

Stem cell Biology

1. Staffs and Students (April 2010)

Professor	Emi NISHIMURA	
Assistant Professor	Takahiro AOTO	
Research Associate	Hiroyuki MATSUMURA,	Tomohiro NISHIDA
Secretary	Iku WATANABE	
Technical Staff	Koki ONISHI	
Graduate Student	Makiko UENO	
Research Student	Nguyen Thanh BINH,	Natsuko OKAMOTO

2. Purpose of Education

Stem cell systems play fundamental roles in tissue turnover and homeostasis. Our goal is to understand the mechanisms of tissue homeostasis driven by stem cell systems and to apply the knowledge to better understand the mechanisms underlying the tissue decline, cancer development and other diseases associated with ageing. We further aim to apply those knowledges gained to regenerative medicine, treatment of cancer and other age-associated diseases.

3. Research Subjects

- 1) Identification of stem cells in the skin.
- 2) Mechanisms of stem cell maintenance
- 3) Mechanisms for MSC ageing and quality control of stem cell pools.
- 4) Mechanisms of tissue ageing
- 5) Mechanisms of cancer development in stem cell systems.

4. Publications

Original articles

1. Tanimura S, Tadokoro Y, Inomata K, Binh NT, Nishie W, Yamazaki S, Nakauchi H, Tanaka Y, McMillan JR, Sawamura D, Yancey K, Shimizu H, Nishimura EK. Hair follicle stem cells provide a functional niche for melanocyte stem cells. *Cell Stem Cell*, 8, 177-187, 2011
2. Nishimura EK., Suzuki M, Igras V, Du J, Lonning S, Miyachi Y, Roes J, Beerman F, Fisher DE. Key Roles for Transforming Growth Factor β in Melanocyte Stem Cell Maintenance *Cell Stem Cell*, 6(2):130-140, 2010