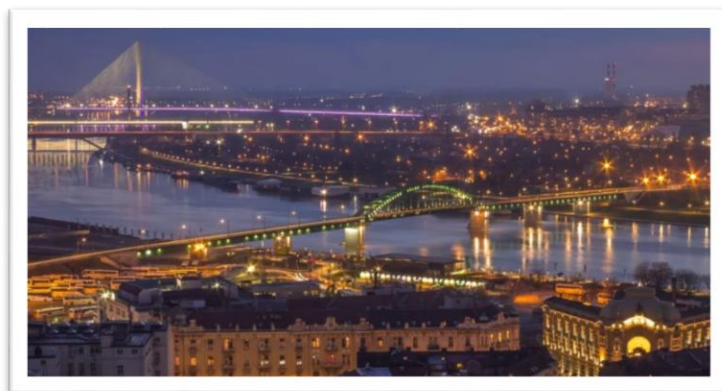




# FoodEnTwin Symposium: Novel analytical approaches in food and environmental sciences Book of Abstracts



June 16-18, 2021  
Belgrade, Serbia



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## Oral presentations

### DETECTION AND QUANTIFICATION OF TROPOMYOSIN INDIFFERENTIALLY TREATED CLAMS FROM KOREA

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Tropomyosin (TM) is known to be a major shrimp allergen (e.g., Pen m 1) and considered a cross-reacting panallergen among shellfish/invertebrates. The clam TM is also considered its major allergen but has not been widely studied. The food processing techniques can alter the TM allergenicity. Hence, the objective of this research is to detect and quantify TM in fresh and differentially treated clams collected in Korea via in-house developed sandwich ELISA protocol to evaluate the effect of various real-life processing techniques on TM stability.

Freshly bought live clams (FC), 4 groups of randomly selected equal number of similarly sized clams were differentially treated. Fresh and packaged (FPC), fresh and frozen at -20°C (FroC). The fresh clams boiled (BC) in boiling water and the marinated clams (MC) suspended in marinade solution for 5 days; soluble protein extracted overnight from 5 samples in PBS buffer with protease inhibitor; BCA assay determined the protein content; capture-detection-enzyme linked secondary antibody in-house ELISA. ELISA was validated with specific antibody based Western blot (WB).

The total soluble protein content of raw clams (FC, FPC, FroC) was between 2.8-4.9 mg/ml. The cooked clams (BC, MC) lost total protein during the cooking and was determined <1 mg/ml. The leaked protein in boiled water (BW) and marinade solution (MS) was confirmed with the protein assay as 0.48 mg/ml and 5.5 mg/ml, respectively. ELISA quantified TM (pg/ml) in FPC =BC (610) >FroC (290) >FC (75) >MC. It (and WB) showed that boiling has no effect on heat stable TM IgG binding, BW contained considerable amount of TM (with pronounced IgG binding). MC, however showed no TM epitope recognition in WB (no band in SDS PAGE) and was not quantified by ELISA nor in MS (<LLOQ). Marination might degrade the TM to significant extent possibly altering the allergenicity.

*Keywords: clam tropomyosin, differentially treated clams, in-house sandwich ELISA, specific antibody based western blot*

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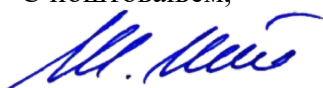
Разматран је захтев за категоризацију поглавља, који је достављен 6. септембра 2021., електронским путем Матичном одбору за хемију.

Одбор је донео одлуку да према критеријумима из важећег Правилник о стицању истраживачких и научних звања, FoodEnTwin Симпозијум „Нови Аналитички приступи у храни и науке о животној средини“, захтев је упућен од стране Тање Ћирковић Величковић

FoodEnTwin Симпозијум „Нови Аналитички приступи у храни и науке о животној средини“, одржан од 16. до 18. јуна 2021. године у Задужбини Илије М. Коларца

**јесте скуп међународног карактера.**

С поштовањем,



Проф. др Живослав Тешић  
Председник Матичног научног одбора за хемију

