

# First Adriatic Symposium on Biophysical Approaches in Biomedical Studies

Mediterranean Institute for Life Sciences, Split, Croatia

August 24-29, 2014

<http://first-adriatic-symposium-babs.com/>

## SCIENTIFIC PROGRAM

- Revised 08/07/14

Sun, Aug 24	Mon, Aug 25	Tue, Aug 26	Wed, Aug 27	Thu, Aug 28	Fri, Aug 29
16:00 <b>Registration</b>	8:30 Welcome address and announcements	8:30 Announcements	<b>Excursion (optional)</b>	8:30 Announcements	8:30 Announcements
18:00 <b>Opening ceremony and Welcome reception</b>	<b>SESSION 1</b> <b>RECENT ADVANCES IN SELECTED BIOPHYSICAL METHODS TO STUDY BIOLOGICAL SYSTEMS</b> (Chair: Tadeusz Sarna)	<b>SESSION 2</b> <b>OXIDATIVE PHENOMENA INVOLVED IN THE PATHOLOGY OF HUMAN DISEASES</b> (Chair: Mladen Merćep)		<b>SESSION 3</b> <b>FREE RADICAL METABOLISM AND BIOENERGETIC CHANGES IN CARDIOVASCULAR DISEASES AND CANCER</b> (Chair: Balaraman Kalyanaraman)	<b>SESSION 4</b> <b>MEMBRANE STRUCTURE AND DYNAMICS AND THE DEVELOPMENT OF NEW CHEMOTHERAPEUTIC AGENTS</b> (Chair: Marija Raguz)
	8:40 <b>Educational lecture</b> All those free radicals: their origin, agenda and how to detect them ( <i>Ljiljana Fruk</i> )	8:35 <b>Educational lecture</b> Oxidative stress in the eye tissues ( <i>Marija Raguz</i> )		8:35 <b>Educational lecture</b> Free radical metabolism and bioenergetic changes in cardiovascular diseases and cancer ( <i>Jacek Zielonka</i> )	8:35 <b>Educational lecture</b> Membrane structure and dynamics and the development of new chemotherapeutic agents ( <i>Jimmy Feix</i> )
	9:20 New non-adiabatic rapid sweep (NARS) spectroscopic EPR methods ( <i>James Hyde</i> )	9:15 High membrane cholesterol content and oxidative stress in health and disease ( <i>W. Karol Subczynski</i> )		9:15 Profiling and targeting of cellular bioenergetics: Inhibition of pancreatic cancer cell proliferation ( <i>Balaraman Kalyanaraman</i> )	9:15 Host defense peptides as natural product scaffolds for a design of next generation antibiotic classes ( <i>Davor Juretic</i> )
	10:00 Regulation of cell polarity by Rac1 GTPases ( <i>Igor Weber</i> )	9:55 Oxygen concentration and diffusion in membranes loaded with cholesterol – a computer modelling study ( <i>Marta Pasenkiewicz-Gierula</i> )		9:55 Imaging the redox environment of pancreatic tumors to make treatment decisions ( <i>Murali Cherukuri</i> )	9:55 Selectivity and membrane interactions of D-amino acid substituted antimicrobial peptides ( <i>Jimmy Feix</i> )
	10:40 Break	10:35 Break		10:35 Break	10:35 Break
	11:10 Functionalized nano elements for reactive oxygen species ( <i>Ljiljana Fruk</i> )	11:05 Oxidative protein damage in cellular aging and death ( <i>Miroslav Radman</i> )		11:05 Immuno-spin trapping of $\alpha$ -synuclein radical formed in maneb- and paraquat-induced models of Parkinson's disease ( <i>Ronald Mason</i> )	11:05 <b>Selected short oral presentations</b> (Chair: Igor Weber)
	11:50 Tetrahydrobiopterin inhibits superoxide release from glutathionylated-eNOS ( <i>Jeannette Vasquez Vivar</i> )	11:45 Oxidative stress and age-related macular degeneration; sub-lethal photodynamic damage to retinal pigment epithelial cells impairs their vital functions ( <i>Tadeusz Sarna</i> )		11:45 'Sense & sensibility' of oxygen in acute myocardial infarction and protection ( <i>Periannan Kuppusamy</i> )	11:05 In search for a good model of photoreceptor membranes: Comparison of physico-chemical properties of liposomes made of natural and synthetic lipids ( <i>Anna Wisniewska-Becker</i> )
	12:30 Lunch	12:25 Lunch		12:25 Lunch	11:30 Structure-based computational drug design lead to new generation statins with markedly improved activity for prevention and treatment of cancers ( <i>Jung-Hsin Lin</i> )
	<b>Special presentation</b>	<b>Selected short oral presentations</b> (Chair: Anna Wisniewska-Becker)		12:25 Mitochondrial-nuclear crosstalk and oxidative stress in health and disease ( <i>Ivor Benjamin</i> )	11:55 Lunch
	13:30 Novel fluorescent methods for biotechnological and biomedical sensing: assessing antioxidants, superoxide and NO dynamics, and biomembranes fluidity ( <i>Gertz Likhtenshtein</i> )	13:25 The effect of light stress on expression of heme oxygenase-1 in retinal pigment epithelium cells containing phagocytized melanosomes ( <i>Anna Pilat</i> )		<b>Special presentation</b>	12:55 Anomalous diffusion of proteins in a membrane as an effect of crowding and trapping ( <i>Mislav Cvitkovic</i> )
	<b>Selected short oral presentations</b> (Chair: Adam Sikora)	13:50 Protective role of zeaxanthin and $\alpha$ -tocopherol during photodynamic damage of ARPE-19 cells ( <i>Magdalena Olchawa</i> )		14:05 Oxidative stress and mitochondrial fission in diabetes using patient-derived cardiomyocytes ( <i>Zeljko Bosnjak</i> )	<b>Closing lecture</b>
	14:00 The role of MicroRNA-21 in anesthetic-mediated cardioprotection ( <i>Jessica Olson</i> )	14:05 Break		14:40 Break	13:30 Tracking single molecules at work in the plasma membrane of living cells ( <i>Akihiro Kusumi</i> )
	14:25 The role of miR-21 in propofol-induced neurotoxicity in developing human neurons ( <i>Danielle Twaroski</i> )	14:35 Implications of the changes of membrane fluidity during barley leaf senescence ( <i>Ivan Jajic</i> )		<b>Selected short oral presentations</b> (Chair: Jeannette Vasquez Vivar)	14:15 Discussion and announcements
	14:50 Break	14:50 New findings on the photoreactivity of Pd-Bacteriopheophorbide derivative - WST11 ( <i>Tomasz Oles</i> )		15:10 The boronate probes – from basic research to practical application in the studies on HNO donors chemistry ( <i>Adam Sikora</i> )	Closing remarks
	15:20 Development of a tracer for imaging activity of NADPH oxidase in the brain ( <i>Toshimitsu Okamura</i> )	15:05 Discussion and announcements		15:35 The characterization of the catalytic antioxidant properties of salen-manganese complexes ( <i>Karolina Debowska</i> )	Closing reception
	15:45 Detection of nitric oxide production in cell cultures by luciferin-luciferase chemiluminescence ( <i>Yakov Woldman</i> )	15:15 <b>Poster session</b>		15:50 Reactivity of boronate probe towards biologically significant oxidants – the dependence on pH ( <i>Dawid Debski</i> )	Adjourn
	16:10 Part played by noble metal clusters and nanoparticles in biomedical applications ( <i>P.T. Manoharan</i> )	17:00 Adjourn		16:05 Mechanistic aspects of the reactivity of profluorescent boronate probe PC1 towards amino acid hydroperoxides ( <i>Ewa Gapys</i> )	
	16:35 Discussion and announcements	19:00 Cocktails and gala dinner ( <i>Location: Vila Dalmacija</i> )		16:20 The use of boronate probes in the studies of selected Piloty's acid derivatives ( <i>Renata Smulik</i> )	
	16:45 Adjourn			16:35 Discussion and announcements	
	19:00 Sightseeing			16:45 Adjourn	