



SERVING SCIENCE THROUGH INNOVATION

Since our establishment in the early 80's, Euroclone has given scientists a valuable opportunity to gain access to a world of products and equipment in Biotechnology.

During more than three decades of experience, our Company has evolved into a modern supplier of up-to-date and own-branded products, pursuing affordability and quality: all manufacturing procedures are strictly regulated with raw materials, bulks and final products undergoing stringent controls.

Euroclone provides innovative products, services and solutions for Molecular and Cell Biology, Genomics, Proteomics, Cytogenetics and Agro-Food Diagnostics.

From the choice of high-quality products to the after sales service, Euroclone is your reliable and solid partner for your scientific challenges.

In 2019 Euroclone is acquired by AddLife AB becoming part of an important international group. This step ensure continuity and further expansion of the company in the Italian market and in the export of the proprietary private lines, key and distinctive element of the identity of Euroclone.



CYTOGENETICS

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The aim of Cytogenetics is the study of cellular constituents concerned with heredity, primarily the structure, function, and origin of the chromosomes.

The chromosome content, called karyotype, is classified on the basis of both chromosome number and morphology, which are fixed characteristics for a particular species.

Theoretically, it is possible to prepare chromosome samples starting from any tissue (or suspension of mitotic cells) providing that appropriate methods are used for the type of cell to be examined.

The identification and characterization of either constitutional or acquired chromosome abnormalities, are the focus of two large areas of diagnostic investigation.

From the clinical point of view, cytogenetic analysis is a fundamental tool for prenatal and postnatal diagnosis of several pathologies (concerning general and specialist medicine), and it is the basis of prevention programs regarding congenital and hereditary diseases.

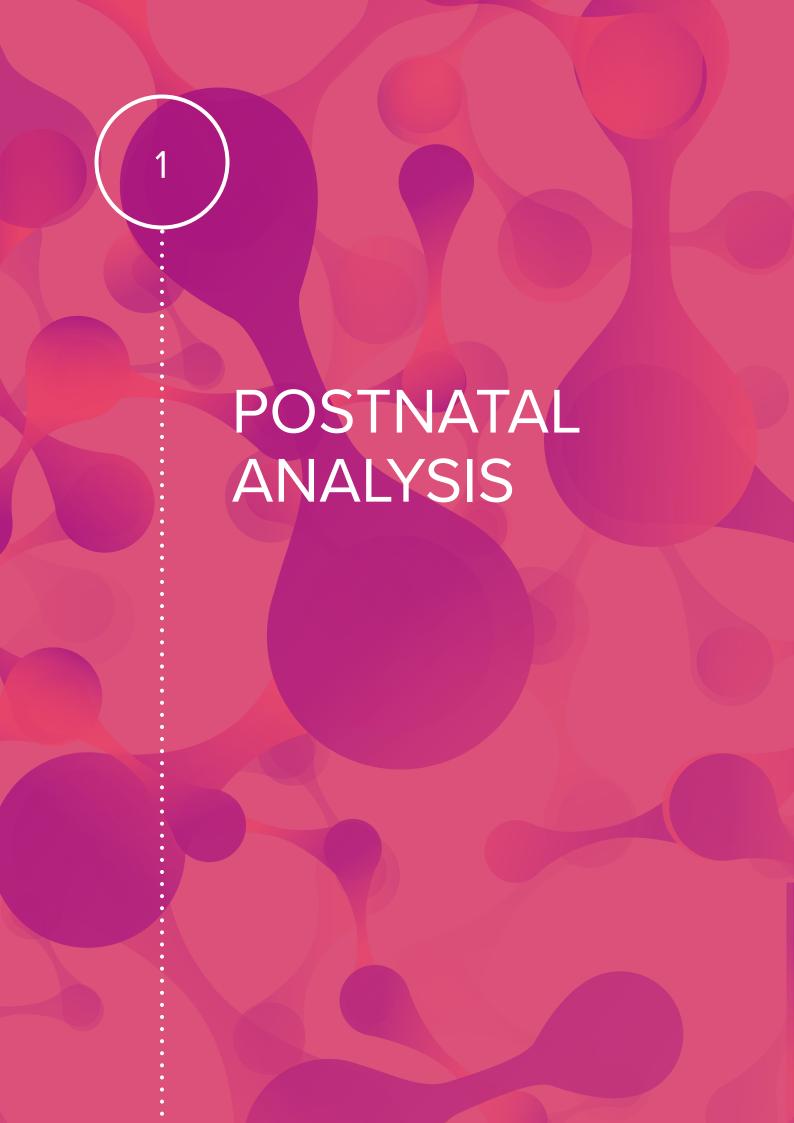
Starting from a long experience in the field of cytogenetic analysis, Euroclone has developed a perfect combination of media, plastic supports, synchronizing agents, and equipment for pre and postnatal analysis.



Human chromosome research has been pursued for over a century and many innovations have been introduced, giving rise to the methods of chromosome-banding and molecular analysis widely used today in routine diagnostic procedures in clinical cytogenetics. Modern cytogenetics is generally said to have begun in 1956 with the discovery by Tjio and Levan¹ that normal human cells contain 46 chromosomes. This discovery was aided by a new technique of slide preparation utilizing a hypotonic solution previously adapted by Hsu in 1952.

Starting from 1960 several banding techniques were introduced in cytogenetics laboratories; the most used are Quinacrine banding (QFQ), Giemsa banding (GTG) and reverse banding (R). In 1976, Yunis introduced high-resolution banding techniques that involve the staining of chromosomes during prophase or early metaphase (prometaphase), before they reach maximal condensation. Through this technique the number of visible bands for all chromosomes increases and allows the detection of less obvious abnormalities usually not seen with conventional banding²⁻³.

In the course of the 80's, advances were made in molecular cytogenetics, including several technologies like FISH and multicolor FISH, Comparative Genomic Hybridization (CGH), Next Generation Sequencing (NGS). Moreover, molecular cytogenetics application involves nanobiotechnology, microarrays, real-time polymerase chain reaction (RT-PCR), *in vivo* imaging, and single molecule detection.



Postnatal cytogenetic analysis refers to the karyotyping of samples derived from a variety of tissues: peripheral blood, bone marrow and skin fibroblast.

With a blood sample as small as 0,2 - 0,5 ml, it is possible to set up a suspension culture from which it is easy to obtain enough mitoses to study the karyotype of a subject. After 48 to 96 hours of culture, metaphase chromosomes are harvested and slides prepared for chromosome analysis⁴⁻⁵.

Chromosome analysis may be performed for several indications, including: multiple congenital anomalies in a patient; couples with a history of spontaneous miscarriages; individuals with ambiguous genitalia, infertility, or amenorrhea; patients with a family history of chromosomal abnormalities; patients with a suspected chromosomal syndrome, and families with male predominant mental retardation.

Moreover chromosome analysis for hematological disorders of leukemic blood cells are performed to identify specific chromosome rearrangements.

These rearrangements in neoplastic cells are often correlated to specific types of leukemia or myelodysplasias.

This information helps the clinician in making a diagnosis, predicting a prognosis, and eventually prescribing a therapy.

Postnatal Analysis

Chromosome kit & Medium, P & M

Chromosome Kit and Medium P and M are specifically designed to optimize peripheral blood lymphocytes (P) and bone marrow (M) cell culture, for the chromosomal analysis. The media are complete, and supplied in ready to use culture tube or in bottles. The use of Chromosome Kit (P/M) in ready to use culture tubes allows remarkable time saving and reduction of manual procedures bringing benefits to the routine laboratory. The ratio between sample/liquid volume and culture surface area was thoroughly studied, and the medium composition accurately formulated to ensure optimal mitotic index.

Chromosome Kits P & M simplify operative protocols and produce highly reproducible and readable specimens for microscopic examination: the number of metaphases and chromosome quality are superior compared to conventional media or other commercially available kit.

Features

- · Mitotic index: metaphases number doubled.
- Easy to use: the tube format guarantees easy handling, and low risk of contamination.
- Shelf life: 12 months from production date.
- CE/IVDR marked: manufactured according to the European Community Regulation for in vitro Diagnostics (2017/746 EU).





Ordering information

Cat.No.	Description	Q.ty/Format	Number of tests
EKAMTP	Chromosome Kit P	10 culture tubes	10
EKAMTB100	Chromosome Medium P	100 ml/bottle	nearly 20
EKAMTB500	Chromosome Medium P	500 ml/bottle	nearly 100
EKAMTM	Chromosome Kit M	10 culture tubes	10
EKAMTB100M	Chromosome Medium M	100 ml/bottle	nearly 20
EKAMTB500M	Chromosome Medium M	500 ml/bottle	nearly 100

SynchroSet

SynchroSet consists of two solutions, which added to the culture medium, and following an extremely simple protocol, allow the synchronization of the cell cycle in both lymphocytes and bone marrow cells. SynchroSet is a reagent that can be used routinely in the lab, and is also suitable for the production of high numbers of prometaphases in which the chromosomes are appropriate for high resolution banding techniques (up to 850-1000 bands per haploid set). This methodology is suitable for more precise identification of breakpoints and minor abnormalities which often cause severe plurimalformative conditions.

Features

- · Easy handling, user friendly protocol.
- Tube format ready to use (4 tubes x 1,5 ml each Sol A; 4 tubes x 1,5 ml each Sol B).
- · High resolution banding.
- Shelf life: 12 months from production date.
- CE/IVDR marked: manufactured according to the European Community Regulation for in vitro Diagnostics (2017/746 EU).



Cat.No.	Description	Q.ty/Format	Number of tests
EKAMTS008	SynchroSet	8 x 1,5 ml/microtubes	nearly 50

Chromosome FBS

Chromosome FBS is a special serum tested for Cytogenetics applications. The use of Chromosome FBS is suggested for postnatal analysis on peripheral blood and bone marrow cells culture.

This serum provides a wide variety of macromolecular proteins, low molecular weight nutrients, and other compounds (hormones and attachment factors) enhancing the *in vitro* growth of cells.

All raw materials are certified (EU approved) and each batch is sample tested for the presence of viruses and mycoplasma.

Features

- Screened for cytogenetics application: peripheral blood and bone marrow cells culture.
- · Suitable also for amnion and chorionic villi cells.
- 100 nm triple filtered.
- Shelf life: 5 years at -20°C.

Ordering information

Cat.No.	Description	Q.ty/Format	Number of tests
EKS0195D	Chromosome FBS	100 ml/bottle	N.A.

ChromoLymphoB Proliferation MIX

Recently, for patients with hematological disorder, the analysis of chromosomal aberrations of neoplastic cells has proved significant Diagnostic and Prognostic info!

The most valuable prognostic test would be the examination of bone marrow or peripheral blood cells.

Specimens could be cultured by adding a small amount of sample to a culture tube containing a nutrient rich medium, and metaphase spreads can be obtained from these within a few hours.

ChromoLympho-B Proliferation MIX, is the mix of ChromoLypmho B Factor and Interleukin 2. ChromoLypmho B Factor is a "new generation" proliferation reagent that used *in vitro* in cultured peripheral blood/bone marrow cells from patients affected with chronic lymphocytic leukemia (CLL) and other B-cell lymphoproliferative syndromes, has proved a very high success rate of metaphase analysis and more importantly, an impressive abnormality rate similar to Fish analysis findings.

Features

- Tube with both ChromoLympho-B Proliferation Factor (10nmoli), and IL2 (500IU), yeast source.
- Tested for in vitro culture of Peripheral Blood and Bone Marrow cells
- To be used on samples from patients affected with CLL and other B cell lymphoproliferative disorders.
- Lyophilized: very stable and long shelf life.
- User friendly and fast protocol.



Cat.No.	Description	Q.ty/Format	Number of tests
EKAMP010M	ChromoLymphoB Proliferation Mix	50 tubes	50

CYTOGENETICS Postnatal Analysis

ChromoTube

ChromoTube are tubes with a flat side, ideal for growing peripheral blood and bone morrow cells.

These tubes have been developed to be used in combination with our Chromosome Medium P (for peripheral blood) and M (for bone morrow).

The medium is retained in the flat side of the tube that is incubated on the tray in horizontal position to provide increased surface for improved gas exchange, and better growing performance of lymphocytes and bone marrow cell cultures.

Following a fast and easy protocol the lab will reach high quality and standardized results for the chromosome preparation, and subsequent analysis (chromosomal banding or molecular investigation.

Features

- Suitable for culture and analysis of peripheral blood and bone marrow cells.
- Tube: polystyrene; Screw cap: polyethylene resins mix.
- Dimensions: L x W: 110x16 mm.
- Suggested working volume, 5-6 ml.
- Gamma ray treated, shelf life 5 years.
- Easy to use: each box contains 3 bags; 50 tubes/bag, for a total of 150 ChromoTubes ready to use.



Cat.No.	Description	Q.ty/Format	Number of tests
EKAMP150	ChromoTube	150 tubes	150

PRENATAL ANALYSIS

Prenatal diagnosis to identify fetal genetic disorders started in the early 1970s. Women with pregnancies at increased risk of chromosome abnormality (usually because of maternal age, altered serum metabolites, or ultrasound abnormalities of the fetus) undergo invasive sampling of either amniotic fluid (AF), chorionic villi (CVS) or, rarely, fetal blood. Material from these samples is cultured to obtain dividing cells and then harvested and prepared for full karyotype analysis of metaphase chromosomes⁶. During the last three decades, improved technology for prenatal diagnosis by karyotyping has mainly involved methods to obtain less condensed chromosomes and to reduce culture time. For example, from 1987 to 1998, the average reporting time in the UK decreased from 20.2 to 13.8 days for amniotic fluid samples and from 21.3 to 14.5 days for CVS⁷. One innovative technique for the culture and analysis of adherent cells from amniotic fluid and chorionic villi is the *in situ* one. The primary advantage of using the *in situ* method instead of culture in T-Flask is that it provides information about the colony originated from a cell. This is important to decide whether an abnormality seen in some, but not all cells represents true mosaicism (constitutional mosaicism) or an artifact of tissue culture (pseudo mosaicism).

Prenatal Analysis

Amniopan

Amniopan is a complete medium, that has been specifically developed for the cultivation of human fetal cells from amniotic fluid or chorion villi biopsy (CVS) material, for prenatal diagnostic applications. The medium formulation is optimized with special emphasis on fast attachment of cells to the cell culture substrate and efficient cell growth, resulting in earlier chromosome analysis, and reduces handling steps and the possibility of contamination.

As a complete, ready to use medium, it contains all the necessary hormones, growth factors, L-glutamine, phenol red, sodium bicarbonate, antibiotics and FBS.

This product is manufactured under strictly supervised quality system in conformance with the ISO 9001/EN and ISO 13485 (medical products and *in vitro* diagnostics) requirements.

Features

- Designed for primary cultures of human amniotic fluid cells and chorionic villi samples.
- Promotes fast cells attachment, guarantees the cell growth in 7-9 days.
- Ready to use and available in liquid form, frozen.
- Shelf life: 24 months at -20°C.
- Very long stability, once thawed store at +2°C/+8°C for 2 weeks.
- Developed for either open (in a 5% CO² atmosphere) or closed culture systems.
- CE/IVD marked: manufactured according to the European Community directive for in vitro Diagnostics.







Amniocyte

Villi

Ordering information

Cat.No.	Description	Q.ty/Format
P0470100	Amniopan medium	100 ml

Amniodish

Amniodish is a support for in situ culture of adherent cells and in particular amniocytes and chorionic villi.

Amniodish is a ready to use 35 mm Petri dish including a round coverglass slide.

The slide allows to grow the cell *in situ* and to perform directly chromosomal banding or molecular investigation (i.e. fluorescent *in situ* hybridization, FISH) avoiding trypsinization step.

Features

- Suitable for *in situ* culture and direct analysis, without trypsinization.
- Short turnaround time: only primary cultures are harvested.
- Suitable for chromosome banding and FISH analysis.
- Easy to use: 40 sterile trays ready to use, for a total of 240 Amniodish.
- Slide dimensions: 32 mm diameter, 0,13-0,16 mm thickness.
- · Gamma ray treated, shelf life: 2 years.





Cat.No.	Description	Q.ty/Format
EKAMN240	Amniodish	240 pcs

Amnioslide

Amnioslide is a support for in situ culture of adherent cells and in particular amniocytes and chorionic villi.

The use of SuperFrost® slide inside the culture chamber allows to perform directly chromosomal banding or molecular investigation (FISH), avoiding trypsinization step.

Features

- Suitable for *in situ* culture and direct analysis, without trypsinization.
- Short turnaround time: only primary cultures are harvested.
- · Suitable for chromosome banding and FISH analysis.
- Easy to use: 30 sterile ready to use trays, 60 chambers.
- Slide dimensions: 25x75 mm; 12,5 cm² culture area.
- · Shelf life: 2 years.



Ordering information

Cat.No.	Description	Q.ty/Format
EKAMS60F	Amnioslide, SuperFrost®	60 pcs

Notes: Superfrost® is a registered trademark by gerhard menzel, glasbearbeitungswerk gmbh & co. Kg

AmnioFlask

AmnioFlask is a well known support for *in situ* culture of amniocytes, chorionic villi derived cells, and other adherent cells. AmnioFlask is a flask ultrasonically welded to a polystyrene microscope slide.

The screw cap guarantees a liquid and gas tight seal to prevent contamination and leakage during flask handling.

At the end of the *in situ* culture the flask is easily removed from the slide, and is possible to perform immediately chromosomal banding or molecular investigation.

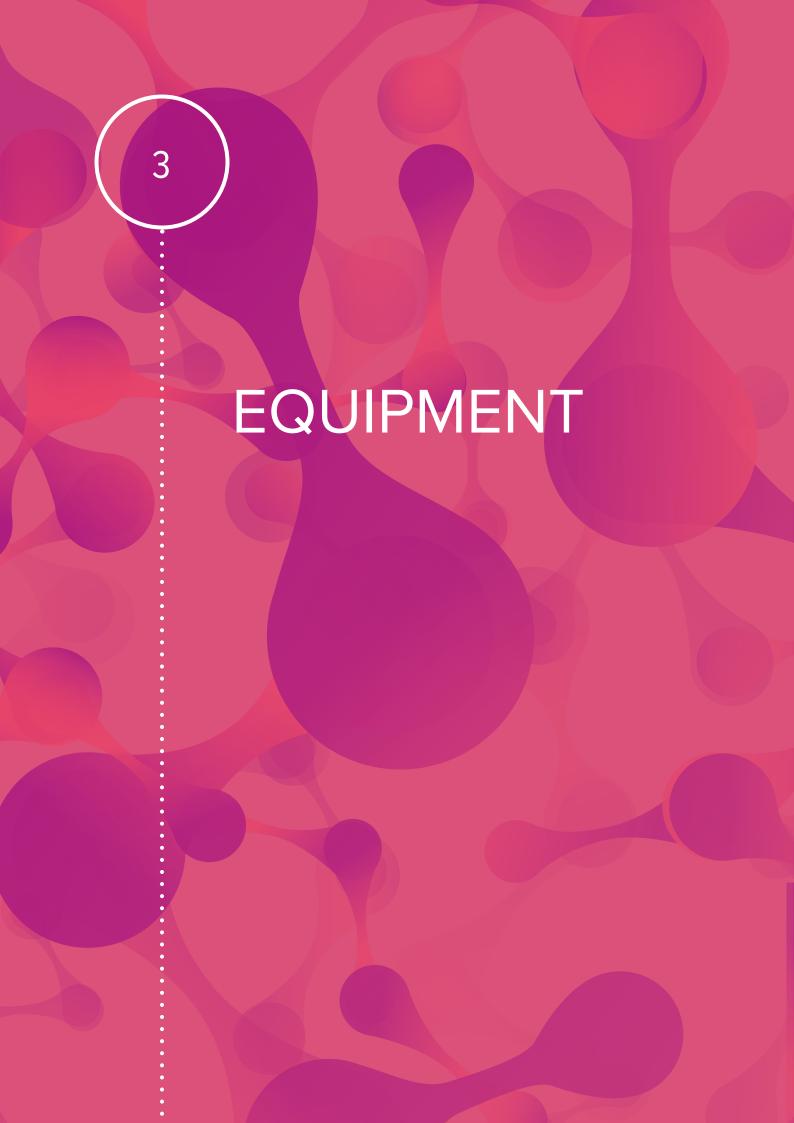
On the bottom of the slide a barcode label is attached. Barcodes are essential for samples tracking and represent the safest way for managing large amount of data, improving accuracy, efficiency and safety levels of storage and reducing costs.

Features

- Suitable for *in situ* culture and direct analysis, without trypsinization.
- Short turnaround time: only primary cultures are harvested.
- Suitable for chromosome banding and FISH analysis.
- Traceability: barcode on the slide provides the safest way to keep track of sample.
- Easy to use: 49 sterile ready to use trays, 245 flasks.
- Slide dimensions: 25x75 mm, 9 cm² culture area.
- · Gamma ray treated, shelf life: 5 years.



Cat.No.	Description	Q.ty/Format
EKAMF250	AmnioFlask	245 pcs



Euroclone answers to the need of automation and standardization of procedures in the Cytogenetic labs through a complete range of instruments that allow to improve all the manual operations required by chromosome preparation steps; these devices will ensure excellent results, perfectly reproducible in any environmental condition, and will drastically reduce the time and the work-load.

CYTOGENETICS Equipment

Equipment

Optichrome® Plus

Controlled evaporation chamber for optimized chromosome preparations.

It has been widely demonstrated that the quality of samples preparations for chromosome analysis depends largely on the environmental conditions in which the final evaporation of the fixative takes place. The combined effects of temperature and relative humidity have a noticeable effect on the quality of the metaphase.

Given that temperature and humidity are in constant variation, not only from season to season, but also throughout each day as a consequence of changes in the climatic conditions, it is easy to understand the requirement for a system that enables cytogenetists to work always under standardized conditions.

Optichrome® PLUS has been specifically designed to minimize all problems related to those critical unstable parameters, allowing the technician to set and control both temperature and humidity, thus defining the ideal working conditions related to a certain protocol.

Optichrome® PLUS will ensure excellent results, perfectly reproducible in any situation, as a final result a great improvement in efficiency and standardization can be easily achieved.

Features

- 7" Touch-screen color display.
- 9 Programs where is possible to save all details (name, sample type, evaporation conditions).
- 4 timers, one for each drawer, can run independently.
- Possibility to process slides of various shape (round, rectangular...).
- Safety: active charcoal filters and ventilation system
- Operating ranges of temperature and humidity are: $20^{\circ}C$ $40^{\circ}C$ (±0.5°C) 35% 60 % (±2%)
- Size: 540x608x540 mm (H x W x D).
- Weight: 65 kg.







Cat.No.	Description
EKAMH960	Optichrome® Plus - Evaporation chamber for optimized chromosome preparations
EKAMH953	Cooling unit for Optichrome® Plus

Hyperchrome

In situ hybridization system Hyperchrome allows both denaturation and hybridization procedures during FISH experiments, eliminating the need to move the sample from one instrument to another.

The heating surface, with accurate temperature control, allows co-denaturation, a process commonly used for simultaneous denaturation of the target DNA and the probe; the humidity chamber, on the other hand, allows to maintain a level of humidity sufficient to prevent dehydration of the probe, and ensure strong signals with a low background.

Hyperchrome enables to obtain high quality and reproducible results.

Features

- Different operation modes: denaturation/hybridization, Fixed Temperature, and Custom.
- Rapid temperature ramp-up and accuracy (±1°C).
- Superior temperature uniformity across all slide positions.
- Touch screen: for easy reading and programming.
- 60 user programmable settings.
- Capacity: 12 microscope slides simultaneously.
- Temperature control range: RT+5°C~99.9°C.
- Time range: 1min ~ 99h59 min.
- Size: 420x225x143 mm (H x W x D).
- Weight: 5,2 kg



Cat.No.	Description
EHP500AS	Hyperchrome - In situ hybridisation system





CYTOGENETICS Related Products

Related Products

Cat.No.	Description	Format	
MEDIA			
ECB9006L	RPMI 1640 MEDIUM	500 ml	
ECM2001L	RPMI 1640 MEDIUM with stable L-Glutamine	500 ml	
ECM0620L	RPMI 1640 MEDIUM w/o Folic Acid (FRAGILE X CHROMOSOME MODIFICATION)	500 ml	
ECB2000L	RPMI 1640 MEDIUM with L-Glutamine	500 ml	
ECB7503L	HAM'S NUTRIENT MIXTURE F-10	500 ml	
ECM0140L	HAM'S NUTRIENT MIXTURE F-10 with L-Glutamine	500 ml	
SALT SOLUTIONS			
ECB4004L	PBS, phosphate buffered saline, w/o Calcium & Magnesium	500 ml	
ECB4007L	HANK'S balanced salts solution, w/o Calcium & Magnesium	500 ml	
ANTIBIOTIC/ANTIMYCOTIC SOLUTIONS			
ECM0010D	Amphotericin B (25 mg/l), penicillin (10.000 U/ml), streptomycin (10.000 mg/l) - 100X	100 ml	
ECM0011B	Gentamycin Solution (10 mg/ml)	10 ml	
ECM0012B	Gentamycin Solution (50 mg/ml)	10 ml	
ECM0012D	Gentamycin Solution (50 mg/ml)	100 ml	
ECB3001D	Penicillin (10.000 U/ml), Streptomicin Solution (10.000 mg/l) - 100X	100 ml	
ANCILLARY REAGI	ENTS		
ECB3000D	L-Glutamine (200 mM) Liquid - frozen 100X	100 ml	
ECB3003D	L-Glutamine with Penicillin/Streptomycin Liquid – frozen 100X	100 ml	
ECB3004D	Stable L-Glutamine (200 mM) Liquid - frozen 100X	100 ml	
EK0041B	Colcemid 10 μg/ml in PBS Liquid	10 ml	
ECM0970D	Distilled Water Sterile, Tissue Culture Tested	100 ml	
ECM0970L	Distilled Water Sterile, Tissue Culture Tested	500 ml	
ECM0180D	HEPES Buffer Solution 1M Liquid	100 ml	
ECM0180L	HEPES Buffer Solution 1M Liquid	500 ml	
ECM0543D	Potassium Chloride 0,075M	100 ml	
ECM0980D	Sodium Bicarbonate 7,5% Liquid	100 ml	
ECM0542D	Sodium Pyruvate 100 mM Liquid - frozen	100 ml	
ECB3052D	Trypsin 0,05% - EDTA 0,02% in PBS w/o Ca, Mg and Phenol Red Liquid - frozen	100 ml	
ECM0920D	Trypsin 0,05% - EDTA 0,02% with Phenol Red Liquid - frozen	100 ml	
ECB3051D	Trypsin 2,5% (w/v) in HBSS w/o Ca & Mg and Phenol Red Liquid - frozen	100 ml	
DISPOSABLE			
ET7025	Primo® TC Flask 25 cm² plug seal- screw cap	200 pcs	
ET7026	Primo® TC Flask 25 cm² screw cap- w/filter	200 pcs	
ET2035	Primo® TC Dishes 35 mm	500 pcs	
ET2060	Primo® TC Dishes 60 mm	500 pcs	
ET2100	Primo® TC Dishes 100 mm	300 pcs	
ET20150	Primo® TC Dishes 150 mm	100 pcs	
ET5015B	Primo® EZ tubes 15 ml PP	500 pcs	
ET5050B	Primo® EZ tubes 50 ml PP	500 pcs	
EPS01N	Primo® Pet pre-sterilized 1 ml	500 pcs	
EPS02N	Prime® Pet pre-sterilized 2 ml	500 pcs	
EPS05N	Primo® Pet pre-sterilized 5 ml	200 pcs	
EPS10N	Primo® Pet pre-sterilized 10 ml	200 pcs	
EPS25N	Primo® Pet pre-sterilized 25 ml	150 pcs	
EPS50N	Primo® Pet pre-sterilized 50 ml	100 pcs	

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Notes	

CYTOGENETICS



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- Produzione Proteine Ricombinanti
- Drug Discovery



Some of the brands mentioned in the guides are available through Euroclone only in Italy.





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