

Impacts of Lectin Microarrays on glyco-biomarker discovery and characterization of the cell surface glycome

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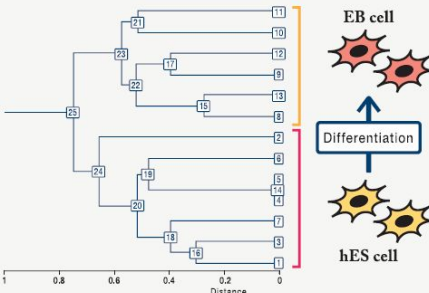
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Glycans are now attracting much attention in the fields of biomarkers, stem cells, infectious disease, and biosimilar drugs.

The combination of evanescent-field fluorescence scanner “GlycoStation” and lectin microarray “LecChip” creates a highly sensitive platform for monitoring interactions between lectins and glycans among different technologies. Because of the high sensitivity of GlycoStation (10ng order of glycoprotein is good enough), and its simple procedure, GlycoStation can be positioned as the most powerful differential analysis tool in screening novel glycobiomarkers focusing on changes of glycan structures. Above all, antibody-overlay lectin microarray methodology is the simplest and quickest way of screening biomarkers from small quantity of samples like serum. In Japan, NEDO MG Project headed by Dr. H. Narimatsu is leading such activities strongly.

These days, application of cell surface glycome profiling onto stem cells is attracting so much attention in order to assure stem cell conditions. The first study was initiated as a joint development project between three groups: GP Biosciences, National Institute of Advanced Industrial Science and Technology, and National Center for Child Health Development, and now inherited by NEDO iPS Project headed by Prof. M. Asashima.




EB cell

Differentiation


hES cell

- Simple
- Quick and
- Easy to use and yet
- Remarkable Results!

Characterization of hES cell by GlycoStation™
Data provided from Dr. Akihiro Umezawa, National Research Institute for Child Health and Development.



Lectin Microarray : LecChip™
45 different kinds of lectin, each recognizing different glycans specifically, are arrayed and one arrayed LecChip™ can be used to measure up to 7 samples.



Evanescent - Field Excitation Scanner : GlycoStation™ Reader 1200
Scanner which detects fluorescent signals in liquid phase without washing arrays.