Spring 1-2003

PHAR 328.01: Antimicrobial Agents

David S. Freeman

University of Montana - Missoula

Let us know how access to this document benefits you.

Follow this and additional works at: https://scholarworks.umt.edu/syllabi

Recommended Citation
https://scholarworks.umt.edu/syllabi/4290
EXAMS AND GRADING:
First Exam: Tuesday, MARCH 4  . . . . . 50 points
Second Exam: Thursday, APRIL 3  . . . . . 70 points
Third Exam: Thursday, MAY 1  . . . . . 80 points
Final Exam:  . . . . . 100 points
10 Point Quizzes: Best 5 or 6 out of 6 scores  . . . . 50 or 60 points
Total Points: 350, or 360
90-100% = A  80-89 % = B  70-79 % = C  65-69 % = D
* All EXAMS are comprehensive
* All exams and quizzes must be taken at scheduled times
* Instructor must be informed BEFORE missing a scheduled exam period
  and MUST be based on GOOD REASONS
* Missed exam periods must be made up within 2 days
* No make up quizzes

STUDENT PERFORMANCE OBJECTIVES:
1) Know the normal relevant biochemical pathways and the major biochemical mechanisms
   of action for the different classes of drugs
2) Know the biochemical mechanisms involved in the development of resistance to different
   classes of antimicrobial agents
3) Given a representative chemical structure or name of a drug, know its biochemical mechanisms
   of action and for development of resistance
4) Given a representative chemical structure or name of a drug, know its major chemical,
   pharmacologic, or therapeutic categorization
5) Given a representative chemical structure or name of a drug, know its major
   therapeutic uses and spectrum of activity
6) Given a representative chemical structure or name of a drug, know important aspects of its
   absorption, pharmacokinetics, and metabolism
7) Know important chemical features (i.e., polar or lipophilic properties, labile groups, etc.) that
   affect the absorption, distribution, metabolism, elimination, potency, stability, or formulation
   of a class of antimicrobial agents
8) Given the chemical structure of an antimicrobial agent, know important chemical changes
   that will predictably alter its properties (i.e., potency, duration of action, stability, etc.)
9) Given a representative chemical structure or name of a drug, know its most common or serious
   adverse or side effects

REQUIRED TEXT: Goodman & Gilman, "The Pharmacological Basis of Therapeutics", Tenth Edition

Reading
in Text

1143-1159  I. General Considerations, Categorization, and
Table 43-1  Sensitivity Testing of Antimicrobial Agents

The following areas will be covered for each outline topic below:
- General Chemical Structures and Properties of Agents
- Biochemical Mechanisms of Action for Agents
- Biochemical Mechanisms Involved in the Development of Microbial Resistance
- Important Aspects of Absorption, Distribution, Metabolism, and Elimination for Agents
- Antimicrobial Spectrum of Activity for Agents
- Important Adverse Effects and Drug Interactions for Agents
II. Antibacterial Agents

1171-1179  A. Sulfonamides and TRIMETHOPRIM
1179-1183  B. Quinolones, Fluoroquinolones
1184-1185  C. NITROFURANTOIN and METHENAMINE
1189-1205  D. Beta-lactam Antibiotics
          1. Penicillins
          2. Beta-lactamase inhibitors (CLAVULANCIC ACID, SULBACTAM, TAZOBACTAM)
          3. Cephalosporins
          4. Carbapenems (IMIPENEM), Carbacephems (LORACARBEF),
             Monobactams (AZTREONAM)
1261-1266  E. SPECTINOMYCIN, POLYMYXIN, VANCOMYCIN, TEICHOPLANIN, BACITRACIN
1219-1234  F. Aminoglycosides
1239-1246  G. Tetracyclines
1250-1256  H. Macrolides (ERYTHROMYCIN, AZITHROMYCIN, CLARITHROMYCIN)
1261-1266  I. CHLORAMPHENICOL
1256-1258  J. CLINDAMYCIN
1258-1259  K. Streptogramins (QUINUPRISTIN, DALFOPRISTIN)
1260-1261  L. Oxazolidinones (LINEZOLID)
1105-1108  M. METRONIDAZOLE

III. Anti-mycobacterial Agents

1273-1282  A. Drugs for Tuberculosis
          * ISONIAZID RIFAMPIN PYRAZINAMIDE ETHAMBUTOL *
1286-1288  B. Drugs for Mycobacterium Avium Complex

IV. Antifungal Agents

1295-1300  A. AMPHOTERICIN B and FLUCYTOSINE
1301-1305  B. Imidazole and Triazole Antifungal Agents (azoles)
          * KETOCONAZOLE ITRACONAZOLE FLUCONAZOLE VORICONAZOLE *
1305-1306  C. GRISEOFULVIN and TERBINAFINE and CASPOFUNGIN
1307-1310  D. Topical Antifungal Agents
          * CLOTRIMAZOLE MICONAZOLE TOLNAFTATE NAFTIFINE *
          * NYSTATIN UNDECYLENIC ACID *

V. Antiviral Agents

1313-1317  A. Overview of Viral DNA and RNA Biochemical Processes
1317-1319  B. Overview of Biochemical Mechanisms of Action and Resistance Development
1317-1328  C. Non-HIV Antiviral Agents
          * ACYCLOVIR VALACYCLOVIR CIDOFOVIR DOCOSANOL *
          * FAMCICLOVIR PENCICLOVIR FOSCARNET GANCICLOVIR *
          * VALGANCICLOVIR TRIFLURIDINE VIDARABINE *
1329-1332  D. Antinfluenza Agents * AMANTADINE RIMANTIDINE OSELTAMIVIR ZANAMIVIR *
1332-1340  E. Other Antiviral Agents

VI. HIV Antiviral Agents

1349-1353  A. Overview of HIV Infection
1353-1360  B. Nucleoside Reverse Transcripase Inhibitors * ZIDOVUDINE DIDANOSINE
          STAVUDINE ZALCITABINE LAMIVUDINE ABACAVIR TENOFOVIR *
1360-1363  C. Nonnucleoside Reverse Transcripase Inhibitors
          * NEVIRAPINE DELAVIRDINE EFAVIRENZ *
1364-1373  D. Protease Inhibitors
          * SAQUINAVIR INDINAVIR RITONAVIR NELFINAVIR AMPRENAVIR *
E. Drugs for Opportunistic Infections

* ATOVAQUONE  PENTAMIDINE *