

## INTISARI

Sebagai upaya preventif dalam mencegah timbulnya efek berat/serius dan dalam penanganan yang tepat pada alergi dibutuhkan adanya diagnosis. Selama ini uji alergi menggunakan produk impor yang belum mencakup alergen spesifik di Indonesia. Sehingga perlu dikembangkan kit-diagnostik alergi menggunakan sumber alergen lokal. Hewan lokal yang banyak dikonsumsi dan secara empiris menyebabkan alergi adalah ikan selar bentong (*Selar crumenophthalmus*) dan cetol (*Poecilia reticulata*). Penelitian ini bertujuan untuk mendapatkan karakteristik profil protein pada ikan-ikan tersebut berupa *heat stability* dan reaksi silang dengan antibodi protein udang.

Pertama dilakukan isolasi protein, diukur kadar protein total menggunakan metode bradford. Kemudian, isolat pada kondisi *raw* (R) dan dengan pemanasan (tahan panas/TP) pada 100°C selama 20 menit diujikan SDS-PAGE (analisis profil bobot molekul) dan ELISA untuk mengujikan potensi reaksi silang isolat protein sampel dengan IgG anti-*tropomyosin* dan IgE total penderita alergi udang. Data yang dianalisis berupa profil pita SDS-PAGE yang menggambarkan karakteristik protein yang bersifat TP, dan hasil ELISA berupa terjadi/tidaknya ikatan antara protein sampel dengan antibodi protein udang.

Hasil penelitian didapatkan kadar protein isolat protein cetol, selar dan udang masing-masing sebesar 2,61±0,39; 2,06±0,45; 2,85±0,06 mg/ml. Karakteristik profil protein ikan cetol memiliki sebanyak 25 protein (R) dengan 13 protein (TP), ikan selar 17 protein (R) dengan 15 protein (TP), dan udang sebanyak 21 protein (R) dengan 16 protein (TP). Terdapat kemiripan profil SDS-PAGE protein isolat protein cetol, selar dan udang, sehingga diprediksi ketiganya mengandung protein alergenik yang sama, diantaranya β-enolase, tropomyosin, aldolase, triosephosphate isomerase dan vitellogenin. Pada pengujian reaksi silang terkonfirmasi bahwa isolat protein cetol dan selar mengandung tropomyosin dan dapat bereaksi silang dengan IgG anti-tropomyosin udang. Selain itu, isolat protein cetol dan selar dapat bereaksi silang dengan IgE penderita alergi udang. Kesimpulan yang didapatkan bahwa adanya kemiripan protein alergenik pada ikan dan udang, dan mampu bereaksi silang.

Kata Kunci: Alergi, Cetol, Protein, Selar, Tropomyosin

## ABSTRACT

A preventive measure to prevent severe/serious effects and in proper handling of allergies, a diagnosis is needed. Allergy tests have used imported products that not cover specific allergens in Indonesia. So, necessary to develop allergy-diagnostic kits using local allergen sources. Local animals that are consumed and empirically cause allergies are bentong selar (*Selar crumenophthalmus*) and cetol (*Poecilia reticulata*). This study aims to obtain the characteristics of the protein profile in these fish in the form of heat stability and cross-reaction with shrimp protein antibody.

First, protein isolation was carried out, total protein content was measured using the Bradford method. Then, isolates in raw (R) conditions and with heating (heat resistance/TP) at 100°C for 20 minutes were tested SDS-PAGE (molecular weight profile analysis) and ELISA to test the potential for cross-reaction of protein isolate samples with IgG anti-tropomyosin and total IgE in shrimp allergy sufferers. Analyzed the characteristics of a protein that is TP based on SDS-PAGE band profile, and ELISA results is the occurrence/absence of the sample protein bonding with shrimp protein antibody.

The results showed that the protein content of cetol, selar and shrimp protein isolates was  $2.61 \pm 0.39$ ;  $2.06 \pm 0.45$ ;  $2.85 \pm 0.06$  mg/ml. Protein profile characteristic of cetol fish has 25 (R) with 13 (TP) proteins, selar fish 17 (R) with 15 (TP) proteins, and shrimp has 21 (R) with 16 (TP) proteins. Based on the SDS-PAGE protein profile of cetol, selar and shrimp protein isolates, it is predicted that all sample contain the same allergenic proteins, including  $\beta$ -enolase, tropomyosin, aldolase, triosephosphate isomerase and vitellogenin. The cross-reaction test confirmed that cetol and selar protein isolates contained tropomyosin and could cross-react with shrimp anti-tropomyosin IgG and can cross-react with IgE in shrimp allergy sufferers. The conclusion obtained that there are similarities in allergenic proteins in fish and shrimp, and capable of cross-reacting.

Keywords: allergy, cetol, protein, selar, tropomyosin