

## **Pyrrolidine and piperidine based chiral spiro and fused scaffolds via Build/Couple/Pair approach**

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Chary<sup>c</sup>, Y. L. N. Murthy<sup>d</sup>, and Subhabrata Sen<sup>a\*</sup>

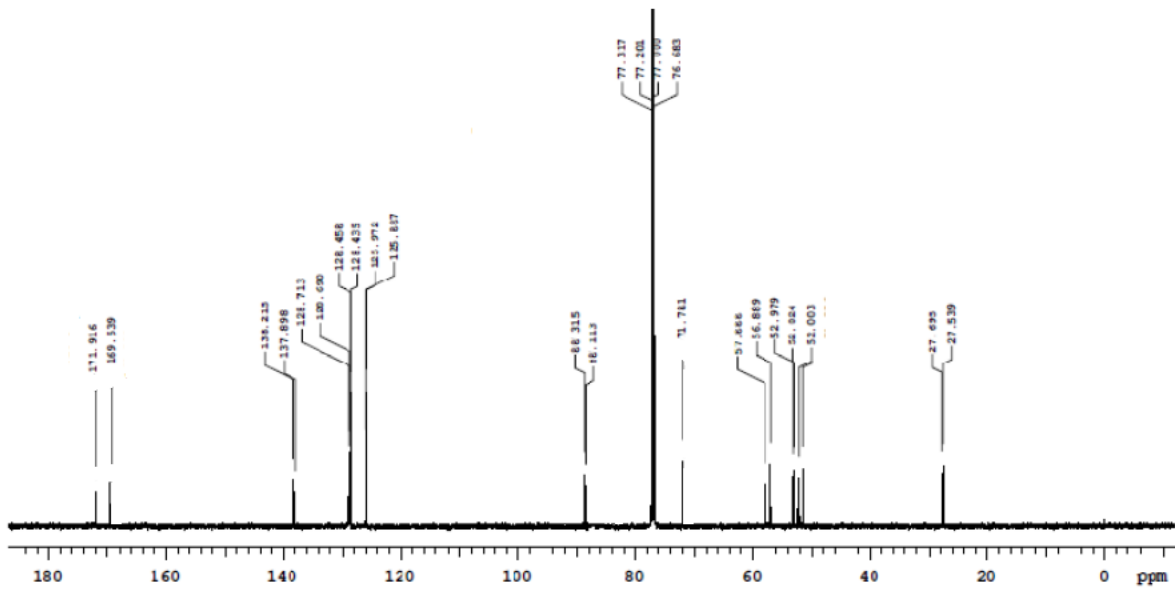
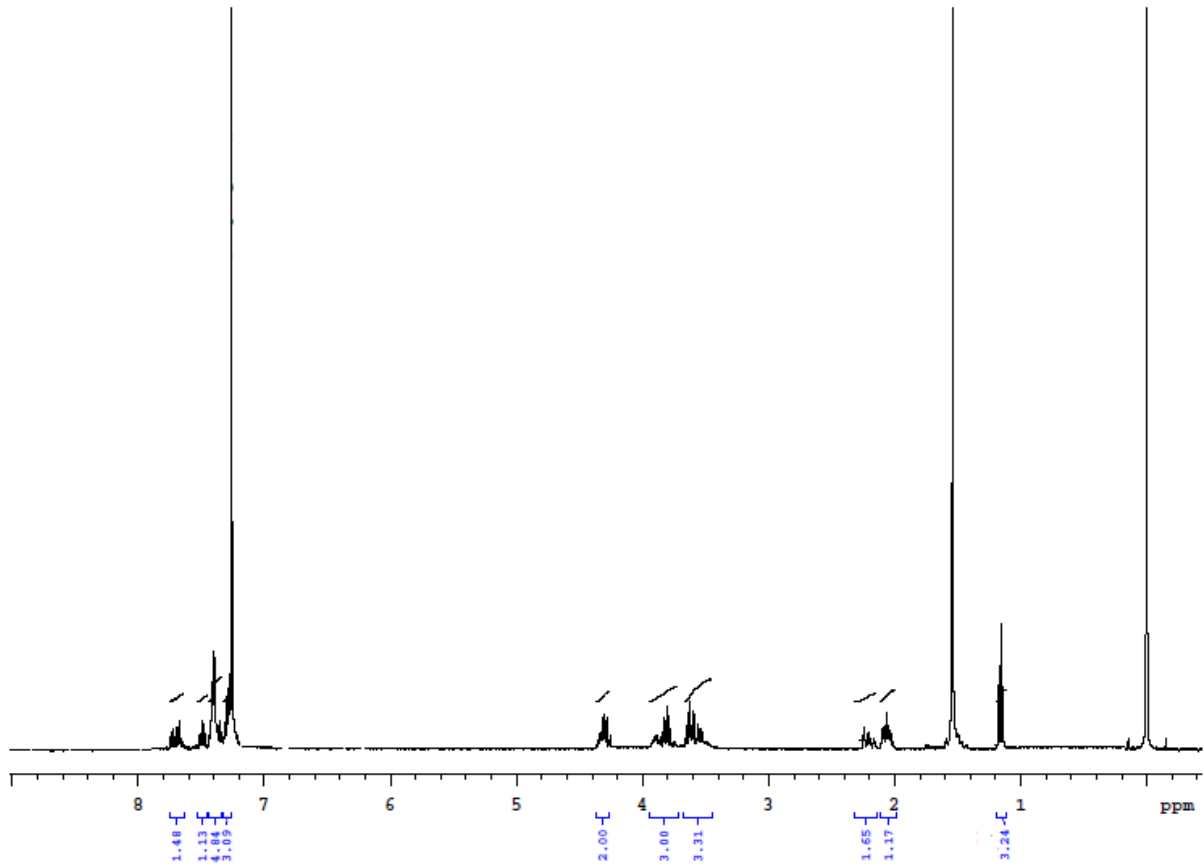
<sup>a</sup> Department of Chemistry, Shiv Nadar University, Dadri, UP, India

<sup>b</sup> GVKBioscience, 28A IDA Nacharam, Hyderabad, AP, India.

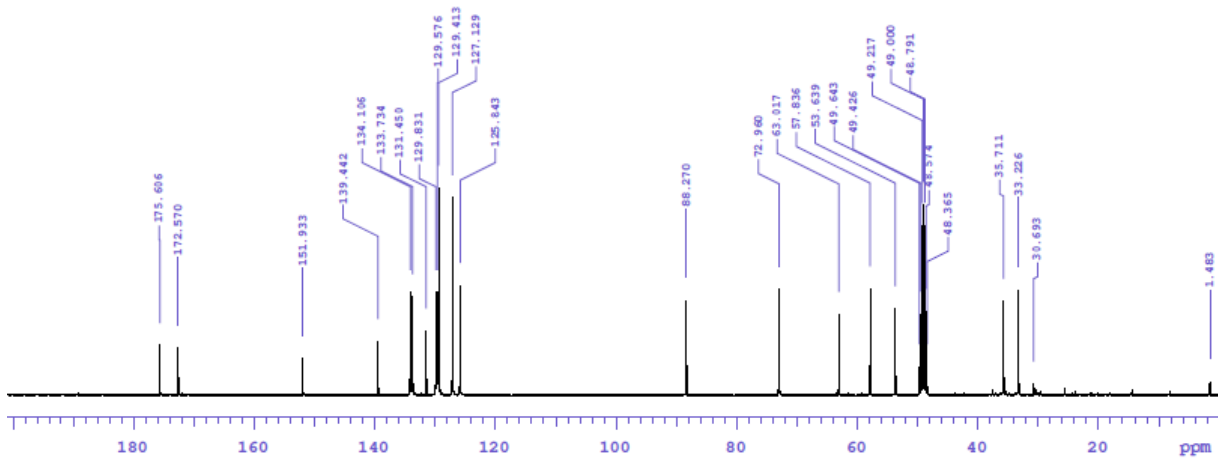
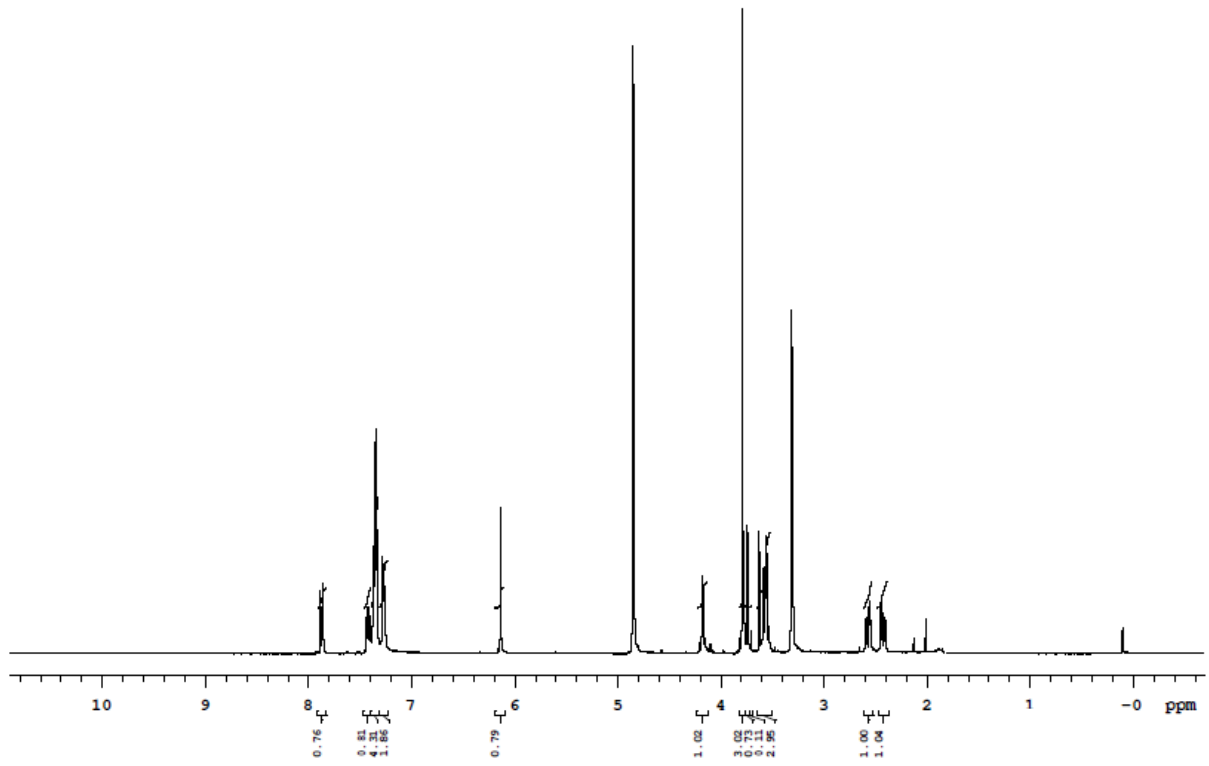
<sup>c</sup> JNTU-H College, Nachupally, Karimnagar, AP, India

<sup>d</sup> Andhra University, Vishakhapatnam, AP, India.

# Compound 4



# Compound 5





# CHIRAL PAK IA RPT

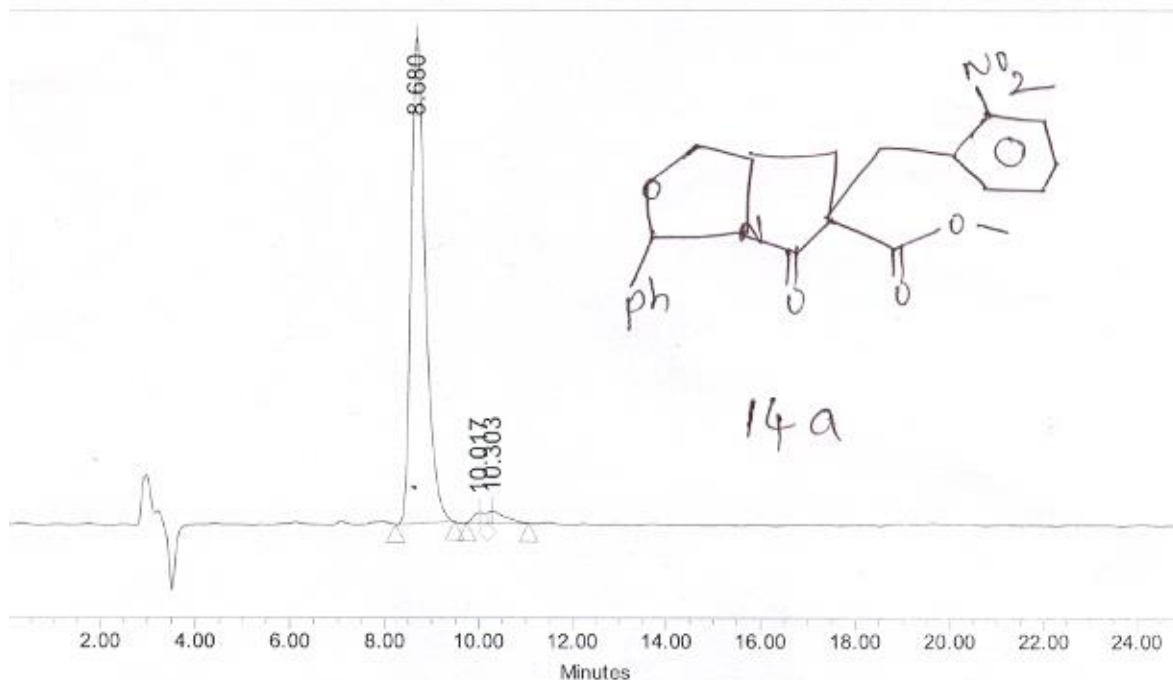
## ANALYTICAL REPORT-MCL-III GVK BIOSCIENCES PVT LTD

### SAMPLE INFORMATION

Sample Name :	DVS-NPR-22-P-1	Acquired By :	System
Sample ID :	103	Date Acquired :	7/27/2011 7:39:45 AM IST
Injection Volume :	10.00 ul	Proc. Chnl. Descr :	PDA 215.0 nm
Run Time :	25.0 Minutes	System Name :	ANL_MCL_HPLC_02

### HPLC CONDITIONS

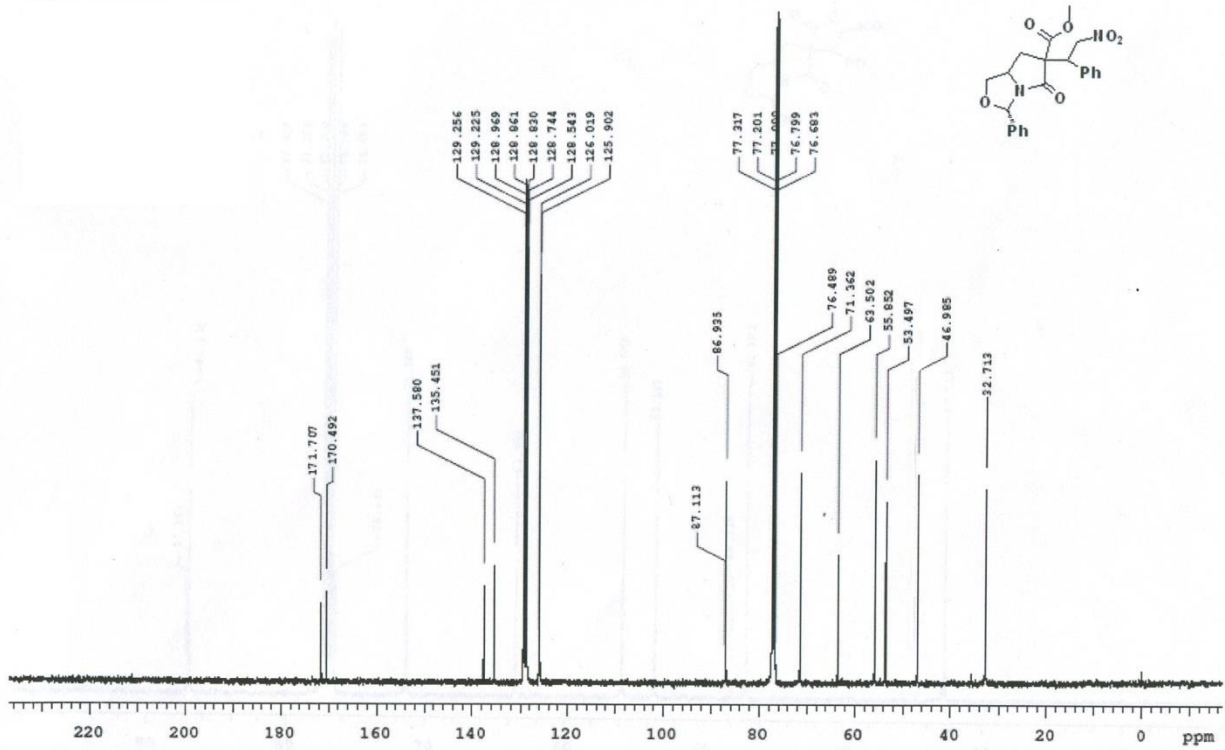
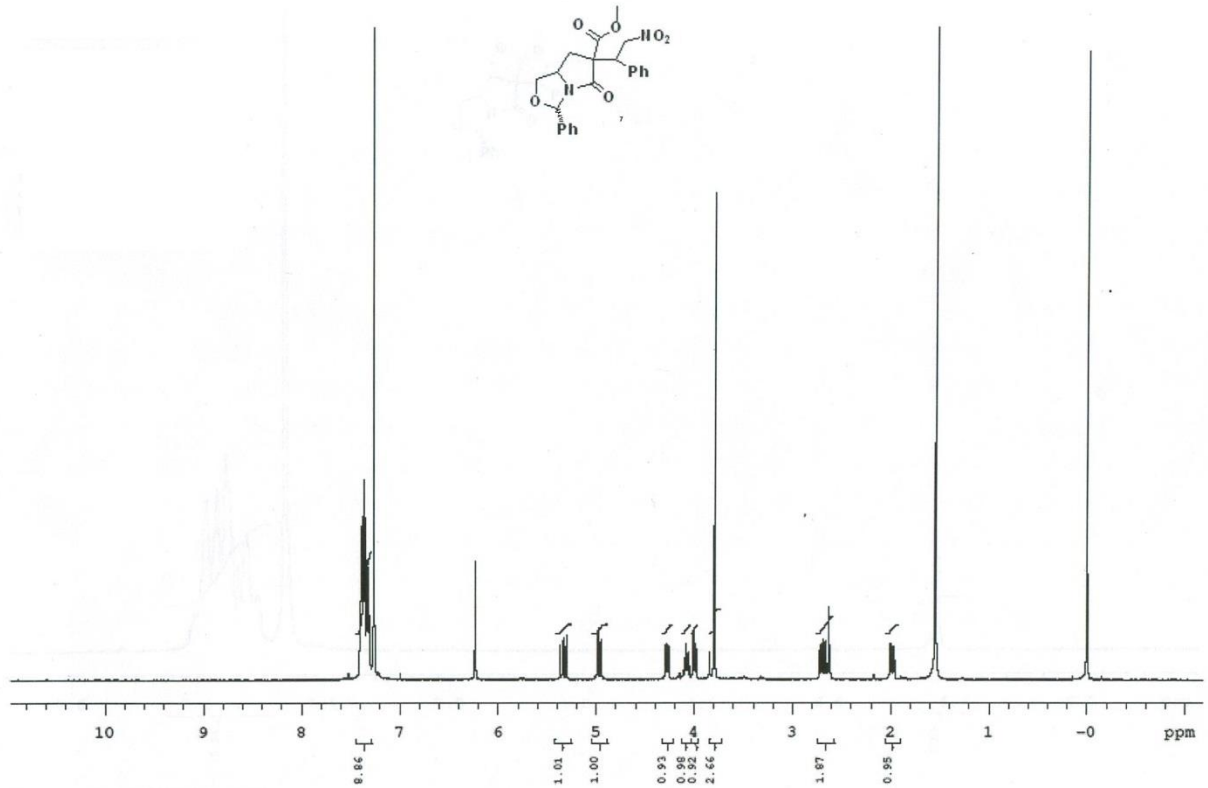
Column :	CHIRAL PAK IA 4.6 X 250mm , 5µm
Column ID :	ANL_CHIRAL_110
Mobile Phase :	D=0.1%TFA in n-HEXANE , C =Ethanol
Isocratic :	80:20
Flow Rate :	1.0 ml/min
Column Temp :	NA
Mobile Phase :	Ethanol



### Peak Results

Retention Time (min)	Area	% Area
8.680	10713833	95.28
10.903	206880	1.84
11.903	323909	2.88

# Compound 7



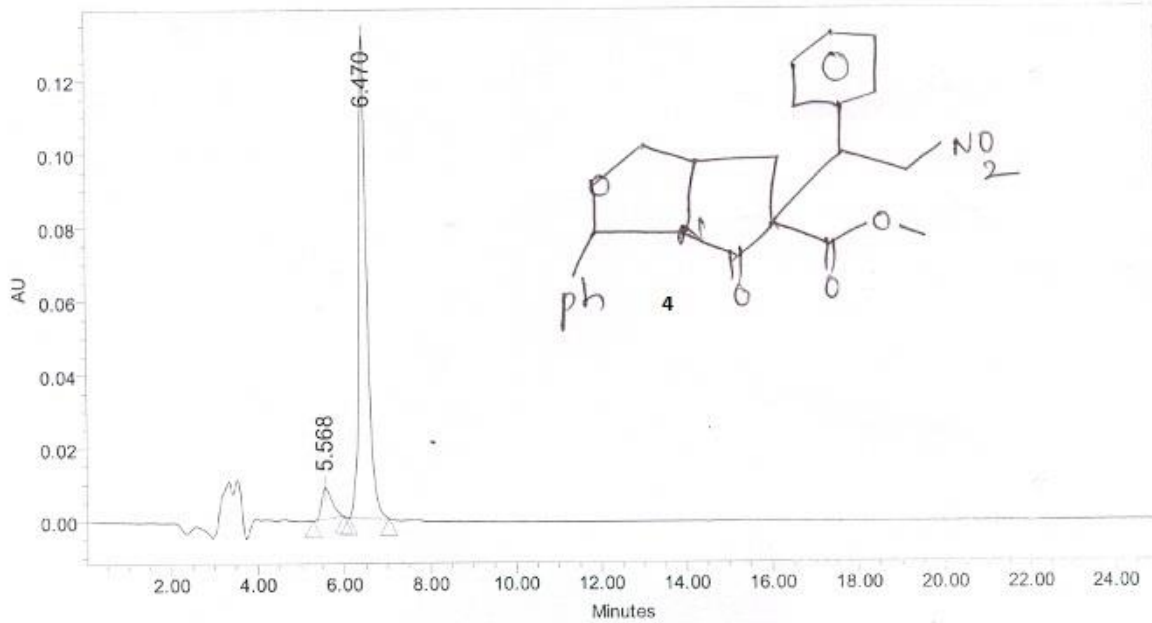
# CHIRAL PAK IA RPT

## SAMPLE INFORMATION

Injection Volume :	15.00 ul	Proc. Chnl. Descr :	PDA 215.0 nm
Run Time :	25.0 Minutes	System Name :	ANL_MCL_HPLC_02

## HPLC CONDITIONS

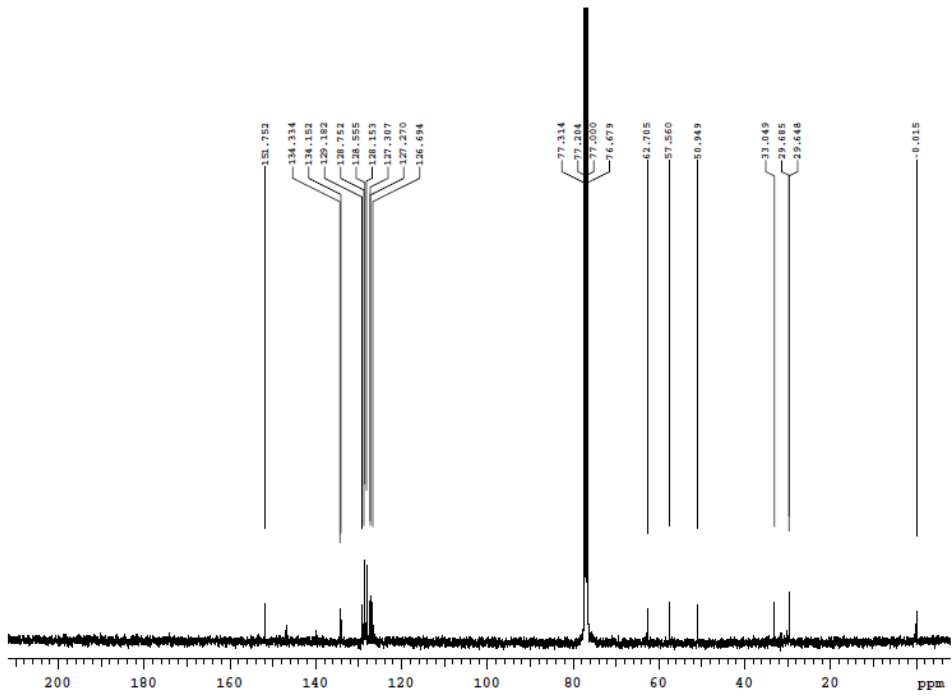
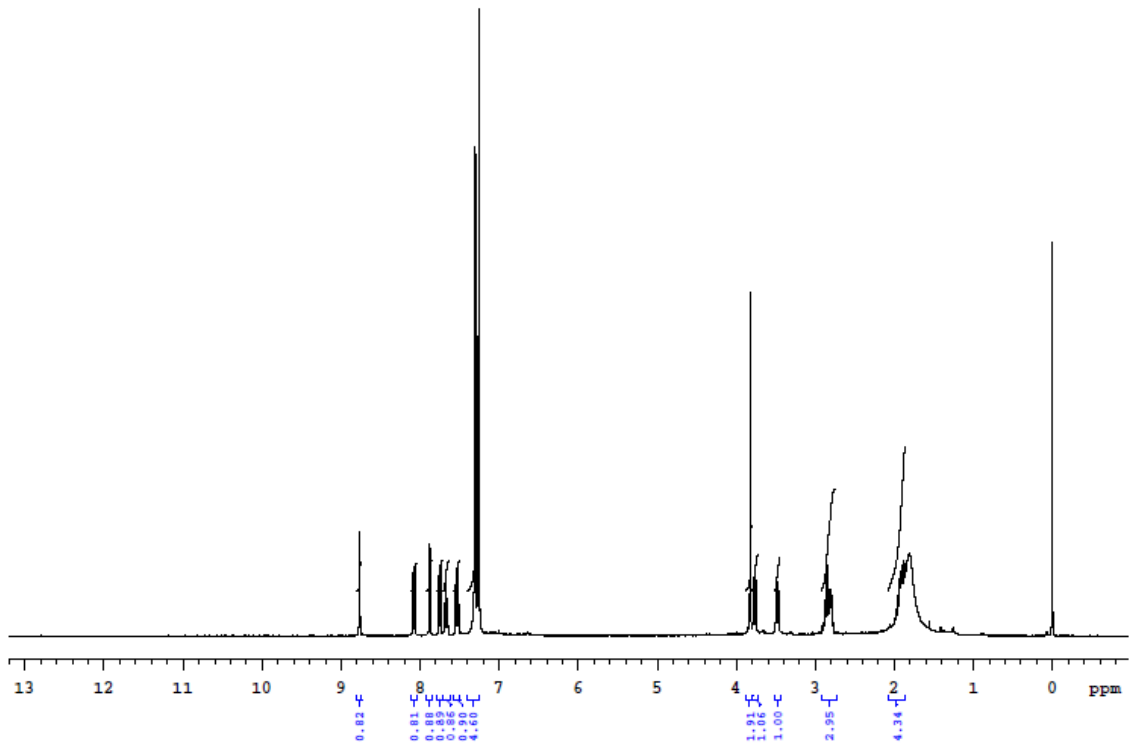
Column : CHIRAL PAK IA 4.6 X 250mm , 5µm  
Column ID : ANL\_CHIRAL\_110  
Mobile Phase : A= n-HEXANE ,B=IPA  
ISOCRATIC : 60:40  
Flow Rate : 1.0 ml/min  
Column Temp : NA  
Diluent : Ethanol



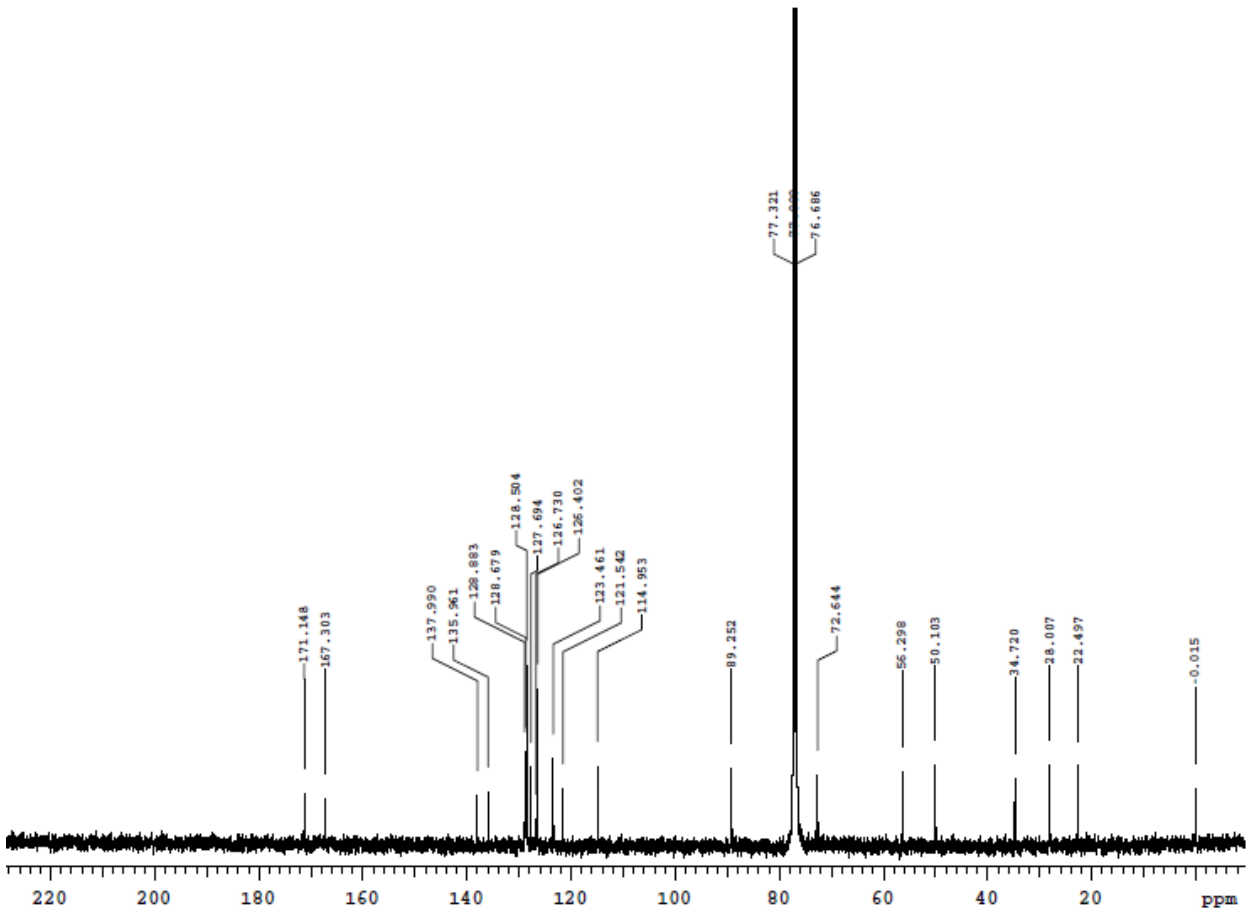
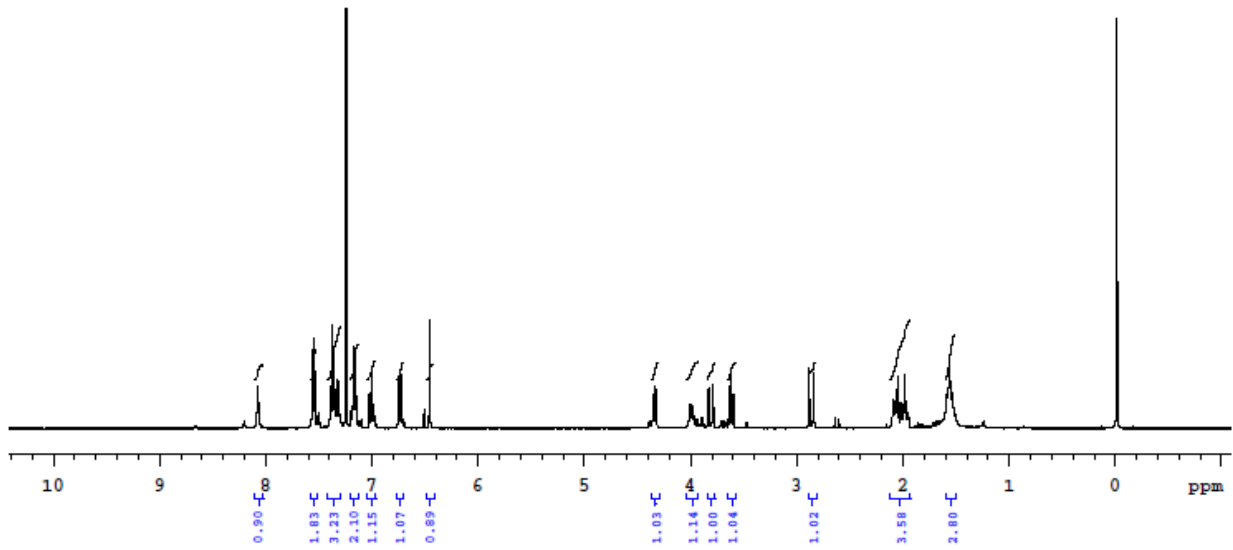
## Peak Results

	RT	Area	% Area
1	5.568	143303	7.87
2	6.470	1677926	92.13

# Compound 8

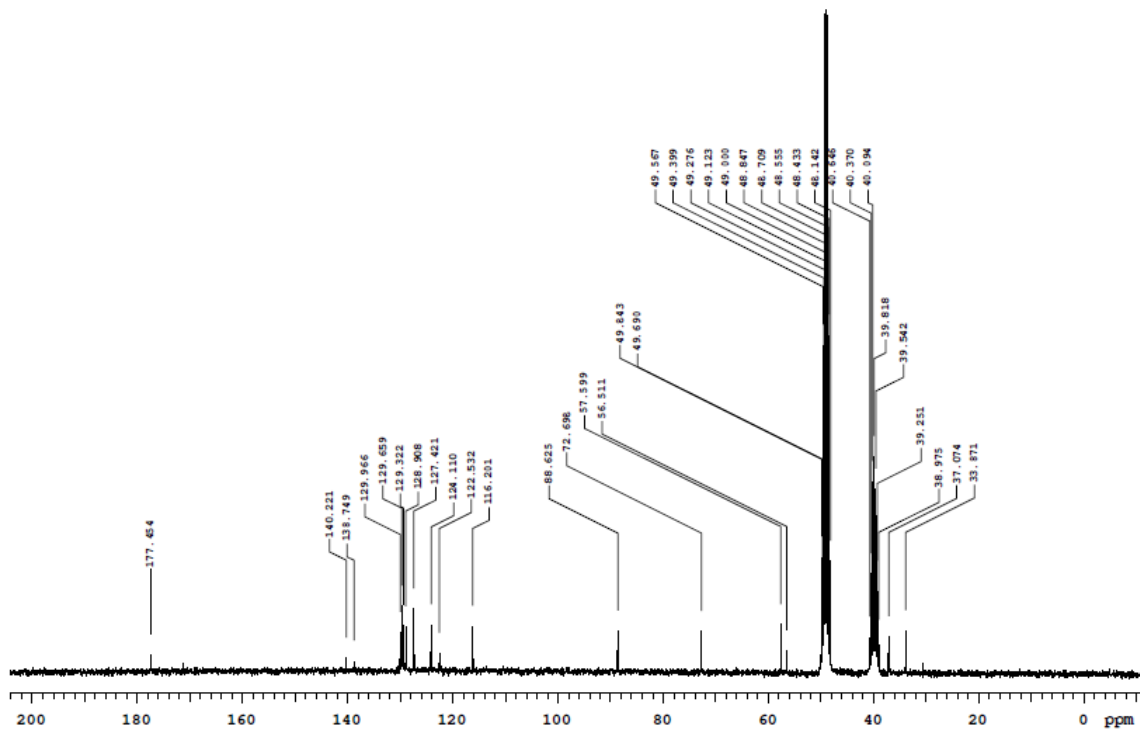
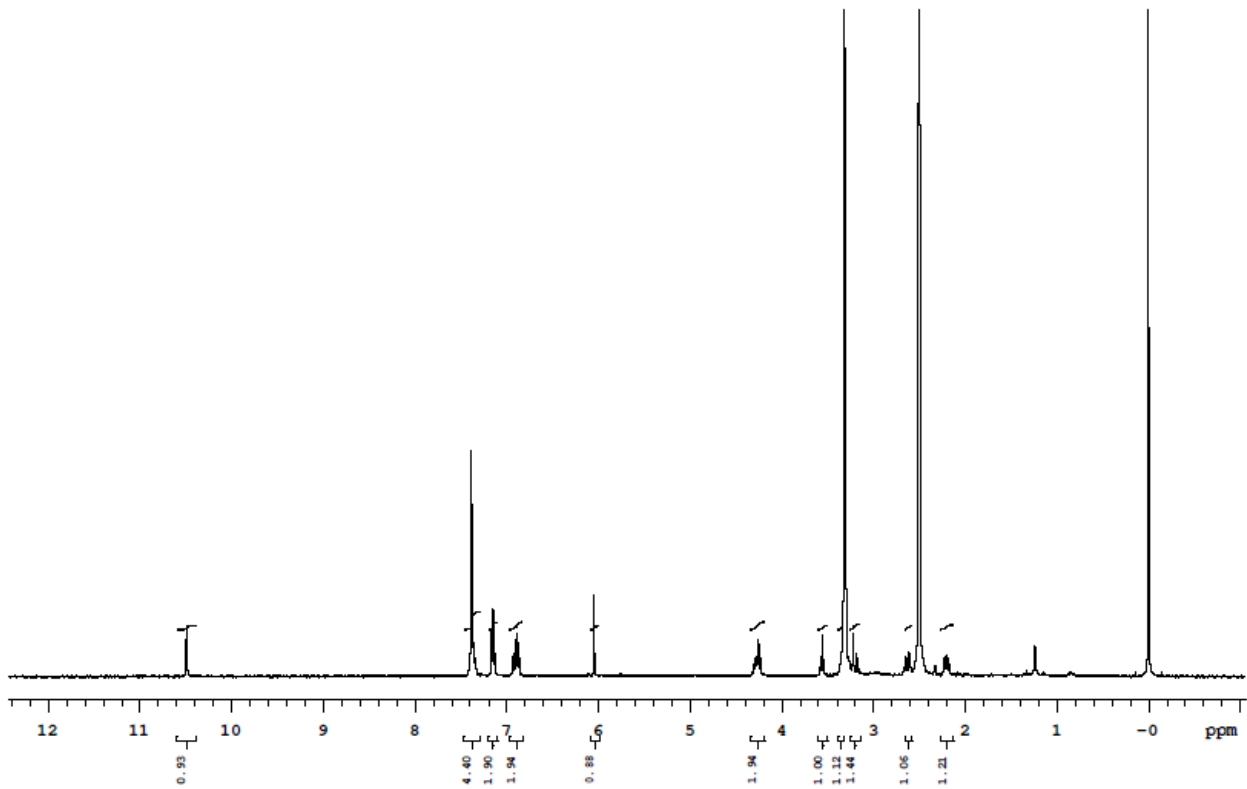


# Compound 9

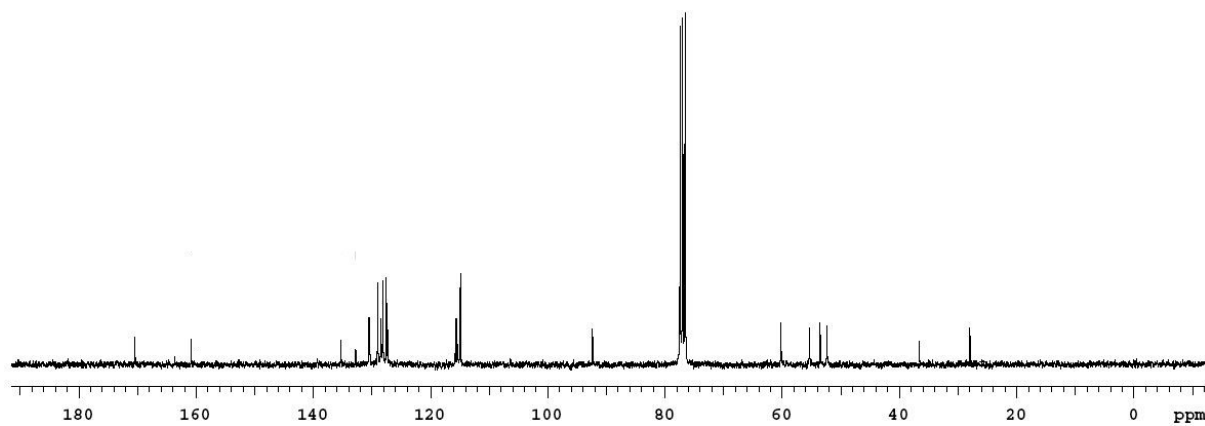
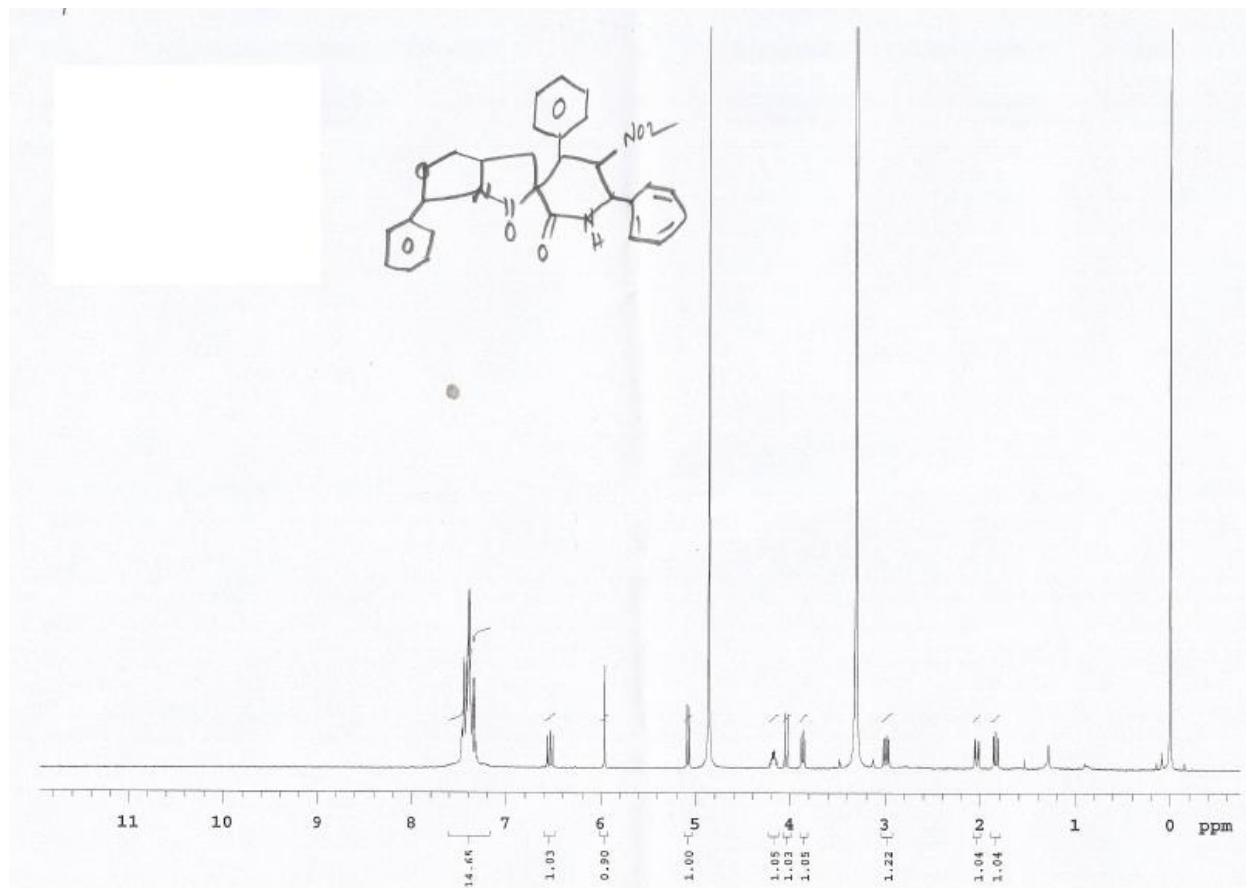




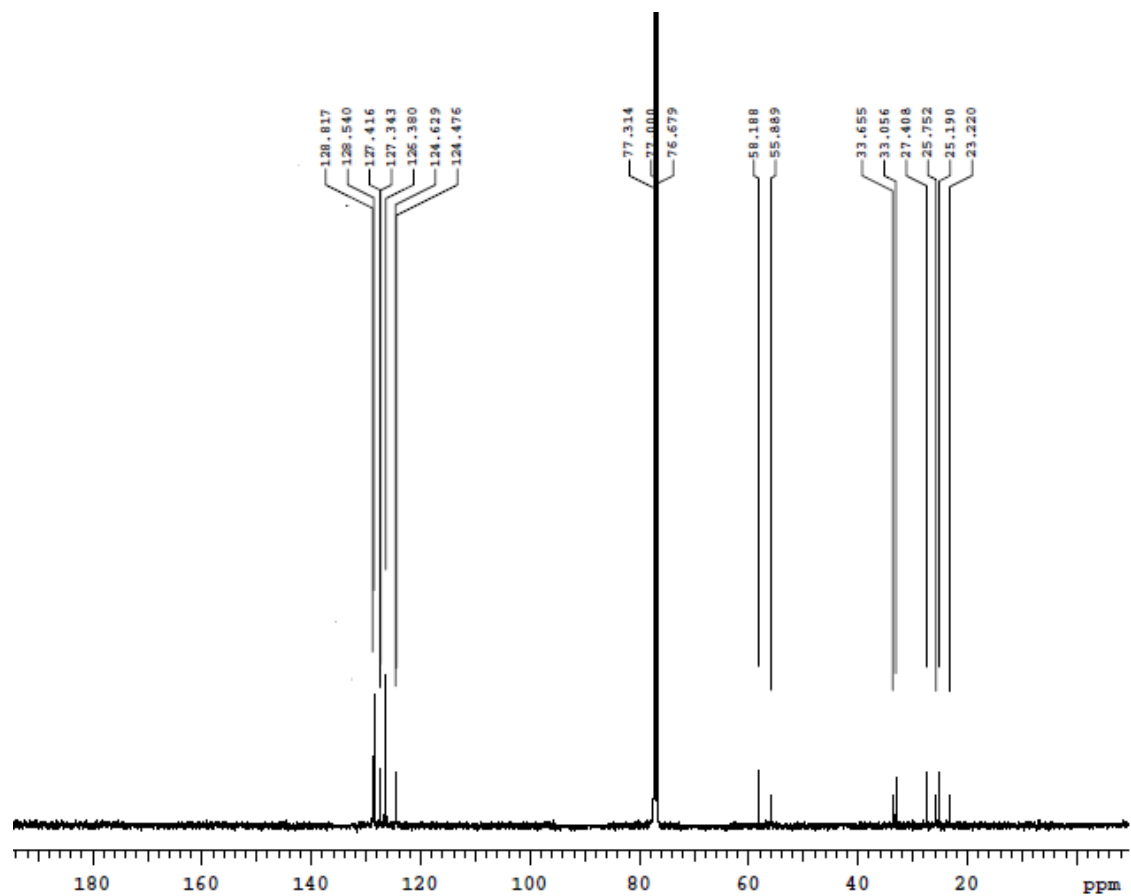
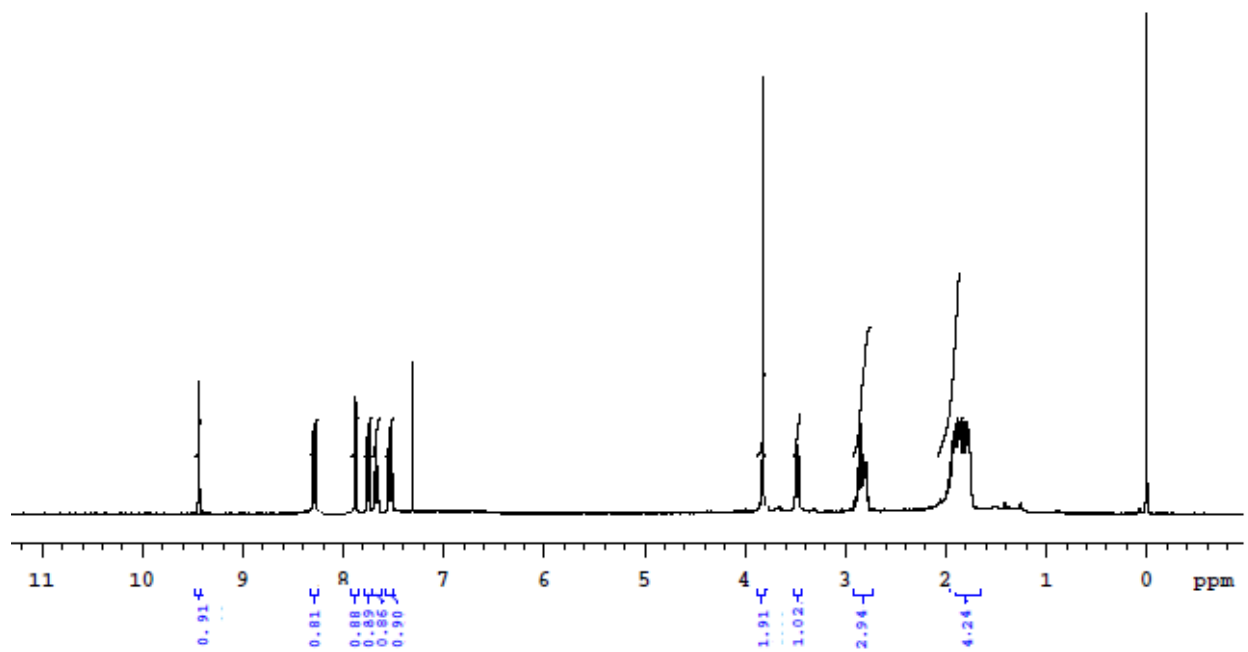
# Compound 10



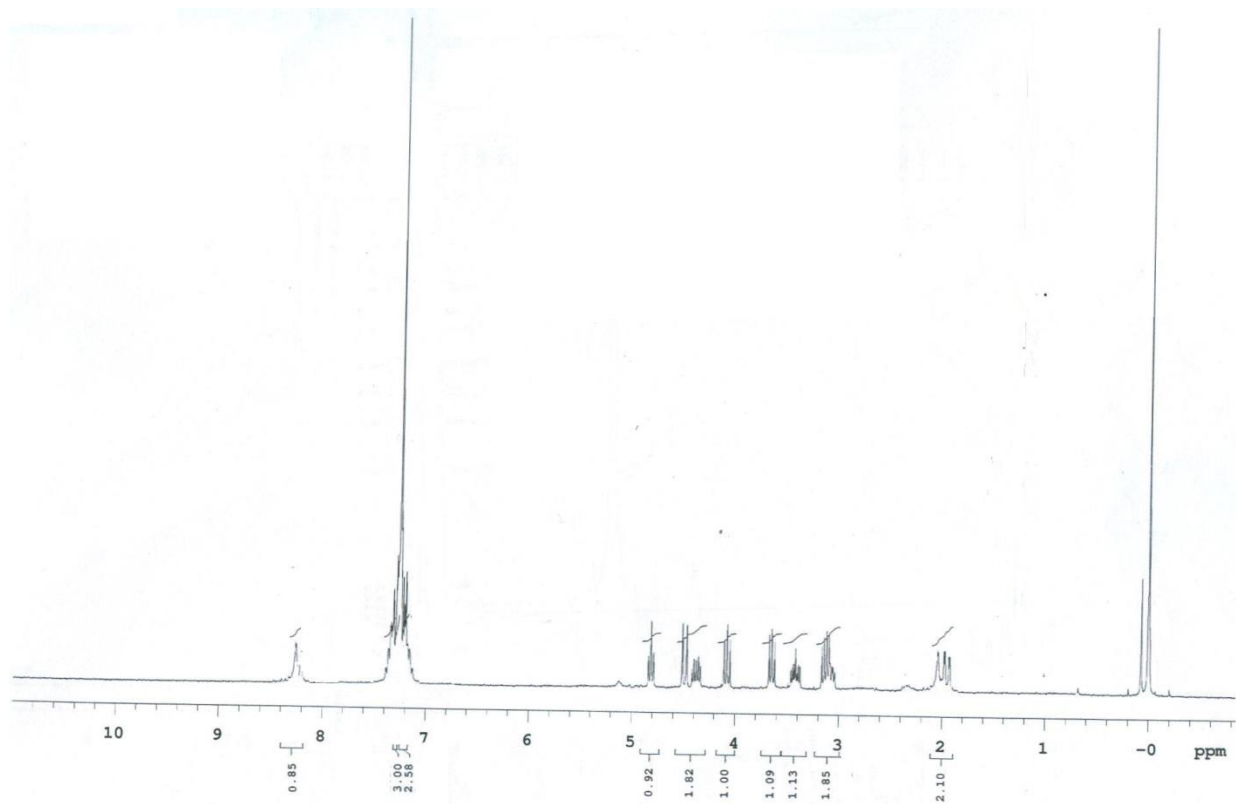
# Compound 11



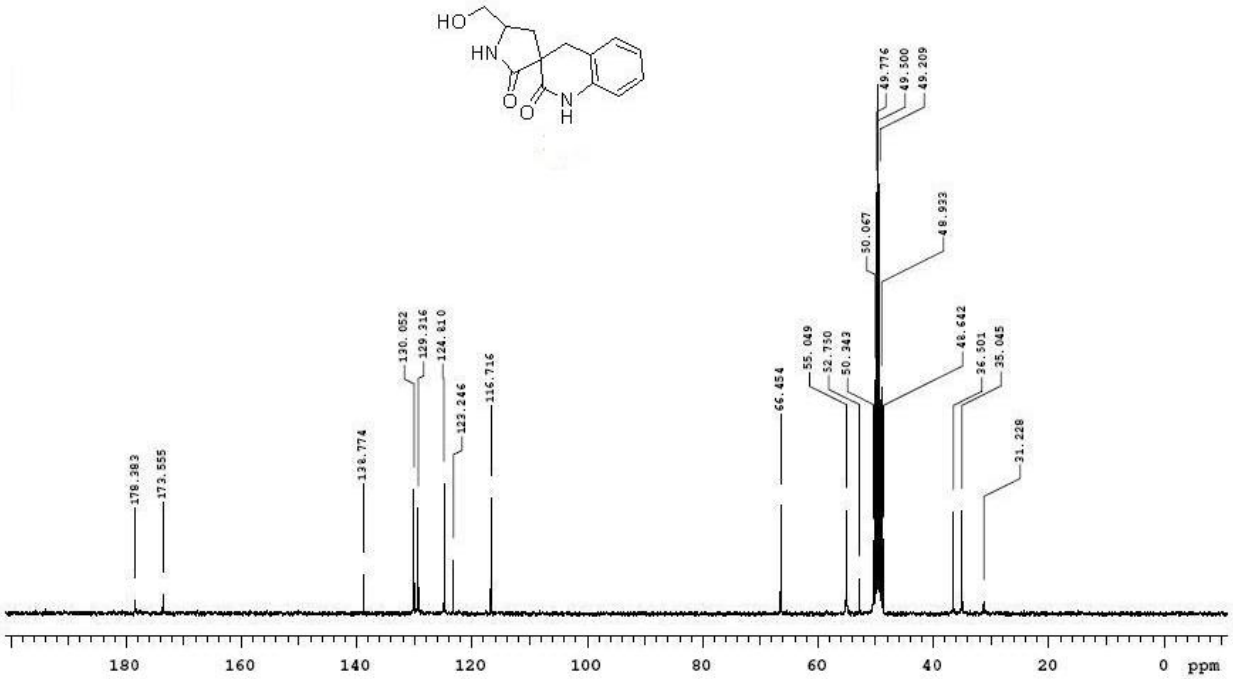
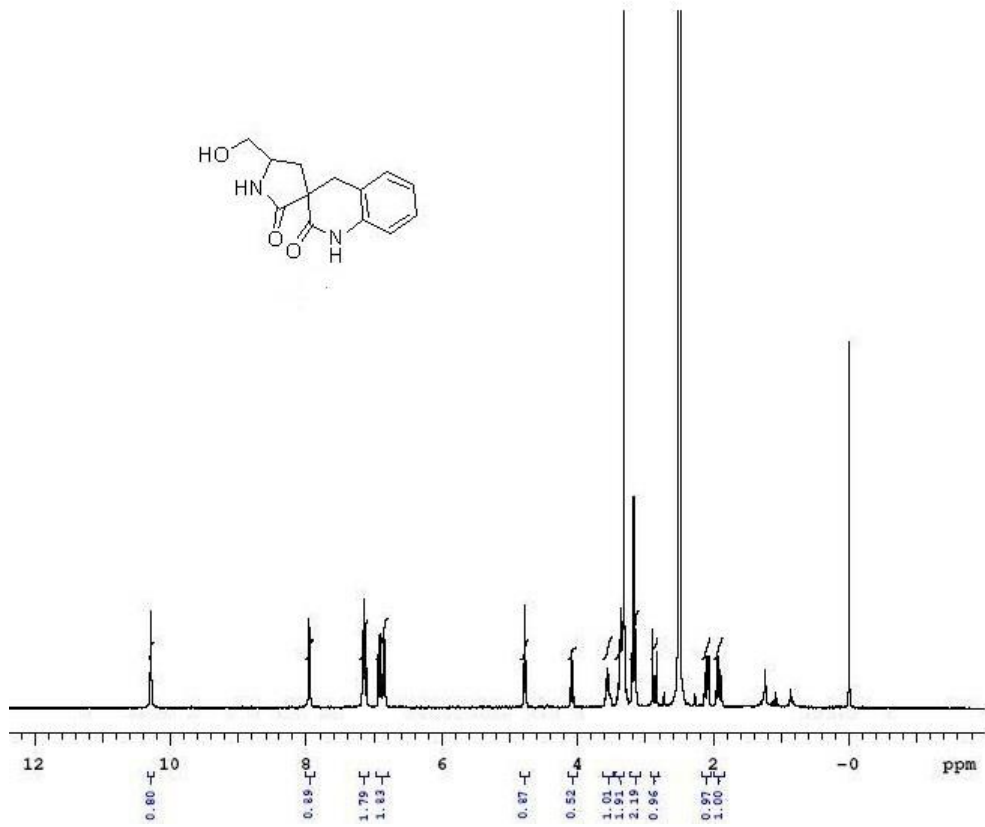
# Compound 12



# Compound 13



# Compound 14



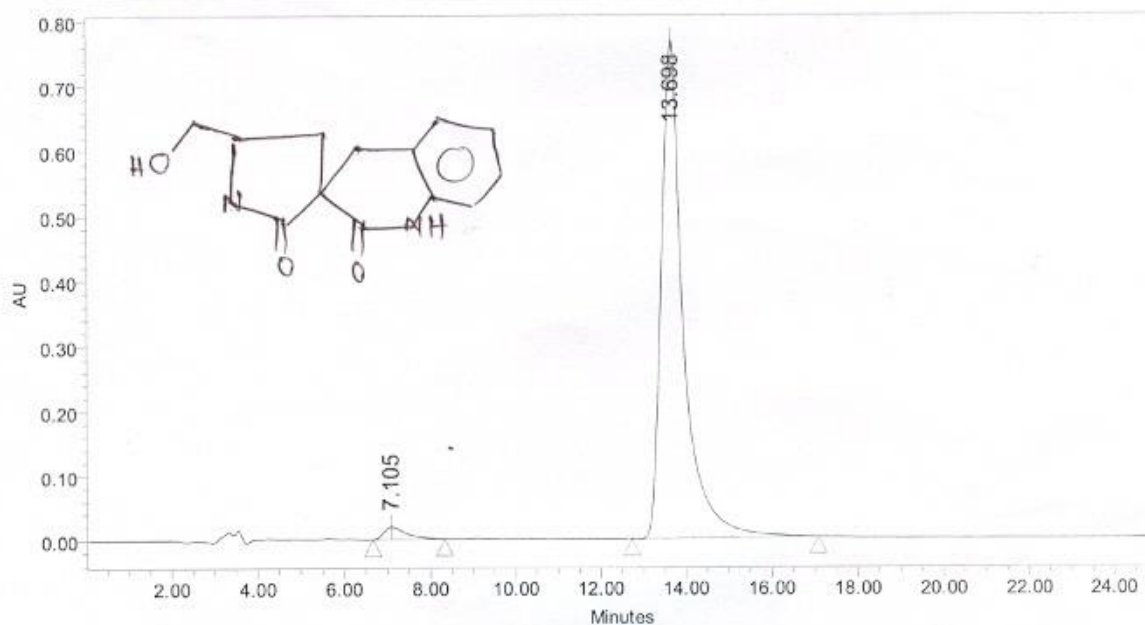
**ANALYTICAL REPORT-MCL-III  
GVK BIOSCIENCES PVT LTD**

**SAMPLE INFORMATION**

Sample Name	: DVS-NPR-27-P	Acquired By	: System
Vial No	: 104	Date Acquired	: 7/27/2011 12:59:32 PM IST
Injection Volume	: 15.00 ul	Proc. Chnl. Descr	: PDA 215.0 nm
Run Time	: 25.0 Minutes	System Name	: ANL_MCL_HPLC_02

**HPLC CONDITIONS**

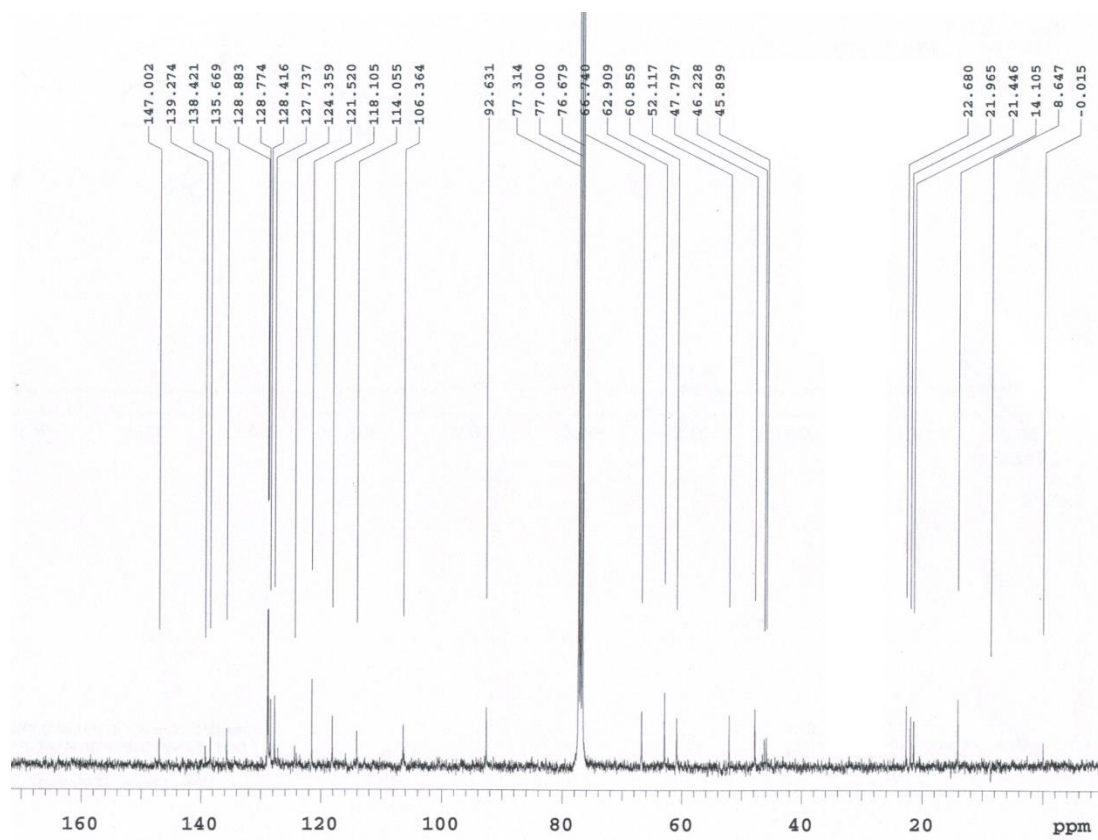
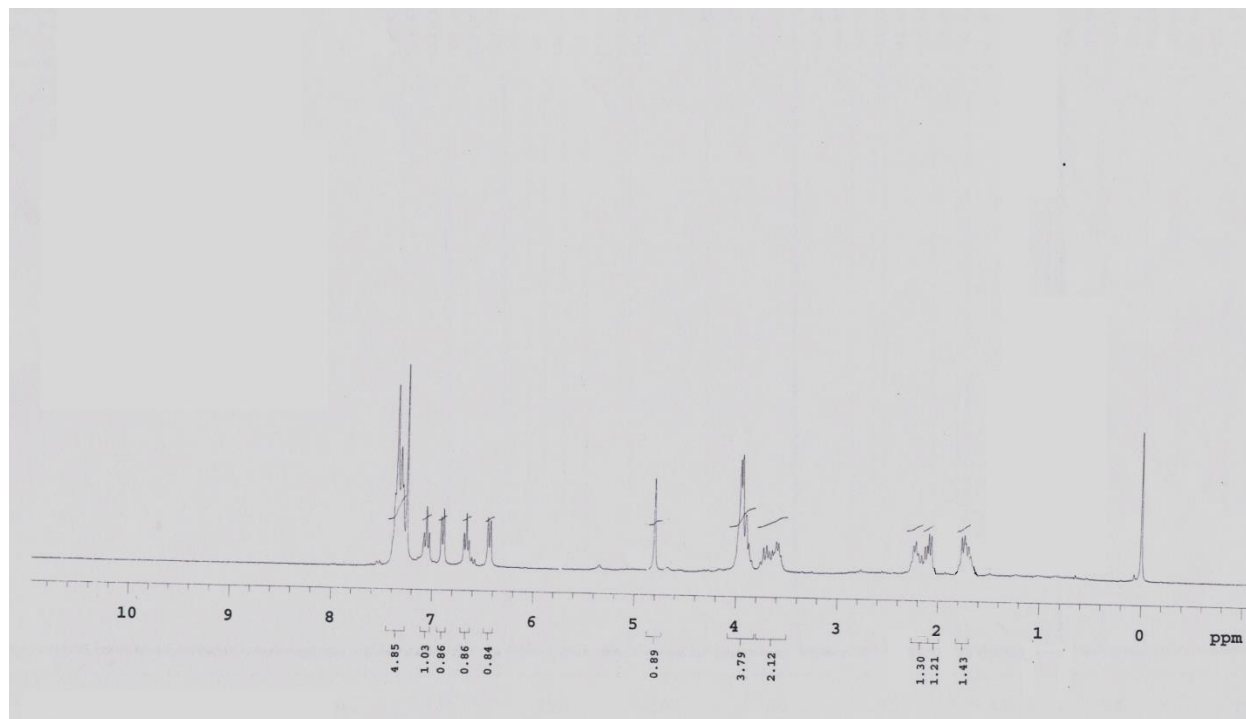
Column	: CHIRAL PAK IA 4.6 X 250mm , 5µm
Column ID	: ANL_CHIRAL_110
Mobile Phase	: A= n-HEXANE ,B=IPA
ISOCRATIC	: 60:40
Flow Rate	: 1.0 ml/min
Column Temp	: NA
Diluent	: Ethanol



**Peak Results**

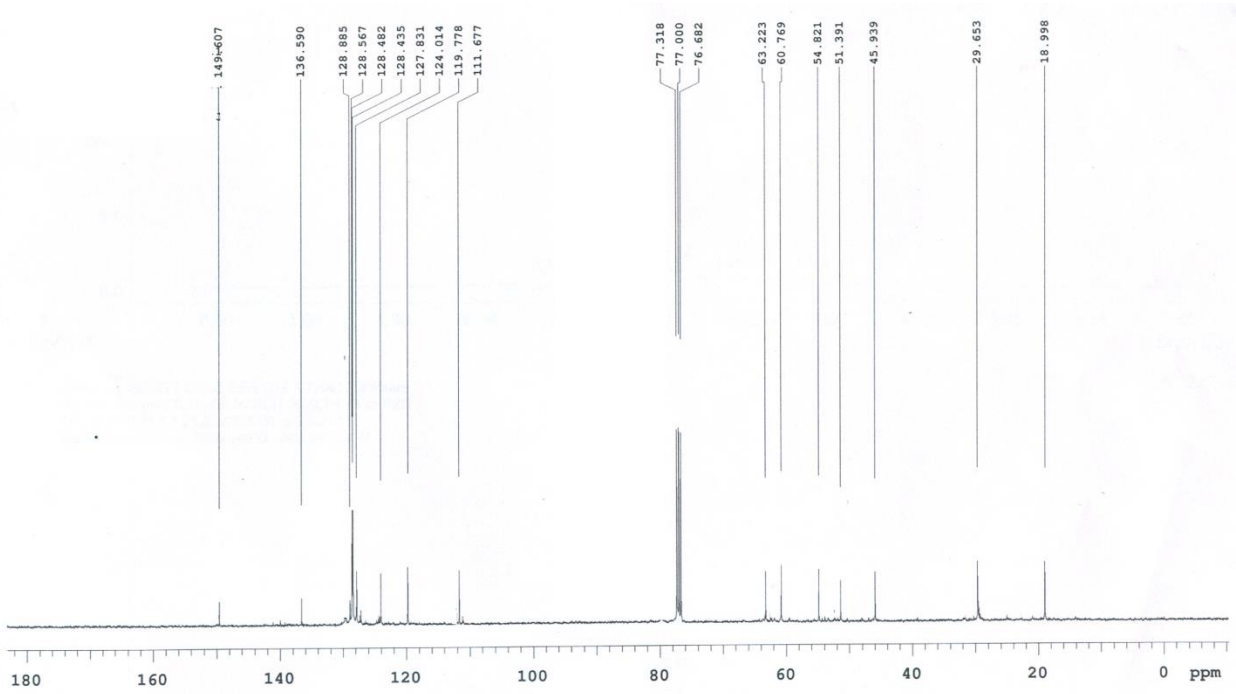
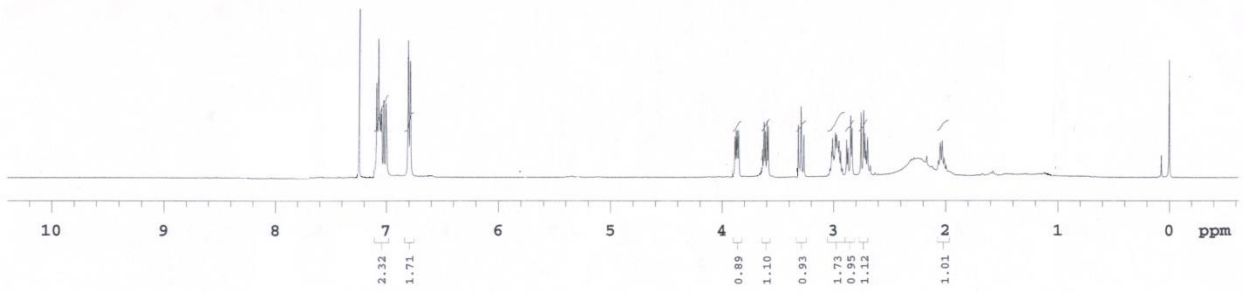
RT	Area	% Area
1 7.105	682433	2.42
2 13.698	27508018	97.58

# Compound 15a



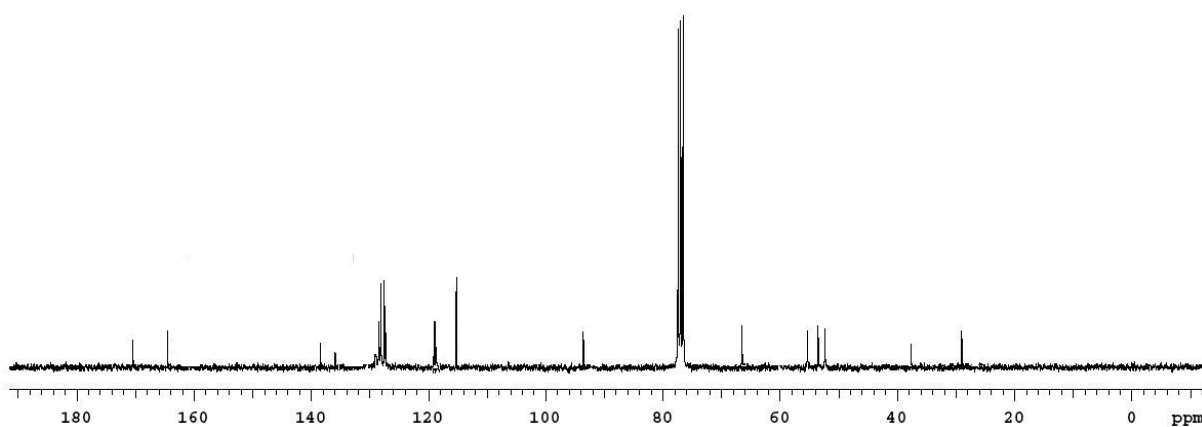
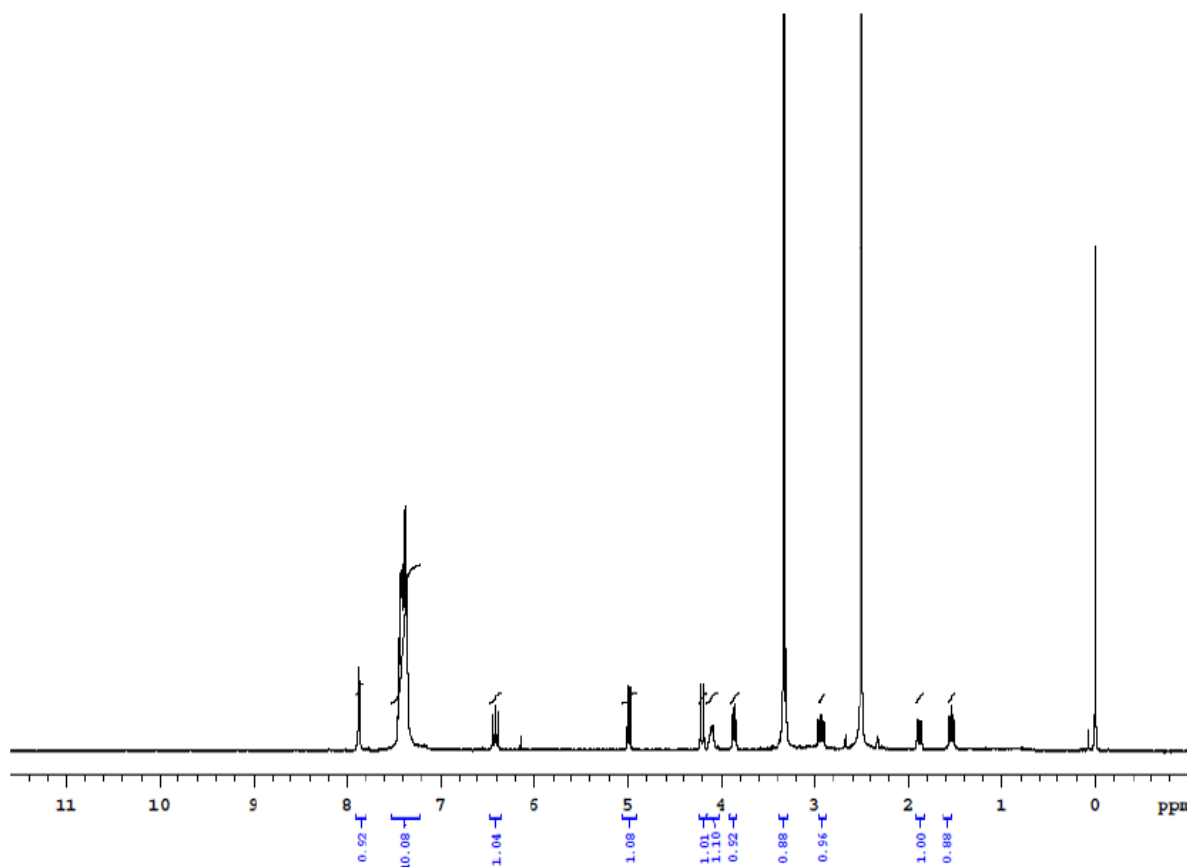
# Compound 15

7

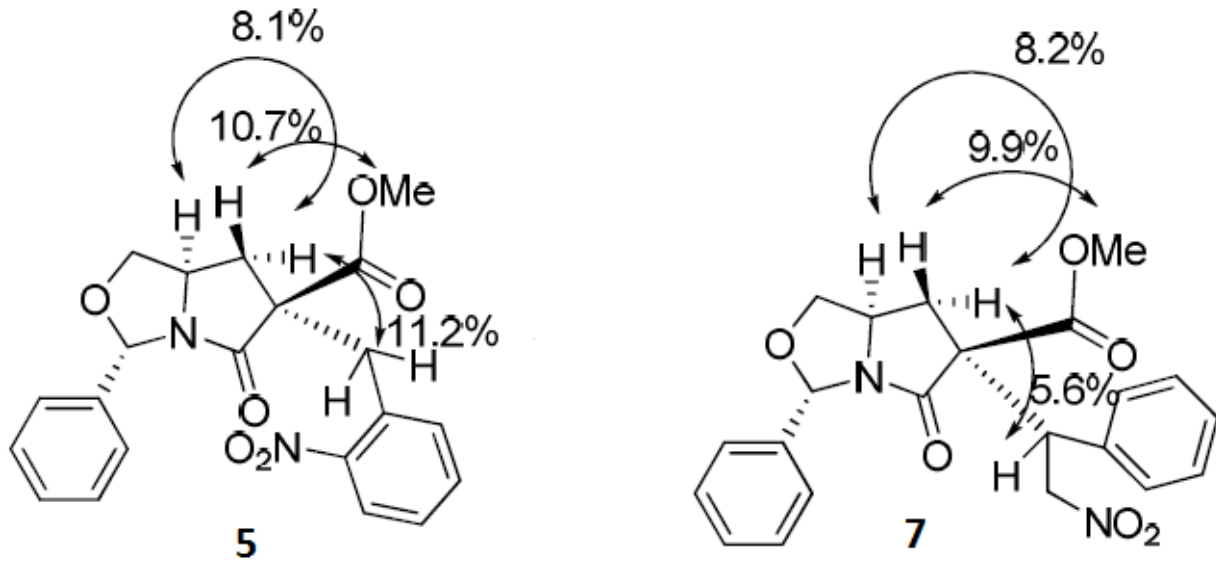




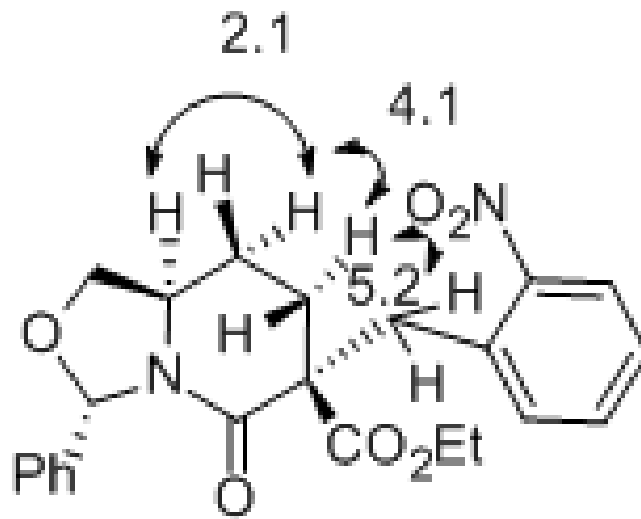
# Compound 16



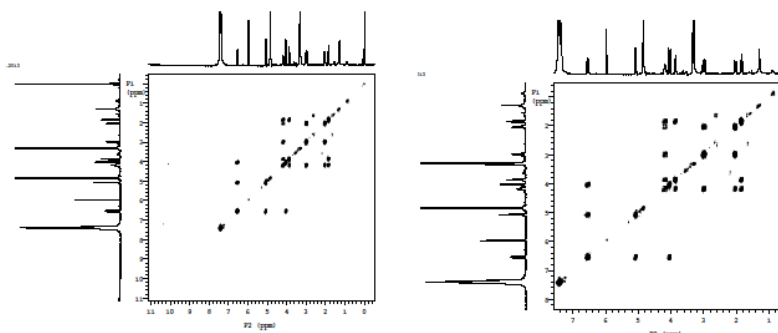
NOE of Compound 5 and 7



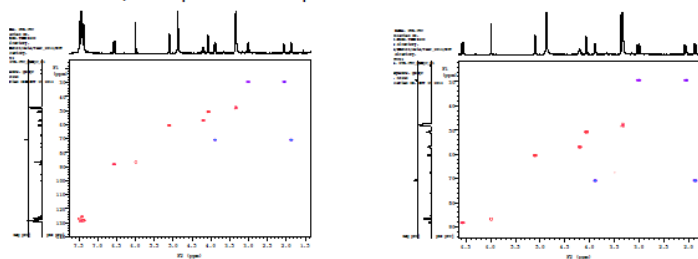
NOE of Compound 4



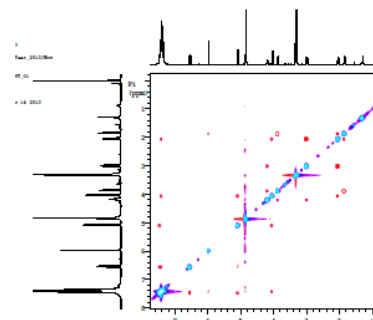
NOE of Compound **11** (also refer the NOESY, DQCOSY and HSQC data below)



DQCOSY plots of Compound **11**



HSQC plots of Compound **11**



NOESY plot of Compound **11**