



## DS-01® Daily Synbiotic

24 Probiotic Strains + Polyphenol-Based Prebiotic • 53.6 Billion AFU

Developed from a deep understanding of the complex interactions within the microbiome, DS-01® confers benefits in and beyond the gut. DS-01® is a broad-spectrum synbiotic formulated with a polyphenol-based prebiotic and 24 clinically and scientifically-studied probiotic strains, including genera *Lactobacillus*, *Lactiplantibacillus*, *Lacticaseibacillus*, *Limosilactobacillus*, *Ligilactobacillus*, and *Bifidobacterium*.\*

### Standards in Quality, Safety, and Efficacy

- Clinically-studied benefits including digestive health, gut-immune function, gut barrier integrity, dermatological health, and cardiovascular health\*
- Patented, non-fermenting prebiotic (punicalagins) compatible with a low FODMAP diet
- Proprietary capsule-in-capsule ViaCap® delivery system evaluated using SHIME® testing to ensure maximum survivability
- Tested for 500 unique pesticides and 14 classes of allergens defined by the European Food and Safety Authority (EFSA)
- No-skip-lot third-party testing for potency, purity, and contaminants

## Clinical Research

DS-01<sup>®</sup> stands on a foundation of rigorous scientific validation, and is formulated with research-derived, biologically active strain and prebiotic dosages. Their research protocols and endpoints are designed with distinguished scientific and medical key opinion leaders.

### Strain-Specific<sup>1-24</sup>

Ten clinical and fourteen pre-clinical trials underpin DS-01<sup>®</sup>'s strain-specific benefits.

### Prebiotic-Specific<sup>25</sup>

A double-blind, randomized, placebo-controlled trial (DBRCT) supports DS-01<sup>®</sup>'s non-fermenting prebiotic benefits for the gut-skin axis.

### Composition-Specific<sup>26-28</sup>

Seed's work fills gaps in existing literature and enhances patient care. They have completed three DBRCTs on DS-01<sup>®</sup>, including one under an investigational new drug (IND) application to explore the full clinical potential of DS-01<sup>®</sup>.

### Mechanistic Highlights<sup>5,7,26</sup>

DS-01<sup>®</sup> supports healthy gut barrier integrity during times of occasional stress. Preclinical and clinical evidence demonstrates strains in DS-01<sup>®</sup> support tight junction integrity and healthy bacterial toxin (LPS) exclusion in the digestive tract.\*



## Clinically-Studied Benefits

### Digestive Health<sup>\*1-4,27</sup>

- Provides support from occasional digestive discomfort, bloating, and intermittent constipation\*
- In a 30-day DBRCT, the probiotic cohort experienced support for occasional abdominal bloating, sense of complete emptying, and discomfort.\*
- In a 12-week DBRCT with a 4-week placebo run-in period in individuals with functional digestive symptoms and abdominal discomfort, conducted under an IND application by Dr. Lembo of Harvard University, DS-01<sup>®</sup> participants were more likely to have optimal bowel regularity and ease. Those experiencing mixed digestive function and "moderate" baseline discomfort who took DS-01<sup>®</sup> had significant improvements in abdominal comfort compared to the placebo group.\*

### Gut Barrier Integrity<sup>\*5-7,26</sup>

- Supports integrity of the intestinal barrier and reinforces healthy tight junctions *in vitro*\*
- In a 12-week DBRCT, the probiotic group experienced significantly supportive modulation in circulating LPS, a marker of increased epithelial permeability, the effect continued two months after cessation of the intervention.\*
- In a 12-week DBRCT among healthy individuals undergoing a 7-day regimen of broad-spectrum antibiotics (metronidazole and ciprofloxacin), concurrent DS-01<sup>®</sup> intake significantly promoted intestinal epithelial barrier integrity, evidenced through lactulose testing.\*

### Gut Immune Axis<sup>\*4-6,8-21</sup>

- Supports healthy gut-immune function and responses to occasional GI stressors\*
- In a 12-week DBRCT, participants showed a favorable alteration in microbial translocation across the intestinal epithelial barrier and favorable circulating Th17:Treg and Th1:Th2 ratios. These findings indicate an appropriately responsive immunologic profile.\*

### Gut Microbial Balance<sup>\*10-12,22,26</sup>

- Encourages stability, diversity, and optimal bacteria levels within the gut microbiota\*

### Dermatological Health<sup>\*5,16,17</sup>

- Reinforces a healthy gut-skin axis to promote clear skin for improved comfort, appearance, and may help smooth fine lines and wrinkles\*
- In a 12-week DBRCT with adults experiencing functionally and aesthetically bothersome skin, individuals showed smoother, clearer, healthier-appearing skin compared to the placebo group.\*

### Cardiovascular Health<sup>\*13-15,26</sup>

- Supports healthy lipid metabolism, and an optimal balance of healthy cholesterol\*
- In a 12-week DBRCT with healthy participants, probiotic participants maintained normal LDL-C baseline levels, while those in the placebo group experienced an increase in LDL-C. The probiotic group had a statistically significant reinforcement of HDL cholesterol.\*
- In a 12-week DBRCT among healthy individuals undergoing a 7-day regimen of broad-spectrum antibiotics (metronidazole and ciprofloxacin), concurrent DS-01<sup>®</sup> intake produced favorable shifts in cardiovascular health markers.\*

### Micronutrient Synthesis<sup>\*18-21</sup>

- Supports intestinal synthesis of B vitamins involved in methyl group metabolism, including folate\*
- In a 30-day randomized comparison trial with healthy adults, participants showed a higher concentration of folate in their feces than participants taking other probiotic strains selected for their *de novo* folate synthesizing capabilities.\*

## A New Standard in Probiotics

### ViaCap® 2-in-1 Capsule Delivery Technology

Seed's patent pending capsule-in-capsule ViaCap® delivery technology is engineered to shield against stomach acid, digestive enzymes, and bile salts for a precision release of maximum potency prior to entering the colon. ViaCap® also serves as a barrier to oxygen and moisture, and buffers against heat stress to minimize impact from fluctuating shipping and storage conditions.



### Prebiotic Outer Capsule

Microbiota-Accessible Polyphenolic Precursors™ (MAPP™) is a proprietary, plant-based, prebiotic compound concentrated from Indian pomegranate, containing punicalagins that are biotransformed into powerful metabolites, including urolithin A. Compatible with a low FODMAP diet.\*

### Probiotic Inner Capsule

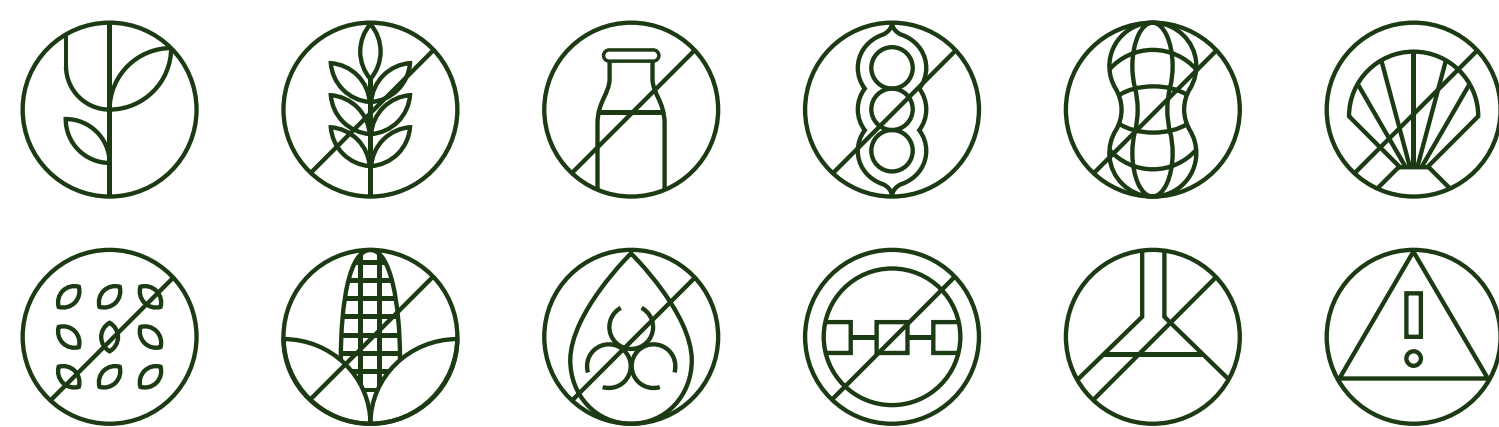
With 24 distinct, clinically and scientifically studied strains, representing 12 species, DS-01® includes significantly more unique (non-redundant) and total (redundant) microbial genes compared to other probiotics, providing high versatility and functionality to deliver broad-spectrum benefits to your patients.

## Rigorous Quality and Allergen Testing

Seed conducts extensive verifications on DS-01®, including a suite of third-party testing throughout the manufacturing process. Their battery of tests includes:

- Potency (AFU)
- Survivability (SHIME®)
- Contaminants
- Extended allergen panel (all 14 EFSA-defined classes)
- Thermostability (temperature)
- Whole-genome sequencing

With 50+ quality assurance and quality control (QA/QC) checkpoints, Seed monitors purity under both U.S. and European protocols (including cGMP and HACCP) throughout the production cycle. This means they extensively test their ingredients prior to encapsulation, and each batch after manufacture.



Vegan, gluten-free, and tested for: dairy, soy, nuts, shellfish, sesame, corn and glyphosate/AMPA. No Binders. No Preservatives. Prop. 65 compliant.

### AFU Viable Cell Count

Seed measures viable cell count in AFU, or active fluorescent units, the most advanced and precise enumeration method for probiotics today. AFU is measured with flow cytometry, a process where probiotic cells are tagged with fluorescent “markers” and counted by a laser as they pass through a tube. Through AFU, they are able to calculate precise measurement of all viable cells, including ones that are efficacious, but not necessarily culturable (and therefore would not be counted in a traditional plated CFU measurement). CFU stands for colony forming units, and is reflected in plating, a classical microbiology technique that has been used since the 1800s. This technique shows the number of “colonies” that are formed on a plate through a series of dilutions. Today, the use of flow cytometry and its unit of measure (AFU) not only allows them to determine viable cell counts, but also allows them to precisely measure each organism in a complex community or multi-species, multi-strain formulation. Traditional plating techniques (CFU) are extremely variable when enumerating multi-species, can vary up to 50% between batch lots, require different plating ingredients for each species (and sometimes strain), and are best used for single strain, rather than multi-strain, synbiotics.

### Superior Gene Richness and Abundance

Genes represent potential functionality, provide the foundation of probiotic effects, and genetic diversity is a well-established trait of successful, adaptive organisms. Compared to 14 leading competitor products, DS-01® features a superior genome with both unique and redundant genes, enabling broad microbial functionality, and enhanced potential for engraftment in the human gut.

### A 2-in-1 Probiotic + Prebiotic

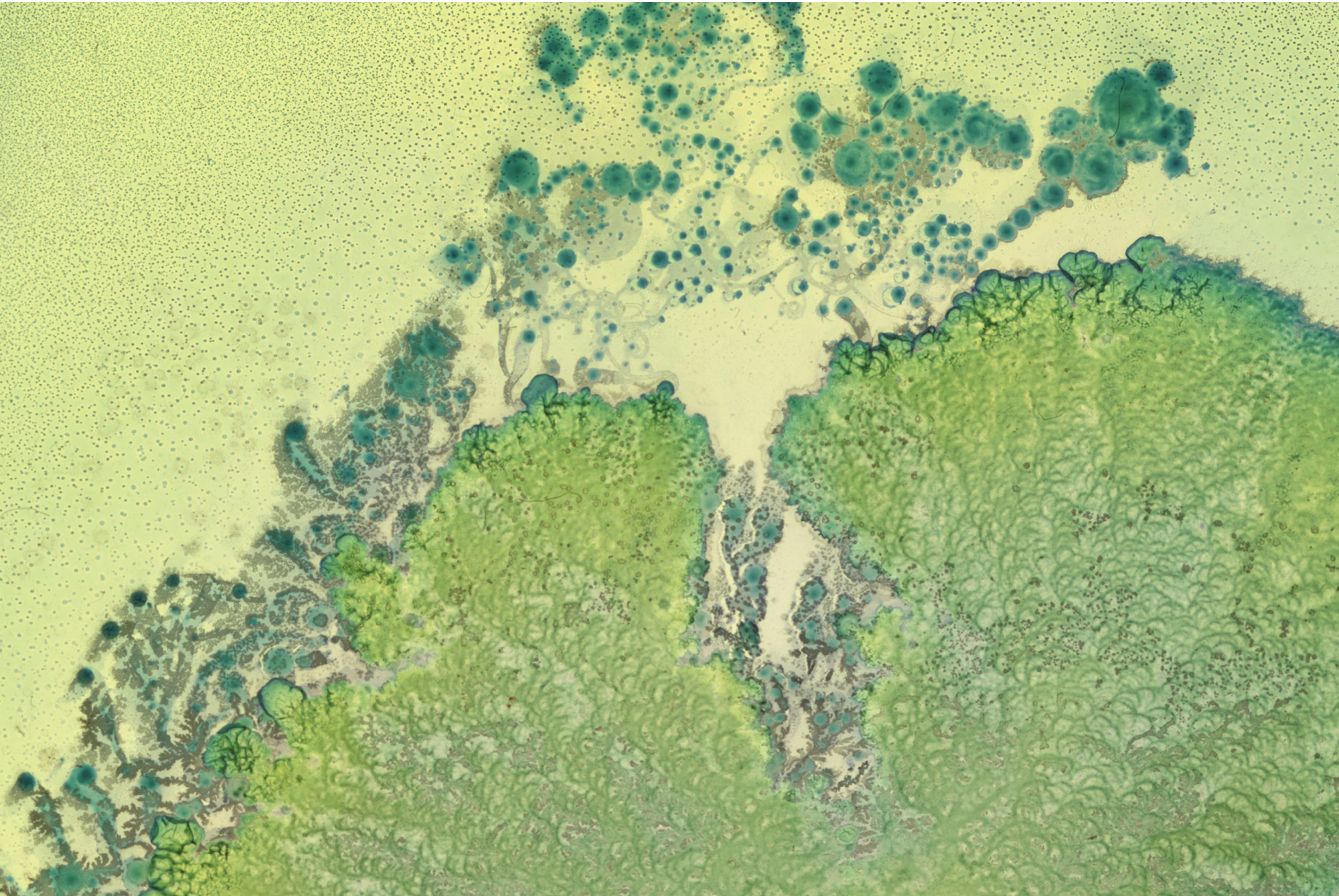
Clinically-studied, broad-spectrum synbiotic formulated with 24 probiotic strains and a novel non-fermenting, plant-based prebiotic.

Supplement Facts	
Serving Size 2 Capsules	
Amount Per Serving	53.6 Billion AFU*
<b>Digestive Health Probiotic Blend*</b>	102mg / 37.0 Billion AFU*
<i>B. longum</i> SD-BB536-JP, <i>B. breve</i> SD-BR3-IT, <i>L. plantarum</i> SD-LP1-IT, <i>L. rhamnosus</i> SD-LR6-IT, <i>L. rhamnosus</i> HRVD113-US, <i>B. infantis</i> SD-M63-JP, <i>B. lactis</i> SD-BS5-IT, <i>B. lactis</i> HRVD524-US, <i>L. crispatus</i> SD-LCR01-IT, <i>L. casei</i> HRVD300-US, <i>B. breve</i> HRVD521-US, <i>B. longum</i> HRVD90b-US, <i>B. lactis</i> SD-150-BE, <i>L. fermentum</i> SD-LF8-IT, <i>L. rhamnosus</i> SD-GG-BE, <i>L. reuteri</i> SD-RD830-FR	
<b>Micronutrient Synthesis Probiotic Blend*</b>	23mg / 8.05 Billion AFU*
<i>B. adolescentis</i> SD-BA5-IT, <i>L. reuteri</i> SD-LRE2-IT	
<b>Dermatological Health Probiotic Blend*</b>	18mg / 3.3 Billion AFU*
<i>L. salivarius</i> SD-LS1-IT, <i>B. lactis</i> SD-CECT8145-SP, <i>B. longum</i> SD-CECT7347-SP, <i>L. casei</i> SD-CECT9104-SP	
<b>Cardiovascular Health Probiotic Blend*</b>	9mg / 5.25 Billion AFU*
<i>L. plantarum</i> SD-LPLDL-UK, <i>B. lactis</i> SD-MB2409-IT	
<b>MAPP Microbiota-Accessible Polyphenolic Precursors™</b>	400mg*
Indian pomegranate (>40% polyphenolic bioactives)	
*Daily Value not established.	
<b>Other Ingredients:</b> Acid-Resistant Vegan Outer [Chlorophyllin] and Inner [Hypromellose, Water] Capsules, Organic Rice Fiber, Organic Rice Extract Blend.	

### For Optimal Results

Take 2 capsules daily, both at once. DS-01® can be taken any time of day—whenever is best for ongoing, compliant use.

\*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.



Tal Danino (Danino Lab). Bacteria on agar.

## Pioneering Microbiome Science for Human and Planetary Health

Seed Health is a diverse, interdisciplinary collective of scientists, practitioners, designers, engineers, bioinformaticians, operators, and scientific communicators.

Seed advances frontier microbiome science from discovery to real-world impact to develop breakthrough innovations in bionics, living medicines, and environmental solutions.

Seed's development programs power a pipeline of innovations targeting health outcomes from infancy to aging, encompassing areas such as the gut microbiome, vaginal microbiome, skin microbiome, oral microbiome, infant health, and the gut-brain axis.

With the understanding that health is not just human, they also founded SeedLabs to advance microbial innovations for some of our planet's greatest ecological challenges. Current projects include honeybee preservation, coral reef regeneration, plastic degradation, and carbon sequestration.

### DS-01® now available through Fullscript®

Visit [seed.com/practitioners](https://seed.com/practitioners) for more information on how to offer DS-01® to your patients. Contact [practitioners@seed.com](mailto:practitioners@seed.com) to access additional educational resources and clinician-to-clinician support.

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