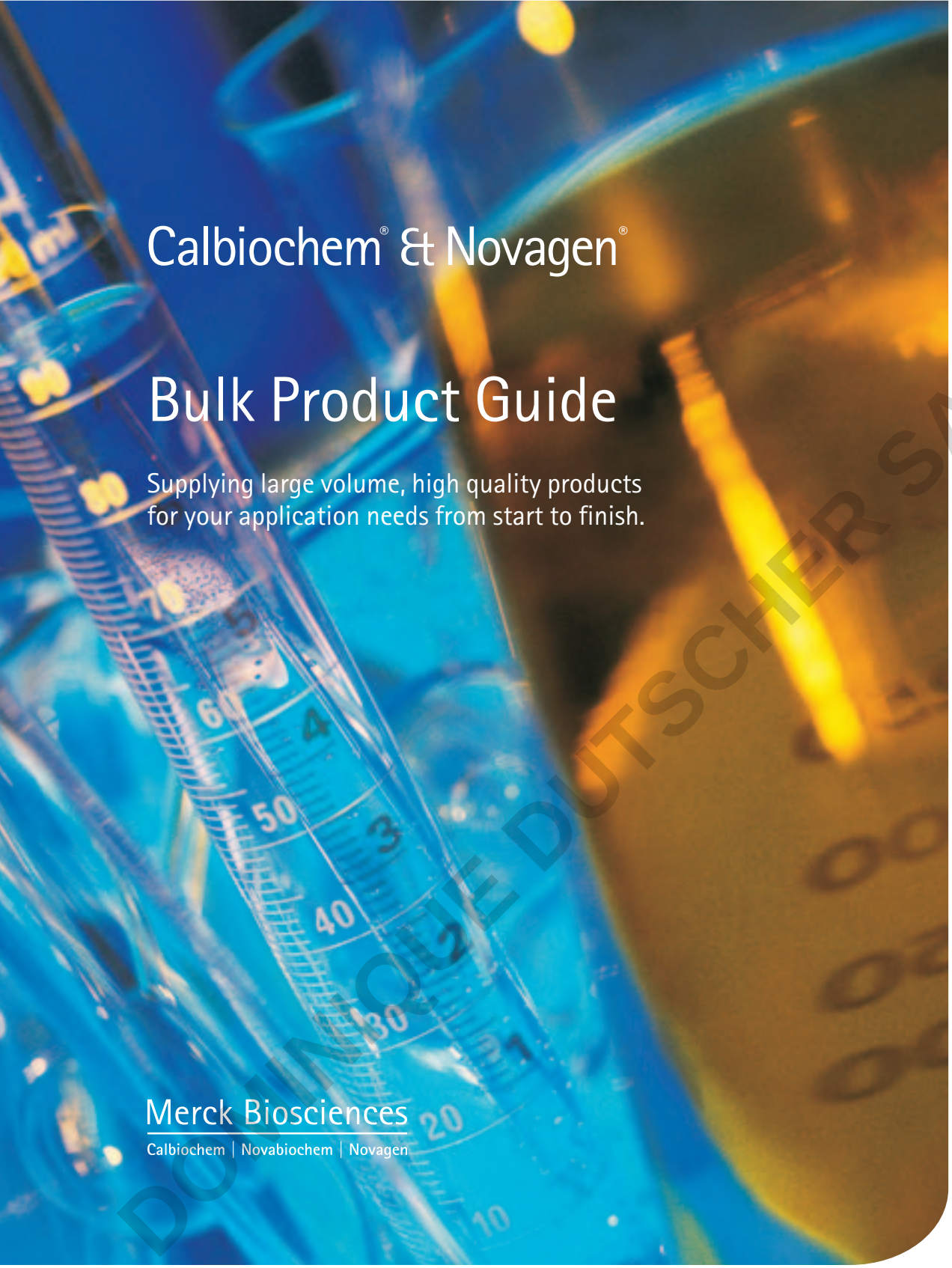


Calbiochem® & Novagen®

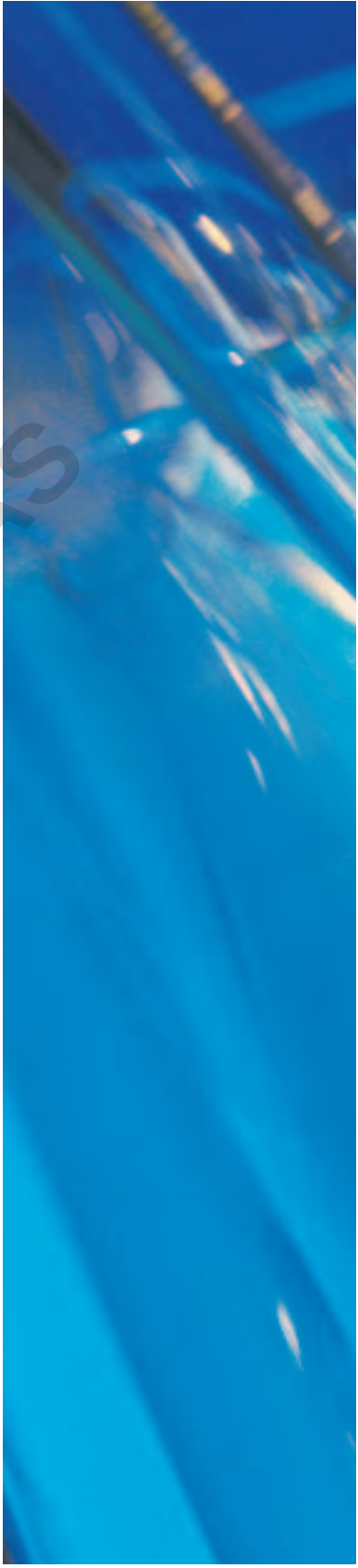
Bulk Product Guide

Supplying large volume, high quality products
for your application needs from start to finish.

Merck Biosciences

Calbiochem | Novabiochem | Novagen

DO NOT COPY DUTSCHER SAS



MERCK



Bulk Services

At Merck Biosciences, we are dedicated to complete customer satisfaction for your bulk and custom research needs. With the experience and technology of our Calbiochem® and Novagen® brands and the support of our parent company, Merck KGaA, we offer a unique, comprehensive collection of the highest quality tools for your life science research.

Our on-site laboratory and production facilities, strategically located in Germany, Switzerland, and the USA, meet your specialty formulation or bulk quantity needs. State-of-the-art dispensing and packaging capabilities help us cater to the unique requirements of your research, while our experienced Quality Control scientists ensure product quality, performance, and reproducibility.

Our professional Bulk Team manages order fulfillment and ensures on-time delivery and complete satisfaction. We offer creative packaging solutions and shipping configurations to provide everything from deliveries scheduled in advance to custom vials in sizes most convenient for your use.

Wherever your research leads, Merck Biosciences can support your unique requirements.

DOMINIQUE DUTSCHER SAS

Merck Biosciences

Products for disease pathway analysis: Alzheimer's, Parkinson's, Cancer, Inflammation & Diabetes.

Nucleic Acid Preparation & General Buffers

- RNase A
- HEPES, MOPS
- Pellet Paint® NF Co-Precipitant
- Proteinase K

Cell Culture

- Overnight Express™ Autoinduction Systems
- Veggie™ Media Components
- Antibiotics
- GeneJuice® Transfection Reagents
- IPTG

Protein Extraction

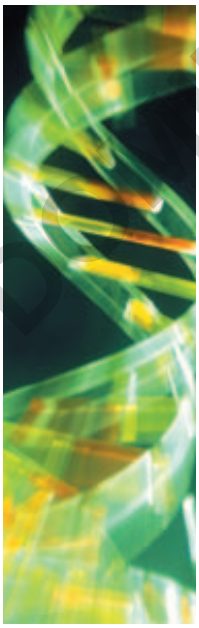
- BugBuster® Protein Extraction Reagent
- PopCulture® Reagent
- Lysonase™ Bioprocessing Reagent
- Protease Inhibitors
- Detergents

Protein Purification & Processing

- His•Bind® Resin
- His•Mag™ Agarose Beads
- His•Bind Fractogel® Resin
- Factor Xa
- Recombinant Enterokinase
- Detergents

Protein Analysis

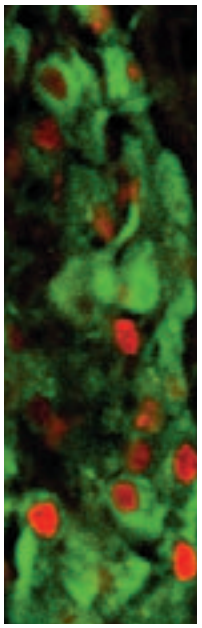
- ProteoPlex™ Cytokine Array
- FRETWorks™ S•Tag™ Assay
- Antibodies
- Inhibitors











DUPLIQUE DUPSCHER SAS

Product	Min. Qty.
391338 HEPES, Free Acid, ULTROL® Grade	10 kg
391948 Hydroxylapatite, High Resolution	5 kg
475898 MOPS, Free Acid, ULTROL Grade	10 kg
70748 Pellet Paint® NF Co-Precipitant	20 ml
53702 PRONASE® Protease, *Streptomyces griseus*	2.5 L
539480 Proteinase K	100 KU
70856 RNase A Solution	100 ml
556746 Ribonuclease A, Bovine Pancreas (RNase A)	1000 KU



Nucleic Acid Preparation and General Buffers

391338 HEPES, Free Acid, ULTROL® Grade — Minimum Quantity: 10 kg

- Zwitterionic N-substituted aminosulfonic acid buffer.
- Active in the pH range of 6.0 to 8.5.
- Purity: ≥ 99% by titration (dry basis). Contaminants: chloride, ≤ 0.01%; sodium, ≤ 0.1%; sulfate, ≤ 0.05%. Heavy metals: < 1 ppm. Absorbance (1.0 M, H_2O, 260 nm): ≤ 0.05.
- White Solid. Soluble in H_2O. pKa 7.55 at 20°C. RTECS TL6809000, CAS 7365-45-9, M.W. 238.3.

391948 Hydroxylapatite, High Resolution — Minimum Quantity: 5 kg

- A form of calcium phosphate that is useful for analytical applications, as well as preparative and batch procedures.
- BSA binding capacity: > 15 mg/g; DNA binding capacity: > 1200 mg/g.
- White solid. CAS 1306-06-5, M.W. 1004.6.

475898 MOPS, Free Acid, ULTROL Grade — Minimum Quantity: 10 kg

- Zwitterionic buffer active in the pH range of 6.5 to 8.0.
- Purity: ≥ 99% by titration. Heavy metals: ≤ 1 ppm. Absorbance (1.0 M, H_2O, 260 nm): 0.05. Soluble in H_2O. pKa 7.2 at 20°C.
- White solid RTECS QE9104530, CAS 1132-61-2, M.W. 209.3.

70748 Pellet Paint® NF Co-Precipitant — Minimum Quantity: 20 ml

- A nonfluorescent dye-labeled carrier that provides a simple confirmation that precipitation has occurred.
- Fully compatible with fluorescent sequencing and the ABI PRISM® BigDye™ Terminator Cycle Sequencing Ready Reaction.
- Sequencing reaction products pellet efficiently and dye-labeled terminators remain in the supernatant during alcohol precipitation using standard precipitation protocols.
- No detectable effect on the sequencing reaction or sequence accuracy.
- 1 ml is sufficient for 1,000 precipitations.

53702 PRONASE® Protease, *Streptomyces griseus* — Minimum Quantity: 2.5 L

- Liquefies mucins and digests proteins to free amino acids.
- Can be used to isolate living chondrocytes and for extraction of bacteriophage lambda DNA.
- Most active at neutral pH, but stable over wide ranges of pH and temperature.
- Nuclease-free.
- One unit is defined as the amount of enzyme that will liberate a digestion product equivalent to 25 mg of tyrosine per minute at 40°C, pH 7.5. Soluble in H_2O. pH optimum 7.5.
- Lyophilized solid containing calcium acetate as a stabilizer. HYGROSCOPIC. RTECS UK9595000, CAS 9036-06-0.

539480 Proteinase K, *Tritirachium album* — Minimum Quantity: 100 KU

- Serine protease that exhibits strong proteolytic activity on a wide variety of denatured and native proteins of high molecular weight.
- Used for isolation of mRNA and high molecular weight DNA. DFP, Hg^{2+}, and PMSF are inhibitors.
- Not inactivated by metal chelators, sulfhydryl reagents, TLCK, or TPCK.
- One unit is defined as the amount of enzyme that will liberate 1.0 µmol of tyrosine per minute at 37°C, pH 7.5.
- Contaminants: DNase, no detectable nicking activity with pBR322, incubation for 6 h at 37°C; RNase, no ribonuclease activity with MS2 RNA detected after incubation for 16 h at 25°C. Soluble in 50 mM Tris, 2 mM calcium acetate, pH 8.0. pH optimum 7.5–12.0.
- Lyophilized solid. EC 3.4.21.14, CAS 39450-01-6, M.W. 28,500.

70856 RNase A Solution — Minimum Quantity: 100 ml

- RNase A Solution is a highly purified preparation of bovine pancreatic ribonuclease that is suitable for selective removal of RNA in plasmid purification procedures.
- 10 mg/ml in 10 mM Tris-HCl, 1 mM EDTA, 50% glycerol, pH 7.5. Custom formulations and concentrations available.

556746 Ribonuclease A, Bovine Pancreas (RNase A) Minimum Quantity: 1000 KU

- Chromatographically purified pyrimidine-specific endoribonuclease that acts on single-stranded RNA.
- One unit is defined as the amount of enzyme that will catalyze the hydrolysis of RNA to yield a first-order velocity constant equal to 1.0 at 25°C, pH 5.0.
- Purity: > 95% Contaminants: protease, none detected. May contain trace amounts of DNase I, which can be inactivated by boiling for 15 minutes in 50 mM potassium acetate, pH 5.5.
- White lyophilized solid. PROTECT FROM MOISTURE. Soluble in H_2O. EC 3.1.4.22, RTECS RF0760000, CAS 9001-99-4, M.W. 13,683. Note: 1 KU = 1000 units.

DOCUMENT DE DUTSCHER SAS

Cell Culture

Antibiotics

171254 Ampicillin, Sodium Salt — Minimum Quantity: 1 kg

- Suitable for maintenance of the selective marker *bla* (β-lactamase or ampicillin resistance).
- Kills growing Gram-negative bacterial cells by interfering with the terminal reaction in bacterial wall synthesis.
- Purity: ≥ 90%. Heavy metals: ≤ 20 ppm.
- White solid. HYGROSCOPIC (anhydrous). Soluble in H_2O. RTECS XH8400000, CAS 69-52-3, M.W. 371.4.

220551 Chloramphenicol — Minimum Quantity: 5 kg

- Suitable for maintenance of the Cam^R selective marker (chloramphenicol resistance).
- Synthetic bacteriostatic antibiotic that inhibits the translation of RNA by blocking the peptidyltransferase reaction on ribosomes.
- Purity: ≥ 97%.
- Gray-white solid. Soluble in EtOH, MeOH, or H_2O. RTECS AB6825000, CAS 56-75-7, M.W. 323.1.

239763 Cycloheximide — Minimum Quantity: 100 g

- Antifungal antibiotic that inhibits protein synthesis in eukaryotes but not prokaryotes.
- Competitively inhibits hFBP12 (K_i = 3.4 µM).
- Triggers apoptosis in HL-60 cells, T cell hybridomas, Burkitt's lymphoma cells, and other cell types.
- Purity: ≥ 90%.
- White to yellow solid. Soluble in EtOH or MeOH. RTECS MA4375000, CAS 66-81-9, M.W. 281.3.

345810 G 418 Sulfate, Cell Culture Tested — Minimum Quantity: 100 g

- Widely used in the selection of eukaryotic expression vectors carrying the bacterial neo^R/Kan^R genes.
- Aminoglycoside related to gentamycin that inhibits prokaryotic and eukaryotic protein synthesis.
- Toxic to bacteria, yeast, protozoans, helminths, higher plant, and mammalian cells.
- Purity: ≥ 98%. Potency: ≥ 730 µg/mg.
- White solid. Soluble in aqueous buffers or H_2O. pH 4.0–6.0. RTECS CB9378500, CAS 108321-42-2, M.W. 692.7.

400051 Hygromycin B, *Streptomyces* sp. — Minimum Quantity: 50 MU

- Aminoglycoside antibiotic that inhibits the growth of prokaryotic (bacteria) and eukaryotic microorganisms (yeasts) and mammalian cells.
- Inhibits protein synthesis at the translocation step on the 70S ribosome and causes misreading of the mRNA. *Hph*, a gene from *E. coli*, encodes resistance to hygromycin B.
- Purity: > 80%.
- Concentration: 350 - 450 mg/ml solution. 10^6 units is equivalent to approximately 900 mg.
- Aqueous solution. RTECS WK2130000, CAS 31282-04-9, M.W. 527.5. Note: 1 MU = 1,000,000 units.

420311 Kanamycin Sulfate, *Streptomyces kanamyceticus* — Min. Quantity : 500 g

- Suitable for maintenance of the Kan^R selective marker (kanamycin resistance).
- Aminoglycoside antibiotic effective against Gram-positive and Gram-negative organisms.
- Inhibitor of protein biosynthesis that acts on the 30S ribosome, causing misreading of the genetic code.
- Contains more than 98% kanamycin A.
- White to off-white solid. Soluble in H_2O. RTECS NZ3225030, CAS 25389-94-0, M.W. 582.6.

553210 Rapamycin — Minimum Quantity: 20 mg

- Anti-fungal immunosuppressant that selectively inhibits the phosphorylation and activation of p70 S6 kinase (IC_{50} = 50 pM).
- Prevents the translational activation of IGF-II.
- Inhibits later signaling events such as $p110^{Rb}$ phosphorylation, $p34^{cdk}1$ kinase activation, and cyclin A synthesis.
- Exhibits strong binding to FK-506 binding proteins.
- Reported to induce apoptosis in a murine B cell line, to inhibit lymphokine-induced cell proliferation at the G_1 phase, and to irreversibly arrest *Saccharomyces cerevisiae* cells in the G_1 phase.
- Purity: ≥ 98%.
- Yellow solid. Soluble in DMSO or MeOH. RTECS VE6250000, CAS 53123-88-9, M.W. 914.2.

Product	Min. Qty.
171254 Ampicillin, Sodium Salt	1 kg
220551 Chloramphenicol	5 kg
239763 Cycloheximide	100 g
345810 G 418 Sulfate	100 g
400051 Hygromycin B	50 MU
420311 Kanamycin Sulfate	500 g
553210 Rapamycin	20 mg



DOMINIQUE DUTSCHER SAS

Product	Min. Qty.
70967 GeneJuice® Transfection Reagent	200 ml
71259 Insect GeneJuice Transfection Reagent	200 ml
71300 Overnight Express™ Autoinduction System 1	100 L
71366 Overnight Express Autoinduction System 2	100 L
71280 Veggie™ Peptone	10 kg
71279 Veggie Yeast Extract	10 kg
561505 L-Selenomethionine	10 g
420322 IPTG, Dioxane-Free, High Purity	100 g

Transfection

70967 GeneJuice® Transfection Reagent — Minimum Quantity: 200 ml

- A DNA transfection reagent consisting of a proprietary cellular protein and a small amount of a novel polyamine formulation optimized for maximal transfection efficiency.
- For stable and transient transfections in both serum containing and serum-free media.
- Only available in 1-ml pack size. Minimal cellular toxicity.
- Ideal for high-throughput transfection in a multiwell plate format.
- 1 ml provides enough reagent to perform up to 500 transfections in standard 35-mm plates.

71259 Insect GeneJuice Transfection Reagent — Minimum Quantity: 200 ml

- A DNA transfection reagent consisting of a proprietary liposome formulation optimized for maximal transfection efficiency of insect cells.
- Highly efficient DNA transfer for both transient and stable transfections in serum-containing or serum-free media. Minimal celluar toxicity.
- Ideal for conventional cotransfection or large-scale protein expression with pIEx™ and pBiEx™ vectors for suspension culture transfection of Sf9 and other insect cells.
- 1 ml is sufficient for 12 transfections in 10-ml suspension culture flasks or 125 transfections in 35-mm plates

Media supplements

71300 Overnight Express™ Autoinduction System 1 — Minimum Quantity: 100 L

- Achieve high-level protein production in the pET and other IPTG-inducible bacterial expression systems without the need to monitor cell growth.
- Kit contains three components (a blend of carbon sources, a concentrated buffer and nitrogen blend, and magnesium) that are added to traditional glucose-free *E. coli* culture media (LB broth, TB, or animal-free Veggie media).
- Media components are metabolized differentially to promote tightly regulated uninduced growth, high cell density, and autoinduction.
- Convenient for routine expression of proteins in multiple cultures and ideal for high-throughput parallel analysis of protein expression, solubility, analysis, and purification from multiple expression clones.

71366 Overnight Express Autoinduction System 2 — Minimum Quantity: 100 L

- Features the capabilities of System 1 and the ability to label proteins with selenomethionine (Se-Met) for downstream crystallization and x-ray diffraction studies.
- Includes identical components as System 1 plus trace metals, a mixture of amino acids lacking methionine, and a separate methionine solution.
- Sufficient methionine (Met) is provided to support growth of the Met auxotroph B834 while providing the ability to reduce the level of unlabeled Met for selenomethionine incorporation by Met auxotrophs.

Veggie™ Media Components

Certified animal-free Veggie media components

The Veggie line of products is ideal for applications that require minimal use of animal-derived materials. Veggie Peptone is a certified animal-free media component obtained from papain-digested soymeal that can be used as a direct replacement for tryptone in bacterial growth media. Veggie Yeast Extract is a certified animal-free media component that can be used as a direct replacement for traditional yeast extract in bacterial growth media. Both products have been quality tested to ensure proper growth and maintenance of bacterial cells.

71280 Veggie Peptone — Minimum Quantity: 10 kg

71279 Veggie Yeast Extract — Minimum Quantity: 10 kg

561505 L-Selenomethionine — Minimum Quantity: 10 g

- Used for ^{35}S-met labeling of proteins.
- Increases the expression of glutathione peroxidase.
- Purity: ≥ 98%.
- White to off-white solid. Soluble in H_2O. RTECS EK7713840, CAS 3211-76-5, M.W. 196.1.

420322 IPTG, Dioxane-Free, High Purity — Minimum Quantity: 100 g

- Inducer of β-D-galactosidase, an enzyme that promotes lactose utilization.
- Induces the expression of cloned genes that are linked to the *lac* promoter and selects *lacY* mutants.
- Purity: ≥ 98%. Contaminants: dioxane: < 0.1% by GC.
- White solid. Soluble in H_2O CAS 367-93-1, M.W. 238.3. PROTECT FROM LIGHT. HYGROSCOPIC.

DOMINIQUE DUTSCHER SAS

Protein Extraction

Protein Extraction Reagents

70921 BugBuster® 10X Protein Extraction Reagent — Minimum Quantity: 2 L

- A detergent formulation for the gentle disruption of the cell wall of *E. coli* to liberate active proteins in preparation for purification or other applications. Requires centrifugation of bacterial cultures.
- Fully compatible with the affinity supports GST•Bind™, GST•Mag™, His•Bind®, His•Mag™, and S•Tag™ Resins, or other chromatography matrices.
- Bioprocessing enzymes Benzonase® Nuclease and rLysozyme™ Solution are recommended to reduce viscosity and increase the extraction efficiency, especially for larger proteins.

71092 PopCulture® Reagent — Minimum Quantity: 3 L

- A detergent-based concentrate that is added directly to cultures of *E. coli* to effectively extract soluble proteins without the need for centrifugation.
- Recombinant proteins can be directly screened in the crude extract, or purified by adding an affinity matrix and completing typical purification procedures.
- Can be adapted to high-throughput robotic processing of samples for proteomics research and any application that would benefit from the increased speed and convenience it provides.
- Bioprocessing enzymes Benzonase® Nuclease and rLysozyme™ Solution are recommended to reduce viscosity and the extraction efficiency, especially for larger proteins.

71167 Insect PopCulture Reagent — Minimum Quantity: 3 L

- A detergent formulation for total insect cell culture extraction from suspension cultures or adherent cells without the need for centrifugation.
- Ideal for automated expression-level screening and fully compatible with Ni-NTA His•Bind® Resin affinity purification.
- May produce higher protein yields due to target protein recovery from both medium and cells.

Bioprocessing Enzymes

Benzonase® Nuclease

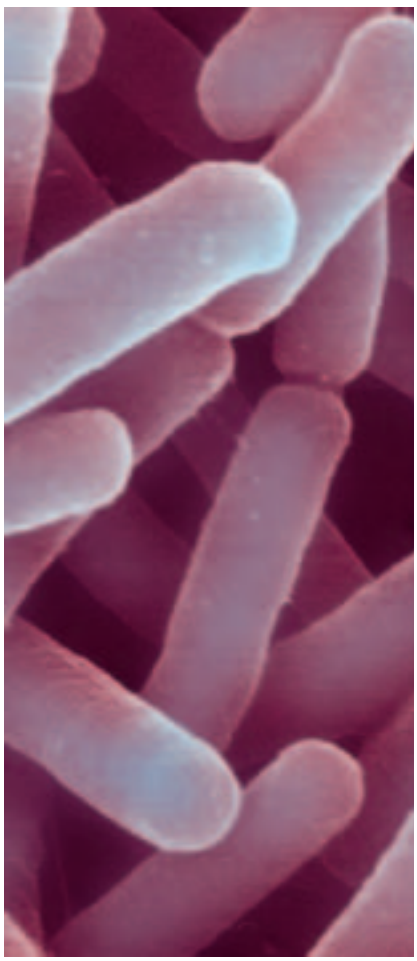
- Benzonase Nuclease is a genetically engineered endonuclease from *Serratia marcescens*. It degrades all forms of DNA and RNA (single stranded, double stranded, linear and circular) while having no proteolytic activity.
- Benzonase is an excellent choice for viscosity reduction to reduce processing time and increase yields of protein and is compatible with BugBuster and PopCulture *E. coli* lysis reagents.
- The enzyme completely digests nucleic acids to 5′-monophosphate terminated oligonucleotides 2 to 5 bases in length (below the hybridization limit), which is ideal for removal of nucleic acids from recombinant proteins, enabling compliance with FDA guidelines for nucleic acid contamination.
- Benzonase Nuclease is available in ultrapure (> 99% by SDS-PAGE) and pure (> 90%) grades at a standard concentration of 25 U/µl and at a high concentration (HC) of 250 U/µl. Both preparations are free of detectable protease and have specific activity > 1×10^6 units/mg protein. The > 99% purity grade is tested for endotoxins and contains < 0.25 EU/1,000 units. The product is supplied as a 0.2 µm filtered solution in 50% glycerol.
- Unit definition: one unit is defined as the amount of enzyme that causes a ΔA_{260} of 1.0 in 30 minutes, which corresponds to complete digestion of 37 µg DNA.
- Benzonase Nuclease is only sold in pack sizes that are listed in the table below.

Benzonase® Nuclease	Pack Size	Cat. No.	Min. Qty.
Benzonase® Nuclease, Purity > 99%	10 KU	70664	200 KU
Benzonase® Nuclease HC, Purity > 99%	25 KU	71206	500 KU
Benzonase® Nuclease, Purity > 90%	10 KU	70746	200 KU
Benzonase® Nuclease HC, Purity > 90%	25 KU	71205	500 KU

71230 Lysonase™ Bioprocessing Reagent — Minimum Quantity: 15 ml

- Lysonase combines the activities of rLysozyme Solution and Benzonase Nuclease to significantly increase protein extraction efficiency and facilitate downstream processing of protein extracts.
- rLysozyme Solution contains a highly purified, stabilized recombinant lysozyme with specific activity 250 times greater than that of chicken egg white lysozyme. Benzonase Nuclease is a genetically engineered nonspecific endonuclease that degrades all forms of DNA and RNA (single stranded, double stranded, circular, linear), reducing extract viscosity, and increasing protein yield.
- For efficient protein extraction with BugBuster (10 µl Lysonase/1 g cell paste) and PopCulture (2 µl Lysonase/1 ml cell culture) Reagent.

Product	Min. Qty.
70921 BugBuster® 10X Protein Extraction Reagent	2 L
71092 PopCulture® Reagent	3 L
71167 Insect PopCulture Reagent	3 L
70664 Benzonase® Nuclease, Purity > 99%	200 KU
71206 Benzonase Nuclease HC, Purity > 99%	500 KU
70746 Benzonase Nuclease, Purity > 90%	200 KU
71205 Benzonase Nuclease HC, Purity > 90%	500 KU
71230 Lysonase™ Bioprocessing Reagent	15 ml



DOWNLOAD DEUTSCHER SAS

Product	Min. Qty.
71110 rLysozyme™ Solution	60,000 KU
71297 rLysozyme Solution, Veggie™ Grade	60,000 KU
101500 AEBSF, Hydrochloride	10 g
616370 Aprotinin, Bovine Lung, Crystalline	1 g
108975 Leupeptin, Hemisulfate	1 g
539132 Protease Inhibitor Cocktail Set II	Inquire
539134 Protease Inhibitor Cocktail Set III	Inquire

71110 rLysozyme™ Solution — Minimum Quantity: 60,000 KU

- rLysozyme Solution contains a highly purified and stabilized recombinant lysozyme that can be used for lysis of *E. coli*.
- Very small amounts of rLysozyme (3000–5000 U/g cell paste) enhance the efficiency of protein extraction with BugBuster® and PopCulture® Reagents.
- The specific activity of rLysozyme (1700 KU/mg, Note 1 KU = 1000 units) for *E. coli* lysis is 250 times greater than that of chicken egg white lysozyme. rLysozyme is optimally active at physiological pH.
- Unit definition: one unit of rLysozyme is defined as the amount of enzyme necessary to cause a decrease of 0.025 A_{450} units per minute at 25°C in a 1-ml suspension (1 mg/ml) of Tuner™(DE3) cells in 0.5X BugBuster diluted with 50 mM Tris-HCl, pH 7.5.

71297 rLysozyme Solution, Veggie™ Grade — Minimum Quantity: 60,000 KU

- rLysozyme Solution, Veggie Grade is a special grade of rLysozyme prepared using certified animal-free or disease-free reagents.
- All of the steps in the preparation of the recombinant enzyme use reagents of nonanimal origin, with the exception of the IPTG used to induce protein expression. IPTG is chemically synthesized by a stringent process from D-galactose isolated from lactose derived from certified disease-free cows.
- Has the same stability and specific activity as rLysozyme Solution and requires no protocol changes.

Protease Inhibitors

101500 AEBSF, Hydrochloride — Minimum Quantity: 10 g

- Specific, irreversible inhibitor of serine proteases.
- Inhibits chymotrypsin, kallikrein, plasmin, thrombin, trypsin, and related thrombolytic enzymes.
- β-secretase inhibitor that inhibits β-amyloid peptide (Aβ) production and enhances amyloid precursor protein (sAPPUa) secretion.
- Purity: > 97%.
- Off-white solid. HYGROSCOPIC. Soluble in 100 mM in H_2O. Stability: only slight hydrolysis at alkaline pHs (8–9). CAS 30827-99-7, M.W. 239.5.

616370 Aprotinin, Bovine Lung, Crystalline — Minimum Quantity: 1 g

- Competitive and reversible inhibitor of esterase and protease activity.
- Inhibits a number of different proteases, including chymotrypsin, coagulation factors involved in the prephase of blood clotting, kallikrein ($K_d = 1 \times 10^{-7}$ M), plasmin ($K_d = 2.3 \times 10^{-10}$ M), tissue and leukocytic proteinases, and trypsin ($K_d = 5 \times 10^{-14}$ M).
- Does not inhibit Factor Xa and thrombin.
- Relatively acid- and heat-stable.
- Purity: ≥ 95%. Contaminants: endotoxin, < 10 EU/mg.
- Specific activity: ≥ 5500 K.I.U./mg protein. One Kallikrein Inhibitory Unit (K.I.U.) is identical to the quantity of protease inhibitor that has the ability to inhibit two kallikrein units by 50% under optimal conditions. Note: 1 K.I.U. = 0.025 antiplasmin units (APU) or 0.0031 trypsin inhibitor units.
- White to off-white lyophilized solid. Soluble in H_2O. pH optimum 5–7, pI 10.5. RTECS YN5080000, CAS 9087-70-1, M.W. 6512.

108975 Leupeptin, Hemisulfate — Minimum Quantity: 1 g

- Reversible inhibitor of trypsin-like proteases and cysteine proteases.
- Known to inhibit activation-induced programmed cell death and to restore defective immune responses of HIV^+ donors.
- White lyophilized solid. HYGROSCOPIC. Soluble in H_2O. CAS 103476-89-7, M.W. 475.6.

539132 Protease Inhibitor Cocktail Set II — Minimum Quantity: Inquire

- A cocktail of five protease inhibitors with broad specificity for the inhibition of aspartic, cysteine, serine, and metalloproteases as well as aminopeptidases.
- Recommended for use with bacterial cell extracts.
- Each vial contains 20 mM AEBSF, HCl, 1.7 mM Bestatin, 200 mM E-64, 85 mM EDTA, and 2 mM Pepstatin A.
- Lyophilzed. 1 set = 5 ml. A volume of 5 ml is recommended for 20 g *E. coli*.

539134 Protease Inhibitor Cocktail Set III — Minimum Quantity: Inquire

- A cocktail of six protease inhibitors with broad specificity for the inhibition of aspartic, cysteine, and serine proteases as well as aminopeptidases. Does not contain EDTA.
- This cocktail is recommended for use with bacterial extracts being used for metal chelation chromatography, mammalian cell and tissue extracts.
- The inhibitors are provided as a solution in DMSO at the following concentrations: 100 mM AEBSF, HCl, 80 mM Aprotinin, 5 mM Bestatin, 1.5 mM E-64, 2 mM Leupeptin Hemisulfate, and 1 mM Pepstatin A. A volume of 1 ml is sufficient for 20 g of tissue.

DOMINIQUE DUTSCHER SAS

Detergents, Non-ionic

300410 Digitonin, High Purity — Minimum Quantity: 10 g

- Non-ionic detergent commonly used to solubilize membrane-bound proteins.
- White solid. PROTECT FROM MOISTURE. Soluble in EtOH or H_2O. Aggregation number 60–70. RTECS IH2050050, CAS 11024-24-1, M.W. 1229.3.

300411 Digitonin, Alcohol-Soluble, High Purity — Minimum Quantity: 20 g

- Non-ionic detergent commonly used to solubilize membrane-bound proteins.
- White solid. PROTECT FROM MOISTURE. Soluble in EtOH. Aggregation number 60–70. RTECS IH2050050, CAS 11024-24-1, M.W. 1229.3.

Detergents, Ionic

220411 Chenodeoxycholic Acid, Sodium Salt — Minimum Quantity: 100 g

- Bile acid that has been shown to increase intracellular Ca^{2+} in isolated rat hepatocyte couplets.
- Induces a permeability transition in freshly isolated rat liver mitochondria.
- Purity: > 95% Heavy metals: < 10 ppm.
- White solid. HYGROSCOPIC Soluble in H_2O or aqueous buffers. RTECS FZ2231000, CAS 2646-38-0, M.W. 414.6.

220201 CHAPS — Minimum Quantity: 250 g

- Zwitterionic detergent that combines features of bile salts and N-alkyl sulfobetaines.
- Capable of solubilizing the opiate receptor to a state exhibiting reversible binding of opiates.
- Capable of disaggregating cytochrome P450 to its monomeric form without denaturation.
- Small micellar molecular weight; a high critical micellar concentration.
- Can be removed from either gels or protein solutions by dialysis across a membrane.
- Purity: ≥ 98%.
- White solid. HYGROSCOPIC. Conductivity (1.0 M, 24°C): < 100 mmhos. Soluble in H_2O. Aggregation number; 4–14, CMC; 6–10 mM, micellar weight; 6150. CAS 75621-03-3, M.W. 614.9.

220202 CHAPSO — Minimum Quantity: 100 g

- Unique detergent with high CMC that solubilizes membrane-bound proteins in their native state.
- Capable of solubilizing opiate receptor to a state exhibiting reversible binding of opiates.
- Purity: > 98% .
- White solid. Soluble in H_2O. Aggregation number: 1.

264101 Deoxycholic Acid, Sodium Salt, ULTROL® Grade — Minimum Quantity: 5 kg

- Intended for use as a detergent to solubilize membrane-bound proteins in their native state.
- Purity: ≥ 99%
- White solid. HYGROSCOPIC . Absorbance (10%, H_2O, 290 nm): ≤ 0.25. Soluble in H_2O. Aggregation number: 3–12, CMC: 2–6 mM, micellar weight: 1200–4900. pKa 6.2. RTECS FZ2250000, CAS 302-95-4, M.W. 414.6.

Detergents, Zwittergents — Minimum Quantity: 500 g

Zwitterionic Detergents are unique in that they offer the combined properties of ionic and non-ionic detergents. Like non-ionic detergents, the zwittergents do not possess a net charge, lack conductivity and electrophoretic mobility, and do not bind to ion-exchange resins. However, like ionic detergents, zwittergents are efficient at breaking protein-protein interactions. Zwitterionic detergents offer an alternative to non-ionic and anionic detergents for solubilizing membrane proteins.

Zwitterionic Detergents

Detergent	Cat. No.	M.W. (anhydrous)	CMC (mM)	Aggregation No.
ZWITTERGENT® 3-08 Detergent	693019	279.6	330	
ZWITTERGENT 3-10 Detergent	693021	307.6	25–40	41
ZWITTERGENT 3-12 Detergent	693015	335.6	2–4	55
ZWITTERGENT 3-14 Detergent	693017	363.6	0.1–0.4	83
ZWITTERGENT 3-16 Detergent	693023	391.6	0.01–0.06	155

Product	Min. Qty.
300410 Digitonin, High Purity	10 g
300411 Digitonin, Alcohol-Soluble, High Purity	20 g
220411 Chenodeoxycholic Acid, Sodium Salt	100 g
220201 CHAPS	250 g
220202 CHAPSO	100 g
264101 Deoxycholic Acid, Sodium Salt, ULTROL® Grade	5 kg
693019 ZWITTERGENT® 3-08 Detergent	500 g
693021 ZWITTERGENT 3-10 Detergent	500 g
693015 ZWITTERGENT 3-12 Detergent	500 g
693017 ZWITTERGENT 3-14 Detergent	500 g
693023 ZWITTERGENT 3-16 Detergent	500 g

DOMINIQUE DUTSCHER SAS

Product	Min. Qty.
71445 ProteoEnrich™ ATP Binders™ Resin	2 g
69670 His•Bind® Resin	1 L
70693 His•Bind Fractogel® Resin	0.5 L
71002 His•Mag™ Agarose Beads	0.2 L
69754 8X Binding Buffer	2 L
69756 8X Wash Buffer	2 L
69757 4X Elute Buffer	2 L
69759 8X Charge Buffer	2 L
189730 Streptavidin	100 mg
203188 Biotin-X-NHS	1 g



Protein Purification & Processing

Protein Purification

71445 ProteoEnrich™ ATP Binders™ Resin — Minimum Quantity: 2 g

- Isolate protein kinases and other proteins with ATP-binding pockets from crude cell or tissue lysates.
- Gentle elution conditions enable recovery of active proteins including interacting partners.
- ATP is immobilized via its γ-phosphate.

Resins and Buffers for His•Tag® Purification

The His•Bind® family of products offers a wide selection of supports designed for rapid one step purification of proteins containing the His•Tag sequence by immobilized metal affinity chromatography (IMAC). The His•Tag sequence (6, 8, or 10 consecutive histidine residues) binds to divalent cations (Ni^{2+}) immobilized on IDA-based His•Bind and His•Mag™ resins. After unbound proteins are washed away, the target protein is recovered by elution with either imidazole or slight reduction in pH. This versatile system enables proteins to be purified under gentle, nondenaturing conditions, or in the presence of either 6 M guanidine or urea.

69670 His•Bind® Resin — Minimum Quantity: 1 L

- Recommeded for small- to medium-scale gravity flow column or batch mode.
- Reusable many times and compatible with THP up to 1 mM.
- 45–65 µM particle size and recommended maximum pressure of 2.8 psi.

70693 His•Bind Fractogel® Resin — Minimum Quantity: 0.5 L

- Fractogel resins are suitable for small to production scale purification with FPLC or gravity flow columns.
- 40–90 µM particle size.
- Recommended maximum pressure of 267 psi

71002 His•Mag™ Agarose Beads — Minimum Quantity: 0.2 L

- His•Mag Agarose Beads for rapid, small-scale purification of multiple samples with minimum handling time using a magnetic format.
- 3 µm magnetic agarose beads.

69754 8X Binding Buffer — Minimum Quantity: 2 L

- Pretested buffer for use during His•Bind® purification binding step.

69756 8X Wash Buffer — Minimum Quantity: 2 L

- Pretested buffer for use during His•Bind® purification washing step.

69757 4X Elute Buffer — Minimum Quantity: 2 L

- Pretested buffer for use during His•Bind® purification elution step.

69759 8X Charge Buffer — Minimum Quantity: 2 L

- Pretested buffer for use during His•Bind® Resin charging step.

189730 Streptavidin — Minimum Quantity: 100 mg

- Streptavidin is a tool for universal test systems in immunology and molecular diagnostics. The streptavidin/biotin system is characterized by low non-specific interactions resulting in reduced background signals.
- Specific activity: 10 units/mg protein. One unit is defined as the amount of streptavidin required to bind 1.0 mg of D-Biotin.
- Lyophilized solid. Soluble in H_2O or many low ionic strength buffers at neutral pH. PROTECT FROM MOISTURE. CAS 9013-20-1, M.W. 60,000.

203188 Biotin-X-NHS — Minimum Quantity: 1 g

- Used to biotinylate amino acids, peptides, or proteins by reacting with primary amines under mild conditions.
- Inserts a six-atom spacer between biotin and the target ligand, thereby alleviating steric hindrance.
- Useful for red blood cell survival studies.
- Purity: ≥ 90%.
- White to off-white solid. PROTECT FROM MOISTURE. Soluble in DMSO. M.W. 454.5.

EMD BIOSCIENCES

Tag Removal

69036 Factor Xa, Restriction Grade — Minimum Quantity: 8000 units

- Restriction Grade Factor Xa is qualified to specifically cleave target proteins at the C-terminal side of its recognition sequence (IleGluGlyArg↓) and can, therefore, be used for removing all vector-encoded sequences from appropriately designed constructs.
- Factor Xa is a highly purified enzyme isolated from bovine plasma and activated with Russell's viper venom.
- Purified to near homogeneity; shows no secondary cleavage from contaminating proteases.
- Functionally tested for activity with fusion proteins.
- Unit definition: one unit is defined as the amount of enzyme needed to cleave 50 µg Xa Cleavage Control Protein to > 95% completion in 16 hours at 21°C in a buffer containing 50 mM Tris-HCl,100 mM NaCl, and 5 mM $CaCl_2$, pH 8.0.

69671 Thrombin, Restriction Grade — Minimum Quantity: 1000 units

- Restriction Grade Thrombin is qualified to specifically cleave target proteins containing the recognition sequence LeuValProArg↓GlySer.
- Functionally tested for activity with fusion proteins and is free of detectable contaminating proteases.
- Unit definition: one unit is defined as the amount of enzyme needed to cleave 1 mg of fusion protein in 16 hours at 20°C in a 200-µl reaction containing buffer (20 mM Tris-HCl, 150 mM NaCl, 2.5 mM $CaCl_2$, pH 8.4), 50 µg fusion protein, and enzyme.

69672 Biotinylated Thrombin — Minimum Quantity: 1000 units

- Biotinylated Thrombin is similar to Restriction Grade Thrombin, but with a covalently attached biotin for easy removal of the enzyme from cleavage reactions using immobilized streptavidin.
- Unit definition: one unit is defined as the amount of enzyme needed to cleave 1 mg of fusion protein in 16 hours at 20°C in a 200-µl reaction containing buffer (20 mM Tris-HCl, 150 mM NaCl, 2.5 mM $CaCl_2$, pH 8.4), 50 µg fusion protein, and enzyme.

69066 Recombinant Enterokinase — Minimum Quantity: 1000 units

- Recombinant Enterokinase (rEK) is a highly purified preparation of the catalytic subunit of bovine enterokinase, which recognizes the identical cleavage site as the native enzyme (i.e., AspAspAspAspLys↓) and has similar enzymatic activity.
- rEK exhibits superior rates of cleavage of fusion proteins containing the recognition sequence when compared to the native enzyme.
- rEK cleaves target proteins at the C-terminal side of its recognition sequence and can, therefore, be used for removing all vector-encoded sequences from appropriately designed constructs.
- rEK is purified to near homogeneity and, unlike some preparations of native bovine enterokinase, exhibits no secondary cleavage arising from contaminating proteases.
- Functionally tested for activity with fusion proteins.
- Unit definition: one unit is defined as the amount of enzyme needed to cleave 50 µg of fusion protein in 16 hours at 23°C in a buffer containing 20 mM Tris-HCl, 50 mM NaCl, and 2 mM $CaCl_2$, pH 7.4.

71493 HRV 3C Protease — Minimum Quantity: 10,000 units

- Recombinant type 14 3C protease from human rhinovirus (HRV 3C) is a highly purifed 6X His-fusion protein which recognized the same cleavage site as the native enzyme: LeuGluValLeuPheGln↓GlyPro.
- The small, 22-kDa size of the protease, optimal activity at 4°C, high specificity, and N-terminal His•Tag® sequence make HFV 3C protease an ideal choice for rapid removal of purification, detection, and solubility enhancing fusion tags.
- pET vectors 47b-50b incorporate the HRV 3C protease cleavage site.
- Unit definition: one unit will cleave > 95% of 100 µg test His•Tag fusion protein in 50 mM Tris-HCl, 150 mM NaCl, pH 7.5 at 4°C for 16 h.

Protein Refolding

233155 Cleland's Reagent (DTT) — Minimum Quantity: 500 g

- Cyclizes as it reduces disulfides to thiols, so reaction is "driven" to completion.
- A protective agent for sulfhydryl (SH) groups.
- Blocks the lethal and hypnotic effects of pentobarbitol.
- Purity: ≥ 97% Heavy metals: < 1 ppm. Oxidized dithiothreitol: ≤ 0.5%.
- White solid. PACKAGED UNDER INERT GAS. Soluble in EtOH or H_2O. RTECS EK1610000, CAS 3483-12-3, M.W. 154.2.

3541 Glutathione, Reduced, Free Acid — Minimum Quantity: 1 kg

- A tripeptide that serves as a component of the γ-glutamyl amino acid transport system.
- An endogenous antioxidant that provides protection against autooxidation useful in protein refolding experiments.
- Purity: > 98%.
- White solid. HYGROSCOPIC. PACKAGED UNDER INERT GAS. Soluble in DMF, EtOH, or H_2O . RTECS MC0556000, CAS 70-18-8, $C_{10}H_{17}N_3O_6S$, M.W. 307.3.

Product	Min. Qty.
69036 Factor Xa, Restriction Grade	8000 units
69671 Thrombin, Restriction Grade	1000 units
69672 Biotinylated Thrombin	1000 units
69066 Recombinant Enterokinase	1000 units
71493 HRV 3C Protease	10,000 units
233155 Cleland's Reagent (DTT)	500 g
3541 Glutathione, Reduced, Free Acid	1 kg

DOMINIQUE DUTSCHER SAS

Product	Min. Qty.
480001 NDSB-195	Inquire
480005 NDSB-201	Inquire
480013 NDSB-211	Inquire
480014 NDSB-221	Inquire
480010 NDSB-256	Inquire
407710 α-Iodoacetamide	1 kg
203325 BMS	50 g

NDSBs Non-Detergent SulfoBetaines

Non-detergent sulfobetaines (NDSBs) carry a sulfobetaine hydrophilic group and a short hydrophobic group that cannot aggregate to form micelles. Hence, NDSBs are not considered detergents. However, they have been successfully employed to increase the yields (up to 30%) of membrane, nuclear, and cytoskeletal-associated proteins. Presumably, the contribution from the short hydrophobic groups combined with the charge neutralization ability of the sulfobetaine group results in higher yields of membrane proteins. NDSBs have been used in refolding and renaturation of denatured proteins, including the proteins found in inclusion bodies in bacterial expression systems. It is hypothesized that the short hydrophobic group on sulfobetaines interacts with the hydrophobic regions of the protein to prevent aggregation during renaturation. Interestingly, NDSBs can substitute for higher concentrations of NaCl required during isolation of halophilic proteins. Other applications of NDSBs include capillary electrophoresis, isoelectrofocusing, and protein crystallization. NDSBs do not interfere with enzymatic assays involving chromogenic substrates bearing nitrophenyl groups and do not inhibit the activities of β-galactosidase and alkaline phosphatase.

Non-Detergent Sulfobetaines (NDSBs)		
Product	Cat. No.	M.W.
NDSB-195	480001	195.3
NDSB-201	480005	201.2
NDSB-211	480013	211.3
NDSB-221	480014	221.3
NDSB-256	480010	257.4

Protein Modification

407710 α-Iodoacetamide — Minimum Quantity: 1 kg

- An irreversible inhibitor of several cysteine proteases.
- Useful for alkylating cysteine and methionine residues.
- Purity: ≥ 99%.
- White crystalline powder. PROTECT FROM LIGHT. Soluble in DMF, EtOH, or H_2O. RTECS AC4200000, CAS 144-48-9, M.W. 185.0.

203325 BMS — Minimum Quantity: 50 g

- Water-soluble reagent useful for the reduction of native disulfide bonds in proteins.
- Purity: ≥ 99%.
- White solid. PACKAGED UNDER INERT GAS. Soluble in phosphatebuffer or H_2O. pKa 7.9 and 9.0. M.W. 186.3.

DOMINIQUE DUTSCHER SAS

Protein Analysis Detection and Assay

Products	Min. Qty.
71255 RoboPop™ Solubility Screening Kit	20 kits
70724 FRETWorks™ S•Tag™ Assay Kit	5,000 rxn
QIA10 c-ErbB2/c-Neu Rapid Format ELISA Kit	Inquire
71414 ProteoPlex™ 16-Well Human Cytokine Array Kit	15 arrays

Protein Solubility Screening

71255 RoboPop™ Solubility Screening Kit — Minimum Quantity: 20 kits

- The RoboPop Solubility Screening Kit is designed for protein expression–level and solubility screening in a 96-well format.
- The kit contains PopCulture® Reagent and Lysonase™ Bioprocessing Reagent for efficient extraction of recombinant proteins from *E. coli* directly from the culture medium without centrifugation. Lysonase significantly increases protein extraction efficiency and reduces sample viscosity facilitating downstream processing and robotic pipetting.
- The kit also incorporates an innovative filtration plate capable of retaining insoluble inclusion bodies while allowing soluble proteins to be collected for rapid quantitation and analysis. Insoluble proteins retained by the filtration plate are solubilized with 4% SDS, collected, and quantified separately.
- The Filter Plate is compatible with standard vacuum manifolds for manual processing and the entire protocol has been validated for robotic sample processing with the Genesis® Freedom™ Workstation from Tecan and the Packard-brand MultiPROBE® II liquid handling work station from PerkinElmer Life Sciences.
- Individual components of the kit may be purchased separately in bulk quantities. Please inquire.

Homogenous, Fluorescent Protein Assay

70724 FRETWorks™ S•Tag™ Assay Kit — Minimum Quantity: 5,000 rxn

- The FRETWorks S•Tag Assay is a FRET-based method that enables extremely sensitive detection of S•Tag fusion proteins in minutes with a homogeneous format.
- Interaction of the 15–amino acid S•Tag fusion peptide with purified S-protein reconstitutes RNase activity, which is measured using the FRET ArUAA substrate.
- Specificity of the substrate allows performance of this assay with crude extracts.
- Assay is compatible with BugBuster® and PopCulture lysates, making it an ideal reagent combination for rapid, automatable screening of protein expression.

Cancer Research

QIA10 c-ErbB2/c-Neu Rapid Format ELISA Kit — Minimum Quantity: Inquire

(ErbB2 ELISA Kit; Erythroblastosis Virus ELISA Kit; HER-2 ELISA Kit; HER2 ELISA Kit; c-Neu ELISA Kit)

- Detects both c-ErbB2/c-Neu p185 and the extracellular domain p105 cleavage fragment.
- Sample type: Positive cell lines: A549, HT29, SK-BR-3, and SKOV-3, or breast, prostate, colon, or ovarian cancer.
- Specificity: Human. Assay range: 0–3 ng/ml. Assay time: 4 hours.
- 96 tests. 96-well plate. AVOID FREEZE/THAW CYCLES.
- Kit contents: Pre-coated 96-well plate, c-ErbB2/c-Neu lyophilized standard, cell resuspension buffer, antigen extraction agent, sample diluent, biotinylated detector antibody, detector diluent, streptavidin peroxidase conjugate, conjugate diluent, wash buffer, substrate, stop solution, adhesive plate sealers.

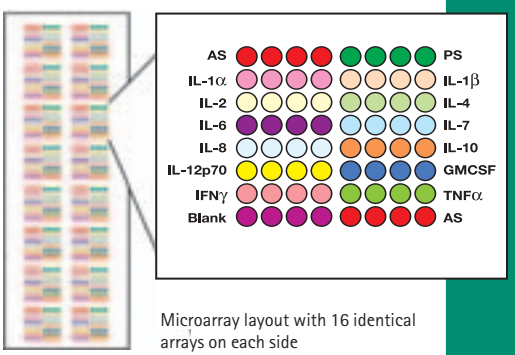
Cytokine Research

71414 ProteoPlex™ 16-Well Human Cytokine Array Kit Min. Quantity : 15 arrays

This novel ProteoPlex™ technology platform combines the power of parallel sample processing with the multiplex data generation capabilities of protein microarrays. The ProteoPlex 16-Well Human Cytokine Array Kit is designed for multiplex detection and measurement of 12 important human cytokines in parallel from up to 10 experimental samples. The combination of advanced surface chemistry, well-characterized capture agents, and a highly sensitive, fluorescence-based detection system provides a robust method for comparing relative cytokine abundance or cytokine quantification in serum samples or cell supernatants. The 12 analytes measured in the kit are pro- and anti-inflammatory cytokines important for the study of immune system regulation and diseases such as asthma and arthritis. Each well on the slide contains a microarray of spotted antibodies with four "spots" for each of the 12 cytokines plus additional spots for positive and negative controls. The replicate spots enable reliable, quantitative data acquisition from a single sample. A typical experimental design is to process 10 samples and a six-point standard curve. The simple protocol is familiar to researchers as it is similar to the protocols used for decades in single-analyte immunoassay systems. The 16-well slide format and SensiLight™ fluorescent detection system are compatible with a broad range of microarray scanners. The ProteoPlex Human 16-Well Cytokine Array Kit is a complete system that includes sample diluent, buffers, cytokine standards, detection antibodies, and SensiLight fluorescent detection reagents. **Complimentary Slide Scanning and Analysis Services are also available.**

Cytokines: IL-1α, IL-1β, IL-2, IL-4, IL-6, IL-7, IL-8, IL-10, IL-12p70, GMCSF, IFNγ, TNFα

Format: Standard microarray slide format with 16 removable wells; 64 spots/well



Microarray layout with 16 identical arrays on each side

continued on next page

DOMINIQUE DUTSCHER SAS

Product	Min. Qty.
440202 LY 294002	250 mg
688000 Y-27632	50
555550 Rho-Kinase Inhibitor	50 mg
529573 PP2	25 mg
529574 PP3	50 mg

Sample Volume: 50 µl for tissue culture supernatants, 25 µl for serum or plasma

Detection Range: 5–2500 pg/ml

Standard Curve Range: 15–800 pg/ml

Reproducibility: < 20% well-to-well CV

Recovery: 80–120% from serum, plasma, and tissue culture supernatants

Assay Duration: 4 hours

Fluorescent Detection System: SensiLight™ PBXL-3 (standard red laser 633 nm excitation; 660 nm emission)

Components:

1 ProteoPlex 16-Well Human Cytokine Array; 1 PBST Buffer Tablet; 1 ml 10X Sample Diluent; 1 tube Detection Antibody Cocktail 1, Lyophilized; 1.6 ml Detection Antibody Diluent; 1 tube Human Cytokine Standard Mix 1, Lyophilized; 0.3 ml 10X Standard Diluent, Serum-based; 1 tube SensiLight PBXL-3 Fluorophore, Lyophilized; 1.8 ml SensiLight PBXL-3 Diluent; 1.5 ml 200X Final Rinse; 1 Slide Dryer; 1 Slide Rinser; 1 Slide Mailer.

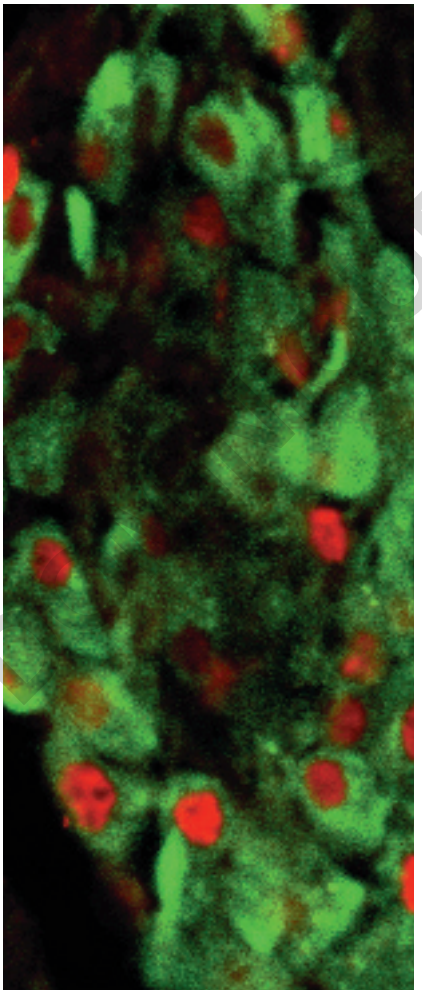
Phosphorylation/dephosphorylation

440202 LY 294002 — Minimum Quantity: 250 mg

- Cell-permeable, potent, specific phosphatidylinositol 3-kinase (Pl 3-kinase) inhibitor (IC_{50} = 1.4 µM) that acts on the ATP-binding site of the enzyme.
- Also inhibits nonhomologous DNA end-joining (NHEJ) in the 460 kDa phosphatidylinositol 3-like kinase DNA-PKc_s, which is the catalytic subunit of DNA-activated protein kinase.
- Does not affect the activity of EGF receptor kinase, MAP kinase, PKC, Pl 4-kinase, S6 kinase, and c-Src at concentrations as high as 50 mM.
- Blocks proliferation of cultured rabbit aortic smooth muscle cells without inducing apoptosis.
- Purity: ≥ 98%.
- Off-white solid. PROTECT FROM LIGHT. Soluble in DMSO or EtOH. CAS 154447-36-6, M.W. 307.4.

688000 Y-27632 — Minimum Quantity: 50 mg

- Highly potent, cell-permeable and selective inhibitor of Rho-associated protein kinases (K_i = 140 nM for $p160^{ROCK}$).
- Inhibits ROCK-II with equal potency.
- Acts as a potent inhibitor of agonist-induced Ca^{2+} sensitization of myosin phosphorylation and smooth muscle contraction.
- Purity: ≥ 95%.
- Lyophilized solid. PROTECT FROM LIGHT. PACKAGED UNDER INERT GAS. Soluble in H_2O. CAS 146986-50-7, $C_{14}H_{21}N_3O \bullet 2HCl \bullet H_2O$, M.W. 338.3.
- Sold under license of U.S. Patent 4,997,834 and PCT Patent W098/06433A1 and under license from Mitsubishi Pharma Corporation.



555550 Rho-Kinase Inhibitor — Minimum Quantity: 50 mg

- Cell-permeable isoquinolinesulfonamide compound that acts as a highly specific, potent, and ATP-competitive inhibitor of G-protein Rho-associated kinase (ROCK; K_i = 1.6 nM).
- Exhibits a much weaker affinity for other serine/threonine kinases (K_i = 630 nM for PKA, 9.27 µM for PKC, and 10.1 µM for MLCK).
- Shown to selectively block lysophosphatidic acid-induced, but not PDBu-induced, phosphorylation of myristoylated alanine-rich C kinase substrate MARCKS (IC_{50} = 2.5 µM) in NT-2 cells.
- Purity: ≥ 95%.
- Lyophilized solid. PROTECT FROM LIGHT. HYGROSCOPIC. PACKAGED UNDER INERT GAS. Soluble in H_2O. M.W. 392.3.

529573 PP2 — Minimum Quantity: 25 mg

- Potent and selective inhibitor of the Src family of protein tyrosine kinases.
- Inhibits $p56^{lck}$ (IC_{50} = 4 nM), $p59^{fyn}T$ (IC_{50} = 5 nM), and Hck (IC_{50} = 5 nM).
- Does not significantly affect the activity of EGFR kinase (IC_{50} = 480 nM), JAK2 (IC_{50} > 50 µM), or ZAP-70 (IC_{50} > 100 µM).
- Inhibits the activation of focal adhesion kinase and its phosphorylation at Tyr^{577}.
- Potently inhibits anti-CD3-stimulated tyrosine phosphorylation of human T cells (IC_{50} = 600 nM).
- Purity: ≥ 95%.
- Off-white solid. PACKAGED UNDER INERT GAS. Soluble in DMSO. M.W. 301.8.

529574 PP3 — Minimum Quantity: 50 mg

- A negative control for the Src family protein tyrosine kinase inhibitor PP2 (Cat. No. 529573).
- Inhibits the activity of EGFR kinase (IC_{50} = 2.7 µM).
- Purity: ≥ 95%.
- Off-white solid. PACKAGED UNDER INERT GAS. Soluble in DMSO. CAS 5334-30-5, M.W. 211.2.

MERCK BIOSCIENCES SAS

Categorical Index

Antibiotics

Ampicillin, Sodium Salt . . . 5
Chloramphenicol . . . 5
Cycloheximide . . . 5
G 418 Sulfate, Cell Culture Tested . . . 5
Hygromycin B, *Streptomyces* sp. . . . 5
Kanamycin Sulfate, *Streptomyces kanamyceticus* . . . 5
Rapamycin . . . 5

Biochemicals

Biotin-X-NHS . . . 10
BMS . . . 12
Clelands Reagent . . . 11
Glutathione, Reduced, Free Acid . . . 11
IPTG, Dioxane-Free, High Purity . . . 6
Pellet Paint® NF Co-Precipitant . . . 4
Ribonuclease A, Bovine Pancrease (RNase A) . . . 4
RNase A Solution . . . 4
Streptavidin . . . 10

Buffers

HEPES, Free Acid, ULTROL® Grade . . . 4
MOPS, Free Acid, ULTROL Grade . . . 4
4X Elute Buffer . . . 10
8X Binding Buffer . . . 10
8X Charge Buffer . . . 10
8X Wash Buffer . . . 10

Detergents

CHAPS . . . 9
CHAPSO . . . 9
Chenodeoxycholic Acid, Sodium Salt . . . 9
Deoxycholic Acid, Sodium Salt, ULTROL Grade . . . 9
Digitonin, High Purity . . . 9
Digitonin, Alcohol-Soluble, High Purity . . . 9
NDSB-195 . . . 12
NDSB-201 . . . 12
NDSB-211 . . . 12
NDSB-221 . . . 12
NDSB-256 . . . 12
NDSB-256 . . . 12
Zwittergent® 3-08 Detergent . . . 9
Zwittergent 3-10 Detergent . . . 9
Zwittergent 3-12 Detergent . . . 9
Zwittergent 3-14 Detergent . . . 9
Zwittergent 3-16 Detergent . . . 9

ELISA

c-Erb2/c-New Rapid Format ELISA Kit . . . 13

Enzymes

Benzonase® Nuclease, Purity > 99% . . . 7
Benzonase Nuclease, Purity > 90% . . . 7
Benzonase Nuclease HC, Purity > 99% . . . 7
Benzonase Nuclease HC, Purity > 90% . . . 7
Lysonase™ Bioprocessing Reagent . . . 7
rLysozyme™ Solution, . . . 8
rLysozyme Solution, Veggie™ Grade . . . 8

Inhibitors

α-Iodoacetamide . . . 12
AEBSF, Hydrochloride . . . 8
Aprotinin, Bovine Lung, Crystalline . . . 8
Leupeptin, Hemisulfate . . . 8
LY 294002 . . . 14
PP2 . . . 14
PP3 . . . 14
Protease Inhibitor Cocktail Set II . . . 8
Protease Inhibitor Cocktail Set III . . . 8
Rho-Kinase Inhibitor . . . 14
Y-27632 . . . 14

Media

L-Selenomethionine . . . 6
Overnight Express™ Autoinduction System 1 . . . 6
Overnight Express Autoinduction System 2 . . . 6
Veggie™ Peptone . . . 6
Veggie Yeast Extract . . . 6

Microarrays

ProteoPlex™ 16-Well Human Cytokine Array Kit . . . 13

Proteases

Biotinylated Thrombin . . . 11
Factor Xa, Restriction Grade . . . 11
HRV 3C Protease . . . 11
PRONASE® Protease, Streptomyces griseus . . . 4
Proteinase K, Tritirachium album . . . 4
Thrombin, Restriction Grade . . . 11
Recombinant Enterokinase . . . 11

Protein Extraction Reagents

BugBuster® 10X Protein Extraction Reagent . . . 7
Insect PopCulture® Reagent . . . 7
PopCulture Reagent . . . 7

Protein Solubility Screening

FRETWorks™ S•Tag™ Assay Kit . . . 13
RoboPop™ Solubility Screening Kit . . . 13

Purification Resins

ATP Binders™ Resin . . . 10
His•Bind® Resin . . . 10
His•Bind Fractogel® Resin . . . 10
His•Mag™ Agarose Beads . . . 10
Hydroxylapatite, High Resolution . . . 4

Transfection

GeneJuice® Transfection Reagent . . . 6
Insect GeneJuice Transfection Reagent . . . 6

Alphabetical Index

Products

4X Elute Buffer . . . 10
8X Binding Buffer . . . 10
8X Charge Buffer . . . 10
8X Wash Buffer . . . 10
α-Iodoacetamide . . . 12
AEBSF, Hydrochloride . . . 8
Ampicillin, Sodium Salt . . . 5
Aprotinin, Bovine Lung, Crystalline . . . 8
ATP Binders Resin . . . 10
Benzonase® Nuclease, Purity > 99% . . . 7
Benzonase Nuclease, Purity > 90% . . . 7
Benzonase Nuclease HC, Purity > 99% . . . 7
Benzonase Nuclease HC, Purity > 90% . . . 7
Biotin-X-NHS . . . 10
Biotinylated Thrombin . . . 11
BMS . . . 12
BugBuster® 10X Protein Extraction Reagent . . . 7
c-Erb2/c-New Rapid Format ELISA Kit . . . 13
CHAPS . . . 9
CHAPSO . . . 9
Chenodeoxycholic Acid, Sodium Salt . . . 9
Chloramphenicol . . . 5
Cleland's Reagent (DTT) . . . 11
Cycloheximide . . . 5
Deoxycholic Acid, Sodium Salt, ULTROL® Grade . . . 9
Digitonin, High Purity . . . 9
Digitonin, Alcohol-Soluble, High Purity . . . 9
Factor Xa, Restriction Grade . . . 11
G 418 Sulfate, Cell Culture Tested . . . 5
GeneJuice® Transfection Reagent . . . 6
Glutathione, Reduced, Free Acid . . . 11
HEPES, Free Acid, ULTROL® Grade . . . 4
His•Bind® Resin . . . 10
His•Bind Fractogel . . . 10
His•Mag™Agarose Beads . . . 10
HRV 3C Protease . . . 11
Hygromycin B, *Streptomyces* sp. . . . 5
Hydroxylapatite, High Resolution . . . 4
Insect GeneJuice® Transfection Reagent . . . 6
Insect PopCulture® Reagent . . . 7
IPTG, Dioxane-Free, High Purity . . . 6
Kanamycin Sulfate, *Streptomyces kanamyceticus* . . . 5
Leupeptin, Hemisulfate . . . 8
LY 294002 . . . 14
Lysonase™ Bioprocessing Reagent . . . 7
NDSB-195 . . . 12
NDSB-201 . . . 12
NDSB-211 . . . 12
NDSB-221 . . . 12
NDSB-256 . . . 12
NDSB-256 . . . 12
Overnight Express™ Autoinduction System 1 . . . 6
Overnight Express Autoinduction System 2 . . . 6
Pellet Paint® NF Co-Precipitant . . . 4
PopCulture® Reagent . . . 7
PP2 . . . 14
PP3 . . . 14
PRONASE® Protease, *Streptomyces griseus* . . . 4
Protease Inhibitor Cocktail Set II . . . 8
Protease Inhibitor Cocktail Set III . . . 8
Proteinase K, *Tritirachium album* . . . 4
ProteoPlex™ 16-Well Human Cytokine Array Kit . . . 13
Rapamycin . . . 5
Recombinant Enterokinase . . . 11
Rho-Kinase Inhibitor . . . 14
Ribonuclease A, Bovine Pancreas (RNase A) . . . 4
rLysozyme™ Solution . . . 8
rLysozyme Solution, Veggie™ Grade . . . 8
RNase A Solution . . . 4
RoboPop™ Solubility Screening Kit . . . 13
L-Selenomethionine . . . 6
Streptavidin . . . 10
Veggie™ Peptone . . . 6
Veggie Yeast Extract . . . 6
Y-27632 . . . 14
Zwittergent® 3-08 Detergent . . . 9
Zwittergent 3-10 Detergent . . . 9
Zwittergent 3-12 Detergent . . . 9
Zwittergent 3-14 Detergent . . . 9
Zwittergent 3-16 Detergent . . . 9

DOMINIQUE DUTSCHER SAS



DOMINIQUE DUTSCHER SAS

For more information or to order bulk quantities,
contact Merck Biosciences

Germany
Merck Biosciences GmbH
Tel +49 6196 564958
Fax +49 6196 641347
E-mail: bulk@merckbiosciences.de

France
VWR International S.A.S.
Hotline: 0 825 05 60 60 and 01 45 14 87 98
Fax: 01 45 14 85 70
E-mail: merckbiosciences@fr.vwr.com

United Kingdom
Merck Biosciences Ltd.
Phone 0800 622 935 or 0115 943 0840
Fax 0115 943 0951
E-mail: customer.service@merckbiosciences.co.uk

Calbiochem, Novabiochem, and Novagen are brands of Merck Biosciences, an affiliate of Merck KGaA, Darmstadt, Germany.

Printed in the USA.

CB0722-2004EURO