

Principles of Cancer Therapy: CB7240
Schedule-Winter 2024

Monday, Wednesday: 9:30-10:30am

Location: Elliman first floor conference room (Room 1124)

Recommended reading: Chabner and Longo, Cancer Chemotherapy and Biotherapy, 5th Edition @ and literature readings

Course directors: Dr. Yubin Ge/Dr. Larry Matherly

1. January 8 (Mon): Drug development for cancer therapy: **Asfar Azmi**
2. January 10 (Wed): Pharmacology of anticancer drugs I: **Jing Li**
January 15 (Mon): HOLIDAY
3. January 17 (Wed): Pharmacology of anticancer drugs II: **Jing Li**
4. January 22 (Mon): Chemotherapy and the cell cycle: **George Brush**
5. January 24 (Wed): Antimetabolites I: **Larry Matherly**
6. January 29 (Mon): Antimetabolites II: **Larry Matherly**
7. January 31 (Wed): Antitumor antibiotics and alkylating agents I: **Steve Patrick**
8. February 5 (Mon): Antitumor antibiotics and alkylating agents II: **Steve Patrick**
9. February 7 (Wed): Antitumor antibiotics and alkylating agents III: **Steve Patrick**

February 9 (Fri): EXAM 1 (Lectures 1-9)

10. February 12 (Mon): Therapy of brain tumors: **Ana deCarvalho**
11. February 14 (Wed): Overview of Radiation therapy: **Mike Joiner**
12. February 19 (Mon): Apoptosis and Chemotherapy I: **Gen Sheng Wu**
13. February 21 (Wed): Apoptosis and Chemotherapy II: **Ge Sheng Wu**
14. February 26 (Mon): Immunotherapy of Cancer I: **HyeonJoo Cheon**
15. February 28 (Wed): Immunotherapy of Cancer II: **HyeonJoo Cheon**
16. March 4 (Mon): Engineered nanoparticles for advanced cancer therapy: **Navnath Gavande**
17. March 6 (Wed): Stem Cells and Cancer Therapy: **Guojun Wu**
March 11-17: SPRING BREAK
18. March 18 (Mon): Steroid and Hormone sensitive cancers: **Manohar Ratnam**
19. March 20 (Wed): Steroid and Hormone sensitive cancers: **Manohar Ratnam**

March 25 (Mon) EXAM 2 (Lectures 10-19)

20. March 27 (Wed): Signal transduction and cancer therapy I: **Arun Rishi**
21. April 1 (Mon): Signal transduction and cancer therapy II: **Arun Rishi**
22. April 3 (Wed): Tumor metabolism: **Jian Wang**
April 5-10 AACR annual meeting
23. April 15 (Mon): Targeting mitochondria for the treatment of cancer: **Siddhesh Aras**
24. April 17 (Wed): New strategies for AML therapy: **Yubin Ge**
25. April 22 (Mon): Tumor Imaging: **Sheryl Roberts**

April 24 (Wed) EXAM 3 (Lectures 20-25)

Learning outcomes:

CB7240 ("Principles of Cancer Therapy") is the key course on cancer therapy offered by the Cancer Biology Graduate Program. The purpose of this course is to introduce the graduate students to the biology of both solid tumors and leukemia, and the principles of conventional chemotherapy, targeted therapy, radiation therapy, and immunotherapy. The lectures cover mechanisms of drug action, pharmacokinetics and clinical implementation. Besides FDA-approved agents, this course will also acquaint students with promising new agents in the pipeline and their clinical development. At the end of the semester, the students are expected to have a good understanding of the following:

1. Biology of solid tumors and leukemia
2. General principles of cancer therapy
3. Mechanisms of action of anticancer drugs, including conventional chemotherapy drugs, molecularly targeted drugs, and immunotherapies
4. Pharmacokinetics and pharmacodynamics
5. Tumor metabolism and associated therapies
6. Basic concepts of targeting mitochondria for cancer therapy

Assessment/Grading Information:

Grades will be based on scores from written exams. There will be 3 written exams: Exam 1 (Lectures 1-9) which will be held on February 9 (Fri), 2024; Exam 2 (Lectures 10-19) which will be held on March 25 (Mon), 2024; and Exam 3 (Lectures 20-25) on April 24 (Wed), 2024.