

Serodominant House Dust Mite Molecular Profile in the Moderate-Severe Type-2 Inflammation Asthma Phenotype

#032

Ruperto Gonzalez-Perez¹; Fernando Pineda²; Paloma Poza-Guedes¹; Martina Aumayr³; Miriam Castillo²; Elena Mederos-Luis¹; Cristina Álava-Cruz¹; Peter Forstenlechner³; Victor Matheu¹; Inmaculada Sanchez-Machin¹
 (1) Hospital Universitario de Canarias, Santa Cruz de Tenerife, Spain (2) Application Lab. DIATER Laboratories, Madrid, Spain. (3) Macro Array Diagnostics, Vienna, Austria.

Rationale

Sensitization profile to house dust mites (HDM) in respiratory allergy may differ depending on specific geographical areas. The role of mites is controversial concerning type 2 inflammation in asthma. The present study aims to characterize the immunological pattern in a selected asthma population focusing on their HDM sensitization.

Material and methods

We selected 45 non-consecutive patients sensitized to *Dermatophagoides pteronyssinus* (DPT) with moderate-severe persistent asthma according to the GINA Guidelines.

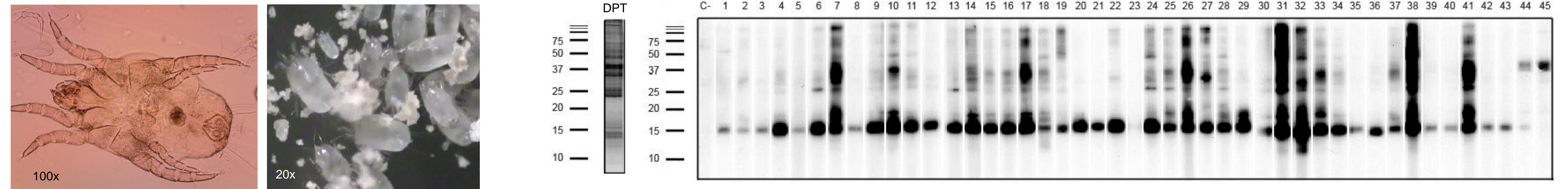
Skin prick test (SPT) with standardized extracts of DPT. (DIATER). Serum blood samples were obtained from all participating subjects.

Total IgE and sIgE (MADx) including a custom-made panel of 9 HDM allergens (Der p 1, Der p 2, Der p 5, Der p 7, Der p 10, Der p 11, Der p 20, Der p 21, and Der p 23) were quantified.

Results

All 45 asthmatic subjects showed a positive SPT to DPT with different molecular sensitization patterns. Median total IgE and absolute eosinophils were 898 UI/mL and 400 Eos/mm³ respectively. Regarding major allergens (Der p 1, Der p 2 and Der p 23), the titers of sIgE to both Der p 2 (26.19 kUA/L) and Der p 23 (21.81 kUA/L) were higher to Der p 1 (18.96 kUA/L), while mid-tier allergens (Der p 5, Der p 7 and Der p 21) reached serodominance (>50%) throughout all samples.

Results



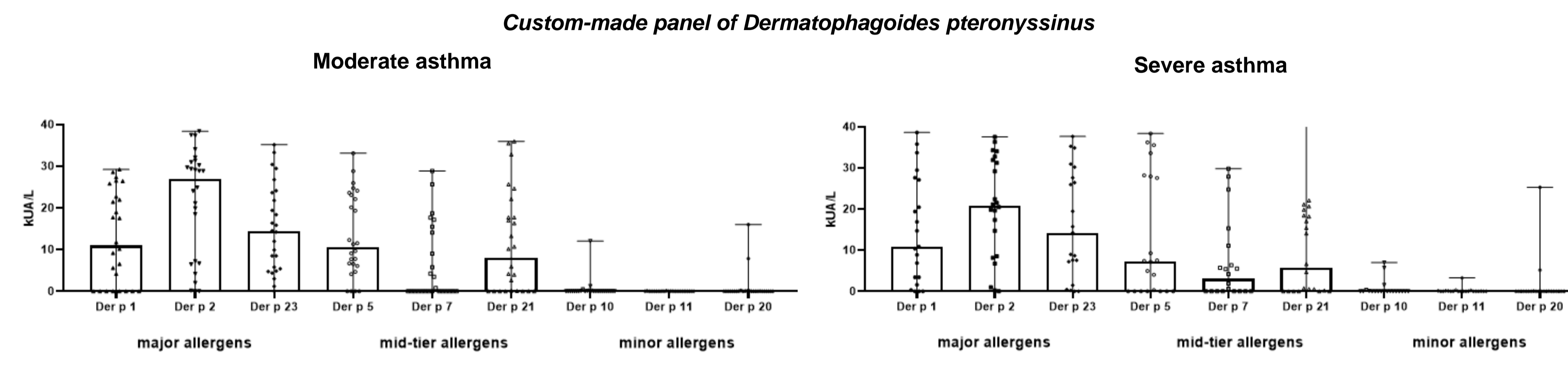
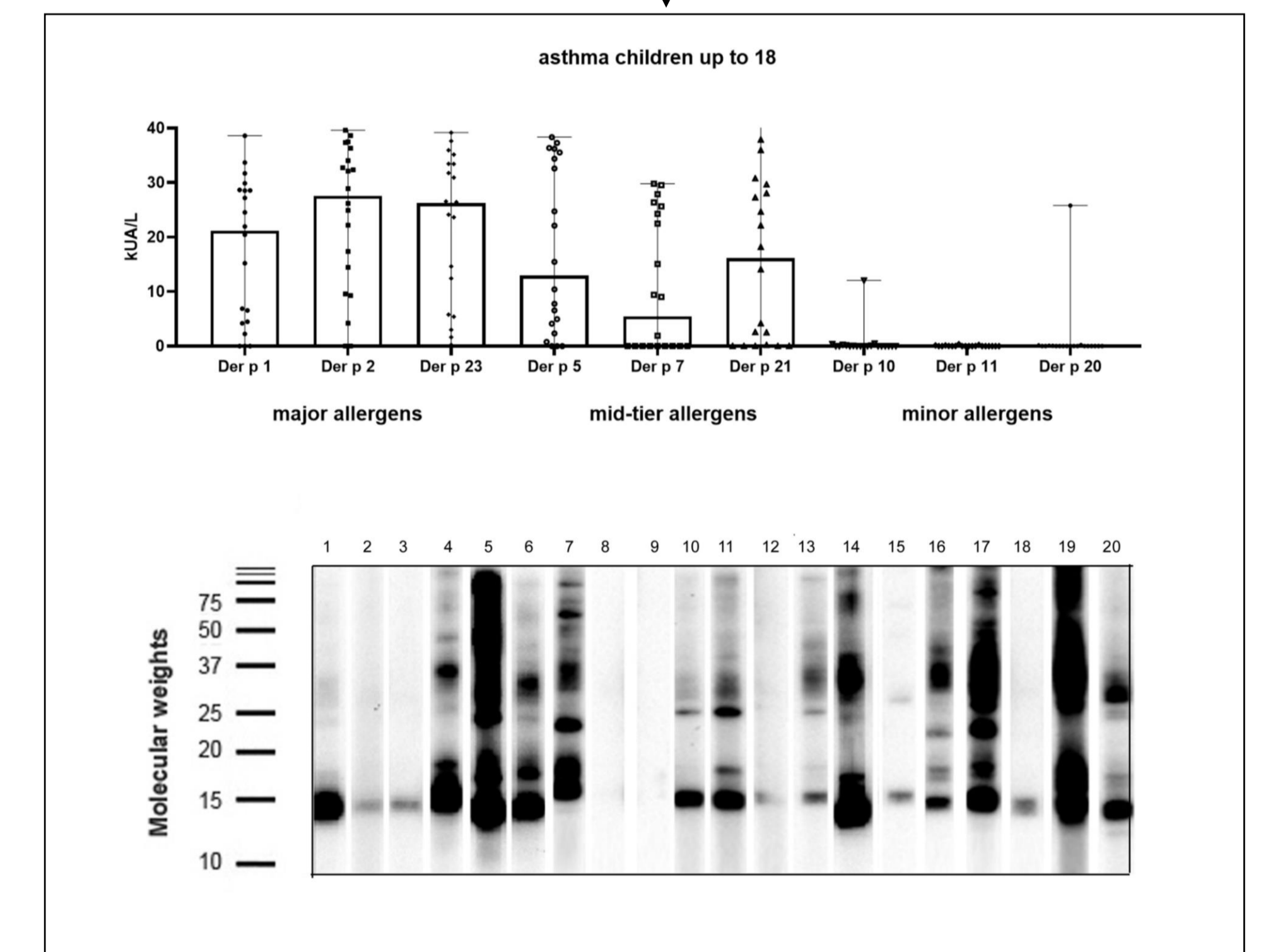
Cultures of *Dermatophagoides pteronyssinus*

SDS PAGE and Western blot in reduced conditions incubated with serum from HDM allergic patients

Asthma (GINA)	Skin Prick Test
Persistent & Moderate/severe	Positive

Below, specific IgE of CRDs house dust mites allergens (means and SD). *Dermatophagoides oteronyssinus* (Der p 1, Der p 2, Der p 5, Der p 7, Der p 10, Der p 11, Der p 20, Der p 21, and Der p 23) of asthmatic patients

On the left, detail of CRDs determination with asthmatic pediatric population



Conclusions

Both major and mid-tier HDM allergens endorsed serodominance in the current type-2 inflammation asthma population. The putative role of these serominant allergens in the pathobiology of this moderate-severe asthma phenotype is yet to be determined.