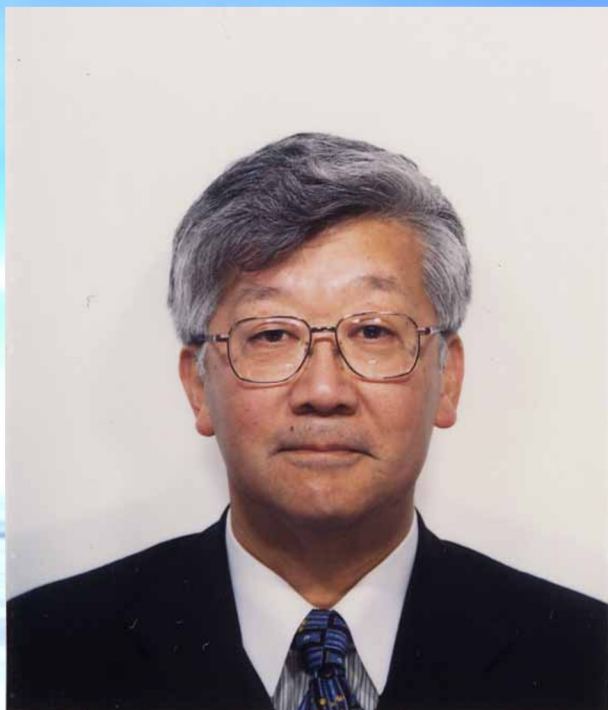


清华大学医学院客座教授赤池敏宏受聘仪式暨学术报告会

Topic: Regulation of Stem Cell Function by Model Proteins of Cell-Cell Interaction and Growth Factor Signaling: A New Frontier of Nanobiomaterials



Speaker:

Prof. Toshihiro AKAIKE

Department of Biomolecular Engineering
Graduate School of Bioscience and Biotechnology
Tokyo Institute of Technology, Japan

ABSTRACT

Embryonic stem (ES) or induced pluripotent (iPS) cells, because of their unique properties of self-renewal and pluripotency, are highly attractive in regenerative medicine, tissue engineering and drug screening. Implementation of research and technologies based on these cells requires a readily available source of stem cells and thereby, poses a challenge in their cultivation. Current methods of propagating these cells on gelatin-coated plates or feeder layers are inexpensive and in general, useful. However, aggregated colony formation under these conventional conditions may generate a heterogeneous environment within and between surrounding cells of the colony, which give heavy stress to ES cells, inhibit efficient proliferation and the distribution of soluble factors. Moreover, the systemic investigation of the regulation of self-renewal and differentiation to lineage specific cells for transplantation depends on the use of defined and homogeneous culture conditions. Both goals are achievable by the development of biomaterial design, e.g., fusion protein of E-cadherin and growth factors as an extracellular matrix, for mouse ES (mES) cell culture. This targeted application will benefit from expansion of ES/iPS cells, as well as the production of a specific differentiated cell type either by controlling the differentiation in a very specific pathway or by elimination of undesirable cell types.

CAREER HISTORY

- 1975 Ph.D., the University of Tokyo
- 1975-1981 Research Associate, Tokyo Women's Medical College
- 1980-1990 Associate Professor, Tokyo University of Agr. and Tech.
- 1990-Present Professor, Tokyo Institute of Technology
- 1989-1996 Visiting Professor, University of Paris XIII (France)
- 2000-2003 Professor, Shinshu University Graduate School of Medicine

Time: 15:30-16:15, September 10, 2009

Venue: Room B321, School of Medicine

Host: School of Medicine, Tsinghua University

All are welcome!