



The problem of absolute configurations

Bijvoet (1951)



Fischer (1891)



About the configuration of glucose and its isomers:
"As all observations made so far for carbohydrates are in such a good agreement with the asymmetric carbon atom theory, it will be allowable to risk already now to utilize this theory as a basis for the classification of these substances."
One problem, he could not solve was that of the absolute configuration of the compounds, and he made a choice in correlating optical rotations and absolute configurations [(+)/(−) are physical values and (D)/(L) stem from a theoretical agreement].

Solving the problems of the absolute configuration via crystallographic studies:
Fischer made the right choice that "Dextrorotatory glucose = D-glucose".

Absolute Configuration

Description

From Fischer, Bijvoet

The problem of absolute configuration

Fischer (1891)



Bijvoet (1951)

Solving the problems of the absolute configuration via crystallographic studies.

Fischer made the right choice that "dextrorotary glucose = D-glucose".

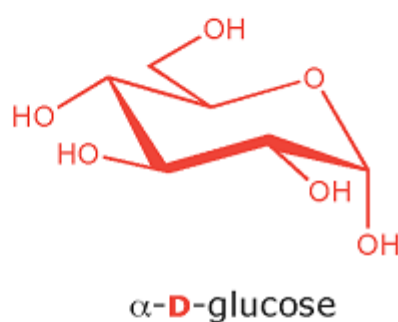
About the configuration of glucose isomers:

"As all observations made so far for carbohydrates are in such a good agreement with the carbon atom theory, it will be allowable already now to utilize this theory as a basis for the classification of these substances."

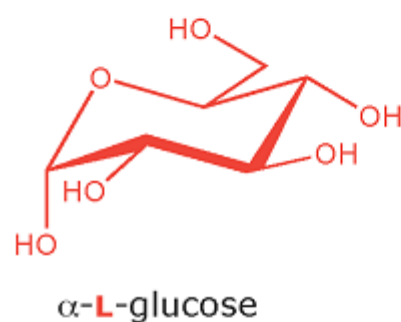
One problem, he could not solve was the absolute configuration of the compounds. He made a choice in correlating optical rotation and absolute configurations [(+)/(-) are physical] and D/L stem from a theoretical agreement.

Absolute configuration (D/L) determination of monosaccharides using the polarimeter

D-enantiomer

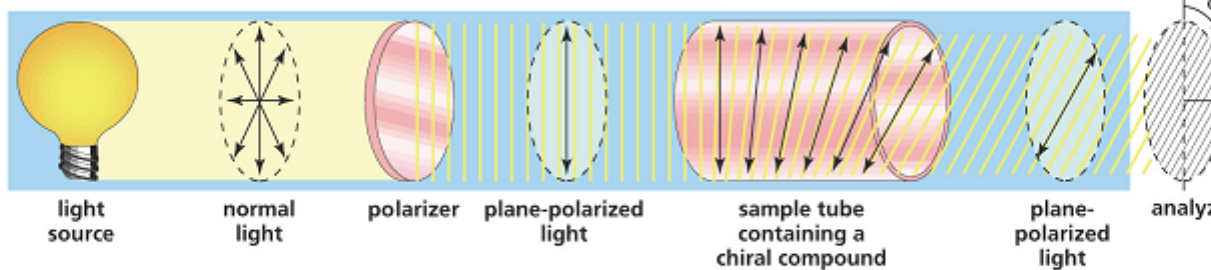


L-enantiomer

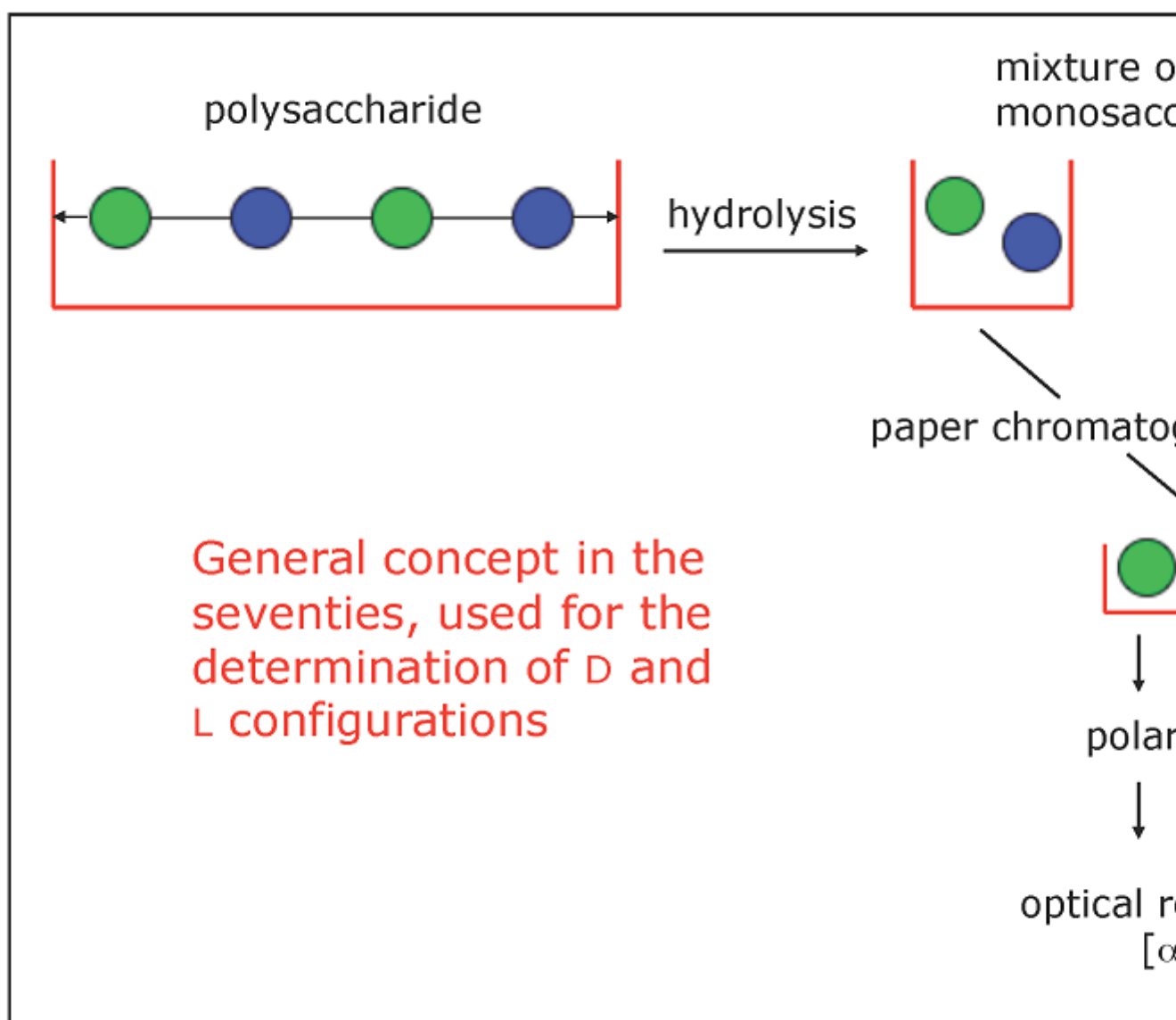


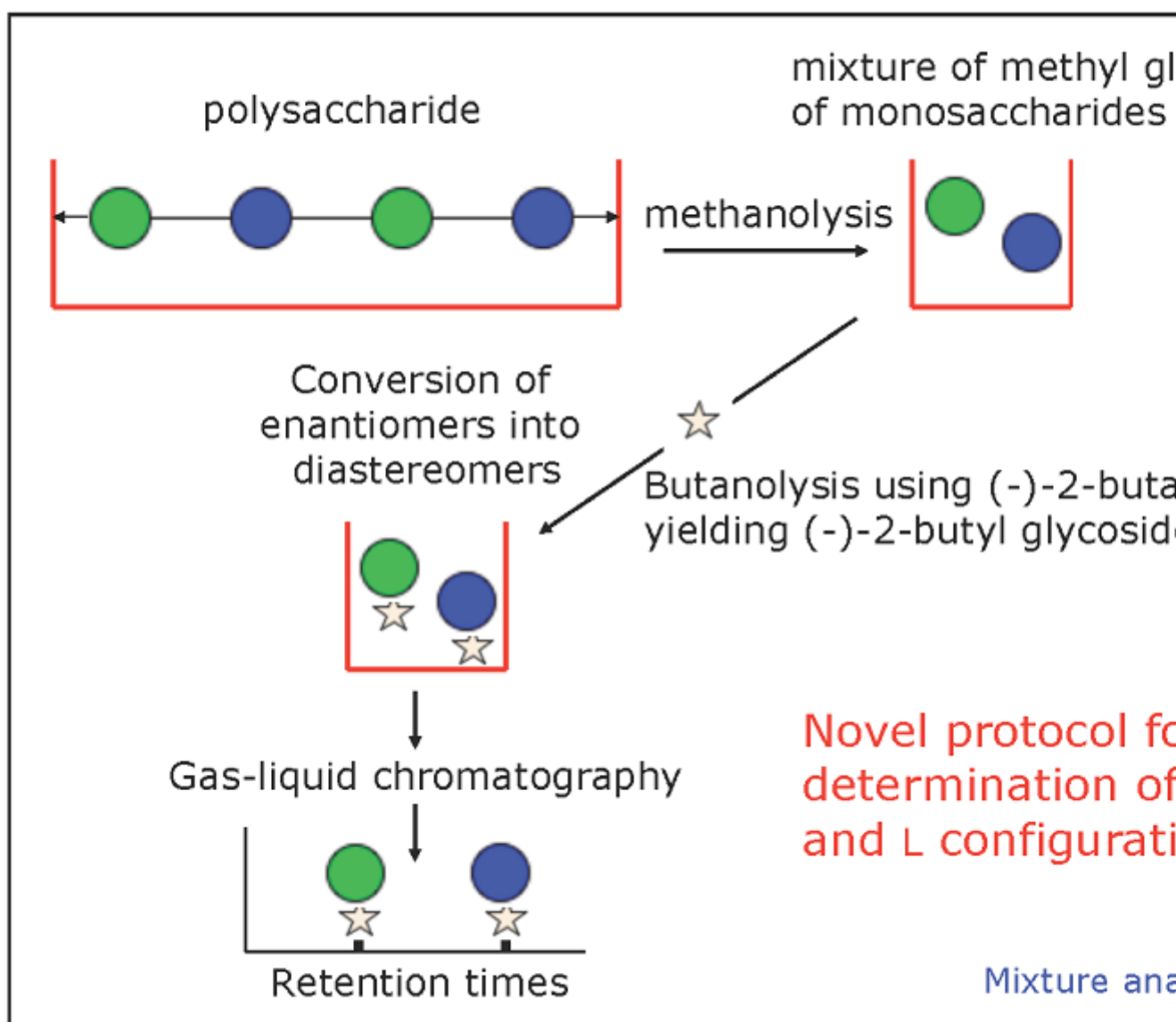
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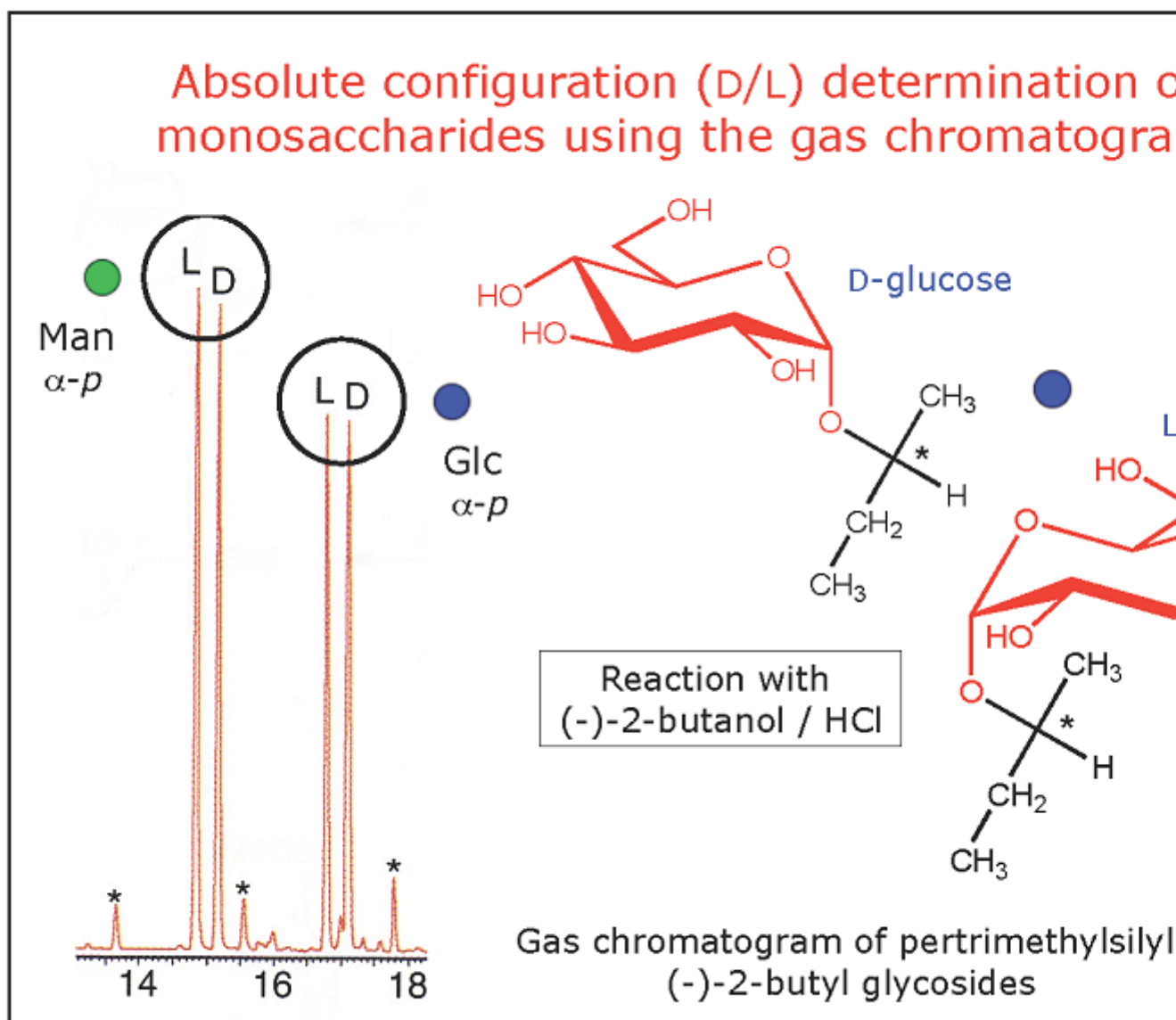


Polarimeter





Absolute configuration (D/L) determination of monosaccharides using the gas chromatography





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DETERMINATION OF THE D AND L CONFIGURATION OF MONOSACCHARIDES BY HIGH-RESOLUTION CAPILLARY G.L.C.

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DETERMINATION OF THE ABSOLUTE CONFIGURATION OF SACCHARIDES IN COMPLEX CARBOHYDRATES BY CAPILLARY G.L.C.

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