

Pharmacology 1 and Prescription Knowledge

Principles of ADME, Pharmacogenetics, Prescription
Knowledge

Refer lecturer for course updated notes.

Students are obliged to follow the courses for evaluation process and presented notes are preliminary drafts for the whole evaluation process.

- Factors for the Efficacy and Potency of a Drug
- Drug Resistance and Resistance Types
- Tolerance, Desensitisation and Tachyphylaxis
- Drug addiction
- Adverse effects of drugs
- Undesirable effects of drugs
- Allergic and sensitization effects

- Body size
- Distribution in body fluids
- Plasma protein binding
- Metabolism
- Excretion
- Physiology
- Pathology
- Genetics

- How do drugs reach the site of action
 - Passive diffusion (weak acids and bases)
 - Filtration
 - Facilitated diffusion
 - Active transport

- Routes of administration
- Oral
- Rectal
- Parenteral
- (1) Intravenous (IV) (2) Intramuscular (IM) (3) Subcutaneous (SC) (4) Intraperitoneal (IP) (5) Spinal and subdural.
- Dermal/Topical
- Inhalation

- Drug distribution
- Barriers
- Plasma protein binding
- Drug redistribution

- Drug metabolism/
biotransformation

- Phase 1

- Oxidation
- Mixed function oxidase
 - Side chain and aromatic hydroxylation
 - O-dealkylation
 - N-oxidation
 - S-oxidation
 - Deamination or N-dealkylation
 - Desulfuration

- Nonmicrosomal

- Alcohol dehydrogenase and aldehyde dehydrogenase
- Monoamine oxidase
- Xanthine oxidase.

- Oxidative metabolism

- Reduction

- Hydrolysis

- Esterases
- Amidases

- Phase II

- Drug excretion
 - Glomerular filtration
 - Active tubular secretion
 - Proximal tubular resorption
 - Biliary secretion
 - Milk
 - Saliva
 - Air
 - Tear/Sweat
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- P-glycoprotein in drug excretion

Drug-receptor interactions

- Receptor mediation
- Non-receptor mediated effects
- Ligands-classification of ligands

Pharmacogenetics in veterinary medicine

Introduction to comparative drug metabolism

CYP variations in animals

Clinically relevant CYP variations

Examples of polymorphisms and drug metabolism

Toxicogenomics

Prescription of veterinary drugs

- Parts of prescription
- Abbreviations used in prescription
- Dispensing, Labeling and Documentation
- Prescribing Controlled Drugs: Critical Issues
- Laws in Turkey regarding prescription
- E-prescription