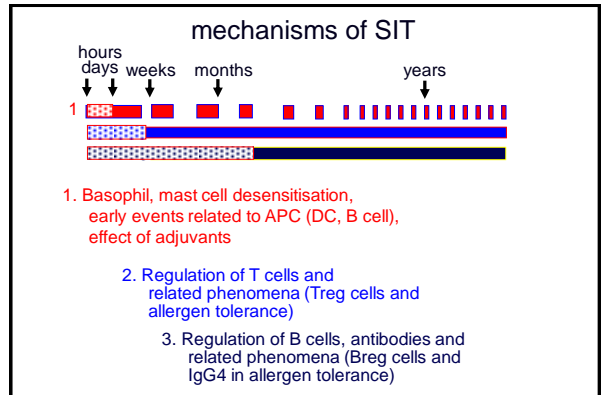


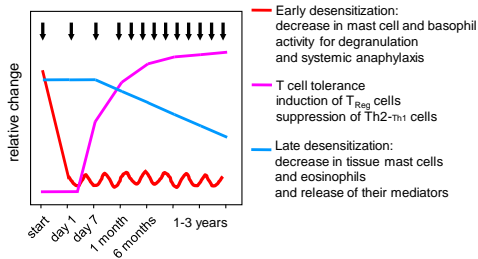
Mechanisms of Allergen-specific immunotherapy

Cezmi A. Akdis

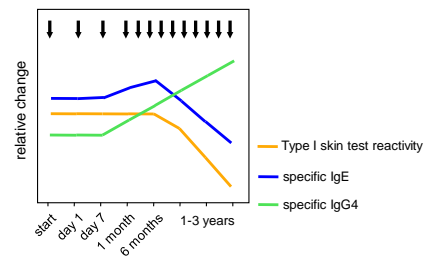
Swiss Institute of Allergy and Asthma Research (SIAF)



Mechanisms of allergen-specific immunotherapy

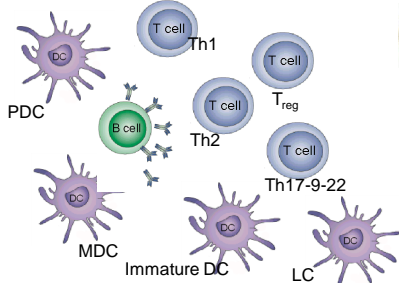


Mechanisms of allergen-specific immunotherapy



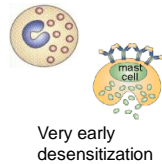
Q1: which one will be the first and preferential APC to present the allergen which T cell?

adjuvants, dose, place, age, status



Q2: how will the system avoid anaphylaxis as early and efficient as possible?

adjuvants, dose, place, age, status

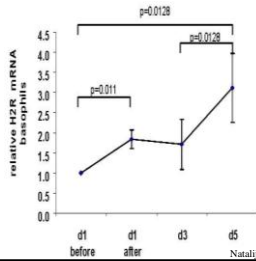


mechanisms of SIT (very early events)



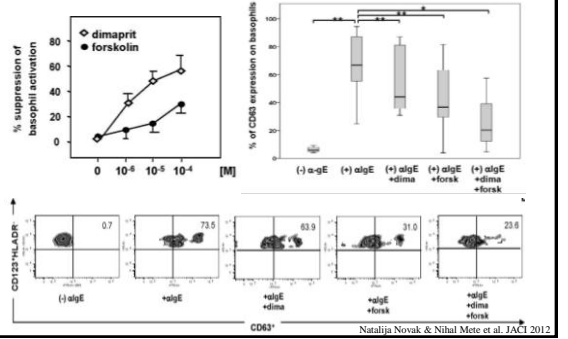
1. Basophil, mast cell desensitisation,

Increased HR2 expression on basophils during very early VIT



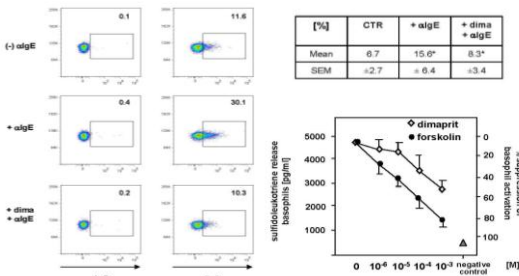
Natalija Novak & Nihal Mete et al. JACI 2012

HR2 suppresses basophil activation



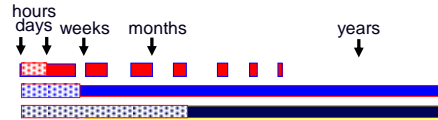
Natalija Novak & Nihal Mete et al. JACI 2012

HR2 suppresses basophils (IL-8 and sulfidoleukotrienes)



Natalija Novak & Nihal Mete et al. JACI 2012

Mechanisms of SIT

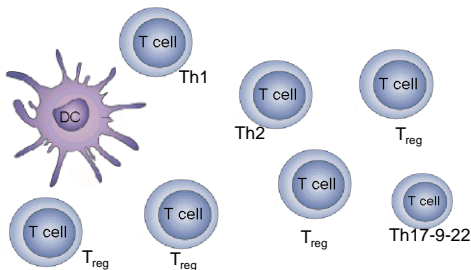


2. Regulation of T cells and related phenomena

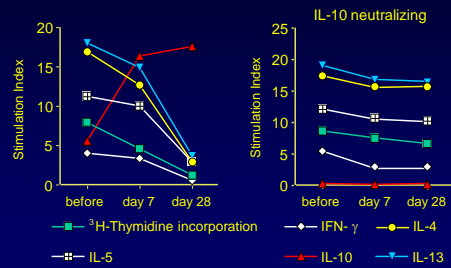
Induction of T regulatory cells
Peripheral T cell tolerance

which one will be the first T cell to contact APC?

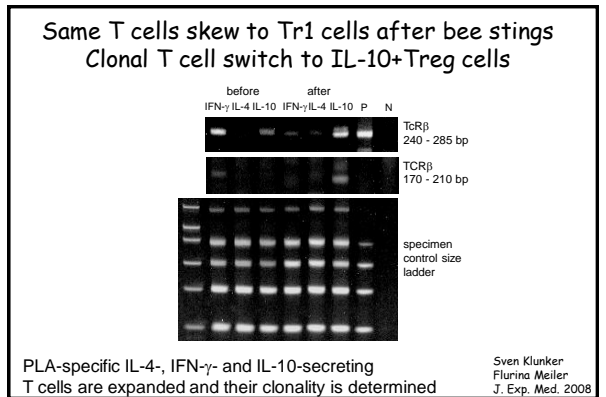
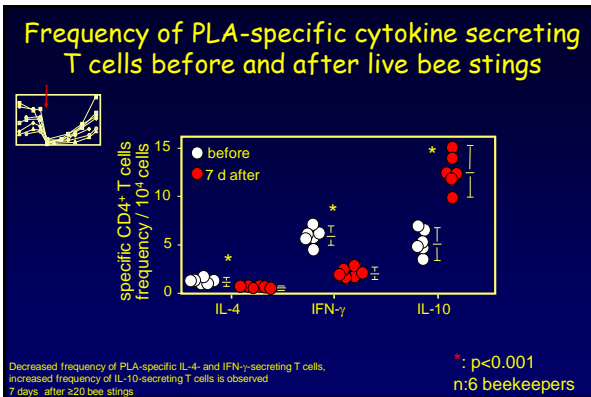
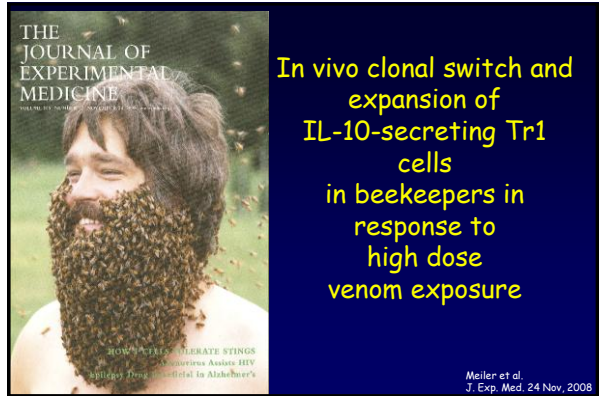
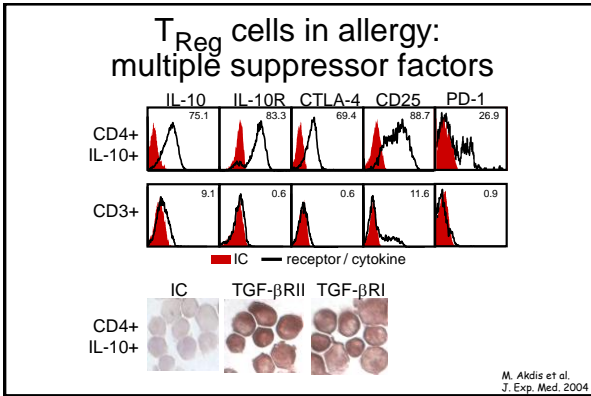
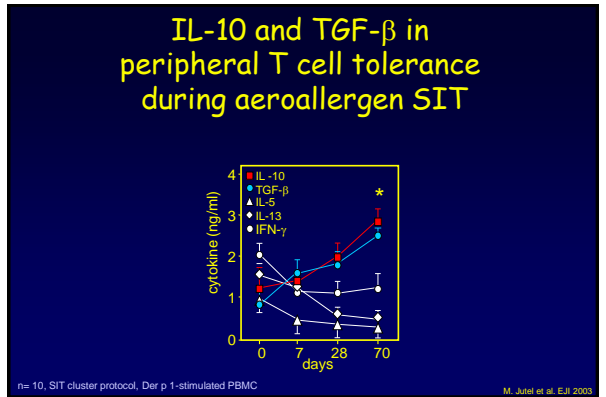
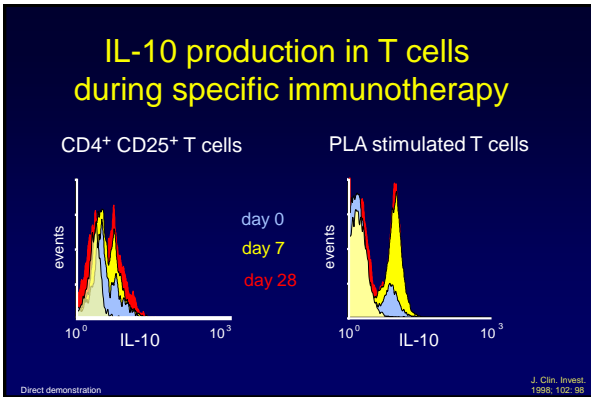
It is very difficult to cope with a primed and established immune response

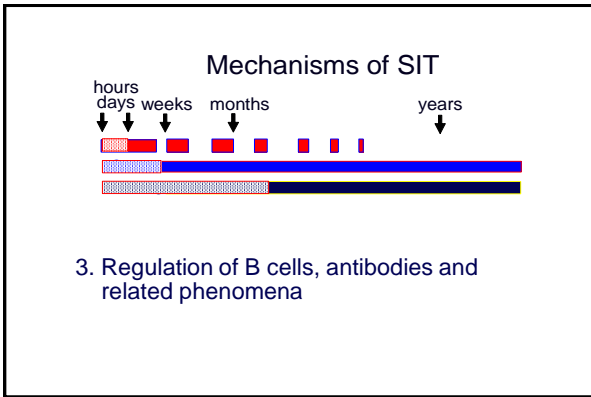


IL-10-induced peripheral T cell tolerance in bee venom specific-immunotherapy

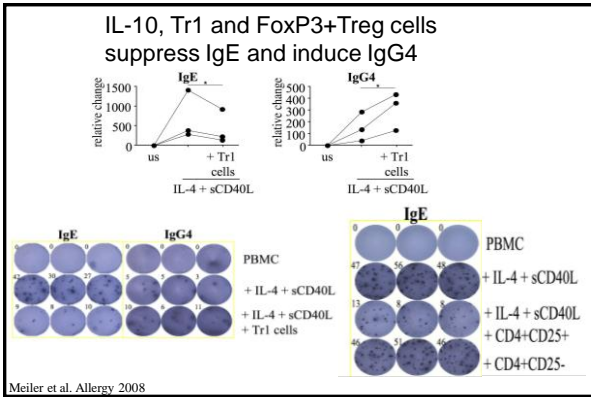
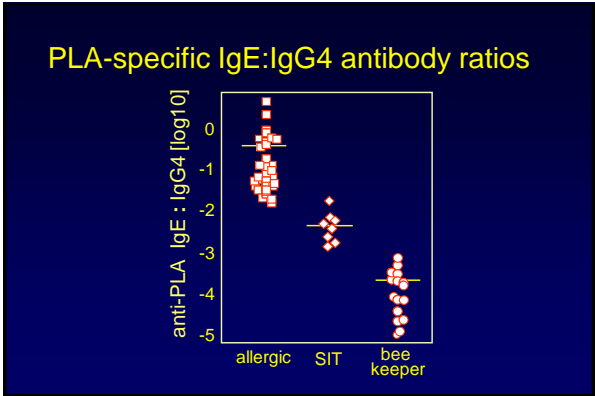
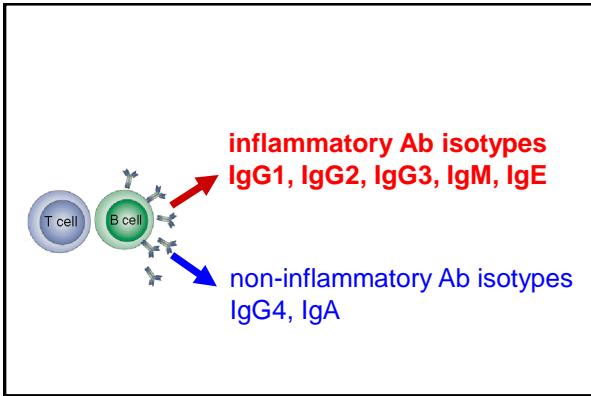


J. Clin. Invest. 1996; 98: 1679
J. Clin. Invest. 1999; 102: 89





Regulation of B cells, antibodies and related phenomena



Human Breg cells in allergen tolerance and allergen-SIT

Willems van de Veen et al. M. A&S



WIRM VII
13-16 March 2013
Davos



EAACI-WAO Congress 2013
World Allergy & Asthma Congress
22 - 26 June 2013
Milan, Italy

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Allergy, a Global Health Challenge

Save the date!

Abstract Submission Deadline: 21 January 2013

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- Maya Zimmermann
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- Tunc Akkoc
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Immune tolerance

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- T. Kündig, Zürich
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Effector Mechanisms

- R. Disch
- B. Wüthrich
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- W. Kneist
- M. Schliz
- D. Kleeman
- W. Deglmann
- H. Behrendt
- C. Traidl-Hoffmann
- G. Menz


Immune regulation by histamine

- T. Watanabe
- R. Koga, Fukuoka
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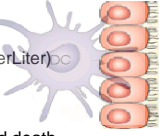
Body surfaces: Skin 0.5%
Mucosas 99.5%

Lung: 100 m²
Gut: 300 m²
1^{1/2} Tennis court



1 Ton food per year mixed with water = 12*0.6*60*24*365*80 = 3'027'456'000 liters
10 billion particles (3 per Liter)

10¹⁴ bacteria
1 kg
2000 species



Only one cell layer between life and death
0.03 mm thick

CLKCARE

