

Patient ID:		Referring Physician:
Patient Name:		
Date of Birth:		
Sample ID:		
Barcode:	02AAN994	
Tested on:	26/11/2019	
Approved on:	26/11/2019	
Printed on:	26/11/2019	
Note: The internal QC (Plausibility check for GD) was within acceptance range.		
		Additional Information:

Lab report: Summary on detectable sensitisations

			Cross-reactive Allergen Families	
Pollen	Grass Pollen	0		
	Tree Pollen	3	Polcalcin	0
	Weed Pollen	2	Profilin	0
Mites	House Dust Mites & Storage Mites	2	PR-10	3
Microorganisms	Fungal Spores & Yeast	2	Ole e 1 Family	0
Plant-Based Food	Legumes	2	LTPs	4
	Grain	4	Storage Proteins	4
	Spices	4	Lipocalins	2
	Fruits	4	NPC2	0
	Vegetables	4	Serum albumin	4
	Nuts & Seeds	4	Parvalbumin	0
Animal-Derived Food	Milk	4	Tropomyosin	2
	Egg	4	CCD	0
	Fish & Seafood	2	Uteroglobin	3
	Meat	3	Arginine kinase	0
Insects & Venoms	Ant, Bee, Wasp	1		
	Cockroach	2	Total IgE (kU/L)	1562
Epithelial Tissues of Animals	Pets	3		
	Animals	3		
Others	Latex	0		
	Ficus	0		
	CCD	0		
	Parasite	0		

Highest measured IgE concentration per allergen group				
< 0,3 kU _A /L	0,3 - 1 kU _A /L	1 - 5 kU _A /L	5 - 15 kU _A /L	> 15 kU _A /L
0	1	2	3	4
Negative or uncertain	Low IgE level	Moderate IgE level	High IgE level	Very high IgE level

Name	Allergen	E/M(*)	Function	kU _A /L
Pollen				
Tree Pollen				
London plane tree	Pla a 3	M	nsLTP	10,79
Cottonwood	Pop n	E		0,44
Weed Pollen				
Mugwort	Art v	E		1,19
Mugwort	Art v 3	M	nsLTP	2,89
Hemp	Can s	E		0,58
Hemp	Can s 3	M	nsLTP	1,86
Russian thistle	Sal k	E		1,56
Mites				
House Dust Mite				
European house dust mite	Der p 1	M	Cysteine protease	0,53
European house dust mite	Der p 10	M	Tropomyosin	1,07
Storage Mite				
Blomia tropicalis	Blo t 5	M	Mites, Group 5	0,43
Blomia tropicalis	Blo t 10	M	Tropomyosin	1,18
Microorganisms & Spores				
Moulds				
Alternaria alternata	Alt a 1	M	Alt a 1-Family	3,81
Plant Food				
Legumes				
Peanut	Ara h 9	M	nsLTP	3,99
Cereals				
Oat	Ave s	E		0,72
Barley	Hor v	E		6,09
Millet	Pan m	E		0,73
Cultivated rye	Sec c_flour	E		21,22
Wheat	Tri a aA_TI	M	Alpha-Amylase Trypsin-Inhibitor	21,43
Wheat	Tri a 14	M	nsLTP	15,08
Wheat	Tri a 19	M	Omega-5-Gliadin	12,53
Spelt	Tri s	E		19,29
Maize	Zea m	E		6,21
Maize	Zea m 14	M	nsLTP	10,05
Spices				
Paprika	Cap a	E		0,61
Mustard	Sin	E		7,68
Mustard	Sin a 1	M	2S Albumin	15,09
Fruit				
Kiwi	Act d 1	M	Cysteine protease	8,89
Kiwi	Act d 2	M	TLP	7,53
Kiwi	Act d 10	M	nsLTP	2,59

Patient:

(*) E=Allergen Extract, M=Molecular Allergen
IgE < 0.3 negative or in question

Name	Allergen	E/M(*)	Function	kU _A /L
Strawberry	Fra a 1+3	M	PR-10+LTP	7,91
Apple	Mal d 3	M	nsLTP	14,10
Cherry	Pru av	E		0,33
Peach	Pru p 3	M	nsLTP	21,64
Blueberry	Vac m	E		0,84
Grapes	Vit v 1	M	nsLTP	5,97
Vegetables				
Onion	All c	E		0,34
Garlic	All s	E		25,31
Celery	Api g 1	M	PR-10	2,03
Celery	Api g 2	M	nsLTP	19,31
Celery	Api g 6	M	nsLTP	3,71
Carrot	Dau c	E		1,28
Carrot	Dau c 1	M	PR-10	1,89
Potato	Sol t	E		28,41
Tomato	Sola l	E		7,79
Tomato	Sola l 6	M	nsLTP	1,00
Nuts				
Pecan	Car i	E		0,95
Hazelnut	Cor a 8	M	nsLTP	1,62
Walnut	Jug r 1	M	2S Albumin	5,39
Walnut	Jug r 2	M	7/8S Globulin	1,28
Walnut	Jug r 3	M	nsLTP	20,04
Walnut	Jug r 4	M	11S Globulin	0,30
Walnut	Jug r 6	M	7/8S Globulin	0,43
Seed				
Sunflower seed	Hel a	E		0,36
Animal Food				
Milk				
Cow, milk	Bos d_milk	E		32,05
Cow, milk	Bos d 4	M	α-Lactalbumin	28,17
Cow, milk	Bos d 5	M	β-Lactoglobulin	6,63
Cow, milk	Bos d 8	M	Casein	29,64
Camel	Cam d	E		8,33
Goat, milk	Cap h_milk	E		24,89
Mare's milk	Equ c_milk	E		5,84
Sheep, milk	Ovi a_milk	E		25,50
Egg				
Egg white	Gal d_white	E		16,17
Egg yolk	Gal d_yolk	E		14,24
Egg white	Gal d 1	M	Ovomucoid	8,91
Egg white	Gal d 2	M	Ovalbumin	15,57
Egg white	Gal d 3	M	Ovotransferrin	14,25
Egg white	Gal d 4	M	Lysozym C	13,52
Egg yolk	Gal d 5	M	Serum Albumin	26,86

Name	Allergen	E/M(*)	Function	kU _A /L
Seafood				
Herring worm	Ani s 3	M	Tropomyosin	1,25
Crab	Chi spp.	E		1,17
Atlantic herring	Clu h	E		1,16
Atlantic cod	Gad m	E		0,67
Lobster	Hom g	E		0,70
Shrimp	Lit s	E		1,28
Squid	Lol spp.	E		0,47
Oyster	Ost e	E		0,34
Shrimp	Pan b	E		0,37
Black Tiger Shrimp	Pen m 1	M	Tropomyosin	2,21
Clam	Rud spp.	E		0,44
Meat				
House cricket	Ach d	E		1,53
Chicken meat	Gal d_meat	E		1,47
Migratory locust	Loc m	E		1,40
Turkey	Mel g	E		9,27
Mealworm	Ten m	E		1,48
Hymenoptera Venoms				
Wasp Venom				
Wasp venom	Ves v 5	M	Antigen 5	0,62
Cockroach				
German Cockroach	Bla g 2	M	Aspartyl protease	2,32
German Cockroach	Bla g 4	M	Lipocalin	1,10
German Cockroach	Bla g 5	M	Glutathione S-transferase	0,37
American Cockroach	Per a 7	M	Tropomyosin	1,61
Animal Origin				
Pet				
Male dog urine (incl. Can f 5)	Can f_male urine	E		2,70
Dog	Can f 4	M	Lipocalin	3,44
Cat	Fel d 1	M	Uteroglobin	6,71
House mouse	Mus m 1	M	Lipocalin	1,99
Rat	Rat n	E		0,60
Farm Animals				
Goat, epithel	Cap h_epithelia	E		9,57

Normal Total-IgE

Adults: < 20 kU/l Allergy unlikely, 20 - 100 kU/l Allergy possible, > 100 kU/l Allergy likely

Interpretation - Support

Raven Interpretation Summary

Sample Information

The sample was tested on ALEX² Barcode 02AAN994, interpretation date 11/26/2019.

Of the tested 295 allergens, 95 were above the detection limit of 0.3 kU_A/L. A sensitization can be an indicator of an allergy. For selected allergens, comments for interpretation are listed below.

Total IgE: 1562 kU/L

The measured total IgE was 1562 kU/L. A high total IgE as in this case indicates that allergy is likely.

Cross-Reactive Allergen Sensitization detected

Sensitization against allergen molecules which are markers of (broad) cross-reactivity between different allergen sources.

Detected cross-reactive allergen sensitizations:

PR-10s: Api g 1, Dau c 1

nsLTPs: Act d 10, Api g 2, Api g 6, Ara h 9, Art v 3, Can s 3, Cor a 8, Jug r 3, Mal d 3, Pla a 3, Pru p 3, Sola l 6, Tri a 14, Vit v 1, Zea m 14

Cysteine Proteases: Act d 1, Der p 1

Storage Proteins: Jug r 1, Jug r 2, Jug r 4, Jug r 6, Sin a 1

Tropomyosins: Ani s 3, Blo t 10, Der p 10, Pen m 1, Per a 7

Lipocalins: Can f 4, Mus m 1

PR-10 Proteins (PR10)

PR-10 inhalative: The major birch pollen allergen, Bet v 1, represents the prototype of all PR-10 allergens and is the primary sensitizer in regions with birch pollen exposure. The presence of PR-10 allergens in Fagales tree pollen explains IgE cross-reactivity between pollen from hazel, alder, beech, oak and hornbeam. PR-10 nutritive: PR-10 allergens in raw fruits, nuts, vegetable and legumes can induce oral allergy syndrome and sometimes severe allergic reactions in sensitized individuals. PR-10 allergens are not stable to heat and digestion.

Non-specific Lipid Transfer Proteins (LTP)

Members of the nsLTP family can cause inhalative symptoms (LTP in pollen), as well as mild to severe forms of food allergy. nsLTP allergens can be found in tree-and weed pollen, as well as in many plant foods and latex. Inhalative symptoms manifest themselves as allergic rhinoconjunctivitis and/or allergic asthma. nsLTP food allergens can trigger both mild and severe forms. nsLTPs are stable to heat and digestion.

Cysteine Proteases (CP)

Members of the CP family can cause inhalative symptoms, as well as mild to severe forms of food allergy. CP allergens can be found in several fruits, mites and in ragweed pollen. Inhalative symptoms manifest as allergic rhinoconjunctivitis and/or allergic asthma. CP food allergens can cause severe reactions. Fruit CP allergens are resistant to heat and digestion.

Storage Proteins (SP)

Members of the storage protein families are able to induce mild and very strong allergic reactions. Allergens of these families can be found in legumes, nuts and seeds. Storage proteins are resistant to heat and digestion. Storage protein allergen families include 2S Albumins, 7/8S & 11S Globulins.

Tropomyosins (TM)

Members of the Tropomyosin family can cause inhalative, as well as mild to severe reactions after consumption of seafood. Allergens of the TM family have been identified in cockroaches, mites, fish-parasites and seafood. The degree of cross-reactivity between TM members is high.

Lipocalins (LC)

Nearly all members of the Lipocalin allergen family can cause inhalative symptoms like allergic rhinoconjunctivitis and allergic asthma. Lipocalin from pigeon tick is associated with idiopathic nocturnal anaphylaxis. The degree of cross-reactivity varies wildly between members of this family. Some members of the Lipocalin family serve as markers for AIT indication.

Weeds / Mugwort

Sensitisation to mugwort was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Art v 3 is a member of the nsLTP allergen family. The degree of cross-reactivity to most other members of this family can be considered medium to high. Art v 3 reactivity is frequently associated with nsLTP sensitization in Mediterranean patients.

Causal treatment is possible via AIT - Art v 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines and corticosteroids in various formulations (tablets, spray).

Salk / Russian Thistle

Sensitisation to Russian thistle was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Causal treatment is possible via AIT - Sal k 1 serves as a marker for AIT indication. Symptomatic treatment includes anti-histamines and corticosteroids in various formulations (tablets, spray).

Moulds / Spores

Alternaria

Patient:

(*) E=Allergen Extract, M=Molecular Allergen
IgE < 0.3 negative or in question

Sensitisation to spores from *Alternaria* was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Alt a 1 is a member of the Alt a 1 allergen family and is associated with inhalative symptoms. Cross-reactions between Alt a 1 and other members of the Alt a 1 allergen family have been described. Alt a 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Causal treatment is possible via AIT, Symptomatic treatment includes anti-histamines and corticosteroids in various formulations (tablets, spray).

Mites & Coackroaches

House dust mites

Sensitization to house dust mite was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to asthma.

Der p 1 & Der f 1 are members of the Cystein Protease allergen family (CP). The degree of cross-reactivity between different members of the CP family is high in different house dust mite species. Both Der p 1 and Der f 1 serve as markers for AIT indication, if corresponding symptoms are present. Positive results were obtained for: Der p 1.

Der p 10 is a member of the Tropomyosin allergen family. The degree of cross-reactivity between Der p 10 and other Tropomyosins is high. Sensitisation to Der p 10 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Allergen avoidance is advised. Encasings for blankets, mattresses, pillows) can reduce the allergen load. Der f 1/Der p 1 and Der f 2/Der p 2 are major allergens from house dust mite and serve as markers for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablets, spray).

Storage Mites

Sensitisation to *Blomia tropicalis* was detected. Allergic symptoms associated with this allergen source range from allergic rhino-conjunctivitis allergic rhinoconjunctivitis to allergic asthma.

Blo t 5 is a member of the Mite Group 5/21 allergen family (MG 5/21) and a marker for *Blomia tropicalis* sensitisation. The degree of cross-reactivity to other members of the MG 5/21 allergen family is limited (e.g. to Der p 5). Blo t 5 may serve as a marker for AIT indication, if corresponding clinical symptoms are present.

Blo t 10 is a member of the Tropomyosin allergen family and it is highly cross-reactive to other members of this allergen family. Sensitisation to Blo t p 10 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Allergen avoidance is advised. Encasings for blankets, mattresses, pillows) can reduce the allergen load. Blo t 5 and 21 may serve as markers for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablets, spray).

Cockroach

Sensitisation to cockroach was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Per a 7 is a member of the Tropomyosin allergen family and it is highly cross-reactive to other members of this allergen family. Sensitisation to Blo t p 10 can be the cause for cross-reactions to shrimp and other seafood species (except fish).

Bla g 2 is a member of the aspartate protease allergen family(PA). Cross-reactions between other members so the PA family are possible. High concentrations of Bla g 2 are found in fecal particles.

Bla g 4 is a member of the calycin allergen family. Cross-reactions to other members of the calycin allergen family have been described.

Bla g 5 is a member of the glutathione S-transferase allergen family (GST) and a major allergen from cockroach. Cross-reactivity to other members of the GST family have been described.

Pest control is advised as a first line measure. If this is not possible, an AIT can be prescribed. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablets, spray).

Furry Animals

Cat

Sensitisation to cat was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Fel d 1 is a member of the Uteroglobin (UG) allergen family and a marker for genuine cat allergy. Fel d 1 is also serves as a marker for AIT indication, if corresponding clinical symptoms are present. The degree of cross-reactivity between Fel d 1 and other members of the UG allergen family is moderate (e.g. Can f Fel d 1 like from dog).

If avoidance of cats is not possible an AIT can be prescribed. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablets, spray).

Dog

Sensitisation to dog was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Can f 4 is a member of the Lipocalin allergen family (LC). The degree of cross-reactivity to other members of the LC family is very low. A low degree of cross-reactivity has been reported with a related allergen from cattle. Can f 4 is the most abundant allergen in dog fur.

Can f 5 is a member of the Arginine Esterase allergen family. It is a major allergen in male dogs only. Female and castrated dogs do not express Can f 5 in significant amounts. Also, patients sensitised to Can f 5 may react to human seminal fluid.

If avoidance of dogs is not possible an AIT can be prescribed. Symptomatic treatment includes anti-histamines as well as corticosteroids in various formulations (tablets, spray).

Nuts and Legumes

Peanut

Sensitization to peanut was detected. Allergic symptoms associated with peanut allergens range from oral allergy syndrome to severe, anaphylactic reactions.

Ara h 9 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Ara h 9 and other members of the nsLTP allergen family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Ara h 9 is stable towards heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Hazelnut

Sensitization to hazelnut was detected. Allergic symptoms associated with hazelnut allergens range from oral allergy syndrome to severe, anaphylactic reactions.

Cor a 8 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Cor a 8 and other members of the nsLTP family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Cor a 8 is stable towards heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Walnut

Sensitization to walnut was detected. Allergic symptoms associated with walnut allergens range from oral allergy syndrome to severe, anaphylactic reactions.

Jug r 1,2,4 & 6 are storage proteins associated with clinical reactions up to anaphylaxis. The degree of cross-reactivity between storage proteins from walnut and storage proteins from legumes, nuts and seeds is moderate. The exception is Jug r 6, which can crossreact with related allergens from tree nuts (e.g. Cor a 11 from hazelnut) and sesame. The importance of these cross-reactions has to be analysed on a clinical level. Jug r 1,2,4 are stable towards heat and digestion. Jug r 6 displays intermediate thermal stability and susceptibility to digestion. Positive results were obtained for: Jug r 1, Jug r 2, Jug r 4, Jug r 6.

Jug r 3 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Jug r 3 and other members of the nsLTP family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Jug r 3 is stable towards heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Wheat

Sensitization to wheat (flour) was detected. Allergic symptoms associated with wheat include immediate and exercise induced anaphylaxis, baker's asthma, gastrointestinal- and skin reactions.

Tri a 14 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Tri a 14 and other members of the nsLTP family and other members of the nsLTP family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Tri a 14 is stable towards heat and digestion.

Tri a 19 is a member of the Gliadin family and can cause wheat dependent exercise induced anaphylaxis. Patients in this category do not react, when wheat is consumed and no physical exertion takes place hours before and after wheat intake. Tri a 19 is also able to induce classic forms of immediate type wheat allergy.

Alpha-amylase trypsin inhibitor from wheat is associated with the development of baker's asthma.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Fruits

Peach

Sensitization to peach was detected. Allergic symptoms associated with peach allergy range from oral allergy syndrome to severe, anaphylactic reactions.

Pru p 3 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Pru p 3 and other members of the nsLTP allergen family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Pru p 3 is stable towards heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Apple

Sensitization to apple was detected. Allergic symptoms associated with apple allergy range from oral allergy syndrome and in very rare cases to anaphylactic reactions.

Mal d 3 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Mal d 3 and other members of the nsLTP family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Mal d 3 is stable towards heat and digestion.

As Mal d 1 is heat sensitive, baked or cooked apple can be consumed without danger for clinical reactions. In case of a genuine apple allergy due to sensitizations to Mal d 2 and 3, avoidance is the therapeutic option of choice. If an anaphylactic reaction occurred, the prescription of an emergency kit is advised.

Kiwi

Sensitization to kiwi was detected. Allergic symptoms associated with kiwi allergy range from oral allergy syndrome to severe, anaphylactic reactions.

Act d 1 is a member of the Cysteine Protease allergen family (CP). The degree of cross-reactivity to other members of the CP family is very low outside different kiwi cultivars. Act d 1 is stable to heat and digestion.

Act d 2 is a member of the TLP allergen family. So far, the clinical importance of TLPs has not been elucidated. The degree of cross-reactivity between Act d 2 and other members (e.g. Mal d 2 from apple) of the TLP allergen family is high. The importance of a TLP sensitization has to be

analysed clinically. Stability studies showed that TLPs are resistant und heat and digestion.

Act d 10 is a member for the nsLTP allergen family and can cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Act d 10 and other members of the nsLTP family is high within botanically closely related species (e.g. stone fruit). The importance of these cross-reactions has to be analysed on a clinical level. Act d 10 is stable towards heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Animal food (Milk, Egg)

Milk

Sensitization to milk was detected. Allergic symptoms associated with milk include severe, anaphylactic reactions, as well as gastrointestinal symptoms and worsening of skin status in individuals suffering from atopic dermatitis. Most children can be expected to outgrow their cow's milk allergy.

Bos d 4 and Bos d 5 are heat labile allergens from cow's milk. Well cooked or baked milk will be tolerated by sensitized patients. Positive results were obtained for: Bos d 4, Bos d 5.

Bos d 8 is a member of the Casein allergen family. The degree of cross-reactivity between caseins from different species is very high. Caseins are stable to heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector). Aside from Bos d 8, cow's milk allergens are not stable to heat.

Egg

Sensitization to hen's egg was detected. Allergic symptoms associated with hen's egg include severe, anaphylactic reactions, as well as gastrointestinal symptoms and worsening of skin status in individuals suffering from atopic dermatitis.

Gal d 1 is a member of the ovomucoid family. The degree of cross-reactivity to ovomucoids from other bird species is high. Ovomucoids are stable to heat and digestions.

Gal d 2 & 3 are heat labile allergens from hen's egg. Well cooked or baked hen's egg will be tolerated by sensitized patients. Gal d 2 can cause allergic complications in sensitized individuals, who are vaccinated with Gal d 2 (Ovalbumin) containing vaccines. Positive results were obtained for: Gal d 2, Gal d 3.

Gal d 4 is a member of the Lysozyme C allergen family. Gal d 4 is used as an additive in pharmaceutical products (E1105) and various food (e.g. cheese). Clinical reactions to Gal d 4 also occur by the intake of raw or mildly heated hen's egg containing products.

Gal d 5 is a heat labile allergen from hen's egg. The degree of cross-reactivity between Gal d 5 and other Serum Albumins is moderate. The importance of these cross-reactions has to be analysed on a clinical level. Serum albumins are not stable towards heat and digestion. Gal d 5 is also implicated in the bird-egg syndrome.

Include intensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector). Aside from Gal d 1, hen's egg allergens are not stable to heat.

Fish and seafood

Sensitization to fish was detected. Allergic symptoms associated with fish allergy include mild as well as severe, anaphylactic reactions and also asthmatic exacerbations.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Shrimp

Sensitization to seafood was detected. Allergic symptoms associated with fish allergy include mild as well as severe, anaphylactic reactions and also asthmatic exacerbations.

Pen m 1 is a member of the Tropomyosin allergen family. It is stable to heat and digestion. The degree of cross-reactivity between Pen m 1 and other Tropomyosins is high. It is stable to heat and digestion.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector).

Insect venoms

Sensitization to wasp venom was detected. Allergic symptoms associated with wasp venom allergy range from local to severe anaphylactic reactions.

Ves v 5 is a member of the Antigen 5 allergen family, which serves as a marker for AIT indication, if corresponding clinical symptoms are present. The degree of cross-reactivity between Ves v 5 and other members of the antigen 5 allergen family is moderate (e.g. Pol d 5 from *Polistes dominulus*).

As avoidance of wasps is difficult, AIT is the major therapy option in wasp venom allergy. Additionally the prescription of an emergency kit (incl. adrenalin autoinjector) is advised.

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