

## RESEARCH NOTE

# IDENTIFICATION OF TROPOMYOSIN AS MAJOR ALLERGEN OF WHITE SQUID (*LOLIGO EDULIS*) BY TWO-DIMENSIONAL IMMUNOBLOTTING AND MASS SPECTROMETRY

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**Abstract.** IgE-mediated allergic reaction to squid is one of the most frequent molluscan shellfish allergies. Previously, we have detected a 36 kDa protein as the major allergen of *Loligo edulis* (white squid) by immunoblotting using sera from patients with squid allergy. The aim of this present study was to further identify this major allergen using a proteomics approach. The major allergen was identified by a combination of two-dimensional electrophoresis (2-DE), immunoblotting, mass spectrometry and bioinformatics tools. The 2-DE gel fractionated the cooked white squid proteins to more than 50 different protein spots between 10 to 38 kDa and isoelectric point (pI) from 3.0 to 10.0. A highly reactive protein spot of a molecular mass of 36 kDa and pI of 4.55 was observed in all of the patients' serum samples tested. Mass spectrometry analysis led to identification of this allergen as tropomyosin. This finding can contribute to advancement in component-based diagnosis, management of squid allergic patients, to the development of immunotherapy and to the standardization of allergenic test products as tools in molecular allergology.

**Keywords:** *Loligo edulis*, tropomyosin, allergen, 2-DE, immunoblotting, mass spectrometry

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