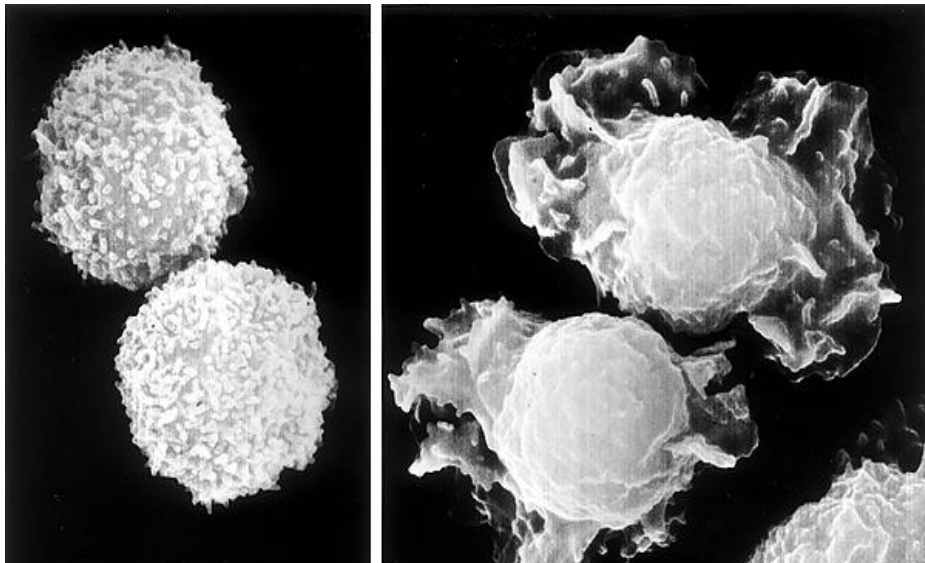




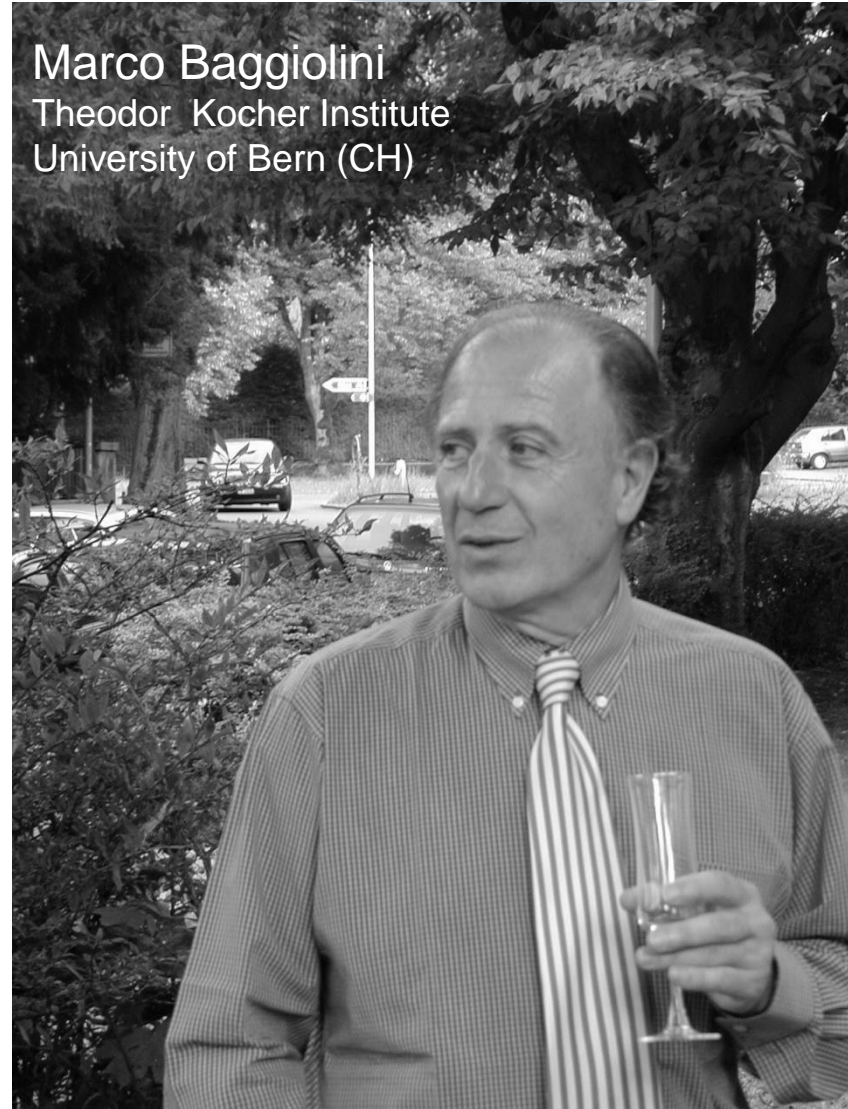
Chemochine e Immunità

Mariagrazia Uguccioni
AIBT 2016 – Pesaro

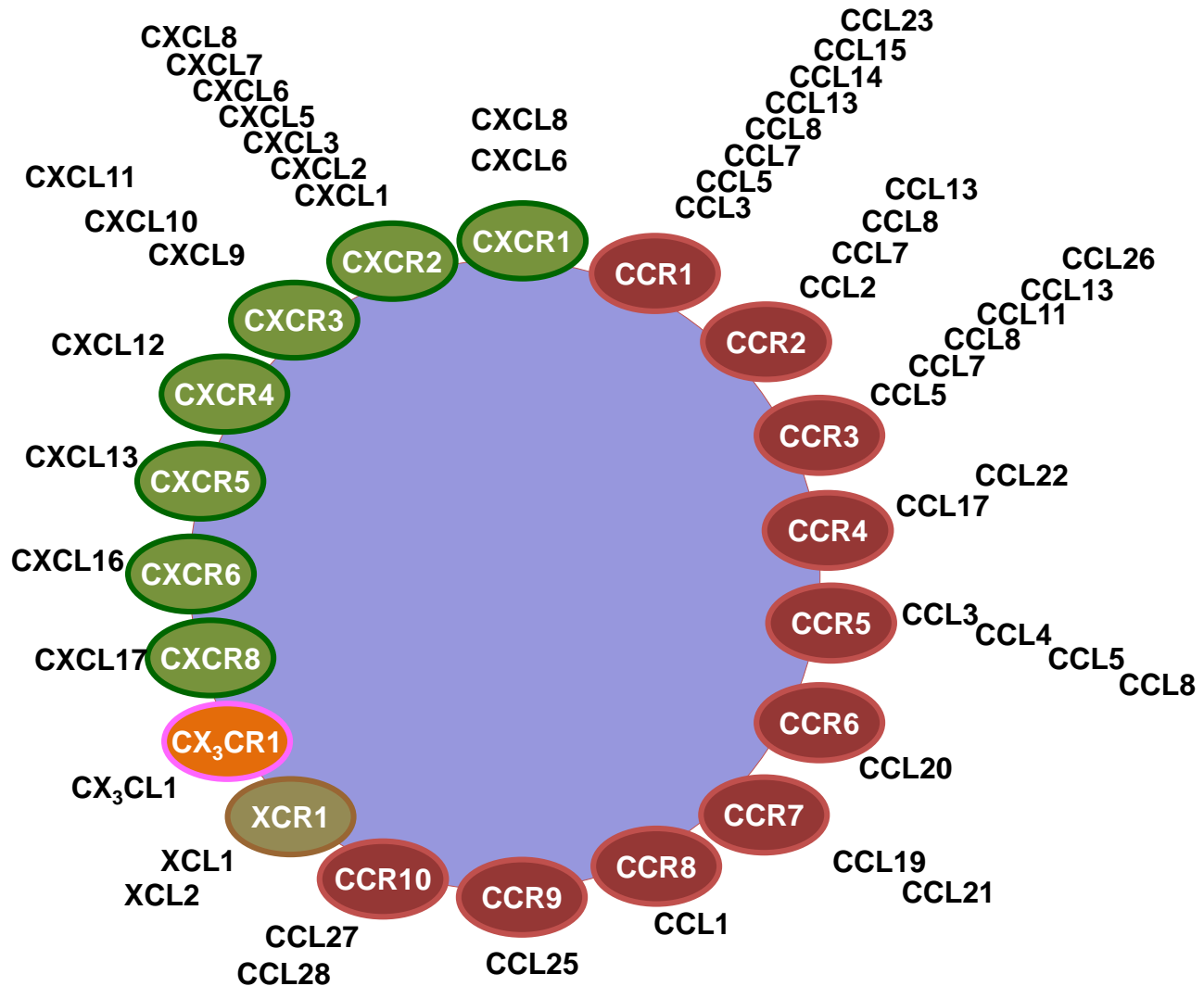
1987 – Discovery of the first “chemotactic cytokine” – IL8



Marco Baggiolini
Theodor Kocher Institute
University of Bern (CH)



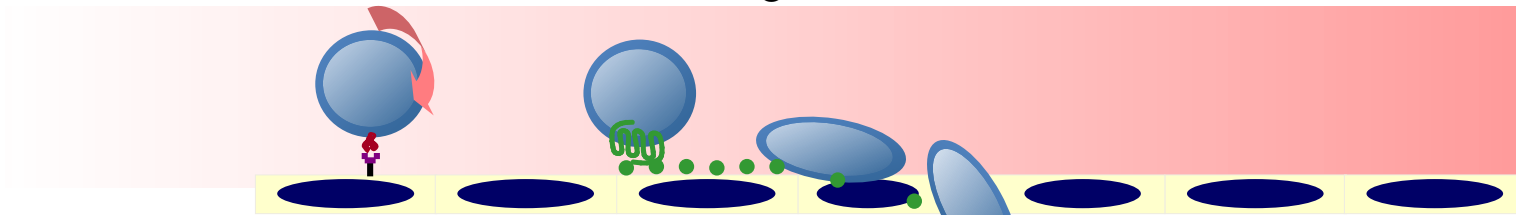
The Chemokine System - 2016



Cell Migration

Selectin-mediated rolling

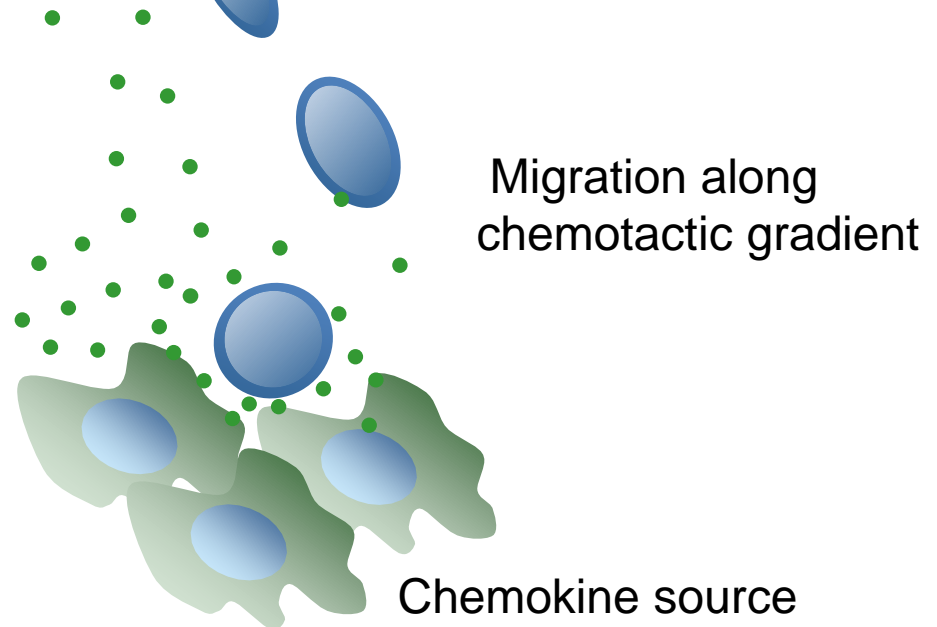
- 1 Chemoattractant signalling
- 2 Integrin-mediated cell adhesion
- 3



Step 1: attachment and rolling

Step 2: activation

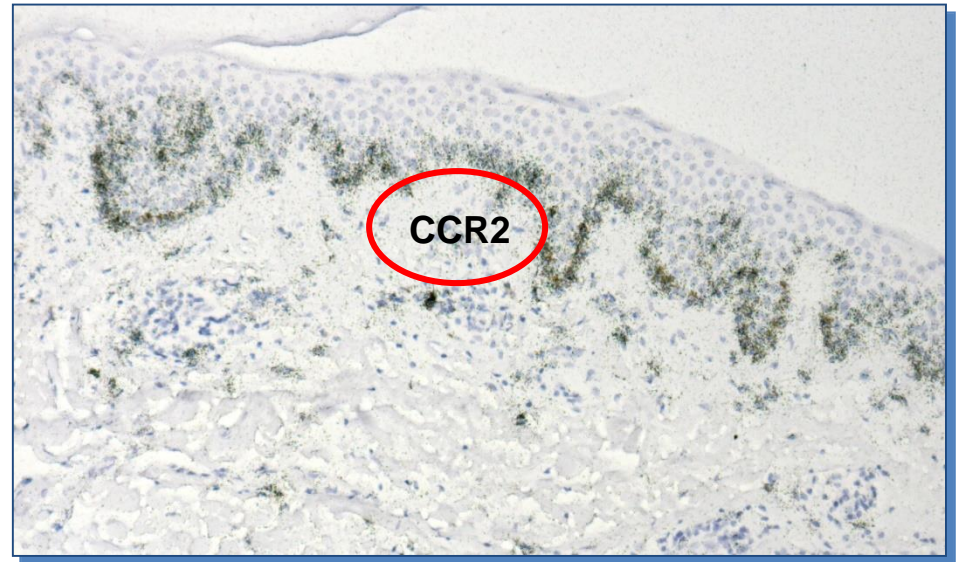
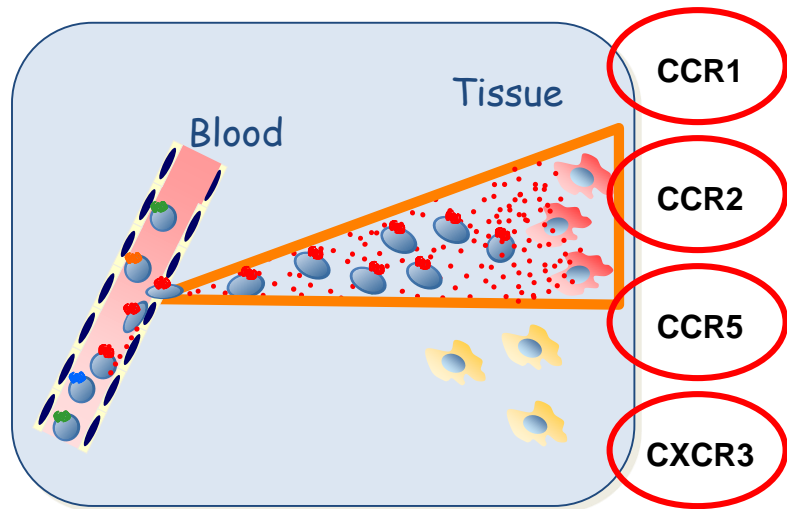
Step 3: arrest and adhesion



Functional Modules in Cell Migration

T naive	IL-2	CCR7	mature DC	Priming
B naive	IL-6	CXCR5	FDC, T _{FH}	Antibody
immature DC	GM-CSF	CCR1, CCR5	T naive	Antigen uptake
TH1	IFN- γ	CCR5	M Φ	Bacteria
TH2	IL-4, IL-5	CCR3	Eos/Bas	Parasites
TH17	IL-17, IL-22	CCR6	Neut	Fungi
CTL	IFN- γ , Perf	CXCR3	M Φ	Virus

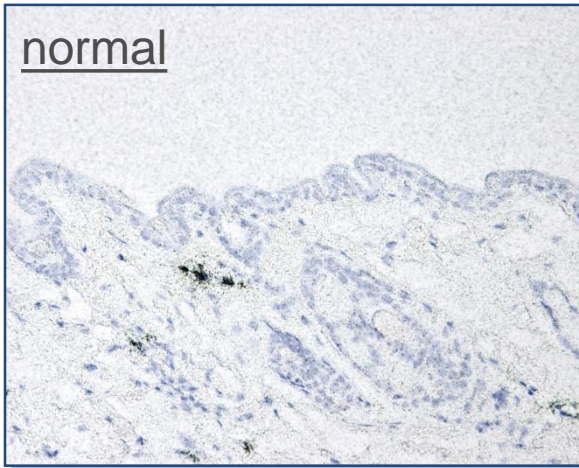
From Blood to Tissue



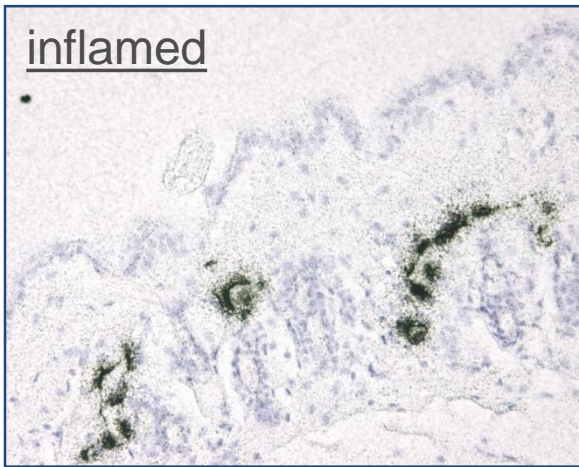
From Tissue to Lymph Nodes

CCL21

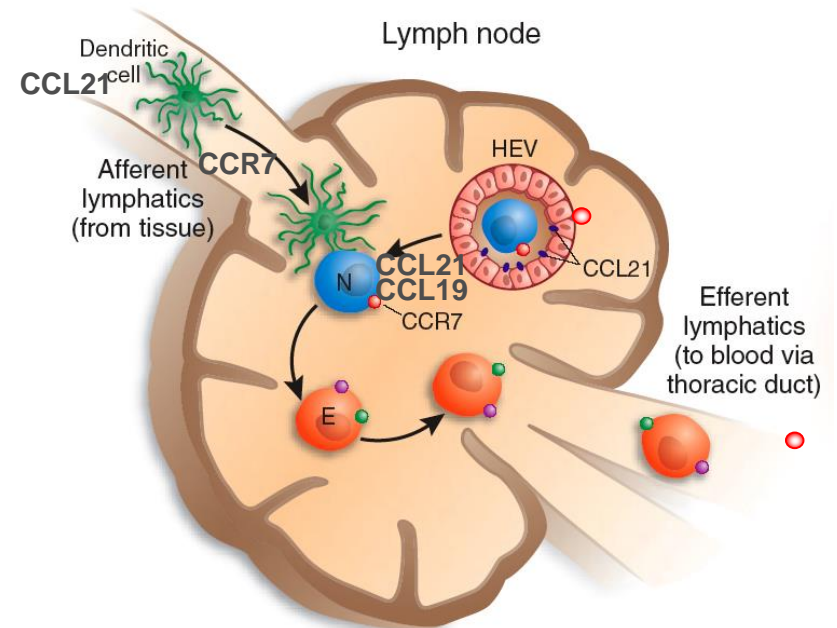
normal



inflamed



Lymph nodes are privileged sites for dendritic cell-naïve T cell encounters



Functional Modules in Cell Migration

T naive	IL-2	CCR7	mature DC	Priming
B naive	IL-6	CXCR5	FDC, T _{FH}	Antibody
immature DC	GM-CSF	CCR1, CCR5	T naive	Antigen uptake
T _H 1	IFN- γ	CCR5	M Φ	Bacteria
T _H 2	IL-4, IL-5	CCR3	Eos/Bas	Parasites
T _H -17	IL-17, IL-22	CCR6	Neut	Fungi
CTL	IFN- γ , Perf	CXCR3	M Φ	Virus
mature DC	IL-12, IL-4	CCR7	T naive	Priming

Functional Modules in Cell Migration

CXCL12

CXCR4

all cells

Bone Marrow
(all tissues)

Differentiation
and homing

CCL19

CCR7

T naïve, mDC

Lymph nodes

Priming in LN

CCL21

CCR7

T naïve, mDC

Lymph nodes
Lymphatic vessels

Homing to LN

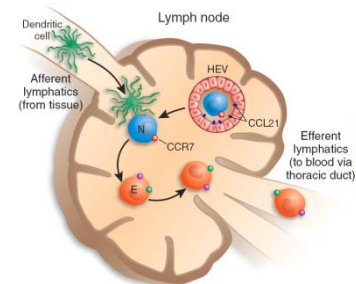
CXCL13

CXCR5

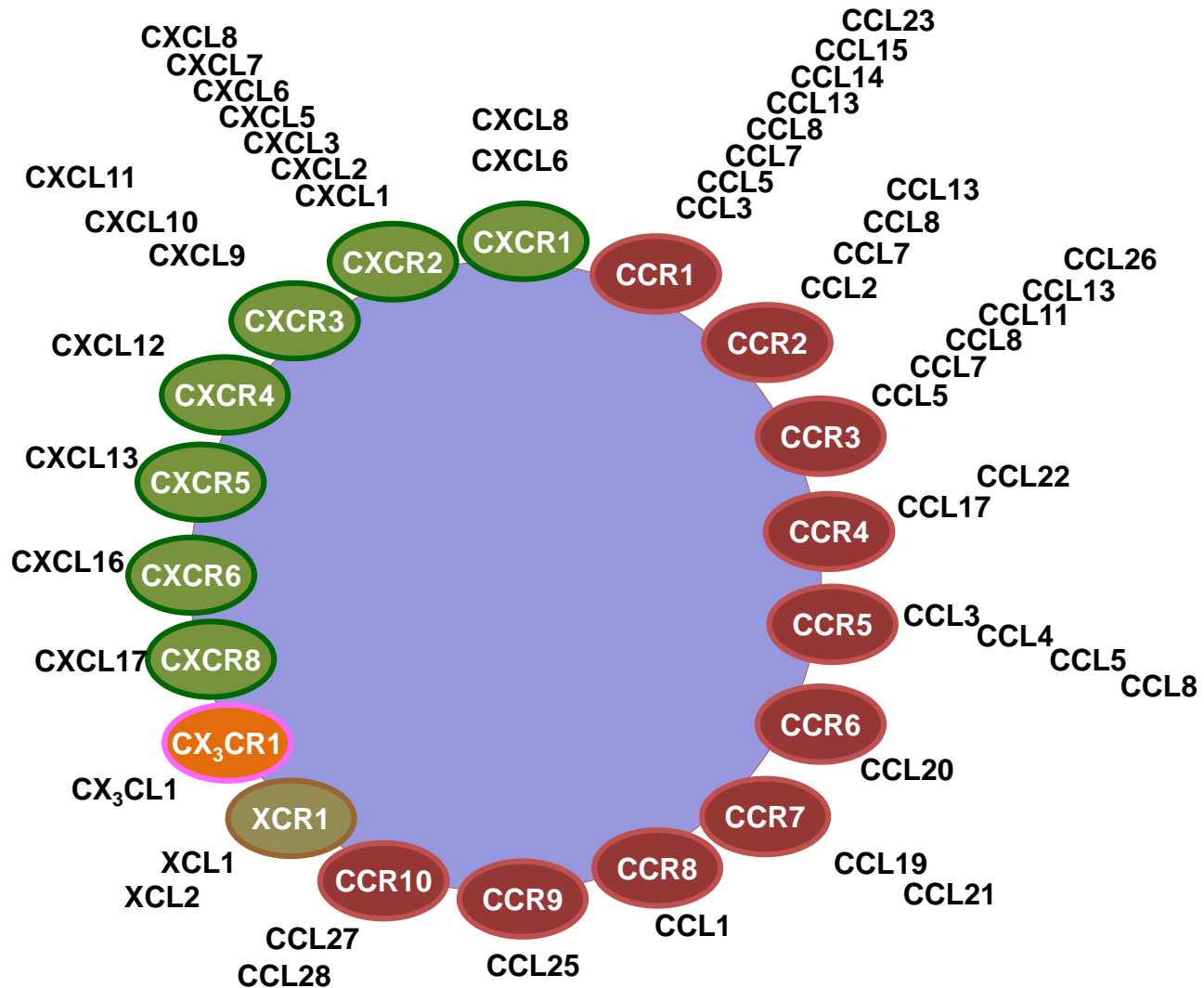
B cells, T_{FH}

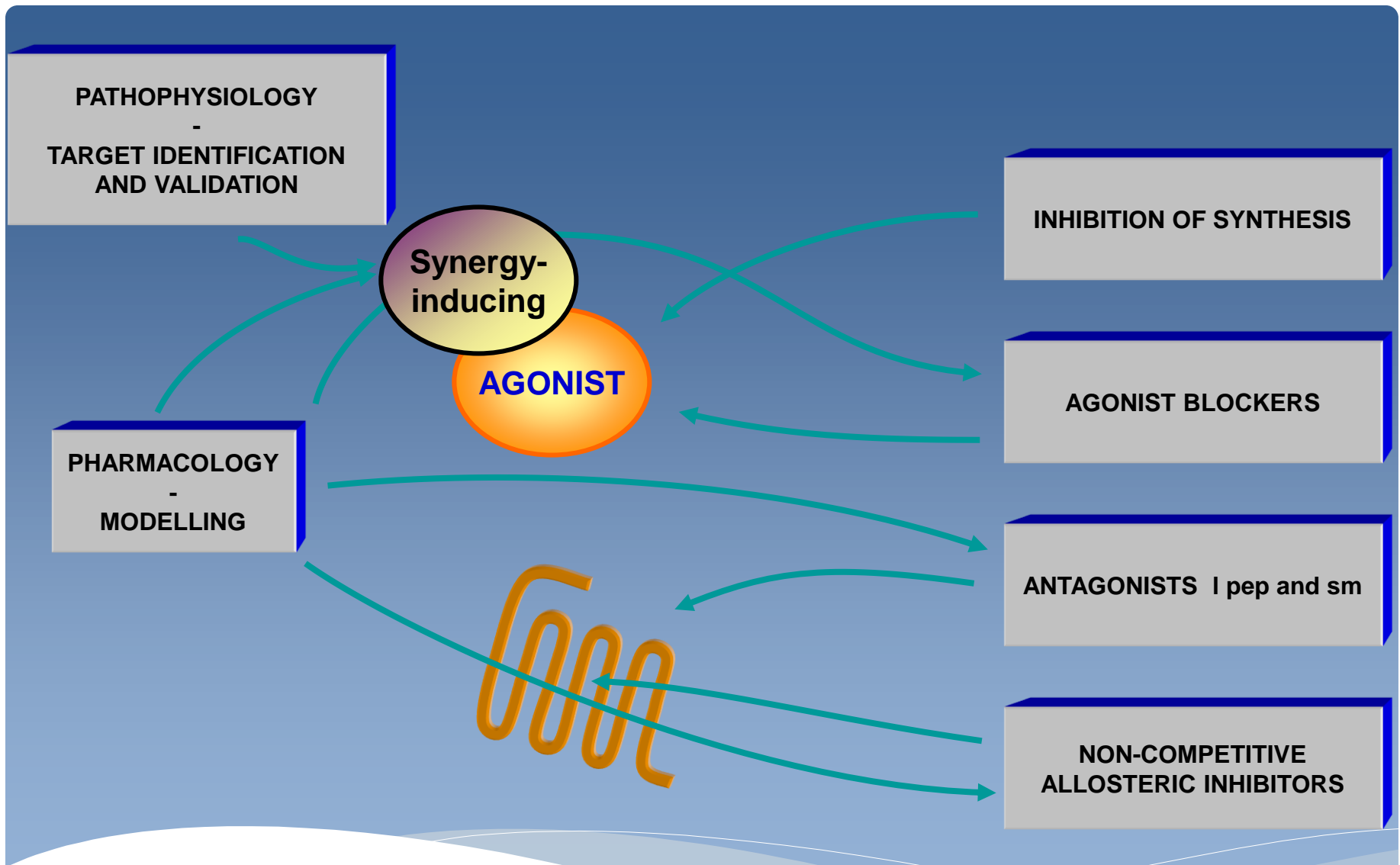
Lymph nodes

Homing to LN



The Chemokine System - 2016





[Annu Rev Immunol.](#) 2014;32:659-702.

Chemokines and chemokine receptors: positioning cells for host defense and immunity.

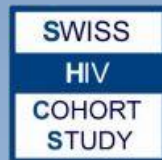
[Griffith JW](#)¹, [Sokol CL](#), [Luster AD](#).

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