Legalon®

Protects and supports the liver

The Legalon® difference

- Uses a clinically trialled extract of *Silybum marianum* – MZ 80.
- Researched in liver health in numerous clinical trials involving hundreds of subjects.
- MZ 80 is produced using a unique and specialised patented extraction technique and manufacturing process.
- Legalon® has been prescribed in Europe for over 40 years and is now available in over 60 countries.
- Well established tolerability through clinical research, with no known reported drug interactions.

Legalon® contains the scientifically researched extract of *Silybum marianum* MZ 80

Legalon® therapeutic indications

- Hepatoprotectant – protects the liver.
- Supports healthy liver function.
- Maintains natural liver detoxification processes.
- Helps reduce occurrence of symptoms of indigestion.
- Supports liver health to:
  - Relieve weariness, feelings of weakness and fatigue.
  - Assist in anti-inflammatory processes.
  - Decrease abdominal feeling of fullness.
  - Relieve nausea.
- Traditionally used in Western herbal medicine to:
  - Support healthy liver regeneration.
  - Relieve symptoms of indigestion.
  - Enhance liver health.
- As an antioxidant: Helps reduce free radical formation and damage to body cells.

MZ 80 – the extract clinically researched in multiple scientific studies for liver health

Multiple clinical trials and history of use show efficacy and tolerability

Legalon® has a long history of use and high levels of tolerability:

- International birth date of Legalon®: 7th July 1971 – when first released to the global market
- Research shows tolerability in numerous clinical trials involving hundreds of subjects
- Legalon® is estimated to have been taken by millions of patients globally since market release

Legalon® research summary

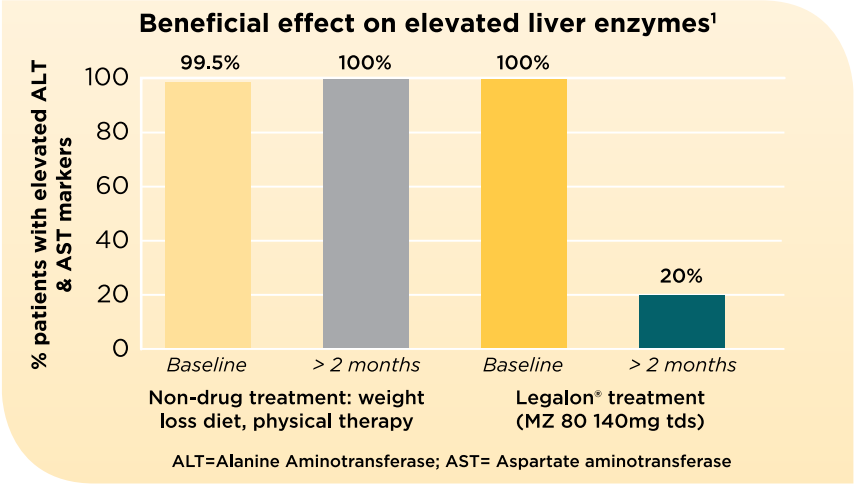
Legalon®, with the specific extract MZ 80, has been researched for efficacy and tolerability over many years. This research shows a clinically researched use of Legalon® for supporting liver health and detoxification processes.

Lead Author/Year	Study Design	Participants/Dose	Outcome Summary
Buturova LI, et al. 2010.	Open, randomised, comparative, parallel group study.	70 adults with nonalcoholic fatty liver disease (NAFLD) (aged 23-65 years). One Legalon® capsule three times daily, for 2 months.	**Efficacy and tolerability study** This study found beneficial changes in clinical findings (improvements in general condition, decreased weakness and discomfort in the right hypochondrium, decreased liver size), biochemical (normalisation of ALT, AST, and GGT levels), and ultrasound (decreased liver size, improved echo texture) parameters. 92% of patients reported subjective improvements in wellbeing. Legalon® was well tolerated.
Schuppan D, et al. 1998.	Open, non-controlled, post marketing drug surveillance study.	998 adults with chronic liver disease (median age 55 years). For a median of 107 days subjects received either regime: 1. Three Legalon® capsules daily (50% of subjects). 2. Two Legalon® capsules daily (38% of subjects). 3. One Legalon® capsule daily (9% of subjects).	**Efficacy and tolerability study** Legalon® significantly improved symptoms of fatigue, reduced productivity, epigastric pressure and flatulence, with many adults free of their symptoms at the end of treatment. Improvements were also seen in liver size and consistency, fibrotic markers and bilirubin levels, with normalisation of liver enzyme laboratory values in approximately 25% of patients. Legalon® was well tolerated.
Albrecht M, et al. 1992.	Open, non-controlled, post marketing drug surveillance study.	2637 adults with toxic liver disease (median age 52 years). For 8 weeks subjects received either regime of Legalon®: 1. 3 x 70mg MZ 80 capsules daily. 2. 3 x 140mg MZ 80 capsules daily.	**Large efficacy and tolerability study** Legalon® significantly improved presenting symptoms, such as tiredness, epigastric discomfort, lack of appetite, nausea and pruritus after 8 weeks. Improvements were also seen in liver size and consistency, and reductions in elevated liver enzyme laboratory values. Legalon® was well tolerated.
Muzes G, et al. 1990.	Randomised, double-blind, placebo-controlled study.	36 adults with chronic alcoholic liver disease (mean age 46 years). One Legalon® capsule three times daily, or placebo, for 6 months.	**Efficacy study** Legalon® significantly increased plasma glutathione peroxidase activity and reduced lipid perpoxidation. It also significantly enhanced the originally low superoxide dismutase activity of erythrocytes and lymphocytes and restored diminished SOD expression on lymphocytes, showing an important antioxidant, antiperoxidative and potential hepatoprotectant effect.

Legalon® reduces liver function enzymes after two months treatment

This study showed that three capsules a day of Legalon® may have a beneficial effect on reducing liver function enzymes in as early as two months. Approximately 92% of patients also reported subjective improvements in wellbeing.[1]

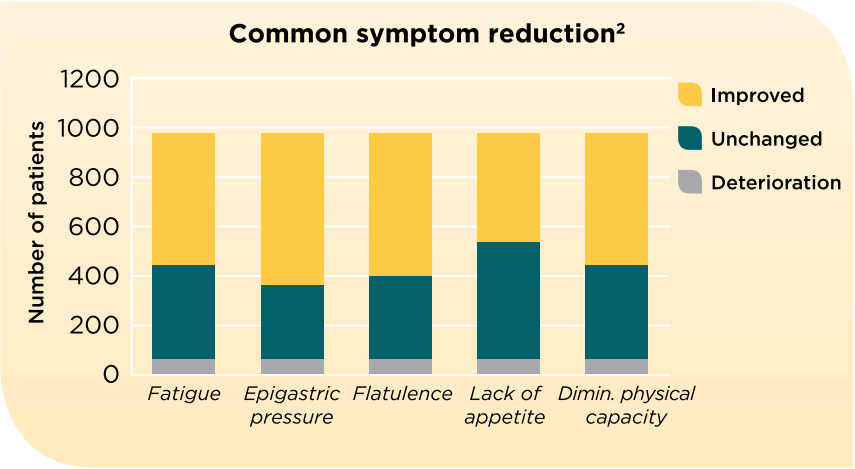
Buturova LI, et al. Potential for the use of Legalon® in non-alcoholic fatty liver disease. Exp Clin Gastroenterol. 2010;3:85-91



Legalon® significantly reduces presenting symptoms

In this study, Legalon® reduced the symptoms most frequently reported, such as fatigue, reduced productivity, epigastric pressure and flatulence. These symptoms were reduced in 45% to 75% of the patients, depending on the type of complaint.[2]

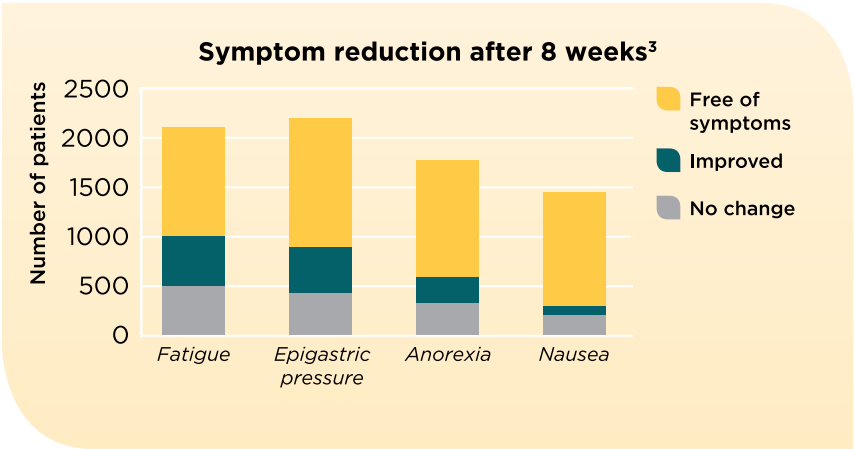
Schuppan D, et al. Legalon® lessens fibrosing activity in patients with chronic liver diseases. Z. Allg. Med. 1998;74:577-584.



Large clinical trial shows symptom reduction with Legalon®

In a study of 2637 subjects, between 50% and 75% of the complaints reported at baseline (tiredness, epigastric discomfort, lack of appetite, nausea, pruritus) had completely subsided, and between 10% and 23% of these were improved, with 8 weeks of Legalon® treatment.[3]

Albrecht M, et al. The Treatment of Toxic Liver Damage with Legalon®, Clinical Pharmacology. 1992;47(2):87-92.



Legalon® potential modes of action

Milk thistle is composed of a mixture of the flavonoid-derivatives (silybin, isosilybin, silydianin, and silychristin) known as silymarin. Preclinical and clinical studies show silymarin's therapeutic effect is attributable to it having several modes of action.[1,5]

Multiple modes of action			
Membrane effect[6]	• Inhibition of uptake of toxins • Membrane stabilisation	Protective effect[6]	• Stimulation of protein synthesis • Stimulation of liver cell growth
Antioxidant effect[6]	• Scavenging of free radicals • Inhibition of lipid peroxidation • Maintenance of physiological detoxifying substances (glutathione)	Anti-inflammatory effect[1,7,8]	• Inhibition of lipoxygenase • Inhibition of cyclooxygenase • Suppression of NF-κB activation

Active ingredients

Each Legalon® capsule contains:

Silybum marianum (Milk thistle) specific ext. dry conc.
MZ 80* 180mg equivalent to min. dry fruit 7.2g standardised to 140mg silymarin.

*MZ 80 is produced through a specialised patented extraction technique and manufacturing process.

Dosage and administration

Adults: Take 1 capsule 3 times daily with water. For best results take Legalon® for a minimum of two months.

Once a desired effect has been achieved the dose may be reduced to 1 capsule daily. Recommend as long as liver support is needed.

Presentation

60 reddish-brown hard gelatine capsules (size 1), containing a yellow powder.

Storage conditions

Store below 30˚C.

Contraindications and precautions

Do not recommend if there is a history of hypersensitivity to *Silybum marianum.*
There are no known reported drug interactions with Legalon®.

Pregnancy and lactation: There are no published studies to establish safety or rationale for the use of Legalon® during pregnancy, or while breastfeeding, so use is not recommended.

FAQ

Can Legalon® be taken regularly even if there are no liver concerns?

Research shows Legalon® has high levels of tolerability and has been taken for long periods of time. One of its actions is to protect the liver (hepatoprotectant) and therefore may be beneficial if taken on a regular basis to support 21st century lifestyles.

No added:

- Gluten
- Wheat
- Dairy
- Egg
- Soy
- Yeast
- Sesame
- Peanuts or tree nuts
- Artificial flavours, colours or sweeteners

References

1. Buturova LI, et al. Potential for the use of Legalon® in non-alcoholic fatty liver disease. Exp Clin Gastroenterol. 2010;3:85-91. **2. Schuppan D**, et al. Legalon lessens fibrosing activity in patients with chronic liver diseases. Z. Allg. Med. 1998;74:577-584. **3. Albrecht M**, et al. The Treatment of Toxic Liver Damage with Legalon®, Clinical Pharmacology. 1992;47(2):87-92. **4. Muzes G**, et al. Effects of Silybum (Legalon®) Treatment on the Antioxidant Defence System and Lipid Peroxidation in Patients with Chronic Alcohol Liver disease (A Double-Blind Study).Orvosi Hetilap. 1992;131(16). **5. Periodic Safety Update Report** for Milk thistle fruit, dry extract. Madaus GmbH. 2013. **6. Saller R**, et al. The use of silymarin in the treatment of liver diseases. Drugs. 2001; 61(14):2035-63. **7. Dehmlow C**, et al. Inhibition of Kupffer cell functions as an explanation for the hepatoprotective properties of silibinin. Hepatology. 1996; 23(4):749-54. **8. Trappoliere M**, et al. Silybin, a component of silymarin, exerts anti-inflammatory and anti-fibrogenic effects on human hepatic stellate cells. J Hepatol. 2009 Jun 1;50(6):1102-11.