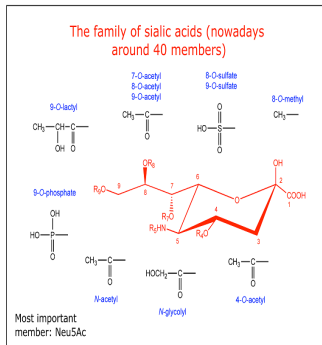
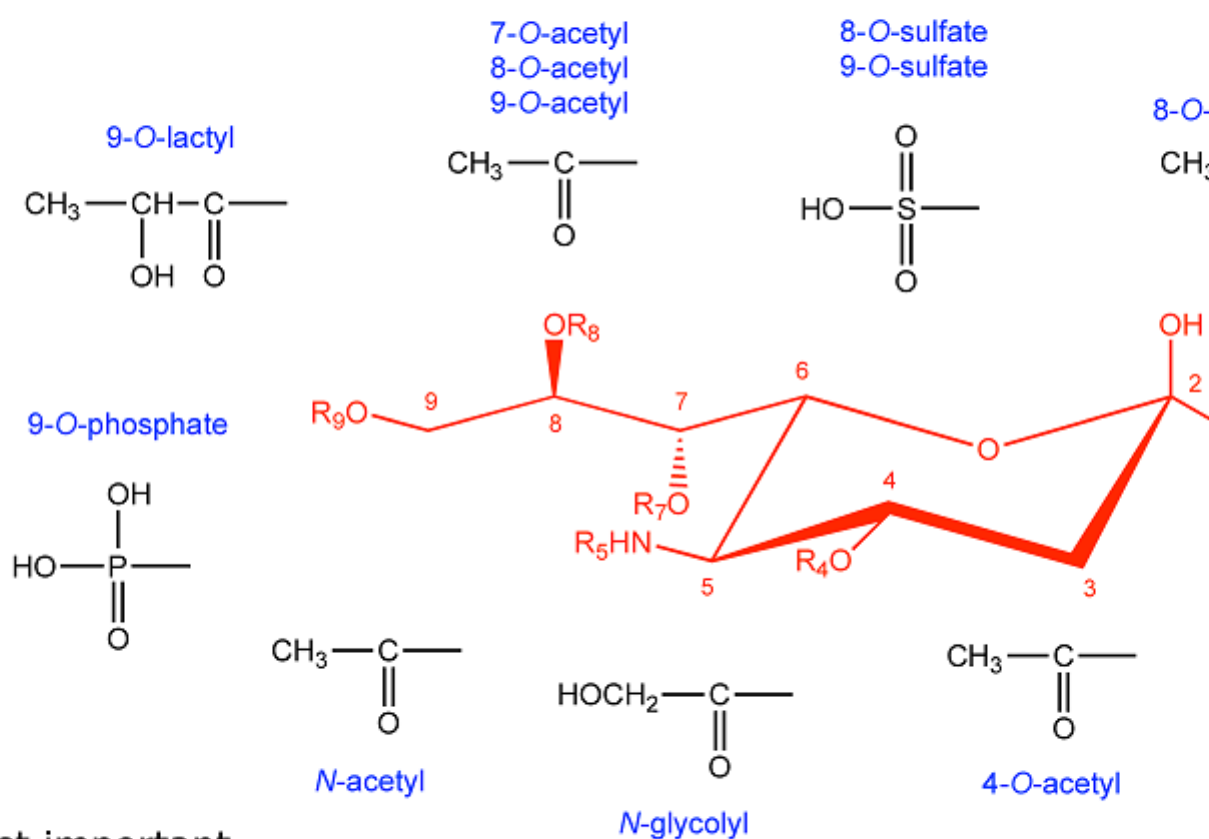




The Family of Sialic Acids

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

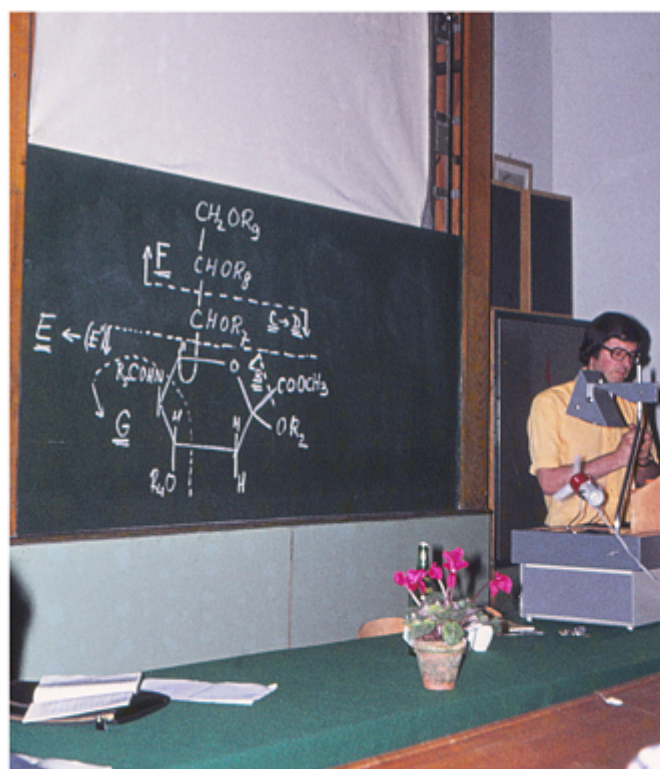
1974

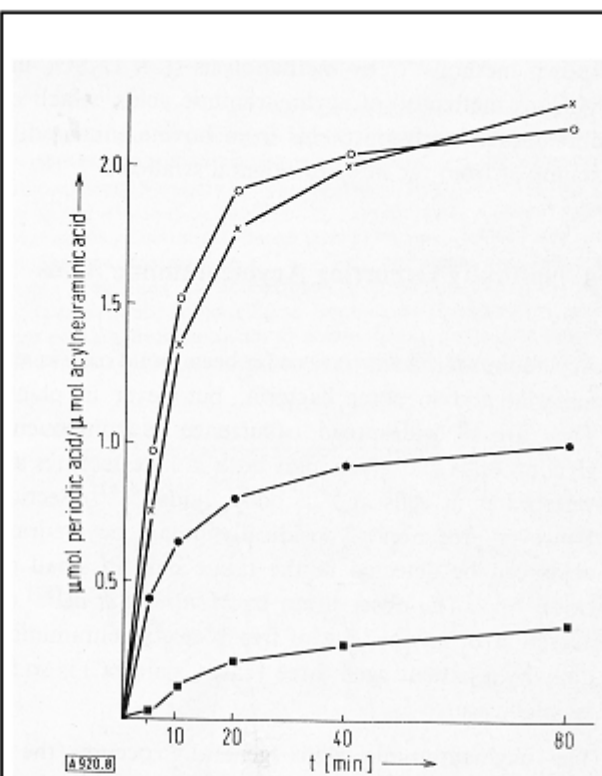
VIIIth International Symposium
on Carbohydrate Chemistry,
Bratislava, 1974



Prof. dr. Roland Schauer

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





Neu5Ac

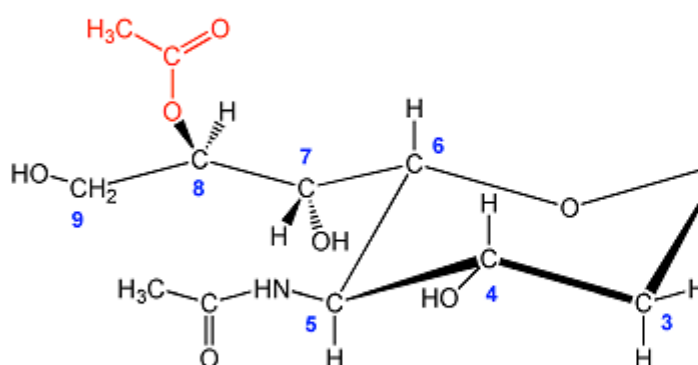
Neu4,5Ac₂Neu5,7Ac₂Neu5,8Ac₂

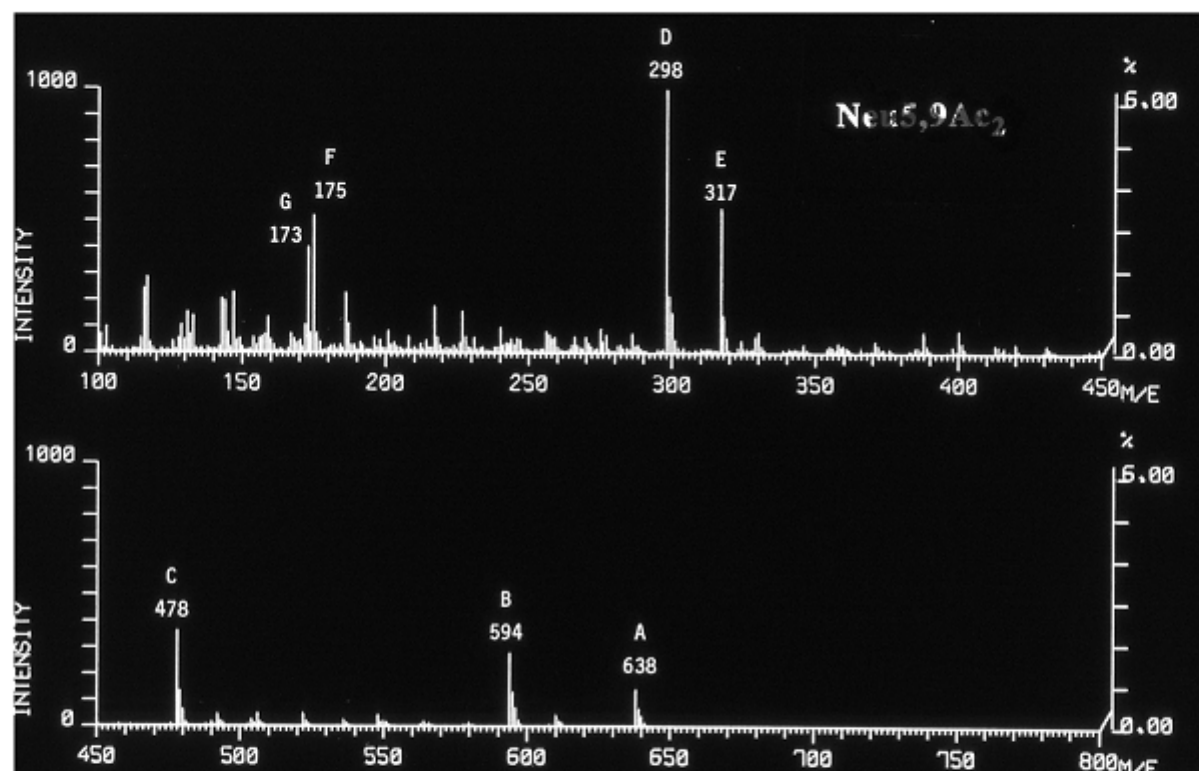
Determination of the **location of O-acetyl groups** on the neuraminic acid skeletons using several isomeric *N*-acetyl-O-acetyl-neuraminic acids. **polarographic measurement of periodate consumption** at

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

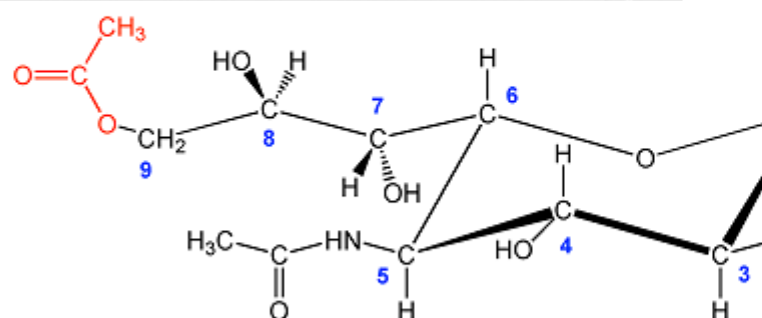
Main O-acetylated Sia in different biological sources

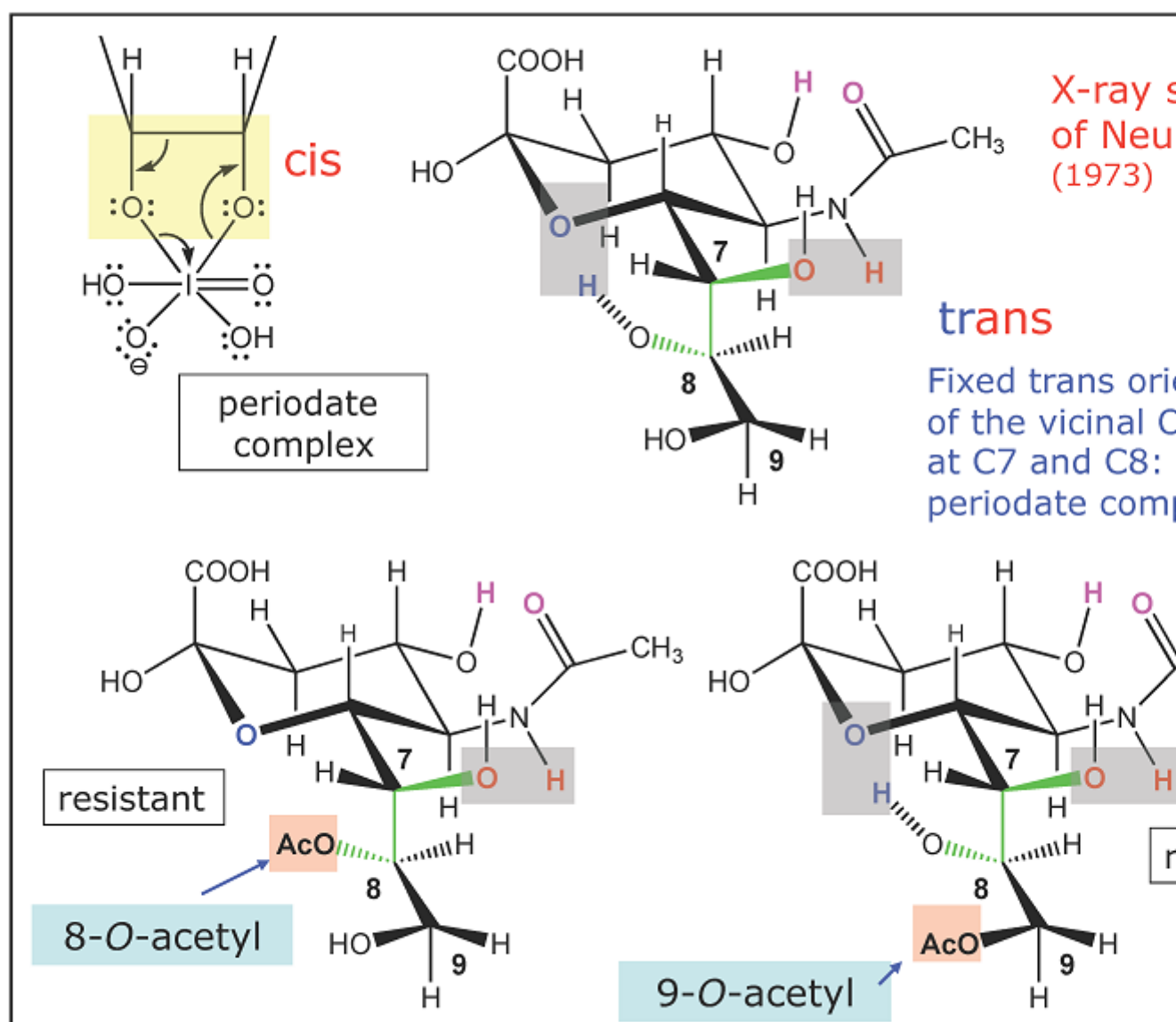
- Neu5,8Ac₂ should not show periodate consumption (very minor due to de-O-acetylation during the incubation).
- Neu5,9Ac₂ was expected to show a consumption of 1 mol periodate, just like Neu5,7Ac₂ (vicinal OH groups).
- Neu5,7Ac₂ does not react in the Aminoff periodic acid / thiobarbituric acid assay.





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





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

JOHANNIS P. KAMERLING, JOHANNES F. G. Vliegenthart,

Laboratory of Organic Chemistry, University of Utrecht (The Netherlands)

CORNELIS VERSLUIS,

Laboratory of Analytical Chemistry, University of Utrecht (The Netherlands)

AND ROLAND SCHAUER

Arbeitsgruppe für Zellchemie, Institut für Physiologische Chemie, Ruhr-Universität Bochum (The Netherlands)

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Category

1. News