

Component analysis using “Magic Chemisorber®”

5. Flavor Components in Cream Cheese

[Background] Identification of flavor compounds by solid phase extraction (SPE) using Magic Chemisorber® is described for the analysis of cream cheese.

[Experimental] Magic Chemisorber® MC-S500 (PDMS thickness 500 µm) was immersed in a paste prepared by mixing 1 mL of water and 1 g of cream cheese for 30 min at 22°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 of 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 cream cheese is shown in Fig. 1, and peak assignments are summarized in Table 1. Various components contained in the cream cheese were observed including δ-Decalactone and δ-Dodecalactone. 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 cream cheese.

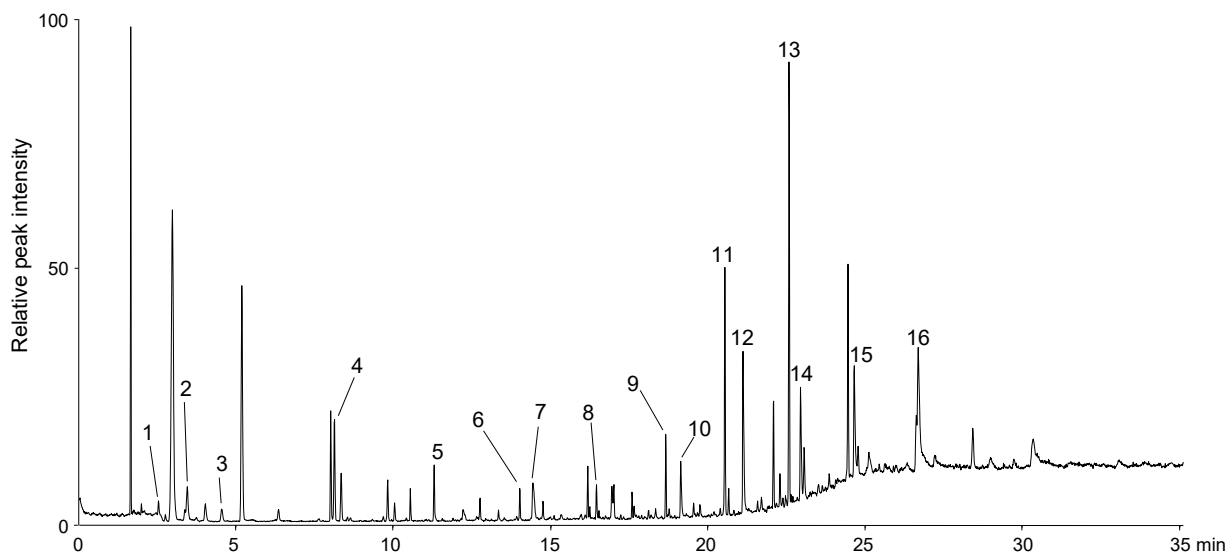


Fig. 1 Chromatogram of extracted compounds from cream cheese by Magic Chemisorber®

Sample: a paste of 1 mL of water and 1 g of cream cheese, Extraction: 30 min immersion at 22°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 cream cheese

#	Compound	#	Compound	#	Compound
1	Acetone	7	Butanoic acid	13	δ-Dodecalacton
2	2-Butanone	8	2-Tridecanone	14	Dodecanoic acid
3	2-Pentanone	9	2-Pentadecanone	15	Tetradecanoic acid
4	2-Heptanone	10	Octanoic acid	16	Hexadecanoic acid
5	2-Nonanone	11	δ-Decalactone		
6	2-Undecanone	12	Decanoic acid		

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

Keywords : Solid phase extraction, immersion method, thermal desorption GC/MS, Cream cheese,

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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