

Enabling a Healthier World

Lonza

Capsules & Health
Ingredients

Capsugel[®] capsules

High-quality products
and support services
to enable your drug
delivery development

From development
to commercialization



The Capsugel[®] capsule portfolio provides a wide variety of high-quality products and technologies **to help you create a customized solution to bring new innovations to market.**

Our innovative capsule solutions

Complete, high-quality products and services portfolio

Capsule customizations to meet your drug delivery requirements

Product support services that complement your development journey

At Lonza, our core values and global footprint allow us to offer unparalleled R&D and technical support services backed by world-class manufacturing and logistics infrastructure.

For more than five decades, we have been elevating the standards for high-quality capsules to help eliminate defects and minimize disruptions in your manufacturing processes. **Together, we ensure you deliver a quality product that meets patient and consumer needs, every time.**





Discover _____
the possibilities





Capsugel[®] capsules

Our broad capsule portfolio developed to **meet functionality requirements across a multitude of applications**

Whether you are in the research or commercial phase of your drug development pipeline, our extensive array of **Capsugel[®] capsules open the door to your next breakthrough health product.**

Our capsules are available in the a variety of configurations to meet you drug application needs:

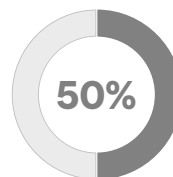
By route of delivery
(inhalation, oral, vaginal)

By release profiles
(immediate, delayed)

By drug development milestones



Capsules are the **globally preferred dosage form**



Nearly 50% of consumers prefer capsules¹

An optimized portfolio to **accelerate** **your drug development**

Developed to meet functionality requirements
across a multitude of applications

With more than 100 years of dosage form expertise, we have helped our customers configure
a wide variety of capsule solutions to meet many common applications and patient needs.

Oral release applications (immediate and modified release)

Engineered for immediate release

Gelatin polymer capsules

Coni-Snap® capsule design



Plant-based capsule engineered for
immediate release without cross-linking
for moisture sensitive APIs

HPMC* thermo-gelled capsules

Vcaps® Plus HPMC capsule



Ideal for enteric formulations without
the need for external coating

HPMC/HPMC AS capsules

for enteric drug delivery



Capsules ideal for oxygen sensitive
formulations – immediate release

Pullulan capsules plant-based

Plantcaps® capsule



Designed for tablet enrobing, tamper
resistance and improve swallowability

Gelatin capsule with enrobing technology

Press-Fit® and Xpress-Fit® capsules



Specialized delivery applications

Ideal for pediatrics and geriatric populations
who have trouble swallowing medication

Gelatin or HPMC thermo-gelled
capsules with sprinkle closure design

Coni-Snap Sprinkle® capsule design



Ideal for development of
efficient DPI delivery systems

Gelatin or HPMC capsules for
dry powder inhalation application

Zephyr® inhalation capsule offering



Ideal for delivery of hormones
or probiotics through vaginal canal

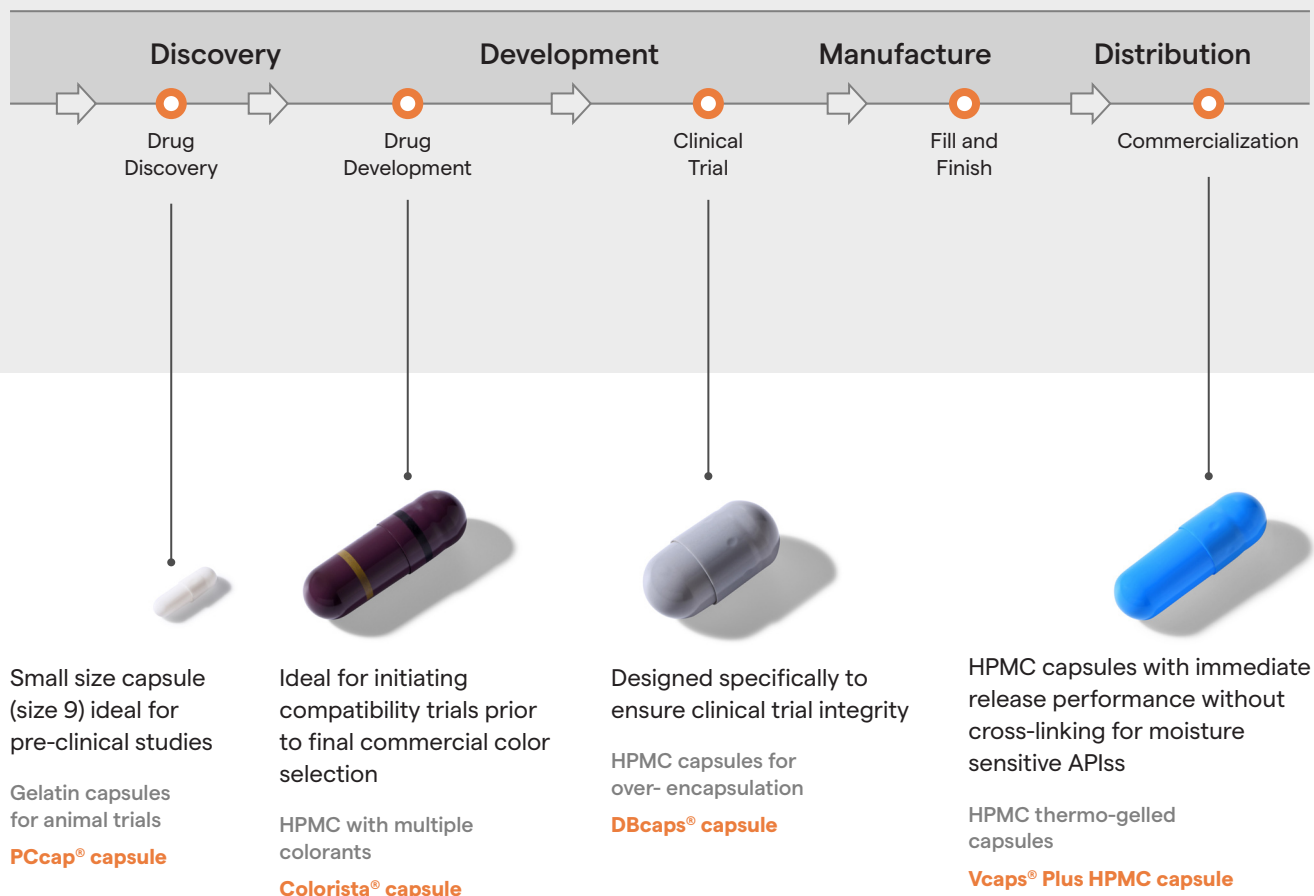
Gelatin, HPMC or pullulan
capsules for vaginal application



Capsules in action

**Solutions to optimize
development process to
allow you to get to market fast**

Our pre-clinical and clinical capsule solutions were developed to help you optimize your process and potentially shorten development timelines.



Pre-clinical and clinical solutions



Develop
your own
unique solution

Custom-built capsules

There isn't one universal capsule for all applications

From a broad range of polymers to capsule designs to unique dosage delivery technologies, **we offer a nearly endless combination of customizations to address the encapsulation and delivery requirements of your next breakthrough drug.**



Capsule polymers

High-quality sourced polymers designed to meet drug formulation needs and patient-centric requirements



Capsule designs

Capsule designs that improve manufacturing productivity and finished product performance



Capsule personalization

From custom colors and printing to custom specifications, we leverage our expertise to meet your specific requirements



Filling options

Our capsules are suitable for a multitude of drug delivery systems to meet an array filling options to maximize your product's potential

Capsule polymers

The foundation of your capsule

From gelatin, HPMC, to Pullulan, we offer a range of polymers to fit the characteristics of your drug formulations and regulatory requirements.



Premium gelatin polymers

Our most used polymer

Sourced specifically to meet stringent pharmaceutical standards and can be used in powder or liquid-filling options

Ideal for:

- Drug development
- Clinical trial
- Stability testing
- Commercial use

	Key value	Oxygen-sensitive protection	Available in multiple sizes	Release profile Route of administration	Widely accepted around the world*
Bovine/ Porcine	Standard gelatin blend helps achieve supply continuity			Immediate Oral and inhalation	
Bovine	Solution for markets where religious certifications are required – i.e., Halal			Immediate Oral and inhalation	
Porcine	BSE-averse market innovation			Immediate Oral and inhalation	

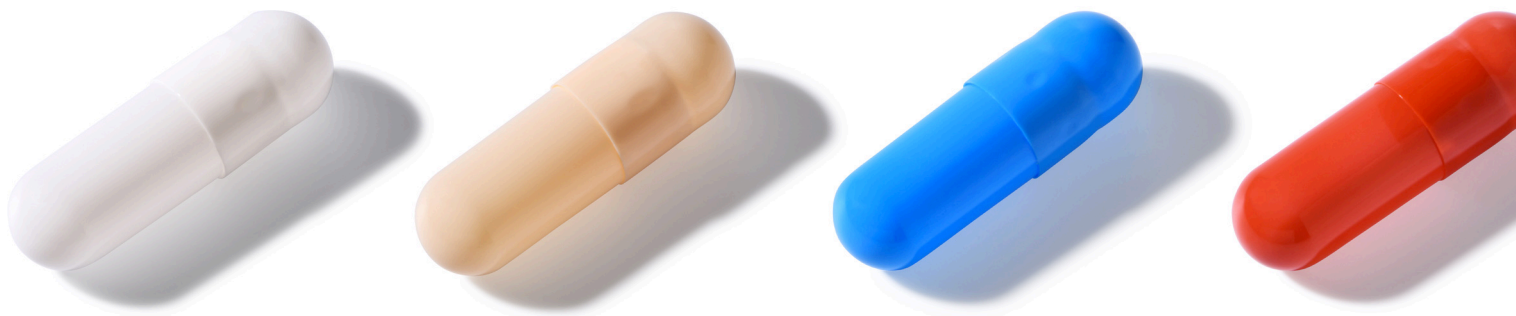
Certifications and compliance







BSE compliance
GMP
Certificates of Analysis



Plant-based polymers

Meet patient needs

Uniquely developed to meet expanding API requirements and growing trend of patient centric dosage forms

Available in a broad capsule size selection, these polymers can be used in powder or liquid-filling options.

	Product	Gelling process	Key value	Release profile Route of administration
HPMC Hypromellose	Vcaps® Plus	Thermo-gelling technology	<ul style="list-style-type: none"> • A glossy, gelatin-like finish • Pharmaceutical compliant dissolution** • Compatible with moisture-sensitive drug formulations 	Immediate Oral and inhalation
	Vcaps®	Gelling agent	<ul style="list-style-type: none"> • A matte, natural-looking finish • Compatible with moisture-sensitive drug formulations 	Immediate Oral and inhalation
HPMC/HPMC-AS Acetate Succinate	Vcaps® Enteric	Thermo-gelling technology	<ul style="list-style-type: none"> • Pharmaceutical compliant enteric disintegration • No coating required 	Enteric Oral
Pullulan	Plantcaps®	Gelling agent	<ul style="list-style-type: none"> • Protects oxygen-sensitive drug formulations • Fast dissolving dosage form 	Immediate Oral

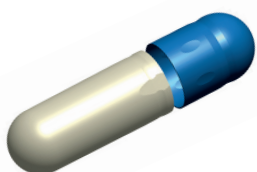
Certifications and compliance



Capsule design

Improve delivery functionality, filling process and capsule security

We've leveraged more than 100 years of experience and expertise to build innovative capsule designs developed to address specific requirements, in both capsule filling process and dose delivery applications.



Coni-Snap® secure closure design

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



Liquid-filled capsule design

Specifically designed capsule for encapsulated liquid-based and specialty powder formulations



Sprinkle closure design

Patented technology for easy-opening for sprinkling on food, addressing swallowing concerns of pediatric and geriatric¹ patients



Over-encapsulation design

Developed specifically for double-blind clinical trials, to ensure clinical trial integrity through a tamper-resistant closure

Capsule personalization

Customize your capsule to offer a unique and memorable experience

These highly coveted capsule personalization services also allow you to add customized specifications across weigh sorting, moisture content, microbiological and release testing to meet your specific product requirements.

Color

Our capsules are available in a nearly unlimited array of color options, to differentiate your product.

Print

Visually maximize your dosage form identity with customizable printing across a wide selection of printing inks.

Capsule size

Available in sizes 000 – size 5, along with elongated options in select sizes.

Specifications and formulations

Customizable formulations and specifications across **weight sorting, moisture, microbiological testing and more**, to meet your product requirements.

Targeted applicable specifications to meet regional requirements.





Leverage our proprietary and broad manufacturing technologies to customize capsules to meet your specific requirements


Filling options

Maximize drug formulation functionality and help solve formulation challenges

From solid-filled capsules, including powder, pellets and granules, to liquid and semi-solid dose delivery systems, our innovative capsule designs suitable for a variety of filling options for your active ingredient.



Solid filled capsules	Liquid and semi-solid filled capsules*	Capsule - enrobed tablets**
Powder	Lipid-filled 	Tablet enrobing 
Pellets	Beadlets 	
Granules	DUOCAP® capsule-in-capsule 	
Pellets and powder		
Powder and tablets		
Tablets		



Maximize your product's performance

Supporting you through the process

Product support services to complement your pre- and post- product development

We offer a variety of services to support your product life cycle from experimentation to development, production to end market delivery.



R&D sampling and accessibility services

From in-stock programs to a full range of R&D samples, our capsule access services expedite your product development, giving you order priority and size flexibility to focus on your product launch.



Packaging, shipping, and inventory logistics

Select from an array of capsule container sizes and fiber-free cartons to provide fast-access to your cGMP facility, expedite your shipping, and optimize your warehouse space with our inventory management services.



Capsules filling optimization, training and technical support

Our capsule filling quality by design services help match your filling equipment to the ideal capsule design, meeting your product formulation specifications and optimizing productivity. Our technical service engineers provide basic and advanced training and tools to help your team install your capsule-filling machinery, with 24/7 emergency technical support available.



Professional consulting services (application services)

Supplement your own internal resources and expertise with our experts—from manufacturing to formulation optimization, to regulatory and beyond.

Dedicated to your success



Partnering beyond the capsule

Helping you unlock innovation

Lonza's capsule application services experts will listen, understand and provide a customizable solution to help you meet your pipeline development challenges.

Our services will help you:

- Develop your unique fill formulation
- Identify the optimum dosage form for your API delivery
- Optimize manufacturing process to improve operation productivity
- Access tailored educational resources – including hands on laboratory training to strengthening your team's knowledge

Lonza dosage and
delivery innovations

Launch with Lonza™
application services

For more information, please call **800-845-6973**, email **solutions@lonza.com** or contact your Lonza Capsules & Health Ingredients sales representative.



Lonza

Capsules & Health
Ingredients

Together
we enable a
healthier world

lonza.com | [capsugel.com](https://www.capsugel.com)

Need help selecting the right capsule configuration?

Please call **800-845-6973**, email solutions@lonza.com or contact your Lonza Capsules & Health Ingredients sales representative.

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