

Date: July 26<sup>th</sup> (Fri), 2013

Venue: Lecture Hall



# The 5<sup>th</sup> Leading Seminar

## Development of basic tools for glycoscience and their application to cancer diagnosis

-A 10-year strategy of the Research Center for Medical Glycoscience of AIST -

**Lecturer: Dr. Hisashi Narimatsu**

Director of Research Center for Medical Glycoscience, National Institute of Advanced Industrial Science and Technology (AIST), Japan

Professor, the Graduate School of Comprehensive Human Sciences, Tsukuba University, Japan

### Abstract

We proposed a 10-year strategy for the development of a new scientific field, glycoscience. Initially, we developed basic technological tools to help scientists and engineers entering this field. As the first project, we exhaustively discovered glycogenes and carried out their functional analyses. The fruits of this work led to several follow-on projects: (1) technology for enzyme synthesis of glycans, (2) technology for structural analysis of glycans, and (3) analysis of biological functions of glycans. The basic tools, developed in the first 5 years of our 10-year strategy, were applied to the development of more useful products, e.g., disease biomarkers, particularly for cancer diagnosis. We are also close to achieving the practical use of a liver fibrosis marker and a cholangiocarcinoma marker for diagnosis. Moreover, we are pursuing development of biomarkers for diagnosis of other cancers. The successful research results for these 10 years have now been transferred to the world, in particular, Asian countries, and yielded collaborative research contracts with domestic and overseas research groups.

Keywords: Glycan, N-glycan, O-glycan, glycosyltransferase, glycogene, lectin, lectin array, mass-spectrometry, IGOT, biomarker, liver fibrosis, liver cancer, cholangiocarcinoma

### 【Schedule】


**15:00-17:00 Lecture at Lecture Hall**

**17:10- Discussion at Meeting Room**

Organizer : Lab. of Microbiology, D2, Takahiro Hiono

## *Time Schedule*

15:00-17:00 Lecture

17:00-17:10 Take photos! 

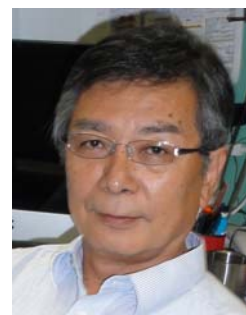
17:10- Discussion Time

*Memo*

## Dr. Hisashi Narimatsu

**Director** of Research Center for Medical Glycoscience, National Institute of Advanced Industrial Science and Technology (AIST), Japan

**Professor**, the Graduate School of Comprehensive Human Sciences, Tsukuba University, Japan



### EDUCATION/TRAINING

1974, M.D., Keio University School of Medicine, Japan

1979, Ph.D., Keio University Graduate School of Medicine, Japan

1983-1986, Postdoctoral fellow, National Institutes of Health, National Cancer Institute, Bethesda, USA

### POSITIONS and HONORS

4/1979-3/1983 **Instructor**, Department of Microbiology, Keio University School of Medicine, Japan

4/1983-4/1985 **Postdoctoral Fellow**, Laboratory of Immunology, National Institute of Allergy and Infectious Disease (NIAID), National Institutes of Health (NIH), Bethesda, Maryland, USA

5/1985-3/1986 **Postdoctoral Fellow**, Laboratory of Pathophysiology, National Cancer Institute (NCI), NIH, Bethesda, Maryland, USA. with Dr. Pradman Qasba.

4/1986-9/1986 **Instructor**, Department of Microbiology, Keio University School of Medicine, Japan

10/1986-3/1991 **Associate Professor**, Instructor, Department of Microbiology, Keio University School of Medicine, Japan

4/1991-9/2000 **Professor**, Division of Cell Biology, Institute of Life Science, Soka University, Japan

10/2000-5/2002 **Principal Research Scientist**, Group Leader of Gene Function Analysis, Institute of Molecular and Cell Biology, National Institute of Advanced Industrial Science and Technology (AIST), Japan

6/2002-12/2006 **Deputy Director** of Research Center for Glycoscience, National Institute of Advanced Industrial Science and Technology (AIST), Japan

6/2002 to present **Professor**, the Graduate School of Comprehensive Human Sciences, Tsukuba University, Japan

12/2006 to present **Director** of Research Center for Medical Glycoscience, National Institute of Advanced Industrial Science and Technology (AIST), Japan

4/2011 to present **Visiting Professor**, Keio University School of Medicine

7/2011 to present **Advisory Professor**, Shanghai Jiao Tong University

Coordinated member, Science council of Japan (2006.8.20~2011.9.30)

### AWARDS and HONORS

2007 April "Nikkei BP Technological Awards" Nikkei Business Publications, Inc.

2010 May "Chemistry-Bio Tsukuba Awards" Tsukuba Foundation for Chemical and Biotechnology.

2011 July "Tsukuba Awards" The Science and Technology Promotion Foundation of Ibaraki.

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