

Sensitization to *Chortoglyphus arcuatus* and *Aleuroglyphus ovatus* in *Dermatophagoides* spp. allergic individuals

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Summary

The prevalence of specific IgE to the storage mites *Aleuroglyphus ovatus* (*Ao*) and *Chortoglyphus arcuatus* (*Ca*) was studied in 77 individuals with allergic asthma and/or chronic allergic rhinitis. All these individuals had a positive skin test (weal ≥ 3 mm) to extracts of *Dermatophagoides pteronyssinus* (*Dp*) and/or *Dermatophagoides farinae* (*Df*). Sera from 29 non-atopic individuals were used as controls. A RAST was considered positive when a serum bound $\geq 1\%$ of the total counts added. The prevalence of a positive RAST to *Dp* was 75.3%, and to at least one of the two storage mites (*Ao* and *Ca*), 76.6%. Among patients with a positive RAST to *Dp*, 79.3% and 75.8% were RAST positive to *Ao* and *Ca*, respectively. RAST inhibition studies with a pool of sera from 13 subjects with high RAST binding to all three mites showed significant crossreactivity between *Ao* and *Ca* and minimal to moderate crossreactivity between *Dp* and *Ao* and *Ca*. This study demonstrates that sensitization to *Ao* and *Ca* is common in individuals with respiratory allergies in Cartagena, Colombia and suggests that *Ao*, *Ca* and *Dp* have unique and common allergenic determinants.

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Introduction

The house dust mites *Dp* and *Df* are frequently found in house dust samples in many parts of the world. They are considered an important aetiological factor in allergic asthma and/or chronic allergic rhinitis [1–3]. Mites belonging to the genera, *Tyrophagus*, *Lepidoglyphus*, *Acarus*, *Aleuroglyphus*, *Glycyphagus* and *Chortoglyphus* are considered storage mites and are very common in stored food and barn dust [4–6]. The human IgE response to storage mite allergens is not fully defined even though several species have been associated with allergic respiratory and dermatological diseases. The allergenicity of storage mites has been traditionally associated with occupational exposure in farming environments [7–13]. However, some investigators have demonstrated that sensitization to storage mites occurs in individuals who

are not occupationally exposed [14–21] and that these mites are present in house dust samples in many regions of the world [11,14,15,18,22,23].

The mites *Ao* and *Ca* belong to the families Acaridae and Chortoglyphidae, respectively. A recent study indicates that *Ca* is common in house dust samples in Cartagena: *Ca* was found in 8% of 50 dust samples ranging from 20–800 mites per gram in mattresses and from 40–60 in floor dust samples [23]. In a previous study in Colombia, *Ca* was identified in 30% of the dust samples collected in areas ranging in altitudes from 17 to 3000 metres above the sea level [24]. *Ao* has not yet been described in house dust samples in Colombia, but close related species such as *Acarus siro*, *Tyrophagus putrescentiae* and *Suidasia nesbittii* are very common [24]. In 1969, Miyamoto *et al.* reported sensitization to *Ca* and *Ao* in Japanese mite allergic individuals and suggested that these mites have common and unique antigens [19]. Sensitization to *Ao* and *Ca* has also been demonstrated in a group of mite allergic individuals residing in an urban

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important role in allergic respiratory diseases in tropical and subtropical environments and may be necessary for the diagnosis and successful treatment of mite allergy in Cartagena, Colombia.

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