Simple Concentration Analysis of Pu-erh Tea Flavor Components - Using Sorptive Media MonoTrap

MonoTrap DCC18 (with activated carbon) was used to simply concentrate and analyze the fragrance components in pu-erh tea. Caffeine, a compound with high-boiling point was detected with high sensitivity by collecting tea leaves extracted with hot water directly on a MonoTrap sampler.

Preliminary processing procedure

Tea
↓
Collector
One MonoTrap DCC18
↓
Solvent extraction
↓
Concentration
↓
GC/MS

Add 15 mL of boiled MilliQ water directly onto 5 g of a tea sample.

leave at 60 ˚C for 30 minutes

Dichloromethane 1000 µL
5 minutes of ultrasonication

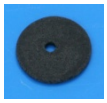
to 100 µL with nitrogen purge

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) - 4 ˚C /min - 250 ˚C
Carrier Gas : He 1 mL/min
Injection : Splitless 250 ˚C
Detection : MS Scan (*m/z* 40-600)
Sample Size : 1 µL

MonoTrap Series

Cat.No	Description	Configuration	Size	Activated Carbon	Functional Group
1050-72101	MonoTrap DCC18	Disk	O.D.10mmx thick 1 mm	Yes	C18
1050-72201	MonoTrap RCC18	Rod	O.D.2.9 mmx I.D.1 mm x Hight 5 mm	Yes	C18
1050-71101	MonoTrap DSC18	Disk	O.D.10 mm x thick 1 mm	No	C18
1050-71201	MonoTrap RSC18	Rod	O.D.2.9 mm x I.D.1 mm x Hight 5 mm	No	C18


DCC18

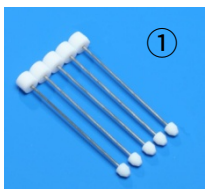
RCC18

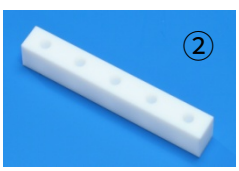
DSC18

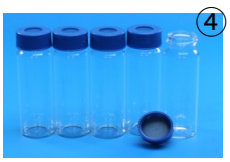
RSC18

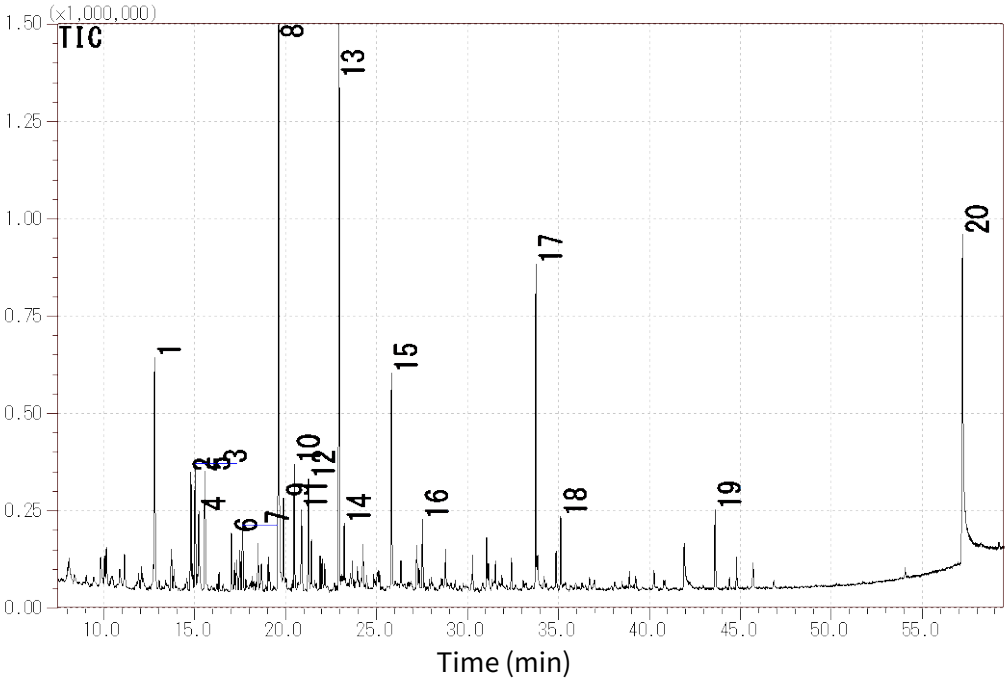
Initial use of the convenient MonoTrap and overview of the start-up kit

	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(40 mL)	5
⑤	200 µL glass insert (flat bottom)	40
⑥	MonoTrap DCC18	20
⑦	MonoTrap RCC18	20
⑧	MonoTrap DSC18	20
⑨	MonoTrap RSC18	20









1. Methylpyrazine
2,3. Dimethylpyrazine
4. Ethylpyrazine
5. 6-Methyl-5-heptene-2-one
6. 2-Ethyl-6-methylpyrazine
7. Trimethylpyrazine
8. Furfural
9. Acetol acetate
10. 2,4-Heptadien-1-al
11. 2-Acetylfuran
12. Benzaldehyde
13. 2-Formyl-5-methylfuran
14. Methyl 2-furoate
15. 2-Furanmethanol
16. Dimethoxybenzene
17. Trimethoxybenzene
18. Pyrrole-2-aldehyde
19. Coumaran
20. Caffein

* According to library search results

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