

# MICROBIOLOGY

## HOST

- I. INTRODUCTION
  - A. RESISTANCE AND SUSCEPTIBILITY
  - B. NONSPECIFIC VS. SPECIFIC (IMMUNITY)
- II. NONSPECIFIC DEFENSES
  - A. BARRIER SURFACES
    - 1. THE SKIN
      - a. SKIN LAYERS
      - b. pH (BETWEEN 3 & 5)
      - c. FATTY ACIDS
      - d. SEBUM
    - 2. MUCOUS MEMBRANES
      - a. MUCUS SECRETING CELLS
      - b. CILIATED CELLS
      - c. LAVAGING
    - 3. SPECIAL ENZYMES
      - a. LYSOZYME
      - b. PROTEASES
    - 4. THE pH OF THE STOMACH
    - 5. THE EYE (TEARS AND LYSOZYME)
  - B. PHAGOCYTOSIS
    - 1. BLOOD CELL TYPES
      - a. ERYTHROCYTES
      - b. THROMBOCYTES
      - c. LEUKOCYTES
        - 1) LYMPHOCYTES
        - 2) GRANULOCYTES (NEUTROPHILS)
        - 3) MONOCYTES --> MACROPHAGE
    - 2. PROCESS
      - a. CHEMOTAXIS
      - b. ADHERENCE
      - c. INGESTION
      - d. DIGESTION (IN PHAGOLYSOZOMES)
        - 1) ENZYMATIC
        - 2) O<sub>2</sub> REACTIONS
  - C. INFLAMMATION -- "rubror et tumor cum calore et dolore"
    - 1. VASODILATION & PHAGOCYTE MIGRATION
    - 2. PHAGOCYTOSIS
    - 3. RESOLUTION
    - 4. FEVER AND IL-1
    - 5. PAIN (PRESSURE; BRADYKININS, PROSTAGLANDINS)
  - D. COMPLEMENT
    - 1. THE COMPLEMENT CASCADE
    - 2. CYTOLYSIS
    - 3. OPSONIZATION
  - E. INTERFERONS (IFNs)
    - 1. INDUCTION
    - 2. MODE OF ACTION
      - a. INHIBIT PROTEIN SYNTHESIS
      - b. REQUIRE ds RNA (VIRAL BYPRODUCT)