

PRODUCT GUIDE

M-Gard® Particulate EW

Purified yeast beta-1,3/1,6-glucan

Lallemand Health
Ingredients

BIOTEC
BETAGLUCANS

BAKER'S YEAST BETA-GLUCAN

Beta-glucans are a heterogeneous group of natural polysaccharides, consisting of D-glucose monomers linked by a β -glycosidic bond. They are important structural elements of the cell wall in bacteria, fungi including yeast, algae, and plants, and are absent in vertebrate and invertebrate tissue. Beta-glucans derived from yeast, which consist of a (1,3)- β -linked backbone with (1,6)- β -linked side chains, are known for their immune-modulating effects.

WHY CHOOSE M-GARD®?

The molecular structure and optimal branching configuration is essential for the immune enhancing activity of beta-1,3/1,6-glucans, and this is what makes M-Gard® so potent compared to other types of yeast beta-glucan.

Biotec BetaGlucans had developed and first patented the process for extracting the beta-1,3/1,6-glucan present in baker's yeast without damaging the branching points or side chains, ensuring that the **purified M-Gard® molecule retains its crucial effect.**

Yeast beta-glucan has beta-(1,3)-linked glucose units with (beta-(1,3) or (1,6)-linked) side chains attached by beta-(1,6)-linkages. It is the frequency of this branching (i.e. the degree of branching) and the length of the branched chains that predicts the immune response since the terminal end part of chains are recognized by the receptors on immune cells.

M-Gard® has long side chains and the ideal degree of branching. The **extensive side chain branching is preserved during the extraction** process, and this is why M-Gard® has the ability to create the strongest immune response.

M-GARD® IMPROVES YOUR IMMUNE SYSTEM

M-Gard® Particulate EW contains **minimum 80% yeast beta-glucan, which can enhance the body's vital defense mechanisms against pathogens.** Studies have shown that M-Gard® exerts immunomodulatory effects *in vitro* and *in vivo* in experimental animal and human trials.

The technical expertise of Biotec BetaGlucans involves proprietary knowledge of how to extract M-Gard® in its optimal and bioactive form.

THE BENEFITS OF M-GARD®

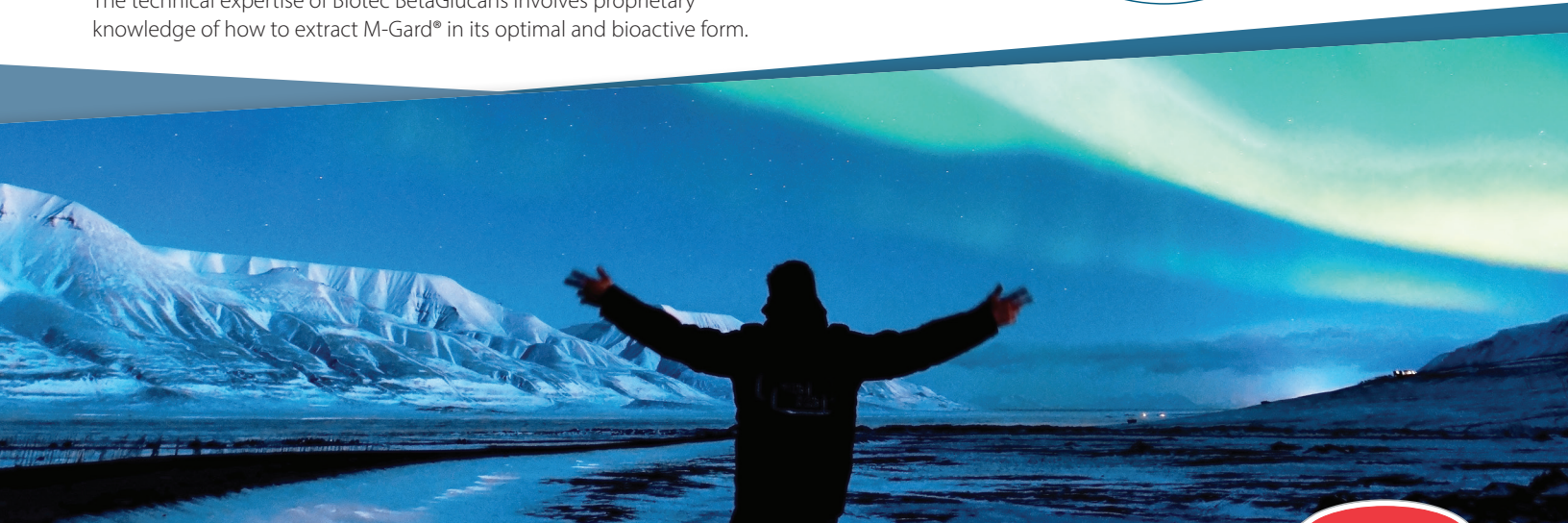
Every day your immune system is under attack from millions of pathogens, such as bacteria, viruses, fungi etc. **A strong immune system is what keeps you healthy.**

Small changes in health can lower immune resistance and tip the scales in favor of pathogens:

- ▶ increased pollution
- ▶ excessive mental or psychological stress
- ▶ excessive physical stress
- ▶ poor diet

M-Gard® supplies a high concentration of purified bioactive yeast beta-glucan to support your health by boosting your natural defenses and raising your level of resistance. **For this reason, M-Gard® is your insurance against pathogens.**

**M-GARD® IS PRODUCED UNDER
PHARMACEUTICAL GMP, ABOVE THE
ARCTIC CIRCLE, IN TROMSØ, NORWAY**



LALLEMAND BIO-INGREDIENTS

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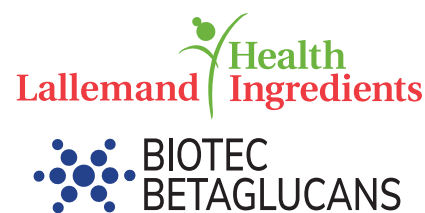
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YEAST BETA-GLUCAN FOR SUSTAINED PROTECTION

- ▶ Many consumers are familiar with oat and barley beta-glucan, which have cholesterol-reducing activity. In contrast, baker's yeast beta-glucan from *Saccharomyces cerevisiae* has been shown to positively modulate the human immune system.
- ▶ Upon ingestion of yeast beta-glucan, immune cells in the digestive tract identify these molecules as foreign objects, and react by initiating an immune response.
- ▶ Yeast beta-glucan molecules interact with receptors on immune cells, prompting an immune cascade against pathogens such as bacteria or viruses.
- ▶ After the immune response is initiated, the yeast beta-glucan particles are simply degraded by enzymes, digested and excreted by the body without further effect.

In this way, the immune system remains “primed” or “activated” for a quick response to infection, and faster recovery.

Yeast beta-glucan helps support healthy immune function, in a large variety of different situations. Studies have demonstrated that M-Gard® can:

- Strengthen the immune system
- Enhance protection against pathogens
- Protect during periods of excessive stress
- Promote healthy inflammatory responses
- Support respiratory health

M-Gard® is produced in the northernmost beta-glucan production facility, globally. The product is the outcome of first class scientific efforts combined with extremely high Norwegian quality standards.

M-Gard® Particulate EW, our 80% concentrated, multi-functional yeast beta-glucan is suitable for a variety of applications.

tablets & capsules

gummies

functional foods

beverages



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