

# Synovo

## A Novel Partner In Glyco Chemistry

**Synovo GmbH** is a Pharmaceutical contract research enterprise located in Tübingen, in Southern Germany. As part of our synthetic chemistry offering, we provide custom glycoconjugate building blocks designed to meet the needs of our partners.

The products we offer include:

- a flexible system for carbohydrate labeling,
- individually designed custom building blocks for saccharide synthesis,
- neo-glycosides resistant to enzymatic degradation,

At **Synovo**, our goal is to provide quick and flexible solutions for our customers`needs.

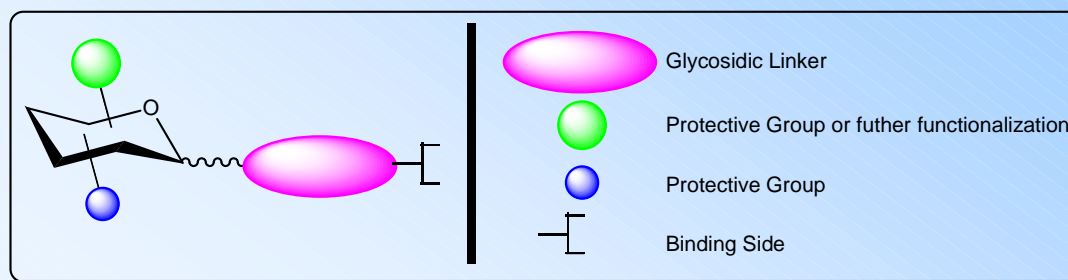


[www.synovo.com](http://www.synovo.com)

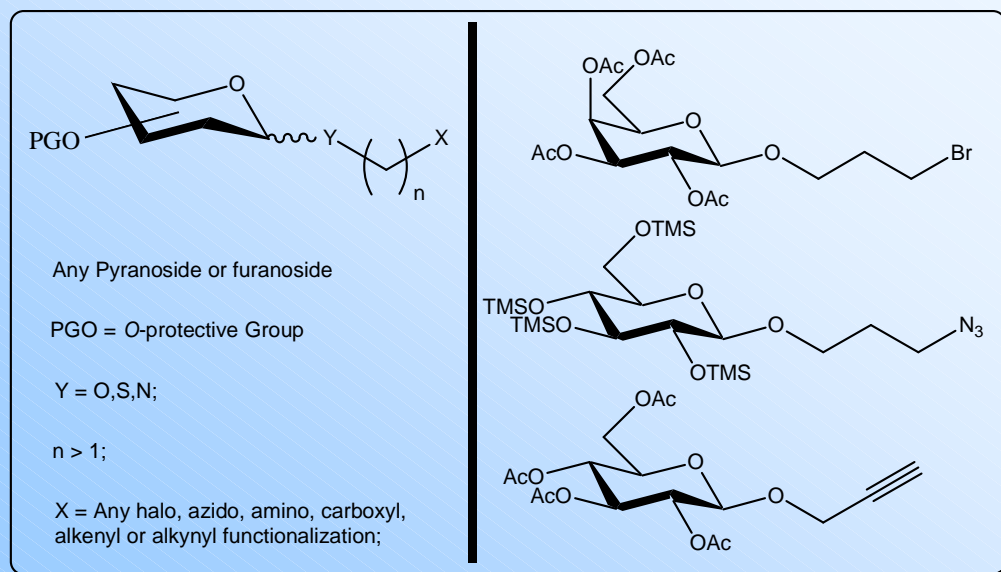
# Glyco Labeling

Attaching hydrophilic polyol residues (e.g. saccharides) to compounds allows manipulation of solubility and other physical properties such as cellular uptake, first pass effect or distribution. However, applications are not limited to medicinal chemistry

In order to determine the effects of glycoside derivatization, **Synovo** offers a carbohydrate linking system combining a sugar residue with an appropriate reactive site:



Any desired mono- or oligosaccharide of your choice can be bound to some specific linker as an O-, S- or N-glycoside. Adequate  $\omega$ -functionalization of the tether allows further coupling to a drug:



Hence

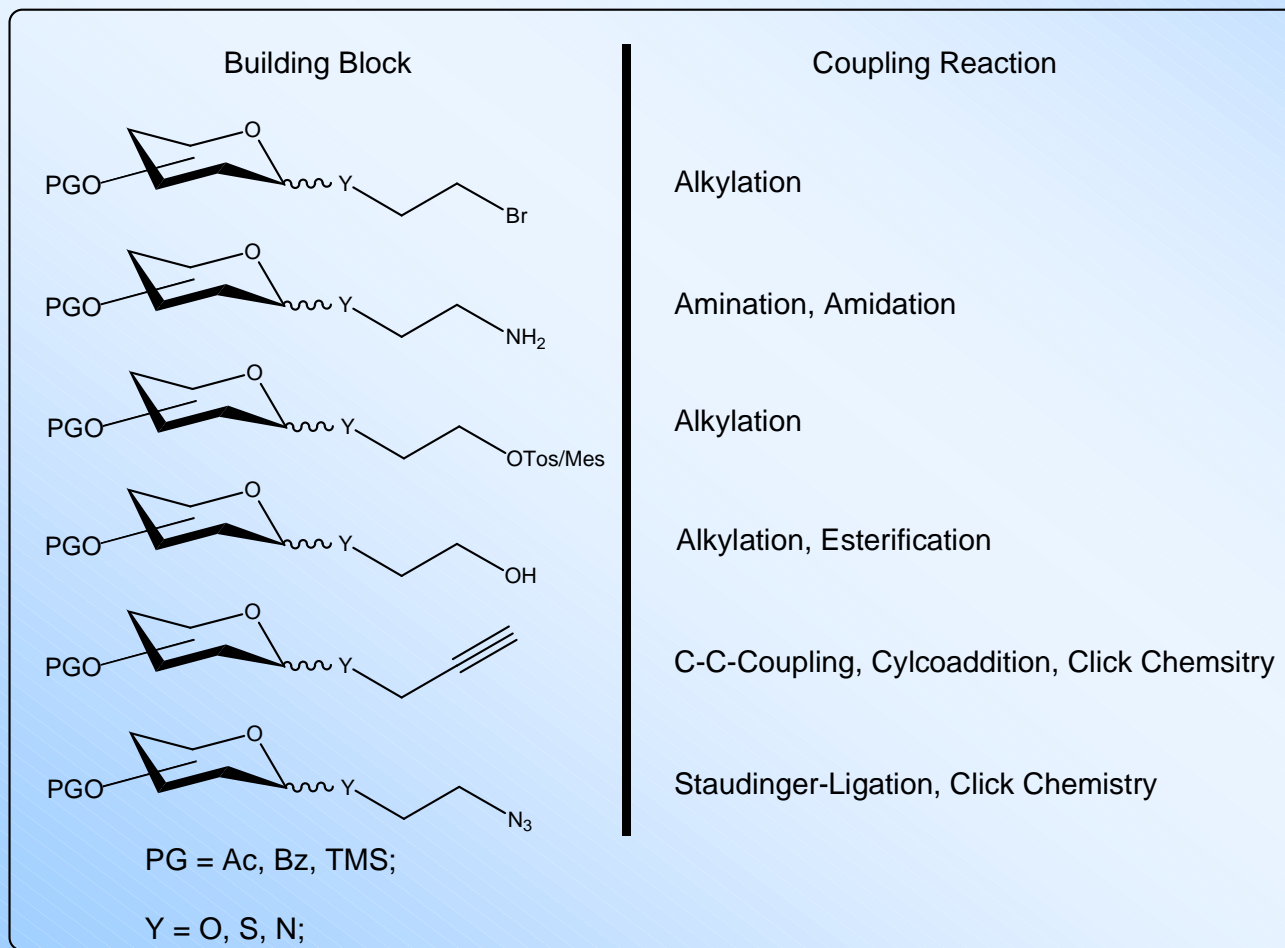
- flexible use of protective groups,
- free choice of glycosidic linkage and
- individual design of the spacer system

provide carbohydrate conjugates ideal to meet your requirements!

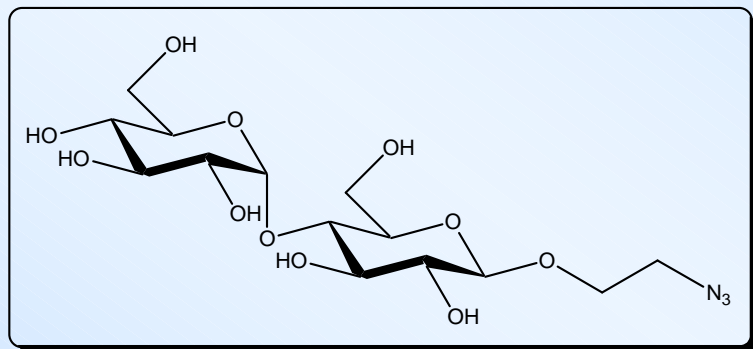


Glycoconjugate formation is greatly facilitated by this approach and this opens up Library approaches.

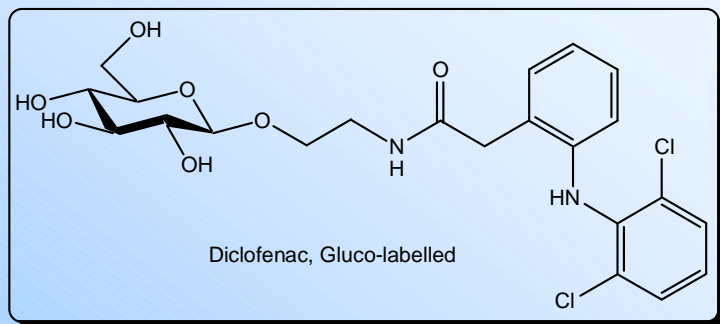
Depending on the chemical nature of the target **Synovo** offers the following means to quickly and specifically react both partners in the most efficient way:



Please take a look at a few examples we are working on – maybe some of these structures will catch your eye...

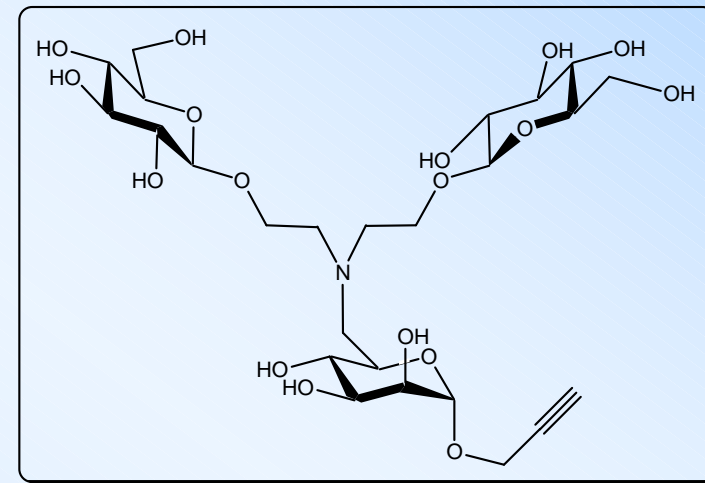
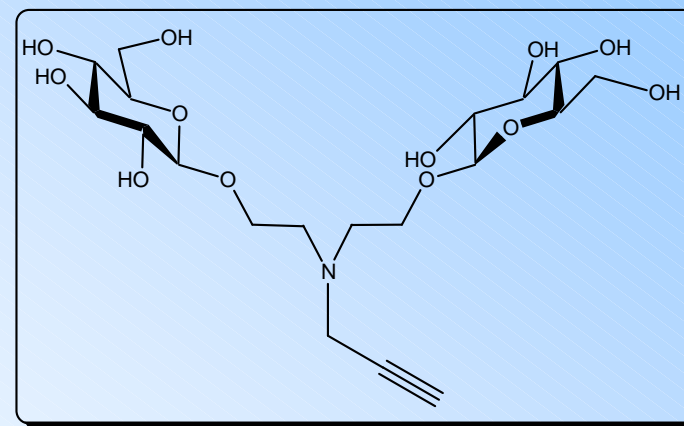


maltose-based example for disaccharides



Diclofenac, Gluco-labelled

example of a glyco labeled drug



two examples of carbohydrate dendrimers

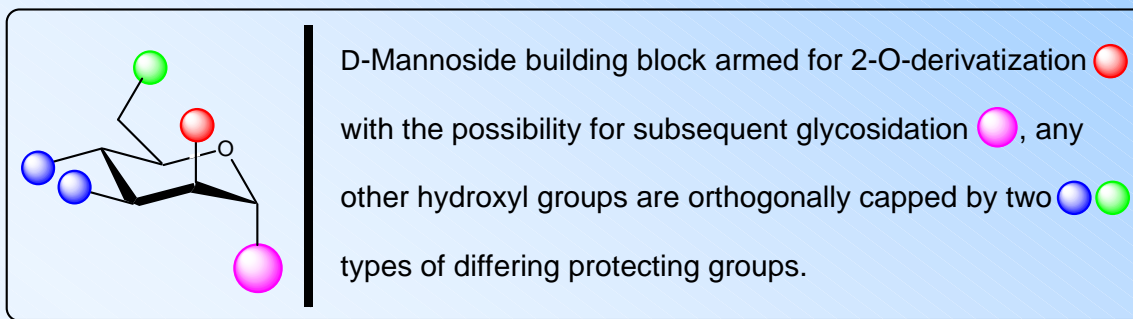
Of course **Synovo** would be glad to listen to your ideas and the issues you face in your chemistry work in this field.



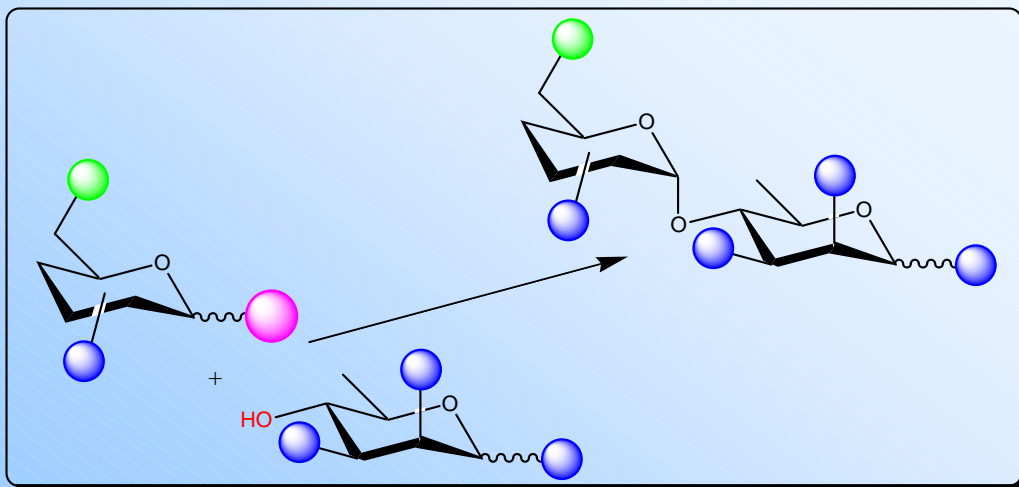
# Custom Building Blocks

Oligosaccharide and glycoside preparation are amongst the most challenging tasks of modern synthetic chemistry. This is mainly due to the demanding requirements of selective manipulation of saccharide hydroxyl functions.

In order to hasten synthetic access to desired glycosides, **Synovo** offers a variety of custom carbohydrate building blocks ready for the next step in reaction sequences as, e.g., glycosidation:



Example for mannose based building blocks

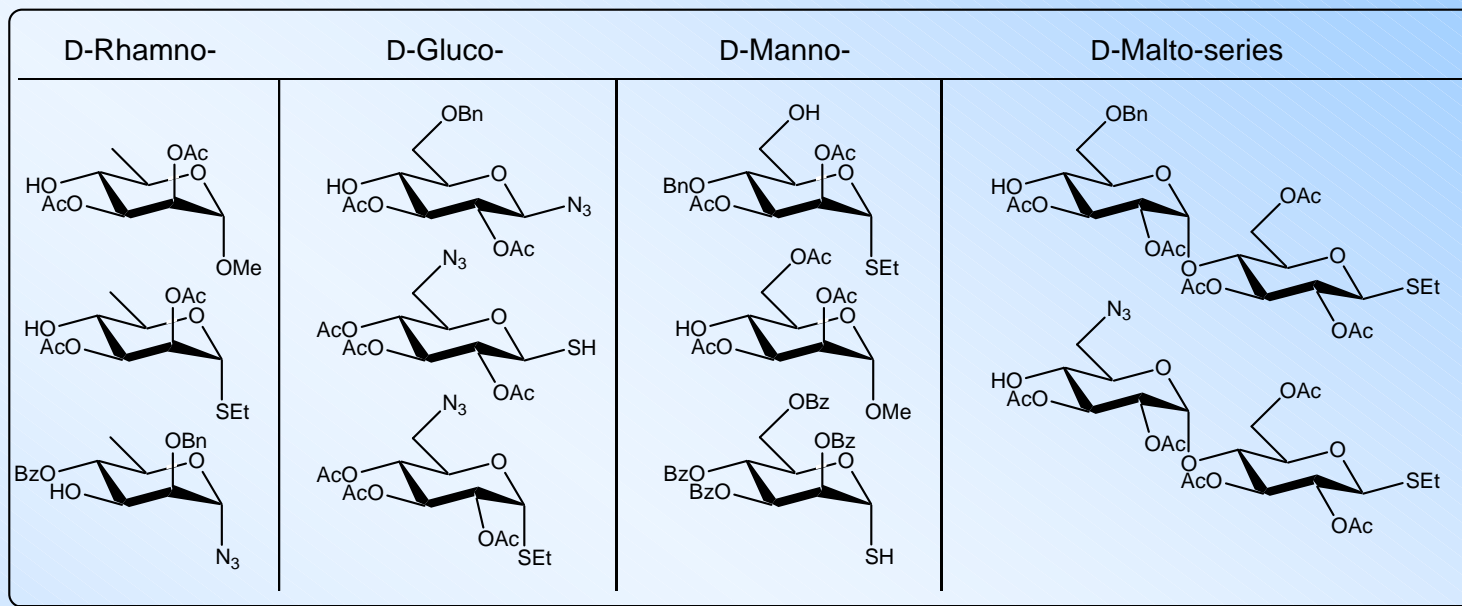


We have put a special focus on developing hexopyranose and hexofuranose based sugars, as they present one of the most common intermediates for oligosaccharide build up.

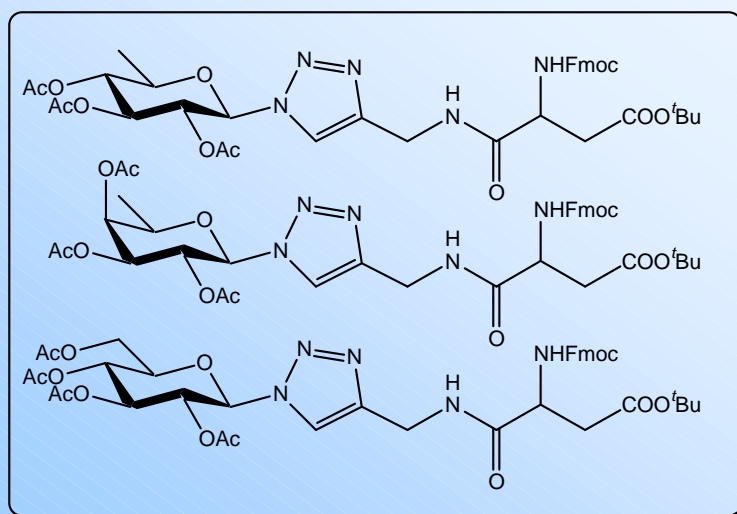
Among these, high value glycosides can be found, including D-rhamnosides, unsaturated or thio sugars!



Please take a look at the following choice of building blocks **Synovo** offers:



Catalogue outtake of some mono- and disaccharides



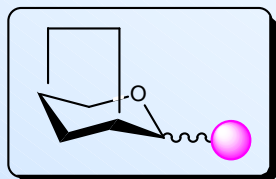
Also in the field of glycosylated amino acids **Synovo** offers a range of substances useful for e.g. solid phase peptide synthesis!

asparaginate carrying orthogonal protected glyco moieties linked via 1,2,3-triazoles

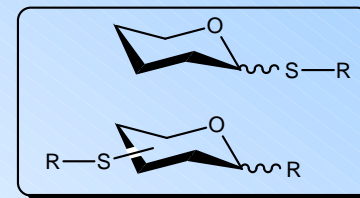


# Degradation resistant sugars

Making carbohydrate residues more stable towards enzymatic degradation is a major task in developing novel sugar containing or sugar based candidates for medicinal applications. Exchanging hydroxyl with thiol groups or restricting conformation are techniques often rendering desired feature.



Being also a part of our building block design concept, **Synovo** offers glycosidation of thio sugars yielding valuable S-glycosides as well as conformational restricted mono- and disaccharides for further synthesis.



Generally **Synovo GmbH** offers expertise and help in the complex field of sugar chemistry. We want to provide quick access to products and solutions for our partners. To meet your expectations we offer:

- clear and fast quotation,
- flexible project scaling,
- sophisticated analytical standards (incl. NMR, HPLC, LC-MS etc.),
- rapid feedback on project constraints;



# Contacts

For further information please check our catalogue on [www.synovo.com](http://www.synovo.com)  
or contact us directly via email or phone:

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