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del Sacro Cuore

Dipartimento di scienze biotecnologiche di base, cliniche intensivologiche e perioperatorie



Proteomics and Metabolomics for Personalized Medicine

XV ITALIAN PROTEOMICS ASSOCIATION ANNUAL
MEETING



Italian Proteomics Association

IN PARTNERSHIP WITH
HELLENIC PROTEOMICS SOCIETY

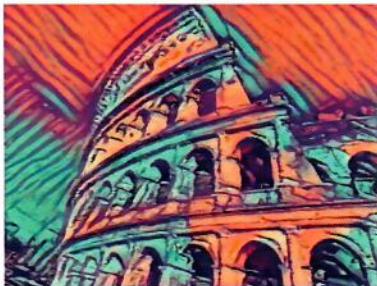


Hellenic Proteomics Society

SERBIAN PROTEOMICS ASSOCIATION
AND



СРПСКО УДРУЖЕЊЕ ЗА ПРОТЕОМИКУ-SePA



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The immunoproteomics reveals novel potential allergens in ark clam seashells, beside abundant tropomyosin

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Shellfish allergy is one of the most common food allergies with a prevalence of 0.5%-2.5% in the general population. The most common allergen present in shellfish is tropomyosin. Our aim was to probe for the presence of potentially novel allergens in two blood cockles, containing haemoglobin, *Anadara broughtonii* (AB) and *Tegillarca granosa* (TG), using sera of patients allergic to seashells and shrimps. Seashells extracts were resolved by 1D and 2D-SDS-PAGE, which were in-gel trypsin-digested and characterized with nLC-ESI-MS/MS. The presence of tropomyosin was confirmed by commercial tropomyosin standard, by 1D/2D blots with specific antibodies and by mass spectrometry identification. 1D-immunoblot was used for individual patients profiling of IgE binding, while 2D-immunoblot was used to assess IgE reactivity with the pool of patients' sera. One third of 69 sera of tested patients allergic to seafood or shrimps showed cross-reactivity with blood clams. 2D-electrophoresis showed that most of proteins are in acidic range with especially in the range 35-50 kDa, with tropomyosin's isoforms presence in majority of spots in both seashells. IgE immunoreactivity of individual patients showed great pattern diversity in 1D-immunoblot. 2D-immunoblots suggests haemoglobin and arginine kinase could be novel clams allergens. In-depth characterization of proteins causing IgE mediated allergies is important, because it can improve diagnosis and patients' health management [1].

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