Protective Effect of Tetramethylpyrazine against Ethanol-Induced Renal Toxicity

Tetramethylpyrazine has been shown to be effective in protecting myocardium from hypoxic injury [13]. Part of this protective function is believed to arise from its ability to lower the intracellular free calcium level by blocking the entrance of Ca2+ from extracellular sources and from the intracellular Ca2+ storage pool [24]. Liu et al. [22] report that tetramethylpyrazine also renders protection against ethanol-induced renal toxicity, partly via its prominent superoxide scavenging effect.

Fetal Striatal Transplant Restores Neuronal Functions in Lesioned Striatum

Embryonic striatal transplants restore many aspects of cognitive and motor function in rats [12, 20]. Employing a rodent model of Huntington's disease, Chen et al. [2] report that fetal striatal transplants restore electrophysiological sensitivity to dopamine in the lesioned striatum. These results provide additional support for the potential of fetal striatal transplants to restore functions to lesioned striatum.

Dermal Exposure to Methyl Parathion Poses High Health Hazard

Public concern regarding use of the organophosphorus insecticide methyl parathion, which inhibits carboxyl esterase and acetylcholinesterase activity [7], has recently been renewed [28]. Kramer et al. [21] report that although the pharmacokinetics of methyl parathion are complex and route dependent, dermal exposure poses the highest risk of long-term adverse health effects because of sustained methyl parathion concentrations.

Genistein Inhibits I_K1 in Guinea Pig Ventricular Myocytes

Genistein, a potent inhibitor of protein tyrosine kinase, has been shown to block Ca2+, Na+ and delayed rectifying K+ currents but to enhance cAMP-dependent Cl− currents [4]. In addition, genistein induces cardiac cystic fibrosis transmembrane conductance regulator Cl− currents via a tyrosine kinase-independent and protein phosphatase-independent mechanism [5, 14]. Chiang et al. [6] show from a whole-cell patch clamp study on guinea pig ventricular myocytes that genistein also inhibits the inward rectifying K+ current I_K1 and depolarizes the resting membrane potential, resulting in abnormal automaticity.

Lysophosphatidylcholine Suppresses Endothelial Intracellular Ca2+ Signaling and Increases Vascular Tone

It has been shown [8] that endothelium-dependent vasorelaxation evoked by endothelium-derived relaxation factors is impaired in vessel segments pretreated with lysophosphatidylcholine (LPC). Although LPC-suppressed endothelium-dependent vasorelaxation has been studied previously [9], details of its mechanism of action are still unclear. Huang et al. [19] evaluated the simultaneous effects of LPC on endothelial intracellular calcium ([Ca2+]i) signaling and vascular tone. They demonstrated that treatment with LPC reduces basal endothelial [Ca2+]i, blunts agonist-evoked endothelial [Ca2+]i signaling and induces vasoconstriction.

Selective Lung Perfusion for Treatment of Pulmonary Metastases

Whereas the lung is a common site for metastatic carcinoma [29], many patients with primary lung cancer are ineligible for surgical therapy. Selective lung perfusion with high doses of an antineoplastic agent has been shown to be successful in a small animal model [30]. Demmy et al. [10] report the results of a pilot study in dogs showing the feasibility of combining video-assisted thoracoscopic surgery techniques and port access cardiac surgical catheter technology to deliver high-dose unilateral pulmonary chemotherapy. This technique will provide a new direction for therapeutic intervention in the treatment of pulmonary cancer.
Tonic Regulation of Motoneuron Activity by Presynaptic GABA<sub>B</sub> Receptors

The trigeminal motor nucleus contains cell bodies of motoneurons that innervate the jaw-opening and jaw-closing muscles. The jaw-closing muscles are far stronger than the jaw-opening muscles [15]. Min et al. [23] investigated trigeminal motoneurons and found that baclofen decreases the mean frequency but not the mean amplitude of mEPSP, which is accompanied by a reduction in 1/CV<sup>2</sup> and an increase in the failure rate. They suggest that excitatory synaptic transmission to motoneurons is subjected to presynaptic modulation by GABA<sub>B</sub> receptors. Functionally, this may be part of a conservative strategy to guard against uncontrolled activity of jaw-closing muscles.

Association of C597A Polymorphism in the Norrie Disease Gene with Advanced Retinopathy of Prematurity

Retinopathy of prematurity (ROP) is a retinal vascular disease which occurs in infants with a short gestational age and low birth weight and may lead to retinal detachment and blindness [1]. Genetic factors such as mutations in the Norrie disease gene have been implicated in determining the progression of ROP to advanced stages [3]. Haider et al. [16] detected a novel single-nucleotide polymorphism (C597A) in exon 3 of the Norrie disease gene in a Kuwaiti cohort of premature infants. They further found that the incidence of this polymorphism was considerably higher in newborns who progress to advanced-stage ROP.

Modulation of UV-Damaged DNA Recognition Activity by DDB

Recognition and incision of UV-DNA adducts play key roles in the efficacy of nucleotide excision repair. Damaged DNA recognition activity has been identified from primate cells as a complex of DRB1 and DRB2 subunits [25]. Sun et al. [27] isolated the cDNA of rodent ddB1 and found that overexpression of DDB1 does not augment UV-damaged DNA recognition activity. In contrast, restricting DDB2 expression by antisense ddB2 partially inhibits the UV response, suggesting that DDB2 may modulate UV-damaged DNA recognition activity.

Autism and Abnormal Reaction to Immunization in Children

Autism and pervasive development spectrum disorders are being diagnosed amongst young children with increasing frequency [17]. The reason for this change in incidence is unclear. Singh et al. [26] detected abnormal measles-mumps-rubella antibodies and identified central nervous system autoimmunity in children with autism. One implication from this study is that abnormal reaction to immunization with common vaccines might provide an explanation for the recent increase in the incidence of autism. The reviewing editor wishes to emphasize that the hypothesis proposed by Singh et al. [26] is highly controversial and that the work should be viewed as ‘food for thought’. A definitive conclusion must await careful analysis of large-scale controlled epidemiological data.

References


