

PATIENT ID:

 VH_Test_2

PATIENT NAME:

 Inhalant Allergy Panel

DATE OF BIRTH:

 01/01/2001

SAMPLE ID:

 Viva Health Test 2

QR-CODE:

 02ANU31D

ANALYZED ON:

 01/12/2022

TESTED ALLERGENS:

 295

TEST METHOD:

 ALEX²

REFERRING PHYSICIAN:

Viva Health Laboratories

TESTED BY:

BIO-DIAGNOSTICS LTD,
UPTON INDUSTRIAL ESTATE,
RECTORY ROAD, UPTON UPON SEVERN,
WORCESTERSHIRE
WR8 0LX

The internal QC (Plausibility check for GD) was within acceptance range.

Lab report: Summary on detectable sensitisations

POLLEN

Grass Pollen



Tree Pollen



Weed Pollen



MITES

House Dust Mites & Storage Mites



PLANT-BASED FOOD

Legumes

Grains

Spices

Fruits

Vegetables

Nuts & Seeds

INSECTS & VENOMS

Ant, Bee, Wasp

Cockroach



MICROORGANISMS

Fungal Spores & Yeast



ANIMAL-DERIVED FOOD

Milk

Egg

Fish & Seafood

Meat

EPITHELIAL TISSUES OF ANIMALS

Pets



Farm Animals



OTHERS

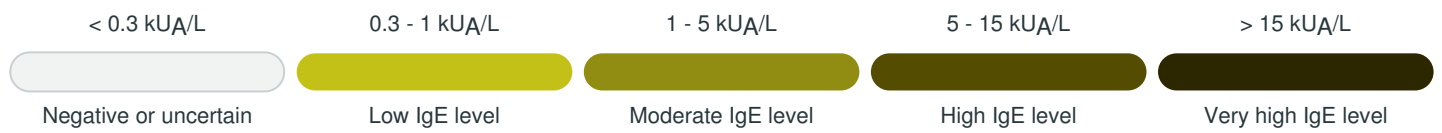
Latex

Ficus

CCD

Parasite

Highest measured IgE concentration per allergen group



Name	E/M	Allergen	Function	kU _A /L
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POLLEN

Grass Pollen

Bermuda grass	■ ■ ■ ■	Cyn d		7.66	
	●	Cyn d 1	Beta-Expansin	24.57	
Perennial Ryegrass	●	Lol p 1	Beta-Expansin	33.78	
Bahia grass	■ ■ ■ ■	Pas n		0.50	
Timothy grass	●	Phl p 1	Beta-Expansin	44.10	
	●	Phl p 2	Expansin	37.24	
	●	Phl p 5.0101	Grass Group 5/6	43.37	
	●	Phl p 6	Grass Group 5/6	33.45	
	●	Phl p 7	Polcalcin	≤ 0.10	
	●	Phl p 12	Profilin	5.28	
Common reed	■ ■ ■ ■	Phr c		0.46	
Cultivated rye, Pollen	■ ■ ■ ■	Sec c_pollen		7.03	

Tree Pollen

Acacia	■ ■ ■ ■	Aca m		0.68	
Tree of Heaven	■ ■ ■ ■	Ail a		0.12	
Alder	●	Aln g 1	PR-10	15.61	
	●	Aln g 4	Polcalcin	≤ 0.10	
Silver birch	●	Bet v 1	PR-10	44.72	
	●	Bet v 2	Profilin	1.93	
	●	Bet v 6	Isoflavon Reductase	17.15	
Paper mulberry	■ ■ ■ ■	Bro pa		0.13	
Hazel pollen	■ ■ ■ ■	Cor a_pollen		7.34	
	●	Cor a 1.0103	PR-10	27.04	
Sugi	●	Cry j 1	Pectate Lyase	0.85	
Cypress	●	Cup a 1	Pectate Lyase	6.06	
	■ ■ ■ ■	Cup s		0.45	
Beech	●	Fag s 1	PR-10	17.72	
Ash	■ ■ ■ ■	Fra e		8.34	
	●	Fra e 1	Ole e 1-Family	20.39	
Walnut pollen	■ ■ ■ ■	Jug r_pollen		1.42	
Mountain cedar	■ ■ ■ ■	Jun a		≤ 0.10	
Mulberry	■ ■ ■ ■	Mor r		≤ 0.10	
Olive	●	Ole e 1	Ole e 1-Family	32.34	

Name	E/M	Allergen	Function	kU _A /L
	⊙	Ole e 9	1,3 β Glucanase	≤ 0.10
Date palm	⊙	Pho d 2	Profilin	18.70
London plane tree	⊙	Pla a 1	Plant Invertase	≤ 0.10
	⊙	Pla a 2	Polygalacturonase	0.25
	⊙	Pla a 3	nsLTP	0.52
Cottonwood	⬢	Pop n		0.92
Elm	⬢	Ulm c		≤ 0.10

Weed Pollen

Common Pigweed	⬢	Ama r		0.30
Ragweed	⬢	Amb a		≤ 0.10
	⊙	Amb a 1	Pectate Lyase	≤ 0.10
	⊙	Amb a 4	Plant Defensin	≤ 0.10
Mugwort	⬢	Art v		0.17
	⊙	Art v 1	Plant Defensin	≤ 0.10
	⊙	Art v 3	nsLTP	0.64
Hemp	⬢	Can s		0.13
	⊙	Can s 3	nsLTP	≤ 0.10
Lamb's quarter	⬢	Che a		≤ 0.10
	⊙	Che a 1	Ole e 1-Family	≤ 0.10
Annual mercury	⊙	Mer a 1	Profilin	3.63
Wall pellitory	⬢	Par j		≤ 0.10
	⊙	Par j 2	nsLTP	≤ 0.10
Ribwort	⬢	Pla l		≤ 0.10
	⊙	Pla l 1	Ole e 1-Family	0.32
Russian thistle	⬢	Sal k		0.62
	⊙	Sal k 1	Pectin Methylesterase	≤ 0.10
Nettle	⬢	Urt d		≤ 0.10

MITES

House Dust Mite

American house dust mite	⊙	Der f 1	Cysteine protease	≤ 0.10
	⊙	Der f 2	NPC2 Family	≤ 0.10
European house dust mite	⊙	Der p 1	Cysteine protease	0.44
	⊙	Der p 2	NPC2 Family	≤ 0.10
	⊙	Der p 5	unknown	≤ 0.10

Name	E/M	Allergen	Function	kU _A /L
	⊙	Der p 7	Mites, Group 7	0.34
	⊙	Der p 10	Tropomyosin	≤ 0.10
	⊙	Der p 11	Myosin, heavy chain	≤ 0.10
	⊙	Der p 20	Arginine kinase	≤ 0.10
	⊙	Der p 21	unknown	≤ 0.10
	⊙	Der p 23	Peritrophin-like protein domain	11.61

Storage Mite

Acarus siro	⋮	Aca s		≤ 0.10
Blomia tropicalis	⊙	Blo t 5	Mites, Group 5	≤ 0.10
	⊙	Blo t 10	Tropomyosin	≤ 0.10
	⊙	Blo t 21	unknown	0.14
Glycyphagus domesticus	⊙	Gly d 2	NPC2 Family	0.22
Lepidoglyphus destructor	⊙	Lep d 2	NPC2 Family	≤ 0.10
Tyrophagus putrescentiae	⋮	Tyr p		≤ 0.10
	⊙	Tyr p 2	NPC2 Family	≤ 0.10

MICROORGANISMS & SPORES

Yeast

Malassezia sympodialis	⊙	Mala s 5	unknown	≤ 0.10
	⊙	Mala s 6	Cyclophilin	0.50
	⊙	Mala s 11	Mn Superoxid-Dismutase	≤ 0.10

Moulds

Alternaria alternata	⊙	Alt a 1	Alt a 1-Family	5.27
	⊙	Alt a 6	Enolase	≤ 0.10
Aspergillus fumigatus	⊙	Asp f 1	Mitogillin Family	≤ 0.10
	⊙	Asp f 3	Peroxisomal Protein	≤ 0.10
	⊙	Asp f 4	unknown	≤ 0.10
	⊙	Asp f 6	Mn Superoxid-Dismutase	≤ 0.10
Cladosporium herbarum	⋮	Cla h		0.10
	⊙	Cla h 8	Short Chain Dehydrogenase	0.16
Penicilium chrysogenum	⋮	Pen ch		≤ 0.10

Name	E/M	Allergen	Function	kU _A /L
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INSECTS & VENOMS

Cockroach

German Cockroach	⊙	Bla g 1	Cockroach Group 1	≤ 0.10	
	⊙	Bla g 2	Aspartyl protease	0.36	
	⊙	Bla g 4	Lipocalin	0.12	
	⊙	Bla g 5	Glutathione S-transferase	≤ 0.10	
	⊙	Bla g 9	Arginine kinase	≤ 0.10	
American Cockroach	⦿	Per a		≤ 0.10	
	⊙	Per a 7	Tropomyosin	0.17	

ANIMAL ORIGIN

Pet

Dog	⊙	Can f_Fd1	Uteroglobin	≤ 0.10	
Male dog urine (incl. Can f 5)	⦿	Can f_male urine		≤ 0.10	
Dog	⊙	Can f 1	Lipocalin	≤ 0.10	
	⊙	Can f 2	Lipocalin	≤ 0.10	
	⊙	Can f 3	Serum Albumin	≤ 0.10	
	⊙	Can f 4	Lipocalin	≤ 0.10	
	⊙	Can f 6	Lipocalin	0.11	
Guinea pig	⊙	Cav p 1	Lipocalin	≤ 0.10	
Cat	⊙	Fel d 1	Uteroglobin	≤ 0.10	
	⊙	Fel d 2	Serum Albumin	0.42	
	⊙	Fel d 4	Lipocalin	≤ 0.10	
	⊙	Fel d 7	Lipocalin	≤ 0.10	
House mouse	⊙	Mus m 1	Lipocalin	≤ 0.10	
Rabbit, epithel	⊙	Ory c 1	Lipocalin	≤ 0.10	
	⊙	Ory c 2	Lipophilin	≤ 0.10	
	⊙	Ory c 3	Uteroglobin	≤ 0.10	
Djungarian hamster	⊙	Phod s 1	Lipocalin	≤ 0.10	
Rat	⦿	Rat n		0.27	

Farm Animals

Cattle	⊙	Bos d 2	Lipocalin	0.25	
Goat, epithel	⦿	Cap h_epithelia		≤ 0.10	

Name	E/M	Allergen	Function	kU _A /L
Horse, epithel	⊙	Equ c 1	Lipocalin	≤ 0.10
	⊙	Equ c 3	Serum Albumin	≤ 0.10
	⊙	Equ c 4	Latherin	≤ 0.10
Sheep, epithel	⬢⬢⬢	Ovi a_epithelia		≤ 0.10
Pig	⬢⬢⬢	Sus d_epithelia		0.38

Total IgE: 951 kU/L**Reference range total-IgE****Adults:** < 100 kU/LPRINTED ON
01/12/2022MOD ALLERGEN PANEL
Viva Health Labs - Inhalant Allergy & tIgE

Information to cross-reactive allergens

Profilins

Profilins show a very high degree of cross-reactivity.

Depending on the population, up to 50% of pollen allergics are sensitised to profilin (higher rate in Mediterranean countries, lower rate in Northern Europe). The sensitisation to profilin can cause inhalative symptoms. Up to 50% of profilin sensitised patients may have food allergy - oral allergy syndrome in most cases. Raw tomato, melon, watermelon, and citrus fruits are typically associated with profilin. Profilins are not stable to processing.

PR-10

PR-10 allergens show a high degree of cross-reactivity.

PR-10 inhalative:

The major birch pollen allergen, Bet v 1, represents the prototype of all PR-10 allergens and is the primary sensitiser 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 sensitised individuals, if a high amount of the respective allergen is consumed. PR-10 allergens are not stable to processing.

Ole e 1 Family

Ole e 1 family allergens show a high degree of cross-reactivity within plant family borders.

The major olive pollen allergen, Ole e 1, represents the prototype of all Ole e 1 family allergens and is the primary sensitiser in regions with olive pollen exposure. Further Ole e 1 related allergens were identified in other trees from the Oleaceae family (ash, lilac, privet). There are further Ole e 1 family members present in grass- and weed pollen.

nsLTPs

nsLTPs show a high degree of cross-reactivity within plant family borders (e.g. stone-fruit, Rosaceae).

nsLTPs are the most prevalent plant-food allergens in Southern Europe. The clinical reactions can be systemic and severe, especially when not associated to birch pollinosis. Pru p 3, the major allergen of peach, plays a precursor role in the sensitization to other nsLTPs. Relevant nsLTPs containing plant-foods belong not only to Rosaceae family (incl. stone- and pomaceous fruit), but also to the nuts and legumes group, as well as to cereals such as wheat, maize and rice. nsLTPs are stable to processing.

Serum Albumins

Serum albumins show a very high degree of cross-reactivity.

Serum albumins represent a minor respiratory allergen of animal dander. Serum albumins are also implicated in rare allergic diseases like pork-cat and bird-egg syndrome. Meat and milk allergen: May elicit severe symptoms upon ingestion of uncooked or unboiled food, not stable to processing.

ALEX² – Number of tested allergen sources: 165



GRASS POLLEN 6
Bahia grass, Bermuda grass, Common reed, Perennial ryegrass, Rye, Timothy grass



COCKROACH 2
American cockroach, German cockroach



TREE POLLEN 19
Acacia, Alder, Arizona Cypress, European Ash, Beech, Cottonwood, Date palm, Elm, Hazel, London Plane Tree, Mediterranean Cypress, Mountain cedar, Mulberry, Olive, Paper mulberry, Silver birch, Sugi, Tree of Heaven, Walnut



INSECT VENOMS 5
Common wasp venom, Fire ant venom, Honeybee venom, Long-headed wasp venom, Paper wasp venom



WEED POLLEN 10
Annual mercury, Hemp, Lamb's quarter, Mugwort, Nettle, Pigweed, Ragweed, Ribwort, Russian thistle, Wall pellitory



FUNGAL SPORES & YEAST 6
Alternaria alternata, Aspergillus fumigatus, Baker's yeast, Cladosporium herbarum, Malassezia sympodialis, Penicillium chrysogenum



HOUSE DUST MITES & STORAGE MITES 7
Acarus siro, American house dust mite, Blomia tropicalis, European house dust mite, Glycyphagus domesticus, Lepidoglyphus destructor, Tyrophagus putrescentiae



EGG 2
Egg white, Egg yolk



LEGUMES 6
Chickpea, White bean, Lentil, Pea, Peanut, Soy



FISH & SEAFOOD 20
Anisakis simplex, Atlantic cod, Atlantic herring, Atlantic mackerel, Black-Tiger shrimp, Brown shrimp, Carp, Common mussel, Crab, Lobster, Northern prawn, Oyster, Salmon, Scallop, Shrimp mix, Squid, Swordfish, Thornback ray, Tuna, Venus clam



GRAINS 11
Barley, Buckwheat, Corn, Cultivated rye, Lupine, Millet, Oat, Quinoa, Rice, Spelt, Wheat



MEAT 10
Beef, Chicken, Horse, House cricket, Lamb, Mealworm, Migratory locust, Pig, Rabbit, Turkey



SPICES 6
Anise, Caraway, Mustard, Oregano, Paprika, Parsley



PETS 7
Cat, Djungarian hamster, Dog, Guinea pig, Mouse, Rabbit, Rat



FRUITS 15
Avocado, Apple, Banana, Blueberry, Cherry, Fig, Grape, Kiwi, Mango, Muskmelon, Orange, Papaya, Peach, Pear, Strawberry



FARM ANIMALS 5
Cattle, Goat, Horse, Pig, Sheep



VEGETABLES 6
Carrot, Celery, Garlic, Onion, Potato, Tomato



OTHERS 4
Latex, Hom s lactoferrin, Pigeon tick, Weeping fig



NUTS & SEEDS 13
Almond, Brazil nut, Cashew, Hazelnut, Macadamia, Pecan, Pistachio, Walnut, Fenugreek seeds, Poppy seed, Pumpkin seed, Sesame, Sunflower seed



INTERPRETATION GUIDANCE SOFTWARE

Interpretation - Support

Raven Interpretation Summary

Sample Information

The sample was tested on ALEX² Barcode 02ANU31D, interpretation date 01/12/2022.

Of the tested 121 allergens, 42 were/was above the cut off of 0.3 kU_A/L. A sensitisation can be an indicator of an IgE dependent allergy. For all positive ALEX 2 allergens, comments for interpretation guidance are listed below.

Total IgE: 951 kU/L

The measured total IgE was 951 kU/L. With a total IgE titre above 100 kU/L, allergy is likely.

Cross-Reactive allergen sensitisation detected

Sensitisations against molecular allergens which are markers of (broad) cross-reactivity between different allergen sources were detected.

Detected cross-reactive allergen sensitisations:

- PR-10s: Aln g 1, Bet v 1, Cor a 1.0103, Fag s 1
- nsLTPs: Art v 3, Pla a 3
- Profilins: Bet v 2, Mer a 1, Phl p 12, Pho d 2
- Cysteine Proteases: Der p 1
- Isoflavon Reductases: Bet v 6

PR-10 Proteins

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

Non-specific Lipid Transfer Proteins (nsLTP)

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

Profilins

Members of the Profilin allergen family can cause inhalative symptoms, as well as mild forms of food allergy. Profilins are present in all plant based allergen sources. Inhalative symptoms - if they occur at all - are usually mild. Profilin food allergy is usually mild and restricted to oral allergy syndrome. Profilins from foods are not resistant to heat and digestion.

Cysteine Proteases

Members of the CP allergen 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.

Isoflavon Reductases

The role of allergens from the IR allergen family is not completely understood. Newer data point to a minor role regarding inhalative symptoms. Members of the IR allergen family can be found in pollen, fruit and vegetables. IR allergens from fruit and vegetables could be responsible for mild symptoms.

Tree Pollen

Acacia

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

A causal treatment via AIT is not available. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Birch Family

Sensitisation to pollen from the birch family was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Aln g 1 is a member of the PR-10 allergen family and is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Aln g 1 and pollen- as well as food-allergens from the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. Aln g 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Bet v 1 is the major allergen in birch pollen and a member of the PR-10 allergen family. It is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Bet v 1 and pollen- as well as food-allergens from the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. Bet v 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Bet v 2 is a member of the Profilin allergen family and is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Bet v 2 and between other members of the Profilin allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level.

Bet v 6 is a member of the Isoflavon Reductase (IR) allergen family. Recent data point to a minor role regarding inhalative symptoms. Cross-reactions between Bet v 6 and other members of the IR allergen family have been described. Patients with isolated sensitisation to Bet v 6 (without Bet v 1) are not suitable candidates for AIT. As IRs are panallergens in plant-derived food, sensitisation to Bet v 6 may cause oral allergy syndrome.

Cor a 1.0103 is a member of the PR-10 family and is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Cor a 1.0103 and pollen- as well as food-allergens from the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. Cor a 1.0103 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Fag s 1 is a member of the PR-10 allergen family and is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Fag s 1 and between other members of the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level.

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

Cottonwood

Sensitisation to cottonwood pollen was detected. Allergic symptoms associated with this allergen source includes allergic rhinoconjunctivitis. So far a member of the Profilin allergen family has been officially accepted by the WHO (Pop n 2).

AIT is available as a causal treatment but rarely performed. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Cypress Family

Sensitisation to pollen from the cypress family was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Cry j 1 is a member of the Pectate Lyase allergen family. The degree of cross-reactivity between different cypress species based on Pectate Lyases is high. Cry j 1 serves as a marker for AIT indication, if corresponding clinical symptoms are present.

Cup a 1 is a member of the Pectate Lyase allergen family. The degree of cross-reactivity between different cypress species based on Pectate Lyases is high. Cup 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 (tablet, spray).

Date Palm

Sensitisation to date palm pollen was detected. Allergic symptoms associated with date palm pollen range from allergic rhinoconjunctivitis to allergic asthma.

Pho d 2 is a member of the Profilin allergen family and is associated with inhalative symptoms and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Pho d 2 and other members of the Profilin allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level.

A causal treatment via AIT may not be available. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Olive family

Sensitisation to pollen from the olive family was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Fra e 1 / Ole e 1 are members of the Ole e 1 allergen family. The degree of cross-reactivity is very high within the Oleaceae family (e.g. between ash, olive, lilac, privet), not so with more distant relatives (e.g. English Plantain). Fra e 1/Ole e 1 are major allergens from Ash/Olive and serve as markers for AIT indication, if corresponding clinical symptoms are present.

Causal treatment is possible via AIT - Fra e 1/Ole e 1 serve as markers for AIT indication, if corresponding clinical symptoms are present. Symptomatic treatment includes anti-histamines and corticosteroids in various formulations (tablet, spray).

London Plane Tree

Sensitisation to London Plane tree pollen was detected. Allergic symptoms associated with this allergen source range from allergic rhinoconjunctivitis to allergic asthma.

Pla a 3 is a member of the nsLTP allergen family. The degree of cross-reactivity to most other members of this family can be considered high. Pla a 3 reactivity is frequently associated with nsLTP sensitisation in Mediterranean patients. AIT is not indicated, when Pla a 3 is the only positive allergen from London Plane Tree pollen. Pla a 3 reactivity is frequently found positive in patients with food allergy caused by nsLTPs.

A causal treatment via AIT is a possible way to treat London Plane tree allergies. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Walnut Tree

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

A causal treatment via AIT may not be available. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Grass pollen

Sensitisation to grass pollen was detected. Allergic symptoms associated with grass pollen range from allergic rhinoconjunctivitis to allergic asthma.

Cyn d 1, Lol p 1 and Phl p 1 are members of the β -Expansin allergen family. The degree of cross-reactivity between members of this allergen family is very high. β -Expansins serve as markers for AIT indication, if corresponding clinical symptoms are present. Positive results were obtained for: Cyn d 1, Lol p 1, Phl p 1.

Phl p 2 is a member of the Expansin allergen family. The degree of cross-reactivity between members of this allergen family is very high. Along with Phl p 1 and 5, Phl p 2 serves as a marker of true grass-pollen Sensitisation. Patients with isolated Sensitisation to Phl p 2 are not suitable candidates for AIT.

Phl p 5 is a member of the Grass Group 5/6 allergen family. The degree of cross-reactivity between members of this allergen family is high, although not in all grass pollen species a Grass Group 5/6 allergen has been described. Along with Phl p 1 and Phl p 2, Phl p 5 serves as marker of true grass-pollen sensitisation. Phl p 1 and 5 serve as markers for AIT indication, if corresponding clinical symptoms are present.

Phl p 6 is a member of the Grass Group 5/6 allergen family. The degree of cross-reactivity between members of this allergen family is high.

Phl p 12 is a member of the Profilin allergen family and is associated with inhalative symptoms during pollen seasons of grasses, trees and weeds, and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Phl p 12 and other members of the Profilin allergen family is very high. The importance of these cross-reactions has to be analysed on a clinical level.

Causal treatment is possible via AIT - Phl p 1 and 5 serve as markers for AIT indication, if corresponding are present. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Weed Pollen

Annual Mercury

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

Mer a 1 is a member of the Profilin allergen family and is associated with inhalative symptoms during pollen seasons of grasses, trees and weeds, and mostly mild forms of food allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Mer a 1 and other members of the Profilin allergen family is very high. The importance of these cross-reactions has to be analysed on a clinical level.

Causal treatment via AIT is not available. Symptomatic treatment includes anti-histamines and local corticosteroids in various formulations (tablet, spray).

Mugwort

Sensitisation to pollen from 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 sensitisation in Mediterranean patients. AIT is not indicated, when Art v 3 is the only positive allergen from mugwort pollen. Art v 3 reactivity is frequently found positive in patients with food allergy caused by nsLTPs.

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 local corticosteroids in various formulations (tablet, spray).

Pigweed

Sensitisation to pollen from pigweed was detected. Allergic symptoms associated with this allergen source include allergic rhinoconjunctivitis.

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

Ribwort

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

Pla l 1 is a member of the Ole e 1 allergen family. The degree of cross-reactivity to Ole e 1 allergens from other plantain species is high, that to Ole e 1-like allergens from other plant families is low. Pla l 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 local corticosteroids in various formulations (tablet, spray).

Russian Thistle

Sensitisation to pollen from 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 local corticosteroids in various formulations (tablet, 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 2 is a member of the Serum Albumin allergen family (SA). The degree of cross-reactivity to other members of the SA family is very high (e.g. Can f 3 from dog). Sensitisation to Fel d 2 can also lead to cat-pork syndrome.

If avoidance of cats is not possible, an AIT can be prescribed. Symptomatic treatment includes anti-histamines as well as local corticosteroids in various formulations (tablet, spray). Avoidance of exposition to cats is strongly recommended.

Pig

Sensitisation to pig was detected. Allergic symptoms associated with this allergen source range from allergic rhino-conjunctivitis to allergic asthma, especially when exposure is frequent (e.g. swine barn workers).

AIT for causal treatment may not be available. Symptomatic treatment includes anti-histamines as well as local corticosteroids in various formulations (tablet, spray). Avoidance is strongly recommended.

Moulds and Yeasts

Alternaria alternata

Sensitisation to spores from *Alternaria alternata* was detected. Allergic symptoms associated with *A. alternata* range from allergic rhinoconjunctivitis to allergic asthma. *Alternaria alternata* is an outdoor fungal species.

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 local corticosteroids in various formulations (tablet, spray).

Malassezia sympodialis

Sensitisation to *Malassezia sympodialis* (MS) was detected. This is common in adult atopic dermatitis patients but rare in healthy individuals. Especially seborrheic skin sites (e.g. head, neck) are preferable colonisation sites.

Mala s 6 is a member of the Cyclophilin allergen family. The degree of cross-reactivity to other members of this family is high.

Skin emollients are the basis of AD therapy. In case of clinically manifest skin inflammation during AD flares, anti-inflammatory treatment is necessary. AD patients may benefit from an antifungal therapy that is effective against *Malassezia*.

Mites and Cockroaches

House dust mites

Sensitisation 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 in different house dust mites is high. 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 7 is a member of the Mite Group 7 allergen family (MG 7). The degree of cross-reactivity to its pendant from *D. farinae* is very high, much lower to related allergens from storage mites

Der p 23 is a member of the Peritrophin-like Protein allergen family (PLP), which is associated with the development of Asthma. The degree of cross-reactivity to other members of the PLP allergen family is not clear.

Allergen avoidance is advised. Encasings for blankets, mattresses and 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 local corticosteroids in various formulations (tablet, spray).

Cockroach

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

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.

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 (tablet, spray).

DISCLAIMER: THE PRESENCE OF IgE-ANTIBODIES IMPLIES A RISK OF ALLERGIC REACTIONS AND HAS TO BE ANALYZED IN CONJUNCTION WITH THE CLINICAL HISTORY AND OTHER DIAGNOSTIC TEST RESULTS. THE RAVEN INTERPRETATION GUIDANCE SOFTWARE IS A TOOL TO SUPPORT PHYSICIANS IN THE INTERPRETATION OF ALEX 2 RESULTS. RAVEN COMMENTS DO NOT REPLACE THE DIAGNOSIS BY A PHYSICIAN. NO LIABILITY IS ACCEPTED FOR RAVEN COMMENTS AND RESULTING THERAPEUTIC INTERVENTIONS. THE STATED COMMENTS ARE DESIGNED EXCLUSIVELY FOR ALEX2 RESULTS.