




Discover Benefits from **Gut to Brain**



-  Highly Functional Phospholipid Content
-  Gut & Brain Health Benefits
-  Supports a Healthy Intestinal Membrane
-  Mild Extraction Preserves Function

Liprogen® MFGM: The Potent Phospholipid Complex for Gut and Brain Health

(Milk Fat Globule Membrane) is a high-phospholipid complex MFGM ingredient derived from dairy milk.

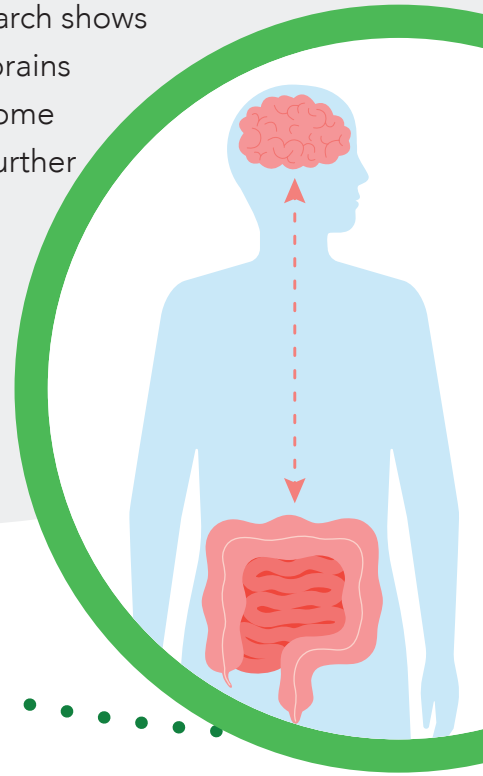
MFGM has been shown to benefit gut and brain health.¹⁻³

What Makes MFGM ESSENTIAL?

The MFGM complex is a mixture of proteins, lipids, complex carbohydrates and the phospholipid composition is **similar to that of neuronal cell membranes** and contribute to the **development of neuronal membrane cells**⁴ along with helping to maintain a **healthy intestinal lining**.^{5,6} A number of published research studies have demonstrated MFGM's importance in the human diet and have shown health **benefits for gut, brain, immune health** and other related conditions.¹⁻¹³ In fact, MFGM is foundational to human health as it has co-evolved with mammals and humans, becoming an important part of the human diet. Not found in plants and only found in mammalian milk, the MFGM complex is nature's first source of phospholipids and delivers significant health benefits.

How Does LIPROGEN® MFGM Work?

MFGM's unique composition of **phospholipids, glycolipids and gangliosides** has been shown to offer the building blocks for human neuronal membranes—such as **sphingomyelin**—that are fundamental in supporting and **maintaining gut and brain health**. Phospholipids present in MFGM **contribute to intestinal health** along with supporting the **transfer of key components** across the blood-brain barrier. Phospholipids have been shown effective for brain health in infants, children and adults. Human brains are rich in these important phospholipid building blocks. However, research shows phospholipid levels in human brains decrease after age 50 and become more pronounced with age.⁷ Further adding to this problem is that today's diets include more plant-based milks and foods that don't contain essential phospholipids that are part of the MFGM complex.



LIPROGEN® MFGM—a milk protein complex enriched with MFGM—contains highly-functional phospholipids.

- ✓ LIPROGEN® MFGM contains key dairy-based bioactives not found in plants, such as **gangliocycles and sphingomyelin**.
- ✓ Developed as a functional nutritional ingredient that acts as a **delivery system for highly beneficial MFGM proteins and phospholipids**, LIPROGEN® MFGM offers benefits from gut to brain health.
- ✓ LIPROGEN® MFGM has a **suggested dose level of 2-10 g/day** based on the recommended daily allowance of dairy containing MFGM.

The components of MFGM support nerve myelination and synaptic transmission

Sphingomyelin¹ and gangliosides² support myelination, necessary for fast driving of action potentials by the axon.³

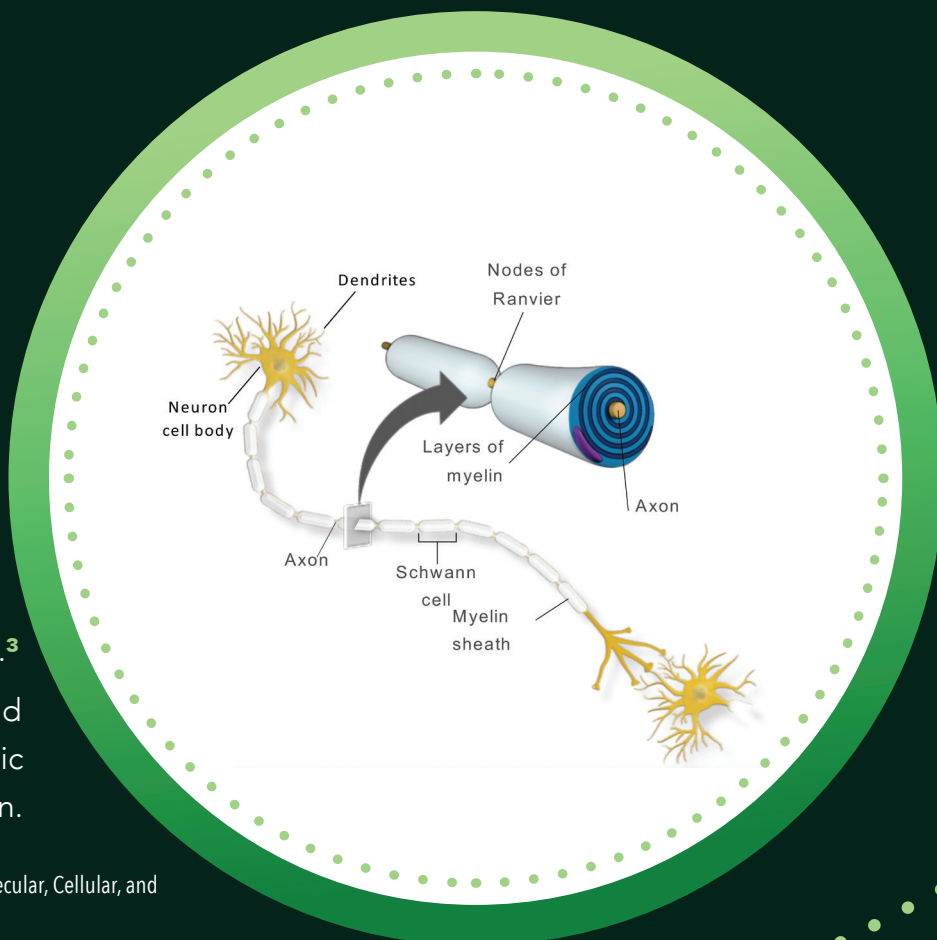
Evidence suggest that gangliosides² and DHA⁴ act on synapse to support synaptic transmission and long-term potentiation.

¹ Quarles RH, et al. In: Siegal GJ, ed. Basic Neurochemistry: Molecular, Cellular, and Medical Aspects; 2006:51-71.

² Palmano K, et al. Nutrients. 2015;7:3891-3913.

³ Squire LR, et al, eds. Fundamental Neuroscience. 2nd ed; 2003.

⁴ Wurtman RJ. Metabolism. 2008;57(suppl 2):S6-S10.



What Makes LIPROGEN® MFGM Unique?

- LIPROGEN® offers MFGM as nature intended
 - Similar composition based on **selective enrichment** and concentration
 - **Mild extraction** with no solvents or high heat
 - Preserves active component efficacy
- Significantly **higher-enrichment phospholipid** content when compared to other MFGM ingredients
- Offers **gut and brain health benefits** along with promoting **whole body wellness**
- Available as a flowable powder, easy to rehydrate
- Ingredient stable up to 12 months
- No known side effects and can be utilized in a wide range of age groups
- Made in the U.S.A.

MFGM Supports Cortical Neuronal Cell Growth

MFGM phospholipids were added in vitro with neuronal cells. Figure 1 demonstrates the strong growth of neuronal cells when stimulated with increasing concentrations of milk phospholipids.⁴

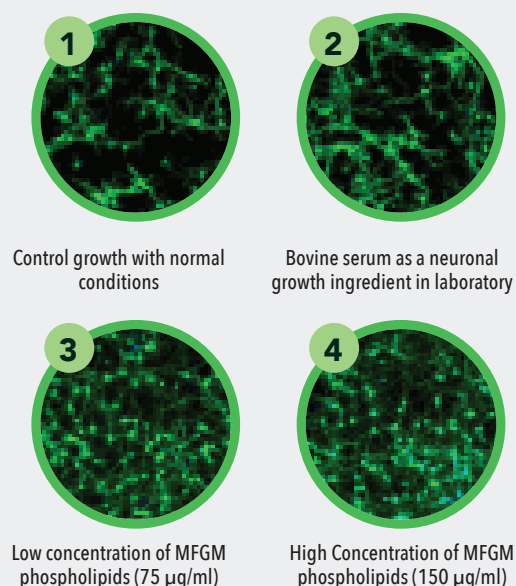
Additional MFGM Benefits

- Provides healthy immune support^{6,10}
- Supports cardiovascular health¹¹
- May improve bone turnover and reduce inflammation¹²
- Increased skin hydration, skin elasticity, facial skin moisture and overall skin health¹³

The Gut & Microbiome Benefits of MFGM

- Coats intestinal membrane with a layer of protective MFGM fats^{5,6}
- Improves gut health with decreased fecal coliform (bad bacteria) and increased levels of good bacteria⁶
- Research suggests MFGM may modulate gut microbiota⁶

Figure 1. Growth of Cortical Neuronal Cells with MFGM⁴



The Brain & Cognitive Benefits of MFGM

- Increases brain and cognitive activity¹⁻³
- Supports neurodevelopment⁴
- May improve reflexes⁸
- Reduces stress hypersensitivity to stress⁹

Food-grade
ingredient
that can be
utilized in

the
following
applications:



Nutritional Supplements



Functional Foods



Beverages

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