



Capsugel developed enTRinsic™ drug delivery technology to provide oral delivery with full enteric protection and rapid release in the upper gastrointestinal (GI) tract, without the use of coatings. Tailored capsules are manufactured using pharmaceutical grades of cellulosic enteric derivatives (100%). This novel, proprietary technology has proven *in-vitro* and *in-vivo* performance, and is finding application in several areas, including oral delivery of sensitive molecules, rapid prototype development, accelerated in vivo testing, market differentiation and protection of intellectual property.

### Ideal for Sensitive Molecules

Some products are difficult or impossible to deliver orally without enteric protection —but are also either sensitive to the coating solution or can't withstand the high temperatures associated with coating application. enTRinsic technology removes these stumbling blocks, making it applicable to a range of sensitive molecules.

Nucleotides

Peptides

Vaccines

Live Biotherapeutic Products

Enteric capsule technology has been shown to rapidly release at pH 5.5, allowing optimal absorption in the upper GI tract.

Independent analysis has indicated savings of more than 9 months in Phase III readiness by eliminating development, scale-up and validation steps associated with enteric coating.<sup>1</sup>

### Accelerate Product Development

enTRinsic technology can greatly simplify and accelerate prototype development and rapid *in-vivo* testing of products requiring enteric protection or targeted release to the upper GI tract.

Eliminate coating system preparation and application steps

Enable rapid screening and optimization of enteric performance

Remove dependency of enteric functionality with process variability

Obviate need for process development of the enteric coating step, process scale-up and validation



1. H2 Pharma Consulting Ltd, Dr. Hiep Huatan PhD, BPharm, MRPharmS, Bearsted, Maidstone, UK

# Targeted Delivery

## Specifications

Product description	Two-piece intrinsically enteric hard capsule
	Manufactured with 100% pharmaceutical grade cellulosic enteric derivatives
	Dissolution at pH 5.5
	Size # 0 standard (additional sizes upon request)
	White opaque standard (specific colors upon request)
	Dry ingredient formulations only
Regulatory Status	Contains commercial polymers used for coating for more than 20 years
	Complies with relevant European, Japanese and US Pharmacopeia monographs
Water content: less than 7%	Storage: empty enTRinsic technology capsules: 15–25° C & 35–65% RH, in moisture-tight packaging
	Shelf life: 6 months storage in HDPE bottles
	Stability: <ul style="list-style-type: none"><li>• No change in dimensions (diameter, length) when stored at 40° C/75% RH for 6 months</li><li>• No change in the enteric properties when stored at 30° C/65% RH for 6 months</li></ul>

Learn more about how Capsugel's enTRinsic Drug Delivery Technology can speed development and expand formulation options for sensitive molecules.

**Capsugel**<sup>®</sup>

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