



CAPILLARY COLUMNS LABORATORY

Our Experience in Gas Chromatography at Your Service



MEGA APPLICATIONS >2012

MEGA®

FAST-GC

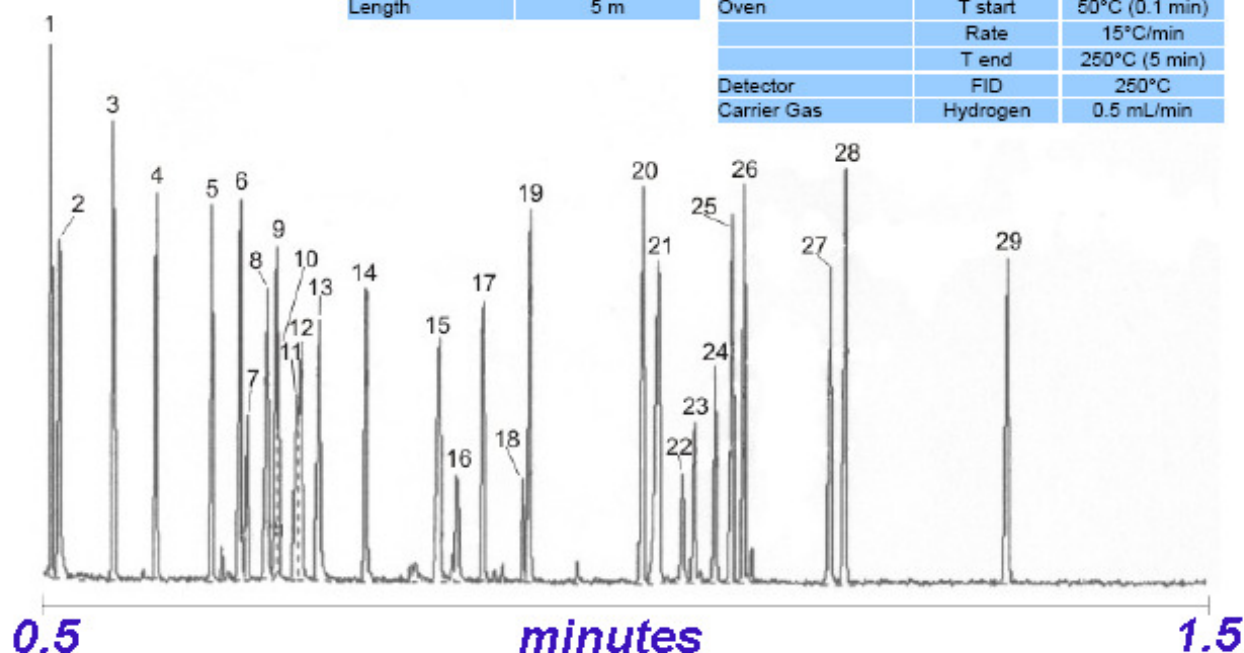
ALLERGENES

Column

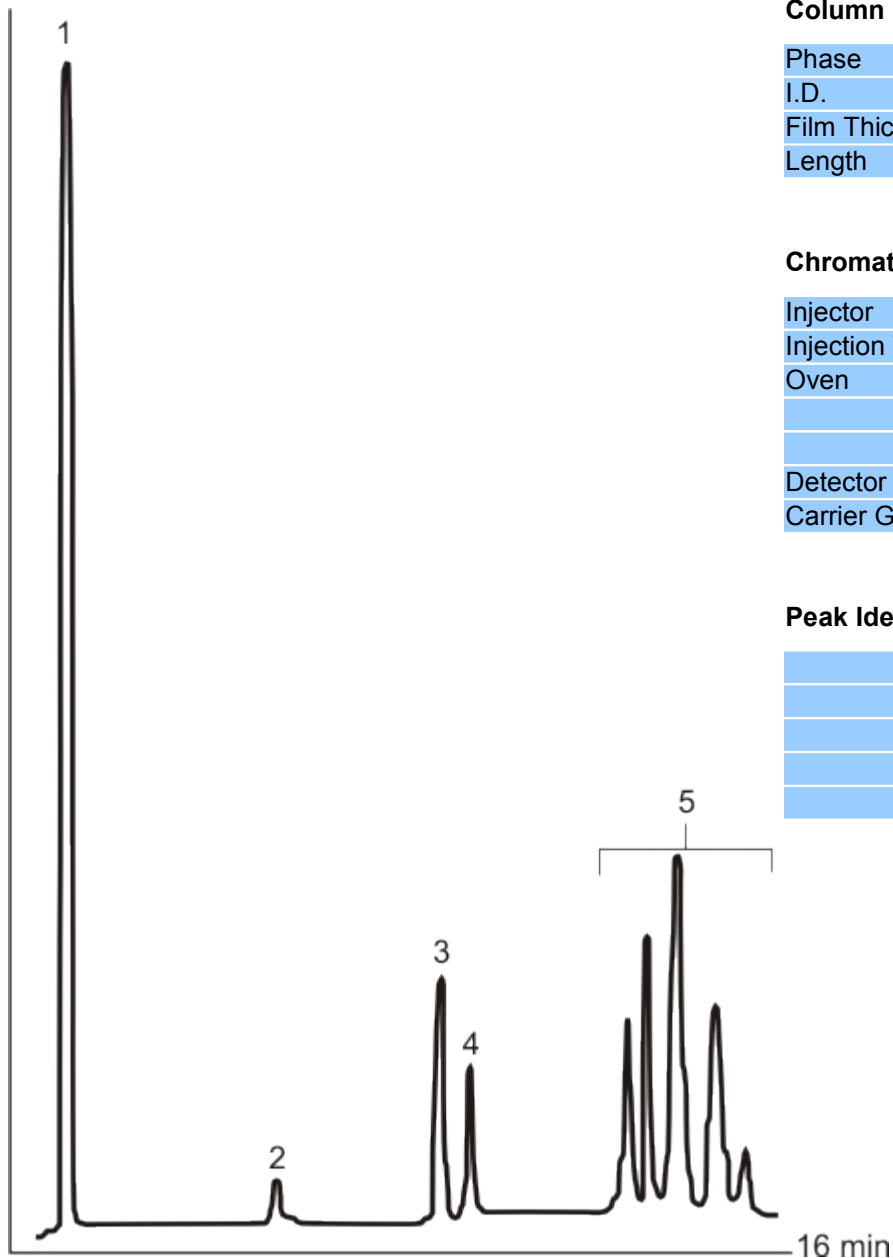
Phase	MEGA-SE54
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injection	Split	230°C
Injection volume		1.0 µL
Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	15°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min



ALKYL NAPHTALENS



Column

Phase	MEGA-5
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	10 m

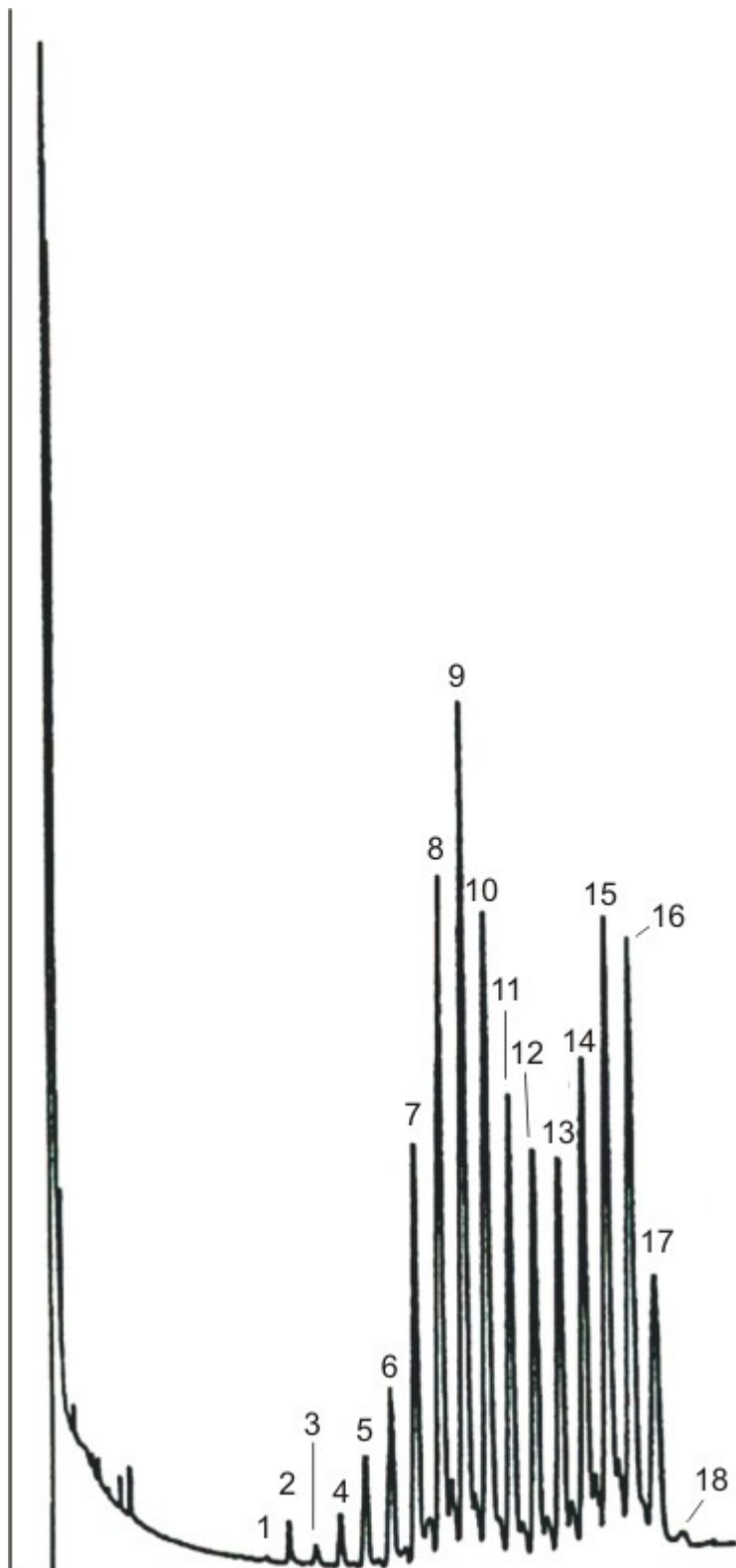
Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	T start	90°C
	Rate	20°C/min
	T end	150°C
Detector	FID	
Carrier Gas	Helium	4.5 mL/min

Peak Identification

1	m-Xylene
2	Naphtalene
3	2-Methylnaphtalene
4	1-Methylnaphtalene
5	others alkyl naphtalens

BUTTER TRIGLYCERIDES C24 – C56



Column

Phase	MEGA-1
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	3 m + 1 m Retention Gap

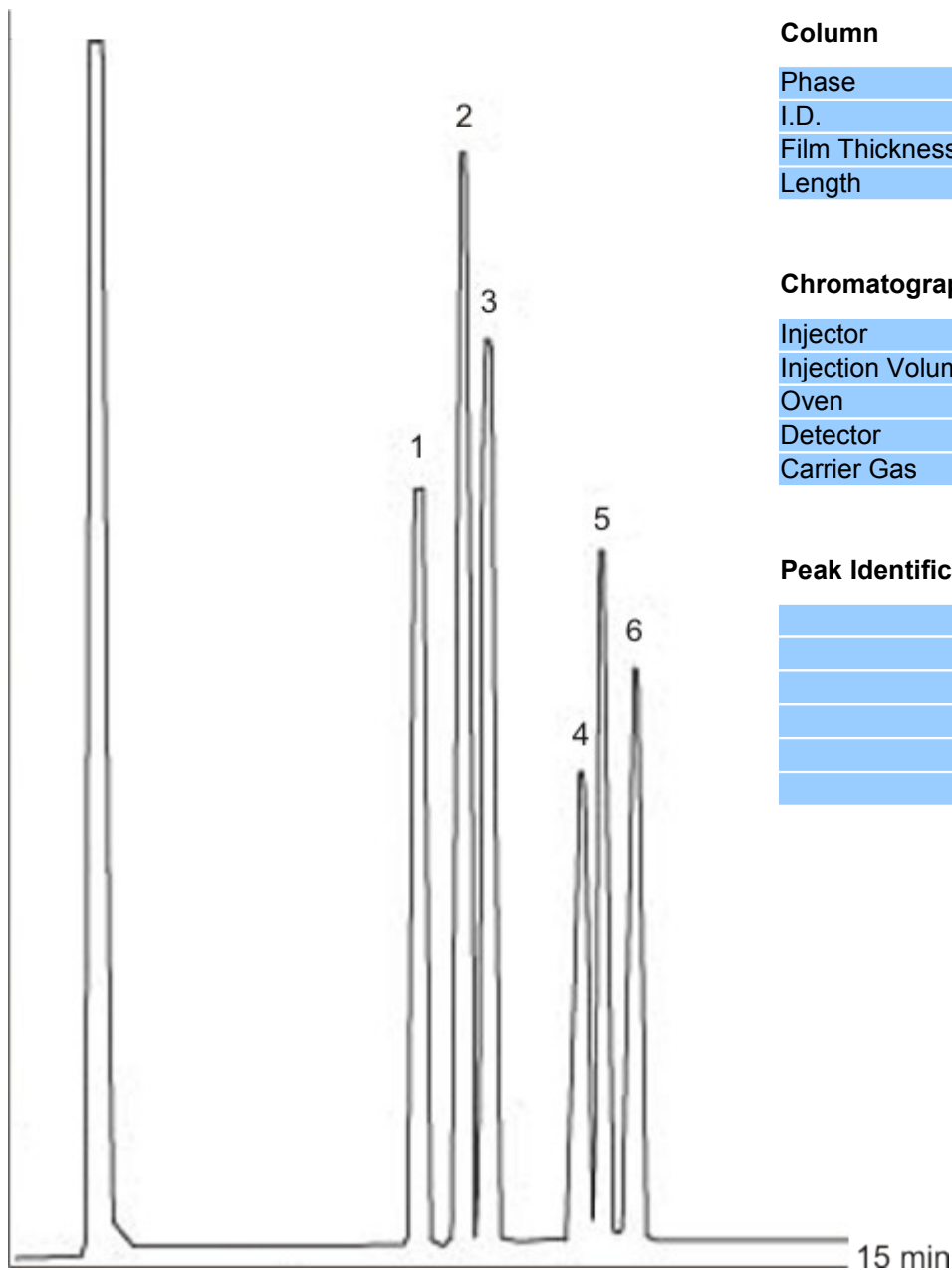
Chromatographic Conditions

Injection	On column	
Injection volume	1 µL	
Oven	T start	60°C
	Rate	15°C/min
	T end	340°C
Detector	FID	350°C
Carrier Gas	Hydrogen	30 kPa

Peak Identification

1	C 24
2	Cholesterol
3	C 26
4	C 28
5	C 30
6	C 32
7	C 34
8	C 36
9	C 38
10	C 40
11	C 42
12	C 44
13	C 46
14	C 48
15	C 50
16	C 52
17	C 54
18	C 56

DIMETHYLANILINES



Column

Phase	MEGA-WAX
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	30 m

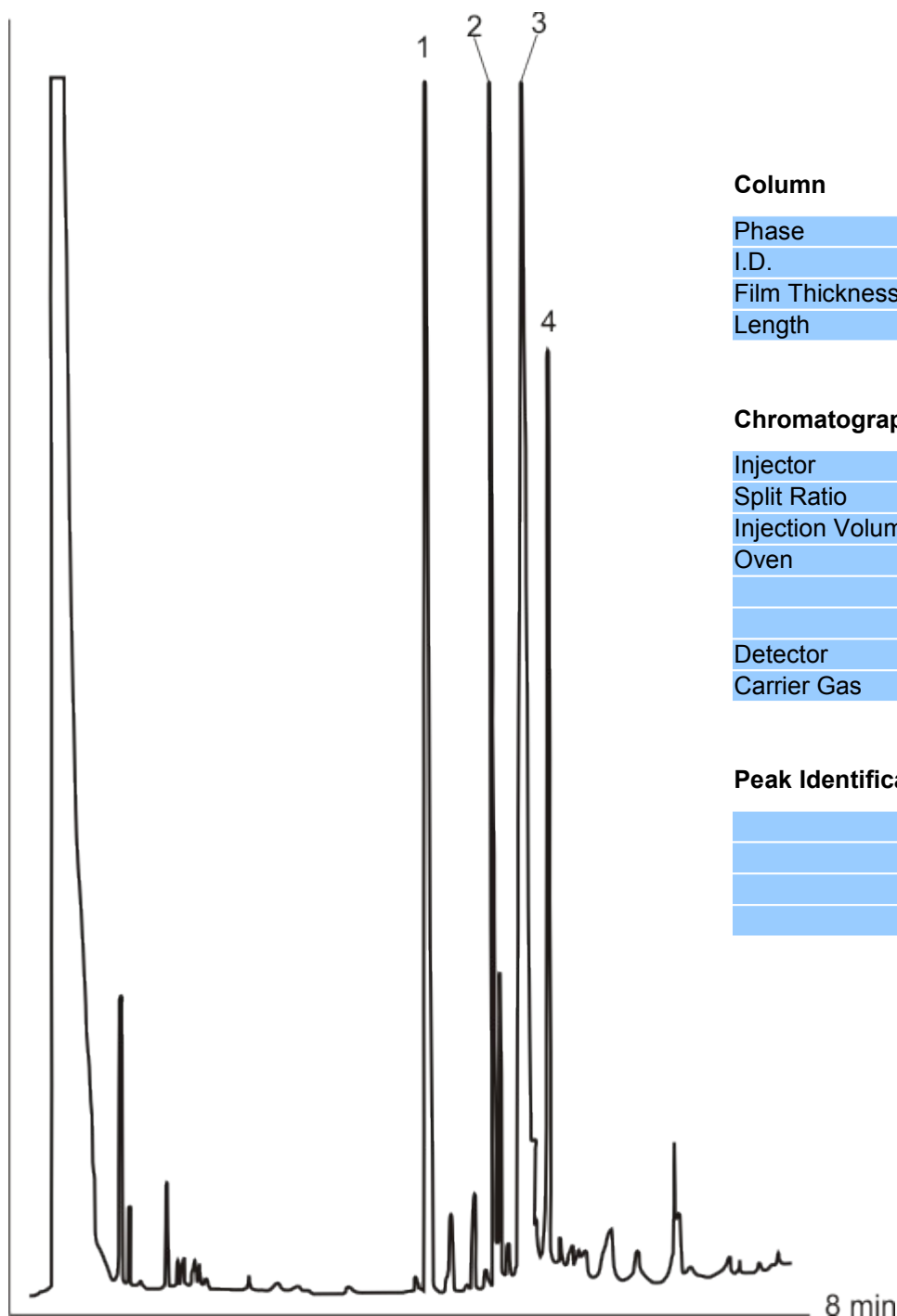
Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	Isot.	130°C
Detector	FID	
Carrier Gas	Nitrogen	1.8 mL/min

Peak Identification

1	2,6-Dimethylaniline
2	2,4-Dimethylaniline
3	2,5-Dimethylaniline
4	3,5-Dimethylaniline
5	2,3-Dimethylaniline
6	3,4-Dimethylaniline

DRUGS OF ABUSE



Column

Phase	MEGA-1
I.D.	0.25 mm
Film Thickness	0.25 µm
Length	15 m

Chromatographic Conditions

Injector	Split	280°C
Split Ratio	1:50	
Injection Volume	1 µL	
Oven	T start	120°C
	Rate	25°C/min
	T end	310°C
Detector	FID	320°C
Carrier Gas	Hydrogen	30 Kpa

Peak Identification

1	Docosane (internal standard)
2	CBD Cannabidiol
3	THC Tetrahydrocannabidiol
4	CBN Cannabinol

DRUGS OF ABUSE



Column

Phase	MEGA-1
I.D.	0.25 mm
Film Thickness	0.25 µm
Length	15 m

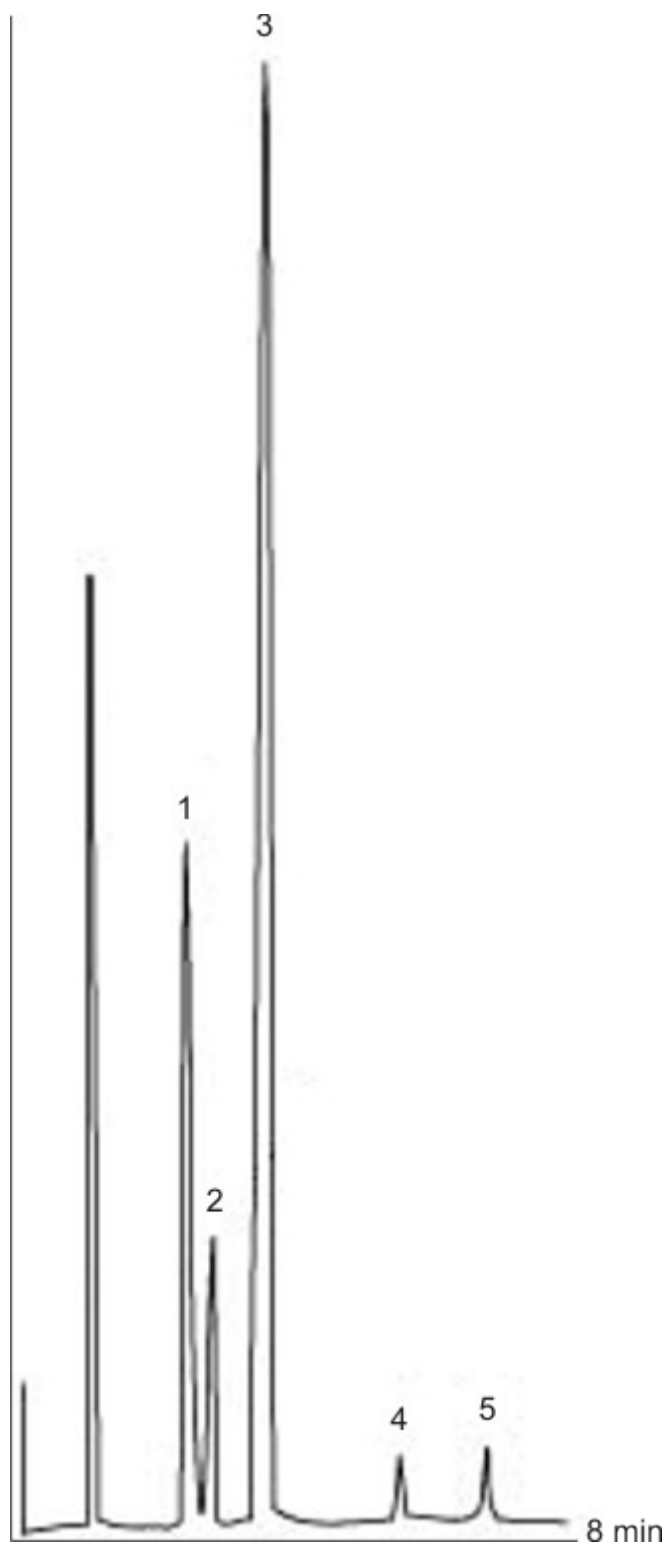
Chromatographic Conditions

Injector	Split	280°C
Split Ratio		1:50
Injection Volume		1 µL
Oven	T start	120°C
	Rate	25°C/min
	T end	310°C
Detector	FID	320°C
Carrier Gas	Hydrogen	30 Kpa

Peak Identification

1	Caffeine
2	Lidocaine
3	Procaine
4	Cocaine
5	Butylantrakinone (internal std)
6	Heroin
7	Papaverine
8	Etaverine (internal standard)
9	Narcotine

AMIDES



Column

Phase	MEGA-ACID
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	10 m

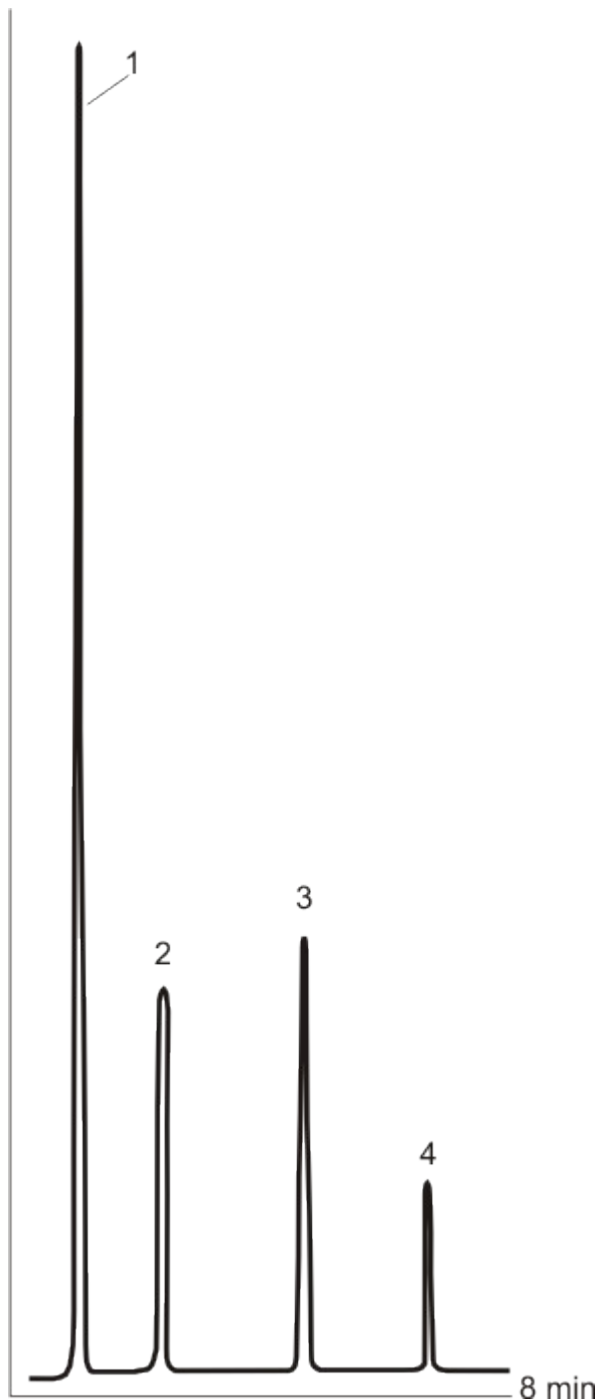
Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	T start	70°C
	Rate	10°C/min
	T end	200°C
Detector	FID	
Carrier Gas	Helium	4.0 mL/min

Peak Identification

1	3-Picoline
2	N,N-Dimethylformamide
3	N,N-Dimethylacetamide
4	N-Methylacetamide
5	Acetamide

CYCLIC HYDROCARBONS



Column

Phase	MEGA-1
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	10 m

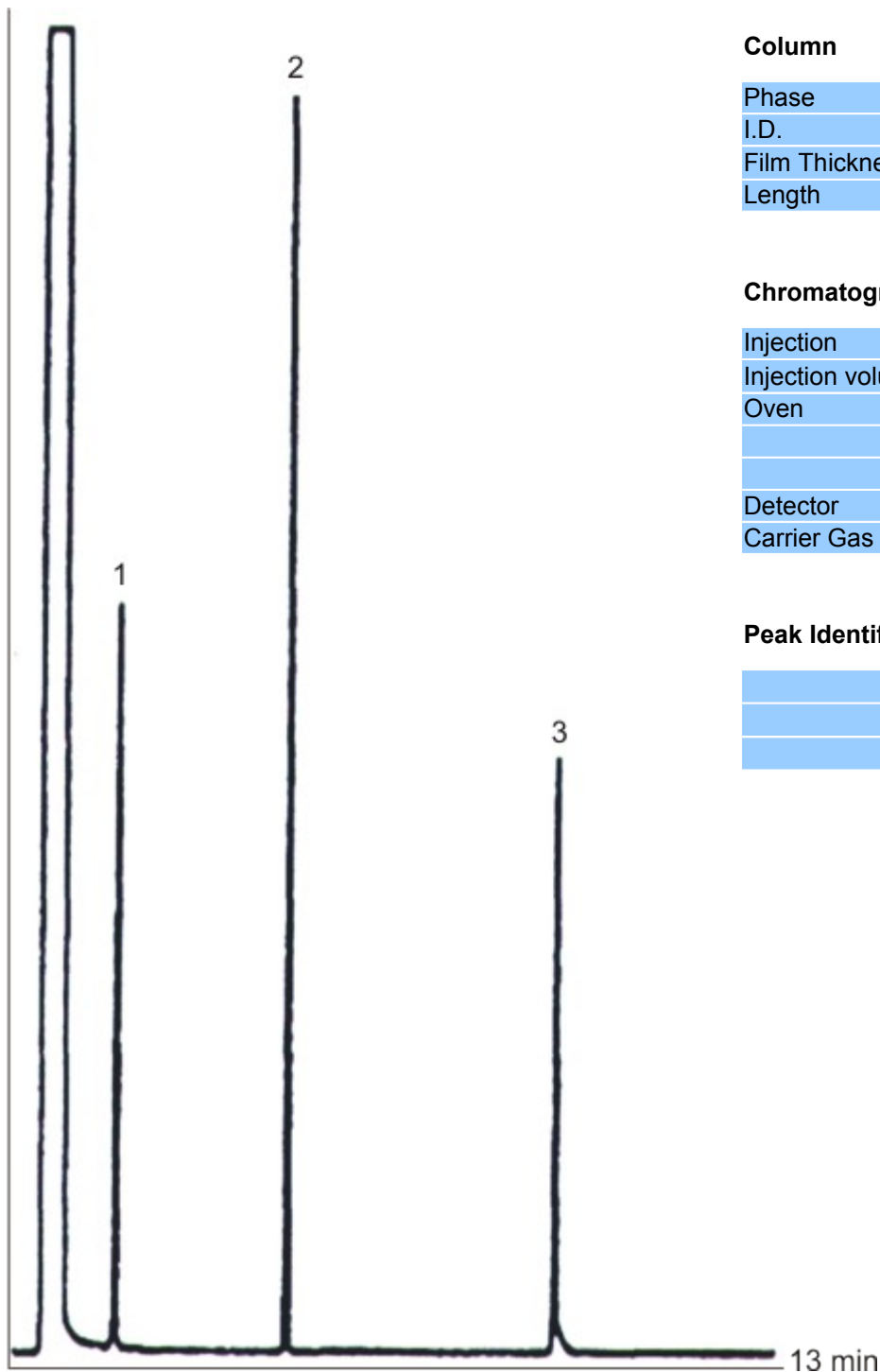
Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	T start	40°C
	Rate	5°C/min
	T end	100°C
Detector	FID	
Carrier Gas	Helium	5 mL/min

Peak Identification

1	Cyclohexane
2	Cycloheptane
3	Cyclooctane
4	n-Decane

NITROSAMINES – EPA METHOD 607



Column

Phase	MEGA-5
I.D.	0.53 mm
Film Thickness	1.5 µm
Length	15 m

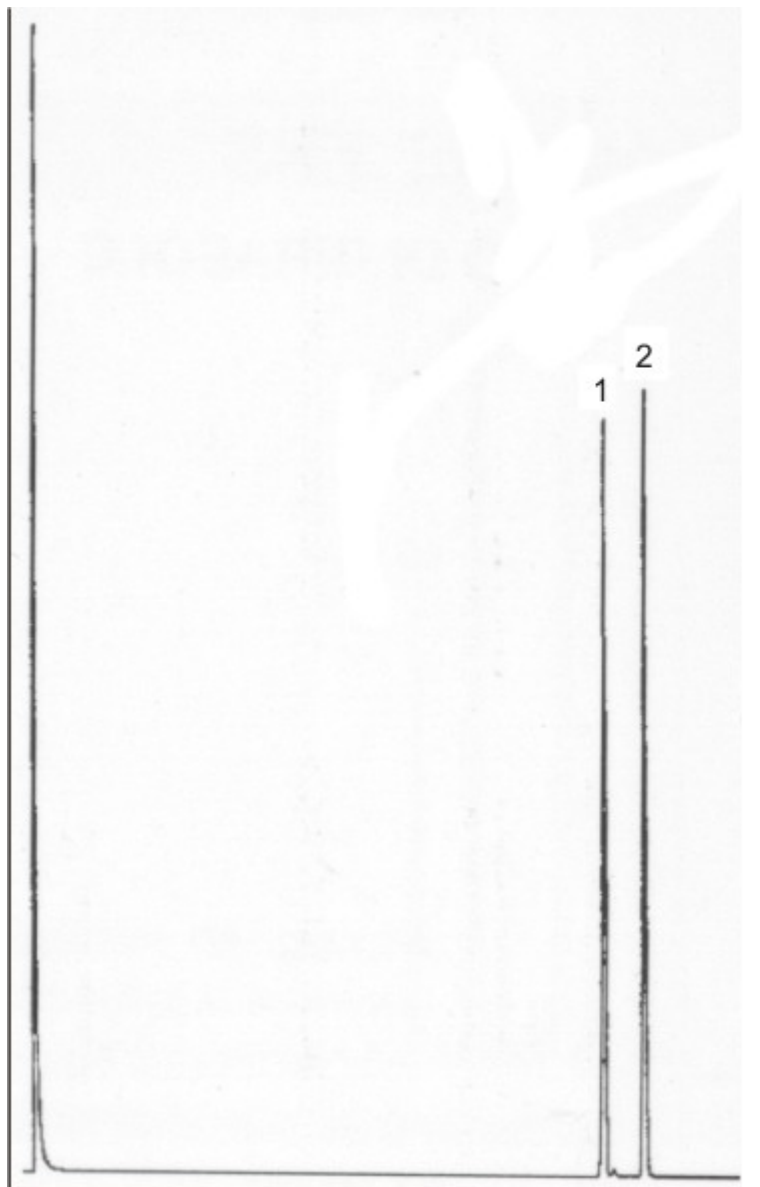
Chromatographic Conditions

Injection	On column	
Injection volume	1.0 µL	
Oven	T start	40°C (4 min)
	Rate	20°C/min
	T end	240°C
Detector	FID	280°C
Carrier Gas	Hydrogen	10 mL/min

Peak Identification

1	N-nitroso-di-methylamine
2	N-nitroso-di-n-propylamine
3	N-nitroso-di-phenylamine

PHARMACEUTICALS – ENANTIOMERS



Column

Phase	MEGA-DEX DMP β
I.D.	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

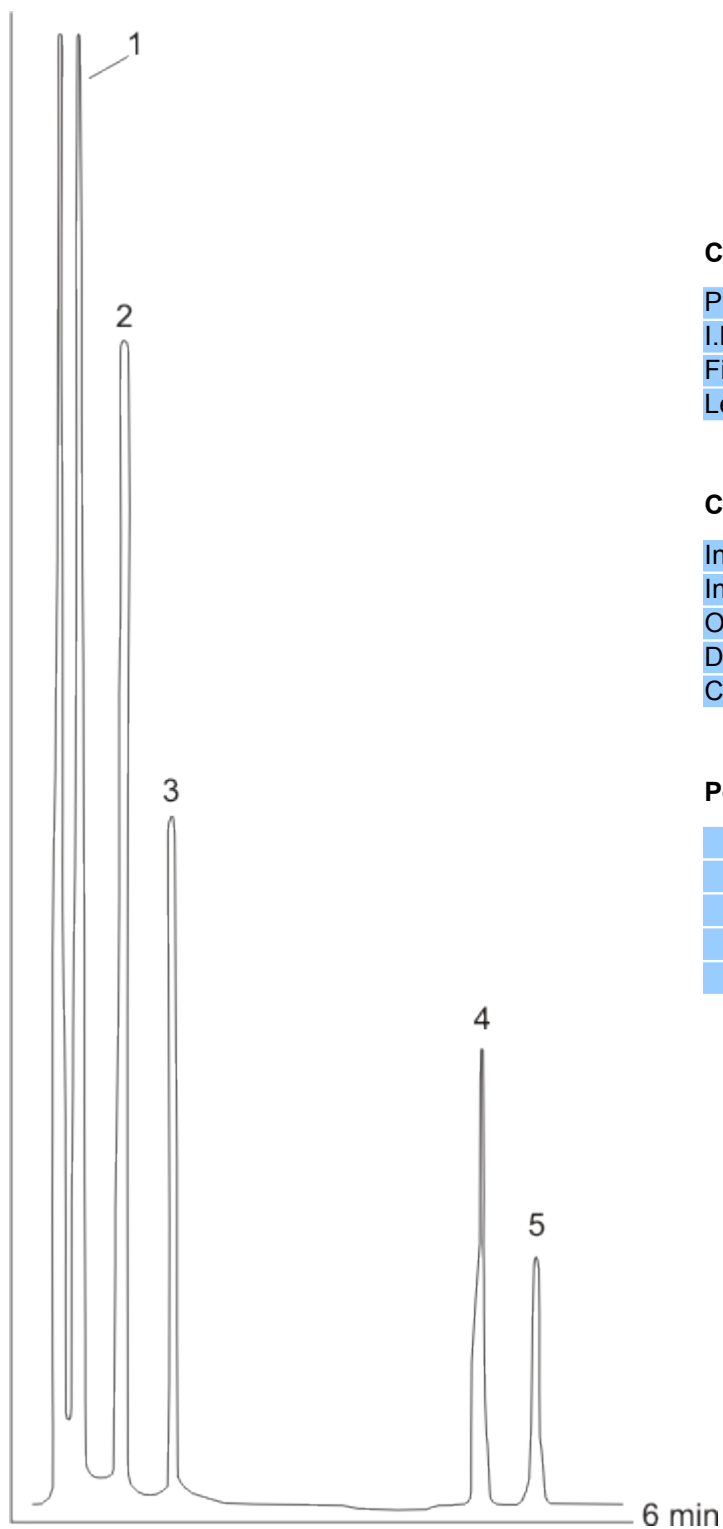
Chromatographic Conditions

Injector	Split	250°C
Split Ratio	1:50	
Injection Volume	1 μ L	
Oven	T start	100°C
	Rate	2.5°C/min
	T end	170°C
Detector	FID	250°C
Carrier Gas	Hydrogen	70 kPa

Peak Identification

1	Hexobarbital (+)
2	Hexobarbital (-)

KETONES



Column

Phase	MEGA-1
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	10 m

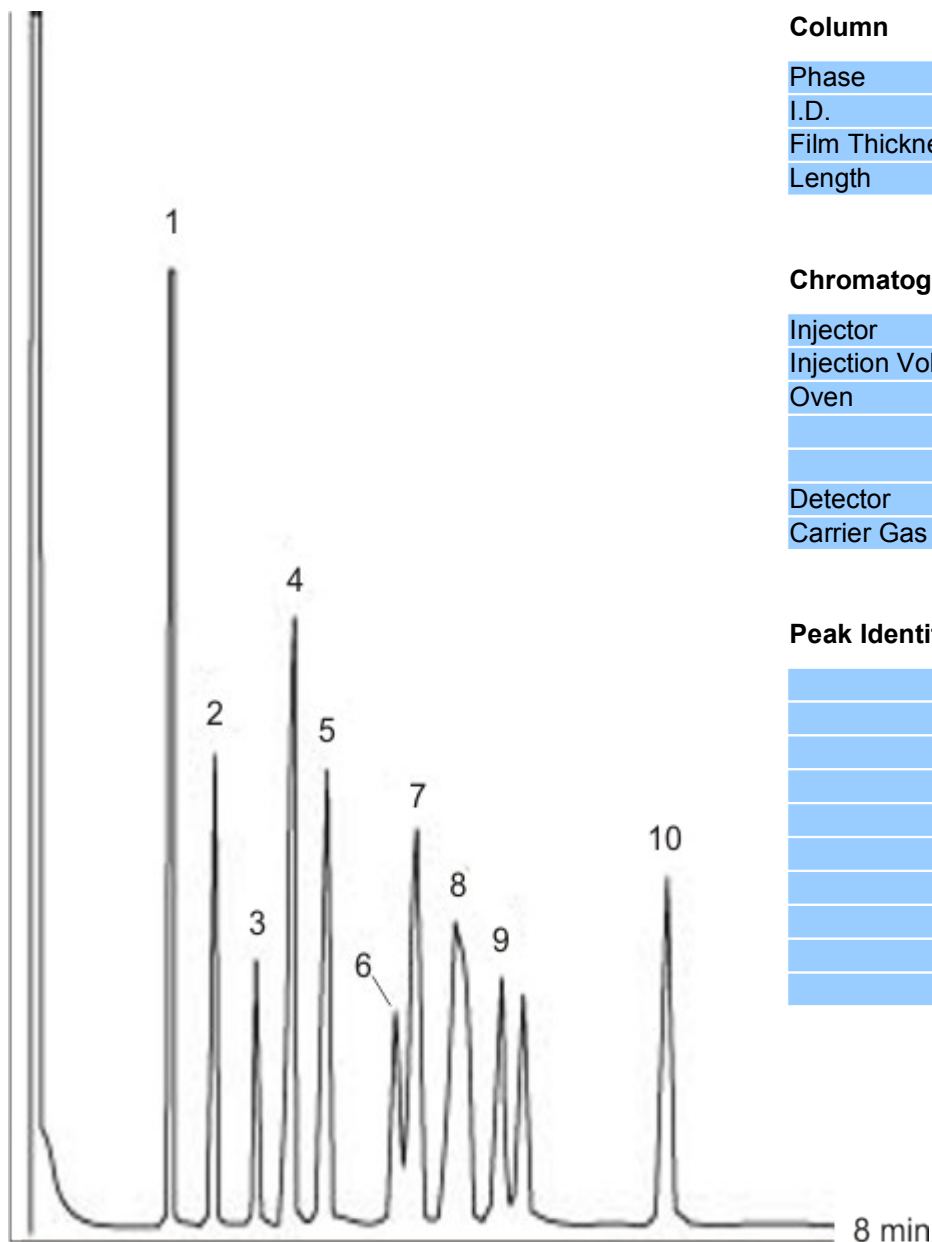
Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	Isot.	40°C
Detector	FID	
Carrier gas	Helium	9.1 mL/min

Peak Identification

1	Acetone
2	Methyl Ethyl Ketone
3	2-Pentanone
4	Cyclohexanone
5	2-Heptanone

PHENOLS



Column

Phase	MEGA-1
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	10 m

Chromatographic Conditions

Injector	Split	
Injection Volume	1 µL	
Oven	T start	60°C
	Rate	5°C/min
	T end	160°C
Detector	FID	
Carrier Gas	Helium	20 mL/min

Peak Identification

1	Phenol
2	n-Decane
3	o-Cresol
4	m + p-cresol
5	2,6-Dimethylphenol
6	o-Ethylphenol
7	2,4 + 2,5-Dimethylphenol
8	3,5-Dimethylphenol + p-Etylphenol
9	2,3-Dimethylphenol
10	3,4-Dimethylphenol

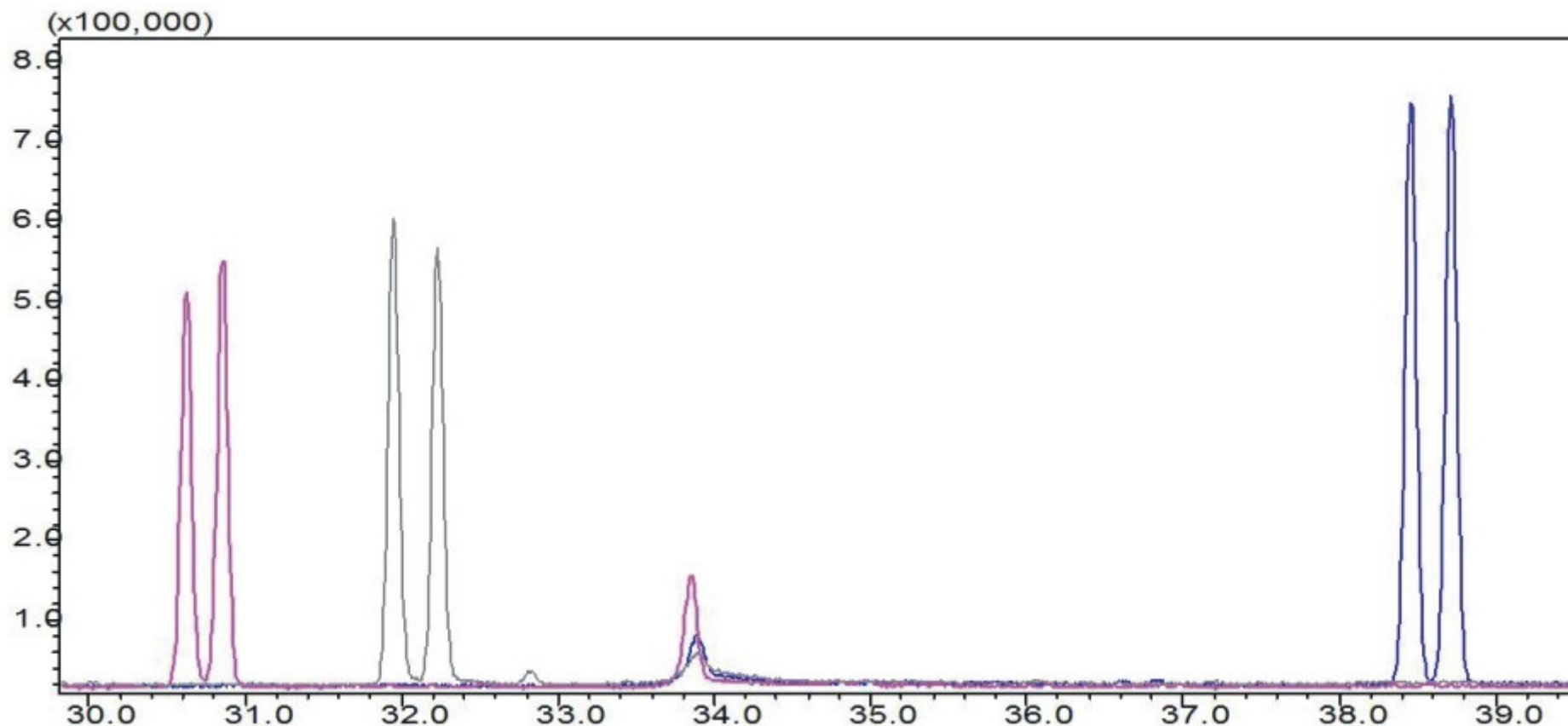
ISOBORNEOL

Column

Phase	MEGA-DEX DMP β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

Identification

	Isobornil Acetate
	Isoborneol
	Isobuturate isoboril



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

ALLERGENES

Courtesy Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

Column

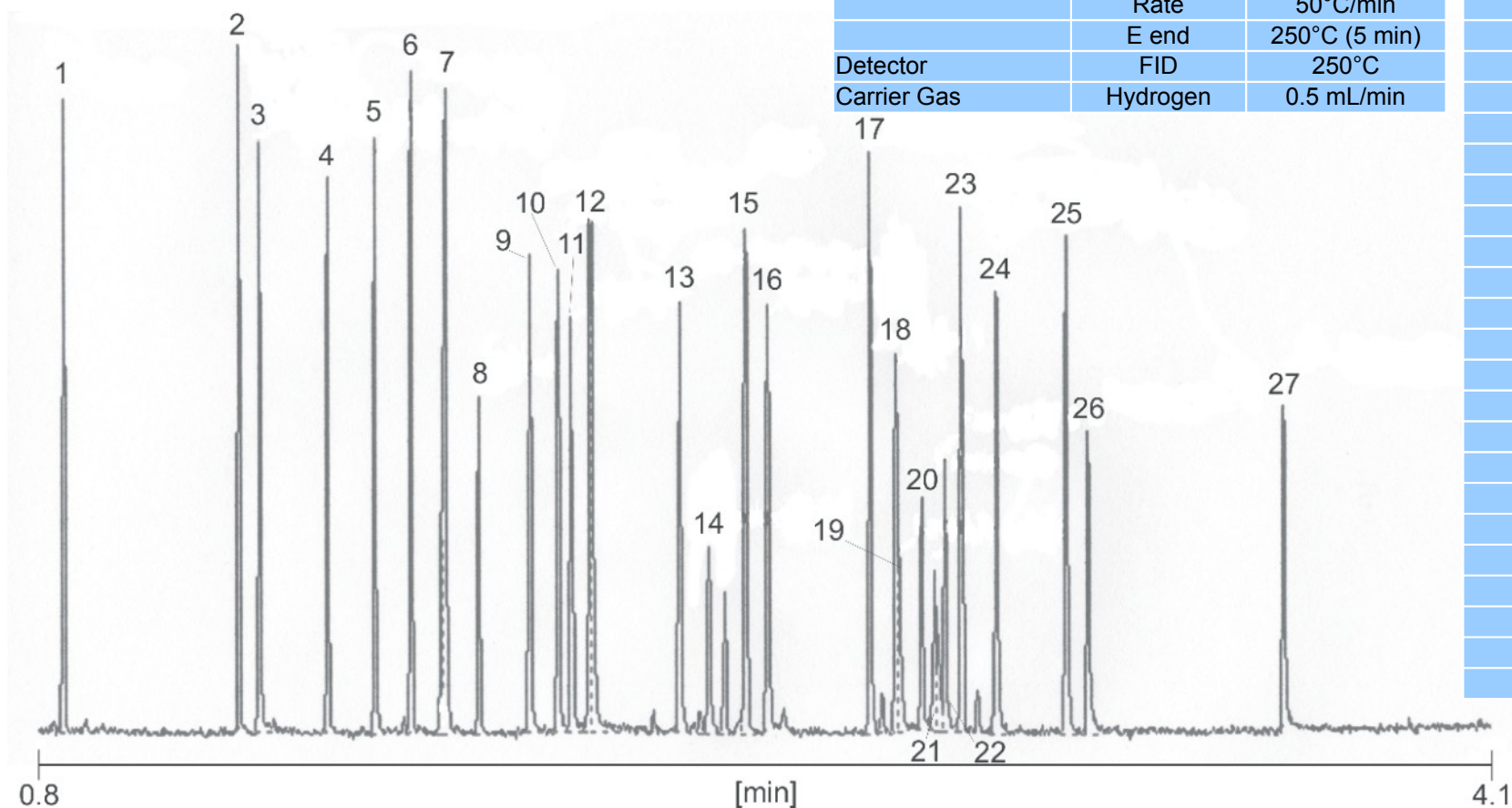
Phase	MEGA-1701
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injection	Split	230°C
Injection volume	1.0 µL	
Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	50°C/min
	E end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	Limonene
2	Linalol
3	Benzyl Alcohol
4	Veratrol
5	Me-Octynoate
6	Citronellol
7	/
8	Neral
9	Geranial
10	OH-Citronellal
11	Eugenol
12	Anisol + Cinnamol
13	α iso Me-Ionone
14	Isoeugenol
15	Lilial
16	Coumarine
17	Amyl Cinnamal
18	Lyril 1
19	Lyril 2
20	Farnesol 1
21	Farnesol 2
22	Farnesol 3
23	Amyl Cinnamol
24	Hexyl Cinnamal
25	Cinnamal
26	Bz. Salicylate
27	Bz. Cinnamate



ALLERGENES

Courtesy Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

Column

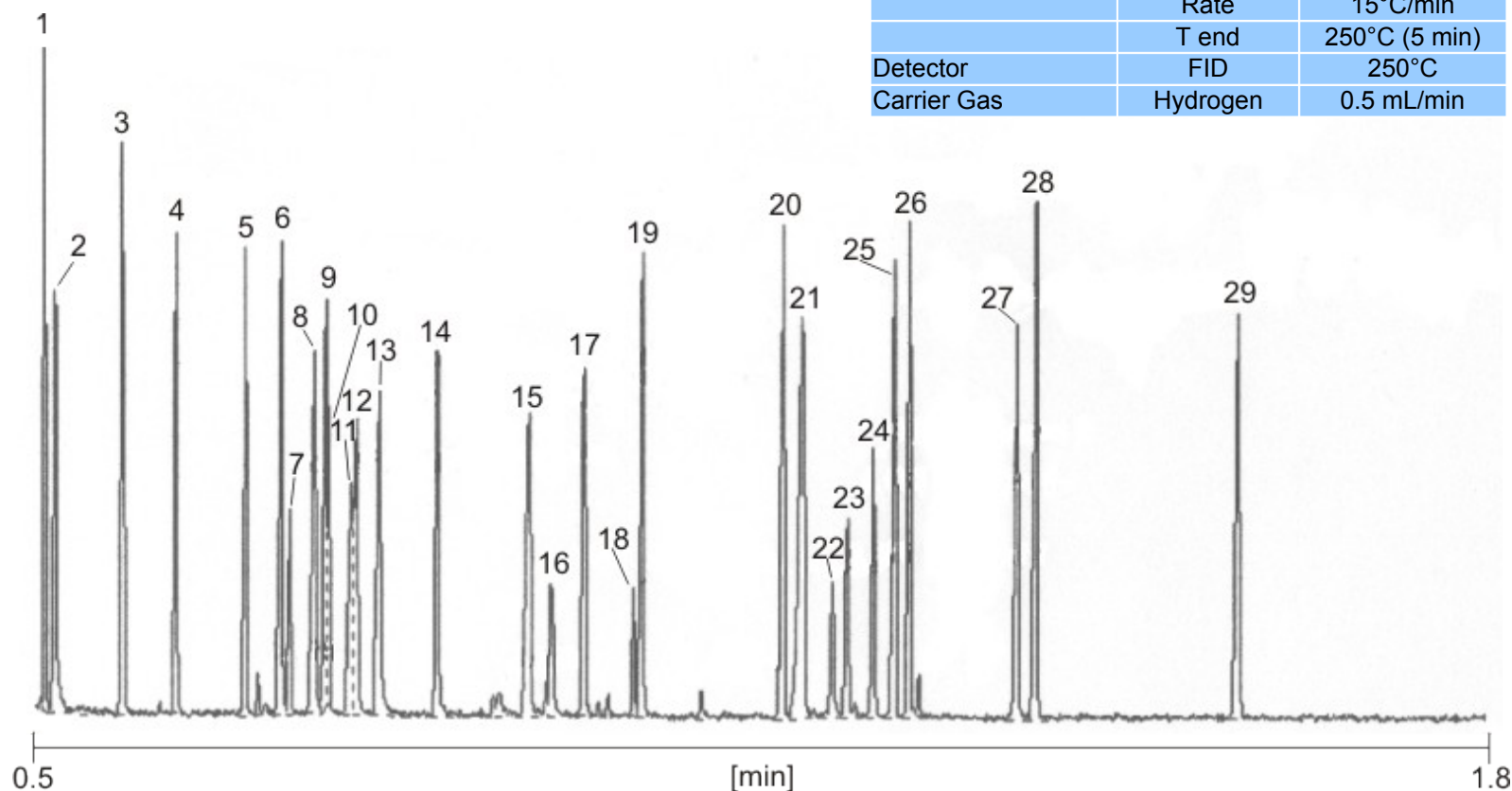
Phase	MEGA-SE54
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injection	Split	230°C
Injection volume	1.0 µL	
Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	15°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	Benzyl Alcohol
2	Limonene
3	Linalol
4	Veratrol
5	Me-Octynoate
6	Citronellol
7	Citral 1
8	Geraniol
9	Cynnamic Ald.
10	Citral 2
11	Anysic Alcohol
12	OH-Citronellal
13	Cynnamic Alcohol
14	Eugenol
15	Coumarine
16	Isoeugenol
17	α iso Me-Ionone
18	α Me-Ionone
19	Lilial
20	Farnesol 1
21	Lyr 1 + Lyr 2
22	Farnesol 1
23	Farnesol 2
24	Farnesol 3
25	Amyl Cynamal
26	Hexyl Cynamal
	Bz. Salicylate
27	1-Ph-Decanone
28	1-Ph-Decanone
29	Bz. Cynamate



ALLERGENES

Courtesy Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

Column

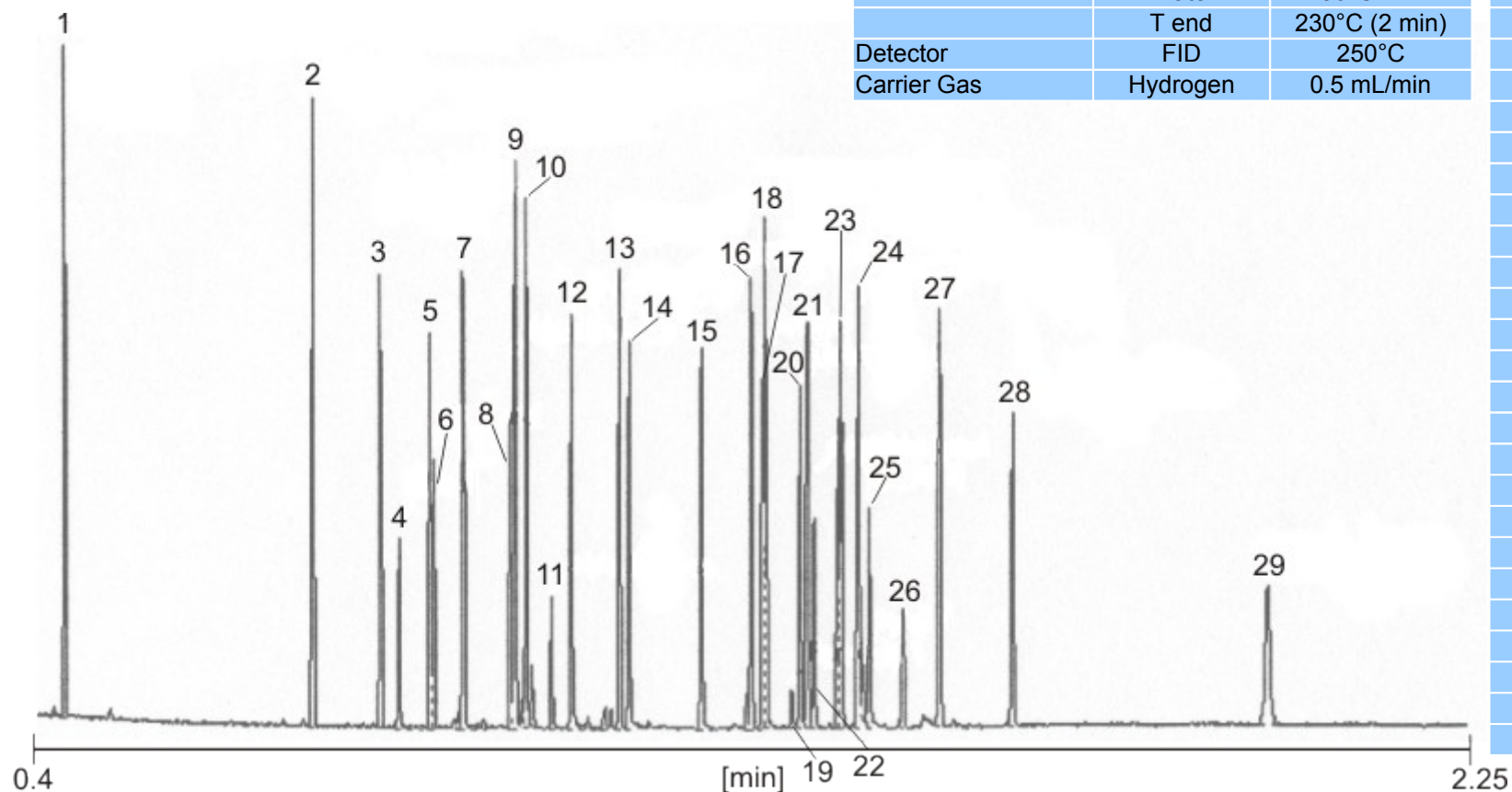
Phase	MEGA-WAX
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

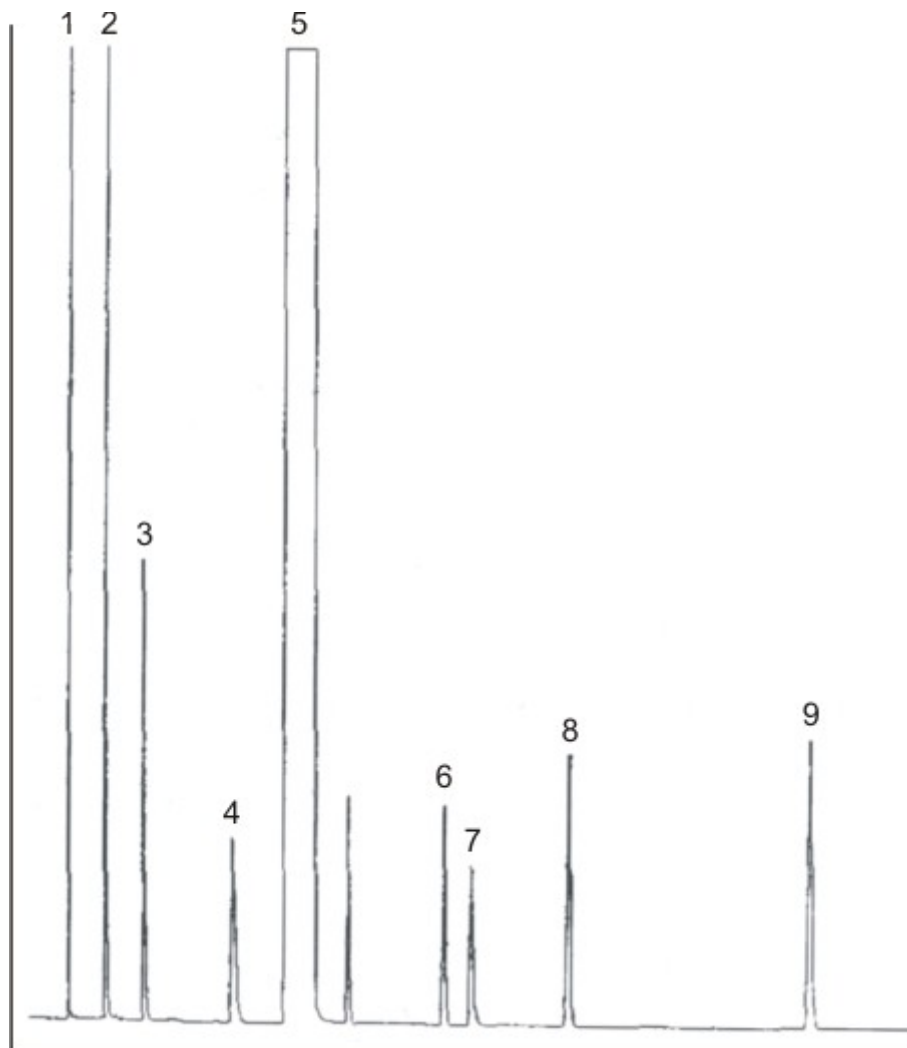
Injection	Split	230°C
Injection volume	1.0 µL	
Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	50°C/min
	T end	230°C (2 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	Limonene
2	Linalol
3	Me-Octynoate
4	Neral
5	Veratrol
6	Geranial
7	/
8	α iso Me-Ionone
9	Geraniol
10	Alc. Benzyl
11	α Me-Ionone
12	OH-Citronellal
13	Cynnamal
14	Citronellal
15	Eugenol
16	Amyl Cynnamal
17	Anysol
18	Cynnamol
19	Farnesol 1
20	Isoeugenol
21	Hexyl Cynnamal
22	Amyl Cynnamol
23	1-Ph-10
24	Coumarine
25	Lylal 2
26	/
27	Bz. Benzoate
28	Bz. Salycilate
29	Bz. Cynnamate



AMINES



Column

Phase	MEGA-BASIC
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

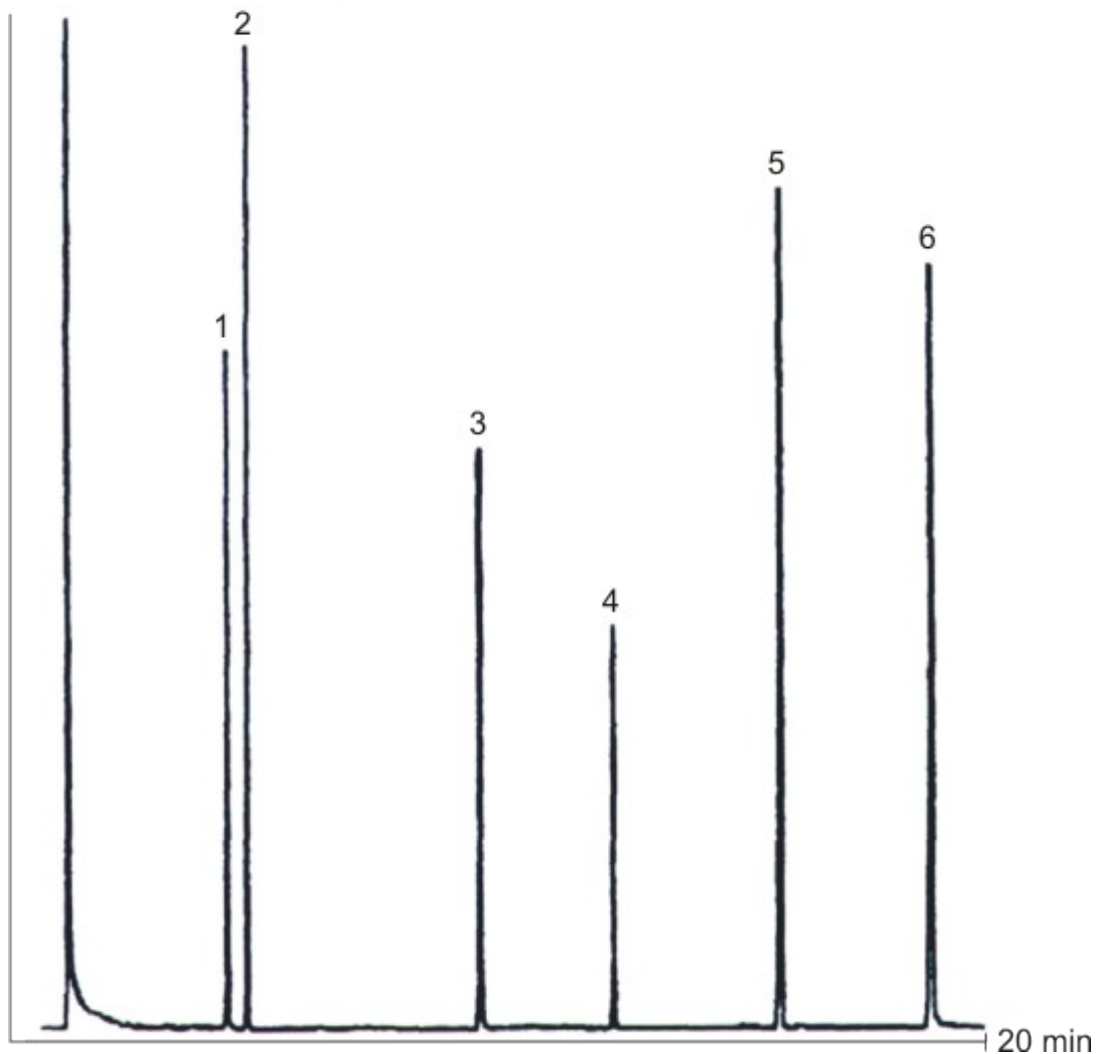
Chromatographic Conditions

Injector	Split	250°C
Split Ratio	1:50	
Injection Volume	1.0 µL	
Oven	T start	35°C
	Rate	2.5°C/min
	T end	130°C
Detector	FID	250°C
Carrier Gas	Hydrogen	40 kPa

Peak Identification

1	N. ethyldiisopropyl amine
2	Di N. propyl amine
3	Diallyl amine
4	2-methyl piroline
5	Pyridine
6	2-methyl diazol
7	Morpholine
8	4,5 dimethyl diazol
9	Pyrrole

ANAESTHETICS



Column

Phase	MEGA-5
I.D.	0.25 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injection	Split	280°C
Split Ratio	1:70	
Injection volume	0.5 µL	
Oven	T start	150°C
	Rate	5°C/min
	T end	250°C
Detector	FID	250°C
Carrier Gas	Hydrogen	60 kPa

Peak Identification

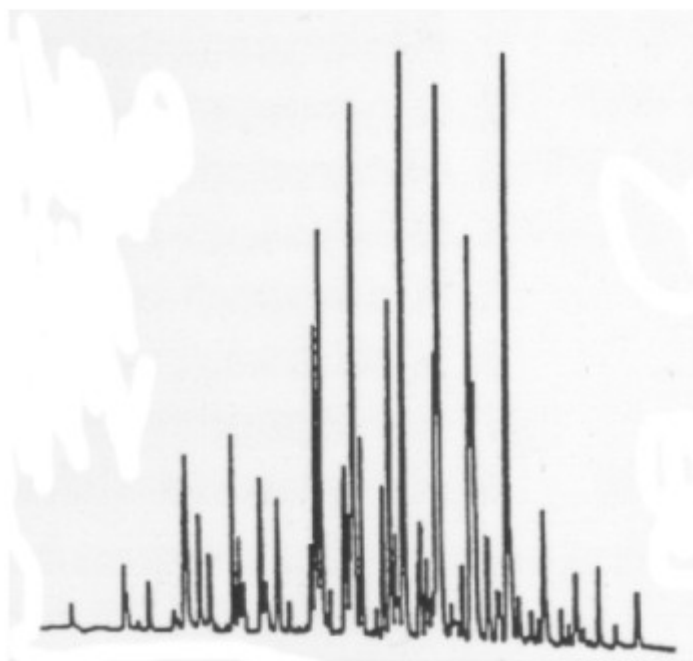
1	Benzocaine
2	Amilocaine
3	Lidocaine
4	Procaine
5	Cocaine
6	Codeine

AROCLOR 1254/1260

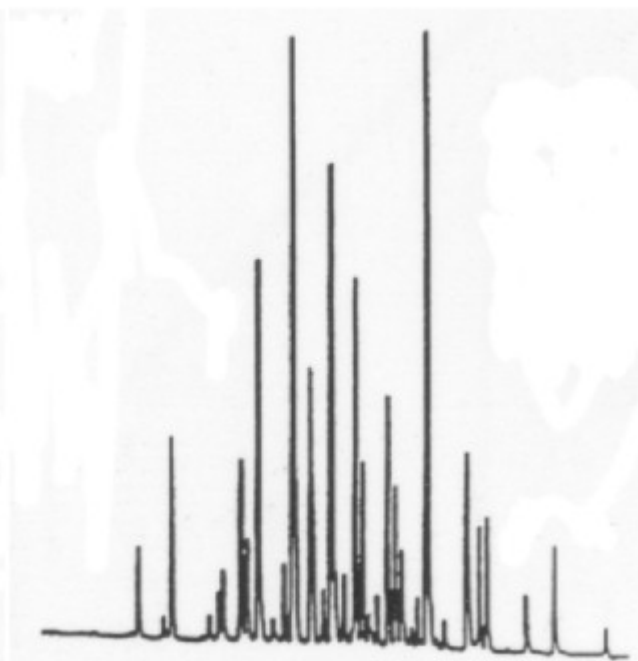
Column

Phase	MEGA-SE54
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

AROCLOR 1254



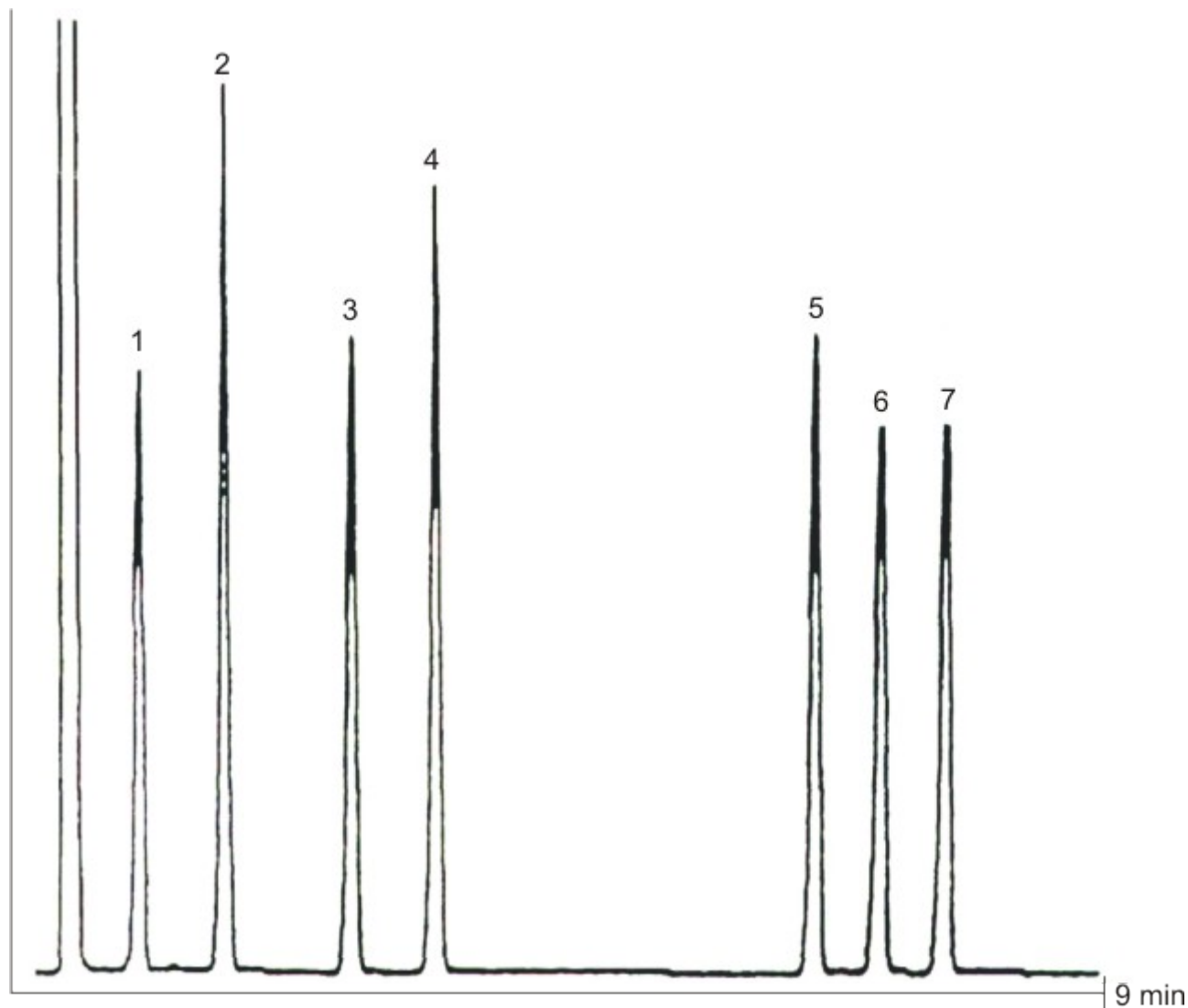
AROCLOR 1260



Chromatographic Conditions

Injection	Split	250°C
Split Ratio	1:30	
Injection volume	1.0 µL	
Oven	T start	100°C
	Rate	3.5°C/min
	T end	250°C
Detector	ECD	300°C
Make up	Methane	
Carrier Gas	Hydrogen	70 kPa

AROMATICS – EPA METHOD 602



Column

Phase	MEGA-WAX
I.D.	0.53 mm
Film Thickness	1.0 µm
Length	25 m

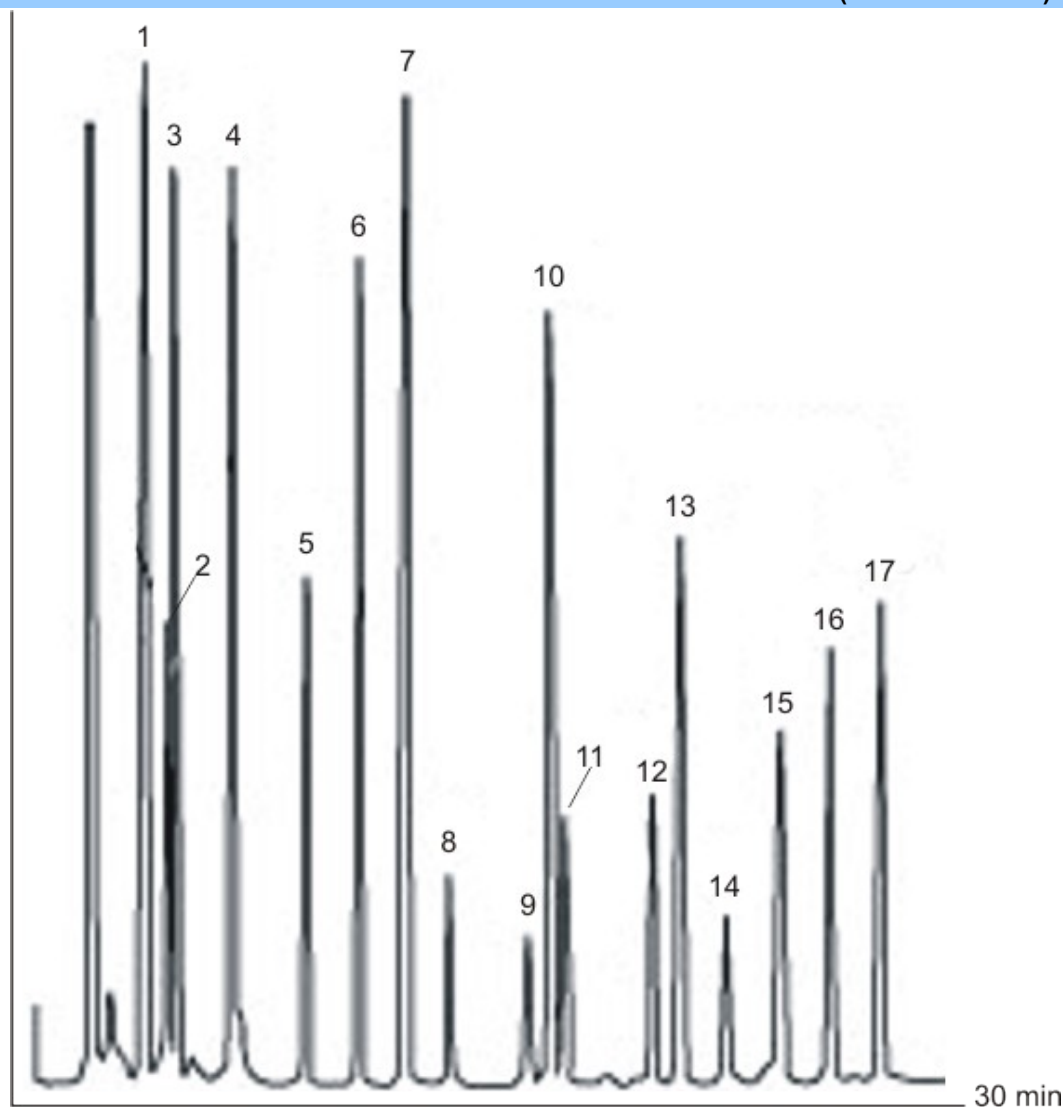
Chromatographic Conditions

Injector	Split	250°C
Injection volume	1.5 µL	
Oven	T start	50°C
	Rate	8°C/min
	T end	120°C
Detector	FID	250°C
Carrier Gas	Helium	20 kPa

Peak Identification

1	Benzene
2	Toluene
3	Ethylbenzene
4	Chlorobenzene
5	1,3 – dichlorobenzene
6	1,4 – dichlorobenzene
7	1,2 – dichlorobenzene

AROMES (TEST MIXTURE)



Column

Phase	MEGA-ACID
I.D.	0.25 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

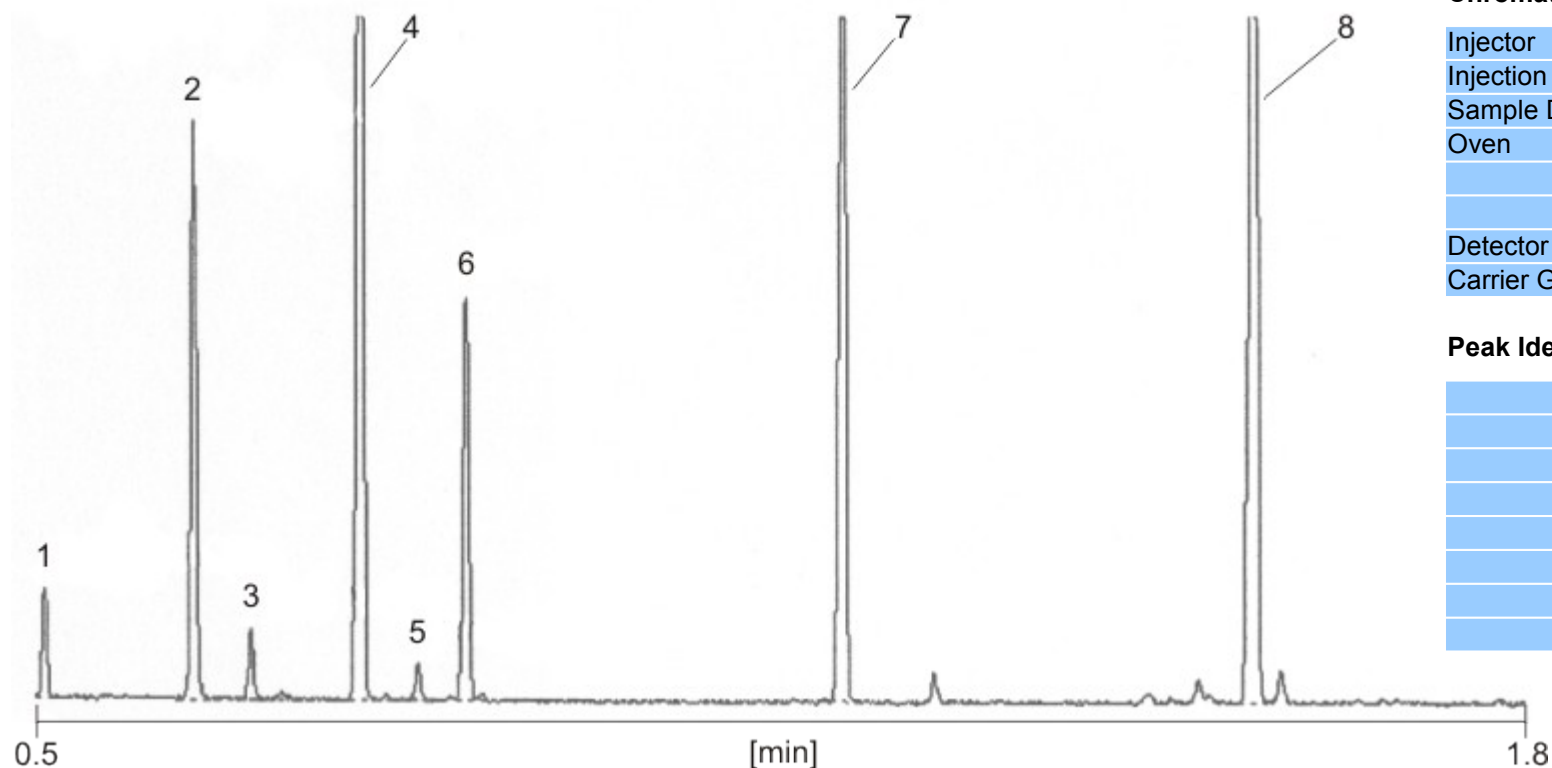
Injetor	Split	
Oven	T start	75°C
	Rate	2°C/min
	T end	140°C
Detector	FID	
Carrier Gas	Helium	1.7 mL/min

Peak Identification

1	Isoamyl acetate
2	α-Phellandrene
3	Cumene
4	1-Pentanol
5	6-Methyl,5-Hepten,2-one
6	2-Nonanone
7	Ethyl Octanoate
8	Furfural
9	Benzaldehyde
10	Linalool
11	Isobutyric Acid
12	n-Butyric Acid
13	Ethyl Decanoate
14	Furfuryl Alcohol
15	α + β Terpineol
16	Carvone
17	Methyl Salicylate

BERGAMOT

Courtesy of Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino



Column

Phase	MEGA-1701
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injector	Split	230°C
Injection Volume	1.0 µL	
Sample Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	50°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	α-Pinene
2	β-Pinene
3	Myrcene
4	Limonene
5	p-Cimene
6	γ-Terpinene
7	Linalool
8	Linalyl Acetate

BERGAMOT

Courtesy of Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

Column

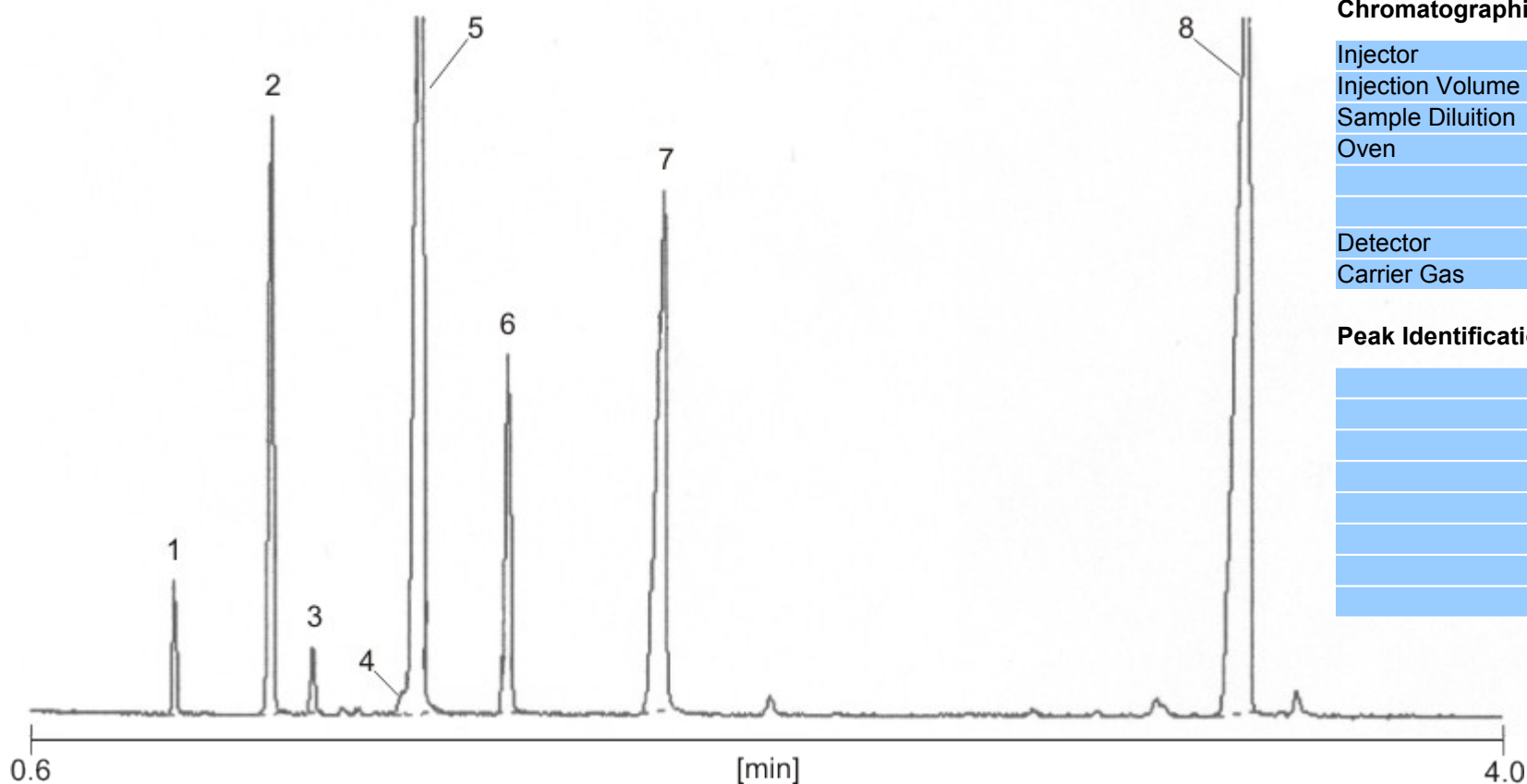
Phase	MEGA-SE54
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injector	Split	230°C
Injection Volume	1.0 µL	
Sample Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	15°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

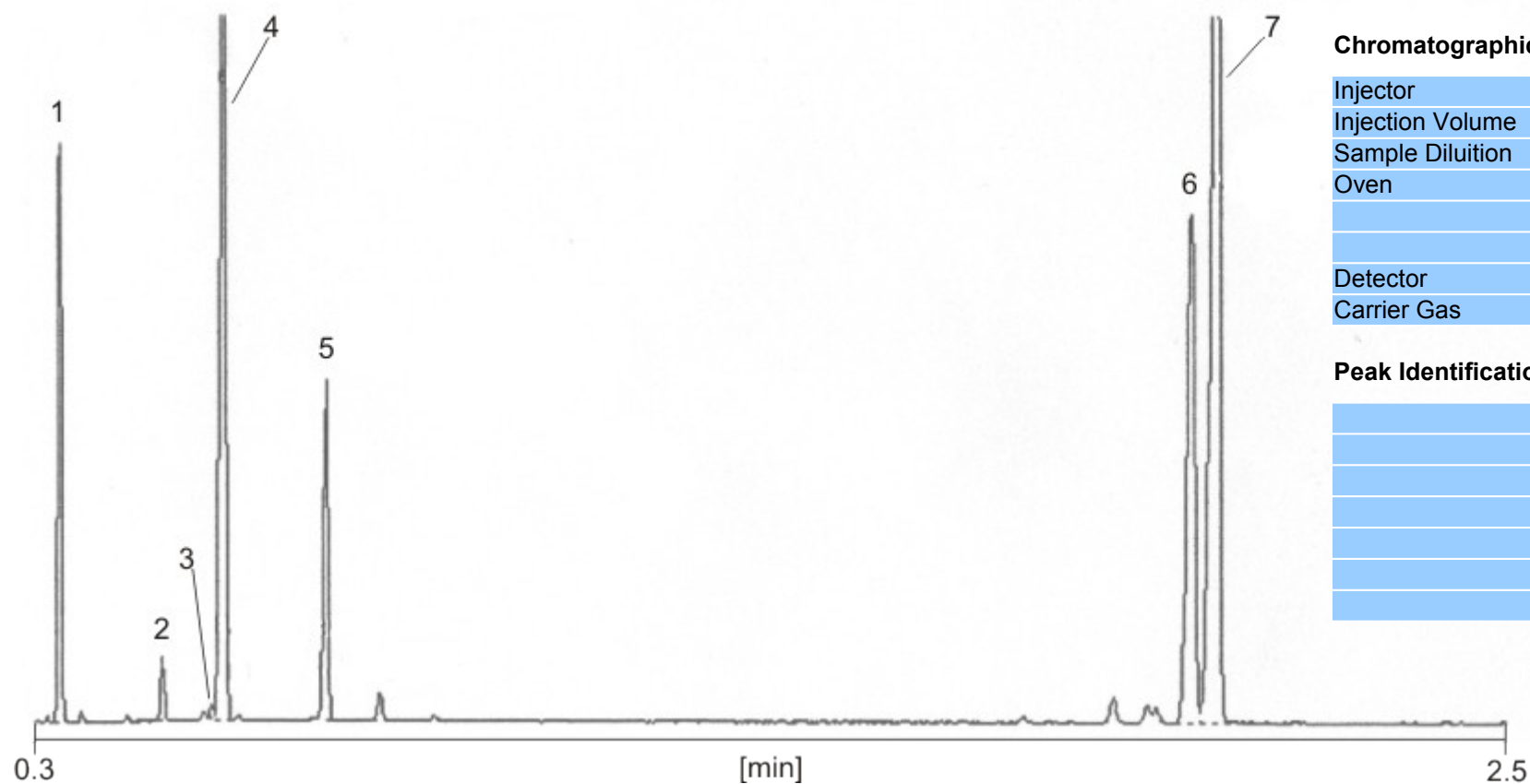
Peak Identification

1	α-Pinene
2	β-Pinene
3	Myrcene
4	p-Cimene
5	Limonene
6	γ-Terpinene
7	Linalol
8	Linalyl Acetate



BERGAMOT

Courtesy Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino



Column

Phase	MEGA-WAX
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

Injector	Split	230°C
Injection Volume	1.0 µL	
Sample Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	30°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	β-Pinene
2	Myrcene
3	p-Cimene
4	Limonene
5	γ-Terpinene
6	Linalool
7	Linalyl Acetate

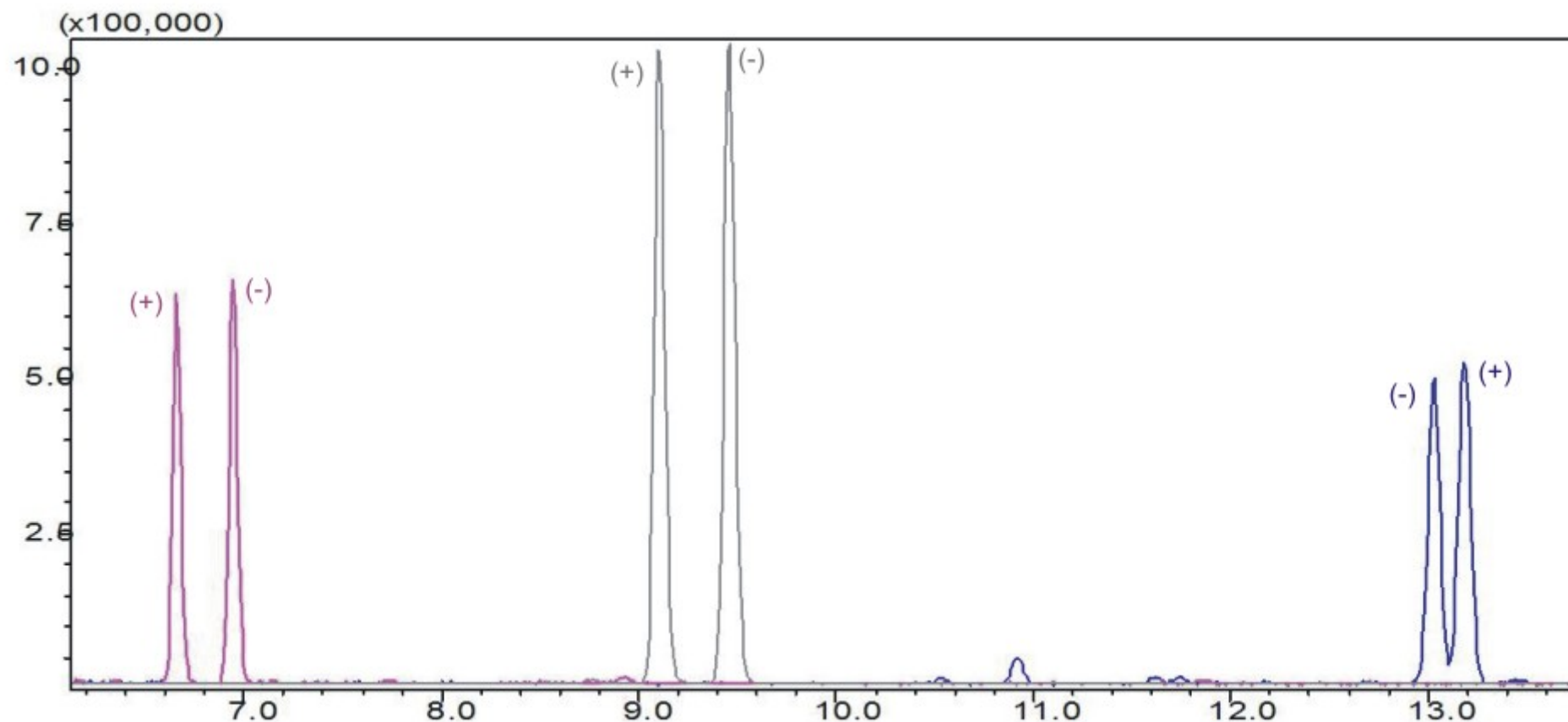
β PINENE

Phase

	MEGA-DEX DET β
	MEGA-DEX DMT β
	MEGA-DEX DMP β

Column

Inner Diameter	0.25 mm
Film Thickness	0.25 μm
Length	25 m



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

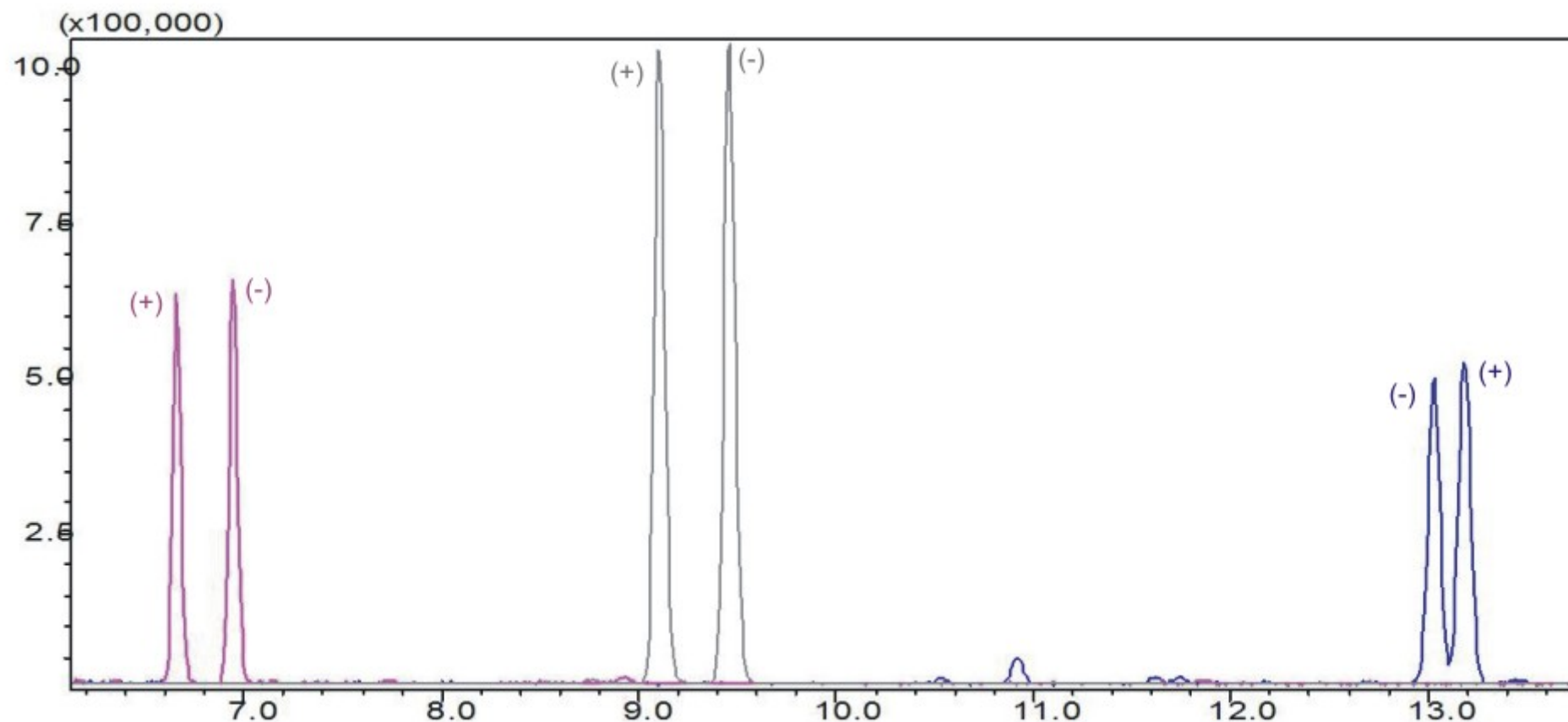
β PINENE

Phase

	MEGA-DEX DET β
	MEGA-DEX DMT β
	MEGA-DEX DMP β

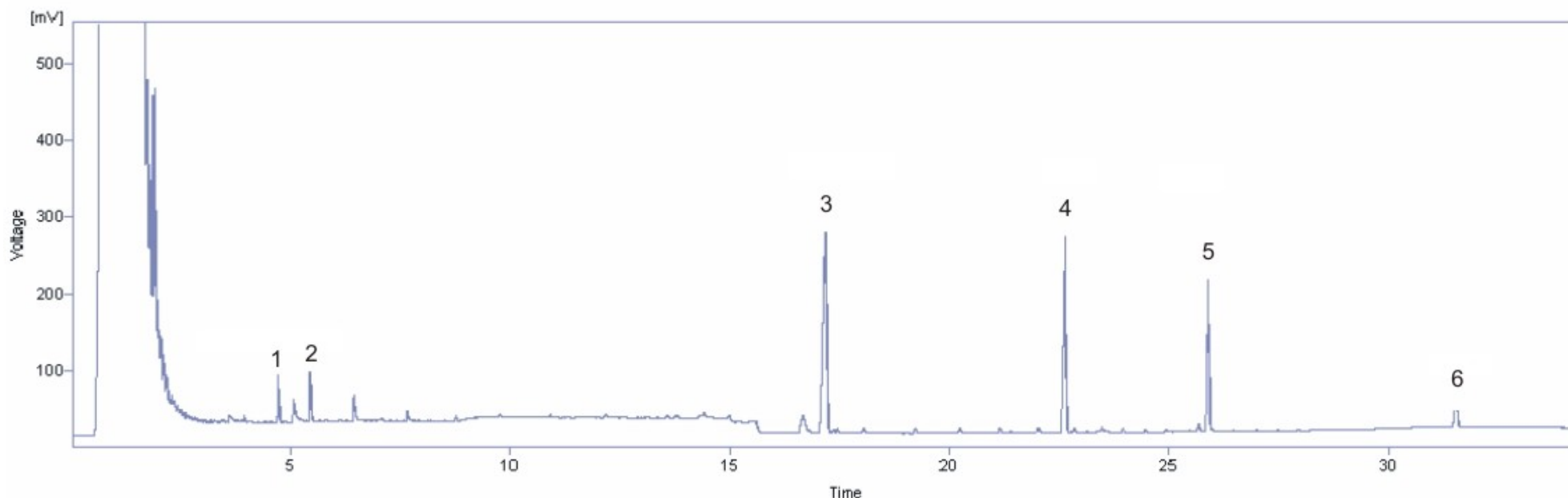
Column

Inner Diameter	0.25 mm
Film Thickness	0.25 μm
Length	25 m



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

BIODIESEL – Determination of Free and Total Glycerol and mono-, di-, tryglicerides (According to UNI EN ISO 14105 and ASTM 6584)



Column

Stationary Phase	MEGA-BIODIESEL105
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	15 m

Sample

Standard mixture of Glycerol and mono-, di-, triglycerides derivatized with MSTFA

GC Conditions

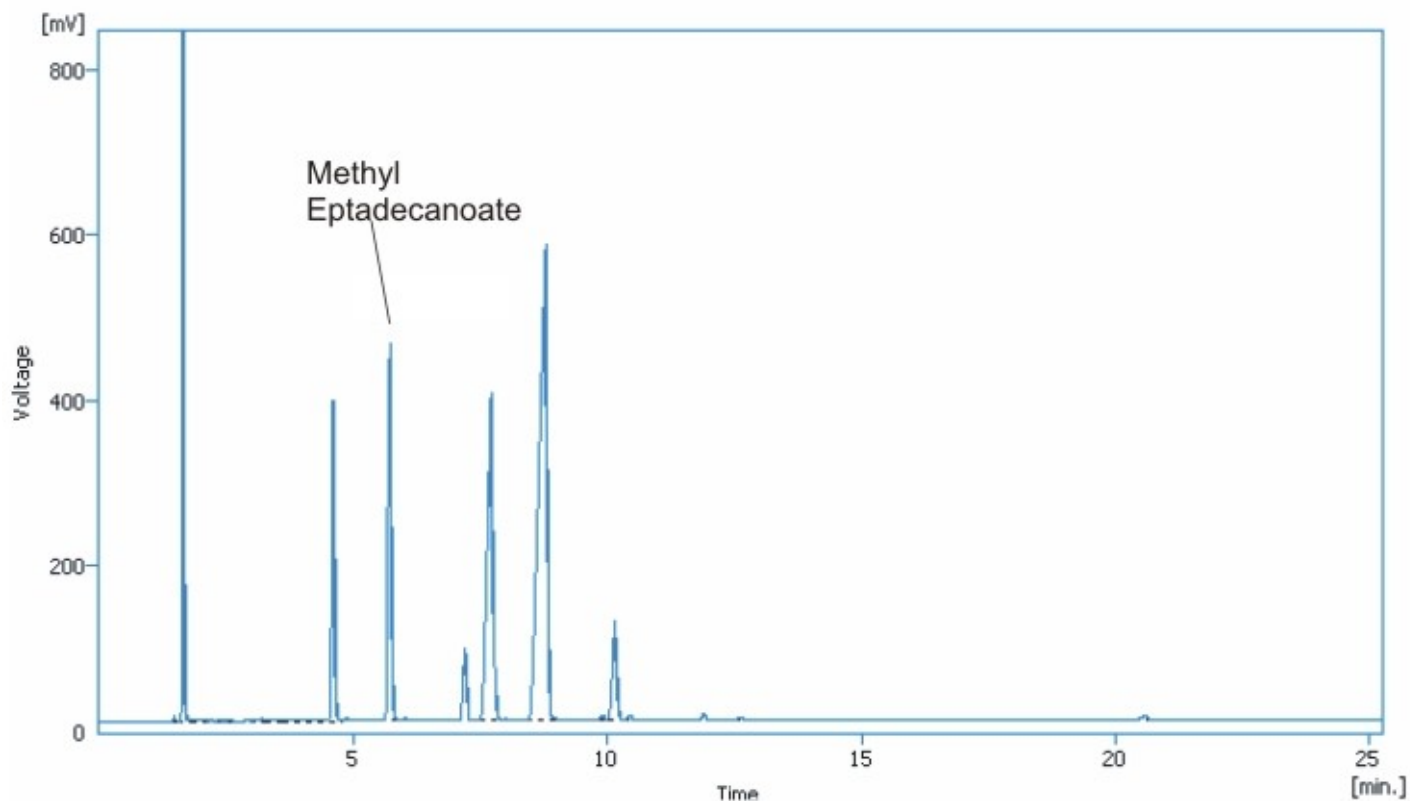
Injector	PTV	50°C T1
	Rate PTV	999°C/min
	T2 PTV	360°C (15min)
Oven	T 1	50°C (1min)
	Rate	15°C/min
	T2	180°C
	Rate 2	7°C/min
	T3	230°C
	Rate 3	10°C
	T4	370°C (5min)
Carrier Gas	Helium	3 mL/min

Identification

1	Glycerol
2	Internal Standard 1
3	Monoolein
4	Internal Standard 2
5	Diolein
6	Triolein

Results carried out with DANI GC MASTER

BIODIESEL – Determination of Esters and Linolenic Acid Methyl Esters contents (According to UNI EN ISO 14103:2003)



Column

Stationary Phase	MEGA-BIODIESEL103
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	30 m

Instrument Conditions

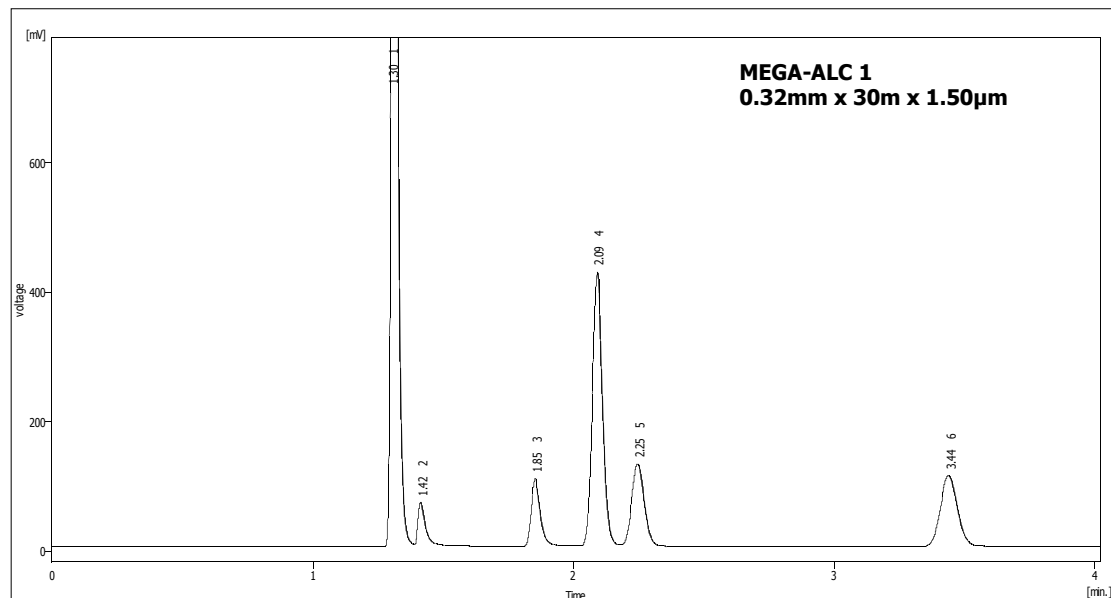
Injector	Split	250°C
Split Ratio	1:50	
Volume injected	1 µL	
Oven	210°C	Isoterma
Detector	FID	250°C
Carrier Gas	Helium	3 mL/min

Sample

Standard Mixture:
10 mg/mL Methyl Eptadecanoate in Biodiesel

Result carried out with DANI MASTER GC

Blood Alcohols – Head Space Analysis

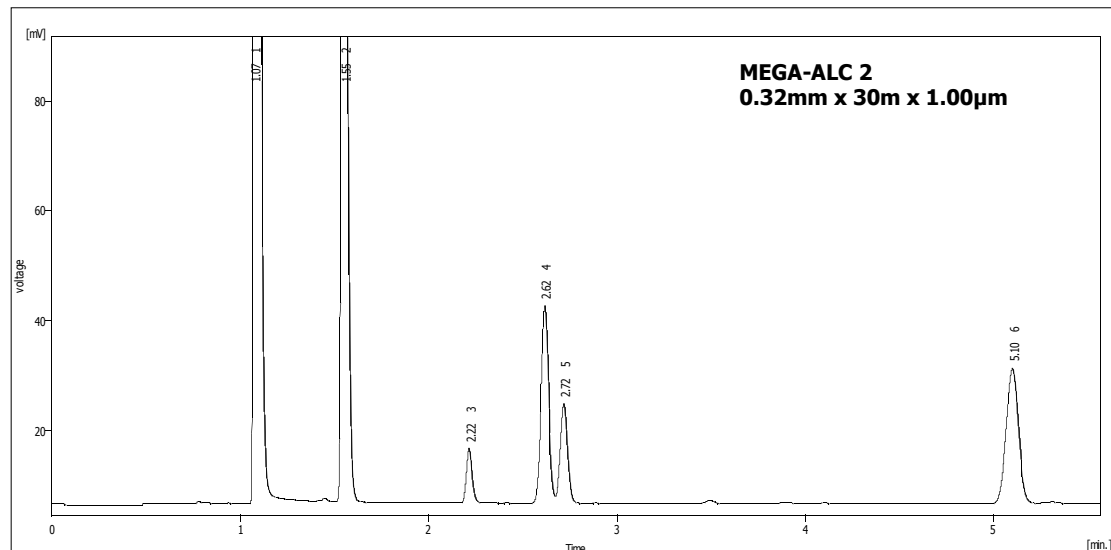


Identification MEGA-ALC 1

1	Acetaldehyde
2	Methanol
3	Ethanol
4	Acetone
5	Isopropanol
6	n-Propanol

Conditions

Injector	Split	250°C
Oven	Isotherm	40°C
Detector	FID	250°C
Carrier Gas	Hydrogen	50kPa
Head Space	15 min	@ 80°C



Identification MEGA-ALC 2

1	Acetaldehyde
2	Acetone
3	Methanol
4	Isopropanol
5	Ethanol
6	n-Propanol

Carried out with DANI GC Master

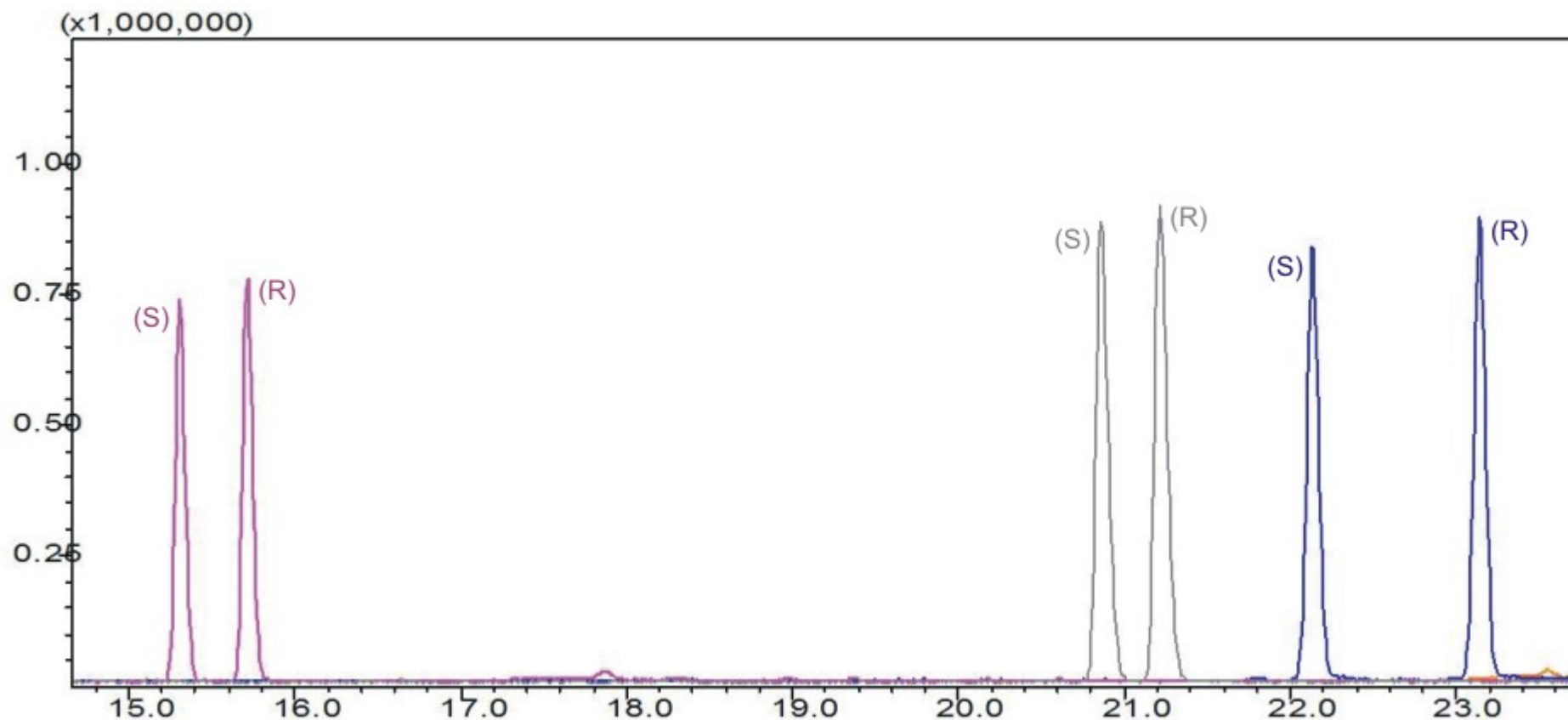
CAMPHOR

Phase

	MEGA-DEX DET β
	MEGA-DEX DMT β
	MEGA-DEX DAC β

Column

Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

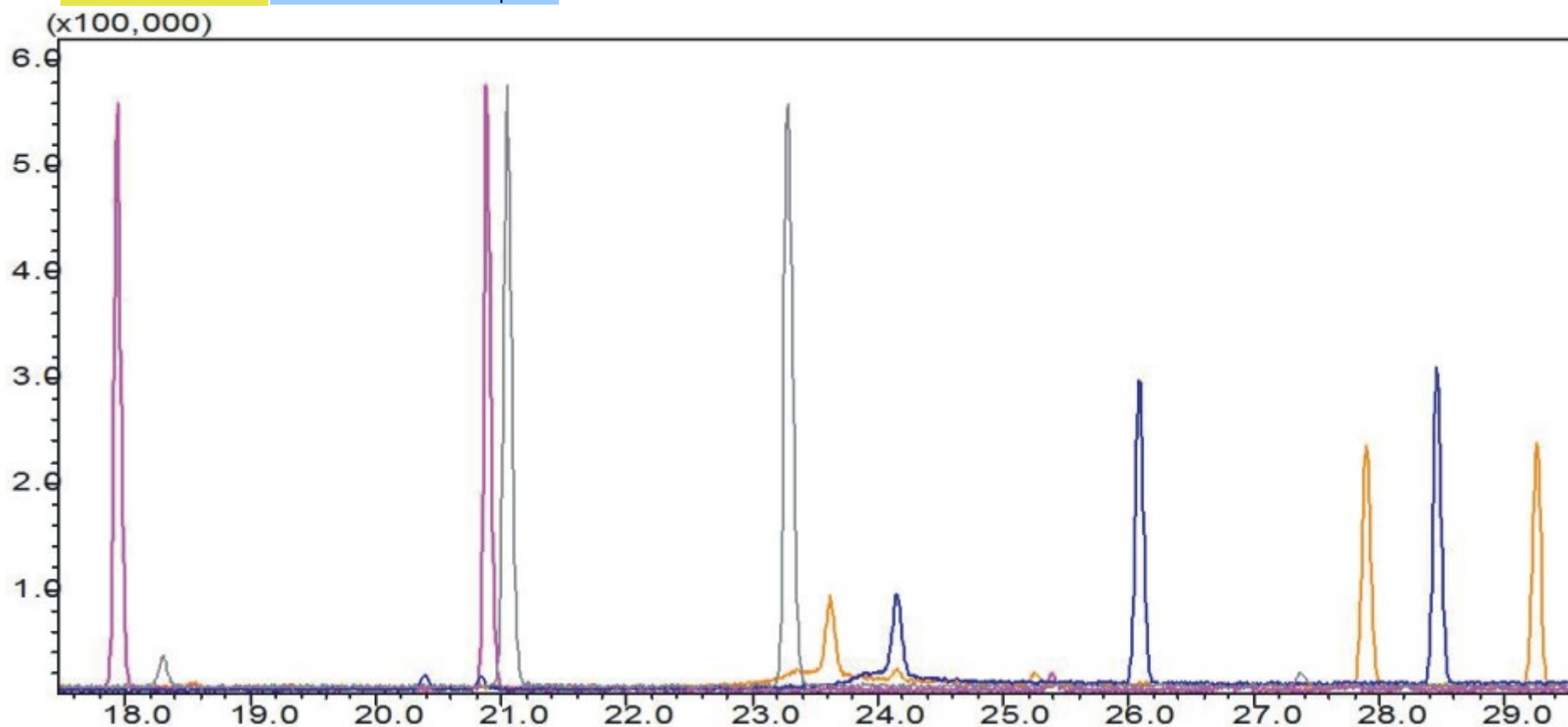
CINEOL

Phase

	MEGA-DEX DET β
	MEGA-DEX DMT β
	MEGA-DEX DAC β
	MEGA-DEX DMP β

Column

Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

STEROLS (TMS) – CORN OIL

Courtesy Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79

Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Conditions

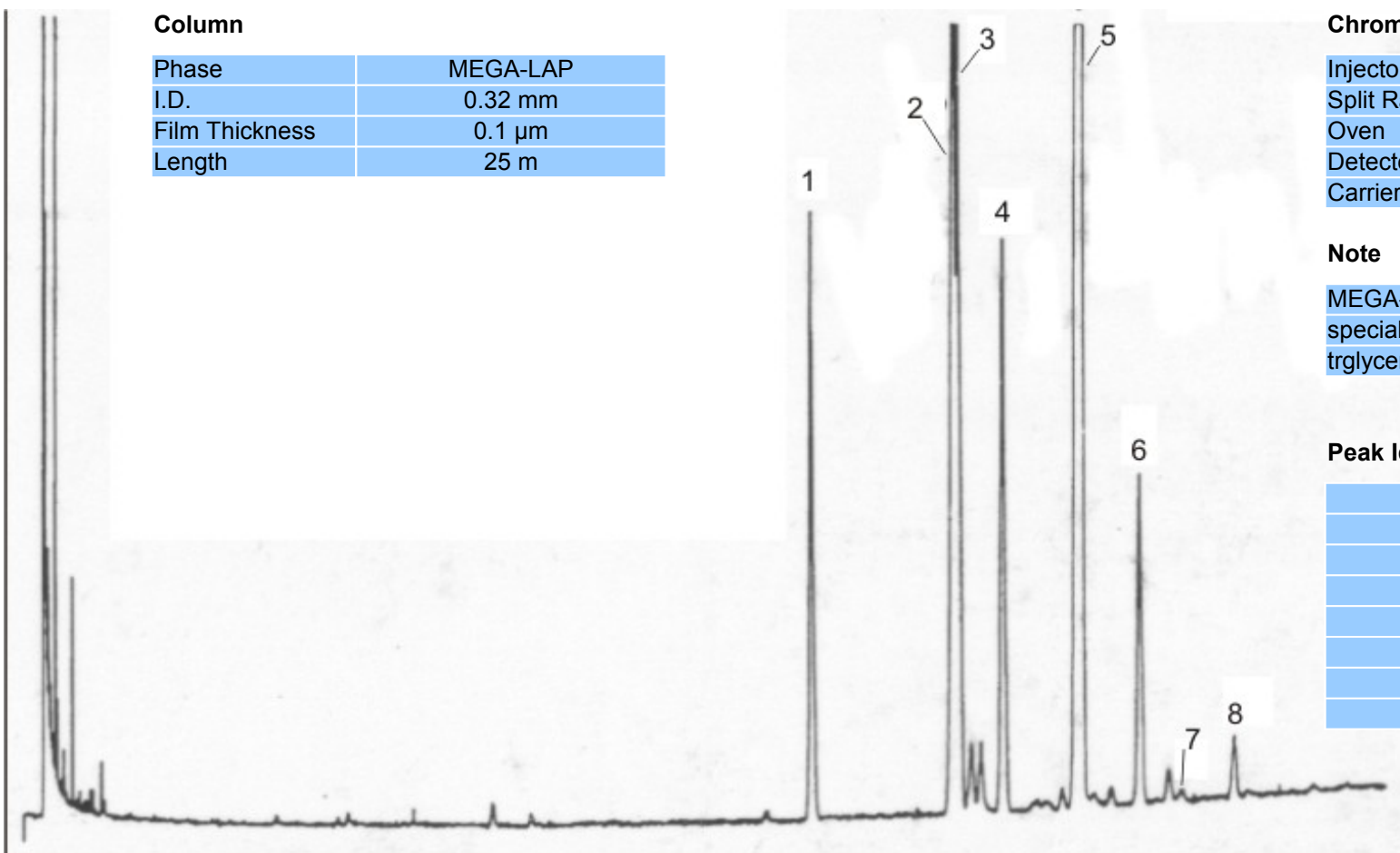
Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier gas	hydrogen	1.2 mL/min

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phase optimized for the triglycerides separation, stable until 370°C

Peak Identification

1	α-colestanol (I.S.)
2	22,23-dihydrobrassicasterol
3	Campesterol
4	Stigmasterol
5	Sitosterol
6	Δ ⁵ -avenasterol
7	Δ ⁷ -stigmasterol
8	Δ ⁷ -avenasterol



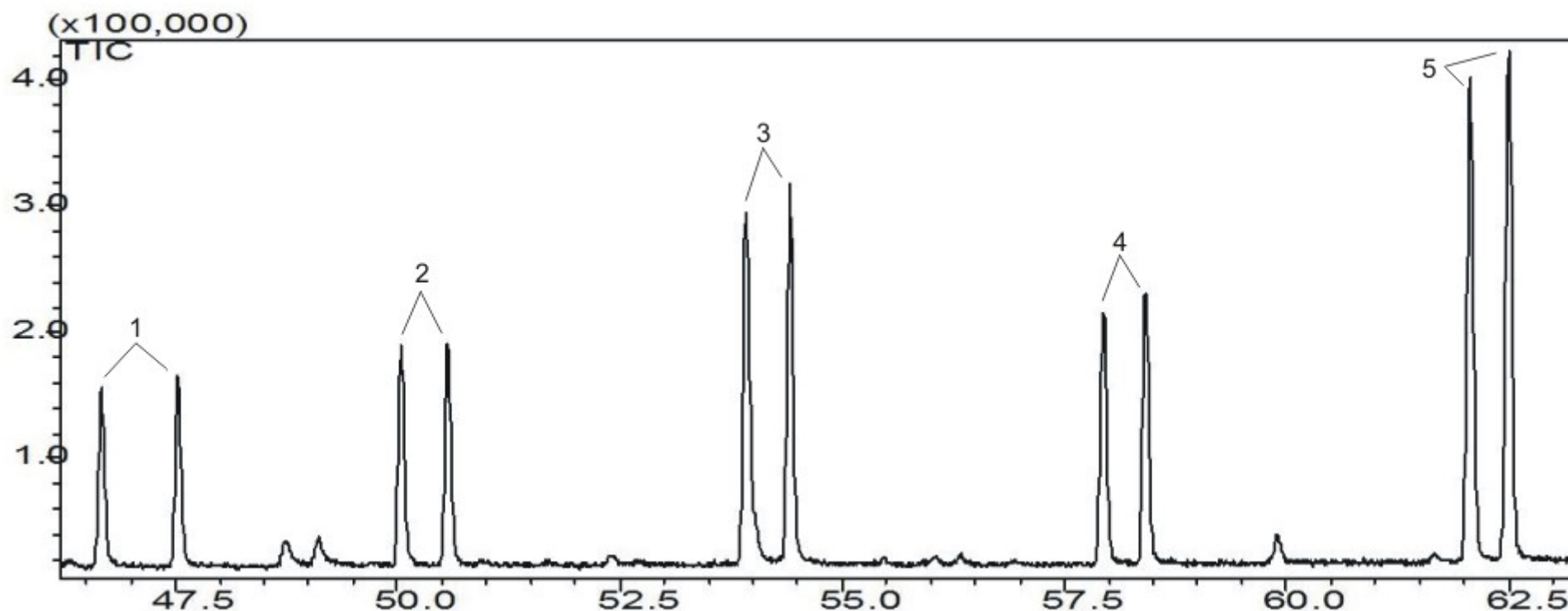
δ-LACTONES

Column

Phase	MEGA-DEX DAC β
Inner Diameter	0.25 mm
Film Thickness	0.25 μm
Length	25 m

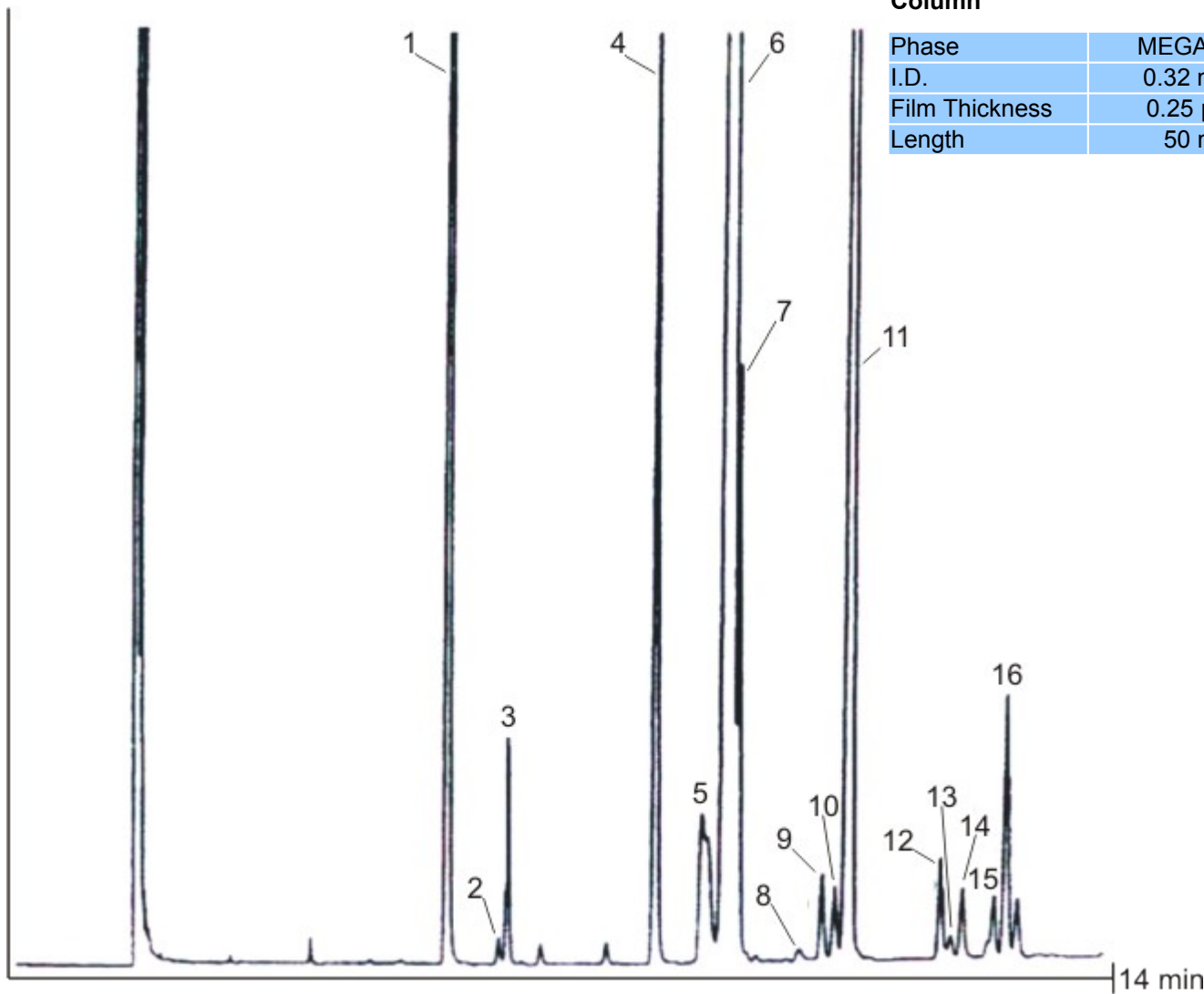
Identification

1	Delta-octalactone
2	Delta-nonolactone
3	Delta-decalactone
4	Delta-undecalactone
5	Delta-dodecalactone



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

FAME cis/trans in Olive Oil



Column

Phase	MEGA-10
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	50 m

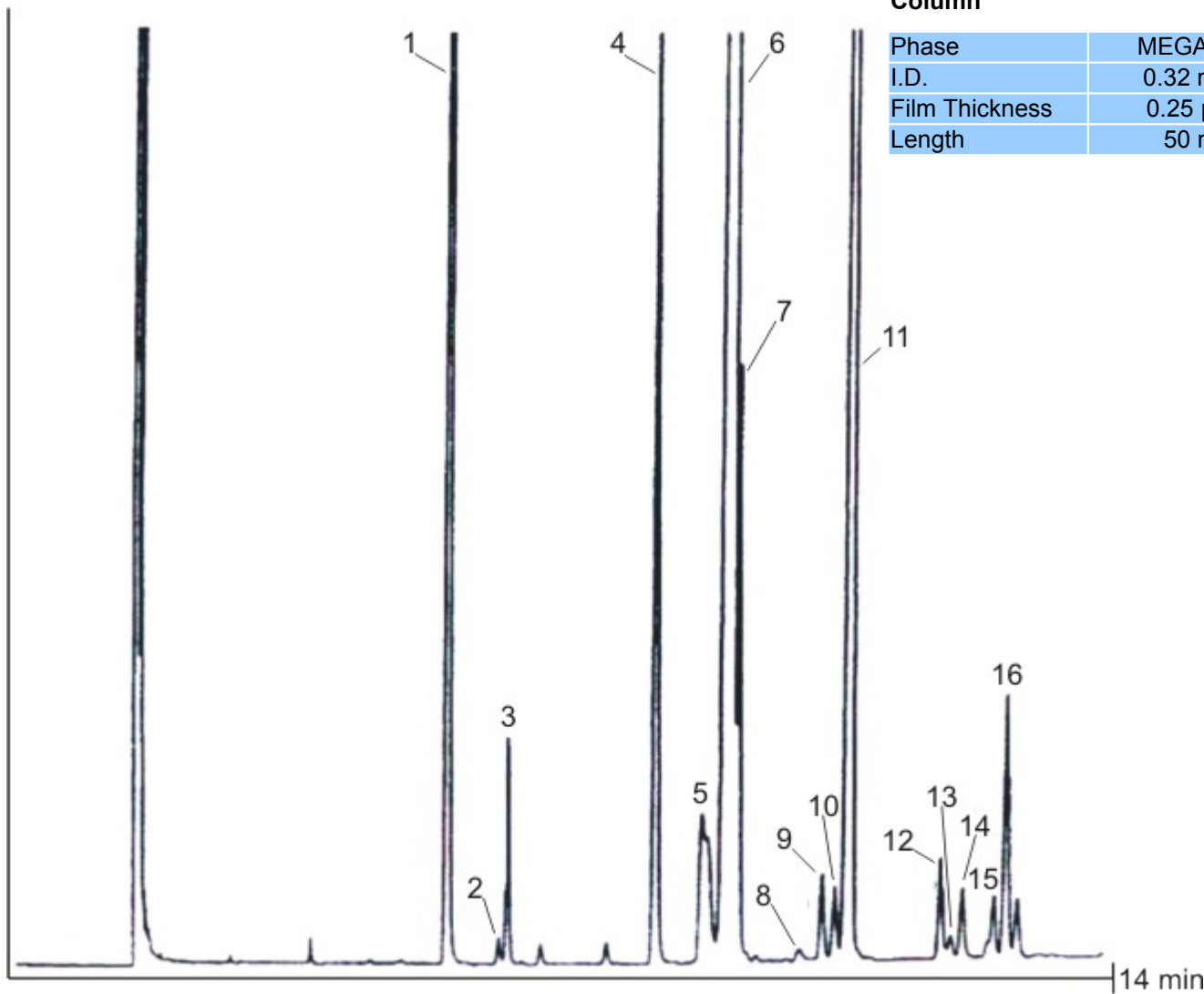
Chromatographic Conditions

Injection	Split	250°C
Split Ratio	1:100	
Injection volume	1.5 µL	
Oven	T start	150°C
	Rate	1°C/min
	T end	190°C
Detector	FID	250°C
Carrier Gas	Hydrogen	60 kPa

Peak Identification

1	Palmitic Acid
2	trans Palmitoleic Acid
3	Palmitoleic Acid
4	Stearic Acid
5	trans Petroselenic Acid
	trans Elaidinic Acid
	trans Vaccenic Acid
6	Oleic Acid
7	cis Vaccenic Acid
8	trans trans Linoleic Acid
9	cis trans Linoleic Acid
10	trans cis Linoleic Acid
11	Linoleic Acid
12	Arachidic Acid
13	trans cis trans Linolenic Acid
14	cis cis Linolenic Acid
15	trans cis cis Linolenic Acid
16	cis cis cis Linolenic Acid

FAME cis/trans in Olive Oil



Column

Phase	MEGA-10
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	50 m

Chromatographic Conditions

Injection	Split	250°C
Split Ratio	1:100	
Injection volume	1.5 µL	
Oven	T start	150°C
	Rate	1°C/min
	T end	190°C
Detector	FID	250°C
Carrier Gas	Hydrogen	60 kPa

Peak Identification

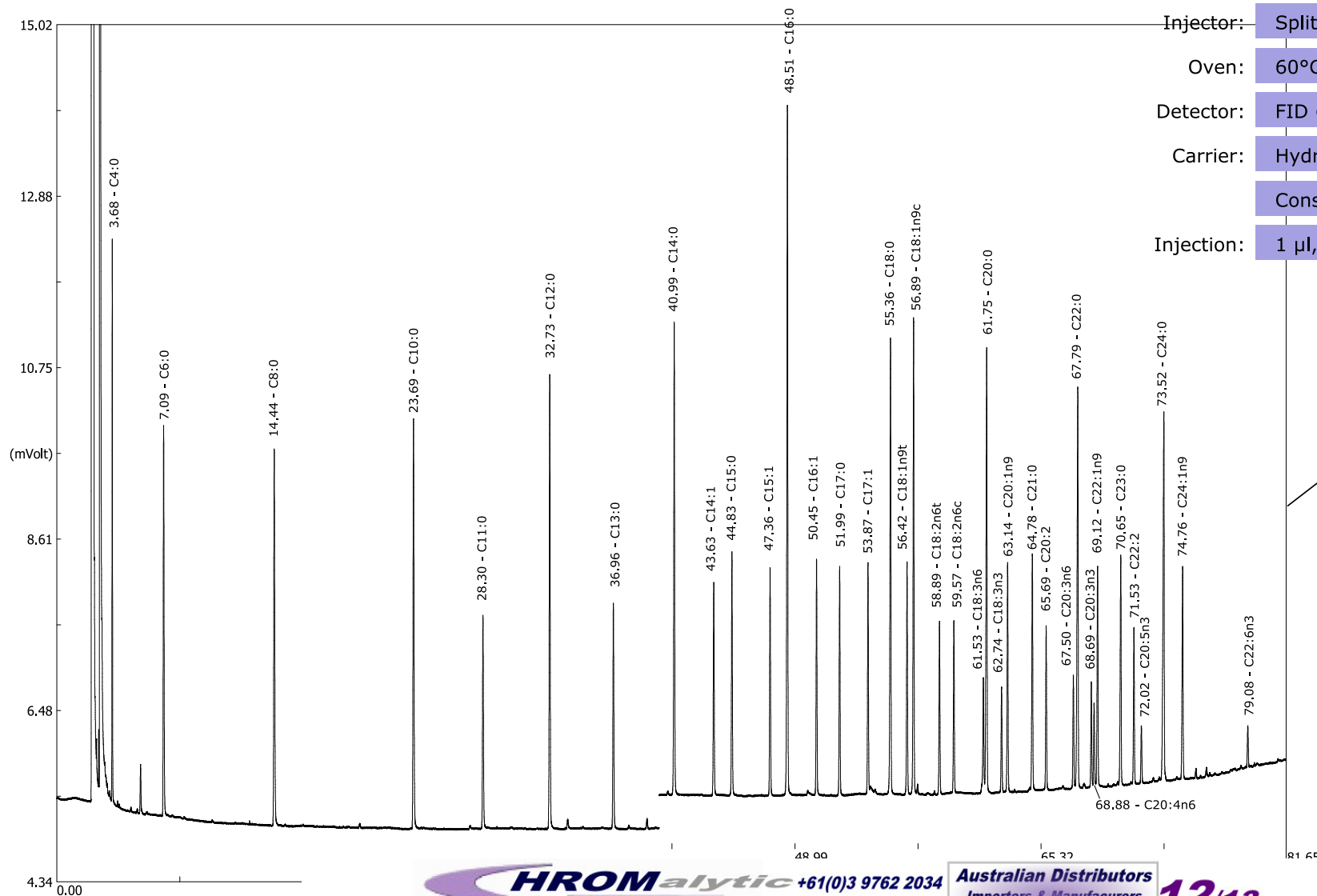
1	Palmitic Acid
2	trans Palmitoleic Acid
3	Palmitoleic Acid
4	Stearic Acid
5	trans Petroselenic Acid
	trans Elaidinic Acid
	trans Vaccenic Acid
6	Oleic Acid
7	cis Vaccenic Acid
8	trans trans Linoleic Acid
9	cis trans Linoleic Acid
10	trans cis Linoleic Acid
11	Linoleic Acid
12	Arachidic Acid
13	trans cis trans Linolenic Acid
14	cis cis Linolenic Acid
15	trans cis cis Linolenic Acid
16	cis cis cis Linolenic Acid

.25µm, 50m - 37 FAMES Mix (Supelco cat. # 47885-U)

MEGA-10 (FAMES) 0.25mm, 0

Conditions

Injector:	Split @ 250°C
Oven:	60°C (6min) - 2°C/min - 230°C
Detector:	FID @ 255°C
Carrier:	Hydrogen @ 100kPa
	Constant Pressure
Injection:	1 µl, split ratio 1:100



Zoom in by clicking here
or with your Pdf viewer, and
browse the chromatogram
in high definition to better
appreciate the separation!

FAMES

Column

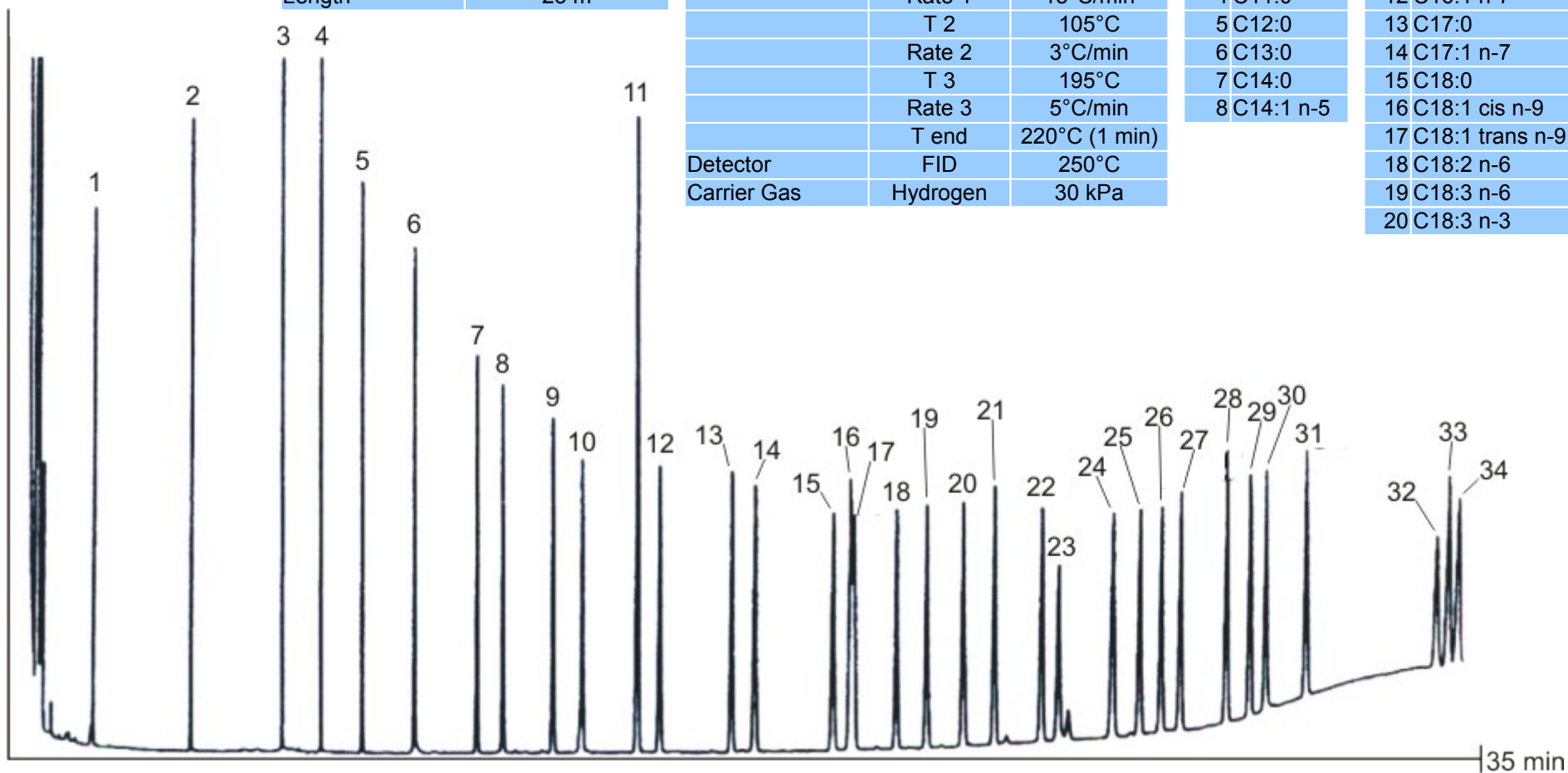
Phase	MEGA-WAX
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injector	On column	
Injection Volume	1.0 µL	
Oven	T start	60°C (2 min)
	Rate 1	15°C/min
	T 2	105°C
	Rate 2	3°C/min
	T 3	195°C
	Rate 3	5°C/min
	T end	220°C (1 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	30 kPa

Peak Identification

1 C6:0	9 C15:0	21 C18:4 n-3
2 C8:0	10 C15:1 n-5	22 C20:0
3 C10:0	11 C16:0	23 C20:1 n-9
4 C11:0	12 C16:1 n-7	24 C20:2 n-6
5 C12:0	13 C17:0	25 C20:3 n-6
6 C13:0	14 C17:1 n-7	26 C20:4 n-6
7 C14:0	15 C18:0	27 C20:5 n-3
8 C14:1 n-5	16 C18:1 cis n-9	28 C20:5
	17 C18:1 trans n-9	29 C22:0
	18 C18:2 n-6	30 C22:1 n-9
	19 C18:3 n-6	31 C22:2 n-6
	20 C18:3 n-3	32 C24:0
		33 C22:6 n-3
		34 C24:1 n-9



FREE ACIDS

Column

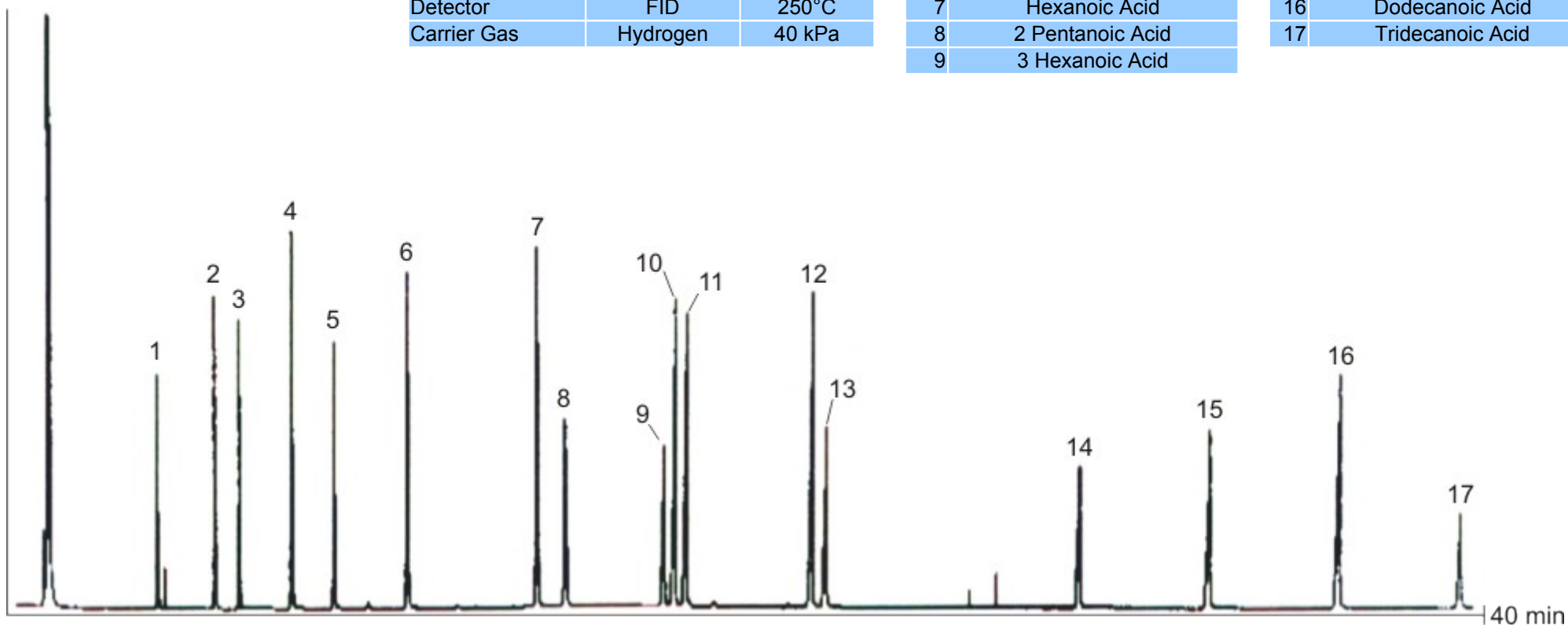
Phase	MEGA-ACID
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injection	Split	250°C
Split Ratio	1:50	
Injection Volume	1 µL	
Oven	T start	80°C
	Rate	2.5°C/min
	T end	210°C
Detector	FID	250°C
Carrier Gas	Hydrogen	40 kPa

Peak Identification

1	Ethanoic Acid	10	Heptanoic Acid
2	Propanoic Acid	11	Trans 2 Hexanoic Acid
3	Isobutanoic Acid	12	Octanoic Acid
4	Butanoic Acid	13	2 Heptanoic Acid
5	Isopentanoic Acid	14	Decanoic Acid
6	Pentanoic Acid	15	Undecanoic Acid
7	Hexanoic Acid	16	Dodecanoic Acid
8	2 Pentanoic Acid	17	Tridecanoic Acid
9	3 Hexanoic Acid		



Mega s n c

Tel /Fax (+30) 0331 54 79 24

CHROMALYTIC Pty Ltd
ECHnology

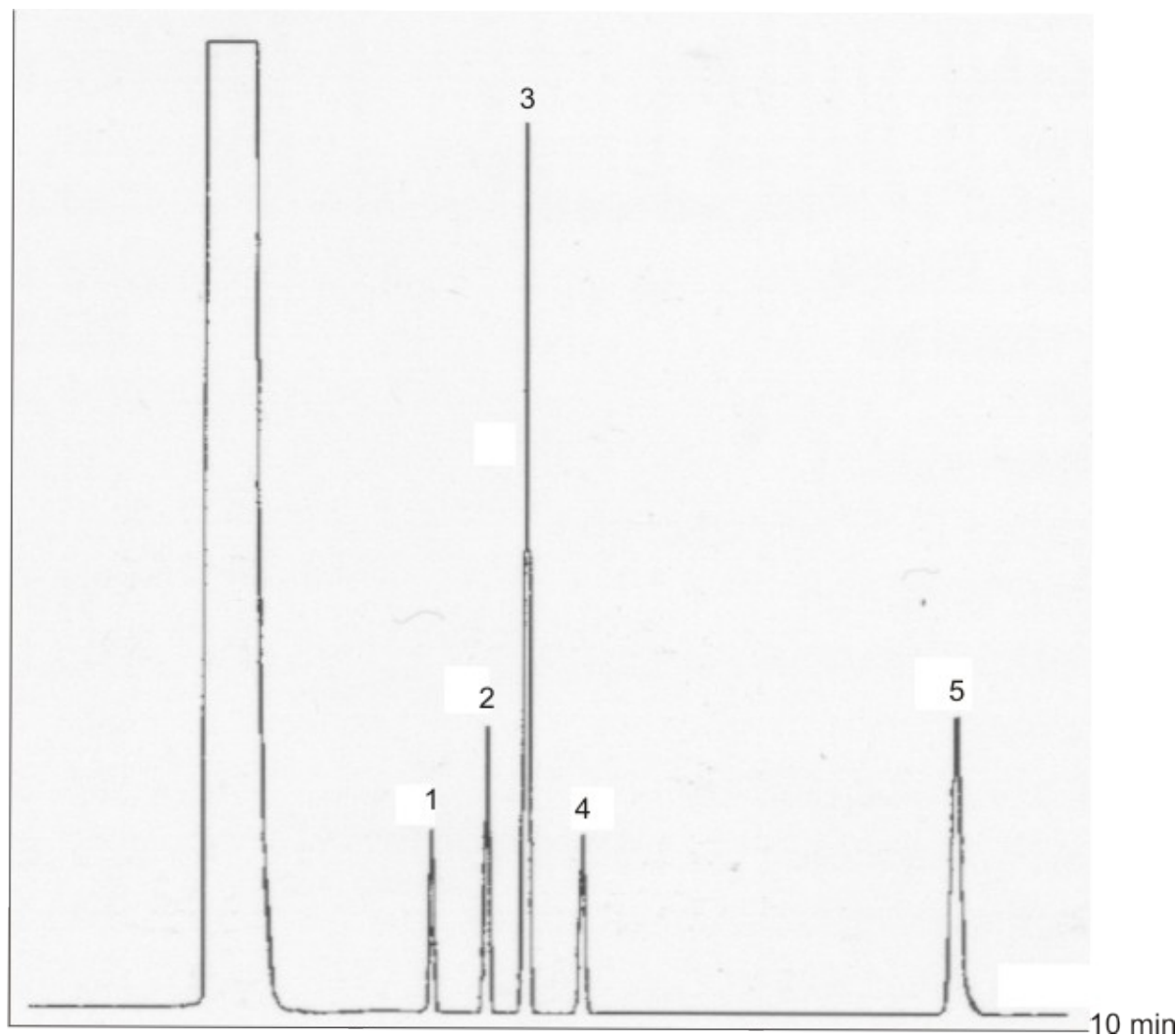
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HALOGENATED AQUEOUS COMPOUNDS



Column

Phase	MEGA-DAI 1
I.D.	0.32 mm
Film Thickness	5 µm
Length	30 m

Chromatographic Conditions

Injector	On column	104°C
Injection Volume	1.0 µL	
Oven	Isot.	104°C
Detector	ECD	300°C
Make up	Nitrogen	50 mL/min
Carrier Gas	Hydrogen	0.8 mL/min

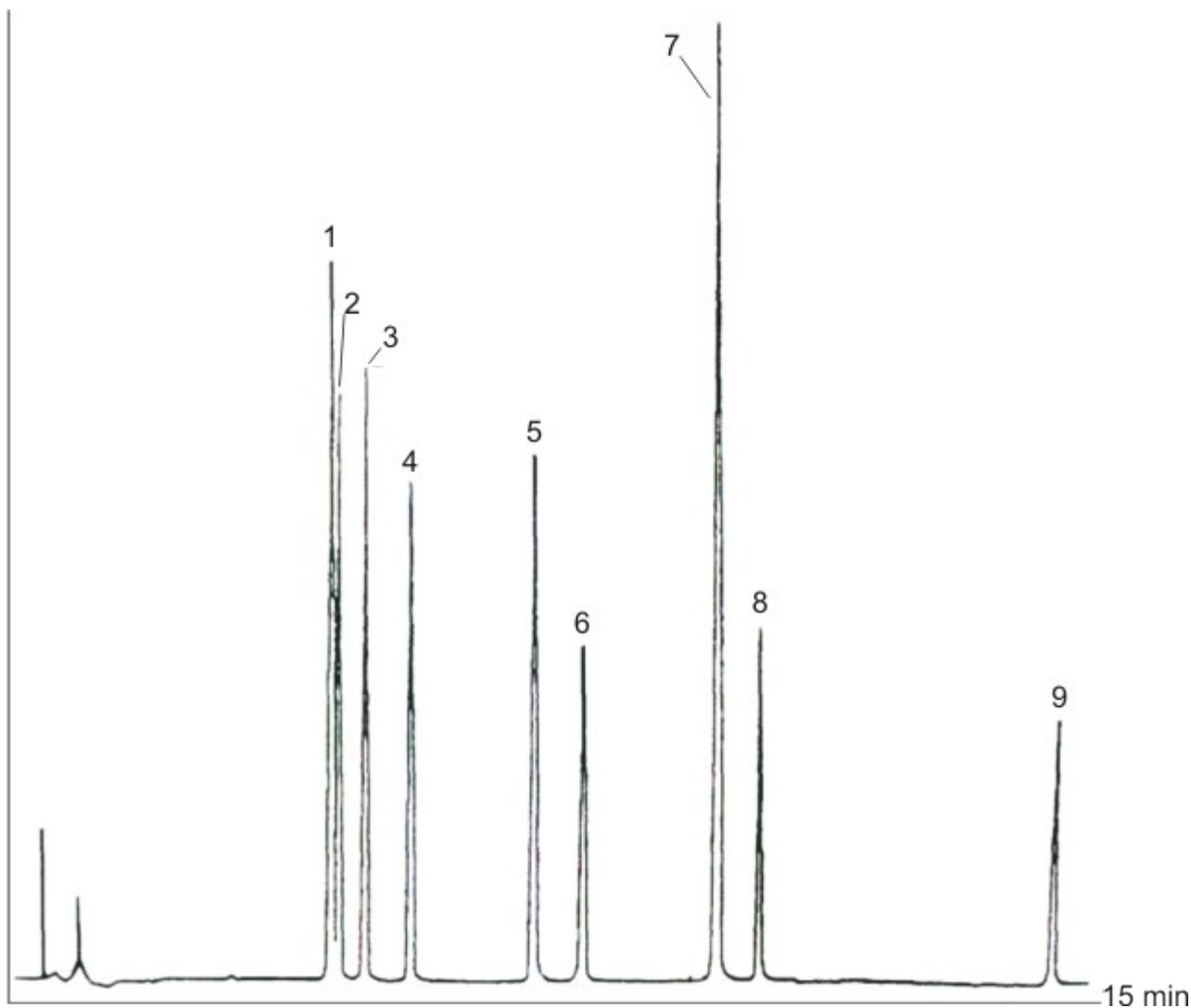
Peak Identification

1	Chlorophorm
2	Methyl-chlorophorm
3	Carbon tetra-chlorur
4	Trieline
5	Tetra-chloro-ethylen

Note

MEGA-DAI (DIRECT AQUEOUSUS INJECTION)
Allow the direct introduction of aqueosus samples
in column without sample preparation

HALOGENATED HYDROCARBONS – EPA METHOD 612



Column

Phase	MEGA-5
I.D.	0.53 mm
Film Thickness	1.5 µm
Length	15 m

Chromatographic Conditions

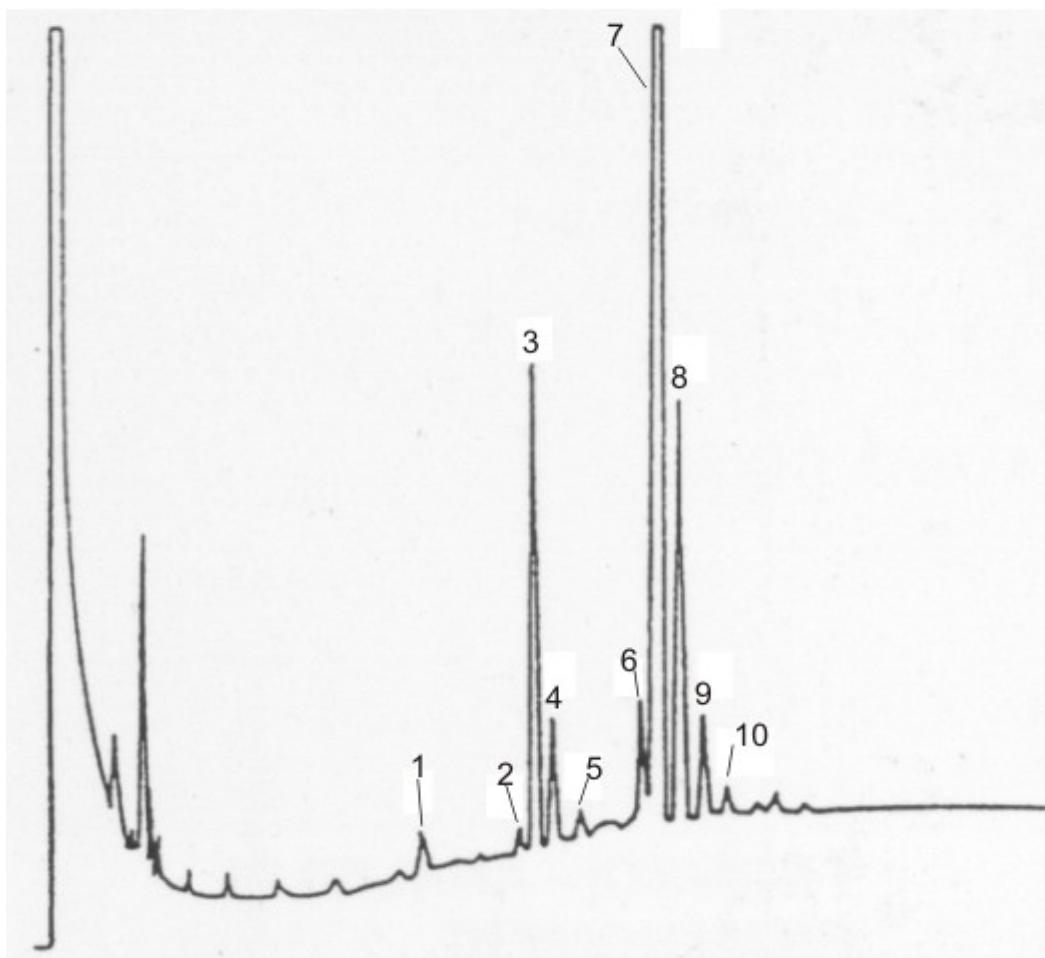
Injection	On column	
Injection volume	1.0 µL	
Dilution	Iso-Octane solution	
Oven	T start	50°C
	Rate	8°C/min
	T end	150°C
Detector	ECD	250°C
Carrier Gas	Helium	20 mL/min

Peak Identification

1	1,3 – dichlorobenzene
2	1,4 – dichlorobenzene
3	1,2 – dichlorobenzene
4	Hexachloroethane
5	1,2,4 – trichlorobenzene
6	Hexachlorobutadiene
7	Hexachlorocyclopentadiene
8	2 – chloronaphtalene
9	Hexachlorobenzene

TRIGLYCERIDES – HAZELNUT OIL

Courtesy of Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79



Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Condition

Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier Gas	Hydrogen	1.2 mL/min

Peak Identification

1	PPO
2	POS
3	POO
4	PLO + OOPo
5	PLL + PoOL
6	800
7	OOO
8	OOL
9	OOL
10	LLL

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phase optimized for the triglycerides separation, stable until 370°C

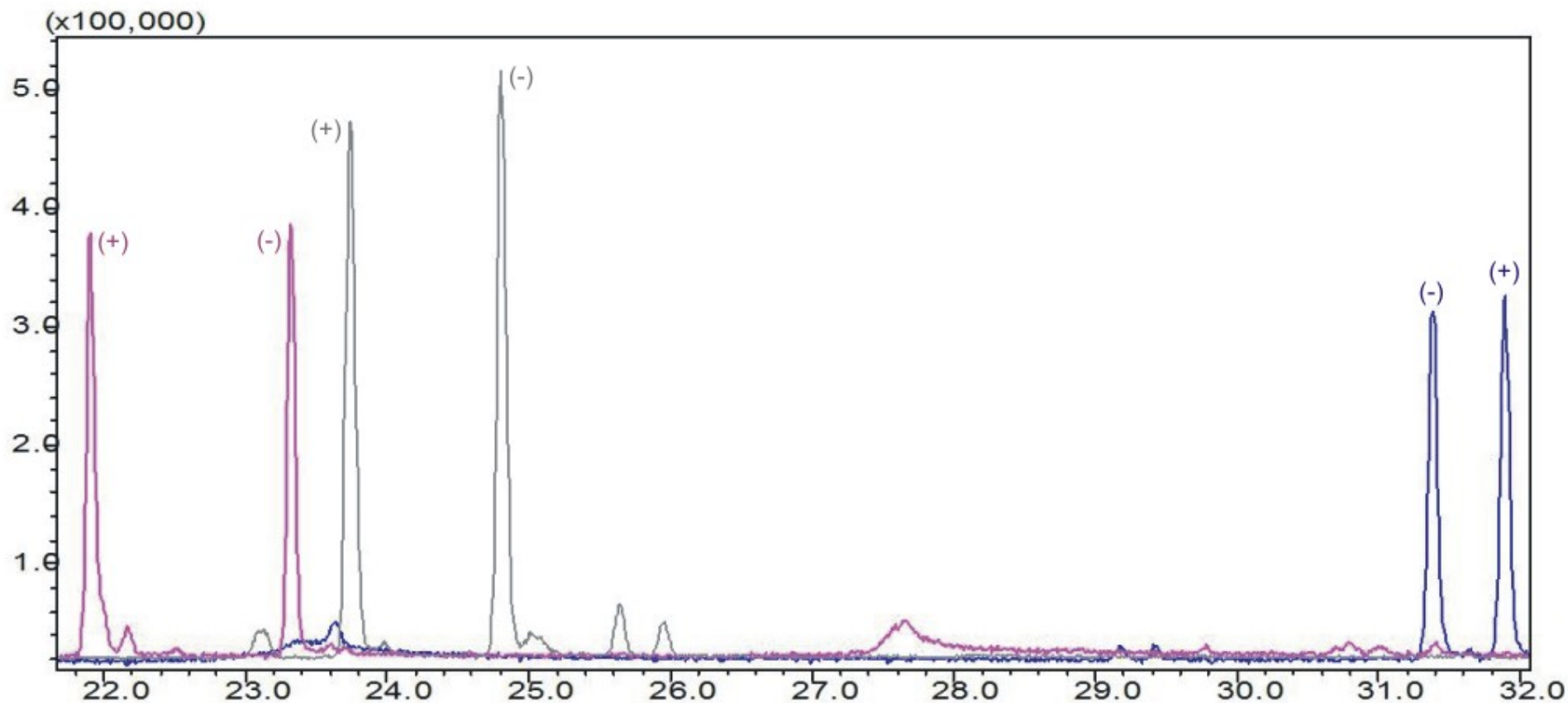
LAVANDULOL

Phase

	MEGA-DEX DET β
	MEGA-DEX DMT β
	MEGA-DEX DMP β

Column

Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

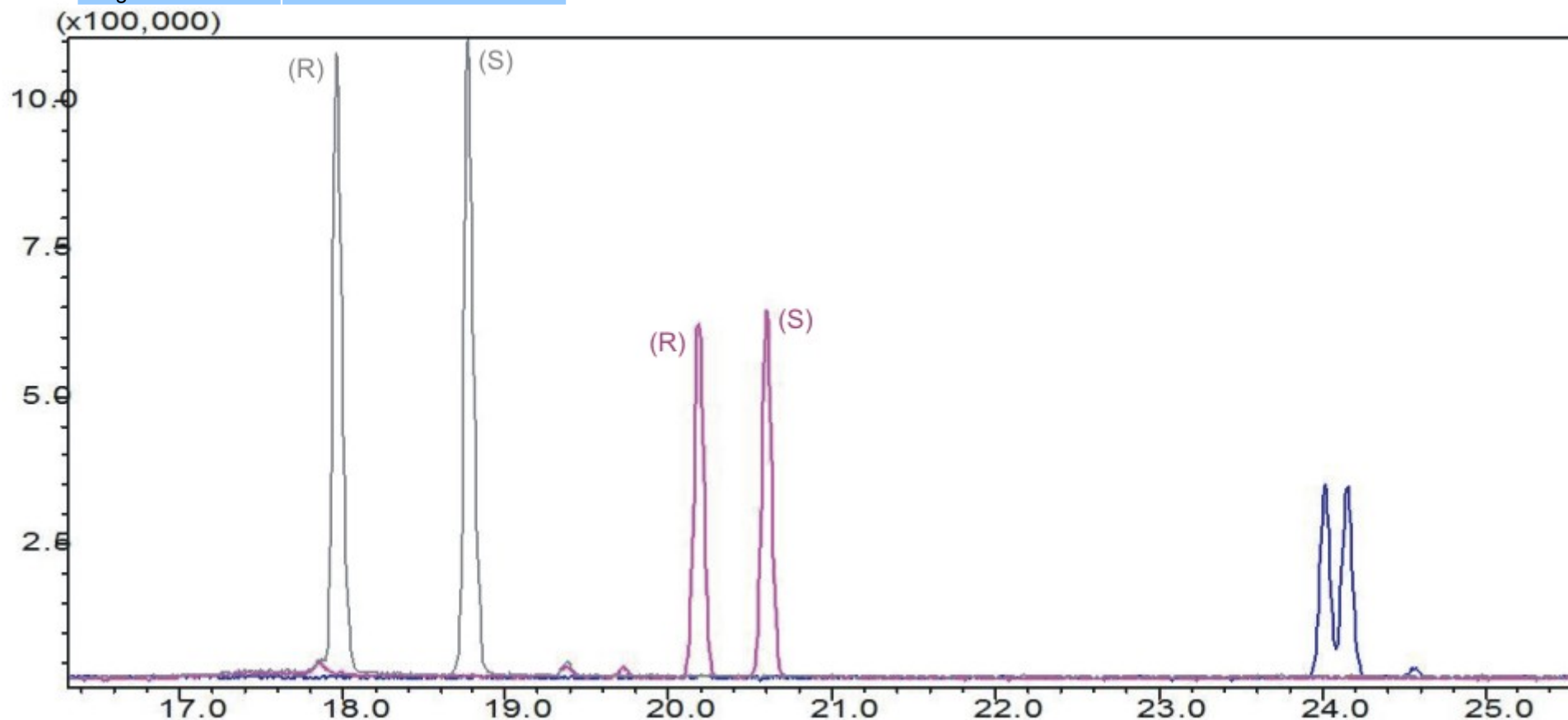
LINALOOL

Column

Phase	MEGA-DEX DET β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

Identification

	Linalool
	Linalil Acetate
	Linalil Propionate



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

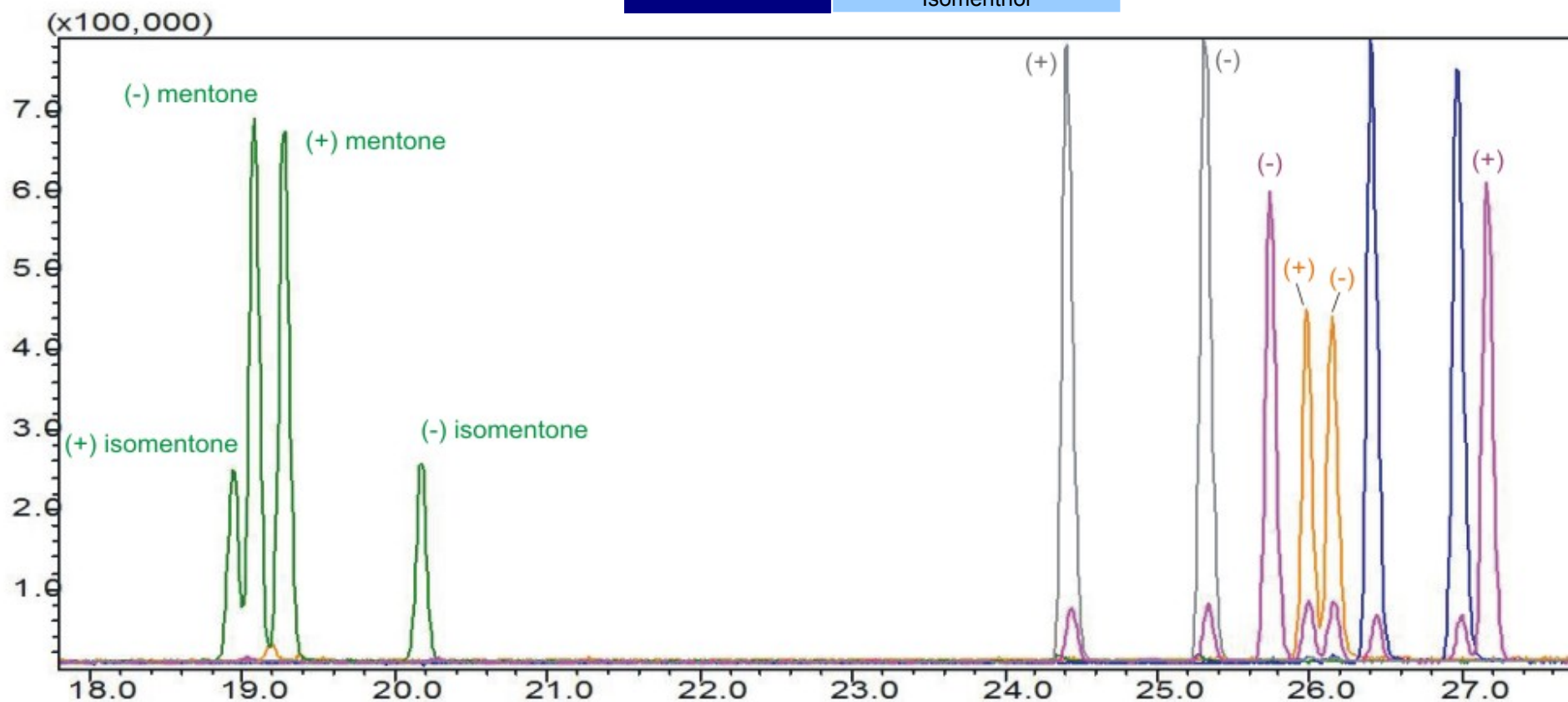
MENTHOLS

Column

Phase	MEGA-DEX DMT β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

Identification

	Menthone + Isomenthone
	Neomenthol
	Neoisomenthol
	Menthol
	Isomenthol



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

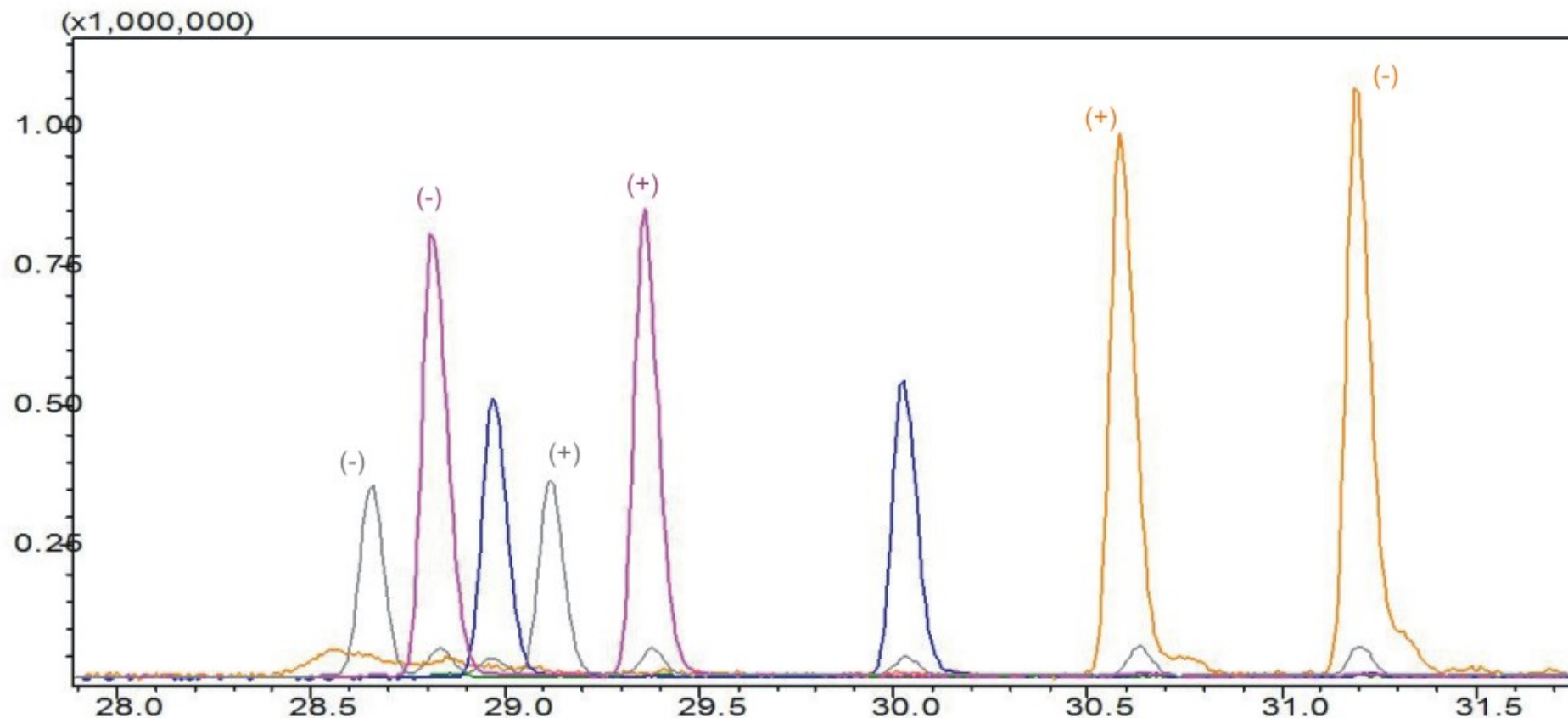
NEOMENTHOL – ISOMENTHOL

Column

Phase	MEGA-DEX DAC β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

Identification

	Neoisomenthol
	Neomenthol
	Isomenthol
	Menthol



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

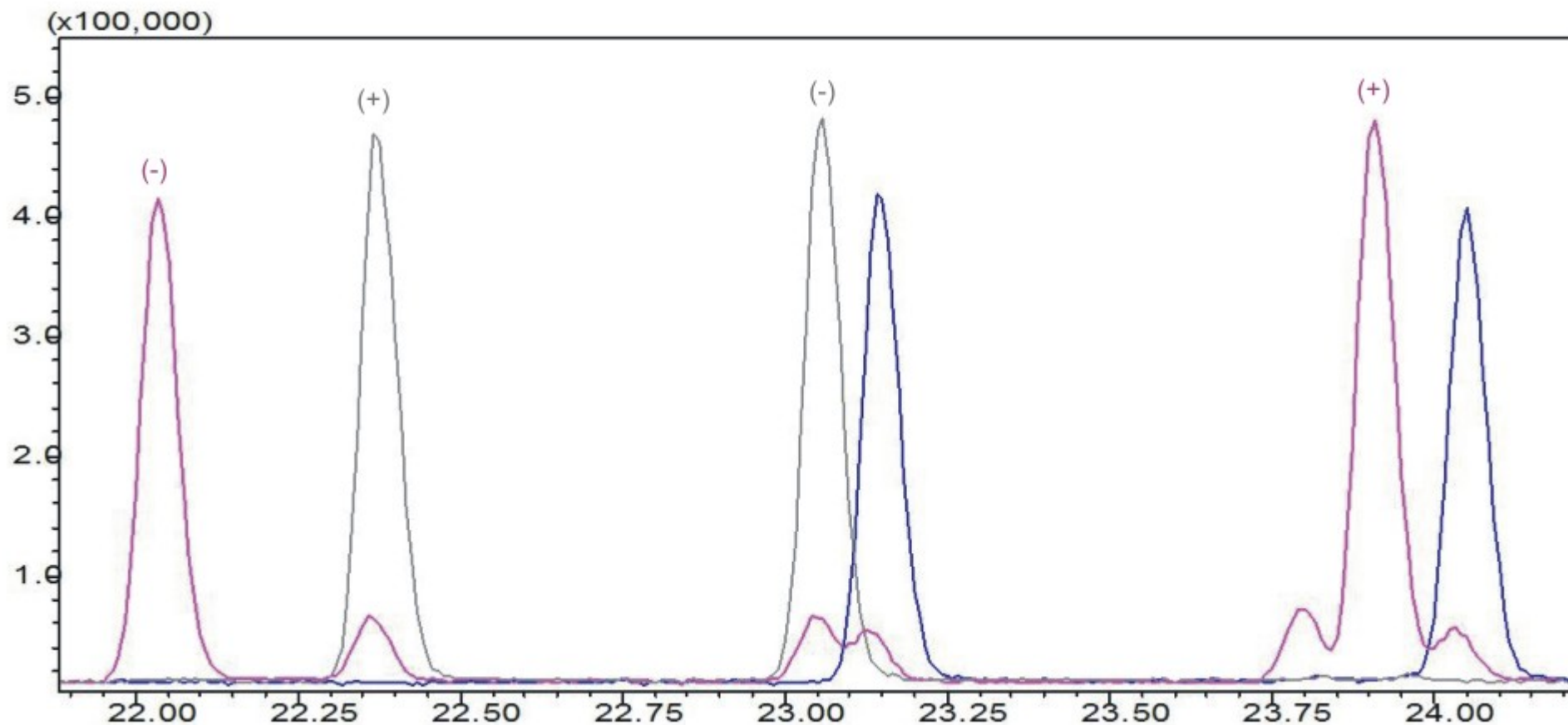
NEOMENTHOL – ISOMENTHOL

Column

Phase	MEGA-DEX DET β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

Identification

	Neomenthol
	Neoisomenthol
	Isomenthol



Courtesy Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

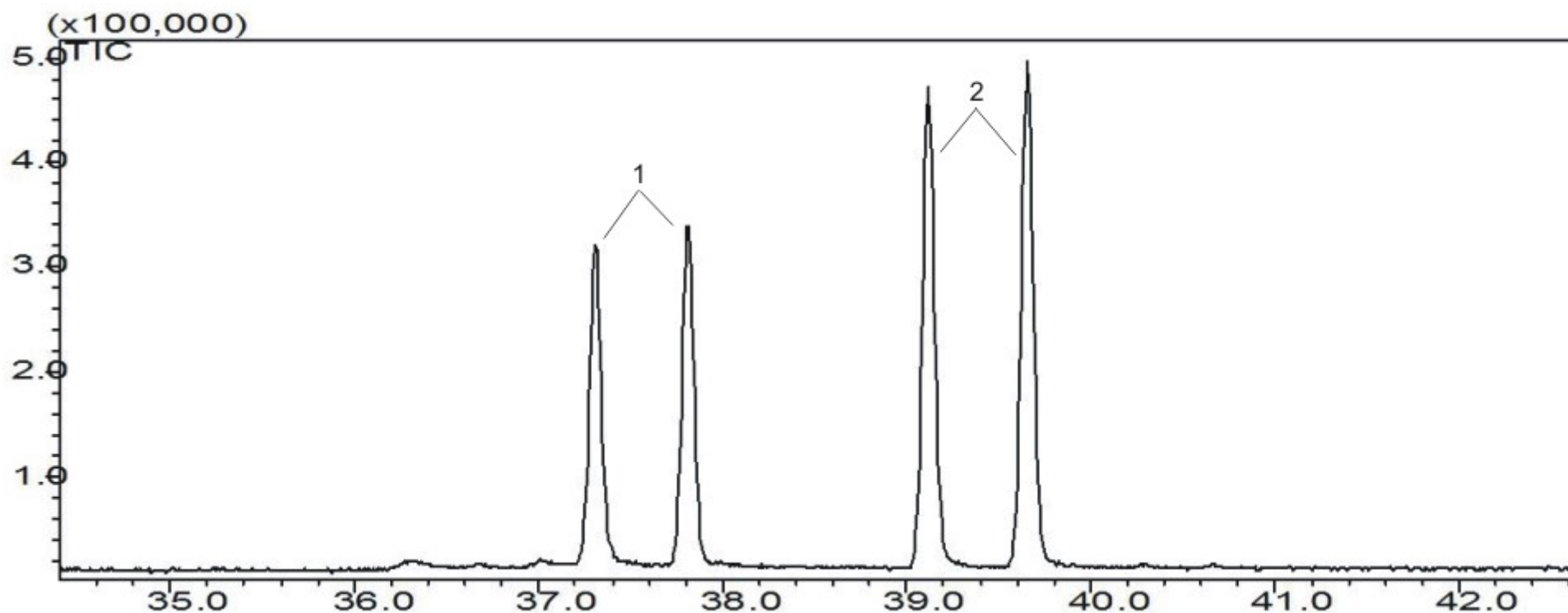
NEROLIDOL

Column

Phase	MEGA-DEX DET β
Inner Diameter	0.25 mm
Film Thickness	0.25 μ m
Length	25 m

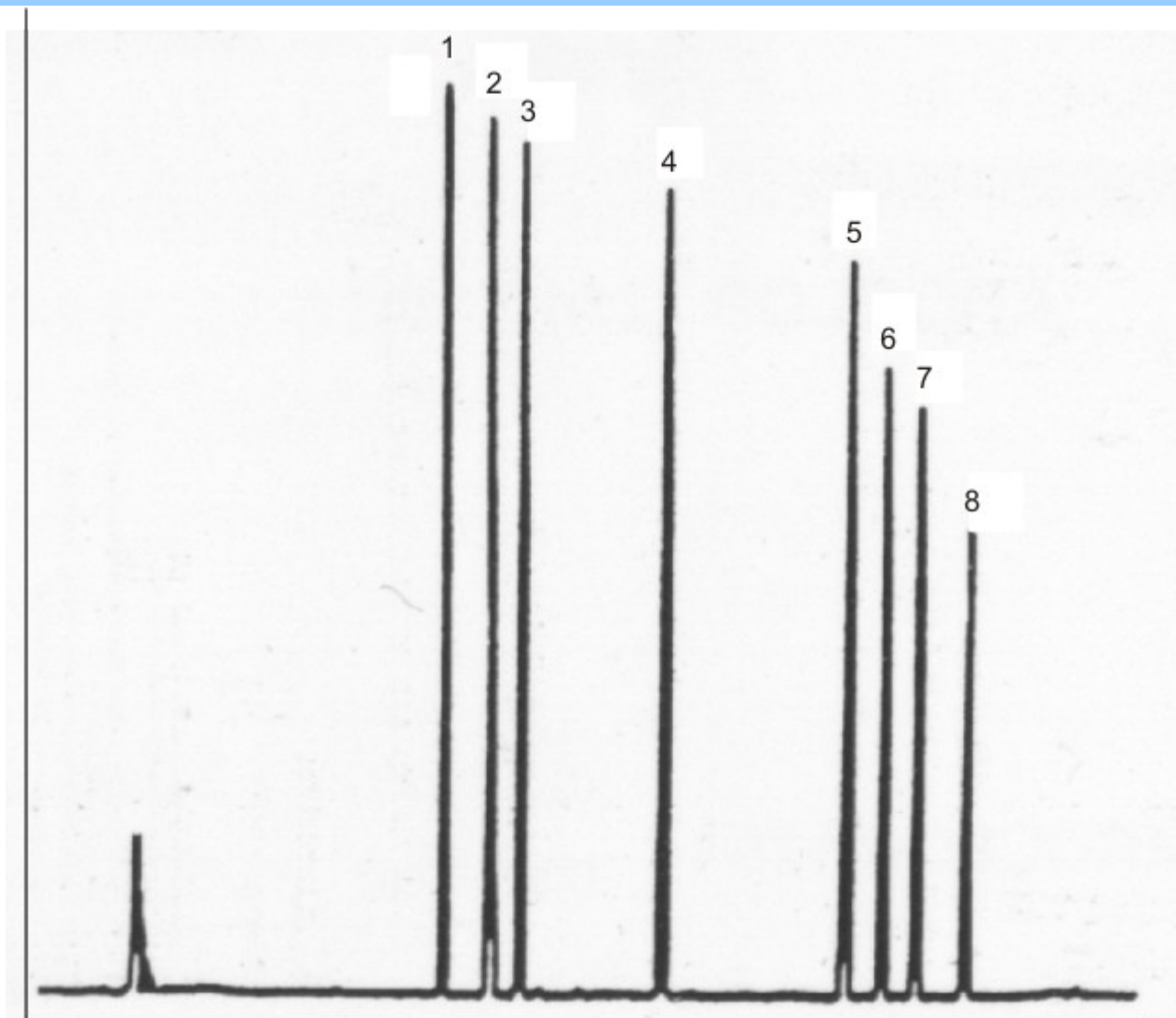
Identification

1	<i>Cis-Nerolidol</i>
2	<i>Trans-Nerolidol</i>



Courtesy of Prof. C. Bicchi, C. Cordero – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

N-NITROSOAMINES



Column

Phase	MEGA-WAX
I.D.	0.32 mm
Film Thickness	1.2 µm
Length	25 m

Chromatographic Conditions

Injector	Splitless	1 min
Split Ratio	1:50	
Injection Volume	1.0 µL	
Oven	T start	60°C (1 min)
	Rate 1	0.5°C/min
	T 2	130°C (2 min)
	Rate 2	25°C/min
	T end	160°C
Detector	NPD	
Carrier Gas	Helium	60 kPa

Peak Identification

1	N-nitrosodimethylamine
2	N-nitrosomethylethylamine
3	N-nitrosodiethylamine
4	N-nitrosodi-n-propylamine
5	N-nitrosodi-n-butylamine
6	N-nitrosopiperidine
7	N-nitrosopirrolidine
8	N-nitrosomorpholine

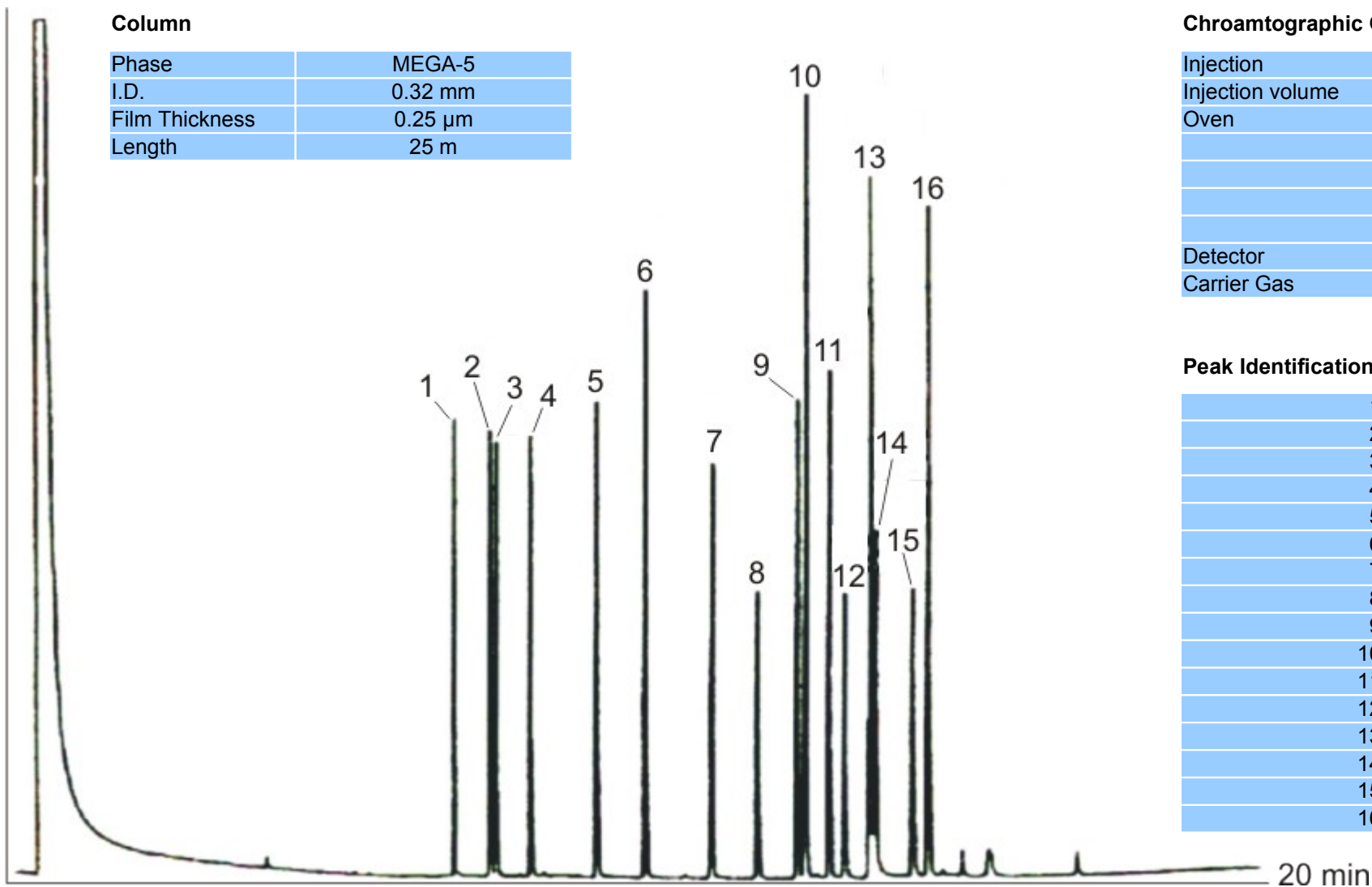
ORGANOCHLORINATED PESTICIDES – EPA METHOD 608/8081

Column

Phase	MEGA-5
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injection	On column	
Injection volume	1.0 µL	
Oven	T start	65°C
	Rate 1	20°C/min
	T 2	150°C
	Rate 2	7°C/min
	T end	260°C
Detector	FID	280°C
Carrier Gas	Hydrogen	60 kPa



Peak Identification

1	α-BHC
2	β-BHC
3	γ-BHC
4	δ-BHC
5	Heptachlor
6	Aldrin
7	Heptachlor epoxide
8	Endosulfan I
9	4,4' DDE
10	Dieldrin
11	Endrin
12	4,4' DDD
13	Endosulfan II
14	Endrina aldehyde
15	4,4' DDT
16	Endosulfan sulfate

PAHs – EPA METHOD 610/8100

Column

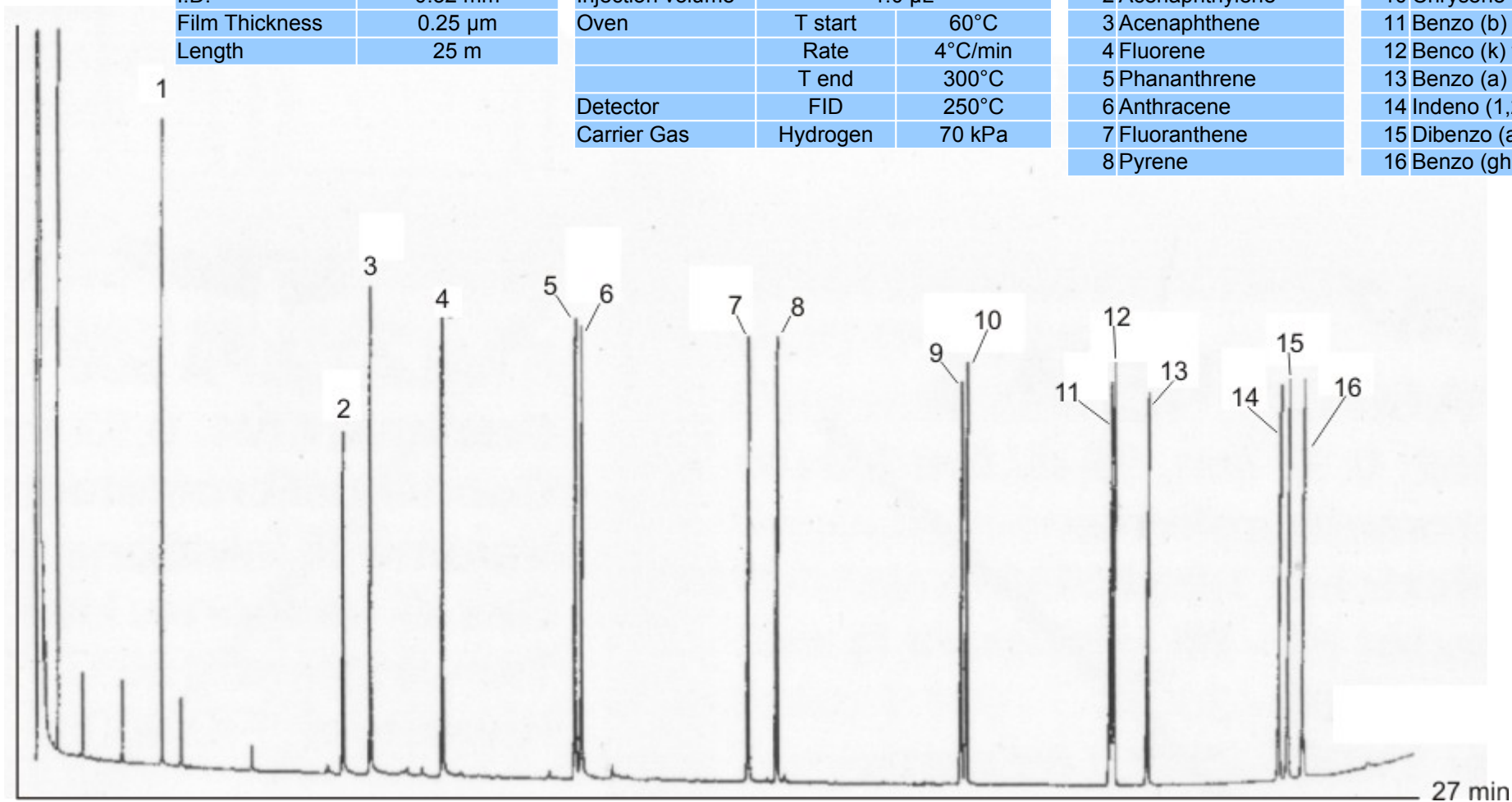
Phase	MEGA-SE54
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injection	On column	
Injection volume	1.0 µL	
Oven	T start	60°C
	Rate	4°C/min
	T end	300°C
Detector	FID	250°C
Carrier Gas	Hydrogen	70 kPa

Peak Identification

1 Naphtalene	9 Benzo (a) Anthracene
2 Acenaphthylene	10 Chrysene
3 Acenaphthene	11 Benzo (b) fluoranthene
4 Fluorene	12 Benzo (k) fluoranthene
5 Phananthrene	13 Benzo (a) pyrene
6 Anthracene	14 Indeno (1,2,3-cd) pyrene
7 Fluoranthene	15 Dibenzo (a,h) Anthracene
8 Pyrene	16 Benzo (ghi) perylene



PAHs – EPA METHOD 610/8100

Column

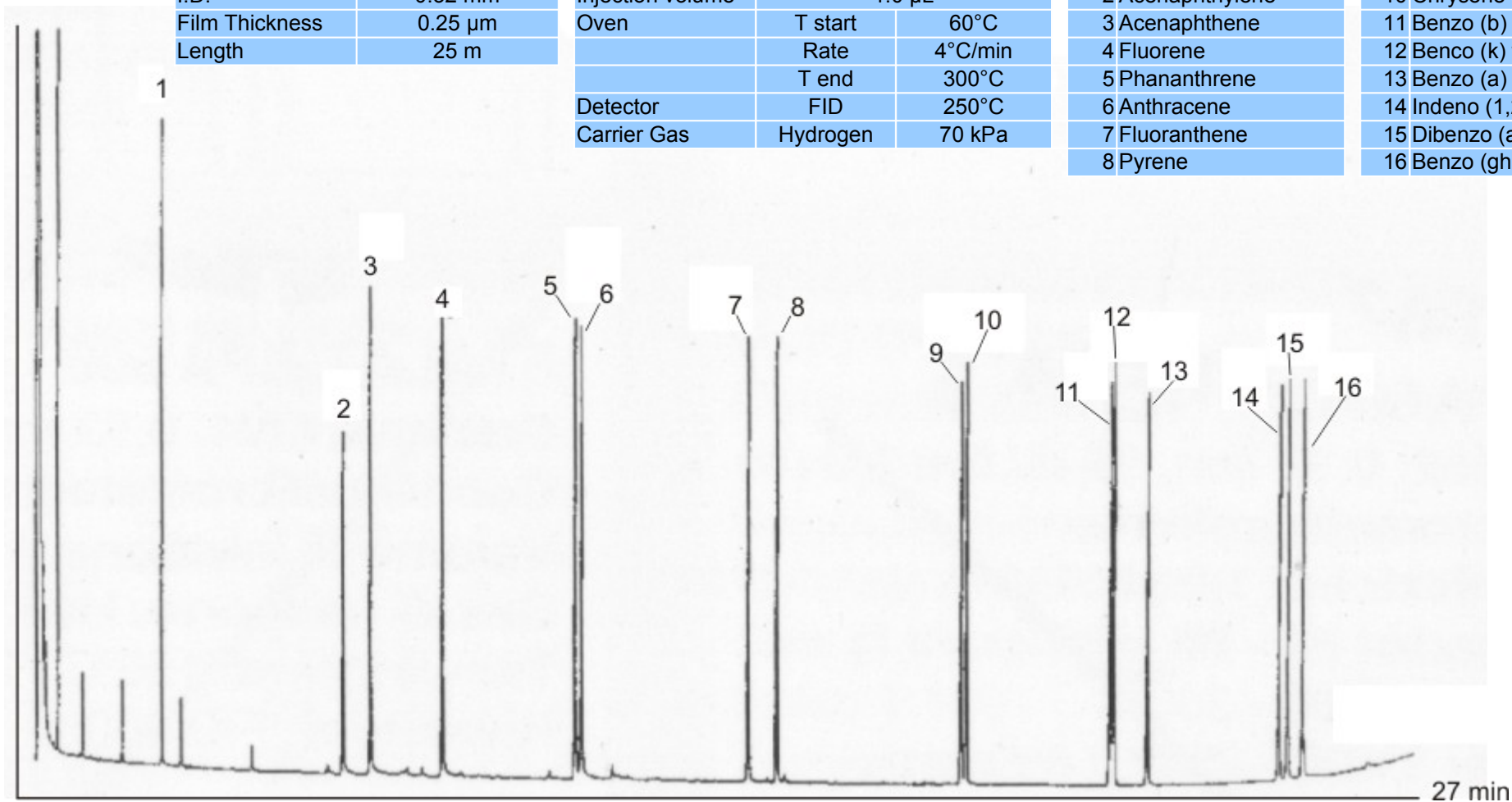
Phase	MEGA-SE54
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injection	On column	
Injection volume	1.0 µL	
Oven	T start	60°C
	Rate	4°C/min
	T end	300°C
Detector	FID	250°C
Carrier Gas	Hydrogen	70 kPa

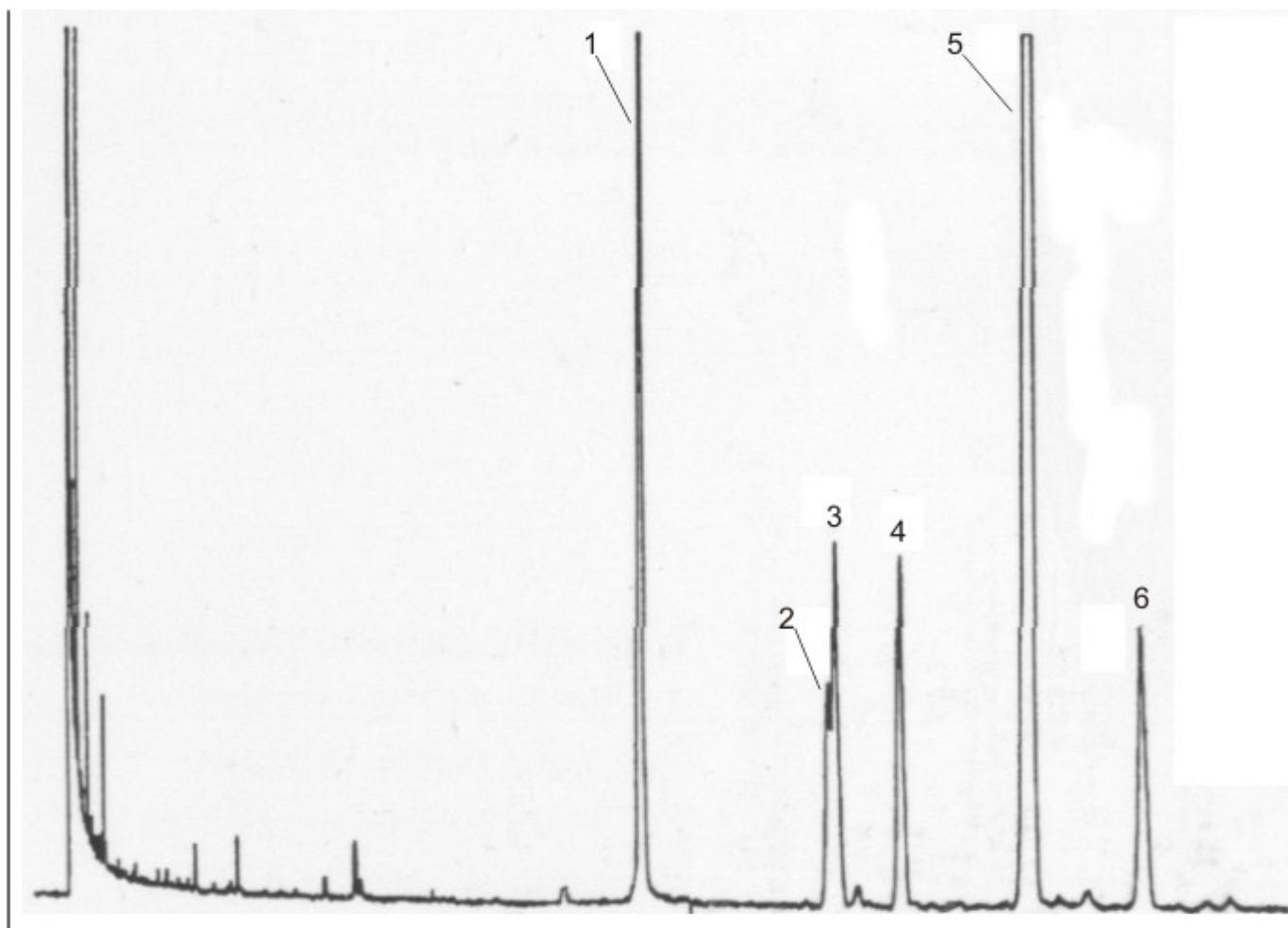
Peak Identification

1 Naphtalene	9 Benzo (a) Anthracene
2 Acenaphthylene	10 Chrysene
3 Acenaphthene	11 Benzo (b) fluoranthene
4 Fluorene	12 Benzo (k) fluoranthene
5 Phananthrene	13 Benzo (a) pyrene
6 Anthracene	14 Indeno (1,2,3-cd) pyrene
7 Fluoranthene	15 Dibenzo (a,h) Anthracene
8 Pyrene	16 Benzo (ghi) perylene



STEROLS (TMS) – PEANUT OIL

Courtesy of Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79



Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Condition

Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier Gas	Hydrogen	1.2 mL/min

Peak Identification

1	α-colestanol (I.S.)
2	22,23-dihydrobrassicasterol
3	Campesterol
4	Stigmasterol
5	Sitosterol
6	Δ5-campesterol

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phase optimized for the triglycerides separation, stable until 370°C

PESTICIDES

Courtesy of Prof. C. Bicchi, C. Brunelli – Università di Torino, Dipartimento Scienza e Tecnologia del Farmaco – Via P.Giuria, 9 – Torino

Column

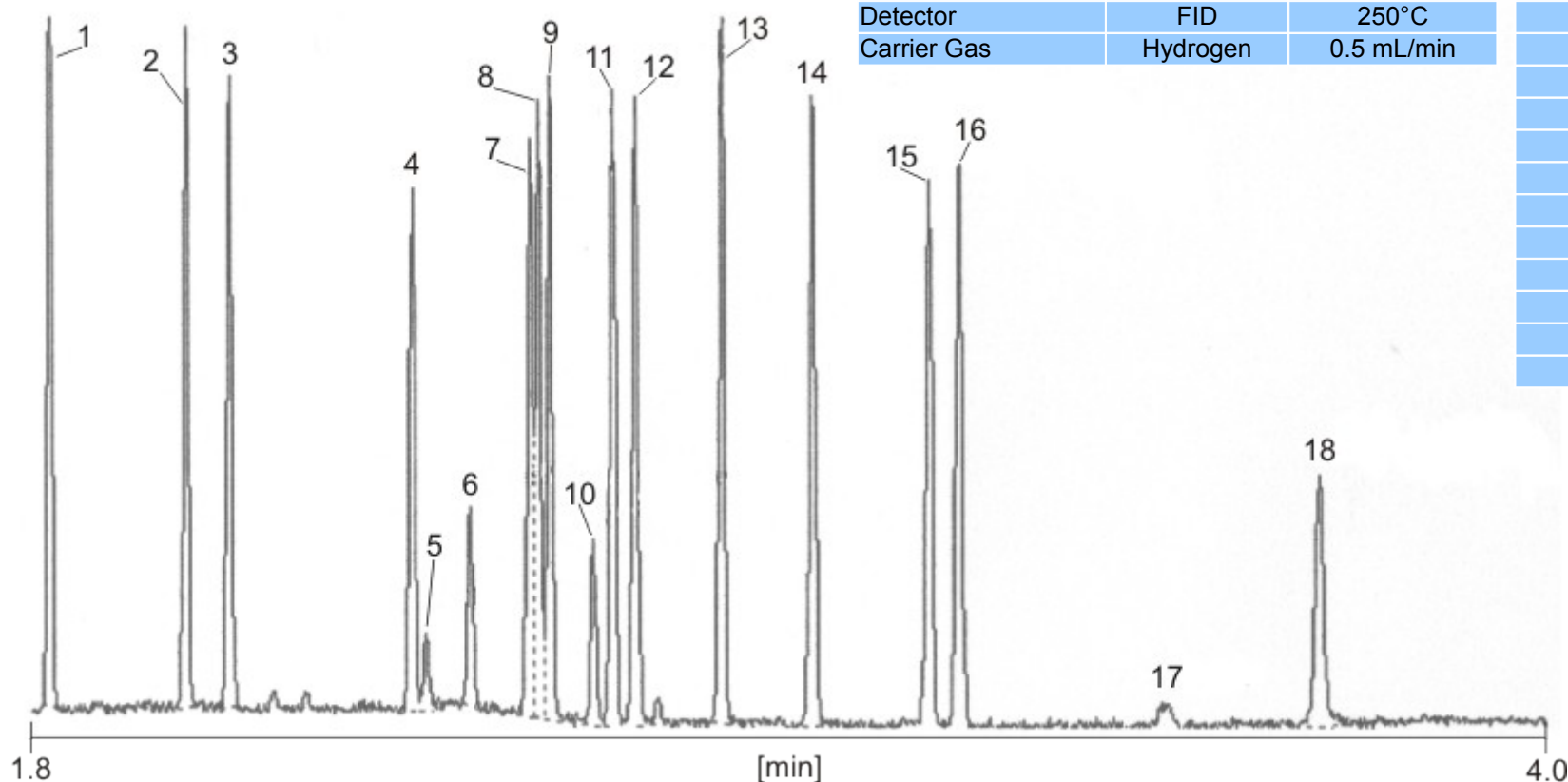
Phase	MEGA-1701
I.D.	0.1 mm
Film Thickness	0.1 µm
Length	5 m

Chromatographic Conditions

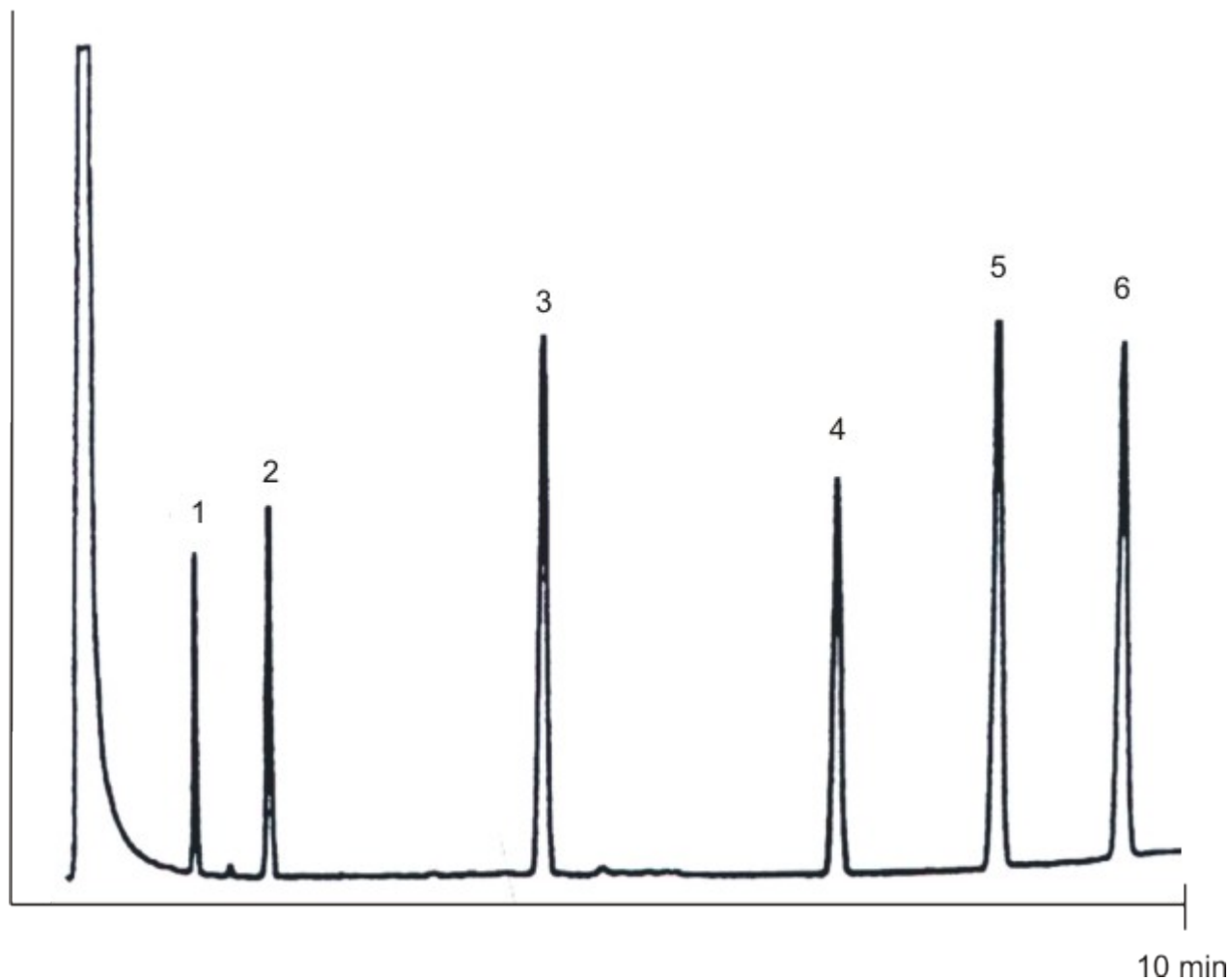
Injector	Split	230°C
Injection Volume	1.0 µL	
Sample Dilution	1:200	in Cyclohexane
Oven	T start	50°C (0.1 min)
	Rate	50°C/min
	T end	250°C (5 min)
Detector	FID	250°C
Carrier Gas	Hydrogen	0.5 mL/min

Peak Identification

1	α-HCH
2	γ-HCH
3	Heptachlor
4	Chlorotalonil
5	/
6	Parathion-Me
7	Malathion
8	Fenotrothion
9	Parathion-Et
10	/
11	Fenitrothion
12	Chlordane-Cis + Trans
13	Dieldrin
14	o,p'-DDT
15	β-Endosulfan
16	p,p'-DDT
17	/
18	Tetradifon



PHTHALATES – EPA METHOD 606



Column

Phase	MEGA-1
I.D.	0.53 mm
Film Thickness	1.5 µm
Length	15 m

Chromatographic Conditions

Injector	Split	250°C
Injection Volume	1.0 µL	
Oven	T start	150°C
	Rate	15°C/min
	T end	270°C
Detector	FID	300°C
Carrier Gas	Helium	20 mL/min

Peak Identification

1	Dimethyl phthalate
2	Diethyl phthalate
3	Di-n-butyl phthalate
4	Butyl Benzyl phthalate
5	Bis (2-ethyhexyl) phthalate
6	Di-n-octyl phthalate

POF

Column

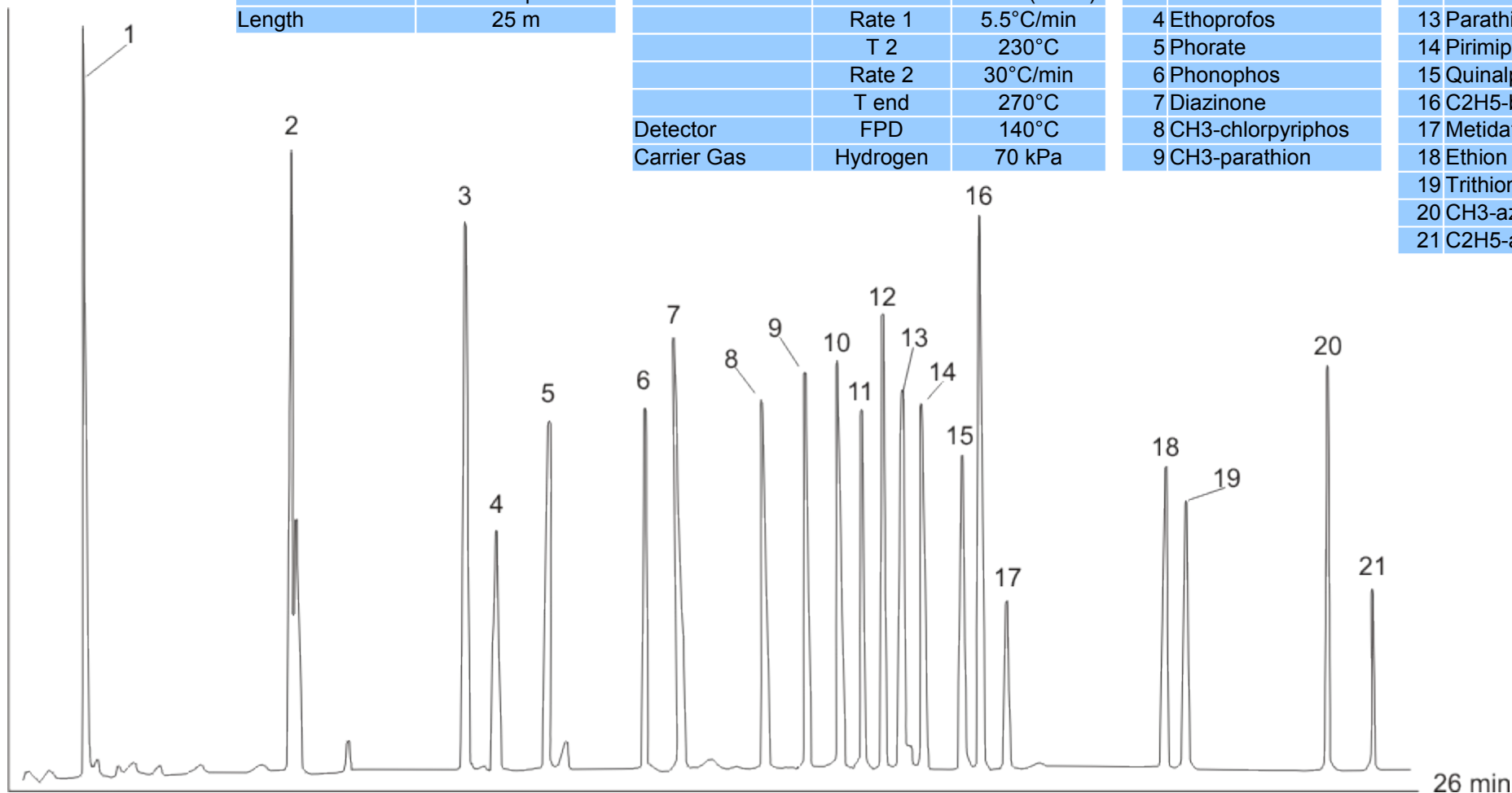
Phase	MEGA-68 (POF)
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

Injector	Splitless	240°C
Injection Volume	1.0 µL	
Oven	T start	100°C (1 min)
	Rate 1	5.5°C/min
	T 2	230°C
	Rate 2	30°C/min
	T end	270°C
Detector	FPD	140°C
Carrier Gas	Hydrogen	70 kPa

Peak Identification

1 Trichlorfon	10 CH ₃ -pirimiphos
2 Phosdrin	11 Chlorpyrifos
3 Tionazine	12 Malathion
4 Ethoprosfos	13 Parathion
5 Phorate	14 Pirimiphos
6 Phonophos	15 Quinalphos
7 Diazinone	16 C ₂ H ₅ -bromophos
8 CH ₃ -chlorpyrifos	17 Metidathion
9 CH ₃ -parathion	18 Ethion
	19 Trithion
	20 CH ₃ -azinphos
	21 C ₂ H ₅ -azinphos



SOLVENTS – MEGA-SOLVE 1

Solvent Retention Time [min]

n-Butyl Acetate	12.07
Secodnary Butyl Alcohol	12.70
n-Propylic Alcohol	13.42
Ethyl Benzene	13.92
m-Xylene	14.36
p-Xylene	14.80
Mesityl Oxide	16.50
Isobutyl Alcohol	17.09
Nitromethane	17.43
Nitroethane	17.86
o-Xylene	18.12
1-Metossi 2-Propanol	20.81
Butylic Alcohol	22.08
Nitropropane	22.38
Pyridine	24.49
Methylcellosolve	25.84
2-Metossi 3-Propanol	28.48
2-Methyl Pyridine	28.83
Methylcellosolve Acetate	30.05
Cellosolve	30.75
Cellosolve Acetate	34.70
3-Methyl Pyridine	37.03
N.N. Dimethylformamide	44.53
Diaceton Alcohol	47.22
N.N. Dimethyl Aniline	57.40
N.N. Dimethyl Acetamide	58.70
N.N. Diethyl Aniline	72.60

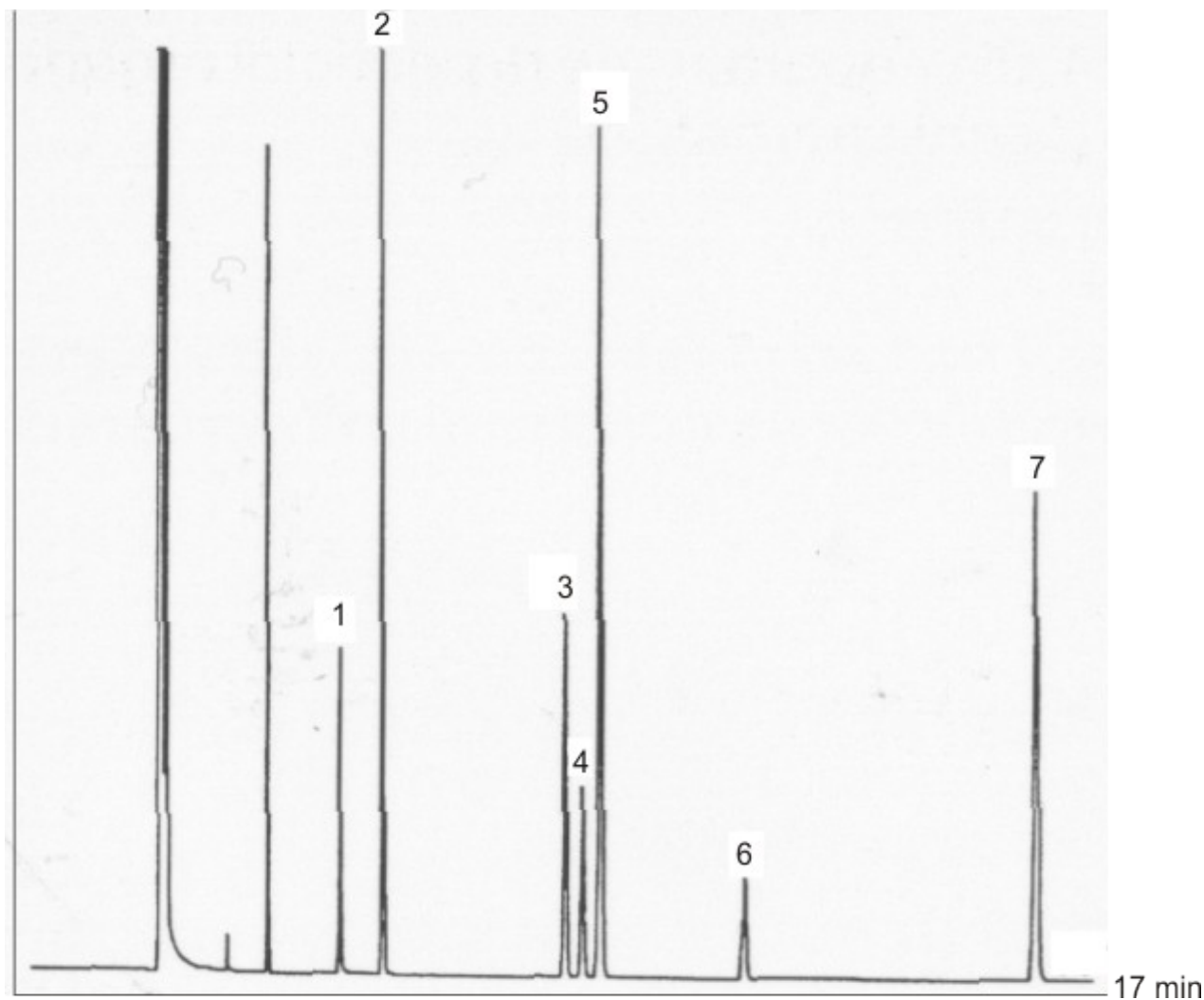
Column

Phase	MEGA-SOLVE1
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	50 m

Chromatographic Conditions

Injector	Split	300°C
Split Ratio	1:100	
Injection Volume	1.0 µL	
Carrier Gas	Hydrogen	60 kPa

SOLVENTS



Column

Phase	MEGA-SOLVE1
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	50 m

Chromatographic Conditions

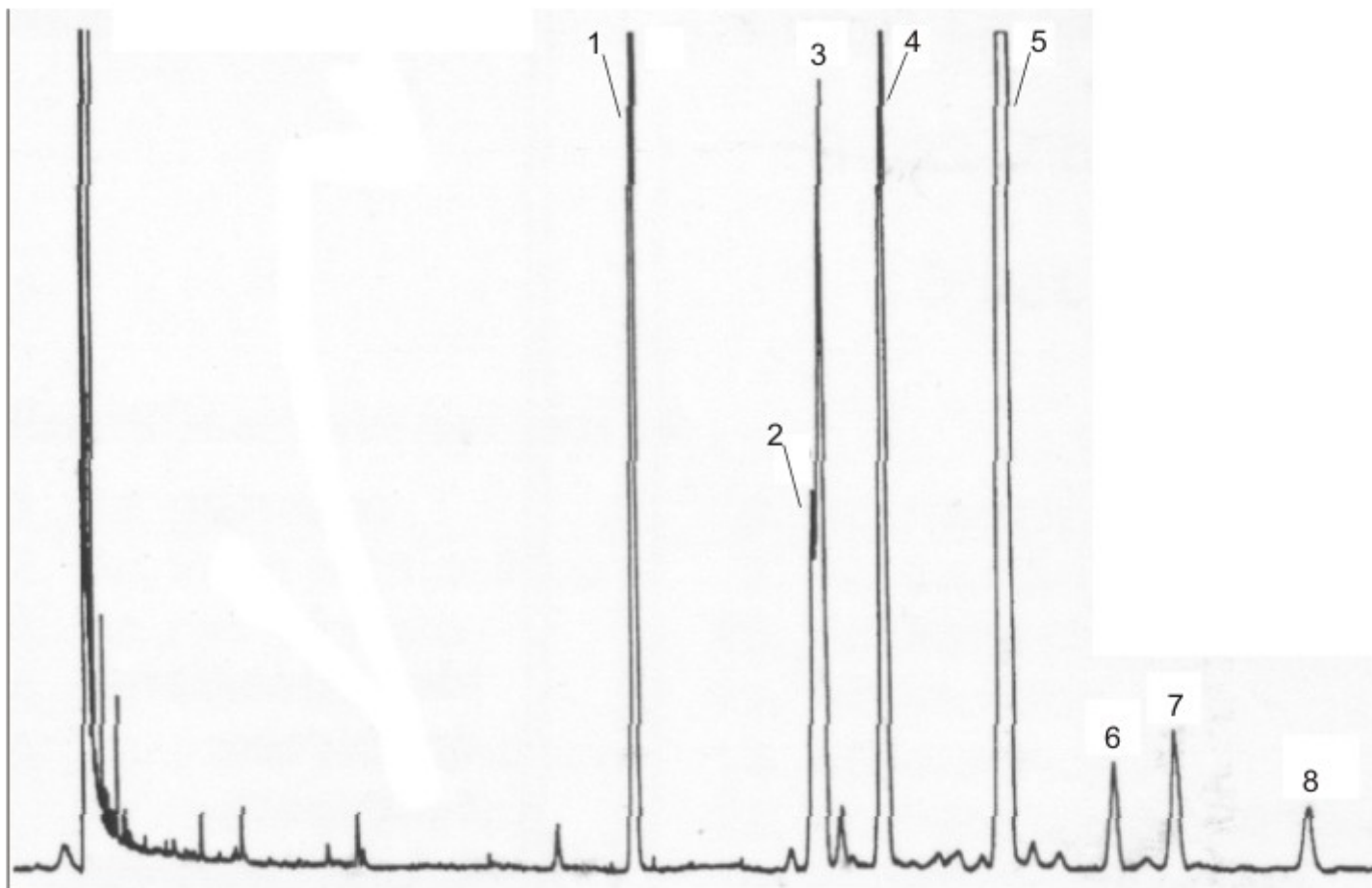
Injector	Split	200°C
Split Ratio	1:70	
Injection Volume	0.5 µL	
Oven	T Start	35°C (2min)
	Rate	1°C/min
	T end	90°C
Detector	FID	200°C
Carrier Gas	Hydrogen	2.5 mL/min

Peak Identification

1	Ethanol
2	Toluene
3	Ethylbenzene
4	m-Xylene
5	p-Xylene
6	o-Xylene
7	Pyridine

STEROLS (TMS) – SOYA OIL

Courtesy of Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79



Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Conditions

Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier Gas	Hydrogen	1.2 mL/min

Peak Identification

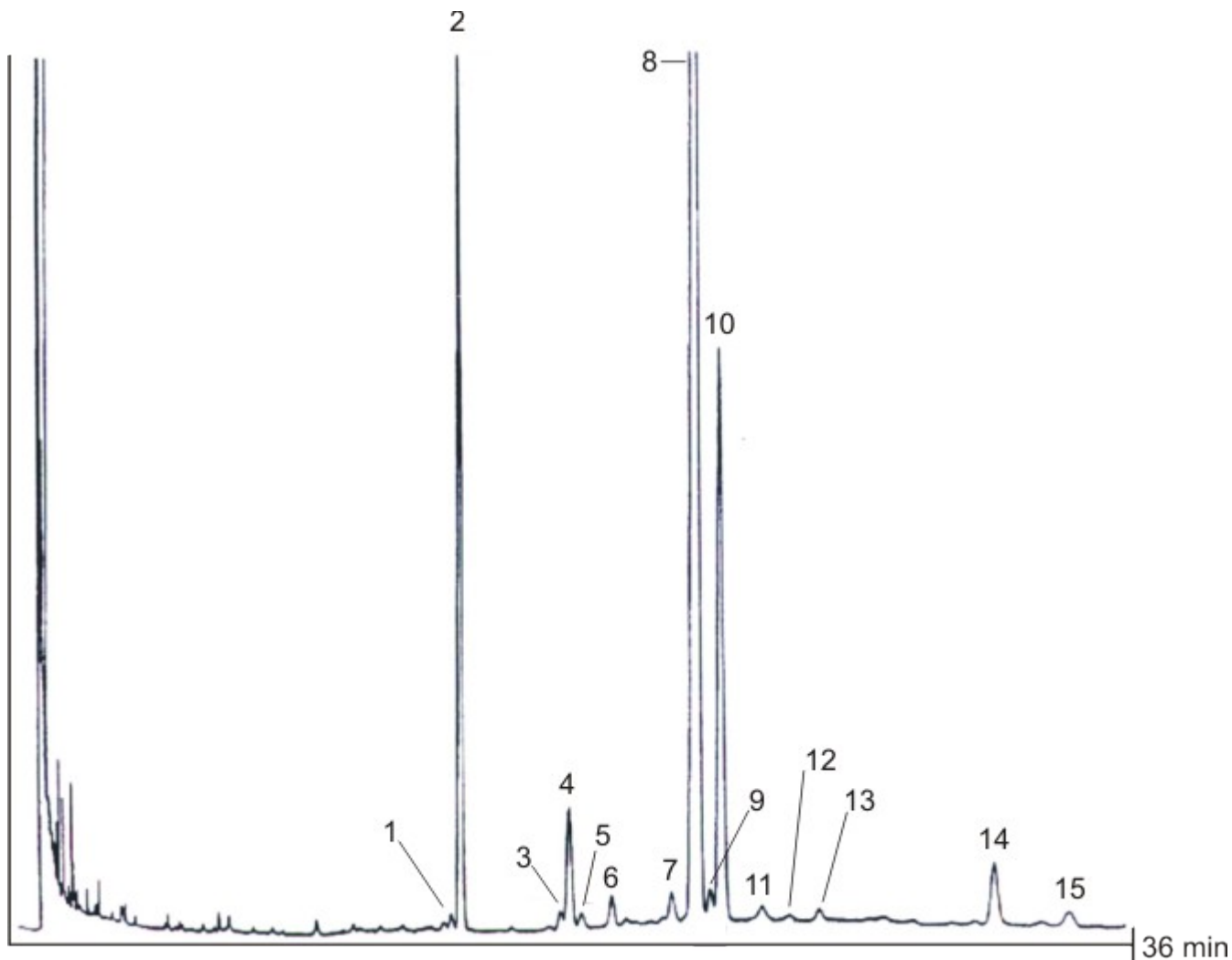
1	α-colestanolo (I.S.)
2	22,23-diidrobrassicasterolo
3	Campesterolo
4	Stigmasterolo
5	Sitosterolo
6	Δ ⁵ -avenasterolo
7	Δ ⁷ -stigmastenolo
8	Δ ⁷ -avenasterolo

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phase optimized for the triglycerides separation, stable until 370°C

STEROLS in Olive Oil

Standard mixture extracted from Olive Oil with SILYL-991 official procedure



Column

Phase	MEGA-SE54
I.D.	0.25 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

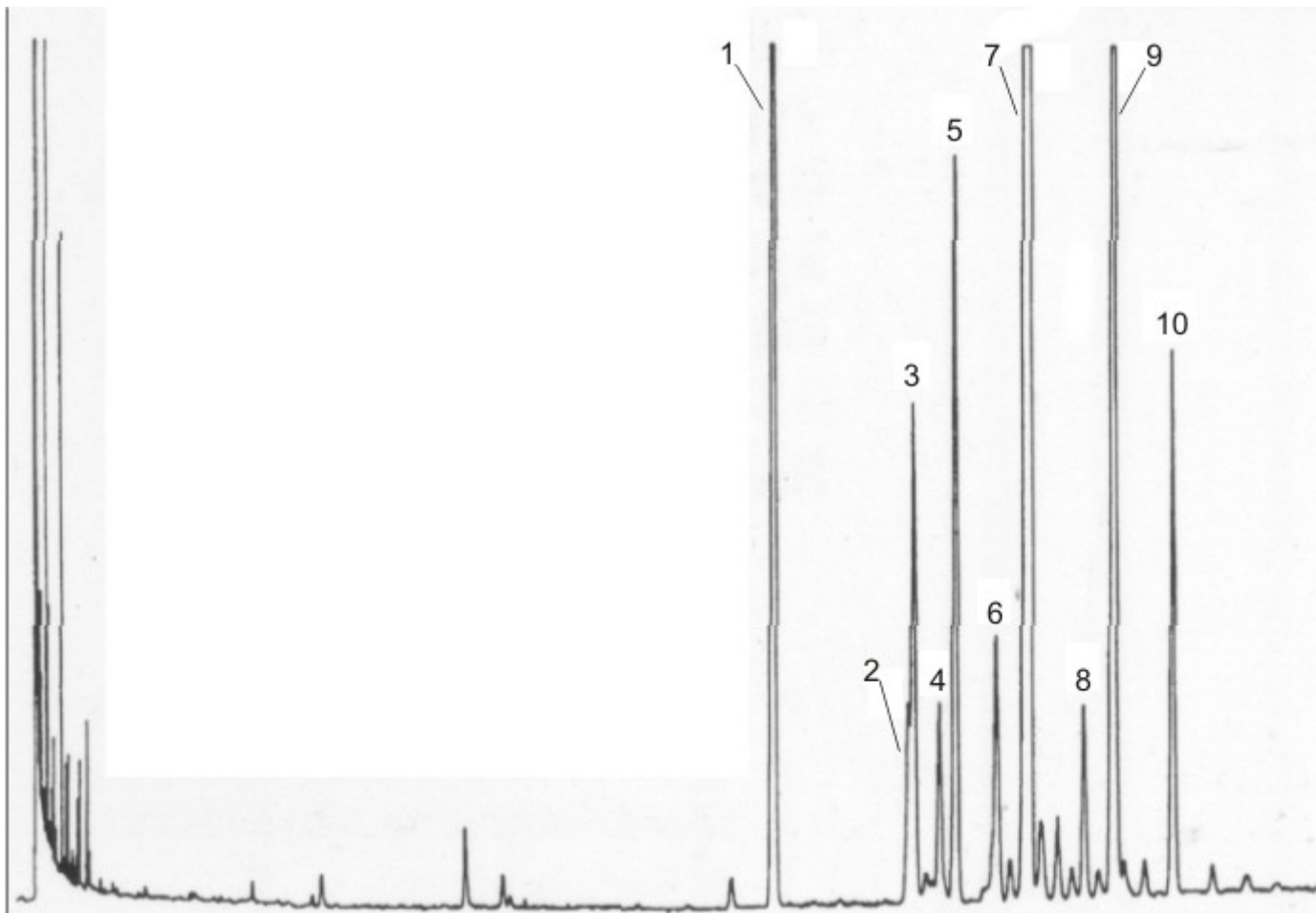
Injection	Split	250°C
Split Ratio	1:100	
Injection volume	1 µL	
Oven	Isothermal	260°C
Detector	FID	280°C
Carrier Gas	Hydrogen	90 kPa

Peak Identification

1	Cholesterol
2	Alpha Cholesterol
3	24 methyl cholesterol
4	Campesterol
5	Campestanol
6	Stigmasterol
7	D5 25 stigmastadiol
8	Beta Sitosterol
9	Sitostanol
10	D5 avanasterol
11	D5 24 stigmastadiol
12	D7 stigmastenol
13	D7 avanasterol
14	Eritrodiol
15	Uvaol

STEROLS (TMS) – SUNFLOWER OIL

Courtesy Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79



Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Conditions

Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier Gas	Hydrogen	1.2 mL/min

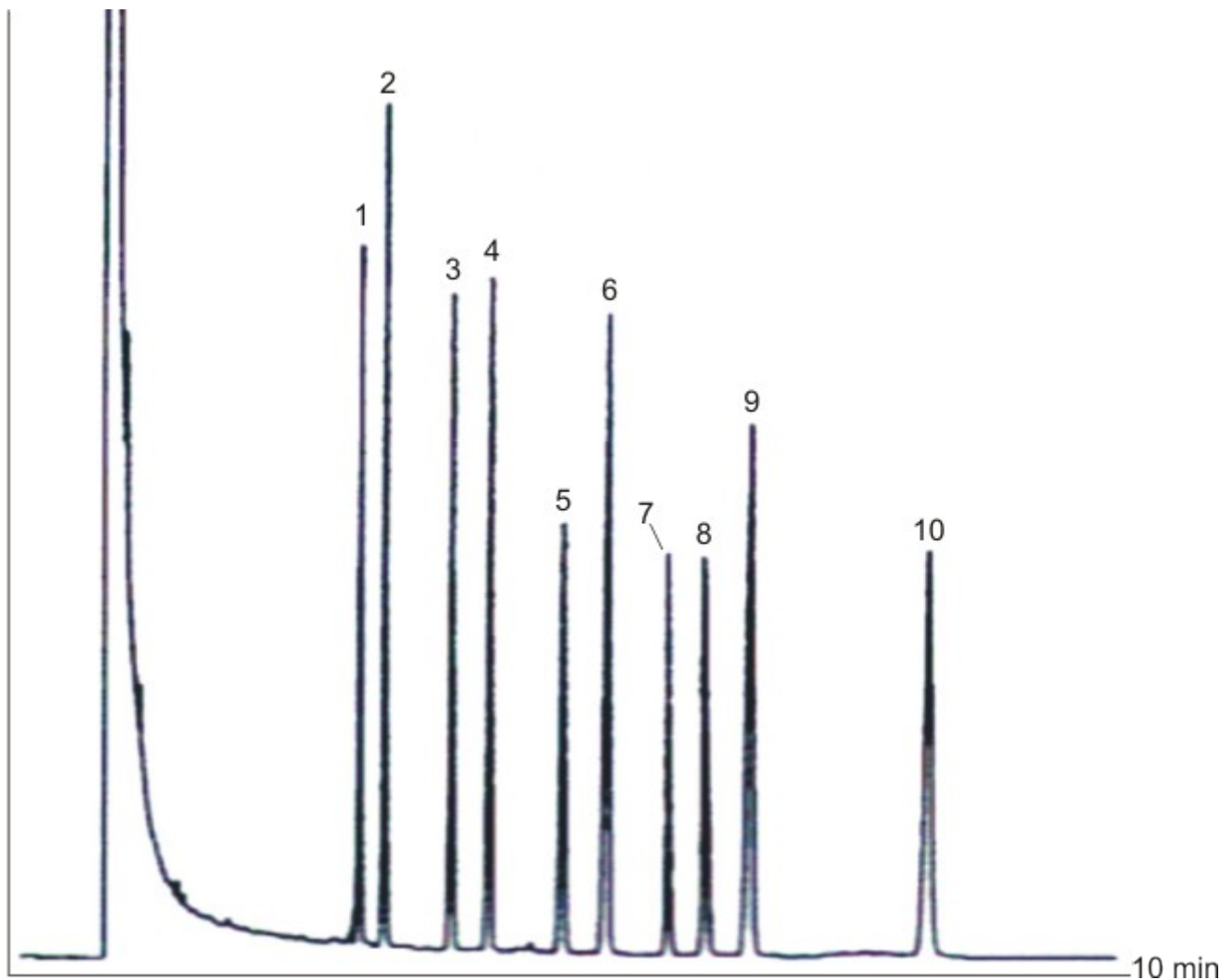
Peak Identification

1	α-colestanol (I.S.)
2	22,23-dihydrobrassicasterol
3	Campesterol
4	Unknown
5	Stigmasterol
6	Δ7-campesterol
7	Sitosterol
8	Δ5-avenasterol
9	Δ7-stigmasterol
10	Δ7-avenasterol

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phase optimized for the triglycerides separation, stable until 370°C

TRIAZINES – EPA METHOD 619



Column

Phase	MEGA-WAX
I.D.	0.32 mm
Film Thickness	0.25 µm
Length	25 m

Chromatographic Conditions

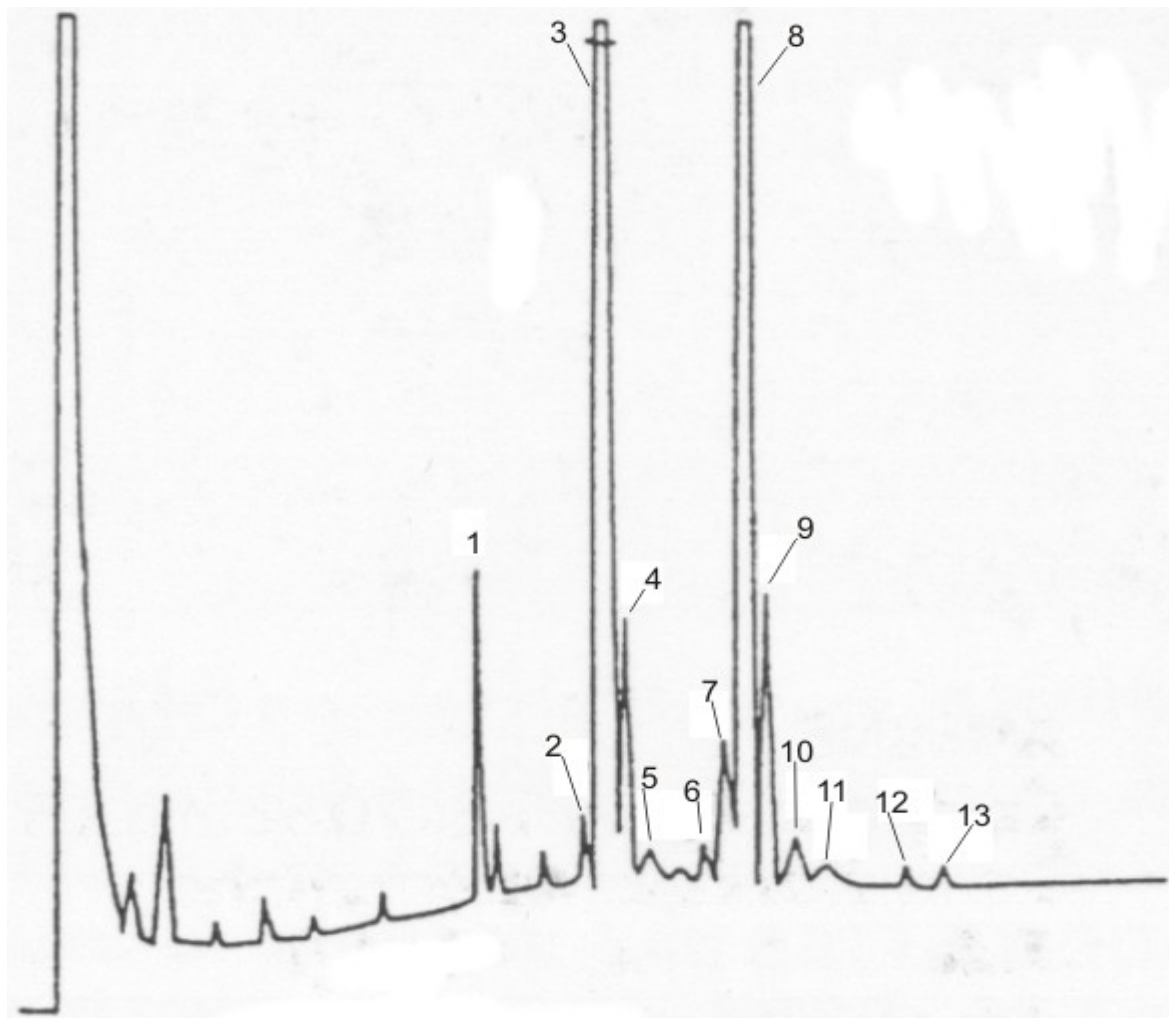
Injection	Split	250°C
Split Ratio	1:70	
Injection volume	1.5 µL	
Oven	Isothermal	230°C
Detector	FID	300°C
Carrier Gas	Helium	20 mL/min

Peak Identification

1	Trietazine
2	Prometon
3	Propazine
4	Terbutylazine
5	Atrazine
6	Prometryn
7	Terburtryn
8	Simazine
9	Ametryn
10	Simetryn

TRIGLYCERIDES – OLIVE OIL

Courtesy of Dott. Mariani – Stazione Sperimentale Olii e Grassi, Milano, Via Giuseppe Colombo 79



Column

Phase	MEGA-LAP
I.D.	0.32 mm
Film Thickness	0.1 µm
Length	25 m

Chromatographic Conditions

Injector	Split	300°C
Split Ratio	1:80	
Oven	Isot.	220°C
Detector	FID	300°C
Carrier Gas	Hydrogen	1.2 mL/min

Peak Identification

1	PPO
2	POS
3	POO
4	PLO + OOPo
5	PLL + PoOL
6	SSO
7	SOO
8	OOO
9	OOL
10	OLL
11	LLL
12	OOO
13	GoOO

Note

MEGA-LAP (LIPID ANALYSIS PHASE) is a special stationary phases optimized for the triglycerides separation, stable until 370°C