

S-BIO Glycomics Services

A New Dimension in Biomarker Discovery & Development

S-BIO is dedicated to advancing glycomics to enable new innovations in disease diagnosis and therapeutic development. GlycanMap® platform introduces a new dimension to biomarker discovery by enabling glycomics research at a throughput and scale comparable to the complimentary fields of genomics and proteomics. Working with S-BIO's team in glycan expertise for biomarker discovery can facilitate the study of the largely untapped but biologically rich human glycome to advance your critical biomarker efforts.

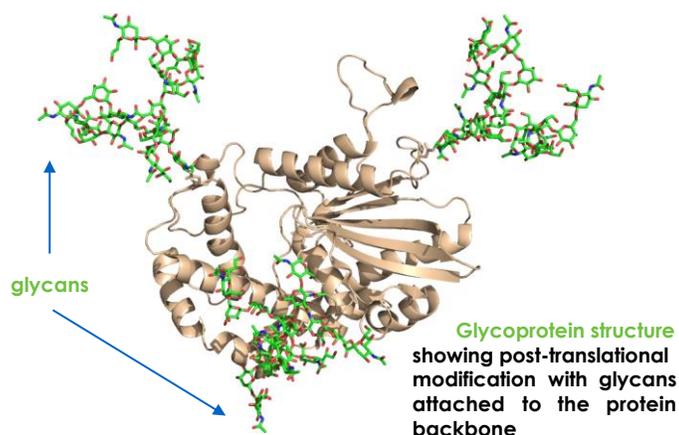
Understanding how glycosylation patterns change when tissues are exposed to disease and/or therapeutic agents opens a new door to:

- Disease diagnosis and prognosis
- Companion diagnostics
- Assessment of drug efficacy and safety
- Clinical and surrogate markers
- Disease mechanisms and target identification

Our biomarker research capabilities include identification of:

- Changes in post-translational modification (glycosylation patterns) of proteins
- Glycan profiles across various complex biological samples including serum/plasma, CSF, tissue extracts and cell extracts
- Novel glycan markers that correlate with disease or drug response
- Identification of parent glycopeptides/proteins to glycan markers
- Novel therapeutic and vaccine targets

Glycans in protein structure and function



Glycoprotein impact a wide range of biological processes:

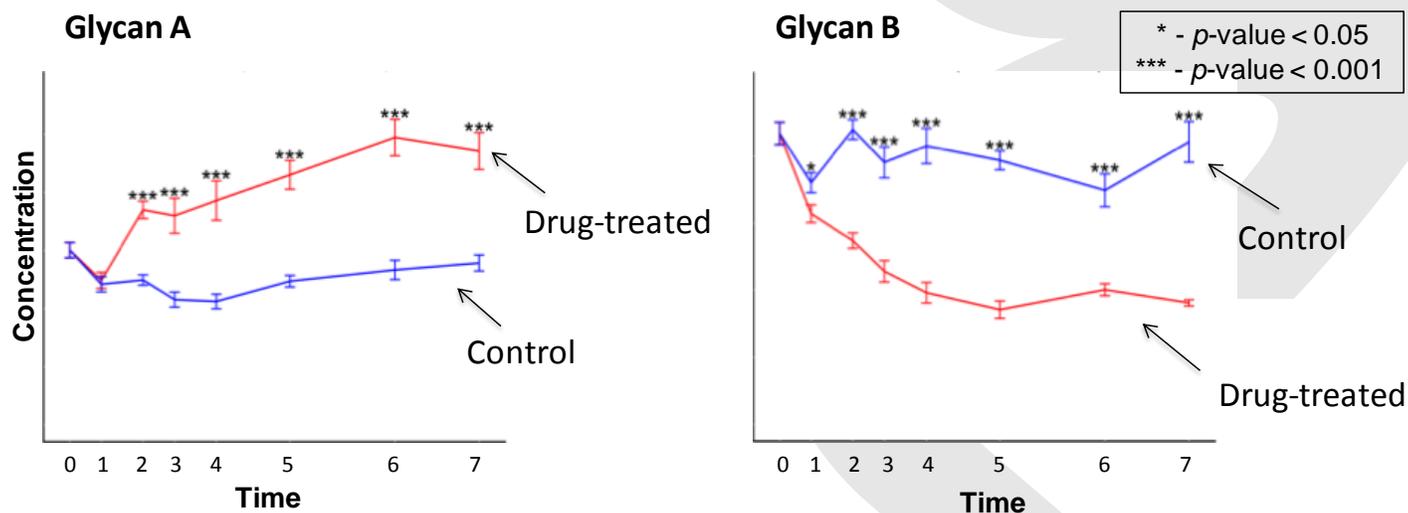
- * Glycans affect cell adhesion and signaling, as well as the stability, activity, half-life, binding characters and immunogenicity of proteins.
- * Glycan structural changes have been observed across a wide range of diseases including inflammatory, oncology, CNS, immune and metabolic.
- * Most secreted proteins are glycosylated, as are many important tumor biomarkers.

Glycan biomarkers already in clinical use:

- * CA19-9 - Glycan biomarker (sialylated Lewis^a antigen) used in the measurement of pancreatic cancer
- * AFP-L3 - Glycoform variant (alpha-1,6 fucosylated) of alpha-fetoprotein used in the risk assessment and early recognition of hepatocellular carcinoma

Case Study: Discovery of Biomarkers for Early Detection of Drug Efficacy

Early detection of drug efficacy can advance drug development, shorten clinical trials and result in better clinical decision-making. In this sponsored study, traditional genomic and proteomic studies had failed to identify early biomarkers of drug efficacy, so S-BIO was retained to evaluate glycosylation patterns as a novel source of early biomarkers. Approximately 150 plasma samples collected over 8 time points were analyzed using the GlycanMap® assay. More than 50 distinct glycans were detected in each sample, ranging from low molecular weight neutral glycans to large, tetra-antennary, sialylated glycans. While most of the detected glycan levels were unchanged after drug treatment, a small series of structurally-related groups exhibited statistically significant differences in response to drug, in some cases as early as the first post-treatment time point. This compared favorably to a “gold standard” biomarker, which was able to detect differences only at the 4th or 5th post-treatment time point. Representative glycans (structures redacted) that exhibited efficacy-associated increases (Panel A) and decreases (Panel B) are shown below.



About S-BIO

S-BIO is division of Sumitomo Bakelite Co., Ltd. With the acquisition of Ezose Sciences Inc.'s glycan assets, S-BIO, division of Sumitomo Bakelite Co., Ltd. is dedicated to advancing glycomics to enable new innovations in disease diagnosis and therapy. S-BIO's glycan analysis services are targeted to audiences who find glycan analysis a bottleneck in their development efforts and would benefit from our high-throughput capabilities to provide rapid and reliable glycan analysis. The company tailors these capabilities to the needs of our partners, typically under fee-for-service agreements. US business operation of S-BIO will operate as a part of Vaupell Holdings Inc., a group company of Sumitomo Bakelite Co., Ltd.