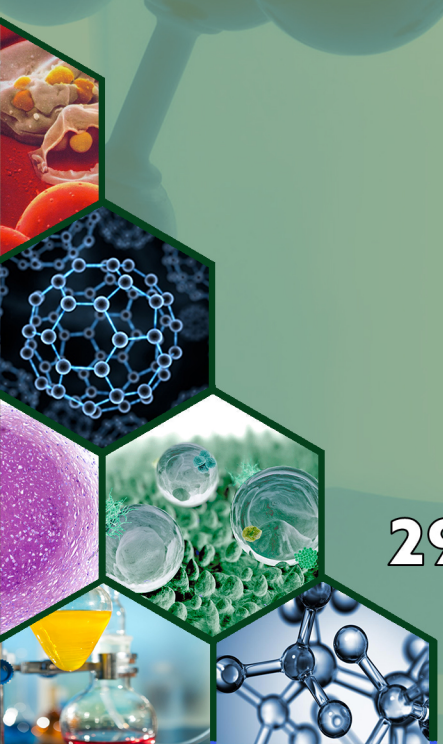
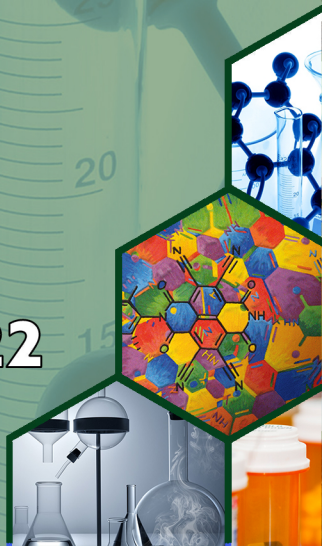
Serbian Chemical Society
Serbian Young Chemists' Club

Eight Conference
of the Young Chemists of Serbia

Book of Abstracts





Belgrade
29th OCTOBER 2022

8th Conference of Young Chemists of Serbia

Book of Abstracts

29th October 2022
University of Belgrade, Faculty of Chemistry

CIP – Категоризација у публикацији
Народна библиотека Србије, Београд

8th Conference of Young Chemists of Serbia
Belgrade, 29th October 2022
Book of Abstracts

Published and organized by
Serbian Chemical Society and Serbian Young Chemists' Club
Karnegijeva 4/III, 11000 Belgrade, Serbia
Tel./fax: +381 11 3370 467; www.shd.org.rs; office@shd.org.rs

Publisher
Dušan **SLADIĆ**, president of Serbian Chemical Society

Editors
Jelena **MILOVANOVIĆ**
Marko **RODIĆ**
Vuk **FILIPOVIĆ**
Života **SELAKOVIĆ**
Jelena **KESIĆ**
Mila **LAZOVIĆ**
Mihajlo **JAKANOVSKI**

Page Layout and Design
Vuk **FILIPOVIĆ**
Jelena **KESIĆ**
Mila **LAZOVIĆ**
Mihajlo **JAKANOVSKI**

Circulation
20 copies

ISBN **978-86-7132-080-1**

Printing
Development and Research Centre of Graphic Engineering
Faculty of Technology and Metallurgy, Karnegijeva 4, Belgrade, Serbia

Scientific Committee

Dr. Jelena Milovanović – University of Belgrade, Institute of molecular genetics and genetic engineering

Dr. Marko Rodić – University of Novi Sad, Faculty of Sciences

Dr. Vuk Filipović – University of Belgrade, Institute of Chemistry, Technology and Metallurgy, National Institute of the Republic of Serbia

Dr. Života Selaković – University of Belgrade, Faculty of Chemistry

Organizing Committee

Jelena Kesić – University of Novi Sad, Faculty of Sciences

Mila Lazović – Innovative Centre of the Faculty of Chemistry, Belgrade

Mihajlo Jakanovski – Innovative Centre of the Faculty of Chemistry, Belgrade

European Young Chemists' Network

Dr. Maximillian Menche, chair of the EYCN

Sponsorship

The organizing committee is grateful for the donations of the selected sponsor participants

European Young Chemists' Network

Analysis doo

Ministry of Education, Science and Technological Development, Republic of Serbia

Acknowledgement

Acknowledgement to the University of Belgrade, Faculty of Chemistry for the use of the space of the Faculty during the 8th Conference of Young Chemists' of Serbia.

Thanks to the Serbian chemical society for the supporting during organization of the Conference.

Deeply acknowledgments to the European Young Chemists' Network and European Chemical Society for the financial support of the best oral and poster presentations.

Thanks to the Analysis d.o.o. for support and the promoting material.

BB OP 01

Optimization of the expression conditions of fluorescently labeled α-synuclein in *Escherichia coli* by response surface methodology and proteolysis by tobacco etch virus protease

Aleksa D. Savić[1], Marija S. Vidović[2], Jelena Z. Radosavljević[1]

[1] *University of Belgrade, Faculty of Chemistry, Belgrade, Serbia*

[2] *University of Belgrade, Institute of Molecular Genetics and Genetic Engineering, Belgrade, Serbia*

Alpha-synuclein is an intrinsically disordered protein prone to aggregation and it is involved in the formation of brain tissue amyloids in patients with Parkinson's and other neurodegenerative diseases. By fluorescently labeling recombinantly expressed proteins, the processes of expression and purification of the same can be easily visually monitored. In a previous work, we have constructed three plasmids for the expression of α-synuclein fused C-terminally to His-tagged mCerulean3 through a polyasparagine linker and tobacco etch virus (TEV) proteolytic site. Here we have transformed these vectors into *Escherichia coli* BL21(DE3) and BL21(DE3)pLysS and optimized the expression conditions by response surface methodology (temperature, time after induction, concentration of induction reagent) of the chimeric proteins coded by vectors. Expression of the chimeric protein was tested at optimal conditions in different media and terrific broth gave the highest yield. The obtained chimeric protein was purified by immobilized metal-affinity chromatography (IMAC), yielding ~29 mg of chimeric protein per liter of medium and was shown to be successfully proteolyzed by TEV protease, giving a fragment of α-synuclein of expected electrophoretic mobility. After another round of IMAC, the obtained α-synuclein of native sequence was mainly found to be in the flow-through.

Acknowledgments

The authors acknowledge the support of the Science Fund of the Republic of Serbia (PROMIS project LEAPSyn-SCI, grant no. 6039663) and by the Ministry of Education, Science and Technological Development, the Republic of Serbia (Contract No. 451-03-68/2022-14/200168*)*