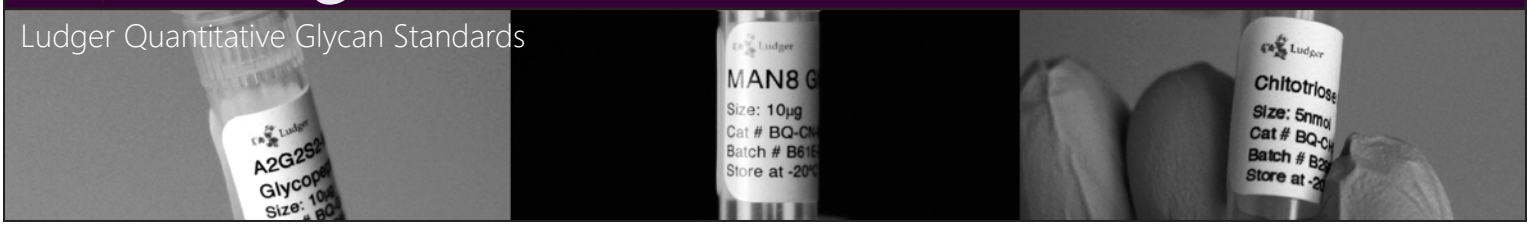
Ludger News

September/October 2020

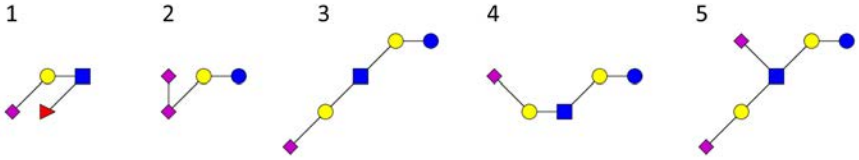
Ludger Quantitative Glycan Standards



New product: Sialidase Testing Panel

We are announcing the launch of a new product – Sialidase Testing Panel – a glycan standard containing a mixture of α2-3, α2-6 and α2-8 sialylated oligosaccharides:

1. 3'-Sialyl Lewis X [Neu5Ac-α2-3Gal-β1-4(Fuc-α1-3)GlcNAc]
2. Disialyllactose [Neu5Ac-α2-8NeuAc-α2-3Gal-β1-4Glc]
3. Sialyllacto-N-tetraose a [Neu5Ac-α2-3Gal-β1-3GlcNAc-β1-3Gal-β1-4Glc]
4. Sialyllacto-N-tetraose c [Neu5Ac-α2-6Gal-β1-4GlcNAc-β1-3Gal-β1-4Glc]
5. Disialyllacto-N-tetraose [Neu5Ac-α2-3Gal-β1-3(Neu5Ac-α2-6)GlcNAc-β1-3Gal-β1-4Glc]



Sialidase Testing Panel can be used as process positive control for sialidase digestions. Applied alongside the samples, it enables the analyst to test if the sialidase used has the required specificity and has worked correctly.
The Sialidase Testing Panel is available labelled with 2-AB or procainamide.
Cat# CAB-STP-NEUAC-01 / CPROC-STP-NEUAC-01

To find out how to incorporate the Sialidase Testing Panel into an exoglycosidase sequencing workflow and to view range of Ludger exoglycosidase enzymes available, visit our Exoglycosidase page. For enquiries or more info, please contact: info@ludger.com

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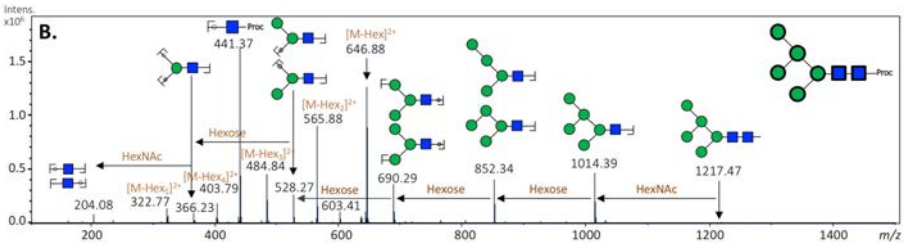
Publication in Scientific Reports: Insights into the salivary *N*-glycome of *Lutzomyia longipalpis*, vector of visceral leishmaniasis

Successful collaboration between Ludger and The Liverpool School of Tropical Medicine, resulted in publishing an article in Scientific Reports titled "**Insights into the salivary *N*-glycome of *Lutzomyia longipalpis*, vector of visceral leishmaniasis.**" Ludger's contribution included:

- Help with the study design and strategy
- Release of N- and O-glycans from sand fly saliva
- O- and N-glycan profiling and characterisation using orthogonal techniques (UHPLC, LC-ESI-MS and exoglycosidase digestions)
- Supporting the visual reporting of structures and nomenclature of glycans identified in the study



Mass spectrometry analysis of released N-glycans from Lu. longipalpis salivary glycoproteins Positive-ion MS/MS fragmentation spectrum for m/z [727.8]2+. Green circle, mannose; Blue square, N-acetylglucosamine; Proc procainamide

This is the first study of the salivary *N*-linked glycans of *Lu. longipalpis*, providing detailed information about their structures and relative abundances. Additionally, the discovery of a 144 Da (unknown) modification present in some salivary glycans is reported. This study provides new insights into how these structures could be recognised by vertebrate host cells.

This work was partially supported by funding from the Wellcome Trust and GlycoPar EU FP7 Marie Curie Initial Training Network.

To find out how to utilise enzymes in glycan characterisation visit our Exoglycosidase enzyme page. Visit our Procainamide webpage for more information on how to characterise glycans using LC-MS. And for more information about this article visit our Publications webpage.

Quantitative Glycan Standards: Strategies for building quality into your experiments using Ludger BioQuant (BQ) Standards

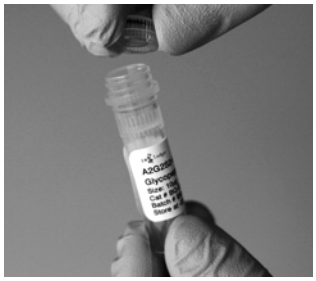
Robust analytical strategies are required to meet the challenge of accurately and reliably characterizing glycosylation. One way to meet this challenge is by integrating quantitative standards into your analytical processes.
Commercial quantitative glycan standards are key tools for:

1. determining analytical process efficiency
2. quantifying samples

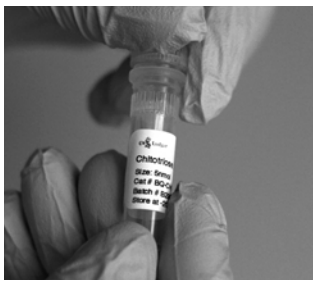
The value of incorporating a quantitative standard into your workflow is that you know what the resulting data is expected to be – this allows you to assess the performance of your process.
If you have confidence in your process you can have confidence in your data.

Ludger's Quantitative Glycan Standards BioQuant (BQ) Standards

Ludger's range of quantitative standards are called BioQuant standards. BioQuant standards are designed to fit simply into your analysis workflow and you treat them as you would any other sample.
Ludger has integrated BQ quantitative standards into many of our analytical processes for glycan analysis and has set acceptance criteria. This allows the analyst to judge the results and know if they are truly in or out-of-specification.



BQ KVANKT-A2G2S2 Glycopeptide Quantitative Process Standard (BQ-GPEP-A2G2S2-10U, 10µg*)
The glycopeptide standard is comprised of an A2G2S2 glycan attached to the asparagine amino acid of a peptide with the sequence Lysine-Valine-Alanine-Asparagine-Lysine-Threonine (KVANKT).
BQ-GPEP is an integral process standard for assessing the performance of the quantitative assays. The two most common quantitative assays during glycan characterisation are monosaccharide and sialic acid analysis.
When using BQ-GPEP-A2G2S2 as a process standard in these quantitative workflows it is taken along with all other samples through the entire process; acid release and labelling. The amount of sialic acid is calculated using a calibration curve. Acceptance criteria have been set for the BQ-GPEP standard in both monosaccharide and sialic acid analyses, this allows the analyst to assess whether the release and labelling have worked as expected and with this information they can have confidence in their entire data set.



BQ-Chitotriose: Standard Used to Quantitate Other Analytes in HPLC/UPLC
Chitotriose is a linear tri-N-acetylglucosamine glycan. It is available as an unlabelled glycan (**BQ-CHITOTRIOSE-01, 5nmol***) and is also available labelled with 2-AB or 2-AA dye (**BQ-CAB-CHI-01; BQ-CAA-CHI-01, 100pmol***).
BQ-Chitotriose quantitative standard is used as an internal standard, spiked into the sample to be quantified, run on an analytical platform for analysis and the quantity of glycan analyte is inferred by comparison of peak height or peak area to that of the standard. This is possible because the trisaccharide is smaller than most glycans and hence elutes before them.

BQ-Man8 Quantitative Glycan Standard (BQ-CN-MAN8-10U, 10µg*) – External Quantitative Standard in HPLC/UPLC
The BioQuant Man 8 glycan is a purified and quantified glycan standard
BQ-Man8 quantitative standard is used as an external standard meaning that it can be used to quantify analytes within a sample set (can be used across multiple samples). It is run on an analytical platform for analysis and the quantity of glycan analyte is inferred by comparison of peak height or peak area to that of the standard.
One advantage of the BQ-Man-8 standard is that it is a typical glycan found in biopharma and biological samples and as such is a characteristic N-glycan sample (in size and chemical properties). It can also be used to assess process efficiency (for example: labelling efficiency).

Please visit our Products page for a full listing of the Quantitative Glycan Standards we have available.
If you have any questions or to request a quotation, please contact: info@ludger.com

*for exact quantities please refer to each product CofA