



Sumitomo Bakelite Co., Ltd

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S-BIO Launching BlotGlyco® O-Glycan Sample Preparation Kit in U.S., Japan

Breakthrough Method Assures Simple, Safety O-Glycans Analysis

Tokyo, Japan – May 19, 2015 Sumitomo Bakelite Co., Ltd. (TOKYO:4203) will launch “BlotGlyco® O-Glycan Sample Preparation Kit”, a breakthrough new product that enables scientists to analyze O-glycans in biological samples, including biotherapeutic glycoproteins, in a simple, safe and streamlined operation. This new product will be launched simultaneously in Japan and United States¹ in late May 2015.

The kit is a valuable tool supporting customers involved in glycoprotein characterization in research and process development, monitoring and batch release, and characterization of previously unattainable information on O-glycan structures.

Glycans are sugar chains composed of linear and/or branched sequences of several carbohydrates. Changes in glycosylation are often a hallmark of disease states such as cancers, virus infection, etc. Characterizing the changes in glycosylation associated with cancer and chronic inflammation can lead to new therapeutic and diagnostic strategies.

In biotherapeutics development, such as antibody drugs, it has been shown that glycans influence their yield, efficacy, immunogenicity and stability of the biotherapeutic agent.

Glycans usually exist as a component of glycoconjugates such as glycoproteins and glycolipids, in other words, glycans are attached to another class of biomolecules, i.e. proteins, lipids, etc. Glycans on glycoproteins, in general, are classified as N-glycans or O-glycans² according to their attachment site in proteins. For the detailed analysis of glycans, researchers need to isolate glycans with an appropriate method for characterization.

Sumitomo Bakelite Co., Ltd. has developed the new tool that enables safe and straightforward O-glycan sample preparation. The kit consists of “O-glycan release reagent” and “BlotGlyco^{®3} glycan purification and labeling beads”. O-Glycan release reagent is based on chemical treatment of protein samples with an ammonium salt that is far innocuous than conventional methods and effective for unbiased mild O-glycan release from glycoproteins.

Since the released O-glycans with the kit carry the reducing terminal that is available for further modification, the O-glycans can be further purified and labeled using BlotGlyco[®] beads, also enclosed in the kit. Thus, the kit enables researchers to recover O-glycans with the tag of the user’s choice depending on analytical method, such as HPLC/UPLC, LC-MS, MALDI-TOF MS, CE/CE-LIF analysis.

The new product “BlotGlyco[®] O-Glycan Sample Preparation Kit” will be an accessible tool for safe and simple O-glycan analysis, which is readily applicable for screening and quality control of biotherapeutics process development as well as biomarker discovery and regenerative medicine research. The product will be available in the U.S. through S-BIO, Vaupell Holdings Inc. (www.s-bio.com), a Sumitomo Bakelite Co., Ltd. group company. S-BIO also offers BlotGlyco[®] Purification and labeling Kit for N-glycan sample preparation. In Japan, Sumitomo Bakelite Co., Ltd. markets the new product.

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Glossary

¹S-BIO, US activity

In 2014, Sumitomo Bakelite Co., Ltd. acquired all the assets of Ezose Sciences Inc. that was dedicated to advancing glycomics to improve scientific understanding and healthcare, and S-BIO has implemented its glycan analytical service business in US. GlycanMap[®] analysis services, formerly Ezose's proprietary technology platform, have been transferred to S-BIO's new facility in Hudson, NH, on the premises of Vaupell Holdings Inc., a group company of Sumitomo Bakelite Co., Ltd. Using this facility as our core site for biotechnology products and services in US, we will clearly identify the needs of our customers in the fields of drug discovery, regenerative medicine, stem cell research as well as glycobiology, and will accelerate our R&D and commercialization of new products/services to satisfy customer's needs.

²N-glycan and O-glycan

N-glycans are attached to an asparagine residue in a certain consensus sequence in proteins, while O-glycans are found on serine or threonine residues without particular consensus sequence. N-Glycans can be easily released from proteins by using an enzyme (N-glycosidase F/PNGase F), therefore it has been widely studied by many researchers. Unlike N-glycans, O-glycan release has been a challenge due to the lack of universal enzymes to cleave the complete glycan from its protein. Chemical treatments have been employed to release O-glycans from the protein using a harsh chemicals and complex procedures. S-BIO's *BlotGlyco[®] O-Glycan Sample Preparation Kit* will fill the gap of the lack of versatile sample preparation method for O-glycan characterization.

³BlotGlyco[®]

BlotGlyco[®] is a polymer bead to facilitate glycan purification and labeling. BlotGlyco[®] beads are coated with dense hydrazide functional groups, which enable specific capturing of sugars via aldehyde group at the reducing end of the glycan. The hydrazide groups on the beads form stable covalent bond with aldehyde; therefore, it allows thorough washing steps to eliminate any impurities including peptides and salts. The label is selectable depending on detection methods including HPLC, LC-MS, MALDI-TOF MS, etc. BlotGlyco[®] has been widely used for N-glycan analysis of biopharmaceuticals or more complicated biological samples by many pharmaceutical companies and academic researchers.