Biome IBS™ Probiotic

Mechanism of Action

FOR PROFESSIONAL REFERENCE ONLY

MECHANISM OF ACTION

Irritable Bowel Syndrome

IBS is a common functional gastrointestinal disorder, affecting around 11% of the world's population. The symptoms of IBS include bloating, flatulence, abdominal pain, or discomfort, associated with a change in bowel habits (diarrhea, constipation, or alternating between the two). The pathogenesis of IBS is not clearly understood, is almost certainly multifactorial, and is affected by genes, the environment, and psychological factors.

The key features of IBS pathophysiology include:

- Alterations in the intestinal microbiota (dysbiosis)
- Visceral hypersensitivity
- Increased intestinal permeability
- Altered gastrointestinal motility
- Immune activation
- Dysfunction in the gut-brain axis

There is good evidence that alterations to the gut microbiota is a predominant factor in IBS pathophysiology, as evidenced by:

- IBS patients have alterations in their gut microbiota, compared to healthy controls
- A study which transferred gut microbiota from IBS patients to healthy rats (via faecal microbial transplantation) resulted in some of the key features of IBS in the rats, including colonic hypersensitivity
- Post-infectious IBS is a common outcome of acute gastroenteritis
- Many IBS patients respond to rifaximin, an oral antibiotic which is very poorly absorbed from the gastrointestinal tract (and hence acts locally within the lumen of the GI tract)
- Interventions with probiotics have been shown to relieve the symptoms of IBS

The mechanism of action by which probiotics exert a therapeutic effect in patients with IBS is likely related to:

- Inhibition of mucosal colonisation by pathogenic microorganisms via the production of antimicrobial substances and interfering with mucosal adhesion
- Secretion of bacteriocidins and chemical defensins that degrade bacterial toxins
- Supporting intestinal barrier integrity and function, through the regulation of tight junction proteins
- Reducing low-grade inflammation by cytokine and Toll-like receptor modulation
- Improving gastrointestinal motility

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