



Immunology and Cell Biology

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

Critical tools for life
science research

Immunology Reagents

Primary antibodies,
secondary antibodies,
conjugates, control sera,
enzymes and proteins

Cell Biology Products

Comprehensive cell
culture media, reagents,
supplements and antibiotics



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Immunology and Cell Biology Research Solutions

MP Bio is a global leader in providing innovative immunological tools with the best quality, flexibility and customization to accelerate your research. Antibodies have become critical tools for many areas of life science research, primarily for their use as molecular tags for specific labeling, separation, and detection. Our antibodies and other reagents have been recommended for use in most assays including western blot, immunoprecipitation, immunostaining, and flow cytometry. In addition to primary antibodies, we also offer a wide variety of secondary antibodies, control immunoglobulins, and control sera.

We offer a full range of products to meet all of your needs in cell biology, spanning many areas of research from cell structure, organization, function and metabolism, to life cycle. Our products include reagents, kits and solutions for cell separation, detachment, signalling, proliferation, growth, apoptosis, staining, and many more areas of current topics of cell biologists. Our time-tested and high quality products can provide the right tools for all your research needs.



Blood Fractionation: Maximize Separation Efficiency of Lymphocyte and Polymorphonuclear Cells From Blood

Blood is composed of several cell types that need to be routinely isolated, such as monocytes, lymphocytes, and polymorphonuclear leukocytes. Isolation of mononuclear and polymorphonuclear cells from blood serves as the starting point for a wide spectrum of immunology studies. One pain point for many researchers is how to specifically isolate mononuclear and polymorphonuclear cells from blood with high yield and cell viability. MP Bio offers three products for the isolation of mononuclear and polymorphonuclear cells from human peripheral blood, as well as bone marrow and umbilical cord blood. The lymphocyte separation medium (LSM™), LymphoSep™, and Mono-Poly™ Resolving Medium have been used for many applications by researchers worldwide.

Mononuclear Cell Isolation for Research Use

Lymphocyte Separation Medium (LSM™) is a legendary tool to separate lymphocytes from human peripheral blood, as well as bone marrow and umbilical cord blood. As proven by more than 2,200 scientific publications, it ensures:

- Maximum yield of monocytes
- >96% cell viability of lymphocytes
- Easy and fast one-step centrifugation
- Low endotoxin
- Sterility

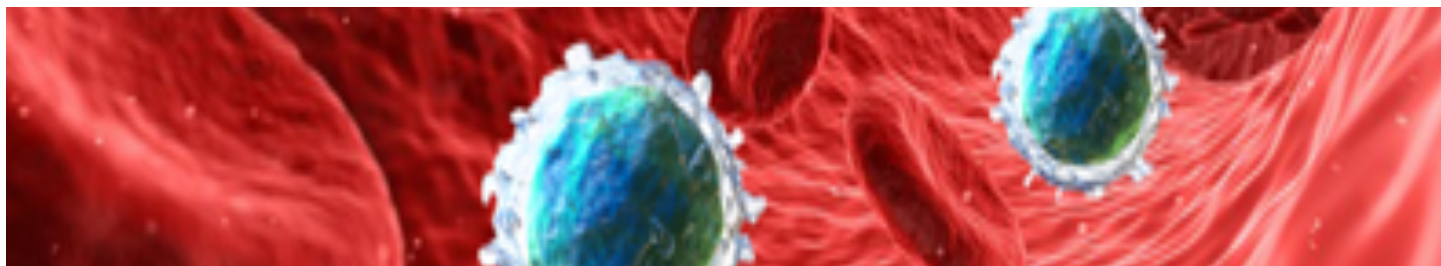
Lymphocyte Separation for *in vitro* Diagnostics

LymphoSep™ lymphocyte separation medium from MP Bio is based on the original Bøyum formulation with a density of 1.077 g/mL. It is validated for *in vitro* Diagnostic (IVD) usage and has designation as an FDA class I exempt medical device for lymphocyte separation (21 CFR 864.8500). It offers similar product features to our Lymphocyte Separation Medium (LSM™), but it is specifically designed for *in vitro* diagnostics use.

Mononuclear and Polymorphonuclear Isolation in One Step

When it is necessary to separate both mononuclear and polymorphonuclear cells from blood, Mono-Poly™ Resolving Medium (Mono-Poly™, M-PRM) may be used. Differential migration during centrifugation allows for the resolution of both mononuclear and polymorphonuclear leukocytes into two distinct bands that are relatively free of erythrocytes. This can be done in a one-step centrifugation process.

Description	Size	Cat. No.
LSM™ - Lymphocyte Separation Medium	5 x 100 mL	ICN50494
LymphoSep™	500 mL	ICN1692254
Mono-Poly™ Resolving Medium	100 mL	ICN1698049



Comprehensive Collection of Animal Sera for Immunoassays

Normal and whole sera are non-immune serum samples prepared from the blood of healthy human, goat, mouse, rabbit, pig, or other species. They 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. MP Bio offers a wide range of high-quality, disease-free sera from a variety of species.

Advantages and Features:

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

Description	Size	Cat. No.
Normal Goat Serum	50 mL	ICN642921
Normal Mouse Serum	10 mL	ICN642931
Normal Sheep Serum	50 mL, 100 mL	ICN642951
Normal Rat Serum	10 mL	ICN642941
Whole Horse Serum	2 mL	ICN55987
Whole Swine Serum	2 mL	ICN55993
Whole Mouse Serum	2 mL	ICN55989
Whole Bovine Serum	2 mL	ICN55980
Whole Human Serum	2 mL	NC1592260
Whole Goat Serum	2 mL	ICN55984
Whole Hamster Serum	2 mL	ICN55986
Whole Chicken Serum	2 mL	ICN55982

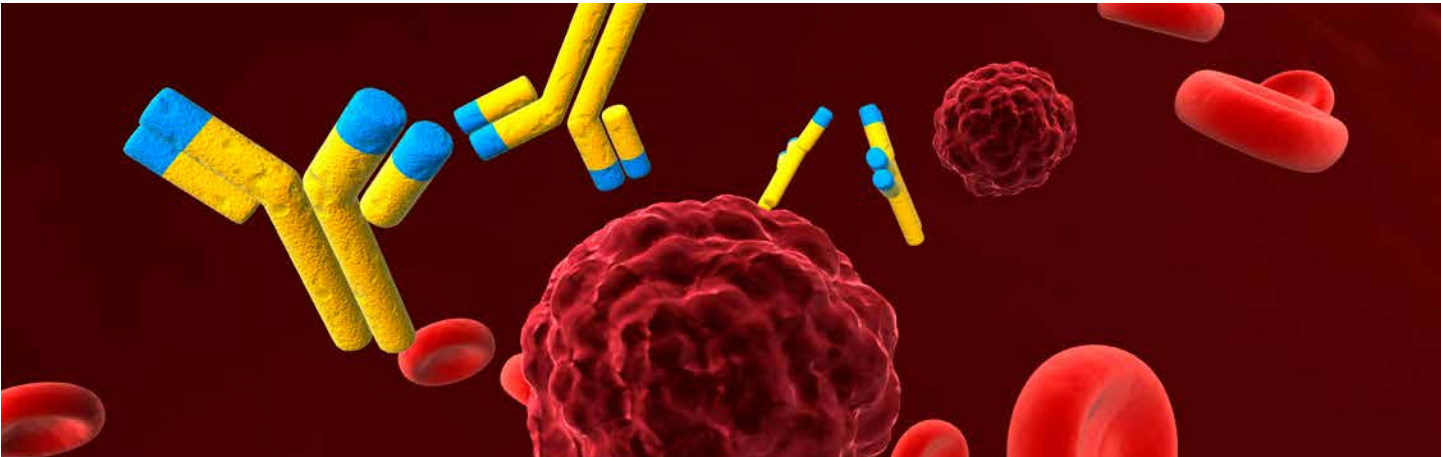


Specialized Polyclonal Antibodies for Immunoassays

Polyclonal antibodies represent a population of antibodies that are produced by different B cell clones within the body by the immune response of an immunized animal. They are a collection of immunoglobulin molecules that react against a specific antigen, recognizing different epitopes within the antigen, and binding the antigen with varying affinities. These features of polyclonal antibodies prove to be advantageous over monoclonal antibodies in many biological assay applications, such as ELISA, immunoprecipitation, and immunochemistry, due to their strong binding capacity to multiple epitopes. However, due to large variation during production and procedures, polyclonal antibodies are not always offered with such high quality. With over 30 years of experience and expertise serving the antibody research community, MP Bio offers a large range of high quality specialized polyclonal antibodies with various host and targets, ensuring:

- Superior overall affinity to antigens
- Robust sensitivity of detection
- High tolerance to changes, such as pH or buffer
- Trusted quality - validated by thousands of scientific publications

Description	Cat. No.
Anti-Hamster IgG from Goat Antibody	ICN56984
Anti-Human Red Blood Cells from Rabbit IgG Fraction	ICN55042
Anti-Sheep Red Blood Cells from Rabbit IgG Fraction	ICN55806
Rabbit Antiserum to Sheep Red Blood Cells	MP0855800
Rabbit Antiserum to Human Red Blood Cells	ICN55133
Guinea Pig Complement	MP0855852
Goat IgG Fraction to Human Albumin	ICN55028
Rabbit IgG Fraction to Human Albumin	ICN55029



FITC-Conjugated Goat IgG Fraction to Achieve the Highest Sensitivity and Specificity

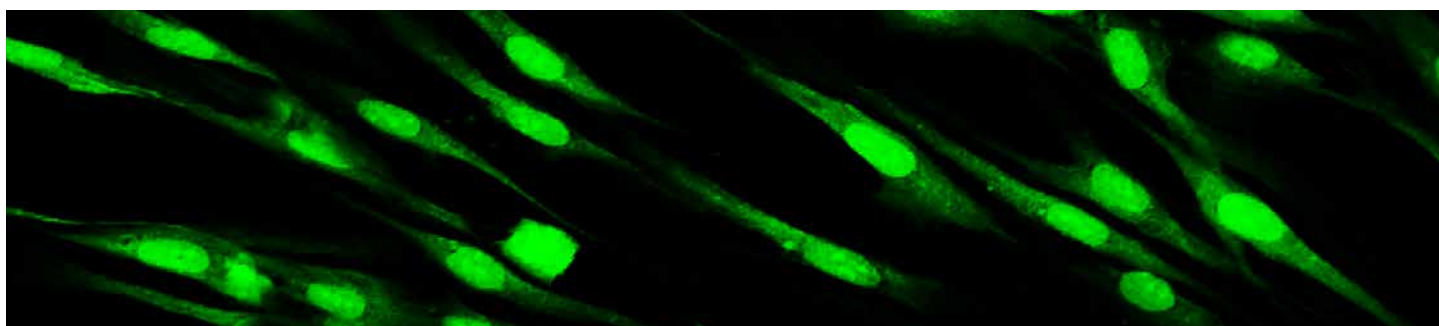
Due to its high absorptivity, excellent fluorescence quantum yield, and affordable pricing, fluorescein isothiocyanate (FITC) is among one of the most commonly used fluorescent dyes for flow cytometry, immunohistochemistry, and fluorescent immunoassays. High quality FITC-conjugated goat IgG fractions are designed to deliver optimal results, including:

- Highest affinity to the target molecule
- Lowest non-specific binding
- Outstanding fluorescence with optimal FITC conjugation
- No existence of Fc fragments

Description	Cat. No.
Fluorescein-Conjugated Goat IgG Fraction to Human Complement C1Q	ICN55166
Fluorescein-Conjugated Goat IgG Fraction to Human Complement C3	ICN55167
Fluorescein-Conjugated Goat IgG Fraction to Human Complement C4	ICN55168
Fluorescein-Conjugated Goat IgG Fraction to Human Fibrinogen	ICN55169
Fluorescein-Conjugated Goat IgG Fraction to Human IgG (Whole Molecule)	ICN55144
Fluorescein-Conjugated Goat IgG Fraction to Human IgM (5Fc μ)	ICN55153
Fluorescein-Conjugated Goat IgG Fraction to Human IgA (Alpha Chain)	ICN55077

Other Fluorescein-Conjugated antibody products:

Description	Cat. No.
Fluorescein-Conjugated Goat Affinity Purified Antibody to Mouse Immunoglobulins (IgG, IgA, IgM)	MP0855521
Fluorescein-Conjugated Goat Affinity Purified F(ab') ₂ Fragment to Mouse Immunoglobulins (IgG, IgA, IgM)	ICN55526
Fluorescein-Conjugated Goat Affinity Purified F(ab') ₂ Fragment to Rabbit IgG (Whole Molecule)	ICN55665
Fluorescein-Conjugated Goat Affinity Purified Antibody to Human IgG (Whole Molecule)	MP0855197
Fluorescein-Conjugated Goat Affinity Purified Antibody to Rat IgG (No Cross to Human)	ICN56407

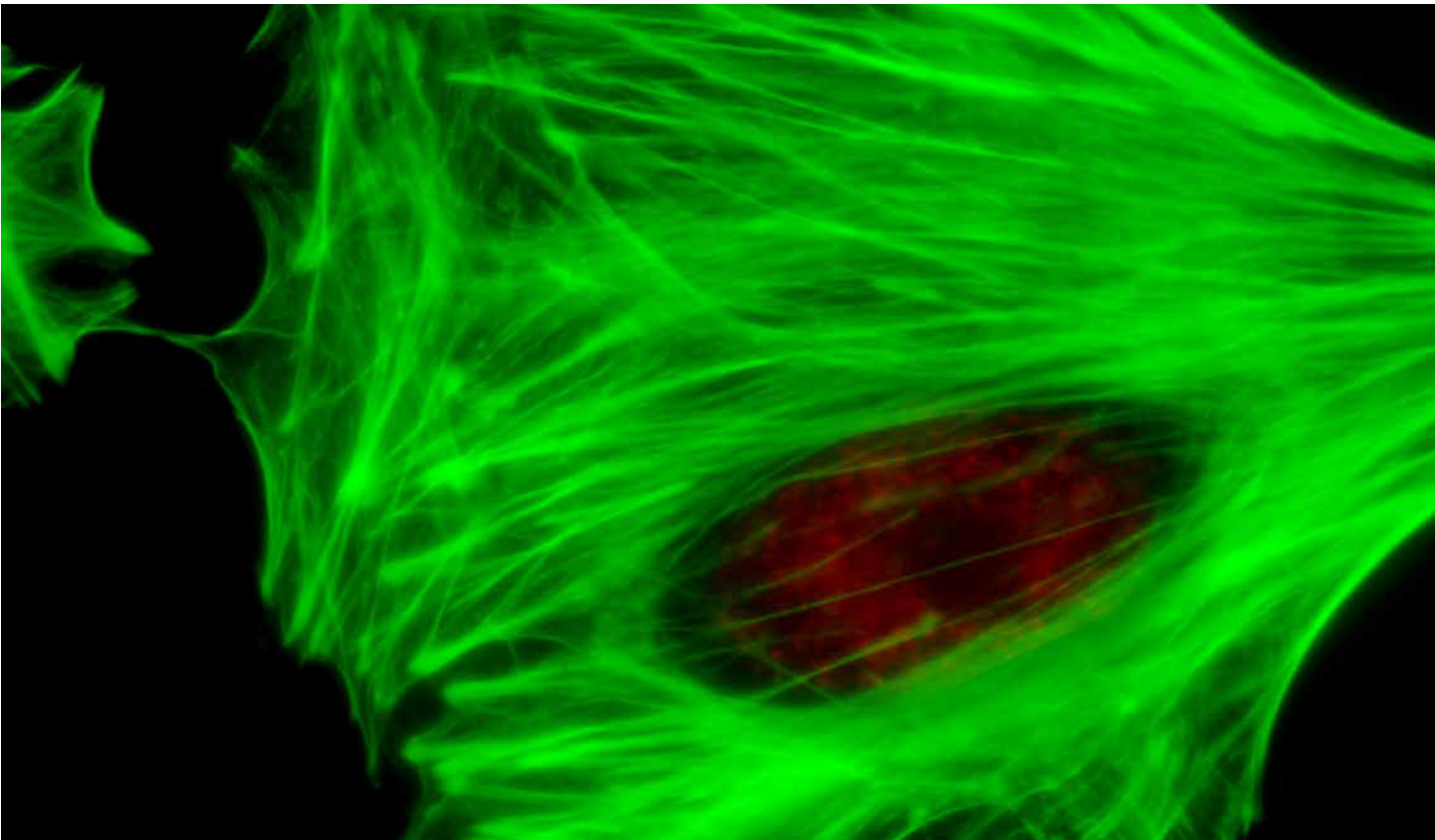


Monoclonal Antibodies to Actin and Tubulin

Antibodies to cytoskeletal proteins are widely used for protein loading controls or specific studies such as apoptosis. MP Bio's antibodies to actin have demonstrated specificity directed towards all six known vertebrate isoactins. Our anti-tubulin monoclonal antibodies enable researchers to visualize microtubules in fixed cells and in fixed or frozen tissue sections from various species.

- Reacts with all known actins or tubulins
- Excellent positive control for western blots
- No known spurious reactivities

Description	Cat. No.
Monoclonal Antibody to Actin C4	ICN691001
	ICN691002
Mouse Anti-Actin Mab Clone B4	NC1684313

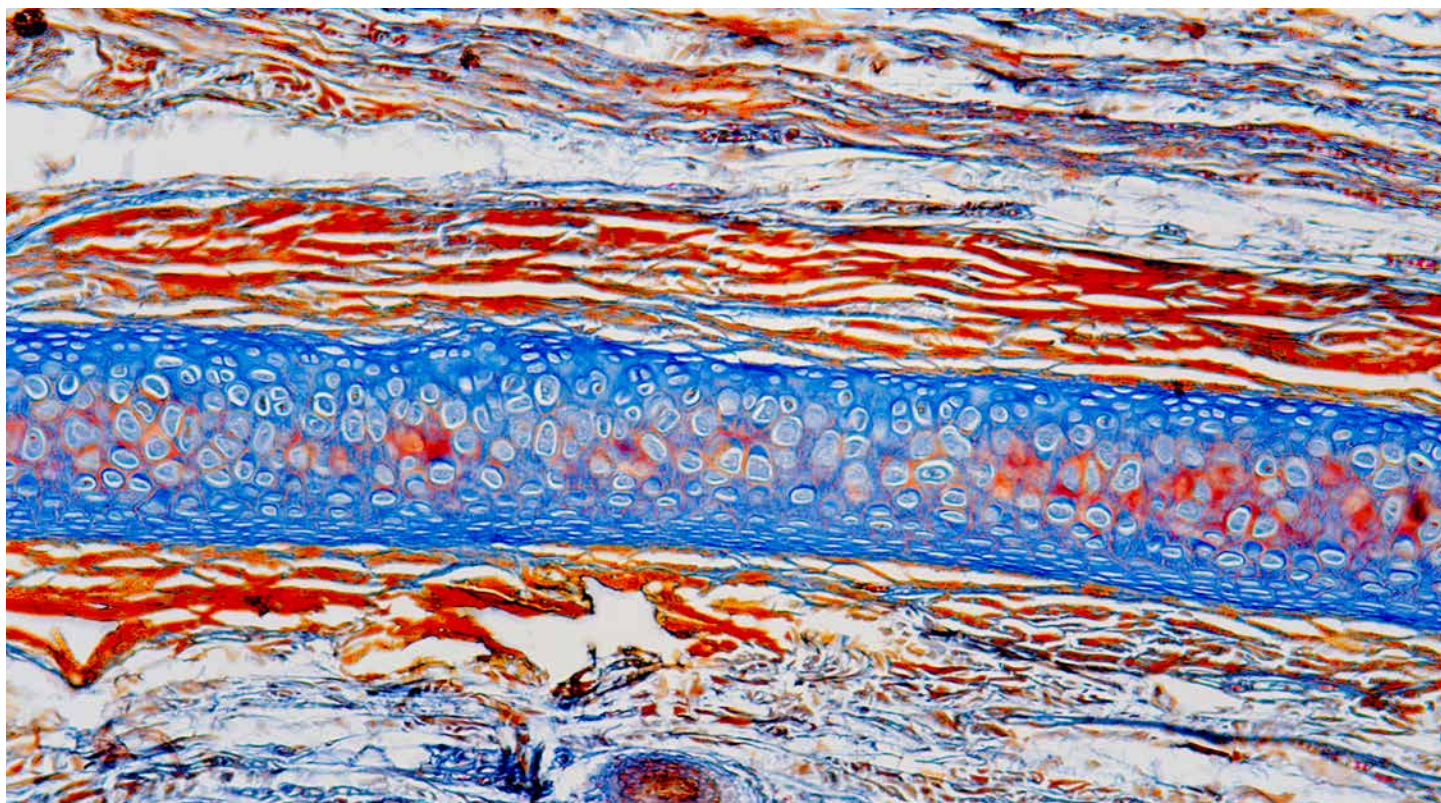


Anti-Human Collagen Monoclonal Antibody

Human collagen is the main structural protein of the extracellular space in various connective tissues. These tissues make up the skin, bones, and tendons of the human body. It is the most abundant protein in our bodies, making up about 30% of the whole-body protein content. Collagen consists of amino acids wound together to form triple-helices of elongated fibrils. Due to these uninterrupted "Glycine-X-Y" triplet repeats in the collagen structure, it is often extremely difficult to generate specific antibodies to collagens. However, MP Bio offers a series of anti-human collagen monoclonal antibodies from mice to specifically and sensitively target a single type of human collagen without cross-reactivity with other collagen types. With quality validated by hundreds of journal citations, our anti-human collagen monoclonal antibodies have been widely used for various applications, including ELISA, immunoprecipitation, PAGE and western blotting.

- Specific binding to a single type of collagen
- No cross-reactivity with other collagen types
- Various immunochemical assay applications
- Validated by hundreds of journal citations

Description	Cat. No.
Anti-Human Collagen Type II, Mouse (Clone II-4CII), Purified IgG	ICN631711

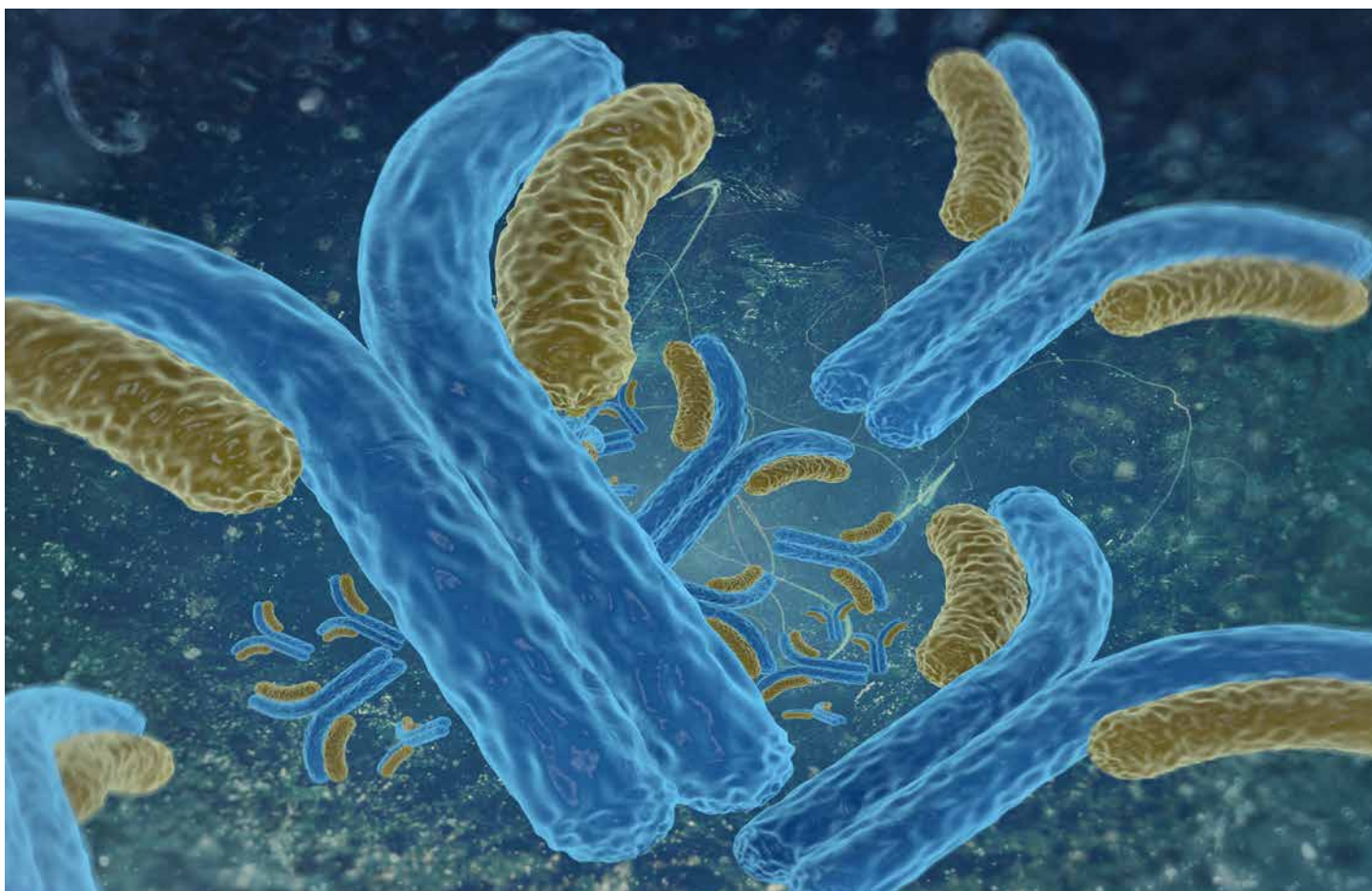


Other Popular Monoclonal Antibodies

MP Bio offers highly validated recombinant monoclonal antibodies against biomarkers and other popular targets for biomedical research and bioprocessing.

- High specificity and sensitivity to targets
- High reproducibility
- Minimal lot-to-lot variations
- Bulk quantity

Description	Cat. No.
Monoclonal Mouse Anti-Chondroitin-4-Sulfate Antibody	MP8636511
Mouse Anti-Synaptophysin IgG1 Monoclonal (Clone: SY38)	ICN697301



LEARN MORE!
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High Quality Secondary Antibodies from Cappel™

Secondary antibodies are usually designed to bind to the primary antibody to amplify signals for detection, separation and quantification of the target antigen. To maximize signals, the secondary antibody must have specificity to interact with the primary antibody species and isotype. In addition, a secondary antibody usually has conjugation with a reporter molecule such as an enzyme or fluorophore. MP Bio offers a wide variety of secondary antibodies without conjugation or with enzyme/fluorescence dye conjugation from multiple immunoglobulins, including human, rabbit and mouse. Enzyme (alkaline phosphatase (AP) or horseradish peroxidase (HRP)) conjugated antibodies are suitable for EIA, ELISA, blot immunostaining and cell/tissue staining, while fluorochrome conjugated antibodies are used for immunofluorescence assays, cell/tissue staining, blot immunostaining and fluorescence-activated cell sorting.

- High specificity for primary antibody species and isotypes
- Multiple pre-conjugations for sensitive detection
- Various fragments
- High purity
- Validated by thousands of publications since 1960's

Antibodies to Human Immunoglobulins

Conjugate	Host	Fraction	Size	Cat. No.
FITC	Goat	IgG	2 mL	ICN55077
None	Goat	F(ab') ₂	2 mL	ICN55049
None	Goat	Affinity Purified	2 mg	ICN55070
FITC	Goat	F(ab') ₂	2 mL	ICN55180
HRP	Goat	IgG	2 mL	ICN55220
None	Goat	Affinity Purified	1 mg	ICN55071
HRP	Goat	F(ab') ₂	2 mL	ICN55246
FITC	Goat	IgG	2 mL	ICN55148
HRP	Goat	IgG	2 mL	ICN55224
None	Goat	IgG	5 mL	ICN55017
FITC	Goat	IgG	2 mL	ICN55153
FITC	Goat	IgG	2 mL	ICN55156
FITC	Goat	F(ab') ₂	2 mL	MP0855186
AP	Goat	Affinity Purified	1 mL	ICN59284
HRP	Goat	IgG	2 mL	ICN55233
FITC	Goat	IgG	2 mL	ICN55159

Antibodies to Rabbit Immunoglobulins

Conjugate	Host	Fraction	Size	Cat. No.
None	Goat	IgG	5 mL	ICN55622
FITC	Goat	IgG	2 mL	ICN55676
HRP	Sheep	IgG	2 mL	ICN55677
HRP	Goat	Affinity Purified	2 mL	ICN55689
AP	Goat	Affinity Purified	1 mL	ICN59298
None	Goat	Affinity Purified	2 mg	ICN55642
FITC	Goat	F(ab') ₂	10 mg	ICN55658
None	Goat	Affinity Purified F(ab') ₂	2 mg	MP08670391
HRP	Goat	Affinity Purified	2 mL	ICN55691

Antibodies to Mouse Immunoglobulins

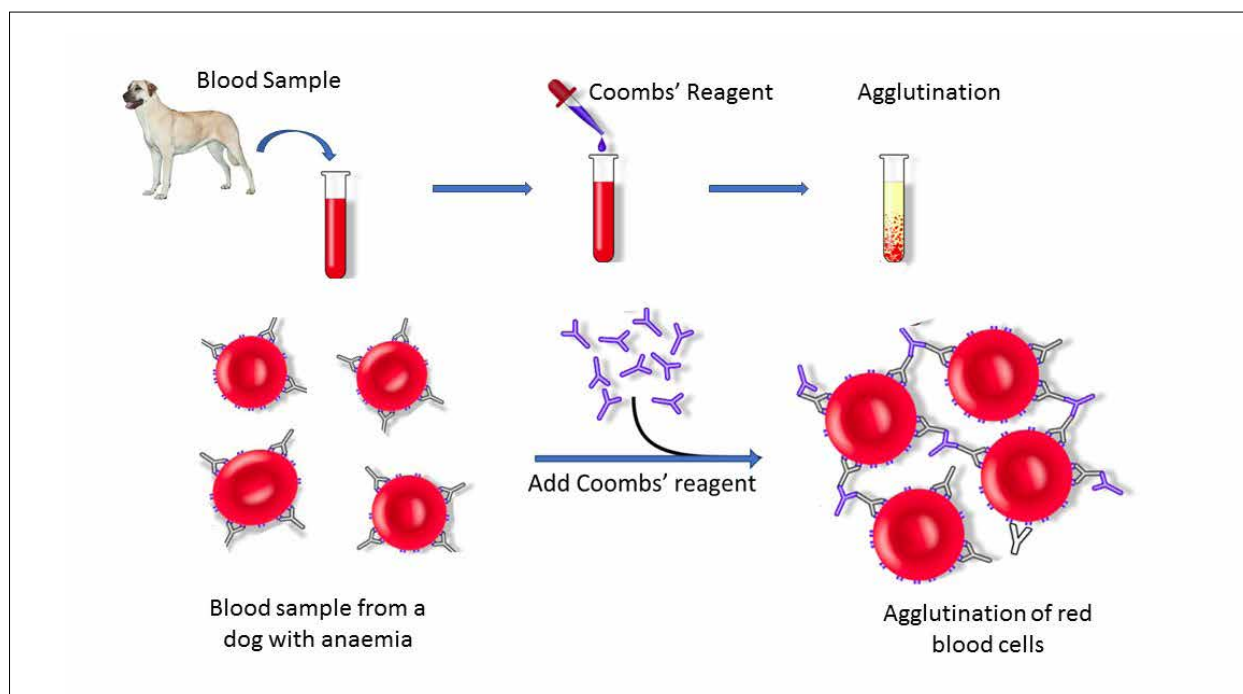
Conjugate	Host	Fraction	Size	Cat. No.
None	Goat	Antiserum	2 mL	NC1642416
None	Rabbit	Antiserum	2 mL	ICN55436
None	Goat	Affinity Purified	2 mg	ICN55479
None	Goat	Affinity Purified	2 mg	ICN670281
FITC	Goat	IgG	2 mL	ICN55493
FITC	Sheep	IgG	2 mL	ICN55495
HRP	Goat	IgG	2 mL	ICN55550
HRP	Goat	Affinity Purified	2 mL	ICN55563
None	Goat	Affinity Purified	2 mg	ICN55482
HRP	Goat	Affinity Purified	2 mL	ICN55566
FITC	Goat	IgG	2 mL	ICN55499
FITC	Goat	Affinity Purified F(ab') ₂	2 mg	ICN55526
HRP	Goat	IgG	2 mL	ICN55556

Sensitive and Specific Coombs' Test (Anti-Globulin) for Animal Studies

Coombs' test is used in research laboratories to screen animals with autoimmune disorders and to develop models for autoimmune diseases. Blood agglutination in the test is a visual positive indication of these diseases, especially immune-mediated hemolytic anemia (IMHA).

With over 50 years industry experience, MP Bio has long been providing scientists and researchers with high quality and reliable Coombs' tests (research use only) that feature:

- Species-specific antibodies for canine, equine, and feline
- Sensitivity to immunoagglutination to IgG, IgM and C3
- Lyophilized powder for extended shelf life and more efficient storage
- Simple reconstitution - diluted with buffer
- Versatility using multiple test platforms



Description	Host	Target	Cat. No.
Canine Anti-Globulin	Rabbit	Canine	ICN646351
Equine Anti-Globulin	Rabbit	Equine	ICN646371
Feline Anti-Globulin	Rabbit	Feline	ICN646381

High Quality and Consistent Animal Sera for Optimal Cell Culture

Animal sera, whether from bovine, human or other animal source, provide all essential nutrients such as proteins, attachment factors, growth factors, amino acids, trace elements, vitamins, lipids, and hormones for healthy cell culture growth. Additionally, animal serum plays an essential role in regulating cell osmotic pressure and membrane permeability, serving as a carrier for enzymes, micronutrients, lipids, and trace elements into the cell. Therefore, animal serum has been widely used as a nutrient boost for most cell-culture applications in the life sciences.

To meet and exceed quality control standards for high performance in cell culture, all sera at MP Bio are tested by independent third-party laboratories for the presence of endotoxin, mycoplasma, bacteria, fungi, and virus; for total protein concentration (including hemoglobin content); and for the growth of cells. A certificate of analysis for each lot is available upon request. Our animal sera ensure:

- High performance for broad cell types
- Low endotoxin level
- Free of mycoplasma contamination
- Free of disease from animal sources
- Minimized lot-to-lot variability
- Sterility
- Country of origin and traceability

Fetal Bovine Serum

Fetal bovine serum (FBS) is probably the most widely used serum-supplement for in vitro cell culture. This is because FBS contains a complex array of protein components, excellent cell growth factors, low endotoxin levels, and low hemoglobin concentration, all of which are required by cells to survive, grow, and divide. FBS from MP Bio offers excellent value for basic cell culture, specialty research, and bioprocessing. With our quality assurance system from raw material to final product, we ensure reliable and consistent delivery of high quality FBS to our customers. MP Bio's brand of heat inactivated CELLeCt™ FBS Gold is the industry standard for FBS supplements.

Sera from Other Animals

Although fetal bovine serum 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 cost, such as human serum, newborn calf serum, horse serum, goat serum, rabbit serum, porcine serum, and chicken serum. MP Bio offers a wide spectrum of animal sera to meet your cell culture needs for both research and bioprocessing.

Description	Cat. No.
CELLeCt™ FBS, GOLD, Heat Inactivated	ICN2916849
Human Serum	MP092930149
Human Type AB Serum from Male Donors	ICN2930949
Human Serum, Pooled	ICN2931149
Rabbit Serum	ICN2941149
Goat Serum	MP92939149
Donor Horse Serum	MP092921149



Chemically Defined FBS Replacement for Optimal Cell Culture

Serum Replacement Promotes Long-Term Cell Culturing

Low-serum and serum-free media provide important advantages in animal cell culture, as the chemically controlled environment offers improved reproducibility and safety by removing lot-to-lot variation and biorisk inherent to animal serum. TCM™ and TCH™ are designed to eliminate the use of serum in cell culture, providing all essential components to promote cell growth and viability in most cell culture situations. Both serum replacements exhibit excellent results in long-term culturing of anchorage dependent and suspension culture.

- Chemically defined nature
- Free of biological variability
- Free of growth factors or steroid hormones
- Long-term culture with no chromosomal or morphological alterations
- Versatile to any basic cell culture media
- Low endotoxin
- Low protein content to simplify downstream processing and purification processes



TCM™ is a fortified, multipurpose serum replacement for long-term culturing of many types of anchorage dependent and suspension cultures with a variety of species, especially primary cell cultures. TCH™ is particularly developed for long-term culturing of human cells.

Description	Cat. No.
TCM™ defined serum replacement, 50x concentrate	ICN2010026
TCH™ defined serum replacement, 50x concentrate	MP092020026

FastGro™, Fully Chemically Defined FBS Replacement for Cell Culture

Fetal bovine serum (FBS) is widely used as a serum-supplement for in vitro cell culture media, providing an undefined mixture of nutrients for healthy cell culture growth, such as proteins, attachment factors, growth factors, amino acids, trace elements, vitamins, lipids, and hormones. However, due to its undefined nature and the variation of animals, FBS can lead to unexpected and undesired stimulations of cells, not to mention biorisk of animal protein or pathogen contamination, such as bovine spongiform encephalopathy (BSE).

To avoid these concerns, MP Bio is pleased to launch FastGro™, a fully chemically defined FBS replacement for cell culture use. This unique product allows culturing a wide range of cells in vitro without the use of serum or any animal or human derived compound. All components in FastGro™ are highly purified and identified chemical compounds, ensuring:

- Chemically defined nature without lot-to-lot variations
- No animal or human derived materials or compounds
- No interference with hormones or growth factors
- Elimination of the risk of contaminants – viruses, mycoplasma, prions, etc.
- Wide range of cell culture practices
- Storage in the refrigerator, and no need for thawing before use

Description	Size	Cat. No.
FastGro™, Fully Chemically Defined FBS Replacement for Cell Culture	100 mL	MP092640049
	500 mL	MP092640054

Chemically-Defined Basal Media for Optimal Cell Culture

Since the 1950's, research scientists performing routine cell culture have been utilizing classical cell culture media in countless applications. Minimizing the risk of adventitious agents or biological contamination can be critical to providing reliable, consistent, and high-quality results. MP Bio supports researchers and scientists to enable them to reach their goals in their quest for scientific excellence. A complete range of chemically-defined basal media are available to support optimal cell growth, providing:

- Chemically-defined essential components
- Lot-to-lot consistency
- Animal-component free media
- No proteins, hormones, or other growth factors
- No biological contaminations such as viruses, mycoplasma, or prions

Select chemically-defined basal cell culture media:

Description	Cat. No.
Basal Medium Eagle (BME) Vitamin Concentrate (100X)	ICN1600449
Dulbecco's Modification of Eagle's Medium (1X Solution) With 4.5 g/L Dextrose, Without L-Glutamine and Inositol	ICN1642954
Dulbecco's Modification of Eagle's Medium (1X Solution) Without L- Glutamine, Leucine, Sodium Pyruvate	ICN1642149
Minimum Essential Medium Eagle (Modified) (1X Solution) With Hank's Salts, 0.35 g/L Sodium Bicarbonate Without L-Glutamine	MP091213254
1X RPMI Without L-Glutamine, L-Cysteine, L-Cystine, and L-Methionine	ICN1646454
1X RPMI 1640 Without L-Glutamine and Phosphate, With 0.85 g/L Sodium Bicarbonate	MP091629754
RPMI 1640 (1X Solution) Without L-Glutamine and L-Leucine	ICN1629149
RPMI 1640 With 2 g/L Sodium Bicarbonate, Without L-Glutamine & Glucose	ICN1646854
Williams Medium E, Powder, With L-Glutamine, Without Sodium Bicarbonate	ICN1050122



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 cells of epithelial origin and stem cells. To maintain the full spectrum of biological activities and minimize the biorisk of animal origin products, MP Bio recently launched BPE and BBE, derived from young, healthy New Zealand cattle with USDA approved sources.

Our bovine pituitary extract (BPE):

- Promotes maximum cell mitogenicity
- Promotes differentiation of pluripotent stem cells
- Allows serum-free culturing of primary epithelial cell types without fibroblast contamination
- Sterile filtration from non-lyophilized tissue
- Maintains consistent activity in serum-free culture systems
- Low TGF- β level to minimize any pre-mature senescence
- Cost-effective: a third of 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)	MP092850450
Bovine Pituitary Extract (10 mL)	MP092850445
Bovine Brain Extract (2.5 mL)	MP092850550

A Complete Solution for Cryopreservation

With over 40 years of experience manufacturing and supplying cell biology products, MP Bio understands the challenges associated with cell cryopreservation. Cryopreservation media from MP Bio ensures:

- Consistent high cell viability
- Serum-free and protein-free formulations
- Validation with multiple cell types
- Long-term cell storage
- Balanced components for maintaining cellular functions
- Long shelf life



We offer a complete solution for cryopreservation to meet your needs:

- **Cryopres™ Dimethyl Sulfoxide (>99.9% USP DMSO)** – commonly used in cell cryopreservation, along with glycerol, to prevent damage to the cell membrane during freezing.
- **pZerve™** – ready-to-use, sterile, cryopreservation solution that does not contain dimethyl sulfoxide (DMSO), fetal bovine serum or other animal proteins.
- **Cell Cryopreservation Medium with 10% DMSO** – a balanced, protein free, ready-to-use cryopreservation solution with 10% USP DMSO (Cryopres™).
- **2-8 CELLsium™** – cytoprotective, protein free, ready-to-use biosolution without DMSO for the short-term storage of cells or tissue

Description	Cat. No.
pZerve™ Cryopreservation Solution, 20 mL	MP92030346
pZerve™ Cryopreservation Solution, 60 mL	MP0920303M2
Cell Cryopreservation Medium with 10% DMSO, 50 mL	MP092780248
Cryopres™ Dimethyl Sulfoxide (>99.9% USP DMSO), 10 mL	MP092780145
Cryopres™ Dimethyl Sulfoxide (>99.9% USP DMSO), 50 mL	MP092780148
2-8 CELLsium™ medium for short-term cell storage, 100 mL	MP092780349
2-8 CELLsium™ medium for short-term cell storage, 500 mL	MP092780354

High Performance Cellular Analysis Kits

MP Bio recently introduced new cellular analysis kits at the whole cell level. These kits are supported by our diverse scientific expertise, time-tested products and technology platforms. They provide research tools to monitor cell viability, proliferation, mitophagy and cellular senescence.

1 **FastCounting™ Cell Counting Kits**

Provides a sensitive and convenient method to determine cell viability in cell proliferation and cytotoxicity assays.

- Highest sensitivity dye for cell viability
- Lowest cytotoxicity among tetrazolium reagents
- Simple procedures without thawing reagents

2 **FastMitophagy™ Detection Kit**

Designed for mitophagy detection in mammalian cells.

- Simple procedure: just add the Mitophagy dye - no need for transfection
- More sensitive than other autophagy markers

3 **FastCellular™ Senescence Detection Kit**

Detect senescent cells with much higher sensitivity than X-gal

- Higher sensitivity due to new fluorogenic detection probe
- Applicable for living cells and fixed tissues

Description	Cat. No.
FastCounting™ Cell Counting Kit (100 tests)	MP092690131
FastCounting™ Cell Counting Kit (500 tests)	MP092690132
FastMitophagy™ Detection Kit (5 x 96 well plates or 25 x 35 mm dish)	MP092690201
FastCellular™ Senescence Detection Kit - SPiDER-β-Gal (1 x 6 well plate)	MP092690301



Cell Culture Antibiotics: Keep Your Cell Cultures Contamination Free

In cell culture, contamination of the culture media with microbiological organisms like bacteria, yeast, fungi, mycoplasma, and endotoxins can be extremely devastating, causing significant cell death and even catastrophic loss of the entire culture. The detrimental impact of microbiological contamination needs to be aggressively treated. Currently, the availability of antibiotics provides an excellent opportunity to combat cell culture contamination with minimal impact on the mammalian cells being cultured. Judicious selection of the antibiotic for your specific cell lines and culture conditions allows for full control of the media without altering cellular growth parameters.

Whether you require an antibiotic active against gram-positive bacteria, gram-negative bacteria, yeast, or fungi, MP Bio provides a wide range of high-quality antibiotics to treat your cell culture contamination.

- **Easy to use** – Convenient addition to liquid culture medium
- **High potency** – Keep your cell cultures contamination free
- **Broad spectrum** – Effective against a wide range of microbial contaminants

Selected antibiotics for cell culture:

Description	Cat. No.
Amphotericin B, 250 µg/mL (Fungizone)	ICN1672346
	ICN1672348
Gentamicin Sulfate Solution, 10 mg/mL	ICN1676045
	ICN16760J8
G418 Sulfate, 50 mg/mL (Geneticin)	ICN1672546
	ICN1672548
Kanamycin Sulfate, 5 mg/mL	ICN1672048
Penicillin-Streptomycin (10,000 IU/mL, 10 mg/mL)	ICN1670249
Penicillin-Streptomycin-Amphotericin B (100X)	ICN1674049



A Complete Solution for Mycoplasma Management in Cell Culture

One of the major issues in mammalian cell culture is infection due to mycoplasma. These simple bacteria can infect the culture and alter a variety of cellular characteristics and functionalities (metabolism, morphology, proliferation, etc.), often leading to experimental artifacts and cell loss. Therefore, it is essential to detect the presence of mycoplasma in your cell culture and remove them effectively, without compromising cell viability. The unique Mycoplasma PCR Detection Kit and Mycoplasma Removal Agent (MRA) from MP Bio can completely manage the mycoplasma contamination in your cell culture.

Mycoplasma Detection

Myco-Sniff™ Mycoplasma PCR Detection Kit greatly simplifies testing and detection of mycoplasma contamination in cell cultures, with the following advantages:

- **Highly sensitive:** Detection limit as low as 20 CFU/mL.
- **Wide detection range of mycoplasma:** Detect mycoplasma from over 8 genera, including 209 individual species.
- **Premixed for ease-of-use:** All PCR reaction components included; just add template DNA or samples.
- **Highly specific:** No interference of animal or bacterial DNA.
- **Fast:** Detection can be achieved within 3 hours.
- **Elimination of cross-contamination:** 8-MOP prevents cross-contamination from previous PCR products.

Similar to our Myco-Sniff™ product, but with higher sensitivity detection (as low as 10 CFU/mL), we also offer Myco-Sniff-Valid™ Mycoplasma PCR Detection Kit, which is validated for sensitive, specific and rapid detection of mycoplasma.

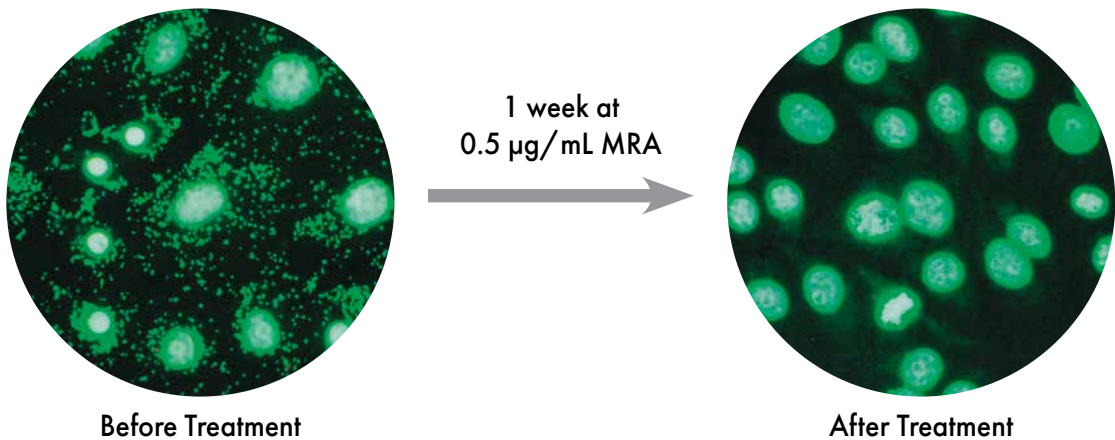
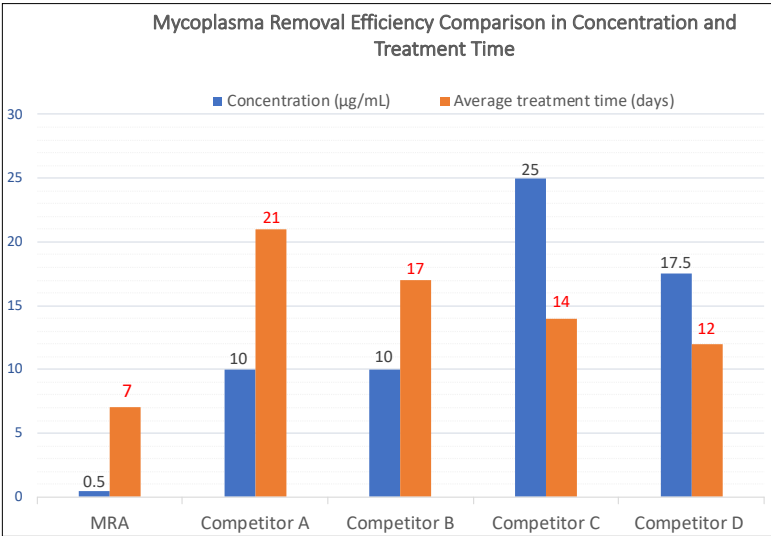
Description	Cat. No.
Myco-Sniff™ Mycoplasma PCR Detection Kit (48 tests)	MP093050201
Myco-Sniff-Valid™ Mycoplasma PCR Detection Kit (48 tests)	MP093050301



Mycoplasma Removal

Once mycoplasma is detected in cell culture medium, it is essential to eliminate it from the cultures without losing cells or causing further contamination. MP Bio's Mycoplasma Removal Agent (MRA) is the most reliable solution for mycoplasma removal and prevention, ensuring quality results (as shown in the following figure), including:

- Elimination of multiple mycoplasma species within one week
- Effective treatment of mycoplasma at the lowest dosage available in the market (0.5 µg/mL)
- Prevention of culture recontamination at 0.1 µg/mL
- Compatibility with most mammalian cell lines
- Sterility and low cytotoxicity
- Citation and recognition in 550+ scientific publications



Description	Cat. No.
Mycoplasma Removal Agent (MRA) (5 mL)	ICN3050044

Obtain Superior Performance with High Purity Bovine Albumin Fraction V

Bovine Albumin Fraction V (also known as Bovine Serum Albumin) is a serum albumin protein derived from cows. It is commonly used in numerous biochemical applications including ELISA, immunohistochemistry, immunoblots, cell culture media, clinical chemistry reagents, and protein research. Our Bovine Albumin Fraction V is derived from healthy cows and ensures superior performance for a variety of applications.

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



A selection of Bovine Albumin Fraction V offered by MP Bio:

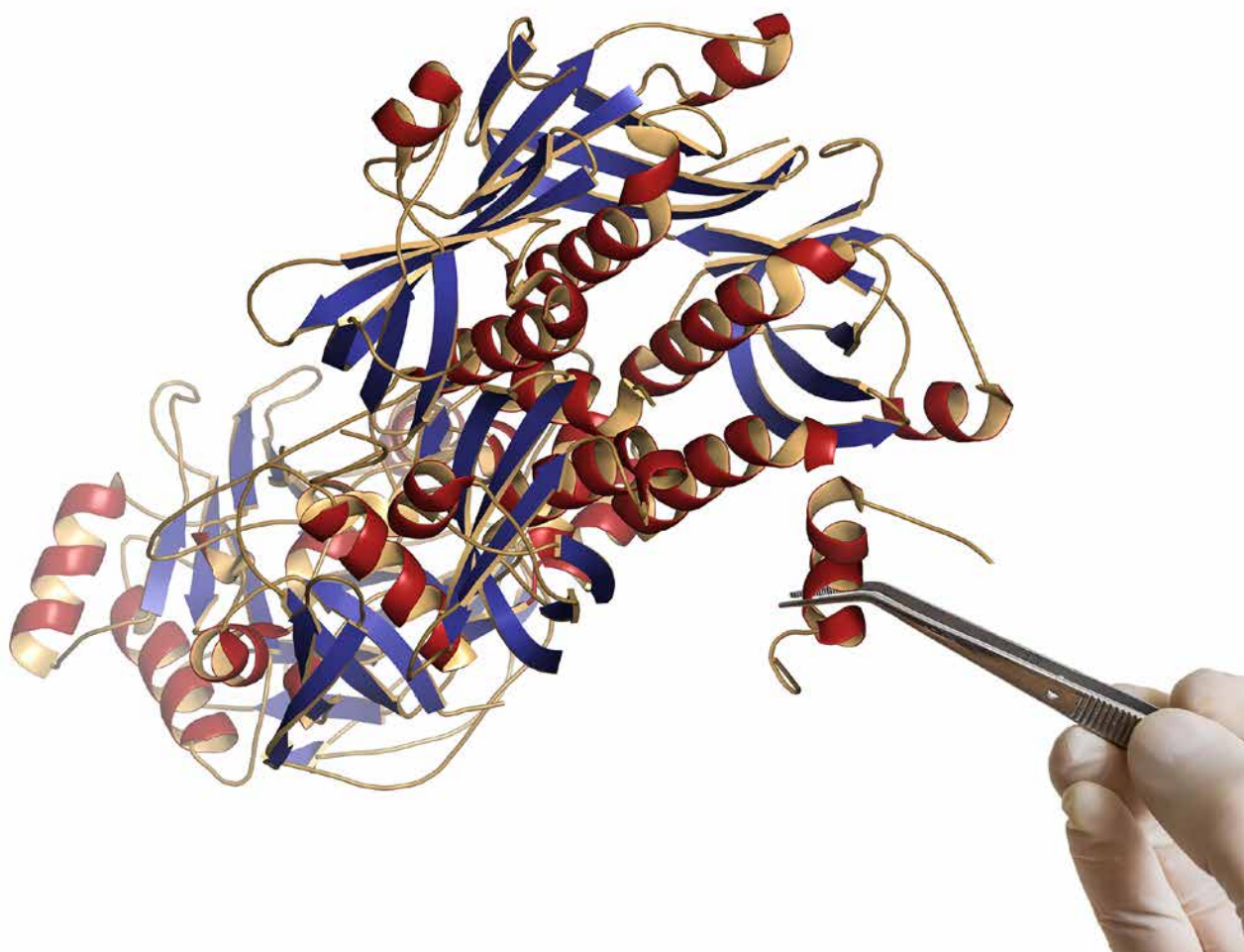
Description	Cat. No.
Bovine Albumin Fraction V, $\geq 98\%$	MP08810025
	ICN810032
Bovine Albumin Fraction V, Protease Free, $\geq 99\%$	ICN820451
Bovine Albumin Fraction V, Low Endotoxin, $>98\%$	MP08810681
Bovine Albumin Fraction V, Reagent Grade, 100%	ICN810661
Bovine Albumin, 35% solution	ICN810061
Bovine Albumin, 30% solution	ICN810133
Bovine Albumin, Cohn Modified, lyophilized, 100%, By Protein Electrophoresis	MP08840042

Improve Sequence Coverage with Protease V8 for Protein Identification

Successful peptide mapping requires selection of the right cleavage enzymes. Protease V8 (also known as endoproteinase-Glu-C) complements tryptic digestion, specifically cleaving peptide bonds on the C-terminal side of glutamic and aspartic acids. Protease V8 from MP Bio has been validated by more than 200 scientific publications and provides:

- Robust activity with greater than 915 units/mg protein
- Specific cleavage at glutamic acid residues in ammonium bicarbonate at pH 7.8 and in ammonium acetate at pH 4, and specific digestion at both glutamic and aspartic acid residues in phosphate buffer at pH 7.8
- Complementary to tryptic digestion
- High tolerance over a broad range of buffers, pHs, and denaturing reagents
- Lyophilized format for longer stability and easier storage

Description	Size	Cat. No.
Protease V8	5 mg	MP08399001



Superior Yeast Lysis Using Zymolyase

Digestion of yeast and fungal cell walls is necessary for many biological processes including protoplast preparation, cell fusion, transformation, and extraction. Generally, the yeast cell wall consists of four major components, namely branched β -(1,3)-glucan, substituted β -(1,3) glucan, glycoproteins, and mannoprotein. As a result, a single lysing enzyme is not efficient to break down yeast cell walls.

Zymolyase is a combination enzyme product with a proprietary mixture of four unique lytic enzymes, each of which attacks a different yeast cell wall component. Therefore, Zymolyase can be used at low concentrations to easily break down various yeast cell wall components at significantly higher efficiencies compared to other lysing enzymes. This helps ensure maximum yields of intact protoplasts without hindering viability or regeneration (see Figure 1).

With almost 3 decades of industry expertise and over 2,400 citations, Zymolyase from MP Bio is time-tested and quality driven, offering:

- Highest efficiency to form almost 100% protoplasts
- Shortest time for yeast cell wall biodegradation
- Lot to lot consistency and high reproducibility

Description	Cat. No.
Zymolyase 100 T	MP08320931
Zymolyase 20 T	MP08320921

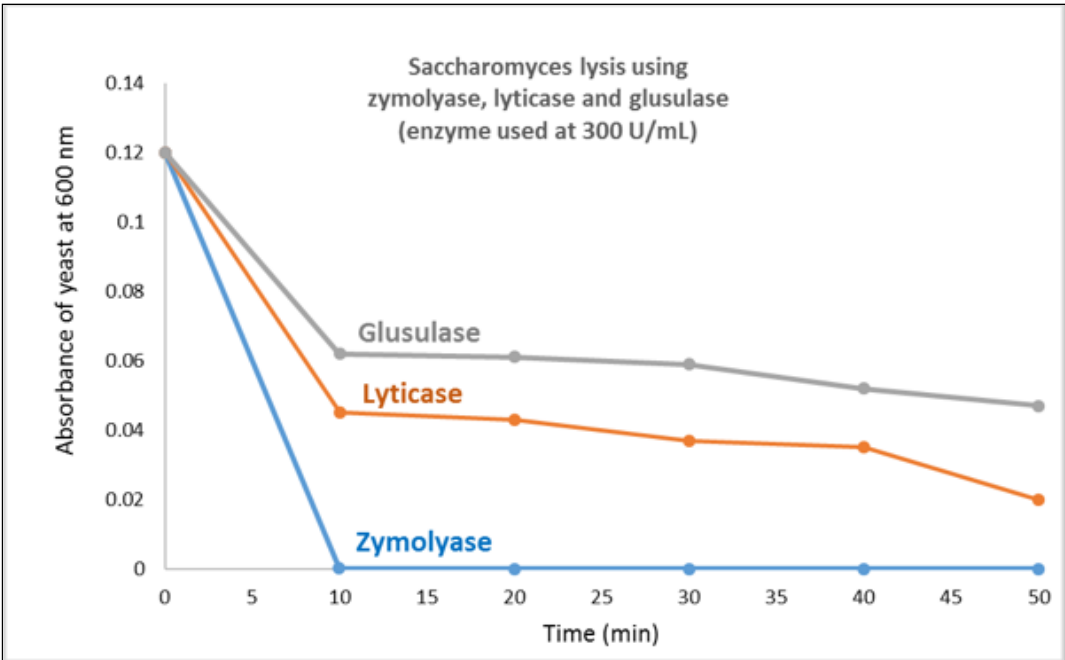


Fig 1. Comparison of *Saccharomyces cerevisiae* lysis using zymolyase, lyticase and glusulase at 300 U/mL.

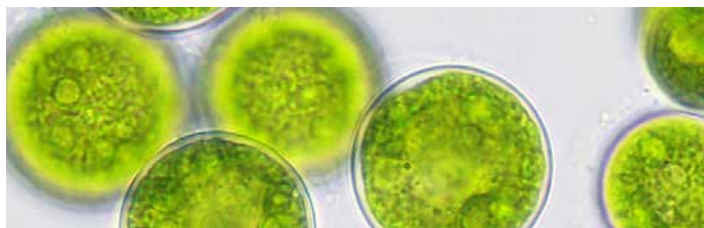


Plant Cell Culture Media for Optimal Results

Successful plant cell culture requires high quality and dependable culture media. MP Bio offers a large range of products designed to support optimal plant cell growth, ensuring reproducible and consistent results. Out of all standard plant cell media, Murashige and Skoog media is the most popular choice for plant growth due to its optimized balanced composition. These components of macronutrients, micronutrients, carbon sources, and vitamins are highly suitable for most plant species.

For the last 30 years, MP Bio has been a trusted plant cell culture medium resource for plant research, ensuring:

- **Balanced macronutrients**
- **Essential micronutrients and vitamins**
- **Optimal plant cell growth**
- **Lot-to-lot consistency**



Selected plant cell/tissue media:

Description	Cat. No.
Murashige and Skoog Medium	ICN2610020
Hoagland's Modified Basal Salt Medium	ICN2621820
Murashige and Skoog Basal Salt Mixture	ICN2623020
Murashige and Skoog Basal Medium	ICN2623120
Murashige and Skoog Basal Medium with Gamborg's Vitamins	ICN2623220
Murashige & Skoog Modified Vitamin Solution (1000x)	ICN2625149

PlantCon™, Unique design for plant cell and tissue culture

Plant cell culture needs to be kept in a contamination-free container with optimal light transparency, controlled atmospheric gas exchange, and managed moisture system for reliable and reproducible results. PlantCon™, a sterilized, plastic and disposable container, is specifically and scientifically designed for this purpose, as it ensures:

- **Broad spectrum light transparency for efficient photosynthesis**
- **Controlled atmospheric gas exchange**
- **EtO sterilized, ready to use and contamination free**
- **Stackable and scalable design for space-saving and automation**
- **Lightweight, affordable, and disposable**



Description	Cat. No.
PlantCon™ System, sterile	MP092672202
PlantCon™ System, sterile	ICN2672206

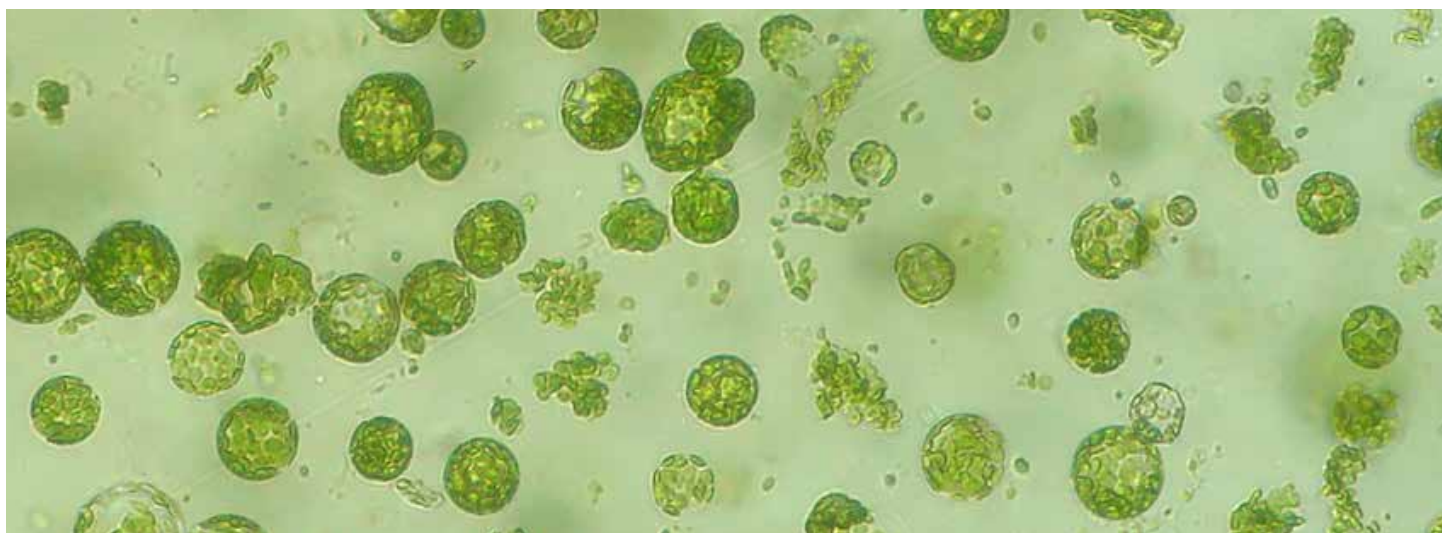
Enzymes for Plant Cell Lysis and Protoplast Formation

Plant protoplasts are plant cells which have had their cell wall removed, usually by digestion with enzymes of pectinases and cellulases. Protoplasts can be isolated from various plant tissues, such as leaves, flowers, stems, roots, and anthers. Due to the various sample sources and structure differences, it is challenging to effectively prepare plant protoplasts with high efficiency and satisfying quality for sequent applications such as DNA transformation, plant breeding, and other uses. MP Bio has long provided high quality pectinases and cellulases to support plant protoplasts. These products offer:

- High efficiency to remove cell walls
- High yield of viable protoplasts
- Robust enzymatic activities
- Optimized enzymatic components

During maceration, the breakdown of pectins leads to a loss of cohesion and cell separations. Both endo-polygalacturonase or endo-pectate lyases have been reported to macerate specific tissues. Pectolyase Y-23 is a specific preparation from *Aspergillus niger* or *Aspergillus japonicus* containing both endo-polygalacturonases and endo-pectin lyases at high activity and a maceration simulating factor. Pectolyase Y-23 with activity greater than 1000 U/g from MP Bio has found wide use and acceptance in the scientific literature. While pectolyase Y-23 from both *A. niger* and *A. japonicus* performs very similarly to each other, the species of *A. niger* are more widely used in biotechnological processes due to its "GRAS status" (Generally Regarded As Safe) by the Food and Drug Administration (FDA).

Description	Size	Cat. No.
Pectolyase Y-23 (A. Niger)	1g	MP08320971
	10 g	MP08320972
Pectolyase Y-23 (A. Japonicus)	1 g	ICN320951



7X: Detergent for Cell Culture, Instrument and Glassware Cleaning

Does your detergent leave behind residue like bacteria, microbial debris and fluorescence? Cited in over 8,000 scientific publications, 7X detergent from MP Bio has been highly recommended for use in a variety of applications ranging from lab maintenance to industrial cell culture. Scientists, lab technicians, and biotechnologists around the world have been using this product for over 65 years to ensure that high degree of cleanliness necessary in any lab.

- Effective, water-soluble and eco-friendly cleaning solutions with no etch to glass or plastic labware in any concentration
- ES 7X is a completely eco-friendly solution
- Nontoxic for tissue and cell cultures
- Eliminate interfering fluorescence residues for flow cytometry
- No need for pH adjustment at any concentration
- Easy and safe to use, no gloves needed, gentle to skin
- Easy to store - 1 gallon of 7X concentrate can make up to 100 gallons of cleaning solution

Description	Size	Cat. No.
7X Cleaning Solution	1 gal	ICN7667093
7X Cleaning Solution	4 x 1 gal	ICN7667094
7X-O-Matic Solution, Machine Wash	4 x 1 gal	ICN7667494
ES 7X Cleaning Solution, Environment-Safe	4 x 1 gal	ICN7667194
ES 7X Cleaning Solution, Environment-Safe	1 gal	ICN7667193





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

- Apoptosis
- Cell Biology
- Culture Growth Media
- FastPrep® Sample Prep
- Immunology
- Molecular Biology
- Adsorbents
- Biochemicals
- Fine Chemicals
- Labware
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- Drugs of Abuse
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