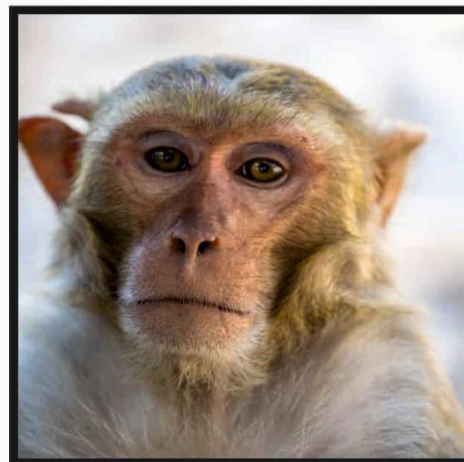
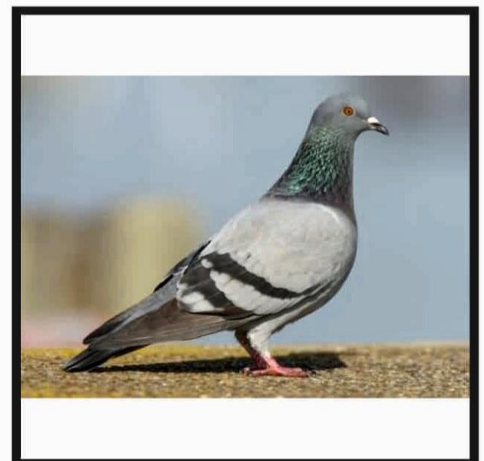


PHARMACOLOGY-I

(FOR B. PHARMACY IV SEMESTER)
AS PER PCI SYLLABUS



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PREFACE

In the fields of medicine, biology, and pharmaceutical science, pharmacology deals with drugs and their effects. A drug can be artificial, natural, or endogenous (found in the body), including physiological or biochemical actions carried out by organisms, tissues, cells, or organs (both endogenous and extrinsic bioactive species may be included under the term "drug"). To be more precise, it is the study of how substances interact with living things to influence normal or aberrant biochemical function. The study of pharmacology focuses on the properties, origins, and effects of drugs—whether biological, chemical, or therapeutic—on living systems.

Pharmacy is not the same as pharmacology. The science of finding and characterising substances that affect the body is known as pharmacology. Pharmacy, on the other hand, describes medical services that apply pharmacology principles to enhance patient outcomes in a clinical context.

Understanding what drugs do to living things and how their effects can be used for therapeutics is the primary goal of the subject. The course covers topics such as drug mechanism of action, pharmacodynamic and pharmacokinetic effects on the body as well as absorption, distribution, metabolism, and excretion, as well as side effects, clinical applications, interactions, dosages, and administration routes for various drug classes.

Objectives:

1. Recognise the pharmacological effects of various drug classes.
2. Describe how the drug acts at the organ system, subcellular, and macromolecular levels.
3. Use your foundational knowledge of pharmacology to treat and prevent a range of illnesses.
4. Observe how medications affect animals through simulated experiments.
5. Recognise how pharmacology relates to other biomedical sciences.

Abbreviations

Absorption, Distribution, Metabolism, and Excretion (ADME)
Acetylcholine (ACh)
Acquired Immunodeficiency Syndrome (AIDS)
Active Pharmaceutical Ingredients (API)
Adenosine Triphosphate (ATP)
Adrenocorticotropin (ACTH)
Adverse Childhood Experiences (ACEs)
Adverse Drug Reactions (ADRs)
American Psychiatric Association (APA)
Amount of drug in the body (A)
Anatomical Therapeutic Chemical Classification System (ATC)
Angiotensin Converting Enzyme (ACE)
Area Under The Curve (AUC)
Attention Deficit Hyperactivity Disorder (ADHD)
Before Common Era (BCE)
Benign Prostatic Hyperplasia (BPH)
Bioavailability (F)
Body Surface Area (BSA)
Body Weight (BW)
Cancer Stem Cell (CSC)
Catechol-O-Methyltransferase (COMT)
Central Nervous System (CNS)
Chronic Obstructive Pulmonary Disease (COPD)
Ciliary Neurotrophic Factor (CNTF)
Clearance (CL)
Ciliary Neurotrophic Factor (CNTF)
Cognitive Behavioral Therapy (CBT)
Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA)
Creatinine Clearance (CL_{cr})
Cytochrome P450 (CYP)
Deoxyribonucleic Acid (DNA)
Diagnostic and Statistical Manual of Mental Disorders (DSM-5)
Dimethyltryptamine (DMT)
Disulfiram-alcohol Reaction (DAR)
Dosage Point (DP)
Electromyography (EMG)
Emergency Room (ER)
Epidermal Growth Factor (EGF)
Epidermal Growth Factor Receptors (EGFR)
Erythropoietin (EPO)
Eudravigilance Clinical Trials Module (EVCTM)
Eudravigilance Post-Authorisation Module (EVPM)

European Economic Area (EEA)
European Medicines Agency (EMA)
European Union (EU)
Examination of Electroencephalographic (EEG)
Facility for Experimental Radiopharmaceutical Manufacturing (FERM)
First-in-Human (FIH)
Food and Drug Administration (FDA)
G Protein Inwardly Rectifying K⁺ (GIRK)
G Protein-Coupled Receptors (GPCRs)
Gastrointestinal (GI)
Global Information Tracker (GIT)
Glucocorticoid Receptors (GR)
Glucose Transporters (GLUTs)
Glutamate and Gamma-Aminobutyric Acid (GABA)
Good Manufacturing Practices (GMP)
Granulocyte Colony-Stimulating Factor (G-CSF)
Granulocyte–Macrophage Colony-Stimulating Factor (GM-CSF)
Growth Hormone (GH)
Guanosine Diphosphate (GDP)
Guanosine Triphosphate (GTP)
Half Maximal Effective Concentration (EC50)
Half-Life (t_{1/2})
Human Immunodeficiency Virus (HIV)
Immunoglobulin E (IgE)
Individual Case Safety Reports (ICSR)
Interferons (IFN)
Interleukins (ILs)
International Conference on Harmonization (ICH)
Intramuscular Injection (IM)
Intravenous (IV)
Intravenous Immunoglobulin (IVIG)
Investigational New Drugs (INDs)
JAK Homology Domain (JH)
Leukemia Inhibitory Factor (LIF)
Local Anesthetic Systemic Toxicity - (LAST)
Lysergic Acid Diethylamide (LSD)
Lysergic Acid Diethylamide (LSD)
Major Histocompatibility Complex (MHC)
Maximum Concentration (C_{max})
Maximum Tolerated Dose (MTD)
Monoamine Oxidase Inhibitors (MAOIs)
Monoamine Oxidase-B (MAO-B)
Myasthenia Gravis (MG)
Nasogastric (NG) Tube
Nasointestinal (NI) Tube
Natural Killer (NK)

Nerve Growth Factor Receptors (NGF)
Nicotinic Receptors (N)
N-methyl-D-Aspartate (NMDA)
Non-Neuronal Acetylcholine (nnACh)
Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)
Obsessive-Compulsive Disorder (OCD)
Oncostatin M (OSM)
Parasympathetic Nervous System (PSNS)
Percutaneous Endoscopic Gastrostomy (PEG)
Periaqueductal Gray (PAG)
Peripheral Nervous System (PNS)
Peroxisome Proliferator-Activated Receptor Alpha (PPAR α)
Pharmacokinetic/Pharmacodynamic (PK/PD)
Pharmacokinetics (PK)
Phencyclidine (PCP)
Plasma Concentration (c)
Post-Traumatic Stress Disorder (PTSD)
Protein Inhibitor of Activated STAT (PIAS)
Protein Kinase Inhibitors (PKIs)
Protein Tyrosine Phosphatases (PTPs)
Receptor Serine/Threonine Kinase (RSTK)
Receptor Tyrosine Kinase (RTK)
Selective Serotonin Reuptake Inhibitors (SSRIs)
Sinoatrial (SA)
Sodium (NA)
Sodium Chloride (NaCl)
Src-Homology 2 (SH2)
Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT)
Structure-Activity Relationship (SAR)
Subacute Myelo optic Neuropathy (SMON)
Subcutaneous (S.C.) Route
Substance Use Disorders (SUDs)
Suppressors of Cytokine Signaling (SOCS)
Suspected Unexpected Serious Adverse Reactions (SUSARs)
The American Society of Addiction Medicine (ASAM)
The Autonomic Nervous System (ANS)
The Janus Kinase/Signal Transducer and Activator of Transcription (JAK/STAT)
The Thrombus Aspiration of Scandinavia (TASTE)
Therapeutic Index (TI)
Thrombopoietin (TPO)
Toll Like Receptors (TLRs)
Transmembrane (TM)
Transmission Electron Microscopy (TEM)
Tricyclic Antidepressants (TCAs)
Tumor Necrosis Factor (TNF)
United States Food and Drug Administration (UDFDA)

Uridine Diphosphate (UDP)-Glucuronosyltransferases (UGT)
Voltage-Gated Ca⁺⁺ Channels (VGCC)
Volume of Distribution (V)
Volume of Distribution (Vd)
WHO Program for International Drug Monitoring (WHO PIDM)
World Health Organization (WHO)
 β -lipotropin (β -LPH)

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