- Multi-solvent recrystallization: similar to the single-solvent but where two (or more) solvents are used. The proportion of first and second solvents is critical. Possible removal by distillation or by an applied vacuum.

- Hot filtration-recrystallization: separate <compound A> from both <impurity B> and some <insoluble matter C>.

- Seeding: this can be spontaneous or can be done by adding a small amount of the pure compound (a seed crystal)

### Chromatography

Chromatography is used for separation of mixtures. A mixture dissolved in a 'mobile phase' passes through a stationary phase, which separates the analyte. The ultimate goal of chromatography is to separate different components. The stationary phase or adsorbent in column chromatography is a solid. The most common stationary phase for column chromatography is silica gel, followed by alumina. Also possible are ion exchange chromatography, reversed-phase chromatography (RP), affinity chromatography or expanded bed adsorption (EBA). The mobile phase or eluent is either a pure solvent or a mixture of different solvents. It is chosen so that the retention factor. The Van Deemter equation in chromatography relates the variance per unit length of a separation column to the linear mobile phase velocity by considering physical, kinetic, and thermodynamic properties of a separation.

- Column chromatography: the stationary bed is within a tube. The particles of the solid stationary phase or the support coated with a liquid stationary phase may fill the whole inside volume of the tube (packed column) or be concentrated on or along the inside tube wall leaving an open non-restricted path for the mobile phase in the middle part of the tube (open tubular column). Differences in rates of movement through the medium are calculated to different retention times of the sample.

- Flash column chromatography: the solvent is driven through the column by applying positive pressure. This allowed most separations to be performed in less than 20 minutes, with improved separations

- Thin layer chromatography (TLC) is similar to paper chromatography. However, instead of using a stationary phase of paper, it involves a stationary phase of a thin layer of adsorbent like silica gel, alumina, or cellulose on a flat, inert substrate. Compared to paper, it has the advantage of faster runs, better separations, and the choice between different adsorbents

- Ion exchange chromatography uses ion exchange mechanism to separate analytes. It uses a charged stationary phase to separate charged compounds, including amino acids, peptides, and proteins. In conventional methods the stationary phase is an ion exchange resin that carries charged functional groups which interact with oppositely charged groups of the compound to be retained. Ion exchange chromatography is commonly used to purify proteins using FPLC (fast protein liquid chromatography)

- Chiral chromatography involves the separation of stereoisomers

#### HPLC

(High Pressure Liquid Chromatography) and LPLC (low pressure). Preparative high performance liquid chromatography is similar to analytical HPLC but features increased injected mass with possibility to "stack" injections automatically. There's technically no product limitation, but usually expensive.

#### Semisynthesis

Hemisynthesis or Semisynthesis or partial chemical synthesis is a type of chemical synthesis that uses compounds isolated from natural sources (e.g. plant material) as starting materials. These natural biomolecules are usually large and complex molecules. This is opposed to a total synthesis where large molecules are synthesized from a stepwise combination of small and cheap (petrochemical) building blocks. It is also possible that the semisymmetric derivative outperforms the original biomolecule itself with respect to potency, stability or safety. Drugs derived from natural sources are usually produced by harvesting the natural source or through semisynthetic methods.

### Drying

Drying means putting out the liquid. Dryers may be atmospheric (spray dryer, fluid bed dryer, etc...), or vacuum (belt dryer, tray dryer, etc...).

#### Spray Dryer

By definition, spray drying is the transformation of feed from a fluid state into a dried form by spraying the feed into a hot drying medium. The process is a one step continuous operation. The feed can be either a solution, suspension or a paste. The spray dried product conforms to powder consisting of single particles or agglomerates, dependent upon the physical and chemical properties of the feed and the dryer design and operation.

#### Vacuum dryer

At constant volume, when the pressure decreases, the boiling temperature decreases. Evaporation at a lower temperature makes possible to get a preserved product. In addition the high rate of heat efficiency is said to result in the best drying performance in the world. The drying process is greatly accelerated due to the fact that the loaded material makes contact with the heating panel in the form of a thin layer. Vacuum drying does not cause the emission of any exhaust gases or hazardous smells.

#### Lyophilization or cryodesiccation

A lyophilizer needs to cool (for freezing and trapping water), create a vacuum (to sublime water), generate heat and transfer heat energy to the product.

#### Other: Rotary Drum Dryer

Wet material is introduced from one end of the dryer, and then stirred evenly by the air of the inner barrel - Plate Dryer: kind of high-efficiency conductive and continuous drying - Blade

### Adulteration & Falsification: get the extract you asked for

Adulteration means falsification of an extract in terms of origin, assay, extraction, actives, or analysis, mostly in order to improve the price.

- Method of analysis:
  - UV versus HPLC: except for very few actives / markers, UV methods always give much higher response than HPLC (when the standard exists of course) without being able to find a correlation. This may be versus HPLC or can be many others, especially when using internal method.
  - Wave lengths: a different wave length or the use of a different Specific Absorption Coefficient
  - Standard: the use of a different standard for a better response by HPLC.
  - Family of the actives: refer to the global family of the actives instead of the active alone.
  - Reduction of the number of markers, what allows to use addition of chemical origin. The more there are markers in the description, the most difficult it is to falsify them.
  - Plant Extract Ratio: difficult to be sure to get a 4:1 extract when there's no marker to control.

Those are the most common noted origins of adulterations.

### Before Packing

Further steps before packing consist in Milling, compacting (to increase the bulk density for instance), grinding (to tune the size reduction in a safe way, especially with fragile particle or components) and then homogenization and standardization: those steps guarantee a optimized repartition and the correct and needed content of actives as mentioned in our CoA (certificate of analysis).