

Purified Natural Allergens for Molecular Diagnostics and Product Standardisation

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Executive Director



Presentation Overview

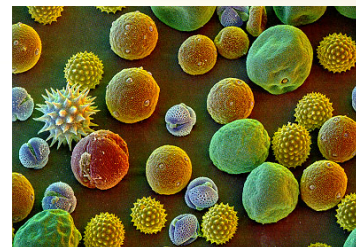
- Allergy and Allergens
- Uses of natural allergen extracts
 - Skin prick tests
 - Allergen immunotherapy
- Standardisation of allergen extracts
- Uses of purified natural allergens
 - Cellular and molecular research
 - In vitro molecular diagnostics



Allergy and Allergens

Allergies

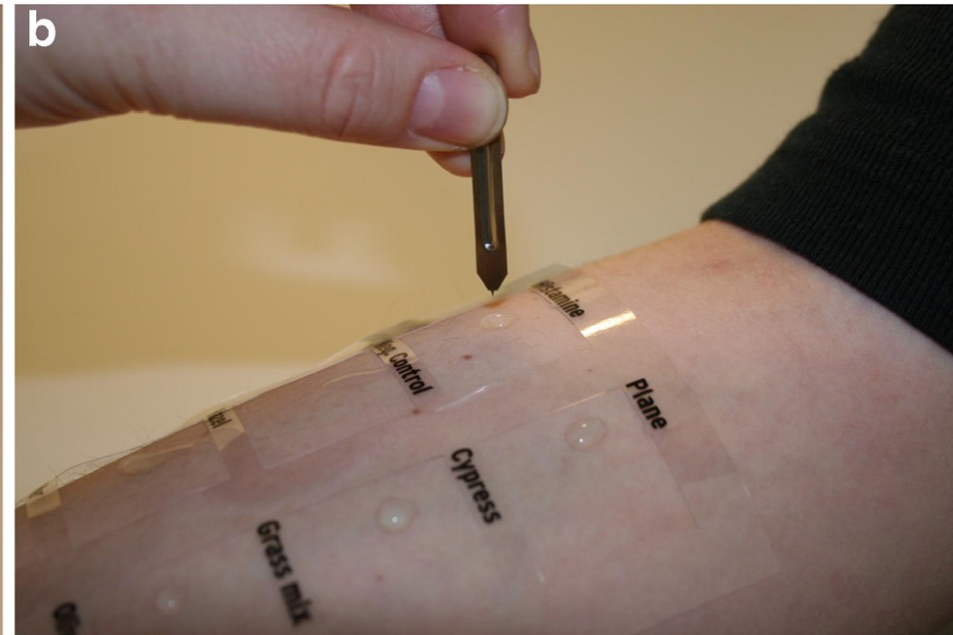
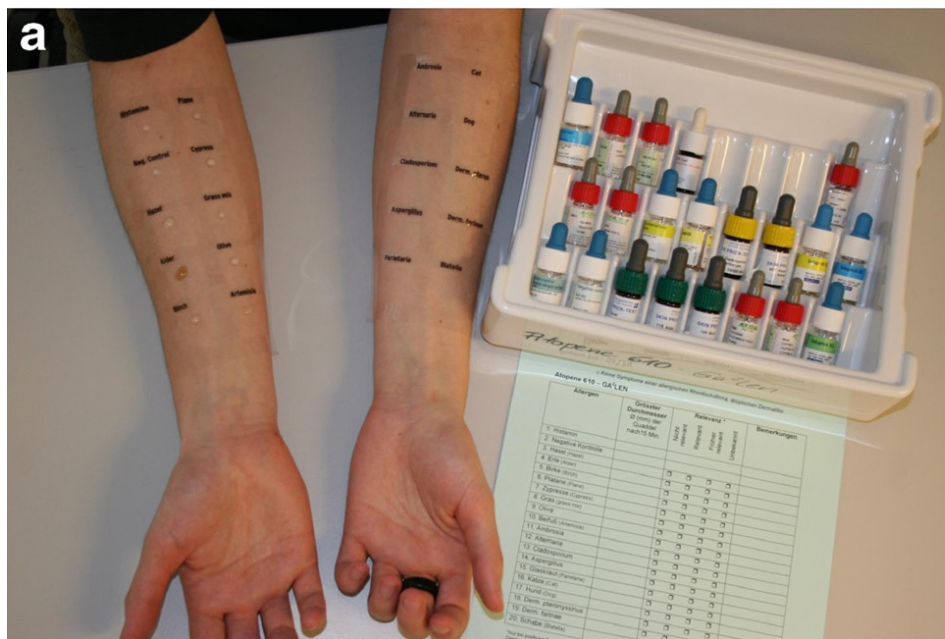
- 30-35% of people at some stage in their lives
- Initially: UK, Europe and USA
- Now: in most countries undergoing industrial development
- Common triggers / allergens: Pollen, Food, Dust, Drugs





Uses of Natural Allergen Extracts

- Allergy diagnostic skin prick tests





Uses of Natural Allergen Extracts

- Allergen Immunotherapy



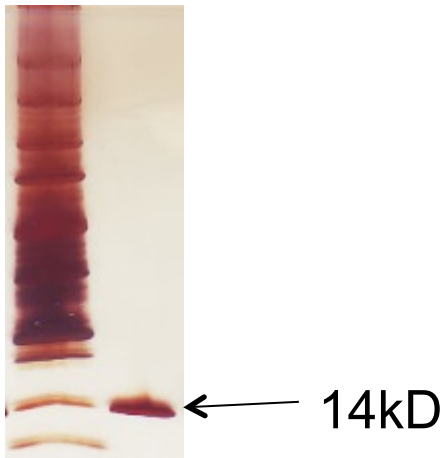
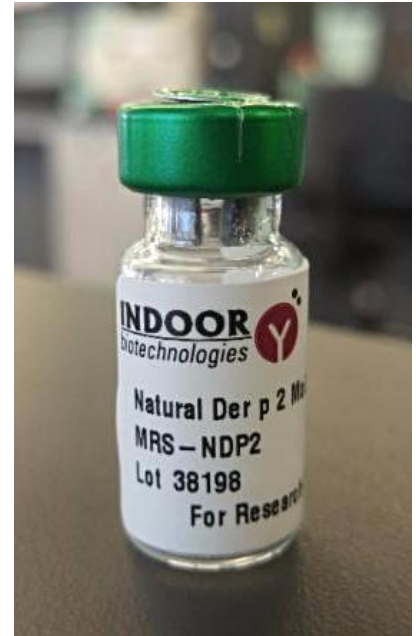
Standardisation of Allergen Extracts

- Allergen specific ELISA
 - Allergen specific antibodies
 - Highly purified allergen standards



Natural Der p 2 Molecular Reference Standard

- Highly purified allergen from spent mite culture by multi-step affinity chromatography
- Lyophilized for long term stability
- Known isoform spectrum determined by mass spectrometry (LC-MS/MS)
- Lot size of 3000 vials produced for long term use
- ISO 9001:2008 certified



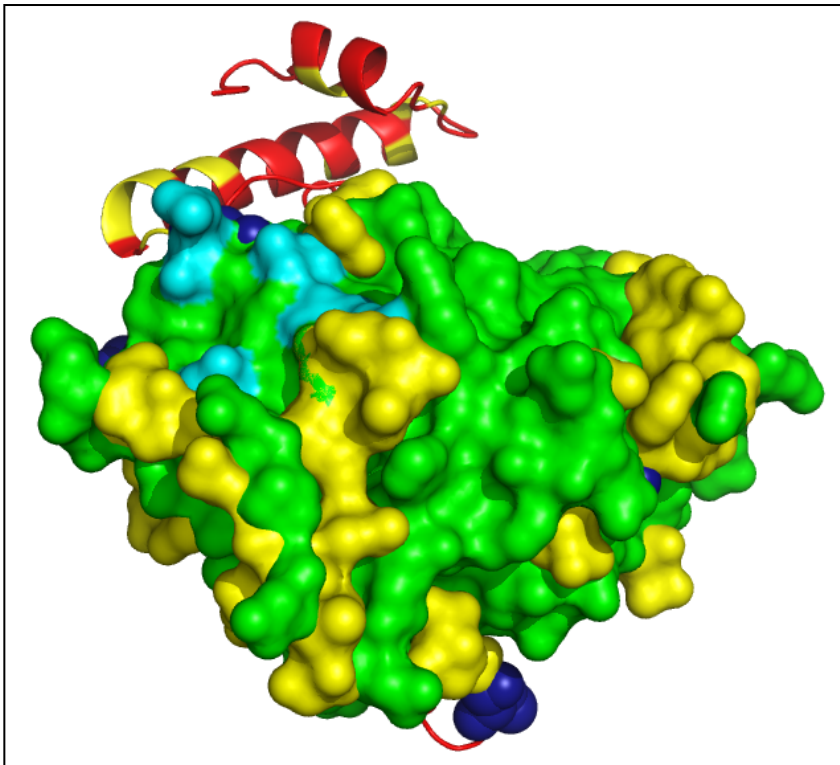
Isoform	Amount
Der p 2.0101	37%
Der p 2 0110/1015	43%
Der p 2.0103/0104, A6XEP9	17%
Der p 2 .0114	3%



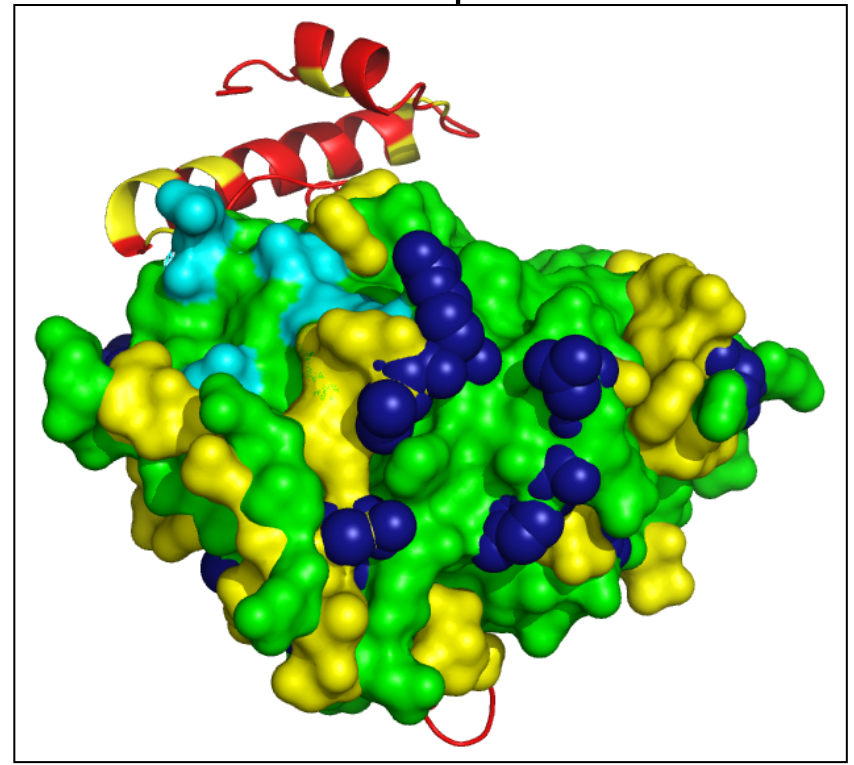
Quality Management System
ISO 9001:2008 Certified

Structural comparison of dust mite allergens

Der f 1

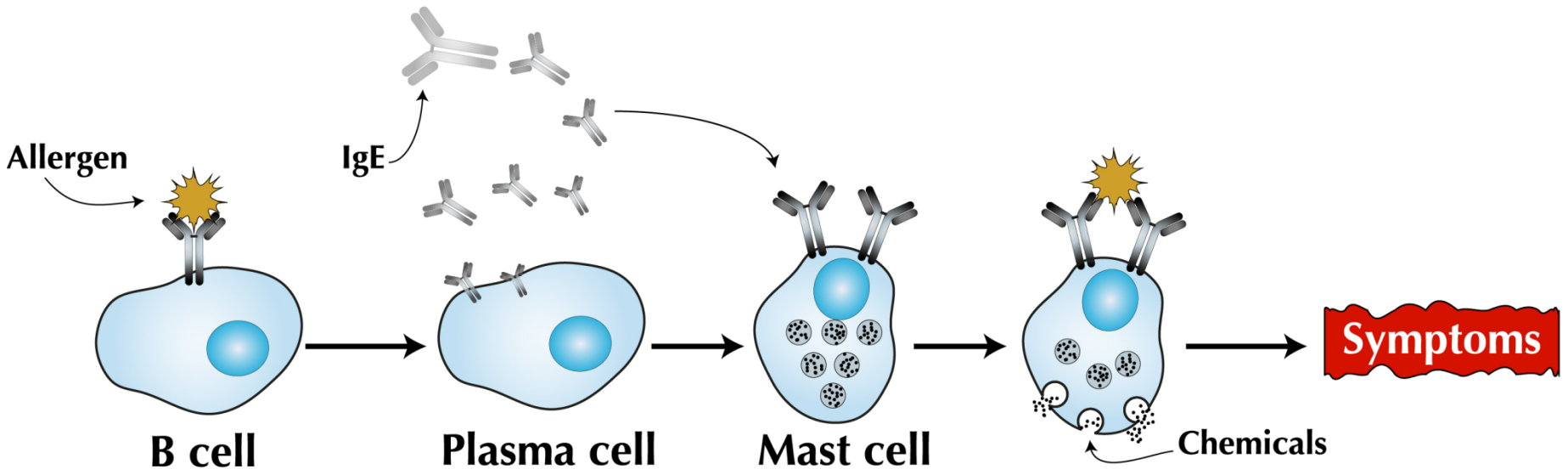


Der p 1



Chruszcz, Minor, Pomés et al, J Mol Biol 386:520-30, 2009

Research into Cellular Responses



1. First-time exposure

2. Body overproduces
Ara h 1 IgE antibody

3. *Ara h 1* IgE attach
to mast cells

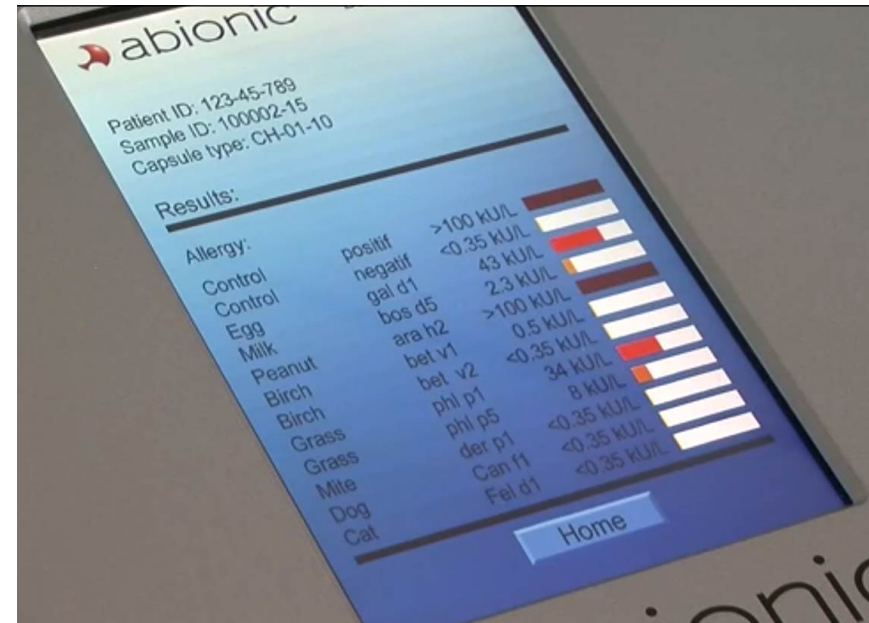
4. Second Exposure:
IgE primed mast cells
release granules and
powerful chemical
mediators

5. Chemical mediators
cause symptoms of
allergy

Reference: Shin et al. Biochemical and structural analysis of the IgE binding sites on *ara h1*, an abundant and highly allergenic peanut protein. *J Biol Chem.* 1998; 273: 13753-9

http://2014.igem.org/Team:Linkoping_Sweden/Project/Culprit

Molecular Diagnostic Platforms





Thanks for your attention.

Questions?

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