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## **DENDRITIC CELLS**

### **1. History**

- a. Initiation identification of the DC
- b. Hematopoietic origin
- c. The reticuloendothelial trap

### **2. Distribution and Subsets**

- a. Unique and shared markers
- b. Tissue distribution
- c. Features of subsets
- d. Subset ontogeny
  - i. knockouts
- e. Plasticity

### **3. Functional regulation/maturation**

- a. The Langerhans cell model
- b. Developmental regulation of DC function
  - i. Modes of endocytosis
  - ii. MHC molecules
    1. synthesis
    2. stability
    3. transport
  - iii. Antigen processing
    1. TCR ligand formation
  - iv. Cross-presentation
  - v. T cell activation
  - vi. Cytokine production
- c. Regulation of maturation
  - i. Inhibitors and inducers
    1. Signaling

### **4. Migration**

- a. Chemokines and chemokine receptors
- b. Subsets
- c. Steady-state vs. inflammation
- d. Tissues to lymph nodes
- e. Within secondary lymphoid tissues

### **5. Antigen presentation**

- a. Immunity
  - i. Antigen encounter
  - ii. Presentation to naive cells
    1. Location
    2. Key players
  - iii. Presentation to memory cells
    1. Location
    2. Key players
  - iv. DC subsets
- b. Peripheral tolerance
  - i. Antigen encounter
  - ii. Tolerance mechanisms
  - iii. DC subsets