Exercice N-1

Donner des structures en accord avec les spectres suivants :

a) C_4H_9Br

δ (ppm) : 1.04 doublet (6H)

δ (ppm) : 1.95 multiple (1H)

δ (ppm) : 3.33 doublet (2H)

b) $C_{10}H_{14}$

δ (ppm) : 1.30 singlet (9H)

δ (ppm) : 7.28 singlet (5H)

b) $C_9H_{11}Br$

δ (ppm) : 2.15 quintuplet (2H)

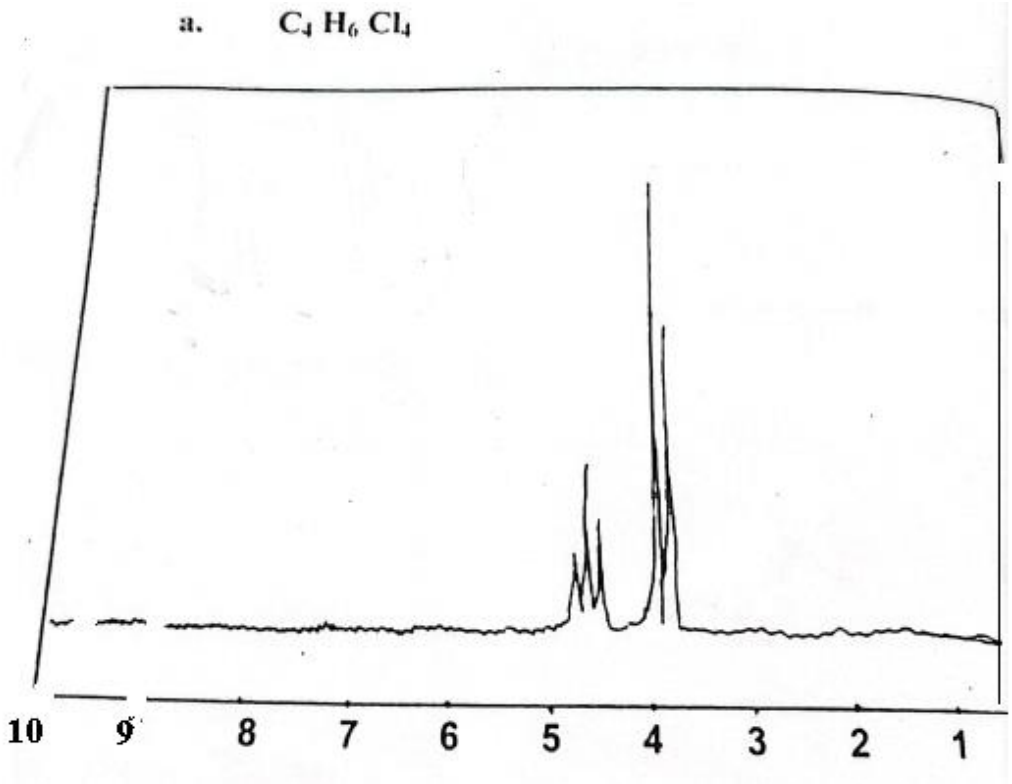
δ (ppm) : 2.75 triplet (2H)

δ (ppm) : 3.38 triplet (2H)

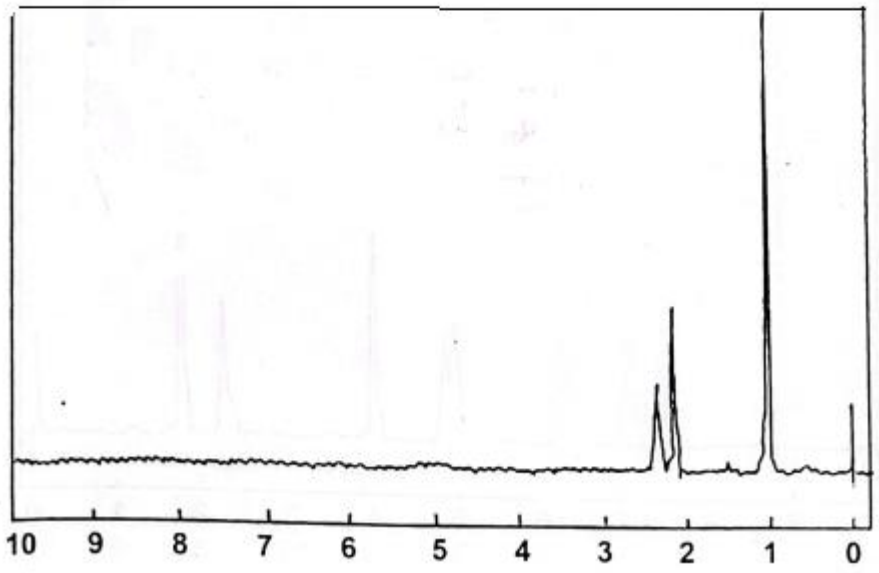
δ (ppm) : 7.22 singlet (5H)

Exercice N-2

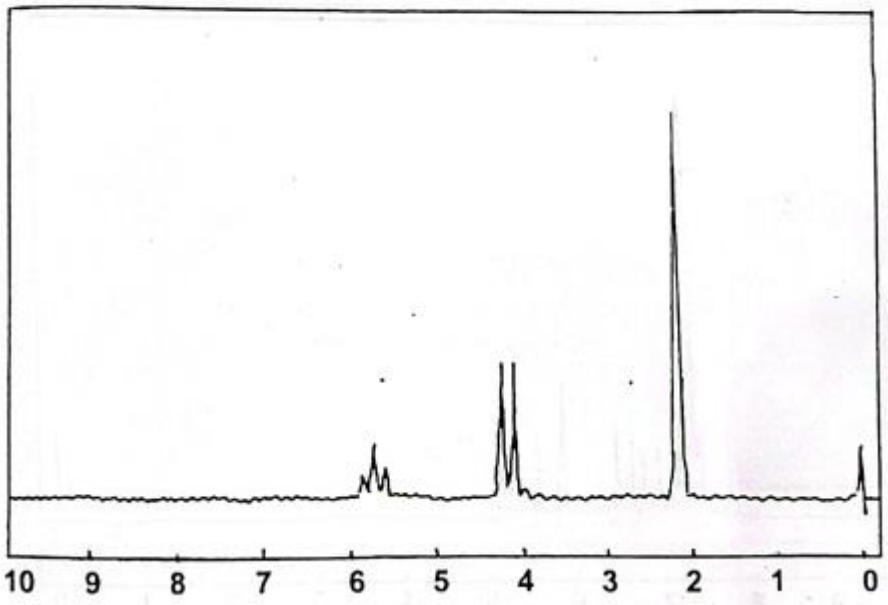
Etablir la structure développée des composés dans les spectres de RMN du proton sont décrits ci-après :



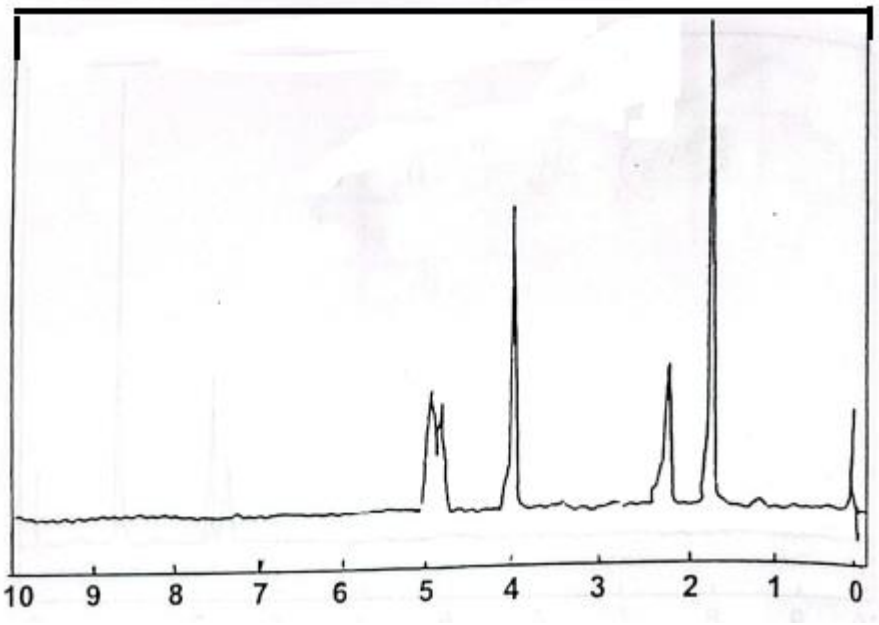
b. $C_7 H_{14} O$



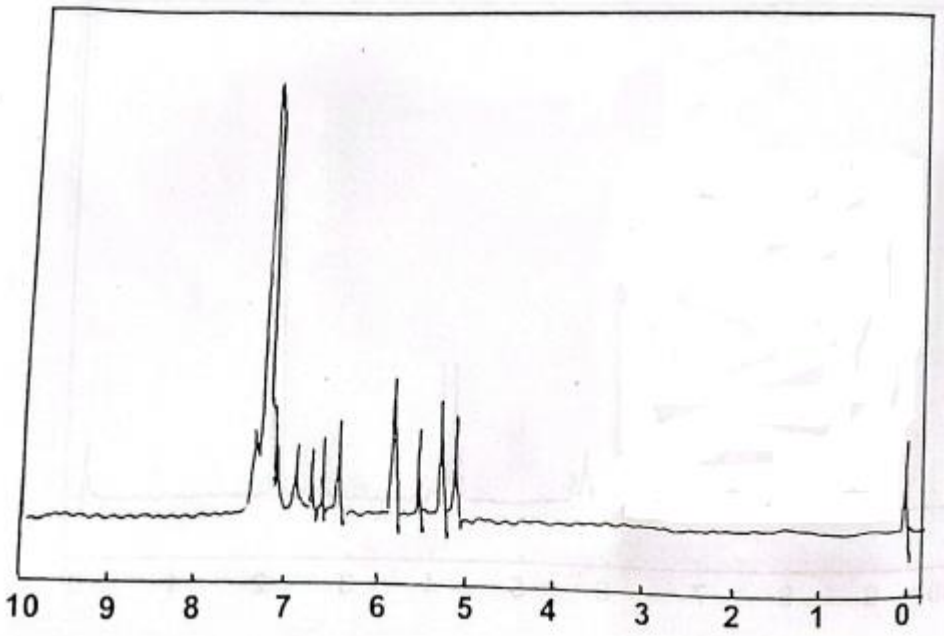
c. $C_4 H_6 Cl_2$



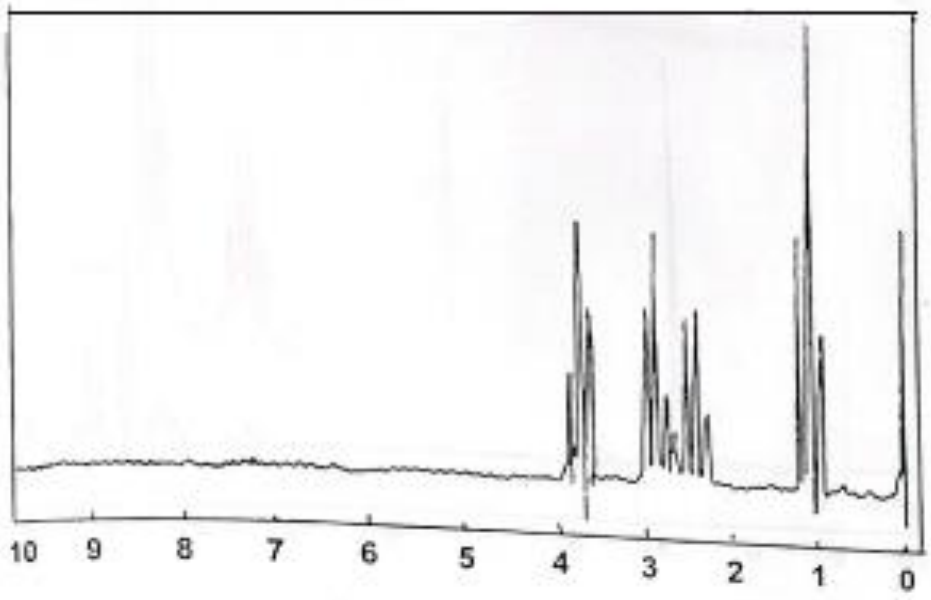
d. C_4H_8O



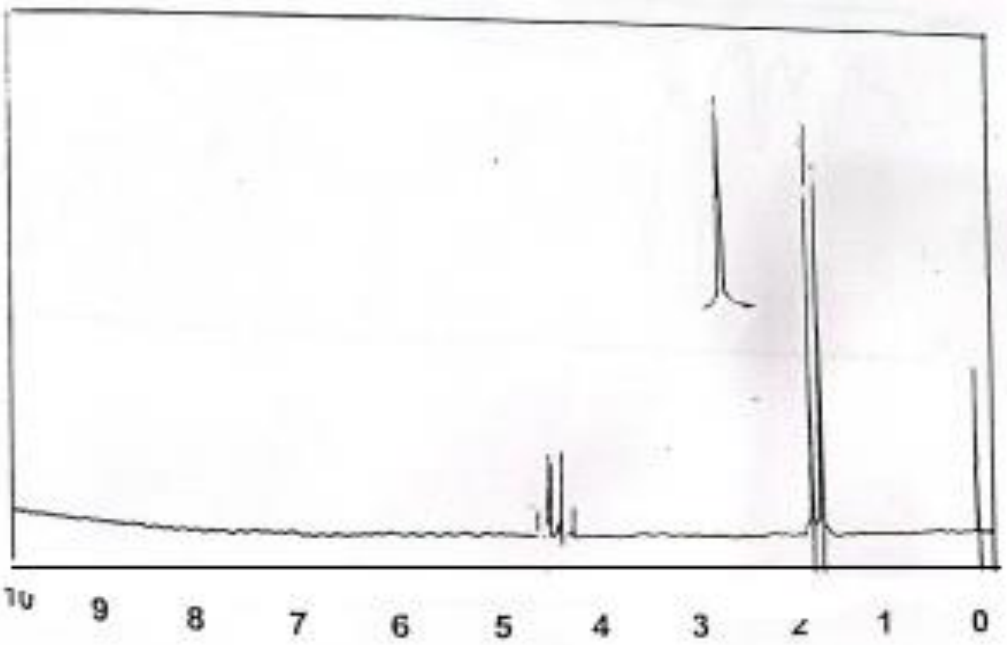
e. $C_8 H_8$



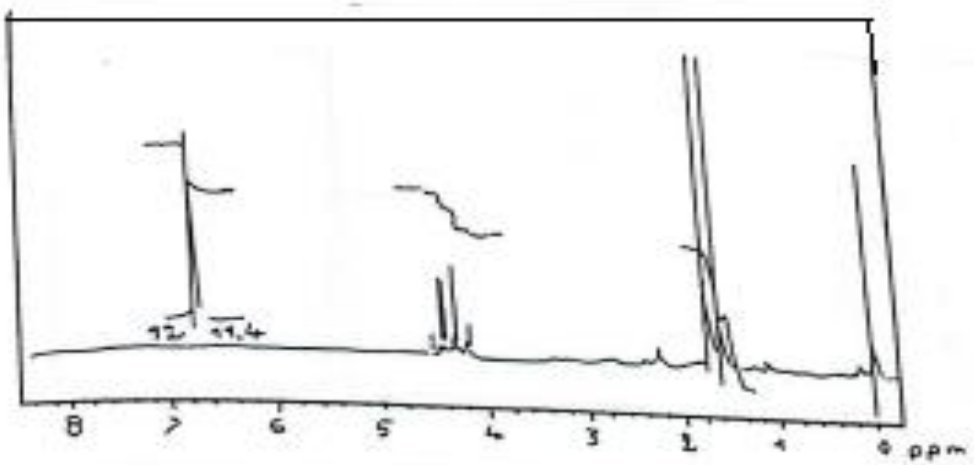
f. $C_5 H_9 Cl O$

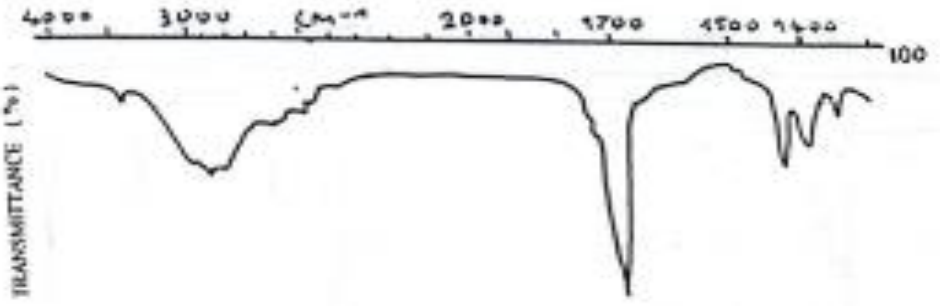


j. $C_3H_5ClO_2$

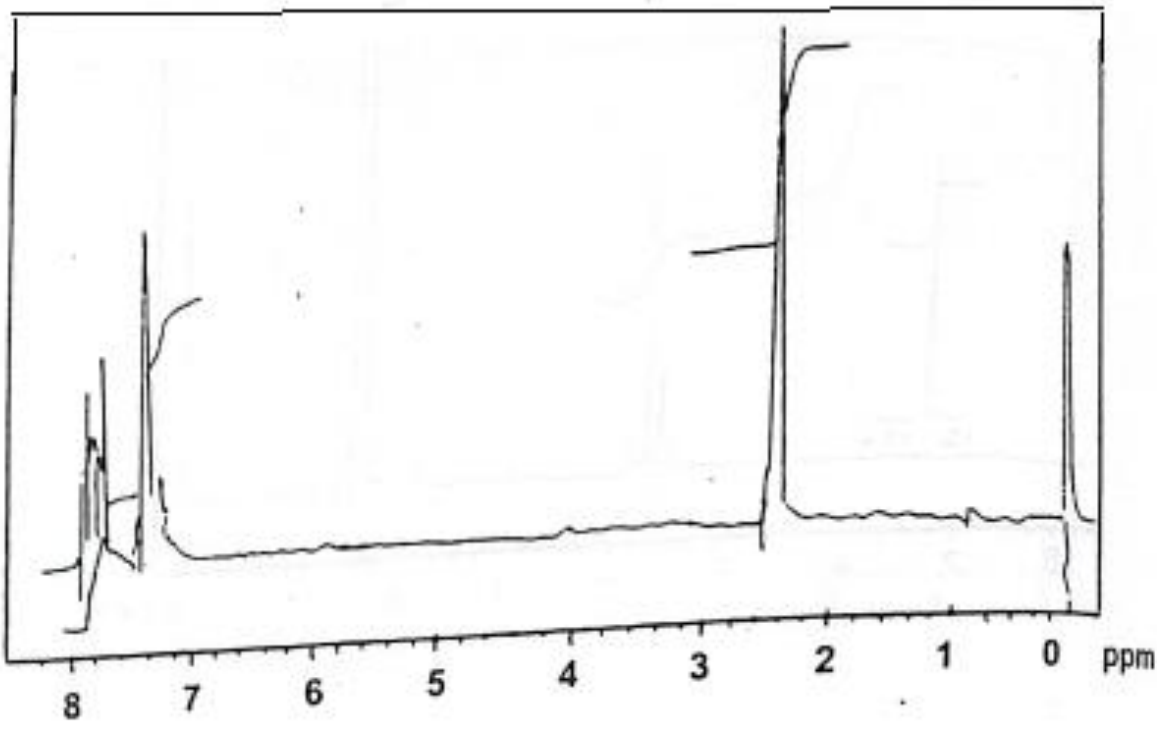


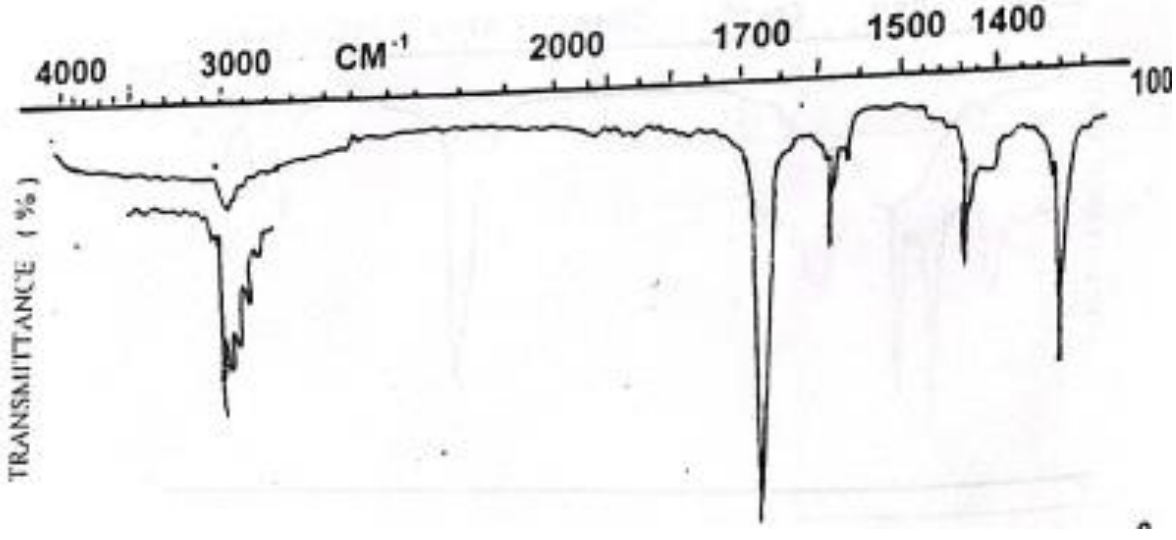
k. C_3H_3ClO





I. $C_8 H_8 O$

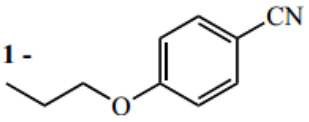

8
7
6
5
4
3
2
1
0
ppm


4000
3000
CM-1
2000
1700
1500
1400
100
TRANSMITTANCE (%)

Exercice N-3

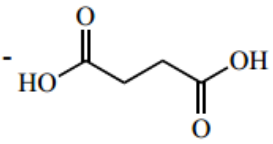
Attribuer les spectres IR et RMN ^{1}H suivants aux composés ci-dessous. Justifier votre réponse en indiquant sur les spectres l'attribution des signaux RMN et les absorptions IR caractéristiques de chaque composé. NB : les bandes IR hachurées ne sont pas à interpréter. En RMN ^{1}H, les signaux marqués d'un astérisque (*) s'échangent avec D_2O.

1 -



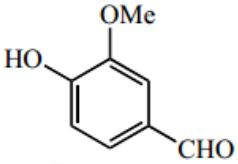
IR :
RMN ^{1}H :

2 -



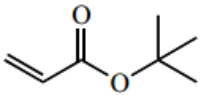
IR :
RMN ^{1}H :

3 -



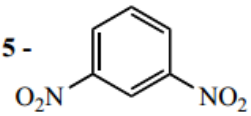
IR :
RMN ^{1}H :

4 -



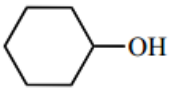
IR :
RMN ^{1}H :

5 -



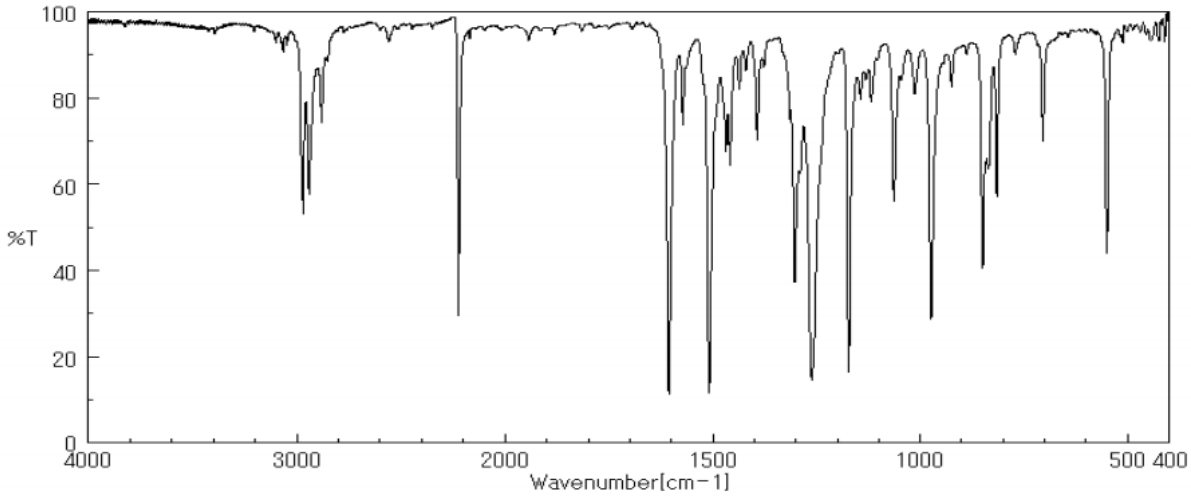
IR :
RMN ^{1}H :

6 -

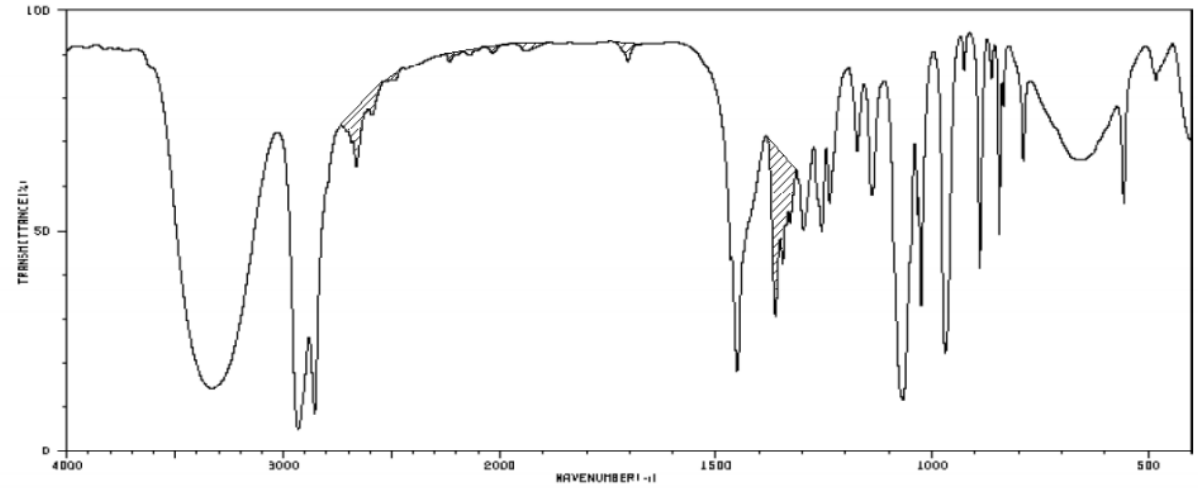


IR :
RMN ^{1}H :

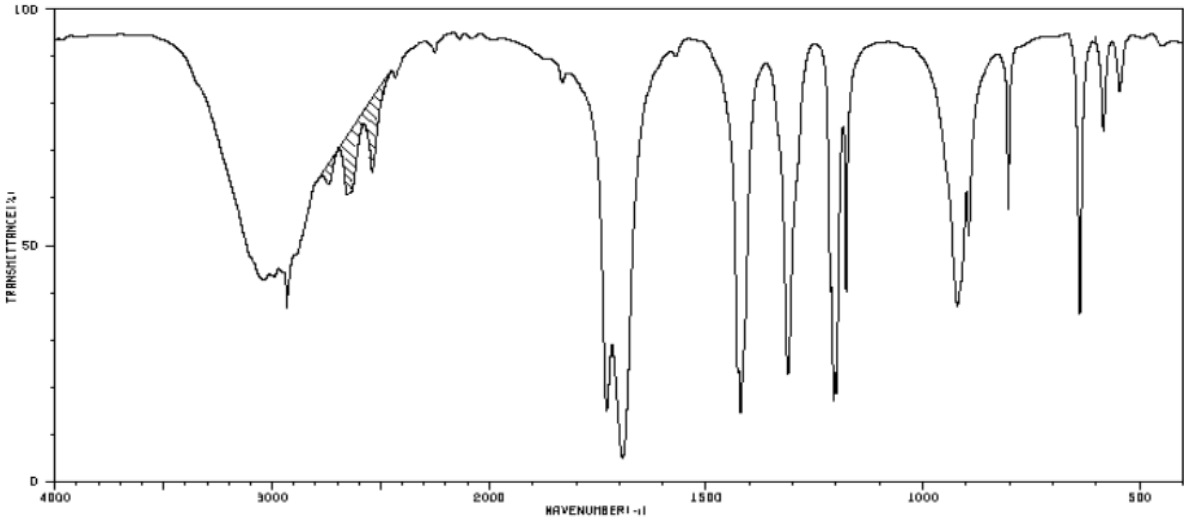
A -



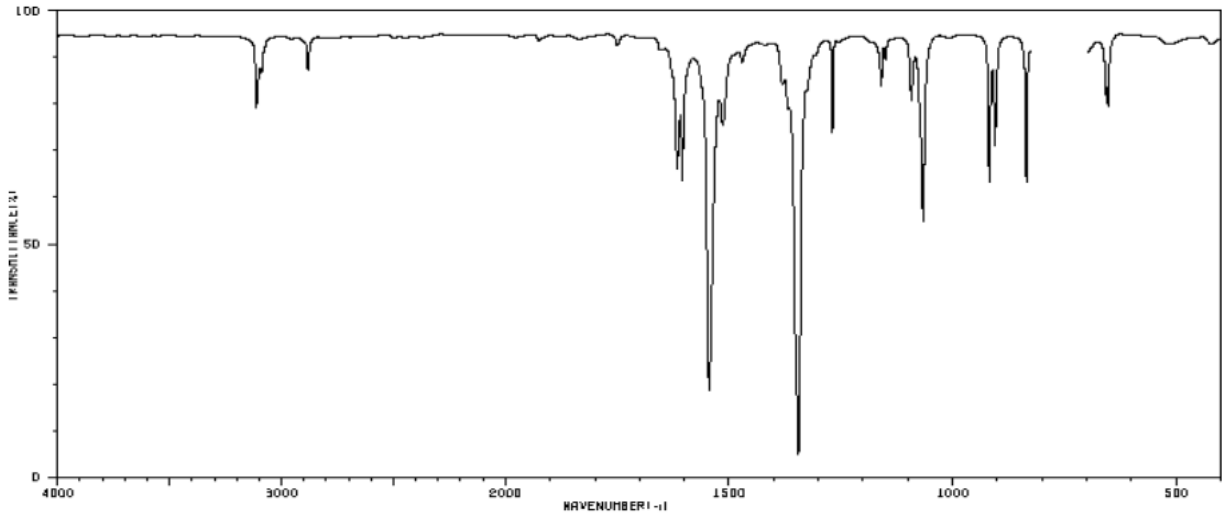
B -


100
50
0
TRANSMITTANCE[%]
4000
3000
2000
1500
1000
500
WAVENUMBER[-1]

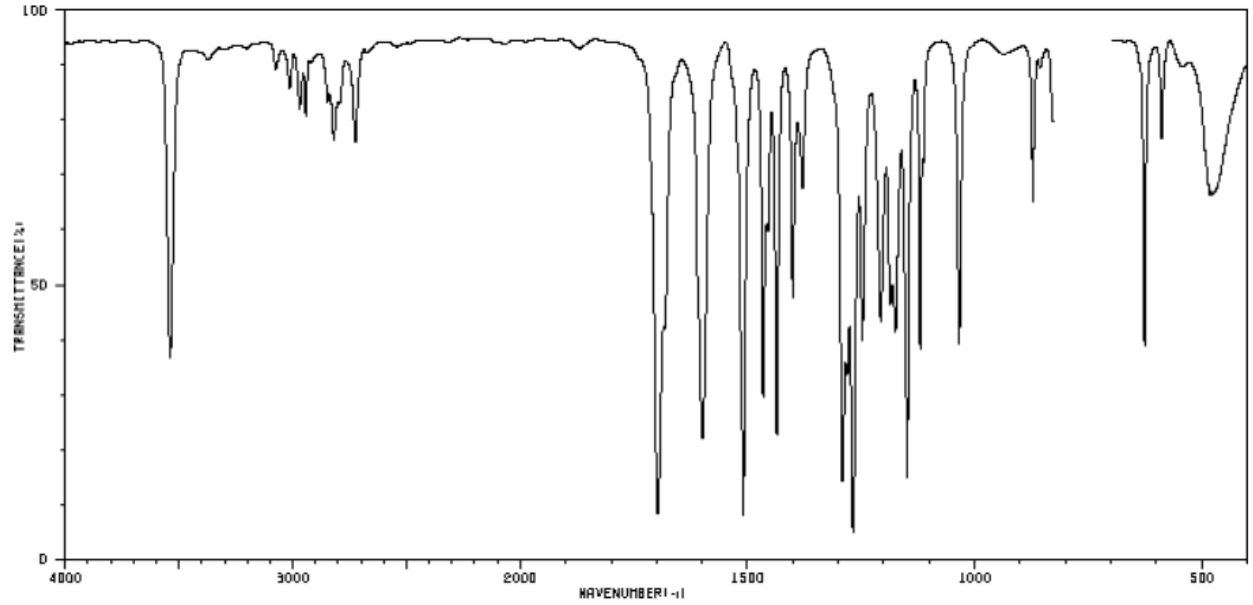
C –


100
50
0
TRANSMITTANCE[%]
4000
3000
2000
1500
1000
500
WAVENUMBER[-1]

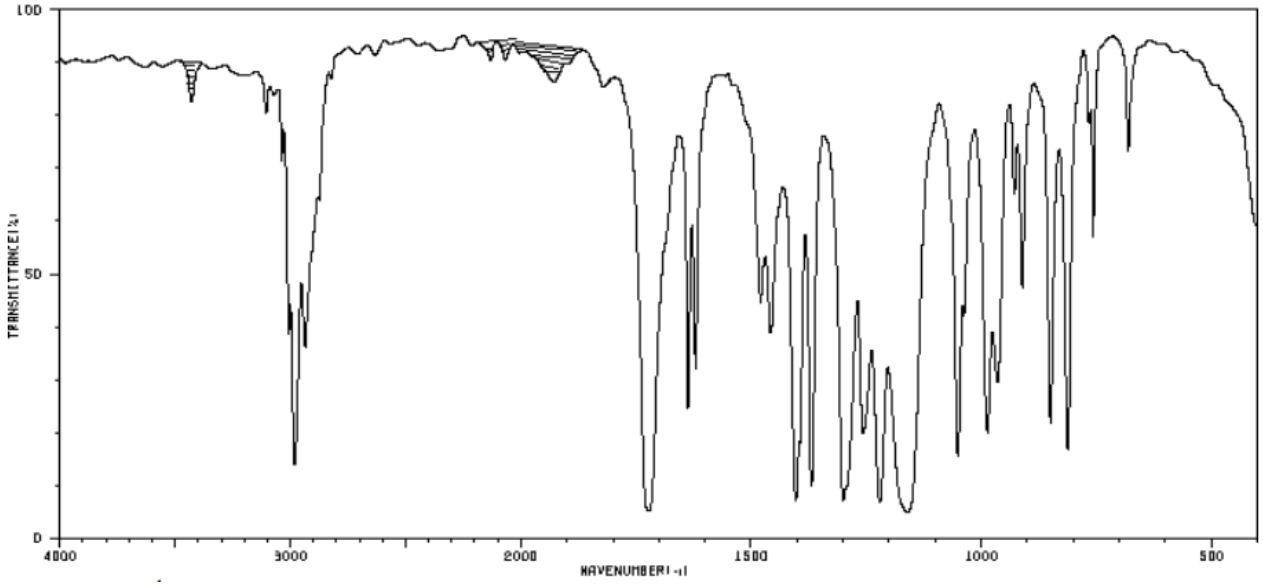
D -


100
50
0
4000
3000
2000
1500
1000
500
WAVENUMBER[-1]

E -

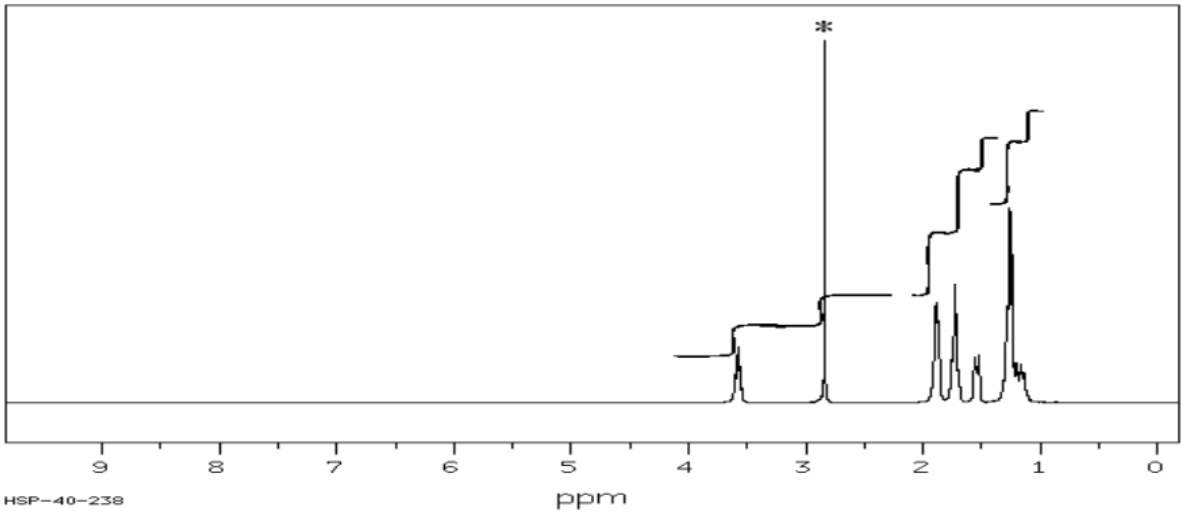

100
50
0
4000
3000
2000
1500
1000
500

F -

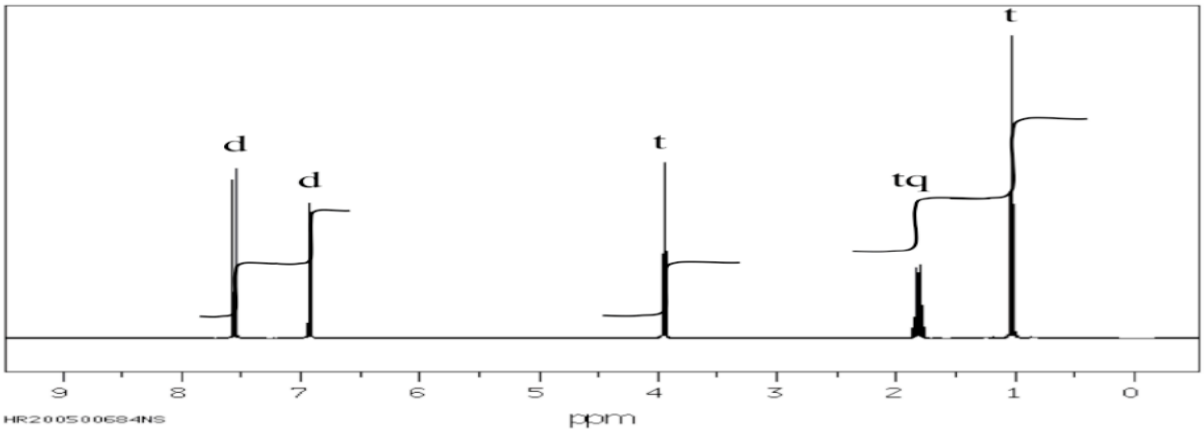

100
50
0
4000
3000
2000
1500
1000
500

Spectres RMN ^{1}H :

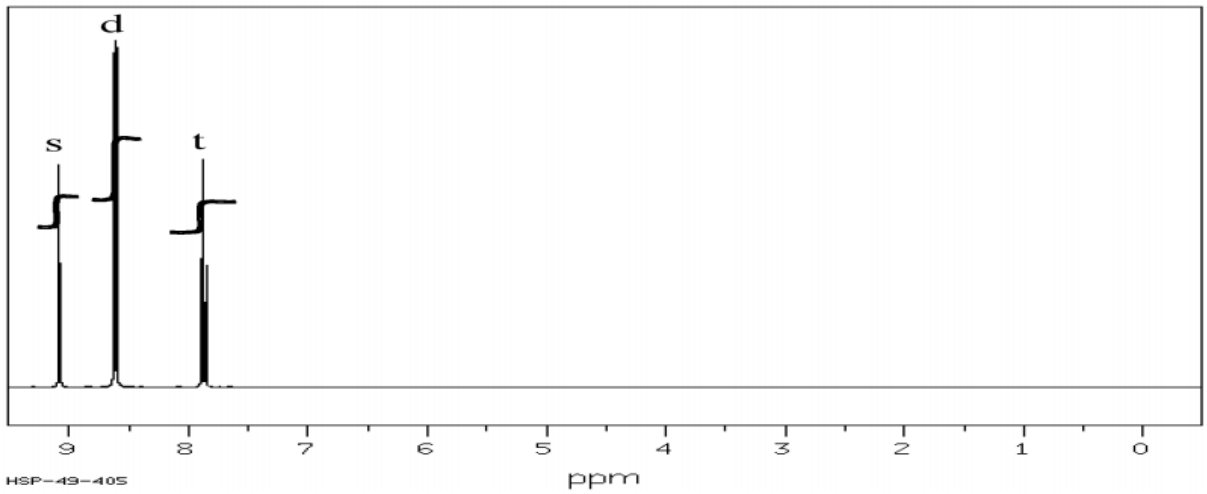
α -



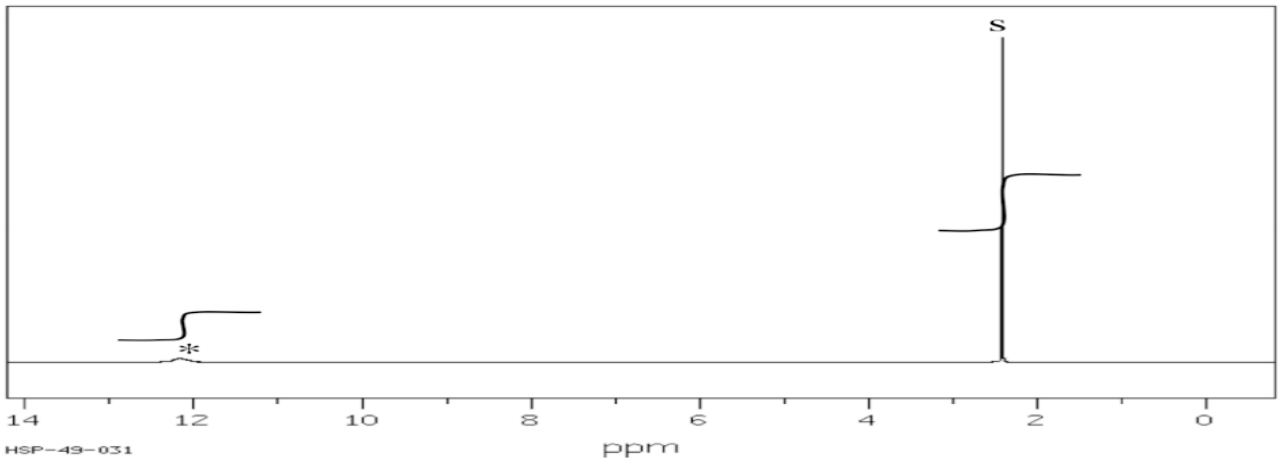
β -



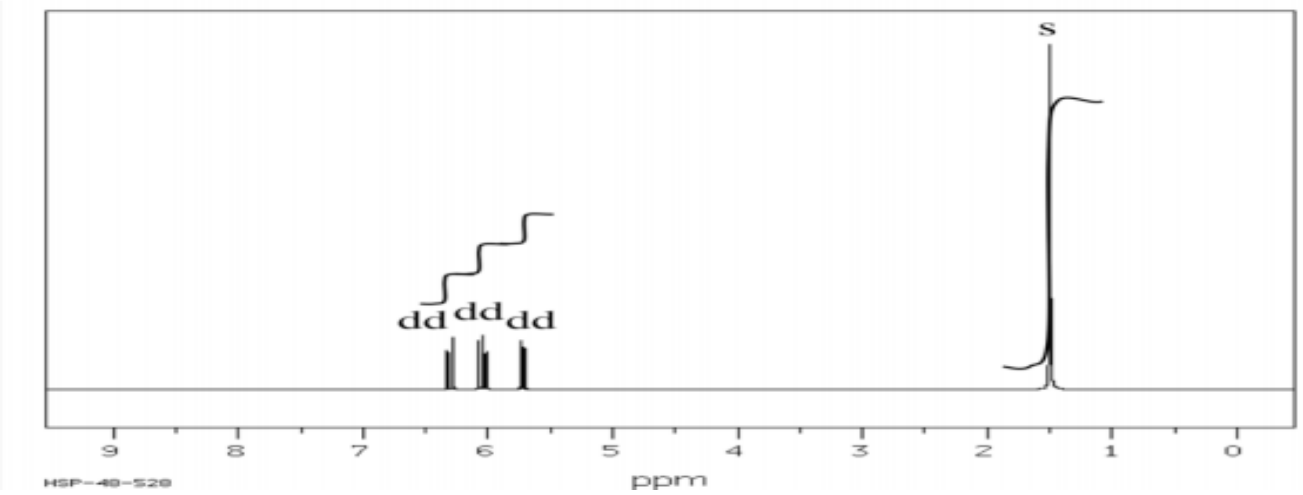
γ -



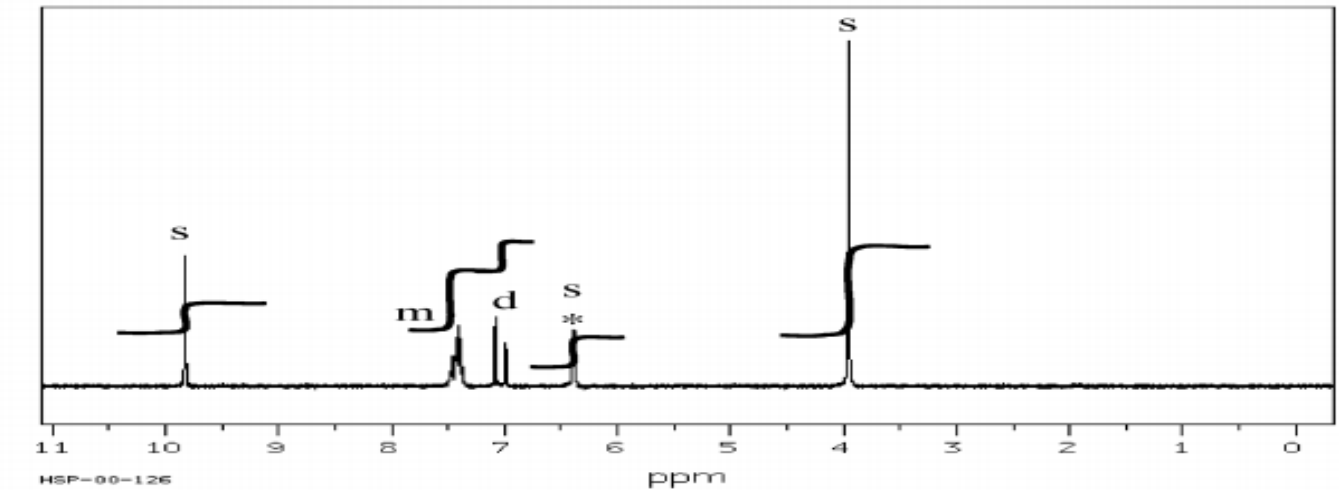
δ -


s
14
12
10
8
6
4
2
0
HSP-49-031
ppm

ε -


s
dd
dd
dd
9
8
7
6
5
4
3
2
1
0
HSP-49-520
ppm

Ω -


s
s
m
d
s
11
10
9
8
7
6
5
4
3
2
1
0
HSP-00-126
ppm