

**S C I E N T I F I C P R O G R A M**

Sun, Sept 24	Mon, Sept 25	Tue, Sept 26	Wed, Sept 27	Thu, Sept 28	Fri, Sept 29
16:00 Registration	8:30 Welcome address ( <i>Tadeusz Sarna</i> ) and announcements	8:30 Announcements	8:30 Announcements	8:30 Announcements	Excursion (optional)
18:00 Opening ceremony and Welcome reception	<b>Session 1</b> <b>ADVANCES IN MAGNETIC RESONANCE TECHNIQUES</b> (Chair: <i>Larry Berliner</i> )	<b>Session 3</b> <b>BIOPHYSICAL PHOTO-TECHNIQUES</b> (Chair: <i>Karol Subczynski</i> )	<b>Session 5</b> <b>LATERAL ORGANIZATION AND DYNAMICS OF BIOLOGICAL MEMBRANES</b> (Chair: <i>Bojan Zagrovic</i> )	<b>Session 7</b> <b>MOLECULAR SIMULATIONS AND MATHEMATICAL MODELING</b> (Chair: <i>Marija Raguz</i> )	
	8:40 High frequency structure simulator (HFSS) modeling of resonators for aqueous biological samples ( <i>James Hyde</i> )	8:35 Single-molecule tracking detection of very transient signaling molecular complexes ( <i>Akihiro Kusumi</i> )	8:35 Site-directed spin labeling studies of protein-membrane interactions: Activation of the bacterial phospholipase, ExoU ( <i>Jimmy Feix</i> )	8:35 Genome-wide association analysis approach in identifying loci for complex diseases, an example for Hashimoto's thyroiditis ( <i>Vesna Boraska Perica</i> )	
	9:10 Multi-frequency resonator development for studying volume-limited metallo-proteins ( <i>Jason Sidabras</i> )	9:05 Phototriggered chemistry for nanostructuring and artificial enzyme design ( <i>Liljana Fruk</i> )	9:05 Saturation recovery EPR of nitroxide spin labels for exploring organization and dynamics of biological membranes ( <i>W. Karol Subczynski</i> )	9:05 An inverted hexagonal phase of monogalactolipid (MGDG) assembly: A molecular dynamics study ( <i>Marta Pasenkiewicz-Gierula</i> )	
	9:40 Transporter conformational dynamics from spin labeling EPR spectroscopy ( <i>Hassane Mchaourab</i> )	10:05 EPR applications to study photosynthesis ( <i>Alexander Tikhonov</i> )	9:35 Nanodiscs as a model of biological membranes ( <i>Anna Wisniewska-Becker</i> )	9:35 Genetic code as a key for understanding RNA-protein interactions ( <i>Bojan Zagrovic</i> )	
	10:10 Break	10:35 Break	10:05 Break		
	<b>Special presentation</b>	<b>Special presentations</b>	<b>Special presentation</b>	<b>Special presentation</b>	
	10:40 Applications of Mössbauer spectroscopy in biomedical research ( <i>Michael Oshtrakh</i> )	11:05 The effect of aging on photoreactivity and phototoxicity of human RPE melanosomes ( <i>Magdalena Olchawa</i> )	10:35 MicroScale thermophoresis and NANODSF as advanced methods in bioanalytical research ( <i>Jakub Nowak</i> )	10:05 New lipid force fields to include anisotropic membrane characters ( <i>Hideaki Fujitani</i> )	
	11:00 Discussion (Chair: <i>Tadeusz Sarna</i> )	11:25 The role of singlet oxygen in photodegradation of melanin ( <i>Andrzej Zadla</i> )	<b>Selected short oral presentation</b> (Chair: <i>Vesna Boraska Perica</i> )	10:25 Break	
	11:10 Group photo	<b>Selected short oral presentations</b> (Chair: <i>Jason Sidabras</i> )	10:55 The structure of lipid bilayer within nanodiscs ( <i>Piotr Stepień</i> )	<b>Selected short oral presentations</b> (Chair: <i>Anna Wisniewska-Becker</i> )	
	11:40 Lunch	11:45 Photogeneration of <sup>1</sup> O <sub>2</sub> by synthetic pheomelanins increases with its controlled photobleaching ( <i>Grzegorz Szewczyk</i> )	11:10 Discussion	10:55 Molecular dynamic simulations of antimicrobial peptide Maculatin 1.1 with various phospholipid bilayers ( <i>Yogesh Sonavane</i> )	
	<b>Session 2</b> <b>IMAGING BIOMARKERS IN LIVING SYSTEMS</b> (Chair: <i>Ivor Benjamin</i> )	12:00 Discussion	11:20 Lunch	11:10 Genome-wide association analysis of thyroid volume and thyroid antibodies in Hashimoto's thyroiditis ( <i>Luka Brcic</i> )	
	12:40 Exosomes as biomarkers in stem cell biology ( <i>Zeljko Bosnjak</i> )	12:10 Lunch	<b>Session 6</b> <b>LIPID AND PROTEIN MODIFICATIONS: IMPLICATIONS IN DISEASES</b> (Chair: <i>Periannan Kuppusamy</i> )	11:35 Genome-wide meta-analysis of thyroid hormone T4 serum levels ( <i>Ivana Gunjaca</i> )	
	13:10 Metabolic MRI with <sup>13</sup> C-labeled endogenous substrates hyperpolarized with dynamic nuclear polarization: Preclinical and clinical applications in cancer imaging ( <i>Murali Krishna Cherukuri</i> )	<b>Session 4</b> <b>REDOX BIOENERGETICS AND METABOLISM IN DISEASES</b> (Chair: <i>Murali Krishna Cherukuri</i> )	12:20 Oxidation of disulfide bonds and its consequences ( <i>Michael Davies</i> )	11:55 Discussion	
	13:40 Noninvasive EPR oximetry in human subjects ( <i>Periannan Kuppusamy</i> )	13:10 The flip side of oxidative stress: The reductive stress world ( <i>Ivor Benjamin</i> )	12:50 Lipid and protein modifications as biomarkers of oxidative stress: Implication in diseases ( <i>Maria Kadiiska</i> )	12:05 Lunch	
	14:10 Break	13:40 Metabolic regulation of phagocyte NADPH oxidase activity ( <i>Jeanette Vasquez-Vivar</i> )	13:20 HNE signaling, physiological or pathological? ( <i>Henry Forman</i> )	<b>Session 8</b> <b>FREE RADICAL DETECTION IN VIVO AND IN VITRO</b> (Chair: <i>Maria Kadiiska</i> )	
	<b>Special presentations</b>	14:10 Targeting OXPHOS, redox, and energy metabolism for cancer treatment: Mitochondria-targeted drugs ( <i>Balaraman Kalyanaraman</i> )	<b>Special presentation</b>	13:05 Basic principles and recent advances in probes and assays for cellular oxidants ( <i>Jacek Zielonka</i> )	
	14:40 Cell elasticity is an important biomarker of melanoma behavior ( <i>Michal Sarna</i> )	<b>Special presentations</b>	13:50 Mechanisms of action of dietary antioxidants: A case of wine ( <i>Mladen Boban</i> )	13:35 Spin traps and fluorescence probes for superoxide detection ( <i>Micael Hardy</i> )	
	15:00 Normative model for central augmentation index—A way to identify people at risk for cardiovascular disease? ( <i>Ana Jeroncic</i> )	14:40 Chemistry and biology of oxidative protein damage in aging and age-related diseases ( <i>Miroslav Radman</i> )	14:10 Biophysics approaches to study molecular mechanisms of Alzheimer's disease: Toward prevention and cure ( <i>Zoya Leonenko</i> )	14:05 Nitroxyl (HNO)—Chemistry, biology, and detection of the most elusive reactive nitrogen species ( <i>Adam Sikora</i> )	
	15:20 Expression pattern of SATB1 and PTEN in the kidneys of diabetic rats during aging ( <i>Katarina Vukojevic</i> )	15:00 Break	14:30 Break	14:35 Discussion	
	<b>Selected short oral presentations</b> (Chair: <i>Jeanette Vasquez-Vivar</i> )	15:30 Semiquinone free radicals of ubiquinone and plastoquinone—Electron carriers, prooxidants, and antioxidants ( <i>Enno Ruuge</i> )	<b>Selected short oral presentations</b> (Chair: <i>Micael Hardy</i> )	14:45 <b>Closing remarks</b> ( <i>Lawrence Berliner</i> )	
	15:40 Transgenic overexpression of GCH 1 improves sarcoplasmic reticulum Ca <sup>2+</sup> release in post-infarction remodeled myocardium ( <i>Zhi-Dong Ge</i> )	15:50 Targeting triple-negative breast cancer metabolism and bioenergetics by mitochondria-targeted SG-1 nitroxide (Mito-SG1): Effects beyond mitochondria ( <i>Marcos Lopez</i> )	15:00 VEGF and diabetes—Do we really know everything? ( <i>Natalija Filipovic</i> )	14:55 Announcements	
	15:55 Discussion	<b>Selected short oral presentations</b> (Chair: <i>Jacek Zielonka</i> )	15:15 Monocyte CD44 receptor that interacts with extracellular matrix is upregulated following myocardial infarction in rats drinking white wine ( <i>Nikolina Rezić-Muzinic</i> )	15:00 Closing reception	
	16:05 <b>Round table meeting</b>	16:10 Impact of metastatic potential enhancement on tumor redox state and vasculature ( <i>Agnieszka Drzal</i> )	15:30 GM3 and CD15s highly expressing breast cancer stem cells are sensitive to novel thieno[2,3-b]pyridine anticancer compound treatment ( <i>Angela Mastelic</i> )	Adjourn	
	16:50 Round table summary	16:25 Effects of disease-related mitochondrial mutations in cytochrome bc1 studied using advanced EPR and optical spectroscopy ( <i>Patryk Kuleta</i> )	15:45 Discussion		
	17:05 Announcements	16:40 Reactive oxygen and nitrogen species: effect of antioxidants ( <i>Arina Dudyliina</i> )	15:55 Announcements		
	17:10 Adjourn	16:55 Discussion	16:00 <b>Poster presentations for Sessions 1-8</b>		
		17:05 Announcements	17:00 Adjourn		
		17:10 Adjourn	19:00 Sightseeing (optional)		
		19:00 Cocktails and gala dinner ( <i>Location: Vila Dalmacija</i> )			