

5. HGPI (Human Disease Glycomics/Proteome Initiative) pilot study

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MS will be the central method of glycan analysis for its high sensitivity, throughput and capability of structure elucidation. HGPI, an activity of HUPO, has conducted a pilot study on the MS analysis of glycans, in order to recognize a variety of MS methods currently used in different laboratories and their capability. Each 1 mg of 3 different preparations of human transferrin (Tf) and IgG (total 6 samples) were sent to 26 laboratories worldwide, and the data replied by 20 labs were compared especially focusing on the sialylated glycans in Tf and galactosylation in IgG. For reference, the standard glycan analysis of reductive amination followed by chromatography and fluorescence detection was performed in some laboratories. MS of glycans especially those of permethylated ones was comparable with the conventional chromatographic method. In addition, MS of glycopeptides gave valuable information, allowing site-specific analysis of Tf and delineating differential galactosylation between two difference IgG subclasses. The results will be submitted for publication by all the members involved in this study as the authors.