Glycomics: A new “omics” tool in biology

Glycomics is an emerging field in the post genomics and proteomics era. It is focusing on the structure and function of glycans, the interactions of the glycan with protein or other molecular. Recently, carbohydrate microarrays have been developed to assist the glycomics study. Carbohydrate can be covalently or noncovalently attached to a solid surface and the microassay can be applied in functional glycomics, diagnosis and new drug development (Shin et al. 2005). It is found that half of the known proteins are glycosylated. Therefore the identification of glycoprotein and characterization the carbohydrate function is a promising approach. One example was using α1,6 fucosyltransferase (FUT8) combing CE/MS and lectin blot technique to identify the target glycoprotein (Kondo et al. 2006). Another example was performing Laser MicroDissection (LMD) as a tool in cancer glycomics using colon cancer as a model. (Korekane et al. 2007). Although limited preliminary data and technique were conducted in glycomics, it would a promising tool in basic and applied biology research.

References:

