

Neuroscience on the brain

The pilgrimage to the annual Society for Neuroscience meeting will convene in Los Angeles from the 7th through the 12th of November – readers may save their legs by targetting some of the items featured here.

Current Protocols in Neuroscience

From John Wiley & Sons

An up-to-date collection of neuroscience methods

The publication draws from techniques in neurophysiology, neuroanatomy, neuropharmacology and behavioural neuroscience to meet the needs of researchers in the full range of disciplines involved in studying the brain, nervous system, and corresponding behaviours. According to Wiley, *Current Protocols in Neuroscience* features carefully edited techniques with troubleshooting tips and helpful comments that come from extensive experience in using these protocols. Each feature provide step-by-step guide through methods. Moreover, quarterly updates are available in looseleaf and electronic formats and should help to keep laboratories up to date with the latest developments in this rapidly changing field. Forthcoming coverage includes gene expression in transgenic mice using neural promoters, generation and utilization of phosphorylation state-specific antibodies to investigate neuronal signaling pathways, an overview of the baculovirus expression system and the measurement of chloride movement in neuronal preparations, to name a few.

Reader Enquiry No. 100

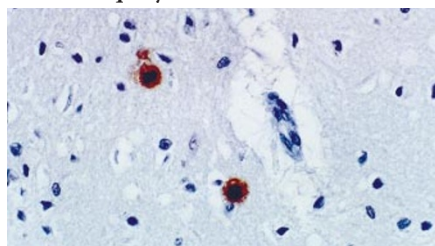
Human prion Pr₂₇₋₃₀ peptide pAb

From Chemicon www.chemicon.com

A goat polyclonal antibody to the human, prion PrP₂₇₋₃₀ peptide

This antibody is made against a synthetic peptide that corresponds to amino acids 79–97 of the amino terminus of the human prion protein PrP₂₇₋₃₀. This has been shown to be immunoreactive to the peptide by ELISA. Moreover, the antibody will immunolabel amyloid plaques in formalin-fixed paraffin sections from CJD brain sections. This antibody should prove useful to scientists and neuropathologists who study the pathogenesis of prion diseases.

Reader Enquiry No. 101



Getting your goat, polyclonal antibody, that is, to human prion peptide PrP₂₇₋₃₀.

NT-4 E_{max} immunoassay

From Promega www.euro.promega.com/uk

A system for sensitive and quantitative detection of neurotrophic factor-4 (NT-4) in an antibody sandwich format

Soluble NT-4 is captured with an anti-human, NT-4 polyclonal antibody and then binds a second, specific anti-NT-4 monoclonal antibody. This monoclonal antibody is detected using a species-specific antibody conjugated to horseradish peroxidase. The antibodies used in this assay provide specific detection of NT-4 to a minimum of 9.4 pg ml⁻¹ and demonstrate less than three per cent crossreactivity with other related neurotrophic factors. The immunoassay system can be used to quantitate NT-4 in tissue culture supernatants, plasma, serum and tissue extracts. Available in two sizes, with two or five 96-well ELISA plates, this system can be configured as desired. Other immunoassays in this range include TGFβ1 and TGFβ2, BDNF, GDNF, gp130, NGF and NT-3.

Reader Enquiry No. 102

Reagents for Alzheimer's research

From Serotec www.serotec.co.uk

Human polyclonal antibodies and recombinant proteins for researching Alzheimer's disease

Products currently available from the company for this area of research include presenilin-1, amyloid-β, amyloid-β precursor and apolipoprotein E. Many of these products are suitable for use in a wide range of applications, including immunocytochemistry, ELISA, immunoprecipitation and western blotting.

Reader Enquiry No. 103

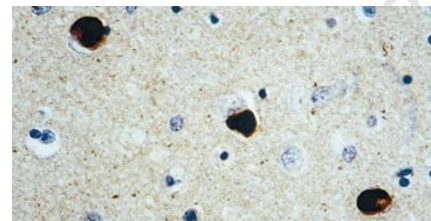
Synuclein antibodies

From Affiniti Research Products

www.affiniti-res.com

Inclusions known as Lewy bodies may contribute significantly to neuronal malfunction and finally to cell death

Found in Parkinson's disease, Lewy bodies are known to contain accumulations of α-synuclein, ubiquitin, and various proteinaceous elements of the ubiquitin-proteasome pathway. Polyclonal antibodies specific to α- and β-synuclein have recently been developed and added to the company's listing of products for brain disease research. The peptide-derived antibodies are suitable for use in western blotting and immunohistochemical applications. In



New synuclein antibodies offered by Affiniti.

addition to the synuclein antibodies, Affiniti offers some 40 antibodies to proteasome subunits and ubiquitin-related compounds, together with a comprehensive range of substrates and proteasome inhibitors. Also offered are antibodies to neurofilaments, tau, tau-protein kinase (GSK3β), and other antigens that are of importance to understanding the mechanisms of neurodegeneration.

Reader Enquiry No. 104

Mdr1a/b double knockout mouse

From Taconic www.taconic.com

A new double knockout mouse is offered for research into the central nervous system

This mouse contains a disruption of multi-drug resistance genes *mdr1a* and *mdr1b*, it has a functional deficiency in the blood brain barrier and is applicable to a wide range of central nervous system research. It should prove useful for studies involving neurotoxicology, drug transport, chemotherapy, oral bioavailability and multi-drug resistance. The *mdr1a/b* double knockout mouse was generated by sequential gene targeting of embryonic stem (ES) cells in the laboratory of Alfred Schinkel *et al.* at the Netherlands Cancer Institute. According to Taconic, these mice exhibit normal development, viability and fertility. Moreover, the *mdr1a/b* double knockout model has shown an increase in the accumulation of digoxin in the brain and testis (male) — this is similar to the *mdr1a* knockout mouse model. The *mdr1a/b* mouse also showed a significant increase in accumulation of digoxin in the ovaries and adrenal glands, over plasma levels and over



Double trouble? Not with this double knockout.

levels in wild type mice, states Taconic. The *mdr1a/b* knockout mouse is available on a FVB background.

Reader Enquiry No. 105

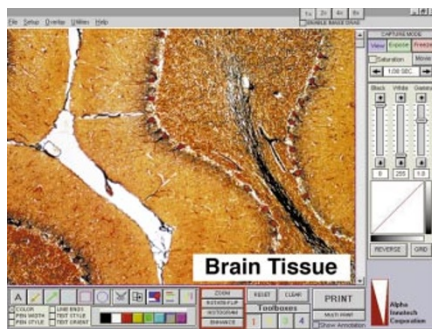
Imaging systems

AlphaEase 4.0 software

From Alpha Innotech www.alphaannotech.com

Imaging software for the AlphaImager and ChemImager systems

Centred on 32-bit architecture, this program supports long file names, enhanced dialogue boxes, and a more familiar look and feel to the software features. Features include MovieMode, camera exposure control from 0.033 s to 4 h, nine levels of automatic image enhancement, zoom/pan controls, histograms, filters and false colours. Analysis tools include one-dimensional densitometry, molecular weights, high-density array analysis, one-dimensional multi-lane analysis, two-dimensional spot densitometry analysis, manual and automatic count for colonies and cells, gel scoring and ruler functions. This new architecture yields more robust compatibility with most Windows applications, as well as enhanced multitasking. AlphaEase 4.0 also boasts new updates that



AlphaEase imaging software from AlphaInnotech.

include 8- and 16-bit grayscale file import, 24-bit colour, higher resolution file import and TWAIN acquisition.

Reader Enquiry No. 106

New technical notes

From Bio-Rad www.bio-rad.com

Two new notes that cover multi-photon imaging of biological tissue

Technical note five summarizes the benefits of non-descanned (external) detectors in collecting scattered light and improving sensitivity, allowing deeper optical sectioning and detection of faint fluorescent signals.

It also illustrates the design of the external detector on the MRC-1024MP system and lists the full range of available filters. On the same subject, technical note number seven describes the advantages of using femtosecond, pulsed lasers for achieving deeper imaging into tissue with flexibility in the use of available power. Multi-photon imaging is increasingly used for studying biological tissue as it allows deeper imaging into samples than other methods and enables the study of living samples for longer periods of time than previously possible, says Bio-Rad.

Reader Enquiry No. 107

PhoTurbo

From Life Science Resources www.lsr.co.uk

Fluorescence detection for simultaneous real-time photometry and electrophysiology

According to the manufacturer, PhoTurbo provides the very high temporal resolution in data acquisition for experiments that the latest optical probes in high speed neurobiological research applications. It has two-in-one functionality, as the system is configured with both PhoCalTurbo and PhoClampTurbo on a single platform. These systems enable both chart-recorder-like data acquisition and triggered sweep acquisition, with full experimental control and on-line viewing of data. PhoTurbo has 16-bit precision and dynamic range to acquire both fluorescence and analog data at rates up to 64 kHz. According to the manufacturer, high-sensitivity photon-detection measurement makes it possible to record and display online even the fastest of physiological events in real time. The system measures optical probes used in the detection of membrane potential or ions, such as calcium sodium and magnesium, which can be combined with such analog patch clamp measurements as voltage and current, or with extracellular pH, O₂ tension and temperature. PhoTurbo is a complete, integrated system, operating under Windows95 with full 32-bit functionality. It includes photomultiplier tubes, all associated electronics, acquisition hardware, power supplies and workstation.

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READER ENQUIRY NO. 65

DP10 digital camera

From Olympus www.olympus-europa.com

A digital photomicrography system for high performance at a more reasonable price

The DP10 digital, colour camera has a progressive 1.7-cm CCD sensor with over 1.4 million pixels (1,280 × 1,024 pixels). However, image resolution is not artificially increased or interpolated by software as is common with other cameras within this price range. Instead, every pixel of the CCD sensor is represented directly in the digital picture. The technology is said to ensure that pictures are sharp with natural colour