



# Sugars

## Application Note

BioPharma

### Authors

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### Introduction

Separation of 21 TMS-derivatized sugars using gas chromatography and Agilent VF-1ms in 36 minutes.



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## Conditions

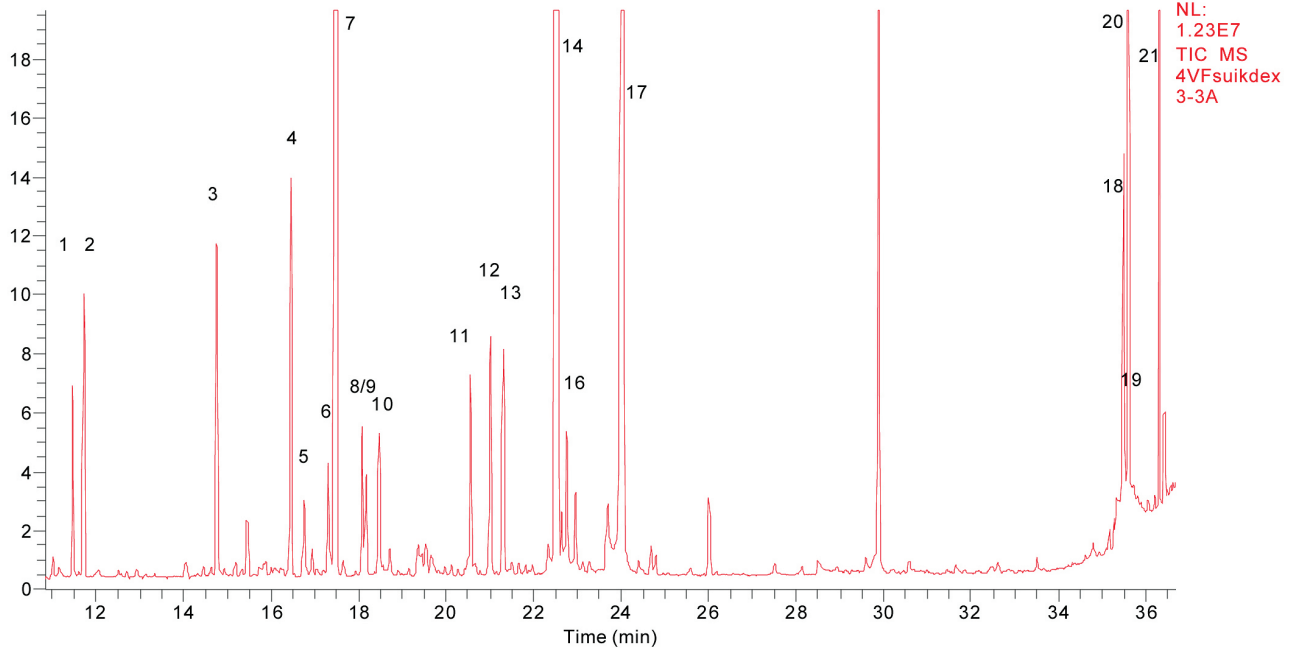
Technique : GC-capillary  
Column : Agilent FactorFour VF-1 ms, 0.25 mm x 30 m fused silica (df = 0.25 µm) (Part no. CP8912)  
Temperature : 105 °C → 240 °C, 4 °C/min, → 300 °C, 20 °C/min  
Carrier Gas : Helium, 1.0 mL/min  
Injector : Split, 1:15, 1 µL  
T = 265 °C  
Detector : MS  
MS settings : scan rate 65 - 750 in 0.7 min; Interface: 285 °C;  
Sample : derivatized as TMS derivatives (with BSTFA)

Courtesy : M.P.M. van den Heuvel,  
LUMC (Leids Universitair Medisch Centrum),  
Leiden, The Netherlands

## Peak identification

1. threitol
2. erythritol
3. rhamnose 1
4. rhamnose 2
5. xylose 1
6. arabitol
7. ribitol
8. 3-o-methylglucose 1
9. xylose 2
10. rhamnitol
11. 3-o-methylglucose 2
12. glucuronic acid-1,5-lactone
13. ribose 2
14. manitol
15. sorbitol (not identified)
16. galactitol
17. glucuronic acid
18. lactulose
19. lactose
20. sucrose
21. threhalose

RT: 10.83 - 36.68



<b>Name</b>	<b>ret.t (minutes)</b>
2-deoxy-tetronic acid	9.41
threitol	11.48
erythritol	11.74
erythronic acid	12.50
threonic acid	12.89
arabinose 1 furanose	14.33
arabinose 2 pyranose	14.50
ribose 1 furanose	14.90
ribose 2 furanose	15.20
arabinose 3 pyranose	15.23
ribose 3 pyranose	15.39
arabinose 4 open ring	15.32
ribose 5? open ring	15.56
ribose 4 pyranose	15.76
arabinose 5 furanose	15.90
xylitol	17.07
arabitol	17.44
ribitol	17.59
3-o-methyl-(b)-d-glucopyranose 4xTMS a	18.15
riboate	18.41
rhamnitol	18.61
arabinoate	18.79
fructose 1 (penta-TMS)	19.49
fructose 2 (penta-TMS)	19.68
fructose 3 (penta-TMS)	19.86
altrose penta-TMS (of galactofuranose)	20.41
galactofuranose penta-TMS (of altrose)	20.46
3-o-methyl-(b)-d-glucopyranose 4xTMS b	20.66
glucose 1 (pyranose 5 x TMS)	21.67
galactose penta-TMS	21.88
ribulose per-TMS	22.28
manitol hexa-TMS	22.70
sorbitol	22.80
galactitol	22.90
d-glucose 5 x TMS (glucose 2)	24.21
myo-inositol (epi?)	26.25
lactose (1) 8 x TMS	35.66
sucrose	35.79
trehalose	36.44
lactose (2) 8 x TMS	36.58

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