

Innovative Reagents for Innovative Research

In Vitro Genotoxicity Study
Product Brochure



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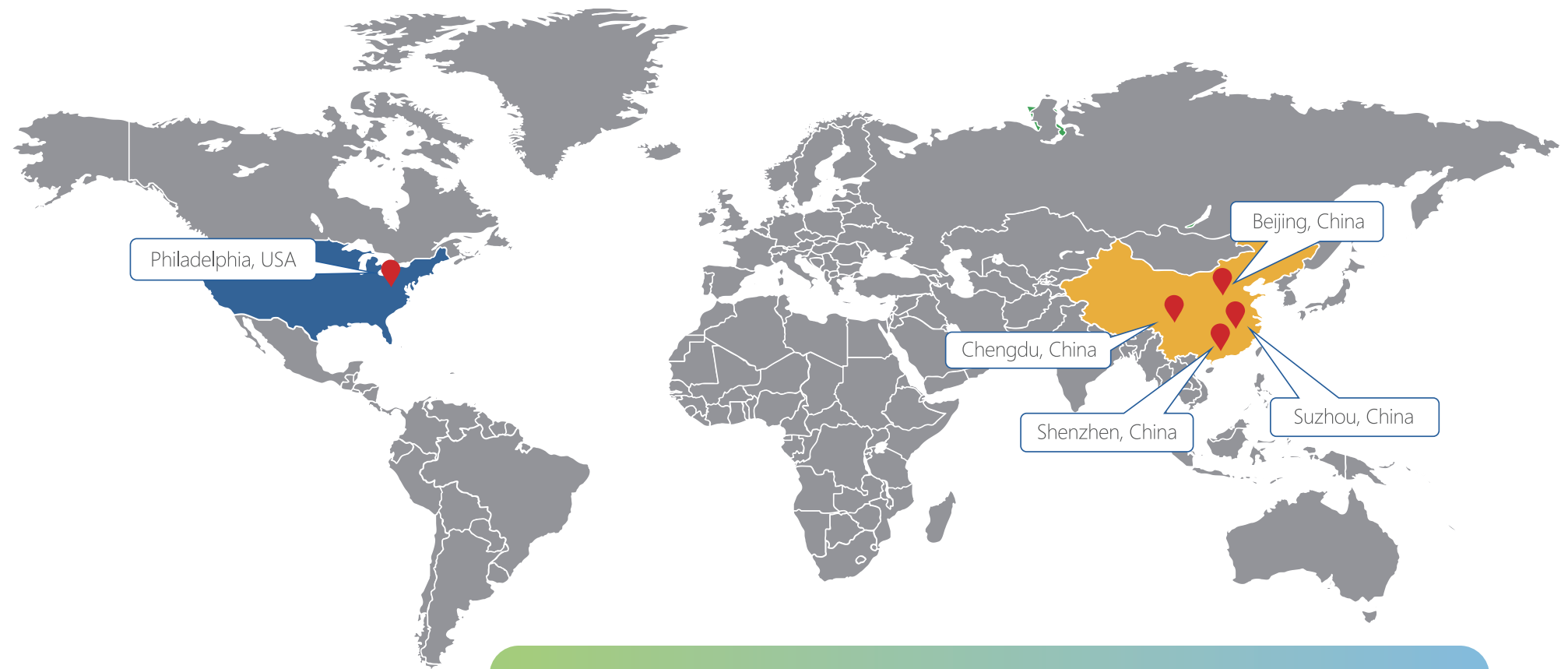


ABOUT US

IPHASE Biotechnology Co., LTD is a high-tech enterprise dedicated to biomedical and life science research. Taking advantage of our comprehensive knowledge base and through persistent 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 ADMEs 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 Biotechnology Co., LTD 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.

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PREFACE

Introduction

Genetics is one of the basic characteristics of all biological lives.DNA is the carrier of genetic information, and changes in its structure may alter the genetic traits of organisms or affect the normal activities of the organism.Damages in DNA of somatic cells may cause tumors in exposed individuals, but the effects of such damages will not be passed onto the next generation.However, damages that occur in reproductive cells can cause DNA damage in sperm cells and oocytes, forming gametes with mutations, which are passed onto the offspring through sexual reproduction, causing dominant lethal or heritable changes.

Genotoxicity assays are *in vitro* and *in vivo* tests used to detect substances that directly or indirectly induce genetic damage through different mechanisms. These tests can detect DNA damage and its permanence, including tests that detect gene mutations and minor deletions based on phenotypic changes or cytological methods that allow observation of serious chromosomal damage.Since no single assay method can detect all genotoxic endpoints, the evaluation of genotoxicity mostly uses a combination test to comprehensively assess the genotoxicity risk of a test substance.

With the continuous development and optimization of genotoxicity research, genotoxicity tests have been widely used in the safety testing and evaluation of food, drugs, cosmetics, chemicals, and pesticides, and have become an indispensable part of their safety evaluation.However, *in vitro* genotoxicity study is often daunting for researchers due to the use of bacteria or cells as test system, high technical requirements, long test period, complicated process, cumbersome preliminary preparation, multilevel testing in systems with and without metabolic activation, and the need of extensive knowledge in microbial culture, cell culture, and experimental animal manipulation.

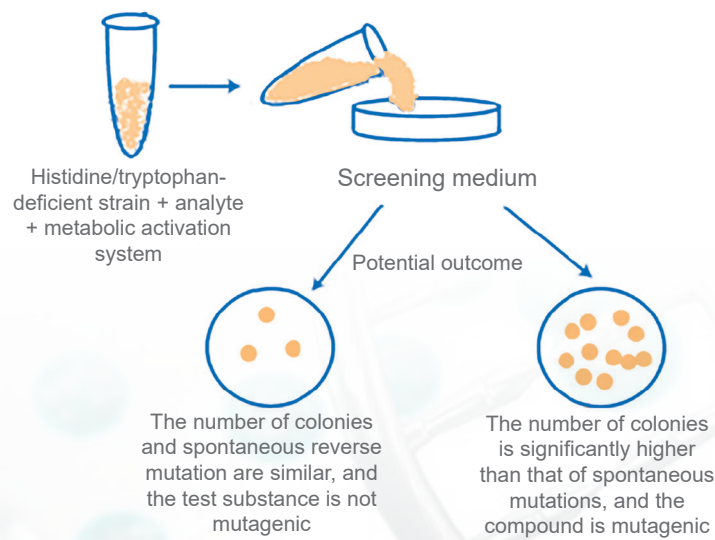
Leveraging over 10 years of experience in genotoxicity research project development and continuous exploration and optimization, IPHASE has developed a series of *in vitro* genotoxicity test kits and single products, such as the Ames test kit, TK gene mutation test kit, *in vitro* chromosome aberration test kit, *in vitro* micronucleus test kit, and induced rat liver S9 activation system, to overcome the challenges in *in vitro* genotoxicity testing.

Bacteria-Based Product

Ames Test Series

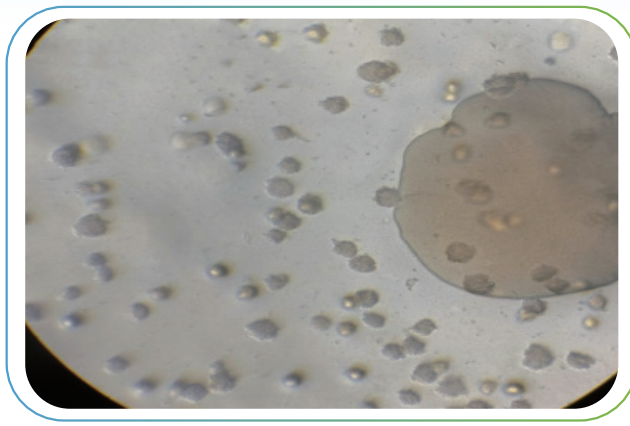
Bacterial Reverse Mutation Test, also known as Ames test, was established in 1975 by the laboratory of Professor B.N. Ames, Department of Biochemistry, University of California, Berkeley, and has been continuously developed and improved. It has become a mandatory test item in the international genotoxicity evaluation system. The Ames test is also one of the reference tests for validating many emerging genotoxicity technologies, and is widely used in the preliminary screening of the mutagenicity and potential carcinogenicity of compounds.

The Ames test is performed in accordance to OECD standards and national standards or guidelines. The test process is complex and requires a variety of reagents that are cumbersome to prepare. Extensive experience and continuous data accumulation are often required to ensure that the test results are stable, reliable, and reproducible. The Ames test usually takes weeks to months to complete, and the long trial cycles are thus often discouraging to researchers.



Ames Test Kit

The Ames test involves the co-culture of an auxotrophic strain of *Salmonella typhimurium* or *Escherichia coli* with the test compound. If the compound is mutagenic, the defective strain can mutate back to wild type. This test is suitable for testing the ability of a test substance to induce point mutations and frameshift mutations. Wild-type strains can synthesize histidine/tryptophan by themselves, and can grow on low-nutrient medium and form visible colonies. Auxotrophic strains cannot synthesize histidine/tryptophan by themselves, and only a few spontaneously reverse-mutated bacteria can grow as visible colonies on histidine- or tryptophan-deficient medium.



Product overview

The Ames kit is an efficient, stable and accurate test that uses the auxotrophic *Salmonella typhimurium* strains TA97a, TA98, TA100, TA1535 and the auxotrophic *Escherichia coli* strain WP2 uvrA (pKM101) as the indicator organisms, and evaluates the mutagenic effect of the test substance by detecting changes in the number of colonies. This kit solidifies the auxotrophic strains (frozen bacterial solution), simplifies the metabolic activation system, and provides all supporting reagents as ready-to-use, which truly achieves the purpose of "one-stop" testing. According to different testing purposes, we have also launched products of different specifications to meet the different needs of customers.



Product characteristics

- Convenience: Induced S9, reagent, and bacterial suspension can be used directly.
- Accuracy: Each component of the kit has undergone strict quality testing and the test results are accurate, reliable and highly reproducible
- Stability: The test kit is highly stability and is easy to transport and store.
- Wide application: The test kit can be used for genotoxicity testing of food, medicine, cosmetics, chemicals, medical devices, and pesticides.

Product information

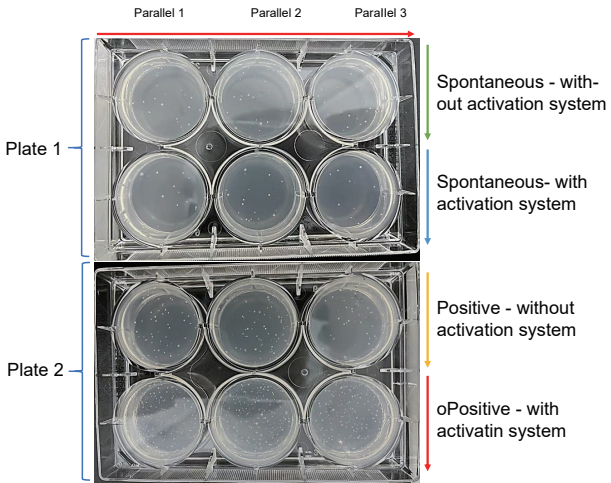
| Product Description | Size |
|---|------------|
| IPHASE Ames Pre-Test Kit | 150 dishes |
| IPHASE Ames Test Kit,2 Bacterial | 100 dishes |
| IPHASE Ames Test Kit,4 Bacterial | 200 dishes |
| IPHASE Ames Test Kit,5 Bacterial | 250 dishes |
| IPHASE Ames Test Kit,4 Bacterial, Plate | 200 dishes |
| IPHASE Ames Test Kit,5 Bacterial, Plate | 250 dishes |
| IPHASE Ames Test Plate Kit | 50 dishes |
| IPHASE Ames Pre-Test Kit, Plate | 150 dishes |
| IPHASE Ames Test Kit,2 Bacterial, Plate | 100 dishes |
| IPHASE Ames Test Kit,TA97a | 50 dishes |
| IPHASE Ames Test Kit,TA98 | 50 dishes |
| IPHASE Ames Test Kit,TA100 | 50 dishes |
| IPHASE Ames Test Kit,WP2uvrA (pKM101) | 50 dishes |
| IPHASE Ames Test Kit,TA1535 | 50 dishes |

Mini-Ames Test Kit

The Mini-Ames test is a microwell Ames test modified from the standard Ames test. This test uses a 6-well plate instead of a culture flask but follows the same procedure as the standard Ames test, which not only ensures high consistency in results with the standard Ames kit, but also greatly reduces the usage of the test substance. This test is more practical for genotoxicity monitoring, safety assessment, and preliminary screening.

Product overview

The Mini-Ames kit is a modified "shrunk version" of the Ames kit that uses the auxotrophic strains TA97a, TA98, TA100, TA1535 and WP2 uvrA (pKM101) as indicator organisms to evaluate the mutagenicity of the test substance by detecting changes in the number of colonies. In addition, the Mini-Ames kit is widely used in the initial screening of mutagenicity due to the use of a 6-well plate instead of a culture plate.



Mini-Ames test results (strain WP2 uvrA pKM101)

Product characteristics

- **Efficient:** The kit uses 6-well metabolic culture plates that greatly reduce the workload of experiments.
- **Consistency:** Test results are highly consistent with standard Ames test.
- **Low dosage:** The dosage of the test substance is only 20% of that used in the standard Ames test.
- **High-throughput:** The kit can be used for the genotoxicity screening of multiple test substances at the same time.

Product information

| Product Description | Size |
|--|------------------------|
| IPHASE Mini-Ames Test Kit, 2 Bacterial | 6-well plate*24 plates |
| IPHASE Mini-Ames Test Kit, 5 Bacterial | 6-well plate*40 plates |

Micro-Ames Assay Kit

The Micro-Ames test is a microporous Ames test modified from the Mini-Ames test. This test uses a 24-well plate, which reduces the usage of test substances, reagents and consumables, as well as the workload of the test. This kit is a valuable tool for early screening of mutagens.

Product overview

The Micro-Ames kit is a "miniature" Ames kit that uses the auxotrophic strains TA97a, TA98, TA100, TA1535, and WP2 uvrA (pKM101) as indicator organisms to evaluate the mutagenicity of the test substance by detecting changes in the number of colonies. In addition, the initial screening of mutagenicity is greatly enhanced in this kit due to the use of a 24-well plate instead of a culture plate.

Product characteristics

- **Low dosage:** The dosage of the test substance used is only 5% of that for the standard Ames test.
- **Efficient:** The use of 24-well metabolic culture plate greatly reduces the workload of the test.
- **High-throughput:** Simultaneous genotoxicity screening of multiple test substances

Product information

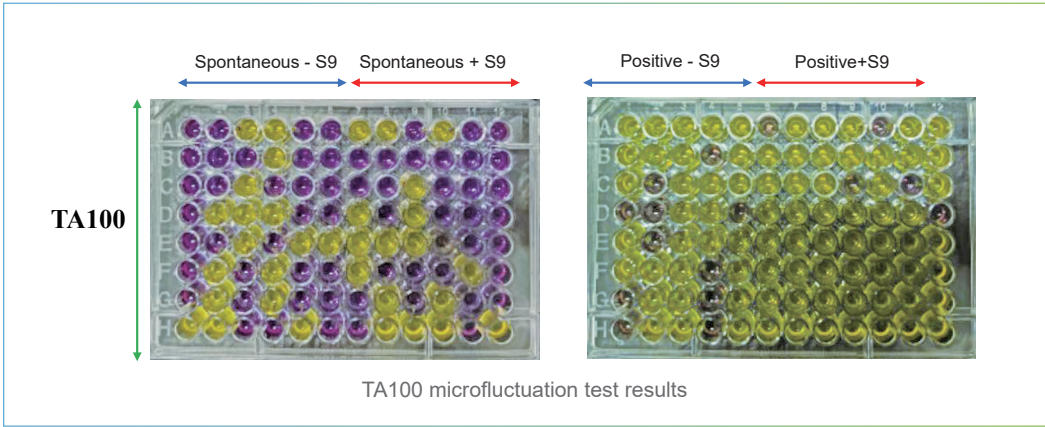
| Product Description | Size |
|---|--------------------------|
| IPHASE Micro-Ames Test Kit, 2 Bacterial | 24-well plate*6 plates |
| IPHASE Micro-Ames Test Kit, 5 Bacterial | 24-well plate*10 platess |

Microtiter Fluctuation Ames Test Kit

The Microtitre Fluctuation Ames Test was developed based on the Ames Fluctuation Test originally developed by Gatehouse in 1978. This test is performed in a 96-well culture plate and uses pH color change as a readout, which not only increases sensitivity but also greatly reduces the amount of test substance used.

Product overview

The Microtiter Fluctuation Ames Test Kit is a rapid genotoxicity screening kit that uses pH color change as readout. The kit uses two strains, TA98 and TA100, as the test strains. The bacteria are cultured in a 96-well culture plate, and the genotoxicity of the test substance is evaluated by counting the number of wells with color changes or directly by a microplate reader. As a result, this test eliminates the tedious and time-consuming process of colony counting and provides highly sensitive results due to the use of a liquid medium.



Product characteristics

- High sensitivity: Higher sensitivity due to the use of a liquid medium instead of solid medium.
- Low dosage: The test is performed in 96-well plates and uses a small amount of the test compound.
- High-throughput: The mutagenicity of the test substance is reflected by counting the number of color-changing wells, achieving high-throughput and automation.

Product information

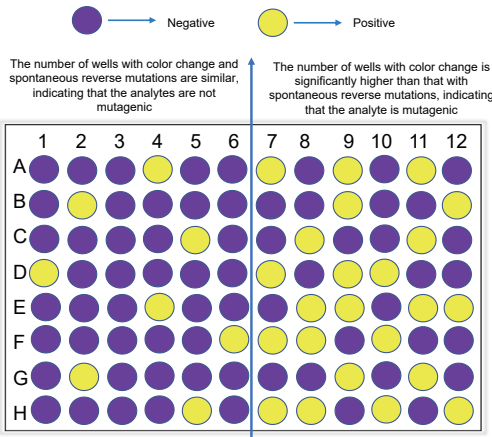
| Product Description | Size |
|---|--------------------------|
| IPHASE Microtitre Fluctuation Ames Test Kit | 16*96 wells, 4*384 wells |

Ames II Test Kit

The Ames II test is a fast-screening Ames test established by Gee et al. using the new Salmonella mutant strains TA7001-TA7006. These 6 strains each have a unique point mutation on the histidine synthesis operon, and these 6 point mutations encompass all possible point mutations. Mixing the 6 strains together (TAmix) can detect all compounds that can induce point mutations. When used together with the TA98 strain in traditional Ames test (used to detect frameshift mutations), compounds that can induce point mutations and frameshift mutations can be detected.

Product overview

The Ames II kit is a rapid genotoxicity screening kit that indicates the result by observing the color change of the pH indicator. The kit involves culturing histidine-deficient *Salmonella typhimurium* TAmix and TA98 in a 96-well culture plate to evaluate the genotoxicity of the test substance by counting the number of wells with color changes manually or using a microplate reader. Because the strains used are more comprehensive, the results are more reliable.



Product characteristics

- Reliability: The kit involves additional types of strains and thus the results are more reliable.
- High-throughput: The mutagenicity of the test substance is reflected by counting the number of color-changing wells, achieving high-throughput and automation.
- Low dosage: The test is performed in 96-well plates and uses a small amount of the test compound.

Product information

| Product Description | Size |
|-------------------------|--------------------------|
| IPHASE Ames II Test Kit | 16*96 wells, 4*384 wells |

Auxiliary Products for Ames Test

Ames strain identification

Strain identification is a very important part of the Ames test. All strains used in the Ames test are auxotrophic strains, and some of their characteristics may be easily lost or mutated during use. To ensure that the characteristics of the strain meet the requirements of the Ames test, the genotype of the strain must be confirmed. This is particularly important:

- (1) Before putting the strains into use;
- (2) When the number of spontaneous revertants is not within the normal range;
- (3) When the sensitivity to standard mutagens is lost;
- (4) When it is necessary to re-preserve the strain;
- (5) When using the master plate for passaging.



Product overview

The Ames strain identification kit is specially developed for commonly used Ames test strains and can be used in conjunction with the Ames kit. This kit can be used to identify strains with histidine/tryptophan deficiency, lipopolysaccharide barrier defect, ampicillin resistance (R factor), tetracycline resistance, and ultraviolet (uvrB) repair deficiency.

Standards for the identification of biological characteristics of commonly used test strains

| Strain designation | Histidine-deficient | Tryptophan-deficient | Lipopolysaccharide Barrier defect | R-factor (ampicillin resistance) | Tetracycline resistance | uvrB Repair-deficient |
|--------------------|---------------------|----------------------|-----------------------------------|----------------------------------|-------------------------|-----------------------|
| TA97 | + | N/A | + | + | - | + |
| TA97a | + | N/A | + | + | - | + |
| TA98 | + | N/A | + | + | - | + |
| TA100 | + | N/A | + | + | - | + |
| TA102 | + | N/A | + | + | + | - |
| TA1535 | + | N/A | + | - | - | + |
| TA1537 | + | N/A | + | - | - | + |
| WP2uvrA | N/A | + | N/A | - | - | + |
| WP2uvrA (pKM101) | N/A | + | N/A | + | - | + |

Note: "+" indicates positive; "-" indicates negative; "N/A" indicates identification not required.

Product characteristics

- Efficiency: Reduces time needed for medium and reagent preparation, greatly improving work efficiency.
- Convenience: The kit is simple, convenient and easy to use.
- Practicality: The kit is developed based on the requirements of the Ames test and meets the assay requirements without generating waste.

Product information

| Product Description | Size |
|---|--------|
| IPHASE Ames Strain Identification Kit, Ames Strain Free | 2 Test |
| IPHASE Ames Strain Identification Kit | 2 Test |

Ames strains

In the 1970s, Bruce.N.Ames established the Ames test by using ultraviolet irradiation to select different histidine auxotrophic *Salmonella typhimurium* strains. In recent years, M.H.L.Green et al. have developed a reverse mutation test using *Escherichia coli*, which formed the basis for the current bacterial reverse mutation test. As key components of the Ames test, the quality of the Ames strains determines the success or failure of the test.

Product overview

The Ames strains provided by IPHASE originate from MOLTOX in the United States. These strains are provided as frozen bacterial suspensions which have been screened by multiple processes such as strain identification, Ames test verification, cryopreservation treatment, and post-recovery verification before release. After recovery, these bacterial strains can be cultured and expanded for used according to the requirements of the Ames test.

Product characteristics

- Traceability: Our products have a clear source with traceability certificates.
- Reliability: All products have been subjected to internal quality control before release to ensure product quality.

Product information

| Product Description | Size |
|--|----------------|
| IPHASE Salmonella Typhimurium TA97a | 0.5mL*10 vials |
| IPHASE Salmonella Typhimurium TA98 | 0.5mL*10 vials |
| IPHASE Salmonella Typhimurium TA100 | 0.5mL*10 vials |
| IPHASE Salmonella Typhimurium TA1535 | 0.5mL*10 vials |
| IPHASE Salmonella Typhimurium TA1537 | 0.5mL*10 vials |
| IPHASE Escherichia Coli WP2uvrA (pKM101) | 0.5mL*10 vials |

Ames Assay Ready-to-Use Media Plates

The bottom medium is another important component of the Ames test. This medium has complex ingredients, large demand, and is time-consuming to prepare, and hence any problem arising from any of these aspects may lead to test failure.

Product overview

The Ames Assay Ready-to-Use Media Plate developed by IPHASE is a finished base medium provided in vacuum packaging and can be used directly.

Product characteristics

- Convenience: Reduces the time in preparing the bottom medium and can be used directly, which greatly shortens the experimental cycle.
- Stability: The product is highly stable and easy to transport and store.
- Reliability: The product has undergone strict quality control and meets the requirements of the Ames test.

Product information

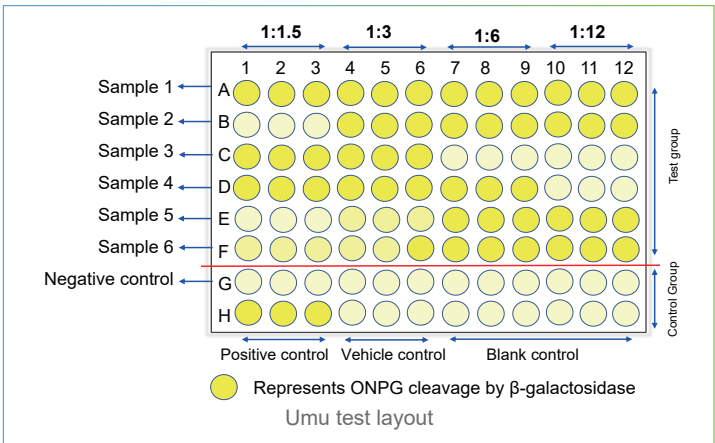
| Product Description | Size |
|----------------------------|-----------|
| IPHASE Ames Test Plate Kit | 50 dishes |

UMU Test Kit

Umu test, also known as SOS/umu test, is a short-term screening test for detecting environmental mutagenesis. This test was established and developed by Oda et al. in 1985 based on injury-induced SOS response and umuC gene expression. Since the umu gene is closely related to DNA damage, the SOS/umu test can more accurately reflect the genotoxicity of potential mutagenic substances. This test has gained increased attention from various fields of research, and has been widely used in the genotoxicity monitoring and quality assessment of water, soil, and air samples.

Product overview

The umu test kit uses *Salmonella typhimurium* TA1535/Psk1002 as the test strain and 4-NQO as the positive control. The test is performed in a 96-well plate and the amount of induced enzyme is quantitatively measured using a microplate reader to evaluate the presence and extent of DNA damage.



Product characteristics

- Accuracy: The test results are consistent with those of the Ames test.
- High-throughput: Simultaneous genotoxicity testing of multiple samples.
- High efficiency: Test time is short and can be completed on the same day.
- Low requirements: The requirements for the test time environment are low, and sterility is not required.

Product information

| Product Description | Size |
|---------------------|----------|
| IPHASE umu Test Kit | 96 wells |

Cell-Based Product

In Vitro Mammalian Cell Gene Mutation Test Kit

The *in vitro* mammalian gene mutation test can be used to detect gene mutations induced by the test substance. Cell lines that can be used include mouse lymphoma cell L5178Y, Chinese hamster ovary cell CHO, Chinese hamster lung cell V79, and TK6 human lymphoblastoid cells. This test is most commonly used for the detection of gene mutations in thymidine kinase (TK), hypoxanthine-guanine phosphoribosyltransferase (HPRT), and xanthine-guanine phosphoribosyltransferase (XPRT). TK, HPRT and XPRT mutation assays detect different spectrums of genetic events.

Product characteristics

- Convenience: Reduces the time for preparing induced S9 and reagents, and greatly shortens the experimental cycle.
- Accuracy: Each component of the kit has undergone strict quality testing and the test results are accurate, reliable and highly reproducible.
- Stability: The test kit is highly stability and is easy to transport and store.
- Wide application: The test kit can be used for genotoxicity testing of food, medicine, cosmetics, chemicals, medical devices, and pesticides.

TK gene mutation test kit

The thymidine kinase (TK) gene is located on the autosome. The TK gene mutation test is an *in vitro* genotoxicity test for the detection of gene mutations on the autosomes of *in vitro* cultured mammalian cells cultured after being treated with the test substance.

Product overview

The *in vitro* mammalian cell TK gene mutation test kit uses the mouse lymphoma cells L5178Y TK+/- as the test system. L5178Y cells are exposed to the test substance for an appropriate time with or without metabolic activation, and the cells are then subcultured in selective culture medium containing trifluorothymidine (TFT). The number of mutant colonies formed is counted, and the mutation frequency is calculated to determine the mutagenicity of the test substance. The kit provides the main reagents and cells for the TK gene mutation test, and each component of the kit has undergone strict quality testing, ensuring that the experimental results are accurate, reliable and reproducible.



Product information

| Product Description | Size |
|--|--------------|
| IPHASE <i>In Vitro</i> Mammalian Cell Gene Mutation Test, L5178Y | 20mL*24 test |
| IPHASE <i>In Vitro</i> Mammalian Cell Gene Mutation Test | 20mL*24 test |
| L5178Y TK+/-Cell Line | Vial |

HGPRT Gene Mutation Test Kit

The hypoxanthine-guanine phosphoribosyltransferase (HGPRT) gene is located on the X chromosome. The HGPRT gene mutation test is an *in vitro* genotoxicity test for the detection of gene mutations on the sex chromosomes of *in vitro* cultured mammalian cells after being treated with the test substance.

Product overview

The *in vitro* mammalian cell HGPRT gene mutation test kit uses Chinese hamster lung cell V79 as the test system. V79 cells are exposed to the test substance for an appropriate time with or without metabolic activation, and the cells are then subcultured in selective culture medium containing 6-mercaptopguanine (6-TG). The number of mutant colonies formed is counted, and the mutation frequency is calculated to determine the mutagenicity of the test substance. This kit provides the main reagents and cells for the HGPRT gene mutation test, and each component of the kit has undergone strict quality testing, ensuring that the experimental results are accurate, reliable and reproducible.

Product information

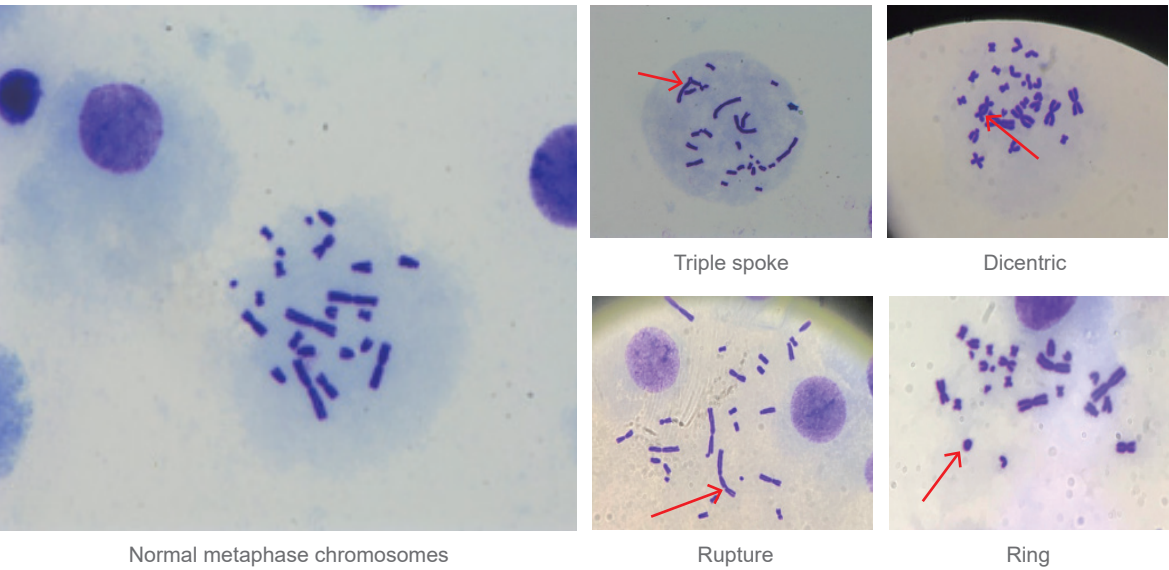
| Product Description | Size |
|---|--------------|
| IPHASE <i>In Vitro</i> Mammalian Cell Gene Mutation Test, V79 | 20mL*24 test |
| IPHASE <i>In Vitro</i> Mammalian Cell Gene Mutation Test | 20mL*24 test |
| V79 Cell Line | Vial |

In Vitro Mammalian Cell Chromosome Aberration Test Kit

in vitro mammalian cell chromosome aberration test is an *in vitro* genotoxicity detection method used to detect whether mammalian cells cultured in vitro cause chromosome structural aberrations after being treated with a test substance.

Product overview

Chromosomal aberration test kit for mammalian cells *in vitro* uses Chinese hamster lung cell CHL as the test system. Under the condition of adding or not adding metabolic activation system, CHL cells are exposed to the test substance and treated with the metaphase blocker colchicine to stop the cells in the metaphase. Then the cells are harvested, prepared, stained and analyzed under the microscope for the type of chromosome structural aberration, so as to evaluate the possibility of mutagenesis of the test substance. The kit provides the main reagents and cells for the *in vitro* chromosome aberration test, and each component of the kit has undergone strict quality testing, and the experimental results are accurate, reliable and reproducible.



Product information

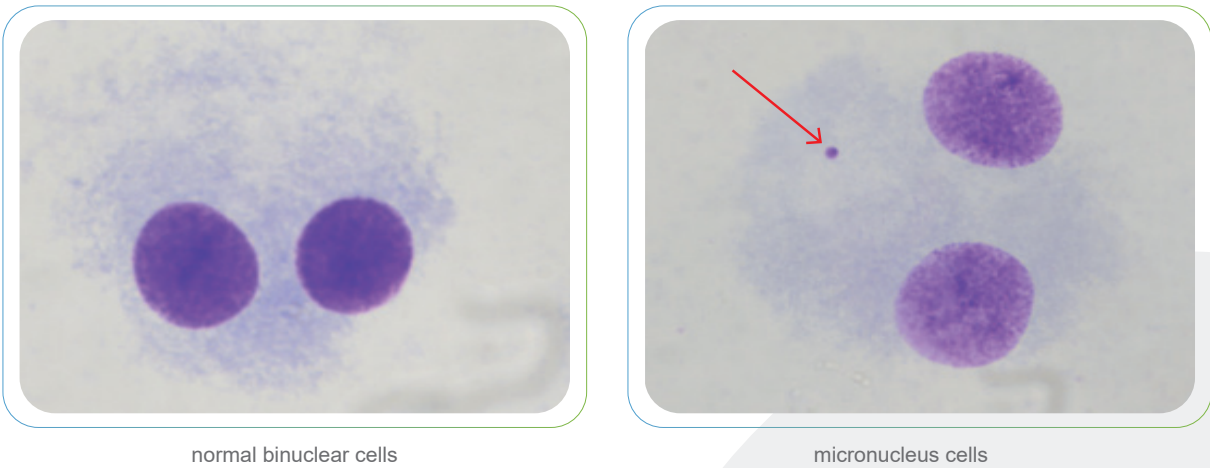
| Product Description | Size |
|--|-------------|
| IPHASE <i>In Vitro</i> Mammalian Chromosomal Aberration Test Kit,CHL | 5mL*20 test |
| IPHASE <i>In Vitro</i> Mammalian Chromosomal Aberration Test Kit | 5mL*20 test |
| CHL Cell Line | 1 vail |

In Vitro Mammalian Cell Micronucleus Test Kit

The *in vitro* mammalian cell micronucleus test is a genotoxicity detection method used to detect whether mammalian cells produce micronuclei after being treated with a test substance, and is suitable for detecting the ability of mitotic cells to cause chromosome breakage and induce aneuploidy during or after exposure to a test substance.

Product overview

The *in vitro* mammalian cell micronucleus test kit uses Chinese hamster lung cell CHL as the test system. Under the condition of adding or not adding the metabolic activation system, the CHL cells are exposed to the test substance, and the actin polymerization inhibitor cytochalasin B (cytoB) is added before mitosis. Then the cells are harvested, prepared, stained, and the micronucleus rate of the cells (binuclear cells) that have completed one mitosis is analyzed under a microscope to evaluate the possibility of mutagenicity of the test substance. The kit provides the main reagents and cells for the micronucleus test *in vitro* , and each component of the kit has undergone strict quality testing, and the experimental results are accurate, reliable and reproducible.



Product information

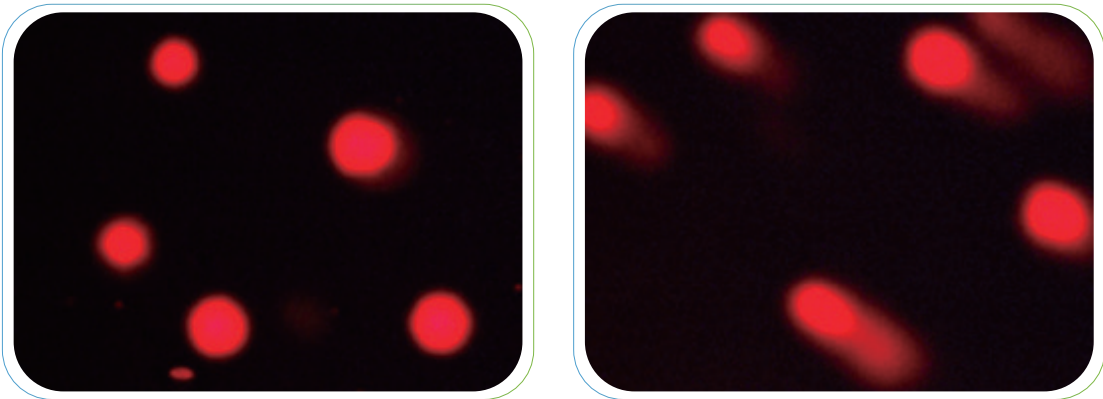
| Product Description | Size |
|---|-------------|
| IPHASE <i>In Vitro</i> Mammalian Cell Micronucleus Test,CHL | 5mL*32 test |
| IPHASE <i>In Vitro</i> Mammalian Cell Micronucleus Test | 5mL*32 test |

Comet Assay Kit

Comet assay, also known as single-cell gel electrophoresis assay, is a test method for judging genotoxicity by detecting DNA strand damage. It can effectively detect and quantitatively analyze the degree of DNA single-strand and double-strand gap damage in cells, so as to perform mutagenic analysis.

Product overview

The IPHASE comet assay kit is based on the principle that DNA molecules may break under the action of endogenous or exogenous DNA damage factors. Single cells are embedded on a special glass slide with agarose gel, and the cells are electrophoresed after lysing and unspinning. After being stained with fluorescent dyes, they are observed under a fluorescence microscope to analyze the comet tail length and fluorescence intensity to determine the degree of DNA damage.



Product information

| Product Description | Size |
|-----------------------------------|-----------------|
| IPHASE Comet Assay Kit | 25 Test/50 Test |
| IPHASE Comet Assay Slide (2-Well) | 25 pieces |

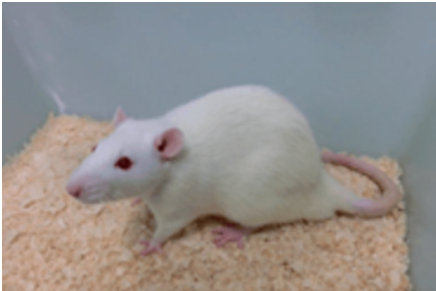
Ancillary Products

Induced Rat Liver S9 Activation System

In order to ensure the accuracy of test results, *in vitro* genotoxicity tests need to be carried out with and without exogenous metabolic activation system to evaluate the potential mutagenic effect of the test substance itself and its metabolites.

Product overview

The induced rat liver S9 activation system provided by IPHASE is prepared from the liver of SD rats induced by phenobarbital sodium and β -naphthoflavone. It has passed the quality control of multiple indicators such as sterility inspection, metabolic activity detection, Ames test verification and *in vitro* chromosome aberration test verification, and meets the needs of *in vitro* genotoxicity tests.



Product characteristics

- Sterility The preparation of this product is strictly sterile, and the sterility test results are acceptable.
- High activity The preparation of this product strictly controls the low temperature to ensure the enzyme activity.
- Wide application This product can be used in many *in vitro* genotoxicity tests such as Ames test, gene mutation, chromosomal aberration, and micronucleus *in vitro*.
- The preparation of large batches of this product follows the principle of batching to meet the needs of customers for bulk orders.

Product information

| Product Description | Size |
|--|------|
| IPHASE Activation System, Rat Liver S9 Mix | 10mL |
| IPHASE Rat(Sprague-Dawley) Liver S9, Induction | 1mL |
| IPHASE Rat(Sprague-Dawley) Liver S9, Induction | 2mL |



Giemsa Dyeing Related Products

In the process of genotoxicity research, it is inevitable to prepare glass slides for the observation of chromosomal mutation results. However, the preparation effect of slides is often affected by multiple factors such as the quality of slides, the quality of staining solution, and the preparation process, and it often becomes the speed-limiting step for researchers to experiment.



Product overview

IPHASE can provide Giemsa staining kits and related single products. Among them, the Giemsa staining kit is specially developed for the preparation of slides in the process of *in vivo* and exogenous genotoxicity research, and can be used in the slide preparation process of multiple tests such as *in vitro* chromosome aberration test and *in vitro* and *in vivo* micronucleus test. The kit contains multiple reagents and consumables such as slides, coverslips, staining solutions, neutral resins, and diluents, all of which have undergone strict quality control to solve the troubles of unsatisfactory slide production for research workers.



Product characteristics

- Wide application: This product can be used in the preparation of slides for *in vitro* chromosome aberration test, *in vitro* and *in vivo* micronucleus test and many other *in vitro* genotoxicity tests.
- Streamlined: This product streamlines the slide preparation process, making the slide preparation process simpler.
- Convenience: This product includes all reagents and consumables for slide preparation, meeting the test requirements.



Product information

| Product Description | Size |
|------------------------|--------|
| IPHASE Giemsa Kit | 1 set |
| IPHASE Giemsa Dye, 100 | 100 mL |
| IPHASE Giemsa Dye, 500 | 500 mL |



Key Customers

