WuXi AppTec

DISEASE BIOLOGY AND PHARMACOLOGY

MODEL CATALOG (Non-Oncology)

October 2026 Issue



WUXI BIOLOGY

WuXi Biology

WuXi Biology offers comprehensive biology services and solutions, supporting both standalone and integrated programs that span from target discovery, hit identification, and lead optimization through clinical development. Backed by a team of approximately 3,000 scientists, the platform covers the entire drug discovery value chain across all major disease areas and target classes, with deep expertise across a broad spectrum of therapeutic modalities, from small molecules, peptides, and oligonucleotides to biologics and conjugates. Driven by a commitment to translate scientific breadth into development efficiency, WuXi Biology seamlessly connects *in vitro* and *in vivo* translational research to accelerate the discovery, validation, and advancement of every innovative molecule.

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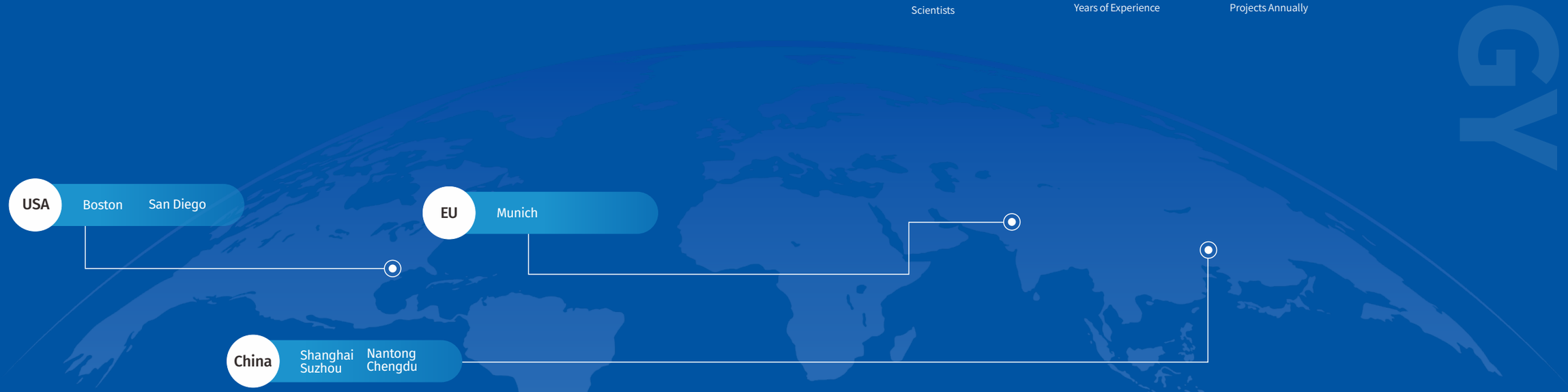

Our Pharmacology Services

Drug discovery demands pharmacology data that are robust, translational, and decision-enabling. Our Pharmacology Services provide an integrated model catalog spanning *in vitro* assays and *in vivo* disease models, paired with fit-for-purpose endpoints to support target validation, lead optimization, and IND-enabling studies. In this brochure, we highlight our immunology, infectious disease, metabolic disease and neuroscience models to support your drug development.

~3000
Scientists

24+
Years of Experience

10000+
Projects Annually

WUXI BIOLOGY

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Immunology

Autoimmune and inflammatory (AI&I) diseases are driven by complex immune dysregulation and redundant signaling pathways, creating significant translational challenges in drug discovery. To overcome these hurdles, WuXi Biology provides an end-to-end AI&I platform featuring >1,000 *in vitro* ready-to-go assays and >200 cross-species *in vivo* models. By eliminating data silos, we deliver a seamless translational workflow from target biology through lead optimization and preclinical candidate (PCC) nomination, providing actionable insights for confident decision-making.

10+ Years of Experience

200+ Immunology Scientists

350+ Clients Annually

1000+ Projects Annually

1000+ Ready-to-go Assays

200+ Immunology Models

Immunology

- Systemic Disease
- Rheumatic Disease
- Skin Disease
- Gastrointestinal Disease
- Respiratory Disease
- CNS Inflammation, Intraocular Inflammation, Acute Inflammation, and Others

Systemic Disease

Indication	Model Name	Model System
	In Vitro	
Systemic Lupus Erythematosus (SLE)	TLR7/8/9 reporter cell assay	Reporter cell
	TLR7/8/9 signaling pathway activation in hPBMC	Primary cell
	Neutrophil activation and NETosis	Primary cell
	cGAS-STING-Type-I IFN signaling pathway activation in THP-1	Immortalized cell
	NLRP3 inflammasome activation in THP-1	Immortalized cell
	BTK targeted B cell inhibition	Primary cell
	JAK/STAT targeted B cell inhibition	Primary cell
	CD40/CD40L targeted B cell inhibition	Primary cell
	Antibody-mediated CDC B-cell depletion assay	Immortalized cell
	Antibody-mediated ADCC B-cell depletion assay	Immortalized cell
	Antibody-mediated ADCP B-cell depletion assay	Immortalized cell
	TCE-mediated B-cell depletion assay	Immortalized cell
	PD-1 agonist assay	Reporter cell
	In Vivo	
Systemic Lupus Erythematosus (SLE)	Spontaneous SLE in MRL/MpJ-Fas/J mouse	Mouse
	Spontaneous SLE in NZB/NZW F1 mouse	Mouse
	Spontaneous SLE in Trex1 KO mouse	Mouse
	Pristane-induced SLE in C57BL/6 or BALB/c mouse	Mouse
	Pristane-induced SLE in hCD34+ humanized mouse	Mouse
	IMQ-induced SLE in C57BL/6 or BALB/c mouse	Mouse
	IMQ-induced SLE model in hCD34+ humanized mouse	Mouse
	R848-induced SLE in C57BL/6 mouse	Mouse
	R848-induced SLE model in hCD34+ humanized mouse	Mouse
	BM12 transfer-induced SLE	Mouse
	Patient-derived PBMC-induced SLE	Mouse
	hIFNa-induced SLE	Mouse
Systemic Sclerosis (SSc)	Bleomycin (BLM)-induced skin fibrosis/SSc	Mouse
	Collagen V-induced SSc	Mouse
	HOCl-induced systemic sclerosis/skin fibrosis	Mouse
	Topoisomerase-I-induced SSc	Mouse
Experimental Sjogren's Syndrome (ESS)	Saliva gland protein-induced experimental Sjögren's syndrome	Mouse | Rat
	Radiation-induced Sjögren's syndrome	Rat
Mucositis	Radiation-induced oral mucositis	Mouse | Rat
	Radiation-induced gut mucositis	Mouse | Rat
	Radiation-induced experimental Sjögren's syndrome	Rat
Rare Autoimmune Disease	Ankylosing spondylitis	Mouse
	Autoimmune hemolytic anemia (AIHA)	Mouse

Rheumatic Disease

Indication	Model Name	Model System
	In Vitro	
Rheumatoid Arthritis (RA)	Chondrocyte activation and cartilage matrix degradation in chondrocyte (SW1353)	Immortalized cell
	Synoviocyte activation and pro-inflammatory cytokine overproduction in synoviocyte (SW982)	Immortalized cell
	NLRP3 inflammasome activation in THP-1	Immortalized cell
	IL-1 reporter cell assay	Reporter cell
	IL-1 signaling pathway activation in hPBMC	Primary cell
	IL-6 reporter cell assay	Reporter cell
	IL-18 reporter cell assay	Reporter cell
	IL-18 signaling pathway activation in hPBMC	Primary cell
	TNF-α reporter cell assay	Reporter cell
	TNF-α signaling pathway activation in HUVEC	Primary cell
	TNF-α signaling pathway activation in human monocyte	Primary cell
Gout	MSU-induced NLRP3 inflammasome activation in THP-1	Immortalized cell
	In Vivo	
Rheumatoid Arthritis (RA)	Adjuvant-induced arthritis (AIA) in Lewis rat	Rat
	Collagen antibody-induced arthritis (CAIA) in BALB/c mouse	Mouse
	Collagen-induced arthritis (CIA) in DBA/1 mouse	Mouse
	Collagen-induced arthritis (CIA) in Lewis rat	Rat
	Collagen-induced arthritis (CIA) in C57BL/6 mouse	Mouse
	hTNFα transgenic spontaneous RA in hTNF-α transgenic mouse	Mouse
	Collagen-induced arthritis (CIA) in B6-hIL-17A mouse	Mouse
	OVA/BSA-induced acute RA	Rabbit
	Pristane-induced arthritis	Rat
Gout/MSU	Hyperuricemia	Mouse | Rat
	MSU air pouch inflammation	Mouse | Rat
	Intra-articular MSU-induced ankle arthritis	Mouse | Rat | Rabbit
Other Arthritis	Mannan-induced psoriatic arthritis	Mouse
	MIA-induced osteoarthritis	Rat
	Surgically induced osteoarthritis by medial meniscus resection	Rat

Skin Disease

Indication	Model Name	Model System
	In Vitro	
Atopic Dermatitis (AD)	IL-33 reporter cell assay	Reporter cell
	IL-33 signaling pathway activation in HUVEC	Primary cell
	IL-33 signaling pathway activation in hPBMC	Primary cell
	TSLP reporter cell assay	Reporter cell
	TSLP signaling pathway activation in SW756	Immortalized cell
	TSLP signaling pathway activation in hPBMC	Primary cell
	IL-4 reporter cell assay	Reporter cell
	IL-4 signaling pathway activation in hPBMC	Primary cell
	IL-5 reporter cell assay	Reporter cell
	IL-5 signaling pathway activation in TF-1	Primary cell
	IL-13 reporter cell assay	Reporter cell
	IL-13 signaling pathway activation in TF-1	Primary cell
	IL-13 signaling pathway activation in hPBMC	Primary cell
	IL-31 reporter cell assay	Reporter cell
	IL-31 signaling pathway activation in U-87 MG	Immortalized cell
	IL-31RA/OSMR reporter cell assay	Reporter cell
	OSM signaling pathway activation in NHEK	Immortalized cell
	OX40 reporter cell assay	Reporter cell
	DC-CD4+ T-cell coculture assay	Primary cell
	Th2-cell chemotaxis assay	Immortalized cell
	Mast-cell degranulation assay	Stem cell derived
Psoriasis	TNF-α reporter cell assay	Reporter cell
	TNF-α signaling pathway activation in HUVEC	Primary cell
	TNF-α signaling pathway activation in human monocyte	Primary cell
	TNF-α signaling pathway activation in NHEK	Primary cell
	IL-23 reporter cell assay	Reporter cell
	IL-23 signaling pathway activation in DB cell	Immortalized cell
	IL-23 signaling pathway activation in human T cell	Primary cell
	IL-17 reporter cell assay	Reporter cell
	IL-17 signaling pathway activation in HaCaT	Immortalized cell
	IL-17 signaling pathway activation in NHEK	Primary cell
	Human keratinocyte activation assay	Immortalized cell
	IL-36 reporter cell assay	Reporter cell
	IL-36 signaling pathway activation in HaCaT	Immortalized cell
	IL-36 signaling pathway activation in NHEK	Primary cell

	In Vivo	
Atopic Dermatitis (AD)	DNCB-induced AD	Mouse | Rat
	DNFB-induced AD	Mouse
	Dust mite-induced skin inflammation	Mouse
	HDM and SEB-induced AD in humanized mouse	Mouse
	HDM and SEB/DNCB-induced AD	Mouse
	hIL-4Rα/hTSLP AD	Mouse
	MC903-induced AD	Mouse
	MC903-induced AD in humanized mouse	Mouse
	mIL-33-induced AD	Mouse
	OVA-induced AD	Mouse
	Oxazolone-induced AD	Mouse
	SDS/SpA-induced AD	Mouse
Delayed-Type Hypersensitivity (DTH)	DNFB-induced DTH	Mouse
	FITC-induced contact hypersensitivity (CHS)	Mouse
	KLH-induced DTH	Mouse | Rat
	mBSA-induced DTH	Mouse
	Oxazolone-induced DTH	Mouse | Rat
	SRBC-induced DTH	Mouse
Alopecia	Cyclophosphamide-induced alopecia	Mouse
	Skin-grafted alopecia areata in C3He mouse	Mouse
	Testosterone-induced androgenetic alopecia	Mouse
	DHT-induced androgenetic alopecia	Mouse
Vitiligo	Melanoma-induced vitiligo	Mouse
	HQ-induced vitiligo	Mouse
Urticaria	TMA-induced urticaria	Mouse
	OVA-induced urticaria	Mouse
	Substance P-induced urticaria	Mouse
Pruritus	AEW-induced pruritus	Mouse
	Chloroquine-induced pruritus	Mouse
	DNCB-induced AD with itch	Mouse
	DNFB-induced pruritus	Mouse
	hIL-31-induced pruritus	Mouse
	IL-31-induced pruritus (wildtype)	Mouse
	Compound 48/80-induced pruritus	Mouse
	Oxazolone-induced AD with itch	Mouse
	SDS/SpA-induced AD with itch	Mouse

Psoriasis	hIL-23-induced psoriasis	Mouse | Rat
	Imiquimod-induced psoriasis	Mouse | Rat
	Imiquimod-induced psoriasis in hTL1A/hIL12A/hIL23B	Mouse
	Imiquimod-induced psoriasis in fully humanized mouse	Mouse
	Mannan-induced psoriasis	NHP
Skin Injury	UVB-induced photodermatitis	Rat
	UVB-induced skin inflammation	Mouse
	UVB-induced skin aging (wrinkle)	Mouse
	LL-37-induced rosacea	Mouse
	TP-induced sebaceous gland enlargement	Hamster
	Wound healing in db/db mouse	Mouse
Pemphigus	DSG3-induced pemphigus	Mouse
Sweating	Pilocarpine-induced sweating	Mouse | Rat

Gastrointestinal Disease

Indication	Model Name	Model System
	In Vitro	
Inflammatory Bowel Disease (IBD)	Integrin α4β7/MADCAM-1-mediated cell adhesion in OPM-2	Immortalized cell
	Integrin α4β7/MADCAM-1-mediated cell adhesion in human T cells & B cells	Primary cell
	TNF-α reporter cell assay	Reporter cell
	TNF-α signaling pathway activation in HUVEC	Primary cell
	TNF-α signaling pathway activation in human monocytes	Primary cell
	TL1A reporter cell assay	Reporter cell
	TL1A signaling pathway activation in TF-1	Immortalized cell
	TL1A signaling pathway activation in hPBMC	Primary cell
	IL-23 reporter cell assay	Reporter cell
	IL-23 signaling pathway activation in DB cells	Immortalized cell
	IL-23 signaling pathway activation in human T cells	Primary cell
	IL-17 reporter cell assay	Reporter cell

	In Vivo	
Inflammatory Bowel Disease (IBD)	Anti-CD40 antibody-induced colitis	Mouse
	Augmentation of cysteamine-induced lesions in the rat duodenum by histamine	Rat
	Colitis in huHSC-NSG mouse	Mouse
	DSS-induced acute colitis	Mouse
	DSS-induced chronic colitis	Mouse
	IL-10 knockout spontaneous IBD	Mouse
	Indomethacin-induced IBD	Rat
	Oxazolone-induced acute colitis	Mouse | Rat
	IL33+OXA-induced acute colitis	Mouse
	IL33+TNBS-induced acute colitis	Mouse
	T cell transfer-induced chronic colitis	Mouse
	T cell transfer–induced chronic colitis in $Il10^{-/-}$ mouse	Mouse
	TNBS-induced acute colitis	Mouse
	TNBS-induced chronic colitis in WT mouse/humanized mouse/BRGSF-HIS	Mouse
	TNBS-induced chronic colitis	Rat
	TNBS-induced colitis	Rat
Irritable Bowel Syndrome (IBS)	5-FU-induced gut syndrome	Mouse
	5-HT-induced IBS	Mouse
	Mustard oil (MO)-induced IBS in C57BL/6 mouse	Mouse
	Radiation-induced intestinal fibrosis	Mouse
	TNBS-induced IBS+EMG	Rat
	Acetic acid-induced IBS	Rat
Peritoneal Fibrosis	Chlorhexidine gluconate-induced peritoneal fibrosis	Mouse
Pancreatitis	Caerulein-induced acute pancreatitis	Mouse
	Caerulein-induced chronic pancreatitis	Mouse
	Caerulein+LPS-induced severe pancreatitis	Mouse
Gastrointestinal Ulcer	Indomethacin-induced gastric ulcers	Rat
Colorectal Cancer	DSS/AOM-induced colorectal cancer	Mouse
Diarrhea	Castor oil (CSO)-induced diarrhea	Mouse
	Senna leaf-induced diarrhea	Mouse
	Magnesium sulfate-induced diarrhea	Mouse
Constipation	Loperamide-induced constipation	Mouse
Food Allergy	OVA and DSS-induced food allergy	Mouse
	OVA-induced food allergy	Mouse

Respiratory Disease

Indication	Model Name	Model System
	In Vitro	
Asthma	IL-33 reporter cell assay	Reporter cell
	IL-33 signaling pathway activation in HUVEC	Primary cell
	IL-33 signaling pathway activation in hPBMC	Primary cell
	TSLP reporter cell assay	Reporter cell
	TSLP signaling pathway activation in SW756	Immortalized cell
	TSLP signaling pathway activation in hPBMC	Primary cell
	IL-4 reporter cell assay	Reporter cell
	IL-4 signaling pathway activation in hPBMC	Primary cell
	IL-5 reporter cell assay	Reporter cell
	IL-5 signaling pathway activation in TF-1	Immortalized cell
	IL-13 reporter cell assay	Reporter cell
	IL-13 signaling pathway activation in TF-1	Immortalized cell
	IL-13 signaling pathway activation in hPBMC	Primary cell
	DC-CD4 T coculture assay	Primary cell
	Th2 cell chemotaxis assay	Immortalized cell
	Mast cell degranulation assay	Stem cell derived
	In Vivo	
Asthma	Ex vivo tracheal ring constriction test	Guinea pig
	IL-33 or HDM-induced acute Th2 inflammation	Mouse
	OVA/Alum-induced Th2 asthma in WT mouse/humanized mouse	Mouse
	HDM/Alum-induced Th2 asthma in WT mouse/humanized mouse	Mouse
	HDM-induced Th2 asthma in WT mouse/humanized mouse	Mouse
	OVA/CFA/LPS-induced non-Th2 asthma in WT mouse/humanized mouse	Mouse
	OVA/Alum/LPS-induced non-Th2 asthma	Rat
Idiopathic Pulmonary Fibrosis (IPF)	Bleomycin-induced IPF	Mouse | Rat
	Silica-induced IPF	Mouse
Pulmonary Arterial Hypertension (PAH)	MCT-induced PAH	Rat
	SuHx-induced PAH	Rat
Acute Lung Injury (ALI) / Acute Respiratory Distress Syndrome (ARDS)	LPS-induced ALI/ARDS	Mouse
	4-day cigarette smoke/LPS-induced ALI	Rat
Rhinitis/Sinusitis	Ovalbumin-induced allergic rhinitis	Mouse
	Aspergillus+OVA-induced chronic sinusitis	Mouse
Chronic Obstructive Pulmonary Disease (COPD)	Long-term cigarette smoke-induced COPD	Mouse | Rat
	Short-term cigarette smoke/LPS-induced COPD-like disease	Mouse
	PPE/LPS-induced COPD	Mouse
Cough	ATP/citric acid-induced acute cough	Guinea pig
	Histamine/citric acid-induced acute cough	Guinea pig
	Citric acid-induced acute cough	Guinea pig

CNS Inflammation, Intraocular Inflammation, Acute Inflammation, and Others

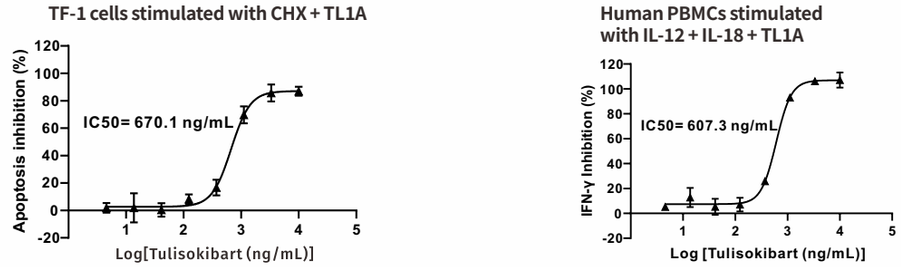
Indication	Model Name	Model System
	In Vitro	
Multiple Sclerosis (MS)	Integrin α4β1/VCAM-1 mediated cell adhesion in HuT 102	Immortalized cell
	Integrin α4β1/VCAM-1 mediated cell adhesion in human T cells & B cells	Primary cell
	BTK targeted B cell inhibition	Primary cell
	JAK/STAT targeted B cell inhibition	Primary cell
	CD40/CD40L targeted B cell inhibition	Primary cell
	Antibody CDC mediated B cell depletion assay	Immortalized cell
	Antibody ADCC mediated B cell depletion assay	Immortalized cell
	Antibody ADCP mediated B cell depletion assay	Immortalized cell
	TCE mediated B cell depletion assay	Immortalized cell
	In Vivo	
	CNS Inflammation	
Experimental Autoimmune Encephalomyelitis (EAE)	MBP68-86-induced acute EAE	Rat
	MOG1-125-induced EAE	Mouse
	MOG35-55-induced chromic EAE	Mouse
	PLP139-151-induced adoptive transfer EAE	Mouse
	RSCH-induced EAE	Rat

	Intraocular Inflammation	
Experimental Autoimmune Uveitis	IRBP-induced experimental autoimmune uveoretinitis	Rat
	Acute Inflammation	
Acute Inflammation	Anti-CD3 antibody-induced inflammation	Mouse
	CLP-induced sepsis/toxic shock	Mouse
	ConA-induced cytokine production	Mouse
	CYP-induced acute interstitial cystitis	Mouse | Rat
	DNP-Ficoll-induced T-cell-independent antibody response	Mouse
	Carrageenan-induced paw edema	Mouse | Rat
	rhIL-36 intradermal injection	Mouse
	PMA-induced ear edema	Mouse
	KLH-induced T-cell-dependent antibody response	Mouse
	LPS/ATP-induced neuroinflammation	Mouse
	LPS/ATP-induced peritonitis	Mouse
	LPS-induced airway inflammation/ALI	Mouse | Rat
	LPS-induced cytokine release	Mouse | Rat
	LPS-induced sepsis/toxic shock	Mouse
	MSU-induced peritonitis	Mouse
	Passive cutaneous anaphylaxis/passive systemic anaphylaxis	Mouse | Rat
	R848 (resiquimod)-induced cytokine release	Mouse
	Thioglycollate-induced peritonitis	Mouse
	TNF-α-induced shock	Mouse | Rat
	Zymosan A-induced peritonitis	Mouse
	IVIg in FcRn-humanized mouse	Mouse
	CpG-induced macrophage activation syndrome	Mouse
Graft-versus-Host Disease (GvHD)	Allogeneic bone marrow transplant-induced GvHD	Mouse
	hPBMC-induced GvHD	Mouse
	DBA/2-to-B6D2F1 transfer-induced chronic GvHD	Mouse
	Hematological Disease	
Immune Thrombocytopenia (ITP)	Escalating-dose anti-mouse CD41 passive-transfer ITP	Mouse
	Others	
Osteoporosis	OVX-induced osteoporosis	Mouse
Vasculitis	ANCA-associated vasculitis	Rat

Showcase

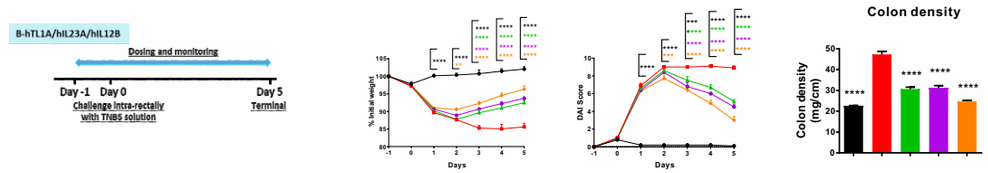
Targeting TL1A in IBD From Inflammation to Fibrosis

• *In Vitro* Pharmacology

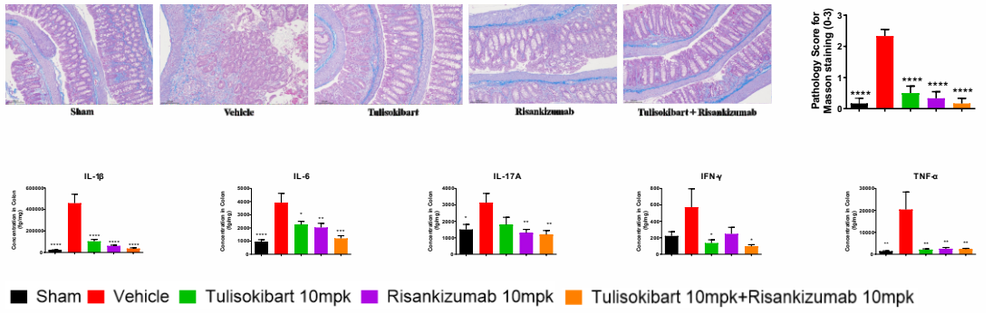


Evaluation of TL1A antibody-induced apoptosis inhibition in TF-1 cells and IFN-γ inhibition in human PBMCs.

• *In Vivo* Efficacy Evaluation in TNBS-induced Acute IBD Model



Histopathology Examination and Cytokine Release

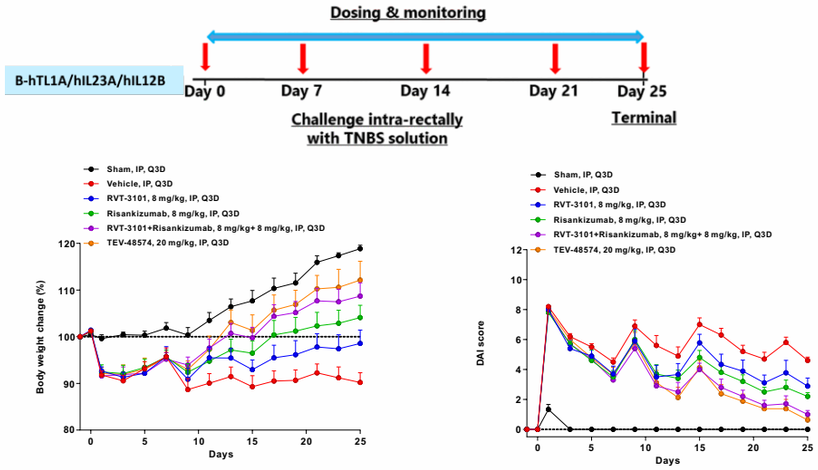


Efficacy of anti-fibrotic TL1A antibodies in a TNBS-induced acute colitis model in hTL1A/hIL23A/hIL12B mice.

Showcase

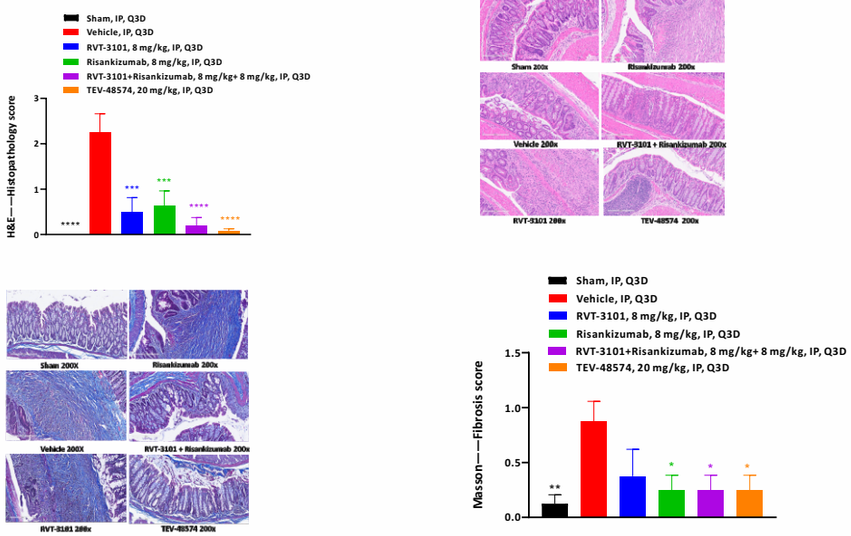
Targeting TL1A in IBD
From Inflammation to Fibrosis

- TNBS-induced Chronic IBD Model

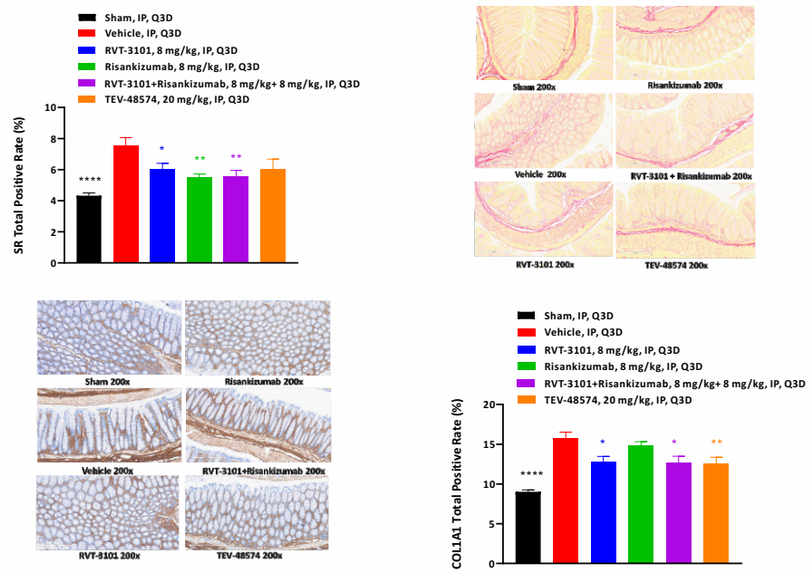


Treatment of anti-fibrotic TL1A antibodies and anti-IL23 antibody in a TNBS-induced chronic colitis model in hTL1A/hIL23A/hIL12B mice showed alleviated efficacy.

Histopathology Examination

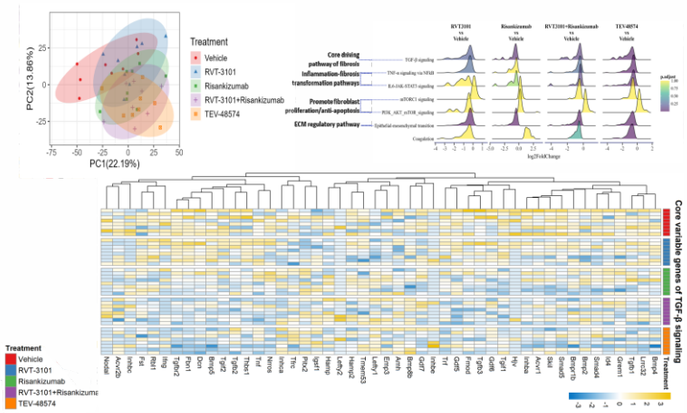


Histopathology Examination



Anti-fibrosis effects was showed in anti-TL1A and anti-IL23 treatments.

Sequencing Analysis

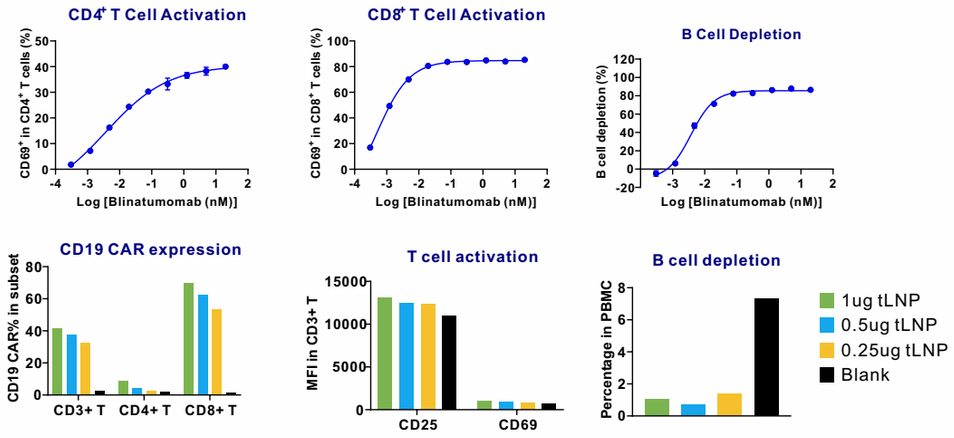


Anti-TL1A and anti-IL23 antibodies significantly downregulated fibrotic pathways and inflammatory pathways.

Showcase

B Cell Depletion Therapy for Autoimmune Diseases

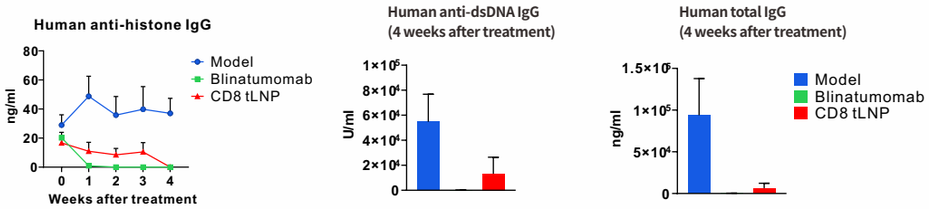
• *In Vitro* Pharmacology



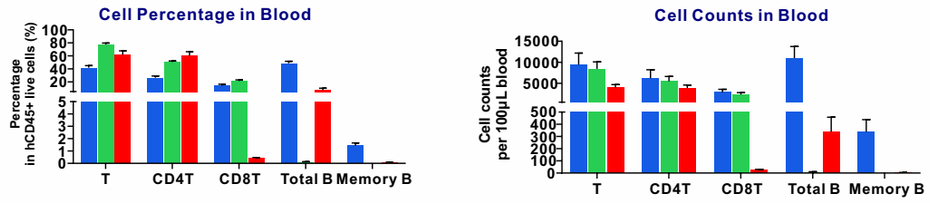
Evaluation of TCE and *in vivo* CAR-T therapy in B cell depletion using human PBMCs.

• *In Vivo* Efficacy Evaluation in Fully Humanized SLE Model

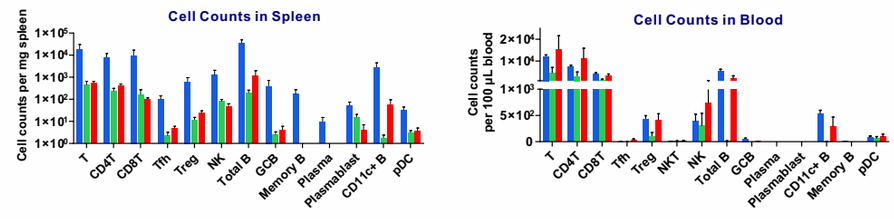




Immune Profiling Analysis

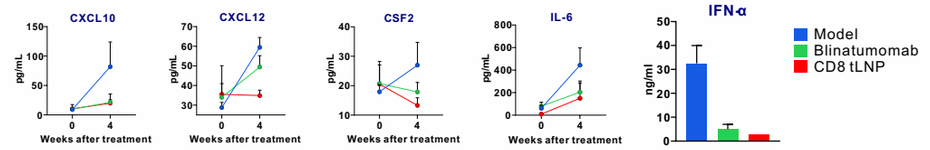


One week treatment of TCE and in vivo CAR-T therapy depleted pathogenic B cells in blood.



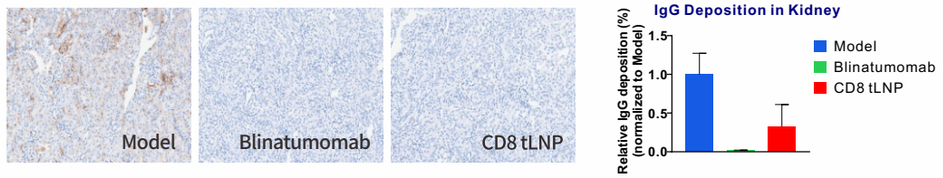
Durable B cell depletion and potential immune reset were observed after 3-week treatment discontinuation.

Translational Biomarker Analysis



TCE and in vivo CAR-T therapy caused several clinical biomarkers reduction.

Histopathology Examination



Remission of immune complex deposition in the kidney was observed.



Infectious Diseases

Infectious diseases remain a critical threat to global public health, exacerbated by the escalating crisis of antimicrobial resistance (AMR) and the continuous emergence of novel pathogens. Addressing these urgent challenges requires navigating complex pathogen biology and rapidly evaluating diverse therapeutic modalities. To combat these global health challenges, WuXi Biology Infectious Disease Platform delivers extensive pathogen and model coverage alongside integrated workflows, a foundation that has contributed to the approval of 20+ marketed drugs. Led by experts with an average of over 12 years of industry experience, we seamlessly advance projects from early discovery through clinical translation.

15+ Years of Experience

20+ Approved Drugs Supported

30+ Virus Species

130+ Bacterial & Fungal Species

400+ Ready-to-go Assays

70+ Animal Models

Infectious Diseases

● Viral Infection ● Bacterial/Fungal Infection

● Viral Infection

Indication	Model Name	Model System
	In Vitro	
Influenza Virus Infection	Influenza NA enzymatic assay	NA
	Influenza MDCK cell-based cytopathic effect (CPE) assay	Immortalized cell
	Influenza MDCK cell-based plaque reduction assay	Immortalized cell
	Influenza A549 cell-based CPE assay	Immortalized cell
	Influenza A549 cell-based plaque reduction assay	Immortalized cell
	Influenza airway infection in 3D cell culture	Organoid
	Influenza minigenome polymerase reporter assay	Immortalized cell
	Influenza serum shift assay	Immortalized cell
RSV Infection	RSV HEp-2 cell-based CPE assay	Immortalized cell
	RSV HEp-2 cell-based ELISA assay	Immortalized cell
	RSV HEp-2 cell-based plaque assay	Immortalized cell
	RSV Vero cell-based plaque assay	Immortalized cell
	RSV airway infection in 3D cell culture	Organoid
	RSV F protein-mediated cell fusion assay	Immortalized cell
	RSV replicon reporter assay	Reporter cell
	RSV NAb ADCC assay	Reporter cell | Primary cell
	RSV NAb CDC assay	Immortalized cell
	RSV NAb ADCP assay	Primary cell
	RSV NAb ADNP assay	Primary cell
	RSV NAb ADE assay	Immortalized cell
CoV Infection	CoV Mpro enzymatic assay	NA
	CoV PLpro enzymatic assay	NA
	SARS-CoV-2 RdRp enzymatic assay	NA
	SARS-CoV-2 helicase enzymatic assay	NA

NA = Biochemical assay, no cell system required

CoV Infection	SARS-CoV-2 RBD or spike trimer/hACE2 binding assay	NA
	SARS-CoV-2 replicon reporter assay	Immortalized cell
	SARS-CoV-2 spike pseudovirus reporter assay	Immortalized cell
	SARS-CoV-2 Vero E6 cell-based CPE assay	Immortalized cell
	CoV MRC5 cell-based CPE assay	Immortalized cell
	CoV Huh-7 cell-based CPE assay	Immortalized cell
	CoV MRC5 cell-based qPCR assay	Immortalized cell
	CoV Huh-7 cell-based qPCR assay	Immortalized cell
HMPV Infection	HMPV LLC-MK2 cell-based GFP reporter assay	Immortalized cell
	HMPV Vero cell-based plaque assay	Immortalized cell
	HMPV F protein-mediated cell fusion assay	Immortalized cell
HRV Infection	HRV H1 HeLa cell-based CPE assay	Immortalized cell
	HRV airway infection in 3D cell culture	Primary cell
HPIV Infection	HPIV Vero cell-based plaque assay	Immortalized cell
AdV Infection	AdV A549 cell-based plaque assay	Immortalized cell
HSV Infection	HSV Vero cell-based CPE assay	Immortalized cell
	HSV Vero cell-based qPCR assay	Immortalized cell
	HSV helicase enzymatic assay	NA
HCMV Infection	HCMV MRC5 cell-based GFP reporter assay	Immortalized cell
	HCMV MRC5 cell-based ELISA assay	Immortalized cell
VZV Infection	VZV MRC5 cell-based qPCR assay	Immortalized cell
EBV Infection	EBV B95-8 cell-based qPCR assay	Immortalized cell
HHV-6 Infection	HHV-6 PBMC cell-based qPCR assay	Primary cell
Measles Virus Infection	Measles MRC5 cell-based ELISA assay	Immortalized cell
Vaccinia Virus Infection	Vaccinia HFF-1 cell-based CPE assay	Immortalized cell
HPV Infection	HPV HEK293FT cell-based reporter assay	Immortalized cell
HBV Infection	PHH-based anti-HBV assay	Primary cell
	HepG2.2.15 cell-based anti-HBV assay	Immortalized cell
HDV Infection	PHH-based anti-HDV RT-qPCR assay	Primary cell
BKV Infection	RPTEC cell-based IFA assay	Primary cell
DENV Infection	Vero cell-based plaque reduction assay	Immortalized cell
HFMD Infection	RD cell-based CPE assay	Immortalized cell
	H1 HeLa cell-based CPE assay	Immortalized cell
RABV Pseudovirus Infection	HEK293T-based neutralization assay	Immortalized cell

In Vivo		
Respiratory Tract Infection	Influenza A/B virus infection	Mouse | Ferret
	Respiratory syncytial virus (RSV) infection	Mouse | Cotton rat
	Human metapneumovirus (hMPV) infection	Mouse | Cotton rat
	Human parainfluenza virus (HPIV) infection	Cotton rat
	Coronavirus OC43 infection in neonatal mouse	Mouse
	Coronavirus SARS-CoV-2 infection in K18 mouse	Mouse
	Rhinovirus 1B infection	Mouse
Herpes Simplex Virus (HSV) Type 1, 2 Infection	HSV-1 herpes labialis/herpes keratitis	Mouse | Rabbit
	HSV-2 recurrent genital herpes	Mouse | Guinea pig
Postherpetic Neuralgia (PHN)	Varicella-zoster virus (VZV) infection	Rat
Immunocompromised & Transplant Organ Injury	Human cytomegalovirus (HCMV) infection	Mouse
Mpox (MPXV) Infection	Vaccinia-based mpox surrogate	Mouse
Pediatric Hand, Foot and Mouth Disease (HFMD)	Coxsackievirus A16 infection	Mouse
	Enterovirus A71 infection	Mouse
EBV Primary Infection	Epstein-Barr virus (EBV) infection	Rabbit
Dengue Hemorrhagic Fever	Dengue virus infection	Mouse
Rabies	Rabies virus infection	Mouse
HIV-1 Primary Infection	HIV-1 virus infection in PBMC-humanized mouse (i.p.)	Mouse
Chikungunya Disease	CHIKV infection in IFNAR$^{-/-}$ mouse	Mouse
HBV Infection	Hydrodynamic injection (HDI)-based HBV	Mouse
	AAV/HBV in WT mouse	Mouse
	AAV/HBV in hTLR8 mouse	Mouse
	AAV/HBV in hPD1/hPD-1/hPD-L1	Mouse
	AAV/HBV in hIFNAR1/2 mouse	Mouse
	HBV transgenic mouse	Mouse
	HBV in liver-humanized mouse	Mouse
HDV Infection	Hydrodynamic injection (HDI)-based HDV	Mouse
	hNTCP-HDV mouse	Mouse
	HDV in liver-humanized mouse	Mouse

Bacterial/Fungal Infection

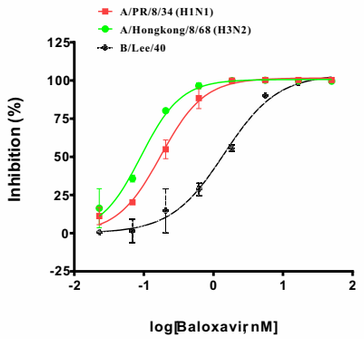
Indication	Model Name	Model System
	In Vitro	
Urinary Tract Infection	E. coli infection	Cell-based infection assay
	K. pneumoniae infection	
	C. albicans infection	
Vulvovaginal Candidiasis (VVC)	C. albicans infection	
Deep Thigh Infection	S. aureus infection	
	K. pneumoniae infection	
	P. aeruginosa infection	
	E. coli infection	
	E. cloacae infection	
	A. baumannii infection	
Systemic Infection, Bacteremia, Sepsis	S. aureus infection	
	S. pneumoniae infection	
	K. pneumoniae infection	
	P. aeruginosa infection	
	E. coli infection	
	E. cloacae infection	
	A. baumannii infection	
	C. albicans infection	
	Aspergillus spp. infection	
	C. neoformans infection	
Lung Infection	S. aureus infection	
	S. pneumoniae infection	
	K. pneumoniae infection	
	E. coli infection	
	M. pneumoniae infection	
	P. aeruginosa infection	
	A. baumannii infection	
	C. albicans infection	
	Aspergillus spp. infection	
Skin/Wound Infection	S. aureus infection	
	K. pneumoniae infection	
Ear Infection	P. acnes infection	
	In Vivo	
Urinary Tract Infection	E.coli infection	Mouse
	K. pneumoniae infection	Mouse
	C. albicans infection	Mouse
Vulvovaginal Candidiasis (VVC), Genital Tract Infection	C. albicans infection	Mouse
Deep Thigh Infection	S. aureus infection	Mouse
	K. pneumoniae infection	Mouse
	P. aeruginosa infection	Mouse
	E. coli infection	Mouse
	E. cloacae infection	Mouse
	A. baumannii infection	Mouse
Systemic Infection, Bacteremia, Sepsis	S. aureus infection	Mouse
	S. pneumoniae infection	Mouse
	K. pneumoniae infection	Mouse
	Enterococcus spp. infection	Mouse
	P. aeruginosa infection	Mouse
	E. coli infection	Mouse
	E. cloacae infection	Mouse
	A. baumannii infection	Mouse
	C. albicans infection	Mouse
	Aspergillus spp. infection	Mouse
	C. neoformans infection	Mouse
	L. monocytogenes infection	Mouse
Lung Infection, Invasive Pulmonary Aspergillosis	S. aureus infection	Mouse
	S. pneumoniae infection	Mouse
	K. pneumoniae infection	Mouse
	E. coli infection	Mouse
	M. pneumoniae infection	Mouse
	P. aeruginosa infection	Mouse
	A. baumannii infection	Mouse
	M. tuberculosis infection	Mouse
	Aspergillus spp.infection	Mouse
Skin/Wound Infection	S. aureus infection	Mouse
	K. pneumoniae infection	Mouse
Ear Infection, Acne	C. acnes infection	Mouse
GI Tract Infection, CDI, Antibiotic-associated Diarrhea (AAD)	C. difficile infection	Mouse

Showcase

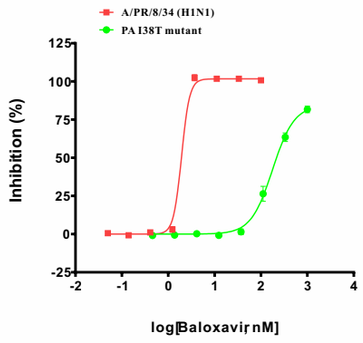
Integrated Efficacy Evaluation of Influenza PA Inhibitor

Early Screening and Proof-of-Concept of Baloxavir

- Antiviral Activity in Plaque Reduction Assay

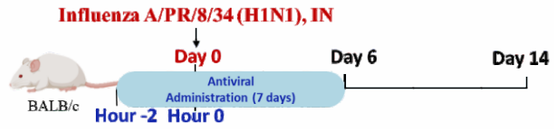


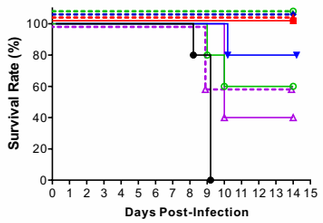
- Antiviral Activity Against WT and Resistant Mutant in MDCK CPE Assay

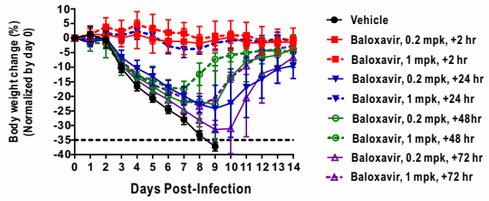


- Verification of the antiviral activity ensured the selection of high-quality hits.
- The resistance of PA I38T verified the MOA.

- *In Vivo* Efficacy in Mouse Model





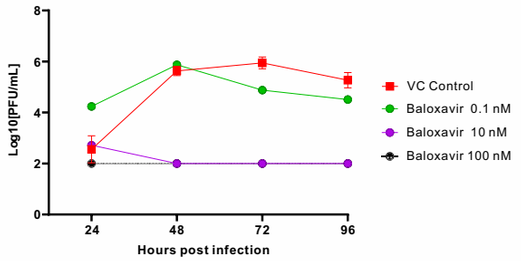


- Cost- and time-efficient preliminary in vivo efficacy evaluation.
- Protection against body weight loss and mortality correlated well with in vitro activity.

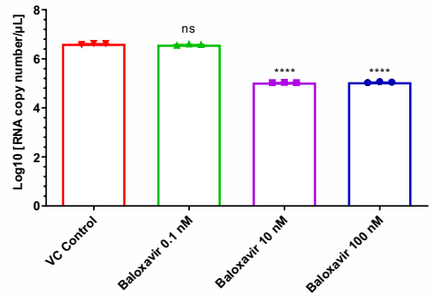
Preclinical Translation

- 3D Airway Infection Model

Viral titer in Apical washes



Intracellular viral RNA at 4 dpi

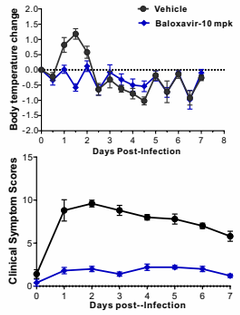


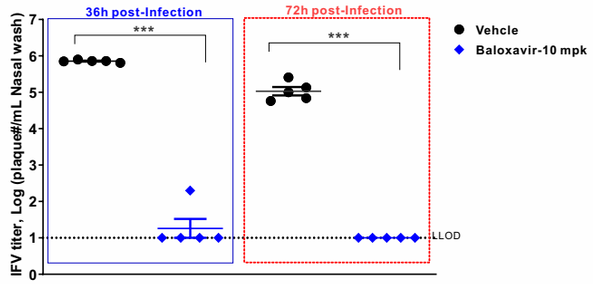
Baloxavir inhibited viral replication in 3D airway infection model.

- Clinically Relevant Ferret Model



- Highly permissive
- More clinically relevant: human-like clinical signs
- Robust platform for transmission studies





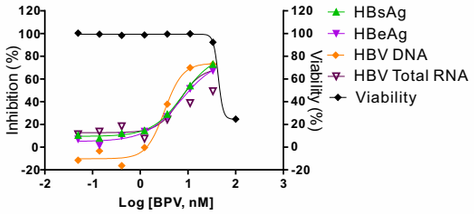
Baloxavir rapidly reduced viral titers in nasal washes, prevented fever, and ameliorated clinical signs in ferrets.

Showcase

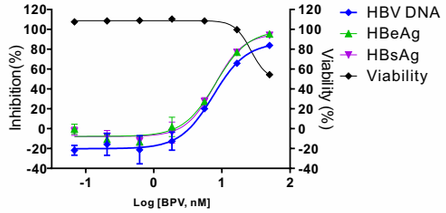
Preclinical Efficacy of Diverse HBV Agents Against Multiple HBV Genotypes

Early Screening and Proof-of-Concept of Bepirovirsen

- Evaluation of Anti-HBV Activity in HepG2.2.15 Cells

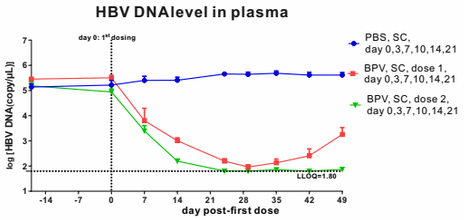


- Evaluation of Anti-HBV Activity in PHHs (Primary Human Hepatocytes)

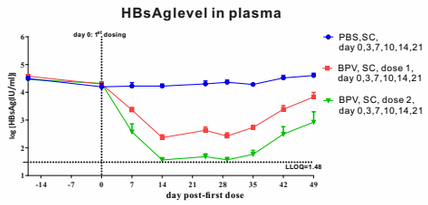


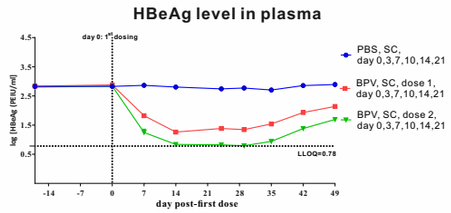
Bepirovirsen is an antisense oligonucleotide that targeted all HBV mRNAs, leading to reductions in viral RNA, DNA, and proteins.

- *In Vivo* Efficacy in AAV-HBV Mouse Model



- Highly stable HBV replication
- Mimics chronic clinical HBV infection with replication persisting >5 months
- Supports evaluation of diverse agents (e.g., DAAs, immune modulators)

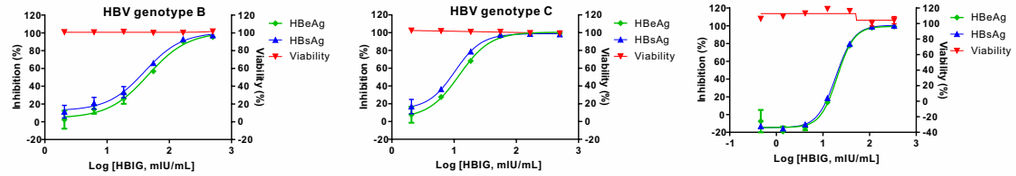




Bepirovirsen dose-dependently reduced plasma viral load and antigens in AAV-HBV mice.

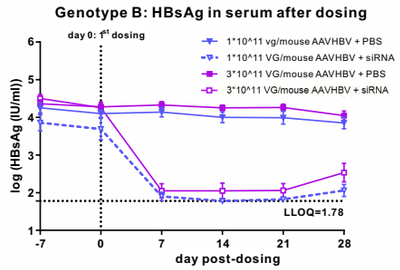
Preclinical Translation

- *In Vitro* Efficacy of Antibody in PHHs Infected with HBV Genotypes B, C and D

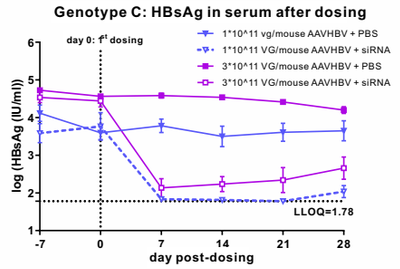


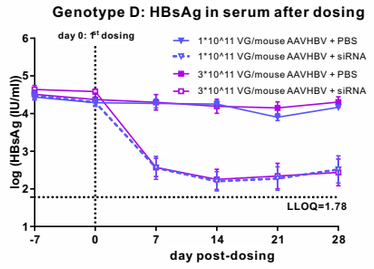
HBIG is an antibody that provided immediate protection against HBV and inhibited HBsAg/HBeAg in PHH-HBV infection assay.

- *In Vivo* Efficacy of siRNA Against HBV Genotypes B, C, and D in the AAV-HBV Mouse Model



- Highly stable HBV replication observed across all genotypes in AAV-HBV mice.
- Comparable serum HBsAg reduction (~2.0-2.2 log10 IU/mL) across genotypes.





A single systemic dose of siRNA induced rapid and substantial reductions in circulating HBsAg across HBV genotypes in the AAV-HBV mouse model.

Metabolism

Metabolic disease is increasingly recognized as a system-level challenge driven by interconnected dysfunction across organs, pathways, and patient populations. As the field evolves, drug discovery is moving beyond single-pathway thinking toward a pan-metabolism approach. Reflecting this broader perspective, our Metabolism Platform spans not only core metabolic disorders but also a wide range of metabolically relevant therapeutic areas, including cardiovascular, liver, renal, gastrointestinal, and endocrine diseases. Enabled by close collaboration across our metabolism-related teams, we deliver integrated *in vitro* and *in vivo* solutions to support translational research and more confident decision-making throughout drug discovery.

15+ Years of Experience

300+ Metabolic Scientists

800+ Projects Annually

30+ Priority Targets

40+ Phenotypic Assays

80+ Metabolic Models

Metabolism

- Cardiometabolic Disease
- Liver & Gastrointestinal Disease
- Renal Disease & Gout
- Reproductive & Endocrine Disease

Cardiometabolic Disease

Indication	Model Name	Model System
	In Vitro	
Obesity	Lipolysis detection in 3T3-L1 cells	Immortalized cell
	Lipolysis detection in primary human adipocytes	Primary cell
	Glucose uptake and p-AKT detection in chronic insulin-induced insulin-resistant 3T3-L1 cells	Immortalized cell
	Glucose uptake and glycogen synthesis in 3T3-L1 cells	Immortalized cell
Diabetes	Insulin secretion detection in INS-1 cells	Immortalized cell
	Glucose uptake detection in 3T3-L1 cells with FFA-induced insulin resistance	Immortalized cell
	Glucose output detection in primary human hepatocytes	Primary cell
	p-AKT detection in FFA-induced insulin-resistant C2C12 cells	Immortalized cell
	p-AKT detection in chronic insulin-induced insulin-resistant L6 cells	Immortalized cell
	Insulin secretion detection in INS-1 cells with glucotoxicity	Immortalized cell
	Glucose uptake detection in 3T3-L1 cells	Immortalized cell
Hyperlipidemia	LDL uptake detection in HepG2 cells	Immortalized cell
	Glucose uptake detection in 3T3-L1 cells	Immortalized cell
	Fatty acid synthesis and cholesterol synthesis in HepG2 cells	Immortalized cell
	In Vivo	
Obesity	Diet-induced obesity (DIO)	Mouse | Rat
	DIO hGLP-1 mouse	Mouse
	DIO hGIPR mouse	Mouse
	DIO hGCGR mouse	Mouse
	DIO hINHBE mouse	Mouse
	DIO hALK7 mouse	Mouse
	ob/ob mouse (spontaneous obesity)	Mouse
	ZSF-1 rat (spontaneous obesity)	Rat
Diabetes	STZ-induced diabetes	Mouse | Rat
	STZ + HFD-induced diabetes	Mouse
	Diabetic foot	Mouse | Rat
	Non-obese diabetic (NOD) mouse	Mouse
	db/db mouse (spontaneous obesity)	Mouse
	ZDF rat (spontaneous diabetes)	Rat
Hyperlipidemia	High-cholesterol diet (HCD) or high-fat diet/western diet (HFD/WD)-induced golden hamster	Golden hamster
	High-cholesterol diet/western diet (HCD/WD)-induced Ldlr$^{-/-}$ mouse	Mouse
	High-cholesterol diet/western diet (HCD/WD)-induced Apoe$^{-/-}$ mouse	Mouse
	High-cholesterol diet/western diet (HCD/WD)-induced hPCSK9 mouse	Mouse

Heart Failure with preserved Ejection Fraction (HFpEF)	Isoproterenol-induced HFpEF	Mouse
	Angiotensin II (Ang II)-induced HFpEF	Mouse
	HFD + Ang II-induced HFpEF in aged female mouse	Mouse
	Ang II-induced HFpEF in DIO mouse	Mouse
	HFD + L-NAME-induced HFpEF	Mouse
	Abdominal aortic constriction (AAC)	Rat
	Diabetic cardiomyopathy in Goto-Kakizaki rat	Rat
	DOCA-salt-induced HFpEF	Rat
	$eNOS^{-/-}$ db/db mouse	Mouse
	ZSF-1 obese rat	Rat
Heart Failure with reduced Ejection Fraction (HFrEF)	Transverse aortic constriction (TAC)	Mouse | Rat
	Myocardial infarction (MI) & reperfusion (MIR)	Mouse | Rat
	Takotsubo cardiomyopathy (TTC)	Mouse
Right-side Heart Failure (RHF)	Monocrotaline (MCT)-induced RHF	Rat
Stroke	Middle cerebral artery occlusion (MCAO)	Mouse | Rat
	Four-vessel occlusion (4VO)	Mouse | Rat
	Intracerebral hemorrhage (ICH)	Mouse | Rat
	Photochemical thrombosis	Mouse | Rat
Atherosclerosis	HFD-induced atherosclerosis in Apoe-/- mouse	Mouse
	HFD-induced atherosclerosis in Ldlr-/- mouse	Mouse
Anticoagulation	AV shunt	Mouse | Rat | Rabbit
	$FeCl_3$-induced thrombosis	Mouse | Rat | Rabbit
	Deep vein thrombosis (DVT)	Mouse | Rat | Rabbit
Hypertension	SHR rat	Rat
	ZSF1 rat	Rat
	Dahl/salt-sensitive rat	Rat
	DOCA-salt-induced hypertension	Rat
	Ang II-induced hypertension	Mouse
Cardiac Safety	ECG monitoring	Mouse | Rat
	DOX-induced cardiotoxicity	Rat
Pericarditis	Constrictive pericarditis	Rat
	Acute pericarditis	Mouse
Phlebitis	Acute phlebitis	Rabbit
Peripheral Vascular Disease	Hindlimb ischemia/reperfusion	Mouse
	Vascular leak syndrome (VLS)	Mouse
Ex vivo Cardiac Function	Vessel ring	Rat
	Langendorff isolated heart	Mouse | Rat | Guinea pig

Liver & Gastrointestinal Disease

Indication	Model Name	Model System
	In Vitro	
MASH	Glucose output detection in primary human hepatocytes	Primary cell
	LDL uptake detection in HepG2 cells	Immortalized cell
	TG detection in HepG2 cells with FFA-induced steatosis	Immortalized cell
	Lipid droplet detection in primary human hepatocytes with FFA-induced steatosis	Primary cell
	TG detection in primary human hepatocytes with FFA-induced steatosis	Primary cell
	Fatty acid synthesis and cholesterol synthesis in HepG2 cells	Immortalized cell
	Biomarker detection in LX-2 hepatic stellate cells with fibrosis	Immortalized cell
	ROS detection in HepG2 cells	Immortalized cell
	ROS detection in primary human hepatocytes	Primary cell
	In Vivo	
MASLD	High-fat diet (HFD) induction	Mouse | Rat
MASH	High-fat diet (HFD) and carbon tetrachloride (CCl4) induction	Mouse | Rat
	Choline-deficient and high-fat diet (CDHFD) induction	Mouse
	GAN diet induction	Mouse | Rat
	Western diet induction	Mouse
	Choline-deficient, L-amino-acid-defined, high-fat diet (CDAHFD) induction	Mouse | Rat
	Choline-deficient, amino-acid-defined diet (CDAA) induction	Mouse
	Methionine-and-choline-deficient (MCD) diet induction	Mouse
	STZ and high-fat diet induction	Mouse
ALD/ASH	Lieber-Decarli ethanol liquid diet induction	Mouse
metALD	GAN diet and alcohol induction	Mouse

Liver Fibrosis	Carbon tetrachloride(CCl_4)induction	Mouse | Rat
	Thioacetamide (TAA) induction	Mouse
	High-fat-and-cholesterol diet (HFCD) induction	Golden hamster
	Bile Duct Ligation(BDL)surgery	Mouse | Rat
	Partial Bile Duct Ligation(pBDL)surgery	Mouse
Liver Cirrhosis	Carbon tetrachloride(CCl_4)induction	Rat
	Choline-deficient, L-amino-acid-defined, high-fat diet (CDAHFD) induction	Rat
Acute Liver Injury/Failure	Acetaminophen (APAP) induction	Mouse
	Concanavalin A (ConA) induction	Mouse
	LPS/D-GalN induction	Mouse
	Liver ischemia and reperfusion (I/R)	Mouse
	Alcohol induction	Mouse
Cholestasis	Alpha-naphthyl isothiocyanate (ANIT) induction	Mouse
	3,5-diethoxycarbonyl-1,4-dihydrocollidine (DDC) diet induction	Mouse
	Bile duct ligation (BDL) surgery	Mouse | Rat
	Partial bile duct ligation (pBDL) surgery	Mouse
Liver Regeneration	70% partial hepatectomy (Phx)	Mouse
Gastric Ulcer	Aspirin induction	Rat
Pancreatitis	Cerulein induction	Mouse
Short Bowel Syndrome (SBS)	Surgically induced SBS	Rat
Constipation	Loperamide induction	Mouse
	Low-fiber diet induction	Rat
Eosinophilic Esophagitis	OVA induction	Mouse
	Peanut induction	Mouse
	OXA induction	Mouse
Conditioned Taste Aversion (CTA)	Semaglutide-induced CTA	Mouse | Rat
Pica Behavior	Cisplatin induction	Mouse | Rat
GI Mobility & Growth	Intestinal growth test	Mouse | Rat
	Gastric emptying	Mouse | Rat

Renal Disease & Gout

Indication	Model Name	Model System
	In Vitro	
Renal Fibrosis	Biomarker detection in HK-2 cells with fibrosis	Immortalized cell
	In Vivo	
Renal Fibrosis	Unilateral ureteral obstruction (UUO)	Mouse
	5/6 nephrectomy-induced renal fibrosis	Mouse | Rat
	Calcium oxalate-induced nephropathy	Mouse
	Adenine-induced kidney disease	Mouse | Rat
	Folic acid-induced kidney disease	Mouse
Glomerular Disease	Anti-glomerular basement membrane (GBM) nephritis	Rat
	Anti-Thy1.1 monoclonal antibody-induced nephritis	Rat
	Passive Heymann nephritis (Fx1A antibody-induced)	Rat
	Puromycin aminonucleoside induction	Rat
	Adriamycin induction	Mouse | Rat
Diabetic Nephropathy	db/db mouse (spontaneous diabetic nephropathy)	Mouse
	db/db mouse (unilateral nephrectomy-accelerated diabetic nephropathy)	Mouse
	BKS-db-eNOS KO mouse	Mouse
	ReninAAV UNx db/db mouse	Mouse
	ZSF-1 diabetic nephropathy model	Rat
Metabolic & Endocrine Nephropathy	HLP diet, oxalate diet and adenine diet induction	Mouse | Rat
	High-fat diet (HFD) induction	Mouse
	DOCA-salt-induced renal hypertension	Mouse | Rat
	Hyperuricemia and high-phosphorus diet induction	Mouse | Rat
Acute Kidney Injury (AKI)	Surgically induced bilateral renal ischemia–reperfusion injury (IRI)	Mouse | Rat
	Surgically induced unilateral renal ischemia-reperfusion injury (IRI)	Mouse | Rat
	u-IRI mouse (AKI progression to CKD)	Mouse
	LPS-induced AKI	Mouse
	Cisplatin-induced AKI	Mouse
Bladder Pain Syndrome (BPS)	CPA-induced acute BPS	Rat
	CPA-induced chronic BPS	Rat
Benign Prostatic Hyperplasia (BPH)	Androgen-induced BPH	Rat
Urinary Retention	Urine spot assay	Mouse
Gout	MSU-induced gout	Rabbit

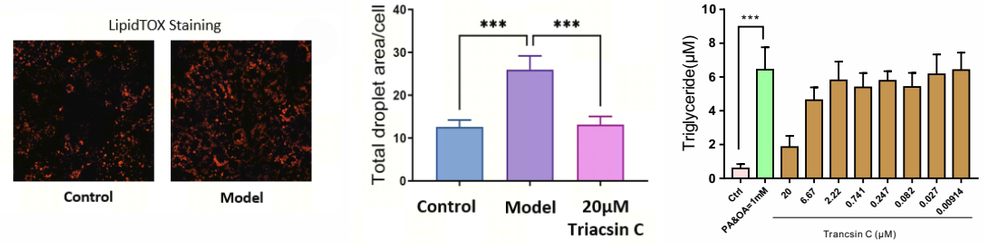
Reproductive & Endocrine Disease

Indication	Model Name	Model System
	In Vivo	
PCOS/PMOS	Letrozole induction	Mouse | Rat
	Letrozole and HFD induction	Mouse
	DHEA induction	Mouse
	DHT induction	Mouse
POI/POF	Cisplatin induction	Mouse
Endometriosis	Endometriosis transplantation	Mouse
	Endometriosis perfusion	Mouse
Adenomyosis	Tamoxifen-induced adenomyosis	Mouse
Thin Endometrium (TE)	Ethanol-induced TE	Rat
Intrauterine Adhesions (IUA)	Ethanol-induced IUA	Rat
Menopause	Ovariectomy (OVX)-induced menopause	Mouse | Rat
Vaginal Atrophy	Ovariectomy (OVX)-induced vaginal atrophy	Mouse | Rat
Controlled Ovarian Hyperstimulation (COH)	PMSG/hCG-induced COH	Mouse | Rat
Hyperplasia of Mammary Glands (HMG)	Estradiol and progesterone induction	Rat
Azoospermia	Busulfan induction	Mouse
	Hyperthermia induction	Mouse
Precocious Puberty	High-fat diet (HFD) induction	Mouse
	Danazol induction	Rat
Osteoporosis	Ovariectomy (OVX)-induced osteoporosis	Mouse | Rat
Hot Flashes	Ovariectomy (OVX)-induced hot flashes	Mouse
Hypoparathyroidism	Parathyroidectomy (PTx)-induced hypoparathyroidism	Rat
Hyperthyroidism	Thyroxine-induced hyperthyroidism	Mouse

PCOS: Polycystic Ovary Syndrome.
PMOS: Polyendocrine Metabolic Ovarian Syndrome.
POI: Primary Ovarian Insufficiency.
POF: Premature Ovarian Failure.

Showcase | Validating Translational MASH Models

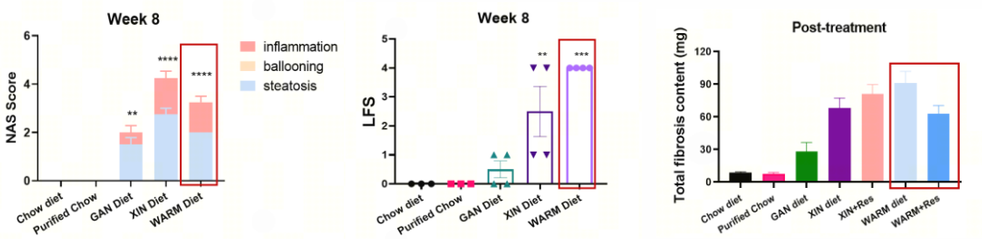
In Vitro Pharmacology



Successfully induced steatosis in human liver cells recapitulated key pathological features of *in vivo* steatosis.

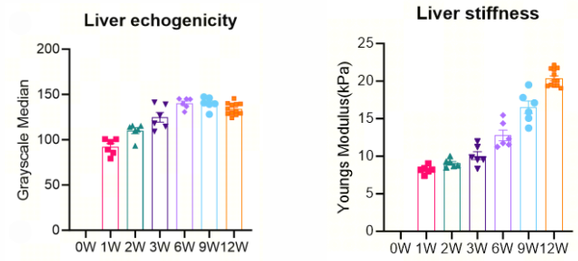
In Vivo Pharmacology

"WARM Diet" -Induced Next Generation Rodent MASH Model



The WARM diet rapidly induced severe MASH with advanced fibrosis by Week 8 and reliably responded to Resmetirom treatment.

Liver Ultrasound for MASH In-Life Characterization

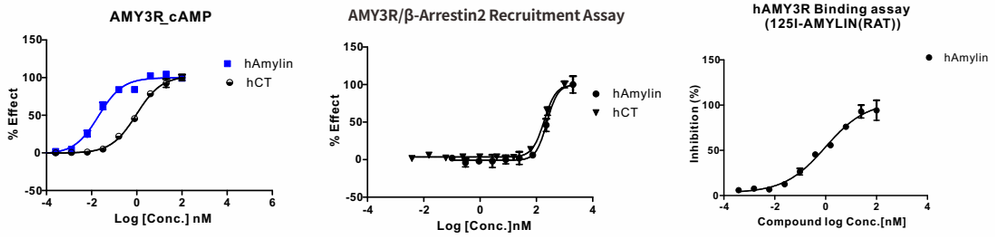


Standardized liver ultrasound enabled reliable in-life MASH characterization with strong histopathology concordance, supporting balanced cohort stratification and therapeutic monitoring.

Showcase

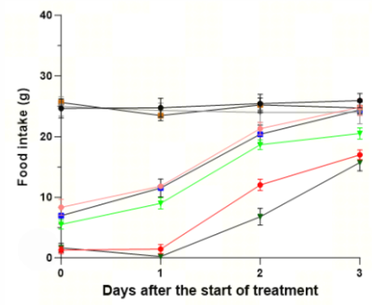
Targeting Amylin for Metabolic Disease

In Vitro Pharmacology



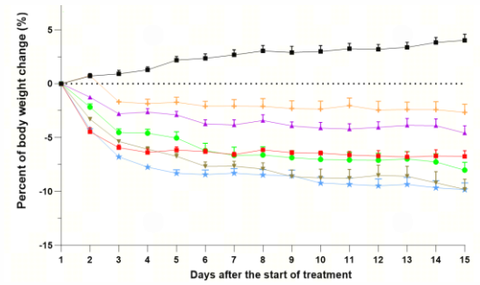
Evaluation of hAmylin and hCT pharmacology via AMY3R cAMP activation, β-arrestin2 recruitment, and radioligand binding assays.

In Vivo Efficacy Evaluation in Rodent Models



Food Intake in SD Rats

- Vehicle 1, NA, SC, Single dose
- Petrelintide, 10 nmol/kg, SC, Single dose
- Petrelintide, 100 nmol/kg, SC, Single dose
- Vehicle 2, NA, SC, Single dose
- Eloralintide, 10 nmol/kg, SC, Single dose
- Eloralintide, 100 nmol/kg, SC, Single dose
- Vehicle 3, NA, SC, Single dose
- Cagrilintide, 10 nmol/kg, SC, Single dose



Body Weight Change in DIO Rats

- Vehicle 1, SC, QD
- Semaglutide, 7.5 nmol/kg, SC, QD
- Cagrilintide, 7.5 nmol/kg, SC, QD
- Sema, 7.5 nmol/kg, SC, QD + Cagri, 7.5 nmol/kg, SC, QD
- Amycretin, 2 nmol/kg, SC, QD
- Amycretin, 10 nmol/kg, SC, QD
- Eloralintide, 7.5 nmol/kg, SC, QD

Amylin peptide agonists demonstrated significant appetite-suppressing efficacy in SD rats and effectively reduced body weight in diet-induced obese (DIO) rats.



Neuroscience

The complexity of the brain makes neuroscience one of the most challenging areas in drug discovery. From neurodegeneration and neuroinflammation to synaptic dysfunction and psychiatric disorders, researchers need models that better reflect human CNS biology and improve translational confidence. Built on our neuroscience expertise, our disease model portfolio is designed to support the evolving needs of CNS research. By capturing key disease features and addressing critical challenges such as cellular complexity, human relevance, and blood-brain barrier considerations, our models help accelerate the path from discovery to decision in neuroscience drug development.

15+ Years of Experience

150+ CNS Scientists

73K+ Curated CNS/BBB Compounds

1000+ Projects Annually

200+ CNS Models

Neuroscience

- Neuropsychiatric Disorders
- Neurodegenerative Diseases
- Pain & Migraine
- Sensory Disorders
- Neuromuscular & Movement Disorders
- Epilepsy, Cerebrovascular Disorders, Neurodevelopmental Disorders, and Insomnia

Neuropsychiatric Disorders

Indication	Model Name	Model System
	In Vitro	
Depression	Dendritogenesis in primary neurons	Primary cell
	Spinogenesis in primary neurons	Primary cell
	Synaptogenesis in primary neurons	Primary cell
	Primary neuronal MEA assay	Primary cell
BBB	BBB model in hCMEC-D3	Immortalized cell
	In Vivo	
Depression	Chronic unpredictable mild stress (CUMS)	Mouse | Rat
	Chronic social defeat stress (CSDS)	Mouse
	Chronic corticosterone (CORT) induction	Mouse
	LPS induction	Mouse
	Chronic pain induction	Rat
	Forced swim test (FST)	Mouse
	Tail suspension test (TST)	Mouse
	Open field test (OFT)	Mouse
	Elevated plus maze (EPM)	Mouse
	Sucrose preference test (SPT)	Mouse | Rat
	Light-dark box test (LDB)	Mouse
	Learned helplessness (LH)	Mouse
Psychedelic	Head twitch response (HTR) test	Mouse
	DOI-induced HTR desensitization test	Mouse
Post Traumatic Stress Disorder	Cued fear conditioning	Mouse
	Contextual fear conditioning	Mouse
	Single prolonged stress(SPS)	Mouse
Schizophrenia	MK801-induced hyperlocomotion	Mouse | Rat
	PCP-induced hyperlocomotion	Mouse
	D-AMPH-induced hyperlocomotion	Mouse | Rat
	METH-induced hyperlocomotion	Mouse
	APO-induced hyperlocomotion	Rat
	Scopolamine-induced hyperlocomotion	Mouse
	Ketamine-induced hyperlocomotion	Mouse
	DOI-induced HTR	Mouse
	LSD-induced HTR	Mouse
	Psilocybin-induced HTR	Mouse
	APO-induced climbing	Mouse
	Caffeine-induced hyperlocomotion	Mouse
	D-AMPH-induced prepulse inhibition (PPI)	Mouse
	Ketamine-induced prepulse inhibition (PPI)	Rat
	Scopolamine-induced prepulse inhibition (PPI)	Rat
	Conditioned avoidance response (CAR) test	Rat
	Sub-chronic PCP-induced attentional set-shifting deficits test (ED/ID test)	Rat
Autism Spectrum Disorder (ASD)	BTBR mouse	Mouse
	Fmr1$^{-/y}$ mouse	Mouse
	Prenatal valproic acid exposure rat	Rat
Addiction	Cocaine-conditioned place preference (CPP)	Rat
	Morphine conditioned place preference (CPP)	Rat
	Ketamine conditioned place preference (CPP)	Rat
	Fentanyl conditioned place preference (CPP)	Rat
	CB-1 agonist self-administration	Rat
	Nicotine self-administration	Rat
	Ketamine self-administration	Rat
	Cocaine self-administration	Rat
	Intermittent access to 2-bottle choice (IA2BC) of alcohol drinking	Rat
	Ethanol-induced behavioral sensitization (BS)	Mouse

Neurodegenerative Diseases

Indication	Model Name	Model System
	In Vitro	
Alzheimer's Disease	Aβ42-induced cytotoxicity in SH-SY5Y cells	Immortalized cell
	Aβ uptake by ipsc-Microglia	Stem cell-derived
	Tau phosphorylation	Reporter cell
	TREM2 pathway (p-syk)	Reporter cell
Parkinson's Disease	α-synuclein phosphorylation on αSyn PFFs induction primary neuronal model	Primary cell
	α-synuclein phosphorylation on αSyn PFFs induction ipsc-DNs model	Stem cell-derived
Aging	Etoposide-induced senescent model in IMR90	Immortalized cell
Amyotrophic Lateral Sclerosis	Axon degeneration model in primary DRG neurons	Primary cell
	Axon degeneration model in iPSC-MNs	Stem cell-derived
	Neuronal mitochondrial movement in Primary DRG neurons	Primary cell
	α-tubulin acetylation in primary DRG neurons	Primary cell
	Induction of TDP43 stress granules in HeLa cells	Immortalized cell
Lysosomal Storage Disorders	Lysosomal pH assay	Immortalized cell
	Lysosomal CathepsinD activity assay	Primary cell
	Lysosomal morphology assay	Immortalized cell
	Lysosomal trapping assay	Immortalized cell
	Lysosomal protein degradation assay	Immortalized cell
	Phospholipidosis assay	Immortalized cell
BBB	BBB model in hCMEC-D3	Immortalized cell
	In Vivo	
Alzheimer's Disease	AAP/PS1 transgenic mouse	Mouse
	AAPSwe transgenic mouse	Mouse
	5xFAD transgenic mouse	Mouse
	STZ ICV injection induction	Mouse
	Aβ oligomer-ICV injection	Mouse
	Aβ oligomer-hippocampal parenchymal injection	Mouse
	3xTg AD	Mouse
	P301L transgenic mouse	Mouse
	Hypoxia exposure induced BBB breakdown	Mouse
	Amyloid-related imaging abnormalities (ARIA)	Mouse
	LPS-induced acute tau phosphorylation	Mouse
Alzheimer's Disease	Hypothermia-induced acute tau phosphorylation	Mouse
	LTP/LTD recording	Mouse
	Goto-Kakizaki (GK) type 2 diabetes rat	Rat
	hTau/hTfR1	Mouse
	5xFAD/hTrem2, APOE, hTfR1	Mouse
	Scopolamine-induced cognitive impairment rat	Rat
Parkinson's Disease	6-hydroxydopamine (6-OHDA) induction	Mouse | Rat
	Rotenone induction	Mouse
	AAV alpha-synuclein overexpression	Mouse | Rat
	Alpha-synuclein pre-formed fibrils (PFFs)	Mouse | Rat
	AAV alpha-synuclein overexpression/preformed fibril (PFF)	Mouse | Rat
	MPTP induction	Mouse
Huntington's Disease	BACHD transgenic mouse	Mouse
	mHTT130 transgenic mouse	Mouse
	mHTT transgenic mouse	Mouse
Experimental Autoimmune Encephalomyelitis (EAE)	MOG35-55-induced chronic EAE	Mouse
	PLP139-151-induced relapsing-remitting EAE	Mouse
	MBP68-86-induced acute EAE	Rat
Multiple Sclerosis	LPC-induced MS	Mouse | Rat
	Cuprizone-induced mouse	Mouse
Tourette's Syndrome	3,3'-Iminodipropionitrile (IDPN) induction	Rat
Spinal Muscular Atrophy (SMA)	Smn-/-;SMN2 transgenic mouse	Mouse
Rett Syndrome (RTT)	Mecp2 $^{-/y}$ mouse	Mouse
Frontotemporal Dementia	MAPT*P301L transgenic mouse	Mouse
Aging	Natural aging	Mouse
	Senescence accelerated mouse (SAMP8)	Mouse
Amyotrophic Lateral Sclerosis	SOD1-G93A mouse model (B6SJL)	Mouse
	SOD1-G93A mouse model (C57BL/6J)	Mouse
	Thy1-TDP-43	Mouse
	SOD1-G93A rat	Rat
BBB Model	Humanized BBB	Mouse
	In-situ via intracalvariosseous (ICO) injection	Mouse | Rat
	Focused ultrasound	Mouse | Rat
	In vivo evaluation of BBB penetration	Mouse

Pain & Migraine

Indication	Model Name	Model System
	In Vitro	
Acute Nociception	Nav patch clamp assay	Reporter cell
	iPSC-SNs patch clamp assay	Stem cell-derived
	Primary DRG patch clamp assay	Primary cell
	In Vivo	
Chronic Neuropathic Pain	Chronic constriction injury (CCI)	Mouse | Rat
	Spared nerve injury (SNI)	Mouse | Rat
	Cisplatin-induced peripheral neuropathy (CIPN)	Mouse | Rat
	Bone cancer pain	Mouse | Rat
	STZ-induced diabetic peripheral neuropathy (DIPN)	Mouse | Rat
	Partial sciatic nerve ligation	Rat
	Spinal nerve ligation (SNL), Chung	Rat
	Varicella-zoster virus (VZV)-induced postherpetic neuralgia	Rat
Osteoarthritis	Monosodium iodoacetate (MIA) induction	Mouse | Rat
	Medial meniscal transection (MMT)	Rat
	Anterior cruciate ligament transection (ACLT)	Rat
	Medial meniscectomy (MMx)	Rat
Migraine	Nitroglycerin (NTG) induction	Rat
	PACAP38 induction	Rat
	Capsaicin induction	Rat
Acute Inflammatory Pain	Formalin induction	Mouse | Rat
	Carrageenan induction	Mouse | Rat
	Capsaicin induction	Mouse | Rat
Acute Nociception	Hot plate	Mouse | Rat | NHP
	Tail flick	Mouse | Rat
Chronic Inflammatory Pain	Complete Freund's adjuvant (CFA) induction	Mouse | Rat
Post Surgery Pain	Brennan model	Mouse | Rat
Trigeminal Neuralgia	Chronic constriction injury of the infraorbital nerve (CCI-IoN)	Mouse | Rat
Fibromyalgia-like Pain	Reserpine induction	Mouse
Visceral Pain	Acetic acid writhing model	Mouse
Itch	Compound 48/80-induced itch	Mouse
	Chloroquine-induced itch	Mouse
	5-GNTI-induced itch	Mouse
Central Nervous System Injuries	Spinal cord injury (SCI)	Mouse | Rat
	Traumatic brain injury (TBI)	Rat
Local Anesthetic	Sciatic nerve block assay	Mouse | Rat

Sensory Disorders

Indication	Model Name	Model System
	In Vivo	
Dry Age-Related Macular Degeneration (dAMD)	NaIO3 induction	Mouse | NHP
	White light induction	Mouse
	Blue light induction	Mouse
Wet Age-Related Macular Degeneration (wAMD)	Laser induction	Mouse | NHP
	Oxygen induction	Mouse
	VEGF induction	Rat | Rabbit
	DL-AAA induction	Rabbit
	hVEGFA mice	Mouse
Myopia	Form deprivation myopia	Mouse
	Surgery, suture eyelid	Rabbit
	Spontaneous myopia	NHP
Glaucoma	Intracameral injection of microbeads	Mouse | Rat
	Laser induction	NHP
	DBA/2J mice	Mouse
Retinitis Pigmentosa	Rd1 transgenic mouse	Mouse
	RhoP23H/P23H transgenic mouse	Mouse
Dry Eye	Scopolamine combined with environmental control	Mouse | Rat
	Benzalkonium chloride (BAC) induction	Mouse | Rat
	Environmental control	Mouse
	Lacrimal gland removal	Mouse
Corneal Defect	NaOH-burn	Rat
	Corneal wound healing	Rabbit
Conjunctivitis	OVA-induced	Mouse

Uveitis	LPS-induced EIU	Rat
	IRBP-induced EAU	Rat
Presbyopia	Aged animal	Mouse
Diabetic Retinopathy	Streptozotocin (STZ) induction	Rat
Neurotrophic Keratitis	NaOH induction	Rabbit
Thyroid Eye Disease	L-thyroxine induction	Mouse
Vestibular Dysfunction	Aminoglycoside antibiotics induction	Mouse
	3,3'-Iminodipropionitrile (IDPN) induction	Mouse
	Surgical labyrinthectomy induction	Mouse
Hearing Loss	Cisplatin-induced hearing loss	Mouse | Rat
	Noise-induced hearing loss	Mouse
	Cochlear ischemia-induced hearing loss	Mouse | Guinea Pig
	Diabetes mellitus transgenic mouse	Mouse
Dysgeusia	Paclitaxel-induced dysgeusia	Mouse
	Cabozantinib-induced dysgeusia	Mouse
Olfactory Dysfunction	Methylimidazole-induced anosmia	Mouse
Emesis and Nausea	Cisplatin-induced emesis	Ferret
	Morphine-induced emesis	Ferret
	Cisplatin-induced PICA behaviors	Rat
	Semaglutide-induced PICA behaviors	Rat
	Xylazine/Ketamine-induced anesthesia	Mouse
	Semaglutide-induced conditioned taste aversion	Mouse | Rat
	Tirzepatide-induced conditioned taste aversion	Mouse
	Retartrutide-induced conditioned taste aversion	Mouse
	Cisplatin-induced conditioned taste aversion	Mouse
	LiCl-induced conditioned taste aversion	Mouse | Rat
	Liraglutide-induced conditioned taste aversion	Rat
	Cisplatin-induced anorexia	Rat

Neuromuscular & Movement Disorders

Indication	Model Name	Model System
	In Vivo	
Duchenne Muscular Dystrophy (DMD)	Dmdmdx	Mouse
Myasthenia Gravis (MG)	Anti-AChR antibody-induced MG	Rat
Sarcopenia	Disuse muscle atrophy	Mouse
	Sciatic Nerve Crush (SNC) induced Sarcopenia	Mouse
Hindlimb Ischemia	Hindlimb ischemia model	Mouse
Charcot–Marie–Tooth Disease Type 1A (CMT1A)	Tg(hPMP22)	Mouse
Charcot-Marie-Tooth Disease Type 2A (CMT2A)	MFN2R94Q:MFN1	Mouse
Charcot-Marie-Tooth Disease Type 2D (CMT2D)	Gars1P278KY	Mouse
Charcot-Marie-Tooth Disease Type 2E (CMT2E)	NeflN98S	Mouse
DM1	Tg(hDMPK)	Mouse
Pompe	Gaa-/- (JAX, #004154)	Mouse
Spinal Muscular Atrophy (SMA)	Smn-/-; SMN2 transgenic mouse	Mouse

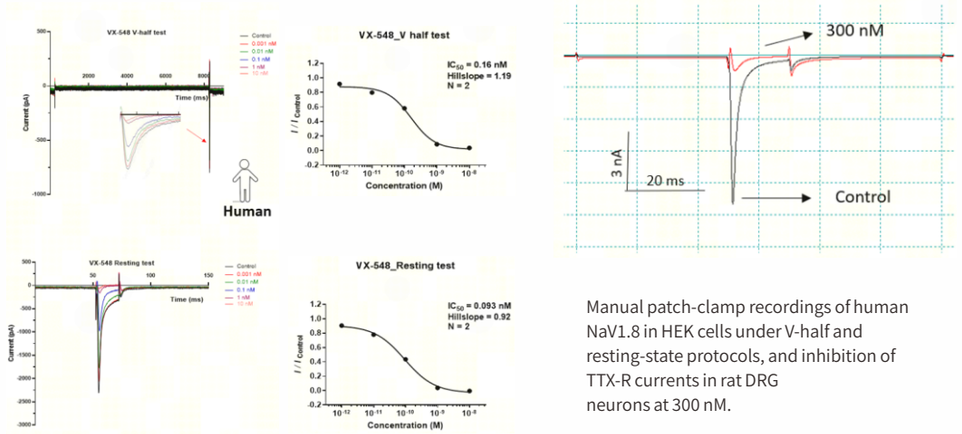
Epilepsy, Cerebrovascular Disorders, Neurodevelopmental Disorders, and Insomnia

Indication	Model Name	Model System
	Epilepsy	
	In Vitro	
Seizure	Primary neuronal MEA assay	Primary cell
	Primary neuronal AMPA-R patch clamp assay	Primary cell
	In Vivo	
Seizure	Pilocarpine kindling	Mouse
	Kainic acid (KA) induction	Mouse
	Maximal electroshock (MES)	Mouse
	Pentylenetetrazole (PTZ) kindling	Rat
	Timed intravenous PTZ seizure threshold test	Mouse
	Scn1a$^{-/+}$ mouse (129S2/B6)	Mouse
	Cerebrovascular Disorders	
	In Vitro	
BBB	BBB model in hCMEC-D3	Immortalized cell
	In Vivo	
Stroke	Middle cerebral artery occlusion (MCAO)	Mouse | Rat
	2-vessel occlusion (2-VO) global cerebral ischemia	Mouse | Rat
Ischemic Stroke	Photothrombotic dMCAO in awake animal	Mouse | Rat
Hemorrhagic Stroke	Intracerebral hemorrhage (ICH)	Mouse | Rat
	Neurodevelopmental Disorders	
	In Vivo	
Angelman Disease	Ube3a (m^{-}/p^{+})	Mouse
Seizure	Scn1a$^{-/+}$ mouse (129S2/B6)	Mouse
Autism Spectrum Disorder (ASD)	Fmr1$^{-/y}$ mouse	Mouse
Spinal Muscular Atrophy (SMA)	Smn$^{-/-}$;SMN2 transgenic mouse	Mouse
Rett Syndrome (RTT)	Mecp2$^{-/y}$ mouse	Mouse
Growth Hormone Deficiency (GHD)	Hypophysectomy	Rat
	Insomnia	
	In Vivo	
Insomnia	Caffeine induction	Rat
	Pentobarbital-induced sleep	Mouse

Showcase | Preclinical Benchmarking of the NaV1.8 Inhibitor in Pain Models

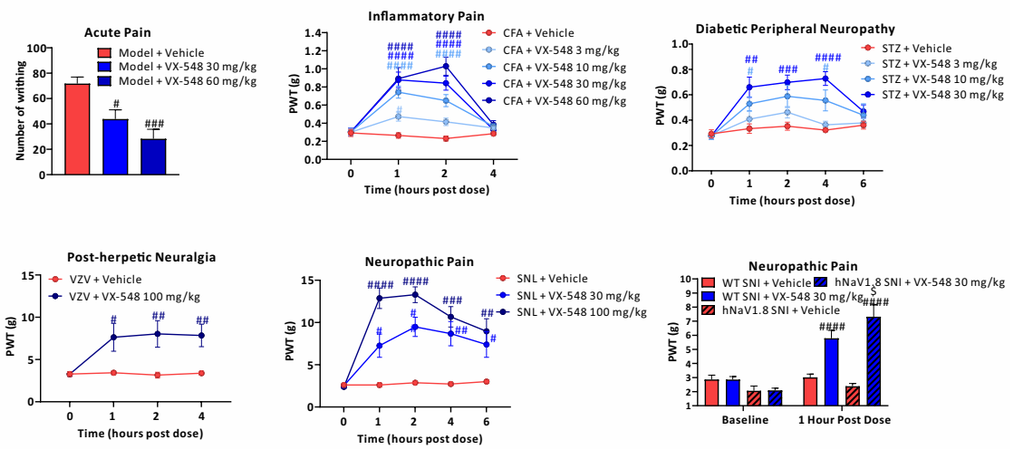
In Vitro Pharmacology

Inhibition of VX-548 on HEK-human Nav1.8 by MPC



Manual patch-clamp recordings of human NaV1.8 in HEK cells under V-half and resting-state protocols, and inhibition of TTX-R currents in rat DRG neurons at 300 nM.

In Vivo Efficacy Evaluation in Rodent Model



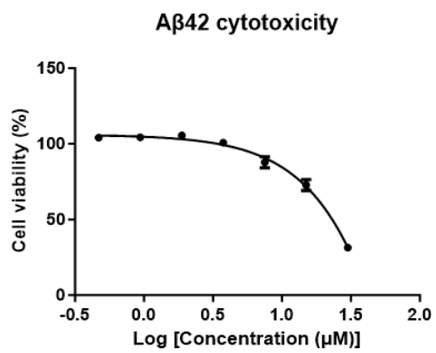
Acute VX-548 showed dose-dependent analgesic effects across rodent pain models, reducing visceral pain and increasing paw withdrawal thresholds in inflammatory and neuropathic states.

Showcase

Targeting Aβ in Alzheimer's Disease (AD)

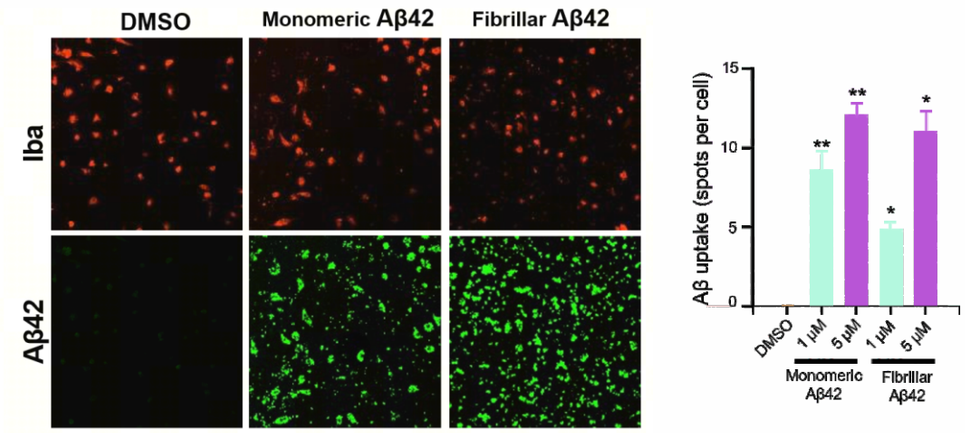
- *In Vitro* Pharmacology

Aβ42-induced cytotoxicity in SH-SY5Y cells



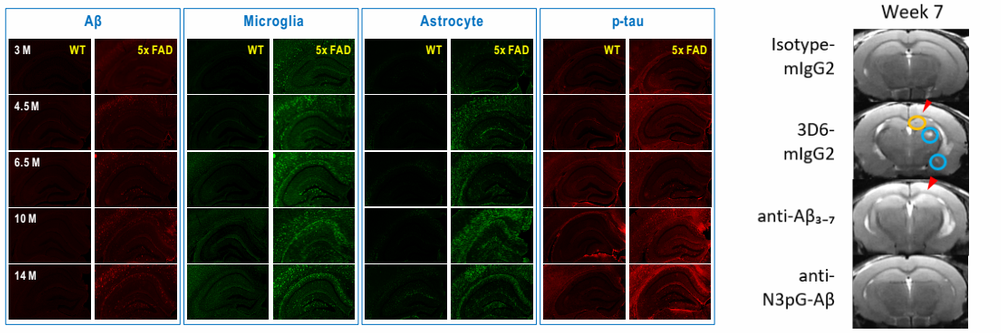
- Aβ42 peptides treatment for 72 hours showed ~30% cytotoxicity in SH-SY5Y cells.
- Cell viability was detected using CellTiter-Glo® Luminescent Cell Viability Assay.

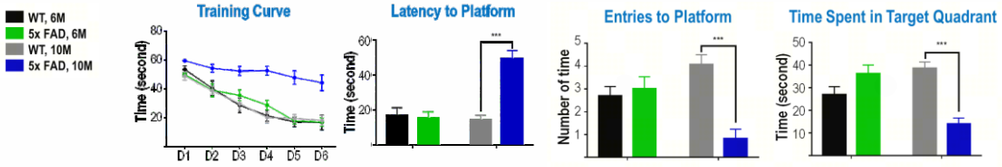
Phagocytic uptake of Aβ42 by primary mouse microglia



Both monomeric and fibrillar Aβ42 drove concentration-dependent phagocytic uptake in primary mouse microglia.

- *In Vivo* Pharmacology



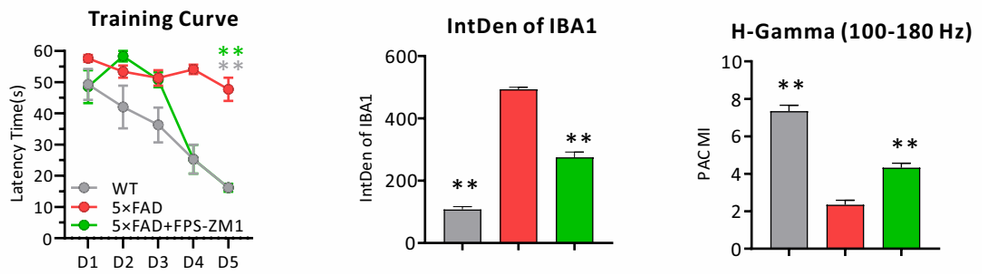


5xFAD mouse model exhibited age-dependent pathology and behavioral deterioration, and can be used to evaluate immunotherapy-induced ARIA via MRI.

Behavioral Test – Cognition (Morris Water Maze)

Immunofluorescence Detection

Neural Signals



FPS-ZM1 improved cognition and inflammation in 5×FAD mice .

Our Vision

Every drug can be made and every disease can be treated

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USA



150+

Hit Finding (DEL, Peptide Discovery)
Compound Profiling (Biophysics)
Drug Delivery

Hit Finding
Compound Profiling
In Vitro Pharmacology
In Vivo Pharmacology
Bioanalysis

Germany



100+

Protein Production
Structural Biology
Hit Finding (DEL, FBDD, SBDD)
Compound Profiling

China

Yangtze River Delta – Integrated Discovery Hub









2000+

Protein Science
Target Discovery
Hit Finding
Compound Profiling
In Vitro & *In Vivo* Pharmacology
(10+ disease areas)
Biomarker Discovery

Chengdu – Specialized Center of Excellence



Drug Delivery
In Vitro Pharmacology
Large Animal Pharmacology
Radionuclide-Drug Conjugates
Discovery Molecular Imaging Center

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