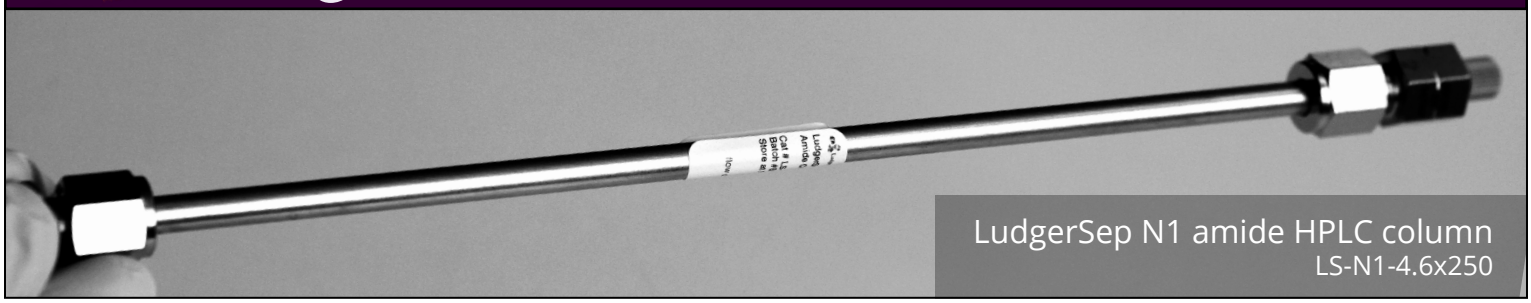
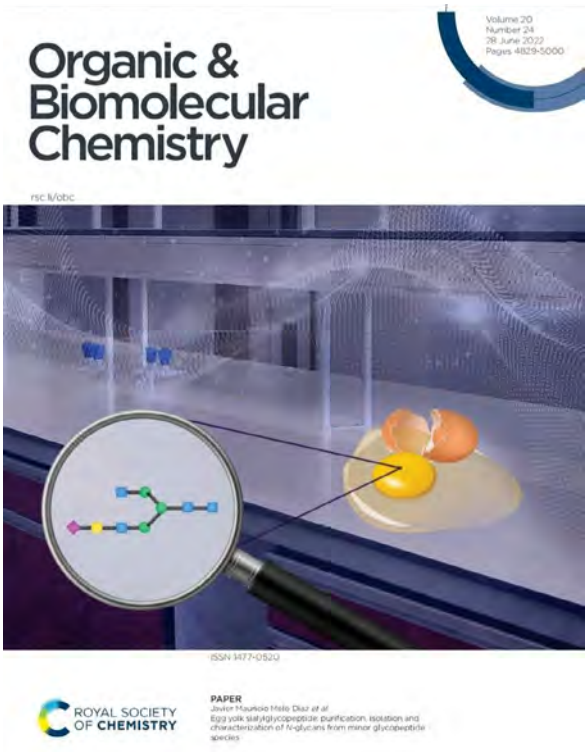
Ludger News

July/August 2022



Article published on Egg yolk sialylglycopeptide: purification, isolation, and characterization

Sialylglycopeptide (SGP) is a readily available in naturally occurring glycopeptides obtained from hen egg yolk which is now commercially available as a quantitative glycopepetide standard at Ludger (BQ-GPEP-A2G2S2). During SGP extraction, other minor glycopeptide species were identified, bearing N-glycan structures of interest, such as asymmetrically branched and triantennary glycans that were concomitantly isolated alongside the most abundant glycan species (Figure 1). Isolating these N-glycans complemented existing chemoenzymatic approaches and served as standards to verify the products of total synthetic strategies. Furthermore, the aim of this research was to provide structural characterisation for the N-glycans derived from these minor glycopeptides.



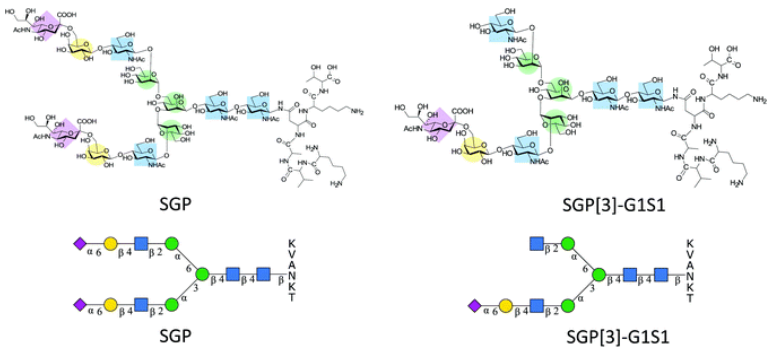


Figure 1. Structural representation of SGP and SGP A2[3]G1S1

This research led to publication of an article "Egg yolk sialylglycopeptide: purification, isolation and characterization of N-glycans from minor glycopeptide species" in the Organic and Biomolecular Chemistry Royal Society of Chemistry Journal by Melo-Diaz et al.

For more information on this article please visit **this link**. For information on our quantitative GPEP-A2G2S2 standard please visit **our feature page** and contact **info@ludger.com** for any technical or quotation enquires.

Pre-launch announcement of Lewis X standards at Ludger

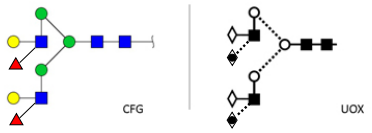
Lewis X (Lex) is a fucosylated trisaccharide glycan epitope which is found distributed throughout eukaryotes and certain bacteria. This glycan epitope has been found to play a role in numerous physiological and pathological processes; it is up-regulated in various cancers, (pancreas, breast, colon, and lung tumors), plays an important role in cell-cell interaction and has been found in infectious bacterium (e.g. Helicobacter pylori).

Robust analytical strategies are required to meet the challenge of accurately and reliably characterizing glycosylation for biopharmaceutical realisation, as well as in glycan biomarker discovery for medical diagnostics and precision medicine. Therefore, a vast range well-characterised glycan standards are an essential element in this practice.

At Ludger we are happy to announce the **pre-launch of three new Lewis X glycan standards**:

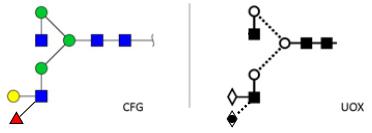
1) **CN-A2G2F2-20U:**

   A2G2F2(a1-3) – symmetric N-glycan standard containing two Lewis X epitopes



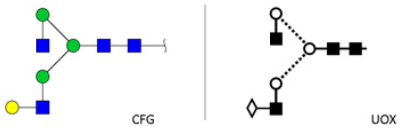
2) **CN-A2[3]G1F1-20U:**

   A2[3]G1F1(a1-3) - asymmetric Lewis X containing N-glycan standard



3) **CN-A2[3]G1-20U:**

   A2[3]G1 – asymmetric N-glycan standard; precursor to A2[3]G1F1(a1-3)



Application of these glycan standards:

1) **Process standards/controls** are used to verify that part of or an entire process has worked correctly. For example: to ensure that the specificity and activity of a fucosidase is as expected.

2) **Reference standards** allow for characterisation by comparison. This can be accomplished by the direct comparison of the chromatographic or electrophoretic retention time of an unknown to that of a standard whose structure has been fully characterised.

To find out how to incorporate these standards in your workflow or request a quotation please contact: **info@ludger.com**

Method for purification of Man9 glycans from butter beans published in Carbohydrate research

High Mannose glycans (HM) are intermediates for the eukaryotic glycosylation pathway but are not commonly found on mature glycoproteins due to extensive trimming and processing in vertebrates. HM, particularly Man9GlcNAc2 (Man-9 or M9) glycans are of interest as standards for positive identification in quality control of biopharmaceuticals or as a building block for vaccines production. However, obtaining homogenous glycans can be challenging process and this constitutes a barrier to their wider application.

Melo-Diaz et. al (Ludger researchers in collaboration with NanoCarb Consortium) have published an article titled *"Extraction and purification of a High Mannose type oligosaccharide from Phaseolus lunatus beans by oxidative release with sodium hypochlorite"* in the **Carbohydrate Research journal**. The article presents the strategy used for the isolation and purification of Man-9 glycan from butter beans and illustrates this method as a viable and cost-effective alternative in comparison to the current enzymatic method.

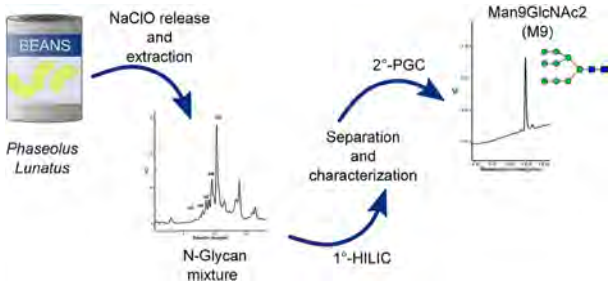


Figure 2. Overview of the extraction, purification and characterisation process of MAN 9 from *Phaseolus lunatus*.

At Ludger we offer both unlabelled (CN-MAN9-10U and CN-MAN9-20U) / and 2-AB, 2-AA and Procainamide labelled (CAB-MAN9-01, CAA-MAN9-01 and CPROC-MAN9-01) versions of Mannose 9 glycan standards. **Click here** for more information or contact us at **info@ludger.com** to incorporate the use of these standards or a variety of other high mannose/oligomannose standards in your workflow.