

## 2026 Akita University Faculty of Medicine Syllabus

<b>Category</b>	: 基礎医学アドバンスコース
<b>Course Title</b>	: Cell biology
<b>Eligible Students</b>	: grade 2 Elective Course
<b>Code</b>	: 71564001
<b>Schedule</b>	: week 31
<b>Credits</b>	: 1

### 1. Lead Instructor

Yasukazu Hozumi (Professor, Department of Cell Biology and Morphology, 6056)

### 2. Instructors

Yasukazu Hozumi (Professor, Department of Cell Biology and Morphology, 6056)

Tomonori Ayukawa (Lecturer, Department of Cell Biology and Morphology, 6237)

Kiwamu Yoshikawa (Assistant Professor, Department of Cell Biology and Morphology, 6058)

Yoji Yonemura (Assistant Professor, Department of Cell Biology and Morphology, 6058)

Masakazu Yamazaki (Part-time Lecturer, Akita University Graduate School of Engineering Science)

### 3. Course Description Outline(Course Objectives)

授業のねらい及び概要

最新の研究について、細胞の形態と機能および組織構築を司る機構を分子レベルで学ぶ。

Course Description Outline

You will learn the mechanisms governing morphology and functions of the cell and tissue construction at the molecular level.

学修目標

・各種顕微鏡を駆使した研究方法を理解し、脂質性二次伝達物質代謝酵素の神経細胞内局在に関する最新の研究について学ぶ。(3-1~3-2)

・細胞極性を司る機構を分子レベルで理解する。(3-1~3-2)

・細胞外マトリックスの構造と機能を分子レベルで理解する。(3-1~3-2)

・組織構築を司る機構を分子レベルで理解する。(3-1 3-2)

・研究医について理解する。(1-1~1-2,6-1~6-2)

・研究の進め方について理解を深める。(5-1~5-4,6-1~6-2)

・他者との議論などを通じて協調性を養う。(2-1~2-6)

・授業中に得た研究のトピックや臨床的知識に興味を抱いて自己学習し、学んだ成果を取り入れることができる。(5-1~5-4,6-1~6-2)

Course Objectives

・ You can understand the methods for research using various microscopes and learn the latest research about the localization of the lipid secondary transmitter metabolizing enzymes in neurons. (3-1~3-2)

・ You can understand the mechanisms governing the cell polarity at the molecular level. (3-1~3-2)

・ You can understand the structure and functions of the extracellular matrix at the molecular level. (3-1~3-2)

・ You can understand the mechanism that governs tissue construction at the molecular level. (3-1~3-2)

・ You can understand physician-scientists. (1-1~1-2,6-1~6-2)

・ You will understand how to proceed your research. (5-1~5-4,6-1~6-2)

・ Your cooperativeness will be cultivated through discussions with others. (2-1~2-6)

・ You can self-study by being interested in research topics and clinical knowledge acquired during classes and incorporate what you learn. (5-1~5-4,6-1~6-2)

### 4. Textbook/Reference Books

細胞の分子生物学第7版 (Alberts ら) Newton Press

## 5. Assessment

出席状況、提出レポート等により行う。

You will be evaluated according to attendance, submitted reports, etc.

## 6. Out of Class Study/Message

最新の基礎医学研究の重要性と研究医についての理解を深めて欲しい。

本授業は研究についての講義を行うので、授業の予習として1年次および2年次の授業内容を確認しておくこと。

授業で講義した内容についてレポートを課すので、配布資料を中心に復習しておくこと。

We want you to deepen your understanding of the importance of the latest basic medical research and physician-scientists.

Since the lecture about the research will be held in this class, please check the contents of the 1st and 2nd year classes as a preparation for the class.

We will request you to submit reports about the content of the lectures in the class, so please review the handouts mainly.

Number of students to be accepted: About 20

Topics and Contents of class, Course Objectives						
	Class Date	Period	Class Format	Topics and Contents of class, Course Objectives	Instructors	Class Room
1	11 / 30 (Mon)	1-10	Lecture	Theme: 形態学的研究手法/研究医について Methods for morphological research/Physician-scientists 各種顕微鏡を駆使した研究方法を理解し、脂質性二次伝達物質代謝酵素の神経細胞内局在に関する最新の研究について学ぶ。 研究医について理解する。 You can understand the methods for research using various microscopes and learn the latest research about the localization of the lipid secondary transmitter metabolizing enzymes in neurons. You can understand physician-scientists.	Yasukazu Hozumi	基礎棟第2講義室
2	12 / 1 (Tue)	1-10	Lecture	Theme: 細胞極性 Cell polarity 細胞極性を司る機構を分子レベルで理解する。 You can understand the mechanisms governing the cell polarity at the molecular level.	Masakazu Yamazaki	基礎棟第2講義室
3	12 / 2 (Wed)	1-10	Lecture	Theme: 研究の進め方 research methodology 研究の進め方について学ぶ。 You will learn how to proceed with research.	Yoji Yonemura	基礎棟第2講義室
4	12 / 3 (Thu)	1-10	Lecture	Theme: 組織構築 Tissue construction 組織構築を司る機構を分子レベルで理解する。 You can understand the mechanism that governs tissue construction at the molecular level.	Tomonori Ayukawa	基礎棟第2講義室
5	12 / 4 (Fri)	1-10	Lecture	Theme: 細胞外マトリックス Extracellular matrix 細胞外マトリックスの構造と機能を分子レベルで理解する。 You can understand the structure and functions of the extracellular matrix at the molecular level.	Kiwamu Yoshikawa	基礎棟第2講義室