Project No.:17005
Core Institution in Japan:Osaka University

JSPS Core-to-Core Program -Strategic Research Networks-
FY2008 Research Report

Project No.	17005
Research Theme	Human disease-related functional glycomics initiative
Duration of Project	2007/4/1 - 2010/3/31
Core Institution in Japan	Osaka University

Implementing Organizations

Country	Japan
Core Institution	Osaka University
Co-Chair (name and title)	Naoyuki Taniguchi (Endowed Chair Professor, Professor Emeritus)
Number of Cooperating Institutions	27
Cooperating Institutions	The University of Tokyo, Nagoya University, Kochi University, Yamaguchi University, Sapporo Medical University, Tokai University, Kinki University, RIKEN, Aichi Cancer Center Research Institute, National Institute of Advanced Industrial Science and Technology, Tokyo Metropolitan Institute of Gerontology, Osaka Medical Center and Research Institute for Maternal and Child Health, Ritsumeikan University, Fukushima Medical University, Tohoku Pharmaceutical University, Soka University, Kyoto University, Hyogo College of Medicine, Hyogo University of Health Sciences,Osaka Medical College, Kagoshima University, Saga University, Aichi Gakuin University,Kyoto Sangyo University,Miyagi Cancer Center Research Institute, National Cancer Center Research Institute, Tokyo Institute Technology

Country	USA
Core Institution	The Scripps Research Institute
Co-Chair (name and title)	James Paulson (Professor)
Number of Cooperating Institutions	14
Cooperating Institutions	The Burnham Institute, University of Washington, The State University of New York at Stony Brook, Johns Hopkins University, University of California, Indiana University, University of Georgia, Albert Einstein College of Medicine, University of Iowa, Yale University, National Institutes of Health, University of Hampshire, Boston University School of Medicine, University of Alabama at Birmingham
Matching Fund	NIH/NIGMS The Consortium for Functional Glycomics

Country	Germany
Core Institution	German Cancer Research Center
Co-Chair (name and title)	Wilhelm von der Lieth (Professor) ＊Since Prof. von der Lieth passed away, Dr. Frank Martin took over this position unutil September/2009
Number of Cooperating Institutions	8
Cooperating Institutions	Hannover Medical University, University of Muenster, Freie University Berlin, University of Kiel, University Goettingen, University Stuttgart, University of Giessen, Max Plank Institute (Dresden)
Matching Fund	European Commission (EUROCarbDM)

Result of Program Implementation

The Human Proteome Organization (HUPO), established 7 years ago, is an international consortium of national proteomics research associations, government researchers, academic institutions, and industrial partners. HUPO promotes the development and awareness of proteomics research, advocates on behalf of proteomics researchers throughout the world, and facilitates scientific collaborations between HUPO members and Initiatives. The Human Disease Glycomics/Proteome Initiative (HGPI; Naoyuki Taniguchi, Chair) supported by JSPS core to core grant is to define community standards for data representation in functional glycomics in relation to diseases. The goal is to facilitate data comparison, exchange, and verification, through which a new generation of biomarker based on the change of carbohydrate structure will be identified.

In the year 2008, we held HGPI meeting twice in USA (November13; Texas) and Japan (March 24-27:Ise-Shima) together with our partner organizations (NIH consortium for functional glycomics (USA)). Our current knowledge on the development of glyco-based biomarker is assembled and published (see below).

Achievements in FY2008 (Self Review)

International standardized protocol for analysis of O-linked glycan chain was reviewed and amended seriously by over 20 mass-spectrometry experts in HGPI committee, based on their independent experiments. All of the data are now assembled for publication.

Our current knowledge on the develoment of glyco-biomarker is summarized and published. Glycomics Approach for cancer BiomarkerDiscovery: Naoyuki Taniguchi (Ed.) Proteomics 8 (16) 3205-3416, 2008

At both of HGPI meetings atTexas and Ise-Shima, the special session for young researchers (post-docs, and master/doctor students) were held. The session was quite successful by communicating with distinguished scientists from USA/Germany.

Future Plan

Towards the development of glyco-based biomarkers, two lines of malignant cells are distributed to mass-spectrometry experts in HGPI committee, and analyzed if we can see any difference of carbohydrate structures on glycoproteins. The data will be assembled in the next HGPI meetings held in Germany/USA (see below).

We continue to hold HGPI meeting with our partner (USA and Germany) so as to discuss the updated results on glycobiology/chermistry. At the HGPI meetings, special session for young investigators (post-docs, and master/doctor students) will be also planned.