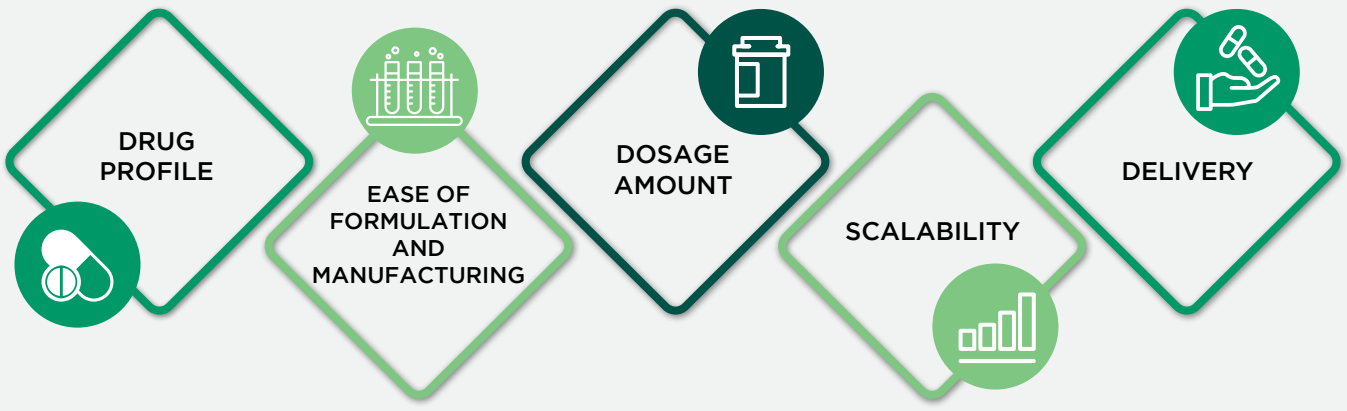
QUICK GUIDE

ALTASCIENCES

CHOOSING THE OPTIMAL DOSAGE FORM FOR YOUR MOLECULE

There are many factors to consider when choosing the right oral dosage form for your active pharmaceutical ingredient (API) leading up to clinical trials, including:



The choice often comes down to two popular oral solid dosage forms: **tablets** and **liquid-filled, hard-shell capsules (LFHCs)**, each with their unique set of benefits and challenges.

	LFHC	TABLET
BENEFITS	• Improved solubility and bioavailability or oral solid dosage drug delivery • Low melting point • Low dose/high potency • Critical stability • Sustained release • Simpler and cost-effective formulation • Combination filling • Abuse-deterrent and tamper-proof • Fast-acting (i.e., breaks down faster) • Tasteless	• Higher doses compared to capsules • Can be split into smaller doses • Variable delivery (quick release, delayed release, or extended-release) • More stable/longer shelf life than capsules • Uniform blend throughout the filling process • Quicker throughput from filling equipment
MANUFACTURING CHALLENGES	• Filling difficulties with high viscous formulations • Typically lower doses • Maintaining continuous temperature control of the formulations • Maintaining continuous mixing and homogeneity • Transferring liquid formulation to encapsulation equipment • Shorter shelf life/less durable	• Slower acting compared to capsules • Inconsistent disintegration properties • Limited abuse-deterrent capabilities • Bad aftertaste, depending on the formulation
ANALYTICAL CHALLENGES	• API solubility can be an issue for dissolution. • Can be prone to “coning” during dissolution. • Less physical durability can lead to handling difficulties in the lab. • Full extraction for other testing may require additional sample manipulation (e.g., open or sliced capsules) that can contribute to variability in results.	• API solubility can be an issue for dissolution. • Extended/sustained release dissolution testing can take long. • Full extraction for other testing can require multiple solvent stages and/or extended shaking/sonication to get through functional layers or excipients. • Inconsistent disintegration will lead to variable disintegration/dissolution results.

With over 25 years of experience formulating, developing, testing, and manufacturing almost every dosage form on the market, our experts can guide you in choosing the optimal one for your drug development program.

QUICK CHECKLIST—Determine Which Dosage Form Is Better for Your Molecule.

LIQUID-FILLED CAPSULES

- ✓ Low Dose Formulations
- ✓ Sustained Release
- ✓ Fast Acting
- ✓ Slower Throughput
- ✓ Abuse-Deterrent Capabilities
- ✓ Shorter Shelf Life

TABLETS

- ✓ High Dose Formulations
- ✓ Variable Delivery
- ✓ Slow Acting
- ✓ High Throughput
- ✓ Limited Abuse-Deterrent Capabilities
- ✓ Longer Shelf Life

READY TO START?

Schedule a conversation with our experts today so we can help decide which dosage form would be most suitable for your API and optimize the results of your upcoming clinical trials.

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CONTACT US

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