

SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION

**PRECLINICAL TESTING OF ACTIVE SUBSTANCES AND CANCER
RESEARCH**

**WITH INTERNATIONAL SYMPOSIUM ON
ANTI-CANCER AGENTS, CARDIOTOXICITY AND NEUROTOXICITY**

Organized by

CENTRE FOR PRE-CLINICAL TESTING OF ACTIVE SUBSTANCES – CPCTAS
FACULTY OF SCIENCE UNIVERSITY OF KRAGUJEVAC
FACULTY OF MEDICINE UNIVERSITY OF KRAGUJEVAC
SERBIAN PHYSIOLOGICAL SOCIETY

Under the auspice of

EU 7th Framework Program (FP)



CME accredited by the Health Council of Serbia

FINAL PROGRAM

ABSTRACT BOOK

<http://cpctas.pmf.kg.ac.rs/conference>

<http://www.physiology.org.rs/eng/htm/konf2011/program.pdf>

MARCH 16-18, 2011, KRAGUJEVAC, SERBIA

ABSTRACT BOOK

TABLE OF CONTENTS

HOW MOUSE MODELS CAN UNVEIL A NEW SIGNALING PATHWAY FOR COLORECTAL TUMORIGENESIS: THE EXAMPLE OF NOTCH Robine S	7
PRECLINICAL TESTING IN ANIMAL SYSTEM/ORGAN MODELS (METABOLISM, CNS, GASTROINTESTINAL, CARDIOVASCULAR, RESPIRATORY, IMMUNE SYSTEM, ENDOCRINE) Kouvelas D	8
ANTIMICROBIAL ACTIVITY OF ETHYL ESTERS OF (S,S)-ETHYLENEDIAMINE--N,N'-DI-2-PROPAONIC AND (S,S)-ETHYLENEDIAMINE-N,N'-DI-2-(3-METHYL)--BUTANOIC ACIDS AND CORRESPONDING PLATINUM(IV) COMPLEXES Stanković M, Radić G, Glodović V, Radojević I, Stefanović O, Čomić Lj, Trifunović S.....	9
IN VITRO ANTIMICROBIAL ACTIVITY OF NOVEL PLATINUM(IV) AND PALLADIUM(II) COMPLEXES WITH 1,2-DIPHENYL-ETHYLENEDIAMINE-N,N'-DI-3--PROPANOIC ACID Radojević I, Stefanović O, Radić G, Glodović V, Čomić Lj, Trifunović S	10
IN VITRO AND IN VIVO ANTITUMOR ACTIVITY OF SELECTED GOLD (III) COMPLEXES ON 4T1 MOUSE BREAST CANCER CELL LINE Volarević V, Milovanović M, Djeković A, Petrović B, Arsenijević N, Bugarčić ZD.....	11
THE ANTIPROLIFERATIVE EFFECTS OF CISPLATIN AND OF BUTYL AND PENTYL ESTERS OF (S,S)- ETHYLENEDIAMINE-N,N'-DI-2-PROPANOIC AND CORRESPONDING PLATINUM(IV) COMPLEXES ON HUMAN COLON AND BREAST CANCER CELL LINES Đačić D, Cvetković D, Glodović V, Radić G, Trifunović S, Marković S.....	12
EVALUATION OF ANTIPROLIFERATIVE ACTIVITY OF NEW PALLADIUM COMPLEXES AND MECHANISM OF CELL DEATH ON HCT-116 AND MDA-MB-231 CELL LINES Žižić JB, Čurčić MG, Obradović AD, Mrkalić E, Matović Z, Čendić M, Djurdjević P, Živić D, Marković SD.....	13
STRUCTURE-ACTIVITY RELATIONSHIPS OF 3-SUBSTITUTED-5,5-DIPHENYHYDANTOIS AS POTENTIAL ANTIPROLIFERATIVE AND ANTIMICROBIAL AGENTS Obradović A, Trišović N, Božić B, Stefanović O, Marković S, Čomić Lj, Božić B, Ušćumlić G.....	14
ADVANCED DIAGNOSTIC METHODS FOR HUMAN BRUCELOSIS Taleski V, Kungulovski Dz.....	15
HYPERICIN AND PSEUDOHYPERICIN PRODUCTION IN ELICITED <i>Hypericum perforatum</i> L. CELL PROVIDES ANTIOXIDANT PROTECTION Gadzovska-Simić S, Tuševski O, Stefova M, Kungulovski Dz, Atanasova-Pančevska N.....	16
ANTIMICROBIAL AND ANTIOXIDATIVE POTENTIAL OF <i>GANODERMA LUCIDUM</i> CULTIVATION BROTH Simonić J, Kosanić M, Stajić M, Vukojević J, Ranković B.....	17
ANTIBACTERIAL ACTIVITY OF PLANT EXTRACTS AND THEIR SYNERGISTIC EFFECTS WITH ANTIBIOTICS Stefanović O, Radojević I, Čomić Lj.....	18
IN VITRO ANTIMICROBIAL ACTIVITY OF METHANOL EXTRACTS FROM FIVE DIFFERENT SPECIES OF LICHEN Radojević I, Stefanović O, Stamenković S, Mitrović T, Cvetković V, Čomić Lj.....	19
ANTIOXIDATIVE ACTIVITIES OF GOLDMOSS STONECROP (<i>SEDUM ACRE</i> L.) PLANT EXTRACTS Stanković M, Topuzović M, Solujić S, Vuković N, Ničiforović N, Mihailović V.....	20
PHENOLIC CONTENT IN VITRO ANTIPROLIFERATIVE AND APOPTOTIC ACTIVITY OF <i>TEUCRUM</i> SPECIES FROM SERBIAN FLORA ON HCT-116 CELL LINE Stanković M, Čurčić M, Đačić D, Topuzović M, Marković SD.....	21
ANTI-CANCER DRUGS AND HEART DISEASE: PATHOPHYSIOLOGY AND PREVENTION Singal PK	22
HOMOCYSTEINE-INDUCED CARDIOTOXICITY IN RAT: FOCUS ON HEART VARIABLES, CORONARY FLOW AND OXIDATIVE STRESS Djurić D, Živković V, Krstić D, Živković S, Djordjević D, Jakovljević V	23

THE ROLE OF GASOTRANSMITTER NO IN HOMOCYSTEINE- AND LINDANE -INDUCED NEUROTOXICITY Hrnčić D, Rašić – Marković A, Šušić V, Djurić D, Stanojlović O.....	24
ANTIOXIDATIVE EFFECT OF TOTAL OLIVE LEAF EXTRACT IN EXPERIMENTAL CEREBRAL ISHEMIA Radenović L.....	25
STUDY OF IN VITRO SENSITIVITY OF TUMOR CELLS OF THE CENTRAL NERVOUS SYSTEM TO CHEMOTHERAPEUTIC DRUGS AND NERVE GROWTH FACTOR Chernov AN, Kalunov VN, Talabaev MV, Grigoriev DG, Demidchik YE, Cherstvoy ED, Kulchitsky VA.....	26
STIMULATION OF INSULIN SECRETION IN TUMOR CELL LINES AND PANCREATIC ISLETS Bačová Z, Hafko R, Orečná M, Kohút P, Hapala I, Štrbák V.....	27
IONIC MECHANISMS OF IMPULSE CODING IN THE NOCICEPTIVE MEMBRANE. CREATION OF NON-OPIOID ANALGESIC “ANOCEPTIN” AND “COLD” INFRARED LASER “CAMERTONE” FOR PAIN RELIEF Krylov B.....	28
ANOCEPTIN – PRECLINICAL AND CLINICAL TESTS RESULTS Lopatina E.....	29
EFFECTS OF THIOACETAMIDE ON LIPID PEROXIDATION AND CATALASE ACTIVITY IN VARIOUS RAT BRAIN REGIONS Mladenović D, Radosavljević T, Rašić-Marković A, Hrnčić D, Krstić D, Čolović M, Petrović S, Stanojlović O.....	30
NATURAL ANTIOXIDANTS IN THE PREVENTION OF DOXORUBICIN TOXICITY – NEW INSIGHTS Dekanski D.....	31
THE ROLE OF ACTIN CYTOSKELETON IN THE INVASION AND METASTASIS FORMATION Schoumacher M, Louvard D, Vignjević D.....	32
ACTIN BUNDLE ORGANISATION IS DISPENSABLE FOR INTESTINAL MICROVILLI PROTRUSION BUT ESSENTIAL FOR APICAL ENZYMESANCHORING AND INTESTINAL PHYSIOLOGY Ubelmann F, Revenu C, Hurbain I, Delacour D, Louvard D, Robine S.....	33
THE ROLE OF FILOPODIA IN CANCER CELL INTERACTION WITH THE TUMOUR MICROENVIRONMENT DURING INVASIVE MIGRATION Geraldo S, Zaccarini F, Fetler L, Louvard D, Vignjević D.....	34
ROLE OF FASCIN PHOSPHORYLATION IN CANCER CELL MIGRATION Elkhatib N, Louvard D, Vignjević D.....	35
NATURAL PRODUCT KORBAZOL EXERTS CYTOTOXICITY AGAINST HUMAN COLON CARCINOMA CELL LINES Baskić D, Popović S, Zelen I, Djurdjević P, Milovanović M, Volarević V, Arsenijević N.....	36
NEW JATROPHANES FROM <i>Euphorbia dendroides</i> L.: REVERSAL OF DRUG RESISTANCE AND SYNERGISTIC INTERACTION WITH PACLITAXEL Pešić M, Aljančić I, Milosavljević S, Todorović N, Jadranin M, Milosavljević G, Povrenović D, Banković J, Marković I, Tanić N, Ruždijić S, Vajs V, Tešević V.....	37
TUMOR AND MICROENVIRONMENT: THE ROLE OF PRESSURE IN CANCER PROLIFERATION Montel F, Delarue M, Elgeti J, Vignjević D, Cappello G, Prost J, Joanny F.....	38
DISSOCIATION BETWEEN ACTIVATION AND EFFECTOR-BINDING UNDERLIES ARF6's FUNCTION IN ENDOCYTIC RECYCLING Montagnac G, Lemoyne de Forges H, Smythe E, Salamero J, Chavrier P.....	39
LOOKING FOR THERAPEUTIC TARGETS IN TRIPLE-NEGATIVE BREAST CANCER Dubois T.....	40
TNF- α MEDIATED SHEDDING OF CD45 AND CD30 FROM K-562 CELLS IS ASSOCIATED WITH RELEASE OF LACTATE DEHYDROGENASE Jurišić V, Srdić T.....	41

IN VITRO COMPARISON OF THE PHOTOTHERMAL ANTICANCER ACTIVITY OF GRAPHENE NANOPARTICLES AND CARBON NANOTUBES Arsikin K, Marković Z, Harhaji-Trajković Lj, Todorović-Marković B, Kepić D, Jovanović S, Pantović A, Dramićanin M, Trajković V.....	42
SENSITIZATION OF GLIOMA CELLS TO SIMAVASTATIN-INDUCED APOPTOSIS BY INHIBITION OF AMPK/AKT/mTOR-DEPENDENT AUTOPHAGY Janjetović K, Misirkić M, Vučićević Lj, Harhaji-Trajković Lj, Šumarac-Dumanović M, Mičić D, Trajković V.....	43
ANTITUMOR ACTIVITY OF SIDERITIS SCARDICA EXTRACTS AGAINST B-16 MOUSE MELANOMA CELLS Jeremić I, Tadić V, Stanojević Ž, Marković G, Arsić I, Bojović D, Bumbaširević V, Isaković A.....	44
ENVIRONMENTAL RISK ASSESSMENT IN PRECLINICAL TESTING OF ACTIVE SUBSTANCES Kouvelas D.....	45
ANTICANCER CHEMOTHERAPEUTICS – SPECIAL CONSIDERATIONS REGARDING ENVIRONMENTAL RISK ASSESSMENT Sardeli C.....	46
NEUROTOXICITY OF ANTICANCER AGENTS AND NEUROPROTECTIVE APPROACHES Papazisis G.....	47
EFFECTS OF ENDOTHELINS ON ISOLATED ISTHMIC SEGMENT OF HUMAN OVIDUCT Janković J, Janković S, Lukić G, Čanović D, Folić M.....	48
THE EFFECTS OF MYOTREXATE ON THE VIABILITY OF THE UTERINE MYOMA <i>in vitro</i> Kastratović T, Mitrović M, Nikolić I, Matović Z, Arsenijević S.....	49
DOSE-DEPENDENT EFFECTS OF POLYCYCLIC AROMATIC HYDROCARBONS ON THE MITOCHONDRIAL 18 kDa TRANSLOCATOR PROTEIN DENSITY (TSPO) IN STEROIDOGENIC ORGANS AND ANTIOXIDANT ENZYMES IN A RAT MODEL OF INDUCED CARCINOGENESIS Dimitrova-Shumkovska J, Veenman L, Gavish M.....	50
THE GENOTOXICITY OF HYDROXYAPATITE AND HYDROXYAPATITE WITH DICALCIUM SILICATE IN HUMAN PERIPHERAL LYMPHOCYTES Opačić-Galić V, Petrović V, Živković S, Jokanović V, Mitić-Čulafić D.....	51
ANTIGENOTOXIC/GENOTOXIC PROPERTIES OF PLANT MONOTERPENES Nikolić B, Mitić-Čulafić D, Vuković-Gačić B, Knežević-Vukčević J.....	52
SYNTHESIS, ANTITUMOR ACTIVITY AND QSAR STUDIES OF 4-AMINOMETHYLIDENE DERIVATIVES OF SOME PYRAZOL-5-ONES Marković V, Erić S, Stanojković T, Joksović M.....	53
ANTITUMORAL ACTIVITY OF PLATINUM (IV) COMPLEX WITH <i>O,O'</i> -DIETHYL ESTER OF (S,S)-ETHYLENEDIAMINE- <i>N,N'</i> -DI-2-(4-METHYL)-PENTANOIC ACID DIHYDROCHLORIDE Vujić J, Milovanović M, Volarević V, Arsenijević N, Trifunović S.....	54
<i>IN VITRO</i> ANTITUMORAL ACTIVITY OF PLATINUM(II) COMPLEXES WITH <i>O,O'</i> -DIALKYL ESTERS OF (S,S)-ETHYLENEDIAMINE- <i>N,N'</i> -DI-2-(4-METHYL)PENTANOIC ACID ON CLL CELLS Milovanović M, Volarević V, Vujić JM, Trifunović SR, Arsenijević N.....	55
ANTI-MELANOMA ACTION OF NOVEL Ru (II) COMPLEXES <i>IN VITRO</i> Jovanović M, Savić A, Dulović M, Misirlić-Denčić S, Sabo T, Grgurić-Šipka S, Marković I.....	56
ANTITUMOR EFFECT OF NOVEL POLYMERIC COPPER(II) COMPLEXES WITH PYRAZOLONE-TYPE LIGANDS <i>IN VITRO</i> Isaković A, Leovac M, Marković I, Misirlić-Denčić S.....	57
¹ H NMR STUDY OF THE REACTIONS OF A METHIONINE- AND HISTIDINE-CONTAINING PEPTIDES WITH DIFFERENT ANTITUMOR ACTIVE PLATINUM(II) COMPLEXES Drašković N, Ašanin D, Živković M, Rajković S.....	58
<i>IN VITRO</i> ASSESSMENT OF THE ANTIMICROBIAL POTENTIAL OF ESSENTIAL OIL MIXTURE AGAINST SELECTED TYPES OF MICROORGANISMS Kungulovski D, Atanasova-Pancevska N, Kungulovski I.....	59

PHENYLPROPANOID PRODUCTION IN <i>Hypericum perforatum</i> L. CELL CO-CULTIVATION WITH <i>Agrobacterium rhizogenes</i> A4 Gadzovska-Simić S, Tuševski O, Kungulovski Dz, Atanasova-Pancevska N, Stefova M	60
LICHENS AS POSSIBLE ANTIMICROBIAL AGENTS Kosanić M, Ranković B	61
FREE-RADICAL SCAVENGING CAPACITY AND TOTAL PHENOLIC CONTENT OF FRAGRANT YELLOW ONION (<i>ALLIUM FLAVUM</i> L.) Stanković M, Ćurčić M, Đačić D, Žižić J, Topuzović M, Marković S	62
ANTIOXIDANT, ANTIPROLIFERATIVE AND APOPTOTIC ACTIVITY OF DIFFERENT EXTRACTS OF LEAVES AND SEED CONES FROM EUROPEAN YEW (<i>Taxus baccata</i> L.) Ćurčić M, Stanković M, Đačić D, Topuzović M, Marković S	63
IN VITRO ANTIPROLIFERATIVE ACTIVITY OF FIVE LICHENS SPECIES ON HCT-116 HUMAN COLON CELL LINE Đačić D, Cvetković V, Stanković M, Ćurčić M, Mitrović T, Stamenković S, Marković S	64
CYTOTOXIC ACTIVITIES OF <i>UMBILICARIA CRUSTULOSA</i> , <i>PARMELIOPSIS AMBIGUA</i> , <i>UMBILICARIA POLYPHYLLA</i> , <i>LECANORA MURALIS</i> AND <i>PARMELIA SAXATIS</i> METHANOL EXTRACTS ON HUMAN COLON CANCER CELL LINE Đačić D, Kosanić M, Ćurčić M, Ranković B, Marković S	65
EVALUATION OF REDOX STATUS OF HCT-116 CELL LINE TREATED WITH VARIOUS LICHEN AND PLANT EXTRACTS Žižić J, Ćurčić M, Đačić D, Obradović A, Stanković M, Mitrović T, Kosanić M, Ranković B, Marković SD	66
IN VITRO ANTIBACTERIAL ACTIVITIES OF SOME <i>LAMIACEAE</i> ESSENTIAL OILS AGAINST HUMAN PATHOGENS Stanković N, Čomić Lj, Miladinović D, Mihajlov-Krsteš T, Mladenović M	67
IN VIVO IMAGING OF CELL MIGRATION DURING INTESTINAL HOMEOSTASIS Simon A, Louvard D, Vignjević D	68
THE ROLE OF CARCINOMA-ASSOCIATED FIBROBLASTS IN THE INITIATION OF COLON CANCER CELL INVASION Glentis A, Schoumacher M, Geraldo S, Louvard D, Vignjević D	69
THE ROLE CARCINOMA-ASSOCIATED FIBROBLASTS IN DIRECTIONAL INVASION OF CANCER CELL Zaccarini F, Geraldo S, Louvard D, Vignjević D	70
DESIGNING NEW TOOLS TO STUDY THE DYNAMICS OF CLATHRIN AND MICROTUBULES Kungulovski I, Montagnac G	71
THE EFFECTS OF TUMOR-ASSOCIATED FIBROBLASTS ON MOTILITY OF COLLORECTAL CANCER CELLS Matić M, Schoumacher M, Vignjević D	72
NATURAL PRODUCT KORBAZOL INDUCES APOPTOTIC CELL DEATH IN B-CLL CELLS THROUGH ROS-MEDIATED MECHANISMS Popović S, Baskić D, Djurdjević P, Zelen I, Arsenijević N	73
CYTOTOXIC EFFECTS OF GLASS IONOMER CEMENTS ON HUMAN PULP DERIVED MESENCHYMAL STEM CELLS Kanjevac T, Milovanović M, Volarević V, Arsenijević N	74
IN VITRO AND IN VIVO ANTI-MELANOMA ACTION OF METFORMIN Pantović A, Janjetović K, Misirkić-Marjanović M, Vučičević Lj, Stevanović D, Harhaji-Trajković Lj, Sumarac-Dumanović M, Mičić D, Trajković V	75
PACLITAXEL IN THE TREATMENT OF MULTI-DRUG RESISTANT NON-SMALL CELL LUNG CANCER, COLON CANCER AND GLIOBLASTOMA CELL LINES Podolski-Renić A, Pešić M, Andelković T, Banković J, Milinković V, Marković I, Tanić N, Ruždijić S	76

ANTIPROLIFERATIVE EFFECT OF LIGNIN MODEL COMPOUND AGAINST HUMAN CELL LINES Radotić K, Andrijević Lj, Bogdanović J, Mutavdžić D, Bogdanović G	77
ALPHA-TOCOPHERYL SUCCINATE EFFECTS ON EHRlich ASCITES CARCINOMA CELLS Stankov K, Bajin-Katić K, Stanimirov B, Mihajlović D, Kovačević Z	78
ARYLPiPERAZINE DOPAMiNERGIC LiGANDS PREVENT NiTRIC OXiDE-INDUCED MiTOCHONDRIAL DAMAGE AND NEURONAL APOPTOSIS Tovilović G, Šoškić V, Zogović N, Misirkić M, Janjetović K, Vučićević Lj, Trajković V	79
BEHAVIORAL MANIFESTATIONS OF ACUTE THIOACETAMIDE-INDUCED HEPATIC ENCEPHALOPATHY IN RATS Mladenović D, Rašić-Marković A, Radosavljević T, Hrnčić D, Krstić D, Stanojlović O	80
OXIDATIVE STRESS IN HEMODIALYSIS PATIENTS: THE ROLE OF EXTRACELLULAR MYELOPEROXIDASE Kisić B, Mirić D, Stanić M, Dragojević I, Stolić A	81
THE EFFECT OF ERYTHROPOIETIN THERAPY ON NiTRIC OXiDE LEVEL IN PATIENTS WITH END STAGE RENAL DISEASE Dejanova B, Petrovska S, Dejanov P, Antevska V	82
POSSIBLE BLOOD VESSEL IMPAIRMENT MARKERS IN CHRONIC DISEASES Dejanova S	83
EVALUATION OF ESTRADIOL LEVEL AND SERUM LiPiDS IN WHiTE WiSTAR RATS OF FEMALE GENDER DURING THEIR GENERATIVE LiFE Petrovska S, Dejanova B, Antevska V	84
THE ANTiOXiDATIVE EFFECTS OF ESTRADIOL THERAPY ON ERYTHROCYTES i WOMEN WITH PREECLAMPSIA Djordjević N, Babić G, Marković S, Ognjanović B, Štajn A, Saičić Z	85
LiVER DAMAGE AND REGENERATIVE RESPONSE IN RATS TREATED WITH THIOACETAMIDE Puškaš N, Mladenović D, Radosavljević T, Rašić-Marković A, Hrnčić D, Macut Dj, Šušić V, Stanojlović O.....	86
INFORMATION SYSTEM FOR SUPPORT OF THE CPCTAS Cvjetković V, Djokić M, Marinković M	87

NATURAL PRODUCT KORBAZOL EXERTS CYTOTOXICITY AGAINST HUMAN COLON CARCINOMA CELL LINES

Baskić D¹, Popović S¹, Zelen I², Djurdjević P³, Milovanović M¹, Volarević V¹, Arsenijević N¹

¹*Department of Microbiology and Immunology, ²Department of Biochemistry, ³Department of Pathophysiology, Faculty of Medicine, University of Kragujevac, Kragujevac, Serbia*

Korbazol, a natural product registered as dietary supplement, has recently been described to selectively induce apoptosis in B-chronic lymphocytic leukemia (B-CLL) cells. The aim of this study was to assess the effect of Korbazol on colon carcinoma, a type of cancer that responds poorly to therapies, and represents a major problem in clinical oncology. Three human colon carcinoma cell lines, CaCo, HCT116 and SW480, and fibroblast primary culture were grown at 37°C under 5%CO₂ atmosphere in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10%FBS. Twenty four hours after seeding, cells were treated with increasing concentrations of Korbazol. After incubating for 24h, cultured cell viability was determined by assaying the reduction of MTT to formazan. A significant cytotoxicity of Korbazol was detected in all three colon carcinoma cell lines, wich occurred in dose-dependent manner. On the contrary, Korbazol had no such effect on fibroblasts. Moreover, Korbazol stimulated fibroblast proliferation and this action was also dose-dependent. The results of our research have shown that Korbazol may be effective not only in hematopoietic malignancies, but also in solid tumors, sparing normal tissue.