

Non-volatile organic acids

Application Note

Clinical Research

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography using an Agilent CP-Sil 5 CB column separates 30 non-volatile organic acids (BSTFA derivatives) in 28 minutes.



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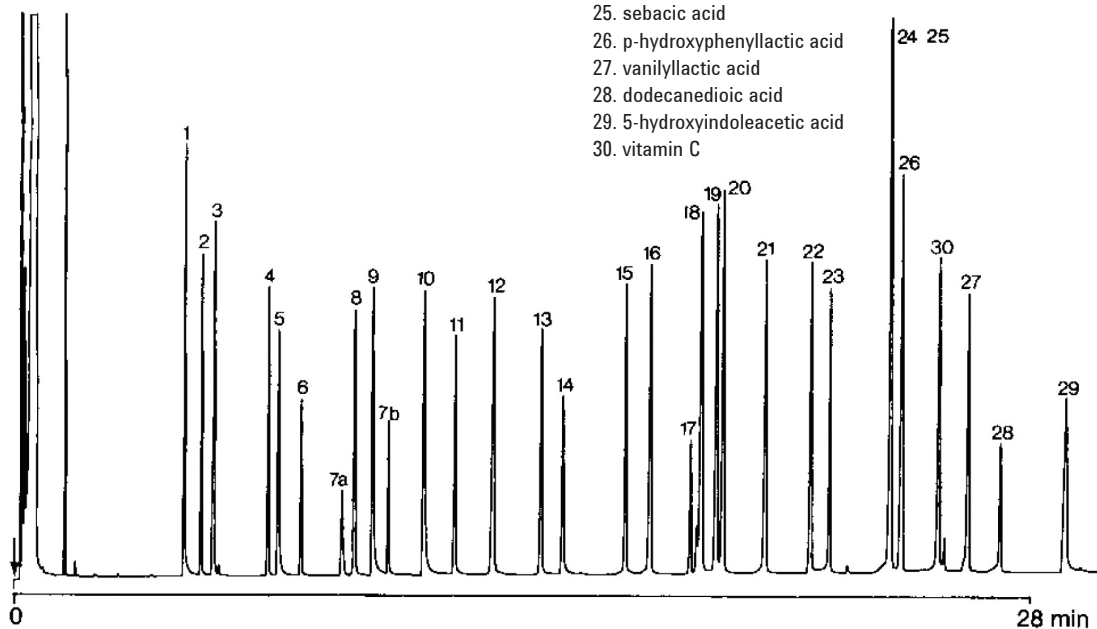
Conditions

Technique	: GC-capillary
Column	: Agilent CP-Sil 5 CB, 0.22 mm x 25 m fused silica WCOT CP-Sil 5 CB (0.12 µm) (Part no. CP7710)
Temperature	: 70 °C (2 min) → 120 °C, 5 °C/min, → 220 °C, 7 °C/min, 220 °C (10 min) → 250 °C (5 min)
Carrier Gas	: He, 1 mL/min
Injector	: Splitter, 1:100
Sample Size	: 1 µL
Derivatization	: BSTFA/CHCl ₃ - 1/3 during 2 hours at 40 °C
Courtesy	: A. van Gennip, A. van Cruchten, H. Steggerda, Emma Kinderziekenhuis, Amsterdam, The Netherlands

See Application Note 225 for the analysis of the same sample on a CP-Sil 19 CB column.

Peak identification

1. phenol
2. lactic acid
3. glycolic acid (hydroxyacetic acid)
4. α-hydroxybutyric acid
5. p-cresol
6. β-hydroxybutyric acid
- 7a/7b. β-ketobutyric acid
8. methylmalonic acid
9. benzoic acid
10. phenylacetic acid
11. succinic acid
12. fumaric acid
13. glutaric acid
14. β-phenylbutyric acid (I.S.)
15. adipic acid
16. methyladipic acid
17. α-hydroxyglutaric acid
18. m-hydroxyphenylacetic acid
19. p-hydroxybenzoic acid
20. p-hydroxyphenylacetic acid
21. suberic acid
22. vanillylactic acid
23. azelaic acid
24. vanilylglycolic acid
25. sebacic acid
26. p-hydroxyphenyllactic acid
27. vanillylactic acid
28. dodecanedioic acid
29. 5-hydroxyindoleacetic acid
30. vitamin C



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