

* D5 Medical & Life Science Seminar (Elective 2 credits)

Academic Year 2017 D5 “International Biomedical Research Seminars” *

Title: **Stem Cells and Their Niche**

Speaker: **Toshio SUDA, M.D., Ph.D.**

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Date: **December 14, 2017 (Thursday)**

Time: 17:30 –

Venue: IRCMS 1F Meeting Lounge



Abstract

Stem cell behavior such as dormancy/activation and mobilization/homing is determined by cell-intrinsic programs and the external microenvironment (niche). The understanding of stem cell nature is critical in regeneration medicine and cancer biology. However, since the knowledge of the stem cell niche is still fragmentary and often discussed separately in each tissue, here, we conjunct our data and methodologies to understand the interaction of stem cells with their niche cells. We believe that cancer stem cells (CSCs) mimic normal stem cells. Thus by comparing niche function for normal and malignant stem cells, we will gain insights into CSCs and their niche, which is epigenetically altered.

In this lecture, the following topics will be discussed; i) identification of stem cells and their niche cells; ii) clarification how the niche regulates stem cell dormancy and proliferation through adhesion molecules, cytokines and metabolic exchange between stem cells and niche cells; and iii) the mechanism of the stem cell mobilization/homing to the niche.

Key Words

Hematopoietic stem cells, Cancer stem cells, Dormancy, Microenvironment(Niche), Cell metabolism

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