ANESTHETIC ACTION & BIOCHEMISTRY

A-111 Room E, 10/17/2000 2:00 PM - 4:00 PM (PS)
Screening of the Ryanodine Receptor Gene and Identification of Novel Mutations in North American Malignant Hyperthermia Population *N. Sambuughin, PhD; Y. Sei, MD, PhD; T. Nelson, PhD; H. Rosenberg, MD; S. Muldoon, MD, USUHS, Bethesda, MD, United States.* Analysis of 76 unrelated patients revealed 6 known and 4 novel RYR1 mutations. These mutations account for 25% of patients.

A-112 Room E, 10/17/2000 2:00 PM - 4:00 PM (PS)
Comparison of Halothane and Sevoflurane Effects on Calcium Influx in Cardiac Myocytes *Inanc Seckin, M.D.; Gary C. Sieck, Ph.D.; Y.S. Prakash, Ph.D., Anesthesiology, Mayo Clinic, Rochester, MN, United States.* This study comparing the effects of halothane vs. sevoflurane on L-type Ca^{2+} channels in adult rat cardiac muscles found sevoflurane to have considerably smaller inhibitory effects.

A-113 Room E, 10/17/2000 2:00 PM - 4:00 PM (PS)
Anesthesia and Antianalgesia *Yi Zhang, MD; James Sonner, MD; Robert Dutton, MD; Edmond I. Eger II, MD, Department of Anesthesia and Perioperative Care, University of California, San Francisco, San Francisco, CA, United States.* Isoflurane, halothane, nitrous oxide, and diethyl ether produce antianalgesia at subanesthetic concentrations of approximately 0.1 MAC.

A-114 Room E, 10/17/2000 2:00 PM - 4:00 PM (PS)
Correlation of Inhaled Anesthetic Potency between *Drosophila Melanogaster* and Mammals *Jian-Xin Zhou, M.D.; Jun Xiao, M.D.; Jin Liu, M.D., Department of Anesthesiology and Critical Care Medicine, The First Affiliated Hospital, West China University of Medical Sciences, Cheng-Du, Si-Chuan, China.* D. melanogaster is a representative model in study of anesthetic mechanism.

Anesthetic Action: Mechanisms of General Anesthesia - Model Protein Interactions

A-115 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Location of a General Anesthetic Binding Site in Protein Kinase C Cys-2 Region Identified by Photoaffinity Labeling and Mass Spectrometry *George H. Addona, Ph.D.; Warren S. Sandberg, M.D., Ph.D.; Keith W. Miller, D. Phil., Anesthesia and Critical Care, Massachusetts General Hospital, Boston, MA, United States.* Tyr-236 on PKC delta2, near the phorbol ester pocket, is the site for photoreactive anesthetics.

A-116 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Investigation of the General Anesthetic Binding Sites on Firefly Luciferase Using a Photoreactive General Anesthetic *George H. Addona, Ph.D.; Claire Tseng, B.A.; Keith W. Miller, D.Phil, Anesthesia and Critical Care, Massachusetts General Hospital, Boston, MA, United States.* A novel photoreactive general anesthetic binds irreversibly at the active site of luciferase.

A-117 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Luciferase as a Model for the Site of Inhaled Anesthetic Action *Yi Zhang, MD; Caroline R. Stabernack, MD; James Sonner, MD; Tomohiro Yamakura, PhD; John Mihic, PhD, Dept. of Anesthesia and Perioperative Care, University of California, San Francisco, San Francisco, CA, United States.* Luciferin does not affect MAC or GABA/Ach. receptors and luciferase may not be a good model for the site of anesthetic action.

A-118 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Xenon Does Not Fit a Model Target for Potent Inhalational Agents *Jonathan W. Tanner, M.D., Ph.D.; Jonas S. Johansson, M.D., Ph.D.; Paul A. Liebman, M.D.; Roderic G. Eckenhoff, M.D., Department of Anesthesia, University of Pennsylvania, Philadelphia, PA, United States.* Xenon destabilizes serum albumin, suggesting that this protein is not a good model for xenon targets the way it is for potent volatile anesthetic agents.

A-119 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Differential Anesthetic Binding to a G Protein Coupled Receptor Demonstrated Using Tryptophan Fluorescence *Yumiko Ishizawa, M.D., Ph.D.; Jonas S. Johansson, M.D., Ph.D.; Paul A. Liebman, M.D.; Roderic G. Eckenhoff, M.D., Department of Anesthesia, University of Pennsylvania, Philadelphia, PA, United States.* Halothane quenched tryptophan fluorescence in rhodopsin, suggesting halothane binds in its hydrophobic core.

A-120 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Prediction of the Tertiary Structure of an Anesthetic Binding Site *Edward J. Bertaccini, MD; James R. Trudell, PhD, Anesthesia, Palo Alto VA/Stanford University, Palo Alto, CA, United States.* The binding site for volatile anesthetics in the GABARa2 is in the middle of the alpha helical, tetrameric, transmembrane subunits and is composed of at least 3 well known and adjacent amino acids.

A-121 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Creator's View of Anesthetics: *Ab Initio* Calculation of Halothane and Sevoflurane *Igor Z. Zubrzycki, Ph.D.; Yan Xu, Ph.D.; Pei Tang, Ph.D., Department of Anesthesiology/CCM and Pharmacology, University of Pittsburgh School of Medicine, Pittsburgh, PA,.* Determination of structures and charge distributions of halothane and sevoflurane by ab initio calculation.

A-122 Room 302, 10/16/2000 9:00 AM - 10:30 AM (PD)
Direct Interaction of Halothane with a Ligand Binding Site in a G Protein Coupled Receptor *Yumiko Ishizawa, M.D.; Paul A. Liebman, M.D.; Roderic G. Eckenhoff, M.D., Department of Anesthesia, University of Pennsylvania, Philadelphia, PA, United States.* Halothane competitively decreased the rate of ligand binding in rhodopsin, suggesting halothane shares its ligand binding site.

Anesthetic Action: Opiates

A-123 Room 302, 10/17/2000 9:00 AM - 10:30 AM (PD)
Anesthetic Potency in μ-Opioid Receptor Knockout Mice *Albert Dahan, MD PhD; Elise Sarton, MD; Luc J. Teppema, PhD, Department of Anesthesiology, Leiden University Medical Center, Leiden, Netherlands.* The anesthetic potency of sevoflurane is partially dependent on the presence of μ-opioid receptors.

A-124 Room 302, 10/17/2000 9:00 AM - 10:30 AM (PD)
μ-Receptor Agonism with Alfentanil Increases Striatal D2 Receptor Dopamine Binding in Man. A PET Study *Nora M. Hagelberg, MD; Jaana K. Kajander, MD; Jarmo Hietala, MD; Kjell Nagren, PhD; Harry Scheinin, MD, Anesthesiology, Turku University Hospital, Turku, Finland.* In a PET study, alfentanil was found to increase D2 binding slightly but statistically significantly in man.