

# SBI Protect®



## CLINICAL APPLICATIONS

- Provides Concentrated Immunoglobulins to Enhance Mucosal Immunity
- Helps Maintain Microbial Balance
- Supports GI Barrier Health and Integrity
- Helps Maintain Normal Inflammatory Balance



## IMMUNE HEALTH

SBI Protect® is the only purified, dairy-free source of immunoglobulin G (IgG) available as a dietary supplement. Serum-derived bovine immunoglobulins (SBI) provide the highest IgG concentration available for GI and immune challenges where allergens are a significant concern. Pure IgG helps to maintain a healthy intestinal immune system by binding a broad range of microbes and toxins within the gut lumen. SBI Protect® provides 1,150 mg IgG in a four-capsule serving.

### Overview

Autoimmunity is on the rise globally, and recent research demonstrates a connection between autoimmunity and intestinal permeability. The discovery that the gut barrier plays a key role in immune health fueled the search to strengthen it. In that search, researchers found that the binding capabilities of immunoglobulins have a positive effect on gut barrier function.<sup>1</sup> Immunoglobulins bind microbes and toxins in the GI tract and eliminate them prior to immune system activation. As these unwanted triggers are removed, it resets healthy immune tolerance and builds a stronger barrier to the external environment.

### SBI and GI Health

The GI tract acts as the gateway to the rest of the body, making the health of the gut barrier critical to overall health. Environmental triggers like poor diet, high stress and toxin exposure can lead to GI challenges. In practice, probiotics are a natural choice for supporting beneficial bacteria in the gut, but supplementation to eliminate unwanted microbes should also be considered. SBI has been shown to bind microbes and toxins, further enhancing microbiome balance and facilitating gut barrier strength.<sup>2,3</sup> Broad-spectrum binding capabilities

(See Table 1) demonstrate the positive influence of non-allergenic forms of immunoglobulins.<sup>1</sup>

As seen in several studies, SBI has the potential to bind many types of microbes and toxins.<sup>1</sup> This binding and elimination decreases microbe and toxin encounters by the immune system and resets immune tolerance.<sup>2,3</sup>

### SBI and Immune Health

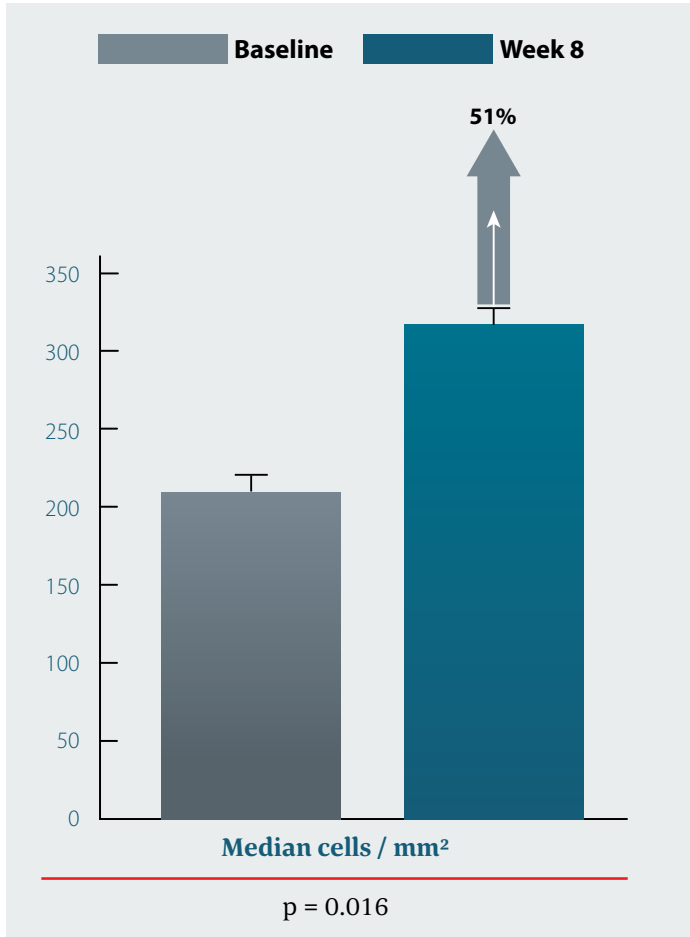
Occasionally, the immune system becomes overactive and immune tolerance drops. When immune tolerance is lost, the checks and balances of antibody production can be affected. To reestablish immune tolerance and appropriate activation, the burden on the immune system must be reduced. Reducing the reasons to respond allows the tissue to maintain normal inflammatory balance and creates an environment for normal tissue repair and immune reconstitution.<sup>4-9</sup>

**Table 1: Serum-Derived Bovine Immunoglobulin Binding Capacity**

Microbial Component	Description
Lipopolysaccharide (LPS)	Bacterial cell wall component
<i>C. difficile</i> Toxin A and B	<i>C. diff</i> virulence factors
Peptidoglycan	Bacterial cell wall component
Flagellin	Antigenic bacterial component
Zymosan	Fungal cell wall component
c-di-AMP	Bacterial messenger molecule
CpG	Bacterial DNA motif
Pam3CSK4	Bacterial lipoprotein
MDP	Bacterial cell wall component

† These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

**Figure 1: Duodenal GALT Immune Reconstitution with SBI<sup>†</sup>**



In studies evaluating the effect of SBI on immune function, subjects showed positive outcomes in several areas, including inflammatory balance, gut barrier function and immune cell counts.<sup>7-9</sup> In an open-label human clinical study, GI-challenged patients were given 2.5 g SBI twice daily. They had increased CD4+ counts in the duodenum after eight weeks, indicating a regenerative effect on the tissue and immune function in the intestines. In a large, multicenter, placebo-controlled follow-up study, SBI led to significant increases in peripheral CD4+ cells when compared to placebo-controlled subjects.<sup>8</sup> Findings of immune reconstitution in these patient demographics is promising for the future of establishing a healthy immune system in patients with GI and immune challenges.

Supplement Facts <sup>v1</sup>		
Serving Size 4 Capsules		
Servings Per Container 30		
	Amount Per Serving	% Daily Value
Calories	10	
Protein	2 g	
Sodium	15 mg	<1%
Serum-Derived Bovine Immunoglobulin Concentrate (ImmunoLin <sup>®</sup> )	2.42 g	*
Immunoglobulin G (IgG)	1.15 g	*

\* Daily Value not established.

Other Ingredients: Hypromellose (Natural Vegetable Capsules) and Magnesium Stearate.

**ID# 265120 120 Capsules**

**Directions**

4 capsules per day or as recommended by your health care professional.

**Does Not Contain**

Gluten, corn, yeast, artificial colors or flavors.

**Cautions**

If you are pregnant or nursing, consult your health care professional before taking this product.

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## References

1. Detzel CJ, Horgan A, Henderson AL, Petschow BW, Warner CD, Maas KJ, Weaver EM. Bovine Immunoglobulin/Protein Isolate Binds Pro-Inflammatory Bacterial Compounds and Prevents Immune Activation in an Intestinal Co-Culture Model. *PLOS One* 10(4) April 2015; DOI:10.1371/journal.pone.0120278
2. Jasion VS, Burnett BP. Survival and Digestibility of Orally-Administered Immunoglobulin Preparations Containing IgG Through the Gastrointestinal Tract in Humans. *Nutrition Journal* 2015;14:22 DOI 10.1186/s12937-015-0010-7.
3. Petschow BW, Burnett B, Shaw AL, Weaver EM, Klein GL. Serum-derived bovine immunoglobulin/protein isolate: postulated mechanism of action for management of enteropathy, *Clin Exp Gastroenterology*. 2014;7:181- 190.
4. Perez-Bosque A, Miro L, Maijo M, Polo J, Campbell J, Russell L, et al. Dietary intervention with serum-derived bovine immunoglobulins protects barrier function in a mouse model of colitis. *American journal of physiology Gastrointestinal and liver physiology*. 2015;308(12):G1012-8.
5. Henderson AL, Brand MW, Darling RJ, Maas KJ, Detzel CJ, Hostetter J, et al. Attenuation of Colitis by Serum-Derived Bovine Immunoglobulin/Protein Isolate in a Defined Microbiota Mouse Model. *Digestive diseases and sciences*. 2015;60(11):3293-303.
6. Wilson D, Evans MD, Weaver E, Shaw AL, Klein GL. Evaluation of Serum-Derived Bovine Immunoglobulin Protein Isolate in Subjects with Diarrhea-Predominant Irritable Bowel Syndrome. *Clinical Medicine Insights: Gastroenterology*. 2013;6:49-60.
7. Asmuth DM, Ma ZM, Albanese A, Sandler NG, Devaraj S, Knight TH, et al. Oral Serum-Derived Bovine Immunoglobulin Improves Duodenal Immune Reconstitution and Absorption Function in Patients with HIV Enteropathy. *Aids*. 2013;27:2207-17.
8. Asmuth DM, Somsouk M, Hunt P, Ma ZM, Miller CL, X.D., Hinkle J, et al. Serum-Derived Bovine Immunoglobulin Protein Isolate Increases Peripheral and Mucosal CD4+ T-cell counts in Patients with HIV Enteropathy. 8th IAS Conference on HIV Pathogenesis, Treatment and Prevention (AIDS 2015); MOAA02; Vancouver, Canada 19-22 July: [http://www.ias2015.org/WebContent/File/IAS\\_2015\\_\\_MED2.pdf](http://www.ias2015.org/WebContent/File/IAS_2015__MED2.pdf); 2015.
9. Bosi P, Casini L, Finamore A, Cremokolini C, Meriardi G, Trevisi P, et al. Spray-dried plasma improves growth performance and reduces inflammatory status of weaned pigs challenged with enterotoxigenic *Escherichia coli* K88. *Journal of animal science*. 2004;82(6):1764-72.