
Enabling a Healthier World

Lonza

Capsules & Health
Ingredients

Capsugel[®] Enprotect[®] capsule

First of its kind enteric
manufacturing technology





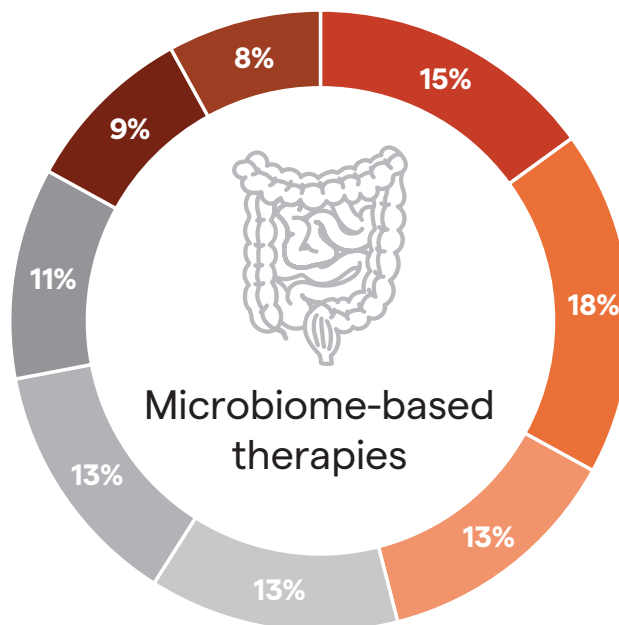
Discover

our breakthrough enteric
manufacturing technology

Today's microbiome market by the numbers

The majority of microbiome-based therapies under development today target either diseases of the gastrointestinal tract, psoriasis and diseases that involve the gut-brain axis, such as Parkinson's disease and other neurological disorders, cancer and infectious disease, such as *Clostridium difficile* infections.

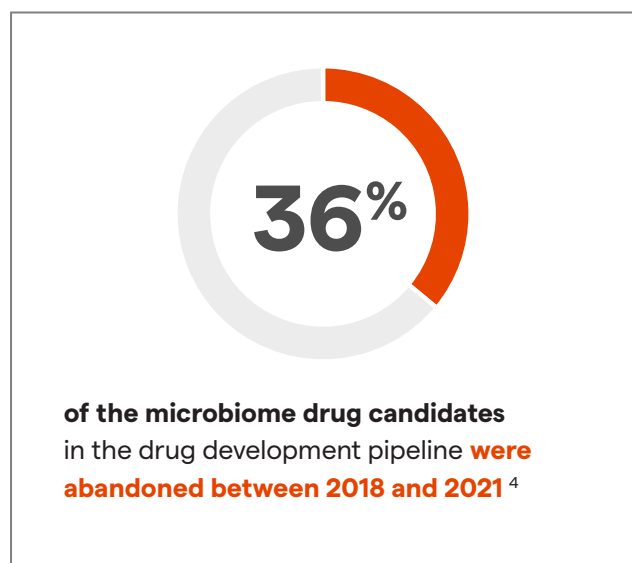
Currently over
3,000
 studies on the microbiome ³



- Other therapeutic areas
- Inflammation/immune
- Cancer
- Infections
- Gastrointestinal diseases
- CNS
- Endocrine/metabolism
- Skin disorders

The microbiome market

In a rapidly growing market, microbiome-based therapies are in high demand, yet many are abandoned due to challenges in the drug development pipeline.



Capsugel[®] Enprotect[®] capsule

Oral solid dosage form
with first of its kind enteric
manufacturing technology

Building on the Capsugel[®] legacy of developing
and launching new and innovative oral solid
dosage forms, Lonza has developed a unique
manufacturing process to build a **bi-layer capsule
to assist in enteric delivery**.

Partner with us to meet compendial enteric
delivery requirements and enable accelerated
development processes.

Targeted enteric drug delivery

Acid protection

No additional coating required

Customizable and scalable



Coni-Snap® secure closure capsule design

Locking system provides leak-free containment ensuring maximum delivery of API

Patented two-ring closure system facilitating high-speed filling processing and secure locking of capsule body and cap

HPMC and HPMC-AS polymers

Protects acid-sensitive APIs, preventing gastric irritation and increasing intestinal absorption

Provides acid resistance up to pH 6.0 with no need for banding or sealing

Rapid dissolution profile release (within 30 minutes) in the buffer stage (pH 6.8)

Bi-layer manufacturing technology

Ensures targeted delivery of APIs to the distal intestine without the need for additional excipients

No additional coating or additional excipient helps to accelerate drug development processes allowing for fast first-in-human timelines

Personalize your oral dose

Customized to maximize differentiation and meet your brand and development needs

Partnering to solve
enteric delivery challenges
**accelerates time to human
and time to market**

Our experts are here to **help you at every stage**



Customize how we work together depending on your business needs

Partnering with us means not only full access to our high-quality products, but a full menu of service options to **customize how we innovate together to solve enteric delivery challenges.**

Ready-to-use solution



Optimize your development process with our ready-to-use Capsugel® Enprotect® capsule

From concept to full scale manufacturing, we partner with you to provide high quality capsules to address your patients' specific needs.

Customizable solution



Partner to help solve delivery challenges through innovation

Our Launch with Lonza™ applications lab services experts will listen, understand and propose a customizable solution to help you meet your pipeline development challenges.

Together
we enable a
healthier world

To speak to a capsule expert or request a sample of the Capsugel® Enprotect® capsule for enteric delivery, contact us or your Lonza Capsules & Health Ingredients sales representative

United States: 888-783-6361 / solutions@lonza.com

EMEA: +33 389 205725 / solutions.emea@lonza.com

South East Asia: +66 2-260-3812 or +62 21 875 2226 / solutions.apac@lonza.com

China: +86 21 6305 8866 / contact.cn@lonza.com

Japan: +81-42-700-6700 / solutions.jp@lonza.com

India: +91 124-6052900 / contact.india@lonza.com

Australia: +61294212700 / solutions.apac@lonza.com

References

1. Global human microbiome therapeutics market size to cross USD 1,544 million by 2027. Market Study Report. 21 Oct. 2020.,
2. Human Microbiome Market: Rising Clinical Trials to Aid in Market Development. Transparency Market Research 27 Jul. 2020.
3. Search Results | Beta ClinicalTrials.gov, August 17, 2022
4. Evaluate Pharma

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