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*"Biochemical Insights into Molecular Mechanisms"*

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PROGRAMME

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Tenth Conference

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***“Biochemical Insights into Molecular Mechanisms”***

- University of Belgrade - Faculty of Chemistry  
Relative properties of Spirulina-derived phycofibroteins and  
polyphosphates
- Lucy H. Jones  
University of Cambridge
- Milica Gligaric  
Institute for Application of Nuclear Energy, University of Belgrade  
Ligand binding to fibrinogen influences its structure and function
- Ivan Copic  
Faculty of Medicine, University of Novi Sad  
New aspects of vitamin C during prenatal period of development

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## Screening of potential inhibitors of recombinant *S*-adenosyl-*L*-homocysteine hydrolase from banana

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*S*-adenosyl-*L*-homocysteine hydrolase (SAHH) catalyses hydrolysis of *S*-adenosyl-*L*-homocysteine to adenosine and homocysteine. It regulates all *S*-adenosylmethionine dependent methylations and is one of the most conserved proteins across different kingdoms of life<sup>1</sup>. Presented study focused on a recombinant SAHH from banana. After a successful production in the BL21 cell culture, it was purified by immobilized metal affinity chromatography, with a yield of 1.5 mg of protein per 30 mL of cell culture. Inhibitory potential of three phenolic compounds: vanillyl alcohol (VA), cinnamic acid (CA) and ferulic acid (FA) was tested. Preliminary *in silico* and *in vitro* screening revealed that FA is the most potent inhibitor and the only of the tested compounds with a positive drug likeness coefficient, predicted by Osiris Property Explorer<sup>2</sup>. After only 15 minutes of incubation 250 nM FA reduced the activity of SAHH by 50%, while VA and CA caused a moderate inhibition at the concentrations  $\geq 500$  nM. *In vitro* inhibition potential of the tested compounds is closely correlated to the discrete structural differences, as showed by the structure activity relationship analysis. Since a large number of different metabolic pathways depend on the activity of SAHH, studies regarding its inhibition could aid in the treatment of a wide range of disorders<sup>3</sup>.

### Acknowledgements

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