

SCIENTIFIC PROGRAM

- Revised 04/27/10 -

SUNDAY, MAY 2	MONDAY, MAY 3	TUESDAY, MAY 4	WEDNESDAY, MAY 5	THURSDAY, MAY 6
2:00pm Registration	7:30am Continental Breakfast and Poster Viewing	7:30am Continental Breakfast and Poster Viewing	7:30am Continental Breakfast and Poster Viewing	7:30am Continental Breakfast and Poster Viewing
3:00-6:00pm Core-To-Core Symposium <i>(Organized by: Periannan Kuppusamy, Ohio State University, and Hideo Utsumi, Kyushu University, Fukuoka, Japan)</i>	8:00am Welcome Address <i>(Antonio Alegria)</i> 8:10am EPR INSTRUMENTATION: THE LATEST AND THE GREATEST <i>(Chair: Balaraman Kalyanaraman, Medical College of Wisconsin)</i> Experiments at Low Microwave Frequencies <i>(James Hyde, Medical College of Wisconsin)</i> 8:40am Frequency Modulation EPR Spectroscopy from L- to W-band <i>(Wojciech Froncisz, Jagiellonian University, Krakow, Poland)</i> 9:10am Rapid Scan EPR <i>(Gareth Eaton, University of Denver)</i> 9:40am ESR Studies of Dynamics and Structure of Membranes and Proteins at ACERT <i>(Jack Freed, Cornell University)</i> 10:10am Revealing Conformational Exchange in Spin Labeled Proteins <i>(Wayne Hubbell, UCLA)</i> 10:40am Break and Poster Viewing	8:00am EPR AND SPIN TRAPPING IN REDOX BIOLOGY <i>(Chairs: Michal Davies, Heart Research Institute, and Jeannette Vasquez-Vivar, Medical College of Wisconsin)</i> Spin Trapping Studies with Peroxide-null Yeasts <i>(Ohara Augusto, Instituto de Quimica, Sao Paulo, Brazil)</i> 8:20am Improving the Superoxide Radical Detection in Biological Systems by the Design of new DPEPMO Derivatives <i>(Olivier Ouari, Universites d'Aix-Marseille)</i> 8:40am The Challenge and Significance of Free Radical Detection in Biological Systems <i>(Ronald Mason, NIEHS)</i> 9:00am Discussion 9:10am Tracking Radicals in Biological Polymers... Searching for the Smoking Gun <i>(Michael Davies, Heart Research Institute, Sydney, Australia)</i> 9:30am Detection of Peroxynitrite by Boronate-based Probes: EPR, Fluorescence and HPLC Studies <i>(Jacek Zielonka, Medical College of Wisconsin)</i> 9:50am Deficient Tetrahydrobiopterin Explains the Double-Hit of Fetal Brain Damage in Hypoxia-Ischemia: A Role for NOS Uncoupling? <i>(Jeannette Vasquez-Vivar, Medical College of Wisconsin)</i> 10:10am Discussion 10:20am Break and Poster Viewing 10:50am SPIN TRAP/SPIN LABEL SYNTHESIS <i>(Chair: Micael Hardy, Universites d'Aix-Marseille)</i> Design and Development of Spin Traps: Towards Detection of Superoxide in Biological Media <i>(Micael Hardy, Universites d'Aix-Marseille)</i> 11:10am Synthesis and New Applications of Nitroxides <i>(Joy Joseph, Medical College of Wisconsin)</i> 11:30am Multifunctional in Vivo EPR using Nitroxyl and Trityl Radicals <i>(Valery Khramtsov, Davis Heart & Lung Research Institute)</i> 11:50am Discussion 12:00pm Lunch <i>(Brisas del Mar, Ocean Tower)</i> 12:45pm EPR TECHNIQUES IN METALLOPROTEINS <i>(Chair: Sandra Eaton, University of Denver)</i> Impact of Mutations on the Iron-sulfur cluster of ETF-QO <i>(Sandra Eaton, University of Denver)</i> 1:05pm Combining High-field EPR with Site-directed NO Spin Labeling Reveals Unique Information on Protein Structure and Local Micro-environment <i>(Klaus Moebius, Free University Berlin, Germany)</i> 1:25pm Multifrequency EPR of Cupric Sites: Four Coordinate, Three Coordinate, and Free Radical Like Sites <i>(William Antholine, Medical College of Wisconsin)</i> 1:45pm Discussion 1:55pm Rapid-Freeze-Quench EPR: What, Why, and How <i>(Brian Bennett, Medical College of Wisconsin)</i> 2:15pm Metal Ion Mutagenesis – Conversion of a Purple Acid Phosphatase from Sweet Potato to a Neutral Phosphatase with the Formation of an Unprecedented Catalytically Competent Mn ^{III} Active Site <i>(Graeme Hanson, University of Queensland, Brisbane, Australia)</i> 2:35pm Discussion 2:45pm Break and Poster Viewing 3:15pm SHORT ORAL COMMUNICATIONS <i>(Chair: Marcelo Bonini, University of Illinois, Chicago)</i> Membrane Homogeneity and Protein Structure through the Rotational Conformational Spaces <i>(Janez Strancar, Jozef Stefan Institute, Slovenia)</i> 3:30pm Multi-frequency ESEEM and Pulsed ENDOR Studies of Metalloenzymes <i>(Arnold Raitzsimring, University of Arizona, Tucson)</i> 3:45pm Synthesis and Characterization of Various Trityl-nitroxide Biradicals as Unique Probes for the Simultaneous Measurement of Redox Status and Oxygenation <i>(Yangping Liu, Davis Heart & Lung Research Institute)</i> 4:00pm Synthesis and EPR Spectroscopy of Deuterated Finland Trityl Radical & Related Derivatives <i>(Olga Grigorieva, Ohio State University, Columbus)</i> 4:15pm Metabolic Stability of Cyclic Nitron Adducts with O ₂ ⁻ and OH towards Rat Liver Microsomes and Cytosol: A Stopped-flow EPR Spectroscopy Study <i>(Yves-Michel Frapart, University Paris Descartes)</i> 4:30pm Structural Origins of Nitroxide Side Chain Dynamics on Membrane Protein α -Helical Sites <i>(Brett Kroncke, University of Virginia, Charlottesville)</i> 4:45pm MnSOD (SOD2)-Peroxidase Activity as a Novel Mitochondrial Redox Modulator <i>(Marcelo Bonini, University of Illinois, Chicago)</i> 5:00pm Pulsed ENDOR and Dipolar Spectroscopy of Gadolinium(III) Complexes: Probing Coordination Structures and Use as a New Spin-Label in Nano Scale Distance Measurements <i>(Arnold Raitzsimring, University of Arizona, Tucson)</i> 5:15pm Poster Viewing and Cash Bar 9:30pm Adjourn	8:00am SPIN LABELING IN MEMBRANES <i>(Chair: W. Karol Subczynski, Medical College of Wisconsin)</i> Physical Properties of Lipid Bilayers using Spin Label EPR <i>(W. Karol Subczynski, Medical College of Wisconsin)</i> 8:20am Electrostatic Landscape of Membrane Proteins and Transmembrane Dielectric Constant Gradients by EPR of pH-sensitive Nitroxides <i>(Alex Smirnov, North Carolina State University, Raleigh)</i> 8:40am Structure and Conformational Dynamics of the <i>Pseudomonas aeruginosa</i> Toxin, ExoU <i>(Jimmy Feix, Medical College of Wisconsin)</i> 9:00am Discussion 9:10am IN VIVO OXIMETRY AND REDOX IMAGING <i>(Chair: Hideo Utsumi, Kyushu University, Fukuoka, Japan)</i> Magnetic Resonance Imaging of Tumor Physiology and Metabolic Profile <i>(Murali Krishna Cherakuri, NCI)</i> 9:30am Three-dimensional EPR imaging at an Interval of 3.6 Seconds <i>(Hiroshi Hirata, Hokkaido University, Sapporo, Japan)</i> 9:50am EPR Oximetry: New Probes and Opportunities for Clinical Applications <i>(Periannan Kuppusamy, Ohio State University)</i> 10:10am Development of Different Type of Overhauser-MRI and Probes for Animal Models <i>(Hideo Utsumi, Kyushu University, Fukuoka, Japan)</i> 10:30am Discussion 10:40am Break and Poster Viewing 11:10am SPIN TRAPS AND NITROXIDES IN TRANSLATIONAL RESEARCH <i>(Chair: Marcos Lopez, Fundación Cardiovascular de Colombia)</i> Observations on the Biomedical Therapeutic Potential of PBN-Nitrones <i>(Robert Floyd, Oklahoma Medical Research Foundation)</i> 11:30am Use of Nitroxide Antioxidants in Cancer Treatment and Prevention <i>(James Mitchell, NCI)</i> 11:50am Mitochondria-targeted Agents in Breast Cancer Detection and Therapy <i>(Marcos Lopez, Fundación Cardiovascular de Colombia)</i> 12:10pm Discussion 12:20pm Lunch <i>(Brisas del Mar, Ocean Tower)</i> 1:05pm FREE RADICALS IN RARE DISEASES <i>(Chair: Maria Kadiiska, NIEHS)</i> Possible Allergic Reactions to (Bi)sulfite: Initiated Oxidation by EPO <i>(Kalina Rangelova, NIEHS)</i> 1:25pm In Vivo Molecular Imaging of Protein Radicals in Rare Diseases <i>(Rheal Townner, Oklahoma Medical Research Foundation)</i> 1:45pm Agonal Involvement of Free Radical Metabolites in the Etiology of Drug-Induced Agranulocytosis <i>(Arno Siraki, University of Alberta)</i> 2:05pm Discussion 2:15pm In Vivo Spin-Trapping by ESR: Lipid-Derived Free Radical Production in Superantigen-induced Interstitial Pneumonia of Immunocompromised Mice <i>(Maria Kadiiska, NIEHS)</i> 2:35pm Oxidant-Antioxidant Interactions during <i>Trypanosoma Cruzi</i> Invasion to Macrophages: Implications for Chagas Disease <i>(Rafael Radi, Universidad de la Republica, Montevideo, Uruguay)</i> 2:55pm Discussion 3:05pm Break and Poster Viewing 3:35pm SHORT ORAL COMMUNICATIONS <i>(Co-chairs: Dario Ramirez, Oklahoma Medical Research Foundation, and Jay Zweier, Davis Heart & Lung Research Institute)</i> In Vivo EPR Oximetry and Myocardial Ischemia Reperfusion Injury <i>(Guanglong He, Davis Heart & Lung Research Institute)</i> 3:50pm In Vivo Monitoring of pH _i , Extracellular Redox Status and Intracellular Glutathione Content in Tumor Tissues of PyMT Mice: Effect of GM-CSF Treatment <i>(Andrey Bobko, Ohio State University Medical Center)</i> 4:05pm Conformational Changes of SecB upon Binding to a Model Substrate - BPTI <i>(Wolfgang Trommer, University of Kaiserslautern)</i> 4:20pm In Vivo Multisite Oximetry using EPR-NMR Coimaging <i>(Jay Zweier, Davis Heart & Lung Research Institute)</i> 4:35pm Multisite Measurement of Dynamic Changes of Oxygenation in Normal Brain and F98 Tumors during Tumor Growth and Carbogen Breathing: A Study of EPR Oximetry with Implantable Resonators <i>(Huagang Hou, Dartmouth Medical School)</i> 4:50pm Characterization of Carbon-Centered Radicals Formed from COX-catalyzed Dhiomo-gamma-linolenic Acid Peroxidation <i>(Steven Qian, North Dakota State University, Fargo)</i> 5:05pm New Insights into the Therapeutic Mechanisms of 4-OH-PBN: Trapping of Protein-Centered Radicals <i>(Dario Ramirez, Oklahoma Medical Research Foundation)</i> 5:20pm Adjourn 6:30pm Conference Banquet <i>(Royal Ballroom, Laguna Tower)</i>	8:00am NOVEL ACTIONS AND REACTIONS OF QUINONES <i>(Chair: Tadeusz Sarna, Jagiellonian University, Krakow, Poland)</i> Metal-independent Decomposition of Hydroperoxides by Halogenated Quinones: Detection and Identification of a Quinone Ketoxyl Radical <i>(Ben-Zhan Zhu, Chinese Academy of Sciences)</i> 8:20am Role of Melanin Quinone Groups in the Generation and Scavenging of Reactive Oxygen Species <i>(Tadeusz Sarna, Jagiellonian University, Krakow, Poland)</i> 8:40am Discussion 8:50am Break and Poster Viewing 9:20am EPR DOSIMETRY <i>(Chair: Harold Swartz, Dartmouth Medical School)</i> Overview and Progress towards Field Deployment <i>(Benjamin Williams, Dartmouth Medical School)</i> 9:40am Incorporation of EPR Dosimetry into the Emergency Response System <i>(Ann Flood, Dartmouth Medical School and R. Javier Nicolalde, Dartmouth Medical School)</i> 10:00am EPR Dosimetry Based on Fingernail Clippings <i>(Steven Swartz, University of Rochester, New York)</i> 10:20am Discussion 10:30am Closing Remarks <i>(Harold Swartz, Dartmouth Medical School)</i> 10:45am Adjourn