

# HUMAN CYTOGENETICS



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# Shanghai XP Biomed

Shanghai XP Biomed was established in 2005, and is ISO13485 certified. VivaCell brand was founded by Shanghai XP Biomed in 2012 and VivaCell products including AmnioType<sup>™</sup>-1, PBType<sup>™</sup>-1 and MarrowType<sup>™</sup> are used in a large number of cytogenetic laboratories all around the world. Our cytogenetic product line gives you the option of selecting high quality tools that can help you make critical decisions in the lab.

Today, our products and services portfolio benefit both life science and medical customers. Whether it is in developing culture media for cell therapy, or supplying media and reagents for classical cell culture, we are committed to providing our customers with reliable products. We do this through our advanced GMP compliant manufacturing and quality control systems, superior regulatory expertise, in-depth market knowledge, and extensive technical customer support, training, and R&D capabilities.

# BOOST PERFORMANCE INCREASE CONSISTENCY

#### Performance

Consistent lot-to-lot performance

Optimized products for the karyotypic analysis of amniotic fluid, chorionic villus, peripheral blood, bone marrow, and hematopoietic cells

Delivers accelerated cell growth with high mitotic index and excellent chromosomal morphology

Clean and reproducible results saving lab time with quick analysis and easy interpretation

#### Quality Control

Manufactured in compliance with the FDA's quality system regulation (cGMP) and the current requirements of ISO 9001 and ISO 13485

Extensive QC testing for culture performance, sterility, and endotoxin

#### Support

**Regional technical support** 

Documentation and traceability documentation including Certificate of Analysis, and Certificates of Origin

Backed by more than 10 years of media development and manufacturing experience



**AMNIOTIC FLUID AND CHORIONIC VILLUS CULTURE** 

#### The optimized medium for prenatal diagnostics

The AmnioType<sup>™</sup> family of cytogenetic media are designed for primary culture of human amniotic fluid (AMF) cells and chorionic villi (CV) samples intended for karyotypic analysis. Our products ensure high mitotic index, providing an accelerated growth of cells for rapid detection and enhanced analysis of chromosomal abnormalities. With AmnioType<sup>™</sup> media, chromosome karyotyping time is greatly reduced, with significantly high cell yield by Day 7 as compared to conventional media (Figure 1).

The AmnioType<sup>™</sup> media are easy to use and application-validated for cytogenetic analysis, giving reproducible results that are easy to analyze and interpret.

The enhanced buffering capacity of AmnioType<sup>™</sup> media is ideal for AMF and CV cells cultured in both open (5% CO<sub>2</sub>) and closed systems. AmnioType<sup>™</sup> -1 and AmnioType<sup>™</sup> -2 are ready-to-use complete media, requiring no serum or additional supplements.

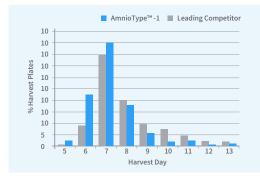


Figure 1: Comparison of the percentage of harvested plates according to harvest day between AmnioType<sup>™</sup> -1 and a competitor (AM). Data provided by customer.

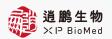
#### PRODUCT INFORMATION

|                             | AmnioType <sup>™</sup> -1  | AmnioType™-2          |
|-----------------------------|----------------------------|-----------------------|
| Open & Closed Systems       | $\checkmark$               | $\checkmark$          |
| Cell Types                  | AMF and CVs                | AMF and CVs           |
| Advantage                   | One bottle                 | Less epithelial cells |
|                             | Ease-of-use                | Improved banding      |
|                             | Rapid growth of AMF and CV | / cells               |
| Complete Medium             | ✓                          | ✓                     |
| Chromosome Karyotyping Time | Up to 8 days               | Up to 12 days         |
| Stability (after thawed)    | 7 days*                    | 14 days*              |
| Shelf Life (when frozen)    | 24 months                  | 24 months             |
|                             |                            |                       |

\*For longer storage and stability, dispense into aliquots and refreeze

# ORDER INFORMATION

| Product                                      | Cat. #     | Size   |
|--|------------|--------|
| AmnioType <sup>™</sup> -1                    | C3620-0100 | 100 ml |
| Amniocyte Karyotyping Medium                 | C3620-0500 | 500 ml |
| AmnioType™-2<br>Amniocyte Karyotyping Medium | C3621-0100 | 100 ml |



**BLOOD LYMPHOCYTE CULTURE** 

#### The optimized medium for short term culture of peripheral blood lymphocytes

Peripheral Blood karyotyping is an important tool in modern human cytogenetics, providing information about chromosomal abnormalities, their frequency in the population, and the relationship between specific chromosomal abnormalities and pheno-typic effects. PBType<sup>™</sup>-1 Peripheral Blood Karyotyping Medium is specifically optimized for short-term culture of peripheral blood lymphocytes for chromosome analysis. No addition of serum, glutamine, or antibiotics is required.

# PRODUCT INFORMATION

|                             | PBType™-1 Peripheral Blood Karyotyping Medium   |
|-----------------------------|---|
| Cell Types                  | Lymphocytes   |
| Advantage                   | <ul><li>Quick results, time-saving</li><li>Excellent growth promotions</li></ul>  |
|                             | <ul><li>High mitotic index</li><li>Reliable results</li></ul>   |
| Complete Medium             | <ul><li>Ready to use</li><li>No further supplements required</li></ul>  |
| Chromosome Karyotyping Time | 48-72 hours   |
| Stability (after thawed)    | 10 days*  |
| Shelf Life (when frozen)    | 24 months   |
| Quality Control             | PBType <sup>™</sup> -1 Peripheral Blood Karyotyping Medium is tested for sterility, pH,<br>osmolality and endotoxin concentrations, as well as measuring the mitotic<br>index |

\*For longer storage and stability, dispense into aliquots and refreeze



| Product  | Cat. #     | Size      |
|--|------------|-----------|
| PBType™-1<br>Peripheral Blood Karyotyping Medium | C3601-0100 | 100 ml    |
| PBType™-1<br>Peripheral Blood Karyotyping Medium | C3601-0150 | 5 ml * 30 |
| PBType™-1<br>Peripheral Blood Karyotyping Medium | C3601-0005 | 5 ml      |





# The optimized medium for short-term cultivation of primary bone marrow cells for chromosome evaluation

MarrowType<sup>™</sup> Bone Marrow Karyotyping Medium is intended for use in short-term cultivation of primary bone marrow cells for chromosome evaluation.

MarrowType<sup>™</sup> Bone Marrow Karyotyping Medium is based on RPMI-1640 basal medium supplemented with L-glutamine, fetal bovine serum, and antibiotics (gentamycin). The medium does not contain any mitogens or conditioned medium. MarrowType <sup>™</sup> Bone Marrow Karyotyping Medium was designed for samples with low cell counts and a low mitotic index.

### PRODUCT INFORMATION

|                             | MarrowType™ Bone Marrow Karyotyping Medium  |
|-----------------------------|---|
| Cell Types                  | Bone Marrow   |
| Advantage                   | <ul> <li>Quick results, time-saving</li> <li>Excellent growth promotion also in small culture volumes</li> <li>Without conditioned medium - no mitogens for more control over your culture</li> <li>High mitotic index</li> </ul> |
| Complete Medium             | <ul><li>Ready to use</li><li>No further supplements required</li></ul>  |
| Chromosome Karyotyping Time | 48-72 hours   |
| Stability (after thawed)    | 10 days*  |
| Shelf Life (when frozen)    | 24 months   |
| Quality Control             | MarrowType™ Bone Marrow Karyotyping Medium is tested for sterility, pH<br>osmolality and endotoxin concentrations, as well as measuring the mitoti<br>index   |

\*For longer storage and stability, dispense into aliquots and refreeze



| Product                                       | Cat. #     | Size   |
|---|------------|--------|
| MarrowType™<br>Bone Marrow Karyotyping Medium | C3630-0100 | 100 ml |





#### The optimized medium for hematopoietic cells from bone marrow and peripheral blood

Cytogenetic analysis of human hematopoietic cells using bone marrow aspirates is a standard practice in hematology. Hemato-Type<sup>™</sup> Hematopoietic cells Karyotyping Medium was developed to stimulate the proliferation of human hematopoietic cells from bone marrow as well as from peripheral blood. HematoType<sup>™</sup> Hematopoietic cells Karyotyping Medium significantly improves the mitotic index and accelerates cell growth and is optimized for use with samples that contain a low number of cells and/or low mitotic index. Therefore, the medium is particularly effective for karyotyping of acute non-lymphocytic leukemias and various stages of chronic myelogenous leukemia, as well as other hematological disorders. HematoType<sup>™</sup> Hematopoietic cell Karyotyping Medium is based on MEM-alpha basal medium supplemented with L-glutamine, fetal bovine serum, antibiotics (gentamycin), and conditioned medium.

### PRODUCT INFORMATION

|                             | HematoType™ Hematopoietic cells Karyotyping Medium   |
|-----------------------------|--|
| Cell Types                  | Hematopoietic cells  |
| Advantage                   | <ul> <li>Quick results, time-saving</li> </ul>   |
|                             | <ul> <li>Excellent growth promotion for samples with low cell count and/or low mitotic index</li> </ul>                            |
|                             | <ul> <li>Contains conditioned media to stimulate cell growth</li> </ul>  |
|                             | <ul> <li>Works with both bone marrow and peripheral blood</li> </ul>   |
|                             | <ul> <li>Unique formulation</li> </ul>   |
| Hematological Disorders     | <ul> <li>The medium effective for acute non-lymphocytic leukemia and various stages of<br/>chronic myelogenous leukemia</li> </ul> |
|                             | <ul> <li>Hematological disorders such as myelodysplastic syndrome and polycythemia vera</li> </ul>                                 |
| Complete Medium             | Ready to use   |
|                             | Contains a conditioned medium with better performance than that of Giant Tumor Cells (GTC  |
|                             | <ul> <li>No further supplements required</li> </ul>  |
| Chromosome Karyotyping Time | 48-72 hours  |
| Stability (after thawed)    | 10 days*   |
| Shelf Life (when frozen)    | 24 months  |
| Quality Control             | HematoType™ Hematopoietic Karyotyping cells Medium is tested for sterility,  |
|                             | pH, osmolality and endotoxin concentrations, as well as measuring the mitotic  |
|                             | index  |

## **ORDER INFORMATION**

ProductCat. #SizeHematoType™<br/>Hematopoietic cells Karyotyping MediumC3640-0100100 ml



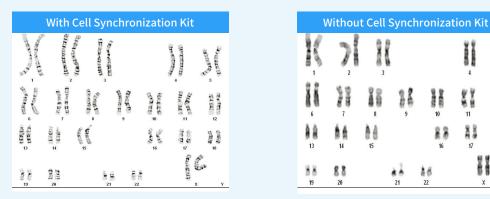
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# CELL SYNCHRONIZATION

#### High resolution cytogenetic analysis for detailed analysis of the karyotype

The blood cell karyotyping method was developed to provide information about chromosomal abnormalities. In the presence of an appropriate mitogen, lymphocytes are stimulated to enter into mitosis with DNA replication. Then, methotrexate, a mitotic inhibitor, is added to block cells at the S-phase of the cell cycle. After 16-18 hours, most of the dividing cells are in the S-phase. After treatment with a hypotonic solution, fixation and staining, chromosomes can be microscopically observed and evaluated for abnormalities. This Kit provide a high resolution analysis which is a special manipulation of the routine blood karyotyping procedure designed to provide a large number of mitotic figures in late prophase or prometaphase. The chromosomes appear longer and less condensed. With the Cell Synchronization Kit, the chromosomes will show a greater level of chromosomal band resolution not seen in routine analysis.

Comparison between the karyograms of peripheral blood cells using PBType™-1 Karyotyping medium (Cat.# C3601) with or without the Cell Synchronization Kit (Cat.# C3610)



# **PRODUCT INFORMATION**

|                | Cell Synchronization Kit  |
|----------------|---|
| Cell Types     | Amniotic Fluid, Chorionic Villi, Bone Marrow, Lymphocytes and Hematopoietic cells |
| Advantage      | <ul> <li>Large number of mitotic figures</li> </ul>                               |
|                | <ul> <li>Longer and less condensed chromosomes</li> </ul>                         |
|                | <ul> <li>High level of band resolution</li> </ul>                                 |
|                | <ul> <li>Detailed analysis of the karyotype</li> </ul>                            |
| Kit Components | <ul> <li>Methotrexate (Amethopterin)</li> </ul>                                   |
|                | <ul> <li>Thymidine</li> </ul>   |
|                |   |

\*For longer storage and stability, dispense into aliquots and refreeze

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# **ORDER INFORMATION**

| Product                  | Cat. #     | Size  |
|--------------------------|------------|-------|
| Cell Synchronization Kit | C3610-0012 | 12 ml |





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#### Quality reagents for cytogenetic labs

Shanghai XP Biomed offers a complete range of products and reagents for your cytogenetic karyotyping needs from start to finish, including colcemid, PHA, and cell synchronization kit for high-resolution chromosomal studies.

## **ORDER INFORMATION**

| Product  | Cat. #     | Size   |
|--|------------|--------|
| Amphotericin B Solution, 250 micrograms/ml                               | C3430-0100 | 100 ml |
| Colcemid (Demecolcine) Solution  | C3541-0010 | 10 ml  |
| Phytohemagglutinin-M (PHA-M), Liquid                                     | C3545-0005 | 5 ml   |
| Potassium Chloride Solution, 0.075 Molar                                 | C3540-0500 | 500 ml |
| Potassium chloride Solution, 0.075 Molar                                 | C3540-0100 | 100 ml |
| Trypsin Solution B (0.25%),<br>w/o Calcium and Magnesium, w/o Phenol Red | C3538-0100 | 100 ml |

## RELATED PRODUCTS

| Product  | Cat. #     | Size     |  |
|--|------------|----------|--|
| Akouguard™-1, Disinfection solution for water tray in CO₂ incubators | C3480-0100 | 100 ml   |  |
| Akouguard™-2, Disinfection solution for water bath                   | C3481-0050 | 50 ml    |  |
| Akougualu -2, Disinection solution for water bath                    | C3481-0500 | 500 ml   |  |
| Pharmacidal, for disinfecting surfaces                               | C3490-1000 | 1 L      |  |
| Filamacidal, for disinfecting surfaces                               | C3490-0100 | 100 ml   |  |
| MycoEZ™ Mycoplasma qPCR Kit  | M5010-0025 | 25 preps |  |
| MycoNator™-1 Antibiotic Solution 100X Conc.                          | C3470-0020 | 20 ml    |  |
| MycoNator™-2 Antibiotic Solution 100X Conc.                          | C3471-0020 | 20 ml    |  |
|  | C3472-0100 | 100 ml   |  |
| MycoNator™-3 Antibiotic Solution 100X Conc.                          | C3472-0020 | 20 ml    |  |
|  | C3472-0010 | 10 ml    |  |
| RPMI 1640, with L-Glutamine  | C3010-0500 | 500 ml   |  |
| RPMI Medium 1640, w/o D-Glucose, w/o L-Glutamine                     | C3015-0500 | 500 ml   |  |
| RPMI Medium 1640, with 25mM Hepes, with L-Glutamine                  | C3018-0500 | 500 ml   |  |
| Dulbecco's Phosphate Buffered Saline (DPBS),                         | 00500 0500 | 500 1    |  |
| w/o Calcium and Magnesium  | C3590-0500 | 500 ml   |  |
| Gentamycin Sulfate Solution, 50 mg/ml                                | C3450-0100 | 100 ml   |  |
| Kanamycin Sulphate Solution, 10 mg/ml                                | C3460-0100 | 100 ml   |  |
| L Cluterrine Selution (200 mM)                                       | C3543-0500 | 500 ml   |  |
| L-Glutamine Solution (200 mM)  | C3543-0100 | 100 ml   |  |
| HEPES Buffer Solution, pH 7.3 at 37°C, 1.0 Molar                     | C3544-0100 | 100 ml   |  |
| Penicillin-Streptomycin Nystatin Solution,                           |            |          |  |
| 10, 000 units/ml Penicillin G Sodium Salt,                           | C3422-0100 | 100 ml   |  |
| 10mg/ml Streptomycin Sulfate, 1, 250 units/ml Nystatin               |            |          |  |
| Penicillin-Streptomycin Amphotericin B Solution,                     | 62422.0100 | 100      |  |
| 10, 000 units/ml Penicillin G Sodium Salt,                           | C3423-0100 | 100 ml   |  |
| Water, Cell Culture Grade, SLE Grade                                 | C3560-0500 | 500 ml   |  |
|  |            |          |  |



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