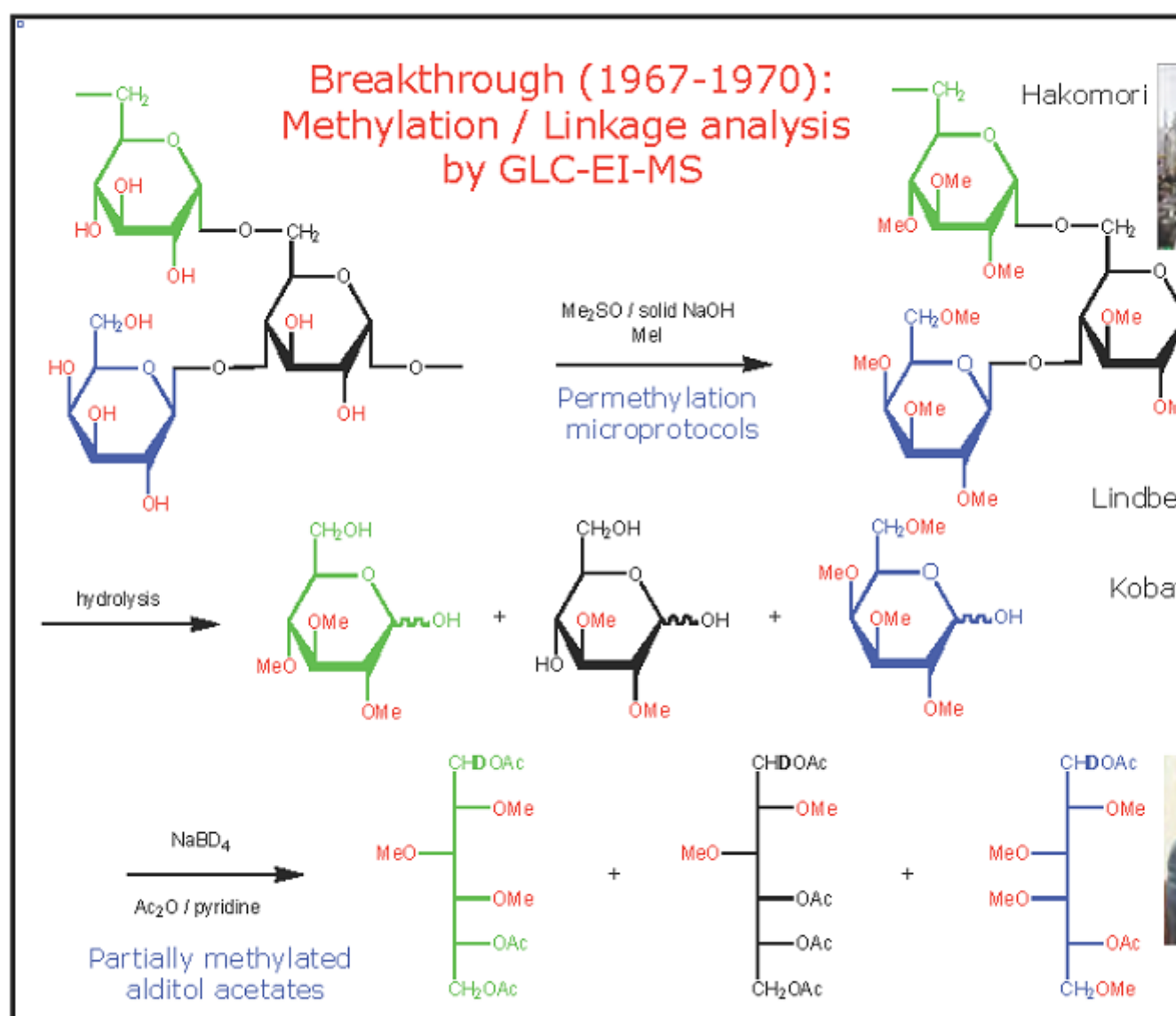


## Glycosidic Linkage Analysis

### Description

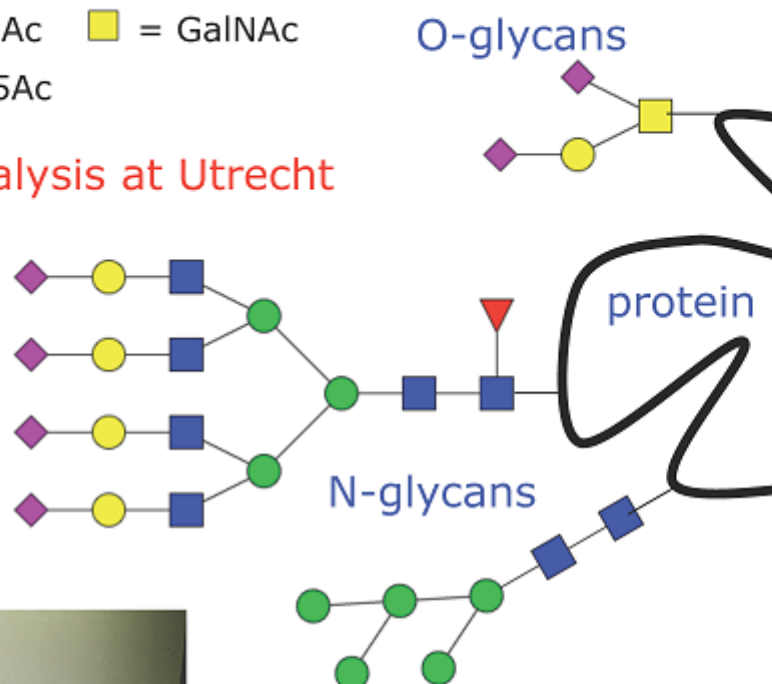
Methylation ??? Glycan -Polysaccharides



● = Gal   ● = Glc   ■ = GlcNAc   ■ = GalNAc  
 ● = Man   ▲ = Fuc   ◆ = Neu5Ac

## Glycoprotein glycan analysis at Utrecht University

360 MHz  $^1\text{H}$  NMR  
 spectroscopy.  
 First instrument in  
 Europe / National  
 facility.  
 1974



Development of 1D  $^1\text{H}$   
 structural-reporter-gro  
 concept (library), base  
 typical chemical shifts  
 the bulk proton region

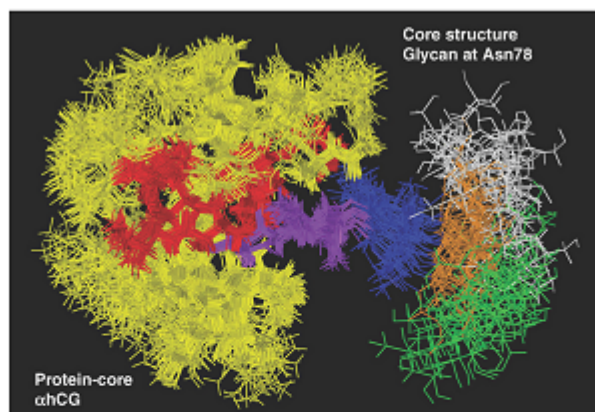
(International) collabor

## A time of structure revisions and finding new elements

Glycoproteins from physiological body fluids and plants.

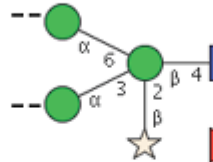
Rec. therapeutic glycoproteins (e.g. EPO, antibodies, FSH,  $\alpha$ -glucosidase).

Urinary oligosaccharides from patients with lysosomal diseases.  
First sialidosis patient in Netherlands.

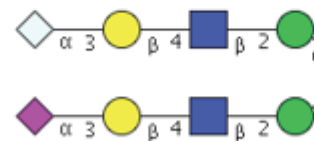


NMR of intact glycoproteins, e.g. structure of  $\alpha$ -hCG

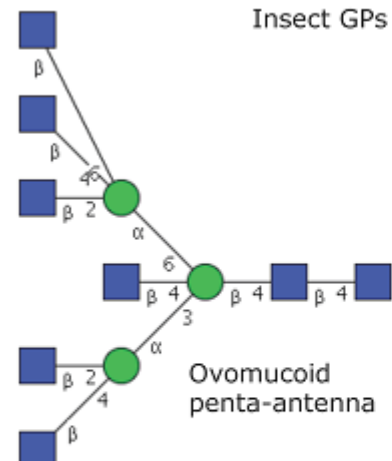
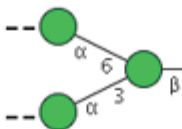
Plant GPs and hemocyanins



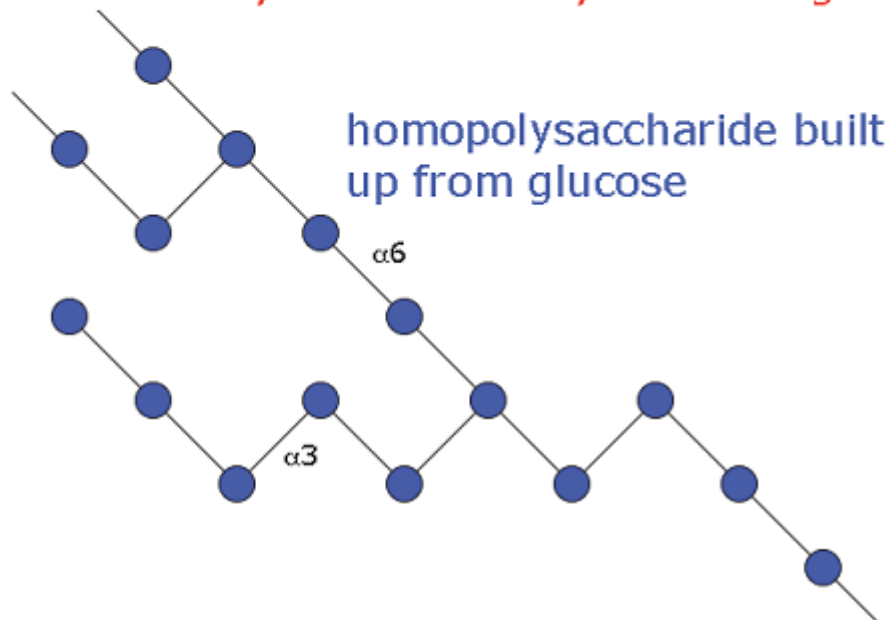
Rec. GPs Neu5Gc



Insect GPs



## Polysaccharide analysis at Utrecht University and University of Groningen

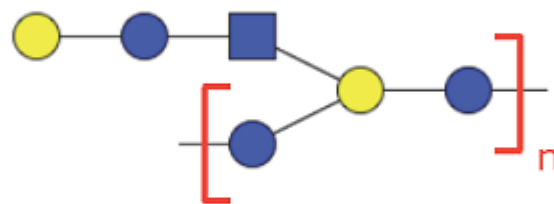


Bacterial polysaccharides with repeating units (CPS and EPS).

Bacterial polysaccharides with non-repeating units (EPS).

Plant polysaccharides with non-repeating units.

Arabinoxylans, AX  
 $\alpha$ - and  $\beta$ -Glucans.  
 Galactans, GOS and sialylated GOS.



heteropolysaccharide built up from repeating hexasaccharide

Development of  $^1\text{H}$  NMR structural-reporter-group concepts (libraries)

Applications

Polysaccharide engineering

### Category

1. News