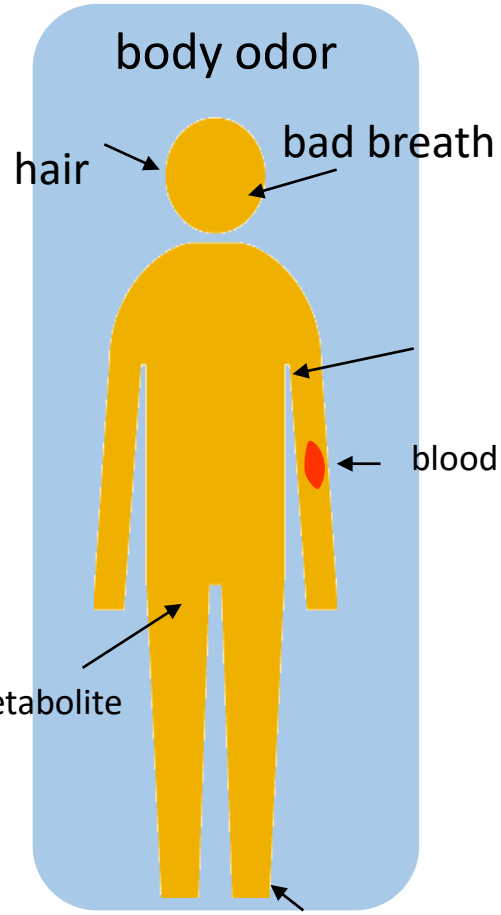
OFF Line Sampling

Application examples



Nasty smell of printer

The smell of the room

MonoTrap
Small sampling device
Big surface area

Market can not support online

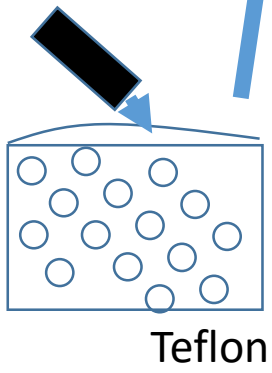
LINEX Liner

AOC6000 or PAL RTC with LINEX OPTIC and GCMS

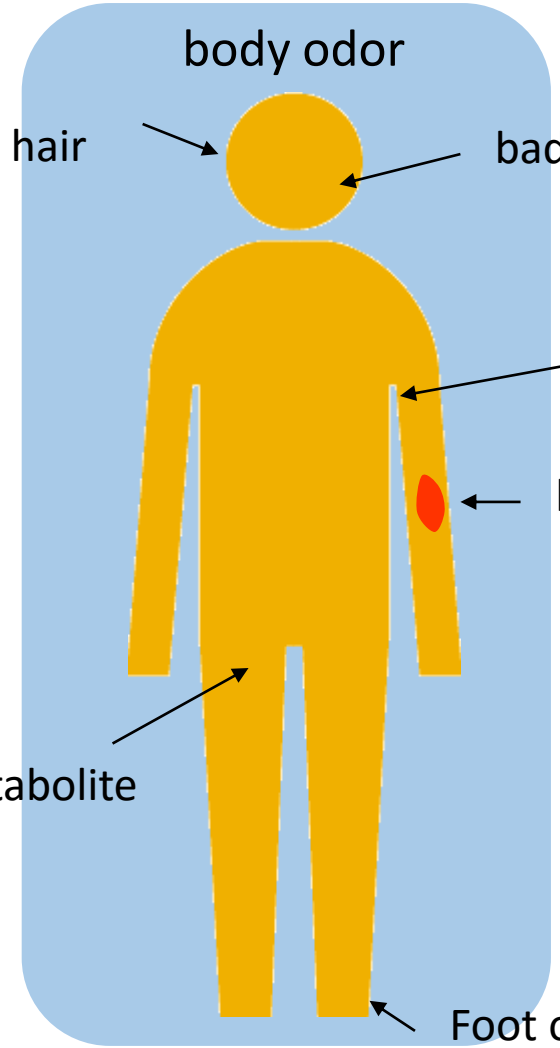
After MonoTrap is in the Liner full automation is possible.

Biological sample; *MonoTrap is a disposable product so easy to use in this case.*

MonoTrap



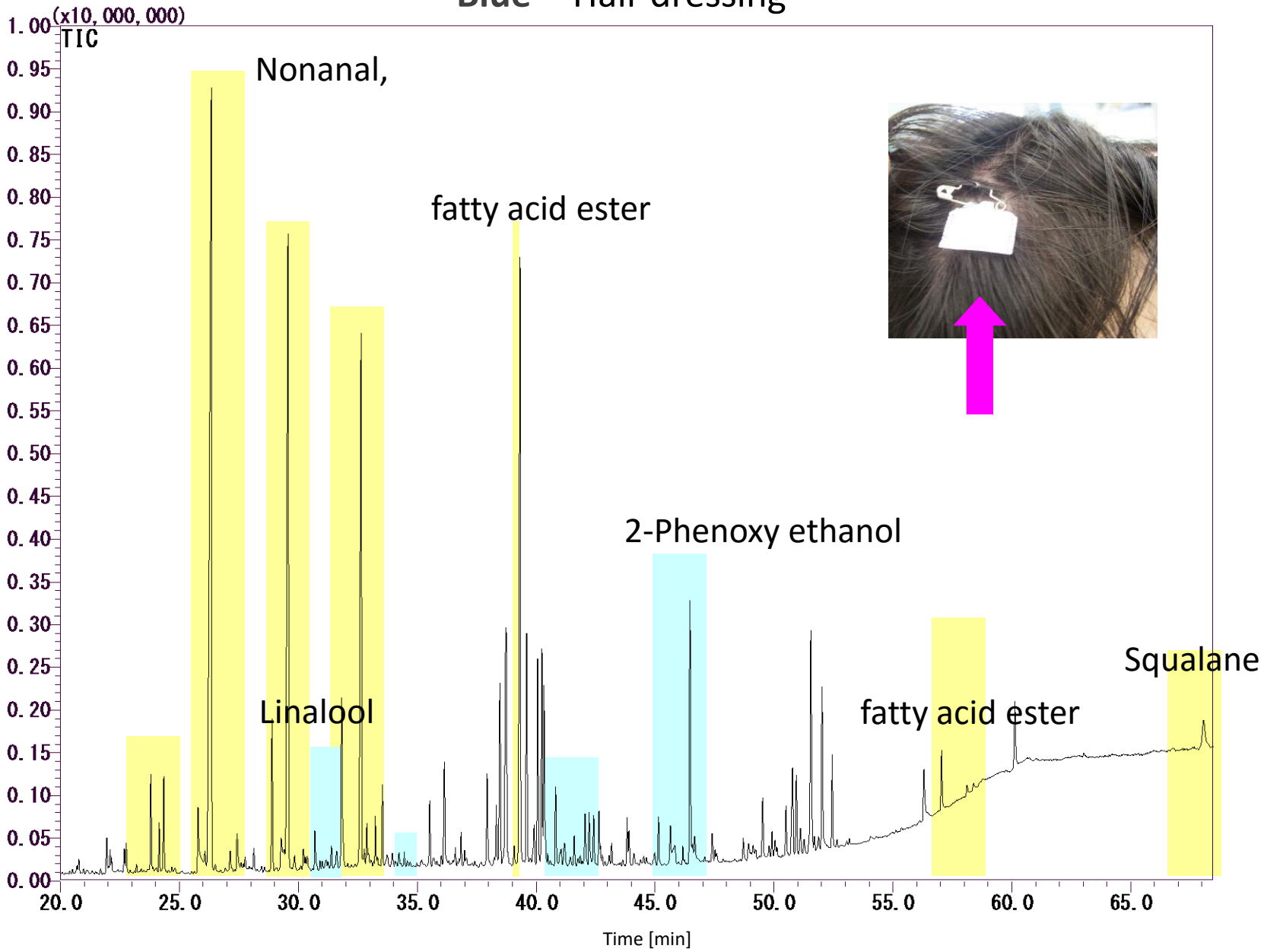
Teflon



GL Sciences

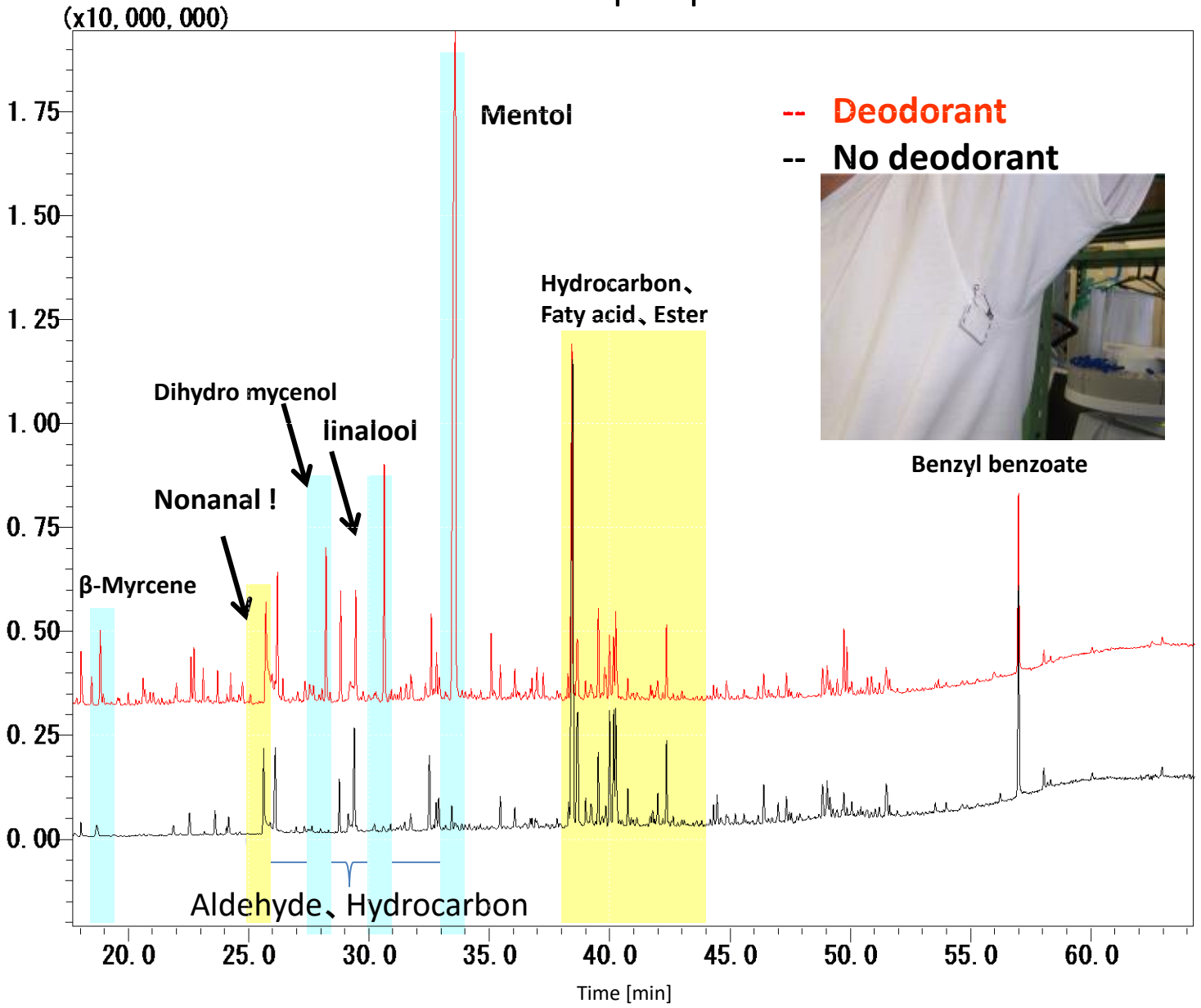
Scalp odor

Blue＝Hair dressing



Armpit

Blue＝ Antiperspirant



TD-GC/MS/O Application

Smells of Sweaty Socks by MMSE

Sample

A subject,
female age 28
She put on socks all day long.

Extraction

Extraction; Used Socks and MonoTrap(RGC18) at37deg, for 6hours.

LINEX, OPTIC with CryoTrap, GCMS

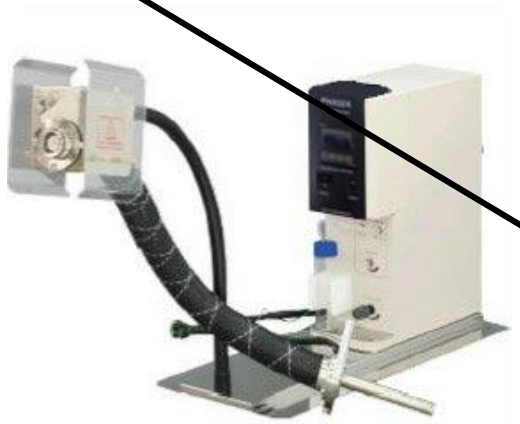
Desorb	Temp200deg
	Time 5min
Cryo	-150deg
Split	3:0(Desorb; 3 Split; 10cc/min)
Injection	250deg
Column Flow	He, 1.4cc/min

TD

After extraction, MonoTrap was put into glass tube for TD.

GC/MS analysis

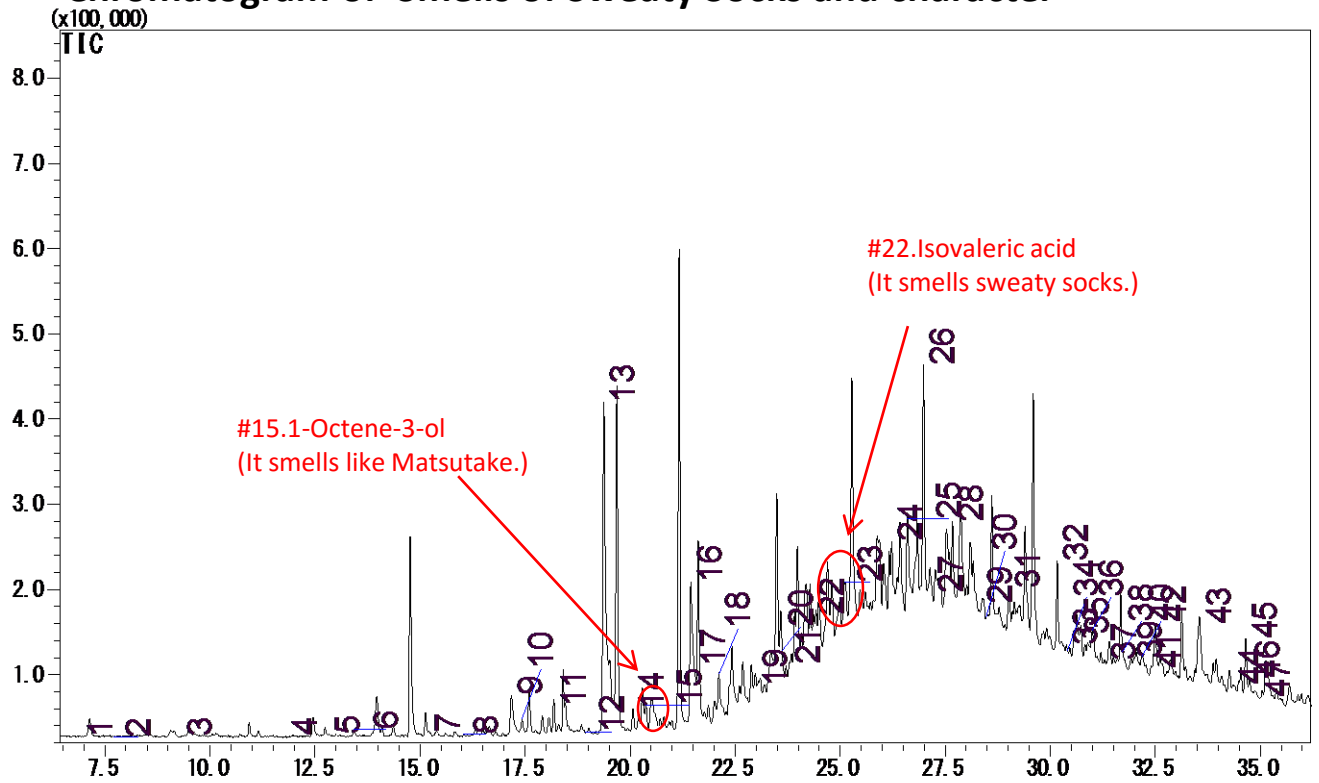
System	SHIMADZU GC-2010,QP-2010Plus
Column	InertCap Pure-WAX 0.25mmI.D. X 30m(0.25µm)
Column Temp	40deg(5min)-6deg/min-250deg(5min)
Detection	MS Scan(m/z 45-600)



PHASER
Gas Chromatography-Olfactometry

GC/MS/O

Chromatogram of Smells of Sweaty Socks and character



Peak #	Strength of smell	Character
1	L	sweaty
2	L	smell of cloth
3	L	sour
4	L	bitter
5	H	smell of iron
6	M	smell of aluminum
7	L	sour
8	M	irritating smell
9	M	Limone
10	H	Shiitake
11	H	**bad smell of feet!**
12	M	sweaty
13	H	sour
14	M	burnt
15	H	**underarm smell・stuffy!**
16	M	metallic
17	H	starch for press
18	M	press smell
19	M	mango
20	M	feces like
21	M	grass
22	H	**Natto＆bad smell of feet!**
23	L	yoguhurt
24	L	apple
25	L	Ogrange
26	L	rice
27	L	hunny
28	M	my cloth cleanser
29	M	sweet
30	H	alcohol like
31	H	like fruit
32	H	piment
33	L	vanilla
34	H	**sweat・stuffy!**
35	H	flower
36	L	feces like
37	L	moldy
38	M	piment
39	H	flower
40	H	cosmetics like
41	L	sweet
42	H	**glove・stuffy!**
43	M	irritating smell
44	L	Limone
45	L	mosquit coil
46	H	mosquit coil
47	L	a zoo like

（L:Low, M:Middle, H:High

※Character of smell was recorded with Olfactory Vioicegram

Smells of uniform by MMSE

Female 28age
The uniform was put on for three days.

MonoTrap for TD 3pcs

Put in Tadlar bag 37degC, 6H

Extract

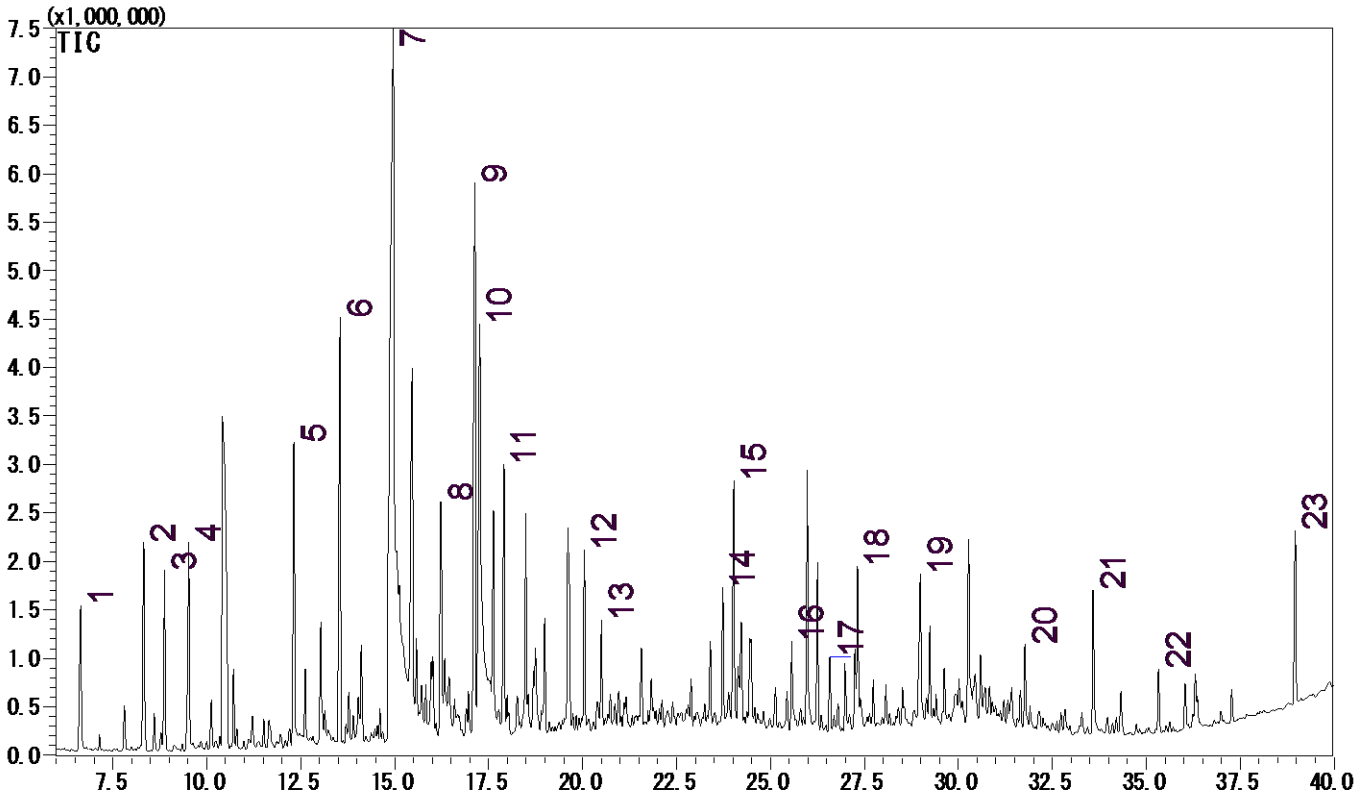
TD-GC/MS

OPTIC, LINEX

Desorb	Temp200deg
	Time 5min
Cryo	-150deg
Split	3:0(Desorb; 3 Split; 0cc/min)
Injection	250deg
Column Flow	He, 1.0cc/min

GC/MS analysis

System	SHIMADZU GC-2010,QP-2010Plus
Column	InertCap Pure-WAX 0.25mmI.D. X 30m(0.25µm)
Column Temp	40deg(5min)-10deg/min-250deg(5min)
Detection	MS Scan(m/z 30-600)



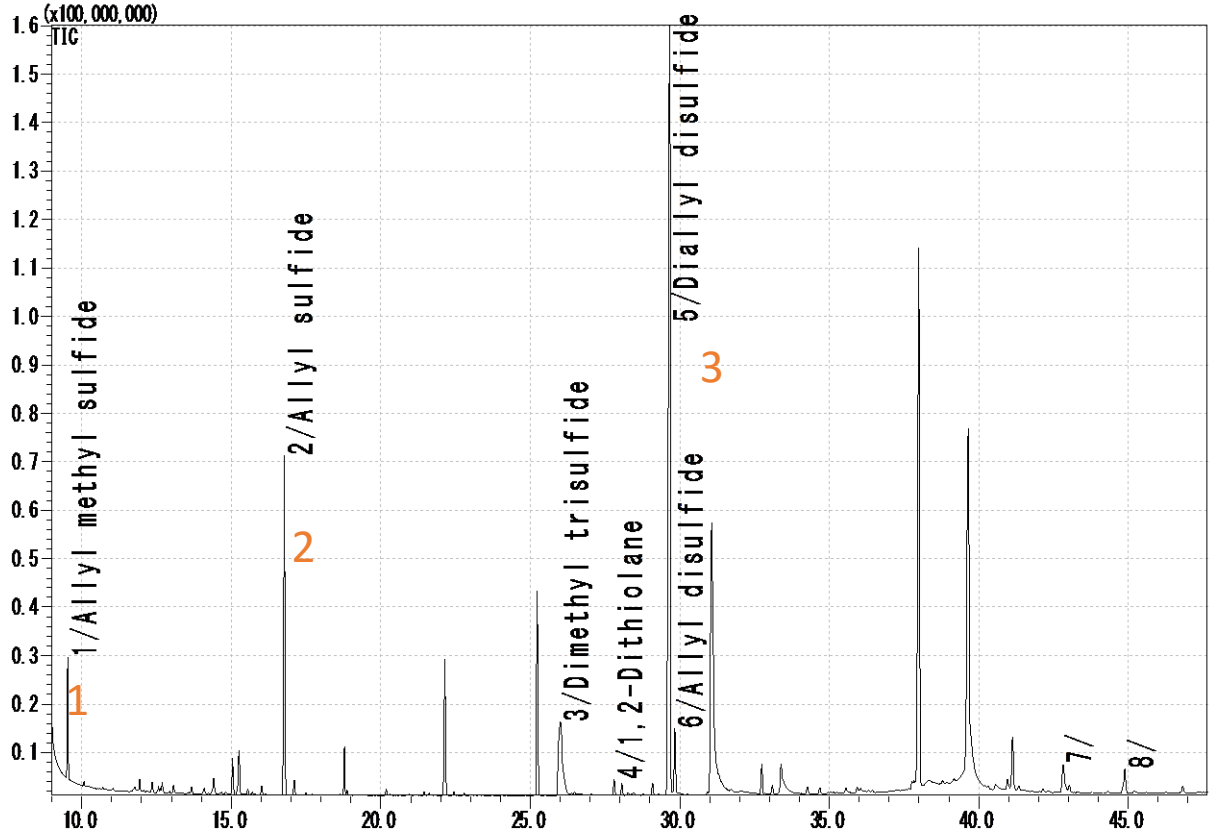
1 Hexanal
2 Propylene glycol monomethyl ether
3 2-Ethoxy-2,3-dihydro-4H-pyran
4 Heptanal
5 Octanal
6 6-Methyl-5-heptene-2-one
7 Nonanal
8 trans-2-Decenol
9 Ethylhexanol
10 Decanal
11 trans-2-Nonenal()
12 Menthol
13 1-Nonanol
14 Hexanoic acid
15 trans-Geranylacetone
16 Heptanoic acid
17 p-Anisaldehyde
18 Octanoic Acid
19 Nonanoic acid（pelargonic acid）
20 Hexylcinnamaldehyde
21 Dodecanoic acid
22 Benzyl Benzoate
23 Parsol MCX（日焼け止め）

Aging note=Body odor associated with aging .

2-Nonenal and pelargonic acid are the causative agents of an aging note.

Analysis of bad breath after eating of garlic.

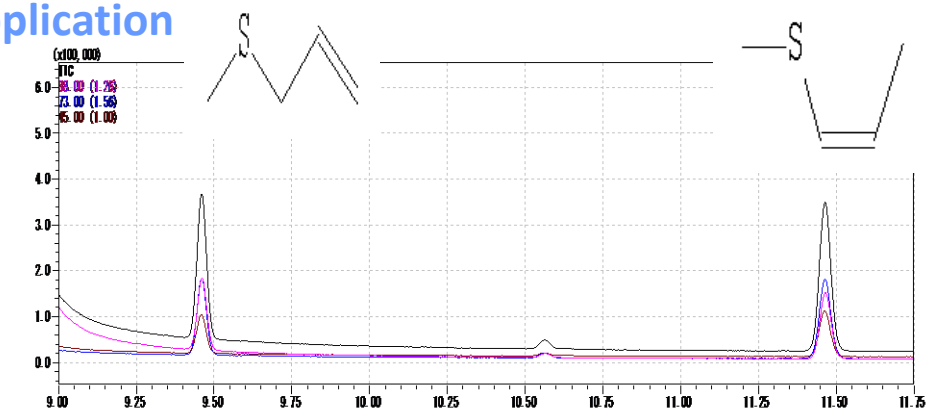
Application

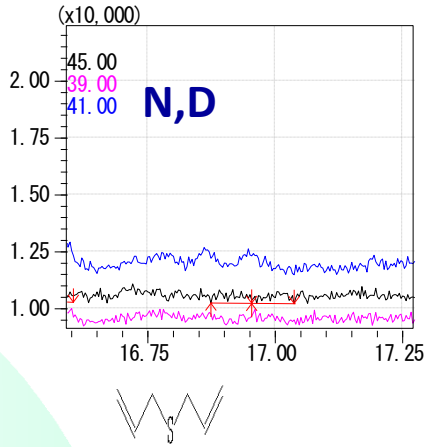


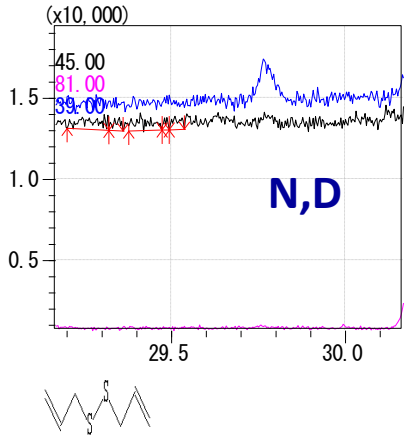
1,Allyl Methyl sulfide　　2,Allyl sulfide　　3,Diallyl disulfide

Analysis of the bad breath after eating a garlic.

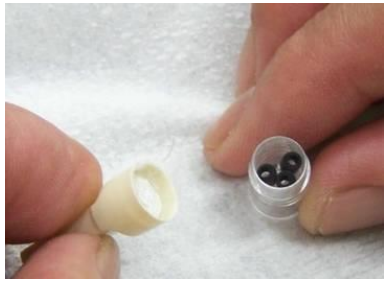
Application

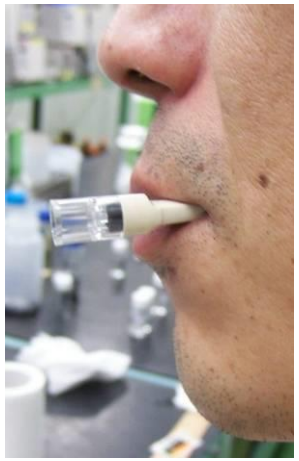






Diallyl disulfide





S200158, Monotrap sampling mouth piece

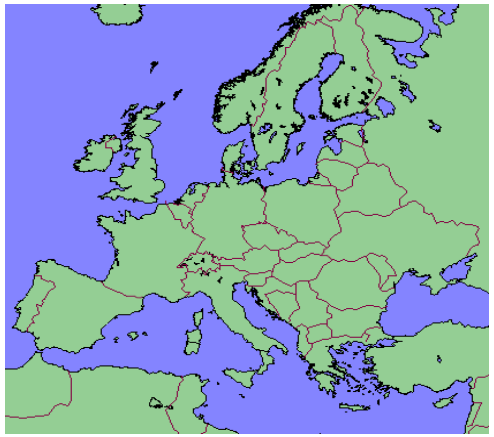
Allyl methyl sulfide

GC settings

System	: SHIMADZU GC-2010、GCMS-QP2010
Column	: InertCap Pure-WAX 0.25mmI.D. × 60m df=0.25µm
Column Temp	: 35°C(5min)→4°C/min→250°C(10min)
Carrier Gas	: He 120kPa
Injection	: Split less 1µL 250°C
Detection	: MS Scan (m/z;35-500)

The main aroma Compound of a raw garlic are almost decomposed or metabolized in a body, and are considered that Allyl methyl sulfide is generated.

Study of the flavor loss during time of preservation.



It is difficult to carry in equipment and chemical.

The method of preservation was examined.

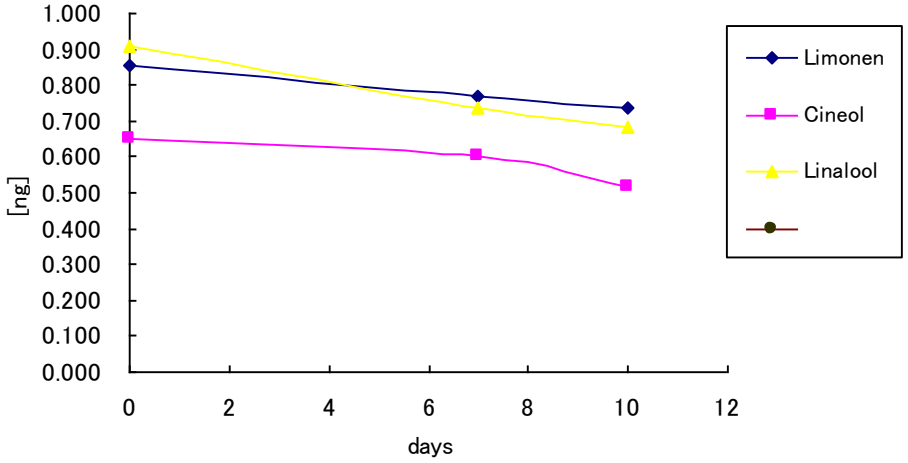
Experimented of the relation between a preservation time and a recovery rate.

Preservation is 4degC refrigeration and room temperature.

Periods are one day, seven days, and ten days.

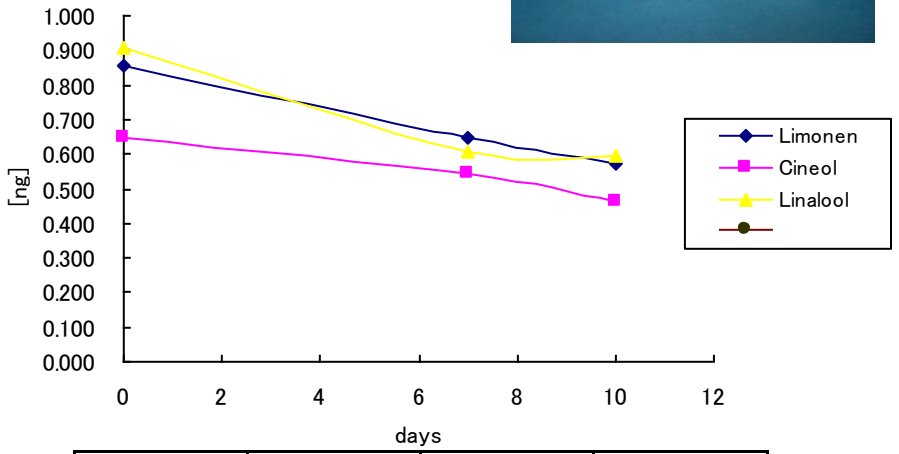
Standard is Limonen, Cineol, Linalool.

RC-4deg



4deg			
RCC18	1 day	7 days	10 days
Limonen	85,7%	76,8%	73,8%
Cineol	65,0%	60,0%	51,7%
Linalool	90,7%	73,8%	68,5%

RC-Room



room temp			
RCC18	1 day	7 days	10 Days
Limonen	85,7%	64,8%	57,3%
Cineol	65,0%	54,1%	46,3%
Linalool	90,7%	60,6%	59,6%