Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Suplemmentary material

Catalytic enantioselective addition of terminal alkynes to aromatic aldehydes using zinc-hydroxyamide complexes

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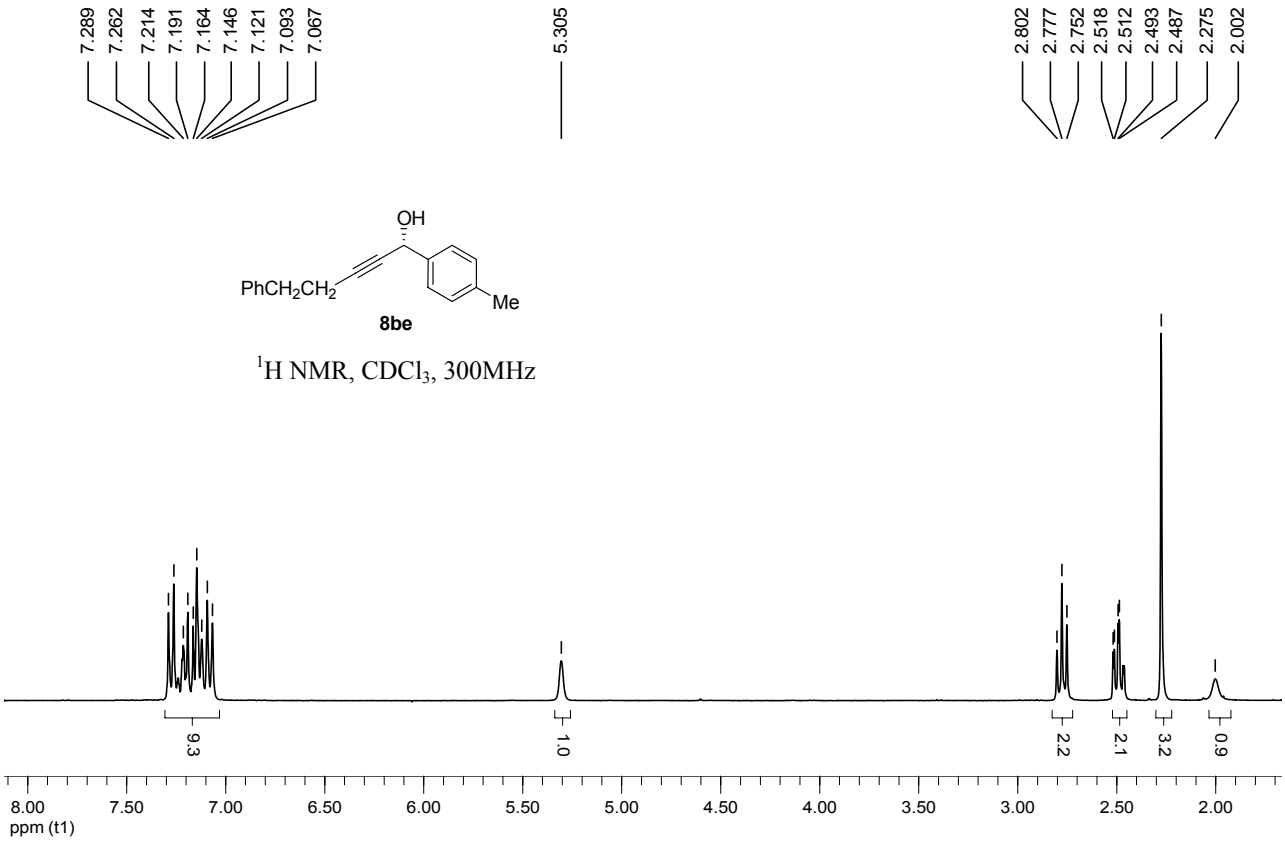
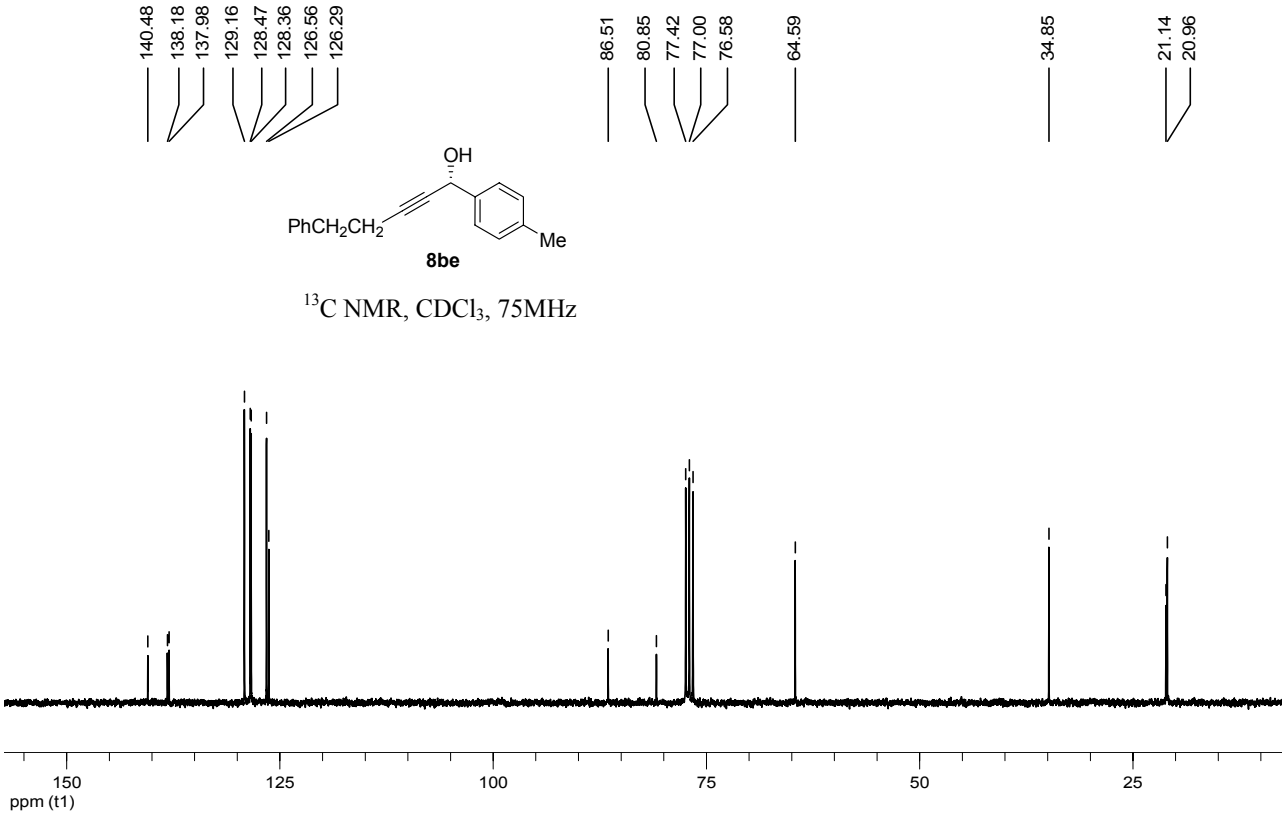
1. NMR spectra for compounds **8be, 8cd, 8ce, 8de, 8ds, 8dt, 8du** and **9**

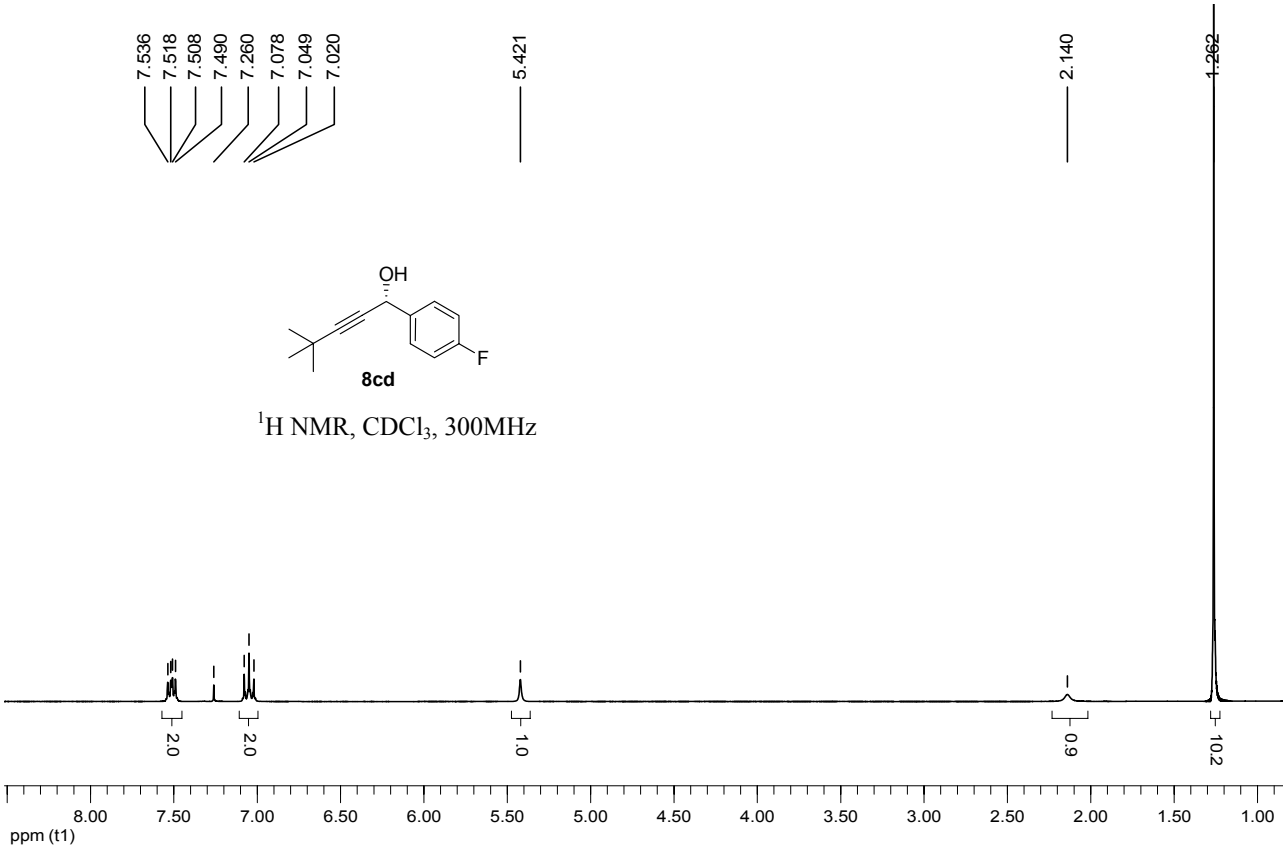
2. HPLC chromatograms for compounds **8be, 8cd, 8ce, 8de, 8ds, 8dt** and **8du**



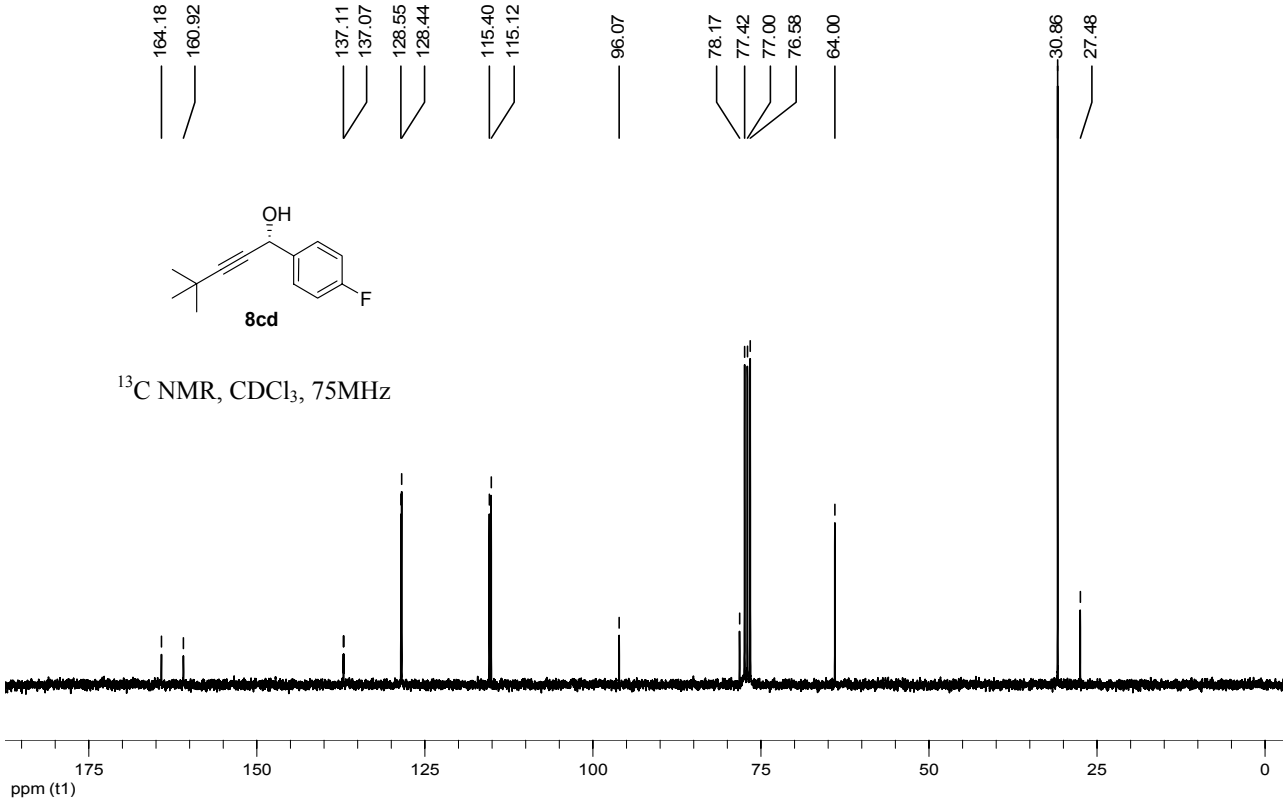
^{1}H NMR, $CDCl_3$, 300MHz



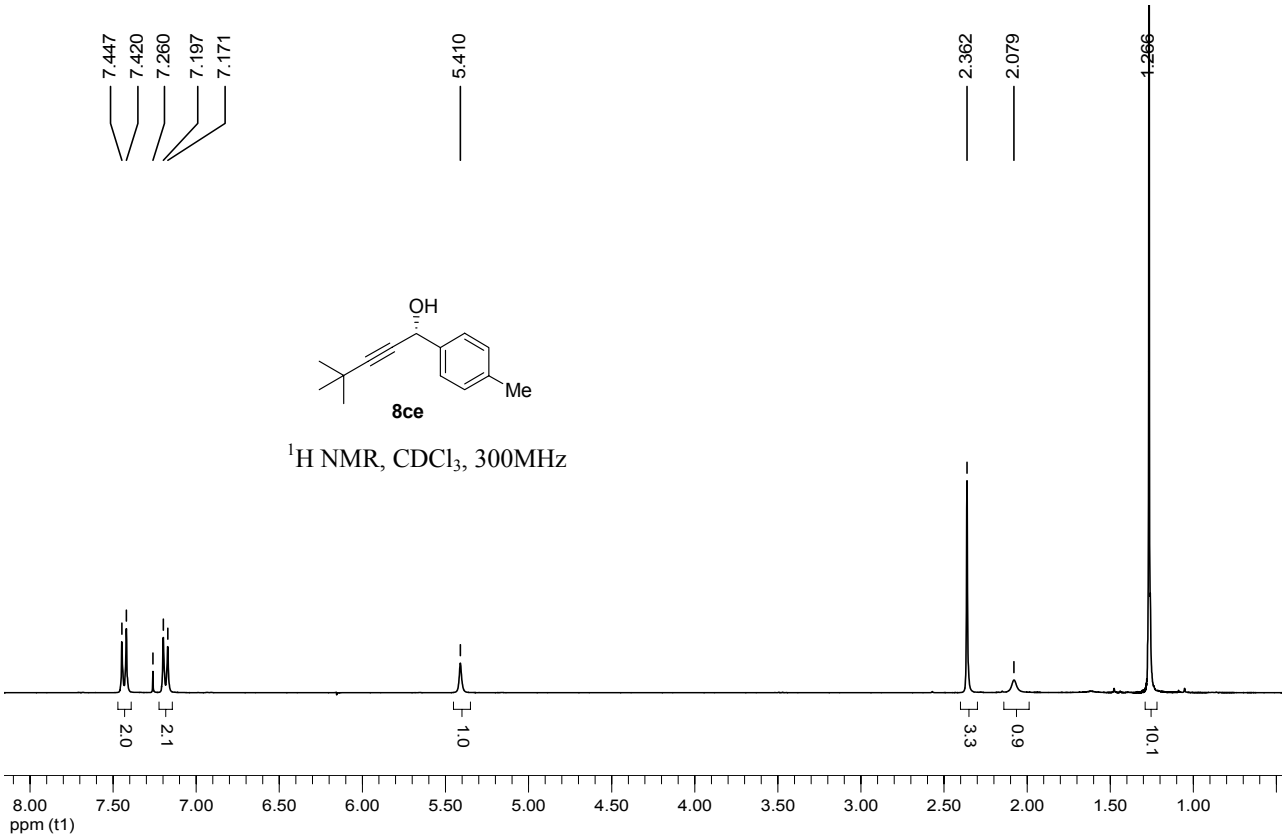
^{13}C NMR, $CDCl_3$, 75MHz



^{1}H NMR, $CDCl_3$, 300MHz

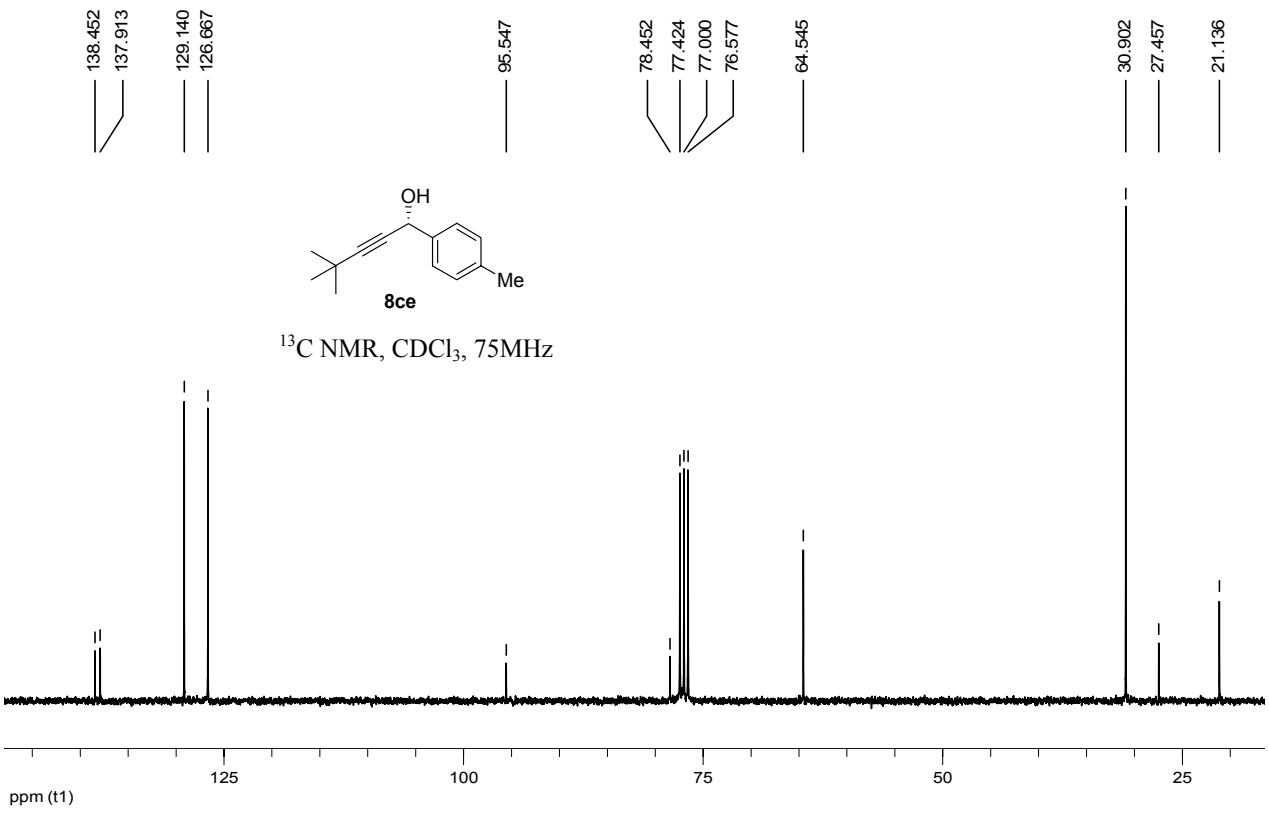


^{13}C NMR, $CDCl_3$, 75MHz



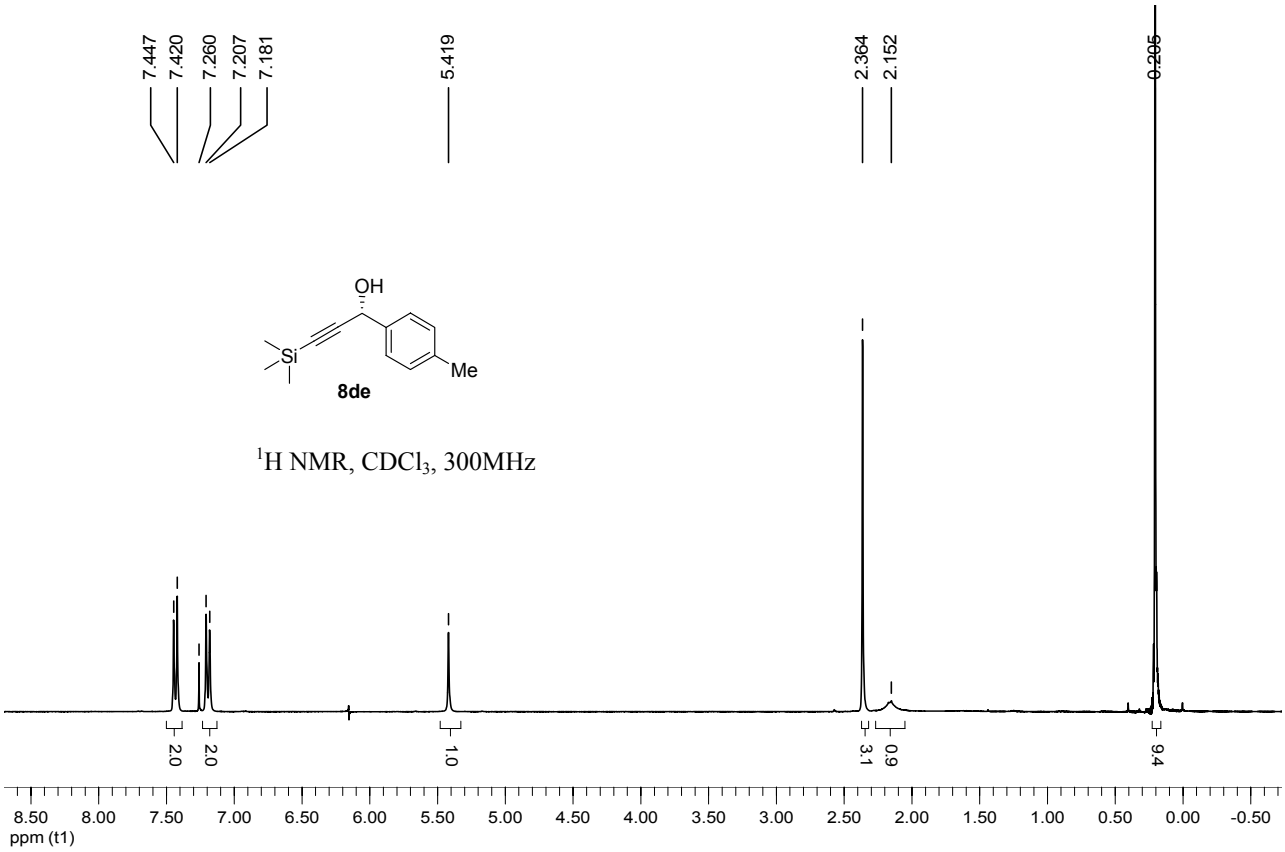
8ce

^{1}H NMR, $CDCl_3$, 300MHz



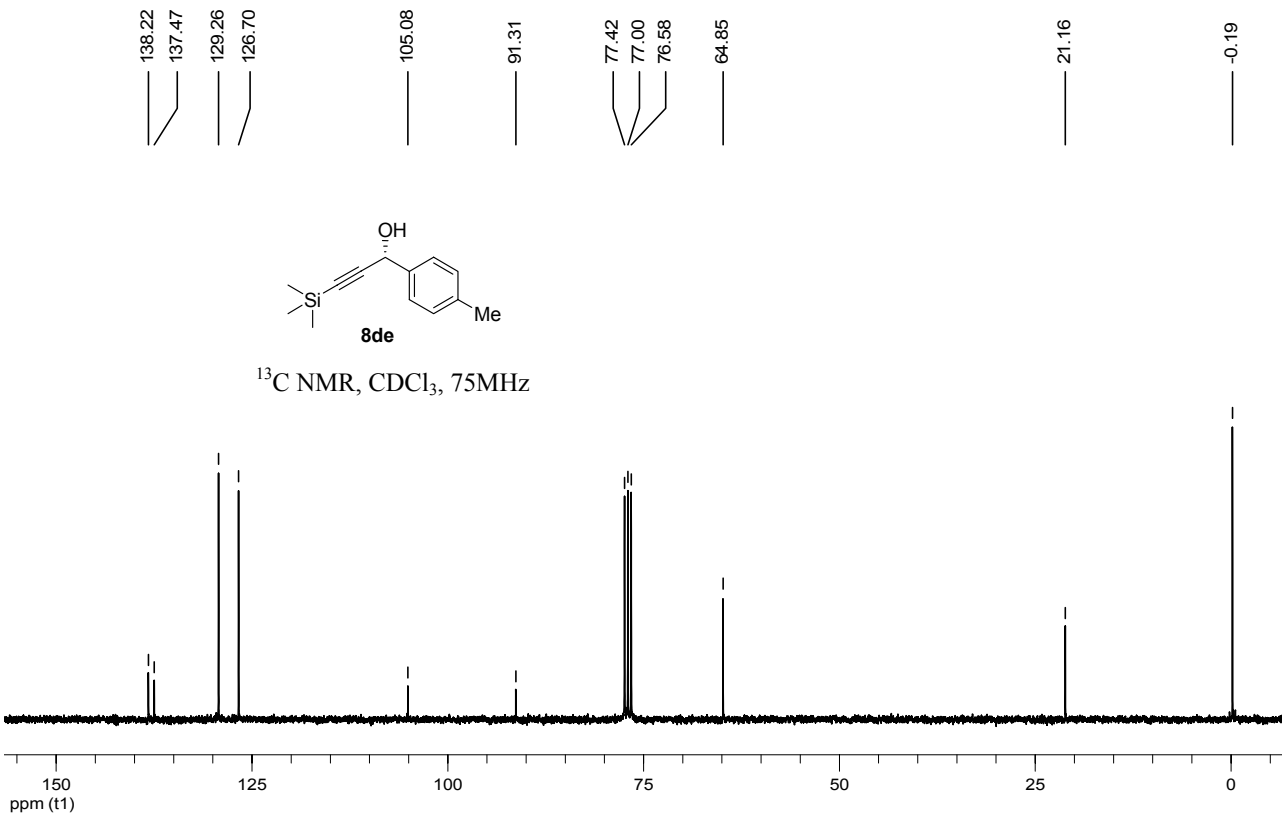
8ce

^{13}C NMR, $CDCl_3$, 75MHz



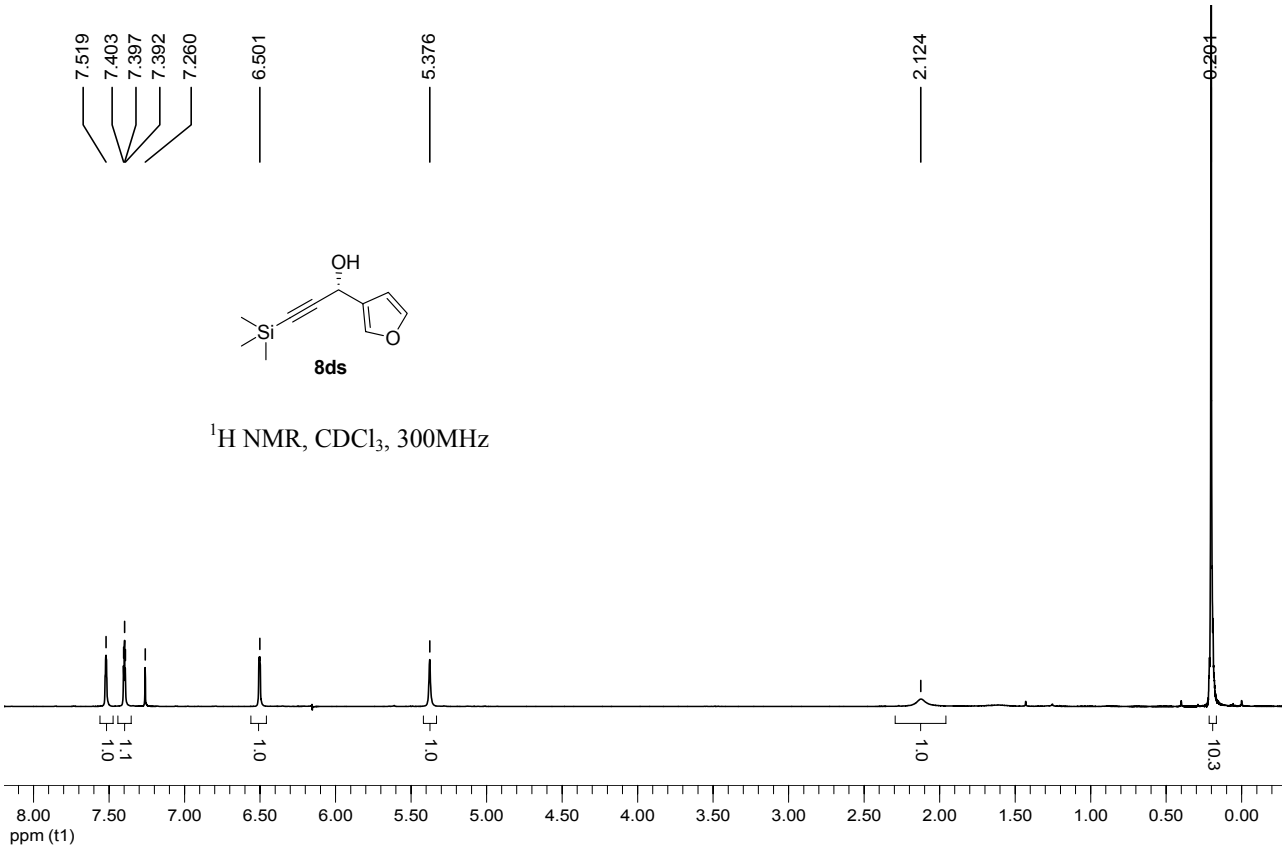
8de

^{1}H NMR, $CDCl_3$, 300MHz



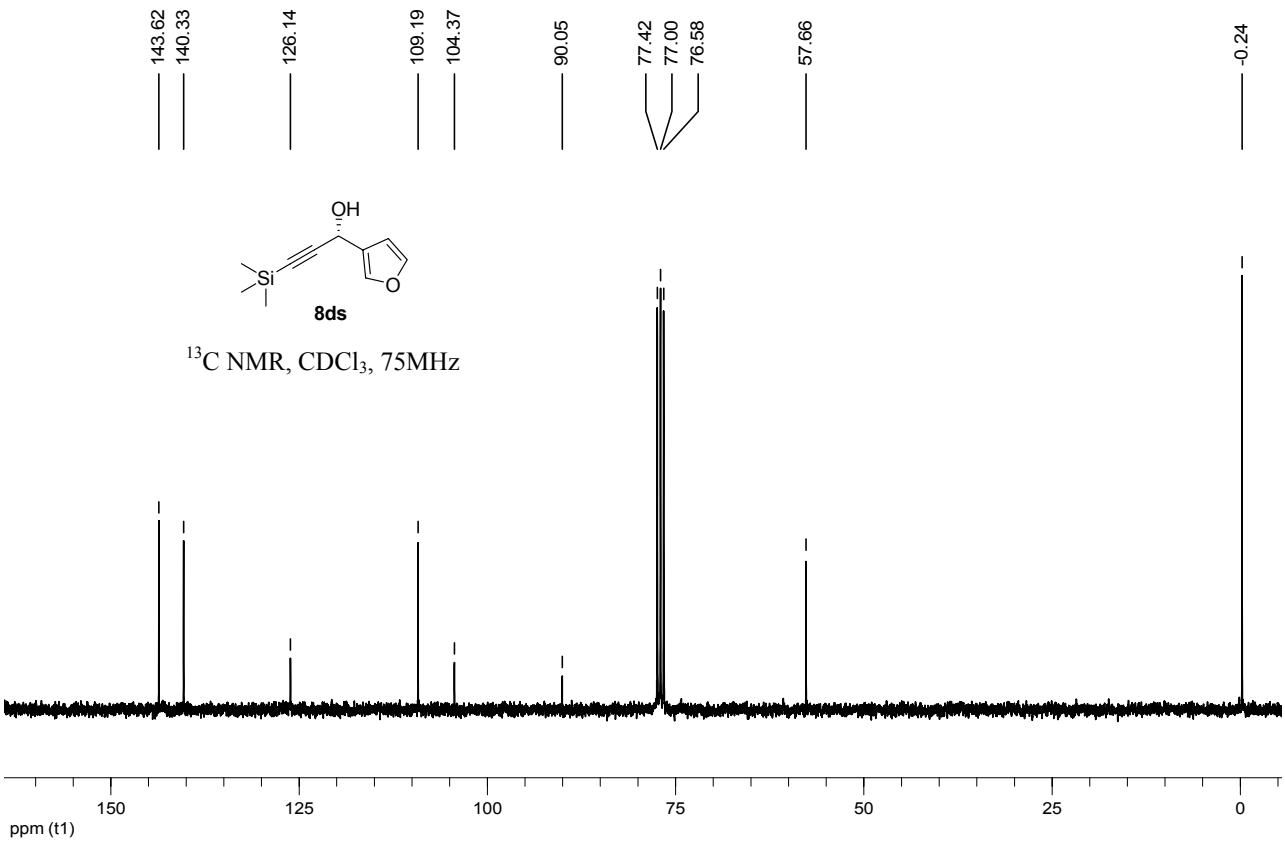
8de

^{13}C NMR, $CDCl_3$, 75MHz



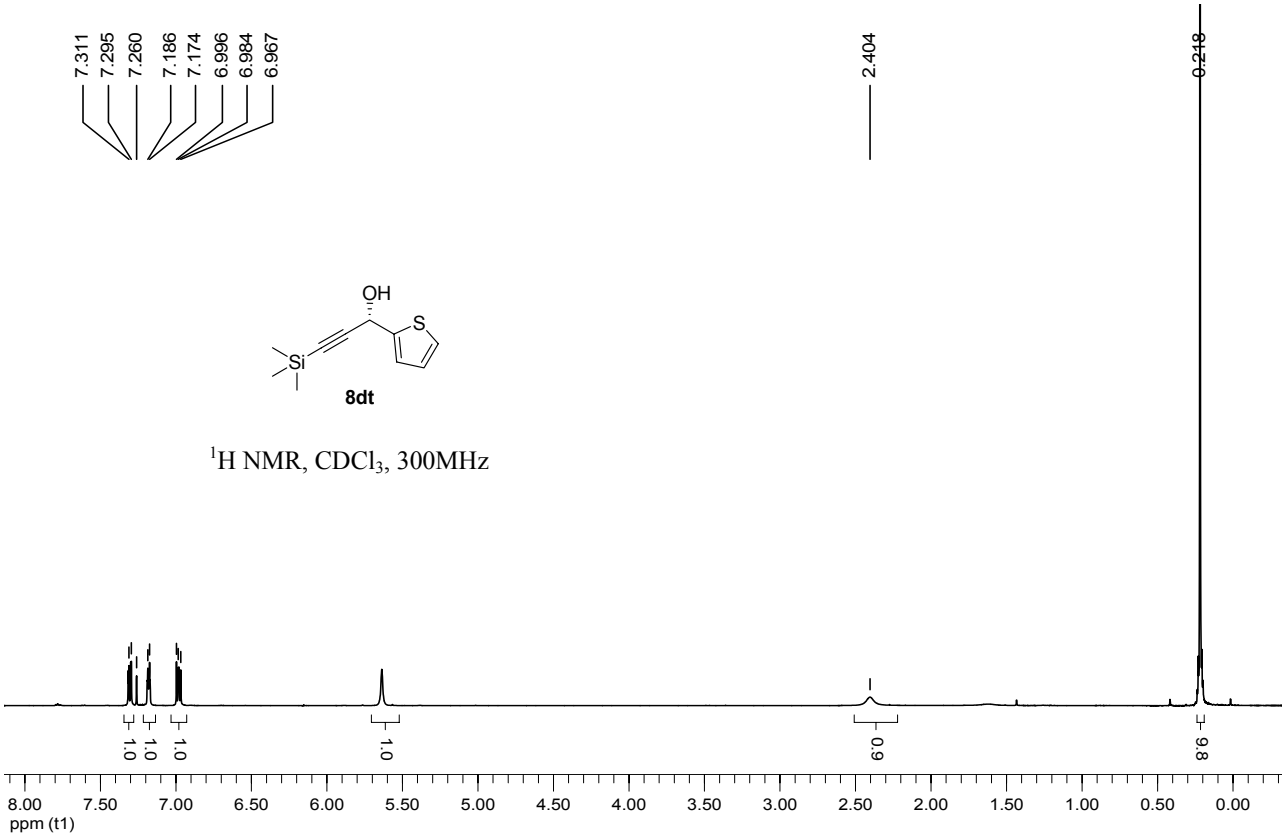
8ds

^{1}H NMR, $CDCl_3$, 300MHz

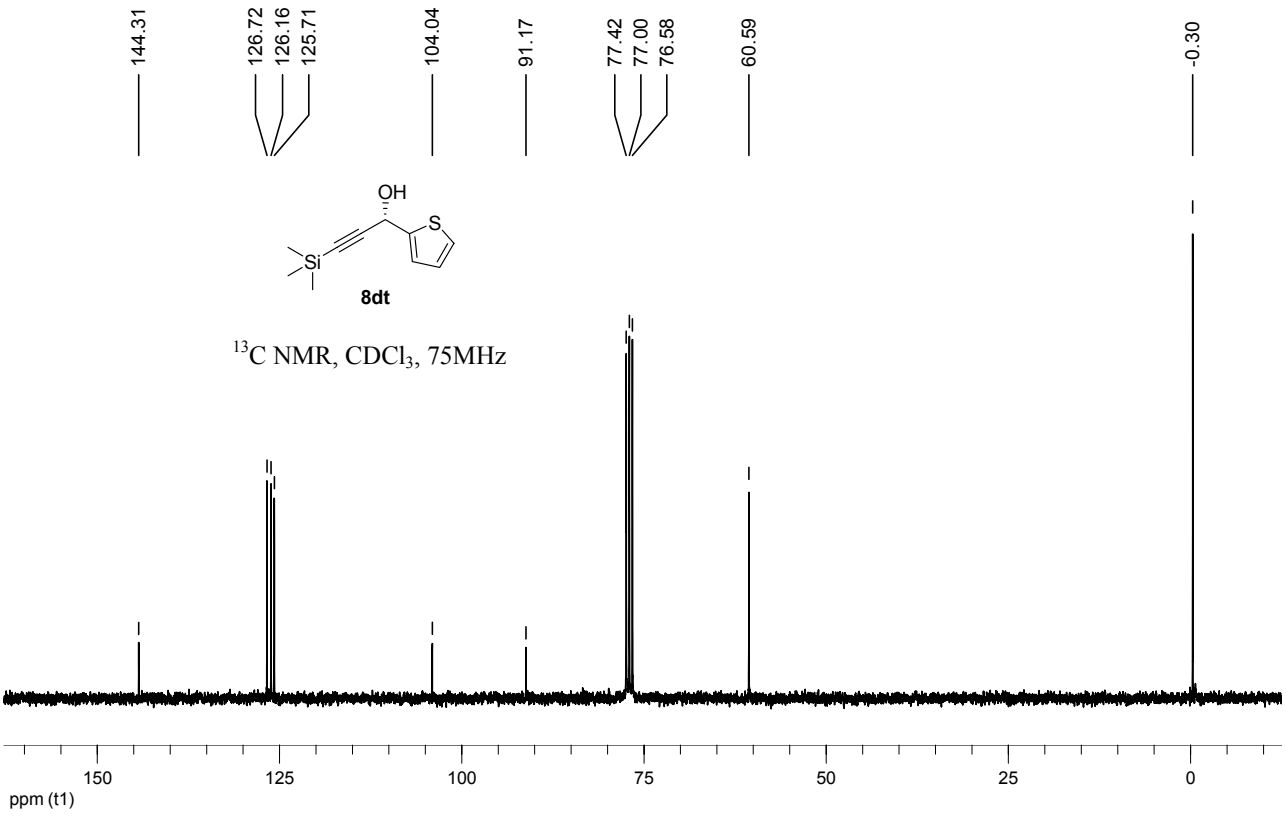


8ds

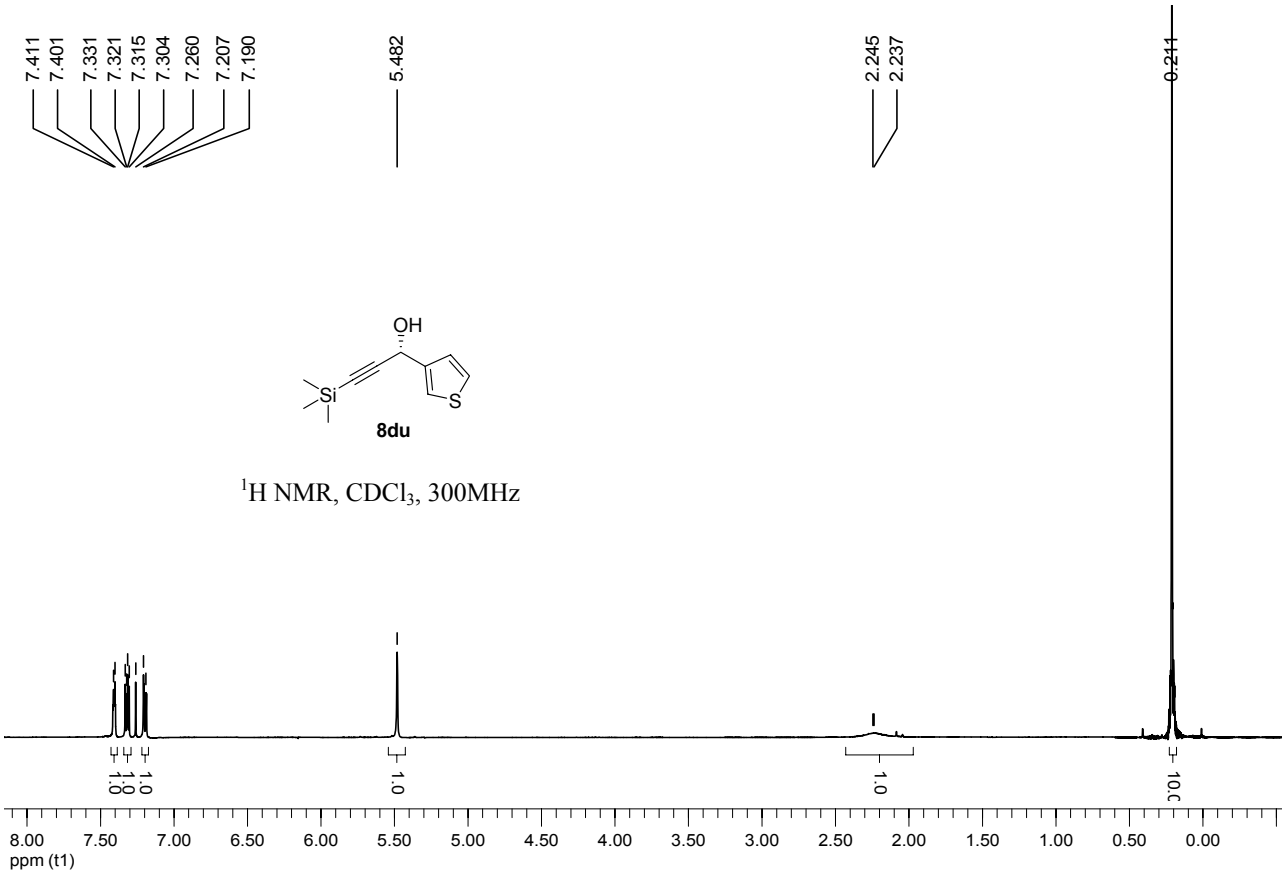
^{13}C NMR, $CDCl_3$, 75MHz



^{1}H NMR, $CDCl_3$, 300MHz

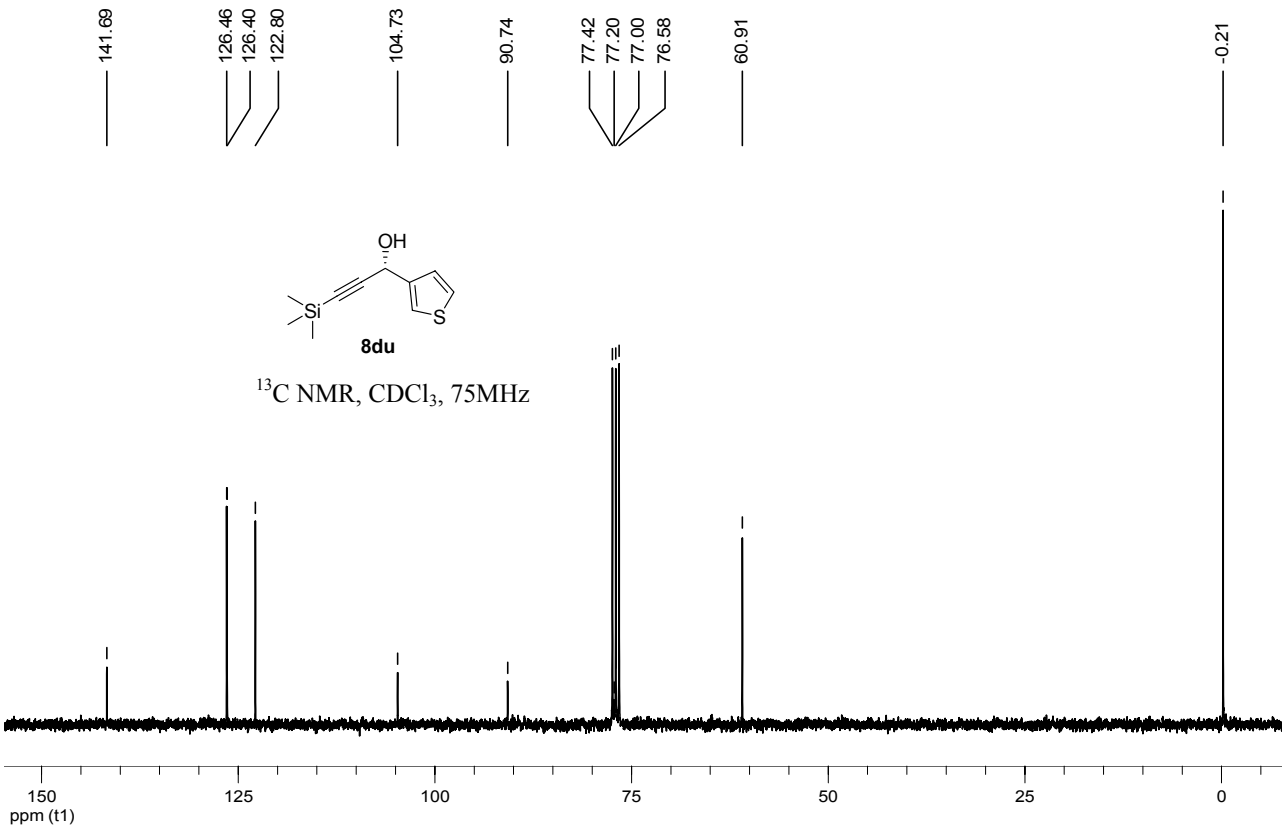


^{13}C NMR, $CDCl_3$, 75MHz



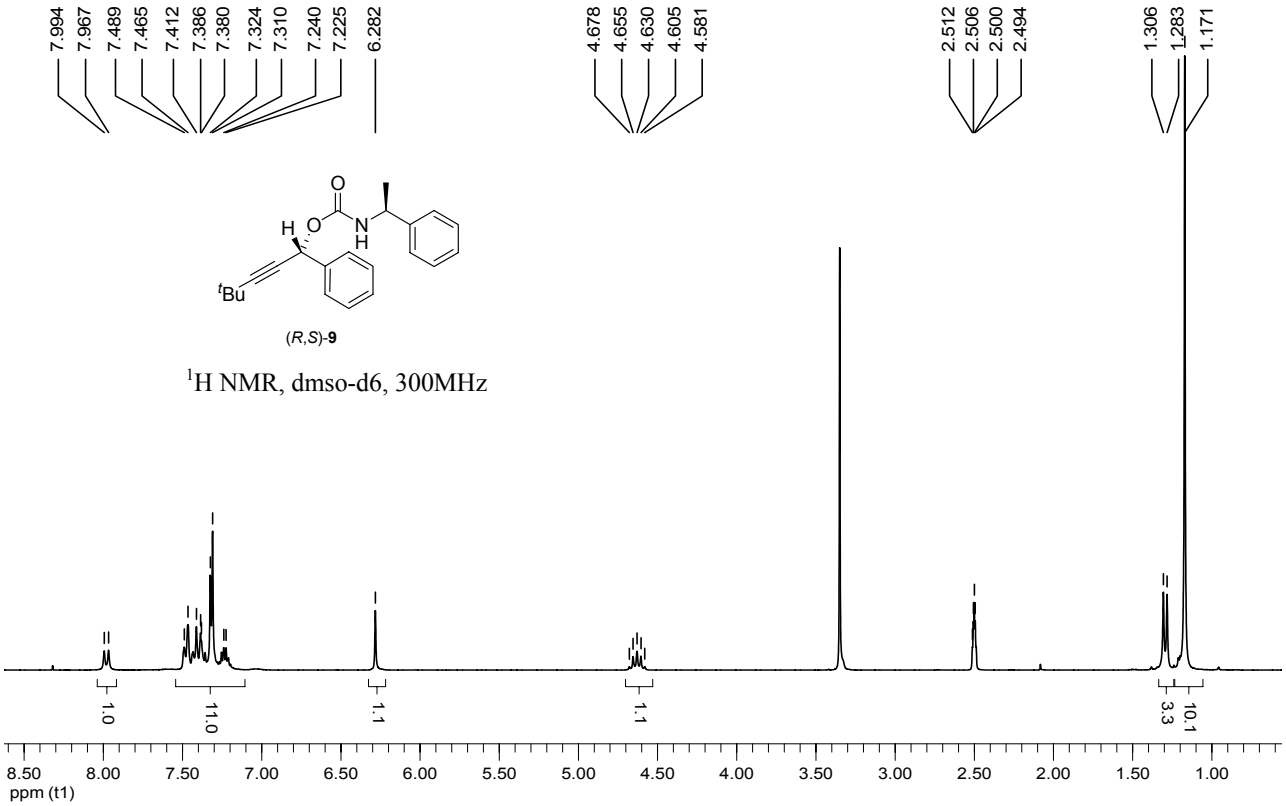
8du

^{1}H NMR, $CDCl_3$, 300MHz



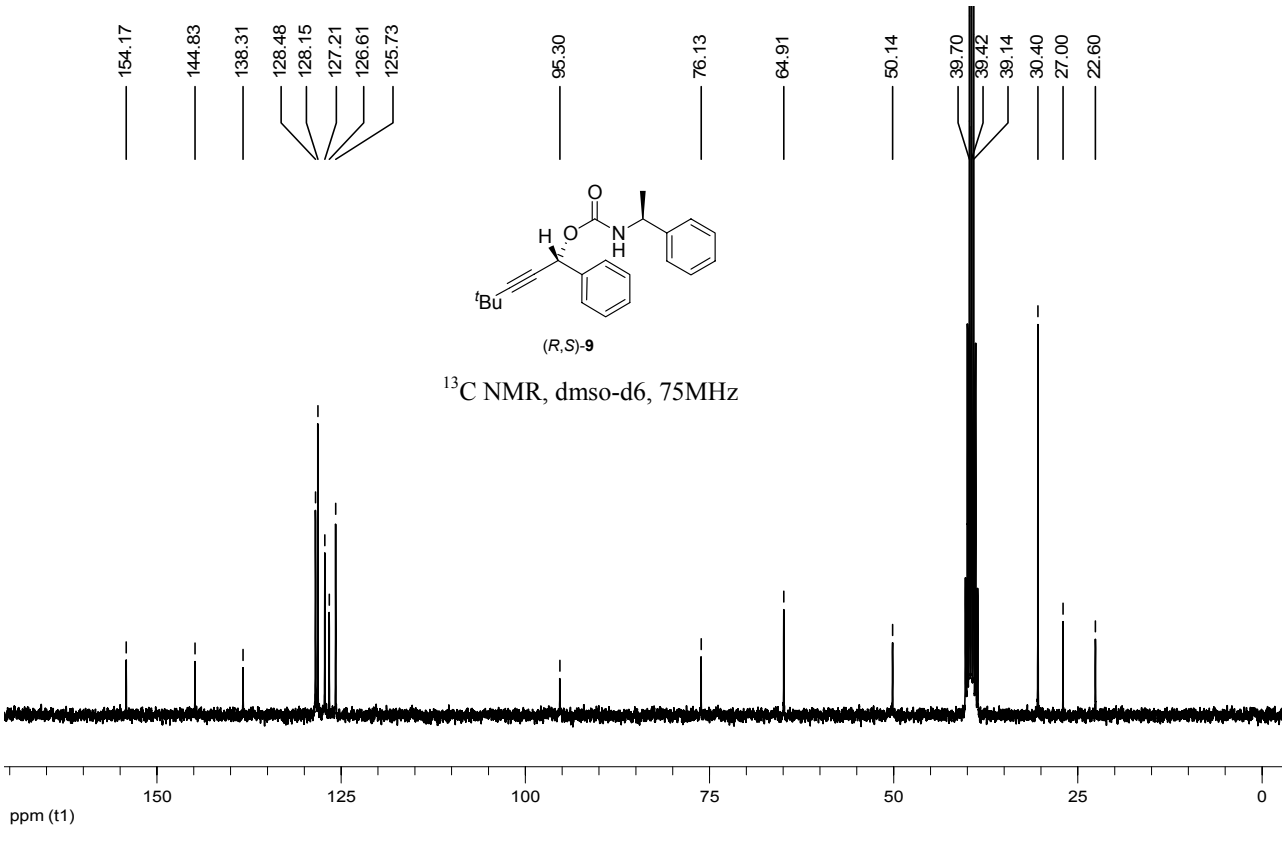
8du

^{13}C NMR, $CDCl_3$, 75MHz



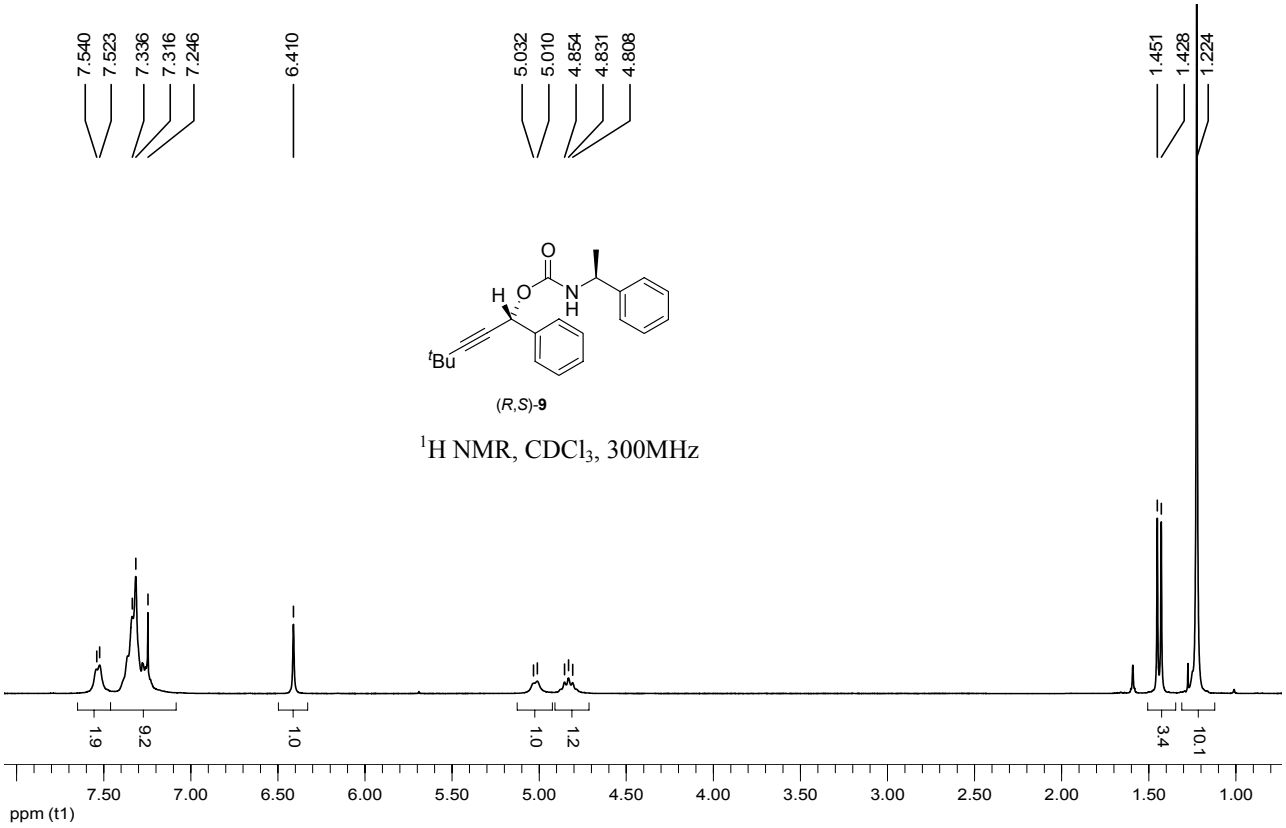
(*R*,*S*)-**9**

^{1}H NMR, dmso-d6, 300MHz



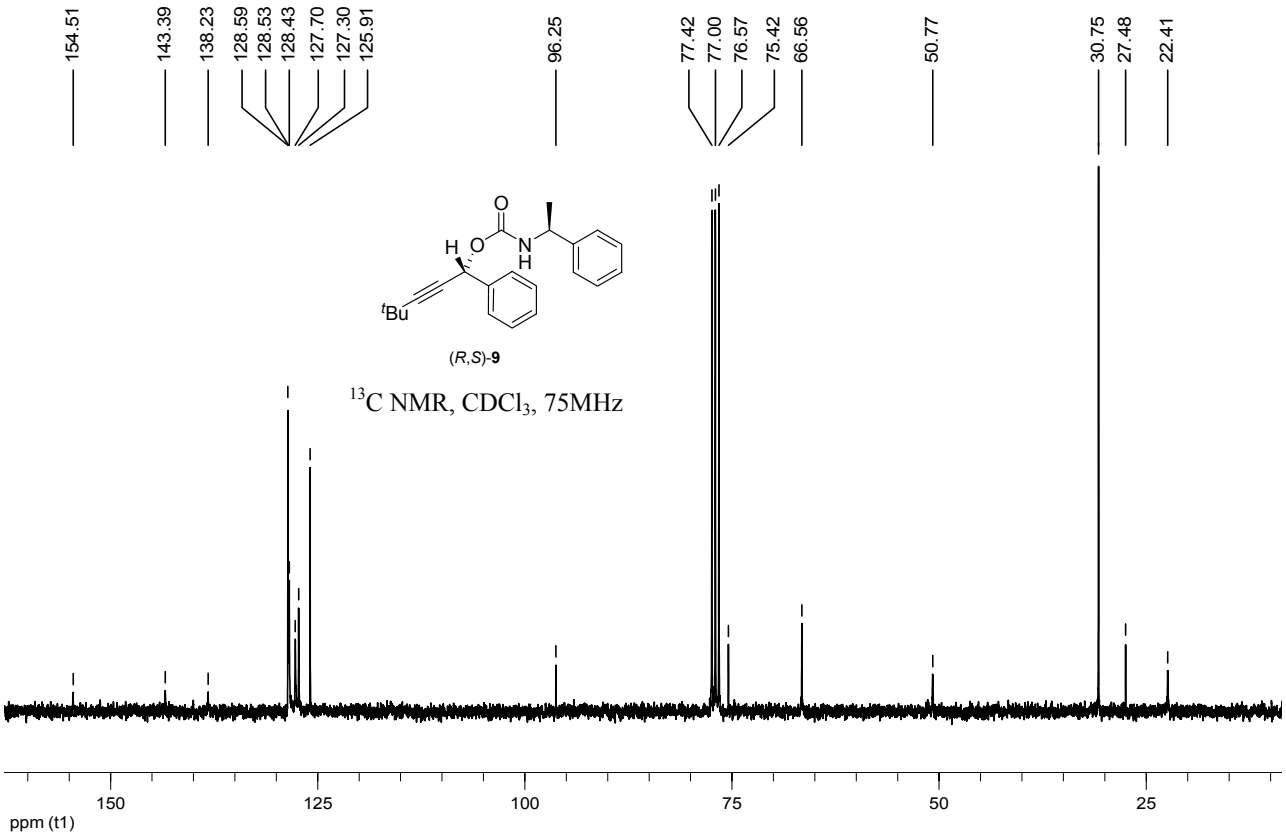
(*R*,*S*)-**9**

^{13}C NMR, dmso-d6, 75MHz



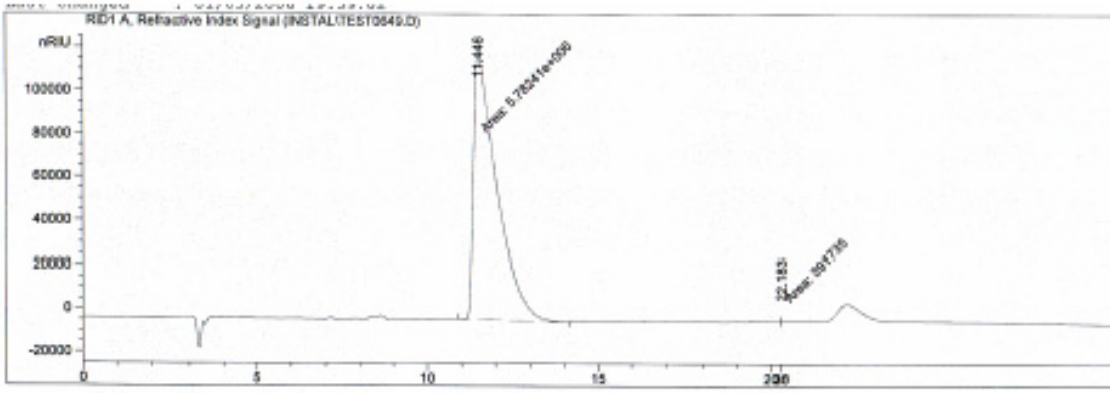
(*R*,*S*)-**9**

^{1}H NMR, $CDCl_3$, 300MHz



(*R*,*S*)-**9**

^{13}C NMR, $CDCl_3$, 75MHz

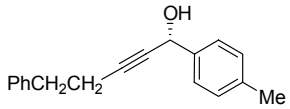


Area Percent Report

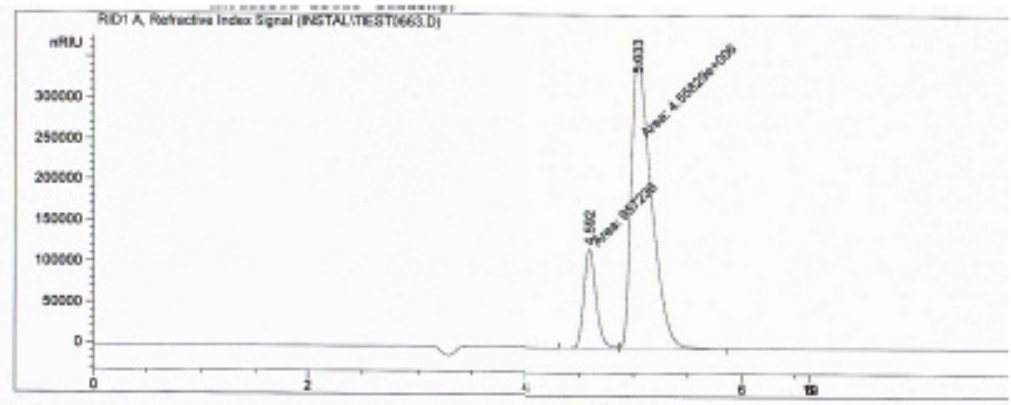
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	11.446	MM	0.7831	5.78241e6	1.23074e5	93.6552
2	22.183	MM	0.8177	3.91735e5	7984.32080	6.3448
Totals :				6.17414e6	1.31058e5	



8be

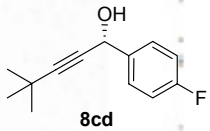


Area Percent Report

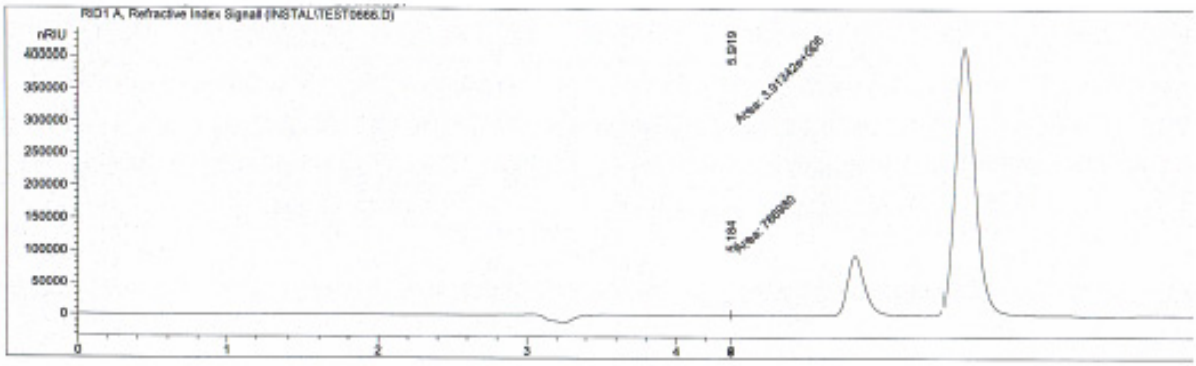
Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	4.592	MF	0.1319	9.57236e5	1.20988e5	17.3553
2	5.033	FM	0.2118	4.55829e6	3.58675e5	82.6447
Totals :				5.51553e6	4.79663e5	



8cd



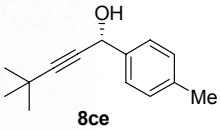
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

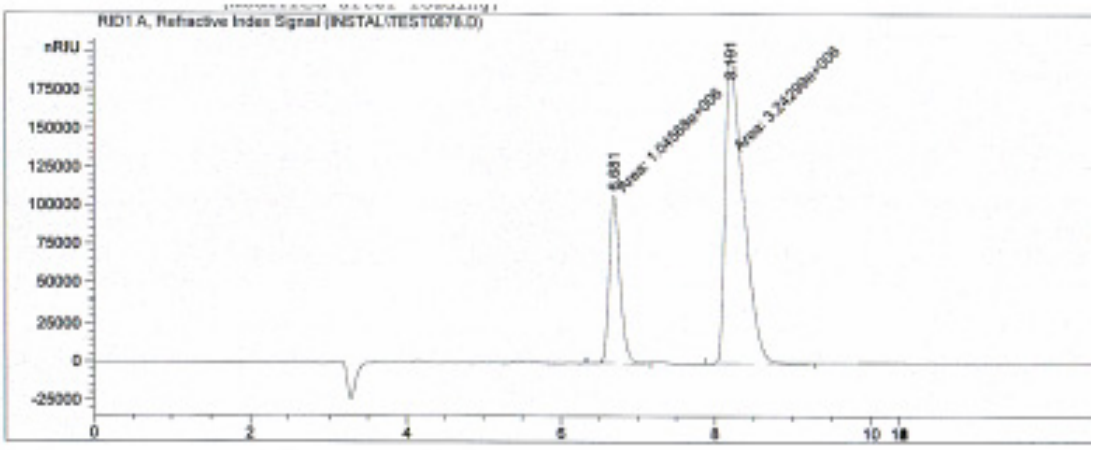
Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	5.184	MM	0.1376	7.86980e5	9.53490e4	16.7428
2	5.919	MM	0.1558	3.91342e6	4.18720e5	83.2572

Totals : 4.70040e6 5.14069e5



8ce



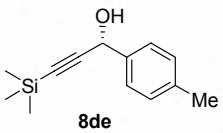
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

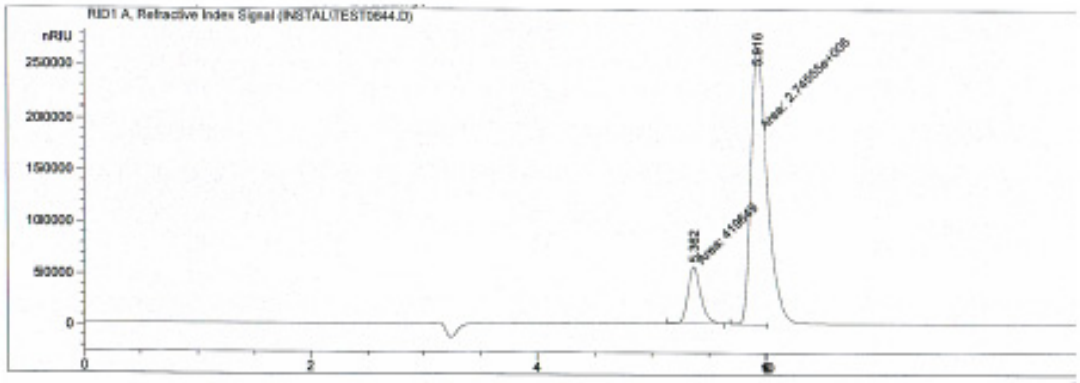
Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	6.681	MM	0.1620	1.04568e6	1.07610e5	24.3824
2	8.191	MM	0.2741	3.24299e6	1.97215e5	75.6176

Totals : 4.28867e6 3.04825e5



8de



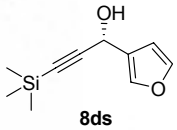
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	5.362	MM	0.1271	4.19649e5	5.50440e4	13.2582
2	5.916	MM	0.1716	2.74555e6	2.66604e5	86.7418

Totals : 3.16520e6 3.21648e5



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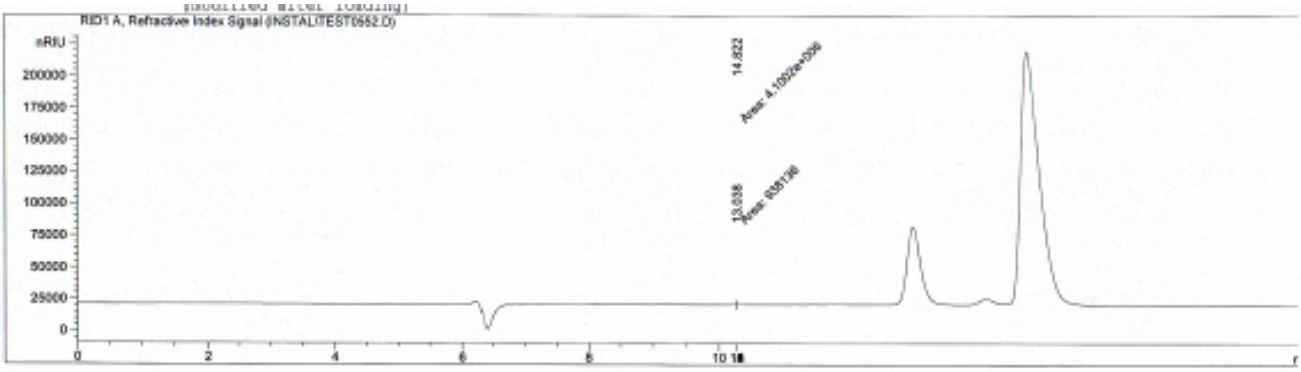


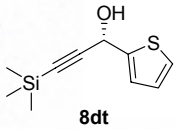
Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

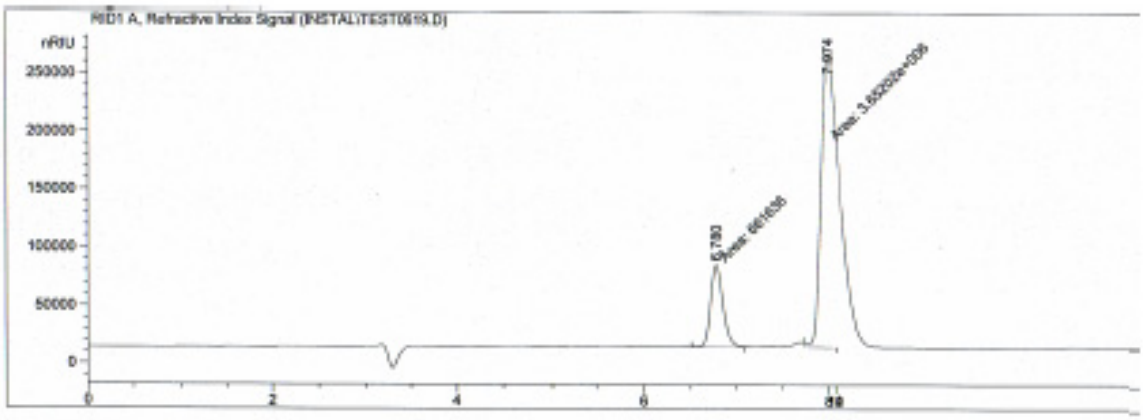
Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	13.038	MM	0.2505	9.38136e5	6.24299e4	18.6199
2	14.022	MM	0.3413	4.10020e6	2.00204e5	81.3801

Totals : 5.03834e6 2.62634e5



8dt

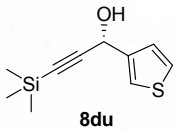


Area Percent Report

Sorted By : Signal
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: RID1 A, Refractive Index Signal

Peak #	RetTime [min]	Type	Width [min]	Area [nRIU*s]	Height [nRIU]	Area %
1	6.780	MM	0.1545	6.61636e5	7.13826e4	15.3382
2	7.974	PM	0.2398	3.65202e6	2.53818e5	84.6618
Totals :				4.31366e6	3.25200e5	



8du