Setting the standard

ImmunoCAP™ Specific IgE

Wheat Allergen Components*

Use this guide to interpret ImmunoCAP Allergen Component test results and unlock a broader understanding of a patient’s allergic sensitization, allowing for a more comprehensive management plan.¹-¹⁶

Up to 65% of grass-allergic patients will also be sensitized to wheat but might not have a true clinical wheat allergy.²,³,¹⁵

Because wheat is part of the grass family, grass-allergic patients will often be sensitized to wheat due to cross-reactivity.²-⁴,¹⁵

Gliadin‡ (α-, β-, γ- and ω-gliadins)

Tri a 19 (ω-5-gliadin)

‡Gliadin is purified from a wheat extract and consists of 4 native, highly purified (99%) gliadins: α-, β-, γ- and ω-gliadins (including ω-5 gliadin)

Cross-reactivity

Risk stratification²-⁴,⁶,⁷

Testing with wheat allergen components can help to:¹-¹⁶

- Assess risk for systemic allergic reactions
- Rule in or out cross-reactivity
- Optimize diagnosis and management

Characteristics of individual proteins³,⁴,⁶,⁹

<table>
<thead>
<tr>
<th>CCD</th>
<th>Profilin</th>
<th>PR-10</th>
<th>LTP</th>
<th>Storage Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUXF3</td>
<td>Phl p 12†</td>
<td>Tri a 14</td>
<td>Tri a 19 (ω-5-gliadin)</td>
<td></td>
</tr>
</tbody>
</table>

†Surrogate markers for profilin Phl p 12, Bet v 2, Pru p 4.
²Gliadin is purified from a wheat extract and consists of 4 native, highly purified (99%) gliadins: α-, β-, γ- and ω-gliadins (including ω-5 gliadin)

1. Sensitization is usually asymptomatic
2. Abundant in nature
3. Cross-reactive with pollen

1. Labile to heat and digestion
2. Mainly local reactions
3. Cross-reactive with birch pollen

1. Stable to heat and digestion
2. Local and systemic reactions
3. Cross-reactive with plant foods and pollens

1. Stable to heat and digestion
2. Associated with systemic reactions
3. Indicates primary sensitization
**Diagnostic considerations**

<table>
<thead>
<tr>
<th>Wheat</th>
<th>Tri a 14</th>
<th>Gliadin</th>
<th>Tri a 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>1433</td>
<td>198</td>
<td>1416</td>
</tr>
</tbody>
</table>

If clinical symptoms are present with exposure to wheat, high probability of clinical wheat allergy and severe, systemic reactions. Consider the following:

- Immediate type wheat allergy
- Wheat-dependent exercise induced anaphylaxis (WDEIA)
- Bakers allergy (asthma) with Tri a 14-positive patients
- Patient likely to react to oral food challenge (OFC)
- Prescribing epinephrine auto-injector
- Informing family, colleagues, and teachers of the allergy and have a plan

If clinical symptoms are present with exposure to wheat, high probability of clinical wheat allergy and severe, systemic reactions. Consider the following:

- Systemic and local symptoms such as oral allergy syndrome (OAS) are possible
- Patient may be sensitized to other LTPs contained in other plant foods/pollens due to cross-reactions which can cause systemic symptoms
- Consider bakers allergy (asthma)
- Immediate type wheat allergy and/or WDEIA
- Patient likely to react to OFC
- Prescribing epinephrine auto-injector
- Inform family, colleagues, and teachers of the allergy and have a plan

If there are no symptoms with wheat exposure, or if symptoms are localized to only the oral cavity, primary wheat allergy and severe reactions are less likely. Consider the following:

- Further investigation to identify primary allergen by investigating what other allergens patient is exposed to
- Testing for CCD, Profilin (Phil p 12), and regional grasses
- OFC with a specialist may be recommended

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**Whole allergens consist of numerous allergen components.** A positive whole allergen sensitization with negative allergen component sensitization may mean a patient is sensitized to a component that is not yet available for testing. Consider a patient’s clinical history and if an OFC with a specialist may be warranted.

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**References**


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  - Bakers allergy (asthma) with Tri a 14-positive patients
  - Patient likely to react to oral food challenge (OFC)
  - Prescribing epinephrine auto-injector
  - Informing family, colleagues, and teachers of the allergy and have a plan

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  - Further investigation to identify primary allergen by investigating what other allergens patient is exposed to
  - Testing for CCD, Profilin (Phil p 12), and regional grasses
  - OFC with a specialist may be recommended

Note: As in all diagnostic testing, any diagnosis or treatment plan must be made by the clinician based on test results, individual patient history, the clinician’s knowledge of the patient, as well as their clinical judgment. Patients can be sensitized to more than one allergen component.

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