

PATIENT ID



REFERRING PHYSICIAN

Dr.

PATIENT NAME

XYZ

DATE OF BIRTH



SAMPLE ID

XYZ

BARCODE

02AHA282

APPROVED ON

20/04/2022

ADDITIONAL INFORMATION

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

TESTED ALLERGENS

295

TEST METHOD

ALEX<sup>2</sup>

## 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

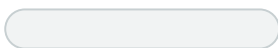
< 0.3 kU<sub>A</sub>/L

0.3 - 1 kU<sub>A</sub>/L

1 - 5 kU<sub>A</sub>/L

5 - 15 kU<sub>A</sub>/L

> 15 kU<sub>A</sub>/L



Negative or uncertain

Low IgE level

Moderate IgE level

High IgE level

Very high IgE level

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

### Grass Pollen

Bermuda grass	••••	Cyn d		0.44
	○	Cyn d 1	Beta-Expansin	1.03
Perennial Ryegrass	○	Lol p 1	Beta-Expansin	≤ 0.10
Bahia grass	••••	Pas n		≤ 0.10
Timothy grass	○	Phl p 1	Beta-Expansin	≤ 0.10
	○	Phl p 2	Expansin	≤ 0.10
	○	Phl p 5.0101	Grass Group 5/6	≤ 0.10
	○	Phl p 6	Grass Group 5/6	≤ 0.10
	○	Phl p 7	Polcalcin	≤ 0.10
	○	Phl p 12	Profilin	≤ 0.10
Common reed	••••	Phr c		≤ 0.10
Cultivated rye, Pollen	••••	Sec c_pollen		≤ 0.10

### Tree Pollen

Acacia	••••	Aca m		≤ 0.10
Tree of Heaven	••••	Ail a		≤ 0.10
Alder	○	Aln g 1	PR-10	≤ 0.10
	○	Aln g 4	Polcalcin	≤ 0.10
Silver birch	○	Bet v 1	PR-10	≤ 0.10
	○	Bet v 2	Profilin	≤ 0.10
	○	Bet v 6	Isoflavon Reductase	≤ 0.10
Paper mulberry	••••	Bro pa		≤ 0.10
Hazel pollen	••••	Cor a_pollen		≤ 0.10
	○	Cor a 1.0103	PR-10	≤ 0.10
Sugi	○	Cry j 1	Pectate Lyase	0.15
Cypress	○	Cup a 1	Pectate Lyase	0.40
	••••	Cup s		0.15
Beech	○	Fag s 1	PR-10	≤ 0.10
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		0.30
Elm	●●●●	Ulm c		0.30

### 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		0.21
	○	Sal k 1	Pectin Methylesterase	≤ 0.10
Nettle	●●●●	Urt d		0.12

### MITES

#### House Dust Mite

American house dust mite	○	Der f 1	Cysteine protease	6.81
	○	Der f 2	NPC2 Family	48.42
European house dust mite	○	Der p 1	Cysteine protease	29.97
	○	Der p 2	NPC2 Family	46.75
	○	Der p 5	unknown	30.21

Name	E/M	Allergen	Function	kU <sub>A</sub> /L
	○	Der p 7	Mites, Group 7	≤ 0.10
	○	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	49.86
	○	Der p 23	Peritrophin-like protein domain	26.63

### Storage Mite

Acarus siro	●●●●	Aca s		1.11
Blomia tropicalis	○	Blo t 5	Mites, Group 5	0.64
	○	Blo t 10	Tropomyosin	≤ 0.10
	○	Blo t 21	unknown	0.98
Glycyphagus domesticus	○	Gly d 2	NPC2 Family	2.93
Lepidoglyphus destructor	○	Lep d 2	NPC2 Family	2.98
Tyrophagus putrescentiae	●●●●	Tyr p		3.04
	○	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

●●●● Allergen Extract

○ Molecular Allergen

IgE < 0.3 negative or in question

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	≤ 0.10
	○	Ara h 9	nsLTP	≤ 0.10
	○	Ara h 15	Oleosin	≤ 0.10
Chickpea	●●●●	Cic a		≤ 0.10
Soy	○	Gly m 4	PR-10	≤ 0.10
	○	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		0.62
Pea	●●●●	Pis s		≤ 0.10

### Cereals

Oat	●●●●	Ave s		≤ 0.10
Quinoa	●●●●	Che q		≤ 0.10
Common buckwheat	●●●●	Fag e		0.18
	○	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		0.36
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

### Fruit

Kiwi	○	Act d 1	Cysteine protease	0.16
	○	Act d 2	TLP	≤ 0.10
	○	Act d 5	Kiwelin	0.43
	○	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	≤ 0.10
Apple	○	Mal d 1	PR-10	≤ 0.10
	○	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	≤ 0.10
		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

Pumpkin seed		Cuc p		0.18
Sunflower seed		Hel a		≤ 0.10
Poppy seed		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.		2.17
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
	<input checked="" type="radio"/>	Gad m 1	β-Parvalbumin	≤ 0.10
Lobster	<input checked="" type="radio"/>	Hom g		20.85
Shrimp	<input checked="" type="radio"/>	Lit s		≤ 0.10
Squid	<input checked="" type="radio"/>	Lol spp.		2.23
Common mussel	<input checked="" type="radio"/>	Myt e		≤ 0.10
Oyster	<input checked="" type="radio"/>	Ost e		4.95
Shrimp	<input checked="" type="radio"/>	Pan b		3.56
Scallop	<input checked="" type="radio"/>	Pec spp.		4.29
Black Tiger Shrimp	<input checked="" type="radio"/>	Pen m 1	Tropomyosin	≤ 0.10
	<input checked="" type="radio"/>	Pen m 2	Arginine kinase	≤ 0.10
	<input checked="" type="radio"/>	Pen m 3	Myosin, light chain	≤ 0.10
	<input checked="" type="radio"/>	Pen m 4	Sarcoplasmic Calcium Binding Protein	≤ 0.10
Thornback ray	<input checked="" type="radio"/>	Raj c		≤ 0.10
	<input checked="" type="radio"/>	Raj c Parvalbumin	α-Parvalbumin	≤ 0.10
Clam	<input checked="" type="radio"/>	Rud spp.		1.54
Salmon	<input checked="" type="radio"/>	Sal s		0.40
	<input checked="" type="radio"/>	Sal s 1	β-Parvalbumin	≤ 0.10
Atlantic mackerel	<input checked="" type="radio"/>	Sco s		0.14
	<input checked="" type="radio"/>	Sco s 1	β-Parvalbumin	≤ 0.10
Tuna	<input checked="" type="radio"/>	Thu a		≤ 0.10
	<input checked="" type="radio"/>	Thu a 1	β-Parvalbumin	≤ 0.10
Swordfish	<input checked="" type="radio"/>	Xip g 1	β-Parvalbumin	≤ 0.10

### Meat

House cricket	<input checked="" type="radio"/>	Ach d		1.67
Cattle, meat	<input checked="" type="radio"/>	Bos d_meat		≤ 0.10
	<input checked="" type="radio"/>	Bos d 6	Serum Albumin	≤ 0.10
Horse, meat	<input checked="" type="radio"/>	Equ c_meat		≤ 0.10
Chicken meat	<input checked="" type="radio"/>	Gal d_meat		0.53
Migratory locust	<input checked="" type="radio"/>	Loc m		0.63
Turkey	<input checked="" type="radio"/>	Mel g		0.18
Rabbit, meat	<input checked="" type="radio"/>	Ory_meat		2.37
Sheep, meat	<input checked="" type="radio"/>	Ovi a_meat		≤ 0.10
Pork	<input checked="" type="radio"/>	Sus d_meat		≤ 0.10
	<input checked="" type="radio"/>	Sus d 1	Serum Albumin	≤ 0.10
Mealworm	<input checked="" type="radio"/>	Ten m		2.30

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

### Fire ant poison

Fire ant		Sol spp.		1.90
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### Honey Bee Venom

Honey bee		Api m		≤ 0.10
		Api m 1	Phospholipase A2	≤ 0.10
		Api m 10	Icarapin Variant 2	≤ 0.10

### Wasp Venom

Hornet		Dol spp		0.14
Paper wasp venom		Pol d		0.24
		Pol d 5	Antigen 5	0.32
Wasp venom		Ves v		1.03
		Ves v 1	Phospholipase A1	≤ 0.10
		Ves v 5	Antigen 5	5.25

### Cockroach

German Cockroach		Bla g 1	Cockroach Group 1	≤ 0.10
		Bla g 2	Aspartyl protease	≤ 0.10
		Bla g 4	Lipocalin	≤ 0.10
		Bla g 5	Glutathione S-transferase	≤ 0.10
		Bla g 9	Arginine kinase	≤ 0.10
American Cockroach		Per a		5.41
		Per a 7	Tropomyosin	≤ 0.10

## ANIMAL ORIGIN

### Pet

Dog		Can f_Fd1	Uteroglobin	≤ 0.10
Male dog urine (incl. Can f 5)		Can f_male urine		0.14
Dog		Can f 1	Lipocalin	≤ 0.10
		Can f 2	Lipocalin	≤ 0.10
		Can f 3	Serum Albumin	≤ 0.10

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	Pro-Hevein	≤ 0.10
	○	Hev b 8	Profilin	≤ 0.10
	○	Hev b 11	Class 1 Chitinase	≤ 0.10

### Ficus

Weeping fig	⦿	Fic b		0.11
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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: 209 kU/L**

#### Normal Total-IgE

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

## Information to cross-reactive allergens

### NPC2

NPC2 allergens show a limited degree of cross-reactivity.

Members of the NPC2 family are present in house dust- and storage mites. The cross-reactivity between Der f 2 and Der p 2 is quite extensive. NPC2 allergens from storage mites show only a limited degree of cross-reactivity to their pendants in house dust mites.

# 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



## FUNGAL SPORES & YEAST

### 6

Alternaria alternata, Aspergillus fumigatus, Baker's yeast, Cladosporium herbarum, Malassezia sympodialis, Penicillium chrysogenum



## WEED POLLEN

### 10

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



## MILK

### 5

Camel's milk, Cow's milk, Goat's milk, Mare's milk, Sheep's milk



## 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



## 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



## LEGUMES

### 6

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



## 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 - Support

### Raven Interpretation Summary

#### Sample Information

The sample was tested on ALEX<sup>2</sup> Barcode 02AHA282, interpretation date 20/04/2022.

Of the tested 295 allergens, 39 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: 209 kU/L

The measured total IgE was 209 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:

- Cysteine Proteases: Der f 1, Der p 1

#### 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.

#### Tree Pollen

##### 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.

Cup a 1 is a member fo 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).

##### Elm

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

A causal treatment via AIT is not 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  $\beta$ -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.

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).

## 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 f 1, Der p 1.

Der p 2 & Der f 2 are members of the NPC2 allergen family. The degree of cross-reactivity between different members of the NPC2 is very high in different house dust mites and less so to related allergens in storage mites. Both Der p 2 and Der 2 serve as markers for AIT indication. Positive results were obtained for: Der f 2, Der p 2.

Der p 5 is a member of the Mite Group 5/21 allergen family (MG 5/21). The degree of cross-reactivity to other members of the MG 5/21 allergen family is moderate (e.g. to Blo t 5).

Der p 21 is a member of the Mite Group 5/21 allergen family (MG 5/21). The degree of cross-reactivity to other members of the MG 5/21 allergen family is moderate to high between Der p 21 and Blo t 21.

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).

### Storage Mites

Sensitisation to storage mites was detected. Allergic symptoms associated with this allergen source range from 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 genuine *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 21 is a member of the Mite Group 5/21 allergen family (MG 5/21) and a marker for genuine *Blomia tropicalis* sensitisation. The degree of cross-reactivity to other members of the MG 5/21 allergen family is limited. Blo t 21 may serve as a marker for AIT indication, if corresponding clinical symptoms are present.

Lep d 2 is a member of the NPC2 allergen family. The degree of cross-reactivity between different members of the NPC2 family is moderate. Lep d 2 may serve as a marker for AIT indication, if corresponding clinical symptoms are present.

Gly d 2 is a member of the NPC2 allergen family. The degree of cross-reactivity between different members of the NPC2 family is moderate. Gly d 2 may serve as a marker for AIT indication, if corresponding clinical symptoms are present.

Allergen avoidance is advised. Encasings for blankets, mattresses and pillows can reduce the allergen load. Blo t 5 and 21, Gly d 2, Lep d 2 and Tyr p 2 may 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.

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).

## Insect Venoms

### Fire ant venom

Allergen Extract

Molecular Allergen

IgE < 0.3 negative or in question

Sensitisation to fire ant venom was detected. Allergic symptoms associated with this allergen source range from local to severe anaphylactic reactions. Fire ants are native to South America and have been imported to the Southern USA, Caribbean countries and recently also to China. Colonies in Australia have been eradicated.

As avoidance of fire ants can be difficult, AIT is the major therapy option. Additionally, the prescription of an emergency kit (incl. adrenalin autoinjector for severe cases) is advised.

### Wasp

Sensitisation 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 high to other vespula species and lower to dolichovespula and vespa species.

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

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 for severe cases) is advised.

## Cereals and Seeds

### Rye flour

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

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

## Fruits

### Kiwi

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

Act d 5 is a kiwi-specific allergen, also called Kiwellin. It is resistant to heat and digestion and is able to induce clinical reactions after intake.

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

## Nuts and Legumes

### Green bean

Sensitisation to green bean was detected. Allergic symptoms associated with green bean range from oral allergy syndrome to anaphylaxis.

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

## Edible insects

Sensitisation to edible insects was detected. Allergic symptoms associated with edible insects range from oral allergy syndrome to anaphylaxis. The degree of cross-reactivity is high to other insects (e.g. cockroach) and also to mites and seafood.

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

## Poultry

Sensitisation to poultry was detected. Allergic symptoms associated with poultry range from oral allergy syndrome to gastrointestinal complaints, urticaria and angioedema. Severe anaphylaxis with cardiovascular symptoms is rare. Chicken and turkey meat are highly cross-reactive and responsible for most poultry related reactions, while duck and goose meat causes milder or no symptoms.



Include extensive patient training on avoidance measures for mild reactions and the prescription of an emergency kit (including adrenalin autoinjector for severe cases). Heat-treatment, or other approaches such as freeze-drying, can decrease the allergenicity of poultry.

## Red Meat

### Rabbit meat

Sensitisation to rabbit-meat was detected. Allergic symptoms associated with rabbit-meat range from gastrointestinal symptoms to anaphylaxis. Rabbit meat allergy can be caused via sensitisation to Serum Albumin, or via sensitisation to alpha-Gal, a heat resistant sugar in non-primate mammals. Clinical reactions to alpha-Gal often have a delay of 3-6 hours.

Include extensive patient training on avoidance measures for mild reactions and the prescription of an emergency kit (including adrenalin autoinjector for severe cases). Heat-treatment, or other approaches such as freeze-drying, can decrease the allergenicity of rabbit meat in serum Albumin associated rabbit meat allergy.

## Fish

Sensitisation to fish was detected. Allergic symptoms associated with fish allergy include mild to severe anaphylactic reactions after fish consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors.

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

## Seafood

### Crab

Sensitisation to crab was detected. Allergic symptoms associated with crab allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

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

### Lobster

Sensitisation to lobster was detected. Allergic symptoms associated with lobster allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

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

### Mussels

Sensitisation to mussels was detected. Allergic symptoms associated with mussels of various species range from oral allergy syndrome to anaphylaxis. Based on Tropomyosin (e.g. Pen m 1), Troponin C (e.g. Cra c 6) and other allergens, the degree of cross-reactivity between different mussel species can be very high. The importance of these cross-reactions has to be analysed on a clinical level.

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

### Shrimp

Sensitisation to shrimp was detected. Allergic symptoms associated with shrimp allergy include mild to severe anaphylactic reactions after shrimp consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. The degree of cross-reactivity between crustaceans is very high.

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

### Squid

Sensitisation to squid was detected. Allergic symptoms associated with squid allergy include mild to severe anaphylactic reactions after consumption as well as respiratory/asthmatic reactions upon exposure to cooking vapors. Squid commonly cross-reacts with mussels and shrimp.

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

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.