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# Medicinal Ingredients

## 3- Nicotinamide (niacinamide)

Niacin, or vitamin B3, is a water-soluble B vitamin found naturally in some foods, added to foods, and sold as a supplement. The two most common forms of niacin in food and supplements are nicotinic acid and nicotinamide. The body can also convert tryptophan—an amino acid—to nicotinamide. Niacin is water-soluble so that excess amounts the body does not need are excreted in the urine. Niacin works in the body as a coenzyme, with more than 400 enzymes dependent on it for various reactions. Niacin helps to convert nutrients into energy, create cholesterol and fats, create and repair DNA, and exert antioxidant effects. [Source](#)

## N-Acetyl-L-cysteine (NAC)

The use of N-acetyl-cysteine (NAC) is an important and low-cost dietary supplement to include when treating a wide range of acute and chronic conditions. NAC has been used in medicine for years, mostly for supporting the treatment of excessive mucous production in respiratory conditions and for acetaminophen toxicity. NAC is derived from the amino acid L-cysteine. L-cysteine is considered a nonessential amino acid because it can be synthesized in the human body. It is considered a “conditionally essential” amino acid by some because the synthesis of L-cysteine may be compromised under stress of illness or in preterm infants. L-cysteine as a supplement has been shown to increase serum levels of glutathione. Levels of glutathione (GSH) in the human body are dependent on 3 conditionally essential amino acids, namely glycine, cysteine, and glutamic acid. NAC has been shown to increase serum levels of GSH, which accounts for its indirect antioxidant and anti-inflammatory properties. [Source](#).

## Vitamin C (ascorbic acid)

Vitamin C, or ascorbic acid, is a water-soluble vitamin. This means that it dissolves in water and is delivered to the body’s tissues but is not well stored, so it must be taken daily through food or supplements. Even before its discovery in 1932, nutrition experts recognized that something in citrus fruits could prevent scurvy, a disease that killed as many as two million sailors between 1500 and 1800.

Vitamin C plays a role in controlling infections and healing wounds and is a powerful antioxidant that can neutralize harmful free radicals. It is needed to make collagen, a fibrous protein in connective tissue that is weaved throughout various systems in the body: nervous, immune, bone, cartilage, blood, and others. The vitamin helps make several hormones and chemical messengers used in the brain and nerves. [Source](#).



## Zinc (sulfate)

Zinc is a trace mineral, meaning that the body only needs small amounts, and yet it is necessary for almost 100 enzymes to carry out vital chemical reactions. It is a major player in the creation of DNA, growth of cells, building proteins, healing damaged tissue, and supporting a healthy [immune system](#). [1] Because it helps cells to grow and multiply, adequate zinc is required during times of rapid growth, such as childhood, adolescence, and pregnancy. Zinc is also involved with the senses of taste and smell.

Because zinc supports the growth and normal functioning of immune cells, even a mild or moderate deficiency can slow down the activity of lymphocytes, neutrophils, and macrophages that protect the body from viruses and bacteria. Zinc deficiency is a common health problem in children from low and middle-income countries that contributes to stunting of growth, diarrhea, pneumonia, and malaria. [2] The elderly who may have low zinc intakes from a poor appetite due to multiple diseases and medications are at risk for infections, such as pneumonia and skin ulcers. [Source](#).

## Licorice (Glycyrrhiza glabra) root

Licorice root has a long history of use, going back to ancient Assyrian, Egyptian, Chinese, and Indian cultures. It was used traditionally for treating a variety of conditions, including lung, liver, circulatory, and kidney diseases. Today, licorice root is promoted as a dietary supplement for conditions such as digestive problems, menopausal symptoms, cough, and bacterial and viral infections. Licorice gargles or lozenges have been used to try to prevent or reduce the sore throat that sometimes occurs after surgery. Licorice is also an ingredient in some products for topical use (application to the skin). [Source](#).





# Proprietary Extract Blend

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## Olive Leaf (*Olea europaea*)

The olive (*Olea europaea* L.) is a well-known evergreen tree, native to the Mediterranean coast, of which the fruit and oil are used for food and cooking. Olives contain numerous triterpene acids including oleanolic acid as the major one. Recently, much attention has been paid to triterpene acids from the pharmaceutical viewpoint because of their anti-HIV, anti-inflammatory, and antitumor-promoting activities. [Source](#).

# Health Benefits of Black Cherry Fruit

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## Black Cherry Fruit (*Prunus serotina*)

Apart from being pleasing to the taste buds, these small fruits are loaded with nutrients which can decrease the risk of many illnesses as well as treat symptoms of other medical conditions. Listed below are few of the health benefits of consuming black cherries.

### 1. Beneficial for Heart

Black cherries are considered beneficial for your heart because they provide protection against damage to your arterial walls. Melatonin present in black cherries helps to reduce the risk of stroke and heart disease by lowering blood lipid levels. The anthocyanin compounds also act as protective agents against heart disease. [\(1\)](#)

### 2. Treatment of Arthritis

Arthritis is caused due to the build-up and crystallization of uric acid in the joints, causing immense pain. People having high levels of urate in their blood are at a risk of gout attack. Research has proved that black cherry juice is effective in easing arthritis pain. This is because the anthocyanin compounds help in breaking up the crystals that form in the joints and cause pain. Drinking 8-16 ounces of black cherry juice daily for two weeks can prevent gout attacks by decreasing the urate levels. [\(2\)](#)

### 3. Helps Prevent Cancer

Including fruits and vegetables in your diet helps to reduce the likelihood of developing several types of cancer. Black cherries consist of several antioxidants that prevent the formation of cancerous cells. Black cherry juice is 100 percent fruit without added sugar and thus is equally beneficial. [\(3\)](#)





#### 4. Anti-ageing Benefits

Pre-mature ageing is the result of damage caused by free radicals leading to an early death of cells. Anthocyanins are powerful antioxidants that help prevent the damage to cells by free radicals, thus preventing pre-mature ageing and reducing the appearance of signs of ageing like fine lines and wrinkles.[\(4\)](#)

#### 5. Anti-inflammatory

Inflammation occurs due to damage caused by free radicals and unfavorably affects the immune system's natural response and is considered the chief factor for heart disease. Anthocyanin compounds which impart color to the black cherries have the potential to fight free radicals that occur in different parts of the body, thus preventing the inflammatory pathways. Black cherry extract is beneficial in reducing inflammation. [\(5\)](#)

#### 6. Fights Tooth Decay

Dental cavities and tooth decay is caused due to the lack of oral hygiene. Compounds in black cherries block the formation of plaque which often leads to cavities and decay. Thus, you can add black cherries to your diet to reduce the chances of experiencing tooth decay. [\(6\)](#)

#### 7. Facilitates Sound Sleep

Black cherries consist of significant amounts of melatonin, a potent antioxidant that is produced in the brain's pineal gland and helps to regulate natural sleep patterns. Since black cherry contains more melatonin than that normally produced by the body, it is effective in fighting insomnia and depression. Drinking an ounce of concentrated black cherry juice an hour before sleep, helps in calming the mind and accelerates sound and peaceful sleep. [\(7\)](#)

#### 8. Skin Protection

Regular consumption of black cherry juice defends your skin from being damaged by harmful ultraviolet A and B rays of the sun. Anthocyanins provide protection against skin cancer because of their anti-carcinogen qualities. They also consist of beta-carotene which are beneficial for skin health and protect the skin from sun damage.[\(8\)](#)

#### 9. Combats Hair Loss

Anemia is one of the most common causes of hair loss and to combat this problem you need to incorporate iron rich food in your diet. Black cherry juice is a rich source of iron and hence, regular intake of this juice can cure anemia, thus minimizing hair loss. [\(9\)](#)



## 10. Reduces Oxidative Stress

Free radicals, if left unchecked, rob the DNA of its electrons, known as oxidation, thus affecting the body's defense. Antioxidants contained in black cherries reduce oxidative stress by neutralizing the free radicals.

- Beneficial for Heart
- Treatment of Arthritis
- Helps Prevent Cancer
- Anti-ageing Benefits
- Anti-inflammatory
- Fights Tooth Decay
- Facilitates Sound Sleep
- Skin Protection
- Combats Hair Loss
- Reduces Oxidative Stress
- Eliminates Migraines
- Reduce post-exercise muscle soreness
- Beneficial for diabetics
- Prevent stomach ulcers
- Lower Uric Acid

[Source](#)

### Black Elder Fruit (*Sambucus nigra* sups, *nigra*)

Many of elderberry's health benefits can be attributed to anthocyanin. As an antioxidant, anthocyanin works by clearing the body of free radicals that damage cells at the DNA level.<sup>1</sup> It also has antiviral properties that may prevent or reduce the severity of certain common infections.

Elderberry also exerts anti-inflammatory effects, reducing swelling and pain by tempering the body's immune response.<sup>2</sup>

#### Colds and Flu

Elderberry juice syrup has been used for centuries as a [home remedy](#) to treat the cold and flu, both of which are caused by a virus. The syrup is believed to reduce the severity and duration of the infection if taken within 48 hours of the first symptoms. Some preliminary evidence from small studies supports this claim.

A 2019 study on elderberry for both cold and flu suggested that the fruit substantially reduced upper-airway symptoms.<sup>3</sup>

A 2016 study from Australia reported that, among 312 long-haul airline passengers, those who used elderberry extract 10 days before and five days after their flight had 50 percent fewer sick days resulting from a cold than those who didn't.<sup>4</sup> In addition, passengers who used elderberry had less severe colds based on a scoring of upper respiratory tract symptoms.

What elderberry did not appear to do was reduce the risk of getting a cold; both the elderberry group and [placebo](#) group had more or less the same number of infections.

However, a 2012 study suggested that elderberry could help prevent influenza infection by stimulating an immune response. [Source](#).



# Proprietary Flavour Blend

## Lemon Balm (*Melissa officinalis*)

*Melissa officinalis* is a plant cultivated in some parts of Iran. The leaves of lemon balm, *Melissa officinalis* L (Lamiaceae), are used in Iranian folk medicine for their digestive, carminative, antispasmodic, sedative, analgesic, tonic, and diuretic properties, as well as for functional gastrointestinal disorders. This review article was aimed not only to introduce *Melissa officinalis* (its growth condition, its chemical compounds, and its traditional usages) but also to overview its antioxidant properties in detail. This review was carried out by searching studies in PubMed, Medline, Web of Science, and IranMedex databases up to 2016. The search terms used were “*Melissa officinalis* L,” “antioxidant properties,” oxidative stress,” “oxidative damage”, “ROS.” Articles whose full texts were not available were excluded from the study. In this study, firstly, traditional usage of this herb was reviewed, including antimicrobial activity (antiparasitic, antibacterial, antiviral, etc), antispasmodic, and insomnia properties. Then, its antioxidant properties were overviewed. Various studies have shown that *Melissa officinalis* L possesses high amount of antioxidant activity through its chemical compounds including high amount of flavonoids, rosmarinic acid, gallic acid, phenolic contents. Many studies confirmed the antioxidative effects of *Melissa officinalis*; thus, its effect in preventing and treating oxidative stress-related diseases might be reliable. [Source](#).



## Rose Hip Fruit (*Rosa canina*)

*Rosa* species, rose hips, are widespread wild plants that have been traditionally used as medicinal compounds for the treatment of a wide variety of diseases. The therapeutic potential of these plants is based on its antioxidant effects caused by or associated with its phytochemical composition, which includes ascorbic acid, phenolic compounds and healthy fatty acids among others. Over the last few years, medicinal interest in rose hips has increased as a consequence of recent research that has studied its potential application as a treatment for several diseases including skin disorders, hepatotoxicity, renal disturbances, diarrhoea, inflammatory disorders, arthritis, diabetes, hyperlipidaemia, obesity and cancer. In this review, the role of different species of *Rosa* in the prevention of treatment of

various disorders related to oxidative stress, is examined, focusing on new therapeutic approaches from a molecular point of view. [Source](#).



# Non-Medicinal Ingredients

## Maltodextrin

Maltodextrin is a type of carbohydrate, but it undergoes intense processing. It comes in the form of a white powder from rice, corn, wheat, or potato starch. Its makers first cook it, then add acids or enzymes to break it down some more. The final product is a water-soluble white powder with a neutral taste. The powder is used as an additive in the foods to replace sugar and improve their texture, shelf life, and taste. [Source](#).

## Cellulose (vegetable capsule)

DEFEND YOUR BODY'S IMMUNITY WITH SCIENCE - NATURALLY PELZ™ was developed by Dr. Dana Flavin, an internationally recognized expert in immune modulation and the prevention and treatment of viruses and cancer. A Ph.D. in Pharmacology, MD in Medicine, Biochemical Pharmacology, including a Master's Degree in Nutrition and Biochemistry. Patented – U.S. Pat. 8268363

## MULTIPLE PATHWAY DEFENCE STRATEGY

Increase antiviral defence and decrease the replication and toxicity of the virus.

Synergy a process in which substances cooperate to reach combined effects that is greater than the sum of the separate effect.

Biochemical Synergy is the amplification effect of several substances working with enhanced supportive mechanisms, showing greater efficacies based on the expansion of the biochemical processes and pharmacological activities. The combination of specific natural substances greatly enhances the individual efficacies of these substances to form a synergistic anti-viral and anti-toxicity effect protecting at multiple levels, amplifying the pharmacological mechanisms for greater protection against viral diseases.

N-acetylcysteine (NAC) proven in clinical studies to increase lymphocytes that contain interferon. Lymphocytes are often suppressed in viral infections like COVID-19. These cells that release interferon are part of the Th1 lymphocytes important for the antiviral activity. One of the mechanism in this lymphocyte suppression is the generation of gas, nitric oxide. This gas comes from enzyme, nitric oxide synthase, and is elevated in viral infections. NAC binds to this gas and allows the movement of these lymphocytes back into the blood stream and an increased antiviral activity of these Th1 lymphocytes. Additionally, NAC increases the endogenous anti-inflammatory factor, glutathione, in lung tissue.

Zinc added for its ability proven in clinical studies to increase the efficacy of interferon. In cases of viral infection, it increases the interferon efficacy to a multiple as much as 10-fold as well as having direct antiviral activities. Zinc supplementation decreases the morbidity of lower respiratory tract infections in pediatric patients in the developing world.