

**LIPOSAN**

# ICELANDIC FIBERS

*The natural way*



Weight  
Management

Improved  
Digestion

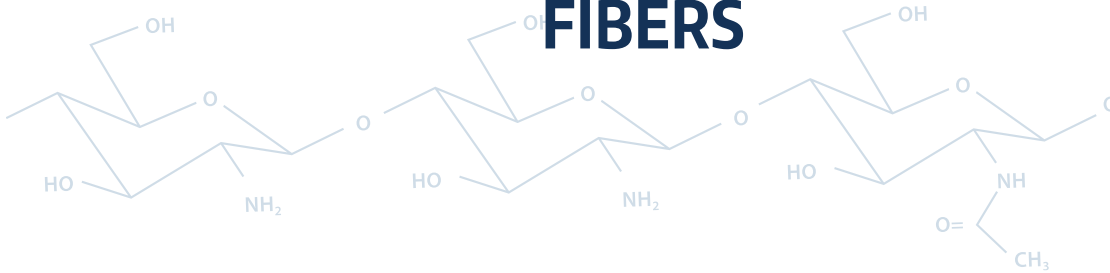
Cholesterol  
Control

Keto  
Friendly

**primex**  
ICELAND

# LIPOSAN

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### What is LipoSan?

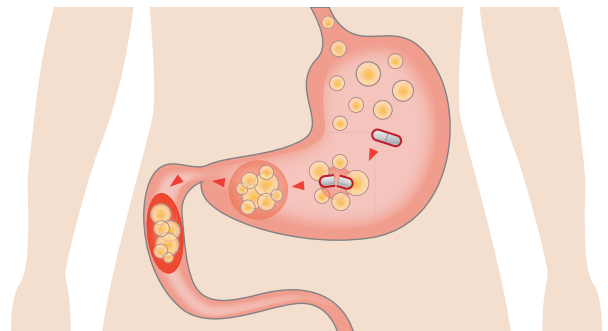
LipoSan Ultra® is a natural and effective dietary supplement for weight management and digestive support. It is a safe, fast-acting and high fat-binding supplement containing Icelandic chitosan, a natural fiber from the sea acting as a soluble and non-soluble fiber in the digestive tract. Once in the digestive tract, LipoSan complexes and binds with dietary fat in such a way that fat is not absorbed by the body. Therefore, LipoSan contributes to weight management and healthy digestion. LipoSan is a unique and proprietary formulation, known to significantly reduce body weight in a human clinical study.<sup>1</sup> LipoSan can also contribute to the maintenance of normal blood cholesterol levels.<sup>2</sup>

The main ingredient of LipoSan is ChitoClear chitosan, manufactured by Primex Iceland, which has been processed to enhance solubility and fat-binding performance. LipoSan is a patented product made in Iceland by combining fresh, high quality raw materials from the pristine waters of the North Atlantic Ocean and years of experience. LipoSan is not digested in our gut but instead it is fermented by colonic bacteria, resulting in an increased production of metabolites known to play an important role in health.

### How does LipoSan work?

Chitosan, as well as other viscous fibers, is known to interfere with the dietary fat metabolism by reducing absorption of dietary cholesterol and complexing with bile acids, hence lowering serum cholesterol. Unlike other viscous fibers, chitosan becomes positively charged in stomach acid, contributing to enhanced fat absorption. This positive charge is a key element for the higher fat-binding capacity of chitosan versus other fibers.

A process patented by Primex Iceland makes LipoSan a user-friendlier and a more effective weight management supplement than regular chitosan. Chitosan must be completely dissolved in stomach acid in order to efficiently bind and block fat, something that usually takes up to an hour or more for regular chitosan products. In vitro tests demonstrate that LipoSan Ultra is more efficient in binding triglycerides than other chitosan products, especially after a short solubilization time (see Fat binding comparison). The resulting enhanced performance of LipoSan is characterized by its rapid solubility in stomach acid, high density and molecular weight, contributing to LipoSan's greater fat-binding capacity. LipoSan can simply be ingested with your meal, in contrast to other chitosan products which are required to be taken at least 30-60 minutes prior to mealtime.



### Revolutionize your diet with LipoSan Micro!

LipoSan Micro is ideal for sprinkling over food or adding during meal preparation. A patent pending micro-coating is an ingenious means to protect LipoSan Ultra's bioactivity from food matrix and mask any chitosan off-flavours. The micro-coating remains stable in acidic foods but once in stomach acid, LipoSan Micro becomes an active fat-binder, just like LipoSan Ultra! This brings many new and exciting applications to an already established product line. LipoSan Micro can be portioned directly to meals or formulated into foods or drinks by manufacturers. You can enjoy all the benefits of LipoSan Ultra without having to swallow capsules or tablets. Simply mix with your food while cooking or sprinkle LipoSan Micro over your meal before eating!

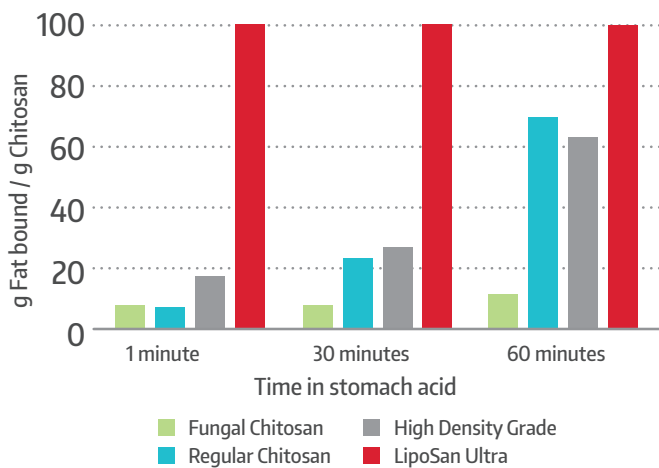
### Liposan Ultra Advantages

- Reduces dietary fat absorption
- Maintains normal blood cholesterol levels
- Improves digestion



Weight loss and improved digestion with minimal changes to lifestyle!

## Fat binding comparison



\*This test can bind max 100 g oil/g chitosan

## Scientific evidence

Clinical studies have already demonstrated the advantages of Primex products to human health. In a randomized, double-blind, placebo-controlled study, LipoSan Ultra has been shown to be efficacious in facilitating weight loss and reducing body fat in overweight and mildly obese individuals (BMI 27-37) despite simple routines and minimal changes of lifestyle.<sup>1</sup> Similarly, Primex chitosan supplemented to a low calorie diet contributed to significantly more weight loss and decrease of systolic and diastolic blood pressure in fifty obese individuals.<sup>3</sup> Another study revealed that daily consumption of Primex chitosan for 8 weeks did not affect serum-fat soluble vitamins or other safety parameters in all 56 subjects, eating a typical diet.<sup>4</sup> This confirms the safety and efficacy of Primex chitosan as a valuable and safe adjunct in long-term dietary treatment and that LipoSan is beneficial to those who want to lose weight with simple routines and minimal changes to lifestyle.

## User's benefits

- No planning ahead, simply take LipoSan with your first bite!
- Each gram of LipoSan can bind over 100 grams of fat!
- Safe, natural and proven effectiveness

## New research findings

New in vitro findings indicate that LipoSan reduces detrimental fermentation in the colon, promoting gut health. Further it stimulates good bacteria, having a positive effect on colonic health by producing higher levels of acetate, propionate, lactate as well as butyrate.

LipoSan can support the digestive system as a whole and contribute to inflammatory and disease prevention.



### References

1. RN Schiller et al. (2001) A randomized, double-blind, placebo-controlled study examining the effects of a rapidly soluble chitosan dietary supplement on weight loss and body composition in overweight and mildly obese individuals. *J Amer Nutr* 4(1): 42-49.
2. EFSA Journal 2011; 9(6):2214 [21 pp.]. doi:10.2903/j.efsa.2011.2214
3. B Zahorska-Markiewicz et al. (2002) Ocena zastosowania chitosanu w kompleksowym leczeniu otylosci. [Effect of chitosan in complex management of obesity]. *Polski merkuriusz lekarski : organ Polskiego Towarzystwa Lekarskiego* 13(74): 129-132.
4. NS Tapola et al. (2008) Safety aspects and cholesterol-lowering efficacy of chitosan tablets. *J Amer Coll Nutr* 27: 22-30.

# LIPOSAN

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LipoSan is available in bulk and as finished products



**LipoSan + vitamin C** is a natural dietary supplement for effective weight management and health support. LipoSan+C is available in 180 caps bottles and as other options such as private label or bulk capsules.

Rediscover your inner beauty with **LipoSan Hair Skin & Nails**. This natural marine formula helps support collagen and elastin formation, skin hydration as well as protecting from oxidative stress. LipoSan Ultra balances perfectly with natural fish collagen and hyaluronic acid as well as important vitamins and minerals to make the ultimate hair skin & nails complex.

**LipoSan Micro** Simply sprinkle over your meal or mix in during food preparation and enjoy the same effectiveness as our tried and tested LipoSan Ultra. This new and unique, microencapsulated weight management ingredient is an innovative development and extension of our weight management product line.



### Pure source – 100% traceability

Primex ehf is an Icelandic marine biotech company and a global leader in sustainable production of high quality chitosan products. Primex is based in Iceland in the middle of the North Atlantic Ocean. The source, shells of North Atlantic coldwater shrimp (*Pandalus borealis*) caught from the pristine waters surrounding Iceland, is selected for its aptitude for high quality chitosan. Primex chitosan and LipoSan are certified as natural. **In 2012, Primex received The Icelandic Innovation Award** for great progress in the development of added-value products.



– your natural partner for chitosan

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