

Fermagalus™

The most bioactive astragalus
by a unique fermentation process

Info and scientific background

Conversion of the saponins to the more active deglycosylated form
Higher concentration of active substances
Formation of smaller active flavonoids or SOD-like substances
High content of cycloastragenol and calycosin
Impact on telomeres
Much lower daily dose needed

What is Fermagalus™?

Fermagalus™ is **fermented astragalus**, a medicinal herb used in traditional Chinese medicine. This plant grows mainly in northern China, Mongolia and Siberia. The **root of astragalus** is used for medicinal purposes. This **immune-supporting herb** is made even more potent than it already is by an **innovative Biotransforming Fermentation Technology!**

Astragalus contains over **126 different components**, such as flavonoids, saponins, and polysaccharides as the main active substances, but also contains amino acids and phenolic acids.

The following are the most important:

- **Saponins** such as astragalosides I through VII, based on the cycloastragenol backbone
- **Polysaccharides** such as e.g. APS-I, APS-II and astragal-in or kaempferol-3-O-b-glucoside
- **Isoflavone glycosides** such as calycosin-7-glucoside
- **Flavonoids** such as kaempferol, quercetin, isorhamnetin and rhamnocitrin

Why fermenting astragalus?

Biotransformation of secondary plant substances

Astragalus is rich in **polysaccharides, saponins and flavonoids**. Therefore, this plant is suitable for lactic acid fermentation since the **bioavailability** is **significantly increased by bioconversion**.

The most active components of astragalus are the **astragalosides**, called saponins. The main focus is on the **conversion** of the **original glycosylated saponins** to the more active form through our own lactic acid fermentation.

Due to their bulky molecular structure, saponins have poor membrane permeability and are susceptible to degradation. The mass of the original astragalosides decreases after fermentation due to the removal of the sugar molecules. This process is called **deglycosylation**.

This results in the so-called aglycone form such as e.g. **cycloastragenol**, which is permeable and therefore directly bioactive. Smaller molecules, which are very active and well studied, penetrate the body more easily!

Our controlled fermentation of astragalus also results in **biotransformation of isoflavone glycosides** to aglycones such as e.g. the bioactive substance **calycosin**. Fermentation with probiotic organisms improves the bioavailability of isoflavones.

Fermagalus™ contains **good absorbable polysaccharides** that have a **regulatory effect on the immune system**. They increase T-cell activity and thereby protect against pathogens such as viruses and bacteria.

Polysaccharides also increase NK (Natural Killer) cell activity, reducing the chance of unwanted cell growth (tumor formation).

The flavonoids are broken down into smaller active antioxidant molecules by fermentation

Formation of SOD-like substances that are not rapidly destroyed in the digestive tract such as superoxide dismutase (SOD) and perform the same function.

All this shows that a controlled fermentation offers a lot of added value compared to astragalus that is not fermented.

The power of cycloastragenol and calycosin

Astragalus is an **eye-catching geroprotector**. Telomere support is in the spotlight when it comes to slowing down the rate of aging and the onset of age-related diseases. **Telomere length** is a biological clock that determines the lifespan of a cell. **Oxidative stress accelerates the shortening of telomeres**, which can be compensated by telomerase. Astragalus (*Astragalus membranaceus*) is most commonly used to support immune health in chronic degenerative diseases.

In addition to the well-known astragalus polysaccharides (APS), saponins and flavonoids are two other classes of chemical compounds that are considered as quality control markers and possess multiple pharmacological properties.

Cycloastragenol (CAG), the **aglycone form of astragalosides** that are the major saponins of astragalus, is currently the only compound known to **activate telomerase** in humans.

Calycosin (CA), the major flavonoid of astragalus, is a potent antioxidant to prevent telomeres from oxidative damage. The **synergistic protection** of CAG and CA against telomere shortening makes astragalus a promising candidate for geroprotection.

In addition to telomere lengthening, **CAG** has other **extensive pharmacological effects**, including anti-inflammatory, antioxidant, antiviral, anti-pulmonary fibrosis, anti-ischemic and hypoxic damage, and anti-lipid accumulation properties. **CA** also optimizes the immune system, is anti-inflammatory, protects against osteoporosis, and has neuroprotective & hepatoprotective properties.

A big benefit of Fermagalus™ is that the **natural matrix** of the plant is **preserved**. Together with the very high bioavailability of the active ingredients, this ingredient is much safer than those that only offer the pure, isolated form of cycloastragenol or calycosin.

The plant astragalus contains **many other intelligent substances** that are highly beneficial to the body, also in their best absorbable form via a patented and controlled fermentation process. **It is the synergy of secondary plant substances in their best absorbable form that plays an important role for health!**

Much lower daily dose needed

By the high bioavailability & rapid absorption in the small intestine and the fact that the biotransformed molecules are more stable & stay in the body for at least five days, a daily dose of 150 to 200 mg is under normal circumstances enough!

FORM	USE
Powder	Nutritional supplements and functional food

DOSAGE	ACTIVE
150 - 200 mg/day	Cycloastragenol > 0,2 % Calycosin > 0,2 % Polysaccharides > 10 % Paraprobiotics > 20 billion CFU/g

Health Benefits

- Repair of DNA damage by activating telomerase (longevity)
- General optimization of the functioning of the immune system
- Has strong anti-viral properties and protects the body against colds and flu
- Is an adaptogen and increases our adaptation to all kinds of stressful circumstances
- Has neuroprotective properties due to the astragalosides
- Has strong liver-supporting properties
- Improves breathing by both strengthening the lung muscles and reducing mucus formation
- Provides cardiovascular protection as it acts as a blood vessel dilator and slight blood thinner as well as a support for cardiac arrhythmias, respiratory distress, heart failure and heart muscle inflammation.

Science

Many studies show the therapeutic properties of astragalus. It is therefore scientifically very well founded. However, it is important that the saponins are available in their easily absorbable form because this is a condition for the therapeutic power of this promising plant!

References are available upon request.