

Advertisement feature

Antibody Arsenal

Precision guided ordinance for research

From research applications to therapeutics, antibodies have been an invaluable tool for the advancement of the medical sciences. To pinpoint your research, put some of the products below in your arsenal.



Image supplied by Millipore

Rockland Immunochemicals produces a wide range of novel **Near Infrared Fluorescent dyes** conjugated to antibodies for protein, cellular assays and microscopy. These dyes have excellent water solubility, near infrared (700-800 nm) emission wavelengths where autofluorescence is low, and minimal non-specific binding. The use of these reagents coupled with the company's Signaling Antibodies provides the researcher with an exceptional signal and low background imaging solution.

Beckman Coulter has added a new member to their family of IOTest Monoclonal Antibodies for research applications: the **IOTest Anti-p75/AIRM1 (adhesion inhibitory receptor molecule 1)-PE conjugated antibody**, featuring an exclusive clone, Z176. This antibody, whose ligand is not yet known, is an inhibitory molecule expressed by natural killer (NK) and myelomonocytic cells. Engagement of p75/AIRM1 with a purified monoclonal antibody has been shown in recent scientific papers to inhibit the proliferation of myeloid cells, and it may represent a useful marker for studying the normal myeloid differentiation process. The new reagent is the only commercially available antibody against the p75/AIRM1 molecule. It can be used with the multicolor NK cell gating reagent, CD3-FITC/CD56-PC5, and completes a line of PE-conjugated NK markers.

BioGenex Anti-c-myc Antibody (Clone 9E10) is designed for the specific localization of c-myc protein in formalin-fixed, paraffin-embedded tissue sections that are used in IHC applications. The c-myc proto-oncogene is mapped on chromosome 8 and the activated expression of c-myc seems to accompany abnormalities in the progression of various malignancies such as lung, breast and colon carcinomas as well as melanomas. The human c-myc gene gives rise to 64kD and 67 kD nuclear

phosphoproteins that both exhibit short half-lives *in vivo* and further exhibit DNA binding properties *in vitro*. Monoclonal antibody 9E10 reacts with the AEEQKLISEEDL epitope of c-myc protein. Available in concentrated form and as a ready-to-use reagent for manual use, the antibody has been optimized for use with the BioGenex Super Sensitive Ready-to-Use Detection Systems.

Cayman Chemical produces a significant number of antibodies for use in the fields of atherosclerosis and metabolic disorder research. Key offerings include **PCSK-9, GPR40, LCAT, apoA1, NPC1L1, LDL receptor, and 11b-hydroxysteroid dehydrogenase (Type 1 and 2) polyclonal antibodies**. In addition, antibodies against PPARs (a, b/d, g), SREBP2, and ChREBP serve as the basis for Cayman's popular transcription factor assay kits.

Covance is the exclusive provider of **beta amyloid 6E10 and 4G8 antibodies**, both widely recognized and used by researchers studying Alzheimer's, and **3F4 antibodies** for prion disease or Transmissible Spongiform Encephalopathies (TSE) research. The recent acquisition of Signet Laboratories enabled Covance to increase its capabilities as a supplier of antibodies for neurodegenerative diseases. In addition, Covance is performing custom antibody development projects in its new Animal Biosafety Level 2 (ABSL-2) vivarium for GLP, non-GLP vaccine and biologics research and development, along with preclinical and post-manufacturing testing.

The **Amersham ECL Plex** system from **GE Healthcare** uses direct fluorescent light detection for quantitative detection of proteins by western blotting. The system reaches a limit of detection in the low picogram range in a model system, with linearity over 3.6 orders of magnitude. In multiplex analysis, two proteins can be detected in the same blot with minimal

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The CELLine 350 cell culture system from Integra



Panorama Antibody Microarray XPRESS Profiler 725 from Sigma-Aldrich

"Antibodies remain the most exquisitely specific, readily producible tool at our disposal for such research."

Daniel J. O'Shannessy, Ph.D.,
VP Corporate Development,
Rockland Immunochemicals

cross-reactivity between antibodies or dyes. The new ECL Plex goat-anti-rabbit IgG-Cy2 and goat-anti-mouse IgG-Cy2 antibodies allow multiplex applications using the Typhoon scanner, Storm imager, or Ettan DIGE Imager. Amersham ECL Plex goat anti-mouse Cy3 conjugates are now available providing improved results with lower background than the original conjugates.

The **CELLine 350** cell culture system, from **INTEGRA Biosciences AG**, uses semi-permeable membrane technology to enable nutrients and gases to diffuse. Media can be exchanged without influencing the function or growth of the cells and gases. Cells growth under optimal conditions allows densities of 107 to 108 cells per ml, while increasing the concentration of expressed protein. Average concentrations of monoclonal antibodies range from 1 to 2 mg/ml and monthly yields typically range from 100 to 250 mg.

Millipore provides **labeled secondary antibodies** used in single- and double-labeling experiments, fluorescence-activated cell sorting (FACS), enzyme-linked immuno-sorbent assay (ELISA), and western blotting applications. This series of antibodies is available either unconjugated or conjugated to an enzyme, biotin or fluorophore. Millipore's enzyme-labeled secondary antibodies, produce either a protein luminescence, or color the proteins to be visible on the membrane. Biotin conjugation provides high levels of signal amplification with minimal cost. Fluorescently labeled antibodies are available conjugated to a variety of fluorophores spanning the entire visible and UV spectrum.

The new **CelliGen 310** benchtop bioreactor, from **New Brunswick Scientific**, has been designed for high-yield production of anchorage-dependent and suspension cultures through small-scale production. A large touch-screen interface monitors and

controls over 120 parameters in one to four vessels simultaneously, including signals from external gas analyzers, pumps, sensors and other ancillary devices. It is available with a choice of four autoclavable vessels (2.2. to 14 liters), multiple thermal mass flow controllers, a wide variety of low-shear impellers, and unique packed-bed basket for high-yield production of secreted products.

Sigma-Aldrich announced the **Panorama Antibody Microarray XPRESS Profiler 725**, a high-throughput tool for multiplex protein expression profiling of serum, cell or tissue extracts. It contains 725 antibodies, arrayed in duplicate on nitrocellulose slides compatible with the majority of DNA array scanners available today. The array antibodies detect human, mouse, and rat proteins associated with a variety of key cell signaling and gene regulation pathways. Targeted-content subsets of antibodies to Mitogen-Activated Protein Kinase (MAPK), Protein Kinase C (PKC) and p53 protein families are also represented on the array.

Spring Valley Laboratories offers **allotype-defined rabbits**, used to obtain polyclonal antibodies, with polymorphisms of a variety of genes involved in immunity, including genetic variants (allelic allotypes) of the VH, CH, and CL regions of antibody molecules. These animals make highly specific antibodies with high affinity and high titers with great success against difficult targets. They can be used alone or in combination with the standard New Zealand White rabbits to maximize the probability for the best antibody response.

Multi-Analyte Profiler ELISArray from **SuperArray** profiles the relative level of eight proteins in multiple cell supernatant (media), serum, or plasma samples at the same time. The capture and detection antibodies included in the kit have been pre-optimized to deliver quantitative results for each antigen on the same plate. The ELISArray provides researchers with a quick

assessment of the level of multiple proteins in multiple samples using a standard quantitative sandwich-based enzyme-linked immuno-sorbent assay.

The **Procollagen Type I C-Peptide EIA Kit**, from **Takara Bio USA**, is an antibody-based, in vitro enzyme immunoassay for detecting pro-collagen type I carboxy-terminal peptide (PIP) in a one step incubation method. PIP is used for studying the correlation of collagen levels with certain health disorders, including bone diseases, liver cirrhosis, and scirrhous adenocarcinoma of the stomach. The kit provides quantitative determination of human, bovine, or canine PIP in plasma, serum, cultured cell extracts, cell culture supernatants, and other biological fluids. Accurate PIP concentrations are determined by comparing specific absorbances, obtained using an EIA plate reader, with the absorbance obtained for standards plotted on a standard curve.

Companies mentioned in this Product Focus:

Beckman Coulter – www.beckmancoulter.com
BioGenex – www.biogenex.com
Cayman Chemical – www.caymanchem.com
Covance – www.covance.com
GE Healthcare – www.gehealthcare.com
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Millipore – www.millipore.com
New Brunswick Scientific – www.nbsc.com
Rockland Immunochemicals – www.rockland-inc.com
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Spring Valley Laboratories – www.svlab.com
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