Sigma-Aldrich®
Lab & Production Materials

MERCK

Robust cultures reproducible results

Animal component-free media and reagents for consistent cell culture

Improve cell culture consistency and performance and reduce biological variability with animal component-free (ACF) media and reagents. Our ACF media and products are manufactured under stringent protocols with rigorous QC testing to ensure highest quality and purity. From cell culture media to growth factors, supplements, cell dissociation reagents, hydrogels, and scaffolds, we offer a complete portfolio of animal component-free tools for your research needs.

Growth Factors

Our highly pure, low endotoxin, animal component-free human, mouse, and rat growth factors and cytokines help increase consistency and safety in cell culturing. These recombinant proteins are expressed in *E. coli* or in HEK systems under animal component-free (ACF) conditions. Growth factors produced in HEK293 cells offer the added advantage of authentic human glycosylation and post-translational modification patterns. Our ACF growth factors and cytokines are ideal for your critical inflammation, cancer, stem cell, and antibody development research applications.

Applications

- Supplement cell culture media for serum replacement
- Promote growth of finicky/fastidious cells
- Promote cellular differentiation
- Stem and immunotherapy cell culture supplements
- Monoclonal antibody production

Features

- ≥98% pure and animal component-free – no risk of introducing pathogenic agents through animal sources
- Low endotoxins, cell culture-tested – no effect on cell viability
- Recombinant – lot-to-lot variability is minimum
- No human or animal-derived components at any point in manufacturing process – easy to import without restrictions

Ordering Information

Product Description	Expression System	Catalog No.
BMP-2 (human)	HEK	H4791
EGF (human)	*E. coli*	SRP3027
EGF (human)	*E. coli*	E5036
IFN-γ (human)	*E. coli*	SRP3058
IGF-I (human)	*E. coli*	SRP3069

Product Description	Expression System	Catalog No.
IL-1β (human)	*E. coli*	SRP3083
IL-2 (human)	*E. coli*	SRP3085
TNF-α (human)	HEK	H8916
TNF-α (human)	*E. coli*	SRP3177
Transforming Growth Factor-β1 human	HEK	H8541

Supplements

Cell culture supplements provide nutrients that promote healthy growth of mammalian, insect, and plant cell cultures. Supplements such as hormones and albumins are most commonly added to cell culture media.

Applications

- Additives to cell culture media
- Improves cell viability, growth, and proliferation

Features

- Animal component-free
- High purity, superior solubility
- Available in powder and solution format
- Lot-to-lot consistency
- Custom specifications and testing available
- Reduces the incidence of performance variability
- Eliminates safety risks due to adventitious agents associated with animal components

Ordering Information

Product Description	Expression System	Size	Catalog No.
AOF ITS Supplement (100X) (contains human recombinant insulin and transferrin with sodium selenite)	Oryza sativa (rice)	10 mL	SCM054
		100 mL	SCM055
Demecolcine solution (10 µg/mL)	Synthetic	20 mL	D1925-20ML
		100 mL	D1925-100ML
Hydrocortisone solution (50 µM)	Synthetic	10 mL	H6909
SyntheChol® NS0 Supplement (500X)	Synthetic	2 mL	S5442-2ML
		10 mL	S5442-10ML
Albumin (human)	Rice	1 g	A9731-1G
		5 g	A9731-5G
		10 g	A9731-10G

Cell Dissociation Reagents

Cell dissociation reagents are used for cell detachment and tissue dissociation in cell culture. Our dissociation enzymes, when used with serum-free or (or serum-containing) media, help maximize the yield of functionally viable cells. These ready-to-use solutions enable dissociation of cells, tissues, and tumors with increased plating efficiency.

Applications

- Cell detachment and tissue dissociation
- Suitable for both serum-free and serum-containing culture conditions

Features

- Animal component-free
- Ready-to-use solution
- Gentle cell disaggregation
- High cell viability

Ordering Information

Product Description	Expression System	Catalog No.
Animal Free Collagenase, Type A	Clostridium histolyticum	SCR136
Animal Free Collagenase, Type B	*Clostridium histolyticum*	SCR137
Animal Free Collagenase, Type C	*Clostridium histolyticum*	SCR138
Animal Free Collagenase/Dispase Blend I	*Clostridium histolyticum*	SCR139
Animal Free Collagenase/Dispase Blend II	*Clostridium histolyticum*	SCR140
Collagenase type I	*Clostridium histolyticum*	SCR103
Trypsin Inhibitor, Defined (1X) Solution	*Soybean*	T7659

Stem Cell and Primary Cell Media

We offer high performance, ready-to-use proprietary serum-free stem cell and primary cell media for a variety of cell types including human ES/iPS, neural stem cells (NSC), mesenchymal stem cells (MSC), hematopoietic stem cells (HSC), and primary cancer cells. These media are highly quality controlled to ensure performance and consistency.

Applications

- Serum-free media for stem cell and primary cell culture
- Isolation, expansion, and differentiation

Features

- Consistency: Defined media composition minimizes lot-to-lot variation
- Performance: Verified high biological activity of components assures superior growth
- Traceability: Animal component-free ensures global regulatory compliance
- Availability: Stable supply

Ordering Information

Product Description	Expression System	Size	Catalog No.
Human Embryonic Stem Cells/iPS Cells	PluriSTEM™ Human ES/iPS Medium	500 mL	SCM130
	PluriSTEM™-XF Human ES/iPS Medium	500 mL	SCM132
Mouse Embryonic Stem Cells	ESGRO™ Complete PLUS Clonal Grade Medium	100 mL	SF-001-100P
		500 mL	SF-001-500P
	ESGRO™-2i Medium	100 mL	SF-016-100
		200 mL	SF-016-200
Neural Stem Cells	Stemline® Neural Stem Cell Expansion Medium	500 mL	S3194-500ML
	ReNcell™ NSC Maintenance Media	500 mL	SCM005
Mesenchymal Stem Cells	PLTMax® Human Platelet Lysate	100 mL	SCM141
		500 mL	SCM142
	PLTGold® Human Platelet Lysate (Heparin-Free)	100 mL	SCM151
		500 mL	SCM152
	Mesenchymal Stem Cell Growth Medium DXF	500 mL	C-28019
Hematopoietic Stem Cells	Stemline® II Hematopoietic Stem Cell Expansion Medium	500 mL	S0192-500ML
		6 x 500 mL	S0192-6X500ML
	Hematopoietic Progenitor Expansion Medium DXF	500 mL	C-28021
	Cytokine Mix E for HPC-Expansion Medium DXF	100 mL	C-39890
		500 mL	C-39891
Macrophage Cells	Macrophage Base Medium DXF	250 mL	C-28057
Dendritic Cells	Dendritic Cell Generation Medium DXF	250 mL	C-28052
	Dendritic Cell Base Medium DXF	250 mL	C-28054
Cancer Stem Cells	3dGRO™ Spheroid Media	250 mL	S3077
Fibroblast Feeder Layers	FibroGRO Xeno-Free Human Fibroblast Expansion Medium	500 mL	SCM044
Primary Cancer Cells	Primary Cancer Culture System	250 mL	C-28081
	3D Tumorsphere Medium XF	250 mL	C-28070
	3D Tumorsphere Medium XF, no phenol red	250 mL	C-28075

Cell Freezing Media

When culturing cells in a serum-free environment, it is essential to also maintain serum-free conditions during cryopreservation. Animal component-free cell cryopreservation media can be used for long term storage of primary cells, stem cells, and various cell lines.

Applications

- Cryopreservation of cells

Features

- Can be used for both cells cultured in serum-supplemented growth medium as well as cells grown under serum-free conditions
- Preservation of a wide variety of cell types including primary cells, stem cells, and various cell lines
- High viability, attachment, and physiological activity post-thawing

Ordering Information

Product Description	Size	Catalog No.
CryoSOfree™ DMSO-free Cryopreservation Medium	100 mL	C9249
Freezing Medium Cryo-SFM	30 mL	C-29910
	125 mL	C-29912

Scaffolds

MAPTrix™ ECM Mimetic Reagents

MAPTrix™ mussel adhesive protein-based products are coating reagents with genetically incorporated bioactive peptides (recognition peptides) which mimic the extracellular matrix (ECM) activity of collagen, cadherin, fibronectin, laminin, tenascin-c, and vitronectin proteins. These coating reagents provide a simple, convenient, and highly reproducible method for engineering tailored ECM surfaces that bind to adhesion receptors such as integrins and promote cell adhesion and spreading.

Applications

- Animal component-free extracellular matrix mimetics for cell culture
- Facilitates cell attachment and growth

Features

- Biochemically defined, animal component-free cell culture surfaces designed to enhance cell performance
- Produces a uniform ECM surface that provides a highly controlled 2D extracellular microenvironment for cell cultures and related applications
- Superior adhesion properties of the mussel adhesive protein enable reproducible and reliable coating
- Compatible with standard coating protocols
- Multiple peptide motifs available

Ordering Information

Product Description	ECM	Catalog No.
MAPTRIX™-E-ADTPPV Cadherin Mimetic, aqueous solution	Cadherin	167032K-2.5MG
MAPTRIX™-C-GFPGER Collagen Mimetic, aqueous solution	Collagen	165042K-2.5MG
MAPTRIX™-C-DGEA Collagen Mimetic, aqueous solution	Collagen	165062K-2.5MG
MAPTRIX™-F-REDV Fibronectin Mimetic, aqueous solution	Fibronectin	161242K-2.5MG
MAPTRIX™-F-RGD Fibronectin Mimetic, aqueous solution	Fibronectin	161052K-2.5MG
MAPTRIX™-L-IKVAV Laminin Mimetic, aqueous solution	Laminin	162242K-2.5MG
MAPTRIX™-L-KAFDITYVRLKF Laminin Mimetic, aqueous solution	Laminin	164422K-2.5MG
MAPTRIX™-L-YIGSR Laminin Mimetic, aqueous solution	Laminin	164142K-2.5MG
MAPTRIX™-M-VAEIDGIEL Tenascin-C Mimetic, aqueous solution	Tenascin-C	168312K-2.5MG
MAPTRIX™-V-FRHRNRKGY Vitronectin Mimetic, aqueous solution	Vitronectin	168012K-2.5MG
MAPTRIX™-V-KKQRFRHRNRKGY Vitronectin Mimetic, aqueous solution	Vitronectin	168024K-10MG

TrueGel3D® Hydrogel for 3D Cell Culture

TrueGel3D® is a biochemically-defined hydrogel formed by mixing polymers with crosslinkers. Compared to other hydrogels based on biological extracts from animal cells (e.g., mouse EHS tumor cells), TrueGel3D® does not contain any products of animal origin that could interfere with or contaminate experiments.

Applications

- 3D cell culture

Features

- Does not contain any products of animal origin that could interfere with or contaminate experiments
- Compatible with a multitude of cell types
- Transparent gels enable cell imaging
- Non-toxic cell recovery option
- Multiple kits available with different gel speeds, supporting a variety of applications
- High throughput hydrogel plates are ready-to-use, feature fully synthetic hydrogels and are automation-compatible

Ordering Information

Product Description	Size	Catalog No.
TrueGel3D® Buffer pH 5.5, 10X concentrate	600 µL	TRUEA-1VL
TrueGel3D® Buffer pH 7.2, 10X concentrate	600 µL	TRUEB-1VL
TrueGel3D® Crosslinker CD cell-degradable crosslinker	200 µL	TRUECD-200UL
	600 µL	TRUECD-600UL
TrueGel3D® Crosslinker PEG non cell-degradable crosslinker	200 µL	TRUEPEG-200UL
	600 µL	TRUEPEG-600UL
TrueGel3D® Enzymatic Cell Recovery Solution	500 µL	TRUEENZ-500UL
TrueGel3D® Hydrogel Kits CD cell-degradable crosslinker and RGD peptide	1 kit	TRUE1-1KT
TrueGel3D® Hydrogel Kits SLO-DEXTRAN, allows cell recovery, CD cell-degradable crosslinker	1 kit	TRUE7-1KT
TrueGel3D® Hydrogel Kits SLO-DEXTRAN, allows cell recovery, PEG non cell-degradable crosslinker	1 kit	TRUE6-1KT
TrueGel3D® Hydrogel Kits FAST-DEXTRAN, allows cell recovery, PEG non cell-degradable crosslinker	1 kit	TRUE2-1KT
TrueGel3D® Hydrogel Kits FAST-DEXTRAN, allows cell recovery, CD cell-degradable crosslinker	1 kit	TRUE3-1KT
TrueGel3D® Hydrogel Kits FAST-PVA, PEG non cell-degradable crosslinker	1 kit	TRUE5-1KT
TrueGel3D® Hydrogel Kits SLO-PVA, PEG non cell-degradable crosslinker	1 kit	TRUE9-1KT
TrueGel3D® Hydrogel Kits FAST-PVA, CD cell-degradable crosslinker	1 kit	TRUE4-1KT
TrueGel3D® Hydrogel Kits SLO-PVA, CD cell-degradable crosslinker	1 kit	TRUE8-1KT
TrueGel3D® Polymer modified for fast gelling (FAST-DEXTRAN), allows cell recovery	170 µL	TRUEDEXF-170UL
TrueGel3D® Polymer modified for slow gelling (SLO-DEXTRAN), allows cell recovery	170 µL	TRUEDEXS-170UL
TrueGel3D® Polymer modified for fast gelling (FAST-PVA)	170 µL	TRUEPVAF-170UL
TrueGel3D® Polymer modified for slow gelling (SLO-PVA)	170 µL	TRUEPVAS-170UL
TrueGel3D® RGD Integrin Adhesion Peptide		TRUERGD
TrueGel3D® Scramble RGD Integrin Adhesion Peptide		TRUESRGD
TrueGel3D® Thioglycerol Solution	180 µL	TRUETHIO-180UL
TrueGel3D® HTS Hydrogel Plates	1 plate	TRUE-HTS1
TrueGel3D® HTS Hydrogel Plates	10 plates	TRUE-HTS10

HyStem® Cell Culture Scaffold Kit for 3D Cell Culture

Customizable and free of animal components, Hystem® hydrogel cell culture scaffolds provide a complex, three-dimensional environment in which cells can proliferate much as they would *in vivo*. With Hystem® cell culture scaffold kits, researchers can tailor the incorporation of ECM proteins, cell attachment factors, and growth factors as well as the elasticity of the hydrogel and cell incorporation to create the specific 3D environment required by their cells.

Applications

- 3D cell culture
- Proven expansion of human embryonic stem cells (H9s), umbilical cord blood CD23+ stem cells, hepatic stem cells, hepatic progenitor cells, and others

Features

- Animal component-free: synthetic hyaluronic acid-based matrix offers complete control of the cellular environment
- Customizable: flexibility to tailor the environments of cultured cells to mimic their *in vivo* counterparts and optimize proliferation and differentiation
- Biologically accurate: rich in hyaluronic acid to closely mimic the complex 3D cellular environments found *in vivo*, providing an optimal environment for culturing your cells

Ordering Information

Product Description	Catalog No.
HyStem® Cell Culture Scaffold Kit	HYS020

Note: Products manufactured by Sigma-Aldrich® and classified as Animal Component-Free (ACF) will not contain or use in the manufacturing process, any primary raw materials derived directly from bovine or other animal tissues. All manufacturing and packaging follow ACF protocols and use equipment that is either unexposed to animal materials or decontaminated. This product is for further research or manufacturing use only. It is not intended for direct use in humans or animals.

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