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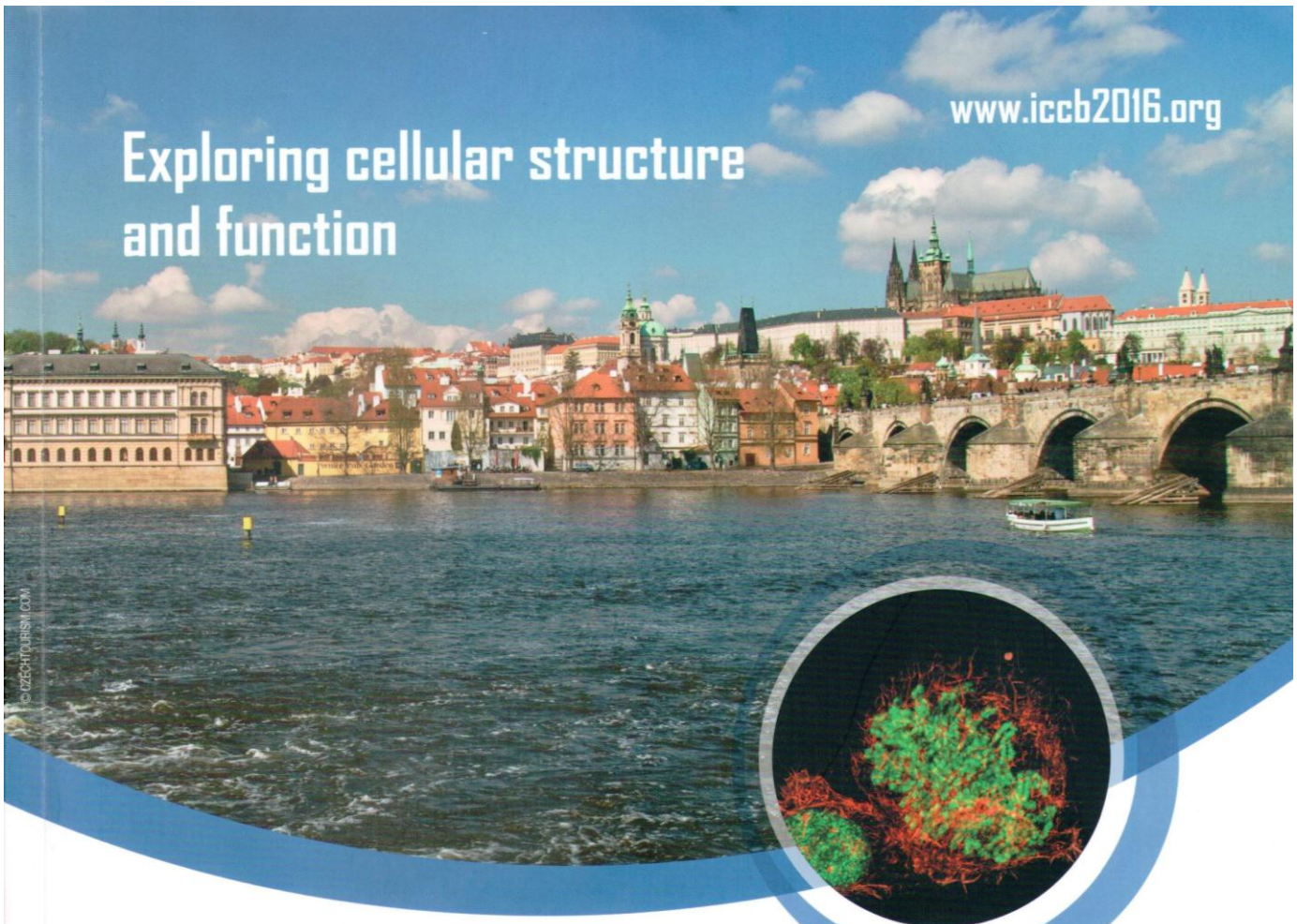

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ICCB 2016

Poster Session III – Regulation and Organization of the Genome

Sunday, July 24, 2016, 13:00 – 14:30 — **Poster area – Registration**

P 353 **Post-Translational Modifications and Inter-Compartmental Mobility of Proteins in the Nucleus**
Krishnaveni Mishra (India)

P 354 **The Role of LEM Domain Proteins in Proper Nucleus Assembly and Function in Health and Disease**
Ryszard Rzepecki (Poland)

P 355 **Localization of G-Quadruplexes at FRAXA in Fragile X Syndrome Patients**
Irina Grishchenko (Russia)

P 356 **Role of Lamin a Proteins in the Maintenance of Genome Organization**
Irena Bronshtein (Israel)

P 357 **The Effect of Histone Modifications and DNA Superhelicity on Nucleosome Stability**
Erfaneh Firouzi Niaki (Hungary)

P 358 **The Hierarchical Nature of Chromosomes: Description of Chromatin Domains Using High Labeling Binding Activated Localization Microscopy (Hi-BALM)**
Kirti Prakash (USA)

P 359 **Quantitative 3D Super-Resolution Imaging and Deep-Content Mapping of Functional Chromatin Topology**
Ezequiel Miron (UK)

P 360 **Nucleoporin Tpr Regulates Nuclear Position and Determines the Transcriptional Fate of HIV-1 Provirus**
Bojana Lucic (Germany)

Poster Session III – Non-coding RNAs

Sunday, July 24, 2016, 13:00 – 14:30 — **Poster area – Registration**

P 361 **A Role of Introns in Function of Activating Non-Coding RNAs**
Zuzana Krchnakova (Czech Republic)

P 362 **Xist Reduction in Breast Cancer Upregulates AKT Phosphorylation via HDAC3-Mediated Repression of PHLPP1 Expression**
Hsiu-Ming Shih (Taiwan)

P 363 **Long Noncoding RNA, ANRIL Regulates the Proliferation of Non-Small Cell Lung and Colorectal Cancer Cells**
Madoka Naemura (Japan)

P 364 **Quantitative Evaluation of siRNA Transport Using Novel Carriers**
Liudmila Vasina (Czech Republic)

Poster Session III – Plant Cell Biology

Sunday, July 24, 2016, 13:00 – 14:30 — **Poster area – Registration**

P 365 **Cytomixis in Tobacco Microsporogenesis: Are There Genome Parts Predetermined to Intercellular Migration?**
Sergey Mursalimov (Russia)

P 366 **Antimutagenic Activity of Biologically Active Substances from *Limonium Gmelinii* (Plumbaginaceae) and *Inula Britannica* (Compositae)**
Saule Kolumbayeva (Kazakhstan)

P 367 **Genome Imprinting in Angiosperm Plants**
Elizabeth Kordyum (Ukraine)

P 368 **Cytogenetical Evaluation and Karyotypic Analysis of *Onobrychis sp***
Farangis Ghanavati (Iran)

P 369 **Developmental Nuclear Localization and Quantification of GFP-tagged EB1c in Arabidopsis Root with Light-Sheet Microscopy**
Georgios Komis (Czech Republic)

P 370 **RAF1 Protein Is Not Required for Cyanobacterial Rubisco Assembly but Influences Its Degradation Under Sulfur Starvation Conditions**
Piotr Kolesinski (Poland)

P 371 **Salt Stress-Induced Subcellular Kinase Relocation and Enhanced Seedling Sensitivity to Salt Induced by Overexpression of Medicago SIMKK in Arabidopsis**
Olga Samajova (Czech Republic)

P 366 - Antimutagenic Activity of Biologically Active Substances from *Limonium Gmelinii* (Plumbaginaceae) and *Inula Britannica* (Compositae)

S. Kolumbayeva[1], A. Lovinskaya[1], A. Zhusupova[1], N. Akhtaeva[1], J. Litvinenko[1], A. Rakhimzhanova[1]

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The incidence of genetic disorders increase in conditions of unfavorable factors which increase the genetic load in population. The modifiers of mutagenic effect may be natural origin biologically active substances (BAS), including vitamins, flavonoids, plant hormones, polypeptides, amino acids and others. Most of BAS are antioxidants and may enhance resistance to mutagenic and toxic effects of a wide range of contaminants. The aim of our research was to study the antimutagenic activity of biologically active substances from medicinal plants growing on the territory of Kazakhstan.

The biologically active substances isolated from the underground and above-ground parts of medicinal plants *Limonium gmelinii* (Willd.) Kuntze (*Plumbaginaceae*) and *Inula britannica* L. (*Compositae*). The comparative analysis of quantitative content of the main groups of biologically active substances in the underground and above-ground parts of *L.gmelinii* shows that they are commensurable in tannins, polysaccharides, flavonoids, coumarins, carotenoids and saponins. In the underground part of *I.britannica* dominate saponins, tannins, vitamin B2 and polysaccharides; in the above-ground part dominate amino- and organic acids. It was studied toxic, mutagenic and antimutagenic activity of selected BAS on barley seeds. The extracts of the plants had not growth-inhibitory effect, the germination of seeds was at negative control level (distilled water). The sequential treatment of seeds with aqueous BAS (25.0; 50.0; 100.0 mg/L) and methyl methanesulfonate (MMS, 1.0; 5.0 mg/L) significantly increased the germination of seeds ($p < 0,01$) compared to treating with only the MMC (positive control). The cytogenetic analysis did not revealed mutagenic activity in plant extracts in used concentrations. When was combined the effects of plant extracts and MMS the frequency of mutagen-induced structural mutations ($p < 0,01$) decreased authentically, there indicated the protective activity of the BAS. It was not significant difference in antimutagenic activity between the extracts from the underground and above-ground parts of the plants.

P 367 - Genome Imprinting in Angiosperm Plants

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The present ideas about a role of epigenetic systems in the regulation of gene expression allowed to approach to understanding the mechanisms of such phenomenon in plant vital activity as genome imprinting (Henderson, Jacobsen, 2007). This phenomenon concerns to the epigenetic modification of alleles inheritable on the maternal or paternal line, that leads to their different expression depending on parent's origin. Thus, maternal and paternal genomes are not functionally equivalent in consequence of genome imprinting (Grosslinkaus, 2005). The regulation of genome imprinting in plants includes DNA methylation and chromatin modification playing an important role in the imprinting regulation in mammals also. It is very interesting that genome imprinting is known in the present time, in the first place, for the endosperm, that is a highly specialized tissue. Endosperm not only provides an embryo with necessary nutrients but perform the particular biological role in the formation of a seed and a fruit. Available data on genome imprinting in the endosperm have been only obtained in the investigations of triploid endosperm developing after double fertilization in an embryo sack of the Polygonum-type that is the most distributed among angiosperm plants. Therefore, it is considered the necessity and timeliness of further research of genome imprinting in endosperm of other ploidy, which develops in embryo sacks of different types – from diploid (Oenothera-type) till pentaploid (Plumbago-type) and nineploid (Peperomia-type), as well as in endosperm of three types – nuclear, cellular and helobial. Undoubtedly, the investigations of these directions will extend our knowledge on the site of genome imprinting in plant ontogenesis, its epigenetic regulation, and a role in the endosperm development and functioning in the seed and fruit formation.

Henderson J.R., Jacobsen S.E. Epigenetic inheritance in plants. Nature, 2007, 447, P. 418–424. Grossniklaus U. Genomic imprinting in plants: a predominantly maternal affair. In: Plant Epigenetics. Blackwell Publishing; Sheffield: 2005. P. 174–200.