Ludger News

November/December 2022

LudgerTag™ 2-AA Glycan Labelling kit

For complex glycan analysis

Anthranilic acid or 2-aminobenzoic acid (2-AA) is a widely used fluorescent label for glycan analysis. It is conjugated to the reducing end of released glycans through reductive amination. **2-AA is highly sensitive and stable** when bound to glycans.

The **2-AA** label carries **one negative charge** which makes it **very versatile** for analysis using the following platforms:

- Capillary electrophoresis (**CE**) separations
- HPLC separations such as hydrophilic interaction liquid chromatography (**HILIC**) (Figure 1), mixed-mode **HILIC/anion exchange**, and weak anion exchange (**WAX**) chromatography separations
- Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (**MALDI-TOF-MS**) analysis in both positive and negative modes
- **Electrophoretic separations** by polyacrylamide gel electrophoresis

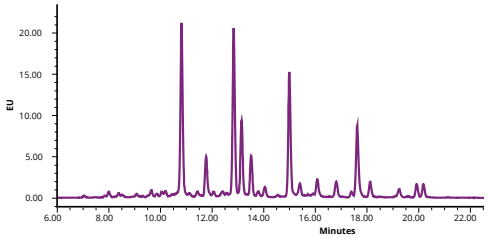


Figure 1. HILIC UHPLC Profile of 2-AA Labelled Human IgG Glycans

2-AA labelling is traditionally applied in the **glycan analysis of therapeutic and biologically relevant glycoproteins** and uses the same reductive amination labelling method that has been used for 2AB labelling.

The following are other areas where it has found application.

- Analysis of human milk oligosaccharides (**HMOs**) using direct PGC-MS
- **Functionalisation of the 2-AA glycans**. The 2-AA tag can be easily and selectively amidated with various amines. These functionalized glycans can be adopted for further conjugation by **click chemistry**, **microarray printing**, and **neoglycoprotein preparation**

To request a quote or to request technical assistance please contact **info@ludger.com.**

Ordering information:

LudgerTag™ 2-AA labelling kit Cat# **LT-KAA-A2**

LudgerTag™ 2-AA labelling kit with 2PB Cat# **LT-KAA-VP24**

Christmas Orders and Delivery Information

Our offices will be closed between **December 26th** and **January 2nd**.
Orders received before **December 16th** will be processed and delivered before Christmas.
First orders to go out in **2023** will be on **January 4th**.

Pre-launch announcement of two unlabelled O-glycan standards (core 1)

O-glycosylation is known to have a **critical impact on protein secretion** and **protective immunity against cancer**, and maintenance of normal development and physiology.

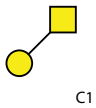
O-glycans are prevalent in several classes of therapeutic proteins including Erythropoietin (EPO), Follicle stimulating hormone (FSH), Etanercept, Granulocyte-colony stimulating factor (G-CSF) providing evidence of its critical involvement in **drug performance and role in diseases**.

In-depth understanding of the O-glycosylation status of these drug substances will elucidate the structure-function relationship of the O-linked sugars, which may lead to the identification of functionally favourable **O-glycan structures** to **improve drug efficacy and safety profile**.

We are happy to announce the **pre-launch of two unlabelled core-1 O-glycan standards** to assist you in accurately and reliably characterise and analyse O-glycosylated therapeutics.

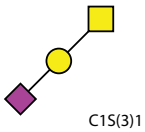
1) **CO-C1-10U** (10 µg) & **CO-C1-20U** (20 µg):

   Core 1 O-glycan, 2-Acetamido-2-deoxy-3-O-(b-D-galactopyranosyl)-D-galactopyranose (also known as galacto-N-biose, GNB and T antigen) is a β 1-3' linked disaccharide.


C1

2) **CO-C1(S3)1-10U** (10 µg) & **CO-C1(S3)1-20U** (20 µg):

   Sialylated Core 1 Glycan, The sialylated core 1 glycan has one terminal NeuAc sialic acid linked α-3 to the galactose of the core 1 glycan, sialylated-Tn antigen.


C1S(3)1

Applications of these O-glycans standards include utilising them as:

- **System suitability standards** (LC system, GU values as pass criteria)
- **Process standards** (labelling and clean-up)
- **Reference standards** (aid in characterisation)
- Well-characterized glycan standard to support analysis of glycosylation patterns. This standard can be used for **best practice** during the analysis of O-glycans.

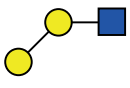
Contact us at **info@ludger.com** to find out how to incorporate these standards in your workflow or request a quotation.

Pre-launch announcement of an unlabelled Alpha-Gal standard

Glycans containing the non-human epitope Galα1-3Gal (Alpha-Gal) can significantly decrease the clinical performance of therapeutic monoclonal antibodies (mAbs). The presence of **Galα1-3Gal can affect the safety profile of a bio-therapeutic** as it can lead to an adverse reaction in patients. Also, neutralisation of the drug by **anti-α-galactose antibodies can reduce therapeutic efficacy**. It is for these reasons that this epitope is a **critical quality attribute (CQA)**. Drug regulators require characterisation data to include the detection and relative quantitation of N-glycans containing the Galα1-3Gal epitope.

3) **CN-ALPHA-GAL-10U** (10 µg) & **CN-ALPHA-GAL-20U** (20 µg):

   Gal alpha 1-3 Gal beta 1-4 GlcNAc, truncated N-Glycan trisaccharide containing alpha-gal epitope.


Alpha-Gal

A commonly employed method for the detection and relative quantitation of the Galα1-3Gal epitope is **exoglycosidase sequencing**. Glycan **standards containing the α-gal epitope are essential process controls** when using an α-galactosidase (see our upcoming standard above). This gives confidence in the function of the enzyme and in the resulting characterization; being able to unequivocally and confidently identify an α-from a β-galactose in a glycan structure.

For any technical enquiry or quote request, please contact **info@ludger.com.**

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