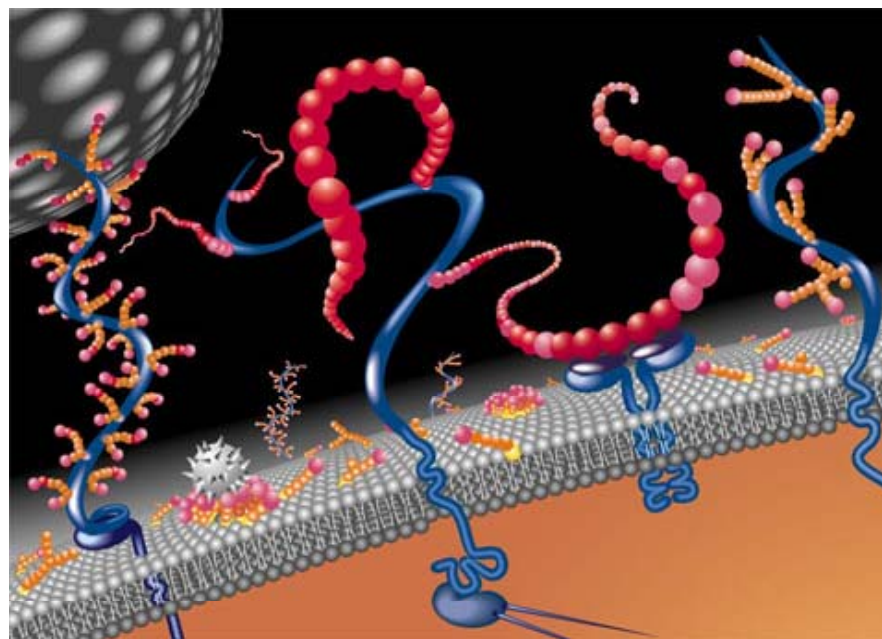


A Microarray Strategy for Functional Glycomics

Dr. Richard Cummings

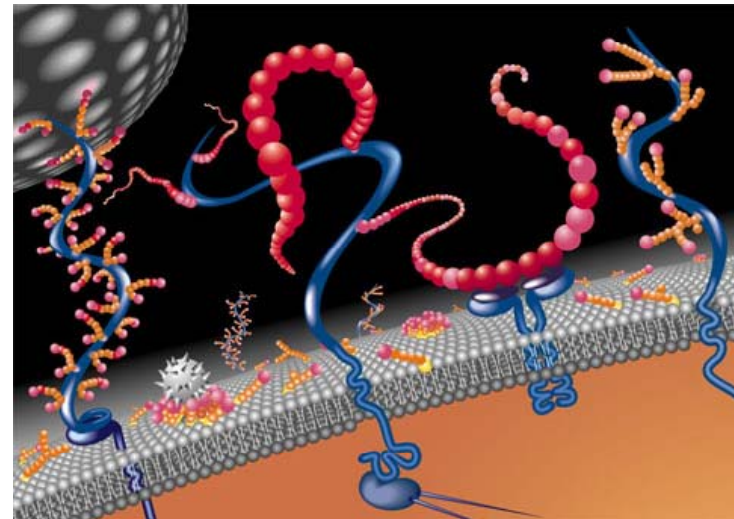
William Patterson Timmie Professor
Chair, Department of Biochemistry

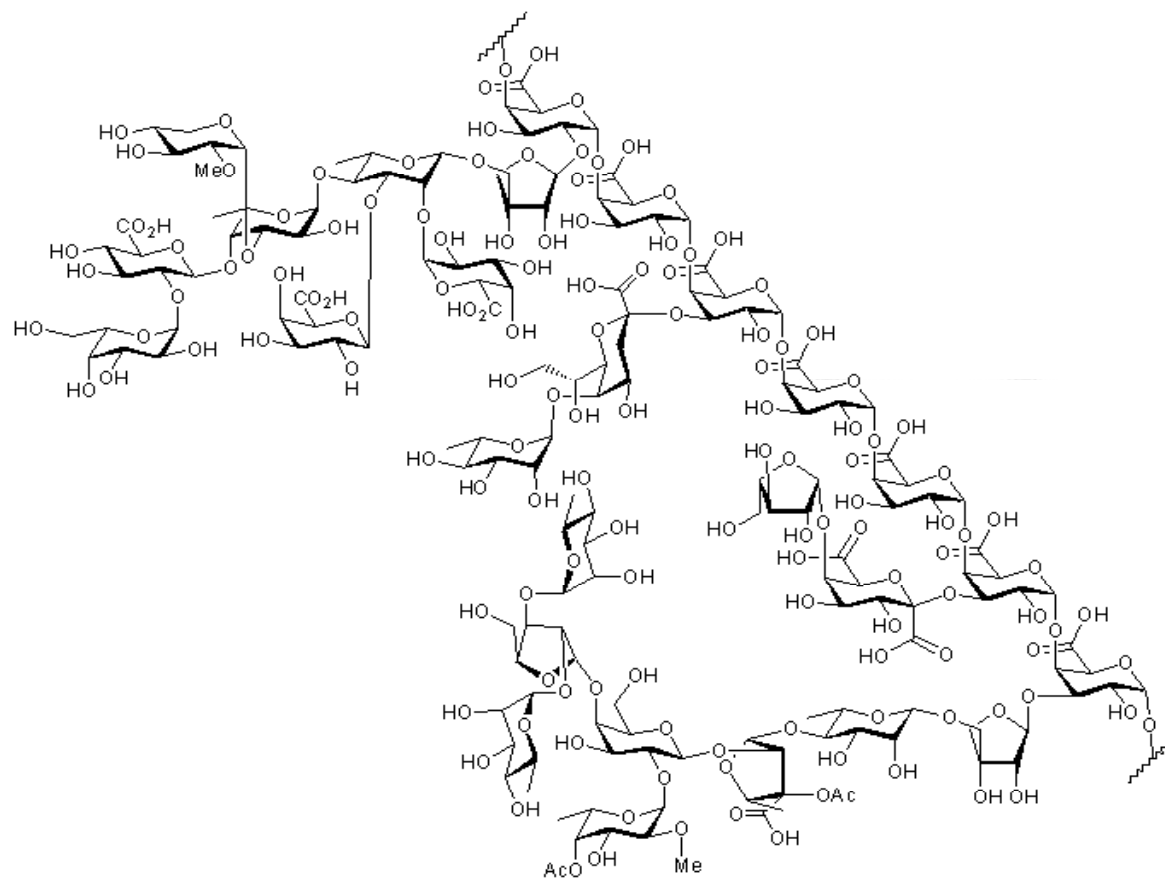
Cory G. Acuff, Ph.D.
Sr. Licensing Associate
OTT Breakfast Club
May 17th, 2011



What is Glycomics?

- Glycans are sugar polymers that are bound to proteins and lipids.
- Glycan components have multiple functions
 - Reproduction
 - Cell Adhesion
 - Signaling
 - Immunity
 - Cancer Development

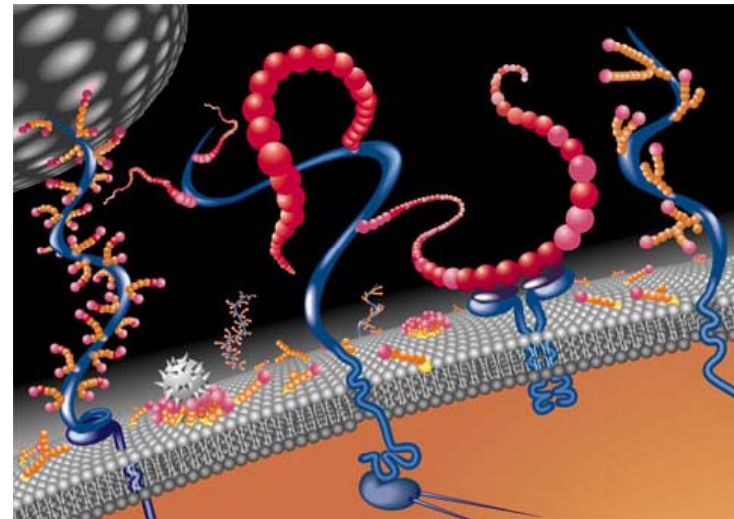




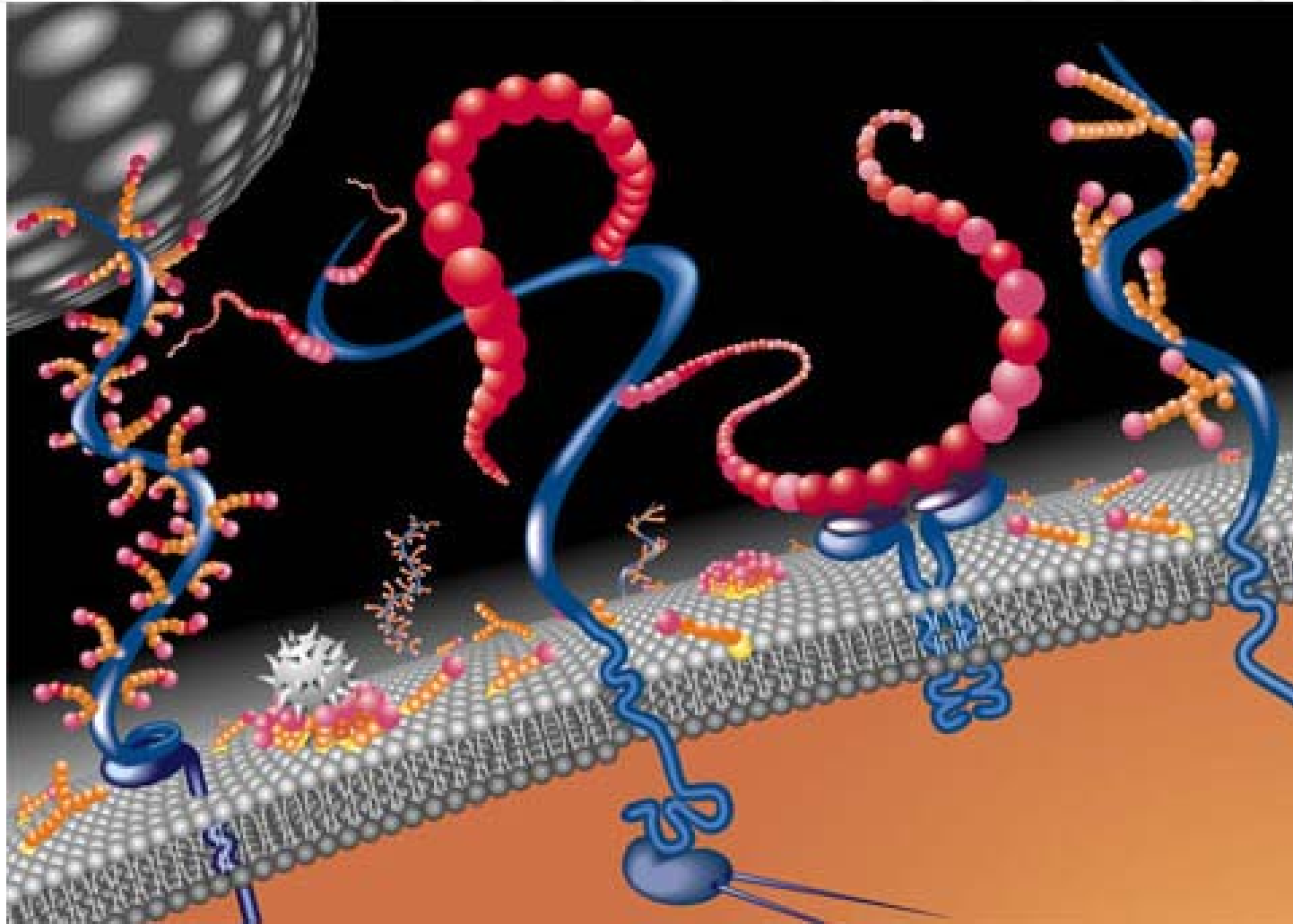
Rhamnogalacturonan II (RG-II)

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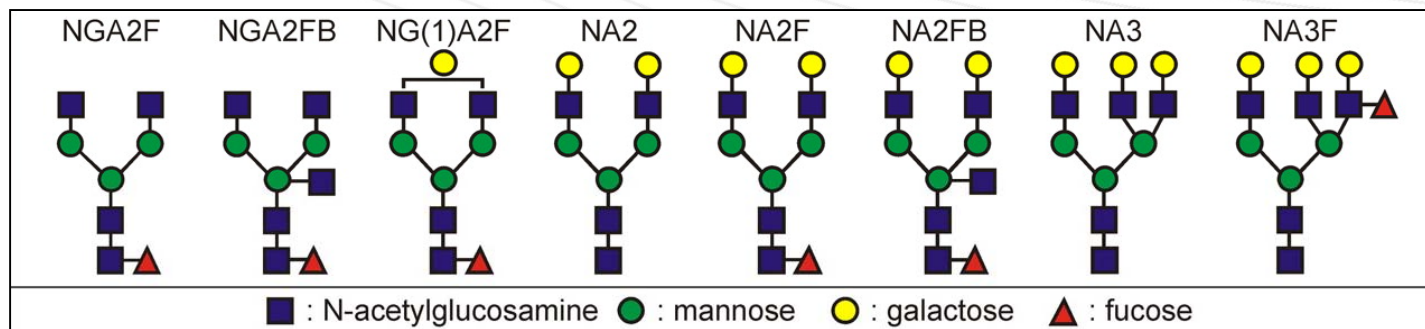


What is Glycomics?



Clinical Uses of Glycomics

* GlycoFibroTest - Glycomics Biomarker Test for Liver Fibrosis



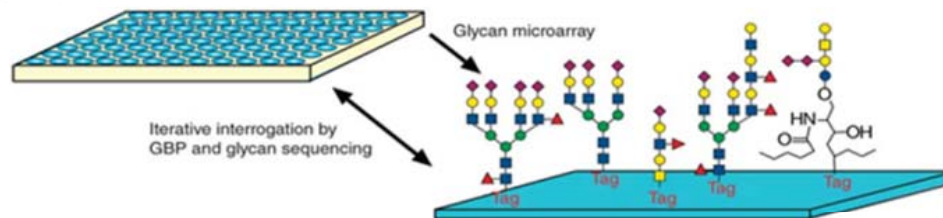
- Measures circulating extracellular matrix components
- Ratio of components change during progression of liver fibrosis
- The NCI-funded Tumor Glycomics Laboratories are searching for glycan-based cancer biomarkers

Glycomics Commercialization

- **Glycomics in Pharma**
 - **Oxford Glycoscience** – purchased by Celltech and subsequently became part of UCB Pharma
 - **GlyKoz** – carbohydrate based antimicrobials
- **Glycomics in Medicine**
 - **Glycominds Ltd**
 - Personalized medicine approaches for treating MS and Crohn's Disease (medical diagnostics)
- **Glycomics Tools**
 - **Glycome Technologies**
 - Mass spec based glycome sequencing and software for analysis
 - **Ezose**
 - High throughput glycomics analysis

How the System Works

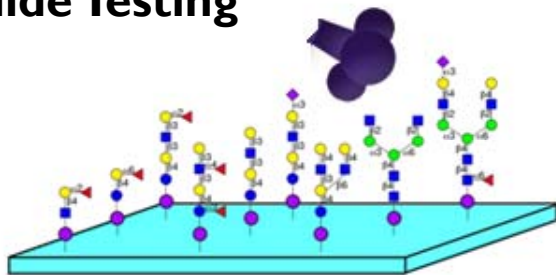
Glycan Library



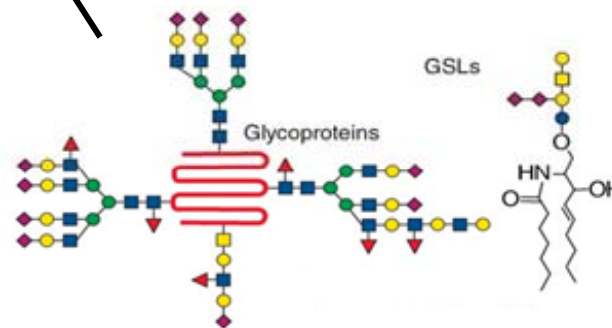
Company

Isolation, Labeling, Purification
Patent Pending

Slide Testing



Customer



Complete Glycome

Commercialization Strategies

- Service and Product Opportunities
 - Screening services
 - Academic research and pharmaceutical companies (i.e. Ezose)
 - Biomarker identification
 - Diagnostic chips sold to clinical testing service providers (Quest)
 - Target identification
 - Biopharmaceutical development (Tn antigen in cancer)
 - Research kits
 - Out licensing of libraries and chip printing technologies

Value Proposition

- Platform technology for creating glycan chip libraries (i.e. Affymetrix)
 - Screening for Biomarkers
 - Cancer
 - Infectious Diseases
 - Autoimmunity
 - Inflammation
 - Identification of Therapeutic Targets
 - Antibody Based Therapies
 - Personalized Medicine
 - Stem Cell Isolation
- Provisional patent filed on system, 11/23/2010