**ABSTRACT SAMPLE**

**QUANTIFICATION OF PARVALBUMIN IN COMMERCIALLY IMPORTANT SEAFOOD SPECIES, USING REAL TIME PCR**

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**Abstract:** Seafood are among the eight major groups of allergens that are believed to account for more than 90% of all food allergies. Parvalbumin, a low molecular weight (12kDa) calcium-binding, heat-stable protein, represents the major allergen in fish. High homology in amino acid sequences and antibody cross-reactivities have been demonstrated for parvalbumins in different fish species. Parvalbumin is extremely abundant in fish muscle, where it plays an important role in relaxation. White muscles generally contain more parvalbumin than dark muscles, which makes the latter much less allergenic. The aim of this study was to quantify the parvalbumin allergen gene in various types of seafood, using real time PCR. Specimens from 25 species of finfish, molluscs and crustacean shellfish commonly consumed in the Mediterranean region were included in the investigation. DNA was extracted using the commercial BIOO SCIENTIFIC kit, after slight modification of the procedure described by the manufacturers. Amplification of the parvalbumin gene was performed by real time PCR. Sixteen out of the 25 species examined yielded positive amplification. Positive samples, including fish (mackerel, horse mackerel, sheepshead, red mullet, sandsmelt, pandora, saddled sea bream, gilthead sea bream, red sea bream, European sea bass, blue whiting, anchovy, sardine) and cephalopods (cuttlefish, musky octopus) exhibited largely variable thresholds, differing by as much as 12 cycles, even though equal amounts of DNA were used in PCR amplification. Gilthead sea bream (*Sparus aurata*), sardine (*Sardina pilhardus*) and red mullet (*Mullus sumuletus*) gave the lower mean threshold cycle (Ct) value (23.00), while picarel (*Spicara smaris*) and saddled sea bream (*Oblada melanura*) gave the highest mean Ct value (35.00), indicating that the copy number of gene-coded parvalbumin varied in different fish species. Studies have shown that allergic reactions to food are highly individual. For some hypersensitive patients, even trace amounts can bring about life-threatening allergic reactions.

**Key words:** parvalbumin, allergen gene, Real Time PCR

Short biography of the author

Photo of the author

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**IMPORTANT DATES**

**Abstract Submission Dedline**: April 30, 2015

**Notification of Acceptance of Abstract**: May 10, 2015

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