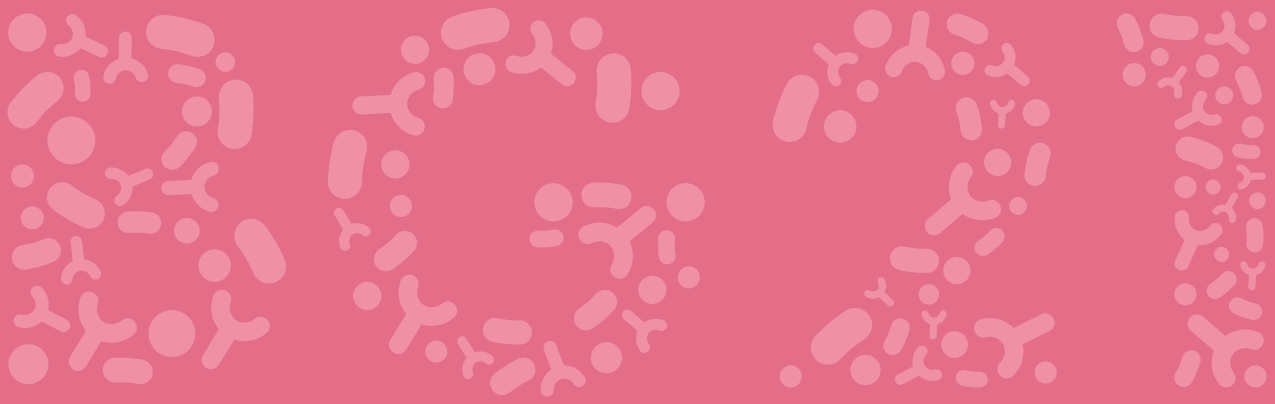
Triple-Synbiotics®

BG·21 bacterial fermented product powder



BIO GENOMICS CO.,LTD

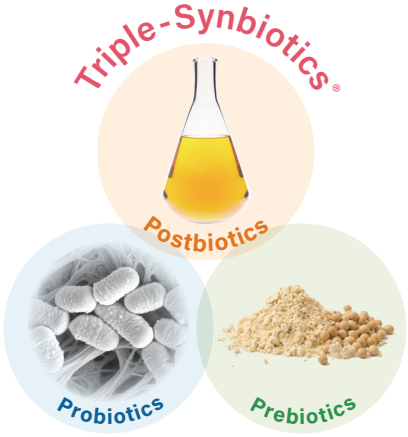
BIOGENOMICS CO.,LTD

Triple-Synbiotics®

BG·21 bacterial fermented product powder

The concept of "Triple-Synbiotics®"

The human intestinal microflora has received considerable interest in recent years, and it is becoming increasingly clear that the gut microbiota plays a role in human health and disease, as well as beauty and aging. Therefore, new products focusing on human microbiota are developed and provided around the world.



Based on our previous research results on intestinal microflora, we have developed "Triple-Symbiotics®," lactic acid bacterial fermented product that combines the beneficial effects of probiotics, prebiotics, and postbiotics.

Probiotics* : Intake of bacteria beneficial to human health.

Prebiotics : Act as food for human microflora, improving the balance of these microorganisms.

Postbiotics : Direct taking metabolic components of intestinal bacteria without host microflora.

**Caution: Do not contain live bacteria in "Triple-Synbiotics®" .*

BG·21 bacterial fermented product powder

BG·21 bacterial fermented product powder, which is "Triple-Synbiotics®", consists of lactic acid bacterial production substance PS-B1®, 21 strains of lactic acid bacteria and bifidobacteria, and soybean dietary fibers.
This product contains abundantly lactic acid bacterial production substance PS-B1®, which has received interest as postbiotics, and provides 517 components from fermentation including short-chain fatty acids and amino acids.

1. Lactic acid bacterial production substance PS-B1® (Postbiotics)

PS-B1® contains 409 components including short-chain fatty acids, amino acids, vitamins, and polyphenols, produced by our co-culture system of lactic acid bacteria and bifidobacteria.

2. 21 strains of lactic acid bacteria and bifidobacteria (Probiotics-like)

BG·21 bacterial fermentation is manufactured using the 16 strains of lactic acid bacteria and the 5 strains of bifidobacteria, selected from our human intestinal strain library of approximately 1000 strains. There are cell bodies and cell wall components of 21 strains in BG·21 bacterial fermented product powder. (Caution: Do not contain live bacteria.)

3. Soybean dietary fibers (Prebiotics)

Our co-culture system of lactic acid bacteria and bifidobacteria uses Japanese organic soybeans containing insoluble and soluble fibers.

Components of BG·21 bacterial fermented product powder

BG·21 bacterial fermented product powder contains 517 components including “short-acid fatty acids” and “amino acids”, etc., identified by metabolomic analysis.

Amino acids（19 types）
alanine, arginine, asparagine, aspartic acid, etc.

Vitamins（7 types）
vitamin B1, vitamin B2, vitamin B5, vitamin B6, etc.

Polyphenols（17 types）
daidzein, genistein, glycitein, etc.

Nucleic acids（11 types）
adenosine, guanosine, thymidine, adenosine monophosphate, etc.

Short-chain fatty acids（3 types）
propionic acid, acetic acid, butyric acid.

Long-chain fatty acids（9 types）
myristic acid, palmitic acid, palmitoleic acid, stearic acid, etc.

Peptides（239 types）
alanylglycine, alanyllysine, arginylarginine, etc.

Other 212 components

Metabolome analysis All metabolites present in living organisms are called "metabolomes", and a method to comprehensively analyze their types and concentrations is called "metabolome analysis".

Evidence of BG·21 bacterial fermented product

Inhibitory effect of acute pollinosis
(*in vivo assay in mice*)

Oral microbiota improvement
(*in vivo assay in mice*)

Manufacturing process

Medium preparation

High-quality Japanese soybean is processed into the medium for 21 strains of bacteria.

The 21 strains

Manufacture using 21 strains selected from our human intestinal strain library of approximately 1000 strains.

Monoculture

The 21 strains of lactic acid bacteria and bifidobacteria are cultured each.

Co-culture

Combined culture of 21 strains from monoculture by combining several mutually compatible strains.

Starter for “PS-B1®”

Cultivate all 21 strains from co-culture as the starter for “PS-B1®”.

Co-fermentation

Our original soy milk medium is placed in an automatically controlled fermentation tank and the starter is added. The co-fermentation is performed while controlling temperature, pH, and DO.

Raw material completion

The ferment is processed into powder to complete “BG·21 bacterial fermented product powder”.

Product specification

Product name	BG·21 bacterial fermented product powder
Minimum order quantity	≥ 1.0 kg
Recommended daily intake	≥ 300 mg
Raw material	BG·21 bacterial fermented product (Made in Japan) (Contain milk and soybean) / Cyclodextrin (or Cyclic oligosaccharide)

Product processing example

Powder

Tablet

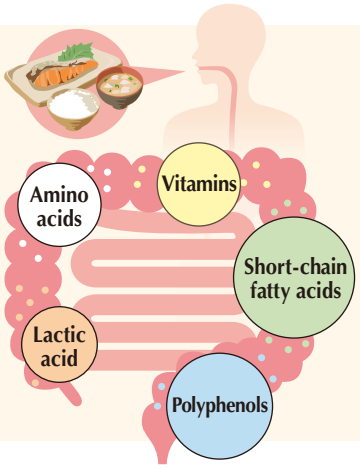
Capsule

Jelly

Typical component 1.

Lactic acid bacterial production substance PS-B1® (Postbiotics)

PS-B1® is the fermentation material of lactic acid bacteria and is manufactured using our co-culture system developed through years of research. Many beneficial effects of PS-B1® have been demonstrated through collaborative research with academic and public institutions. Based on these findings and results, PS-B1® has been patented for "Manufacturing method" , "Lactic acid bacterial production substance" , "Allergic dermatitis suppressant" , and "Systemic allergic response suppressant".



"Lactic acid bacteria metabolic products" are produced every day in your intestines!?

Intestinal bacteria produce "Lactic acid bacteria metabolic products" which are metabolized from our daily foods. Beneficial bacteria for human health in the intestines produce short-chain fatty acids, which are now in the spotlight, as well as amino acids, vitamins, polyphenols, and other components important for health. These metabolites are absorbed into our bodies and affect our health.

Patents

Japanese Patent No. 5918290

Japanese Patent No. 6626869

Collaborative research institutions

- Nagasaki International University
- RIKEN (Institute of Physical and Chemical Research)
- Tokyo University of Technology
- Vocational School of Tokyo Biotechnology
- Kurume University
- Industrial Technology Center of Nagasaki

Major evidence through collaborative research with academic and public institutions

Immunity

Inhibitory effect of "PS-B1®" on cancer cell growth and its application

The effect of "PS-B1®" intake on allergic dermatitis-induced mice

Improvement of the intestinal environment

The potential effect of "PS-B1®" on intestinal bacteria growth

The potential effect of "PS-B1®" on the reduction of colon cancer risk

Improvement of skin structure

Clinical trial on the effect of "PS-B1®" application in skin structure improvement

Influence on bowel movements, stool properties, and skin structure by taking "PS-B1®"

Improvement of bowel movements

Influence on bowel movements, stool properties, and skin structure by taking "PS-B1®"

Diabetes

Suppression of blood glucose elevation by "PS-B1®" intake in non-obese type II diabetes model rats

Metabolism

Clinical trial on the effect of "PS-B1®" intake on the improvement of liver function and lipid metabolism

Liver function

Clinical trial on the effect of "PS-B1®" intake on the improvement of liver function and lipid metabolism

Halitosis

Clinical trial using the mouthwash containing PS-B1® to suppress halitosis

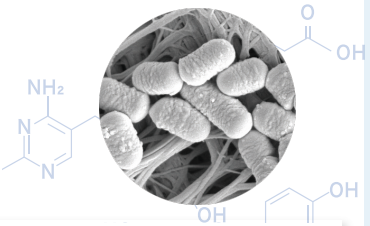
Osteoporosis

The potential osteoporosis prevention effect of PS-B1® intake in mice

Typical component 2.

21 strains of lactic acid bacteria and bifidobacterial （Probiotics-like）

The strains of lactic acid bacteria and bifidobacteria using the manufacture of BG·21 bacterial fermented product powder were selected from our human intestinal strain library of approximately 1000 strains. This material includes bacterial bodies and its wall components of 21 strains in abundance. (Caution: Do not contain live bacteria.)



Lactic acid bacteria（16 strains）

1 *L.acidophilus*
2 *L.gasseri*
3 *L.rhamnosus*
4 *L.plantarum*
5 *L.casei*
6 *L.brevis*
7 *L.paracasei subsp.paracasei*
8 *L.helveticus*
9 *L.delbrueckii subsp.bulgaricus*
10 *L.salivarius*
11 *L.delbrueckii*
12 *L.lactis subsp.lactis*
13 *P.pentosaceus*
14 *E.faecalis*
15 *E.durans*
16 *E.faecium*

Bifidobacteria（5 strains）

17 *B.longum*
18 *B.bifidum*
19 *B.adolescentis*
20 *B.breve*
21 *B.longum subsp.infantis*

Typical component 3.

Soybean dietary fibers （Prebiotics）

Our Japanese organic soybean used for the manufacturing of BG·21 bacterial fermented product contains various nutrient compositions, including high-quality proteins, vitamins, insoluble and soluble fibers, and oligosaccharides. With all these nutrients inherent in soybeans, we have developed a unique soymilk medium for lactic acid bacteria and bifidobacteria. This medium is used to manufacture BG·21 bacterial fermented product.

The Japanese-quality soybean

❶ Organic JAS Certification in Japan

❷ National Organic Program(NOP) certification accepted in the US and EU

Maintaining organic soybean quality with “Ice temperature system”

Soybeans deteriorate quickly as soon as they are harvested and it is difficult to produce a quality stable medium for bacteria. To avoid this problem, we use the “Ice temperature system” for the storage of soybeans.

Normal refrigerated
Germination ratio 66.7%

Ice temperature system
Germination ratio 94.0%

Using the “Ice temperature system”, soybeans can be stored in high-quality conditions as the germination rate remains at 90% even one year after harvest.

株式会社バイオジェノミクス

Corporate name ： BIOGENOMICS Co., Ltd.

URL ： https://biogenomics.co.jp

Address ： 693-1, Imazumachi, Omura,
Nagasaki 856-0818, Japan

BG2403-1E