

LESSON PLAN

Faculty Name: Dr. Minkal Tuteja

Subject Name: Medicinal Chemistry

Class: B. Pharmacy –V Sem

Subject Code: BP501T

Scope of the Subject: This course is designed to impart fundamental knowledge on the structure, chemistry and therapeutic value of drugs. The subject emphasizes on structure activity relationships of drugs, importance of physicochemical properties and metabolism of drugs. The syllabus also emphasizes on chemical synthesis of important drugs under each class.

Course outcome: Upon completion of the course, the student shall be able to understand

- The classification and mechanism of drugs under different categories.
- The structure activity relation of certain drugs as per the specifications
- The chemical synthesis of certain specified drugs
- The significance of physicochemical properties and metabolism of drugs

Number of Lectures: 45**Each lecture:** 01 hour

| Lecture No. | Particular | Remark/Date |
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| 1. | Antihistaminic agents: Histamine receptors and their distribution in human body H₁-Antagonists: Diphenhydramine hydrochloride*, Dimenhydrinate, Doxylamines succinate, Clemastine fumarate, Diphenylpyraline hydrochloride, Tripelenamine hydrochloride, Chlorcyclizine hydrochloride, Meclizine hydrochloride, Buclizine hydrochloride, Chlorpheniramine maleate, Triprolidine hydrochloride*, Phenidamine tartarate, Promethazine hydrochloride*, Trimeprazine tartrate, Cyproheptadine hydrochloride, Azatidine maleate, Astemizole, Loratadine, Cetirizine, Levocetrazine Cromolyn sodium | |
| 2. | H₂-antagonists: Cimetidine*, Famotidine, Ranitidin | |
| 3. | Gastric Proton pump inhibitors: Omeprazole, Lansoprazole, Rabeprazole, Pantoprazole | |
| 4. | Anti-neoplastic agents: Alkylating agents: Meclorethamine*, Cyclophosphamide, Melphalan | |
| 5. | Antimetabolites: Mercaptopurine*, Thioguanine, Fluorouracil, Floxuridine, Cytarabine, Methotrexate*, Azathioprine | |
| 6. | Plant products: Etoposide, Vinblastin sulphate, Vincristin sulphate | |
| 7. | Anti-anginal: Vasodilators: Amyl nitrite, Nitroglycerin*, Pentaerythritol | |

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| | <p>tetranitrate, Isosorbide dinitrite*, Dipyridamole.</p> <p>Calcium channel blockers: Verapamil, Bepridil hydrochloride, Diltiazem hydrochloride, Nifedipine, Amlodipine, Felodipine, Nicardipine, Nimodipine.</p> <p>Diuretics: Carbonic anhydrase inhibitors: Acetazolamide*, Methazolamide, Dichlorphenamide.</p> <p>Thiazides: Chlorthiazide*, Hydrochlorothiazide, Hydroflumethiazide, Cyclothiazide,</p> <p>Loop diuretics: Furosemide*, Bumetanide, Ethacrynic acid.</p> <p>Potassium sparing Diuretics: Spironolactone, Triamterene</p> <p>Osmotic Diuretics: Mannitol</p> <p>Anti-hypertensive Agents: Timolol, Captopril, Lisinopril, Enalapril, Benazepril hydrochloride, Quinapril hydrochloride, Methyldopate hydrochloride,* Clonidine hydrochloride, Guanethidine monosulphate, Guanabenz acetate, Sodium nitroprusside, Diazoxide, Minoxidil, Reserpine, Hydralazine hydrochloride.</p> | |
| 8. | <p>Anti-arrhythmic Drugs: Quinidine sulphate, Procainamide hydrochloride, Disopyramide phosphate*, Phenytoin sodium, Lidocaine hydrochloride, Tocainide hydrochloride, Mexiletine hydrochloride, Lorcaïnide hydrochloride, Amiodarone, Sotalol.</p> <p>Anti-hyperlipidemic agents: Clofibrate, Lovastatin, Cholesteramine and Cholestipol</p> <p>Coagulant & Anticoagulants: Menadione, Acetomenadione, Warfarin*, Anisindione, clopidogrel</p> <p>Drugs used in Congestive Heart Failure: Digoxin, Digitoxin, Nesiritide, Bosentan, Tezosentan.</p> | |
| 9. | <p>Drugs acting on Endocrine system</p> <p>Nomenclature, Stereochemistry and metabolism of steroids</p> <p>Sex hormones: Testosterone, Nandralone, Progestrones, Oestriol, Oestradiol, Oestrone, Diethyl stilbestrol. Drugs for erectile dysfunction: Sildenafil, Tadalafil. Oral contraceptives: Mifepristone, Norgestrel, Levonorgestrol</p> <p>Corticosteroids: Cortisone, Hydrocortisone, Prednisolone, Betamethasone, Dexamethasone</p> <p>Thyroid and antithyroid drugs: L-Thyroxine, L-Thyronine, Propylthiouracil, Methimazole.</p> | |
| 10. | <p>Antidiabetic agents:</p> <p>Insulin and its preparations</p> <p>Sulfonyl ureas: Tolbutamide*, Chlorpropamide, Glipizide, Glimepiride.</p> <p>Biguanides: Metformin.</p> <p>Thiazolidinediones: Pioglitazone, Rosiglitazone.</p> <p>Meglitinides: Repaglinide, Nateglinide.</p> <p>Glucosidase inhibitors: Acarbose, Voglibose.</p> <p>Local Anesthetics: SAR of Local anesthetics</p> | |
| 11. | <p>Amino Benzoic acid derivatives: Benzocaine*, Butamben, Procaine*, Butacaine, Propoxycaïne, Tetracaine, Benoxinate.</p> | |

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| | Lidocaine/Anilide derivatives: Lignocaine, Mepivacaine, | |
| 12. | Prilocaine, Etidocaine. Miscellaneous: Phenacaine, Dipiperodon, Dibucaine.* | |
| 13. | Benzoic Acid derivatives; Cocaine, Hexylcaine, Meprylcaine, Cyclomethycaine, Piperocaine. | |

Teacher in-charge

HOD

Principal