EXPERIMENTAL NEUROSCIENCES

Experimental Neuroscience: Cerebrovascular / Brain Injury / Neuroprotection

A-686 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Induction of Inducible Nitric Oxide Synthase in the Gerbil Hippocampus Following Transient Forebrain Ischemia *Hiroshi Abe, MD,PhD; Hideaki Tsuchida, MD,PhD; Hideyuki Shiratsuka, MD,PhD; Yoshimichi Ueda, MD,PhD; Shogo Katsuda, MD,PhD, Anesthesiology, Kanazawa Medical University, Uchinada, Ishikawa, Japan.* This study addressed iNOS induced in the hippocampus may play an important role in the induction of apoptosis.

A-687 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
A Molecular Mechanism for Action of Neuroprotectants and Paralytic Drugs *Ying-Jun Cao, M.D.; John C. Dreixler, Ph.D.; Jeffrey D. Roizen; Michael T. Roberts; Khaled M. Houamed, Ph.D., Deptment of Anesthesia and Critical Care, The University of Chicago, Chicago, IL, United States*

A-688 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Antioxidant Defenses in Hypoxic Immature Astrocyte Cultures *Andrew J. Davidson, MBBS FANZCA; Douglas B. Cowan, PhD; Dimitrios N. Poutias, BS; Francis X. McGowan, MD, Department of Anesthesia, Children's Hospital, Boston, MA, United States.* Hypoxic immature astrocytes are more susceptible to oxidant injury due to altered antioxidant defenses and increased production of oxyradicals.

A-689 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Traumatic Brain Injury or Peroxynitrite Reduces Vasodilatory Responses in Isolated Rodent Cerebral Arteries *Douglas S. Dewitt, Ph.D.; Babu P. Mathew, M.S.; Donald S. Prough, M.D., Department of Anesthesiology, University of Texas Medical Branch, Galveston, TX, United States.* Brain injury or peroxynitrite reduces vasodilatory responses to CGRP and cromakalim in isolated rodent cerebral arteries.

A-690 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Effect of Hypertonic Saline and Mannitol on Plasma Osmolality and Brain Water *Eve Dillman, BS; Johnny E. Brian, MD; Michael M. Todd, MD, Dept. of Anesthesia, University of Iowa Hospitals and Clinics, Iowa City, IA, United States.* Mannitol and hypertonic saline had equal effects on brain water for equal changes in osmolality. More saline is required to achieve the same osmolalities as mannitol.

A-691 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
The Effect of Hypothermia on the Expression of Apoptosis-Regulating Proteins after Cerebral Ischemia in the Rat *Kristin Engelhard, MD; Christian Werner, MD; Monika Bachl; Eva Eberspacher; Eberhard Hilt, PhD, Klinik fur Anaesthesiologie, Technische Universitat München, Munchen, Germany.* Mild hypothermia inhibits synthesis of apoptosis-regulating proteins 4h after cerebral ischemia.

A-692 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Cyclosporin A Protects Astrocyte but Not Cerebellar Granule Neuron Mitochondria from Calcium Induced Injury *Gary Fiskum, Ph.D.; Krish Chandrasekaran, Ph.D.; Linda L. Bambrick, Ph.D.; Bruce K. Krueger, Ph.D., Anesthesiology, Univ. of Maryland, Baltimore, Baltimore, MD, United States.* The neuroprotectant cyclosporin A protects non-neuronal but not neuronal mitochondria against calcium-induced damage.

A-693 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Optical Image Analyses of Neuronal Dysfunction in Hippocampal Slices from the Gerbil Following Transient Brain Ischemia *Naoshi Fujiwara, Ph.D.; Ren-Zhi Zhan, M.D.; Kiichiro Taga, M.D.; Kenji Seo, D.D., Department of Medical Technology, Niigata University School of Health Sciences, Niigata, Japan.* Ischemic neuronal dysfunction was optically analyzed by a membrane potential imaging technique.

A-694 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Effect of a Single Dose of Ketamine on Apoptotic Neurodegeneration in the Developing Rat Brain *Hideaki Hayashi, MD; Pieter Dikkes; Sulpicio G. Soriano, MD, Dept of Anesthesia, Children's Hospital, Boston, MA, United States.* A single dose of ketamine from 25 to 75 mg/kg did not increase neuronal apoptosis in the 3 to 7-day-old rat brains, as examined 24 hours after injection.

A-695 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Cardiopulmonary Bypass (CPB) Increases Brain Inducible Cyclooxygenase (COX2) mRNA Expression in Rats *Bradley J. Hindman, MD; Steven A. Moore, MD; Johann Cutkomp, BS; Tom Smith, BS, Department of Anesthesia, University of Iowa, College of Medicine, Iowa City, IA, United States.* Compared to surgical shams, rats undergoing 1 h of cardiopulmonary bypass had greater brain COX2 expression 4 h later.

A-696 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Effect of Isoflurane on Neuronal Apoptosis in Rats Subjected to Focal Ischemia *M. Kawaguchi, M.D.; J.R. Kimbro, M.D.; J.C. Drummond, M.D.; D.J. Cole, M.D.; P.M. Patel, M.D., Dept. of Anesthesiology, VA Medical Center and University of California, San Diego, CA, United States.* Isoflurane reduced the development of apoptosis early after ischemia but did not prevent it at later stages of post-ischemia.

A-697 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
The Neuroprotective Agent Riluzole Inhibits NMDA-Induced FAK 125 Tyrosine Kinase Phosphorylation in the Rat Hippocampus *Hawa Keita, M.D.; Agnes Peyclit, M.D.; Fanny Jardinaud; Danielle Rouelle; Jean Mantz, M.D.Ph.D., Anesthesiology, Hopital Bichat, Paris 7 University, Paris, France.* Inhibition of NMDA-induced tyrosine kinase phosphorylation contribute to riluzole neuroprotection.

A-698 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Chronic Hyperglycemia and Insulin: The Effect on Neurologic Outcome Following Transient Focal Cerebral Ischemia in Rats *Heidi M. Koenig, MD; Mikhail I. Freidine, MD/PhD; Roberto A. Santizo, MD; Dale A. Pelligrino, PhD, Anesthesiology, University of Illinois-Chicago, Chicago, IL, United States.* Insulin decreases brain injury after transient middle cerebral artery occlusion in chronically hypergycemic rats.

A-699 Room F, 10/16/2000 9:00 AM - 11:00 AM (PS)
Effect of Lamotrigine on MRI-Derived Indices of Brain Water Content during Global Cerebral Ischemia *Herbert Koinig, MD; John P. Williams, PhD; Michael J. Quast, PhD; Mark H. Zornow, MD, Department of Anesthesia, University of Texas Medical Branch, Galveston, TX, United States.* Lamotrigine did not prevent fluid shifts during global cerebral ischemia, as derived from calculation of the ADC of water.