



POSTER PRESENTATION

Open Access

Identification of *Helianthus annuus* allergens in subjects with allergy to sunflower

M^a Luisa Macias^{1*}, Francisca Gomez², Ana Aranda¹, Natalia Blanca-Lopez³, Cristobalina Mayorga¹, M^a Jose Torres², Gabriela Canto³, Araceli Diaz-Perales⁴, Miguel Blanca²

From 5th International Symposium on Molecular Allergology (ISMA 2013)
Vienna, Austria. 6-7 December 2013

Background

Sunflower seeds (*Helianthus annuus*) can trigger anaphylactic reactions, generalized urticaria, angioedema, oral allergy syndrome and other symptoms after ingestion. These reactions have been attributed to 2S albumins (SFA-8) and LTP (Hel a 3). We aimed to characterize the basophil response to storage proteins and oleosins from sunflower seed in patients allergic to sunflower.

Methods

The proteins 2S, 11S and oleosins were purified from a raw sunflower seed extract by FPLC/HPLC and identified by specific antibodies and peptide mass fingerprinting. We tested the immunological recognition of these proteins by basophil activation test (BAT). Four concentrations (1, 0.2, 0.1, 0.02 μ g/ml) of each protein and the sunflower roasted extract were used. Ten patients were selected by clinical history and skin prick test positive to commercial extract. Twelve subjects with skin prick test negative to commercial extract and not food allergy were included as controls.

Results

All patients showed a positive basophil response to roasted extract. BAT was positive in 87.5% of cases for 2S albumin, 60% for oleosins, and 57.14% for 11S albumin. 50% of patients were positive to the 3 proteins, 37.5% only for 2S albumin and 12.5% for storage proteins (both 2S and 11S albumin). In 40% of controls the concentration 1 μ g/ml of 2S albumin induced low basophil activation.

Conclusions

All the sunflower allergens tested in our group of patients were able to induce basophil activation in a

high percentage of cases. Storage proteins and oleosins are responsible for sunflower allergy in 50% of cases.

Authors' details

¹Carlos Haya Hospital-IBIMA, Research Laboratory, Malaga, Spain. ²Carlos Haya Hospital, Allergy Service, Malaga, Spain. ³Infanta Leonor Hospital, Allergy Service, Madrid, Spain. ⁴Plant Biotechnology Institute, UPM-INIA, Madrid, Spain.

Published: 17 March 2014

doi:10.1186/2045-7022-4-S2-P14

Cite this article as: Macias et al.: Identification of *Helianthus annuus* allergens in subjects with allergy to sunflower. *Clinical and Translational Allergy* 2014 **4**(Suppl 2):P14.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



¹Carlos Haya Hospital-IBIMA, Research Laboratory, Malaga, Spain
Full list of author information is available at the end of the article