Using CarboGrove to guide experimental design and data interpretation

GLIC Seminar Series: Glycan Arrays
3/06/23
Zachary Klamer
Big Picture

Demo

Application
Our work has touched on nearly every aspect of glycan arrays

• Worked closely with array developers in designing new arrays (ZBiotech)

• Developed software for the quantification and summarization of array images (SignalFinder Microarray)

• Developed software for interactive and automated analysis of glycan array data (MotifFinder)

• Compiled the analysis of over a thousand datasets into a database of specificities (CarboGrove)
What is a motif?

• A motif is a pattern – commonly a substructure but can be more...
Beyond simply “finding” motifs

From data to insights

We’ll see how this can lead to novel insights in our demo!
Improving accessibility of array data
Big Picture
Demo
Application

Carbogrove.org
Big Picture
Demo
Application
Guiding Experimental Design

• Searching CarboGrove terminal HexNAC glycan binding proteins

• Define examples of different presentations of HexNAC and predict binding

• Select a set of lectins which meet the experimental needs and give as much information as possible
Assisting in result interpretation

Questions?

MotifFinder
SignalFinder Microarray

Brian Haab, Ph.D.
Anna Repesh B.S.
Hoang-Le Tran B.S.

Jian Zhang, Ph.D. Z Biotech
Next Presenter: René Ranzinger

The Glycan Array Data Repository
03/20/2023 10am ET