



GRASS

Molecular Allergology



Use components to identify patients for **appropriate grass pollen SIT**

Resolve multiple positivity to pollen tests

Take the diagnosis and management of grass pollen-allergic patients to a whole new level

Use components to verify “true” grass pollen sensitization

Grass pollen allergy is common and most grass pollen allergic patients are sensitized to several other pollens.^{1,2,3} Components help to distinguish between positive results due to sensitization to specific grass pollens and the cross-reactivity to food, weed or tree pollens.^{4,5}

- Grass pollen-specific components: Phl p 1, Phl p 2, Phl p 4, Phl p 5, Phl p 6, Phl p 11.
- Markers for cross-reactivity: Phl p 7 (polcalcin), Phl p 12 (profilin).

Identify patients for appropriate SIT treatment

An accurate diagnosis on the molecular level increases the likelihood of successful SIT; patients with primary sensitization to specific components have a better outcome of treatment as compared to patients sensitized only to cross-reactive components.^{6,7,8,9}

A recent study showed that more than 50% of the patients had their pollen SIT treatment changed when components were used in the diagnostic work-up.¹⁰

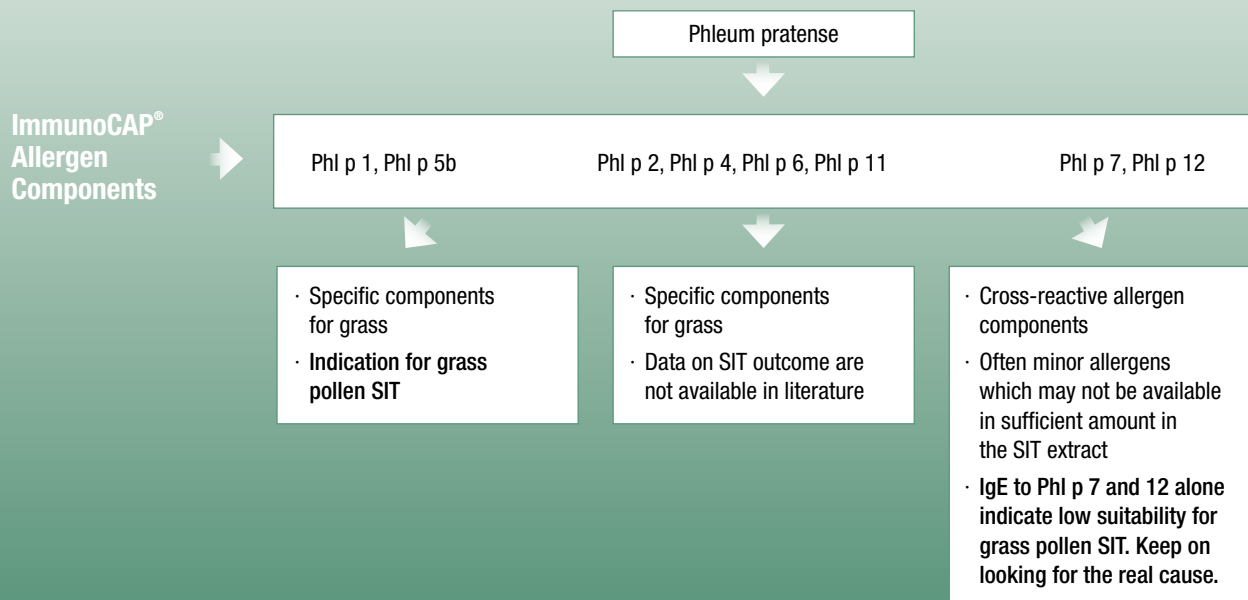
Improved patient management and quality of life

An accurate grass pollen diagnosis and appropriate immunotherapy can:

- Reduce allergic symptoms
- Improve the quality of life
- Optimize SIT outcome

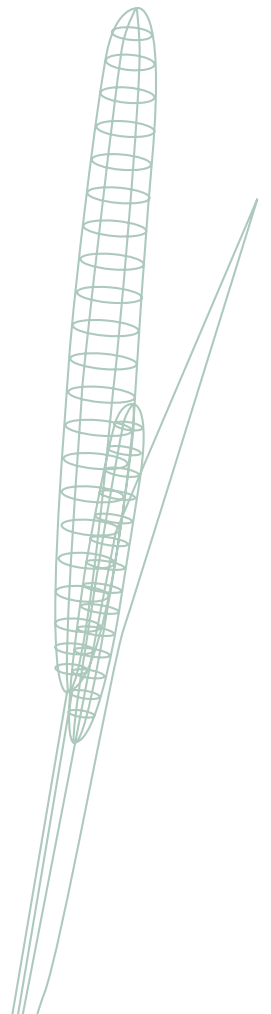


Suggested profiles for SIT decision



Did you know that?

- Grass pollen allergy is common worldwide, and in some regions up to 40 % of atopics show sensitization to grass pollen.^{1,4,11}
- Group 1 and group 5 allergens (Phl p 1 and Phl p 5) are the dominating grass pollen allergens. More than 90 % of patients with sensitization to grass pollen have IgE abs to Phl p 1 and/or Phl p 5.^{4,5,8}
- Sensitization to the cross-reactive allergens profilin and polcalcin is usually not frequent (< 20 %). When no specific grass sensitization is detected other pollen or food specific components should be investigated.^{3,4,8}
- Up to 30 % of patients suffering from pollinosis simultaneously present allergy to fruits and vegetables, such as peanut, soy and tomato, either due to cross-reactivity or true co-sensitization.²
- The SIT extract chosen for treatment should ideally contain appropriate concentrations of the components indicated as trigger of the symptoms.^{6,9,11}
- Effective SIT is usually associated with increased IgG4 and reduced IgE antibody levels. Grass components can be used to monitor the levels of IgE and IgG4 during SIT treatment to ensure compliance.^{9,12,13}
- SIT treatments are expensive and prescribed for several years. A correct diagnosis is therefore important.^{6,14}





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: **1.** Barber D. et al. Understanding patient sensitization profiles in complex pollen areas: a molecular epidemiological study. *Allergy*. 2008 Nov; 63(11): 1550–8. **2.** Cuesta-Herranz J. et al. Differences among pollen-allergic patients with and without plant food allergy. *Int Arch Allergy Immunol*. 2010; 153(2): 182–92. **3.** Hauser M. et al. Panallergens and their impact on the allergic patient. *Allergy Asthma Clin Immunol*. 2010; 6(1): 1. **4.** Andersson K. et al. Characteristics and immunobiology of grass pollen allergens. *International Archives of Allergy & Immunology*. 2003; 130(2): 87–107. **5.** Sekerkova A. et al. Detection of Phl p 1, Phl p 5, Phl p 7 and Phl p 12 specific IgE antibodies in the sera of children and adult patients allergic to Phleum pollen. *Allergol Int*. 2012 Jun; 61(2): 339–46. **6.** Walker S.M. et al. Immunotherapy for allergic rhinitis. *Clin Exp Allergy*. 2011 Sep; 41(9): 1177–200. **7.** Schmid-Grendelmeier P. Recombinant allergens. For routine use or still only science? *Hautarzt*. 2010 Nov; 61(11): 946–53. **8.** Tripodi S. et al. Molecular profiles of IgE to Phleum pratense in children with grass pollen allergy: Implications for specific immunotherapy. *J Allergy Clin Immunol*. 2012 Mar; 129(3): 834–9 e8. **9.** Valenta R. et al. Component-resolved diagnosis to optimize allergen-specific immunotherapy in the Mediterranean area. *J Invest Allergol Clin Immunol*. 2007; 17 Suppl 1: 36–40. **10.** Sastre J. et al. How molecular diagnosis can change allergen-specific immunotherapy prescription in a complex pollen area. *Allergy*. 2012 May; 67(5): 709–11. **11.** Hatzler L. et al. Molecular spreading and predictive value of preclinical IgE response to Phleum pratense in children with hay fever. *J Allergy Clin Immunol*. 2012 Oct; 130(4): 894–901 e5. **12.** Jutel M. et al. Allergen-specific immunotherapy with recombinant grass pollen allergens. *Journal of Allergy & Clinical Immunology*. 2005; 116(3): 608–13. **13.** Rossi R.E. et al. Evaluation of 70 polysensitized allergic patients with skin prick test and an allergen microarray. *IT J Allergy Clin Immunol*. 2007; 17: 158–64. **14.** Canonica G.W. et al. Cost-effectiveness of GRAZAX for prevention of grass pollen induced rhinoconjunctivitis in Southern Europe. *Respir Med*. 2007 Sep; 101(9): 1885–94.

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