



- Hard Capsule Manufacturing
- Dosage Form Solutions
  Product Development & Manufacturing
- Corporate R&D

# INNOVATIVE DOSAGE SOLUTIONS FOR THE HEALTHCARE INDUSTRY

Bioavailability Enhancement

Modified & Targeted Release

Capsules / Encapsulation

Specialized Applications



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Capsugel is one of the world's leading providers of innovative dosage solutions that help customers turn their compounds into better medicines and nutritionals. Science and engineering drives everything we do – from the industry's broadest technology suite, enabling solutions to challenges like bioavailability, to the design, development and manufacture of optimized, high quality dosage forms.

### DESIGN

Our breadth of advanced technology solutions, our formulation expertise and our experience in solving problems is unparalleled.

## **DEVELOP**

Our proprietary technology platforms and development services support product development, rapid scale-up and transfer to commercial production.

### **MANUFACTURE**

We provide specialized manufacturing of lab scale, clinical and commercial finished dosage forms across our technology platforms.

### FASTER PRODUCT APPROVALS

#### OPTIMIZATION-FOCUSED SERVICES

Drug substance characterization

Micronization

Xcelodose® micro-dosing services for powder in capsule evaluation

Feasibility screening

Formulation optimization

IND-supporting stability and analytical methods

GMP manufacture across solid oral dose range (high containment and controlled substances)

#### **TECHNOLOGY SELECTION**

Fundamental model-based approach, developed through years of investigation and formulation experience, enables selection of the appropriate technology for the optimal design of our clients' compounds.

## TECHNOLOGY PLATFORMS & CAPABILITIES

#### **BIOAVAILABILITY ENHANCEMENT**

Salt screening / selection

Micronization

Spray-dried dispersions (SDDs)

Hot-melt extrusion

Lipid / liquid-based formulations

Liquid-filled hard capsules, soft gels, lipid multiparticulates

Nanotechnologies

Nano-milling, nano-crystals

#### MODIFIED & TARGETED RELEASE

Gastric resistant capsules

enTRinsic<sup>™</sup> drug delivery technology

Multi-particulate technologies

Fluid-bed layering, extrusion / spheronization, mini-tabs, lipid multiparticulates

Fixed dose combinations

Bi/tri-layer matrices, capsule-in-capsule technology

Osmotic / zero-order technologies

Colonic delivery technologies

#### CAPSULES / ENCAPSULATION

Widest portfolio of innovative capsules and encapsulation technologies

Vcaps Plus® 2nd generation HPMC capsules

Specialized capsule polymers, designs and applications Leading standards of quality and regulatory stewardship

Unmatched global footprint & service capability

Comprehensive R&D support and supply programs

#### SPECIALIZED APPLICATIONS

Inhalation formulations

Spray drying-particle engineering, micronization, DPI capsules

Bioprocessing & Bioformulation solutions

Pediatric formulations

Multi-particulate processing options, orally dissolving tablets, sprinkle capsules, taste-masking

High-potency API / low dose applications

Abuse deterrent forms