



Innovative Reagents for Innovative Research

Biological Matrix Product Catalogue

- ③ Provide reliable matrix for biological sample analysis
- ③ Provide exclusive products for early drug research and development
- ③ Provide high-quality raw materials for immunology research

IPHASE Biosciences





About Us

IPHASE Biosciences is a high-tech enterprise dedicated to biomedical and life science research. Taking advantage of our comprehensive knowledge base and through unrelenting scientific explorations, our scientific team is committed to providing scientific researchers with high-quality innovative biological reagent products and related technical services.

IPHASE was initially established to develop ADMET series products for early screening of drugs. Based on over 10 years of successful experience in independent product R&D and product support, the company has increased the R&D efforts in innovative products for pharmacokinetics, pharmacology, microbiology, immunology, genetics and clinical medicine, gradually enriching its product portfolio. Our commercially available products have acquired quality certificates by internal or international standards (such as OECD and ICH), and have obtained a series of qualification/patent certificates as well as wide recognition from the industry.

Our company's core competitiveness is the accumulated innovative technical capabilities and rich experience in the fields of chemical analysis, biological analysis, cytogenetics, genetic engineering, protein and antibody development and immune analysis. Our mission is to provide industry-leading reagents for life science and pharmaceutical innovation!





Corporate Philosophy

IPHASE Biosciences pursues the development concept of "innovative reagents for innovative research" and adheres to the corporate purpose of "honesty, rigor, pragmatism, and innovation". Being market-oriented, we strive to provide high-quality and technologically advanced products for domestic and foreign enterprises and research institutions, thus achieving the brand commitment of IPHASE.



Contents

- ▶ P01 Introduction
- ▶ P02 Biological Matrix for Biological Sample Analysis
 - Method validation set**
 - Conventional biological matrices**
 - Blank Serum
 - Blank Plasma
 - Blank Whole Blood
 - Blank Bile
 - Blank Urine
 - Blank Feces
 - Blank Liver Tissue
 - Blank Kidney Tissue
 - Blank Brain Tissue
 - Biological matrices for purification processes**
 - Artificial biological matrices**
- ▶ P09 Biological Matrices for New Drug Development
 - Biological matrices for ophthalmic pharmaceutical research**
 - Plasma specific for ADME research**
 - Plasma for plasma protein binding assay
 - Plasma for plasma stability test
 - Whole blood specific for stability test
 - Human Tissues
- ▶ P14 Biological Matrices for Immunology Research
 - Biological matrices for immune cell isolation**
 - Peripheral blood
 - Spleen
 - Bone Marrow
 - Biological matrices for cell culture**
- ▶ P18 Species Identification Test Kit
- ▶ P19 Key Customers

 Introduction

Our biological matrices are extracted from the tissues and organs of healthy subjects or healthy animals, such as serum, plasma, whole blood, and spleen. As a special class of product, biological matrices can be applied to and play different roles in various fields of research.

In new drug R&D, biological matrices not only form the basis for method development and validation and ensure the accuracy and reliability of analytical methods, but also serve as a special test system for evaluating the metabolic profile and safety of drugs. For example, plasma can be used as the test system for plasma stability test and plasma protein binding assay to evaluate drug stability and distribution. Human tissues can serve as a detector in tissue cross-reactivity test of macromolecular drugs, providing support for the safety of the drug.

In immunology research, biological matrices are the sources of cells and serve as high-quality raw materials for life science research. The immune system is comprised of immune organs, immune cells, and immune molecules. The peripheral blood, spleen, and bone marrow are key components of the immune system that provide high-quality cells for immunological research.

By leveraging years of experience in bioanalysis, drug research, and immunology research as well as the company's in-house experimental animal center, IPHASE has developed various types of biological matrices for multiple species and multiple application purposes. The company offers high-quality blank biological matrices for bioanalysis, specific products for early drug R&D, and high-quality raw materials for immunology research. In addition, the origin of all matrices has been confirmed by PCR, eliminating concerns in scientific research.



+ Biological Matrix for Biological Sample Analysis

The measurement of the concentrations of chemical drugs, biological drugs and their metabolites in biological matrices is an important process in drug development. Blank biological matrices are required for analytical method development and validation to ensure the accuracy and specificity of the analytical method. Blank matrices are primarily used for the preparation of calibration and quality control samples to evaluate the specificity, selectivity, precision, accuracy, matrix effect, recovery rate, stability, dilution linearity, and interference effect of analytical methods. Therefore, high-quality blank matrices are critical for ensuring the accuracy of test results.



IPHASE has developed a series of products including the bioanalytical method validation set, conventional blank biological matrices, and replacement matrices to assist scientists with their research.

▶ Product advantages

- ◇ High-quality. All products have been subjected to stringent quality control based on their properties and special application, and meet the requirements for bioanalysis.
- ◇ Multiple species. IPHASE provides biological matrices from multiple animal species, including human, monkey, dog, rat, and mouse. The origin of all products has been confirmed by PCR, which eliminates customer concerns.
- ◇ Multiple types. IPHASE offers various types of conventional biological matrices and sets, biological matrices for purification processes, and artificial biological matrices such as serum, plasma, whole blood, urine, and bile, to meet the different needs of bioanalysis.
- ◇ Safety. Animals from which the biological matrices are collected have been tested for infectious agents, making the products safe for use.
- ◇ Traceability. All products have a clear source, which meets the traceability requirements of various regulations and eliminates customer concerns.
- ◇ Customization. In addition to conventional matrices, biological matrices after purification, and artificial matrices, the company can provide customized matrices based on the customers' needs.

+ Method validation set

The mainstream guiding principles for bioanalytical method validation, such as the *Chinese Pharmacopoeia*, EMA, FDA, and ICH M10, have described the selection and usage of blank matrix. The requirements for blank matrix are particularly higher for the selectivity and matrix effect of a detection method. Selectivity is defined as the ability of an analytical method to distinguish and detect the analyte in the presence of potential interfering substances in the blank biological matrix. Selectivity should be demonstrated using blank matrix from at least 6 individual sources/batches. Matrix effect refers to changes in analyte response caused by interfering substances and unidentified components in the biological matrix. During method validation, the matrix effect of different sources/batches should be assessed using at least 3 replicates of low-concentration and high-concentration quality control samples with matrix preparations from at least 6 sources/batches for each replicate.



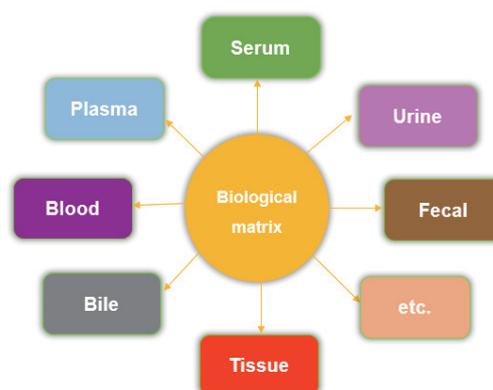
Based on the requirements of mainstream guiding principles for bioanalytical methods, IPHASE has developed a blank biological matrix method validation set for bioanalytical method validation.

Description	Species	Unit Size
IPHASE Blank Serum Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Blank Plasma Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Blank Whole Blood Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Blank liver Tissue Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Blank Urine Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Blank Fecal Kit	Human, Monkey, Dog, Rat, Mouse	6 Donors/Batch, 10 Donors/Batch
IPHASE Vitreous Humor Kit	Monkey, Rabbit	6 Donors/Batch, 10 Donors/Batch
IPHASE Aqueous Fluid Kit	Monkey, Rabbit	6 Donors/Batch, 10 Donors/Batch
IPHASE Marrow Kit	Monkey, Rabbit	6 Donors/Batch, 10 Donors/Batch

+ Conventional biological matrices

Conventional biological matrices include blank whole blood, serum, plasma, bile, milk, urine, stool, intestinal contents, tissues, organs, vitreous humor, aqueous humor, and cerebrospinal fluid from healthy subjects or healthy laboratory animals. The measurement of drug concentration in biological matrices is an important process in innovative drug R&D, and the resulting data is used to support the application of new active substances and the application for changes in generics and authorized drugs. Notably, the supply of high-quality blank biological matrices is critical for ensuring successful implementation of tests and acquisition of reliable data.

By leveraging the company's well-equipped laboratory animal center and complete supplier system, IPHASE now offers various types of conventional biological matrices including serum, plasma, whole blood, bile, and urine from different animal species to support the needs of bioanalysis.



◇ Blank Serum

Description	Strain	Unit Size
IPHASE Human Serum	Homo Sapiens	50 mL, 100 mL
IPHASE Monkey Serum	Cynomolgus, Rhesus	5 mL, 50 mL, 100 mL
IPHASE Dog Serum	Beagle	5 mL, 50 mL, 100 mL
IPHASE Rat Serum	Sprague-Dawley, Wistar, Wistar-Han	2 mL, 50 mL, 100 mL
IPHASE Mouse Serum	ICR/CD-1, C57BL/6, KM, BALB/c, CH3	0.3 mL, 50 mL, 100 mL
IPHASE Rabbit Serum	New Zealand White, Japanese White	5 mL, 50 mL, 100 mL
IPHASE Feline Serum	/	50 mL, 100 mL
IPHASE Minipig Serum	Bama	50 mL, 100 mL
IPHASE Horse Serum	/	50 mL, 100 mL

◇ Blank Plasma

Description	Strain	Anticoagulant	Unit Size
IPHASE Human Plasma	Homo Sapiens	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Monkey Plasma	Cynomolgus, Rhesus	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Dog Plasma	Beagle	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Rat Plasma	Sprague-Dawley, Wistar, Wistar-Han	EDTA-K2, Heparin Sodium	2 mL, 50 mL, 100 mL
IPHASE Mouse Plasma	ICR/CD-1, C57BL/6, KM, BALB/c	EDTA-K2, Heparin Sodium	0.3 mL, 50 mL, 100 mL
IPHASE Rabbit Plasma	New Zealand White, Japanese White	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Minipig Plasma	Bama	EDTA-K2, Heparin Sodium	50 mL, 100 mL
IPHASE Bovine Plasma	/	EDTA-K2, Heparin Sodium	50 mL, 100 mL

◇ Blank Whole Blood

Description	Strain	Anticoagulant	Unit Size
IPHASE Human Whole Blood	Homo Sapiens	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Monkey Whole Blood	Cynomolgus, Rhesus	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Dog Whole Blood	Beagle	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Rat Whole Blood	Sprague-Dawley, Wistar, Wistar-Han	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Mouse Whole Blood	ICR/CD-1, C57BL/6, KM, BALB/c, NPG	EDTA-K2, Heparin Sodium	0.6 mL, 50 mL, 100 mL
IPHASE Rabbit Whole Blood	New Zealand White, Japanese White	EDTA-K2, Heparin Sodium	5 mL, 50 mL, 100 mL
IPHASE Chicken Whole Blood	/	EDTA-K2, Heparin Sodium	50 mL, 100 mL
IPHASE Minipig Whole Blood	Bama	EDTA-K2, Heparin Sodium	50 mL, 100 mL
IPHASE Bovine Whole Blood	/	EDTA-K2, Heparin Sodium	50 mL, 100 mL

◇ Blank Bile

Description	Strain	Unit Size
IPHASE Monkey Bile	Cynomolgus, Rhesus	5 mL, 50 mL, 100 mL
IPHASE Dog Bile	Beagle	5 mL, 50 mL, 100 mL
IPHASE Rat Bile	Sprague-Dawley, Wistar, Wistar-Han	1 mL, 50 mL, 100 mL
IPHASE Mouse Bile	ICR/CD-1, C57BL/6, KM, BALB/c	1 mL, 5 mL, 10 mL

◇ Blank Urine

Description	Strain	Unit Size
IPHASE Human Urine	Homo Sapiens	5 mL, 50 mL, 100 mL
IPHASE Monkey Urine	Cynomolgus, Rhesus	5 mL, 50 mL, 100 mL
IPHASE Dog Urine	Beagle	5 mL, 50 mL, 100 mL
IPHASE Rat Urine	Sprague-Dawley, Wistar, Wistar-Han	2 mL, 50 mL, 100 mL
IPHASE Mouse Urine	ICR/CD-1, C57BL/6, KM, BALB/c	1 mL, 50 mL, 100 mL
IPHASE Rabbit Urine	New Zealand White, Japanese White	5 mL, 50 mL, 100 mL

◇ Blank Feces

Description	Strain	Unit Size
IPHASE Human Feces	Homo Sapiens	10g
IPHASE Monkey Feces	Cynomolgus, Rhesus	10g
IPHASE Dog Feces	Beagle	10g
IPHASE Rat Feces	Sprague-Dawley, Wistar, Wistar-Han	10g
IPHASE Mouse Feces	ICR/CD-1, C57BL/6, KM, BALB/c	10g
IPHASE Rabbit Feces	New Zealand White, Japanese White	10g



◇ Blank Liver Tissue

Description	Strain	Unit Size
IPHASE Monkey Liver Tissue	Cynomolgus, Rhesus	5g
IPHASE Dog Liver Tissue	Beagle	5g
IPHASE Rat Liver Tissue	Sprague-Dawley, Wistar, Wistar-Han	2g
IPHASE Mouse Liver Tissue	ICR/CD-1, C57BL/6, KM, BALB/c	0.5g
IPHASE Rabbit Liver Tissue	New Zealand White, Japanese White	5g
IPHASE Minipig Liver Tissue	Bama	5g

◇ Blank Kidney Tissue

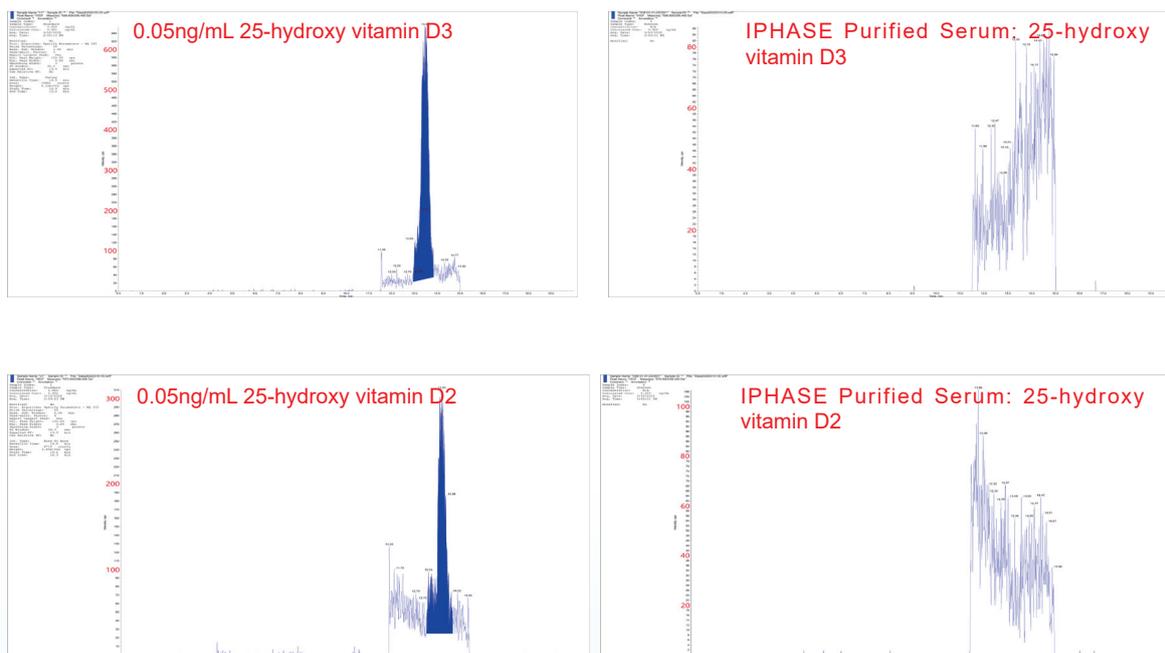
Description	Strain	Unit Size
IPHASE Monkey Kidney Tissue	Cynomolgus, Rhesus	5g
IPHASE Dog Kidney Tissue	Beagle	5g
IPHASE Rat Kidney Tissue	Sprague-Dawley, Wistar, Wistar-Han	2g
IPHASE Mouse Kidney Tissue	ICR/CD-1, C57BL/6, KM, BALB/c	0.5g
IPHASE Rabbit Kidney Tissue	New Zealand White, Japanese White	5g
IPHASE Minipig Kidney Tissue	Bama	5g

◇ Blank Brain Tissue

Description	Strain	Unit Size
IPHASE Monkey Brain Tissue	Cynomolgus, Rhesus	5g
IPHASE Dog Brain Tissue	Beagle	5g
IPHASE Rat Brain Tissue	Sprague-Dawley, Wistar, Wistar-Han	2g
IPHASE Mouse Brain Tissue	ICR/CD-1, C57BL/6, KM, BALB/c	0.5g
IPHASE Rabbit Brain Tissue	New Zealand White, Japanese White	5g
IPHASE Minipig Brain Tissue	Bama	5g

+ Biological matrices for purification processes

For analytes that are also endogenous substances, if the analytical method is unable to distinguish the drug component from the corresponding endogenous component, then the accuracy of analyte detection will be affected. The contents of endogenous substances may be influenced by age, gender, circadian rhythm, disease or drug side effects. As far as possible, calibration standard samples and quality control samples should be prepared with real blank matrices with low enough content *in vivo*, such as our biological matrices after purification.



IPHASE Purified Serum Vitamin Test Results

According to the special requirements for the detection of endogenous substances, IPHASE has purified real biological matrices by using proprietary techniques and developed purified biological matrices with no/low levels of endogenous substances. These products not only meet the needs of bioanalysis but also serve as a new option for the preparation of matrix reference materials and matrix WC samples.

Description	Species	Unit Size
IPHASE Purified Serum	Human, Monkey, Dog, Rat, Mouse	50 mL, 100 mL
IPHASE Purified Plasma	Human, Monkey, Dog, Rat, Mouse	50 mL, 100 mL
IPHASE Purified Whole Blood	Human, Monkey, Dog, Rat, Mouse	50 mL, 100 mL
IPHASE Purified Urine	Human, Monkey, Dog, Rat, Mouse	50 mL, 100 mL

+ Artificial biological matrices

The failure to obtain a real biological matrix with no/low interfering substances is often inevitable during the detection of endogenous substances. In this case, artificial biological matrices may be used as alternatives. Artificial biological matrices are matrices that have been prepared artificially. Not only the ingredients and constituent ratios of real biological matrices are recapitulated to the maximum extent, but also the interference of endogenous substances in real matrices is eliminated. Artificial biological matrices are widely used in method validation to ensure the accuracy of analytical methods. In addition, they also play an important role in stability tests and provide assurance for data authenticity.

By taking advantage of the company's state-of-the-art equipment, professional technicians, and years of R&D experience, IPHASE has developed a series of artificial biological matrix products to support bioanalysis and research in other fields.



Description	Unit Size
IPHASE Artificial Simulation Plasma, BSA Free	100 mL
IPHASE Artificial Simulation Plasma	100 mL
IPHASE Artificial Simulation Urine	100 mL, 500 mL
IPHASE Artificial Simulation Saliva	100 mL, 500 mL
IPHASE Artificial Sweat, Alkaline	100 mL, 500 mL
IPHASE Artificial Gastric Juice	100 mL, 500 mL
IPHASE Artificial Simulation Intestinal Juice	100 mL, 500 mL
IPHASE Artificial Simulation Intestinal Juice, Ammonia	100 mL, 500 mL
IPHASE Artificial Pig Simulation Intestinal Juice	100 mL, 500 mL
IPHASE Artificial Whole Blood	100 mL, 500 mL
IPHASE Artificial Cerebrospinal Fluid	100 mL

+ Biological Matrices for New Drug Development

The new drug R&D process encompasses the discovery of hit compounds, structural optimization of lead compounds, and clinical evaluation of candidate drugs. During the entire R&D process, biological matrices are often required for evaluating the pharmacokinetics profile of drugs, such as tissue distribution, plasma/whole blood metabolic stability, and plasma protein binding rate.

By leveraging the company's years of experience in drug R&D and in-house laboratory animal center, IPHASE now offers various reliable biological matrices, including biological matrices for ophthalmic pharmaceutical research, plasma specific for ADME study, and whole blood specific for stability study, to support new drug R&D.

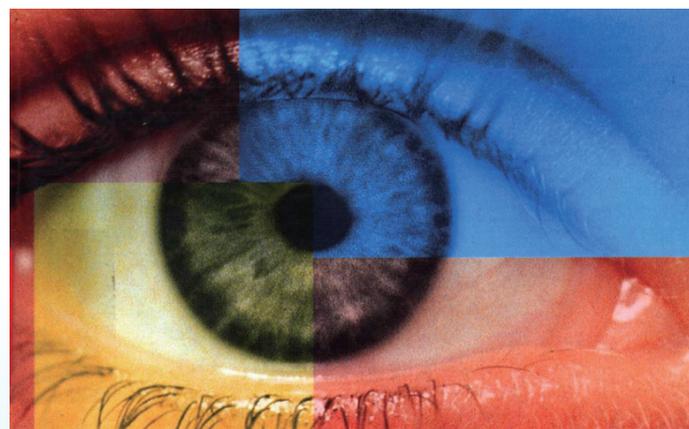


Product advantages

- ◇ High-quality. The quality of the biological matrix is evaluated with a positive reference drug and the inter-batch variation is kept within 15%, which is more suited to the needs of new drug R&D.
- ◇ Multiple species. IPHASE provides specific biological matrices from human, monkey, dog, rat, and mouse. The origin of all products has been confirmed by PCR, which eliminates customer concerns.
- ◇ Multiple types. IPHASE provides fresh or frozen biological matrices for special purposes, meeting the needs of new drug R&D.
- ◇ Safety. Humans and animals from which the biological matrices are collected have been tested for infectious agents, making the products safe for use.
- ◇ Traceability. All products have a clear source, which meets the traceability requirements of various regulations and eliminates customer concerns.
- ◇ Customization. In addition to conventional matrices, the company can provide customized matrices based on the customers' needs.

+ Biological matrices for ophthalmic pharmaceutical research

Human pharmacokinetics (PK) study is generally required during new drug development. However, for ophthalmic drugs, continuous sampling from human eye tissues for bioanalysis is both unethical and unfeasible. Hence, human PK study is often extrapolated from or replaced by animal ocular tissue distribution study. Rabbits and monkeys have similar eye anatomy as humans and are the most commonly used animals for ocular PK study. Rabbits are often used for the PK study of small molecule drugs due to their accessibility and low cost. On the other hand, monkeys are commonly used for the PK study of large molecule drugs due to the effects of immunogenicity and severe inflammation.



Source of image: "Clinical application and study of ophthalmic drugs"

Based on the special needs of ophthalmic drug R&D, IPHASE has developed specific blank matrix for the R&D of ophthalmic drugs.

Description	Strain	Unit Size
IPHASE Rabbit Vitreous Humor	New Zealand White, Japanese White	1 mL
IPHASE Monkey Vitreous Humor	Cynomolgus, Rhesus	1 mL
IPHASE Rabbit Aqueous Fluid	New Zealand White, Japanese White	1 mL
IPHASE Monkey Aqueous Fluid	Cynomolgus, Rhesus	1 mL
IPHASE Rabbit Cornea Homogenate	New Zealand White, Japanese White	10 mL
IPHASE Monkey Cornea Homogenate	Cynomolgus, Rhesus	10 mL
IPHASE Rabbit Retina Homogenate	New Zealand White, Japanese White	10 mL
IPHASE Monkey Retina Homogenate	Cynomolgus, Rhesus	10 mL

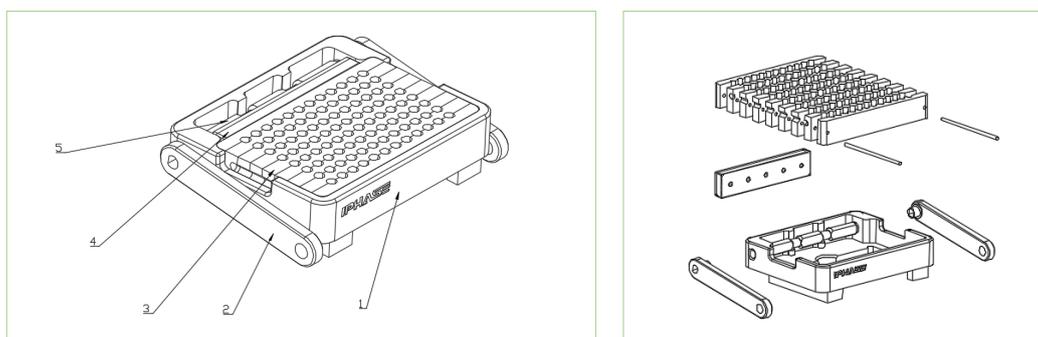
+ Plasma specific for ADME research

Plasma is an important component of blood and is primarily comprised of water, plasma proteins, glucose, hormones, mineral ions and various hydrolases. During new drug R&D, plasma can be used as a test system to evaluate the plasma stability and plasma protein binding of a study compound, providing data support for druggability research.

Based on the requirements for ADME assays, IPHASE has developed special plasma products that meet the specifications for plasma protein binding assay and plasma stability test.

◇ Plasma for plasma protein binding assay

Plasma protein binding (PPB) rate is the amount of a drug bound to proteins in the blood as a percent of total amount of drug, which reflects the extent of binding between the drug and plasma proteins. The binding of drugs to the plasma proteins has an important impact on the distribution and transport of drugs in the body, and is an important link in the process of new drug development. It is difficult for drugs to pass through the blood vessel wall when bound to plasma proteins. Therefore, protein-bound drugs usually have no pharmacological activity. In contrast, free unbound drugs easily permeate through the cell membrane, are closely associated with drug metabolism, excretion and efficacy, and have important clinical significance.

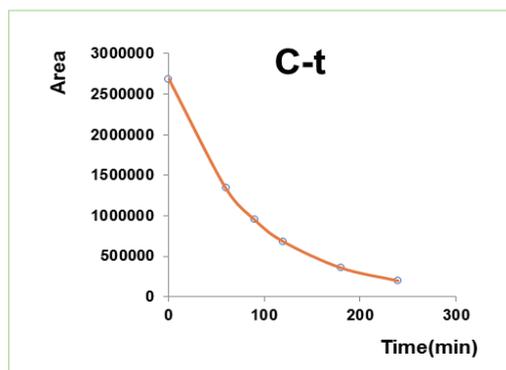


IPHASE has developed plasma products from various animal species that are specific for the plasma protein binding assay to ensure smooth progress of drug R&D.

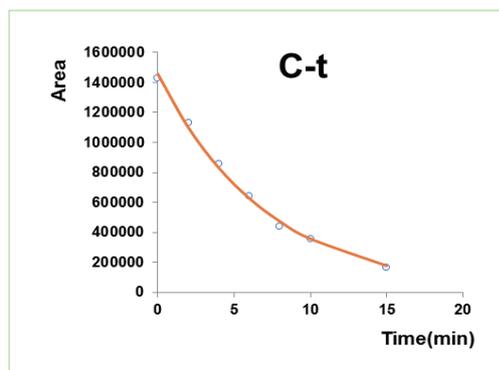
Description	Anticoagulant	Unit Size
IPHASE Human Plasma, PPB	EDTA-K2, Heparin sodium	5 mL
IPHASE Monkey (Cynomolgus) Plasma, PPB	EDTA-K2, Heparin sodium	5 mL
IPHASE Dog(Beagle) Plasma, PPB	EDTA-K2, Heparin sodium	5 mL
IPHASE Rat (Sprague-Dawley) Plasma, PPB	EDTA-K2, Heparin sodium	5 mL
IPHASE Mouse(ICR/CD-1) Plasma, PPB	EDTA-K2, Heparin sodium	5 mL

◇ Plasma for plasma stability test

Although the hepatic metabolic stability of compounds is generally considered to be one of the most important challenges in drug discovery, the plasma stability of compounds is still an important factor in the development of new drugs. Plasma stability of compounds is sometimes inconsistent with hepatic metabolic stability, which is often an overlooked issue. The metabolic enzymes in the liver are different from those in the blood. In *in vitro* stability assessment, the compound is stable in the liver metabolic enzymes does not mean that it is also stable in the plasma. Therefore, it is of great significance to study the plasma stability of lead compounds in the development of new drugs.



Monkey plasma stability test results for XXX



Rat plasma stability test results for XXX

IPHASE provides plasma products that meet the requirements for plasma stability testing.

Description	Anticoagulant	Unit Size
IPHASE Human Plasma, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Monkey(Cynomolgus) Plasma, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Dog(Beagle) Plasma, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Rat(Sprague-Dawley) Plasma, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Mouse(ICR/CD-1) Plasma, Stability	EDTA-K2, Heparin sodium	5 mL

+ Whole blood specific for stability test

Clearance is a measure of the body's or organ's ability to eliminate a drug from the circulation. Whole blood clearance can be defined as the volume of blood removed per unit time from the overall blood pool in the body (systemic whole blood clearance) or from the blood pool passing through the eliminating organs (organ whole blood clearance). The whole blood clearance of a compound directly reflects the stability of the compound in whole blood, which is of significant importance in new drug R&D.

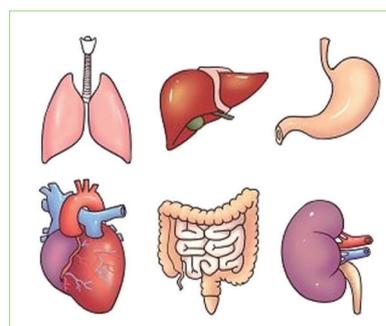
IPHASE offers whole blood products that meet the requirements for whole blood stability testing.

Description	Anticoagulant	Unit Size
IPHASE Human Whole Blood, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Monkey(Cynomolgus) Whole Blood, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Dog(Beagle) Whole Blood, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Rat(Sprague-Dawley) Whole Blood, Stability	EDTA-K2, Heparin sodium	5 mL
IPHASE Mouse(ICR/CD-1) Whole Blood, Stability	EDTA-K2, Heparin sodium	5 mL

+ Human tissues

According to the US FDA guidelines, the tissue cross-reactivity of large molecule drugs must be tested in 35 types of normal human tissues to assess the presence of potential drug binding sites in human tissues and to provide support for drug safety.

In response to the needs of large molecule drug R&D and challenges in domestic supply, IPHASE currently offers cryosections of organs of the circulatory, digestive, and immune systems, filling the vacancy of such products in the market.



System	Visceral Organ	Form
Circulatory system	Heart	Frozen Section
	Blood vessel	Frozen Section
Nervous system	Spinal marrow	Frozen Section
	Peripheral nerve	Frozen Section
	Cerebellum	Frozen Section
	Cerebral cortex	Frozen Section
Immune system	Spleen	Frozen Section
	Thymus	Frozen Section
	Bone marrow	Frozen Section
	Tonsil	Frozen Section
	Lymph gland	Frozen Section
Endocrine system	Adrenal gland	Frozen Section
	Thyroid gland	Frozen Section
	The pituitary	Frozen Section
Digestive system	Parotid gland	Frozen Section
	Pancreas	Frozen Section
	Stomach	Frozen Section
	Small intestine	Frozen Section
	Esophagus	Frozen Section
	Colon	Frozen Section
	Liver	Frozen Section
Urinary system	Bladder	Frozen Section
	Ureter	Frozen Section
	Kidney	Frozen Section
Respiratory system	Lungs	Frozen Section
	Trachea	Frozen Section
Reproductive system	Testis	Frozen Section
	Prostate	Frozen Section
Other organs	Eyeball	Frozen Section
	Blood corpuscle	Frozen Section
	Striated muscle	Frozen Section
	Skin	Frozen Section

+ Biological Matrices for Immunology Research

Immunology is a biomedical science that studies the immune response of organisms to antigenic substances and its mechanisms. An immune response is the response that the body makes upon antigen stimulation. It represents a biological process for identifying and eliminating antigenic substances. The immune system is responsible for carrying out immune responses and immune functions in the body. The immune system, comprised of immune organs (thymus, bone marrow, spleen, lymph nodes, and mucosa-associated lymphoid tissues), immune cells (phagocytes, natural killer cells, T cells and B cells), and immune molecules (cell surface molecules, antigens, cytokines and complement), plays important roles in immune defense, immune homeostasis, and immune surveillance.

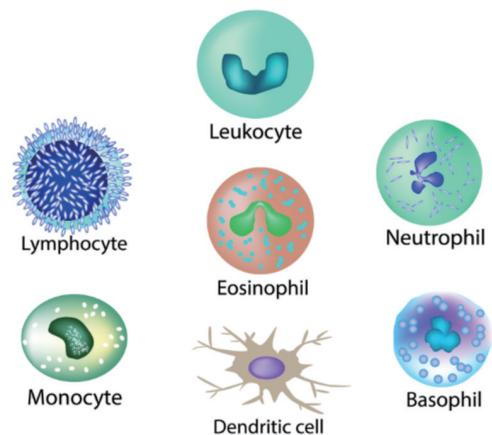
In response to the needs of immunology research, IPHASE provides biological matrices for immune cell isolation and cell culture.



+ Biological matrices for immune cell isolation

Immune cells are composed of many different cell types, such as monocytes, macrophages, dendritic cells, and NK cells, and they each play an important role in immune defense. Lymphocytes are key players in the immune system because they dictate immune specificity. Cells that interact with lymphocytes are important for mediating antigen presentation and immune responses. Cell isolation is the first key step in immunology research. Since immune cells are generally found in the peripheral blood, spleen, bone marrow, and thymus, a supply of high-quality immune tissues and organs are critical for the study of the immune system.

IPHASE offers improved and optimized fresh biological matrices such as peripheral blood, spleen, and bone marrow as high-quality raw materials for immune cell isolation.



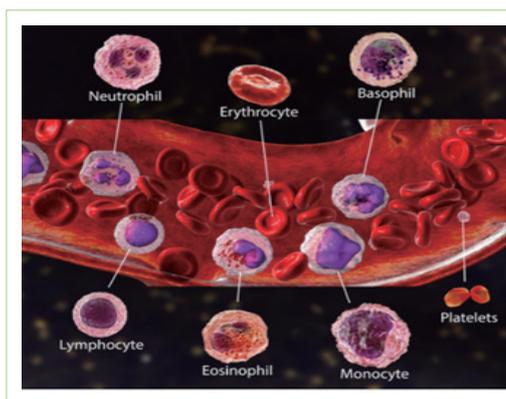
Product advantages

- ◇ High-quality. Tissues and organs are harvested and shipped on-demand, which ensures sample freshness and meets the special requirements for cell isolation.
- ◇ Multiple species. IPHASE provides tissues and organs from human, monkey, dog, rat, and mouse.
- ◇ Safety. Animals from which the biological matrices are collected have been tested for infectious agents, making the products safe for use.
- ◇ Customization. In addition to conventional matrices, the company can provide customized matrices based on the customers' needs.
- ◇ Cold-chain transport. All products are shipped by cold-chain transport with temperature monitoring, ensuring the quality of tissues and organs.

◇ **Peripheral blood**

Peripheral blood, also known as whole blood, is a mixture formed by collecting blood into a blood collection bag. It is mainly composed of blood cells and plasma. Whole blood cells include red blood cells, white blood cells, and platelets. Red blood cells are responsible for transporting oxygen, white blood cells mediate immune functions, and platelets are important for hemostasis. White blood cells make up the body's defense system and are primarily composed of T cells, B cells, NK cells, dendritic cells (DCs), macrophages, and granulocytes.

IPHASE offers whole blood products that are specific for immunology research and meet the customers' needs for cell isolation.

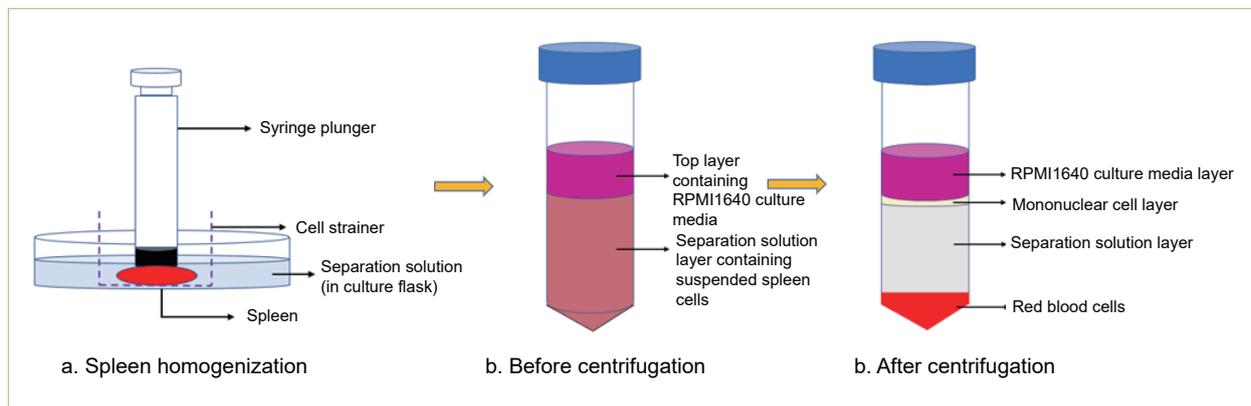


Description	Strain	Anticoagulant	Form
IPHASE Human Whole Blood	Homo Sapiens	EDTA-K2, Heparin Sodium	Fresh
IPHASE Monkey Whole Blood	Cynomolgus, Rhesus	EDTA-K2, Heparin Sodium	Fresh
IPHASE Dog Whole Blood	Beagle	EDTA-K2, Heparin Sodium	Fresh
IPHASE Rat Whole Blood	Sprague-Dawley, Wistar, Wistar-Han	EDTA-K2, Heparin Sodium	Fresh
IPHASE Mouse Whole Blood	ICR/CD-1, C57BL/6, KM, BALB/c, NPG	EDTA-K2, Heparin Sodium	Fresh
IPHASE Rabbit Whole Blood	New Zealand White, Japanese White	EDTA-K2, Heparin Sodium	Fresh
IPHASE Minipig Whole Blood	Bama	EDTA-K2, Heparin Sodium	Fresh

◇ **Spleen**

The spleen is a large and elongated organ located in the left posterior region of the upper abdomen. It is the largest lymphatic organ in the body and a blood-filtering organ. The spleen is home to a large number of lymphocytes and other immune cells and the site for eliciting specific immune responses. Antigens that enter the spleen can immediately activate T cells and B cells, leading to the generation of sensitized T cells and plasma cells.

IPHASE currently provides spleen products that are specific for immunology research and meet the customers' needs for cell isolation.

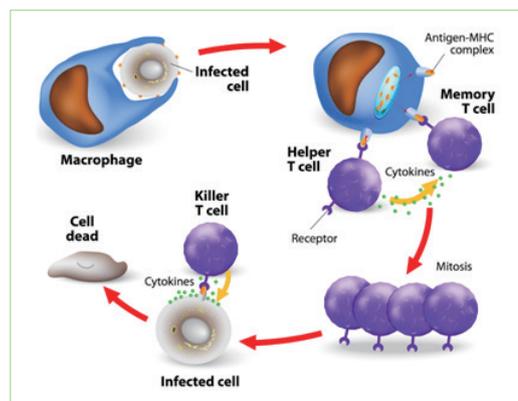


Description	Strain	Form
IPHASE Monkey Spleen Tissue	Cynomolgus, Rhesus	Fresh
IPHASE Dog Spleen Tissue	Beagle	Fresh
IPHASE Rat Spleen Tissue	Sprague-Dawley, Wistar, Wistar-Han	Fresh
IPHASE Mouse Spleen Tissue	ICR/CD-1, C57BL/6, KM, BALB/c	Fresh
IPHASE Rabbit Spleen Tissue	New Zealand White, Japanese White	Fresh
IPHASE Minipig Spleen Tissue	Bama	Fresh

◇ Bone marrow

The bone marrow is an important hematopoietic organ of the body and the source of various cells. The bone marrow is the source of all blood cells in animals or humans after birth and is the site of immune cell development and differentiation. Multipotent hematopoietic stem cells (HSCs) in the bone marrow first differentiate into myeloid progenitors and lymphoid progenitors. Myeloid progenitors further differentiate into the red blood cell lineage, monocyte lineage, granulocyte lineage and megakaryocyte lineage. Lymphoid progenitors develop into precursor cells of various lymphocytes (T cells, B cells, NK cells).

IPHASE offers bone marrow products that are specific for immunology research and meet the customers' needs for cell isolation.



Description	Strain	Form
IPHASE Monkey Spinal Marrow	Cynomolgus, Rhesus	Fresh
IPHASE Dog Spinal Marrow	Beagle	Fresh
IPHASE Rat Spinal Marrow	Sprague-Dawley, Wistar, Wistar-Han	Fresh
IPHASE Mouse Spinal Marrow	CR/CD-1, C57BL/6, KM, BALB/c	Fresh
IPHASE Rabbit Spinal Marrow	New Zealand White, Japanese White	Fresh
IPHASE Minipig Spinal Marrow	Bama	Fresh

+ Biological matrices for cell culture

Cell culture is a method of harvesting tissues or cells from an organism and culturing them *in vitro* under sterile conditions with appropriate temperature and nutrients to simulate the physiological environment *in vivo*. This process allows tissues/cells to survive, grow, and maintain their structure and function. Biological matrices (e.g., serum) are important nutrients that play an irreplaceable role in cell culture.

Based on the needs of various cell culture methods, IPHASE has developed a series of high-quality cell culture-grade biological matrices for cell biology and immunology research.



▶ Product advantages

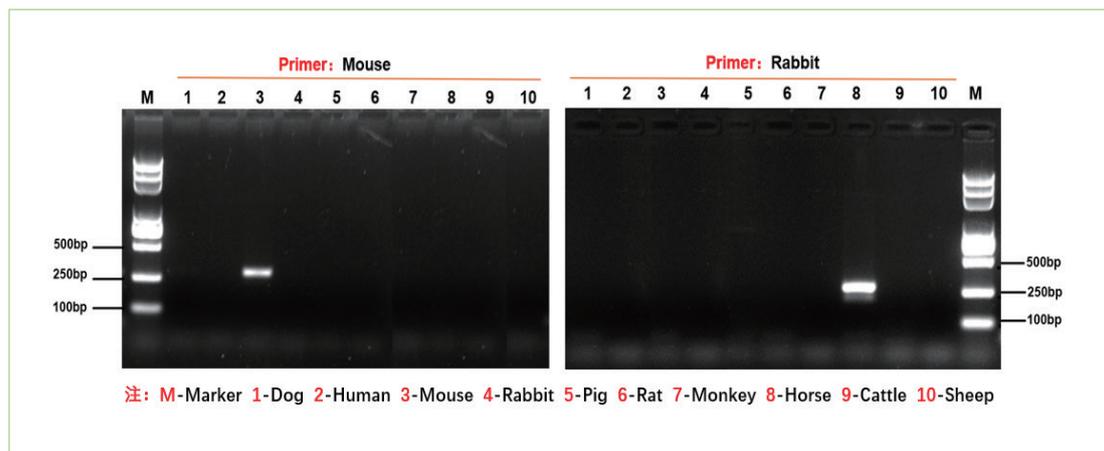
- ◇ Sterility. All products have been obtained using aseptic methods and therefore meet the requirements for cell culture.
- ◇ Pyrogen-free. Low endotoxin level that prevents cell stimulation.
- ◇ Safety. Animals from which the biological matrices are collected have been tested for infectious agents, making the products safe for use.

Description	Level	Unit Size
IPHASE Fetal Bovine Serum	cell culture	50mL, 100mL, 500mL
IPHASE Newborn Bovine Serum	cell culture	50mL, 100mL, 500mL
IPHASE Calf Serum	cell culture	50mL, 100mL, 500mL
IPHASE Horse Serum	cell culture	50mL, 100mL, 500mL

+ Species Identification Test Kit

Blank biological matrices from different animals are often used during bioanalysis to ensure the accuracy of test results. However, how can one guarantee that the matrix purchased originates from the required species? To address this question, IPHASE has launched the species identification test kit as a reliable assurance for bioanalysis.

The IPHASE species identification test kit is a PCR-based kit that uses animal-specific primers to accurately identify the source species. This identification test kit is applicable to blood preparations (e.g., serum, plasma, whole blood) and organs (e.g., spleen, liver, kidney) from up to 10 animal species, including human, monkey, dog, rat, mouse, pig, rabbit, bovine, horse, and sheep, thereby eliminating concerns for counterfeit biological matrices.



Description	Capacity	Unit Size
Species Identification Kit	10 Species	5 Test

+ Key Customers





Innovative Reagents for Innovative Research

IPHASE

Add: 418 Industrial Drive, North Wales, PA 19454
Email: info@iphasebio.com
Web: www.iphasebio.com
Tel: 1 267-613-8425