

Prolimmuno®

DuoLife **MEDICAL FORMULA PROIMMUNO®** is a dietary supplement based on natural ingredients, including two proprietary formulas enclosed in innovative delayed release capsules that improve the absorption of active compounds.



DuoLife **MEDICAL FORMULA PROIMMUNO®** is plant-based ingredients, organic zinc and propolis extracts with a broad spectrum of action: supporting optimal functions of the immune and respiratory systems, as well as helping fight against viral infections and inflammation. Raw materials standardized for the content of active compounds, ingredients with high bioavailability, patented method of extract extraction - all this to best support the optimal condition of the body, which is extremely important in the season conducive to infections.

When?

Viral infections are a major health problem and their course depends largely on the general condition of the body¹⁻³. In a situation of overwork, stress and improper diet, the condition of the system deteriorates, resulting in the disruption of immune functions and frequent infections. Also, in the autumn-winter-spring season, immune functions are often weakened, and infections are more frequent. In this case, the supplementation supports a proper diet, helping you to return to your best condition faster. Moreover, during an infection, appropriate supplementation may support the body in its fight against viruses, bacteria and the accompanying inflammation.

DuoLife **MEDICAL FORMULA PROIMMUNO®** is intended to be used as a supporting preparation for people:

- ▶ who want to support the functions of the immune system on a daily basis, especially in the autumn-winter-spring season;
- ▶ with reduced immunity, with the problem of recurrent viral and bacterial infections of the upper and lower airways;
- ▶ who are particularly vulnerable to respiratory infections, for example because of the type of work they do (teachers, educators, health care workers, people who are often in large groups of people);
- ▶ elderly people (in case of chronic diseases, after consultation with a doctor).

How?

DuoLife **MEDICAL FORMULA PROIMMUNO®** dietary supplement provides the body with valuable bioactive ingredients. Quercetin, luteolin, galangin, artemisinin, apigenin and tanshinone IIA present in the product, as well as organic zinc mutually support their health-supporting effect on a synergistic basis. As a result, they support the functions of the immune and respiratory systems, both during the period of good health and in the course of infection. Moreover, through their antioxidant effect, the polyphenols contained in the supplement help to maintain optimal condition of the heart and blood vessels, lungs and other organs, whose efficient functioning may help to protect against severe course of infections¹⁻³. Importantly, the presence of extracts as a „biological background“ for bioactive compounds, as well as a proprietary phospholipid formula or yeast matrix from the inactivated cells of *Saccharomyces cerevisiae*, promotes optimal bioavailability of active ingredients.

DuoLife **MEDICAL FORMULA PROIMMUNO®** supports:

- ▶ body immunity;
- ▶ the fight against viral and bacterial infections,
- ▶ the system's fight against inflammation,
- ▶ airway functions,
- ▶ cardiovascular system functions,
- ▶ antioxidant processes.

i Duolife MEDICAL FORMULA PROIMMUNO® – usage:

1-2 capsules daily.

i Composition table

Content of ingredients per average daily dosage	1 capsule	2 capsules
ProlImmuno® a proprietary formula of flavonoids obtained from Japanese pagoda tree (<i>Styphnolobium japonicum</i>)	145 mg	290 mg
including quercetin phospholipid formula	125 mg	250 mg
including luteolin from 10:1 flower extract	17,5 mg	35 mg
Proprietary formula derived from inactivated yeast cells of <i>Saccharomyces cerevisiae</i>	100 mg	200 mg
including organic zinc	5 mg 50% NRV*	10 mg 100% NRV*
Propolis extract	30 mg	60 mg
including galangin	0,9 mg	1,8 mg
Green propolis extract	20 mg	40 mg
including artemisin C	0,1 mg	0,2 mg
Sage Root Extract (<i>Salvia miltiorrhiza</i>)	15 mg	30 mg
including tanshinone IIA	0,75 mg	1,5 mg
Apigenin from grapefruit (<i>Citrus paradisi</i>)	2,5 mg	5 mg

*NRV – Nutrient Reference Value for an average adult (8400kJ/2000kcal)

Ingredients: ProlImmuno® proprietary formula of flavonoids obtained from scholar tree (*Styphnolobium japonicum*) standardized for quercetin with phospholipids and luteolin, proprietary formula of organic zinc obtained from inactivated yeast cells of *Saccharomyces cerevisiae*, inulin from common chicory root (*Cichorium intybus*), extract from propolis standardized for galangin content, extract from green propolis standardized for artemisin C content, extract from red-root sage (*Salvia miltiorrhiza*) standardized for tanshinone IIA content, apigenin from grapefruit (*Citrus paradisi*). Coating ingredients: organic cellulose derivative (HPMC), gellan gum, copper complexes of chlorophylls and chlorophyllins (dye). Anti-caking agent: silica. Do not exceed the recommended daily intake. The product should not be used as a substitute for a varied diet. Balanced diet and a healthy lifestyle are the basis for proper functioning of human body.

i The herbal extract from scholar tree flower contained in the preparation has a **ratio of 10:1 written next to its name - this is the so-called DER - what does it mean?**

DER (drug extract ratio) specifies a number of milligrams of plant material used to obtain one milligram of the extract.

If the capsule contains 20 milligrams of 10:1 scholar tree flower extract (or other herbal extract), this means that 200 milligrams of raw material were used to obtain the capsule.

What is the effect of ProImmuno® proprietary flavonoid formula: quercetin and luteolin, obtained from scholar tree flowers?

Quercetin supports the immune system, promotes the fight against inflammation, and acts as a natural antioxidant. The effect of quercetin on the immune system and inflammatory processes is multidirectional and widely described in the scientific literature and confirmed by numerous clinical studies^{1,4-7}. However, what is especially important: in scientific studies, including those from 2020, quercetin also shows a promising effect supporting the body's fight against viral infections⁸⁻¹². Through its potential impact on viral proteases and support of the respiratory system, quercetin can support the body during the infection season⁹⁻¹³.

What is more, by its health-supporting effect, quercetin also helps to maintain optimal condition of the heart, blood vessels, joints and digestive tract^{4,14}. It supports the good overall condition of the organism, which is extremely important in the context of its protection in the autumn-winter-spring season.

Quercetin enhances the effects of vitamin C¹⁵, a natural antioxidant, considered an important health-supporting vitamin helping in infections and maintaining a healthy immune system¹. Therefore, combining ProImmuno® with DuoLife Vita C may be beneficial.

Luteolin is another valuable flavonoid present in scholar tree flowers. It may contribute to supporting the functions of the immune and respiratory systems. Like quercetin, luteolin also exhibits in scientific studies actions that may be conducive to fighting viral infections^{4-7,15-17}.

Additionally, due to its antioxidant properties, luteolin promotes the removal of free oxygen radicals from the body, contributing to the reduction of oxidative stress. Thus, it supports the functioning of the cardiovascular system, helps to regulate cholesterol and blood glucose levels and contributes to slowing down the aging process¹⁸. By supporting the functions of the cardiovascular, respiratory and immune systems, it can help the body minimize the risk of severe viral infections and related complications¹⁻³.

What does “quercetin phospholipid formula” mean?

This formula is based on a proprietary technology in which quercetin is combined with organic phospholipids, making it much more bioavailable than with the ordinary raw material. The increased bioavailability of quercetin from the formula has been confirmed in a published clinical trial with 12 healthy volunteers¹⁹. The results of the study prove that the level of quercetin administered orally in the formula form reaches up to 20 times the value in blood plasma compared to using the unformulated raw material alone (*Figure 1*). Among other things, a dose of 250 mg of phospholipid quercetin - identical to that contained in 2 ProImmuno® capsules - is used in the study.

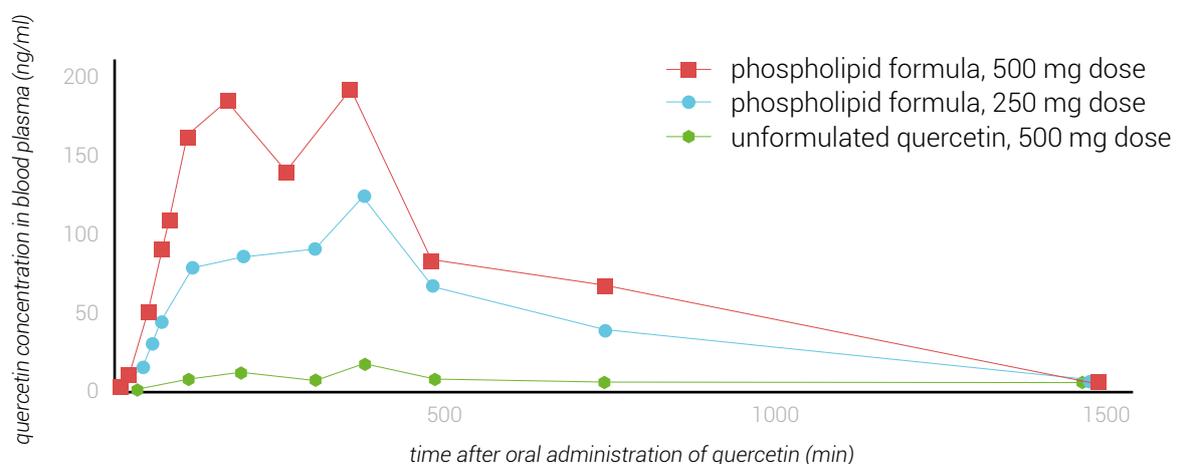


Figure 1. Pharmacokinetic profile of quercetin in a published clinical trial with 12 healthy volunteers. Concentration of quercetin in plasma achieved after oral administration of the compound in the form of phospholipid formula (500 mg and 250 mg doses) and in unformulated form (500 mg of pure quercetin). Based on [19].

Zinc occurs in the preparation in the form of a proprietary formula from inactivated yeast cells of *Saccharomyces cerevisiae*. What is the difference between this formula and "ordinary" zinc?

The formula contained in the preparation has an increased and standardized content of natural organic zinc. But it is also a wealth of many other valuable nutrients. The formula is obtained by fermentation and then inactivation of special lines of *Saccharomyces cerevisiae* yeast. Yeast - a natural wealth of many vitamins, minerals and fiber, is cultured and additionally nourished, and then processed and dried under mild conditions, which allows the interaction of preserved vitamins and minerals with the natural yeast matrix, which is their „biological background“ and guarantees their durability and quality. The resulting final product contains a complex of natural, perfectly digestible nutrients, with a specific, standardized amount of organic zinc.

Zinc is one of the main microelements of the body, whereas the supply of zinc in food products is generally insufficient; even one in three people in the world may have a deficiency of this element, making its supplementation, especially during the period of susceptibility to infection, advisable. Zinc contributes to the maintenance of systemic homeostasis, is involved in the body's immune processes, is essential for the division and differentiation of immune cells - lymphocytes, minimizes the toxic effects of heavy metals on the functions of systems and organs. As a valuable antioxidant, it can protect cells from oxidative stress²⁰⁻²². Zinc also has effects conducive to the body's fight against infections caused by the viruses^{23,24}.

Extracts from propolis included in the dietary supplement ProImmuno® mutually support their health effect, as well as the effect of the other ingredients of the preparation on a synergic basis.

Propolis is a very complex product, produced by bees from bee putty and pollen balm²⁵. The preparation contains two propolis extracts: brown and green propolis. They differ in composition and origin, but both are extremely valuable sources of health-supporting bioactive compounds.

- ▶ Brown (European) propolis comes mainly from black poplar (*Populus nigra*); the raw material of such origin is considered particularly valuable - this is due to the high content of polyphenols, including the health-supporting galangin²⁶. The galangin content of ProImmuno® is strictly defined (standardized). The brown propolis extract used in the preparation is obtained in the patented Multi Dynamic Extraction (M.E.D.®) method, which allows for very effective extraction of bioactive compounds from the raw material.
- ▶ Green propolis is produced with the involvement of honeybees from the Brazilian plant *Baccharis dracunculifolia*. This propolis is extremely valuable in terms of its health-supporting properties^{27,28}. The most valuable bioactive compound is the artemillin C, very characteristic for green propolis; its content in other propolis is much lower^{27,28}. The green propolis extract contained in the supplement is standardized for artemillin C.
- ▶ Propolis (both green and brown) has documented (by numerous scientific reports and preclinical and clinical trials) effect of helping overcome viral and bacterial infections²⁵⁻²⁷. Propolis also supports the condition of the immune system, helping to protect the organism during the autumn or spring solstice, as well as promoting proper functions of the respiratory system³³. Thanks to its antioxidant properties, propolis can also help to protect the body from the effects of oxidative stress, supporting the maintenance of proper functions of the heart, blood vessels, brain and other organs.

Red-root sage (also known as Danshen or Chinese sage) is an extremely valuable health-supporting plant known in the Chinese tradition...

...and valued in Europe and the United States for many years. As a dietary supplement, Danshen is the first traditional Chinese health-supporting plant included in the American Pharmacopoeia and the first to be approved for clinical trials by the FDA (*Food and Drug Administration*)³⁸. The plant is also present in the European Pharmacopoeia³⁹. The raw material has been documented by scientific reports (*Figure 2*) and numerous clinical studies as showing health-supporting effects^{38,40,41}; not only does it support the functions of the immune system, but also the work of the respiratory tract and the cardiovascular system, also contributing to maintaining proper cholesterol and glucose levels in the blood, supporting the work of the kidneys and the central nervous system. Thanks to this, it helps to maintain a good general condition of the organism which is extremely important in the context of its fight against viral infections. Especially in the case of viral infections, the course of the disease depends largely on the condition of the immune, cardiovascular and respiratory systems¹⁻³. Valuable active ingredients in red-root sage are tanshinones, especially tanshinone IIA. They show scientifically proven¹² effects that can help protect the body from viruses. The tanshinone IIA content in Prolimmuno® is strictly defined (standardized).

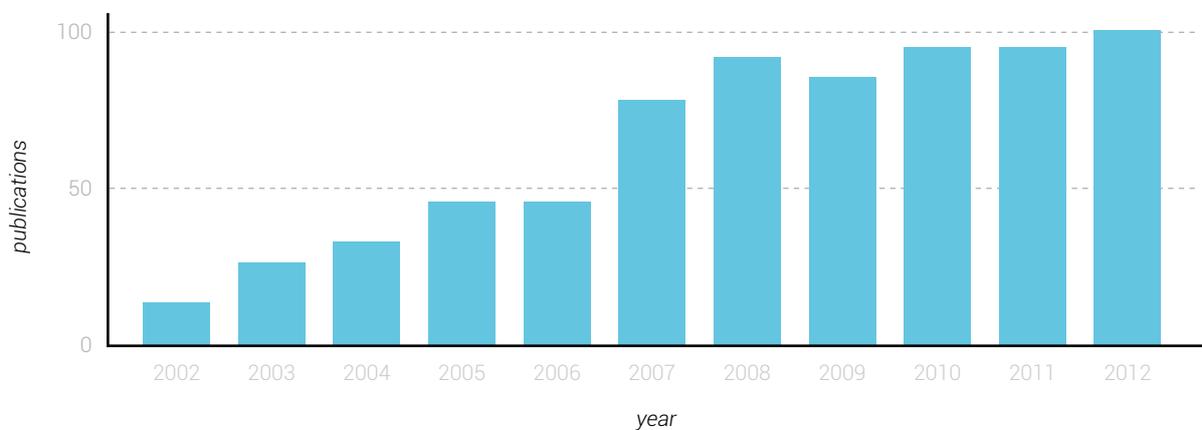


Figure 2. Number of published reports on the health-supporting properties of red-root sage and tanshinone IIA in years 2002-2012. Based on [38].

Apigenin supports the action of other polyphenols contained in the preparation, including quercetin, luteolin and galangin.

Apigenin is a valuable plant flavonoid with many documented health-supporting properties, such as supporting the functions of the immune system, the respiratory system, as well as antioxidant properties⁴². The potential supportive effect of apigenin on the body's condition during the infectious season is also noted; apigenin has been shown to support the fight against viruses^{9,10,12,42}.

The bioavailability of apigenin depends to a large extent on the functioning intestinal microflora, therefore it is beneficial to combine it with probiotics⁴².

What makes DuoLife Medical Formula ProlImmuno® different?

- ▶ **Capsules made of organic cellulose derivative (HPMC)**, containing also chlorophyll derivatives, without preservatives, gluten and gelatine, suitable also for vegans and vegetarians (plus kosher and halal certificates), with delayed release time, with clinical trials* - improving the absorption of active compounds contained inside the capsule, which translates into increased concentration of active substances in the body.
- ▶ **Packaging free of bisphenol A (BPA)**, a compound with controversial health effects⁴³.
- ▶ **100% natural ingredients**, with an additional content of **prebiotic - inulin** from the common chicory root; inulin stimulates the development of natural intestinal microflora, thus supporting function of the gastrointestinal tract^{14,44,45} it has a low glycaemic index. Optimal functions of the large intestine are also supported by the nutrients from *Saccharomyces cerevisiae* yeast contained in the preparation.
- ▶ **Formulation prepared in consideration of the principles of synergy and antagonism**
- ▶ **Complete components - with a preserved biological background that improves their bioavailability**, including a proprietary formula with quercetin with increased bioavailability
- ▶ **Standardised raw materials**, including propolis extract obtained by a patented extraction method guaranteeing the desired amount of bioactive constituents and the absence of inactive constituents
- ▶ **The product DOES NOT contain preservatives, artificial fillers and is GMO FREE** - the raw materials used to develop the supplement DO NOT originate from genetically modified plants/fungi.
- ▶ **The product does NOT contain gluten** - it is suitable for people intolerant to gluten
- ▶ **Concentrated formula** - facilitating usage of the supplement - 1 to 2 times a day

 *The references for DuoLife Medical Formula ProlImmuno® can be found on a separate binder sheet.*