

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

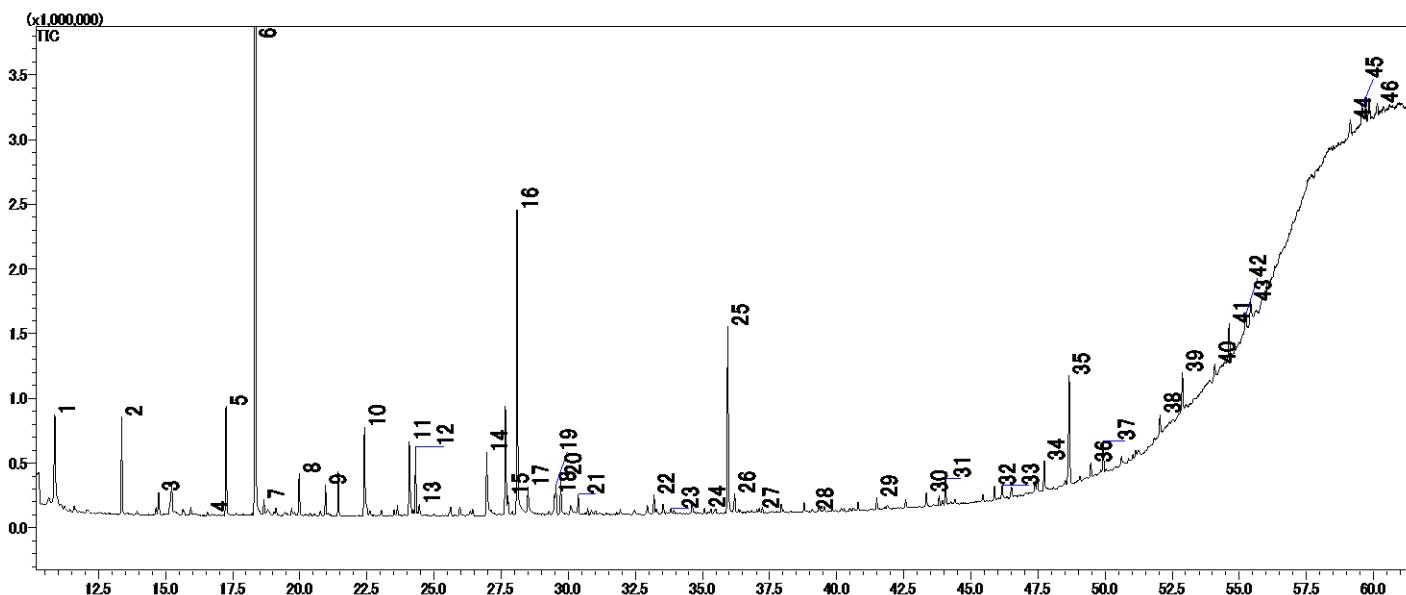
Introduced into GC/MS using HandyTD

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.

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
16. 2,3-Butanediol		

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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GL Sciences, Inc. Japan

22-1 Nishishinjuku 6-Chome
Shinjuku-ku, Tokyo,
163-1130, Japan
Phone: +81-3-5323-6620
Fax: +81-3-5323-6621
Email: world@glsc.co.jp
Web: www.glsciences.com

GL Sciences B.V.

De Sleutel 9
5652 AS Eindhoven
The Netherlands
Phone: +31 (0)40 254 95 31
Email: info@glsciences.eu
Web: www.glsciences.eu

GL Sciences, Inc. USA

4733 Torrance Blvd. Suite 255
Torrance, CA 90503
Phone: 310-265-4424
Fax: 310-265-4425
Email: info@glsciencesinc.com
Web: www.glsciencesinc.com

GL Sciences (ShangHai) Ltd.

Tower B, Room 2003,
Far East International Plaza,
NO,317 Xianxia Road,
Changning District.
Shanghai, China P.C. 200032
Phone: +86 (0)21-6278-2272
Email: contact@glsciences.com.cn
Web: www.glsciences.com.cn

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