Ag Presentation by MHC   Chapter 6

I. Background
  A. Numbers
  B. B cells
  C. T cells - MHC restricted

II. APCs
  A. Professional phagocytes
  B. Other cells
  C. Signals
    1. first signal
    2. secondary signal
    3. enhancement

III. Discovery
    1. histocompatibility
  A. Genetic level
      a. major histocompatibility complex (MHC)
  B. Protein level
    1. human leukocyte antigens (HLAs)
  C. Why there?
  D. Presentation
  E. What you need to know
    1. purpose
    2. classes
      a. Class I MHC
      b. Class II MHC

IV. Genomic Organization of the MHC
  A. Naming history
      a. human leukocyte antigens (HLAs)
      b. HLA-A, HLA-B, and HLA-C
      c. HLA-D
        1) HLA-DP, HLA-DQ, and HLA-DR
  B. Variance
    1. polymorphic
    2. codominant expression
    3. mutation rate
    4. crossing over
    5. Not
  C. Gene structure
    1. Class I loci
      a. 3 loci
      b. nonclassical
    2. Class II MHC locus
    3. Class III loci
  D. Expression
    1. Class I
    2. Class II

V. Properties of Ags recognized by T Lymphocytes
  A. peptides
  B. aa seq.

VI.Class I MHC Loading
  A.Ag processing
    1.Ag location
    2.proteolytic digestion
      a.proteasome
  B.Class I MHC synthesis
    1.tapasin
  C.Ag transport
    1.TAP
      a.structure
      b.function
  D.Assembly
    1.peptide-loading complex
  E.Surface expression

VII.Class II MHC Loading
  A.Ag processing
    1.bind external Ag
    2.internalization
    3.processing
  B.Class II MHC synthesis
    1.translation
    2.invariant chain (I_i)
  C.Assembly
    1.processing of I_i
        a)CLIP
    2.HLA-DM
      a.structure
      b.function
    3.trimming
  D.Surface expression

VIII.T Cell Actions
  A.Remember:

IX.Non-MHC Restricted Ag Recognition
  A.Natural killer T cells
    1.CD1
  B. $\gamma\delta$ T cells