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

www.ugd.edu.mk
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

9:35 – 9:55  Assoc. Prof. Zorica Arsovska Sarafinovska
Institute of Public Health of the Republic of Macedonia, Skopje,
University Goce Delcev Stip
Republic of Macedonia

9:55 – 10:15 Prof. Biljana Gjorgjeska
University Goce Delcev Stip
Republic of Macedonia

10:15 – 10:35 Assoc. Prof. Bistra Angelovska
University Goce Delcev Stip
President of Pharmaceutical Chamber of Macedonia. Republic of Macedonia

10:40 – 11:10 Coffee break

Chair: Prof. Milka Zdravkovska
Co-chair: Ass. Prof. Darinka Gjorgieva Ackova

10:10 – 11:50 Prof. Neven Zarkovic
Rudjer Boskovic Institute, Croatia

11:50 – 12:10 Assoc. Prof. Tatjana Ruskovska
University Goce Delcev Stip Republic of Macedonia

12:10 – 12:30 Prof. Rubin Gulaboski
University Goce Delcev Stip Republic of Macedonia

12:30 – 12:50 Assoc. Prof. Darko Bosnakovski
University Goce Delcev Stip
Republic of Macedonia

12:50 – 14:00 Coffee break

Poster presentation

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

Adherence to Therapy: A Modern Pharmacotherapeutic Approach

Use of disinfectants and antiseptics in selected health institutions in Republic of Macedonia

Code of Ethics for Pharmacists – Pharmaceutical Chamber of Macedonia

4-Hydroxynonenal – major bioactive marker of lipid peroxidation

Nicotinamide adenine dinucleotide biosynthesis and consumption in dysfunctional white adipocytes

New insights into the chemistry and functions of Coenzyme Q

Genetically modified systems to study muscular dystrophies

Poster presentation
## SESSION 3

**Chair:** Assoc. Prof. Cena Dimova  
**Co-chair:** Ass. Prof. Nevenka Velickova  

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

## SESSION 4

**Chair:** Assoc. Prof. Darko Bosnakovski  
**Co-chair:** Ass. Prof. Katarina Smilkov  

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| 16:00 – 16:40    | **Prof. Adriano Duatti**  
University of Ferrara, Ferrara, Italy | Molecular imaging and radionuclide therapy of prostate cancer         |
| 16:40 – 17:00    | **Assoc. Prof. Vaso Taleski**  
University Goce Delcev Stip, Republic of Macedonia | Where Nanotechnology and Nanomedicine meet – Applications and Potential Risks |
| 17:00 – 17:20    | **Dr. Aleksandar Cvetkovski**  
University Goce Delcev Stip, Republic of Macedonia | The role of molecular cocrystals in drug development                  |
| 17:20 – 17:40    | **Prof. Emilija Janevik Ivanovska**  
University Goce Delcev Stip, Republic of Macedonia | Drug development based on radiolabeled antibodies                     |
| 17:40 – 18:00    | **Closing remarks**                                                     |                                                                     |
The organizers would like to acknowledge the support given from the University Goce Delcev- Stip and the Pharmaceutical chamber of Macedonia.
Gratitude is expressed to Alkaloid AD Skopje and Fitofarm for the financial support.
INTERNATIONAL SYMPOSIUM AT FACULTY OF MEDICAL SCIENCES

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

November 24, 2015 – Stip

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2. Adherence to Therapy: A Modern Pharmacotherapeutic Approach
   Author: Zorica Arsovska Sarafinovska

3. Use of disinfectants and antiseptics in selected health institutions in Republic of Macedonia
   Author: Biljana Gjorgjeska

4. Code of Ethics for Pharmacists – Pharmaceutical Chamber of Macedonia
   Author: Bistra Angelovska

5. 4-Hydroxynonenal – major bioactive marker of lipid peroxidation
   Authors: Neven Zarkovic, Kamelija Zarkovic

6. Nicotinamide adenine dinucleotide biosynthesis and consumption in dysfunctional white adipocytes
   Authors: Prof. Tatjana Ruskovska, David Bernlohr

7. New insights into the chemistry and functions of Coenzyme Q
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8. Genetically modified systems to study muscular dystrophies
   Author: Darko Bosnakovski

9. Counteracting microbial biofilm formation onto dental material
   Author: Lia Rimondini

10. The endless potential of the umbilical cord blood for investigation, research and treatment
    Author: Elizabeta Zisovska

11. The cytokinesis-blocked micronucleus assay: Good choice for detection and evaluation of genotoxicity in human cells
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16. Drug development based on radiolabeled antibodies
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“Current achievements and future perspectives in medical and biomedical research”

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Contemporary Microbiological Diagnostic Tests for Rapid Identification and Detection of Resistance of Mycobacterium tuberculosis

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Abstract
Tuberculosis (TB) occurs in every part of the world as a top infectious disease killer. In 2014, 9.6 million cases and 1.5 million deaths (140 000 children) from TB were registered. Over 95% of TB deaths occur in developing countries. The Millennium Development Goal target of halting and reversing the TB epidemic by 2015 has been met globally. TB incidence has fallen since 2000 and is now 18% lower, by an average of 1.5% per year. An estimated 43 million lives were saved through TB diagnosis and treatment between 2000 and 2014. Another Goal target is ending the TB epidemic by 2030. According to WHO Director General, „Everyone with TB should have access to the innovative tools and services they need for rapid diagnosis, treatment and care. This is a matter of social justice, fundamental to our goal of universal health coverage”. In cases of drug-susceptibility, TB is a treatable and curable disease with a standard six month protocol of four antimicrobial drugs. In some cases, extensively drug-resistant TB, XDR-TB, a form of multi-drug resistant TB with weak responds including the most effective second-line anti-TB drugs. About 480 000 people developed MDR-TB in the world in 2014. Establishing, equipping, financing, and ensuring sustainability of appropriate laboratory networks are challenging, complex and expensive, but necessary for an effective response to the challenges of TB-HIV and drug-resistant TB (DR-TB) control. Beside classical methods for isolation, identification and susceptibility testing, Reference laboratories introduce new, rapid methods. New systems for isolation use selective, liquid media (BACTEC, MGIT), which enable final diagnosis in about two weeks. In 2012, for the first time, rapid diagnostic test GeneExpert (based on molecular technics was established in Republic of Macedonia. GeneXpert MTB/RIF is an automated, cartridge-based nucleic amplification assay for the simultaneous detection of TB and rifampicin resistance directly from sputum in under two hours. As a result of use of contemporary standards for detection, treatment and prevention of TB included in the National program for TB control, in connection with realization of the Program for TB control financially supported with grant from the Global fund to fight against HIV/AIDS, TB and malaria, from 2002 to date number of new cases with TB in the Republic of Macedonia significantly decreased.

Keywords: Bactec MGIT, GenXpert, Mycobacterium tuberculosis, tuberculosis, resistance.