

## Biochemistry

### 1. Staffs and student (April, 2009)

Professor	Masaki Yanagishita
Associate Professor	Miki Yokoyama
Junior Associate Professor	Yasuhiro Kumei
Assistant Professor	Katarzyna Anna Podyma-Inoue
Research Assistant Professor, Global Center of Excellence Program	Hiroyuki Nakamura
Technical staff	Kazue Terasawa
Graduate student	Hiroko Yamanokuchi

### 2. Purpose of education

Extracellular matrix is a critical constituent of multicellular organisms by functioning as scaffold for body structures and providing internal environment for cell activities. Our section focuses on the research and education on molecular composition, biological functions and pathological processes involving extracellular matrices.

### 3. Research subjects

- Studies on the biological functions of heparan sulfate proteoglycans
- Roles of sphingolipid metabolism on cell death progression
- Localization of transmembrane proteins on the plasma membrane
- Sensing and response mechanisms of cells toward gravity

### 4. No clinical services

### 5. Publications

#### [Original article]

- Masaki Yanagishita, Katarzyna Anna Podyma-Inoue and Miki Yokoyama. Extraction and separation of proteoglycans. *Glycoconj. J.* (2009) 26:953-959
- Troeberg L, Fushimi F, Scilabra SD, Nakamura H, Dive V, Thøgersen IB, Enghild JJ, Nagase H, The C-terminal domains of ADAMTS-4 and ADAMTS-5 promote association with N-TIMP-3. *Matrix Biol.* (2009) 28:463-469

### 6. Presentation at meetings

- Ebe, N., Yokoyama, M., Iwasaki, K., Yanagishita, M. and Izumi, Y., High-mobility group box 1 release from human gingival epithelial cells during apoptosis, *Europerio* 6, July 4, 2009, Stockholm, Sweden
- Katarzyna A. Podyma Inoue, Miki Yokoyama and Masaki Yanagishita, Heparan sulfate proteoglycans on the plasma membrane; association with detergent-resistant membranes, 6<sup>th</sup> International Conference on proteoglycans, September 13-17, Aix-les-Bains, France
- Katarzyna A. Podyma Inoue, Miki Yokoyama and Masaki Yanagishita, Remodeling of extracellular matrix and low gravity, Meeting of the Japanese Society for Biological Sciences in Space, JSBSS23, October 2-4, 2009, Tsukuba
- T. Ishida, J.L. Zeredo, T. Yabushita, S. Seki, Y. Fusejima, G. Fukushima, K. Toda, Y. Kumei: Nociceptive behaviors in rats at low gravity conditions. *Congress of Pain*. September 10, 2009, Lisbon, Spain
- Y. Kumei: Life Sciences Research in Partial Gravity: The 23<sup>rd</sup> annual meeting of JSBSS at a symposium "Low gravity physiology and space exploration," October 3, 2009, Tsukuba
- Y. Kumei, J.L. Zeredo, T. Yabushita, T. Ishida, S. Seki, T. Ikeda, K. Toda, M. Matsuura, Y. Nomura, K. Iwasaki, F. Kawano, Y. Ohira, M. Okuno, D. Kageyama, and M. Yamashita Japanese Research Group for Animal and Human Physiology in Lunar and Martian Gravity. The 25<sup>th</sup> annual meeting of American Society for Gravitational and Space Biology. November 7, 2009, Raleigh, NC, U.S.A.
- Zeredo, JL, Yabushita, T., Ishida, T., Toda, K. and Kumei, Y. Rat defensive behaviors triggered by graded levels of partial gravity. *Ethology* 2009, November 27, 2009, Tsukuba