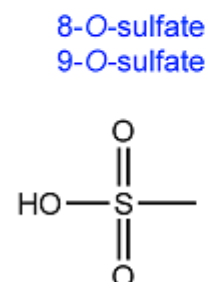
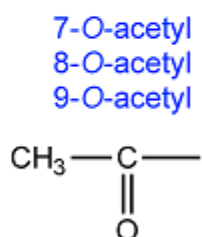
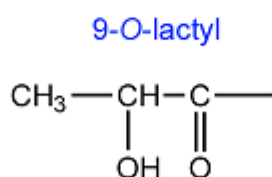


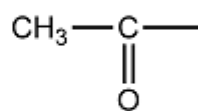
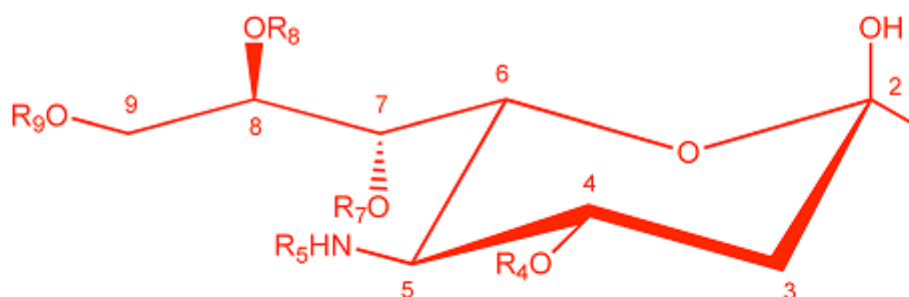
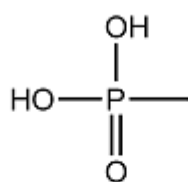
## The Family of Sialic Acids

### Description

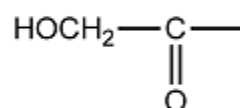
## The family of sialic acids (nowadays around 40 members)



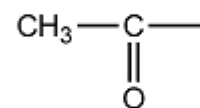
9-O-phosphate



*N*-acetyl



*N*-glycolyl



4-O-acetyl

Most important member: Neu5Ac

## Structural analysis of O-acetylated sialic acid

### Conflict between organic chemistry and mass spectrometry

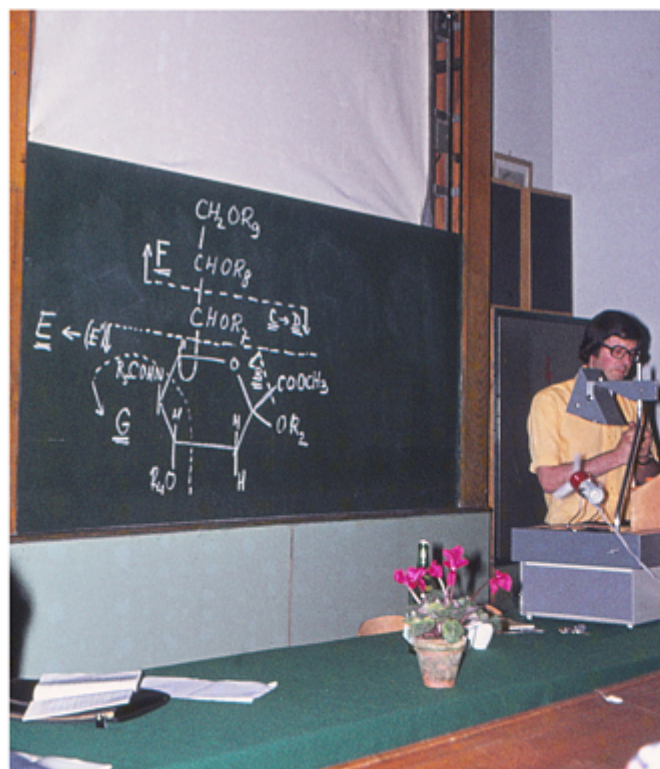
### 1974

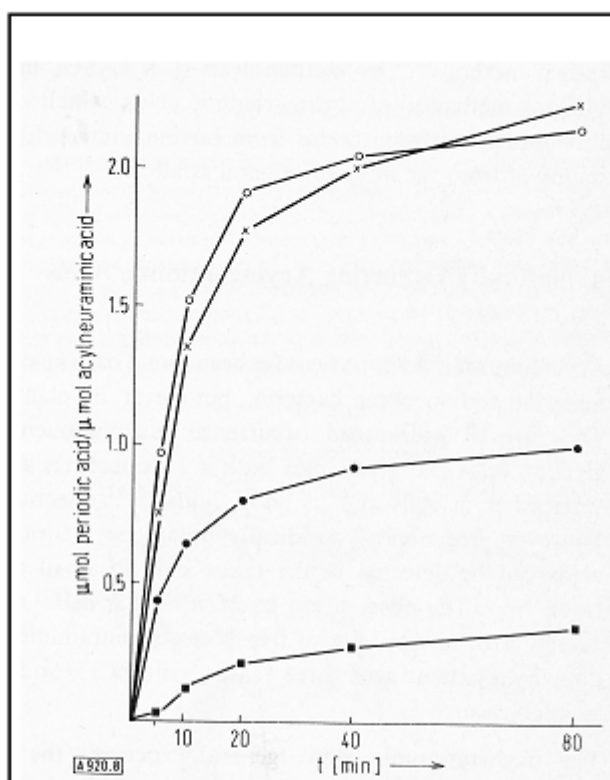
VIIth International Symposium  
on Carbohydrate Chemistry,  
Bratislava, 1974



Prof. dr. Roland Schauer

Gift of Neu5,8Ac<sub>2</sub> (based on  
no periodate consumption)  
for EI-MS analysis





Neu5Ac

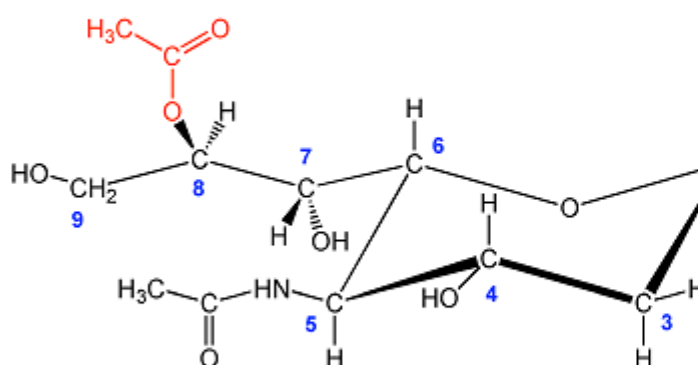
Neu4,5Ac<sub>2</sub>Neu5,7Ac<sub>2</sub>Neu5,8Ac<sub>2</sub>

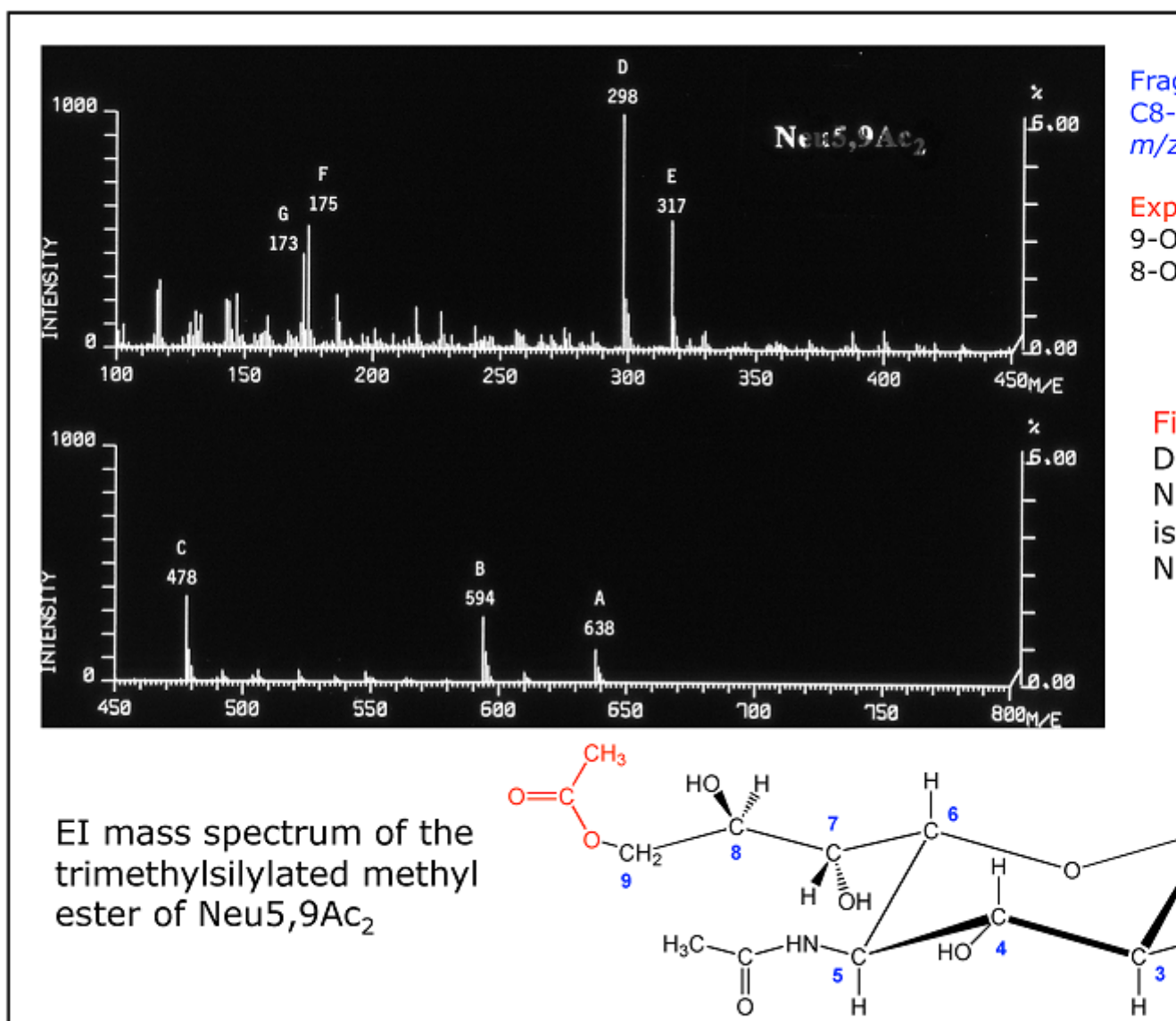
Determination of the **location of O-acetyl groups** on the neuraminic acid skeletons using several isomeric *N*-acetyl-*O*-acetyl-neuraminic acids by **polarographic measurement of periodate consumption** at

R. Schauer, *Angew. Chem. Int. Ed.* (1973) 127-138.

Main *O*-acetylated Sia in different biological sources

- Neu5,8Ac<sub>2</sub> should not show periodate consumption (very minor due to de-*O*-acetylation during the incubation).
- Neu5,9Ac<sub>2</sub> was expected to show a consumption of 1 mol periodate, just like Neu5,7Ac<sub>2</sub> (vicinal OH groups).
- Neu5,7Ac<sub>2</sub> does not react in the Aminoff periodic acid / thiobarbituric acid assay.

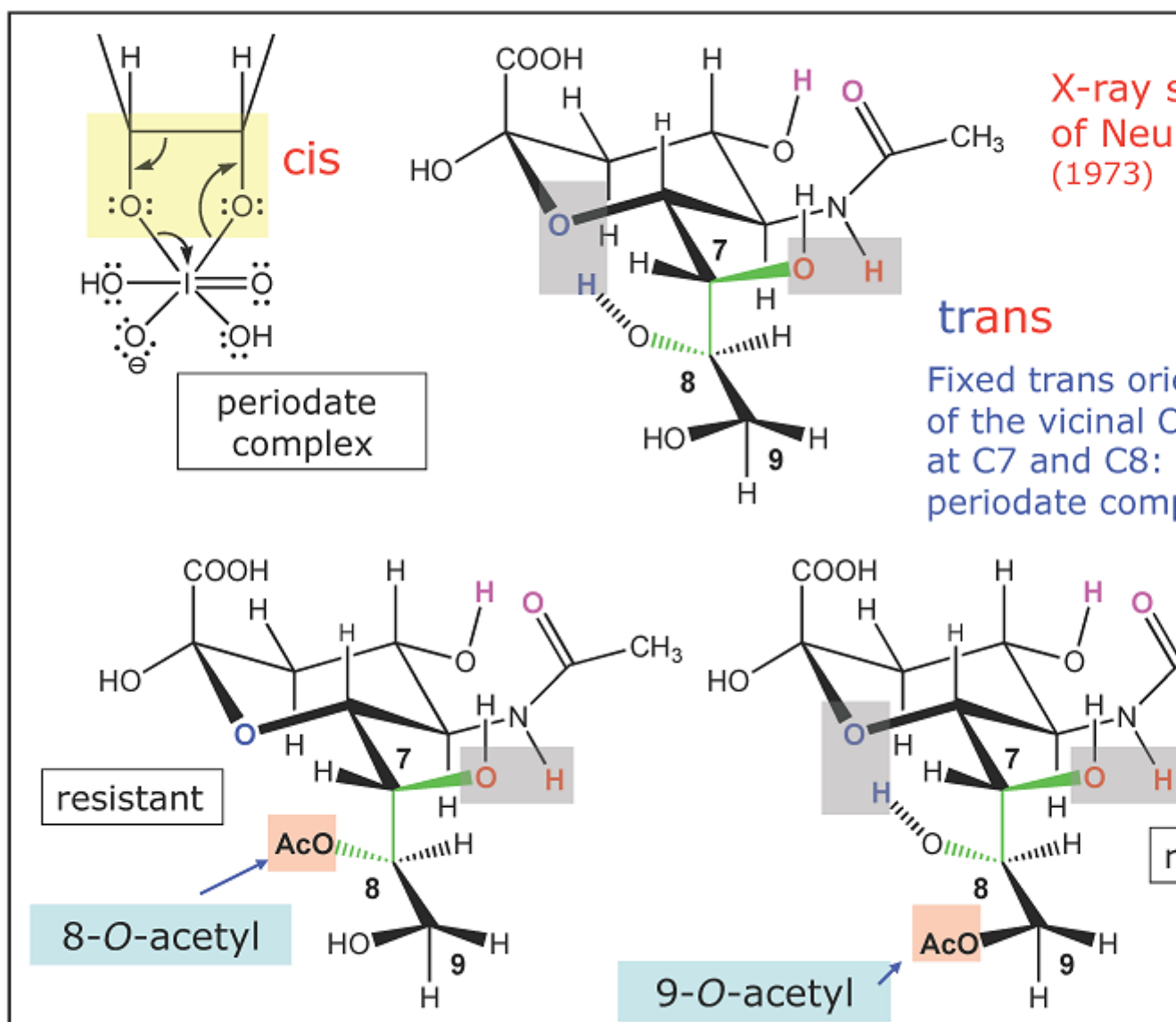




Fra  
C8-  
m/z

Exp  
9-O  
8-O

Fi  
D  
N  
is  
N



Reprinted from

*Carbohydrate Research*, 41 (1975) 7–17

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IDENTIFICATION OF  
O-ACETYLATED N-ACYLNEURAMINIC ACIDS BY  
MASS SPECTROMETRY

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(Received October 17th, 1974; accepted for publication, October 29th, 1974)

**Category**

1. News