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PHAR 422.01: Medicinal Chemistry II

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Reading
In Text

II. Antihypertensive Drugs

- A. Overview of the Biochemical and Physiological Factors Responsible for Hypertension
B. Chemistry and Biochemical Mechanisms of Agents

- 883-885 1. Alteration of the sympathetic nervous system
877-881 2. Alteration of the central nervous system
***METHYLDOPA CLONIDINE GUANABENZ GUANFACINE**
- GUANADREL***
- 885-889 3. Vasodilators *** HYDRALAZINE MINOXIDIL NITROPRUSSIDE ***
893, 810-813 4. Alteration of renin-angiotensin system
817-819 a. Angiotensin converting enzyme inhibitors (ACE inhibitors)
820-824 *** CAPTOPRIL ENALAPRIL LISINOPRIL FOSINOPRIL BENAZEPRIL ***
*** MOEXIPRIL PERINDOPRIL QUINAPRIL RAMIPRIL TRANDOLAPRIL ***
829-833 b. Angiotensin receptor antagonists
*** LOSARTAN CANDESARTAN IRBESARTAN VALSARTAN ***
*** TELMISARTAN EPROSARTAN ***
833-834 5. Prospectus - New agents in development

III. Anticoagulant, Thrombolytic, and Antiplatelet Agents

- 1519-1521 A. Biochemical Processes of the Blood Clotting Systems
1530-1531 B. Prothrombin time and clotting tests
C. Chemistry and Biochemical Effects of Agents
- 1521-1522 1. Calcium chelators *** EDTA CITRATE ***
2. Heparin and its derivatives
*** HEPARIN ARDEPARIN DANAPAROID DALTEPARIN ***
*** ENOXAPARIN TINZAPARIN FONDAPARINUX ***
a. Antagonist *** PROTAMINE SULFATE ***
- 1526-1528 3. Oral Anticoagulants
a. Natural product and model agent
*** BISHYDROXYCOUMARIN ***
b. Synthetic agents *** WARFARIN ***
- 1531-1533 4. Thrombolytic agents *** STREPTOKINASE t-PA UROKINASE ***
1534-1536 5. Antiplatelet/Antithrombotic agents
*** ASPIRIN TICLOPIDINE CLOPIDOGREL EPTIFIBATIDE ***
*** DIPYRIDAMOLE TIROFIBAN ABCIXIMAB ***
6. Inhibitors of fibrinolysis
*** AMINOCAPROIC ACID APROTININ TRANEXAMIC ACID ***

IV. Agents Useful for Treating Heart Failure

- A. Cardiac Glycosides
933-935 1. Cardiac ion channels and mechanism of action of Glycosides
916-918 2. Definitions, Sources, and Chemistry
*** DIGOXIN DIGITOXIN OUABAIN ***
- 927 B. Phosphodiesterase Inhibitors *** AMRINONE MILRINONE ***
928-929 C. Prospectus - New treatments for heart failure

V. Antianginal Agents

- 843-848 A. Organic Nitrates - Chemistry and Mechanisms
*** NITROGLYCERIN ISOSORBIDE DINITRATE ISOSORBIDE MONONITRATE ***
- 853-858 B. Calcium Channel Blockers - Mechanisms
1. *** VERAPAMIL DILTIAZEM MIBEFRADIL ***
2. Dihydropyridines: ***NIFEDIPINE NIMODIPINE NISOLDIPINE ***
*** AMLODIPINE NICARDIPINE FELODIPINE ISRADIPINE ***

Reading
In Text

VI. Diuretic Agents

- 757-763 A. Overview of the Biochemical Functioning of the Nephron
763-766 B. Chemistry and Mechanisms of Carbonic Anhydrase Inhibitors * **ACETAZOLAMIDE** *
767-768 C. Chemistry and Mechanisms of Osmotic Diuretics * **MANNITOL** *
769-772 D. Chemistry and Mechanisms of "Loop" or High-Ceiling Diuretics
* **FUROSEMIDE BUMETANIDE TORSEMIDE ETHACRYNIC ACID** *
773-776 E. SAR and Chemistry of Thiazides
***HYDROCHLOROTHIAZIDE CHLOROTHIAZIDE METHYCLOTHIAZIDE**
QUINETHAZONE*
777-781 F. Potassium-sparing diuretics * **SPIRONOLACTONE TRIAMTERENE AMILORIDE** *
784 G. Prospectus - New diuretics in development

VIII. Analgesic-Antipyretic-Anti-inflammatory and Antigout Agents

- 670-679 A. Chemistry, Biochemistry, and Overview of Eicosanoids
B. Nonsteroidal Anti-inflammatory Drugs (NSAIDs)
687-692 1. Mechanisms of action
692-694 2. Adverse effects
696-699 3. Salicylates * **ACETYLSALICYLIC ACID DIFLUNISAL** *
* **OLSALAZINE SULFASALAZINE** *
703-704 4. Para-aminophenols * **ACETAMINOPHEN** *
705-709 5. Acetic acid derivatives * **INDOMETHACIN SULINDAC** *
* **TOLMETIN KETOROLAC DICLOFENAC ETODOLAC** *
710-713 6. Propionic acid derivatives * **IBUPROFEN NAPROXEN** *
* **FENOPROFEN KETOPROFEN OXAPROZIN** *
713-714 7. * **PIROXICAM MELOXICAM NABUMETONE** *
714-715 8. Selective COX-2 Inhibitors * **CELECOXIB ROFECOXIB VALDECOXIB** *
740 C. Inhibitors of Leukotriene Biosynthesis and Receptor Antagonists
* **ZILEUTON ZAFIRLUKAST MONTELUKAST** *
716-717 D. Gold compounds * **AUROTHIOGLUCOSE AURANOFIN** *
* **GOLD SODIUM THIOMALATE** *
718 E. Disease Modifying Antirheumatoid Drugs (DMARDs)
METHOTREXATE LEFLUNOMIDE ETANERCEPT INFLIXIMAB
***SULFASALAZINE HYDROXYCHLORAQUINE PENICILLAMINE**
AZATHIOPRINE*
F. Antigout agents
719-720 1. Decreased granulocyte activity * **COLCHICINE** *
721-722 2. Inhibit uric acid synthesis * **ALLOPURINOL** *
722-724 3. Uricosuric Agents * **PROBENECID PHENYLBUTAZONE SULFINPYRAZONE** *
726-727 G. Prospectus - New anti-inflammatory treatments

IX. Opioid Analgesic Agents

- 569-574 A. Biochemistry of Endorphins, Enkephalins, and Their Receptors
578-579 B. Natural Product and Model Agent * **MORPHINE** *
587-590 C. SAR, Stereochemistry, and Chemical Properties
1. Chemical features of morphine
2. N-Substituents producing agonist, partial agonist, or antagonist effects
3. Synthetic agents
* **HEROIN HYDROMORPHONE CODEINE MEPERIDINE LEVORPHANOL** *
* **BUTORPHANOL METHADONE FENTANYL PENTAZOCINE ETORPHINE** *
* **NALOXONE NALTREXONE DEXTROMETHORPHAN** *

X. Methylxanthines

- 743-746 A. Chemistry and Biochemical Mechanisms