# Course Contents

## Molecular Pharmacology-VI

## Introduction to molecular approaches to target Identification:

Target, Need of target, characteristics of target, role of target, target identification, target validation, approaches of target selection, parameters of targeting, Tools & strategies of drug targeting.

## Introduction to molecular approaches to drug development:

Drug discovery, drug screening, preclinical safety and toxicity testing, Evaluation in humans, FDA, Clinical trials

## Molecular delivery for cellular and subcellular processes that contribute to humans diseases:

Nature of drug, physical nature of drug, drug size, drug reactivity, drug receptor bond, drug shape.

## Principles of drug receptor Interactions:

Drug receptor interaction, G-protein receptors, enzyme linked receptors (Tyrosine kinases, Serine-threonine kinases), Ion channels (as targets of neurohormones & neuromodulators) , Intracellular/nuclear receptors.

## Enzymes:

Phosphodiesterases, phospholipases, ATPase, peroxidases, ACEs, monoamine oxidases

## Gene targeting:

Angiogenesis, Apoptosis, senescence

## Inflammation:

Pharmacology of inflammation, Mediators/ Autacoids (Histamines, prostaglandins, leukotriene, bradykinens, serotonin etc.), mechanism of anti-inflammatory drugs (NSAIDs, Opioids) at molecular level.

## Neoplastic diseases

Breast cancer, colorectal cancer, uterine cancer, prostate cancer

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## Neurodegenerative diseases

Mechanisms of neuronal death

Pathophysiology of Parkinson’s disease, molecular mechanisms of Drugs used for Parkinson’s disease

Pathophysiology of Alzheimer’s disease, molecular mechanisms of drugs used for Alzheimer’s disease

Pathophysiology of Huntington’s disease and drugs used for Huntington’s disease and mechanism of drugs

Pathophysiology of multiple sclerosis and mechanism of drugs used for multiple sclerosis

Pathophysiology of epilepsy and mechanism of drugs used for epilepsy.

## Psychiatric disorders:

Drugs used for anxiety and their mechanism, drugs used for depression and their mechanism, drugs used for schizophrenia and their mechanism.

## Cardiovascular diseases:

Coronary heart disease (IHD), Angina pectoris, Myocardial infarction, Hypertension, Heart failure.