

PATIENT ID:

 test

PATIENT NAME:

 test

DATE OF BIRTH:



SAMPLE ID:

 test

QR-CODE:

 02ALPOC7

ANALYZED ON:

 21/03/2022

TESTED ALLERGENS:

 295

TEST METHOD:

 ALEX<sup>2</sup>

REFERRING PHYSICIAN:

ADDITIONAL INFORMATION:

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

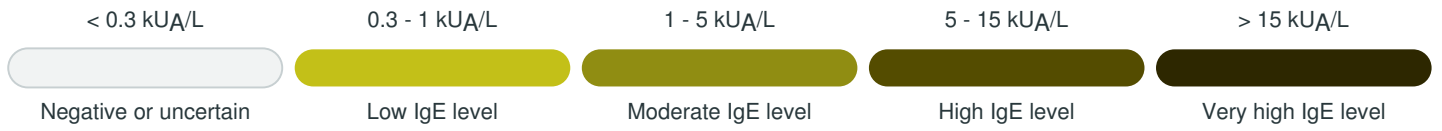
Latex 

Ficus 

CCD 

Parasite 

### Highest measured IgE concentration per allergen group



Name	E/M	Allergen	Function	kU <sub>A</sub> /L
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## POLLEN

### Grass Pollen

Bermuda grass	••••	Cyn d		8.14
	⊙	Cyn d 1	Beta-Expansin	12.06
Perennial Ryegrass	⊙	Lol p 1	Beta-Expansin	38.06
Bahia grass	••••	Pas n		2.27
Timothy grass	⊙	Phl p 1	Beta-Expansin	37.15
	⊙	Phl p 2	Expansin	≤ 0.10
	⊙	Phl p 5.0101	Grass Group 5/6	39.19
	⊙	Phl p 6	Grass Group 5/6	35.00
	⊙	Phl p 7	Polcalcin	≤ 0.10
	⊙	Phl p 12	Profilin	≤ 0.10
Common reed	••••	Phr c		0.45
Cultivated rye, Pollen	••••	Sec c_pollen		7.97

### Tree Pollen

Acacia	••••	Aca m		≤ 0.10
Tree of Heaven	••••	Ail a		≤ 0.10
Alder	⊙	Aln g 1	PR-10	4.48
	⊙	Aln g 4	Polcalcin	≤ 0.10
Silver birch	⊙	Bet v 1	PR-10	24.82
	⊙	Bet v 2	Profilin	≤ 0.10
	⊙	Bet v 6	Isoflavon Reductase	≤ 0.10
Paper mulberry	••••	Bro pa		≤ 0.10
Hazel pollen	••••	Cor a_pollen		4.59
	⊙	Cor a 1.0103	PR-10	14.20
Sugi	⊙	Cry j 1	Pectate Lyase	≤ 0.10
Cypress	⊙	Cup a 1	Pectate Lyase	≤ 0.10
	••••	Cup s		≤ 0.10
Beech	⊙	Fag s 1	PR-10	15.68
Ash	••••	Fra e		≤ 0.10
	⊙	Fra e 1	Ole e 1-Family	≤ 0.10
Walnut pollen	••••	Jug r_pollen		≤ 0.10
Mountain cedar	••••	Jun a		≤ 0.10
Mulberry	••••	Mor r		≤ 0.10
Olive	⊙	Ole e 1	Ole e 1-Family	≤ 0.10

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

## Weed Pollen

Common Pigweed	⊙	Ama r		≤ 0.10
Ragweed	⊙	Amb a		≤ 0.10
	⊙	Amb a 1	Pectate Lyase	≤ 0.10
	⊙	Amb a 4	Plant Defensin	≤ 0.10
Mugwort	⊙	Art v		≤ 0.10
	⊙	Art v 1	Plant Defensin	0.10
	⊙	Art v 3	nsLTP	≤ 0.10
Hemp	⊙	Can s		≤ 0.10
	⊙	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	≤ 0.10
Wall pellitory	⊙	Par j		≤ 0.10
	⊙	Par j 2	nsLTP	≤ 0.10
Ribwort	⊙	Pla l		≤ 0.10
	⊙	Pla l 1	Ole e 1-Family	≤ 0.10
Russian thistle	⊙	Sal k		≤ 0.10
	⊙	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	0.11
	⊙	Der p 2	NPC2 Family	≤ 0.10
	⊙	Der p 5	unknown	≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
	⊙	Der p 7	Mites, Group 7	0.11
	⊙	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	≤ 0.10

### 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	≤ 0.10
Glycyphagus domesticus	⊙	Gly d 2	NPC2 Family	≤ 0.10
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	≤ 0.10
	⊙	Mala s 11	Mn Superoxid-Dismutase	≤ 0.10
Yeast	⊙	Sac c		≤ 0.10

### Moulds

Alternaria alternata	⊙	Alt a 1	Alt a 1-Family	≤ 0.10
	⊙	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	≤ 0.10
Penicillium chrysogenum	⊙	Pen ch		≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
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## PLANT FOOD

### Legumes

Peanut	⊙	Ara h 1	7/8S Globulin	≤ 0.10
	⊙	Ara h 2	2S Albumin	≤ 0.10
	⊙	Ara h 3	11S Globulin	≤ 0.10
	⊙	Ara h 6	2S Albumin	≤ 0.10
	⊙	Ara h 8	PR-10	5.56
	⊙	Ara h 9	nsLTP	≤ 0.10
	⊙	Ara h 15	Oleosin	≤ 0.10
Chickpea	⊙	Cic a		≤ 0.10
Soy	⊙	Gly m 4	PR-10	1.28
	⊙	Gly m 5	7/8S Globulin	≤ 0.10
	⊙	Gly m 6	11S Globulin	≤ 0.10
	⊙	Gly m 8	2S Albumin	≤ 0.10
Lentil	⊙	Len c		≤ 0.10
White bean	⊙	Pha v		≤ 0.10
Pea	⊙	Pis s		≤ 0.10

### Cereals

Oat	⊙	Ave s		≤ 0.10
Quinoa	⊙	Che q		≤ 0.10
Common buckwheat	⊙	Fag e		≤ 0.10
	⊙	Fag e 2	2S Albumin	≤ 0.10
Barley	⊙	Hor v		≤ 0.10
Lupine seed	⊙	Lup a		≤ 0.10
Rice	⊙	Ory s		≤ 0.10
Millet	⊙	Pan m		≤ 0.10
Cultivated rye	⊙	Sec c_flour		≤ 0.10
Wheat	⊙	Tri a aA_TI	Alpha-Amylase Trypsin-Inhibitor	≤ 0.10
	⊙	Tri a 14	nsLTP	≤ 0.10
	⊙	Tri a 19	Omega-5-Gliadin	≤ 0.10
Spelt	⊙	Tri s		≤ 0.10
Maize	⊙	Zea m		≤ 0.10
	⊙	Zea m 14	nsLTP	≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
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### Spices

Paprika	••••	Cap a		≤ 0.10
Caraway	••••	Car c		≤ 0.10
Oregano	••••	Ori v		≤ 0.10
Parsley	••••	Pet c		≤ 0.10
Anise	••••	Pim a		≤ 0.10
Mustard	••••	Sin		≤ 0.10
	⊙	Sin a 1	2S Albumin	≤ 0.10

### Fruits

Kiwi	⊙	Act d 1	Cysteine protease	≤ 0.10
	⊙	Act d 2	TLP	≤ 0.10
	⊙	Act d 5	Kiwellin	≤ 0.10
	⊙	Act d 10	nsLTP	≤ 0.10
Papaya	••••	Car p		≤ 0.10
Orange	••••	Cit s		≤ 0.10
Melon	⊙	Cuc m 2	Profilin	≤ 0.10
Fig	••••	Fic c		≤ 0.10
Strawberry	⊙	Fra a 1+3	PR-10+LTP	4.44
Apple	⊙	Mal d 1	PR-10	6.66
	⊙	Mal d 2	TLP	≤ 0.10
	⊙	Mal d 3	nsLTP	≤ 0.10
Mango	••••	Man i		≤ 0.10
Banana	••••	Mus a		≤ 0.10
Avocado	••••	Pers a		≤ 0.10
Cherry	••••	Pru av		≤ 0.10
Peach	⊙	Pru p 3	nsLTP	≤ 0.10
Pear	••••	Pyr c		≤ 0.10
Blueberry	••••	Vac m		≤ 0.10
Grapes	⊙	Vit v 1	nsLTP	≤ 0.10

### Vegetables

Onion	••••	All c		≤ 0.10
Garlic	••••	All s		≤ 0.10
Celery	⊙	Api g 1	PR-10	≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
	⊙	Api g 2	nsLTP	≤ 0.10
	⊙	Api g 6	nsLTP	≤ 0.10
Carrot	⦿	Dau c		≤ 0.10
	⊙	Dau c 1	PR-10	≤ 0.10
Potato	⦿	Sol t		≤ 0.10
Tomato	⦿	Sola l		≤ 0.10
	⊙	Sola l 6	nsLTP	≤ 0.10

## Nuts

Cashew	⦿	Ana o		≤ 0.10
	⊙	Ana o 2	11S Globulin	≤ 0.10
	⊙	Ana o 3	2S Albumin	≤ 0.10
Brazil nut	⦿	Ber e		≤ 0.10
	⊙	Ber e 1	2S Albumin	≤ 0.10
Pecan	⦿	Car i		≤ 0.10
Hazelnut	⊙	Cor a 1.0401	PR-10	1.85
	⊙	Cor a 8	nsLTP	≤ 0.10
	⊙	Cor a 9	11S Globulin	≤ 0.10
	⊙	Cor a 11	7/8S Globulin	≤ 0.10
	⊙	Cor a 14	2S Albumin	≤ 0.10
Walnut	⊙	Jug r 1	2S Albumin	≤ 0.10
	⊙	Jug r 2	7/8S Globulin	≤ 0.10
	⊙	Jug r 3	nsLTP	≤ 0.10
	⊙	Jug r 4	11S Globulin	≤ 0.10
	⊙	Jug r 6	7/8S Globulin	≤ 0.10
Macadamia	⊙	Mac i 2S Albumin	2S Albumin	≤ 0.10
	⦿	Mac inte		≤ 0.10
Pistachio	⊙	Pis v 1	2S Albumin	≤ 0.10
	⊙	Pis v 2	11S Globulin subunit	≤ 0.10
	⊙	Pis v 3	7/8S Globulin	≤ 0.10
Almond	⦿	Pru du		≤ 0.10
Seed	⦿	Cuc p		≤ 0.10
	⦿	Hel a		≤ 0.10
	⦿	Pap s		≤ 0.10



Name	E/M	Allergen	Function	kU <sub>A</sub> /L
Sesame	⊙	Pap s 2S Albumin	2S Albumin	≤ 0.10
	⊙	Ses i		≤ 0.10
Fenugreek seeds	⊙	Ses i 1	2S Albumin	≤ 0.10
	⊙	Tri fo		≤ 0.10

## ANIMAL FOOD

### Milk

Cow, milk	⊙	Bos d_milk		≤ 0.10
	⊙	Bos d 4	α-Lactalbumin	≤ 0.10
	⊙	Bos d 5	β-Lactoglobulin	≤ 0.10
	⊙	Bos d 8	Casein	≤ 0.10
Camel	⊙	Cam d		≤ 0.10
Goat, milk	⊙	Cap h_milk		≤ 0.10
Mare's milk	⊙	Equ c_milk		≤ 0.10
Sheep, milk	⊙	Ovi a_milk		≤ 0.10

### Egg

Egg white	⊙	Gal d_white		≤ 0.10
Egg yolk	⊙	Gal d_yolk		≤ 0.10
Egg white	⊙	Gal d 1	Ovomucoid	≤ 0.10
	⊙	Gal d 2	Ovalbumin	≤ 0.10
	⊙	Gal d 3	Ovotransferrin	≤ 0.10
	⊙	Gal d 4	Lysozym C	≤ 0.10
Egg yolk	⊙	Gal d 5	Serum Albumin	≤ 0.10

### Seafood

Herring worm	⊙	Ani s 1	Kunitz Serin Protease Inhibitor	≤ 0.10
	⊙	Ani s 3	Tropomyosin	≤ 0.10
Crab	⊙	Chi spp.		≤ 0.10
Herring	⊙	Clu h		≤ 0.10
	⊙	Clu h 1	β-Parvalbumin	≤ 0.10
Brown shrimp	⊙	Cra c 6	Troponin C	≤ 0.10
Carp	⊙	Cyp c 1	β-Parvalbumin	≤ 0.10
Atlantic cod	⊙	Gad m		≤ 0.10
	⊙	Gad m 2+3	β-Enolase & Aldolase	≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
	⊙	Gad m 1	β-Parvalbumin	0.11
Lobster	⦿	Hom g		≤ 0.10
Shrimp	⦿	Lit s		≤ 0.10
Squid	⦿	Lol spp.		≤ 0.10
Common mussel	⦿	Myt e		≤ 0.10
Oyster	⦿	Ost e		≤ 0.10
Shrimp	⦿	Pan b		≤ 0.10
Scallop	⦿	Pec spp.		≤ 0.10
Black Tiger Shrimp	⊙	Pen m 1	Tropomyosin	≤ 0.10
	⊙	Pen m 2	Arginine kinase	≤ 0.10
	⊙	Pen m 3	Myosin, light chain	≤ 0.10
	⊙	Pen m 4	Sarcoplasmic Calcium Binding Protein	≤ 0.10
Thornback ray	⦿	Raj c		≤ 0.10
	⊙	Raj c Parvalbumin	α-Parvalbumin	≤ 0.10
Clam	⦿	Rud spp.		≤ 0.10
Salmon	⦿	Sal s		0.26
	⊙	Sal s 1	β-Parvalbumin	≤ 0.10
Atlantic mackerel	⦿	Sco s		≤ 0.10
	⊙	Sco s 1	β-Parvalbumin	≤ 0.10
Tuna	⦿	Thu a		≤ 0.10
	⊙	Thu a 1	β-Parvalbumin	≤ 0.10
Swordfish	⊙	Xip g 1	β-Parvalbumin	≤ 0.10

## Meat

House cricket	⦿	Ach d		≤ 0.10
Cattle, meat	⦿	Bos d_meat		≤ 0.10
	⊙	Bos d 6	Serum Albumin	≤ 0.10
Horse, meat	⦿	Equ c_meat		≤ 0.10
Chicken meat	⦿	Gal d_meat		≤ 0.10
Migratory locust	⦿	Loc m		≤ 0.10
Turkey	⦿	Mel g		≤ 0.10
Rabbit, meat	⦿	Ory_meat		≤ 0.10
Sheep, meat	⦿	Ovi a_meat		≤ 0.10
Pork	⦿	Sus d_meat		≤ 0.10
	⊙	Sus d 1	Serum Albumin	≤ 0.10
Mealworm	⦿	Ten m		≤ 0.10

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
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## INSECTS & VENOMS

### Fire ant poison

Fire ant	••••	Sol spp.		≤ 0.10 <input type="text"/>
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### Honey Bee Venom

Honey bee	••••	Api m		≤ 0.10 <input type="text"/>
	⊙	Api m 1	Phospholipase A2	≤ 0.10 <input type="text"/>
	⊙	Api m 10	Icarapin Variant 2	≤ 0.10 <input type="text"/>

### Wasp Venom

Hornet	••••	Dol spp		≤ 0.10 <input type="text"/>
Paper wasp venom	••••	Pol d		≤ 0.10 <input type="text"/>
	⊙	Pol d 5	Antigen 5	≤ 0.10 <input type="text"/>
Wasp venom	••••	Ves v		≤ 0.10 <input type="text"/>
	⊙	Ves v 1	Phospholipase A1	≤ 0.10 <input type="text"/>
	⊙	Ves v 5	Antigen 5	≤ 0.10 <input type="text"/>

### Cockroach

German Cockroach	⊙	Bla g 1	Cockroach Group 1	≤ 0.10 <input type="text"/>
	⊙	Bla g 2	Aspartyl protease	≤ 0.10 <input type="text"/>
	⊙	Bla g 4	Lipocalin	≤ 0.10 <input type="text"/>
	⊙	Bla g 5	Glutathione S-transferase	≤ 0.10 <input type="text"/>
	⊙	Bla g 9	Arginine kinase	≤ 0.10 <input type="text"/>
American Cockroach	••••	Per a		≤ 0.10 <input type="text"/>
	⊙	Per a 7	Tropomyosin	≤ 0.10 <input type="text"/>

## ANIMAL ORIGIN

### Pet

Dog	⊙	Can f_Fd1	Uteroglobin	≤ 0.10 <input type="text"/>
Male dog urine (incl. Can f 5)	••••	Can f_male urine		≤ 0.10 <input type="text"/>
Dog	⊙	Can f 1	Lipocalin	≤ 0.10 <input type="text"/>
	⊙	Can f 2	Lipocalin	≤ 0.10 <input type="text"/>
	⊙	Can f 3	Serum Albumin	≤ 0.10 <input type="text"/>

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
	⊙	Can f 4	Lipocalin	≤ 0.10
	⊙	Can f 6	Lipocalin	≤ 0.10
Guinea pig	⊙	Cav p 1	Lipocalin	≤ 0.10
Cat	⊙	Fel d 1	Uteroglobin	≤ 0.10
	⊙	Fel d 2	Serum Albumin	≤ 0.10
	⊙	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		≤ 0.10

## Farm Animals

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

## OTHERS

### Latex

Latex	⊙	Hev b 1	Rubber elongation factor	≤ 0.10
	⊙	Hev b 3	Small rubber particle protein	≤ 0.10
	⊙	Hev b 5	unknown	≤ 0.10
	⊙	Hev b 6.02	Hevein	≤ 0.10
	⊙	Hev b 8	Profilin	≤ 0.10
	⊙	Hev b 11	Class 1 Chitinase	0.12

### Ficus

Weeping fig	⊙	Fic b		≤ 0.10
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Name	E/M	Allergen	Function	kU <sub>A</sub> /L
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## CCD

Hom s Lactoferrin	<input checked="" type="radio"/>	Hom s LF	CCD	≤ 0.10 
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## Parasite

Pigeon tick	<input checked="" type="radio"/>	Arg r 1	Lipocalin	≤ 0.10 
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**Total IgE: 270 kU/L**

Reference range total-IgE

Adults: < 100 kU/L

PRINTED ON  
20/10/2022

## Information to cross-reactive allergens

### 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.

# ALEX<sup>2</sup> – 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



**MILK** 5  
Camel's milk, Cow's milk, Goat's milk, Mare's milk, Sheep's milk



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



**EGG** 2  
Egg white, Egg yolk



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



**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



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



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



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



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



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



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



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



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

# Interpretation - Support

## Raven Interpretation Summary

### Sample Information

The sample was tested on ALEX<sup>2</sup> Barcode 02ALP0C7, interpretation date 21/03/2022.

Of the tested 295 allergens, 19 were/was above the cut off of 0.3 kU<sub>A</sub>/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: 270 kU/L

The measured total IgE was 270 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, Ara h 8, Bet v 1, Cor a 1.0103, Cor a 1.0401, Fag s 1, Gly m 4, Mal d 1

#### 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.

### Tree Pollen

#### 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.

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).

### 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  $\beta$ -Expansin allergen family. The degree of cross-reactivity between members of this allergen family is very high.  $\beta$ -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 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.

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).

## Fruits

### Apple

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

Mal d 1 is a member of the PR-10 allergen family and is associated with mild forms of apple allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Mal d 1 and other members of the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. In most cases an Mal d 1 sensitisation is caused by a primary sensitisation against Bet v 1 from birch pollen. Mal d 1 is not 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 genuine apple allergy due to sensitisations to Mal d 2 and/or 3, avoidance is the therapeutic option of choice. Mal d 3 is primarily located in fruit skin, peeled apple is tolerated by most patients with Mal d 3 sensitisation. Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases).

### Strawberry

Sensitisation to strawberry was detected. Allergic symptoms associated with strawberry are usually mild, systemic reactions are rare.

Fra a 1 is a member of the PR-10 allergen family and is associated with mild forms of strawberry allergy (e.g. oral allergy syndrome). The degree of cross-reactivity between Fra a 1 and other members of the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. Usually Fra a 1 sensitisation is caused by a primary sensitisation against Bet v 1 from birch pollen. Fra a 1 is not stable towards heat and digestion. Fra a 3 is a member of the nsLTP allergen family and may cause clinical reactions from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity between Fra a 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. Fra a 3 is stable towards heat and digestion.

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

## Nuts and Legumes

### Hazelnut

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

Cor a 1.0401 is a member of the PR-10 allergen family and is associated with mild forms of hazelnut allergy e.g. oral allergy syndrome. In rare cases, mild systemic reactions occur. Severe anaphylactic reactions are very rare. The degree of cross-reactivity between Cor a 1.0401 and other members of the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. In most cases a Cor a 1.0401 sensitisation is caused by a primary sensitisation against Bet v 1 from birch pollen. Cor a 1.0401 is not stable towards heat and digestion.

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

### Peanut

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



Ara h 8 is a member of the PR-10 family and is associated with mild forms of peanut allergy e.g. oral allergy syndrome. The degree of cross-reactivity between Ara h 8 and other members of the PR-10 allergen family is moderate to high. The importance of these cross-reactions has to be analysed on a clinical level. In most cases an Ara h 8 sensitisation is caused by a primary sensitisation against Bet v 1 from birch pollen. Ara h 8 is not stable towards heat and digestion

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

### Soy

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

Gly m 4 is a member of the PR-10 family and is associated with mild forms of soy allergy e.g. oral allergy syndrome, as well as severe reactions after the consumption of unprocessed soy products like soy milk. The degree of cross-reactivity between Gly m 4 and other members of the PR-10 allergen family is high. The importance of these cross-reactions has to be analysed on a clinical level. In most cases a Gly m 4 sensitisation is caused by a primary sensitisation against Bet v 1 from birch pollen. Products like soy milk contain high levels of unprocessed allergens.

Include extensive patient training on avoidance measures and the prescription of an emergency kit (including adrenalin autoinjector for severe cases). Fermented soy products (e.g. soy sauce, miso) have lost allergenicity.

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.