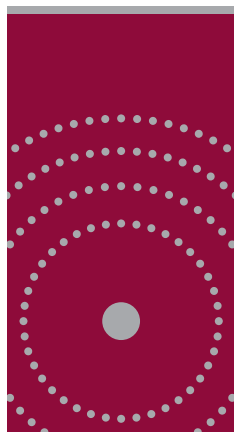




PRODUCT DOCUMENTATION

# IMUNOSAN





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# Text of the leaflet

**Imunosan** is a bio-information product containing a unique combination of the most effective natural substances enhancing the general (non-specific as well as specific) immunity of the organism. It prevents infectious diseases, supports their treatment, accelerates recovery from a disease and prevents recurring infections. It acts prophylactically as well as therapeutically in a number of civilisation diseases and is a promising product for combating cancer. It improves mental as well as physical health, resistance to stress, and works effectively when eliminating fatigue. It provides the needed vital energy and slows down the aging process of the body.

**Imunosan** harmonises, in particular, the meridians of the spleen, colon, lungs, urinary bladder, liver, gall bladder, pericardium, and the triple energiser.

## Use:

- It enhances immunity during acute as well as chronic inflammatory conditions (viruses, bacteriae);
- It is suitable for recurring infections;
- It has positive effects on the treatment of respiratory diseases and gastro-intestinal conditions;
- It speeds up healing, regeneration, and recovery from diseases or from surgical procedures;
- It helps combat cancer and reduces adverse effects of chemotherapy and radiotherapy;
- It enhances the function of the liver and kidneys, and detoxifies the body exposed to the effects of chemical substances and radiation – it is suitable during toxic loads, long-term use of medicines, hepatitis, and mononucleosis;
- It fights allergies, especially severe asthma conditions and skin symptoms;
- It supports the healing process in the skin and acts against skin conditions – eczema, rashes, psoriasis;
- It enhances natural microflora of the colon, helps combat inflammations of the bowels and flatulence – suitable during repeated use of antibiotics and for intestinal problems;
- It reduces blood sugar levels – suitable for the improvement of the condition of diabetic patients;
- It reduces cholesterol and fat blood levels – it reduces the risk of cardiovascular diseases (atherosclerosis, myocardial infarction, stroke);
- It normalises blood pressure;
- It improves general fitness, provides energy during overall weakness, physical or mental exhaustion – suitable for individuals under stress and strain;
- It has positive effects on fertility and libido.

## Composition:

**Milk Vetch** – it enhances immunity, protects the heart and vessels, accelerates healing, cleans liver and kidneys, provides vital energy and eliminates fatigue.

**Reishi** – it enhances immunity and acts against malignancies, detoxifies and recovers liver cells, acts against inflammations and allergies, protects the heart and vessels, and has anti-aging effects.

**Bighead Rhizome** – it enhances the function of the spleen and stomach, increases body energy, acts against oedemas and water retention in the body, prevents excess sweating.

**Siberian Ginseng** – it tones the organism and improves its fitness (strong adaptogen), it stimulates the function of sexual glands, protects the heart and vessels, eliminates fatigue, and improves mental health.

**Wild Privet** – it has anti-inflammatory and disinfecting effects, it fights free radicals, and enhances the function of the stomach.

**Red Clover** – it helps combat malignancies, eliminates toxic substances from the body, protects the heart and vessels, controls female hormone levels.

**Royal Sun Agaricus** – it significantly enhances immunity, prevents civilisation diseases, fights malignancies, reduces allergies, and protects the liver, heart, and vessels.

**Green Tea** – it has antioxidant and anti-tumour effects, it enhances immunity, protects the heart and vessels, improves digestion, and eliminates fatigue.

**Poor Man's Ginseng** – it supports immunity and vitality, improves stress resistance, eliminates fatigue, fights insomnia, and improves appetite.

Individual pieces of bioinformation are frequencies, which simulate the regulatory frequencies of the subcortical brain centres controlling the vegetative nervous system and the function of viscera. They act to offset negative information and invoke a regeneration 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:

The product is not intended for children, pregnant and breastfeeding women, and persons with hypersensitivity to soybean products.

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

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

## Immunity – the defence system of the body

### Distinguishing the “inherent” from the “foreign”

The major function of the immune system of the body is to control whether the balanced condition of the organism is maintained and to maintain its integrity in relation to harmful substances coming from the inner or outer environment. A harmonically working immune system is able to distinguish substances which are harmful for the body from those which are not. Generally speaking, the immune system protects the body from damage and infection.

This major function of the immune system manifests itself on three levels:

- a) Defence function** – the immune system protects the body from harmful agents from the outer environment (pathogenic micro-organisms – bacteriae, viruses, fungi and their waste products – toxic substances of organic origin, toxic substances of inorganic origin);
- b) Auto-tolerance** – the immune system identifies inherent tissues and cells, and does not fight them; it destroys and eliminates cells of foreign organisms;
- c) Immune control** – the immune system identifies harmful agents generated within the body and continuously eliminates them (old, dead, invaded, and damaged or mutated cells).

**The immunity in the body is catered for by white blood cells (leukocytes) and cells derived from them.**

## Antigens

Any substance which the immune system identifies and reacts to is scientifically called an “antigen”.

Antigens may be categorised as external and internal on the basis of their origin, i.e. whether they come from the external or internal environment of the organism. An antigen which is able to cause an excess, inadequate reaction of the immune system is called an “allergen”. An antigen may be practically any substance of any chemical structure. Most antigens are of external origin and they are usually commonly called “pathogens”.

## Types of immune mechanisms

### 1) Non-specific immunity (innate, inherent immunity)

This is an innate type of immune mechanism, which is evolutionary older and acts against common pathogens – foreign organisms and substances. It responds quickly, because the cells (phagocytes, “natural killers”) and humoral substances (such as interferons), for this kind of immune reaction are present in the body since the very birth. Non-specific immunity does not have any immunological memory and is not affected by previous encounters with pathogens. Innate immunity protects the organism in the first hours and days after it is attacked by a pathogen.

Besides innate defence tools, non-specific immunity includes also those mechanisms which protect the body from the outer environment and represent an effective barrier against the penetration of foreign

substances – fatty acids on the surface of the skin, cilia on the surface of mucosa, antiseptic substances contained in saliva and sweat, acid pH of the stomach, natural microbial colonisation of the bowel. If these mechanisms are damaged, the innate immunity of the body is decreased.

## 2) Specific immunity (adaptive, acquired immunity)

This type of an evolutionary younger immune reaction develops with a slight delay after the attack on the body, but is targeted exactly at a specific pathogen or antigen. Each foreign structure activates the production of specific antibodies (B lymphocytes), and specialised cells (T lymphocytes), which identify the pathogen in the body and destroy it. A typical feature of specific immunity is its immunological memory, which is the prerequisite for an immunity acquired after an encounter with an infectious disease or after vaccination.

The mechanisms of both innate and acquired immunity are inseparable; they always develop in conjunction and cooperate with each other. Together they create a much complex and intertwined system of the immunity of the organism.

### White blood cells – mobile units of the immune system

White blood cells or leukocytes are blood cells responsible for all immune reactions of the body. For this purpose, there are five types of white blood cells, each with different immune functions.

Leukocyte type	Proportion (%)
Neutrophils	60
Eosinophils	2
Basophils	1
Lymphocytes	32
Monocytes	5

The common feature of all white blood cells is their ability to move and adhere to various surfaces. All types of leukocytes are produced from stem cells present in bone marrow; they differentiate and mature in primary lymphatic organs – in bone marrow and thymus. In peripheral (secondary) lymphatic organs and tissues (spleen, lymphatic nodes, and clusters of lymphatic tissue) white blood cells temporarily accumulate, they meet the antigen here and cooperate with each other. White blood cells continuously travel among tissues, bloodstream, and lymphatic tissues; they are constantly distributed across the whole body and ensure permanent immune control.

### White blood cell count

Under normal circumstances, the number of leukocytes in a healthy individual ranges from **4–9 . 10<sup>9</sup>/liter of blood**.

In the early hours of the day the total number of white blood cells is the lowest, while in the afternoon it is the highest. The amount of white blood cells also increases with hard physical exercise, after meals, in stressful

# Introduction to the topic

situations, when it is hot, and in intensive sunlight. High quantities of white blood cells may be also found in the blood of babies right after delivery (18–20 · 10<sup>9</sup>/l), but they achieve normal levels in a few days.

The pathologic reproduction of white blood cells starts during any infection in the body, during chronic conditions, leukaemia, and in hypoxic conditions (lack of oxygen in tissues).

**The balance of the immune system is also much enhanced by the overall condition of the nervous system and by the system of inner secretory glands.**

## Immune disorders

Immune disorders may be, for easier understanding, divided into two groups – immune deficiency conditions and immune hypersensitivity conditions. In both cases the immune system does not work as it should, its functions are either much reduced, or the system reacts inadequately to stimuli from the outer or inner environment.

### 1. Immune deficiency conditions

The body is incapable of a physiological immune reaction. Immunity against common and little pathogenic micro-organisms is much decreased. The patient suffers from severe, long-lasting infections, which many times jeopardise his/her life. Frequent are chronically suppurating wounds,

abscesses, and constant diarrhoea. Post-vaccination complications, more frequent tumour development and autoimmune conditions may be expected.

#### a. Primary immune deficiencies

These are congenital, genetically conditioned, and are experienced e.g. in SCID, CVID, Di George syndrome, ataxia teleangiectasia, etc.

#### b. Secondary immune deficiencies

These are acquired in the course of life, either as a consequence of a disease, treatment, or lifestyle. These are more frequent than primary immune deficiencies.

They manifest e.g. in HIV infections, in chronic infectious diseases, severe liver conditions (cirrhosis), nephritic syndrome, aplastic anaemia, tumour diseases (particularly leukaemia and lymphomas), etc.

Therapy – e.g. chemotherapy, immunosuppressive post-transplantation treatment, anaesthesia, conditions after major surgeries.

Life – e.g. exposure to radioactive radiation, severe malnutrition, severe burns, alcoholism in pregnancy, old age.

### 2. Immune hypersensitivity

Pathologic hypersensitivity makes the immune system harm its own body. This may be caused by a congenital disposition, or a too aggressive, long acting antigen, or auto-antigen. It manifests e.g. as an allergy, anaphylactic reaction, atopy, autoimmune disease, contact dermatitis, chronic inflammations, post-transfusion and post-transplantation reactions, etc.

### **A closer look at the most frequent types of immune disorders**

In our society, immune disorders are more and more frequent. It is no doubt that the most frequent immune disorders are allergies (detailed in the Peralgin PD) and autoimmune diseases. Allergic conditions affect as much as 20% of the human population, autoimmune diseases 3% of the human population. Their incidence is likely to keep growing.

#### **Autoimmune diseases**

An autoimmune reaction is, under normal circumstances, a physiological phenomenon responsible for so called auto-tolerance mechanism, whose task is to destroy everything which is not inherent to the body. If this mechanism gets out of control (is unable to distinguish between inherent and foreign proteins), it results in tissue damage and interference with the physiological function – an autoimmune disease develops. It involves a number of chronic conditions which are incapacitating in consequence. They are quite rare in childhood; their peak incidence is from puberty to the age of retirement. Autoimmune diseases are more frequent in women and in developed countries. Family history is also common.

The development of an autoimmune disease is triggered by many causes, often in combination. Genetic factors are easy to understand, these, however, are accompanied by many an external factor – hormone stimulation (from this perspective the administration of hormone contraception to

women seems to be inappropriate and it may be a cause of a more frequent occurrence of these diseases in women), frequent infections, certain administered medicines, vaccination (the pathologic autoimmune reaction usually subsides after the discontinuation of the medicine).

#### **Examples of autoimmune diseases:**

- Kidney disorder – glomerulonephritis
- Endocrine organ disorders – Type I Diabetes Mellitus, thyroid gland and sexual organ diseases
- Joint and muscle diseases – rheumatoid arthritis, lupus erythematosus
- Connective tissue diseases – vasculitis
- Cardiovascular diseases – rheumatoid fever, Lyme disease
- Nervous tissue diseases – multiple sclerosis, myasthenia gravis
- Digestive tract diseases – coeliacia, ulcerative colitis, Crohn's disease

### **Immunity versus cancer**

The transformation of a normal cell to a tumour one occurs in the body for a number of various reasons, of which many remain undisclosed by contemporary science (viral or chemical stimulation of the cell, ionizing radiation, etc.). The core of this metamorphosis is usually a mutation of the genes which control the cell division process. This may result in an uncontrolled division of a mutated cell

# Introduction to the topic

(primary tumour), its migration to other tissues and aggressive growth therein (secondary tumour – metastasis). Theoretically, tumour cells should be identified by the immune system and destroyed within the immune control mechanism. If the immune system is affected or overloaded, the transformed malignant cells may easily escape the immune control (another reason may be also a great similarity between the tumour cell and the normal cell). In the human body, however, transformations of normal cells to abnormal cells are relatively frequent, but a properly working immune system is usually able to deal with them at the very start.

That is why the enhancement of the innate immunity by natural immunostimulators (potent natural immunostimulators are beta glucans contained in mushroom extracts) seems to be the most effective therapeutic as well as preventive method for cancer.

## Possible civilisation causes of immune disorders

### a) Non-breastfeeding

Scientific evidence shows that the period for which a baby is breastfed is very important for the development of a strong immunity. Children breastfed for longer periods of time provably suffer from less infections and the incidence of allergies in these children is much lower. A baby should be breastfed at least until the age of six months.

### b) Sterility of environment

Many times, it has been proven that a strict hygiene applied especially in the case of infants and the youngest children is, in terms of the proper functionality of the immune system, at least controversial. Constant interference with the pH of the protective skin barrier with alkaline soaps, bath foams, and disinfecting agents paradoxically contributes to a much greater vulnerability of the body to foreign pathogens. The cellular immune system is thus unnecessarily overloaded with work which, under normal circumstances, could be easily handled by the skin and mucosa. At the same time, though, the opposite extreme may occur. If the organism is constantly in a sterile environment, the immune system is not exposed to adequate load by foreign pathogens to which it is naturally set up, it does not have the opportunity to mature appropriately, and it turns its powers against its own body.

### c) Undermining intestinal microflora

Unbalanced diet and repeated administration of antibiotics may result in insufficient colonisation of the intestines by good bacteriae, and due to this foreign pathogens may penetrate the intestinal mucosa and invade the body. A condition when the pathologic bacterial strains, burdening the organism, prevail is called intestinal dysmicrobia. This condition reduces the defence powers of the body.

#### **d) Lifestyle and exposure to stress**

Chronic stress results in a reduced function of the immune system and an increased vulnerability of the body not only to infections, but in the long term inadequate mental stress may be the cause of allergies, autoimmune and tumour diseases. Other impacts which adversely affect human immunity include a lack of exercise, improper diet, food additives, preservatives, colorants, and flavours, smoking and, last but not least, a widespread tendency to neglect diseases. Moreover, it has been observed for many times, and subsequently also scientifically evidenced, that mourning (e.g. over the loss of a beloved person), results in the inactivation of a part of the immune reactions, which quickly results in a disease.

#### **e) Chemicals, toxic burden, and excess use of medicines**

There is no doubt that the increasing pollution of our environment excessively burdens the immune system, which is easily susceptible to this overload. The issues of excess use of medicines, especially antibiotics, antipyretics, anti-inflammatory drugs, etc., is, however, often perceived differently. We often use medicines to resolve those diseases, which the body should easily cope with by itself, for us. This prevents the natural and essential enhancement of our immunity. Hurried reduction of temperature prohibits the reaction of our own immune system (temperatures not exceeding 38°C should not be lowered at all).

#### **f) Hereditary load**

The direct causes of certain specific and relatively rare immune disorders are genetic mutations inherited from parents. Most of these diseases manifest a recessive type of heredity, which means that the disease may develop only if both parents carry the relevant gene. Unfortunately, however, a number of genes which are responsible for immune deficiency conditions are linked to the X chromosome, which practically means that boys are affected twice as much as girls. For example the higher incidence of autoimmune diseases in boys is given by X-chromosome links of the genes responsible for these diseases.

# Imunosan

## composition

**Product form:** soft gelatinous capsule

**Capsule size:** 1,400mg

**Content:** 90 capsules

**Energy:** 38kJ/10kcal in one capsule

### Active substances:

Component:	Quantity in one capsule
Milk Vetch (extract)	70 mg
Reishi (extract)	60 mg
Bighead Rhizome (extract)	60 mg
Siberian Ginseng (extract)	50 mg
Wild Privet (extract)	40 mg
Red Clover (extract)	40 mg
Green Tea (extract)	30 mg
Royal Sun Agaricus (extract)	30 mg
Poor Man's Ginseng (extract)	20 mg

### Excipients:

Soybean oil, water, gelatine, glycerine

### Recommended 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:

The product is not intended for children, pregnant and breastfeeding women, and persons with hypersensitivity to soybean products.

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

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.

### Authorisation of the Ministry of Health of the Czech Republic

OVZ-35.0-16.10.07

# Description of effects of individual ingredients

## MILK VETCH

**Latin name:** Astragalus membranaceus

**Czech name:** Kozinec blanitý

**English name:** Milk Vetch

**Chinese name:** Huang Qi

**Family:** Leguminosae

**Active substances:** root

triterpenoid glycosides (brachyosides A, B and C), saponins (astragalosides I–IV, isoastragaloside I–II, soyasaponin I, astragenol, cyclocanthoside E), amino acids (GABA, cysteine), flavonoids, isoflavonoids, polysaccharides, sterols (daucosterol, ( $\beta$ -sitosterol), fatty acids, polysaccharides, betaine, mucus, unsaturated fatty acids, and selenium

Milk Vetch root is frequently used in traditional Chinese medicine (TCM) to enhance immunity against diseases and for the general increase of energy in the body.

### Immunity and viruses

The active substances contained in the Milk Vetch root extract are able to enhance and increase natural immunity of the organism by supporting the production of the protective T lymphocytes.

The use of Milk Vetch hence has its effects in all cases of impaired non-specific immunity of the body and has a major role in fighting viral particles, as the substances contained in the plant inhibit the copying of the genetic information of viruses (DNA

or RNA), and thus do not allow for their multiplication in the body, and, at the same time, enhance the production of interferon. Milk Vetch is therefore used for the treatment of viral diseases (respiratory viral diseases, viral Type B hepatitis, viral kidney disease, viral heart disease, chronic inflammation of the prostate and bladder, etc.). It is used to increase the immunity both in acute and chronic infections, it may be used for bacterial infections, which are usually of a secondary nature and follow the viral infection.

### Heart disease

Milk Vetch extracts have supportive effects in the prevention and treatment of various cardiovascular diseases (angina pectoris, high blood pressure, arrhythmia, cardiomyopathy, ischemic heart disease) due to their antioxidant effects as well as the ability to control the diastolic and systolic blood volumes and influence blood density by the effects on the kidney and hypothalamus. Milk Vetch has provable effects on decreasing cholesterol and triacylglycerides blood levels, and anti-coagulation effects and prevents the formation of thrombi and blood clots. It is suitable as prevention of myocardial infarction and stroke.

### Oncology

The use of Milk Vetch is very significant in various oncology diseases, as the plant makes it difficult for the tumour cells to apply self-defence mechanisms against the immune system. It is also suitable as a product after oncology treatment (chemotherapy

# Description of effects of individual ingredients

and radiotherapy), as it provably reduces adverse effects; it, moreover, accelerates healing (of burns and ulcers), recovery, and the start-up of innate immune mechanisms which are much affected by the treatment. The positive effect of Milk Vetch extract administration has been observed in lung cancer, colorectal carcinoma, and oncological conditions of the digestive tract.

## Other

Milk Vetch extracts are diuretic, they detoxify the body (especially the kidneys), they protect liver cells, positively influence spleen and pancreatic function, and reduce the production of the gastric acid. They improve the condition of diabetic patients (Type II Diabetes Mellitus). Milk Vetch vitalises and tones the organism, it supplies vital energy, increases resistance to diseases, physical strain as well as mental stress, and it helps to enhance the viability and mobility of sperms).

## REISHI

**Latin name:** Ganoderma lucidum

**Czech name:** Lesklokorka lesklá

**English name:** Reishi

**Chinese name:** Ling Zhi

**Family:** Ganodermataceae

**Active substances:** sporocarp

amino acids, vitamins, minerals (Mn, Fe, Zn, Cu, Mg, Ca, K, Ge), polysaccharides – beta glucans,

triterpenoid glycosides (lucidenic, oleanic, and ganoderic acids), proteins (LZ-8), sulphur, adenosin, ergosterol, superoxidismutase (SOD)

Reishi is a traditional TCM product. In China, it has been considered a source of health, eternal youth and long age, in Chinese its name means a “magic flower”. This fungus is not edible, as it is too hard and ligneous, but it is used in the form of a powder, syrup, tea or tincture. It has become a much sought for and venerated pharmaceutical as early as before Christ, (it is the longest used fungus in medicine). Nowadays it is valued as a potent adaptogen, immunomodulator, and an agent for general invigoration of the body.

## Oncology

Reishi beta glucans and germanium have positive effects on the stimulation of the immunity of the organism (they support microphages and control the function of T and B lymphocytes) and at the same time inhibit the growth of tumour cells. For oncology patients Reishi may be used as a means to alleviate adverse effects of chemotherapy or radiotherapy (it improves appetite, fights fatigue, hair loss and reduces the risk of infection), to improve the quality of life (it acts as a pain killer and supports mental health), to prolong life in the terminal stage of a disease and to reduce inoperable metastases, and last but not least to prevent recurrence of the disease.

### **Liver detoxification and kidney support**

Triterpenoids contained in Reishi have a provable, extraordinary ability to detoxify the liver tissue and, at the same time, to protect liver cells from damage. This fact is used in the treatment of hepatitis (Types A, B and C), and also, with much success, in the treatment of liver cancer and elimination of toxic substances from the body. It is particularly suitable after a long-term use of chemical medicines, alcohol, drugs, exposure to strong pollution, in constant manipulation with toxic substances, heavy metals and chemicals. Reishi also has the ability to harmonise kidney function.

### **Inflammations and allergies**

Reishi supports immunity and acts preventively against bacterial and viral inflammations (colds, bronchitis, inflammatory diseases affecting joints, kidneys, prostate, and bladder), and against allergies (eczema, allergic rhinitis, bronchitis and asthma). It is successfully applied for a number of auto-immune disorders (such as lupus erythematosus).

### **Cardiovascular system**

Reishi controls blood pressure (high as well as low), and is used in various cardiovascular disorders. It prevents the formation of blood clots and acts preventively against myocardial infarction and stroke. It reduces cholesterol and sugar blood levels.

### **Other**

The therapeutic effects of Reishi are truly wide: it may be used for diabetes, gout, gastric and duodenal ulcers, but also for migraines, epilepsy, insomnia, and menstruation problems. Available data suggest that it also has a positive effect on the treatment of infertility and that it slows down the aging process.

## **BIGHEAD RHIZOME**

**Latin name:** *Atractyloides macrocephala*

**Czech name:** Atraktylis velkoúborný

**English name:** Bighead Rhizome

**Chinese name:** Bai Zhu

**Family:** Asteraceae

**Active substances:** root

Ethereal oils, vitamin A, triterpenoid glycosides (tractylenoides), scopoletin, atractylon, fructose, inulin, amino acids (aspartic acid, serine, glutamic acid, alanine, glycine, valine, isoleucine, leucine, tyrosine, phenylalanine, lysine, histidine, arginin and proline), sesquiterpenes and alkaloids

Bighead Rhizome is a plant commonly used in TCM, often as part of herbal mixtures to enhance the energy of the body and to improve digestion.

### **Spleen, stomach and digestion**

Bighead Rhizome extracts enhance the function of the spleen, control the function of the stomach and protect the liver. They improve digestion as they

# Description of effects of individual ingredients

stimulate the production of bile and gastric acids. Bighead Rhizome helps fight flatulence, constipation and diarrhoea, as it enhances the peristaltic activity of the intestines. From the perspective of Chinese medicine, Bighead Rhizome is able to supply spleen energy, whose insufficiency demonstrates as a loss of appetite, nausea, chronic fatigue, shortness of breath, and inadequate peripheral blood circulation. The invigoration of spleen results in a general increase of postnatal energy in the body. It is used for ulcerative conditions and for all infections of the digestive tract, particularly those of bacterial origin.

## Urology

Bighead Rhizome supports kidney function and has diuretic effects. It helps fight water retention in the body, eliminates oedemas, and reduces excess mucus production (suitable for cough, it enhances expectoration).

## Oncology and immunology

Based on laboratory results it has been discovered that the ethereal oils of Bighead Rhizome have the ability to destroy tumour cells in oesophageal cancer. They increase the lymphocyte count and support the phagocytising activity of macrophages.

## Sweating

Bighead Rhizome enhances the firmness of skin surface structures and prevents excessive sweating.

## Pregnancy

It eliminates morning nausea in pregnancy and prevents the threat of miscarriage. It has mildly sedative effects on the foetus.

## SIBERIAN GINSENG

**Latin name:** Eleutherococcus senticosus

**Czech name:** Eleuterokok ostní

**English name:** eleuthero, Siberian Ginseng, devil's root

**Chinese name:** Ci Wu Jia

**Family:** Araliaceae

**Active substances:** root

Essential oils, resins, flavonoids, saccharides, polysaccharides, pectin, glycosides (eleutherosides B, D, E) and minerals (K, P, Ca, Fe, Mg, Mn, Zn)

Eleuthero is a traditional toning herb with adaptogenic effects. It is used as an alternative to ginseng and is often called Siberian Ginseng. Compared to ginseng it is undemanding and spreads easily.

## Adaptogen and immunostimulator

Siberian Ginseng Root extracts are known for their ability to increase the resistance of the body under physical strain or mental stress, to improve fitness and performance (they stimulate the formation of muscles), and to stimulate the function of sexual glands. They help the body cope with extreme living conditions and load, such as the polluted

environment. Siberian Ginseng is very often used to fight chronic fatigue, but also as a natural medicine accelerating recovery from infectious diseases, chemotherapy, radiotherapy, surgical procedures, and also for chronically ill patients. Siberian Ginseng provably enhances the immune system and by supporting the production of interferon and T lymphocytes it protects the body from infections.

### **Oncology**

Siberian Ginseng has the ability to prevent the formation of tumours, to slow down the growth of tumours and subsequent formation of metastases.

### **Mental health**

Siberian Ginseng extracts have been evidenced to have positive effects in the treatment of mental diseases (anxiety, neuroses, depressions, hypochondria), they improve mental health of seniors, and have positive effects on the quality of sleep. These effects are due to the Siberian Ginseng's well known ability to improve stress resistance of the organism.

### **Cardiovascular system**

Siberian Ginseng is successfully used in the treatment of low blood pressure, atherosclerosis, and rheumatic heart conditions. Furthermore, it reduces the risk of other cardiovascular diseases. It provably reduces blood cholesterol levels.

### **Other**

It stimulates the function of the pancreas, and improves the condition of diabetic patients (it improves blood sugar metabolism). As an ingredient in ointments it helps to treat skin injuries, eczema, and psoriasis. It has been observed that the consumption of Siberian Ginseng improves the weight gains and performance of livestock.

## **WILD PRIVET**

**Latin name:** Ligustrum vulgare

**Czech name:** Ptačí zob obecný

**English name:** Wild Privet, European Privet, Common Privet

**Family:** Oleaceae

**Active substances:** leaves

Glycosides (ligustrin), tanning agents, flavonoids (apigenin, luteolin)

The fruit of Wild Privet are generally considered toxic; their toxicity, however, is relatively low and does not represent any major jeopardy for adults. Nowadays, this shrub is known as an ideal plant for hedges, but in folk medicine it was traditionally used as an effective disinfectant and an agent with astringent and anti-inflammatory effects. For medicinal purposes, leaves and bark are used.

### **Immunity**

Available data suggest that Wild Privet has the ability to modulate the activity of the immune system, in particular

# Description of effects of individual ingredients

to block adverse effects of free radicals. At the same time it can help fight fatigue due to its ability to improve the resistance of the organism to negative external effects.

## Inflammations

Wild Privet extracts exhibit anti-inflammatory activity; they may be used in the treatment of chronic intestinal problems, ulcerative stomach and intestinal conditions, and in chronic inflammations of sexual organs. They may be used also in the treatment of nasopharyngeal inflammations and typical respiratory diseases. Wild Privet fights viruses, bacteria, and parasites.

## Stomach

Due to its astringent effects it has positive effects in the treatment of gastric problems, loss of appetite, nausea, and non-specific stomach pain.

## RED CLOVER

**Latin name:** *Trifolium pratense*

**Czech name:** Jetel luční

**English name:** Red Clover, cow clover, meadow clover

**Family:** Leguminosae

**Active substances:** whole plant

Flavonoids, isoflavonoids (biochanin A, daidzein, genistein, formononetin), phytoestrogens, essential oils, tanning agents (tannin), salicylic, oxalic, coumaric and racemic acids, resins, glycosides (tricholin), minerals (Ca, P, K, Mg, Fe, Cu, Mn), P-sitosterol, myricylalcohol

Red Clover is a common, widely spread plant which is appreciated more as a fodder crop, although it has a long lasting tradition of natural folk healing. At present it is gaining scientific attention due to its promising use in the treatment of cancer.

## Oncology

Preliminary laboratory results suggest that isoflavonoids isolated from clover could be used in the treatment of breast, prostate and lymphatic nodes cancer and in ovarian cancer. Clover is traditionally an ingredient of anti-cancer mixtures, but official medicine still lacks adequate sound evidence for its use.

## Protection of the heart and vessels

Active substances obtained from clover improve blood circulation and have the ability to reduce blood cholesterol and triacylglycerides levels, effectively protecting the vessels from atherosclerosis.

## Inflammations

Clover helps eliminate toxins and chemicals from the body; it has disinfecting and anti-inflammatory effects. It is traditionally used in the treatment of respiratory diseases (colds, cough, bronchitis, asthma), diarrhoeal conditions and to provide relief from spasms. The elimination of waste and toxic products from the body has positive effects in the treatment of gout and rheumatism.

### **Estrogenic action**

Clover is used to alleviate the negative symptoms typical for menopause (hot flushes) as a natural hormone substitution agent. It reduces the risk of osteoporosis. It may be used to modulate the period and to alleviate painful menstruation.

### **Skin**

Clover may be used externally for long-lasting skin problems, for suppurating wounds, eczema and psoriasis.

## **GREEN TEA**

**Latin name:** Camellia chinensis

**Czech name:** zelený čaj

**English name:** Green Tea

**Family:** Theaceae

**Active substances:** leaves

Bioflavonoids (in particular catechins – EGCG), fluorides, tanning agents, tannins, L-teanin, caffeine, vitamins (B1, B2, E, C, K), minerals (K, Mg, Zn, Fe, P)

It is generally known that tea has spread abroad from China, but to Europe it was imported only in 1610. In the 17th century, however, it was still the privilege of the upper classes, and it took a long time to spread amongst common people. Drinking green tea has therapeutically positive effects on the general health of the body, it acts preventively against a number of civilisation diseases, and it slows down the aging

process. This is evidenced not only by its world-wide popularity but also by many a scientific research.

### **Immunity and cancer prevention**

Polyphenolic substances contained in green (unfermented) tea are powerful antioxidants which block the effects of free radicals and other carcinogenic substances. Green Tea may be considered a suitable everyday means of cancer prevention and of slowing down the aging process of the body. Preliminary research suggests that green tea may also have protective effects against breast, colon, stomach, prostate and skin cancer. When green tea is drunk regularly, the body excretes interferon, a substance protecting it from infections.

### **Cardiovascular system**

Green tea reduces cholesterol levels, decreases blood pressure and acts preventively against cardiovascular diseases (atherosclerosis, myocardial infarction, and stroke).

### **Other**

Green tea reduces the occurrence of dental caries. It improves digestion, prevents gastric ulcers and reduces the acidity of the inner environment. It has calming effects on the CNS, it helps concentration, and improves memory. It has stimulating effects and helps combat fatigue.

# Description of effects of individual ingredients

## ROYAL SUN AGARICUS

**Latin name:** Agaricus blazei Murrill,

syn. Agaricus brasiliensis

**Czech name:** žampion mandlový

**English name:** Royal Sun Agaricus, Mushroom of God, Almond Mushroom, Hime-matsutake

**Family:** Agariceae

**Active substances:** sporocarp

Beta glucans ( $\beta$ -(1-3)-D-glucan,  $\beta$ -(1-4)- $\alpha$ -D-glucan,  $\beta$ -(1-6)-D-glucan), xyloglucans, galactoglucans, RNA, steroids (ergosterol), proteins, saccharides, fats, minerals (K), chitin, phospholipids

This kind of mushroom has been discovered for medicinal purposes only recently, in the 1970s. It naturally occurs in mountain areas of Brazil, it has a typical almond flavour and it is part of normal diet of the inhabitants of these regions, who are extraordinarily healthy and long-lived. Detailed scientific investigations have revealed that this type of mushroom has a much bigger healing capacity than other mushrooms used in medicine, as it contains especially high amounts of beta glucans.

### Immunity

Glucans extracted from this type of mushroom range among the most potent currently tested substances with enhancing effects on the activity of the immune system – they stimulate the activity of macrophages, the production of interleukin, interferon and TNF-factor,

tumour infiltrating lymphocytes (TIL), NK cells (“natural killers”), the production of T and B lymphocytes and the production of granulocytes in bone marrow. Agaricus significantly improves the immunity of the body, and acts effectively against viral infections.

It is an especially effective prevention against all infectious and civilisation diseases (autoimmune diseases, allergies, cancer, and diabetes), and generally is effective in all conditions of impaired non-specific immunity.

### Oncology

Over the last 25 years, Royal Sun Agaricus was subjected to detailed scientific research which has revealed that the mushroom has surprising anti-tumour and anti-mutagenic effects. It may be therefore used not only as a preventive agent, but also as a therapeutic agent in a number of oncological conditions (particularly in uterine cancer). Not only a significant slow-down or cessation in the growth of the tumour has been observed, but also a total disappearance of the tumour. Furthermore it has been observed that the administration of this mushroom in a synergic manner increases the efficacy of classical anti-tumour treatment methods (chemotherapy, radiotherapy).

### Allergies

The administration of Royal Sun Agaricus has desensitisation effects in patients with allergies (it reduces their sensitivity to the allergen) and

has positive effects in particular on skin allergic symptoms (dermatitis, eczema, etc.).

#### **Liver**

It normalises liver function. Successfully tested in patients with type B hepatitis.

#### **Cardiovascular system**

Royal Sun Agaricus is used in diabetic patients for its ability to reduce blood sugar levels. Furthermore, it helps reduce cholesterol and triacylglycerol blood levels, reduces blood pressure and acts preventively against atherosclerosis.

### **POOR MAN´S GINSENG**

**Latin name:** Codonopsis pilosula

**Czech name:** Pazvonek chloupkatý

**English name:** Poor Man’s Ginseng, Bonnet Bellflower, Bastard Ginseng

**Chinese name:** Dang Shen

**Family:** Campanulaceae

**Active substances:** root

saccharides (inulin, fructose), amino acids (threonine, aspartic acid, isoleucine, alanine, asparagine, glutamic acid, glycine, serine, valine, proline, glutamine), minerals (K, Ca, Mg, Fe, Cu, Zn, Mn), vitamins B<sub>1</sub> and B<sub>2</sub>, sterols (alpha-spinasterol), heteroglycosides (syringin, tangshenoside I and II), furan derivatives, triterpenoids, saponins and alkaloids (codonopsine, codonopsinine)

Poor Man’s Ginseng belongs to the group of plants which are used as a substitute for ginseng, and is often referred to as the ginseng of the poor. It has significant stimulating and toning effects.

#### **Resistance and vitality**

Root extracts of this plant increase immunity, general stress resistance and vitality of the organism. They are used for conditions of chronic fatigue and exhaustion after difficult surgical procedures, after deliveries, and in long-lasting physical strain or mental stress, in fever, and particularly in asthma and chronic cough with excess production of mucus. They have positive effects on the CNS and help combat insomnia. Poor Man’s Ginseng improves digestion and appetite. It improves the post-treatment condition of oncology patients.

#### **Blood and blood circulation**

Poor Man’s Ginseng has positive effects on the synthesis of haemoglobin, and increases red blood cell count (it is used in anaemia), it enhances blood circulation and has the ability to decrease high blood pressure.

#### **Other**

It has been reported that Poor Man’s Ginseng may be successfully used also for flatulence, for intestinal and kidney inflammations, to modify the condition of diabetic patients and also for the treatment of generalised scleroderma (a rheumatic disease of autoimmune origin).

# General evaluation of Imunosan applicability

The unique combination of natural extracts contained in Imunosan promises positive prophylactic as well as therapeutic effects for a broad range of civilisation diseases. It enhances the resistance of the body to infectious diseases, improves the reactivity of the immune system during diseases, and speeds up the recovery of the body from illnesses. It brings many a benefit to persons suffering from chronic diseases, recurring infections and anyone in whom conservative treatment proves to be inefficient or too risky.

The anti-inflammatory effects of Imunosan act on the body as a whole – the product could be especially useful for inflammatory diseases of the respiratory and gastrointestinal tracts; due to its effects on the pair organs lungs-colon it will also have very good therapeutic effect on skin diseases, as well as inflammatory diseases of the spleen, pancreas, liver, and kidneys.

Compared to typical allopathic medicines, the use of Imunosan has a specific benefit in supporting the inherent immunity and mobilisation of natural defence tools of the body's immune system. The use of Imunosan during a disease will hence result in "training" the inherent immunity and in increasing resistance to recurring infections. This effect is supported by the ability of a number of extracts contained in the product to stimulate the production of T lymphocytes – immune cells with a memory effect. Imunosan may be much beneficial in persons who constantly burden their body with large quantities

of chemicals, be it due to a stressful lifestyle (improper diet and lifestyle, smoking, drug abuse, staying in a polluted environment, manipulation with toxic and radioactive substances), or due to the treatment of a chronic or recurring disease (use of large amounts of chemical medicines, antibiotics, etc.). In these cases, Imunosan will work against cell damage caused by these adverse substances; it will enhance the function of the liver and elimination of toxic substances from the body. By reducing the toxic load of the organism it will help to slow down the aging process. For this reason, the use of Imunosan is beneficial also for healthy individuals over 40 years, when the activity of the immune system naturally decreases. For healthy individuals to the age of 40 Imunosan may represent an ideal tool for health prevention, elimination of fatigue, improvement in mental as well as physical condition, and, last but not least, also an improvement in fertility and libido.

The highly positive effects of the use of Imunosan may be experienced by people with the diagnosis of a tumour disease. Imunosan is not intended to replace classic anti-tumour therapy, but its concurrent use during anti-cancer therapy will reduce the risk of adverse effects of the treatment, such as loss of appetite, fatigue, and mental stress. It is known that radiotherapy, chemotherapy as well as surgical procedures have a devastating effect on the immunity of the organism and the risk of death due to a trivial infection is much higher in such patients. Enhancing

immunity is essential not only to decrease the risk of a secondary infection, but also to decrease the risk of recurrence of malignancies, as after the surgical removal of the tumour there is always a certain amount of tumour cells remaining in the body, and the immune system impaired after the operation and therapy provides an environment well suitable for their further uncontrolled multiplication. In the case of inoperable cancers, wide-spread metastases, and terminal-stage cancers Imunosan may present a hope of recovering in a natural way or of at least prolonging life and improving its quality.

Imunosan, however, also offers a perspective to those whose risk of tumour diseases is higher, either due to family history or their personal medical history of a tumour condition, as tumours at initial stage (several million cells) are difficult to identify by the current medical diagnostic tools, and many times imaging methods reveal them when it is too late – usually at a stage of several billion cells ready to form metastases in other parts of the body. By enhancing one's immunity it is possible to prevent the spreading of a tumour impossible to diagnose or even completely suppress tumours at this stage due to the especially high content of beta glucans in Imunosan.

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