

Discovery Biology Solutions



With wide-ranging capabilities in biology, GVK BIO offers high quality, seamless and cost effective solutions across the Pharma and Biotech value chain. Biological assessment of New Molecular Entities (NMEs) play a crucial role in ascertaining structure activity relationships, potency, selectivity, druggability, *In Vitro* and *In Vivo* efficacy evaluation.

Our capabilities include reagent generation, high-throughput screening, assay development, biomarker validation, radiometric assays, DMPK, animal pharmacology (disease models) and exploratory toxicology for small molecules and biologics.

In Vitro Pharmacology

Primary Pharmacology

A. Target Class

- Enzymes
- GPCRs
- Transporters
- Ion Channels

B. Assay Platforms & Technologies

- Absorbance
- Luminescence
- ECHO - 550
- Fluorescence (FP/ HTRF/TR-FRET)
- Radiometry
- Thin Layer Chromatography (TLC/ HPLC/LC-MS/MS)
- Rapid fire - HTMS
- Flow Cytometry
- Luminex-Magpix
- Q-PCR Assays
- Automated Western (WES)

- High Content Screening (HCS)

- High Throughput Screening (HTS)

C. Model Systems

- Cell lines
- Normal primary cells
- Patient derived primary cells
- Stem cells
- 3D cell culture

Reagent Generation

- Gene synthesis
- Cloning/sub-cloning
- E.coli expression
- Baculovirus expression
- Yeast expression
- Mammalian (CHO/HEK)
- Lentiviral expression Tagged/Untagged/Radiolabeled protein production
- Transient/Stable cell line generation

Cosmetics & Personal care

- Skin Care assays
- Hair Care assays
- Anti-Ageing assays
- Anti-pollution test
- REACH/OECD guided assays
- Bio compatibility testing

In Vitro Toxicology

- Genotox (AMES/Micronucleus etc.)
- Hepato toxicity
- Cardio toxicity
- Dermal toxicity
- Ocular toxicity
- Mitochondrial toxicity
- Neuro toxicity
- Vaginal toxicity
- Toxicogenomic profiling
- Endocrine Disruptor Screening

DMPK Services

TARGET TO HIT	HIT TO LEAD	LEAD TO CANDIDATE IDENTIFICATION	CANDIDATE SELECTION
<p>Assessment of Physiochemical & <i>In Vitro</i> ADME properties</p> <ul style="list-style-type: none"> In silico properties Solubility Log D Metabolic stability CYP inhibition 	<p>Optimisation of Physiochemical & Druggable Properties</p> <ul style="list-style-type: none"> Metabolic stability CYP inhibition Permeability <ul style="list-style-type: none"> PAMPA CACO - 2 Plasma / Tissue protein binding Reactive metabolite <i>In Vivo</i> PK (rodent) 	<p>Optimisation of Druggable Properties, IVIVC, PK/PD Correlation</p> <ul style="list-style-type: none"> Permeability <ul style="list-style-type: none"> CACO - 2 Plasma / Tissue protein binding Blood / Plasma partitioning Met id (soft spot) PK (non-rodent) PK (rodent) Target tissue exposure IVIVC, renal/biliary CL Mass balance PK/PD 	<p>Dose Range Finding, Safety/Tox Assessment, Interspecies Scaling</p> <ul style="list-style-type: none"> Dose range finding studies (rodents and nonrodents) PK/PD Tissue distribution Food effect Gender effect Metabolite profiling / Metabolism Pathway Safety profiling Toxicokinetics CYP induction Interspecies scaling

In Vivo Pharmacology

Our animal facility is accredited by **AAALAC** and **CPCSEA** (India) for ethical treatment of animals. All the animal experiments are conducted in accordance with **IAEC** approved protocols.

GVK BIO's rodent facility is also certified by **OHSAS** for strictly following all recommended rules for health and safety of our employees.

Animal Models of Oncology

- Xenograft Cancer models
- Syngeneic Tumor models

Animal Models of Metabolic Disorders

- Obesity
- NASH STELIC
- Diabetes

Animal Models of Pain

- Neuropathic Pain models
- Incisional/Post-operative Pain models
- Inflammatory Pain models

Animal Models of Inflammation

- Acute inflammation
- Colon inflammation

- Dermal inflammation
- Neuro inflammation

Animal Models of Fibrosis

- Pulmonary Fibrosis
- Liver Fibrosis

Integrated Services

Ability to provide solutions across chemistry, *In Vitro* pharmacology, DMPK, *In Vivo* pharmacology and safety

Experience in driving programs from target validation to clinical candidate selection

Project Management provided as a resource to handle all non-scientific logistical aspects of an integrated program



Leading CDMO
INOGENT

Discovery CRO of Choice
GVK BIO

Large Molecule Discovery Partner
ARAGEN

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