

## A TWO-YEAR JOURNEY OF ACHIEVEMENTS AND MILESTONES



Consortium members

As of January 2025, the **GlycanTrigger project** has entered its third year, making significant progress in understanding how glycans influence the shift from **gut health to chronic inflammation**. With a focus on **inflammatory bowel diseases** (IBD) such as **Crohn's disease** (CD), the project has achieved major milestones in research, patient engagement, and public outreach.

One of GlycanTrigger's key achievements has been the identification of a **unique glycosylation signature** detectable in the blood up to six years before clinical symptoms of CD emerge. This breakthrough discovery, published in **Nature Immunology**, lays the foundation for developing non-invasive biomarkers to predict and potentially prevent the onset of CD.

Building on this research, the team has also been investigating how glycan changes occur directly in the gut. By analysing colon tissue from CD patients who had undergone surgery to "reset" the disease, GlycanTrigger researchers compared samples from those who relapsed within six months to those who remained in remission, alongside healthy colon tissue.

*"Using advanced imaging and molecular techniques, we are mapping the spatial distribution of specific glycans and immune cells while examining key genetic pathways at the gut surface. These analyses are providing valuable new data on the molecular shifts that drive inflammation",* explained Manfred Wuhrer, a partner from LUMC, Netherlands.

In parallel, the project is preparing to launch a pioneering **pilot clinical trial** in collaboration with Hospital da Luz, Portugal, targeting CD patients who have undergone surgery. This trial will investigate the potential effect of glycan supplementation in intestinal inflammation, envisioning disease prevention. Additionally, the study will explore how glycan administration modulates both the gut microbiome and the immune system at the mucosal level.

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*"As GlycanTrigger enters its third year, we are seeing the real impact of our research in understanding how glycans shape gut health and the transition to inflammation", said project coordinator Salomé Pinho (i3S). "Our findings are not only advancing scientific knowledge but also opening new possibilities for early disease detection and bringing potential new innovative therapeutic strategies. As we move forward, we remain committed to translating this research into practical solutions that can improve patient outcomes and shape the future of IBD clinical and therapeutic management".*

Beyond the lab, GlycanTrigger has gained international recognition, with its research presented **at major scientific conferences**, such as the 3rd International GlycoBioTec Symposium in Berlin, the 26th International Symposium on Glycoconjugates in Taiwan, the Glyco-core Symposium in Nagoya-Japan, and the 7th European Congress of Immunology in Dublin, among others. These presentations have been reinforced by publications in high-impact journals such as **Nature Immunology, Trends in Immunology, Gut Microbes and Cellular & Molecular Immunology**, among others. GlycanTrigger researchers (Inês Alves and Joana Gaifem) have also received distinguished honours, including the prestigious **Maria de Sousa Prize**, recognizing the project's impactful contributions to biomedical and immunology research.

Patient engagement and community outreach remain central to GlycanTrigger's mission. In November 2024, the project hosted its **1st GlycanTrigger Patients Symposium**, joining together patients, healthcare professionals, and researchers through interactive Q&A sessions, webinars, and workshops. Following its success, an in-person symposium is planned for 2025. Additionally, GlycanTrigger has launched a **podcast series** featuring IBD experts and patient association leaders who discuss challenges and developments in IBD care. The project also runs a monthly **health literacy social media campaign** titled *"Understanding IBD: Bridging Knowledge Towards Disease Prediction and Prevention"*.

*"These initiatives within GlycanTrigger have been instrumental in providing educational content on IBD, covering symptoms, treatments, mental health, and patient self-advocacy, ultimately promoting health literacy", said Luisa Avedano, partner from the patient association, EFCCA.*

Efforts to share knowledge extend to regular **newsletters**, an engaging **project video**, and active participation in events such as the **European Researchers' Night** in Porto, where the project team engaged with the public and raised awareness about its research. The GlycanTrigger project has been featured in **leading news magazines and media outlets**, further amplifying its impact and awareness of its scientific contributions.

To stay up to date with our latest project activities follow us on our [social media channels](#), visit our [website](#), or subscribe to our [newsletter](#).

