Recombinant allergens for diganosis of Olive allergies

Olive (*Olea europaea*) pollen allergy is one of the most significant pollinoses in many geographical locations. Olive is is one of the most common and economically important trees in the Mediterranean area and it has also been introduced as an ornamental tree in many countries.

Olive pollen has a complex allergenic profile from which more than 10 allergens have been identified and characterized.

Ole e 1 is the most prevalent allergen of olive pollen, often reaching values higher than 70% among olive-sensitive patients. It is the single major allergen in regions with low pollen counts and constitutes more than 10% of the total protein content of pollen in the most profuse varieties of the *Olea europaea* tree. It does not exist in fruit, leaf, or stem; therefore, these tissues cannot induce allergy through Ole e 1.

Ole e 2 is a profilin and it was identified as a minor allergen in birch (*Betula verrucosa*), timothy grass (*Phleum pratense*) and mugwort (*Artemisia vulgaris*) pollens. A first estimation of IgE binding frequency to profilin in patients allergic to olive pollen was reported by Ledesma *et al.* (Ledesma A, Rodriguez R, Villalba M, *et al*. Olive-pollen profilin. Molecular and immunologic properties. Allergy 1998;53:520–526)**. The frequency of sensitization to this allergen for olive tree pollen allergic patients by *in vitro* and most *in vivo* techniques is around 20%. Although Ole e 2 is a minor allergen, its presence should be ascertained and quantified in *Olea europaea* allergenic extracts intended for diagnostic and therapeutic use.**

Rekom Biotech, as specialised company in the design and development of recombinant biomarkers, has produced as mature proteins three allergens of *Olea europaea*:

ALLERGEN	CAT NUMBER	INCIDENCE
Ole e 1	RAL0012	70%
Ole e 2	RAL0010	20%-47%
Ole e 5	RAL0047	40%

Pack size: 0.1 mg*; 1 mg; bulk
Format: liquid; lyophilised
*under availability
Top product (Satisfaction guarantee)

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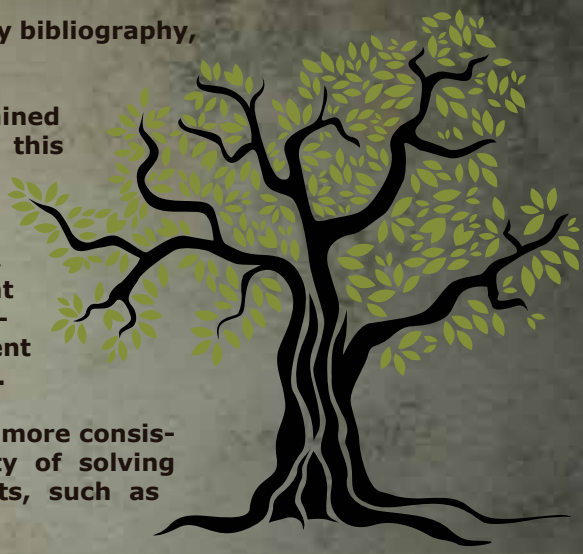
These biomarkers have been evaluated in an external study carried out at a Spanish hospital by a group of allergists with positive and negative serum samples from patients. The evaluation of the recombinant allergens has been performed by means of an *in-house* ELISA assay. In this immunoassay, it has been determined the presence of specific IgE in sera that had previously been validated by skin prick testing (SPT) and the UniCAP® test. The sera panel for this study was composed of 25 positive and 10 negative specimen sera.

IgE (IU/ml)	Ole e 1	Ole e 2	Crude extract
0,35-0,70	28%	12%	4%
0,70-3,5	20%	20%	8%
3,5-17,50	44%	8%	36%
17,50-50	8%	0%	24%
50-100	0%	0%	16%
>100	0%	0%	8%
Total	100%	40%	96%

This incidence was subsequently compared to the data described by bibliography, finding a very good correlation.

The measure of circulating IgE antibodies specific for a determined allergen provides information about the patient sensitisation to this allergen. In general, low IgE levels would indicate a low probability of developing a clinical disease, while high IgE levels would show a high correlation of developing disease.
Through an adequate diagnostic test incorporating our biomarkers, it would be possible to determine the allergen to which the patient is reacting and the levels of specific IgE to this allergen. This quantification will allow to predict more accurately the chance of the patient developing a disease, and thus the need for appropriate treatment.



In the final analysis, these recombinant allergens offer better and more consistent quality than extracts, given that they open the possibility of solving common shortcomings often found when working with extracts, such as cross-reactions and non-reproducibility.

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