GT068

GL Sciences Inc.

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

↓

Collection (HS)
One MonoTrap RGC18TD

↓

TD-GC-MS

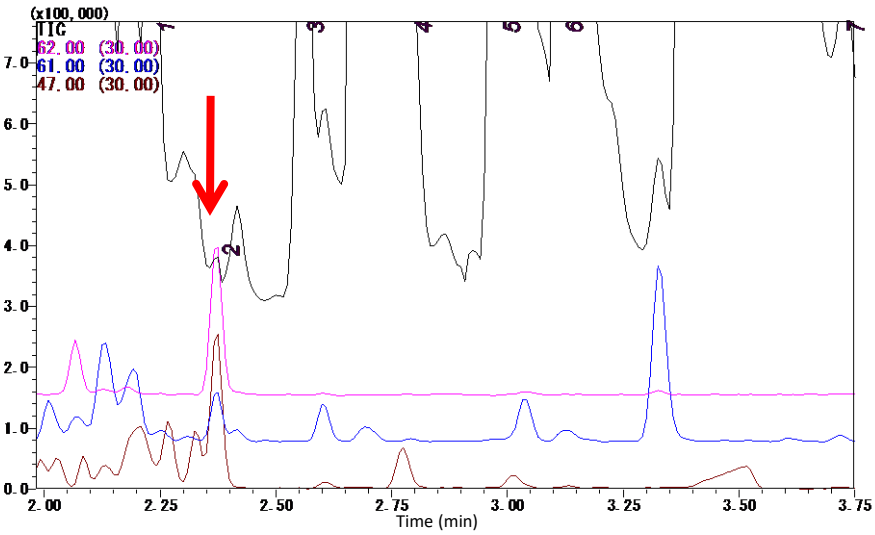
Cut one piece with scissors.

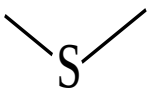
40 ˚C for 3 h

Conditions

System	: GC-MS-Thermal Desorption
Column	: InertCap Pure-WAX 0.25 mm I.D. × 30 m df = 0.25µm
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)

Scan

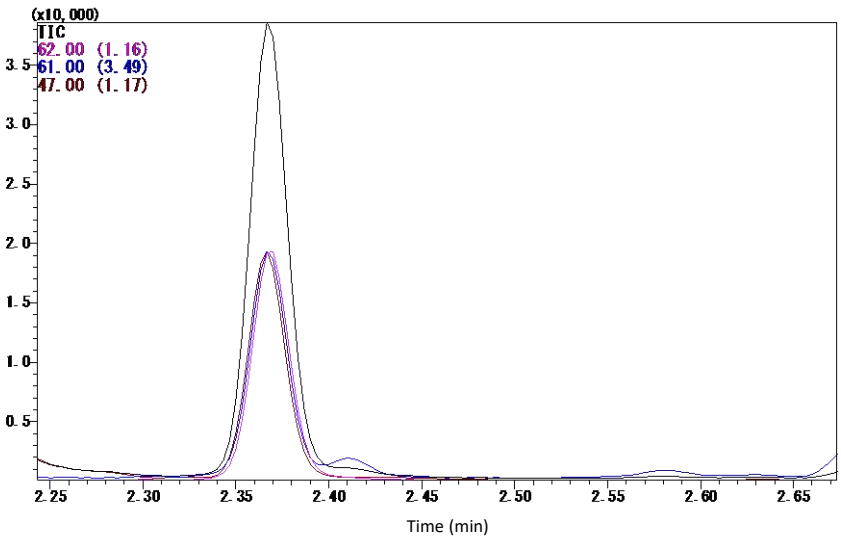




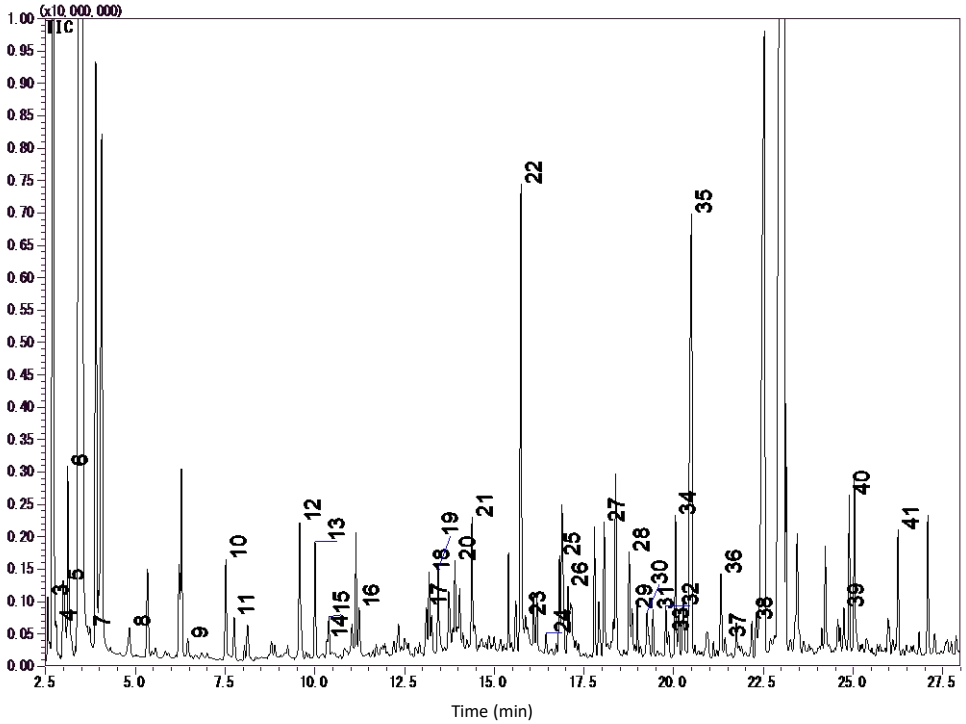
Dimethyl sulfide
m/z = 62,61,47

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

SIM



For detecting Dimethyl sulfide in SIMs I confirmed.



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

* 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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