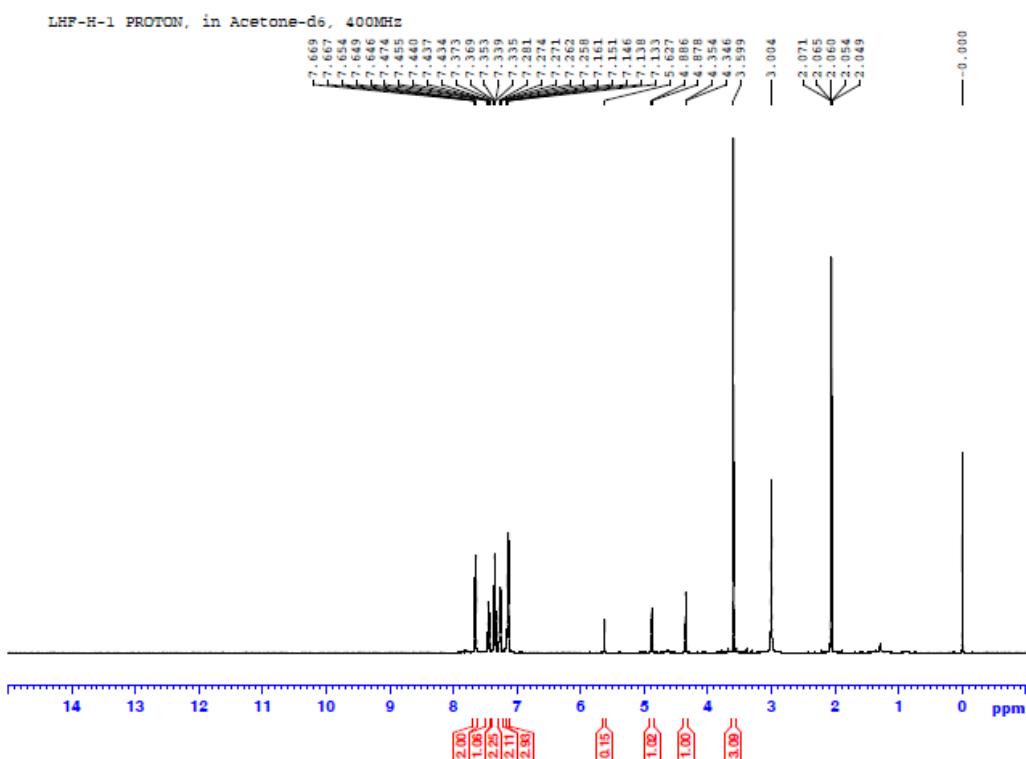
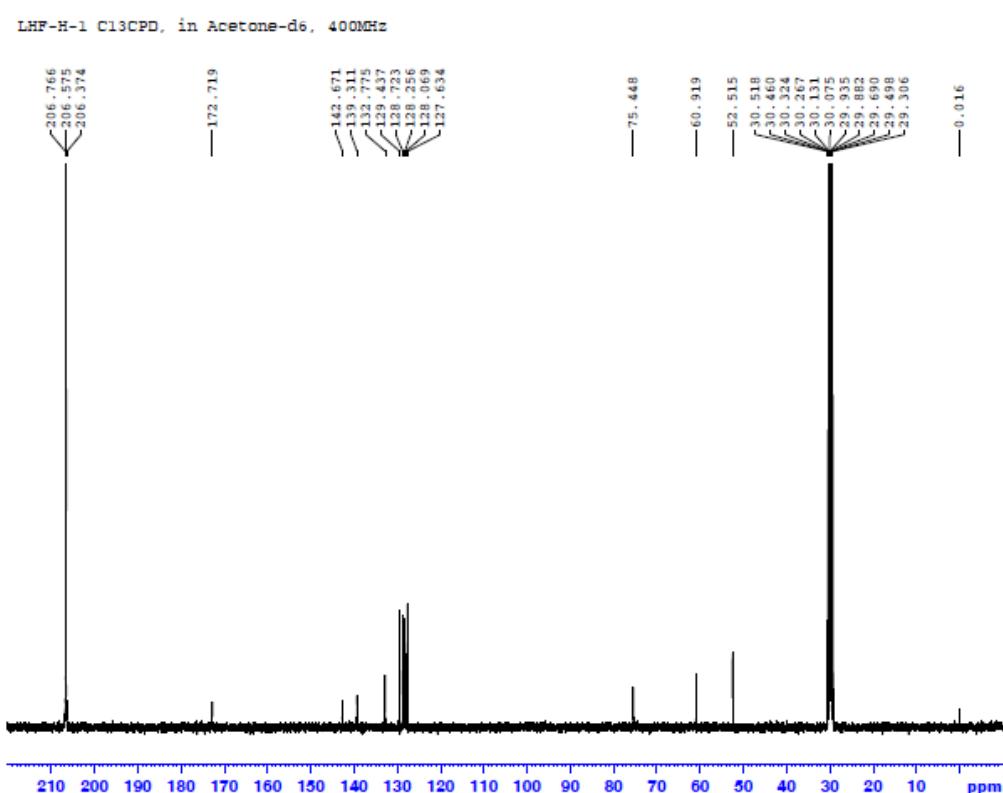


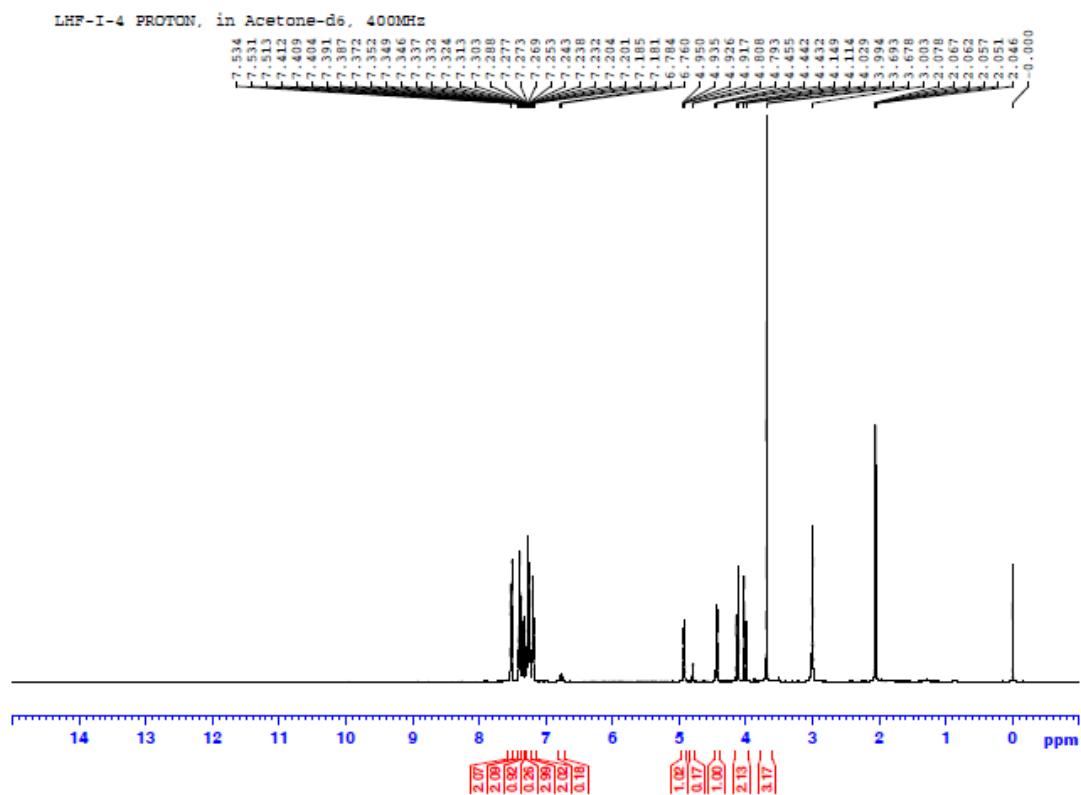
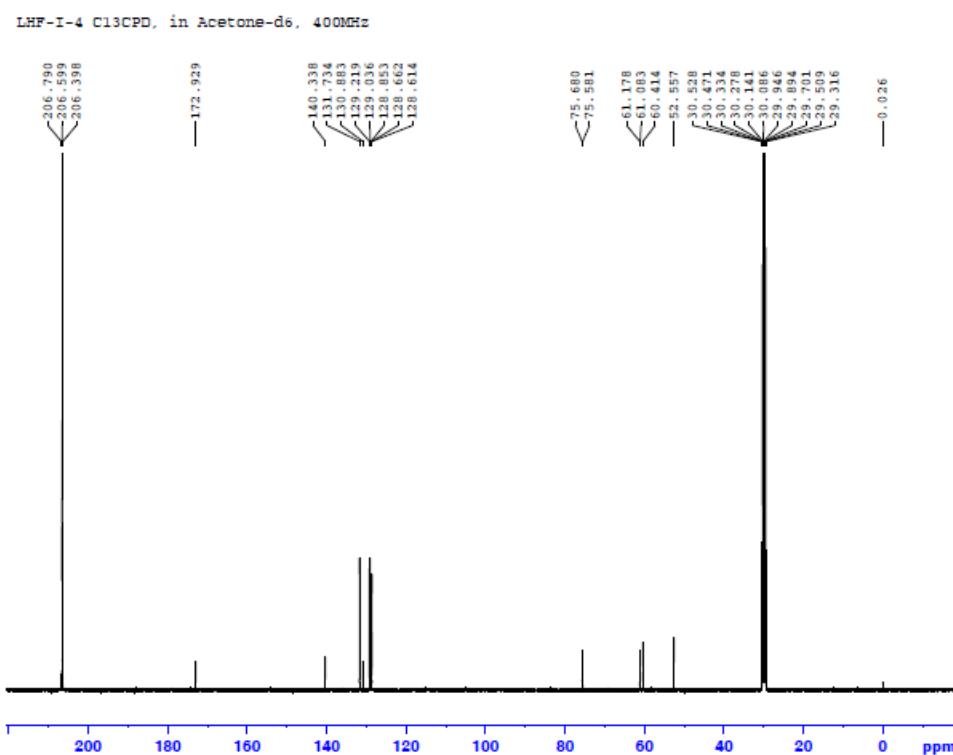
# Supplementary Materials

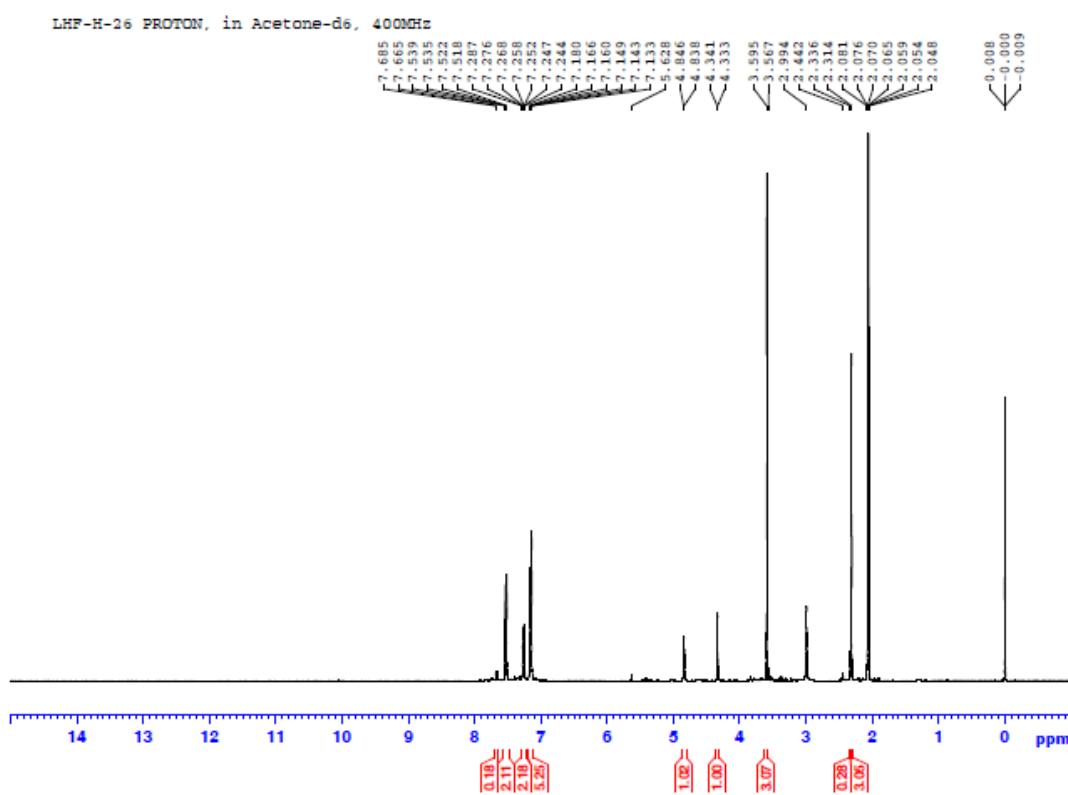


<sup>1</sup>H-NMR of 7a

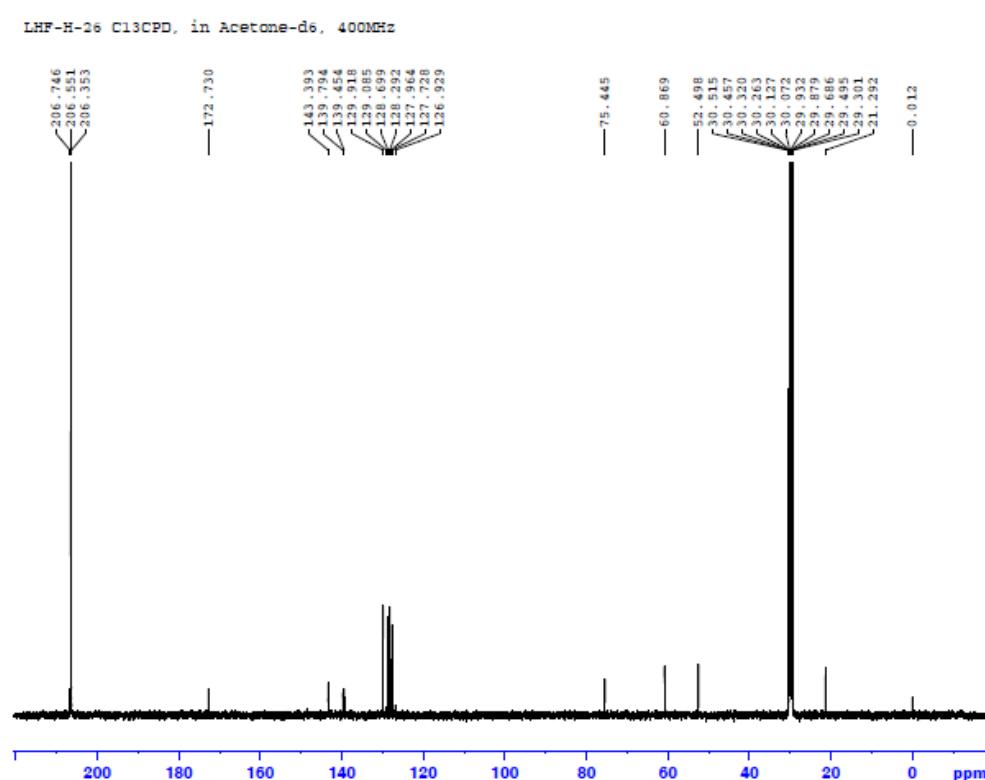


<sup>13</sup>C-NMR of 7a

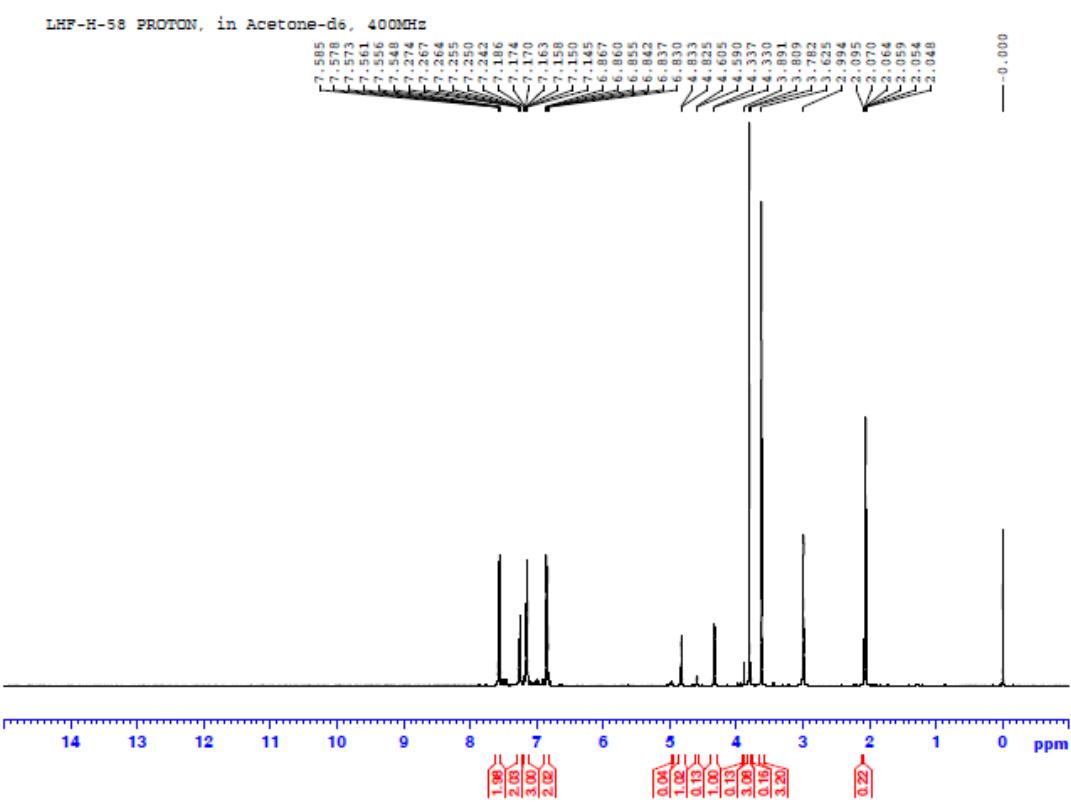
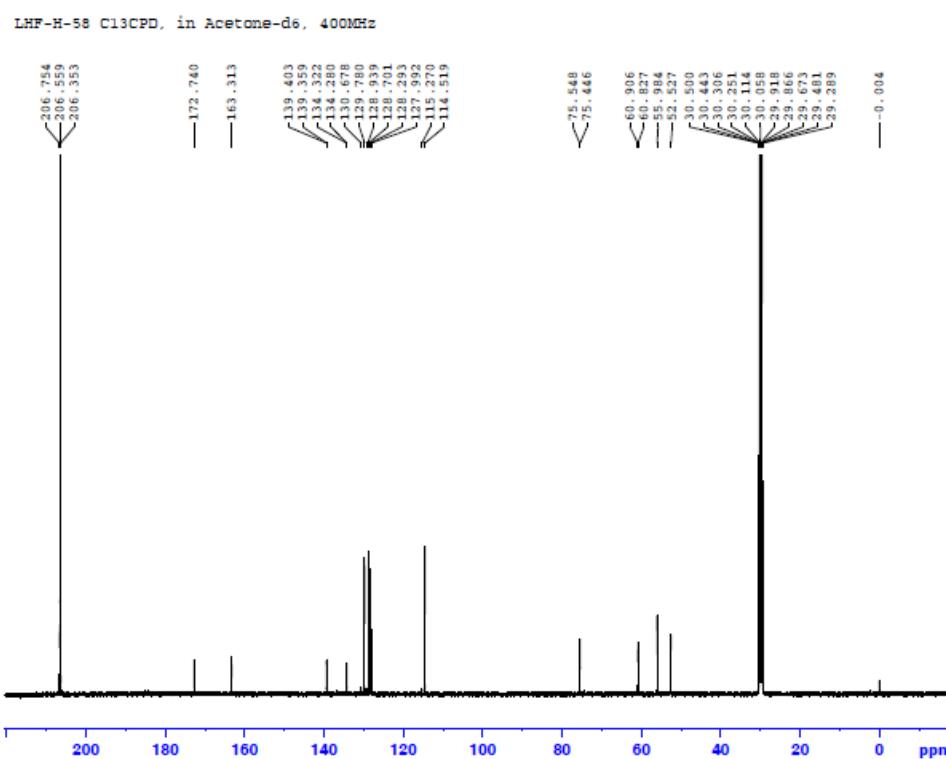
<sup>1</sup>H-NMR of 7b<sup>13</sup>C-NMR of 7b

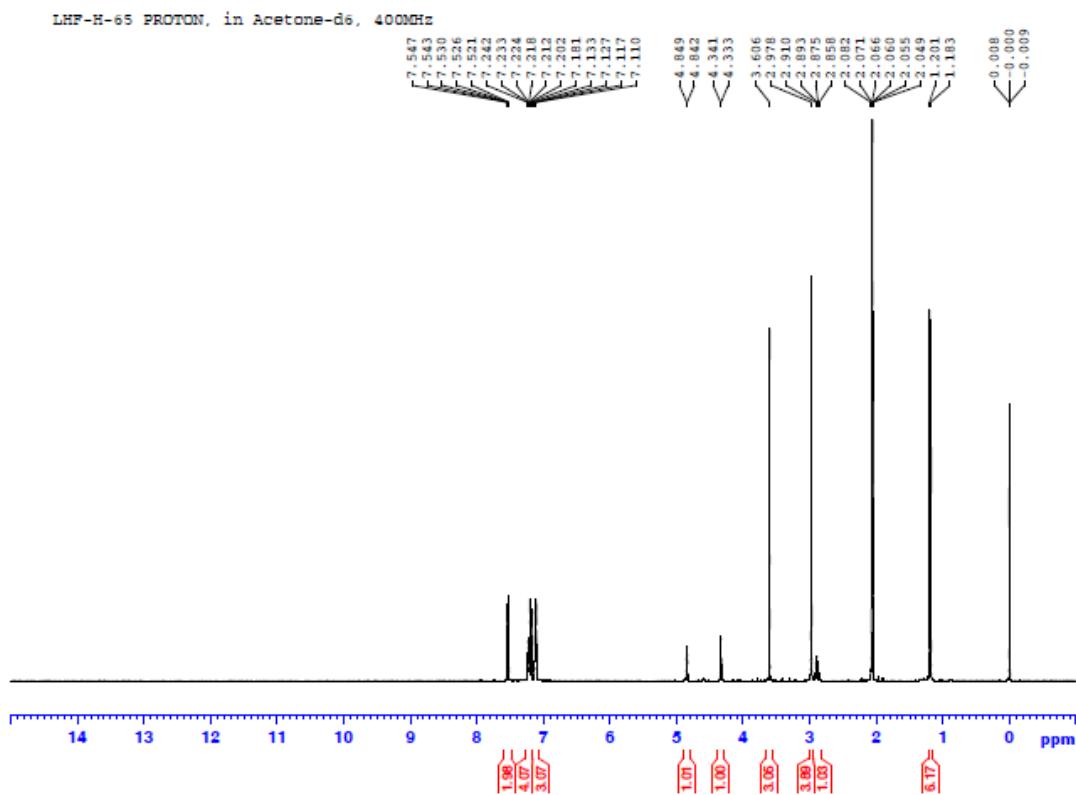


<sup>1</sup>H-NMR of 7c

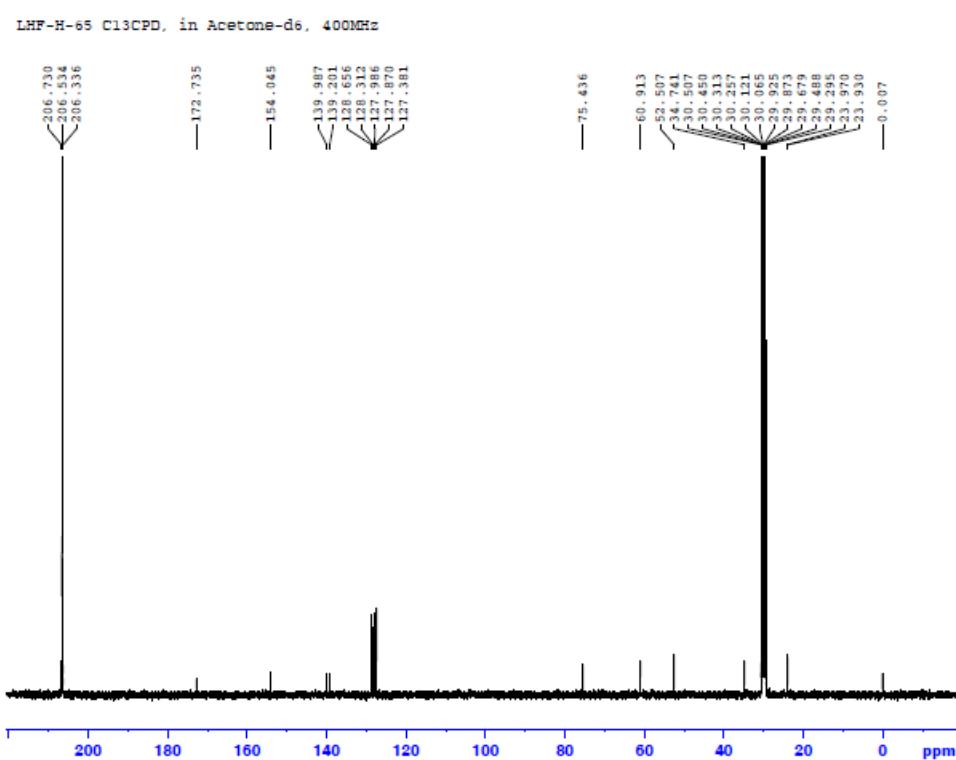


<sup>13</sup>C-NMR of 7c

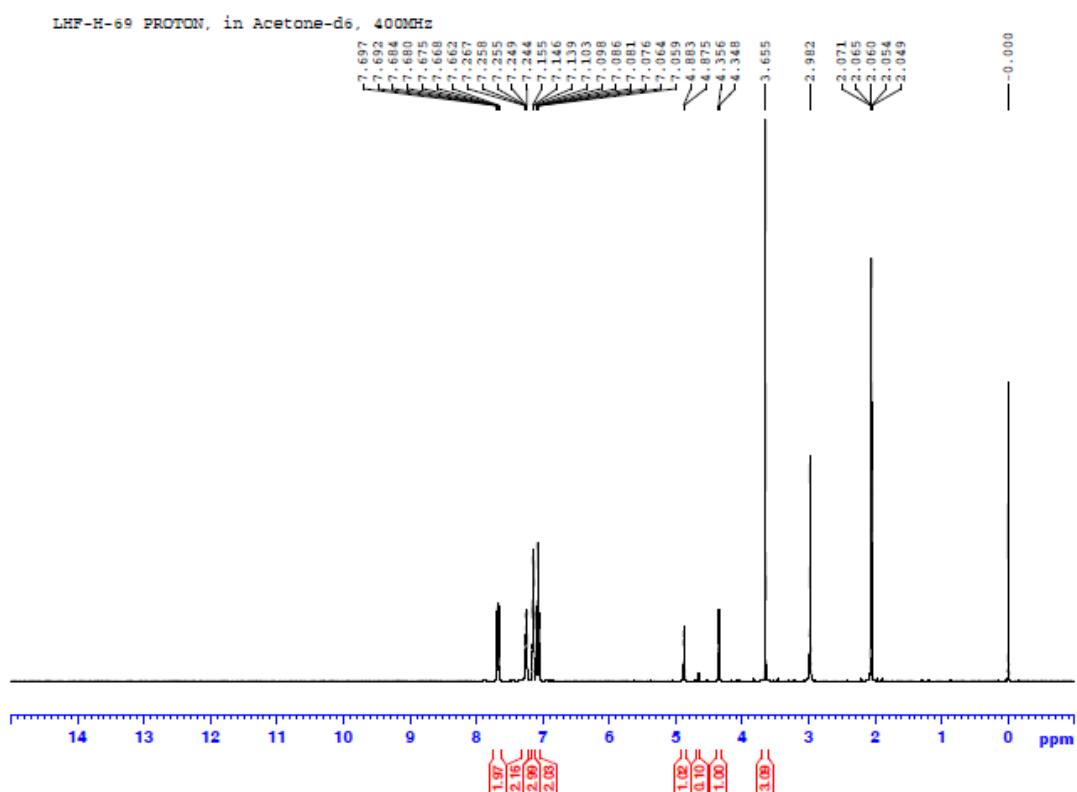
<sup>1</sup>H-NMR of 7d<sup>13</sup>C-NMR of 7d



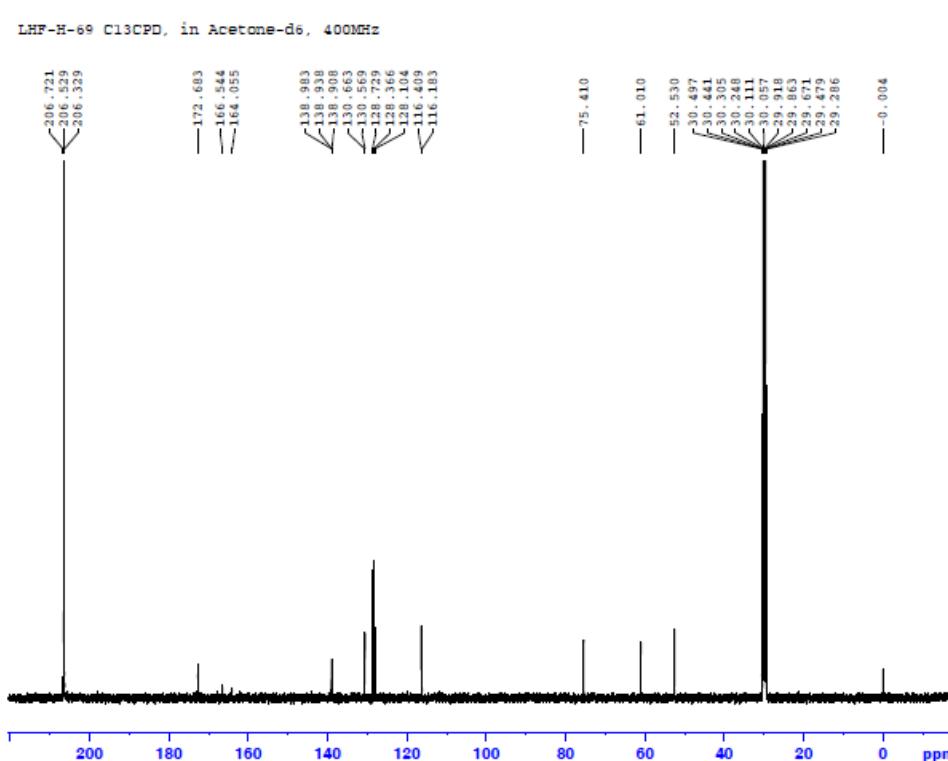
### <sup>1</sup>H-NMR of 7e



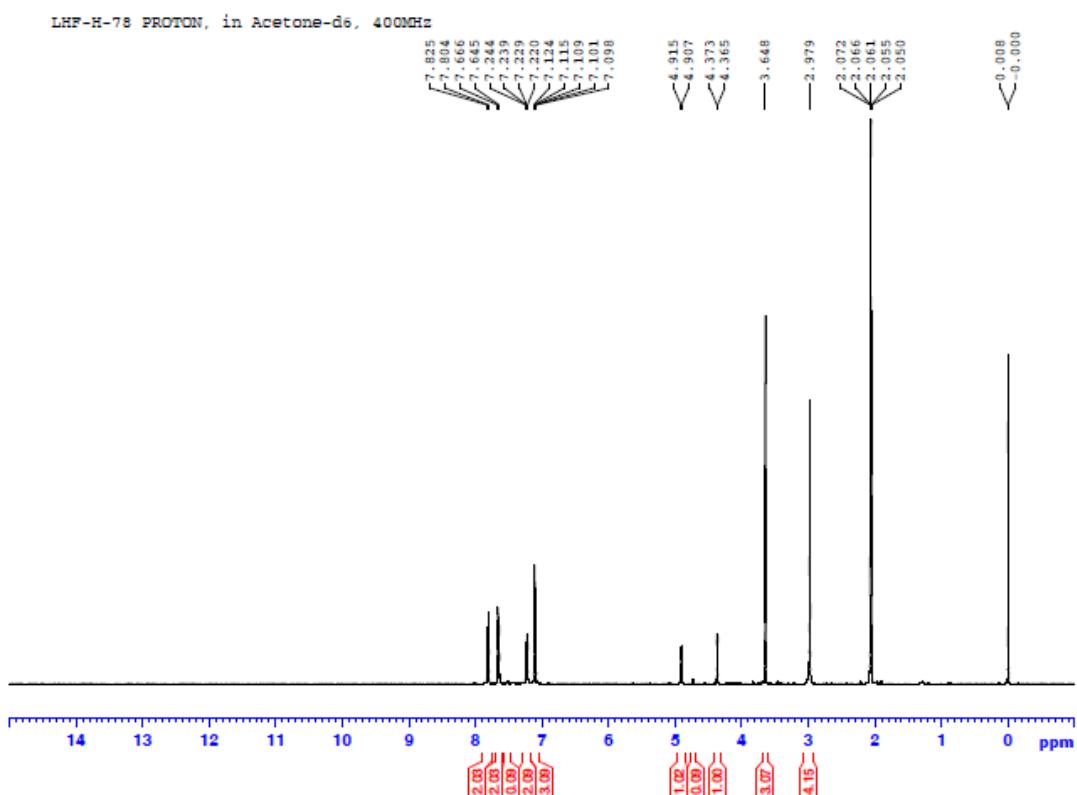
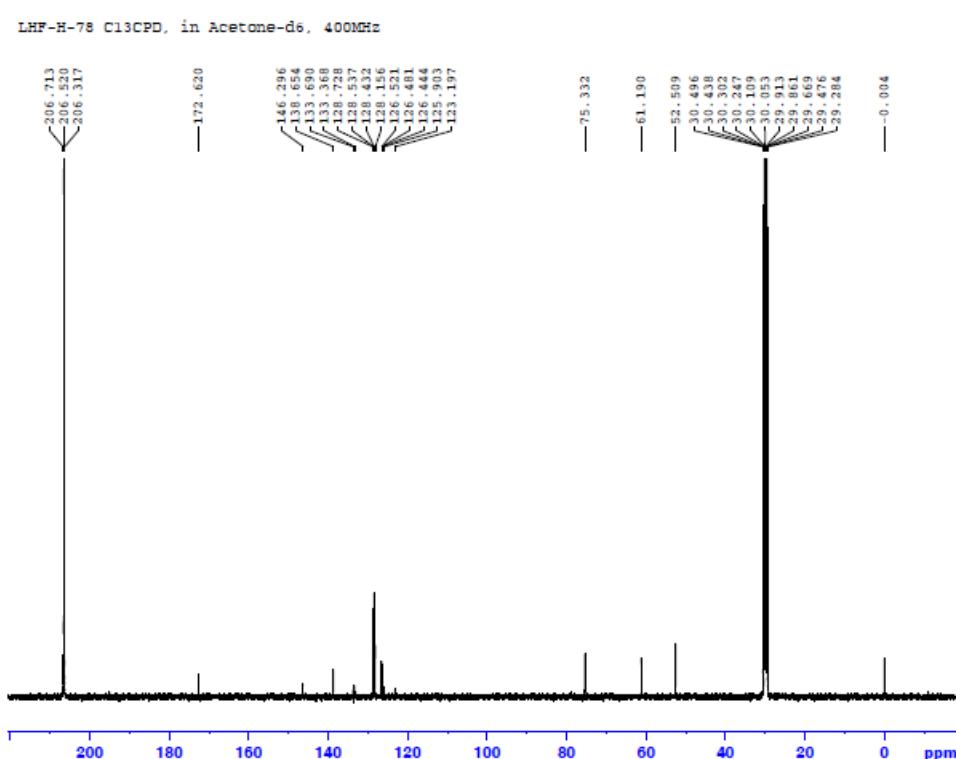
### <sup>13</sup>C-NMR of 7e

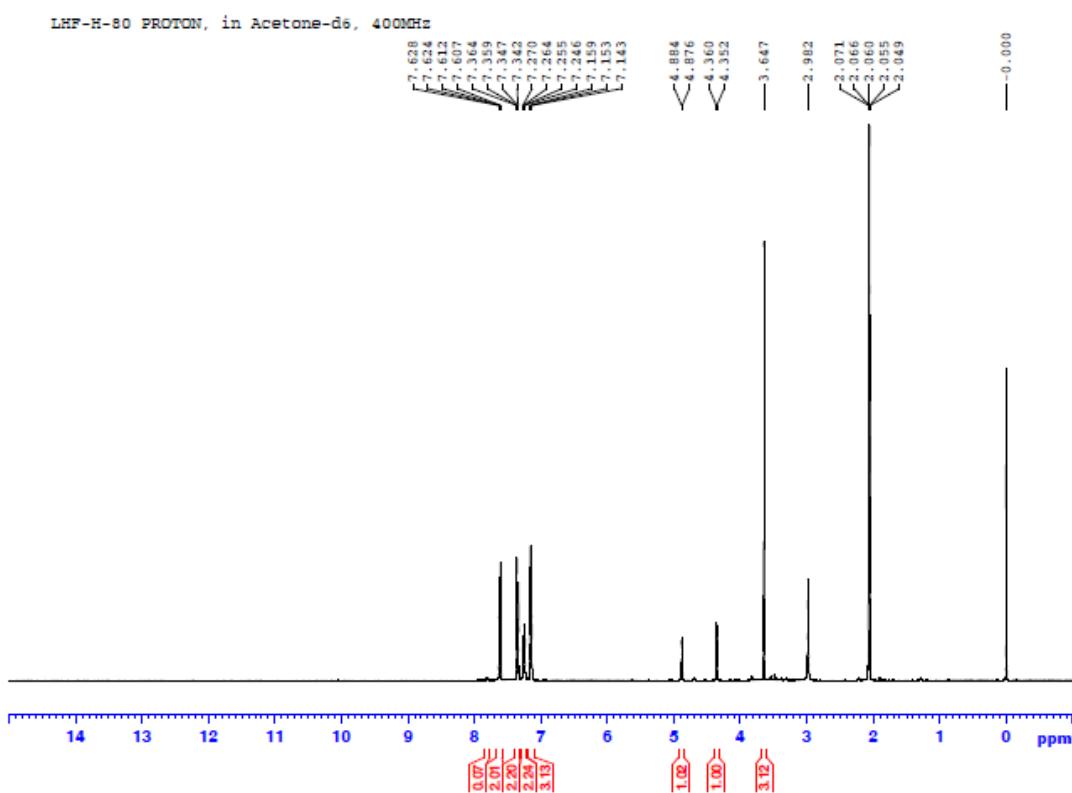
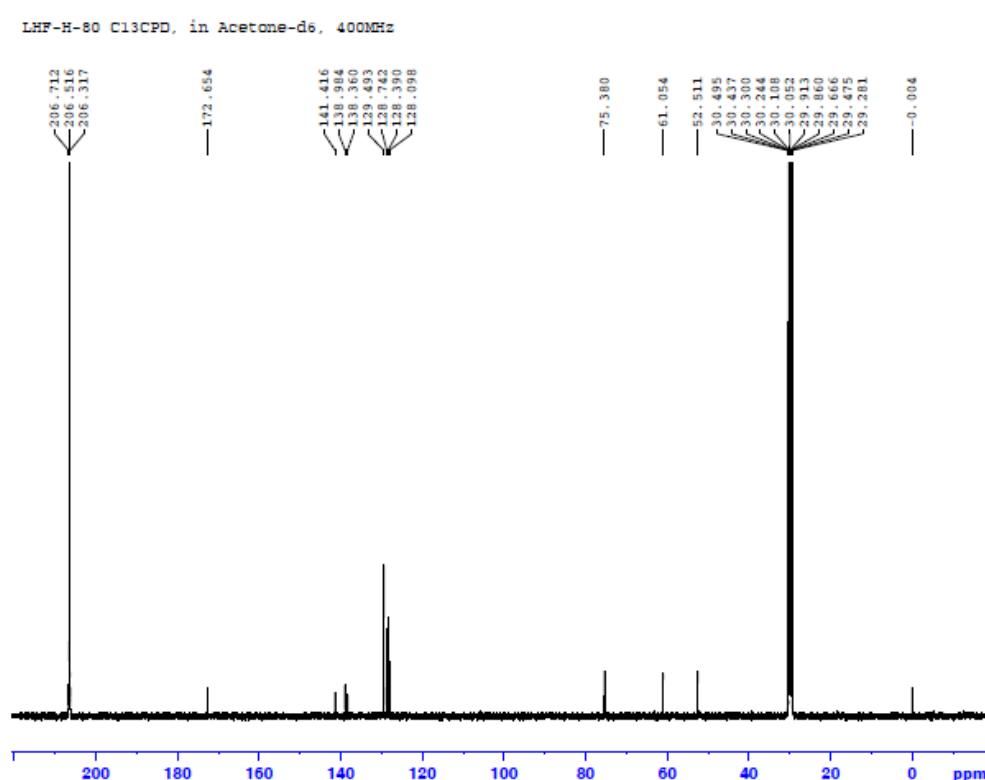


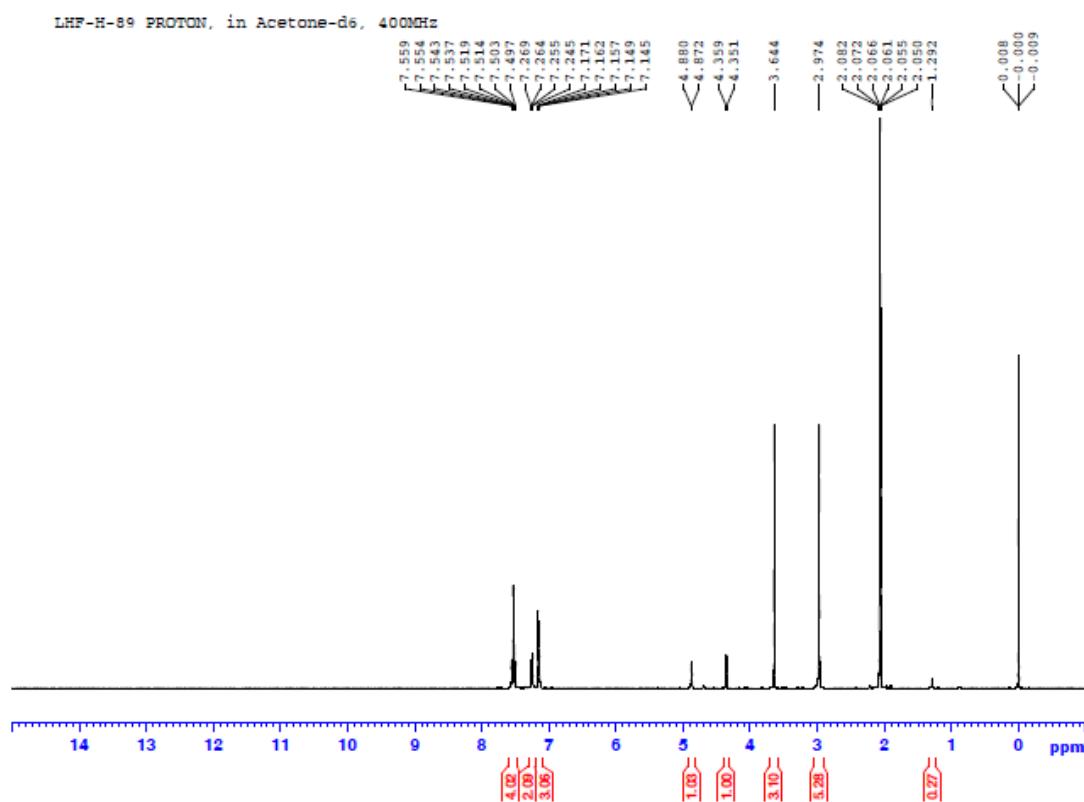
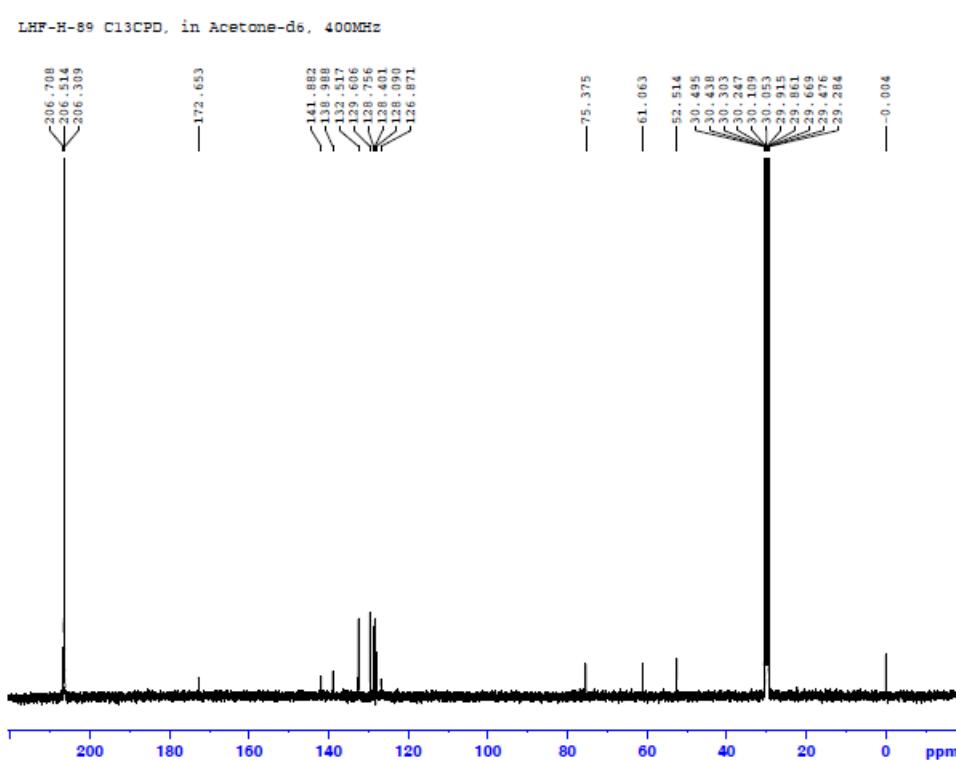
### <sup>1</sup>H-NMR of 7f

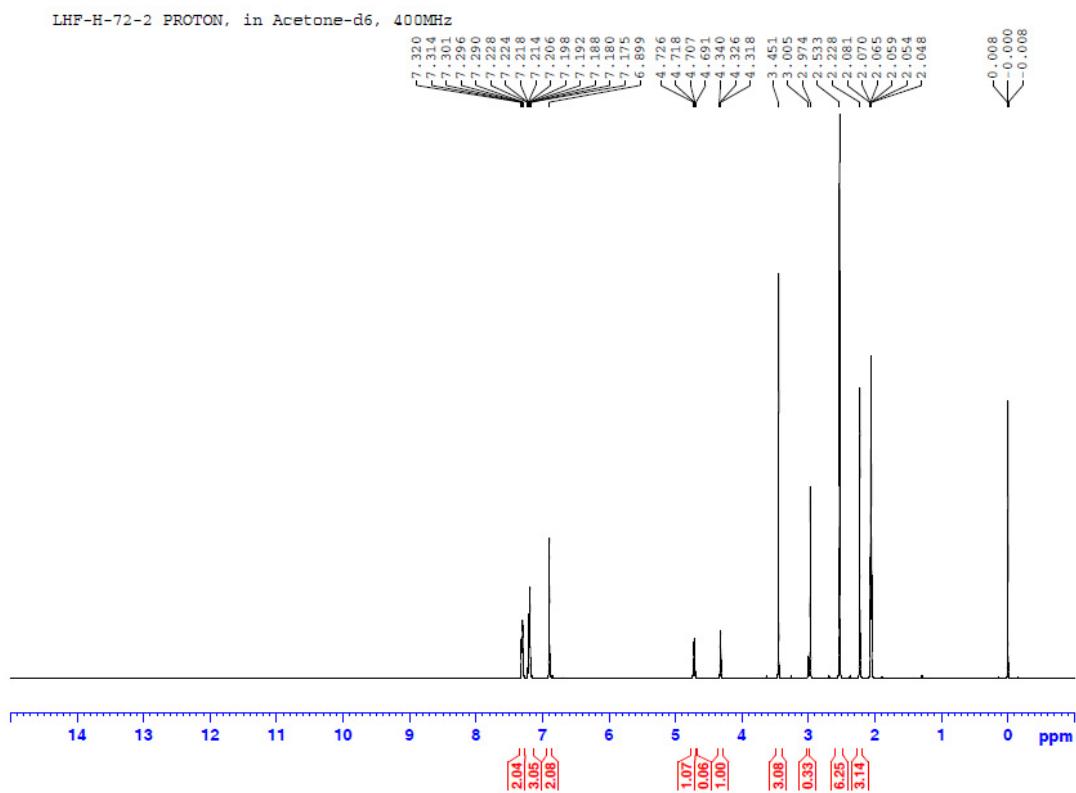
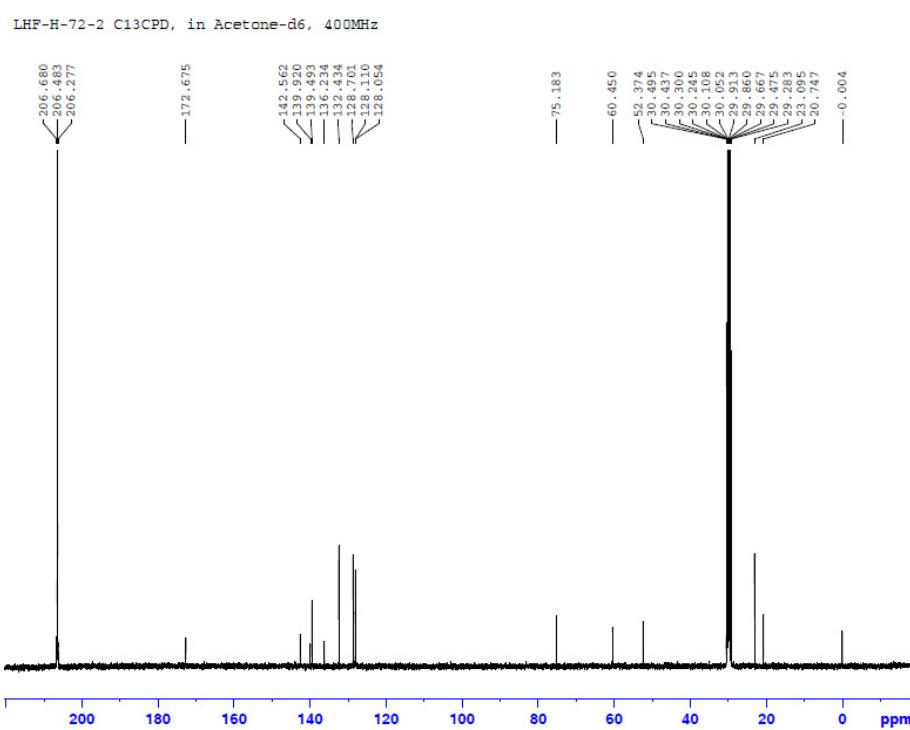


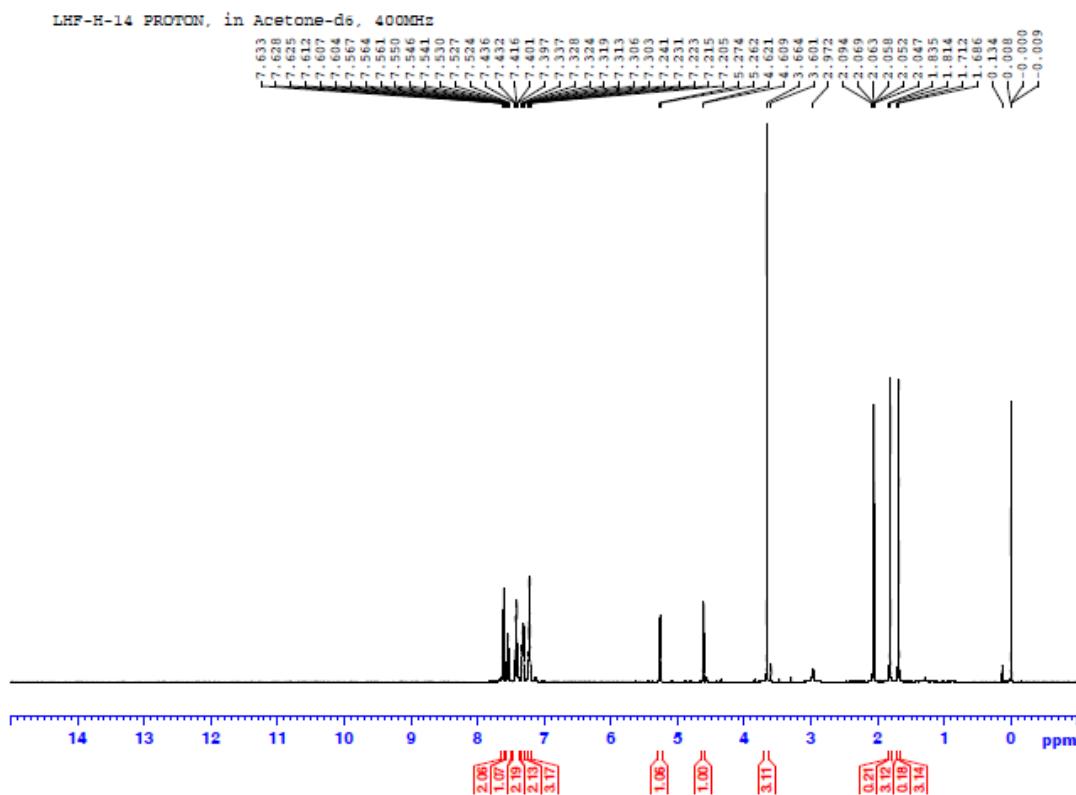
### <sup>13</sup>C-NMR of 7f

<sup>1</sup>H-NMR of 7g<sup>13</sup>C-NMR of 7g

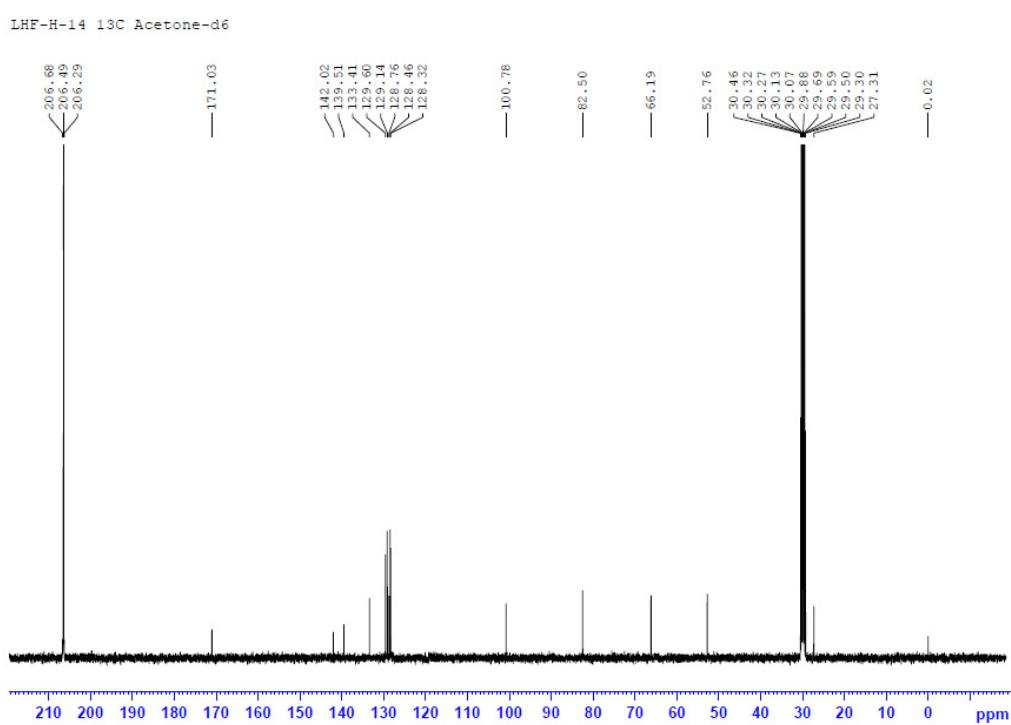
<sup>1</sup>H-NMR of 7h<sup>13</sup>C-NMR of 7h

<sup>1</sup>H-NMR of 7i<sup>13</sup>C-NMR of 7i

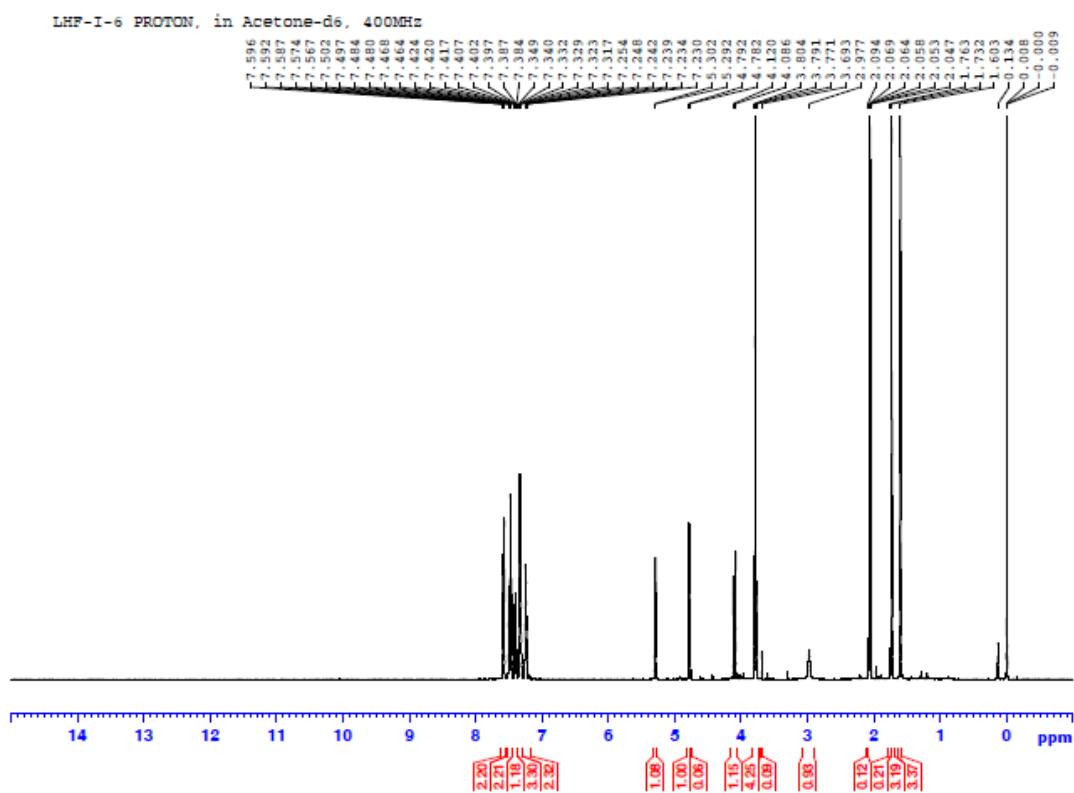
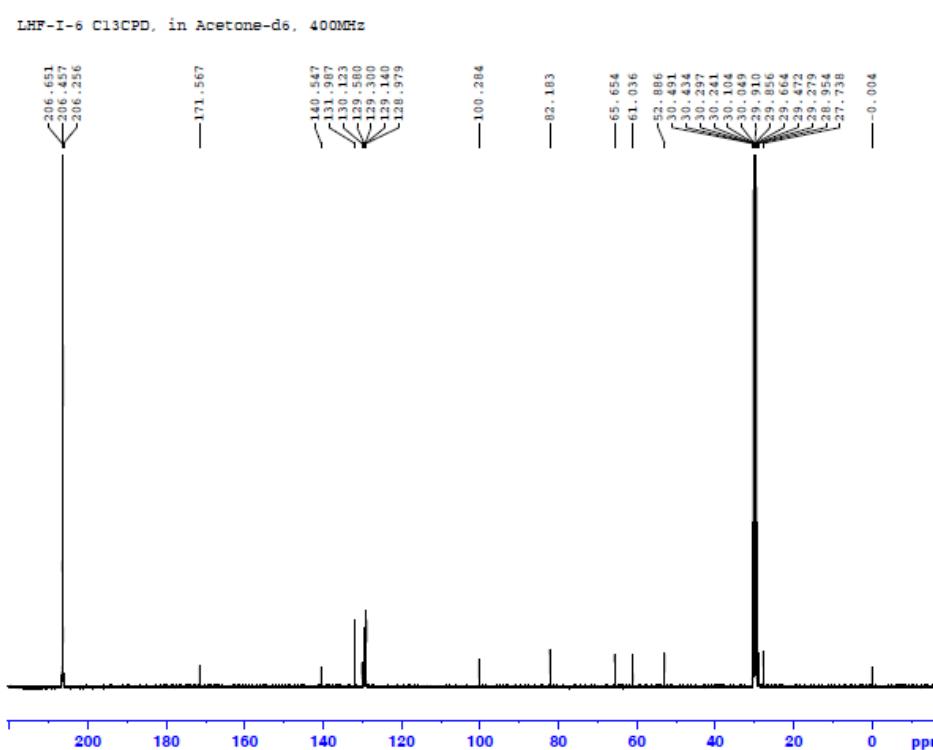
<sup>1</sup>H-NMR of 7j<sup>13</sup>C-NMR of 7j

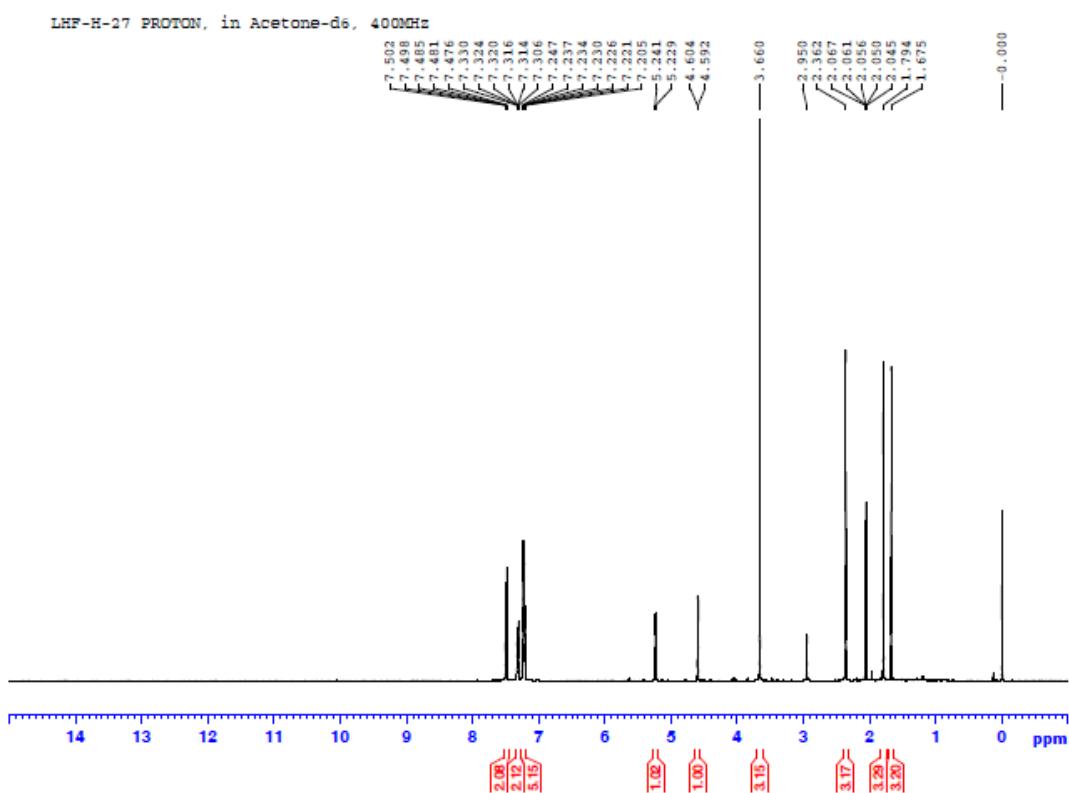


### <sup>1</sup>H-NMR of 11a

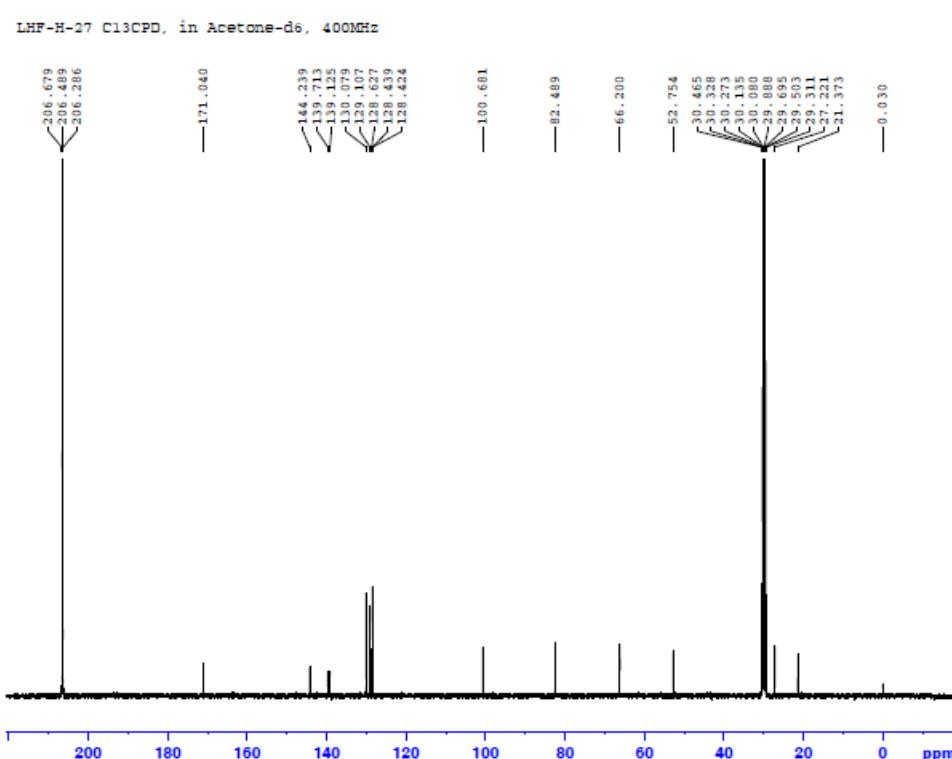


### <sup>13</sup>C-NMR of 11a

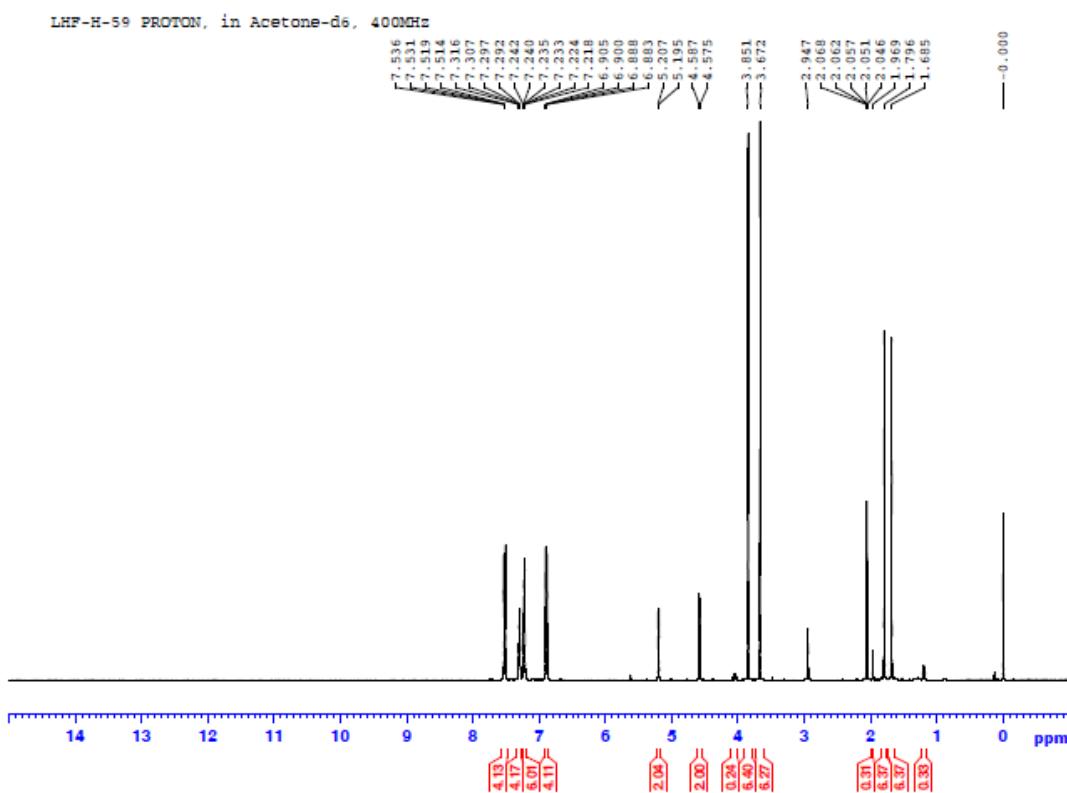
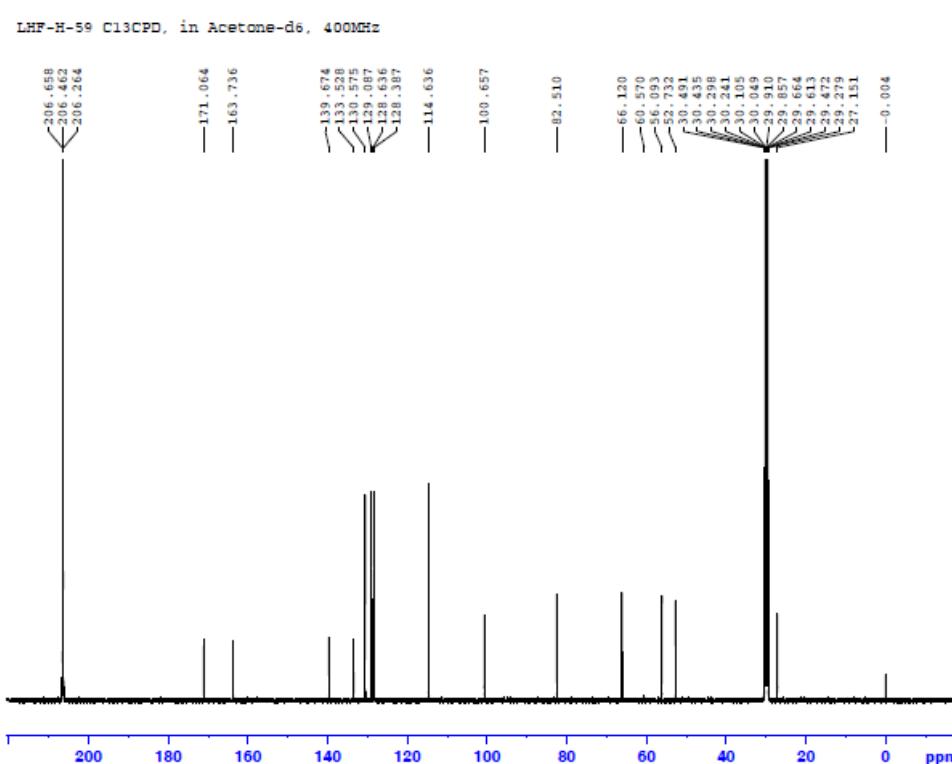
<sup>1</sup>H-NMR of 11b<sup>13</sup>C-NMR of 11b

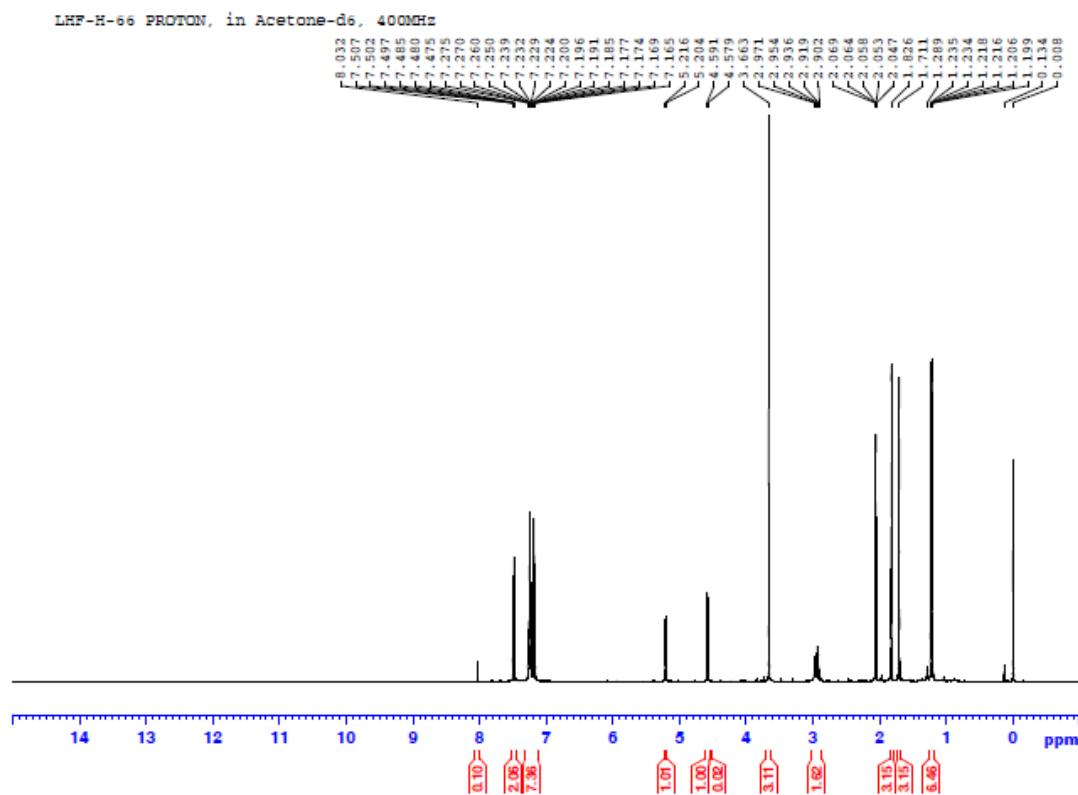


### <sup>1</sup>H-NMR of 11c

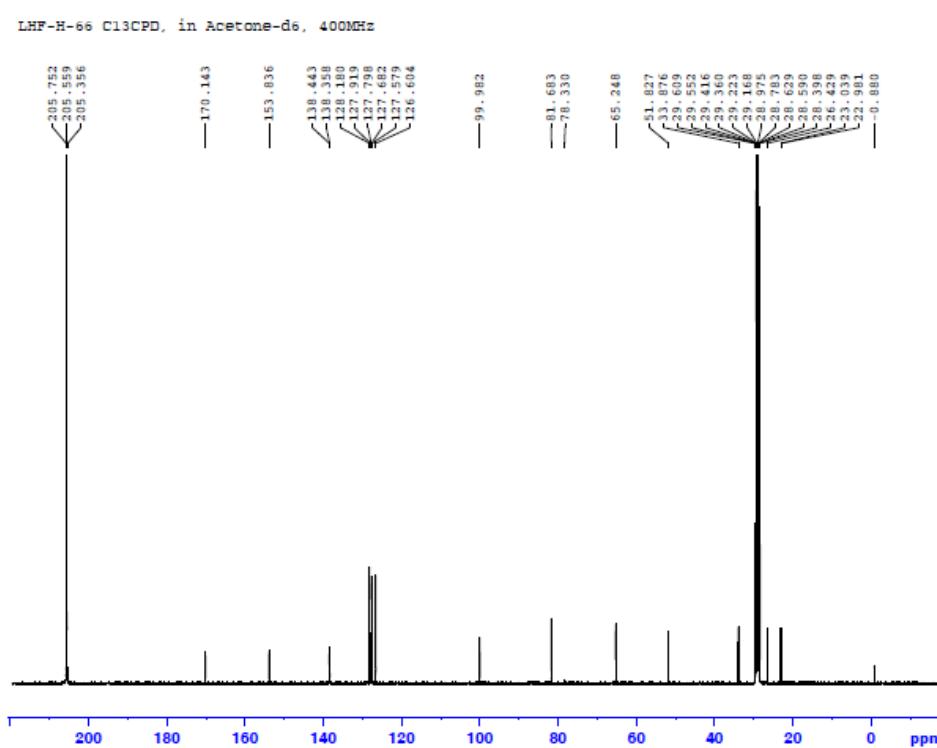


### <sup>13</sup>C-NMR of 11c

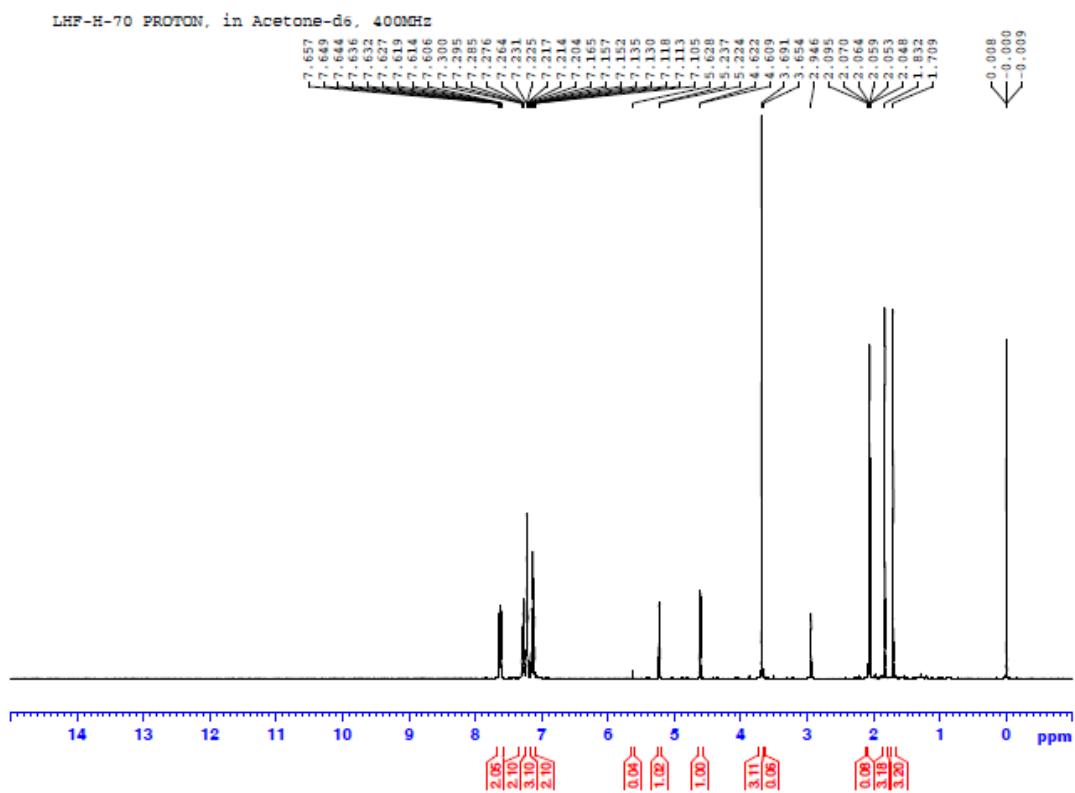
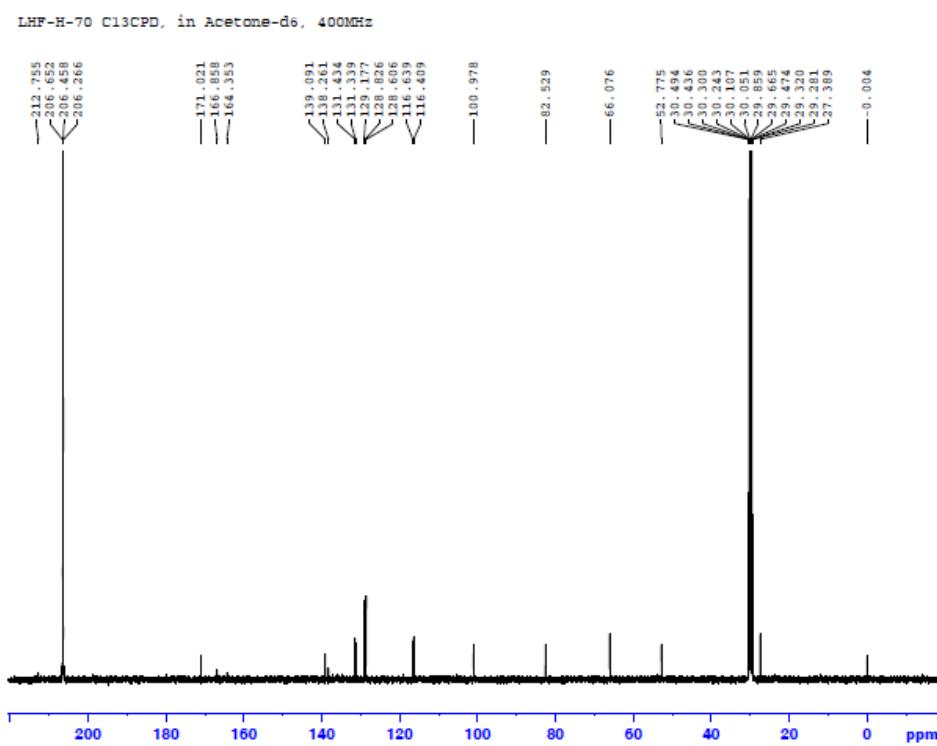
<sup>1</sup>H-NMR of 11d<sup>13</sup>C-NMR of 11d

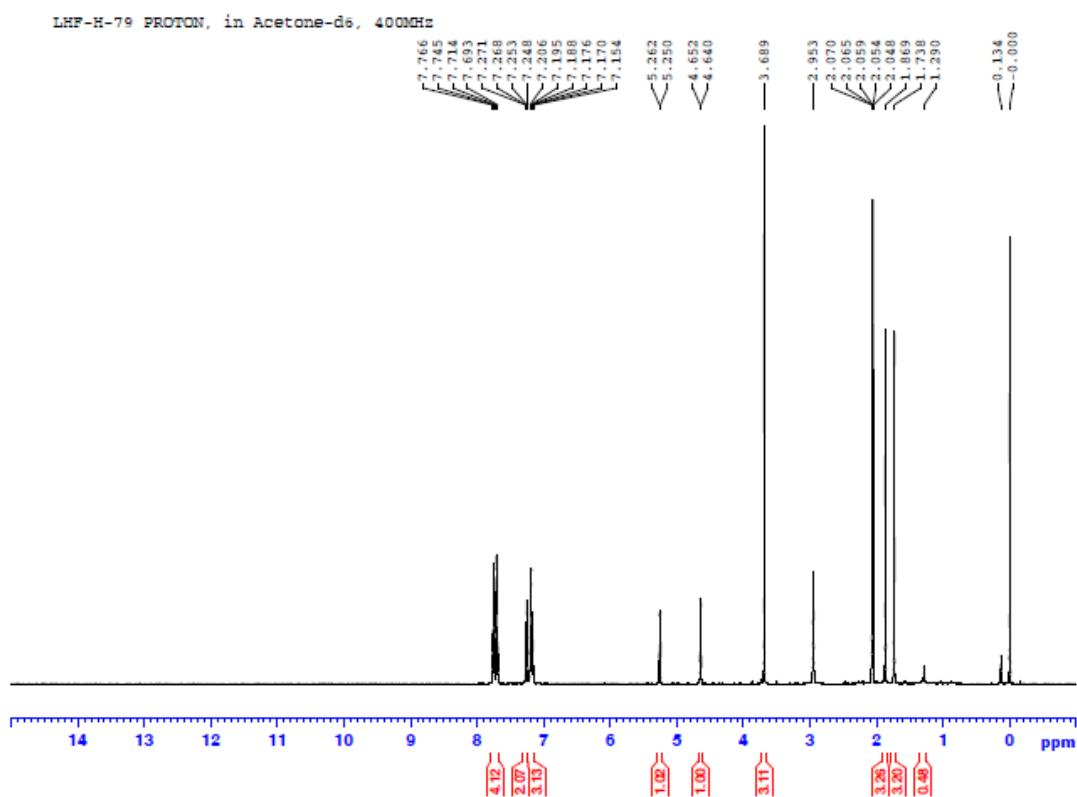
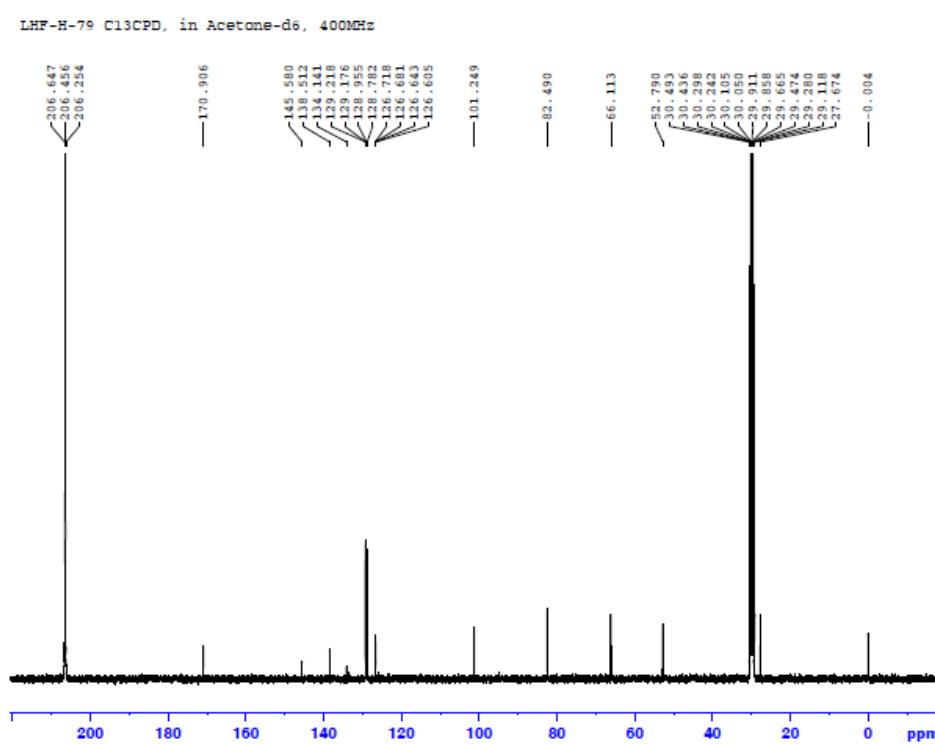


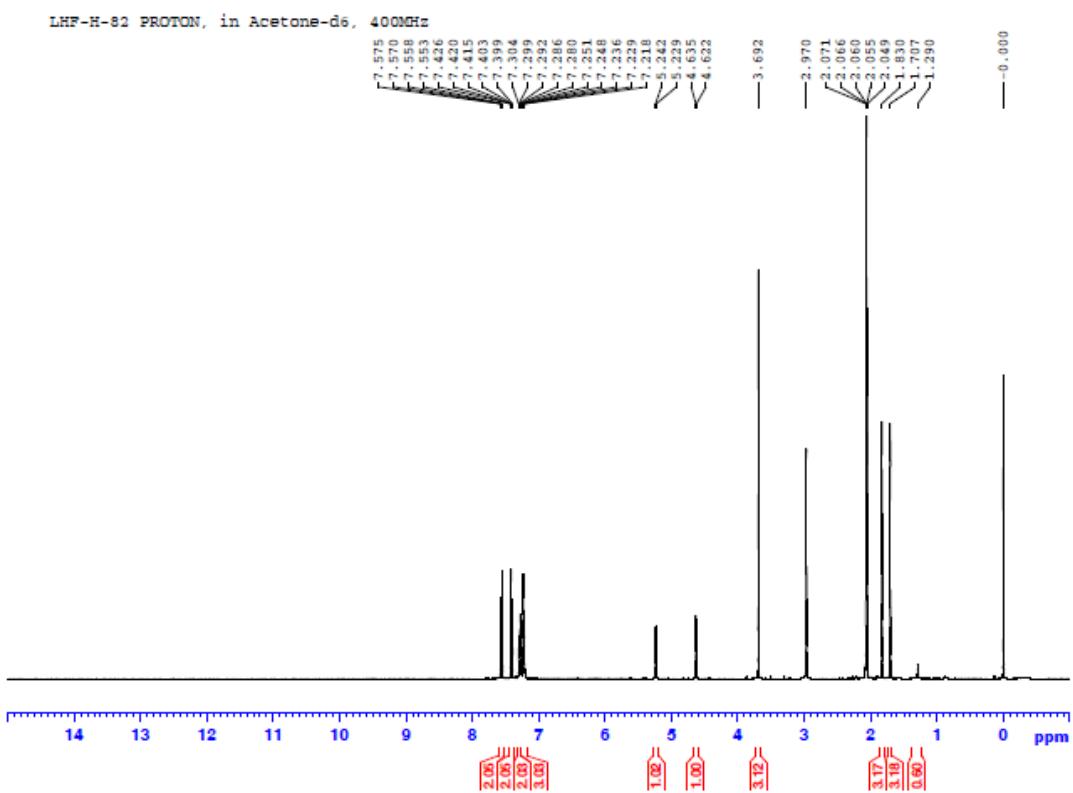
### <sup>1</sup>H-NMR of 11e



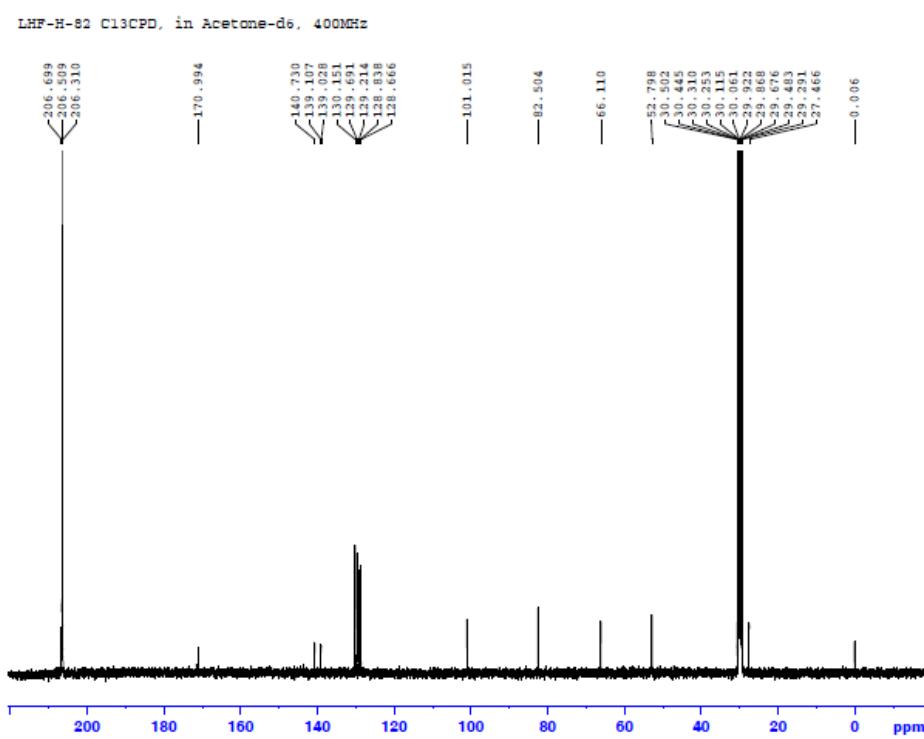
### <sup>13</sup>C-NMR of 11e

<sup>1</sup>H-NMR of 11f<sup>13</sup>C-NMR of 11f

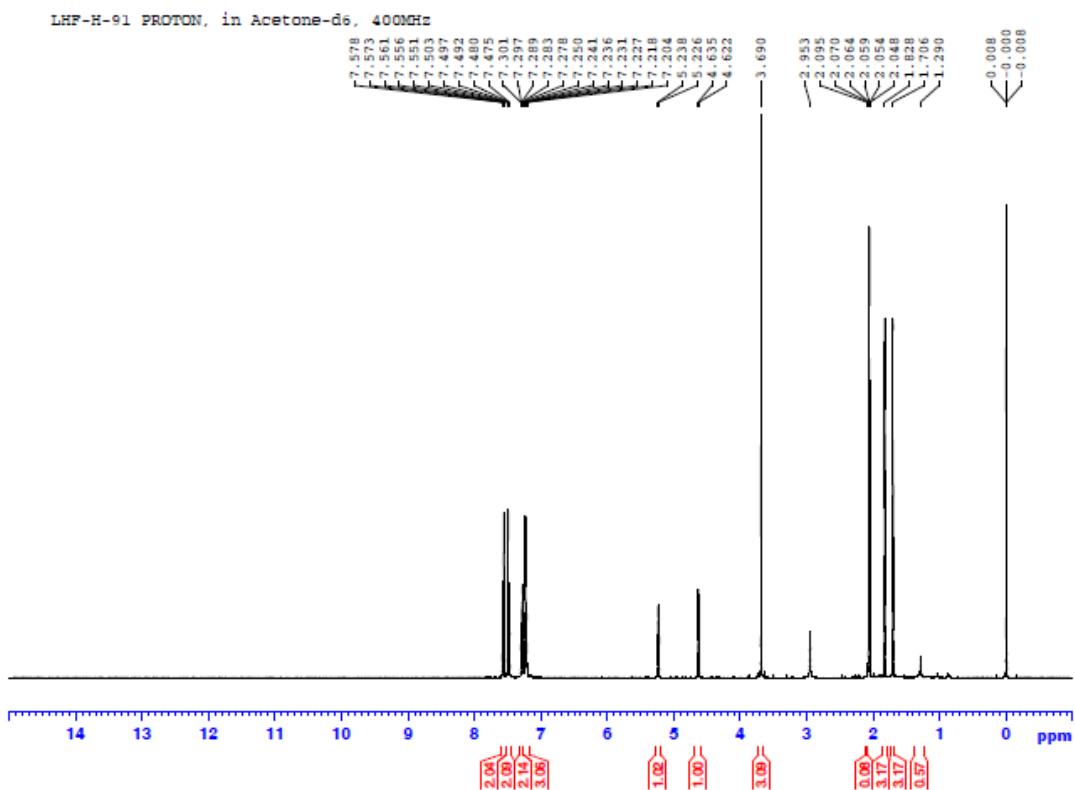
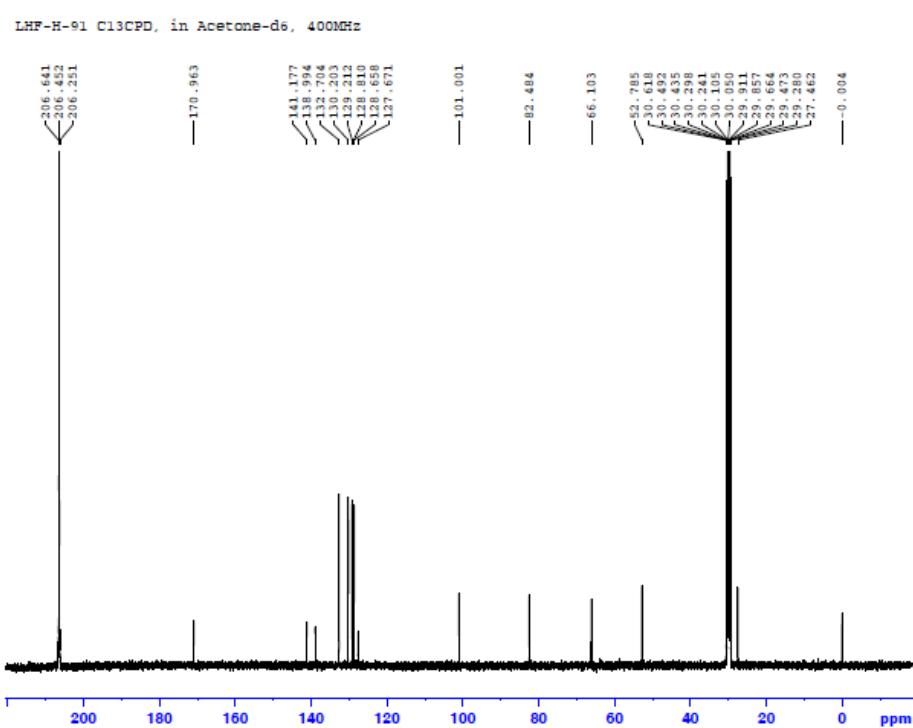
<sup>1</sup>H-NMR of 11g<sup>13</sup>C-NMR of 11g

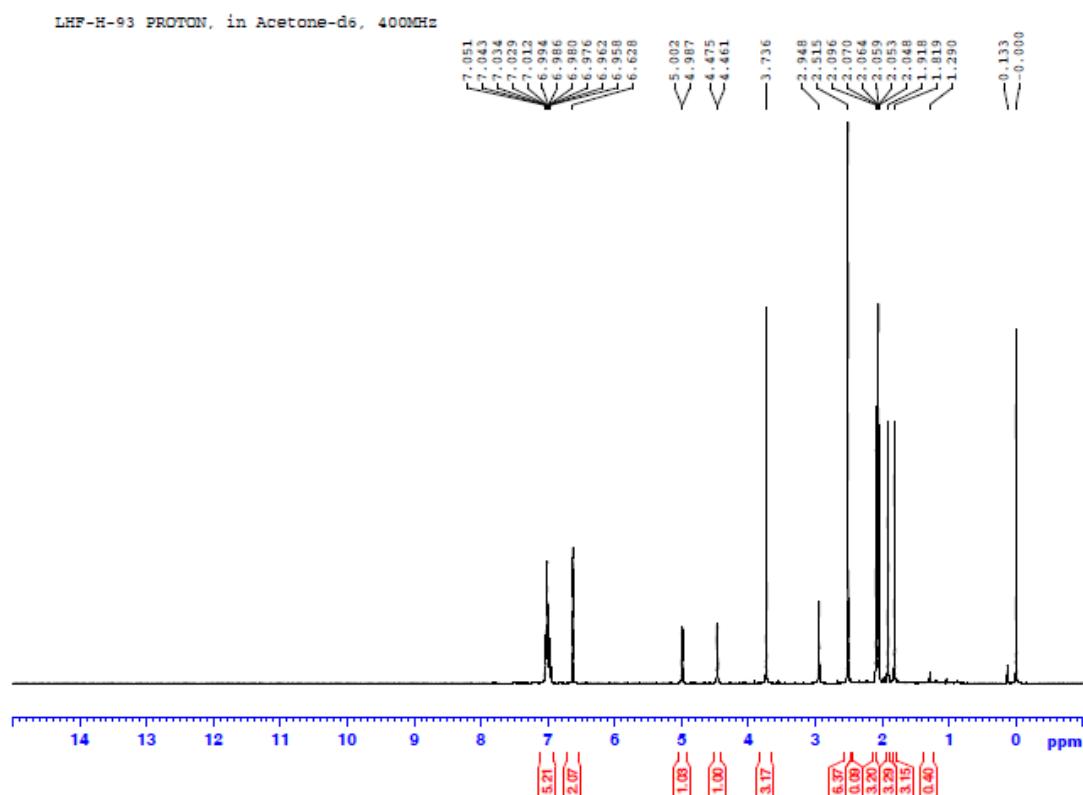
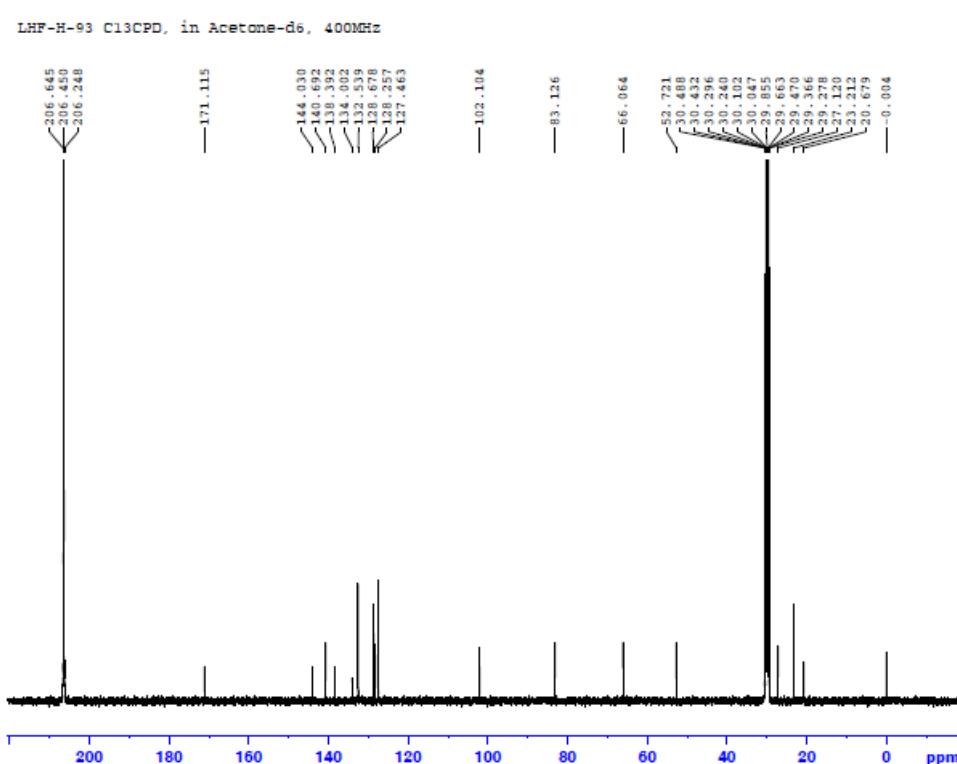


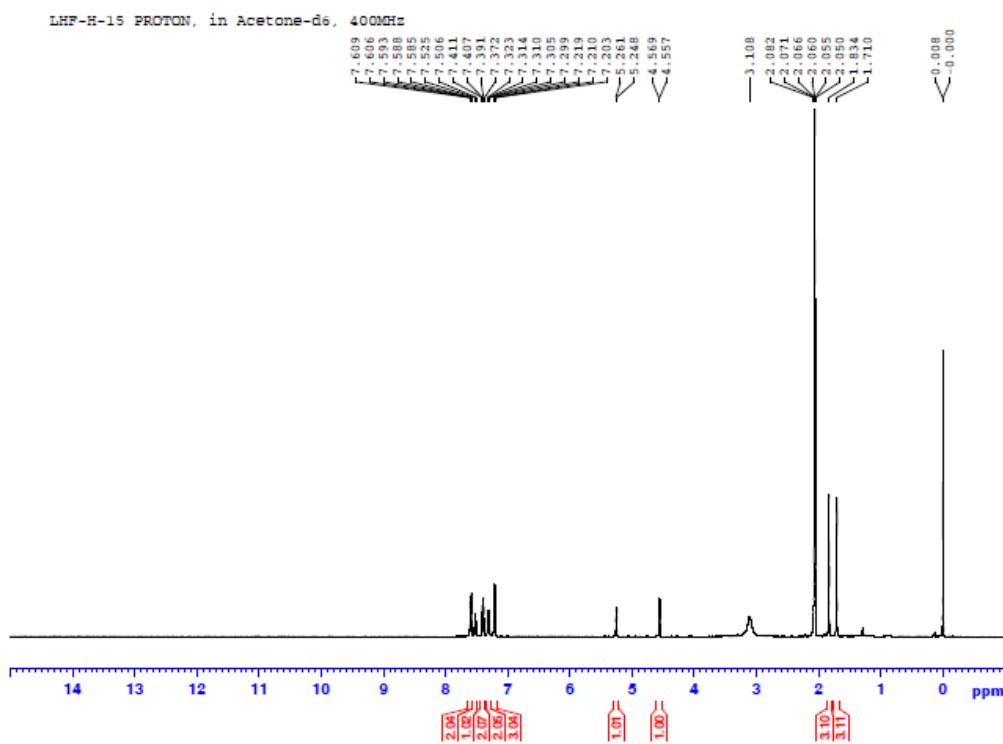
### <sup>1</sup>H-NMR of 11h



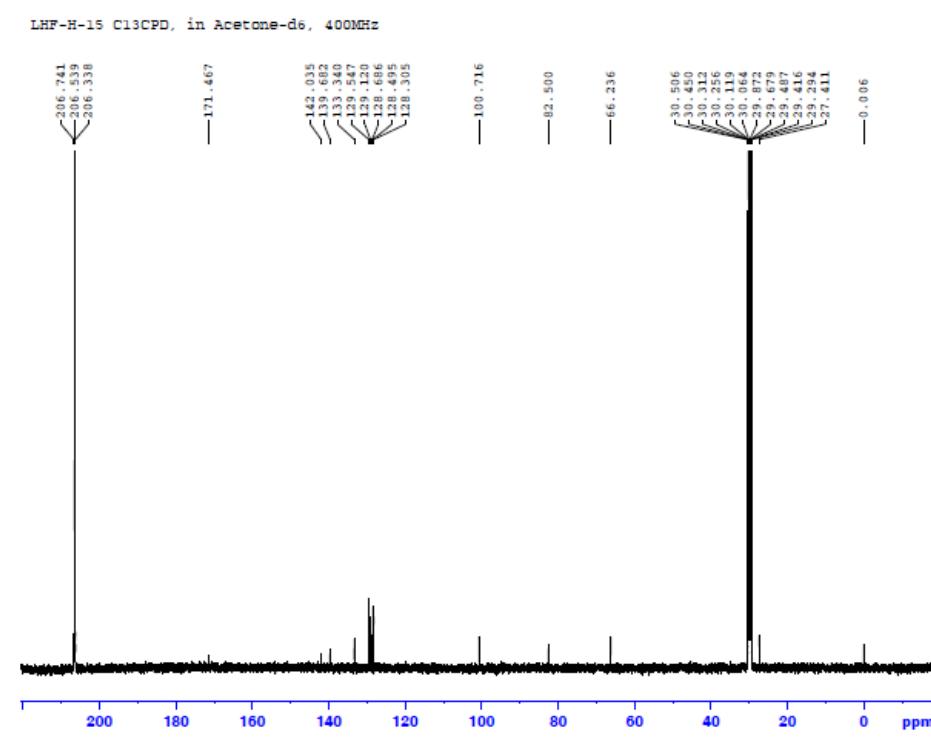
### <sup>13</sup>C-NMR of 11h

<sup>1</sup>H-NMR of 11i<sup>13</sup>C-NMR of 11i

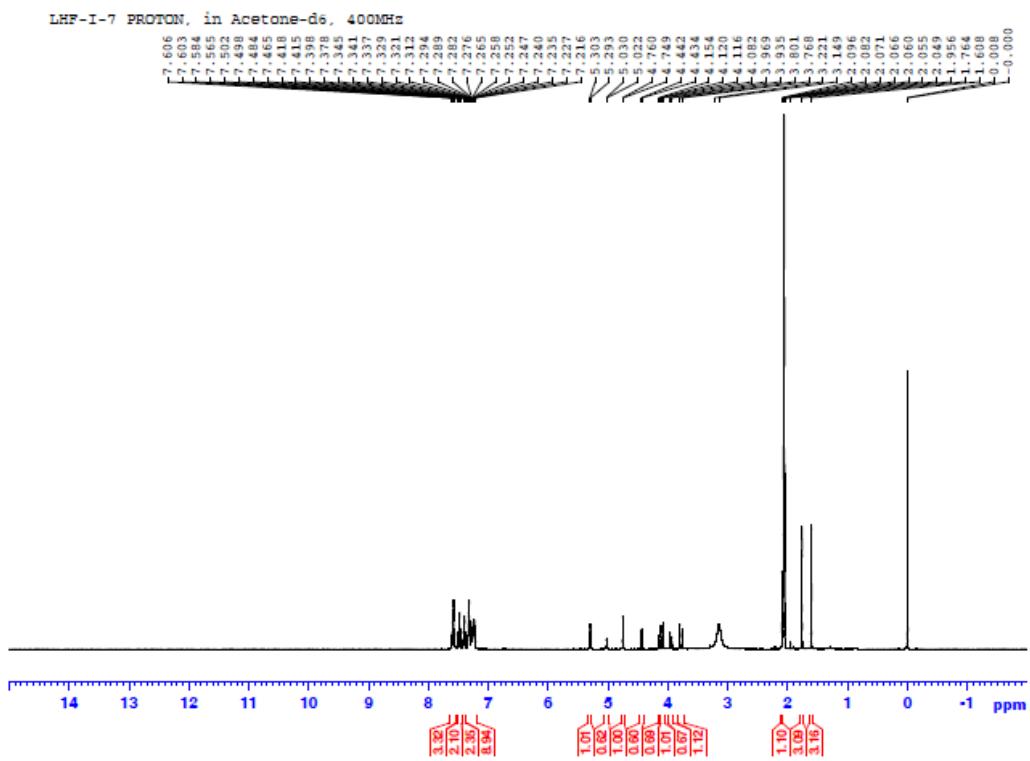
<sup>1</sup>H-NMR of 11j<sup>13</sup>C-NMR of 11j



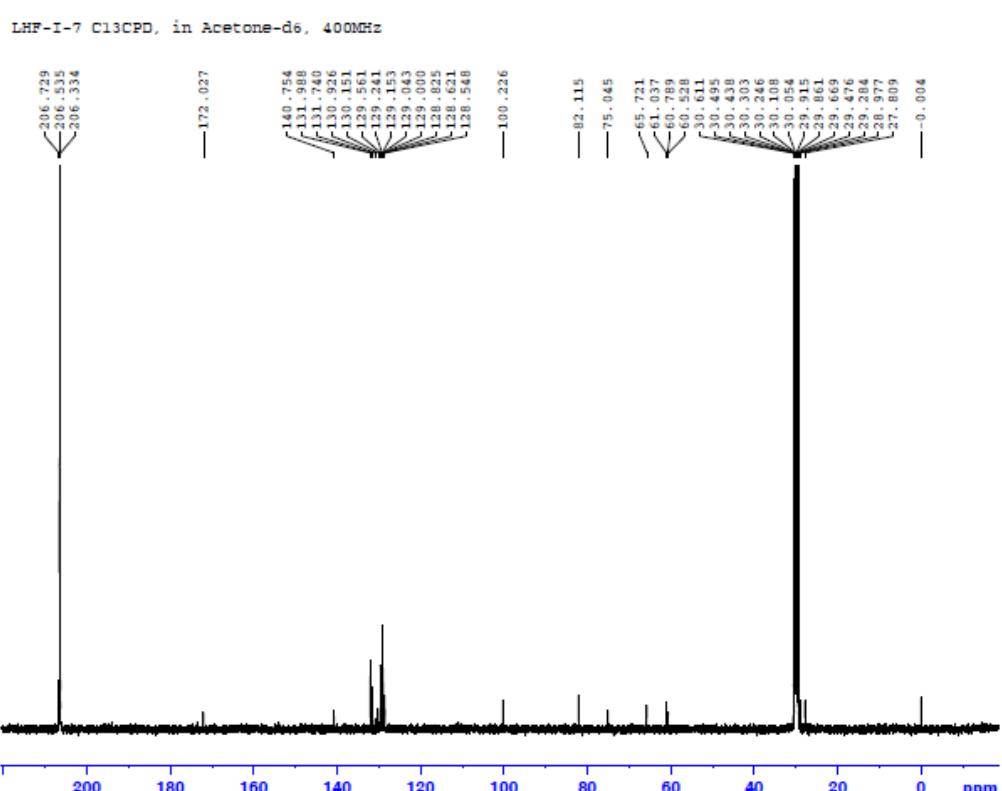
<sup>1</sup>H-NMR of 12a



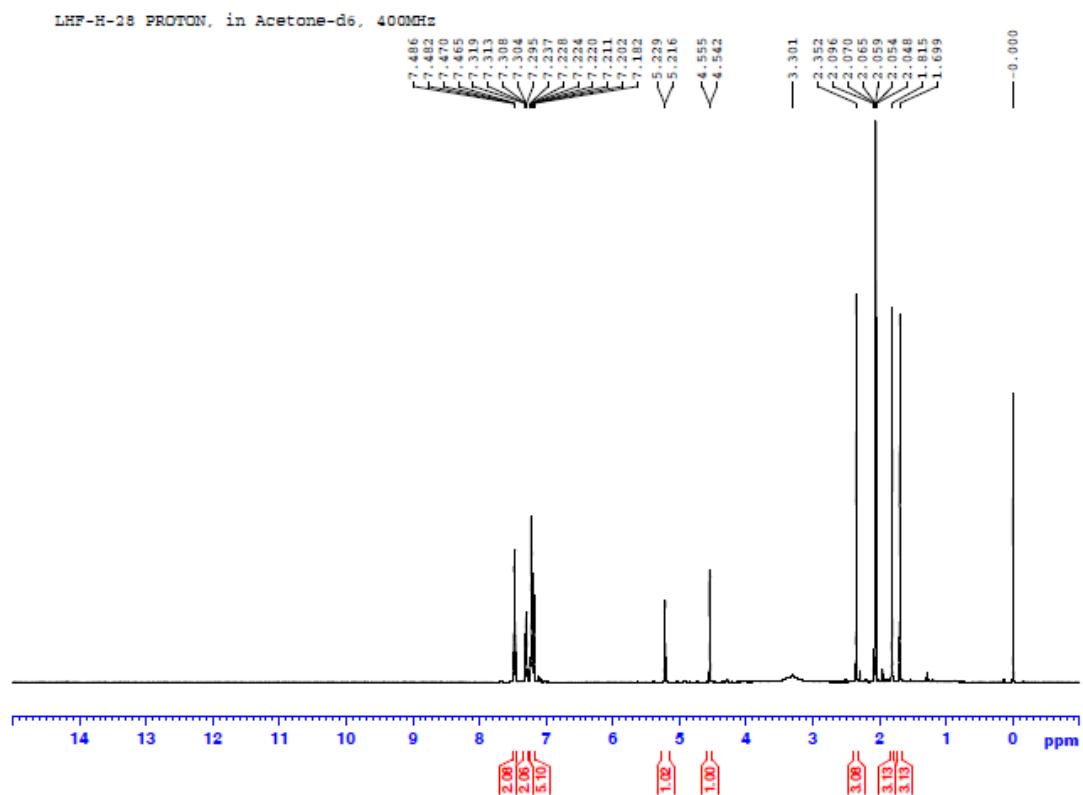
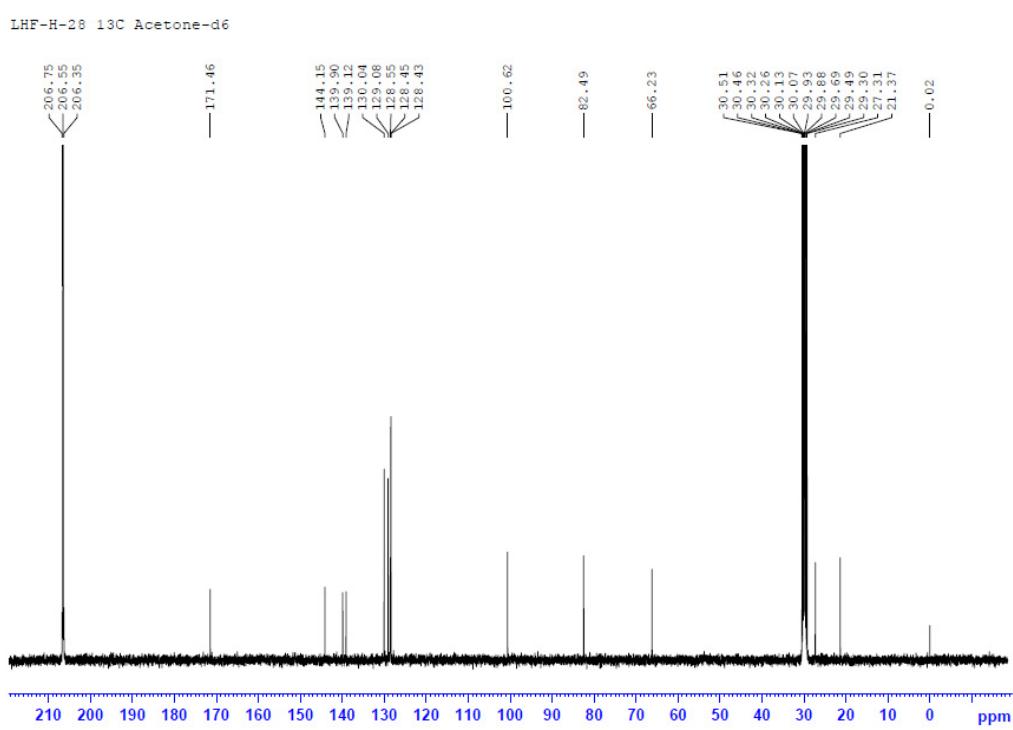
<sup>13</sup>C-NMR of 12a

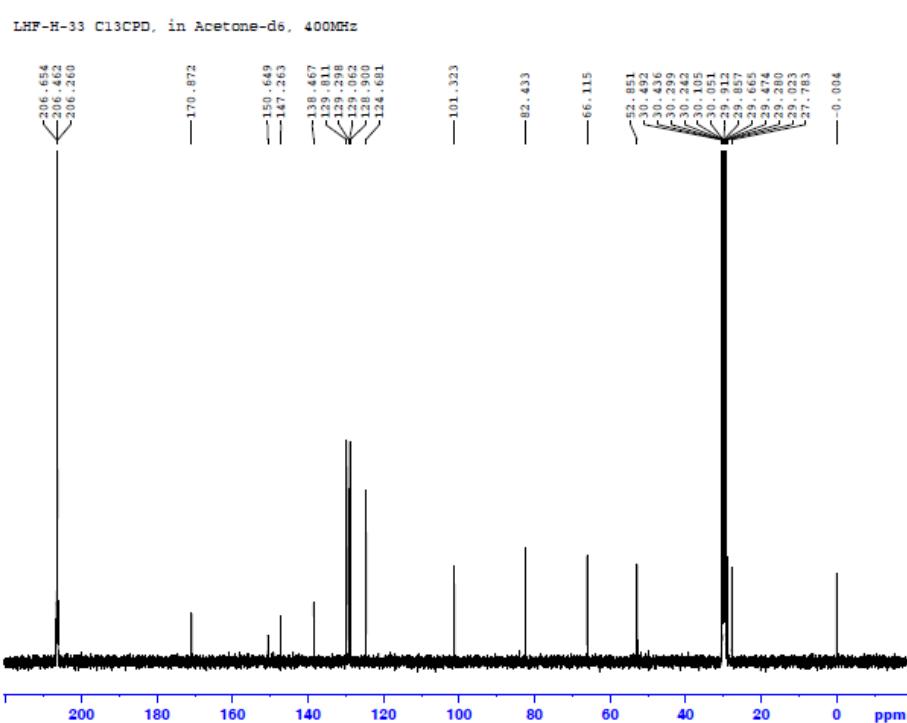
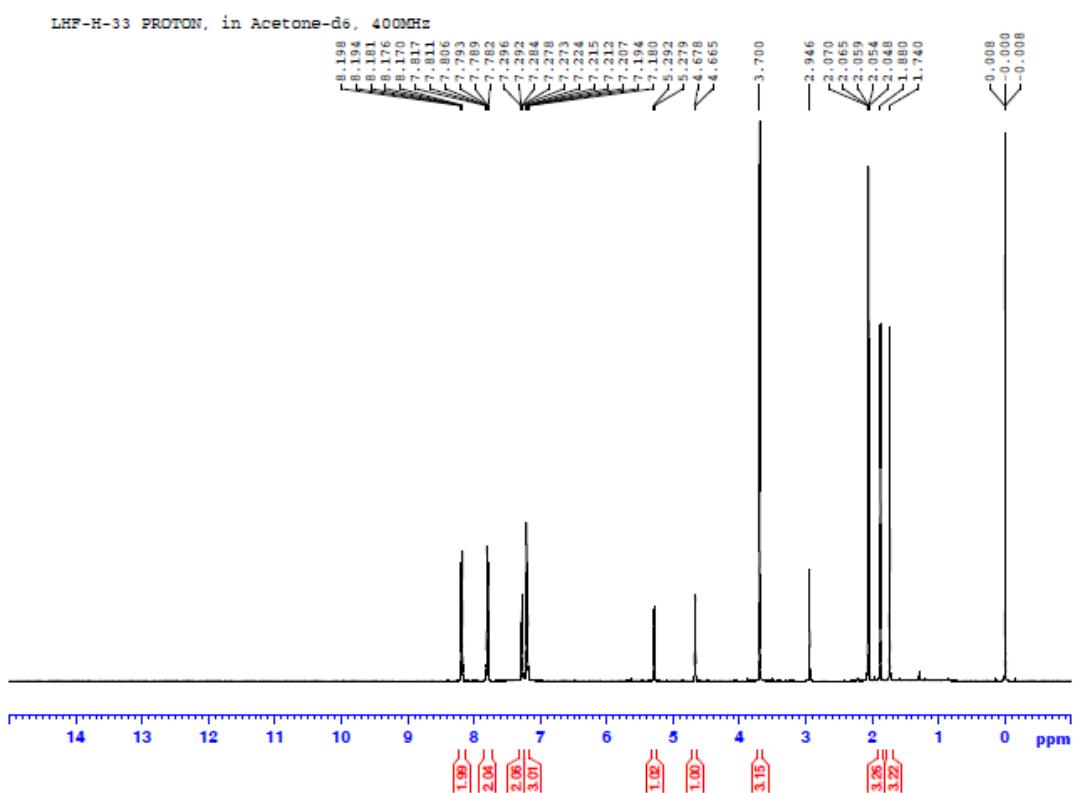


<sup>1</sup>H-NMR of 12b

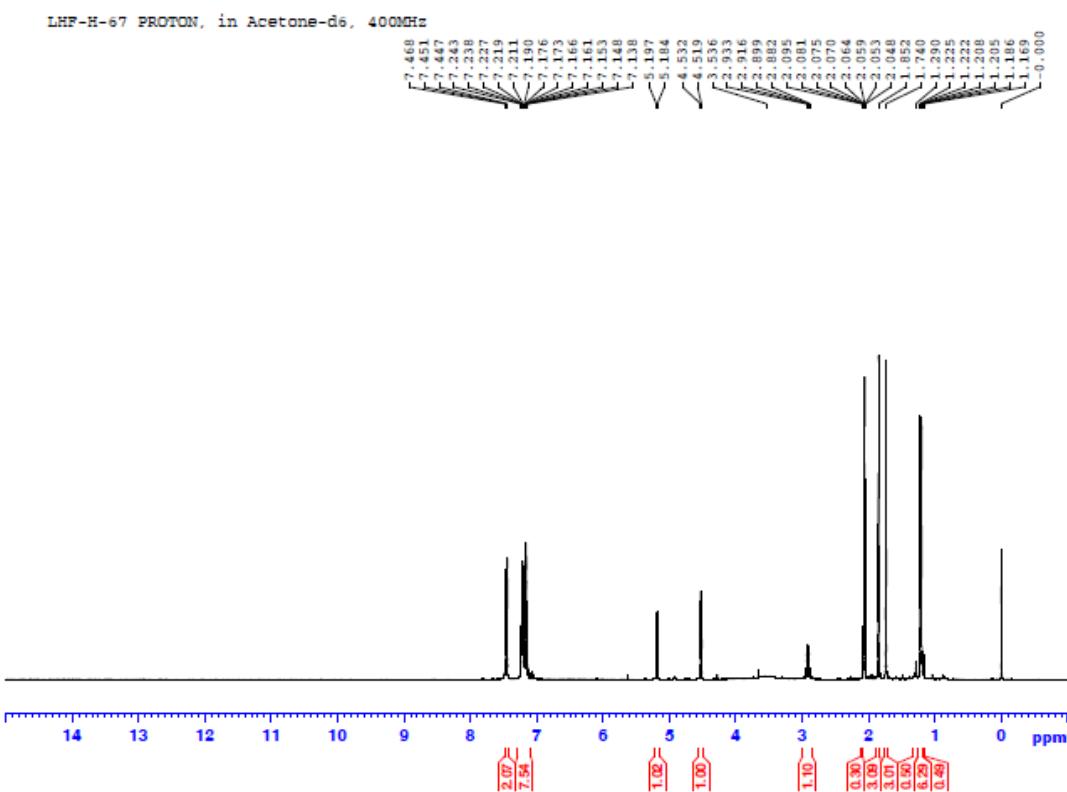
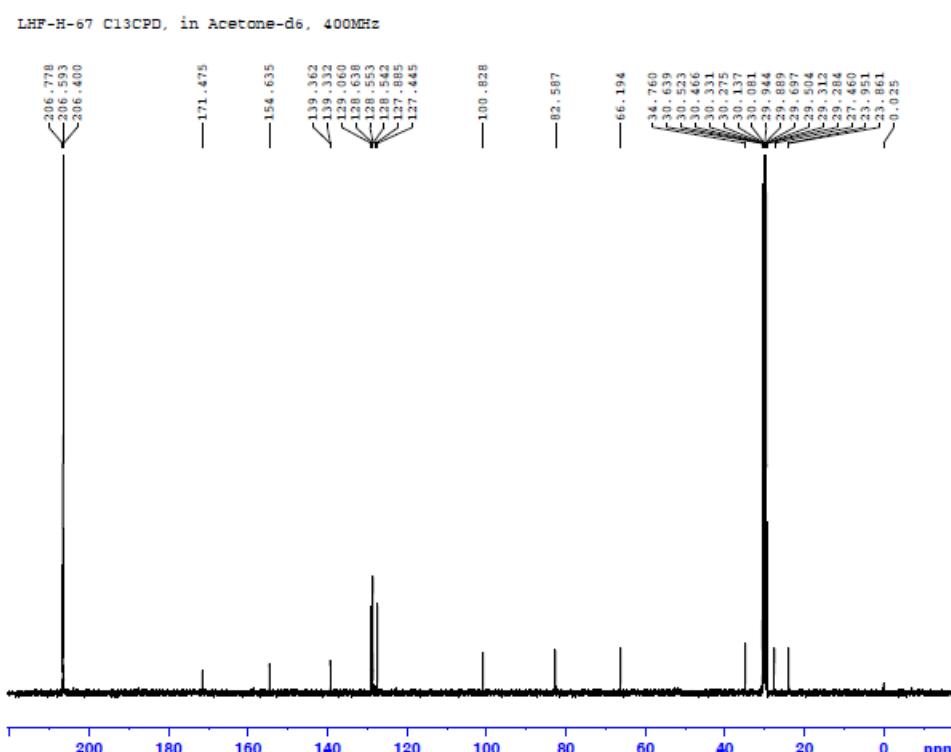


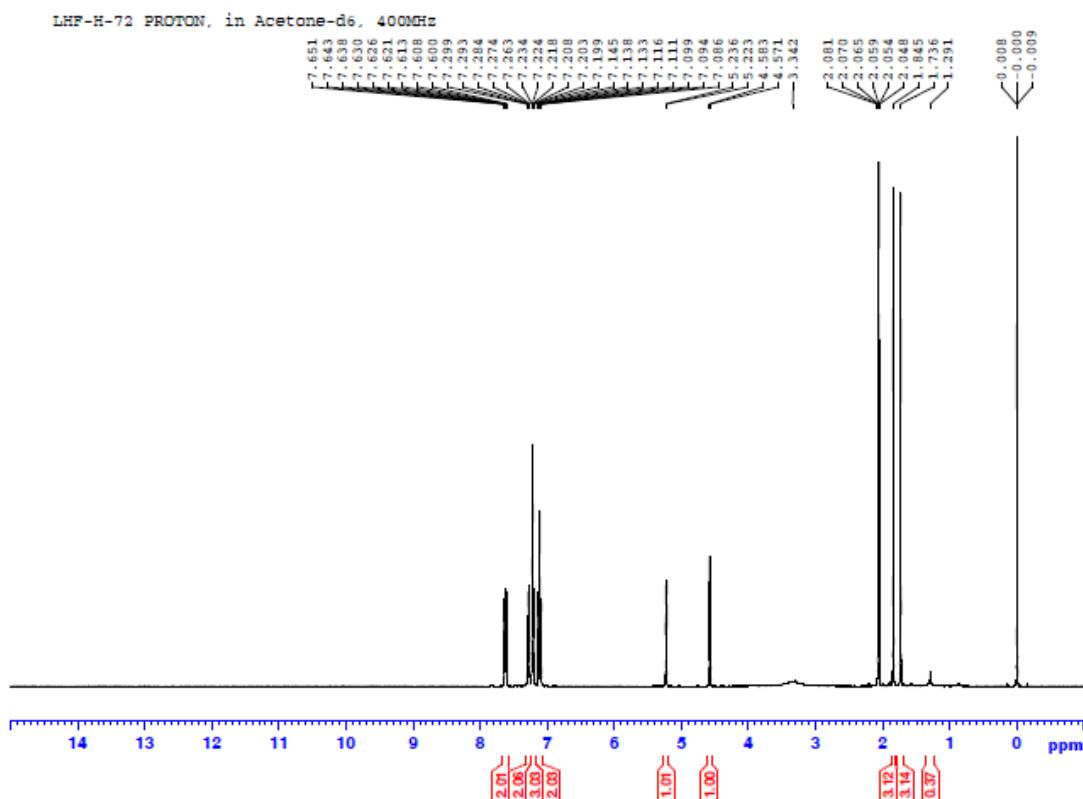
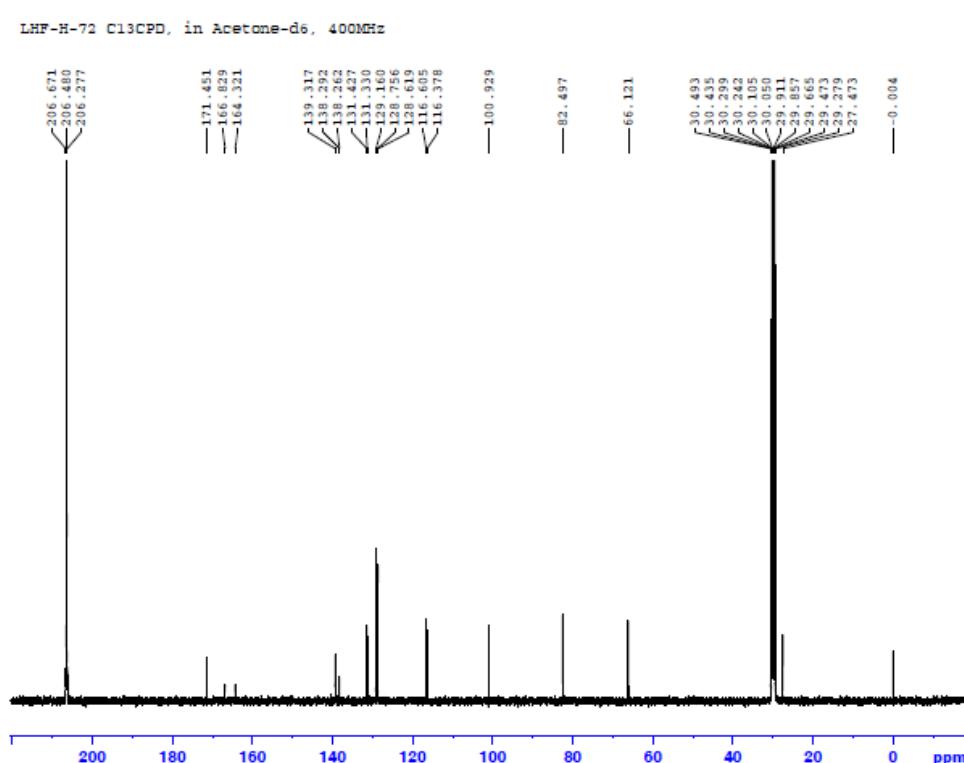
<sup>13</sup>C-NMR of 12b

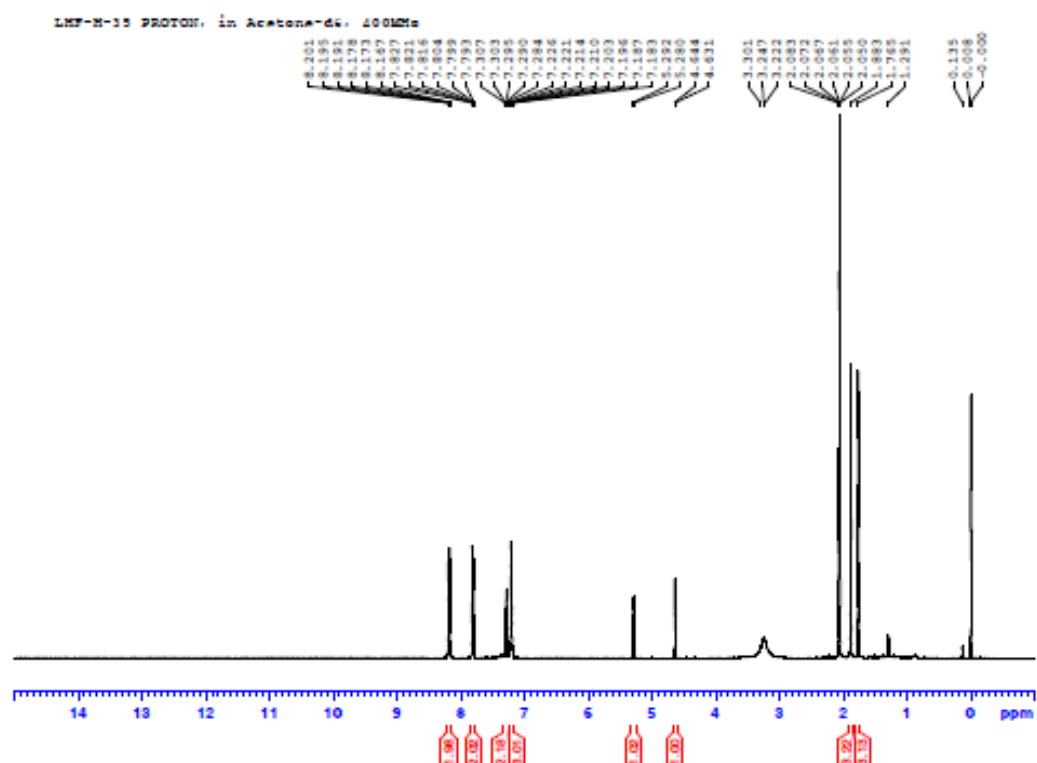
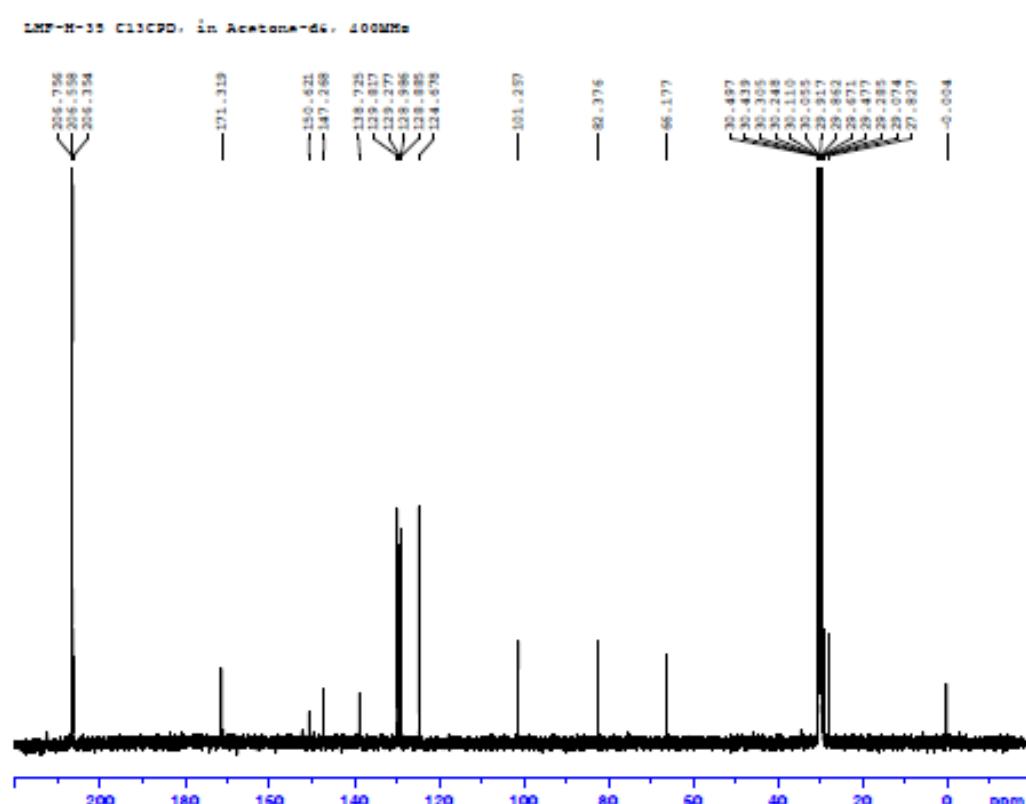
<sup>1</sup>H-NMR of 12c<sup>13</sup>C-NMR of 12c

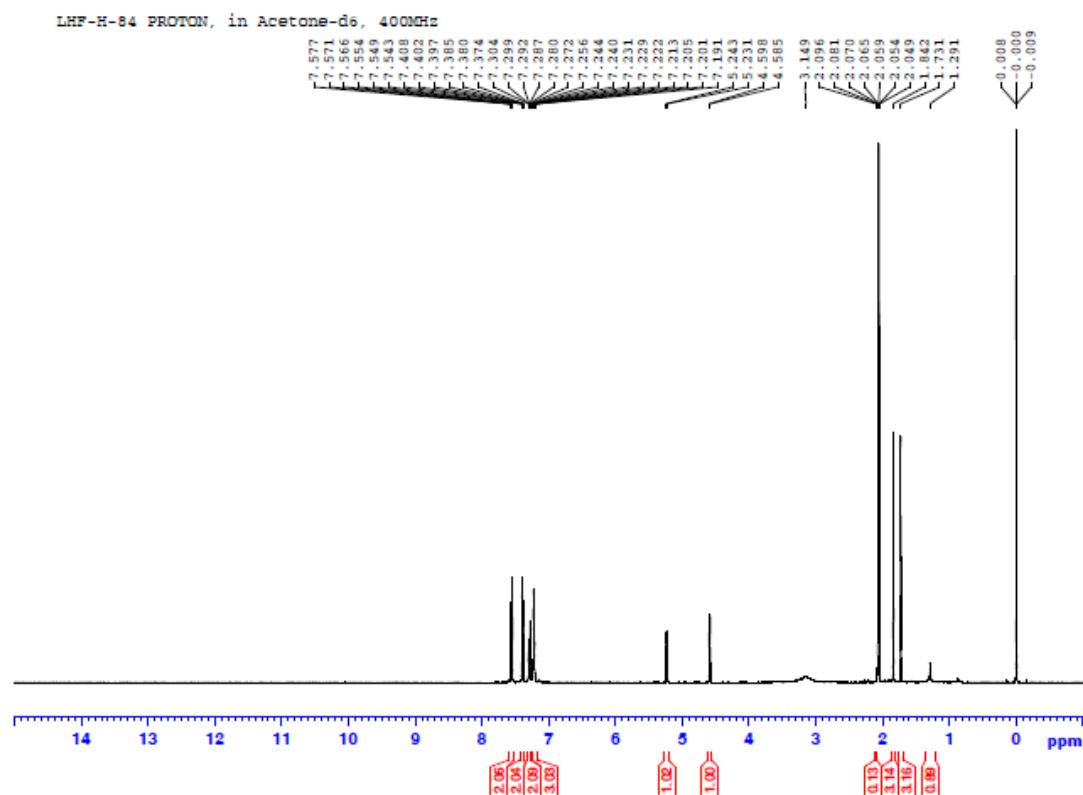
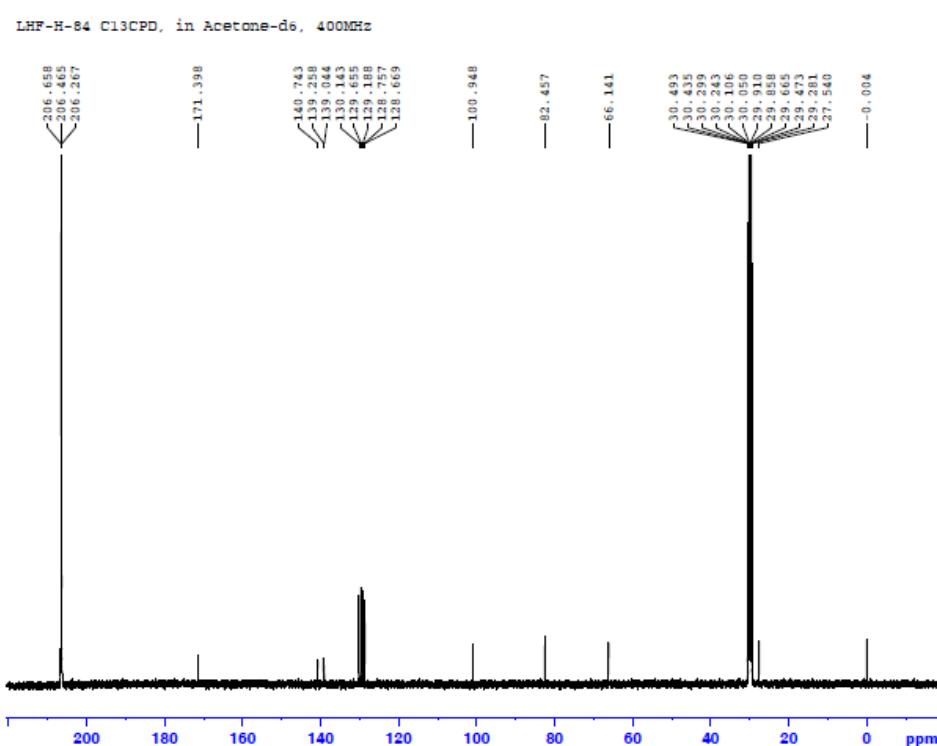


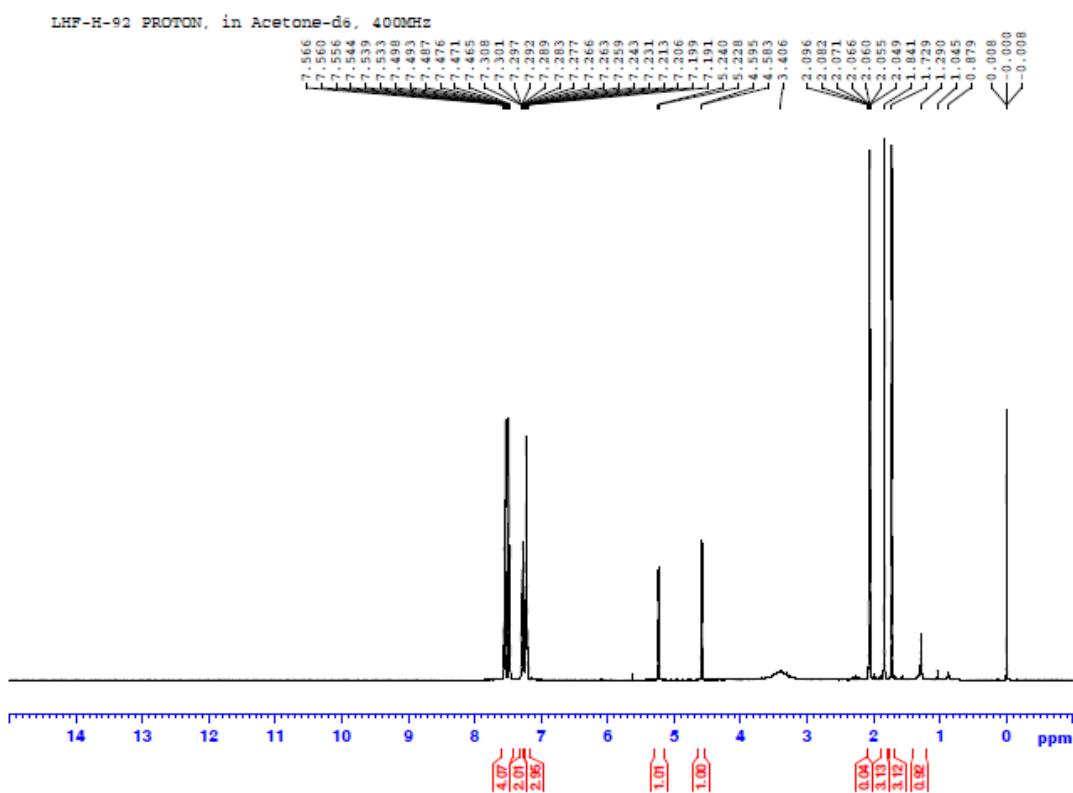
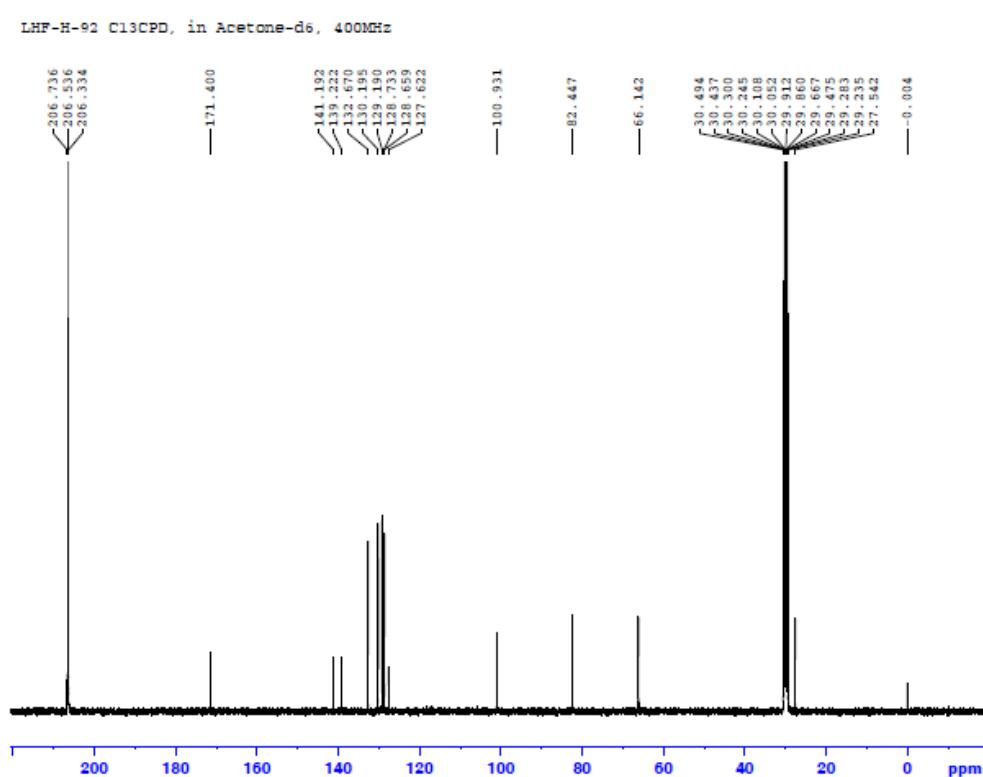
### <sup>13</sup>C-NMR of 12d

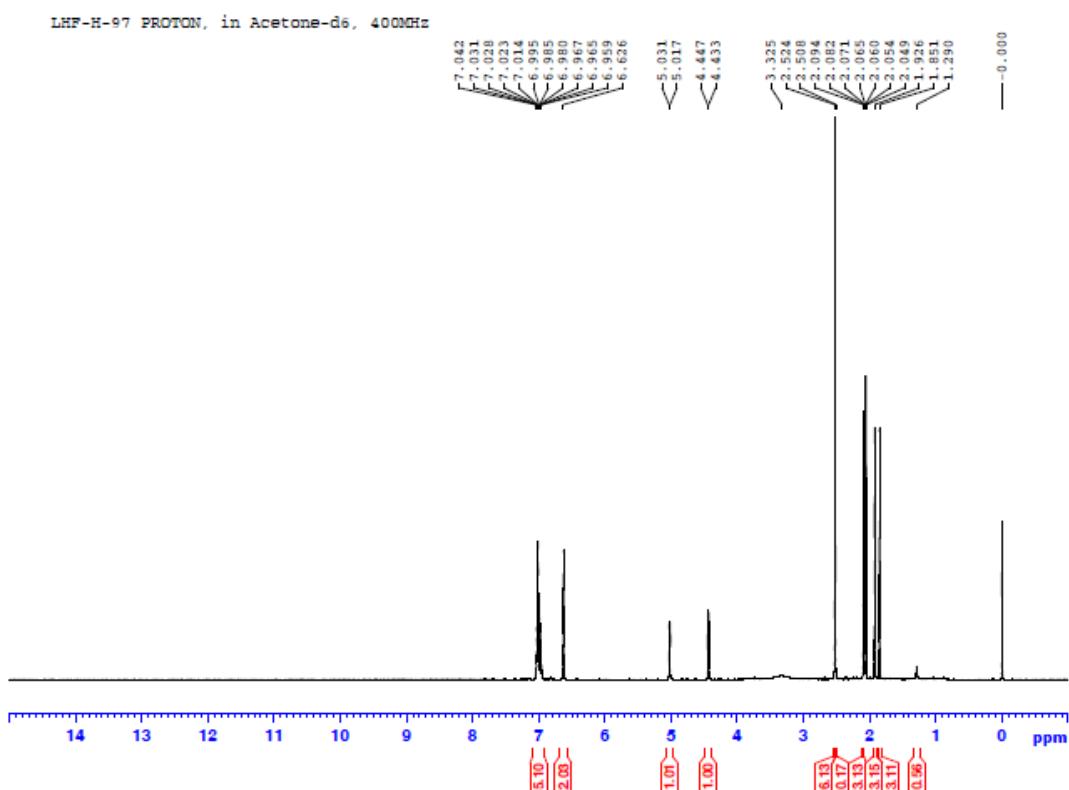
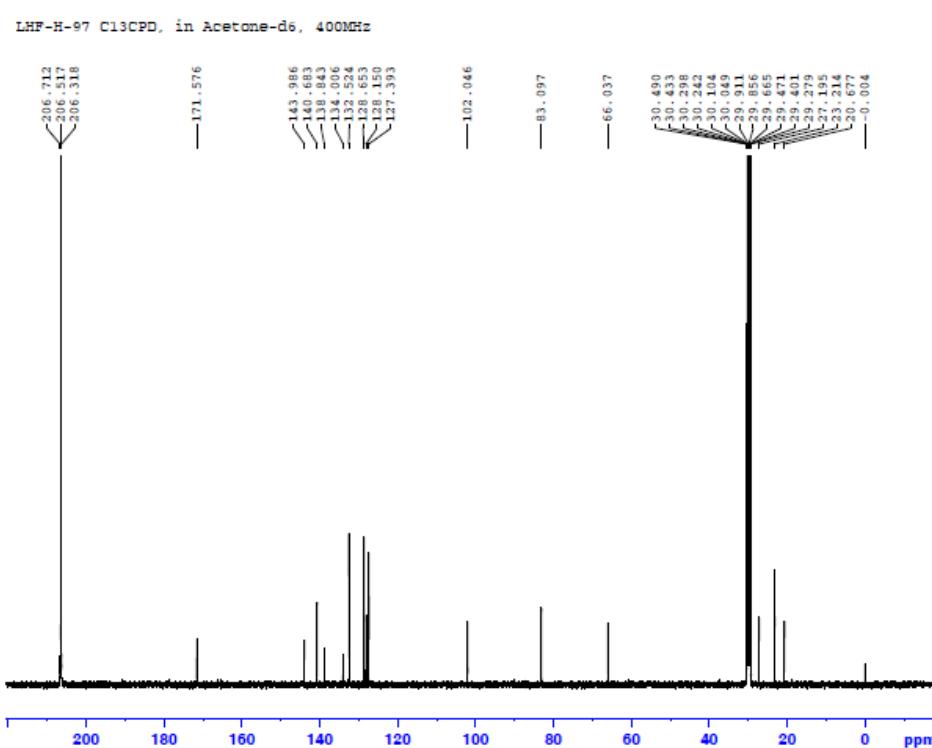
<sup>1</sup>H-NMR of 12e<sup>13</sup>C-NMR of 12e

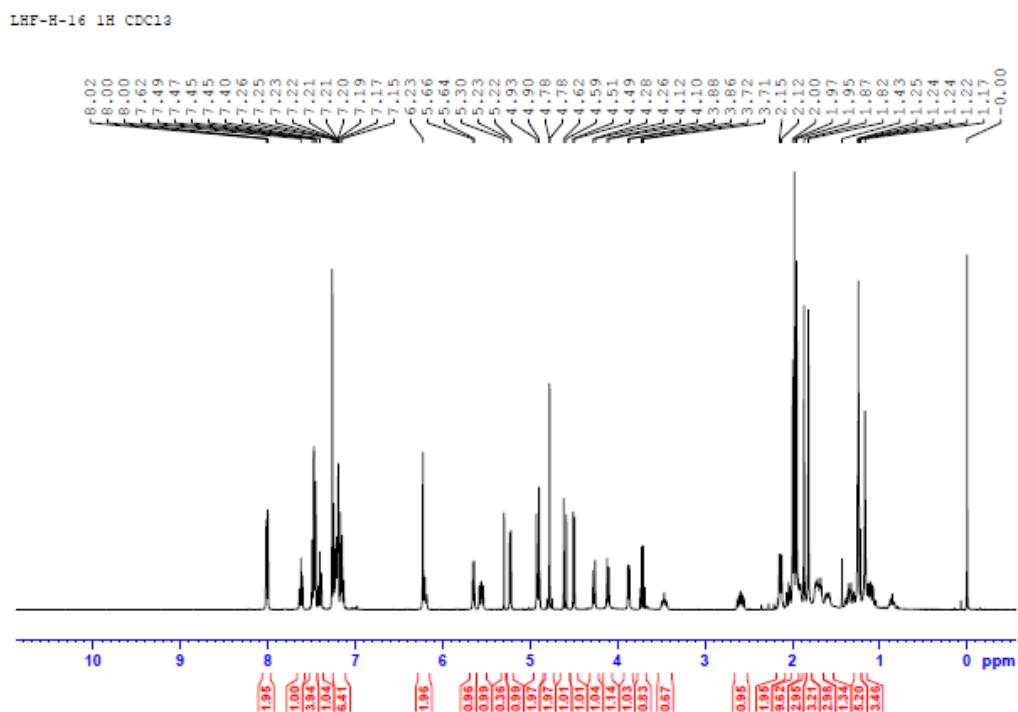
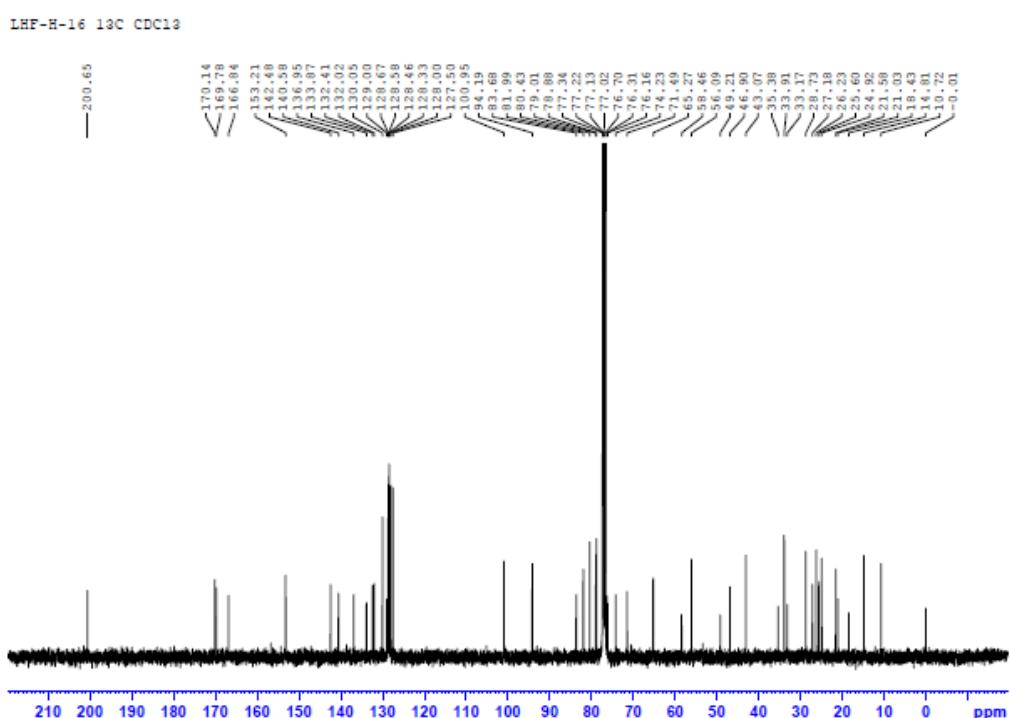
<sup>1</sup>H-NMR of 12f<sup>13</sup>C-NMR of 12f

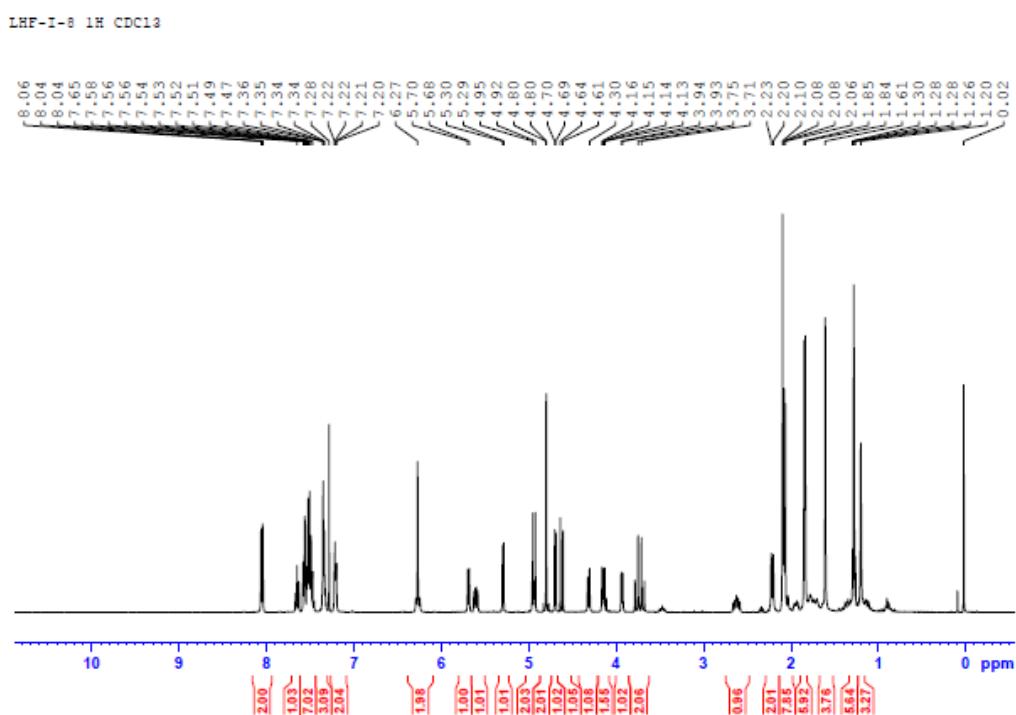
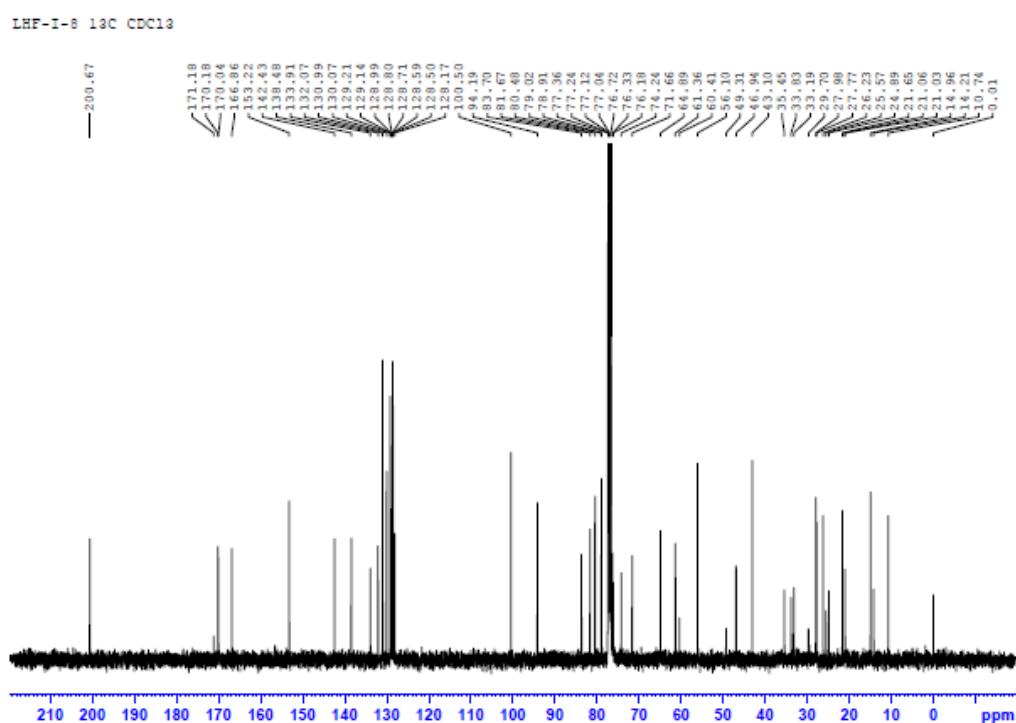
<sup>1</sup>H-NMR of 12g<sup>13</sup>C-NMR of 12g

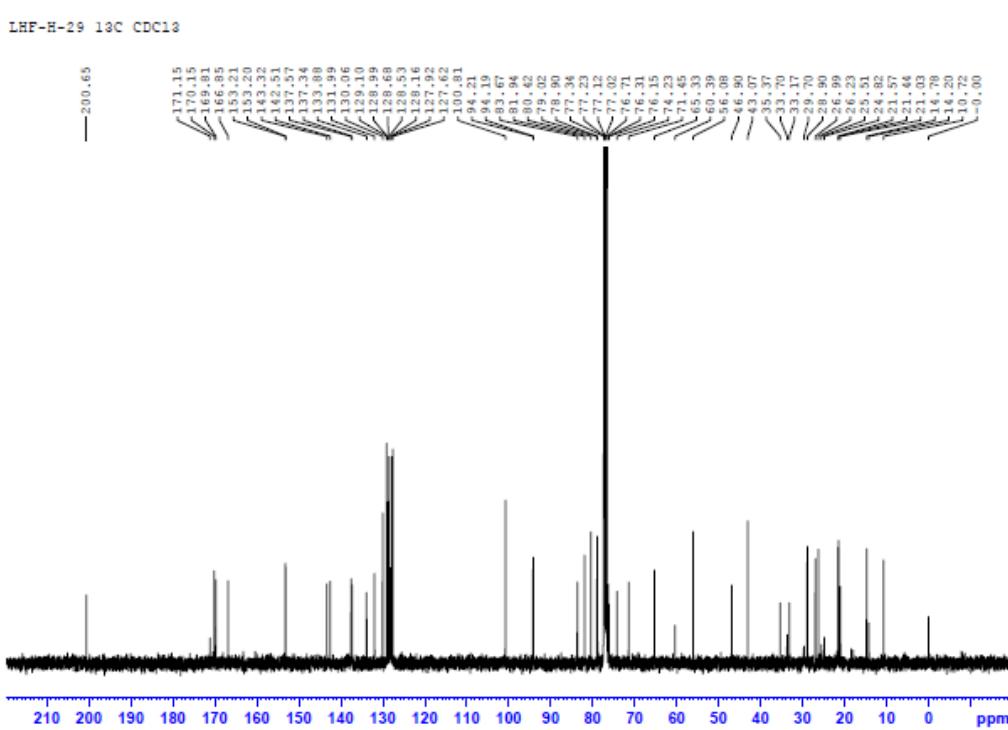
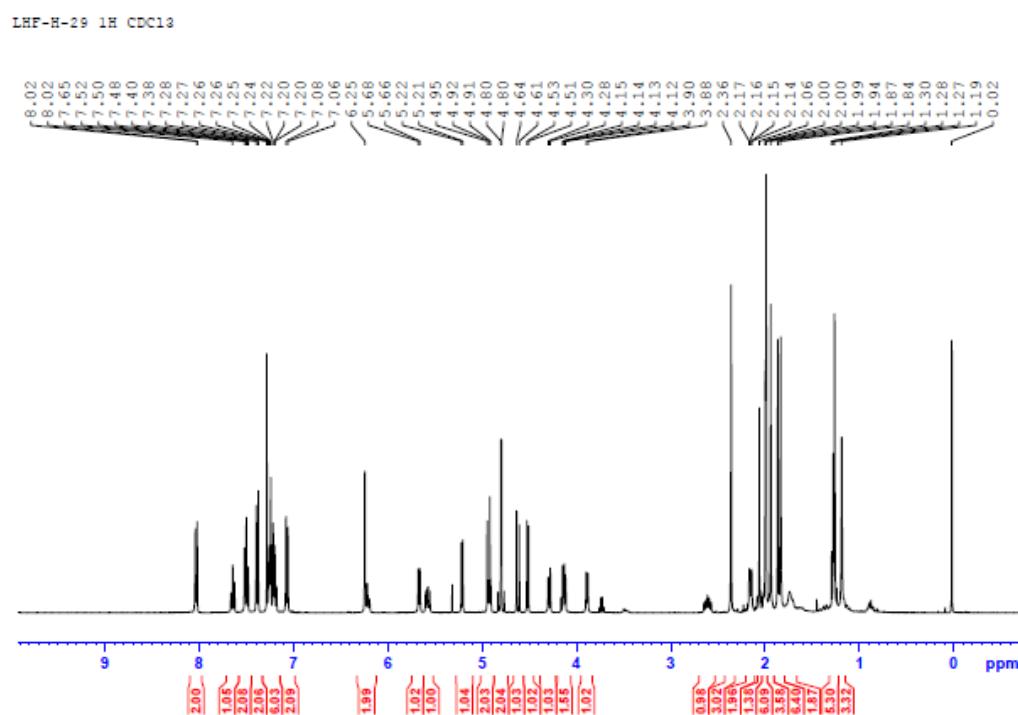
<sup>1</sup>H-NMR of 12h<sup>13</sup>C-NMR of 12h

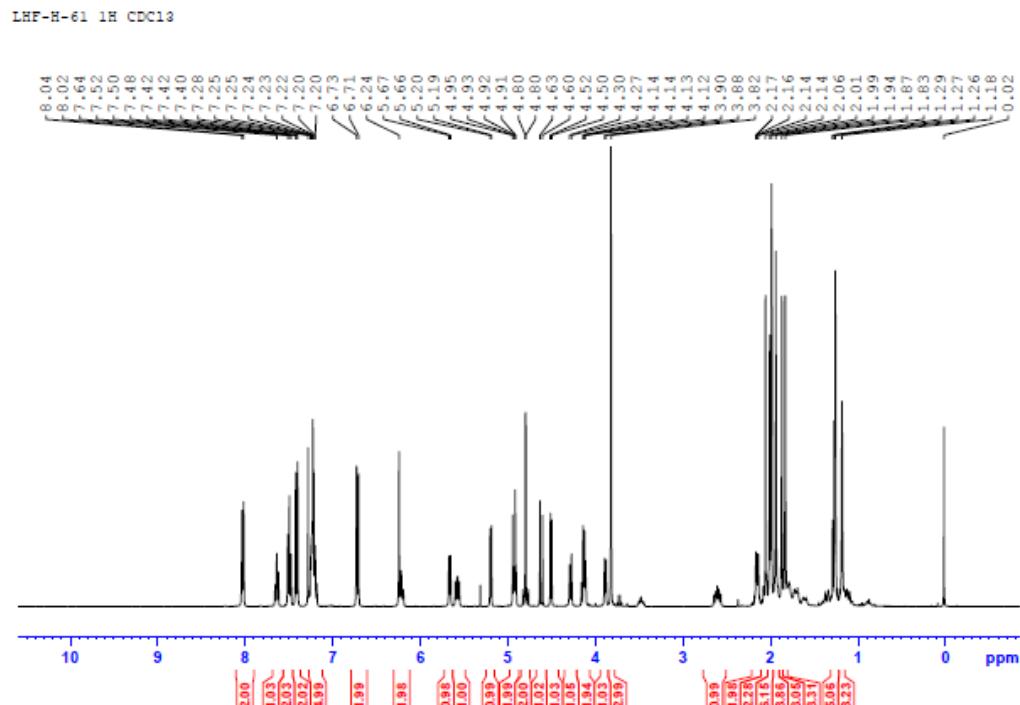
<sup>1</sup>H-NMR of 12i<sup>13</sup>C-NMR of 12i

<sup>1</sup>H-NMR of 12j<sup>13</sup>C-NMR of 12j

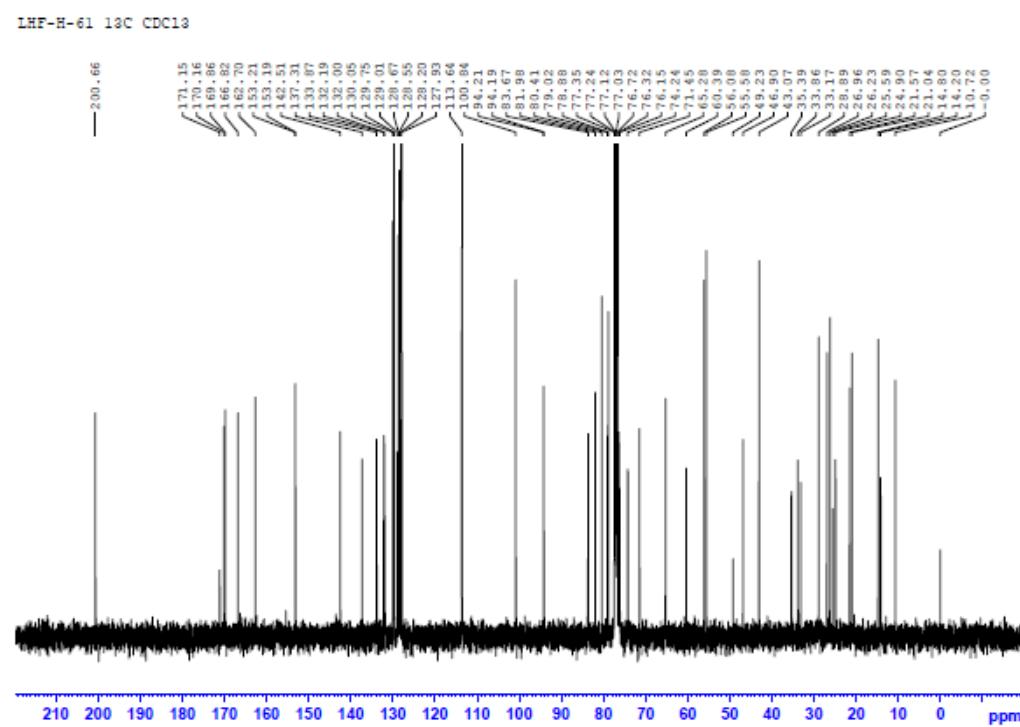
<sup>1</sup>H-NMR of 13a<sup>13</sup>C-NMR of 13a

<sup>1</sup>H-NMR of 13b<sup>13</sup>C-NMR of 13b

<sup>13</sup>C-NMR of 13c



<sup>1</sup>H-NMR of 13d

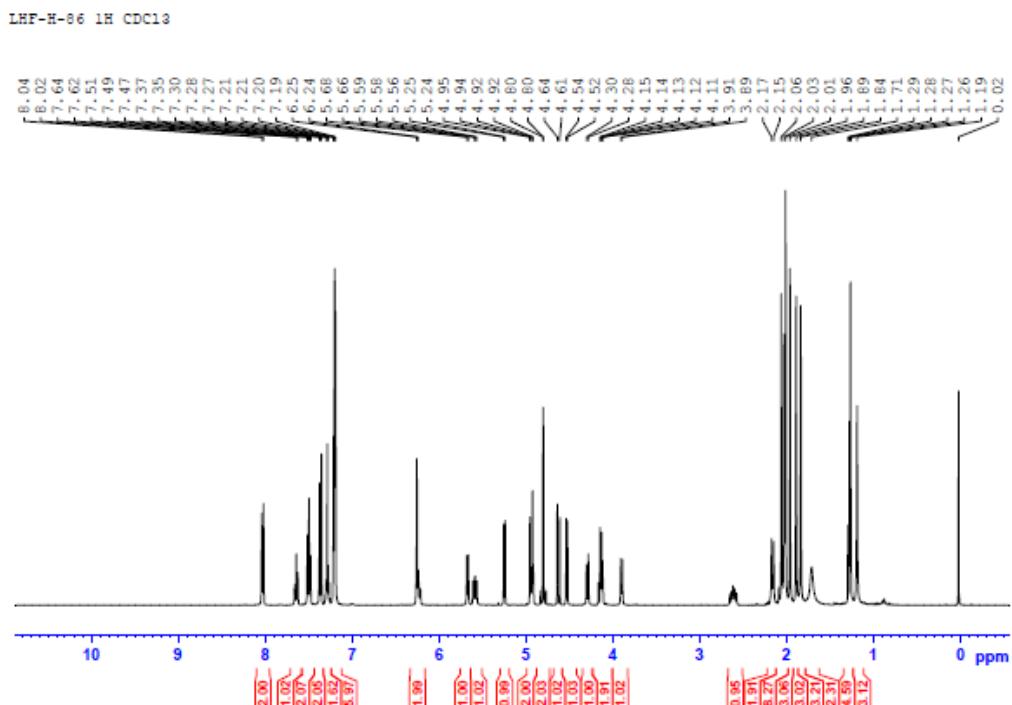


<sup>13</sup>C-NMR of 13d

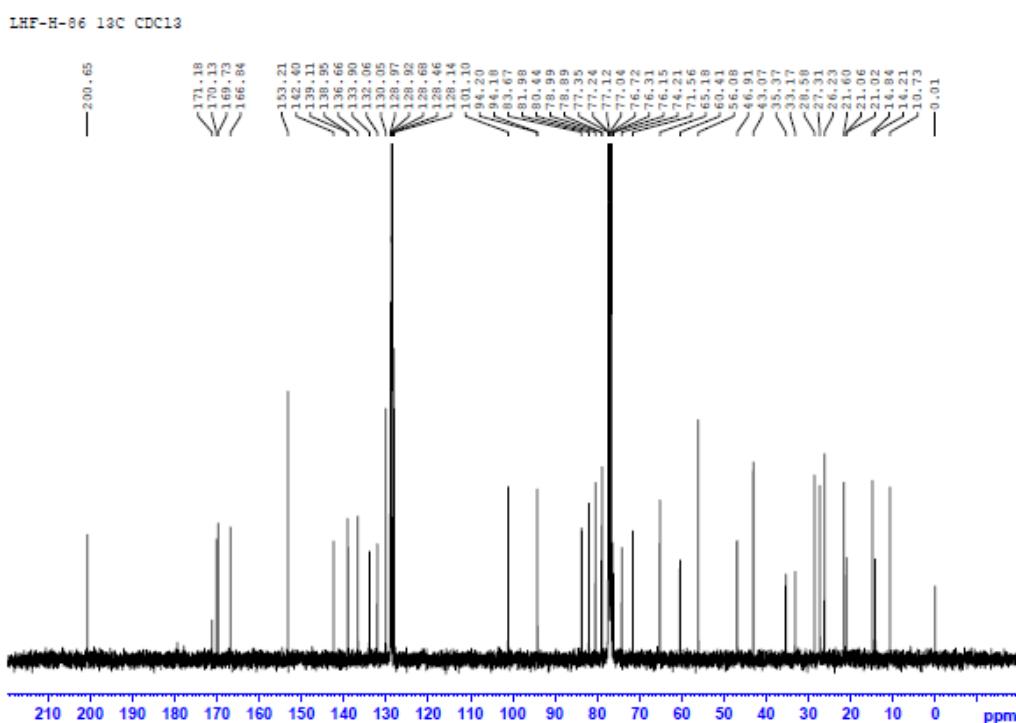




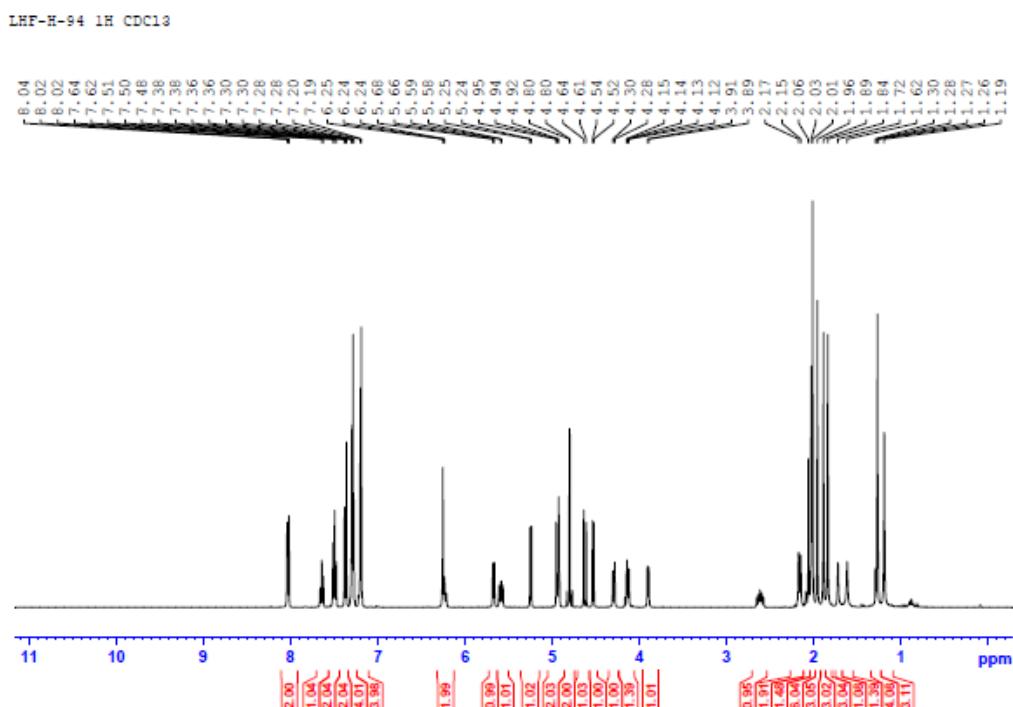




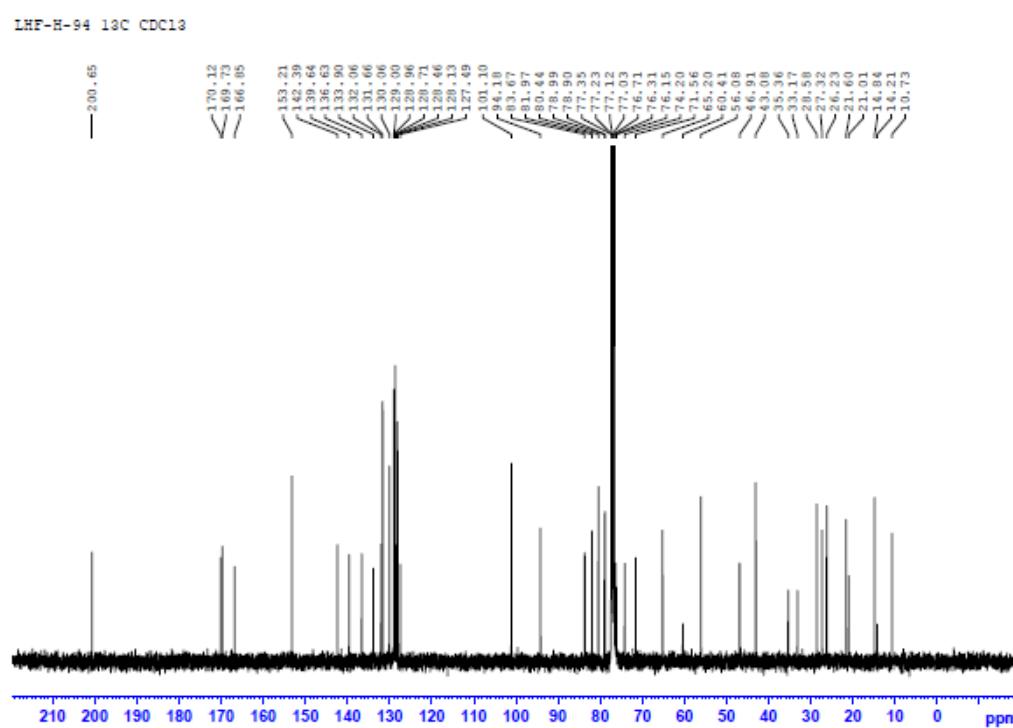
### <sup>1</sup>H-NMR of 13h



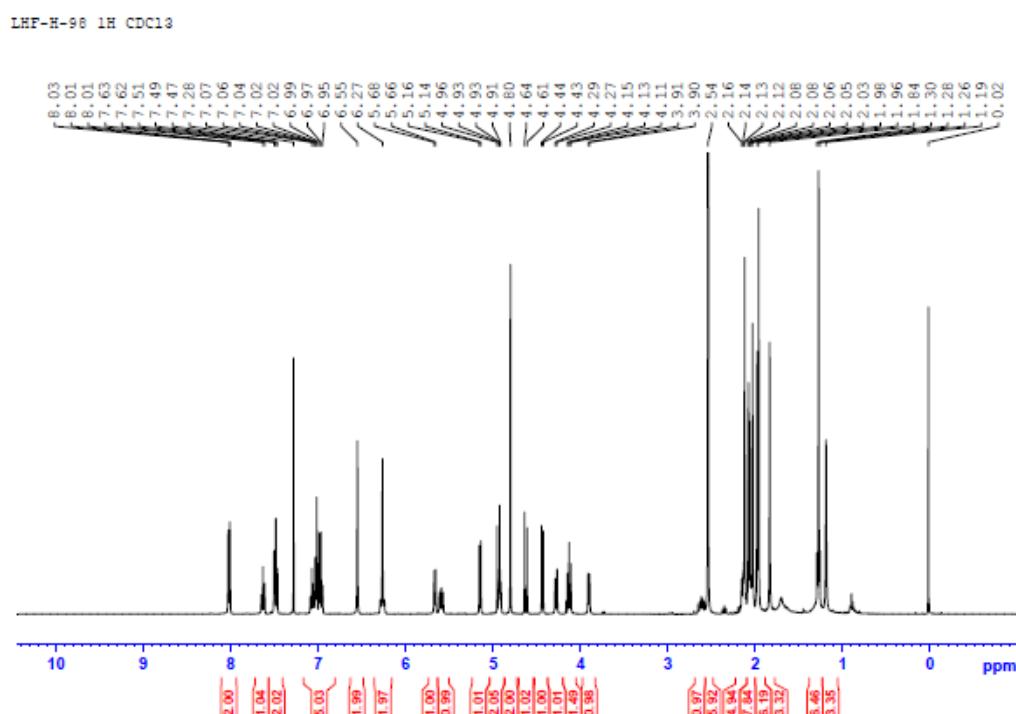
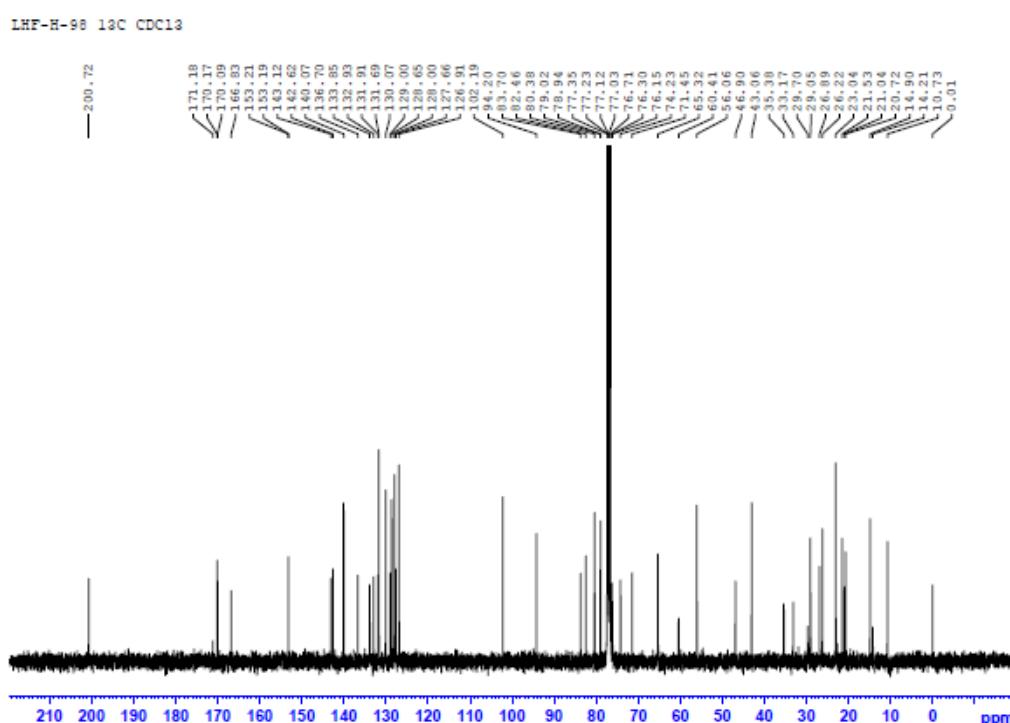
### <sup>13</sup>C-NMR of 13h

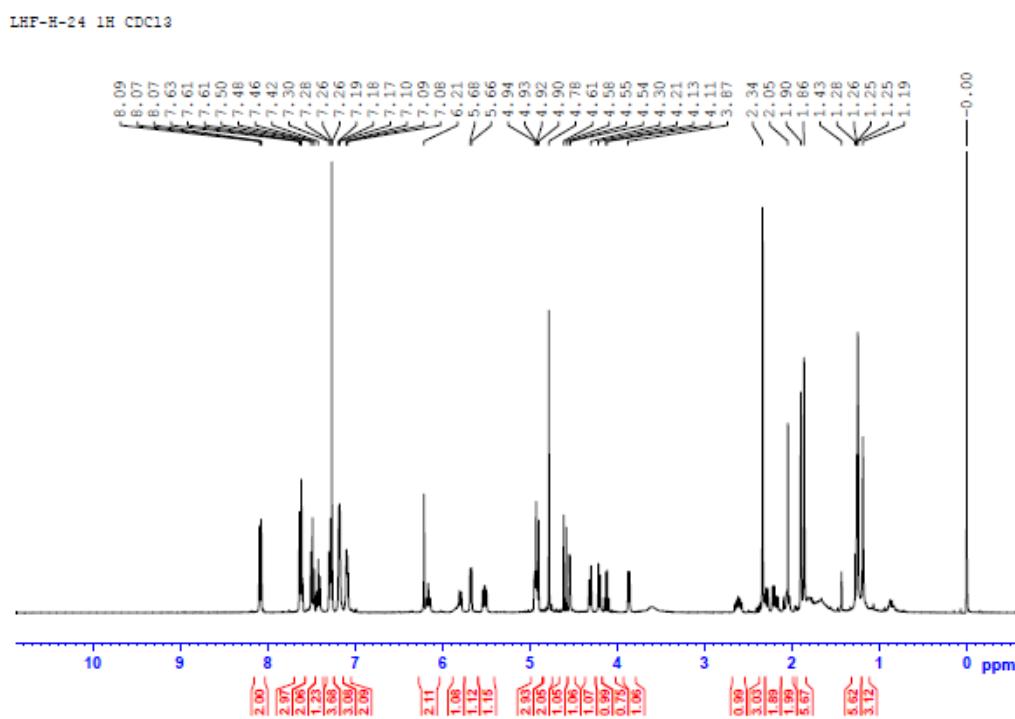
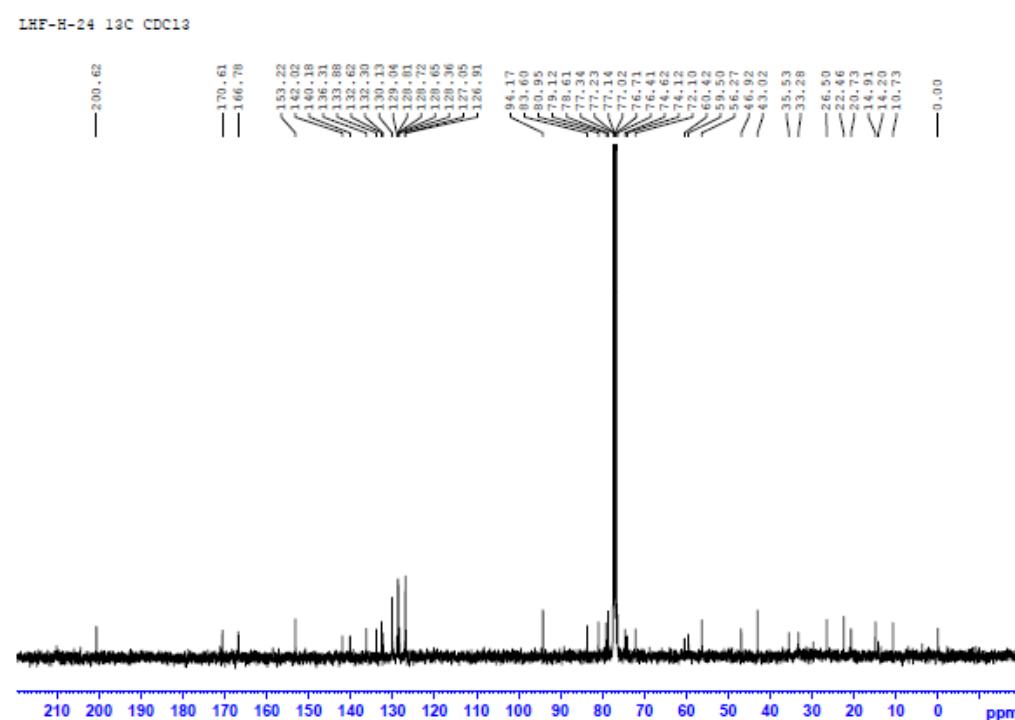


<sup>1</sup>H-NMR of 13i

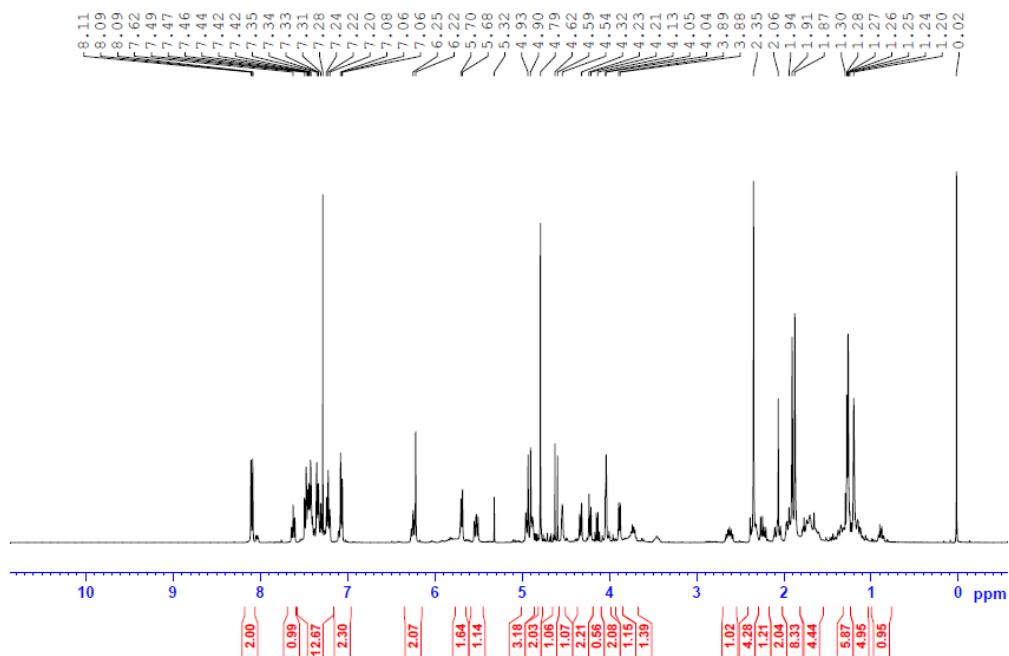


<sup>13</sup>C-NMR of 13i

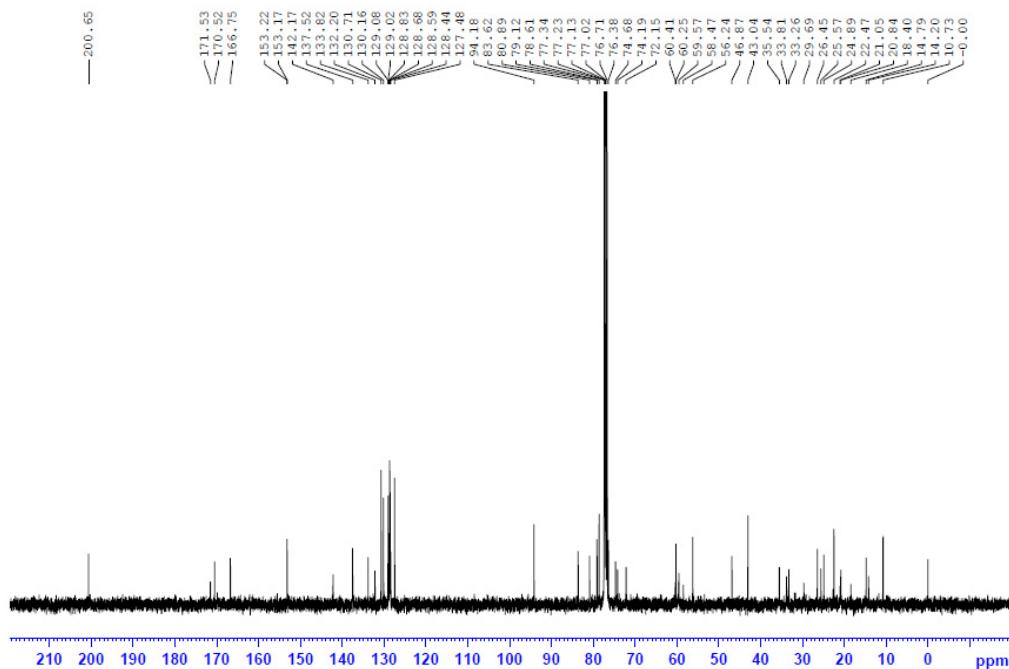
**<sup>1</sup>H-NMR of 13j****<sup>13</sup>C-NMR of 13j**

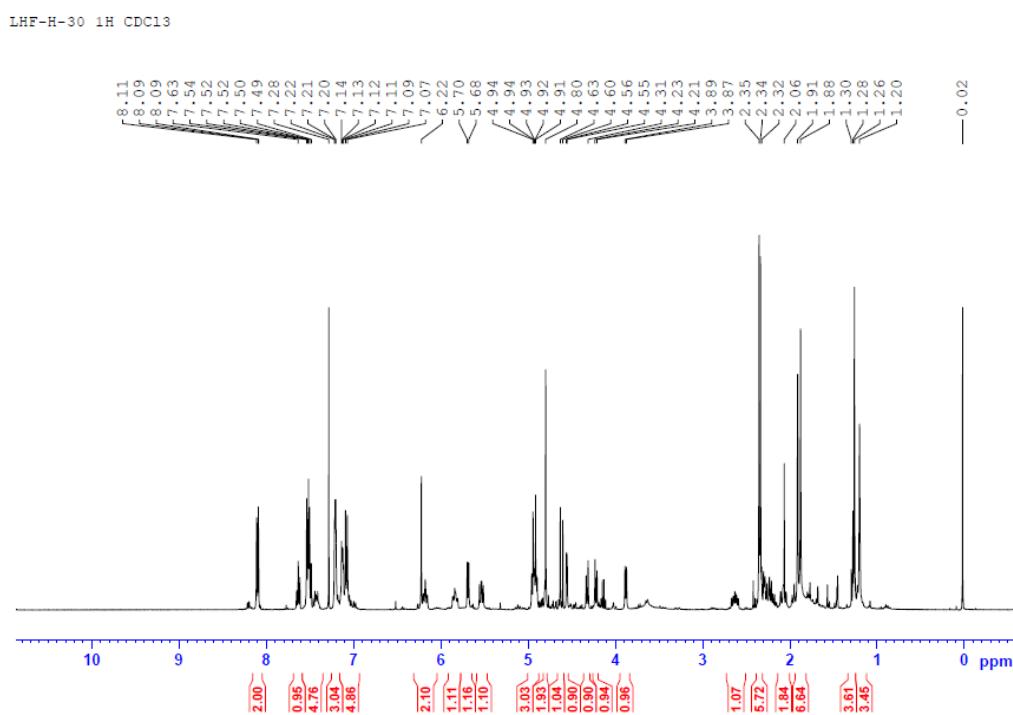
<sup>1</sup>H-NMR of 5a<sup>13</sup>C-NMR of 5a

LHF-I-10 1H CDCl3

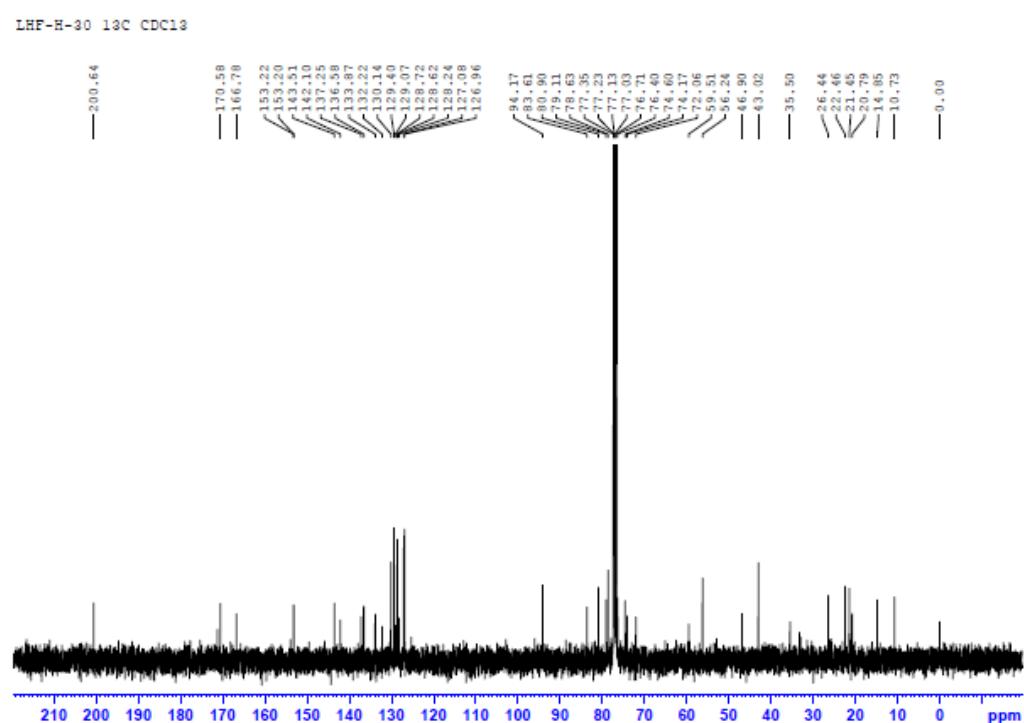
**<sup>1</sup>H-NMR of 5b**

LHF-I-10 13C CDCl3

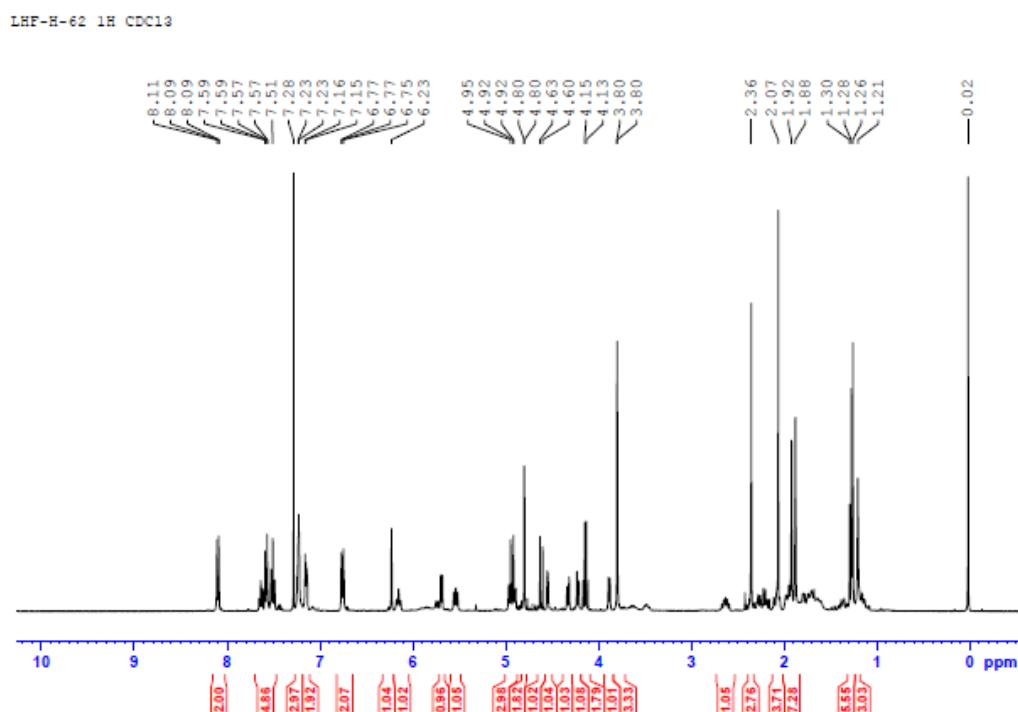
**<sup>13</sup>C-NMR of 5b**



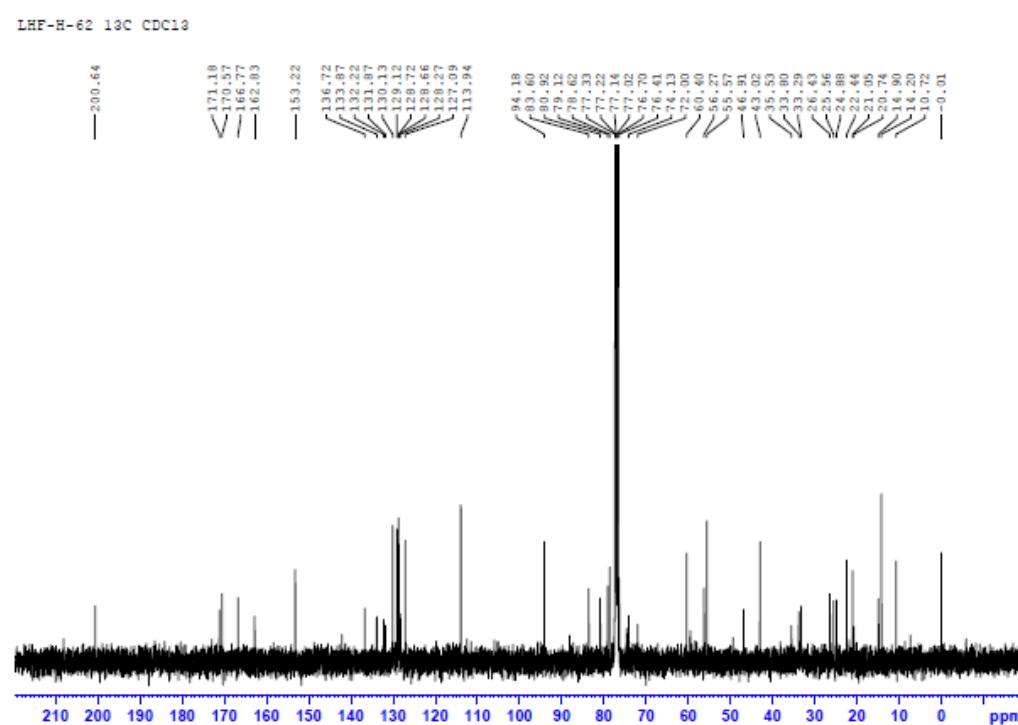
### <sup>1</sup>H-NMR of 5c



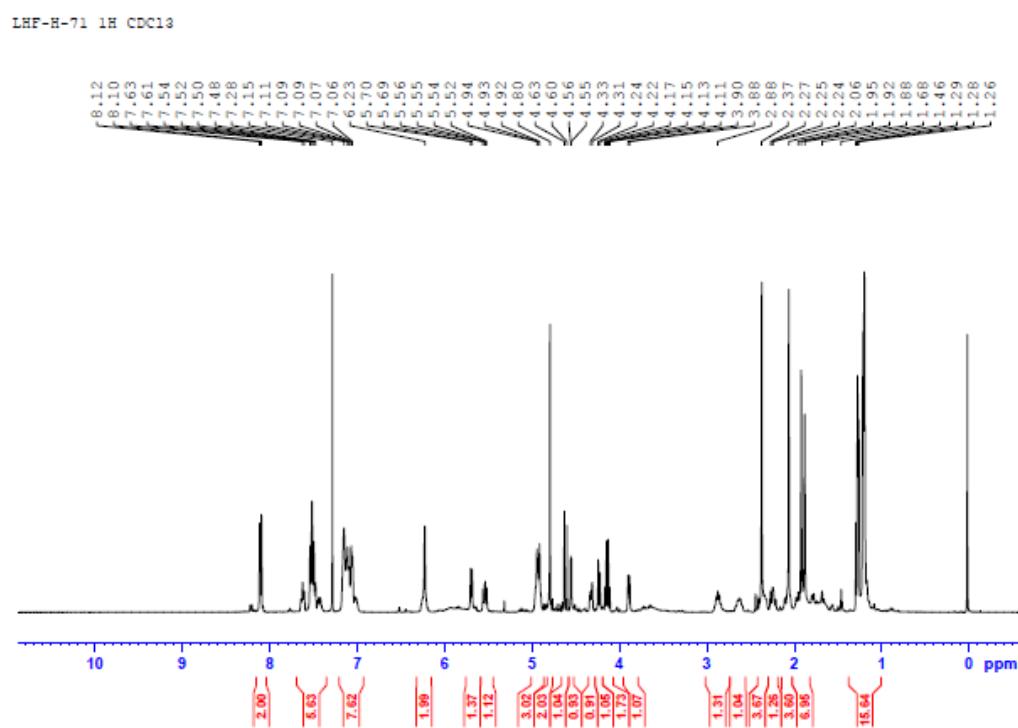
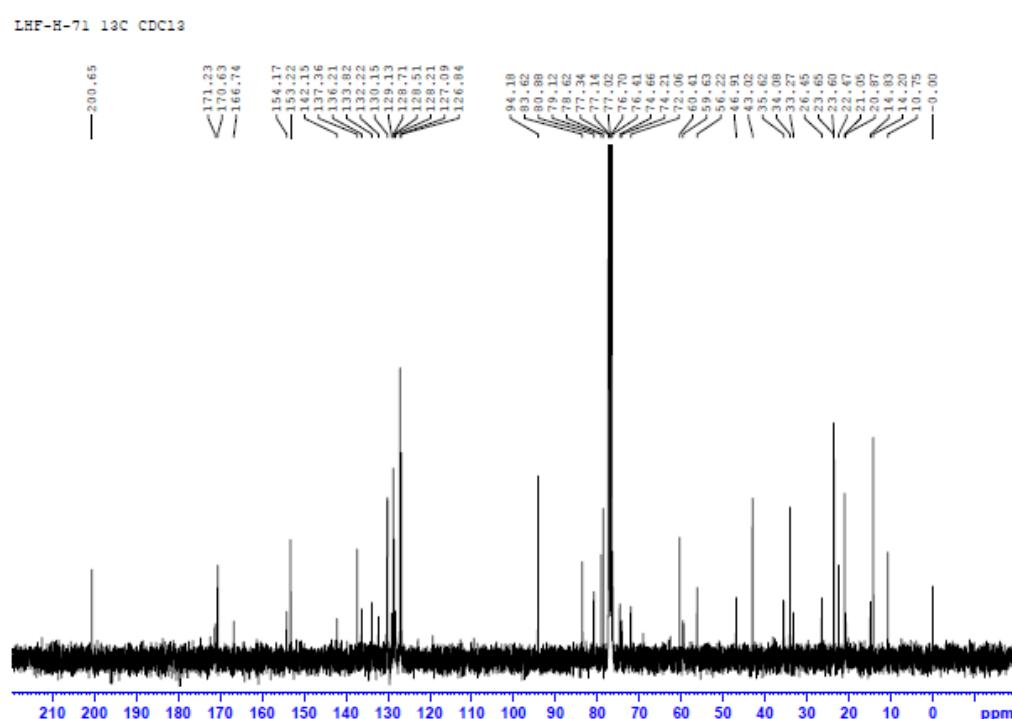
### <sup>13</sup>C-NMR of 5c

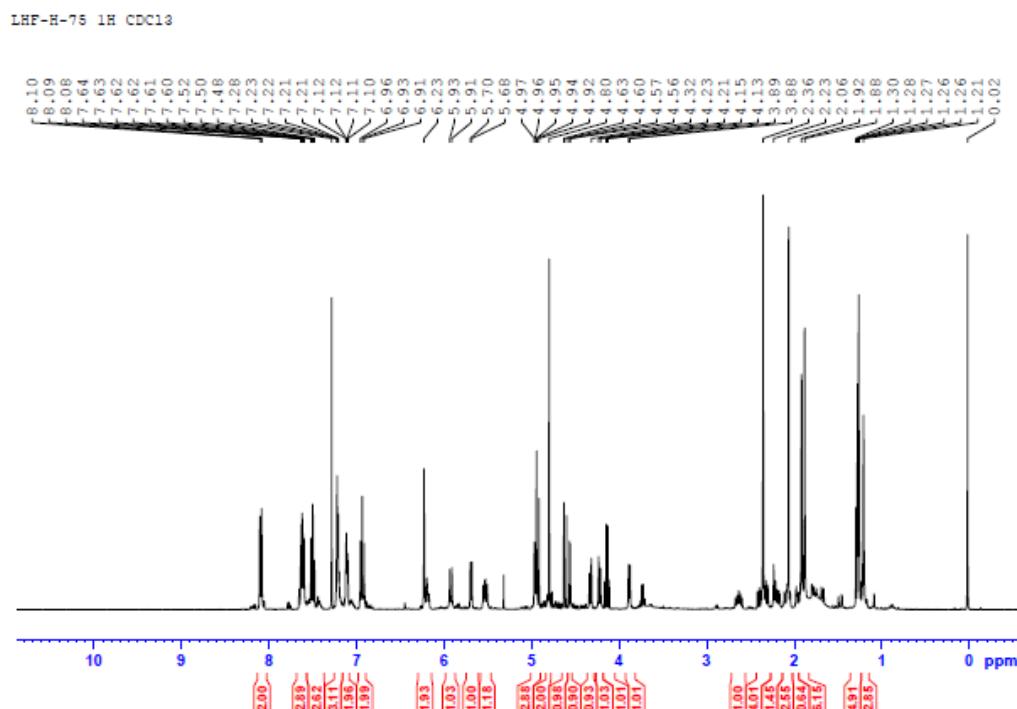


### <sup>1</sup>H-NMR of 5d

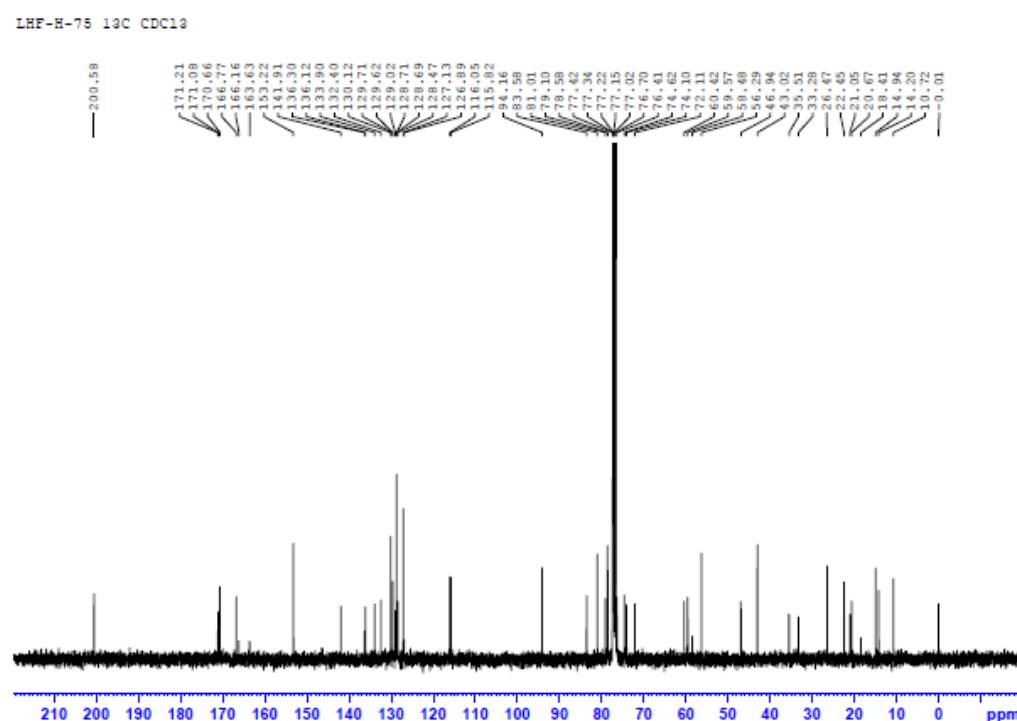


### <sup>13</sup>C-NMR of 5d

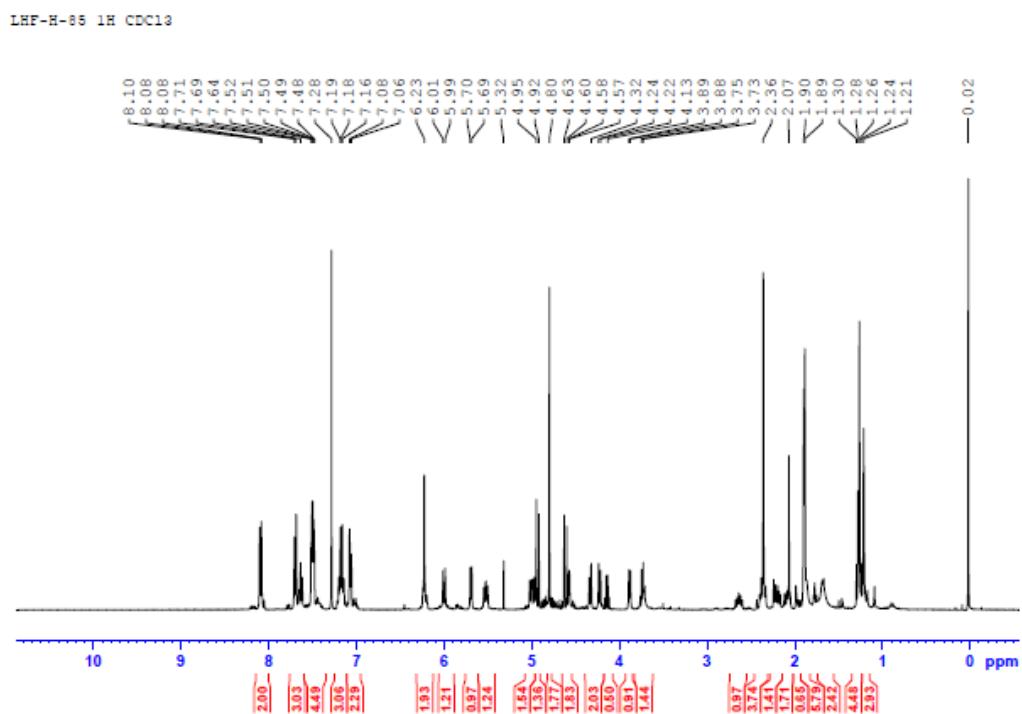
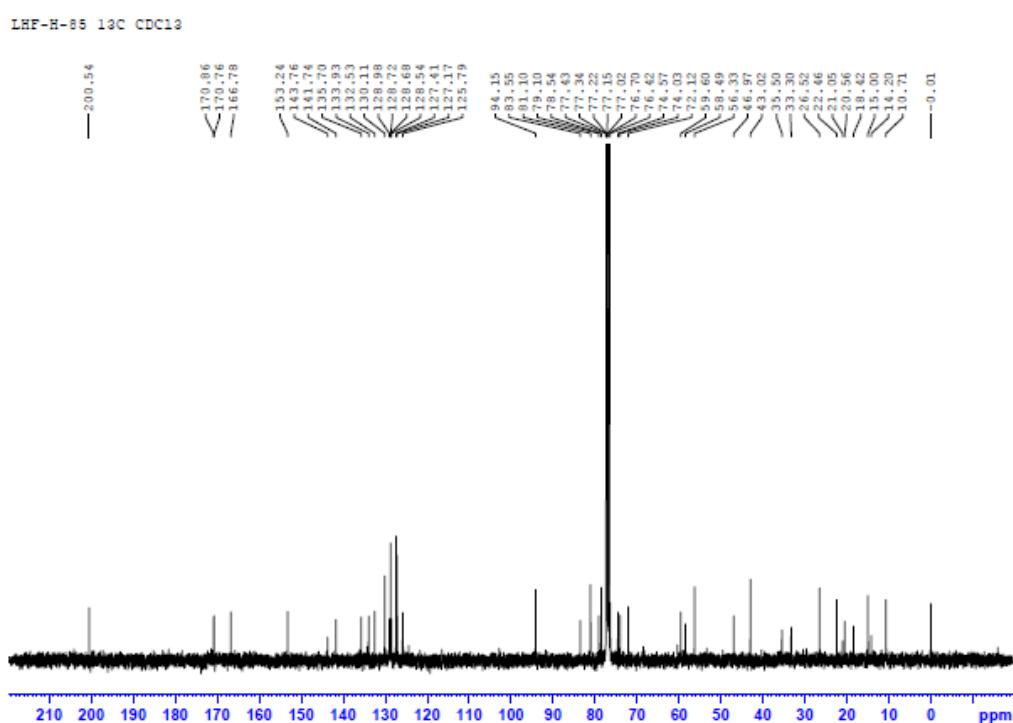
**<sup>1</sup>H-NMR of 5e****<sup>13</sup>C-NMR of 5e**

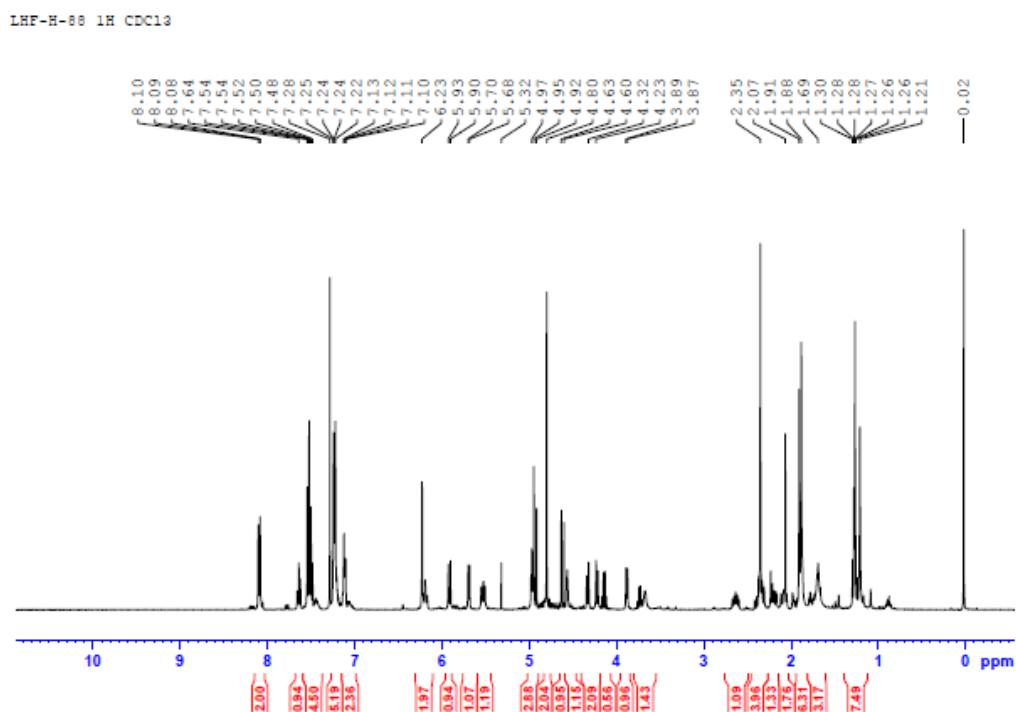


<sup>1</sup>H-NMR of 5f

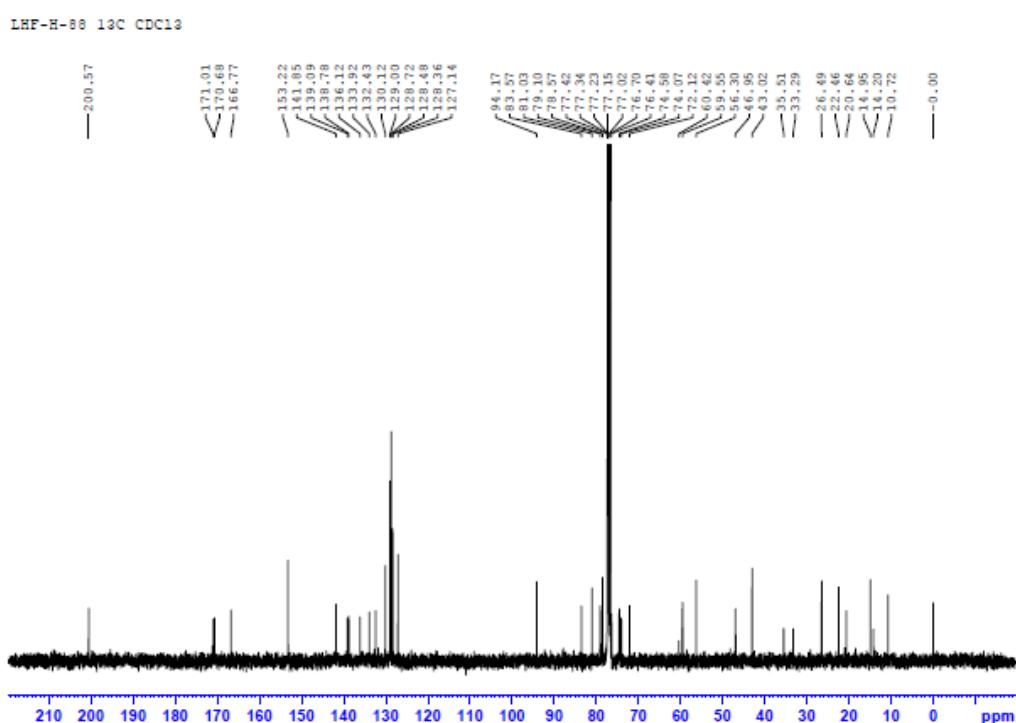


<sup>13</sup>C-NMR of 5f

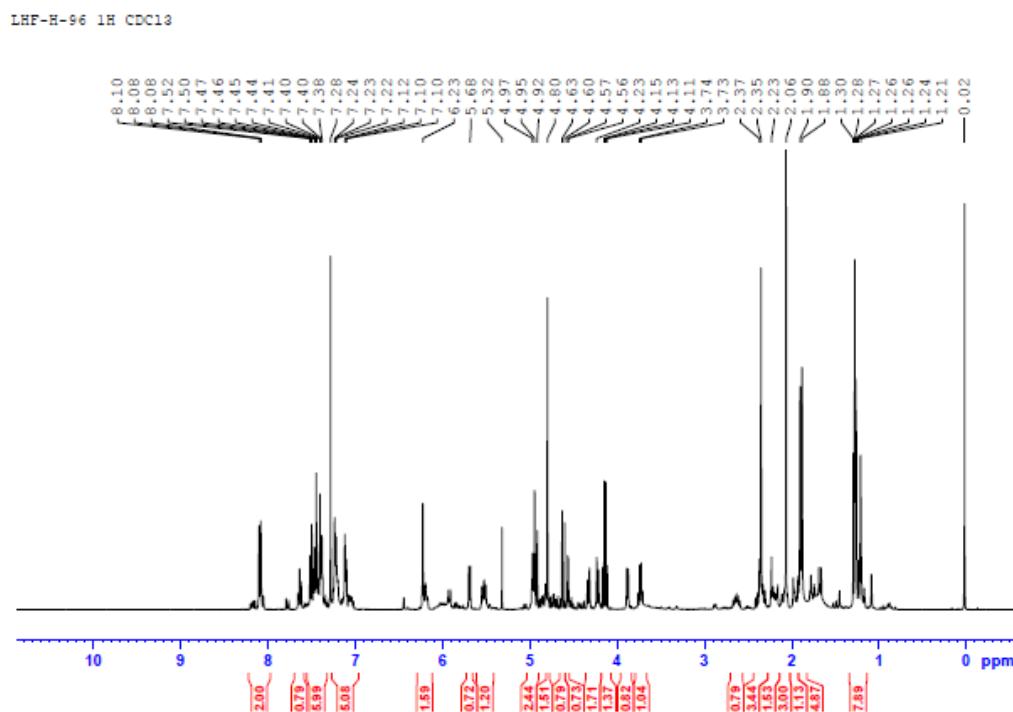
<sup>1</sup>H-NMR of 5g<sup>13</sup>C-NMR of 5g



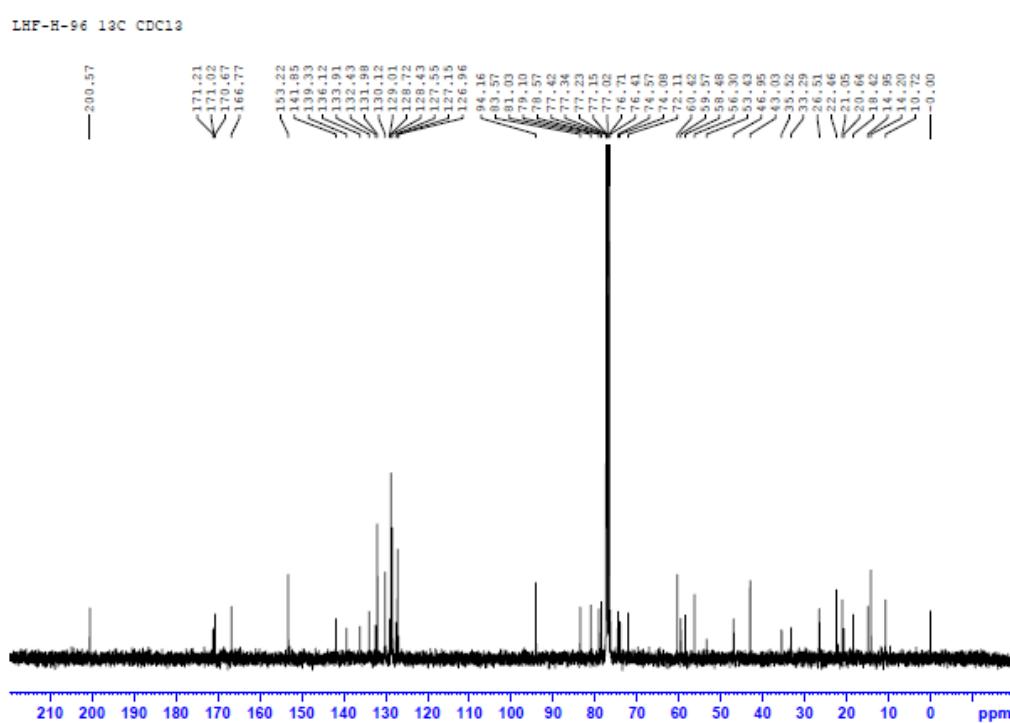
### <sup>1</sup>H-NMR of 5h



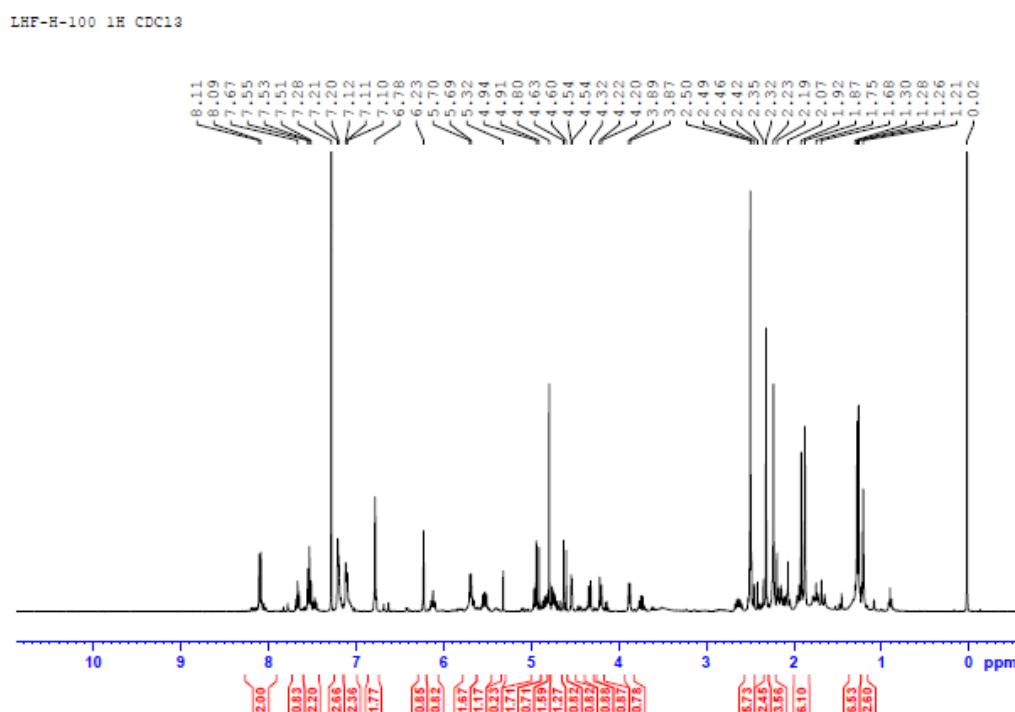
### <sup>13</sup>C-NMR of 5h



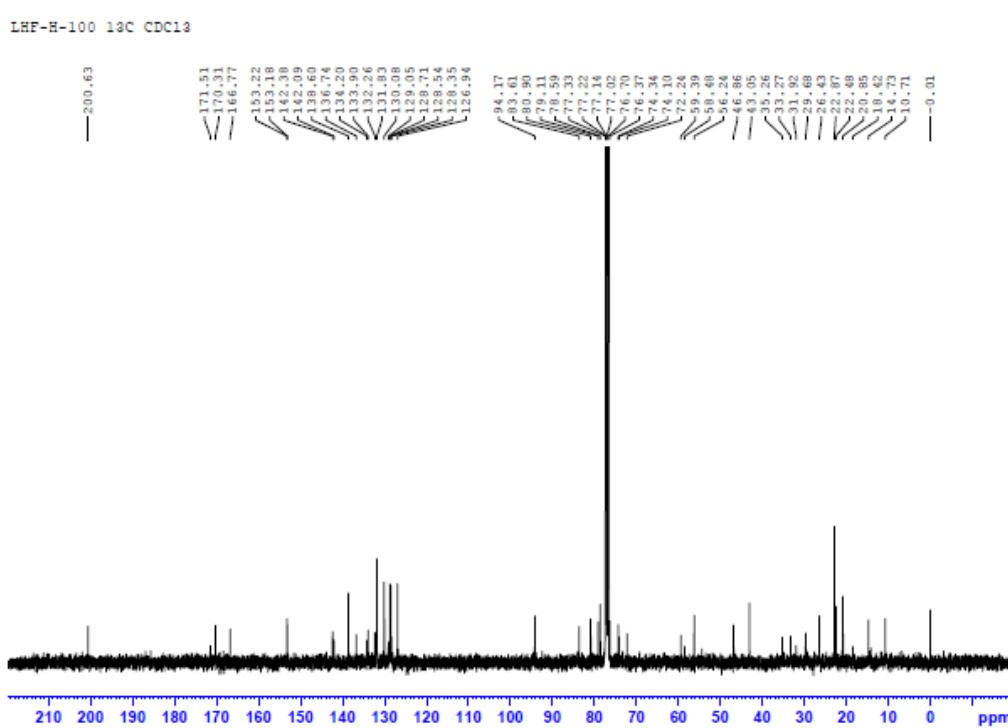
<sup>1</sup>H-NMR of 5i



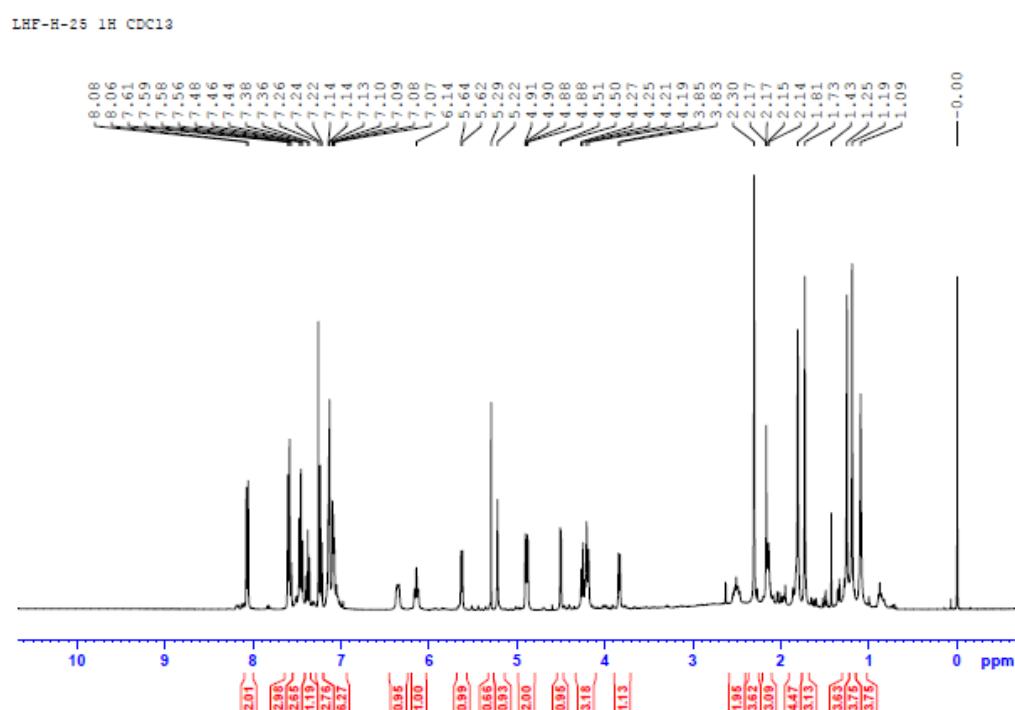
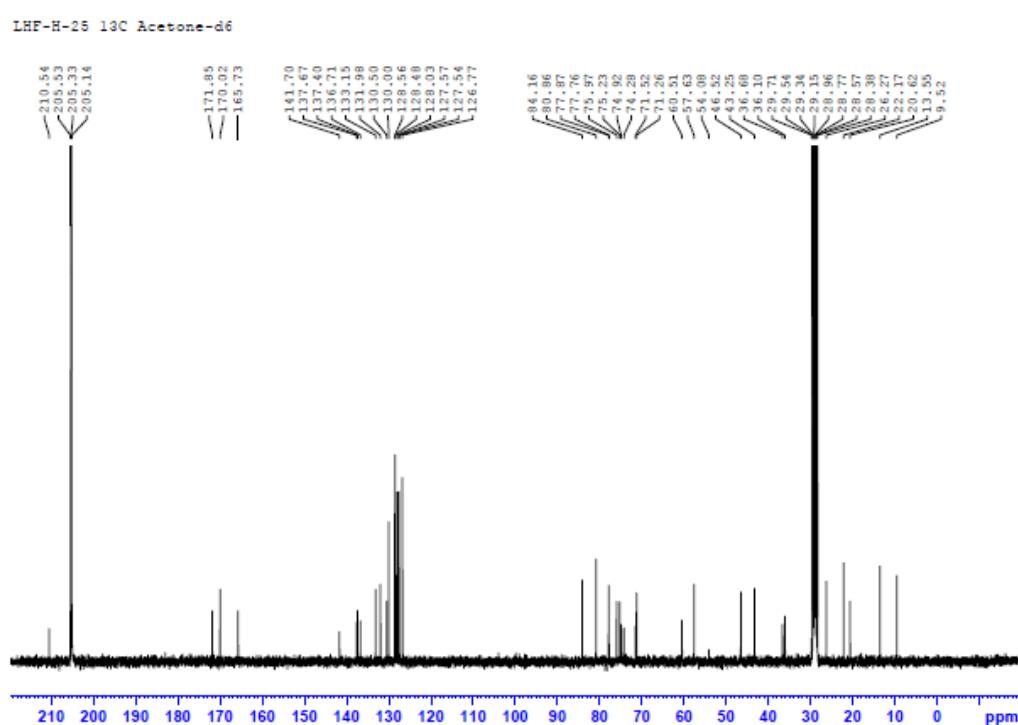
<sup>13</sup>C-NMR of 5i

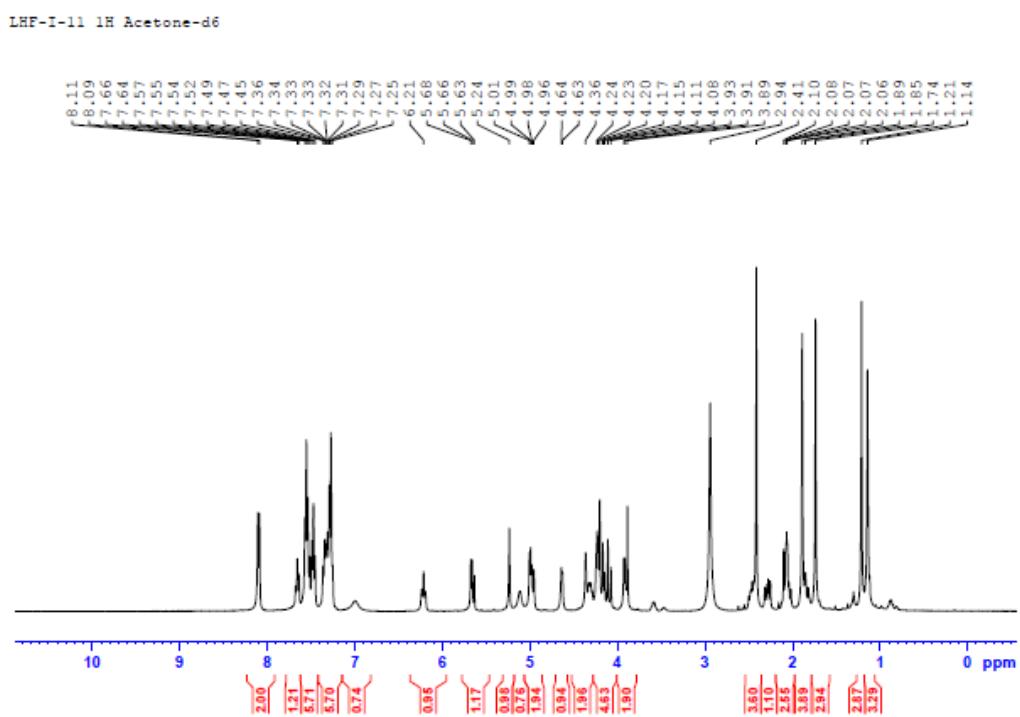
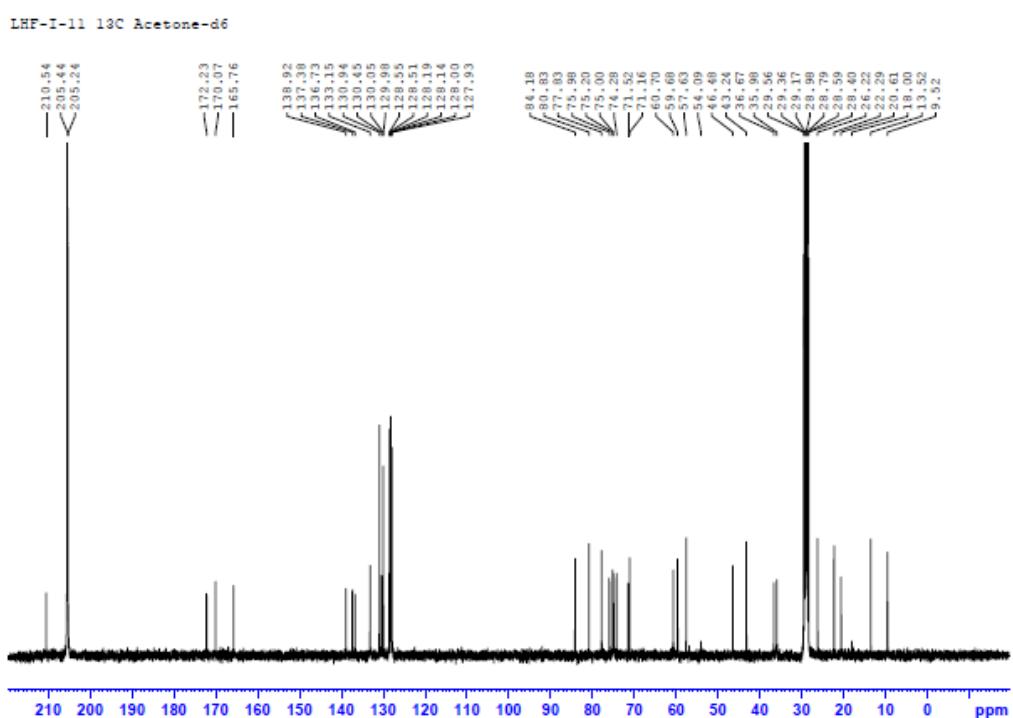


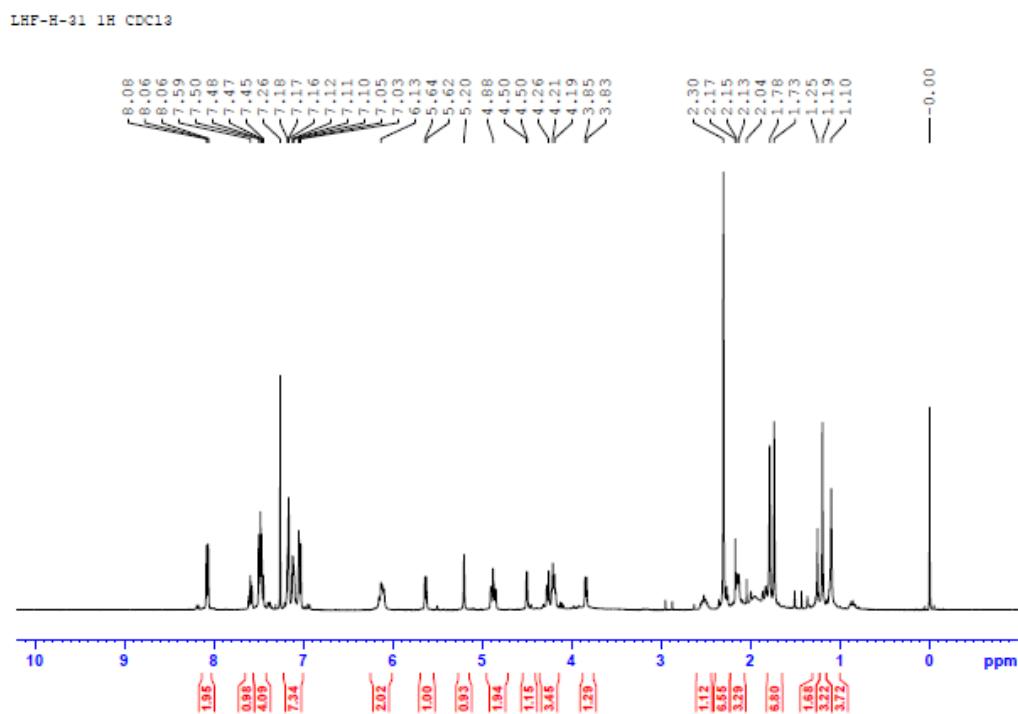
### <sup>1</sup>H-NMR of 5j



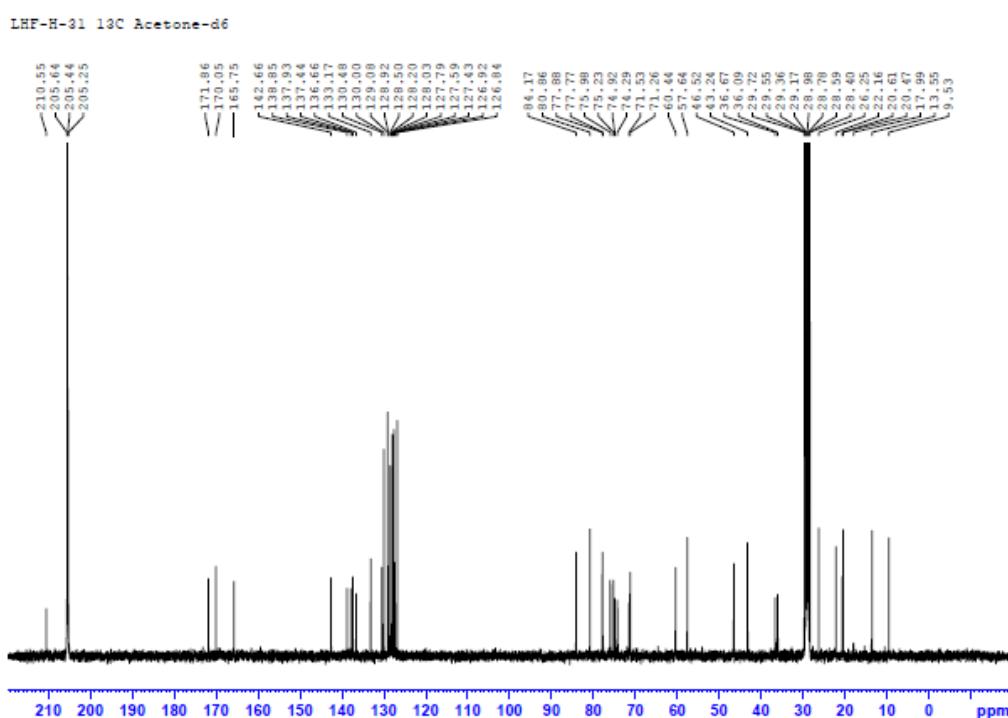
### <sup>13</sup>C-NMR of 5j

<sup>1</sup>H-NMR of 3a<sup>13</sup>C-NMR of 3a

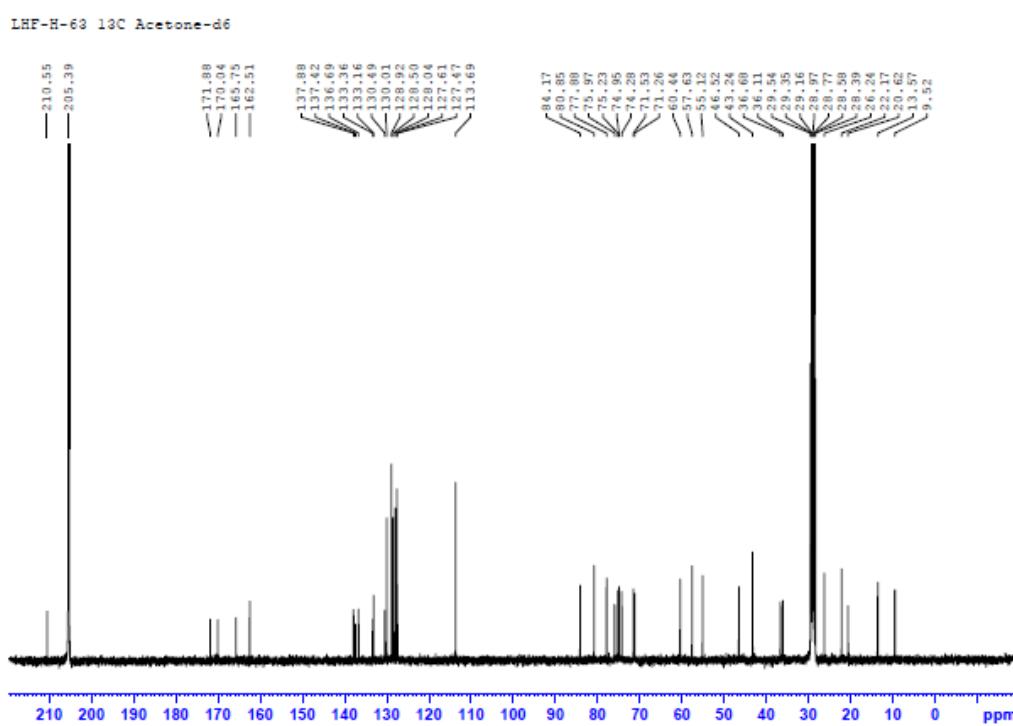
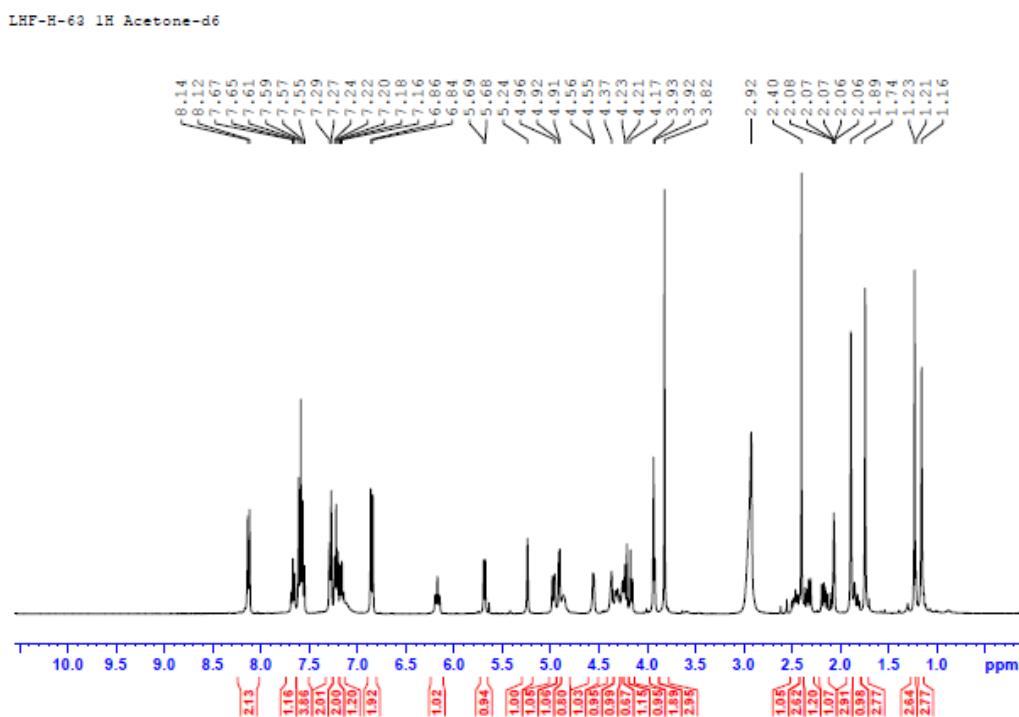
**<sup>1</sup>H-NMR of 3b****<sup>13</sup>C-NMR of 3b**



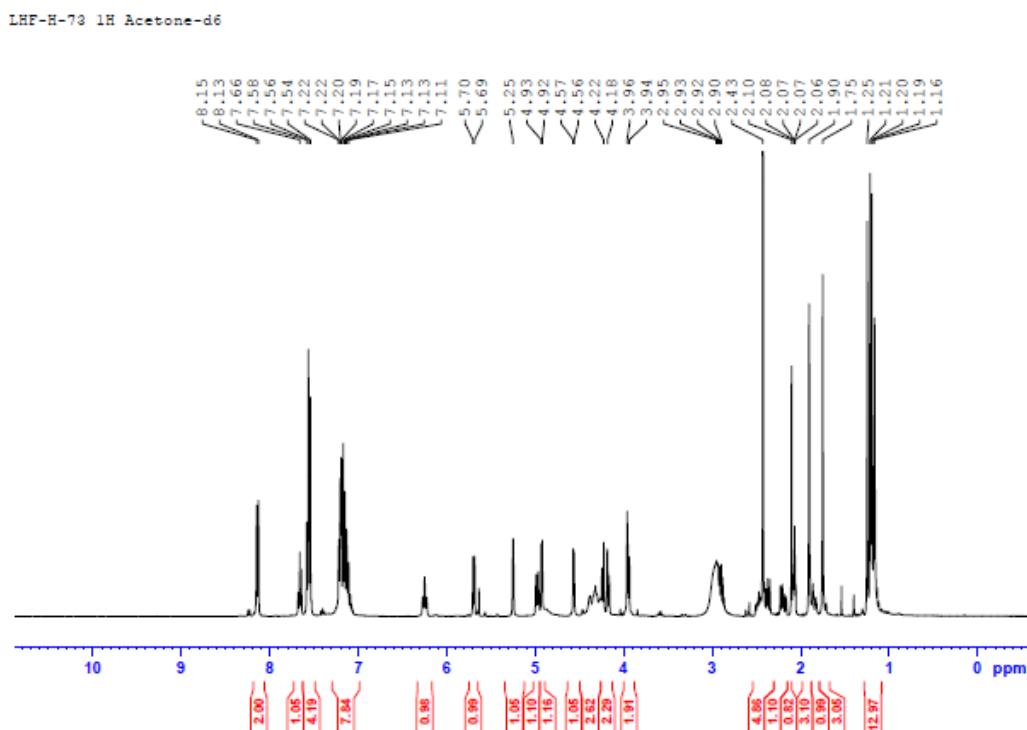
### <sup>1</sup>H-NMR of 3c



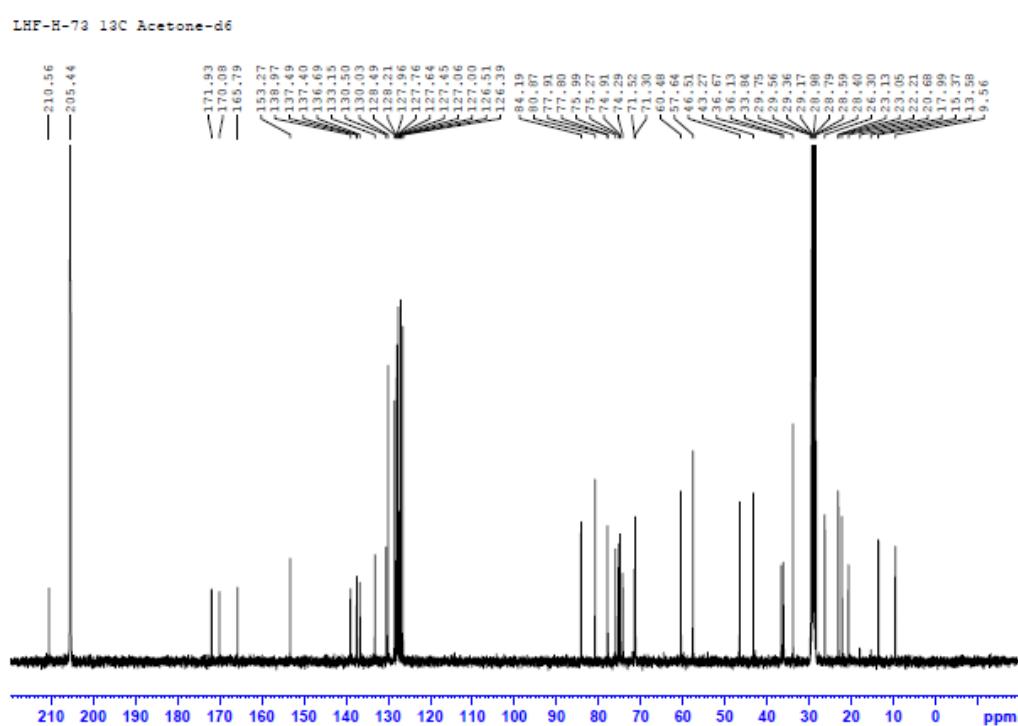
### <sup>13</sup>C-NMR of 3c



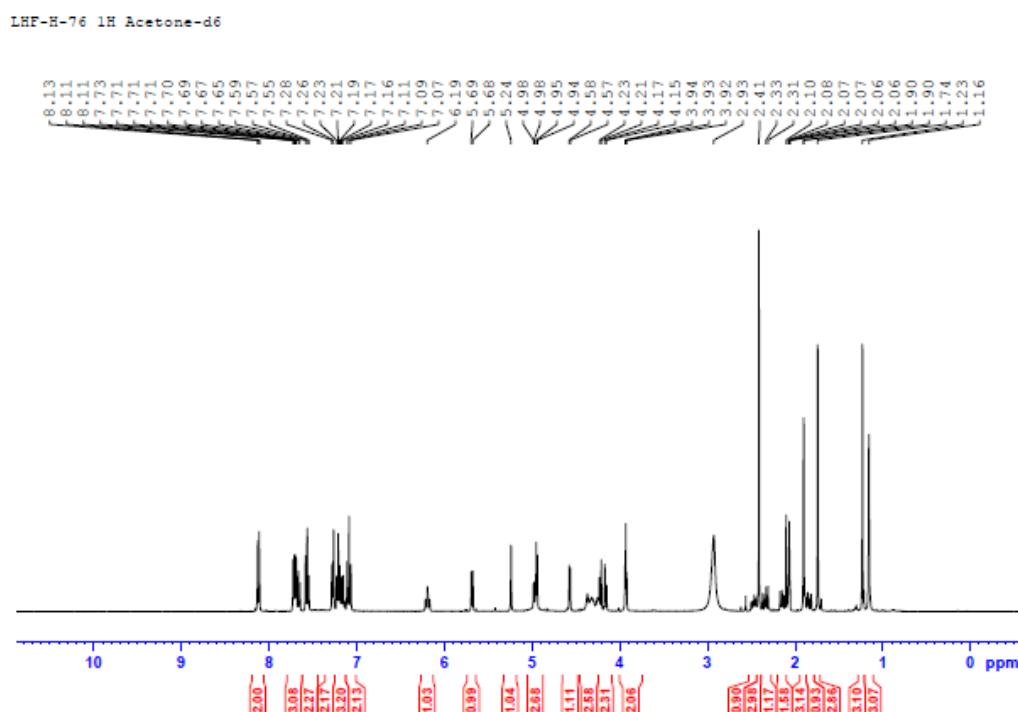
<sup>13</sup>C-NMR of 3d



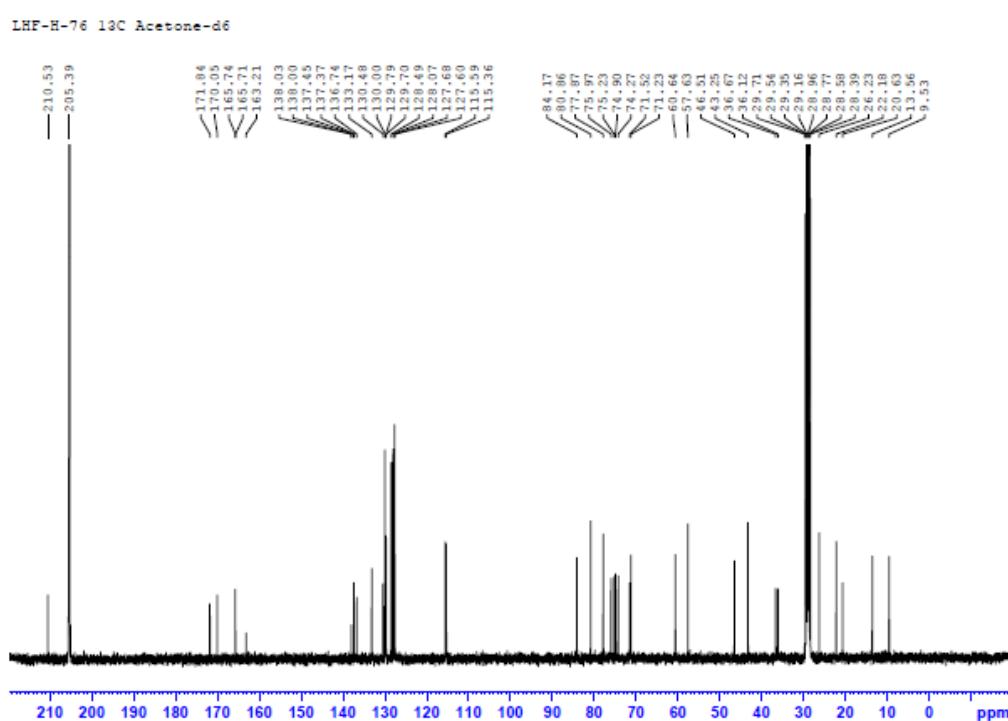
### <sup>1</sup>H-NMR of 3e



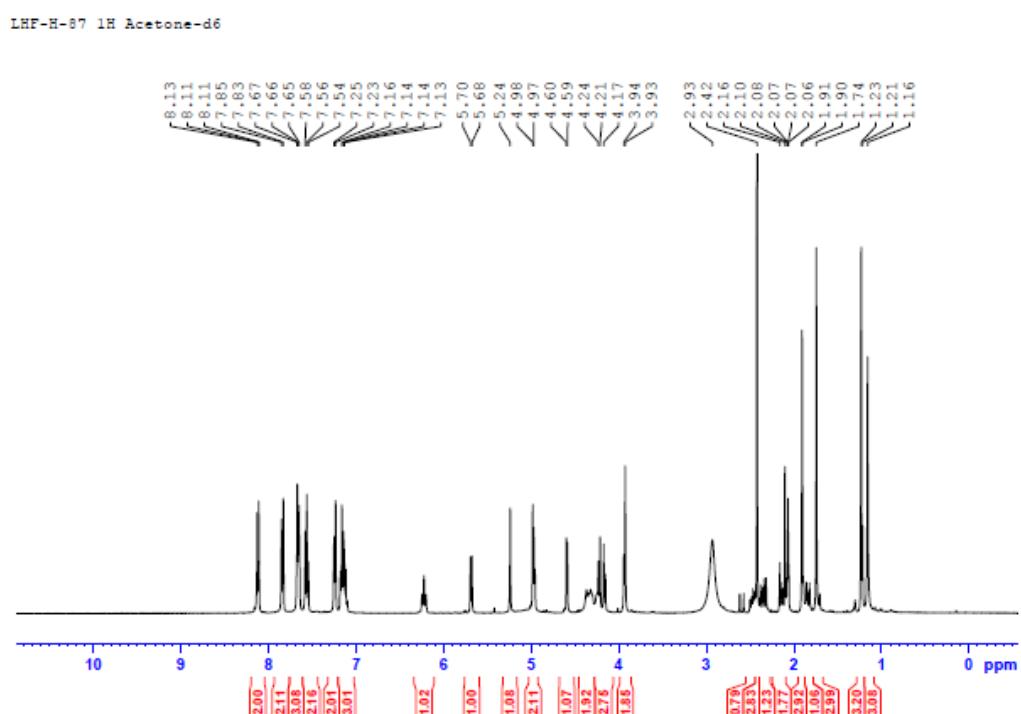
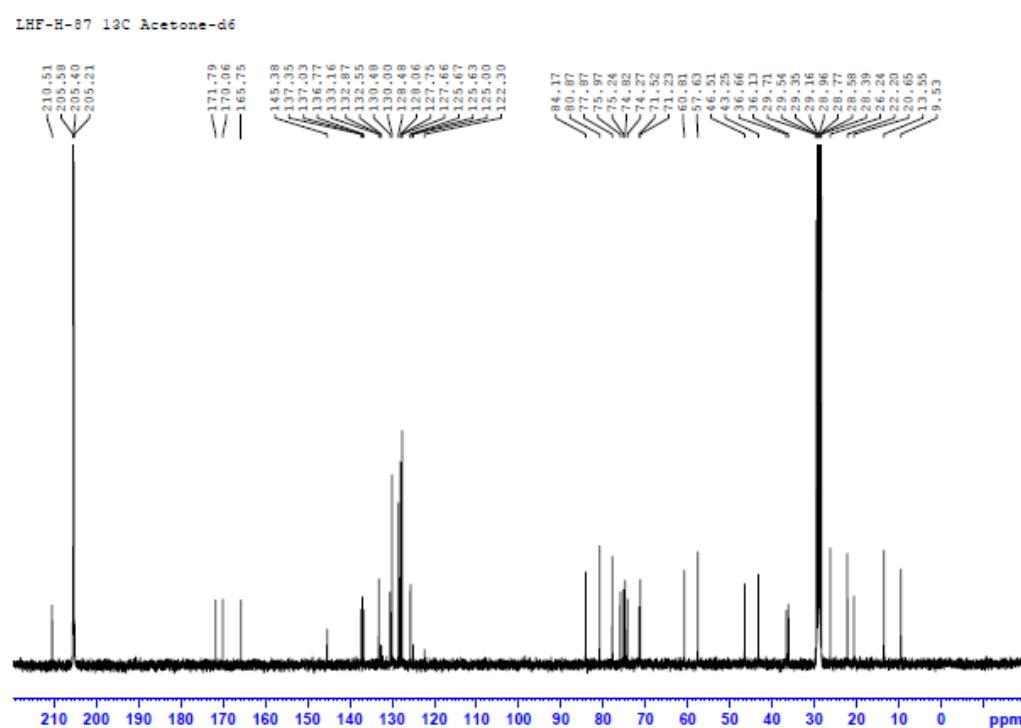
### <sup>13</sup>C-NMR of 3e

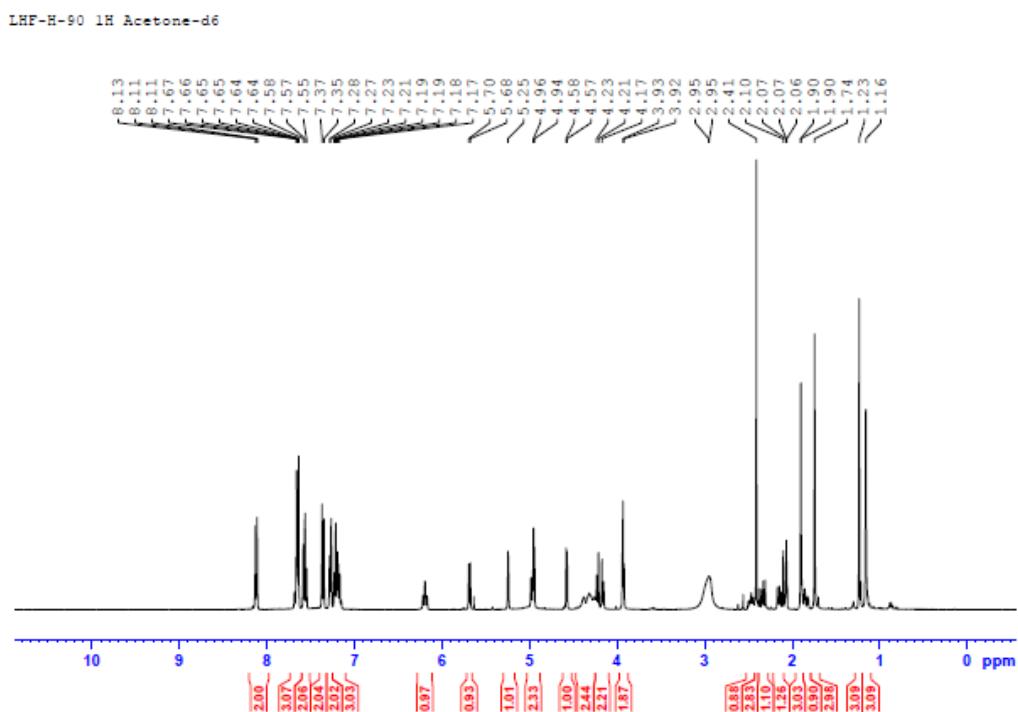


### <sup>1</sup>H-NMR of 3f

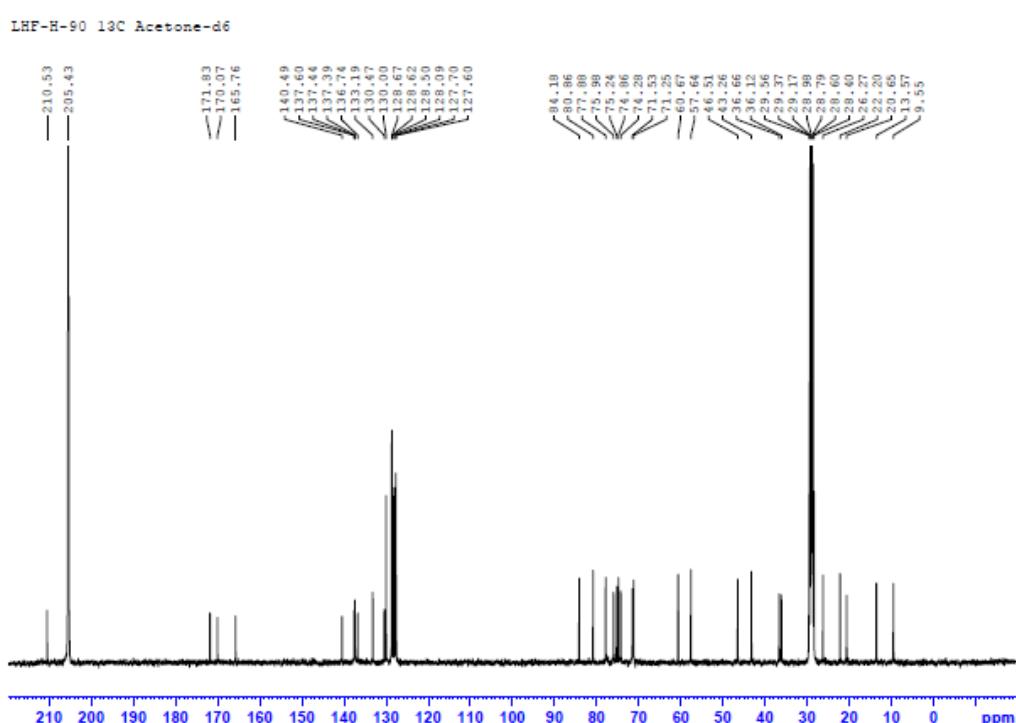


### <sup>13</sup>C-NMR of 3f

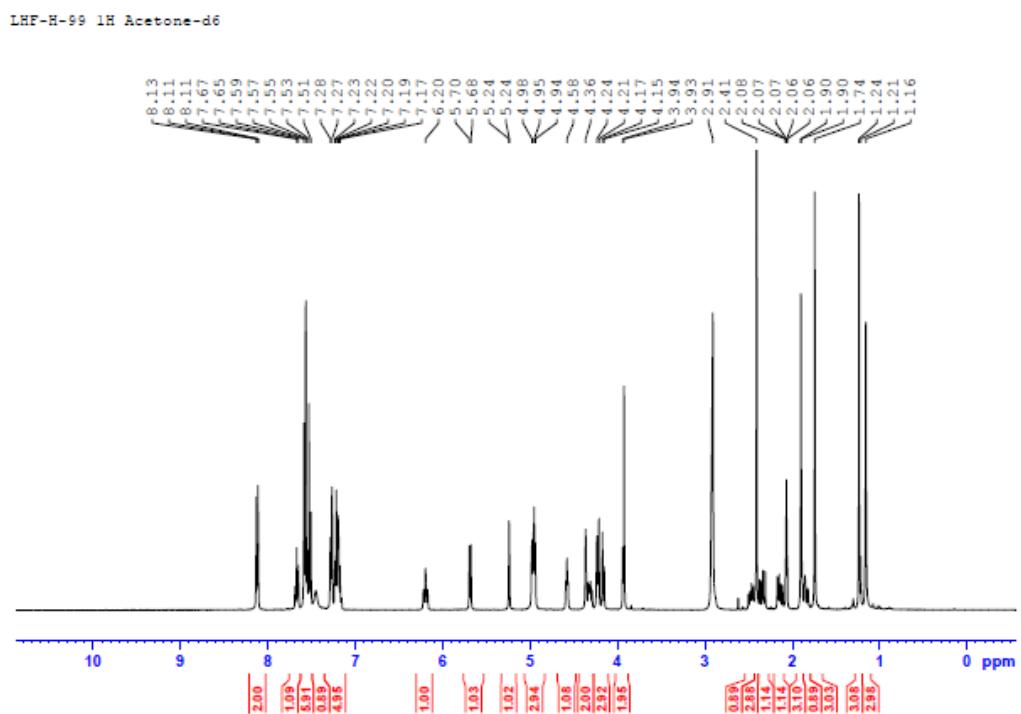
<sup>1</sup>H-NMR of 3g<sup>13</sup>C-NMR of 3g



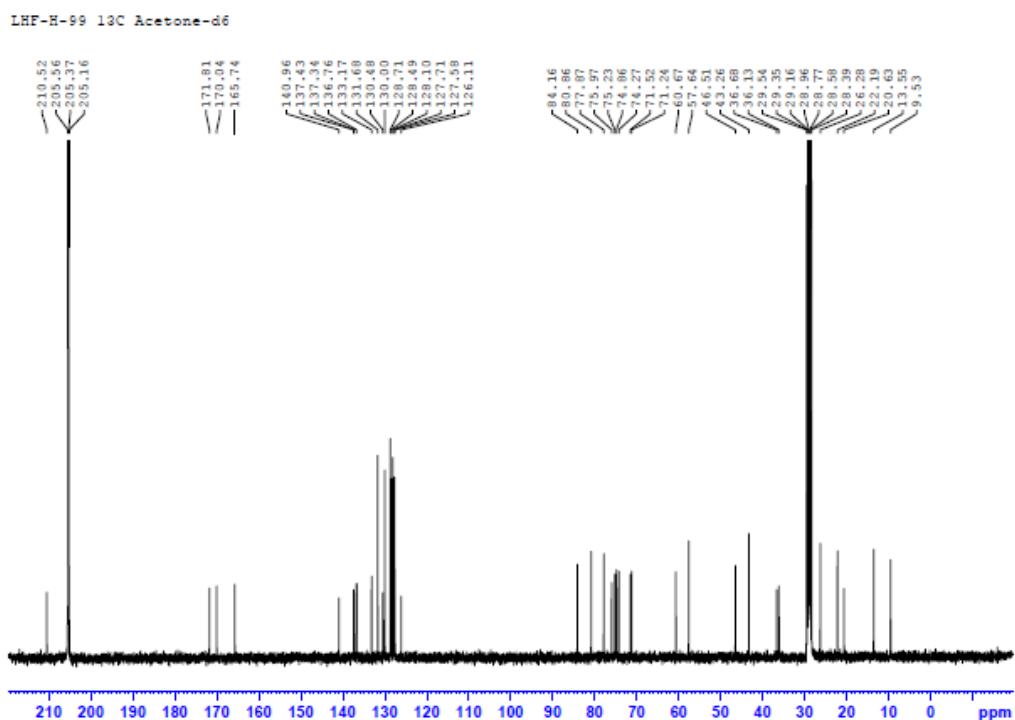
### <sup>1</sup>H-NMR of 3h



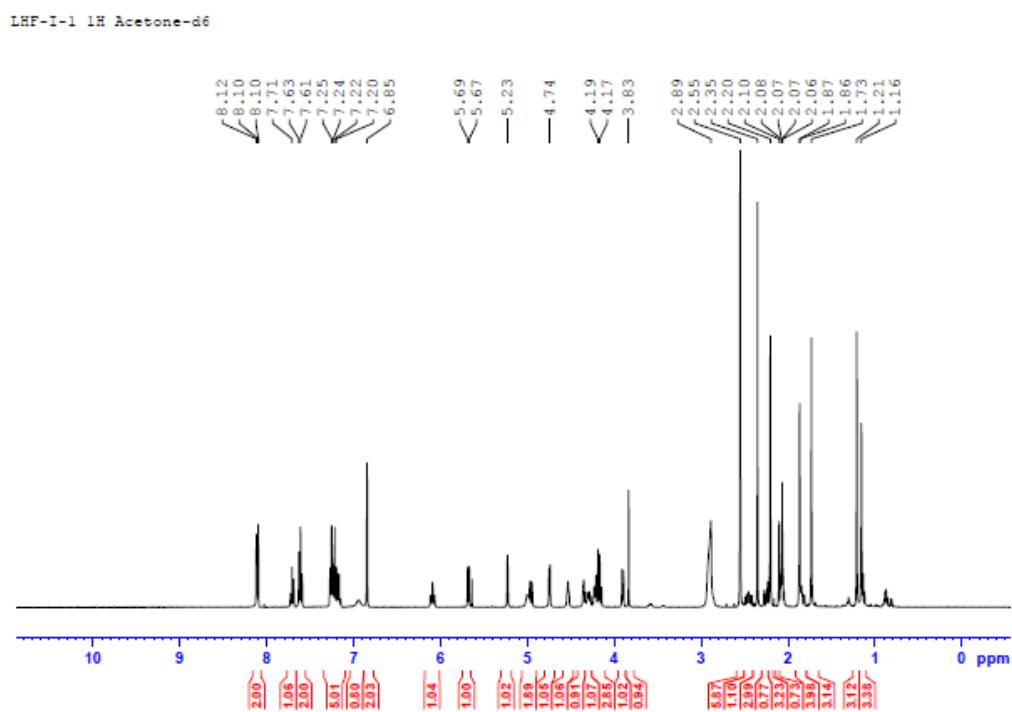
### <sup>13</sup>C-NMR of 3h



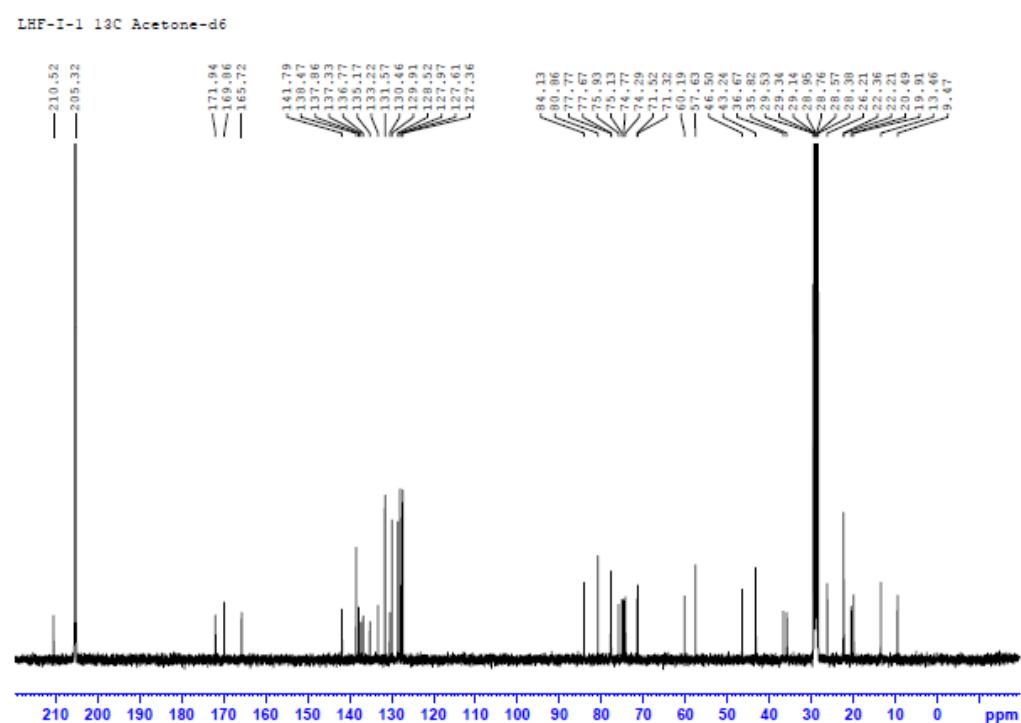
### <sup>1</sup>H-NMR of 3i



### <sup>13</sup>C-NMR of 3i



<sup>1</sup>H-NMR of 3j



<sup>13</sup>C-NMR of 3j

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**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

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Card Serial Number	F130792
Analysis Name	D:\Data\zfj\2013\2013704_000008.d
Sample Name	LHF-H-25
Acquisition Date	4/21/2013 10:02:33 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	870.2802

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Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 40 H 49 N 1 Na 1 O 19	0.071	870.2791	-1.29	-0.08	-1.12	16.50	ok	even
C 43 H 47 N 2 Na 1 O 16	0.077	870.2818	-1.79	2.99	1.56	21.00	ok	odd
C 37 H 53 N 1 Na 1 O 19 S 1	0.082	870.2825	2.58	3.82	2.25	11.50	ok	even
C 44 H 49 N 1 Na 1 O 14 S 1	0.093	870.2766	-4.17	-2.92	-3.63	20.50	ok	even
C 47 H 47 N 2 Na 1 O 11 S 1	0.102	870.2793	-1.09	0.12	-0.95	25.00	ok	odd

## HR-ESI of 3a

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**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

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Card Serial Number	F130799
Analysis Name	D:\Data\zfj\2013\2013704_000009.d
Sample Name	LHF-I-11
Acquisition Date	4/21/2013 10:03:31 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	884.2944

---

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 44 H 49 N 2 Na 1 O 16	0.080	884.2974	3.37	3.47	2.98	21.00	ok	odd
C 45 H 51 N 1 Na 1 O 14 S 1	0.164	884.2922	-2.49	2.81	-2.20	20.50	ok	even
C 48 H 49 N 2 Na 1 O 11 S 1	0.167	884.2949	0.54	6.13	0.48	25.00	ok	odd

## HR-ESI of 3b

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**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number	F130795
Analysis Name	D:\Data\zfj2013\2013704_000008.d
Sample Name	LHF-H-31
Acquisition Date	4/21/2013 10:02:33 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	884.2942

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 44 H 49 N 2 Na 1 O 16	0.024	884.2974	3.67	2.62	3.24	21.00	ok	odd
C 41 H 51 N 1 Na 1 O 19	0.034	884.2947	0.64	-0.42	0.56	16.50	ok	even
C 45 H 51 N 1 Na 1 O 14 S 1	0.135	884.2922	-2.19	1.35	-1.94	20.50	ok	even
C 48 H 49 N 2 Na 1 O 11 S 1	0.137	884.2949	0.84	4.54	0.74	25.00	ok	odd
C 38 H 55 N 1 Na 1 O 19 S 1	0.138	884.2981	4.45	8.15	3.93	11.50	ok	even

**HR-ESI of 3c**

**Shanghai Mass Spectrometry Center**  
**Shanghai Institute of Organic Chemistry**  
**Chinese Academy of Sciences**  
**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number	F130794
Analysis Name	D:\Data\zfj2013\2013704_000008.d
Sample Name	LHF-H-31
Acquisition Date	4/21/2013 10:02:33 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	900.2889

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 44 H 49 N 2 Na 1 O 17	0.099	900.2853	3.80	0.34	3.42	21.00	ok	odd
C 41 H 51 N 1 Na 1 O 20	0.107	900.2867	0.82	-0.64	0.74	16.50	ok	even
C 48 H 49 N 2 Na 1 O 12 S 1	0.127	900.2898	1.02	7.23	0.02	26.00	ok	odd
C 45 H 51 N 1 Na 1 O 15 S 1	0.129	900.2872	-1.96	4.23	-1.76	20.50	ok	even
C 42 H 53 Na 1 O 18 S 1	0.133	900.2845	4.93	1.24	-4.44	16.00	ok	odd
C 38 H 55 N 1 Na 1 O 20 S 1	0.139	900.2930	4.57	10.00	4.11	11.50	ok	even

**HR-ESI of 3d**

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## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number F130794

Analysis Name D:\Data\zfj2013\2013704\_000008.d

Sample Name LHF-H-73

Acquisition Date 4/21/2013 10:02:33 AM

Operator: zfj

Ionization Mode ESI-Positive

Ion Mass (Measured) 912.3239

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 47 H 55 N 1 Na 1 O 14 S 1	0.034	912.3235	-0.42	-0.38	-0.39	20.50	ok	even
C 44 H 57 Na 1 O 17 S 1	0.039	912.3209	-3.36	-3.29	-3.07	16.00	ok	odd
C 43 H 55 N 1 Na 1 O 19	0.044	912.3280	2.32	2.71	2.12	16.50	ok	even

## HR-ESI of 3e

Shanghai Mass Spectrometry Center  
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 Chinese Academy of Sciences  
 High Resolution MS Data Report



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number F130800

Analysis Name D:\Data\zfj2013\2013704\_000007.d

Sample Name LHF-H-76

Acquisition Date 4/21/2013 10:01:59 AM

Operator: zfj

Ionization Mode ESI-Positive

Ion Mass (Measured) 888.2700

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 46 H 45 N 2 Na 1 O 15	0.088	888.2712	1.39	-0.74	1.24	25.00	ok	odd
C 44 H 48 F 1 N 1 Na 1 O 14 S 1	0.098	888.2672	-3.15	-5.37	-2.80	20.50	ok	even
C 47 H 46 F 1 N 2 Na 1 O 11 S 1	0.099	888.2699	-0.14	-2.31	-0.12	25.00	ok	odd
C 47 H 47 N 1 Na 1 O 13 S 1	0.100	888.2680	-4.44	-6.64	-3.04	24.50	ok	even

## HR-ESI of 3f

**Shanghai Mass Spectrometry Center**  
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**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number	F130795
Analysis Name	D:\Data\zfj2013\2013704_000008.d
Sample Name	LHF-H-87
Acquisition Date	4/21/2013 10:02:33 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	938.2651

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 44 H 46 F 3 N 2 Na 1 O 16	0.081	938.2692	4.35	4.27	4.08	21.00	ok	odd
C 45 H 48 F 3 N 1 Na 1 O 14 S 1	0.094	938.2640	-1.17	-1.30	-1.10	20.50	ok	even

## HR-ESI of 3g

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**High Resolution MS Data Report**



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number	F130801
Analysis Name	D:\Data\zfj2013\2013704_000007.d
Sample Name	LHF-H-90
Acquisition Date	4/21/2013 10:01:59 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	904.2359

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 47 H 45 Na 1 O 15 S 1	0.256	904.2371	1.38	1.38	1.25	25.00	ok	odd
C 47 H 44 Cl 1 N 1 Na 1 O 14	0.303	904.2343	-1.81	-1.81	-1.63	25.50	ok	even
C 44 H 48 Cl 1 N 1 Na 1 O 14 S 1	0.307	904.2376	1.92	1.92	1.74	20.50	ok	even
C 47 H 46 Cl 1 N 2 Na 1 O 11 S 1	0.322	904.2403	4.88	4.88	4.42	25.00	ok	odd

## HR-ESI of 3h

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## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

Card Serial Number	F130800
Analysis Name	D:\Data\zfj2013\2013704_000011.d
Sample Name	LHF-H-99
Acquisition Date	4/21/2013 10:37:04 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	948.1870

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 44 H 48 Br 1 N 1 Na 1 O 14 S 1	0.007	948.1871	0.13	-0.24	0.12	20.50	ok	even
C 47 H 48 Br 1 N 2 Na 1 O 11 S 1	0.013	948.1898	2.98	2.58	2.80	25.00	ok	odd
C 47 H 44 Br 1 N 1 Na 1 O 14	0.021	948.1837	-3.42	-3.44	-3.25	25.50	ok	even

## HR-ESI of 3i

Shanghai Mass Spectrometry Center  
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 Chinese Academy of Sciences  
 High Resolution MS Data Report



## Instrument



Bruker Daltonics, Inc. APEXIII 7.0 TESLA FTMS

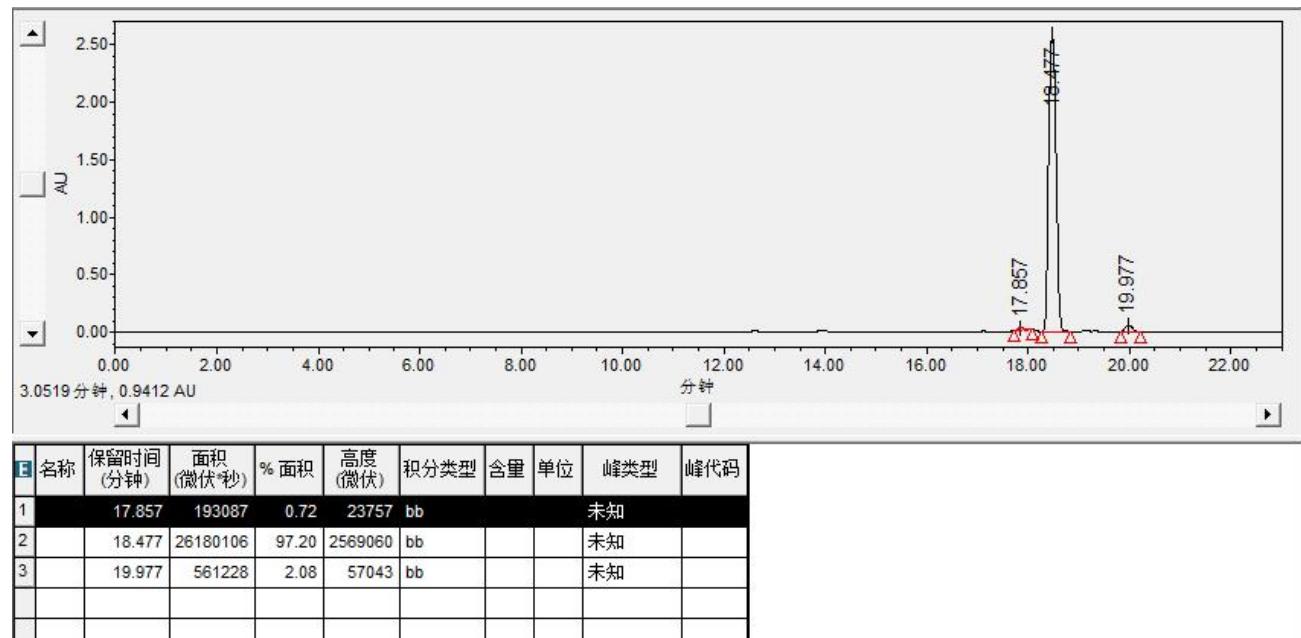
Card Serial Number	F130797
Analysis Name	D:\Data\zfj2013\2013704_000009.d
Sample Name	LHF-I-1
Acquisition Date	4/21/2013 10:03:31 AM
Operator:	zfj
Ionization Mode	ESI-Positive
Ion Mass (Measured)	912.3264

Sum Formula	Sigma	m/z	Err [ppm]	Mean Err [ppm]	Err [mDa]	rdb	N Rule	e <sup>-</sup>
C 46 H 53 N 2 Na 1 O 16	0.085	912.3287	2.61	3.10	2.38	21.00	ok	odd
C 47 H 55 N 1 Na 1 O 14 S 1	0.099	912.3235	-3.07	-2.60	-2.80	20.50	ok	even

## HR-ESI of 3j

HPLC (Waters e2695; Kromasil C18 column (5 µm, 4.6 mm×250 mm); 0-20min: 5%-100%

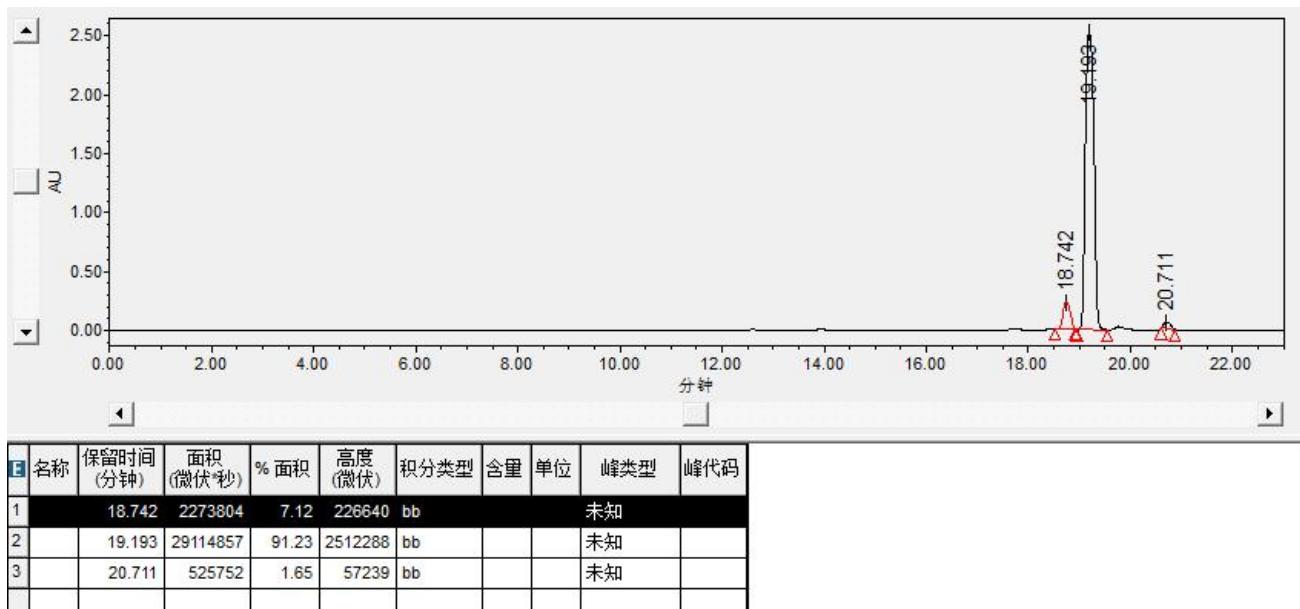
MeCN, 20-23min: 100% MeCN; 240 nm)



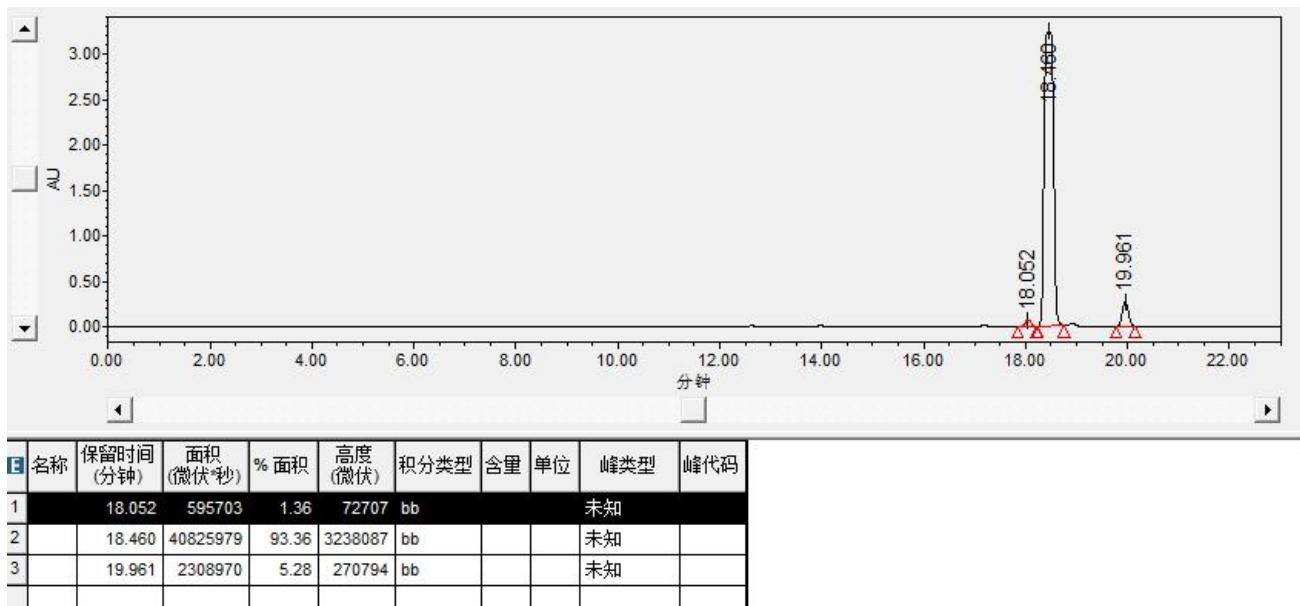
HPLC data of 3a



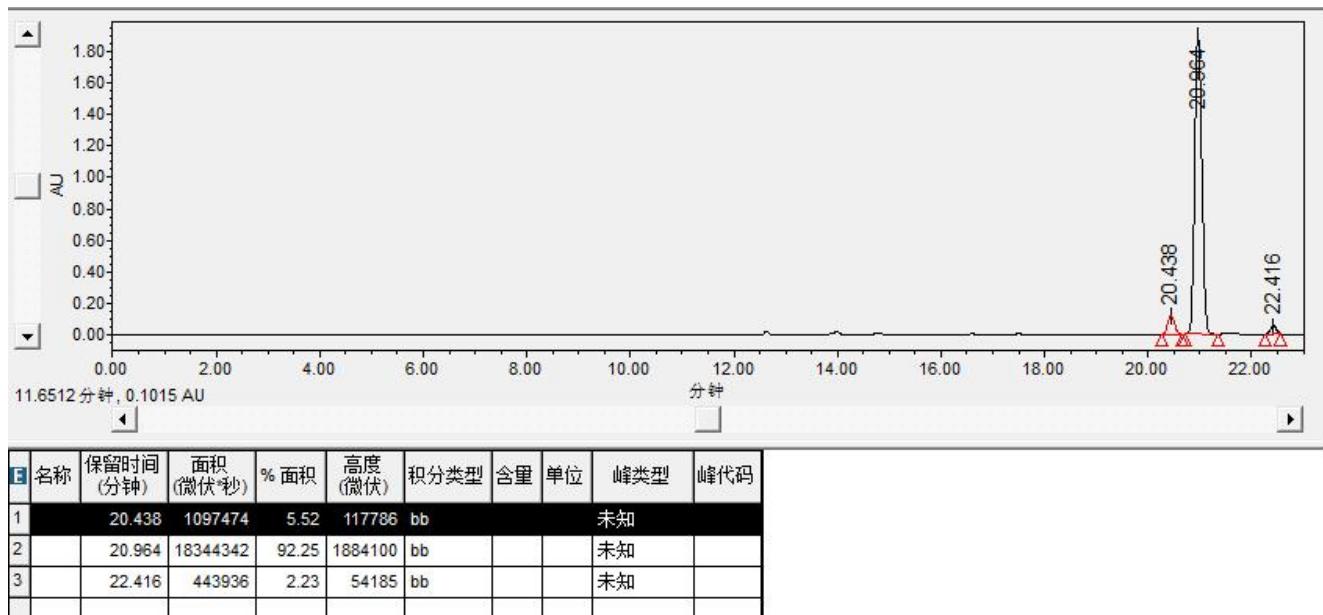
HPLC data of 3b



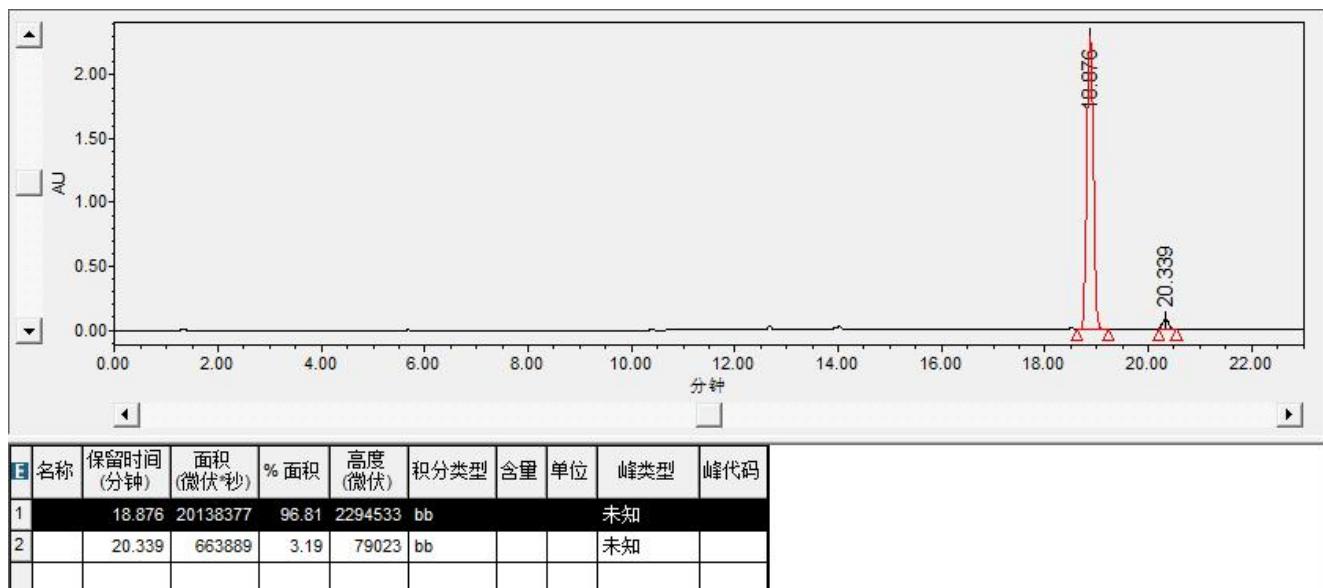
HPLC data of 3c



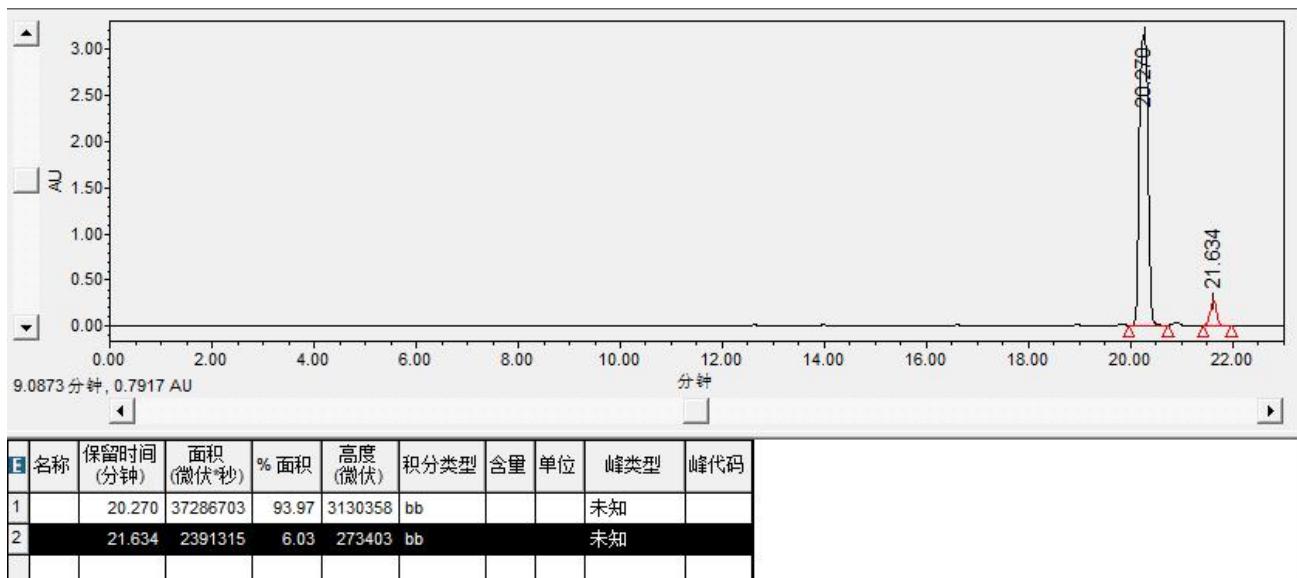
HPLC data of 3d



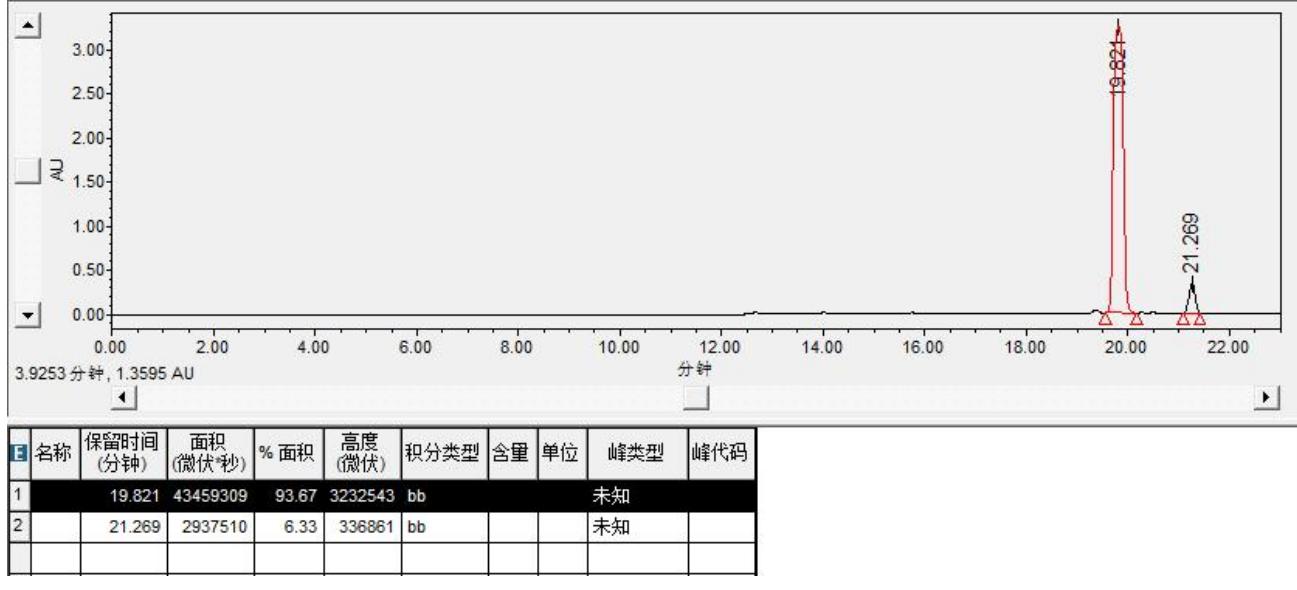
HPLC data of 3e



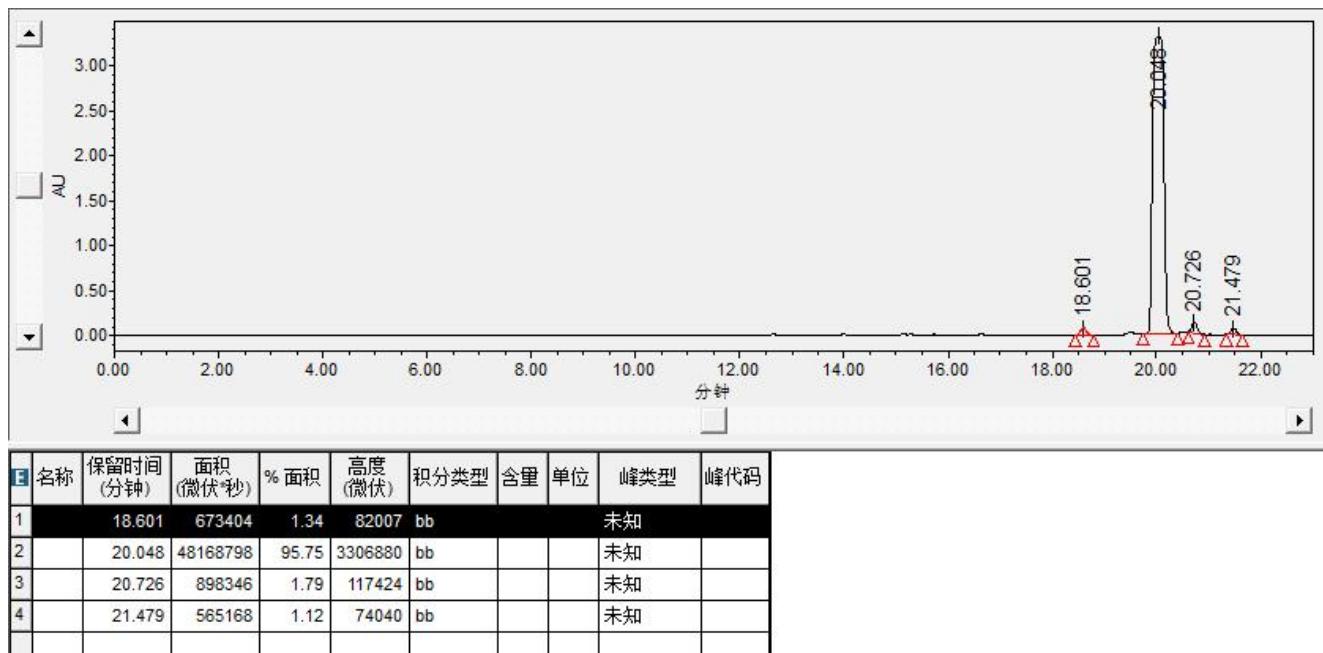
HPLC data of 3f



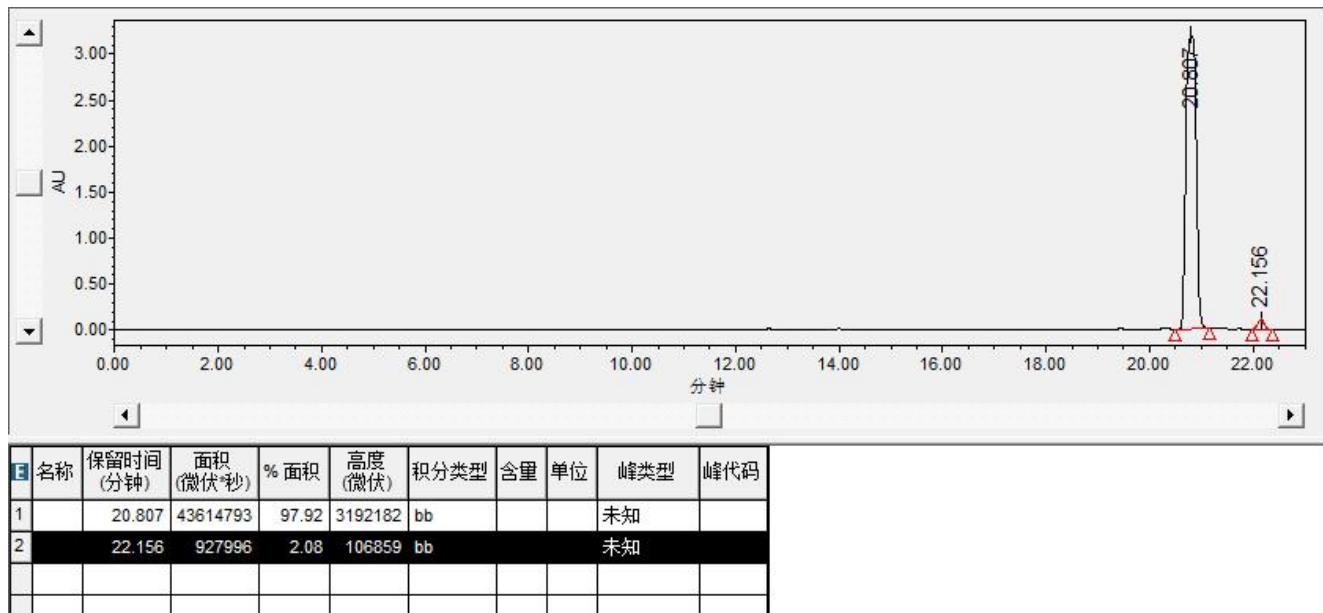
HPLC data of 3g



HPLC data of 3h



HPLC data of 3i



HPLC data of 3j