ALIMENTUM LABS

CellGenic

Comprehensive Cellular Membrane Support

Alimentum Labs
alimentumlabs.com
1.800.445.4647

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CellGenic

Comprehensive Cellular Membrane Support

A blend of cell membrane components, including phospholipids and lipid antioxidants, to support membrane regeneration while promoting heart and brain health; also enhances the activity of key genes and protein complexes, such as the *PPAR* gene family, *HMGCR* and the AMPK complex.

Cardio

Brain

Hormone

Metabolism

Health Indications

- Support Cellular Health and Membrane Integrity
- Enhance Mitochondrial Function
- Cognitive Function and Brain Health
- Promote Memory and Focus
- Strengthen Neuronal Signaling
- Support Cardiovascular Health
- Improve Circulatory Function
- Boost Cholesterol Metabolism
- Provide Antioxidant Support
- Regulate Inflammation

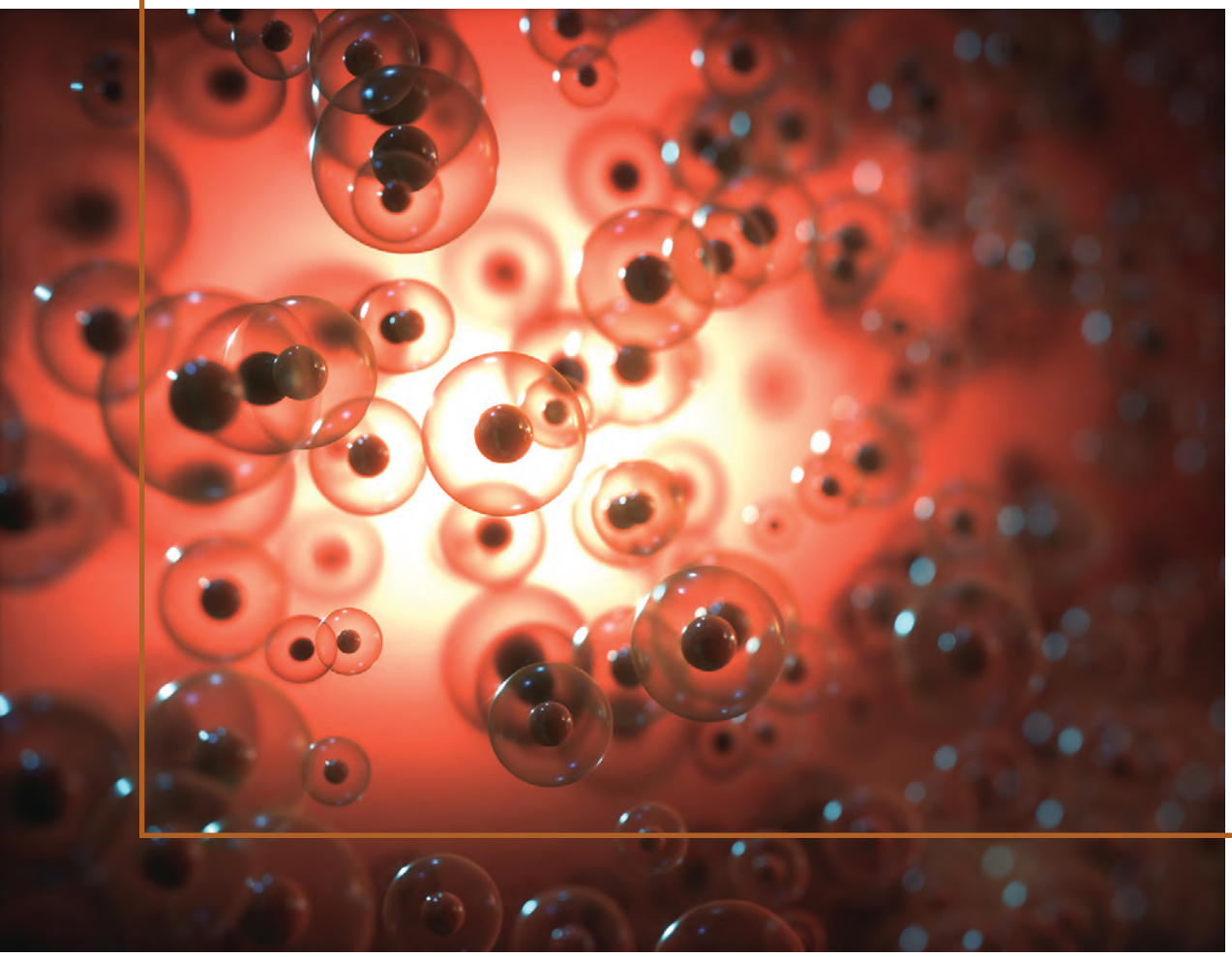
Instructions For Use

Take 2 capsules daily, with or without food, or as directed by your healthcare provider.

**Individual needs may vary; please consult your practitioner before altering the prescribed doses or protocols.

Product Description

Optimal health begins at the cellular level, where membranes regulate nutrient absorption, energy production, and communication between cells. CellGenic is a cutting-edge formula designed to strengthen and restore cellular membranes, ensuring optimal function of the brain, heart, and metabolic system. By delivering a synergistic blend of phospholipids, antioxidants, and bioactive compounds, it promotes membrane fluidity, mitochondrial efficiency, and lipid metabolism, helping cells resist oxidative stress and inflammation.



This advanced formula supports neuroprotection, cardiovascular health, and cholesterol balance by optimizing key pathways such as *PPAR* gene regulation, AMPK activation, and lipid signaling. By maintaining healthy circulation, reducing arterial inflammation, and enhancing neurotransmitter function, CellGenic provides foundational support for cognitive clarity, cardiovascular resilience, and metabolic flexibility.

Designed using nutrigenomic and metabolomic research, CellGenic enhances membrane regeneration, mitochondrial performance, and lipid transport, helping the body maintain cellular integrity and longevity. Whether supporting cognitive function, heart health, or cholesterol regulation, this formula delivers essential nutrients to fortify cell membranes and optimize cellular resilience for long-term wellness.

Key Elements and Features of CellGenic

Supports Cellular Health & Membrane Integrity

This formula helps maintain cell membrane stability, fluidity, and resilience, which are essential for overall cellular function. By protecting against oxidative stress and inflammation, it supports the longevity and efficiency of cells, particularly in high-energy organs like the brain and heart. Additionally, it enhances mitochondrial function and energy production, ensuring cells operate optimally and resist damage. Key ingredients such as beta-sitosterol, inositol, phosphatidic acid, lecithin, sea buckthorn oil, and extra virgin olive oil contribute to these benefits by stabilizing cell structures and supporting lipid metabolism.

Enhances Brain Health & Cognitive Function

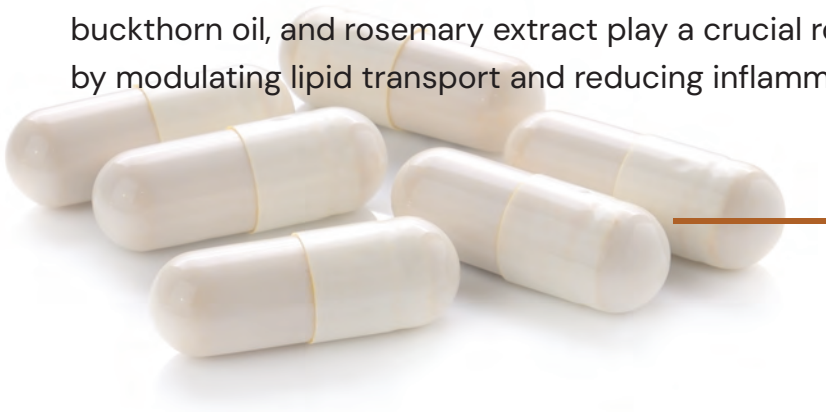
CellGenic promotes neuroprotection and neurotransmitter balance, helping to maintain cognitive health and reduce age-related decline. It supports memory, focus, and cognitive longevity by reducing oxidative stress, enhancing neuronal signaling, and providing essential lipids for brain function. By protecting against oxidative stress and neurodegeneration, it helps maintain brain plasticity and resilience, reducing the risk of cognitive impairment. Key ingredients such as Alpha-GPC, vitamin E, inositol, rosemary extract, coconut oil, and black currant oil work together to support brain cell integrity and optimal neurotransmitter function.

Promotes Heart Health & Cardiovascular Function

This formula supports healthy circulation and endothelial function, which are crucial for maintaining proper blood flow and reducing strain on the cardiovascular system. It helps maintain healthy blood pressure and arterial flexibility, preventing arterial stiffness and promoting vascular health. Additionally, it reduces oxidative stress and arterial inflammation, which are key contributors to heart disease. Ingredients like beta-sitosterol, beetroot juice powder, octacosanol, vitamin E, sea buckthorn oil, rosemary extract, and potassium phosphate help optimize vascular function and protect against cardiovascular complications.

Regulates Cholesterol & Lipid Metabolism

Helps maintain healthy cholesterol levels and lipid balance, which are essential for heart health and overall metabolic function. By reducing LDL oxidation and enhancing bile acid excretion, it promotes better cholesterol metabolism and helps prevent plaque buildup in the arteries. It also supports cardiovascular wellness and metabolic function, ensuring optimal lipid utilization. Key ingredients such as beta-sitosterol, octacosanol, black currant oil, extra virgin olive oil, sea buckthorn oil, and rosemary extract play a crucial role in these effects by modulating lipid transport and reducing inflammatory markers.



Gene Spotlight

Cellular health and membrane integrity are regulated by a network of genes that govern lipid metabolism, energy balance, and structural regeneration. These genes influence mitochondrial function, oxidative stress response, and the dynamic remodeling of cellular membranes. Supporting the proper expression of these genes is essential for maintaining cellular resilience, metabolic flexibility, and overall health.

Genetic Interactions

PPARA (Peroxisome Proliferator-Activated Receptor Alpha) Gene

PPARA is a key regulator of lipid metabolism and mitochondrial function. It plays a critical role in fatty acid oxidation, inflammation control, and cellular energy homeostasis. By activating *PPARA*, cells enhance their ability to utilize fatty acids as an energy source, reducing oxidative stress and supporting membrane lipid composition. Optimizing *PPARA* function is crucial for metabolic adaptation, mitochondrial efficiency, and cellular health.[1]

PPARG (Peroxisome Proliferator-Activated Receptor Gamma) Gene

PPARG is essential for lipid storage, adipocyte differentiation, and membrane phospholipid balance. It modulates anti-inflammatory pathways and supports insulin sensitivity, making it a critical factor in cellular repair and membrane integrity. The proper activation of *PPARG* enhances the incorporation of beneficial fatty acids into membranes, improving fluidity, stability, and overall cell function.[2]

PPARD (Peroxisome Proliferator-Activated Receptor Delta) Gene

PPARD plays a pivotal role in mitochondrial biogenesis, fatty acid oxidation, and cellular energy regulation. It promotes membrane lipid remodeling and helps maintain the balance between saturated and unsaturated fatty acids, influencing the flexibility and resilience of cellular membranes. Activating *PPARD* enhances endurance, metabolic efficiency, and cellular longevity.[1]

AMPK (AMP-Activated Protein Kinase) Genes

AMPK is the master regulator of energy balance, responding to cellular stress and nutrient availability. It enhances mitochondrial function, autophagy, and membrane renewal by promoting fatty acid oxidation and inhibiting excessive lipid accumulation. AMPK activation supports cellular health by maintaining phospholipid homeostasis, reducing oxidative damage, and optimizing membrane turnover.[3]

HMGCR (3-Hydroxy-3-Methylglutaryl-CoA Reductase) Gene

HMGCR encodes a key enzyme in the mevalonate pathway, responsible for cholesterol synthesis and cellular lipid regulation. Cholesterol is a fundamental component of cell membranes, impacting their fluidity, permeability, and signaling capacity. Proper regulation of *HMGCR* ensures balanced cholesterol production, supporting membrane integrity, neuroprotection, and overall cellular function.[4]

How CellGenic Works

CellGenic works by targeting cellular health at its core, enhancing membrane integrity, mitochondrial function, and lipid metabolism to support optimal brain, heart, and overall wellness. Its blend of phospholipids, antioxidants, and bioactive compounds protects cells from oxidative stress and inflammation, while key ingredients like beta-sitosterol, inositol, and phosphatidic acid regulate critical pathways involved in energy production, neurotransmission, and cardiovascular function. By improving circulation, cholesterol balance, and cellular resilience, this formula provides comprehensive support for longevity, cognitive function, and cardiovascular health, making it a powerful ally in maintaining overall well-being.

Key Ingredients

Beta-sitosterol

Beta-sitosterol, a plant-derived phytosterol, integrates into cellular and mitochondrial membranes, enhancing fluidity, structural integrity, and signaling.[5] It regulates key genes involved in apoptosis (*BCL2, BAX*), cell survival (*PI3K/AKT1*), tumor suppression (*AMPK, PTEN*), and inflammation (*TNF-α, IL-6*), contributing to cellular protection and growth regulation.[5-8] By stabilizing mitochondrial membranes, it improves ATP production and oxidative stress resistance through GSK3β activation.[5] Its antioxidant effects enhance SOD, catalase, and GPx activity, protecting against oxidative damage.[6] These multifaceted interactions make beta-sitosterol a powerful bioactive for cellular health and resilience.

Inositol

Inositol is a vital cellular nutrient that enhances membrane stability, regulates gene expression, and supports metabolic and signaling pathways. As a key component of phosphatidylinositol and phosphoinositides, it maintains membrane integrity and facilitates cell signaling and trafficking.[7] Inositol regulates the PI3K/Akt pathway, influencing cell survival, metabolism, and growth, while its polyphosphate derivatives modulate mRNA export, gene transcription, and chromatin remodeling.[8,9] In insulin signaling and glucose metabolism, inositol enhances insulin sensitivity and reduces metabolic dysfunction.[10] It also protects against cellular stress and neurodegeneration, playing a role in conditions like Alzheimer's and multiple sclerosis.[11] Additionally, inositol phosphate signaling regulates cell proliferation and apoptosis, making it a promising target for cancer therapy.[9] Through its role in nutrient sensing, energy homeostasis, and cellular adaptation, inositol emerges as a crucial regulator of cellular health and longevity.[12]

Octacosanol

Octacosanol supports cellular health by activating AMP-activated protein kinase (AMPK) and peroxisome proliferator-activated receptors (*PPAR*), which enhance lipid metabolism and reduce cholesterol synthesis by downregulating HMG-CoA reductase (*HMGCR*). This modulation improves insulin sensitivity, reduces body fat, and enhances brown adipose tissue activity. Additionally, octacosanol preserves cellular membrane integrity by reducing inflammatory markers like VCAM-1 and PE-Selectin in endothelial cells, and inhibits *HMGCR* expression to regulate healthy cholesterol metabolism.[13–18]

Beetroot Juice Powder

Beetroot juice powder promotes cellular health by enhancing mitochondrial function through its high nitrate content, which increases nitric oxide (NO) production, improving blood flow and oxygen delivery. It is rich in antioxidants like betalains, polyphenols, and vitamin C, which help reduce oxidative stress and protect cellular components from damage. Additionally, betalains support detoxification by enhancing phase II detoxification enzymes in the liver, while also exhibiting anti-inflammatory effects by inhibiting pro-inflammatory cytokines such as *TNF-α* and *IL-6*. The combination of nitrate-derived NO and polyphenols further aids in cellular repair and regeneration by regulating autophagy and apoptosis, crucial processes for removing damaged cells and supporting tissue renewal. These mechanisms collectively enhance cellular resilience and may contribute to chronic disease prevention.[19–21]

Vitamin E

Vitamin E, primarily in the form of α-tocopherol, plays a crucial role in cellular health and membrane integrity by acting as a lipid-soluble antioxidant that neutralizes lipid peroxyl radicals, preventing lipid peroxidation and maintaining cell membrane stability. It integrates into phospholipid bilayers, enhancing fluidity and resilience against oxidative stress, toxins, and UV radiation. Vitamin E also modulates gene expression, particularly in pathways regulating oxidative stress response, inflammation, and apoptosis. It influences genes such as *NFE2L2*, which activates the antioxidant response element (ARE), boosting cellular defense mechanisms, and *NF-κB*, which reduces inflammatory cytokines like *TNF-α* and *IL-6*. Additionally, it supports mitochondrial function by preserving ATP production and protects endothelial cells, improving vascular health. By stabilizing cellular proteins and DNA, Vitamin E reduces mutation risk, delays aging, and maintains homeostasis. These mechanisms collectively enhance immune function, longevity, and disease resistance.[22–26]

Sea Buckthorn

Sea buckthorn supports cellular health and membrane integrity through its high content of bioactive compounds, including polyunsaturated fatty acids, flavonoids, and antioxidants. It enhances lipid metabolism, reduces oxidative stress, and improves mitochondrial function, which are crucial for maintaining cellular integrity. Additionally, sea buckthorn influences gene expression, particularly in lipid metabolism, glucose transport, and antioxidant pathways. It modulates genes involved in mitochondrial biogenesis and insulin sensitivity, and its procyanidins regulate oxidative injury through the p38MAPK/NF-κB signaling pathway. Furthermore, it activates the Nrf2 pathway, promoting antioxidant defenses, and histone acetylation mechanisms, which regulate gene expression in response to stress.[27–32]

Coconut Oil

Coconut oil supports cellular health and membrane integrity through its medium-chain triglycerides (MCTs), particularly lauric acid, which integrates into phospholipid bilayers, enhancing membrane stability and resilience. MCTs provide rapid mitochondrial energy, reducing oxidative stress while polyphenols and vitamin E act as antioxidants, preventing lipid peroxidation. Additionally, coconut oil modulates gene expression by activating the Nrf2 pathway for cellular defense and inhibiting NF-κB, reducing inflammation via *TNF*-α and *IL-6* suppression. It also supports neuronal health, as ketones provide an alternative energy source for brain cells, protecting neuronal membranes. These properties collectively boost cellular detoxification, immune defense, and longevity.[33–36]

Alpha-GPC

Alpha-GPC supports cellular and membrane health by enhancing membrane fluidity, reducing oxidative stress, and stabilizing mitochondrial function. It protects astrocytes from amyloid beta-induced damage, improves membrane microviscosity, and restores muscarinic receptor function in aging brain tissue, contributing to neuronal signaling and integrity. Additionally, it delays degenerative processes and reduces amyloid accumulation, highlighting its neuroprotective potential.[37–39]

Mediator® (Phosphatidic acid)

Phosphatidic acid is a crucial lipid in cellular and membrane health, regulating membrane dynamics, signaling, and gene expression. It facilitates membrane fusion and fission, interacts with proteins to modulate enzymatic activity, and influences cytoskeletal organization and vesicular trafficking. Phosphatidic acid also acts as a signaling molecule, affecting cell proliferation and stress responses. Additionally, it directly regulates gene expression and contributes to regulating the Ras/MEK/Erk pathway, promoting cell survival and proliferation.[40–42]

Extra Virgin Olive Oil

Extra virgin olive oil supports cellular and membrane health through its high polyphenol content, which enhances antioxidant defenses, reduces oxidative stress, and protects lipid membranes. Polyphenols such as hydroxytyrosol and tyrosol restore intracellular antioxidant balance and reduce lipid peroxidation, preserving cellular membrane integrity. Extra virgin olive oil also increases the expression and activity of key antioxidant enzymes like catalase and glutathione peroxidase, helping protect pancreatic and liver cells from oxidative damage. At the genetic level, its compounds influence lipid metabolism and cellular function by modulating gene transcription related to lipid synthesis, oxidation, and inflammation.[43–45]

Lecithin Oil (Sunflower)

Lecithin oil supports cellular and membrane health by enhancing membrane integrity, promoting stem cell adhesion and proliferation, protecting against oxidative damage, and regulating lipid metabolism and cholesterol transport. It also improves Na+/K+-ATPase activity, which is essential for cellular function.[46–48]

Black Currant Oil (Stearidonic Acid)

Black currant oil, rich in stearidonic acid, supports cellular health and membrane integrity by enriching phospholipids in red blood cells, modulating lipid metabolism, and influencing gene expression. It enhances membrane fluidity and alters fatty acid composition, which impacts cell signaling and membrane protein function. Additionally, it contributes to the production of anti-inflammatory eicosanoids and reduces oxidative stress. At the genetic level, stearidonic acid suppresses NF-κB and MAP-kinase pathways, reducing inflammatory responses in macrophages.[49–51]

Rosemary Extract

Rosemary extract enhances cellular health and membrane integrity through its antioxidant, anti-inflammatory, and metabolic regulatory properties. It modulates lipid polymorphism and fluidity in phospholipid membranes, improving membrane stability and function. Rosemary extract also affects gene expression by activating the AMPK and PPAR pathways, which regulate glucose and lipid metabolism, and by repressing PTEN expression, potentially affecting cancer-related cellular functions. Additionally, it extends cellular lifespan and reduces oxidative stress by upregulating antioxidant enzymes such as SOD and CAT while decreasing MDA levels. Its effects on cholesterol metabolism involve upregulating VLDLR gene expression and influencing RNA post-transcriptional modifications. These findings highlight rosemary extract's potential in cellular protection and metabolic regulation.[52–56]

Candelilla Wax

Candelilla wax contributes to cellular health and membrane integrity primarily through its role as an oleogelator, enhancing lipid structuring and stability in biological systems. It affects membrane dynamics by forming strong lipid networks that influence membrane viscosity and fluidity, which are essential for maintaining cellular function. Candelilla wax also interacts with lecithins and triacylglycerols, modifying crystallization kinetics and microstructural organization.[57,58]

Potassium (Phosphate)

Potassium phosphate supports cellular health by regulating ion balance, energy metabolism, and membrane potential. It aids ATP synthesis and enzyme activation, influences ion transport, and prevents conditions like hypokalemia. It also enhances muscle energy metabolism and reduces exertion during exercise.[59–62]

Warnings/Contraindications

When used as directed there are no known contraindications for CellGenic.

It is always recommended that you consult your practitioner prior to adding any new supplement to your regimen if you are pregnant, breastfeeding, experiencing renal failure, undergoing an organ transplant(s), managing diabetes with insulin, or are taking medication(s) for any pre-existing conditions.

Safety

All ingredients are tested before use for:

- Pathogenic microbial contaminants
- Heavy metals and/or chemical contaminants
- Purity

Additional Information

- Gluten Free
- Dairy Free
- Vegan
- No Sugar
- Non-GMO
- cGMP Facility

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