

Shellfish and crustaceans allergy

ImmunoCAP™ Specific IgE tests

ThermoFisher
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The shellfish group is included among the “Big Eight” food groups which are responsible for more than 90% of all food allergy cases. It is estimated that up to 3% of the adult population is affected by food allergy to shellfish, including crustaceans and molluscs, depending on geographical region.^{1,2}

ImmunoCAP™
Whole Allergen

ImmunoCAP™
Allergen Components



Good to know!

Prevalence of dust mite-allergic patients with IgE to tropomyosin is reportedly between 5–18%.⁷ Patients with sIgE to Der p 10 may have a higher probability of allergic reactions to shellfish (crustaceans and molluscs), insects and parasites.⁵

Shrimp (f24)

Pen a 1 (f351) / Pen m 1*
Tropomyosins

Primary sensitiser

- Pen a 1 from *Penaeus aztecus*
- Pen m 1 from *Penaeus monodon*
- Major and clinically relevant allergens in shrimp and crustacean allergy
- Thermostable and highly allergenic proteins
- Tropomyosin proteins are highly cross-reactive amongst many invertebrate species (pan-allergen) such as shrimps and other crustacean foods such as crab, lobster, snail and molluscs as well as dust mites, cockroaches and helminths³⁻⁶

Minor allergens

Pen m 2*
Arginine kinase

Pen m 4*
Sarcoplasmic calcium binding protein

- Minor allergens from *Penaeus monodon*
- Possible relevance for the diagnosis of respiratory allergies in the occupational setting where sensitisation results from inhalation exposure

* Available only on ImmunoCAP ISAC_{E1121} test

Shrimp (f24)	Tropomyosin Pen a 1	Tropomyosin Der p 10	Interpreting results and management considerations*
			Probability to react to different tropomyosin and to crustacean foods in general – cross-reactions through tropomyosin can cause systemic symptoms. ^{3,5-7}
			Some patients sensitised to Der p 10 may react to crustacean tropomyosin such as Pen a 1 in shrimp. These patients are at higher probability of crustacean allergy. ^{3,5-7}
			If all components in the algorithm are negative and f24 is positive, the patient might be sensitized to an untested allergen. As such, in the context of clinical history, exposure reduction may still be recommended. ⁸

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

ImmunoCAP whole allergens available for testing:

Whole allergen	Code	Whole allergen	Code
Shrimp	f24	Lobster	f80
Abalone	f346	Octopus	f59
Blue mussel	f37	Oyster	f290
Clam	f207	Pacific squid	f58
Crab	f23	Snail	f314
Crayfish	f320	Squid	f258
Langust (spiny lobster)	f304	Scallop	f338

References: 1. Davis CM, et al. J Allergy Clin Immunol Pract 2020;8(1):37-44. 2. Ruethers T, et al. Mol Immunol 2018;100:28-57. 3. Turner P, et al. Ann Allergy Asthma Immunol 2011;106(6):494-501. 4. Chokshi NY, et al. Allergy Asthma 2015;36(4):65-71. 5. DeWitt AM, et al. Mol Nutr Food Res 2004;48(5):370-379. 6. Fernandes J. Clin Exp Allergy 2003;33:956. 7. Ayuso R, et al. J Allergy Clin Immunol 2008;122:795-802. 8. Dramburg S, et al. Pediatr Allergy Immunol 2023;34(Suppl 28):e13854.

Official product names: ImmunoCAP Allergen f24, Shrimp; ImmunoCAP Allergen f346, Abalone; ImmunoCAP Allergen f37 Blue mussel; ImmunoCAP Allergen f207, Clam; ImmunoCAP Allergen f23, Crab; ImmunoCAP Allergen f320, Crayfish; ImmunoCAP Allergen f304, Langust; ImmunoCAP Allergen f80, Lobster; ImmunoCAP Allergen f59, Octopus; ImmunoCAP Allergen f290; ImmunoCAP Allergen f58, Pacific squid; ImmunoCAP Allergen f314, Snail; ImmunoCAP Allergen f258, Squid; ImmunoCAP Allergen f338, Scallop; ImmunoCAP Allergen f351, Allergen component rPen a 1 Tropomyosin, Shrimp; ImmunoCAP Allergen d205, Allergen component rDer p 10 Tropomyosin, House dust mite

 Learn more at thermofisher.com/allergencomponents

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