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

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

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# **ABSTRACT BOOK**

## TABLE OF CONTENTS

|  |    |
|--|----|
| HOW MOUSE MODELS CAN UNVEIL A NEW SIGNALING PATHWAY FOR COLORECTAL TUMORIGENESIS:<br>THE EXAMPLE OF NOTCH<br>Robine S .....  | 7  |
| PRECLINICAL TESTING IN ANIMAL SYSTEM/ORGAN MODELS (METABOLISM, CNS, GASTROINTESTINAL,<br>CARDIOVASCULAR, RESPIRATORY, IMMUNE SYSTEM, ENDOCRINE)<br>Kouvelas D .....  | 8  |
| ANTIMICROBIAL ACTIVITY OF ETHYL ESTERS OF (S,S)-ETHYLENEDIAMINE--N,N'-DI-2-PROPAONIC AND<br>(S,S)-ETHYLENEDIAMINE-N,N'-DI-2-(3-METHYL)--BUTANOIC ACIDS AND CORRESPONDING PLATINUM(IV)<br>COMPLEXES<br>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<br>1,2-DIPHENYL-ETHYLENEDIAMINE-N,N'-DI-3--PROPANOIC ACID<br>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<br>BREAST CANCER CELL LINE<br>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)-<br>ETHYLENEDIAMINE-N,N'-DI-2-PROPANOIC AND CORRESPONDING PLATINUM(IV) COMPLEXES ON HUMAN<br>COLON AND BREAST CANCER CELL LINES<br>Đačić D, Cvetković D, Glodović V, Radić G, Trifunović S, Marković S..... | 12 |
| EVALUATION OF ANTIPROLIFERATIVE ACTIVITY OF NEW PALLADIUM COMPLEXES AND MECHANISM OF<br>CELL DEATH ON HCT-116 AND MDA-MB-231 CELL LINES<br>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<br>ANTIPROLIFERATIVE AND ANTIMICROBIAL AGENTS<br>Obradović A, Trišović N, Božić B, Stefanović O, Marković S, Čomić Lj, Božić B, Ušćumlić G.....  | 14 |
| ADVANCED DIAGNOSTIC METHODS FOR HUMAN BRUCELLOSIS<br>Taleski V, Kungulovski Dz.....  | 15 |
| HYPERICIN AND PSEUDOHYPERICIN PRODUCTION IN ELICITED <i>Hypericum perforatum</i> L. CELL PROVIDES<br>ANTIOXIDANT PROTECTION<br>Gadzovska-Simić S, Tuševski O, Stefova M, Kungulovski Dz, Atanasova-Pančevska N.....  | 16 |
| ANTIMICROBIAL AND ANTIOXIDATIVE POTENTIAL OF <i>GANODERMA LUCIDUM</i> CULTIVATION BROTH<br>Simonić J, Kosanić M, Stajić M, Vukojević J, Ranković B.....  | 17 |
| ANTIBACTERIAL ACTIVITY OF PLANT EXTRACTS AND THEIR SYNERGISTIC EFFECTS WITH ANTIBIOTICS<br>Stefanović O, Radojević I, Čomić Lj.....  | 18 |
| IN VITRO ANTIMICROBIAL ACTIVITY OF METHANOL EXTRACTS FROM FIVE DIFFERENT SPECIES OF<br>LICHEN<br>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<br>Stanković M, Topuzović M, Solujić S, Vuković N, Nićiforović N, Mihailović V.....  | 20 |
| PHENOLIC CONTENT IN VITRO ANTIPROLIFERATIVE AND APOPTOTIC ACTIVITY OF <i>TEUCRIUM</i> SPECIES<br>FROM SERBIAN FLORA ON HCT-116 CELL LINE<br>Stanković M, Čurčić M, Đačić D, Topuzović M, Marković SD.....  | 21 |
| ANTI-CANCER DRUGS AND HEART DISEASE: PATHOPHYSIOLOGY AND PREVENTION<br>Singal PK .....   | 22 |
| HOMOCYSTEINE-INDUCED CARDIOTOXICITY IN RAT: FOCUS ON HEART VARIABLES, CORONARY FLOW<br>AND OXIDATIVE STRESS<br>Djurić D, Živković V, Krstić D, Živković S, Djordjević D, Jakovljević V.....  | 23 |

|   |    |
|---|----|
| THE ROLE OF GASOTRANSMITTER NO IN HOMOCYSTEINE- AND LINDANE -INDUCED NEUROTOXICITY<br>Hrnčić D, Rašić – Marković A, Šušić V, Djurić D, Stanojlović O.....   | 24 |
| ANTIOXIDATIVE EFFECT OF TOTAL OLIVE LEAF EXTRACT IN EXPERIMENTAL CEREBRAL ISHEMIA<br>Radenović L.....   | 25 |
| STUDY OF IN VITRO SENSITIVITY OF TUMOR CELLS OF THE CENTRAL NERVOUS SYSTEM TO<br>CHEMOTHERAPEUTIC DRUGS AND NERVE GROWTH FACTOR<br>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<br>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<br>ANALGESIC “ANOCEPTIN” AND “COLD” INFRARED LASER “CAMERTONE” FOR PAIN RELIEF<br>Krylov B.....  | 28 |
| ANOCEPTIN – PRECLINICAL AND CLINICAL TESTS RESULTS<br>Lopatina E.....   | 29 |
| EFFECTS OF THIOACETAMIDE ON LIPID PEROXIDATION AND CATALASE ACTIVITY IN VARIOUS RAT<br>BRAIN REGIONS<br>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<br>Dekanski D.....  | 31 |
| THE ROLE OF ACTIN CYTOSKELETON IN THE INVASION AND METASTASIS FORMATION<br>Schoumacher M, Louvard D, Vignjević D.....   | 32 |
| ACTIN BUNDLE ORGANISATION IS DISPENSABLE FOR INTESTINAL MICROVILLI PROTRUSION BUT<br>ESSENTIAL FOR APICAL ENZYME ANCHORING AND INTESTINAL PHYSIOLOGY<br>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<br>DURING INVASIVE MIGRATION<br>Geraldo S, Zaccarini F, Fétler L, Louvard D, Vignjević D.....   | 34 |
| ROLE OF FASCIN PHOSPHORYLATION IN CANCER CELL MIGRATION<br>Elkhatib N, Louvard D, Vignjević D.....  | 35 |
| NATURAL PRODUCT KORBAZOL EXERTS CYTOTOXICITY AGAINST HUMAN COLON CARCINOMA CELL<br>LINES<br>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<br>INTERACTION WITH PACLITAXEL<br>Pešić M, Aljančić I, Milosavljević S, Todorović N, Jadranin M, Milosavljević G, Povrenović D, Banković J, Marković I,<br>Tanić N, Ruždijić S, Vajs V, Tešević V..... | 37 |
| TUMOR AND MICROENVIRONMENT: THE ROLE OF PRESSURE IN CANCER PROLIFERATION<br>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<br>ENDOCYTIC RECYCLING<br>Montagnac G, Lemoyne de Forges H, Smythe E, Salamero J, Chavrier P.....   | 39 |
| LOOKING FOR THERAPEUTIC TARGETS IN TRIPLE-NEGATIVE BREAST CANCER<br>Dubois T.....   | 40 |
| TNF- $\alpha$ MEDIATED SHEDDING OF CD45 AND CD30 FROM K-562 CELLS IS ASSOCIATED WITH RELEASE OF<br>LACTATE DEHYDROGENASE<br>Jurišić V, Srdić T.....   | 41 |



|   |    |
|---|----|
| IN VITRO COMPARISON OF THE PHOTOTHERMAL ANTICANCER ACTIVITY OF GRAPHENE NANOPARTICLES AND CARBON NANOTUBES<br>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<br>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<br>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<br>Kouvelas D.....  | 45 |
| ANTICANCER CHEMOTHERAPEUTICS – SPECIAL CONSIDERATIONS REGARDING ENVIRONMENTAL RISK ASSESSMENT<br>Sardeli C.....   | 46 |
| NEUROTOXICITY OF ANTICANCER AGENTS AND NEUROPROTECTIVE APPROACHES<br>Papazisis G.....   | 47 |
| EFFECTS OF ENDOTHELINS ON ISOLATED ISTHMIC SEGMENT OF HUMAN OVIDUCT<br>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><br>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<br>Dimitrova-Shumkovska J, Veenman L, Gavish M..... | 50 |
| THE GENOTOXICITY OF HYDROXYAPATITE AND HYDROXYAPATITE WITH DICALCIUM SILICATE IN HUMAN PERIPHERAL LYMPHOCYTES<br>Opačić-Galić V, Petrović V, Živković S, Jokanović V, Mitić-Čulafić D.....  | 51 |
| ANTIGENOTOXIC/GENOTOXIC PROPERTIES OF PLANT MONOTERPENES<br>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<br>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<br>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<br>Milovanović M, Volarević V, Vujić JM, Trifunović SR, Arsenijević N.....            | 55 |
| ANTI-MELANOMA ACTION OF NOVEL Ru (II) COMPLEXES <i>IN VITRO</i><br>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><br>Isaković A, Leovac M, Marković I, Misirlić-Denčić S.....   | 57 |
| <sup>1</sup> H NMR STUDY OF THE REACTIONS OF A METHIONINE- AND HISTIDINE-CONTAINING PEPTIDES WITH DIFFERENT ANTITUMOR ACTIVE PLATINUM(II) COMPLEXES<br>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<br>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<br>Gadzovska-Simić S, Tuševski O, Kungulovski Dz, Atanasova-Pancevska N, Stefova M .....  | 60 |
| LICHENS AS POSSIBLE ANTIMICROBIAL AGENTS<br>Kosanić M, Ranković B .....  | 61 |
| FREE-RADICAL SCAVENGING CAPACITY AND TOTAL PHENOLIC CONTENT OF FRAGRANT YELLOW<br>ONION ( <i>ALLIUM FLAVUM</i> L.)<br>Stanković M, Čurčić M, Đačić D, Žižić J, Topuzović M, Marković S .....   | 62 |
| ANTIOXIDANT, ANTIPROLIFERATIVE AND APOPTOTIC ACTIVITY OF DIFFERENT EXTRACTS OF LEAVES<br>AND SEED CONES FROM EUROPEAN YEW ( <i>Taxus baccata</i> L.)<br>Čurčić M, Stanković M, Đačić D, Topuzović M, Marković S .....  | 63 |
| IN VITRO ANTIPROLIFERATIVE ACTIVITY OF FIVE LICHENS SPECIES ON HCT-116 HUMAN COLON CELL<br>LINE<br>Đačić D, Cvetković V, Stanković M, Čurčić M, Mitrović T, Stamenković S, Marković S .....  | 64 |
| CYTOTOXIC ACTIVITIES OF <i>UMBILICARIA CRUSTULOSA</i> , <i>PARMELIOPSIS AMBIGUA</i> , <i>UMBILICARIA<br/>POLYPHYLLA</i> , <i>LECANORA MURALIS</i> AND <i>PARMELIA SAXATIS</i> METHANOL EXTRACTS ON HUMAN COLON<br>CANCER CELL LINE<br>Đačić D, Kosanić M, Čurčić M, Ranković B, Marković S ..... | 65 |
| EVALUATION OF REDOX STATUS OF HCT-116 CELL LINE TREATED WITH VARIOUS LICHEN AND PLANT<br>EXTRACTS<br>Žižić J, Čurčić 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<br>PATHOGENS<br>Stanković N, Čomić Lj, Miladinović D, Mihajlov-Krstev T, Mladenović M .....  | 67 |
| IN VIVO IMAGING OF CELL MIGRATION DURING INTESTINAL HOMEOSTASIS<br>Simon A, Louvard D, Vignjević D .....   | 68 |
| THE ROLE OF CARCINOMA-ASSOCIATED FIBROBLASTS IN THE INITIATION OF COLON CANCER CELL<br>INVASION<br>Glentis A, Schoumacher M, Geraldo S, Louvard D, Vignjević D .....   | 69 |
| THE ROLE CARCINOMA-ASSOCIATED FIBROBLASTS IN DIRECTIONAL INVASION OF CANCER CELL<br>Zaccarini F, Geraldo S, Louvard D, Vignjević D .....   | 70 |
| DESIGNING NEW TOOLS TO STUDY THE DYNAMICS OF CLATHRIN AND MICROTUBULES<br>Kungulovski I, Montagnac G .....   | 71 |
| THE EFFECTS OF TUMOR-ASSOCIATED FIBROBLASTS ON MOTILITY OF COLLORECTAL CANCER CELLS<br>Matić M, Schoumacher M, Vignjević D .....   | 72 |
| NATURAL PRODUCT KORBAZOL INDUCES APOPTOTIC CELL DEATH IN B-CLL CELLS THROUGH ROS-<br>MEDIATED MECHANISMS<br>Popović S, Baskić D, Djurdjević P, Zelen I, Arsenijević N .....  | 73 |
| CYTOTOXIC EFFECTS OF GLASS IONOMER CEMENTS ON HUMAN PULP DERIVED MESENCHYMAL STEM<br>CELLS<br>Kanjevac T, Milovanović M, Volarević V, Arsenijević N .....  | 74 |
| IN VITRO AND IN VIVO ANTI-MELANOMA ACTION OF METFORMIN<br>Pantović A, Janjetović K, Misirkić-Marjanović M, Vučićević Lj, Stevanović D, Harhaji-Trajković Lj, Sumarac-Dumanović<br>M, Mičić D, Trajković V .....  | 75 |
| PACLITAXEL IN THE TREATMENT OF MULTI-DRUG RESISTANT NON-SMALL CELL LUNG CANCER, COLON<br>CANCER AND GLIOBLASTOMA CELL LINES<br>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<br>Radotić K, Andrijević Lj, Bogdanović J, Mutavdžić D, Bogdanović G .....  | 77 |
| ALPHA-TOCOPHERYL SUCCINATE EFFECTS ON EHRlich ASCITES CARCINOMA CELLS<br>Stankov K, Bajin-Katić K, Stanimirov B, Mihajlović D, Kovačević Z .....   | 78 |
| ARYLPIPERAZINE DOPAMINERGIC LIGANDS PREVENT NITRIC OXIDE-INDUCED MITOCHONDRIAL<br>DAMAGE AND NEURONAL APOPTOSIS<br>Tovilović G, Šoškić V, Zogović N, Misirkić M, Janjetović K, Vučićević Lj, Trajković V ..... | 79 |
| BEHAVIORAL MANIFESTATIONS OF ACUTE THIOACETAMIDE-INDUCED HEPATIC ENCEPHALOPATHY IN<br>RATS<br>Mladenović D, Rašić-Marković A, Radosavljević T, Hrnčić D, Krstić D, Stanojlović O .....                         | 80 |
| OXIDATIVE STRESS IN HEMODIALYSIS PATIENTS: THE ROLE OF EXTRACELLULAR MYELOPEROXIDASE<br>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<br>RENAL DISEASE<br>Dejanova B, Petrovska S, Dejanov P, Antevska V .....   | 82 |
| POSSIBLE BLOOD VESSEL IMPAIRMENT MARKERS IN CHRONIC DISEASES<br>Dejanova S .....   | 83 |
| EVALUATION OF ESTRADIOL LEVEL AND SERUM LIPIDS IN WHITE WISTAR RATS OF FEMALE GENDER<br>DURING THEIR GENERATIVE LIFE<br>Petrovska S, Dejanova B, Antevska V .....  | 84 |
| THE ANTIOXIDATIVE EFFECTS OF ESTRADIOL THERAPY ON ERYTHROCYTES I WOMEN WITH<br>PREECLAMPSIA<br>Djordjević N, Babić G, Marković S, Ognjanović B, Štajn A, Saičić Z .....  | 85 |
| LIVER DAMAGE AND REGENERATIVE RESPONSE IN RATS TREATED WITH THIOACETAMIDE<br>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<br>Cvjetković V, Djokić M, Marinković M .....   | 87 |

## IN VITRO AND IN VIVO ANTITUMOR ACTIVITY OF SELECTED GOLD (III) COMPLEXES ON 4T1 MOUSE BREAST CANCER CELL LINE

Volarević V<sup>1</sup>, Milovanović M<sup>1</sup>, Djeković A<sup>2</sup>, Petrović B<sup>2</sup>, Arsenijević N<sup>1</sup>, Bugarčić ZD<sup>2</sup>

<sup>1</sup>Department of Microbiology and Immunology, Centre for Molecular Medicine, Faculty of Medicine, University of Kragujevac; <sup>2</sup>Department of Chemistry, Faculty of Science, University of Kragujevac, Kragujevac, Serbia

Purpose: Evaluation of the cytotoxic activity of newly synthesized gold(III) complexes  $[\text{AuCl}_2(\text{en})]^+$ ,  $[\text{AuCl}_2(\text{SMC})]^+$ ,  $[\text{AuCl}_2(\text{DMSO})_2]^+$  (en: ethylenediamine, SMC: S-methyl-L-cysteine and DMSO : for dimethylsulfoxide) in 4T1 mouse breast cancer cell line *in vitro* and *in vivo* and to compare their antitumor characteristics with cisplatin complex  $[\text{PtCl}_2(\text{NH}_3)_2]$ . Methods: The *in vitro*, effects of the tested complexes on 4T1 cell viability were determined using MTT colorimetric technique. *In vivo*, progression of mouse breast tumor growth in BALB/c mice was measured by using external caliper. Results: Among the tested gold(III) complexes,  $[\text{AuCl}_2(\text{en})]^+$  showed best cytotoxic effects *in vitro*. The cytotoxic effects of  $[\text{AuCl}_2(\text{en})]^+$  and  $[\text{PtCl}_2(\text{NH}_3)_2]$  were similar at all concentrations. The data from the *in vivo* experiment showed that among the tested gold(III) complexes only  $[\text{AuCl}_2(\text{en})]^+$  can prevent the primary breast tumor growth.  $[\text{AuCl}_2(\text{en})]^+$  was tolerated well and much better than  $[\text{AuCl}_2(\text{DMSO})_2]^+$ ,  $[\text{AuCl}_2(\text{SMC})]^+$  and  $[\text{PtCl}_2(\text{NH}_3)_2]$  complex which was confirmed by weight gain in mice that received  $[\text{AuCl}_2(\text{en})]^+$ . In addition, mice that received  $[\text{AuCl}_2(\text{en})]^+$  showed better survival time in comparison with mice that received  $[\text{PtCl}_2(\text{NH}_3)_2]$  complex. Conclusion:  $[\text{AuCl}_2(\text{en})]^+$  complex seems to be good candidate for future pharmacological evaluation in breast cancer research.