



PRODUCT DOCUMENTATION

# GERIATRIM





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# Text of the leaflet

Geriatrim is a bioinformation product containing a unique combination of natural substances and vitamins which effectively help to eliminate negative signs of ageing. It optimises metabolic processes and regenerates the organism exposed to long-term stress. It provides care for vascular, nervous, hormone as well as digestive system and enhances the function of viscera and prevents their damage. The product enhances vitality, optimism, and mental health.

## Use:

- It detoxifies the body and reduces negative effects of free radicals present in a polluted environment.
- Due to the high content of antioxidants it slows down the ageing process and enhances tissue restoration.
- It enhances the immune system and the function of inner secretory glands.
- It improves the capacity of the body to combat civilisation and infectious diseases.
- It enhances digestion and supports liver and stomach function.
- It optimises the internal pH of the body.
- It has positive effects on the quality of eyesight.
- It improves the quality of the vascular system and prevents cardiovascular diseases.
- It prevents the development of varices.
- It harmonises the nervous system and improves mood.
- It improves the quality of sleep and facilitates easier falling asleep.
- It supports vitality and facilitates vivacity.

## Composition:

**Wolfberry** – contains high amounts of vitamins and flavonoids of anti-oxidative potential; it enhances the immune system, supports vitality and sexual potency, improves eyesight, protects the liver and regenerates tissues.

**Kudzu** – it adjusts digestive processes, enhances the nervous and hormone system, stabilises blood pressure and heart function; it has detoxifying effects, increases brain serotonin and dopamine levels, and normalises emotional disturbances.

**Sea buckthorn** – a source of many vitamins, which may be well utilised; it harmonises digestion, supports immunity, and slows down the ageing process, it increases immunity during infectious diseases and accelerates healing, it improves the condition of the skin and of connective tissues.

**Pot marigold** – it has anti-inflammatory effects, improves digestion and supports pancreatic and hepatic function.

**Pumpkin seed oil** – this is a rich source of easily usable zinc, and acts as prevention of prostate and urinary tract disorders; it harmonises mental condition, reduces blood cholesterol levels, and slows down the ageing process.

**Chlorella pyrenoidosa** – it detoxifies the body, has probiotic and anti-inflammatory effects, facilitates healing, and helps to prevent excess acidity of the body.

**Ginseng** – it improves digestion and stimulates metabolism, helps the body to recover, and supplies vivacity.

**Ginkgo** – it supports the function of the brain and blood flow in the brain as well as in any other organs and tissues; it improves the quality of vessels, enhances the quality of hearing, and helps prevent senility.

**Vitamin C** – it has a major anti-oxidative effect; it improves the condition of connective tissue, and helps combat bleeding.

**Vitamin B<sub>6</sub>** – it is essential for a number of biochemical processes in the body, it ensures an optimal condition of the nervous system.

**Vitamin B<sub>9</sub>** – it is necessary for growth and development; it ensures an optimal function of the nervous system, and helps combat bacterial infections.

**Vitamin B<sub>12</sub>** – it is important for the regulation and proper function of the nervous system, it improves memory, enhances concentration, and is essential for proper haematogenesis; it reduces the risk of cardiac diseases, and helps in an overall body recovery.

### **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.

### **Dosage:**

1 capsule 2–3 times per day, ideally after meals. After three weeks of usage it is recommended to discontinue the product for one week. Do not exceed the recommended daily dose!

### **Warning:**

It is recommended to increase the intake of fluids during the use of the product.

The product is not intended for children under 3 years of age! Not recommended for pregnant and breastfeeding women and persons with hypersensitivity to soy and bee products.

Dietary supplements are not intended to substitute varied diet.

Store out of reach of children!

Best-Used-Before-Date is specified on the labelling.

Store at 10–25°C in a dry and dark place; do not freeze.

# Introduction to the topic

## Biological principle of ageing, free radicals, and oxidative stress

The organism gets naturally worn out through so called oxidative stress, which is a process during which oxygen radicals (oxygen atoms containing an uncoupled electron) are formed as the products of oxidation-reduction chemical processes in the body. Where oxygen is present, the oxygen molecule immediately binds to the place of the uncoupled electron, and a peroxy radical is formed, which tries to obtain the missing electron from another compound, thus creating another free radical. This chain reaction is interrupted either by two radicals binding together, or by a reaction with an antioxidant. The best known sources of free radicals are chemical reactions of the respiratory chain in mitochondria, where oxidation by atmospheric oxygen generates energy and free radicals as by-products. Oxygen radicals in the body have two types of effects.

### Positive effects of free radicals

By combating foreign microorganisms penetrating the body, free radicals positively enhance antimicrobial immunity (detoxification) of the body. The human organism can make use of free radicals in a number of various ways, e.g. white blood cells contain lots of free radicals through which they kill microorganisms, yeast, and parasites; T-cells use free radicals to destroy tumorous cells; osteoclasts to remodel the bone, etc. A certain amount of free oxygen radicals is hence necessary in the body.

### Negative effects of free radicals – oxidative stress

The problem of our times is, however, the fact that the amount of oxygen radicals entering our body is many times higher than necessary. As a result of human activity, the amounts of free radicals in nature keep increasing and at present the balance between free radicals and antioxidants which destroy free radicals is frequently upset. The prevalence of free radicals over antioxidants is thus the true cause of the above-mentioned oxidative stress.

Oxidative stress is a risky condition which damages tissues, the genetic cell material, and which is responsible for the development of many a disease. Simply speaking, free radicals damage bio-molecules and such damage is then the cause of a disease.

Unsaturated fatty acids as well as proteins are subjected to lipoperoxidation; due to oxidative stress the DNA nitrogenous base is damaged, thus increasing the risk of mutations and cancerogenesis. Glycooxidation, furthermore, induces the production of so called AGE substances (advanced glycosylation end-products), cross-links with proteins are formed, which severely damage functionality.

### **Diseases caused by free radicals**

An increased concentration of free radicals on the general biological level causes damage of cellular structures and physiological functions which then manifest in the form of a number of various diseases. Free radicals accelerate (promote) ageing, they increase the risk of cardiovascular diseases, have a major role in the development and progress of diabetes, eye disorders, such as the cataract, inflammations, tumours, a number of lung, skin and neurodegenerative conditions (e.g. Parkinson's and Alzheimer's disease); furthermore, they induce immune disorders, support viral infections, and have their role in some intoxications; they are involved e.g. in rheumatic joint inflammation, in eclampsia, and cause male infertility.

### **Sources of free radicals and evaluation of the oxidative stress level**

The source of higher amounts of oxygen radicals in the body is the environment polluted with nitrogen oxides (NO<sub>x</sub>), exhaust gases and smog (SO<sub>2</sub>), as well as cigarette smoke, excessively heated fats, and, last but not least, alcohol. Free radicals are also produced following intensive exercise, e.g. in sportsmen.

The level of oxidative stress may be quantitatively evaluated. Due to fatty acid peroxidation, blood contains malonic acid, ethane may be detected in expired air, and stool is typically coloured with a yellow-brown pigment.

### **Antioxidants – the enemies of free radicals**

The increased presence of free radicals in the body may be eliminated by substances of antioxidative potential, such as vitamins C, E, A, beta-carotene, and others. It is, however, necessary to stress that not every antioxidant can eliminate every free radical. Due to this it has been recognised that antioxidative therapy must contain more antioxidants to cover the whole range of various free radicals.

- Antioxidants are rightfully considered an effective therapy against premature ageing and wear of the organism.
- **With the ageing process the reserves of antioxidants are dropping, thus increasing toxic burden and people can succumb to various diseases caused by free radicals more easily. While in young people antioxidant supplementation is suitable only in particular cases and for particular conditions (top sports, severe injury, etc.), for seniors, antioxidative support of the body should be a rule to add quality years to their life.**

### **Definition of the term “antioxidant”**

An antioxidant is a substance the molecules of which reduce the activity of oxygen radicals – they decrease the likelihood of their formation or transform them to less reactive or non-reactive ones, reducing the oxidation process in the body (or in the mixture in which they are present).

# Introduction to the topic

For this reason they are added to food which would otherwise be excessively susceptible to oxidation. They have positive effects on the health of the body where they reduce oxidative stress.

## **Natural versus synthetic antioxidants**

Antioxidants may be classified as natural (occurring naturally, although in lower concentrations), and synthetic (artificially produced without any corresponding occurrence in nature). The first group is generally preferred, but existing research suggests that the used artificial antioxidants are completely harmless (although research into the effects of long-term and lifelong use is nonexistent). Experts agree that the efficacy of natural antioxidants received naturally through food is significantly higher than that of the same dose administered purely in the form of a dietary supplement (e.g. a combination of synthetically produced vitamins). Latest research, moreover, shows that at least some antioxidants, if used in the long term in their pure form, manifest an antioxidant reversal, i.e. they turn their antioxidative effect to a pro-oxidative one (which is a highly adverse effect). This property whose mechanism remains unclear has been observed in beta-carotenes (provitamin A), vitamin E, vitamin C and flavonoids.

No reversal has been reported for antioxidants received in a natural way. Insufficient as well as excessive administration of antioxidants may be harmful. A combination of

various types of antioxidants may improve their absorption from the bowel. Natural antioxidants from organic substances demonstrate the best absorption. The body has got used to this form during its long development and natural products, in addition, contain the most effective forms of antioxidants.

## **Natural antioxidants**

Vitamin A, vitamin E, vitamin C, carotenoids, polyphenolic substances (bioflavonoids) certain selenium and zinc compounds, the enzymes glutathionperoxidase, superoxiddismutase, and catalase.

Natural antioxidants present in food increase the life of foodstuffs and their use has positive effects on health, as it decreases the likelihood of development of civilisation diseases.

## **The secret of longevity**

Existing observations suggest that the length of human life is influenced to a minor extent by hereditary factors and to a much greater degree by lifestyle. Long-lived people live in a clean environment and in contact with nature, they have enough exercise even in the older age, but rest regularly and sleep long, they are slim and have a modest, yet varied diet.

Diet in particular plays a major role in the issue of longevity. A diet resulting in a long, good-quality life is typical by being low in calories, but rich in nutrients, it contains little refined sugar and animal fats, but plenty of vegetables, fruit, cereals, legumes, and seeds. Long-lived people are, almost exclusively, vegetarians. Meat as well as sugar increases the acidity of the inner environment which increases the likelihood of microbial infection and tumour diseases.

“Longevity diet” contains significant amounts of vitamins and minerals, in particular zinc, calcium, vitamin E, vitamin C and vitamins of the B group.

To maintain one’s youth for a long time, it is necessary to take care especially of one’s health, good function of the reproductive organs and all of the inner secretory glands. A reduced function of these glands results in a slow-down of all vital life processes and in premature ageing.

Last but not least, the precondition of longevity is, in particular, the will to live and a joyful, optimistic attitude to life.

# Geriatrim composition

**Product form:** soft gelatine capsule

**Capsule size:** 740 mg

**Energy value:** 4.2 kcal in one capsule

## Active substances:

Component	Quantity in
Wolfberry (extract)	80 mg
Kudzu (extract)	50 mg
Sea buckthorn	25 mg
Pot marigold	13,5 mg
Pumpkin seeds (oil)	10 mg
Chlorella pyrenoidosa (extrakt)	10 mg
Ginseng (extract)	10 mg
Ginkgo (extract)	8 mg
Vitamin C	3 mg
Vitamin B <sub>6</sub>	1 mg
Vitamin B <sub>9</sub>	0,2 mg
Vitamin B <sub>12</sub>	0,1 mg

## Excipients:

Soy oil, water, gelatine, glycerine, bee wax

## Recommended dosage

### Recommended daily dose:

1 capsule 2–3 times per day, ideally after meals. After three weeks of usage it is recommended to discontinue the product for one week. Do not exceed the recommended daily dose!

### Warning:

Due to the content of ginseng in the product it is not advisable to drink milk or eat dairy products immediately after the administration of the product. It is recommended to increase the intake of fluids during the use of the product. The product is not intended for children under 3 years of age. Not recommended for pregnant and breastfeeding women and persons with hypersensitivity to soy and bee products. Dietary supplements are not intended to substitute varied diet. Store out of reach of children!

## Storage method

Store at 10–25°C in a dry and dark place. Do not expose to direct sunlight as it may destroy (oxidise) the biologically active substances.

The product has been developed, manufactured, and controlled in compliance with requirements of the ISO 9001:2000 standard.

# Description of effects of individual ingredients

## WOLFBERRY

**Latin name:** Lycium chinense

**Czech name:** Kustovnice čínská

**English name:** Goji, Wolfberry

**Chinese name:** ko-chi

**Family:** Solanaceae

**Active substances:** fruit

Amino acids, beta-carotene, zeaxanthin, immunologically active polysaccharides, vitamins A, C and E, vitamins B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, beta-sitosterol, linolenic acid, linoleic acid, sesquiterpenoids and betaine, trace elements – Zn, Fe, Cu, Ca, Ge, Se, and P

According to traditional Chinese medicine, wolfberry has a sweet taste, neutral nature, and it influences liver and kidney meridians; furthermore, it nourishes blood, multiplies yin as well as yang, tones the liver and kidneys and moisturises the lungs. Ancient Chinese healers claim that wolfberry enhances the immune system, supports vitality and sexual potency, improves eyesight, protects the liver, improves blood circulation, and has positive effects on many other internal organs (kidneys, lungs). It is also renowned for its rejuvenating and longevity properties. The truth is that people living in areas where wolfberry is a normal part of a regular diet, boast the longest average age on Earth.

### Immunity

Modern research into the wolfberry fruit has shown that wolfberry promotes the immune response of the

body and reduces the number of antigens associated with allergic conditions. Wolfberry, furthermore, increases phagocytosis and improves immunity and haematogenesis.

### Sexual potency

Aphrodisiacal properties of the wolfberry fruit have also been demonstrated to a certain extent. The intake of wolfberry has positive effects on male potency (erection) and sexual libido; it results in an increase of male sexual hormone levels, and increases the production of sperm.

### Liver regeneration

Betaine contained in wolfberry fruit has been shown to treat various chronic liver conditions and to have positive effects on the regeneration of liver cells. It, moreover, supports overall detoxification, reduces blood sugar levels, cholesterol levels and blood lipid levels. The liver uses betaine to produce choline, which has calming effects, improves memory and helps prevent the built-up of fat in liver (steatosis).

### Eyesight

Wolfberry has been shown to enhance eyesight and improve sharp eyesight.

### Other

Some of the published studies (mostly Chinese) have reported a positive impact of wolfberry use on the cardiovascular system, as well as the anti-inflammatory, anti-cancer and antioxidative properties of wolfberry, although very few results of these studies have been confirmed by western scientists or in clinical trials.

# Description of effects of individual ingredients

## KUDZU

**Latin name:** Pueraria lobata

**Czech name:** Kudzu – (Kuzu)

**English name:** Kudzu, Ge Gen, Japanese Arrowroot

**Chinese name:** Ge Gan

**Family:** Leguminosae

**Active substances:** root

Isoflavones (daidzin, daidzein, genistein, puerarine),  
saccharides, minerals - Fe, Ca, Na

### Nervous system

The root of this plant stabilises the nervous system, as it enhances the production of serotonin and dopamine in the brain. These hormones cater for the correct transmission of stimuli among various sections of the brain. Serotonin in addition helps to regulate emotional upset, and a lack of this hormone causes swings of mood and excess aggressiveness or mania or even depression and nervous breakdown.

### Dependencies

Scientific studies have evidenced that kudzu is involved in the process of slowing down the breakdown of ethanol to acetic acid aldehyde (acetaldehyde, which induces the sign of alcoholic intoxication). This way the need for and subsequently also consumption of alcohol is reduced in the body. The root of kudzu has been found to contain isoflavonoids, which help combat nicotine

dependency by alleviating withdrawal symptoms through an increased production of limbic system mediators (dopamine and serotonin), which “substitute” the effect of nicotine receptor stimulation in this sphere.

### Hormonal balance

In the last few years, kudzu has been also examined in terms of alleviating menopausal and climacteric symptoms, which are associated with a reduced production of the hormone oestrogen. A lack of this compound causes women to feel discomfort – hot flushes, dizziness, irritation, skin problems, bone decalcification and blood circulatory disorders. Existing research suggests that isoflavonoids act similarly to oestrogen, and hence are able to alleviate some of the above-mentioned problems.

### Other

Isoflavone genistein contained in kudzu root has been successfully tested as a substance preventing prostate and breast cancer. Furthermore, it has been demonstrated that kudzu root extracts eliminate or alleviate headache, including migraine conditions, and decrease arterial pressure. Kudzu also supports detoxification of viscera, particularly the liver; it adjusts digestion, alleviates excess stomach acidity and diarrhoea, and has positive effects on the circulatory system and on bones.

## SEA BUCKTHORN

**Latin name:** Hippophae rhamnoides L.

**Czech name:** Rakytník řešetlákový (úzkolistý)

**English name:** Sea buckthorn, Siberian pineapple

**Family:** Elaeagnaceae

**Active substances:** fruit

Vitamins C, A, E, beta-carotene, B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub>, K, choline, Fe, Mn, S, B, Al, Ti, Si, bioflavonoids (quercetin, campherol, rutin), catechins, amino acids, unsaturated fatty acids (oleic, alpha – linoleic), apple and tartaric acids, tanning agents, pectin, SoD, serotonin

### Immunity, stress, fatigue

Sea buckthorn is considered a significant polyvitaminous plant with overall biostimulating and toning effects; it slows down the ageing process and significantly supports the immune system.

It increases the immunity of the body to infection, increases red blood cell count (has a therapeutic effect in anaemia), accelerates regenerative as well as healing processes and is much suitable during convalescence and general weakness. In addition to its stimulating action on the body, it has also a good effect on mental performance; it increases immunity to stress and helps combat fatigue.

### Cancer

Sea buckthorn demonstrates powerful antioxidative properties and is able to eliminate toxic substances

and free radicals from the body. Sea buckthorn's antitumor and radioprotective effects have been recently attracting attention. Sea buckthorn works for instance in the treatment of cervical cancer and is used preventively during radiotherapy.

### Digestion

The finding that sea buckthorn extracts have substantial bactericide effects, particularly against staphylococcus causing digestive and intestinal disorders, is important. Sea buckthorn has stimulating effects on digestion. It supports hepatic and pancreatic function and the production of digestive enzymes and bile. It has its role in the treatment of gastric and duodenal ulcers and gastroesophageal reflux disease. It has a healing and calming effect on the mucosa of the entire digestive system. It also helps in infectious hepatitis affecting the liver, and protects liver cells from death.

### Heart and blood vessels

Sea buckthorn improves blood circulation, works against platelet clustering and formation of atherosclerotic plaques, preventing and treating atherosclerosis. It normalises blood pressure, protects the heart and blood vessels and enhances their elasticity. It acts as prevention of cardiac and vascular conditions – from myocardial infarction, angina pectoris to haemorrhoids.

### Lungs

Sea buckthorn has therapeutic effects on lungs and bronchi, heals mucosa and dissolves mucus. It has therapeutic effects during asthma.

# Description of effects of individual ingredients

## **Connective tissue**

Due to its high content of vitamin C, sea buckthorn enhances the formation of collagen structures, improves the condition of joint cartilage, and helps combat arthritis, rheumatism and gout. The finding that sea buckthorn helps combat pain is important.

## **Skin**

Sea buckthorn taken internally and sea buckthorn oil used, at the same time, externally, has a broad range of applications in the treatment of skin conditions.

It heals wounds, burns, frostbite, acne, eczema, rash, dry skin, wounds which do not heal well, venous ulcers, and a range of other skin conditions. It combats inflammatory processes, stimulates skin renewal, increases skin elasticity, reduces the formation of lines and wrinkles, and heals up smaller wounds without visible scarring. It also prevents premature loss of hair. Due to its high content of vitamin A it improves eyesight.

Constant use of sea buckthorn does not present any health risk, even to children, pregnant and breastfeeding women.

## **POT MARIGOLD**

**Latin name:** Calendula officinalis

**Czech name:** Měsíček lékařský

**English name:** Pot Marigold

**Family:** Asteraceae

**Active substances:** blossom

Carotenoids (beta-carotene, lutein), flavonoids (quercetin, rutin), essential oils, saponins, phytosterols (beta-sitosterol, stigmasterol, taraxasterol), bitter substances, salicylic acid, vitamin E, inulin

## **Gall bladder**

Internally, pot marigold is used particularly in fat digestion disorders, as the present bitter substances enhance bile production. It is therefore useful in gall bladder and biliary tract disorders. Due to its relatively high content of mucous substances pot marigold has slightly laxative effects and well alleviates abdominal and intestinal cramps.

## **Inflammations**

Internal use of pot marigold is important for its non-specific anti-inflammatory effects which this plant demonstrates due to its high content of phytosterols and natural flavonoids. The potent anti-inflammatory action of pot marigold is used in particular externally, for the treatment of wounds which do not heal well.

## **Carotenoids and eyesight**

Pot marigold flowers are typical by their rich yellow colour, which is caused by the presence of large amounts of carotenoids, especially beta-carotene and lutein. Lutein, like beta-carotene, has potent anti-oxidative effects (it prevents cell damage by free radicals), and, like beta-carotene, plays a major role in the prevention of skin and visceral damage caused by the effects of UV radiation and free radicals. Lutein research has shown that lutein is particularly important for the eyes. Once it enters

the body, it accumulates in two eye areas: in so called “yellow spot” (macula lutea) on the retina, and in the lens. The yellow spot on the retina may, with growing age, experience vascular changes due to the effects of free radicals which may result in its degeneration, hence gradually weakening one’s eyesight. Research into yellow spot degeneration has clearly shown that lutein has a major role in its protection. The lens is another part of the human eye which is most prone to diseases in the old age. Free radicals damage the proteins which form the lens and cause their aggregation and drying, which is the basis of cataract. Everyday use of lutein is reported to reduce the incidence of macula lutea degeneration and to reduce the risk of cataract which in 5% represents the reason for blindness in seniors.

## PUMPKIN SEEDS

**Latin name:** Cucurbita pepo

**Czech name:** Tykev obecná

**English name:** Squash, Pumpkin

**Family:** Cucurbitaceae

**Active substances:** seed oil

Organically bound Zn, amino acids (particularly L-tryptophan), essential omega-3 and omega-6 fatty acids, vitamins E, A, D, B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub> and minerals – Se, K, Ca, P, Mg, Cu, Mn, Fe, steroid substances (cucurbitol)

### Prostate and urinary tract

The oil exhibits major healing and calming effects. It is a rich source of organically bound zinc, which plays an important role in the prevention of kidney stones, prostate and urinary tract disorders, which represent a frequent health complication in seniors. The therapeutic effects of pumpkin seeds on prostatic hyperplasia have been evidenced by a number of clinical studies. In some cases, it also improves urinary incontinence in women.

### Prevention of cardiovascular diseases

The present unsaturated fatty acids reduce blood levels of bad cholesterol, high blood pressure, and hence also the risk of myocardial infarction, stroke, and atherosclerosis. Concurrently, it has healing effects on the digestive tract and therapeutic effects on ulcerative conditions.

### Ageing

Cucurbitol belongs among natural hormone active substances, which slow down the ageing process and combat degenerative processes in the skin. It prevents eczema and improves the quality of the skin.

### Mental health

The high content of L-tryptophan amino acids in pumpkin oil may act in improving mental processes, prevent anxiety, depression, and increase optimism, as this essential amino acid is a precursor of the neurotransmitter serotonin, which is responsible for the happy feeling and whose drop accompanies most of the mental conditions.

# Description of effects of individual ingredients

## CHLORELLA PYRENOIDOSA

**Latin name:** Chlorella pyrenoidosa

**Czech name:** Zelenivka

**English name:** Chlorella

**Systematic classification:** single-celled alga

**Active substances:**

Free amino acids, glycoproteins, vitamins and minerals, CGF

Due to its high content of valuable nutrients (vitamins, minerals, amino acids) chlorella may be considered a full-fledged foodstuff.

### **Immunity and detoxification**

Chlorella effectively helps to clean the digestive tract, in particular the colon, and is involved in the development of useful intestinal microflora, thus enhancing the natural immunity of the body. It stimulates the production of white blood cells (leukocytes), their phagocytic activity as well as the production of lymphocytes responsible for the synthesis of antibodies, thus naturally increasing the immunity of the human body. It is also involved in the detoxification of the organism; it eliminates toxins, heavy metals and harmful chemicals received from food and from the environment from the body.

### **Healing and growth**

In the administration of chlorella, an unusual effect on tissue regeneration and cellular division and growth

has been observed. Due to this, chlorella is applied in the treatment of chronic inflammations, eczema, burns, and wounds that do not heal well. It also helps to regenerate an organism subjected to long-term stress, after any surgery or exposure to irradiation. This alga has these properties due to a substance called CGF (chlorella growth factor), considered to be the most effective component of chlorella. The observed effects of CGF are remarkable.

Many scientific studies have shown that CGF enhances tissue regeneration, especially cellular division and growth. In childhood it even improves and speeds up the overall growth and development of the organism.

### **Alkalisiation of the internal environment**

Another important property of chlorella is its ability to reduce the acidity of the inner environment, thus protecting the body from the attack of bacteria and fungi, which, on the contrary, thrive in acidic internal environment.

### **Ageing**

Provable rejuvenating effects of chlorella are attributed to relatively high contents of RNA and DNA. Sufficient quantities of these nucleic acids slow down the ageing process, increase energy and improve immunity.

### **Skin**

Due to the ability of chlorella to detoxify the body, clean blood, and enhance the immune system, its effects are positively reflected also in the quality and health of the skin. It may help in the treatment of acne, rash, eczema, but also any surface wound or damage (scalds, burns, acid and alkali burns, etc.).

## GINSENG

**Latin name:** Panax ginseng C. A. Mey

**Czech name:** Žeňšen pravý

**English name:** Ginseng

**Family:** Araliaceae

**Active substances:** root

Saccharides, lipids, proteins, vitamins, glycosides (ginsenosides), minerals - K, P, Ca, Na, Fe, S, trace elements - Al, Si, Mn, Mg, Ti

In TCM, ginseng is traditionally used in the prevention and therapy of a number of diseases. It is known as an excellent toning and aphrodisiac agent. It is used in nervous exhaustion and general weakness of the body. It improves digestion, prevents vomiting and diarrhoea, supports convalescence after surgeries, diseases or delivery. It is applied in the treatment of stroke, diabetes, loss of memory, impotence, and anaemia. Current scientific knowledge has proven the following therapeutic effects of ginseng: it protects tissues from toxic burden by neutralising free radicals and stimulating hepatic function. It supports the immune system. It controls blood pressure and blood sugar levels, it regulates the white and red blood cell counts. It treats gastric ulcers and prevents their development. It improves brain activity, supports memory, learning and alertness. It protects eyesight by healing deformations and corneal

clouding; it balances hormonal activity. It improves performance and the adaptability. Scientific studies also report that some of the important substances present in ginseng exhibit anti-tumour effects.

## GINKGO

**Latin name:** Ginkgo biloba

**Czech name:** Jinan dvoulaločný

**English name:** Ginkgo, Ginkgo

**Family:** Ginkgoaceae

**Active substances:** whole plant

flavonglycosides, terpenes (ginkgolides A, B, C, bilobalide)

Ginkgo has been the Number One plant of Chinese herbal medicine since times immemorial. Some scientific studies suggest that potent flavonoids obtained from ginkgo might be effective when combating ageing in all parts of the human body. They have strong therapeutic effects in the treatment of many diseases, including Alzheimer's disease, asthma, impotence, tinnitus and loss of hearing, headache, blood circulatory disorders, and haemorrhoids.

### Brain

Ginkgo increases blood flow in the brain, and thus enables brain cells to absorb more oxygen. This prolongs the ability of brain cells to survive during oxygen insufficiency. This ability is used in the treatment of stroke.

# Description of effects of individual ingredients

## **Blood vessels**

Gingko protects vessels from spasms and loss of elasticity, it has relaxing effects on vascular walls and prevents capillaries from becoming too fragile and vessels from excess permeability resulting in blood passing into tissues. It also acts as a barrier against abnormal formation of blood clots in arteries and veins.

Clinical applications of gingko include the treatment of stroke, senility and brain oedema caused by irradiation. Other disorders in the treatment of which the positive effects of gingko are used, include vertigo, deafness, embolism and some eye disorders and vascular complications in diabetic patients. Gingko also protects cells from damage caused by intoxication.

In healthy individuals gingko causes a major improvement of alertness, quickness, and ability of the brain to react to stimuli, particularly when administered at higher doses.

## **VITAMIN C**

Most animals are able to produce their own vitamin C through transformation of the glucose molecule. The exceptions to this rule are people, guinea pigs, and monkeys. Vitamin C is not considered to be a true vitamin, as its need is compared to other vitamins many times higher, but opinions regarding the recommended daily dose much differ. In long-

term use of high doses, a paradoxical lack of vitamin C may occur, as the active transport of vitamin C into cells is restricted in mega doses.

Vitamin C enables the production of collagen, a protein macromolecule, which is the base of any connective structure. It enhances firmness and ensures elasticity of vascular walls, bones, and strength of teeth. It is essential for the very formation of muscles, bones, teeth and cartilage. It prevents bleeding from gums and bruising. It helps healing and absorption of iron. It acts as a powerful antioxidant, uptaking free radicals and preventing tissue damage. It slows down the ageing process and helps to combat stress; it improves general health. It enhances the production of white blood cells and improves the function of the immune system as well as immunity of the body during infectious diseases. It is reported to shorten the duration of diseases and to alleviate the progress of a disease.

### **Signs of insufficiency:**

Sluggish sensation, increased tiredness, loss of appetite, low immunity to infections, bleeding from gums, increased occurrence of dental caries, increased fragility of blood capillaries, impaired collagen structures, joint deformation; long-term depletion causes scurvy and later on even death.

### **Higher doses are necessary for:**

Smokers, alcoholics, women using hormonal contraception, newborns, pregnant and breastfeeding

women, people subjected to stress and physical strain, convalescents and patients with an infection.

## VITAMIN B<sub>6</sub>

### (Pyridoxine)

This vitamin is contained in food to a great degree, but its need in the body is relatively high. Chemically, it is a mixture of three very similar substances which transform in the body one into another (pyridoxol, pyridoxal, pyridoxamine). Vitamin B<sub>6</sub> is essential for a number of biochemical processes in the body. It is involved in protein metabolism – in obtaining energy from amino acids. It is a coenzyme of the enzyme aminotransferase. It is also involved in the process of production of urea, a waste substance formed from an amino group separated during the reprocessing of proteins.

It is also involved in the process of glycogen breakdown and obtaining energy. Muscular activity uses up as much as 80% of vitamin B<sub>6</sub> in the body. It acts as prevention of nervous diseases. It helps during premenstrual syndrome.

### Signs of insufficiency:

Accompanied by the lack of entire B-complex. Inflamed and oily skin of the face, buccal cavity inflammations, nervous system disorders, irritation, spasms, disturbed red blood cell production.

### Higher doses are necessary for:

People with high intake of proteins in food (professional sportsmen), patients using tuberculosis medicines, women using hormonal contraception, alcoholics, people with absorption disorders, with a lack of red blood cells, with chronic diseases.

## VITAMIN B<sub>9</sub>

### (folic acid, folacin, folate)

In natural sources it is present in the form of folates which have to be first processed to folic acid in the body. The transformation of folic acid to the active form requires the presence of vitamin B<sub>12</sub>. It is involved in the formation of building stones of nucleic acids (DNA, RNA). It is not toxic even in high doses, on the contrary, its insufficiency is rather frequent. Folic acid is essential for growth and development. It ensures optimal development and function of the nervous system. It reduces the occurrence of nervous system hereditary defects in newborns (if administered during pregnancy). It helps in the treatment of bacterial infections. It helps in the treatment of cancer.

### Signs of insufficiency:

These are similar to those of vitamin B<sub>12</sub> insufficiency, but without nervous disorders. Fatigue, loss of energy, tender tongue and buccal cavity. Growth disorders and infertility.

# Description of effects of individual ingredients

## **Necessary higher doses:**

In pregnancy it enhances cell division, supports foetal growth and tissue differentiation, particularly of the nervous system. It prevents hereditary developmental defects. Folic acid supplementation is also necessary where diet is inadequate, in liver diseases and alcoholism.

## **VITAMIN B<sub>12</sub>**

### **(Cobalamine)**

This is a rather big and chemically complex molecule with a central cobalt atom (the only occurrence of a natural substance where a cobalt atom is bound to carbon). For people, the source of vitamin B<sub>12</sub> is exclusively food of animal origin (offal, meat, and egg yolk); the absorption of vitamin B<sub>12</sub> is, moreover, restricted in the body. For this reason, it is, as the only vitamin soluble in water, stored in relatively large quantities in the liver. Due to this, its insufficiency during zero intake only shows after several years! Vitamin B<sub>12</sub> is produced by bacteria in the colon, but because it is absorbed in the small intestine, the vitamin produced in this manner cannot be used by the human body.

It has an essential role in the synthesis of fatty acids. It is involved in the formation of DNA and ATP building stones. It is absolutely necessary for the control and proper function of the nervous system. It improves memory and enhances concentration.

It is necessary for the formation of so called myelin sheath which protects the surface of nerves. It is much important in proper haematogenesis. It helps to treat anaemia. It reduces the risk of cardiac diseases and works in the overall regeneration of the body.

### **Signs of insufficiency:**

Red blood cell formation disorder – anaemia; inadequate renewal of mucous cells and tissues, nervous disorders, loss of weight, deteriorating memory and mental performance.

### **Higher doses are necessary for:**

Vegans, children of vegan and vegetarian mothers, anaemic people, patients after surgical removal of part of the stomach or small intestine, patients with an inflammatory or parasitic bowel disease (colitis, roundworm, tapeworm).

# General evaluation of suitability of use

Geriatrim may be expected to exhibit a rather wide scope of effects, from general enhancement of the immunity, support of digestion, to detoxification, regeneration, and general rejuvenation of the organism. Especially important may be its effect on the nervous, hormone and vascular systems. This combination of effects suggests that Geriatrim may have an outstanding ability to improve one's mental health and to support mental balance. The nervous, and especially brain tissue will be, thanks to the balanced contents of included natural components, not only well supplied with blood, but also sufficiently nourished, which will ensure its optimal function. Concurrent effects on hormonal balance, which is usually the cause of bad mental health in cases where the nervous system otherwise works properly, is also of importance. With regard to this, Geriatrim may be a suitable product for the treatment of problems associated not only with old age, but also with andropause and menopause. Regular and long-term use of Geriatrim may prevent senility in seniors and reduce symptoms or delay the onset of hereditary neurodegenerative conditions (Alzheimer's and Parkinson's disease).

Geriatrim may help seniors feel generally better, both in terms of physical and mental health; much younger people, however, who suffer from fatigue, headaches associated with mental stress, with frequent psychosomatic problems (gastric neurosis, stress nausea, pains or diseases caused by mental stress, etc.) may also avail of its effects.

Chemically, Geriatrim is a mixture of ingredients containing natural antioxidants (Wolfberry, chlorella, ginkgo, etc.) and an artificial antioxidant (vitamin C). This means that only the amount of vitamin C is artificially increased, but its major proportion is still in the natural form, without any risk of antioxidative reversal due to excess intake. Yet it is not advisable to combine the product with other types of dietary supplements containing vitamins, flavonoids, and especially beta-carotene.

In respect of Energy products, it might not be advisable to administer Geriatrim in the long term together with Blomultivitamin, Celitin, Flavocel or Grepofit; in the short term, however, these combinations may have a highly positive regenerative effect and may enhance the effects of Geriatrim on a specific health problem

Mgr. Tereza Viktorová



**CORPORATE HEADQUARTERS**

**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