

Concentration Analysis of Flavor Components in Baked Meat - Using HandyTD Portable Thermal Desorber and MonoTrap Simplified Enrichment Tools

The volatile components in baked meat (short rib of Japanese beef) were screened and analyzed using HandyTD and MonoTrap RGC18 TD a simplified enrichment tool. HandyTD is a compact, portable, and easy-to-operate thermal desorption device. After collection, set the MonoTrap in a glass liner and introduce the heat-desorbed components into the GC inlet.

Preliminary processing procedure

Broiled meat

Broil only one side, for 10 seconds,
Place 27.79 g in a 40 mL vial
(No oil or seasoning used)

Collection (HS)
2 MonoTrap RGPS TD

80 °C for 15 min.



TD/GC/MS

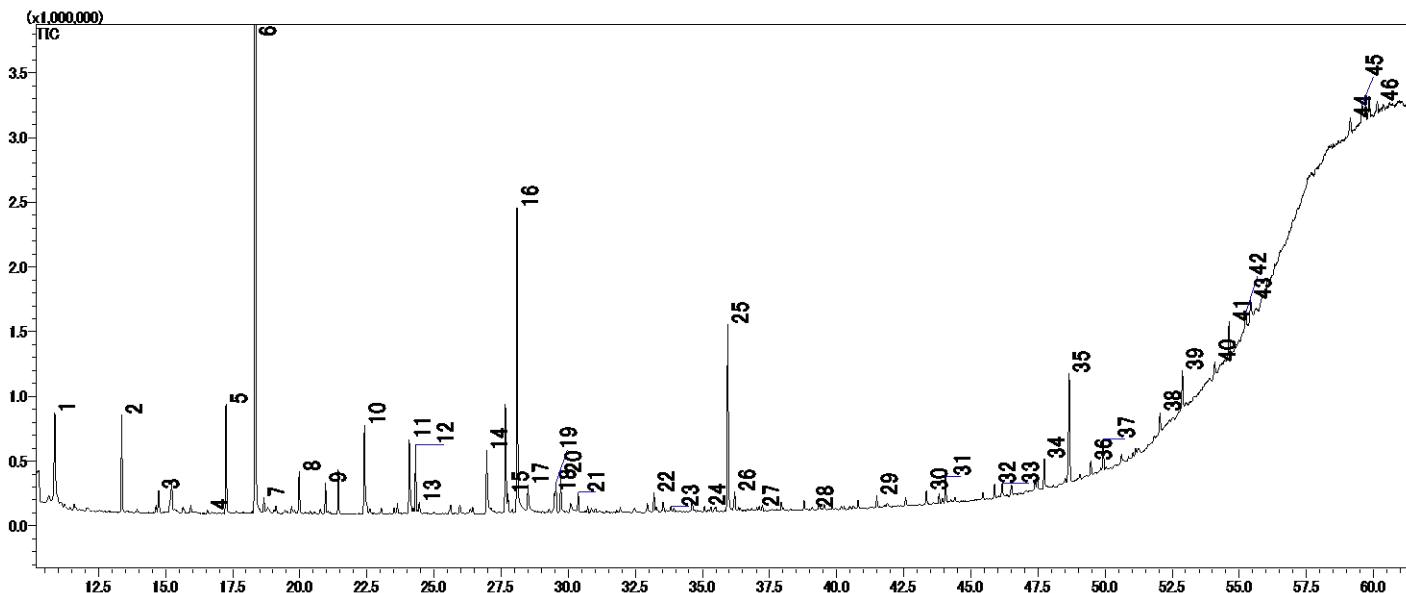
Introduced into GC/MS using HandyTD

GC Conditions

System	: GC - MS - Thermal Desorption (HandyTD TD265)
Column	: InertCap Pure-WAX 0.25 mm I.D. x 60 m, df = 0.25 μm
Col. Cat. No.	: 1010-68162
Col.Temp.	: 40 °C (5 min) - 6 °C/min - 250 °C
Carrier Gas	: He, 2.0 mL/min
GC Inlet	: 250 °C, Split 9:1
Detection	: MS Scan (m/z 45-450)

HandyTD Conditions

Desorb Temp.	: 40 °C - 45 °C/sec - 250 °C (1.5 min)
Desorb Press.	: 114 kPa



* Standard samples are not used for qualitative analysis.
Results from library search.

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|------------------------|-------------------------------------|-------------------------------------|
| 1. Hexanal | 17. Propylene Glycol | 32. 2-Heptadecanone |
| 2. 1-Butanol | 18. (E)-2-Octen-1-ol | 33. Pyranone |
| 3. Heptanal | 19. Butyrolactone | 34. Heneicosane |
| 4. 2-Pentylfuran | 20. Butanoic acid | 35. 9-Heptadecanone |
| 5. 1-Pentanol | 21. (E)- 2-Decenal | 36. Docosanal |
| 6. Acetoin | 22. 2(5H)-Furanone | 37. Heneicosane |
| 7. Octanal | 23. 2,4-Decadienal | 38. Heneicosane |
| 8. 2-Methyl-3-octanone | 24. (E,E)-2,4-Decadienal | 39. 4-hydroxydihydro-2(3H)-Furanone |
| 9. 1-Hexanol | 25. Hexanoic acid | 40. Heneicosane |
| 10. Nonanal | 26. 2-(2-Butoxyethoxy)ethyl acetate | 41. δ-Undecalactone |
| 11. Acetic acid | 27. Dimethyl sulfone | 42. 5-methyl-2,4-Imidazolidinedione |
| 12. 1-Octen-3-ol | 28. 1-(1H-Pyrrol-2-yl)ethanone | 43. Tetradecanoic acid |
| 13. 1-Heptanol | 29. Octanoic acid | 44. δ-Dodecalactone |
| 14. 2,3-Butanediol | 30. 2-Phenoxyethanol | 45. n-Hexadecanoic acid |
| 15. 1-Octanol | 31. Nonanoic acid | 46. Niacinamide |

Product used

Portable thermal desorber HandyTD TD265

Product name: HandyTD TD 265
Cat.No. :2709-80000



Collector MonoTrap RGPS TD

Product name: MonoTrap RGPS TD
Cat.No.:1050-74202



MonoTrap RGPS TD



MonoTrap Trial Kit for TD

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