



University of Kragujevac  
Faculty of medical sciences



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**The 5<sup>th</sup> Quality of Life workshop**  
**“Trends in Stem Cell Research and  
Cell-based Therapy”**  
**Kragujevac, 28<sup>th</sup> September 2017**

### **Time schedule**

09:30 – 10:00 Registration

10:00 – 10:30 **Opening Remarks**

**Prof. dr Nebojsa Arsenijevic**, Rector of University of Kragujevac

**Prof. dr Nikola Tanic**, Deputy Minister of Education, Science and Technological Development of the Republic of Serbia

**Prof. dr Ivanka Popović**, President, AIS3

**H.E. Giuseppe Manzo**, Italian Ambassador to Serbia (to be confirmed)

10:30 – 12:00 **Lecture block 1**

Moderators: Prof. dr Nebojsa Arsenijevic, Prof. dr Miodrag L. Lukic, Prof. dr Pavle Andjus

10:30 – 11:00 **“Interfacing neurons with carbon based nanomaterials: impact on neuronal signaling”**

**Prof. dr Laura Ballerini**, International School for Advanced Studies SISSA-ISAS, Trieste

11:00 - 11:30 **“Ependymal stem cells”**

**Prof. dr Miodrag Stojkovic**, Faculty of Medical Sciences University of Kragujevac

11:30 – 12:00 **“The role of erythropoietin in angiogenesis in multiple myeloma”**

**Prof. dr Domenico Ribatti**, School of Medicine, University of Bari

12:00-14:00 Lunch break and Poster viewing



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## 14:00-15:30 Lecture block 2

Moderators: Prof. dr Miodrag Stojkovic, Dr. Diana Bugarski, Ass.prof. Aleksandar Arsenijevic

14:00 – 14:30 “**Extracellular vesicles and microvesicles derived from stem cells current state of the art**”

**Prof. dr Chiara Porro**, School of Medicine, University of Foggia

14:30 – 15:00 “**Immunomodulatory effects of mesenchymal stem cells in acute liver failure and fibrosis**”

**Prof. dr Vladislav Volarevic**, Faculty of Medical Sciences, University of Kragujevac

15:30 – 16:00 “**Strategies for the follow-up of cell transplants by non-invasive imaging methods**”

**Prof. dr Giuseppe Digilio**, The University of Eastern Piedmont Amedeo Avogadro, Novara and Vercelli

15:30-16:00 Coffee brake

## 16:00-17:30 Lecture block 3

Moderators: Prof. dr Vladislav Volarevic, Prof. dr Tatjana Kanjevac, Prof. dr Ivanka Popovic

16:00 – 16:30 “**Mesenchymal stem cells from dental tissues: isolation, osteogenic differentiation and expression of adhesion molecules**”

**Prof. dr Giorgio Mori**, School of Medicine, University of Foggia

16:30 – 17:00 “**Influence of local microenvironment on the characteristics and functional diversity of mesenchymal stem cells**”

**Dr. Diana Bugarski**, Institute for Medical Research, University of Belgrade

17:30 – 18:00 “**IR-SNOM nanospectroscopy to study early stage cells differentiation**”

**Prof. dr Antonio Cricenti**, Institute of Structure of Matter, CNR, Rome

18:00 – 18:15 Coffee break

## 18:15- 19:00 Closing session: Forum discussion and take home messages

Moderators: Prof. dr Miodrag Stojkovic, Prof. dr Vladislav Volarevic, Prof. dr Pavle Anđus



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# The 5<sup>th</sup> Quality of Life workshop

## “Trends in Stem Cell Research and Cell-based Therapy”

Kragujevac, 28<sup>th</sup> September 2017

### Scientific Rationale

The word “Quality of Life” (QoL) has strong evocative capacity and is at the same time deeply ambiguous. So are methods, tools of analysis, and thematic areas in which this concept itself can be elaborated. QoL encompasses objective and subjective both qualitative and quantitative, social and individual indicators for issues like e.g. health, environment, wealth, education, social inclusion, happiness, meaningfulness etc.

In spite of a widespread disagreement about the interpretation of this multifaceted and multidisciplinary concept, QoL is behind actions of policy makers, economists, physicians, scientists, governments, non-government organizations, etc., all sharing -in principle- the goal of improving the well-being of individuals and societies. With this Workshop, we intend to offer young scholars and researchers the opportunity to attend stimulating keynote speeches by top Italian and Serbian professionals and experts. The end of the Workshop will be dedicated to a brainstorming session about QoL where fresh ideas and views can be forged and confronted.

The fifth QoL is dedicated to very interesting subject “**Trends in Stem Cell Research and Cell-based Therapy**”. The enormous potential of stem cells and regenerative medicine for restoring tissue or organ function and benefiting mankind has been acknowledged by society with world-class distinctions such as the 2012 Nobel Prize in Medicine and Physiology awarded to John Gurdon and Shinya Yamanaka. Stem cell based therapy is nowadays mainly used for generating and expanding functional cells to repair or replace tissue or organ function lost due to age, disease, damage, or congenital defects. Also, mesenchymal stem cells (MSCs) are, due to their immunomodulatory characteristics used as new therapeutic agents in the treatment of inflammatory and autoimmune diseases. Accordingly, stem cell-based research and therapy has emerged over the last of the most rapidly developing fields in medical science, demonstrating unprecedented potential to restore severely damaged or destroyed tissue and even “grow” new tissue in its place.



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## **Center of Excellence for Molecular Medicine and Stem Cell Research at Faculty of Medical Sciences University of Kragujevac**

Serbia has recognized growing importance of innovation for economic development which has led to a new National Science and Technology (S&T) Strategy. The National S&T Strategy has identified biomedicine and human health as one of the top priorities. The Strategy also aims to strengthen the research and development (R&D) infrastructure and the development of human capital which will be realized through the creation of Excellence Centres. Such centres will strongly improve the competitive position of Serbia.

Recently, University of Kragujevac (UoK) has established the Center of Excellence for Molecular Medicine and Stem Cell Research that is, according to the number of papers published in top ranked journals + obtained grants and top cited researchers, the best ranked research centre in this region. Accordingly, the UoK and especially Faculty of Medical Sciences was chosen to be the birthplace for the Serbian Centre of Excellence and Stem Cell Bank because it has core staff members who have experience when it comes to working with pluri- and multipotent stem cells. The Faculty aims to promote and improve research on human development, stem cell biology, bioengineering, developmental disorders, neurological disabilities and immunological properties/reactions of engrafted stem cells and hosts. Currently, the Faculty is fully equipped with equipment that is necessary for research in the field of molecular medicine and stem cell science.

Ministry of Education, Science and Technological Development of Republic of Serbia (MESTD) has recognized the capacity and potential of Faculty of Medical Sciences UoK and decided to support its further development by building a new facilities which includes a stem cell bank, research and education centres equipped with state of the art equipment for Good Manufacturing Practices (GMP)-based research in the field of stem cell science and regenerative medicine. This center, built on the lot of 1.7 hectares, will be established within UoK and will be close connected with neighbouring Clinical Center of Kragujevac enabling translation of stem cell related fundamental research into clinical application.



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## Objectives:

- Animation and raising the awareness of students and young researchers on issues of the impact and significance of stem cell-based research for the treatment of autoimmune and degenerative diseases.
- Comparison of Italian and Serbian experience in different aspects of cell-based therapy and regenerative medicine.

## Aims:

- To present up-to-date findings of cellular and molecular mechanisms involved in cell-based therapy and regenerative medicine.
- To enable students' discussion and exchange of ideas looking at issues from different expert fields.
- To rise public interest about innovations, trends, and concerns related to the stem cell therapy in humans.
- To provide young researchers a chance to express publicly their views, impressions and suggestions about their vision regarding therapeutic potential, ethical and safety issues of stem cell-based therapy.

## Goals:

- To create a constructive discussion between students regarding the potential of cell-based therapy for immunomodulation and regeneration.
- To define the indications for cell-based therapy and transplantation.
- To acknowledge ethical and safety concerns regarding stem cell-based therapy in humans.

## Learning objectives:

- Students will experience constructive discussion regarding important issues of molecular mechanisms involved in beneficial effects of cell-based therapy, be introduced to the impact of stem cells for modern and personalized medicine.
- Students will have a better understanding of the main aspects of regenerative medicine and stem cell science in Healthcare.
- Students will be familiarized with the main ethical and safety concerns regarding the use of stem cells in clinical trials as well as new approaches that should be used for solving this issues.



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