INVITED LECTURE

Studying the Chemical Biology of N-glycans with Microarrays

Katarzyna Brzezicka[a], Ana Beloqui[a], Sonia Serna[a], Juan Etxebarria[a], Javier Calvo[b], Nerea Ruiz[a], Begoña Echeverria[a], Manuel Martin-Lomas[a] and Niels-Christian Reichardt[a]

a) Biofunctional Nanomaterials Department, CICbiomaGUNE, 20009 San Sebastian, Spain

b) Mass Spectrometry Unit, CICbiomaGUNE, 20009 San Sebastian; e-mail: nreichardt@cicbiomagune.es

In the last years our laboratory has developed convergent routes for the chemo-enzymatic synthesis of *N*-glycans with full control of number of antennae, type of terminal sugars and core modifications. Currently over 100 structures with a particular focus on antigenic invertebrate and plant glycans are available for the preparation of glycan arrays on glass and ITO coated slides for high-throughput interaction studies. In this talk strategies for the synthesis of this class of natural glycodendrimers will be discussed and applications for the **1)** array-assisted trapping and assignment of lectins from complex mixtures, **2)** the screening of binding specificities of C-type lectins involved in antigen recognition **3)** the screening of antibodies from *S. mansoni* infected patient sera and **4)** their use in the quantitative glycan profiling by SALDI-MS presented.