



Trends in **Molecular Biology** • Special issue

# Abstract Book

## CoMBoS<sup>2</sup>

2<sup>nd</sup> Congress of Molecular Biologist of Serbia

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# WELCOME SPEECH



Professor Dušanka **Savić-Pavićević**  
President of the Serbian Society  
for Molecular Biology



Dr. Melita **Vidaković**  
President of the Steering Committee  
of the Serbian Society for Molecular Biology

Dear colleagues and friends,

On behalf of the Serbian Society for Molecular Biology (MolBioS), we warmly welcome you to Belgrade for the Second Congress of Molecular Biologists of Serbia (CoMBoS2).

The congress is gathering almost 250 participants from 13 countries (Sweden, United Kingdom, Italy, Switzerland, USA, Australia, Hungary, Czech Republic, Romania, Montenegro, Croatia, Bosnia and Herzegovina, and Serbia).

The program covers various fields of Molecular Biology, including Molecular Biomedicine, Molecular Biotechnology and Molecular Cell Biology, and consists of plenary and invited lectures, the MolBioS award winner lecture, poster sessions and the project corner. Special attention is paid to students and young scientists through the MolBioS Student Session, flash presentations and workshops on state-of-the-art molecular biology methods.

We wish you to be inspired by exciting and outstanding lectures given by renowned scientists and experts, exchange ideas, find opportunities for new collaborations, and have good fun.

**WELCOME TO**

  
**CoMBoS2**

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Abstracts

Session  
MOLECULAR  
MECHANISMS  
OF CELL FUNCTIONS



## ACTIVATION OF COAGULATION FACTORS AND PROTHROMBOTIC PROPERTIES OF ENDOTHELIUM IN HEMATOLOGICAL MALIGNANCIES

Olivera Mitrović-Ajtić,<sup>1</sup> Dragoslava Đikić,<sup>2</sup> Teodora Dragojević,<sup>1</sup> Vladimir Otašević,<sup>2</sup> Emilija Živković,<sup>1</sup> Vojin Vuković,<sup>2</sup> Milica Vukotić,<sup>1</sup> Tijana Subotički,<sup>1</sup> Miloš Diklić,<sup>1</sup> Nada Suvajdžić-Vuković,<sup>2,3</sup> Mirjana Mitrović,<sup>2,3</sup> Biljana Mihaljević,<sup>2,3</sup> Darko Antić,<sup>2,3</sup> Vladan P. Čokić<sup>1</sup>

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**Introduction:** Patients with hematological malignancies have an increased risk of thrombotic complications, ranging from 3-5% in patients with lymphoma and acute myeloid leukemia (AML). The presented study observed the onset of thrombus formation to predict risk factors for thrombosis in lymphoid and myeloid malignancies.

**Methods:** Coagulation factors, inflammatory signaling pathways and adhesion molecules have been observed in patients with Hodgkin lymphoma (HL), diffuse large B-cell lymphoma (DLBCL), follicular lymphoma (FL) and AML. Their mononuclear cells (MNC) trans-endothelial migration through human microvascular endothelial cells (HMEC-1) monolayer is observed by Boyden chamber.

**Results:** Thrombin was in positive correlation with tumor necrosis factor alpha (TNF- $\alpha$ ) in HL, while with P-selectin ( $p < 0.001$ ), tumor growth factor-beta (TGF- $\beta$ ) and factor VIII ( $p < 0.05$ ) in DLBCL and AML. Trans-endothelial migration of MNC was increased by TNF- $\alpha$  ( $p < 0.001$ ) in DLBCL regardless of previous thrombosis. Regarding coagulation, factor VIII was increased in HL and AML ( $p < 0.05$ ), while tissue factor in non-Hodgkin lymphomas (DLBCL and FL,  $p < 0.05$ ). Tissue factor was in positive correlation with adhesion molecule P-selectin and factor VIII ( $p < 0.05$ ). P-selectin was increased in non-Hodgkin lymphomas ( $p < 0.0001$ ), while TGF- $\beta$  only in FL ( $p < 0.001$ ). Fibrinolytic activity was decreased in plasma of patients with HL, DLBCL, and FL ( $p < 0.05$ ), but largely in AML ( $p < 0.01$ ) as measured by tissue-type plasminogen activator. Inflammatory NF- $\kappa$ B signaling has been activated in HL and DLBCL, while p38 signaling only in HL.

**Conclusion:** Coagulation factors and inflammation are increased in hematological malignancies along with the interaction of the endothelium and circulating cells that predispose to thrombus formation.

Key words: hematological malignancies; thrombus; coagulation factors; adhesion molecules.

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