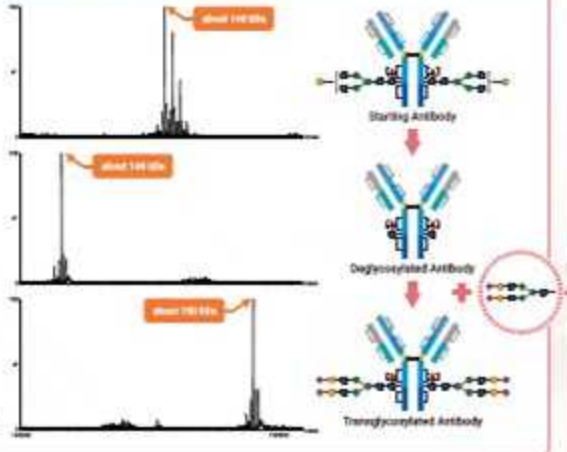
Glycosylation solutions for antibody drug development

GlyTech, Inc.'s chemo-enzymatic glycan production and transglycosylation technologies open up new avenues for the development of high-functionality antibodies and antibody drug conjugates (ADCs).
Our extensive expertise in glycan synthesis and modification allow us to go beyond antibody glycan homogenization with specialized glycan-based linkers for the attachment of payloads and other molecules to existing antibodies to create new ADCs.

Remodeling workflow

After an initial analysis of the antibody (e.g. intact MS, glycan analysis), its glycans are cleaved off, leaving behind the remodelling scaffold. The glycan of the desired conformation is then uniformly introduced. All steps are carried out under mild conditions for maximum control over the risk of conformational changes to the antibody.

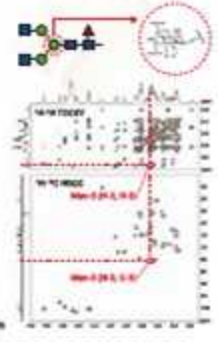


Glycan remodeling workflow and MS analysis data

Features and advantages

Structure-guaranteed glycans

Our glycan synthesis expertise and high-precision glycan analysis capabilities allow us to guarantee the homogeneity and specific structures of our glycans and glycan-based linkers before and after antibody remodeling.
We also use several different multidimensional NMR techniques to identify not only the constituent monosaccharides of our glycans, but also the positions and configurations of their glycosidic bonds.



NMR analysis of FA2 glycan

Fully scalable manufacturing system

A seamless service across the development timeline

Our bulk glycan production platform (>10 kg/year) allows us to seamlessly provide glycans for antibody remodelling on any scale from the research phase to the pre-clinical and clinical phases.

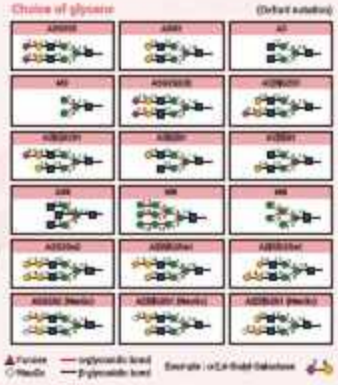
Our solutions

Antibody glycan remodeling

A homogeneous and well-defined glycoform on an antibody can improve process reproducibility, amplify QC, enhance therapeutic efficacy, and improve properties such as immunogenicity, stability, and target recognition. GlyTech's chemoenzymatic antibody glycan remodelling platform makes use of our versatile homogenous glycan production technology to replace the glycans on your target antibody with a glycan of your choice.

Wide glycan selection

Our world-leading glycan production technology allows us to access over 50 different individual glycan structures in high volume and purity. Our N-glycan catalog includes monobranch and asymmetric complex-type glycans, glycans with mixed sialylation, and high-mannose-type glycans.



Glycan-based ADC linker synthesis and attachment

Based on over 20 years experience in glycan synthesis and modification, we can remodel antibody glycans to act as ADC linkers. Our experts will work closely with you to determine the most appropriate glycan modification for the aims and requirements of your project.

Increased linker design flexibility:

- Wider variety of conjugation reactions and linker structures possible than with direct modification of the antibody
- To achieve the optimal synthetic route, payloads/labels may also be introduced onto the glycan in advance, allowing for a wider choice of stable payload-linker structures or environment specific cleavable bonds

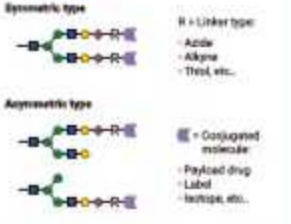
Improved antibody homogeneity:

- Site-specific remodeling carried out with carbohydrate-selective enzymes
- Remodeling carried out with carbohydrate-selective enzymes
- No chemical modification of the antibody protein, so no unwanted by-products
- Uniform drug-to-antibody ratio
- Maintain the existing properties of the antibody, depending on payload

Other advantages:

- High water solubility of glycan moiety
- Potentially as few as two synthetic steps needed

Flexible design



Flexible service

We can provide not only transglycosylated antibodies but also glycan linkers that have payload or activated group.