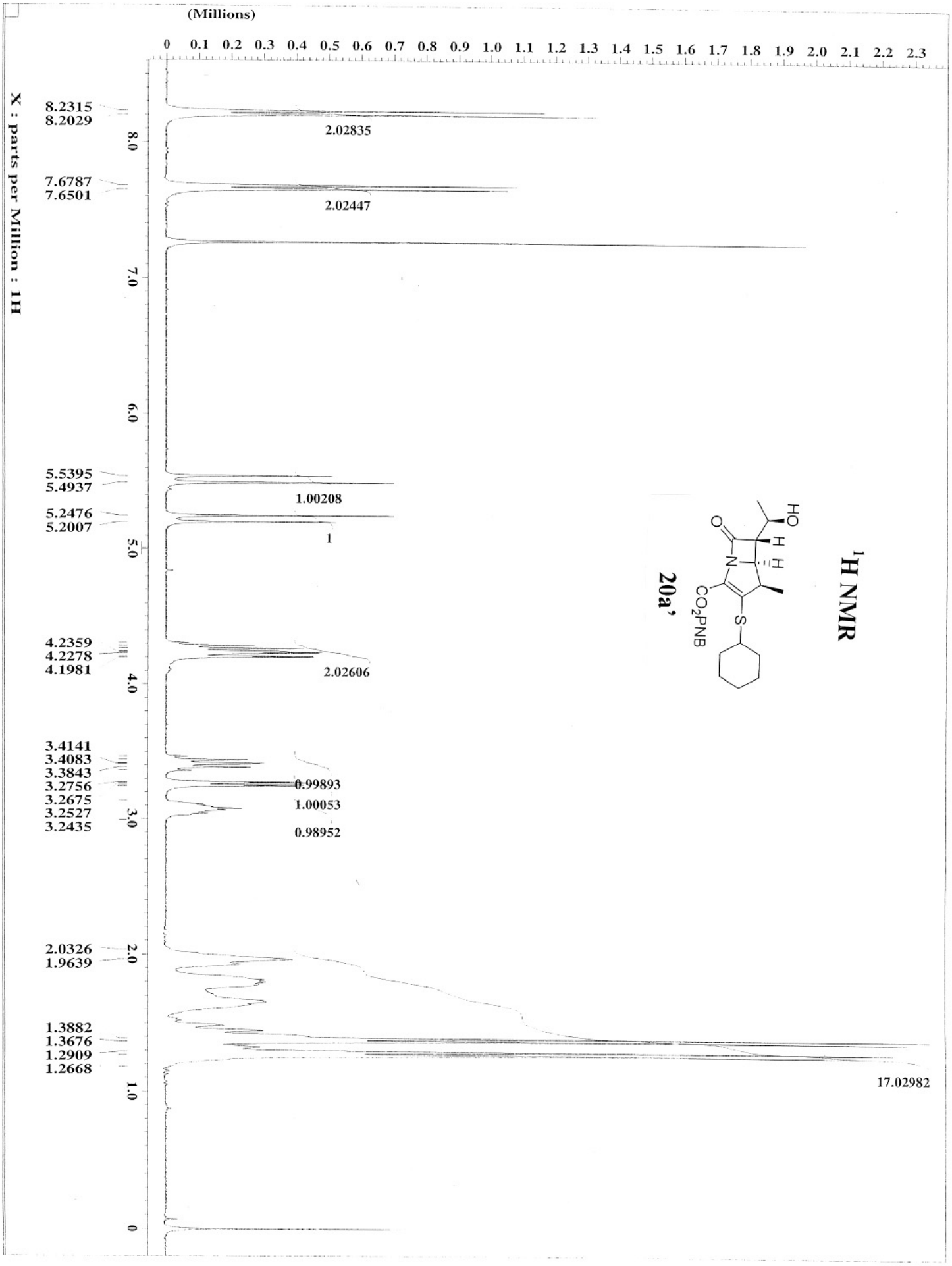
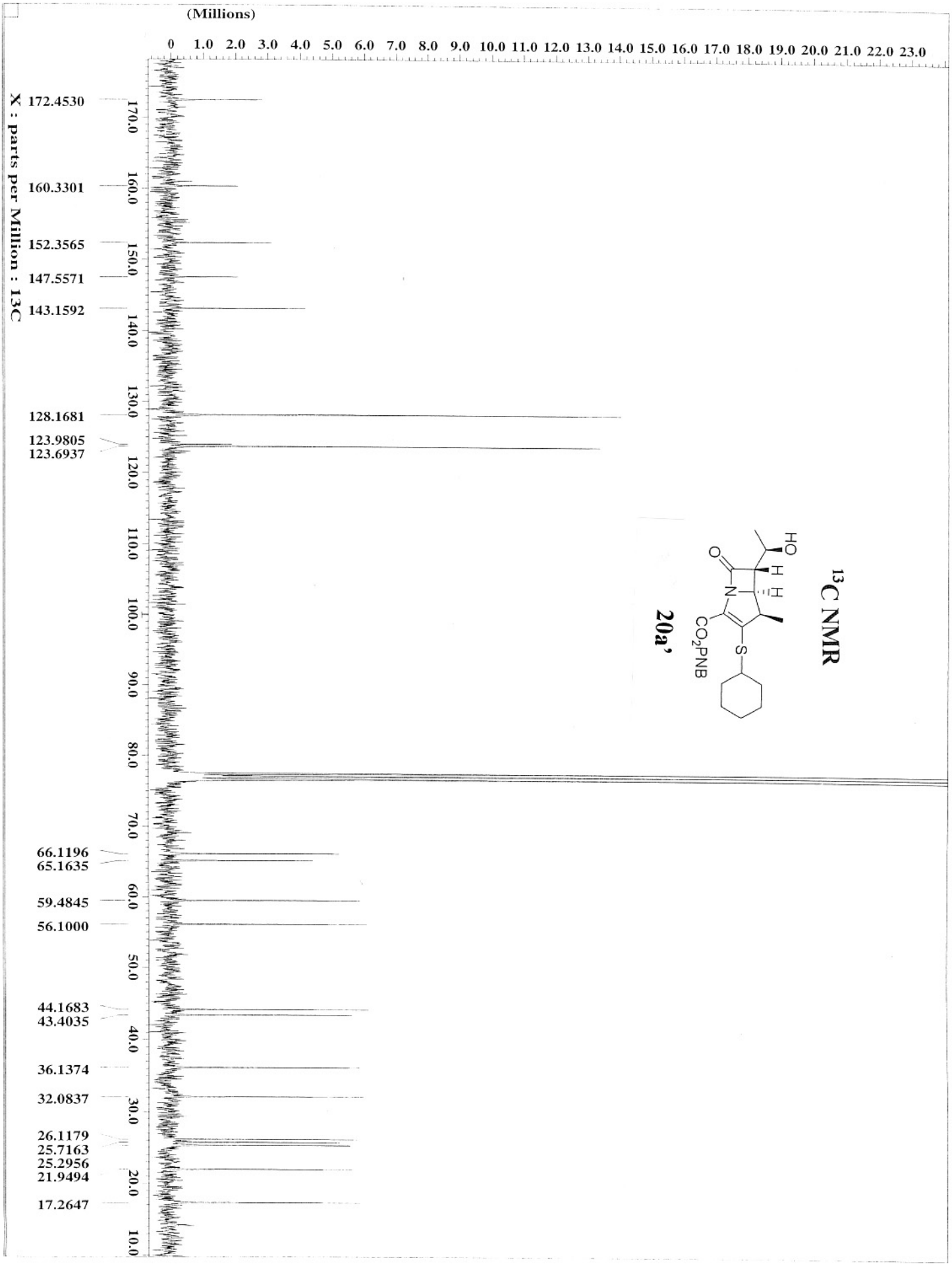
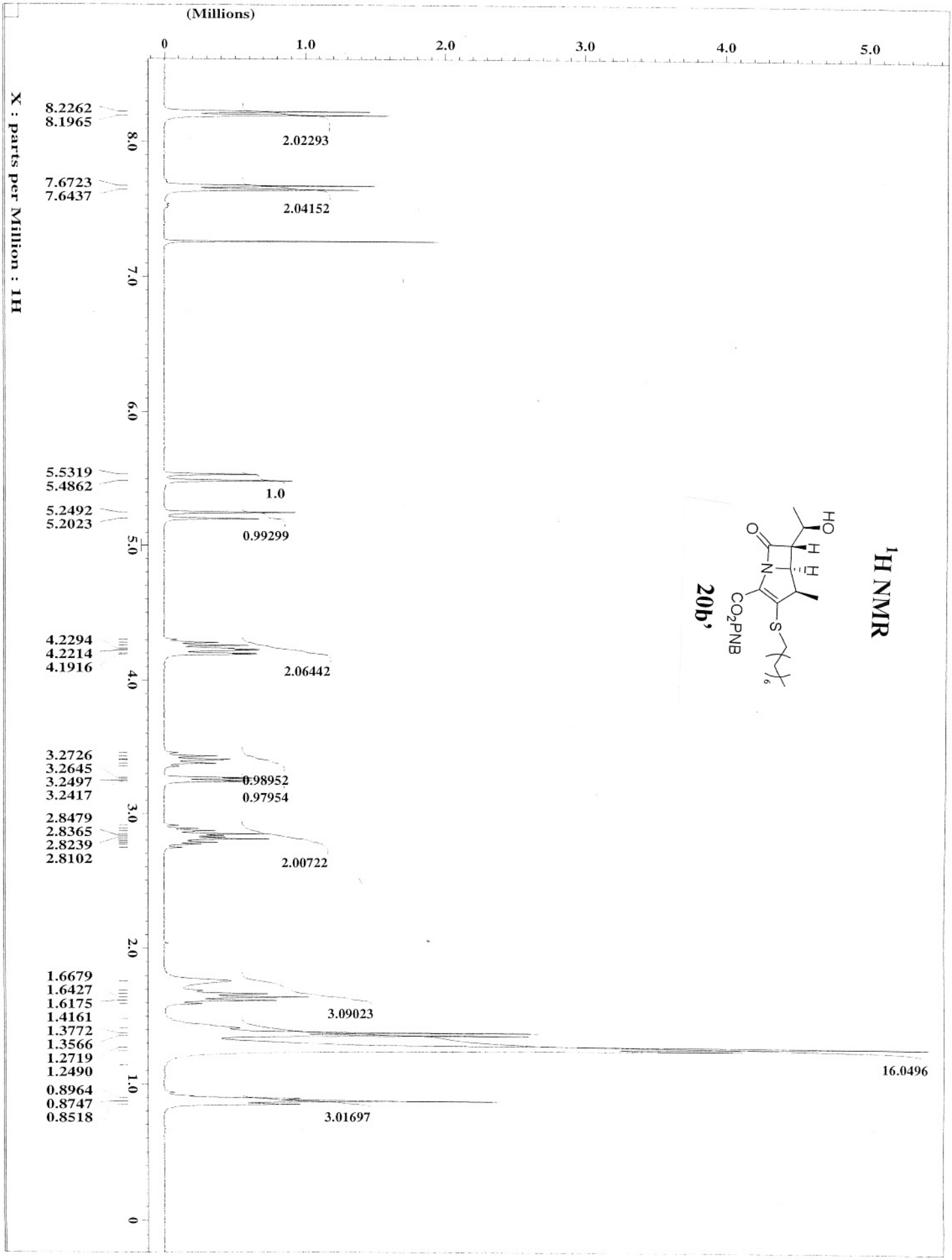
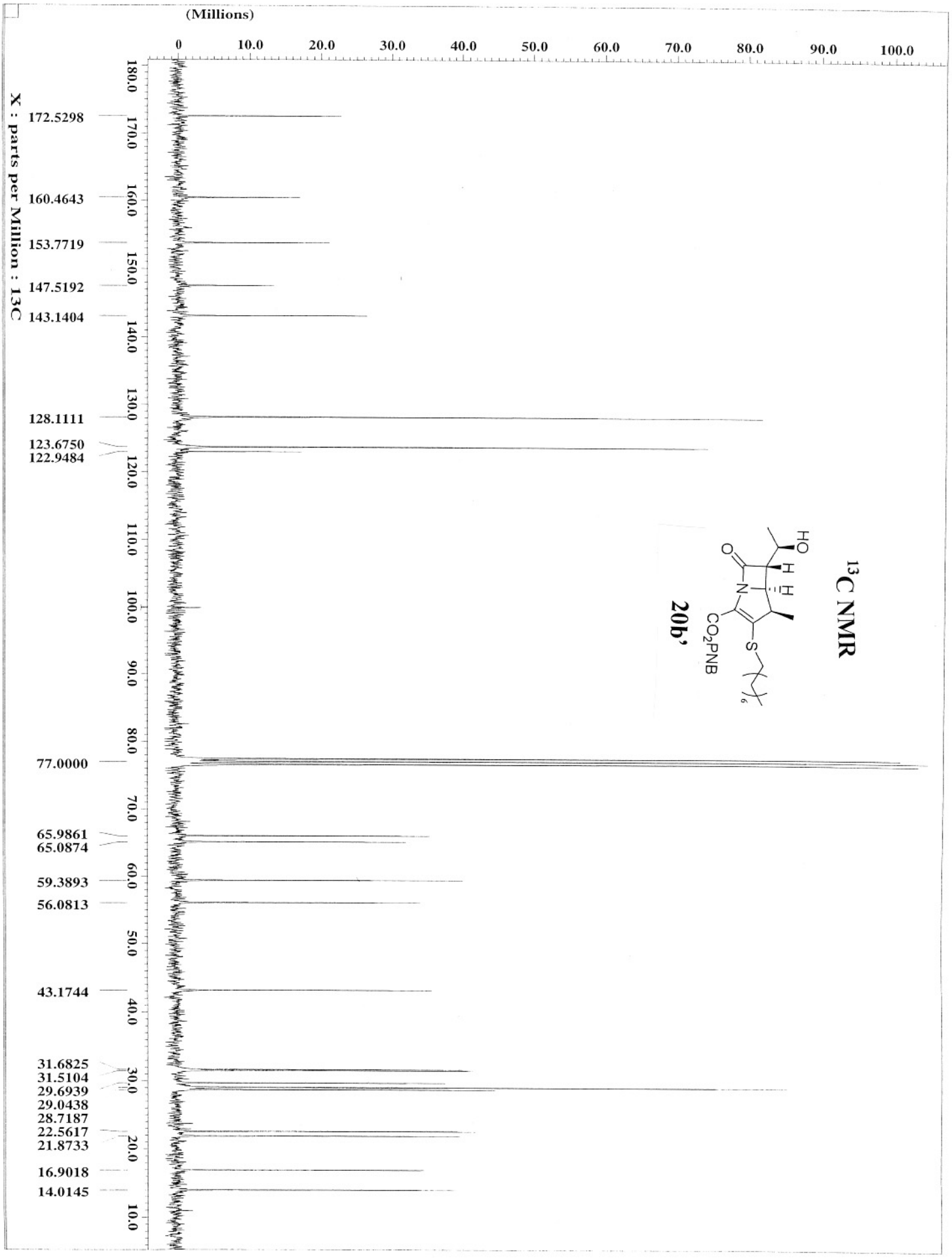
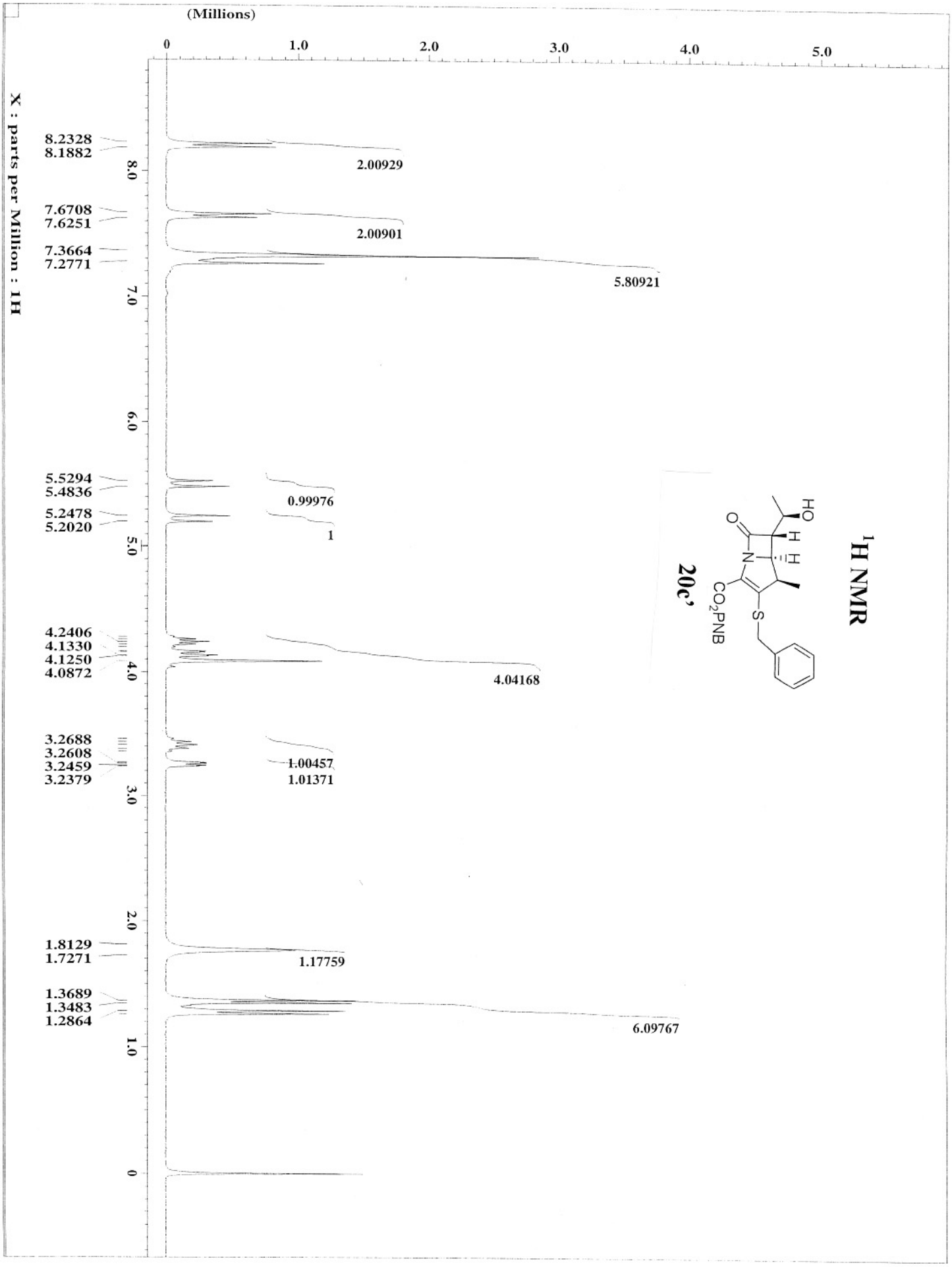
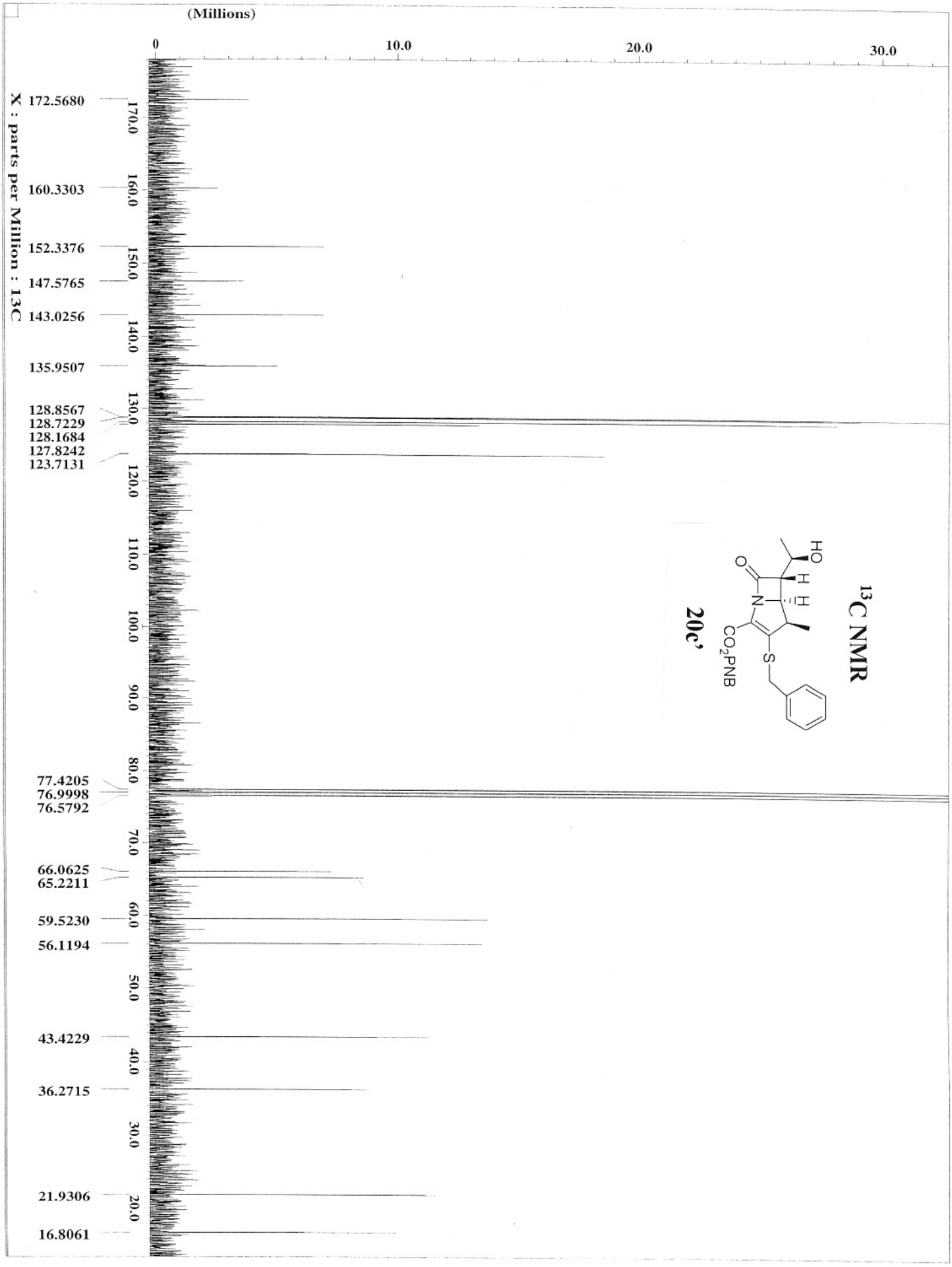

^{1}H NMR
20a'
X : parts per Million : 1H
(Millions)
8.2315
8.2029
7.6787
7.6501
5.5395
5.4937
5.2476
5.2007
4.2359
4.2278
4.1981
3.4141
3.4083
3.3843
3.2756
3.2675
3.2527
3.2435
2.0326
1.9639
1.3882
1.3676
1.2909
1.2668
2.02835
2.02447
1.00208
1
2.02606
0.99893
1.00053
0.98952
17.02982

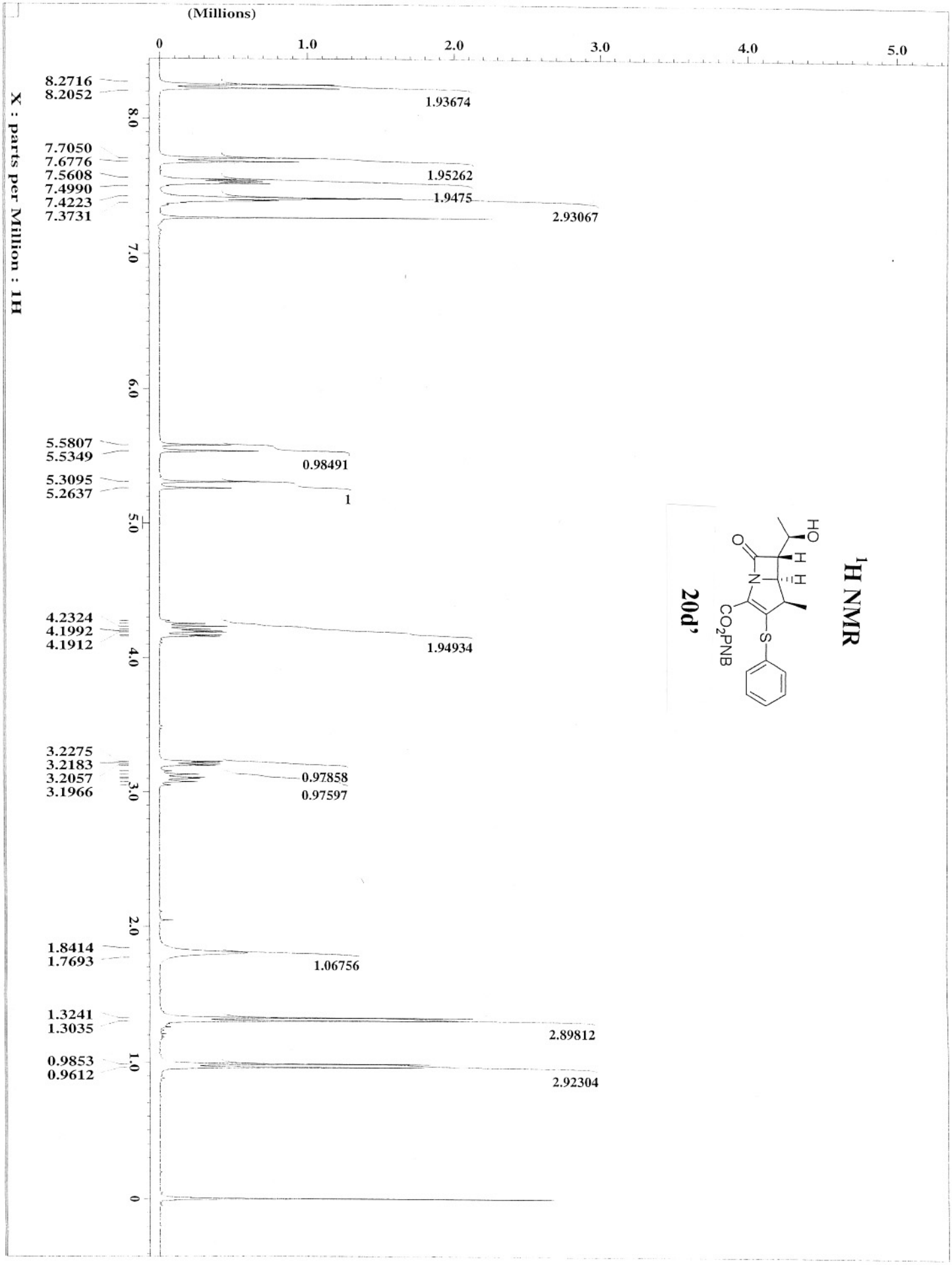

^{13}C NMR
20a'
HO
H
H
H
O
N
S
CO_2PNB
(Millions)
0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0 21.0 22.0 23.0
X : parts per Million : 13C
172.4530
160.3301
152.3565
147.5571
143.1592
128.1681
123.9805
123.6937
66.1196
65.1635
59.4845
56.1000
44.1683
43.4035
36.1374
32.0837
26.1179
25.7163
25.2956
21.9494
17.2647
170.0 160.0 150.0 140.0 130.0 120.0 110.0 100.0 90.0 80.0 70.0 60.0 50.0 40.0 30.0 20.0 10.0

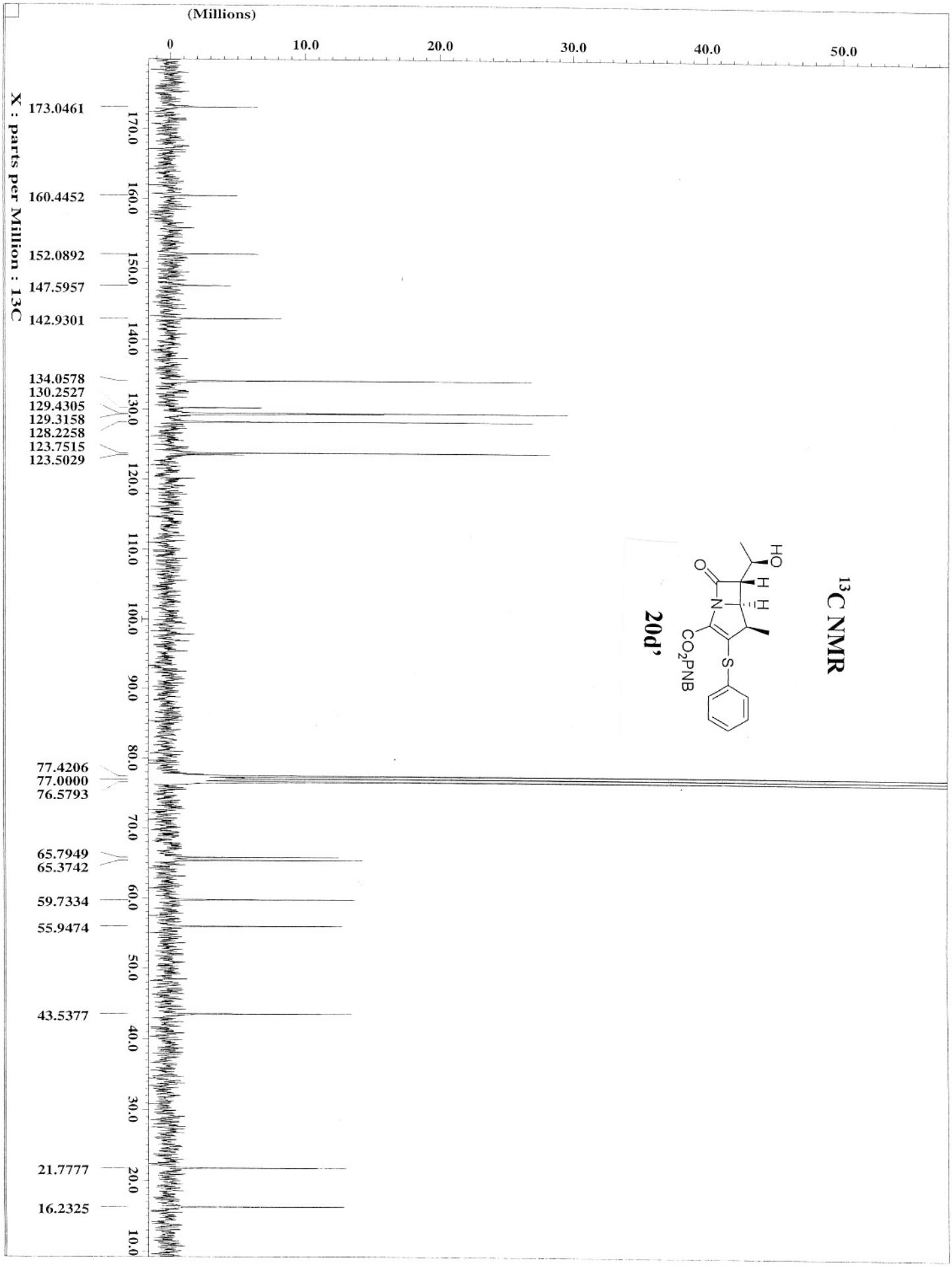

^{1}H NMR
20b'
(Millions)
X : parts per Million : 1H
8.2262
8.1965
7.6723
7.6437
5.5319
5.4862
5.2492
5.2023
4.2294
4.2214
4.1916
3.2726
3.2645
3.2497
3.2417
2.8479
2.8365
2.8239
2.8102
1.6679
1.6427
1.6175
1.4161
1.3772
1.3566
1.2719
1.2490
0.8964
0.8747
0.8518
2.02293
2.04152
1.0
0.99299
2.06442
0.98952
0.97954
2.00722
3.09023
16.0496
3.01697

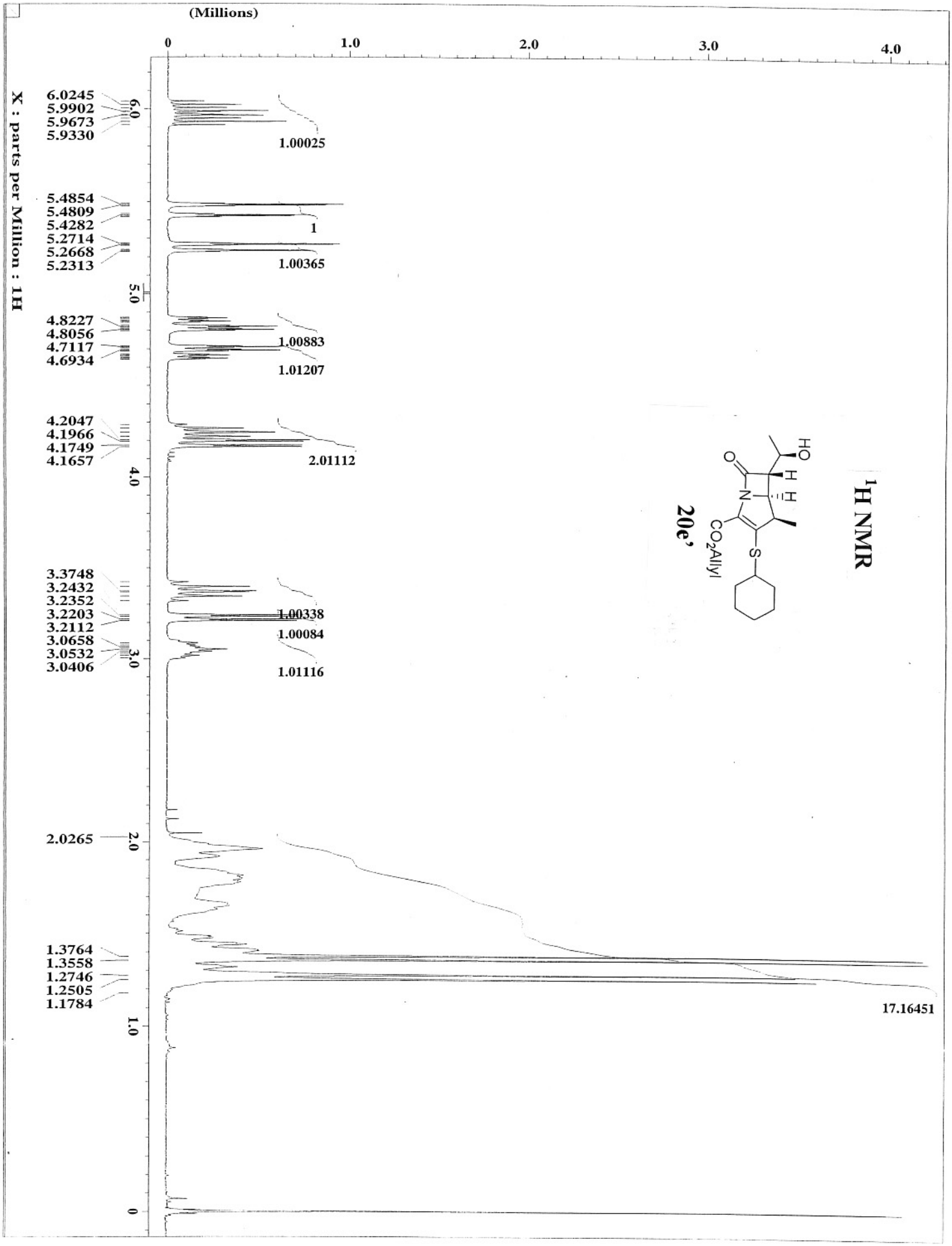

^{13}C NMR
20b'
HO
H
H
N
O
S
CO2PNB
6
(Millions)
0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
X : parts per Million : 13C
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
172.5298
160.4643
153.7719
147.5192
143.1404
128.1111
123.6750
122.9484
77.0000
65.9861
65.0874
59.3893
56.0813
43.1744
31.6825
31.5104
29.6939
29.0438
28.7187
22.5617
21.8733
16.9018
14.0145

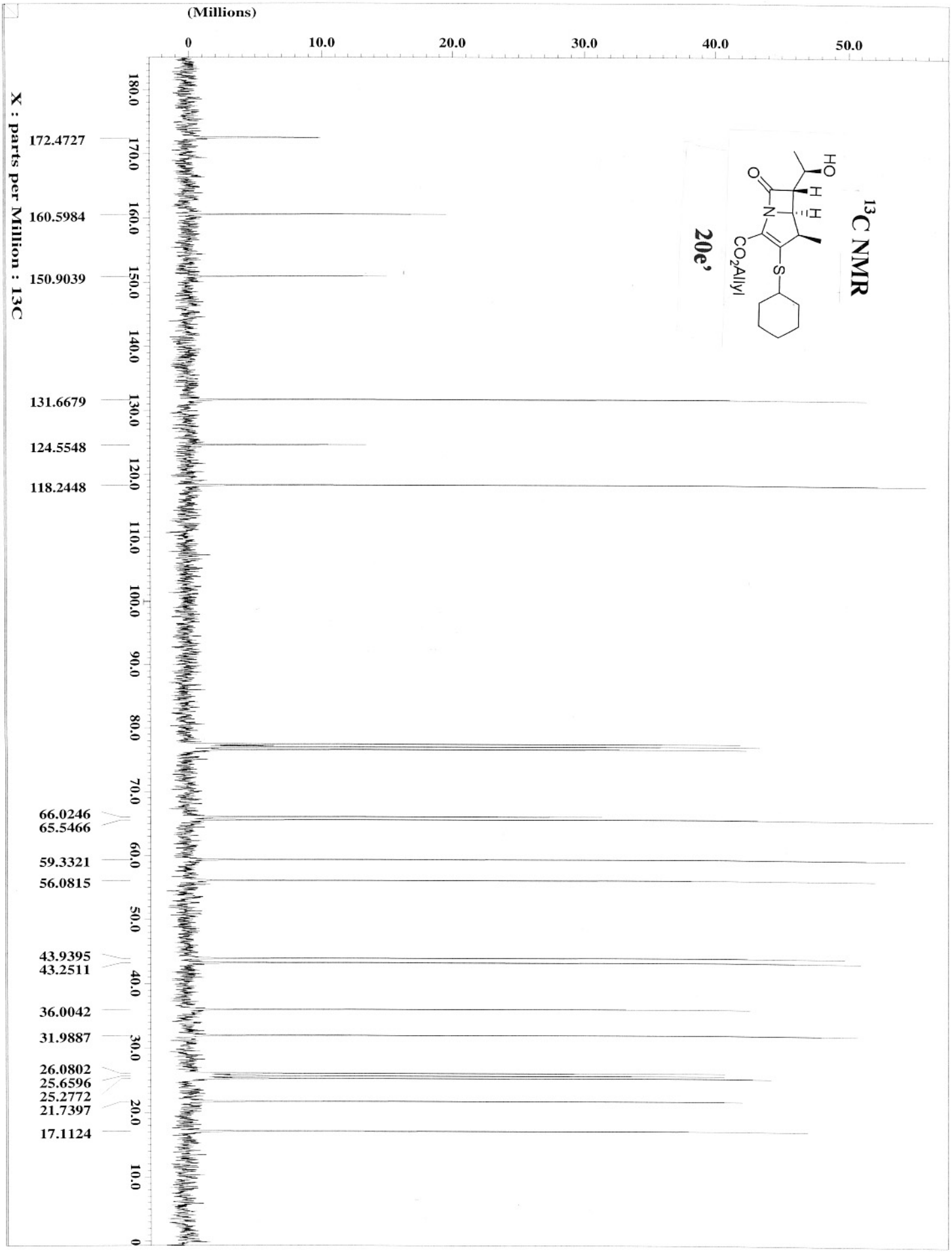

^{1}H NMR
20c'
HO
H
H
O
N
S
CO_2PNB
(Millions)
0
1.0
2.0
3.0
4.0
5.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
X : parts per Million : 1H
8.2328
8.1882
7.6708
7.6251
7.3664
7.2771
5.5294
5.4836
5.2478
5.2020
4.2406
4.1330
4.1250
4.0872
3.2688
3.2608
3.2459
3.2379
1.8129
1.7271
1.3689
1.3483
1.2864
2.00929
2.00901
5.80921
0.99976
1
4.04168
1.00457
1.01371
1.17759
6.09767


^{13}C NMR
20c'
HO
H
H
N
O
S
CO_2PNB
(Millions)
0
10.0
20.0
30.0
X : parts per Million : 13C
172.5680
160.3303
152.3376
147.5765
143.0256
135.9507
128.8567
128.7229
128.1684
127.8242
123.7131
77.4205
76.9998
76.5792
66.0625
65.2211
59.5230
56.1194
43.4229
36.2715
21.9306
16.8061
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0


^{1}H NMR
20d'
HO
H
H
N
O
S
CO_2PNB
(Millions)
0
1.0
2.0
3.0
4.0
5.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
X : parts per Million : 1H
8.2716
8.2052
7.7050
7.6776
7.5608
7.4990
7.4223
7.3731
5.5807
5.5349
5.3095
5.2637
4.2324
4.1992
4.1912
3.2275
3.2183
3.2057
3.1966
1.8414
1.7693
1.3241
1.3035
0.9853
0.9612
1.93674
1.95262
1.9475
2.93067
0.98491
1
1.94934
0.97858
0.97597
1.06756
2.89812
2.92304


^{13}C NMR
20d'
HO
H
H
O
N
S
CO_2PNB
(Millions)
0
10.0
20.0
30.0
40.0
50.0
X : parts per Million : 13C
173.0461
160.4452
152.0892
147.5957
142.9301
134.0578
130.2527
129.4305
129.3158
128.2258
123.7515
123.5029
77.4206
77.0000
76.5793
65.7949
65.3742
59.7334
55.9474
43.5377
21.7777
16.2325
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0


^{1}H NMR
20e'
X : parts per Million : 1H
(Millions)
6.0245
5.9902
5.9673
5.9330
5.4854
5.4809
5.4282
5.2714
5.2668
5.2313
4.8227
4.8056
4.7117
4.6934
4.2047
4.1966
4.1749
4.1657
3.3748
3.2432
3.2352
3.2203
3.2112
3.0658
3.0532
3.0406
2.0265
1.3764
1.3558
1.2746
1.2505
1.1784
1.00025
1
1.00365
1.00883
1.01207
2.01112
1.00338
1.00084
1.01116
17.16451


^{13}C NMR
20e'
HO
H
H
O
N
S
CO_2Allyl
(Millions)
0
10.0
20.0
30.0
40.0
50.0
X : parts per Million : 13C
180.0
170.0
160.0
150.0
140.0
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0
172.4727
160.5984
150.9039
131.6679
124.5548
118.2448
66.0246
65.5466
59.3321
56.0815
43.9395
43.2511
36.0042
31.9887
26.0802
25.6596
25.2772
21.7397
17.1124