GVK BIO
Accelerating R&D

In Vitro Pharmacology

At GVK BIO, we offer a panel of validated *In Vitro* pharmacological assays that cover a broad range of targets. Apart from ascertaining the potency of the NCE on target, assays are also available for selectivity screening and profiling. While working closely with the customers, the team provides solutions ranging from Reagent Generation, Assay Development and Validation to High Throughput Screening. The cornerstone of our *In Vitro* pharmacology is broad expertise in target-specific molecular interactions along with state of the art technology platforms.

Primary Pharmacology

A. Target Class

- Enzymes
- GPCRs
- Transporters
- Ion channels

B. Screening Platforms

- Real Time QPCR (Quantstudio 6 Flex)
- Absorbance/Luminescence/ Fluorescence (HRTF/FP/TR-FRET)
- Radiometry
- FLIPR-based screening
- Chromatography (TLC/ HPLC/LC-MS/MS)
- HTMS (Rapid Fire System)
- Flow cytometry (BD FACSVerse)
- SPR (Biacore T200)
- Manual Patch Clamp (Axon)
- Automated Western Blotting (WES)
- Multiplexed Detection (MAGPIX)
- Next Gen Sequencing (Ion Torrent S5)
- High Content Screening (Cellinsight Cx7)
- Precision Nanoliter Liquid Handling (ECHO 550)
- High Throughput Screening

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 expression (CHO/HEK)
- Lentiviral expression
- Tagged/Untagged/ Radiolabeled protein production
- Transient/Stable cell line generation
- Membrane and Microsomal proteins
- Stem cells iPSC

Genotoxicity

- Ames bacterial reverse mutation test-OECD 471
- *In Vitro* chromosomal aberration test-OECD 473
- *In Vitro* Micronucleus test-OECD 487
- Mammalian cell gene mutation test-OECD 490/476
- *In Vitro* comet assay
- γH2AX Double Strand DNA damage assay
- Phase1 drug metabolism PCR Array

Cytotoxicity

- Cytoxicity assessment by XTT, MTT, BrDU Cell titre Glo and ATPLite methods
- NCE's cytoxicity potential using cell lines, iPSC's and primary cells derived from tissue or whole blood

Cardiotoxicity, Liver Toxicity and Neurotoxicity

- Caridotoxicity safety screening on hERG by patch clamp, fluorescence polarization, HCS and FLIPR methods
- Liver toxicity and neurotoxicity screening across a panel of cell lines (HepG2, HuH7, Hep3B, SH-SY5Y, SK-N-SH) and primary human hepatocytes
- Toxicity testing using iPSC derived cardiomyocytes, hepatocytes and neuronal cells

Dermal Toxicity

- Skin irritation assay (Reconstructed 3D Human Epidermis models)-OECD 439
- Skin corrosion assays (Reconstructed 3D Human Epidermis models)-OECD 431
- Skin sensitization assay (Direct Peptide Reactivity Assay)-OECD 442C
- Phototoxicity assay using Balb/C 3T3 cells-OECD 432

Ocular Toxicity

- Epi-ocular eye irritation assay (HCE)-OECD 492
- Short time exposure assay (SIRC cell line)-OECD 491
- Mechanistic Toxicity
- Mitochondrial (Glu/Gal) assay
- Drug induced Phospholipidosis and Steatosis
- Lysosomal Trapping (Lysosomotropism) assay
- Cytochrome-C release assay
- Caspase 3/7 assay

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