

Ab-solutely Fab-ulous

The latest in Abs, Fabs and all things antibody related



Image supplied by GE Healthcare

While the majority of public attention is focused on antibody products as therapeutics, the scientific world has a much closer relationship with antibodies as research tools – for example in immunodetection assays, fluorescence staining and protein purification. This feature takes a look at the latest antibody products available, and related accessories.

Purification products

As part of its Custom-Design Media program, **GE Healthcare** has launched four new custom-designed **BioProcess™ affinity chromatography media** for industrial-scale purification of various biopharmaceuticals, including antibodies, antibody fragments and Adeno Associated Virus (AAV). Enabling the rapid one-step purification of biopharmaceuticals with both high purity and high yield, new products include **KappaSelect** for antibody fragments with kappa light chain, **IgSelect** for human IgG, **AVB Sepharose High Performance** for AAV, and **VIIISelect** for Factor VIII production. The media have all been designed with the robustness necessary for use in bioprocessing, including high chemical stability when using typical CIP (Clean-In-Practice) solutions, and a rigid agarose base matrix enabling both a high flow rate and the processing of large sample volumes, resulting in increased throughput. The new media are based on the use of immobilised single chain antibody fragments as chromatography ligands, which have been tailored for specific separations in collaboration with **BAC**.

BAC's CaptureSelect® affinity ligands are based on Camelid single chain antibody fragment, which have many advantageous chromatographic characteristics, including robustness, high specificity and flexibility. The CaptureSelect **Antibody Toolbox** offers a range of affinity media specifically designed for antibody purification. "Currently, researchers face a number of challenges in the chromatographic purification of antibodies, and these products aim to simplify and streamline the process," comments Dr Laurens Sierkstra, CEO at BAC. "The Antibody Toolbox comes with standardised protocols for each product, which minimise method testing and optimisation steps." The Antibody Toolbox products offer simple chromatography solutions for a range of

antibody formats in a single-step purification process with mild elution conditions. The product range includes affinity matrices for the purification of human Fc (for all subclasses of IgG and Fc fusion proteins), human Fab kappa and lambda, human IgA, human and mouse IgM and multi-species Fc. The Antibody Toolbox products are available through BAC's web shop.

Agilent Technologies' Bio-Monolith HPLC Columns provide high-resolution and rapid separations of large proteins, antibodies (IgG, IgM), plasmid DNA, viruses, phages and other macro biomolecules. The columns contain a short, polymer-based, monolith disc that allows for "flow rate independent" separations. The monolith structure virtually eliminates diffusion; there are no pores and no void volumes, making transport between mobile and stationary phase very rapid. The column family offers strong cation exchange, strong and weak anion exchange, and Protein A phases. Bio-Monolith HPLC columns are compatible with HPLC and preparative LC systems, including Agilent 1100 and 1200 HPLC systems.

Millipore now offers its ProSep Ultra Plus chromatography media in a convenient, easy-to-use prepacked column format. **ProSep Ultra Plus Prepacked Columns** are ready to use, small-scale columns that are an ideal tool for initial media screening, scaling and optimisation studies. The prepacked columns are available in 1 mL, 2.5 mL and 5 mL sizes and are compatible with any lab-scale chromatography system. ProSep Ultra Plus media is a high capacity Protein A chromatography media, delivering up to 50% greater productivity for today's higher titre therapeutic antibody processes. It is an affinity resin with a high dynamic binding capacity (>50 mg/mL at 10% breakthrough with 3–6 min residence time) and flow rate capability.

Material compiled by College Hill

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The CaptureSelect® Antibody Toolbox from BAC

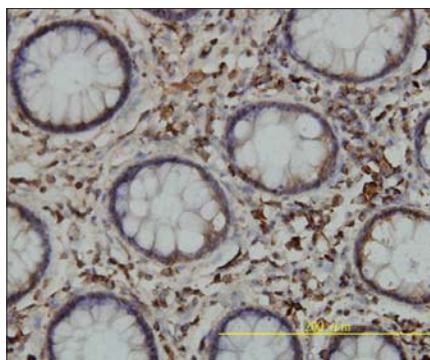
Antibodies

BioGenes offers routine and highly sophisticated development of **monoclonal antibodies** against all kinds of antigens, including peptides, soluble proteins, membrane proteins, phosphorylated antigens, small organic molecules like haptens, oligo- and polysaccharides, and highly toxic substances. BioGenes has also developed antibodies that distinguish modified proteins and peptides from non-modified (e.g., phosphorylation, methylation, etc.) as well as anti-idiotypic antibodies, and requires only 0.2 mg of purified protein for complete monoclonal antibody development.

AnaSpec has added 4 new **phosphospecific anti-Tau antibodies** to its range, representing the industry's largest collection of anti-Tau antibodies – 17 phosphospecific and 9 non-phosphospecific antibodies. Tau is a collection of microtubule-associated proteins that is involved in microtubule assembly and stabilisation. In adult human brain, 6 isoforms, ranging between 352 and 441 amino acids in length, are produced as a result of alternative RNA splicing. AnaSpec's Rabbit anti-Phospho-Tau antibodies were raised against synthetic phosphopeptides. These antibodies were evaluated for specificity with ELISA and/or Western blot. Species reactivity includes human, mouse and rat. Some antibodies have also shown reactivity with bovine, chicken and zebrafish.

Sigma-Aldrich has added more than 2,000 antibodies to its line of **Prestige Antibodies™**. These antibodies are developed by the Human Proteome Resource, are commercially available through an exclusive partnership with Sigma-Aldrich and Atlas Antibodies, and are the latest additions to the Human Protein Atlas portal. Initially consisting of 1,800 antibodies, the portfolio has grown to more than 3,800 antibodies directed against 3,600 genes. The goal of this project is to produce several thousand antibodies per year and at least one antibody to all 22,000 non-redundant human proteins by 2015.

With the addition of 36 new antibodies, **Dako's FLEX RTU** antibody portfolio now comprises a total of 99 superior ready-to-use antibodies. Dako's FLEX RTU antibody series is developed specifically for diagnosis of the



The large portfolio of antibodies offered by AssayDesigns™ provides versatility in numerous applications

most common types of cancer (breast, colon, lung, prostate, melanoma, etc.), offering superior staining performance, improved laboratory efficiency, increased productivity and increased patient safety. The portfolio features state-of-the-art staining quality, single protocols with user-defined staining intensity and reagent traceability from start to finish of workflow process.

Assay Designs™ now distributes Abnova antibodies within the US and Canada. The addition of more than 3000 of Abnova's highly characterised monoclonal antibodies expands the Assay Designs product offering to more than 4200 antibodies, 130 proteins, and 200 kits for life sciences research. The company's worry free antibody trial program facilitates the identification of the most suitable antibody for specific applications or species of interest. Easy-to-use kits and a portfolio of Stressgen® antibodies enable rapid and reproducible detection of key small and large molecule biomarkers of cellular and oxidative stress, heat shock proteins, apoptosis, mediators of inflammation, cell signalling, GPCR activation and more.

Kits and reagents

SoluLinK announces the introduction of its newest product, the **One-Shot ChromaLink Antibody Labelling Kit**. This innovative kit includes all the components for the rapid traceable biotinylation of a single antibody. The kit features its patented sulfo-ChromaLink Biotin linker, and a water-soluble, biotin labelling reagent that allows rapid and direct, non-destructive quantification of incorporated biotin. The kit comes complete with all necessary reagents, and a foolproof protocol and reference materials conveniently located on a flash drive. "The One-Shot ChromaLink Biotin Antibody Labelling Kit is the first in a line of products designed to address existing unmet market detection needs with effective conjugation technology, supplied in a complete, easy-to-use format," observes Leo Mendoza, Director of Product Development for SoluLinK.

R&D Systems now offers a **Human Fetuin A DuoSet ELISA Development Kit**. Human Fetuin A, also known as Alpha 2-Heremans-Schmid glycoprotein (AHSG), is a member of the cystatin superfamily of

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protease inhibitors. It is expressed primarily by hepatocytes, as well as monocytes and macrophages. The new DuoSet ELISA Kit contains the basic components required to measure Fetuin A in cell culture supernates. It includes capture and detection antibodies, a protein standard, and Streptavidin-HRP for the development of fifteen 96-well plates. 45-plate economy packs are also available.

Companies mentioned in this Product Focus:

Agilent Technologies – www.agilent.com
AnaSpec – www.anaspec.com
AssayDesigns – www.assaydesigns.com
BAC – www.bac.nl
BioGenes – www.biogenes.de
Dako – www.dako.com
GE Healthcare – www.gelifesciences.com
Millipore – www.millipore.com
R&D Systems – www.rndsystems.com
Sigma-Aldrich – www.sigmaaldrich.com
SoluLinK – www.solulink.com

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