

Concise Catalytic Asymmetric Total Syntheses of Ancistrocladinium A and Its Atropdiastereomer

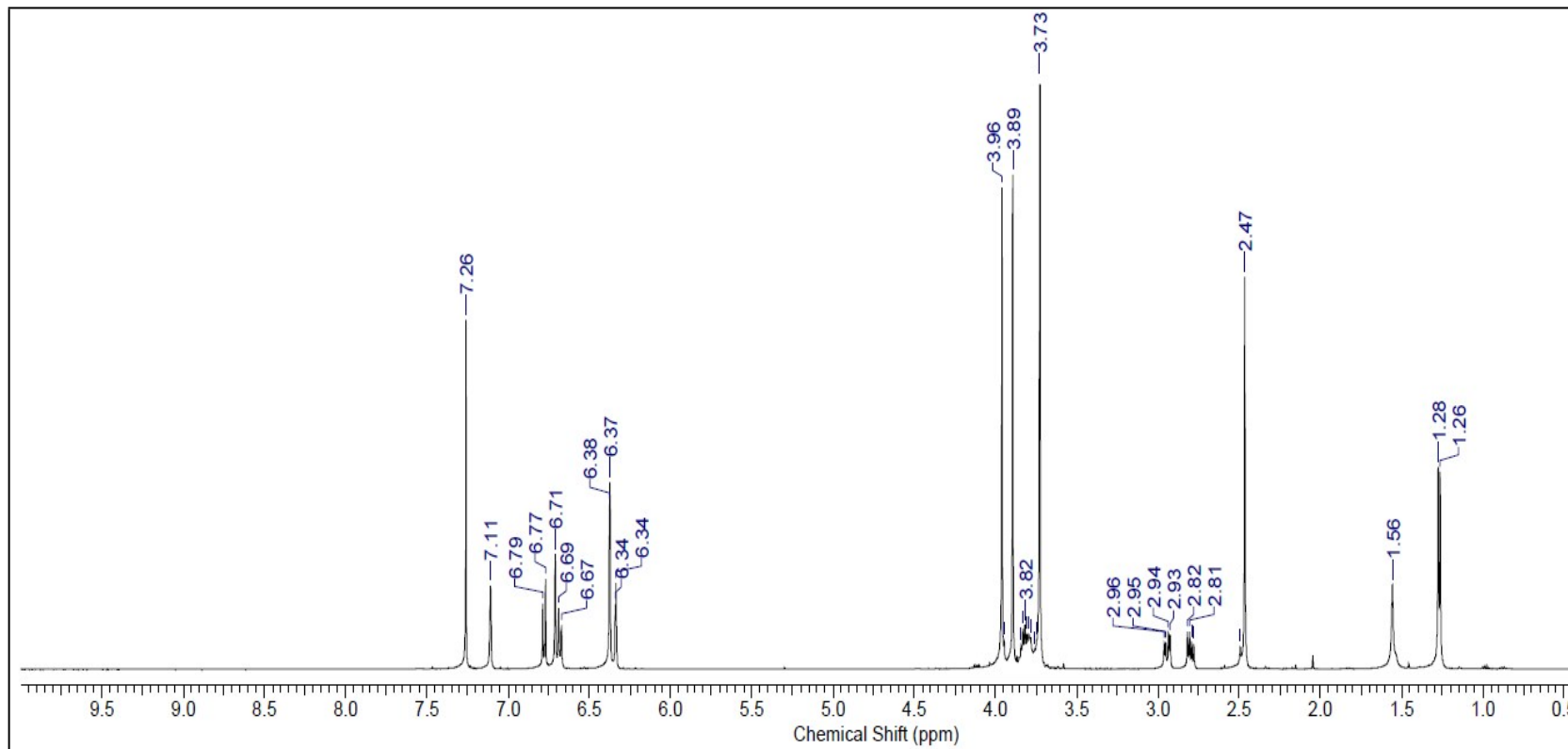
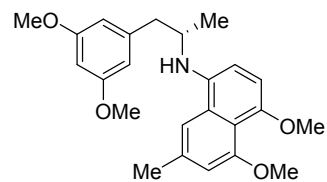
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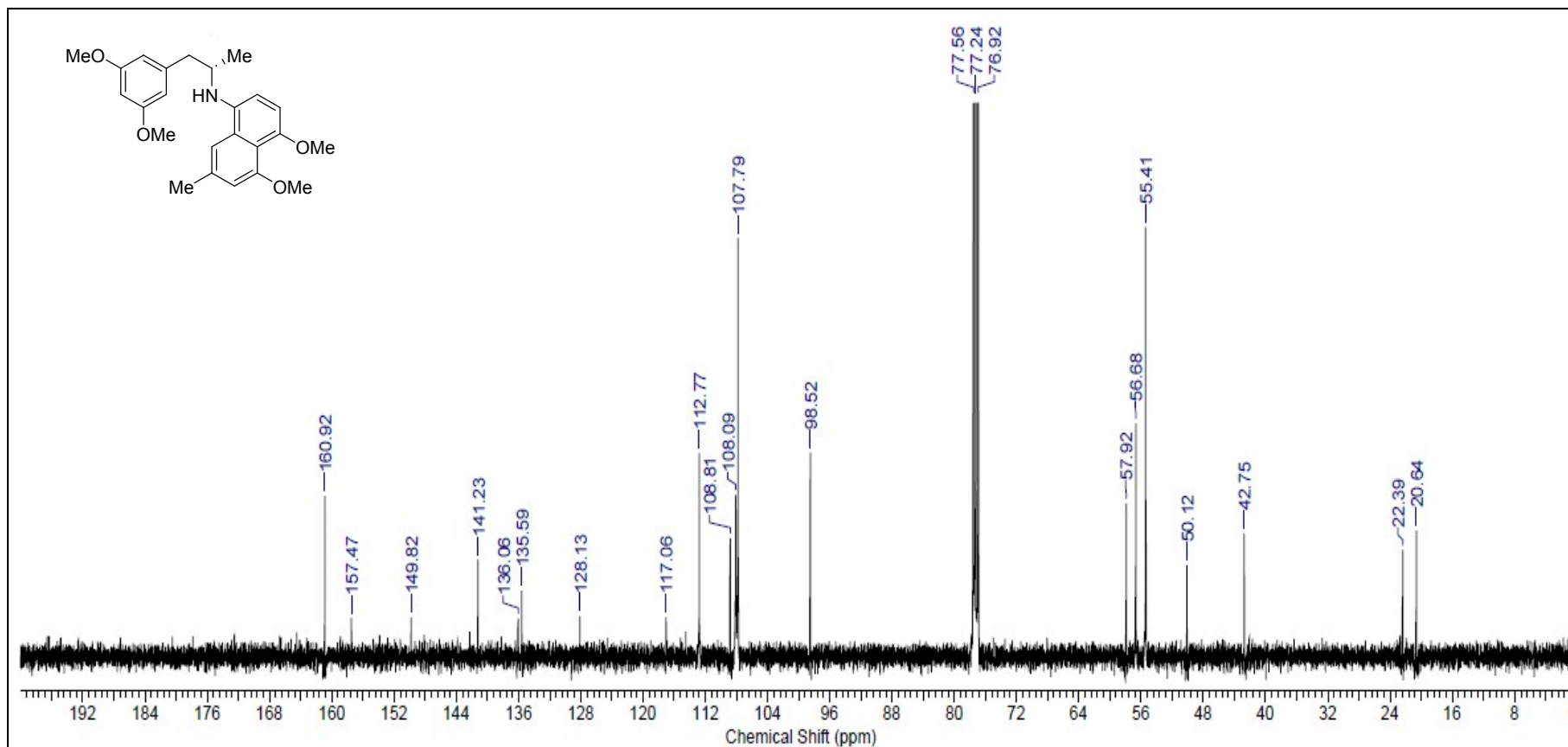
1. Spectroscopic Data

1-1. Spectroscopic Data of 3

a) ¹H NMR Spectrum of 3

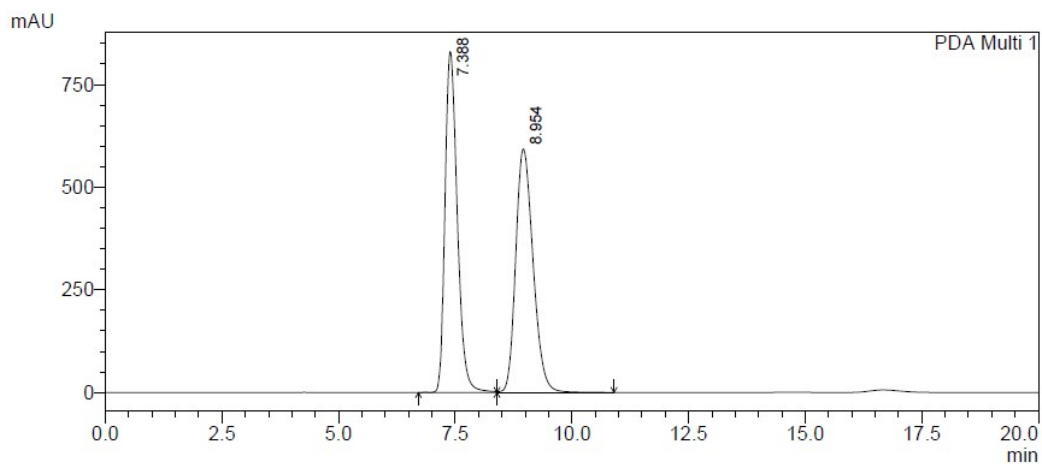


b) ^{13}C NMR Spectrum of 3



c) HPLC data of 3

rac-3

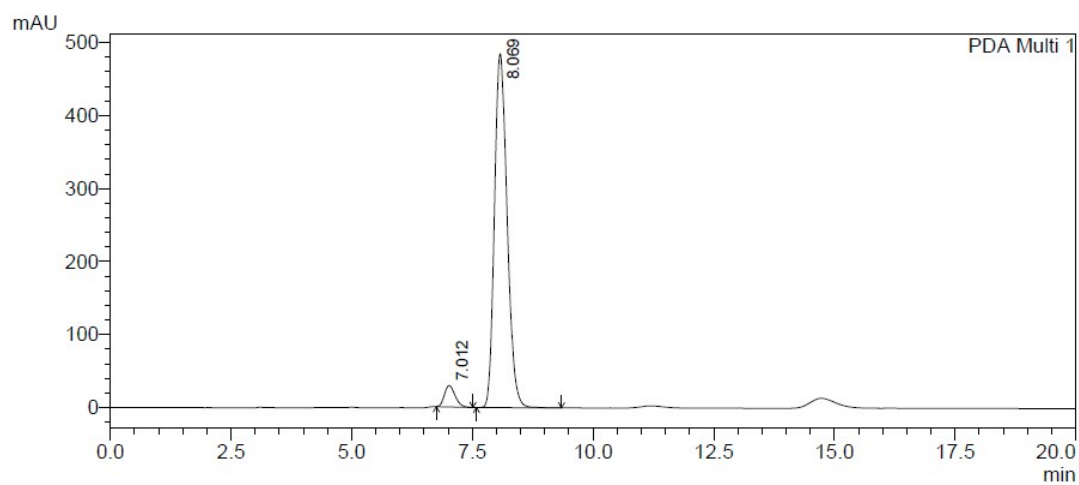


PeakTable

PDA Ch1 339nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.388	15192172	830370	49.725	58.325
2	8.954	15359986	593326	50.275	41.675
Total		30552158	1423696	100.000	100.000

(S)-3



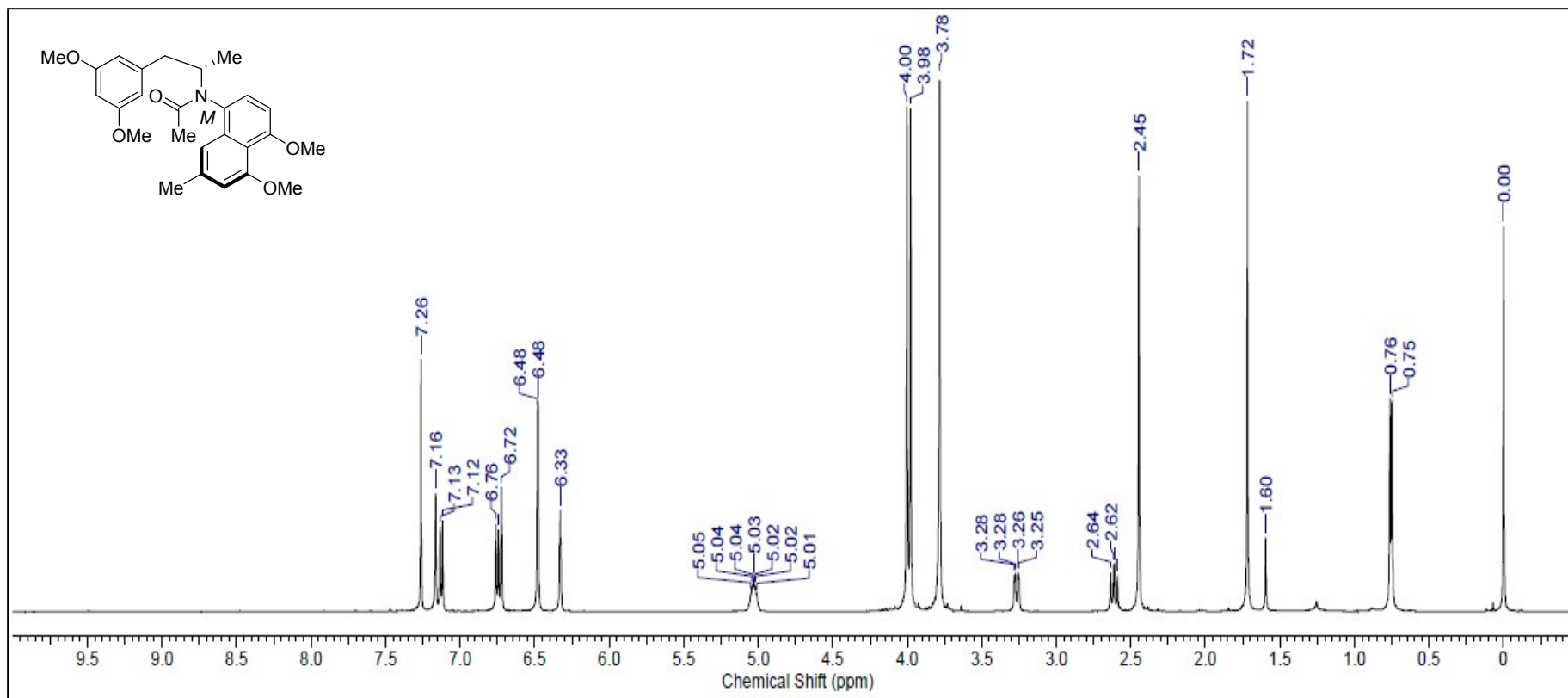
PeakTable

PDA Ch1 339nm 4nm

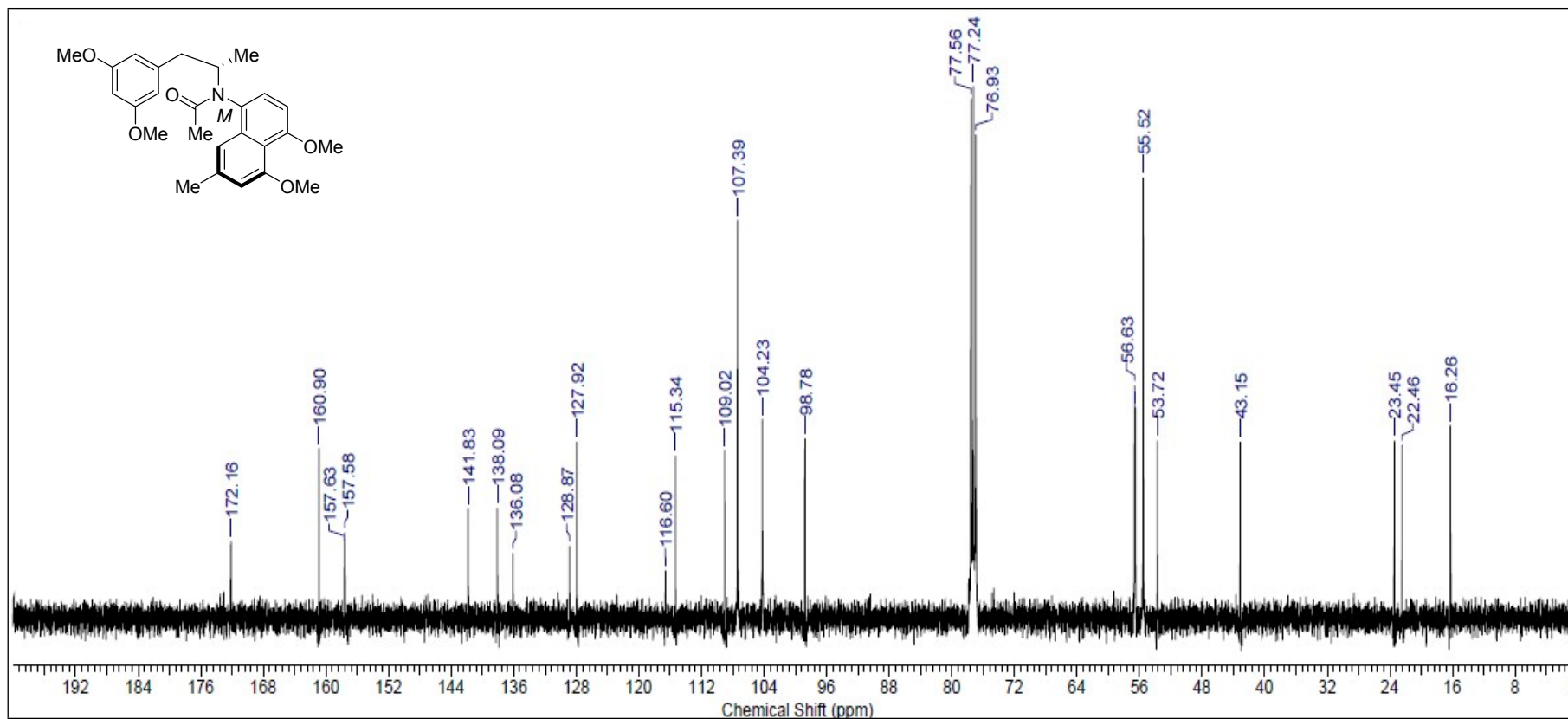
Peak#	Ret. Time	Area	Height	Area %	Height %
1	7.012	453071	29529	4.859	5.739
2	8.069	8871156	484963	95.141	94.261
Total		9324227	514492	100.000	100.000

1-2. Spectroscopic Data of *M-2*

a) ^1H NMR Spectrum of *M-2*

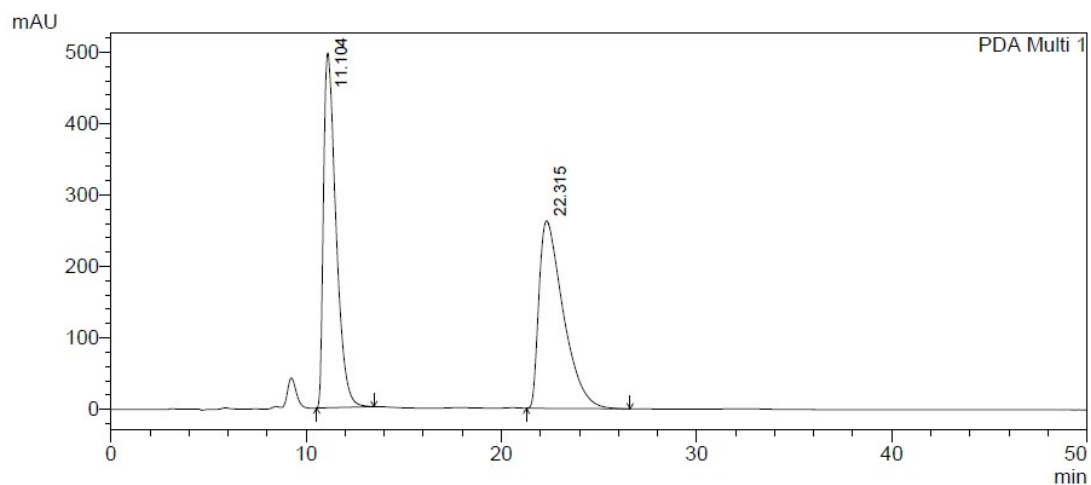


b) ¹³C NMR Spectrum of M-2



c) HPLC data of *M-2*

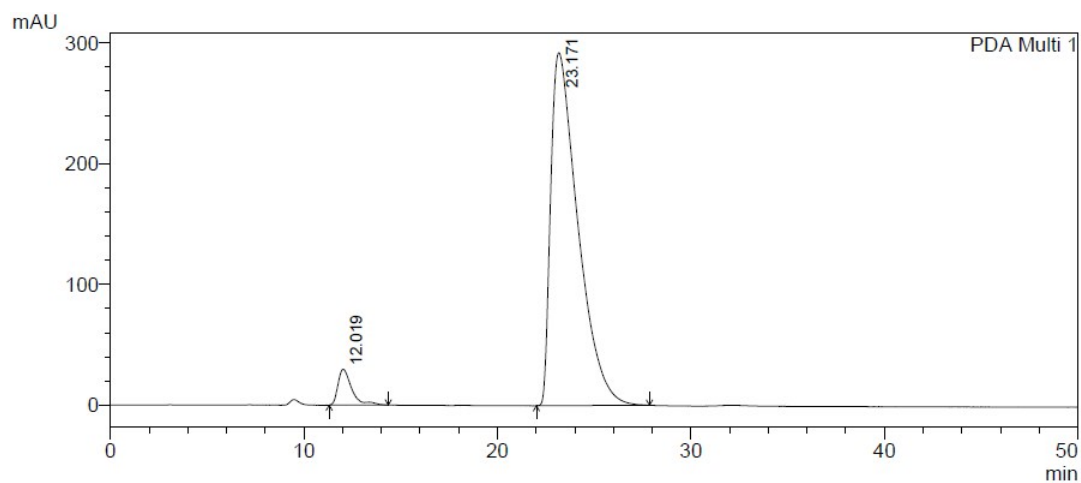
rac-M-2



PeakTable

PDA Ch1 339nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	11.104	22049832	496935	49.289	65.425
2	22.315	22685980	262616	50.711	34.575
Total		44735813	759551	100.000	100.000

(S)-M-2

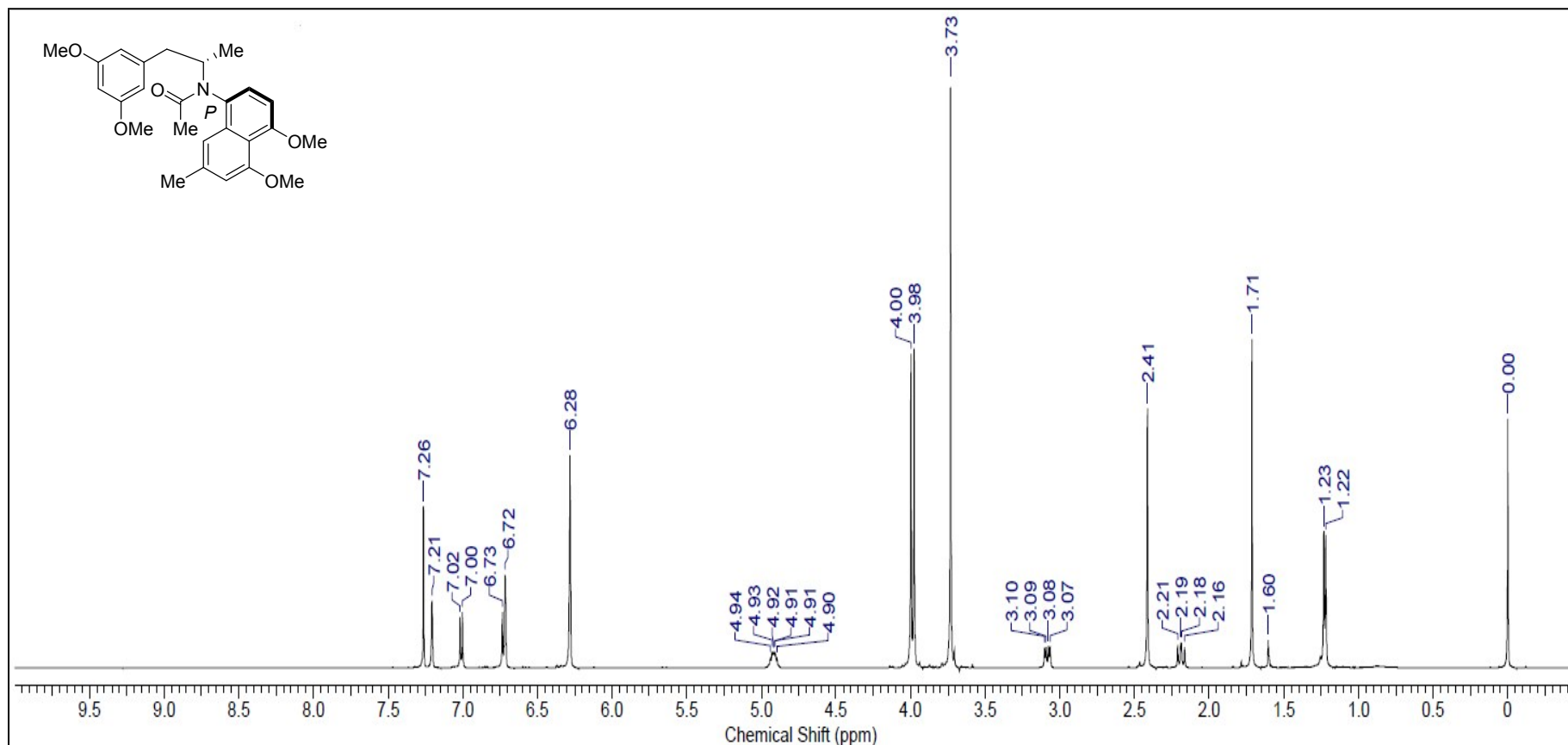


PeakTable

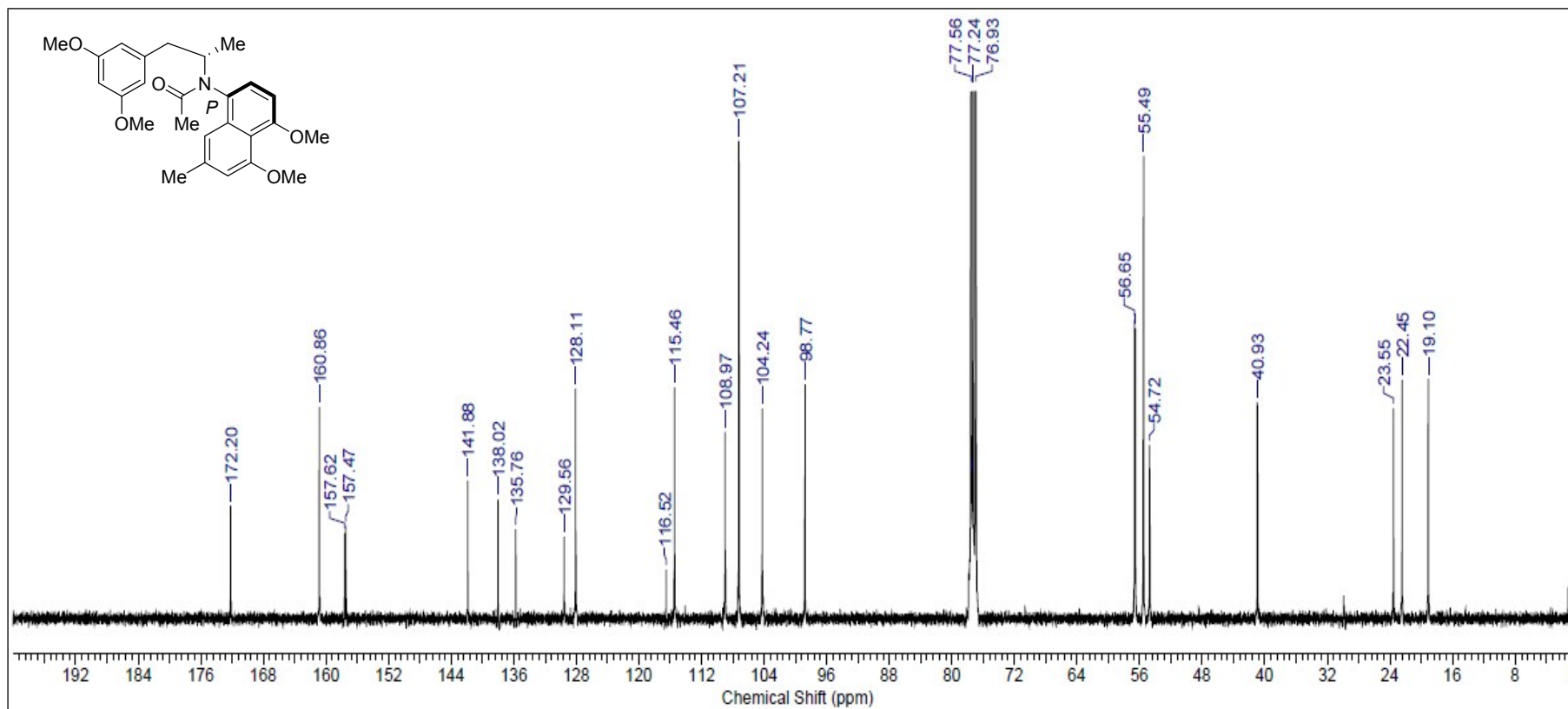
PDA Ch1 339nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	12.019	1464137	29684	4.881	9.215
2	23.171	28532022	292447	95.119	90.785
Total		29996158	322130	100.000	100.000

1-3. Spectroscopic Data of *P-2*

a) ^1H NMR Spectrum of *P-2*

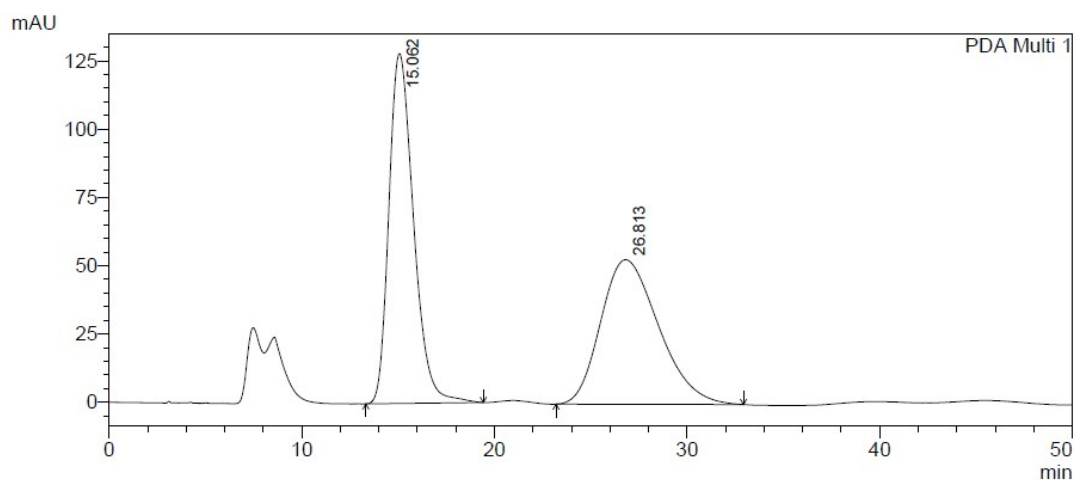


b) ¹³C NMR Spectrum of P-2



c) HPLC data of *P-2*

rac-P-2

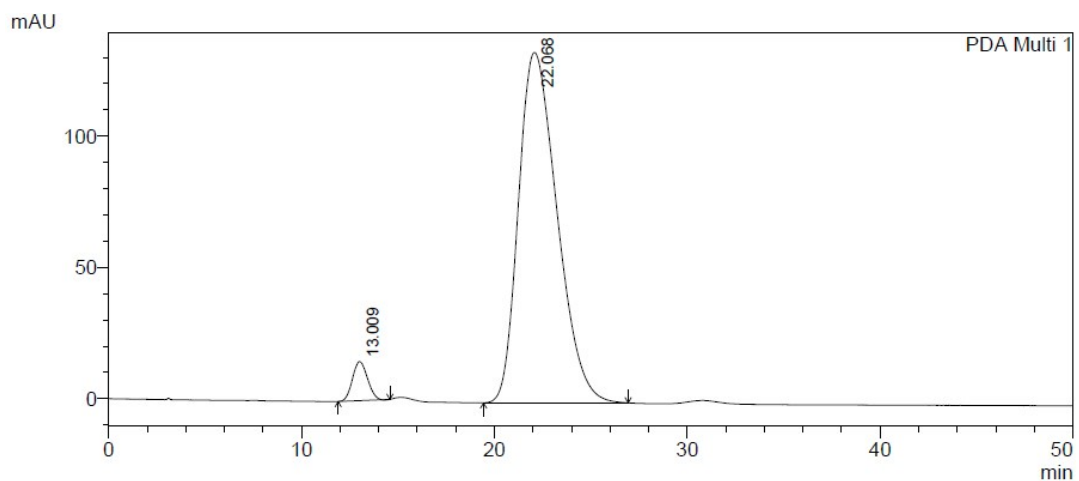


PeakTable

PDA Ch1 339nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	15.062	11411356	128168	50.739	70.759
2	26.813	11078788	52965	49.261	29.241
Total		22490144	181133	100.000	100.000

(S)-P-2



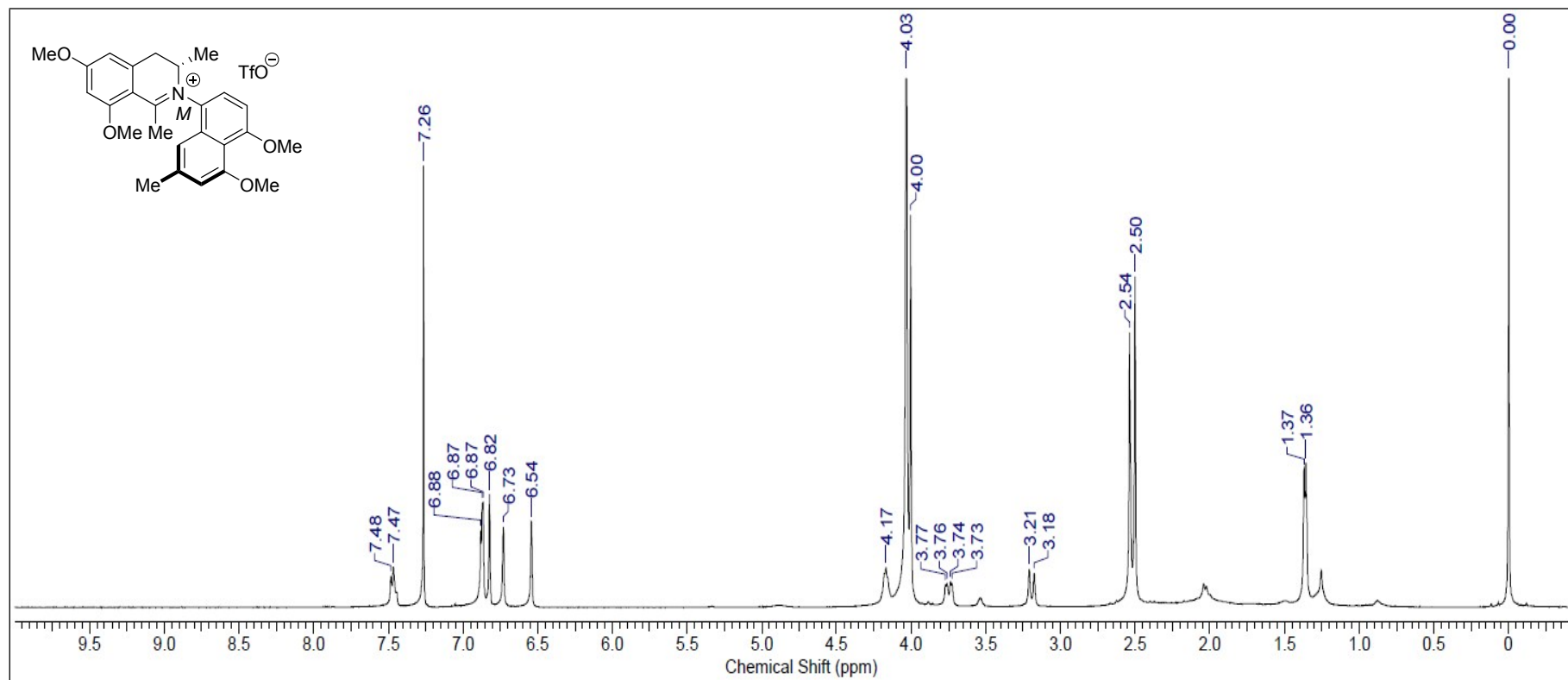
PeakTable

PDA Ch1 339nm 4nm

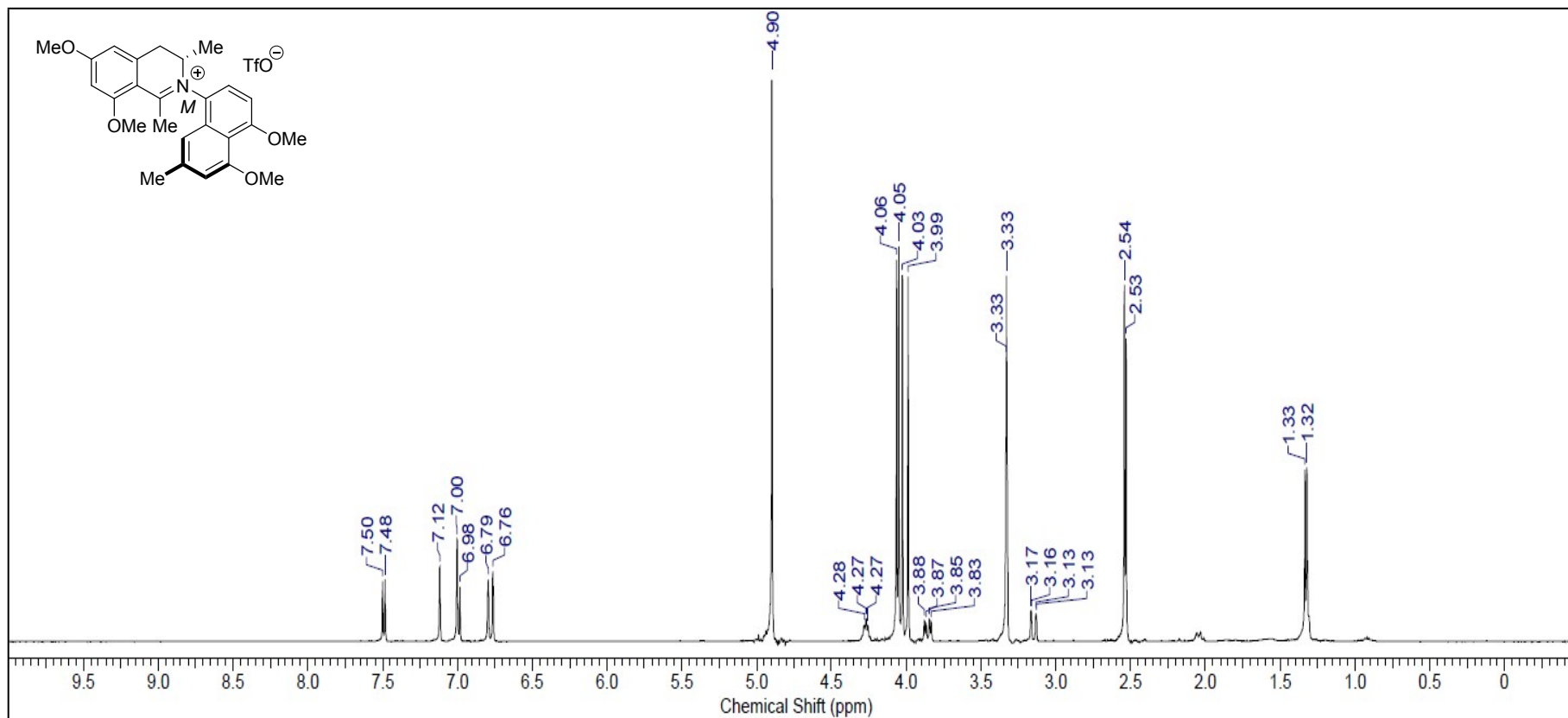
Peak#	Ret. Time	Area	Height	Area %	Height %
1	13.009	802492	14885	4.133	10.034
2	22.068	18613687	133460	95.867	89.966
Total		19416179	148344	100.000	100.000

1-4. Spectroscopic Data of Ancistrocladinium A (*M-1*)

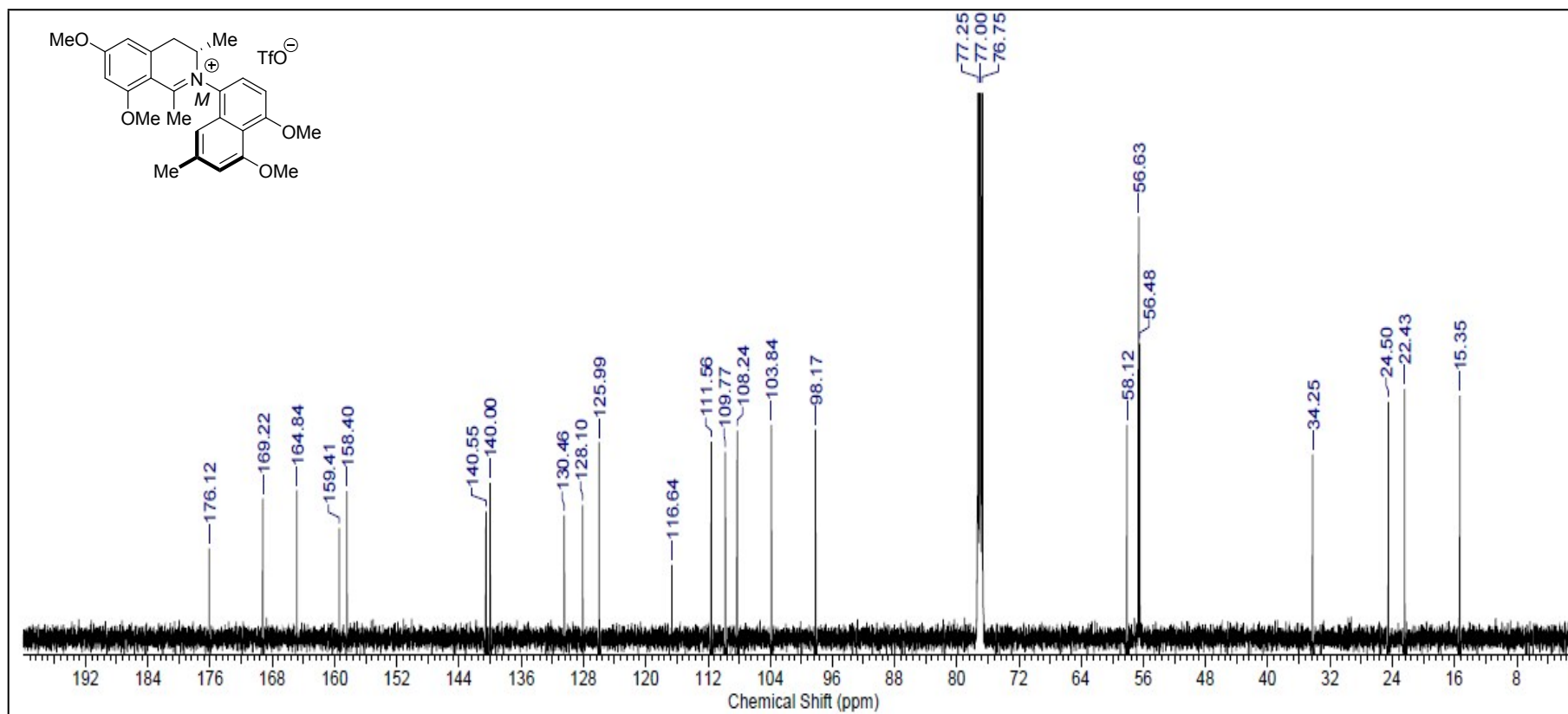
a) ¹H NMR Spectrum of *M-1* (solvent; CDCl₃)



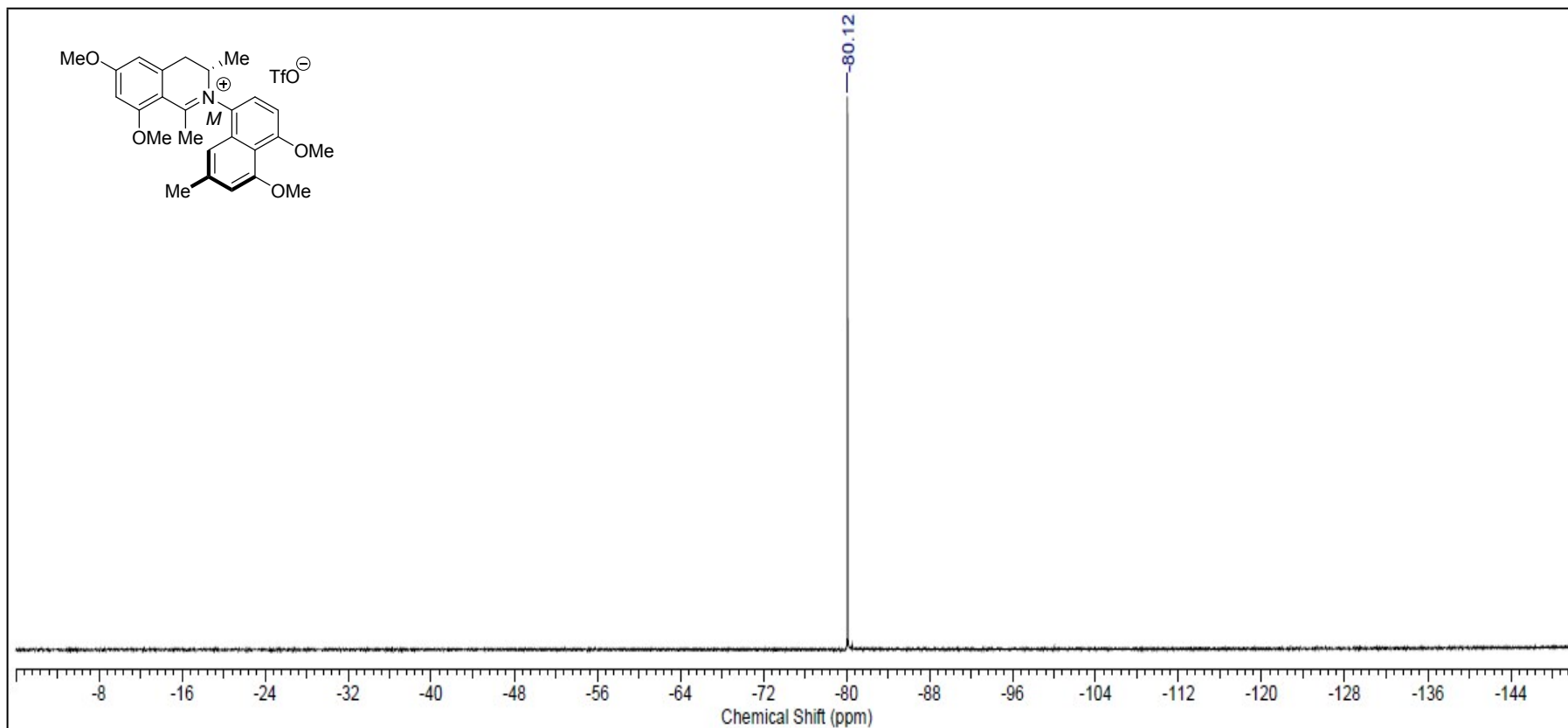
b) ¹H NMR Spectrum of *M*-1 (solvent; CD₃OD)



c) ¹³C NMR Spectrum of *M*-1 (solvent; CDCl₃)

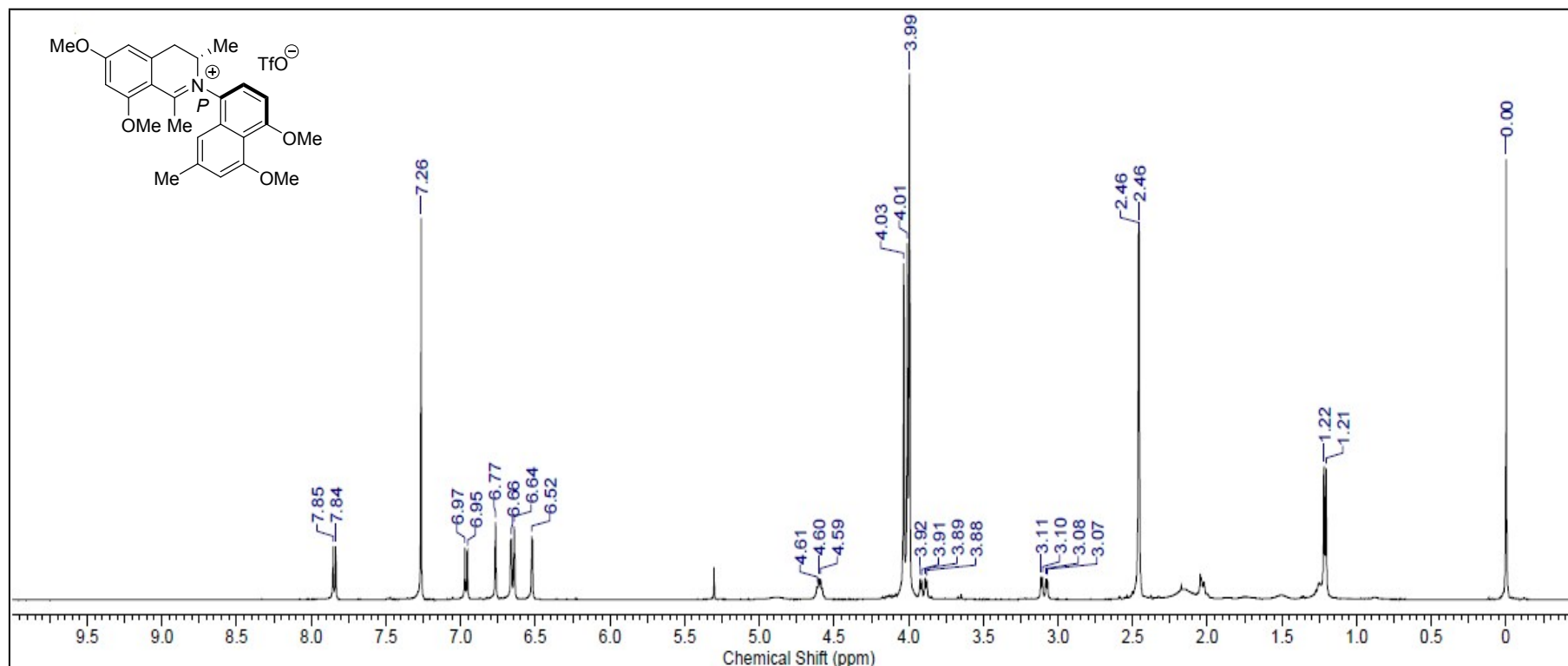


d) ^{19}F NMR Spectrum of *M*-1 (solvent; CD_3OD)

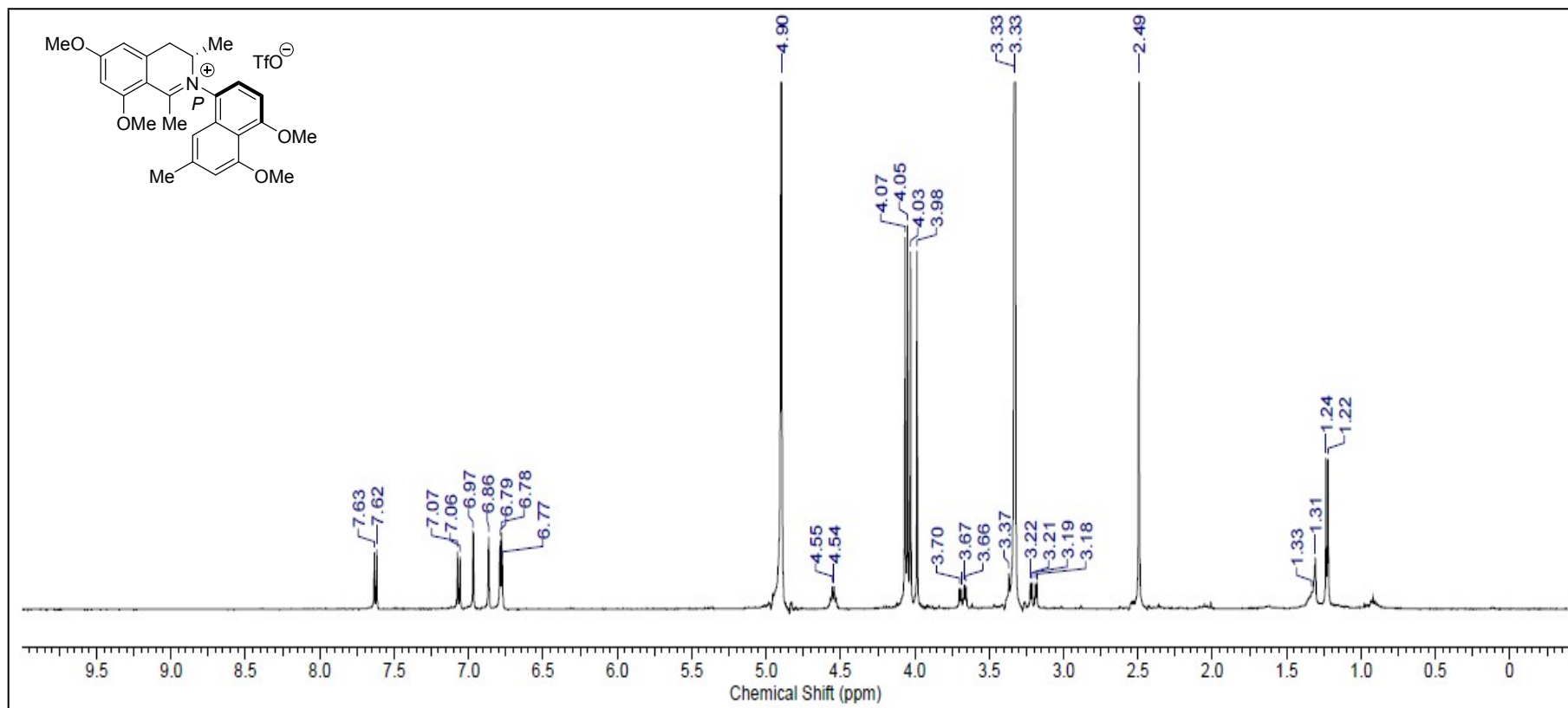


1-5. Spectroscopic Data of Atropodiastereomer (*P*-1)

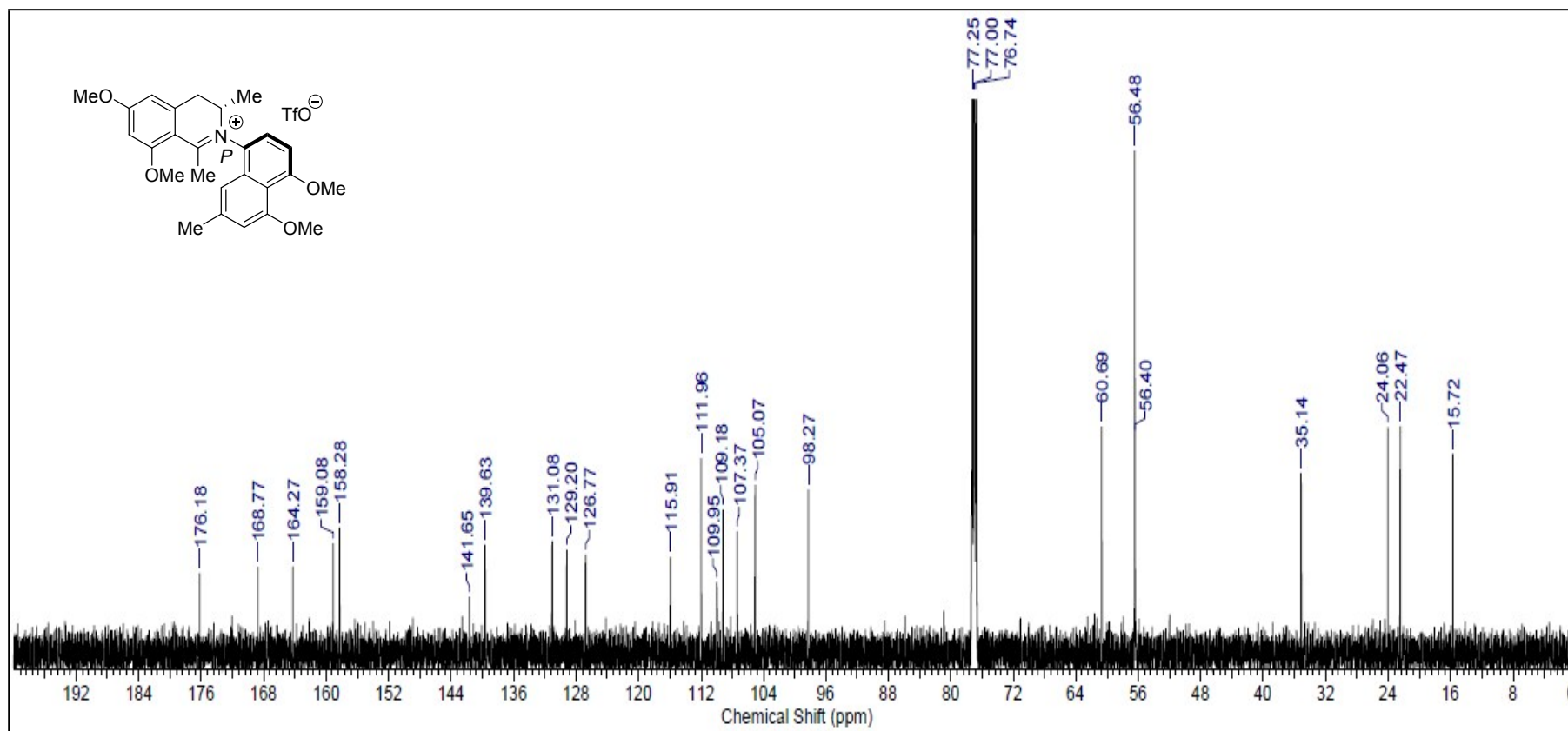
a) ¹H NMR Spectrum of *P*-1 (solvent; CDCl₃)



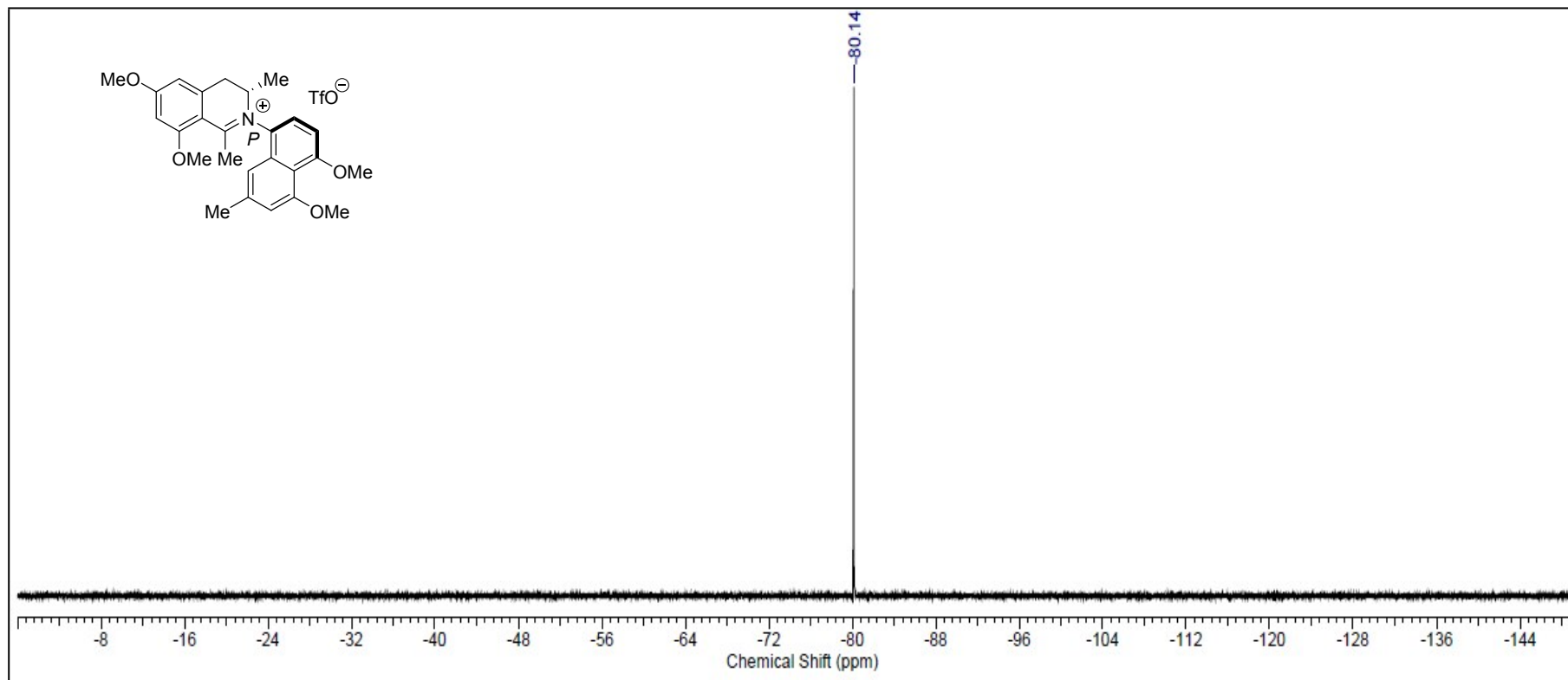
b) ¹H NMR Spectrum of *P*-1 (solvent; CD₃OD)



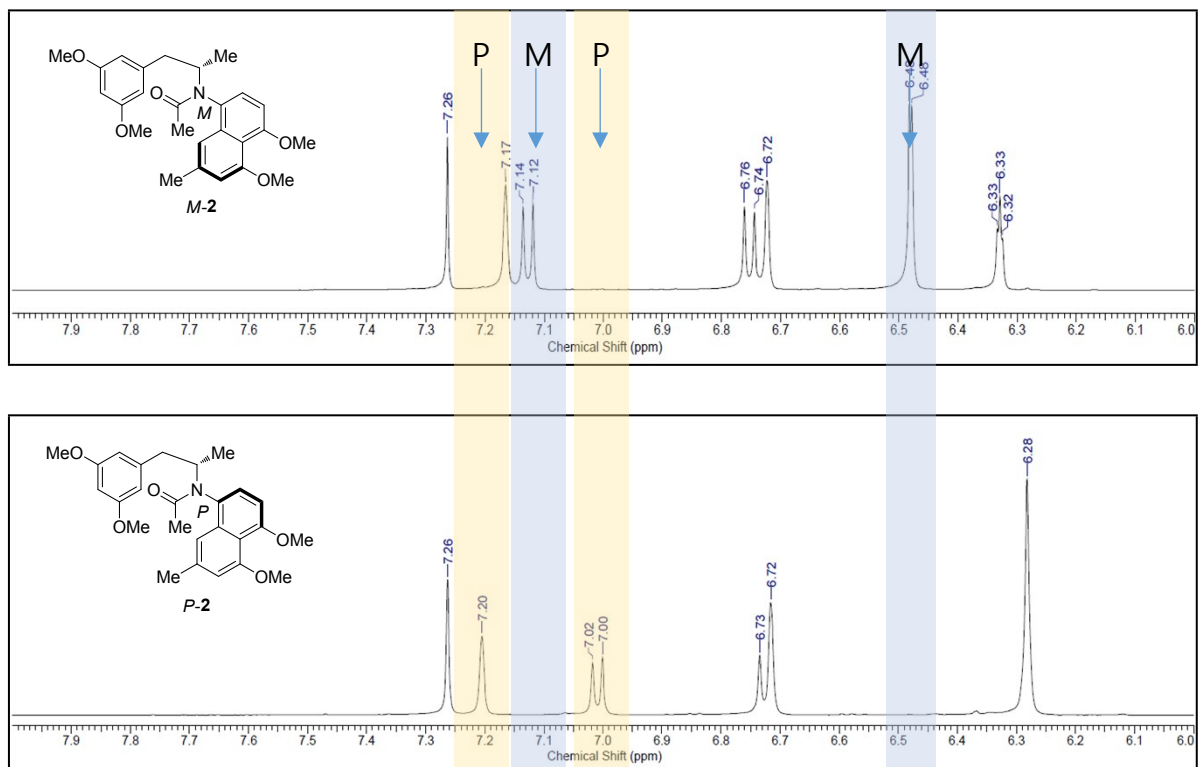
c) ¹³C NMR Spectrum of *P*-1 (solvent; CDCl₃)



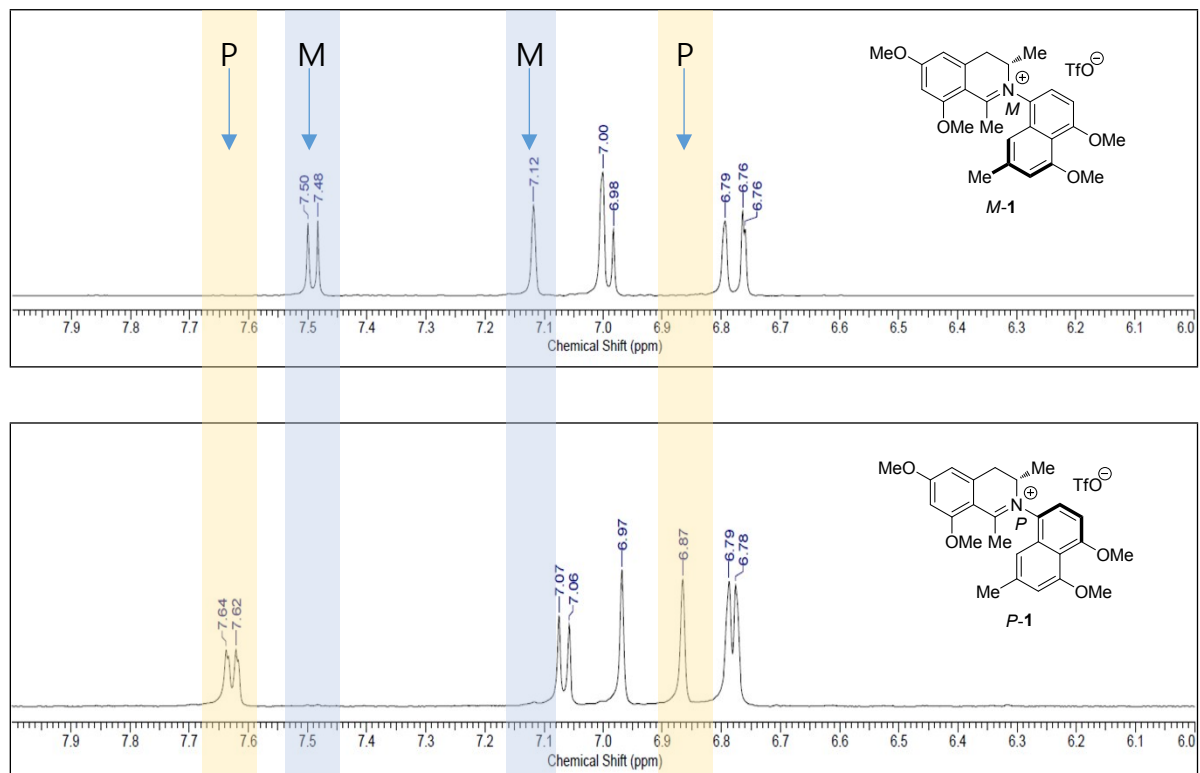
d) ^{19}F NMR Spectrum of *P*-1 (solvent; MeOD)



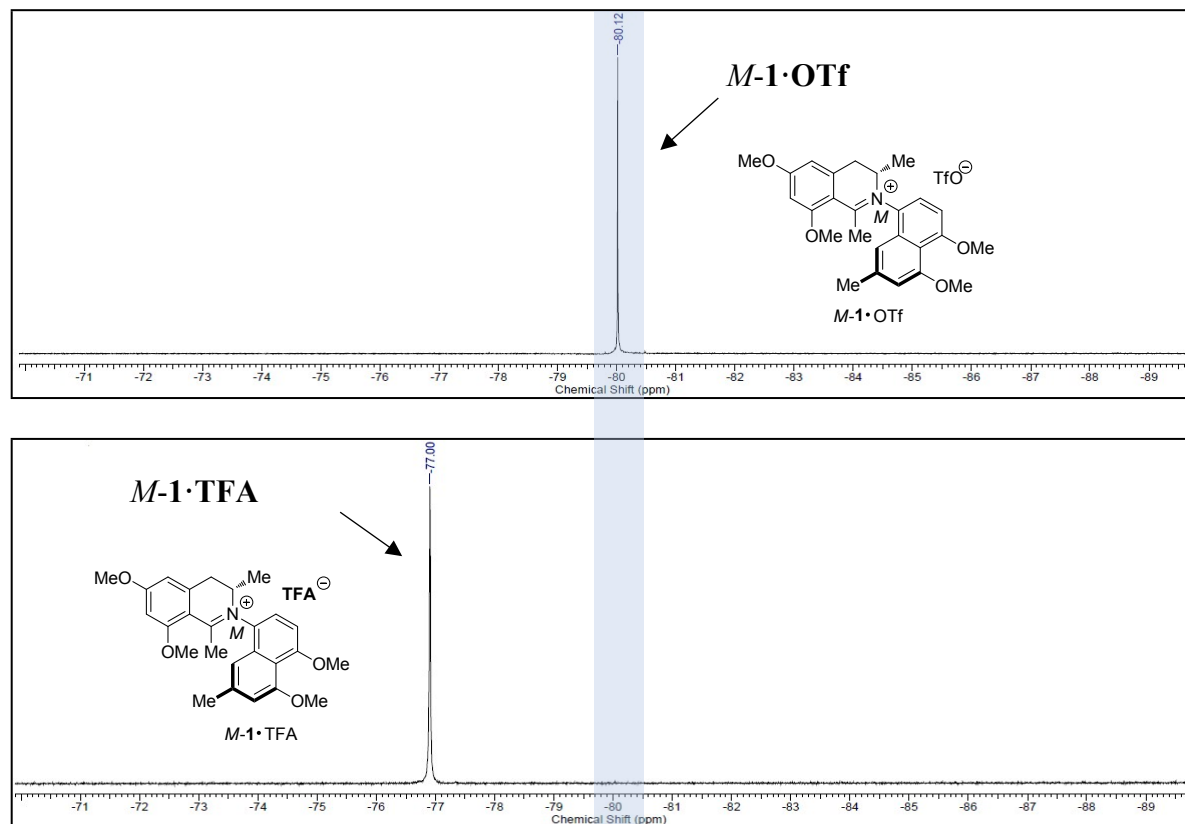
1-6. Comparison of NMR Spectra of Tertiary Amides (*M-2* and *P-2*)



1-7. Comparison of NMR Spectra of Ancistrocladinium A (*M*-1) and Atropdiastereomer (*P*-1)

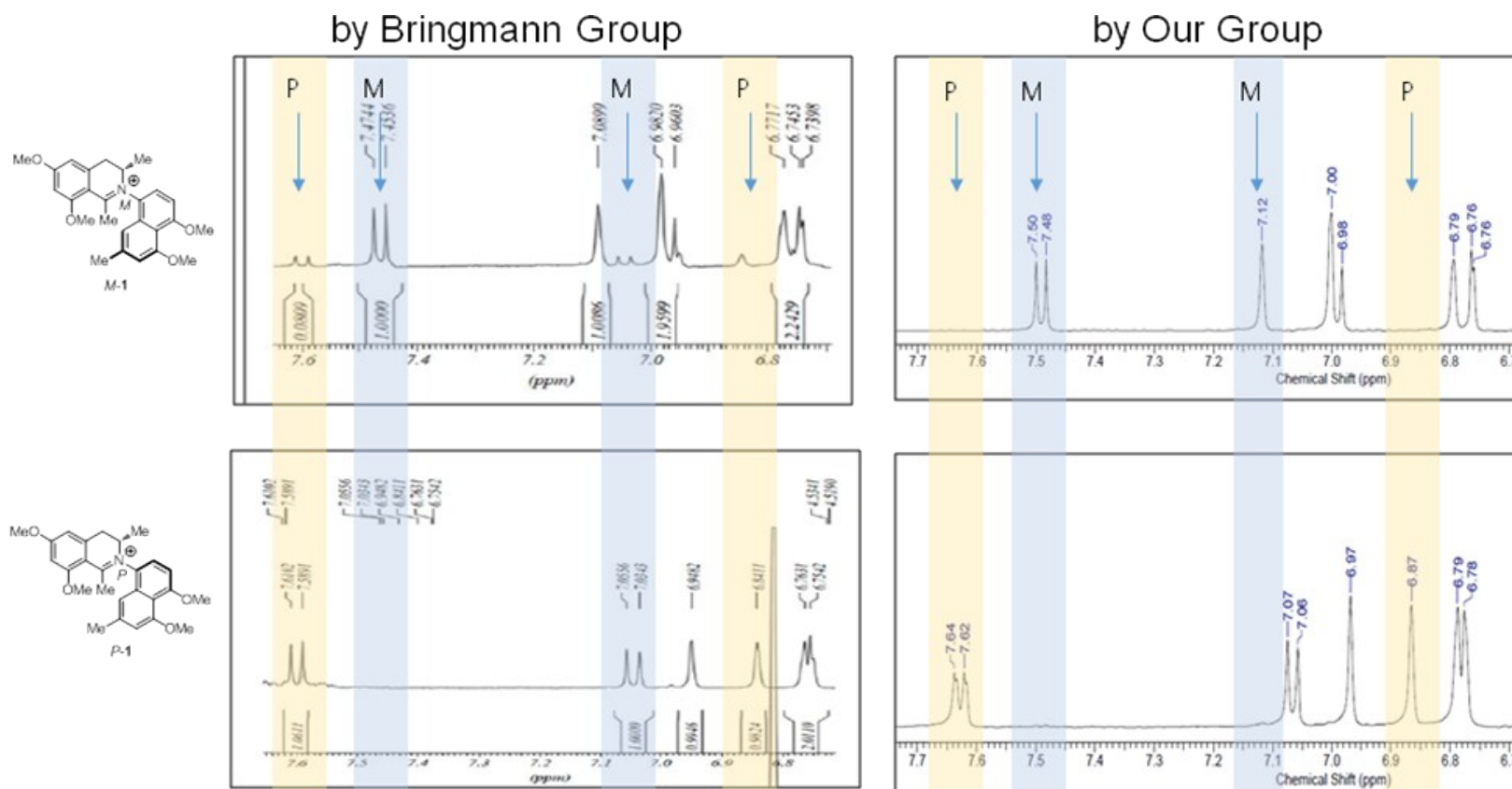


1-8. Comparison of ^{19}F NMR Spectra after Ion-exchange Chromatography

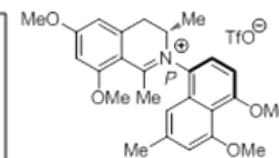
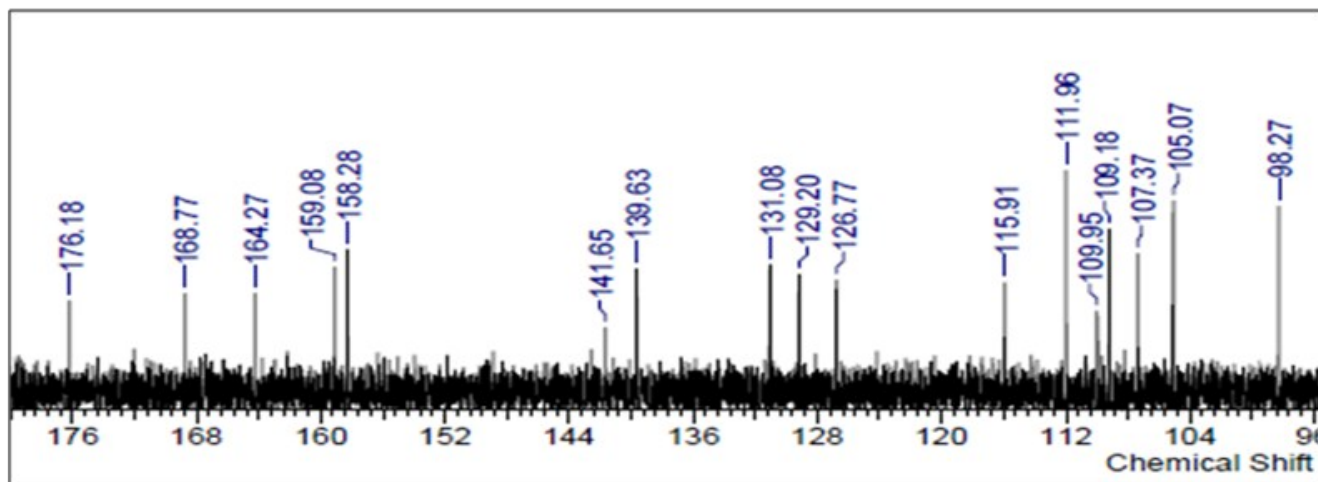


1-9. Comparison of NMR Spectra of Ancistrocladinium A (M-1) and Atropdiastereomer (P-1) between Our and Bringmann's Results

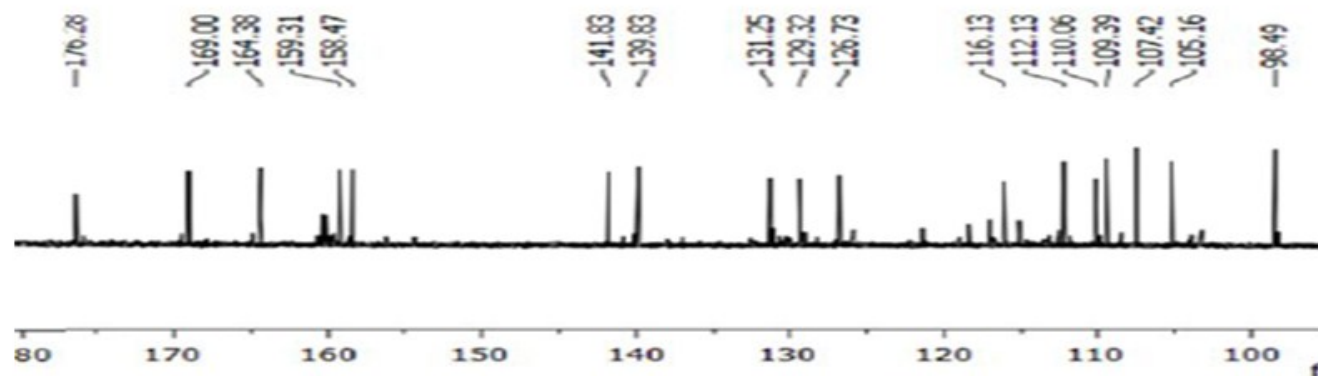
A. Comparison of ¹H NMR Spectra (in CDCl₃)



B. Comparison of ^{13}C NMR Spectra of (*P*)-Ancistrocladinium A (**P-2**) (in CDCl_3)



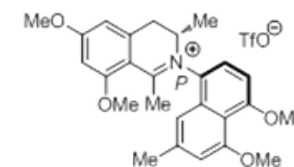
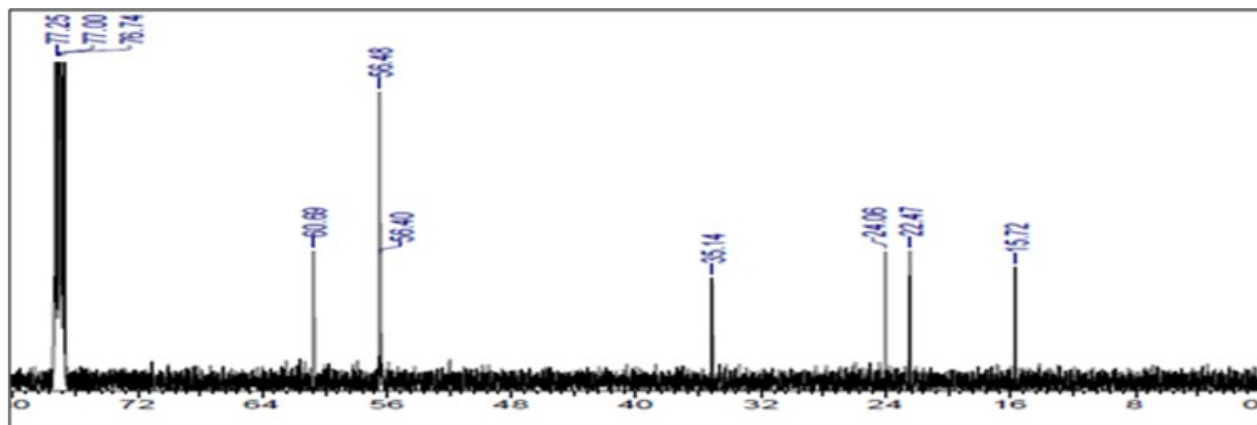
by Our Group



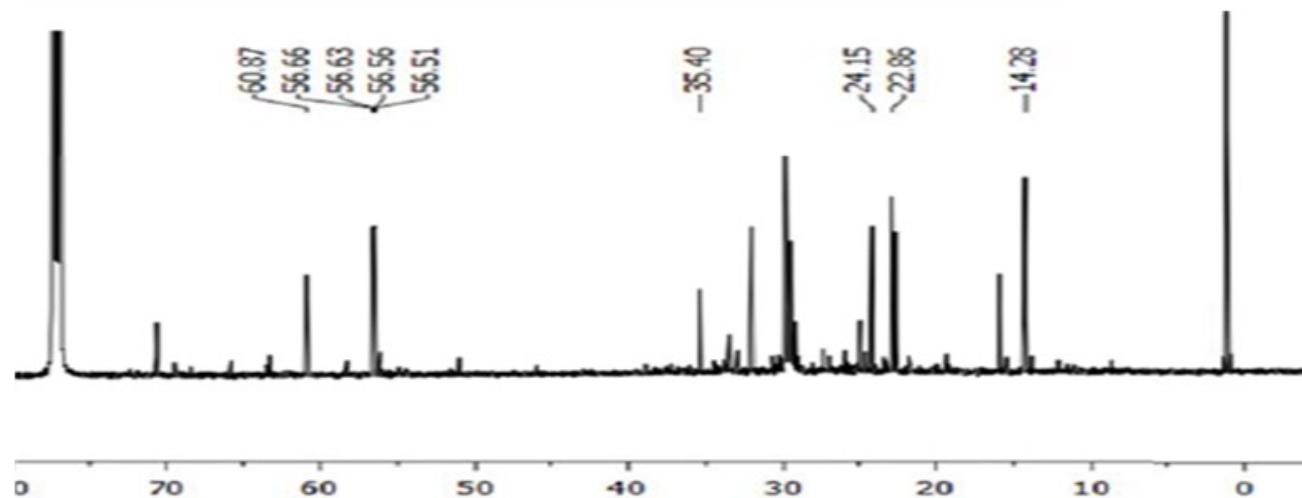
By Bringmann Group

Figure S8: ^{13}C NMR spectrum of (*P*)-Ancistrocladinium A (**3b**) in CDCl_3

C. Comparison of ^{13}C NMR Spectra of (P)-Ancistrocladinium A (P-2) (in CDCl_3)



by Our Group



by Bringmann Group