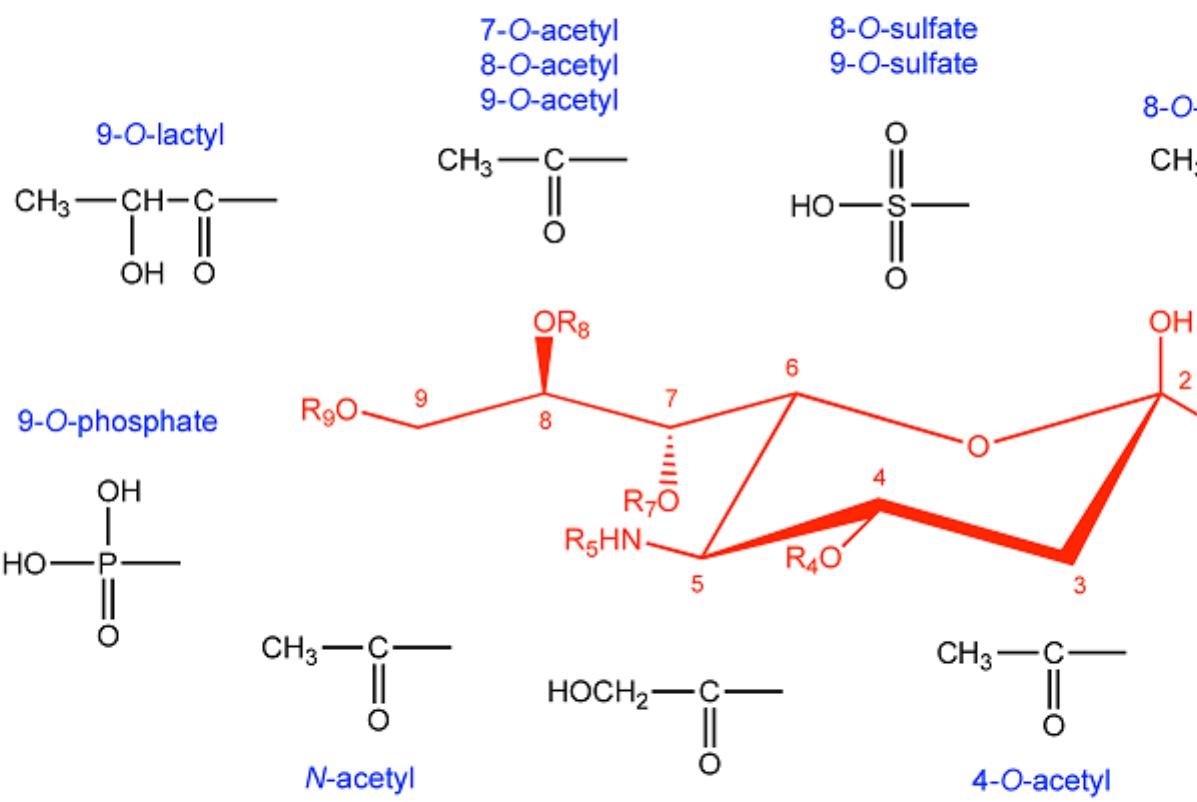


The Family of Sialic Acids

Description

The family of sialic acids (nowadays around 40 members)



Most important member: Neu5Ac

Structural analysis of O-acetylated sialic acid

Conflict between organic chemistry and mass spectrometry

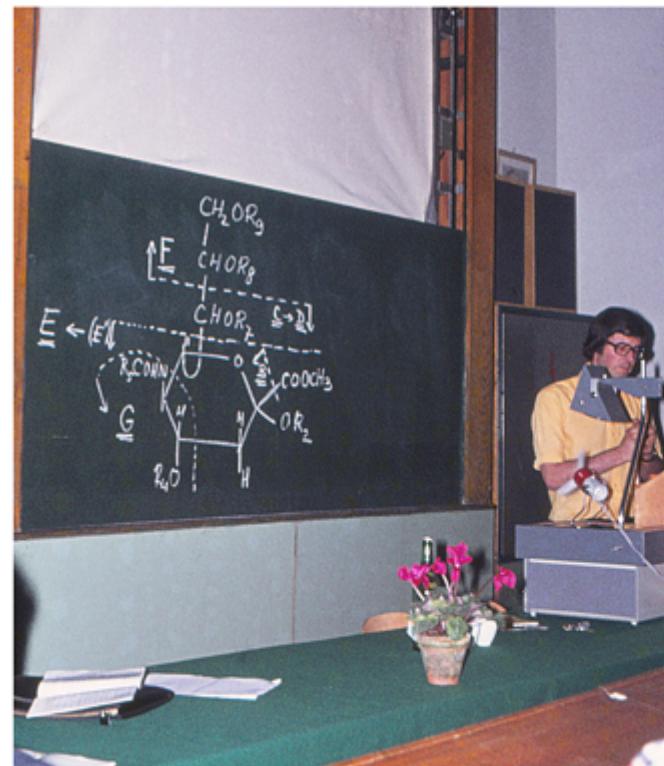
1974

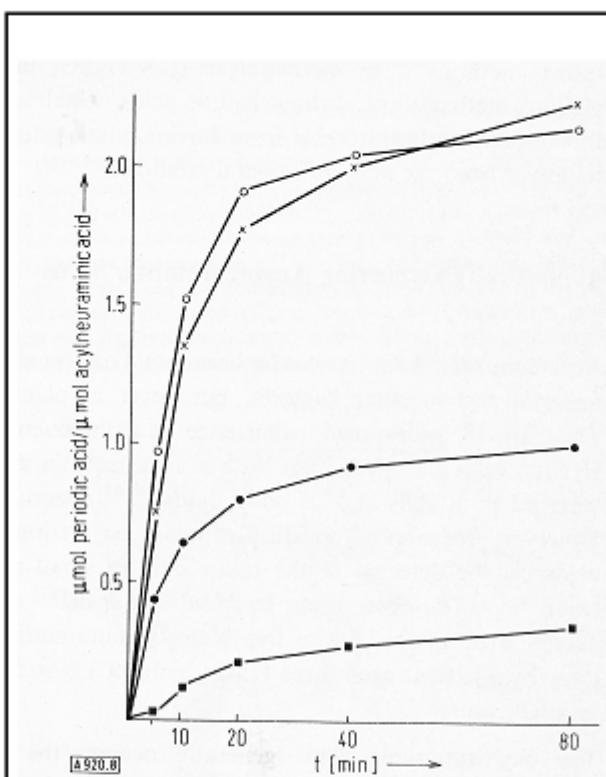
VIIth International Symposium
on Carbohydrate Chemistry,
Bratislava, 1974



Prof. dr. Roland Schauer

Gift of Neu5,8Ac₂ (based on
no periodate consumption)
for EI-MS analysis





Neu5Ac
Neu4,5Ac₂

Neu5,7Ac₂

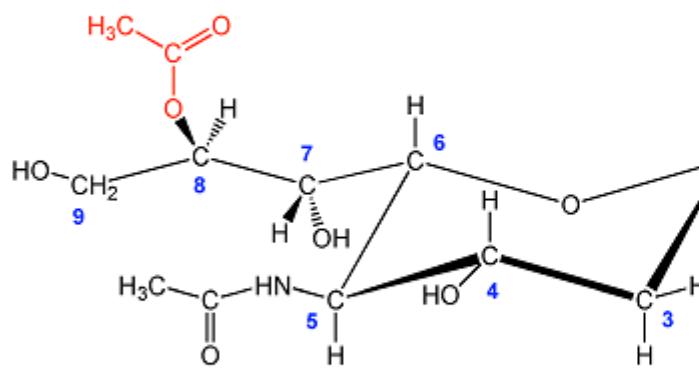
Neu5,8Ac₂

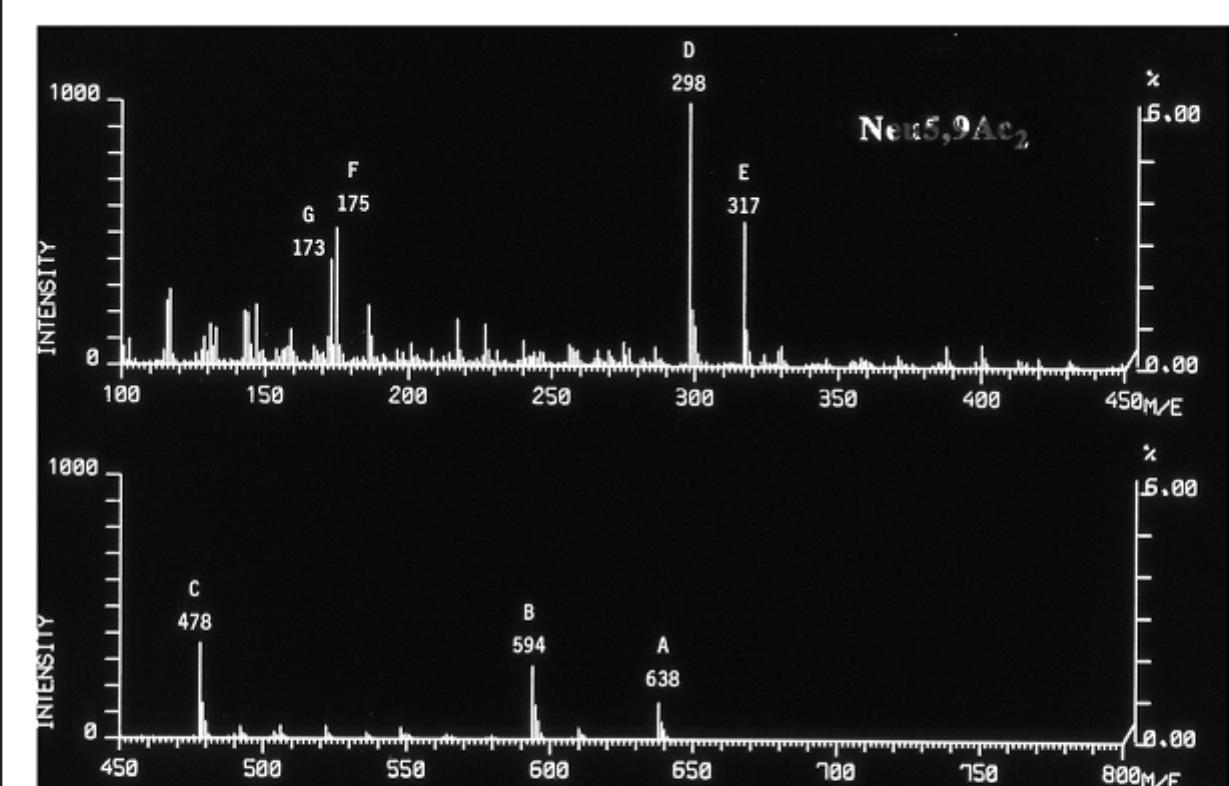
Determination of the **location** of **O-acetyl groups** on the neuraminic acid skeletons of several isomeric *N*-acetyl **O**-acetyl-neuraminic acids by **polarographic measurement** of **periodate consumption** at **A 920.8**.

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

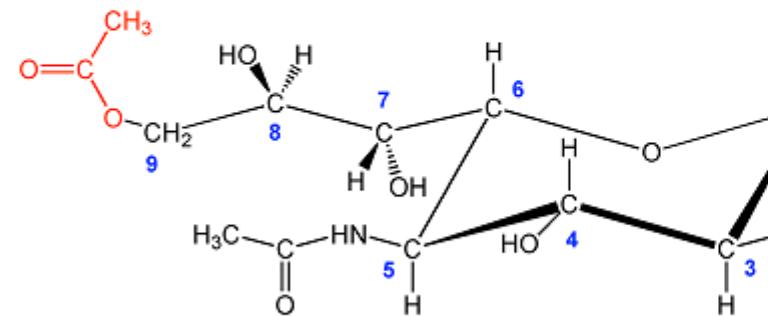
Main O-acetylated Sia in different biological sources

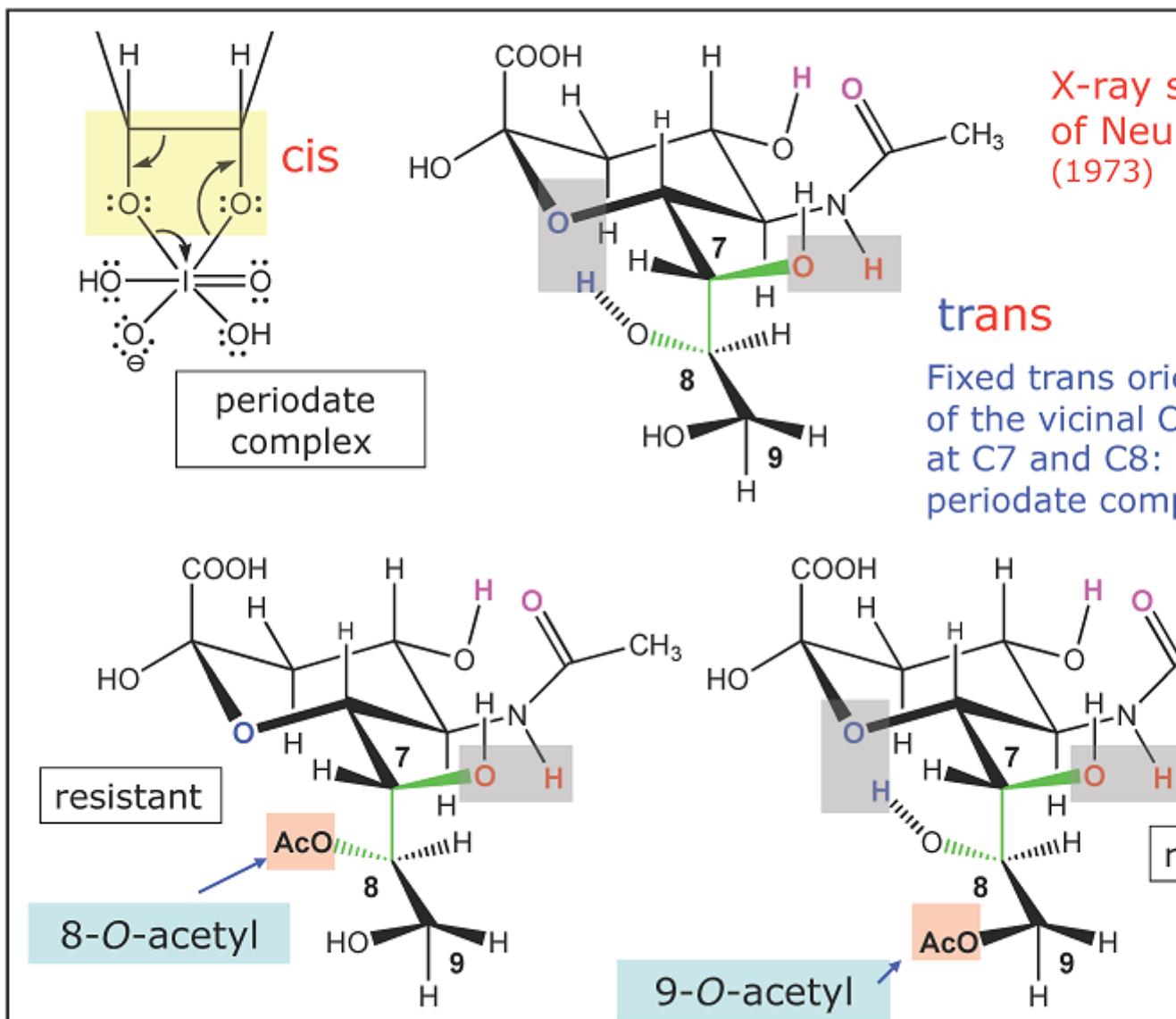
- Neu5,8Ac₂ should not show periodate consumption (very minor due to de-O-acetylation during the incubation).
- Neu5,9Ac₂ was expected to show a consumption of 1 mol periodate, just like Neu5,7Ac₂ (vicinal OH groups).
- Neu5,7Ac₂ does not react in the Aminoff periodic acid / thiobarbituric acid assay.





EI mass spectrum of the trimethylsilylated methyl ester of Neu5,9Ac₂





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