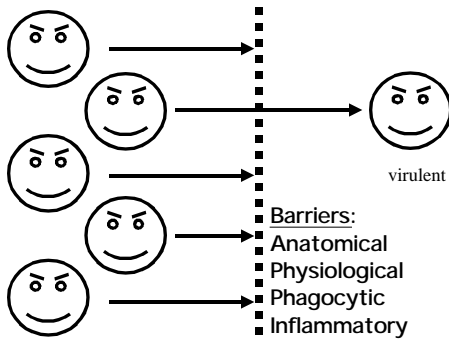


The Immune System overview

Bio 160 lecture
January 31, 2000

Prof. Paul M. Knopf
BMC 413
X 3-1607

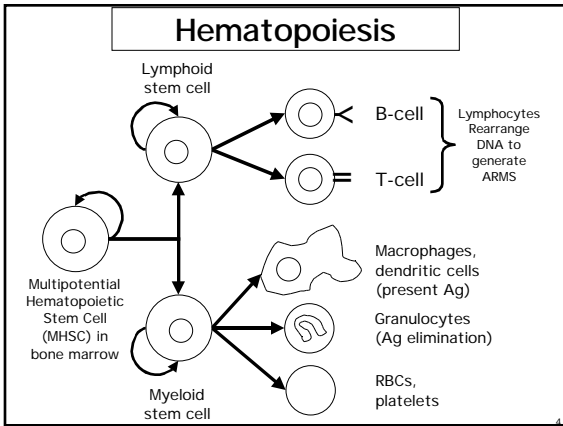
Innate Immunity Eliminates Most Pathogens

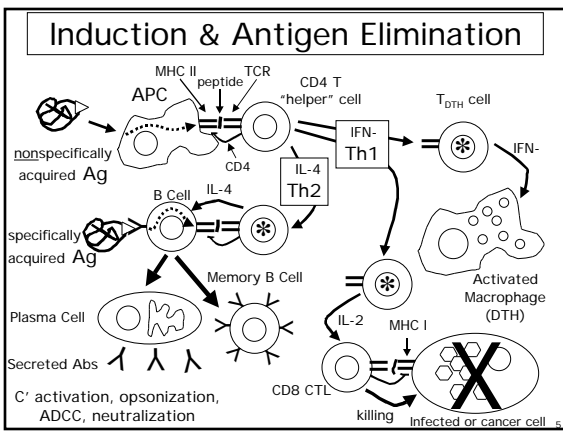


Innate v. Adaptive Immunity

Which is enhanced by prior exposure?

- NK cells
- Type 1 IFN (α & β)
- $\gamma\delta$ T cells
- "B1" B cells
- APC
- CD4/8 T cells; B cells





Antigen Elimination (Effector) Phase

- ANTIBODY DEPENDENT
- Neutralization of 'toxic' effects of Ags
- Opsonization of Ags (+ C' & phagocytes)
- C'-dependent lysis (CP) of cellular Ags or enveloped viruses
- Ab-dependnt cellular cytotoxicity (ADCC)
- Activation of chemotactic signals (C3a, C5a, degranulation)

Antigen Elimination (Effector) Phase

- T-CELL DEPENDENT
- Encapsulation of particulate Ags (DTH)
- Toxicity to cellular Ags (CTL)
- Infiltration (DTH + cytokines)

The Immune Response: Positive and Negative Outcomes

- "Positive"
 - Pathogen elimination - Immunotherapy
 - Vaccination - Research
 - BM transplants & Diagnosis
- "Negative"
 - Hypersensitivity - Immune deficiency
 - Autoimmunity - Graft Rejection
 - Cancer & GVHD
