

Serbian Biochemical Society

XI Conference

“Amazing Biochemistry”

Date

22nd and 23rd of September, 2022

Venue

Faculty of Sciences
University of Novi Sad
Novi Sad, Serbia

Invited Speakers

Andrej Veljković

Faculty of Medicine, Niš, Serbia

Roman Jerala

National Institute of Chemistry,
Ljubljana, Slovenia

Dejan Orčić

Faculty of Sciences, Novi Sad, Serbia

Jelena Danilović Luković

Institute for Application of Nuclear
Energy, Belgrade, Serbia

Sonja Milić Komić

Institute for Multidisciplinary Research,
Belgrade, Serbia

Miloš Matić

Faculty of Sciences, Kragujevac, Serbia

Miron Sopić

Faculty of Pharmacy, Belgrade, Serbia

Plenary Speakers



István Zupkó

University of Szeged



Brankica Jankovic

University of Zürich



Deadlines:

Registration & Abstract

submission: 15th of July, 2022

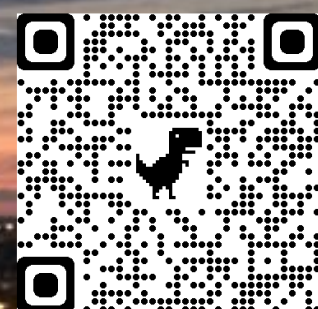
Abstract acceptance:

15th of August, 2022

Fee payment:

10th of September, 2022

<https://www.biochemistry-conference.org.rs/>



Sugar-mediated thermal stabilisation of C-Phycocyanine from *Arthrospira platensis*

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C-phycocyanin (C-PC), the major protein of cyanobacteria *Arthrospira platensis*, is a blue pigment that primarily transfers energy during photosynthesis. It has diverse biotechnological applications since it can be used in nutraceutical, cosmetics, pharmaceutical industries, and biomedical research. Its intensive blue colour and strong antioxidant activity give C-PC significant potential to replace synthetic colourants in the food industry. However, thermal treatment of food has detrimental effects on C-PC colour due to sensitivity to higher temperatures; therefore, the application of this natural colourant in food and other products is limited. Hence, improving C-PC stability is the major challenge for successful application in food and beverage colouring. In light of this, we aim to investigate the thermal stability of C-PC in the presence of selected sugars (glucose, fructose and sucrose), commonly used in the food industry. *Ex-situ* absorption spectrophotometry showed that 18% solution (w/v) of glucose, sucrose and fructose at pH 7, upon incubation at 65°C, exhibited 91.4, 52.9 and 52.5% of colour preservation, respectively. *In situ* fluorescence measurements revealed that free C-PC has a melting point of 55.4°C, while the presence of glucose and sucrose increases the melting point of C-PC to 64.4 and 61.4°C, respectively. On the other hand, fructose does not significantly influence the C-PC melting point. These results show that the thermal stability of the C-PC solution is substantially increased in the presence of sugars, while the type of sugar significantly determines the extent of the stabilisation effect. Overall, our study provides the strategy for enhancing the application potential of C-PC as a natural food colourant, providing a food product with vivid blue colour and substantial antioxidant activities.

Acknowledgements

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