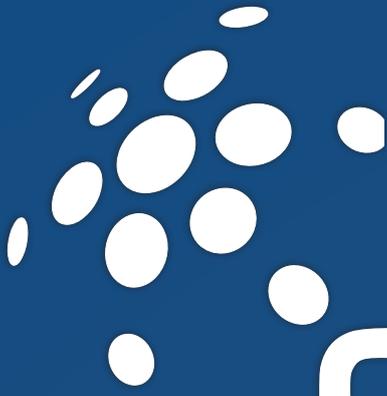


2023



SERANA[®]

Science for Life

LEADING
PRODUCER OF
CELL CULTURE
PRODUCTS AND
OEM SERVICES

www.serana-europe.com



Serana Europe - Leading Manufacturer and Supplier of Cell Culture Products

Serana Europe GmbH is a leading manufacturer and supplier of cell culture products. Our product range includes animal & human sera, sterile liquid & powdered classical media, reagents, supplements and buffer solutions for cell culture applications. Serana's products are used in all areas where cell culture is performed. This includes the biopharmaceutical industry for the production of vaccines, therapeutic proteins and diagnostics. In addition, we are a major supplier to Academic R&D institutes (universities, hospitals & clinics), private research organizations and various biotech companies.

Cell culture is a wide biotechnological field with a broad range of applications. A number of key cell lines are used in industrial biopharmaceutical manufacturing, research, and diagnostics. In order to boost the performance of your specific processes, our experts are available to help you to optimize, formulate and manufacture custom products based on your specific needs.

Our quality assurance team guarantees exceptional quality manufacturing standards which follows relevant guidelines and regulatory requirements. We are EDQM, ISO 9001, and ISO 13485 certified, and our team is dedicated to continuously improve our quality management system. Our quality control department also offers a wide variety of relevant biological, molecular and biochemical assays as a service.

We have certified manufacturing facilities in Germany and Australia, which makes us an ideal global partner with validated storage and delivery logistics world-wide.



A few reasons to choose Serana as your partner in cell culture

Quality

Flexibility

Reliability

Experience

Cost Effective

Service & Support

SCIENCE FOR LIFE

CERTIFIED QUALITY FOR YOUR SUCCESS

OUR QUALITY PROMISE

Products manufactured by Serana utilize stringent operating and quality control procedures. Detailed production and traceability records are available for every batch produced. A battery of QC tests is performed including: physical and chemical analysis, protein profiling, sterility, virology, biochemistry and cell culture performance benchmarking. Only batches that pass Serana's rigorous quality control procedures are released for sale. Detailed certificates of analysis are prepared and made available for each lot produced.

CUSTOMISED MANUFACTURING

As well as Serana's standard QC control procedures, many additional tests can be carried out upon our clients' request. Should you require a component or a test that is not specifically listed, please speak to your customer service representative to see if your custom request can be accommodated by our manufacturing and QC processes.



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PRODUCT RANGE

Should you have any specific product requirements that our stock product offering cannot fulfill, please don't hesitate to ask if we can tailor-make a product to your specifications.

WWW.SERANA-EUROPE.COM

On our website you will find current detailed products and services information including: specifications, formulations, certificates, safety data sheets and much more.

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01 FOETAL BOVINE SERUM

Serana's Foetal Bovine Serum is sourced from only the highest quality raw material sources in Australia, United States, Europe, South and Central America. We have extensive international industry experience manufacturing to the highest of standards.

Serana maintains an in-house quality control department in order to verify the products adhere to the strictest of quality specifications.

Speak with a Serana customer representative today about your foetal bovine serum requirements in order to receive your free samples.

Foetal Bovine Serum (FBS) is the liquid fraction of the clotted fetal blood. After separation by centrifugation, the raw FBS is then dispensed into containers and frozen. A batch of sterile filtered FBS is obtained by thawing, pooling and filtration of raw FBS through a series of membrane filters culminating in a sterile 0.1 micron filter, before being aseptically dispensed.

PRODUCT SPECIFICATIONS

Foetal Bovine Serum

pH	6.8 – 8.2
Osmolality	260 – 340 mOsm/kg
Endotoxin	< 10 EU/ml
Total Protein	3.0 – 4.5 g/dl
Albumin	1.4 – 3.4 g/dl
IgG	< 400 µg/ml
Haemoglobin	< 25 mg/dl
Myoplasma	not detected
Virus & Antibodies	BHV-1, PI-3, BVDV
Sterility	passed



TEST SAMPLES, RESERVATIONS AND ORDERS

Many customers prefer to test serum products with their respective cell lines in order to adhere to their in-house quality requirements. Serana's distributors will provide samples from different batches for customer testing and will hold the requested number of bottles from each batch on reservation until sample tests are completed. Normally, reservations are held for four to six weeks. Please advise your distributor if longer reservations are required.

- + Quality assured
- + Triple 0.1 µm sterile filtered
- + Extensive certificate of analysis provided

ORDERING INFORMATION

PRODUCT	ORIGIN	VOLUME	STORAGE	SHELF LIFE	CODE
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Brazil	500 ml	< - 15° C	5 Years	S-FBS-SA-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Netherlands	500 ml	< - 15° C	5 Years	S-FBS-NL-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Ireland	500 ml	< - 15° C	5 Years	S-FBS-IR-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	United States	500 ml	< - 15° C	5 Years	S-FBS-US-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Australia	500 ml	< - 15° C	5 Years	S-FBS-AU-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Colombia	500 ml	< - 15° C	5 Years	S-FBS-CO-015
Foetal Bovine Serum Triple 0.1 µm Sterile filtered	Uruguay	500 ml	< - 15° C	5 Years	S-FBS-UY-015
Fetal Bovine Serum Substitutes					
Fetal+ Triple 0.1µm Sterile Filtered A serum substitute for foetal bovine serum	EU Eligible	500 ml	< - 15° C	5 Years	S-FBSP-EU-015
Fetal ExCell - Triple 0.1µm Sterile Filtered A serum substitute for foetal bovine serum	EU Eligible	500 ml	< - 15° C	5 Years	S-SFBS-EU-015

We also offer specially processed Foetal Bovine Serum, including:

- + Gamma irradiated + Charcoal stripped + Heat Inactivated + Dialysed + Ultra Low IgG

ANIMAL BLOOD BY PRODUCTS

02 BOVINE SERUM

Calf serum and newborn calf serum contain higher concentrations of IgG than foetal bovine serum as well as having an increased protein content.

Newborn and calf serum can be cost-effective alternatives to foetal bovine serum.

Adult Bovine Serum (ABS) is defined as the liquid fraction of clotted blood derived from healthy slaughtered cattle 12 months of age or older deemed to be fit for human consumption by ante and/or post-mortem inspection.

Bovine Calf Serum (BCS) is defined as the liquid fraction of clotted blood derived from healthy, slaughtered bovine calves, aged from 20 days up to 12 months, deemed fit for human consumption by ante-and/or post- mortem inspection.

Newborn Calf Serum (NCS) is defined as the liquid fraction of clotted blood derived from healthy, slaughtered bovine calves aged less than 20 days, deemed fit for human consumption through ante- and/or post- mortem inspection.



PRODUCT SPECIFICATIONS

Bovine Serum

	ADULT	CALF	NEWBORN CALF
pH	6.8 – 8.2	6.8 – 8.2	6.8 – 8.2
Osmolality	260 – 340 mOsm/kg	260 – 340 mOsm/kg	260 – 340 mOsm/kg
Endotoxin	test and report	test and report	test and report
Total Protein	test and report	test and report	test and report
Albumin	test and report	test and report	test and report
Haemoglobin	test and report	test and report	test and report
Myoplasma	not detected	not detected	not detected
Virus & Antibodies	BHV-1, PI-3, IBRV	BHV-1, PI-3, IBRV	BHV-1, PI-3, IBRV
Sterility	passed	passed	passed
Long Term Storage	< -15°C	< -15°C	< -15°C

For complete specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

ORDERING INFORMATION

PRODUCT	ORIGIN	VOLUME	STORAGE	SHELF LIFE	CODE
Adult Bovine Serum	Australia	500 ml	< - 15° C	5 Years	S-ABS-AU-015
0.2 µm Sterile filtered		1000 ml			S-ABS-AU-1L
Calf Serum	Australia	500 ml	< - 15° C	5 Years	S-CS-AU-015
0.2 µm Sterile filtered		1000 ml			S-CS-AU-1L
Newborn Calf Serum	New Zealand	500 ml	< - 15° C	5 Years	S-NC-NZ-015
0.2 µm Sterile filtered		1000 ml			S-NC-NZ-1L
Newborn Calf Serum – Gamma Irradiated	New Zealand	500 ml	< - 15° C	5 Years	S-NC-NZ-035



ANIMAL BLOOD BY PRODUCTS

03 OTHER ANIMAL SPECIES SERUM

Serana also processes serum for various other species of animal (e.g. Horse, Mouse, Rabbit, Sheep, Chicken, Pig). Should you have a specific requirement for a species not listed, please simply ask. We have extensive long-term relationships with raw material suppliers around the world.



PRODUCT SPECIFICATIONS

Various animal species serum

	CHICKEN	HORSE	GOAT	PORCINE
pH	5.0 – 8.0	6.5 – 8.0	test and report	7.0 – 8.0
Osmolality	240 – 340 mOsm/kg	240 – 350 mOsm/kg	test and report	260 – 350 mOsm/kg
Endotoxin	test and report	< 50 EU/ml	test and report	< 50 EU/ml
Total Protein	test and report	6.0 – 8.5 g/dl	test and report	6.0 – 8.0 g/dl
Haemoglobin	test and report	< 30 mg/dl	test and report	< 50 mg/dl
Sterility	passed	passed	passed	passed

	RABBIT	MOUSE	RAT	SHEEP
pH	7.0 – 8.5	7.0 – 8.5	7.0 – 8.0	7.0 – 8.0
Osmolality	260 – 350 mOsm/kg	260 – 350 mOsm/kg	260 – 350 mOsm/kg	250 – 350 mOsm/kg
Endotoxin	< 100 EU/ml	< 100 EU/ml	< 50 EU/ml	< 70 EU/ml
Total Protein	4.5 – 7.0 g/dl	5.0 – 6.5 g/dl	3.5 – 6.0 g/dl	5.0 – 8.0 g/dl
Haemoglobin	< 50 mg/dl	< 40 mg/dl	< 50 mg/dl	< 60 mg/dl
Sterility	passed	passed	passed	passed

For complete specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

ORDERING INFORMATION

PRODUCT	ORIGIN	VOLUME	STORAGE	SHELF LIFE	CODE
Chicken Serum 0.2 µm Sterile filtered	EU	500 ml	< - 15° C	5 Years	S-CH-EU-015
Horse Serum 0.2 µm Sterile filtered	EU	500 ml	< - 15° C	5 Years	S-HS-EU-015
Goat Serum 0.2 µm Sterile filtered	EU	500 ml	< - 15° C	5 Years	S-GS-EU-015
Mouse Serum 0.2 µm Sterile filtered	EU	100 ml	< - 15° C	5 Years	S-MS-EU-011
Porcine Serum 0.2 µm Sterile filtered	EU	500 ml	< - 15° C	5 Years	S-PS-EU-015
Rabbit Serum 0.2 µm Sterile filtered	EU	500 ml 100 ml	< - 15° C	5 Years	S-RB-EU-015 S-RB-EU-011
Rat Serum 0.2 µm Sterile filtered	EU	100 ml	< - 15° C	5 Years	S-RT-EU-011
Sheep Serum 0.2 µm Sterile filtered	EU	100 ml	< - 15° C	5 Years	S-SS-EU-011

ANIMAL BLOOD BY PRODUCTS

04 TREATED ANIMAL BLOOD

We offer various animal species whole blood in various treatments and preparations. All whole animal blood products are of EU origin. The products are collected by means of donor aseptic collection. The product certificate of analysis includes the accepted packing cell volume (PCV) specifications.

05 BOVINE SERUM ALBUMIN

Bovine Serum Albumin (BSA) is the main protein found in bovine blood plasma and has applications in cell culture, in-vitro diagnostics, human and veterinary pharmaceuticals, molecular biology, serology and general research. Serana's BSA is manufactured using the heat shock method, plus purification by extensive diafiltration at a low pH gives a more purified product (albumin fraction) than the Cohn process. This process takes place in a closed system. These products are suitable for cell culture applications including vaccine production.

Serana also produces a high grade chromatographically purified product from high quality Australian origin bovine serum. This unique proprietary process preserves the integrity of the albumin protein and with extensive filtration and diafiltration. This produces a reagent grade product suitable for the most sensitive and diagnostic research applications.

PRODUCT SPECIFICATIONS

TREATED ANIMAL BLOOD

	HORSE	SHEEP	PORCINE	RABBIT	CHICKEN	GUINEA PIG	MOUSE	BOVINE	GOAT
Product Code - Defibrinated Blood	B-HBD	B-SBD	B-PBD	B-RBD	B-CBD	B-GPBD	B-MBD	B-BBD	B-GBD
Product Code - Red Blood Cells in Alsever's	B-HBA	B-SBA	B-PBA	B-RBA	B-CBA	B-GPBA	B-MBA	B-BBA	B-GBA
Packing Cell Volume (PCV)	> 32%	> 32%	> 32%	> 32%	> 32%	> 32%	> 32%	> 32%	> 32%

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Various dispensing sizes available: 10 ml, 20 ml, 50 ml, 100 ml, 500 ml, 1000 ml

ORDERING INFORMATION

PRODUCT	ORIGIN	VOLUME	STORAGE	SHELF LIFE	CODE
Defibrinated Blood Horse, Sheep, Porcine, Rabbit, Chicken, Guinea Pig, Mouse, Bovine, Goat	EU	varies	2 - 8° C	21 days	B-[SPECIES]BD[VOLUME]
Red Blood Cells in Alsever's Horse, Sheep, Porcine, Rabbit, Chicken, Guinea Pig, Mouse, Bovine, Goat	EU	varies	2 - 8° C	21 days	B-[SPECIES]BA[VOLUME]

Other potential preparations and treatments (e.g., Citrated, Lysed, Red Blood Cells in GVB) are available upon request.

Only available in Germany

PRODUCT SPECIFICATIONS

BOVINE SERUM ALBUMIN

	LYOPHILIZED FINE POWDER	LOW ENDOTOXIN	CHROMATOGRAPHY PURIFIED
Product Code	RBP-010	RBP-016	RBP-020
pH	6.5 - 7.5	6.5 - 7.5	7.0 - 7.2
Purity	≥ 98.0%	≥ 98.0%	≥ 99.0%
Endotoxin	< 10 EU/ml	< 1 EU/ml	< 1 EU/ml
Protease	tested	tested	not detected
Fatty Acid	tested	tested	not detected
Moisture	< 5.0%	< 5.0%	< 5.0%

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Various dispensing sizes available: 5 g, 50 g, 100 g, 500 g, 1 kg, 10 kg

ORDERING INFORMATION

PRODUCT	ORIGIN	QUANTITY	STORAGE	SHELF LIFE	CODE
Bovine Serum Albumin Lyophilized Fine Powder	Australia	1 Kg	2 - 8° C	5 Years	RBP-010-1KG
Bovine Serum Albumin Low Endotoxin, Lyophilized Fine Powder	Australia	1 Kg	2 - 8° C	5 Years	RBP-016-1KG
Bovine Serum Albumin Protease and Fatty Acid Free, Lyophilized Fine Powder	Australia	100 g	2 - 8° C	5 Years	RBP-020-100G

01 HUMAN SERUM

Human Male AB Plasma-Derived Serum can be used for various cell culture applications. It is a main component needed for culturing human cell lines. It is often used to replace FBS which is not an ideal supplement for human derived cell lines. Human Male AB Serum is filtered and cell culture tested for mycoplasma, endotoxin, and sterility. Our US origin Human Male AB Plasma-Derived Serum is a proprietary product manufactured with either human or bovine thrombin following a cGMP process. Plasma is collected from FDA licensed centers within the US. Each unit is tested and found negative for all viral markers using FDA-approved methods.

Human Male AB off the clot (OTC) serum can be used for various cell culture applications. OTC serum typically has a slightly higher protein content than Human Male AB Serum and can be used instead of Human Male AB serum if higher protein is required for your cell culture process. Human Male AB OTC Serum is collected from the whole blood donation of healthy male AB donors at FDA-licensed centers within the US. The whole blood is allowed to coagulate naturally after collection and once clotted, the material is centrifuged to remove the clot and serum is separated and virally tested. The individual units are then pooled, filtered and bottled. Each Individual unit is tested and found negative for all required viral markers using FDA-approved methods.



ORDERING INFORMATION

PRODUCT	ORIGIN	VOLUME	STORAGE	SHELF LIFE	CODE
Human Male AB Off The Clot Serum	USA	100 ml	< -15°C	5 Years	S-HUO-US-011
Human Male AB Serum	USA	100 ml	< -15°C	5 Years	S-HU-US-011
Human Male AB Serum	EU	100 ml	< -15°C	5 Years	S-HU-EU-011
Human Male AB Plasma-Derived Serum, Manufactured with Bovine Thrombin	USA	100 ml	< -15°C	5 Years	S-HUB-US-011
Human Male AB Plasma-Derived Serum, Manufactured with Human Thrombin	USA	100 ml	< -15°C	5 Years	S-HUH-US-011

We also offer specially processed human serum, including: + Gamma irradiated, + Heat Inactivated, + 500 ml aliquots

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Testing conducted at certified labs: HIV-1, HCV and HBV by Nucleic Acid Test, WNV and Zika by Nucleic Acid Test, Anti-HIV 1 / 2, Anti HCV, HBsAg, Chagas & Syphilis

Additional tests: Anti HBC, Mycoplasma, Endotoxin, USP Sterility, Hemoglobin, Osmolality, pH, Chemistry and Species Testing

HUMAN BLOOD BY PRODUCTS

02 HUMAN SERUM ALBUMIN

Human Serum Albumin (HSA), the most abundant protein in plasma, makes up about half of human serum protein content. It represents the main determinant of plasma oncotic pressure and the main modulator of fluid distribution between body compartments. It has an extraordinary ligand binding capacity, which makes it the main carrier for fatty acids and hormones, and also affects pharmacokinetics of many drugs.

HSA is a valuable biomarker of many diseases. Additionally, it is widely used clinically to treat several diseases, including: hypovolemia, shock, burns, surgical blood loss, trauma, hemorrhage, cardiopulmonary bypass, acute respiratory distress syndrome, hemodialysis, acute liver failure, chronic liver disease, nutrition support, resuscitation and hypoalbuminemia. It's also used as a supplement for cell culture media and promotes cell growth by delivering nutrients and binding toxins.



PRODUCT SPECIFICATIONS

HUMAN SERUM ALBUMIN

	HSA
Protein Composition (Albumin Purity)	> 92%
Potassium	report value
Sodium	report value
pH	report value

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Various dispensing sizes available: 100 g, 500 g, 1 kg

ORDERING INFORMATION

PRODUCT	ORIGIN	QUANTITY	STORAGE	SHELF LIFE	CODE
Human Serum Albumin Lyophilized powder	USA	100 g	2 - 8° C	5 years	HSA-001-100G
Human Serum Albumin Lyophilized powder	USA	500 g	2 - 8° C	5 years	HSA-001-500G
Human Serum Albumin Lyophilized powder	USA	1 kg	2 - 8° C	5 years	HSA-001-1KG

Individual donor units used in the preparation of this product are tested negative by tests for antibodies to HIV 1/2, HCV and non-reactive for HBsAg. Pooled samples are tested to be non-reactive for HIV-1 RNA, HBV DNA and HCV RNA using a Nucleic Acid Test. All tests are performed with kits approved by the FDA. Each donor must be tested and found negative for syphilis according to FDA guidelines. All donor units are collected at FDA approved donor centres located in the United States. The pool of source plasma for fractionation from which the product comes from is tested and must be found non-reactive for virological markers HBsAg, anti HIV-1/ HIV-2 and anti HCV using validated serological tests, and for HCV RNA, HIV-1 RNA and HBV DNA using validated techniques.

01 STERILE LIQUIDS

Serana cell culture liquid media is manufactured under stringent standard operating procedures. A variety of tests are performed including endotoxin, pH value, osmolality and cell culture performance on each lot of 0.1 µm sterile filtered media. Only batches that pass Serana's rigorous quality control procedures are released for sale. Detailed certificates of analysis are prepared and made available for each lot produced.

Dulbecco's Modified Eagle's Medium, or DMEM for short, is a standardized nutrient medium for cell culture with a wide range of uses for human and various animal cells. DMEM is a modified version of Eagle's Minimum Essential Medium (EMEM) which contains four times the concentration of amino acids and vitamins.

DMEM/F-12 (Dulbecco's Modified Eagle Medium/Nutrient Mixture F-12) is a widely used basal medium for supporting the growth of many different mammalian cells. Cells successfully cultured in DMEM/F-12 include MDCK, glial cells, fibroblasts, human endothelial cells, and rat fibroblasts.

The **Nutrient Mixture F-12, also known as Ham's F-12**, was formulated by R. G. Ham (1965) for the synthetic, serum-free culturing of single-cell Chinese hamster ovary (CHO) cells. A key change over the predecessor medium F-10 is increased zinc, which greatly improved plating efficiency and reproducibility for CHO cells. F-12 was designed primarily for the plating of single cells and not for supporting populations exceeding 100,000 cells. However, it is now widely used for a variety of mammalian cell types. Depending on the type of culture, F-12 may require serum or protein supplementation.

IMDM (Iscove's Modified Dulbecco's Medium) works well for high-density, rapidly proliferating cell cultures including Jurkat, COS-7 and macrophages.

Leibovitz's L-15 Medium was originally formulated for use in carbon dioxide free systems requiring sodium bicarbonate. L-15 is buffered by the use of free basic amino acids, phosphate buffers, and higher levels of galactose and sodium pyruvate to help maintain physiological pH control. L-15 has been shown to work for human tumor cells and embryonic cells and for established cell lines such as HeLa and Hep-2.

McCoy's 5A Medium is a general purpose medium that supports the propagation of many types of primary cells, established cell lines, and explants from biopsy tissues. This medium will support the growth of primary mammalian cells derived from normal bone marrow, skin, spleen, kidney, lung, rat embryos, and other tissues. It requires serum supplementation, commonly with 10% Fetal Bovine Serum and requires a 5–10% CO₂ environment to maintain physiological pH.

Media 199 was originally formulated for nutritional studies of chick embryo fibroblasts. Media 199 are formulated with either Earle's salts or Hanks' salts. Media utilizing Earle's salts are buffered with a bicarbonate/carbonic acid system and will maintain pH in a CO₂ incubator. Use of Earle's salts in atmospheric conditions will result in rapid rise in pH of the culture medium.

Minimum Essential Medium (MEM) is one of the most widely used of all synthetic cell culture media. MEM has been used for cultivation of a wide variety of cells grown in monolayers.

MEM Alpha is a modification of Minimum Essential Medium that contains non-essential amino acids, sodium pyruvate, thioctic acid, vitamin B12, biotin, and ascorbic acid. MEM Alpha can be used with a variety of suspension and adherent mammalian cells, including keratinocytes, primary rat astrocytes, and human melanoma cells.

RPMI 1640 was a modification of McCoy's 5A medium (or RPMI 1630), and when properly supplemented with serum or an adequate serum replacement, RPMI 1640 allows the cultivation of many cell types, especially human T/B-lymphocytes, bone marrow cells, and hybridoma cells.

William's E Medium requires supplementation, usually with 5-10% fetal bovine serum. William's E Medium uses a sodium bicarbonate (2.2 g/l) buffer system and therefore requires a 5-10% CO₂ environment to maintain physiological pH.

ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
DMEM	With High Glucose, L-Glutamine, and Sodium Pyruvate.	500 ml	2 to 8°C	12 months	MCL-002-500ML
DMEM	With High Glucose and L-Glutamine. Without Sodium Pyruvate.	500 ml	2 to 8°C	12 months	MCL-004-500ML
DMEM	With High Glucose. Without L-Glutamine and Sodium Pyruvate.	500 ml	2 to 8°C	24 months	MCL-005-500ML
DMEM	With High Glucose and Sodium Pyruvate. Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-008-500ML
DMEM	With Low Glucose, L-Glutamine and Sodium Pyruvate.	500 ml	2 to 8°C	12 Months	MCL-015-500ML
DMEM	With Low Glucose and Sodium Pyruvate. Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-019-500ML
DMEM	With Low Glucose, Stable Glutamine, and Sodium Pyruvate.	500 ml	2 to 8°C	18 Months	MCL-044-500ML
DMEM	With High Glucose, Stable Glutamine and 25 mM HEPES.	500 ml	2 to 8°C	18 months	MCL-045-500ML
DMEM	With High Glucose and Stable Glutamine.	500 ml	2 to 8°C	18 months	MCL-046-500ML
DMEM	With High Glucose, Stable Glutamine, and Sodium Pyruvate	500 ml	2 to 8°C	18 months	MCL-059-500ML
DMEM / Ham's F-12	With Stable Glutamine.	500 ml	2 to 8°C	18 months	MCL-021-500ML
DMEM / Ham's F-12	With L-Glutamine and 15 mM HEPES.	500 ml	2 to 8°C	12 Months	MCL-023-500ML
DMEM / Ham's F-12	With L-Glutamine.	500 ml	2 to 8°C	12 months	MCL-047-500ML
DMEM / Ham's F-12	Without L-Glutamine. With 15 mM HEPES.	500 ml	2 to 8°C	24 months	MCL-048-500ML
DMEM / Ham's F-12	With Stable Glutamine and 15 mM HEPES	500 ml	2 to 8°C	18 months	MCL-066-500ML
Ham's F-12	With L-Glutamine.	500 ml	2 to 8°C	12 months	MCL-029-500ML
IMDM	With L-Glutamine. Without Supplements.	500 ml	2 to 8°C	12 Months	MCL-049-500ML
IMDM	With Stable Glutamine, 25 mM HEPES, 1 g/L Glucose, Without Calcium	500 ml	2 to 8°C	18 months	MCL-068-500ML
Leibovitz's L-15 Medium	Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-050-500ML
Leibovitz's L-15 Medium	With L-Glutamine	500 ml	2 to 8°C	12 months	MCL-069-500ML
McCoy's 5A Medium	With L-Glutamine.	500 ml	2 to 8°C	12 Months	MCL-051-500ML
Medium 199	With Earle's Salts and L-Glutamine. Without Phenol Red.	500 ml	2 to 8°C	12 months	MCL-032-500ML
Medium 199	With Earle's Salts and L-Glutamine.	500 ml	2 to 8°C	12 months	MCL-033-500ML
Medium 199	With Earle's Salts. Without L-Glutamine.	500 ml	2 to 8°C	12 months	MCL-034-500ML
MEM	With Earle's Salts, L-Glutamine and 25 mM HEPES	500 ml	2 to 8°C	12 months	MCL-067-500ML
MEM	With Earle's Salts and L-Glutamine.	500 ml	2 to 8°C	12 Months	MCL-052-500ML



PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
MEM	With Earle's Salts and Stable Glutamine.	500 ml	2 to 8°C	18 Months	MCL-055-500ML
MEM	With Earle's Salts. Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-056-500ML
MEM	With Hank's Salts. Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-057-500ML
MEM	With Earle's Salts. Without L-Glutamine and NaHCO3	500 ml	2 to 8°C	24 months	MCL-058-500ML
MEM Alpha Modification	Without L-Glutamine. With Nucleosides.	500 ml	2 to 8°C	24 months	MCL-053-500ML
MEM Alpha Modification	Without L-Glutamine. Without Nucleosides.	500 ml	2 to 8°C	24 months	MCL-054-500ML
RPMI 1640	With L-Glutamine.	500 ml	2 to 8°C	12 Months	MCL-037-500ML
RPMI 1640	With L-Glutamine and 25 mM HEPES.	500 ml	2 to 8°C	12 Months	MCL-038-500ML
RPMI 1640	Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-039-500ML
RPMI 1640	With Stable Glutamine.	500 ml	2 to 8°C	18 Months	MCL-041-500ML
RPMI 1640	Without L-Glutamine and Phenol Red.	500 ml	2 to 8°C	24 months	MCL-042-500ML
RPMI 1640	With 25 mM HEPES. Without L-Glutamine.	500 ml	2 to 8°C	24 months	MCL-043-500ML
Williams Medium E	With L-Glutamine	500 ml	2 to 8°C	12 months	MCL-070-500ML
Williams Medium E	without L-Glutamine	500 ml	2 to 8°C	24 months	MCL-071-500ML
Williams Medium E	With Stable Glutamine	500 ml	2 to 8°C	18 months	MCL-072-500ML

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Should you have any specific product requirements that our stock product offering cannot fulfill: please don't hesitate to ask if we can tailor-make a product to your specifications.

Powder media can be rehydrated on-site to provide basic nutrients for your cell culture applications. Serana offers powder cell culture media and buffers which are manufactured using high quality, cell culture tested components in exact proportions. The powder is mixed in a clean, environmentally controlled location, using state of the art equipment to eliminate contamination and provide homogeneous batch consistency.

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

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CLASSICAL MEDIA

02 READY MIX POWDERS

All our liquid media are also available in powder form. Contact our team of experts to target your specific needs. Powdered media is formulated without sodium bicarbonate because it tends to gas off in the powdered state.

ORDERING INFORMATION

PRODUCT	OPTIONS	MAKES	STORAGE	SHELF LIFE ¹	CODE
DMEM	With High-Glucose, L-Glutamine, and Sodium Pyruvate.	50L	2 to 8°C	4 Years	MCP-002-50L
DMEM	With High-Glucose, and L-Glutamine. Without Sodium Pyruvate.	50L	2 to 8°C	4 Years	MCP-004-50L
DMEM	With Low Glucose, L-Glutamine and Sodium Pyruvate.	50L	2 to 8°C	4 Years	MCP-015-50L
DMEM / Ham's F-12	With L-Glutamine and 15 mM HEPES.	50L	2 to 8°C	4 Years	MCP-023-50L
DMEM / Ham's F-12	With L-Glutamine and 15 mM HEPES, Without Phenol red	50L	2 to 8°C	4 Years	MCP-024-50L
DMEM / Ham's F-12	With L-Glutamine.	50L	2 to 8°C	4 Years	MCP-047-50L
Ham's F-12	With L-Glutamine.	50L	2 to 8°C	4 Years	MCP-029-50L
Medium 199	With Earle's Salts and L-Glutamine. Without Phenol Red.	50L	2 to 8°C	4 Years	MCP-032-50L
Medium 199	With Earle's Salts and L-Glutamine.	50L	2 to 8°C	4 Years	MCP-033-50L
Medium 199	With Earle's Salts. Without L-Glutamine.	50L	2 to 8°C	4 Years	MCP-034-50L
MEM	With Earle's Salts and L-Glutamine.	50L	2 to 8°C	4 Years	MCP-052-50L
MEM Alpha Modification	With L-Glutamine, Without Nucleosides	50L	2 to 8°C	4 Years	MCP-055-50L
RPMI 1640	With L-Glutamine.	50L	2 to 8°C	4 Years	MCP-037-50L
RPMI 1640	With L-Glutamine and 25 mM HEPES Buffer.	50L	2 to 8°C	4 Years	MCP-038-50L
RPMI 1640	Without L-Glutamine.	50L	2 to 8°C	4 Years	MCP-039-50L
RPMI 1640	With Stable Glutamine.	50L	2 to 8°C	4 Years	MCP-041-50L
RPMI 1640	Without L-Glutamine and Phenol Red.	50L	2 to 8°C	4 Years	MCP-042-50L
RPMI 1640	With 25 mM HEPES buffer. Without L-glutamine.	50L	2 to 8°C	4 Years	MCP-043-50L
Williams Medium E	with L-glutamine, without sodium bicarbonate and Phenol Red	50L	2 to 8°C	4 Years	MCP-070-50L
Williams Medium E	without L-glutamine, sodium bicarbonate, and phenol red	50L	2 to 8°C	4 Years	MCP-071-50L

01 TRANSFECTION & ANTIBIOTICS

Antibiotics help to solve contamination issues and can attack bacterial structures in the cell. It is a common solution to use antibiotics in cell culture, such as penicillin, streptomycin, gentamicin or amphotericin as media supplements to reduce infection rates. The main reason for using antibiotics in cell culture is to kill bacteria or inhibit their proliferation. Serana has a complete set of antibiotics and transfection products to do just that.



ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Amphotericin B Solution	Contains 250µg/ml amphotericin B and 250µg/ml sodium deoxycholate. Effective against fungi and yeasts. Sterile-filtered solution.	100 ml	-5° to -20°C	4 Years	RAL-005-100ML
Antibiotic/Antimycotic Solution 100X	Contains 25mg/l Amphotericin B, 107 units/l Penicillin G Sodium, 205 mg/l Sodium deoxycholate, and 10 g/l Streptomycin sulfate. Effective against yeast, multicellular fungi, gram-positive and gram-negative bacteria.	100 ml	-5° to -20°C	2 Years	RAL-006-100ML
Gentamicin Solution (10mg/ml)	Contains 10mg/ml gentamicin. Sterile filtered solution.	100 ml	2 to 8°C	4 Years	RAL-003-100ML
Penicillin-Streptomycin Solution 100X	This sterile-filtered solution contains 10,000 units/ml of penicillin and 10,000 µg/ml streptomycin in 0.9% saline. Suitable for use in cell culture.	100 ml	-5° to -20°C	4 Years	RAL-002-100ML
Penicillin-Streptomycin-Amphotericin Solution 100X	This sterile-filtered solution contains 10,000 units/ml of penicillin, 10,000 µg/ml streptomycin and 25 mg/ml Amphotericin B in 0.85% saline. Suitable for use in cell culture.	100 ml	-5° to -20°C	4 Years	RAL-008-100ML
Penicillin-Streptomycin-Glutamine Solution 100X	This sterile-filtered solution contains 10,000 units/ml of penicillin, 10,000 µg/ml streptomycin and 29.2 mg/ml L-glutamine in 0.9% saline. Suitable for use in cell culture.	100 ml	-5° to -20°C	4 Years	RAL-001-100ML
Penicillin-Streptomycin-Nystatin Solution 100X	This sterile-filtered solution contains 10,000 units/ml of penicillin, 10,000 µg/ml streptomycin and 1250 U/ml nystatin in 0.85% saline. Suitable for use in cell culture.	100 ml	-5° to -20°C	4 Years	RAL-007-100ML
G418 disulfate	G418 disulfate salt	10 g	2 to 8°C	4 Years	RGP-001-10G

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

Should you have any specific product requirements that our stock product offering cannot fulfill: please don't hesitate to ask if we can tailor-make a product to your specifications.

02 GROWTH ADDITIVES

We offer a variety of supplements for effective cell culture. Our products assure superior quality and exceptional performance for your applications.



L-Glutamine is an essential amino acid required by a wide array of cells grown in culture. It is a critical component of many cell culture medias and serves as a major energy source for cells in culture.

Sodium Pyruvate is a salt of the conjugate anion form of pyruvic acid, known as pyruvate. It is commonly added to cell culture media as an additional source of energy.

In order to reduce the rapid breakdown of free L-glutamine and increase glutamine stability within cell culture media, L-alanyl-L-glutamine is often substituted.

ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Sodium Pyruvate Solution	100 mM solution in purified water	100 ml	2 to 8°C	4 Years	BPL-001-100ML
L-Glutamine Solution	100X L-glutamine (200mM) in 0.85% sodium chloride solution	100 ml	-5 to -20°C	4 Years	RGL-001-100ML
Stabilized L-Glutamine Solution	100X L-alanyl-L-glutamine (200mM) in 0.85% sodium chloride solution	100 ml	-5 to -20°C	4 Years	RGL-002-100ML

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03 CELL DETACHMENT

Cell detachment of adherently growing cells is a key step in any culture activity using adherent cells and tissues. Serana's offering encompasses traditional trypsinization-based products, as well as more gentle cell detachment and dissociation products such as Accutase™ and Papain-based solutions.

Trypsin solutions are commonly used for dissociation of tissues and cell monolayers. All trypsin solutions are prepared from porcine parvovirus-tested and mycoplasma-tested components.

A cell detachment solution of proteolytic and collagenolytic enzymes can be useful for the routine detachment of cells from standard tissue culture plasticware or even adhesion coated plasticware. Accutase™ does not contain mammalian or bacterial-derived products. Accutase™ is a registered trademark of Innovative Cell Technologies, Inc.



ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Accutase Cell Detachment Solution	Sterile Filtered	100 ml	-5° to -20°C	2 Years	RTL-007-100ML
Papain Solution	61.25 mg/L, in PBS w/o Ca, Mg, Sterile Filtered	100 ml	-5° to -20°C	6 Months	RPL-001-100ML
Trypsin Powder	1:250	1 Kg	-5° to -20°C	2 Years	RTP-1KG
Trypsin Powder	1:250	50 g	-5° to -20°C	2 Years	RTP-50G
Trypsin Solution 2.5% (10X)	Contains 2.5% trypsin (from Porcine pancreas) in DPBS (10x). Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-004-100ML
Trypsin-EDTA (0.05 %) in HBSS (1x), with phenol red	Contains 0.05% trypsin (from Porcine pancreas) in HBSS (1x). Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-006-100ML
Trypsin-EDTA (0.25 %) in HBSS (1x), with phenol red	Contains 0.25% trypsin (from Porcine pancreas) in HBSS (1x). Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-005-100ML
Trypsin-EDTA Solution (1X)	Contains 0.25% trypsin (from Porcine pancreas) in DPBS (1x). Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-001-100ML
Trypsin-EDTA Solution 0.05% (1X)	Contains 0.05% trypsin (from Porcine pancreas) in DPBS (1x). Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-003-100ML
Trypsin-EDTA Solution 0.5% (10X)	Contains 0.5% trypsin (from Porcine pancreas) in DPBS (10x). No phenol red. Sterile filtered. Porcine parvovirus and mycoplasma tested.	100 ml	0° to -20°C	2 Years	RTL-002-100ML

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CELL CULTURE SUPPLEMENTS, BUFFERS AND REAGENTS

04 BUFFERS

Cell and tissue culture buffers are an energy source. They also keep ideal osmotic pressure present and maintain proper pH levels. Used predominately in biomolecular research, the dry and liquid substances have a balanced inorganic salt composition. Lower concentration options permit equilibration with air in a closed system, while higher salt concentration options keep gaseous phases in equilibrium. Cell growth is optimal when plated in a nutritional medium that has been buffered.

Sodium Bicarbonate is a buffer commonly used for maintaining the pH of a cell culture medium in the presence of carbon dioxide. In addition to buffering, sodium bicarbonate provides some nutritional benefits, while seldom displaying any cell toxicity.

Dulbecco's Phosphate Buffered Saline (DPBS) is intended for use in the maintenance of mammalian cells where a balanced salt solution provides an environment that will maintain the structural and physiological integrity of cells. DPBS is commonly used in cell culture as a diluent, for rinsing cells, and as a buffer in many chromatographic applications. DPBS is also used to wash and resuspend cells during the dissociation process.

HEPES is widely used in cell culture, tissue culture, protein purification and extraction, immunoprecipitation, cell lysis, live cell imaging and other biological/biochemical research. Compared with other buffers such as PBS (phosphate buffered saline) and TRIS, HEPES has higher stability in maintaining the pH values of cell culture media.

Hank's balanced salt solution (HBSS) gives an improved physiological environment including pH, as well as a balanced salt composition for proper osmoregulation, and inorganic salts and carbohydrates as additional energy sources for mammalian cells in culture.

Earle's balanced salt solution (EBSS) is an isotonic saline solution. It contains sodium chloride, potassium chloride, calcium chloride, magnesium sulfate, sodium dihydrogen phosphate, sodium bicarbonate and dextrose (glucose). It is intended to be used in 5% CO₂ atmosphere.

Cell culture grade water is high-quality water suitable for use as a solvent in the preparation of cell culture media and other reagents for sensitive applications. Cell culture grade water goes through a wide array of testing which includes testing to the chemical and physical properties found in the USP and EP monographs for sterile Water for Injection (WFI).

ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Sodium Bicarbonate Solution 7,5% solution (w/v) in purified water	Sterile filtered	100 ml	RT	4 Years	BBL-001-100ML
DPBS – Dulbecco's Phosphate Buffered Saline Without calcium and magnesium	Sterile filtered	500 ml	RT	4 Years	BDL-001-500ML
	Sterile filtered	1000 ml			BDL-001-1L
	Sterile filtered	2,5 l			BDL-001-2.5L
	Sterile filtered	5 l			BDL-001-5L
	Sterile filtered	10 l			BDL-001-10L
DPBS (10X) – Dulbecco's Phosphate Buffered Saline 10X DPBS without calcium and magnesium		500 ml	RT	4 Years	BDL-002-500ML
DPBS – Dulbecco's Phosphate Buffered Saline With calcium and magnesium	Sterile filtered	500 ml	RT	4 Years	BDL-003-500ML
	Powder	10 l			BDP-001-10L
	Powder	50 l			BDP-001-50L
HEPES Solution 1M solution in purified water	Sterile filtered	100 ml	RT	4 Years	BSL-001-100ML
HBSS – Hank's Balanced Salt Solution With calcium and magnesium, without phenol red	Sterile filtered	500 ml	RT	4 Years	BHL-001-500ML
HBSS – Hank's Balanced Salt Solution With phenol red, without calcium and magnesium	Sterile filtered	500 ml	RT	4 Years	BHL-002-500ML
HBSS – Hank's Balanced Salt Solution Without calcium and magnesium and phenol red	Sterile filtered	500 ml	RT	4 Years	BHL-003-500ML
HBSS - Hank's Balanced Salts (10X) With calcium and magnesium. Without phenol red.	Sterile filtered	500 ml	RT	4 Years	BHL-004-500ML
HBSS - Hank's Balanced Salts (10X) Without calcium and magnesium. Without phenol red.	Sterile filtered	500 ml	RT	4 Years	BHL-005-500ML
EBSS - Earle's Balanced Salts Without calcium and magnesium. Without phenol red.	Sterile filtered	500 ml	RT	4 Years	BHL-006-500ML
EBSS - Earle's Balanced Salts Without calcium and magnesium. With phenol red.	Sterile filtered	500 ml	RT	4 Years	BHL-007-500ML
Purified Water Cell culture grade purified water	Sterile filtered	500 ml	RT	4 Years	BWL-001-500ML

DIAGNOSTIC PRODUCTS

01 VIROLOGY

Viral Transport Medium (VTM), allows the safe transfer of viruses, chlamydiae, and mycoplasma for further research including conventional cell culture methods, diagnostic tests, and molecular biology techniques. Our product contains heat-inactivated Fetal Bovine Serum, Gentamycin and Amphotericin B. The composition and manufacturing of our VTM follows the official Center for Disease Control and Prevention (CDC) guidelines. Serana's VTM is also offered in various bulk sized aliquots (5L, 10L).

02 CYTOGENETICS & SUPPLEMENTS

Colcemid Solution: for chromosome analysis during lymphocyte karyotyping and amniotic fluid cell chromosome analysis, and in cell synchronization.

Potassium Chloride: for preparation of blood lymphocyte chromosomes.

Sodium Citrate: is a hypotonic solution used for chromosome karyotyping.

Trypsin EDTA Solution: is used for chromosome digestion before staining (Giemsa banding).

Lymphogrow: is a medium has been specifically optimised for short-term culture of peripheral blood lymphocytes for chromosome analysis.

Amniogrow: designed for the primary culture of human amniotic fluid cells and chorionic villi (CV) cells.

ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	3 ml	2 to 25°C	1 Year	VTM-001-3ML
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	100 ml	2 to 25°C	1 Year	VTM-001-100ML
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	500 ml	2 to 25°C	1 Year	VTM-001-500ML
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	1000 ml	2 to 25°C	1 Year	VTM-001-1L
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	5 L	2 to 25°C	1 Year	VTM-001-5L
Viral Transport Media	Contains 2% Heat Inactivated FBS, Sterile filtered.	10 L	2 to 25°C	1 Year	VTM-001-10L

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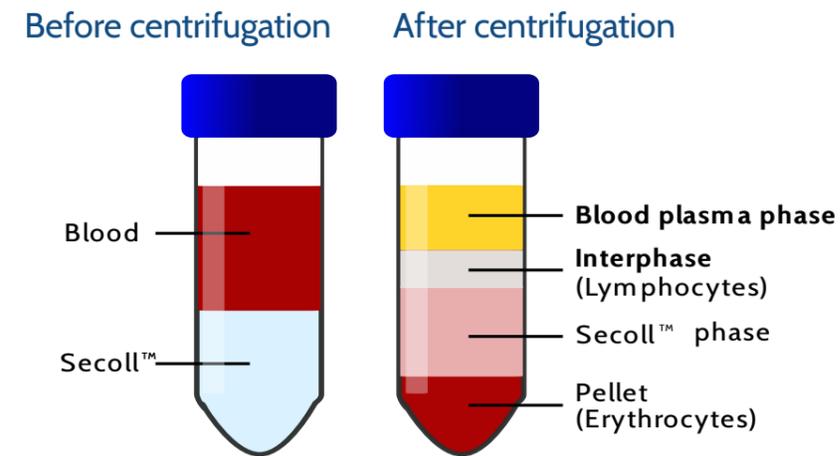
ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Phytohemagglutinin (PHA-M)	Sterile Filtered	10 ml	< - 15°C	12 months	CDS-001-10ML
Colcemid Solution	(10 µg/ml) in DPBS. Sterile filtered	10 ml	2 to 8°C	24 months	CDS-002-10ML
Potassium Chloride (KCl)	0.075 Molar, for blood lymphocyte karyotyping. Sterile filtered	100 ml	2 to 8°C	24 months	CDS-003-100ML
Sodium Citrate Solution (0.8%)	Hypotonic solution for chromosome karyotyping, Sterile filtered	500 ml	RT	24 months	CDS-004-500ML
Trypsin EDTA Solution	Trypsin EDTA (0.5%), EDTA 0.2% (10X), For chromosome treatment before Giemsa banding. Sterile filtered	100 ml	< - 15°C	24 months	CDS-005-100ML
Lymphogrow Media	Complete karyotyping medium for peripheral blood lymphocytes. Sterile filtered	100 ml	< - 15°C	24 months	LMG-001-100ML
Amniogrow Media	Complete medium for cultivation of amnion and chorionic villi cells. Sterile Filtered	100 ml	< - 15°C	24 months	AMG-001-100ML

DIAGNOSTIC PRODUCTS

03 SEPARATION MEDIA

Secoll™ Lymphocyte separation solution is made with Polysucrose 400 (PS400). PS400 is a hydrophilic polymer with a molecular weight of 400000 Dalton. It is used for the production of density gradients for the separation of cells and sub-cellular components, which sediment during centrifugation due to gravity.



ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Secoll™ Lymphocyte Separation Solution	Density 1.077 g/ml, Sterile Filtered	100 ml	2 to 25°C in darkness	3 Years	RLL-001-100ML
Secoll™ Lymphocyte Separation Solution	Density 1.077 g/ml, Sterile Filtered	500 ml	2 to 25°C in darkness	3 Years	RLL-001-500ML
Secoll™ Lymphocyte Separation Solution	Density 1.077 g/ml, Sterile Filtered	5L	2 to 25°C in darkness	3 Years	RLL-001-5L

For complete current specifications and other technical information please see the technical data sheet on our website www.serana-europe.com

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04 CRYOPRESERVATION MEDIA

The reduction of biological and biochemical processes at low temperatures can generate a possibility for the long-term preservation of cells and tissues. However, ice crystals cause freezing death penalty for almost all living cells. Water-to-ice transition is the critical phase for cells counteracting low temperatures. In cryopreservation process, presence of a Cryoprotective Agent (CPA) affects the rate of water transport, nucleation, and crystallization in a way that leads to the maintenance of the cell structure and bringing the biological sample in a suspended animation status at cryogenic temperature for any considerable period of time.

The cryopreservation media containing CPA is one of the critical components of a fruitful cryopreservation. Depending on the cryopreservation procedure and targeted tissue/cells media can differ.

ORDERING INFORMATION

PRODUCT	OPTIONS	VOLUME	STORAGE	SHELF LIFE	CODE
Amniotic Membrane Cryopreservation Medium	With 50% (w/w) Glycerol. Sterile filtered	500 ml	2 to 25°C	24 months	CPM-004-500ML
Cardiovascular and Meniscus Cryopreservation Medium	With 16% (w/w) DMSO. Sterile filtered	100 ml	0 to 30°C	24 months	CPM-002-100ML
Decellularised Dermis Cryopreservation Medium	With 25% (w/w) Glycerol. Sterile filtered	500 ml	2 to 25°C	24 months	CPM-005-500ML
Skin Cryopreservation Medium	With 25% (w/w) Glycerol. Sterile filtered	500 ml	2 to 25°C	24 months	CPM-003-500ML

CONTRACT SERVICES

01 MANUFACTURING

Our team of highly skilled and knowledgeable specialists who have been working in the field of cell culture for many years are committed to providing you the best possible experience while being your partner in cell culture.

We have manufacturing facilities in Germany and Australia, which makes us an ideal partner for both industrial and research organizations. We are EDQM, ISO 9001, and ISO 13485 certified with consistent and reliable production lines in order to continuously provide you with high quality products worldwide.

Focusing on sterile liquid handling and dispensing, Serana has the capacity to handle your manufacturing requirements:

02 QUALITY CONTROL

We regularly perform comprehensive validated quality control analysis and assays in our Quality department following the relevant regulatory guidelines (e.g., European and US Pharmacopeia). You are the most welcomed if you may contact us for any QC services and collaborations in the following fields.

**We provide:**

- Extensive production documentation provided on a per batch basis
- Packaging with ample frozen and chilled storage available
- Liquid media manufacturing, sterile bottling and labeling
- Custom media manufacturing to your specifications
- Secure and monitored 24/7 facility
- Capable of 2000+ liter batch sizes
- Certified facility

**We do:**

- Sterility Testing
- Protein Profiling
- Biochemical Analysis
- Virus and Antibody Testing
- Performance bench-marking
- Culture Testing on a wide variety of cell lines

03 CONTRACT LYOPHILIZATION

Cycle Development

Cycle development begins with understanding the critical temperatures of the formulation by utilizing:

- + Modulated Differential Scanning Calorimetry (mDSC)
- + Freeze Dry Microscopy (FDM)

Once we have determined the thermal properties of your formulated product, we use the following data sets:

- + Glass Transition Temperature (T_g)
- + Eutectic Temperature (T_e)
- + Collapse Temperature (T_c)
- + Re-crystallization Temperature (T_{cry})

This is in order to develop the nominal drying conditions for the lyophilization cycle parameters.

Intentional Collapse

To deliver a commercially robust lyophilization process and ensure the finished product consistently meets the finished product CQAs at release, we perform an “Intentional Collapse Study” (ICS) during the final stages of lyophilization development. The Process Development team will perform the ICS study to intentionally collapse the product to fully understand the potential points of failure in the lyophilization cycle.

Cycle Optimization

Life cycling the nominal lyophilization cycle parameters, we will specifically optimize the lyophilization cycle for your product, optimizing for low residual moisture, cake appearance, reconstitution, and total run time. Optimizing the cycle for total run time can lead to cost efficiencies over the life-cycle of your product.

Lyophilization Equipment

Our freeze dryer is suitable for applications in the field of research and development, as well as small-scale production. The free-standing unit has an ice capacity of 10 kg and a footprint of up to 1.2 m².



ANY QUESTIONS?

If you have any questions on what Serana can offer, please visit our website or send our support team an e-mail. Our helpful, multilingual staff can answer any queries you might have about our products and services.

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