



INVITRIA

Performance. Defined.

2020 Product Catalog

About InVitria

InVitria was founded to deliver performance, quality and supply chain reliability to the biotechnology industry with clinic-ready products for use in vaccines, gene therapies, cell therapies, regenerative medicine, tissue preservation and medical devices. InVitria does this by helping customers replace undefined serum and serum components with products that are made using recombinant DNA technology in a blood-free and non-mammalian manufacturing system. InVitria uses GMP manufacturing located in the USA and is able to serve a global customer base.

Why Should I Go Blood-free?

Fetal bovine serum, human serum, and human serum derived proteins (xeno-free) have been incorporated in many protocols for propagating cells in vitro for use in making vaccines, immunotherapies, cell therapies and regenerative medicines. There are several drawbacks to using these in human therapeutics. Because each lot of a serum product is unique to the donor from which it came, there is significant donor-to-donor variability which leads to undesirable variability in clinical manufacturing. Also, because these components are undefined, it can be difficult to pinpoint the root cause of problems. And, not only are these components in limited supply, but their cost continues to increase due to limited supply. The headache of using serum is no longer necessary thanks to the blood-free products available from InVitria.

Performance. Defined.

InVitria defined the current standard of performance and quality through innovation. If you desire clinical raw materials that have been manufactured and released according to functional performance specifications, InVitria can deliver the performance you require. Visit InVitria.com to find application-specific performance data and guidelines for using these products to help you achieve your performance objectives. Because InVitria uses a non-mammalian recombinant manufacturing technology its products are defined and do not contain adventitious infectious agents from serum.

Proven Regulatory Advantage

InVitria has successfully worked with leading therapeutic companies to support their BLA approvals and has a track record of success with on-market products utilizing InVitria products in more than 250,000 patients.

Reliability and Technical Support

InVitria manufactures according to good manufacturing practices (GMPs) in the United States and has a global distribution network. InVitria welcomes its customers to utilize its Product Applications Specialists who are technically trained to help customers optimize the incorporation of blood-free and defined components. This is our promise to all customers – a dedication to successful outcomes and customer service.

Product Questions or Need Support?

Email: productapplications@invitria.com

Phone: 800-916-8311



Blood-free

Regulatory
compliant blood-
free/animal-free



Supply Chain

Complete supply
and manufacturing
chain is owned
and operated by
InVitria

More control over
your supply chain
and scalability

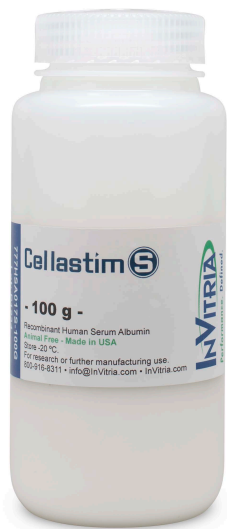
2020 Products

Single Components	2
Recombinant human albumin	2
Cellastim-S®.....	2
Exbumin®.....	2
Optibumin®.....	3
Recombinant Transferrin	3
Optiferrin®.....	3
Recombinant Lysozyme	4
Lysobac®.....	4
LysoSure®.....	4
Recombinant Cytokines	5
Leukemia Inhibitory Factor (LIF).....	5
Cell Culture Supplements	5
ITS Animal-Free.....	5
ITSE Animal-Free.....	6
ITSE Animal-Free + Albumin.....	6
Blood-Free Complete Media	7
OptiVERO®.....	7
OptiPEAK® T Lymphocyte.....	7
OptiPEAK® HEK293t.....	7

Recombinant human albumin (rHSA)

InVitria offers a recombinant human albumin sourced from a non-mammalian host. Albumin is a potent antioxidant, waste carrier, and reactive oxygen/nitrogen species scavenger. The addition of this protein greatly enhances the growth and viability of mammalian cells. Sourcing albumin from a recombinant source improves performance and reduces variability and the risk of introducing adventitious infectious agents from serum components.

InVitria offers three different recombinant versions of human serum albumin that exhibit superior purity and biological activity compared to native human and bovine albumin. Cellastim S[®] is a cell culture-grade recombinant human serum albumin that has been specifically optimized for use in cell culture systems. Exbumin[®] has been engineered to serve primarily as an excipient. Optibumin[®] is ideally suited for hydrophobic molecule solubilization, bioconjugation, in-vitro fertilization (IVF), surgical sealant and other clinical applications.



Cellastim S

For cell culture media applications.

Product Type: Recombinant human albumin (rHSA)

Product Form: Powder

Cellastim S[®] is optimized specifically to enhance the performance of animal-free cell culture media due to the favorable lipid profile and other engineered attributes of the molecule.

Cellastim S[®] is ideally suited for a variety of different stem, primary, and production cell types that include immune cells, VERO, Mesenchymal Stem Cells, HEK, CHO and other cell types. Each lot is tested in cell culture systems to ensure consistent quality and performance.

Qty.	SKU	Price	
10G	777HSA017S-10G	\$408.50	Available Online »
100G	777HSA017S-100G	\$3,950.00	Available Online »
1KG	777HSA017S-1KG	Request quote	Call 800.916.8311
5KG	777HSA017S-5KG	Request quote	Call 800.916.8311



Exbumin

A formulation excipient and virus stabilizer.

Product Type: Recombinant human albumin (rHSA)

Product Form: Powder

Exbumin[®] is a formulation excipient and can stabilize virus used in vaccines and gene therapies.

Exbumin[®] has been a choice of industry leading vaccine developers and has been used in thousands of patient injections after international regulatory approval for use as an excipient in injectable therapeutics. Each lot is functionally tested to ensure consistent quality and performance.

Qty.	SKU	Price	
10G	777HSA097-10G	\$850.00	Available Online »
100G	777HSA097-100G	\$6,500.00	Available Online »
1KG	777HSA097-1KG	Request quote	Call 800.916.8311
5KG	777HSA097-5KG	Request quote	Call 800.916.8311

“Cellastim S has provided us with a robust animal-free product for growing cells in chemically-defined medium. Cellastim S worked well as a suitable replacement for BSA at a range of concentrations that we tested.”

Brian Majors, Biogen Idec

Recombinant human albumin (rHSA) Continued



For uses including in vitro fertilization, bioconjugation, surgical adhesives, hydrophobic molecule solubilization, diluents, and medical devices.

Product Type: Recombinant human albumin (rHSA)
Product Form: Liquid

Optibumin® is a version of rHSA optimized specifically for applications including bioconjugation, diluents, surgical adhesives, pharmaceutical preparations, in-vitro fertilization, and tissue preservation.

Optibumin® is supplied as 10% liquid. Each lot is tested in cell culture systems to ensure consistent quality and performance.

Qty.	SKU	Price	
100mL	777HSA047-100ML	\$1,250.00	Available Online »
1L	777HSA047-1L	Request quote	Call 800.916.8311

“When evaluating various protein supplements for the expansion of both human mononuclear and hematopoietic stem cells, I found that a combination of InVitria’s Cellastim S and Optiferrin significantly outperformed the best nonrecombinant proteins. It’s clear to me that these recombinant components can enable the development of superior animal free expansion media for stem cell applications.”

Paul Price, CSO, D-Finitive Cell Technologies

Recombinant Transferrin

InVitria offers a recombinant human transferrin sourced from a non-mammalian host designed to replace serum-derived transferrin. Transferrin is primarily found in the blood plasma consisting of four iron-bound forms that bind to transferrin surface receptors on the cell. Each transferrin molecule delivers several payloads of iron to the cell per hour because it is recycled by the cell after the payload of iron is delivered. Given the central role of iron uptake in cell health, the inclusion of transferrin is critical in serum free cell culture media to ensure adequate cell proliferation and function ex vivo for most cell types.

Optiferrin® is a recombinant human serum transferrin that exhibits exceptional purity and biological activity. It provides superior reliability, consistency and performance compared to serum-derived alternatives.



The most effective way to deliver iron in cell culture without any oxidative reactions or cell damage caused by other iron sources.

Product Type: Recombinant human transferrin, partially iron saturated
Product Form: Powder

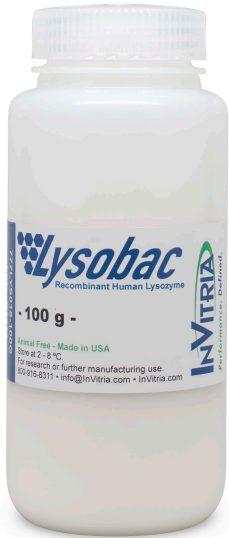
Optiferrin® is recombinant human transferrin and is blood-free. Optiferrin® has been utilized in HEK, CHO, iPSC, hematopoietic, VERO, RBC, stem, primary, and other cells.

Qty.	SKU	Price	
1G	777TRF029-1G	\$245.75	Available Online »
10G	777TRF029-10G	\$1,525.00	Available Online »
100G	777TRF029-100G	Request quote	Call 800.916.8311

Recombinant Lysozyme

InVitria offers an egg-free lysozyme. Lysozyme is a natural enzyme with antimicrobial and antiviral characteristics typically found in animal secretions. Lysozyme has been widely used in food preservation, bacterial lysis, animal health and diagnostic applications.

Lysobac® is a highly active egg-free lysozyme. Lysozyme lyses the peptidoglycan polymer typically found in most bacterial cell walls. The enzyme cleaves the (1,4) linkage between N-acetylglucosamine and N-acetylmuramic acid of the peptidoglycan component of the cell wall. In our studies, Lysobac® exhibited four times more activity than a commercially available hen egg white (chicken) lysozyme in lysing Micrococcus and E. coli cells. LysoSure® is generally recognized as safe (GRAS) recombinant lysozyme InVitria designed specifically for animal health applications.



Lysobac

Egg-free lysozyme for bacterial lysis, food preservation, and diagnostic applications.

Product Type: Recombinant lysozyme
Product Form: Powder

Lysobac® is a recombinant lysozyme that is suitable for uses as a preservative in foods and beverages, diagnostic applications, bioprocessing and life science research. Lysobac® is four times more active per mg for lysing Micrococcus and E. coli., when compared with the highly variable chicken lysozyme and thus is more effective as a preservative. Lysobac also eliminates any concerns regarding consumers with egg allergies.



LysoSure

Egg-free lysozyme for use in animal health.

Product Type: Recombinant lysozyme
Product Form: Powder

LysoSure® is a recombinant lysozyme that is designed to replace hen egg white lysozyme in food animal production to improve preservation of animal feeds. This product is generally recognized as safe (GRAS), and has been shown to not have the allergenicity of hen egg white lysozyme. LysoSure can be used in animal feeds.

Qty.	SKU	Price	
10G	777LYS016-10G	\$265.00	Available Online »
100G	777LYS016-100G	\$2,105.00	Available Online »
1KG	777LYS016-1KG	Request quote	Call 800.916.8311

Qty.	SKU	Price	
1kG	777LYS055-1kG	\$21.00	Available Online »
10kG	777LYS055-10kG	\$157.50	Available Online »
50KG	777LYS055-50KG	Request quote	Call 800.916.8311

Recombinant Cytokines

Leukemia inhibitory factor (LIF), a member of the IL-6 cytokine family, is known to be a critical stem cell factor in a variety of different human and mouse cell systems responsible for reduction of spontaneous differentiation. LIF has been shown to be the primary driver in the maintenance of the true naïve phenotype in human embryonic stem cells (hESC) and induced pluripotent stem cells (iPSCs). Addition of LIF demonstrates enhanced proliferation of various human multipotent stem cell types and pluripotent Mouse ESCs (mESCs). In addition, LIF has also been shown to activate the LIF receptor on the surface of neural stem cells (NSC), thereby enhancing the cells' capacity for self-renewal.

Recombinant LIF is used extensively in both mESC and various human stem cell media systems. InVitria manufactures recombinant Leukemia Inhibitory Factor and has demonstrated similar biochemical characteristics as compared to rhLIF derived from E. coli but with 500x lower endotoxin contamination.



LIF Leukemia Inhibitory Factor

Suitable for the enhancement of cellular proliferation and survival of multiple stem and primary cell types.

Product Type: Leukemia Inhibitory Factor
Product Form: Liquid

Leukemia Inhibitory Factor is commonly used to replace feeder cells in mouse embryonic stem cell culture and is also used in numerous human stem and primary cell media. This rhLIF product and has the lowest endotoxin and highest purity of the commercial LIF products available today.

Qty.	SKU	Price
10mL	777LIF048-10mL	Request quote Call 800.916.8311

Blood-free Cell Culture Supplements

InVitria manufactures blood-free ITS, ITSE, and ITSE + Albumin supplements. Conveniently formulated as 100x concentrated liquids, these supplements can effectively reduce and help eliminate serum in cell culture. These are commonly used in serum-free cell culture systems.

Replacement of serum with recombinant blood-free proteins, such as transferrin, albumin, and insulin can restore cell viability and proliferation.

ITS_{Animal-Free}

Formulated for serum free media.

Product Type: Blood-free recombinant protein cell culture media supplement
Product Form: Liquid



Insulin-Transferrin-Selenium (ITS) is a basal media supplement and can be used to reduce the amount of serum needed to culture cells. Insulin promotes the uptake of glucose and amino acids, transferrin is a nontoxic iron carrier, selenium is required for the function of glutathione peroxidase and other antioxidant enzymes. The components of the 100x sterile solution are manufactured in a certified animal-free facility.

Qty.	SKU	Price
10ml	777ITS091-10mL	\$38.50 Available Online »
100mL	777ITS091-100mL	\$324.50 Available Online »
10mL x 10	777ITS091-10X10	\$357.50 Available Online »
1 L	777ITS091-1L	Request quote Call 800.916.8311



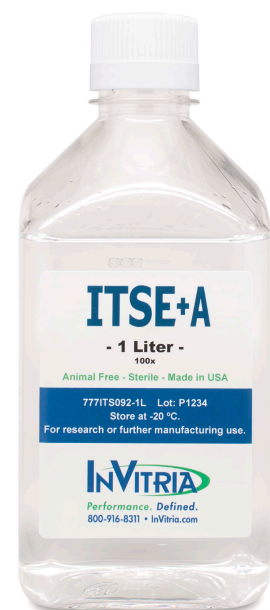
ITSE Animal-Free

Formulated to replace animal derived insulin and transferrin supplements.

Product Type: Blood-free recombinant protein cell culture media supplement

Product Form: Liquid

Insulin-Transferrin-Selenium-Ethanolamine (ITSE) is a basal media supplement and can be used to reduce the amount of serum needed to culture cells. Insulin promotes the uptake of glucose and amino acids, transferrin is a non-toxic iron carrier, selenium is required for the function of glutathione peroxidase and other antioxidant enzymes, and ethanolamine is a phospholipid precursor. The components of the 100x sterile solution are manufactured in a certified animal-free facility.



ITSE+A

Formulated for serum free media.

Product Type: Blood-free recombinant protein cell culture media supplement

Product Form: Liquid

Insulin-Transferrin-Selenium-Ethanolamine-Albumin (ITSE+A) is a basal media supplement and can be used to reduce the amount of serum needed to culture cells. Insulin promotes the uptake of glucose and amino acids, transferrin is a non-toxic iron carrier, selenium is required for the function of glutathione peroxidase and other antioxidant enzymes, ethanolamine is a phospholipid precursor, and albumin is a multifunctional protein. The components of the solution are manufactured animal-free and it is provided as a 100x sterile concentrate.

Qty.	SKU	Price	
10mL	777ITS032-10mL	\$39.50	Available Online »
100mL	777ITS032-100mL	\$345.00	Available Online »
10mL x 10	777ITS032-10X10	\$365.00	Available Online »
1L	777ITS032-1L	Request quote	Call 800.916.8311

Qty.	SKU	Price	
10mL	777ITS092-10mL	\$43.75	Available Online »
100mL	777ITS092-100mL	\$370.25	Available Online »
10mL x 10	777ITS092-10X10	\$406.25	Available Online »
1L	777ITS092-1L	Request quote	Call 800.916.8311

“InVitria’s ITSE Animal-Free works well, and better than our alternative product from another supplier.”

Senior Cell Culture Scientist, Ludwig Institute for Cancer Research

Blood-free Complete Media

InVitria's scientists have formulated blood-free and defined cell culture media for immediate and convenient application in vaccines, cell therapies and gene therapies. These medias are fully defined and customizable and can be modified to meet your specific requirements.




OptiVERO
1x Base Media - 970 mL

Blood-Free chemically defined VERO expansion and production media.

Product Type:
Liquid-Complete Media Kit

OptiVERO® was specifically optimized for VERO-based virus production in both 2D and 3D culture formats. This complete media kit is offered as a liquid base media with frozen protein and media supplements. Opti-VERO does not contain any blood-derived components or plant hydrolysates and is considered to be bloodfree and chemically defined.



OptiPEAK
T-Lymphocyte
1x Base Media - 400 mL

Blood-Free chemically defined T Lymphocyte expansion media.

Product Type:
Liquid - Complete Media Kit

OptiPEAK® T Lymphocyte was specifically optimized for the chemically defined blood-free expansion of human T lymphocytes. This complete media kit is offered as a liquid base media with frozen protein and media supplements. OptiPEAK® T Lymphocyte is suitable for both research and immunotherapy manufacturing applications.



OptiPEAK
HEK293t
1x Base Media - 900 mL

Blood-Free chemically defined HEK293t expansion and production media.

Product Form:
Liquid - Complete Media Kit

OptiPEAK® HEK293t was specifically optimized for chemically defined blood-free expansion of adherent HEK 293T cells for production of viral vectors used in gene therapy or vaccines. This complete media kit is offered as a liquid base media with a frozen protein supplement. OptiPEAK HEK 293T does not contain any animal components or plant hydrolysates and is considered to be blood-free and chemically defined.

Qty.	SKU	Price	
1 L	777OCM090-1L	\$155.00	Available Online »

Qty.	SKU	Price	
1 L	777OPT069-1L	\$183.75	Available Online »

Qty.	SKU	Price	
1 L	555CDK0021-1L	\$245.00	Available Online »

“InVitria has provided reliable and responsive support throughout our clinical development and regulatory process, and we look forward to continuing this partnership as we commercialize new and improved cancer therapies for patients.

Vice President, Quality Immunomedics



Performance. Defined.



InVitria.com



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