Trends in **Molecular Biology** • Special issue

# Abstract Book

# CoMBoS2

2nd Congress of Molecular Biologist of Serbia

ISBN-978-86-82679-15-8

Belgrade • 2023

**CoMBoS2 – the Second Congress of Molecular Biologists of Serbia, Abstract Book – Trends in Molecular Biology, Special issue**
06-08 October 2023, Belgrade, Serbia
**Online Edition**
https://www.imgge.bg.ac.rs/lat/o-nama/kapacitet-i-oprema/istrazivacka-delatnost
https://indico.bio.bg.ac.rs/e/CoMBoS2

**IMPRESSUM**

PUBLISHER:
**Institute of Molecular Genetics and Genetic Engineering (IMGGE), University of Belgrade**

FOR THE PUBLISHER:
Dr. Sonja **Pavlović**

EDITOR:
Dr. Zorana **Dobrijević**

EDITORIAL REVIEW BOARD:
Prof. Dr. Silvana **Andrić**
Dr. Valentina **Ćirković**
Dr. Ivica **Dimkić**
Prof. Dr. Branko **Jovčić**
Prof. Dr. Gordana **Matić**
Ass. Prof. Dr. Milena **Milutinović**
Dr. Aleksandra **Stanković**
Dr. Nemanja **Stanisavljević**
Dr. Maja **Stoiljković**

EDITOR IN CHIEF:
Prof. Dr. Dušanka **Savić-Pavićević**

DESIGN:
Ivan **Strahinić**


Institute of Molecular Genetics and Genetic Engineering (IMGGE),
University of Belgrade
Belgrade, 2023
ISBN 978-86-7078-173-3

CoMBoS2

# Content

# EXPRESSION PROFILES OF LONG NON-CODING RNA GAS5 AND MICRORNA-222 IN YOUNGER AML PATIENTS

Pavlović Đorđe,[1] Nataša Tošić,[1] Branka Zukić,[1] Zlatko Pravdić,[2] Nada Suvajdžić Vuković,[2,3] Sonja Pavlović,[1] Vladimir Gašić[1]

*[1]Laboratory for Molecular Biomedicine, Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia;*
*[2]Clinic of Hematology, Clinical Center of Serbia, Belgrade, Serbia;*
*[3]School of Medicine, University of Belgrade, Belgrade, Serbia*

**Introduction:** Acute myeloid leukemia (AML) is a heterogeneous malignant disease, that accounts for 80% of all acute leukemias in adults. Imprecise risk stratification and lack of personalized treatment creates a constant need to find new prognostic markers and targets for innovative therapeutics. Recently, this search has pointed towards non-coding RNAs (ncRNA). Numerous studies have shown dysregulation of lncRNA *GAS5* in cancers, but it was poorly investigated in AML. Since *GAS5* acts like a molecular sponge for miR-222, co-expression profiles of these non-coding RNAs could be novel prognostic markers in AML.

**Methods:** *GAS5* expression levels were analysed in 94 AML patients and 14 healthy controls using Real-Time PCR and miR-222 expression levels were analysed in a subgroup of 39 patients with normal karyotype (AML-NK). ROC curve analyses were used to find a cut-off value between $GAS5^{high}$ and $GAS5^{low}$, while the median value was used for distinguishing between miR-$222^{high}$ and miR-$222^{low}$.

**Results:** We showed that *GAS5* expression in AML patients was lower compared to healthy controls. Lower *GAS5* expression on diagnosis was related to an adverse prognosis. The disease-free survival and the overall survival were lower in the $GAS5^{low}$ group but survival analysis failed to confirm this finding. In the AML-NK group patients had higher expression of miR-222 compared to healthy controls. A synergistic effect of $GAS5^{low}$/miR-$222^{high}$ status on disease prognosis was not established.

**Conclusion:** Our findings indicate the potential prognostic significance of *GAS5* expression and the need for further investigation of these two non-coding RNAs and their potential roles in leukemogenesis.

Key words: AML; *GAS5*; miR-222

Acknowledgements: This work has been funded by grant from the Ministry of Education, Science and Technological Development, Republic of Serbia (Grant No. 451-03-9/2021-14/ 200042).