ALIMENTUM LABS

Metabolic µBiomic

GLP-1 Probiotic

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Metabolic µBiomic

GLP-1 Probiotic

Naturally increases GLP-1 to curb cravings, maintain a healthy weight, and regulate blood sugar by lowering glucose spikes. Works best when paired with Metabolic Superfood.

Metabolism

Gut

Immunity

Whole Body

Health Indications

- Re-establish Lost Keystone Species
- Natural GLP-1 Support
- Correct Insulin Resistance
- Protect Heart Health
- Regulate Cholesterol Levels
- Support Weight Management
- Manage Appetite
- Encourage a Diverse Gut Microbiome

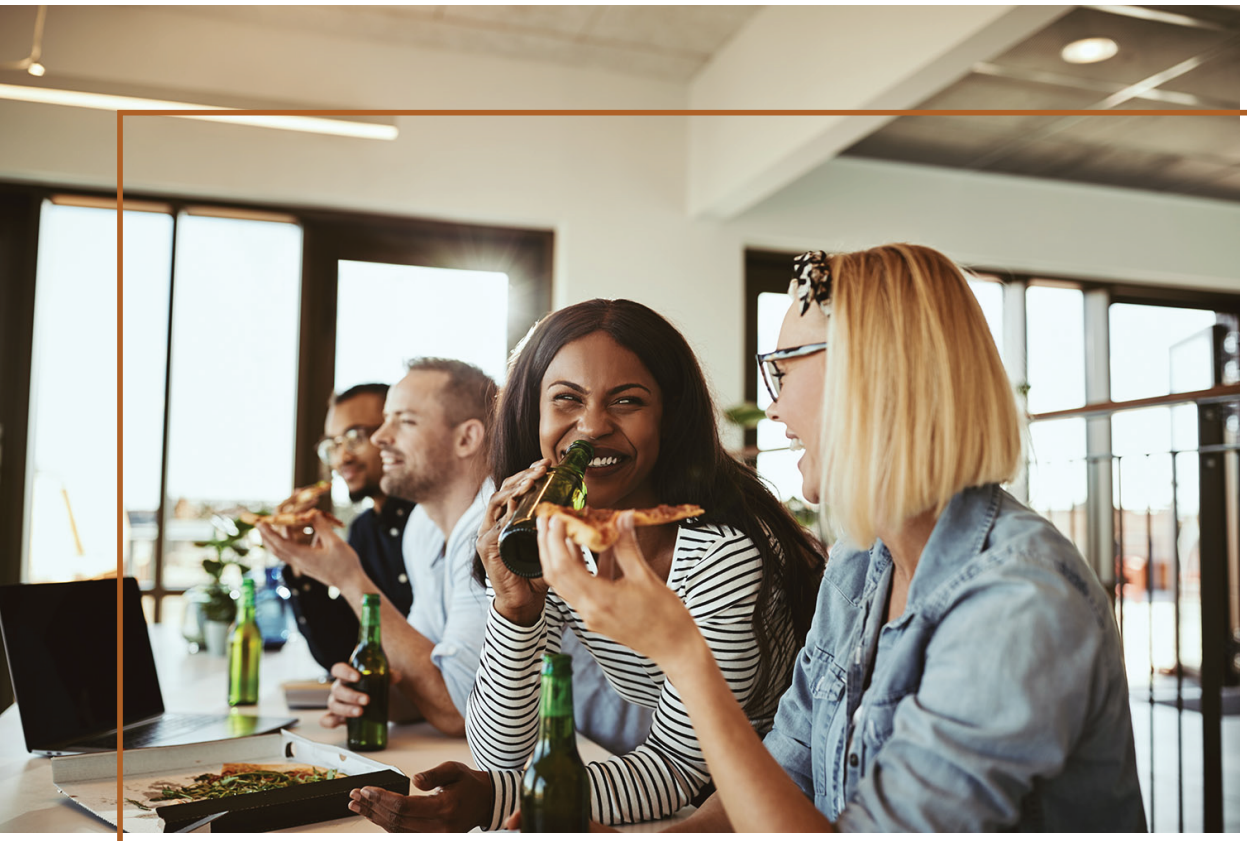
Instructions For Use

Take 2 capsules daily for 30 days, or as directed by your health care provider. Refrigerate after opening to optimize shelf life. We highly recommend Metabolic µBiomic be paired with its synergistic prebiotic formula, Metabolic Superfood.

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

Product Description

Metabolic health refers to the body's ability to regulate essential functions like blood sugar control, fat metabolism, and inflammation, which are key to maintaining overall well-being and preventing conditions such as obesity, diabetes, and cardiovascular disease. The gut microbiome, a diverse community of microbes living in the digestive system, plays a crucial role in metabolic health. It helps with digestion, nutrient absorption, and the production of short-chain fatty acids (SCFAs), such as butyrate, that regulate inflammation and improve insulin sensitivity. Certain beneficial bacteria, like *Akkermansia muciniphila*, also influence the release of hormones such as GLP-1, which helps control blood sugar, appetite, and insulin secretion. A balanced and healthy gut microbiome is essential for supporting these processes and maintaining metabolic balance.



Poor diet and lifestyle choices and or dietary and environmental exposures or stressors can significantly disrupt both metabolic health and the gut microbiome. This can lead to imbalances in the gut microbiome, reducing the diversity of beneficial bacteria while promoting the growth of harmful microbes. This disruption impairs the microbiome's ability to regulate digestion, produce short-chain fatty acids (SCFAs), and support immune function. Additionally, it can contribute to increased inflammation, insulin resistance, and dysregulated lipid metabolism, which are key factors in metabolic disorders such as obesity, type 2 diabetes, and cardiovascular disease. Sedentary behavior, stress, and insufficient sleep further exacerbate these issues by negatively affecting gut health and disrupting hormonal balance. Together, these factors create a vicious cycle that harms both the gut microbiome and overall metabolic health, increasing the risk of developing chronic health conditions.

Metabolic µBiomic supports healthy metabolic function by promoting a balanced gut microbiome and assisting in the normal operation of key metabolic processes. A balanced gut microbiome is associated with maintaining insulin sensitivity, normal blood sugar levels, efficient fat metabolism, and a well-regulated inflammatory response—factors that contribute to overall metabolic wellness. Bacteria such as *Akkermansia muciniphila* and *Butyricicoccus pullicaecorum* can enhance gut barrier function, support inflammatory response, and support a regulated glucose and lipid metabolism, all of which help maintain healthy blood sugar levels, prevent insulin resistance and avoid high cholesterol. Strains like *Eubacterium rectale* and *Lactobacillus bulgaricus* produce short-chain fatty acids (SCFAs) that nourish gut cells, improve insulin sensitivity, and reduce harmful inflammation. Additionally, bacteria like *Bifidobacterium longum* and *Lacticaseibacillus casei* promote a healthier gut microbiome by increasing beneficial bacteria. These probiotics can modulate important hormones like GLP-1, which regulate insulin secretion and appetite, contributing to better glucose control and reduced fat accumulation. By maintaining a healthy microbiome and supporting metabolic functions, these probiotics help resist the effects of modern diets and lifestyles that can lead to metabolic disorders.

Key Elements and Features of Metabolic µBiomic

GLP-1 Support

Probiotics like *Akkermansia muciniphila* can enhance levels of glucagon-like peptide-1 (GLP-1), a hormone that improves insulin secretion, suppresses appetite, and regulates gastric emptying. By modulating gut hormones such as GLP-1, these bacteria help improve insulin sensitivity, glucose homeostasis, and overall metabolic control, making them promising candidates for metabolic disease management.

Insulin Sensitivity and Cholesterol Regulation

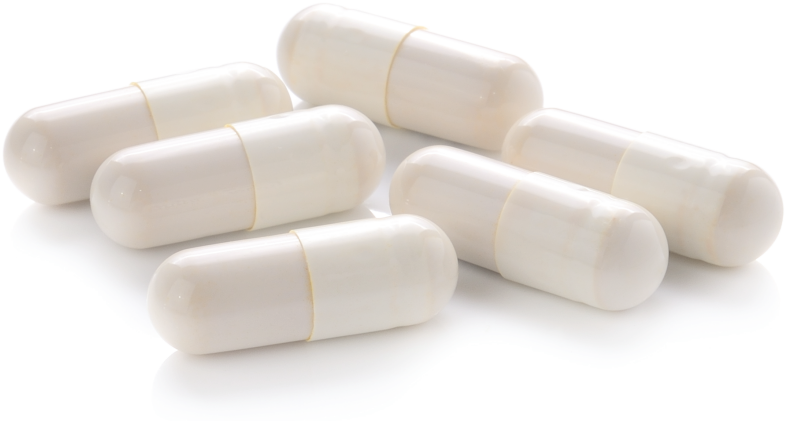
Several probiotics, including *Lacticaseibacillus casei*, *Bifidobacterium longum*, and *Lactobacillus gasseri*, can improve insulin sensitivity by reducing insulin resistance and enhancing glucose metabolism. Additionally, they may help regulate lipid profiles by lowering LDL cholesterol levels and promoting higher HDL cholesterol, which are essential for preventing metabolic disorders like obesity and type 2 diabetes.

Short-Chain Fatty Acid (SCFA) Production and Gut Health

Probiotics like *Eubacterium rectale*, *Butyricicoccus pullicaecorum*, and *Lactobacillus bulgaricus* produce short-chain fatty acids (SCFAs) such as butyrate, which serve as an energy source for gut cells, enhance gut barrier integrity, reduce inflammation, and support lipid metabolism. These SCFAs play a crucial role in maintaining a healthy gut environment and improving metabolic function.

Impact on Gut Microbiota and Inflammation

Probiotics like *Christensenella minuta* and *Lacticaseibacillus casei* modulate gut microbiota composition, reduce pathogenic microbes, and control systemic inflammation, thus supporting overall metabolic balance and reducing risks of metabolic disorders.



Exclusive Probiotic Spotlight

This formulation features our own exclusively researched and developed probiotics, known as keystone species. These species are directly related to adverse health effects when missing or lacking in human microbiomes. Through 15 years of research, Alimentum Labs has carefully selected specialized probiotic species, each offering unique benefits for the gut-brain axis and mental health.

The nature of our exclusive keystone strains of probiotics grants them a distinctive advantage as they colonize specific niches within the gut where they are intended to thrive. Once established, these anaerobic bacteria tend to persist long-term, providing benefits that set them apart from traditional probiotics.

Akkermansia muciniphila **MS22**

Akkermansia muciniphila is a beneficial gut bacterium that plays a crucial role in metabolic health by improving gut barrier function, reducing inflammation, and regulating glucose and lipid metabolism. This bacterium thrives in the mucus layer of the intestine, where it enhances mucus production, strengthens gut integrity, and reduces systemic inflammation—key factors in metabolic disorders such as obesity and type 2 diabetes. Studies suggest that *A. muciniphila* supplementation can improve insulin sensitivity and glucose homeostasis by modulating gut hormones, including glucagon-like peptide-1 (GLP-1). GLP-1 is a hormone that enhances insulin secretion, suppresses appetite, and slows gastric emptying, all of which contribute to better metabolic control. Research indicates that *A. muciniphila* may increase GLP-1 levels by influencing gut epithelial cells and promoting beneficial microbial interactions, making it a promising probiotic candidate for metabolic disease management.[1,2]

Butyricicoccus pullicaecorum MS24

Butyricicoccus pullicaecorum is a beneficial butyrate-producing next-generation probiotic that supports metabolic health by enhancing gut microbiota balance, reducing inflammation, and improving intestinal barrier function. This bacterium produces butyrate, a short-chain fatty acid (SCFA) that serves as an energy source for intestinal cells, helping to maintain gut integrity and reduce systemic inflammation, which is a key factor in metabolic disorders like obesity and type 2 diabetes. Additionally, *B. pullicaecorum* has been shown to modulate immune responses and suppress the growth of harmful bacteria, contributing to overall gut homeostasis. Its anti-inflammatory effects also help regulate insulin sensitivity and lipid metabolism.[3–5]

Dorea longicatena MS14

Dorea longicatena is a beneficial gut microbe that produces indole-3-acetate. The indole-3-acetate is metabolized by beneficial gut microbes like *Bifidobacterium longum*, *Bacteroides fragilis*, and *Eubacterium halli*. These indole-3-acetate metabolites interact with intestinal cells to release GLP-1 and modulate insulin and blood sugar levels, as well as increase satiety. Research shows that increased levels of *D. longicatena* improves insulin resistance and weight management in type 2 diabetes. It is also related to increased muscle mass in the arms and legs, which also supports healthy metabolism, insulin regulation, cardiovascular health and mobility.[6,7]

Eubacterium rectale MS23

Eubacterium rectale, a beneficial gut bacteria, plays a crucial role in supporting metabolic health by producing short-chain fatty acids (SCFAs), particularly butyrate. Butyrate serves as an energy source for colon cells, helps regulate inflammation, and improves gut barrier integrity, which collectively contribute to better metabolic function. Research indicates that *E. rectale* can help modulate metabolic disorders and metabolic syndrome. Additionally, by promoting a balanced gut microbiome, *E. rectale* supports lipid metabolism.[8,9]

Eubacterium hallii MS25

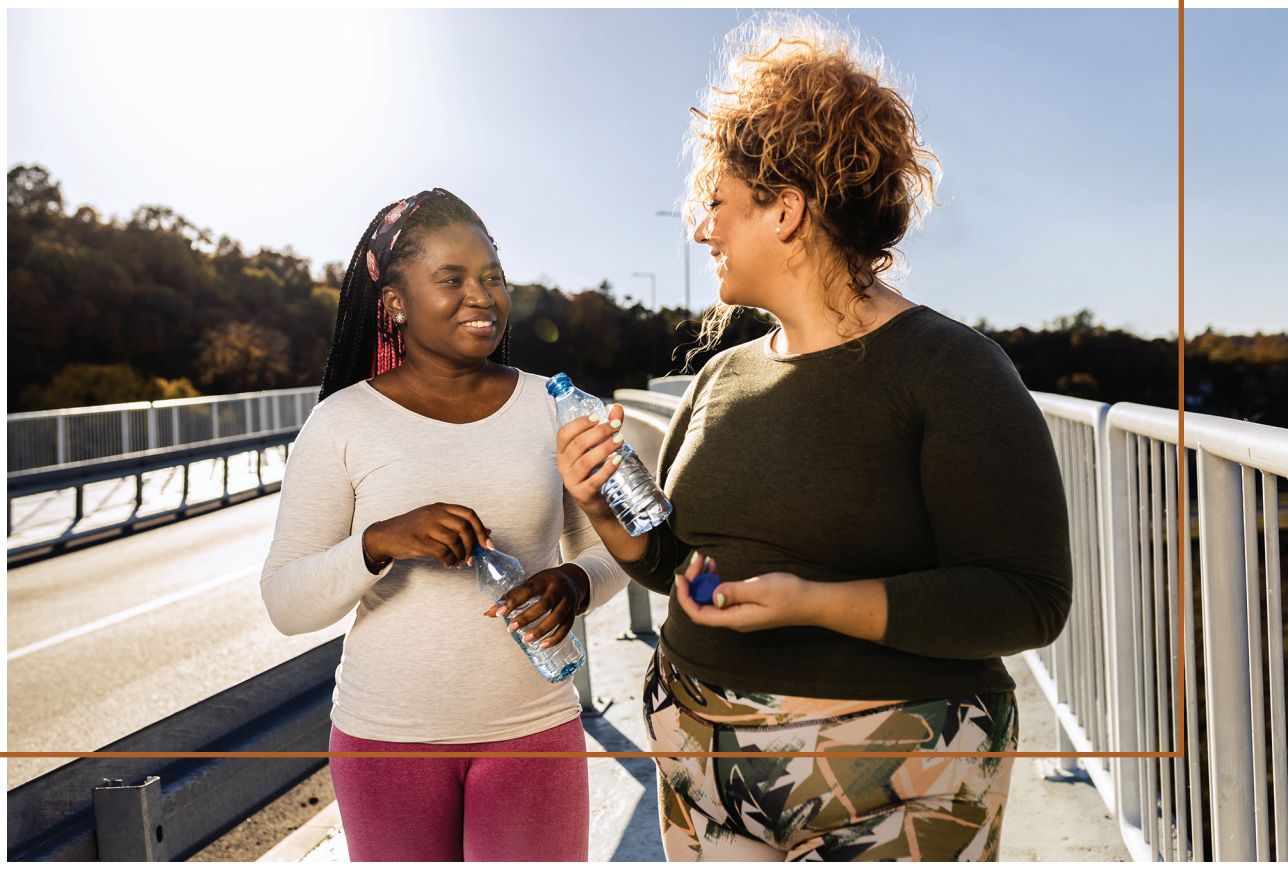
Eubacterium hallii is a beneficial gut bacterium that plays a crucial role in supporting metabolic health by influencing key aspects of energy balance, glucose metabolism, and gut microbiome composition. This probiotic is known for its ability to convert dietary fiber and lactate and acetate produced by Bifidobacterium and Lactobacilli, into beneficial short-chain fatty acids (SCFAs) like butyrate and propionate. These SCFAs contribute to gut barrier integrity, reduce inflammation, and enhance insulin sensitivity, all of which are essential for metabolic health. Additionally, *E. hallii* has been linked to improved lipid metabolism and reduced risk factors associated with metabolic disorders like obesity and type 2 diabetes.[10,11]

Christensenella minuta MS26

Christensenella minuta is a beneficial gut bacterium where research has shown that individuals with a higher abundance of *C. minuta* in their gut microbiome tend to have lower body mass index (BMI) and a reduced risk of metabolic disorders. This probiotic influences energy metabolism by modulating lipid metabolism, improving insulin sensitivity, and reducing inflammation associated with obesity and metabolic syndrome. Additionally, *C. minuta* has been linked to enhanced gut barrier function and reduced pathogenic microbe levels, which may help mitigate systemic inflammation and improve overall metabolic balance. Supplementation with *C. minuta* has been shown to reduce fat accumulation when consuming a high-fat diet.[12–14]

How Metabolic µBiomic Works

These scientifically-backed probiotic strains work together to enhance metabolic health by improving gut barrier integrity, reducing inflammation, and optimizing glucose and lipid metabolism. Key strains like *Akkermansia muciniphila* and *Christensenella minuta* boost insulin sensitivity and support weight management, while butyrate-producing bacteria like *Butyricicoccus pullicaecorum* and *Eubacterium hallii* strengthen gut health and regulate inflammation. Additional strains, such as *Lactobacillus acidophilus* and *Bifidobacterium longum*, further refine the gut microbiome, promoting a balanced metabolism, reduced cravings, and improved energy utilization. This next-generation probiotic powerhouse helps optimize metabolic function, making it a game-changer for long-term metabolic health.



Key Ingredients

***Akkermansia muciniphila* MS22**

Exclusive to Alimentum Labs, *Akkermansia muciniphila* plays a vital role in metabolic health by improving gut barrier function, reducing inflammation, and regulating glucose and lipid metabolism. It enhances mucus production and strengthens gut integrity, which are key in managing obesity and type 2 diabetes. *A. muciniphila* supplementation has shown potential in improving insulin sensitivity and glucose control by modulating gut hormones like GLP-1, making it a promising probiotic for metabolic disease management.[1,2]

***Butyricicoccus pullicaecorum* MS24**

Exclusive to Alimentum Labs, *Butyricicoccus pullicaecorum* is a butyrate-producing probiotic that supports metabolic health by improving gut microbiota balance, reducing inflammation, and enhancing intestinal barrier function. It produces butyrate, which helps maintain gut integrity and reduce inflammation, key in managing obesity and type 2 diabetes. *B. pullicaecorum* also helps modulate immune responses and regulates insulin sensitivity and lipid metabolism.[3–5]

***Dorea longicatena* MS14**

Exclusive to Alimentum Labs, *Dorea longicatena* produces indole-3-acetate, which is metabolized by beneficial gut microbes like *Bifidobacterium longum* and *Bacteroides fragilis*. These metabolites stimulate GLP-1 release, modulating insulin, blood sugar, and increasing satiety. Research shows that *D. longicatena* improves insulin sensitivity, weight management in those with type 2 diabetes, and promotes increased muscle mass, supporting metabolism, cardiovascular health, and mobility.[6,7]

Eubacterium rectale
MS23

Exclusive to Alimentum Labs, *Eubacterium rectale* supports metabolic health by producing short-chain fatty acids, especially butyrate, which fuels colon cells, reduces inflammation, and strengthens gut barrier integrity. Research shows *E. rectale* helps modulate metabolic disorders, metabolic syndrome, and supports lipid metabolism by promoting a balanced gut microbiome.[8,9]

Eubacterium hallii
MS25

Exclusive to Alimentum Labs, *Eubacterium hallii* supports metabolic health by converting dietary fiber and metabolites from from *Bifidobacterium* and *Lactobacilli* into beneficial SCFAs like butyrate and propionate. These improve gut integrity, reduce inflammation, and enhance insulin sensitivity, while also supporting lipid metabolism and reducing the risk of metabolic disorders like obesity and type 2 diabetes.[10,11]

Christensenella minuta
MS26

Exclusive to Alimentum Labs, *Christensenella minuta* is a gut bacterium linked to lower BMI and reduced risk of metabolic disorders. It improves insulin sensitivity, modulates lipid metabolism, and reduces inflammation related to obesity and metabolic syndrome. *C. minuta* also enhances gut barrier function and reduces pathogenic microbes, supporting overall metabolic balance and reducing fat accumulation on a high-fat diet.[12–14]

Lacticaseibacillus casei

Lacticaseibacillus casei, formerly known as *Lactobacillus casei*, improves lipid profiles by preventing increases in LDL cholesterol while enhancing HDL cholesterol levels. Additionally, it aids in glucose metabolism by reducing insulin resistance, a key factor in metabolic disorders. *L. casei* also positively modulates the gut microbiota, increasing beneficial bacteria and reducing harmful ones, which enhances intestinal and metabolic health. Furthermore, it helps maintain muscle mass, particularly in aging individuals, and exhibits strong antioxidant and antimicrobial properties, contributing to overall metabolic stability.[15–17]

Lactococcus lactis

Lactococcus lactis, a beneficial probiotic bacterium, enhances gut microbiota balance by promoting the growth of beneficial bacteria and inhibiting harmful pathogens, thereby improving overall gut health. This probiotic contributes to better digestion and nutrient absorption, which can positively impact metabolism by optimizing energy utilization. Additionally, *L. lactis* produces bioactive compounds such as short-chain fatty acids (SCFAs) and bacteriocins, which help regulate inflammation and maintain intestinal barrier integrity. Studies also suggest that *L. lactis* may support glucose metabolism by modulating insulin sensitivity and regulates lipid metabolism, protecting cardiometabolic health.[18–20]

Lactobacillus delbrueckii ssp. bulgaricus

Lactobacillus bulgaricus, a beneficial probiotic, supports metabolic health by promoting gut microbiota balance, enhancing digestion, and modulating inflammation. Research suggests that this probiotic strain aids in the metabolism of carbohydrates and fats, improving insulin sensitivity and reducing the risk of metabolic disorders such as type 2 diabetes and obesity. Additionally, *L. bulgaricus* produces bioactive compounds, such as short-chain fatty acids (SCFAs) and lactic acid, which contribute to a healthy gut environment and regulate lipid metabolism and cholesterol and triglyceride levels. Its role in reducing oxidative stress and inflammation further supports metabolic function by mitigating factors linked to metabolic syndrome. Regular consumption of *L. bulgaricus*, often found in fermented dairy products like yogurt, has been associated with improved glucose regulation and overall metabolic health.[21,22]

Lactobacillus buchneri

Lactobacillus buchneri is a probiotic bacterium known for its role in promoting metabolic health by enhancing gut microbiota balance and improving digestive efficiency. This strain produces beneficial metabolites, such as lactic acid and acetic acid, which help regulate pH levels in the gut and inhibit harmful bacteria. Additionally, *L. buchneri* has been linked to improved fermentation processes in the gut, leading to better nutrient absorption and energy utilization. Studies suggest that probiotics like *L. buchneri* may contribute to metabolic health by modulating inflammation, reducing oxidative stress, and influencing glucose and lipid metabolism. These effects collectively support a healthier metabolic profile, potentially reducing the risk of metabolic disorders such as obesity, insulin resistance, and dyslipidemia.[23]

Pediococcus acidilactici

Pediococcus acidilactici, a beneficial lactic acid bacterium, supports metabolic health by promoting gut microbiome balance, enhancing digestion, and modulating metabolic pathways. This probiotic has been shown to improve glucose metabolism by reducing insulin resistance and supporting healthy blood sugar levels. Additionally, it aids in lipid metabolism by lowering cholesterol levels and reducing markers of inflammation, both of which are crucial for preventing metabolic disorders like obesity and type 2 diabetes. Research also shows that supplementing with *P. acidilactici* can enhance the beneficial effects of metformin treatment. *P. acidilactici* also enhances gut barrier integrity and regulates the immune response, helping to reduce systemic inflammation—a key factor in metabolic dysfunction.[24]

Bifidobacterium longum

Bifidobacterium longum is a well-researched probiotic known for its beneficial effects on metabolic health. It plays a key role in modulating gut microbiota, reducing inflammation, and improving metabolic markers such as blood sugar and lipid levels. Studies have shown that *B. longum* can enhance insulin sensitivity and reduce oxidative stress, which are crucial for preventing metabolic disorders. It can also reduce some of the negative side effects of obesity. By producing beneficial short-chain fatty acids (SCFAs), *B. longum* also supports energy metabolism and appetite regulation.[25,26]

Levilactobacillus brevis

Levilactobacillus brevis improves gut microbiota balance, which is crucial for metabolic function and overall health. Studies indicate that *L. brevis* can help regulate blood glucose levels by enhancing insulin sensitivity and reducing inflammation. Additionally, this probiotic produces short-chain fatty acids (SCFAs), which contribute to lipid metabolism and energy balance. *L. brevis* has also demonstrated potential in reducing oxidative stress and modulating the gut-brain axis, which can improve appetite regulation.[27–29]

Bifidobacterium animalis ssp *lactis*

Bifidobacterium lactis helps regulate blood sugar levels by improving insulin sensitivity. This probiotic also supports gut health by enhancing the integrity of the intestinal barrier and modulating the gut microbiota, which plays a crucial role in metabolism. Additionally, *B. lactis* has been shown to lower cholesterol levels and reduce markers of metabolic syndrome, such as abdominal fat accumulation and systemic inflammation. It improves inflammatory markers associated with cardiovascular disease and atherosclerosis.[30–32]

Propionibacterium shermanii

Propionibacterium shermanii is a beneficial bacteria that produces many important compounds such as the short-chain fatty acid (SCFA) propionate and vitamin B12. It is also capable of improving gastrointestinal and systemic inflammation, both of which are complicating factors of metabolic diseases and metabolic syndrome.[33]

Lactobacillus acidophilus

Lactobacillus acidophilus is a well-researched probiotic known for its beneficial effects on metabolic health. This probiotic strain helps regulate gut microbiota balance, which plays a crucial role in metabolic functions such as glucose metabolism, lipid regulation, and inflammation control. Studies have also shown that supplementation with L. acidophilus can increase populations of *A. muciniphila* up to 2,000 times, which is critical for metabolic health.[34]

Lacticaseibacillus rhamnosus

Lacticaseibacillus rhamnosus plays a role in improving gut microbiota balance, which is crucial for metabolic function. Studies show that *L. rhamnosus* helps regulate blood glucose levels, reduce insulin resistance, support lipid metabolism, and improve cholesterol levels. A clinical trial demonstrated that supplementation with *L. rhamnosus* can reduce cravings, binges, and mood related issues in patients dieting for weight loss. Additionally, *L. rhamnosus* may reduce systemic inflammation and oxidative stress, both of which contribute to metabolic dysfunction.[35,36]

Lactobacillus gasseri

Lactobacillus gasseri can modulate the gut microbiome to improve metabolism and inflammation profiles. Studies show that supplementation with *L. gasseri* can reduce abdominal fat accumulation.[37]

Saccharomyces cerevisiae

Saccharomyces cerevisiae is a probiotic yeast that is incredibly beneficial to other populations of beneficial gut bacteria. It provides multiple types of compounds that feed beneficial bacteria. It also helps to modulate the immune system and inflammation levels in the gut. All of these mechanisms support robust metabolic health.[38]

Warnings/Contraindications

When used as directed there are no known contraindications for Metabolic µBiomic.

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
- Correct genus and species of probiotic microbes
- Purity

Additional Information

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

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