Fish allergy

ImmunoCAP™ Specific IgE tests

The increase in global fish consumption has led to an increase in reports of fish-related allergies.[1] The route of exposure is not limited to ingestion, but also includes manual handling and inhalation, which are important factors to consider in occupational exposure.[1]

ImmunoCAP™ Whole Allergens

Cod (f3) **/ Salmon** (f41)

ImmunoCAP™ Allergen Components

Gad c 1 (f426) **and/or Cyp c 1** (f355)
Parvalbumins

Major allergens

- Major fish allergens
- Specific marker allergen of genuine sensitization to fish
- Stable to heat and digestion
- Important clinical cross-reactivity among fish species
- Abundant in bony fish light muscle, but present in very low amounts in dark muscle[1-6]

Regular consumption of fish or recent exposure without symptoms: *Anisakis simplex,* a parasite residing in fish muscle, can be another source of IgE-mediated hypersensity after fish ingestion[7]

Good to know!

Parvalbumins are major allergens in fish and causes a major clinical cross reactivity between fish species.[1-6]

However, they are expressed in lower levels in certain fish species such as salmon, halibut and tuna. This perhaps explains why some fish-allergic patients can tolerate these species.[1,6]

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Cod (f3) **Salmon** (f41)	**Parvalbumin** Gad c 1	**Parvalbumin** Cyp c 1	**Interpreting results and management considerations***
+/−	+	+/−	• Primary allergen in fish, high probability of allergy to cod and closely related fish (white fish but also other fishes) due to cross-reactions[1–7] • Consider cod and closely related fish avoidance
+/−	+/−	+	• High probability of allergy to carp and closely related fish (oily fish) due to cross-reactions[1–7] • Consider carp and closely related fish avoidance
+	−	−	• If all components in the algorithm are negative and fish extracts are positive, the patient might be sensitized to an untested allergen like enolase and/or aldolase. As such, in the context of clinical history, exposure reduction may still be recommended.[7] If clinical suspicion persists, consider oral food challenge (OFC).[1]

* Results should always be interpreted in the context of the clinical history.

As cross-reactivity between fish species can be limited, consider other available ImmunoCAP whole allergens available for testing:

Whole allergen	Code
Anchovy	f313
Catfish	f369
Chub mackerel	f50
Fish (cod)	f3
Gulf flounder	f147
Haddock	f42
Hake	f307

Whole allergen	Code
Halibut	f303
Herring	f205
Jack mackerel, Scad	f60
Mackerel	f206
Megrim	f311
Plaice	f254
Pollock	f413

Whole allergen	Code
Red snapper	f381
Salmon	f41
Sardine (Pilchard)	f61
Sole	f337
Swordfish	f312
Tilapia	f414
Trout	f204

References: 1. Leung ASY et al. J Allergy Clin Immunol Pract. 2024 Mar;12(3):633-642.e9. **2.** Swoboda I, et al. Allergy 2002;57:(Suppl 73):79-84. **3.** Bugajska-Schretter A, et al. J Allergy Clin Immunol 1998;101:67–74. **4.** Lim DL-C, et al. Allergy Immunol 2008;19:399–407. **5.** Bugajska-Schretter A, et al. Gut 2000;46(5):661-669. **6.** Griesmeier U, et al. Allergy 2010;65:191-198. **7.** Dramburg S, et al. Pediatr Allergy Immunol 2023;34(Suppl 28):e13854.

Official product names: ImmunoCAP Allergen f3, Fish (cod); ImmunoCAP Allergen f426, Allergen component Gad c1 Cod; ImmunoCAP Allergen f307, Hake; ImmunoCAP Allergen f205 Herring; ImmunoCAP Allergen f60 Jack mackerel; ImmunoCAP Allergen f206 Mackerel; ImmunoCAP Allergen f311, Megrim; ImmunoCAP Allergen f254 Plaice; ImmunoCAP Allergen f413, Pollock; ImmunoCAP Allergen f381 Red snapper; ImmunoCAP Allergen f41 Salmon; ImmunoCAP Allergen f308 Sardine; ImmunoCAP Allergen f61 Sardine, Japanese Pilchard; ImmunoCAP Allergen f337 Sole; ImmunoCAP Allergen f312 Swordfish; ImmunoCAP Allergen f414 Tilapia; ImmunoCAP Allergen f204 Trout; ImmunoCAP Allergen f40 Tuna; ImmunoCAP Allergen f355, Allergen component rCyp c 1 Carp; ImmunoCAP Allergen f384, Whitefish (Inconnu)

Learn more at **thermofisher.com/allergencomponents**

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