Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70 **Казахстан** +7(7172)727-132 **Киргизия** +996(312)96-26-47

www.sigmaaldrich.nt-rt.ru | | scx@nt-rt.ru

Технические характеристики на материалы для подготовки проб белка, белки, ферменты и малые молекулы компании Sigma-Aldrich

Виды товаров: реагенты и усилители для лизиса цельных клеток, коктейли с ингибиторами протеазы и фосфатазы, реагенты для субклеточного фракционирования, наборы для изоляции органелл, наборы для экстракции и истощения, смолы и буферы для аффинной очистки для очистки белков, хроматографические колонки и среды, материалы для очистки биотинилированного белка, лабораторные устройства для диализа и диафильтрации дназа i, дезоксирибонуклеаза, нуклеазы, ферментные системы, субстраты и ферменты для обнаружения, протеазы, протеазные реагенты гликозидазы, гликозидазы и гликобиологические реагенты, ферменты β-глюкуронидаза и сульфатаза для анализа лекарств, ферменты для анализа наркотиков, ферменты для анализа лекарств, коэнзимы, альбумины и транспортные белки.

Whole Cell Lysis Reagents & Enhancers

Isolation and purification of proteins requires disruption of cells or tissue samples and extraction of the relevant protein fraction. This step is critical as processing methods can affect the target protein's integrity and activity, or otherwise expose it to degradative conditions. A variety of reagents and enzymes for cell lysis and protein extraction provide an array of options tailored for specific cell types and application needs.

RIPA buffer

BugBuster® protein extraction reagents

CelLytic™ lysis reagents

PopCulture® reagents

Enhancers: Extraction enzymes and other reagents

E1014
Benzonase® Nuclease
≥250 units/µL, ≥90% (SDS-PAGE), recombinant, expressed in E. coli, buffered aqueous glycerol solution

L6876
Lysozyme from chicken egg white
lyophilized powder, protein ≥90 %, ≥40,000 units/mg protein

E8263
Benzonase® Nuclease, ultrapure
≥250 units/µL, ≥99% (SDS-PAGE), recombinant, expressed in E. coli, buffered aqueous glycerol solution, ultrapure grade

M9901

Mutanolysin from Streptomyces globisporus ATCC 21553
lyophilized powder, ≥4000 units/mg protein (biuret), Chromatographically purified

L2524
Lyticase from Arthrobacter luteus
lyophilized powder, ≥2,000 units/mg protein, Protein ≥20 % by biuret

62971
Lysozyme from chicken egg white
powder (crystalline), ~70000 U/mg

L4919
Lysozyme from chicken egg white
BioUltra, lyophilized powder, ≥98% (SDS-PAGE), ≥40,000 units/mg protein

L4025
Lyticase from Arthrobacter luteus
lyophilized powder, ≥200 units/mg solid

SAE0152
Lysozyme from chicken egg white
free of DNA contaminants, suitable for Microbiome research, lyophilized powder, protein ≥90%, ≥40,000 units/mg protein

71456
BugBuster® Master Mix

L3790
Lysozyme from chicken egg white
10 mg/mL

L1667
Lysozyme human
recombinant, expressed in rice, ≥100,000 units/mg protein, lyophilized powder

SAE0091
Lysostaphin from Staphylococcus staphylolyticus
free of DNA contaminants, suitable for Microbiome research, lyophilized powder, ≥500 units/mg protein

MAC4L
MetaPolyzyme

lyophilized powder

62970
Lysozyme from chicken egg white
dialyzed, lyophilized, powder, ~100000 U/mg

L2879
Lysozyme chloride form from chicken egg white
Grade VI, ≥35,000 units/mg protein (E1%/282)

CELLYTPN1
CelLytic™ PN Isolation/Extraction Kit
For plant leaves

SAE0092
Mutanolysin from Streptomyces globisporus ATCC 21553
free of DNA contaminants, suitable for Microbiome research, lyophilized powder, ≥4000 units/mg protein (biuret)

SAE0098
Lyticase from Arthrobacter luteus
free of DNA contaminants, suitable for Microbiome research, ≥2000 units/mg protein, lyophilized powder

L4631
Lysozyme from chicken egg white
For use as a marker in SDS-PAGE

M4782
Mutanolysin from Streptomyces globisporus ATCC 21553
0.2 µm filtered, lyophilized powder, ≥4000 units/mg protein (biuret)

CB0050
CelLytic™ B Plus Kit
For bacterial lysis

L7773
Lysozyme from chicken egg white
aseptically filled

04963
Lyticase from Bacillus subtilis
≥500 U/mL

L8402
Lysozyme from human neutrophils
≥95% (SDS-PAGE), lyophilized powder, ≥100,000 units/mg protein (E1%/280)

71194-M
0.5 M THP Solution
Reducing agent compatible with His•Bind chromatography

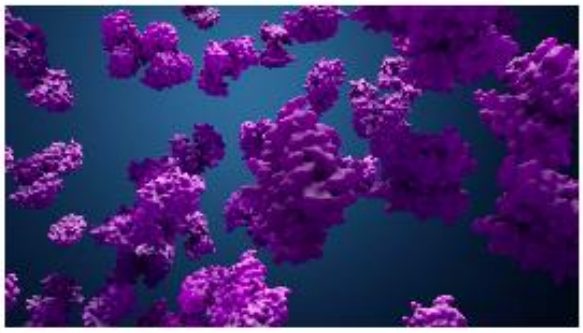
CB0500
CelLytic™ B Plus Kit
For bacterial lysis

SRE0007
Mutanolysin from Streptomyces globisporus ATCC 21553
Suitable for manufacturing of diagnostic kits and reagents, ≥4000 units/mg protein (biuret)

M3440
Mutanolysin Assay Substrate
(Lyophilized suspension of washed Enterococcus faecalis STF-3 (ATCC 12984) cell walls.)

MBD0064
ExoPolyzyme
For enzymatic lysis of extracellular biofilm matrix

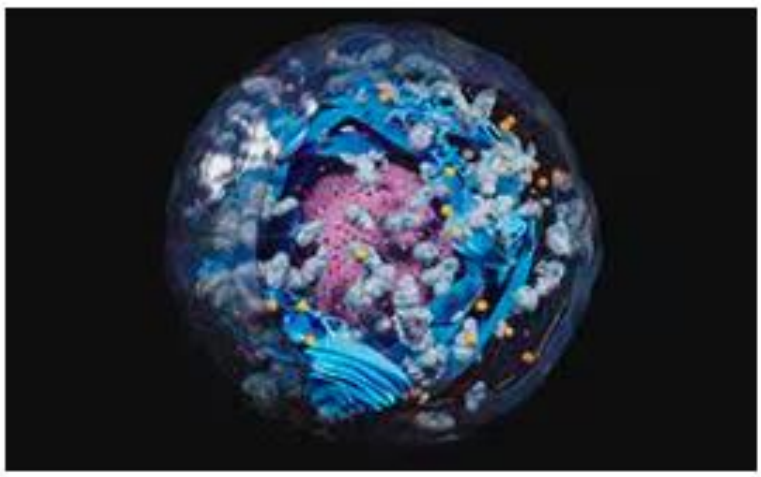
Phosphatase and Protease Inhibitor Cocktails



Phosphatase and protease inhibitor cocktails are used to prevent proteolysis and dephosphorylation of proteins during extraction, sample preparation, and analysis. A variety of phosphatase and protease inhibitor cocktails as well as individual inhibitors are available to prevent sample degradation and preserve the native state of proteins during sample preparation. Our inhibitor cocktails are designed and optimized for specific tissues including mammalian, plant, bacterial, and yeast.

539131
Protease Inhibitor Cocktail Set I
A cocktail of five protease inhibitors that will inhibit a broad range of proteases and esterases. Supplied with a data sheet

Subcellular Fractionation, Enrichment, and Depletion Reagents



Subcellular fractionation and protein enrichment enable the identification and study of proteins in proteomics research. A wide selection of kits for processing samples from cells, tissues, bacteria, plants, and other sample types is available for subcellular fractionation, protein extraction, depletion, and enrichment.

- **Organelle Isolation Kits**
- **ProteoExtract® Kits**
- **ProteoPrep® Extraction and Depletion Kits**

ORGANELLE ISOLATION KITS

The biogenesis and maintenance of intracellular organelles is fundamental in cell biology. Establishing and maintaining order requires mechanisms to synthesize and localize proteins to specific organelles and monitor and regulate individual organelles. Targeted proteomics profiling can be partnered with protein pathway function by enriching for organelles and analyzing their contents. These kits and reagents enable researchers to enrich for functional mitochondria, chloroplasts and more with companion kits to determine organelle integrity.

- Specially formulated extraction reagents and proven procedures suitable for small- or large-scale isolation
- Isolate intact, functionally active organelles for protein extraction, in vitro assays, and other studies

PROTEOEXTRACT® KITS

The ProteoExtract® kits cover the different steps in proteomics sample preparation from protein extraction and abundant protein removal to concentration of protein mixtures, removal of interfering substances, digestion of proteins, selective capturing of phosphorylated peptides, and selective enrichment for specific protein classes. All kits are cross-compatible.

- Efficient and reproducible protein extraction
- Protease inhibitor cocktails improve results in downstream analyses
- Better spot resolution facilitated by nucleic acid digestion with protease-free Benzonase® nuclease
- Designed for compatibility with many applications including activity assays, Western blots, 1D and 2D PAGE, and mass spectrometry
- Optimized protocols for different biological samples

PROTEOPREP® EXTRACTION AND DEPLETION KITS

ProteoPrep® kits and individual extraction reagents allow for selective or total protein extracts from cellular samples. The protein extractions obtained with each component can be optimized to meet your individual needs. The reducing and alkylating reagents produce protein samples that exhibit improved focusing and decreased streaking in 2D gels. Each kit reagent is also available as an individual product for researchers who have optimized an extraction protocol using one chaotropic extraction reagent.

Innovative detergent preparations

Premixed solubilization solutions

MITOISO2
Mitochondria Isolation Kit
sufficient for 50 applications (2-5 x 10^7 cells), isolation of enriched mitochondrial fraction from cells

☐

ER0100

Endoplasmic Reticulum Isolation Kit

isolation of intact ER from mammalian soft tissues and cultured cells

☐

MITOISO1

Mitochondria Isolation Kit

sufficient for 10-20 g (animal tissue), sufficient for 50 assays (2 mL), isolation of enriched mitochondrial fraction from animal tissues

☐

CPISO

Chloroplast Isolation Kit

isolation of intact chloroplasts from leaves

☐

PEROX1

Peroxisome Isolation Kit

isolate peroxisomes from tissues and cells

☐

MCL1

Mammalian Cell Lysis Kit

☐

GL0010

Golgi Isolation Kit

sufficient for 50 g (tissue)

☐

PROTTWO

ProteoPrep® Universal Extraction Kit

Recombinant/Fusion Tag Protein Purification

Recombinant protein purification by tag-specific affinity chromatography is a proven technology that results in highly specific recognition and purification of recombinant proteins. The expression, purification, and detection of recombinant proteins can be a lengthy and time-consuming endeavor. Depending on the protein of interest and expression system, protein tags may be added to improve the outcome of common steps including protein solubility during expression, purification by affinity chromatography, or immunodetection following isolation and purification. We offer affinity columns and resins for multiple fusion tags in numerous formats, including magnetic beads, packed columns, and agarose resin slurries, ensuring we have products for all various scales and applications.

- **Cytiva™ Amersham Chromatography Columns and Media**
- **Agarose Beads and Affinity Gels**
- **Superflow Agarose and High-flow Affinity Gels**
- **Magnetic Beads**
- **BugBuster® Purification Kits**

CYTIVA™ AMERSHAM CHROMATOGRAPHY COLUMNS AND MEDIA

A wide range of Cytiva™ Amersham chromatography media is available to purify proteins using either manual or automated methods. Prepacked formats include gravity columns, spin columns, 96-well plates, and prepacked columns for use with automated chromatography systems.

- **His-tagged proteins**: Fast and convenient histidine-tagged recombinant protein purification using immobilized metal ion affinity chromatography (IMAC). Ni Sepharose media are precharged with nickel ions (Ni2+); TALON® Superflow™ medium is precharged with cobalt ions (Co2+).
- **GST-tagged proteins**: Glutathione Sepharose chromatography media are available in lab packs, prepacked GSTrap and GSPrep columns, and 96-well plates. GST Purification Modules are offered for purification of bacterial lysates. GST SpinTrap modules includes prepacked Glutathione Sepharose 4B SpinTrap columns as well as the buffers needed for purification. RediPack GST Purification Modules include gravity flow columns and buffer.
- **Strep-tag™ II-tagged proteins**: Strep-tag II binds specifically to StrepTactin™ Sepharose High Performance resin, which has StrepTactin ligand immobilized on a Sepharose base matrix to yield pure target protein.
- **MBP-tagged proteins**: Dextrin Sepharose High Performance chromatography medium purifies recombinant proteins tagged with maltose binding protein (MBP).

AGAROSE BEADS AND AFFINITY GELS

Agarose beads and affinity gels enable fusion-tagged protein purification using ligands cross-linked to beaded agarose. Good for small to large scale purification under native, denaturing, or mildly reducing conditions, these resins are suitable for gravity flow column purification, low-speed centrifugation in batch processing, and low-pressure chromatography procedures as the beads and gels are designed for lower pressures. EZview™ affinity gels incorporate a red dye that allows the user to easily differentiate pellet from supernatant, resulting in less protein loss during batch purification. Immunoprecipitation kits include affinity gels, mini-spin columns, and lysis reagent and are specially designed to allow maximal recovery of proteins from immunoprecipitates.

SUPERFLOW AGAROSE AND HIGH-FLOW AFFINITY GELS

Superflow agarose and High-flow affinity gels use highly crosslinked agarose beads that can withstand higher pressures compared to standard agarose bead resins. This makes these resins suitable for fast protein liquid chromatography (FPLC) purification methods. Superflow agarose and high-flow affinity gels are recommended for medium to large scale purification.

MAGNETIC BEADS

Magnetic beads are used to purify recombinant fusion tagged protein using a magnetic rack or platform to separate beads from wash and elution fractions. This procedure allows for rapid processing under native or denaturing conditions within seconds, and is suitable for low throughput using single microfuge tubes or higher throughput using 96-well plates and automation.

BUGBUSTER® PURIFICATION KITS

BugBuster® purification kits combine affinity resin, wash buffers, elution buffers, and extraction reagent for convenient preparation of soluble cell extracts and affinity purification of tagged fusion proteins from E. coli.

F4799
3X FLAG® Peptide
lyophilized powder

D1411
d-Desthiobiotin
≥98% (TLC)

SAE0197
Anti-HA Magnetic Beads
Magnetic agarose, suspension

SAE0201
Anti-C-Myc Magnetic Beads
Magnetic agarose, suspension

I4510
Iminodiacetic acid Sepharose™
aqueous ethanol suspension

E2513
ExtrAvidin®-Agarose, high binding
For purification of biotinylated macromolecules and complexes

Biotinylated Protein Purification

Biotinylated proteins and biotinylated antibodies are commonly used in basic research and drug discovery. Various affinity chromatography resins and prepacked columns and plates are available to bind, isolate, and purify biotinylated proteins and antibodies.

S6940
SigmaScreen™ Streptavidin High Capacity Coated Plates
96 well clear

A9207
Avidin−Agarose from egg white
aqueous glycerol suspension

B0519
Biotin−Agarose
PBS suspension

E2642
ExtrAvidin® magnetic beads
For purification of biotinylated macromolecules and complexes

Laboratory Dialysis & Diafiltration Devices

Each protein preparation is unique. Give your prep the special treatment it deserves with a perfectly engineered device for dialysis or diafiltration. Our tools were designed to gently process samples while preventing precipitation or over-concentration. Find the ideal product from our selection of dialyzers and diafiltration devices that quickly and efficiently desalt, buffer exchange, and remove contaminants and impurities from protein and other biomolecular samples.

Dialyzers rely on passive diffusion for buffer exchange and desalting through placement of the dialyzer in a bath or reservoir filled with exchange buffer. Diafiltration is a technique that uses ultrafiltration for buffer exchange, eliminating salts and microsolutes in a process called "washing out".

In both processes, separation is achieved by selective diffusion across a porous, semi-permeable membrane that allows permeation of small molecules including solvents, salts, and small metabolites while blocking the passage of larger molecules, such as proteins.

- **Dialyzers** are recommended for small to medium scale dialysis (10 µL - 15 mL sample volumes).
- **Centrifugal ultrafiltration devices** use centrifugal pressure to gently drive solutes through the membrane for diafiltration of biological samples ranging from 0.5 mL - 15 mL.
- For larger samples volumes, **stirred cells** can be used for continuous diafiltration of biological and environmental samples up to 400 mL, with an optional external 800 mL reservoir for ed capacity.

DIALYZERS

Gently and easily dialyze protein or nucleic acid samples using D-Tube™ dialyzers. These devices feature dialysis membrane windows in a capped centrifuge tube format, enabling

efficient buffer exchange to remove urea, detergents, salt, and other microsolutes. Designed with a double membrane, D-Tube™ dialyzers spread the sample over a large area so that dialysis is complete in 2-5 hours.

- Easy-to-handle dialyzers for buffer exchange and removal of urea and detergents
- Offered in several sizes including Mini (10-250 µL), Midi (50-800 µL), Maxi (100 µL - 3 mL), and Mega (10, 15, or 20 mL)
- Leak-resistant design — no clamps or knots required
- No syringe required to load or withdraw samples. Simply load your sample with standard pipette tip.
- Screw cap for easy opening and closing
- High sample volume recovery (>90%)

AMICON® CENTRIFUGAL ULTRAFILTRATION DEVICES

Amicon® Ultra centrifugal filters enable rapid desalting, buffer exchange, and diafiltration of 0.5 mL -15 mL sample volumes with high sample recovery. Amicon® Ultra centrifugal devices use Ultracel® regenerated cellulose (RC) membranes for gentle ultrafiltration and are offered with nominal molecular weight limits (NMWLs) of 3 kDa, 10 kDa, 30 kDa, 50 kDa, and 100 kDa.

- Small- and mid-volume ultrafiltration for 0.1 mL - 15 mL sample volumes
- Low binding membrane and polypropylene housing for >90% sample recovery
- Ultra-fast sample processing in as little as 10 minutes
- Compatible with a variety of organic solvents and aqueous solutions, pH 1 to 9

STIRRED CELLS

Stirred cells use pressurized ultrafiltration (pUF) at high flow rates to process large sample volumes for rapid diafiltration and buffer exchange. Gas pressure is applied directly to the cell for filtration.

Amicon® Stirred Cells:

- Offered in three different sizes to handle volumes from 50 mL to 400 mL, with an optional external 800 mL reservoir for ed capacity
- Gentle sample processing using magnetic stirring to minimize polarization and shear denaturation
- High flow rates for rapid diafiltration
- Reusable and autoclavable for sterility

Solvent-resistant stirred cells:

- Designed for applications requiring compatibility with solvents
- Borosilicate glass cylinder and PTFE components for broad compatibility
- Autoclavable with membrane in-place
- Top plate opening provides access to contents without dismantling
- Few components for easier cleaning and assembly

DISC MEMBRANES FOR STIRRED CELLS

Disc membranes are designed for use with stirred cells for buffer exchange, desalting, and diafiltration. Ultrafiltration disc membranes are available in Ultracel® regenerated cellulose

and Biomax® polyethersulvone (PES). These membranes are available in a range of different pore sizes and diameters.

- Ultracel® regenerated cellulose ultrafiltration membranes are recommended for concentrating or desalting dilute solutions. The hydrophilic, tight microstructure of Ultracel® membranes assures the highest possible retention with the lowest possible adsorption of protein, DNA or other macromolecules.
- Biomax® PES ultrafiltration membranes are recommended for concentrating or desalting higher volumes of more concentrated samples such as serum, plasma, or conditioned tissue culture media.

UFSC200SL
Amicon® Stirred Cell 200mL Seal Kit (3 each of o-ring and gasket)
This Amicon stirred cell model provides high flow rates with solutions up to 10% macrosolute concentration. Capable of rapid concentration, or salt removal followed by concentration in the same unit.

UFSC400SL
Amicon® Stirred Cell 400mL Seal Kit (3 each of o-ring and gasket)
This Amicon stirred cell model provides high flow rates with solutions up to 10% macrosolute concentration. Capable of rapid concentration, or salt removal followed by concentration in the same unit.

UFSC050SL
Amicon® Stirred Cell 50mL Seal Kit (3 each o-ring and gasket)
This Amicon stirred cell model provides high flow rates with solutions up to 10% macrosolute concentration. Capable of rapid concentration, or salt removal followed by concentration in the same unit.

UFC50VL96
Amicon Ultra 0.5ml Vials
Vial for protein concentration & desalting, pkg of 96

PBHK15005
Biomax® UF Membrane
Ultrafiltration, high flux,low protein binding, chemical compatibility

71511
D-Tube Electroelution Accessory Kit

BAF182370000
Dialysis bag holder clip for beakers
pack of 6 ea

D9777
Dialysis tubing cellulose membrane

avg. flat width 25 mm (1.0 in.)

D9652
Dialysis tubing cellulose membrane
avg. flat width 33 mm (1.3 in.)

D9277
Dialysis tubing cellulose membrane
avg. flat width 10 mm (0.4 in.)

D9402
Dialysis tubing cellulose membrane
avg. flat width 76 mm (3.0 in.)

D9527
Dialysis tubing cellulose membrane
avg. flat width 43 mm (1.7 in.)

Z371092
Dialysis tubing closures
blue, size 50 mm

Z371084
Dialysis tubing closures
yellow, size 150 mm

Z371157
Dialysis tubing closures
black, size 50 mm

Z370975
Dialysis tubing closures
white, size 110 mm

Z371106
Dialysis tubing closures
blue, size 70 mm

Z371076
Dialysis tubing closures
yellow, size 110 mm

Z371068
Dialysis tubing closures
yellow, size 70 mm

Z371017
Dialysis tubing closures
red, size 110 mm

Z370967
Dialysis tubing closures
white, size 70 mm

Z371130
Dialysis tubing closures
green, size 50 mm

Z371149
Dialysis tubing closures
green, size 70 mm

Z370991
Dialysis tubing closures
red, size 50 mm

Z371009
Dialysis tubing closures
red, size 70 mm

Z370959
Dialysis tubing closures
white, size 50 mm

Z371165
Dialysis tubing closures
black, size 70 mm

Z371025
Dialysis tubing closures
red, size 150 mm

Z371041
Dialysis tubing closures
yellow, size 50 mm

D7884
Dialysis tubing, benzoylated
Avg. flat width 32 mm (1.27 in.)

D0405
Dialysis tubing, high retention seamless cellulose tubing
avg. flat width 23 mm (0.9 in.), MWCO 14000, 99.99% retention

D0530
Dialysis tubing, high retention seamless cellulose tubing
avg. flat width 32 mm (1.3 in.), MWCO 12400, 99.99% retention

Z756814
Equilibrium type dialysis cell
capacity 1 mL, pack of 1 ea

Z756822
Equilibrium type dialysis cell
capacity 5 mL, pack of 1 ea

BAF148480000
Fillpour® Dialysis Tube Funnels
5, 9 and 13.5 mm Diameter Steps, 10 pak of

BAF148480001
Fillpour® Dialysis Tube Funnels
13.5, 19 and 28 mm Diameter Steps, 10 pak of

71514-M
Floating Rack, Maxi

71748-M
Floating Rack, Mega

71513-M
Floating Rack, Midi

71512-M
Floating Rack, Mini

PBGC07610
PES Membrane Filter, 10 kDa NMWCO
Biomax®, filter diam. 76 mm

PBGC04710
PES Membrane Filter, 10 kDa NMWCO
Biomax®, filter diam. 47 mm

PBGC02510
PES Membrane Filter, 10 kDa NMWCO
Biomax®, filter diam. 25 mm

PBGC04310
PES Membrane Filter, 10 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBGC06210
PES Membrane Filter, 10 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBHK04710
PES Membrane Filter, 100 kDa NMWCO
Biomax®, filter diam. 47 mm

PBHK04310
PES Membrane Filter, 100 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBHK06210
PES Membrane Filter, 100 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBHK02510
PES Membrane Filter, 100 kDa NMWCO
Biomax®, filter diam. 25 mm

PBHK07610
PES Membrane Filter, 100 kDa NMWCO
Biomax®, filter diam. 76 mm

PBTK04710

PES Membrane Filter, 30 kDa NMWCO
Biomax®, filter diam. 47 mm

PBTK04310
PES Membrane Filter, 30 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBTK06210
PES Membrane Filter, 30 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBTK02510
PES Membrane Filter, 30 kDa NMWCO
Biomax®, filter diam. 25 mm

PBTK07610
PES Membrane Filter, 30 kDa NMWCO
Biomax®, filter diam. 76 mm

PBMK09005
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 90 mm

PBMK04310
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBMK15005
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 150 mm

PBMK06210
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBMK07610
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 76 mm

PBMK02510
PES Membrane Filter, 300 kDa NMWCO
Biomax®, filter diam. 25 mm

PBMK04710
PES Membrane Filter, 300 kDa NMWCO

Biomax®, filter diam. 47 mm

PBCC06210
PES Membrane Filter, 5 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBCC02510
PES Membrane Filter, 5 kDa NMWCO
Biomax®, filter diam. 25 mm

PBCC04710
PES Membrane Filter, 5 kDa NMWCO
Biomax®, filter diam. 47 mm

PBCC07610
PES Membrane Filter, 5 kDa NMWCO
Biomax®, filter diam. 76 mm

PBCC04310
PES Membrane Filter, 5 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBQK02510
PES Membrane Filter, 50 kDa NMWCO
Biomax®, filter diam. 25 mm

PBQK07610
PES Membrane Filter, 50 kDa NMWCO
Biomax®, filter diam. 76 mm

PBQK04710
PES Membrane Filter, 50 kDa NMWCO
Biomax®, filter diam. 47 mm

PBQK04310
PES Membrane Filter, 50 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBQK06210
PES Membrane Filter, 50 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBVK04710
PES Membrane Filter, 500 kDa NMWCO
Biomax®, filter diam. 47 mm

PBVK02510
PES Membrane Filter, 500 kDa NMWCO
Biomax®, filter diam. 25 mm

PBVK06210
PES Membrane Filter, 500 kDa NMWCO
Biomax®, filter diam. 63.5 mm

PBVK04310
PES Membrane Filter, 500 kDa NMWCO
Biomax®, filter diam. 44.5 mm

PBVK07610
PES Membrane Filter, 500 kDa NMWCO
Biomax®, filter diam. 76 mm

PLAC15005
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLAC04310
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLAC02510
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLAC15005
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLAC04710
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 47 mm

PLAC09005
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLAC06210
Regenerated Cellulose Membrane Filter, 1 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLGC15005

Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLGC04710
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 47 mm

PLGC04310
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLGC02510
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLGC09005
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLGC07610
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 76 mm

PLGC06210
Regenerated Cellulose Membrane Filter, 10 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLHK07610
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 76 mm

PLHK06210
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLHK04710
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 47 mm

PLHK15005
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLHK02510
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLHK04310
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLHK09005
Regenerated Cellulose Membrane Filter, 100 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLBC04710
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 47 mm

PLBC09005
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLBC07610
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 76 mm

PLBC04310
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLBC02510
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLBC06210
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLBC15005
Regenerated Cellulose Membrane Filter, 3 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLTK15005
Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLTK02510
Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLTK06210

Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLTK04710
Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 47 mm

PLTK04310
Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLTK09005
Regenerated Cellulose Membrane Filter, 30 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLCC06210
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 63.5 mm

PLCC15005
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 150 mm

PLCC07610
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 76 mm

PLCC04710
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 47 mm

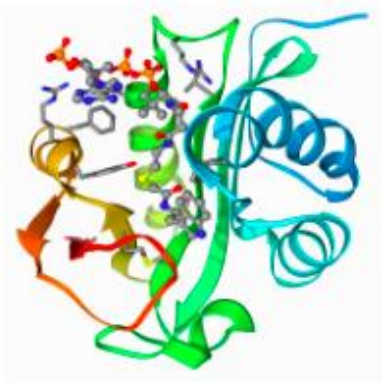
PLCC04310
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 44.5 mm

PLCC02510
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 25 mm

PLCC09005
Regenerated Cellulose Membrane Filter, 5 kDa NMWCO
Ultracel®, filter diam. 90 mm

PLTK07610
Ultrafiltration Discs, 30 kDa NMW
Ultracel®, filter diam. 76 mm

Coenzymes



Most biochemical reactions in the body are regulated by enzymes. **Coenzymes** are organic compounds that facilitate the action of enzymes and can bind temporarily or permanently to an enzyme. Coenzymes can catalyze reactions, but not as effectively as when in conjunction with an enzyme.

Coenzymes, which are tightly bound or covalently attached to enzymes, are often referred to as prosthetic groups. Coenzymes, which are more loosely associated with enzymes, can be described as co-substrates. They can serve various functions, including:

- Assist in intracellular energy-coupling reactions.
- Act as carriers of hydrogen atoms, electrons, or chemical groups (e.g. NADH acts as an electron carrier).
- Facilitate reactions by associating with enzyme substrates at enzyme active sites.

Coenzymes can be vitamin-derived, such as from B-vitamins and vitamin C. For example, coenzyme A (CoA), an acyl group carrier that is key to metabolism, derives from pantothenic acid. Vitamin C itself is a cofactor for hydroxylases. With the exception of vitamin C, vitamins must be modified in order to serve as coenzymes. Metabolite coenzymes, such as adenosine triphosphate (ATP), are made from nucleotides.

Our high-quality coenzymes accommodate the rigorous demands of your nutrition/food science applications, metabolism research, microbiome research, and disease research. For more specific requirements, we support you with the convenience of customized products and packaging.

R7649
(−)-Riboflavin
meets USP testing specifications

M4758
(±)-6-Methyl-5,6,7,8-tetrahydropterine dihydrochloride
~95% (TLC)

90669
(±)-α-Tocopherol
tested according to Ph. Eur.

54920

(R)-3-Hydroxybutyric acid
≥98.0% (T)

C6146
2-Butenoyl coenzyme A lithium salt
≥90% (HPLC)

D9150
2,3-Dimethoxy-5-methyl-p-benzoquinone
apoptosis inducer

D3385
3′-Dephosphocoenzyme A
≥90% (HPLC)

A1625
Acetoacetyl coenzyme A sodium salt hydrate
cofactor for acyl transfer

A2181
Acetyl coenzyme A lithium salt
≥93% (HPLC)

A2056
Acetyl coenzyme A trisodium salt
≥93% (HPLC), powder

ACOA-RO
Acetyl-Coenzyme A
85% (Enzymatic and Absorbance), 2% (lithium)

MAK039
Acetyl-Coenzyme A Assay Kit
sufficient for 100 fluorometric tests

MAK133
ADP Assay Kit
sufficient for 100 assays (bioluminescent)

MAK135
ADP/ATP Ratio Assay Kit
sufficient for 100 tests (bioluminescent)

A5837
Arachidonoyl coenzyme A lithium salt

≥85%

A0580
Arachidonylethanolamide
≥97.0% (TLC), oil

A1968
Ascorbic acid 6-palmitate
meets USP testing specifications

M3013
β-Methylcrotonyl coenzyme A lithium salt
≥90%

N1636
β-Nicotinamide adenine dinucleotide hydrate
purified by column chromatography, ≥99%

N7004
β-Nicotinamide adenine dinucleotide hydrate
≥96.5% (HPLC), ≥96.5% (spectrophotometric assay), from yeast

43410
β-Nicotinamide adenine dinucleotide hydrate
≥95% (HPLC)

N3014
β-Nicotinamide adenine dinucleotide hydrate
suitable for cell culture, ≥96.5% (HPLC), ≥96.5% (spectrophotometric assay), from yeast

19606
Biotin
tested according to Ph. Eur.

B4501
Biotin
≥99% (HPLC), lyophilized powder

B4639
Biotin
powder, BioReagent, suitable for cell culture, suitable for insect cell culture, suitable for plant cell culture, ≥99%

B0301
Biotin
meets USP testing specifications

B1508
Butyryl coenzyme A lithium salt hydrate
≥90%

C8731
Calcium pantothenate
meets USP testing specifications, monograph mol wt. 476.53 ($C_{18}H_{32}CaN_2O_{10}$)

C1357
Cholecalciferol
meets USP testing specifications

C9756
Cholecalciferol
≥98% (HPLC)

C4282
Coenzyme A hydrate
≥85% (UV, HPLC)

C3144
Coenzyme A sodium salt hydrate
cofactor for acyl transfer

C3019
Coenzyme A trilithium salt
≥93%

C2643
Coenzyme A, oxidized lithium salt
≥85%

C9538
Coenzyme Q_{10}
≥98% (HPLC)

27597
Coenzyme Q_9
≥96.0% (HPLC)

28007
Crotonoyl coenzyme A trilithium salt
~90% (HPLC)

C3607
Cyanocobalamin
meets USP testing specifications

43107
Cyanocobalamin
tested according to Ph. Eur.

D5269
Decanoyl coenzyme A monohydrate
≥90%

H6132
DL-3-Hydroxy-3-methylglutaryl coenzyme A sodium salt hydrate
≥90% (HPLC)

29992
DL-α-Tocopherol acetate
tested according to Ph. Eur.

H0261
DL-β-Hydroxybutyryl coenzyme A lithium salt
≥90%

47612
Folinic acid calcium salt hydrate
BioXtra, ≥99.0% (HPLC)

G9510
Glutaryl coenzyme A lithium salt
≥90%

MAK036
Hemin Assay Kit
sufficient for 100 colorimetric tests

H2012
Hexanoyl coenzyme A trilithium salt hydrate
≥85%

I0383
Isobutyryl coenzyme A lithium salt
≥85%

I9381

Isovaleryl coenzyme A lithium salt hydrate
≥90%

A92902
L-Ascorbic acid
99%

255564
L-Ascorbic acid
ACS reagent, ≥99%

95212
L-Ascorbic acid
tested according to Ph. Eur.

A0278
L-Ascorbic acid
reagent grade

A7506
L-Ascorbic acid
reagent grade, crystalline

A5960
L-Ascorbic acid
BioXtra, ≥99.0%, crystalline

A2218
L-Ascorbic acid
meets USP testing specifications

A4544
L-Ascorbic acid
suitable for cell culture, suitable for plant cell culture, ≥98%

L2659
Lauroyl coenzyme A lithium salt
≥90% (HPLC)

M4263
Malonyl coenzyme A lithium salt
≥90% (HPLC)

63410
Malonyl coenzyme A tetralithium salt

≥90% (HPLC)

M9429
Menadione
meets USP testing specifications

M1762
Methylmalonyl coenzyme A tetralithium salt hydrate
≥90% (HPLC)

M4414
Myristoyl coenzyme A lithium salt
≥80.0%

H1385
n-Heptadecanoyl coenzyme A lithium salt
≥90%

P5397
n-Propionyl coenzyme A lithium salt
≥85%

N5535
Niacinamide
meets USP testing specifications

N0761
Nicotinic acid
BioReagent, suitable for cell culture, suitable for insect cell culture, suitable for plant cell culture, ≥98%

N5410
Nicotinic acid
meets USP testing specifications

N4126
Nicotinic acid
≥98%

72309
Nicotinic acid
≥99.5% (HPLC)

A6706
O-Acetyl-L-carnitine hydrochloride
≥99% (titration), powder

O6877
Octanoyl coenzyme A lithium salt hydrate
≥95% (HPLC)

O1012
Oleoyl coenzyme A lithium salt
≥90% (HPLC)

P6775
Palmitoleoyl coenzyme A lithium salt
~90%

P9716
Palmitoyl coenzyme A lithium salt
≥90%

P2153
Phenylacetyl coenzyme A lithium salt
~95%

P6280
Pyridoxine hydrochloride
BioReagent, suitable for cell culture, suitable for insect cell culture, suitable for plant cell culture

P4722
Pyridoxine hydrochloride
meets USP testing specifications

P9755
Pyridoxine hydrochloride
≥98% (HPLC)

77623
Riboflavin 5′-monophosphate sodium salt
tested according to Ph. Eur.

R7774
Riboflavin 5′-phosphate sodium salt hydrate
meets USP testing specifications

A7007
S-(5′-Adenosyl)-L-methionine chloride dihydrochloride
≥75%

A2408

S-(5'-Adenosyl)-L-methionine p-toluenesulfonate salt
≥80% (HPLC), ≥80% (spectrophotometric assay)

S3381
Sodium stearate
≥99%

S4751
Stearic acid
Grade I, ≥98.5% (capillary GC)

S0802
Stearoyl coenzyme A lithium salt
≥90%

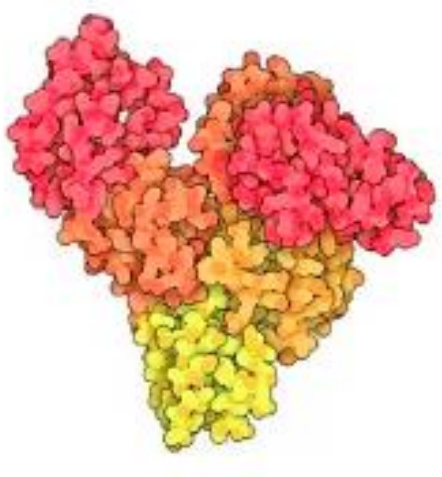
S1129
Succinyl coenzyme A sodium salt
≥85%

T4625
Thiamine hydrochloride
reagent grade, ≥99% (HPLC)

T4562
Thiamine hydrochloride
meets USP testing specifications

SMB00580
Vitamin K_4
≥98% (HPLC)

Albumins and Transport Proteins



Many molecules are unstable or insoluble when they exist in non-complexed forms. In vitro, albumins and other carrier proteins are often used to bind, sequester and stabilize a range of important small molecules and proteins. Albumins are simple water-soluble proteins found in animal fluids and tissues, and to a lesser extent in plants. Albumins are used in the biomanufacture of therapeutic monoclonal antibodies and recombinant proteins.

We provide albumins for comprehensive application needs, including cell culture, protein quantitation, enzyme stabilization, ELISA, and antibody-related processes. Along with albumins from diverse sources, we offer these essential proteins in different formats and formulations.

ALBUMINS IN CELL CULTURE

Albumins, particularly from bovine serum (BSA) are an important component of many **serum-free** cell culture systems, particularly those that utilize hybridoma or Chinese Hamster Ovary (CHO) cells. In cell culture media, albumin functions by binding and delivering other essential molecules to cells in culture. Because all albumins do not have identical efficacy in culture media, it is advisable to choose those that have been tested for cell culture applications.

BOVINE SERUM ALBUMIN (BSA)

Bovine serum albumin (BSA) is a globular protein (~66 kDa MW) that is used in numerous biochemical applications due to its stability and lack of interference with biological reactions. The BSA structure is a single polypeptide chain consisting of about 583 amino acid residues and no carbohydrates. Learn more about the BSA protein structure, BSA molecular weight, properties, and applications in our BSA physical properties and application guide.

BSA is the classic workhorse of albumin products used in numerous applications. Our diverse formats for albumin from bovine serum include purities ranging from 95-99%. We

manufacture and distribute BSA purified from a variety of primary methods including the true Cohn fractionation method, modified ethanol fractionation methods, heat shock, and chromatography. Additional purification steps may include crystallization or charcoal filtration. For convenience, our BSAs are defined by method of preparation:

- Chromatographic purification of albumin typically yields a more highly conserved native protein conformation than the ethanol and heat shock fractionation methods.
- The ethanol and heat shock method combine both processes using Cohn fractionation to perform the initial purification followed by a heat step to further purify the albumin to ≥ 99% by Agarose electrophoresis.
- Ethanol fractionation is a fractionation method that includes the adjustment of ethanol concentration, pH, and temperature. Unlike the heat shock method, this process is kept at a low temperature ensuring a non-denaturing condition for the proteins and preserves the native albumin structure and function.
- The heat shock fractionation process of heat and pH adjustment relies on the addition of a protein stabilizer. This addition allows the albumin to tolerate the increased temperature of > 65 °C. Most other plasma proteins denature and precipitate during this process yielding an albumin with increased purity.

HUMAN SERUM ALBUMIN (HSA)

Human serum albumin (HSA) is the most abundant protein in human plasma with a molecular weight of ~66 kDa (based on amino acid composition). Serum albumin may be referred to as Cohn Fraction V. This naming convention is taken from the original Cohn method of fractionating serum proteins using cold ethanol precipitation, as serum albumin was found in the fifth ethanol fraction using Cohn's method. Since then, the term "Cohn Fraction V" has been used by some to describe serum albumin regardless of the method of preparation. We produce human serum albumins using a cold alcohol fractionation process derived from the traditional Cohn method, as well as from the heat shock method, and offer both native and recombinant versions of HSA in powder and solution formats.

OTHER ALBUMIN PRODUCTS

Our portfolio includes additional albumin products for specific applications requiring human and other nonbovine proteins. Recombinant human albumins and animal component-free (ACF) albumin are supplied in aqueous buffers or lyophilized powder formats. Albumins available from other species include those derived from the following sources:

- chicken egg white
- mouse serum
- rat serum
- porcine serum
- ovine serum

Our albumins are of high purity and superior solubility to ensure low background in protein quantitation assays, and to minimize interference in bioprocesses.

TRANSFERRINS AND TRANSFERRIN REPLACEMENTS

Cells require iron to bind available oxygen from the extracellular environment. Transferrins are single chain glycoproteins found in serum that facilitate the uptake of iron in culture medium and its subsequent intracellular transport. Although

transferrin is the physiologically optimal method for delivering iron to cells in culture and has therefore been integral in the production of biopharmaceuticals such as monoclonal antibodies, lower-risk animal-free systems have led to some adoption of small-molecule alternatives to transferrin in biomanufacturing. Many of these transferrin alternatives are iron chelators, which must be used with appropriate protocols in culture systems as many do not manage redox cycling of iron and can therefore contribute to oxidative stress. Our cell culture reagents include a complete selection of transferrins and transferrin replacements.

L6010
α-Lactalbumin from bovine milk
Type III, calcium depleted, ≥85% (PAGE), lyophilized powder

L5385
α-Lactalbumin from bovine milk
Type I, ≥85% (PAGE), lyophilized powder

L7269
α-Lactalbumin from human milk
≥95% (SDS-PAGE), lyophilized powder

121800-M
Advanced Glycation Endproduct-BSA
AGE-BSA has been reported to induce apoptosis in cultured human umbilical vein endothelial cells and inhibit nitric oxide synthase activity in proximal tubular epithelial cells.

1.12018
Albumin fraction V
(from bovine serum) for biochemistry

A7641
Albumin from chicken egg white
lyophilized powder

A5253
Albumin from chicken egg white
powder, 62-88% (agarose gel electrophoresis)

A5378
Albumin from chicken egg white
lyophilized powder, ≥90% (agarose gel electrophoresis)

A5503
Albumin from chicken egg white
lyophilized powder, ≥98% (agarose gel electrophoresis)

A2512
Albumin from chicken egg white

lyophilized powder, ≥98% (agarose gel electrophoresis)

A2514
Albumin from goat
≥96% (agarose gel electrophoresis)

SRP6516
Albumin from human plasma
≥95% (SDS-PAGE)

A8763
Albumin from human serum
lyophilized powder, essentially globulin free, ≥99% (agarose gel electrophoresis)

A4327
Albumin from human serum
lyophilized powder, essentially protease free, ≥96% (agarose gel electrophoresis)

A1887
Albumin from human serum
lyophilized powder, essentially fatty acid free

A5843
Albumin from human serum
lyophilized powder, low endotoxin

A3782
Albumin from human serum
lyophilized powder, Fatty acid free, Globulin free, ≥99% (agarose gel electrophoresis)

A1653
Albumin from human serum
lyophilized powder, ≥96% (agarose gel electrophoresis)

A9511
Albumin from human serum
lyophilized powder, ≥97% (agarose gel electrophoresis)

A3139
Albumin from mouse serum
lyophilized powder, ≥96% (agarose gel electrophoresis)

A3559
Albumin from mouse serum
lyophilized powder, essentially globulin free, ≥99% (agarose gel electrophoresis)

A4414
Albumin from porcine serum
lyophilized powder, essentially globulin free, ≥99% (agarose gel electrophoresis)

A6272
Albumin from rat serum
lyophilized powder, ≥96% (agarose gel electrophoresis)

A6414
Albumin from rat serum
lyophilized powder, essentially fatty acid free, essentially globulin free, ≥99% (agarose gel electrophoresis)

A6608
Albumin human
recombinant, expressed in Saccharomyces cerevisiae, aqueous solution, 10% in aqueous buffer, ≥99% (agarose gel electrophoresis)

A7223
Albumin human
recombinant, expressed in Pichia pastoris, 5% in aqueous buffer, ≥90% (SDS-PAGE)

A9731
Albumin human
recombinant, expressed in rice, lyophilized powder, suitable for cell culture, low endotoxin, ≥96% (SDS-PAGE)

A6710
Albumin hydrolysate

A9080
Albumin solution human
30% in 0.85% sodium chloride, protease free

A6784
Albumin solution human
10% in 0.85% sodium chloride and 0.05% sodium azide, aseptically filled

B8894
Albumin, Acetylated from bovine serum
protease free, for molecular biology

B2518
Albumin, Acetylated from bovine serum
lyophilized powder, suitable for microbiology

A8549
Albumin, biotin labeled bovine
lyophilized powder

126615
Albumin, Bovine Serum, 10% Aqueous Solution, Nuclease-Free

126625
Albumin, Bovine Serum, 30% Aqueous Solution, Stabilizer-Free

126626
Albumin, Bovine Serum, 30% Sterile-Filtered Aqueous Solution, Preservative-Free

12657
Albumin, Bovine Serum, Fraction V, Crystalline

126575
Albumin, Bovine Serum, Fraction V, Fatty Acid-Free

126609
Albumin, Bovine Serum, Fraction V, Fatty Acid-Free, Nuclease- and Protease-Free
BSA Fatty Acid-free is designed for use in serological testing, RIA, and hormone response studies. Suitable for use in Molecular Biology applications, such as Northern and Southern blots.

126579
Albumin, Bovine Serum, Fraction V, Fatty Acid-Poor, Endotoxin-Free

12659-M
Albumin, Bovine Serum, Fraction V, Low Heavy Metals

12660
Albumin, Bovine Serum, Fraction V, Modified Cohn, pH 5.2

126593
Albumin, Bovine Serum, Fraction V, RIA and ELISA Grade

A6661
Albumin, dinitrophenyl
lyophilized powder

A8301
Albumin, glycated human
lyophilized powder

12668-M
Albumin, Human Serum, Fraction V

126658
Albumin, Human Serum, Fraction V, High Purity

12666
Albumin, Human Serum, Fraction V, Low Heavy Metals

A1900
Albumin, Monomer bovine
Monomer ≥97 %

126674
Albumin, Mouse

T1428
apo-Transferrin bovine
BioReagent, suitable for cell culture, ≥98%

T1147
apo-Transferrin human
powder, BioReagent, suitable for cell culture, ≥98% (agarose gel electrophoresis)

T5391
apo-Transferrin human
γ-irradiated, powder, BioXtra, suitable for cell culture, ≥98%

T2036
apo-Transferrin human
powder, BioReagent, suitable for cell culture, ≥98% (agarose gel electrophoresis)

A9418
Bovine Serum Albumin
lyophilized powder, BioReagent, suitable for cell culture

A6003
Bovine Serum Albumin
lyophilized powder, essentially fatty acid free, ≥96% (agarose gel electrophoresis)

A2153
Bovine Serum Albumin
lyophilized powder, ≥96% (agarose gel electrophoresis)

A3059
Bovine Serum Albumin
heat shock fraction, protease free, essentially globulin free, pH 7, ≥98%

A7030
Bovine Serum Albumin
heat shock fraction, protease free, fatty acid free, essentially globulin free, pH 7, ≥98%

A3803
Bovine Serum Albumin
heat shock fraction, lyophilized powder, essentially fatty acid free, ≥98% (agarose gel electrophoresis)

A7888
Bovine Serum Albumin
heat shock fraction, suitable for RIA, pH 5.2, ≥96%

A9647
Bovine Serum Albumin
heat shock fraction, pH 7, ≥98%

A4503
Bovine Serum Albumin
cold ethanol fraction, pH 5.2, ≥96%

A8806
Bovine Serum Albumin
fatty acid free, low endotoxin, lyophilized powder, BioReagent, suitable for cell culture, ≥96% (agarose gel electrophoresis)

10711454001
Bovine Serum Albumin
blood typing: suitable, Endonuclease, Exonuclease, Rnases, Proteinases free

BSAV-RO
Bovine Serum Albumin
≥98.5%, New Zealand origin

10775835001
Bovine Serum Albumin
98.5% (electrophoresis), Fatty acids (total) ≤0.2 mg/g, Triglycerides (enzym.) free, Immunoglobulins not detectable, microbiological culture: suitable, USA origin

BSAVHS-RO
Bovine Serum Albumin
≥98.5%, Ash 1%, Heavy metals < 10 ppm, stem cell culture, Mycoplasma Negative, USA origin

V900933
Bovine Serum Albumin
≥98%, ≤5% Loss on drying, suitable for western blot

05470
Bovine Serum Albumin
lyophilized powder, crystallized, ≥98.0% (GE)

A8022
Bovine Serum Albumin
heat shock fraction, pH 5.2, ≥96%

A0281
Bovine Serum Albumin
lyophilized powder, essentially fatty acid free and essentially globulin free, ≥99% (agarose gel electrophoresis)

A3311
Bovine Serum Albumin
powder, BioXtra

A9430
Bovine Serum Albumin
heat shock fraction, low endotoxin, pH 7, ≥98%

A4378
Bovine Serum Albumin
lyophilized powder, 1× crystallized, ≥97% (agarose gel electrophoresis)

A7638
Bovine Serum Albumin
lyophilized powder, essentially globulin free, ≥99% (agarose gel electrophoresis)

A3912
Bovine Serum Albumin
heat shock fraction, pH 5.2, ≥96%

A7511
Bovine Serum Albumin
lyophilized powder, essentially fatty acid free, ≥97% (agarose gel electrophoresis), 1X Crystallized

A9543
Bovine Serum Albumin
heat shock fraction, low endotoxin, pH 7, ≥98%

B4287
Bovine Serum Albumin
heat shock fraction, protease free, suitable for hybridization, pH 7, ≥98%

A1470
Bovine Serum Albumin
lyophilized powder, low endotoxin, BioReagent, suitable for cell culture, ≥98% (agarose gel electrophoresis)

A7906
Bovine Serum Albumin
heat shock fraction, pH 7, ≥98%

A2934
Bovine Serum Albumin
lyophilized powder, essentially globulin free, low endotoxin, ≥98% (agarose gel electrophoresis)

A9056
Bovine Serum Albumin
heat shock fraction, microbiologically tested, ≥96% (agarose gel electrophoresis)

A4161
Bovine Serum Albumin
lyophilized powder, essentially globulin free, BioReagent, suitable for cell culture

A4919
Bovine Serum Albumin
heat shock fraction, protease free, low endotoxin, suitable for cell culture, pH 7, ≥98%

A3156
Bovine Serum Albumin
lyophilized powder, γ-irradiated, Globulin Free, BioXtra, suitable for cell culture

B6917
Bovine Serum Albumin
lyophilized powder, suitable for (for molecular biology), Non-acetylated

A3294
Bovine Serum Albumin
heat shock fraction, protease free, pH 7, ≥98%

A3983
Bovine Serum Albumin
lyophilized powder, essentially γ-globulin free, ≥98% (agarose gel electrophoresis)

A3733
Bovine Serum Albumin
lyophilized powder, ≥98% (agarose gel electrophoresis)

A3608
Bovine Serum Albumin
lyophilized powder, ≥96% (agarose gel electrophoresis)

A3858
Bovine Serum Albumin
lyophilized powder, Protease, essentially free, ≥98% (agarose gel electrophoresis)

A5611
Bovine Serum Albumin
Cohn Fraction V, lyophilized powder, ≥96% (agarose gel electrophoresis)

03117057001
Bovine Serum Albumin Fraction V, heat shock, fatty acid free
from bovine serum

03117332001
Bovine Serum Albumin Fraction V, protease-free
from bovine serum

A1595
Bovine Serum Albumin solution
10% in DPBS, low endotoxin, fatty acid free, suitable for cell culture, sterile-filtered

A9576
Bovine Serum Albumin solution
30% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A8412
Bovine Serum Albumin solution
7.5% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A7979
Bovine Serum Albumin solution
35% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A7284
Bovine Serum Albumin solution
30%±2% in 0.85% sodium chloride, aseptically filled

A8577
Bovine Serum Albumin solution
30% in saline, protease free, aseptically filled

A8327
Bovine Serum Albumin solution
30%±2% in 0.85% sodium chloride, aseptically filled

A3174
Bovine Serum Albumin solution
30% in saline, high avidity, contains azide and caprylate, aseptically filled

B8667
Bovine Serum Albumin solution
20 mg/mL in H_2O, low bioburden, protease free, for molecular biology

A4628
Bovine Serum Albumin solution
5% in 0.85% sodium chloride, aseptically filled

A1595
Bovine Serum Albumin solution
10% in DPBS, low endotoxin, fatty acid free, suitable for cell culture, sterile-filtered

A9576
Bovine Serum Albumin solution
30% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A8412
Bovine Serum Albumin solution
7.5% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A7979
Bovine Serum Albumin solution
35% in DPBS, sterile-filtered, BioXtra, suitable for cell culture

A7409
Bovine Serum Albumin solution

35% in 0.85% sodium chloride, aseptically filled

C0880
Conalbumin from chicken egg white
Iron complex

C0755
Conalbumin from chicken egg white
Substantially iron-free

324101
DNP-Albumin Conjugate, Bovine
DNP-Albumin Conjugate, Bovine, is useful for production of antibodies specific for DNP and albumin. Contains >30 DNP-groups per molecule protein.

T1283
holo-Transferrin bovine
Iron-saturated, BioReagent, suitable for cell culture

T0665
holo-Transferrin human
powder, BioReagent, suitable for cell culture, ≥97%

L9530
Linoleic Acid-Albumin from bovine serum albumin
liquid, sterile-filtered, BioReagent, suitable for cell culture

B7542
Maleimide Activated BSA

O1641
Ovalbumin (323-339) (chicken, Japanese quail)

P3717
Phosphoserine-BSA
2 mg/mL, buffered aqueous solution

10602361001
Plasmin, human
from human plasma

10874477001
Plasminogen
from human serum

P1742
Prealbumin from human plasma
lyophilized powder

820456
Probumin® Bovine Serum Albumin Diagnostic Grade
lyophilized powder, pkg of 5 kg

820463
Probumin® Bovine Serum Albumin Diagnostic Grade
solution (30%), pkg of 1 L

820452
Probumin® Bovine Serum Albumin Diagnostic Grade
lyophilized powder, pkg of 1 kg

P0914
Protein standard
Micro Standard, liquid

P0834
Protein standard
liquid, 2 mg protein/ml

D5197
SigMatrix Ultra Serum Diluent

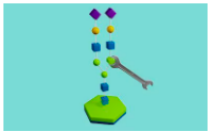
10602400001
Thrombin
from human plasma

T3705
Transferrin human
recombinant, expressed in rice

T8158
Transferrin human
powder, BioReagent, suitable for cell culture

SRP6472
Transferrin human
recombinant, expressed in HEK 293 cells, ≥95% (SDS-PAGE)

Glycobiology Profiling Tools



Glycobiology profiling is critical to many areas of research. For example, glycosylation is one of the most common and impactful modifications found in biologic systems. It is seen in the simplest of prokaryotes and the most complex multicellular organisms, attached to proteins, lipids, and even RNA playing roles in structure, function, and regulation. As the knowledge base and methods evolve, scientists need the right tools for the job. We are filling your toolbox with glycobiology reagents and tools like enzymes, resins, labels, and reagents to aid in the discovery and experimentation around glycobiology.

Explore Glycobiology Profiling Tools

GLYCOBIOLOGY PROFILING CATEGORIES

To accommodate your glycobiology workflow needs, we offer a wide range of products for functional and structural analysis of glycans, including glycoprocessing and glycosylation enzymes, glycan labels, lectins, capture resins, standards, glycoproteins, and free oligosaccharides. This includes offerings of carbohydrate-recognizing proteins such as lectins and galectins, carbohydrate-active enzymes like glycosidases (exoglycosidases, endoglycosidases), and glycosyltransferases. Additionally, our GlycoProfile™ kits are a curated product line that have been developed to simplify common workflows including release and labeling of N-linked and O-linked glycans.

The glycobiology profiling tools we offer can be broken into these 4 categories:

- **Capture**
- **Release**
- **Modify**
- **Analyze**

CAPTURE

- Lectin Resins
  - Easily choose your lectin in **our Lectin Selection Guide**.
  - Product Nos. **61768**, **L0511**, **L3885**, **C7555**, **C9017**, **L8775**, **L1394**, **L1882**, **61768**
- **Capture Resins**

RELEASE

- **Enzymatic**
- **Chemical**
- **N-Linked**
- **O-Linked**
- **Glycosaminoglycans (GAGs)**
- Lipid-Linked
    - **Endoglycoceramidase II from Rhodococcus sp.**
    - **GlycoProfile™ β-Elimination Kit**

MODIFY

- **Exoglycosidases**
- **Glycosyltransferases and Sugar Nucleotides**
- **Carbohydrate Building Blocks**

ANALYZE

- **Glycan Labeling**
    - **GlycoProfile™ 2-AB Labeling Kit**
- **Lectins**
- Chromatography
    - **Supel™ Carbon HPLC column**
    - **BIOshell™ Glycan HPLC Columns**
- Standards
    - **O-Linked Glycans**
    - **N-Linked Glycans**
    - **Fluorescent-Labeled Dextran Ladders**
    - **Carbohydrates**
- **Glycoconjugates**
- Clean Up
    - **GlycoProfile™ Glycan Clean-Up Cartridge**
    - Discovery® SPE Tubes

Product Nos. **52624-U**, **55467-U**, **55482-U**

10080
a-Amylase from hog pancreas
powder, ~50 U/mg

A0521
a-Amylase from human saliva
Type IX-A, lyophilized powder, 1,000-3,000 units/mg protein

A1031
a-Amylase from human saliva
Type XIII-A, lyophilized powder, 300-1,500 units/mg protein

A6255
a-Amylase from porcine pancreas
PMSF Treated, Type I-A, saline suspension, ≥1000 units/mg protein (E1%/280)

G8507
a-Galactosidase from green coffee beans
ammonium sulfate suspension, ≥9 units/mg protein

G7163
a-Galactosidase, positionally specific from Escherichia coli
recombinant, expressed in E. coli, buffered aqueous solution

G3651
a-Glucosidase from Bacillus stearothermophilus
lyophilized powder, ≥50 units/mg protein

G9259
a-Glucosidase from rice
Type V, ammonium sulfate suspension, 40-80 units/mg protein

G5003
a-Glucosidase from Saccharomyces cerevisiae
Type I, lyophilized powder, ≥10 units/mg protein (using p-nitrophenyl a-D-glucoside as substrate.)

G0660
a-Glucosidase from Saccharomyces cerevisiae
recombinant, expressed in proprietary host, lyophilized powder, ≥100 units/mg protein

M7257
a-Mannosidase from Canavalia ensiformis (Jack bean)
ammonium sulfate suspension, ≥15 units/mg protein (biuret)

N3786
α(2→3,6,8,9) Neuraminidase from Arthrobacter ureafaciens
Proteomics Grade, suitable for MALDI-TOF MS

N8271
α(2→3,6,8,9) Neuraminidase from Arthrobacter ureafaciens
recombinant, expressed in E. coli, buffered aqueous solution

N5521
α(2→3,6) Neuraminidase from Clostridium perfringens (C. welchii)
recombinant, expressed in E. coli, buffered aqueous solution, ≥250 units/mg protein

N7271
α(2→3) Neuraminidase from Streptococcus pneumoniae
buffered aqueous solution

344824
α1-3,4-Fucosidase, Xanthomonas sp.
Native α1-3,4-fucosidase from Xanthomonas species. Catalyzes the hydrolysis of α1,3- and α1,4-linked branched, non-reducing terminal fucose from complex carbohydrates. Note: 1 mU = 1 milliunit.

345797
α1-3,6-Galactosidase, Recombinant, E. coli
Catalyzes the hydrolysis of α1,3-linked and α1,6-linked, non-reducing terminal galactose from complex carbohydrates and glycoproteins.

G3643
α_1-Acid Glycoprotein from bovine plasma
≥99%

M3800
A1F Glycan ammonium salt
from Porcine

480708
α2-3,6-Neuraminidase, Clostridium perfringens, Recombinant, E. coli

S2279
3′-Sialyl-Lewis-a tetrasaccharide

S1782
3′-Sialyl-Lewis-X tetrasaccharide

M0925
3α,6α-Mannopentaose
≥85%

F1924
α-1→(2,3,4)-Fucosidase solution from Xanthomonas sp.
buffered aqueous solution

F3023
α-1→(3,4)-Fucosidase solution from Xanthomonas sp.
buffered aqueous solution

F6272
α-1,6-Fucosidase solution from Elizabethkingia miricola
recombinant, expressed in E. coli, buffered aqueous solution

S1951
α-2,3-Sialyltransferase from Pasteurella multocida
recombinant, expressed in E. coli BL21, ≥2 units/mg protein

S2076
α-2,6-Sialyltransferase from Photobacterium damsela
recombinant, expressed in E. coli BL21, ≥5 units/mg protein

A9857
α-Amylase from Aspergillus oryzae
≥150 units/mg protein (biuret)

10065
α-Amylase from Aspergillus oryzae
powder, ~30 U/mg

A8220
α-Amylase from Aspergillus oryzae
aqueous solution, ≥800 FAU/g

86250
α-Amylase from Aspergillus oryzae

powder, ~1.5 U/mg (~0.2 U acc. to Willstätter)

A7595
α-Amylase from Bacillus amyloliquefaciens
liquid, ≥250 units/g

A3403
α-Amylase from Bacillus licheniformis
Type XII-A, saline solution, ≥500 units/mg protein (biuret)

A4551
α-Amylase from Bacillus licheniformis
lyophilized powder, 500-1,500 units/mg protein, 93-100% (SDS-PAGE)

A6380
α-Amylase from Bacillus sp.
Type II-A, lyophilized powder, ≥1,500 units/mg protein (biuret)

A4862
α-Amylase from Bacillus sp.
liquid

10069
α-Amylase from Bacillus sp.
powder, yellow-brown, ~380 U/mg

10070
α-Amylase from Bacillus sp.
powder, yellow-brown, ~50 U/mg

A6814
α-Amylase from Bacillus sp.
powder, ≥400 units/mg protein (Lowry)

10080
α-Amylase from hog pancreas
powder, ~50 U/mg

A0521
α-Amylase from human saliva
Type IX-A, lyophilized powder, 1,000-3,000 units/mg protein

A1031
α-Amylase from human saliva
Type XIII-A, lyophilized powder, 300-1,500 units/mg protein

A6255
a-Amylase from porcine pancreas
PMSF Treated, Type I-A, saline suspension, ≥1000 units/mg protein (E1%/280)

G8507
a-Galactosidase from green coffee beans
ammonium sulfate suspension, ≥9 units/mg protein

G7163
a-Galactosidase, positionally specific from Escherichia coli
recombinant, expressed in E. coli, buffered aqueous solution

G3651
a-Glucosidase from Bacillus stearothermophilus
lyophilized powder, ≥50 units/mg protein

G9259
a-Glucosidase from rice
Type V, ammonium sulfate suspension, 40-80 units/mg protein

G5003
a-Glucosidase from Saccharomyces cerevisiae
Type I, lyophilized powder, ≥10 units/mg protein (using p-nitrophenyl a-D-glucoside as substrate.)

G0660
a-Glucosidase from Saccharomyces cerevisiae
recombinant, expressed in proprietary host, lyophilized powder, ≥100 units/mg protein

M7257
a-Mannosidase from Canavalia ensiformis (Jack bean)
ammonium sulfate suspension, ≥15 units/mg protein (biuret)

N3786
a(2→3,6,8,9) Neuraminidase from Arthrobacter ureafaciens
Proteomics Grade, suitable for MALDI-TOF MS

N8271
a(2→3,6,8,9) Neuraminidase from Arthrobacter ureafaciens
recombinant, expressed in E. coli, buffered aqueous solution

N5521
α(2→3,6) Neuraminidase from Clostridium perfringens (C. welchii)
recombinant, expressed in E. coli, buffered aqueous solution, ≥250 units/mg protein

N7271
α(2→3) Neuraminidase from Streptococcus pneumoniae
buffered aqueous solution

344824
α1-3,4-Fucosidase, Xanthomonas sp.
Native α1-3,4-fucosidase from Xanthomonas species. Catalyzes the hydrolysis of α1,3- and α1,4-linked branched, non-reducing terminal fucose from complex carbohydrates. Note: 1 mU = 1 milliunit.

345797
α1-3,6-Galactosidase, Recombinant, E. coli
Catalyzes the hydrolysis of α1,3-linked and α1,6-linked, non-reducing terminal galactose from complex carbohydrates and glycoproteins.

G3643
α_1-Acid Glycoprotein from bovine plasma
≥99%

M3800
A1F Glycan ammonium salt
from Porcine

480708
α2-3,6-Neuraminidase, Clostridium perfringens, Recombinant, E. coli

480716
α2-3,6,8,9-Neuraminidase, Arthrobacter ureafaciens, Recombinant, E. coli

M2800
A2F Glycan ammonium salt
from Porcine thyroglobulin, ≥90%

A6306
Agarase from Pseudomonas atlantica
lyophilized powder, ≥5,000 units/mg protein (Lowry)

A2986
Amylase, Maltogenic from Bacillus sp.

A7420
Amyloglucosidase from Aspergillus niger
lyophilized powder, 30-60 units/mg protein (biuret), ≤0.02% glucose

A2910
Amyloglucosidase from Aspergillus niger
Isoelectric focusing marker, pI 3.6

A7095
Amyloglucosidase from Aspergillus niger
≥260 U/mL, aqueous solution

10115
Amyloglucosidase from Aspergillus niger
lyophilized, powder, ~70 U/mg

A1602
Amyloglucosidase from Aspergillus niger
ammonium sulfate suspension, ≥40 units/mg protein

A9228
Amyloglucosidase from Rhizopus sp.
≥40,000 units/g solid

G1288
β-(1→3,4,6)-Galactosidase, positionally specific
recombinant, expressed in E. coli, buffered aqueous solution

G0288
β-(1→3,6)-Galactosidase, positionally specific from Xanthomonas manihotis
recombinant, expressed in E. coli, buffered aqueous solution

67138
β-(1→3)-D-Glucanase from Helix pomatia
≥0.2 U/mg

A7130
β-Amylase from barley
Type II-B, 20-80 units/mg protein (biuret)

A8781
β-Amylase from sweet potato

A7005
β-Amylase from sweet potato
Type I-B, ammonium sulfate suspension, ≥750 units/mg protein (E1%/280)

G5160
β-Galactosidase from Aspergillus oryzae
≥8.0 units/mg solid

G1875
β-Galactosidase from bovine liver
Grade III, lyophilized powder, ≥0.15 units/mg protein

G4142
β-Galactosidase from bovine testes
ammonium sulfate suspension, 1.0-3.0 units/mg protein (modified Warburg-Christian)

G5635
β-Galactosidase from Escherichia coli
Grade VIII, lyophilized powder, ≥500 units/mg protein

G6008
β-Galactosidase from Escherichia coli
Grade VI, lyophilized powder, ≥250 units/mg protein

G4155
β-Galactosidase from Escherichia coli
aqueous glycerol suspension, ≥500 units/mg protein (biuret)

G3153
β-Galactosidase from Escherichia coli
lyophilized powder, ≥500 units/mg protein

48275
β-Galactosidase from Escherichia coli
suitable for enzyme immunoassay, lyophilized, powder, ~140 U/mg

G3665
β-Galactosidase from Kluyveromyces lactis
≥2600 units/g

G8673
β-Glucanase 2, thermostable
recombinant, expressed in E. coli, ≥90% (SDS-PAGE)

49101
β-Glucanase from Aspergillus niger
powder, dark brown, ~1 U/mg

G4423
β-Glucanase from Trichoderma longibrachiatum

G0395
β-Glucosidase from almonds
lyophilized powder, ≥2 units/mg solid

G4511
β-Glucosidase from almonds
lyophilized powder, 10-30 units/mg solid

49290
β-Glucosidase from almonds
lyophilized, powder, ≥4 U/mg

M9400
β-Mannosidase from Helix pomatia
5-30 units/mL, ammonium sulfate suspension, crude extract

A2264
β-N-Acetylglucosaminidase from Canavalia ensiformis (Jack bean)
ammonium sulfate suspension, ≥10 units/mg protein

A6805
β-N-Acetylglucosaminidase from Streptococcus pneumoniae
recombinant, expressed in E. coli, buffered aqueous solution

G0413
β(1→4)-Galactosidase, positionally specific from Streptococcus pneumoniae
recombinant, expressed in E. coli, buffered aqueous solution

110116
β1-2,3,4,6-N-Acetylglucosaminidase, Streptococcus pneumoniae, Recombinant, E. coli

684274
β1,2-Xylosidase, Xanthomonas sp.

SAE0093
Beta-1,4-galactosyltransferase 1
B4GALT1 human recombinant, expressed in HEK 293 cells, 2000 units/mg protein

SAE0090
Beta-galactoside alpha-2,6-sialyltransferase 1
≥300 units/mg protein, ST6GAL1 human recombinant, expressed in HEK 293 cells

E6412
Cellobiohydrolase I from Hypocrea jecorina
0.13 U/mg, recombinant, expressed in corn

C1184
Cellulase from Aspergillus niger
powder, ≥0.3 units/mg solid

22178
Cellulase from Aspergillus niger
powder, off-white, ~0.8 U/mg

C2605
Cellulase from Aspergillus sp.
aqueous solution

C2730
Cellulase from Trichoderma reesei
aqueous solution, ≥700 units/g

C8546
Cellulase from Trichoderma reesei ATCC 26921
lyophilized powder, ≥1 unit/mg solid

C0615
Cellulase from Trichoderma sp.
powder, ≥5,000 units/g solid

SAE0020
Cellulase, enzyme blend

C6137
Chitinase from Streptomyces griseus
lyophilized powder (essentially salt free), ≥200 units/g solid

SAE0158
Chitinase from Streptomyces griseus
chromatographically purified, lyophilized powder, free of DNA contaminants, suitable for Microbiome research

C8241

Chitinase from Trichoderma viride
lyophilized powder, ≥600 units/g solid

C9830
Chitosanase from Streptomyces griseus
lyophilized powder, >50 units/mg protein (Bradford)

C0794
Chitosanase from Streptomyces sp.
buffered aqueous glycerol solution, ≥15 units/mg protein ($E^{1\%}$)

C3667
Chondroitinase ABC from Proteus vulgaris
BSA free, lyophilized powder, specific activity 50-250 units/mg protein

C2905
Chondroitinase ABC from Proteus vulgaris
lyophilized powder, 0.3-3 units/mg solid

SAE0150
Chondroitinase ABC from Proteus vulgaris
recombinant, low endotoxin, aqueous solution, ≥100 U/ml, 50-250 units/mg protein, BSA free

C2780
Chondroitinase AC from Flavobacterium heparinum
lyophilized powder, 0.5-1.5 units/mg protein (using chondroitin sulfate A as substrate)

E2039
Chondroitinase AC from Flavobacterium heparinum
recombinant, expressed in E. coli, ≥200 units/mg protein, For Chondroitin Sulfate Analysis

C8058
Chondroitinase B from Flavobacterium heparinum
lyophilized powder (with BSA as stabilizer)

C0954
Chondroitinase C from Flavobacterium heparinum
lyophilized powder, ≥200 units/mg solid

L7647
Concanavalin A from Canavalia ensiformis (Jack bean)
Type VI, lyophilized powder
\C0412
Concanavalin A from Canavalia ensiformis (Jack bean)
Type IV-S, lyophilized powder, γ-irradiated, BioReagent, suitable for cell culture

C5275
Concanavalin A from Canavalia ensiformis (Jack bean)
Type IV-S, lyophilized powder, aseptically processed, BioReagent, suitable for cell culture

C2010
Concanavalin A from Canavalia ensiformis (Jack bean)
Type IV, lyophilized powder

L6397
Concanavalin A from Canavalia ensiformis (Jack bean)
peroxidase conjugate, lyophilized powder

C7642
Concanavalin A from Canavalia ensiformis (Jack bean)
FITC conjugate, Type IV, lyophilized powder

C7555
Concanavalin A from Canavalia ensiformis (Jack bean)
agarose conjugate, Type VI, saline suspension

C2272
Concanavalin A from Canavalia ensiformis (Jack bean)
biotin conjugate, Type IV, lyophilized powder

220477
D-(−)-Lyxose
99%

D0443
Dextranase from Chaetomium erraticum

D5884
Dextranase from Penicillium sp.
lyophilized powder, 10-25 units/mg solid

D8144
Dextranase from Penicillium sp.
lyophilized powder, 400-800 units/mg protein

D4668
Dextranase from Penicillium sp.
lyophilized powder, 100-250 units/mg protein

09962

Diastase from Aspergillus oryzae
powder, white, amylase ≥3500 U/g

D9515
Driselase™ from Basidiomycetes sp.
powder, Protein ≥10 % by biuret

E2164
endo-1,4-β-D-glucanase from Acidothermus cellulolyticus
recombinant, expressed in corn, ≥2.0 units/mg protein

324716
Endo-a-N-acetylgalactosaminidase, Streptococcus pneumoniae, Recombinant, E. coli
Endo-a-N-acetylgalactosaminidase, Streptococcus pneumoniae, Recombinant, E. coli, CAS 59793-96-3, catalyzes the hydrolysis of the unsubstituted Galβ1,3GalNAc core disaccharide attached to Ser or Thr.

G6920
Endo-β-galactosidase from Bacteroides fragilis
recombinant, expressed in E. coli, ≥140 units/mg protein, buffered aqueous solution

345811
Endo-β-Galactosidase, Bacteroides fragilis, Recombinant, E. coli
Endo-β-Galactosidase, Bacteroides fragilis, Recombinant, E. coli, hydrolyzes internal β-galactosidic linkages of oligosaccharides in poly-N-acetyl-lactosamine structures.

E9030
Endoglycoceramidase II from Rhodococcus sp.
aqueous solution

E9762
Endoglycosidase F1 from Elizabethkingia miricola
recombinant, expressed in E. coli, ≥16 U/mg, buffered aqueous solution

324725
Endoglycosidase F1, Elizabethkingia meningosepticum, Recombinant, E. coli
Endoglycosidase F1, Elizabethkingia meningosepticum, Recombinant, E. coli cleaves asparagine-linked or free oligomannose and hybrid. Suitable for deglycosylation of native proteins.

E0639
Endoglycosidase F2 from Elizabethkingia miricola
recombinant, expressed in E. coli, 20 U/mg

324726
Endoglycosidase F2, Elizabethkingia meningosepticum, Recombinant, E. coli

Endoglycosidase F2, Elizabethkingia meningosepticum, Recombinant, E. coli cleaves asparagine-linked or free oligomannose and biantennary complex oligosaccharides. It is not active above pH 6.0.

E2264
Endoglycosidase F3 from Elizabethkingia miricola
recombinant, expressed in E. coli, 30 U/mg

324727
Endoglycosidase F3, Elizabethkingia meningosepticum, Recombinant, E. coli
Endoglycosidase F3, Elizabethkingia meningosepticum, Recombinant, E. coli, cleaves asparagine-linked or free biantennary and triantennary complex, and Man3GlcNAc oligosaccharides from glycoproteins.

A0810
Endoglycosidase H from Streptomyces plicatus
recombinant, expressed in E. coli, buffered aqueous solution

324717
Endoglycosidase H, Streptomyces plicatus, Recombinant, E. coli
Endoglycosidase H, Streptomyces plicatus, Recombinant, E. coli cleaves between the two N-acetylglucosamine residues in the diacetylchitobiose core of the oligosaccharide.

EDEGLY
Enzymatic Protein Deglycosylation Kit

G7907
Galactose Oxidase from Dactylium dendroides
≥30 units/mg solid

G5170
Galectin-3 human
recombinant, expressed in E. coli, lyophilized powder

SRP6373
Galectin-4 human
recombinant, expressed in E. coli, ≥95% (SDS-PAGE)

SRP4647
Galectin-7 human
recombinant, expressed in E. coli, ≥98% (SDS-PAGE), ≥98% (HPLC)

172426
Glucoamylase, Rhizopus sp.
Glucoamylase is a multi-domain enzyme that belongs to the glycosyl hydrolase 15 family. Useful for the enzymatic determination of starch.

49291
Glucosidase from Aspergillus niger
powder, gray-brown, ≥750 U/g

G0535
Glycopeptidase A from almonds
buffered aqueous glycerol solution, ≥0.05 unit/mL

H2125
Hemicellulase from Aspergillus niger
powder, 0.3-3.0 unit/mg solid (using a β-galactose dehydrogenase system and locust bean gum as substrate)

H0161
Hyaluronic Acid Binding Protein bovine
lyophilized powder

H9910
Hyaluronic Acid Binding Protein−Biotin bovine
lyophilized powder

385910
Hyaluronic Acid Binding Protein, Bovine Nasal Cartilage

385911
Hyaluronic Acid Binding Protein, Bovine Nasal Cartilage, Biotinylated

HX0514
Hyaluronidase

H3757
Hyaluronidase from bovine testes
Type VIII, lyophilized powder, 300-1,000 U/mg

H3884
Hyaluronidase from bovine testes
Type IV-S, lyophilized powder (essentially salt-free), 750-3000 units/mg solid

H3631
Hyaluronidase from bovine testes
Type VI-S, lyophilized powder, 3,000-15,000 units/mg solid

H2126
Hyaluronidase from sheep testes
Type II, lyophilized powder, ≥300 units/mg solid

H1136
Hyaluronidase from Streptomyces hyalurolyticus

385931
Hyaluronidase, Bovine Testes

389561
Hyaluronidase, Streptomyces hyaluronlyticus nov. sp.

57620
Inulinase from Aspergillus niger
lyophilized, powder, brown-gray, ~25 U/mg

I4504
Invertase from baker's yeast (S. cerevisiae)
Grade VII, ≥300 units/mg solid

I4753
Invertase from Candida utilis
Grade X, ≥300 units/mg solid

I0408
Invertase Glycoprotein Standard
BioReagent, from Saccharomyces cerevisiae, for proteomics

08124
Isoamylase from Pseudomonas sp.
ammonium sulfate suspension, ≥10,000,000 units/mg protein

L7759
Lectin from Arachis hypogaea (peanut)
peroxidase conjugate, lyophilized powder

L7381
Lectin from Arachis hypogaea (peanut)

FITC conjugate, lyophilized powder

L0881
Lectin from Arachis hypogaea (peanut)
lyophilized powder, Affinity-purified

L2380
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
lyophilized powder

L2895
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
Isolectin B_4 (BSI-B_4), FITC conjugate, lyophilized powder

L3019
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
Isolectin B_4 (BSI-B_4), lyophilized powder

L2140
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
Isolectin B_4 (BSI-B_4), biotin conjugate, lyophilized powder

L9381
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
FITC conjugate, lyophilized powder

L2895
Lectin from Bandeiraea simplicifolia (Griffonia simplicifolia)
Isolectin B_4 (BSI-B_4), FITC conjugate, lyophilized powder

61760
Lectin from Canavalia ensiformis
lyophilized, ≥50% (GE), powder

L2785
Lectin from Dolichos biflorus (horse gram)
lyophilized powder

L6533
Lectin from Dolichos biflorus (horse gram)
biotin conjugate, buffered aqueous solution

L5390
Lectin from Erythrina cristagalli (coral tree)
lyophilized powder

L8275
Lectin from Galanthus nivalis (snowdrop)
lyophilized powder

L8775
Lectin from Galanthus nivalis (snowdrop)
agarose conjugate, saline suspension

L1395
Lectin from Glycine max (soybean)
lyophilized powder, salt, essentially free

L3382
Lectin from Helix pomatia
lyophilized powder, salt, free

L6512
Lectin from Helix pomatia
biotin conjugate, lyophilized powder

L1277
Lectin from Lens culinaris (lentil)
Isoelectric focusing marker, pI (1) 8.2, (2) 8.6, (3) 8.8

L0511
Lectin from Lens culinaris (lentil)
Sepharose™ conjugate, saline suspension

L0401
Lectin from Lycopersicon esculentum (tomato)
FITC conjugate, buffered aqueous solution

61764
Lectin from Phaseolus vulgaris
lyophilized, powder

L9017
Lectin from Phaseolus vulgaris (red kidney bean)
Phytohemagglutinin PHA-P, BioXtra, purified by affinity chromatography, lyophilized powder

L4144
Lectin from Phaseolus vulgaris (red kidney bean)
Leucoagglutinin PHA-L, lyophilized powder, BioReagent, suitable for cell culture

L2769
Lectin from Phaseolus vulgaris (red kidney bean)
Leucoagglutinin PHA-L, lyophilized powder

L8754
Lectin from Phaseolus vulgaris (red kidney bean)
Phytohemagglutinin PHA-P, lyophilized powder

L2646
Lectin from Phaseolus vulgaris (red kidney bean)
Phytohemagglutinin PHA-M, lyophilized powder

L8629
Lectin from Phaseolus vulgaris (red kidney bean)
Erythroagglutinin PHA-E

L9017
Lectin from Phaseolus vulgaris (red kidney bean)
Phytohemagglutinin PHA-P, BioXtra, purified by affinity chromatography, lyophilized powder

L8902
Lectin from Phaseolus vulgaris (red kidney bean)
Phytohemagglutinin PHA-M, lyophilized powder, BioReagent, suitable for cell culture

L8777
Lectin from Phytolacca americana (pokeweed)
lyophilized powder, BioReagent, suitable for cell culture

L9379
Lectin from Phytolacca americana (pokeweed)
lyophilized powder

L5380
Lectin from Pisum sativum (pea)
lyophilized powder

L0770
Lectin from Pisum sativum (pea)
FITC conjugate, lyophilized powder

L9895
Lectin from Pseudomonas aeruginosa
lyophilized powder

61767
Lectin from Triticum vulgaris

lyophilized, ≥55% (GE), powder

L3892
Lectin from Triticum vulgaris (wheat)
peroxidase conjugate, lyophilized powder

L1394
Lectin from Triticum vulgaris (wheat)
agarose conjugate, saline suspension

L0636
Lectin from Triticum vulgaris (wheat)
BioReagent, suitable for cell culture, lyophilized powder

L4895
Lectin from Triticum vulgaris (wheat)
FITC conjugate, lyophilized powder

L5142
Lectin from Triticum vulgaris (wheat)
biotin conjugate, lyophilized powder

L9640
Lectin from Triticum vulgaris (wheat)
lyophilized powder

L1882
Lectin from Triticum vulgaris (wheat)
agarose conjugate, saline suspension

L5505
Lectin from Ulex europaeus (gorse, furze)
lyophilized powder

L8146
Lectin from Ulex europaeus (gorse, furze)
peroxidase conjugate, lyophilized powder

L8262
Lectin from Ulex europaeus (gorse, furze)
biotin conjugate, lyophilized powder

L9006
Lectin from Ulex europaeus (gorse, furze)
FITC conjugate, lyophilized powder

L1516
Lectin from Wisteria floribunda
buffered aqueous solution, biotin conjugate

L8258
Lectin from Wisteria floribunda
lyophilized powder

L7659
Lewis-b tetrasaccharide

L7784
Lewis-Y tetrasaccharide

A8312
m-Aminophenylboronic acid–Agarose
aqueous suspension

A8530
m-Aminophenylboronic acid–Agarose
saline suspension

M8284
Maltose Phosphorylase from Enterococcus sp.
recombinant, expressed in E. coli, lyophilized powder

40941
Methylphosphonic acid
99.0-101.0% (T)

91957
Monosodium methylphosphonate
99.0-101.0% (T)

SAE0202
Mucinase StcE
from EHEC, recombinant, powder

B8299
N-Butyldeoxynojirimycin
film (dried in situ)

362300
N-Glycosidase F, Chryseobacterium meningosepticum, Recombinant, E. coli

362185
N-Glycosidase F, Elizabethkingia meningosepticum

M1777
N-Methyl-1-deoxynojirimycin
≥98%

NDEGLY
Native Protein Deglycosylation Kit

N5254
Neuraminidase Agarose from Clostridium perfringens (C. welchii)
Type VI-A, ammonium sulfate suspension

N5631
Neuraminidase from Clostridium perfringens (C. welchii)
Type VIII, lyophilized powder, 10-20 units/mg protein (using 4MU-NANA), 3.5-8.0 units/mg protein (mucin)

N2876
Neuraminidase from Clostridium perfringens (C. welchii)
Suitable for manufacturing of diagnostic kits and reagents, Type V, lyophilized powder

N3001
Neuraminidase from Clostridium perfringens (C. welchii)
Type VI, lyophilized powder, 6-15 units/mg protein (using 4MU-NANA), 2-10 units/mg protein (mucin)

N2133
Neuraminidase from Clostridium perfringens (C. welchii)
Type X, lyophilized powder, ≥50 units/mg protein (using 4MU-NANA)

72197
Neuraminidase from Vibrio cholerae
≥1.5 U/mL, specific activity ≥ 1.5U/mg protein

N7885
Neuraminidase from Vibrio cholerae
Type III, buffered aqueous solution, 0.2 µm filtered, 1-5 units/mg protein (Lowry, using NAN-lactose)

N6514
Neuraminidase from Vibrio cholerae
Type II, buffered aqueous solution, 8-24 units/mg protein (Lowry, using NAN-lactose)

N7779
Nojirimycin bisulfite microbial
solid

G1163
O-Glycosidase from Streptococcus pneumoniae
recombinant, expressed in E. coli, buffered aqueous solution

A0414
p-Aminobenzyl 1-thio-β-D-galactopyranoside–Agarose
saline suspension

89216
Pectinase from Aspergillus
≥0.3 U/mg

P2611
Pectinase from Aspergillus aculeatus
aqueous solution, ≥3,800 units/mL

E6287
Pectinase from Aspergillus aculeatus

P4716
Pectinase from Aspergillus niger
BioReagent, suitable for plant cell culture, aqueous glycerol solution, ≥5 units/mg protein (Lowry)

P2401
Pectinase from Rhizopus sp.
powder, 400-800 units/g solid

P3026
Pectolyase from Aspergillus japonicus
lyophilized powder, ≥0.3 units/mg solid

12-241
Phospho-Glycogen Synthase Peptide-2
Phospho-Glycogen Synthase Peptide-2 primarily used in Kinase Assays.

F8435
PNGase F from Elizabethkingia meningoseptica
lyophilized powder, recombinant, expressed in E. coli

G1549
PNGase F from Elizabethkingia meningoseptica
ready-to-use solution, recombinant, expressed in E. coli

P9120
PNGase F from Elizabethkingia meningoseptica
recombinant, expressed in E. coli, set of 100 units nanomolar unit

P7367
PNGase F from Elizabethkingia meningoseptica
BioReagent, ≥95% (SDS-PAGE), for proteomics

G5166
PNGase F from Elizabethkingia miricola
buffered aqueous solution

A7229
PUGNAc
≥95% (HPLC)

E2412
Pullulanase microbial

L3885
Succinyl-Concanavalin A
lyophilized powder

S9263
Swainsonine
synthetic

86247
Taka-Diastase from Aspergillus oryzae
powder, slightly beige, ~100 U/mg

T4528
Thioglucosidase from Sinapis alba (white mustard) seed
≥100 units/g solid

53886
Tn Antigen
≥99.0% (TLC)

T8778
Trehalase from porcine kidney
buffered aqueous glycerol solution, ≥1.0 units/mg protein

X2753
Xylanase
powder, ≥2500 units/g, recombinant, expressed in Aspergillus oryzae

X3876
Xylanase from Trichoderma viride
lyophilized powder, 100-300 units/mg protein

Proteases

Proteolytic hydrolysis of peptide bonds is recognized as an essential and ubiquitous mechanism for the regulation of a myriad of physiological processes. Four main classes of proteolytic enzymes have been routinely utilized to describe proteases. The serine proteases are probably the best characterized. This class of proteases includes trypsin, chymotrypsin and elastase. The cysteine protease class includes papain, calpain and lysosomal cathepsins. Aspartic proteases include pepsin and rennin. Metallo-proteases include thermolysin and carboxypeptidase A. Explore our comprehensive offering of rigorously tested proteinases for your protein workflow needs.

PROTEASES FOR RESEARCH APPLICATIONS

In order to assist with your protease selection, our Protease Finder allows researchers to locate endo- and exopeptidases that are required for precise protein cleavage. Facilitating the catalytic breakdown of proteins in smaller polypeptides or single amino acids, our proteases provide a comprehensive range of offerings to meet your protein research application needs.

PROTEASES FOR PROTEOMICS RESEARCH

Proteases are commonly used tools in proteomics research and suitable for digesting proteins into small peptide fragments for mass spectrometry analysis followed by sequencing (tandem MS). Trypsin generates peptides in the useful mass range for mass spectrometry and is recognized as the most used protease for protein identification. Explore our solution-stable recombinant SOLu-Trypsin products (**EMS0004**) (**EMS0005**) for additional information. Additionally, there are instances where separate or sequential digestion with other proteases may be a better choice for your protein of interest. We offer a variety of sequencing grade proteases that are appropriate for use in mass spectrometry sample preparation.

PROTEASES FOR INDUSTRIAL AND APPLIED RESEARCH

Proteases have commercial importance in different industrial and applied sectors and have multiple applications. Due to their wide variety of physiological characteristics, including hydrolysis at pH extremes or elevated temperatures, they ideal for use in the pharmaceutical, diagnostic, textile, food and beverage sectors. Specific applications for these proteases include but are not limited to; dietary fiber testing and clean-in-place additives for contaminate removal. We have a wide range of purified enzymes and enzyme mixtures for researching and developing new processes, products, and assays.

PROTEASE DETECTION KITS

We offer two easy-to-use kits to detect trace amounts of protease, or to determine total protease activity, using the same methodologies utilized by our QC department for years. We have used these protocols to test thousands of samples for proteolytic activity.

The Protease Detection Kits are complete kits for detection of primary or trace protease activity by your choice of fluorometric or colorimetric detection. Everything you need, including control, standards, buffers, and substrate, is included. For convenience, the assay can be performed in either a cuvette or microplate format. Each kit contains enough reagents for 200 x 1 mL assays. For greater sensitivity when measuring low levels of protease activity, the Protease Fluorescent Detection kit (**PF0100**) is recommended. For more accurate quantification of primary protease activity, the Protease Colorimetric Detection kit is (**PC0100**) recommended.

Both the Fluorometric Detection Kit and the Colorimetric Detection Kit have been tested against representative samples of all four types of protease classes (serine, aspartic, cysteine and metalloproteases) to ensure broad application suitability.

650277
1-Cyclohexen-1-yl-boronic acid pinacol ester

CHY5S
α-Chymotrypsin from bovine pancreas
≥40 units/mg protein, vial of 5 mg

C4129
α-Chymotrypsin from bovine pancreas
Type II, lyophilized powder, ≥40 units/mg protein

C6423
α-Chymotrypsin from bovine pancreas
suitable for protein sequencing, salt-free, lyophilized powder

C7762
α-Chymotrypsin from bovine pancreas
Type I-S, essentially salt-free, lyophilized powder

C3142
α-Chymotrypsin from bovine pancreas
(TLCK treated to inactivate residual tryspin activity), Type VII, essentially salt-free, lyophilized powder, ≥40 units/mg protein

C8946
α-Chymotrypsin from human pancreas
lyophilized powder

C9134
α-Chymotrypsin−Agarose from bovine pancreas
lyophilized powder, 2,000-3,500 units/g agarose (One ml gel will yield 65-120 units)

C4879
α-Chymotrypsinogen A from bovine pancreas
essentially salt-free, lyophilized powder

A6362
Alpha-lytic protease

A8200
Aminopeptidase from Aeromonas proteolytica
lyophilized powder, 50-150 units/mg protein

A4987
Aminopeptidase His-tagged from Vibrio proteolyticus

A9934
Aminopeptidase I from Streptomyces griseus
lyophilized powder, ≥200 units/mg protein

164598
Aminopeptidase M, Porcine Kidney

164599
Aminopeptidase N, Rat

B5144
Bromelain from pineapple stem
≥4 units/mg protein, (chromatography purified)

B4882
Bromelain from pineapple stem
≥3 units/mg protein

208713
Calpain-1, Human Erythrocytes
Calpain-1, Human Erythrocytes, is a native calpain-1. A heterodimeric cysteine proteinase with low Ca^{2+} requirement (EC_{50} = 2 µM).

208712
Calpain-1, Porcine Erythrocytes
Calpain-1, Porcine Erythrocytes, is a native calpain-1. A heterodimeric cysteine proteinase with low Ca^{2+} requirement (EC_{50} = 2 µM).

C9268
Carboxypeptidase A from bovine pancreas
(Type II-PMSF treated), ≥50 units/mg protein, ready-to-use solution

C9268
Carboxypeptidase A from bovine pancreas
(Type II-PMSF treated), ≥50 units/mg protein, ready-to-use solution

C1261
Carboxypeptidase A−Agarose
ammonium sulfate suspension, ≥6 units/mL packed gel, 25 °C, enzyme from bovine pancreas

C5233
Carboxypeptidase B from human pancreas
50-55 units/mg protein carboxypeptidase B

C9584
Carboxypeptidase B from porcine pancreas
lyophilized powder

217356
Carboxypeptidase B, Porcine Pancreas

C9658
Carboxypeptidase G from Pseudomonas sp.
lyophilized powder, ≥3 units/mg protein

C3888
Carboxypeptidase Y from baker's yeast (S. cerevisiae)
lyophilized powder, ≥50 units/mg protein

SRP3302
CARBOXYPEPTIDASE-B rat
recombinant, expressed in E. coli, ≥95% (SDS-PAGE), ≥95% (HPLC)

C0150
Cathepsin B from human placenta
lyophilized powder, ≥5 units/mg protein

C8511
Cathepsin C from bovine spleen
Type X, lyophilized powder, ≥5 units/mg protein

C8118
Chymase human
recombinant, expressed in Pichia pastoris

SRP6509
Chymotrypsin from human pancreas
≥95% (SDS-PAGE)

230900
Chymotrypsin, Human Pancreas
Natiave chymotrypsin from human pancreas. Pancreatic digestive enzyme. Increased levels of this enzyme and/or its zymogen have been found in serum of individuals with cystic fibrosis.

C0888
Clostripain from Clostridium histolyticum
≥20 units/mg solid

D3571
Dipeptidyl Peptidase III human
recombinant, expressed in Sf9 cells

D3446
Dipeptidyl Peptidase IV human
recombinant, expressed in Sf9 cells

D3071
Dipeptidyl Peptidase IX human
recombinant, expressed in Sf9 cells

D3321
Dipeptidyl Peptidase VII human
recombinant, expressed in Sf9 cells

D3196
Dipeptidyl Peptidase VIII human
recombinant, expressed in Sf9 cells

SRP6056
Dipeptidylpeptidase human
recombinant, expressed in Hi-5 Insect cells, ≥95% (SDS-PAGE)

E8140
Elastase from human leukocytes
lyophilized powder, ≥50 units/mg protein (Bradford)

E1250
Elastase from porcine pancreas
Type I, ≥4.0 units/mg protein

E0258
Elastase from porcine pancreas
Type IV, Protein 50-90 %, lyophilized powder, ≥4.0 units/mg protein (biuret)

E0127
Elastase from porcine pancreas
Type III, lyophilized powder, Protein 55-85 %, ≥4.0 units/mg protein

324708
Endoproteinase Asp-N, Excision Grade, Pseudomonas fragi

P2922
Endoproteinase Glu-C from Staphylococcus aureus V8
Type XVII-B, lyophilized powder, 500-1,000 units/mg solid

324713
Endoproteinase Glu-C, Excision Grade, Staphylococcus aureus

E5144
Enterokinase from bovine intestine
powder

E0885
Enterokinase from porcine intestine
lyophilized powder, ≥100 units/mg protein

E0632
Enterokinase from porcine intestine
≥0.5 units/mg solid

SRP3032
Enterokinase human
recombinant, expressed in CHO cells, ≥90% (SDS-PAGE), ≥90% (HPLC), suitable for cell culture

SRP6215
Enterokinase human
recombinant, expressed in CHO cells, ≥90% (SDS-PAGE)

F7182
Fibroblast Activation Protein a human
recombinant, expressed in Sf21 cells, ≥95% (SDS-PAGE)

F4165
Ficin from fig tree latex
powder, ≥0.1 unit/mg solid

F6008
Ficin from fig tree latex
lyophilized powder

F4125
Ficin from fig tree latex
saline suspension, ≥1.0 units/mg protein (biuret)

SRP6274
Furin human
recombinant, expressed in HEK 293 cells, ≥95% (SDS-PAGE)

F2677
Furin human
≥2,000 unit/mL, buffered aqueous solution, recombinant, expressed in baculovirus infected Sf9 cells

344932
Furin, Human, Recombinant

SRP2152
HIV Protease, His tagged,recombinant from HIV-1
recombinant, expressed in E. coli, ≥85% (SDS-PAGE)

SRP6058

Kallikrein-3 human
recombinant, expressed in human cells, ≥95% (SDS-PAGE)

K4519
Keratinase
lyophilized powder

L6007
Leucine Aminopeptidase, microsomal from porcine kidney
Type VI-S, lyophilized powder, ≥12 units/mg protein (biuret)

L5006
Leucine Aminopeptidase, microsomal from porcine kidney
Type IV-S, ammonium sulfate suspension, 10-40 units/mg protein (Bradford)

M6435
Methionine Aminopeptidase from Pyrococcus furiosus
≥93% (SDS-PAGE), recombinant, expressed in E. coli

P7545
Pancreatin from porcine pancreas
8 × USP specifications

P1750
Pancreatin from porcine pancreas
4 × USP specifications

V900486
Pancreatin from porcine pancreas
Vetec™, reagent grade

P1625
Pancreatin from porcine pancreas
≥3 × USP specifications

SRP6285
PCSK9 human
recombinant, expressed in HEK 293 cells, ≥97% (SDS-PAGE)

77151
Pepsin from porcine gastric mucosa
powder, slightly beige, 1200-2400 U/mg

77161
Pepsin from porcine gastric mucosa

tested according to Ph. Eur.

77160
Pepsin from porcine gastric mucosa
powder, slightly beige, ≥500 U/mg

V900497
Pepsin from porcine gastric mucosa
Vetec™, reagent grade

P6887
Pepsin from porcine gastric mucosa
lyophilized powder, ≥3,200 units/mg protein

P7000
Pepsin from porcine gastric mucosa
powder, ≥250 units/mg solid

P7125
Pepsin from porcine gastric mucosa
powder, ≥400 units/mg protein

P7012
Pepsin from porcine gastric mucosa
lyophilized powder, ≥2,500 units/mg protein (E1%/280)

SRE0001
Pepsin from porcine gastric mucosa
Suitable for manufacturing of diagnostic kits and reagents, lyophilized powder, ≥3200 units/mg protein

P0609
Pepsin−Agarose from porcine gastric mucosa
lyophilized powder, ≥30 units/mg dry solid

516360
Pepsin, Porcine Stomach Mucosa
Catalyzes the hydrolysis of aminoacyl-proline to an amino acid and proline. Inhibitors include aliphatic alcohols, pepstatin A, and pH 6.0.

P6675
Prolidase from porcine kidney
lyophilized powder, ≥100 units/mg protein

E1411
Proline Specific Endopeptidase from Flavobacterium sp.

lyophilized powder, ≥5.0 units/mg solid

O9515
Prolyl oligopeptidase
recombinant, expressed in E. coli

P6110
Protease from Aspergillus oryzae
≥500 U/g

P2143
Protease from Aspergillus saitoi
Type XIII, ≥0.6 unit/mg solid

P1236
Protease from Bacillus amyloliquefaciens
liquid, ≥0.8 U/g

P3910
Protease from Bacillus licheniformis
lyophilized powder, for use in Total Dietary Fiber Assay, TDF-100A

P5380
Protease from Bacillus licheniformis
Type VIII, lyophilized powder, 7-15 units/mg solid

P5459
Protease from Bacillus licheniformis
glycerol solution (50%)

P4860
Protease from Bacillus licheniformis
≥2.4 U/g

P5860
Protease from Bacillus sp.
liquid, ≥8 U/g

P5985
Protease from Bacillus sp.
liquid, ≥16 U/g

P3111
Protease from Bacillus sp.
liquid, ≥16 U/g

P0029
Protease from Bacillus sp.

P4630
Protease from bovine pancreas
Type I, ≥5 units/mg solid

P0107
Protease from Rhizopus sp.

P5147
Protease from Streptomyces griseus
Type XIV, ≥3.5 units/mg solid, powder

P0652
Protease from Streptomyces sp.
Type XXI, ≥15 units/mg solid

539131
Protease Inhibitor Cocktail Set I
A cocktail of five protease inhibitors that will inhibit a broad range of proteases and esterases. Supplied with a data sheet.

P4032
Proteinase from Aspergillus melleus
Type XXIII, ≥3 units/mg solid

P8038
Proteinase, bacterial
Type XXIV, 7.0-14.0 units/mg solid, lyophilized powder

P6236
Pyroglutamate Aminopeptidase from Pyrococcus furiosus
recombinant, expressed in E. coli, ~90% (SDS-PAGE), ≥5.0 units/mg protein

19924
Pyroglutamate Aminopeptidase from Pyrococcus furiosus, recombinant from E. coli
7-13 mU (per vial)

R4877
Rennin from calf stomach
≥20 units/mg protein

83553
Rennin from Mucor miehei
lyophilized, powder, slightly brown, ~0.1 U/mg

SAE0067
SUMO Protease
His tagged recombinant protein, lyophilized powder

SAE0101
SUMO Protease, Biotin tagged
Recombinant protein, aqueous solution, ≥25,000 units/mL

P1512
Thermolysin from Geobacillus stearothermophilus
Type X, lyophilized powder, 30-350 units/mg protein (E1%/280)

T7705
Thimet Oligopeptidase from Bacillus licheniformis

T6763
Trypsin Acetylated from bovine pancreas
Type V-S, ≥8,500 BAEE units/mg protein (biuret)

T1763
Trypsin Agarose
buffered aqueous suspension, from bovine pancreas trypsin

T9935
Trypsin from bovine pancreas
essentially salt-free, lyophilized powder, ≥9,000 BAEE units/mg protein, BioReagent, suitable for cell culture

T8003
Trypsin from bovine pancreas
Type I, ~10,000 BAEE units/mg protein

T1005
Trypsin from bovine pancreas
Type XI, lyophilized powder, ≥6,000 BAEE units/mg protein

T8802
Trypsin from bovine pancreas
TPCK Treated, essentially salt-free, lyophilized powder, ≥10,000 BAEE units/mg protein

T7309
Trypsin from bovine pancreas

≥2,500 USP units/mg solid, meets USP testing specifications

T9201
Trypsin from bovine pancreas
powder, ≥7,500 BAEE units/mg solid

T1426
Trypsin from bovine pancreas
TPCK Treated, essentially salt-free, lyophilized powder, ≥10,000 BAEE units/mg protein

T6424
Trypsin from human pancreas
salt-free, lyophilized powder, vial of ≥1,000 BAEE units

T0303
Trypsin from porcine pancreas
Type IX-S, lyophilized powder, 13,000-20,000 BAEE units/mg protein

T7409
Trypsin from porcine pancreas
lyophilized powder, Type II-S, 1,000-2,000 units/mg dry solid

T7168
Trypsin from porcine pancreas
tablet, 1 mg tablet

93615
Trypsin from porcine pancreas
~1500 U/mg

T9003
Trypsin inhibitor from Glycine max (soybean)
lyophilized powder

93620
Trypsin inhibitor from Glycine max (soybean)
lyophilized powder, ~10000 U/mg

SRP6311
Trypsin Pancreas from human pancreas
≥95% (SDS-PAGE)

T4019
Trypsin−Agarose
buffered aqueous suspension, from bovine pancreas trypsin

6502
Trypsin, Bovine Pancreas

650275
Trypsin, Iodination Grade, Human Pancreas

650279
Trypsin, Porcine, MS Grade

650366-M
Tryptase, Human Lung

T3568
TrypZean® bovine
recombinant, expressed in corn, lyophilized powder, ≥3,350 units/mg solid (USP)

Detection Substrates & Enzymes

Detection substrates and enzymes are crucial in many areas of life science, both as tools and targets in detection systems. Our enzyme substrates and substrate detection systems offer convenience, stability, and consistency. They are routinely analyzed in our laboratories for identity, assay, and homogeneity, as well as for functional performance in the corresponding enzyme system. We offer substrates, buffers, and reagents in powder, liquid, tablet, and capsule forms for use in enzyme assays, ELISA, blotting, imaging, and many other applications. Our high purity enzymes have undergone extensive characterization and offer

lot-to-lot consistency. Explore our enzyme products and discover ways to utilize our detection substrates and enzymes in different detection methods.

PEROXIDASE ENZYMES

Our peroxidase enzymes are recognized around the world as the industry standard for diagnostic manufacturing and laboratory-scale research applications. Horseradish peroxidase (HRP) enzymes, peroxidase enzyme products, horseradish peroxidase substrates, and inhibitors are widely used as secondary detection reagents in ELISAs, immuno-histochemical techniques, and blotting analyses. In addition, you can conjugate our HRP to your own molecule including antibodies and avidins. Our peroxidase products include variations of HRP enzyme and chromogenic substrates of HRP such as 3,3′,5,5′-Tetramethylbenzidine (TMB) Liquid Substrate System for ELISA and SIGMAFAST™ OPD (o-Phenylenediamine dihydrochloride) tablet. Other products include chemiluminescence substrates of HRP for ultra-sensitive detection such as Lumi-Light^{PLUS} Western Blotting Substrate and BM Chemiluminescence ELISA Substrate (POD).

ALKALINE PHOSPHATASE (ALP) ENZYMES

Our reliable ALPs are widely used in immunohistochemical assays, northern, Southern, and western blot applications, as well as ELISA-based diagnostics. Explore our ALP resource to find the right protocol for your assay needs. We offer a variety of ALP products and alkaline phosphatase substrates. Options include **colorimetric substrates** and chromogenic substrates such as phosphatase substrate tablets, **SIGMAFAST™ BCIP®/NBT tablet**, and Alkaline Phosphatase Yellow (pNPP) Liquid Substrate System for ELISA ready-to-use solution. Histochemical substrates include naphthol AS-TR phosphate disodium salt and 5-bromo-4-chloro-3-indolyl phosphate disodium salt. Additionally, we provide chemiluminescence substrates for ultra-sensitive detection such as CDP-Star®, ready-to-use disodium 2-chloro-5-(4-methoxyspiro {1,2-dioxetane-3,2′-(5′chloro)tricyclo [3.3.1.13,7] decan}-4-yl)-1-phenyl phosphate from Roche.

LUCIFERASE REAGENTS

Luciferase is the original source for bioluminescent technology and firefly luciferase is a widely used bioluminescent reporter. These highly sensitive luciferase enzyme products are used extensively in molecular and cell biology, and for the efficient detection and quantitation of ATP as a reporter for genetic function. The light-producing reaction is initiated by D-luciferin activation. ATP is hydrolyzed and light is emitted when firefly luciferase catalyzes the oxidation of D-luciferin. We provide multiple formats of luciferase such as solutions and powders to fit your bioluminescent experiment needs. To protect the firefly population, we offer highly active **green recombinant firefly luciferase**. We also offer variations of the luciferase substrate, D-luciferin for luciferase assays.

ADDITIONAL DETECTION SUBSTRATES

Our broad collection of additional detection substrates has numerous applications to suit your needs. This includes substrates for staining and labeling of actin microfilaments and the detection of cholesterol and lipoproteins in cells. Explore enzyme-based detection systems for ELISA, immunohistochemistry, and Western blotting including OPD, TMB, BCIP, pNPP, fast

red, ABTS, DAB, chemiluminescence, and many more. We manufacture basic reagent powders as well as convenient solutions and tablets. We also offer enhancers and stop solutions specifically formulated for optimal performance with our detection substrates.

P3754
1,4-Bis(5-phenyl-2-oxazolyl)benzene
BioReagent, suitable for scintillation

69587
2′-(4-Methylumbelliferyl)-a-D-N-acetylneuraminic acid sodium salt hydrate
suitable for fluorescence, BioReagent, ≥96.5% (HPLC)

287810
2′,7′-Dichlorofluorescin Diacetate
Cell-permeable fluorogenic probe that is useful for the detection of reactive oxygen species (ROS) and nitric oxide (•NO) and for the determination of the degree of overall oxidative stress.

F5006
2-Fluoro-2-deoxy-D-glucose
glycosylation inhibitor, glucose analog

A3219
2,2′-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid)
Liquid Substrate System

A9941
2,2′-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt
tablet, 10 mg substrate per tablet

A1888
2,2′-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt
≥98% (HPLC)

A6926
3-Amino-9-ethylcarbazole
tablet

D6815
3,3′-Diaminobenzidine (DAB) Enhanced Liquid Substrate System tetrahydrochloride
for Membrane Applications

D5905
3,3′-Diaminobenzidine tetrahydrochloride
tablet, 10 mg substrate per tablet

T2885

3,3′,5,5′-Tetramethylbenzidine
≥98% (TLC)

T5525
3,3′,5,5′-Tetramethylbenzidine
tablet, 1 mg substrate per tablet

87748
3,3′,5,5′-Tetramethylbenzidine
≥98.0% (NT)

T0440
3,3′,5,5′-Tetramethylbenzidine (TMB) Liquid Substrate System for ELISA
peroxidase substrate

T0565
3,3′,5,5′-Tetramethylbenzidine (TMB) Liquid Substrate System for Membranes
ready to use solution

T3405
3,3′,5,5′-Tetramethylbenzidine dihydrochloride
tablet, 1 mg substrate per tablet

T8768
3,3′,5,5′-Tetramethylbenzidine dihydrochloride hydrate
powder, ≥98%

V900355
3,3′,5,5′-Tetramethylbenzidine dihydrochloride hydrate
Vetec™, reagent grade, ≥98%

87750
3,3′,5,5′-Tetramethylbenzidine dihydrochloride hydrate
≥98.0% (calc. on dry substance, AT)

T4319
3,3′,5,5′-Tetramethylbenzidine Liquid Substrate, Slow Kinetic Form, for ELISA
peroxidase substrate

A0554
4-Acetamido-4′-isothiocyanato-2,2′-stilbenedisulfonic acid disodium salt hydrate
≥80%

A8264
4-Aminophthalhydrazide

C6788
4-Chloro-1-naphthol
tablet

C8890
4-Chloro-1-naphthol
crystalline

F5883
4-Fluoro-7-nitrobenzofurazan
≥98% (elemental analysis)

69591
4-Methylumbelliferyl a-D-glucopyranoside
≥98% (TLC)

N3129
4-Nitrophenyl phosphate bis(cyclohexylammonium) salt
phosphatase substrate

N3254
4-Nitrophenyl phosphate di(tris) salt
phosphatase substrate

N2640
4-Nitrophenyl phosphate disodium salt hexahydrate
tablet

N9389
4-Nitrophenyl phosphate disodium salt hexahydrate
tablet

N2765
4-Nitrophenyl phosphate disodium salt hexahydrate
tablet

71768
4-Nitrophenyl phosphate disodium salt hexahydrate
suitable for enzyme immunoassay, ≥99.0% (enzymatic)

A3537
5-Aminosalicylic acid
≥99%

B4526
5-Bromo-4-chloro-3-indolyl α-D-mannopyranoside
≥93%

B4377
5-Bromo-4-chloro-3-indolyl acetate
esterase substrate

B9146
5-Bromo-4-chloro-3-indolyl β-D-galactopyranoside
≥98%

B4252
5-Bromo-4-chloro-3-indolyl β-D-galactopyranoside
≥98%, powder

B6024
5-Bromo-4-chloro-3-indolyl β-D-galactopyranoside
tablet

V900468
5-Bromo-4-chloro-3-indolyl β-D-galactopyranoside
Vetec™, reagent grade, ≥98%

B4527
5-Bromo-4-chloro-3-indolyl β-D-glucopyranoside
≥97%

B5285
5-Bromo-4-chloro-3-indolyl β-D-glucuronide sodium salt
≥98%

B8174
5-Bromo-4-chloro-3-indolyl β-D-glucuronide sodium salt
tablet

B9151
5-Bromo-4-chloro-3-indolyl butyrate
≥99%

B6149
5-Bromo-4-chloro-3-indolyl phosphate disodium salt
≥98% (HPLC)

B6777
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt

BioReagent, for molecular biology, powder, ≥99%

B8503
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt
≥99% (HPLC)

B0274
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt
tablet

16670
5-Bromo-4-chloro-3-indolyl phosphate p-toluidine salt
≥95.0% (HPLC)

B1379
5-Bromo-4-chloro-3-indolyl sulfate potassium salt
sulfatase substrate

94498
5-Cyano-2,3-di-(p-tolyl)tetrazolium chloride
≥85% (HPLC)

322123
5,5′-Dithio-bis-(2-nitrobenzoic Acid)
Sulfhydryl reagent used to characterize reactive SH groups.

B7877
6-Bromo-2-naphthyl β-D-glucopyranoside
≥99% (TLC)

A1227
ABTS Enhancer
for peroxidase detection

12-379
Acetyl-Histone H4 (Lys5, 8, 12, 16) Peptide, biotin conjugate
Acetyl-Histone H4 (Lys5, 8, 12, 16) Peptide, biotin conjugate primarily used in Immunoprecipitation and Affinity Precipitation Assays.

I3636
Acridine Mutagen ICR 191

FLASC
Adenosine 5′-triphosphate (ATP) bioluminescent somatic cell assay kit
for cellular ATP determination

FLAAS
Adenosine 5′-triphosphate (ATP) disodium salt hydrate
vial of ~1 mg ATP

A7699
Adenosine 5′-triphosphate disodium salt hydrate
BioXtra, ≥99% (HPLC), from microbial

02065
Adenosine 5′-triphosphate, immobilized on Agarose 4B
suitable for affinity chromatography, powder (lyophilized)

AB0300
Alkaline Phosphatase Blue Membrane Substrate Solution
sufficient for 400 mL working substrate

AB0100
Alkaline Phosphatase Blue Microwell Substrate
sufficient for 400 mL working substrate

AP0100
Alkaline Phosphatase Diethanolamine Activity Kit
sufficient for 100 tests

SAE0063
Alkaline Phosphatase Recombinant
solution (high-activity)

P7998
Alkaline Phosphatase Yellow (pNPP) Liquid Substrate System for ELISA
ready to use solution

90101
Ampliflu™ Red
for fluorescence, ≥98.0% (HPLC)

11371
Avidin-Peroxidase Conjugate from hen egg white/horseradish
lyophilized, powder, almost white, avidin ~5 U/mg

216254
BCECF/AM
A variable mixture of cell-permeable ester derivatives of BCECF that are hydrolyzed by cytosolic esterases to yield intracellularly trapped indicator BCECF.

12-414
CHKtide, biotin conjugate

220588
Chlorophenolred-β-D-galactopyranoside, Sodium Salt

C3105
Coelenterazine fcp
solid

C3355
Coelenterazine hcp
solid

50227
D-Luciferin potassium salt
≥98.0% (HPLC)

309800
Dihydroethidium
A cell-permeable, chemically-reduced ethidium derivative.

309825
Dihydrorhodamine 123
Cell-permeable fluorogenic probe that is useful for the detection of reactive oxygen species (ROS) such as peroxide and peroxynitrite.

12-566
Dimethyl-Histone H3 (Lys27) Peptide, biotin conjugate
Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes.

E9029
E-Toxa-Clean® Concentrate
alkaline detergent

E8029
E-Toxate™ Endotoxin standard
for endotoxin quantitation

ET0200
E-TOXATE™ Kit
sufficient for 20 assays

ET0300
E-TOXATE™ Kit
sufficient for 100 assays

ET0100
E-Toxate™ Kit
sufficient for 50 assays

2108
E-Toxate™ Reagent
Single test vial

E8779
E-Toxate™ reagent from Limulus polyphemus
sufficient for 20 tests

E8904
E-Toxate™ reagent from Limulus polyphemus
sufficient for 50 tests

46043
Ethidium homodimer
suitable for fluorescence, ~90% (HPCE)

F3301
Factor Xa chromogenic substrate
solid

F9765
Filipin complex from Streptomyces filipinensis
≥70% (UV)

F4767
Filipin III from Streptomyces filipinensis
≥85% (HPLC)

FLE250
Firefly Lantern Extract
for ATP determination

F6303
Firefly Lantern Extract
pkg of 100 mg

344101
FSB
A fluorine analog of the amyloidophilic fluorescent probe BSB that crosses the blood-brain barrier and displays low toxicity.

5.34329
H_2S Fluorescent Probe, P3

SAE0116
Heparanase-1 pre-activated human
recombinant, expressed in HEK 293 cells

12-403
Histone H3 Peptide, biotin conjugate
This peptide corresponds to residues 1-21 of histone H3.

12-404
Histone H3 Peptide, biotin conjugate, residues 21-44
This gene contains introns & its mRNA is polyadenylated, unlike most histone genes. The protein encoded is a replication-independent member of the histone H3 family.

12-372
Histone H4 Peptide, biotin conjugate, residues 2-24
Histone H4 Peptide, biotin conjugate, residues 2-24 primarily used in Immunoprecipitation and Affinity Precipitation Assays.

I5505
Indoxyl phosphate disodium salt
crystalline

SRE0028
Lipase from human pancreas

L9420
Luciferase from Photinus pyralis (firefly)
recombinant, expressed in E. coli, buffered aqueous solution, ≥10×10^{10} units/mg protein

SRE0045
Luciferase from Photinus pyralis (firefly)
recombinant, expressed in E. coli, lyophilized powder, ≥10×10^{10} units/mg protein

L8507
Luciferase from Vibrio fischeri (Photobacterium f)
lyophilized powder

A8511

Luminol
≥97% (HPLC)

69244
Mant-GDP triethylammonium salt solution
≥95.0% (HPLC)

475989
MTT
Membrane-permeable yellow dye that is reduced by mitochondrial reductases in living cells to form the dark blue product, MTT-formazan.

A0156
N-(4-Aminobutyl)-N-ethylisoluminol
≥90%

N1875
Naphthol AS-BI β-D-glucuronide
β-glucuronidase substrate

N4006
Naphthol AS-BI N-acetyl-β-D-glucosaminide
β-hexosaminidase substrate

N2250
Naphthol AS-BI phosphate disodium salt hydrate
≥96.0% (HPLC)

N0758
Naphthol AS-D chloroacetate
esterase substrate

N4875
Naphthol AS-MX phosphate
powder, ≥99% (HPLC)

N6125
Naphthol AS-TR phosphate disodium salt
≥99% (HPLC), Bulk package

93862
Nitrotetrazolium Blue chloride
90.0-110.0% (calc. on dry substance, T)

D9143

o-Dianisidine
peroxidase substrate

D9154
o-Dianisidine dihydrochloride
tablet, 10 mg substrate per tablet

P5412
o-Phenylenediamine
tablet, 20 mg substrate per tablet

P9029
o-Phenylenediamine
Peroxidase substrate, ≥98.0%, powder

P1526
o-Phenylenediamine dihydrochloride
peroxidase substrate

P1063
o-Phenylenediamine dihydrochloride
tablet, 60 mg substrate per tablet

N7653
p-Nitrophenyl Phosphate Liquid Substrate System
liquid

P6001
p-Phenylenediamine
98% (GC)

SRE0082
Peroxidase from horseradish
Suitable for manufacturing of diagnostic kits and reagents

P6782
Peroxidase from horseradish
Type VI-A, essentially salt-free, lyophilized powder, ≥250 units/mg solid (using pyrogallol), 950-2000 units/mg solid (using ABTS)

P8250
Peroxidase from horseradish
Type II, essentially salt-free, lyophilized powder, 150-250 units/mg solid (using pyrogallol)

V900503
Peroxidase from horseradish

Vetec™, reagent grade

77332
Peroxidase from horseradish
lyophilized, powder, ~150 U/mg

P8375
Peroxidase from horseradish
Type VI, essentially salt-free, lyophilized powder, ≥250 units/mg solid (using pyrogallol)

P8415
Peroxidase from horseradish
Type XII, essentially salt-free, lyophilized powder, ≥250 units/mg solid (using pyrogallol)

P8125
Peroxidase from horseradish
Type I, essentially salt-free, lyophilized powder, ≥50 units/mg solid (using pyrogallol)

P6140
Peroxidase from horseradish
Type X, ammonium sulfate suspension

P2088
Peroxidase from horseradish
Highly stabilized, essentially salt-free, lyophilized powder, 200-300 units/mg solid (using pyrogallol)

P6278
Peroxidase Inactivated
≤0.02 units/mg protein (biuret)

516531
Peroxidase, Horseradish

P1709
Peroxidase, Maleimide Activated from horseradish
lyophilized powder, >200 units/mg protein

04394
Peroxidase, Nitrospira sp., recombinant
≥10.0 U/g

P2141
Phalloidin from Amanita phalloides
≥90%

P1951
Phalloidin–Tetramethylrhodamine B isothiocyanate
sequence from Amanita phalloides(synthetic: peptide sequence)

P5282
Phalloidin, Fluorescein Isothiocyanate Labeled
sequence Amanita phalloides(synthetic: peptide sequence)

SRE0026
Phosphatase substrate
Suitable for manufacturing of diagnostic kits and reagents

P4744
Phosphatase substrate
powder

P5994
Phosphatase substrate
40 mg tablets

P5869
Phosphatase substrate
100 mg capsules

S0942
Phosphatase substrate
5 mg tablets

P5744
Phosphatase substrate
40 mg capsules

P8361
Phosphatase, Alkaline bovine
recombinant, expressed in Pichia pastoris, ≥4000 units/mg protein

P0114
Phosphatase, Alkaline from bovine intestinal mucosa
BioUltra, buffered aqueous glycerol solution, ≥5,700 DEA units/mg protein

A2356
Phosphatase, Alkaline from bovine intestinal mucosa
buffered aqueous glycerol solution, ≥5,500 DEA units/mg protein

P5521

Phosphatase, Alkaline from bovine intestinal mucosa
≥2,000 DEA units/mg protein

P7640
Phosphatase, Alkaline from bovine intestinal mucosa
lyophilized powder, ≥10 DEA units/mg solid

P6774
Phosphatase, Alkaline from bovine intestinal mucosa
buffered aqueous solution, ≥2,000 DEA units/mg protein

P7923
Phosphatase, Alkaline from bovine intestinal mucosa
buffered aqueous glycerol solution, ≥4,000 DEA units/mg protein

79390
Phosphatase, Alkaline from calf intestinal mucosa
suitable for enzyme immunoassay, solution (clear, colorless), ~2500 U/mg protein (~10 mg/ml)

P5931
Phosphatase, Alkaline from Escherichia coli
lyophilized powder, 30-60 units/mg protein (in glycine buffer)

P4069
Phosphatase, Alkaline from Escherichia coli
buffered aqueous glycerol solution, 20-50 units/mg protein (in glycine buffer)

P4252
Phosphatase, Alkaline from Escherichia coli
ammonium sulfate suspension, 30-90 units/mg protein (modified Warburg-Christian, in glycine buffer)

P4439
Phosphatase, Alkaline from porcine kidney
lyophilized powder, ≥100 DEA units/mg protein

A2237
Phosphatase, Alkaline shrimp
≥900 DEA units/mL, buffered aqueous glycerol solution, recombinant, expressed in proprietary host

P0762
Phosphatase, Alkaline−Agarose from calf intestine
ammonium sulfate suspension

12-440
Poly (Glu4-Tyr) Peptide, biotin conjugate

46121
Resorufin ethyl ether
suitable for fluorescence, ≥95% (UV)

S5628
Ser-Tyr β-naphthylamide
powder

D4293
SIGMAFAST™ 3,3'-Diaminobenzidine tablets
tablet, To prepare 5 mL

D0426
SIGMAFAST™ DAB with Metal Enhancer
tablet

574799
SynaptoRed™ Reagent
A lipophilic, water-soluble styrylpyridinium red fluoroprobe that is useful for staining active recycling synaptic vesicles.

S7896
Syringaldazine
indicator for laccase and peroxidase activity

177539
Syringaldazine
98%

12-564
Trimethyl-Histone H3 (Lys4) Peptide, biotin conjugate
Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes.

12-568
Trimethyl-Histone H3 (Lys9) Peptide, biotin conjugate
Histones are basic nuclear proteins that are responsible for the nucleosome structure of the chromosomal fiber in eukaryotes.

14136
tris-NTA Amine trifluoroacetate salt solution
≥80.0% (HPLC)

L8286
Ultima Gold™ LSC Cocktail

For aqueous and non-aqueous samples

L8411
Ultima Gold™ XR LSC Cocktail
For aqueous samples

Nucleases (DNases and RNases)

The function of nucleases (DNases and RNases) includes the enzymatic breakdown of DNA and RNA and is necessary for numerous research applications. For example, the purification of proteins and specific nucleic acids often requires the digestion of DNA, RNA or both. Viscosity problems resulting from high DNA concentrations and enzymatic cell dissociation methods are often enhanced utilizing DNase. We offer a complete selection of high-purity nucleases to meet most digestion requirements.

Non-Specific Nucleases	Endo-nuclease	Exo-nuclease	DNA Single Strand	DNA Double Strand	RNA	Hybrid RNA	Yields 3'-Phosphate	Yields 5'-Phosphate
Turbonuclease	X		X	X	X			X
DNase I	X		X	X				X
DNase II	X		X	X			X	
Micrococcal Nuclease	X	X	X	X			X	
Nuclease P_1			X		X			X
Nuclease S_1	X	X	X		X			X
Phosphodiesterase I		X						X
Phosphodiesterase II		X	X	X	X			X
RNase A	X				X		X	

RNase H	X				X			X
RNase T_1	X			X		X		
Ribonuclease Optimized Blend	X			X	X	X		

Restriction Endonucleases

NUCLEASES FOR DNA AND RNA DIGESTION

Our nucleases vary by cleavage specificity as well as by properties such as pH optimum, allowing the investigator to choose the digestive enzyme best suited to experimental needs. Deoxyribonuclease I from mammalian sources, for example, yields products with terminal 5' P1 from Penicillium citrinum - degrades single-stranded DNA and RNA, but not double-stranded DNA. Ribonuclease A will hydrolyze any RNA contaminating protein samples or preparations of plasmid DNA. Many of these enzymes have additional uses in molecular biology. For example, DNase I "nicks" DNA to allow incorporation of labeled bases. RNase A is a tool in the RNase protection assay that measures the abundance of specific mRNAs.

DEOXYRIBONUCLEASE I AND DEOXYRIBONUCLEASE II DNASE ENZYMES

Deoxyribonuclease I catalyzes the endonucleolytic cleavage of double and single stranded DNA to yield 5'-phosphodinucleotide and 5'-phosphooligonucleotide end-products. The product of hydrolysis is a complex mixture of 5'-phosphate mononucleotides and oligonucleotides. In the presence of magnesium ions, DNase I attacks each strand of DNA independently and the cleavage sites are random. In the presence of manganese (II), DNase I cleaves both strands of DNA at approximately the same site. Most protocols use magnesium ion with DNase I but for specific purposes, manganese is used. In addition, deoxyribonuclease II catalyzes the endonucleolytic cleavage of double and single stranded DNA to yield nucleoside 3'-phosphates and 3'-phosphooligonucleotide end-products. The pH range for activity is 4.0 to 6.5, with only about 15% at pH 6.5. with an optimum of pH 5.0. The optimum stability of the enzyme is at pH 5 - 5.5, with rapid inactivation at pH 8.5 at 30 °C. We offer a broad collection of DNase enzymes to support a variety of sample types and applications. Whether it is lyophilized or in liquid form, some of our DNases include significantly low concentrations of RNase or proteases to protect your sample from undesired digestion.

RIBONUCLEASE A, RIBONUCLEASE H, AND RIBONUCLEASE T_1 RNASE ENZYMES

Ribonuclease A catalyzes the endonucleolytic cleavage of RNA to yield nucleoside 3'-phosphates and 3'-phosphooligonucleotides ending in Cp or Up. Activators of RNase A include potassium and sodium salts. The optimal temperature for activity is 60 °C, although the enzyme does exhibit activity from 15-70 °C. The pH optimum is 7.6, with an activity range of 6-10. The highest activity is exhibited with single stranded RNA. RNase A is a very stable enzyme and can withstand temperatures up to 100 °C. At 100 °C, RNase A is most stable between pH 2.0 and 4.5. Ribonuclease H specifically hydrolyzes the phosphodiester bonds of RNA in RNA:DNA duplexes to generate products with 3'-hydroxyl and 5'-phosphate ends. It degrades only the RNA component of the DNA-RNA hybrid (RNA that is hydrogen bonded to a complementary DNA strand).

In addition, Ribonuclease T_1 catalyzes the two-stage endonucleolytic cleavage of RNA to yield nucleoside 3'-phosphates and 3'-phosphooligonucleotides ending mainly in Gp. In the reaction, cleavage occurs between the 3'-phosphate group of a guanidine ribonucleotide and 5'-hydroxyl of the adjacent nucleotide. The initial product is a 2':3' cyclic phosphate nucleoside that is hydrolyzed to the corresponding 3'-nucleoside phosphate. In solution, it is resistant to heat (100 °C for 10 minutes at pH 6) and acid, but unstable in alkaline solution (>pH 9). It should be noted that the reaction catalyzed by the enzyme cannot be stopped by heating the reaction mixture to 100 °C. We offer a broad collection of RNase enzymes, to support the variety of sample types and applications. Whether it is lyophilized or in liquid form, some of our RNases include significantly low concentrations of proteases to protect your sample from undesired protein cleavage.

DN25
Deoxyribonuclease I from bovine pancreas
lyophilized powder, Protein ≥85 %, ≥400 Kunitz units/mg protein

D5025
Deoxyribonuclease I from bovine pancreas
Type IV, lyophilized powder, ≥2,000 Kunitz units/mg protein

D4527
Deoxyribonuclease I from bovine pancreas
Type II, lyophilized powder, Protein ≥80 %, ≥2,000 units/mg protein

D4513
Deoxyribonuclease I from bovine pancreas
Type II-S, lyophilized powder, Protein ≥80 %, ≥2,000 units/mg protein

D4263
Deoxyribonuclease I from bovine pancreas
Standardized vial containing 2,000 Kunitz units of DNase I (D4527), vial of ≥0.25 mg total protein

T4330
Turbonuclease from Serratia marcescens
recombinant, expressed in E. coli

SRE0015
Salt Active Nuclease (SAN)
recombinant, expressed in Pichia pastoris

R5503
Ribonuclease A from bovine pancreas
Type I-AS, 50-100 Kunitz units/mg protein

N3755
Nuclease micrococcal from Staphylococcus aureus
100-300 units/mg protein

R5125
Ribonuclease A from bovine pancreas
Type III-A, ≥85% RNase A basis (SDS-PAGE), 85-140 Kunitz units/mg protein

D5319
Deoxyribonuclease I bovine
recombinant, expressed in Pichia pastoris, buffered aqueous glycerol solution, ≥5,000 units/mg protein

D8764
Deoxyribonuclease II from bovine spleen
Type V, essentially salt-free, lyophilized powder, ≥1,000 units/mg protein

R5000
Ribonuclease A from bovine pancreas
Type II-A, ≥60% (SDS-PAGE), >= 60 Kunitz units/mg protein

R5500
Ribonuclease A from bovine pancreas
Type XII-A, ≥90% (SDS-PAGE), 75-125 Kunitz units/mg protein

N5661
Nuclease S_1 from Aspergillus oryzae
for single-strand DNA/RNA digestion

R1153
RNase B Glycoprotein Standard from bovine pancreas
Proteomics Grade

R5250
Ribonuclease A from bovine pancreas
Type X-A, ≥90% (SDS-PAGE), ≥70 Kunitz units/mg protein

V900498
Ribonuclease A from bovine pancreas
Vetec™, reagent grade, 80%

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Россия +7(495)268-04-70
Казахстан +7(7172)727-132
Киргизия +996(312)96-26-47

www.sigmaaldrich.nt-rt.ru | | scx@nt-rt.ru