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, Pb.D.; Y.S. Prakash, Pb.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 Zbang, 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, Pb.D.; Warren S. Sandberg, M.D., Pb.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 Zbang, MD; Caroline R. Stabernack, MD; James Sonner, MD; Tomobiro Yamakura, PbD; John Mibic, PbD, 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 Isbizawa, M.D., Pb.D.; Jonas S. Jobansson, M.D., Pb.D.; Paul A. Liebman, M.D.; Roderic G. Eckenboff, 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, PbD, 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 Isbizawa, M.D.; Paul A. Liebman, M.D.; Roderic G. Eckenboff, M.D., Department of Anestbesia, 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, PbD; 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.