



**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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Biocorona formation of hen egg white proteins onto the surface of polystyrene and polyethylene terephthalate

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Ovalbumin (OVA), a main protein of egg white, has characteristic structural fold of a serpin-family of proteins, propensity to fibril formation and stability to digestion. Microplastics (MPs) contaminating our food can interact with food proteins in the food matrix and during digestion. In this study adsorption of OVA to polystyrene (PS) (110 µm and 260 µm), polyethylene terephthalate (PET) (140 µm) MPs were investigated in acidic (pH 3) and neutral (pH 7) conditions. Formations of corona on MPs were investigated using isolated OVA and egg white protein extract comparatively. OVA adsorption depends on MPs size, polymer chemistry and pH, being highest in acidic pH and higher for PS. Adsorption of OVA to PS and PET reaches dynamic equilibrium after 4h resulting in disruption of tertiary structure and formation of hard and soft corona around MPs. Shorter fragments of OVA populate hard corona, while soft corona exclusively consist of full length OVA, albeit in its non-native conformation. The conformational changes resemble those induced by heat treatment with re-arrangement of α - β secondary structures. Structural changes are striking for the OVA in corona around MPs. Soft corona OVA preserves thermal and proteolytic stability, but loses ability to form fibrils upon heating. OVA is abundantly present in corona around MPs also in the presence of other egg white proteins. MPs contaminating food may bind and change structure and functional properties of main egg white protein.

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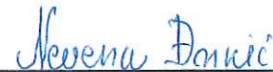
Dr Nikola Gligorijević

Velika nam je čast što ste prihvatili da održite predavanje pod naslovom "Biocorona formation of hen proteins onto the surface of polystyrene and polyethylene terephthalate" na VI Simpozijumu srpskog udruženja za proteomiku – SePA, pod nazivom: "Razvoj i primena novih metoda proteomike", koji će se održati u Kragujevcu 2. jun 2023. godine u Rektoratu u Kragujevcu.

U ime Srpskog udruženja za proteomiku,


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