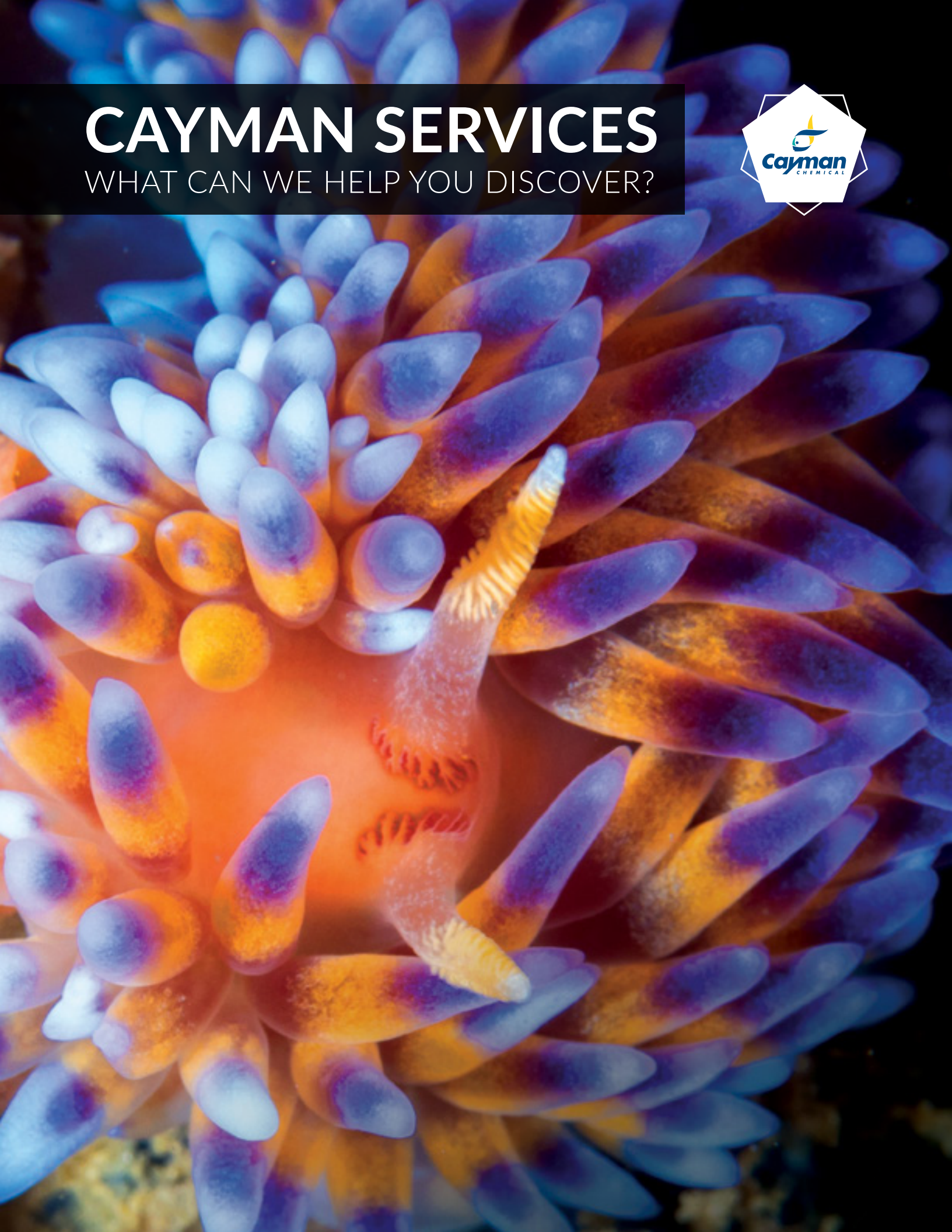
CAYMAN SERVICES

WHAT CAN WE HELP YOU DISCOVER?



CAYMAN SERVICES

Cayman is a US-based CRO and CDMO providing development and preclinical discovery services to the global pharmaceutical, biotechnology, and academic research markets. Our diverse suite of services leverages a team of more than 170 highly skilled scientists with expertise in medicinal chemistry, structural biology, cell and molecular biology, custom assay development, complex multi-step organic synthesis, analytical chemistry, and GMP API manufacturing.

We offer a personalized, flexible approach that enables our clients to address research questions from basic research to drug discovery and development.

On every project we aim to deliver prompt quotations, competitive prices, quality science, and personalized customer service with a commitment to our mission to **help make research possible**.

ABOUT CAYMAN CHEMICAL

LOCATION
Ann Arbor, MI · USA

FOUNDED
1980

FACILITIES
163,901 ft^2 total space
50,065 ft^2 lab space

SCIENTISTS
170+

INDUSTRIES SERVED
Pharmaceutical, Biotechnology, and Academic

ACCREDITATIONS
ISO/IEC 17025:2017 & ISO 17034:2016 [Analytical Standards]

MEDICINAL CHEMISTRY & STRUCTURAL BIOLOGY

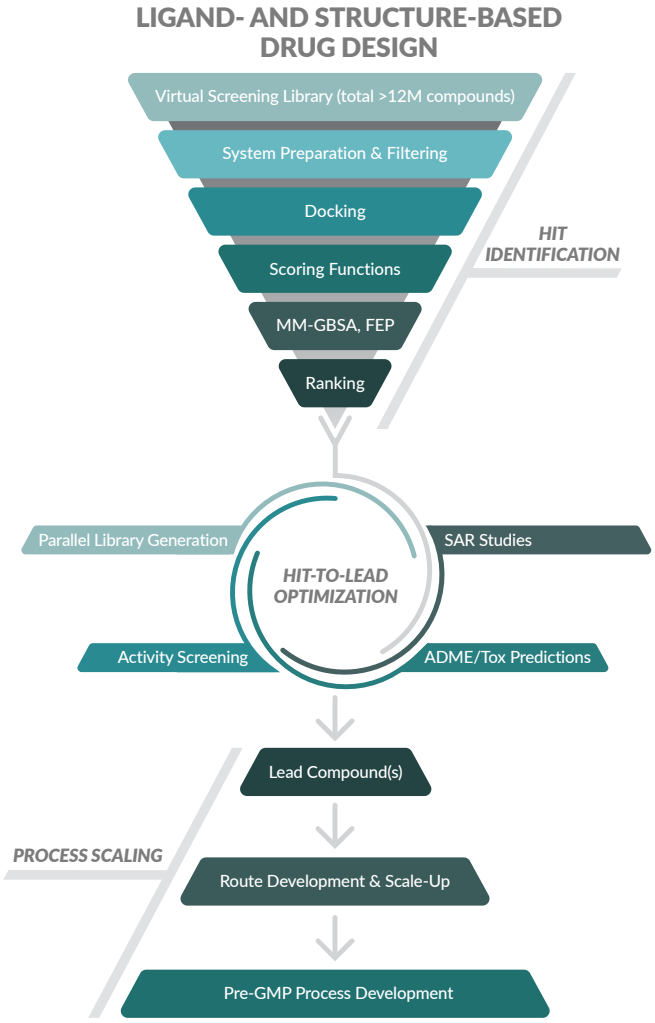
Cayman's medicinal and computational chemistry services offer a fully integrated, multidisciplinary approach to developing a wide range of therapeutics. Our scientists have the expertise and technology to bring your drug discovery program to preclinical stages of development, including US-based GMP process development and manufacturing to support small molecule therapeutics.

Medicinal & Computational Chemistry

- Hit identification using virtual high-throughput screening (vHTS) of >12 million compounds from the Enamine® Stock Screening Compounds Collection and the MilliporeSigma Aldrich Market Select® Screening Collection Phase databases
- Hit-to-lead optimization through iterative cycles of custom synthesis, parallel library generation, and SAR supported by HTS and assay development cores
- Process scaling, route optimization, and pre-GMP process development
- US-based CGMP API manufacturing (multi-gram to multi-kilo scale)

Structure-Based Drug Design

- *In silico* drug design/CADD
- Biophysical characterization by SPR (Biacore™ 8K), TSA, and DLS/SLS (Stunner)
- Protein crystal and co-crystal screening and optimization
- Structure determination by X-ray crystallography (LS-CAT 21-ID, APS, Argonne National Laboratory) & cryo-EM (through partnership with NanoImaging Services):



Argonne NATIONAL LABORATORY

NIS NANOIMAGING SERVICES

Explore the latest developments from our scientists, including scientific posters, application notes, webinars, and more

www.caymanchem.com/literature

BIOANALYSIS & ASSAY DEVELOPMENT

Sample Analysis & Compound Screening for Biomarker Discovery & Target Identification

Our fully integrated bioanalysis and assay development services leverage the diverse expertise of our scientists to aid your research and/or drug discovery efforts. We can support projects ranging in scope from running or optimizing a single assay to building a comprehensive biomarker discovery and development program that incorporates numerous in-house capabilities and core facilities.

LIPIDOMIC PROFILING

Standardized bioanalytical methods and industry-leading expertise in lipid biosynthetic pathways support biomarker discovery and validation.

- Untargeted analysis to identify relative changes in samples across lipid classes
- Targeted panels for quantitative analysis of eicosanoids, phospholipids, endocannabinoids, sphingolipids, SCFAs, and more
- Experience with common and not-so-common sample matrices
- Consultative study design and data interpretation

CELLULAR METABOLISM

Explore therapeutic avenues in various disease models and assess mitochondrial function using established or customized methods and state-of-the art equipment, including the Agilent Seahorse™ platform.

- Mitochondrial biogenesis and function
- ROS generation and oxidative stress
- Immunometabolism studies
- High-content imaging
- Custom cellular models of disease using established cell lines and primary cells

IMMUNOLOGY

Innovative assays for immune-mediated disease and immuno-oncology applications.

- Assays for induction, inhibition, and downstream biological effects of neutrophil extracellular traps (NETs)
- Primary cell isolation and phenotyping using flow cytometry
- ELISpot analysis and cytokine profiling (multiplex)
- Industry-leading optimized protocols and expertise for MS-based immunopeptidome profiling with our partner MS Bioworks

MS Bioworks
Protein Mass Spectrometry Services

HIGH-THROUGHPUT SCREENING

Flexible formats and automated workflows for robust data you can trust.

· Automated liquid and microplate handling (96- to 1,536-well capacity)

· Fluorometric, absorbance, luminescent, (H)TR-FRET, and Alpha readouts

· Enzyme activity and inhibitor screening

· Cell-based assays and reporter assays

CUSTOM ASSAY DEVELOPMENT

Our experts offer assay design, development, validation, and manufacturing. We can build quantitative assays on a variety of analysis and detection platforms to suit your specific needs and can provide enhanced documentation to support technology and/or method transfer to CLIA/CAP certified diagnostic testing labs.

· Immunoassays

· Enzyme activity assays

· Inhibitor screening assays

· Detection kits

· Cell-based assays

· Reporter assays

· Mass spectrometry-based assays

· Cytokine release assays

Our bioanalysis and assay development services are supported by multiple core competencies:

PROTEIN EXPRESSION & PURIFICATION

- Protein production and characterization
- Bacterial, insect, and mammalian expression systems
- Large-scale protein expression, including 10 L fermentation capacity
- Biocatalyst development and target optimization in conjunction with Cayman's Chemistry Services

ANTIBODY PRODUCTION

- Monoclonal or polyclonal antibody production using protein, peptide, or small molecule immunogens
- Recombinant antibody production
- Antibody conjugation
- Antibody characterization (antibody pair optimization, epitope mapping, affinity assessment by SPR)
- Bulk production and purification

CELL & MOLECULAR BIOLOGY

- Fully equipped BSL2 cell culture suite for the culture of established and primary cell lines
- Reproducible, scalable transient transfection (MaxCyte® high-throughput electroporator)
- Stable cell pools and cell line production
- RNAi knockdown and qRT-PCR analysis

ANALYTICAL CHEMISTRY

With 40+ years of combined experience in mass spectrometry, Cayman scientists are available to support your biomarker and drug development studies. Equipped with state-of-the-art instrumentation, we are continuously expanding our LC-MS/MS capabilities for the detection and quantification of drugs, metabolites, and biomarkers in biological samples. We utilize rigorous and modern scientific methods to provide our customers with the highest quality data.

Qualitative & Quantitative Analysis

- Analytical method development and sample analysis for biomarker discovery and pharmacokinetic (PK) studies
- Fit-for-purpose bioanalytical methods utilize state-of-the-art Waters®, Sciex, and Thermo Scientific™ instrumentation to ensure the highest sensitivity and data integrity
- Drug property screening including solubility, metabolism, rate of release, & PK testing to support medicinal chemistry programs

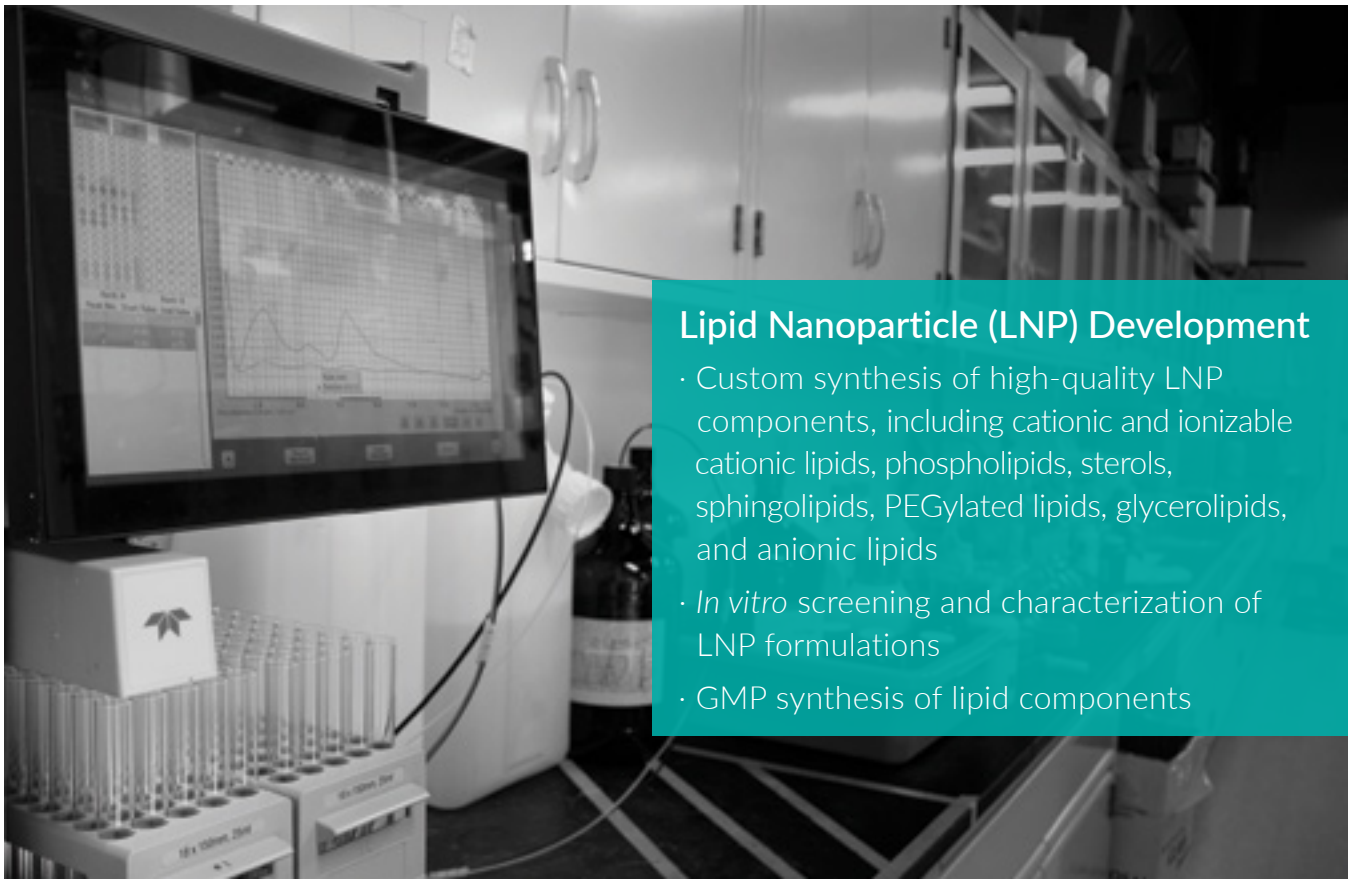
CHEMICAL SYNTHESIS

Multi-Step, Complex Organic Synthesis

- Complex fatty acid metabolites, glycerophospholipids, sphingolipids, and sterols
- Small molecules, drug-like heterocyclic compounds
- Classic and emerging drugs of abuse (PEDs, LSDs, amphetamines, benzodiazepines, synthetic cannabinoids, opioids, etc.)
- Isotopically labeled standards
- Analytical standards, Reference Materials (RMs), and Certified Reference Materials (CRMs)
- Natural product isolation and biocatalysis

GMP API MANUFACTURING

- Process scaling, route optimization, and pre-GMP process development
- Preclinical/clinical API synthesis and method validation
- US-based CGMP API manufacturing (multi-gram to multi-kilo scale)



Lipid Nanoparticle (LNP) Development

- Custom synthesis of high-quality LNP components, including cationic and ionizable cationic lipids, phospholipids, sterols, sphingolipids, PEGylated lipids, glycerolipids, and anionic lipids
- *In vitro* screening and characterization of LNP formulations
- GMP synthesis of lipid components

WORKING WITH CAYMAN

With Cayman, you can expect prompt, open, and professional communication every step of the way.

- **COLLABORATIVE** – We do the work, you control direction
- **FLEXIBLE** – Phase-based projects or FTE-based contracts designed to keep work on time and on budget
- **CONFIDENTIAL** – Secure data transfer and reporting

DISCOVERY CALL
- Discussion under CDA/NDA
- Understand project scope & aims
- Convey capabilities

PROPOSAL
- Outline project
- Estimate timelines & pricing
- Agree upon scope of project

SOW OR MSA
- Finalize scope of work
- Finalize timelines & pricing

PRODUCTION
- Initiate & actively manage project
- Provide regular project updates
- Submit final written report
- Secure data transfer
- Complete final consultation to review data

INVOICING
- Submitted per project or phase
- Report FTE (time & materials-based)

WHAT OUR CLIENTS ARE SAYING...

Cayman was **enormously helpful** to us with our program to discover and develop new small molecule modulators of ligand/receptor interactions. We made extensive use of its **medicinal chemistry, assay development, structural biology, and analytical chemistry services** resulting in the successful identification and characterization of several promising lead candidates. In addition to its technical proficiency, Cayman provided **expert, highly collaborative and critical guidance** to our program.

– CEO, Recovery Therapeutics, Inc.

We have worked with the **Bioanalysis group** at Cayman Chemical on multiple projects. The scientists are outstanding at executing on established protocols as well as troubleshooting projects that are in an optimization/discovery stage. There is a **high degree of communication** throughout the process which we have found vital when projects hit a hurdle and we need to pivot from the original plan. They are a **trusted resource for cellular-based assays**, especially flow cytometry, and **consistently provide excellent guidance and data** for these types of projects.

– Principal Scientist, AVITA Medical

To learn more about our Services and request a quote, visit our website at **www.caymanchem.com/services**

CONTACT US

Email: contractresearch@caymanchem.com
Phone: (888) 526-5351
Website: www.caymanchem.com/services

Our services are also available through these online marketplaces: