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Thermo Fisher Scientific Enhances Glycan Analysis Workflow With Simultaneous Charge, Size and Polarity HPLC Separations

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Thermo Scientific Dionex GlycanPac AXH-1 column enables high throughput characterization of glycans in biopharmaceutical drug discovery, research and manufacturing QA/QC

Thermo Fisher Scientific Inc., the world leader in serving science, introduced yesterday the Thermo Scientific Dionex GlycanPac AXH-1 HPLC column. This new column is designed to enable simultaneous separation of biologically-important glycans based on charge, size and polarity, and facilitate challenging characterization of glycan profiles and determination of their structures.

Growing numbers of scientists are investigating glycans as potential biomarkers or as post-translational modifications of therapeutic proteins, as evidenced by large numbers of published studies. Antibody research is gaining growing interest in developing protein biotherapeutics, including monoclonal antibodies for the treatment of diseases. Glycosylation of antibodies is a major source of structural and functional variation and can profoundly affect the safety and effectiveness of biopharmaceutical products.

Mass spectrometry has emerged as a powerful tool for determining the structures of glycans, and this new column is designed to enable researchers to harness the power of high-resolution accurate-mass (HRAM) mass spectrometry at high throughput rates. This column is designed to separate both labeled and native glycans based on the availability of samples. Native glycan separation allows researchers to eliminate the fluorescent labeling step and increase throughput without eroding performance. The GlycanPac AXH-1 column complements glycan workflows available from Thermo Fisher Scientific by providing high levels of selectivity and resolution of these complex molecules. Analysis by Orbitrap-based HRAM mass spectrometry and structural elucidation by SimGlycan® software then provides detailed information.

“We’re constantly looking for ways to make high performance glycan analysis more accessible and useful to the pharmaceutical community,” said Chris Pohl, Thermo Scientific vice president, Chromatography Chemistry. “We feel that this new column succeeds in terms of enhancing quality of results and speed.”

Thermo Scientific experiments have shown the new column to deliver excellent resolution for both unlabeled and labeled glycans. It is compatible with fluorescent and mass spectrometry detection methods, according to the company’s tests. The GlycanPac AXH-1 column, based on innovative mixed-mode surface chemistry, combines weak anion-exchange and HILIC (hydrophobic interaction liquid chromatography) retention mechanisms. The weak anion exchange functionality provides retention and selectivity for negatively charged

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glycans, while the HILIC mode enables separation of identically charged glycans by polarity and size. The result is new capability for separating glycans. The column can also be used to accurately quantify glycans based on charge.

For more information about the Thermo Scientific HRAM mass spectrometry glycans workflow, visit www.thermoscientific.com/glycanpac.

Source: Thermo Fisher Scientific

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