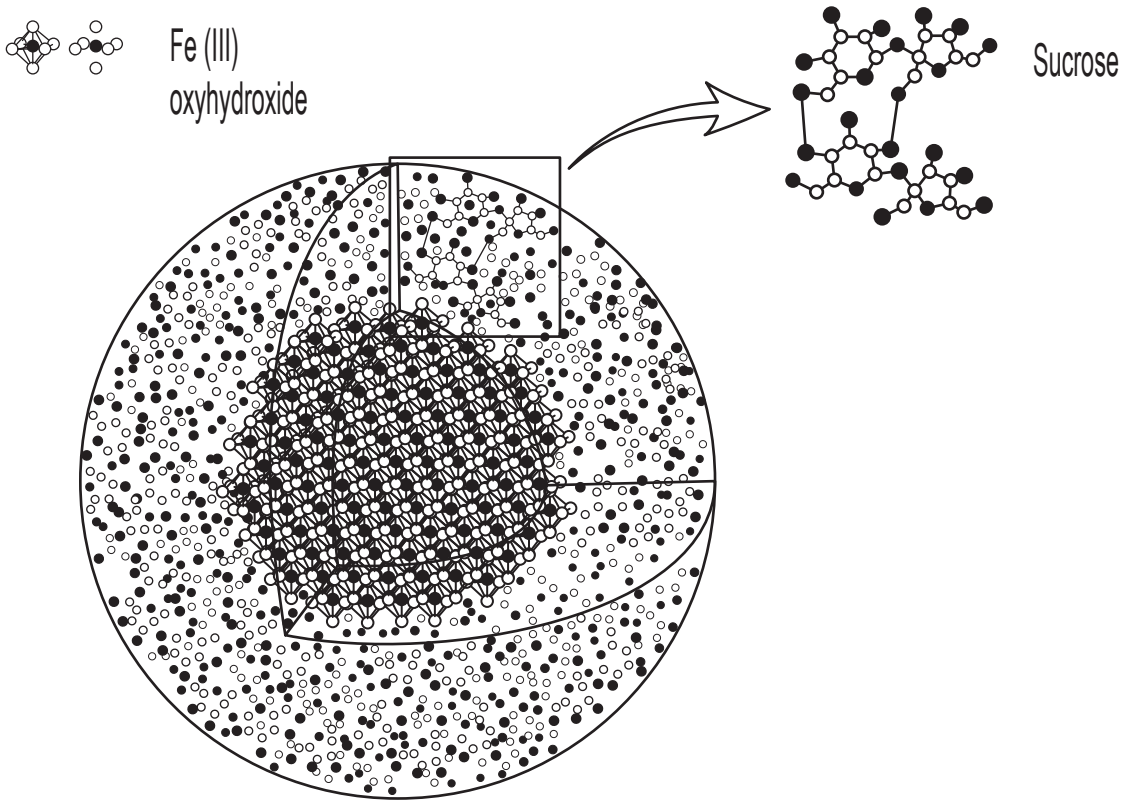


Fig. 1

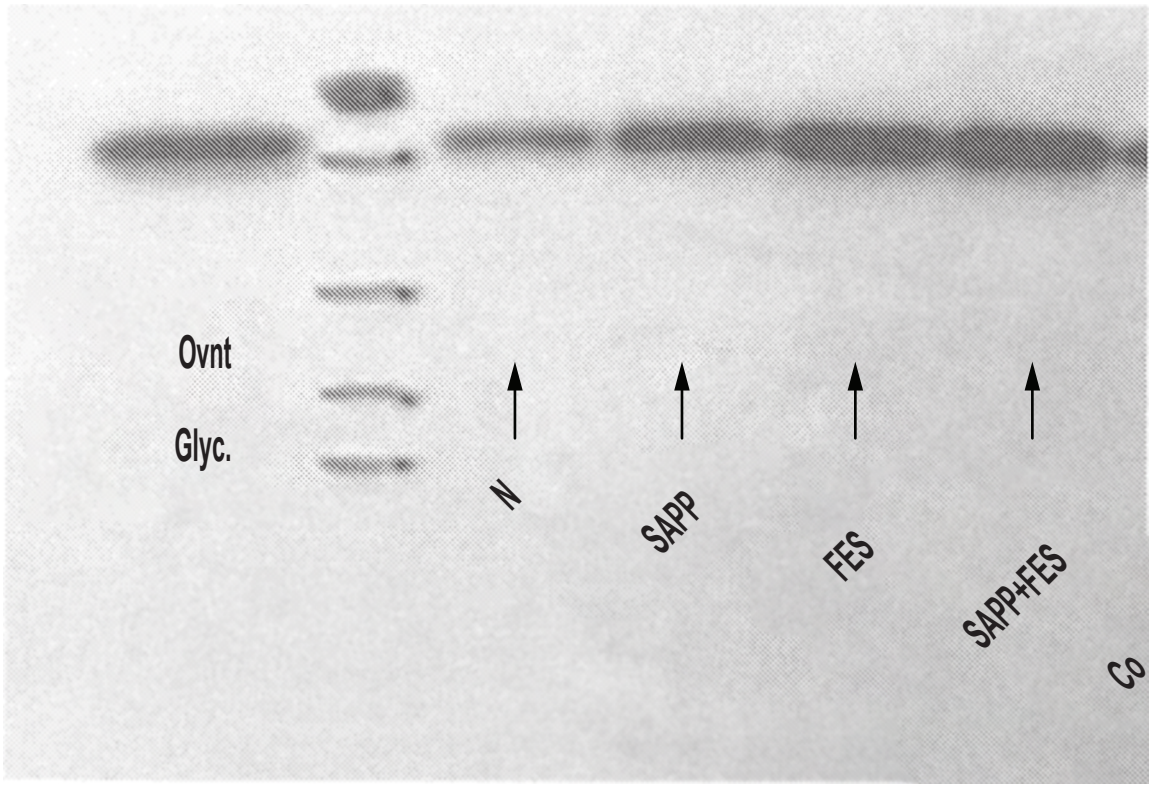


Fig. 2

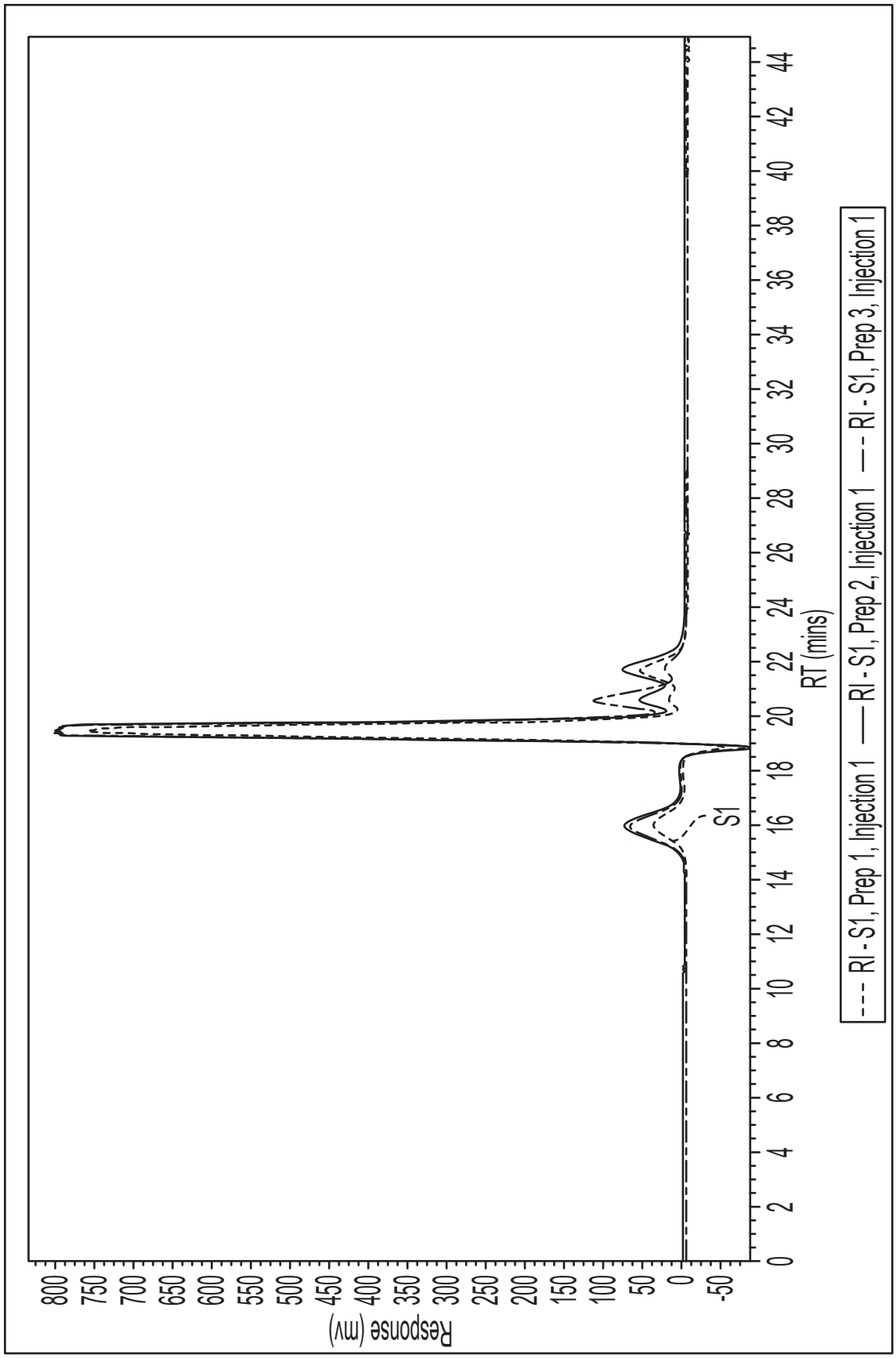

Response (mv)
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
-50
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
RT (mins)
S1
--- RI - S1, Prep 1, Injection 1
—— RI - S1, Prep 2, Injection 1
— — RI - S1, Prep 3, Injection 1

Fig. 3

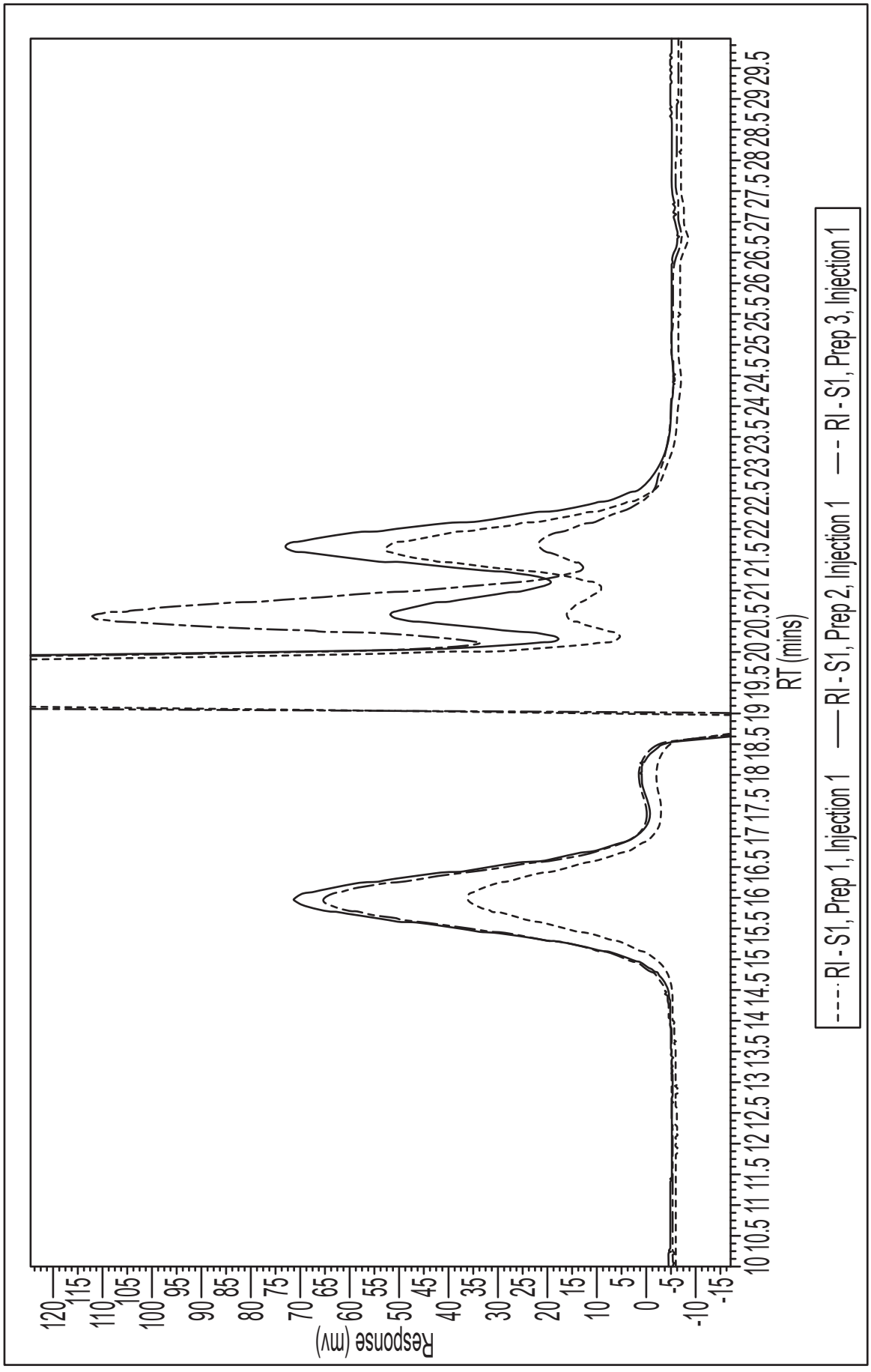

Response (mv)
120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 -5 -10 -15
10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5 22 22.5 23 23.5 24 24.5 25 25.5 26 26.5 27 27.5 28 28.5 29 29.5
RT (mins)
RI - S1, Prep 1, Injection 1
RI - S1, Prep 2, Injection 1
RI - S1, Prep 3, Injection 1

Fig. 4

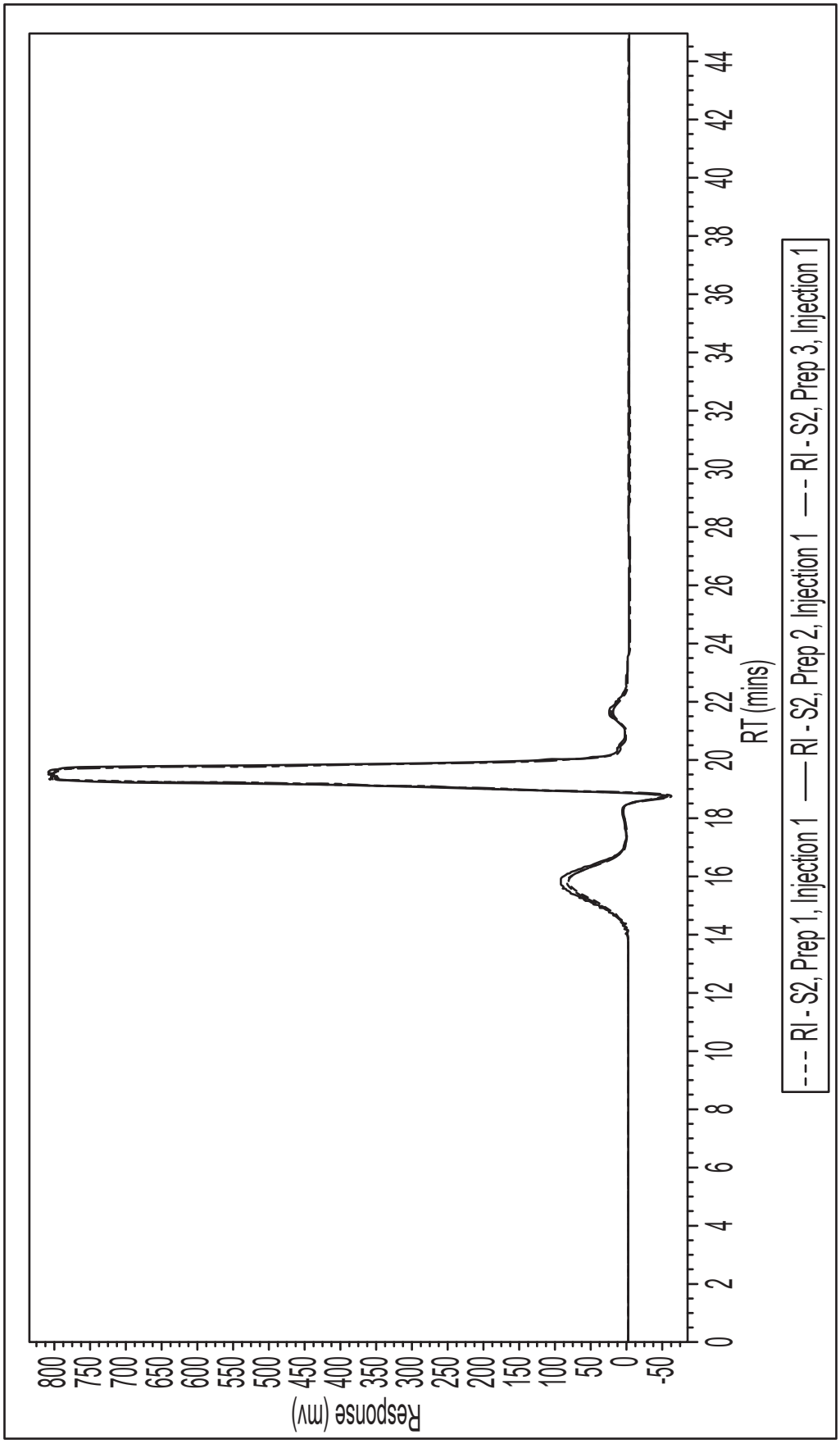

Response (mv)
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
-50
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
RT (mins)
RI - S2, Prep 1, Injection 1
RI - S2, Prep 2, Injection 1
RI - S2, Prep 3, Injection 1

Fig. 5

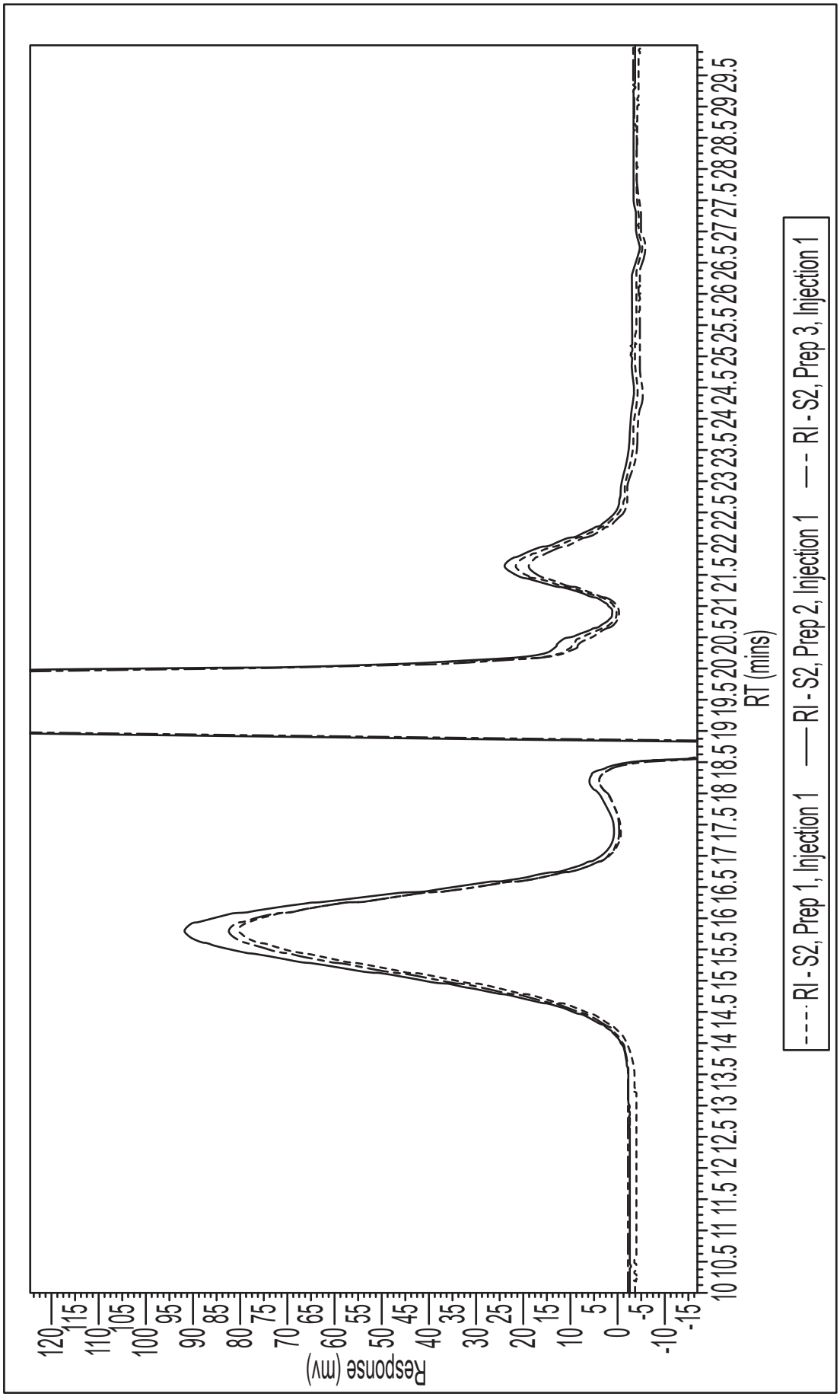

Response (mv)
120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 -5 -10 -15
10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5 22 22.5 23 23.5 24 24.5 25 25.5 26 26.5 27 27.5 28 28.5 29 29.5
RT (mins)
RI - S2, Prep 1, Injection 1
RI - S2, Prep 2, Injection 1
RI - S2, Prep 3, Injection 1

Fig. 6

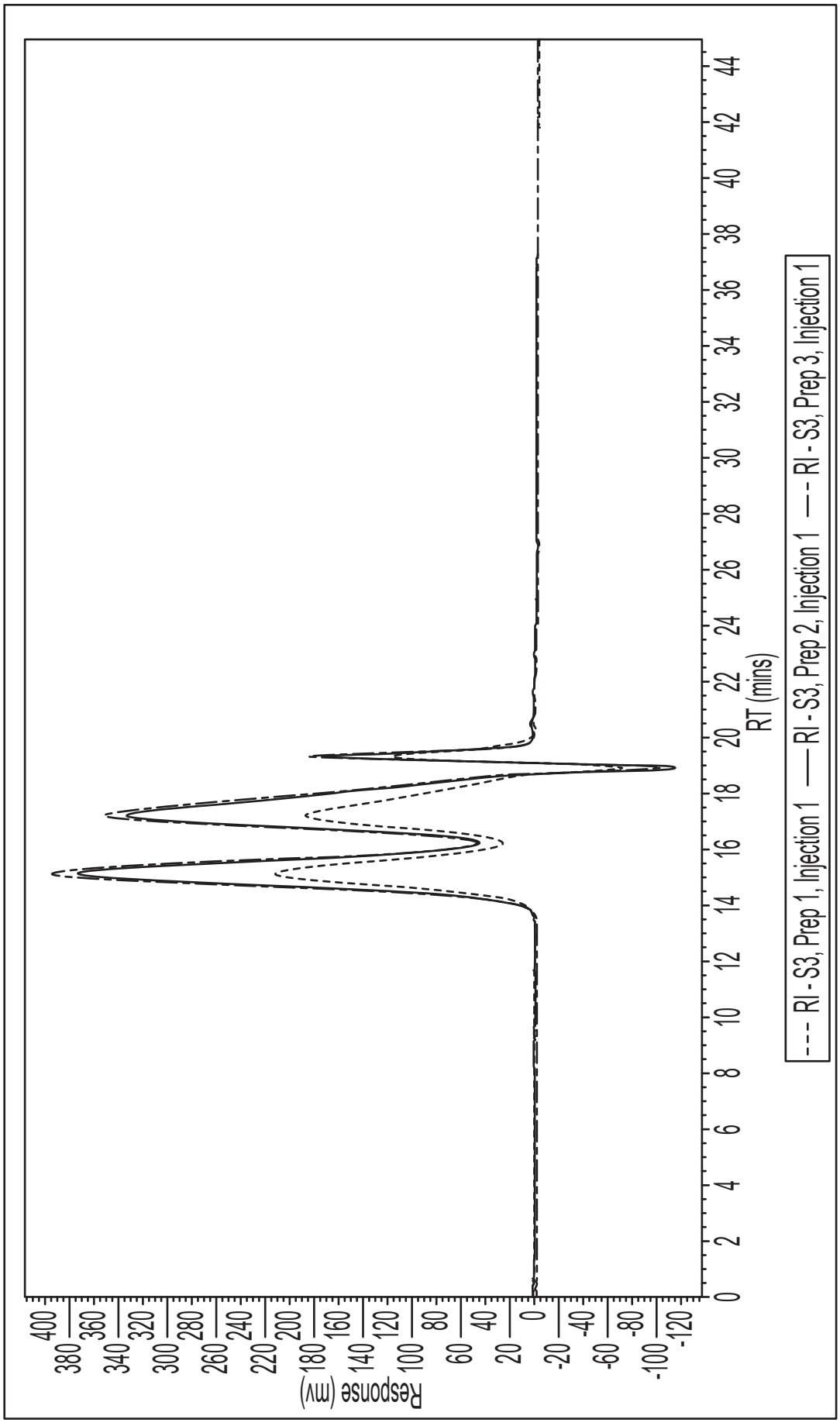

Response (mv)
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
RT (mins)
RI - S3, Prep 1, Injection 1
RI - S3, Prep 2, Injection 1
RI - S3, Prep 3, Injection 1

Fig. 7

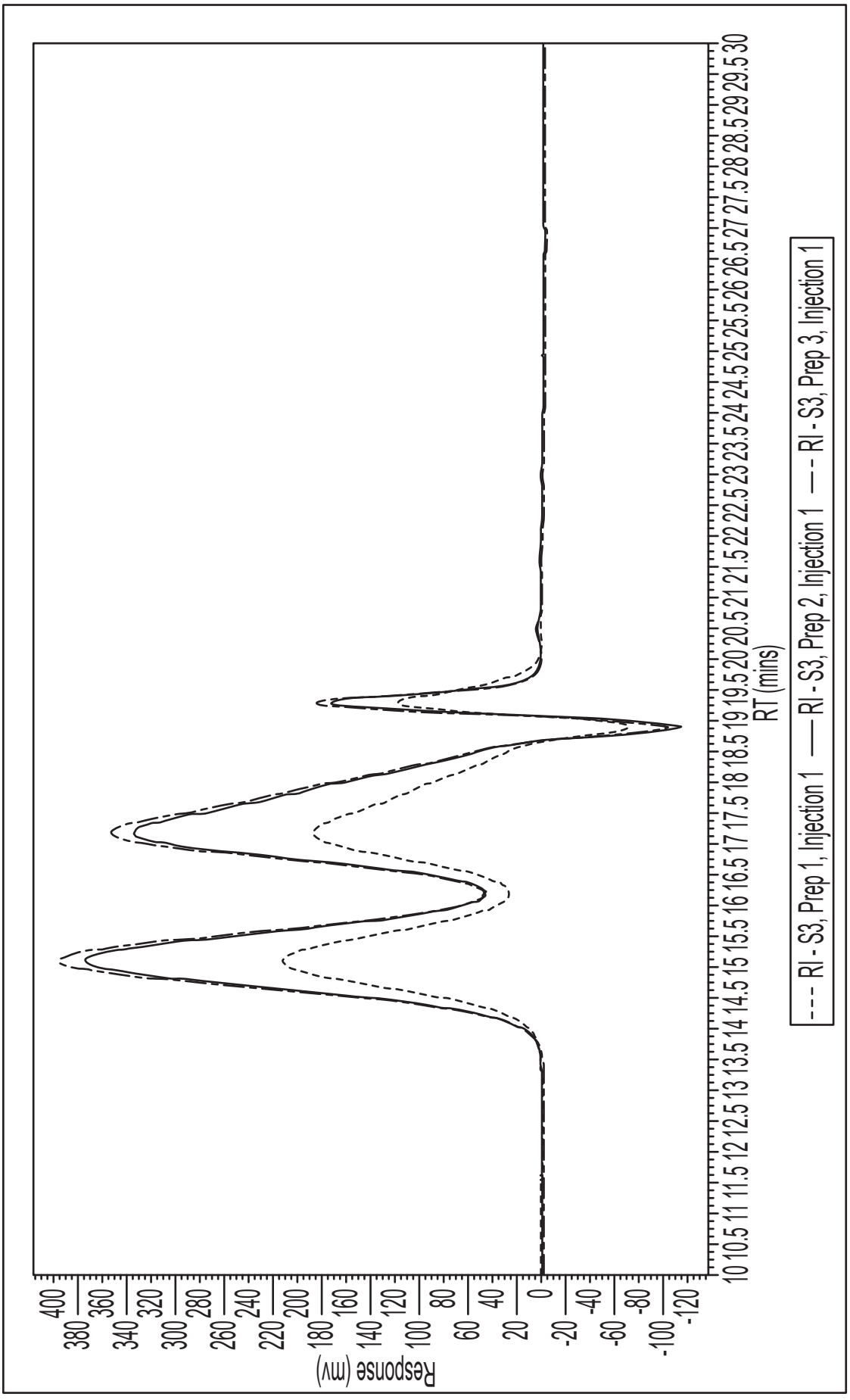

Response (mv)
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5 22 22.5 23 23.5 24 24.5 25 25.5 26 26.5 27 27.5 28 28.5 29 29.5 30
RT (mins)
RI - S3, Prep 1, Injection 1
RI - S3, Prep 2, Injection 1
RI - S3, Prep 3, Injection 1

Fig. 8

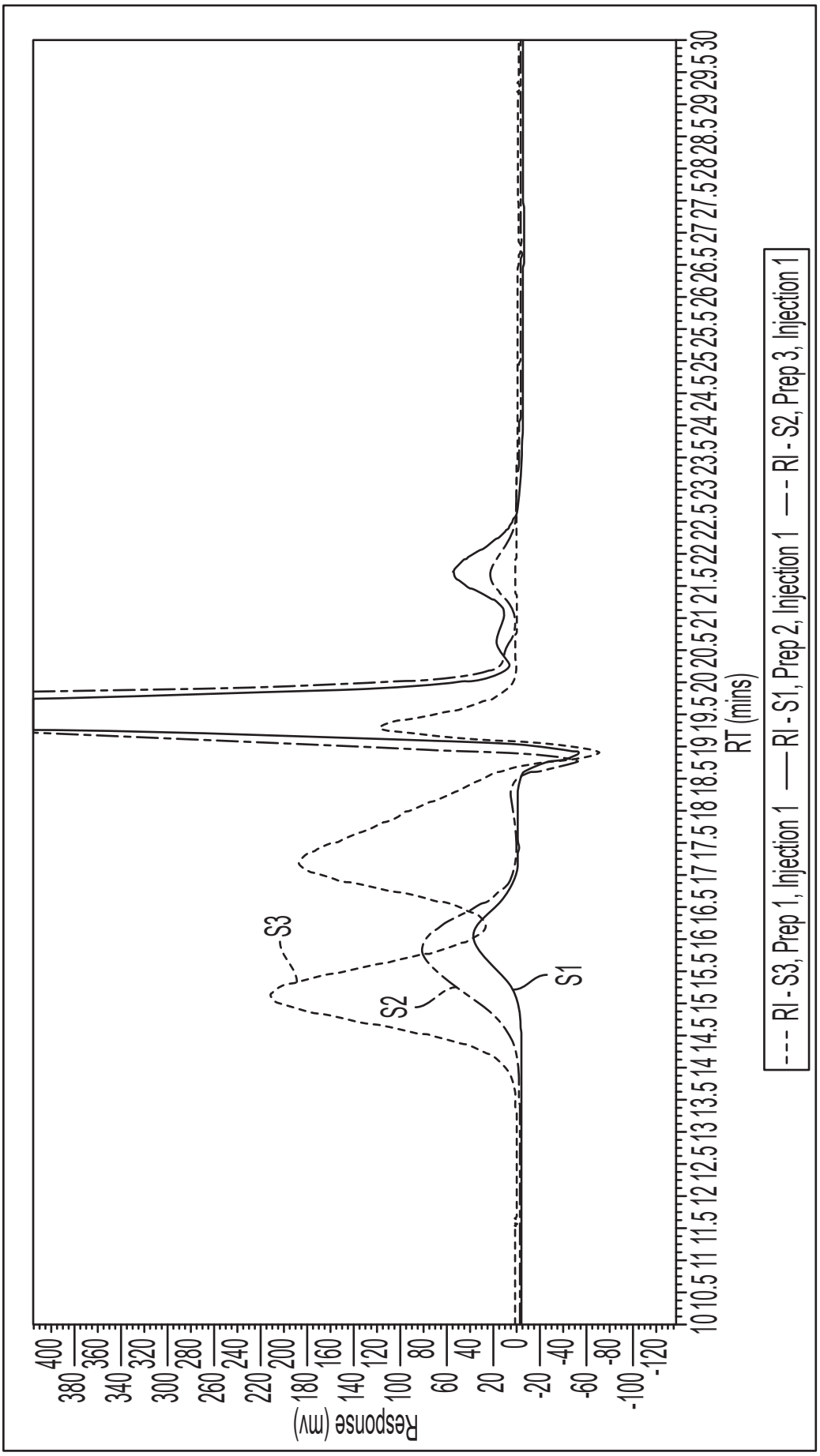

Response (mv)
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
10
10.5
11
11.5
12
12.5
13
13.5
14
14.5
15
15.5
16
16.5
17
17.5
18
18.5
19
19.5
20
20.5
21
21.5
22
22.5
23
23.5
24
24.5
25
25.5
26
26.5
27
27.5
28
28.5
29
29.5
30
RT (mins)
S1
S2
S3
--- RI - S3, Prep 1, Injection 1
—— RI - S1, Prep 2, Injection 1
—·— RI - S2, Prep 3, Injection 1

Fig. 9

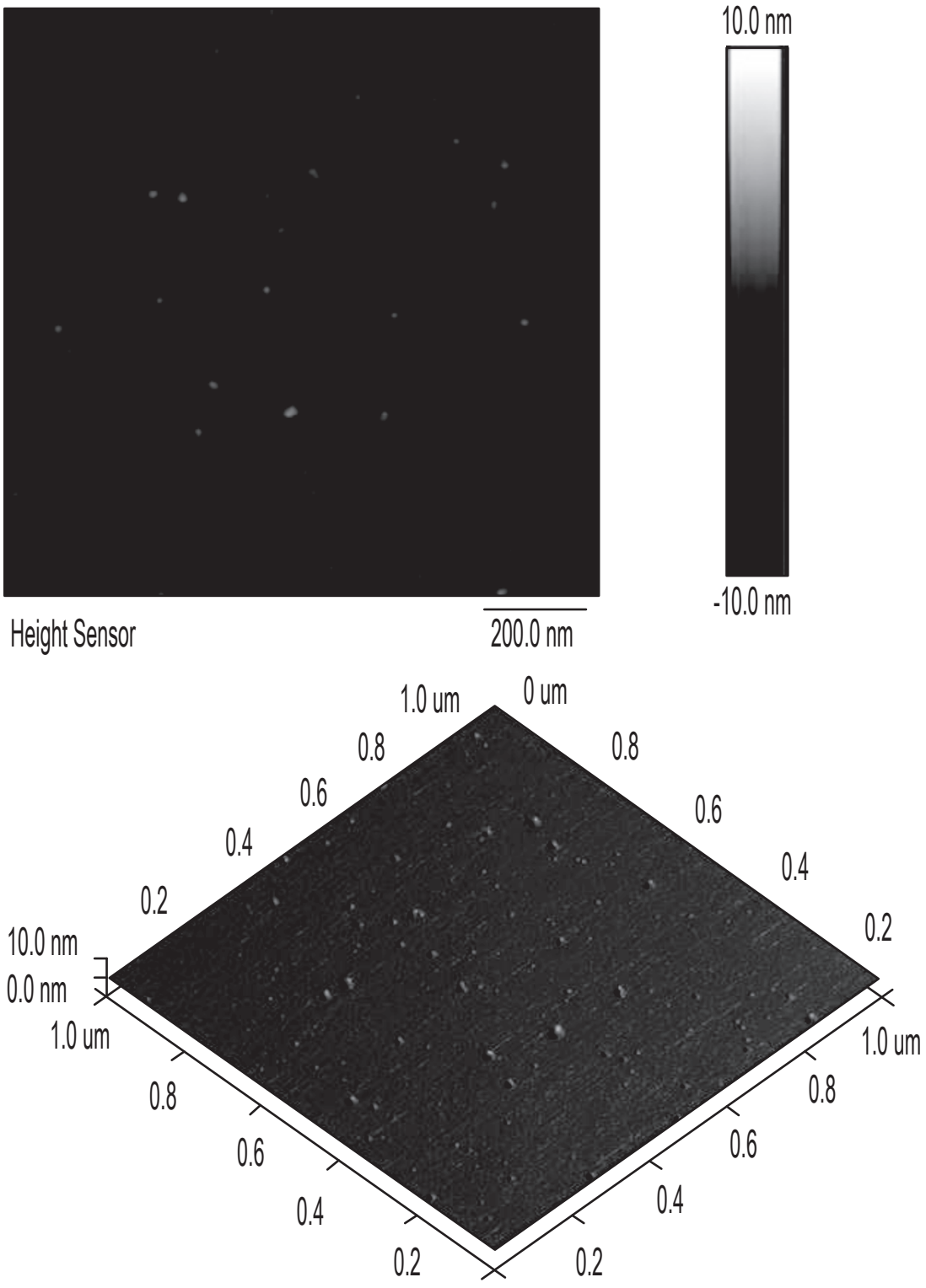

10.0 nm
-10.0 nm
Height Sensor
200.0 nm
1.0 um
0 um
0.8
0.6
0.4
0.2
10.0 nm
0.0 nm
1.0 um
0.8
0.6
0.4
0.2
0.2
0.4
0.6
0.8
1.0 um

Fig. 10

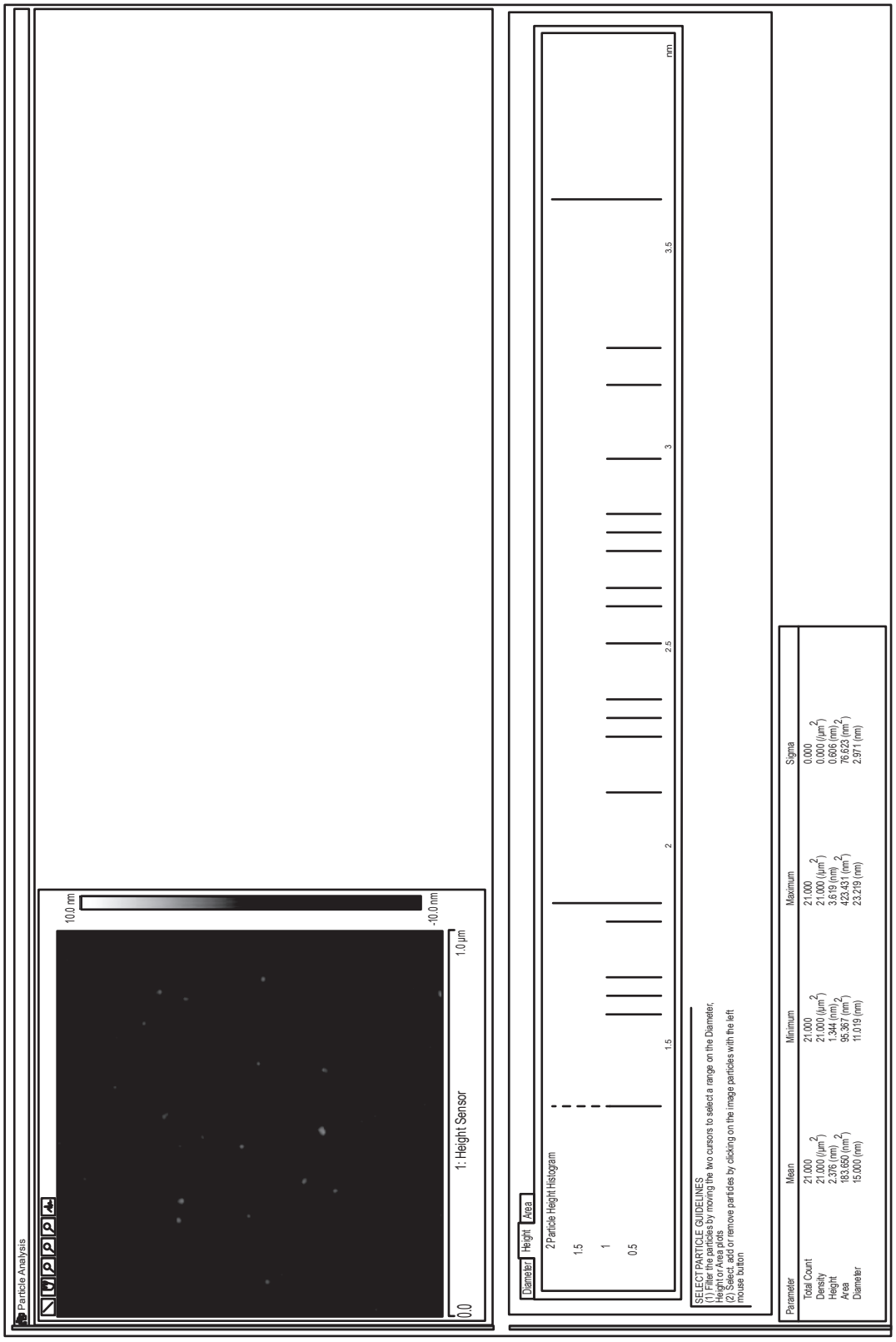

Particle Analysis
10.0 nm
-10.0 nm
1: Height Sensor
0.0
1.0 µm
Diameter
Height
Area
2 Particle Height Histogram
1.5
1
0.5
2
2.5
3
3.5
nm
SELECT PARTICLE GUIDELINES
(1) Filter the particles by moving the two cursors to select a range on the Diameter, Height or Area axes.
(2) Select, add or remove particles by clicking on the image particles with the left mouse button
Parameter
Mean
Minimum
Maximum
Sigma
Total Count 21.000 21.000 21.000 0.000
Density 21.000 (/µm2) 21.000 (/µm2) 21.000 (/µm2) 0.000 (/µm2)
Height 2.376 (nm) 1.344 (nm) 3.619 (nm) 0.606 (nm)
Area 183.650 (nm2) 95.367 (nm2) 423.431 (nm2) 76.623 (nm2)
Diameter 15.000 (nm) 11.019 (nm) 23.219 (nm) 2.971 (nm)

Fig. 11

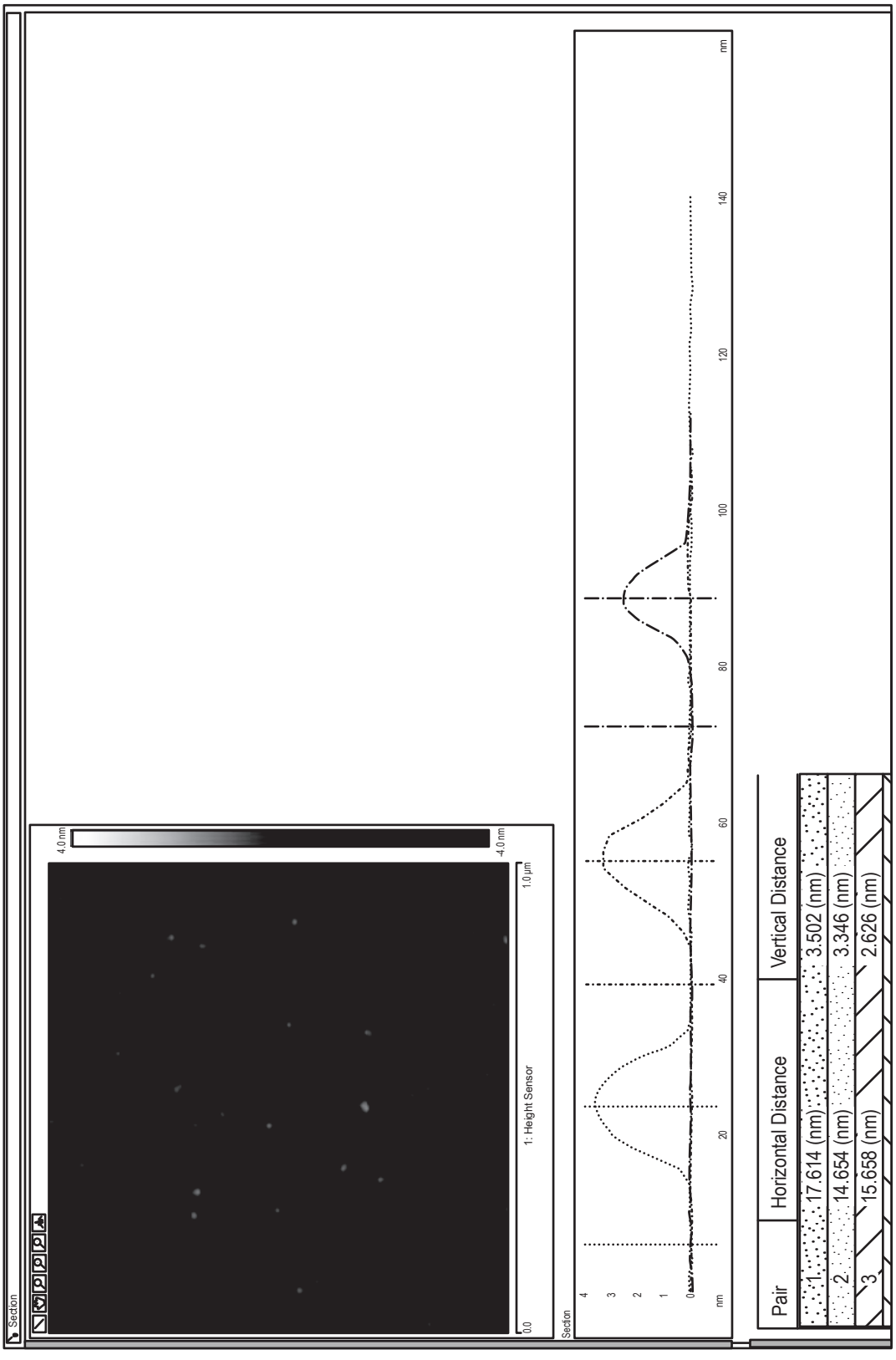

Section
4.0 nm
-4.0 nm
1.0 µm
1: Height Sensor
0.0
Section
nm
Pair
Horizontal Distance
Vertical Distance
1
17.614 (nm)
3.502 (nm)
2
14.654 (nm)
3.346 (nm)
3
15.658 (nm)
2.626 (nm)

Fig. 12

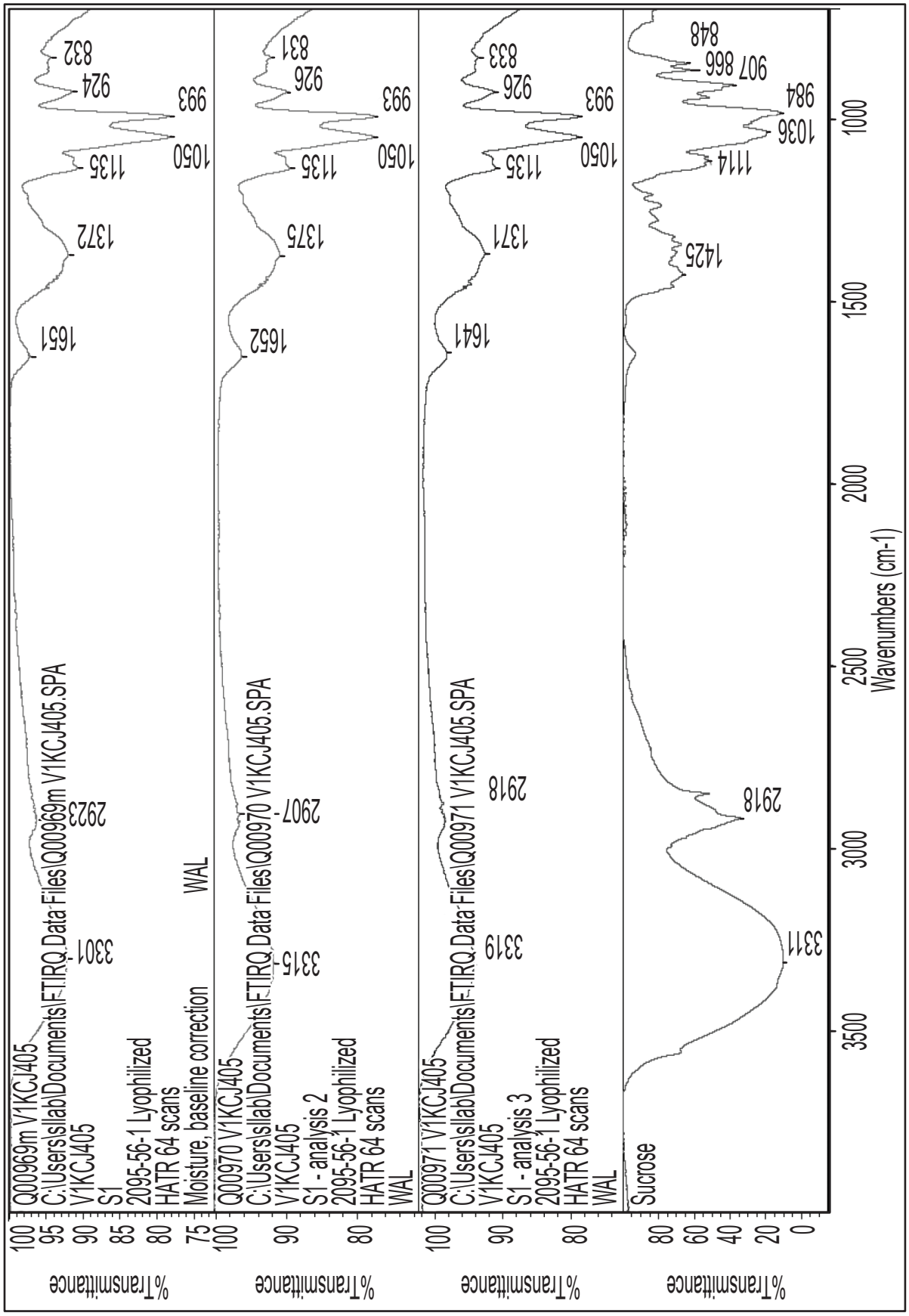

Q00969m V1KCJ405
C:\Users\slab\Documents\FTIRQ.Data-Files\Q00969m V1KCJ405.SPA
V1KCJ405
S1
2095-56-1 Lyophilized
HATR 64 scans
Moisture, baseline correction
WAL
3301
2923
1651
1372
1135
1050
993
924
832
Q00970 V1KCJ405
C:\Users\slab\Documents\FTIRQ.Data-Files\Q00970 V1KCJ405.SPA
V1KCJ405
S1 - analysis 2
2095-56-1 Lyophilized
HATR 64 scans
WAL
3315
2907
1652
1375
1135
1050
993
926
831
Q00971 V1KCJ405
C:\Users\slab\Documents\FTIRQ.Data-Files\Q00971 V1KCJ405.SPA
V1KCJ405
S1 - analysis 3
2095-56-1 Lyophilized
HATR 64 scans
WAL
3319
2918
1641
1371
1135
1050
993
926
833
Sucrose
3311
2918
1425
1114
1036
984
907
866
848
%Transmittance
Wavenumbers (cm-1)
3500
3000
2500
2000
1500
1000

Fig. 13

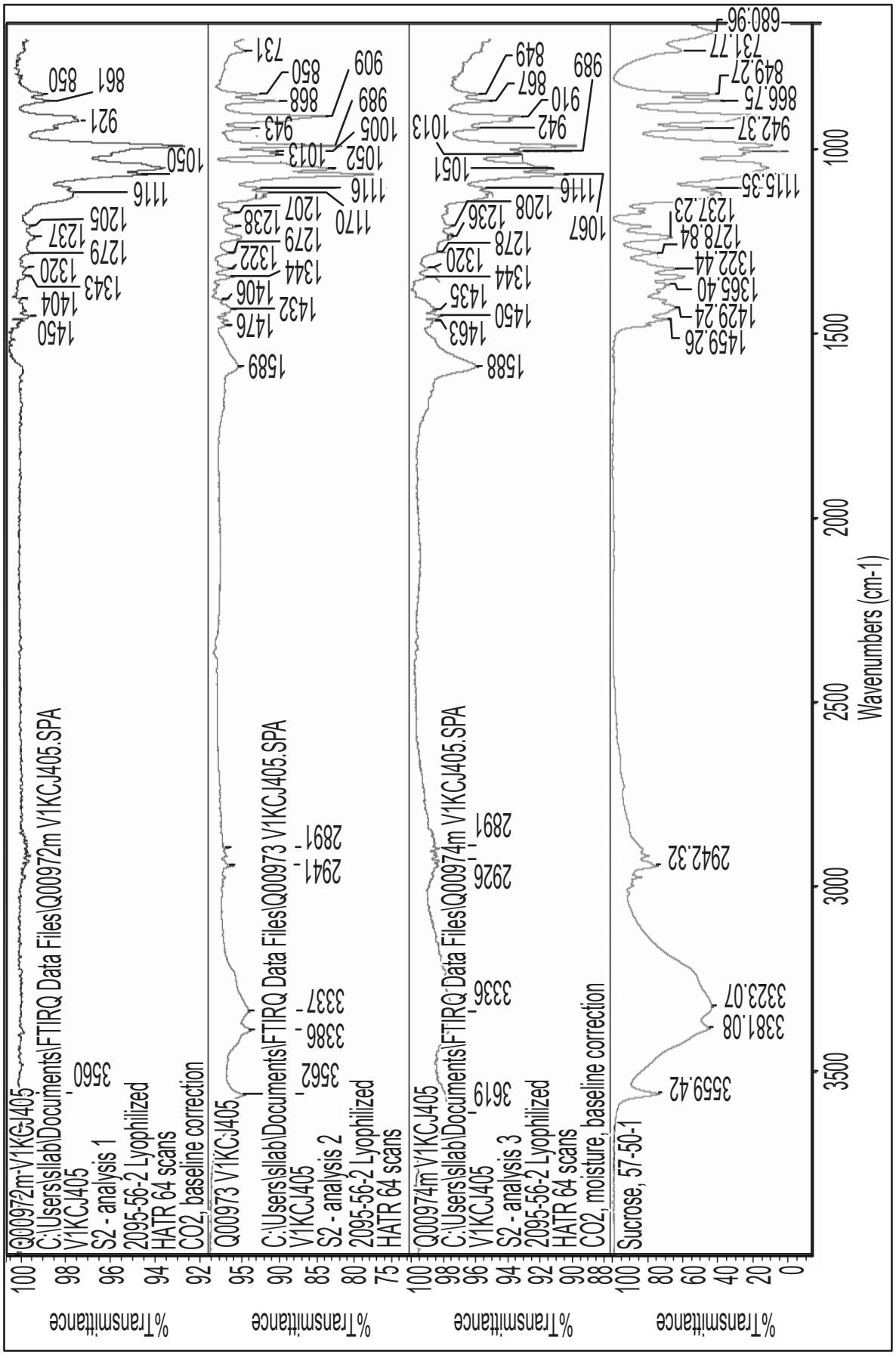

Q00972m V1KCJ405
C:\Users\sllab\Documents\FTIRQ Data Files\Q00972m V1KCJ405.SPA
V1KCJ405
S2 - analysis 1
2095-56-2 Lyophilized
HATR 64 scans
CO2, baseline correction
3560
1450
1404
1343
1320
1279
1237
1205
1116
1050
921
861
850
Q00973 V1KCJ405
C:\Users\sllab\Documents\FTIRQ Data Files\Q00973 V1KCJ405.SPA
V1KCJ405
S2 - analysis 2
2095-56-2 Lyophilized
HATR 64 scans
3562
3386
3337
2941
2891
1589
1476
1432
1406
1344
1322
1279
1238
1207
1170
1116
1052
1013
1005
989
943
909
868
850
731
Q00974m V1KCJ405
C:\Users\sllab\Documents\FTIRQ Data Files\Q00974m V1KCJ405.SPA
V1KCJ405
S2 - analysis 3
2095-56-2 Lyophilized
HATR 64 scans
CO2, moisture, baseline correction
3619
3336
2926
2891
1588
1463
1450
1435
1344
1320
1278
1236
1208
1116
1067
1051
1013
989
942
910
867
849
Sucrose, 57-50-1
3559.42
3381.08
3323.07
2942.32
1459.26
1429.24
1365.40
1322.44
1278.84
1237.23
1115.35
942.37
866.75
849.27
731.77
680.96
%Transmittance
Wavenumbers (cm-1)

Fig. 14

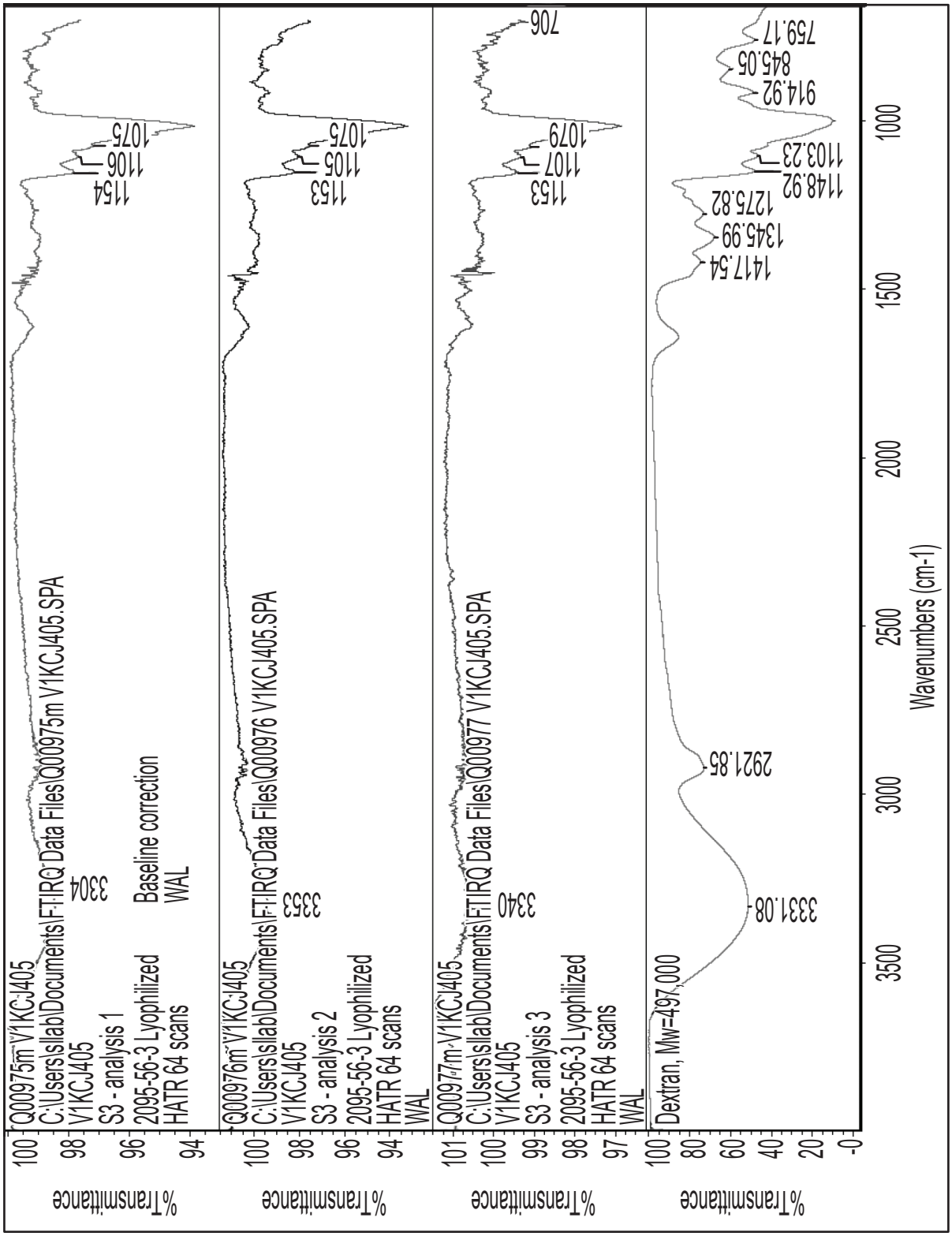
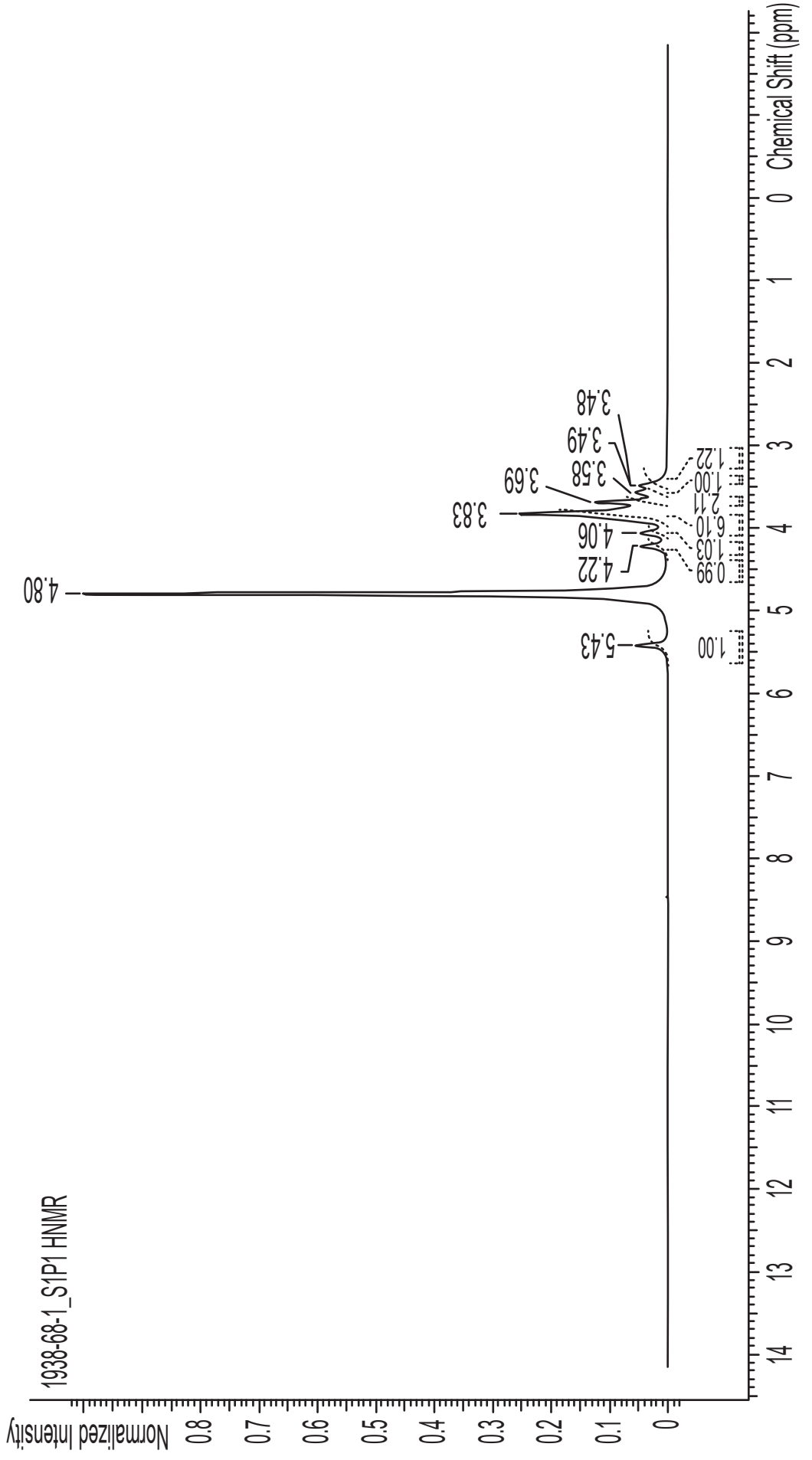
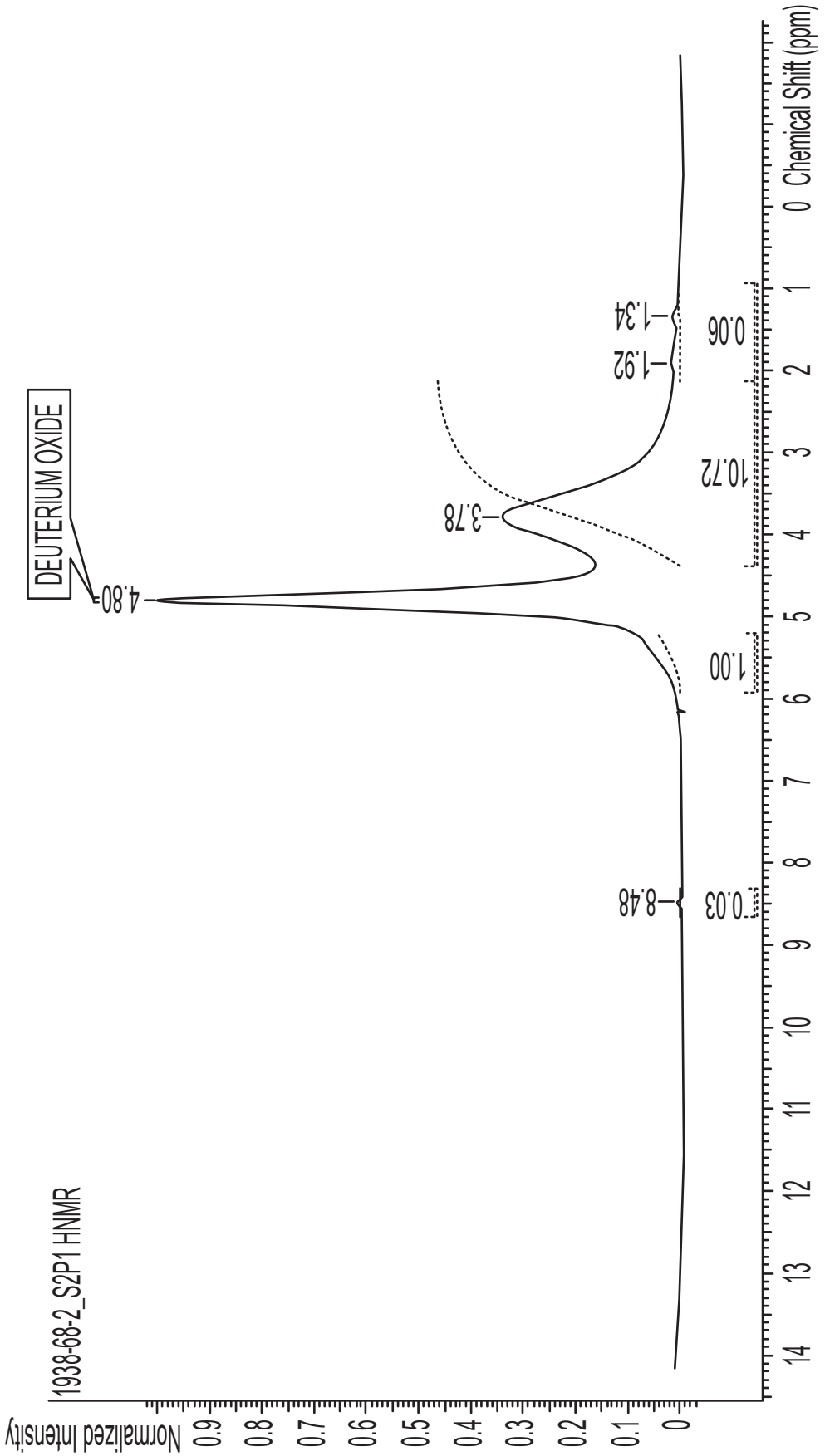

Q00975m V1KCJ405
C:\Users\slab\Documents\FTIRQ Data Files\Q00975m V1KCJ405.SPA
V1KCJ405
S3 - analysis 1
2095-56-3 Lyophilized
HATR 64 scans
Baseline correction
WAL
3304
1154
1106
1075
Q00976m V1KCJ405
C:\Users\slab\Documents\FTIRQ Data Files\Q00976 V1KCJ405.SPA
V1KCJ405
S3 - analysis 2
2095-56-3 Lyophilized
HATR 64 scans
WAL
3353
1153
1105
1075
Q00977m V1KCJ405
C:\Users\slab\Documents\FTIRQ Data Files\Q00977 V1KCJ405.SPA
V1KCJ405
S3 - analysis 3
2095-56-3 Lyophilized
HATR 64 scans
WAL
3340
1153
1107
1079
706
Dextran, Mw=497,000
3331.08
2921.85
1417.54
1345.99
1275.82
1148.92
1103.23
914.92
845.05
759.17
%Transmittance
Wavenumbers (cm-1)
3500
3000
2500
2000
1500
1000

Fig. 15



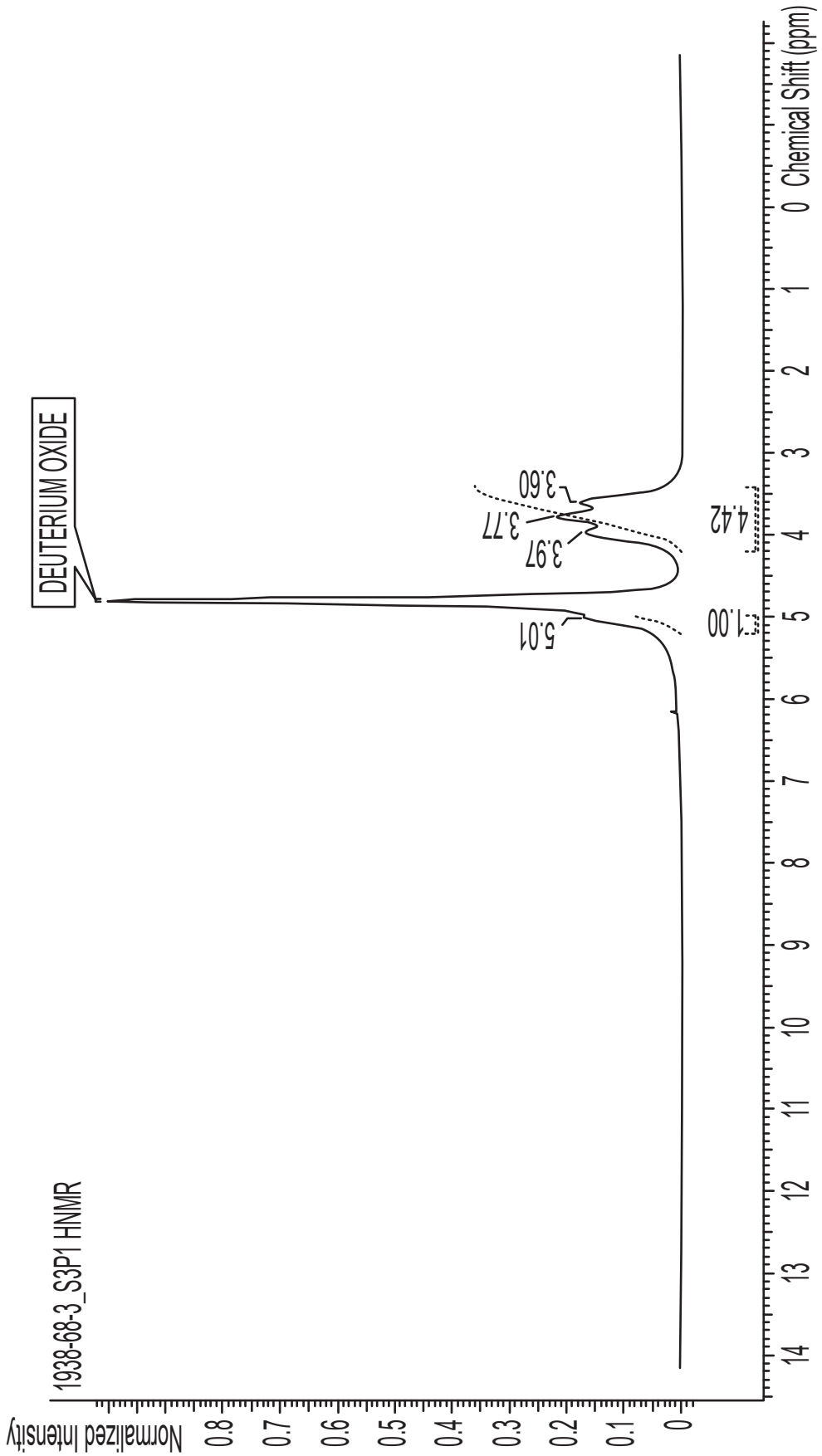
1H NMR spectra of S1-preparation 1

Fig. 16



1H NMR spectra of S2-preparation 1

Fig. 17



1H NMR spectra of S3-preparation 1

Fig. 18

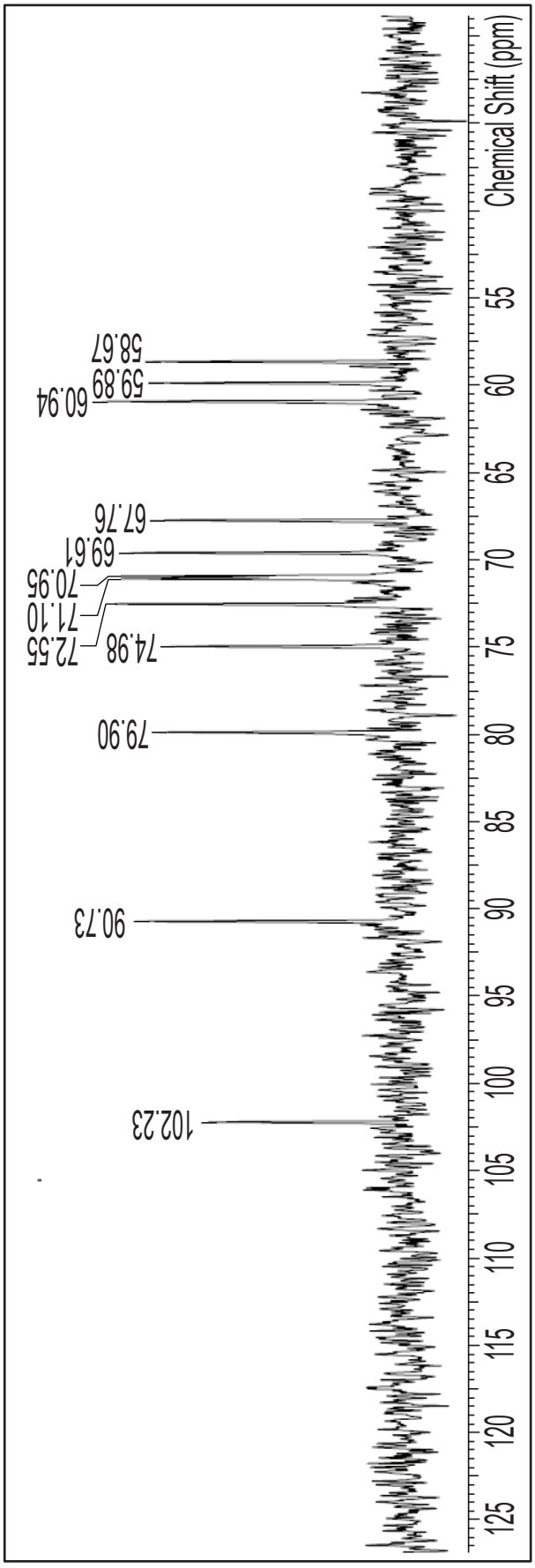

Chemical Shift (ppm)
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
102.23
90.73
79.90
74.98
72.55
71.10
70.95
69.61
67.76
60.94
59.89
58.67

Fig. 19

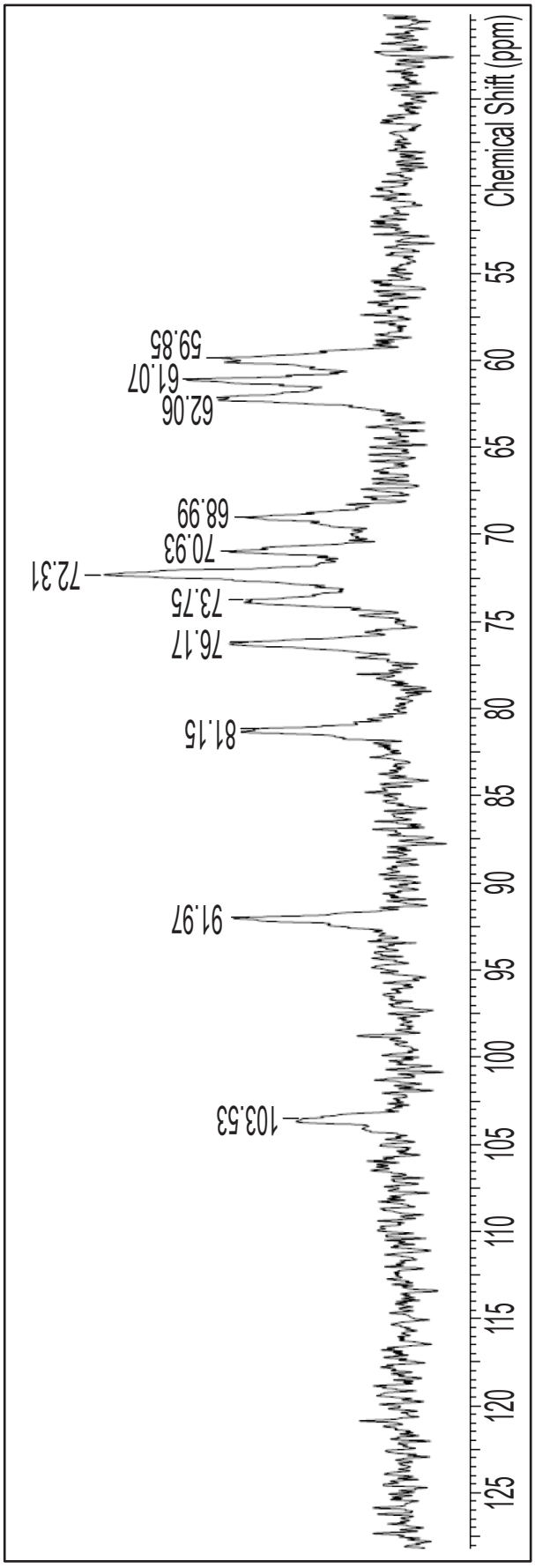

Chemical Shift (ppm)
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
103.53
91.97
81.15
76.17
73.75
72.31
70.93
68.99
62.06
61.07
59.85

Fig. 20

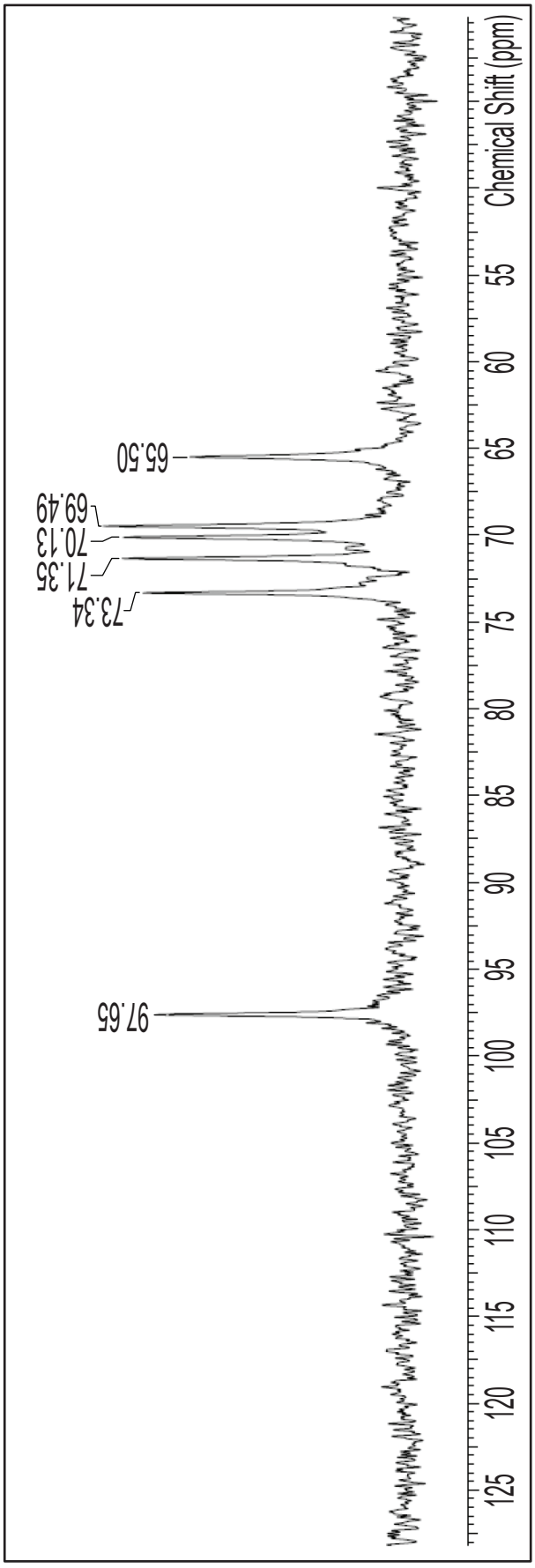

Chemical Shift (ppm)
125
120
115
110
105
100
95
90
85
80
75
70
65
60
55
97.65
73.34
71.35
70.13
69.49
65.50

Fig. 21

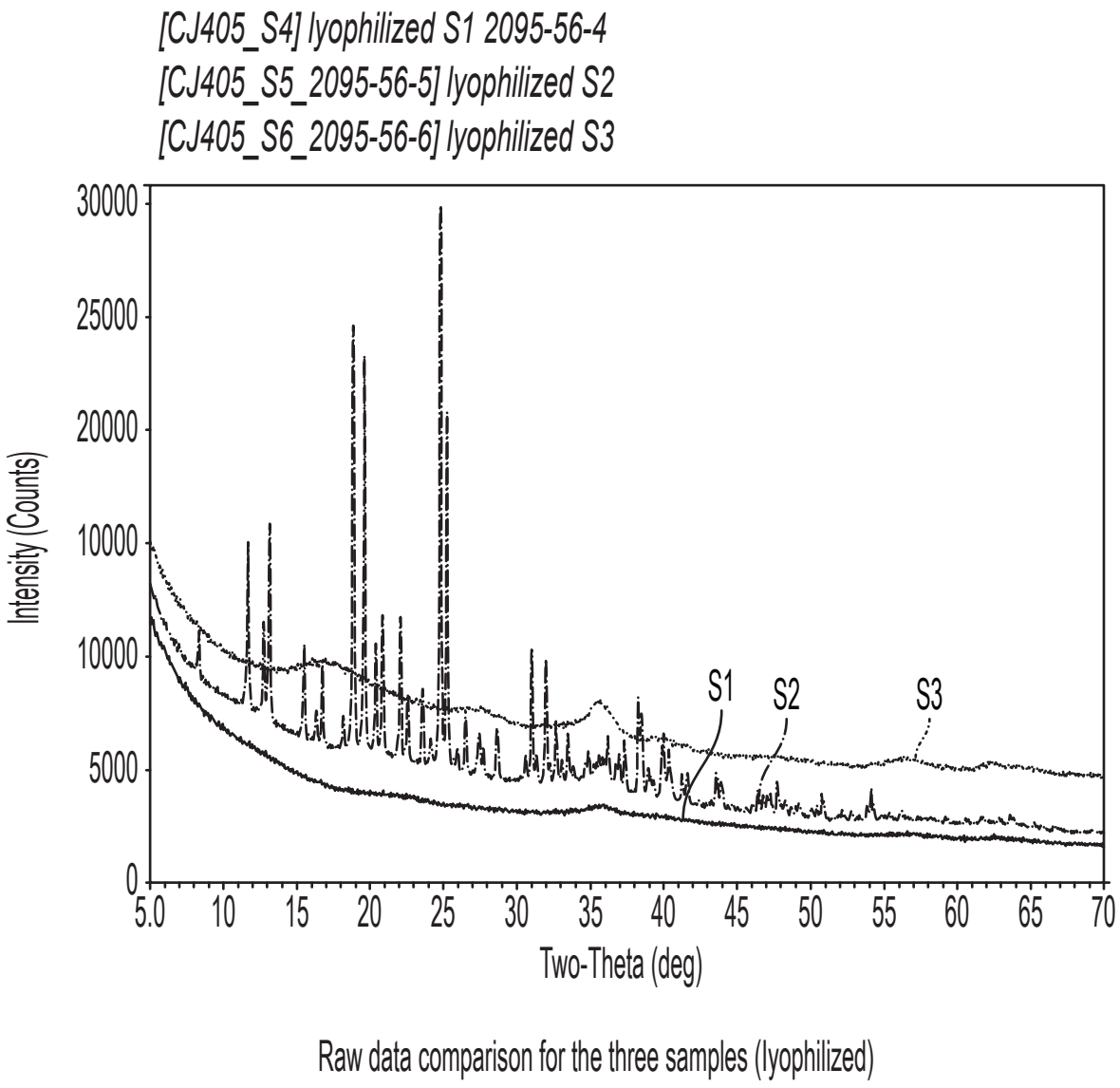

[CJ405_S4] lyophilized S1 2095-56-4
[CJ405_S5_2095-56-5] lyophilized S2
[CJ405_S6_2095-56-6] lyophilized S3
Intensity (Counts)
30000
25000
20000
10000
10000
5000
0
5.0
10
15
20
25
30
35
40
45
50
55
60
65
70
Two-Theta (deg)
S1
S2
S3
Raw data comparison for the three samples (lyophilized)

Fig. 22

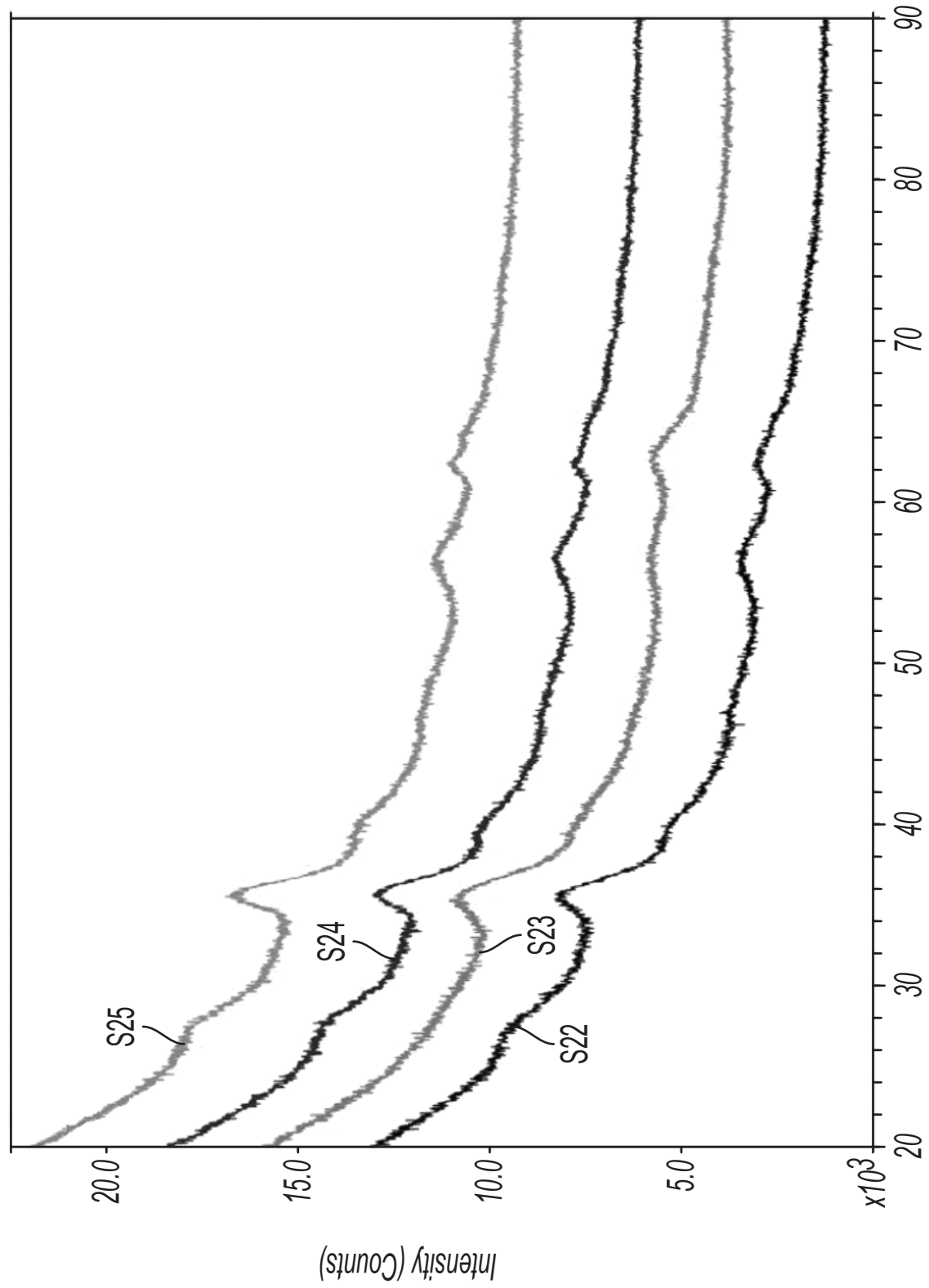

Intensity (Counts)
20.0
15.0
10.0
5.0
x10^3
20
30
40
50
60
70
80
90
Two-Theta (deg)
S25
S24
S23
S22

Fig. 23

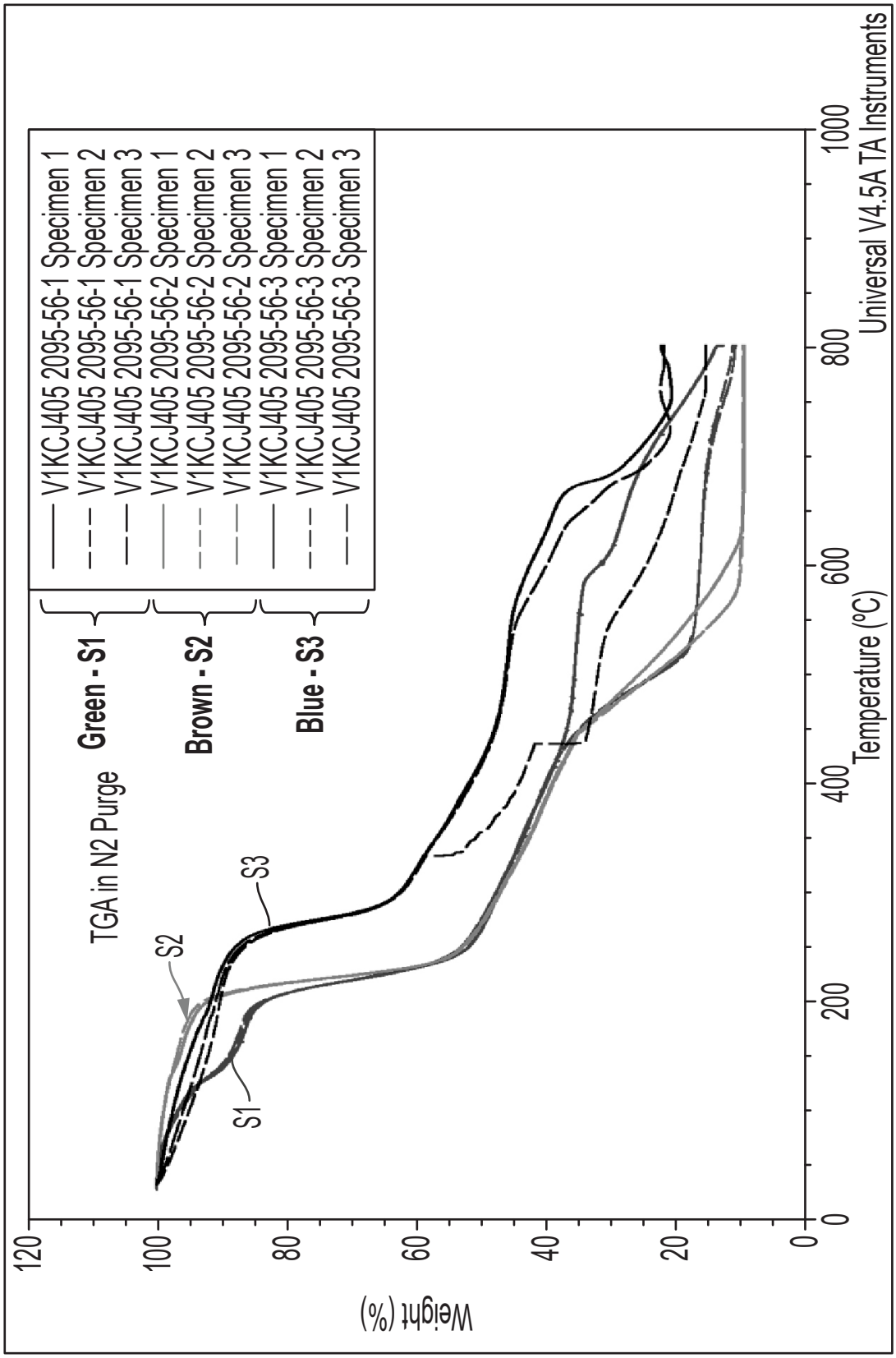

TGA in N2 Purge
V1KCJ405 2095-56-1 Specimen 1
V1KCJ405 2095-56-1 Specimen 2
V1KCJ405 2095-56-1 Specimen 3
V1KCJ405 2095-56-2 Specimen 1
V1KCJ405 2095-56-2 Specimen 2
V1KCJ405 2095-56-2 Specimen 3
V1KCJ405 2095-56-3 Specimen 1
V1KCJ405 2095-56-3 Specimen 2
V1KCJ405 2095-56-3 Specimen 3
Green - S1
Brown - S2
Blue - S3
S1
S2
S3
Weight (%)
Temperature (°C)
Universal V4.5A TA Instruments

Fig. 24

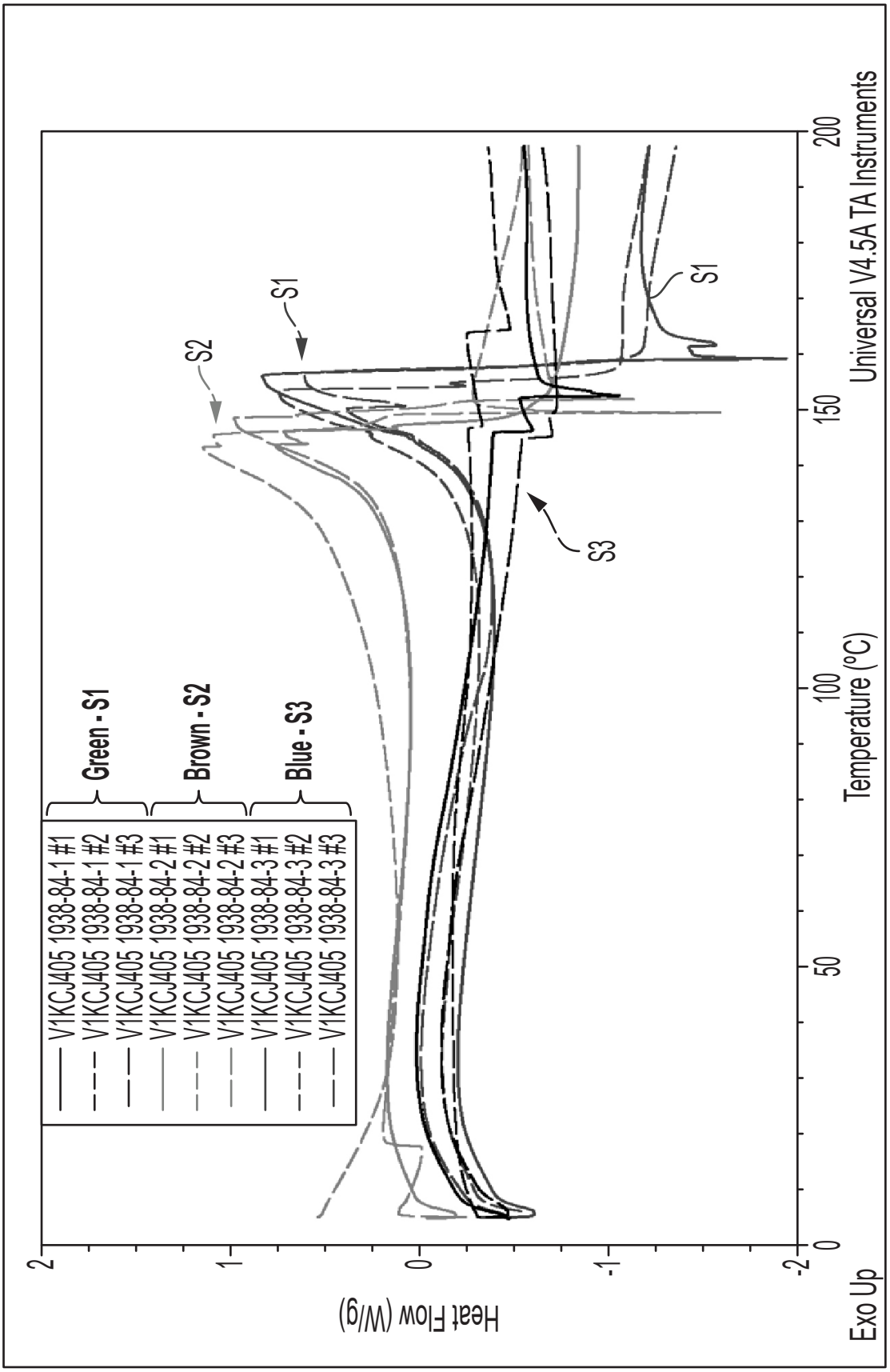

V1KCJ405 1938-84-1 #1
V1KCJ405 1938-84-1 #2
V1KCJ405 1938-84-1 #3
V1KCJ405 1938-84-2 #1
V1KCJ405 1938-84-2 #2
V1KCJ405 1938-84-2 #3
V1KCJ405 1938-84-3 #1
V1KCJ405 1938-84-3 #2
V1KCJ405 1938-84-3 #3
Green - S1
Brown - S2
Blue - S3
S1
S2
S3
S1
Heat Flow (W/g)
Exo Up
Temperature (°C)
Universal V4.5A TA Instruments

Fig. 25