Medicilon Large Animal Pharmacodynamic Research Service Platform

With the advent of the era of precision medicine and the deepening understanding of disease mechanisms, large animal models such as non-human primates, dogs, rabbits, and miniature pigs have shown unique advantages and value in key areas of drug development. Due to their higher physiological similarity to humans, these models are particularly valuable in the research of cardiovascular diseases, metabolic disorders, inflammatory immune diseases, and neurological diseases.

In order to assist clients in precisely selecting suitable large animal models, Medicilon has established an innovative, flexible, and reliable Large Animal Pharmacodynamic Research Service Platform. This platform focuses on large animal models such as non-human primates, dogs, rabbits, and miniature pigs, and offers comprehensive and in-depth disease model development and pharmacodynamic research. The platform is equipped with world-class experimental facilities and equipments and is supported by a team of experienced scientists and technical experts. This professional team is dedicated to providing pharmacodynamic research services, including experimental protocal design, model establishment, and data analysis, to accelerate the translation of scientific research results into clinical applications.

Diverse Disease Models, Empowering Drug Development Innovation

The Medicilon Large Animal Pharmacodynamic Research Service Platform encompasses a wide range of disease models, including but not limited to metabolic diseases (such as obesity, diabetes, and hyperuricemia), cardiovascular diseases (such as thrombosis, stroke, and atherosclerosis), inflammatory and immune diseases (such as arthritis, osteoporosis, and psoriasis), as well as other disease models. This comprehensive coverage addresses nearly all major disease areas in current drug development.

The platform not only offers standard disease model development services but is also skilled in customizing complex disease models to meet the diverse research needs of clients. In addition, the platform provides a full range of services from drug screening and efficacy evaluation to safety assessment, helping clients accelerate the new drug development process.

Table 1: Types of Large Animal Pharmacodynamic Models Conducted by Medicilon

Disease Areas	Large Animal Disease Models	
Metabolic Disease Models	• Obesity and Diabetes Models • Liver Fibrosis Models • Dyslipidemia Models • Hepatobiliary Models	• Hyperuricemia Models • Pulmonary Fibrosis Models • Non-Alcoholic Fatty Liver Models
Inflammatory and Immune Disease Models	• Arthritis and Osteoarthritis Models • Psoriasis Models • Multiple Sclerosis Models	• Osteoporosis Models • Atopic Dermatitis Models • Acute Inflammation Models
Cardiovascular Disease Models	• Thrombosis and Anticoagulation Models • Atherosclerosis Models	• Stroke Models • Anemia Models
Other Disease Models	• Skin Wound Models • Gynecological Disease Models	• Kidney Failure and Injury Models

AAALAC Certification, Animal Facilities Meet International Standards

Medicilon's preclinical animal testing facility has been accredited by AAALAC International since 2009 and has consistently passed re-evaluations. The facility meets international standards in experimental animal quality, animal welfare, and biosafety.




Table 2: Current Large Animal Capacity at Medicilon

Species	Number of Rooms	Capacity
Non-Human Primates	61	2,260
Dogs	62	1,720
Rabbits	14	520
Miniature Pigs	10	200

Medicilon's large animal efficacy research and development service platform currently boasts spacious animal housing. From animal care and management to experimental procedures, every step strictly adheres to international standards, providing a solid foundation for large-scale, high-quality, and efficient efficacy experiments.

Advanced Instruments and Equipment Enhance R&D Efficiency and Effectiveness

The platform is equipped with advanced large animal experimental instruments, pharmacodynamic experimental analysis equipment, and pharmacodynamic experimental pathological research devices, providing strong technical support for disease efficacy evaluation and ensuring the accuracy and reliability of the experimental process.

1. Large Animal Experimental Instruments and Equipment

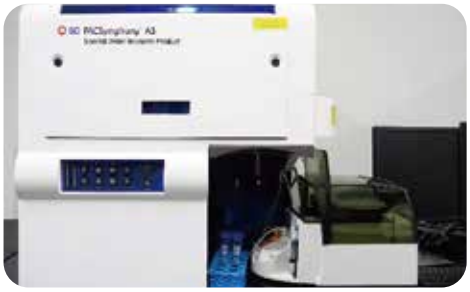
Large Animal Operating Room

Operating Room Equipment

Doppler Blood Microcirculation Imager

Oral and Nasal Exposure System

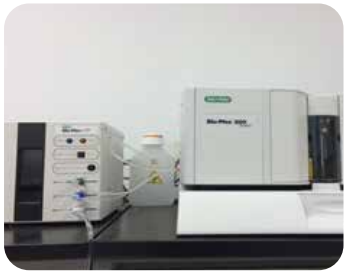
Preoperative Preparation for Mini Pigs



BD FACSymphony A3 Flow Cytometer

2. Pharmacodynamic Experimental Analysis Equipment

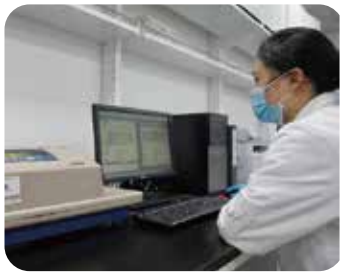
MSD Electrochemiluminescence Analyzer



Bio-Plex 200 Suspension Array System

GE Biacore 8K Molecular Interaction Analysis Platform

Molecular Devices SpectraMax iD5 Multi-Mode Microplate Reader



Molecular Devices SpectraMax M4/M5 Multi-Mode Microplate Reader

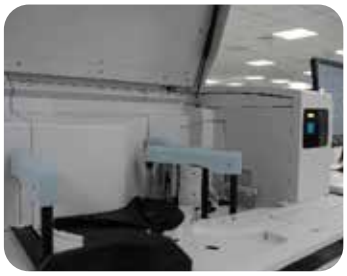
Gyrolab xPlore Fully Automated Nanoliter-Scale Immunoassay Workstation

Molecular Devices Microplate Reader

Applied Biosystems 7500 Real-Time Fluorescent Quantitative PCR System

3. Pharmacodynamic Experimental Pathological Research Equipment

Beckman Coulter AU5800 Fully Automated Biochemical Analyzer



Sysmex Coagulation Analyzer

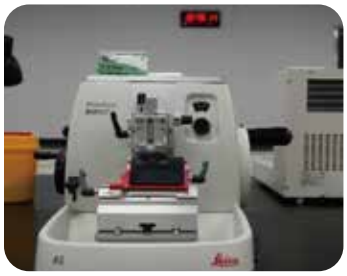
Sysmex Fully Automated Urine Analyzer

Sysmex Hematology Analyzer

Thermo Refrigerated Centrifuge

Leica Peloris 3 Automatic Tissue Processor

Epredia Embedding Machine



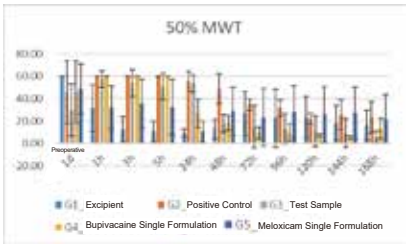
Leica Microtome

Case Studies

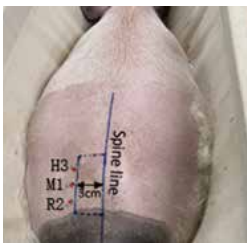
Practices and Achievements of Medicilon's Large Animal Pharmacodynamic Research and Development Service Platform

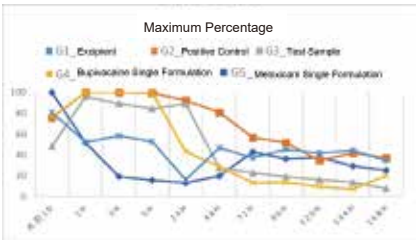
Case 1: Analgesic Test of Compound Preparation on Postoperative Acute Pain Model in Bama Miniature Pigs

Postoperative Day 1



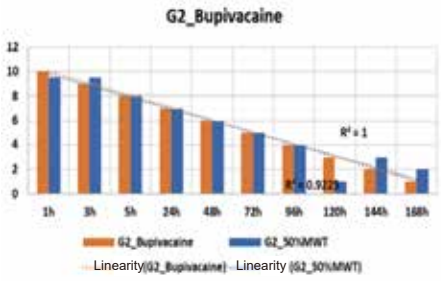
Pain Threshold Measurement Points

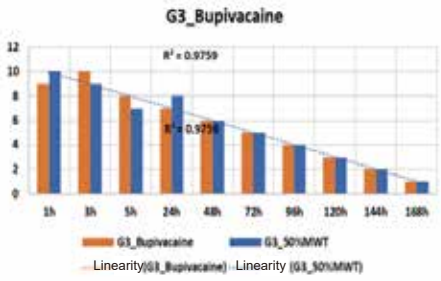


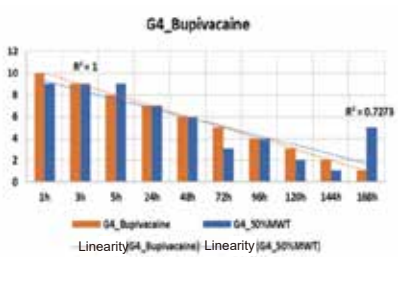


Pain Threshold Measurement Points

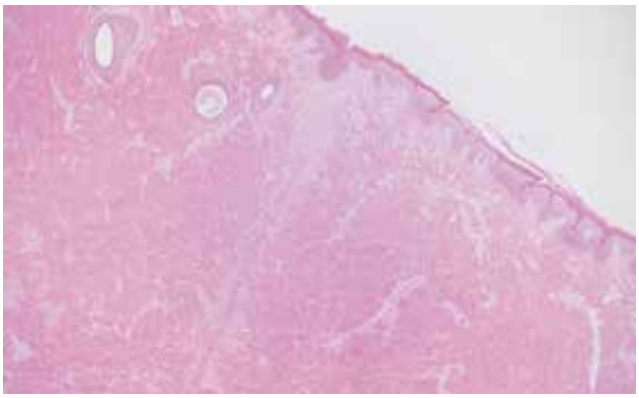
Linear Correlation Between Plasma Bupivacaine Concentration and 50% MWT at Different Time Points



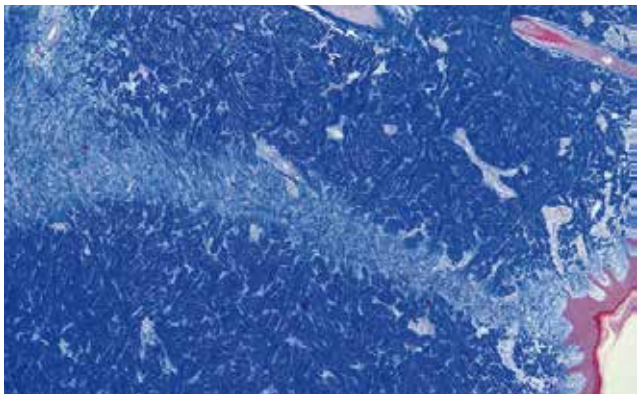




Pathological Examination:



HE Staining



Masson Staining

Case 2: The Effect of a Small Molecule Anticoagulant on the Coagulation Function of Cynomolgus Monkeys

Monkey Restraint:

Bleeding Time:

Bleeding Volume Record Form		Low-Dose Group			High-Dose Group			Positive Control Group		
Time Point	Date	G1			G2			G3		
		8437			8439			8441		
		G1（992001001488763）			G2（992001001488768）			G3（992001001488866）		
		Weight of the Centrifuge Tube (g)	Weight of the Centrifuge tube plus blood (g)	Bleeding Volume (g)	Weight of the Centrifuge Tube (g)	Weight of the Centrifuge tube plus blood (g)	Bleeding Volume (g)	Weight of the Centrifuge Tube (g)	Weight of the Centrifuge tube plus blood (g)	Bleeding Volume (g)
Before Administration 1d	2024.01.15	1.15	2.50	1.35	1.12	1.62	0.50	1.13	1.99	0.86
After Administration 1h	2024.01.23	1.90	3.45	1.55	1.90	2.96	1.06	1.88	4.87	2.99
After Administration 24h	2024.01.24	1.93	2.90	0.97	1.87	3.09	1.22	1.88	5.03	3.15
After Administration 3d	2024.01.26	1.91	3.38	1.47	1.86	4.45	2.59	1.89	2.7	0.81
After Administration 7d	2024.01.30	1.89	2.32	0.43	1.89	2.39	0.50	1.89	2.32	0.43
After Administration 14d	2024.02.06	1.86	2.62	0.76	1.87	2.22	0.35	1.87	2.18	0.31
After Administration 28d	2024.02.20	1.89	2.98	1.09	1.89	2.15	0.26	1.89	2.52	0.63

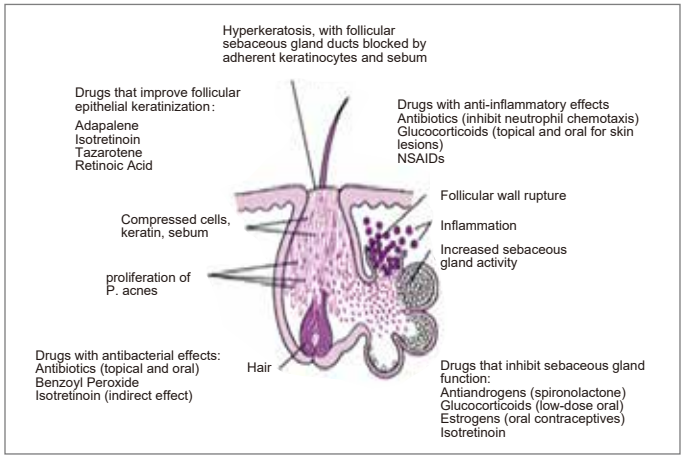
Clotting Time:

Blood Collection Record Form		Low Dose		High Dose		Positive Drug	
Time Point	Date	G1		G2		G3	
		8437		8439		8441	
		G1（992001001488763）		G2（992001001488768）		G3（992001001488866）	
		Test Number：1		Test Number：2		Test Number：3	
		PT(sec)	APTT(sec)	PT(sec)	APTT(sec)	PT(sec)	APTT(sec)
Before Administration 1d	2024.01.15	9.9	20.2	9.8	20.5	10.0	19.9
After Administration 1h	2024.01.23	9.5	21.7	9.0	21.9	9.7	21.4
After Administration 24h	2024.01.24	9.7	21.3	9.0	21.1	9.6	20.8
After Administration 3d	2024.01.26	9.7	20.3	9.0	19.8	9.2	20.9
After Administration 7d	2024.01.30	9.7	21.6	9.2	21.1	9.7	21.3
After Administration 14d	2024.02.06	9.5	21.7	8.9	21.7	9.8	21.8
After Administration 28d	2024.02.20	9.4	22.0	9.1	22.2	9.5	21.9
PT(Max:11.7sec Min:8.5sec) APTT(Max:25.9sec Min:18.4sec):This range covers data from 2016 to 2022 for captive rhesus monkeys							

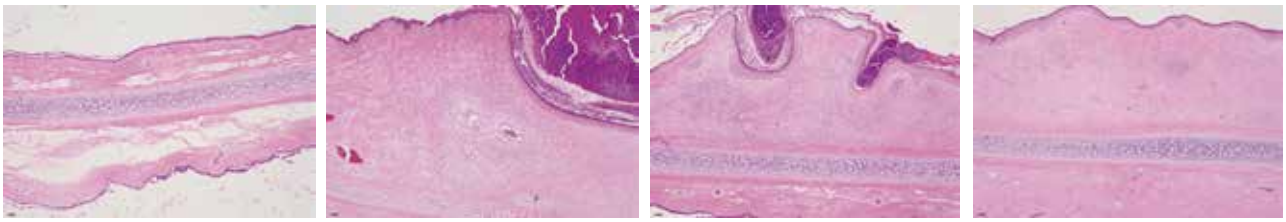
Case 3: Efficacy Study of Acne Medication in New Zealand Rabbits

Animal Models:

Mechanism of Action:



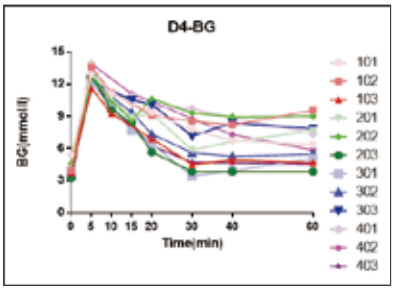
Pathological Examination:

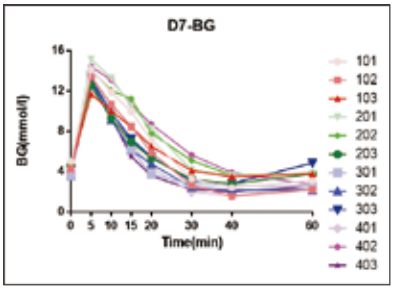


Control Group | Model Group | Positive Control Group | High Dose Group

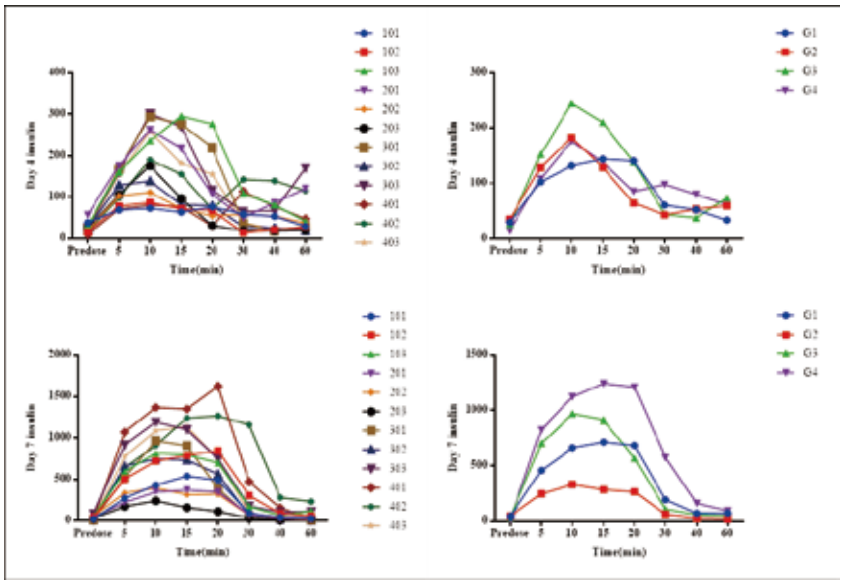
Case 4: IVGTT and Insulin Testing in Cynomolgus Monkeys

IVGTT Testing:



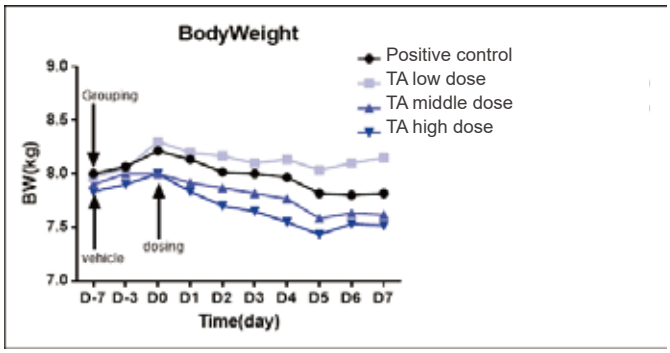


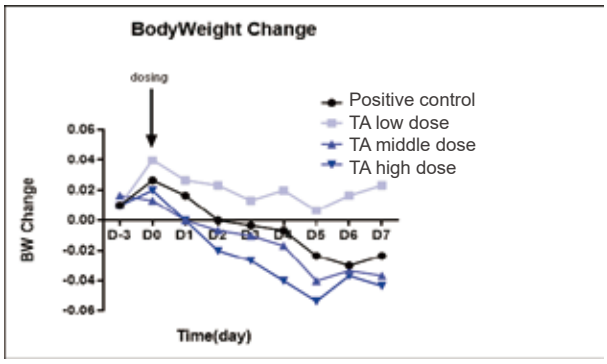
Insulin Testing:



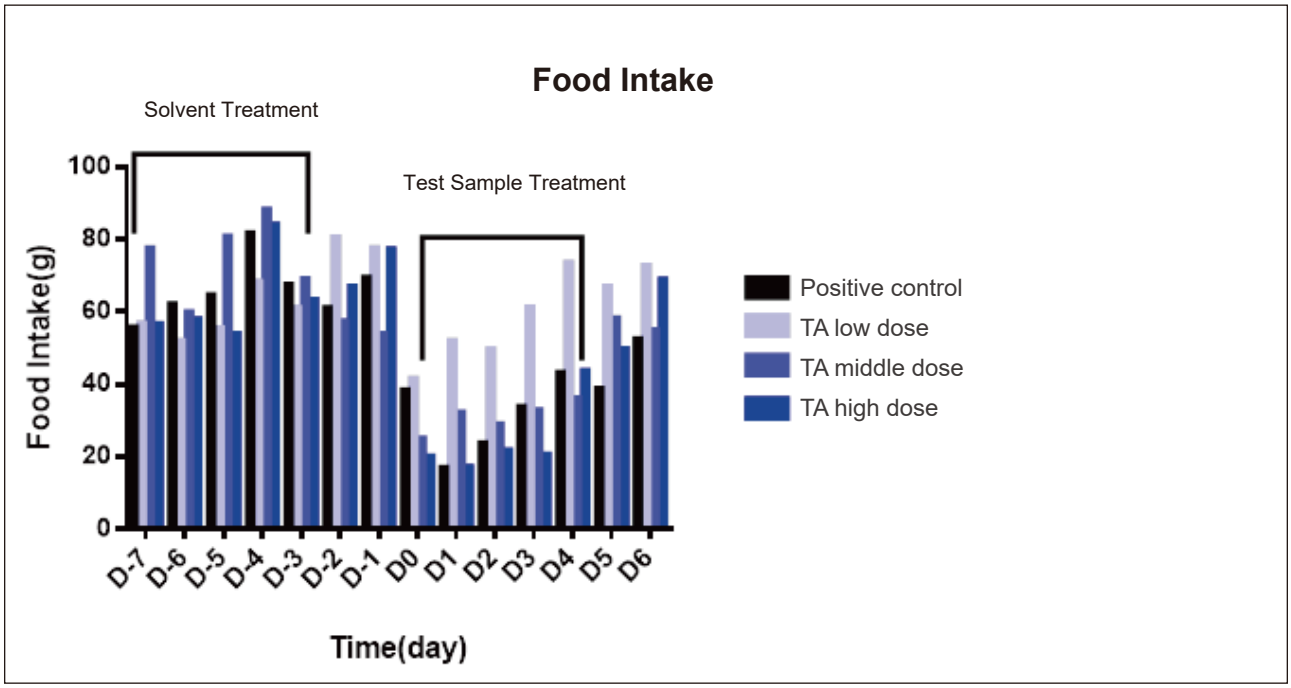
Case 5: Weight Loss Experiment in Cynomolgus Monkeys

Weight Measurement:





Food Intake:



In the ever-evolving wave of the biopharmaceutical field, Medicilon's large animal efficacy research and development service platform adheres to the principles of innovation leadership, openness, and collaborative win-win strategies. The platform continuously deepens the expansion of its functions and service boundaries. The platform will actively explore new methods and technologies for constructing disease models, continuously enriching and developing models for neurological disorders, inflammatory and immune diseases, cardiovascular and metabolic disorders, digestive system diseases, ocular diseases, and other conditions. This aims to provide clients with more precise, efficient, and comprehensive drug development solutions.

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