Ludger News

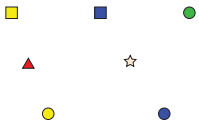
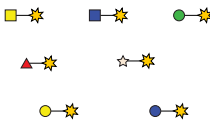
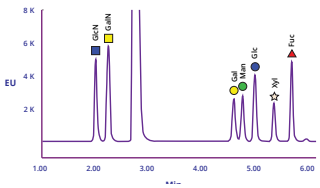
September/October 2025

LudgerTag™ Monosaccharide Release and Labelling Kit

For the quantitative analysis of digested glycoproteins

Monosaccharide analysis is a **regulatory requirement** outlined in the ICH Q6B guidelines for characterising biopharmaceuticals. This information can be used **at all stages of drug development** as a method of determining the type of glycosylation (N-linked and/or O-linked) and the extent to which glycosylation has occurred. It can also be used to demonstrate **consistency between batches** for QC lot release during the manufacturing process.

Follow the **workflow** below for **monosaccharide quantitation**.

<table>
<tr><th>Release</th><th>Labelling</th><th colspan="2">RP-HPLC Analysis</th><th>Results</th></tr>
<tr><td>  </td><td>  </td><td colspan="2"> 
</td><td rowspan="3">Regulatory compliance during the quality control of biopharmaceuticals:
1) Drug safety and efficacy
2) Batch-to-batch consistency</td></tr>
<tr><td rowspan="2">LT-MONO-96
Mild acid hydrolysis @100°C for 3h + drying for 8h</td><td rowspan="2">LT-MONO-96
2-AA @80°C for 5h</td><td>LS-R2-4.6x150
25 µL for 30 min</td><td>LS-UR2-2.1x50
5 µL for 8 min</td></tr>
<tr><td colspan="2">LS-R-BPTX10
LudgerSep R BPT Buffer</td></tr>
<tr><td colspan="4">Standards & Controls (run with your samples)</td><td>Key Indicator</td></tr>
<tr><td colspan="4">Quantitative Standards Included in LT-MONO-96 kit:
Quantitative standard containing GlcN, GalN, Gal, Man, Glc, and Fuc CM-MONOMIX-10
Xylose quantitative standard CM-XYLOSE-100

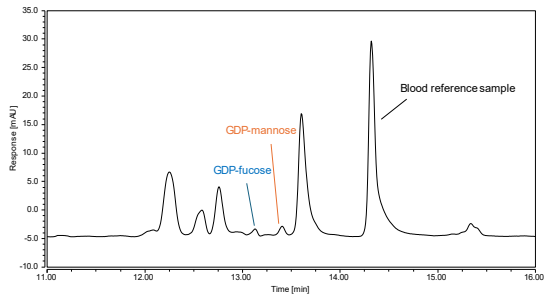
Recommended Positive Process Controls:
Quantitative glycopeptide standard BQ-GPEP-A2G2S2-10U
Fetuin Glycoprotein Standard GCP-FET-50U-X4</td><td>GlcN, GalN, Gal, Man, Glc, and Fuc amounts in nmol/mg of protein</td></tr>
</table>

Click here for more information on monosaccharide quantitation or contact us at **info@ludger.com**.

Sponsors of RSC Carbohydrate Group Winter Meeting 2025

Ludger Ltd is delighted to be one of the sponsors of the **RSC Carbohydrate Group Winter Meeting 2025**, taking place 22–23 September in York, UK. This exciting symposium will bring together leading researchers from around the world to share the latest advances in carbohydrate chemistry and foster new collaborations. We look forward to connecting with the community and celebrating innovation in the field.

Unlock the Power of Nucleotide Sugar Analysis with Ludger



UHPLC-UV Chromatogram of Blood Reference Sample Showing Peaks for GDP-Fucose and GDP-Mannose.

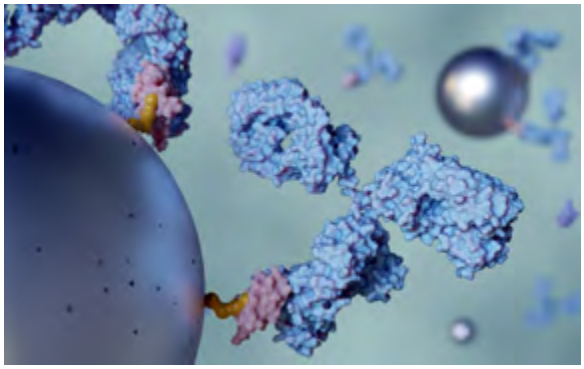
Precise control of glycosylation is essential for advancing biopharmaceutical development, biomarker discovery, and understanding disease mechanisms. **Activated nucleotide sugars**, including **GDP-mannose**, **GDP-fucose**, **UDP-galactose**, and **UDP-glucose**, act as critical donor substrates for glycosyltransferases. Their levels directly influence glycan structures on proteins and lipids, shaping protein folding, immune responses, and cell signalling.

At Ludger, we provide **quantitative analysis of key nucleotide sugars** using our highly sensitive UPLC-UV platform (see chromatrogram). Our assays provide robust and reproducible data to support glycomics, therapeutic development, and diagnostic research. We also offer custom assay development, tailored to your specific project needs.

Whether you are investigating **glycosylation pathways**, **assessing therapeutic glycoprotein quality**, or **exploring nucleotide sugar analogues** as novel treatment strategies, our analysis services help you generate the insights you need. Monitoring sugar nucleotide pools can reveal biomarkers for cancer, metabolic disorders, congenital glycosylation defects, and inflammatory conditions, empowering breakthroughs in precision medicine and therapeutic design.

Partner with Ludger to accelerate your research. With our expertise in glycobiology and commitment to analytical excellence, we provide the tools to explore, quantify, and translate nucleotide sugar dynamics into meaningful biological and clinical impact.

Personalised Biomolecular Coronas: A New Frontier in Precision Diagnostics



We are proud to announce our latest publication in **Analytical Chemistry** (Martinez-Serra et al., 2025), showcasing a breakthrough **collaboration between our glycomics team and Dr. Marco Monopoli's nanoscience group** at **RCSI**. Together, we have developed a novel multiple-exposure **nanoparticle method** that redefines how we study **plasma and discover biomarkers**.

When blood plasma is repeatedly exposed to fresh silica nanoparticles, layers of "biomolecular coronas" are formed. Early exposures capture abundant clotting and transport proteins such as fibrinogen and apolipoproteins, while later exposures enrich immune and inflammatory proteins, including immunoglobulins and complement factors. This sequential fractionation effectively "peels back" layers of the plasma proteome and glycome, revealing hidden biomarker signatures that are normally masked by highly abundant proteins like albumin.

Using advanced tools such as SDS–PAGE, mass spectrometry, and UHPLC, we traced progressive shifts in both protein and glycan composition across exposures. This creates a personalised corona profile unique to each individual, providing a non-invasive window into health status and disease risk.

By enriching low-abundance biomolecules with diagnostic potential, this method opens new possibilities for precision diagnostics, early disease detection, and patient-tailored healthcare, bringing us closer to a future where monitoring disease is as personalised as the people we treat.

Join our Glycotechnology News Service

Subscribe