

Weed pollinosis

ImmunoCAP™ Specific IgE tests

The term “weed” does not constitute a botanical family, but rather refers to diverse plants used as culinary herbs, medicinal plants that are ecologically adaptive as well as invasive segetal plants.¹ Weed allergy related symptoms can be unclear and difficult to diagnose due to frequent poly-sensitisations, and inconclusive anamnesis due to overlapping flowering seasons with other pollens such as birch and grass. Cross-reactions are expected between different weed species when botanically closely related.^{1,2}

ImmunoCAP™ Whole Allergens

Mugwort (w6)

Ragweed (w1)

Wall pellitory (w21)

Plantain (w9)

Saltwort (w11)

ImmunoCAP™ Allergen Components

Art v 1 (w231)
Defensin-like protein

Amb a 1 (w230)
Pectate lyase

Par j 2 (w211)
LTP

Pla l 1 (w234)
Ole e 1like protein

Sal k 1 (w232)
Pectin methylesterase

Primary sensitiser

- Major allergen for mugwort
- Responsible for crossreactivity with ragweed, sunflower and chamomile¹⁻¹⁴



- Major allergen for ragweed
- Cross-reactivity with pectate lyases from the *Asterales* order and with the unrelated major grass allergen Phl p 4^{1,16}



- Major allergen for wall pellitory
- Par j 2 lacks cross-reactivity with LTPs from other species¹⁸



- Major allergen for plantain
- Marker of genuine sensitisation to plantain¹



- Major allergen for saltwort
- Marker of genuine sensitisation to saltwort¹



Cross-reactives allergens[#]

Art v 3 (w233) LTP – Profilin (Bet v 2, Phl p 12) – Polcalcin (Bet v 4, Phl p 7)

Art v 3 shares clinically relevant cross-reactivity with other pollen and food LTPs such as Pru p 3. It is considered as an allergen associated to LTP syndrome.^{16,19}

[#] Profilin (Bet v 2, Phl p 12) and polcalcin (Bet v 4, Phl p 7) from birch and Timothy grass can be used as marker for almost all pollen due to structural similarity.¹⁸

Whole extracts	Allergen components	Interpreting results*	Management considerations
Mugwort	Art v 1 	Primary sensitation to mugwort is likely ¹⁻¹³	- Consider prescription of allergen immunotherapy (AIT) with mugwort pollen - Weed pollen exposure reduction¹⁻¹³
	Art v 3 	Primary sensitation to mugwort and LTP syndrome likely ¹⁶⁻¹⁹	- Patient well to moderately suitable for AIT with mugwort - Weed pollen exposure reduction¹⁻¹³
Ragweed	Amb a 1 	Primary sensitation to ragweed is likely ¹⁻¹³	- Consider prescription of AIT with ragweed pollen - Weed pollen exposure reduction¹⁻¹³
Wall pellitory	Par j 2 	Primary sensitation to wall pellitory is likely ^{1,20}	- Consider prescription of AIT with wall pellitory pollen^{1,20} - Weed pollen exposure reduction¹⁻¹³
Plantain	Pla l 1 	Primary sensitation to plantain is likely ^{1,2}	- Consider prescription of AIT with plantain pollen^{1,2} - Weed pollen exposure reduction¹⁻¹³
Saltwort	Sal k 1 	Primary sensitation to saltwort is likely ^{1,21}	- Consider prescription of AIT with saltwort pollen^{1,21} - Weed pollen exposure reduction¹⁻¹³

* Results should always be interpreted in the context of the clinical history.

References: 1. Dramburg S, et al. *Pediatr Allergy Immunol* 2023;34(Suppl 28):e13854. 2. Gadermaier, G, et al. *Methods* 2014;66:55-66. 3. Forkel, et al. *Int Arch Allergy Immunol* 2020;181(2):128-135. 4. Asero, R, et al. *Ann Allergy Asthma Immunol* 2014;113:307-313. 5. Liao, et al. *Front. Peridatr* 2022;10:816354. 6. Cosi V, et al. *Curr Allergy Asthma Rep* 2023;23(6):277-285. 7. Egger M, et al. *Allergy* 2006;61:461-476. 8. Gao Z, et al. *Allergy* 2019;74(2):284-293. 9. Zbircea LE, et al. *Int J Mol Sci* 2023;24(4):4040. 10. Schmid-Grendelmeier P. *Hautarzt* 2010;61(11):946-953. 11. Canonica GW, et al. *World Allergy Organization Journal* 2013;6(1):17-7. 12. Asero R. *Eur Ann Allergy Clin Immunol* 2012;44(5):183-187. 13. Kleine-Tebbe, J. and Jakob, T. Editors: *Molecular Allergy Diagnostics*. Springer International Publishing Switzerland 2017. 14. Leonard R, et al. *J Biol Chem* 2010;285(35):27192-200. 15. Pichler U, et al. *PLoS One* 2015;10(5):e0120038. 16. Wopfner N, et al. *Int Arch Allergy Immunol* 2005;138(4):337-346. 17. Zhao L, et al. *Clin Transl Allergy* 2020;10(1): p. 50. 18. Asero R, et al. *Clin exp Allergy* 2018;48(1):6-12. 19. Scheurer S, et al. 2021;21(2):7. 20. Gonzalez-Rioja R, et al. *Clin Exp Allergy* 2007;37(2): p. 243-250. 21. Barderas R, et al. *Clin Exp Allergy* 2007;37(7): p. 1111-1119.

Official product names: ImmunoCAP Allergen w1, Common ragweed; ImmunoCAP Allergen w6, Mugwort; ImmunoCAP Allergen w21, Wall pellitory; ImmunoCAP Allergen w9, Plantain (English), Ribwort; ImmunoCAP Allergen w11, Saltwort (prickly), Russian thistle; ImmunoCAP Allergen w230, Allergen component Amb a 1, Ragweed; ImmunoCAP Allergen w231, Allergen component Art v 1, Mugwort; ImmunoCAP Allergen w233, Allergen component Art v 3 LTP, Mugwort; ImmunoCAP Allergen w211, Allergen component Par j 2 LTP, Wall pellitory; ImmunoCAP Allergen w234, Allergen component Pla l 1, Plantain; ImmunoCAP Allergen w232, Allergen component Sal k 1, Saltwort

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