

Season's Greetings! 2026

We wish you a Happy New Year



IMPORTANT DELIVERY INFORMATION

Our offices will be closed between **December 25th** and **January 1st**.

Orders received before **December 16th** will be scheduled for shipment before Christmas, where item availability allows it. The first orders to go out in **2026** will be on **January 2nd**.



Glycomics Differentiates Subtypes of Multiple Sclerosis

A recent study by T. Kacerova et al., published in *Neurology: Neuroimmunology&Neuroinflammation*, "**Plasma N-Glycan Profiling Enhances Diagnostic Precision in Multiple Sclerosis, AQP4-Ab NMOSD, and MOGAD**", showcases the impact of advanced glycomics in understanding multiple sclerosis (MS). The research, led by the **Daniel C. Anthony** group at the **University of Oxford** in collaboration with the **Daniel I. R. Spencer** group at Ludger, used Ludger's high-resolution mass-spectrometry workflows to map N-glycan profiles in patients with different forms of MS.

The team identified **distinct changes in N-glycan branching, sialylation, and fucosylation** that **separate relapsing-remitting MS from progressive disease**, aligning closely with immune activation markers and clinical status. These results demonstrate how glycomics can enable more precise disease stratification and support the discovery of powerful new biomarkers for prognosis and treatment monitoring in neuroinflammatory conditions.

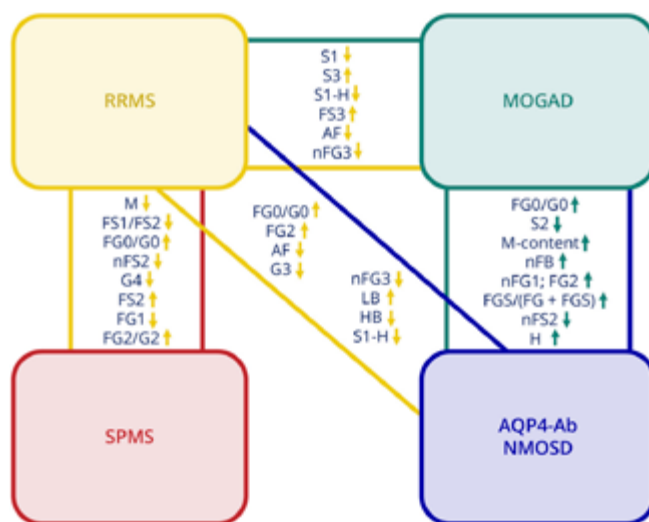
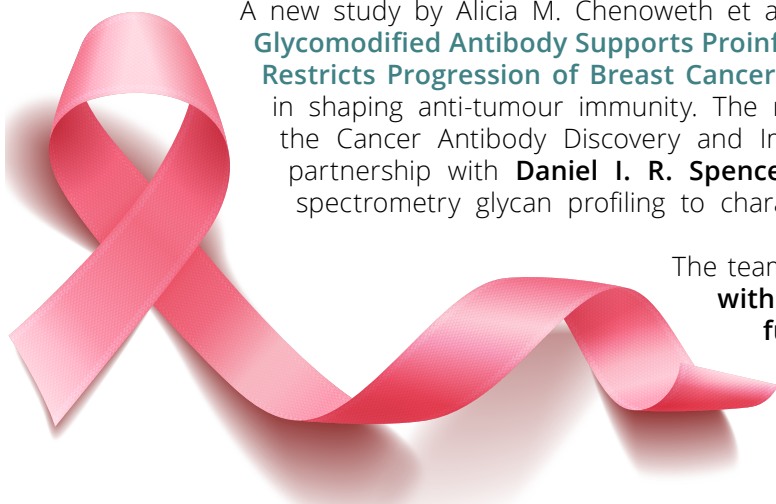


Figure 1 Arrows show increased or decreased glycan traits across MS and antibody-defined groups, highlighting subtype-specific branching, fucosylation, and sialylation differences.

Glycan-Engineered Antibodies Boost Anti-Cancer Immunity

A new study by Alicia M. Chenoweth et al., published in *Cancer Research*, "**An Fc-Engineered Glycomodified Antibody Supports Proinflammatory Activation of Immune Effector Cells and Restricts Progression of Breast Cancer**", highlights a powerful role for antibody glycosylation in shaping anti-tumour immunity. The research, led by **Professor Sophia Karagiannis** and the Cancer Antibody Discovery and Immunotherapy Group at **King's College London**, in partnership with **Daniel I. R. Spencer's** team at Ludger, used Ludger's advanced mass-spectrometry glycan profiling to characterise tumour-reactive antibodies in breast cancer.

The team discovered specific **N-glycan signatures associated with enhanced immune-cell activation and improved functional responses against tumour cells**. These findings deepen our understanding of how antibody glycosylation contributes to cancer immunology, and they underscore the growing potential of glycomics to guide biomarker development and next-generation therapeutic design.



Expanding the Horizons of Glycobiology: Ludger Contributes to Breakthrough Discovery of PNGaseL's Broad N-Glycan Specificity

A new study directed by **Lucy I. Crouch** and **David N. Bolam**, in collaboration with Ludger, has unveiled an exciting breakthrough in glycobiology, demonstrating the unique potential of **PNGaseL**, an enzyme derived from *Flavobacterium akiainvivens*. Unlike the widely used PNGaseF, which is limited in the range of N-glycans it can cleave, PNGaseL displays **remarkable versatility**. It efficiently releases mammalian-, plant-, and invertebrate-type complex N-glycans, as well as high-mannose structures, offering a level of specificity far beyond current tools.

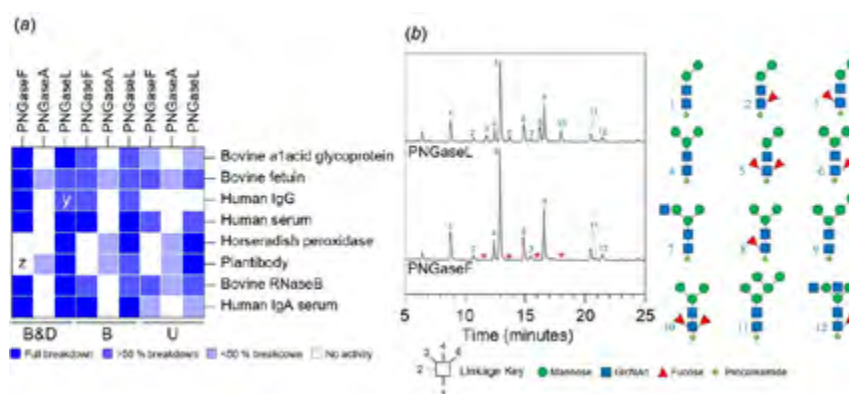
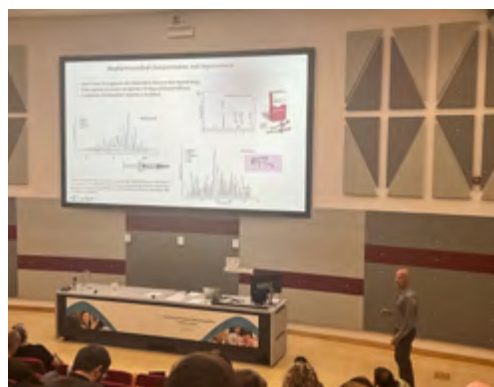


Figure 2 PNGaseL shows broader activity than PNGaseF/A, efficiently releasing N-glycans from varied proteins, including α 1,3-core-fucosylated structures.

The article, "**PNGaseL from *Flavobacterium akiainvivens* targets a diverse range of N-glycan structures**", provides detailed biochemical and structural analyses, confirming **PNGaseL's stability and broad substrate range**. Notably, it **functions under standard conditions used for PNGaseF**, making it highly compatible with established workflows. The findings position PNGaseL as a next-generation enzyme for advancing glycomics research, with potential to accelerate discoveries in areas ranging from biomarker development to biopharmaceutical quality control.

This collaboration highlights Ludger's leadership in cutting-edge glycobiology, supporting the development of advanced analytical tools that empower researchers worldwide. PNGaseL's robust performance paves the way for superior glycan profiling, expanding opportunities to explore the N-glycome across species and applications. This innovation marks a significant step forward in understanding glycoproteins and their biological roles.

Industrial Talk Highlights Glycosylation as a Therapeutic Design Tool



The **RSC Carbohydrate Group Winter Meeting 2025** took place in York in September, bringing together leading scientists and industry experts to discuss the latest advances in carbohydrate research and its applications.

As part of the industrial sponsorship session, **Assoc Prof. Dr. Daniel Spencer** delivered an impactful and well received presentation titled "**Beyond Decoration – Glycosylation as a Therapeutic Design Tool**".

The talk demonstrated the innovative role of glycobiology in enhancing drug performance, with a core focus on the findings of our recent publication, "**Enhanced α 2-3-linked sialylation determines the extended half-life of CHO-rVWF**". The presentation illustrated a breakthrough in biotherapeutic

design by strategically enhancing the α 2-3linked sialylation, which successfully extends the therapeutic protein's half-life in the body. This mechanism leverages glycosylation as a powerful design element to significantly improve drug efficacy and performance.

The positive feedback received underscores our commitment to advancing glycoscience and strengthening collaboration between industry and academia!

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