BP14, an allergen from Cupressus sempervirens pollen related to the family of snakin/gibberellin-regulated proteins

The missing link of the cross-reactivity between cypress pollen and peach or citrus

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INTRODUCTION

Cypress pollenosis: 9 to 65 % of pollen sensitized patients

Cypress species: Cupressus sempervirens, Hesperocyparis arizonica, Cryptomeria japonica, Juniperus ashei, etc...

Cypress allergies:
- group 1: pectate lyase
- group 2: polygalacturonase
- group 3: thaumatin-like protein
- group 4: Ca-binding protein

and BP14, a 14kDa basic allergen

 Worldwide cypress pollen allergy

BP14 is a member of the snakin/gibberellin regulated protein (GRP)

- Inhibition protocols:
  1. adsorption (depletion) of the patient’s serum on C. sempervirens pollen extract (Cups) or snakin-1, dotted or blotted onto nitrocellulose membrane
  2. incubation of the adsorbed serum on blotted C. sempervirens pollen extract (Cups) or snakin-1

CONCLUSION (1)

- A pollen allergen is a member of the snakin/GRP protein family
- It cross-reacts with other members of this protein family found in many fruits and plants.
- It may constitute the structural basis of the peach/cypress and citrus/cypress associated syndromes, involving Prun 7 and Cit 7, two allergens, of the snakin/GRP protein family, described in peach and sweet orange.

CONCLUSION (2)

- Given the results of crossed inhibition it seems that the food sensitization is secondary to the pollen sensitization
- The sensitization to allergens from snakin/GRP protein family could be a new marker of the pollen food associated syndromes.

(Charpin et al. 2017, Clin Rev Allergy Immunol.)

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