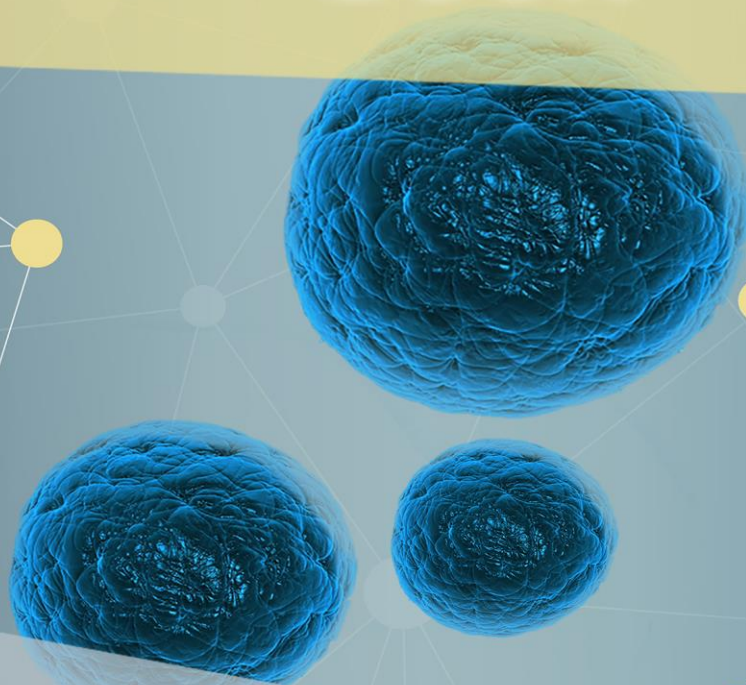


Serbian Association for Cancer Research

**5<sup>th</sup> CONGRESS OF SDIR:  
TRANSLATIONAL POTENTIAL OF  
CANCER RESEARCH IN SERBIA**

**ABSTRACT  
BOOK**



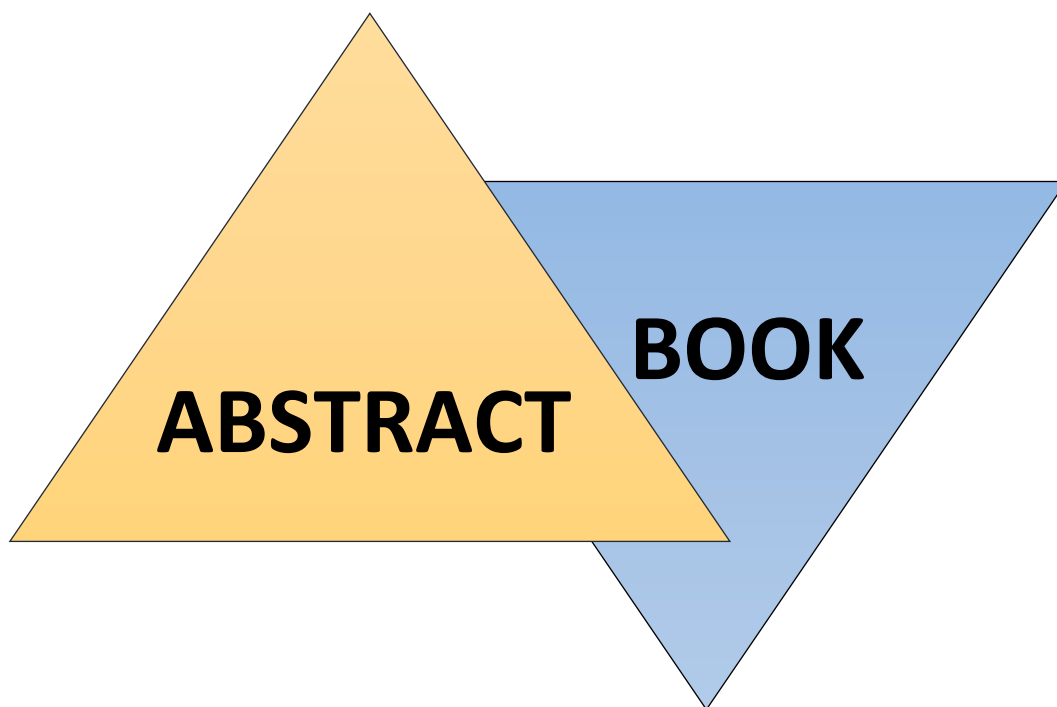
**Virtual event  
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5<sup>th</sup> CONGRESS OF THE SERBIAN ASSOCIATION FOR  
CANCER RESEARCH

With international participation



TRANSLATIONAL POTENTIAL OF CANCER  
RESEARCH IN SERBIA

**SDIR – 5**

Virtual event, December 3, 2021

## THE FIFTH CONGRESS OF THE SERBIAN ASSOCIATION FOR CANCER RESEARCH

with international participation  
"TRANSLATIONAL POTENTIAL OF CANCER RESEARCH IN  
SERBIA "

December 3, 2021, Virtual event  
Serbian Association for Cancer Research (SDIR) is a member of the European Association for  
Cancer Research (EACR).  
President of SDIR-5 Congress  
*dr sc. med. Mirjana Branković-Magić*

THE FIFTH CONGRESS OF THE SERBIAN ASSOCIATION FOR CANCER RESEARCH  
with international participation "Translational potential of cancer research in Serbia"Virtual event,

December 3, 2021

Publisher: Srpsko društvo istraživača raka, 11000 Beograd  
Year: 2021.

Editors: *dr sc. Marija Đorđić Crnogorac, dr sc. Milica  
Nedeljković*

Print: Srpsko društvo istraživača raka, Beograd

Number of copies: 20

ISBN: 978-86-919183-3-0.

CIP - Каталогизacija u publikaciji - Narodna biblioteka Srbije,  
Beograd

616-006(048)(0.034.2)

SERBIAN Association for Cancer Research. Congress (5 ; 2021)  
Translational Potential of Cancer Research in Serbia [Elektronski izvor] :  
abstract book / 5th Congress of the Serbian Association for Cancer  
Research with International Participation SDIR-5, Virtual event, December  
3, 2021 ; [editors Marija Đorđić Crnogorac, Milica Nedeljković]. – Beograd  
: Srpsko društvo istraživača raka, 2021 (Beograd : Srpsko društvo  
istraživača raka). - 1 elektronski optički disk (CD-ROM) ; 12 cm

Sistemski zahtevi: Nisu navedeni. - Nasl. sa naslovne strane dokumenta. -

Tiraž 20.

ISBN 978-86-919183-3-0

a) Онкологија - Апстракти

COBISS.SR-ID 52655625

## LETTER OF WELCOME

*Dear colleagues,*

*We are very pleased to welcome you to the 5<sup>th</sup> Congress of the Serbian Association for Cancer Research (SDIR) with international participation "Translational potential of cancer research in Serbia" to be held on December 3, 2021 as a virtual event.*

*During the congress, lectures will be delivered by a distinguished Serbian and international researchers, that will cover the following topics:*

- *Liquid biopsies in lung cancer*
- *Advances in solid tumor research*
- *Cancer and metabolism*
- *Radiobiology*
- *Imaging in cancer*

*We are pleased to say that our fifth congress is actively supported by the European Association for Cancer Research.*

*We are delighted to welcome you!*

*Kind regards,*



*dr sc. med. Mirjana Branković-Magić, president of SDIR*



*dr sc. Milena Čavić, president of the Organizing Committee*



## ACKNOWLEDGMENTS

The Serbian Association for Cancer Research would like to acknowledge the ongoing support of Ministry of Science, Education and Technological Development of the Republic of Serbia, European Association for Cancer Research, Institute of Oncology and Radiology of Serbia and Institute for Biological Research "Siniša Stanković".

The Serbian Association for Cancer Research is also very grateful to the following sponsors for providing financial support to the SDIR-5 congress:

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## PROGRAMME

### 03.12.2021. Virtual event 09.00 – 17.30

- 09.00 – 09.05 **Congress welcome and opening.** SDIR President Mirjana Branković-Magić
- 09.05 – 09.30 EACR Plenary lecture – EACR President Caroline Dive. **Liquid biopsies in lung cancer.** *University of Manchester, Manchester, UK*
- 09.30 - 09.40 Discussion
- 09.40 – 11.05 **Session: Advances in solid tumor research**  
Chairs: Caroline Dive and Milena Čavić
- 09.40 – 10.00 Remond J.A. Fijneman. **ctDNA biomarker detection in patients with colorectal cancer.** *The Netherlands Cancer Institute, Amsterdam, Netherlands*
- 10.00 – 10.20 Gunes Esendagli. **Mesenchymal properties and immune checkpoint pathways in small cell lung cancer (SCLC) stem cells.** *Hacettepe University Cancer Institute, Ankara, Turkey*
- 10.20 – 10.50 **Short talks selected from SDIR member PIs of The Program for Excellent Projects of Young Researchers (PROMIS) of the Science Fund of the Republic of Serbia**
- 10.20 – 10.30 Miljana Tanić. **Tracking systemic therapy resistance of lung and colorectal cancer through targeted NGS analysis of genetic and epigenetic variants in liquid biopsies.** *Institute of Oncology and Radiology of Serbia, Serbia*
- 10.30 – 10.40 Aleksandra Nikolić. **Cancer biosensors based on gene regulatory elements.** *Institute of Molecular Genetics and Genetic Engineering, Serbia*
- 10.40 – 10.50 Jelena Grahovac. **Drug repurposing in pancreatic ductal adenocarcinoma.** *Institute of Oncology and Radiology of Serbia, Serbia*
- 10.50 – 11.05 Discussion
- 11.05 – 11.15 Break
- 11.15 – 12.40 **Session: Cancer and metabolism**  
Chair: Milica Pešić
- 11.15 – 11.35 Liang Li. **An antibody drug conjugate-like agent DTLL sensitizes gemcitabine efficacy in pancreatic cancer based on SMAD4 profiles.** *Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, China*

- 11.35 – 11.55 Ljubica Harhaji-Trajković. **Dual targeting of energy metabolism and lysosomes as an anticancer strategy; it is not all about autophagy.** *Institute for Biological Research "Siniša Stanković", University of Belgrade, Belgrade, Serbia*
- 11.55 – 12.23 **Short talks selected from abstracts**
- 11.55 – 12.02 Nikolina Piteša. **Genes for competing endogenous RNAs as targets of transcription factors GLI in melanoma cell lines.** *Ruđer Bošković Institute, Zagreb, Croatia*
- 12.02 – 12.09 Cristina P.R. Xavier. **Chitinase 3-like-1 (CHI3L1) as a potential therapeutic target for pancreatic cancer.** *Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Institute of Molecular Pathology and Immunology, University of Porto, Portugal*
- 12.09 – 12.16 Jovana Jagodić. **Elemental profile of glioblastomas – analysis of blood, cerebrospinal fluid and brain tissue.** *Faculty of Chemistry, Belgrade, Serbia*
- 12.16 – 12.23 Stefana Stojanović. **Hsa-miR-222 identifies high-risk PTC patients with classical variant architecture.** *Institute for the Application of Nuclear Energy — INEP, University of Belgrade, Belgrade, Serbia*
- 12.23 – 12.40 Discussion
- 12.40 – 12.45 Break
- 12.45 – 14.30 **Session: Radiobiology**
- Chairs: Marina Nikitović and Ivana Matić
- 12.45 – 13.00 Irina Besu Žižak. **The role of IL6 in radiotherapy-induced toxicity.** *Institute of Oncology and Radiology of Serbia, Serbia*
- 13.00 – 13.15 Bojana Ilić. **Cellular senescence in ionizing radiation.** *Clinic for Endocrinology, Diabetes and Metabolic Diseases, Clinical Center of Serbia, Serbia*
- 13.15 – 13.30 Jadranka Antić. **Effects of ionizing radiation on DNA methylation: from experimental biology to clinical applications.** *Clinic for Endocrinology, Diabetes and Metabolic Diseases, Clinical Center of Serbia*
- 13.30 – 13.45 Sercan Ergün. **The interrelationship between FYN and miR-128/193a-5p/494 in Imatinib resistance in prostate cancer.** *Faculty of Medicine, Ondokuz Mayıs University, Samsun, Turkey*
- 13.45 – 14.13 **Short talks selected from abstracts**
- 13.45 – 13.52 Sami Ahmad. **Gene expression kinetics and pathway analysis of skin fibroblasts irradiated in vitro.** *Universitätsmedizin Mannheim, Medical Faculty Mannheim, Heidelberg University, Mannheim, Germany*



- 13.52 – 13.59 Jelena Stanić. **Radiation-induced lymphocyte apoptosis as a possible biological predictor of radiotherapy toxicity in prostate cancer patients.** *Institute of Oncology and Radiology of Serbia, Serbia*
- 13.59 – 14.06 Aleksandar Stepanović. **Can miRNA expression patterns predict radiotoxicity in patients with glioblastoma?** *Institute of Oncology and Radiology of Serbia, Serbia*
- 14.06 – 14.13 Bojana Kožik. **Potential predictive role of K-ras gene mutation and BCL2 protein expression status in locally advanced rectal cancers treated with neoadjuvant chemoradiotherapy.** *Vinča Institute of Nuclear Sciences, National Institute of Republic of Serbia, University of Belgrade, Serbia*
- 14.13 – 14.30 Discussion
- 14.30 – 15.15 **Poster Session, lunch break and industry session viewing.**  
Moderator Ana Krivokuća
- 15.15 – 17.00 **Session: Imaging in cancer**  
Chair: Jelena Grahovac
- 15.15 – 15.35 Bojana Gligorijević. **Real-time microscopy of invasive cancer cells in the tumor microenvironment context.** *Temple University, USA*
- 15.35 – 15.55 Jelena Stanisavljević. **Defining and imaging colon cancer heterogeneity.** *Institute of Photonic Sciences, Barcelona Institute for Science and Technology, Spain*
- 15.55 – 16.15 Giorgio Seano. **Vessel co-option and resistance to therapy in glioblastoma.** *Institut Curie Research Center, Centre Universitaire, France*
- 16.15 – 16.43 **Short talks selected from abstracts**
- 16.15 – 16.22 Predrag Jovanovic. **Characterizing the role of 4E-BP1 in breast cancer metastasis.** *Jewish General Hospital, Lady Davis Institute, Montreal, Canada; McGill University, Experimental Medicine, Montreal, Canada*
- 16.22 – 16.29 F. Koutsougianni. **Siramesine, a non-opioid  $\sigma_2$  receptor agonist as a potential agent for the development of novel targeted treatments for pancreatic cancer.** *University of Thessaly, Larisa, Greece*
- 16.29 – 16.36 Batuhan Mert Kalkan. **The role of Nek2 on centrosome clustering in cancer cells with extra centrosomes.** *Koç University, Graduate School of Health Sciences, Istanbul, Turkey*
- 16.36 – 16.43 Tijana Martinov. **Sox2-targeted T cell therapy for treating multiple myeloma.** *Fred Hutchinson Cancer Research Center, Seattle, United States of America*
- 16.43 – 17.00 Discussion
- 17.00 – 17.30 **Closing remarks and best poster awards.** SDIR President Mirjana Branković-Magić

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**Antineuroblastoma potential of polyoxopalladate(II)**

Andjelka M. Isakovic<sup>1</sup>, Marija Jeremic<sup>1</sup>, Danijela Krstić<sup>2</sup>, Mirjana B. Čolović<sup>3</sup>, Ulrich Kortz<sup>4</sup>, Sonja Misirlic-Dencic<sup>1</sup>

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<sup>4</sup> *Department of Life Sciences and Chemistry, Jacobs University, Bremen, Germany*

**Background:** Polyoxometalates are a class of anionic, polynuclear metal-oxo clusters reported as promising *in vitro* and *in vivo* antitumor agents for several decades. The aim of this study was to investigate the antineuroblastoma potential of the polyoxopalladate(II) nanocube  $\text{Na}_8[\text{Pd}_{13}\text{As}_8\text{O}_{34}(\text{OH})_6] \cdot 42\text{H}_2\text{O}$  ( $\text{Pd}_{13}$ ).

**Material and methods:** All experiments were performed on human neuroblastoma cell line, SH-SY5Y. The number of viable cells after the treatment with  $\text{Pd}_{13}$  was assessed using an acid phosphatase viability assay. The level of superoxide ion, mitochondrial membrane potential, pan-caspase activity, acidic intracellular vesicles content, and the cell cycle was determined by flow cytometry. **Results:** The obtained results suggest that  $\text{Pd}_{13}$  caused a significant decrease in cell viability with IC50 values of 7.7  $\mu\text{M}$  (24 h) and 4.4  $\mu\text{M}$  (48 h).  $\text{Pd}_{13}$  induced depolarization of mitochondrial membrane (2 h), followed by  $\sim 30\%$  increase in the production of the superoxide ion ( $\text{O}_2^-$ ) 4 h after treatment. An increase ( $\sim 30\%$ ) in pancaspase activation and disturbance of neuroblastoma cell cycle were observed after 24 h treatment. Namely,  $\text{Pd}_{13}$  caused an increase (14.4%) in the number of cells with fragmented nuclear DNA (SubG<sub>0</sub>), a decrease (%) of cells in the G<sub>1</sub> phase, and an increase (%) in the S phase, all suggestive of cell cycle arrest. Finally,  $\text{Pd}_{13}$  increased the orange to green fluorescence ratio for  $\sim 45\%$  24 h after treatment, supporting intracellular acidification. **Conclusion:** The polyoxopalladate,  $\text{Pd}_{13}$  can be regarded as a promising antineuroblastoma agent which induces oxidative stress, and causes pan-caspase activation, DNA fragmentation and cell cycle arrest, which are all hallmarks of apoptotic neuroblastoma cell death.

Keywords: polyoxopalladates, antitumor, neuroblastoma, apoptosis

