

Glycoscience Program



Nearly all aspects of biology are affected by glycan mediated events. All cells contain an extensive array of sugars (glycans) that play critical roles in intracellular functions, and which modulate or mediate intercellular interactions with other cells or the extracellular matrix. For example, like phosphorylation, O-GlcNAcylation (addition of O-linked N-acetylglucosamine to serine or threonine residues of intracellular proteins) regulates numerous intracellular signaling events. Likewise, glycosylation of membrane proteins and lipids plays a critical role in intercellular communication, by mediating the function of cellular receptors. Unfortunately, it is difficult to synthesize or sequence glycans, which hinders the study of their biological functions, and their use as biological targets for drug discovery.

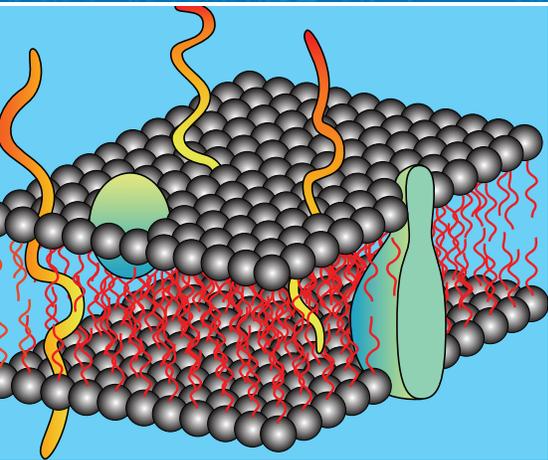
Although there have been a handful of notable successes in carbohydrate-based drug development, the complexity of

carbohydrate chemistry makes glycoscience inaccessible to most biomedical researchers.

The NIH Common Fund Glycoscience program is focused on creating new methodologies and resources to study glycans and develop these resources so they may be more easily understood and accessed by the broader biomedical research community. Achieving this goal will allow investigators to fully explore the roles of carbohydrates in their biological models, pathways, and/or diseases of interest, rather than fail to attempt such discovery due to a lack of tools or expertise. Initiatives of this program have been designed to encourage new strategies and high-risk approaches for methods and tool development, with subsequent rapid transition of successful projects to commercialization.

Program Initiatives

- › Develop methods and technologies for synthesizing biomedically relevant carbohydrates.
- › Develop accessible tools for probing and analyzing carbohydrates and their interaction partners.
- › Develop tools for integrating and analyzing data.



Glycoscience Resources

Glycoscience program resources are available to the biomedical research community. Links to specific Glycoscience program resources may be found at <https://commonfund.nih.gov/Glycoscience/programresources>

Glycoscience Funding Opportunities

To find out more about Glycoscience Funding Opportunities, please visit <http://commonfund.nih.gov/Glycoscience>

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