

WELCOME TO THE ERA OF MOLECULAR ALLERGY FOR ANIMALS!



**First quantitative macroarray
IgE test specifically designed
for animals**

**Over 200 allergen extracts and
molecular components**

**Better identification of allergen
cross-reactivities**

**Fully automated process, higher
level of standardisation**

**With CCD blocking and
2 blocking efficiency detectors**



Molecular Allergology: The future of IgE sensitisation detection



Molecular allergology is a state-of-the-art approach to the detection of sensitisations, whereby defined single allergen components are used for the determination of specific IgE in place of traditionally-used allergen extracts. The molecular components are recombinant proteins that provide a higher level of standardisation than allergen extracts and enable a more precise identification of IgE sensitisations.

Molecular allergology tests are powerful tools that help pinpoint allergy triggers, thus facilitating risk assessment and therapy decisions.

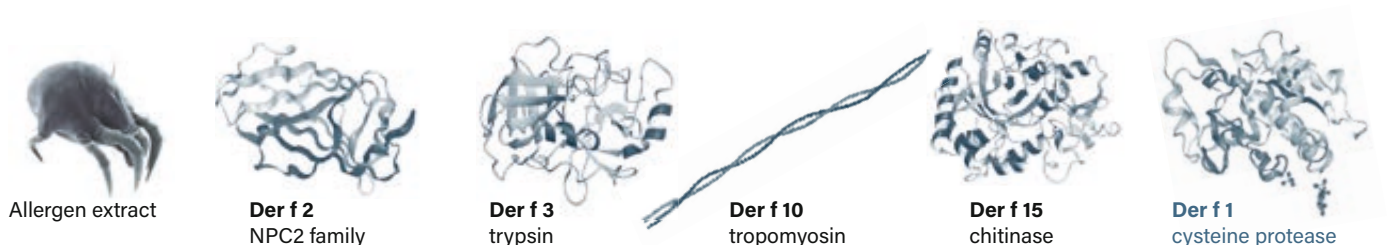
We are excited to introduce the first molecular allergology platform for animals, representing the next generation of allergen-specific IgE serology:

PAX - pet allergy xplorer to horse allergy xplorer



What are the main advantages of PAX?

- First quantitative multiplex macroarray specifically designed for companion animals
- Over 200 allergen extracts and components included = lower testing cost per allergen
- Fully automated process = higher level of standardisation
- With CCD blocking and 2 blocking efficiency detectors
- Only 0.5 ml of serum needed per test
- Expected increase in serological test sensitivity due to a higher concentration of molecular allergens
- Identification of "primary" sensitising allergens
- Identification of allergen cross-reactivities
- Selection of relevant allergen-specific immunotherapy



Allergen extract

Der f 2
NPC2 family

Der f 3
trypsin

Der f 10
tropomyosin

Der f 15
chitinase

Der f 1
cysteine protease

The PAX results are clearly set out, easy to interpret and include the following information:

- Summary of detectable sensitisations
- Interpretation summary and treatment recommendation
- Detailed results per extract and components
- Detailed interpretation with information about allergenicity and relevance, time of the year, possible cross-reactivities and treatment indication for each allergen

PAX Complete result



LABOKLIN PAX

Doris Customer: Test:

Common Name	Scientific name	E/H Allergen	Function	ng/mL
Grass Pollens				
Bermuda grass	Cynodon dactylon	Cyn d		18
		Cyn d 1	Beta-Espin	29
Kentucky blue grass	Poa pratensis	Poa p		18
Medow fescue	Festuca pratensis	Fes p		23
Orchard grass	Dactylis glomerata	Dac g		20
Perennial ryegrass	Lolium perenne	Lol p 1	Beta-Espin	18
Rye, cultivated	Saracantha	Sar c, pollen		22
Timothy grass	Phleum pratense	Phi p 1	Beta-Espin	20
		Phi p 2	Espin	23
		Phi p 5.0351	Grass Group 5/6	18
		Phi p 6	Grass Group 5/6	17
		Phi p 7	Phos	17
		Phi p 12	Phos	20
Weed Pollens				
Dick / Sorrel	Rumex acetosella / crispus	Rum a, Rum c		24
Orchard grass	Plantago lanceolata	Pla 1		25
Lamb's quarter	Chenopodium album	Pla 11	On a 2-Family	22
		Pla 1	On a 2-Family	22
		Pla 1	On a 2-Family	22
Ragwort	Antennaria vulgaris	Ant v		21
		Ant v 1	Plant Defense	21
		Ant v 3	hLTP	22
Nettle	Urtica dioica	Urt d		22
Heliotrop	Heliotropium judiciale	Hel j		17
		Hel j 2	hLTP	18
Ragwort	Antennaria antemithella	Ant a		24
		Ant a 1	Pectate Lyase	23
		Ant a 4	Plant Defense	23
Russian thistle	Salsola kali	Sel 1		21
		Sel 1	Pectin methylesterase	21

Legend: Allergen Extract Molecular Allergen

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LABOKLIN PAX

Doris Customer: Test:

Interpretation - Support

D. pteromyssinus

- This patient has a sensitization to house dust mites.
- Associated allergic signs are generally year-round, but house dust mites are known to proliferate during times of high humidity and temperature.
- There is a known cross-reactivity between allergens of house dust and storage mite species.
- Allergen-specific immunotherapy is recommended for house dust mite sensitization, if the corresponding clinical signs occur.

Dac p 1 is an allergen from the Dermatophagoides pteromyssinus house dust mite. It is a member of the mite Group 1 allergen family (specific to the cysteine protease).

Dac p 1 is a major allergen of humans sensitized to this house dust mite. It has also been shown to be an allergen in mite-sensitized dogs. At this time we do not know if this is the case in cats and horses.

The potential for cross-reactions with other Group 1 mite allergens is variable, from very high (Der f 1 and Der m 1) to low (Tyr p 1, Bla 1, Bla 1, Bla 1, Bla 1).

Mosquitoes

- This patient has a sensitization to mosquitoes.
- Clinical signs are due to a combination of immediate and late-phase reactions that follow the bites of insects; signs are generally worse in the summer and fall.
- There is a high likelihood of cross-reactivity between salivary allergens of different biting insect species, especially those that are closely related.
- The avoidance of insect bites via multifaceted insect control measures is the most effective treatment option for insect bite hypersensitivity. Immunotherapy is recommended for these insects, if the corresponding clinical signs occur.

Honey bee venom

- This patient has a sensitization to honey bee venom.
- Clinical signs follow stings from honey bees, and involve a combination of immediate and late-phase reactions at the site of stings; systemic signs also can occur.
- There is a known cross-reactivity between allergens of the honeybee and vespine venoms. In humans, cross-reactivity has been demonstrated between the bee venom and mosquito venoms.
- Allergen-specific immunotherapy is currently not available for honey bee venom sensitization; the treatment is symptomatic.

Api m 1 is an allergen from the honey bee (Apis mellifera). It is the honey bee venom's phospholipase A2.

Api m 1 is a CD4-carrying major allergen of humans sensitized to honey bee venom; our preliminary results suggest that most dogs sensitized to the honey bee venom also are sensitized to Api m 1. At this time we do not know if this is the case in cats and horses.

Api m 1 is considered a marker for sensitization to honey bee and bumble bees; phospholipases A2 are not cross-reactive with phospholipases A1 from vespine (V-g, Vex v 1).

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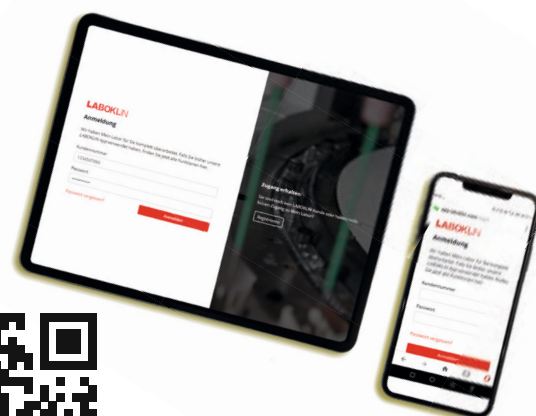
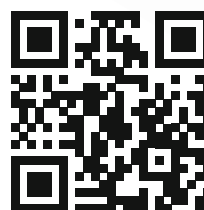
Access reports via your mobile with the LABOKLIN app!

We at Laboklin understand that it is not always possible to log on to the computer and check whether the expected results have already arrived. Sometimes it has to be done after-hours whilst at home or in between farm calls.

With the Laboklin app, you can use your mobile device (smartphone or tablet) to access your results online anytime, anywhere. As the reports are synchronized live, they can only be accessed if your device is connected to the internet*.

Scan the QR code to access the app directly.

* The applications are provided free of charge by LABOKLIN. Any fees incurred for establishing a connection to the data network of your mobile phone provider should be checked before use.



PAX Allergens: Components & Extracts

	Common name	Scientific name	Extracts & Components
Grass Pollens	Bermuda grass	<i>Cynodon dactylon</i>	Cyn d *
			Cyn d 1
	Orchard grass	<i>Dactylis glomerata</i>	Dac g *
	Meadow fescue	<i>Festuca pratensis</i>	Fes p *
	Perennial ryegrass	<i>Lolium perenne</i>	Lol p 1
	Timothy	<i>Phleum pratense</i>	Phl p 1
			Phl p 2
			Phl p 5.0101
			Phl p 6
			Phl p 7
			Phl p 12
	Kentucky blue grass	<i>Poa pratensis</i>	Poa p *
	Ryegrass, cultivated	<i>Secale cereale</i>	Sec c_pollen *
Tree Pollens	Alder	<i>Alnus glutinosa</i>	Aln g *
			Aln g 1
			Aln g 4
	Silver birch	<i>Betula verrucosa</i>	Bet v *
			Bet v 1
			Bet v 2
			Bet v 6
	Hazel	<i>Corylus avellana</i>	Cor a_pollen *
			Cor a 1.0103
	Cypress	<i>Cupressus sempervirens</i>	Cup s *
	Beech	<i>Fagus sylvatica</i>	Fag s 1
	Ash	<i>Fraxinus excelsior</i>	Fra e *
			Fra e 1
	Privet	<i>Ligustrum vulgare</i>	Lig v *
	Olive tree	<i>Olea europaea</i>	Ole e *
			Ole e 1
			Ole e 7
			Ole e 9
	London plane tree	<i>Platanus acerifolia</i>	Pla a 1
			Pla a 2
	Cottonwood	<i>Populus nigra</i>	Pla a 3
			Pop n *
	Elm	<i>Ulmus campestris</i>	Ulm c *
Weed Pollens	Ragweed	<i>Ambrosia artemisiifolia</i>	Amb a *
			Amb a 1
			Amb a 4
			Amb a 4
	Mugwort	<i>Artemisia vulgaris</i>	Art v *
			Art v 1.0101
			Art v 3.0201
	Lamb's quarter	<i>Chenopodium album</i>	Che a *
			Che a 1
	Wall pellitory	<i>Parietaria judaica</i>	Par j *
			Par j 2
	Ribwort / Plantain	<i>Plantago lanceolata</i>	Pla l *
			Pla l 1

	Common name	Scientific name	Extracts & Components
Weed Pollens	Dock/Sorrel	<i>Rumex crispus / acetosella</i>	Rum c / * Rum a
	Russian thistle	<i>Salsola kali</i>	Sal k *
			Sal k 1
	Nettle	<i>Urtica dioica</i>	Urt d *
Danders & Epithelia	Cattle	<i>Bos domesticus</i>	Bos d 2
	Dog	<i>Canis familiaris</i>	Can f 1
			Can f 2
			Can f 3
			Can f 4
			Can f 6
			Can f_maleurine (including Can f 5) *
			Can f Fel d 1 like
			Can f Fel d 1 like
	Guinea pig	<i>Cavia porcellus</i>	Cav p 1
	Cat	<i>Felis catus</i>	Fel d 1
			Fel d 2
			Fel d 4
			Fel d 7
	Mouse	<i>Mus musculus</i>	Mus m 1
	Rabbit	<i>Oryctolagus cuniculus</i>	Ory c 1
			Ory c 2
			Ory c 3
Mites & Cockroaches	Acarus siro	<i>Acarus siro</i>	Aca s *
	German cockroach	<i>Blattella germanica</i>	Bla g *
			Bla g 1
			Bla g 2
			Bla g 4
			Bla g 5
			Bla g 9
	Dermatophagoides farinae	<i>Dermatophagoides farinae</i>	Der f *
			Der f 1
			Der f 2
			Der f 15
			Der f 18
			Der f 18
	Dermatophagoides pteronyssinus	<i>Dermatophagoides pteronyssinus</i>	Der p *
			Der p 1
			Der p 2
			Der p 5
			Der p 7
			Der p 10
			Der p 11
			Der p 20
			Der p 21
			Der p 23
	Glycyphagus domesticus	<i>Glycyphagus domesticus</i>	Gly d 2
	Lepidoglyphus destructor	<i>Lepidoglyphus destructor</i>	Lep d *
		<i>Lepidoglyphus destructor</i>	Lep d 2

	Common name	Scientific name	Extracts & Components
	Tyrophagus putrescentiae	<i>Tyrophagus putrescentiae</i>	Tyr p *
		<i>Tyrophagus putrescentiae</i>	Tyr p 2
Moulds & Yeasts	Alternaria alternata	<i>Alternaria alternata</i>	Alt a *
			Alt a 1
			Alt a 6
	Aspergillus fumigatus	<i>Aspergillus fumigatus</i>	Asp f *
			Asp f 1
			Asp f 3
			Asp f 4
			Asp f 6
			Asp f 8
	Cladosporium herbarum	<i>Cladosporium herbarum</i>	Cla h *
	Malassezia pachydermatis	<i>Malassezia pachydermatis</i>	Cla h 8
			Mala p *
	Malassezia sympodialis	<i>Malassezia sympodialis</i>	Mala s 1
			Mala s 9
			Mala s 5
			Mala s 6
			Mala s 11
Insect Venoms	Honey bee venom	<i>Apis mellifera</i>	Api m *
			Api m 1
			Api m 2
			Api m 3
			Api m 5
	Long-headed wasp venom	<i>Dolichovespula spp.</i>	Api m 10
			Dol spp *
			Dol spp *
	Paper wasp venom	<i>Polistes dominula</i>	Pol d *
	Fire ant venom	<i>Solenopsis richteri & Solenopsis invicta</i>	Pol d 5
			Sol spp *
Biting Insects	Mosquito	<i>Aedes aegypti</i>	Ves v *
		<i>Vespula vulgaris</i>	Ves v 1
	Midges	<i>Culicoides obsoletus</i>	Ves v 5
			Aed a *
			Cul n *
			Cul o 11 (CO167)
			Cul o 1P
			Cul o 8
			Cul o 2P
			Cul o 3
			Cul o 5
			Cul o 7
			Cul o 9 (CO120)
	Stable fly	<i>Stomoxys calcitrans</i>	Sto c *
	Horse fly	<i>Tabanus spp.</i>	Tab spp. *
	Deer fly	<i>Chrysops vittatus</i>	Chr v *

* Extract

	Common name	Scientific name	Extracts & Components
Foods	Linseed, flax	<i>Linum usitatissimum</i>	Lin u *
	Cottonseed	<i>Gossypium hirsutum</i>	Gos h *
	Lupine seed	<i>Lupinus albus</i>	Lup a *
	Great millet sorghum	<i>Sorghum bicolor</i>	Sor b *
	Oat	<i>Avena sativa</i>	Ave s *
	Buckwheat	<i>Fagopyrum esculentum</i>	Fag e *
			Fag e 2
	Sunflower seed	<i>Helianthus annuus</i>	Hel a *
	Barley	<i>Hordeum vulgare</i>	Hor v *
	Rice	<i>Oryza sativa</i>	Ory s
			Ory s_GLUB1
	Millet	<i>Panicum miliaceum</i>	Pan m *
	Rye, cultivated	<i>Secale cereale</i>	Sec c_flour *

	Common name	Scientific name	Extracts & Components
Foods	Corn, cereal	<i>Zea mays</i>	Zea m *
			Zea m 14
			Zea m_GBSSI
	Apple	<i>Malus domestica</i>	Mal d 1
			Mal d 2
			Mal d 3
	Peanut	<i>Arachis hypogaea</i>	Ara h 1
			Ara h 2
			Ara h 3
			Ara h 5
			Ara h 6
			Ara h 8
			Ara h 9
			Ara h 15
	Soy	<i>Glycine max</i>	Gly m *
			Gly m 4
			Gly m 5
			Gly m 6
			Gly m 8

	Common name	Scientific name	Extracts & Components
Foods	Lentil	<i>Lens culinaris</i>	Len c *
			Len c 1
			Len c 2
			Len c 3
	Pea	<i>Pisum sativum</i>	Pis s *
			Pis s 1
			Pis s 2
			Pis s 3
	Mealworm	<i>Tenebrio molitor</i>	Ten m *
	Carrot	<i>Daucus carota</i>	Dau c *
			Dau c 1
Other	Latex	<i>Hevea brasiliensis</i>	Hev b 1
			Hev b 11
			Hev b 3
			Hev b 5
			Hev b 6.02

* Extract

4PAWS – THE reminder APP for Pet Owners

From setting reminders to give medication as well as being prepared when traveling – all this is possible with the 4Paws app!



Allergy

Pollen calendar, allergy test results, and the treatment plan for allergy therapy – all in one place.



Other treatments

Never forget to administer important medication again – thanks to the reminder function.



Vaccinations

Remember to schedule your vaccinations at the right time – it's no problem!



Anti-parasitics

Worming treatment and parasite prophylaxis – when is it right? The app tells you.



Traveling

Enter the travel period and destination and the app will remind you of the recommended prophylactic measures and follow-up examinations. The app provides information on the vector-borne pathogens found in the destination country in the form of "fact sheets".

NEW

Absolutely no costs and ad-free installation from the app stores:



LABOKLIN
LABORATORY FOR CLINICAL DIAGNOSTICS



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