SEMINAR

CIC biomaGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

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New methods for the isolation of N-glycans from natural sources

Wednesday, 7th February
12.00 pm

CIC biomaGUNE - Seminar Room

Complex N-glycans are sought-after biomolecules for advancing biomedical applications in glycoscience. However, their synthesis is challenging, expensive and time consuming. Isolation of these structures from natural sources via enzymatic or chemical methods is an alternative to total synthesis which has historically been employed e.g. for small scale sourcing of analytical standards. In both cases, their production is limited to small amounts of each structure, which often restricts their use only at the level of analytical standards in individual doses of a few micrograms. The development of new protocols for the isolation from natural sources that allow the obtention of complex N-glycan libraries of relevance to biomedical research still represents a technological challenge.

Here, we present to new methods for the isolation of N-glycans from natural sources on a preparative scale. It is worth pointing out that the two protocols developed allow the obtention of a library of N-glycans of high complexity and in significantly higher quantities from economical natural sources. The first methodology allows obtaining N-glycans that after procainamide labelling can be used as standards in any suitable analysis by LC-FLD. The second protocol also includes the synthesis of a new bifunctional fluorescent spacer that allows, at the same time, the separation of glycan mixtures by HPLC-FLD and their immobilisation on solid surfaces and supports for microarray studies, or any other purposes.