

## Services

Shanghai Model Organisms offers a full range of model organism services, including model customization services, research-ready models, breeding, phenotyping and drug screening. Mouse, rat, zebrafish and C. elegans models are available to meet different research needs.

Shanghai Model Organisms has established a series of genetically engineered mouse model R&D techniques ranging from gene cloning, transgene and gene knockout plasmid construction to mouse embryonic stem cell manipulation, microinjection, genetic breeding, genotyping, speed expansion, strain rederivation, embryo cryopreservation, phenotyping etc.

Following the cutting edge gene editing technologies, we have constructed over 10,000 genetically-engineered mouse models to-date, through the use of [ES cell targeting technology](#)、[CRISPR gene editing technology](#) and [transgenic technology](#). We provide renowned universities, research institutes, hospitals and pharmaceutical companies around the world with efficient [genetically-engineered animal model customization services](#)、[animal disease models](#)、[phenotyping](#)、breeding and cryopreservation services. Our animal models and supporting services are invaluable tools for the [research on gene function](#)、[human diseases](#)、[cell lineage tracing](#)、as well as [drug R&D and screening](#).

We have a vast clientele spread across Mainland China, Hong Kong, Macau, South Korea, Singapore, Europe, America and Australia etc.

### More Comprehensive Technical Services for Animal Models

- [Mouse](#)
- Zebrafish
- C. elegans

## **Core Technology Platforms**

### **Research and development platform for genetically engineered mouse models**

Provides conventional knockout models, conditional knockout models, KO first mouse models, targeted overexpression models, point mutation models, conditional point mutation models, humanized models, transgenic models etc. through the use of traditional embryonic stem cell (ESC) targeting and artificial nuclease-mediated (CRISPR/Cas) gene editing technologies.

### **Phenotyping platform for rats and mice**

The platform can carry out professional services for phenotyping of rats and mice, including blood routine analysis, blood biochemical analysis, small animal in vivo imaging, microCT, metabolic analysis, behavioral analysis, pathological analysis etc. The platform can also use surgery and drugs to prepare disease models, as well as provide tailor-made extended experiment services for researchers.

### **Breeding platform for rats and mice**

Provides technical services such as genetic breeding, speed expansion, embryo cryopreservation, strain rederivation and strain rescue.

Strictly monitors the environment inside the barrier, regularly tests the laboratory animals and their environmental microorganisms to strictly control the quality of the animals.

Places great emphasis on animal care accredited by the International Laboratory Animal Evaluation and Accreditation Council (AAALAC).

### **Preclinal services platform**

Preclinical Service Platform currently focuses on tumors, autoimmune diseases and rare diseases. It has established a comprehensive in vivo and in vitro pharmacological and pharmacological service platform, and provides customers with services that meet international standards.

## **Zebrafish research technology platform**

Equipped with AAALAC-certified zebrafish breeding facilities and professional equipment for analysis and testing.

Provides services such as gene function analysis (including gene overexpression, loss of function and phenotyping), customization of transgenic zebrafish, drug screening (traditional Chinese medicine, small molecules, natural products and new uses for conventional drugs etc.), disease models and their pharmacodynamic evaluation, drug toxicity and safety evaluation.

## **C. elegans research technology platform**

Comes with a variety of common disease models and mutant strains.

Provides analytical services for gene function, including customization of transgene and gene knockout C. elegans, generation of RNA interference vectors, research on aging and longevity mechanisms. The platform also provides high-throughput drug screening services, using animal models to process rapid and high-throughput screening of genes, drugs, small molecular compounds and plant extracts etc.

## **Molecular and cell biology technology platform**

Equipped with advanced cell culture chamber and cell detection equipment, the platform has implemented the GLP management system and is able to perform routine tumor cell and primary cell experiment services.

The platform reserves a large number of commonly used tumor cell lines, mostly derived from the ATCC and the Chinese Academy of Sciences Collection Committee cell bank. These cell lines can be used to offer technical services such as cell line gene editing, cell proliferation/apoptosis, and cell migration/invasion.