

Overview of Cancer: Cancer Biology, Pathology and Anatomy

(Code : 4820 1st – 2nd year, 1 unit)
(Course ID: GS-c4820-L)

1. Instructors

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2. Classroom/Lab Lecture Location

The report assignments will be informed by e-mail.

3. Course Purpose and Outline

[Course Purpose]

- To understand the genetic abnormalities underlying cancer.
- To understand carcinogens, infections associated with canceration and hereditary cancers.
- To understand factors regulating differentiation associated with cancer and differentiation therapy.
- To understand the association between cancer and vasculature and angiogenesis inhibition therapy.
- To understand cell death/life span, cell proliferation/cycle and DNA damage repair, all of which are directly linked to cell fate, with a focus on the difference between normal cells and cancer cells.
- To understand established and new theory regarding cell transformation as well as cancer stem cells and relevant ES/iPS cells.
- To understand the lymphatic system as a metastasis pathway of cancer.
- To understand the position of the arteries used for intra-arterial infusion cancer therapy.
- To understand methods and processes for pathological diagnosis of cancer (benign and malignant/infiltrating and metastatic) in cancer treatment medical practice.
- To understand the importance of judging malignancy grade with relevance to treatment methods.
- To understand diagnosis and treatment of early cancer in comparison with advanced cancer.
- To understand change in cancer lesions after treatment.

[Outline]

This course is designed to comprehensively teach basic medical science underlying recent progress in treatment options for cancer treatment medical practice (e.g., high precision radiotherapy, minimal invasive surgery, molecular target therapy and immune checkpoint inhibitors).

4. Course Objectives

To understand the behavior and true condition of cancer at the molecular level and from a morphological viewpoint with relevance to diagnosis and treatment.

5. Format

A bidirectional class will be conducted, as well as presentations, lectures and video content to promote active participation by students taking this course. All programs are conducted in an omnibus format.

6. Course Details

No.	Topics
1	Clinical anatomy of chest, abdomen and pelvic cancer
2	Degrees of atypism and malignancy of cancer
3	Role of pathological diagnosis in cancer chemotherapy
4	Early cancer and advanced cancer
5	Sites of occurrence and diversity of cancer
6	Biochemical characteristics of cancer cells
7	Cancer and cell cycle
8	Hereditary cancer
9	Characteristics of cancer cells
10	Oncogenes and tumor suppressor genes

The assessment will be by the report assignments.

7. Prerequisite Reading

None.

8. Reference Materials

To be indicated in the lecture if necessary.

9. Language Used

All classes are conducted in English.

10. Office Hours

Mon – Fri: 9:00 AM – 17:00 PM

Contact: MIYAKE Satoshi, Department of Clinical Oncology

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Please contact the instructor regarding questions or consultations.

11. Note(s) to Students

It is expected that anyone who is interested in the field of oncology will participate actively.