# **Mastering the Microbiome Market**



A comprehensive strategic guide to navigating the fastest-growing sector in healthcare and wellness

Alphons Philips, PhD, MBA Director–Scientific Affairs



"Sabinsa is a responsible and reliable company."



2023 LIFE TIME ACHIEVEMENT AWARD















Late DR. MUHAMMED MAJEED // FOUNDER // RECIPIENT OF ELLIS ISLAND MEDAL OF HONOR BY NECO AUTHORIZED BY THE U.S. CONGRESS

# **Mastering the Microbiome Market: A Strategic Guide to Success**

- Global microbiome market represents one of the fastest-growing sectors in healthcare and wellness
- Projected to reach \$108B by 2030 (Frost & Sullivan, 2024)
- Annual growth rate of 22.3%.
- Growth is driven by increasing:
  - Awareness of gut-health connections
  - Rising chronic disease rates
  - Shift toward preventive healthcare

#### **Top 3 Drivers**

- Personalized nutrition
- Women's health microbiome R&D
- Gut-skin-health crossover products

**Key growth regions**: North America, EU, Southeast Asia

"Clean-label + clinically proven" now a mandatory expectation



### **Human Microbiome Project**



153 Million USD

80 Universities

242 Subjects

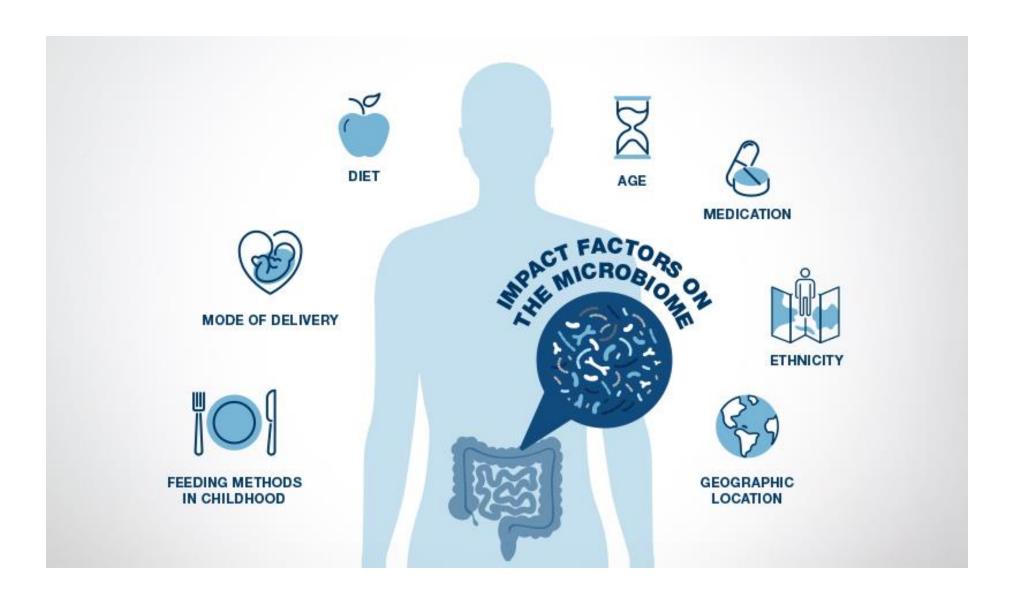
5000 samples

5 Years Research

10,000 species

8 million protein coding genes





Source: Online

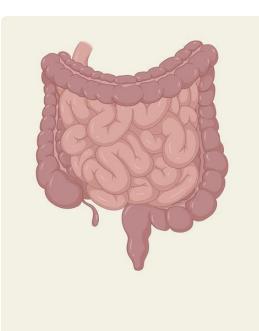
# **Genome Taxonomy Database (GTDB) R226**



Taxonomic Rank	Bacteria	Archaea	Total
Phyla	169	20	189
Classes	571	63	634
Orders	1,976	171	2,147
Families	5,311	603	5,914
Genera	27,326	2,079	29,405
Species	136,646	6,968	143,614

(Source: GTDB R226 stats as of April 16, 2025)





Gut microbiome

MetabolitesNeurotransmittersHormones

Immune system

Vagus nerve

Enteric nervous system

Neuroendocrine system

Circulatory system

Altered social behaviour

- Autism spectrum disorder (ASD)
- Anxiety
- Depressive-like behavior

Physical performance and motivation

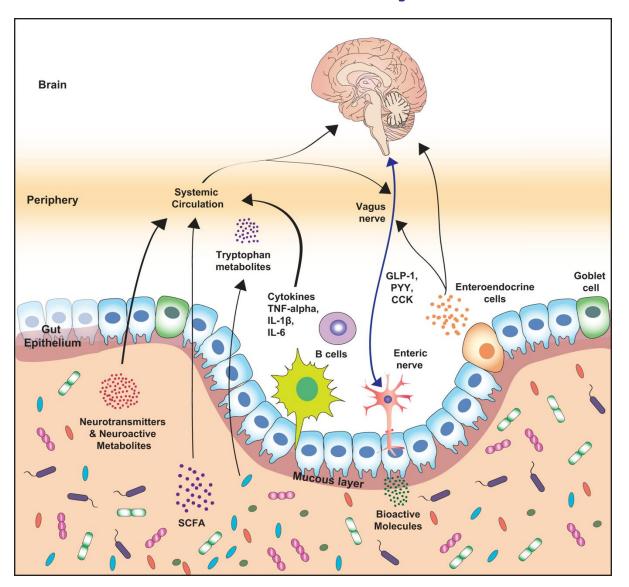
Neurodegenerative diseases

Nature 2024. Microbiota-gut-brain axis and its therapeutic applications in neurodegenerative diseases

**Gut Brain Axis** 

### **Bidirectional Pathways in the Gut-Brain Axis**





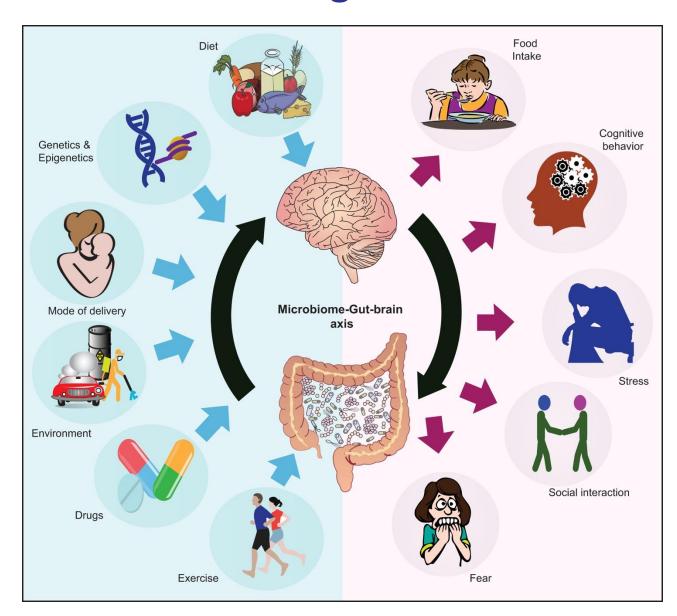
- Gut microbiota 

  Brain (central nervous system)
- Immune-modulatory signaling (e.g., ILs, TNF)
- Neuronal innervation (vagal and enteric pathways)
- Enteroendocrine signaling (e.g., GLP-1, PYY, CCK)
- Microbial metabolite signaling (e.g., SCFAs)
- Hepatic and gallbladder metabolism influence

Source: DOI: (10.1152/physrev.00018.2018)

### Factors Influencing the Microbiota-Gut-Brain Axis





#### **Key Influencers on Microbiota–Gut–Brain Activity:**

- Diet and nutrition
- Genetic predisposition and epigenetic modifications
- Environmental exposures
- Use of medications (e.g., antibiotics, psychotropics)
- Physical activity and exercise
- Mode of delivery at birth (Normal vs. cesarean)

#### **Behaviors Affected by Axis Perturbations:**

- Cognitive function
- Social behaviors
- Stress response
- Fear processing
- Appetite and food intake

Source: DOI: (10.1152/physrev.00018.2018)



### **PROBIOTICS**

Live microorganisms which, when administered in adequate amounts, confer a health benefit on the host

Joint FAO/WHO Working Group

# **LactoSpore®: The Resilient Probiotic**

Heyndrickxia coagulans (Bacillus coagulans MTCC 5856)

Spore-forming probiotic with superior stability and targeted gut-brain benefits

- Shelf-stable probiotic
- Heat and storage stable
  - Three-year stability
  - Three grades: 6B, 15B, 100B
  - The Original Stable Probiotic helps to maintain overall health
    - LactoSpore® produces the beneficial short chain fatty acids (SCFA) by fermenting plant-based fibers
    - Supported by clinical studies for a range of health benefits.
  - Patented

### **Health Benefits**

- IBS Management
- Mood Enhancement
- Immune Support
- Digestive Health



Source: <u>lactospore.com</u>

### **Postbiotics: The New Frontier**



# PoZibio® - Next Generation Digestive Health

Clinically-formulated postbiotic supplement targeting to help 'leaky gut syndrome'

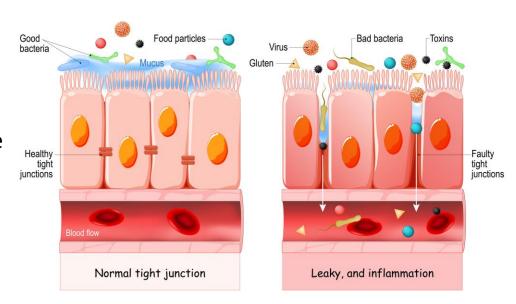
### Key Benefits

- Strengthens Gut Barrier Enhances gut lining integrity
- Reduces Age-Related Inflammation Balances immune response
- Supports Cognitive Function Promotes gut-brain connection
- Enhances Metabolic Health Optimizes digestion & energy

### Scientific Validation

- \$2M research grants from NIH & U.S. Department of Defense
- Wake Forest University validated
- Patented Lactobacillus paracasei formulation
- Proven mechanism: Regenerates gut's protective mucus layer

Leaky gut syndrome



"The Next Generation of Digestive Health Supplement for a Longer, Healthier Life"





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350+
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Sabinsa Corp. 20 Lake Drive East Windsor, NJ 08520 Manufacturing

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750 Innovation Circle
Payson, UT 84651

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Active Customer
Retention Rate

Certifications
ISO, FDA audited
facilities



# Herbal Remedies and Botanicals: Natural Allies for the Microbiome







### **Gold Standard Curcumin Extract**

Patented turmeric extract with enhanced bioavailability and targeted neuroprotection

### Mechanism of Action and health benefits

- Neuroinflammation: Reduction in inflammatory markers (TNF- $\alpha$ , IL-6), enhanced microglial function
- Gut Barrier: Improvement in intestinal permeability, enhanced tight junction proteins
- Oxidative Stress: Increase in antioxidant enzyme activity, mitochondrial protection
- Mood Support: Improvement in depression scores when combined with standard therapy

Source: <u>curcuminoids.com</u>

# **Shagandha®-The Stress Modulator**

### **Premium Ashwagandha Extract**

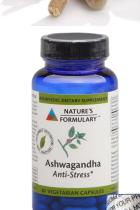


#### **Stress-Gut-Brain Connection**

- Best for stress management support
- Potent root extract of Ashwagandha, standardized and effective with just 2.5% withanolides
- A premier adaptogen with a long history of use in Ayurvedic medicine
- Cortisol Regulation: Reduction in morning cortisol, normalized circadian rhythm
- Microbiome: Protects beneficial bacteria during stress
- Gut Permeability: Improvement in intestinal barrier function under stress conditions
- Cognitive Performance: Improvement in executive function, enhanced working memory
- Sleep Quality: Improvement in sleep onset, better sleep quality scores

Source: <u>shagandha.com</u>











### United States (FDA)

- GRAS Status requirement
- Structure/function claims only
- Food additive or drug pathways

### **European Union**

- Novel Food Regulation
- EFSA health claims authorization
- QPS list compliance

### Asia-Pacific

- Japan's established functional foods
- China's evolving framework
- Australia/NZ TGA oversight

### **Challenges:**

 Navigating the complex regulatory landscape represents a significant challenge but also a potential competitive advantage

### **Best practices:**

- Early regulatory consultation
- Maintaining comprehensive safety dossiers and clinical evidence
- Implementing robust manufacturing records

"Companies that master global regulatory harmonization gain significant speed-tomarket advantages in this rapidly evolving sector"

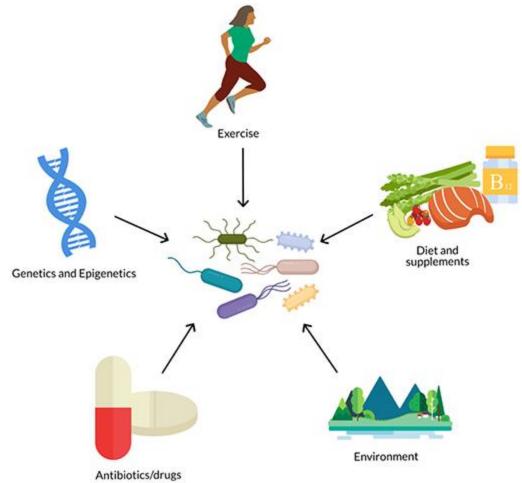


# Practical Takeaways: How to Support a Healthy Microbiome



# ⇒ PROBIOTIC FOODS ☆





Source: Frontiers in Nutrition



### **Disclaimer**

Any references to plant-derived nutrients in this presentation and their effects on diseases, including claims of curing, modifying the course, or alleviating symptoms, are paraphrased from published, peer-reviewed scientific literature. These statements are not intended to suggest that these nutrients are drug products.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, mitigate or prevent any disease.











































































































### participating members of:





















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