

SISR 602 (4829) Stem cell for surgical patient

(Code: 4829, 1st~2nd year, 1 units)

(Course ID: GS-c4829-L)

1. Instructors

Name	Position	Department	Contact
Nuttawut Sermsathanasawadi	Chief Instructor / Associate Professor Dr.	Division of Vascular Surgery, Department of Surgery	Nuttawut.ser@mahidol.ac.th
Methichit Wattanapanitch	Assistant Professor	Division of Research Faculty of Medicine	Methichit.wat@mahidol.ac.th
Visnu Lohsiriwat	Associate Professor	Division of Head-Neck and Breast Surgery, Department of Surgery	Visnu.loh@mahidol.ac.th
Patimaporn Wongprompitak	Lecturer Dr.	Division of Research Faculty of Medicine	Patimaporn.won@mahidol.ac.th

2. Classroom/Lab Lecture

- Lecture Online by Zoom

- Division of Vascular Surgery, Syamindra Building 12th floor,

Department of Surgery, Faculty of Medicine Siriraj hospital, Mahidol University

- MU-TMDU office, 727 Room, SiMR Building 7th Floor.

### **3. Course Purpose and Outline**

The purpose of this course is to encourage students to comprehensively understand stem cells for treatment of surgical patients. Students will improve their abilities to independently study stem cell application through education and training about origins, properties, and regulations of stem cells that function in tissue development, maintenance and regeneration. The course will especially focus on endothelial progenitor cells in view of neovascularization for therapeutic angiogenesis in no-option critical limb ischemia.

### **4. Course objectives**

The objectives of this course are as follows: To help students absorb knowledge and research strategies that are necessary to understand stem cell development, maintenance, and fate determinations, particularly in endothelial progenitor cells. To make students learn molecular biological, cell biological and histological methods for conducting research projects. To develop students' skills to recognize problems by themselves, construct working hypotheses, design and perform experiments to solve the research question, properly discuss experimental results. and, report the summary of research in English.

### **5. Format**

Programs are set up for a small number of students (not more than 3 students) for more intense discussion and in-depth participation.

## 6. Course Description and Timetable

Date	Time	Topic/Details	Instructors
Tue 2May23	13.00-16.00	Lecture Stem Cell for Vascular Surgery	<ul style="list-style-type: none"> <li>• Assoc. Prof. Dr.Nuttawut Sermsathanasawadi</li> <li>• Dr. Nuttapol Chruewkamlow</li> </ul>
Mon 22May23	14.00-16.00	Clinical Application of ADSCs in Breast Reconstructive Surgery	Lecturer Visnu Lohsiriwat
Tue 16May23	13.00-16.00	Mesenchymal stem cell from the route of OB-GYN	Dr. Tatsanee Phermthai
Tue 23May23	13.00-16.00	Induced pluripotent stem cells: Applications in Biomedical Research	Assist. Prof. Methichit Wattanapanitch
Tue 30May23	13.00-16.00	Limbal stem cell niche	Lecturer Dr. Patimaporn Wongprompitak
		Examination	Assoc.Prof.Dr.Nuttawut Sermsathanasawadi

**Lecture and conference:**

**Goals/outline:**

This course will introduce to students the recent topics in the research field of stem cell for critical limb ischemia.

Research Meeting 15:00 ~ 16:30 on every Friday

**Practice :**

In this course, students will learn the molecular basis of the stem cells (endothelial progenitor cell). Students will receive exposure to cutting edge concepts and research technologies, and study regulatory mechanisms in endothelial progenitor cell. With emphasis also on physiological and clinical application of stem cells, the course aims to improve student's understanding of stem cells.

Available programs: Progress report 9.00-10.00 on every Tuesday

**Lab :**

Each student will conduct independent research, under supervision of instructors, on endothelial progenitor cells.

Students are advised to design experiments regarding endothelial progenitor cells.

Through execution of such experiments, students shall understand general property of endothelial progenitor cells in both/either physiological and/or clinical application (translational Research).

Available programs: Participation to the research groups by consultation

**7. Assessment**

Grading will be undertaken based on lecture/practice/lab participation, performance, presentation, reports, and lab work execution.

**8. Prerequisite Reading**

None.

**9. Reference Materials**

None.

**10. Language used**

All classes are conducted in English.

**11. Office Hours**

Mon – Fri: 9:00 AM – 17:00 PM

Contact : Associate Professor Dr.Nuttawut Sermsathanasawadi,

Division of Vascular Surgery, Department of Surgery

Email: Nuttawut.ser@mahidol.ac.th    Tel +662-4198021

Please contact the instructor regarding questions or consultations.

**12. Note(s) to Students**

None.