

WuXi Biology

Drug Discovery Engine at WuXi AppTec



- **Over 20 Years of Excellence:** Supporting drug R&D of innovative medicines
- **Global Footprint:** Delivering world-class standards, in Asia, the North America, and Europe
- **Expert Team:** Offering end-to-end services across diverse therapeutic areas
- **Reliable Service:** Achieving success and delivery with leading organizations
- **Innovation:** Advancing novel therapeutics with new modalities and technologies

Global Drug Discovery Biology Enabler

A comprehensive spectrum of biology services and solutions, supporting stand-alone and integrated projects, from target discovery to hit finding, lead optimization, candidate selection, and beyond.



Multiple Modalities & Functional Platforms



24+

Years experience
in biology services



9

Global operation
sites



10,000+

Projects delivered
annually



~3,000

Employees
worldwide



Top 15

Global pharma
partnership



1,800+

Global customers
in past 5 years

Adhering to High Global Regulatory Standards



AAALAC
Certification



NGV Quality
Management
System Certification



ISMS Information
Security
Certification



CAP Certification
for Biomarker
Labs



BSL2 & P2
Laboratory
Certification



SMBEE
Radiation
Safety Certification

High Quality Standards



NMPA



1,000+

Targets screened



Across all

Therapeutic
modalities



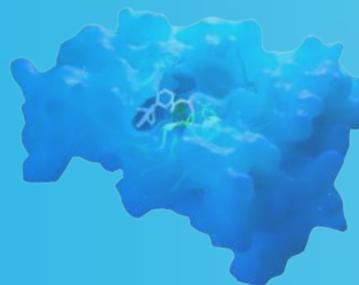
1,500+

Ready-to-go
assays



4,000+

Animal models



Comprehensive & Integrated Biology Solution for All Modalities

Our established track record supports the discovery and development of new therapeutics across all modalities, addressing unmet medical needs.

Oligonucleotide platform

The Oligonucleotide platform accelerates therapeutic development via target validation, sequence design, *in vitro* screening (mRNA/functional), chemical modifications, safety/tox/stability profiling, delivery optimization, and *in vivo* PK/PD/disease models.

200+ clients

900+ projects

200+ targets

40+ IND projects



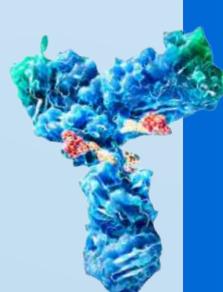
Conjugated modalities platform

The Conjugated modalities platform offers integrated *in vitro/vivo* studies, including cell binding, Fc-mediated activity, and payload MoA, backed by hundreds of CDX/PDX models to evaluate bystander effects, cell viability, and internalization. The platform addresses drug resistance via payload-resistant, antigen mutation/deletion, and ABC transporter overexpression models.

200+ clients

900+ projects

200+ targets



Peptide platform

The Peptide platform streamlines therapeutic peptide and delivery tool discovery with integrated capabilities, including DEL screening, customizable libraries, phage/mRNA display, and high-throughput synthesis. *In vitro/in vivo* validation ensures target specificity, stability, functionality, and safety.

10+ cyclization strategies

300+ billion peptide libraries

1400+ unnatural AAs



Degrader platform

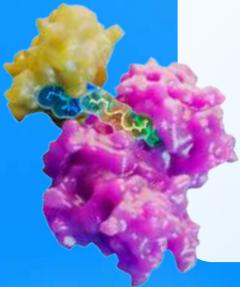
The Degradator platform drives discovery of protein degraders with tailored strategies, encompassing 10+ bi functional types, and 20+ TPD assays. Capabilities include screening of 60+E3 ligases, testing of 1,400+ constructs, production of 550+ proteins, and 30+ on-the-shelf options.

8+ years experience & expertise

100+ clients collaborate

10+ in clinical stages

300+ programs in TPD



Vaccine platform

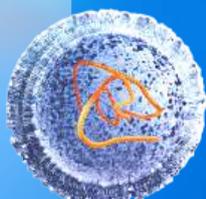
The Vaccine platform accelerates development through antigen design and formulation, novel adjuvants/delivery vectors, and preclinical validation services (biodistribution/shedding, neuro-virulence/tox), supported by immunogenicity and challenge/protection studies.

8+ years experience

50+ projects in 2024

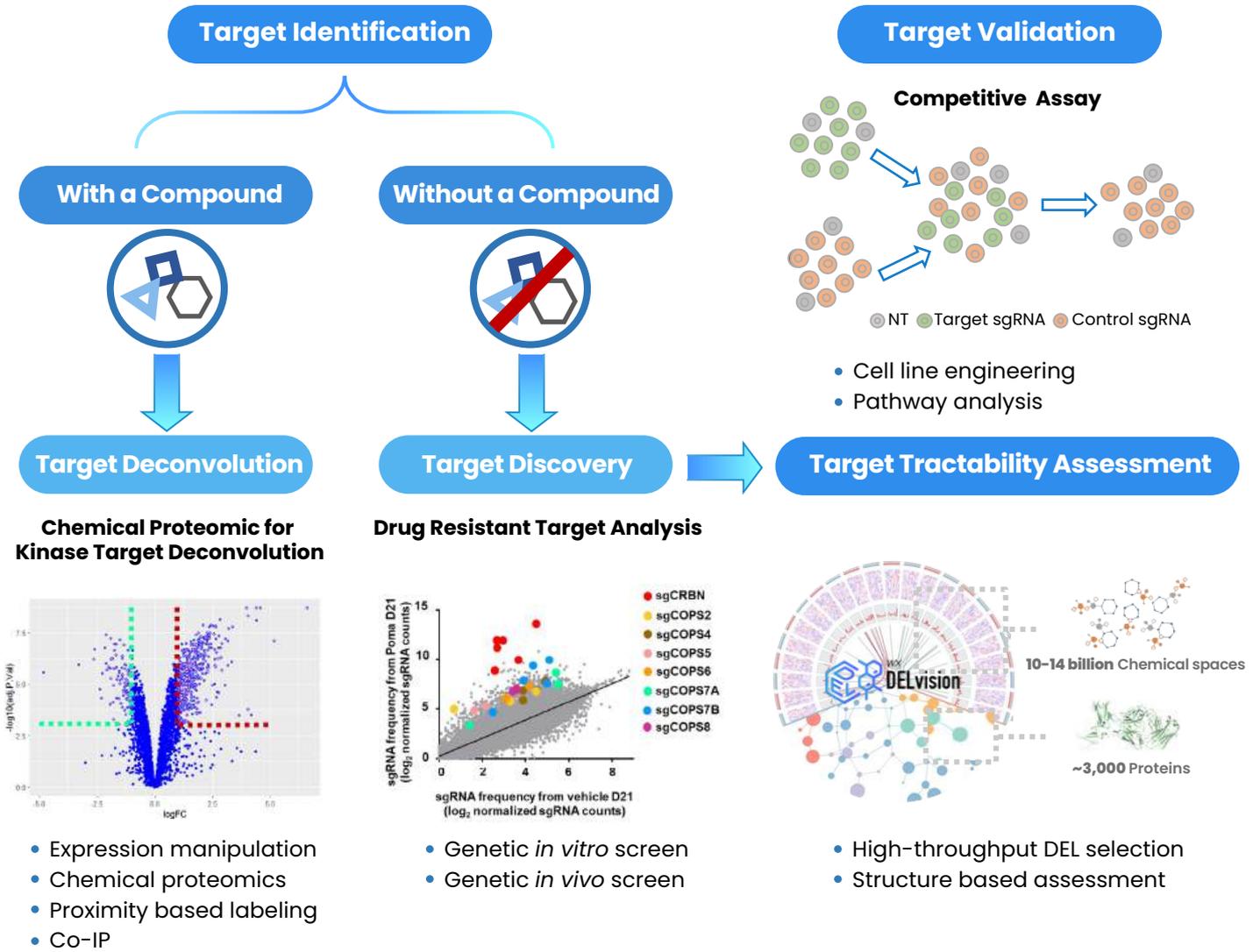
30+ clients in 2024

20+ IND projects in 2024



Target Identification & Validation

Combining Multiple Target Discovery Approaches



Biological Material Engineering

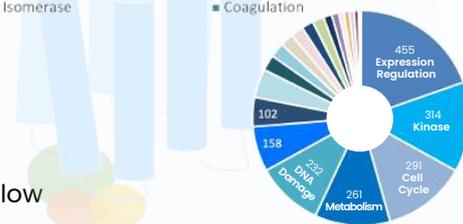
Protein and Antibody

- 20+ years of experience
- 1500+ proteins produced (1200 assay-grade & 250+ crystallization-grade)

Cell Line

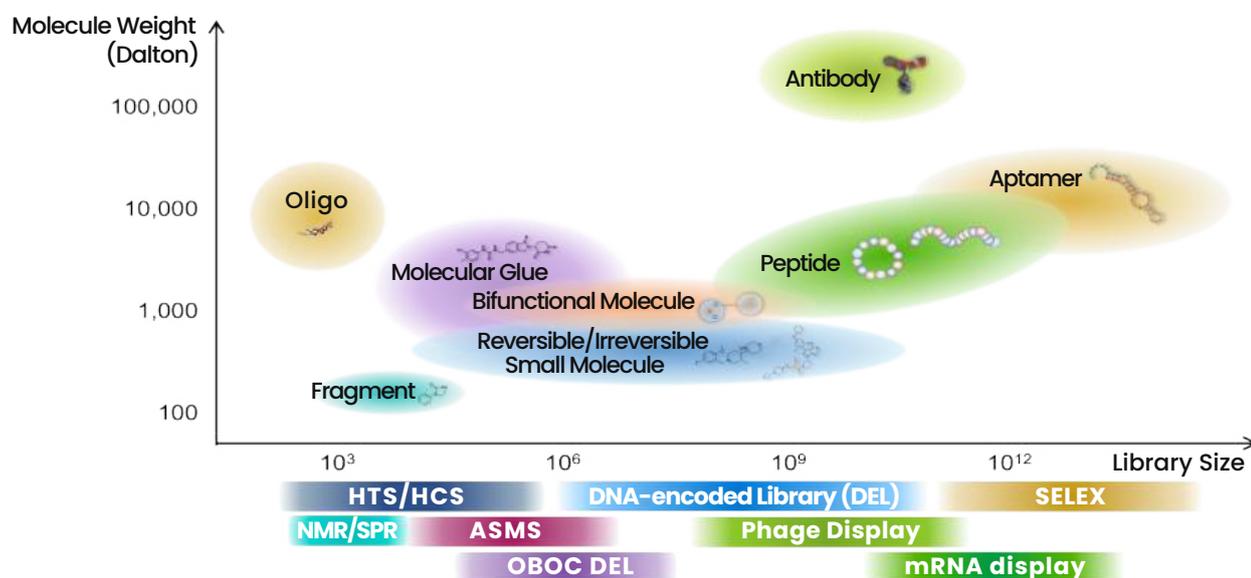
- 2000+ engineered cell lines delivered
- Diverse ready-to-use **resistant cell models**
- Ready-to-use hot target **reporter cell lines**
- Well-established **iPSC** generation and differentiation workflow

- Expression Regulation
- Metabolism
- Immune Response
- Viral Protein
- Antibody/Nanobody
- Cell Adhesion
- Apoptosis
- Isomerase
- Kinase
- DNA Damage
- Membrane Protein
- Receptor
- Interleukin(-receptor)
- GPCR
- Cytokine
- Coagulation
- Cell Cycle
- Ubiquitinylation
- Protein Degradation
- Neuronal Function
- Lipid Transport
- Phosphatase
- Nucleotide Exchange



Hit Finding Solutions

High-throughput Hit Finding Platforms



- **1800+ clients** globally, and **1600+ projects** (2024) delivered
- **15+** years of expertise ensures high-quality and efficient delivery
- **1,000+ diverse targets** screened, with a **success rate >90%**
- Validated hit from DEL directly entered **Phase III** clinical trials
- Leverage the **synergy** of different screening technologies for small molecule and new modality discovery



Screening Library Collections

Small Molecule

- Fragment
- Covalent molecule
- Molecular glue

Diversity Library

HTS Library (370K)
 DELpro (40B)/DELlight (10B) Library
 Fragment Library (4K)
 Covalent Fragment Library (2.6K)
 OBOC DEL Library (100K)

Focused Library

GPCR-focused HTS Library (10K)
 RNA-targeted DEL Library (100M)
 Kinase-focused HTS Library (16K)

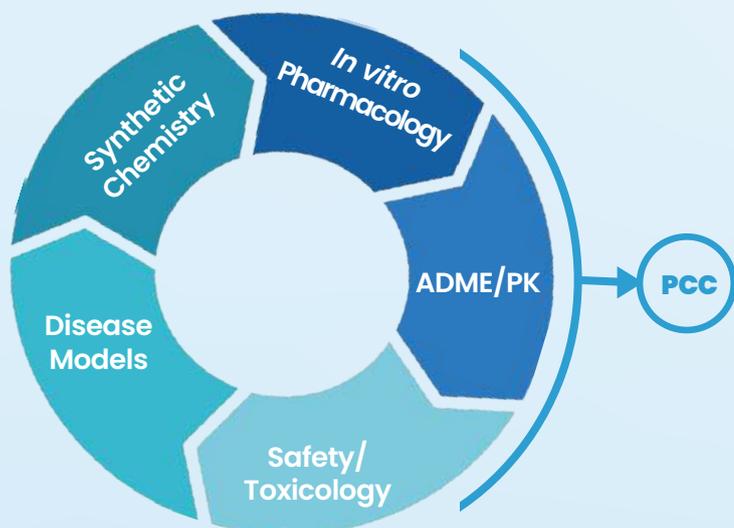
Beyond RO5

- PROTAC
- Macrocycle
- Peptide
- Aptamer
- Oligonucleotide
- Antibody

Peptide DEL Library (300B)
 mRNA display Library (1T)
 Phage display Library (10B)
 Covalent Fragment Library (2.6K)
 RNA Aptamer Library (40nt)

ASO Library (200)
 Peptide Optimization DEL
 (1M to 10B)

Hit-to-Lead & Lead Optimization



- State-of-art facility and instrumentation for parallel running of >2000 SAR programs
- Ready-to-go and custom assays, models and platforms for efficacy, selectivity and safety evaluation
- Dedicated team for SAR data integrity and quality assurance
- Database, data management team and systems for efficient data delivery

State-of-the-art Technology Platforms

Biochemical Assays

- Luminescence (x-Glo and luciferase coupled assays), fluorescent intensity and fluorescent polarization
- TR-FRET, FRET, LANCE Ultra, HTRF, LanthaScreen, Z'LYTE, protease assays; AlphaScreen/AlphaLISA
- Caliper, PhosphoSens, Absorbance based assays

Cellular Assays

- AlphaScreen, Luminescence (x-Glo and luciferase coupled assays), TR-FRET, ELISA, HTRF
- FLIPR, cAMP, IP-1 and beta -arrestin
- Reporter gene assays (Luciferase, b-lac, GFP, b-gal)
- Nano Glo, NanoBit, HiBiT, NanoBRET
- WB, Jess, ICW

Biophysical Assays

- SPR, MST, NMR, DSF/Nano-DSF, ITC, BLI

Mass Spectrometry & Label Free

- RapidFire, LC/MS and ASMS

Radiometric Assays

- Licensed radioisotopes: ^{14}C , ^3H , ^{32}P , ^{33}P , ^{35}S , ^{125}I
- SPA, Filtration, Uptake, TLC, Binding

Electrophysiology Assays

- Automated and manual patch-clamp

Structural Biology

- High-resolution X-ray crystallography: from well-established to de novo structure determination
- Cryo-EM: structure determination below 3 Å
- characterizing challenging targets including protein complexes and membrane proteins

High Content & Multiplexing Assays

- Opera and Operetta: dissect the complexity of biology
- MSD, Luminex, CBA and Olink: multiplexed biomarker analysis
- Seahorse metabolic analyzer: cellular energy metabolism analysis

Phenotypic Functional Assays

- Primary cells, immortalized cells and engineered cells
- Functional markers, signal pathway mapping and disease related functional analysis in various therapeutic areas
- Wide-range technological support with focus on HCA, FACS



In Vivo Pharmacology & Disease Models

- Large and expanding infrastructure with AAALAC-accredited and BSL-2-certified animal facility
- Disease-centric capabilities, full coverage of major therapeutic areas
- Rich selection of host species covering large animals and all small animals



Cancer Pharmacology

Tumor-Centric Oncology

- **410+** CDX Models/**29** Cancer Types
- **1,500+** PDX Models/**25** Cancer Types

Continuous Innovation

- **61** Orthotopic Models
- **80** Metastatic Models
- **160+** Drug Resistant Models

OncoWuXi Database

- ✓ Comprehensive Model Datasets: Growth kinetics, histopathology, pharmacological sensitivity
- ✓ Model Type Coverage: 1,800+ Model Datasets, including PDX, CDX, syngeneic, humanized, acquired Resistance, rat, hamster, etc.

Immuno-Oncology

- **92+** Syngeneic/**21** Cancer Types GEMMs for **20+** Targets
- **50+** PBMC/HSC Humanized Models

PD Biomarker Detection

- Tumoral Signaling Changes
- Tumor Microenvironment
- Immune Context



Autoimmune & Inflammatory Diseases

✓ In Vitro Immunology ✓ Ex Vivo PD Analysis ✓ Mechanistic Research ✓ In Vivo Efficacy



- Alopecia Areata
- Atopic Dermatitis (AD)
- Delayed Type Hypersensitivity
- Experimental Autoimmune



- Encephalomyelitis
- Experimental Sjögren's Syndrome
- Rheumatoid Arthritis



- Systemic Lupus Erythematosus
- Systemic Sclerosis



- Acute Inflammation Models
- Asthma
- Gout
- GvHD



- Inflammatory Bowel Diseases
- Pancreatitis
- Peritonitis



- Psoriasis
- Sepsis



In Vivo Pharmacology & Disease Models



Neuropharmacology

Established Neuropharmacological Technologies

Neurosurgery

- ICV Injection
- IT Injection
- Catheterization
- Cannula Implantation
- Probe Implantation

Behavioral Tests

- Motor
- Emotion
- Sleep
- Social Making
- Learning Memory
- Addiction
- Attention
- Decision-

Electrophysiology

- Electroencephalogram
- Electromyogram
- Local Field Potential
- Single-Unit Recording
- Patch Clamp

Post-Life Tests

- Histopathology, IF, IHC, RNA-Scope
- Gene Expression, qRT-PCR
- Biochemical, Proteins
- Neurotransmitters, Biomarkers

Diverse In Vivo Models of Neurological Diseases

- Epilepsy & Sleep Disorders
- Neuromuscular Diseases
- Psychiatric Disorders
- Pain Disorders
- Neurodegenerative Diseases
- Rare Diseases
- Ontological & Ocular Diseases
- Traumatic Disorders
- Cerebrovascular Diseases
- Infectious & Immune Diseases



Infectious diseases

Develop Bioassays

HTS

Lead ID/Op, SAR, PCC

Support Clinical Trials

Antiviral : 20+ different viruses

- Liver-specific viruses: HBV, HDV
- Respiratory viruses: Flu, RSV, hMPV, CoV, HRV, AdV
- Herpes viruses: HSV-1&2, HCMV, EBV, VZV
- Others viruses: EV71&Cox, Dengue, Vaccinia, Rabies

Antimicrobial : 130+ different bacterial and fungal species

- Animal PK/PD studies
- Multiple models: systemic, lung, deep thigh, superficial, wound, urinary, GI, genital tracts



Metabolic Diseases

Obesity

- Body Composition Analysis
- Metabolic Cage
- Energy Expenditure
- Respiratory Exchange Ratio
- Heat Monitoring
- Food Intake
- Treadmill
- Muscle Function
- Dual Energy X-ray Absorptiometry (DEXA)

Diabetes

- Fasting Blood Glucose
- OGTT/IPGTT/IVGTT
- Insulin Tolerance Test
- HbA1C Test
- Wound Healing
- Glomerular Filtration Rate
- Water Intake

Hyperlipidemia

- Blood Lipid Profile
- Liver Lipid Profile
- Liver Function Analysis



In Vivo Pharmacology & Disease Models



Gastrointestinal

Inflammatory Bowel Diseases
Gastric Ulcer
Pancreatitis
Short Bowel Syndrome
Constipation
Eosinophilic Esophagitis
...



Renal

Acute Kidney Injury
Chronic Kidney Disease
Renal Fibrosis
Autoimmune & Inflammatory
Nephropathy
Diabetic Nephropathy
...



Cardiovascular

Stroke
Cardiac Dysfunction
Anticoagulation
Atherosclerosis
Hypertension
...



Hepatobiliary

NAFLD/MASH
Fibrosis
Cirrhosis
PBC/PSC
Acute Liver Injury
ALD
...



Urogenital/Endocrine

Female/Male Infertility
Menopause Symptoms
Endocrine Diseases
Urinary Diseases
...



Pulmonary

Pulmonary Fibrosis
Asthma
Pulmonary Arterial
Hypertension
Chronic Obstructive
Pulmonary Disease
Acute Lung Injury
...



Rare Diseases

Metabolic :

Pompe, Gaucher, Fabry...

Hematologic :

Hemophilia, Sickle Cell Disease...

Others :

Duchenne Muscular Dystrophy, Alport...

Neurologic :

Rett, Huntington, Sclerosis...

Immunologic :

Myasthenia Gravis, Immune Hemolysis...



Large Animal Pharmacology

✓ Technical Capabilities

- Pre-study screening: AAV screening, CSF profiling, in-life imaging, etc.
- High-difficulty administration methods: intrathecal catheterization (IT), intra-cerebroventricular cannula (ICV), stereotaxic injection, intracameral injection, etc.
- Clinical observations
- Professional tissue biopsy: liver, adipose tissue, kidney, muscle, etc.
- Diverse in-life testing methods: MRI, PET-CT, endoscope, DEXA, ECG, behavioral tests, electrophysiology, etc.
- Precise dissection and tissue sampling

✓ Validated Disease Models

- Cardiovascular | Neurodegenerative disorders | Metabolic diseases | Ocular pathologies | Inflammatory / autoimmune disorders | Skin scar / wound infection | Osteoarthritis



WuXi Biology Global Footprint



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WuXi Biology website



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