

Custom Synthesis

Our Core Capabilities

❖ Custom Synthesis

- Tailored synthesis of reference compounds to support screening, validation, and SAR studies
- Custom preparation of scaffolds and building blocks for medicinal chemistry programs
- Multi-step stereoselective synthesis of chiral molecules
- Metabolites synthesis
- Macrocycles synthesis
- Lipids, PEG chemistry, sugar chemistry & ADCs
- Natural products, Nucleosides & Nucleotides
- Fluorinated compounds and Deuterated compounds
- Libraries in 1-3 steps, including PROTAC library and Peptide library
- Flexible approach to address unique client needs, from milligram to multi-kilogram scale

❖ Diverse Organic Synthesis

- Bond Formation & Complex Chemistry – Expertise in C–C bond formation, heterocyclic scaffolds, carbohydrate chemistry, lipids, dendrimers, and advanced peptide modifications.
- Catalysis & Redox Processes – Strong capabilities in hydrogenation (low- and high-pressure), catalyst/ligand screening, enantioselective synthesis, and chiral resolution via salt formation.
- Reaction Technologies – Proficiency in flow chemistry, microwave-assisted synthesis, cryogenic reactions (-78°C), and high-temperature transformations ($>160^{\circ}\text{C}$).
- Functional Group Transformations – Advanced methods, including ozonolysis, carbonylation, photochemistry, electrochemistry, and efficient metal scavenging.
- Scale-Up & Route Optimization – Expertise in translating discovery-scale syntheses to development-scale with cost-effective and robust synthetic routes.

- Chiral Chemistry – Strong focus on stereoselective synthesis, asymmetric transformations, and preparation of enantiopure compounds.
- Complex Molecule Handling – Proven ability to design and execute syntheses for highly functionalized and structurally diverse molecules
- Asymmetric Synthesis – Different approaches are being used, including:
 - Chiral pool synthesis
 - Use of chiral auxiliaries and reagents
 - Asymmetric catalysis
 - Kinetic resolution
 - Photoredox approach

❖ **Specialized and Advanced Chemistry Techniques**

- Emerging Modalities & Specialized Areas – Deep expertise in biocatalysis, surfactant chemistry, nucleoside chemistry, natural product synthesis, and the design of glue/bifunctional degraders.
- New Techniques for Organic Synthesis – Photoredox chemistry, electroredox chemistry, automated solid phase peptide synthesis.