

PERMEABILITY FACTORS™ INTESTINAL PERMEABILITY COMPLEX

Fortifying the Gut Barrier

A healthy, well-functioning intestinal mucosa is the body's primary line of defense. Both internal and external factors can challenge the integrity of the gastrointestinal mucosa. For example, the presence of cell mediators and free radicals can directly influence the health of the gut barrier. Additionally, certain foods and/or prescription medications can also have an impact in sensitive individuals.

Effective Permeability Support*

Permeability Factors provides nutrients, phospholipids, and essential fatty acids that promote healthy gut pH, balanced microflora throughout the GI tract, and appropriate transport of nutrients across the intestinal membranes while preventing the passage of unwanted substances.* Widely used by integrative practitioners, the ingredients in Permeability Factors support healthy intestinal permeability and gastrointestinal function.*

PERMEABILITY FACTORS

- Long history of use in clinical practice
- Ideal adjuvant to Oxyperm™ intestinal protection
- A part of our GI Restoration Program



wheat free



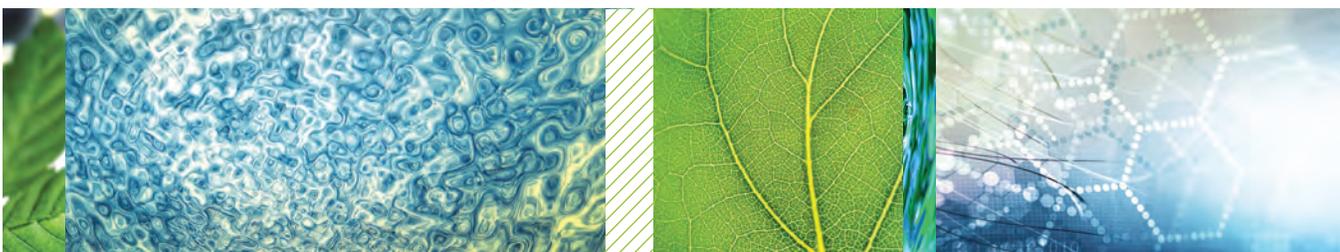
gluten free



soy free



dairy free



PERMEABILITY FACTORS™

How It Works

The structure and function of the layers of gastrointestinal tract can be challenged by a wide variety of factors – both internal and external. By providing proper nourishment and stimulating immune responses, Permeability Factors is designed to protect and rebuild intestinal mucosa to support gut barrier function and intestinal permeability.* As such, Permeability Factors is intended to promote a healthy balance of microflora in the GI tract and support the healthy transport of nutrients across the intestinal membranes.*

Key Ingredients

Vitamin E is an antioxidant, which helps stabilize cellular membranes.* As the principal antioxidant of lipid structures, such as those found in intestinal cell membranes,* vitamin E can help protect cell membranes from oxidative damage.* Administration has also been shown to increase the concentration of immune cells located in the folds of the small intestine.*¹

L-Glutamine is an amino acid that protects the integrity of intestinal mucosa.* It is a conditionally essential amino acid used by the enterocytes, cells found in the small intestines that are involved in nutrient absorption.*² Multiple well-designed clinical studies have shown that L-glutamine restores healthy gut barrier function and permeability, which can be challenged during natural nutrient breakdown, a process called catabolism.*³⁻⁵ L-glutamine is involved not only in supporting the body's natural cytokine response, but also in enhancing immune system function.* By maintaining secretory immunoglobulin A (IgA) levels, L-glutamine supports healthy microbial balance in the GI tract, which can be altered during catabolism.*^{6,7} L-glutamine also helps soothe the mucosal lining of the stomach and small intestines.*

N-Acetyl D-Glucosamine (NAG) is a key component in the production of intestinal mucosa.* It is an important building block of the glycoprotein, glycocalyx.* Glycocalyx makes up the intestinal mucosa, which helps protect the intestinal wall from contact with digestive enzymes and acids, while allowing for the selective absorption of nutrients.* Research has shown that supplementation with NAG increases the secretion of this protective mucous.*⁸ Evidence also suggests that healthy intestinal mucosa plays a critical role in balancing the body's natural cytokine response.*⁹ NAG has also been shown to support a healthy balance of microflora throughout the intestines.*¹⁰

Gamma-Linolenic Acid (GLA) supports the body's natural cytokine response.* Derived from borage seed oil, gamma-linolenic acid is a well-known omega-6 fatty acid. Due to its ability to enhance the body's natural cytokine response and its incorporation into cell wall membranes, GLA has been shown to support healthy gut barrier function.*^{11,12} One study found that administration enhanced healthy permeability of intestinal cells 8.7 fold.*¹³

Gamma-Oryzanol protects GI mucosa by maintaining a healthy acid balance.* It is obtained from rice bran and contains ferulic acid and phytosterols. Ferulic acid supports the body's cytokine response.* It protects critical cellular molecules from oxidative stress and preserves the physiological integrity of cells exposed to stress.*¹⁴ Gamma-oryzanol has been shown to support the gastrointestinal tract and reduce symptoms of occasional indigestion.* In preclinical studies, gamma-oryzanol and ferulic acid have been studied for their effects on the lining of the stomach and the modulation of gastric secretions and the regulation of gastrointestinal motility.*^{15,16}

Supplement Facts

| Serving Size 2 softgels | | Servings per container 45 |
|---|--------|---------------------------|
| Amount per 2 softgels | | %DV |
| Calories | 10 | |
| Protein | <1 g | 1%† |
| Vitamin E (as d-alpha tocopheryl acetate) | 11 IU | 37% |
| L-Glutamine | 500 mg | ** |
| NAG (N-Acetyl D-Glucosamine) (crab and shrimp shells) | 250 mg | ** |
| Sunflower Lecithin Proprietary Blend including Phosphatidylcholine | 170 mg | ** |
| Gamma-Linolenic Acid (from borage seed oil) | 133 mg | ** |
| Gamma Oryzanol (from rice bran oil) | 66 mg | ** |

†Percent Daily Values (DV) are based on a 2,000 calorie diet.

**Daily Value not established.

Other Ingredients: gelatin, safflower oil, glycerin, purified water, beeswax, caramel color, titanium dioxide color

Recommendations: Take 1 or 2 softgels three times daily, or as recommended by your healthcare professional.

Caution: If pregnant, nursing, or taking prescription drugs, consult your healthcare professional prior to use.

Contains No: salt, yeast, wheat, gluten, soy, dairy products, artificial flavors or preservatives.

Integrative Therapeutics

90 CT - 136013

Phosphatidylcholine is a phospholipid that strengthens intestinal cell membranes.* Phosphatidylcholine is a major component of cellular membranes.* Research has shown that supplementation protects and restores healthy gastrointestinal mucosa by strengthening the mucous- phospholipid layer.* Because of its unique structure, phosphatidylcholine maintains not only the strength, but also the fluidity of membranes, which is important for healthy nutrient transport.*¹⁷ Studies have also shown that phosphatidylcholine plays a role in neutralizing free radicals and in supporting the body's natural cytokine response in the GI tract.*^{18,19}

References

1. Khan MZ, Akter SH, Islam MN, Karim MR, Islam MR, Kon Y. *Anat Histol Embryol*. 2008 Feb;37(1):52-9.
2. Fleming t, ed. *PDR® for Nutritional Supplements*. Montvale, NJ: Medical Economics company, Inc; 2001: 261-5.
3. Lima NL, Soares AM, Mota RM, Monteiro HS, Guerrant RL, Lima AA. *J Pediatr Gastroenterol Nutr*. 2007 Mar;44(3):365-74.
4. Li Y, Yu Z, Liu F, tan L, Wu B, Li J. *Tumori*. 2006 Sep-Oct;92(5):396-401.
5. Lima AA, Brito LF, Ribeiro HB, Martins Mc, Lustosa AP, Rocha EM, Lima NL, Monte cM, Guerrant RL. *J Pediatr Gastroenterol Nutr*. 2005 Jan;40(1):28-35.
6. tang ZF, Ling YB, Lin N, Hao Z, Xu RY. *World J Gastroenterol*. 2007 Apr 21;13(15):2223-8.
7. Quan ZF, Yang c, Li N, Li JS. *World J Gastroenterol*. 2004 Jul 1;10(13):1992-4.
8. Deters A, Petereit F, Schmidgall J, Hensel A. *J Pharm Pharmacol*. 2008 Feb;60(2):197-204.
9. Rhoads JM. *Dig Dis Sci*. 1988;33(11):1359-63.
10. Ghannoum MA. *Microbios*. 1991;67:95-105.
11. Fleming t, ed. *PDR® for Nutritional Supplements*. Montvale, NJ: Medical Economics company, Inc; 2001: 171-4.
12. Kapoor R, Huang YS. *Curr Pharm Biotechnol*. 2006 Dec;7(6):531-4.
13. Usami M, Komurasaki t, Hanada A, Kinoshita K, Ohata A. *Nutrition*. 2003 Feb;19(2):150-6.
14. Srinivasan M, Sudheer AR, Menon VP. *J Clin Biochem Nutr*. 2007 Mar;40(2):92-100.
15. Cicero AF, Gaddi A. *Phytother Res*. 2001 Jun;15(4):277-89.
16. Badary OA, Awad AS, Sherief MA, Hamada FM. *World J Gastroenterol*. 2006 Sep 7;12(33):5363-7.
17. Fleming t, ed. *PDR® for Nutritional Supplements*. Montvale, NJ: Medical Economics company, Inc; 2001: 351-6.
18. Ghyczy M, torday c, Kaszaki J, Szabó A, czóbel M, Boros M. *Shock*. 2008 May 2.
19. Demirebilek S, Gürses I, Sezgin N, Karaman A, Gürbüz N. *J Pediatr Surg*. 2004 Jan;39(1):57-62.

*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THESE PRODUCTS ARE NOT INTENDED TO DIAGNOSE, TREAT, CURE, OR PREVENT ANY DISEASE.