VI Simpozijum Srpskog udruženja za proteomiku (SePA)
"Razvoj i primena novih metoda proteomike"

Rektorat Univerziteta u Kragujevcu
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Book of abstracts

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VI Simpozijum Srpskog udruženja za proteomiku "Razvoj i primena novih metoda proteomike"

13:00 **Prof. dr Marija Stanić** - dekan PMF Kragujevac, **Prof. dr Nevena Đukić**, PMF- Kragujevac, otvaranje VI SePA simpozijuma.

13:10 **Dr Lidija Izrael – Živković**, "Proteome changes of the model bacteria *Pseudomonas aeruginosa* san ai exposed to nanoceria", Institut za hemiju, Medicinski fakultet, Univerzitet u Beogradu, Višegradska 26, Beograd, Srbija

13:30 **Dr Ana Medić**, "Flexibility of carbon catabolic pathways in *Pseudomonas aeruginosa* san ai during the biodegradation of toxic organic compounds- a multiomics approach", Institut za hemiju, Medicinski fakultet, Univerzitet u Beogradu, Višegradska 26, Beograd, Srbija

13:50 **Dr Katarina Smiljanić**, "Alterations in proteomic profiles of lung epithelial cell line BEAS 2B upon treatments with electronic cigarettes liquids and pure nicotine", Univerzitet u Beogradu – Hemijski fakultet, Studentski trg 12-16, Beograd, Srbija

14:10 **Dr Nataša Avramović**, "Application of NMR spectroscopy in metabolomics", Institut za hemiju, Medicinski fakultet, Univerzitet u Beogradu, Višegradska 26, Beograd, Srbija

14:30 **Dr Romana Masnikosa**, "Plasma profile of inflammatory mediators in NHL patients", Institut za nuklearne nauke „Vinča", Laboratorija za fizičku hemiju, Mike Petrovića Alasa 12-14 11351 Vinča, Beograd, Srbija

14:50 Pauza: Poster sekcija

15:10 **Dr Marko Živanović**, "Scaffolds for *in vivo* wound healing", Institut za informacione tehnologije Kragujevac, Jovana Cvijića bb, 34000 Kragujevac.

15:30 **Dr Milan Mladenović**, "Computational Approaches in Modulating the Estrogen Receptor α; Signaling: A Pathway for Breast Cancer Cure Discovery?", Univerzitet u Kragujevcu, Prirodno – Matematički fakultet, Institut za Hemiju, Radoja Domanovića 12, Kragujevac, Srbija

15:50 **Dr Milena Milutinović**, „The impact of natural products on the expression of apoptosis and biotransformation-related genes and proteins in immortalized carcinoma cell lines" Univerzitet u Kragujevcu, Prirodno – Matematički fakultet, Institut za Biologiju i Ekologiju, Radoja Domanovića 12, Kragujevac, Srbija

16:10 **Dr Maja Krstić Ristivojević,**"Identification of isoforms of shellfish tropomyosin" Univerzitet u Beogradu – Hemijski fakultet, Studentski trg 12-16, Beograd, Srbija

16:30 **Dr Nikola Gligorijević,** "Biocorona formation of hen proteins onto the surface of polystyrene and polyethylene terephthalate", Univerzitet u Beogradu – Hemijski fakultet, Studentski trg 12-16, Beograd, Srbija

16:50 **Dr Dragana Filipović**, "Chronic fluoxetine treatment of socially isolated rats modulates prefrontal cortex proteome", Institut za nuklearne nauke „Vinča", Laboratorija za molekularnu biologiju i endokrinologiju, Mike Petrovića Alasa 12-14 11351 Vinča, Beograd, Srbija

17:10 Analysis doo

17:30 Diskusija i zatvaranje skupa

18:00 Godišnja skupština društva

Plasma Profile of Inflamatory Mediators in NHL Patients

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Both cancer and inflammation are almost invariably accompanied by lipidome dysregulation. Hence, various lipid species have been reported as candidate markers for many solid tumours[1-3]. However, neither the global lipidome nor sub-lipidome of inflammatory pathways in Non-Hodgkin lymphoma (NHL) has been studied. In order to fill this gap and shed light on the inflammatory pathways accompanying NHL, we designed a targeted liquid chromatography – Multiple Reaction Monitoring of bioactive lipids/lipid mediators in plasma of female patients with Diffuse Large B-cell Lymphoma (DLBCL), the most often type of NHL. We chose to quantify lipids known or hypothesized to be involved in inflammation and cancer progression along with their membrane precursors. In a pilot study encompassing plasma samples from 17 DLBCL patients and 21 BMI-matched controls, we analysed levels of pro-inlammatory arachidonic acid (AA)-derived oxylipins, focusing on lipoxygenase (LOX) and cytochrome P450 monooxygenase products: hydroxyeicosatetraenoic acids (HETEs) and dihydroxyeicosatrienoic acids; several AA-containing phospholipids (PLs); specificlysophospholipid subclasses; sphingomyelins (SMs), sphingosine 1-phosphate (S1P) and polyunsaturated fatty acids. Data were subjected to classical statistics and multivariate unsupervised and supervised machine learning (ML) algorithms. The DLBCL status was profoundly associated with altered S1P, SM 34:1, SM 36:1 and phosphatidylinositol PI 34:1 abundance. On the other hand, eicosanoids 12(S)-HETE, 15(S)-HETE and thromboxane B2 were major lipid species discriminating between DLBCL and healthy status, as well as lysophosphatidylinositol LPI 20:4. The correlations between lipid species varied considerably between the cancer and controls, reflecting significant changes in lipid metabolic and/or signalling pathways, particularly those within LOX pathway and cell membrane PL remodelling. We suggest S1P, SM 36:1, SM 34:1 and PI 34:1 may beviewed as lipid signatures of DLBCL. Furthermore, these four lipid species could serve asa basis for the prospective validation in larger DLBCL/NHL clinical studies. As far as we know, this is the first plasma lipid profiling in DLBCL/NHL and, as such, brings new knowledge on the metabolic basis of inflammation in this cancer. The added value of our plasma lipid profiling in DLBCL is a deeper understanding of particulate lipid dysregulations in this tumour.

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2. Salditt T, Dučić T. X-Ray Microscopy for Neuroscience: Novel Opportunities by Coherent Optics. In: Fornasiero E, Silvio R (eds) Super-Resolution Microsc Tech Neurosci Ser, Humana Press, New York, 2014, pp 257–90.

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