



GOCE DELCEV UNIVERSITY - STIP
FACULTY OF MEDICAL SCIENCES



International symposium at
Faculty of medical sciences

CURRENT ACHIEVEMENTS AND FUTURE PERSPECTIVES IN MEDICAL AND BIOMEDICAL RESEARCH



STIP, 24 NOVEMBER 2015
MULTIMEDIA CENTRE – UGD, STIP

INTERNATIONAL SYMPOSIUM AT FACULTY OF MEDICAL SCIENCES
“Current achievements and future perspectives in medical and biomedical research”

SCIENTIFIC PROGRAM

November 24, 2015 - Stip

8:30 – 9:00

Registration

9:00 – 9:15

Rector / Vice rector/Dean

SESSION 1

Chair: Prof. Emilija Janevik Ivanovska

Co-chair: Ass. Prof. Elena Drakalska

9:15 – 9:35

Ass. Marija Darkovska Serafimovska
Macedonian agency of drug and medical
devices, Director
University Goce Delcev Stip
Republic of Macedonia

Step forward of Macedonian agency for medicines and medical devices, establishment and strategic plan for development

9:35 – 9:55

Assoc. Prof. Zorica Arsovska Sarafinovska
Institute of Human Health, Skopje,
University Goce Delcev Stip
Republic of Macedonia

Adherence to Therapy: A Modern Pharmacotherapeutic Approach

9:55 – 10:15

Prof. Biljana Gjorgjeska
University Goce Delcev Stip
Republic of Macedonia

Use of disinfectants and antiseptics in the health institution in Republic of Macedonia

10:15 – 10:35

Assoc. Prof. Bistra Angelovska
University Goce Delcev Stip
President of Pharmaceutical Chamber
of Macedonia. Republic of Macedonia

Code of Ethics for Pharmacists – Pharmaceutical Chamber of Macedonia

10:40 – 11:10

Coffee break

Poster presentation

SESSION 2

Chair: Prof. Milka Zdravkovska

Co-chair: Ass. Prof. Darinka Gjorgieva Ackova

10:10 – 11:50

Prof. Neven Zarkovic
Rudjer Boskovic Institute, Croatia

4-Hydroxynonenal – major bioactive marker of lipid peroxidation

11:50 – 12:10

Assoc. Prof. Tatjana Ruskovska University
Goce Delcev Stip Republic of Macedonia

Nicotinamide adenine dinucleotide biosynthesis and consumption in dysfunctional white adipocytes

12:10 – 12:30

Prof. Rubin Gulaboski University
Goce Delcev Stip Republic of Macedonia

New insights into the chemistry and functions of Coenzyme Q

12:30 – 12:50

Assoc. Prof. Darko Bosnakovski
University Goce Delcev Stip
Republic of Macedonia

Genetically modified systems to study muscular dystrophies

12:50 – 14:00

Coffee break

Poster presentation

SESSION 3

Chair: Assoc. Prof. Cena Dimova

Co-chair: Ass. Prof. Nevenka Velickova

14:00 – 14:40	Prof. Lia Rimondini Università del Piemonte Orientale, Novara, Italy	<i>Counteracting microbial biofilm formation onto dental materials</i>
14:40 – 15:00	Prof. Elizabeta Zisovska Agency for Quality and Accreditation of Healthcare Institutions, Skopje, Republic of Macedonia	<i>The endless potential of the umbilical cord blood for investigation, research and treatment</i>
15:00 – 15:20	Ass. Misko Milev University Goce Delcev Stip Republic of Macedonia	<i>The cytokinesis-blocked micronucleus assay: Good choice for detection and evaluation of genotoxicity in human cells</i>
15:20 – 15:40	Prof. Lence Miloseva University Goce Delcev Stip Republic of Macedonia	<i>Multiple predictive model for clinical and subclinical depression in adolescence</i>
15:40 – 16:00	Coffee break	Poster presentation

SESSION 4

Chair: Assoc. Prof. Darko Bosnakovski

Co-chair: Ass. Prof. Katarina Smilkov

16:00 – 16:40	Prof. Adriano Duatti University of Ferrara, Ferrara, Italy	<i>Molecular imaging and radionuclide therapy of prostate cancer</i>
16:40 – 17:00	Assoc. Prof. Vaso Taleski University Goce Delcev Stip Republic of Macedonia	<i>Where Nanotechnology and Nanomedicine meet – Applications and Potential Risks</i>
17:00 – 17:20	Dr. Aleksandar Cvetkovski University Goce Delcev Stip Republic of Macedonia	<i>The role of molecular cocrystals in drug development</i>
17:20 – 17:40	Prof. Emilija Janevik Ivanovska University Goce Delcev Stip Republic of Macedonia	<i>Drug development based on radiolabeled antibodies</i>
17:40 – 18:00	Closing remarks	

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INTERNATIONAL SYMPOSIUM AT FACULTY OF MEDICAL SCIENCES

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

November 24, 2015 – Stip

ORAL PRESENTATIONS

1. **Step forward of Macedonian Agency for medicines and medical devices. Establishment and strategic plan for development**
Author: Ass. Marija Darkovska-Serafimovska
2. **Adherence to Therapy: A Modern Pharmacotherapeutic Approach**
Author: Ass. Prof. Zorica Arsovska Sarafinovska
3. **Use of disinfectants and antiseptics in selected health institutions in Republic of Macedonia**
Author: Prof. Biljana Gjorgjeska
4. **Code of Ethics for Pharmacists – Pharmaceutical Chamber of Macedonia**
Author: Prof. Bistra Angelovska
5. **4-Hydroxynonenal – major bioactive marker of lipid peroxidation**
Author: Prof. Neven Zarkovic
6. **Nicotinamide adenine dinucleotide biosynthesis and consumption in dysfunctional white adipocytes**
Author: Prof. Tatjana Ruskovska
7. **New insights into the chemistry and functions of Coenzyme Q**
Author: Prof. Rubin Gulaboski
8. **Genetically modified systems to study muscular dystrophies**
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9. **Counteracting microbial biofilm formation onto dental materials**
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10. **The endless potential of the umbilical cord blood for investigation, research and treatment**
Author: Prof d-r Elizabeta Zisovska
11. **The cytokinesis-blocked micronucleus assay: Good choice for detection and evaluation of genotoxicity in human cells**
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12. **Multiple predictive model for clinical and subclinical depression in adolescence**
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Author: Prof. Emilija Janevik

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POSTER PRESENTATIONS

1. **Correlation between dynamic balance and gait parameters in patients with ischemic stroke in the chronic period**
Authors: Danche Vasileva, Daniela Lubenova, Marija Mihova, Ivan Maznev, Lence Nikolovska, Zhu Jihe;
2. **Effect of kinesitherapy on physical activity in patient with Guillain-Barré syndrome**
Authors: Antoaneta Dimitrova, Kristin Petrova Grigorova, Daniela Lubenova, Danche Vasileva, Milena Nikolova;
3. **Case Report : Oligoasthenoteratozoospermia, treatment with acupuncture**
Authors: Jihe Zhu, Blagica Arsovska, Danche Vasileva, Andrijana Sterjovska-Aleksovska, Kristina Kozovska;
4. **Treatment of cervical spondylosis with acupuncture**
Authors: Kristina Kozovska, Jihe Zhu, Blagica Arsovska, Andrijana Sterjovska-Aleksovska;
5. **Effect of kinesitherapy on static and dynamic balance in patient after vertebro-basilar system stroke**
Authors: Milena Nikolova, Antoaneta Dimitrova, Danche Vasileva, Daniela Lubenova, Kristin Petrova Grigorova;
6. **Malignant pleural effusions in lung cancer: the condition during the disease**
Authors: Marija Karakolevska-Ilova, Elena Simeonovska Joveva, Aleksandar Serafimov, Lidija Petrovska;
7. **Systemic fungal infections in hematological malignancies**
Authors: Petar Kuzmanovski, Velo Markoski;
8. **Morbidity and mortality of malignant neoplasms in Macedonia**
Authors: Viktorija Vukovikj, Velo Markoski;
9. **Cognitive behavioral program in treating insomnia among elderly patients**
Authors: Knejinja Richter, Lence Miloseva, Guenter Niklewski, Anja Piehl;
10. **Regulations and legal aspects in management of medical waste**
Authors: Biljana Shikoska, Cena Dimova, Gjorgi Schumanov;
11. **Control of the psychiatric disorders in the Republic of Macedonia**
Authors: Leonid Ramov, Velo Markoski;
12. **Monitoring of the renal function in Indometacin treated patients with rheumatoid arthritis**
Author: Drita Yzeiri Havziu;
13. **Incidence of breast cancer in Macedonia**
Authors: Dijana Stojanova, Velo Markoski;
14. **HPV virus as a cause of cancer of the cervix in R.Macedonia**
Authors: Stefanija Joveva, Velo Markoski, Vaso Taleski;
15. **Analysis of the Pap test results by age groups in the area of Kriva Palanka**
Authors: Robert Nikolovski, Kristina Denchovska, Goran Mladenovski, Velo Markovski;
16. **Giant rhinophyma treated by excision and full thickness skin grafting**
Author: Emilija Lozanovska Doneva;

- 17. Incidence of patients with chronic renal failure in Skopje**
Authors: Simona Kamceva, Velo Markoski;
- 18. Calculation of effective dose to family members of patients with thyroid diseases**
Authors: Marina Zdravevska Kochovska, Emilija Janjevik Ivanovska, Meri Angeleska, Sasho Nikolovski, Zlatko Filipovski;
- 19. Contemporary Microbiological Diagnostic Tests for Rapid Identification and Detection of Resistance of Mycobacterium tuberculosis**
Authors: Oliver Taleski, Vaso Taleski;
- 20. Analysis of clinical features and complications in patients with β -thalassemia in the region of Strumica**
Authors: Silvana Sinokapovska, Cena Dimova;
- 21. Lymphoepithelioma : A case report**
Author: Vase Stojcheska;
- 22. F-ra Capitullum Radii L.Dex. – A Case report**
Author: Svetlana Jovevska;
- 23. Patient with intracranial hemorrhage and arteriovenous malformation detected with transcranial color duplex sonography – case report**
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- 24. Hereditary supracondylar spur of the humerus: Case report**
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- 25. Prosthetic rehabilitation in patient with advanced degree of functional disorders (case report)**
Authors: Natasa Denkova, Katerina Zlatanovska, Ana Radeska-Panovska, Sanja Nashkova, Ivona Kovacevska;
- 26. Marginal Implants Bone Loss – a Case Report**
Authors: Kiro Papakoca, Ana Radeska-Panovska, Katerina Zlatanovska;
- 27. Ectodermal Dysplasia, a Case Report: Challenge for Prosthodontic Solution**
Authors: Emilija Bajraktarova Valjakova, Bajevska Jagoda, Vesna Korunoska Stevkovska, Biljana Kapushevskaja, Nikola Gigovski, Aneta Mijoska, Katerina Zlatanovska, Cvetanka Bajraktarova Mishevskaja;
- 28. Alveolar socket preservation and shaping using temporary prosthetic construction – case presentation**
Authors: Nikola K. Gigovski, Vesna Korunoska- Stevkoska, Emilija Bajraktarova, Aneta Mijoska, Ana Radeska-Panovska;
- 29. Porcelain veneers produced by refractory die method**
Authors: Katerina Zlatanovska, Julija Zarkova-Atanasova, Ana Radeska, Natasa Denkova, Kiro Papakoca;
- 30. Correlation of Two Different Local Hemostatic Modalities in Oral Surgery Patients with Oral Anticoagulants**
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- 31. Assessment of orthodontic treatment need among school children by using iotn (index of orthodontic treatment need)**
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- 32. Oral Hygiene Level Maintenance among Dental Medicine Students**
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- 35. Oral surgery treatment in the patients with combination syndrome**
Authors: Vesna Korunoska Stevkovska, Nikola Gigovski, Katerina Zlatanovska, Emilija Bajraktarova, Aneta Mijoska;
- 36. Iatrogenic mistakes, cause for a failure at surgical treatment of a chronic periapical processes**
Authors: Sarita Kadrova, Cena Dimova;
- 37. Evaluation of Different Preparation of Artificial Teeth and Acrylate Prosthetic Base**
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- 39. Use of gypsum into working everyday in dental technician**
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- 40. Mobile dental NOG-types used in working dental models**
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- 41. Determining normal tissue toxicity of non-radioactively Lu/Y-labeled rituximab-conjugates in rat animal model**
Author: Darinka Gjorgieva Ackova;
- 42. Genetically Engineered Mouse Models For Human Pancreatic Cancer: A Review Of The KC, KPC And iKRAs*P53* Models**
Authors: David Mwanza Wanjeh, Joel Munene Muchira, Aschalew Alemu Marie, Darko Bosnakovski;
- 43. Mouse Models For Human Prostate Cancer: Xenograft Vs Genetically Engineered Mouse Model**
Authors: Aschalew Alemu Marie, Joel Munene Muchira, David Mwanza Wanjeh, Darko Bosnakovski;
- 44. HER2 Transgenic Mouse Models: A Way To HER2+ Breast Cancer Targeted Therapy**
Authors: Joel Munene Muchira, David Mwanza Wanjeh, Aschalew Alemu Marie, Darko Bosnakovski;
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- 50. Determination of active pharmaceutical ingredient – chloropyramine in dragées**
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- 51. Comparison of volatile aroma compounds between cultivated and spontaneous flowering stems of Sideritis scardica Griseb. from R. Macedonia**
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- 52. Bioactive compounds of cold-pressed oil from the seeds of Gojy Berry (Lycium barbarum)**
Author: Sanja Kostadinovik Velickovska;
- 53. Development and validation of HPLC method for determination of flavonoids in herbal preparations**
Authors: Tanja Janeva, Zorica Arsova-Sarafinovska;
- 54. Atomic emission spectrometry with inductively coupled plasma (ICP-AES) analysis of trace elements in Camellia sinensis teas**
Authors: Dragica Doneva, Trajce Stafilov, Zorica Arsova-Sarafinovska, Katerina Starkoska, Maja Shishovska;

- 55. Determination of trace elements analyzed by atomic emission spectrometry with inductively coupled plasma (ICP-AES) in Matricaria chamomilla L. teas present on macedonian market**
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- 59. Comparison of the procedure for registration of medicines in the European Union and the Republic of Macedonia**
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- 60. Pharmaco-economic evaluation of the antibiotic prophylaxis in orthopedic surgeries**
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- 61. Therapeutic approach in the treatment of benign prostatic hyperplasia**
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- 62. Oxidative stress, aging and antioxidants**
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- 63. Oxidative stress, oxidative DNA damage and prostate cancer**
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- 66. Cancer specific conjugated monoclonal antibodies for anticancer therapy**
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- 67. Accreditation of the Laboratory of Radiopharmacy – requested requirements or need of challenge**
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- 68. Quality control of PET radiopharmaceuticals, with reference to its specifics vs quality control of conventional pharmaceuticals**
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- 69. Production of [11C] Choline in The University Institute for PET – new perspective in diagnostics of prostate malignancy in R. of Macedonia**
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- 70. PET radiopharmaceuticals in the diagnosis of neurological diseases**
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- 71. Achievements and perspectives in formulation of stable immunoconjugate of the HER2-targeting trastuzumab – potential for rapid labelling with Gallium-68**
Author: Marija Sterjova



Faculty of Medical Sciences

University Goce Delcev – Stip, Macedonia

INTERNATIONAL SYMPOSIUM AT FACULTY OF MEDICAL SCIENCES

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Genetically modified systems to study muscular dystrophies

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Abstract

We developed different approaches to utilize genetically modified cells and animal models to understand molecular mechanism of Facioscapulohumeral muscular dystrophy (FSHD).

Main obstacle with primary cell lines is to obtain sufficient number of tissue specific progenitors that will be able extensively to proliferate and maintain the phenotype to be used for relevant in vitro studies. As an alternative solution for obtaining appropriate cells are induced pluripotent stem (IPS) cells. IPS cells can be made from different somatic cells by cell reprogramming. Patient specific IPS cells retain the genotype of the patient, they are good models to study molecular mechanism of diseases and they are suitable for autologous cell transplantations. We generated IPS cells from myoblasts from FSHD patients using common reprogramming factors (Oct4, Sox2, KLF4 and c-Myc), incorporated in viral vectors. Mesenchymal stem cells were obtained by differentiation of IPS cells in 3D culture conditions in presence of cocktail of growth factors. Myogenic progenitors were obtained by overexpressing Myf5 in mesenchymal cell fraction. Generated cells revealed typical characteristics of myoblast and were able functionally to recover damaged mouse muscle. Furthermore, we were able to genetically correct affected locus in FSHD IPS cells by removing 4qA161 allele using zinc finger nucleases. Gene corrected cells did not express DUX4 and displayed normal myogenic properties compared to the affected ones.

To be able to study FSHD in vivo and test various therapy approaches we developed transgenic mouse model that has incorporated DUX4 gene on X chromosome. IDUX4 mouse expressed DUX4 in different tissue. Male pups have runt phenotype, with prominent skin, testis and retina pathological changes.

In this talk, advantages and methods for cell manipulations for generating in vitro and in vivo diseases models will be discussed.

Keywords

FSHD, IPS cells, animal models, myogenesis.