

Circuiti IPA

Circuiti e normativa italiana

Quali IPA e perché

1	Naftalene
2	Acenaftilene
3	Acenaftene
4	Fluorene
5	Fenantrene
6	Antracene
7	Florantene
8	Pirene
9	Benzo(a)antracene
10	Crisene
11	Benzo(b)fluorantene
12	Benzo(k)fluorantene
13	Benzo(j)fluorantene
14	Benzo(e)pirene
15	Benzo(a)pirene
16	Perilene
17	Indeno(1,2,3-cd)pirene
18	Benzo(ghi)perilene
19	Dibenzo(a,h)antracene
20	DiBenzo(a,l)Pyrene
21	DiBenzo(a,e)Pyrene
22	DiBenzo(a,i)Pyrene
23	DiBenzo(a,h)Pyrene

Quali IPA e perché: EPA

1	Naftalene
2	Acenaftilene
3	Acenaftene
4	Fluorene
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6	Antracene
7	Florantene
8	Pirene
9	Benzo(a)antracene
10	Crisene
11	Benzo(b)fluorantene
12	Benzo(k)fluorantene
13	Benzo(j)fluorantene
14	Benzo(e)pirene
15	Benzo(a)pirene
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19	Dibenzo(a,h)antracene
20	DiBenzo(a,l)Pyrene
21	DiBenzo(a,e)Pyrene
22	DiBenzo(a,i)Pyrene
23	DiBenzo(a,h)Pyrene

Quali IPA e perché: In Italia

1	Naftalene
2	Acenaftilene
3	Acenaftene
4	Fluorene
5	Fenantrene
6	Antracene
7	Fluoranthene
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9	Benzo(a)antracene
10	Crisene
11	Benzo(b)fluoranthene
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20	DiBenzo(a,l)Pyrene
21	DiBenzo(a,e)Pyrene
22	DiBenzo(a,i)Pyrene
23	DiBenzo(a,h)Pyrene

		suoli	acque	emiss
1	Naftalene			
2	Acenaftilene			
3	Acenaftene			
4	Fluorene			
5	Fenantrene			
6	Antracene			
7	Fluoranthene		x	
8	Pirene	x	x	
9	Benzo(a)antracene	x	x	x
10	Crisene	x	x	
11	Benzo(b)fluoranthene	x	x	x
12	Benzo(k)fluoranthene	x	x	x
13	Benzo(j)fluoranthene			x
14	Benzo(e)pirene			
15	Benzo(a)pirene	x	x	x
16	Perilene			
17	Indeno(1,2,3-cd)pirene	x	x	x
18	Benzo(ghi)perilene	x	x	
19	Dibenzo(a,h)antracene	x	x	x
20	DiBenzo(a,l)Pyrene	x		x
21	DiBenzo(a,e)Pyrene	x		x
22	DiBenzo(a,i)Pyrene	x		x
23	DiBenzo(a,h)Pyrene	x		x

		suoli	acque	emiss.
1	Fluoranthene		x	
2	Pirene	x	x	
3	Benzo(a)antracene	x	x	x
4	Crisene	x	x	
5	Benzo(b)fluoranthene	x	x	x
6	Benzo(k)fluoranthene	x	x	x
7	Benzo(j)fluoranthene			x
8	Benzo(e)pirene			
9	Benzo(a)pirene	x	x	x
10	Perilene			
11	Indeno(1,2,3-cd)pirene	x	x	x
12	Benzo(ghi)perilene	x	x	
13	Dibenzo(a,h)antracene	x	x	x
14	DiBenzo(a,l)Pyrene	x		x
15	DiBenzo(a,e)Pyrene	x		x
16	DiBenzo(a,i)Pyrene	x		x
17	DiBenzo(a,h)Pyrene	x		x

		suoli	acque	emiss.
1	Fluoranthene		x	
2	Pirene	x	x	
3	Benzo(a)antracene	x	x	x
4	Crisene	x	x	
5	Benzo(b)fluoranthene	x	x	x
6	Benzo(k)fluoranthene	x	x	x
7	Benzo(j)fluoranthene			x
8	Benzo(e)pirene			
9	Benzo(a)pirene	x	x	x
10	Indeno(1,2,3-cd)pirene	x	x	x
11	Benzo(ghi)perilene	x	x	
12	Dibenzo(a,h)antracene	x	x	x
13	DiBenzo(a,l)Pyrene	x		x
14	DiBenzo(a,e)Pyrene	x		x
15	DiBenzo(a,i)Pyrene	x		x
16	DiBenzo(a,h)Pyrene	x		x

Separazione e quantificazione dei Benzo(x)fluorantheni

- Come separarli
- Come quantificarli
- Quali prendere in considerazione in fase di elaborazione dei risultati di un circuito

Colonne gascromatografiche

- Colonna **DB 5** o simili (fase a bassa polarità):
5% diphenyl -- 95% dimethyl polysiloxane
- Colonna **DB 35** o simili (media polarità):
35% diphenyl -- 65% dimethyl polysiloxane
- Colonna **DB 65** o simili (media polarità):
65% diphenyl -- 35% dimethyl polysiloxane

Colonne gascromatografiche

- Colonna **DB 50** o simili (media polarità):
100% methylphenyl polysiloxane
- Colonna **DB 17** o simili (media polarità):
50% diphenyl - 50% dimethyl polysiloxane

Colonne gascromatografiche

- Colonna **DB 5** o simili (fase a bassa polarità): 5% diphenyl - 95% dimethyl polysiloxane
- Colonna **DB 35** o simili (media polarità): 35% diphenyl - 65% dimethyl polysiloxane
- Colonna **DB 17** o simili (media polarità): 50% diphenyl - 50% dimethyl polysiloxane
- Colonna **DB 65** o simili (media polarità): 65% diphenyl - 35% dimethyl polysiloxane

Colonne gascromatografiche

- Colonna **DB 5** o simili (fase a bassa polarità):
5% diphenyl - 95% dimethyl polysiloxane
- Colonna **DB 35** o simili (media polarità):
35% diphenyl - 65% dimethyl polysiloxane
- Colonna **DB 50** o simili (media polarità):
100% methylphenyl polysiloxane

Colonna DB 35 o simili

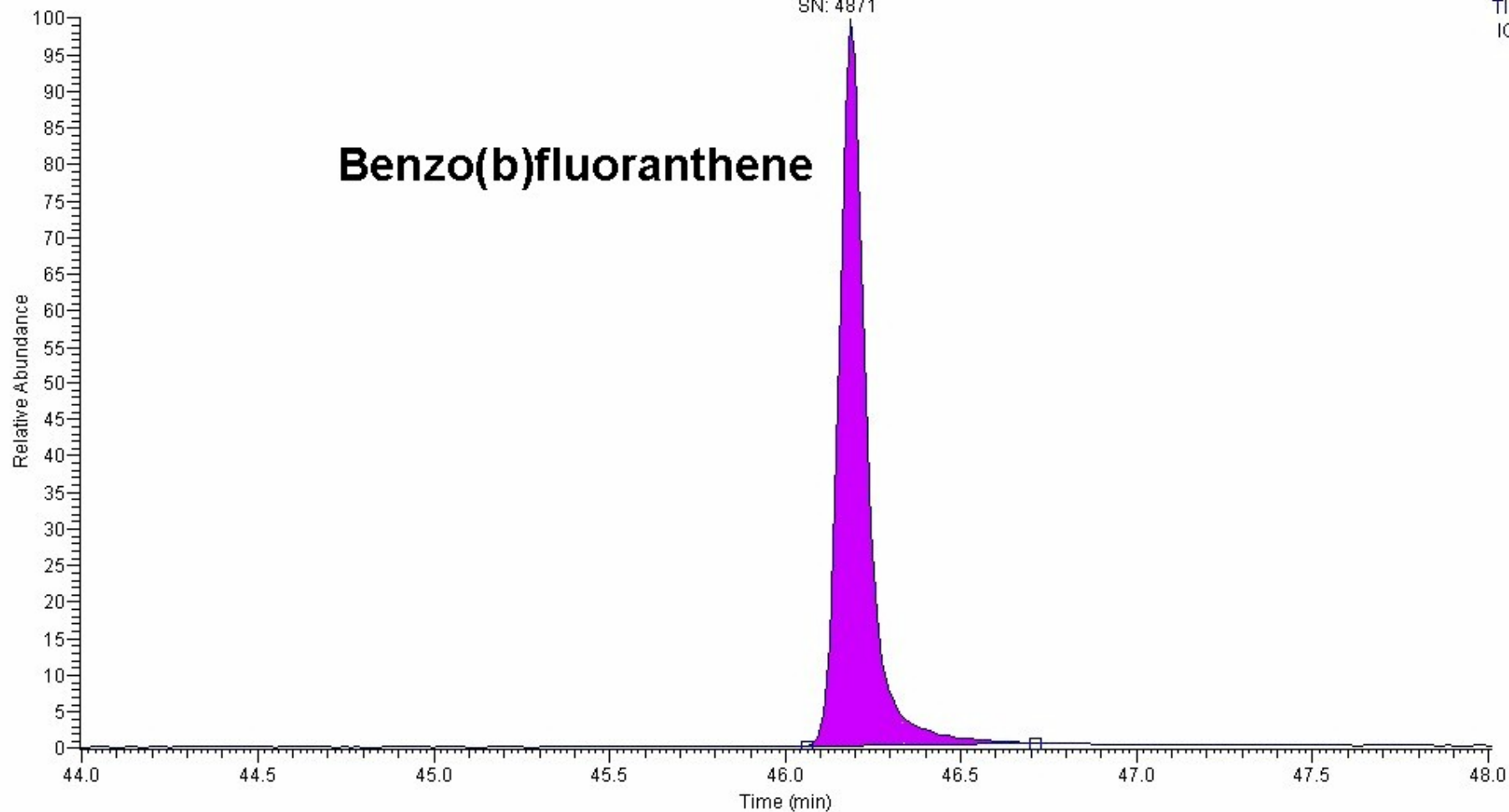
C:\calibur\data\D508
Benzo(b)fluoranthene

09/23/2008 02:45:14 PM

RT: 43.99 - 48.01 SM: 5G

RT: 46.19
AA: 1022525
SN: 4871

NL:
1.80E5
TIC F: MS
ICIS D508



Colonna DB 35 o simili

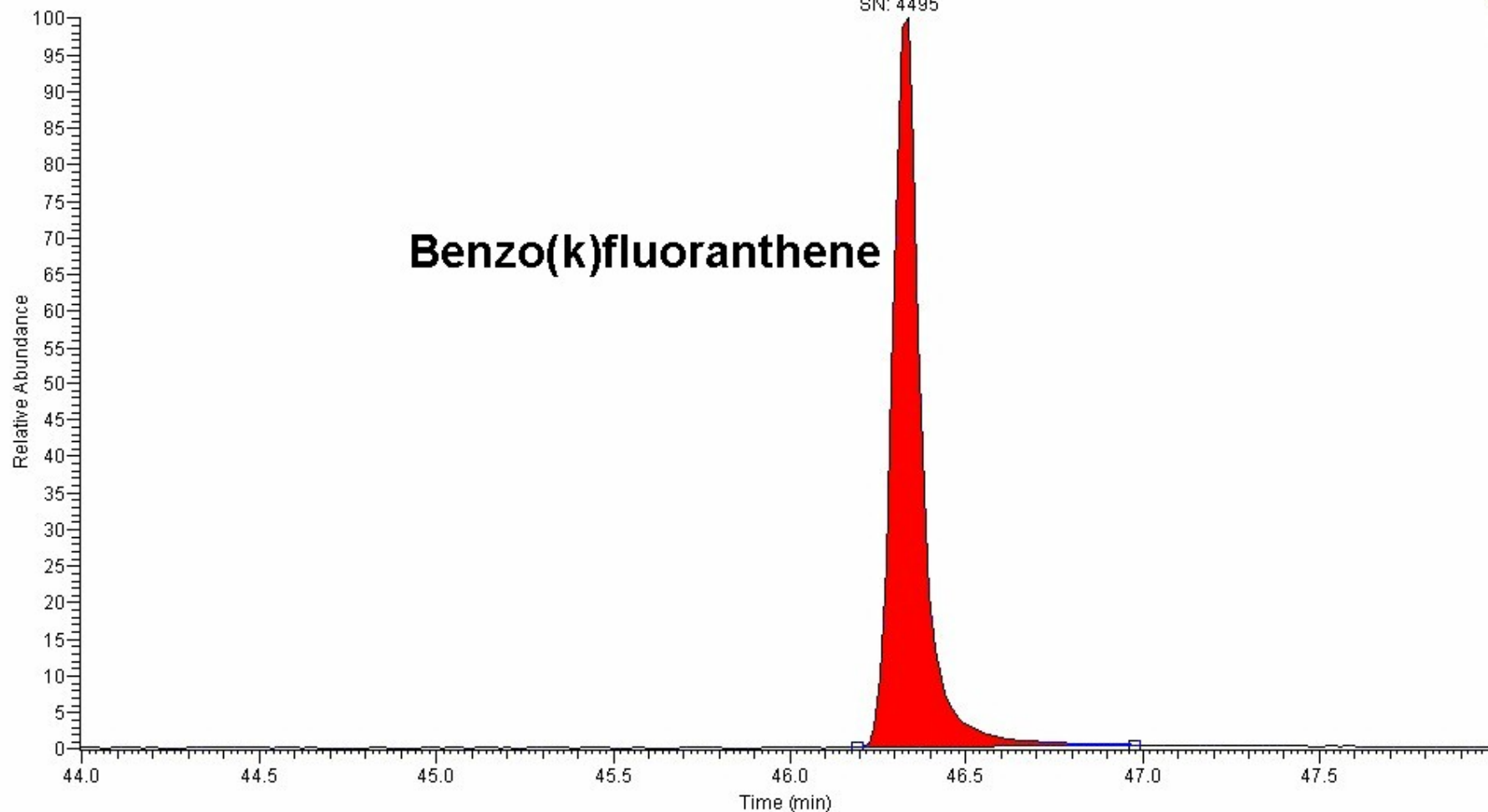
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Benzo(k)fluoranthene

09/23/2008 05:04:53 PM

RT: 43.99 - 47.99 SM: 5G

RT: 46.34
AA: 921973
SN: 4495

NL:
1.62E5
TIC F: MS
ICIS D510



Colonna DB 35 o simili

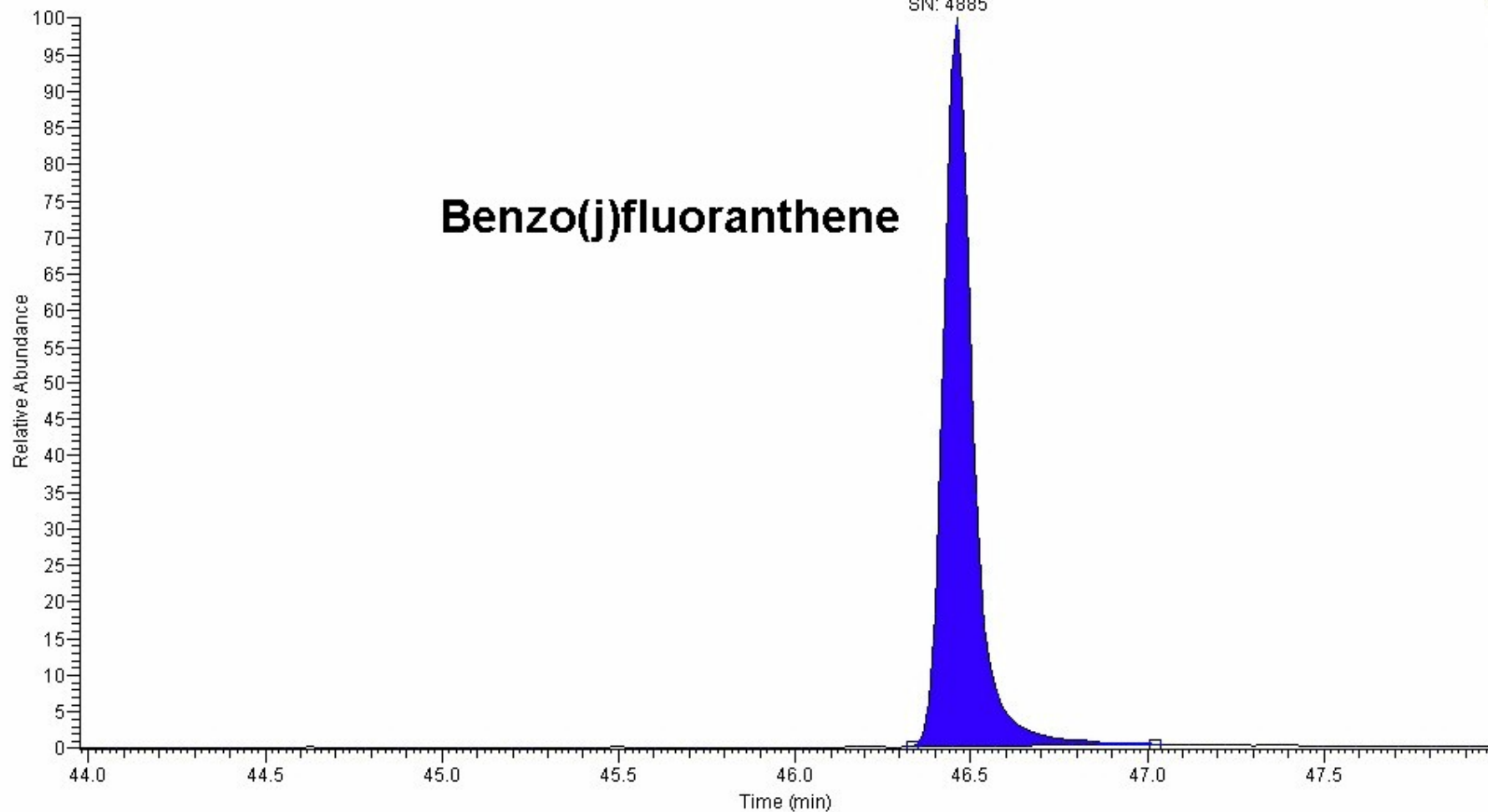
C:\calibur\data\D509
Benzo(j)fluoranthene

09/23/2008 03:55:05 PM

RT: 43.97 - 47.98 SM: 5G

RT: 46.46
AA: 763512
SN: 4885

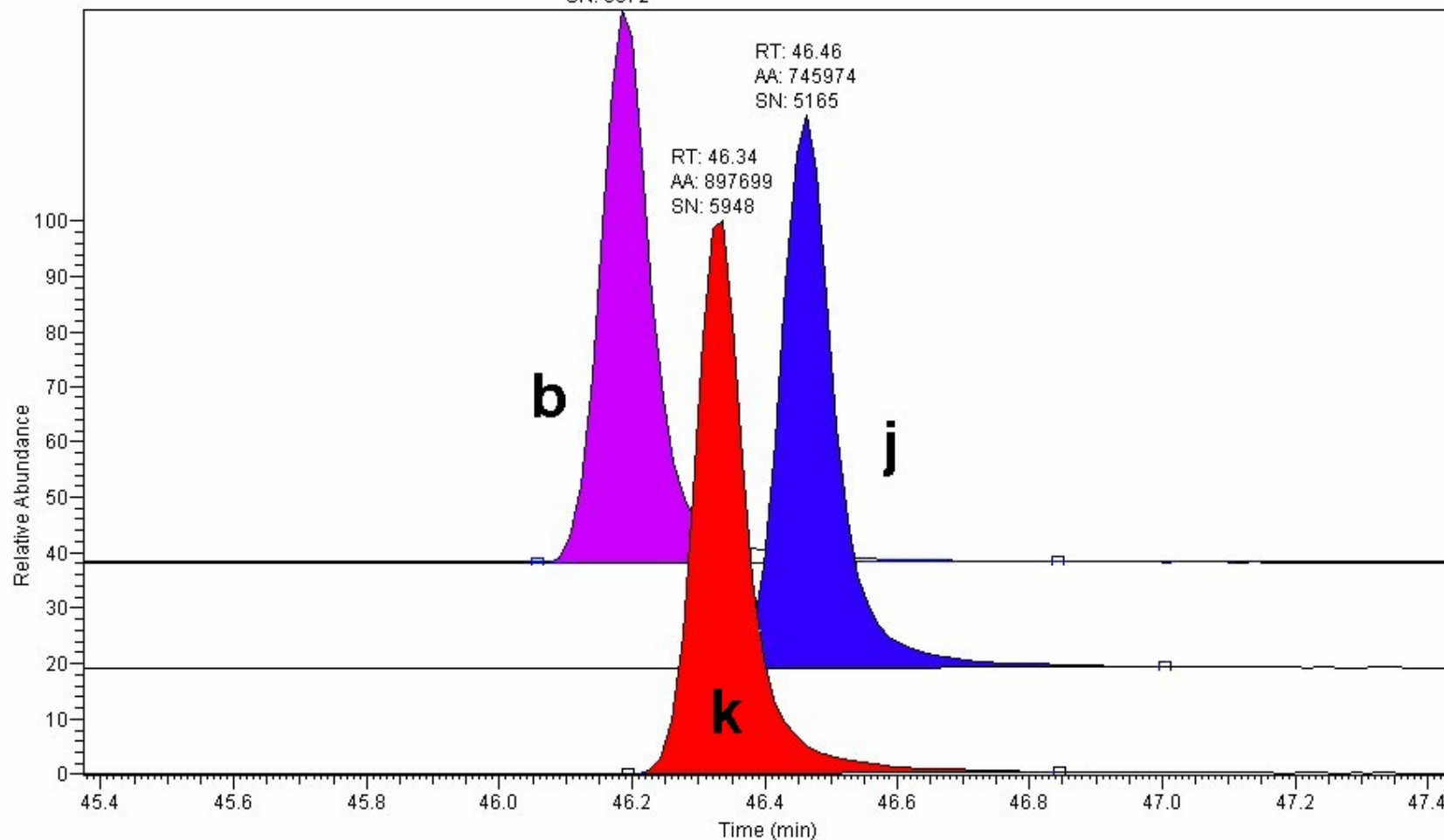
NL:
1.32E5
TIC F: MS
ICIS D509



Colonna Rtx 35 - HP 35 - SPB 35 - SP 608 - DB 35

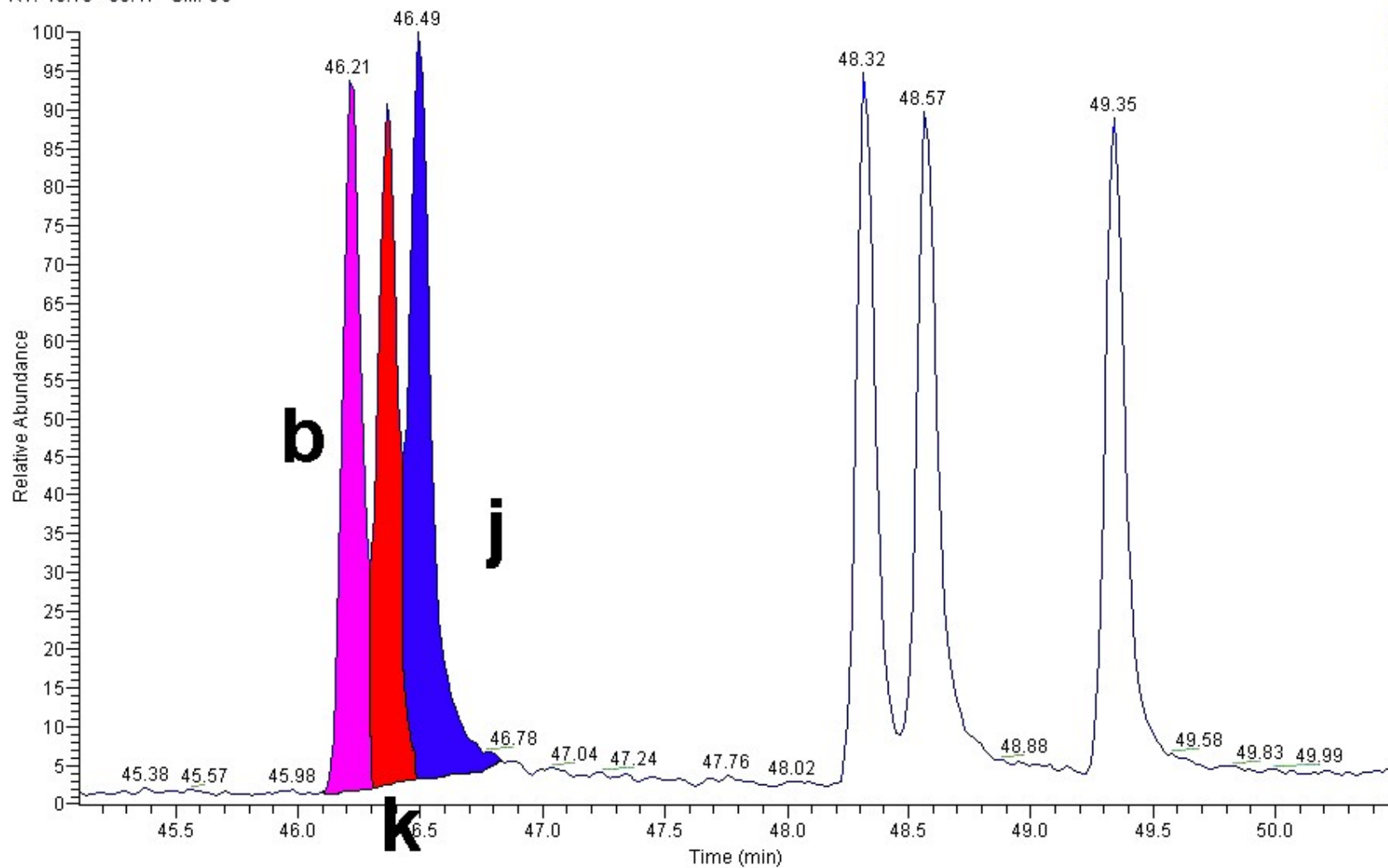
RT: 46.19
AA: 1012354
SN: 6672

NL: 1.76E5
m/z= 251.5-252.5 F: +
c SIM ms [
251.50-252.50,
262.00-264.00,
263.00-265.00] MS
ICIS D508
NL: 1.27E5
m/z= 251.5-252.5 F: +
c SIM ms [
251.50-252.50,
262.00-264.00,
263.00-265.00] MS
ICIS D509
NL: 1.59E5
m/z= 251.5-252.5 F: +
c SIM ms [
251.50-252.50,
262.00-264.00,
263.00-265.00] MS
ICIS D510

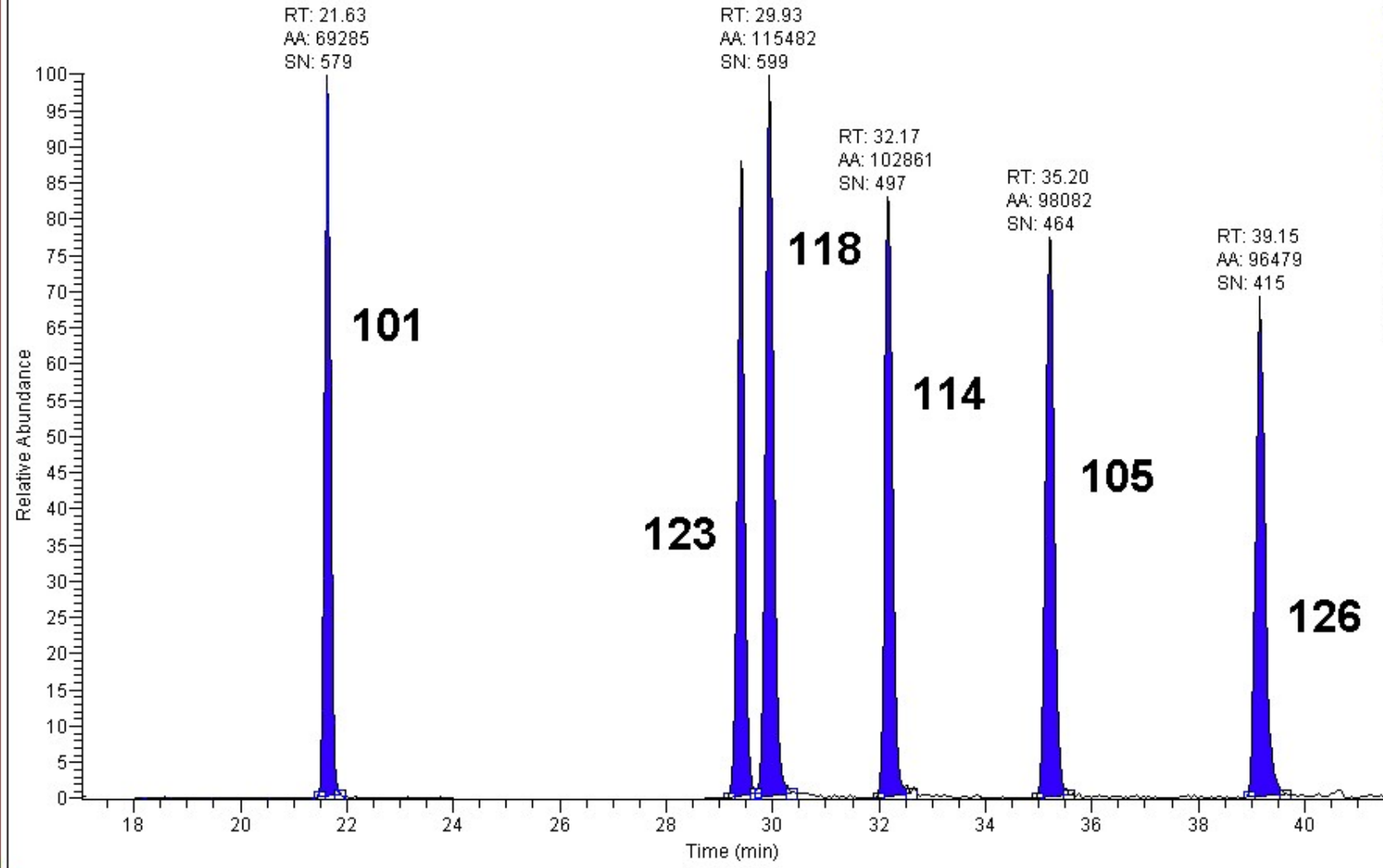


RT: 45.10 - 50.47 SM: 5G

NL: 1.89E4
m/z= 251.5-252.5 F:
+ c SIM ms [
251.50-252.50,
262.00-264.00,
263.00-265.00] MS
D507



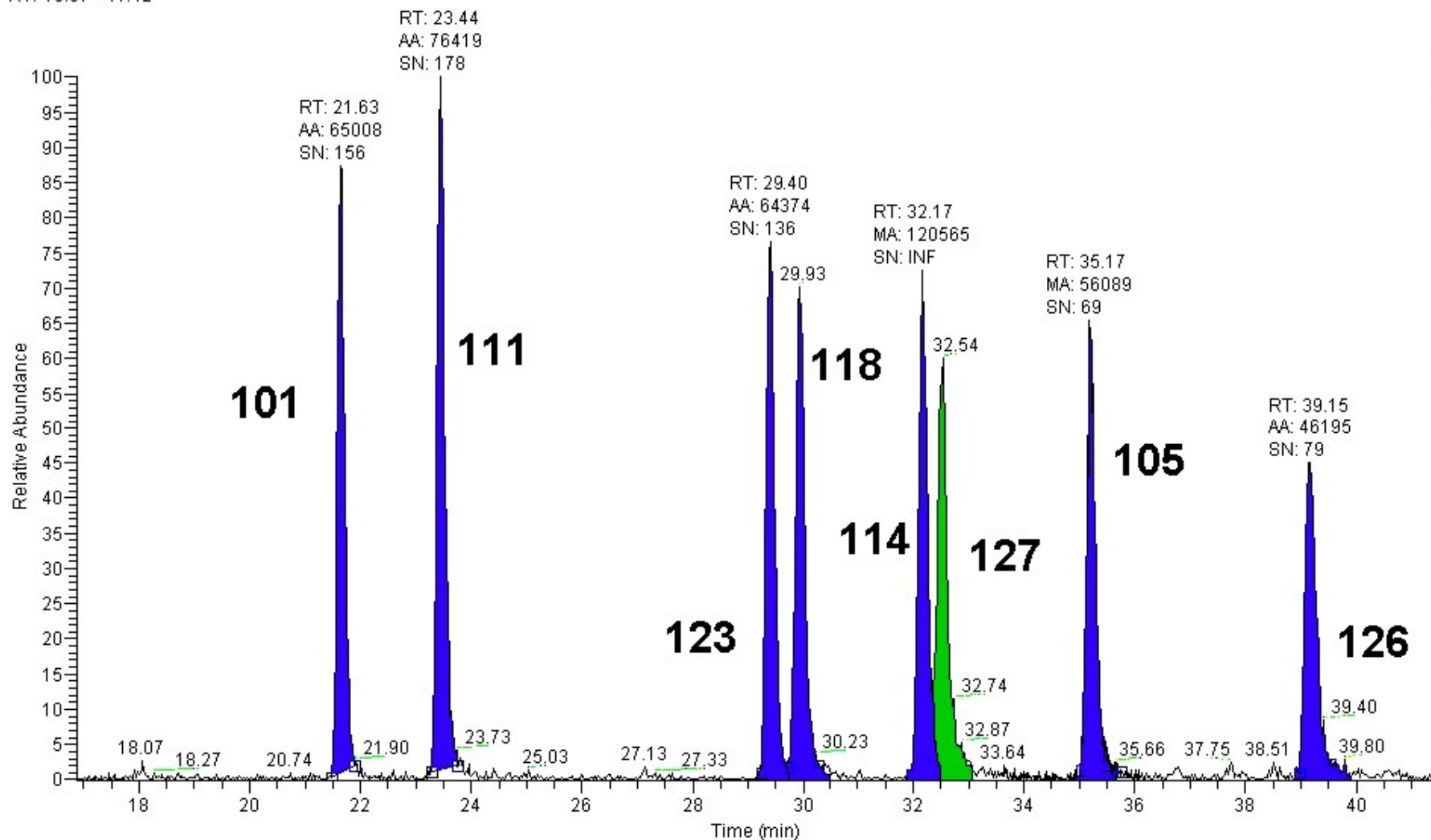
RT: 17.01 - 41.48 SM: 5G



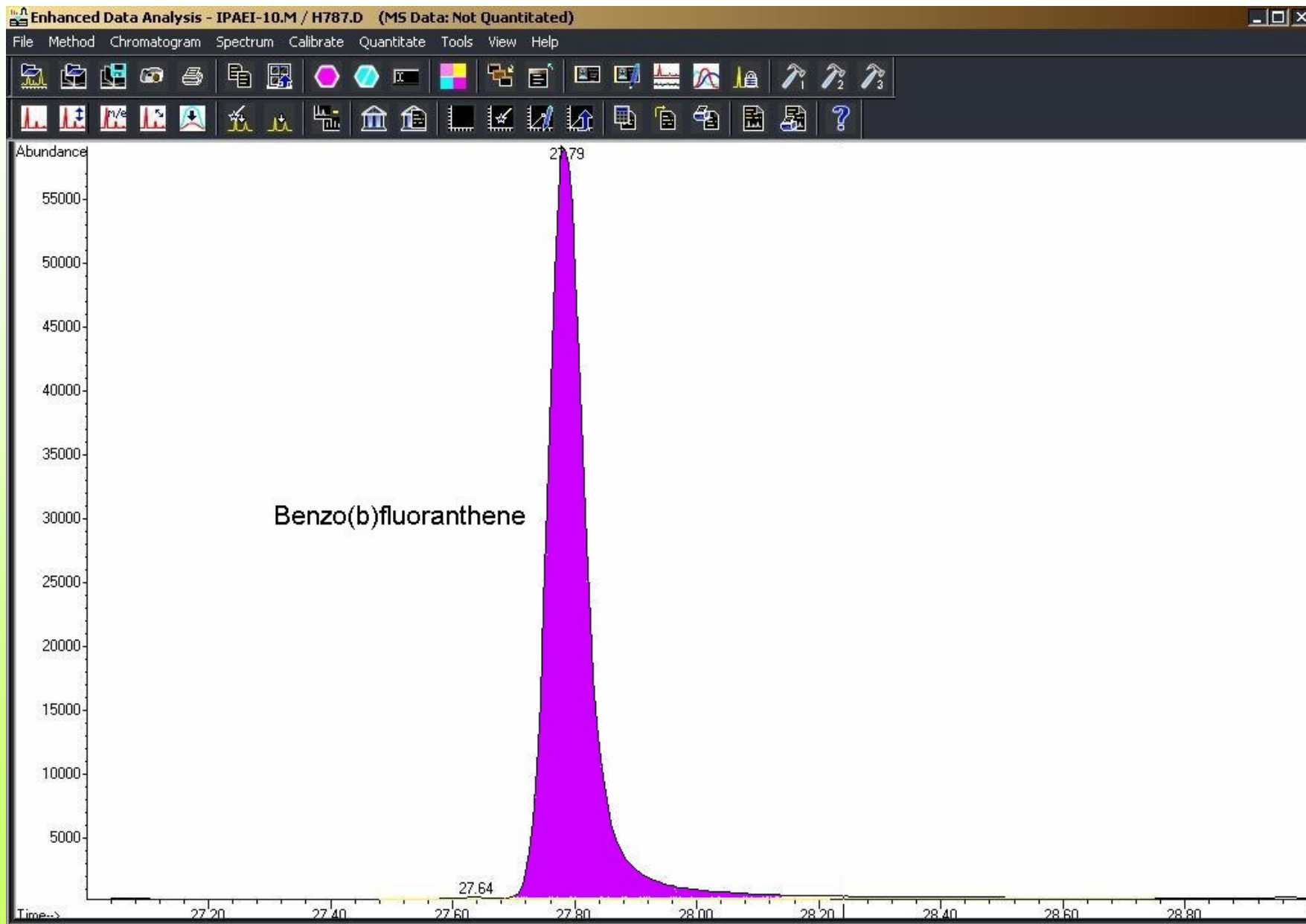
NL: 8.89E3
 m/z= 300.0-306.0 F: +
 c SRM ms2
 338.00@3.75 [
 265.00-271.00,
 300.00-306.00] MS
 ICIS D521
 NL: 1.15E4
 m/z= 265.0-271.0 F: +
 c SRM ms2
 338.00@4.50 [
 265.00-271.00,
 300.00-306.00] MS
 ICIS D521

RT: 16.87 - 41.42

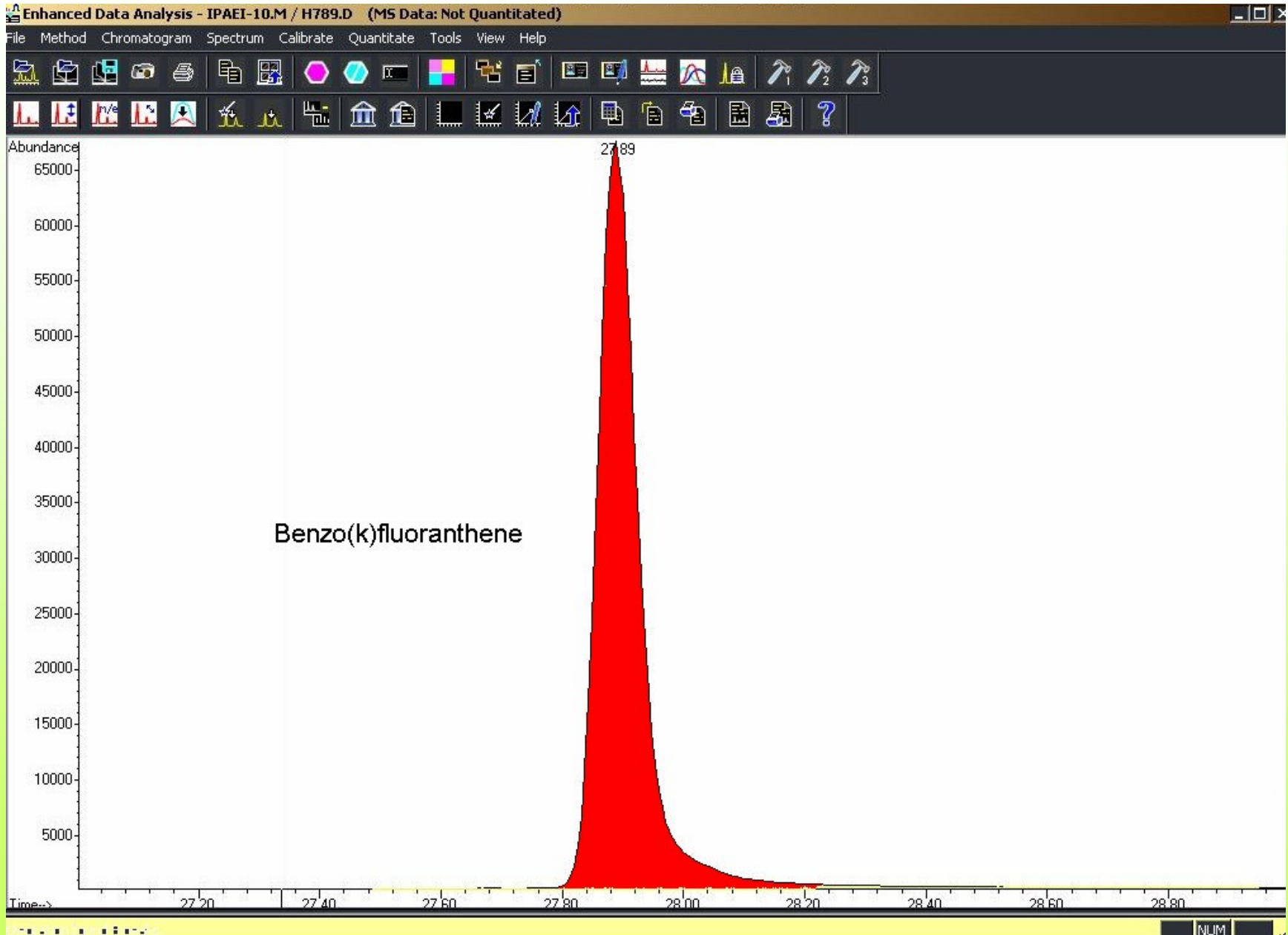
NL:
7.98E3
m/z=
337.50-
338.50 F:
MS
D555_081
015090246



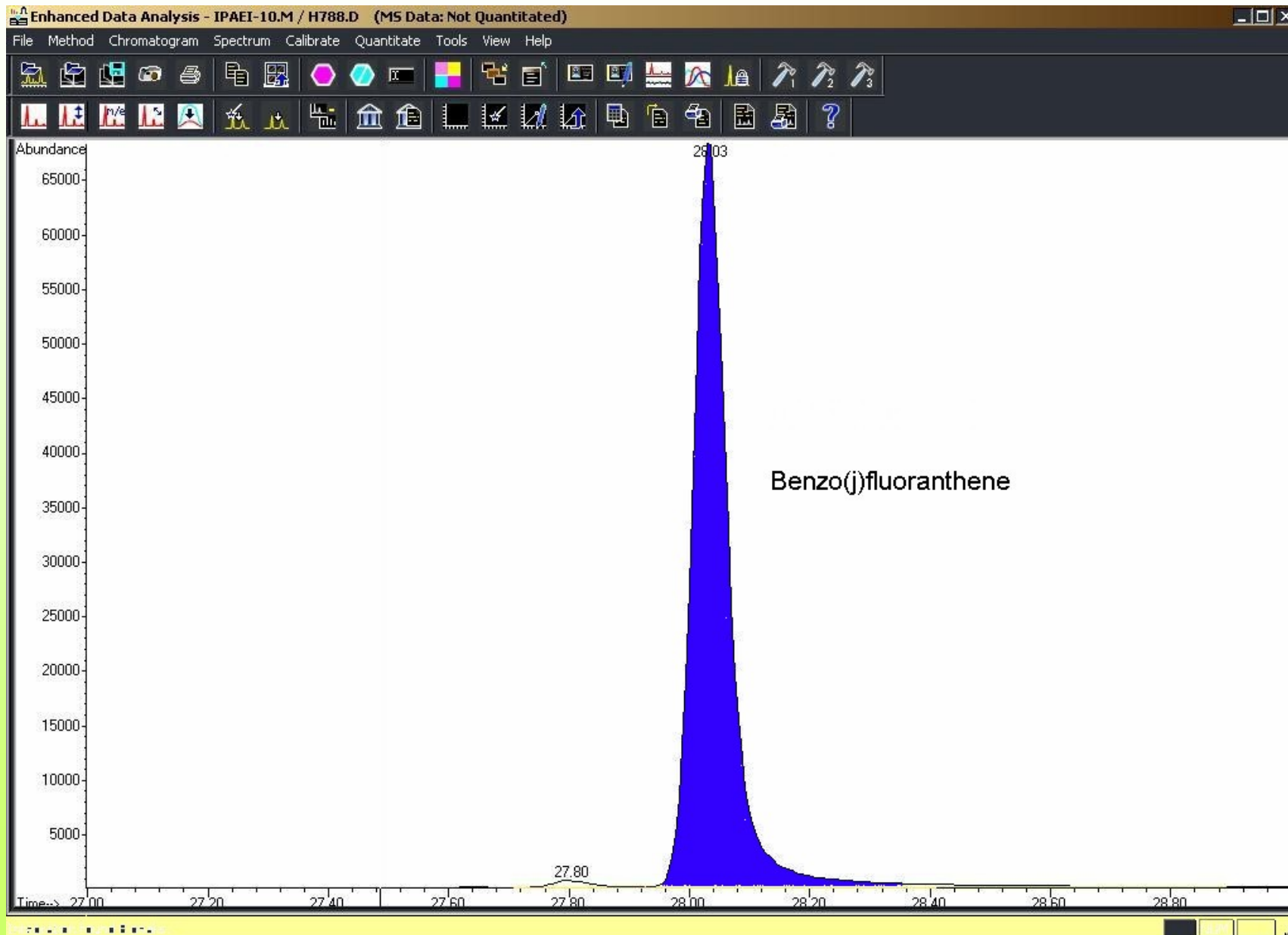
Colonna HP 50 o simili



Colonna HP 50 o simili

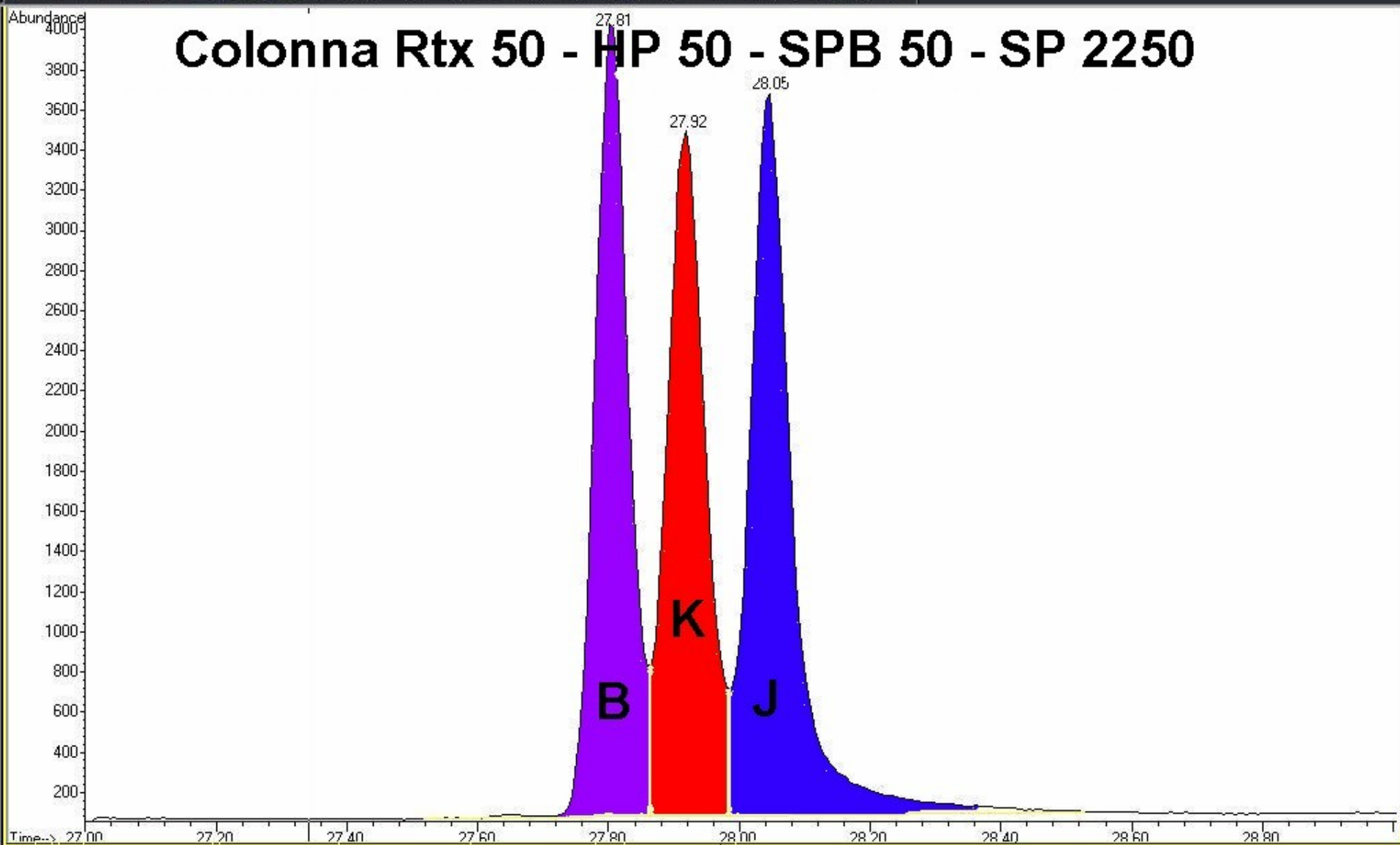


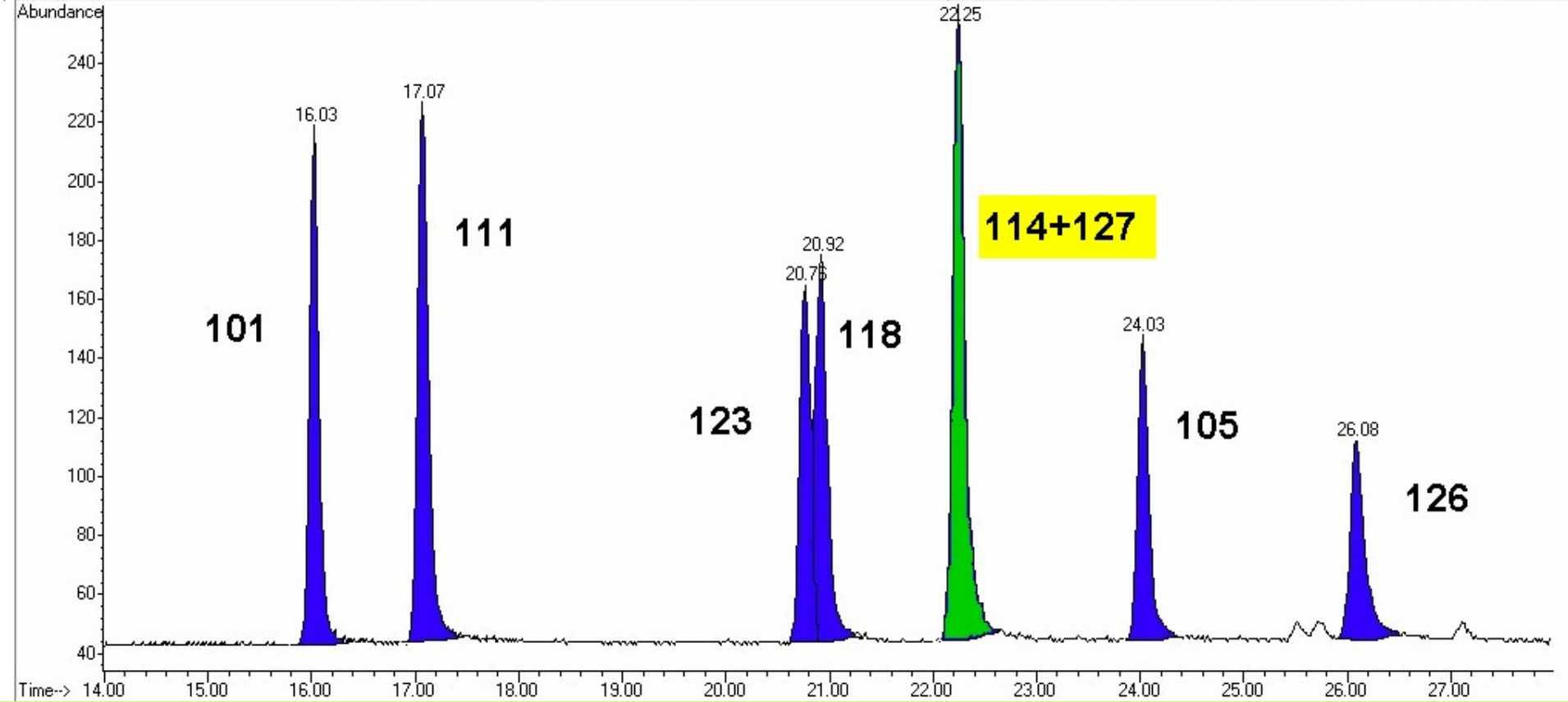
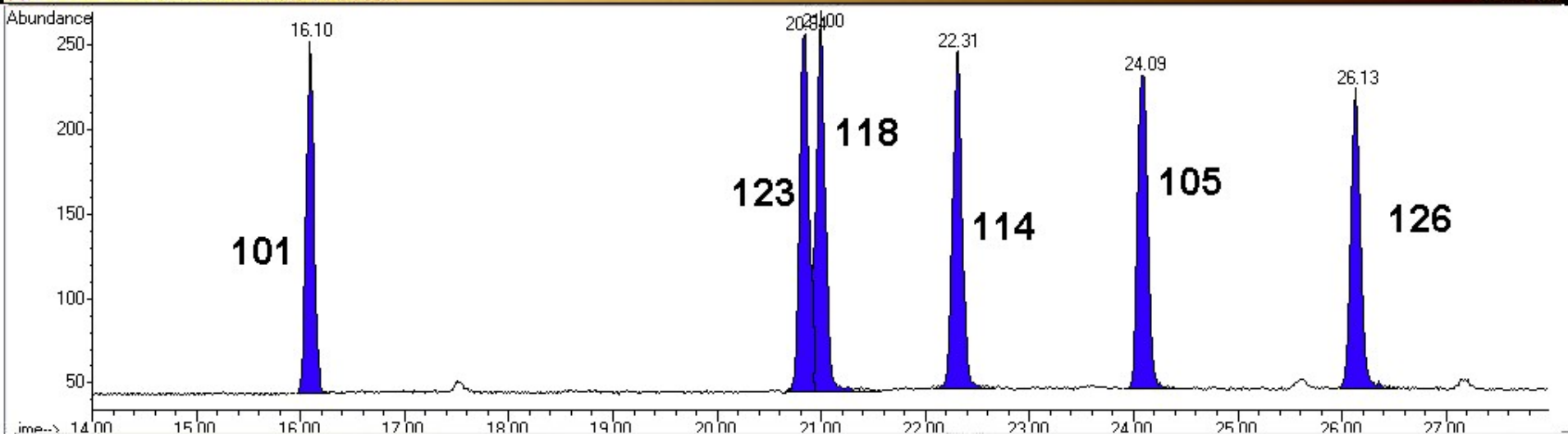
Colonna HP 50 o simili





Colonna Rtx 50 - HP 50 - SPB 50 - SP 2250

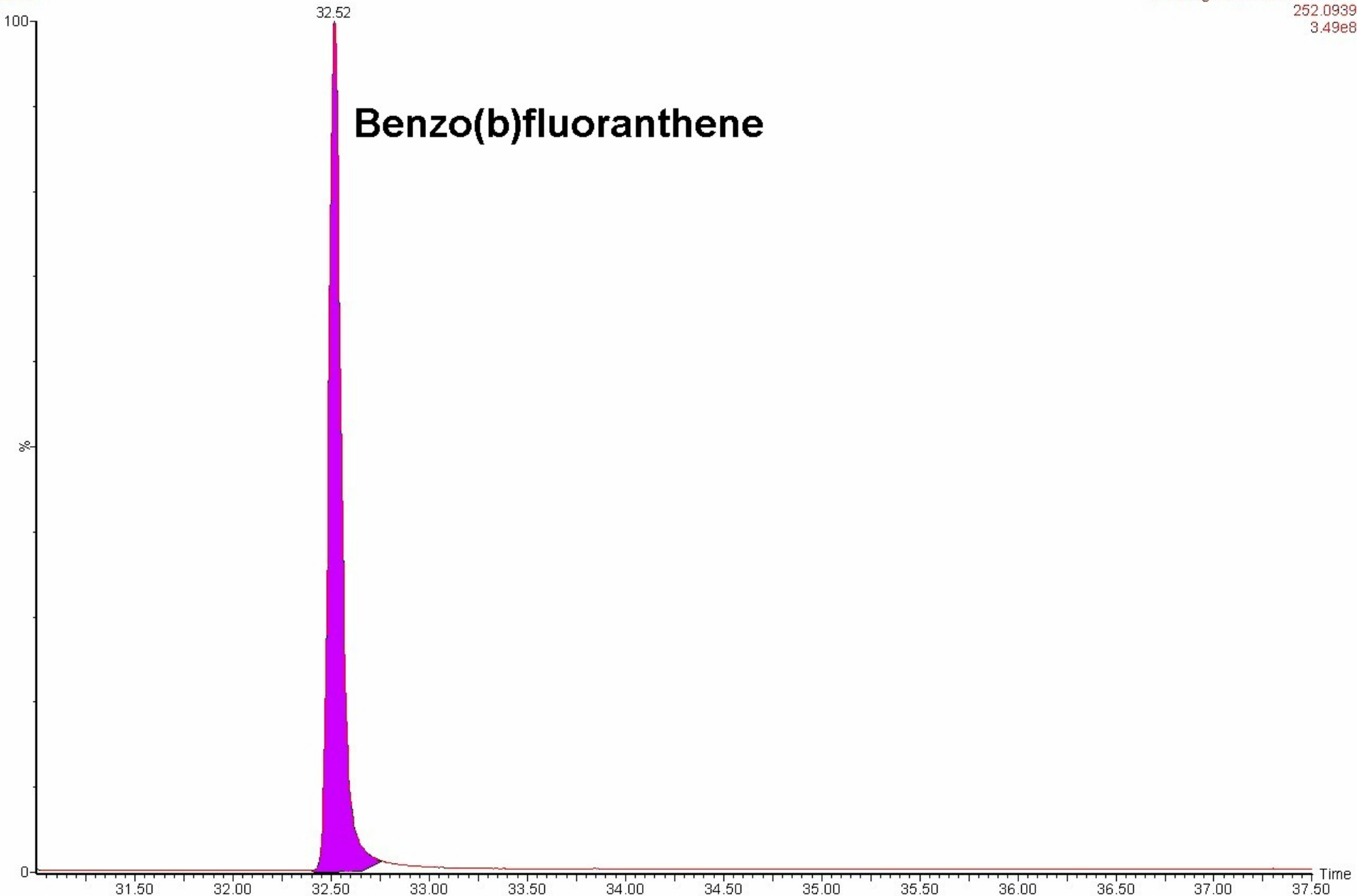




rrf ipa Paste

A936

6: Voltage SIR 3 Channels EI+
252.0939
3.49e8



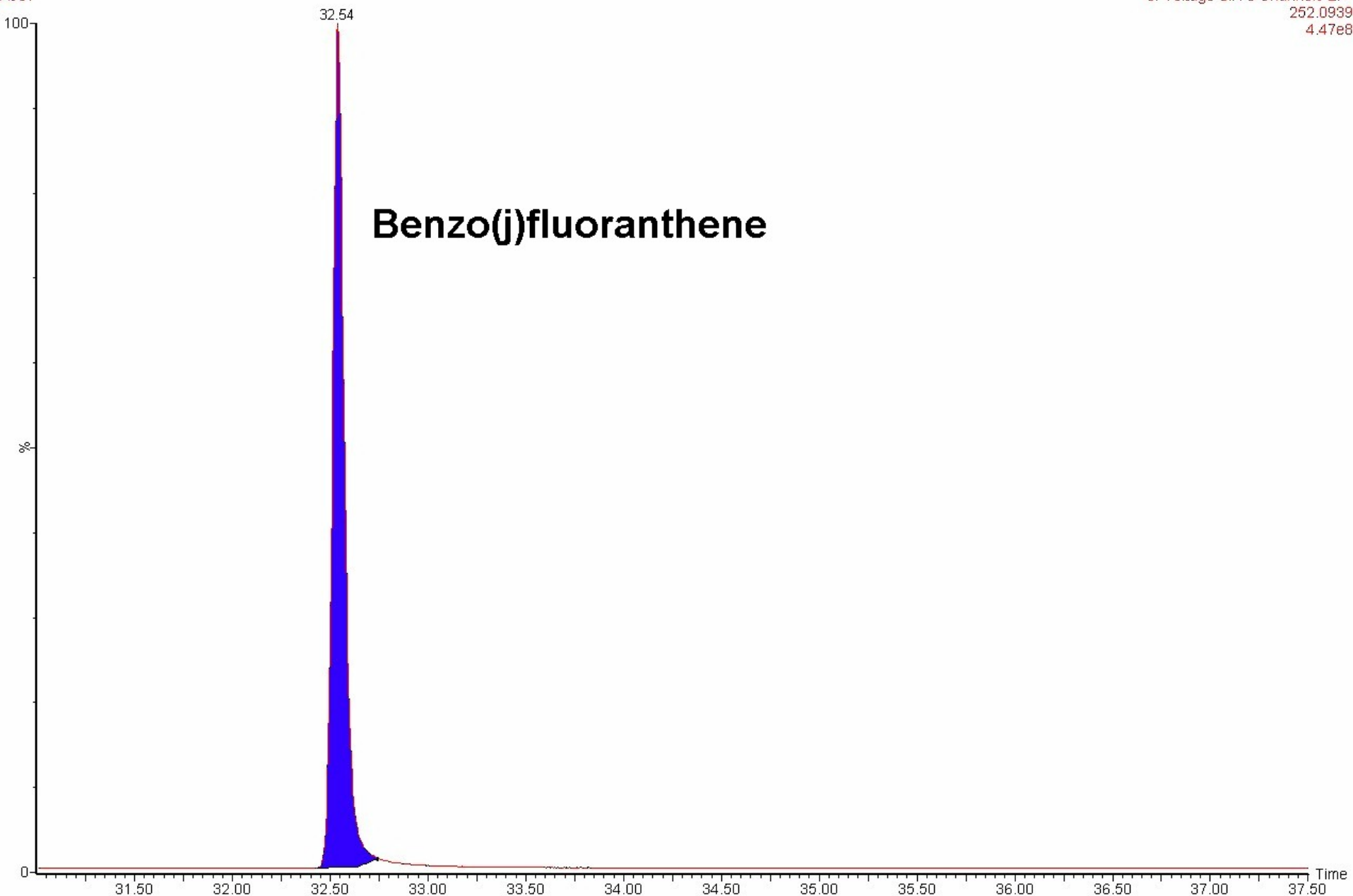
rrf ipa Paste

A937

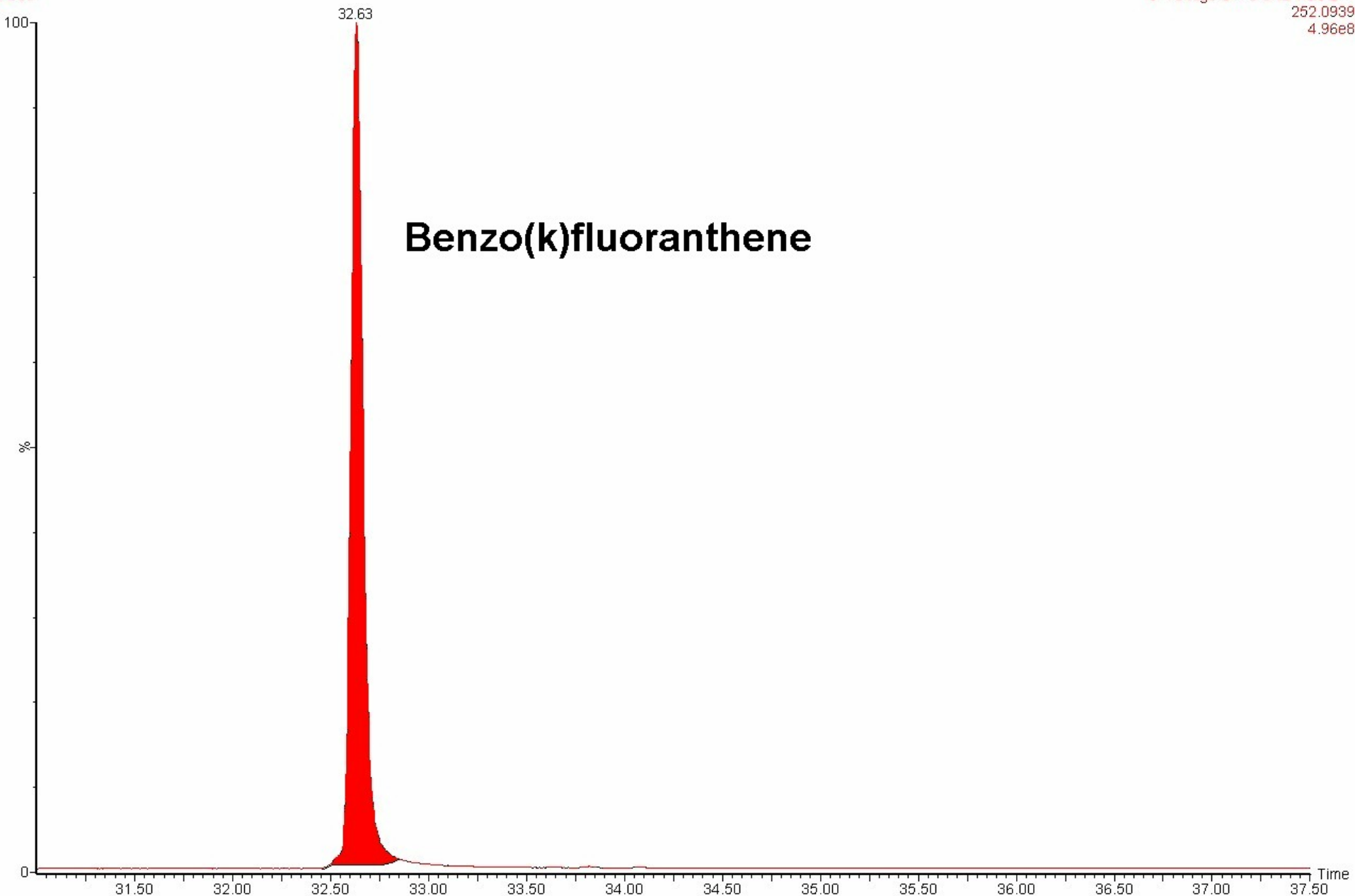
6: Voltage SIR 3 Channels EI+

252.0939

4.47e8



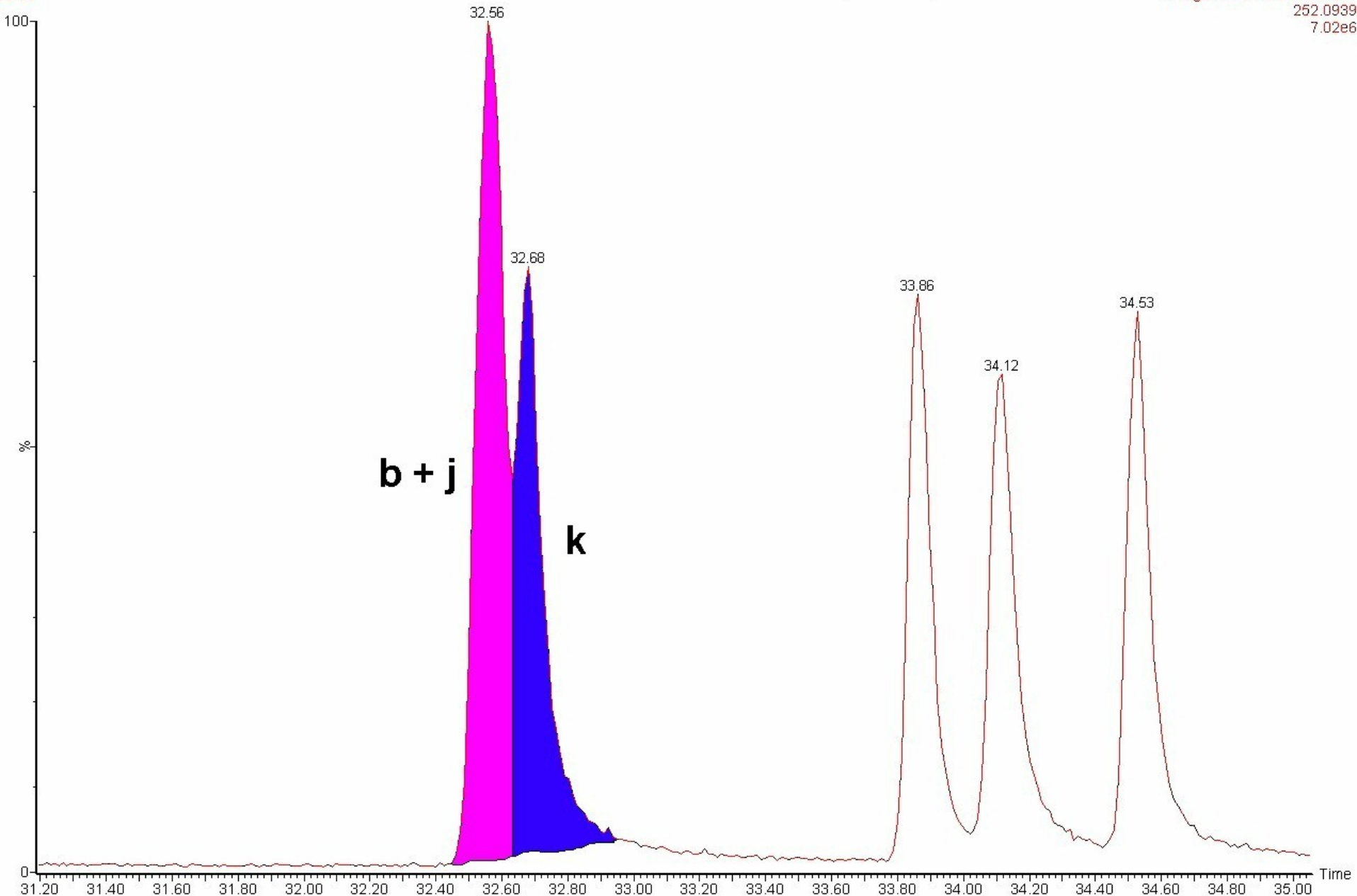
Benzo(j)fluoranthene



Paste

Colonna DB 5 - Rtx 5 - HP 5 - SPB 5 - (50m)

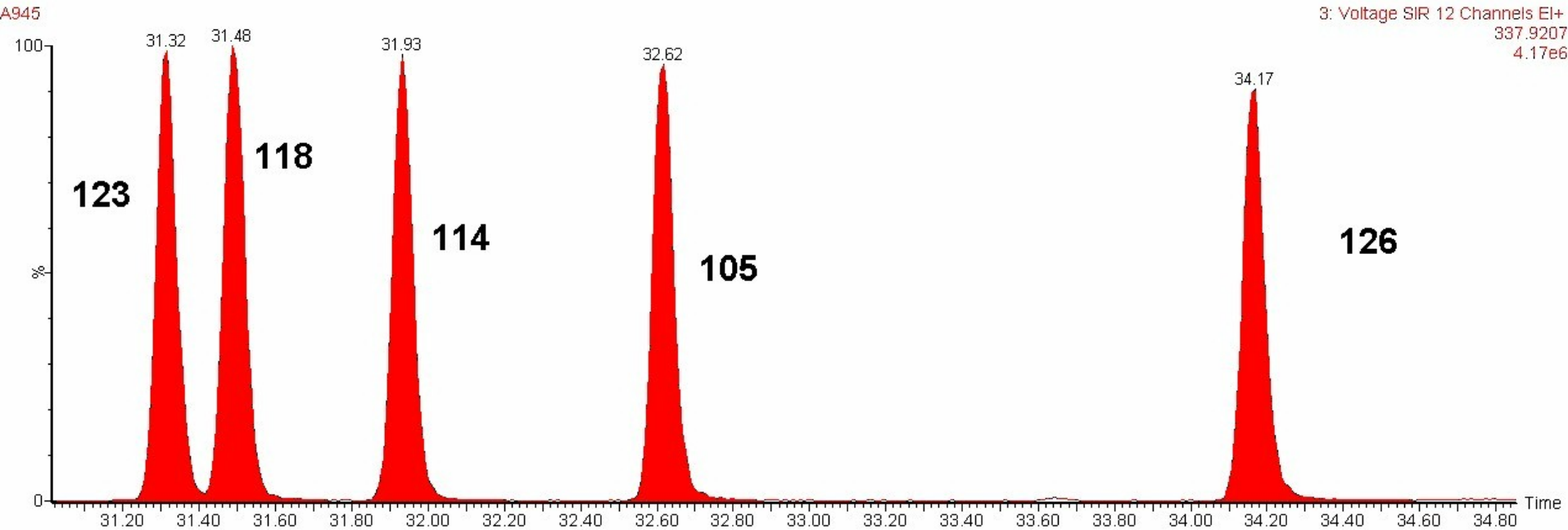
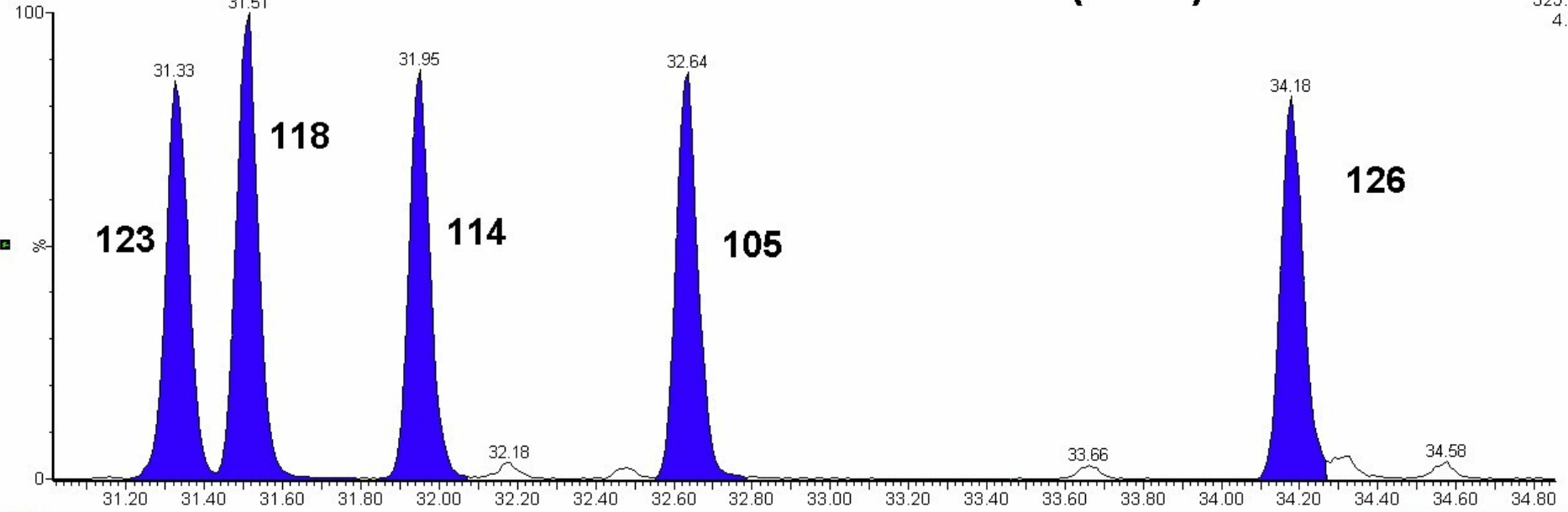
Voltage SIR 21 Channels EI+
252.0939
7.02e6



Paste

Colonna DB 5 - HP 5 - Rtx 5 - SPB 5 - (50 m)

3: Voltage SIR 12 Channels EI+
325.8757
4.70e6

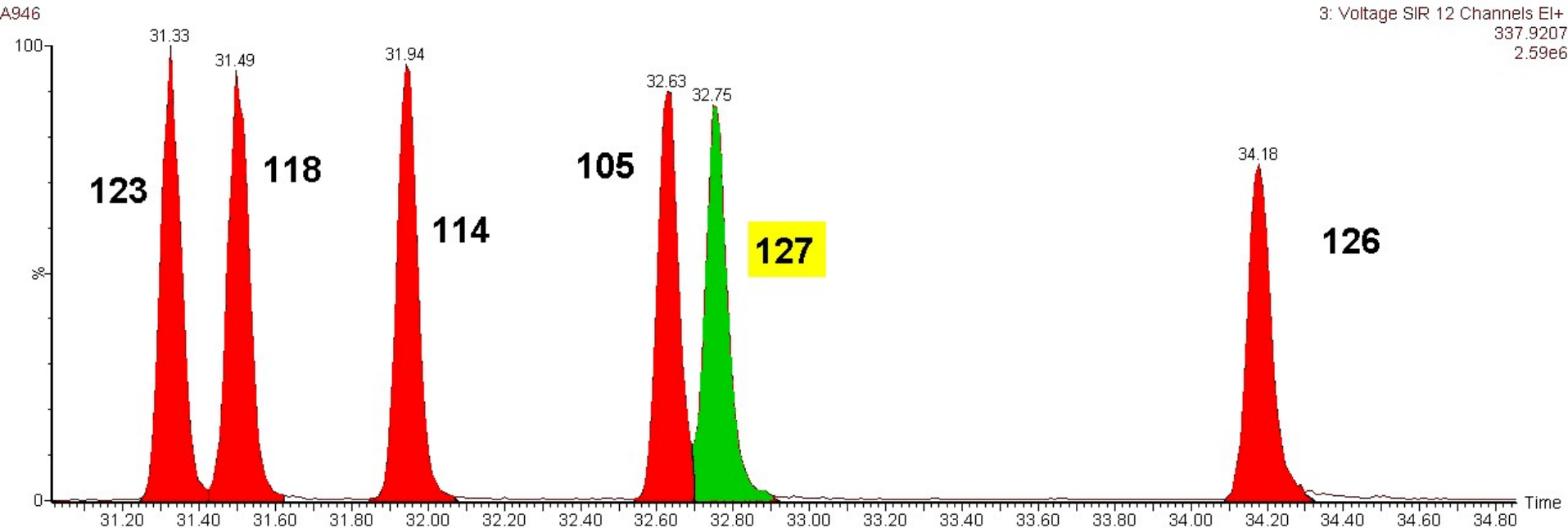
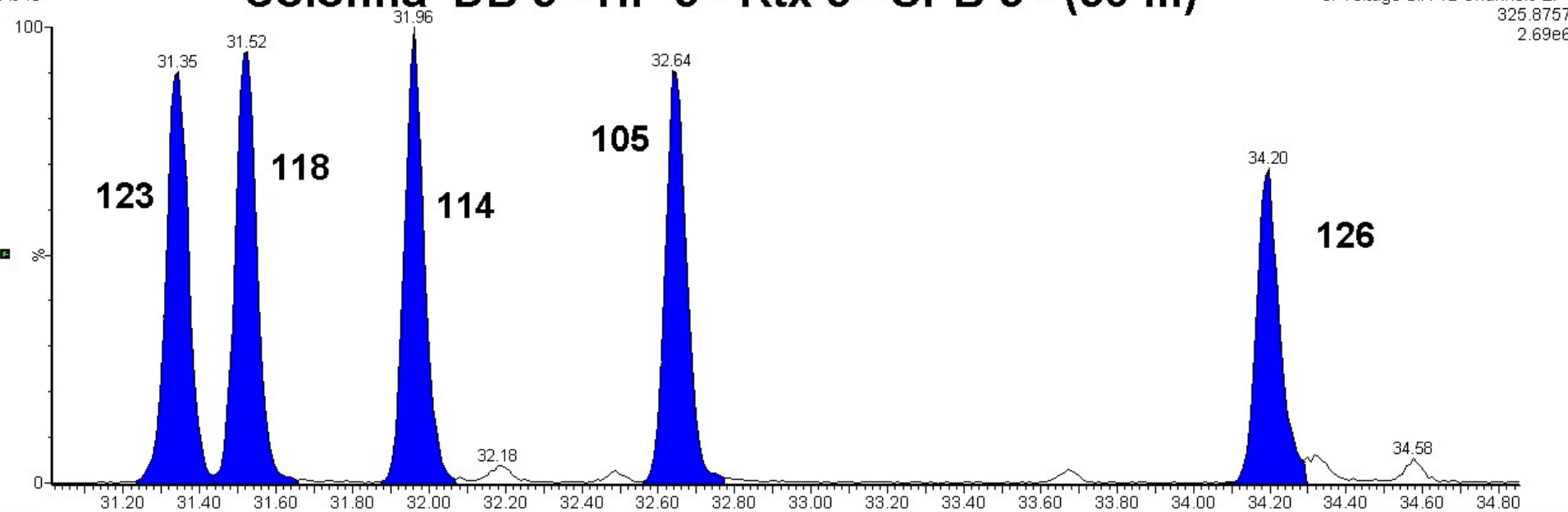


3: Voltage SIR 12 Channels EI+
337.9207
4.17e6

Paste

Colonna DB 5 - HP 5 - Rtx 5 - SPB 5 - (50 m)

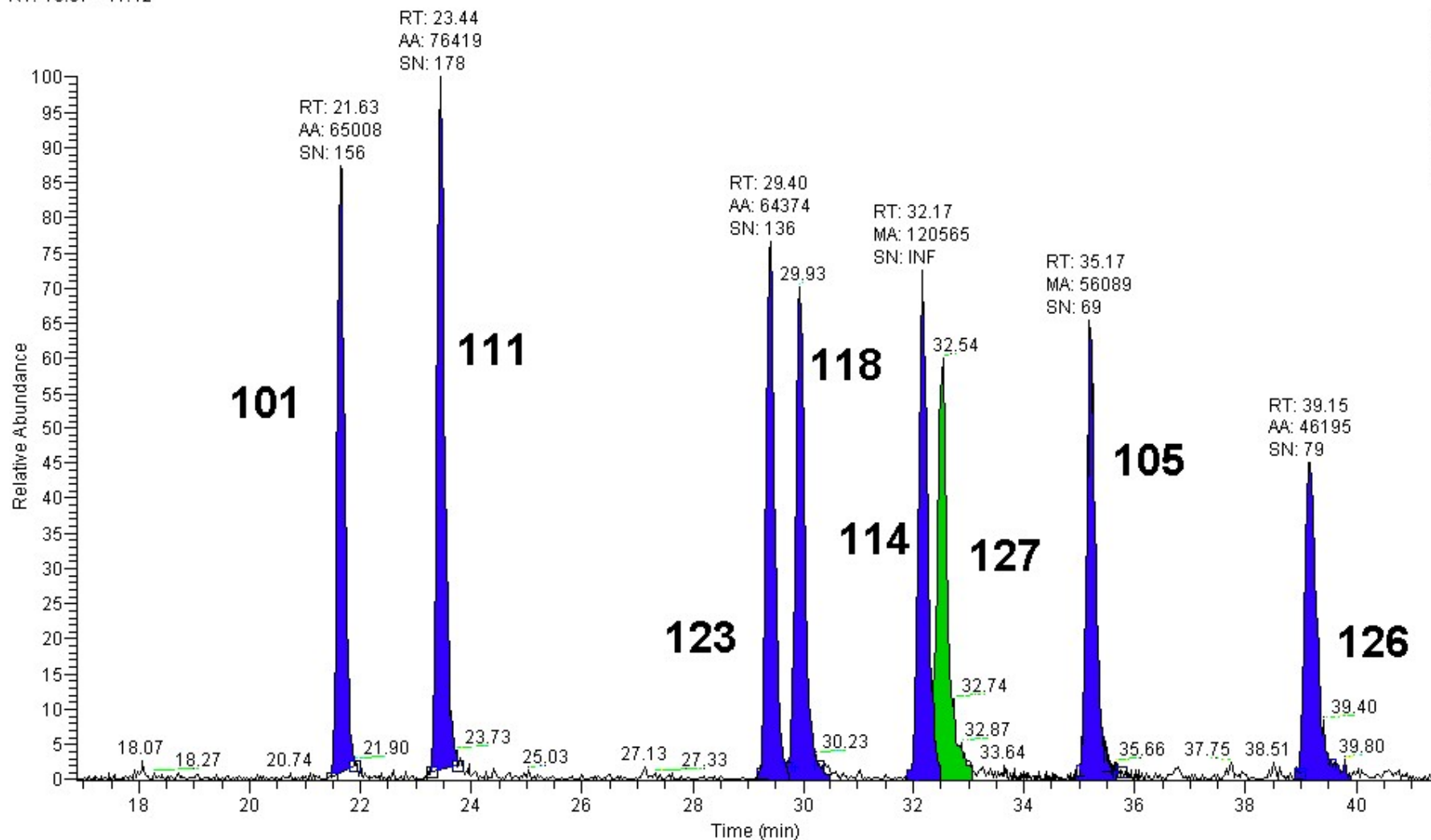
3: Voltage SIR 12 Channels EI+
325.8757
2.69e6



3: Voltage SIR 12 Channels EI+
337.9207
2.59e6

RT: 16.87 - 41.42

NL:
7.98E3
m/z=
337.50-
338.50 F:
MS
D555_081
015090246



conclusione

- La miglior colonna per la separazione dei Benzo(x)fluorantheni:
 - Abc 17
 - Abc 35
- Le migliori per i PCBdl sono:
 - Abc 5
 - Abc 35
- Per chi utilizza lo stesso strumento per IPA e PCB
 - **Abc 35**

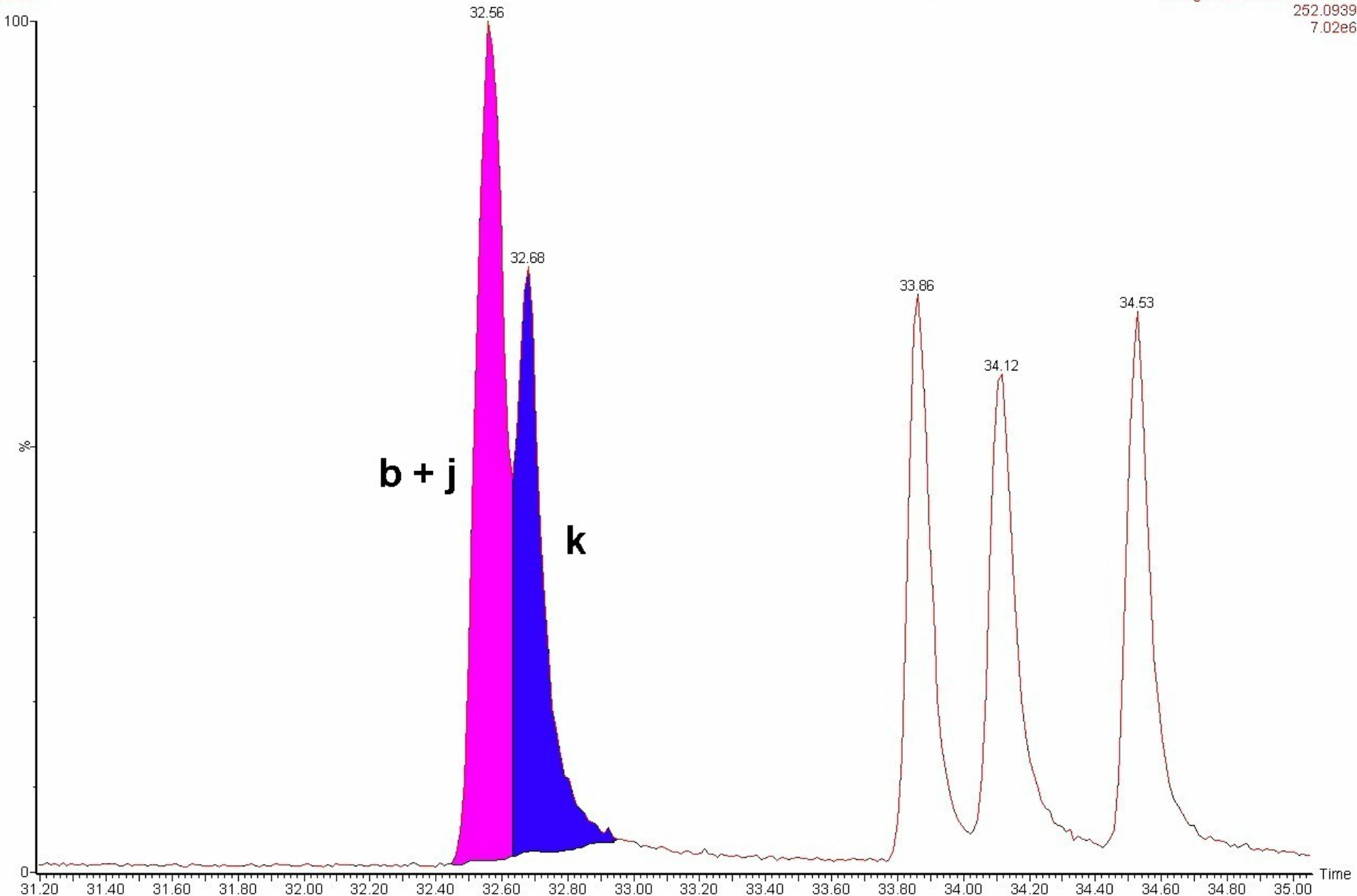
Separazione e quantificazione dei Benzo(x)fluorantheni

- Come quantificarli
- Quali prendere in considerazione in fase di elaborazione dei risultati di un circuito

Paste

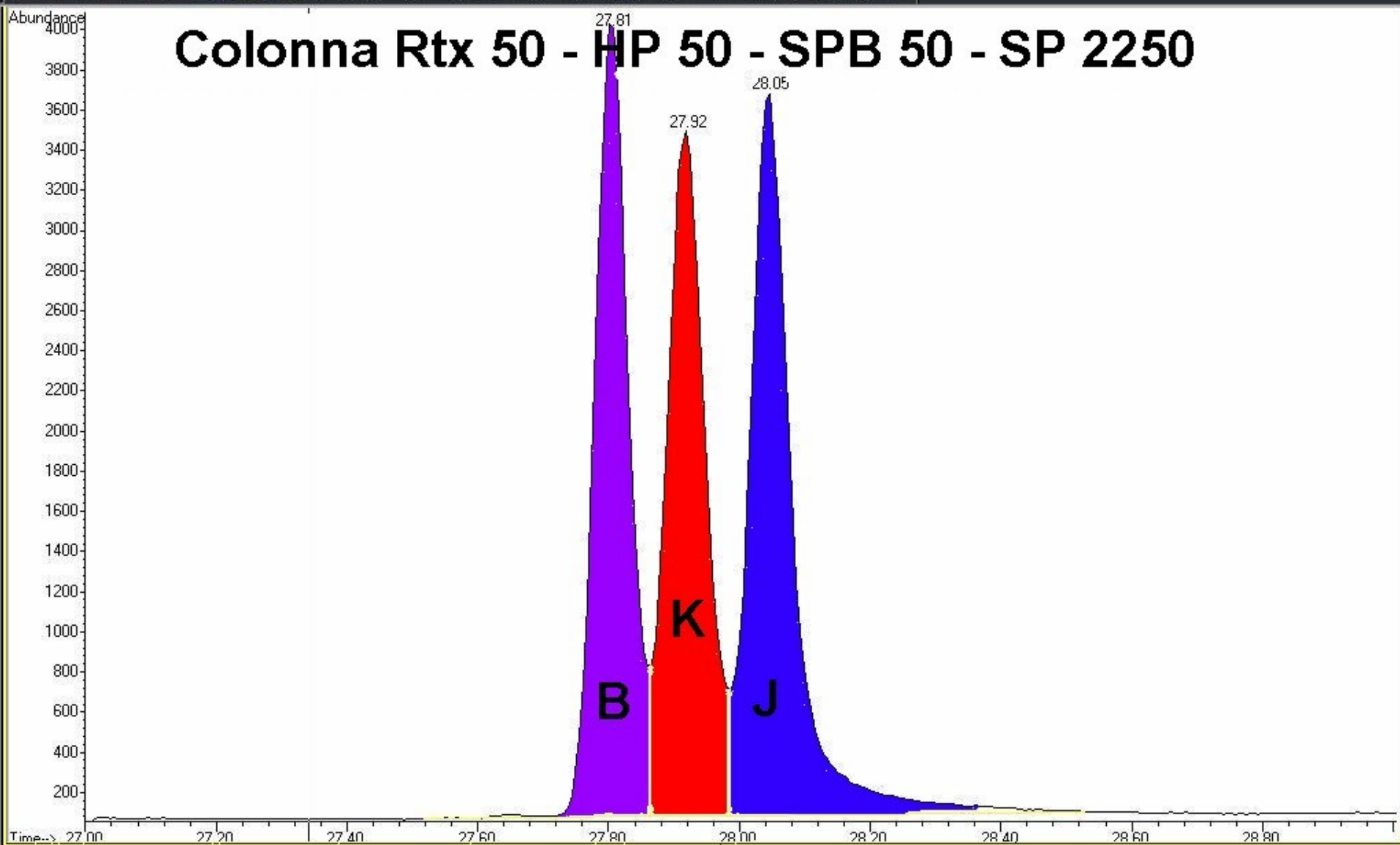
Colonna DB 5 - Rtx 5 - HP 5 - SPB 5 - (50m)

Voltage SIR 21 Channels EI+
252.0939
7.02e6





Colonna Rtx 50 - HP 50 - SPB 50 - SP 2250



Separazione e quantificazione dei Benzo(x)fluorantheni

- Quali prendere in considerazione in fase di elaborazione dei risultati di un circuito