Find out more about allergy to furry animals to improve patient management

- Define primary sensitizers and understand cross-reactions to pets
- Improve pet allergy avoidance advice
- Facilitate identification of patients and selection of appropriate extracts for immunotherapy

Benefits in patient management
- Well-founded pet allergy avoidance and proper immunotherapy can:
  - Reduce allergic symptoms
  - Relieve the patient from fear of unexpected severe reactions in social life and daily activities
  - Improve the quality of life of pet-allergic patients

Make a precise assessment
ImmunocAP® Allergen components help you differentiate between “true” allergies and cross-reactivity

Make a substantiated decision
A better differentiation helps you give relevant advice and define the optimal treatment

Make a difference
More informed management helps you improve the patient's well-being and quality of life

References:
19. www.thermoscientific.com/phadia

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.
Use components to resolve multiple positivity to pet extracts

The case history of pet allergic patients does not always clearly suggest which animal(s) is causing the symptoms. Furthermore, many patients allergic to furry animals are positive to several pet dander extracts such as cat, dog and horse. 1, 2

Complete natural extracts detect sensitization to pets with high efficiency and sensitivity: 3

- Cat dander: e1
- Dog dander: e5
- Horse dander: e3

Components can help explain multiple positive pet extract tests and clarify: 1, 2

- True co-sensitization to cat, dog and horse
- Cross-reactivity between serum albumins

Specific pet components discriminate between true sensitization to one/several pets: 1, 2

- Specific cat components: Fel d 1, Fel d 4
- Specific dog components: Can f 1, Can f 2, Can f 5
- Specific horse component: Equ c 1

Cross-reactive pet components explain cross-reactivity: 1, 2, 4

- Serum albumins: cat component Fel d 2, dog component Can f 3
- Serum albumins are present in all mammals and have similar protein structure between species

*See lipocalin explanation under “Did you know that?”

Pet allergy

- Cat and dog allergies are among the most important indoor allergens 8, 9
- Pet allergic subjects present mainly with rhinitis and asthma symptoms 8, 9
- As many as about 60–70 % of animal allergic patients are co-sensitized to several pets such as cat, dog and horse, suggesting strong comorbidity and/or prevalent cross-reactivity 1

Cat allergy

- Fel d 1 is the major cat allergen component and about 60–90 % of cat allergic subjects have IgE antibodies to Fel d 1 9–11
- High IgE levels to Fel d 1 is a risk factor for development of asthma 10
- Fel d 2 IgE antibodies are detected in about 60 % of cat allergic subjects, often at low IgE levels. 9, 12
- Fel d 2 is a cross-reactive serum albumin regarded as a minor cat allergen, and about 15–40 % of cat allergic patients are sensitized to Fel d 2 9, 10, 14

Dog allergy

- Can f 1, Can f 2 and Can f 5 are all specific dog allergen components 2, 15–17
- About 50–90 %, 20–30 % and up to 70 % of dog allergic subjects are sensitized to Can f 1, Can f 2 and Can f 5, respectively 2, 15–17
- Can f 3 is the cross-reactive dog serum albumin. IgE to Can f 3 is detected in about 15–50 % of dog allergic patients 2, 14

Horse allergy

- Equ c 1 is a major horse allergen component. About 75 % of horse allergic subjects are sensitized to Equ c 1 19
- Generally lipocalins are of low protein similarity. However, certain lipocalins share significant sequence similarity and display some level of cross-reactivity, for example horse Equ c 1 and cat Fel d 4 12, 20

IgE Levels indicate primary sensitization

When IgE antibodies to two or more cross-reacting components are detected, the primary sensitization is generally indicated by the highest IgE levels.

In this case, IgE antibodies to both cat Fel d 2 and dog Can f 3 serum albumins are detected. Here, the cat is most likely the primary sensitizer driving the symptoms, since the levels of IgE to Fel d 2 is much higher than the IgE levels to Can f 3.

Did you know that?

IgE levels indicate primary sensitization

When IgE antibodies to two or more cross-reacting components are detected, the primary sensitization is generally indicated by the highest IgE levels.

In this case, IgE antibodies to both cat Fel d 2 and dog Can f 3 serum albumins are detected. Here, the cat is most likely the primary sensitizer driving the symptoms, since the levels of IgE to Fel d 2 is much higher than the IgE levels to Can f 3.

Suggested test profiles

<table>
<thead>
<tr>
<th>Component</th>
<th>ImmunoCAP® COMPLETE EXTRACTS</th>
<th>ImmunoCAP® COMPONENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat</td>
<td>Fel d 1, Fel d 2, Fel d 4</td>
<td>Fel d 1, Fel d 2, Fel d 4</td>
</tr>
<tr>
<td>Dog</td>
<td>Can f 1, Can f 2, Can f 3, Can f 5</td>
<td>Can f 1, Can f 2, Can f 3, Can f 5</td>
</tr>
<tr>
<td>Horse</td>
<td>Equ c 1</td>
<td>Equ c 1</td>
</tr>
</tbody>
</table>

**Pet allergy**

- Cat and dog allergies are among the most important indoor allergens 8, 9
- Pet allergic subjects present mainly with rhinitis and asthma symptoms 8, 9
- As many as about 60–70 % of animal allergic patients are co-sensitized to several pets such as cat, dog and horse, suggesting strong comorbidity and/or prevalent cross-reactivity 1

**Cat allergy**

- Fel d 1 is the major cat allergen component and about 60–90 % of cat allergic subjects have IgE antibodies to Fel d 1 9–11
- High IgE levels to Fel d 1 is a risk factor for development of asthma 10
- Fel d 2 IgE antibodies are detected in about 60 % of cat allergic subjects, often at low IgE levels. 9, 12
- Fel d 2 is a cross-reactive serum albumin regarded as a minor cat allergen, and about 15–40 % of cat allergic patients are sensitized to Fel d 2 9, 10, 14

**Dog allergy**

- Can f 1, Can f 2 and Can f 5 are all specific dog allergen components 2, 15–17
- About 50–90 %, 20–30 % and up to 70 % of dog allergic subjects are sensitized to Can f 1, Can f 2 and Can f 5, respectively 2, 15–17
- Can f 3 is the cross-reactive dog serum albumin. IgE to Can f 3 is detected in about 15–50 % of dog allergic patients 2, 14

**Horse allergy**

- Equ c 1 is a major horse allergen component. About 75 % of horse allergic subjects are sensitized to Equ c 1 19
- Generally lipocalins are of low protein similarity. However, certain lipocalins share significant sequence similarity and display some level of cross-reactivity, for example horse Equ c 1 and cat Fel d 4 12, 20

**IgE Levels indicate primary sensitization**

When IgE antibodies to two or more cross-reacting components are detected, the primary sensitization is generally indicated by the highest IgE levels.

In this case, IgE antibodies to both cat Fel d 2 and dog Can f 3 serum albumins are detected. Here, the cat is most likely the primary sensitizer driving the symptoms, since the levels of IgE to Fel d 2 is much higher than the IgE levels to Can f 3.
Find out more about allergy to furry animals to improve patient management

- Define primary sensitizers and understand cross-reactions to pets
- Improve pet allergy avoidance advice
- Facilitate identification of patients and selection of appropriate extracts for immunotherapy

Benefits in patient management
- Well-founded pet allergy avoidance and proper immunotherapy can:
  - Reduce allergic symptoms
  - Relieve the patient from fear of unexpected severe reactions in social life and daily activities
  - Improve the quality of life of pet-allergic patients

Make a precise assessment
**ImmunoCAP®** Allergen components help you differentiate between “true” allergies and cross-reactivity

Make a substantiated decision
A better differentiation helps you give relevant advice and define the optimal treatment

Make a difference
More informed management helps you improve the patient’s well-being and quality of life

References:

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

www.thermoscientific.com/phadia
Use components to resolve multiple positivity to pet extracts

The case history of pet allergic patients does not always clearly suggest which animal(s) is causing the symptoms. Furthermore, many patients allergic to furry animals are positive to several pet dander extracts such as cat, dog and horse. 1, 2

Complete natural extracts detect sensitization to pets with high efficiency and sensitivity: 3

- Cat dander: e1
- Dog dander: e5
- Horse dander: e3

Components can help explain multiple positive pet extract tests and clarify: 1, 2

- True co-sensitization to cat, dog and horse
- Cross-reactivity between serum albumins

Specific pet components discriminate between true sensitization to one/several pets: 1, 2

- Specific cat components: Fel d 1, Fel d 4*
- Specific dog components: Can f 1, Can f 2, Can f 5
- Specific horse component: Equ c 1

Cross-reactive pet components explain cross-reactivity: 1, 2, 4

- Serum albumins: cat component Fel d 2, dog component Can f 3
- Serum albumins are present in all mammals and have similar protein structure between species

*See lipocalin explanation under “Did you know that?”

Suggested test profiles

**immunoCAP® COMPLETE EXTRACTS**

**immunoCAP® COMPONENTS**

**CAT**

Fell d 1, Fell d 2, Fell d 4

- **Can f 1**, **Can f 2**, **Can f 5**

**DOG**

Can f 1, Can f 12, Can f 13, Can f 15

- **Serum albumins**, **Lipocalin**

**HORSE**

Equ c 1

**Did you know that?**

IgE levels indicate primary sensitization

When IgE antibodies to two or more cross-reacting components are detected, the primary sensitiser is generally indicated by the highest IgE levels.

In this case, IgE antibodies to both cat Fell d 2 and dog Can f 3 serum albumins are detected. Here, the cat is most likely the primary sensitizer driving the symptoms, since the levels of IgE to Fell d 2 is much higher than the IgE levels to Can f 3.

Pet allergy

- Cat and dog allergies are among the most important indoor allergens. 1, 2
- Pet allergic subjects present mainly with rhinitis and asthma symptoms. 3
- As many as about 60–70% of animal allergic patients are co-sensitized to several pets such as cat, dog and horse, suggesting strong comorbidity and/or prevalent cross-reactivity. 1

Cat allergy

- **Fell d 1** is the major cat allergen component and about 60–90% of cat allergic subjects have IgE antibodies to Fell d 1. 1, 5
- High IgE levels to Fell d 1 is a risk factor for development of asthma. 1, 7
- Fell d 4 IgE antibodies are detected in about 60% of cat allergic subjects, often at low IgE levels. 1, 10
- Fell d 2 is a cross-reactive serum albumin regarded as a minor cat allergen, and about 15–40% of cat allergic patients are sensitized to Fell d 2. 1, 11, 12

Dog allergy

- **Can f 1**, **Can f 12** and **Can f 15** are all specific dog allergen components. 2, 15–17
- About 50–90%, 20–30% and up to 70% of dog allergic subjects are sensitized to Can f 1, Can f 12 and Can f 15, respectively. 2, 16–18
- Can f 3 is the cross-reactive dog serum albumin. IgE to Can f 3 is detected in about 15–50% of dog allergic patients. 2, 15–18

Horse allergy

- **Equ c 1** is a major horse allergen component. About 75% of horse allergic subjects are sensitized to Equ c 1. 19
- Generally lipocalins are of low protein similarity. However, certain lipocalins share significant sequence similarity and display some level of cross-reactivity, for example horse Equ c 1 and cat Fel d 4. 12, 20
Use components to resolve multiple positivity to pet extracts

The case history of pet allergic patients does not always clearly suggest which animal(s) is causing the symptoms. Furthermore, many patients allergic to furry animals are positive to several pet dander extracts such as cat, dog and horse. ¹⁻²

Complete natural extracts detect sensitization to pets with high efficiency and sensitivity: ³
- Cat dander: e₁
- Dog dander: e₅
- Horse dander: e₃

Components can help explain multiple positive pet extract tests and clarity: ¹⁻²
- True co-sensitization to cat, dog and horse
- Cross-reactivity between serum albumins

Specific pet components discriminate between true sensitization to one/several pets: ¹⁻²
- Specific cat components: Can f 1, Can f 2, Can f 5
- Specific horse component: Equ c 1
- Specific dog component: Can f 3

Cross-reactive pet components explain cross-reactivity: ¹⁻², ⁴
- Serum albumins: cat component Can f 3, horse component Can f 1

Cross-reactive serum albumins may have similar protein structure between species ¹⁻², ⁴
*See lipocalin explanation under “Did you know that?”

### Suggested test profiles

<table>
<thead>
<tr>
<th>ImmunoCAP® COMPLETE EXTRACTS</th>
<th>CAT</th>
<th>HORSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fel d 1, Fel d 2, Fel d 4</td>
<td>Fel d 3</td>
<td>Equ c 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ImmunoCAP® COMPONENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum albumins: Can f 1, Can f 2, Can f 3, Can f 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ImmunoCAP® COMPLETE EXTRACTS</th>
<th>DOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can f 1, Can f 2, Can f 3, Can f 5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ImmunoCAP® COMPONENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum albumins: Can f 1, Can f 2, Can f 3, Can f 5</td>
</tr>
</tbody>
</table>

### Did you know that?

IgE levels indicate primary sensitization

When IgE antibodies to two or more cross-reacting components are detected, the primary sensitization is generally indicated by the highest IgE levels.

In this case, IgE antibodies to both cat Fel d 2 and dog Can f 3 serum albumins are detected. Here, the cat is most likely the primary sensitizer driving the symptoms, since the levels of IgE to Fel d 2 is much higher than the IgE levels to Can f 3.

Pet allergy
- Cat and dog allergens are among the most important indoor allergens ⁵⁻⁶
- Pet allergic subjects present mainly with rhinitis and asthma symptoms ⁷⁻⁸
- As many as about 60–70% of animal allergic patients are co-sensitized to several pets such as cat, dog and horse, suggesting strong comorbidity and/or prevalent cross-reactivity ¹

Cat allergy
- Fel d 1 is the major cat allergen component and about 60–90% of cat allergic subjects have IgE antibodies to Fel d 1⁹⁻¹¹
- High IgE levels to Fel d 1 is a risk factor for development of asthma ¹²⁻¹³
- Fel d 4 IgE antibodies are detected in about 60% of cat allergic subjects; often at low IgE levels ¹₀⁻¹²
- Fel d 2 is a cross-reactive serum albumin regarded as a minor cat allergen, and about 15–40% of cat allergic patients are sensitized to Fel d 2¹⁰⁻¹², ¹₃⁻¹₄

Dog allergy
- Can f 1, Can f 2 and Can f 3 are all specific dog allergen components ²⁻⁻¹⁶⁻¹⁷
- About 50–90%, 20–30% and up to 70% of dog allergic subjects are sensitized to Can f 1, Can f 2 and Can f 3, respectively ²⁻⁻¹⁶⁻¹⁷
- Can f 3 is the cross-reactive dog serum albumin: IgE to Can f 3 is detected in about 15–50% of dog allergic patients ²⁻⁻¹₆⁻¹₇

Horse allergy
- Equ c 1 is a major horse allergen component. About 75% of horse allergic subjects are sensitized to Equ c 1 ²⁻⁻¹₉⁻⁻²₀
- Generally, lipocalins are of low protein similarity. However, certain lipocalins share significant sequence similarity and display some level of cross-reactivity, for example horse Equ c 1 and cat Fel d 4 ²⁻⁻¹₂⁻⁻²₀

**Cat and dog allergens are among the most important indoor allergens.**

**Pet allergic subjects present mainly with rhinitis and asthma symptoms.**

**As many as about 60–70% of animal allergic patients are co-sensitized to several pets such as cat, dog and horse, suggesting strong comorbidity and/or prevalent cross-reactivity.**

**Cat allergy:**
- Fel d 1 is the major cat allergen component and about 60–90% of cat allergic subjects have IgE antibodies to Fel d 1.
- High IgE levels to Fel d 1 is a risk factor for development of asthma.
- Fel d 4 IgE antibodies are detected in about 60% of cat allergic subjects; often at low IgE levels.
- Fel d 2 is a cross-reactive serum albumin regarded as a minor cat allergen, and about 15–40% of cat allergic patients are sensitized to Fel d 2.

**Dog allergy:**
- Can f 1, Can f 2 and Can f 3 are all specific dog allergen components.
- About 50–90%, 20–30% and up to 70% of dog allergic subjects are sensitized to Can f 1, Can f 2 and Can f 3, respectively.
- Can f 3 is the cross-reactive dog serum albumin: IgE to Can f 3 is detected in about 15–50% of dog allergic patients.

**Horse allergy:**
- Equ c 1 is a major horse allergen component. About 75% of horse allergic subjects are sensitized to Equ c 1.
- Generally, lipocalins are of low protein similarity. However, certain lipocalins share significant sequence similarity and display some level of cross-reactivity, for example horse Equ c 1 and cat Fel d 4.
Find out more about allergy to furry animals to improve patient management

Define primary sensitizers and understand cross-reactions to pets

- Improve pet allergy avoidance advice
- Facilitate identification of patients and selection of appropriate extracts for immunotherapy

Benefits in patient management

Well-founded pet allergen avoidance and proper immunotherapy can:
- Reduce allergic symptoms
- Relieve the patient from fear of unexpected severe reactions in social life and daily activities
- Improve the quality of life of pet-allergic patients

Make a precise assessment

ImmunoCAP® Allergen components help you differentiate between “true” allergies and cross-reactivity

Make a substantiated decision

A better differentiation helps you give relevant advice and define the optimal treatment

Make a difference

More informed management helps you improve the patient’s well-being and quality of life

References:

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.
Define primary sensitizers and understand cross-reactions to pets. Improve pet allergen avoidance advice. Facilitate identification of patients and selection of appropriate extracts for immunotherapy.

Benefits in patient management

Well-founded pet allergen avoidance and proper immunotherapy can:

- Reduce allergic symptoms
- Relieve the patient from fear of unexpected asthma reactions in social life and daily activities
- Improve the quality of life of pet-allergic patients

Resolve unclear case history of allergy to furry animals

Use components to resolve multiple positivity to pet extracts

Find out more about allergy to furry animals to improve patient management

www.thermoscientific.com/phadia

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

Resolve unclear case history of allergy to furry animals

Use components to resolve multiple positivity to pet extracts

Find out more about allergy to furry animals to improve patient management

www.thermoscientific.com/phadia

© 2011 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.