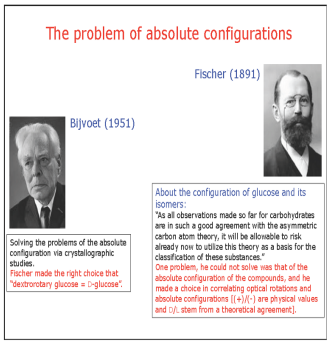


Absolute Configuration

Description

From Fischer, Bijvoet â?¦.

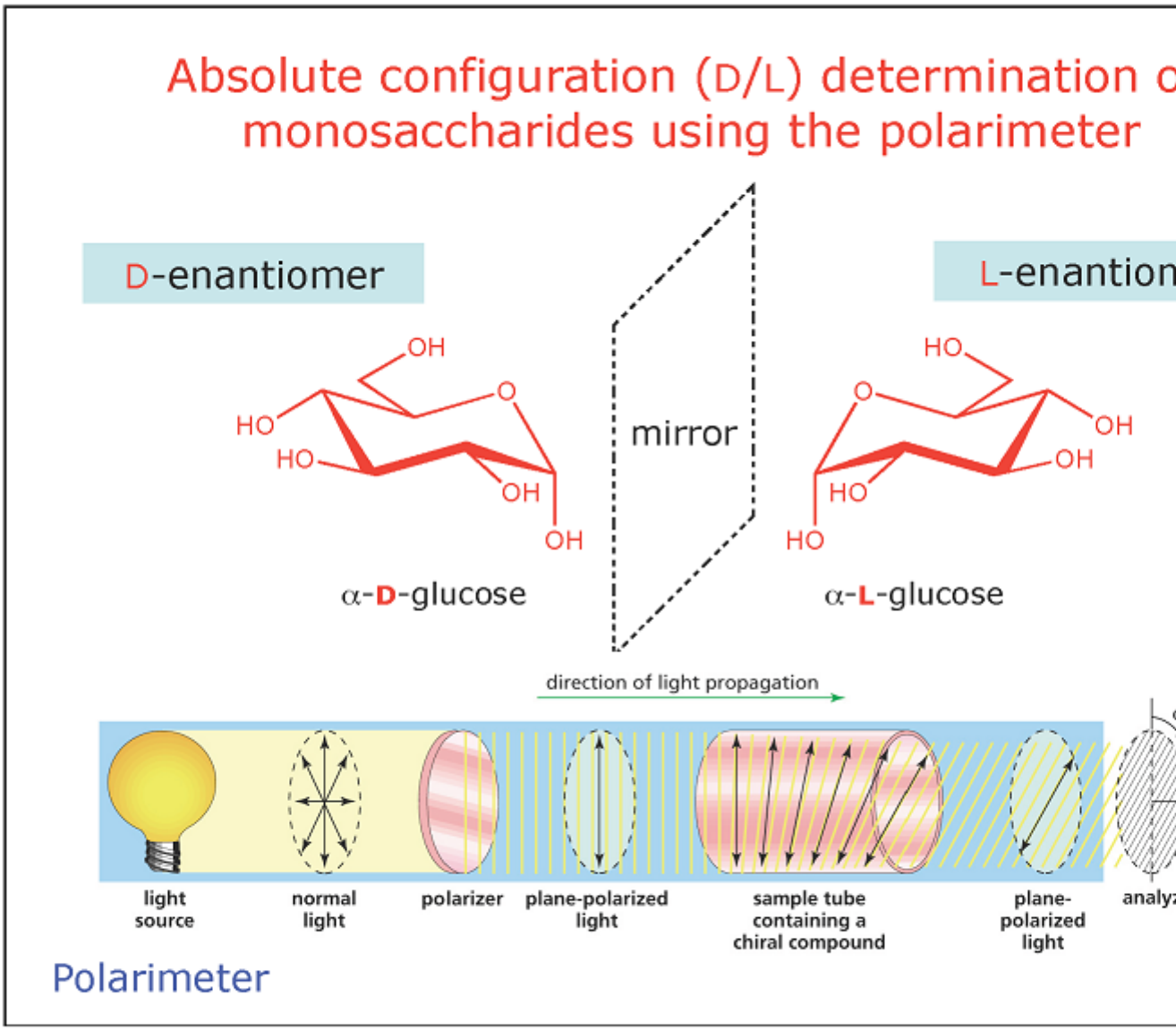
The problem of absolute configuration

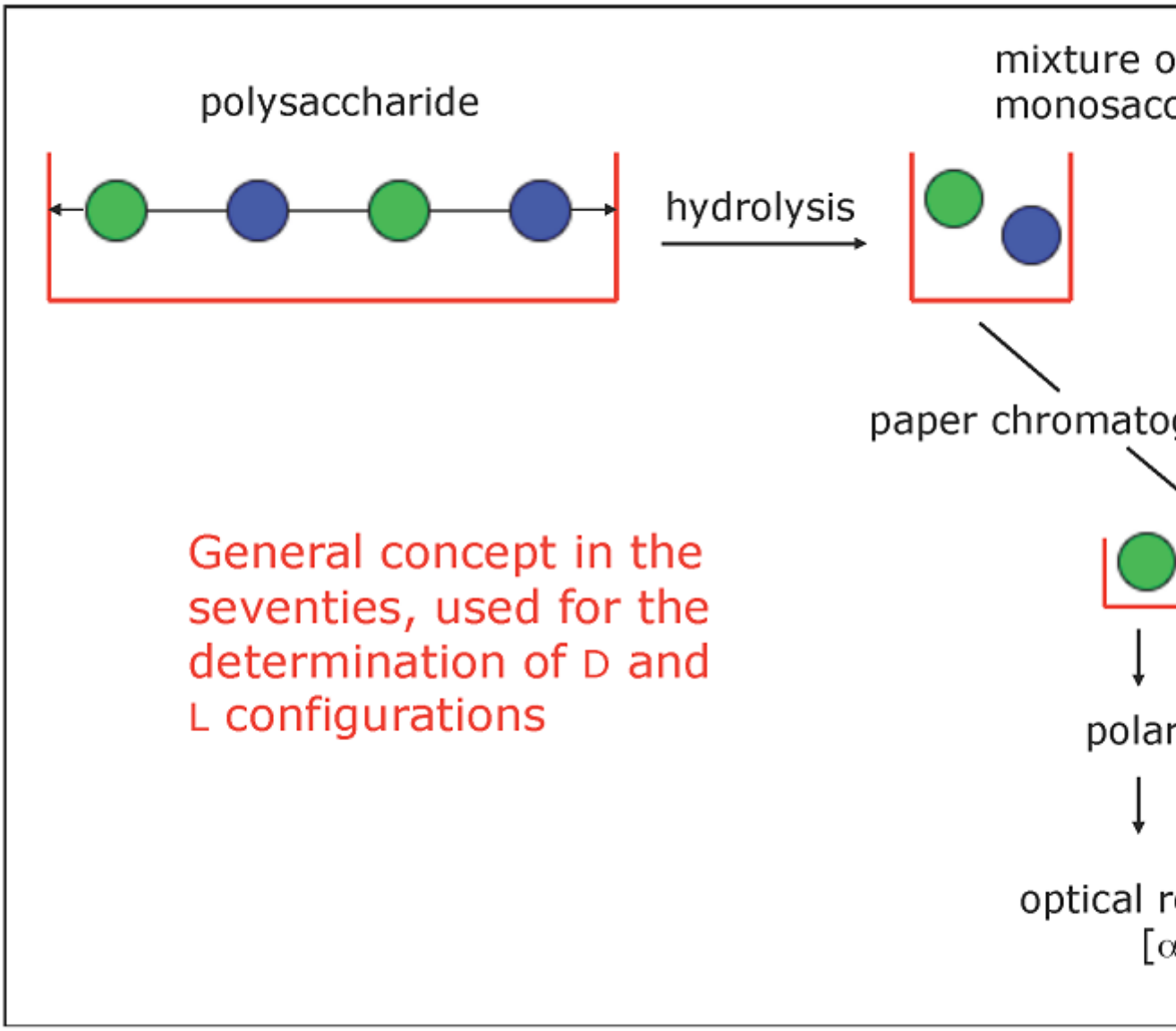
Fischer (1891)

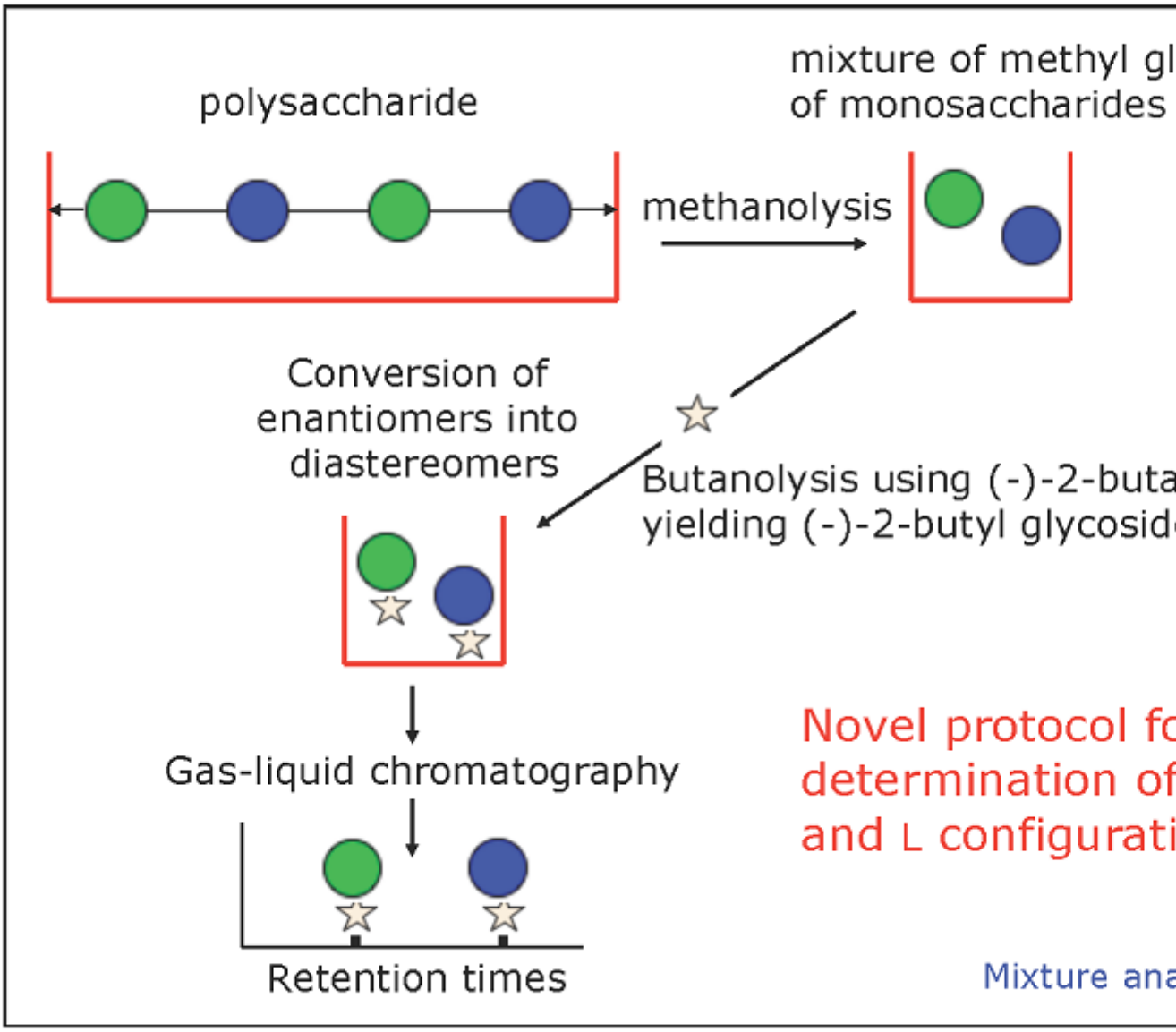
Bijvoet (1951)

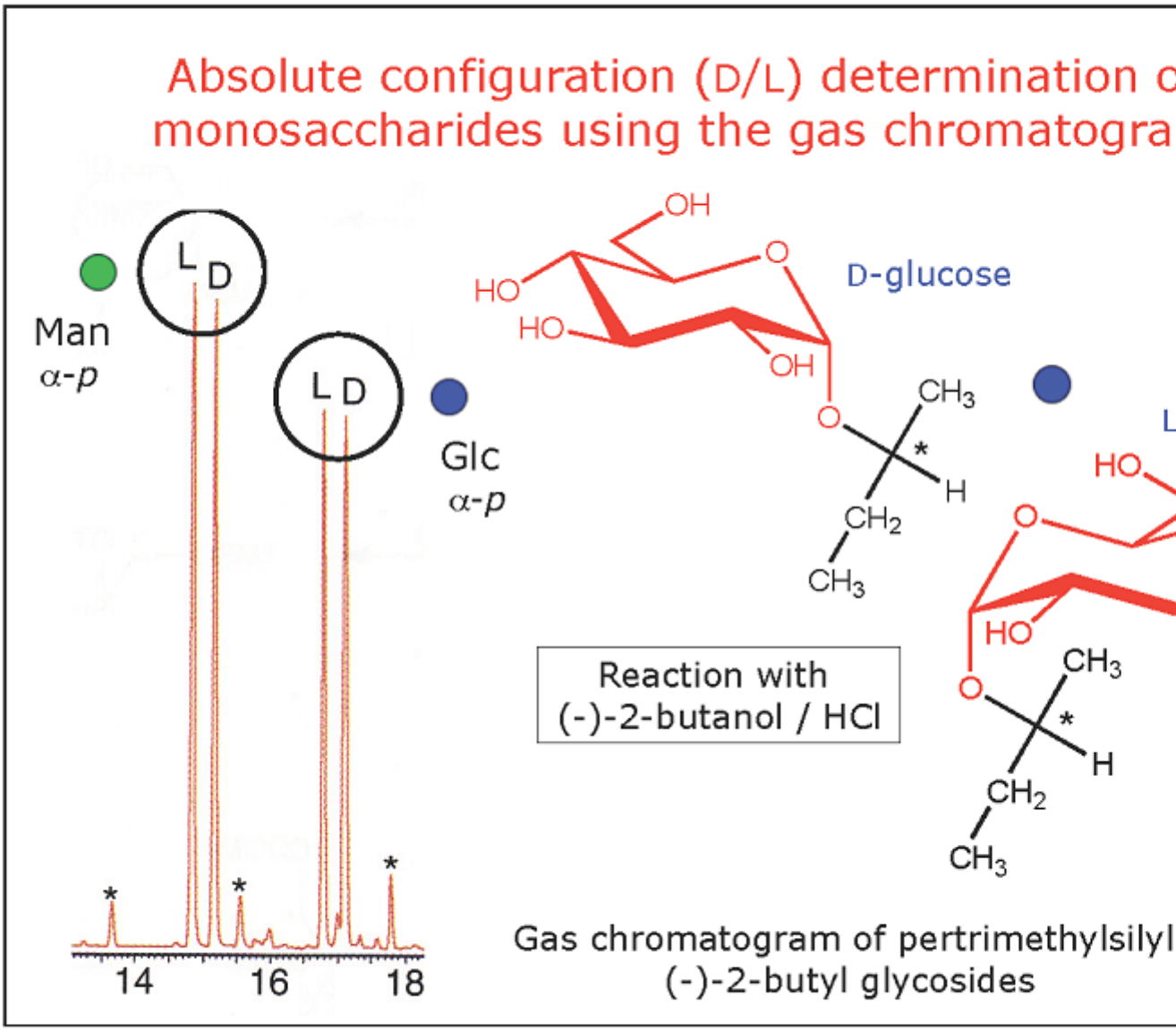
Solving the problems of the absolute configuration via crystallographic studies.
Fischer made the right choice that "dextrorotary glucose = D-glucose".

About the configuration of glucose isomers:
"As all observations made so far for carb
are in such a good agreement with the a
carbon atom theory, it will be allowable
already now to utilize this theory as a ba
classification of these substances."
One problem, he could not solve was tha
absolute configuration of the compounds
made a choice in correlating optical rota
absolute configurations [(+)/(-) are phy
and D/L stem from a theoretical agreem

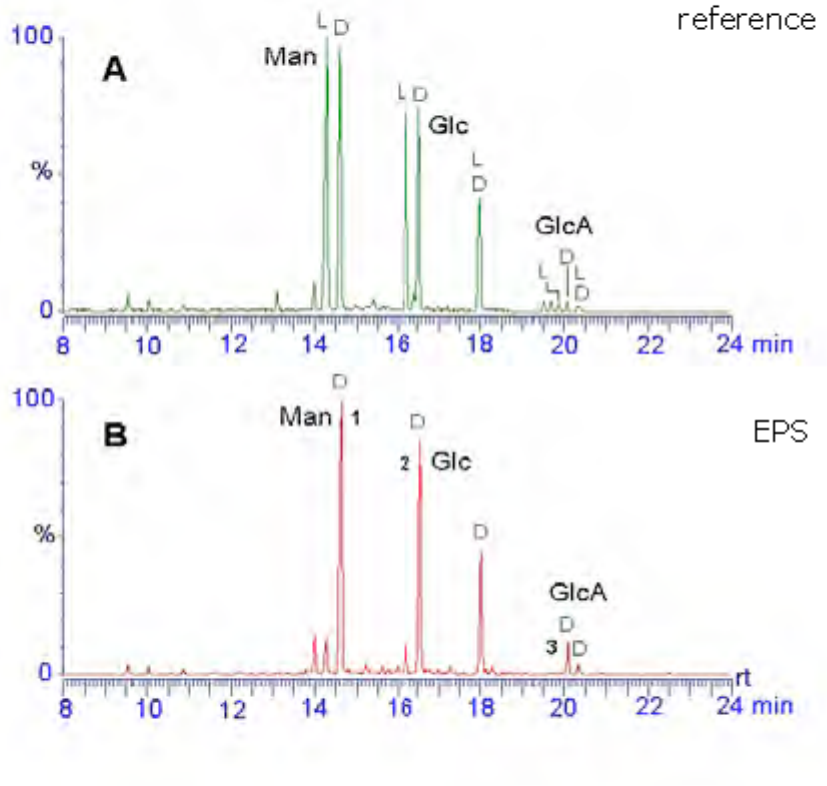

Absolute configuration (D/L) determination o
monosaccharides using the polarimeter
D-enantiomer
L-enantion
mirror
α-D-glucose
α-L-glucose
direction of light propagation
light source
normal light
polarizer
plane-polarized light
sample tube containing a chiral compound
plane-polarized light
Polarimeter


polysaccharide
hydrolysis
mixture o
monosacc
paper chromatog
General concept in the seventies, used for the determination of D and L configurations
polar
optical r
[α


polysaccharide
mixture of methyl gl
of monosaccharides
methanolysis
Conversion of
enantiomers into
diastereomers
Butanolysis using (-)-2-buta
yielding (-)-2-butyl glycosid
Gas-liquid chromatography
Retention times
Novel protocol fo
determination of
and L configurati
Mixture ana


Absolute configuration (D/L) determination o
monosaccharides using the gas chromatogra
L D
Man
α-p
L D
Glc
α-p
14
16
18
OH
HO
HO
O
OH
D-glucose
CH3
O
*
H
CH2
CH3
Reaction with
(-)-2-butanol / HCl
HO
HO
O
CH3
O
*
H
CH2
CH3
Gas chromatogram of pertrimethylsilyl
(-)-2-butyl glycosides

GLC analysis of absolute configurations



Exopolysaccha
Propionibacteri
freudenreichii

General note ab
retention times:
(-)-2-butyl α-L-
=
(+)-2-butyl α-D-

β-D-Glc*p*A-(1→6) α-D-Glc*p*-(1→6)
\ \
[→3)-α-D-Man*p*-(1→3)-α-D-Man*p*-(1→3)-α-D-Glc*p*-(1→]$_n$

Carbohydrate Research, 62 (1978) 349–357

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

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(Received June 20th, 1977; accepted for publication July 22nd, 1977)

Cited: 731; average 19.76 / year; 2

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Gerrit Gerwig

Carbohydrate Research, 77 (1979) 1–7

DETERMINATION OF THE ABSOLUTE CONFIGURATION OF
SACCHARIDES IN COMPLEX CARBOHYDRATES BY CAPILLARY

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Category

1. News