CY-414 PHARMACEUTICAL CHEMISTRY

Transformation of Chemicals into Drugs: Physiochemical Properties In Relation To Biological Action: Complex events between drug administration and drug action. Solubility, partition coefficient and drug-receptor interactions.

Factors Influencing Dosage Formations: Disintegration, dissolution and absorption of drugs, their pre-requisites, Effective blood level, Placebo effects, MIC values etc. and Drug-drug interactions.

Drug Metabolism: Factors influencing metabolism of drugs. Site of metabolism, Metabolic changes in GI tract, Types of metabolic reactions and Reactions based on functional groups.

Structure-Activity Relationship (SAR): Chemical structure in relation to biological activity of molecules, stereochemical factors, prodrugs, isosters and pharmacophoregroups.Synthesis, physical and chemical properties, mode of action, SAR studies and toxicity of the following drugs.

Sulfa drugs: Sulfa drugs in current therapy (human and veterinary use).

Drugs acting on NIDDM: Sulfonylureas. Antibiotics: Penicillin and related compounds, cephalosporins, tetracyclines chloramphenicol and quinolones. Antiviral agents and antineoplastic agents. Histamines and antihistamines: H1 and H2-receptor antagonists, development of H3 receptors and proton pump inhibitors.

Anti-malarial drugs, Analgesics (peripheral as well as centrally acting), local anesthetics

Recent trends in drug development: Quantitative structure activity relationship (OSAR), computer models and stimulations with examples including a case study of at least one drug.