



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

Altogen Labs: Company Information & Services

Background

- Altogen Labs is headquartered in Austin, Texas.
- Altogen Labs is a **GLP** certified and **IACUC** regulated laboratory that provides research services for pharmaceutical, biotechnological, and academic institutions worldwide.
- We provide both preclinical **efficacy** (xenograft) and **safety** (Pharm/Tox) studies. Both GLP and non-GLP services are available.
- For xenograft efficacy studies we provide over 120 in-house **validated** CDX and PDX animal models: AltogenLabs.com/xenograft-models
- 100% of IP belong to the client. We offer all types of preclinical services, both *in vivo* and *in vitro*.



Contact us: info@altogenlabs.com | Read more at AltogenLabs.com
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Clients We Have Worked With:



Video referrals by Savara Pharmaceuticals and Terapio Corp:

<https://youtu.be/C83LdvCe6u8>

also available at

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What kind of services does Altogen Labs provide?

Services include:

- Safety toxicology studies
- Efficacy studies
- Drug discovery
- Pharm/tox safety
- Imaging studies
- Over 90 in-house validated xenograft models
- Stable cell line development in just 28 days
- Cryopreservation
- Cell banking
- ... and much more



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Preclinical research services:

- Safety Toxicology
 - Sample Report
 - 282 pages
- Efficacy Testing:
 - *In vitro* (cell lines)
 - *In vivo* (xenograft animal models)

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Study No.: NTD025917 (Reference No.: L090420) Page 6 of 266

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- Therapeutic RNAi Development: Targeted siRNA, qPCR Assays
- Liposome Encapsulation Services: small RNA, DNA, Proteins
- ELISA and Cell-Based Assay Development (Cell Cycle, Viability)
- Apoptosis Assay: Caspase-3 and Caspase-7 Cell Line Screen
- RNAi Consulting: Technology Development and Evaluation

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RNA interference (gene silencing) services:

- *In Vivo* siRNA Delivery and Tissue Targeting (*In Vivo* RNAi)
- Generation of Tetracycline-inducible RNAi Gene Knockdown Cell Lines
- PCR Cloning: DNA Vector Construction (shRNA)
- RNAi Manufacturing and CRO Services
- RNAi Screen Pathway Analysis: siRNA and microRNA
- Quantitation sh/siRNA-induced Knockdown by qRT-PCR and WB
- Genome-wide siRNA and microRNA High-throughput Screens
- Stable RNAi Cell Line Generation: Stable Gene Knockdown
- siRNA Transfection and RNAi Cell-based Library Screening
- siRNA Liposome Encapsulation Service
- Transient (siRNA) and Stable (shRNA) Transfection Services

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In Vivo siRNA Delivery

- Altogen Labs provides A-to-Z RNAi in vivo delivery services: custom si/miRNA liposome encapsulation, chemical modification, in vitro validation, in vivo tissue-targeted delivery.
- Assays include: oligonucleotide accumulation (TaqMan), target mRNA (RT-PCR) and protein expression levels (WB and ELISA).

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Liposome Encapsulation Services

We offer generation of various liposomal formulations via microfluidization, sonication, extrusion, and other methods. Please note that there are many different liposome formulations referenced in literature - these liposomes vary based on the type of molecule that need to be encapsulated (RNA, DNA, protein, small molecule compounds). We are a CRO company and can generate any type of liposomal formulation, as well as these eight standard liposome formulations:

Standard Liposome #1: DSPC : Cholesterol = 2 : 1

Standard Liposome #2: DMPC : DMPG : Cholesterol = 1 : 1 : 1

Standard Liposome #3: DOPC : Cholesterol : DPPG : Triolein = 7 : 7 : 1 : 1

Standard Liposome #4: PC : DOTAP : PEG : Cholesterol = 10 : 1 : 1 : 3

Standard Liposome #5: EPC : Cholesterol = 55 : 45

Standard Liposome #6: HSPC : Cholesterol : PEG2000-DSPE = 12 : 8 : 1

Standard Liposome #7: HSPC : Cholesterol : DSPG = 2 : 1 : 0.8

Standard Liposome #8: DOPC : Cholesterol : Cardiolipin = 5 : 4 : 1

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Development of stable cell lines services:

- Generation of Stable Cell Line in 28 Days
- Stable RNAi Cell Line Development:
shRNA Gene Knockdown
- Protein overexpression: Mammalian
stable cell line development

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Cell Lines Available

100+ Cell Lines available for *in vitro* and *in vivo* services, including:

Cell Line	Tissue	Disease
Caki-2	Kidney	Clear Cell Carcinoma
PANC-1	Pancreas	Epithiloid Carcinoma
SK-MEL-2	Skin	Malignant Melanoma
SK-OV-3	Ovary	Adenocarcinoma
U-87 MG	Brain	Glioblastoma/Astrocytoma
A431	Epidermis	Epidermoid Carcinoma
SW-480	Colon	Adenocarcinoma
HeLa	Cervix	Adenocarcinoma

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PDX and CDX Models

- Altogen Labs offers over 120 established PDX and in-house validated CDX models to accelerate oncology drug development.
- We support clients from study design phase through patent or regulatory submissions (100% of IP belongs to the client).

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Xenograft Animal Services

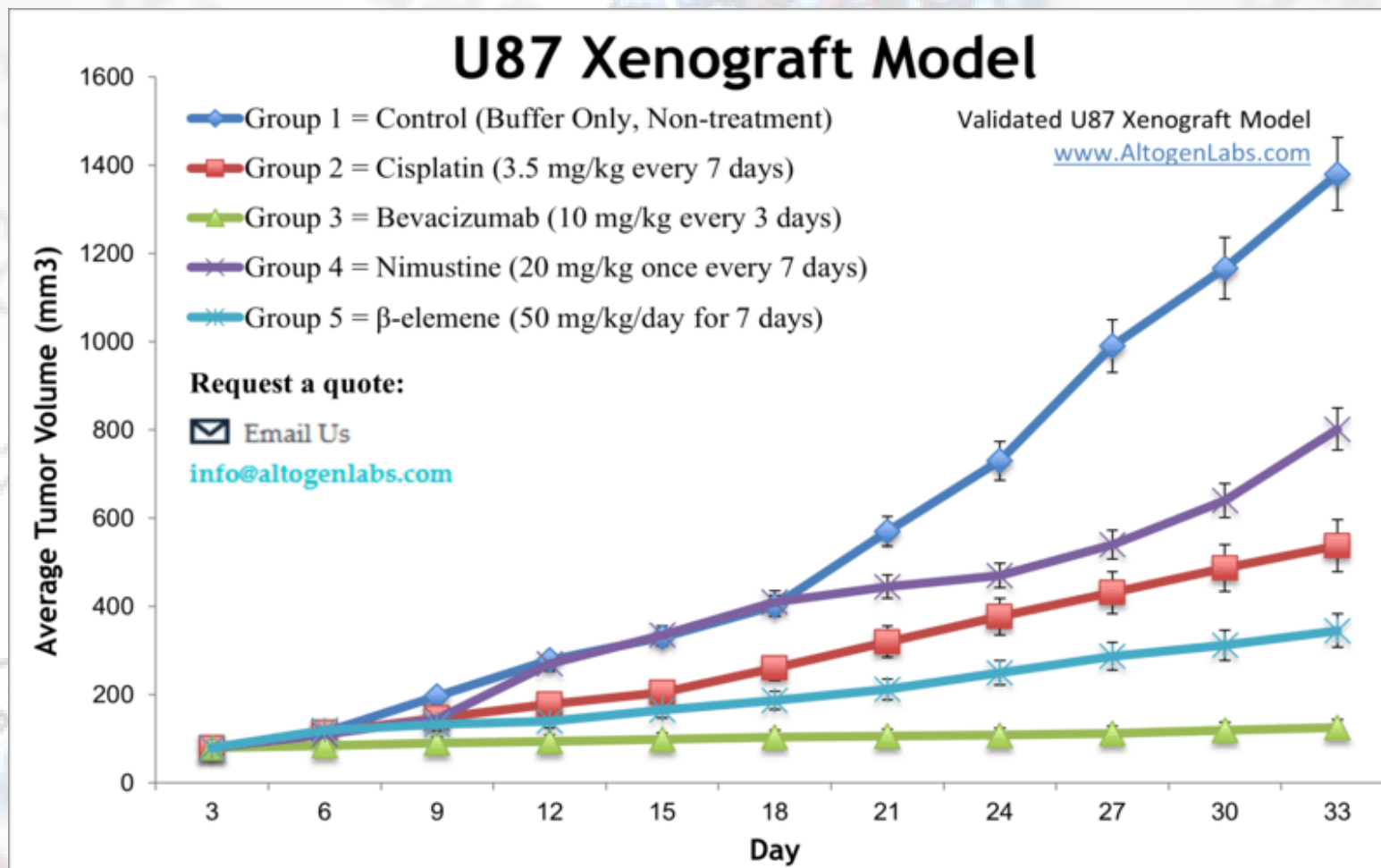
- Altogen Labs provides validated xenograft cancer animal models (biodistribution, PK/PD, imaging studies). We offer assistance in choosing the best model suitable for clients project experimental goals.
- Animal handling and maintenance at our facility is regulated by IACUC and compliant to GLP standards and guidelines.
- We provide detailed experiment procedures, health reports, and experimental data.

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Example of Xenograft Model



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Available Mouse Strains

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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Our commitments

Altogen Labs is committed to providing high-quality results efficiently and ethically. We have committed to:

- Meet timeline expectations
- Sustain clear communication with all clients
- Exceed quality expectations
- Strictly follow all GLP and IACUC regulations
- Preserve client confidentiality

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Compliance to Good Laboratory Practice

- What is Good Laboratory Practice, or "GLP"?

Good Laboratory Practice is a required set of regulations that ensures that preclinical testing is conducted in a manner that guarantees integrity and high quality that can be trusted.

The Food and Drug Administration determines the set of guidelines that make up the GLPs.

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Regulatory solutions

Our team observes and follows all regulations for agency demands and laboratory protocol:

- FDA, EMA, PMDA regulatory practices
- Novel formulations
- Anti microbial efficacy studies
- NDA study design
- E/L programs
- Patent challenge

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Your project is our project!

Your project and satisfaction are our top priority, and we maintain constant communication with all clients to make sure every goal is being completed.

- Over 500 projects completed since 2009
- Scientists and staff with dozens years of preclinical laboratory research and expertise
- 100+ in-house validated xenograft models

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Biological capabilities

- Cell line development
- Isoelectric focusing/capillary isoelectric focusing
- Microbial testing
- Bacterial endotoxin testing
- High-performance liquid chromatography
- Structural characterization
- Large molecule method development and validation (potency, purity, etc.)
- Bioactivity testing
- Etc.

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In-house Stability Program

- Temperature control and cycling
- Photostability studies
- Back-up systems for power
- Power loss protocol
- Automated monitoring
- Customized conditions

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Project management

- Open line of communication and consultation throughout projects
- Quality assurance procedures
- Technology transfer
- Technology validation
- On-site monitoring
- Qualified suppliers

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CDMO Capabilities

Biological

Cell line development

DSP

Cell bank establishment

USP

API

General APIs

Sterile, fermentation,
and high potency APIs

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Biological Manufacturing

- Cell line development
- Cell bank establishment
- DSP, USP
- Characterization and Analysis
- 100% GLP compliant

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Contract research biology CRO services (GLP):

- *In Vivo* Toxicology Service (Mouse, Rat)
- Teratoma Formation and Analysis Service
- Stimulation of Adipogenesis (Gly)
- Cell Culture Decontamination Service

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Generation of Stable Cell Lines

- Stable cell lines over-expressing a protein of interest, or RNAi construct targeting a gene of interest, are powerful research tools for the production of recombinant antibodies, drug screening, and gene function studies.

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Microorganism identification (16s sequencing) services:

- What is Microorganism Identification?
Method Description
- Scientific Background: Specific 16S rRNA Regions
- Bacterial Analysis: 16S Sequencing
- Microbial Identification Service: Applications

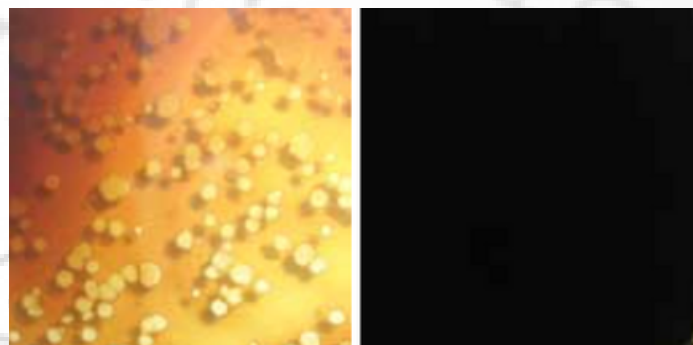
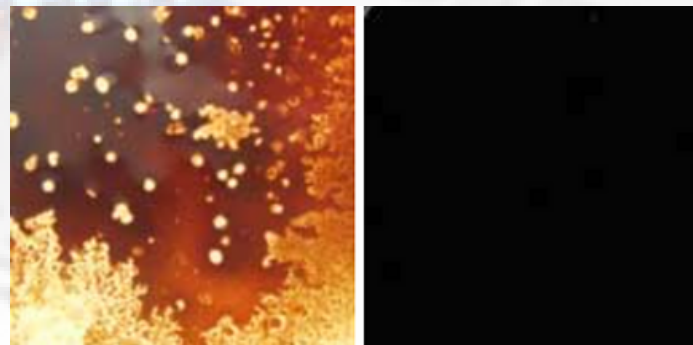
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Bioremediation products and services:

- Bioremediation Products
- Oil-degrading Bacteria
- Bioremediation Services



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Cryopreservation and cell banking services:

- Cryopreservation and Cell Banking Service (GLP-compliant)
- Cell Banking Service: Master Cell Bank (MCB, WCB) Generation

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Keep up with our news

- Altogen Labs is continuously releasing news about recent development and additions to the company. Stay up to date with our newest additions by viewing our news page.
- Read here: <https://altogenlabs.com/news>

Click here to Request a Quote, or
e-mail experimental details to:
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What's next?
How process works?



Technical support and QA/QC teams ensure and support the company's high quality products and services. We support clients from study design phase through patent or regulatory submissions (100% of IP belongs to the client).

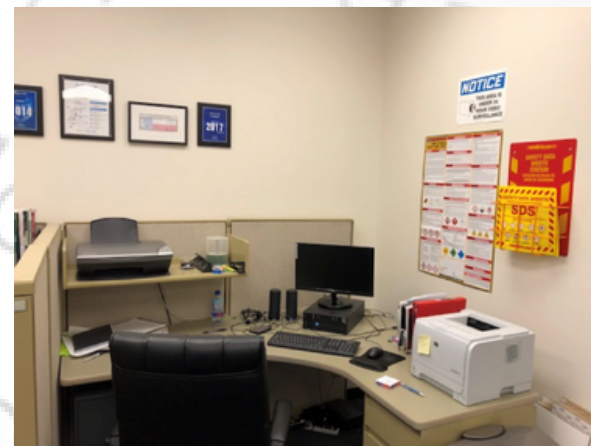
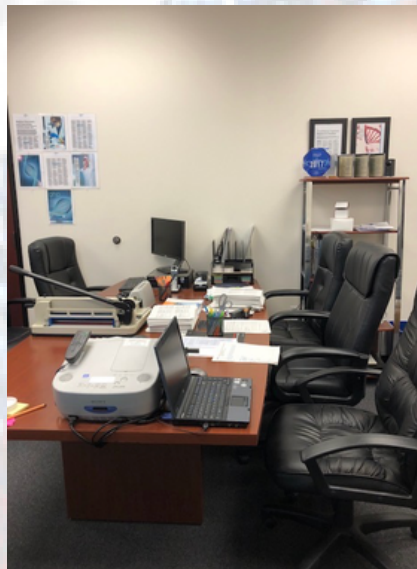
Altogen Labs offers instant quotes, comprehensive service packages, and competitive prices.

We are happy to discuss your experimental details to help generate accurate price quotes and timeline estimates (please e-mail study details to info@altogenlabs.com, or call us at 512-433-6177)

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Facilities & Equipment



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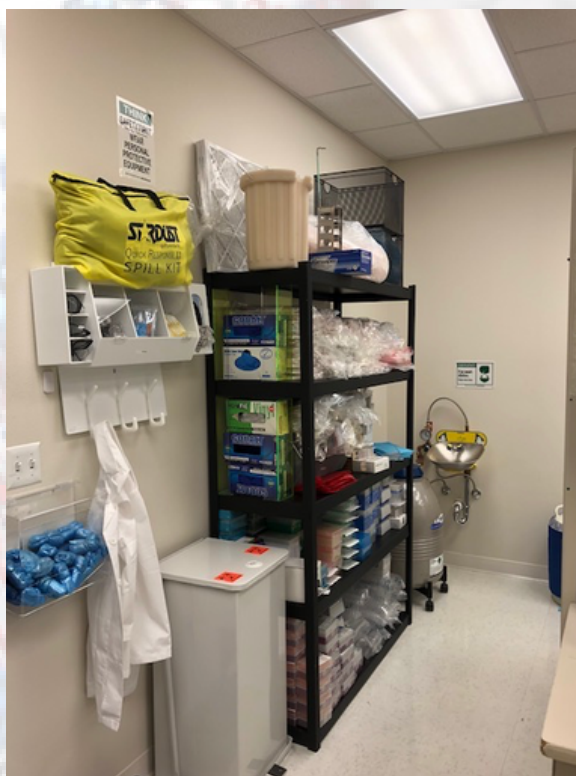


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Contact Us

- Altogen Labs has a variety of services available, and a professional team that brings years of experience and specialization. High-quality results and efficiency are prioritized in all past and future projects.
- Please contact us by emailing info@altogenlabs.com or calling us at 512-433-6177 to discuss your project and for us to provide an immediate price quote.



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

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