

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

ADMET/DMPK

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

The importance of preclinical studies

Preclinical studies are essential for drug development because they provide the necessary information about the toxicity of a drug to study it and determine a safe dosage amount.

This is necessary to continue drug development and begin testing on human subjects to ensure it is not harmful.



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DMPK/ADMET

- DMPK stands for "Drug Metabolism and Pharmacokinetics" and can be referred to as 'ADMET'.
- ADMET is the acronym for "Absorption, Distribution, Metabolism, and Excretion" with the frequent addition of "Toxicology".
- An ADMET profile determines essential information about the drug and whether it is safe, and if so, at what dose it is safe for humans. DMPK properties show the amount of the drug that reaches a target and its duration.

ADMET

Absorption: The bioavailability of the drug. Absorption determines the amount of the drug that is absorbed and at the speed that it is done.

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ADMET

Distribution: The location(s) the drug is distributed throughout the body, as well as the speed and extent of that distribution.

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ADMET

Metabolism: The speed and rate at which the drug is metabolized.

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ADMET

Elimination: The type and speed of excretion.

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Toxicity: Whether the drug is toxic to the body, and if so what organs it effects.

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Preclinical capabilities

- Assays tailored to project's goal
- Permeability assessment
- CYP inhibition and induction
- Hit identification
- Physiochemical profiling
- Overcoming BBB
- Metabolism profiling
- Drug to drug interaction
- Biomarkers
- Bioavailability



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ADMET/PK

- "PK": Pharmacokinetic studies provide essential information about how an organism reacts to a drug through the analysis of periodically drawn blood samples.
- Preclinical capabilities also include ADMET/PK profiling for oral bioavailability, evaluating kinetic and thermodynamic solubility, permeability, and metabolism evaluation.
- Predictions of oral bioavailability are made available through assay.

In Vivo Subjects

Altogen Labs is a GLP certified company that maintains high-quality and ethical care of all subjects at the facility. As projects vary in target treatment and optimal selection of *in vivo* subjects, Altogen Labs offers a variety of different categories of mice for every project.



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Types of mice available at Altogen Labs

Mouse type	T cells	B cells	NK cells	Coat	Other Notes
CD1	No	Yes	Yes	White/albino	Outbred
B6	Yes	Yes	Yes	White/albino	Inbred
Balb/c	No	Yes	Yes	Nude, albino	Inbred
Balb/SCID	No	No	Yes	White	Inbred
NOD/SCID	No	No	Impaired	White	Inbred
Nu/nu	No	Yes	Yes	Nude	Outbred
CD57BL	Yes	Yes	Yes	Dark brown/black	Inbred
CB17	Yes	Yes	Yes	White	Inbred
NSG	No	No	No	White	Inbred
Swiss Nude	No	Yes	Yes	Nude	Outbred

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About the models

- CD1: This model originates from a non-inbred Swiss stock of the 1920s from the Centre Anticancerux Romand (Lausanne, Switzerland). Outbred stocks are generally used for their genetic variability.
- B6: This strain of mouse arose from a spontaneous mutation in the C57BL/6 strain resulting in a coisogenic albino mutant. These mice have a mutant tyrosinase gene.

About the models

- Balb/SCID: This mouse model lacks functioning T and B cells but do have functioning NK cells which limits engraftment. These mice are sensitive to irradiation and have functioning macrophages, dendritic cells and complement activity. Some cancer cell lines show improved engraftment over nude models in Balb/SCID mice.
- Balb/c: This strain of nude mouse was developed in the 1980s through many crosses and backcrosses and remains to be an inbred model. Balb/c mice do not have a thymus and therefore cannot produce T-cells and are considered immunodeficient. Balb/c mice are often used for their easy breeding and similar weights (low-variation) of males and females. They are also used for monoclonal antibody production.

About the models

- NOD/SCID: The homozygous SCID mutation results in impaired T cell and B cell lymphocyte development. The NOD characteristic results in impaired natural killer cell function. NOD/SCID mice also lack macrophage and dendritic cell activity as well as reduced complement activity. These mice have a non-obese diabetic and insulinitis background and low cytokine production. NOD/SCID mice exhibit a 36-week median survival due to the development of thymic lymphomas, which limits their use to short-term experiments.
- Nu/nu: These mice originate from the National Institute of Health (NIH). Originally thought to be BALB/C congenic mice, once it was discovered that these mice were outbred they were determined to be of their own strain. These mice do not have a thymus, or T-cells, and are nude immunodeficient models.

About the models

- CD57BL/6: This laboratory mouse strain was the 2nd mammalian species to ever have its genome published in entirety. They originate from the Bussey Institute for Research in Applied Biology in 1921. These mice are often selected for easy breeding and availability of congenic strains. These mice are particularly sensitive to odors, noise, pain, cold, alcohol and morphine addiction.
- CB17: CB17 mice are of a congenic strain that carry the immunoglobulin heavy chain allele (Igh-1b) from a C57BL/Ka on a BALB/c background. They are an ideal control for the CB17/SCID immunodeficient mouse model

About the models

- NSG: Also known as NOD scid gamma, these mice are deficient in NK, T and B cells as well as multiple cytokine pathways. They also have reduced dendritic cell function and defective macrophage activity and lack a complement system. They are one of the most immunodeficient models available and unlike NOD/SCID mice, NSG mice do not develop thymic lymphomas and can be used for long-term experiments.
- Swiss Nude: These mice originate from the 1974 Gustave Roussy Institute (Villejuif, France) Swiss stock. They are T cell deficient, nude and albino.

Contact Us

- Altogen Labs offers a variety of preclinical research services and has a team that has years of expertise in these specialized services. Our team maintains consistent communication and scientific support throughout every project.
- Altogen Labs provides a variety of *in vivo* and *in vitro* preclinical services essential to drug development.



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

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