



INTRODUCTION TO VETERINARY IMMUNOLOGY

POWERPOINTS

JAMES A. ROTH, DVM, PhD, DACVM • GAYLE BROWN, DVM, PhD • KEVAN FLAMING, DVM, PhD

Introduction to Veterinary Immunology

An Online Course

James A. Roth, DVM, PhD
Gayle B. Brown, DVM, PhD
Kevan P. Flaming, DVM, PhD

Institute for International Cooperation in Animal Biologics (IICAB)

Center for Food Security and Public Health (CFSPH)

Iowa State University
College of Veterinary Medicine



Drs. Jim Roth, Gayle Brown, and Kevan Flaming

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Introduction to Veterinary Immunology and Principles of Vaccination

*James A. Roth, DVM, PhD
Gayle B. Brown, DVM, PhD
College of Veterinary Medicine
Iowa State University
Ames, Iowa USA*



Basic Immunology

- **Overview**
- **Complement**
- **Granulocytes**
- **Macrophages**
- **Lymphocytes**
- **Antigen/Antibody**
- **T Cell Subsets**
- **Antigen Recognition**
- **Response to Antigen**
- **Body Surface Immunity**
- **Fetal and Neonatal**
- **Immune Dysfunction**
- **Diagnostic Tests**

Basic Vaccinology

- **Regulations**
- **Protective Immunity**
- **Types of Vaccines**
- **Vaccine Failure and Duration of Immunity**
- **Adverse Vaccine Reactions**



Innate (Native) Defense Mechanisms

- Protects naïve animal
- Protects immediately
- Not antigen specific
- **Activated by "danger signals" from pathogens and tissue damage**

Adaptive (Acquired) Defense Mechanisms

- Develop after antigen exposure
- Require several days to weeks
- Antigen specific
- Memory and tolerance
- Activate native defense mechanisms

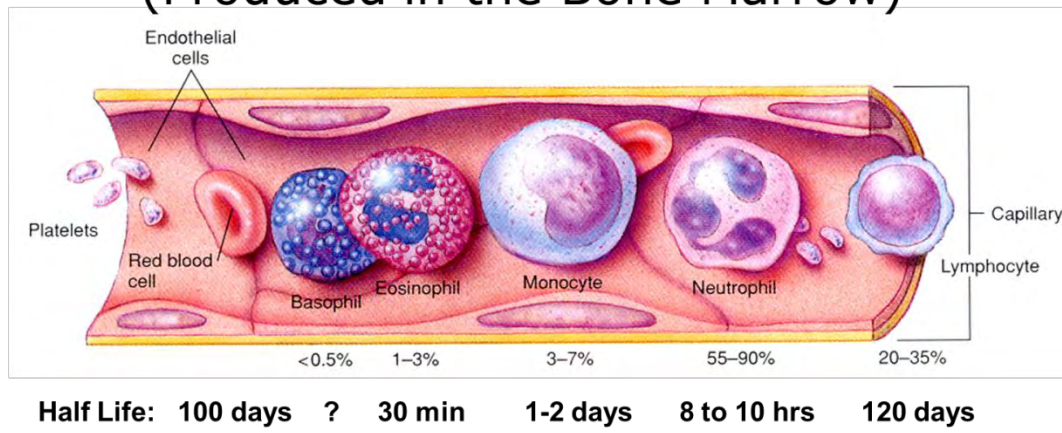
Innate (Native) Defense Mechanisms

- Barriers to infection
- Phagocytic cells
- Complement
- Native defense cytokines
- Natural killer (NK) cells
- Antimicrobial peptides

Adaptive Defense Mechanisms

- Antibodies
- Cell mediated immunity
 - T-Helper Cells (Cytokines)
 - Cytotoxic T cells
 - Gamma Delta T cells

Blood Cells (Produced in the Bone Marrow)



Talaro, K.P., Talaro, A. Foundations in Microbiology, 3rd Ed. 1999, pg 441.

Antigen, Antibody, Antibiotic

- **Antigen:** Any foreign substance that can bind to specific lymphocyte receptors and induce an immune response
- **Antibody:** An immunoglobulin (Ig) molecule synthesized on exposure to antigen, which can bind specifically to that antigen
- **Antibiotic:** A chemical compound, usually obtained from microorganisms, that can prevent growth or kill bacteria
