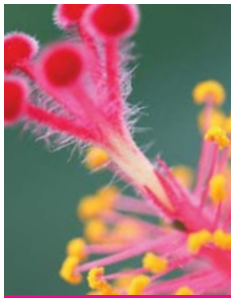
ENERGY

PRODUCT DOCUMENTATION

FLAVOCEL



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Text of the leaflet

Flavocel is a bioinformation product made of a concentrated roselle extract (135 mg/tablet), fortified with vitamin C (200 mg/tablet) and a special mixture of essential oils. The mixture of essential oils enhances the effects of roselle and also supports the function of lungs and bronchi. It is composed of eucalyptus, grapefruit, cardamom, copaiba and holywood lignum-vitae extracts and has antimicrobial, antiviral and antibacterial effects.

Bioinformation:

Bioinformation represents frequencies which simulate the control frequencies of subcortical brain centres, which regulate the vegetative nervous system and the function of viscera. Bioinformation acts to offset negative information and induce a new regenerative process.

Flavocel harmonises in particular the kidney, urinary bladder, triple energiser, lungs, heart and spleen meridians, helping to combat problems associated with the impaired function of these organs. It is a biologically highly active product which may be very well combined with other Energy products.

Use:

- Colds, flu, tonsillitis and bronchial problems
- Kidney and urinary stones
- Gout
- High blood pressure
- Oedema
- Allergies
- Anaemia
- General weakness and fatigue
- Intestinal, abdominal, gastric, uterine, lung etc. spasms
- Constipation
- Atherosclerosis
- Impaired immunity
- Intestinal parasites
- Heart and bone marrow functional stimulation
- Nutrition and regeneration of teeth, gums, blood vessels and bone cells
- Improved iron absorption
- Reduced blood cholesterol levels
- Protein metabolism enhancement
- Stimulation of adrenal gland hormones, collagen and ligament production
- Enzymatic activity trigger
- Positive effects on urinary tract and bladder, kidney and prostate inflammations

Roselle (Hibiscus sabdariffa)

is a rich natural source of vitamin C, organic acids, polysaccharides, phytosterols, and flavonoids. Flavonoids help quicker vitamin C absorption and they are known for their antioxidative activity. Roselle extract exerts a potent antibacterial effect. It may even inhibit the growth of the bacterium causing tuberculosis (Mycobacterium tuberculosis). Roselle helps to combat fever and spasms of

uterine and intestinal muscles, it soothes cough and has slightly sedative effects. In higher doses it eliminates intestinal parasites and harmful organisms. It generally refreshes the body, reduces blood pressure, alleviates oedema, and enhances the production of bile. Plant pigments (flavonoids) together with vitamin C uptake free radicals, hence slowing down the oxidative processes in the cell which cause the cell to age. The contained phytosterols reduce blood cholesterol levels, help to break up urinary stones and dissolve atherosclerotic plaques in blood vessels. Due to the high concentrations of fruit acids roselle extract has a slightly laxative and diuretic effect. It is effective in combating inflammations of the urinary tract and bladder, kidneys and prostate. Latest research has shown its protective effects on the heart and blood vessels.

Vitamin C

is an important dietary supplement, as the human body cannot produce it itself. Flavocel contains a highly-absorbable left-handed form of vitamin C (which occurs naturally) with beneficial effects on the human body. Vitamin C is involved in many a metabolic reaction. It is essential for the growth and regeneration of teeth, gums, ligament, blood vessels and bone cells. It enhances immunity by producing antibodies; it has antioxidative effects and allows for the activity of various enzymes in the body. It can bind certain toxins, thus reducing their adverse effects. It is also necessary for the healing of wounds. It improves the production of adrenal gland hormones and of collagen; it reduces cholesterol levels and helps to absorb iron from food. It generally maintains good condition of the organism. During colds, flu, recovery, and in smokers it is generally advisable to increase the intake of vitamin C. Vitamin C deficiency causes scurvy, anaemia and is the cause of gum oedema, weakness, fatigue and bleeding from the nose.

Recommended dosage:

It is advisable to take vitamin C in several smaller doses rather than as a big bulk at one time, as the surplus quantities are excreted by urine without any benefit for the body.

Adults: 1–2 tablets per day
Children (from 3 to 12 years): 1/2 tablet per day

After three weeks of usage the product should be discontinued for one week.
Flavocel does not contain sugar and hence is suitable also for diabetic patients!
Do not exceed the recommended daily dose.
Dietary supplements are not intended to substitute varied diet.
The product is not intended for children under 3 years of age.
Keep out of the reach of children.
Store at a dark, dry place at 10–25°C; do not freeze.

Introduction to the topic

Flavocel is a uniquely formulated product containing roselle extract, vitamin C and a mixture of essential oils which can be helpful during flu epidemics, in recovery, as well as an agent against the effects of oxidative stress in anybody's life. The addition of special essential oils enhances the effects of the active substances contained in Flavocel and, furthermore, has beneficial effects on the mucosa, especially lung and bronchial mucosa.

Flavocel has a broad range of applications, not only for the generally recognised effects of vitamin C, but also for its contents of roselle plant polyphenols. Polyphenols, most common group of which are flavonoids, are being associated with a reduced rate of severe diseases (tumour diseases, cardiovascular conditions, diabetes, etc.). Flavonoids are contained practically in all plant cells and usually accompany vitamin C, for which they play the role of a "bodyguard". They protect it from damage by oxidative processes, but at the same time much increase its absorbability and efficacy. These two substances are an illustration of so called synergic activity, where the joint effect is many times higher than if they were taken separately.

Natural flavonoids have a number of beneficial pharmacological functions, such as potent antiviral, antioxidative, antibacterial and anti-inflammatory effects. So called French paradox is also mentioned in relation to polyphenols in food. A French paradox is the fact that people who live in France suffer from cardiovascular diseases (primarily acute cardiac events) in a relatively low degree, despite their diet rich in saturated fats. This phenomenon was first scientifically described by an Irish medical doctor Samuel Black in 1819. The major cause was considered to be the content of flavonoids in wine, especially substances called resveratrol and procyanidins. With regard to this, however, it should be pointed out that we are talking about a reasonable wine consumption (no more than 1–2 glasses per day taken with food). Nevertheless, medically, the causes of the French paradox have not been quite explained and research continues. One thing is clear, though: flavonoids have positive effects on the metabolism of cholesterol and fats in the body and they reduce the risk of atherosclerosis, diabetes, myocardial infarction and stroke. Some studies, moreover, suggest that the intake of food containing certain polyphenols may protect the body from certain types of tumour (mostly lung cancer, digestive tract cancer, breast cancer and uterine mucosa cancer in women and prostate cancer in men). In addition to wine, polyphenols are also contained in tea, chocolate, fruit (primarily citruses) and vegetables (onion) or in some cereals (such as buckwheat).

The added essential oils are extracted from eucalyptus, grapefruit, cardamom, copaiba, and holywood lignum-vitae and contain a large amount of substances which stimulate the nervous system.

Through their effects they may influence the emotional status of an individual as well as the endocrine gland activity. Essential oils work directly or prophylactically also in the plants proper. Many of the active substances ensure the protection of the plant and its surface from pests, moulds, bacteria and also from toxins and chemical substances. All essential oils have antimicrobial effects and some also boast anti-fungal and immunomodulatory properties.

Description of ingredients

ROSELLE

Roselle, *Hibiscus sabdariffa L*. in Latin, is an annual undershrub as much as 2 m high, originally a native of Northern Africa and Mesoamerica. Currently, it is grown in all suitable climatic zones, particularly in Sudan, Egypt, China, India, Thailand, and Taiwan. It is also known as red sorrel, in some countries it is called karkade or carcade (Northern Africa), and büsop (in equatorial Africa), its synonyms are African mallow, rama and hibiscus tea flower. In subtropical and tropical zones, roselle is used for the preparation of a soft sour drink called karkade. It provides relief in the hot weather because it increases blood flow rate in the surface layers of the skin, dilates pores, and thus contributes to the general cooling of the skin.

Botanically, Hibiscus sabdariffa L. is of the mallow family (Malvaceae in Latin). It is used as a decorative plant (shrub); in food industry it is utilised as a colorant or flavour for tea mixtures, jams, sauces as well as soft drinks (highly refreshing taste). Traditional medicine uses it especially for the treatment of hypertension and liver conditions. Due to its other numerous effects, however, roselle seems to have a much wider pharmacological application than originally anticipated. In Africa, roselle has been traditionally used as a spasmolytic agent (combats spasms), antibacterial and antioxidative agent, a cholagogum (it enhances the production and excretion of bile), a diuretic and antihelminthic agent (works against parasites). Due to its content of organic acids (sometimes called fruit acids) it is not necessarily suitable for persons with increased production of gastric juices and gastric ulcers. For this reason it works also as a mild laxative, because the resorption of organic acids in the digestive tract is poorer.

The stem and leaves are eaten as a vegetable, like spinach in our country. The part of the plant which is collected and industrially processed is the calyx which turns red after blossoming. It contains organic acids, flavonoids, plant pigments, phytosterols, mucilaginous polysaccharides, and pectin. The extract is wine-red and of a sour, mucilaginous taste caused by the high content of ascorbic acid or vitamin C. The overall effects of the plant are anti-inflammatory and disinfecting, especially in the area of digestive and urinary tracts. Roselle extract disinfects the urinary tract and kidneys, contributes to the dissolution of certain types of urinary stones, has diuretic effects and alleviates oedemas. The disinfecting and antibiotic effects work against all common pathogenic bacterial strains and in higher doses also against parasites. The flavonoids contained therein prevent oxidative damage of LDL cholesterol and its deposition in blood vessels.

Research has shown that roselle extract has spasmolytic or cramp releasing effects on uterine muscles (painful period) and intestinal muscles.

Plant pigments anthocyans and flavonoids together with vitamin C update free radicals, thus decelerating the ageing process and cellular damage. The extract in general induces the feelings of freshness, reduces high blood pressure without any adverse effects and effectively combats fever.

In addition to flavonoids, organic acids and vitamin C (high content), roselle extract also contains beta-carotene, vitamins B_1, B_6, niacin and important trace elements (Ca, Mg and Fe).

Active substances contained in Roselle:

Vitamin C (L-ascorbic acid)

In nature, ascorbic acid assumes several forms; nevertheless, the only biologically active compound is the L-ascorbic acid. Vitamin C is a vitamin only for man and several other animal species. It is an important substance for the entire human metabolism (it is involved, in particular, in hydroxylation reactions accompanying e.g. biotransformation of various compounds), and it exerts antioxidative effects. It protects the body from the highly reactive free radicals (active oxygen species), helps to safeguard the protection of vitamin E and membrane lipids form oxidisation. It has also a protective function in respect of unstable forms of folic acid.

During respiratory diseases, recovery and in other cases it is recommended to increase the daily dose of vitamin C to 1,000g and even more. Vitamin C deficiency or hypovitaminosis demonstrates as a number of non-specific symptoms, most often as so called spring tiredness. In the case of vitamin C avitaminosis, scurvy and anaemia develops. Due to the fact that vitamin C content in food is gradually decreasing during storage as well as during cooking, it is advisable to supplement it by means of dietary supplements at least in winter, in smokers also during illness and recovery. Flavocel stimulates the production of antibodies and the engulfing of foreign substances by white blood cells (phagocytosis).

Vitamin C is involved in a range of metabolic reactions, particularly in protein metabolism. It is essential for the growth and regeneration of teeth, gums, ligament, blood vessels and certain bone cells. It helps the activity of various enzymes and it is important for the production of certain substances involved in the transmission of stimuli among nervous cells. It is also essential for proper immune response to an infection and for wound healing. It improves the production of adrenal gland hormones and of collagen (intercellular ligament) and enhances the absorption of iron from food. Vitamin C deficit impairs the formation of intercellular mass in connective tissues, bones and teeth. The subsequent weakening of blood vessels then results in an increased haemorrhagic tendency and in bone defects, poorer wound and fracture healing, increased gum bleeding tendency and formation of bruises.

Description of ingredients

Vitamin C, moreover, helps to control the production of cholesterol in the liver and its transformation into bile. It reduces the overall cholesterol blood levels and has the ability to maintain vessel walls strong and elastic; it reduces the risk of cardiovascular diseases.

Flavonoids

Flavonoids are sometimes also called the P-vitamin or P-factor group. This terminology is based on the major effect which is the much beneficial influence on blood capillary permeability and elasticity. This property is based on activating the production of a protein-type substance – elastic collagen.

Flavonoids are polyphenolic secondary metabolites of plants (found primarily in fruit and vegetables), which are responsible for the colour of blossoms, fruit and sometimes also leaves (plant pigments). They are known for their potent antioxidative effects. In total, there are several thousand of flavonoid substances, of which approx. 60 compounds exhibit significant positive effects on the human body and its vascular system in particular. Important flavonoids include quercetin (the structural skeleton of many other flavonoids, including rutin, hesperidin, etc.), proanthocyanidins (contained also in the sap of the Croton spp. tree, which is, apart from other, the essential substance of the product Drags Imun), epicatechin etc.

Flavonoids influence the metabolism of cholesterol and fats in the body; they reduce their levels, and thus contribute to eliminating the risk of atherosclerosis, high blood pressure, myocardial infarction and stroke. Through their activity they also improve the condition of blood capillaries, hence reducing the risk of cardiovascular diseases. Their effects may be labelled with a single word – “veno-activity” (or angio-activity), which means positive activity influencing the vascular and venous system.

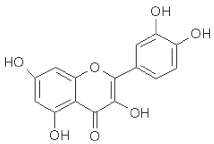
Flavonoids represent an important component of the antioxidative system; they prevent lipid peroxidation, destroy free radicals and may bind and inactivate some pro-oxidative metal ions (iron, copper). Through these processes they much support the detoxification of the body. Organic acids – citric and apple – are also involved in the uptake of heavy metals (in the form of chelate bonds); these acids, moreover, enhance the digestive process and have antiseptic and antimycotic properties.

Flavonoids are often labelled as active anti-inflammatory substances. They can exert anti-allergic, hepatoprotective (supporting liver tissue regeneration) and spasmolytic (working against spasms) effects. Various research projects have shown that they have diuretic, antibacterial or antiviral effects. Furthermore, flavonoids have the ability to reduce the mutagenicity and carcinogenicity of various foreign substances;

they can stop tumour cell growth and even actively destroy these cells.

The major flavonoid occurring in roselle is quercetin. Studies have shown quercetin to exert both anti-inflammatory and anticancer activity (demonstrated for prostate and lung cancer). It has pronounced anti-allergic effects and prevents the release of histamine in the body. Other research studies have shown that it has positive effects also on cardiac and respiratory diseases (bronchitis and asthma), reduces high blood pressure and enhances the secretion of insulin.

Quercetin structural formula



EUCALYPTUS

Eucalyptus is a non-hardy, evergreen, quickly growing tree which may, in some cases, grow into the height of the unbelievable 150m. It is a native of Australia. Nowadays, eucalyptuses are grown in many subtropical regions, including Southern Europe.

Eucalyptus, (Latin *eucalyptus*) belongs to the myrtle family. It is grown for its wood and for aromatic substances which are obtained from leaves by hydro-steam distillation

A eucalypt extract contains an essential oil with cineol as its main active substance, tanning agents and bitter substances. The eucalypt essential oil ranges among the best antiseptic substances. It prevents microbe multiplication, improves problems with difficult coughing, and helps combat fever. Cineol, which has bactericidal effects, is isolated from the essential oil by freezing. The eucalypt essential oil is used particularly in ointments or for inhalations (the product Spiron) during bronchitis, asthma, inflammatory nose and larynx conditions, etc. The essential oil in Flavocel supports the overall activity of all ingredients and has positive effects on the lungs and bronchi.

GRAPEFRUIT

Grapefruit is a tree which is in Latin called *Citrus Paradisi*. It is a native of the Caribbean region and belongs to the rue family (*Rutaceae* in Latin). This evergreen tree reaches the height of as much as 25 meters and, apart from the fruit which is used as food, certain substances obtained from the seeds and rind offer a broad pharmacological application.

A substance which exerts antibiotic properties preventing not only the multiplication of bacteria, but also of viruses and fungi, is obtained from grapefruit seeds. Grapefruit essential oil contains limonene, which is capable of dissolving smaller kidney and gall stones. The high content of flavonoids, together with

Description of ingredients

this substance, contributes to these pharmacological effects of grapefruit or grapefruit-seed extract. Both components complement each other and hence exert beneficial effects on the body. In aromatherapy, grapefruit essential oil provides strength and energy.

CARDAMOM or GREEN/TRUE CARDAMOM

Cardamom essential oil (*oleum cardamomi* in Latin) is obtained from the green cardamom plant (*Elettaria cardamomum* in Latin) which belongs to the ginger family. The fruit and rhizome of green cardamom, or simply cardamom, are used as spice.

Cardamom is a robust herb which may be as tall as 2–4 m. Its fruit is formed by ellipsoidal greenish capsules, 2cm long, which contain 15 to 20 aromatic red-brown seeds. Originally, cardamom is a native of the tropical rainforest of Cardamom Hills in the mountains of Ghat along the south-west coast of India. At present, it is grown also in other regions of India, Sri Lanka, Vietnam, China, Guatemala, but also in Tanzania.

Besides significant amounts of protein, saccharides and fats, cardamom fruit contain also terpenes (1,8-cineol, α-pinene, β-pinene, α-terpineol and its acetate, borneol, geraniol and its acetate, limonene, linalool and its acetate, myrcene nerolidol, p-cymene, sabinene), carboxylic acid (oleic acid, linoleic acid, palmitic and stearic acids) and vitamins such as thiamine, riboflavin a niacin. Cardamom extract (cardamom essential oil) contains as much as 30% of cineol and has positive effects on digestion and it helps combat gastric problems (heartburn). It is considered to be an aphrodisiac; it has toning, antiseptic and diuretic effects. Cardamom rhizome, fruit and seeds are used. The essential oil is obtained from cardamom seeds. Cardamom is used as a much precious spice, and forms part of Indian curry or masala. Seeds support digestion, stimulate the organism, combat fatigue and fever.

COPAIBA or COPAIPERA

COPAIBA, sometimes called copaipera, (*Copaifera* in Latin) is a plant of several varieties. The best known is the Brazilian species. It is a tree from which terpene oil is obtained by pressing. This oil is called copaiba balm. Copaiba balm, however, is also obtained from the West-Indian species of copaipera, but this balm is less aromatic and also less effective. Copaiba essential oil exerts diuretic activity, has positive effects on mucosa (including lung and bronchial mucosa), and on urinary tract infections.

HOLYWOOD LIGNUM-VITAE

Holywood lignum-vitae is an evergreen tree, in Latin called *Guajacum sanctum*, growing in the western

regions of India. Holywood lignum-vitae wood ranges among the hardest and best quality kinds of wood. It contains as much as 20% resin. Through distillation or boiling of the holywood lignum-vitae resin a drug is obtained which serves as an anti-syphilitic agent and a remedy supporting the metabolism. At present the essential oil is also used in the production of perfumes. Pharmacologically, it is valuable for its effects on the mucosa, catarrhs and skin conditions.

Overview of effects

The immune system
- Antimicrobial and antiviral effects
- Stimulates the immune system (enhances phagocytic activity, stimulates the production of antibodies)
- Flu, viral colds, bronchi and lung conditions, common colds
- Diuretic and anti-inflammatory effects (urinary tract and bladder infections)

Vascular system
- Varicose veins, spider veins, haemorrhoids
- Tendency towards excessive formation of bruises, bleeding from the nose and gums, and excessive menstrual bleeding
- It reduces platelet aggregation, thins the blood
- In terms of cholesterol: it reduces cholesterol levels, enhances its transformation to bile acids in the liver, inhibits the oxidative damage of LDL cholesterol – reduces the risk of atherosclerosis
- Enhanced haematopoiesis through absorption of iron from food – works against anaemia

Significant antioxidant
- Protects the cells from oxidative damage and generally decelerates the ageing of cells
- Reduces the risk of cardiovascular and tumour diseases
- Reduces the negative effects of smoking, eliminates the effects of radiation and adverse environmental effects on the body
- Supports the organism under increased physical stress

Menopausal problems (positive effects on their symptoms due to the contained flavonoids)
- Helps combat hot flushes and sweating
- Positive effects helping to prevent osteoporosis

Anti-allergic
- Reduces the secretion of histamine
- Possible application in hay fever, conjunctivitis, asthma as well as allergic skin reactions

Brain and senses
- It supports mental activity (in particular concentration and quickness)
- It is involved in the process of stress hormone production and the hormones of happiness (endorphins)
- Helps combat fatigue, stress and overwork
- Due to its antioxidative activity it may act as protection of the crystalline lens from cataracta

Skin, bones, teeth
- It helps the synthesis of collagen, hence improving skin elasticity (positive effect on wrinkles) and healthy bones and teeth
- For better healing of wounds and burns

Spasmolytic effects

- Helps combat spasms of the uterus, digestive and excretory systems.

Other effects

- It supports the protein metabolism and facilitates enzymatic activity
- It improves the production of adrenal gland hormones; the phytosterols and limonene contained in the product help to break up smaller urinary and kidney stones
- For inflammatory non-bacterial conditions (arthritis, ulcerative colitis and Crohn's disease)
- For the fatigue syndrome

General benefits of Flavocel

- Flavonoids from roselle extract
- Left-handed form of vitamin C
- Antimicrobial, antioxidative, diuretic and spasmolytic effects
- Synergic activity of flavonoids, ascorbic acid and essential oils
- No adverse effects, suitable also for children, pregnant and breastfeeding women.

CHIEF HEAD-OFFICE AND HEAD-OFFICE
FOR THE CZECH REPUBLIC
ENERGY GROUP, a. s.
Trojská 201/39, 171 00 Praha 7
Czech Republic
tel. / fax: +420 283 853 853/54
info@energy.cz, www.energy.cz