

HGPI Report 2009 by Naoyuki Taniguchi, Vice-Chair of HGPI and Hisashi Narimatsu, Chair of HGPI

Major accomplishments

1. HGPI has summarized the result of 2nd Pilot study for O-glycan analysis using IgA as standard samples. Seven laboratories joined and had good results and now submitted to Publication Committee of the HUPO and waiting for the permission.
The chairs of pilot studies are Anne Delle, Stuart Haslam and Yoshinao Wada
The manuscript entitled below is now submitted to publication in Proteomics.
2. HGPI is now undergoing to perform the 3rd HGPI Pilot Study on Glyco-Biomaker Discovery. The following two tasks, glycan structural analysis and identification of carbohydrate antigen-carrier proteins as task 1 and task 2 respectively, are planned by using cancer cells (L428, U937, SK-N-SH). However, Task 2 is optional. Regarding the cells on task 1, 1 x 10⁷ cells / each cell line are provided by Hisashi Narimatsu group, RCMG, AIST Japan.
The chair of this pilot study is Pauline Rudd and the secretary general is Hiromi Ito. Fourteen laboratories worldwide are now participating in this pilot study. We are going to present some progress in the analysis result of this Pilot Study at the HGPI workshop at 8th HUPO World Congress in Toronto, Canada, in September 6, 2009, at 13:00-15:00.

Meetings

1. On August 17, 2008 at the 7th Annual World Congress in Munich, we had the HGPI workshop and the meeting report was published in Proteomics as below.
2. Regarding to foster young scientists, HGPI has supported 15 young scientists including postdoctoral fellows and graduate students in Japan who had participated in the 2008 Annual Conference of the Society for Glycobiology held in Forth Worth, Texas on November 13. James Paulson (vice-chair of HGPI and a leader for Consortium for Functional Glycomics) and Naoyuki Taniguchi (a leader for Core to Core program) had a workshop among young scientists and gave them an opportunity for young scientists to give an oral presentation in the workshop.
3. In March 24-27, 2009, HGPI co-organized the joint meeting with NIH/NCI and other funding agencies in Japan entitled Clinical and Translational Research on Cancer: Glycomics Applications. This meeting was held in Ise-Shima, Japan, southwest of Tokyo on the coast, and involved Japanese and US researchers, as well as others from around the world. The purpose of this conference was to discuss recent advances in glycomics research of translational significance for the discovery and development of biomarkers for early detection and diagnosis of cancer. The organizers are Naoyuki Taniguchi, Hisashi Narimatsu, James Paulson, Michael Pierce, Karl Kruger, Sadhir Srivastava, and William Hancock, and HGPI supported travel expenses for 45 people in Japan and NIC/NIH supported also people from US sides. Over 130 people joined this meeting.
4. In November 5-8, 2009, HGPI is planning to support the travel expenses for 25 Japanese young scientists to participate German/Japan Glycomeeting and Euromeeting and give them an opportunity to give an oral presentation in Giessen and Colgne, Germany and exchange information with other countries on glycobiology and glycomics.

Publications

1. Taniguchi N. Human disease glycomics/proteome initiative (HGPI). Mol Cell Proteomics. 2008 Mar;7(3):626-7.
2. Pierce JM, Taniguchi N. 7th HUPO World Congress: the human disease glycomics/proteomics initiative (HGPI) session 17 August 2008, Amsterdam, The Netherlands. Proteomics. 2009 Apr;9(7):1738-41.
3. Taniguchi N, Hancock W, Lubman DM, Rudd PM. The second golden age of glycomics: from functional glycomics to clinical applications. J Proteome Res. 2009 Feb;8(2):425-6.
4. Taniguchi N (as a Guest Editor). Toward cancer biomarker discovery using the glycomics approach. Proteomics. 2008 Aug;8(16):3205-8
5. Yoshinao Wada, Anne Dell, Stuart M. Haslam⁵, Bérangère Tissot, Kévin Canis, Parastoo Azadi, Malin Bäckström, Catherine E. Costello, Gunnar C. Hansson, Yoshiyuki Hiki, Mayumi Ishihara, Hiromi Ito, Kazuaki Kakehi, Niclas Karlsson, Koichi Kato, Nana Kawasaki, Kay-Hooi Khoo, Kunihiko Kobayashi, Daniel Kolarich, Akihiro Kondo, Carlito Lebrilla, Miyako Nakano, Hisashi Narimatsu, Jan Novak⁰, Milos V. Novotny, Nicolle H. Packer, Matthew B. Renfrow, Michiko Tajiri, Kristina A. Thomsson, Shin-Yi Yu, and Naoyuki Taniguchi. Comparison of methods for profiling O-glycosylation:HUPO Human Disease Glycomics/Proteome Initiative multi-institutional study of IgA1. Submitted for publication
6. Future plans
7. It is important to determine the core proteins which carry specific glycan structures related to diseases. However, the technology is still behind to perform it in a high throughput manner. The HGPI will try to develop technologies to determine glycopeptides structures available in a high throughput manner.