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The first recorded death from an insect allergy was King Menes of Egypt, who, according to the hieroglyphics on his tomb, died of a wasp sting in 2621 B.C.

A typical family history of atopy

Emperor Augustus: suffered from bronchial asthma, seasonal rhinitis and atopic eczema

Emperor Claudius: perennial rhinoconjunctivitis

Britannicus: horse dander allergy

King Richard III (1452-1485) used his allergy to strawberries to arrange the murder of Lord William Hastings.

He ate some strawberries and developed acute urticaria.

He then accused Hastings of putting a curse on him, an action that demanded the head of Hastings on a plate.

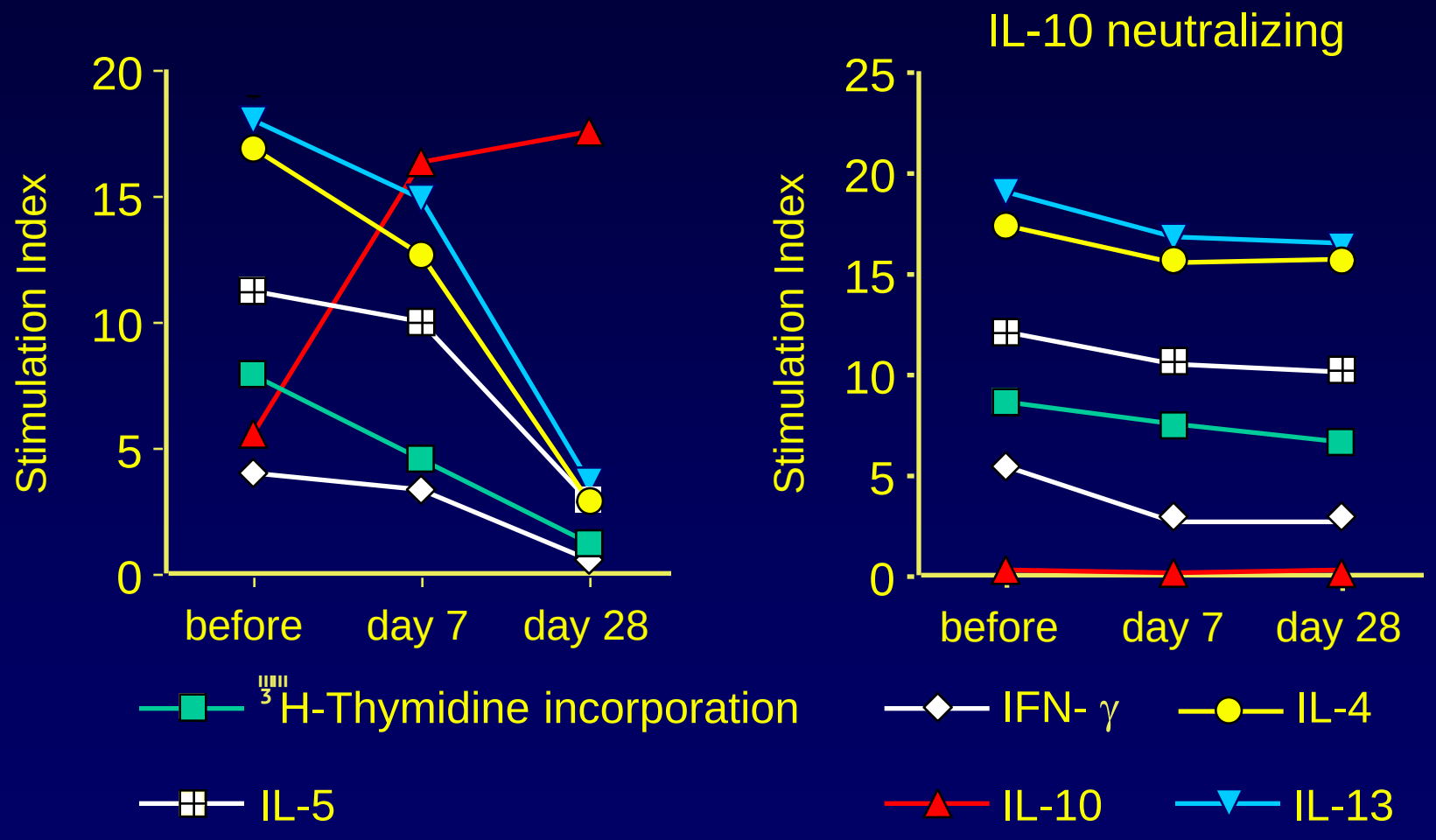
Regulatory/suppressor cells		Suppressor mechanism
T cells	Tr1	IL-10, TGF-ß
	Th3	TGF-ß
	$CD4^+$ $CD25^+$ T_{Reg}	IL-10, TGF-ß, CTLA-4, PD-1, GITR
	$CD8^+$ $CD25^+$	Same as $CD4^+$ $CD25^+$
	$CD28^-$ T_{Reg}	
	Qa-1-dependent CD8+	Qa-1-specific TCR
	$CD4^-$ $CD8^-$ T_{Reg}	induction of apoptosis
	TCRγδ T_{Reg}	IL-10, TGF-ß
B cell subset	B_{reg}	IL-10
DC	DC_{Reg}	IL-10
NK cell subset	NK_{Reg}	IL-10
Macrophages		IL-10, TGF-ß
Resident tissue cells		IL-10, TGF-ß

IPEX syndrome

FOX P 3 mutations

Hyper IgE
Eczema
Autoimmunity
Increased Th1 and Th2

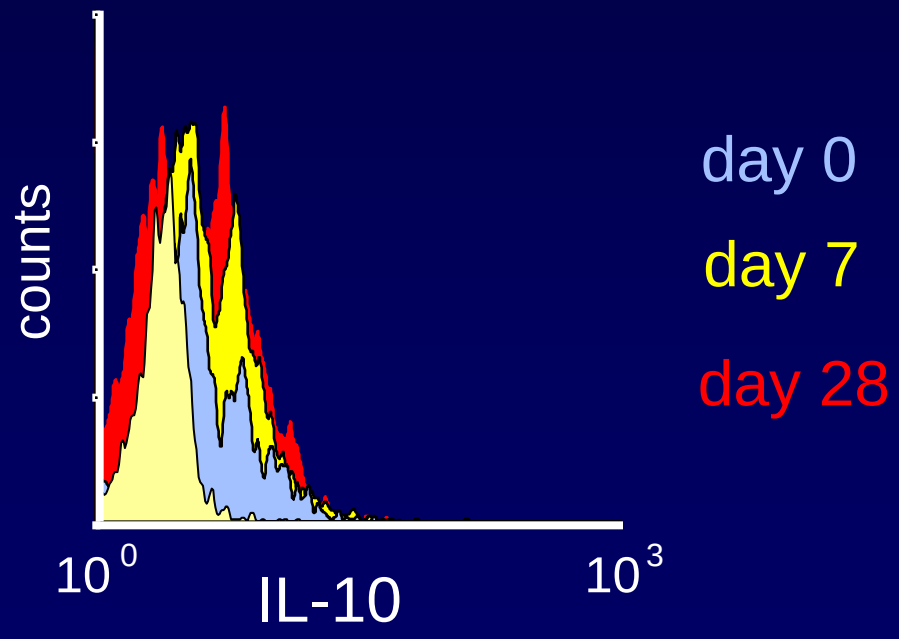
IL-10-induced peripheral T cell tolerance in bee venom specific-immunotherapy



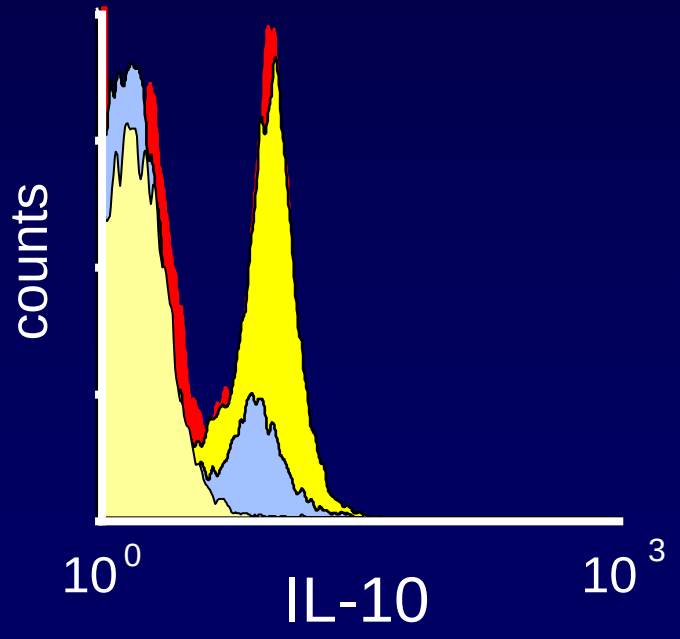
J. Clin. Invest. 1996; 98: 1676
J. Clin. Invest. 1998; 102: 98

IL-10 production in T cells during specific immunotherapy

CD4$^+$ CD25$^+$ T cells

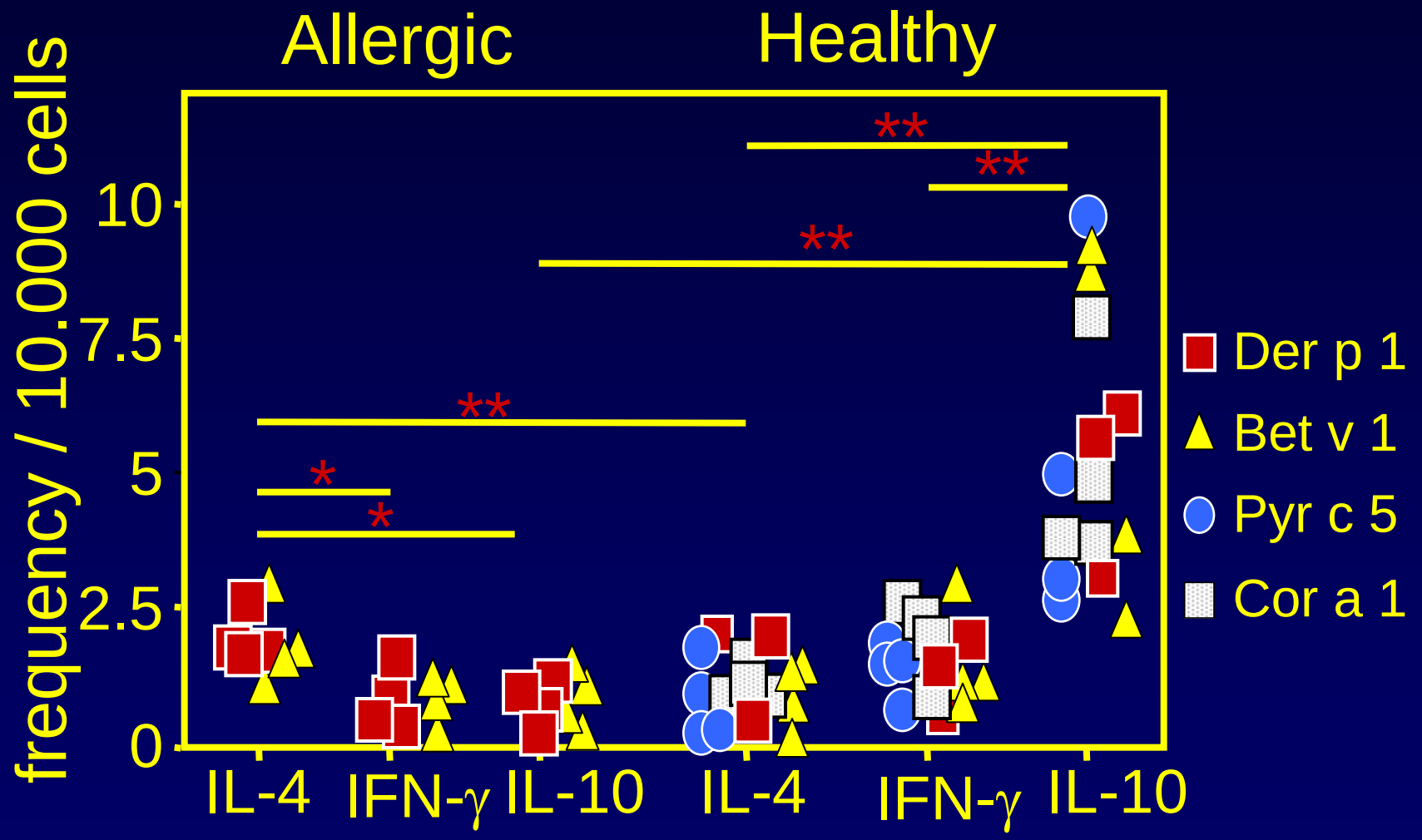


PLA-stimulated T cells



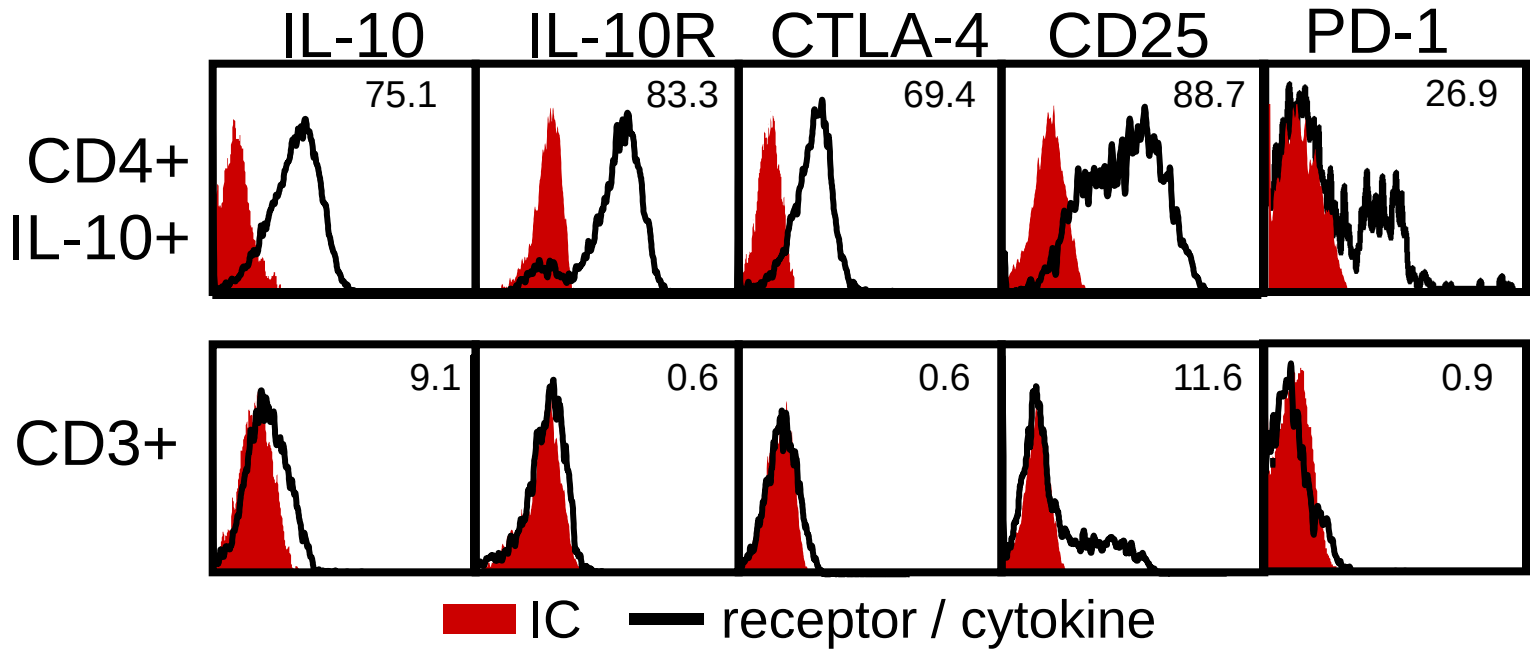
J. Clin. Invest.
1998; 102: 98

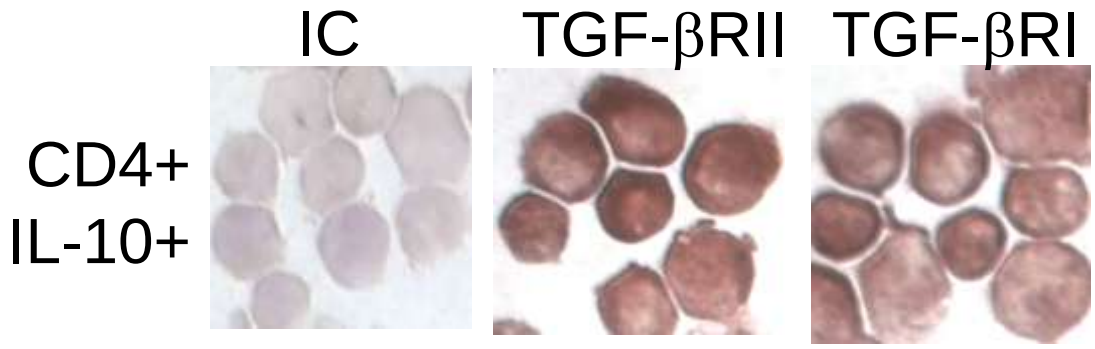
Aeroallergen-specific T cell frequency in health and allergy



J Exp Med 2004

T_{Reg} cells in allergy: multiple suppressor factors



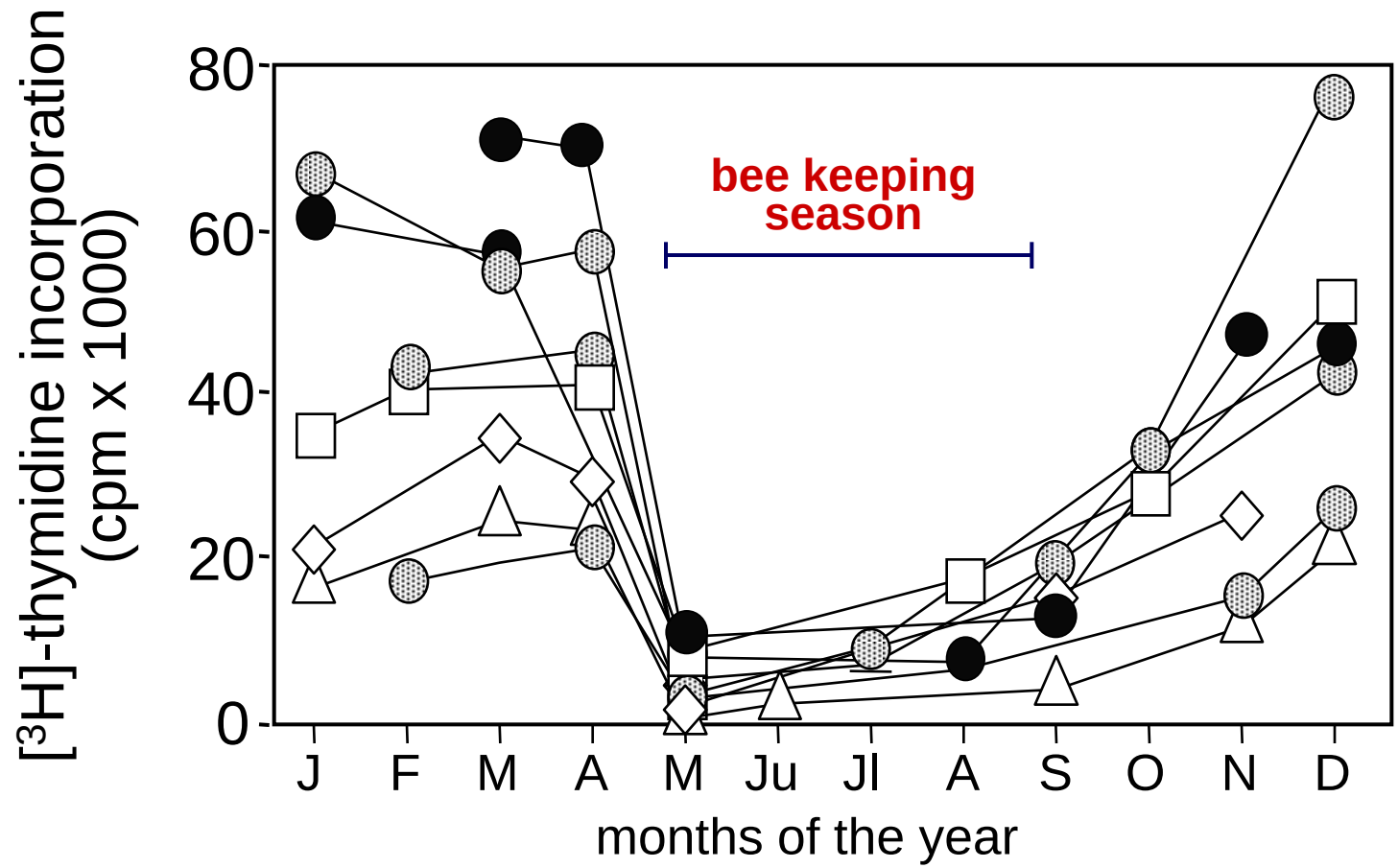


IL-10-mediated peripheral T cell tolerance during natural bee stings

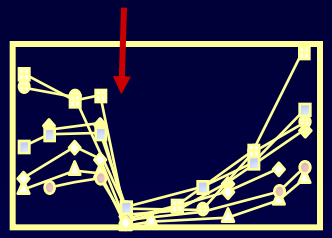
a model for
natural high dose antigen/allergen exposure

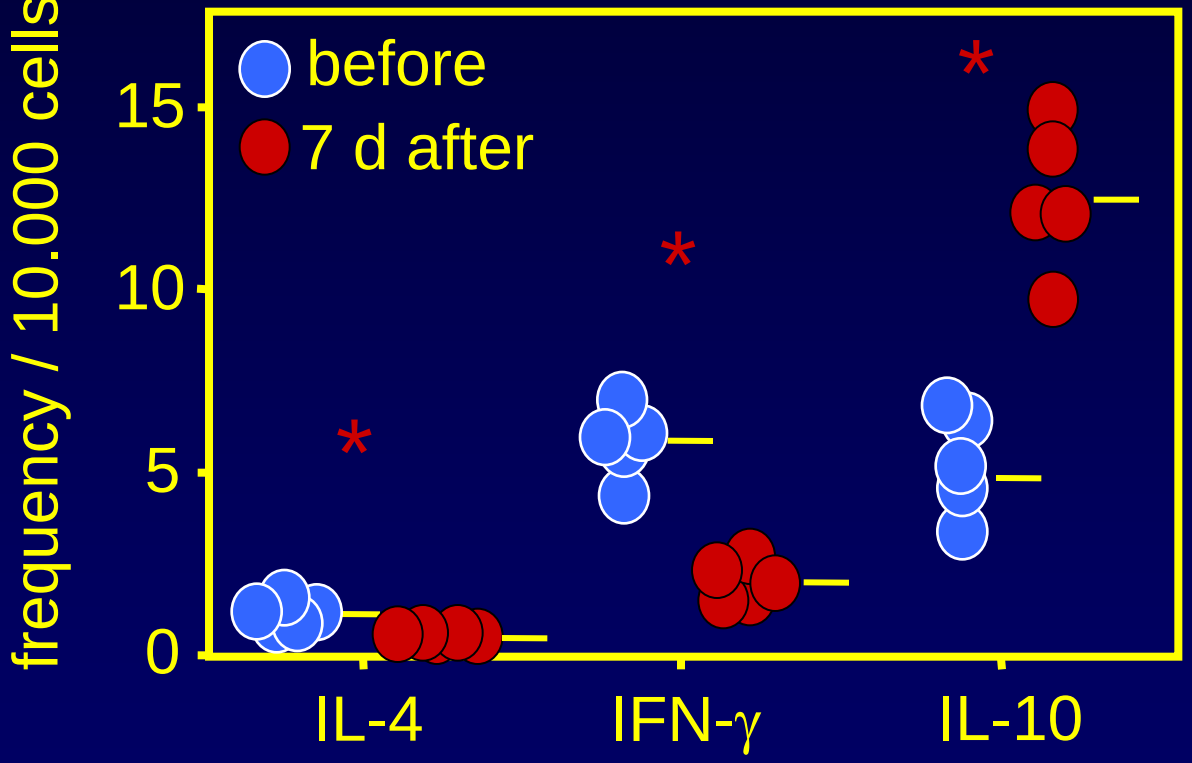
more than 20 bee stings in one week

Antigen-specific peripheral T cell tolerance



Frequency of PLA-specific cytokine secreting T cells before and after live bee stings

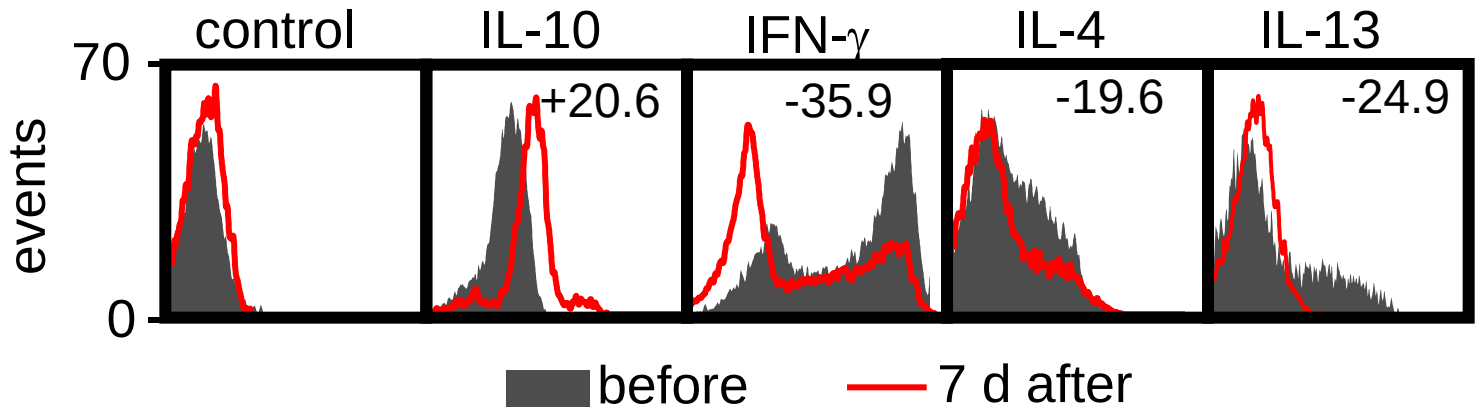




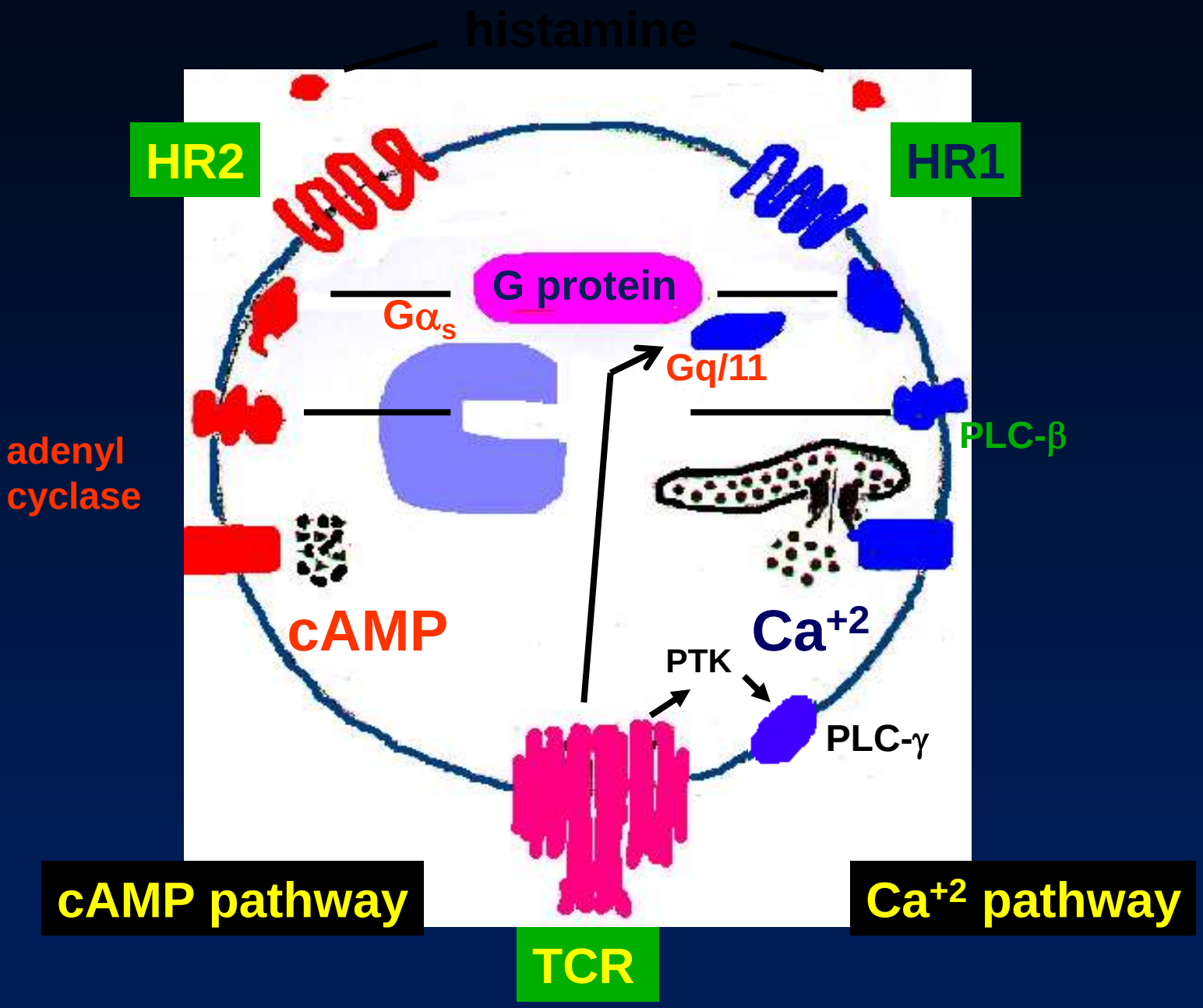
Decreased frequency of PLA-specific IL-4- and IFN-γ-secreting T cells, increased frequency of IL-10-secreting T cells is observed 7 days after ≥20 bee stings

*: $p<0.001$
n:5 beekeepers

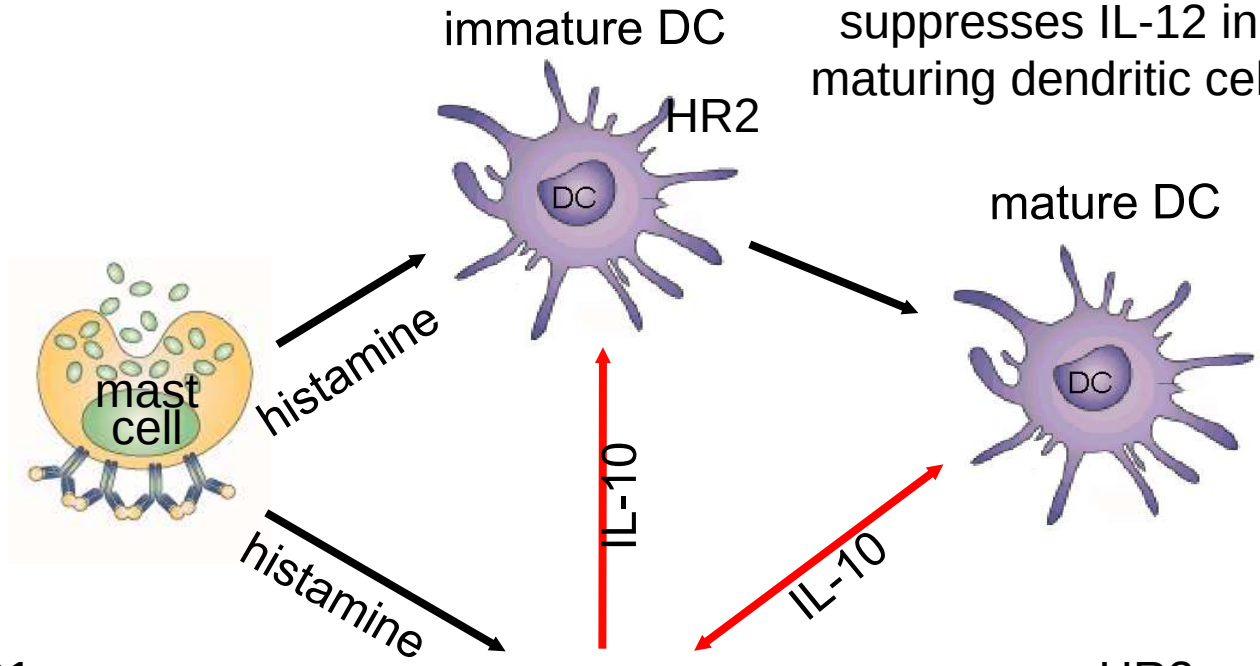
Increased IL-10, suppressed IL-4, IL-13, IFN-γ in PLA-specific cells after bee stings



role of histamine receptor 2


histamine
HR2
HR1
G protein
$G\alpha_s$
Gq/11
PLC-β
adenyl cyclase
cAMP
Ca^{+2}
PTK
PLC-γ
cAMP pathway
Ca^{+2} pathway
TCR

HR2 suppresses APC capacity, increases IL-10 and suppresses IL-12 in maturing dendritic cells



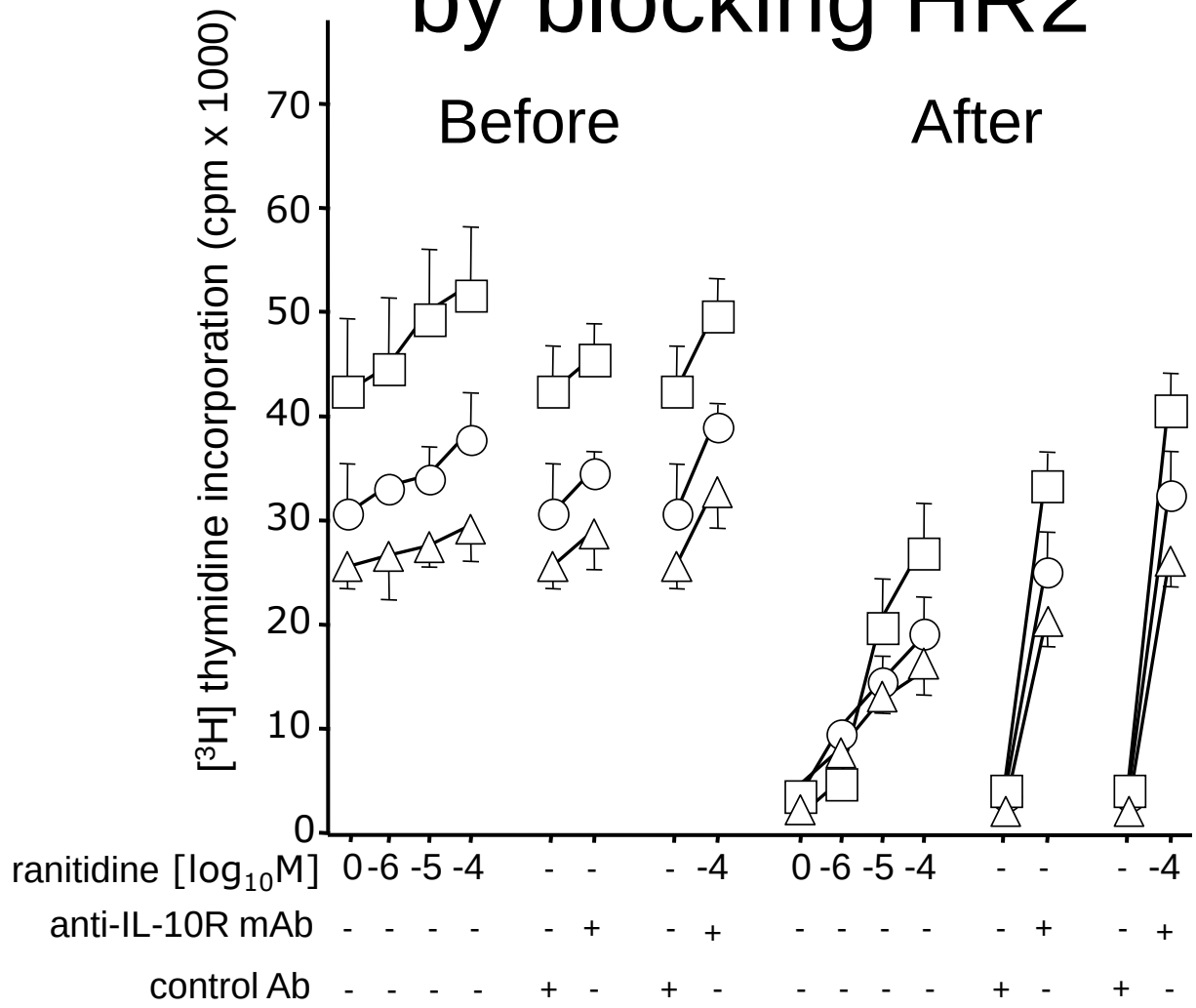
HR1 on Th1 cell enhances IFN-γ and proliferation, increases effector functions and tissue injury

enhanced suppressive capacity of Treg cells

HR2 on Th2 cell suppresses IL-4, IL-13 and proliferation

Nature 2001
Curr Opin Immunol. 2002

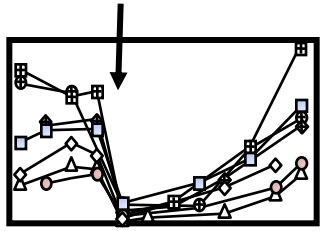
Recovery from peripheral T cell tolerance by blocking HR2

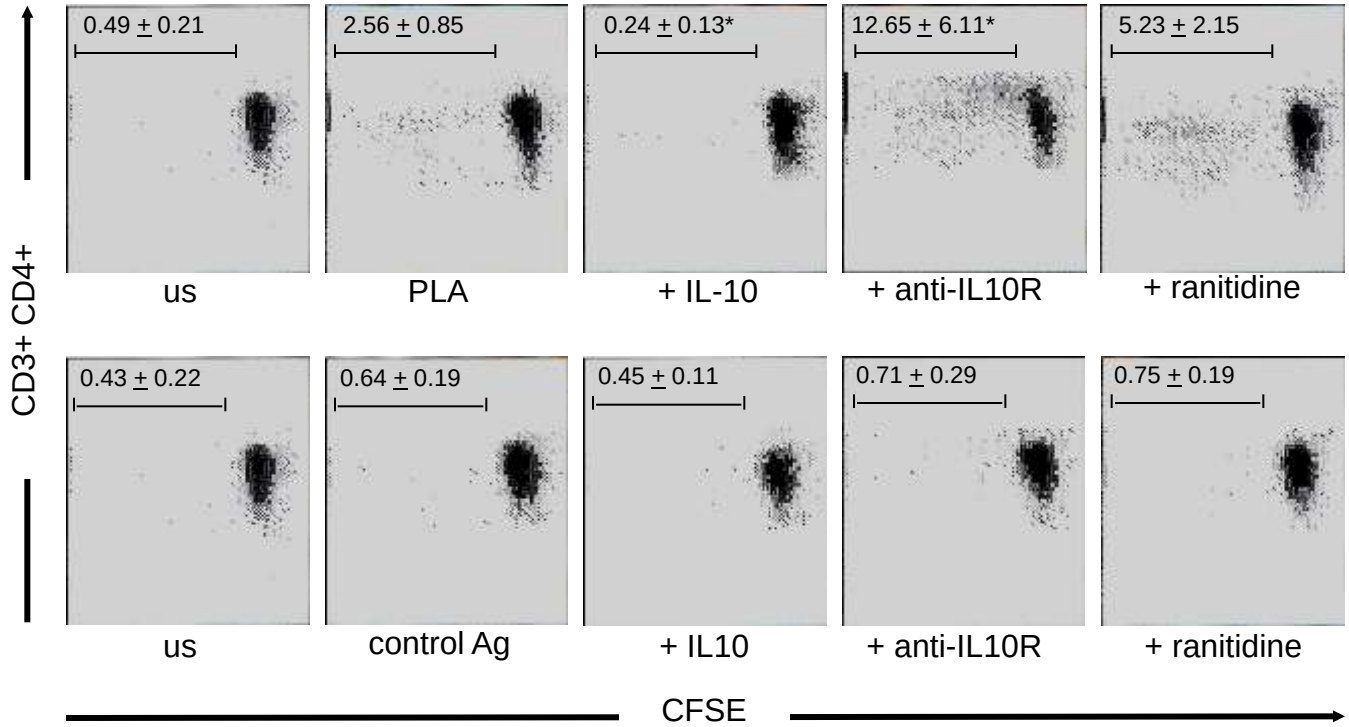


PBMC of 3 beekeepers before and after natural stings were stimulated with 0.3μM PLA and different doses of ranitidine

3H-thymidine incorporation was determined at day 5

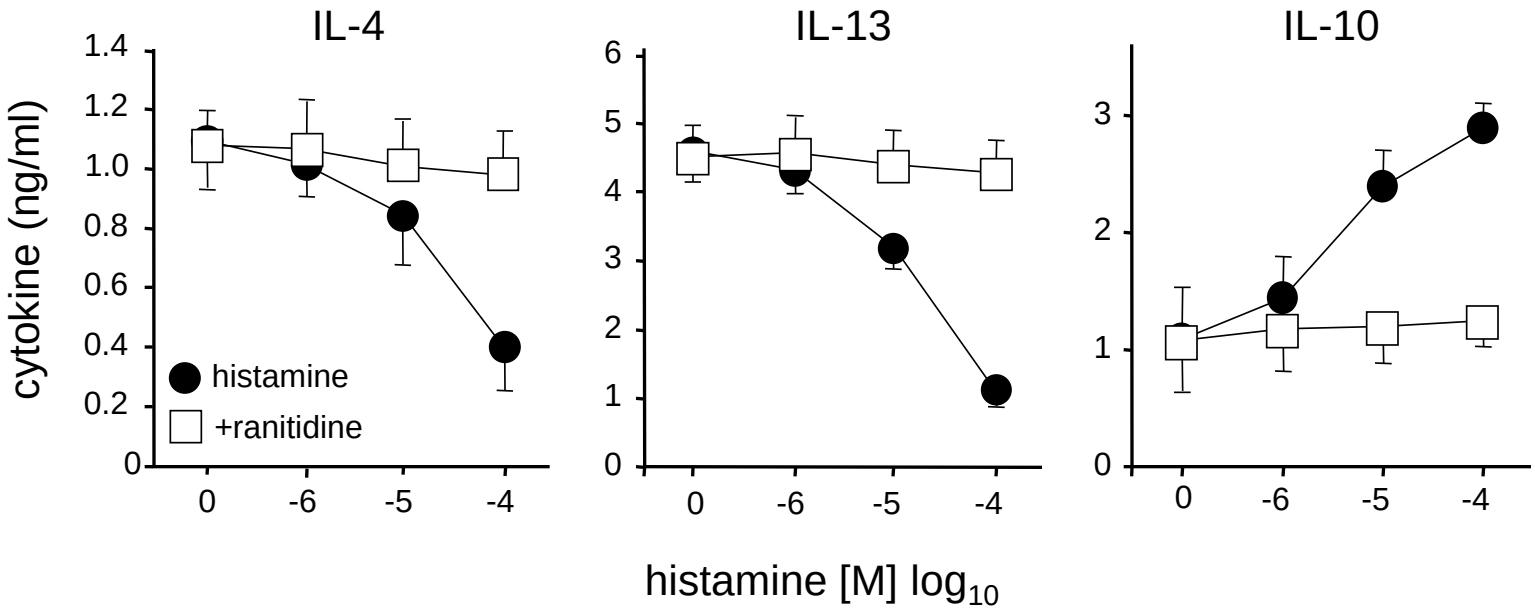
Breaking of peripheral T cell tolerance by blocking IL-10R and HR2





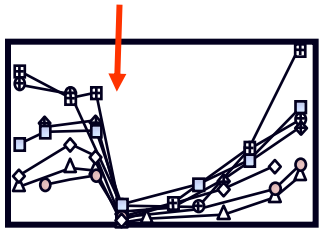
active suppression by IL-10 and histamine via HR2 after multiple bee stings

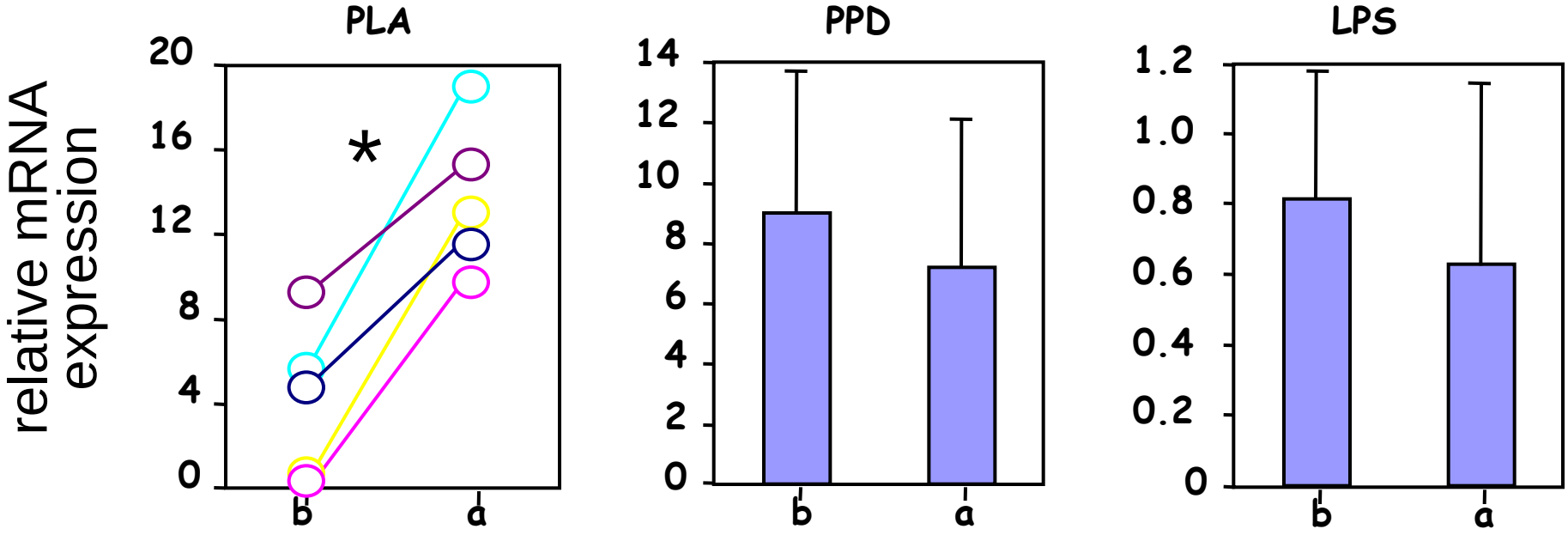
Histamine enhances IL-10 production by Th2 cells via HR2



In vitro differentiated Th2 cells

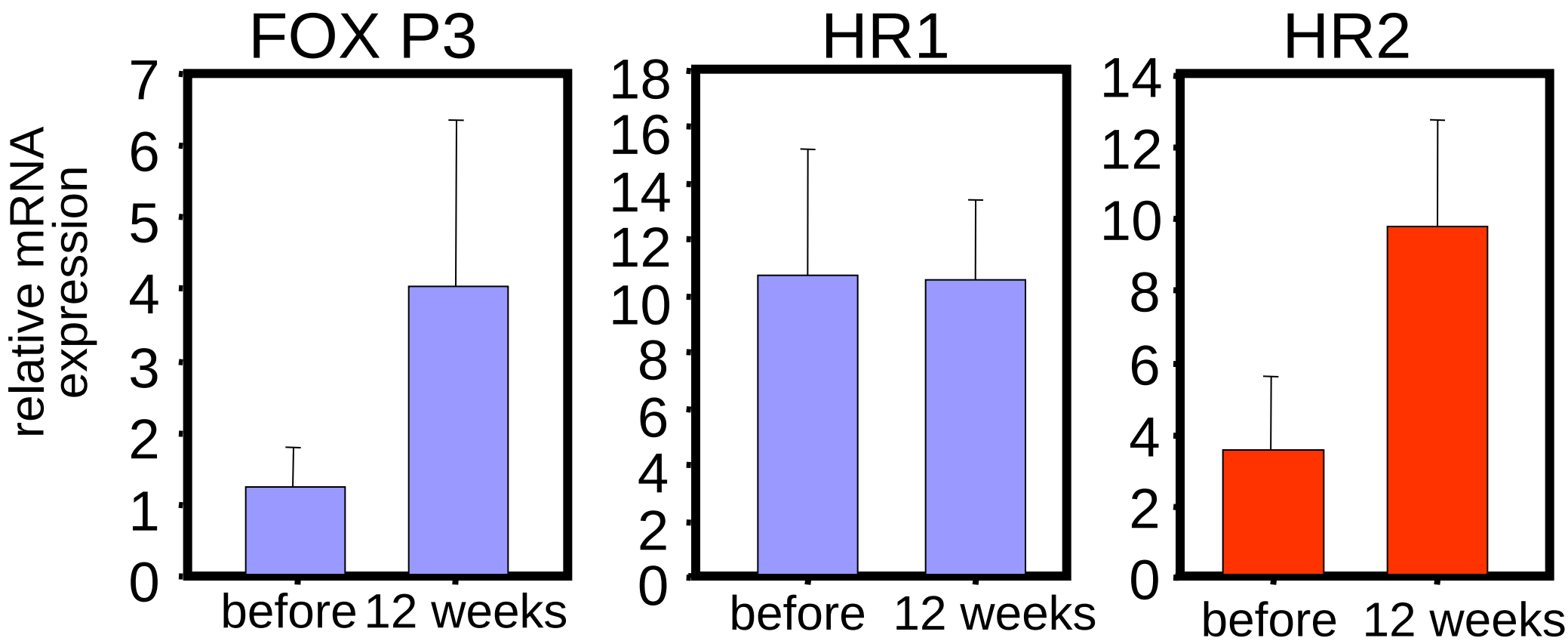
Upregulation of HR2 on allergen-specific T cells by natural bee stings





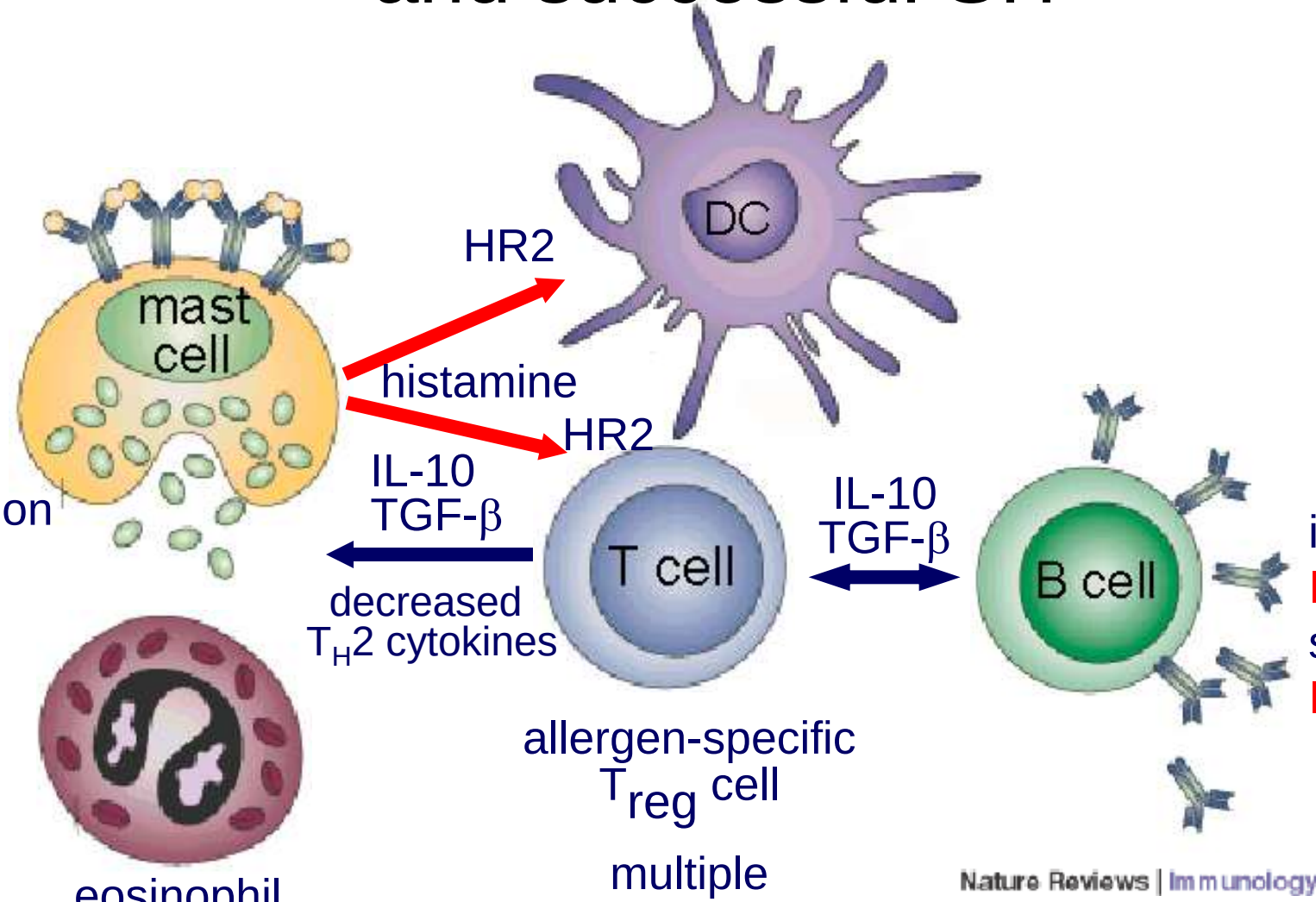
2-ddCT 18s versus HR2 in 12 day expanded allergen, PPD or LPS activated cultures
Analysed mRNAs are HR1, HR2, HR4, CIS1, FOX P3, SOCS 1, SOCS 3,SOCS 5

Induction of HR2 and FOXP3 on specific T cells by PLA peptide immunotherapy



n=7, 0.1, 1, 5, 25, 50, 50, 100, 100, 100 μg weekly PLA peptides, PBMC + PLA, d5 IL-12, d12 anti-CD2/CD28

Tolerance in healthy immune response and successful SIT



J Clin Invest 1996
J Clin Invest 1998
FASEB 1999
FASEB 2001
Immunology Today
Immunology 2001
Nature 2001
Eur J Imm 2003
FASEB 2003
Nature Rev Imm 2003
J. Exp. Med 2004
JACI 2005
Curr Opin Immunol 2006

Philosophy of the meeting

As ever, immune regulation is the hottest issue in basic and clinical sciences. No question that we need to gather and get inspired. With an outstanding list of speakers in this field, „Immune Regulation – Davos" becomes the key event of the year 2007, being big enough to learn from other disciplines and small enough to personally meet the experts.
Davos has been stimulating not only for scientists, but also for other meetings such as the World Economic Forum, held every year in the same conference center. There will be long lunch breaks, allowing to digest attended symposia, to talk with colleagues, while enjoying the winter sports and landscape. The evening sessions will give young researchers the opportunity to meet senior scientists. As at other Davos meetings, we will come together for poster sessions with deserts and drinks providing a relaxed and stimulatory atmosphere for scientific exchange.

Practical workshops

A practical course on flow cytometric and Treg analysis will be performed at the Swiss Institute of Allergy and Asthma Research. This course will provide firsthand expertise on Treg-analysis facilitating your research. The course is planned both for scientific fellows and technical assistants. It will be an ideal complementation for the theoretical background provided by the meeting and will be supported by flowcytometer experts as well as researchers from SIAF. Several other workshops are being planned and details will be announced on our website.

Organisator:
Cezmi Akdis
Organizing comitee:
Carsten Schmidt-Weber
Mübeccel Akdis
Reto Crameri
In:
Davos, congress center
Abstract submission:
15 January 2007 - 15 February 2007
Early registration deadline:
15 December 2006
Meeting style:
Symposium & workshop, practical workshops
Meeting organization:
This meeting is organized by the Swiss Institute of Allergy and Asthma Research (SIAF), a non-profit, University associated foundation
SIAF, Obere Str. 22, CH-7270 Davos
Treg.meeting.Davos@siaf.unizh.ch
Registration Fee:
500 .- Swiss Francs
Fellows in training: 200.- Swiss Francs

SIAF

World Immune Regulation Meeting

Special focus on regulatory cells

11 - 15 April 2007
Davos - Switzerland

http://www.siaf.unizh.ch/WTM/index.html

Immune tolerance

- Judith Zumkehr
- Sven Klunker
- Alison Taylor
- Johan Verhagen
- Flurina Meiler
- Christian Karagiannidis

- U. Müller, Bern
- B. Wüthrich, Zurich
- M. Jutel, Wroclaw, SIAF
- R. Valenta, Vienna
- S. Viehts, Langen
- H. Fiebig, Reinbek
- C. Heusser, Basel
- S. Durham, London
- M. Larche, London
- B. Ballmer-Weber, Zurich

Effector Mechanisms

- Reto Crameri
- Carsten Schmidt-Weber
- Cezmi A. Akdis
- Kurt Blaser

- R. Disch
- B. Wüthrich
- P. Schmid-Grendelmeier
- W. Kneist
- M. Schliz
- D. Kleeman
- W. Deglmann
- G. Menz