

Components analysis using “Magic Chemisorber®”

3. Flavor Components in Peach/Strawberry Flavored Drink

[Background] Identification of flavor compounds by solid phase extraction (SPE) using Magic Chemisorber® is described for the analysis of a peach/strawberry drink.

[Experimental] Magic Chemisorber® MC-S500 (PDMS thickness 500 µm) was immersed in 10 mL of a peach/strawberry drink for 30 min at 24°C. Then, the surface of the Chemisorber was cleaned using KimWipes prior to the analysis. The Magic Chemisorber® was placed in a flow-through Eco-cup LHF, and heated to 250°C for 15 min. Thermally desorbed compounds were swept by a carrier gas to the GC injection port configured for splitless operation. The desorbed compounds were once cryo-trapped at the head the separation column using a MicroJet Cryo-Trap, and then they were sent to the separation column and detected by a quadrupole MS detector.

[Results] A chromatogram of the extracted compounds from the peach/strawberry drink is shown in Fig. 1, and peak assignments are summarized in Table 1. Various components contained in the peach/strawberry drink were observed including γ-undecalactone (peach lactone) and linalool. The results show that the use of the Magic Chemisorber® and the pyrolyzer configured for thermal desorption is a quick and simple technique for analyzing flavor components in liquid samples.

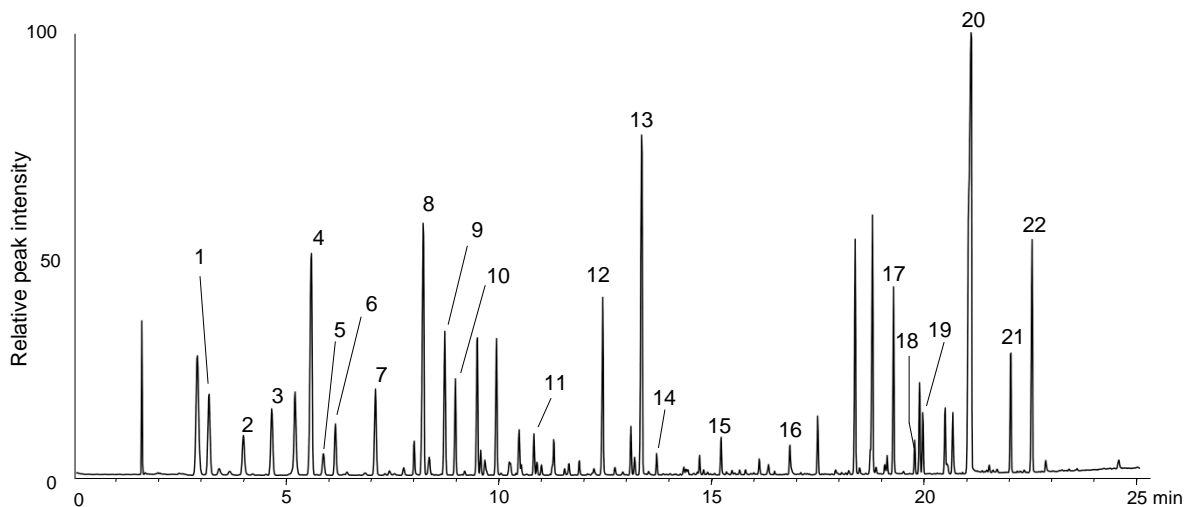


Fig. 1 Chromatogram of extracted compounds from flavored drink by Magic Chemisorber®

Sample amount: 10 mL, Extraction: 30 min immersion at 24°C
 Thermal desorption temp.: 250°C (15 min hold), cryo-trapped with MicroJet Cryo-Trap
 Separation column: Ultra ALLOY-CW (polyethylene glycol 20M), L=30 m, i.d.=0.25 mm, df=0.25 µm
 Column flow rate: 1 mL/min, Splitless mode, GC oven temp.: 40°C (3 min hold) - 250°C (10 °C/min, 30 min hold)

Table 1 Components extracted from peach/strawberry flavored drink

#	Compound	#	Compound	#	Compound
1	Ethyl acetate	9	2-Hexenal	17	Methyl cinnamate
2	Ethanol	10	Ethyl hexanoate	18	Ethyl cinnamate
3	Methyl butanoate	11	2-Isopropyl-4-methylthiazole	19	γ-Decalactone
4	Ethyl butanoate	12	Octyl acetate	20	γ-Undecalactone (Peach lactone)
5	Ethyl 2-methylbutanoate	13	Linalool	21	γ-Dodecalactone
6	Ethyl isopentanoate	14	Diethyl malonate	22	δ-Dodecalactone
7	Isoamyl acetate	15	α-Terineol		
8	Methyl hexanoate	16	Nerol		

Ref: [L. Wang et al., J. Chromatogr. A 1035 \(2004\) 277-279.](#)

Keywords : Solid phase extraction, immersion method, thermal desorption GC/MS, Peach/strawberry flavored drink

Products used : Multi-functional pyrolyzer, Magic Chemisorber®, MicroJet Cryo-Trap, UA-CW, Flow through Eco-cup LHF

Applications : Food component analysis, additives analysis

Related technical notes : [MCA-001E](#), [MCA-002E](#)

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Phone: (81)24-935-5100 Fax: (81)24-935-5102
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