

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

Academic Year 2017 D5 “International Biomedical Research Seminars” *

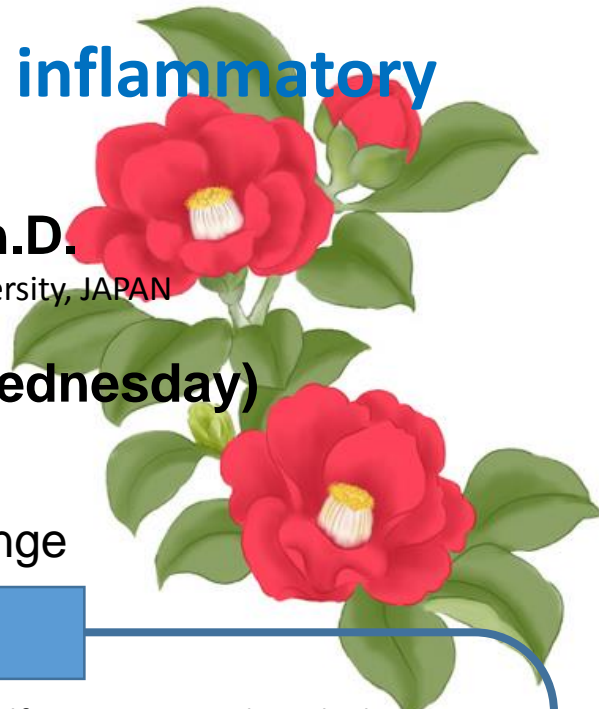
Title: **Stem cells under inflammatory stress**

Speaker: **Hitoshi Takizawa, Ph.D.**
Professor, IRCMS, Kumamoto University, JAPAN

Date: **January 24, 2018 (Wednesday)**

Time: 17:30 –

Venue: IRCMS 1F Meeting Lounge



Abstract

Life-long hematopoiesis is sustained by self-renewing and multi-lineage differentiating hematopoietic stem cells (HSCs). HSCs divide relatively slowly and are kept dormant mostly in the bone marrow microenvironment (niche), and its behavior is tightly regulated by both cell-intrinsic program and niche-derived cell extrinsic factors. However, upon hematopoietic challenge, such as infection, inflammation, aging, HSCs can be activated to proliferate and differentiate to integrate hematopoietic needs to hematopoiesis. Recent findings have advanced our understanding of the mechanism by which mature blood cells sense signals in peripheral tissues and feedback them to early hematopoietic cells in bone marrow for them to keep hematopoietic homeostasis, and how the sensing mechanism change over time and result in hematopoietic alteration that might lead to hematopoietic dysregulation such as aplasia or neoplasia.

In this lecture, I will cover the following topics by introducing new knowledge and methodologies:

- a.) Introduction about blood- and bone-forming cells
- b.) Role of inflammation on hematopoiesis
- c.) Impact of inflammation on early hematopoiesis and niche
- d.) Potential role of inflammatory stress on hematopoietic aging and beyond

◆ Essay / To IRCMS: ircms@jimu.kumamoto-u.ac.jp

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