

Advertisement feature

Hunger for Protein

Kits and formulations with a penchant for purification

As more and more samples are run for Sanger-based sequencing applications worldwide, companies crave methods that provide high throughput with maximum speed and accuracy. Feed that hunger with these time-saving, cutting-edge products.



Image supplied by Invitrogen

The **NUNC ProPur IMAC Kit** from **Nalge Nunc International** is designed for fast, easy and robust affinity purification of His-tagged proteins using a standard laboratory centrifuge. The kit features pre-packed Ni²⁺-IDA agarose resin plugs in tapered spin columns that demonstrate excellent flow rates and high solute recovery. Scientists may isolate, purify and concentrate target protein in less than 20 minutes with the ProPur Mini Kit which uses a 2.2 mL microfuge tube. The ProPur Midi spin column uses a 50 mL centrifuge tube. ProPur IMAC Kits include the pre-packed spin columns, concentrated buffers in bottles and laminated protocol card. Other available ProPur Kits include the Mini and Midi Protein A and Protein G Kits for antibody purifications.

Applied Biosystems introduces the **BigDye XTerminator Purification Kit**, which is designed to shorten the amount of time and work required to perform the purification step of the Sanger sequence workflow in a reliable manner. The BigDye XTerminator Purification Kit involves a simple 4-step protocol that provides more reliable dye blob removal, increased sample stability, and more reproducible, higher-quality results. The kit consists of two reagents, the XTerminator Solution, which binds impurities but leaves DNA in solution, and the SAM Solution, an additive that enables complete removal of unincorporated terminators and stabilizes sequenced DNA fragments. The product is designed to work in conjunction with the Applied Biosystems BigDye Terminator sequencing chemistry, which is used to amplify and create fluorescent dye-labeled terminated fragments for automated sequencing analysis. "The number of samples run for Sanger-based sequencing applications continues to increase worldwide," said Kim Caple, Ph.D., Senior Director and General Manager for Applied

Biosystems' genetic analysis business. Dr. Caple adds, "One of our objectives at Applied Biosystems is to enable our customers to spend less time on sample preparation and the sequence clean-up process and instead enable them to focus on data generation and interpretation."

With **EPICENTRE's BACMAX96 DNA Purification Kit** researchers can purify 384 fosmids or BACs in less than four hours. The BACMAX96 DNA Purification Kit was developed for the easy and reliable isolation of high-quality BAC and fosmid DNA in a 96-well format. The BACMAX96 Kit consistently yields up to 900 ng of DNA from single-copy BAC and fosmid clones, and from 2.5 µg to 6 µg of DNA from the CopyControl BAC and fosmid clones induced to high copy number. The high yields from the CopyControl clones are due in part to an autoinduction protocol that was specifically designed for a high-throughput format. Purified DNA performs excellently in downstream applications such as fingerprinting, end sequencing, and transposon insertion sequencing. The new **MasterPure Yeast RNA Purification Kit** provides all of the reagents needed to purify RNA from various yeast cell types including: *Candida*, *Saccharomyces*, *Schizosaccharomyces*, and filamentous fungi, such as *Aspergillus*. The kit utilizes a rapid desalting process to remove contaminating macromolecules, avoiding toxic organic solvents, bead beating, and spheroplasting. The resulting MasterPure RNA is of higher quality than that obtained from bead-beating and is perfect for microarray gene expression analysis.

Fisher Chemical has introduced the **BioReagents EZ-Run Protein Gel Solution**, a novel acrylamide gel and buffer formulation that allows separation of a wide range of proteins from 3kDa to 200 kDa on the same mini-gel with less prep work than traditional SDS-PAGE. More importantly, it

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The NUNC ProPur Kits from Nalge Nunc International.



The Kingfisher 96 from Thermo Fisher Scientific.

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Senior Director /General Manager of Genetic Analysis
Applied Biosystems

provides a resolution superior to a gradient gel, resolving proteins that vary in size by 1-3kDa. The product comes in a ready-to-pour, premixed solution of acrylamide, bisacrylamide, buffer and SDS to provide significant time savings. The gel is compatible with post-electrophoresis applications such as Western blotting, MALDI analysis, protein sequencing and other downstream applications. It is also suitable for staining with all commonly used dyes such as Coomassie Brilliant Blue, silver stain and fluorescent dyes.

Invitrogen introduces the **OptiCHO Express Kit** which is designed for bioproduction scientists that need to quickly and easily produce high yields of therapeutic proteins from CHO DG44 cells. The new, 10-reaction OptiCHO Express Kit comes complete with a detailed protocol, cloning vector, reagents, cells and media, all fully optimized to work together. The OptiCHO Express Kit includes the pOptiVEC-TOPO vector with a DHFR gene to help CHO DG44 cells express an excess amount of protein, and is TOPO adapted to produce greater than 85 percent efficient room temperature ligation in just five minutes. The kit also contains FreeStyle MAX Reagent, a transfection reagent for high transfection efficiencies, and three serum-free media for culturing CHO DG44 cells.

Miltenyi Biotec introduces the **MultimACS Separator**, a magnetic molecule isolation instrument for manual or automated use. Up to 96 samples such as mRNA, protein, virus particles, or biomolecule complexes can be extracted and purified in parallel via gentle, column-based procedures. The isolation procedures rely on the extremely small, paramagnetic MACS MicroBeads coupled either to oligo (dT), protein A, protein G, Streptavidin, or antibody molecules. Even small amounts of target molecules are captured. Various isolation kits with ready-to-use reagents

and columns reduce pipetting steps, user-variance, sample losses, and hands-on time. The system can be integrated into robotic systems or operated manually on the bench, and a software tool is also available to direct the MultiMACS Separator from an external robot PC.

The new **Maxwell 16 Polyhistidine Protein Purification Kit**, from **Promega**, provides an easy method for the efficient, automated purification of polyhistidine-tagged protein from bacterial cultures, culture media and other sample types including mammalian and insect cells at the push of a button. As with the Maxwell 16 DNA and RNA purification kits, the Maxwell 16 Polyhistidine Protein Purification kit uses pre-filled reagent cartridges to provide purified protein from up to 16 samples per run in less than 40 minutes. Using a novel lysis buffer and an optimized automated method, Maxwell 16 achieves more consistent yields than manual methods. The purified protein is ready for analysis by polyacrylamide gel analysis, Western blot, MALDI-TOF mass spectroscopy or by functional assays.

Ni-NTA Superflow from **QIAGEN** is now available in pre-filled 1 mL and 5 mL cartridges for purification on liquid chromatography platforms, such as the FPLC, ÄKTA, and BioLogic systems. Ni-NTA Cartridges are used to purify from 5 mg to 100 mg His-tagged proteins. The robust Superflow matrix allows high flow rates which speeds the purification procedure and increases throughput. The cartridges are quickly and easily connected to liquid chromatography systems and the purification process is highly reproducible, guaranteeing consistent, high quality protein preparations.

Thermo Fisher Scientific manufactures the **KingFisher** range magnetic particle processors for purifying DNA/RNA, proteins and cells. The Thermo Scientific KingFisher, KingFisher mL and KingFisher

96 are already established as the leading magnetic particle processors, primarily due to their ease-of-use and flexibility. Based on patented magnetic separation technology, KingFisher systems enable you to process any samples (proteins, nucleic acids and cells) from virtually any source (blood, cell cultures, tissue lysates, soil, feces, etc.). A short purification time increases productivity and throughput, and easy-to-use automation significantly improves reproducibility and minimizes human error. Ready to use protocols make start-up and new user training simple, while the open design of the instruments allows scientists to choose market-available magnetic particles and ready-made kits that are most suitable to their individual application. The Thermo Scientific KingFisher family covers sample volumes from 20-1000 μ L in either tube or microplate format. All instruments within the family can be used stand-alone or via PC control. Additionally, the KingFisher 96 is fully compatible with robotics and instrumentation such as liquid handlers. The highly visual and logical KingFisher Software allows creation and modification of user protocols.

Companies mentioned in this Product Focus:

Applied Biosystems – www.appliedbiosystems.com
 EPICENTRE – www.epibio.com
 Fisher Chemical – www.fishersci.com
 Invitrogen – www.invitrogen.com
 Miltenyi Biotec – www.miltenyibiotec.com
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