

# Neuroscience mardi gras

With some 25,000 participants descending on New Orleans, attendees of the Society for Neuroscience meeting must be wondering how to cover such an event. Here are some ideas on new products that may be on exposition.

## Neuronavigation system

From Laser Lines

*A system that will enable surgeons to improve the accuracy and safety of complex operations*

Near-infrared cameras show surgeons the exact positions of surgical instruments both directly and where they might be employed on three-dimensional reconstructions of the patient's scans. Using CT head scans, the system shows on a television screen exactly where the instruments are inside the head with a virtual reality image that depicts where the surgeon is operating. The system incorporates ceramic balls on the instruments for detection by the camera. CAT and MRI scans, as well as images from microscopes, endoscopes or intracranial ultrasound can also be incorporated.

**Reader Enquiry No. 100**

## Ischaemia models for drug discovery

From Cerebrus

*A range of new in vivo stroke models to help identify potential new therapeutic agents and show their efficacy*

Cerebrus is working on novel treatments for ischaemia, and has both well established models of ischaemic stroke (permanent or transient middle cerebral artery occlusion and four vessel occlusion), and models that are exclusive to the company, such as mouse cerebral embolism, haemorrhagic stroke and photochemically-induced ischaemia. The models should provide pharmaceutical companies with relevant information about the efficacy of candidate drugs to advance drug discovery programmes, while freeing up valuable 'in-house' resources.

**Reader Enquiry No. 101**

## Brain/tissue slice chamber

From Medical Systems

*The chamber features a single base unit and two interchangeable top units*

The Haas-top configuration utilizes semi-



The brain slice chamber with Haas and Zbicz-based design features.

submersion techniques, providing excellent stability for intracellular recording and rapid exchange of perfusion fluids. The Zbicz top is designed to maintain viable slices of tissue submerged under a constant flow of perfusing liquid. Therefore, alternative techniques can be employed for evaluation of drug actions. Cell life of ten or more hours is possible. A companion temperature controller (model TC-202A) is offered, which functions with either top chamber and regulates temperature between 30–45 °C ± 0.2 °C.

**Reader Enquiry No. 102**

## CM1850 cryostat

From Leica

*Designed for simple operation and a high-volume workload in a variety of routine histology and clinical pathology sectioning*

The CM 1850 features easy disinfection of the splash-proof microtome and an enclosed drainage system, which reduces the release of bacteria and germs into the air while sectioning fresh and potentially infectious tissue specimens. The vacuum-panel insulation design leads to stated power savings of about 10 per cent. This enhances the durability of the refrigerating system and ensures stable cryochamber temperatures. The optional Peltier cooling stage provides rapid specimen freezing down to –60 °C and, used in combination with the 10-disk capacity, actively cooled freezing shelf (to –45 °C) and heat extractor system, provides a very rapid freezing system for specimen preparation. The cryostat is equipped with temperature sensors for testing refrigeration temperatures. The sensors are easily accessible, as are all of the serviceable components. Status of both refrigeration and electronic systems can be checked via an external PC link.

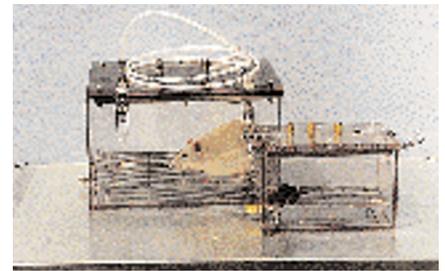
**Reader Enquiry No. 103**

## Air-tight animal cages

From Columbus Instruments

*Animal cages made of high-density, crash-resistant 0.634-cm transparent plastic Lexan*

Each cage is equipped with stainless steel latches and a suspended stainless steel floor grid. Rigid construction and an airtight seal around the top lid make them ideal for testing animal oxygen consumption and exposure to other gaseous environments. Connectors for plastic 0.634-cm hoses facilitate gas/air delivery and sampling. Two standard models are available: 31 cm × 19 cm × 18 cm for rats and 20 cm × 10 cm × 12 cm for mice. On request, special cage sizes can



No quantum cats in these air-tight boxes — clear Lexan allows easy viewing of mice and rats.

be made to the customers' specifications. The new animal cages can be used for testing animal behaviour and physiology when exposed to environmental pollutants, as well as for measuring animal oxygen consumption and respiration rate measurements.

**Reader Enquiry No. 104**

## EPC-9 digital patch-clamp amplifier

From ALA Scientific Instruments

*The amplifier comes complete with a built-in digital oscilloscope, a pulse generator, an analog filter and a data acquisition system*

Features include full computer control (PC- and Mac-based), automatic self-test and calibration, automatic capacitance neutralization up to 1,000 pF, capacitance tracking, variable high-quality filters, automatic leak subtraction, and currents up to 2 µA. The EPC-9 permits rapid switching from current clamp to voltage clamp mode without transients. Amplifier noise is as quiet as capacitive headstage-type amplifiers. Types of experiments that can be conducted include single-channel recordings, whole-cell voltage clamp studies, current clamp studies, artificial membrane recordings, and loose patch type recordings. The EPC-9n double/triple patch clamp unit is now available in one chassis. When combined with Pulse software, EPC-9 the becomes a more flexible and advanced patch-clamp system. Pulse now supports Digidata 1200A.

**Reader Enquiry No. 105**

## Reagents

### Neuronal glutamate transporter (EAAC1) polyclonal antibody

From Chemicon

*Chemicon's new goat polyclonal antiserum to the neuronal glutamate transporter offers unique possibilities to localize glutamatergic neurons in the nervous system*

The antibody has been used successfully for immunohistochemistry and works on rat, mouse and guinea pig. It is expected to work



Chemicon's new goat polyclonal antiserum to the neuronal glutamate transporter.

on human, rabbit and monkey due to peptide sequence homology. As the antiserum is generated in goat, it may be used in double-labelling experiments.

**Reader Enquiry No. 106**

**$\alpha 4\beta 2$  nAChR ligand**

From RBI

*A receptor ligand that is manufactured and sold with the exclusive permission of Abbott Laboratories*

The classic nicotinic acetylcholine receptor (nAChR) is an ion channel protein consisting of  $\beta 1$ ,  $\delta$ ,  $\gamma$  ( $\epsilon$  in adult) and two  $\alpha 1$  subunits. Various nAChR gene products exist in the peripheral and central nervous systems and these assemble to form receptors that have been implicated in a variety of responses, including analgesia and cognition. The analgesic ( $\pm$ )epibatidine has been identified as a potent ligand for the  $\alpha 4\beta 2$  nAChR subtype, but it also displays significant activity at neuromuscular and ganglionic-like nAChRs. As well as being a potent ligand at the  $\alpha 4\beta 2$  and ganglionic-like nAChR subtypes,  $\alpha 4\beta 2$  nAChR can differentiate between the two major  $\alpha$ -bungarotoxin-sensitive nAChRs ( $\alpha 7$  and  $\alpha 1$ ,  $\beta 1$ ,  $\delta$  and  $\gamma$ ) by displaying marked selectivity towards the  $\alpha 7$  subtype. Also offered is a selective D1 dopamine receptor agonist. This isochroman derivative is an agonist both *in vitro* and *in vivo*. When tested in marmosets treated with MPTP to induce a parkinsonian-like state, it induces locomotor activity and reduces the severity of the parkinsonian-like symptoms. The compound is active following either oral or subcutaneous administration.

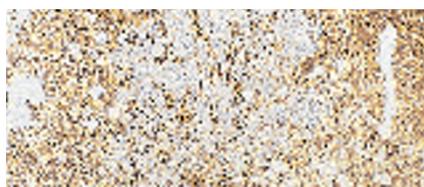
**Reader Enquiry No. 107**

**Anti-NGFR MAb**

From Dako

*Monoclonal anti-human nerve growth factor receptor (NGFR), Clone NGFR5*

This antibody recognizes the 75K NGFR, p75<sup>NGFR</sup>. This p75 receptor protein is a member of the nerve growth factor/tumour necrosis factor superfamily of receptors, many of which function as mediators of cell death, or apoptosis. *In vitro*, unbound p75<sup>NGFR</sup> has been demonstrated to promote neural cell death, whereas binding of p75<sup>NGFR</sup> by NGF ligand or antibody has been shown to inhibit p75<sup>NGFR</sup>-induced cell death. Immunohistochemical



Dako now offers an antibody that recognizes the 75K NGFR, p75<sup>NGFR</sup>.

analysis with this antibody can be performed on routinely processed tissue sections, frozen sections or cell smears.

**Reader Enquiry No. 108**

**Voltage-gated Ca<sup>2+</sup>-channel antibodies**

From TCS Biologicals

*A collection of voltage-gated Ca<sup>2+</sup>-channel antibodies under the Alomone Labs label*

The new antibodies include polyclonal antibodies to the  $\alpha_{1A}$ ,  $\alpha_{1B}$ ,  $\alpha_{1C}$  and  $\alpha_1$  subunits. The  $\alpha_1$  subunit forms a channel that resembles Q- and P-type voltage-gated Ca<sup>2+</sup> channels. The new polyclonal antibody to the rat  $\alpha_{1A}$  subunit recognizes both the major (190 K) and minor (210 K) forms of the subunit. The  $\alpha_{1B}$  subunit forms the N-type voltage-gated Ca<sup>2+</sup> channel, which is insensitive to dihydropyridines and blocked by  $\omega$ -conotoxin GVIA and  $\omega$ -conotoxin MVIIA. This polyclonal antibody recognizes both the 210 K and 240 K forms of the rat  $\alpha_{1B}$  subunit. The  $\alpha_{1C}$  subunit forms the cardiac and one of the brain L-type voltage-gated Ca<sup>2+</sup> channels. Anti- $\alpha_{1A}$  recognizes both the 190 K and 210 K forms of rat  $\alpha_{1C}$ . Anti-pan  $\alpha_1$  is raised against peptide CP corresponding to highly conserved residues of  $\alpha_{1S}$  of skeletal muscle voltage-gated calcium channels containing N-terminal cysteine. It recognizes all types of  $\alpha_1$  subunits, cross-reacts with mouse and rat and is fully inhibited with soluble CP.

**Reader Enquiry No. 109**

**QCB Select**

From Quality Control Biochemicals

*Antibodies for the selective detection of A $\beta$  [1-40], [1-42] and [1-43]*

QCB has developed three C-terminal specific, affinity purified rabbit polyclonal A $\beta$  antibodies, which allow for the quantitative determination of A $\beta$  [1-40], [1-42] and [1-43]. Selectivity for these antibodies is 300–500-fold and sensitivity in sandwich ELISAs is 5–15 pg for A $\beta$  [1-40] and [1-43] and 15–25 pg for A $\beta$  [1-42]. Other applications include RIAs, dot blots and immunohistochemistry procedures. An antibody directed against amino acids 17–28 of A $\beta$  is also available.

**Reader Enquiry No. 110**

*These notes are compiled by Brendan Horton from information provided by the manufacturers.*

*For more details, fill in the reader service card bound inside the journal.* □

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