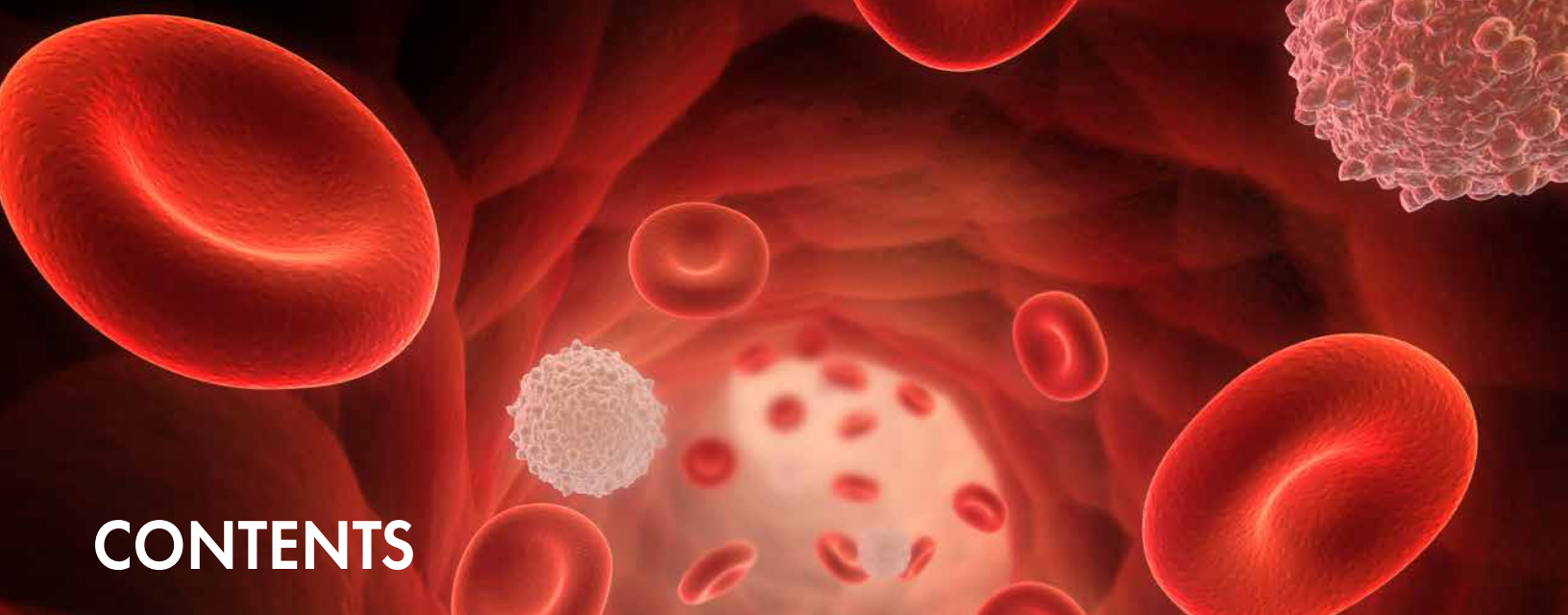


Blood and Tissue Derived Products

- Whole Blood and Fractions
- Animal Tissue Extracts
- Sera
- Anti-Sera
- Bovine Purified Proteins
- Myeloma Proteins
- Coagulation Proteins





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Animal Sera for Immunological Studies

Serum is the liquid fraction of whole blood that is collected after coagulation of the blood; it is the blood plasma with the fibrinogens removed. Serum includes all proteins not used in blood clotting (coagulation) as well as electrolytes, antibodies, antigens, hormones, and any exogenous substances. Normal and whole sera are non-immune serum samples prepared from the blood of healthy humans, goat, mouse, rabbit, pig and other species. These sera provide sufficient quantities of endogenous proteins to saturate and block nonspecific binding interactions for a wide range of immunological applications, including immunohistochemistry (IHC), ELISA and Western blotting. They are essential bioreagents ideal for use in immunological research and in vitro diagnostic manufacturing. MP Biomedicals offers a wide range of disease-free sera from a variety of species, such as human, goat, sheep, mouse, pig, rat and rabbit. Advantages and features of our products include:

- High quality from healthy animals or donors
- Versatile for blocking or saturating nonspecific interactions
- Comprehensive collection from various species
- Constant availability
- Lyophilized product for longer storage

Description	Cat. No.
Normal Goat Serum	08642921
Normal Mouse Serum	08642931
Normal Sheep Serum	08642951
Normal Rat Serum	08642941
Whole Rabbit Serum	0855990
Whole Horse Serum	0855987
Whole Swine Serum	0855993
Whole Mouse Serum	0855989
Whole Bovine Serum	0855980
Whole Human Serum	0855979
Whole Goat Serum	0855984
Whole Dog Serum	0855983
Whole Hamster Serum	0855986
Whole Chicken Serum	0855982
Whole Cat Serum	0855981

Animal Sera for Optimal Cell Culture

Animal sera provide essential nutrients such as proteins, attachment factors, growth factors, amino acids, trace elements, vitamins, lipids and hormones for healthy cell culture growth. They play an essential role in cell culture to regulate cell osmotic pressure and membrane permeability, serving as a carrier for enzymes, micronutrients, lipids and trace elements into the cell. As such, animal serum has been widely used as a nutrient boost for most cell-culture applications in the life sciences. However, selecting serum for successful cell culture is always challenging and imposes risks for basic research and bioprocessing. The variable nature of animal products can impact factors such as cost, standardization, contamination, country of origin, specifications and overall variability.

New Zealand Origin Fetal Bovine Serum

Fetal bovine serum (FBS) is the most widely used serum-supplement for in vitro cell culture. FBS contains a complex array of protein components, excellent cell growth factors, low endotoxin levels, and low hemoglobin concentrations, all of which are required by cells to survive, grow and divide. Our New Zealand origin Fetal Bovine Serum is manufactured in a closed loop system. The process is monitored from blood collection to sterile filtration (3 x 0.1 µm) in a fully validated and dedicated filtration facility to ensure the highest quality and lowest levels of endotoxins and hemoglobin. Most importantly, our New Zealand FBS is fully traceable and is supported by the availability of a full collection of manufacturing records.

- Sourced from BSE-free New Zealand
- Triple 0.1 µm sterile filtration process
- Free of mycoplasma contamination
- Low levels of endotoxins and hemoglobin
- Fully traceable

Description	Size	Cat. No.
CellMaxx™ Fetal Bovine Serum, New Zealand Origin	500 mL	092917654
	1 L	092917626

Fetal Bovine Serum from US and South America

In addition to New Zealand origin Fetal Bovine Serum, MP Bio also offers FBS from the US and South America with excellent value for basic cell culture, specialty research and bioprocessing. These sera are tested with independent third-party laboratories for the presence of endotoxins, mycoplasma, bacteria, fungi and viruses; total protein concentration (including hemoglobin content); and for the growth of cells. A certificate of analysis for each lot is available upon request. MP Bio brand of heat inactivated CELLect™ FBS Gold and CELLect™ FBS Silver are de facto industry standards for FBS supplements. Our FBS ensures:

- High performance for broad cell types
- Low endotoxin levels
- Free of mycoplasma contamination
- Free of disease from animal sources
- Country of origin and traceability

Description	Cat. No.
CELLect™ Fetal Bovine Serum, Gold, US Origin	092916749
CELLect™ FBS, GOLD, Heat Inactivated	092916849
Fetal Bovine Serum, South America Origin	092910154



Sera from Other Animals

Although FBS is the most commonly used serum for cell culture, many other animal sera can be used based on cell origin, cross-reactivity, performance requirements and costs. MP Bio offers a wide spectrum of animal sera to meet your cell culture needs for both research and bioprocessing, including serum from human, newborn calf, horse, goat, rabbit, porcine and chicken. All sera are tested with independent third-party laboratories for the presence of endotoxins, mycoplasma, bacteria, fungi and viruses; total protein concentration (including hemoglobin content); and for the growth of cells.

Description	Cat. No.
Human Serum, Pooled	092930149
Human Type AB Serum (HCV, HIV, HbsAG Free), Heat Inactivated	092938249
Human Type AB Serum (HCV, HIV, HbsAG Free)	092931949
Human Type AB Serum from Male Donors	092930949
Donor Horse Serum	092921149
Newborn Bovine Serum	092912149
Rabbit Serum	092941149
Goat Serum	092939149
Porcine Serum	092924149
Chicken Serum	092950149

Antiserum

Antiserum is human or other animal blood serum containing a mixture of polyclonal antibodies that bind to a specific known foreign antigen (called immunogen), in which the donor of the blood has usually been actively immunized with that specific antigen.

Three important parameters of an antiserum are used to characterize its quality:

Avidity

Commonly applied to antibody interactions in which multiple antigen-binding sites simultaneously interact with the target antigenic epitopes. The avidity of an antiserum is a measure of the strength of the interactions of its antibodies with an antigen. Avidity should not be thought of as the mere sum of its constituent affinities, but as the combined effect of all affinities participating in the antibody-antigen interaction.

Specificity

Each antibody is capable of binding only to a specific antigen due to the specific chemical constitution. The specificity of an antiserum is a measure of the ability of its antibodies to distinguish the immunogen from related antigens.

Titer

The final optimal dilution of the antiserum to be employed in the procedure. It depends on the concentrations of the antibodies present and on their affinities for the target antigen.

MP Bio offers a comprehensive selection of antisera from various species for a wide spectrum of target molecules from multiple animals with strong avidity, unique specificity and high titer.

Description	Cat. No.
Anti-Bovine Albumin from Rabbit Antiserum	0855269
Anti-Bovine Albumin from Rabbit Antiserum	08651111
Anti-Bovine Serum from Goat Antiserum	0855998
Anti-Bovine Serum from Rabbit Antiserum	08650011
Anti-Bovine Transferrin from Rabbit Antiserum	0855273
Anti-Cat Serum from Goat Antiserum	0855999
Anti-Chicken Albumin from Rabbit Antiserum	0855296
Anti-Chicken Serum from Goat Antiserum	0856000
Anti-Deer Serum from Goat Antiserum	0856008
Anti-Dog Albumin from Rabbit Antiserum	0855314
Anti-Dog Complement C3 from Goat Antiserum	0855315
Anti-Dog Serum from Goat Antiserum	0855317
Anti-Dog Serum from Rabbit Antiserum	0856001
Anti-Goat Serum from Rabbit Antiserum	08650061
Anti-Hemagglutinin from Rabbit Antiserum	0855138

Description	Cat. No.
Anti-Horse Serum from Goat Antiserum	0855408
Anti-Horse Serum from Goat Antiserum	0856002
Anti-Horse Serum from Rabbit Antiserum	08650121
Anti-Human Albumin from Goat Antiserum	0855109
Anti-Human Albumin from Rabbit Antiserum	0855110
Anti-Human Antitrypsin from Goat Antiserum	0855111
Anti-Human Complement C3 from Goat Antiserum	0855117
Anti-Human Complement C9 from Goat Antiserum	0855121
Anti-Human Ferritin from Rabbit Antiserum	08650771
Anti-Human Fibrinogen from Goat Antiserum	0855123
Anti-Human Hemoglobin from Rabbit Antiserum	0855129
Anti-Human Red Blood Cells from Rabbit Antiserum	0855133
Anti-Human Seminal Fluid from Rabbit Antiserum	0855134
Anti-Human Serum from Goat Antiserum	0855136
Anti-Human Serum from Goat Antiserum	0855996
Anti-Human Serum from Rabbit Antiserum	0855137
Anti-Human Serum from Rabbit Antiserum	0855997
Anti-Human Transferrin from Goat Antiserum	0855139
Anti-Human Uromucoid from Goat Antiserum	0855140
Anti-Human Vimentin from Goat Antiserum	08657941
Anti-Mouse Albumin from Rabbit Antiserum	0855442
Anti-Mouse Complement C3 from Goat Antiserum	0855444
Anti-Mouse Hemoglobin from Rabbit Antiserum	0855447
Anti-Mouse Serum from Goat Antiserum	0855449
Anti-Mouse Serum from Goat Antiserum	0856003
Anti-Mouse Transferrin from Goat Antiserum	0855451
Anti-Porcine Insulin from Guinea Pig Antiserum	08651041
Anti-Porcine Serum from Rabbit Antiserum	08650351
Anti-Rabbit Serum from Goat Antiserum	0855617
Anti-Rabbit Serum from Goat Antiserum	0856004
Anti-Rat Albumin from Goat Antiserum	0855710
Anti-Rat Albumin from Rabbit Antiserum	0855711
Anti-Rat Complement C3 from Goat Antiserum	0855713
Anti-Rat Serum from Goat Antiserum	0856005
Anti-Sheep Red Blood Cells from Rabbit Antiserum	0855800
Anti-Sheep Serum from Goat Antiserum	0856006
Anti-Sheep Serum from Rabbit Antiserum	08650191
Anti-Swine Serum from Goat Antiserum	0855820
Anti-Swine Serum from Goat Antiserum	0856007

Bovine Serum Albumin (BSA or Fraction V) Powders

Bovine Serum Albumin is a highly characterized protein derived from cows. It has been commonly used in serology, microbiology, tissue culture and general laboratory reagent preparation, including:

- Growth promoter in serum-free media for animal cell culture
- Diluent/enhancer in blood banking techniques
- Diluent/stabilizer for EIA, RIA and other immunoassay techniques
- Protein supplement for serum standards, controls and references
- Protein stabilizer for long-term storage of diluted antibodies

The nickname "Fraction V" refers to albumin being the fifth fraction of the original Edwin Cohn purification methodology that made use of differential solubility characteristics of plasma proteins. By manipulating solvent concentrations, pH, salt levels and temperature, Cohn was able to pull out successive "fractions" of blood plasma. The process was first commercialized with human albumin for medical use and later adopted for production of BSA.

MP Bio is pleased to offer an ultrapure grade of crystallized bovine serum albumin and Fraction V powder through the Cohn process for sensitive applications requiring the highest albumin purity and lowest residual level of globulins. This bovine albumin product can be used for protein preparation, diagnostic assays, molecular weight standards, antigen carriers in protein studies and monoclonal antibody production. Additional benefits and features include:

- Versatile blocking agent for ELISA, western blotting, and immunohistochemistry
- Optimal nutrient for cell and microbial cultures
- Suitable for protein and enzyme stabilization
- High purity for protein quantification
- Origin certification and traceability

Description	Cat. No.
Albumin, Bovine, Crystalline	08810025
Bovine Albumin, Cohn Modified	08840042
Bovine Albumin Fraction V, Protease Free	08820451
Bovine Albumin Fraction V, Reagent Grade	08810661
Bovine Albumin Fraction V, Low Endotoxin	08810681
Bovine Albumin Fraction V, pH 7.0	08810025
Bovine Serum Albumin, Fatty Acid Free	02152401
AlbumiNZ™ Microbiological Grade BSA	02180620
AlbumiNZ™ Low IgG BSA	02199897

Bovine Albumin Solutions

Bovine serum albumin solutions (30 and 35%), prepared from high quality Fraction V, are intended for in vitro diagnostic use in immunohematological procedures in which a high protein diluent is recommended. 30% Polymer Enhanced solution is a superior enhancement reagent for serological procedures. Bovine Albumin Polymer Enhanced potentiates the expression of weak antigen-antibody reactions and avidity of red blood cells.

Description	Cat. No.
Albumin, Bovine, 30% solution	08810133
Bovine Albumin 30% Solution Polymer Enhanced	08810784
Bovine Albumin, 35% solution	08810061
Bovine Albumin, 35% solution	08810063
Bovine Albumin Solution, Path 4, 35% solution	08810101
Bovine Albumin Solution, Path 5, 35% solution	08810111

Human Serum Albumin Powder and Solution

Human serum albumin is the serum albumin found in human blood. It is the most abundant protein in human blood plasma and constitutes about half of the serum protein. Human serum albumin transports hormones, fatty acids, and other compounds; buffers pH; and maintains oncotic pressure, among other functions. MP Biomedicals offers a large selection of human albumin in various formats, including powder, crystalline, 10% solution and 30% solution.

Description	Cat. No.
Human Albumin Fraction V	08823022
Human Albumin Crystallized (1X Cohn Crystallized)	08823030
Human Albumin, Fraction V, Protease Free	08823002
Human Albumin, Fraction V, Fatty Acid Free	08823234
Albumin, Human, 30% Solution	08823051
Albumin, Human, 10% Solution	08810171

Other Animal Albumins

Description	Cat. No.
Mouse Albumin Fraction V	0855858
Rat Albumin Fraction V	0855869
Chicken Albumin (Ovalbumin)	02191224

Coagulation Proteins

Fibrinogen

Fibrinogen (factor I) is a glycoprotein complex that circulates in the blood of vertebrates. During tissue and vascular injury, fibrinogen is converted enzymatically by thrombin to fibrin and then to a fibrin-based blood clot. Fibrin clots function primarily to occlude blood vessels to stop bleeding. Fibrinogen from MP Bio is highly purified, lyophilized and readily soluble in saline and preferred buffers for applications such as preparation of fibrin plates for analysis of fibrinolytic enzymes, substrate for clotting assays and the study of fibrinogen degrading products.

Description	Cat. No.
Bovine Fibrinogen 90% Clottable	08820224
Bovine Fibrinogen 75% Clottable	08820215
Human Fibrinogen, Plasminogen Depleted	03BC0501
Fibrinogen Fraction I	02151122
Fibrinogen	02154165

Transferrin

Transferrin is a monomeric serum glycoprotein (~80,000 daltons) that binds up to two Fe^{3+} atoms for delivery to vertebrate cells through receptor-mediated endocytosis. Once iron-carrying transferrin proteins are inside endosomes, the acidic environment favors dissociation of iron from the transferrin–receptor complex. Following the release of iron, the apotransferrin is recycled to the plasma membrane, where it is released from its receptor to scavenge more iron. MP Bio offers highly purified transferrin from serum or plasma with three iron levels: iron poor, partially saturated and saturated.

Description	Cat. No.
Purified Human Transferrin	0855915
Human Transferrin Iron Poor (Apo)	08823411
Human Transferrin Iron Saturated	08823431
Human Transferrin Partially Iron Saturated	08823422
Bovine Transferrin (Holo)	02152335
Bovine Transferrin (Apo)	02152334
Bovine Transferrin, Partially Iron Saturated	08820551
Purified Mouse Transferrin	0855943
Purified Rat Transferrin	0855953

Thrombin

Thrombin is used throughout the diagnostics industry in a variety of coagulation assays, clotting factor tests and defibrination of blood or plasma for serum controls. Thrombin is also used for site specific cleavage of recombinant fusion proteins and in biochemical and medical research applications. Particularly, MP Bio offers lyophilized bovine thrombin for both high and low specific activity. These products are manufactured in New Zealand from bovine plasma of New Zealand origin using prothrombin activated with thromboplastin extracted from bovine lung tissue. High specific activity thrombin has a specific activity of > 2,000 NIH units/mg protein, while low specific activity product has a specific activity of 90-300 NIH units/mg protein and greater than 50% total protein.

Description	Cat. No.
Thrombin,Bovine	08820361
α -Thrombin	02154163
Bovine Thrombin, High Specific Activity (New Zealand Origin)	02180539
Bovine Thrombin, Low Specific Activity (New Zealand Origin)	02199907
Fibrinogen	02154165



Purified Gamma Globulin

Gamma globulins are a class of globulins, identified by their position after serum protein electrophoresis. The most significant gamma globulins are immunoglobulins, i.e. antibodies, although some immunoglobulins are not gamma globulins, and some gamma globulins are not immunoglobulins. Immunoglobulins are useful for structural and biological studies, for use as reference standards or as starting material for the preparation of immunogen. MP Bio offers a selection of purified immunoglobulins, both animal and human, ensuring:

- Validation by immuno-electrophoresis
- Examination by double diffusion against heavy chain
- High purity

Description	Cat. No.
Human IgG Positive Control (No IgA, IgM)	0855836
Purified Human Gamma Globulin	0855838
Purified Bovine Gamma Globulin	0855847
IgA, Secretory, Human, Purified	0855905
IgA Serum, Human, Purified	0855906
Human IgE, Myeloma Source	08643491
IgG, Human, Purified (98%)	0855908
IgM, Human, Purified (98%)	0855916
IgG, Bovine, Purified (98%)	0855917
IgG, Chicken, Purified (98%)	0855920
IgG, Hamster, Purified (98%)	0855933
IgG, Monkey, Purified (98%)	0855937
IgG, Mouse, Purified (98%)	0855939
IgG, Rat, Purified (98%)	0855951
IgG, Rabbit, Purified (98%)	0855961
IgG, Rabbit, Purified (98%), Lyophilized	0855944
Goat IgG, Lyophilized	08641431
Horse IgG, Lyophilized	08641441
Human IgG (98%), Lyophilized	08641451
Mouse IgG, Lyophilized	08641461
Rat IgG, Lyophilized	08641481

Myeloma Proteins

Purified IgG subclasses are isolated from myeloma sera and characterized as follows:

High subclass antigenic reactivity

High purity: <1% from other IgG subclasses by ELISA

No detectable IgA or IgM

No detectable other serum proteins

Description	Cat. No.
IgG1 (KAPPA), MOPC21, Mouse	0850327
IgG2A (KAPPA), UPC10, Mouse	0850328
IgG2B (KAPPA), MOPC195, Mouse	0850330
IgG2B (KAPPA), MOPC141, Mouse	0850331
IgG3 (KAPPA), FLOPC21, Mouse	0850332
Human IgG1 (Myeloma Source)	08642311
Human IgG2 (Myeloma Source)	08642321
Human IgG4 (Myeloma Source)	08642341

Animal Extract Products for Cell Culture

Bovine Extract for Maximum Mitogenicity in Cell Culture

Containing a full spectrum of putative mitogens and growth factors, bovine pituitary extract (BPE) and bovine brain extract (BBE) continue to be the most successful tissue-sourced extracts for culturing a wide range of cells in vitro, particularly epithelial origin and stem cells. To maintain the full spectrum of biological activities and minimize biorisk of animal origin products, MP Bio recently launched BPE and BBE made from young, healthy New Zealand cattle from USDA approved sources.

Bovine Pituitary Extract (BPE):

- Promotes maximum cell mitogenicity
- Allows serum-free culturing of primary epithelial cell types without fibroblast contamination
- Promotes differentiation of pluripotent stem cells
- Sterile filtration from non-lyophilized tissue
- Maintains consistent activity in serum-free culture systems
- Low TGF- β levels to minimize any premature senescence
- Cost-effective: a third the cost of serum

Bovine Brain Extract (BBE):

- Promotes maximum cell mitogenicity
- Promotes differentiation of pluripotent stem cells
- Supports growth and extended passaging of primary neuronal cell types
- Sterile filtration from non-lyophilized tissue
- Cost-effective alternative to endothelial cell growth supplement

Description	Cat. No.
Bovine Pituitary Extract (2.5 mL)	092850450
Bovine Pituitary Extract (10 mL)	092850445
Bovine Brain Extract	092850550

Chicken Embryo Extract for Cell Culture

Chicken Embryo Extract (CEE) is an undefined medium component prepared from chicken embryos. While the exact mechanism the supplement exerts on cell growth has not been fully elucidated, various studies note that CEE has a positive effect on growth and attachment. MP Bio offers high quality CEE, ensuring:

- Healthy cell growth for avian neural crest cells, muscle cells, myoblast cells, dorsal root ganglion neurons, etc.
- Sterilization by 0.2 μ m filtration
- Preparation from 9 to 12-day old chicken embryos for maximum performance
- Free of any clinical signs of disease

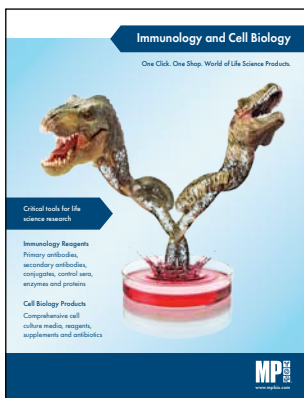
Description	Cat. No.
Chicken Embryo Extract (20 mL)	092850145

One Call. One Source. A World of Life Science Reagents.

In addition to our extensive portfolio of blood and tissue derived products, MP Bio also offers a complete collection of general and niche life science products. Drawing on years of manufacturing and laboratory experience, our diverse array of products cover the areas of molecular biology, biochemistry, immunology, cell biology, fine chemicals and diagnostics. Our comprehensive workflow solutions are suitable for a variety of research applications and we remain a leader in sample preparation.

MP Bio is dedicated in providing the best possible reagents, kits and services so researchers and scientists can achieve the same results, every time. We support our customers through exceptional customer service and technical support and afford scientists with a wealth of products, tools, and resources. As your partner in research, MP Bio is a one stop destination for quality products, reliable services, and innovative solutions.

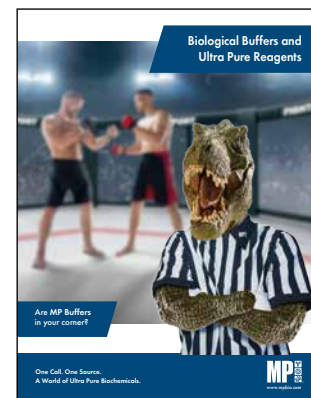
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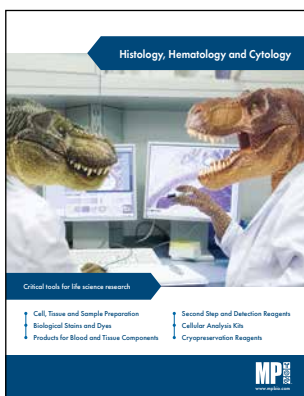
Immunology and Cell Biology



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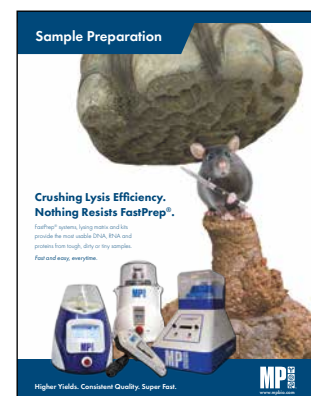
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Antibiotics for Cell Culture



Sample Preparation

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