

Altogen  
Labs

Provider of Preclinical Research Services (GLP/non-GLP) for Drug Discovery  
Efficacy and Pharm/Tox IND contract research studies (clients worldwide)  
100+ Xenograft Models (validated in-house) and IND-enabling Toxicology studies  
100% IP belongs to client, experienced IACUC-regulated barrier facility

# ***Preclinical Studies: IC-50 Testing***

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

# *Optimized Development*

- Cells are grown, trypsinized, and diluted to the ideal concentration for the specific cell line.
- The process is repeated and data is analyzed for a highly accurate result.
- Toxicology testing → IC-50 is a toxicological property that must be determined for a compound of interest.

# Pre-Clinical Development

- *In vitro* and *in vivo* testing must characterize the pharmacological profile of an Investigational New Drug (IND) with respect to safety and effectiveness.
- A representative value of antagonist potency. Quantitatively, it is the midpoint in which a compound completely inhibits biochemical function. It is determined through dose-response study.



Candidate Drugs Must be **Safe** and Effective

<http://lab-training.com>

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

Provider of Global Contract Research Services Accelerating Preclinical Research, Drug Discovery & Therapeutics

Altogen  
Labs

# Purpose

- IC-50 (inhibitory concentration) curves show dose response curves. This data is used to calculate the drug concentration needed to decrease the amount of viable cells by a specific percentage in comparison to cells grown with no exposure to the specific drug. This directly shows drug effectiveness.
- The concentration must be specific because if it is too high or too low, it will have adverse effects such as being toxic to cells.

# The Drug Development Process

## Step 1

Discovery  
and Development

New technologies or new insights lead to identification of new candidates. The candidates' benefits and biochemical mechanism of action are determined at this stage.

## Step 2

IC-50  
Studies

Preclinical  
Research

Both in vitro and in vivo experiments will detail the toxicological properties of the candidate drug. IC-50 studies are part of this process. The FDA requires researchers to use Good Laboratory Practices (GLP) in pre-clinical research.

## Step 3

Clinical  
Research

This 3 phase stage will determine how effective and safe the drug is with human subjects.

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

Altogen  
Labs

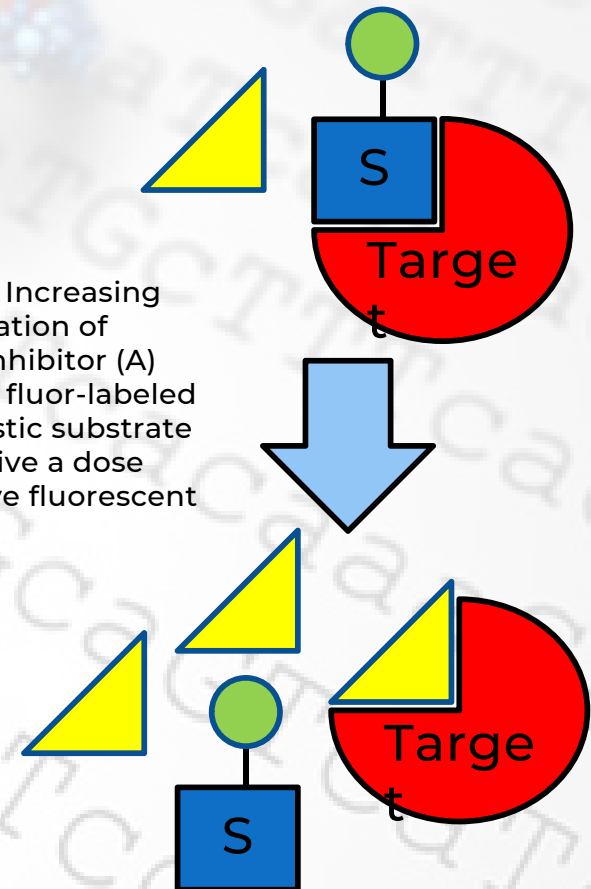
Provider of Global Contract Research Services Accelerating Preclinical Research, Drug Discovery & Therapeutics



# Dose-Response Studies

- Depending on the drug target (enzyme, cell, cellular receptor) the dose-response studies can vary.
- Since an antagonist inhibits the activity of its target, a common method for determining IC-50 would be by competitive binding assay.
- Measuring the effect of increasing concentrations of antagonist (candidate drug) with a constant concentration of agonist.

Example: Increasing concentration of agonist inhibitor (A) displaces fluor-labeled (F) agonistic substrate (S) that give a dose responsive fluorescent signal.



# Sample Cell Lines Available

Disease / Tumor Type	Cell Line / ID
Breast Adenocarcinoma	SKBR3 (HTB30), MDA-MB (HTB26), MCF7 (HTB22)
Colon Carcinoma	Caco2 (HTB37), LS174T (CL188), SW480 (CCL228)
Kidney	MDCK (CCL34), Cos7 (CRL1651), HEK293 (CRL1573)
Neuroblastoma	SK-N-SH (HTB-11), Neuro-2a (CCL-131)
Prostate Carcinoma	LNCaP (CRL-1740), DU145 (HTB-81)
Leukemia	K-562 (CCL-243), CCRF-CEM (CCL-119)
Pancreatic Carcinoma	Capan-1 (HTB-79), MIA PaCa-2 (CRL-1420)
Melanoma	J774A.1 (TIB-67), SK-MEL-28 (HTB-72)

*View our full catalog of cell lines available at [altogenlabs.com](http://altogenlabs.com)*

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

Provider of Global Contract Research Services Accelerating Preclinical Research, Drug Discovery & Therapeutics

Altogen  
Labs



# Pre-Clinical Development

- Cancer cell lines are used as the *in vitro* model system for IC-50 studies.
- Altogen Labs has a broad catalog of cancer cell lines available for IC-50 studies.
- Altogen Labs can also use custom cell lines provided by the client for toxicology studies.



Altogen Labs has multiple cells lines available for pre-clinical studies in toxicology.  
Photo credit: videohive.net

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

Provider of Global Contract Research Services Accelerating Preclinical Research, Drug Discovery & Therapeutics

Altogen  
Labs

# Contact Us

- Altogen Labs has a staff of scientists bringing years of knowledge and experience to any toxicology study.
- Altogen Labs meets and complies with all FDA standards and guidelines for Good Laboratory Practices (GLP), which are requisite for pre-clinical research.
- Altogen Labs pre-clinical services are versatile with respect to type of experiments and cell lines used.



Altogen Labs can meet any request for pre-clinical research.  
Photo credit: <http://www.ddw-online.com>

**Contact us to discuss details, timeline estimates, and price!**

Contact us: [info@altogenlabs.com](mailto:info@altogenlabs.com) | Read more at [AltogenLabs.com](http://AltogenLabs.com)  
ALTOGEN® 11200 Menchaca Road 203 • Austin • TX • 78748 • USA 512-433-6177

Provider of Global Contract Research Services Accelerating Preclinical Research, Drug Discovery & Therapeutics

Altogen  
Labs