

PROTEIN WORKFLOW

ISOLATION AND AMPLIFICATION, SAMPLE
PREP, PURIFICATION AND ANALYSIS



TABLE OF CONTENTS

ISOLATION AND AMPLIFICATION

Page 3–5



SAMPLE PREPARATION

Page 6–7



PROTEIN PURIFICATION

Page 8–11



ANALYSIS

Page 12–15



Cytiva and the Drop logo are trademarks of Global Life Sciences IP Holdco LLC or an affiliate.

934-AH, ADCF, ActiCHO, ActiPro, ActiSM, AdvanceSTEM, ÄKTA, ÄKTA pure, ÄKTAcrossflow, ÄKTA Pilot, ÄKTAprocess, Amersham, Anodic, Anopore, Anotop, Applied Precision, ArrayWorx, Aspire, Asymptote, Atmos, AuroDye, Autovial, AxiChrom, AxiTide, Bagkart, Batch 360, Benchkote, Bhoomi, Biacore, Biacore & design, Bioclear, BioProcess, BIOREWARDS, Biosafe, Biotrak, Capto, Cell Boost, Cellbag, Chromatoflow, Chronicle, CMG, Cosmic Catf, CryoSC, Cy, CycloPore, CyDye, Cytiva, Cytodex, Cytopore, DieCyder, DIBE, Drop (design), Drop (device), ECL, ECL Advance, ECL DualVue, ECL Plex, ECL Select, e-Core, Ettan, ExcelGel, ExoProStar, Fast Trak, Fetal Clone, FetalClone (stylized), FetalPrime, FicolL, FicolL-Paque, Figurate, Fineline, FlexFactory, Fluxkart, GammaBind, GenomiPhi, GF/C, GFX, GraviTrap, GSTprep, GSTrap, HiLoad, HiPrep, HiPrep (design), HiScale, HiScreen, HiScreen Fibro, HisPrep, HisTrap, HiTrap, HiTrap Fibro, Hoop, Hot Lips Tube Sealer, Hybond, HyCell, HyClone, Hyperfilm, HyQ, HyQTase, HyrTryp, IceStart, illustra, ImageQuant, Immobiline, Immunopore, IPGphor, Klari-Flex, KUBio, Kvick, Kvick Flow, Kvick Lab, Kvick Start, Labcrew, Lab Recharge, LEADseeker, Lyo-Stable, MabSelect, MabSelect Prisma, MabSelect SuRe, MabSelect Xtra, MABTrap, MacroCap, MashPrep, MaxCell, MBPTrap, MCID, MCID ELITE (design), Media Wand, MicroSpin, MidGee, MidiTrap, Mini Q, Mini S, MINIBEADS, MiniTrap, Mini-UniPrep, Mono Q, Mono S, MonoBeads, MultiPhor, MultiTemp, MultiTrap, my.CryoChain, Nanomover, NAP, NGS-Plex, Nuclepore, Nytran, OligoPilot, OligoProcess, Oligosynt, OptiRun, PAA, Percoll, Pharmalyte, PhastGel, PhastSystem, PreDictor, PreScission, Primer Support, PrimeView, ProbeQuant, Procel, ProCell, Protran, Puradisc, Qflex, RA Reeve Angel (stylized), Rainbow, Ready To Go, Ready To Process, ReadyCircuit, readyflux, ReadyMate, Ready-To-Go, ReadyToProcess, ReadyToProcess WAVE, RediGrad, RESOURCE, ReZist, RTG, Schleicher & Schuell, Sefia, Sepax, Sephacel, Sephacryl, Sephadex, Sepharose, Sera-Mag, SeraSil-Mag, Sera-Xtracta, Shark Skin, Smart-Max, SOURCE, SPARTAN, SpinTrap, Split circle (design), Split circle (device), STREAMLINE, StrepTrap, Superdex, Superloop, Superose, TempliPhi, Test Tube Slanted (design), Testa Center (stylized) & device, Thermo Sequenase, Tricorn, T-SQUARE, Typhoon, Typhoon Trio, ULTA, UNICORN, UNIFILTER, Uniflo, Uniflux, UniPrep, Uno, VIA Capsule, VIA Freeze, VIA Thaw, W Whatman (stylized) & device, WAVE, WAVE Bioreactor, WAVE Biotech (stylized) & device, WAVE Mixer, WAVEMIXER (design), WAVEMIXER (stylized) & device, waveTuner, Whatman, Whatman GD/X, WorX, Xcellerex, Xcellerex (design), Xuri are trademarks of Global Life Sciences Solutions USA LLC or an affiliate doing business as Cytiva.

© 2021 Cytiva

All goods and services are sold subject to the terms and conditions of sale of the supplying company operating within the Cytiva business. A copy of those terms and conditions is available on request. Contact your local Cytiva representative for the most current information.

ISOLATION AND AMPLIFICATION

NUCLEIC ACID ISOLATION AND AMPLIFICATION

illustra™ RNAspin kits

illustra RNAspin RNA isolation kits are designed for rapid extraction of high-quality RNA (up to 100 µg) from a wide range of sample types.

- Fast and simple
- Easy to use
- Available in mini and 96-well formats

illustra PuReTaq Ready-To-Go™ PCR beads

Premixed, predispensed, single-dose reactions optimized for performing standard PCR.

- High-quality PuReTaq DNA polymerase and high-purity reagents
- Verified for real-time PCR
- Long-term ambient-temperature stable
- Available in 96-well plates and Hot Start Mix



Description	PK	Art. no.
illustra RNAspin 96 kit (4x 96 well plates)	4x 96 rxn	25050075
illustra RNAspin mini kit	50 rxn	25050071
illustra PuReTaq RTG PCR 0.2 ml MWP	96 rxn	27955701
illustra PuReTaq RTG PCR 0.2 ml hinged tube with cap	96 rxn	27955901
illustra Hot Start Mix RTG 0.5 ml	100 rxn	28900646
illustra Hot Start Mix RTG 0.2 ml	96 rxn	28900653

Sera-Mag™ beads

Sera-Mag is the trusted brand for magnetic bead technology to the scientific community for over 30 years. For robust and reproducible results choose from:

- Streptavidin coated – isolation of biotinylated targets such as PCR products, Oligos, and antibodies
- Universal bead reagent for increased throughput and precision in immunoassays
- Carboxylate-modified – optimized for covalent coupling of proteins and nucleic acid isolation
- Oligo (dT) – excellent for isolating mRNA from a variety of sources
- Neutravidin coated – streptavidin blocked surfaces may help reduce non-specific binding in some applications

Description	PK	Art. no.
Sera-Mag Oligo (dT) coated magnetic particles	1 ml	38152103011150
Sera-Mag SpeedBeads streptavidin-blocked magnetic particles	1 ml	21152104011150
Sera-Mag Streptavidin	5 ml	30152105010150
SpeedBead Streptavidin	1 ml	66152104011150
Sera-Mag SpeedBeads neutravidin-coated magnetic particles	5 ml	78152104010150



NUCLEIC ACID PURIFICATION AND CLEAN-UP

illustra NAP columns

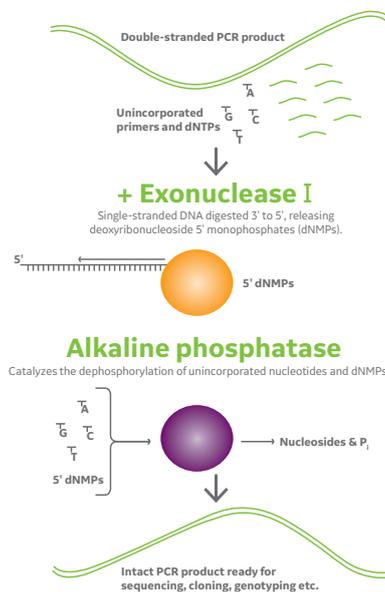
These disposable columns are prepacked with Sephadex™ G-25 DNA Grade and require only gravity to run. They allow rapid and efficient purification of DNA and oligonucleotides in less than 15 min.

- Useful for small-scale purification, desalting and buffer exchange
- Available in three sizes depending on sample volume: 0.5 ml, 1 ml or 2.5 ml

illustra MicroSpin™ G-25 columns

These are designed for the rapid purification of DNA for use in a wide range of applications, including desalting, buffer exchange, and removal of unincorporated nucleotides from end-labelled oligonucleotides.

- Prepacked with Sephadex G-25 DNA Grade and pre-equilibrated in distilled water containing 0.05 % Kathon CG/ICP Biocide
- Requires less than 4 min from sample application to collection of purified product



illustra ExoProStar™

ExoProStar 1-Step PCR and Sequence Reaction Clean-Up reagent provides a simple, single-step method for removing unincorporated primers and nucleotides prior to downstream analysis. illustra Exonuclease I and Alkaline Phosphatase enzymes are combined in a single, stable mix requiring just one pipetting step to establish the clean-up reaction. 30 min protocol.

ExoProStar S is an enzymatic PCR clean up technology with Exonuclease I and Shrimp Alkaline Phosphatase to remove unincorporated primers and dNTPs. For maximum flexibility it comes in two separate tubes; just two simple pipetting steps needed to prepare the reaction. Complete heat inactivation of the enzymes within 10 min. Fast 15 min protocol and scalable for different reaction sizes. Easy to automate.

illustra GFX™ PCR DNA and gel band purification kit

Isolate and concentrate DNA fragments from PCR mixtures, agarose gel bands, and enzyme digests in under 10 min.

- Flexible elution volume for different DNA concentrations
- Highly pure DNA is ready for direct use in sequencing, PCR, labelling, restriction enzyme digestion, and cloning



Description	PK	Art. no.
illustra NAP-5 Columns, 0.5 ml	50 columns	17085302
illustra NAP-10 Columns, 1 ml	50 columns	17085402
illustra NAP-25 Columns, 2.5 ml	50 columns	17085202
illustra MicroSpin G-25 Columns	50 columns	27532501
illustra ExoProStar-1 Step	100 rxn	US77702
illustra ExoProStar S	100 rxn	US79010
illustra GFX PCR DNA and gel band purification kit	100 rxn	28903470
illustra GFX 96 PCR purification kit (10x 96-well plates)	10x 96 rxn	28903445

NUCLEIC ACID AMPLIFICATION

illustra TempliPhi™ DNA amplification kit

Prepare DNA sequencing templates from circular DNA for cycle sequencing, cloning, and transformation in 4 to 6 hours.

- Use simple protocol to reduce time, labor, and quantity of consumables needed for template preparation – workflow enables easy automation
- Use amplified DNA directly for cycle sequencing without purification
- Amplify DNA from bacterial or M13 liquid cultures, colonies, plaques, glycerol stocks, or purified circular (plasmid or M13) DNA

illustra single cell GenomiPhi™ DNA amplification kit

This kit combines the novel capabilities of Phi29 DNA polymerase with an optimized formulation to amplify genomic DNA from 1–1000 cells without background interference.

- Amplifications can be completed in less than 3 hours with less than 15 min hands-on time
- Whole genome amplification of genomic DNA from as little as a single cell

illustra GenomiPhi V2 DNA amplification kit

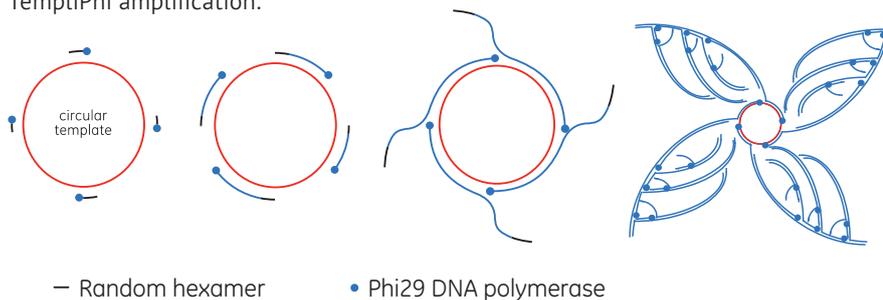
This kit offers highly efficient and representative amplification of the whole genome.

- Outperforms PCR-based whole genome amplification techniques
- Quick and simple automation-friendly protocol; no thermal cycler required
- Yields high-quality DNA (e.g., for high-throughput genotyping, hybridization, and DNA archival)



Description	PK	Art. no.
illustra TempliPhi DNA amplification kit	100 rxn	25640010
illustra Single Cell GenomiPhi DNA amplification kit	25 rxn	29108107
illustra Single Cell GenomiPhi DNA amplification kit	100 rxn	29108039
illustra GenomiPhi V2 DNA amplification kit	100 rxn	25660031
illustra RTG GenomiPhi V3 DNA amplification kit	96 rxn	25660196

TempliPhi amplification:



SAMPLE PREPARATION

SYRINGE FILTERS

SPARTAN™ HPLC syringe filters

These filters offer reproducible filtration for ultra-high performance liquid chromatography (UHPLC) and high performance liquid chromatography (HPLC) sample preparation. SPARTAN filters can also be used in capillary electrophoresis, protein filtration, UV/VIS analysis, and any application requiring a chemically resistant, low protein binding, hydrophilic membrane in a polypropylene housing.

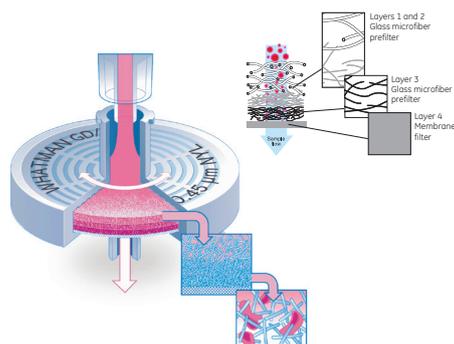
- Hydrophilic regenerated cellulose membrane exhibits low protein binding
- Excellent chemical resistance to common aqueous and organic solvents
- Tested and certified for the absence of UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol, and acetonitrile
- Documented batch-to-batch quality and consistency, ensuring reproducible result



Whatman GD/X™ syringe filters

These filters are specifically designed for filtration of viscous or otherwise hard-to-filter samples with high solids content.

- High loading capacity for samples with high solids content
- Three layer glass fiber prefiltration stack for filtering larger sample volumes with less back pressure build-up
- Process three to seven times more sample volume than filters without prefilter



Puradisc™ FP syringe filters

The FP 30 filter range contains a low protein binding cellulose acetate membrane, for sterile filtration of cell, tissue culture media and samples containing proteins. Available in different pore sizes.

Description	PK	Art. no.
SPARTAN HPLC Syringe Filter, 30 mm, regenerated cellulose, 0.2 µm	100	10463060
SPARTAN HPLC Syringe Filter, 30 mm, regenerated cellulose, 0.45 µm	100	10463050
SPARTAN HPLC Syringe Filter, 13 mm, regenerated cellulose, 0.2 µm	100	10463100
SPARTAN HPLC Syringe Filter, 13 mm, regenerated cellulose, 0.45 µm	100	10463110
GD/X Syringe Filter, 25 mm, regenerated cellulose, 0.2 µm	150	6887-2502
GD/X Syringe Filter, 25 mm, regenerated cellulose, 0.45 µm	150	6882-2504
Puradisc FP Syringe Filter, 30 mm, cellulose acetate, 0.45 µm, sterile	50	10462100
Puradisc FP Syringe Filter, 30 mm, cellulose acetate, 0.2 µm, sterile	50	10462200

MEMBRANE FILTERS

Regenerated cellulose membranes

Whatman™ regenerated cellulose membrane filters are microporous cellulose acetate filters made without wetting agents.

- Chemical resistance suitable for a wide range of aqueous and organic media
- Low extractable levels to minimize sample contamination
- Mechanically stable with low protein binding
- Spontaneous wetting with very good wet strength

Description	PK	Art. no.
RC55 Membrane Circles, regenerated cellulose, 0.45 µm, 47 mm	100	10410212
RC55 Membrane Circles, regenerated cellulose, 0.45 µm, 50 mm	100	10410214

LAB ESSENTIALS

Grade 105 lens cleaning tissue

This high-quality lens cleaning tissue is chemically pure and free from silicones and other additives.

Benchkote™ surface protector

Whatman Benchkote is an absorbent lab paper that protects surfaces against hazardous spills. After use, the bench protector sheet is incinerated or disposed of according to local regulations.

Kjeldahl analysis weighing boat

This weighing boat is designed so users can collect, transfer, and drop both sample and weighing boat into an acid solution during a Kjeldahl analysis without influencing analytical results.

- No glue or chemical additives
- Excellent for both weighing and quantitative sample transfer

1 Chr chromatography paper

Whatman cellulose chromatography papers are manufactured from the highest quality cotton linters with no additives. The papers are manufactured and tested specifically for chromatographic techniques and undergo rigorous quality control to ensure uniformity. 1 Chr has a smooth surface, 0.18 mm thick with a linear flow rate (water) of 130 mm/30 min. These papers offer good resolution for general analytical separations.

Cytiva Whatman™ Vacu-Guard filter 50 mm disc filter

The Vacu-Guard filter is designed for in-line use with stepped barb connections for 10 to 12 mm i.d. hose.

- Excellent for protecting vacuum pump systems from solvent vapor or gaseous contaminants and aqueous aerosols
- Available with choice of chemical trap: activated carbon, molecular sieve, or desiccant
- Membrane retains 99.99 % of airborne particles greater than 0.1 μm
- Features hydrophobic polytetrafluoroethylene (PTFE) membrane

Whatman HEPA-VENT 50 mm disc filter

Hepa-Vent high-efficiency particulate arrestance (HEPA) air filters are used in industrial, research, and scientific applications that require extremely high retention of airborne particles.

- Meets high-efficiency particulate arrestance standard, retaining 99.97 % of all particles $\geq 0.3 \mu\text{m}$ in air
- Depth design results in extremely high retention and bidirectional flow rate

Description	PK	Art. no.
Benchkote surface protector, sheets, 460 x 570 mm	50	2300-916
Grade 105 lens cleaning tissue, 100 x 150 mm, 25 wallets of 25 sheets	25x 25	2105-841
Kjeldahl analysis weighing boat, grade 609	100	10313032
Grade 1 Chr cellulose chromatography paper, 200 x 200 mm	100	3001-861
Grade 1 Chr cellulose chromatography paper, 460 x 570 mm	100	3001-917
Vacu-Guard 50 mm disc filter	10	6722-5000
HEPA-VENT 50 mm disc filter	10	6723-5000



PROTEIN PURIFICATION

AFFINITY CHROMATOGRAPHY



HisTrap™ excel

The HisTrap excel is a ready-to-use immobilized metal ion affinity chromatography (IMAC) column prepacked with Ni Sepharose excel. Designed for capture and purification of histidine-tagged proteins from various sample types, including *E. coli* lysates. Nickel ions are very strongly bound to the resin, making it especially suitable for purification of his-tagged proteins secreted into eukaryotic cell culture supernatants or for samples causing nickel stripping.

- Increase target protein yield and decrease degradation through reduced and simplified sample handling
- Resistant to EDTA (100 mM) and reducing agents such as DTT (5 mM)



HiTrap™ TALON® crude

The HiTrap TALON crude allows for rapid separations and easy scale-up with a minimum of sample preparation and equipment.

- Suitable for IMAC purification of his-tagged proteins when Ni²⁺ is not the optimal choice of metal ion
- Compatible with commonly used IMAC reagents and appropriate for purifying proteins under native or denaturing conditions

HisTrap HP

The HisTrap HP is prepacked with Ni Sepharose High Performance and designed for simple, high-resolution purification of his-tagged proteins by IMAC.

- High binding capacity, at least 40 mg/ml chromatography resin
- Compatible with a wide range of reducing agents, detergents, denaturants, and other additives
- Simple manual operation with a syringe, pump, or chromatography system such as ÄKTA



HisTrap FF crude

HisTrap FF Crude columns are high binding capacity IMAC columns for his-tagged protein purification when scalability is needed.

- Excellent flow properties – great performance even at high flow rates
- HiTrap column format – compatible with syringe, pump, or chromatography system such as ÄKTA systems or other FPLC systems
- High binding capacity – binds up to 40 mg his-tag protein/ml resin
- Optimized for unclarified samples – short purification time can minimize potential negative effects, such as degradation and oxidation of proteins
- His-tag protein purification from unclarified lysates



Description	PK	Art. no.
HisTrap excel 5x 1 ml	5 columns	17371205
HiTrap TALON crude, 5x 1 ml	5 columns	28953766
HisTrap HP 5x 1 ml	5 columns	17524701
HisTrap FF crude 5x 1 ml	5 columns	11000458



A suitable and high dynamic binding capacity will help to save costs. Make sure the resin and column you choose match to the needed expressed target protein. HiTrap columns can be connected easily in series up-to three to increase capacity.

Ni Sepharose™ excel

Ni Sepharose excel is a his-tagged protein purification resin for minimized Ni-leakage and maximized protein recovery when samples contain stripping agents.

- Versatile – suitable for eukaryotic samples, including insect and CHO cells, as well as bacterial samples such as *E. coli*
- Retained binding capacity of up to 10 mg/ml resin
- Flexible formats – prepacked and loose resin formats for optimized screening and preparative his-tag purification
- Simplified sample handling – fewer steps needed compared with conventional workflow
- EDTA-resistant resin for IMAC chromatography

**His GraviTrap™**

The His GraviTrap is a prepacked, single-use column for purification of his-tagged proteins by immobilized metal affinity chromatography (IMAC). This column gives fast and simple gravity-flow purifications without any need for a purification.

- Convenient, prepacked gravity-flow column
- Allows direct purification of both clarified and unclarified cell lysates
- High binding capacity; approximately 40 mg of pure protein per column

His GraviTrap TALON

The His GraviTrap TALON is a prepacked gravity flow column for convenient manual purification of his-tagged proteins.

- Offers a different selectivity compared to nickel-charged resins
- One run takes about 30 min, and large sample volumes can be applied all at once
- Convenient his-tagged purification with high purity (> 90%) and binding capacity of up to 15 mg/column

**His SpinTrap™**

This is a single use, prepacked spin column for purifying his-tagged proteins by immobilized metal ion affinity chromatography (IMAC).

- Allows direct purification of both clarified and unclarified cell lysates
- Yields up to 750 µg pure protein per column
- For simple, small-scale purification of his-tagged proteins and rapid expression screening

His SpinTrap TALON

The His SpinTrap TALON is a single-use column for rapid screening with small samples of his-tagged proteins.

- Suitable for purification of multiple samples in parallel, such as screening
- With a microcentrifuge, one run takes about 10 min
- Designed for high purity, small-scale purification and screening of his-tagged proteins from clarified cell lysates



Description	PK	Art. no.
Ni Sepharose excel 25 ml	1 bottle	17371201
Ni Sepharose excel 100 ml	1 bottle	17371202
His GraviTrap	10 columns	11003399
His GraviTrap TALON	10 columns	29000594
His SpinTrap	50 columns	28401353
His SpinTrap TALON	50 columns	29000593



His Mag Sepharose Ni and His Mag Sepharose excel

His Mag Sepharose Ni products are magnetic beads designed for rapid, small-scale purification and screening of his-tagged proteins from different sources. Mag Sepharose format has excellent properties for small-scale experiments. The high density of the beads allows rapid capture by magnetic devices while the visibility of the beads ensures reliable collection of the bound his-tagged proteins in the purification procedure. For purification of expressed proteins direct from culture media, His Mag Sepharose excel provides the capability to purify secreted proteins without any stripping of the ligand, vastly increasing yield and significantly shortening the workflow.

**NHS Mag Sepharose**

These magnetic beads are designed for pull-down techniques enabling rapid capture and enrichment of selected proteins based on affinity

- Non-adherent beads remove smearing effects and aggregate formation.
 - Can be used without detergents
- Simple capture of target protein in small or large sample volumes (low microliter to high milliliter scale)
- Visible and dense Sepharose based magnetic beads with N-hydroxysuccinimide ligand for easy coupling of biomolecules containing a free amine group

Protein A and G Mag Sepharose

These magnetic beads are designed to simplify enrichment of target proteins by immunoprecipitation applications. Based on Sepharose with Protein A or G as ligand.

- Non-adherent beads remove smearing effects and aggregate formation.
 - Can be used without detergents
- Optimized capacity for enrichment/immunoprecipitation of target proteins – only low amounts of antibody needed
- Flexible protocols with elution conditions optimized for both electrophoresis and MS analysis
- Simple capture of target protein in small or large sample volumes (low microliter to high milliliter scale)
- Visible and dense Sepharose based magnetic beads with Protein G ligand, easy to spot and collect bound target protein

MagRack Maxi and Mag Rack 6

MagRack Maxi is a magnetic rack for small-scale protein purification and sample enrichment with magnetic beads. MagRack 6 enables handling of up to six samples in 1.5 ml microcentrifuge tubes.

- Provides convenience by making it easy for you to perform small-scale purifications
- Allows for optimal performance during protein purifications or enrichments
- Enrichment of sample volumes up to 50 ml



Description	PK	Art. no.
His Mag Sepharose Ni	2x 1 ml	28967388
NHS Mag Sepharose	1x 500 µl	28944009
Protein G Mag Sepharose	1x 500 µl	28944008
Protein A Mag Sepharose	1x 500 µl	28944006
MagRack Maxi	each	28986441
Mag Rack 6	each	28948964

SIZE EXCLUSION CHROMATOGRAPHY

HiPrep™ Sephacryl™ S-100 HR

HiPrep Sephacryl HR are prepacked columns for preparative separation of biomolecules. They offer:

- Maximum recovery and minimum nonspecific adsorption with long-term chemical and physical stability resulting from the hydrophilic, rigid allyl dextran/bisacrylamide matrix
- Compatibility with low to medium pressure ÄKTA systems
- High capacity columns – preparative separation of proteins in sample volumes up to 5 ml or 13 ml for 16/60 and 26/60 columns respectively
- HiPrep Sephacryl S-100 is used for separating peptides and small proteins
- Sephacryl S-100 HR Mr 1 000 to 100 000

HiLoad™ Superdex™ 75 pg

HiLoad Superdex 75 pg prepacked columns are for high-resolution size exclusion chromatography of recombinant proteins from samples up to 5 ml.

- ÄKTA system compatible – fittings (1/16") for direct connection to ÄKTA systems and other chromatography systems
- Scalable – separations can be scaled up using Superdex 75 prep grade resin
- Prepacked format – for convenience and reproducibility; can be used with standalone pump or chromatography system

Superdex™ 75 Increase

Superdex 75 Increase is a prepacked column for versatile use in size exclusion chromatography applications. It is used in preparative purification as well as for characterization and analysis of proteins with molecular weights between Mr 3000 and 70 000, such as recombinant tagged proteins.

- Reduced run time with maintained resolution for time saving or increased throughput
- Higher resolution for improved protein purity and analysis data
- Higher lot-to-lot consistency for better reproducibility

Description	PK	Art. no.
HiPrep 16/60 Sephacryl S-100 HR	1 column	17116501
HiPrep 26/60 Sephacryl S-100 HR	1 column	17119401
HiLoad 16/600 Superdex 75 pg	1 column	28989333
Superdex 75 Increase 10/300 GL	1 column	29148721

DESALTING/BUFFER EXCHANGE

HiTrap desalting columns

This ready-to-use 5 ml column is prepacked with Sephadex G-25 Superfine, for fast and convenient desalting and buffer exchange. For larger sample volumes, up to three columns could be easily connected in series.

PD-10 desalting column

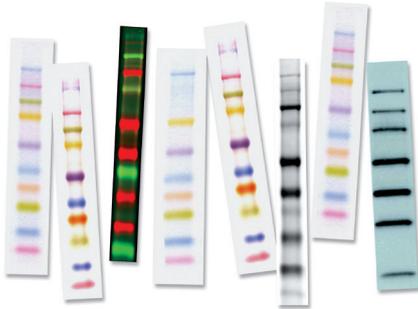
This column contains Sephadex G-25 resin for rapid buffer exchange, desalting, and removal of small contaminants (salts, dyes, radioactive labels) from samples using gravity flow or centrifugation. For smaller scale please use PD MidiTrap™ G-25 (1.0 ml), PD MiniTrap™ G-25 (0.5 ml), PD SpinTrap G-25 (130 µL) and PD MultiTrap™ G-25 (130 µL) in parallel. 4 x PD-10 spin adaptor are included.

Description	PK	Art. no.
HiTrap desalting 5x 5 ml	5 columns	17140801
PD-10 desalting column	30 columns	17085101



ANALYSIS

GEL ELECTROPHORESIS



Amersham™ ECL™ Rainbow™ markers

These ready-to-load markers with sharp, intense bands on gels and blots enable monitoring of electrophoresis progress and convenient confirmation of transfer to blotting membranes.

- Comprises of 10 individually colored proteins in the molecular weight range of 12 000 to 225 000
- Each 250 µL pack size is sufficient for use with 50 minigels (10 x 8 cm) or 25 large gels (20 x 20 cm)

Available formats:

- Full-range rainbow markers (Mr 12 000 to 225 000) use ten separate proteins with six different colors
- High-range rainbow markers (Mr 12 000 to 225 000) use eight separate proteins with six different colors
- Low-range rainbow markers (Mr 3 500 to 38 000) use seven separate proteins with five different colors

ECL Plex™ FL rainbows

These fluorescent rainbow markers are for use with the ECL Plex western blotting detection system.

- Optimized to provide visible marker bands on gels and membranes, as well as fluorescent images using Cy™3 and Cy5 channels
- Protein molecular weight markers optimized for use with the ECL Plex western blotting detection system that enables multiplex detection on a western blot at the same time

ECL™ DualVue™ Western Blotting-Marker

These markers contain both colored proteins and tagged proteins that facilitate accurate size determination of proteins on western blots.

- Tagged recombinant protein markers allow accurate calculation of molecular weight of target protein(s)
- Product is compatible with any HRP substrate as well as both PVDF and nitrocellulose membrane types
- Prestained markers indicate efficiency of protein transfer to membrane and blot orientation
- Detect proteins on gel and membrane as well as on film

Description	PK	Art. no.
Low Range Mol Wt marker rainbow (Mr 3 500 to 38 000), 250 µl	250 µl	RPN755E
High Range Mol Wt marker rainbow (Mr 12 000 to 225 000), 250 µl	250 µl	RPN756E
Full Range Mol Wt marker rainbow (Mr 12 000 to 225 000), 250 µl	250 µl	RPN800E
ECL DualVue western markers	25 loadings	RPN810
ECL Plex FL rainbows	120 µl	RPN850E

WESTERN BLOTTING DETECTION

Amersham ECL detection reagents

ECL based on horseradish peroxidase (HRP)-conjugated secondary antibodies has become the most commonly used detection method for western blotting. It is a sensitive detection method, where the light emission is proportional to protein quantity. Minute quantities of proteins can be detected and quantitated.

- Longer shelf life: up to 18 month shelf life on ECL Select and Prime Products
- Stability: ECL Select and ECL Prime products are stable and stored at room temperature

Description	PK	Art. no.
Amersham ECL Prime blocking reagent	40 g	RPN418
Amersham ECL Start western blotting detection reagent	For 2000 cm ² membrane	RPN3243
Amersham ECL western blotting detection reagent	For 2000 cm ² membrane	RPN2209
Amersham ECL Select western blotting detection reagent	For 1000 cm ² membrane	RPN2235
Amersham ECL Prime western blotting detection reagent	For 3000 cm ² membrane	RPN2236



LABELLING

CyDye™

CyDye Fluors are fluorescent dyes used in applications such as microarray analysis, FISH, 2-D DIGE, immunoprecipitation, and blotting.

Description	PK	Art. no.
Cy3 Mono 5 Pack – each tube sufficient to label 1 mg protein	5	PA23001
Cy5 Mono 5 Pack – each tube sufficient to label 1 mg protein	5	PA25001
Cy3 Mono NHS Ester	1 mg	PA13101
Cy5 Mono NHS Ester	1 mg	PA15101
Cy3 Maleimide mono reactive dye	1 mg	PA13131
Cy5 Maleimide mono reactive dye	1 mg	PA15131
Cy3 BIS NHS Ester	5 mg	PA13000
Cy5 BIS NHS Ester	5 mg	PA15000
Cy7 Mono NHS Ester	1 mg	PA17101
Cy5.5 Mono NHS Ester	1 mg	PA15601



IMAGING

Amersham Hyperfilm™ ECL detection film

This is a sensitive film for the detection of chemiluminescent signals in western blotting assays.

- Clear background for excellent contrast and band visibility
- Publication-quality images



Amersham western blotting membranes

Cytiva offers a broad selection of nitrocellulose (NC) and polyvinylidene difluoride (PVDF) western blotting membranes, with pore size ranges to suit your application requirements.

- Optimized for chemiluminescent and fluorescent detection
- Excellent protein binding capacity over a wide size range
- New larger pack sizes reduce your price per blot by up to 30 %

Amersham Protran™, NC membranes with high affinity for proteins, great blocking ability, and compatibility with a range of detection methods.

Amersham Protran Supported, NC membranes supported by an inert polyester nonwoven material, giving the membranes exceptional handling characteristics that allows for stripping and reprobing of the membrane.

Amersham Hybond™ P, PVDF membranes with low background and high sensitivity and resolution, for all labelling detection systems, but particularly recommended for chemiluminescence detection.

Amersham Hybond LFP, PVDF membranes specifically optimized for fluorescence detection methods.



Description	PK	Art. no.
Protran 0.45 µm/3mm 80 x 90 mm	10	10600114
Protran Premium 0.45 µm/3mm 80 x 90 mm	10	10600117
PVDF 0.45 µm/3mm 80 x 90 m	10	10600121
Amersham Hybond PVDF 0.2 µm, 260 mm x 4 m	1 roll	10600021
Amersham Hybond LFP PVDF membrane, 0.2 µm, 254 mm x 4 m	1 roll	10600022
Amersham Hybond P PVDF membrane, 0.45 µm, 300 mm x 4 m	1 roll	10600023
Hyperfilm ECL 5 x 7 in	50 shts	28906835
Hyperfilm MP 5 x 7 in	50 shts	28906842

TRANSFER

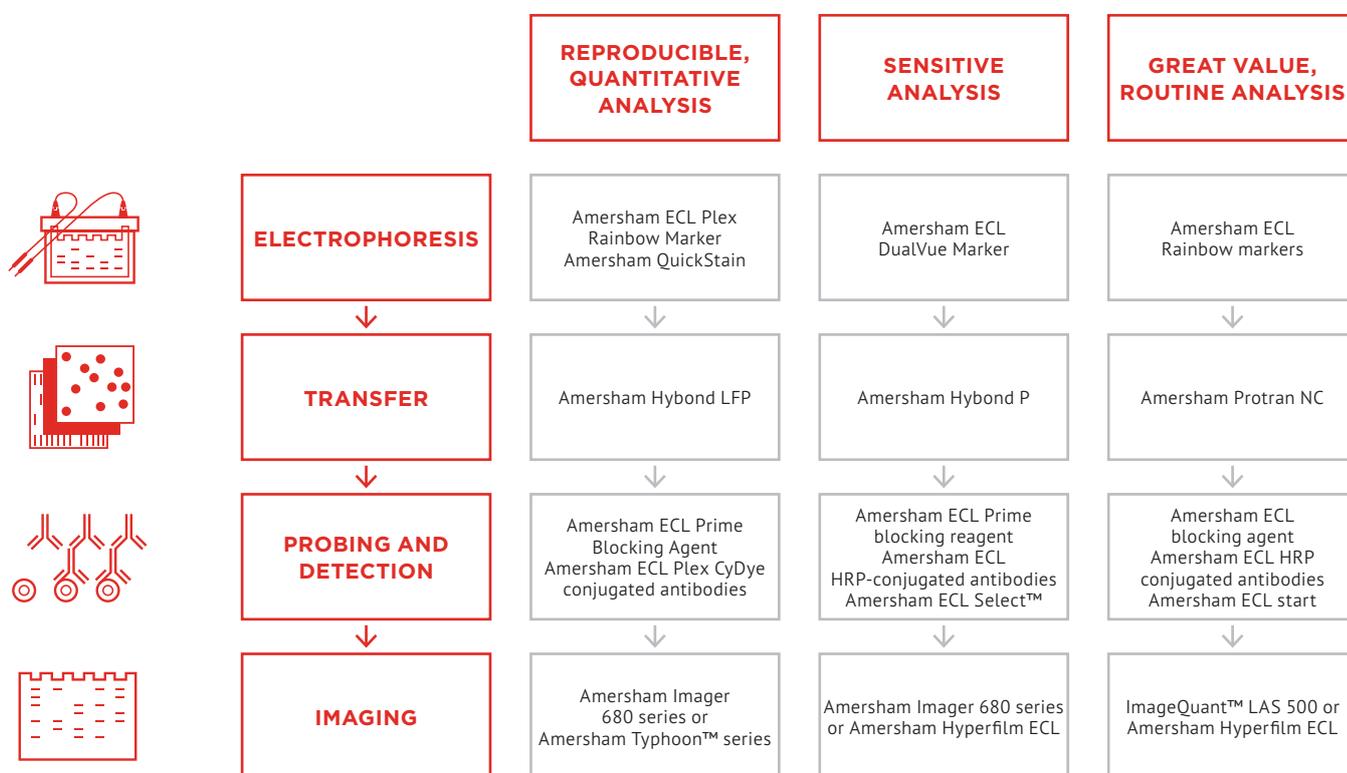
GB003 blotting paper

This general purpose blotting paper (0.8 mm) made from pure raw materials with a high absorbency used as a membrane gel support. A thick paper recommended for the lysis/denaturation of colony or plaque lifts and western blots.

Description	PK	Art. no.
GB003 blotting paper 100 x 100 mm	50 shts	10426880

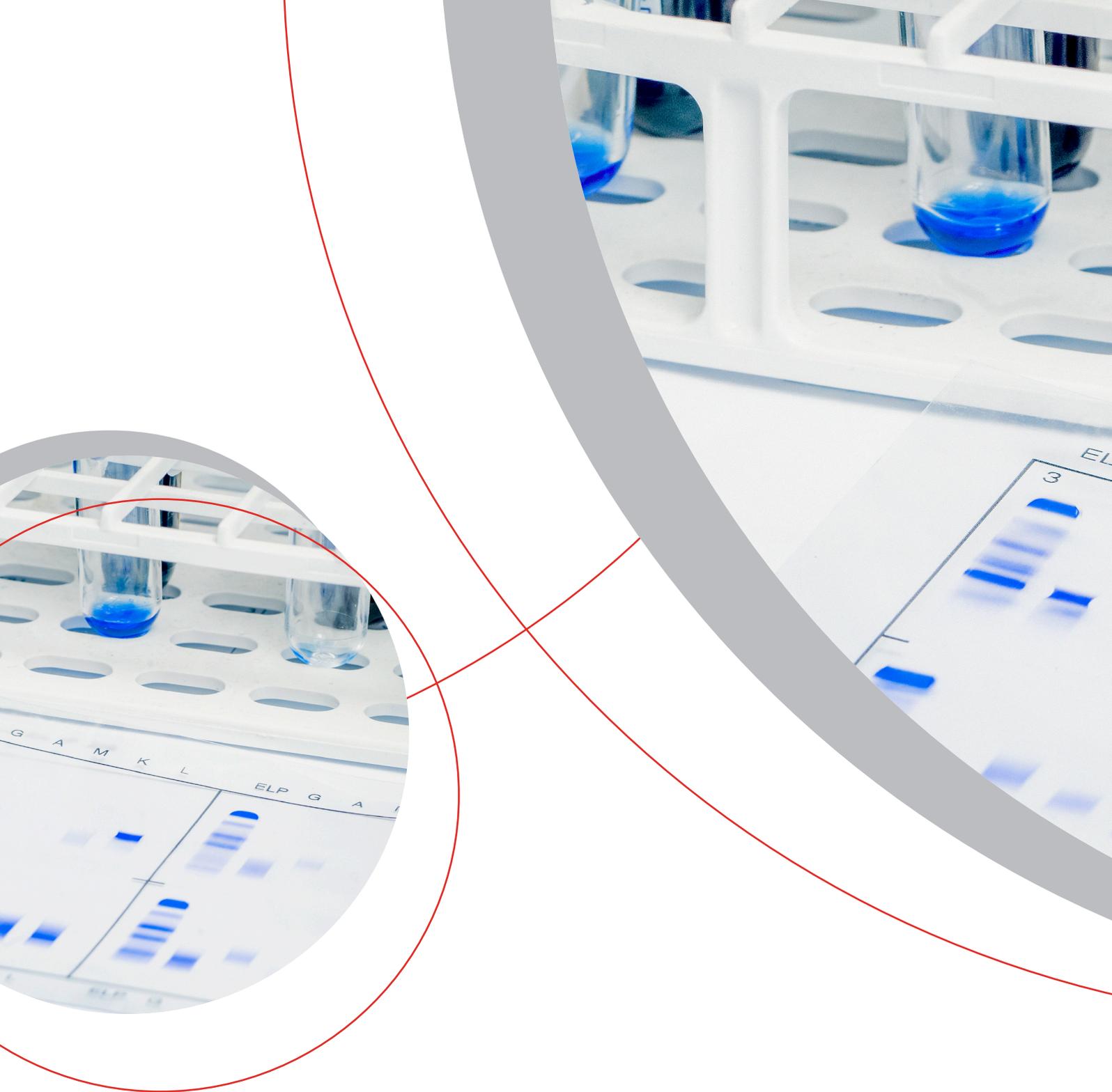
SELECTION GUIDES

Suggested products for your analysis requirements



Use the table below to select the most appropriate membrane for your application

APPLICATION	PROTEIN ABUNDANCE	PROTEIN SIZE	RECOMMENDED MEMBRANE
VERIFY PRESENCE/ ABSENCE WITH CHEMILUMINESCENCE	High	< M _r 10 000	Amersham Protran 0.1 NC
		< M _r 20 000	Amersham Protran 0.2 NC
		> M _r 20 000	Amersham Protran 0.45 NC
	Low	< M _r 20 000	Amersham Protran 0.2 PVDF
		> M _r 20 000	Amersham Protran 0.45 PVDF
STRIPPING AND REPROBING	High	< M _r 20 000	Amersham Protran Supported 0.2 NC
		> M _r 20 000	Amersham Protran Supported 0.45 NC
	Low	< M _r 20 000	Amersham Hybond P 0.2 PVDF
		> M _r 20 000	Amersham Hybond P 0.45 PVDF
	REPRODUCIBLE QUANTITATION WITH FLUORESCENCE	High	< M _r 20 000
> M _r 20 000			Amersham Protran Premium 0.45 NC
Low		> M _r 20 000	Amersham Hybond LFP 0.2 PVDF



Germany

Tel.: 0800 4393784
Fax: 0800 8443937
sales@thgeyer.de

Scandinavia

Tel.: +45 4630 0030
sales@thgeyer.dk

Tel.: +46 8 6030200
sales@thgeyer.se

Poland

Tel.: +48 2242764-64
sales@thgeyer.pl

Other Countries

Tel.: +49 7159 1637-823
Fax: +49 7159 18417
sales@thgeyer.com

www.thgeyer.com

