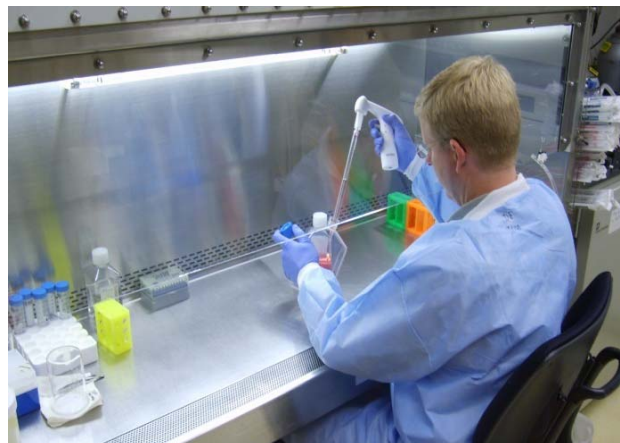


IN VITRO SERVICES

MIR offers a variety of *in vitro* services to support your oncology, inflammation and preclinical discovery needs. Our highly trained staff will perform your study and provide weekly updates and a detailed final report. We currently perform the following types of studies:



Cell-based Assays

- IC₅₀ Determinations
- Invasion and Migration
- Adhesion Molecule Expression
- Cytokine Release Assays

Biomarker Analysis

- ELISA
- Western Blot
- Multiplex Methods

Cytokine Analysis

- TNF, IL-1, IL-4, IL-6, etc.
- ELISA or Multiplex Method

Histology

Imunohistochemistry

Flow Cytometry

Custom Client Assays



Many of the same cell lines used for *in vitro* studies are the same cell lines used *in vivo*. This gives a stronger correlation in the data between *in vitro* and *in vivo* studies.



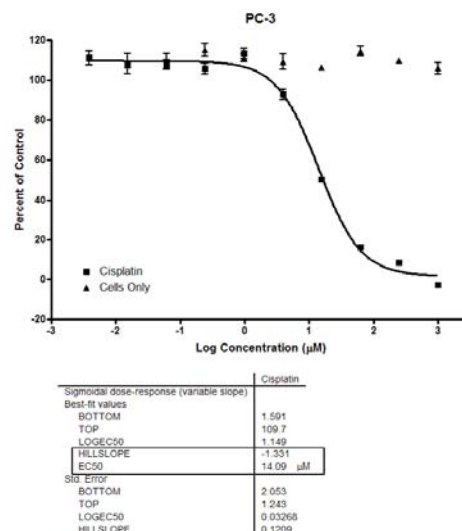
Innovation in Drug
Evaluation

MIR Preclinical Services



IC₅₀ Determination

An IC₅₀ is the median inhibitory concentration of a therapeutic agent that reduces the effect of a disease by 50%. This is typically used as a screening method for anti-cancer therapeutics. Though success *in vitro* does not necessarily translate to success *in vivo*, *in vitro* studies are often used to generate preliminary data for moving into *in vivo* studies. MIR has validated the cell lines below for screening. These same cell lines can also be used for *in vivo* testing:



A2780	DU145	HT-29	KB	MiaPaCa-2	RPMI-8226
A549	H125	H125	MCF-7	MX-1	SK-MES-1
BT-474	H460	H460	MCF-7/ADR	OVCAR-3	SK-OV-3
BxPC-3	HCT 116	IGROV-1	MDA-MB-231	PANC-1	SW620
Colo205	HL-60	K-562	MDA-MB-435	PC3	T-47D

Flow Cytometry

MIR provides flow cytometry services to support both *in vitro* and *in vivo* research. Clients provide antibodies and their preferred staining protocol or MIR can work on protocol development to meet clients needs.

Cytokine Analysis

Cytokine analysis can be performed from *in vitro* culture supernatants or serum samples from studies being conducted by the MIR pharmacology group. Clients may also send serum or culture supernatants for analysis.

Biomarker Development

MIR has been developing methods to detect the phosphorylation state of many of the popular targets clients want to monitor to determine drug induced biomarker changes and modulation, either in cell culture or in tissues harvested from ongoing *in vivo* studies. Please inquire on targets that are currently available or under development.

Custom *in vitro* Services Requests

MIR has a 4,000ft² biochemistry and molecular biology laboratory equipped to perform several types of microplate assays using absorbance and fluorescence (intensity, polarization and FRET) as well as multiplex analysis of cytokines and oncology biomarkers.