



Faculty of Medical Sciences

University Goce Delcev – Stip, Macedonia

INTERNATIONAL SYMPOSIUM AT FACULTY OF MEDICAL SCIENCES

**“Current achievements and future perspectives in
medical and biomedical research”**

BOOK OF ABSTRACTS

November 24, 2015 – Stip

Contents

| | |
|---|----|
| ORAL PRESENTATIONS | 10 |
| Step forward of Macedonian Agency for medicines and medical devices | |
| Establishment and strategic plan for development..... | 11 |
| Adherence to Therapy: A Modern Pharmacotherapeutic Approach..... | 12 |
| Use of disinfectants and antiseptics in selected health institutions in Republic of Macedonia | 14 |
| Code of Ethics for Pharmacists – Pharmaceutical Chamber of Macedonia..... | 15 |
| 4-Hydroxynonenal – major bioactive marker of lipid peroxidation | 16 |
| Nicotinamide adenine dinucleotide biosynthesis and consumption in dysfunctional white adipocytes..... | 17 |
| New Insights into the Chemistry and Functions of Coenzyme Q..... | 18 |
| Genetically modified systems to study muscular dystrophies | 19 |
| Counteracting microbial biofilm formation onto dental materials..... | 20 |
| The endless potential of the umbilical cord blood for investigation, research and treatment..... | 21 |
| The cytokinesis-blocked micronucleus assay: Good choice for detection and evaluation of genotoxicity in human cells | 23 |
| Multiple predictive model for clinical and subclinical depression in adolescence | 24 |
| Molecular Imaging and therapy with radionuclides of prostate cancer | 25 |
| Where Nanotechnology and Nanomedicine meet – Applications and Potential Risks | 27 |
| The role of molecular cocrystals in drug development..... | 29 |
| Drug development based on radiolabeled antibodies..... | 30 |
| POSTER PRESENTATIONS | 31 |
| Correlation between dynamic balance and gait parameters in patients with ischemic stroke in the chronic period..... | 32 |
| Effect of kinesitherapy on physical activity in patient with Guillain-Barré syndrome..... | 33 |
| Case Report : Oligoasthenoteratozoospermia, treatment with acupuncture | 34 |
| Treatment of cervical spondylosis with acupuncture..... | 36 |
| Effect of kinesitherapy on static and dynamic balance in patient after vertebro-basilar system stroke | 37 |
| Malignant pleural effusions in lung cancer: the condition during the disease | 38 |
| Systemic fungal infections in hematological malignancies | 40 |
| Morbidity and mortality of malignant neoplasms in Macedonia | 41 |
| Cognitive behavioral program in treating insomnia among elderly patients | 43 |
| Regulations and legal aspects in management of medical waste | 44 |
| Control of the psychiatric disorders in the Republic of Macedonia..... | 46 |
| Monitoring of the renal function in Indometacin treated patients with rheumatoid arthritis..... | 47 |
| Incidence of breast cancer in Macedonia | 48 |
| HPV virus as a cause of cancer of the cervix in R.Macedonia | 49 |
| Analysis of the Pap test results by age groups in the area of Kriva Palanka | 50 |
| Giant rhinophyma treated by excision and full thickness skin grafting..... | 52 |
| Incidence of patients with chronic renal failure in Skopje..... | 53 |
| Calculation of effective dose to family members of patients with thyroid diseases | 54 |
| Contemporary Microbiological Diagnostic Tests for Rapid Identification and Detection of Resistance of Mycobacterium tuberculosis..... | 56 |
| Analysis of clinical features and complications in patients with β -thalassemia in the region of Strumica | 57 |
| Lymphoepithelioma: A case report..... | 59 |

| | |
|---|-----|
| F-ra Capitulum Radii L.Dex. – A Case report | 60 |
| Patient with intracranial hemorrhage and arteriovenous malformation detected with transcranial color duplex sonography – case report..... | 61 |
| Hereditary supracondylar spur of the humerus: Case report..... | 63 |
| Prosthetic rehabilitation in patient with advanced degree of functional disorders (case report) | 64 |
| Marginal Implants Bone Loss – a Case Report..... | 65 |
| Ectodermal Dysplasia, a Case Report: Challenge for Prosthodontic Solution | 66 |
| Alveolar socket preservation and shaping using temporary | 68 |
| prosthetic construction – cases presentation | 68 |
| Porcelain veneers produced by refractory die method | 69 |
| Correlation of Two Different Local Hemostatic Modalities in Oral Surgery Patients with Oral Anticoagulants..... | 70 |
| Assessment of orthodontic treatment need among school children by using iotn (index of orthodontic treatment need) | 72 |
| Oral Hygiene Level Maintenance among Dental Medicine Students | 73 |
| Poor oral hygiene and show of caries in 12 year old children | 74 |
| Implant-prosthetic therapy failure in smoker and nonsmoker patients | 75 |
| Oral surgery treatment in the patients with combination syndrome | 76 |
| Iatrogenic mistakes, cause for a failure at surgical treatment of a chronic periapical processes | 77 |
| Evaluation of Different Preparation of Artificial Teeth and Acrylate Prosthetic Base..... | 78 |
| Analysis of the dimensional stability of elastomeric silicone impression materials..... | 79 |
| Use of Gypsum Into Working Everyday in Dental Technician | 81 |
| Mobile dental NOG types used in working dental models | 82 |
| Determining normal tissue toxicity of non-radioactively Lu/Y-labeled rituximab-conjugates in rat animal model..... | 83 |
| Genetically Engineered Mouse Models For Human Pancreatic Cancer: A Review Of The KC, KPC And iKRas*P53* Models | 84 |
| Mouse Models For Human Prostate Cancer: Xenograft Vs Genetically Engineered Mouse Model | 85 |
| HER2 Transgenic Mouse Models: A Way To HER2+ Breast Cancer Targeted Therapy | 86 |
| Types of scaffolds and their application in bone tissue engineering..... | 87 |
| Significance of preparation of tissue samples for electron microscopy for observation and diagnosis..... | 88 |
| Design and characterization of nanoparticles as platforms for delivery of curcumin..... | 90 |
| Freeze-drying approach to enhance antibody stability..... | 91 |
| An overview of phytosomes as a novel herbal drug delivery system | 92 |
| Determination of active pharmaceutical ingredient – chloropyramine in <i>dragées</i> | 94 |
| Compariton of volatile aroma compounds between cultivated and spontaneous flowering stems of <i>Sideritis scardica</i> Griseb. from R. Macedonia | 95 |
| Bioactive compounds of cold-pressed oil from the seeds of Goji Berry (<i>Lycium barbarum</i>) | 96 |
| Development and validation of HPLC method for determination of flavonoids in herbal preparations | 97 |
| Atomic emission spectrometry with inductively coupled plasma (ICP-AES) analysis of trace elements in <i>Camellia sinensis</i> teas | 98 |
| Determination of trace elements analyzed by atomic emission spectrometry with inductively coupled plasma (ICP-AES) in <i>Matricaria chamomilla</i> L. teas present on macedonian market.. | 99 |
| Human health risks from heavy metals via consumption of contaminated food | 100 |

| | |
|---|-----|
| Development of an ultrasonic method for effective extraction of capsaicin as a potent bioactive compound | 101 |
| Electrochemical analysis of the properties of benzene-1,2,4-triol | 102 |
| Comparison of the procedure for registration of medicines in the European Union and the Republic of Macedonia | 103 |
| Pharmacoeconomic evaluation of the antibiotic prophylaxis in orthopedic surgeries..... | 104 |
| Therapeutic approach in the treatment of benign prostatic hyperplasia..... | 105 |
| Oxidative stress, aging and antioxidants..... | 106 |
| Oxidative stress, oxidative DNA damage and prostate cancer | 108 |
| RNA interference (RNAi) mechanism as a basis for future successful treatment of chronic hepatitis B infection | 110 |
| Anti-cancer target therapy based on drugs conjugated to hyaluronic acid | 112 |
| Cancer-specific conjugated monoclonal antibodies for anticancer therapy..... | 113 |
| Accreditation of the Laboratory of Radiopharmacy – requested requirements or need of challenge | 115 |
| Quality control of PET radiopharmaceuticals, with reference to its specifics vs quality control of conventional pharmaceuticals | 117 |
| Production of [¹¹ C]Choline in The University Institute for PET – new perspective in diagnostics of prostate malignancy in R. of Macedonia | 118 |
| PET radiopharmaceuticals in the diagnosis of neurological diseases | 120 |
| Achievements and perspectives in formulation of stable immunoconjugate of the HER2-targeting trastuzumab – potential for rapid labelling with Gallium-68..... | 121 |

Development and validation of HPLC method for determination of flavonoids in herbal preparations

Tanja Janeva¹, Zorica Arsova – Sarafinovska^{1,2}

¹ University Goce Delcev – Stip, Faculty of Medical Sciences, Krste Misirkov 10-A, Stip, 2000, R. Macedonia

² Institute of Public Health of the Republic of Macedonia, 50 Divizija 6, 1000 Skopje, Republic of Macedonia

Telephone: (+389-78) 660 726; E-mail address: tanja.15549@student.ugd.edu.mk

Abstract

Introduction - Flavonoids are a large group of polyphenolic components possessing benzo- γ -pyronic structure and widely distributed in plants. The chemical nature and the biological activity of flavonoids depends on the structural class to which they belong, the degree of hydroxylation, the degree of polymerization, and the presence of other substituents and bonds. Today, there are large number of herbal preparations containing plant extracts rich in flavonoids used as OTC drugs, and therefore it is necessary to develop methods for controlling and monitoring their quality.

Aim - Development and validation of HPLC method for determination of rutin and quercetin in tablets containing 1200 mg dry leaf of *Ginkgo biloba*.

Method - Simple HPLC method with gradient elution (acetonitrile: 0.3% phosphoric acid), flow rate of 1,2 mL/min, column temperature of 25°C and UV detection (rutin at 255 nm, quercetin at 375 nm) of rutin and quercetin in herbal preparation containing dry leaf of *Ginkgo biloba*.

Results - The method showed high specificity, excellent linearity for the concentration in the range of 0.01-0.08 mg/ml. Correlation coefficient (R^2) for rutin is 1, while for the quercetin is 0.999. Precision, which was determined by six repetitions of the analysis of 0.05 mg/mL standard solution, showed a relative standard deviation of less than 1% for both rutin and quercetin.

Conclusion - The method is simple, easy to perform and specific for determination of rutin and quercetin in herbal preparations containing dry leaf of *Ginkgo biloba*, and additionally, can be used for routine analysis.

Keywords

Ginkgo biloba, HPLC, quercetin, rutin, validation.