

Simple Concentration Analysis of Flavor Components in Roasted Laver - Using MonoTrap Collector Tools

MonoTrap RGC18TD, a simple concentration tool was used to simply concentrate the flavor components in roasted laver. These were then introduced and measured by thermal desorption. Easy-to-use, high-sensitivity analysis was achieved. Dimethyl sulfide and β -ionone, which are the fragrance components of smelling of the sea were both detected.

Pretreatment procedure

Roasted laver

Cut one piece with scissors.

Collection (HS)
One MonoTrap RGC18TD

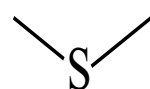
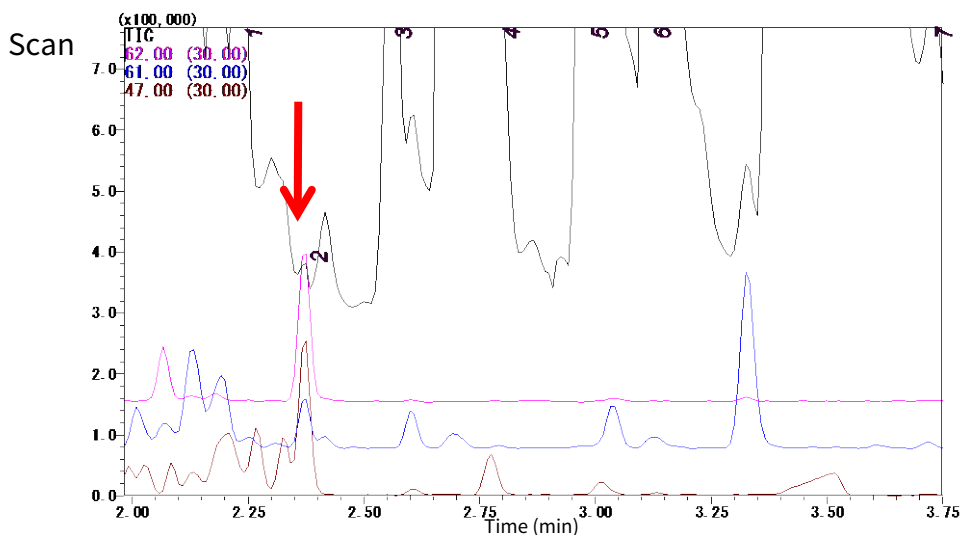
40 °C for 3 h

TD-GC-MS



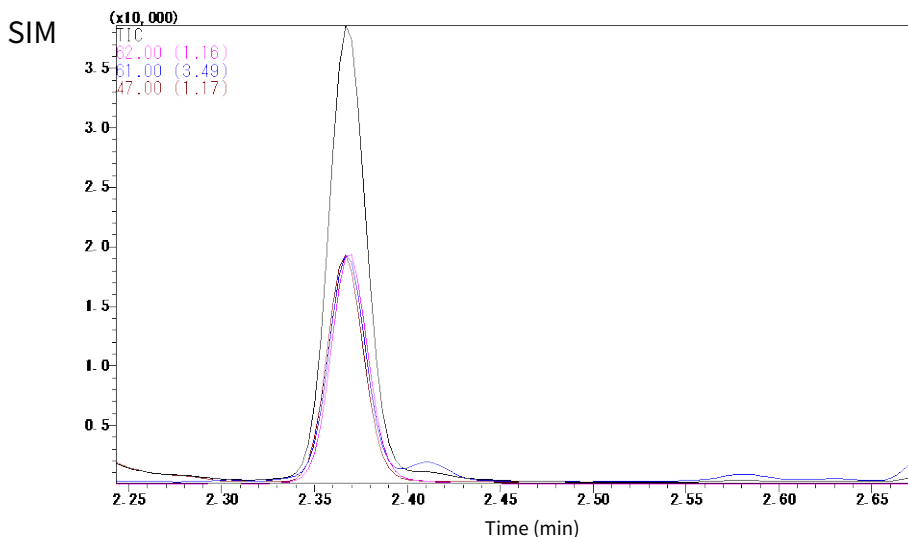
Conditions

System	: GC-MS-Thermal Desorption
Column	: InertCap Pure-WAX 0.25 mm I.D. × 30 m df = 0.25 μ m
Col.Temp.	: 40 °C (5 min) - 6 °C/min - 250 °C
Carrier Gas	: He 1 mL/min (constant flow)
Desorb Temp.	: 200 °C
Time	: 5 min
Flow	: 5 mL/min
Split	: Splitless
Cryo Trapping	: -150 °C
Injection Temp.	: 250 °C
Detection	: MS Scan (m/z = 28.5 - 600) SIM (m/z : 62,61,47 for Dimethyl sulfide)

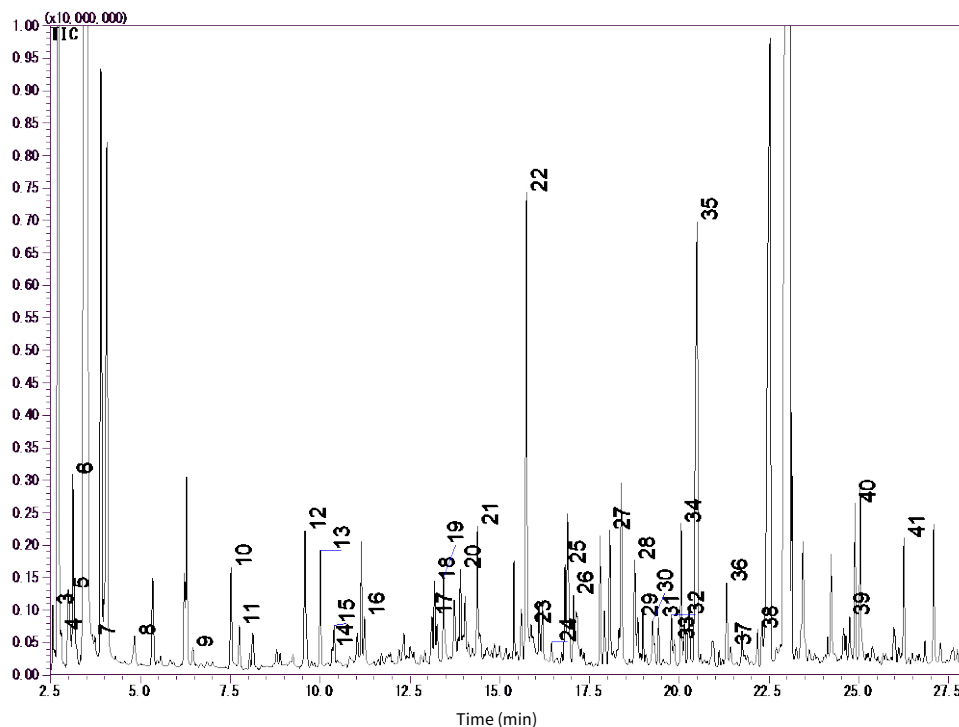


Dimethyl sulfide
 m/z = 62,61,47

Structures created using Chemistry 4-D Draw
Which is provided by ChemInnovation Software, Inc.



For detecting Dimethyl sulfide in SIMs
I confirmed.



- | | |
|------------------------------------|---|
| 1. Acetaldehyde | 22. Nonanal |
| 2. Dimethyl sulfide | 23. Trimethylpyrazine |
| 3. Propanal | 24. 2-Octenal |
| 4. Methyl acetate | 25. 2-Ethyl-3,6-dimethylpyrazine |
| 5. Trimethylamine | 26. 1-Octen-3-ol |
| 6. Trimethylamine | 27. Decanal |
| 7. Isovaleraldehyde | 28. 2-Nonenal |
| 8. Pentanal | 29. 3-Caranol |
| 9. 1-Propanol | 30. Dimethyl Sulfoxide |
| 10. Hexanal | 31. 3,5-Octadien-2-one |
| 11. 2-Methyl-2-butenal | 32. 2,6-Nonadienal |
| 12. 2-Ethyl-trans-2-butenal | 33. Propylene Glycol |
| 13. 1-Penten-3-ol | 34. 2,6-Dimethylcyclohexanol |
| 14. 2-Heptanone | 35. Butyrolactone |
| 15. Heptanal | 36. n-Methyl-2-pyrrolidinone |
| 16. 2-Hexenal | 37. 2(5H)-Furanone, 5-methyl- |
| 17. Acetoin | 38. 2-Dodecanone |
| 18. Octanal | 39. α -Ionone |
| 19. Acetol | 40. Trans-Geranylacetone |
| 20. 2,5-Dimethylpyrazine | 41. δ-Ionone |
| 21. 6-Methyl-5-heptene-2-one | |

* For the qualitative analysis of standard samples
Not performed.
This results in a library search.

Red letters: flavor components of burning

(Reference: Summary of the 52nd Conference on Fragrances, Terpenes and Essential Oil Chemistry)

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