

APPLICATION BRIEF



Antibiotic therapy targets infection-causing, pathogenic bacteria, but also commensal bacteria in the host.

LGG® For Antibiotic Therapy*

Lactobacillus rhamnosus GG (LGG®) is the most extensively studied probiotic strain since its identification in 1985. Numerous human clinical trials have shown that supplementation with LGG® offers a variety of gastrointestinal benefits. Clinical data demonstrates that LGG® reduces the incidence and duration of diarrhea resulting from dysbiosis due to viral and bacterial intestinal infections,¹ travel to foreign countries^{2,3} and side effects of antibiotics.^{4-8,12}

The Impact of Antibiotics on the Intestinal Microbiome

Antibiotic therapy targets infection-causing, pathogenic bacteria, but also commensal bacteria in the host. Antibiotics disturb the balance of the gut microbiota.^{7,8} Uncomfortable side effects stemming from the imbalance, such as diarrhea, vomiting, bloating, and taste disturbances, can lead some patients to discontinue their antibiotic regimen, resulting in a high risk of treatment failure and contributing to the emergence of antibiotic resistant strains.⁹

Different classes of antibiotic therapy disturb the balance of the gut microbiome to different degrees depending on several factors:

- Spectrum of the agent
- Mechanism of action
- Dose
- Duration of treatment
- Route of administration

Commonly prescribed antibiotics can heavily impact the abundance and diversity of commensal intestinal bacteria and promote the emergence of antibiotic resistant strains.^{10,11} The table below indicates the impact of several classes of antibiotics on commensal intestinal bacteria, assessed using cultivation and MIC values.

ANTIBIOTIC IMPACT ON EMERGENCE OF RESISTANT STRAINS IN:

	Anaerobes	Aerobic Gram positive cocci	Enterobacteria	Enterocci	Enterobacteria
Amoxicillin/clavulanic acid	NC	↑	↑	NC	NC
Ciprofloxacin (high conc. in faeces)	NC	NC	↓↓	NC	+
Clarithromycin/metronidazole	↓	↑	↓	+	+
Cephalosporins (high conc. in faeces)	NC	↑	↓↓	NC	+
Clindamycin	↓↓		↑	+	+
Vancomycin	↓	↑↓	NC	+	+

↓↓ = strong suppression; ↓ = moderate suppression; ↑ = increase in number
↑↓ = positive and negative effects seen in different studies, NC = no change detected.
+ = resistant strains detected

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LGG® The Proven Professional Probiotic

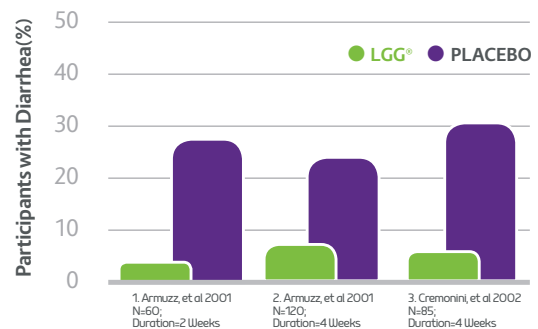


LGG® Reduces the Incidence and Duration of Diarrhea Resulting from Antibiotics*

Multiple clinical trials have demonstrated the efficacy of LGG® in reducing several antibiotic-associated side effects. By outcompeting pathogens for resources and binding sites on the intestinal mucosa, LGG® forms a protective barrier, produces an antibacterial substance against pathogens, and improves antibiotic treatment tolerability by reducing the incidence and severity of antibiotic associated diarrhea (AAD).⁴⁻⁶

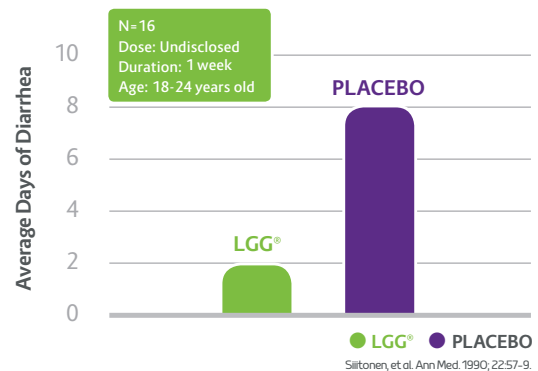
LGG® Helps Reduce the Incidence of Diarrhea During Antibiotic Therapy*

LGG® improves antibiotic treatment tolerability by reducing several side effects associated with antibiotic regimens, including diarrhea.⁴⁻⁶ A series of three clinical trials demonstrate the efficacy of LGG® (all at 12 billion CFU/d) in reducing the incidence of AAD related to antibiotic cocktails prescribed to patients with *H. pylori* infection. Data also supports the use of LGG® for additional antibiotic-related side effects, such as nausea, taste disturbance, and bloating (data not shown).



LGG® Reduces the Duration of Diarrhea During Erythromycin Treatment*

LGG® has been clinically shown to colonize the intestines and to improve antibiotic treatment tolerability by reducing the duration of diarrhea associated with a single antibiotic therapy, such as Erythromycin.^{1,12}



References

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*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.