

CONTENTS

PART I.

INTRODUCTION.....	2
UNDERSTANDING STRUCTURAL DIAGRAMS OF ORGANIC MOLECULES.....	4
SOME COMMON MOLECULES	23
PROTEINS AND THREE-DIMENSIONAL PROTEIN STRUCTURE	26
SOME OF THE PROTEIN STRUCTURES THAT APPEAR IN THIS BOOK	32

PART II.

INFLAMMATORY, CARDIOVASCULAR AND METABOLIC DISEASES

ANTI-INFLAMMATORY AGENTS

Acetylsalicylic acid (Aspirin™).....	38
Naproxen (Aleve™).....	39
How Do Anti-Inflammatory Drugs Work?.....	40
Other Eicosanoids in Inflammation	41
An Overview of Inflammation	42
Celecoxib (Celebrex™).....	43
Prednisone (Deltasone™).....	44
Methotrexate (Trexall™).....	46
Allopurinol (Zyloprim™).....	47

ANTIASTHMATIC AND ANTIALLERGIC AGENTS

Salmeterol (Serevent™).....	50
Fluticasone Propionate (Flovent™).....	51
Montelukast Sodium (Singulair™).....	52
Tiotropium Bromide (Spiriva™).....	53
Loratadine (Claritin™).....	54

TYPE 2 DIABETES

An Overview of Metabolic Syndrome	56
---	----

ANTIDIABETIC AND CHOLESTEROL-LOWERING AGENTS

Metformin (Glucophage™).....	60
Glipizide (Glucotrol™).....	61

Pioglitazone (Actos™).....	62
Sitagliptin (Januvia™)	63
Atorvastatin (Lipitor™)	64
Ezetimibe (Zetia™)	65

CARDIOVASCULAR AGENTS

Atenolol (Tenormin™).....	68
Enalapril (Vasotec™)	69
Candesartan Cilexetil (Atacand™).....	70
Aliskiren (Tekturna™)	71
Amlodipine (Norvasc™).....	72
Nitroglycerin	73
Clopidogrel Bisulfate (Plavix™).....	74
Digoxin (Lanoxin™).....	75

RECEPTORS AND SIGNALING

Information Flow into the Cell by Chemical Signaling	78
--	----

REFERENCES FOR PART II.	80
--------------------------------------	-----------

PART III.

REPRODUCTIVE MEDICINE

Oral Contraceptives	90
Testosterone	91
Mifepristone (Mifeprex™).....	92
Oxytocin (Oxytocin™).....	93
Sildenafil (Viagra™)	94

OSTEOPOROSIS

Some Aspects of Osteoporosis.....	96
Alendronate (Fosamax™)	97
Calcitriol (Rocaltrol™)	98
Raloxifene (Evista™)	99
Teriparatide (Forteo™).....	100

GLAUCOMA AND ANTIULCER AGENTS

Latanoprost (Xalatan™)	102
Ranitidine (Zantac™)	103
Omeprazole (Prilosec™)	104
REFERENCES FOR PART III.	105

PART IV.

AUTOIMMUNE DISEASE AND ORGAN TRANSPLANT

A Brief Survey of the Immune System	112
---	-----

IMMUNOSUPPRESSIVE AGENTS

Azathioprine (Imuran™)	122
Mycophenolate Mofetil (CellCept™)	123
Cyclosporin (Neoral™)	124
Tacrolimus (Prograf™)	125
FTY720 (Fingolimod)	126

INFECTIOUS DISEASES

ANTIBIOTICS

Amoxicillin (Amoxil™)	130
Cefaclor (Ceclor™)	132
Doxycycline (Vibramycin™)	133
Azithromycin (Zithromax™)	134
Ciprofloxacin (Cipro™)	135
Trimethoprim (Triprim™)	136
Amikacin (Amikin™)	137
Vancomycin (Vancocin™)	138
Linezolid (Zyvox™)	139
Isoniazid (Laniazid™)	140
Ancillary Antibiotics	142
Drug Resistance	143

ANTIVIRAL AGENTS

On Viruses and Viral Diseases	146
Acyclovir (Zovirax™)	148
Ribavirin (Virazole™)	149
Oseltamivir (Tamiflu™)	150
Zidovudine (Retrovir, AZT™)	151
Zalcitabine (Hivid™)	152
Nevirapine (Viramune™)	153
Efavirenz (Sustiva™)	154
Lopinavir + Ritonavir (Kaletra™)	155
UK427857 (Maraviroc)	156

ANTIFUNGAL AGENTS

Amphotericin (Fungizone™)	160
Fluconazole (Diflucan™)	161
Caspofungin (Cancidas™)	162
Terbinafine (Lamisil™)	163

ANTIMALARIAL AND ANTIPARASITIC AGENTS

Parasitic Diseases: A Focus on Malaria	166
Chloroquine (Aralen™)	167
Artemether + Lumefantrine (CoArtem™)	168
Atovaquone + Proguanil (Malarone™)	169
Miltefosine (Impavido™)	170
Nitazoxanide (Alinia™)	171
Ivermectin (Stromectol™)	172

REFERENCES FOR PART IV	173
-------------------------------------	------------

PART V. MALIGNANT DISEASE

An Overview of Cancer	184
Capecitabine (Xeloda™)	187
Carboplatin (Paraplatin™)	188
Vinblastine (Velban™)	189

Paclitaxel (Taxol™).....	190
Cyclophosphamide (Cytoxan™).....	191
Tamoxifen (Nolvadex™).....	192
Irinotecan (Camptosar™).....	193
Bleomycin (Blenoxane™).....	194
Imatinib (Gleevec™).....	195
Sunitinib (Sutent™).....	196
Bortezomib (Velcade™).....	197
Ancillary Anticancer Agents.....	198
REFERENCES FOR PART V.....	200

PART VI.

DRUGS ACTING ON THE NERVOUS SYSTEM

PAIN AND ANALGESIA

Lidocaine (Xylocaine™).....	208
Morphine (Avinza™).....	209
Acetaminophen (Tylenol™).....	210
Fentanyl (Duragesic™).....	211
Sodium Thiopental (Sodium Pentothal™).....	212
Gabapentin (Neurontin™).....	213
Diazepam (Valium™).....	214
Sumatriptan (Imitrex™).....	215

HYPNOTICS (INSOMNIA) AND ANTISMOKING

Zolpidem (Ambien™).....	218
Ramelteon (Rozerem™).....	219
Varenicline (Chantix™).....	220

The Brain, Neurotransmission and Molecular Neurotransmitters.....	221
--	------------

NEURODEGENERATIVE AND PSYCHIATRIC DISEASES

Levodopa (Larodopa™).....	224
Donepezil (Aricept™).....	225

ANTIPILEPTIC AGENTS	226
ANTIANSIETY AGENTS	228
ANTIDEPRESSANTS	229
ANTIPSYCHOTICS	232
REFERENCES FOR PART VI.....	233
GLOSSARY	237
INDEX	249