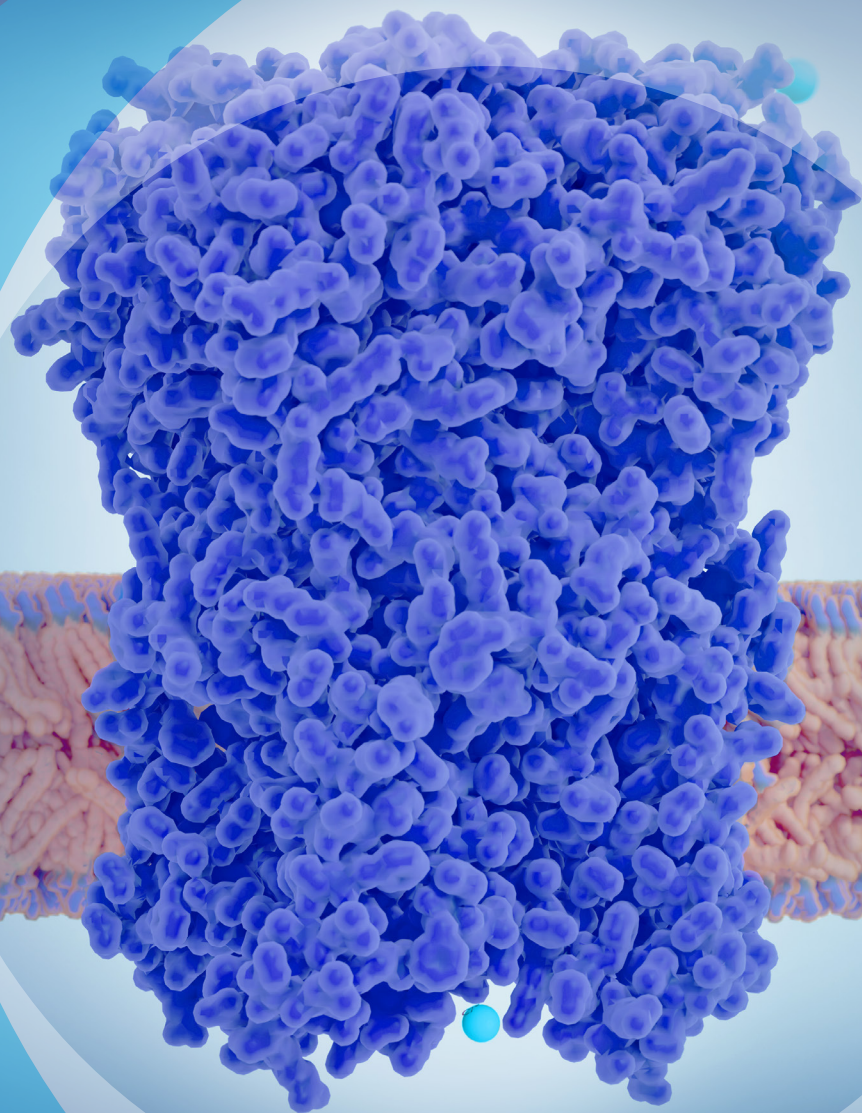




ION CHANNEL ASSAYS

# **Delivering Custom Cell-Based Tools for Ion Channel Drug Discovery**



# Partner with Global Leaders in Ion Channel Drug Discovery

## Supporting Your Research

With over 20 years of expertise and a portfolio of more than 150 validated ion channel targets, Sygnature Discovery is your partner of choice for ion channel drug discovery. Our proven track record accelerates the path from target identification to lead optimization.

## Global Reputation for Excellence

Our reputation for excellence has been built on high-quality, reliable data that accelerates drug development. Whether you require off-the-shelf or custom cell-based assays, our dedicated scientists work collaboratively with you to develop bespoke tools that unlock the potential of complex ion channel targets.

At the heart of our success is our commitment to advancing ion channel drug discovery through state-of-the-art screening technologies and cutting-edge electrophysiology platforms. From fluorescence-based screening assays to manual and automated electrophysiology and solid-supported membrane assays, we provide comprehensive solutions tailored to the unique demands of each project.



# End-to-End Ion Channel Discovery

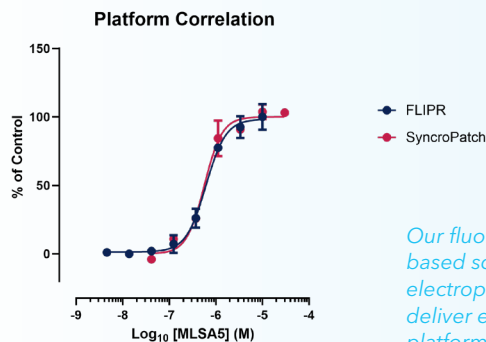
Integrated workflows to accelerate hit identification, profiling & lead optimization



## Target Validation & Assay Development

Unlock the full potential of your ion channel drug discovery with our expertise in **custom cell line generation** and assay development. Our expert cell biology team delivers fast, cost-effective, and **innovative solutions** tailored to your specific target, leveraging the latest technologies to produce high-quality, optimized cell reagents.

With a **proven track record** in developing and refining ion channel assays, we provide robust target-focused solutions that power comprehensive screening cascades. Our integrated approach combines fluorescence-based screening and electrophysiology techniques, delivering precise, actionable insights into compound activity.



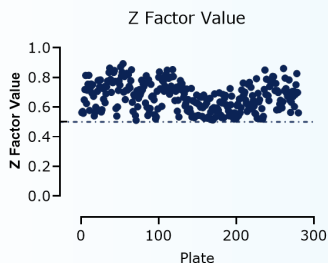
*Our fluorescence-based screening and electrophysiology assays deliver excellent cross-platform correlation.*



## High-Throughput Screening

Accelerate your ion channel drug discovery with our high-throughput screening platforms. Our screening team provides fast, efficient hit-finding solutions, helping to **uncover new starting points** for medicinal chemistry programs.

Using either customer-supplied compound libraries or our **proprietary LeadFind Library**, we integrate advanced compound tracking, precision dispensing and sophisticated endpoint readers to ensure successful outcomes. Our fluorescence-based assays, available in **96- and 384-well formats** are optimized for efficiency, sensitivity and accuracy, delivering actionable insights to propel your discovery pipeline forward.



*High-throughput screening assays consistently deliver high assay reproducibility to support confident hit identification.*

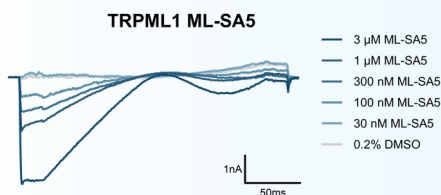


## Electrophysiological Studies

Gain deeper mechanistic insights with our electrophysiology expertise. We offer both manual and high-throughput automated electrophysiology platforms to support every stage of ion channel drug discovery.

Our **384-well automated systems** deliver reproducible data for large-scale screening and profiling, while **manual patch-clamp platforms** provide detailed kinetic and mechanistic data for complex targets.

This synergistic approach ensures generation of high-quality, actionable data to confidently progress your ion channel discovery programs.



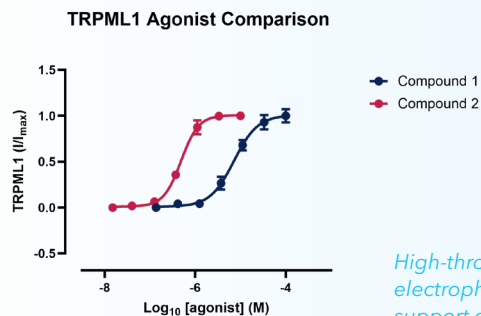
*Electrophysiology platforms provide reproducible, high-quality data to support both rapid compound screening and detailed mechanistic studies.*



## Lead Optimization

Streamline your lead optimization with tailored assays and data-driven profiling, within a single integrated workflow. We combine **functional assays**, **electrophysiology**, and **mechanistic studies** to guide your SAR and refine lead candidates. Our integrated approach ensures efficient compound profiling delivering the insights needed to confidently advance your research.

By tailoring each workflow to your project's needs, we deliver reliable, decision-making data that accelerates your path from hit to lead, supporting rapid progression to preclinical development.

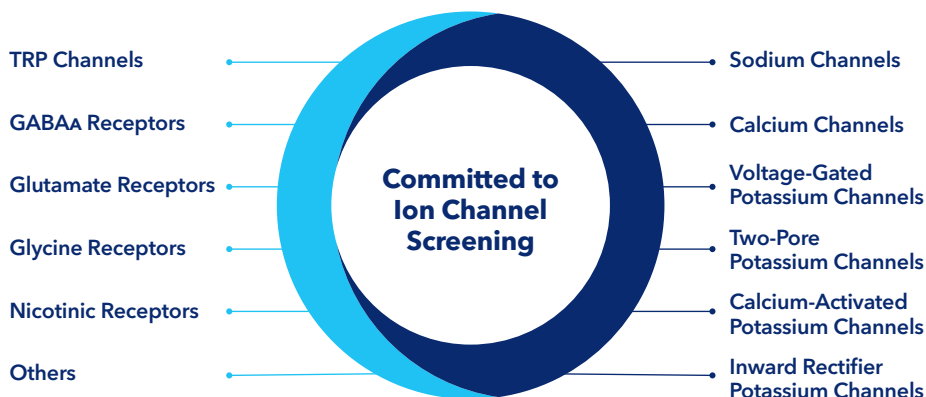


*High-throughput automated electrophysiology cascades support data-driven lead optimization.*



# Ion Channel Targets and Assays

Accelerate your ion channel drug discovery with the largest commercially available ion channel collection. Our purpose-built, in-house clonal cell lines deliver reproducible, high-quality data for high-throughput screening and downstream electrophysiology.



## Our comprehensive capabilities support every stage of ion channel drug discovery, from target selection to lead optimization

- **150+ Ion Channel Targets and Assays**
- **Customizable Assay Development** for unique research needs
- **Pre-Validated Assays** for accelerated data generation
- **Comprehensive Profiling Services** - Routine profiling and selectivity panels provide detailed insight into compound behaviour
- **Disease-Relevant Variants** - Proprietary cell lines designed to model clinically significant variants, offering insights into disease mechanisms
- **Species Orthologs** - Comparative studies across species to support translational research



## Your Research, Accelerated

Our platform enables flexibility and scalability, supporting projects from initial screening to late-stage lead optimization. Partner with our expert team to design your custom discovery cascade, or access our validated assays for rapid data generation.

Whatever your project needs, we'll help accelerate your success.

# Cutting-Edge Technologies

Take advantage of state-of-the-art technologies purpose-built for ion channel drug discovery to deliver scalable, precise data at every stage, from early screening to detailed mechanistic studies. Our advanced platforms provide flexible endpoint readouts, ensuring reliable, high-quality data to support confident decision making.



## High-Throughput Fluorescence-Based

Our fluorescence-based platforms enable rapid, high-quality compound screening:

- **Calcium Mobilization, Membrane Potential, Thallium Flux and Biosensor Assays**
- **Flexible Plate Formats**  
96- and 384-well configurations
- **Quantitative, Multiplexed Readouts**  
Designed for rapid decision-making in lead identification



## Electrophysiology Expertise

Our electrophysiology technologies provide unparalleled depth in ion channel characterization:

- **384-Well Automated Electrophysiology Platforms**
- **Manual Patch Clamp**  
Gold standard for detailed kinetic and mechanistic ion channel studies
- **Two-Electrode Voltage Clamp**  
Ideal for multi-subunit or complex targets
- **Solid-Supported Membrane Electrophysiology**  
Offering a unique window into lysosomal channels within native organellar membranes.

# Stable Cell Line Generation & Assay Development

Reliable data starts with reliable cell lines. Purpose-built, clonal cell lines deliver consistent protein expression and high assay reproducibility making them ideal for long-term studies and high-throughput screening applications.

By eliminating the variability and time-consuming nature of transient transfection systems, monoclonal cell lines deliver robust data to expedite your drug discovery research.



## From Cell Line Generation to Tailored Assays

We apply a structured process to ensure high-quality, validated assays built on robust cell lines.

- **Functional Clone Screen**  
Identify optimal clonal isolates
- **Electrophysiology validation**  
Assess performance and reproducibility
- **Pharmacology assessment**  
Confirm reference pharmacology

## Custom Assay Development Expertise

Sygnature Discovery's assay development team specializes in custom assays to support ion channel drug discovery.

- **Activators, Inhibitors and Modulators**  
Tailored approaches to assess ion channel modulation
- **Customized Voltage Protocols**  
Designed to match the biophysical properties of each ion channel target
- **Optimized Application Protocols**  
Adapted to your screening requirements for precise compound characterization
- **Detailed Analysis and Reporting**  
Comprehensive data packages with customizable reporting formats for clear insights

# Customized Screening Cascades

Our screening cascades are designed to support structure-activity relationship analysis and downstream selectivity studies, generating robust data across a wide range of assays.

- **High-Throughput Automated Electrophysiology**  
Screening thousands of compounds weekly with multiple advanced platforms built for efficiency and reliable data generation
- **Routine SAR Testing for Informed Decisions**  
Regular electrophysiology assessments provide essential SAR insights, guiding medicinal chemistry efforts
- **Rapid Data Turnaround**  
Priority testing slots keep your project moving with fast, reliable data delivery
- **Dedicated Project Leadership**  
Experienced project leaders ensure seamless communication and alignment with your research goals



**Target Validation  
and Assay Development**



**Hit Finding**



**Hit Confirmation**



**Lead Optimization**



# Comprehensive Support for Ion Channel Discovery Success

Sygnature Discovery offers a suite of integrated support designed to accelerate ion channel research, ensuring efficiency from initial target validation through to lead optimization and candidate selection.



## Biology Support

Custom cell-based and biochemical assays to support target validation, hit-to-lead efforts, and SAR analysis



## Chemistry Support

SAR analysis, structure-based design and custom synthesis supporting hit-to-lead efforts



## Protein Sciences & Structural Biology

Protein production, biophysical characterization and structure determination to advance mechanistic understanding and guide structure-based drug design



## In Vivo Pharmacology

Translational models for efficacy testing, supporting target engagement, pharmacodynamics and dose selection in disease-relevant models



## Compound Libraries

LeadFinder library with 150,000 lead-like compounds for diverse hit discovery



## DMPK Expertise

*In vitro* ADME, PK and metabolic profiling to de-risk compounds early



## Compound Management

Azenta system storing 2M+ compounds for streamlined inventory control



## Project Management

Dedicated project managers ensure clear communication, streamlined logistics and alignment across multidisciplinary teams

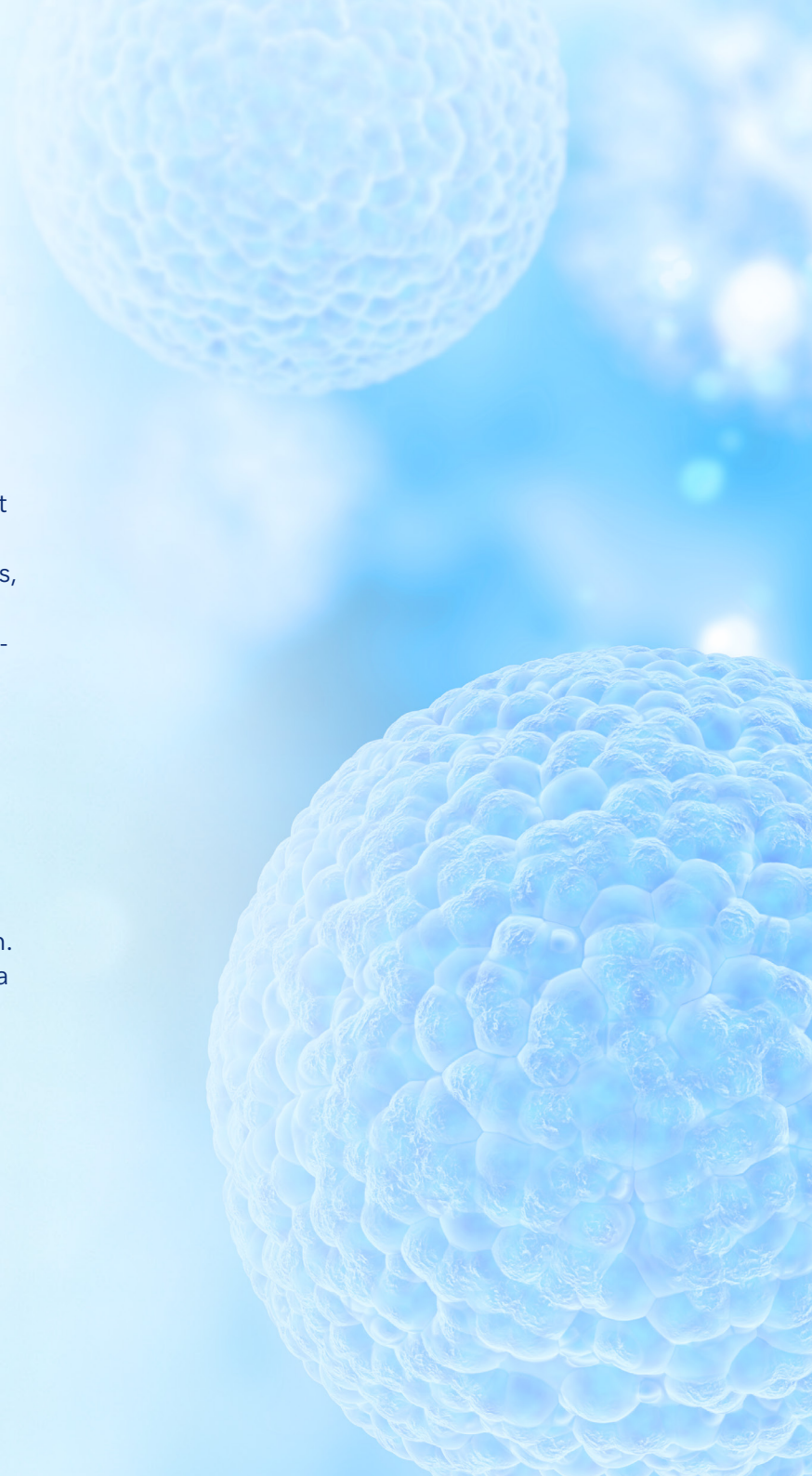
# Delivering Quality and Performance to Your Drug Discovery Research

## Why Choose Sygnature Discovery for Your Ion Channel Discovery Project?

With over 20 years of experience and a global reputation for excellence in ion channel drug discovery, Sygnature Discovery offers the largest commercially available collection of ion channel assays and targets, purpose-built clonal cell lines, and cutting-edge technologies, including high-throughput electrophysiology and fluorescence-based platforms. Our customizable screening cascades, pre-validated assays and disease-relevant models ensure reliable, high-quality data to accelerate your discovery timelines.

We provide comprehensive integrated support, including biology, protein science, chemistry, DMPK, in vivo pharmacology, and a fully managed compound library and storage system. Our dedicated project leaders ensure rapid data generation, clear communication and scientific excellence throughout your project.

Whether you need integrated ion channel drug discovery support, electrophysiology profiling, mechanistic studies or custom assay development, Sygnature Discovery is your trusted partner, combining scientific expertise with operational excellence to help you make confident, data-driven decisions.





[sygnaturediscovery.com](https://sygnaturediscovery.com)