

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37

Пермь (342)205-81-47  
Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Саранск (8342)22-96-24  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97

Тверь (4822)63-31-35  
Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

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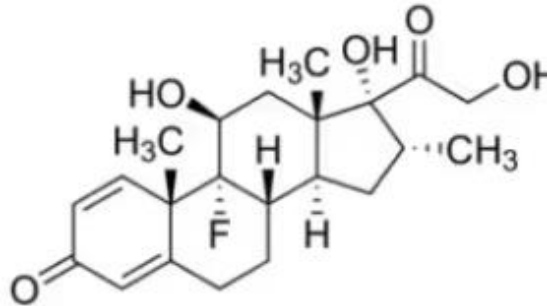
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# Технические характеристики на добавки и реагенты для клеточных культур, ч.2

## КОМПАНИИ **Sigma-Aldrich**

**Виды товаров:** гормоны, добавки для клеточных культур, сыворотки клеточных культур, человеческая сыворотка, фетальная бычья сыворотка, сыворотки, человеческие сыворотки для клеточных культур, сыворотка крысиная, сыворотка бычья, сыворотка овечья, кроличья сыворотка, фетальная бычья сыворотка, козья сыворотка, гипооптическая человеческая сыворотка, ослиная сыворотка, сыворотка для телят, человеческие сыворотки АВ, человеческая сыворотка из плазмы с низким содержанием тромбоцитов, сыворотка для новорожденных и взрослых крупного рогатого скота, сыворотка для мышей, сыворотка лошадиная, свиная сыворотка и др.

# Hormones



Cultured cells require a supply of nutrients for growth and differentiation. Mammalian cell culture media contains a balance of pH, salts, **carbohydrates**, **amino acids**, **vitamins**, fatty acids, **lipids**, **growth factors**, hormones, trace elements, and **serum**. Hormones promote cell growth and can act in a cell-type specific manner. Some cells require hormone supplements to grow under *in vitro* culture.

## CELL CULTURE GRADE HORMONE SUPPLEMENTS

The hormone **dexamethasone** is used in cell culture to study apoptosis, cell signaling pathways, cell differentiation, and gene expression.

Erythropoietin promotes the proliferation, differentiation, and survival of erythroid progenitors.

**β-Estradiol** hormone is used to study cell differentiation and transformation. β-Estradiol has been used for culturing mammary tumor cells and oocytes.

**Glucagon** is a peptide hormone that is used as a supplement in some culture and animal model applications, such as measuring glucagon response in mice.

**Hydrocortisone** can be used in epithelial and endothelial adherent cell culture applications.

**Insulin** is a peptide hormone that is used as a growth factor in many mammalian cell culture systems.

**Progesterone** has been used as a growth-promoting hormone in epithelial cell culture.

**Prostaglandin E1** and **prostaglandin E2** are lipid hormones that are used in some mammalian cell culture applications.

**3,3',5'-Triiodo-L-thyronine** (T3) and its precursor **thyroxine** (T4) hormones are produced by the thyroid gland and are used as supplements in some cell culture applications.



T2877

**3,3',5-Triiodo-L-thyronine**

≥95% (HPLC), powder



T5516

**3,3',5-Triiodo-L-thyronine sodium salt**

γ-irradiated, powder, suitable for, suitable for cell culture



T6397

**3,3',5-Triiodo-L-thyronine sodium salt**

powder, BioReagent, suitable for cell culture



D8015

**4-Dimethylaminoantipyrine**

reactive nitrogen species scavenger



A0887

**5α-Androstane**



M4135

**α-Melanocyte stimulating hormone**

≥97% (HPLC)



A2661

**Acetylcholine chloride**

suitable for cell culture



A2407

**Adrenocorticotrophic Hormone Fragment 1-17 human, rat**

≥97% (HPLC)



A0298

**Adrenocorticotrophic Hormone Fragment 1-24 human, rat**

≥97% (HPLC)



A0673

**Adrenocorticotrophic Hormone Fragment 18-39 human**

≥97% (HPLC)



A1527

**Adrenocorticotrophic Hormone Fragment 7-38 human**

≥97% (HPLC)



A0423

**Adrenocorticotrophic Hormone human**

≥97% (HPLC)



A7075

**Adrenocorticotrophic Hormone rat**

≥95% (HPLC)



05-23-0101

**Angiotensin II, Human**

Plays an important role in the regulation of blood pressure.



V9879

**[Arg<sup>8</sup>]-Vasopressin acetate salt**

≥95% (HPLC)



V0377

**[Arg<sup>8</sup>]-Vasopressin solution**

Grade VI (synthetic), ~100 IU/mL in 0.9% NaCl



A7430

**Azadirachtin**

~95%



E2758

**β-Estradiol**

BioReagent, powder, suitable for cell culture



E2257

**β-Estradiol**

powder, γ-irradiated, suitable for cell culture



E4389

**β-Estradiol-Water Soluble**

BioReagent, suitable for cell culture



T3535

**Calcitonin human**

≥97% (HPLC), powder



T3660

**Calcitonin salmon**

≥97% (HPLC), powder



05-23-2401

**Calcitonin, Salmon**

Calcitonin, Salmon, CAS 47931-85-1, is a 32 amino acid synthetic calcitonin that is shown to stimulate bone formation and inhibit bone resorption. Has ability to cross mucous membranes.



C0434

**Chorionic gonadotropin human**

lyophilized powder, from human pregnancy urine



C1063

**Chorionic gonadotropin human**

lyophilized powder, vial of ~2,500 IU



CG5

**Chorionic gonadotropin human**

lyophilized powder, vial of ~5,000 IU



CG10

### **Chorionic gonadotropin human**

lyophilized powder, vial of ~10,000 IU



230734

### **Chorionic Gonadotropin, Human Urine, Standard Grade**

Chorionic Gonadotropin, Human Urine, Standard Grade, CAS 9002-61-3, is a native glycoprotein hormone that is synthesized by chorionic tissue of the placenta and found in urine during pregnancy.



27885

### **Coumestrol**

≥95.0% (HPLC)



V1005

### **[deamino-Cys<sup>1</sup>, D-Arg<sup>8</sup>]-Vasopressin acetate salt hydrate**

≥95% (HPLC)



D4902

### **Dexamethasone**

powder, BioReagent, suitable for cell culture, ≥97%



D8893

### **Dexamethasone**

powder, γ-irradiated, BioXtra, suitable for cell culture, ≥80% (HPLC)



D2915

### **Dexamethasone-Water Soluble**

BioReagent, suitable for cell culture



E1024

**Estradiol**

meets USP testing specifications



F9381

**Fluorometholone**

≥98%



F4021

**Follicle Stimulating Hormone from human pituitary**

~7,000 IU/mg (powder)



869001-M

**Follicle Stimulating Hormone, Human Pituitary, Iodination Grade**

Follicle Stimulating Hormone, Human Pituitary, Iodination Grade, CAS 9002-68-0, is a native pituitary protein that regulates Sertoli cells by acting on G-protein-linked cell surface FSH receptors.



G2044

**Glucagon**

synthetic, powder, suitable for cell culture



G1774

**Glucagon**

≥95% (HPLC), powder, synthetic



869008-M

**Growth Hormone, Human Pituitary, Iodination Grade**

Growth Hormone, Human Pituitary, Iodination Grade, CAS 12629-01-5, is a single chain polypeptide hormone essential for growth of all tissues and plays a role in fat mobilization.





H0135

**Hydrocortisone**

γ-irradiated, powder, BioXtra, suitable for cell culture



H3160

**Hydrocortisone**

meets USP testing specifications



H0888

**Hydrocortisone**

BioReagent, suitable for cell culture



H2270

**Hydrocortisone 21-hemisuccinate sodium salt**

powder, BioReagent, suitable for cell culture



H6909

**Hydrocortisone solution**

50 μM, sterile-filtered, BioXtra, suitable for cell culture



H0396

**Hydrocortisone-Water Soluble**

BioReagent, suitable for cell culture



57310

**Indole-3-butyric acid**

≥98.0% (T)



57400

**Indole-3-propionic acid**

≥99.0% (T)



I1633

**Insulin chain A oxidized ammonium salt from bovine pancreas**

≥80% (HPLC), powder



I6383

**Insulin Chain B Oxidized from bovine pancreas**

≥80% (HPLC), powder



I5500

**Insulin from bovine pancreas**

≥25 USP units/mg (HPLC), powder



I4011

**Insulin from bovine pancreas**

Hybri-Max™, powder, suitable for hybridoma



I1882

**Insulin from bovine pancreas**

$\gamma$ -irradiated, BioXtra, suitable for cell culture, potency:  $\geq 20$  units/mg (USP units), lyophilized powder



I6634

**Insulin from bovine pancreas**

powder, BioReagent, suitable for cell culture



I5523

**Insulin from porcine pancreas**

powder,  $\geq 27$  USP units/mg



I3536

**Insulin human**

recombinant, expressed in yeast,  $\gamma$ -irradiated, suitable for cell culture



I0908

**Insulin human**

meets USP testing specifications



I2643

**Insulin human**

recombinant, expressed in yeast (proprietary host)



I1507

**Insulin human**

$\geq 95\%$  (HPLC), semisynthetic, powder, non-sterile



I0516

**Insulin solution from bovine pancreas**

10 mg/mL insulin in 25 mM HEPES, pH 8.2, BioReagent, sterile-filtered, suitable for cell culture



I9278

**Insulin solution human**

sterile-filtered, BioXtra, suitable for cell culture



407709

**Insulin, Zinc, Human, Recombinant, *P. pastoris***



J2000

**Juvenile hormone III**

≥65%, liquid, non-sterile



48130

**Kinetin**

≥99.0% (HPLC)



74480

**L-Norepinephrine hydrochloride**

≥98.0% (sum of enantiomers, HPLC)



T1775

**L-Thyroxine**

powder, BioReagent, suitable for cell culture



T2376

**L-Thyroxine**

≥98% (HPLC)



T2501

**L-Thyroxine sodium salt pentahydrate**

≥98% (HPLC), powder



T0397

**L-Thyroxine sodium salt pentahydrate**

γ-irradiated, powder, BioXtra, suitable for cell culture



N5785

**L-(–)-Norepinephrine (+)-bitartrate salt monohydrate**

meets USP testing specifications



L3772

**Leptin from mouse**

≥98% (SDS-PAGE), recombinant, expressed in *E. coli*, lyophilized powder



L5037

**Leptin from rat**

≥97% (SDS-PAGE), recombinant, expressed in *E. coli*, lyophilized powder



L4146

**Leptin human**

≥97% (SDS-PAGE), recombinant, expressed in *E. coli*, lyophilized powder



429700

**Leptin, Human, Recombinant, *E. coli***



L6420

**Luteinizing Hormone from human pituitary**

≥8,500 IU/mg



869003-M

**Luteinizing Hormone, Human Pituitary, Iodination Grade**



M5250

**Melatonin**

powder, ≥98% (TLC)



85265

**Methyl 4-hydroxybenzoate sodium salt**

tested according to Ph. Eur.



M8764

**[Nle<sup>4</sup>, D-Phe<sup>7</sup>]- $\alpha$ -Melanocyte Stimulating Hormone trifluoroacetate salt**

≥95% (HPLC)



O6012

**Orexin A human, rat, mouse**

≥97% (HPLC)



O4375

**Oxytocin**

lyophilized powder, ~15 IU/mg solid (Prepared from synthetic oxytocin)



O3251

**Oxytocin**



O6379

**Oxytocin acetate salt hydrate**

≥97% (HPLC)



P7036

**Parathyroid hormone human**

≥95% (HPLC), powder



P6149

**Progesterone**

γ-irradiated, BioXtra, suitable for cell culture



P8783

**Progesterone**

powder, BioReagent, suitable for cell culture



P3277

**Progesterone 3-(O-carboxymethyl)oxime**



P7556

**Progesterone-Water Soluble**

powder, BioReagent, suitable for cell culture



L4021

**Prolactin human**

recombinant, expressed in *E. coli*, lyophilized powder, BioReagent, suitable for cell culture, >97% (SDS-PAGE)



P7527

**Prostaglandin E<sub>1</sub>**

powder,  $\gamma$ -irradiated, BioXtra, suitable for cell culture



P8908

**Prostaglandin E<sub>1</sub>**

synthetic, powder, BioReagent, suitable for cell culture



P0409

**Prostaglandin E<sub>2</sub>**

synthetic, powder, BioReagent, suitable for cell culture



P6532

**Prostaglandin E<sub>2</sub>**

$\gamma$ -irradiated, powder, BioXtra, suitable for cell culture





P5069

**Prostaglandin F<sub>2α</sub> tris salt**

synthetic, suitable for cell culture



S0885

**Somatostatin**

powder, γ-irradiated, BioXtra, suitable for cell culture



S1763

**Somatostatin**

powder, BioReagent, suitable for cell culture



869006-M

**Thyroid Stimulating Hormone, Human Pituitary, Iodination Grade**



D4000

***trans*-Dehydroandrosterone**

≥99%



Z2125

**Zearalenone**

fungal mycotoxin

# Supplements for Cell Culture



Cell culture supplements enable labs to customize and augment media formulations to suit specific cell culture applications such as protein production, hybridoma production, CHO (Chinese hamster ovary) cell applications, other serum-free workflows, and more. The cell culture- and insect cell culture-tested supplements collected here have undergone application testing for suitability in cell culture systems. This testing eliminates the need for labs to screen these supplements prior to use in a cell culture application.

## ITS SUPPLEMENTS

Serum-free and reduced-serum cell culture media formulations often require supplementation with the factors normally present in serum that are required for healthy culture growth. ITS reagent is used as a basal supplement when the goal is to reduce or eliminate the use of fetal bovine serum (FBS) in culture media, when culture media must be animal origin-free, or to tailor nutrients and their concentrations for specific cell culture applications. ITS is named for the constituent nutrients **insulin**, **transferrin**, and **selenium**. Variants on this nutrient cocktail include SITE (**selenium**, **insulin**, **transferrin**, **ethanolamine**), and enhanced formulations that may also incorporate **linoleic acid**, **oleic acid**, and/or **bovine serum albumin (BSA)**.

The biological function of key constituent ingredients in ITS and its variants are as follows:

**Insulin** is a polypeptide hormone that promotes the cellular uptake of glucose and amino acids

**Transferrin** is an iron-transport protein. An essential trace element, iron can be toxic in its free form. To supplement cells in culture, iron is supplied bound to transferrin.

**Selenium/sodium selenite** is an essential trace element normally present in serum.

**Ethanolamine** is a fatty acid that contributes significantly to the proliferation of hybridoma cells. It is frequently added to supplements to optimize media for hybridoma culture.

**Sodium pyruvate** provides an additional carbon source for certain culture systems.

## HYBRIDOMA REAGENTS

Traditional methods for monoclonal antibody production have relied upon the use of medium supplemented with serum of animal origin. When these antibodies are employed for research or *in vitro* diagnostic applications, the presence of serum does not

pose significant regulatory concerns, and efforts to develop serum-free media have focused primarily on cost reduction. As antibodies are increasingly used as biotherapeutics, the need for media and reagents that ensure robust hybridoma culture without the use of sera and other animal products has increased.

Our Hybri-Max™ supplements are culture-tested for optimal performance in hybridoma culture. These and other hybridoma-designated supplements support robust culture in monoclonal antibody labs.

## AMINO ACIDS, ANTIBIOTICS, AND OTHER CELL CULTURE SUPPLEMENTS

Our cell culture-tested amino acid supplements include both polyamine reagents and individual amino acids that enable custom enrichment of cell culture media formulations. Our complete culture supplement solutions include **cholesterol**, **lactoferrin**, linoleic acid, **glucagon**, cyclodextrin, yeast extracts, antioxidants, **vitamins**, **antibiotics**, and more.



C0926

### **(2-Hydroxypropyl)-β-cyclodextrin**

powder, BioReagent, suitable for cell culture



H125

### **(2-Hydroxypropyl)-γ-cyclodextrin**

solid



17779

### **2,3,5-Triphenyl-tetrazolium chloride solution**

suitable for microbiology, Filter sterilized solution that is recommended for the detection of microbial growth based on reduction of TTC



C4680

### **α-Cyclodextrin**

powder, BioReagent, suitable for cell culture,  $\geq 98\%$



A2786

**Adenine**

BioReagent, suitable for cell culture



A9795

**Adenine hydrochloride hydrate**

powder, BioReagent, suitable for cell culture



A5159

**Aminopterin**

Hybri-Max™, 50 ×,  $\gamma$ -irradiated, lyophilized powder, BioXtra, suitable for hybridoma



A3411

**Aminopterin**

powder, BioReagent, suitable for cell culture



A1345

**Antioxidant Supplement (1000×)**

liquid, sterile-filtered, suitable for cell culture



T5391

**apo-Transferrin human**

$\gamma$ -irradiated, powder, BioXtra, suitable for cell culture,  $\geq 98\%$



T1147

**apo-Transferrin human**

powder, BioReagent, suitable for cell culture,  $\geq 98\%$  (agarose gel electrophoresis)



T2036

**apo-Transferrin human**

powder, BioReagent, suitable for cell culture,  $\geq 98\%$  (agarose gel electrophoresis)



A7422

**AT Media Supplement (50×) Hybri-Max™**

$\gamma$ -irradiated, lyophilized powder, BioXtra, suitable for hybridoma



A1164

**Azaserine**

Hybri-Max™,  $\gamma$ -irradiated, 50x, lyophilized powder, BioXtra, suitable for hybridoma



A9666

**Azaserine-Hypoxanthine 50x**

Hybri-Max™,  $\gamma$ -irradiated, lyophilized powder, BioXtra, suitable for hybridoma



C4805

**$\beta$ -Cyclodextrin**

powder, BioReagent, suitable for cell culture,  $\geq 97\%$



11088947001

**BM Condimed H1**

Hybridoma Cloning Supplement



B6766

**BME Amino Acids Solution 50×**

Without L-glutamine, sterile-filtered, BioReagent, suitable for cell culture



83055

**BSM Supplement**

Supplement for the selective isolation and identification of *Bifidobacteria*



39643

***Burkholderia cepacia* Selective Supplement**

suitable for microbiology



C4951

**Cholesterol-Water Soluble**

powder, BioReagent, suitable for cell culture



1.00432

**ChromoCult® *Listeria* Agar Selective-Supplement**

for *Listeria* spp., pkg of 10 vials, for the preparation of ChromoCult® *Listeria* agar (base)



1.00888

***Clostridium perfringens* selective supplement**

For the preparation of TSC Agar, For the enumeration of *Clostridium perfringens*



C2294

**Cod liver oil fatty acid methyl esters**

BioReagent, suitable for insect cell culture



C2787

**Complement C7 from human serum**

≥85% (SDS-PAGE), ≥150,000 C7H50 units/mg protein



C7786

**Conalbumin from chicken egg white**

BioReagent, suitable for cell culture



C3279

**Copper(II) chloride dihydrate**

powder, BioReagent, suitable for cell culture



C6304

**Corn meal**

suitable for insect cell culture, BioReagent



18079

**Cycloheximide solution**

0.1%, suitable for microbiology



V1255

**D-Valine**

BioReagent, suitable for cell culture



G1639

**D-(+)-Galactosamine hydrochloride**

suitable for cell culture, BioReagent



1.00898

**E.coli / Coliform Selective-Supplement**

for *Escherichia coli*, for coliforms, pkg of 10 vials, for use with ChromoCult® Coliform Agar



75208

**Egg yolk Tellurite Emulsion**

suitable for microbiology



211-GS

**Endothelial Cell Growth Supplement (15ml)**



02-102

**Endothelial Cell Growth Supplement, 150mg**

The Endothelial Cell Growth Supplement is designed for use as a cell culture media supplement. This cell growth supplement is available in a 150 mg format & has been optimized & validated for cell culture.



02-101

**Endothelial Cell Growth Supplement, 50mg**

The Endothelial Cell Growth Supplement is designed for use as a cell culture media supplement. This cell growth supplement is available in a 50 mg format & has been optimized & validated for cell culture.



14701C

**EX-CELL® Glycosylation Adjust (Gal +)**

protein quality supplement





1.17257

**Fermtech® Yeast Extract**

For Biotechnology



F3388

**Ferric citrate**

BioReagent, suitable for cell culture



116-GS

**Fibroblast Growth Supplement (15ml)**



C4930

**γ-Cyclodextrin**

powder, BioReagent, suitable for cell culture, ≥98%



G6144

**Gelatin from porcine skin**

gel strength 80-120 g Bloom, Type A



G2044

**Glucagon**

synthetic, powder, suitable for cell culture



G6264

**Guanosine**

BioReagent, suitable for cell culture



T1283

**holo-Transferrin bovine**

Iron-saturated, BioReagent, suitable for cell culture



T0665

**holo-Transferrin human**

powder, BioReagent, suitable for cell culture,  $\geq 97\%$



11363735001

**Hybridoma Fusion and Cloning Supplement**

solution, suitable for hybridoma, Mycoplasma, tested



I1884

**Insulin-transferrin-sodium selenite media supplement**

$\gamma$ -irradiated, lyophilized powder, BioXtra, suitable for cell culture



11074547001

**Insulin-Transferrin-Sodium Selenite Supplement**

suitable for cell culture, lyophilized, pkg of 50 mg (for 5 l medium)



I3146

**ITS Liquid Media Supplement (100 $\times$ )**

liquid, sterile-filtered, BioReagent, suitable for cell culture



I2771

**ITS+3 Liquid Media Supplement (100×)**

liquid, sterile-filtered, BioReagent, suitable for cell culture



M7397

**L-(-)-Malic acid**

BioReagent, suitable for cell culture, suitable for insect cell culture



A2536

**L-2-Aminobutyric acid**

BioReagent, suitable for cell culture



L9010

**Lactalbumin enzymatic hydrolysate**

powder, BioReagent, suitable for cell culture



L4894

**Lactoferrin from human milk**

powder, BioReagent, suitable for cell culture



L5900

**Linoleic Acid-Water Soluble**

powder, BioReagent, suitable for cell culture



1.11781

**Listeria selective enrichment supplement**

for *Listeria* spp., pkg of 10 vials, for use with *Listeria*-Enrichment-Broth (Base), for use with GranuCult® Buffered *Listeria* Enrichment Broth (base)



69732

**Lithium mupirocin Supplement**

suitable for microbiology,

Selectively inhibits the growth of lactic acid bacteria



M0553

**Middlebrook ADC Growth Supplement**

Enrichment supplement recommended for the cultivation of Mycobacteria



M0678

**Middlebrook OADC Growth Supplement**

Enrichment supplement recommended for isolation and cultivation of Mycobacteria, suitable for microbiology



1.09874

**MSRV Selective Supplement**

for *Salmonella* spp., pkg of 10 vials, for the preparation of MSRV medium



1.00045

**MUP Selective Supplement**

For the preparation of TOS-MUP agar, For the enumeration of *Bifidobacteria*



N6530

**N1 Medium Supplement (100×)**

solution, sterile-filtered, suitable for cell culture



SCM081

**N21 Medium Supplement (50X)**

The N21 Medium Supplement is an optimized serum-free supplement developed for isolation & expansion of neurons from mouse & rat hippocampus.



SCM012

**NDiff Neuro-2 Medium Supplement (200x)**

NDiff Neuro-2 Medium Supplement is a serum-free, N2-like supplement for the in vitro differentiation of murine embryonic stem (ES) cells into post-mitotic neurons particularly via monolayer differentiation.



1.09877

**OGYE selective supplement**

for yeasts, for molds, pkg of 10 vials, for use with OGYE agar, Base



O5003

**OPI Media Supplement**

Hybri-Max™, γ-irradiated, powder, suitable for hybridoma



O7753

**Oxaloacetic acid**

powder, BioReagent, suitable for cell culture, suitable for insect cell culture, ≥97% (HPLC)



1.07006

**Oxford *Listeria* Selective Supplement**

selective for *Listeria* spp., pkg of 10 vials, for use with GranuCult® Oxford Agar (Base)



R4658

**PEPTITE-2000®**



P5905

**Peptone from animal tissue**

from meat, BioReagent, suitable for cell culture, suitable for plant cell culture



SCM152

**PLTGold® Human Platelet Lysate**

Heparin-free Human Platelet Lysate (hPL) for Mesenchymal Stem Cell Culture. 500ml.



SCM151

**PLTGold® Human Platelet Lysate**

Heparin-free Human Platelet Lysate (hPL) for Mesenchymal Stem Cell Culture. 100ml.



SCM141

**PLTMax Human Platelet Lysate**

PLTMax Human Platelet Lysate is a growth factor rich supplement that is a superior alternative to fetal bovine serum (FBS) for human mesenchymal stem cell (MSC) culture. 100ml.



SCM142

**PLTMax Human Platelet Lysate**

PLTMax Human Platelet Lysate is a growth factor rich supplement that is a superior alternative to fetal bovine serum (FBS) for human mesenchymal stem cell (MSC) culture. 500ml.



P8483

**Polyamine Supplement (1000×)**

liquid, sterile-filtered, BioReagent, suitable for cell culture



17774

**Potassium tellurite solution**

1% in H<sub>2</sub>O, suitable for microbiology



1.07624

***Pseudomonas* CN Selective Supplement**

for *Pseudomonas* spp., pkg of 10 vials, for the preparation of *Pseudomonas* CN Selective Agar



MTOXRCSUP

**RPTEC Complete Supplement**

sterile-filtered, suitable for cell culture, add to 500 ML of basal medium



Y1000

**Select Yeast Extract**

powder, BioReagent, suitable for cell culture, suitable for insect cell culture



Y1000

**Select Yeast Extract**

powder, BioReagent, suitable for cell culture, suitable for insect cell culture



S4920

**SITE Liquid Media Supplement (100×)**

liquid, sterile-filtered, BioReagent, suitable for cell culture



S5295

**SITE+3 Liquid Media Supplement (100×)**

liquid, sterile-filtered, BioReagent, suitable for cell culture



P5436

**Sodium propionate**

≥99.0%, BioReagent, suitable for insect cell culture



P3662

**Sodium pyruvate**

Hybri-Max™, powder, suitable for hybridoma



S5261

**Sodium selenite**

BioReagent, suitable for cell culture, ≥98%



S5666

**SPITE Medium Supplement (100×)**

liquid, sterile-filtered, BioReagent, suitable for cell culture



92949

**Trace Metal Mix A5 with Co**

suitable for microbiology, Sterile supplement recommended for the culture and maintenance of Cyanobacteria





10652202001

**Transferrin**

from human serum



T8158

**Transferrin human**

powder, BioReagent, suitable for cell culture



616420

**Transferrin, Holo, Bovine Plasma**



T4532

**Tryptose Broth**

suitable for insect cell culture



T8782

**Tryptose Phosphate Broth**

buffered powder, Microbiologically tested.



T9157

**Tryptose Phosphate Broth**

suitable for insect cell culture



T8159

**Tryptose Phosphate Broth solution**

sterile-filtered, suitable for cell culture



75423

### **Vancomycin supplement**

suitable for microbiology



Y4625

### **Yeast Brewers**

Debittered, BioReagent, suitable for insect cell culture

## **FBS - Fetal Bovine Serum & Fetal Calf Serum**



Fetal bovine serum (FBS) is the most widely-used growth supplement for **cell culture media**. When used at appropriate concentrations, it supplies many defined and undefined components that have been shown to satisfy specific metabolic requirements for the culture of cells. FBS is a complex mixture of biomolecules that includes growth factors, proteins, trace elements, vitamins, and hormones that are important for the growth and maintenance of cells in vitro culture.

Our **FBS selection categories** make it easy to choose an FBS product suitable for any cell culture application, based on relevant parameters such as  $\gamma$ -irradiation, geographic origin, suitability for hybridoma or insect culture, need for heat-inactivation, or special application testing.

---

## FBS CLASSIC

FBS products that are suitable for general cell culture applications are collected in the FBS Classic portfolio. These products include serum products that have the following attributes:

Must pass rigorous testing of up to 48 defined quality release parameters, including endotoxin and hemoglobin

Dialyzed

Charcoal-stripped

0.1 µm triple-filtered

USA, USDA, Canada, Australia, and other origin

## FBS PREMIER

For customers using FBS in a biomanufacturing process. Products are manufactured using select raw materials at specialist facilities, frequently employing Single Use Disposal technologies.

FBS Premier products are supported by enhanced levels of documentation, including EDQM Certificates of Suitability. They are also QC tested and released to enhanced levels, especially after being Gamma Irradiated using our validated SER-TAIN process.

Stringent testing and release procedures based on internationally recognized regulatory guidelines

Intended Use: For Research or Further Manufacturing

USA, Australia, and New Zealand origin

## FBS SELECT

Products designated FBS Select are pre-qualified for specialized cell and tissue culture including supplementation of stem cells, cardiomyocytes, and cells cultured for the development of immunotherapeutics. FBS Select products include sera that are:

EmbryoMax® ES (embryonic stem) cell-qualified

Mesenchymal stem cell-qualified

HL-1 cell-screened

Ultra-low IgG

Dialyzed by ultrafiltration

FBS Superior, EU approved



F7524

**Fetal Bovine Serum**

non-USA origin, sterile-filtered, suitable for cell culture



F2442

**Fetal Bovine Serum**

USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma



F4135

**Fetal Bovine Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture, suitable for insect cell culture, suitable for hybridoma



F0926

**Fetal Bovine Serum**

USDA approved, sterile-filtered, suitable for cell culture



F9665

**Fetal Bovine Serum**

Heat Inactivated, non-USA origin, sterile-filtered, suitable for cell culture



12306C

**Fetal Bovine Serum**

non-USA origin, from USDA approved countries, Heat Inactivated, sterile-filtered, suitable for cell culture



S0615

**FBS Superior**

Supplemented FBS, EU approved



F6765

**Fetal Bovine Serum**

USA origin, Charcoal Stripped, sterile-filtered, suitable for cell culture



12103C

**Fetal Bovine Serum**

USA origin, suitable for cell culture



F1051

**Fetal Bovine Serum**

Canada origin, sterile-filtered, suitable for cell culture



ES009-M

**Fetal Bovine Serum**

US Origin, EmbryoMax ES Cell Qualified FBS, sterile-filtered, suitable for stem cell culture



12003C

**Fetal Bovine Serum**

Australia origin, USDA approved, sterile-filtered, suitable for cell culture



F0392

**Fetal Bovine Serum**

USA origin, Dialyzed by ultrafiltration against 0.15 M NaCl, sterile-filtered, suitable for cell culture



12107C

**Fetal Bovine Serum**

USA origin,  $\gamma$ -irradiated by SER-TAIN process, sterile-filtered, suitable for cell culture



12007C

**Fetal Bovine Serum**

Australia origin,  $\gamma$ -irradiated, sterile-filtered, suitable for cell culture



S5394

**Lipoprotein Deficient Serum from fetal calf**

frozen liquid



12106C

**Fetal Bovine Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture



TMS-016

**Fetal Bovine Serum**

US Origin, HL-1 Cell Screened FBS, sterile-filtered, suitable for cell culture



F1283

**Fetal Bovine Serum**

Fetal Bovine Serum, USA origin, Ultra Low IgG



F9423

**Fetal Bovine Serum**

Australia origin, suitable for, USDA approved, sterile-filtered, suitable for cell culture, suitable for hybridoma

# Sera



With more than 35 years of experience in the management and production of sera for use in cell culture, we offer many varieties of FBS and other bovine (cow) serum, chicken, caprine (goat), equine (horse), human, ovine (sheep), porcine (pig) and rabbit sera produced and tested for use in cell culture applications. Every serum product we offer is tested for viral contamination and cell culture performance, and is supported with certification of origin.

FBS (fetal bovine serum) is an essential supplement for labs around the world that perform cell culture. Our FBS Classic, FBS Premier, and FBS Select portfolios help you navigate serum selection by considering serum attributes that are important to your process. These classifications recognize the needs of labs conducting general cell culture; biomanufacturing and applications requiring stringent quality testing; and the culture of more specialized or fastidious cell phenotypes, to enable confident selection of the right FBS for your cell culture performance, documentation, and optimization needs.

We manage and segregate our adult, newborn and fetal bovine sera (FBS) inventories by country and/or region of origin to meet US and international regulatory standards and restrictions. Our FBS products are collected into USA-sourced and non-USA-sourced categories, and we offer USA-origin horse and goat sera from donor herds. Our non-USA sourced FBS is lot-designated and managed as USDA-approved or country/region of origin/restricted sales, and we offer lot testing and matching for all FBS products. Our human sera are sourced and comprehensively tested to meet public safety requirements. In addition to complete sera solutions, we offer serum replacement products for optimal growth of cultures that require serum-free conditions.

## FETAL BOVINE SERUM (FBS)

Our FBS product selection categories help you choose the right FBS product for your general or specific cell culture application need, based on attributes relevant to your workflow:

**FBS Classic:** Our best value fetal bovine sera for general cell culture applications

**FBS Premier:** For culture processes like biomanufacturing that require stringent testing and release procedures based on internationally-determined standards, these products must pass rigorous testing of up to 56 defined quality release parameters

**FBS Select:** These FBS products meet standards for tailored supplementation of stem cells, cardiomyocytes, and cells cultured for immunotherapeutic development---just to name a few specialized cell phenotypes.

## CALF AND ADULT BOVINE SERA

Like FBS, neonatal calf serum contains growth factors and nutrients that can provide a cost-effective alternative to FBS for some culture applications. Adult bovine serum is also used to supplement culture media to promote growth and proliferation. These sera may be an economical option for applications where the presence of antibodies and other immune factors in sera will not impact cultures.

## HUMAN SERUM

Human serum is vital for biomedical applications that include tissue engineering, transplantation and cell therapy development. For certain human cell culture applications, human serum may be a more optimal choice than FBS. These include cell invasion studies and methods that involve the formation of spheroids. Our human serum products are serially sterile-filtered and tested for the absence of HBsAg, Hepatitis A, and HIV, as well as other relevant bacteria, viruses, toxins, and hemoglobin. Biological performance is assessed using cell culture medium supplemented with the serum for seven days to ensure suitability for culture.

## SERA FROM OTHER ANIMAL SPECIES

Beyond bovine serum, sera from other species may also be used as more cost-effective alternatives for supplementation of basal cell culture media, or for applications requiring species-specific sera. Animal sera are fundamental reagents for immunodetection protocols, where they are used to block nonspecific binding and enhance signal/noise ratio. We offer sera from diverse species that include horse, goat, rabbit, sheep, pig, rat and mouse.

### Compare Product Number Product Name Product Description



12138C

#### **Bovine Calf Serum**

Iron-Fortified, USA origin, from formula-fed bovine calves, sterile-filtered, suitable for cell culture



12133C

#### **Bovine Calf Serum**

USA origin, for cell culture, sterile-filtered, suitable for cell culture



345876

#### **Bovine $\gamma$ -Globulin, Serum**



B9433

#### **Bovine Serum, Adult**

USA origin, sterile-filtered, suitable for cell culture



C8056

#### **Calf Serum**

from formula-fed bovine calves, iron supplemented, USA origin, sterile-filtered, suitable for cell culture



12238C

#### **Calf Serum**

Iron-Supplemented, from formula-fed bovine calves, sterile-filtered, USA origin, suitable for cell culture



C5405

#### **Chicken Serum**

USA origin, sterile-filtered, suitable for cell culture



C0913



**Complement C2 deficient serum human**  
for complement assays



C8788

**Complement C3 deficient serum human**  
substrate serum for C3 activity



C1163

**Complement C5 deficient serum human**  
for complement assays



234405

**Complement C5-Depleted Serum, Human**



C1288

**Complement C6 deficient serum human**  
for complement assays



C1413

**Complement C7 deficient serum human**  
for complement assays



C1538

**Complement C8 deficient serum human**  
for complement assays



S1639

**Complement sera from guinea pig**  
lyophilized powder



S3269

**Complement sera from mouse**  
lyophilized powder



S7764

**Complement sera from rabbit**  
lyophilized powder



S1764

**Complement sera human**  
lyophilized powder



C9473

**Complement Serum Standard human**  
aqueous solution



234400-M

## **Complement, Rabbit Serum**

Complement, Rabbit Serum, is tested for suitability for HLA-ABC serology. Useful as an active source of complement for use with hybridoma antibodies, alloantisera, and related applications.

## **Compare**

**Product Number**

**Product Name**

**Product Description**



D9663

**Donkey serum**



S0615

**FBS Superior**

Supplemented FBS, EU approved



F7942

**Fetal Bovine Serum**

Canada origin, sterile-filtered,  $\gamma$ -irradiated, suitable for cell culture



12306C

**Fetal Bovine Serum**

non-USA origin, from USDA approved countries, Heat Inactivated, sterile-filtered, suitable for cell culture



12103C

**Fetal Bovine Serum**

USA origin, suitable for cell culture



12107C

**Fetal Bovine Serum**

USA origin,  $\gamma$ -irradiated by SER-TAIN process, sterile-filtered, suitable for cell culture



12106C

**Fetal Bovine Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture



12007C

**Fetal Bovine Serum**

Australia origin,  $\gamma$ -irradiated, sterile-filtered, suitable for cell culture



12006C

**Fetal Bovine Serum**

Australia origin, USDA approved, Heat Inactivated, suitable for cell culture



12003C

**Fetal Bovine Serum**

Australia origin, USDA approved, sterile-filtered, suitable for cell culture

- F1051  
**Fetal Bovine Serum**  
Canada origin, sterile-filtered, suitable for cell culture
  
  - F0926  
**Fetal Bovine Serum**  
USDA approved, sterile-filtered, suitable for cell culture
  
  - F9423  
**Fetal Bovine Serum**  
Australia origin, suitable for, USDA approved, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - F7524  
**Fetal Bovine Serum**  
non-USA origin, sterile-filtered, suitable for cell culture
  
  - F0392  
**Fetal Bovine Serum**  
USA origin, Dialyzed by ultrafiltration against 0.15 M NaCl, sterile-filtered, suitable for cell culture
  
  - F2442  
**Fetal Bovine Serum**  
USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - F9665  
**Fetal Bovine Serum**  
Heat Inactivated, non-USA origin, sterile-filtered, suitable for cell culture
  
  - F3885  
**Fetal Bovine Serum**  
γ-irradiated, USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - F4135  
**Fetal Bovine Serum**  
USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture, suitable for insect cell culture, suitable for hybridoma
  
  - F6765  
**Fetal Bovine Serum**  
USA origin, Charcoal Stripped, sterile-filtered, suitable for cell culture
- Compare**  
**Product Number**  
**Product Name**  
**Product Description**
- F1283

**Fetal Bovine Serum**

Fetal Bovine Serum, USA origin, Ultra Low IgG



F7942

**Fetal Bovine Serum**

Canada origin, sterile-filtered,  $\gamma$ -irradiated, suitable for cell culture



ES-020-B

**Fetal Bovine Serum**

US Origin, Mesenchymal Stem Cell Qualified FBS, sterile-filtered, suitable for stem cell culture



F8192

**Fetal Bovine Serum**

Australia origin, Heat Inactivated, sterile-filtered, suitable for cell culture, suitable for hybridoma



ES009-M

**Fetal Bovine Serum**

US Origin, EmbryoMax ES Cell Qualified FBS, sterile-filtered, suitable for stem cell culture



G9023

**Goat serum**



G6767

**Goat Serum Donor Herd**

USA origin, sterile-filtered, suitable for cell culture



S26-M

**Goat Serum, 1 L**

Non-sterile goat serum collected from normal healthy goats. Used for blocking of interfering antibodies.



G9774

**Guinea pig serum**



H0146

**Horse serum**

liquid



H1270

**Horse Serum**

Donor herd, USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma



H1138

**Horse Serum**

Donor Herd, USA origin, Heat inactivated, sterile-filtered, suitable for cell culture



12449C

**Horse Serum**

USA origin, Donor herd, suitable for cell culture, suitable for hybridoma



P2918

**Human Serum**

from platelet poor human plasma, sterile-filtered, (mycoplasma tested, virus tested)



H4522

**Human Serum**

from human male AB plasma, USA origin, sterile-filtered



H5667

**Human Serum**

Heat Inactivated (from male AB clotted whole blood), USA origin, sterile-filtered



H6914

**Human Serum**

(from male AB clotted whole blood), USA origin, sterile-filtered



H3667

**Human Serum**

Heat Inactivated, from human male AB plasma, USA origin, sterile-filtered



S1-M

**Human Serum, Normal**



SAE0012

**Hypo-Opticlear Human Sera**



S5394

**Lipoprotein Deficient Serum from fetal calf**

frozen liquid



S5519

**Lipoprotein Deficient Serum from human plasma**

sterile-filtered, frozen liquid



LP4

**Lipoprotein Deficient Serum, human, 100 mg**

LPDS is isolated from fresh human serum by isopycnic ultracentrifugation, and is used for blocking of interfering antibodies.



M5905

**Mouse serum**



12023C

**Newborn Bovine Serum**

New Zealand origin

- N4762  
**Newborn Calf Serum**  
USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture
  
- N4637  
**Newborn Calf Serum**  
USA origin, sterile-filtered, suitable for cell culture
  
- 566460  
**Normal Donkey Serum, Sterile**
  
- NS02L  
**Normal Goat Serum**  
This Normal Goat Serum is validated for use as a negative control in any application.
  
- 566380  
**Normal Goat Serum, Lyophilized Solid**
  
- 566400  
**Normal Guinea Pig Serum, Lyophilized Solid**
  
- NS03L  
**Normal Mouse Serum**  
This Normal Mouse Serum is validated for use in ELISA, Flow Cytometry, Immunoblotting, Immunofluorescence, Immunohistochemistry, Immunoprecipitation for the detection of Mouse Serum.
  
- NS01L  
**Normal Rabbit Serum**  
This Normal Rabbit Serum is validated for use in ELISA, Flow Cytometry, Immunoblotting, Immunofluorescence, Immunohistochemistry, Immunoprecipitation for the detection of Rabbit Serum.
  
- 869019-M  
**Normal Rabbit Serum, Lyophilized Solid**
  
- 12731C  
**Porcine Serum**  
USA origin, sterile-filtered, suitable for cell culture
  
- P9783  
**Porcine Serum**  
USA origin, sterile-filtered, suitable for cell culture
  
- R9133  
**Rabbit serum**
  
-

R7136

**Rabbit Serum**

USA origin, sterile-filtered, Suitable for *Borrelia* culture



R4505

**Rabbit Serum**

USDA approved, sterile-filtered, suitable for cell culture



S20-M

**Rabbit Serum, 100 ml**



R9759

**Rat serum**



S24-M

**Rat Serum, 100 ml**

Non-sterile rat serum collected from normal healthy rats. Used for blocking of interfering antibodies.



S1507

**Sera bovine**



S2007

**Sera from goat**

lyophilized powder (from clotted whole blood)



S7273

**Sera from mouse**

frozen liquid (from clotted whole blood)



S3509

**Sera from mouse**



S7648

**Sera from rat**

frozen liquid



S2382

**Sera from sheep**



S7023

**Sera human**

frozen liquid



S2257

**Sera human**

lyophilized powder (from clotted whole blood)



S5393

**Serum minus IgA/IgM/IgG human**  
lyophilized powder



S5143

**Serum minus IgG human**  
lyophilized powder



S9388

**Serum Replacement 2 (50x)**  
liquid, sterile-filtered, suitable for cell culture



S3772

**Sheep serum**



S2263

**Sheep Serum**  
USA origin, sterile-filtered, suitable for cell culture



S22-M

**Sheep Serum, 100 ml**  
Non-sterile sheep serum collected from normal healthy sheep. Used for blocking of interfering antibodies.

## Human Serum for Cell Culture



Serum is the fluid that remains once clotting factors are removed from blood plasma. A common supplement in cell culture media, serum provides a mix of hormones, growth and attachment factors, buffering agents, and other nutritional components to cells. Some studies have determined that human serum is better suited than **FBS** for certain human cell culture applications, such as **cell invasion studies** and the **formation of spheroids**. Our human serum for cell culture is tested for the presence of viruses, bacteria, hemoglobin, and toxins, and then serially filtered under sterile conditions.

### Human AB Serum Products

### Human Serum from Platelet Poor Plasma

### Applications for Human Serum



## HUMAN AB SERUM PRODUCTS

Human adult AB serum is used for culturing human cell lines, including human stem cell lines. We offer both AB off-the-clot and AB plasma products. Human AB serum is prepared from whole blood that is allowed to clot naturally, called OTC or Off-The-Clot serum. Human serum from clotted whole blood is used most frequently however, as it contains more growth factors for cell growth.

AB human serum can also be plasma-derived or prepared from whole blood that is not allowed to coagulate. Once the plasma is separated from whole blood, it is treated with calcium to activate the clotting cascade and centrifuged to extract the serum. This preparation is used when testing sera for growth factors.

We offer heat inactivated human AB serum both from plasma and clotted whole blood. Adult serum contains complement, a component in sera that can be harmful to some cells or have deleterious effects in downstream immunoassays. Heat inactivation of serum inactivates complement, and this serum is mainly used when culturing hematopoietic cells or when performing immunological assays, such as mixed-lymphocyte reactions or neutralization assays.

## HUMAN SERUM FROM PLATELET POOR PLASMA

Human serum from platelet poor plasma (PPP) is a media supplement that is often used in studies that look at the effects that platelet lysates have on the cellular growth, such as on human skin fibroblasts and articular chondrocytes growth. PPP human sera is also used when differentiating human induced pluripotent stem cells (hiPS) to hiPS-brain microvascular endothelial cells or in platelet derived growth factor (PDGF) purification assays.

## APPLICATIONS FOR HUMAN SERUM

Human serum from blood type AB donors lacks antibodies specific for both A and B blood-type antigens, making it suitable for transplantation and cell therapy. Other biotechnical and biopharmaceutical applications include tissue engineering, the expansion of mesenchymal stem cells from adipose tissue, or of mesenchymal stromal cells from human bone marrow. In addition, AB serum is essential for generating peripheral blood-derived NK cells, and for enhancing pre-transplant human islet culture.

**S5393**

## Serum minus IgA/IgM/IgG human

lyophilized powder

### PROPERTIES

human

**300**

unconjugated

lyophilized powder

15 mM sodium azide

vial of 0.5 mL

2-8°C

unmodified

### DESCRIPTION

## General description

Serum is the liquid component of blood that includes proteins, immunoglobulin and electrolytes. The product can be used for selective removal of contaminating antibodies when immobilized on a solid matrix. This product can also be used in anti-protective antigen (anti-PA) IgG measurements using PA coupled microspheres[1]. Human serum deficient of IgG, IgA, and IgM can react specifically with anti-human whole serum but does not show reactivity with anti-human IgG, IgA, or IgM.

## Application

Serum minus IgA/IgM/IgG human has been used as a control serum in immunoelectrophoresis, immunodiffusion, enzyme linked immunosorbent assay. It has also been used as

control sera to assess neuraminidase inhibition[2]

microneutralization assay[3]

single radial hemolysis (SRH) repeatability assay[4]

## Quantity

Each vial contains at least 25 mg protein

## Reconstitution

Reconstitute with 0.5 mL deionized water.

## Disclaimer

RESEARCH USE ONLY. This product is regulated in France when intended to be used for scientific purposes, including for import and export activities (Article L 1211-1 paragraph 2 of the Public Health Code). The purchaser (i.e. enduser) is required to obtain an import authorization from the France Ministry of Research referred in the Article L1245-5-1 II. of Public Health Code. By ordering this product, you are confirming that you have obtained the proper import authorization.

Unless otherwise stated in our catalog or other company documentation accompanying the product(s), our products are intended for research use only and are not to be used for any other purpose, which includes but is not limited to, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses or any type of consumption or application to humans or animals.

## SAFETY INFORMATION

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

Personal Protective Equipment

dust mask type N95 (US), **Eyeshields, Gloves**



H6914

## Human Serum

(from male AB clotted whole blood), USA origin, sterile-filtered

### PROPERTIES

human

**300**

sterile-filtered

Hemoglobin,  $\leq 25$  mg/dL

USA origin

cell culture | mammalian: suitable

cell culture | stem cell: suitable

$\leq 10$  EU/mL Endotoxin

dry ice

$-20^{\circ}\text{C}$

### DESCRIPTION

#### Application

Human AB serum is used in tissue engineering, transplantation and cell therapy applications for the expansion of mesenchymal stem cells (MSC) from adipose tissue or mesenchymal stromal cells from human bone marrow; for standardized limbal epithelial stem cell graft generation and transplantation; for ex vivo expansion of NK cells from peripheral blood in Hematopoietic Stem Cell Expansion Medium; and for upgrading pretransplant human islet culture technology.

#### Packaging

Packaging may vary for different batches due to short supply of the bottles used to pack this product. The presence or lack of shrink wrap around the cap of the bottle doesn't impact product integrity/sterility of the product.

#### Warning

Each donor is tested for and found non-reactive for Hepatitis B & C and non-reactive for Human Immunodeficiency Virus (HIV) antibody by ELISA. Nevertheless, products of human origin should be considered potentially infectious and handled accordingly.

#### Analysis Note

Endotoxin tested

#### Other Notes

It is not unusual for our human serum products to be cloudy. This product is from pooled serum and cloudiness indicates that lipids are present in the serum. No clear, lipid-free human serum products are available.

#### Disclaimer

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purchaser (i.e. enduser) is required to obtain an import authorization from the France Ministry of Research referred in the Article L1245-5-1 II. of Public Health Code. By ordering this product, you are confirming that you have obtained the proper import authorization.

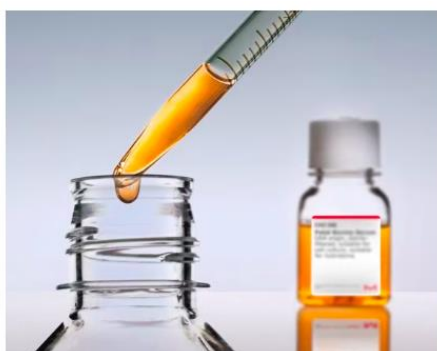
## RELATED PRODUCTS

Related Product

### Product No. Description

06693

Timestrip Plus™ -20 °C



H5667

## Human Serum

Heat Inactivated (from male AB clotted whole blood), USA origin, sterile-filtered

### PROPERTIES

human

**300**

sterile-filtered

Hemoglobin,  $\leq 25$  mg/dL

USA origin

cell culture | mammalian: suitable

cell culture | stem cell: suitable

$\leq 10$  EU/mL Endotoxin

dry ice

-20°C

### DESCRIPTION

#### Application

Human AB serum is used in tissue engineering, transplantation and cell therapy applications for the expansion of mesenchymal stem cells (MSC) from adipose tissue or mesenchymal stromal cells from human bone marrow; for standardized limbal epithelial stem cell graft generation and transplantation; for ex vivo expansion of NK cells from peripheral blood in Hematopoietic Stem Cell Expansion Medium; and for upgrading pretransplant human islet culture technology.

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## Analysis Note

Endotoxin tested

## Other Notes

It is not unusual for our human serum products to be cloudy. This product is from pooled serum and cloudiness indicates that lipids are present in the serum. No clear, lipid-free human serum products are available.

## Disclaimer

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## SAFETY INFORMATION

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

S5519

# Lipoprotein Deficient Serum from human plasma

## PROPERTIES

human

**200**

sterile-filtered

frozen liquid

No banding correlating to lipoprotein observed by Agarose Electrophoresis protein,  $\geq 50$  mg/mL biuret

USA origin

$\geq 50$  mg protein/mL Biuret

cell culture | mammalian: suitable

**P02647**

**P02649**

**P02654**

**P02656**

**P04114**

**P06727**

**Q6Q788**

dry ice

-20°C

human

... **APOA1(335)** , **APOA4(337)** , **APOA5(116519)** , **APOB(338)** , **APOC1(341)** , **APOC3(345)** , **APOE(348)**

Show Less

## DESCRIPTION

Biochem/physiol Actions

Lipoprotein deficient serum was shown to inhibit the transfer of unesterified cholesterol from LDL to HDL. [1]  
Preparation Note

Dialyzed against Dulbecco's phosphate buffered saline, pH 7.2-7.3

Disclaimer

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## SAFETY INFORMATION

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

**S1764**

# Complement sera human

lyophilized powder

## PROPERTIES

human

**200**

lyophilized powder

USA origin

cell culture | mammalian: suitable

virus, tested

dry ice

-20°C

## DESCRIPTION

General description

Complement serum is prepared from pooled human plasma and lyophilized from the amount of serum indicated on the label.

## Application

Complement sera human has been used:

to incubate DLD-1 or SW-620 cells to quantify C5a release

in multiplex bead antibody-binding assay to assay C3d

in complement-dependent cytotoxicity assay

Complement sera human has been used:

to incubate DLD-1 or SW-620 cells to quantify C5a release[1]

in multiplex bead antibody-binding assay to assay C3d[2]

in complement-dependent cytotoxicity assay[3]

The activity of complement sera can be determined by hemolytic assays *in vitro*. [4]

## Physical form

Lyophilized powder from indicated amount of serum

## Analysis Note

Hemolytic titer (CH<sub>50</sub> units per ml) is determined by method of Kabat and Mayer. Actual titer given on label.

## Disclaimer

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## SAFETY INFORMATION

### Storage Class Code

11 - Combustible Solids

### WGK

WGK 3

### Flash Point(F)

Not applicable

### Flash Point(C)

Not applicable

P2918

## Human Serum

from platelet poor human plasma, sterile-filtered, (mycoplasma tested, virus tested)

## PROPERTIES

human

sterile-filtered

USA origin

cell culture | mammalian: suitable

(mycoplasma tested, virus tested)  
≤10 EU/mL endotoxin

dry ice  
-20°C

## DESCRIPTION

### General description

The serum is the fluid part of the blood containing plasma without fibrinogen.[1]

### Application

Human Serum has been used:

in the preparation of human serum samples that mimic the COVID-19 patient samples for serological antibody testing[2]

as a media supplement to differentiate human induced pluripotent stem cells (hiPS) to hiPS- brain microvascular endothelial cells (BMEC)[3]

for culturing transgenic *Plasmodium falciparum* clone[4]

for assessing the electrochemical response of recombinant *P. falciparum* parasite L-lactate dehydrogenase (LDH) in serum samples[4]

in platelet-derived growth factor (PDGF) purification assays

Human serum from platelet poor plasma (PPP) is useful for studies of the effects of platelet lysates on the growth of cells such as articular chondrocytes and human skin fibroblasts. It has also been used in platelet derived growth factor (PDGF) purification assays.

### Biochem/physiol Actions

Serum serves as a supplement to basal media formulations and conventional biomedical cell culture media. It acts as a source of trace nutrients, signaling molecules, growth factors, and hormones that induce proper cell growth *in vitro*. [5] Human serum from platelet-poor plasma (PPP) is useful in the studies of the effects of platelet lysates on the growth of cells such as articular chondrocytes and human skin fibroblasts.

### Analysis Note

Endotoxin tested

### Other Notes

It is not unusual for a white precipitate to form following a freeze-thaw cycle for this human serum product.

### Disclaimer

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## SAFETY INFORMATION

### Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable



S7023

# Sera human

frozen liquid

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## PROPERTIES

human

200

frozen liquid

USA origin

dry ice

-20°C

## DESCRIPTION

General description

The serum is the fluid from plasma devoid of fibrinogen, prothrombin, and other clotting factors. It contains various plasma proteins, amino acids, polypeptides, growth factors, fat, carbohydrates, nucleic acid derivatives, hormones, inorganic minerals, and vitamins.

Application

Sera human has been used:

to prepare the antigen standards for the validation assay of multiple-biomarker detection

as a quality check (QC) sample to optimize the experimental workflow

as a control in immunoproteomics assay

Biochem/physiol Actions

Human serum is used as a cell culture supplement. It maintains physiological balance by stimulating or inhibiting cell growth. It is known to have an inhibitory action on endogenous and exogenous enzymes.

Disclaimer

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## SAFETY INFORMATION

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

C9473

# Complement Serum Standard human

aqueous solution

## PROPERTIES

human

200

aqueous solution

cell analysis

dry ice

-70°C

## DESCRIPTION

General description

The complement serum standard human is suitable for the determination of CH50 and AP50 complement activities. This allows for a test of the complement activity on the capacity of the serum to lyse red blood cells *in vitro* and can be used in procedures for genotyping DNA samples of the complement system.

Application

Complement Serum Standard human has been used as a positive control to study the role of the complement system in immunological demyelination of the spinal cord from mammals.[1]

Biochem/physiol Actions

The complement system is an important constituent of innate immunity.[2] It participates in the first line of defense against microbial infections, altered host cells, and removal of immune complexes and injured cells. The complement system comprises more than thirty components such as the plasma proteins produced by the liver, membrane proteins expressed on the cell surface, cytokines, and hormones.[2][3] The complement proteins come together to opsonize the pathogens and initiate a cascade of inflammatory responses serving the immune cells to fight the infection and maintain homeostasis.[2]

Physical form

Supplied as a 0.22 µm filtered solution containing ~ 18 mM citrate, ~22 mM dextrose, ~3 mM phosphate and ~13 mM calcium

Disclaimer

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## SAFETY INFORMATION

Storage Class Code

11 - Combustible Solids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

S2257

## Sera human

## PROPERTIES

human

lyophilized powder (from clotted whole blood)

USA origin

2-8°C

## DESCRIPTION

## Application

Not tested for use in cell culture

## Physical form

0.2 $\mu$  filtered prior to lyophilization from the indicated amount

## Disclaimer

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## SAFETY INFORMATION

### Storage Class Code

11 - Combustible Solids

### WGK

WGK 3

### Flash Point(F)

Not applicable

### Flash Point(C)

Not applicable

SAE0012

# Hypo-Opticlear Human Sera

## PROPERTIES

human

**200**

total protein,  $\geq 6.0$  g/dL

dry ice

$-20^{\circ}\text{C}$

## DESCRIPTION

### Features and Benefits

This human serum is processed to reduce both T3 and T4 to zero values, making these sera suitable for use in the preparation of standards and controls.

Delipidization increases shelf life, improves appearance and eliminates interference from turbidity or the presence of lipids.

Contains low enzymes and low serum iron.

This stripped serum can withstand numerous freeze-thaws without affecting clarity.

### Analysis Note

Endotoxin tested

## Disclaimer

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## SAFETY INFORMATION

### Storage Class Code

10 - Combustible liquids

WGK  
WGK 1  
Flash Point(F)  
Not applicable  
Flash Point(C)  
Not applicable

S5143

# Serum minus IgG human

lyophilized powder

## PROPERTIES

human

**200**

unconjugated

lyophilized powder

15 mM sodium azide

vial of 0.5 mL

2-8°C

## DESCRIPTION

General description

This product is pooled, lyophilized human serum deficient of IgG.

Application

Serum minus IgG human has been used in:

immuno-electrophoresis

immunodiffusion

enzyme-linked immunosorbent assay (ELISA)

serum analysis

serum analysis by MISPE-PE-MS and molecularly imprinted solid phase extraction (MISPE)-pulsed elution (PE) method coupled with electrospray mass spectrometry (MS)

Serum minus IgG human was used for screening of cephalexin in human plasma and serum by molecularly imprinted solid phase extraction technique.

Quantity

Each vial contains at least 25 mg protein

Reconstitution

Reconstitute with 0.5 mL deionized water

Disclaimer

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Unless otherwise stated in our catalog or other company documentation accompanying the product(s), our

products are intended for research use only and are not to be used for any other purpose, which includes but is not limited to, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses or any type of consumption or application to humans or animals.

## **SAFETY INFORMATION**

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

Personal Protective Equipment

dust mask type N95 (US), **Eyeshields, Gloves**

**C1413**

# **Complement C7 deficient serum human**

for complement assays

## **PROPERTIES**

human

**200**

solution

activity assay: suitable

**P10643**

dry ice

-70°C

human ... **C7(730)**

## **DESCRIPTION**

Application

Complement C7 deficiencies in humans are rare, but often associated with recurrent infections by *Neisseria* spp. (such as meningitis). C7 deficiencies in patients with meningococcal meningitis have shown a mutation which results in an 11 bp deletion in exon 6 resulting in a premature stop codon. Additionally, research has suggested that screening of patients with systemic neisserial infection by CH50 or the APH-50 assay can reveal a C7 deficiency.

Physical form

Supplied as a solution in PBS, pH 7.4

Analysis Note

C7 is depleted by immunoabsorption as judged by a highly sensitive hemolytic assay.

Disclaimer

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## **SAFETY INFORMATION**

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)  
Not applicable  
Flash Point(C)  
Not applicable

C1288

## Complement C6 deficient serum human

for complement assays

### PROPERTIES

human  
**200**  
liquid  
activity assay: suitable  
**P13671**  
dry ice  
-70°C  
human ... **C6(729)**

### DESCRIPTION

Application

Complement C6 is one of the end terminals of the complement system contained in the membrane attack complex (MAC). A deficiency of C6 may result in an increased susceptibility to *Neisseria meningitidis*. Research has identified that a mutation which leads to a 31 bp deletion in exon 10 in the C6 gene results in C6 deficiency. A coagulation defect has also been observed in mice that are C6 deficient.

Physical form

Supplied as a solution in PBS, pH 7.4

Analysis Note

C6 is depleted by immunoabsorption as judged by a highly sensitive hemolytic assay.

Disclaimer

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### SAFETY INFORMATION

Storage Class Code

10 - Combustible liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

C1163

# Complement C5 deficient serum human

for complement assays

## PROPERTIES

human

200

solution

activity assay: suitable

P01031

-70°C

human ... C5(727)

## DESCRIPTION

Application

Complement C5 deficiencies in humans are rare, but often associated with recurrent infections by *Neisseria spp.* (such as meningitis). Deficiency in C5 results in an impairment of hemolytic activity from both the classical and alternative pathway of the complement system. Recently, genetic research has revealed that a 153 bp deletion in exon 30 results in complete C5 deficiency. Research has also implicated C5 deficiency in a predisposition to cardiac dysfunction when cardiac injury occurs.

Biochem/physiol Actions

Complement C5 deficiency can, paradoxically, protect against certain effects of infection. Patients deficient in C5 are unusually susceptible to meningococcal infection, but have a milder course of infection. Reduced expression of tumor necrosis factor (TNF) may account for this effect.[1]

Physical form

Supplied as a solution in PBS, pH 7.4

Analysis Note

C5 is depleted by immunoabsorption as determined by hemolytic assay.

Disclaimer

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## SAFETY INFORMATION

Storage Class Code

12 - Non Combustible Liquids

WGK

WGK 3

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

C1538

# Complement C8 deficient serum human

for complement assays

## PROPERTIES

human

200

solution  
USA origin  
activity assay: suitable  
infectious agent, tested  
**P07357**  
dry ice  
-70°C  
human ... **C8A(731)**

**BCR638**

## Human serum (Al, Se, Zn)

BCR<sup>®</sup>, certified reference material

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### PROPERTIES

human  
certified reference material  
BCR<sup>®</sup>  
JRC  
clinical testing  
matrix material  
wet ice  
-70°C

**BCR637**

## Human serum (Al, Se, Zn)

BCR<sup>®</sup>, certified reference material

### PROPERTIES

human  
certified reference material  
BCR<sup>®</sup>  
JRC  
clinical testing  
matrix material  
wet ice  
-70°C

**C8788**

## Complement C3 deficient serum human

substrate serum for C3 activity

### PROPERTIES

human  
**200**  
solution  
substrate serum for C3 activity  
activity assay: suitable  
infectious agent, tested  
**P01024**  
dry ice  
-70°C  
human ... **C3(718)**



BCR639

## Human serum (Al, Se, Zn)

BCR<sup>®</sup>, certified reference material

### PROPERTIES

human  
certified reference material  
BCR<sup>®</sup>  
JRC  
clinical testing  
matrix material  
wet ice  
-70°C

BCR304

## Human serum (Ca, Mg, Li)

BCR<sup>®</sup>, certified reference material

[Sign Into View Organizational & Contract](#)

### PROPERTIES

human  
certified reference material  
BCR<sup>®</sup>  
JRC  
clinical testing  
matrix material  
-20°C

C0913

## Complement C2 deficient serum human

for complement assays

### PROPERTIES

human  
**200**  
liquid  
activity assay: suitable  
**P06681**  
dry ice  
-70°C  
human ... **C2(717)**

# FBS - Fetal Bovine Serum & Fetal Calf Serum



Fetal bovine serum (FBS) is the most widely-used growth supplement for **cell culture media**. When used at appropriate concentrations, it supplies many defined and undefined components that have been shown to satisfy specific metabolic requirements for the culture of cells. FBS is a complex mixture of biomolecules that includes growth factors, proteins, trace elements, vitamins, and hormones that are important for the growth and maintenance of cells in vitro culture.

Our **FBS selection categories** make it easy to choose an FBS product suitable for any cell culture application, based on relevant parameters such as  $\gamma$ -irradiation, geographic origin, suitability for hybridoma or insect culture, need for heat-inactivation, or special application testing.



F7524

**Fetal Bovine Serum**

non-USA origin, sterile-filtered, suitable for cell culture



F2442

**Fetal Bovine Serum**

USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma



F4135

**Fetal Bovine Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture, suitable for insect cell culture, suitable for hybridoma



F0926

**Fetal Bovine Serum**

USDA approved, sterile-filtered, suitable for cell culture



F9665

**Fetal Bovine Serum**

Heat Inactivated, non-USA origin, sterile-filtered, suitable for cell culture



12306C

**Fetal Bovine Serum**

non-USA origin, from USDA approved countries, Heat Inactivated, sterile-filtered, suitable for cell culture



S0615

**FBS Superior**

Supplemented FBS, EU approved



F6765

**Fetal Bovine Serum**

USA origin, Charcoal Stripped, sterile-filtered, suitable for cell culture



12103C

**Fetal Bovine Serum**

USA origin, suitable for cell culture



F1051

**Fetal Bovine Serum**

Canada origin, sterile-filtered, suitable for cell culture



ES009-M

**Fetal Bovine Serum**

US Origin, EmbryoMax ES Cell Qualified FBS, sterile-filtered, suitable for stem cell culture



12003C

**Fetal Bovine Serum**

Australia origin, USDA approved, sterile-filtered, suitable for cell culture



F0392

**Fetal Bovine Serum**

USA origin, Dialyzed by ultrafiltration against 0.15 M NaCl, sterile-filtered, suitable for cell culture



12007C

**Fetal Bovine Serum**

Australia origin,  $\gamma$ -irradiated, sterile-filtered, suitable for cell culture



12107C

**Fetal Bovine Serum**

USA origin,  $\gamma$ -irradiated by SER-TAIN process, sterile-filtered, suitable for cell culture



S5394

**Lipoprotein Deficient Serum from fetal calf**

frozen liquid



12106C

**Fetal Bovine Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture



TMS-016

**Fetal Bovine Serum**

US Origin, HL-1 Cell Screened FBS, sterile-filtered, suitable for cell culture

- F1283  
**Fetal Bovine Serum**  
Fetal Bovine Serum, USA origin, Ultra Low IgG
  
  - F9423  
**Fetal Bovine Serum**  
Australia origin, suitable for, USDA approved, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - F3885  
**Fetal Bovine Serum**  
γ-irradiated, USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - ES-020-B  
**Fetal Bovine Serum**  
US Origin, Mesenchymal Stem Cell Qualified FBS, sterile-filtered, suitable for stem cell culture
  
  - F7942  
**Fetal Bovine Serum**  
Canada origin, sterile-filtered, γ-irradiated, suitable for cell culture
  
  - F8192  
**Fetal Bovine Serum**  
Australia origin, Heat Inactivated, sterile-filtered, suitable for cell culture, suitable for hybridoma
  
  - 12006C  
**Fetal Bovine Serum**  
Australia origin, USDA approved, Heat Inactivated, suitable for cell culture
- 

## **FBS CLASSIC**

FBS products that are suitable for general cell culture applications are collected in the FBS Classic portfolio. These products include serum products that have the following attributes:

Must pass rigorous testing of up to 48 defined quality release parameters, including endotoxin and hemoglobin

Dialyzed

Charcoal-stripped

0.1 μm triple-filtered

USA, USDA, Canada, Australia, and other origin

## **FBS PREMIER**

For customers using FBS in a biomanufacturing process. Products are manufactured using select raw materials at specialist facilities, frequently employing Single Use Disposal technologies.

FBS Premier products are supported by enhanced levels of documentation, including EDQM Certificates of Suitability. They are also QC tested and released to enhanced levels, especially after being Gamma Irradiated using our validated SER-TAIN process.

Stringent testing and release procedures based on internationally recognized regulatory guidelines

Intended Use: For Research or Further Manufacturing

USA, Australia, and New Zealand origin

## **FBS SELECT**

Products designated FBS Select are pre-qualified for specialized cell and tissue culture including supplementation of stem cells, cardiomyocytes, and cells cultured for the development of immunotherapeutics. FBS Select products include sera that are:

EmbryoMax® ES (embryonic stem) cell-qualified

Mesenchymal stem cell-qualified

HL-1 cell-screened

Ultra-low IgG

Dialyzed by ultrafiltration

FBS Superior, EU approved

To learn more about how our FBS will work in your application, **click here** to request a sample.

# Other Sera for Cell Culture



Serum is an important cell culture media supplement due to its mix of growth factors, hormones, attachment factors, buffering agents, and trace nutritional elements. Although fetal bovine serum (FBS) is the most common serum used to enrich culture media, many other animal sera can be used to supplement media in species-specific and other cell culture applications. Species-specific animal serum products can provide an environment that closely mimics the native state of the cells, promoting healthy cell growth. We provide other sera products such as:

## **Newborn and Adult Bovine Serum**

### **Serum from Other Animal Species**

## **NEWBORN AND ADULT BOVINE SERUM**

Newborn calf serum can present a cost-effective alternative to FBS in media for many culture applications, and where a low antibody titer will not impact cells. Adult bovine serum may similarly be used as a basal media supplement to promote growth and proliferation. Choose from

Iron-supplemented serum from formula-fed calves

Calf serum of USA or New Zealand origin

Adult bovine serum (ABS) of USA origin

## **SERUM FROM OTHER ANIMAL SPECIES**

Beyond bovine serum, sera from other species may also be used as more cost-effective alternatives for supplementation of basal cell culture media, or for other applications. Equine (horse) and porcine (pig) sera, for example, have been used in the production of vaccines for both human and animal use.

We offer sera from diverse species that include:

Chicken

Porcine (pig)

Caprine (goat)

Equine (horse)

Ovine (sheep)

Rabbit

H1270

**Horse Serum**

Donor herd, USA origin, sterile-filtered, suitable for cell culture, suitable for hybridoma



S30-M

**Donkey Serum, 100 ml**

Non-sterile donkey serum collected from normal healthy donkeys. Used for blocking of interfering antibodies.



H1138

**Horse Serum**

Donor Herd, USA origin, Heat inactivated, sterile-filtered, suitable for cell culture



P9783

**Porcine Serum**

USA origin, sterile-filtered, suitable for cell culture



12133C

**Bovine Calf Serum**

USA origin, for cell culture, sterile-filtered, suitable for cell culture



B9433

**Bovine Serum, Adult**

USA origin, sterile-filtered, suitable for cell culture



G6767

**Goat Serum Donor Herd**

USA origin, sterile-filtered, suitable for cell culture



N4637

**Newborn Calf Serum**

USA origin, sterile-filtered, suitable for cell culture



C8056

**Calf Serum**

from formula-fed bovine calves, iron supplemented, USA origin, sterile-filtered, suitable for cell culture



N4762

**Newborn Calf Serum**

USA origin, Heat Inactivated, sterile-filtered, suitable for cell culture



C5405

**Chicken Serum**

USA origin, sterile-filtered, suitable for cell culture



R4505

**Rabbit Serum**

USDA approved, sterile-filtered, suitable for cell culture



S1639

**Complement sera from guinea pig**

lyophilized powder



S25-M

**Mouse Serum, 100 ml**

Non-sterile mouse serum collected from normal healthy mice. Used for blocking of interfering antibodies.



12138C

**Bovine Calf Serum**

Iron-Fortified, USA origin, from formula-fed bovine calves, sterile-filtered, suitable for cell culture



S2263

**Sheep Serum**

USA origin, sterile-filtered, suitable for cell culture



S7273

**Sera from mouse**

frozen liquid (from clotted whole blood)



S7764

**Complement sera from rabbit**

lyophilized powder



S7648

**Sera from rat**

frozen liquid



12023C

**Newborn Bovine Serum**

New Zealand origin



12731C

**Porcine Serum**

USA origin, sterile-filtered, suitable for cell culture



12449C

**Horse Serum**

USA origin, Donor herd, suitable for cell culture, suitable for hybridoma



12238C

**Calf Serum**

Iron-Supplemented, from formula-fed bovine calves, sterile-filtered, USA origin, suitable for cell culture



S3509

**Sera from mouse**



S3269

**Complement sera from mouse**

lyophilized powder



S2007

**Sera from goat**

lyophilized powder (from clotted whole blood)



R7136

**Rabbit Serum**

USA origin, sterile-filtered, Suitable for *Borrelia* culture



S2382

**Sera from sheep**



S1507

**Sera bovine**

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
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