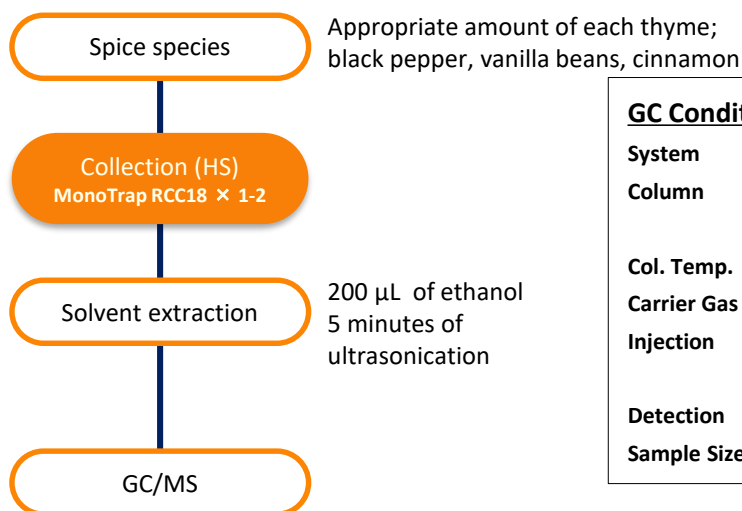


# Simple Concentration and Analysis of Spice Flavor Components - Using Sorptive Media MonoTrap

In this application note, MonoTrap RCC18 (with activated carbon) was used to simply concentrate and analyze the flavor components of spices.

## Preliminary processing procedure



### GC Conditions

**System** : GC - MS

**Column** : InertCap Pure-WAX  
0.25 mm I.D. x 30 m df = 0.25 µm

**Col. Temp.** : 40 °C(5 min) - 5 °C/min - 250 °C

**Carrier Gas** : He 1 mL/min

**Injection** : Split 1:20  
250 °C

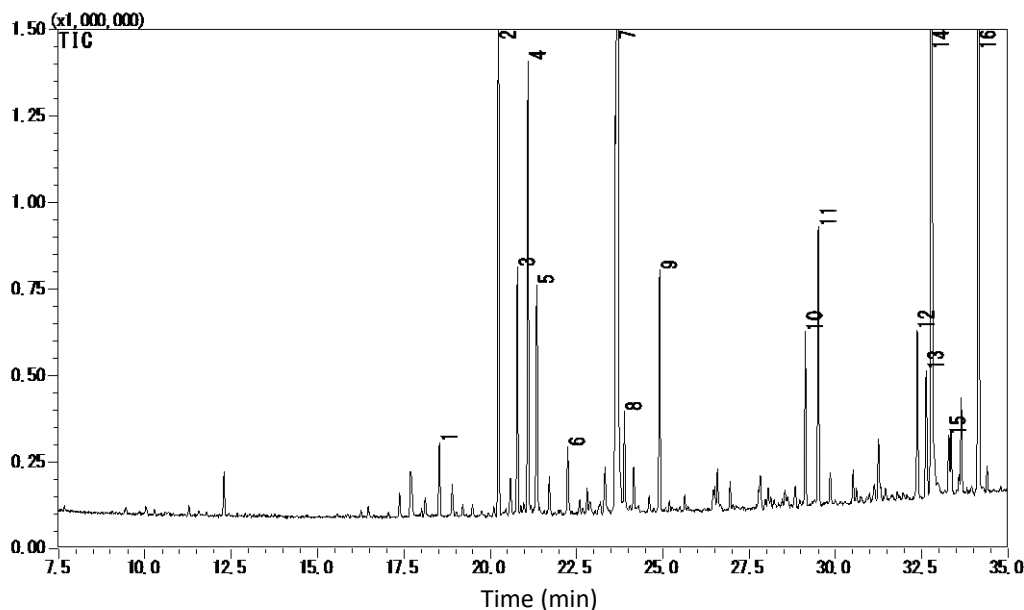
**Detection** : MS Scan (*m/z* : 35-600)

**Sample Size**: 1 µL



Image of collection vials

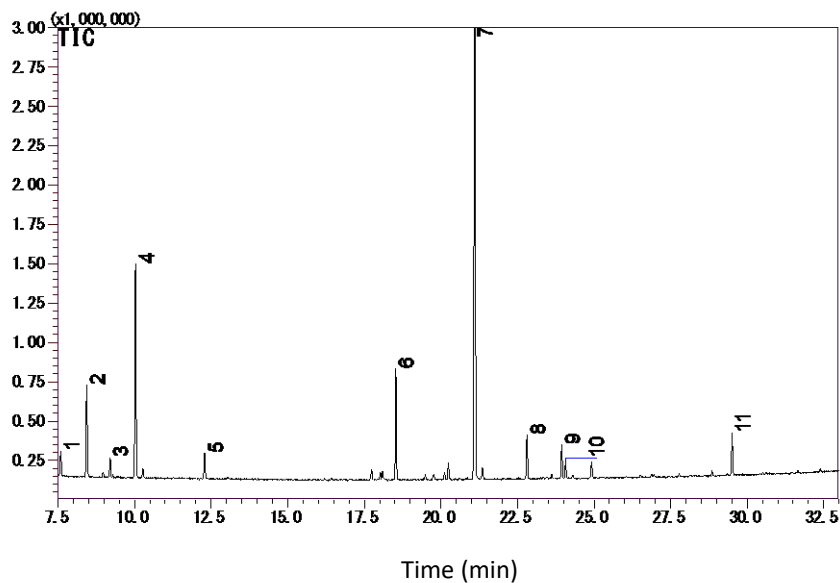
## Time



- |   |   |
|---|---|
| 1. Copaene  | 9. $\gamma$ -Muurolene                    |
| 2. $\beta$ -Linalool                                      | 10. 3,7-Octadiene-2,6-diol, 2,6-dimethyl- |
| 3. 1,7,7-Trimethylbicyclo[2.2.1]hept-2-yl acetate         | 11. Caryophyllene oxide                   |
| 4. 4,11,11-Trimethyl-8-methylenebicyclo[7.2.0]undec-4-ene | 12. Spathulenol                           |
| 5. <i>p</i> -Menth-1-en-4-ol                              | 13. 2,6-Dimethyl-1,7-octadiene-3,6-diol   |
| 6. Alloaromadendrene                                      | 14. Unknown                               |
| 7. Borneol  | 15. Tau.-Cadinol                          |
| 8. 4,7,7-Trimethylbicyclo[4.1.0]heptan-3-ol               | 16. Carvacrol                             |

\*According to the library search results

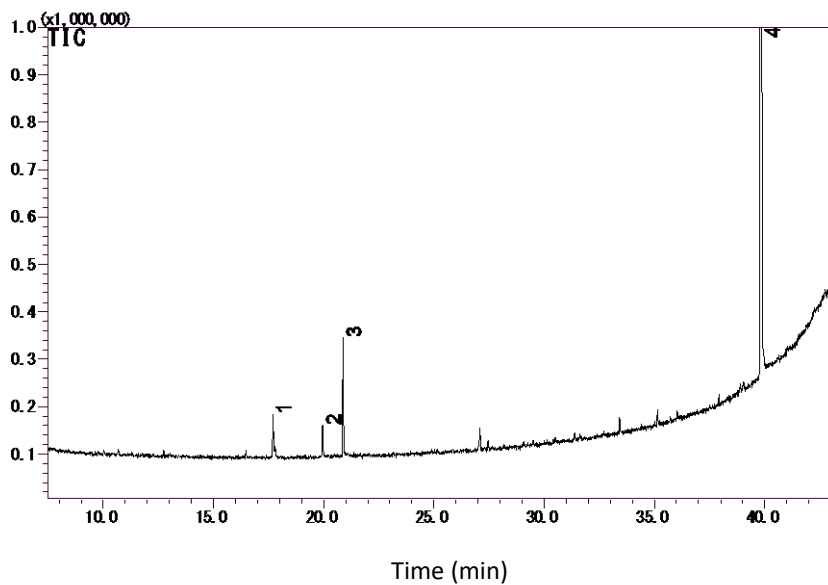
Black pepper



1. 4(10)-Thujene
2. 3-Carene
3.  $\beta$ -Myrcene
4. D-Limonene
5.  $\sigma$ -Cymene
6. Copaene
7. Caryophyllene
8.  $\alpha$ -Caryophyllene
9. Eudesma-4(14),11-diene
10.  $\alpha$ -Selinene
11. Caryophyllene oxide

\*According to library search results

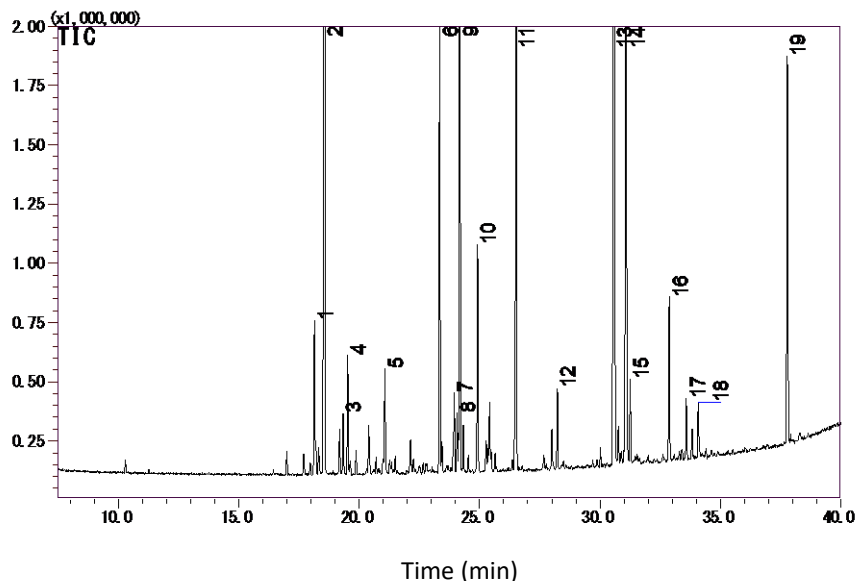
Vanilla beans



1. Acetic acid
2. Butanediol
3. Butanediol
4. Vanillin

\*According to library search results

## Cinnamon



1. Cycloisosativene
2.  $\alpha$ -Cubebene
3. Sativen
4. Sativen
5.  $\beta$ -Elemene
6.  $\gamma$ -Muurolene
7. Eudesma-4(14),11-diene
8.  $\beta$ -Chamigrene
9.  $\alpha$ -Muurolene
10.  $\delta$ -Cadinene
11. Calamenene
12.  $\alpha$ -Calacorene
13. Cinnamaldehyde
14. 3-Methyl-7,8-dihydroquinolin-5(6H)-one
15. Cedr-8-ene
16. Murolan-3,9(11)-diene-10-peroxy
17.  $\alpha$ -Cadinol
18. Cadalene
19. Coumarin

\*According to library search results

## Initial use of MonoTrap...

## Introduction to the convenient MonoTrap Start UP-KIT

	Description	Qty.
①	MT Holder	5
②	MT Stand	1
③	MT Extract Cup with Vial (20 mL)	5
④	Clean Pin Hole Septum with vial (40mL)	5
⑤	200 $\mu$ L glass insert (flat bottom)	40
⑥	MonoTrap DCC18	20
⑦	MonoTrap RCC18	20
⑧	MonoTrap DSC18	20
⑨	MonoTrap RSC18	20



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