

Category (科目区分)	Cluster of Organ Development and Regenerative Systems		
Course Title (授業科目名)	Hematopoiesis regeneration / practice		
Instructors (担当者名)	Naoto Takahashi	Academic Year (配当年次)	1,2
Required Course / Elective Course (必修/選択)	Elective Course	Credits (単位数)	1
Class Format (授業形態)	Lecture		
Schedule (開講期間)	Students will be notified by email after completing course registration.		
Class Date/Period (開講曜日・時間)	Every Monday from 18:00 to 21:30 (please contact us for details of the schedule)		
Course Outline/ Course Objectives (授業の概要・到達目標)			
Purpose of class: The purpose of the class is to understand the development and regeneration of normal cells under the theme of hematopoietic stem cells and hematopoietic stem cell transplantation. Achievement goal of class: The goal is to understand and explain hematopoietic stem cells and hematopoietic stem cell transplantation.			
Class outline: 1.2. Understand what hematopoietic stem cells are, their biological characteristics and regenerative ability while looking back on the history of biological medicine in past studies. 3.4. Hematopoietic stem cell transplantation includes bone marrow, peripheral blood, and cord blood depending on the type of cell used, and bone marrow-destructive transplantation and non-destructive transplantation depending on the type of pre-transplantation treatment used. Each principle and application will be explained. 5.6.7. Collection and infusion of transplanted cells as a practice of hematopoietic stem cell transplantation therapy. We will explain pretreatment before infusion and supportive care after transplantation. 8.9.10. In addition to the in vitro colonization method, there are in vivo and surface antigen-based methods for quantifying hematopoietic stem cells. Stem cells also include hematopoietic progenitor cells whose differentiation is determined in a certain direction. Each culture method and quantification method will be explained.			
Course Planning (授業計画)			
	Course Outline/ Course Objectives (授業の概要及び到達目標) (Contents of Class) (授業内容)	Instructor (担当教員名)	Department (講座名) Class Room [実施場所]
1	Hematopoietic stem cells (Looking back on the history of research up to the discovery of hematopoietic stem cells)	Naoto Takahashi	Department of Hematology, Nephrology, and Rheumatology [Conference Room] or [laboratory]
2	Hematopoietic stem cell transplantation (understanding the theory of hematopoietic stem cell transplantation)	Naoto Takahashi	
3	Quantification of hematopoietic stem cells 1 (flow cytometry)	Miho Nara	
4	Quantification of hematopoietic stem cells 2 (flow cytometry)/ practice	Miho Nara	
5	Culture of hematopoietic stem cells 1 (colony forming)	Yoshihiro Kameoka	
6	Culture of hematopoietic stem cells 2 (colony forming)/ practice	Yoshihiro Kameoka	
7	Culture of hematopoietic stem cells 1 (liquid culture method)	Sho Ikeda	
8	Culture of hematopoietic stem cells 2 (liquid culture method)/ practice	Sho Ikeda	
9	Hematopoietic stem cell research summary 1	Akihiro Kitadate	
10	Hematopoietic stem cell research summary 2	Akihiro Kitadate	

Grading Criteria (成績評価の基準と方法)

30 hours of lectures + 15 hours of practical training, 45 hours in total, will be one credit, and the evaluation will be made in consideration of the attendance status, the results of oral examinations or written examinations, and the contents of the submitted report.

Contact Information (問い合わせ先(氏名, メールアドレス等))

Name: Naoto Takahashi / E-mail: naotot@doc.med.akita-u.ac.jp

Comment (その他特記事項)

Information about courses: If you cannot attend the training due to work, such as a graduate student who is a member of society, we will adjust the schedule.

Textbooks / References: Distribute materials as needed. Alternatively, specify the document.

Self-study content during self-study time: It is desirable to carry out preparatory learning according to the goals to be achieved and the content of the lesson.