o2h discovery

Insight-Driven Science

A multi-modality integrated drug discovery platform, operating from its state-of-the-art research centres in Cambridge, UK and Ahmedabad, India

o2h group's vision is to be the best at

seeding new ideas in life science and technology by co-investing, co-creating and co-executing across boundaries

#o2hcollaborativeinnovation

discovery

A multimodality integrated drug discovery platform to support our collaborators developing the next generation of therapies.

ventures

An S/EIS fund focused on seeding early stage biotech therapeutics and related AI opportunities.

technology

Customised software development services including both web and mobile apps covering all phases from design, build to adoption.

incubator

Shaping one of the region's most exciting community of entrepreneurs in life science, technology and green innovation.

community

o2h group is a community aware company and has been working with various organisations on a number of programs.

therapeutics

Novel co-curation, risk share, spin in-out of unloved/novel pre-seed ideas and IP for later seed stage funding.

but why bother?

because at o2h we love working with fearless innovators from any background with a collective passion we design and shape new discoveries that impact the world in which we live.

external collaboration

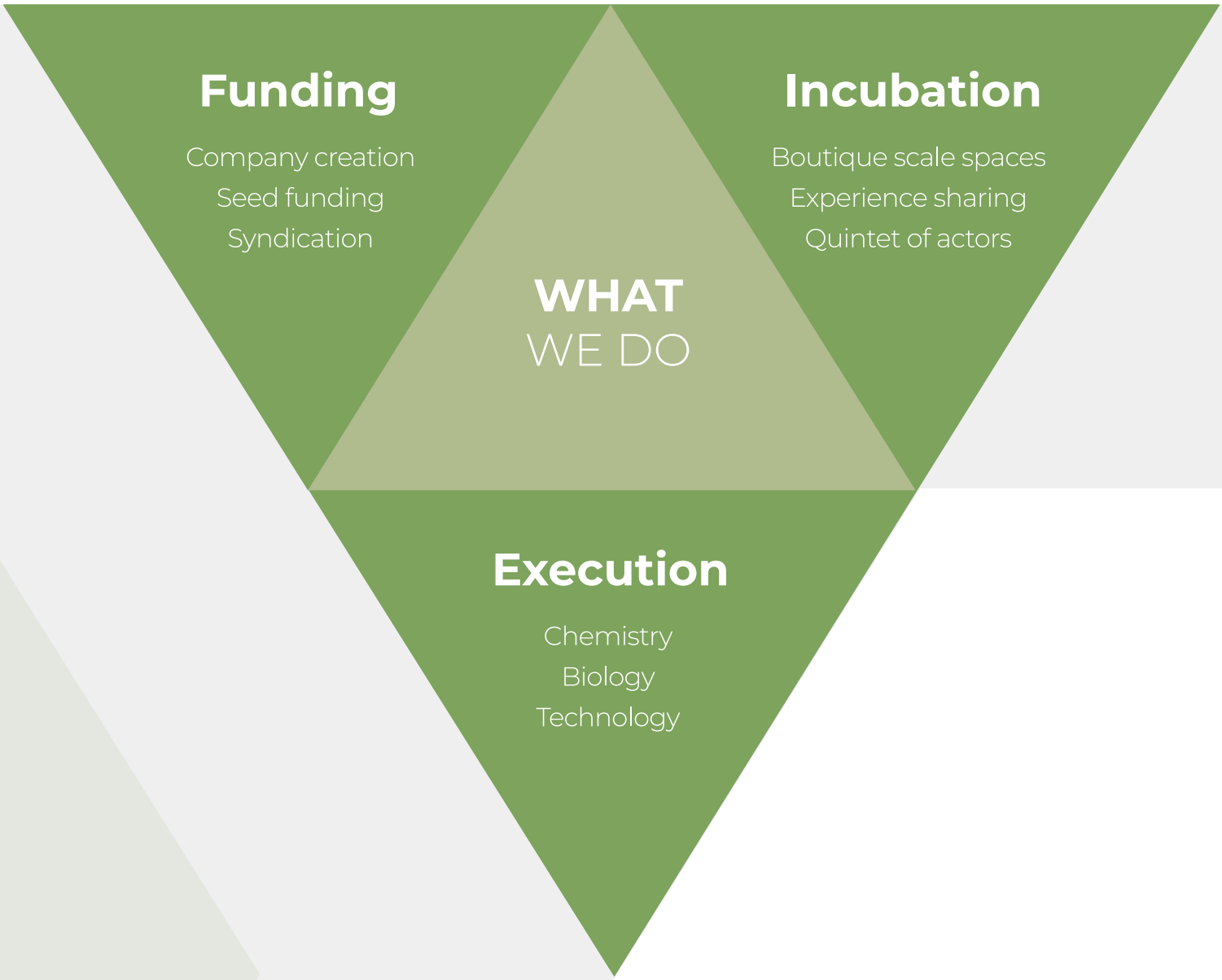
we don't need to do everything ourselves and are comfortable with different levels of control in a collaboration necessary in order to innovate.

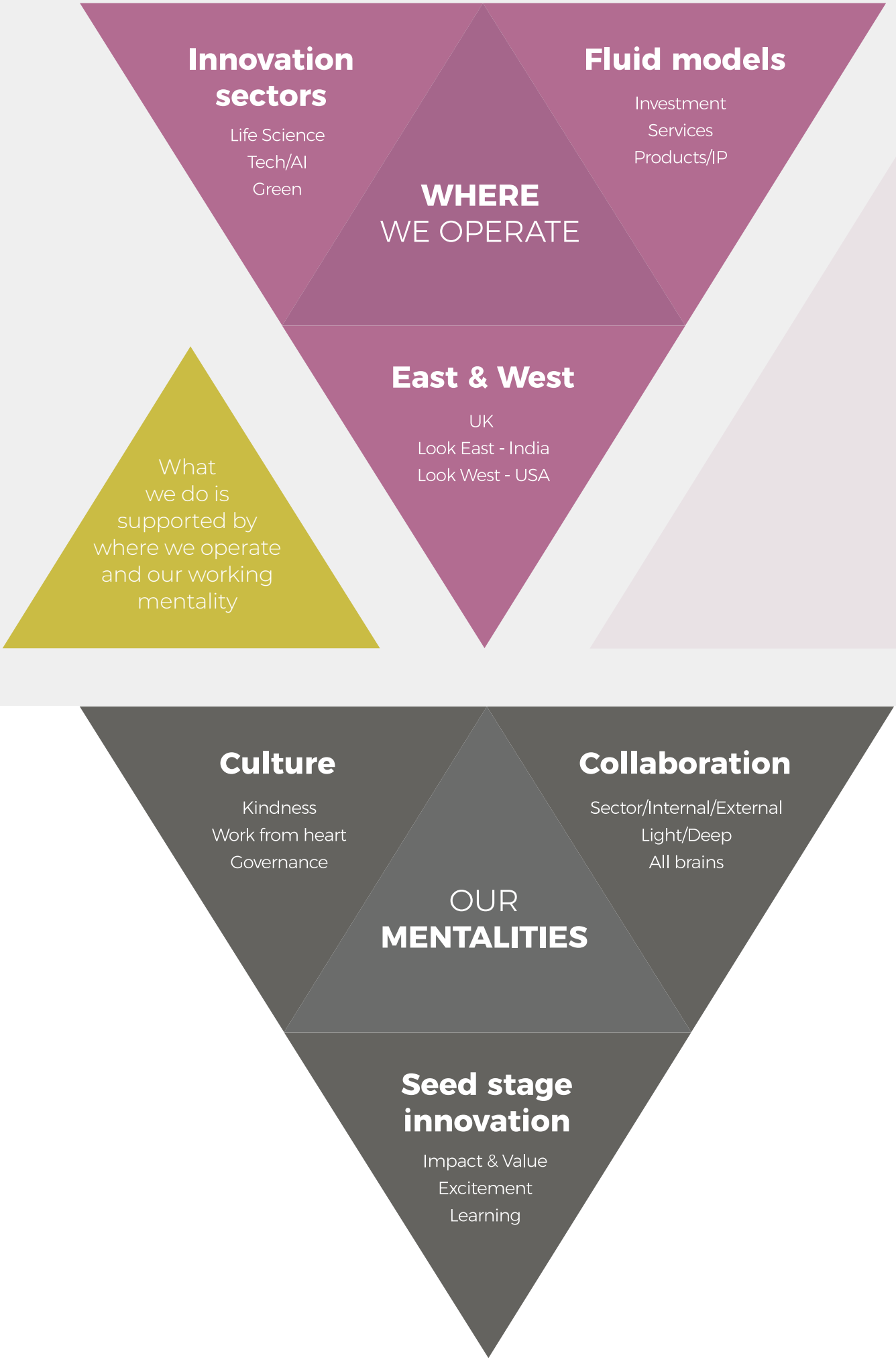
Light collaboration

Deep collaboration

seeding new ideas

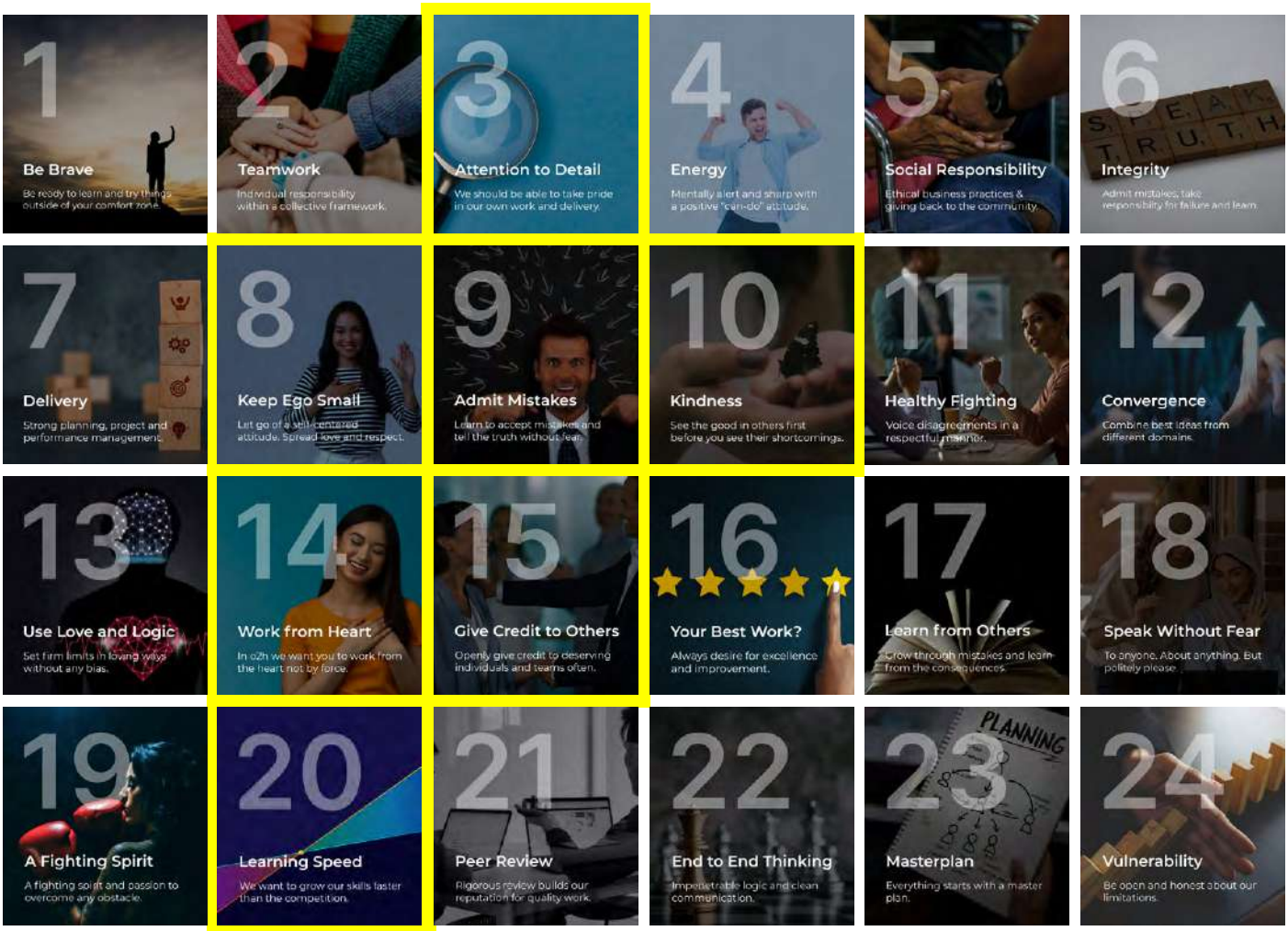
by triaging funding, execution and incubation




Innovation sectors
Life Science
Tech/AI
Green
Fluid models
Investment
Services
Products/IP
WHERE
WE OPERATE
East & West
UK
Look East - India
Look West - USA
What we do is supported by where we operate and our working mentality
Culture
Kindness
Work from heart
Governance
Collaboration
Sector/Internal/External
Light/Deep
All brains
OUR
MENTALITIES
Seed stage innovation
Impact & Value
Excitement
Learning

Our Culture is Our IP

It is embedded in simple human values that drive our habits, reflexes and attitudes to our work, each other and our community.



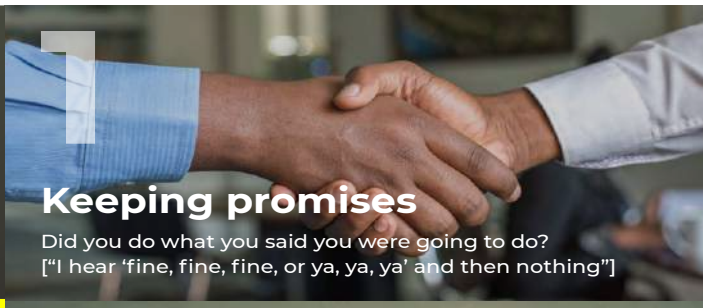
These 7 highlight a key piece of our human identity

> "Here the atmosphere is really electrifying"

Driving Customer Success

If you win, we win, and we have played our part in seeding new ideas in life-sciences, and finding patient cures...

Golden rules for collaborator communication



1 Keeping promises

Did you do what you said you were going to do? ["I hear 'fine, fine, fine, or ya, ya, ya' and then nothing"]

2 Save your collaboration manager time

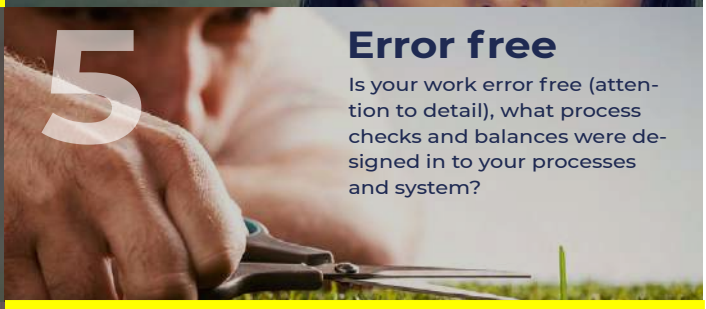
What are you doing everyday to make the life of your collaboration manager easier everyday and allow them to process their work faster?

3 Insight

Are you giving insight/analysis for fast decision making or only giving them data/information/unexplained attachments?

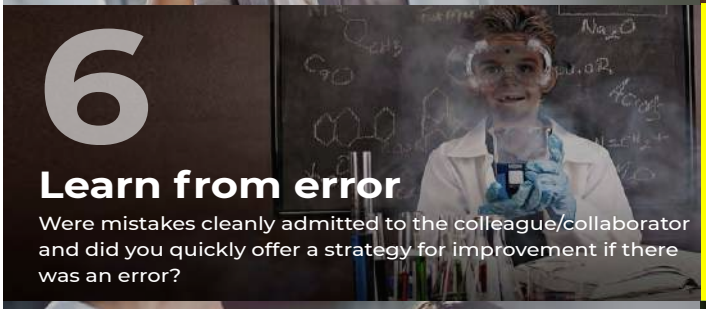
4 Advanced real time updates

Are you managing expectations via frequent real-time updates and informing of problems/ solutions? [colleagues/collaborators don't like surprises]



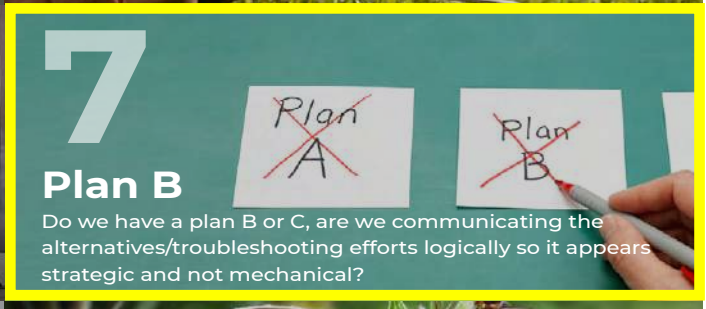
5 Error free

Is your work error free (attention to detail), what process checks and balances were designed in to your processes and system?



6 Learn from error

Were mistakes cleanly admitted to the colleague/collaborator and did you quickly offer a strategy for improvement if there was an error?



7 Plan B

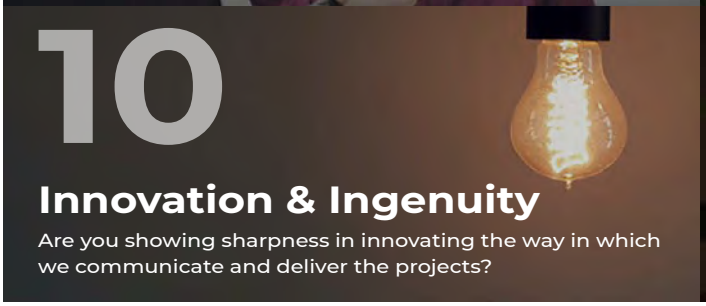
Do we have a plan B or C, are we communicating the alternatives/troubleshooting efforts logically so it appears strategic and not mechanical?

8 Direct insight from the ground

Is the collaborator exposed to live insights of trouble-shooting evidence from the ground team and via literature search based research?

9 Team strength in depth

Does the collaborator see the strength in depth of capabilities by being exposed to communications from scientists/techies working at the ground level?



10 Innovation & Ingenuity

Are you showing sharpness in innovating the way in which we communicate and deliver the projects?

11 Expectations & Targets

Are you adapting to the latest changing expectations and targets of colleagues/collaborators and what is happening in their project/business?

o2h discovery

Chemistry Delivered

A track record over two decades of breakthrough innovations in people, process and technology to give you an outstanding drug discovery service...

Insight-Driven Drug Discovery

o2h discovery operates a multi-modality integrated platform from Cambridge, UK, and Ahmedabad, India, with a focus on insight driven discovery.

Chemistry

- Medicinal & Synthetic Chemistry
- Small Molecules & Peptides
- PR&D/Scaleup
- Library Synthesis
- Degraders, Glues, ADCs, LNPs

Biology & DMPK

- Compound Screening
- Target Validation, Mechanistic Studies
- Biophysical/Biochemical and cellular assays
- Phys-chem & In vitro ADME Profiling
- In vivo PK/Tox/Efficacy Partnership

Ternary³ Model Formation

To take you on the journey from idea to development candidate, we have a unique three-part ternary model combining novel capabilities (in-house/strategic third-party/ tech platforms), cutting-edge AI tools (mixed in with human experience), and business model to fit your stage of capital evolution.

Digitisation

- ELN
- CITC – Project Mgmt.
- Inventory Search

'Mix in' Human Experience

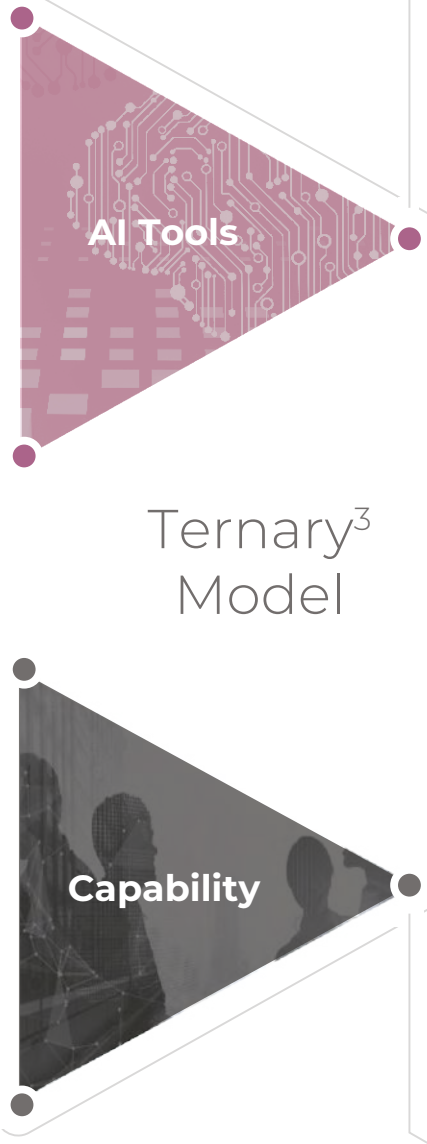
- Superstar talent
- Senior team
- Use brains and tools...

Leverage of Novel Tech Partners

- Phoremost, Stick Tx, Astex
- Ternary, ODD, Spirea
- See o2h Ventures Portfolio...

Novel Leading In-house Capability

- TPD/Glues/TACS
- Conjugates - (ADCs, PDCs...)
- Phenotypic Screening/Cell Painting Novel/Niche Assays - (Integrin, ChamelogK, Neurite, Semarion, SPR, RNA, Mitochondrial, Psychedelics...)

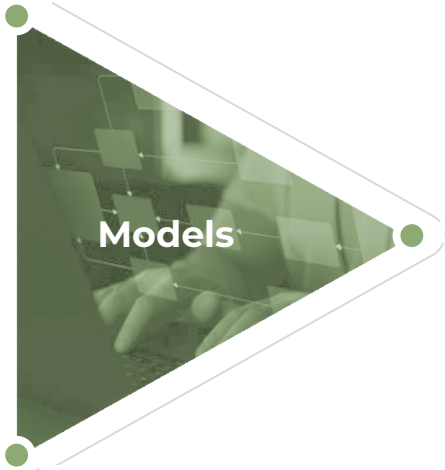


AI

- SciFinder, Chemical.AI
- Deepmirror
- Inductivebio
- Ignota Labs

Risk

- Milestones/Buy-out
- IP share
- Sweat Equity



Awards

- Kickstarter
- Biology Match Funding

Services

- FTE, FFS
- Plug-in Biotech

Strategic Partners

- DEL - (HitGen)
- In-vivo - (Vipragen)
- Comp chem – (Linchpin.bio, ODD)
- hERG - (Metrion)
- Organoids - (Biodimensions)

Leap to Development Candidate *with* o2h discovery

Idea ⇄ **Chemistry**
(Design/Synthesis/Optimisation of Novel Chemical Matter)

Wet Lab	**In-house**	• Medicinal Chemistry • Small Molecules, Peptides, Lipids • ADCs - Linker/Payload • PROTACs, Molecular Glues
Wet Lab	**Strategic & Tech Partners**	• Computational - (Linchpin.bio, ODD) • Compound Libraries - (Enamine) • Fragment Libraries - (Astex) • Glues - (Ternary Tx, Stick Tx) • ADCs - (Spirea) • LNP Formulation - (Camgene)
AI Tools	**Proprietary**	• Fragment Library • Chemistry
AI Tools	**Strategic Partners**	• Developability - (Deepmirror) • Retrosynthesis - (SciFinder, Chemical.AI)
Models	**Awards & Guarantees**	• o2h Discovery • Peptide Guarantee
Models	**Co-discovery**	• Co-discovery with • Plug-in

To take you on the journey from idea to development candidate, we have in-house capabilities comprising proprietary tools, strategic partnerships, and technology platforms. We combine these with AI at each stage where appropriate, integrating human effort, hybrid tools, and fully automated systems. Additionally, we offer a range of business models that enhance capital efficiency, helping you get to the lead candidate.

Biology/Screening (Assay Development/ Hit Identification)	**DMPK** (Metabolic Stability)	**PR&D/ Scaleup** (Synthesis of GLP & Non-GLP)	**Lead/Dev Candidate** (IND-enabling Studies)
• Biology Strategy, Cascade & Assay Design • Biochemical, Biophysical, Cellular Assays • Target Validation/Engagement & MOA • Fragment/Small Molecule/ Phenotypic Screening	• In-vitro ADME • Pre-formulation	• Non-GMP (gram to sub-kg)	
• DEL - (HitGen) • Protein Production - (GenScript) • 3D Organoids & Engineered Tissues - (Biodimensions) • Omics - (Strand Life Sciences)	• In-vivo - (Vipragen) • hERG - (Metrion, ApconiX) • AMES - (RCC Labs, Adgyl Lifesciences) • Efficacy Models - (Pharmidex)	• Non-GMP (kg-scale) - (Ami Lifesciences) • GMP - (Ami Lifesciences)	
in the Cloud™			
• Cellular Pathways, Genomics, and Repurposing - (AI-VIVO)	• In Silico ADME - (Inductivebio) • In Silico Tox - (Ignota Labs)		
Kickstarter Award			
• Biology Match Funding			
Inflexion Tx (sweat equity, or milestones/deferred payments/royalties, % share in the IP/program)			
Biotech (co-locate subsidiary-like operations in the UK and India)			

Extensive Track Record of Collaborations in Biotech

o2h discovery has supported marquee biotech and pharma across the globe since 2004.

Extensive Track Record of Collaborations in Biotech

o2h discovery has supported marquee biotech and pharma across the globe since 2004.

What Our Customers Say...

My relationship with o2h Discovery is now more than a decade. I have had many opportunities to collaborate with the o2h team for my drug discovery efforts at Karyopharm, Protai and Sporos Bioventures. I have always been impressed by their efficiency to deliver novel chemical compounds that helps to achieve targeted project milestones. Real time and insightful communication is also their key differentiator.

Sharon Shacham
Co-founder & MD, E44 Ventures

Our relationship with o2h over many years supporting our medicinal chemistry projects in QEDDI has been highly productive. With o2h's help we have progressed our portfolio to an advanced stage ready for partnering. We are very pleased with the efficiency, productivity and communication with o2h chemists and look forward to further positive outcomes.

Brian Dymock
Head of QEDDI

At Cellestial, our goal is to maximise patient benefit that our treatments can offer. Small molecule therapeutics remain the most scalable form of treatment modality, meaning that more people around the world can benefit from them. We are proud to partner with o2h to expand our pipeline of astrocyte-protective small molecule drugs. The expertise provided both on the conceptual planning stage as well as the synthesis efficiency is world-class.

Dr Nat Hastings
CEO, Cellestial Health

We had a great experience working with o2h discovery on our Fragment libraries project. Their expertise in conducting fragment-based screening, targeting dual series threonine kinase on surface plasmon resonance, was impressive. The efficiency, productivity, and detailed communication from the o2h biologist team were outstanding. We look forward to further positive outcomes in our future collaborations.

Eran Seger
CEO and Co-founder, Protai Bio

Protai

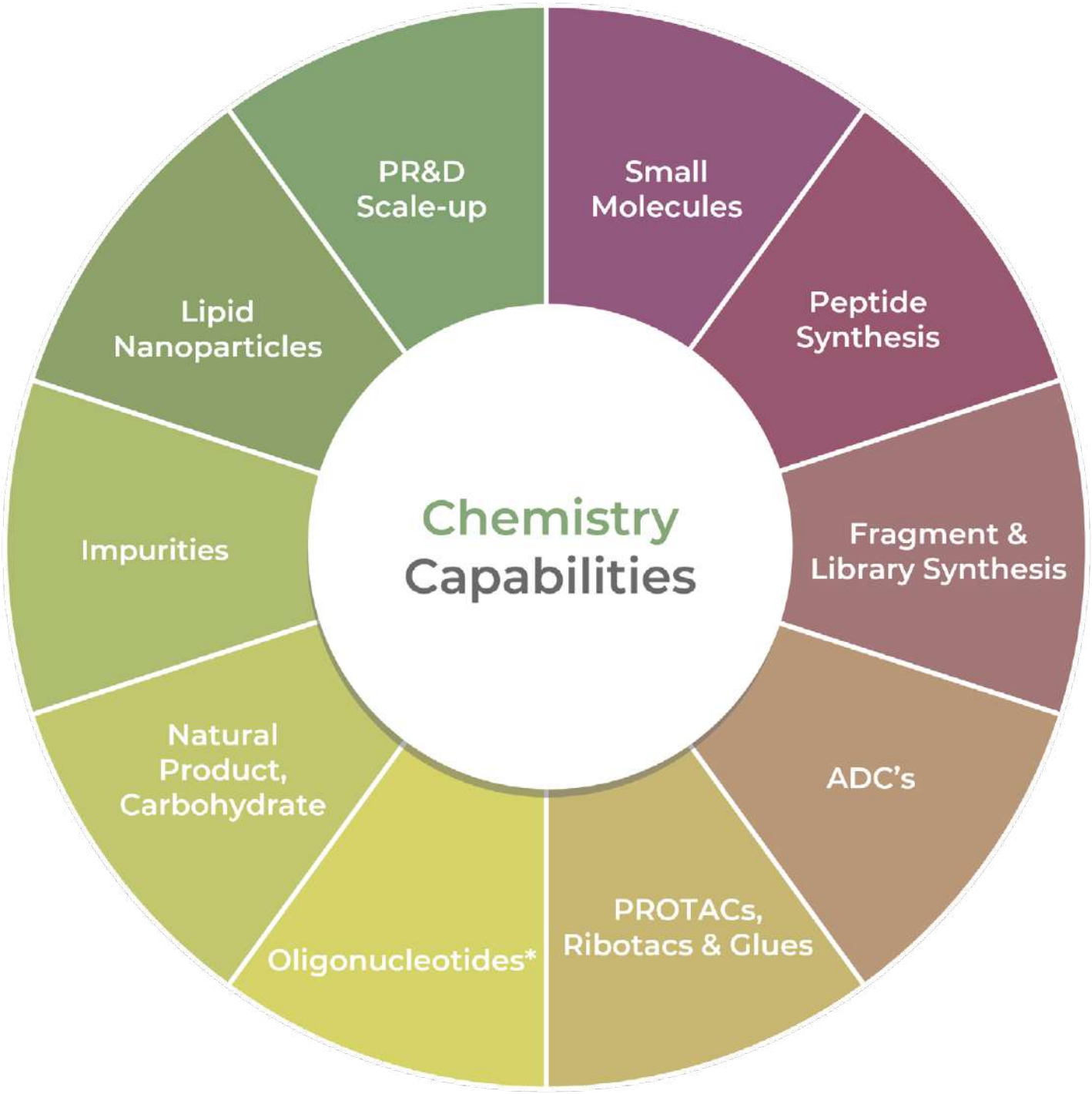
Persephoni Biopartners is excited to announce the award of the o2h Kickstarter Program to InnoVira Therapeutics, a Persephoni portfolio company focused on developing small molecule medicines. The Kickstarter award will accelerate our early discovery and drive generation of candidates for our lead program. The high quality medicinal chemistry services provided by o2h Discovery are uniquely designed to help startups such as InnoVira reach value milestones more rapidly, which aligns closely with Persephoni's core mission of de-risking early stage companies to bring novel therapies to patients faster.

Hilary Schultz
CEO, Persephoni Biopartners

PERSEPHONI™
Discover | Transform | Accelerate

Chemistry Capabilities

We have deep chemistry expertise in medicinal chemistry, and various modalities to support a HIT ID to lead optimisation program complemented by strong HTE experience.



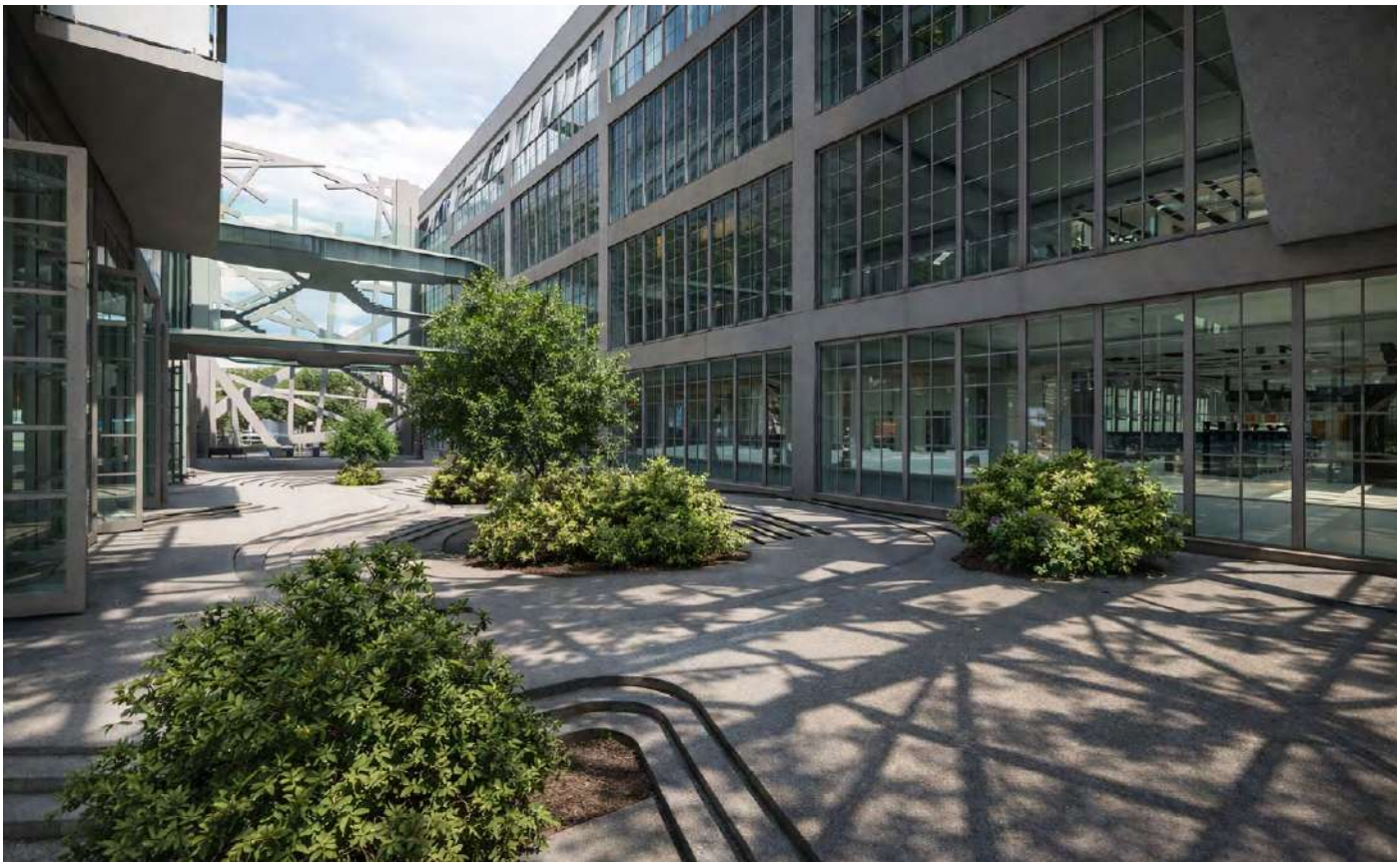
* Service in planning phase

**Electrochemistry and Photochemistry reactions can support green chemistry approaches...

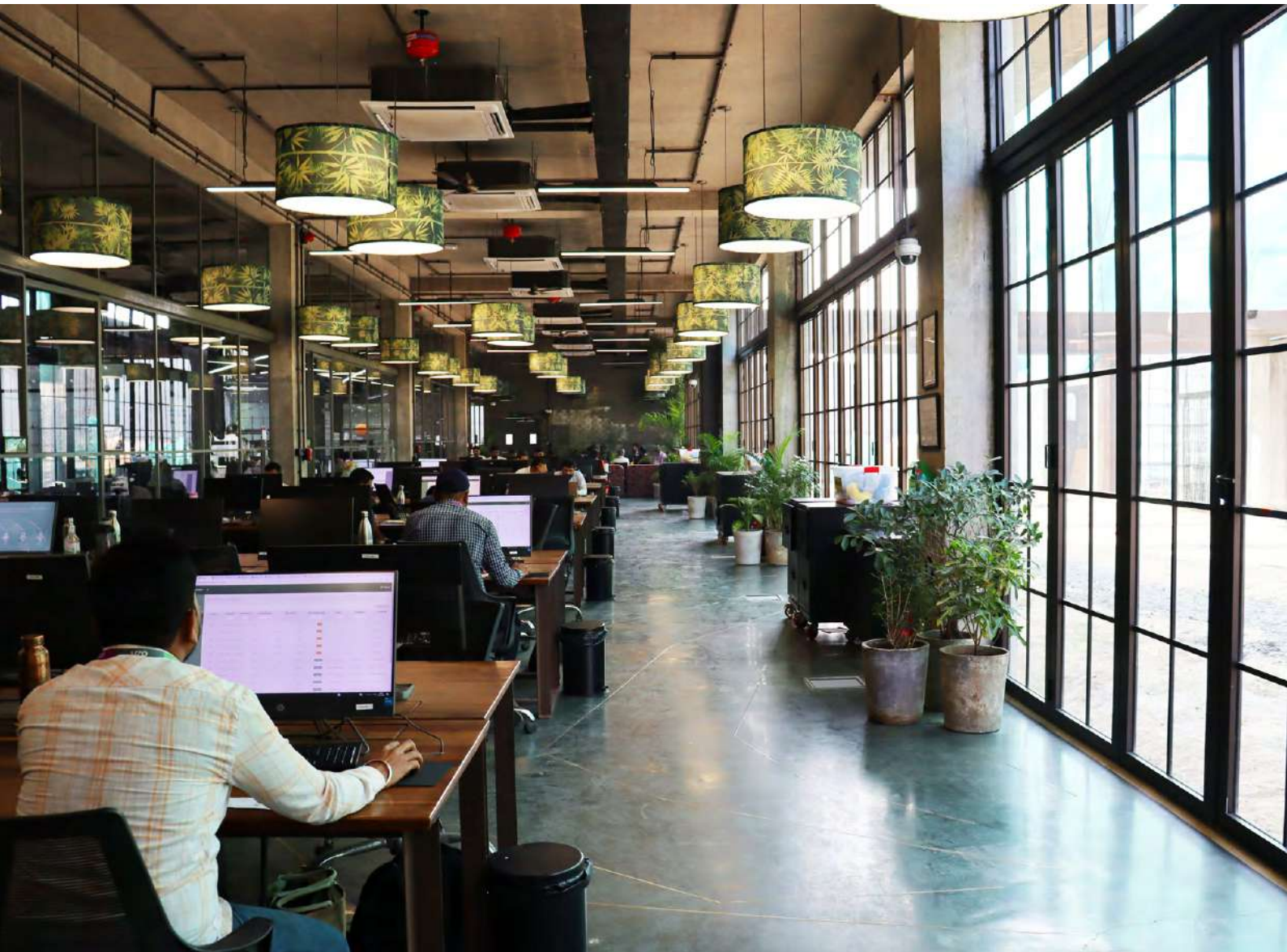
State-of-the-Art Research Centre

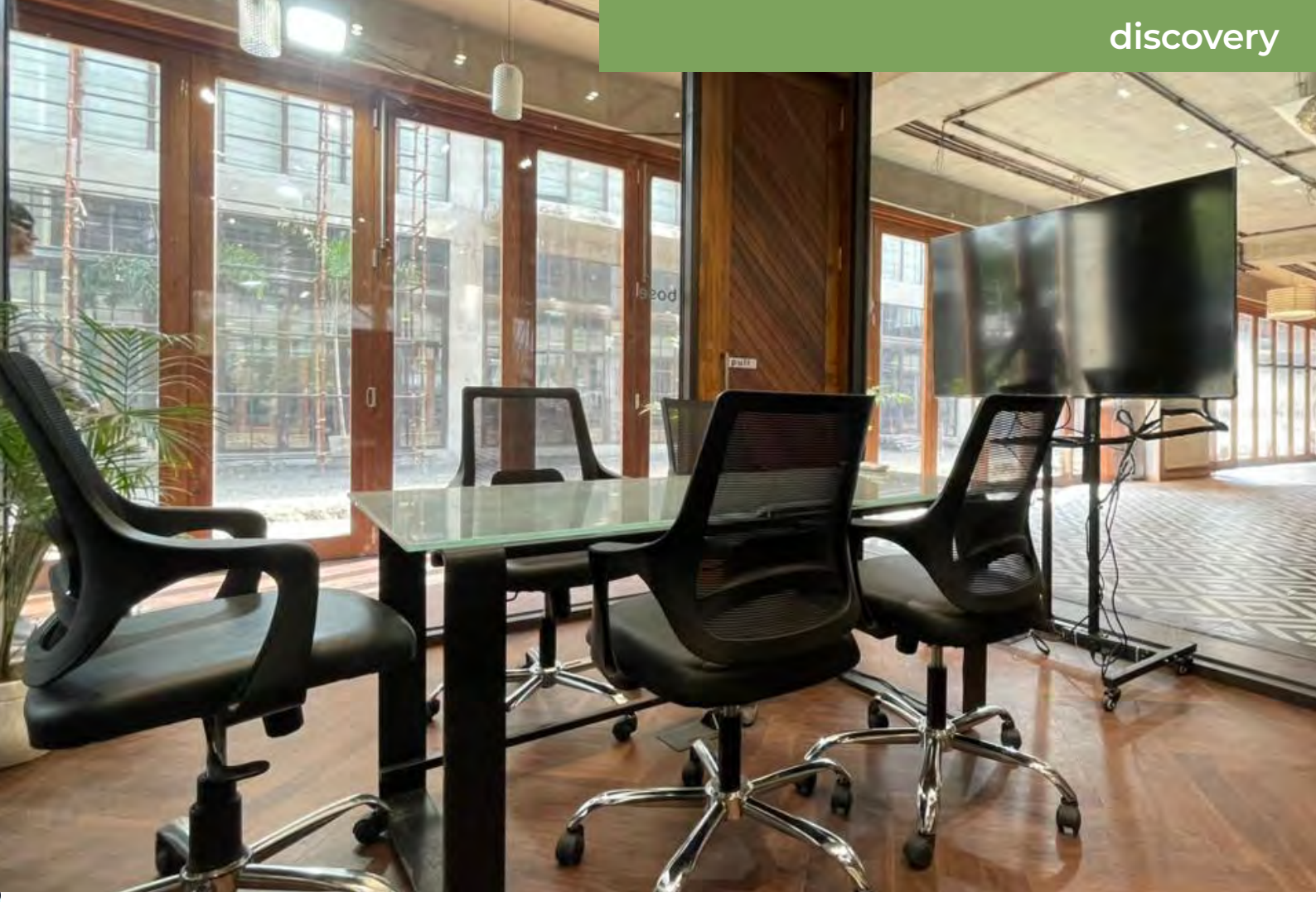
Shirish Research Centre

o2h discovery has launched a new state-of-the-art research centre with chemistry, biology, Scaleup, process and ADC capabilities to support integrated pre-clinical drug discovery programs.




shirish research park





Integrated Drug Discovery (IDD)

Deep scientific knowledge, expert management and a thorough understanding of the drug discovery challenges

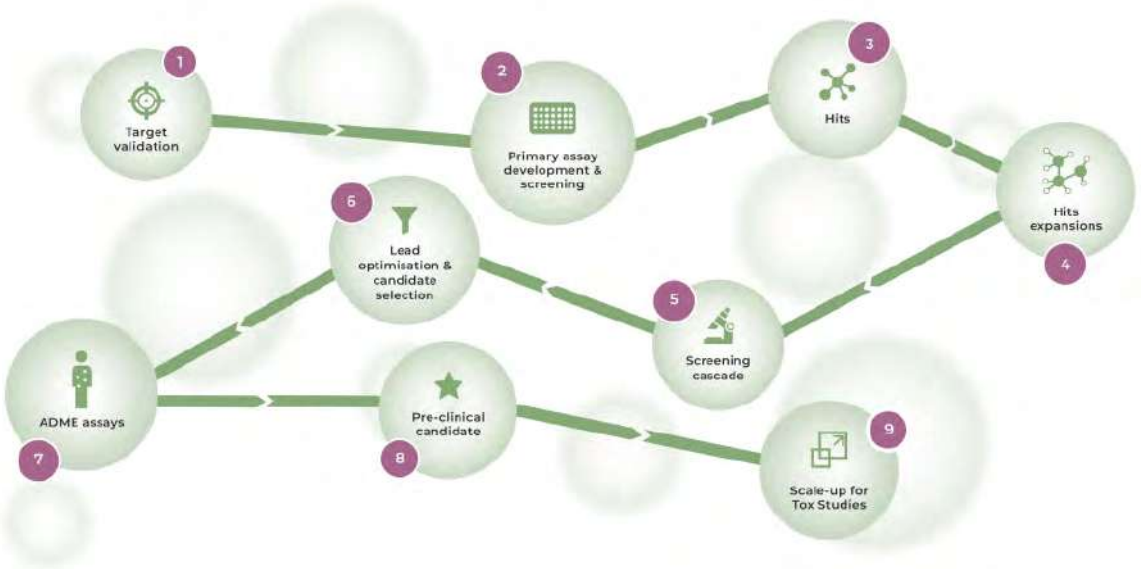
Discover a comprehensive suite of capabilities to propel your drug discovery program from target validation to IND submission. We offer more than just multiple services.

Our **integrated approach** combines deep scientific knowledge, expert management and a thorough understanding of the drug discovery challenges.

"Have always delivered and we particularly appreciate their philosophy of working towards the success of the partner organisation and not just the work plan."

Bob Boyle
CEO, Sentinel

Sentinel ONCOLOGY



Target Identification & Validation

Drug discovery starts with finding the right biological target and confirming that modulating it can deliver real therapeutic benefit. We have experience supporting drug discovery endeavours from inception through to pre-clinical model studies. We deploy integrated cellular, biochemical, and mechanism-based assays to confirm target relevance and disease linkage laying the groundwork for robust progression into hit discovery.

Hit Identification

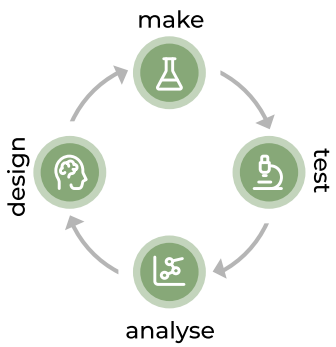
At o2h discovery, we tailor high-quality hit-finding strategies across diverse target classes, including challenging “me too” and “undruggable” targets. Leveraging biochemical, biophysical, and high-throughput cellular platforms, we deliver high-confidence hits with clear on-target engagement and actionable SAR to accelerate drug discovery.

Hit-to-Lead

At o2h discovery, we accelerate hit-to-lead development through rational design, SAR confirmation, synthesis, biological assays, and early ADMET studies. By integrating pharmacology, DMPK, and medicinal chemistry, we enable faster design-make-test-analyse cycles, empowering biotech partners to make informed Go/No-Go decisions and advance molecules addressing unmet medical needs.

Lead Optimisation

Lead Optimisation is a critical phase in the drug discovery and development process. During this stage promising lead compounds typically identified during the hit-to-lead phase undergo extensive refinement and optimisation. Our multidisciplinary approach enhances lead compounds via structure-guided design, ADMET fine-tuning, pharmacokinetic profiling, and safety assessment transforming leads into preclinical candidates.



Fragment Based Drug Discovery

Unlock the potential of undruggable targets with o2h discovery's Fragment-based drug discovery services

Fragment-based drug discovery has emerged as a revolutionary approach to identifying novel chemical starting points for a wide range of biological targets, including those once considered undruggable.

By utilising smaller, basic building blocks known as fragments, this cutting-edge method offers unique advantages in the search for potent drug candidates.

"We have worked with the o2h team on a range of synthetic projects and had consistently positive experience. The combination of competence, effective project management and detailed documentation made us go back again and again."

Professor Kirill Alexandrov

CSIRO, QUT Synthetic Biology Alliance

Medicinal Chemistry

We work at the critical interface of chemistry and biology, partnering with global biotech and pharma companies to accelerate the development of innovative therapies

Overview

Our medicinal chemistry expertise spans the full spectrum of small molecule design and synthesis, from traditional heterocyclic and carbocyclic chemistry (including carbohydrates and steroids) to complex modern modalities. These include PROTACs, molecular glues, peptides, and oligonucleotides, where our integrated approach helps advance even the most challenging drug discovery programs.

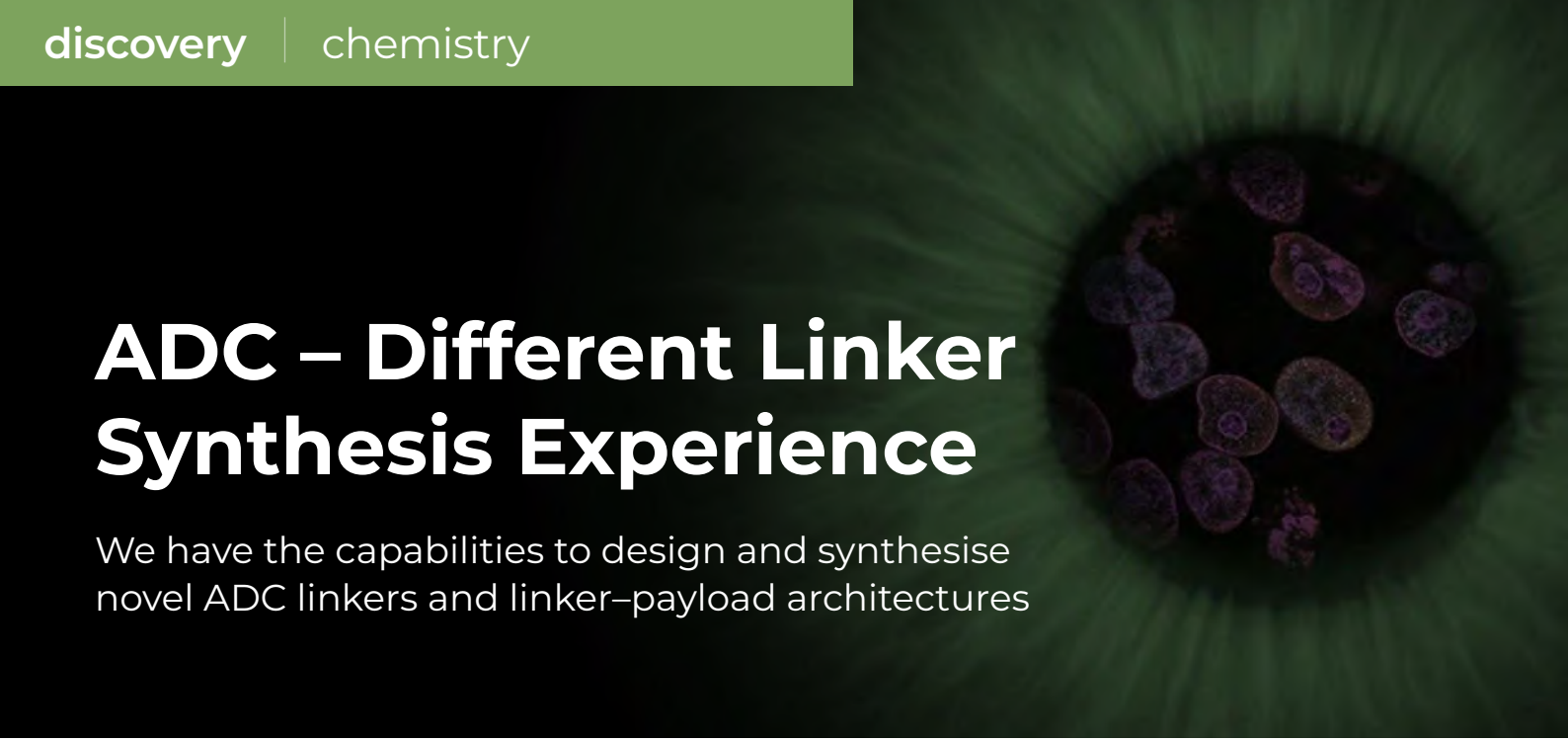
By combining deep scientific knowledge with flexible collaboration models, o2h Discovery enables partners to efficiently scale their research, reduce timelines, and bring breakthrough medicines closer to patients.

Why Partner with o2h Discovery for Medicinal Chemistry Service?

o2h Discovery offers end-to-end medicinal chemistry services, including hit identification, hit-to-lead optimisation, lead generation, and lead optimisation. Our services can be accessed as standalone projects or integrated within a complete drug discovery program.

We combine chemistry and biology expertise to design and synthesise high-quality compounds, establish structure-activity relationships, reduce liabilities, and advance molecules toward in vivo proof-of-concept. Our teams collaborate closely to ensure compounds meet target product profiles while supporting ADME, PK/PD, and pharmacological studies.

- Global expertise with operations in India, UK, and USA
- Integrated drug discovery model combining medicinal chemistry, biology, and DMPK
- Proven track record in hit-to-lead and lead optimisation program
- Flexible, agile, and collaborative engagement structures
- Strong emphasis on IP protection and scientific integrity



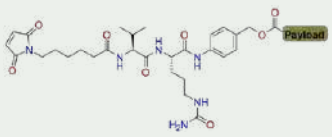
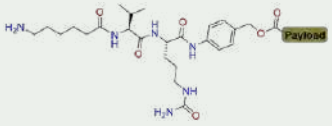
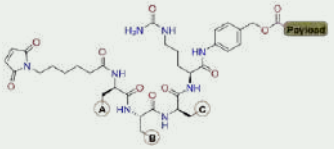
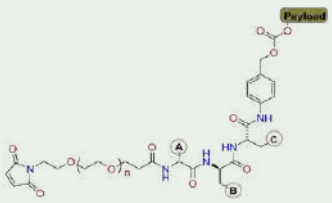
ADC – Different Linker Synthesis Experience

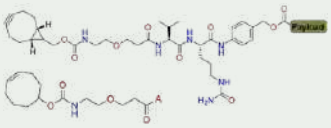
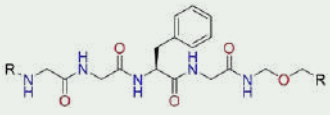
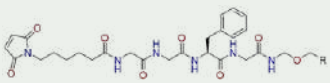
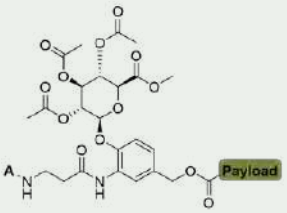
We have the capabilities to design and synthesise novel ADC linkers and linker–payload architectures

Examples of payloads we have worked with include:

1. Exatecan
2. SN38
3. MMAE
4. Duocarmycines
5. Triptolide

List of cleavable ADC Linkers – easy access of these linkers

Sr. No.	Linker name	Structure
1	MC-Val-Cit-PABC-Paylaod	
2	cadaverine-Val-Cit-PABC- Paylaod	
3	MC-A-B-C-Cit-PABC- Paylaod Non-natural AA linker	
4	Maleimide-PEGn-A-B-C-PABC- Paylaod PEGylated linker	

Sr. No.	Linker name	Structure
5 & 6	BCN-PEG-Val-Cit-PABC- Payload & TCO-PEG-Val-Cit-PABC- Payload Clickable linkers	
7	GGFG-linker Peptide linker	
8	Maleimide-caproyl-GGFG-linker Peptide linker	
9	Glucuronide linker B-Glucuronidelinker	

Peptide Synthesis - Capabilities and Experience

A dedicated to advancing scientific research and drug discovery through exceptional peptide synthesis services

Our Peptide Platform

With cutting-edge infrastructure, expert scientists, and a commitment to speed, we remove the traditional roadblocks in peptide sourcing, ensuring your research moves forward and faster than ever.

State-of-the-art facility for peptide synthesis, purification, analysis and characterisation

Expertise in traditional solution phase and advanced solid phase peptide synthesis (SPPS)

Capabilities to generate library of standard average length peptides (20-mer), as well as to deliver long chain (50-mer) and complex peptides

Peptide Modification

In addition to synthesis, our experienced team of chemists also excel in performing a wide range of peptide modifications, including but not limited to the following:

- Linear - long chain peptides
- Acetylated Peptides
- Macrocyclic Peptides
- Branched Peptides
- PEGylated Peptides
- Di-sulphide bond formation
- Succinylated Peptides
- Head to Tail Cyclisation
- Lactam ring formation
- Stapled Peptides

Additional Services

- Assay Development *(SPR, FP, ChamelogK)*
- Chromatography *(HPLC, TLC, GC, IC)*
- Chromatography with LC-MS/ESI
- Spectroscopy *(UV Vis, IR, NMR)*
- Titration *(Acid-Base & Karl Fisher)*
- pH Adjustment and Amino Acid Analysis
- Metallic Analysis *(AAS, ICP, ICP-MS)*
- Counter Ion Exchange *(TFA removal)*
- Solubility Testing

Nucleoside – Nucleotide Chemistry

We specialise in precision synthesis of nucleoside and nucleotide analogues, backed by advanced analytics

Nucleoside Analogues

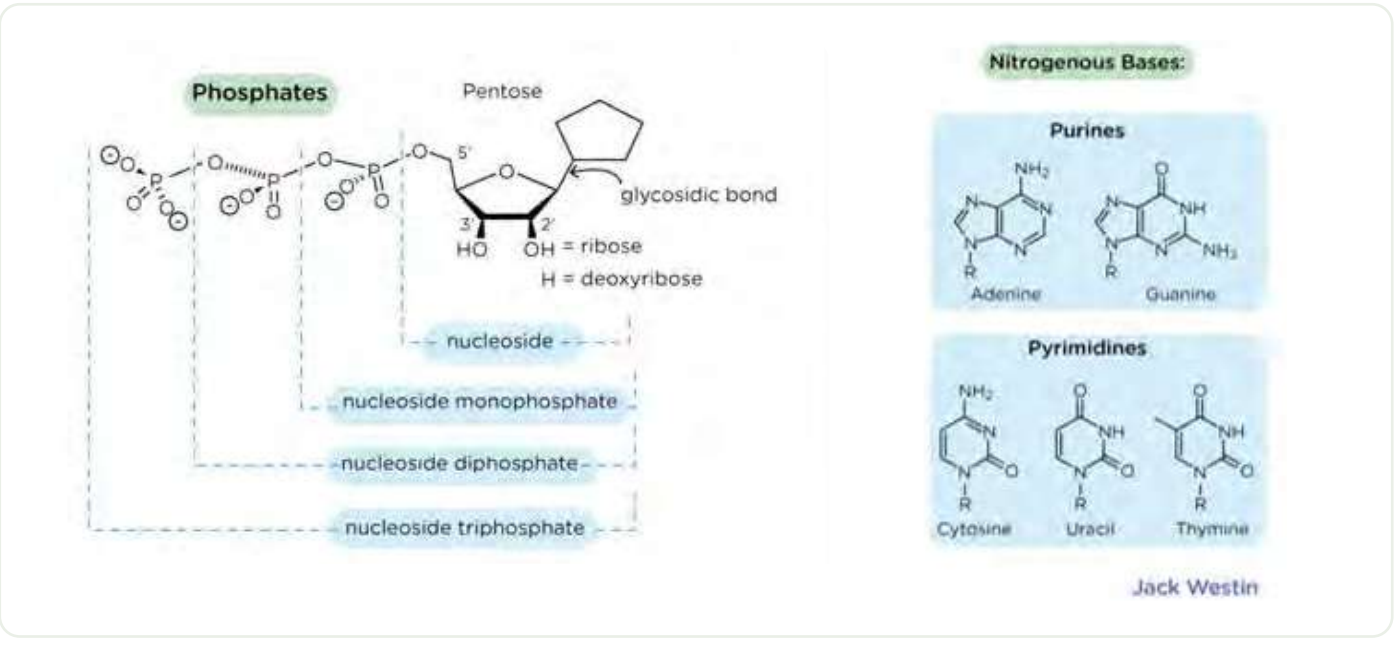
- Ribose and Base Modification: Enhancing stability and functionality.
  - Uracil/Cytidine
  - Adenosine
  - Guanosine
- C-linked Nucleosides: Improving pharmacokinetics and biological activity.

Nucleotide Analogues

- NMP, NDP, NTP, N4P, Thio-phosphate:
  Custom synthesis for biochemical and therapeutic applications.

Dedicated Purification and Analytical Instruments

- Ensuring high quality and purity of synthesized compounds.



High Throughput Experimentation (HTE) & Library Synthesis

Our scientific team specialises in HTE for diverse chemistries, covering reaction screening, synthesis, purification, and library delivery

Technology & Infra Support

- Catalyst Kits – Pre-packaged kits for rapid reaction screening and optimisation
- Parallel Reaction Stations – Radleys Carousels
- Parallel Reaction Blocks – 6, 10, 12
- Pressurized Vessels (for parallel hydrogenation, reduction, carbonylation type reactions)
- Robotic Microwave Systems
- Photo Reactor Systems
- Peptide Synthesizers
- Flash Purification Systems
- Prep HPLC Support
- SFC Support
- SCX Cartridges
- Ion Exchange Resins

Chemistry Range

- Suzuki Coupling
- Buchwald Coupling
- C-H Activation
- Pd-mediated Cross Coupling
- Acid-Amie Coupling
- Acrylamides

Library Diversity Reagents

- Boronates
- Acids
- Amines
- Esters
- Alcohols
- Aldehydes
- Aromatic & Heteroaromatic Halides
- Thio Compounds

Micro Chemistry New initiatives

- Parallel rxn Screening
- Sub mg scale rxn (48 to 96)
- LCMS Monitoring
- Heatmap Data Generation
- Quick Decision Making

> 1500 compound library delivered with ~93% success rate, for a UK based big pharma

Targeted Protein Degradation

We have expertise in PROTAC services and synthesis for targeted protein degradation and integrated drug discovery

o2h discovery has a customisable "off-the-shelf" PROTAC Toolbox™ consisting of a diverse set of linkers, E3 ligands and functionalised E3 ligand-linker compounds to jumpstart design, synthesis and testing/screening novel protein degraders.

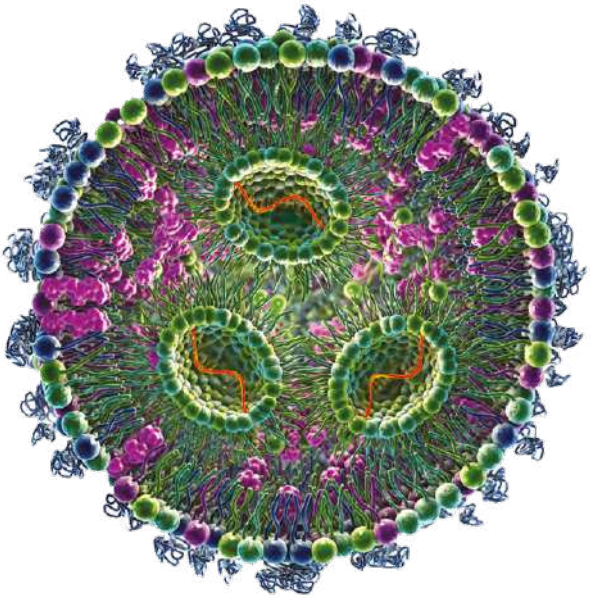
"We've worked with o2h for a long time now as partners, and I particularly pick out their PROTAC expertise in synthesis, purification, and also testing the stability of PROTACs once they've been made."

Julian Blagg

Executive VP, Drug Discovery, Neophore

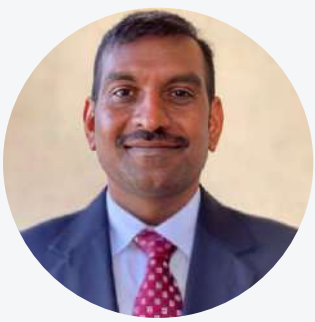
Lipid Nanoparticles (LNPs)

Specialising in the synthesis of diverse phospholipid molecules from mg to multi-gram scale



o2h has acquired extensive expertise and capabilities to conduct the synthesis, purification and analysis of diverse and intricate lipid containing molecules, from low milligrams to multi-gram scale.

Our analytical team utilises a range of analytical methods, such as CAD HPLC, to purify and assess these products, ensuring high levels of purity are achieved.



"We understand that lipid chemistry is complex and requires significant expertise in synthesis, purification, and analysis. Therefore, we looked for a competent and reliable CRO partner to support our requirements and found o2h discovery. We have now done several projects with o2h."

Bharat Majeti

Head of LNP technology, RVAC Medicines

RVAC MEDICINES

Advancing Next-Generation Covalent Inhibitors

Harnessing Scientific Expertise and Drug-Discovery Experience to Target Complex and Intractable Diseases

Covalent inhibitors offer distinct advantages over traditional reversible inhibitors, including enhanced potency, prolonged target engagement, time-dependent pharmacology and the ability to modulate challenging targets that lack well-defined binding pockets or are driven by transient or shallow binding interactions. When appropriately designed, covalent mechanisms can also enable improved selectivity through controlled reactivity and precise residue targeting.

At o2h discovery, we have capabilities to support the design and development of next-generation covalent inhibitors, spanning both targeted covalent and reversible covalent modalities, with the potential to address complex and previously intractable targets.

Our multidisciplinary teams offer integrated expertise in covalent drug discovery, including informed covalent warhead selection and medicinal chemistry strategies to finely tune intrinsic electrophilicity, steric accessibility, and leaving-group behaviour in order to define the minimum reactivity needed in the warhead and reduce the risk of off-target activity. We have established experimental biology capabilities such as jump-dilution assays to distinguish irreversible from reversible inhibition and to assess the durability of target engagement under enzyme-turnover conditions. In parallel, our ADME team provides the GSH reactivity assay to evaluate intrinsic electrophile reactivity and support early de-risking of off-target liabilities; additionally, the assay has been extended to include GST-mediated conjugation, providing a more physiologically relevant read-out for assessing metabolism-linked reactivity risks.

Through a strong understanding of protein–ligand interactions (including covalent binding geometry and residue microenvironment effects) and modern synthetic capabilities, we seek to deliver tailored solutions that may enhance target engagement and support sustained, mechanism-driven therapeutic effects.

Potential areas of support in covalent inhibitor discovery include:

- Identification and optimisation of covalent warheads across multiple electrophile classes
- Design and synthesis of selective covalent inhibitors with a focus on balancing potency, selectivity, and reactivity
- Support from concept through to preclinical development including hit-to-lead and lead-optimisation phases
- Development of residue-specific warheads, targeting cysteine as well as other residues such as lysine, tyrosine, and beyond (including serine and threonine where mechanistically appropriate)
- Mechanistic characterisation of covalent binding through kinetic, biochemical, and cellular assays
- Early developability assessment encompassing metabolic stability, permeability, and safety-relevant reactivity profiling

Should you wish to discuss how we might support your project, please contact us at discovery@o2h.com

Analytical Chemistry

Comprehensive Analytical Support Across the Entire Discovery and Development Cycle

Expertise

Basic Analysis: Comprehensive HPLC (Chiral & Achiral), LCMS, mass spectrometry, and NMR services for qualitative and quantitative analysis.

Structure Characterization: Expertise in NMR data interpretation, LCMS/MS analysis, and developing expertise in amino acid sequencing by MS/MS for peptide compounds.

Purification: Specialization in the purification of PROTACs, peptides, and lipids, including UV-inactive compounds up to gram scale.

Chiral Separation: mg to g scale chiral separations, a wide range of chiral stationary phases (CSPs), and high-efficiency SFC.

Advanced Studies: Property determination, including Chamelog K, Chromlog D, and impurity/product quantification.

Equipment

Spectroscopy: NMRs for 1H, 13C, 2D & QNMR analysis, UPLC-MS, direct mass with MS/MS capabilities, HR-MS/MS, ICP-MS & FTIR (outsourced).

Liquid Chromatography (LC) Systems: HPLC-PDA, 1 UPLC with PDA/CAD, HPLC- ELSD.

Purification: Specialization in the purification of PROTACs, peptides, and lipids, including UV-inactive.

Preparative/Purification Systems: Prep HPLC (with Auto purification), Analytical/Preparative SFCs (UPC2 & SFC Investigator for semi-purification (multiple columns and solvent selectors), Waters SFC 350 for Chiral separation).

Thermal Analysis: DSC 5+, TGA (outsourced).

PR&D and Scaleup Services

From lab-scale R&D to large-scale production (g to kg)

In our 20+ years of experience working on fast-paced drug discovery projects with companies across the globe, we have prepared thousands of new chemical entities. We put this experience together, along with our talented staff and high-end infrastructure, to offer high-quality and cost-effective services for your 'development' projects.

Key Highlights

- The Non-GMP PR&D lab designed to ensure safety and operational efficiency
- The kilo lab has a full range of 20L, 50L, and 100L jacketed glass reactors
- Temperature ranging from -35 °C to 200 °C
- State-of-the-art glass reactor assemblies incorporate advanced features
- Utilisation of flame-proof connections and static discharge mechanisms
- Equipped with Thermal Screening Unit and Differential Scanning Calorimetry
- Per batch manufacturing output from grams to lower kilograms

Our Offerings

- Flash purification machine to support large scale purification
- Route scouting for novel, cost-effective, and scalable ROS
- Process development and optimisation for pre-clinical supplies
- Scaleup of intermediates, building blocks, and final targets
- Analytical method development & large-scale purification support
- Synthesis, isolation, and characterisation of process impurities
- TSE/BSE certification and metal content analysis
- Milestone-based project tracking with thorough and real-time communication
- Supply of detailed tech pack with active assistance for technology transfer
- A dedicated analytical team to support real time QC and method development
- GMP Synthesis Support (via channel partners)

In-house Equipment Suite

A comprehensive range of equipment (Analytical, Reaction Technology and Purification) for 'speed' of project delivery:

Analytical	Items
SFC-Analytical	2
NMR(400 MHz-Bruker)	2
LCMS	9
HPLC-Reverse Phase	6
HPLC-ELSD Detectors	1
HPLC-Chiral/Normal Phase	1
GC	1
LCMS/MS	2
Polarimeter	1
Karl Fischer Titrator	1

Scale-Up Reaction Equipment	Items
20 L Rotavapor	2
Hydrogenator 1, 2, 5 and 10L	1
20 L Glass reactor non-Jacket (Temp range 25°C to 250°C)	1
50 L Rotavapor reactor non-Jacket (Temp range 25°C to 250°C)	1
50 L Rotavapor reactor with dean stark (Temp range -60°C to 250°C)	1
100 L Glass reactor (Temp range -40°C to 250°C)	1
Large Nutsche Filter	1

Purification	Items
SFC-Preparative (mg, gm, Kg-scale)	1
Prep HPLC	8
Scale-Up Flash Systems	2

Biology Delivered

An integrated team of highly experienced biologists with a proven track record in advancing complex projects

Overview

At o2h discovery, we provide fully integrated biology services from our state-of-the-art facilities in Cambridge, UK, and Ahmedabad, India, to accelerate drug discovery programs. Our team of experienced Ph.D and Masters level scientists delivers high-quality results across a broad range of therapeutic areas. Leveraging advanced technology platforms, we support every stage from target validation to pre-clinical candidate selection.

Our biologists design and execute customisable assays to assess potency, efficacy, and mechanism of action (MOA) profiling. We foster a collaborative, cross-continental working model, ensuring seamless technology transfer between our UK and India teams. By combining academic insight with industrial rigor, we deliver faster, smarter research solutions.

State-of-the-Art Equipment

Our cutting-edge facilities are equipped with advanced tools to ensure precision and efficiency in biology research:

- Biacore T200 SPR
- Incucyte
- Thermo CX7 LED
- Robotics
- Jess
- CytoFLEX S
- FLIPR Penta
- Bio-Rad CFX96
- Hamilton Star
- CLARIOstar Plus & PHERAstar
- Opentrons OT2

Biology Capabilities

Compound Screening

Biophysical/Biochemical and Cellular Assays

Target Validation, Mechanistic Studies

Future direction: DNA Encoded Libraries (DEL), Antibody Drug Conjugates (ADC), Membrane Proteins, Proteomics, other TACs and Molecular Glues

Discover novel assays and blogs on following topics:

- High-Content Imaging: A Transformative Approach to Drug Discovery
- Exploring SPR and Fluorescent Dye Displacement Assays for RNA Binding Small Molecule Therapeutics
- PROTAC: o2h discovery's Biology Expertise
- Exploring Psychedelics: A New Frontier in Mental Health Research
- Integrin Assays: Decoding Cellular Interactions
- Revolutionising Drug Discovery: Harnessing the Power of FRET and BRET Assays
- Unlock Advanced Flow Cytometry: Boost Research with the CytoFLEX S System

scan to read

Assay Screening

We provide integrated screening services to fuel novel drug discovery programs

Our Capabilities...

- Assay development, optimisation, and validation
- Screening using biochemical, biophysical, and cell-based formats
- Hit confirmation, counter-screening, and selectivity profiling
- Integration with ADME/DMPK studies and SAR expansion

Automated Discovery Powered by OT-2!

To strengthen our Screening offering, o2h discovery has integrated the Opentrons OT-2 liquid handling robot, a flexible and customisable automation platform designed for reproducible, high-throughput workflows.

Key Features

- Dual 8-channel multi-pipettes for accurate liquid handling down to 384-well plates
- Absolute reproducibility in pipetting, minimising variability across large datasets
- Customisable and programmable workflows adaptable to any throughput requirement
- Supports compound dispensing, serial dilutions, cell seeding, hit picking, and nucleic acid/protein extraction
- Kit- and reagent-agnostic software, avoiding lock-in to expensive consumables
- Reduced manual handling, saving time while eliminating human error

By incorporating OT-2, we enhance both throughput and data quality in Screening campaigns. This automation-driven approach ensures faster cycles of design–make–test–analyse (DMTA), enabling biotech innovators to progress from hits to leads with speed, accuracy, and confidence.

Drug Discovery Through Biophysical Insight

Using fluorescence polarization, SPR, and thermal shift assays, we study protein binding, stability, and mechanisms

At o2h discovery, we deliver biophysical characterisation of ligand-target interactions and can aid in hit finding approaches using fragment-based screening. We can prove mechanistic insights, kinetic and thermodynamic profiling for your novel compounds. With a published crystal structure of your target of interest and in complex with its cognate peptide/molecule, we can develop customisable assays for small molecule screening.

We can design Fluorescence Polarisation (or) Anisotropy with labelled peptide or compound probes using high performance plate readers like CLARIOstar and PHERAstar. With label-free technology platforms like Biacore T200, we can establish more advanced studies like Surface Plasmon Resonance (SPR) providing vital kinetic data on ligand-target interaction like association-Kon, dissociation-Koff rates and KD determination. We can use simple techniques such as Thermal Shift Assay (TSA) to determine thermal unfolding and aggregation of the target protein using SYPRO Orange dye that binds to hydrophobic regions of the denatured proteins; illuminating the presence of unstable proteins in the absence of compound binding or target engagement.

In addition to the range of aforementioned biophysical methods, o2h discovery has well-established alliance partners to augment our capabilities and in providing tailored needs for your research project.

To know more about our biology services offering, please reach out to us at discovery@o2h.com

Cascade Design

A systematic arrangement of assays and models that progressively evaluate a compound's efficacy, selectivity, and safety

Cascade Design: A Catalyst for More Efficient Drug Discovery

Progressing from hit to lead to preclinical development is fraught with challenges.
Many candidates fail due to:

- Poorly designed or non-reproducible assays
- False positives from irrelevant models
- Lack of early Go/ No-Go decision points
- Weak translation from in-vitro to in-vivo outcomes

o2h Discovery's Cascade Design Approach

1	**Integrated Discovery Cascade**	We design cascades that drive progress through well-defined Go/No-Go checkpoints, reducing late-stage failures.
2	**Progressive Assay Design**	Layering biochemical, biophysical, cellular, and in vivo assays to ensure biological relevance at every stage.
3	**STAR in Drug Development**	Incorporating Structure–Tissue Exposure/Selectivity–Activity Relationship (STAR) to align chemistry, PK/PD insights.
4	**Expert Decision Framework**	Our team applies the Dos, Don'ts, and Go/No-Go rules in assay design, helping collaborators avoid common pitfalls.

Why Partner with o2h Discovery?

At o2h discovery, we support our collaborators by combining biology, chemistry, and DMPK expertise to build cascades that de-risk discovery programmes, accelerate candidate selection, and support the next generation of therapies addressing unmet medical needs.

If you'd like to discuss your screening cascade challenges in more detail, we'd be happy to set up a call.
Write to us at: **discovery@o2h.com**

ChameLogK Assay

Unveiling chameleonicity for PROTAC molecules

o2h discovery; First in the World to Offer the ChameLogK Assay to our Clients...

o2h discovery is thrilled to be the first in the world to offer the ChameLogK assay to our clients. With the capability to quickly and inexpensively measure chameleonicity, this assay represents a significant step forward in assessing PROTAC molecules and optimising their properties. As we make this groundbreaking technology available, we invite our clients to explore the possibilities it presents in enhancing their drug discovery efforts. The ChameLogK assay, now a part of our service portfolio, positions our company at the forefront of innovation, providing clients with a valuable tool to navigate the complexities of molecule design in the ever-evolving landscape of drug development.

Integrin Assay

Decoding cellular interactions

Integrins are heterodimeric cell surface receptors and are key regulators affecting cell morphology, proliferation, survival and differentiation. Mutations in specific integrins or deregulated expressions are associated with a variety of diseases. Each integrin consists of α-subunit and a β-subunit, of which there are 18 and 8 variants, respectively, creating 24 known heterodimers. Integrins act as adhesion receptors with the unusual ability to signal in both directions across the plasma membrane. Integrins can therefore enable human cells to respond to changes in the extracellular environment (via outside-in signalling) and can influence the extracellular environment (via inside-out signalling). We have successfully established biochemical and cell-based assays to assess target engagement of small molecules for different integrin targets.

FLIPR® Penta Technology

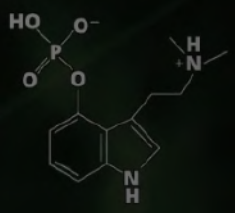
Collaborative FLIPR assay services for drug discovery programs

o2h discovery's commitment to excellence in scientific research is exemplified by our recent investment in the FLIPR Penta technology. We stand ready to collaborate seeking FLIPR-based assay services for different drug discovery programs. The introduction of the FLIPR Penta High-Throughput Cellular Screening System to our repertoire, enables rapid screening of compound libraries and to assess the effects of potential drug candidates in a fast, automated, and precise manner. It has extensive use in understanding GPCR and ion channel biology. With the simultaneous pipette and read function, plus high-end camera system, we can allow up to 100 measurements per second and provide detailed information about cardiomyocyte and/or neuronal oscillations.

We offer multiple fluorescence or luminescence-based assay readouts, and can support in measuring calcium flux, potassium and membrane potential.

Psychedelics Research

A new frontier in mental health research



Psilocybin

$C_{12}H_{17}N_2O_4P$

At o2h, we have developed and screened a series of 5-HT2A-small molecules with varying potencies towards Gq and β-arrestin-biased signaling thererby shedding light on the dynamics associated with the 5-HT2A receptor. These serve as invaluable tools in elucidating the specific intracellular responses providing comprehensive understanding for drug discovery and pharmacological research.

Our scientists can support in identifying compounds with differential signaling activities, downstream of the 5-HT receptor, stimulated via Gαq and beta-arrestin pathways.

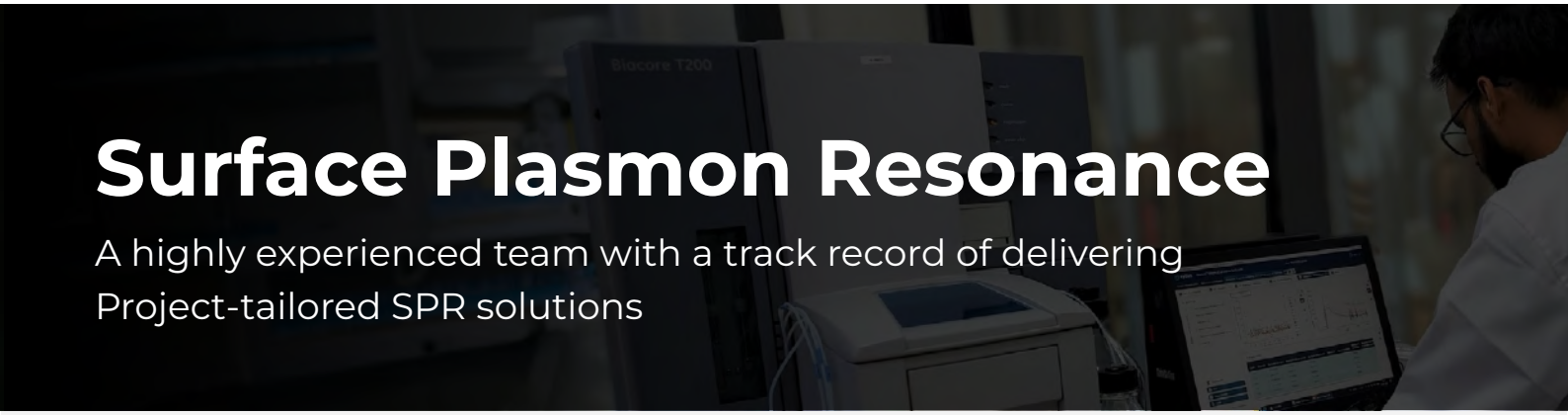
o2h can also support in exploratory studies using BRET-based protein-protein interactions and complementation assays (an area that is currently gaining interest).

High-Content Imaging

A transformative approach to drug discovery

At o2h discovery, our high-content imaging assays are designed to address a broad spectrum of biological questions, including protein trafficking, translocation, receptor internalisation, and target recruitment to specific organelles. These assays offer critical insights into molecular interactions and sub-cellular processes, enabling a deeper understanding of cellular dynamics.

Our expertise also spans cell cycle analysis, where we investigate mitotic progression, cytokinesis, and the effects of DNA Damage Response (DDR) mechanisms. By integrating assessments of proliferation, apoptosis, and autophagy, we provide a comprehensive view of cellular stress responses and overall cellular health. Additionally, we specialise in identifying phenotypic and morphological changes that signal invasiveness, drug resistance, and other disease-relevant behaviours, offering valuable insights for therapeutic development.



Surface Plasmon Resonance

A highly experienced team with a track record of delivering Project-tailored SPR solutions

o2h discovery offers a broad gamut of biochemical, biophysical, and cell-based bioassay screening services for supporting drug discovery programs of our various collaborators. To augment these services, we have incorporated SPR-based assays (surface plasmon resonance) in our portfolio using state-of-the-art Biacore T200 system. The Biacore T200 provides real-time, label-free, affinity and kinetic analysis for various types of biomolecular interactions with high sensitivity and accuracy. This system enables our team to deliver robust, high-quality data in a time-bound manner for the screening of small molecules, biologics and NBEs (novel biological entities) at any phase of drug development. We offer various project-tailored SPR solutions which include the following:

- Fragment-based drug discovery (FBDD)
- Small molecule drug discovery
- Biotherapeutic drug discovery

ChameLogK: A Rapid, High-Throughput Assay to Assess Bioavailability of Beyond Rule of Five Compounds

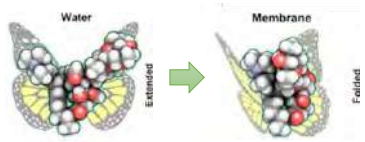
Catherine Stace*[1] Dharmesh Bhatt[2], Andy Morley[1], Claudio Dagostin[1], Mayank Gupta[2], Pranav Pandya[2], Hardic Dave[2], Dhruv Lad[2], Vinkal Zalavadia[2], Vishal Patel[2], Hemal Soni[2], Nilesh Dagia[2], Sunil Shah[1,2], Prashant Shah[1,2]
[1] o2h Discovery Pvt. Ltd., Changodar, Ahmedabad, India. [2] o2h Ltd., Mill SciTech Park, Hauxton, Cambridgeshire, UK. * Correspondence to catherine.stace@o2h.com

Abstract

ChameLogK is a cutting-edge method for measuring chameleonicity, a vital factor in assessing cell permeability propensity of small molecules, including 'Beyond Rule-of-Five' such as PROTACs, macrocycles and peptides. Chameleonicity is ability of molecules to conformationally adapt to their environment, driven by intramolecular hydrogen bonds; ChameLogK combines lipophilicity (BRlogD) and polarity (Δlog k_w^{IAM}) descriptors. Leveraging literature methods, o2h has developed a reliable, high-throughput platform to rapidly and inexpensively measure chameleonicity, accelerating optimization of Beyond Rule-of-Five therapeutic compounds

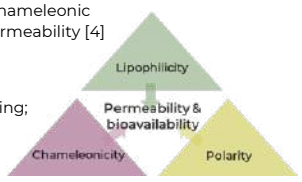
Chameleonicity: An indicator of bioavailability and cell permeability for Beyond Rule of Five molecules

- Chameleonicity is the capacity of a molecule to hide polarity in non-polar environments and expose it in water, help achieving sufficient permeability and solubility for drug molecules with high molecular weight [1]



Adapted from Danielus *et al*, Nature 2020 [2]

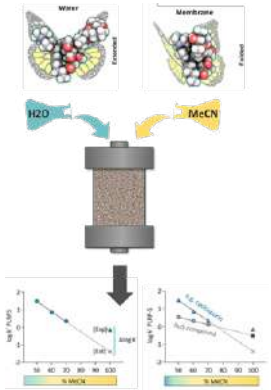
- For many years, it has been known that bRo5 molecules, such as macrocycles and small peptides, can exhibit chameleonic properties – conformational flexibility - driven by the formation of intramolecular hydrogen bonds [3]
- bRo5 compounds often suffer from a poor permeability and bioavailability profile. The design and optimization of compounds with chameleonic properties is central to optimizing solubility and permeability [4]
- BRlogD, Δlog k_w^{IAM} and ChameLogK are three complementary measures revealing lipophilicity, solubility, exposed polarity, and chameleonic masking; together forming a triad of drug-likeness, guiding smarter compound prioritization by explaining permeability and bioavailability [5]



- Other established phys chem measures relating to permeability, such as ePSA [6][1] are comparatively low throughput and costly, revealing a need for an easily-accessible alternative measure to support rapid design and optimization of bRo5 compounds
- The ChameLogK method was pioneered in by Giulia Caron's group in Turin [5] and has garnered significant interest in the academic setting, but had not been developed into a fully-transferable platform for routine screening in the commercial setting
- **o2h discovery is the first in the world to offer the ChameLogK assay to clients to support their drug discovery programs**

Measuring ChameLogK: How it works

ChameLogK is the difference (Δlog k') between the experimental retention at 100% MeCN on a PLRP-S column, and the extrapolated retention at 100% MeCN obtained from the linear region measured at 50/60/70% MeCN. Positive values indicate extra retention in the non-polar limit, consistent with polarity masking/folding (i.e. chameleonicity).



Method features:
- HPLC-based method, using PLRP-S column
- Record the retention time (RT) of compound in differing ratios of water:acetonitrile
- Linear regression to fit of Log k' PLRP-S and the % acetonitrile; Chameleonic properties are observed as a steeper downward slope with an up-tick
- Extrapolate to calculate at 100% acetonitrile and calculate Chamelogk using the formula:
  Chamelogk = Exp. log k' 100 - Ext. log k' 100

Graphics adapted from [2] and [5]

Assay Validation and Platform Development

o2h conducted a rigorous validation process, with a variety of different chemical species, underscoring the reliability of the assay as a robust and transferable platform, broadly applicable for multiple drug discovery programs.

- Validated with >20 different compounds, including macrocycles, non-macrocyclic compounds, and PROTACs
- >100 compounds examined to date confirm versatility and effectiveness in designing bioavailable compounds beyond Ro5 constraints

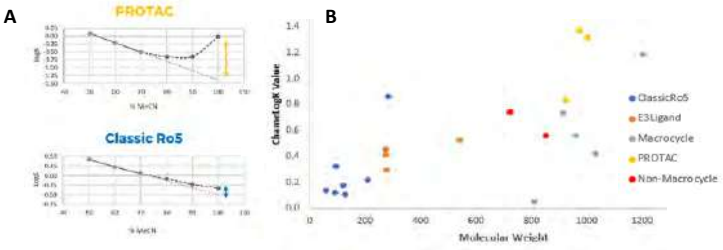


Figure 1: A. Output data showing correlation of Log K' with % acetonitrile for a PROTAC and a classic Ro5 compound; **B.** Summary of chameleonicity across a range of chemical species

Results
- PROTACs: Displayed distinct "Chameleonic" qualities.
- Non-macrocycles: Moderate chameleonicity, showing expected flexibility compared to classic Ro5 and PROTACs
- Macrocycles: Led by Cyclosporin, showed variable behaviour
- E3 Ligands: Consistent behaviour, possibly involving internal folding or interactions
- Ro5 molecules like caffeine, and diazepam defied expectation

o2h has streamlined processes for **maximal throughput and productivity**, creating a **cost-effective and easy-access** version of this ground-breaking technique

Supporting a range of modalities

- The **increasing need to explore the bRo5 space** to access novel chemistry, better mechanisms of action, and exciting new modalities, requires a way to quickly and inexpensively measure chameleonicity
- This assay represents a **significant step forward** in assessing molecules such as PROTACs and optimization of their properties [7] Enabling:

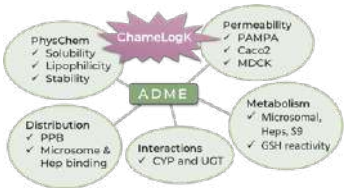
Hetero-bifunctionals | Glues

- ✓ Optimization to fit with target biology; e.g. crossing the **BBB** or efficiently accessing **intracellular targets**
- ✓ Characterization of molecules to guide **design** and create a **robust pre-clinical data package**
- ✓ Understand the **relationship between biophysical and cell-based** results

Peptides | Macrocycles

A key part of your drug discovery program

- o2h offers the ChameLogK assay as part of a comprehensive suite of ADMET and assay biology, enabling full characterisation of compounds
- o2h also offers a range of integrated services linking directly to this field:



- ✓ **PROTACs:** off-the-shelf-toolbox, featuring >100 building blocks, a range of E3 ligands and ready-to-use linkers
- ✓ **Custom Peptide Synthesis**: parallel and solid & solution phase; 'peptide guarantee'
- ✓ **Macrocycles** and natural product chemistry
- ✓ **Molecular glues**, with comprehensive assay suite for in-cell target engagement and degradation
- ✓ **Medicinal and synthetic** chemistry

References

[1] David *et al* (2021) 'Prediction of Chameleonic Efficiency', ChemMedChem 16(7), pp2669-2685
[2] Danielas et al, (2020) 'Solution Conformations Explain the Chameleonic Behaviour of Macrocyclic Drugs', *Nature* 26(23), pp5231-5244
[3] Bockus and Lokey, (2017) 'Chapter 5: Bioactive and Membrane-Permeable Cyclic Peptide Natural Products', *Practical Medicinal Chemistry with Macrocycles: Design, Synthesis, and Case Studies*, John Wiley and Sons, Inc.
[4] Ramelot *et al*, (2023), 'Cell-permeable chameleonic peptides: Exploiting conformational dynamics in de novo cyclic peptide design, Current Opinion in Structural Biology 80, p102603
[5] Garcia Jimenez et al (2023), 'Chamelogk: A Chromatographic Chameleonicity Quantifier to Design Orally Bioavailable Beyond-Rule-of-5 Drugs', Journal of Medicinal Chemistry 66(15), p10681. **Seminal article by Giulia Caron's group**
[6] Goetz *et al* (2014), 'EPSA: A Novel Supercritical Fluid Chromatography Technique Enabling the Design of Permeable Cyclic Peptides', ACS Medicinal Chemistry Letters, 5(10).
[7] Apprato et al (2024), 'Exploring the chemical space of orally bioavailable PROTACs', Drug Discovery Today 29(4), p103917.

Want to learn more about this assay and how o2h supports integrated drug discovery programs...?

Scan the QR code to explore our website:

Read our blog on ChameLogK:

Contact us: info@o2h.com

High-content analysis of DNA damage markers in multiplexed cell lines using the SemaCyte® microcarrier platform

Jackline Agwenge, Simon Stockwell
o2h Discovery, Hauxton House, Mill SciTech Park, Cambridge CB22 5HX

Abstract

High-content imaging (HCI) offers a considerable depth of analysis options when considering the requirements for developing a new cellular assay. The information-rich image data collected during an HCI assay allows access to measures of spatial, quantitative, temporal and morphological markers of target engagement, often requiring monolayers of adherent cells seeded to assay plates. The SemaCyte microcarrier system developed by Semarion enables powerful new strategies to manage cell monolayers in drug discovery workflows. In collaboration with Semarion, o2h Discovery have updated an established HCI approach to DNA damage to explore SemaCyte-enabled enhancements in cellular assays; miniaturisation of seeding, assay-ready adherent cells, multiplexed cell lines and subpopulation barcoding are investigated here.

Objectives

Perform a first-pass test using the SemaCyte system to obtain and analyse cellular HCI data, making use of cell multiplexing capabilities and same-day set up of assays from frozen cell SemaCyte stocks

Assay details

- **96-well plate, 2hr, 11-point etoposide** (EP) DRC
- Cells presented as **pooled SemaCytes** in each well
- Using **frozen SemaCytes** on same day as recovery
- Fixed endpoint - probes for **DNA damage markers**
- **3 multiplexed cell lines per well** – U2OS, A549, U87MG
- 4 SemaCyte **barcodes used for deconvolution** by HCI
- **Plate reference control:** U2OS cell line re-used for 4th barcode providing fixed 50µM set, spiked to every well

Key findings & next steps

Multiplexing - Early analyses with this data set yield sufficient information to characterise and differentiate variability in DNA damage dose responses between cell lines grown in parallel using SemaCytes

Thawed monolayers – recovery of frozen assay-ready monolayers worked well (>= 75% viable) and offers a new flexibility to scheduling and maintaining cells for deployment to assays

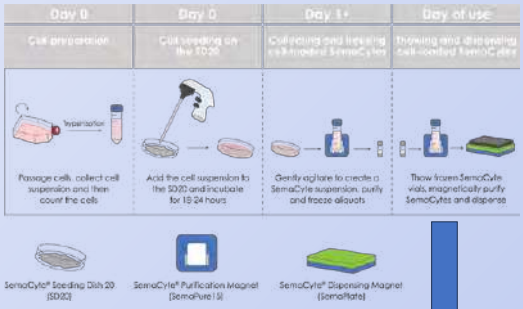
Data handling - The ability to deconvolute mixed populations using image processing to sort SemaCytes by barcodes proved accessible and opens further options for how to organize and control HCI assays

Next steps – A deeper dive into the current data set is planned, including exploration of RAD51 and implementation of dynamic image acquisition strategies such as the CellInsight EurekaScan

Acknowledgements
o2h Discovery would like to acknowledge the team at *Semarion* for their collaborative support and insight. Furthermore, *ThermoFisher Scientific* have provided indispensable support across instrument and data-handling steps in the workflow.

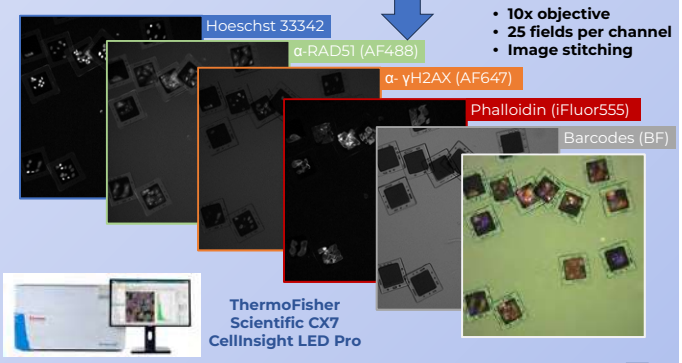
Workflow

1. Cell handling



- 3 cell lines:
  - U2OS
  - U87MG
  - A549
- Each assigned SemaCyte barcodes
- Revived following frozen storage
- Pooled for assay
- Drugged 2hr with EP DRC same day
- Fixed and stained for subsequent HCI

2. High-content imaging

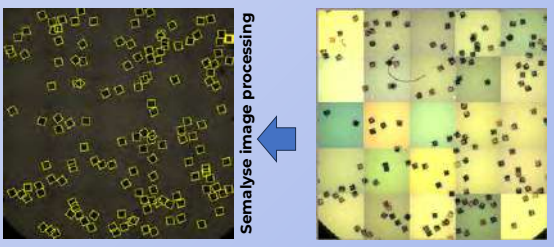


ThermoFisher Scientific CX7 CellInsight LED Pro

- 10x objective
- 25 fields per channel
- Image stitching

3. Image processing I – deconvolution

QC and extraction of SemaCytes according to cell line-specific barcodes



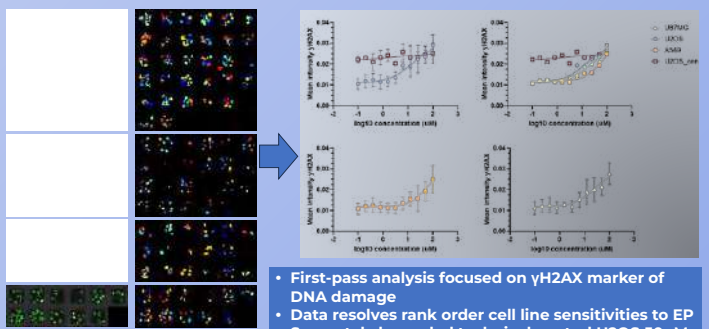
4. Image processing II – quantitation

Cell Profiler to detect and characterise cells within SemaCyte-defined image masks

Barcoded cell line groups per well

Cell by cell feature extraction

Cell line-specific etoposide dose response curves



- First-pass analysis focused on γH2AX marker of DNA damage
- Data resolves rank order cell line sensitivities to EP
- Separately barcoded technical control U2OS 50µM EP population correctly intersect main DRC

Poster No - ProUPS_080

Integrated drug discovery services from o2h: Advancing therapeutic innovation through collaborative research

Romit Bose[1], Prasad Sulkshane[1], Rajesh Yesodharan[1], Animesh Pandit[1], Anagha Dahake[1], Prachi Soni[1], Priya Gajjar[1], Adit Kotak[1], Simon Stockwell[2], Keith Woodley[2], Christian Mutti[2], Jackline Agwenge[2], Alice Willer[2], Sunil Shah[1,2], Prashant Shah[1,2], Gayathri Sadasivam[1,2*]

[1] *In vitro* Biology, o2h Discovery Pvt. Ltd., Changodar, Ahmedabad, India

[2] *In vitro* Biology, o2h Discovery Pvt. Ltd., Mill SciTech Park, Hauxton, Cambridgeshire, UK

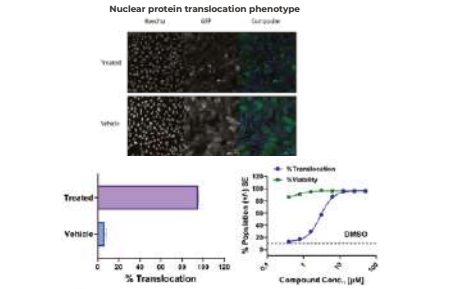
*Correspondence to gayathri.sadasivam@o2h.com

Overview

o2h Discovery has enhanced its biology expertise across therapeutic areas in Cambridge, UK, and Ahmedabad, India, utilizing advanced platforms to support all stages of preclinical drug discovery, from lead optimization to IND filing. Our Integrated Drug Discovery (IDD) approach combines biology, chemistry, and ADME capabilities to accelerate the design-make-test-analyze cycles. Our experienced biologists develop customizable assays to support potency-to-efficacy translation and mechanism-of-action characterization, with seamless collaboration between our UK and India teams. Specializing in small molecule drug discovery, we bring in-depth expertise in target biology, providing valuable insights that drive progress in complex biology projects across a broad range of therapeutic areas.

High-content imaging (HCI)

- o2h Discovery leverages high-content imaging (HCI) systems with confocal capabilities for high-resolution, quantitative, realtime analysis of lead molecule characterization across several biological processes.
- These include protein trafficking, receptor internalization, cell cycle progression, apoptosis, drug resistance, DNA damage response, and changes in cell health and morphology.
- By providing spatial, quantitative, and morphological data, HCI enables precise target engagement analysis.
- o2h has developed bespoke HCI speckle assay to analyze phenotypic changes in spliceosome factors induced by molecules targeting mRNA splicing factors.
- In collaboration with Semarion, o2h Discovery has enhanced the HCI approach for DNA damage analysis using the innovative SemaCyte® microcarrier system, optimizing cell monolayer management for more efficient drug discovery.

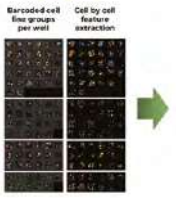


Assay Parameters

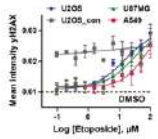
- 3 cell lines (U2OS, U87MG, A549)
- Each assigned SemaCyte barcodes
- Revived following frozen storage
- Pooled for assay
- Drugged 2hr with EP DRC same day
- Fixed and stained for subsequent HCIC

Experimental Workflow

1. Cell line handling
2. High-content imaging
3. Image processing I – deconvolution
4. Image processing II – quantitation



Cell line-specific etoposide dose response curves



Scan the QR to read more about our HCI assay services

Integrated Drug Discovery (IDD)

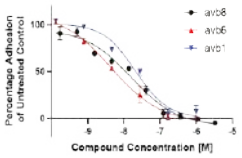
o2h offers a comprehensive suite of R&D services to propel your drug discovery program from target validation to IND submission.

- **Comprehensive Toolbox:** In-house expertise in chemistry, biology, ADME with advanced capabilities in SPR, and HCI.
- **Therapeutic Foresight:** Specializing in cancer biology, immuno-oncology, metabolic disorders, and CNS diseases.

Scan the QR to read more about our IDD services

Integrin Biology

- Customizable platform to evaluate compound potency and specificity in cell adhesion assays targeting multiple integrins.
- Our assays investigate the inhibition or activation of integrin pairs—key drug targets for numerous diseases.
- Our custom cell lines enable precise evaluation of differential inhibition across integrin pairs, simplifying specificity testing.
- In-depth compound characterization through other bespoke cellular assays using flow cytometry and HCI, assessing activity in biological settings.

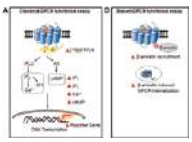


Scan the QR to read more about our integrin biology services

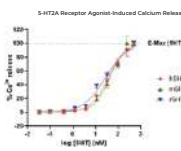
Psychedelics Discovery Services

- At o2h, we have developed and screened a series of 5-HT2A small molecules with varying potencies towards Gq and β-arrestin-biased signalling, providing insights into 5-HT2A receptor dynamics.
- These molecules serve as key tools for understanding specific intracellular responses, advancing drug discovery research.

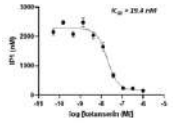
GPCR Signalling
(https://doi.org/10.3389/fcell.2021.611443)



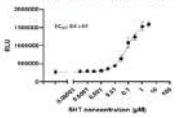
Calcium Release



IP1 accumulation



β-arrestin recruitment



Scan the QR to read more about our psychedelic discovery services

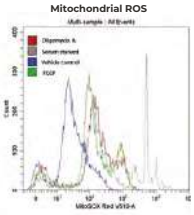
Mitochondrial Biology

o2h offers cutting-edge assays that detect and monitor hanges in mitochondrial structure and function, helping researchers unravel the intricacies of these organelles and their impact on cellular health. Dysfunctional mitochondria are implicated in diseases such as Parkinson's, Alzheimer's, diabetes, and even aging.

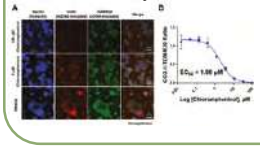
Assay Services

- Superoxide production using MitoSOX red dye – flow cytometry
- Mitochondrial Biogenesis or Degradation (Mitophagy) – HCI
- Mitochondrial Calcium uptake using RHOD-2 AM dye – FLIPR
- Jess-Based Western Blotting of proteins (SDHA, MFN2) involved in mitochondrial fission, fusion, and apoptosis

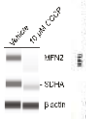
Mitochondrial ROS



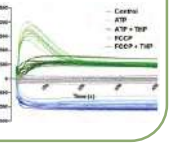
Mitochondrial Biogenesis HCI assay



JESS Western Blotting



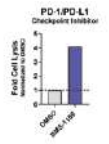
Mitochondrial Calcium flux

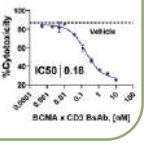


Immuno-oncology (IO)

o2h offers various IO research services for the phenotypic screening of novel immune therapeutics, which includes the following:

- PBMC isolation and immunophenotyping
- Receptor expression using FACS
- Co-culture of cancer cells with immune cells
- Cytotoxicity of immunotherapeutic (CFSE/7-AAD)





Scan the QR to read more about our IO Services

State-of-the-art Equipment

Our cutting-edge facilities are equipped with advanced instruments to ensure precision and efficiency in biology research.


Biacore T200


CellInsight CX7 HCS


FLIPR Penta


CytoFLEX S


JESS


IncuCyte S3

o2h Biology Match Funding Award

From idea to milestone, start generating data on the bench

- Match Funding of up to 50%
- Highly Experienced Biologists
- Comprehensive Project Management
- Access to Cutting-edge Equipment Suite

Scan the QR to know more

Poster No - ProUPS_079

An array of Targeted Degradation approaches offered as a part of integrated drug discovery services by o2h Discovery

Prasad Sulkshane[1], Romit Bose[1], Keith Woodley[2], Alice Willer[2], Shubham Gourana[1], Anagha Dahake[1], Animesh Pandit[1], Jackline Agwenge[2], Christian Mutti[2], Simon Stockwell[2], Rajesh Yesodharan[1], Sunil Shah[1,2], Prashant Shah[1,2] and Gayathri Sadasivam[1,2*]

[1] *In vitro* Biology, o2h Discovery Pvt. Ltd., Changodar, Ahmedabad, India

[2] *In vitro* Biology, o2h Discovery Pvt. Ltd., Mill SciTech Park, Hauxton, Cambridgeshire, UK

*Correspondence to gayathri.sadasivam@o2h.com

o2h Discovery

- o2h Discovery provides early-stage drug discovery services from its advanced facilities in Ahmedabad, India, and Cambridge, UK.
- The company has expanded its expertise in targeted protein degradation (TPD), offering a comprehensive suite of solutions for PROTAC design, synthesis, screening, and a customizable "off-the-shelf" PROTAC toolbox. Our experienced biology team provides assays for binary and ternary complex formation, protein degradation, and DC50 estimation, ensuring fully integrated capabilities.
- Leveraging expertise in small molecule discovery and bespoke assay development, o2h enables screening of small molecules that bind to unique RNA folds.
- Drawing on insights from Tong et al. (2023), o2h Discovery is applying these findings to design RNA-targeting molecules. By conjugating RNA-binding small molecules with RNase L-recruiting agents, or RIBOTACs, o2h aims to develop novel RNA degraders using a PROTAC-like approach, enhancing RNA-targeted drug discovery.
- Looking ahead, o2h is also exploring the use of DUBTACs for protein stabilization and other TAC-based mechanisms to clear protein aggregates, broadening its scope in targeted degradation strategies.

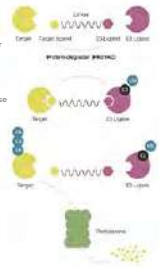
PROTAC (PROteolysis TArgeting Chimera)

Degrader design
Constructed to bind both target and E3 ligase through a crosslinker

Ternary complex
Degrader recruits target to E3 ligase

Polyubiquitination
Ubiquitin (Ub) added to target's Lys residues

Target degradation
Ub-marked target is degraded by the proteasome



Specific questions:

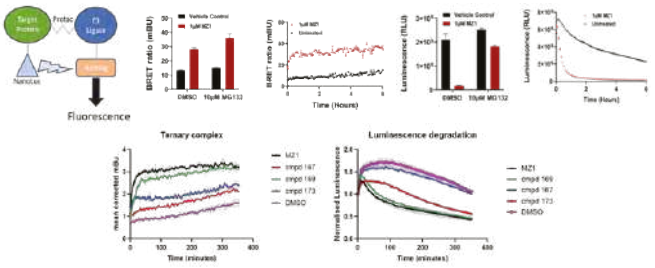
Q. Is my target degraded?
Q. What is the binary affinity for POI & E3 ligase?
Q. Do they form ternary complex?
Q. Is my target ubiquitinated?

Case Study:
Target protein: BD2 domain of BRD4
E3 Ubiquitin ligase: VHL
PROTAC molecule: MZ1

Demonstration of ternary complex formation & target protein degradation by Nanoluciferase assay:

HEK293 cells expressing NanoLuc-BRD4 (Donor) and Halo-Tag-VHL (acceptor) at 1:100 ratio.

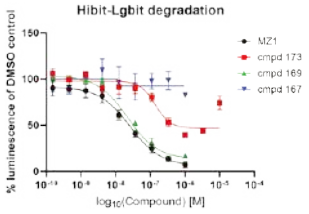
Ternary Complex Formation | **Target Protein Degradation**



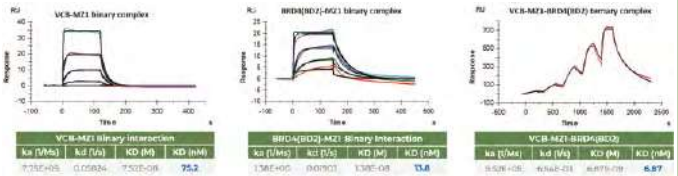
Demonstration of target protein (BRD4) degradation by split Nanoluciferase assay:

- In HEK293 cells stably expressing LgBit nanoluciferase fragment, we knocked in the corresponding HiBit fragment at the endogenous locus of BRD4.
- The LgBit fragment has a high affinity for the HiBit fragment, thereby reconstituting the active NanoBiT® (Nanoluciferase) enzyme.
- Expression of BRD4 therefore, creates an active nanoluciferase.
- Degradation of BRD4 thus causes a decrease in the Nanoluciferase signal.

Assessing BRD4 degradation by HiBit-LgBit assay



Demonstration of binary and ternary complex formation by SPR:



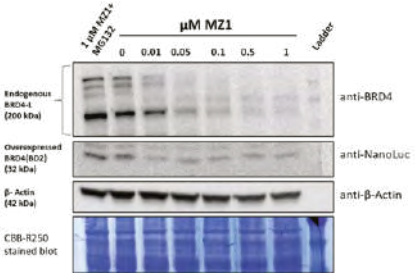
VCB-MZ1 binary interaction			
ka (1/Ms)	kd (1/s)	KD (M)	KD (nM)
7.35E+05	0.05824	7.92E-08	79.2

BRD4(BD2)-MZ1 binary interaction			
ka (1/Ms)	kd (1/s)	KD (M)	KD (nM)
1.38E+06	0.01901	1.38E-08	13.8

VCB-MZ1-BRD4(BD2)			
ka (1/Ms)	kd (1/s)	KD (M)	KD (nM)
9.52E+05	6.56E-03	6.87E-09	6.87

Demonstration of target protein degradation by western blotting:

HeLa cells transfected with the Nanoluc-BRD4(BD2) plasmid and 24 hours later treated with indicated concentrations of MZ1 for 6 hours. The cell lysates were analyzed by western blotting for the indicated proteins.



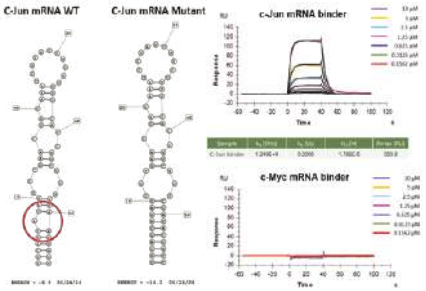
RiboTAC (RNA-TArgeting Chimera)

- Current RNA-targeting modalities have been limited to antisense oligonucleotides, which mediate Ribonuclease-dependent RNA cleavage.
- However, RNA is remarkably structured and intricately folded as hairpin loops through its intramolecular base pairing, forming a series of unique secondary structures.
- These RNA folds, similar to motifs or domains in proteins, may offer a unique opportunity for targeting by small molecules through specific binding.
- The biological outcome of such RNA binding small molecules can be further enhanced by appending a functional group to it, which can recruit a Ribonuclease, activate it and cleave the target RNA.
- We have developed SPR & Fluorescence Dye Displacement assays as robust and highly sensitive methods to study these specific RNA-small molecule interactions.

Case Study

- Studying the specific interactions between c-Jun mRNA and a small molecule [Ref. Tong et al. (2023)].
- A specific part of c-Jun mRNA bearing a unique loop/kink – Wild Type (WT), where a small molecule – c-Jun mRNA binder binds.
- Negative control: Mutant c-Jun mRNA, which lacks the unique kink (the binding site).
- Unrelated small molecule: c-Myc mRNA binder.

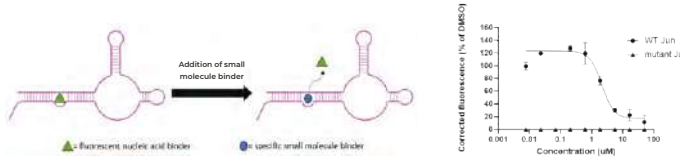
Demonstration of RNA-small molecule interactions by SPR:



In SPR assay, the small molecule c-Jun binder showed specific binding towards WT form of c-Jun mRNA as compared to its mutant form, such that upon mutant subtraction, the sensorgram appear positive.

The unrelated small molecule c-Myc mRNA binder did not exhibit binding to the c-Jun mRNA, with the net effect being marginally negative sensorgrams.

Demonstration of RNA-small molecule interactions by Fluorescent dye displacement assay

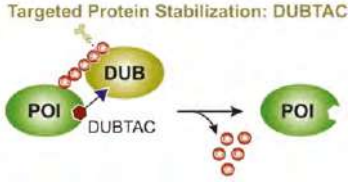


Fluorescence readout showing displacement of the ToPro RNA binder by the c-Jun binder. As the concentration of the c-Jun binder increases, fluorescence decreases. No displacement is observed with the mutant c-Jun mRNA.

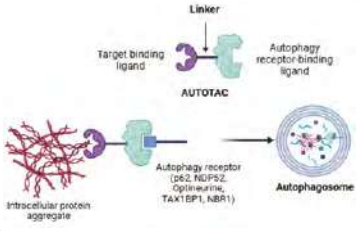
Next, we plan to demonstrate the ternary complex of RNA-RiboTAC-RNaseL by SPR and evaluate the RiboTAC efficacy in cellular studies.

Future Plans

DUBTAC (Deubiquitinase-TArgeting Chimera)

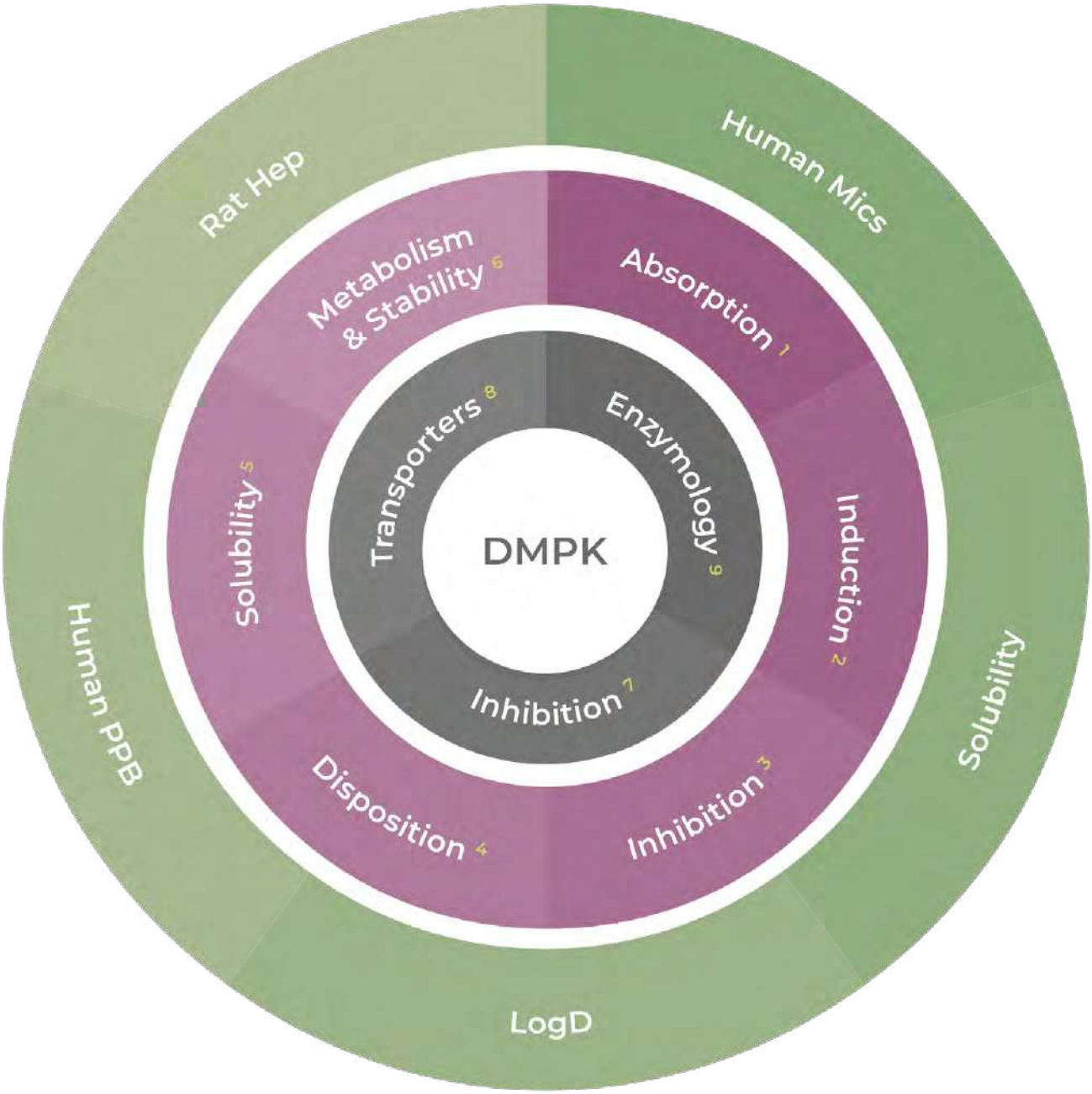


Autophagy-TArgeting Chimera



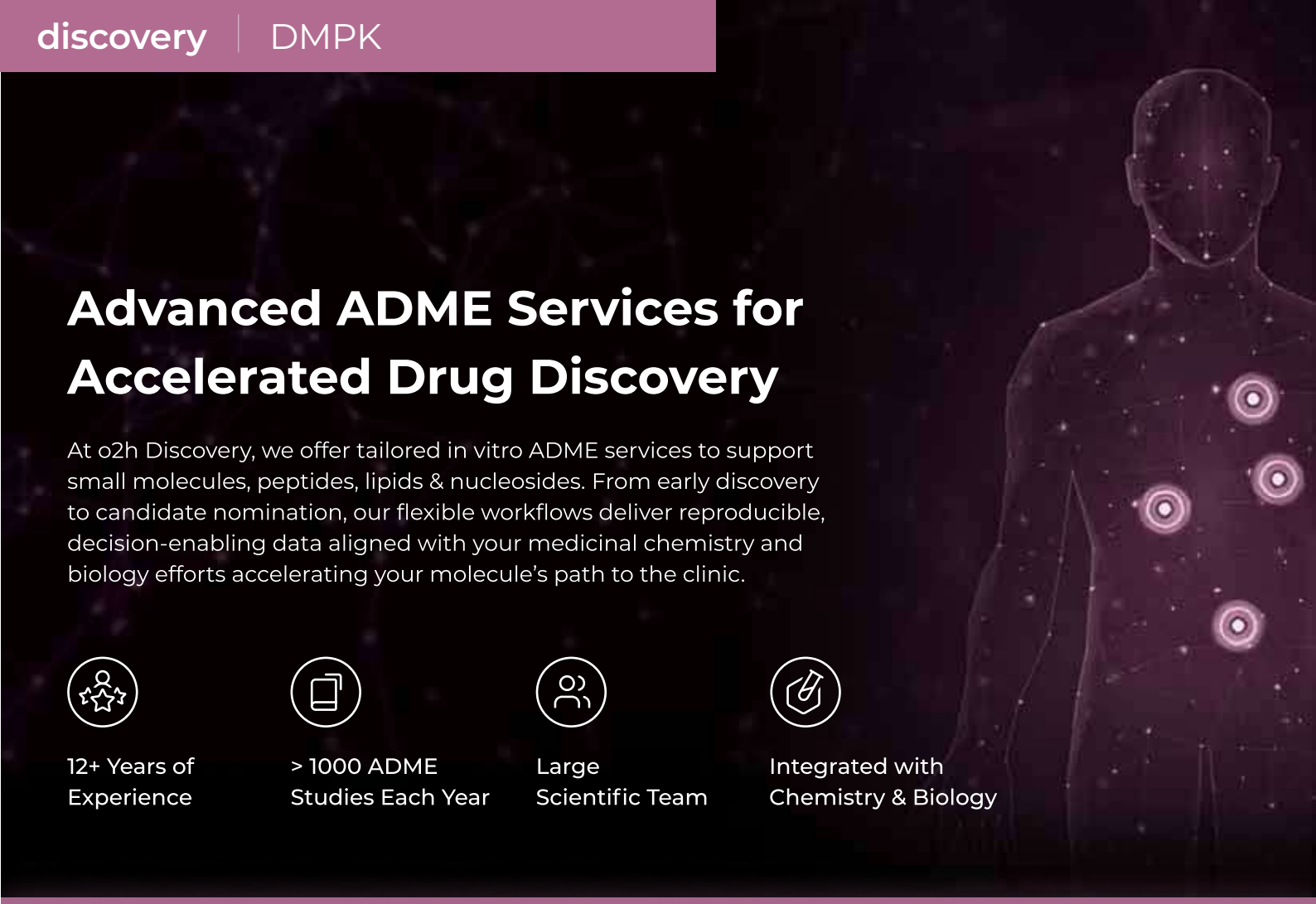
DMPK Capabilities

o2h discovery operates a multi-modality integrated platform from Cambridge, UK, and Ahmedabad, India, with a focus on insight driven discovery.



1. Cell-permeability, CACO2-efflux, MDCK-MDR1, MDCK-MDR1-BCRP
2. PXR, CYP induction, HepRG, HepR
3. CYP enzyme, TDI, PgP, OATP1B1, BCRP
4. Blood plasma partitioning, plasma protein binding, hepatic uptake, OATP1B1 substrate
5. pKa, Solid, FaSSIF, Lung solubility
6. Hepatocyte, microsome clearances, met-id , CYP identification, Fuinc, chemical stability, chemical reactivity
7. UGT, SULT, other enzymes
8. Substrates
9. UGT identification, enzyme identification

Wave 1 Wave 2-3 Wave 4



Advanced ADME Services for Accelerated Drug Discovery

At o2h Discovery, we offer tailored in vitro ADME services to support small molecules, peptides, lipids & nucleosides. From early discovery to candidate nomination, our flexible workflows deliver reproducible, decision-enabling data aligned with your medicinal chemistry and biology efforts accelerating your molecule's path to the clinic.

12+ Years of Experience

> 1000 ADME Studies Each Year

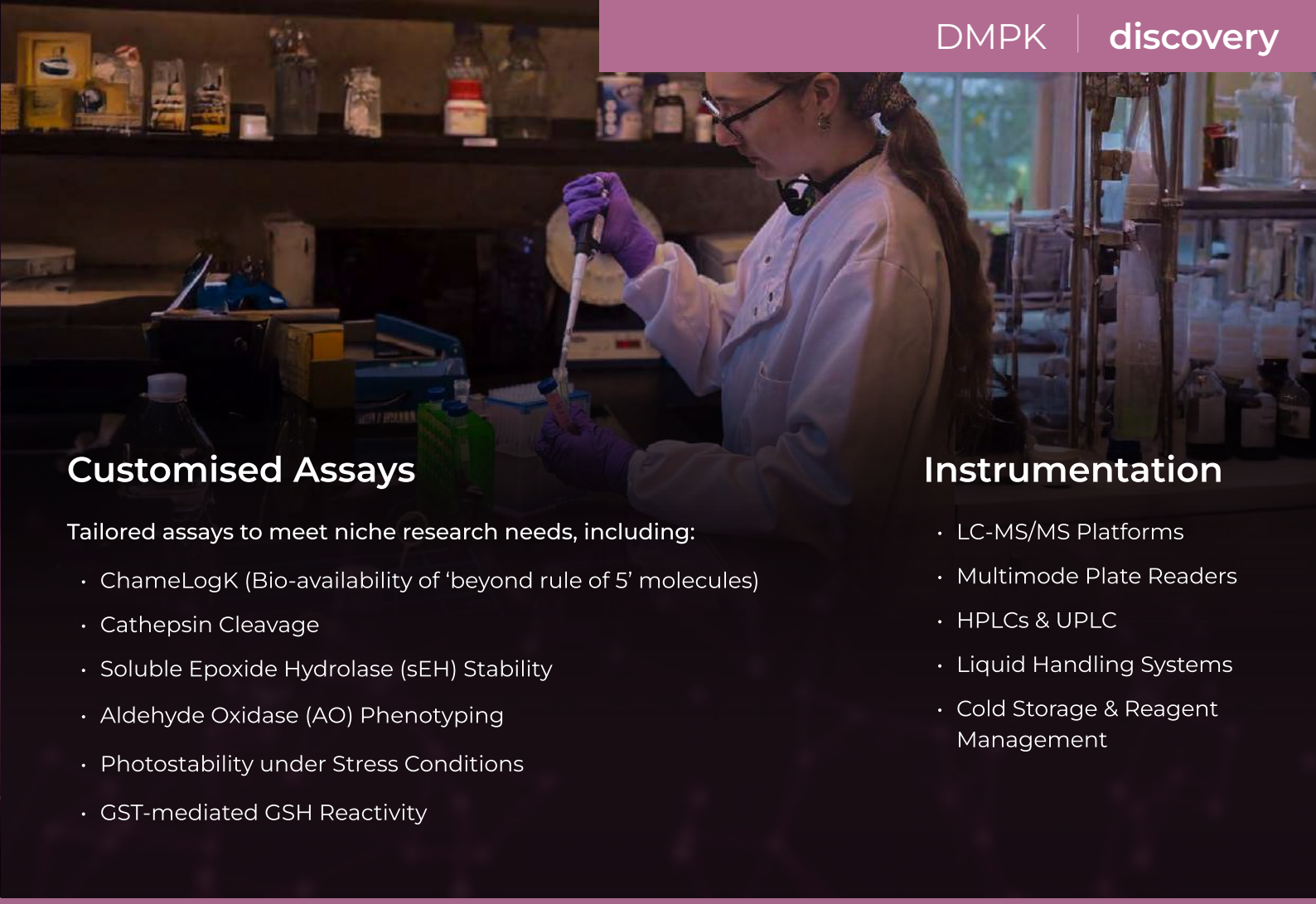
Large Scientific Team

Integrated with Chemistry & Biology

Comprehensive ADME Assay Platforms

Our ADME screening service can provide customised solutions to solve complex druggability issues throughout the early discovery and development phases with speed, quality, and cost effectiveness.

Physicochemical Properties	Drug Metabolism	Permeability & Drug Transporters Services	Drug-Drug Interaction	Distribution
• Solubility (kinetic, thermodynamic, FaSSIF, FeSSIF, FaSSGF, simulated lung fluid) • Lipophilicity (LogP, LogD, Chrom LogD and pKa) • Stability (buffer, pH, plasma)	• Microsomal stability • Non-CYP mediated Metabolism • S9 stability • Hepatocyte stability • sEH stability • Metabolic identification • L-Glutathione stability • GSH conjugation • Cathepsin cleavage	• PAMPA • CACO2- permeability • MDCK-MDR1 permeability • MDCK-WT permeability • P-gP transporter in CACO2 and MDCK • BCRP substrate identification • BCRP inhibition • MDCK-BCRP permeability • OATP1B1 substrate identification • OATP1B1 transporter inhibition • Hepatic uptake	• CYP inhibition • CYP induction • CYP TDI • UGT inhibition • SULT inhibition	• Plasma protein binding • Tissue homogenate binding • Blood-plasma partitioning • Microsomal binding (Fuinc) • Hepatocyte binding (Fuinc)



Customised Assays

Tailored assays to meet niche research needs, including:

- ChameLogK (Bio-availability of 'beyond rule of 5' molecules)
- Cathepsin Cleavage
- Soluble Epoxide Hydrolase (sEH) Stability
- Aldehyde Oxidase (AO) Phenotyping
- Photostability under Stress Conditions
- GST-mediated GSH Reactivity

Instrumentation

- LC-MS/MS Platforms
- Multimode Plate Readers
- HPLCs & UPLC
- Liquid Handling Systems
- Cold Storage & Reagent Management

Why o2h discovery?

Our unique points-based system provides an easy-to-use and cost-effective way to access flexible ADME services: get the economies of scale & the flexibility you need, without all the paperwork.

- Experienced scientists with deep domain expertise
- Customisable workflows for small molecules, peptides, and beyond
- Agile team and rapid turnaround ideal for fast-moving biotechs
- Clear, reproducible, and flexible reporting
- Our ADME services align with chemistry and biology to deliver cohesive insights

Contact us

o2hdiscovery.co
discovery@o2h.com
o2h-discovery
o2h_discovery
o2hlife
o2hgroup

Scan to visit website

In-vivo Pharmacokinetics

We provide robust and reproducible in-vivo pharmacokinetics and pharmacology studies that drive discovery pipeline decisions

PK Services

- Discrete and cassette studies
- Single-dose and repeat-dose
- Gender and food effect
- Dose proportionality
- Tissue distribution (e.g. brain uptake)
- Excretion studies
- Bio-avaibility

Species/Animals Available

- Rat (Sprague Dawley, Wistar)
- Mice (Balb/C, Swiss Albino)
- Dog (Begale)
- Rabbit (New Zealand White)
- Guinea Pig (Dunkin Hartley)
- Mini-pig

Toxicology Services

- General: Acute tox, repeat-dose tox (7/14/28/90 days), Chronic tox (180 days)
- Genetic: Core Battery (AMES, Chromosomal Aberration, MNT), Comet Assay
- Developmental & Reproductive: OECD 421, 422, Male fertility, OECD 414, OECD 443

Disease-relevant Pharmacology Models (rodent-based)

Oncology

- PC3 (Prostate)
- SKOV3 (Ovarian)
- Mia PaCa-2 (Pancreatic)
- MOLT4 (ALL)
- A549 (Lung)
- HCT116 (Colon)
- MDA-MB468 (Breast)
- A375 (Melanoma)
- Metastasis model

Inflammation model

- Collagen-induced arthritis
- Adjuvant-induced arthritis
- DSS-induced colitis
- TNBS-induced colitis
- PMA-induced psoriasis / atopic dermatitis
- IMQ-induced psoriasis / atopic dermatitis

Motor Skill

- Neurodegenerative Disorder-Y Maze test
- Neuromuscular diseases- Four limb hanging tests

CNS

- Neurotoximia – LPS Induced
- Parkinson disease
- ALZHEIMER'S MODEL

Metabolic Disorders model

- Osteoporosis
- TYPE II Diabetic obese
- Aging study

Molecules to Medicines: Effective Pre-Formulation

Extensive characterization of drug substance, formulating the NCEs for pre-clinical studies

Formulation Expertise Driving the Transition from Discovery to Clinic

At o2h Discovery, we support biotech and life sciences innovators with comprehensive toxicology formulation services designed to accelerate preclinical development. Our expertise spans pre-formulation studies, preclinical formulations for PK evaluations, and the development of robust TOX formulations prepared for dosing.

We also specialise in solubility and bioavailability enhancement strategies to ensure optimal drug performance. By integrating scientific rigour with a collaborative approach, we help our partners streamline the transition from discovery to safe and effective clinical candidates.

Comprehensive Pre-Formulation Solutions for Drug Discovery

Discovery support

- Salt screening
- Drug solubilizer screening
- Determination of partition coefficients
- Formulation stability

Material characterization (solid-form)

- Polymorph and crystallinity studies
- Thermal characterization (DSC)
- Solid-state NMRs
- Particle size and size distribution

Early pre-clinical formulation

- Self-emulsifying drug delivery systems (SEDDS)
- Co-solvent technique
- Lipid-based formulation
- Molecular dispersion
- Nanosuspension
- Complexation

Our pre-formulation studies evaluate a broad spectrum of physical and chemical properties essential for designing the right formulation and delivery approach for your lead candidates. Backed by a team of expert scientists, we translate these insights into formulations that are effective, scalable, and compliant with regulatory standards.

o2h discovery

The world's first chemistry project management app

Spend less of your time managing your FTEs and spend more of your time selecting the right compounds for synthesis. Your FTEs will spend more time making compounds rather than manually entering data, administration and reporting.

Benefits

- Instant project kick-off
- Facilitates collaborative research
- Real-time scientific data exchange
- Faster decision making & communication
- Reduction in lead time for starting materials
- Live tracking of inward starting materials
- Project tracking
- Transparency & visibility

Manage your integrated drug discovery collaboration from anywhere

To find out more visit **o2h.com/chemistry-in-the-cloud/**

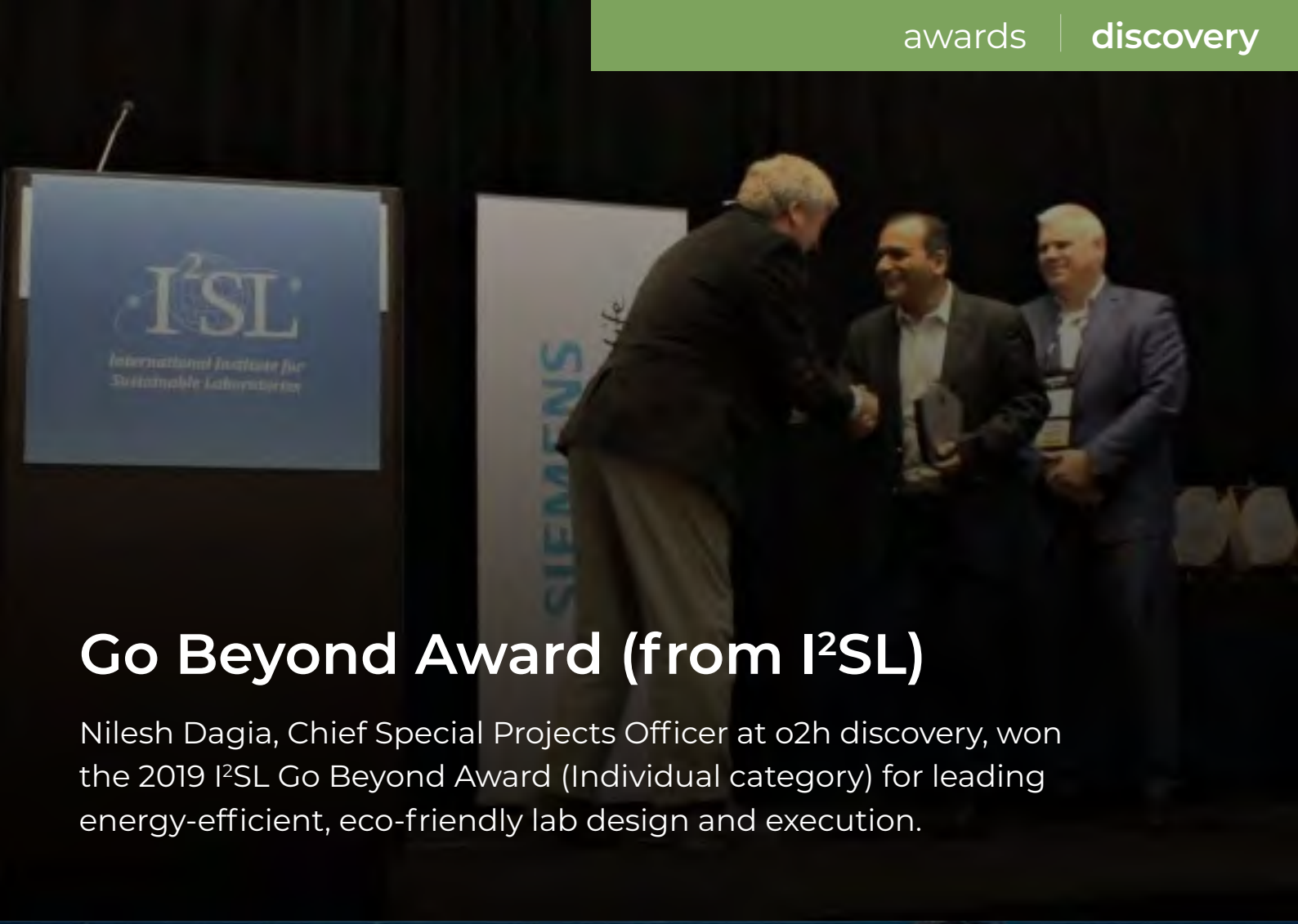
features

- Project Management
- New Projects
- Communication & Data
- Starting Materials
- Performance, Admin & Tracking

Best Use of Technology Award

Chemistry in the Cloud™ has won the category “Best Use of Technology Award” in the Pharma Industry Awards UK 2023.

PHARMA INDUSTRY AWARDS



Go Beyond Award (from I²SL)

Nilesh Dagia, Chief Special Projects Officer at o2h discovery, won the 2019 I²SL Go Beyond Award (Individual category) for leading energy-efficient, eco-friendly lab design and execution.

OBN Awards 2023

o2h discovery won the “Most Impactful CRO of the Year” Award at the industry leading OBN Awards ceremony...

Models

Our campaign models are designed to give biotechs the head start they need to advance their drug discovery programs.

From Kickstarters to Biology Match Funding and the Peptide Guarantee, our initiatives open structured pathways that accelerate growth and move pioneering science toward its next milestone.

o2h Biology Match Funding Award

From idea to milestone, start generating data on the bench

Overview

o2h discovery is serving up the o2h Biology Match Funding Award, an exclusive programme designed to give biotechs and big pharma an opportunity to smash through their discovery research projects!

With this award, we will match fund 50% of the FTE cost for projects up to $65K/£50K. It is designed to help you ace key milestones and rally your way to the next stage of funding or secure additional grants. It will also enable biotech research companies to tap into o2h's vast expertise and resources, ensuring the delivery of impactful scientific results. With this initiative, we aim to foster a collaborative environment that drives scientific breakthroughs and promotes growth within the biotech ecosystem.

Eligibility

This award is open to all sizes of biotech companies, big pharma, and academic institutions with novel drug discovery programs requiring biology research support. Early-stage startups must have secured initial funding or grants to qualify. **T&C**[1]

Evaluation

The applications will be evaluated by the match funding committee based on the programme's scientific potential, impact on human health, alignment with our in-house research capabilities, and other factors. This is a time-limited competition. **T&C**[2]

Programme highlights

Match Funding of up to 50%

o2h will provide match funding for 50% of the FTE cost of biology research carried out with o2h discovery, for selected projects valued up to $65K/£50K.

Highly Experienced Biologists

Get access to work with our highly experienced team with a strong track record of >25 years delivering solid results to progress challenging biology projects.

Comprehensive Project Management

Expertise in executing and managing diverse biology projects, including target engagement, pharmacological profiling, target biochemistry, cell-based assays and more.

Access to Cutting-edge Equipment Suite

o2h's biology equipment capabilities include the Jess, Biacore T200 SPR, FLIPR Penta, CytoFlex, and more.

Terms & Conditions:

(1) The work package will be fully executed at o2h's in-house research facilities and cannot be conducted in collaboration with any other CRO or organisation. Additionally, projects must fall within the scope of o2h's biology research capabilities.

(2) Awardees will be announced within 3-4 weeks from the date of application.

o2h Kickstarter Award

A competitive award to turbocharge your biotech startup with a chemistry boost!

7+
Editions across the globe

35+
Awards provided so far

$6.3M+
Invested in resources

Give your startup a boost of chemistry...

Building on the success of our earlier Kickstarter competition, we have now launched the latest edition of o2h Kickstarter in “North America”, exclusively tailored for early-stage biotech companies that have secured initial funding, have exciting drug targets, and have the ability to scale, but need expert services to supercharge their chemistry efforts to meet the next scientific and funding milestones.

In essence, the award aims to support the next wave of biotechnology companies by providing a cost-effective team of six experienced o2h discovery chemists and trainee chemists. Despite o2h’s broader capabilities in Med Chem, ADME, and Biology Screening (in the UK and India), the goal is to keep the process straightforward and accessible.

Scan to find out more

The Kickstarter provides vital access to chemists with the skills and knowledge to deliver on the promise of our technology.

Vid Stojevic
CEO & Co-founder, Kuano

The Kickstarter competition was transformative for Sevenless. We were able to effectively put 10 full time FTEs on our lead optimisation program, which delivered novel chemistry ahead of schedule.

The progress was outstanding and the o2h team a pleasure to work with. Kickstarter did for us exactly as it's name suggests. We are now looking to move a drug candidate forward through IND enabling studies and towards Phase I clinical trials.

Dr Neil Benson
CEO, Sevenless Therapeutics

The Kickstarter will enable us to thoroughly explore our nascent SAR and advance our lead program more rapidly.

Beth J Hoffman
President & CEO,
Origami Therapeutics

o2h Plug-in Biotech

A new plug-and-play model for structuring a biotech

Overview

o2h discovery has launched o2h Plug-in Biotech, a new dedicated service designed to help early-stage biotech companies establish and scale subsidiary-like operations in the UK and India.

Changing the business model from Contract Research Organisation (CRO) to Contract Discovery Organisation (CDO), the plug-in biotech is a plug-and-play operational platform that will enable biotech founders and executives to retain strategic control while outsourcing execution and administrative functions to o2h's expert teams on both sides of the world.

Why choose us?

We have the core capabilities to help you set up your subsidiary-like biotech.

- Scalability
- Skills & Talent
- Speedy Execution

How do we help you?

We will provide all the required services to help you smoothly set up and run your biotech operations

Plug-in Biotech — Head-office

Chemistry/Biology, PR&D/Scale-up

Dedicated FTE's or labs with the latest equipment, and experienced scientists to support your research needs.

Tech & AI

IT support, security management, data management, digital development and AI-driven solutions to enhance your biotech operations.

Board, Licensing and BD Support

We can add board members, licensing and BD capabilities to support from the UK to support asset value creation opportunities.

Scientific Decision-Making & Licensing

Focus on advancing your therapeutics pipeline while accessing top scientific expertise for decision-making and licensing.

Project Management

Streamlining your drug discovery projects from inception to completion, ensuring timely delivery and optimal efficiency.

Legal Services

Legal assistance for regulatory compliance, intellectual property protection, contract management, and more.

Supply Chain Management

End-to-end supply chain solutions, ensuring timely procurement and delivery of necessary materials.

Board & C-Suite

Keep key leadership resources close to ensure aligned vision, faster decisions, and a stronger strategic advantage.

Accounts & Finance

Comprehensive financial services including bookkeeping, payroll, tax compliance, and financial reporting.

HR, EA & Office Admin Management

End-to-end support across recruitment, compliance, employee benefits, facilities, admin, executive and daily operations.

Marketing Support

Branding, digital marketing, content creation, and outreach strategies to amplify your presence.

Funding & Grants

Maximise investment opportunities without distractions from backend execution.

discovery@o2h.com

o2hdiscovery.co/plug-in-biotech

o2h Peptide Guarantee

*Get peptides delivered in **2 weeks.***
If delayed, it's on us!

Overview

At o2h Discovery, we recognise that fast and reliable peptide synthesis is crucial for accelerating innovation, advancing drug discovery, and delivering life-changing therapies without delay. This is why a rapid and dependable peptide synthesis service becomes essential.

With the o2h Peptide Guarantee Programme, our goal is simple: deliver high-quality peptides in 2 weeks. If delayed, it's on us!

This initiative is designed to accelerate the drug discovery journey for small-molecule-focused biotech organisations, academic researchers, and pharma companies by providing peptides with speed, precision, and reliability. Our expertise in peptide synthesis supports the development of innovative therapies that address unmet medical needs, helping advance groundbreaking science that improves human health and the environment.

Highlights

Ultra-Fast Peptide Synthesis

High-quality peptides delivered in 2 weeks. If delayed, it's on us.

T&C Applied

Highly Experienced Peptide Chemists

Work with our expert scientists with vast experience in synthesising and optimising complex peptide molecules with efficiency.

End-to-End Peptide Solutions

From custom synthesis and complex modifications at mg to gram scale, to purification, analysis and characterisation; we handle it all with precision.

Cutting-Edge Equipment & Advanced Capabilities

o2h's peptide facility is equipped with Biotage Syro I, CEM Liberty Blue, and more for fast, high-quality peptide production.

Contact us

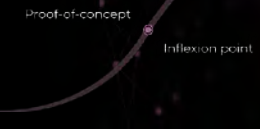
o2hdiscovery.co/peptide-guarantee
discovery@o2h.com
o2h-discovery
o2hlife
o2hlife
o2hgroup

Scan to visit website

co-discovery with o2h discovery inflexion Tx

A Match Funding Offer to Support Critical Proof-of-Concept Studies

Unlock high value ideas, assets and near misses...



Overview

We are in an era of exciting new science. Pharma and biotech are often required to make extremely pressured decisions on the deployment of scarce funds and resources. The commercial biopharma paradigm requires companies to quickly move promising assets from preclinical to clinical along a focused strategic journey to help access critical stakeholder support for milestone payments and further funding.

Inflexion^{Tx} mitigates against a delayed or missed opportunity by sharing some of the value in return for mobilising these ideas with a structured program towards the next key go-no-go position. o2h discovery has evolved deep design experience for focused and efficiently structured POC studies leading to an early signal that the science works. The expertise cuts across a range of modalities and integrates medicinal chemistry, biological assay cascade design, DMPK and analysis. The match-funding offer is available in bundles of USD 100K, 250K, or 500K, allowing shared financial and scientific risk.

Where it can help...

Through Inflexion^{Tx}, projects can regain focus and direction, unlocking value and advancing scientific opportunities where others may have seen only risk. It can provide critical support in scenarios such as:

New Modality
Explore alternative modalities against an existing asset to explore new IP space

Novel Target Space
Using novel screening strategies combining in-silico for target identification

Near Miss
An additional study boost may be required to crack a scientific bottleneck

Novel Hit Matter
Design assay cascade/ panel along with some early chemical matter

Rescue After Setback
Stalled after pre-clinical study data or clinical trial setback

New Indicators
Assets not aligned with strategy but valuable in other indications

Novel Contrarian Ideas
Projects that go by hunch against prevailing industry trends

Funding Gap
Providing data to the program champion to unlock an asset

Creating Backup Program
Building up the pipeline behind the development candidate

Lead Optimisation
Advancing promising leads into more potent, development ready drug candidate molecules

Power Your Pipeline With India

Excellence for accelerated drug discovery

Key Stats

10.75% CAGR growth will push India's CRO sector to USD 2.5 billion

$82M+ infrastructure for drug discovery and development

$2M+ to develop common facilities such as testing labs and effluent treatment plants

Why is India the Perfect Destination for Your Next Drug Discovery Project?

India's CRO landscape is evolving rapidly, with clinical development services taking the lead, followed by discovery chemical services. To stay ahead of shifting regulatory landscapes, CROs are enhancing their scientific writing and regulatory capabilities. Notably, biomarker development and companion diagnostics are emerging as critical areas of focus, particularly in the context of precision medicine and targeted therapies.

The Strategic Edge of Partnering with India

Scientific Talent Pool

A vast pool of highly skilled scientists with expertise in cutting-edge technologies

Secure and Reliable

Strong IP protection, privacy measures, and robust compliance with global regulatory standards

Advanced Infrastructure

Modern research facilities equipped to handle complex discovery needs

Fast Supply Chain

Fast and reliable supply chain to accelerate project timelines and deliverables

Favourable Policies

Supportive biotech and outsourcing regulations that promote innovation and partnership

discovery@o2h.com | o2h-discovery | o2hlife | o2hlife

Scan to visit website

o2h discovery

Thank you

Scan and
Discovery More

For more information or to get a quote contact us at: discovery@o2h.com

o2h-discovery o2h_discovery o2hlife o2hlife o2hgroup