

Large Animal Pharmacology Platform

State-of-the-Art Large Animal Facility

- **10,000+** m² facility houses **1,800+** cages, operating in **Chengdu & Nantong, China**
- Accommodating **NHP** (Cynomolgus, Rhesus), Minipig, Dog
- Equipped with **ABSL2** & **BSL2** laboratories
- IACUC professionals ensure the highest standards of **animal welfare**



NHP



Dog



Minipig

One-Stop Service Platform

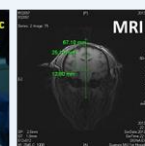
- **Disease-centric** capabilities cover all major therapeutic areas
- Highly experienced team
- Offering non-GLP PD, Efficacy evaluation services in normal healthy animals & disease models

In Vivo Technical Capabilities

SCREENING	Animal Enrollment Criteria , AAV Screening, In-Life Imaging, Biopsy, Blood/Urine Biochemistry, Cerebrospinal Fluid (CSF) Profiling, Histopathology, Disease Biomarkers
ROUTES OF ADMINISTRATION	General : PO, IV Bolus, IV Infusion, IP, SC CNS : IT, ICV, ICM, Stereotaxic Delivery, Carotid Artery Injection Eye : Eye Drops, Intracameral, Subconjunctival, Intravitreal, Subretinal Injections Ear : Transtympanic (TT), Intra-Labyrinth (IL), Round Window
CLINICAL OBSERVATIONS	Post-Dosing Monitoring : Hourly Monitoring, Veterinary Care, Supplements, Emergency Care for Adverse Events (AE) Cage-Side Observation : Daily Monitoring, Food/Water Intake, Behavioral Observation
IN-LIFE SAMPLING	Blood, CSF (+/- Cannula), Aqueous & Vitreous Humor, Biopsy
IN-LIFE TESTING	Imaging : MRI, PET-CT, Ultrasound, Endoscope, Eye Imaging Electrophysiology : EEG, EMG, MCV/SCV, ABR, COR, ERG, OCT Behavior : Motor Function, Fine Movement, Cognition, CANTAB Functional Tests : ECG, DSI Telemetry, DEXA, Pulmonary Function
TERMINAL SAMPLE COLLECTION	Blood, CSF, Accurate Dissection for Organs & Tissue Regions



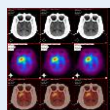
Intra-cisterna magna (ICM)



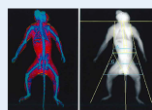
Intrathecal (IT)



Imaging Evaluation



PET/CT



DEXA

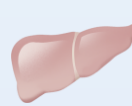


MRI

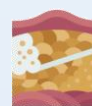
Extensive Tissue Biopsy Experiences



Liver Needle Biopsy



Liver



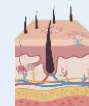
Subcutaneous Adipose (ScWAT)



Kidney



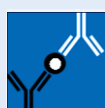
Muscle



Skin

Ex Vivo Laboratory Services

PD/Immune Profiling Assessment



PD Biomarker Analysis

Over 60 validated biomarkers

More than 5 types of validated animal tissues

Includes **4** large animal species



Immune Profiling

14 types of tissues digestion methods

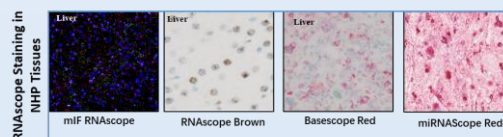
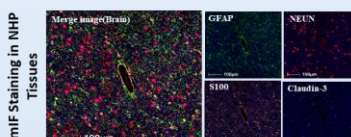
21 colors in a single panel

Analysis of **over 17** immune cell subpopulations

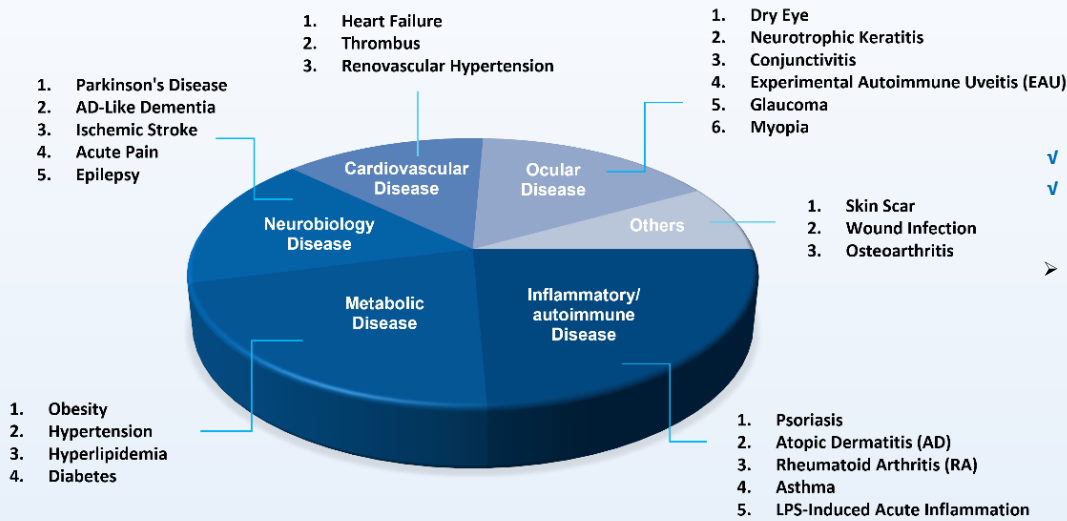
Large Animal Histopathology

- Anatomy
- H&E/Special Staining/IHC/Multiplex IF/RNAscope
- TMA Macrodissection/Microdissection
- Board-Certified Veterinary Pathologists

- Pathological Evaluation, including: Drug-Induced Toxicity Diagnosis of Animal Disease
- NHP Tissue Bank



Large Animal Disease Models



- ✓ Experimental Disease Model
- ✓ Spontaneous Disease Model

➤ Extensive Experience in Supporting New Modality Drug Discovery

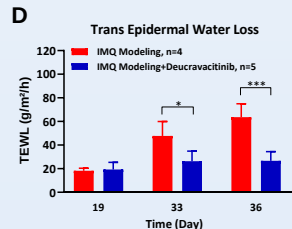
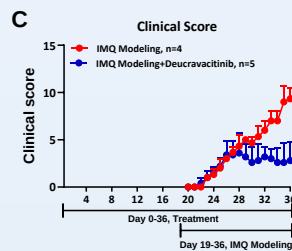
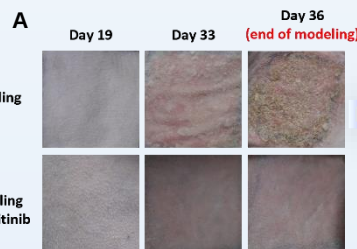
- ✓ siRNA/ASO
- ✓ Ab & Bi-specific & ADC
- ✓ mRNA-LNP
- ✓ Vaccine
- ✓ AAV
- ...

Case Study: Imiquimod-Induced Psoriasis Model

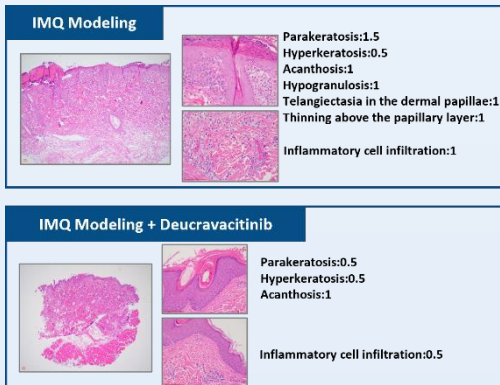
Model Development and Validation (Preventive Treatment)

Readouts

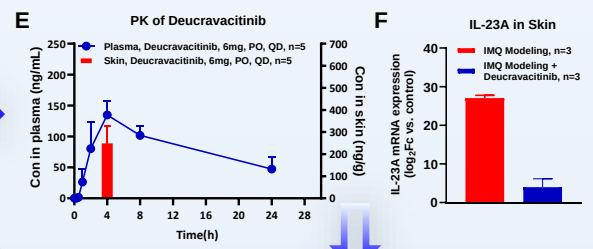
- Local Smear Area Scoring
- TEWL Measurement
- Skin Biopsy Collection
- PK Sampling and Analysis
- Histopathology and Pathology Scoring
- Cytokine Detection
- Statistical Analysis for Efficacy



B

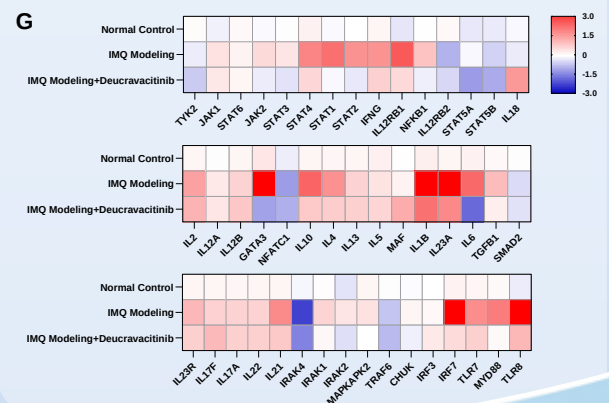


PK/PD Assessment



Exploring MoA

TLR Signaling	JAK-STAT Signaling	Th17 Lymphocyte	Th1 Lymphocyte	Th2 Lymphocyte
IRAK4, IRAK1, NFKB1, IRAK2, MAPKAPK2, TRAF6, CHUK, IRF3, IRF7, TLR7, MYD88, TLR8	TYK2, JAK1, STAT6, JAK2, STAT3, IL23R, STAT4, IL17A, IL17F, IL17A, IL17B, IL17C, IL17D, IL17E, IL17F, IL17G, IL17H, IL17I, IL17J, IL17K, IL17L, IL17M, IL17N, IL17O, IL17P, IL17Q, IL17R, IL17S, IL17T, IL17U, IL17V, IL17W, IL17X, IL17Y, IL17Z	IL1B, IL23A, IL6, TGFBI, SMAD2, STAT3, IL23R, IL17F, IL17A, IL17B, IL17C, IL17D, IL17E, IL17F, IL17G, IL17H, IL17I, IL17J, IL17K, IL17L, IL17M, IL17N, IL17O, IL17P, IL17Q, IL17R, IL17S, IL17T, IL17U, IL17V, IL17W, IL17X, IL17Y, IL17Z	IFNG, IL12RB1, STAT1, NFKB1, IL12RB2, STAT5A, STAT5B, IL18, IL2, IL12A, IL12B	GATA3, NFATC1, IFNG, IL10, IL4, IL13, IL5, MAF, STAT6



(A) Representative images of the monkey dorsal back skin following IMQ application on different days. (B) Histopathological analysis of monkey skin biopsies. (C) Scoring curves for back skin thickness, scaling, and erythema. (D) TEWL data from the IMQ-treated areas. (E) PK profiling of Deucravacitinib in NHP plasma. (F) Cytokine levels between IMQ-induced psoriasis model animals with and without Deucravacitinib. (G) Gene expression characterization in the IMQ-induced psoriasis model using NanoString analysis.



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