Information Sheet

SNAPDRAGON CHEMISTRY
A CAMBREX COMPANY

Complex Synthetic Molecule Development and Manufacturing

Cambrex offers innovative capabilities and technology to develop and manufacture synthetic molecules for use in drug substances, medical devices and diagnostic agents.

Our experienced team of Ph.D.s use data-rich experimentation and advanced process analytical technology (PAT) tools, enabled by proprietary LabOS™ software, to efficiently determine the design space and optimal conditions for manufacturing complex synthetics, including:

- Peptides
- Oligonucleotides
- Synthetic DNA
- Block Copolymers
- Polymeric Linkers
- Functionalized Dendrimers
- Modified Carbohydrate Polymers

Our Approach

Cambrex and Snapdragon Chemistry, a Cambrex company, together provide comprehensive capabilities to help you develop and manufacture peptides and complex synthetics. We have developed several technologies to enable robust and reproducible cGMP manufacture, including:

- Z-Flow® Technology
- Liquid-Phase Peptide Synthesis (LPPS) Technology
- Solid-Phase Synthesis
- Peptide Fragment Assembly
- Lean Tag & Tag Removal Technologies
- Peptide Crystallization
- Peptide Sequencing
- AI-Enabled Process Optimization
- Tangential Flow Filtration
- Nanofiltration
- Ion Exchange Chromatography
- Wiped Film Evaporation

About Cambrex

Cambrex is a leading global contract development and manufacturing organization (CDMO) that provides drug substance development and manufacturing across the entire drug lifecycle, as well as comprehensive analytical and IND enabling services.

With over 40 years of experience and a team of 2,000 experts servicing global clients from North America and Europe, Cambrex offers a range of specialized drug substance technologies and capabilities, including continuous flow, controlled substances, solid-state science, material characterization, and highly potent APIs.

About Snapdragon Chemistry

Snapdragon Chemistry specializes in active pharmaceutical ingredient (API) batch and continuous flow process development, utilizing state-of-the-art automation technology and proprietary equipment to solve complex process and analytical development challenges.

With R&D and manufacturing headquartered in Waltham, Massachusetts, Snapdragon's 70+ employees come with strong ties to the local scientific community, with more than 30 Ph.D. scientists on staff.

How can we help you advance? **cambrex.com**

Peptide Development

To reduce the economic and environmental impacts of manufacturing peptides, Snapdragon Chemistry has invested extensively in R&D to design a liquid-phase peptide synthesis (LPPS) technology that utilizes traditional batch reactors and continuous flow, obviating the dependency on specialized, solid-phase reactors. This new LPPS technology reduces solvent demand and the need for excess reagents compared to standard solid-state peptide synthesis processes.

The LPPS technology supports peptides up to 12 residues long, while larger peptides are then assembled in liquid phase, using a convergent fragment coupling approach. Combined with convergent fragment couplings, the technology enables the entire manufacture of peptide therapeutics without requiring specialized reactors. The technology is also fully compatible with both Fmoc and Cbz protecting group strategies, even within the same peptide fragment.

Processes developed with our LPPS technology can be scaled in the same way as traditional small molecules. The LPPS technology provides a significantly more cost-efficient and environmentally sustainable solution when compared to traditional solid-phase peptide synthesis, allowing for the substitution of sustainable solvents such as 2-methyltetrahydrofuran in place of problematic solvents like the N,N-dimethylformamide typically used in SPPS.

Analytical Services for Peptides

Cambrex has established state-of-the-art analytical capabilities to complement our development services, including high-resolution mass spectrometry and peptide sequencing capabilities to support peptide development, process characterization and commercialization needs.

Peptide Crystallization

Peptides present increased complexity for crystallization due to the large size and flexibility of the molecules, leading to a much smaller crystallization operating range compared to small molecules. They have a high risk of gelling, fibrillation and aggregation, often leading to low-purity results and high residual solvent contents. If solids are recovered, they are often isolated as amorphous solids, which can be difficult to handle – both during production and during further formulation steps.

In parallel with our investment in LPPS technology, Cambrex has developed unique peptide and protein crystallization capabilities. We have designed a crystallization screening platform specifically for the discovery of crystalline forms of peptides and proteins. Crystallization can deliver improved product quality and stability and reduce the need for time-consuming preparative chromatography and lyophilization, in addition to:

- Significant impurity rejection.
- Improved processability.
- Reduced hygroscopicity.
- Increased stability.
- Control of aggregation & gelling.
- Full structural determination.
- Cost advantage when compared to column chromatography methods for purification.

Scan to Connect with our Experts

Our scientists specialize in making connections. Start a conversation today and experience what it's like to work with a collaborative CDMO.