EXPERIMENTAL NEUROSCIENCES

A-742 Room E, 10/16/2000 2:00 PM - 4:00 PM (PS)
Comparative Neurotoxic Effects of Lidocaine and Bupivacaine in Human Neuronal SH-SY5Y Cells *Jacek A. Wojtczak, MD, PhD, Depts of Anesthesiology and Pharmacology/Physiology, University of Rochester School of Medicine and Dentistry, Rochester, NY, United States*

A-743 Room E, 10/16/2000 2:00 PM - 4:00 PM (PS)
Increased Extracellular Ascorbate Release Reflects Glutamate Re-uptake during Early Stage of Reperfusion after Forebrain Ischemia *Toshiko Yusa, M.D., Anesthesiology, University of the Ryukyus, Nakagami-gun, Okinawa, Japan.* Ascorbate and glutamate in rat hippocampus were measured in vivo using a microdialysis biosensor system. Heteroexchange of ascorbate with glutamate was suggested.

A-744 Room E, 10/16/2000 2:00 PM - 4:00 PM (PS)
Ischemic Preconditioning Does Not Alter Reperfusion Blood Flow in a Rat Model of Spinal Cord Ischemia *David A. Zvara, M.D.; David M. Colonna, M.D.; Dwight D. Deal, B.S.; Jason C. Vernon, B.S.; James M. Zboyovski, B.S., Dept. of Anesthesiology, Wake Forest Univ. School of Medicine, Winston-Salem, NC, United States.* Ischemic preconditioning does not alter reperfusion blood flow in a rat model of spinal cord ischemia.

Experimental Neuroscience: Anesthetic Mechanisms / Physiology / Pharmacology

A-745 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
The Mechanism of Modulation of Neuronal Nicotinic Acetylcholine Receptors by Substance P *T. Andoh, MD; H. Itoh, MD; T. Sasaki, MD; T. Higashi, MD; F. Okumura, MD, Anesthesiology, Yokohama City Univ. School of Medicine, Yokohama, Japan.* Substance P inhibits neuronal nAchRs most likely by direct interactions with receptor subunits but not through activation of diffusible cytoplasmic factors.

A-746 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Isoflurane Depresses Electroencephalographic and Medial Thalamic Responses to Noxious Stimulation Via an Indirect Spinal Action *Joseph F. Antognini, M.D.; Makoto Sudo, M.D.; Satoko Sudo, M.D.; E. Carstens, Ph.D., Department of Anesthesiology and Pain Medicine, U.C. Davis, Davis, CA, United States.* Isoflurane action in the spinal cord diminished transmission of noxious input to brain and thalamus.

A-747 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
The Optical Isomers of Isoflurane Show Stereoselective Effects in Rats *Robert Dickinson, PhD; Ian L. White, MB, BS; William R. Lieb, PhD; Nicholas P. Franks, PhD, Blackett Laboratory, Imperial College of Science, Technology & Medicine, London, United Kingdom.* S(+) isoflurane is 40 $\pm$ 8 % ($P < 0.001$) more potent than R(-) isoflurane at abolishing the righting reflex in rats.

A-748 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Are SK Channels the Molecular Target for Action of Antidepressants, Anticonvulsants, and Antipsycotics on Neurons? *John C. Dreixler, Ph.D.; Jing-Tan Bian, Ph.D.; Ying-Jun Cao, M.D.; Jeffrey D. Roizen; Khaled M. Houamed, Ph.D., Anesthesia and Critical Care, University of Chicago, Chicago, IL, United States*

A-749 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Org 25435 - A New Water-Soluble Intravenous Anaesthetic *David K. Gemmell, PhD; Alan Byford, MSc; Hardy Sundaram, PhD; Jeremy J. Lambert, PhD; Niall Hamilton, PhD, Pharmacology, Organon Labs. Ltd, Newhouse, Motherwell, United Kingdom.* Org 25435 is anesthetic in mice, and in rats it produced EEG Burst Suppression and maintained anesthesia by infusion. It is a positive modulator of the $GABA_A$ receptor.

A-750 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
An Amino Acid in the $GABA_A$ Receptor β1 Subunit is Critical for Alkane Anesthetic Effects *Eric P. Greenblatt, MD; Xin Meng, MD, Anesthesia, Univ of Penn, Philadelphia, PA, United States.* Mutation of a critical amino acid in the $GABA_A$ β1 subunit generated receptors that show no modulation by halothane or chloroform, but enhancement by isoflurane or enflurane.

A-751 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Isoflurane Potentiates $GABA_A$ Receptor-Mediated Metabolic Depression *In Vivo*: A Quantitative Positron Emission Tomography (PET) Study *Ferenc Gyulai, M.D.; Leonard Firestone, M.D.; Mark Mintun, M.D., Anesthesiology/CCM, University of Pittsburgh, Pittsburgh, PA, United States.* Isoflurane potentiates neuronal inhibition both via $GABA_A$receptors and other mechanisms.

A-752 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Effects of Isoflurane and Sevoflurane on $GABA_A$ Receptor: Potentiation, Activation, and Channel Block *Gerhard Hapfelmeier, MD; Rainer Haseneder; Eberhard Kochs, MD, Dept. of Anesthesiology, Technical University, Munich, Germany.* Iso and Sev reduce the EC_{50} of GABA. In addition, the volatiles are agonists and open-channel blocker at the $GABA_A$ receptor.

A-753 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Membrane Cholesterol Affects the Kinetics of 5-HT3 Receptor and GABAA Receptor *Gerhard Hapfelmeier, MD; Brigitte Eisensamer, PhD; Walter Zieglgansberger, MD; Eberhard Kochs, MD; Rainer Rupprecht, MD, Clin. Neuropharmacol., Max-Planck-Institute of Psychiatry, Munich, Germany.* Increasing membrane cholesterol slows down 5-HT3 receptor activation and desensitization and GABAA receptor deactivation.

A-754 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Multiple Mutations Are Required to Remove Chloroform Sensitivity from $GABA_A$ Receptors *Neil L. Harrison, PhD; Alyson Andreasen, BA; Anna Viner, BA; Adam Light; Andrew Jenkins, PhD, Department of Anesthesiology, Weill Medical College of Cornell University, New York, NY, United States*

A-755 Room D, 10/17/2000 9:00 AM - 11:00 AM (PS)
Reduced Anxiety and Stress Responses in Mice Lacking the NK1 Receptor *Mark J.S. Heath, M.D.; Luca Santarelli, Ph.D.; Pierre C. Debs, M.S.; Rene Hen, Ph.D., Anesthesiology, Columbia University, New York, NY, United States.* A series of behavioral, cellular, and biochemical studies showed that mice lacking the NK1 receptor display markedly reduced anxiety and stress responses.