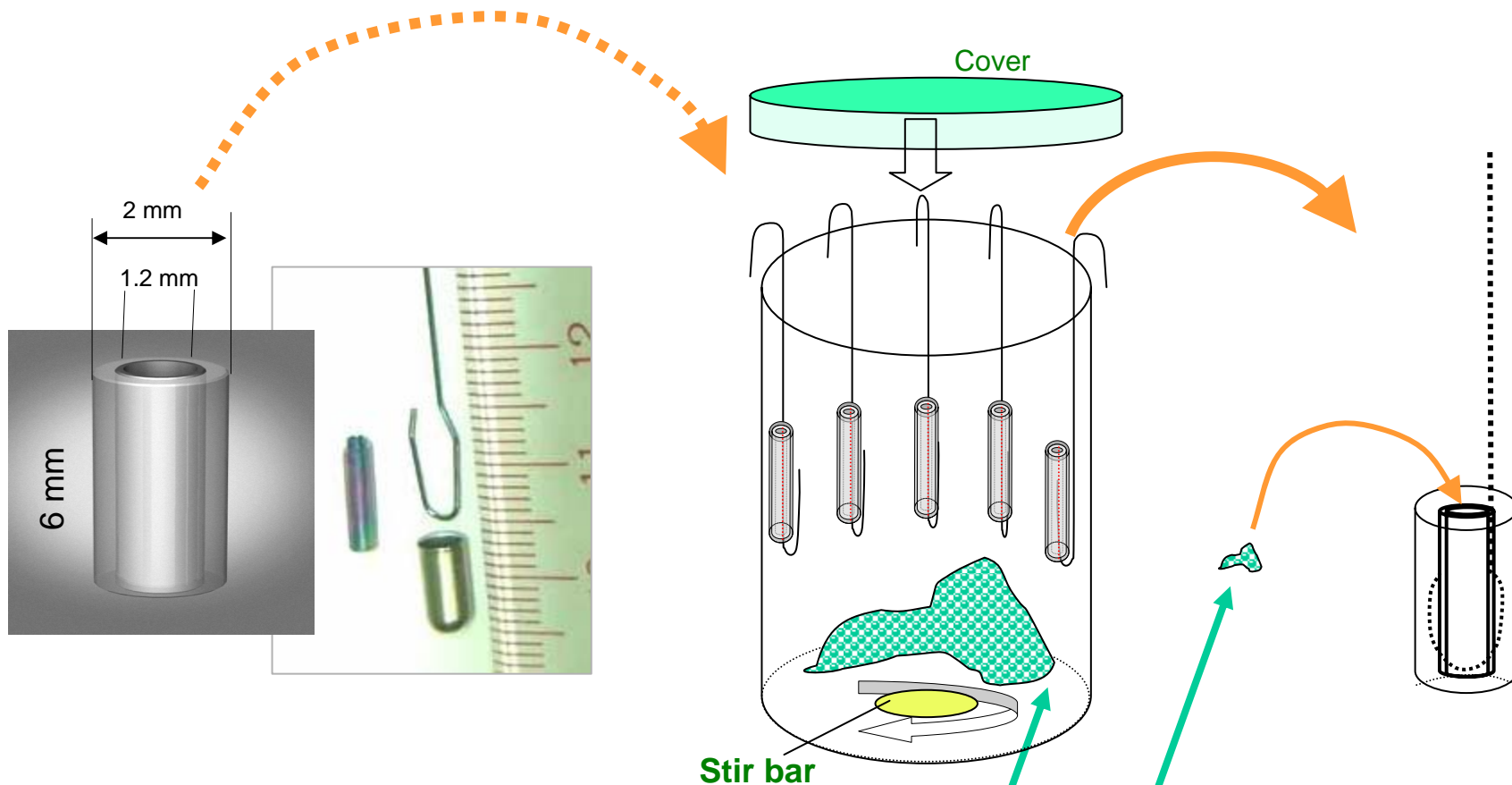


What is SPEE (Magic Chemisorber) and How to sampling the volatiles?



Magic Chemisorber

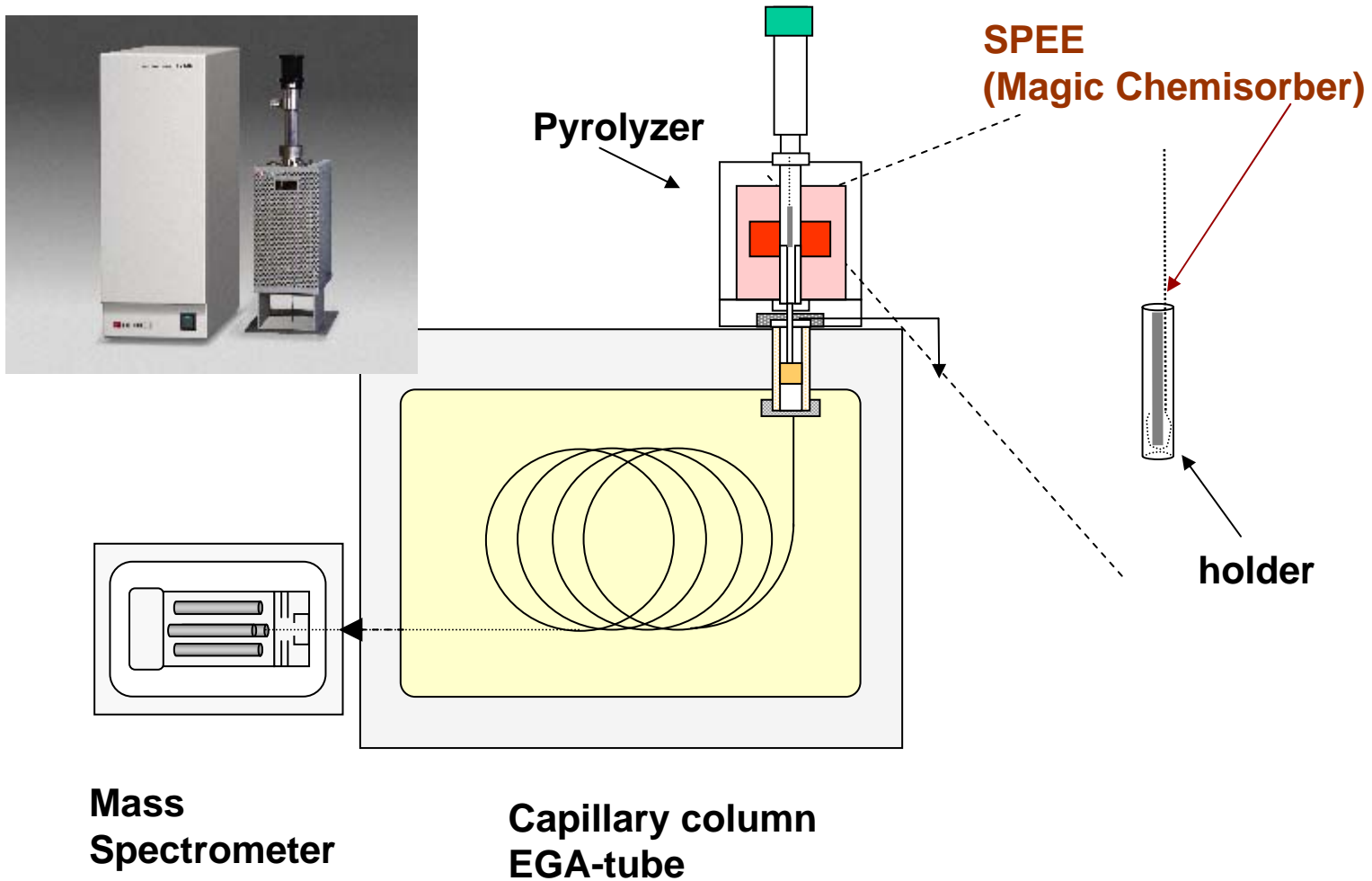
Chemically bonded layer of PDMS (320 um thickness)

Film (30x30cm, 3x3mm)

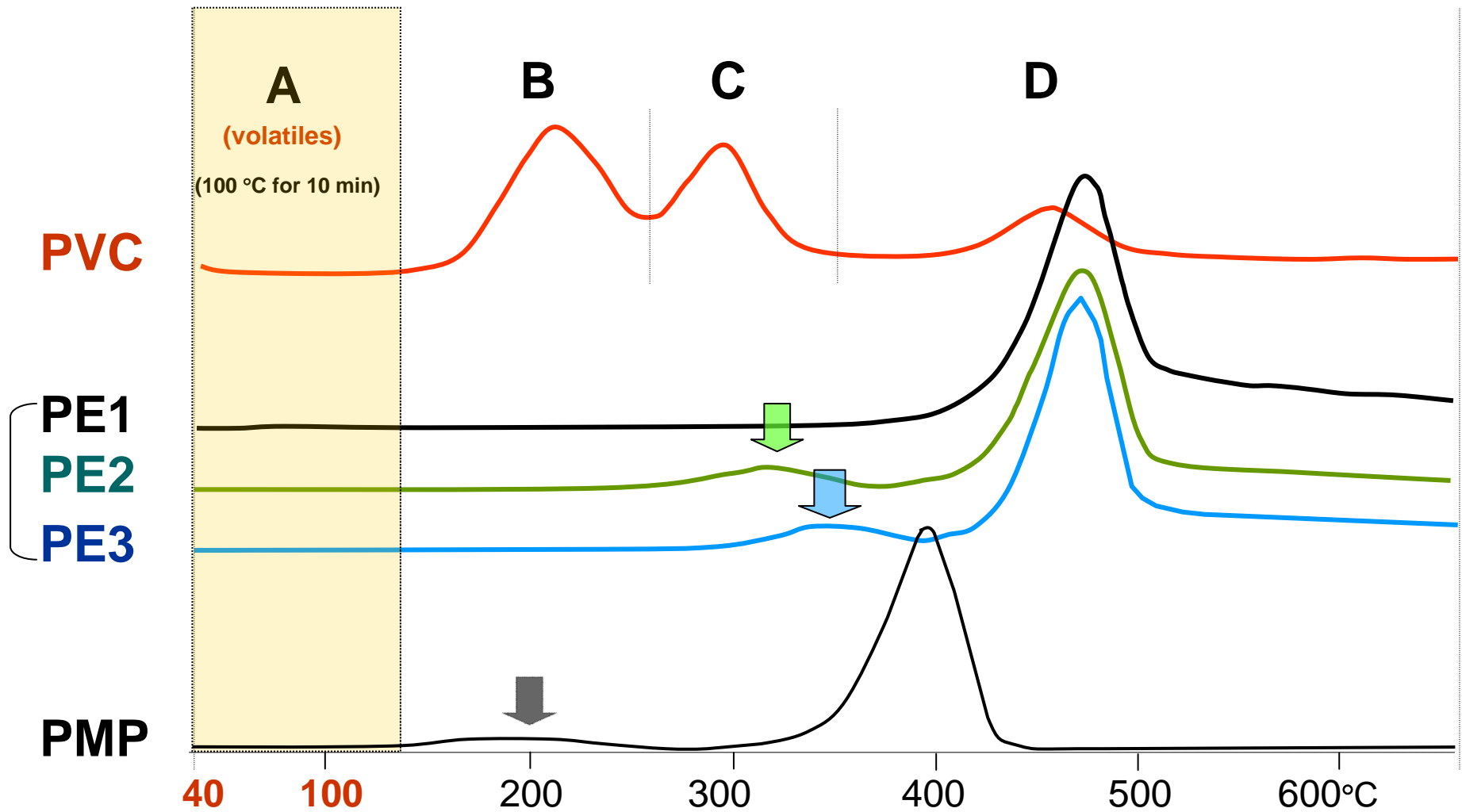
Heat-up to 100°C for 10 min in GC Oven

Thermal Desorption

Schematic diagram of the TD-GC/MS system

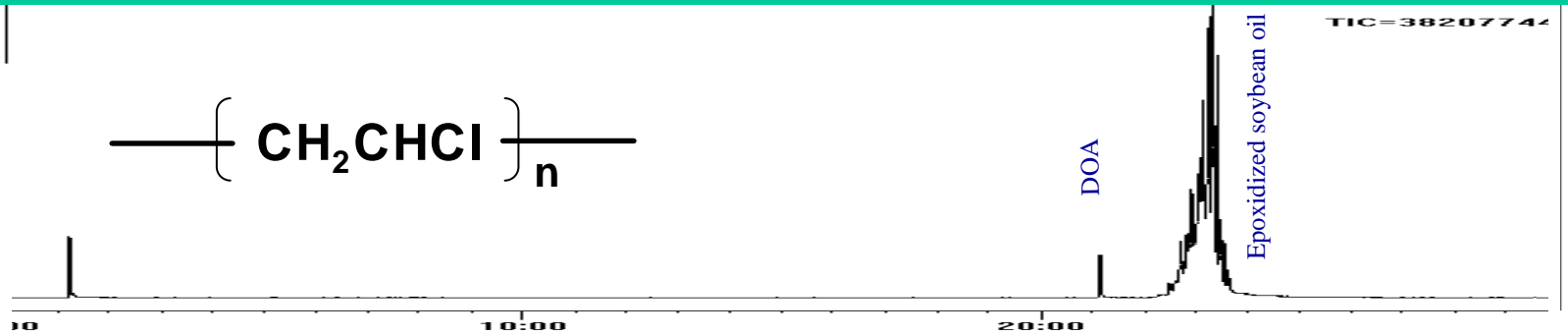
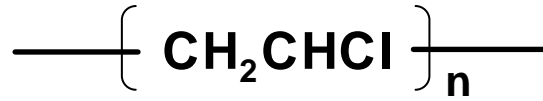


EGA Thermograms of Five Films



PVC: Volatiles analysis (Additive: Epoxidized soybean oil)

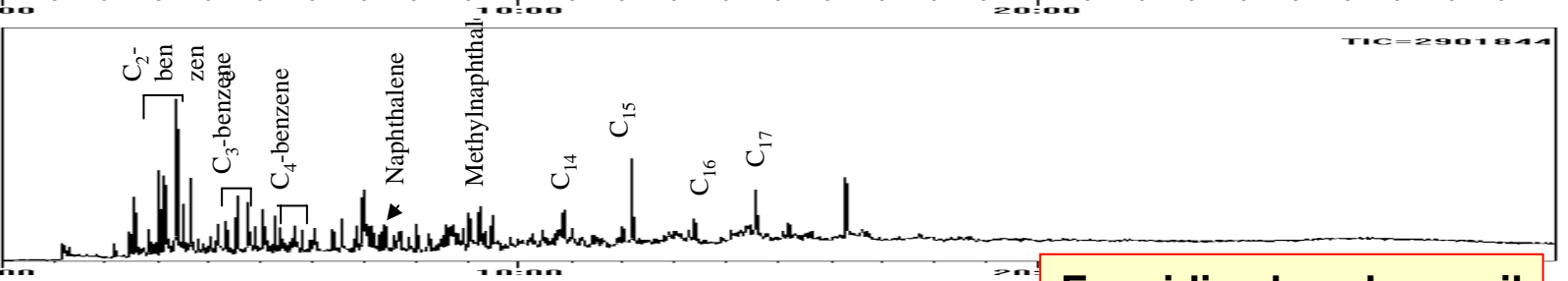
Zone B
(120 ~ 240 °C)



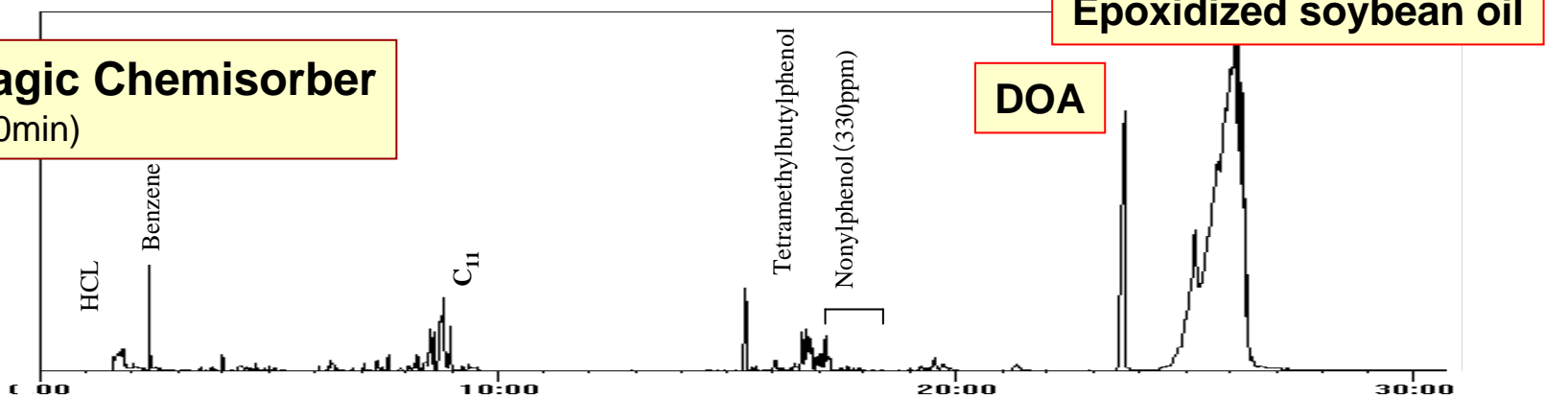
Zone C
(240 ~ 350 °C)



Zone D
(350 ~ 600 °C)



SPEE: Magic Chemisorber
(100°C for 10min)





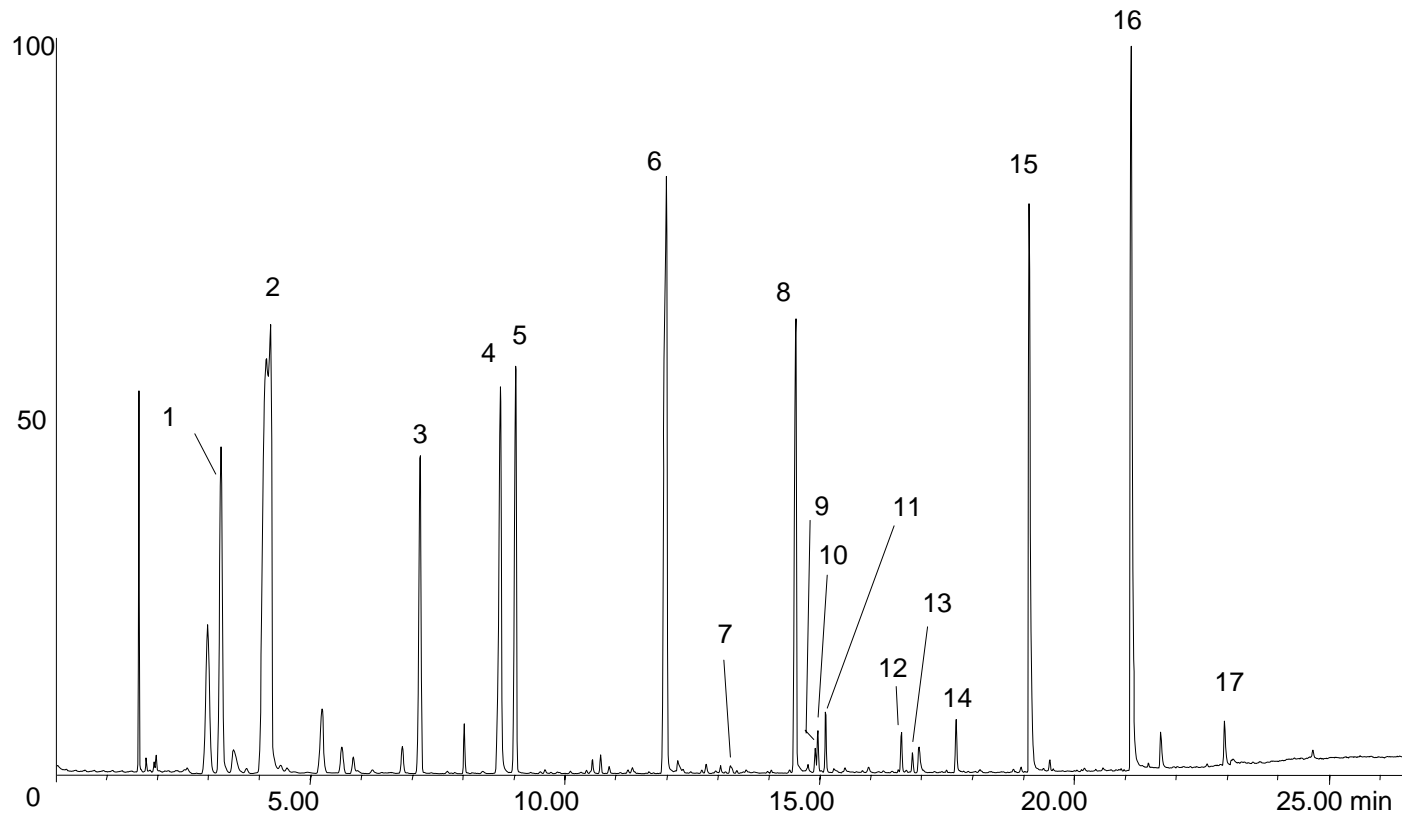
Trace organic compounds in Red Wine using a Magic Chemisorber

(Solid Phase Micro Extraction and its thermal desorption)

Double-Shot Pyrolyzer: PY-2020iD (Thermal desorption at 250°C for 15 min)

Column: Frontier Lab UA-CW (Polyethyleneglycol 20M) L: 30m, I.d.: 0.25mm, df: 0.25µm

He:1 ml/min, GC Oven Temp: 40°C(3min)-250°C (10min hold, 10°C/min)



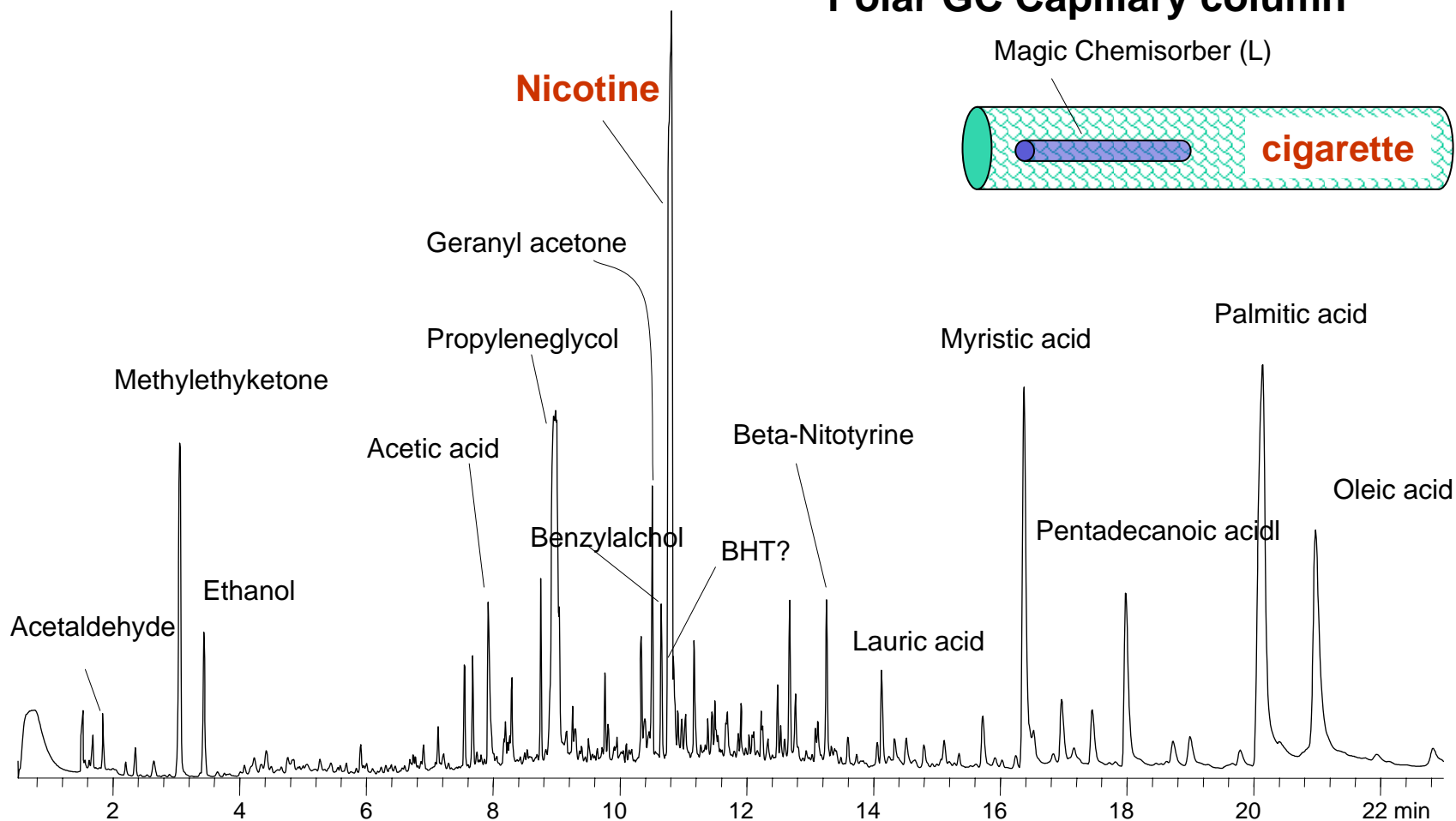
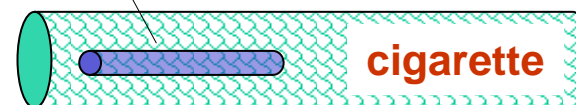
- 1: Ethyl acetate
- 2: Ethanol
- 3: Isoamyl acetate
- 4: Isoamyl alcohol
- 5: Ethyl hexanoate
- 6: Ethyl octanoate
- 7: Vitispirane
- 8: Ethyl decanoate
- 9: Ethyl Benzoate
- 10: Diethyl succinate
- 11: Ethyl 9-decanoate
- 12: Phenethyl acetate
- 13: Ethyl dodecanoate
- 14: Phenylethyl alcohol
- 15: Octanoic acid
- 16: Decanoic acid
- 17: Dodecanoic acid

Volatiles of Cigarette (Davidoff:Germany) using Magic Chemisorber (L)

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
 Col: Carbowax (UACW-30M-0.25F), GC oven: 40°C(2)-230°C(10min hold, 20 °C/min)

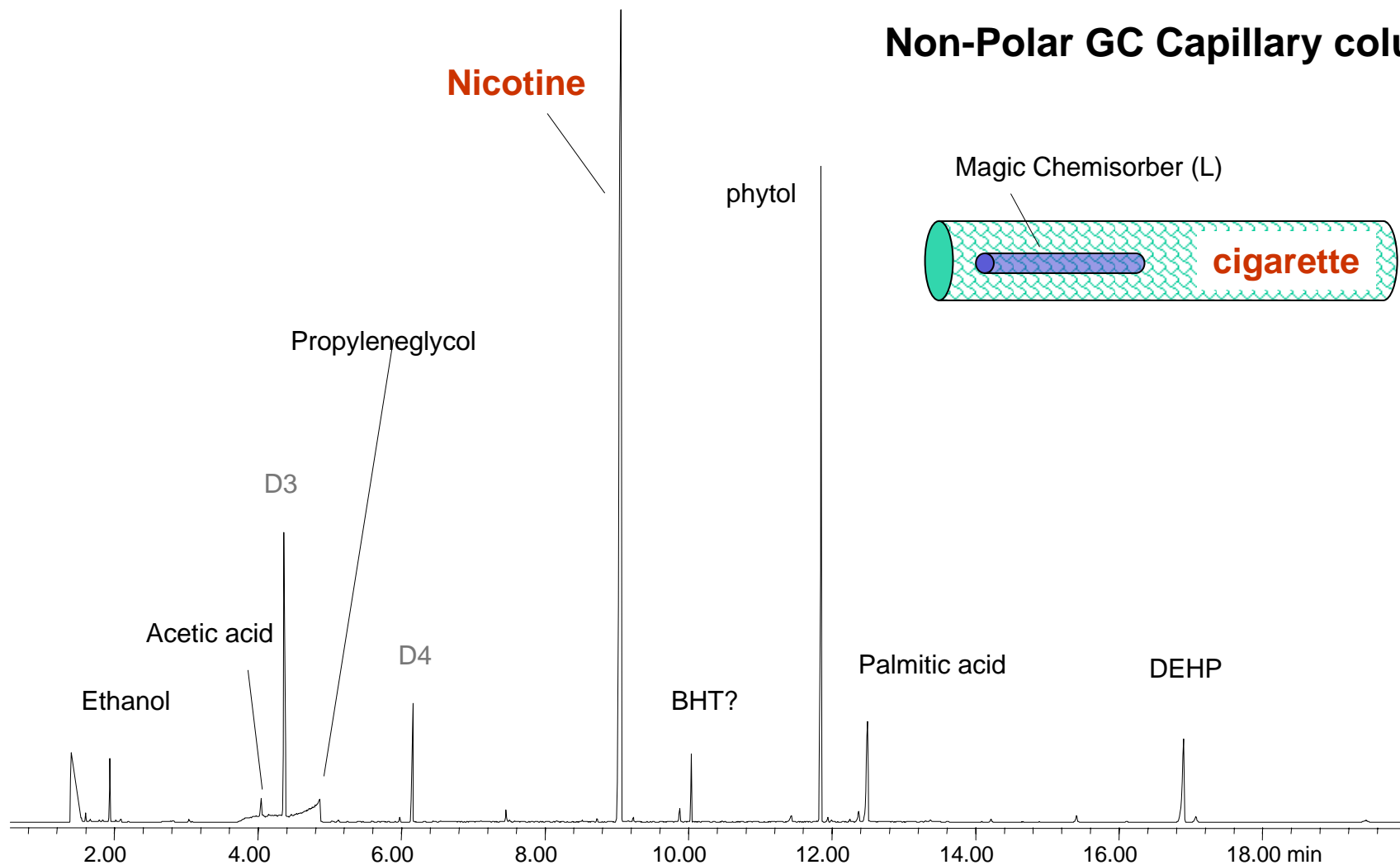
Polar GC Capillary column

Magic Chemisorber (L)



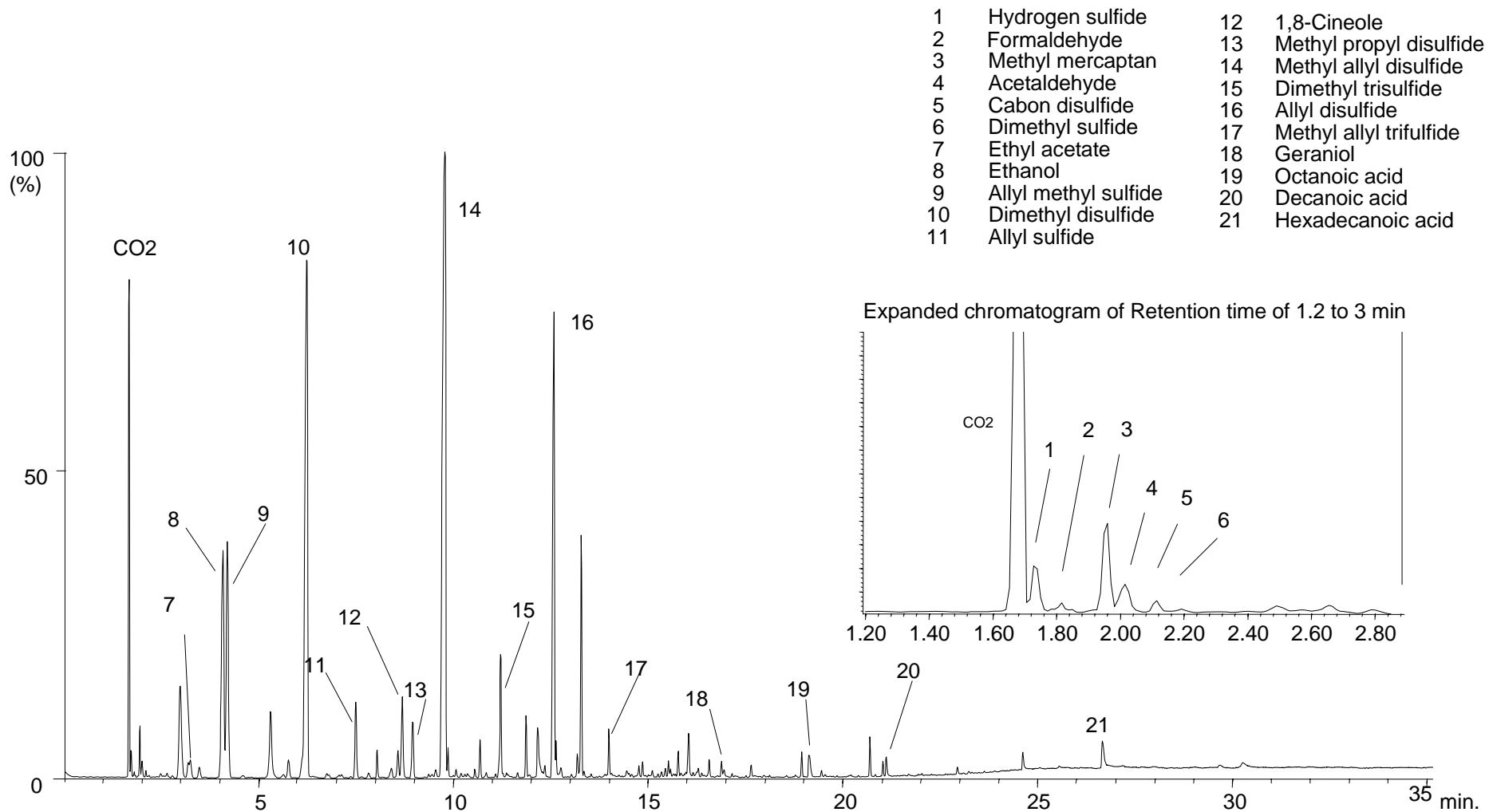
Volatiles of Cigarette (Mild seven: Japan) using Magic Chemisorber (L)

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Col: 5% phenyl polymethylsiloxane (UA5-30M-0.25F), GC oven: 40°C(2)-250°C(10min hold, 20 °C/min)



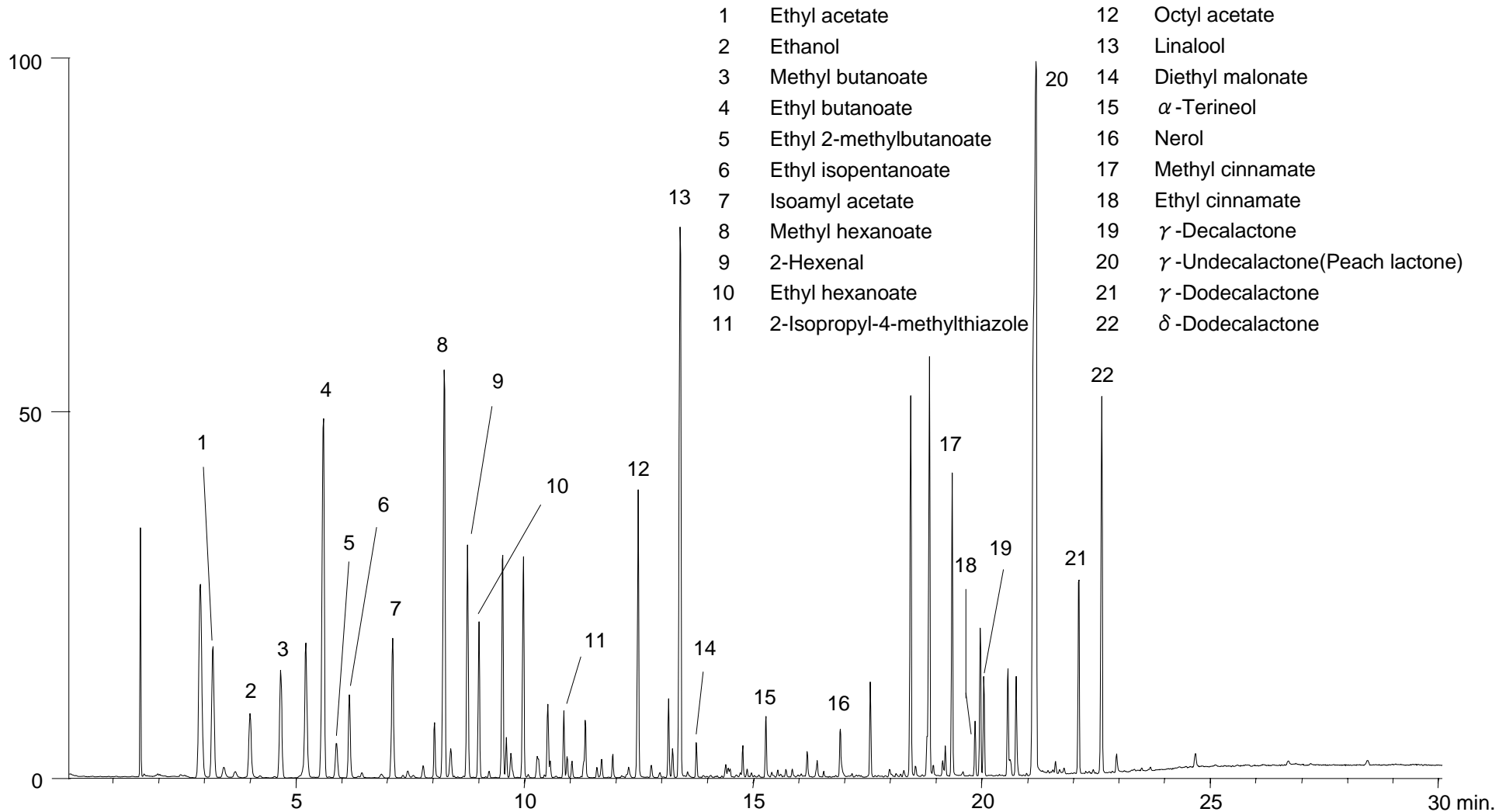
Head Space Analysis of Kimchi (Korean pickles) using Magic Chemisorber (S)

Sample: 3g/10ml, Head space in 2 Hrs at room temp, Thermal desorption at 100°C-250°C(5min, 40 °C/min) , He: Splitless injection
 Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)



Liquid extraction from drinking water (peach and strawberry) using Magic Chemisorber

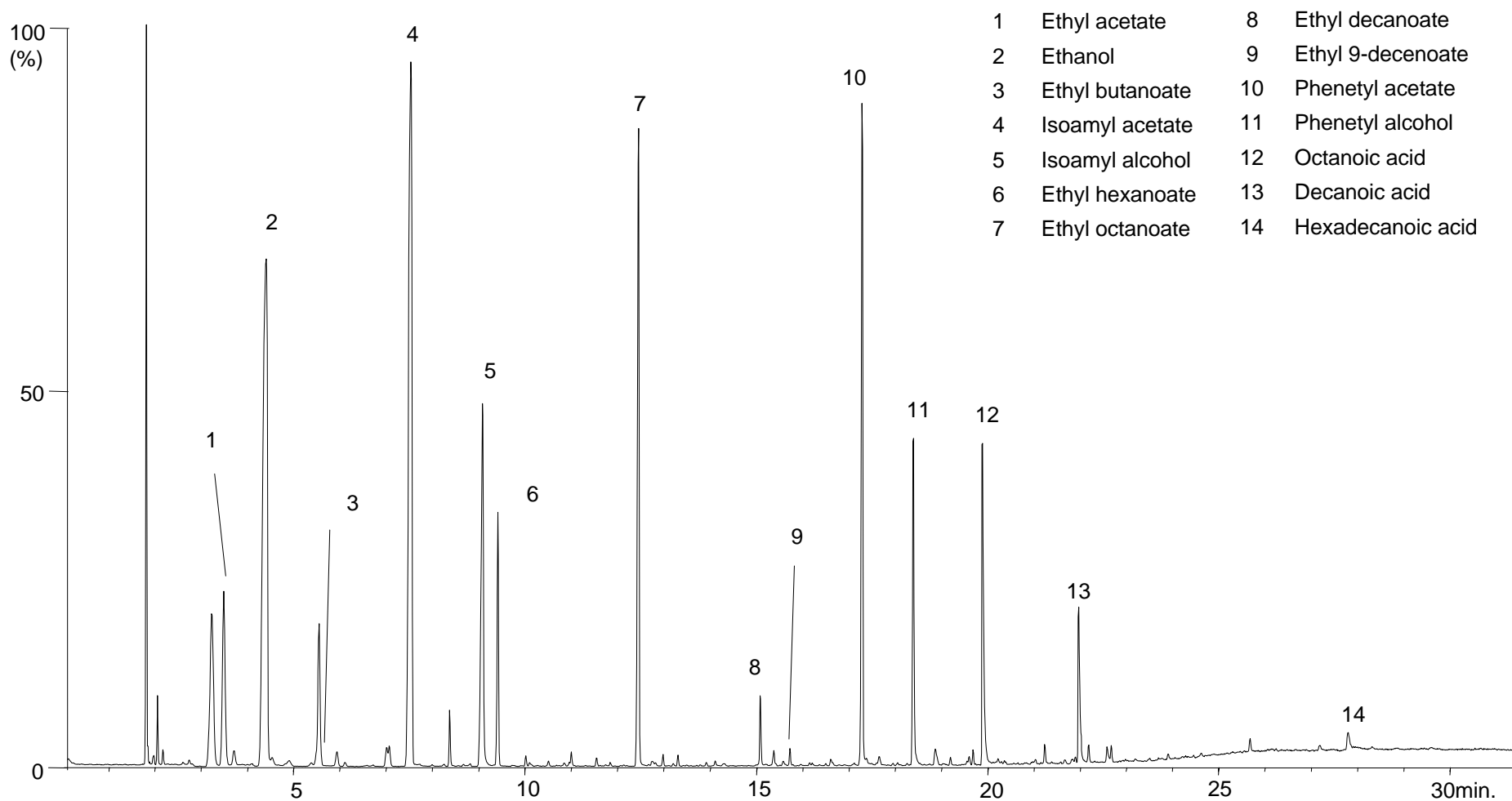
Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Head space of Beer using Magic Chemisorber (S)

Sample: 10ml, Immersed for 30 min at room temp, Thermal desorption at 100°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)

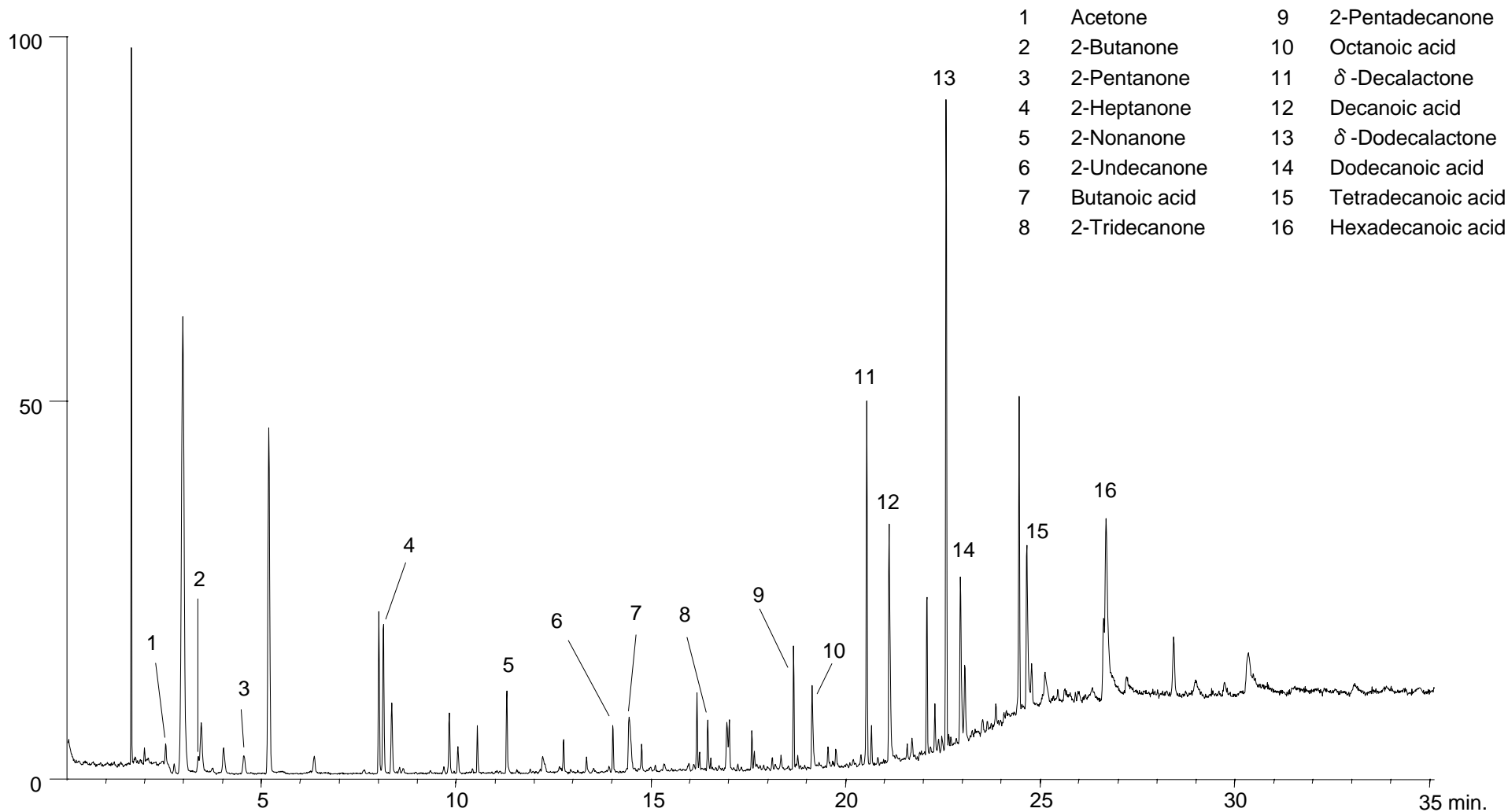




Liquid extraction from the Cheese sample using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection

Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)

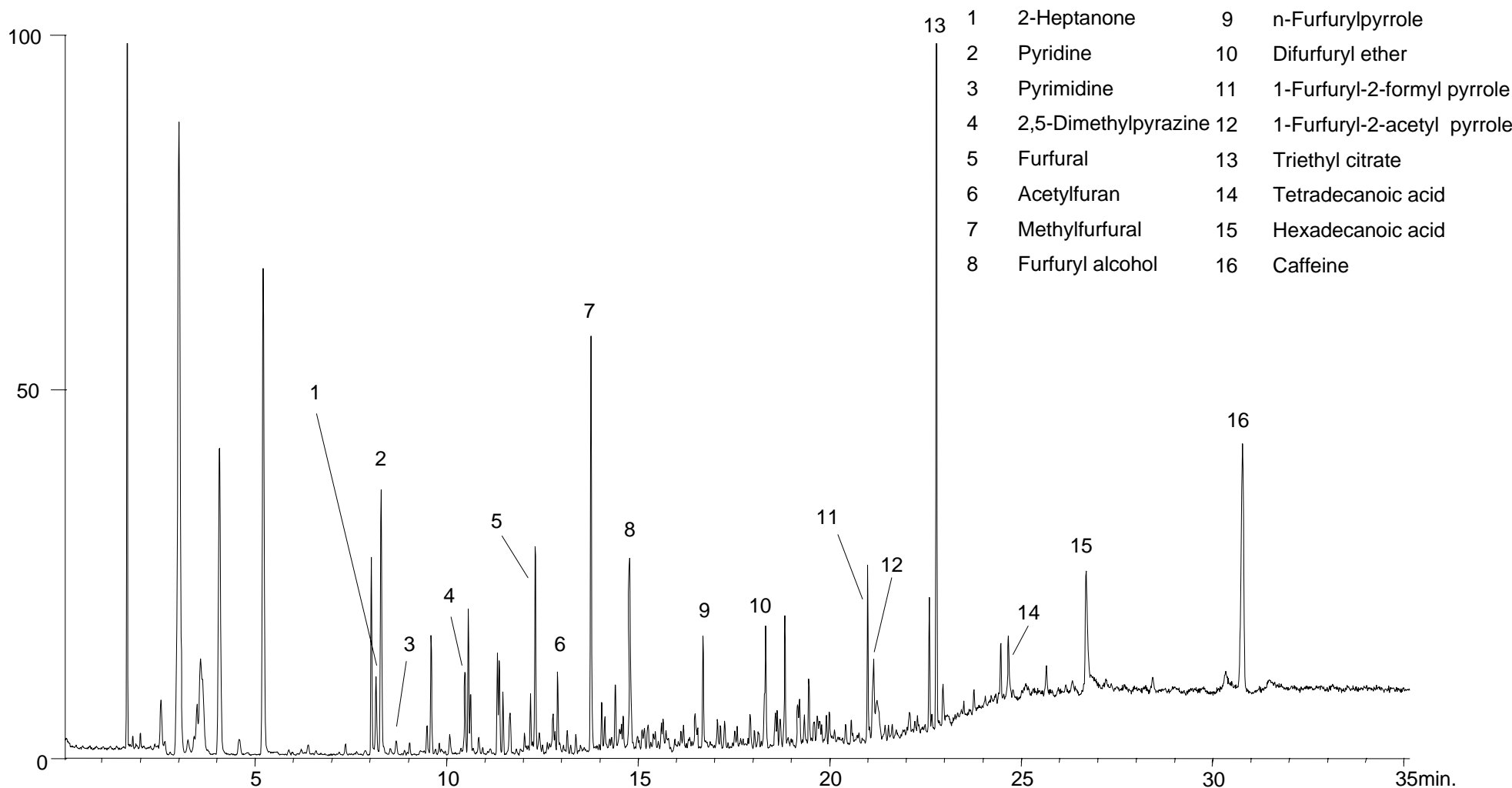




Liquid extraction from Coffee in can bottle using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection

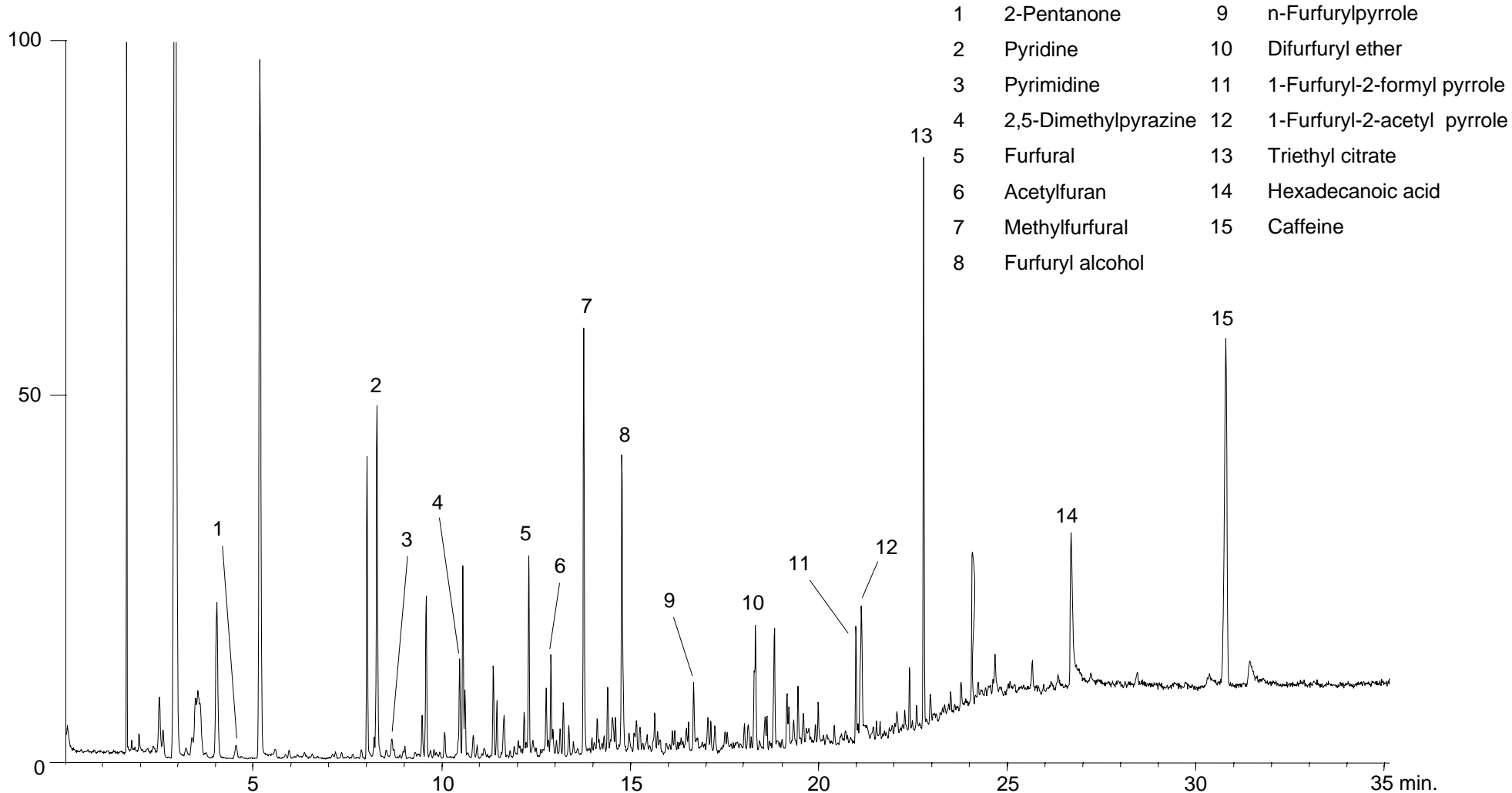
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





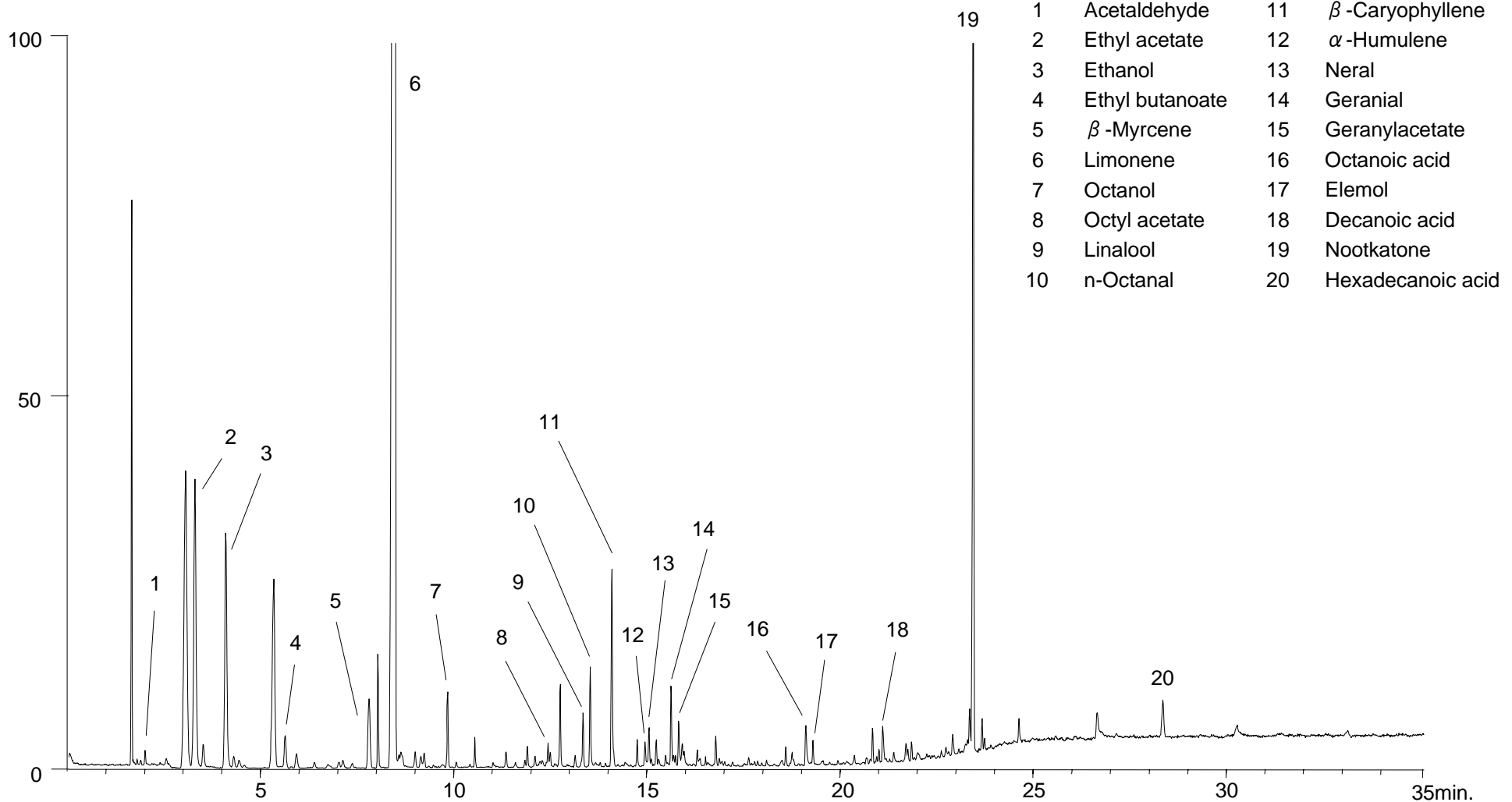
Liquid extraction from Black-Coffee in can bottle using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)



Liquid extraction from Natural Grape fruits juice using Magic Chemisorber

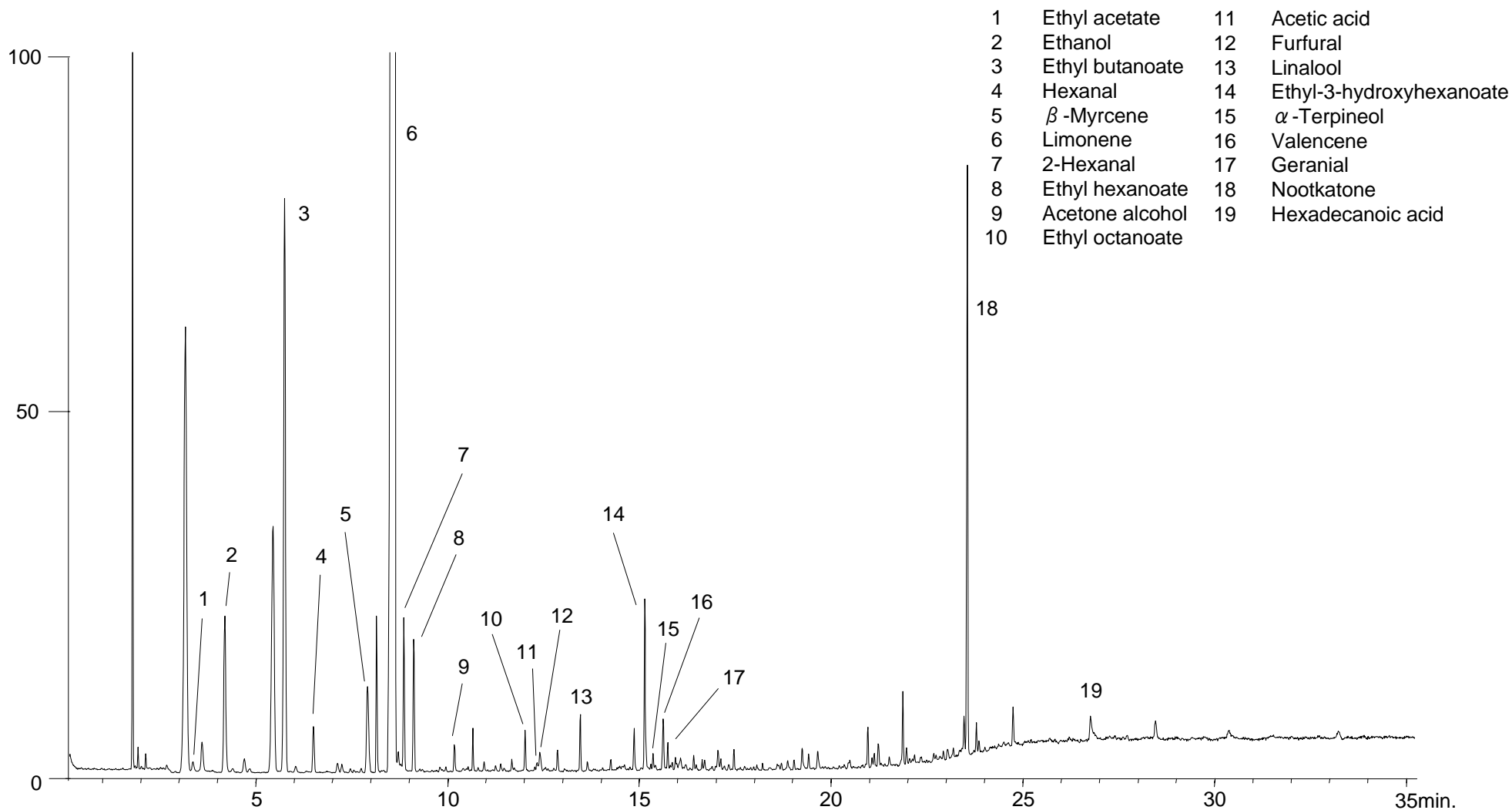
Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
 Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Liquid extraction from orange juice using Magic Chemisorber

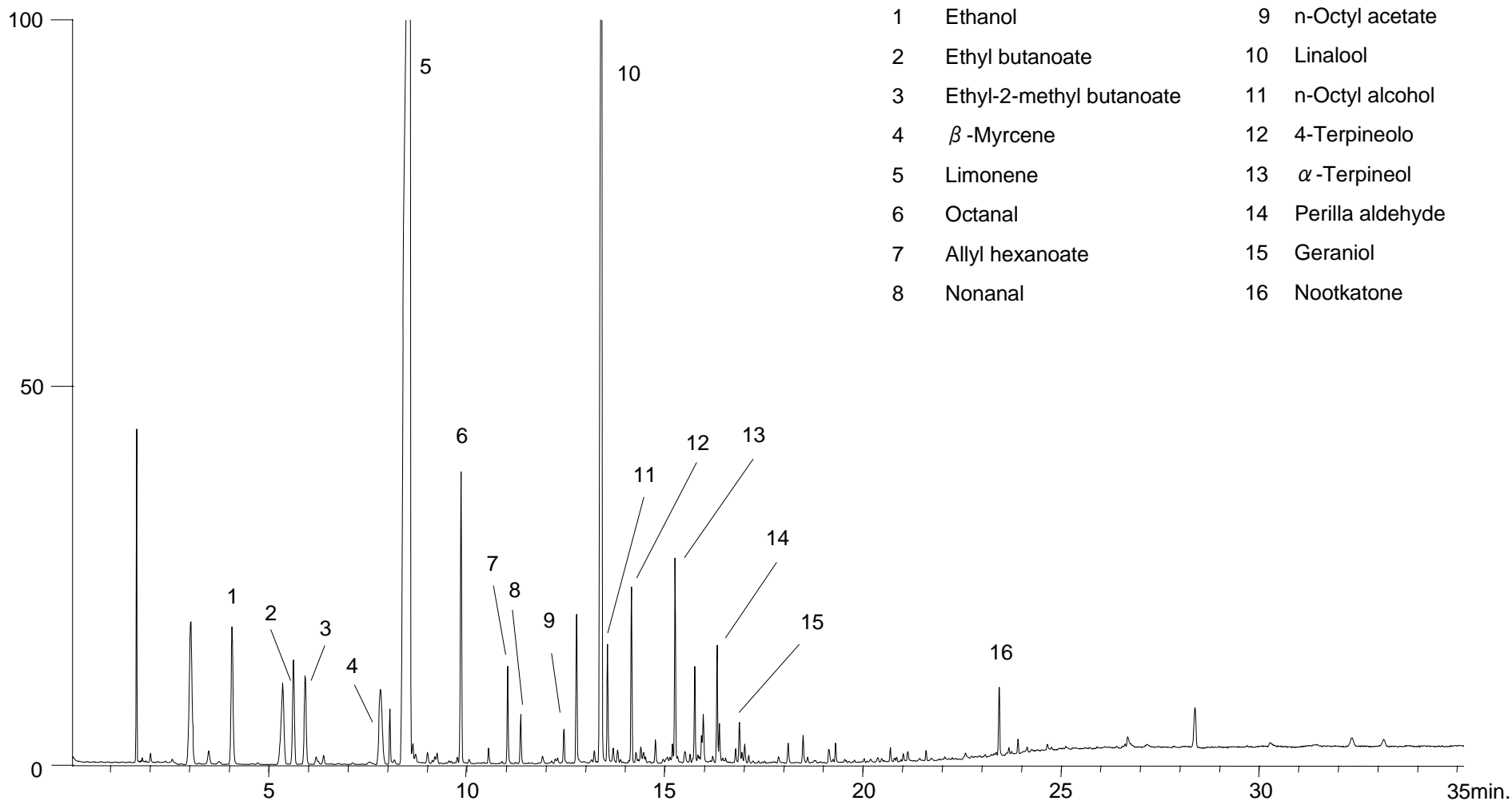
Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Liquid extraction from Orange juice; concentrated, using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)

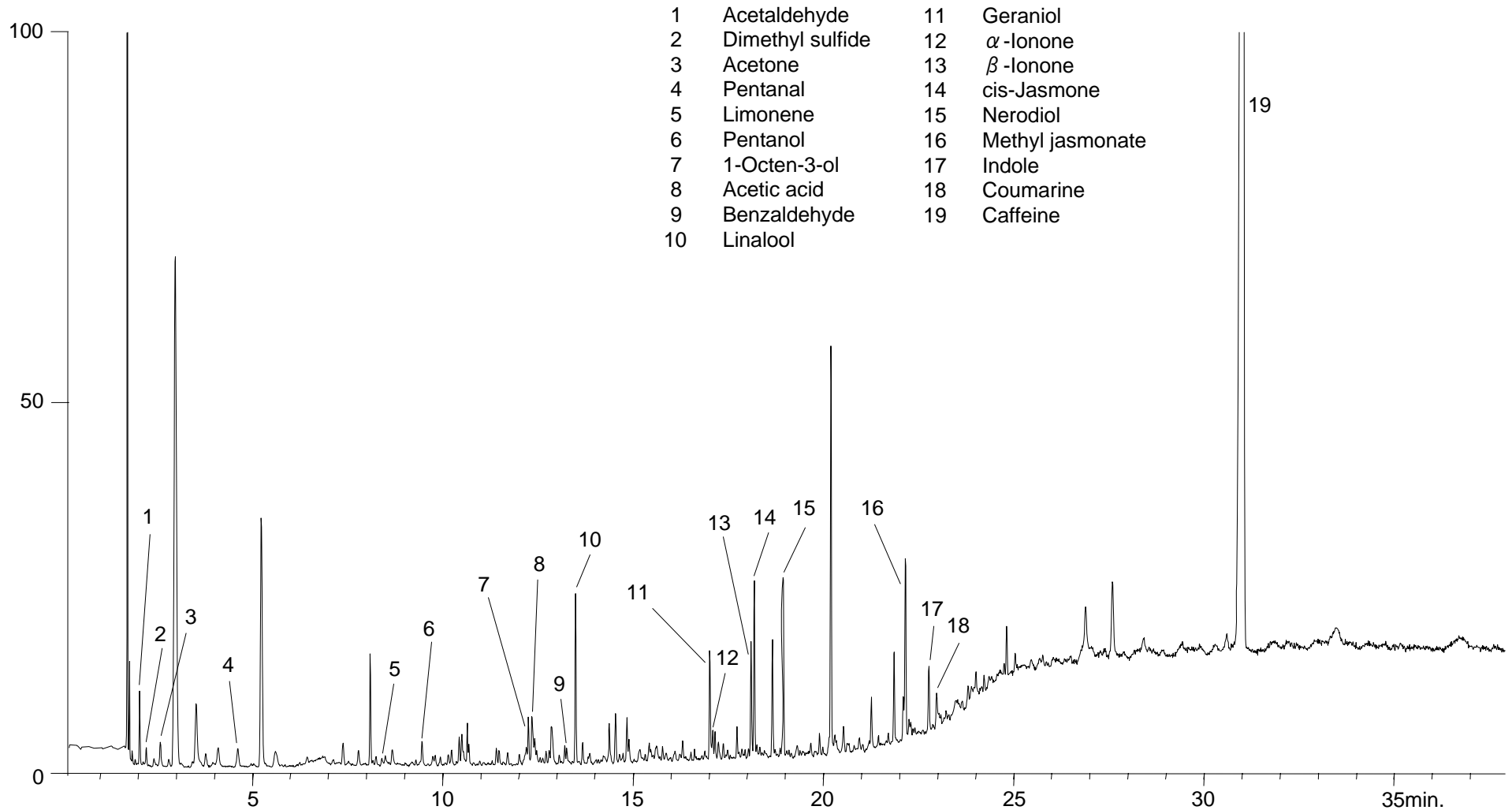




Liquid extraction from green tea using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection

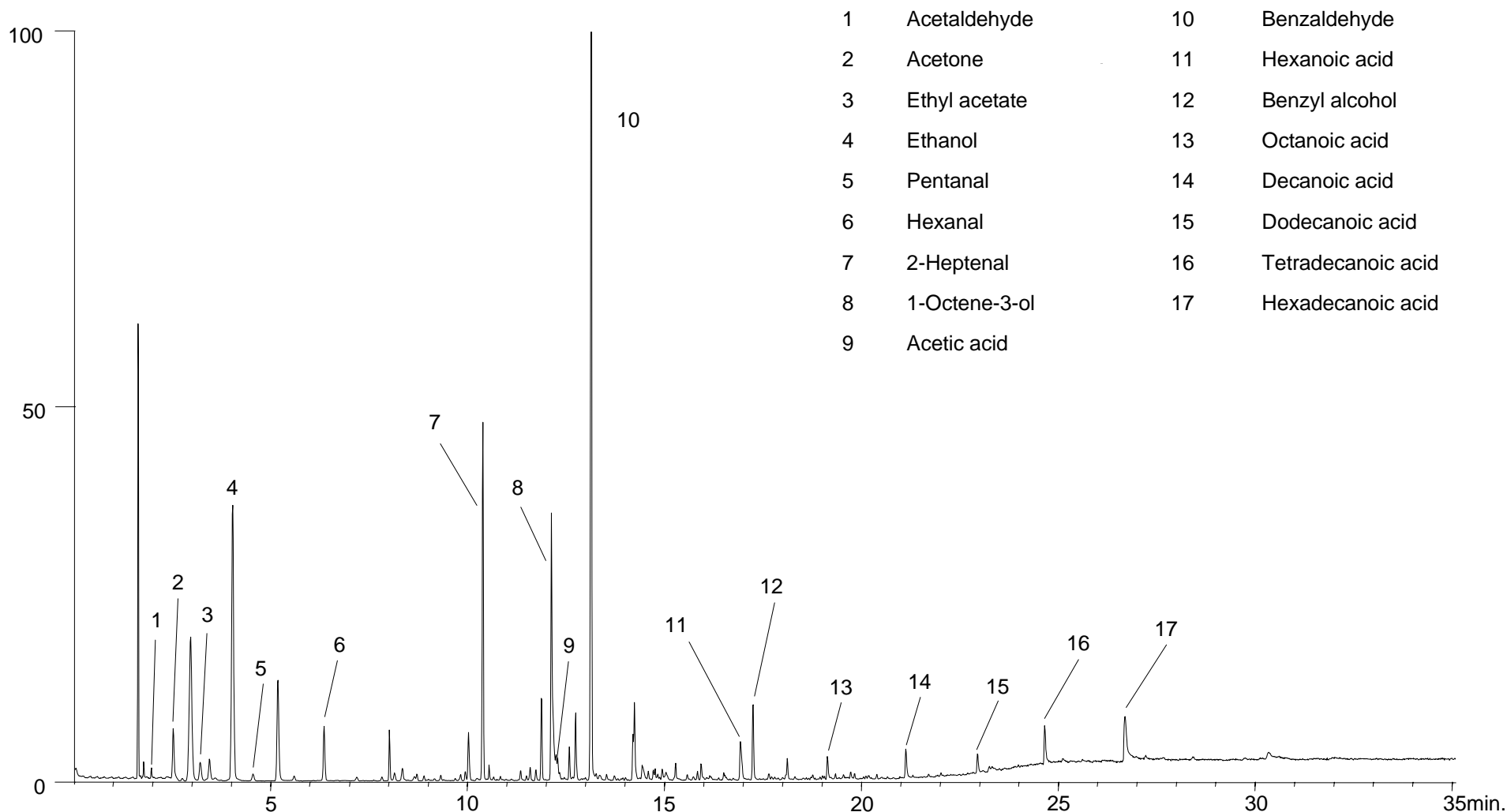
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Head space of a pickled *ume* (Plum) using Magic Chemisorber (S)

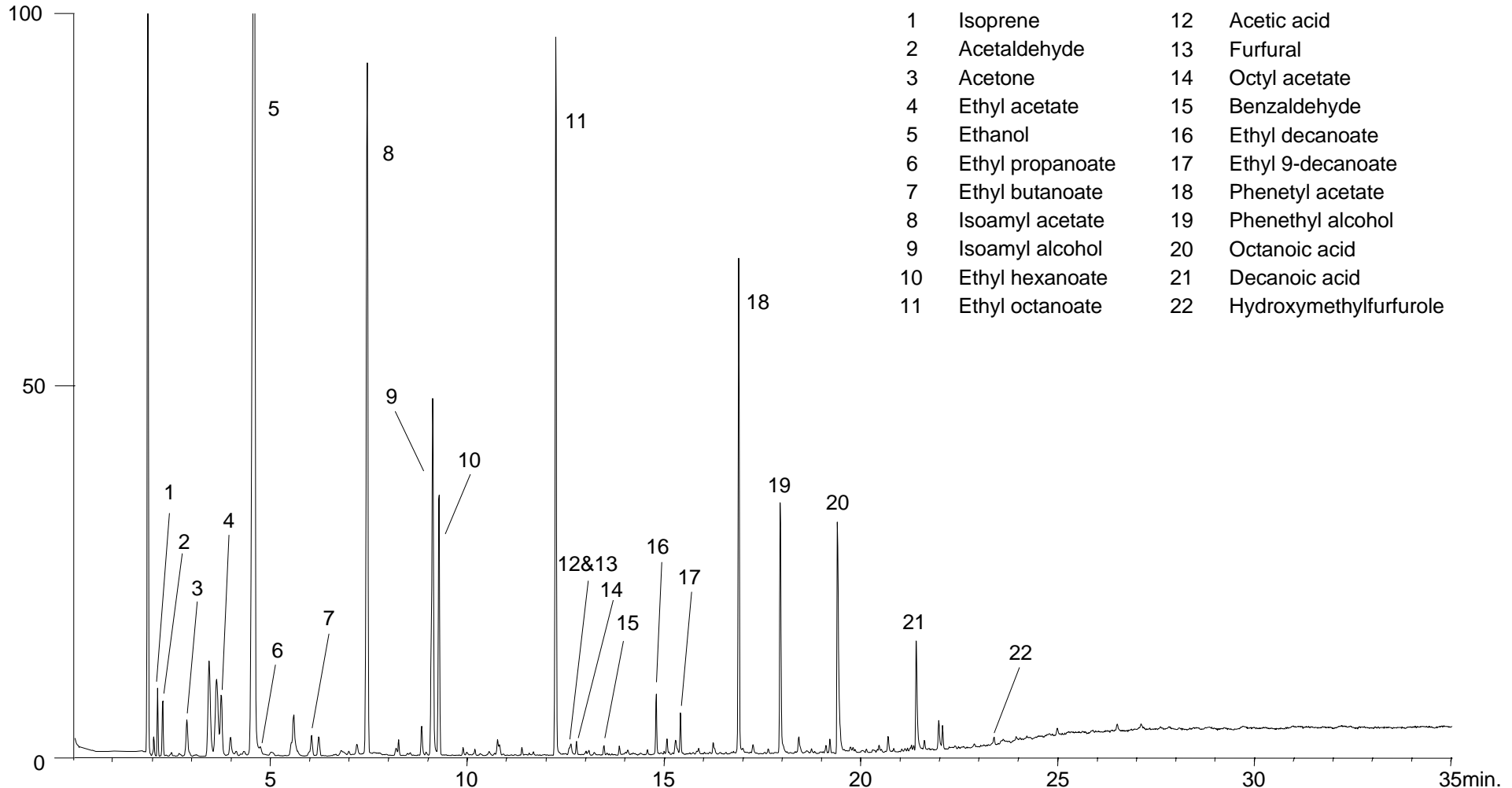
Sample: 3g/10ml, Head space in 2 Hrs at room temp, Thermal desorption at 100°C-250°C(5min, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Liquid extraction from low-malt beer using Magic Chemisorber

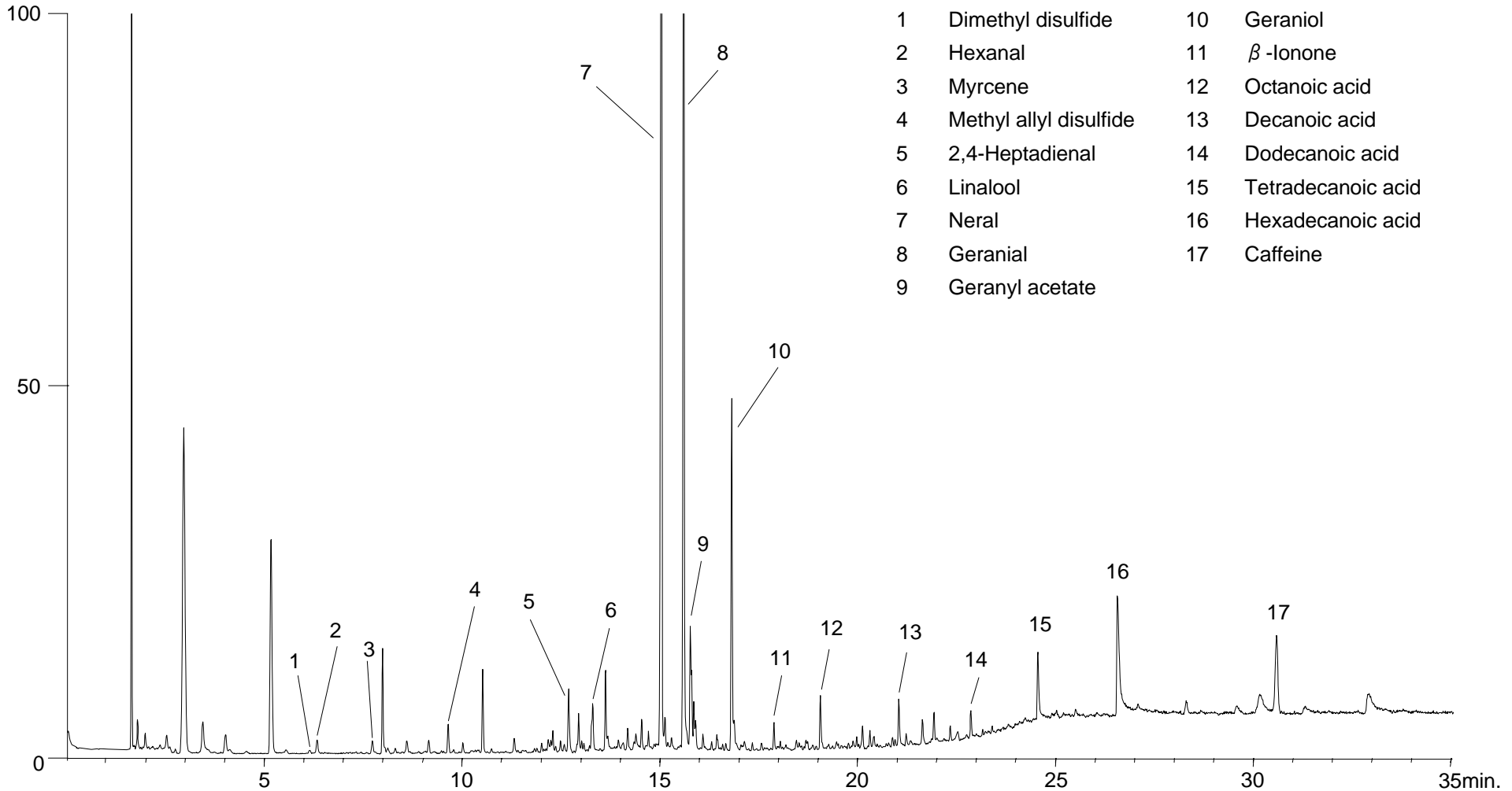
Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Liquid extraction from herbal & Oolong tea using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)





Liquid extraction from jasmine tea using Magic Chemisorber

Extraction for 30 min at room temp and thermally desorption at 200°C-250°C(5min hold, 40 °C/min) , He: Splitless injection
Column: Carbowax (UACW-30M-0.25F), GC oven: 40(3)-250°C(10min hold, 10 °C/min)

