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An Aspiring Interdisciplinary Journal of Genetic Research

*special
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**2nd B&H SYMPOSIUM
OF LABORATORY GENETICISTS
AND MOLECULAR BIOLOGISTS
(WITH INTERNATIONAL PARTICIPATION)**



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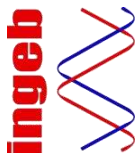
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(with International Participation)

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**2ND B&H SYMPOSIUM OF LABORATORY GENETICISTS AND MOLECULAR BIOLOGISTS
(WITH INTERNATIONAL PARTICIPATION)**

10TH - 11TH MAY 2024, BANJA LUKA, BOSNIA AND HERZEGOVINA

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**2nd B&H SYMPOSIUM OF LABORATORY GENETICISTS AND
MOLECULAR BIOLOGISTS (WITH INTERNATIONAL
PARTICIPATION)**

May 10th 2024	Friday - FIRST DAY	
8:30-9:00	Registration of participants	
9:00-9:20	Opening and welcome speech	Radoslav Dekic, PhD, Dean of FNSM, Banja Luka Stojko Vidovic, PhD, Medical Faculty Banja Luka Marija Vukovic, PhD, University Clinical Center of the Republic of Srpska, Banja Luka
9:20-9:40	Trends in psychiatric genetics	Lejla Kapur Pojskic, PhD, INGEB, Sarajevo
9:40-10:00	Neurodegenerative diseases –challenges and perspectives in molecular approach treatment	Jasmin Ramic, PhD, INGEB, Sarajevo
10:00-10:20	Molecular-genetic diagnostics autism spectrum disorders	Nela Maksimovic, PhD, Institute for Human Genetics, Belgrade University, Medical Faculty
10:20-10:30	Discussion	
10:30-11:00	Coffee break	
11:00-11:30	Genomics as a basis for personalized medicine	Sonja Pavlovic, PhD, IMGGE, Belgrade
11:30-12:00	Detection of copy number variants in genome and their significance in human diseases	Dijana Perovic, PhD, Institute for Human Genetics, Belgrade University, Medical Faculty
12:00-12:30	Cytogenetics in the era of molecular karyotyping	Leona Morožin Pohovski, PhD, Children's Hospital Zagreb
12:30-13:00	The role of genomic instability in the promotion and progression of malignant tumors - diagnostic and prognostic significance	Nikola Tanic, PhD, The University of Belgrade, Institut for Biological Research "Sinisa Stankovic", Institut of National Interest for Republic of Serbia, Belgrade, Republic of Serbia

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13:00-13:15	Sponzorsko predavanje Profy: OPTIMIZE YOUR MSI WORKFLOW WITH PROMEGA	Kriti Pathak, Promega GmbH, Walldorf, Germany
13:15-14:15	Lunch	
14:15-14:40	Conventional and molecular diagnostics of myeloproliferative neoplasms and acute myeloid leukemia – the experience of Clinic of Hematology UCCS	Vesna Djordjevic, PhD, University Clinical Center of Serbia, Belgrade
14:40-15:05	Diagnostics of chronic lymphocytic leukemia and multiple myeloma: from cytogenetic to NGS	Marija Dencic, PhD, Medical Faculty, Belgrade
15:05-15:25	Conventional cytogenetic analysis in chronic lymphocytic leukemia	Jelica Jovanovic, spec.geneticist, University Clinical Center of Serbia, Belgrade
15:25-15:40	Cytogenetic and molecular-genetic aberrations in acute lymphoblastic leukemia in adults- the experience of Clinic of Hematology UCCS	Sandra Bizic Radulovic, spc.geneticist, University Clinical Center of Serbia, Belgrade
15:40-15:50	Discussion	
15:50-16:15	Genetic influences on metabolic diseases development	Malgorzata Wrzosek, PhD, Collegium Medicum, Jan Kochanowski University, Kielce, Poland 2) Department of Biochemistry and Pharmacogenomics, Faculty of Pharmacy, Medical University of Warsaw, Warsaw, Poland
16:15-16:30	Human genetic variants modulating the course of COVID-19 infection in a subset of Bosnian-Herzegovinian patients.	Adna Asic, PhD, Verlab Research Institute for biomedical engineering, medical devices and artificial intelligence
16:30-16:40	Discussion	
16:40-17:30	Poster Presentation	
20:00-24:00	Gala Dinner	Restaurant Integra-14.floor

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May 11th 2024	Saturday - SECOND DAY	
9:00-11:00	Satellite symposium-“ Pharmacogenomics in the era of next-generation sequencing ”.	PharmGenHub project granted by EU throughout program Horizon Widera 2021 - Twinning Western Balkan
11:00-11:30	Discussion	
11:30-12:00	Coffee break	
12:00-12:30	Pharmacogenomics and pharmacotranscriptomics of acute myeloid leukemia in childhood: on the way to personalized medicine	Branka Zukic, PhD, IMGGE, Belgrade
12:30-12:50	Significance of TPMT genotyping in clinical practice	Vanja Vidovic, PhD, Medical faculty, Banja Luka
12:50-13:10	Genotipization of promotor variants of UGT1A1 gene as a pharmacogenetic marker in clinical practice	Marija Vukovic, PhD, University Clinical Center of Republic of Srpska, Banja Luka
13:10-13:25	Sponzorsko predavanje Mikro&Polo: A Novel Digital PCR Tool for Parallel Detection of Multiple Hallmark Mutations in BRAFV600 and EGFR exon19	Dr. Ellen Bruske
13:25-13:30	Discussion	
13:30-14:30	Lunch	
14:30-14:50	Application of molecular karyotyping in prenatal diagnostics	Jadranka Vranekovic, PhD, University of Rijeka, Faculty of Medicine
14:50-15:10	Genetic causes of male infertility; karyotyping and Y microdeletion analysis	Nada Starcevic Cizmarevic, PhD, University of Rijeka, Faculty of Medicine
15:10-15:30	Subfertility and sterility of couples: mutations associated with thrombophilia - more than a coagulation disorder and why both partners should be tested after re-occurring spontaneous abortions	Zeljko Popovic, PhD, FNSM; GenoLab, Laboratory of Medical Biochemistry and Molecular Diagnostics, Novi Sad
15:30-15:45	Pros and cons of dietary antioxidants: interindividual variability of flavonoids genotoxicity	Maida Hadžić, PhD, INGEB, Sarajevo

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15:45-16:00	Assessment of Immunomodulatory and Epigenetic Effects: A Comparative Study of Cytokine Profiles between Plant-Based and Omnivorous Diets	Marta Despotovic, research assistant, Institute for Medical Research, Belgrade
16:00-16:10	Discussion	
16:10-17:00	Declaration of the best poster, Closing ceremony	
	Parallel sessions: The posters will be displayed continuously in the entrance hall of the Amphitheater. Presenting authors will be available for questions and discussion personally.	

POSTERS

KOŽIK BOJANA (*Laboratory for Radiobiology and Molecular Genetics, Vinča Institute of Nuclear Sciences, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia*): SPATIAL EXPRESSION OF ZEB1 GENE AS A POTENTIAL PROGNOSTIC MARKER IN RECTAL CANCER

KRAJNOVIĆ MILENA (*"Vinča" Institute of Nuclear Sciences - National Institute of the Republic of Serbia, University of Belgrade, Laboratory for Radiobiology and Molecular Genetics, Mike Petrovića Alasa 12-14, 11001 Belgrade, Serbia*): SEQUENCE VARIABILITY OF HCV CORE REGION AND HOST GENETIC AND EPIGENETIC FACTORS CAN PREDICT THE RESPONSE TO COMBINED PEG-IFN/RBV THERAPY IN PATIENTS WITH CHRONIC HEPATITIS C INFECTION GENOTYPE 1B

TOVILOVIĆ-KOVAČEVIĆ GORDANA (*Institute for Biological Research "Siniša Stanković" – National Institute of the Republic of Serbia, University of Belgrade, Belgrade, Serbia*): ANTIHEPATOMA ACTIVITY OF METHANOL EXTRACTS FROM *THYMUS PANNONICUS* IN VITRO SHOOT CULTURES

BOŽOVIĆ ANA (*Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, University of Belgrade, Belgrade, Serbia*): ERB IS A POSSIBLE BIOMARKER OF BREAST CANCER

ROLJIĆ ALEKSANDRA (*Pan-European University Apeiron, Banja Luka, Bosnia and Herzegovina*): CORRELATION OF GENETIC FACTORS WITH SPORTS PREDISPOSITIONS

ANDJELKOVIĆ MARINA (*Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia*): CHARACTERIZATION OF 16 NOVEL GENETIC VARIANTS IN GENES ASSOCIATED WITH EPILEPSY

MALEŠEVIĆ BOJANA (*University Clinical Centre of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina*): A RARE TRISOMY OF CHROMOSOME 4 IN ACUTE MYELOID LEUKEMIA - CASE REPORT

DEVANTIER-DU PLESSIS CARLA (*Medical Faculty, University of Sarajevo, Sarajevo, Bosnia and Herzegovina*): DETERMINING SIBSHIP INDICES WITH 15 STR LOCI: CENTRAL BOSNIA STUDY

BLAGOJEVIĆ DANIJELA (*Public Health Institution Hospital "Sveti Vračevi", Bijeljina, Bosnia and Herzegovina*): CHALLENGES IN SARS-CoV-2 DIAGNOSTICS BY REAL TIME RT-PCR

IGNJATOVIĆ ĐURĐICA (*Institute for Biological Research "Siniša Stanković" - National Institute of Republic of Serbia, University of Belgrade, Belgrade, Republic of Serbia*): EFFECTS OF PRENATAL DEXAMETHASONE TREATMENT AND MODERATE POST-WEANING FRUCTOSE CONSUMPTION ON RECOGNITION MEMORY IN ADULT MALE WISTAR RAT OFFSPRING

SOFTIĆ ADNA (*Verlab Research Institute for Biomedical Engineering, Medical Devices and Artificial Intelligence, Sarajevo, Bosnia and Herzegovina*): ENHANCING SPORTS PERFORMANCE BY INSIGHTS FROM GENETIC TESTING OF YOUNG ATHLETES FROM BOSNIA AND HERZEGOVINA

VUČIĆ GORDANA (*Laboratory for Immunohistochemical and Molecular Diagnostics, Institute of Clinical Pathology, University Clinical Center, Banja Luka, Bosnia and Herzegovina*): FREQUENCY OF V600E MUTATION IN BRAF GENE AMONG PATIENTS WITH METASTATIC MELANOMA ON THE TERRITORY OF BOSNIA AND HERZEGOVINA

ŠNJEGOTA DRAGANA (*Faculty of Natural Sciences and Mathematics, University of Banja Luka, Banja Luka, Bosnia and Herzegovina*): THE INFLUENCE OF SEX ON THE GENETIC STRUCTURE OF THE JACKAL (*CANIS AUREUS*) OF BOSNIA AND HERZEGOVINA

BRKLAČIĆ JELENA (*Institute for Biological Research "Siniša Stanković" - National Institute of Republic of Serbia, University of Belgrade, Belgrade, Republic of Serbia*): DIETARY SUPPLEMENTATION WITH LIOPHILISED STRAWBERRY IMPROVES INSULIN SENSITIVITY AND REDOX STATUS IN MOUSE MODEL OF DIET INDUCED OBESITY

KULIĆ JOVAN (*Faculty of Medicine Foča, University of East Sarajevo, Foča, Republic of Srpska, Bosnia and Herzegovina*): THE ROLE OF ANGIOTENSIN I CONVERTING ENZYME INSERTION/DELETION POLYMORPHISM ON COVID-19 DISEASE SUSCEPTIBILITY

KRISTEL KLAASSEN (*Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Republic of Serbia*): GENETIC LANDSCAPE OF PHENYLKETONURIA IN SERBIA

VIRIJEVIC MARIJANA (*Clinic of Hematology University Clinical Center of Serbia, Faculty of Medicine University of Belgrade, Belgrade, Republic of Serbia*): NEW TERT VARIANT IN A FAMILY WITH APLASTIC ANEMIA

CIMESA MLADEN (*International Burch University, Department of Genetics and Bioengineering, Sarajevo, Bosnia and Herzegovina*): MICRORNA SIGNATURES IN ALZHEIMER'S DISEASE: A REVIEW OF DIAGNOSTIC POTENTIAL

ŠUŠKALO NEVENA (*University Clinical Centre of the Republic of Srpska, Banja Luka, Bosnia and Herzegovina*): CASE REPORT OF INHERITED TRANSLOCATION T(12;13)(Q24.33;Q21.2)

MARJANOVIC IRENA (*Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Republic of Serbia*): NEW GATA3 VARIANT IN A PATIENT WITH BARAKAT SYNDROME

GABELJIĆ NUSRETA (*International Burch University, Sarajevo, Bosnia and Herzegovina*): ADVANCING ALZHEIMER'S DISEASE MANAGEMENT THROUGH PERSONALIZED MEDICINE: INTEGRATING GENETIC, NEUROINFLAMMATORY, AND BIOMARKER INSIGHTS

KONJHODŽIĆ RIJAD (*Alea Genetic Center, Sarajevo, Bosnia and Herzegovina*): OPTIMIZING CUSTOM-DESIGNED PRIMERS FOR COMPLETE MITOCHONDRIAL GENOME SEQUENCING WITH ILLUMINA® NEXTERA® XT SYSTEM AND CONFIRMATORY SANGER SEQUENCING

MASLIĆ SRETENKA (*University Clinical Centre of the Republic of Srpska, Department of Medical Genetics, Banja Luka, Bosnia and Herzegovina*): CASE REPORT: PRENATAL DETECTION OF PSEUDOISODICENTRIC CHROMOSOME 18Q

ZEKAVICA MAJA (*Department of Laboratory Diagnostics, University Hospital Medical Center "Zvezdara", Belgrade, Republic of Serbia*): TUMOR NECROSIS FACTOR ALPHA GENE POLYMORPHISMS -238G>A AND -308G>A AS GENETIC MARKERS FOR THE DEVELOPMENT OF ALCOHOL RELATED LIVER CIRRHOSIS

EFFECTS OF PRENATAL DEXAMETHASONE TREATMENT AND MODERATE POST-WEANING FRUCTOSE CONSUMPTION ON RECOGNITION MEMORY IN ADULT MALE WISTAR RAT OFFSPRING

Ignjatović Đurđica, Nestorović Nataša, Tomić Mirko, Ristić Nataša, Veličković Nataša, Perović Milka, Tovilović-Kovačević Gordana, Manojlović Milica

Institute for Biological Research "Siniša Stanković" - National Institute of Republic of Serbia, University of Belgrade, Belgrade, Republic of Serbia

During prenatal development, glucocorticoids control fetal growth and maturation of fetal tissues. Synthetic glucocorticoids are frequently administered to pregnant women at risk for preterm delivery. Despite their beneficial effects on lung maturation and fetal survival, their impact on the developing brain is less clear. Among postnatal factors that might have a profound effect on both the cognitive capacity and behavior of the offspring, high fructose consumption is particularly concerning in the young population. The present study aimed to investigate the effects of prenatal dexamethasone exposure additionally challenged with postnatal fructose overconsumption on anxiety and recognition memory performance in male Wistar rat offspring. Pregnant female rats were treated with three doses of dexamethasone (0.5 mg/kg/b.m.) during late gestation (16th-18th gestational day), corresponding to clinical human exposure. Male offspring were supplemented with a moderate dose of fructose, similar to those found in sugar-sweetened beverages (10% solution), from weaning till adulthood. Recognition memory and anxiety-like behavior were assessed using a novel object recognition test, and elevated plus maze, respectively. Hippocampal synaptic plasticity was estimated by the levels of GAP-43, synaptophysin, postsynaptic density protein 95 (PSD-95), and its activating phosphorylation (pPSD-95-Ser295). Prenatal dexamethasone treatment induced an anxiolytic-like effect, stimulation of exploratory behavior, and the improvement of recognition memory associated with an increase in GAP-43 protein level in the hippocampus. Fructose overconsumption after weaning did not modify the effects of prenatal glucocorticoid exposure in the applied experimental model, suggesting that fetal programming had a prevailing influence. According to our results, prenatal dexamethasone treatment may induce changes in reactions to novel situations in male Wistar rats which might represent advantageous fetal developmental adaptation to a new environment, while increased exploratory behavior, reduced anxiety, and improved ability to recognize novel objects could improve survival in an adverse postnatal environment.

Keywords: prenatal, dexamethasone, fructose, novel object recognition, hippocampus, synaptic plasticity, programming

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