

Supporting Information II

Lithium BINOL Phosphate Catalyzed Desymmetrization of *meso*-Epoxides with Aromatic Thiols

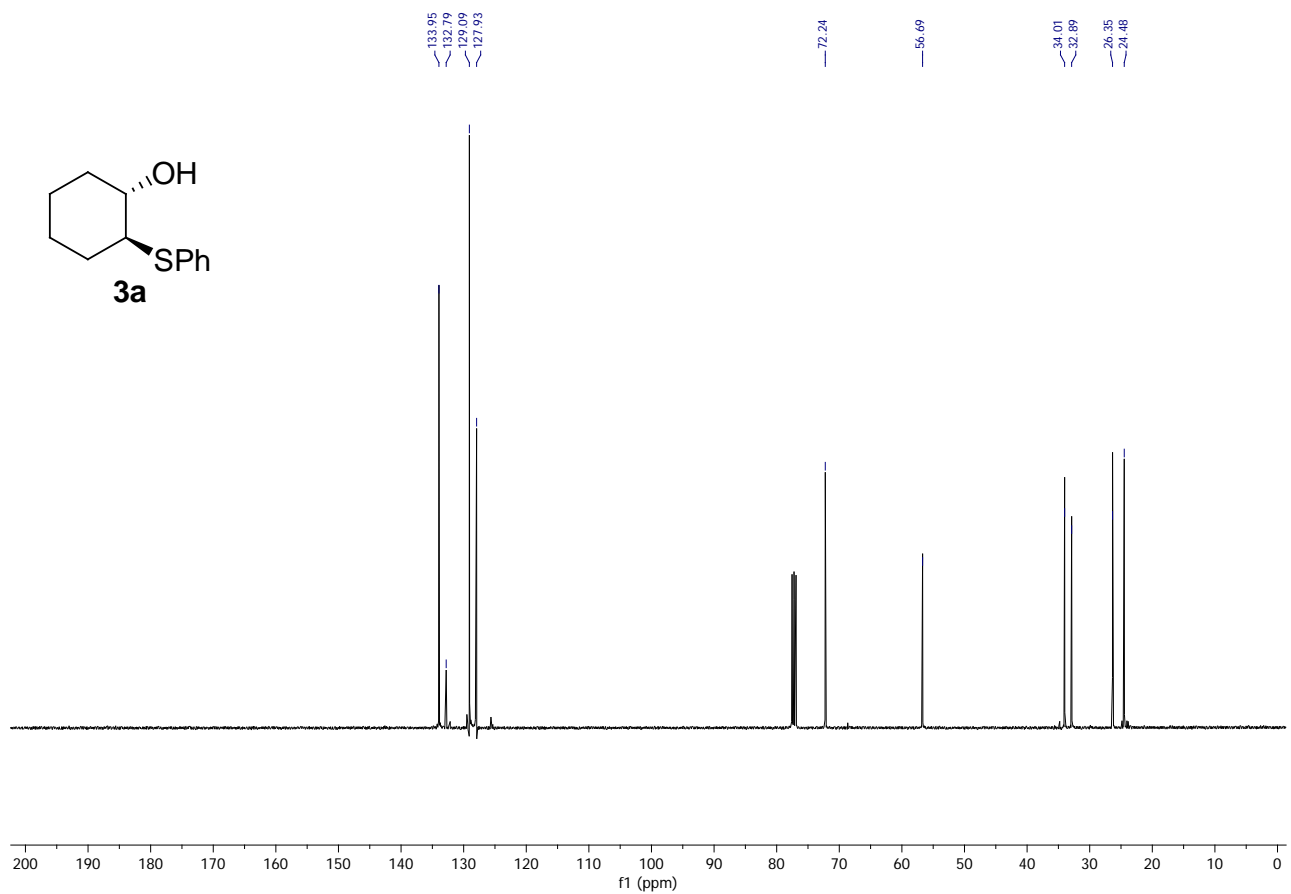
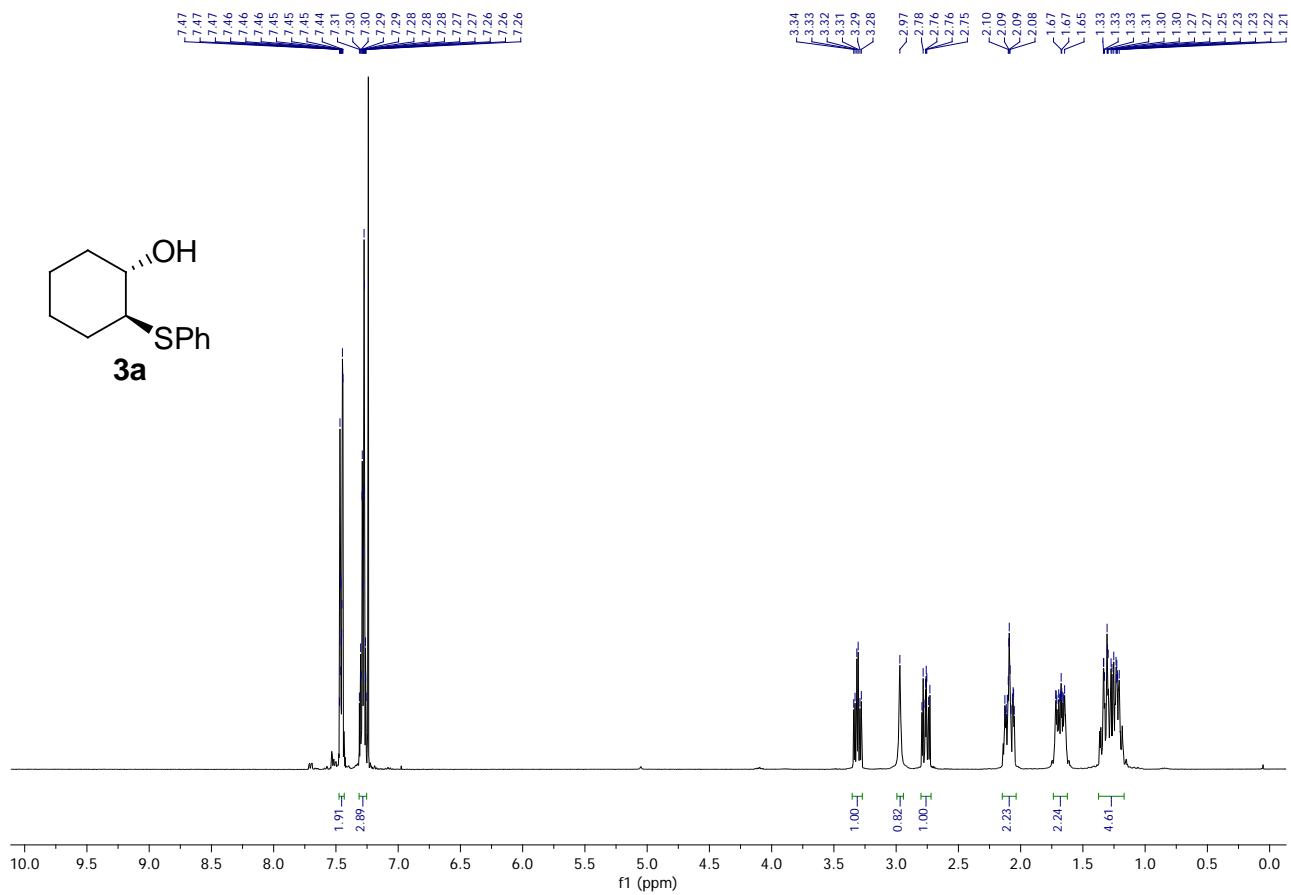
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Department of Chemistry, University of South Florida, 4202 E. Fowler Ave., Tampa, Florida, 33620, USA.

*jantilla@usf.edu

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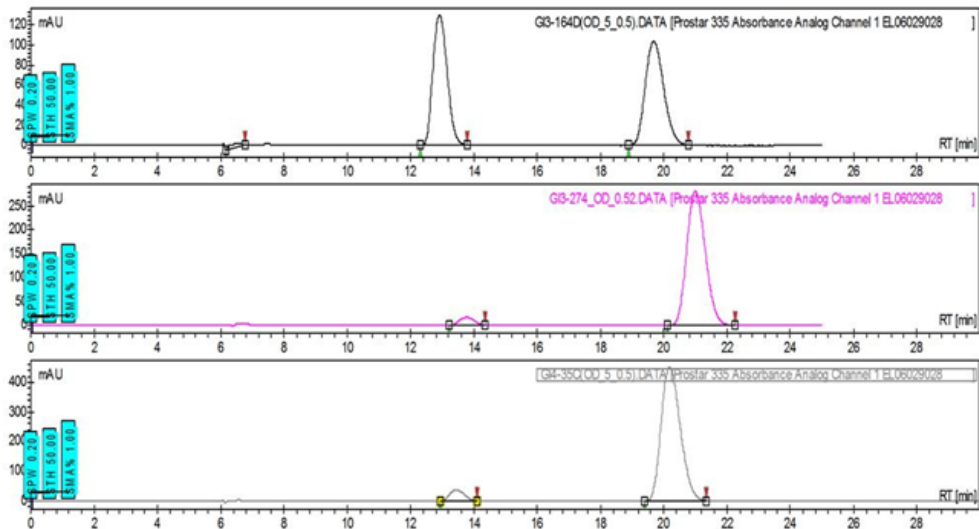
¹H, ¹³C, and HPLC traces.....S2 – S39



Chromatogram : GI4-35C(OD_5_0.5)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 7/15/2012 9:58:08 PM
Processed : 7/15/2012 10:30:15 PM
Printed : 7/17/2012 2:06:45 PM



Peak results :

GI3-164D(OD_5_0.5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

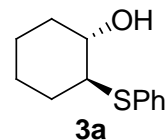
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	6.32	4.1	0.58	1.5	1.093
2	12.92	129.9	0.82	67.9	48.636
3	19.68	104.1	1.07	70.2	50.270
Total		238.1		139.6	100.000

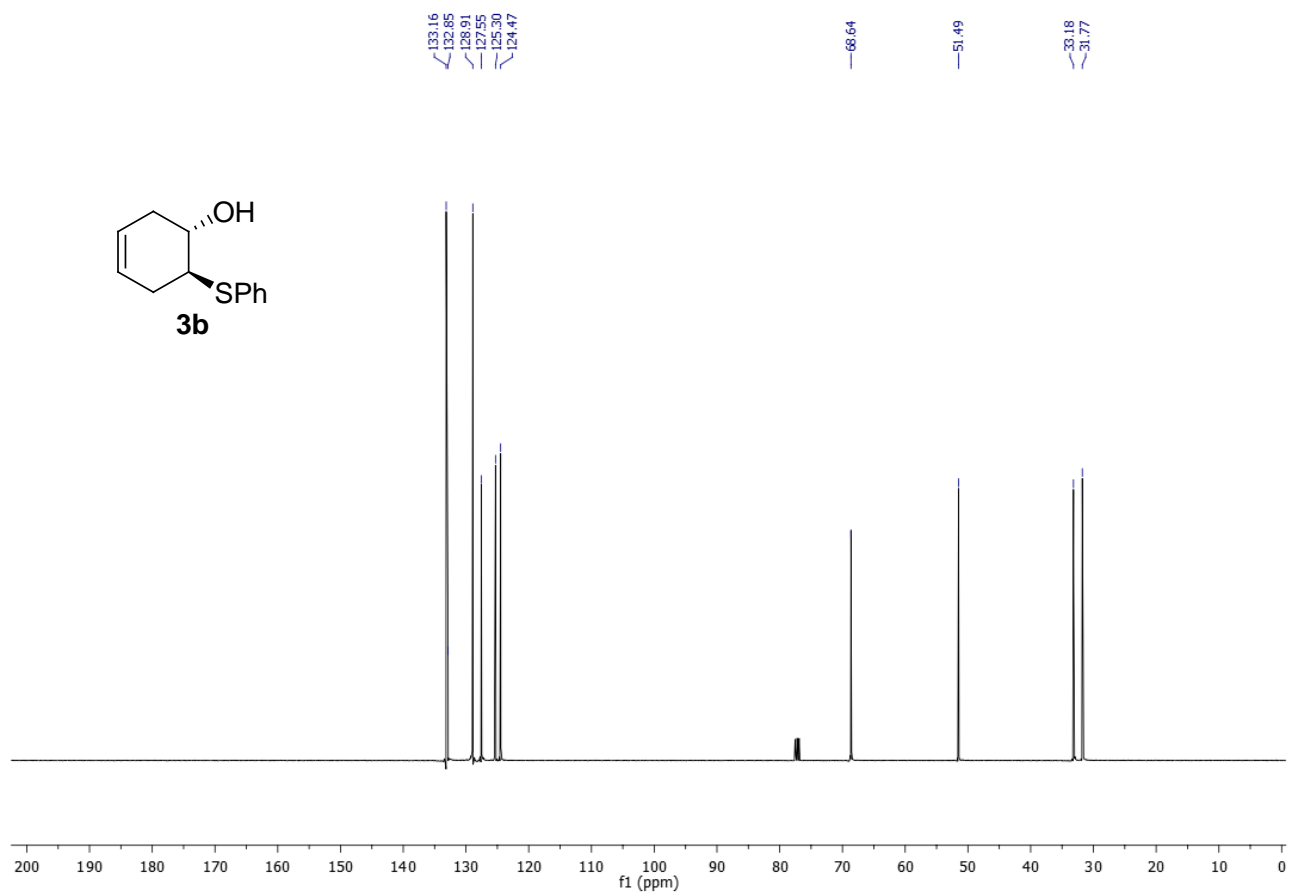
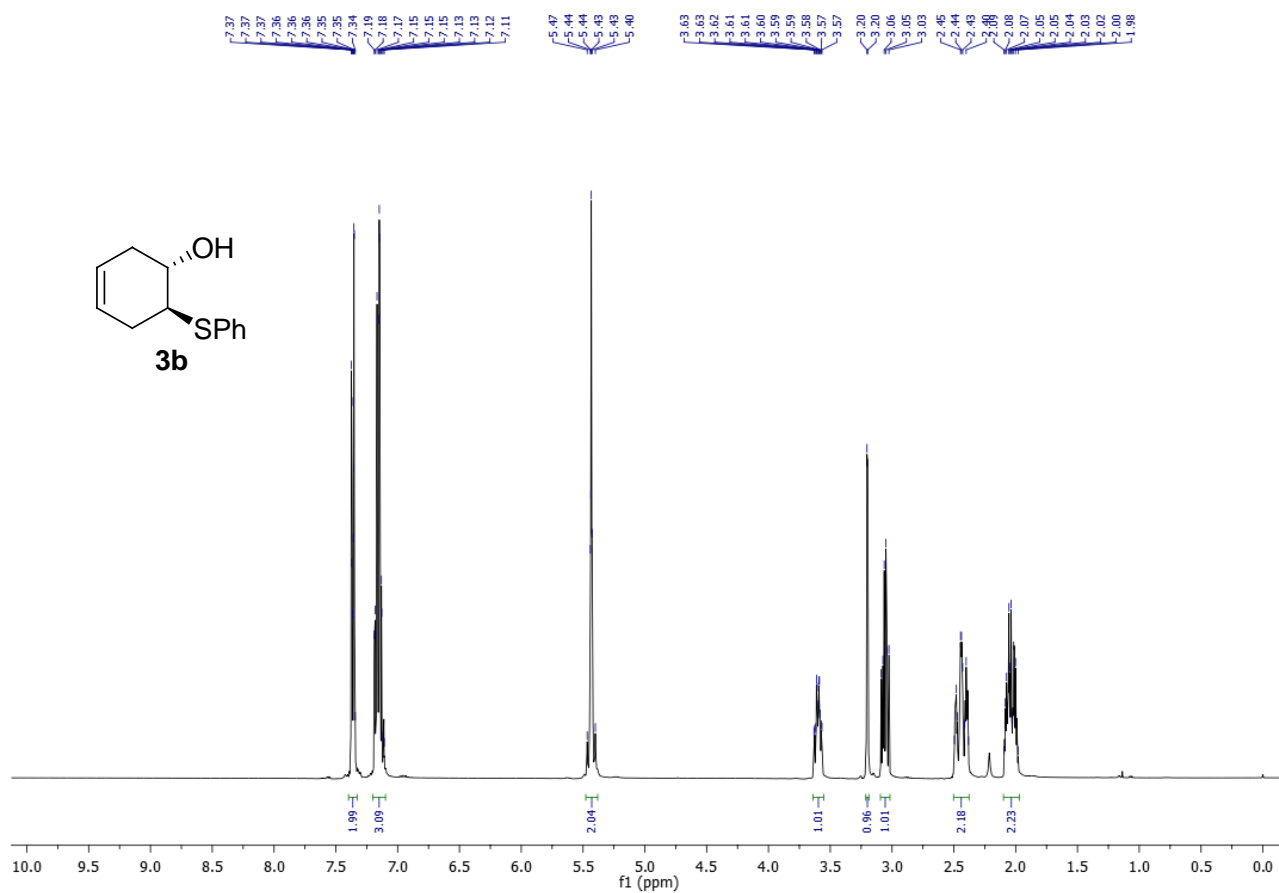
GI3-274 OD_0.52.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	13.76	16.5	0.86	9.0	4.480
2	21.00	280.2	1.09	191.1	95.520
Total		296.7		200.0	100.000

GI4-35C(OD_5_0.5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	13.44	35.9	0.86	19.5	5.799
2	20.19	451.5	1.12	317.4	94.201
Total		487.4		337.0	100.000

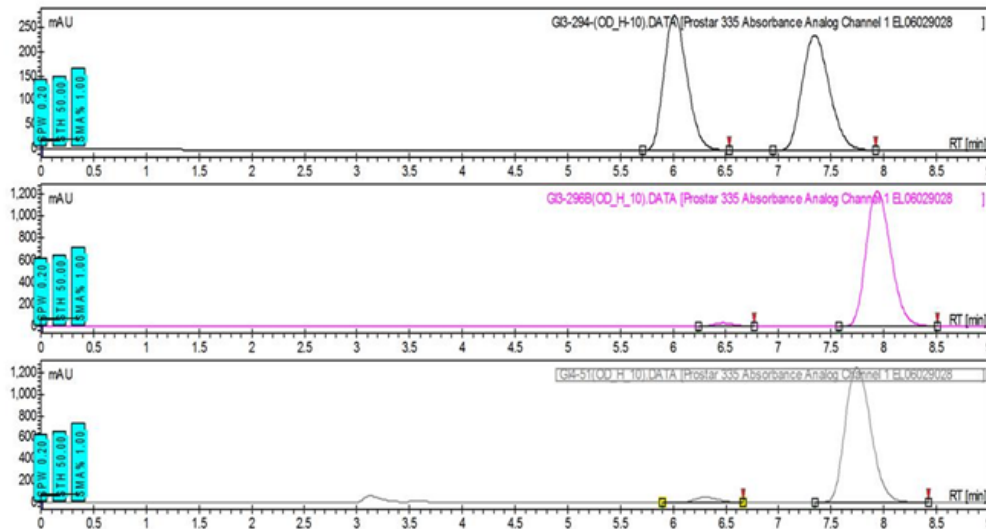




Chromatogram : GI4-51(OD_H_10)_channel1

System : HPLC
Method : Ingle
User : User1

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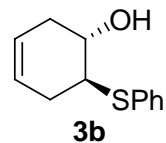
Peak results :

GI3-294-(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	6.01	280.5	0.41	71.1	49.841
2	7.35	238.7	0.48	71.5	50.159
Total		519.2		142.6	100.000

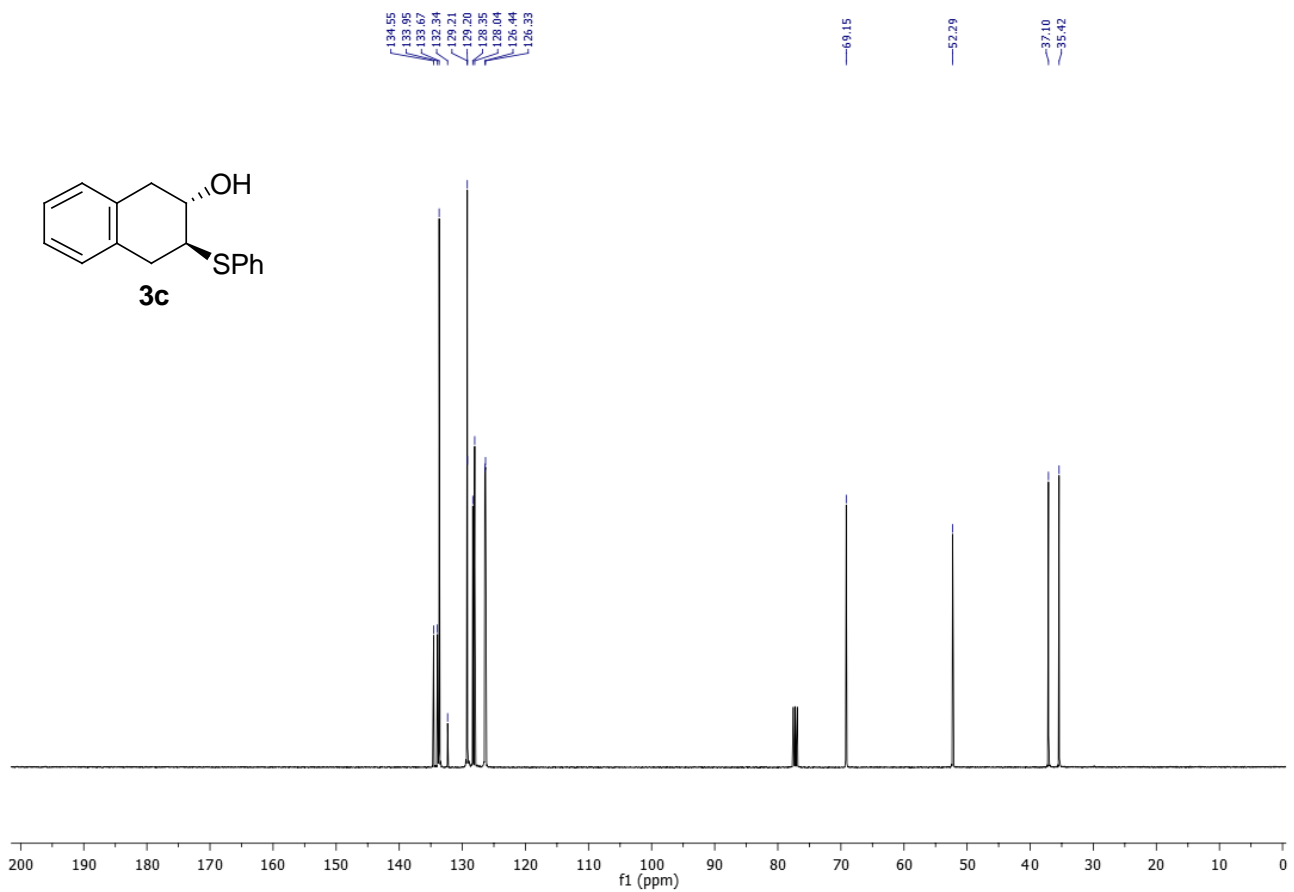
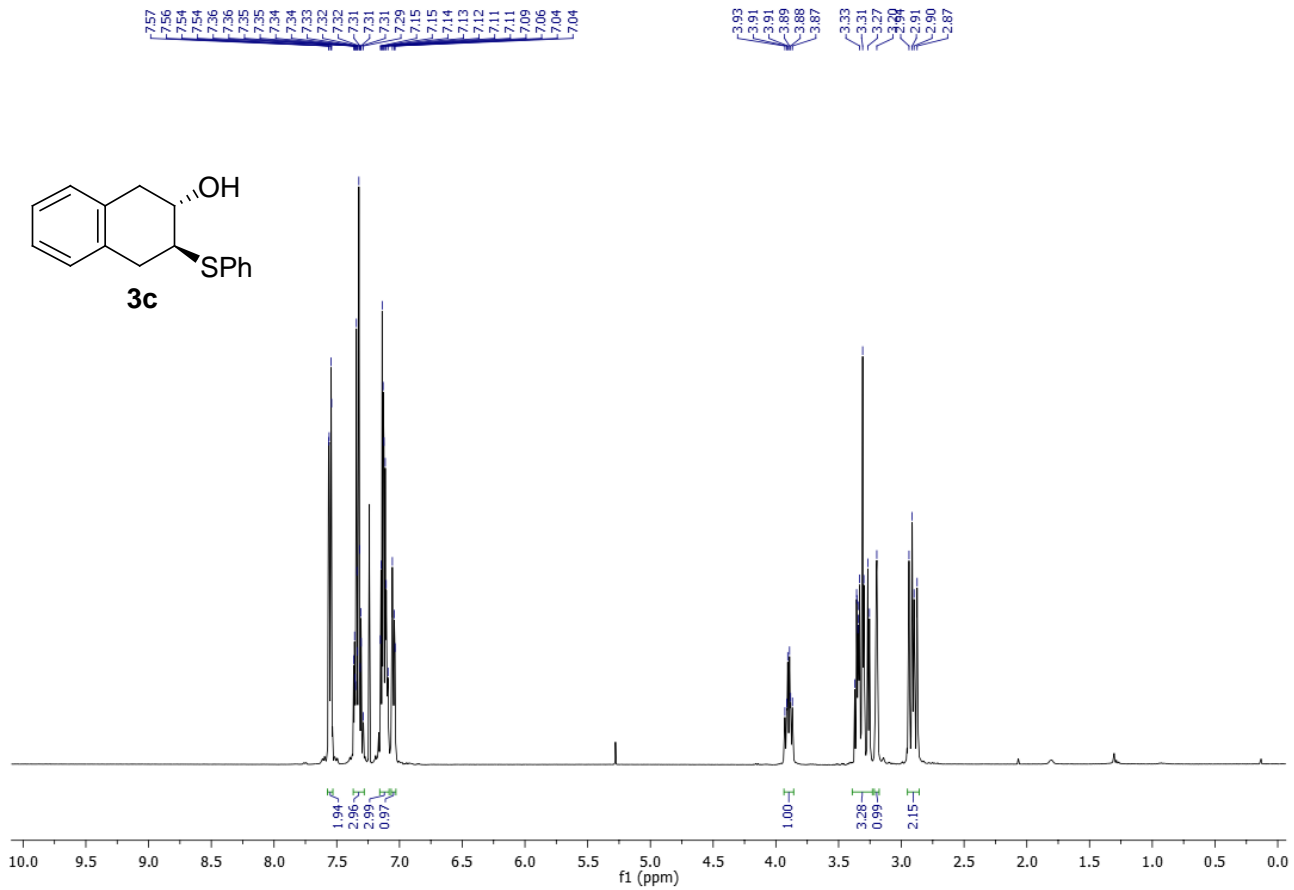
GI3-296B(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	6.47	31.2	0.35	6.8	2.000
2	7.93	1226.6	0.43	333.4	98.000
Total		1257.9		340.2	100.000



GI4-51(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

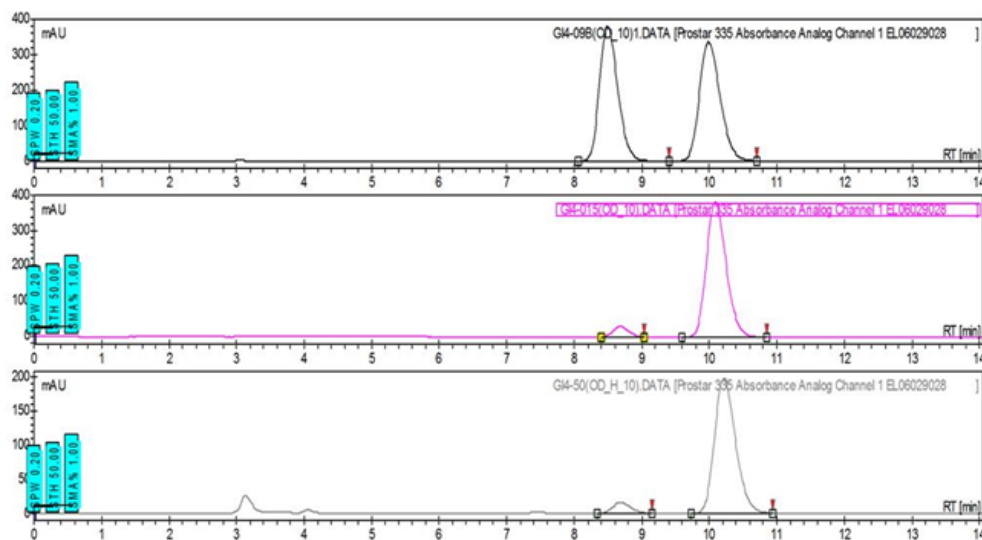
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1	6.31	47.5	0.38	11.2	3.073
2	7.75	1252.9	0.45	354.5	96.927
Total		1300.3		365.7	100.000



Chromatogram : GI4-015(OD_10)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 8/21/2011 9:14:46 PM
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Peak results :

GI4-09B(OD_10)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

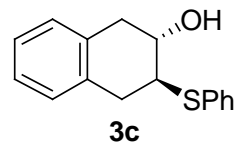
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.49	381.6	0.50	120.5	50.044
2	9.99	337.7	0.57	120.3	49.956
Total		719.3		240.8	100.000

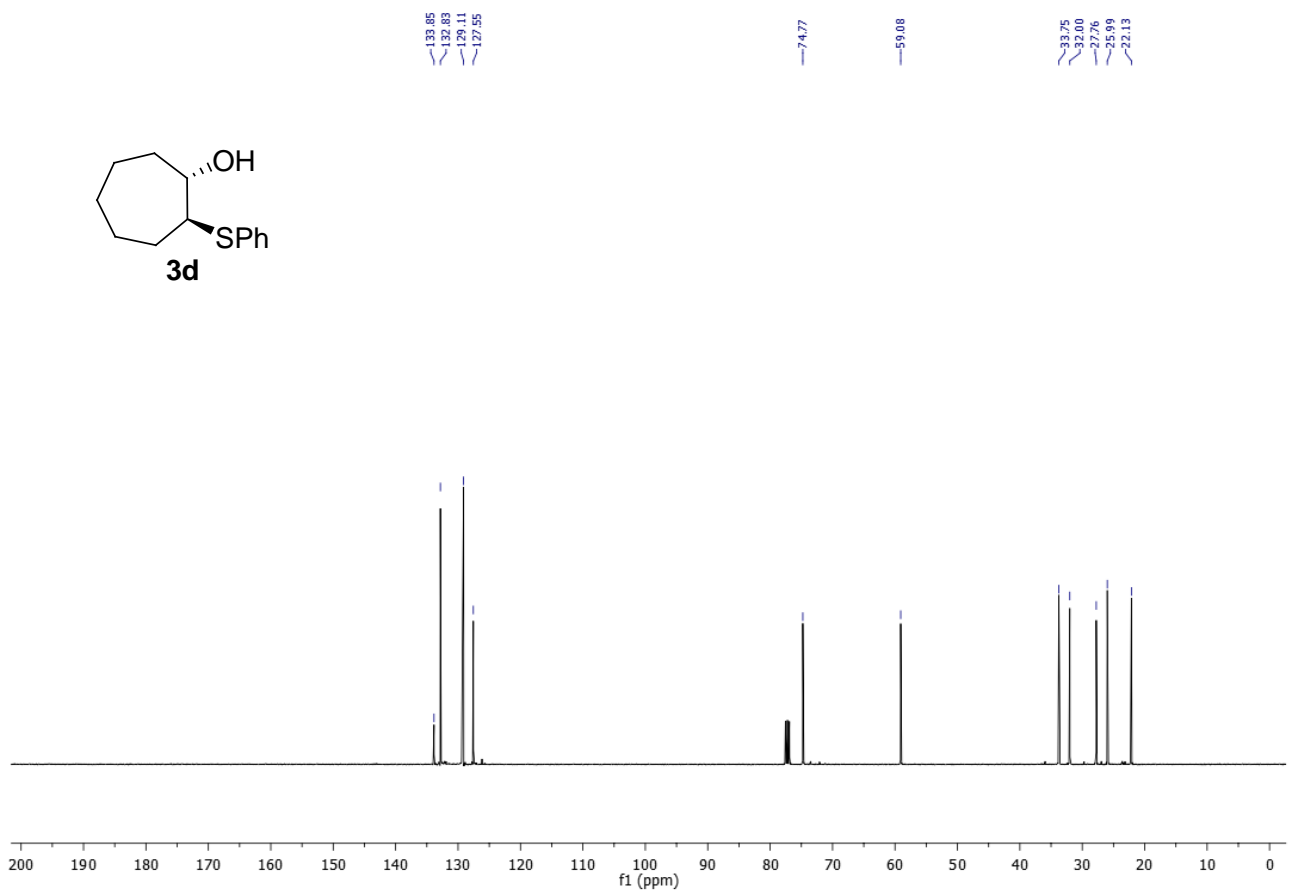
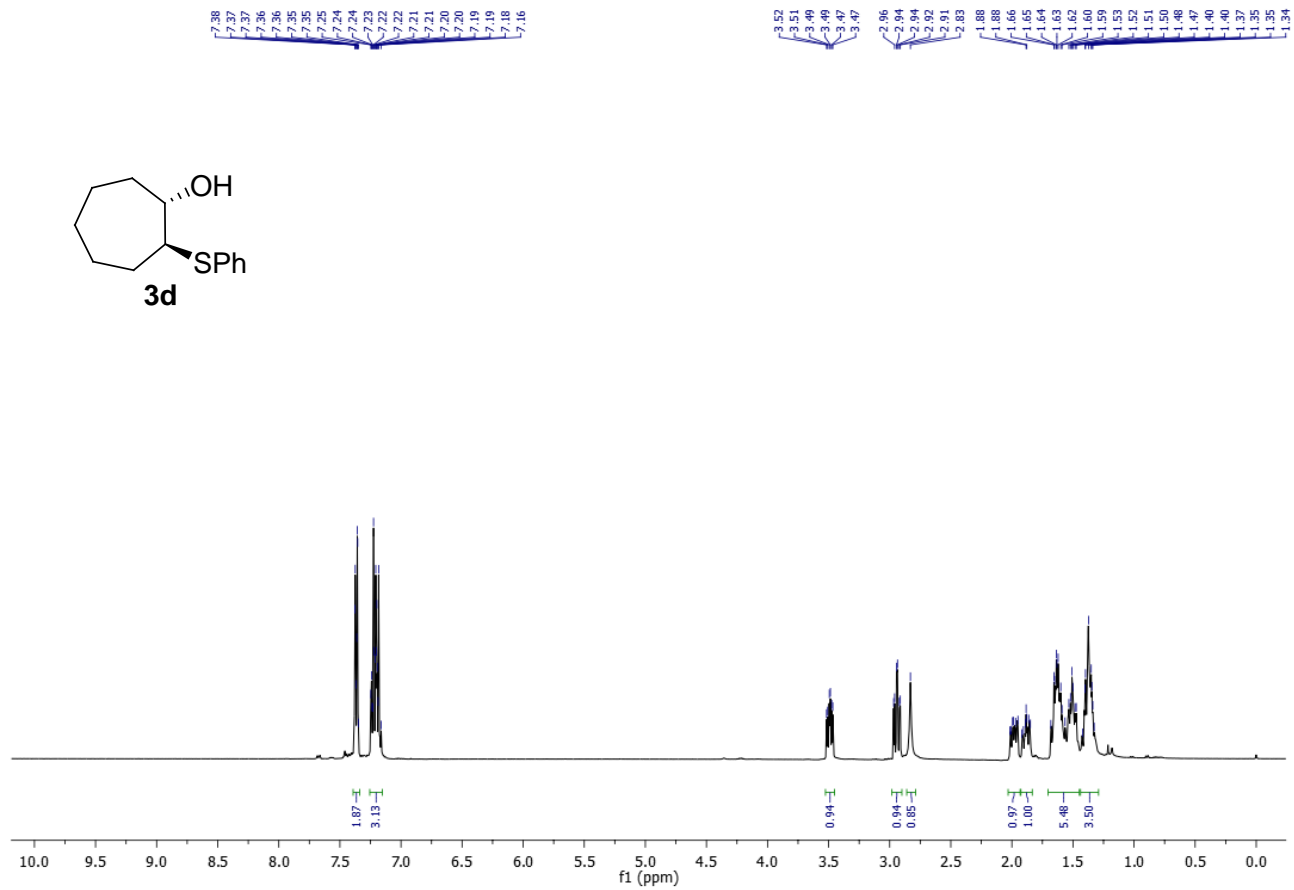
GI4-015(OD_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.68	29.2	0.45	8.0	5.778
2	10.09	385.6	0.54	131.0	94.222
Total		414.8		139.0	100.000

GI4-50(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.68	16.0	0.48	4.8	6.350
2	10.21	197.6	0.57	71.4	93.650
Total		213.6		76.3	100.000

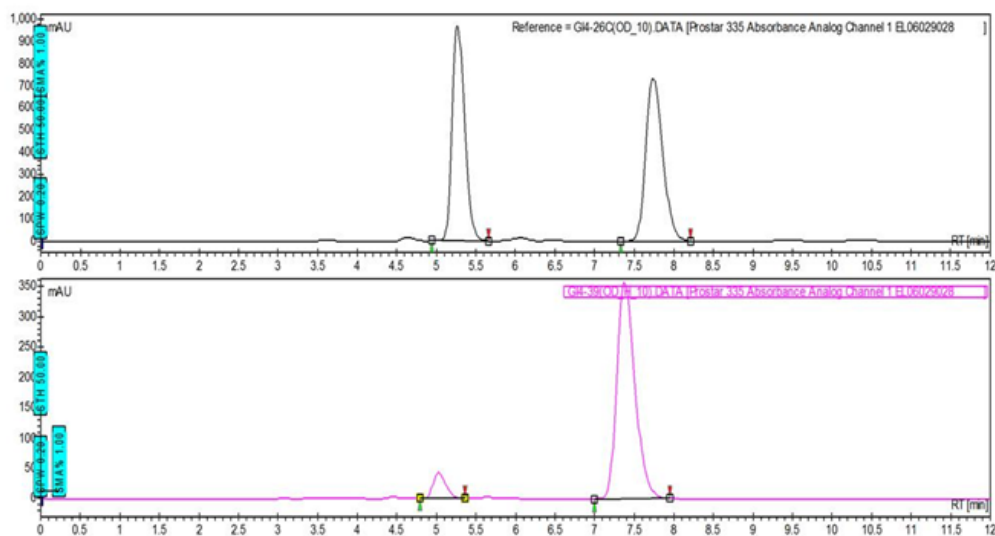




Chromatogram : GI4-39(OD_H_10)_channel1

System : HPLC
Method : Ingle
User : User1

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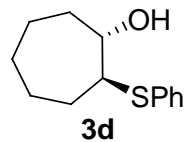
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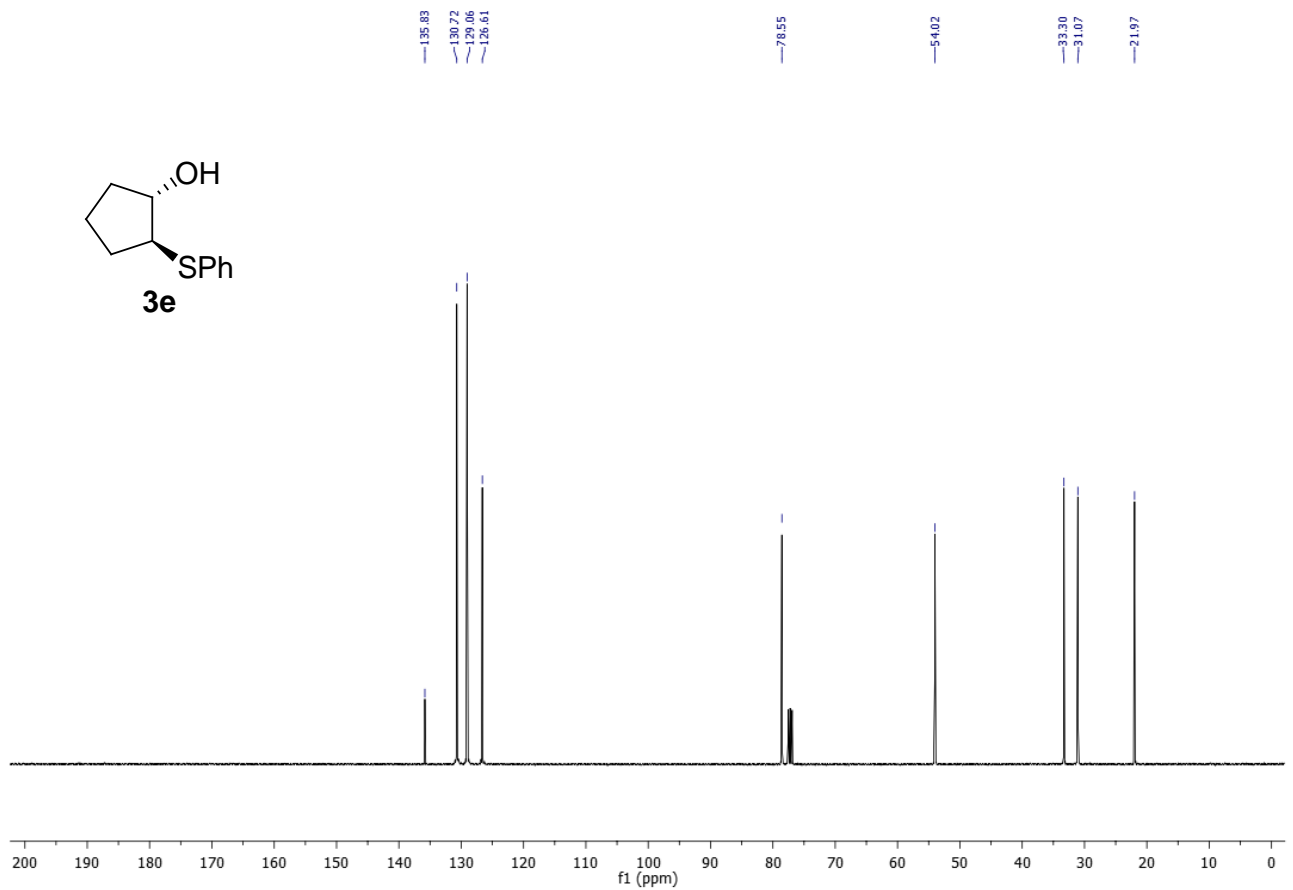
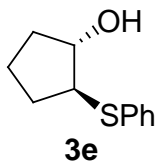
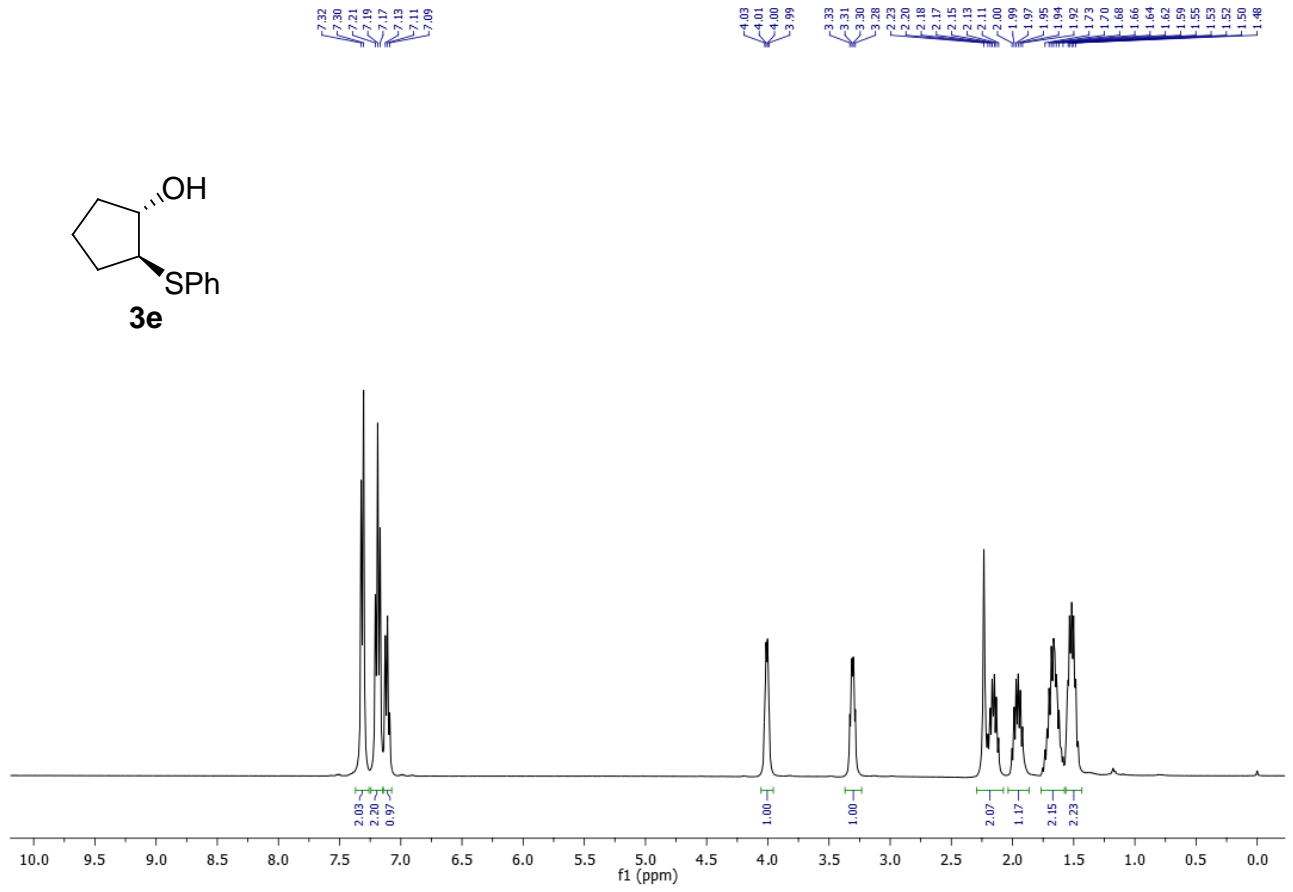
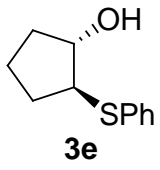
GI4-26C(OD_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.27	969.1	0.30	179.5	49.353
2	7.75	728.5	0.40	184.2	50.647
Total		1697.6		363.7	100.000

GI4-39(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.03	42.9	0.30	8.1	7.870
2	7.37	355.8	0.42	94.7	92.130
Total		398.6		102.8	100.000

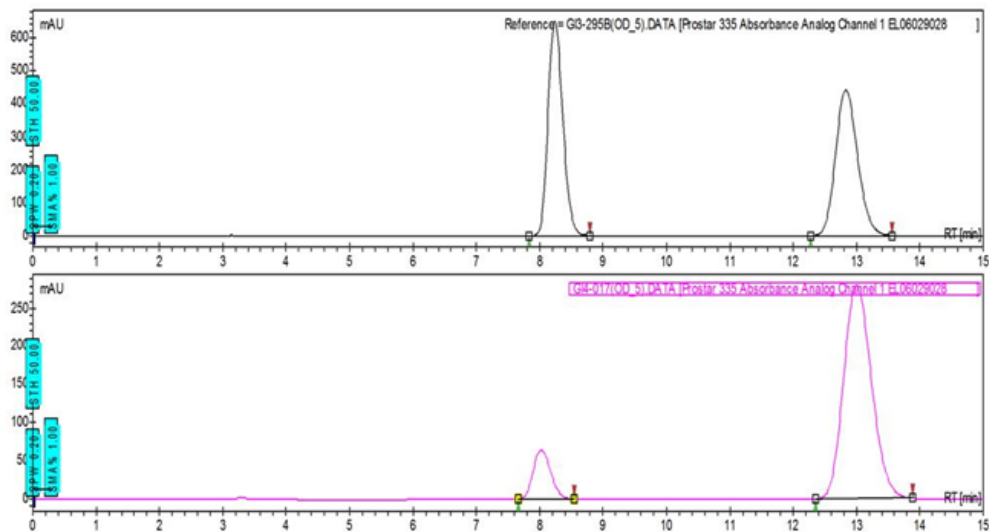




Chromatogram : GI3-017(OD_5)_channel1

System : HPLC
Method : Ingle
User : User1

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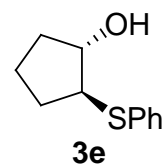
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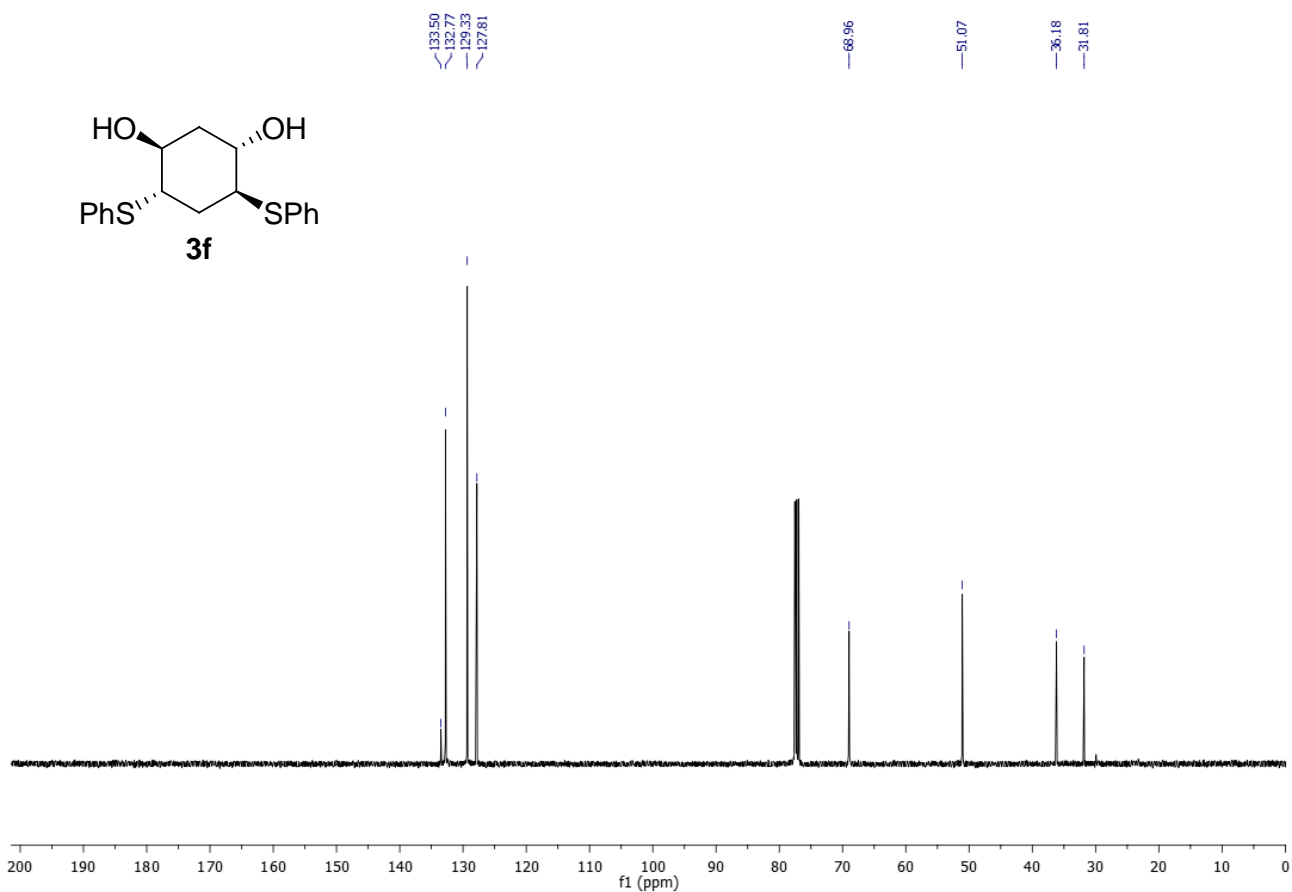
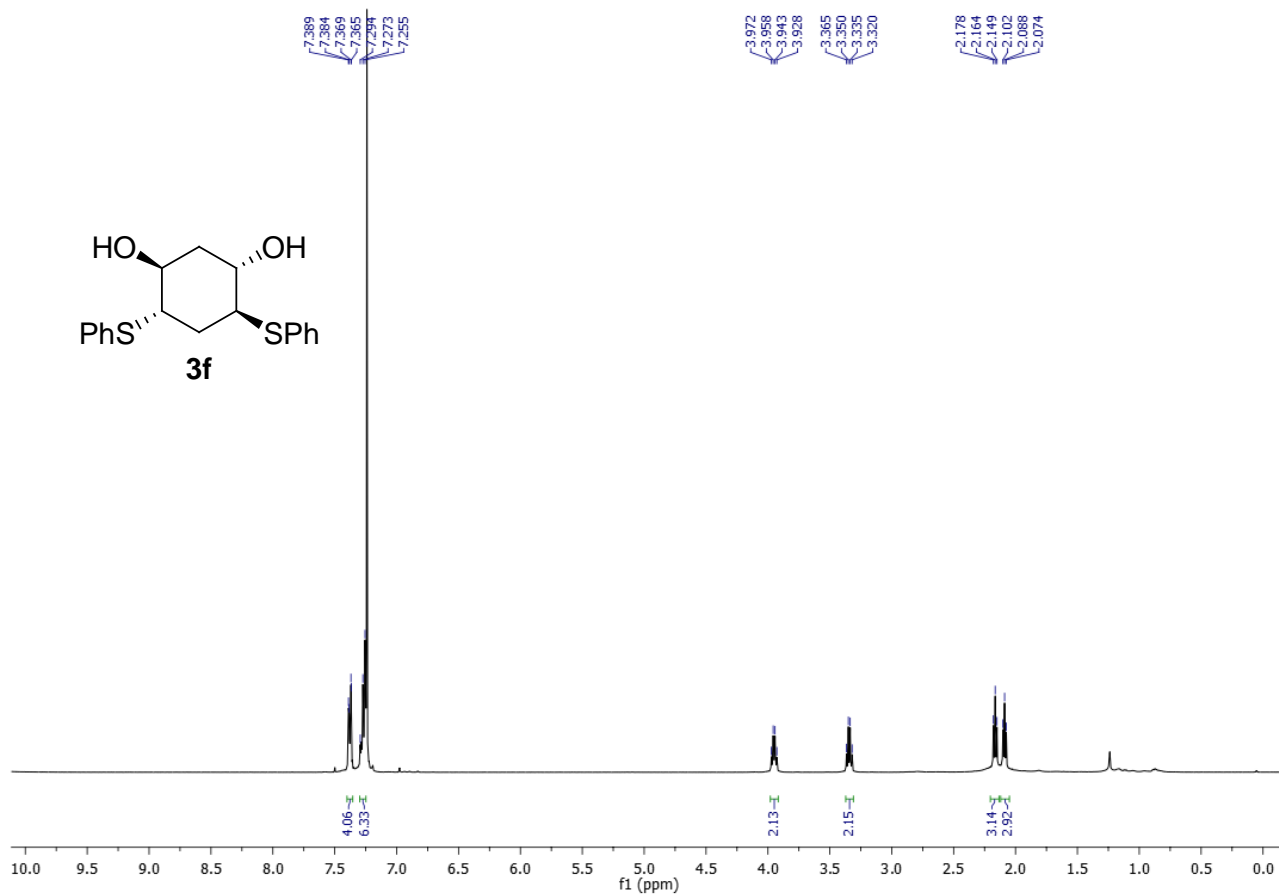
GI3-295B(OD_5)_DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

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1	8.24	650.3	0.43	177.1	49.852
2	12.83	442.1	0.64	178.1	50.148
Total		1092.4		355.2	100.000

GI4-017(OD_5)_DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.03	63.8	0.51	20.1	12.331
2	13.00	280.2	0.81	142.9	87.669
Total		344.0		163.0	100.000

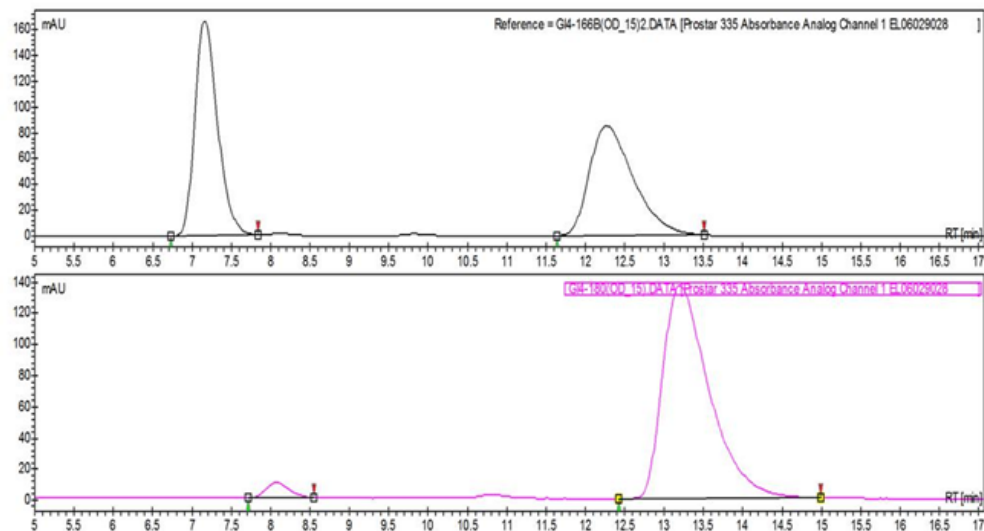




Chromatogram : GI4-180(OD_15)_channel1

System : HPLC
Method : Ingle
User : User1

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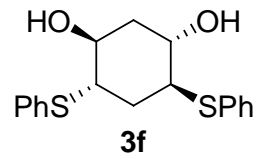
Peak results :

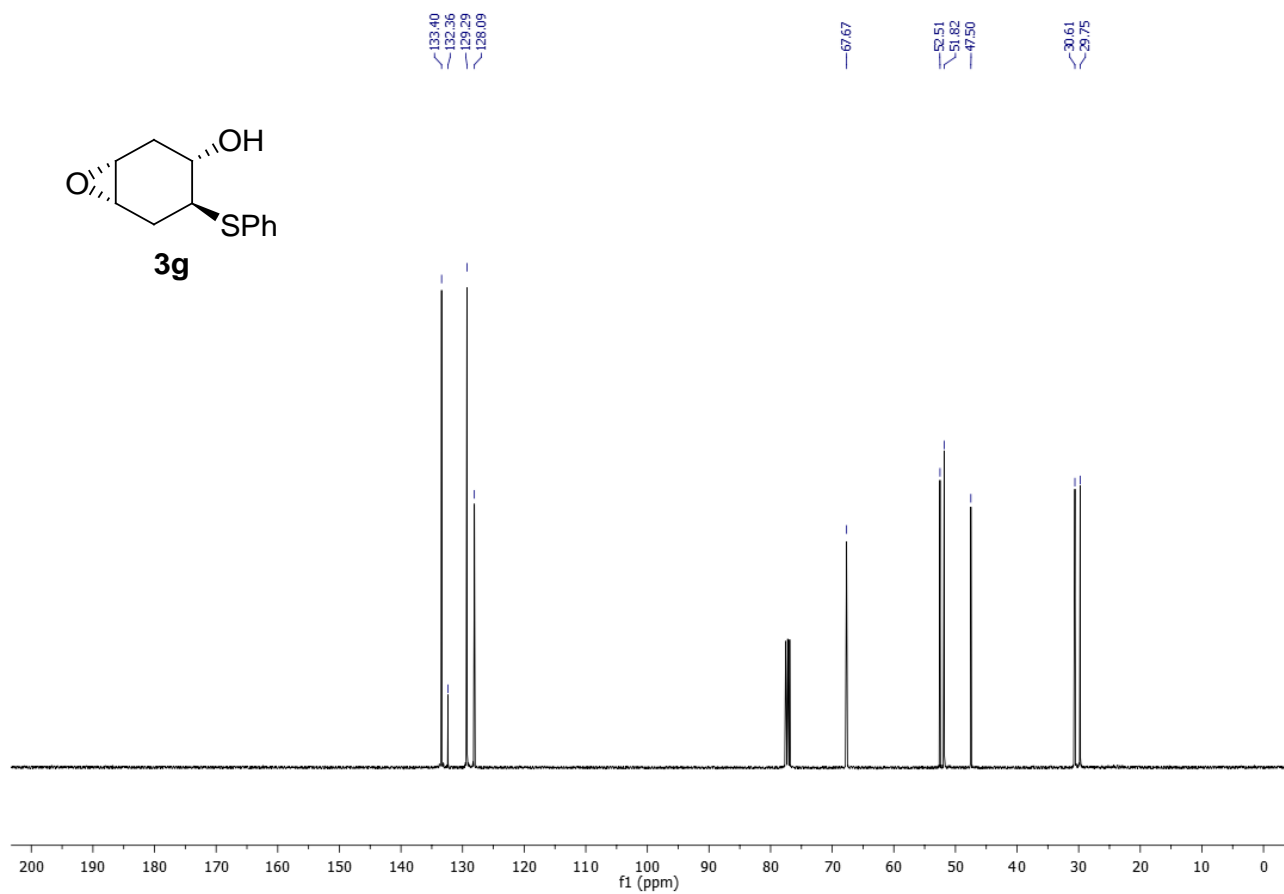
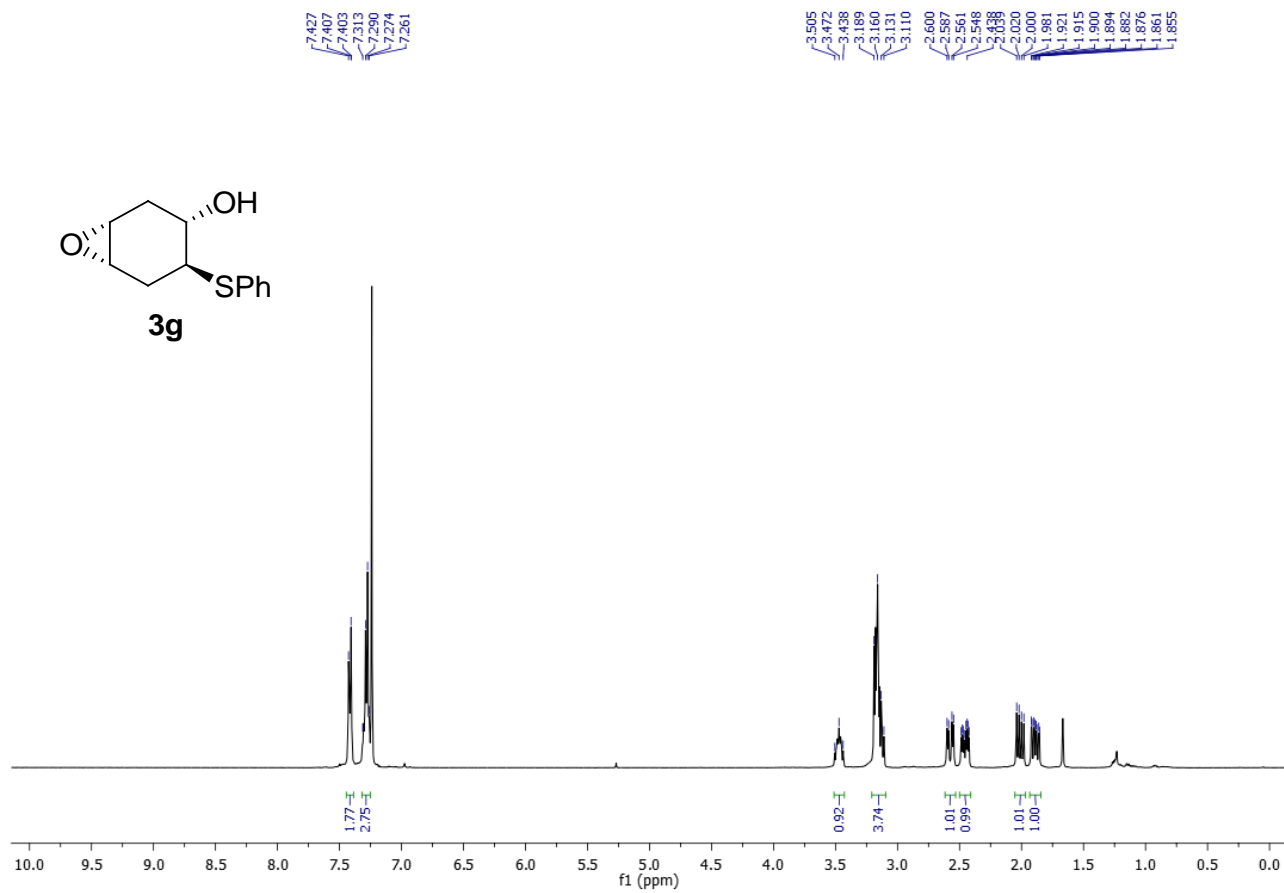
GI4-166B(OD_15)2.D\\ATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	7.16	166.7	0.53	55.8	50.231
1	12.27	85.3	1.02	55.3	49.769
Total		252.0		111.1	100.000

GI4-180(OD_15)2.D\\ATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
2	8.07	9.7	0.54	3.3	3.378
1	13.20	136.7	1.06	93.6	96.622
Total		146.4		96.9	100.000

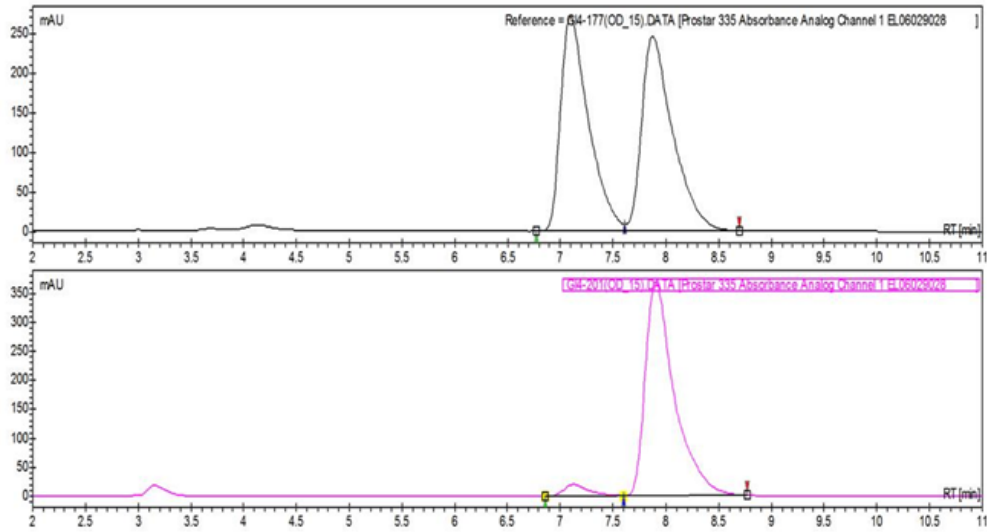




Chromatogram : GI4-172(OD_15)_channel1

System : HPLC
 Method : Ingle
 User : User1

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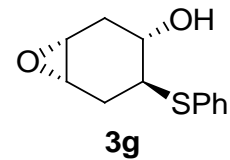
Peak results :

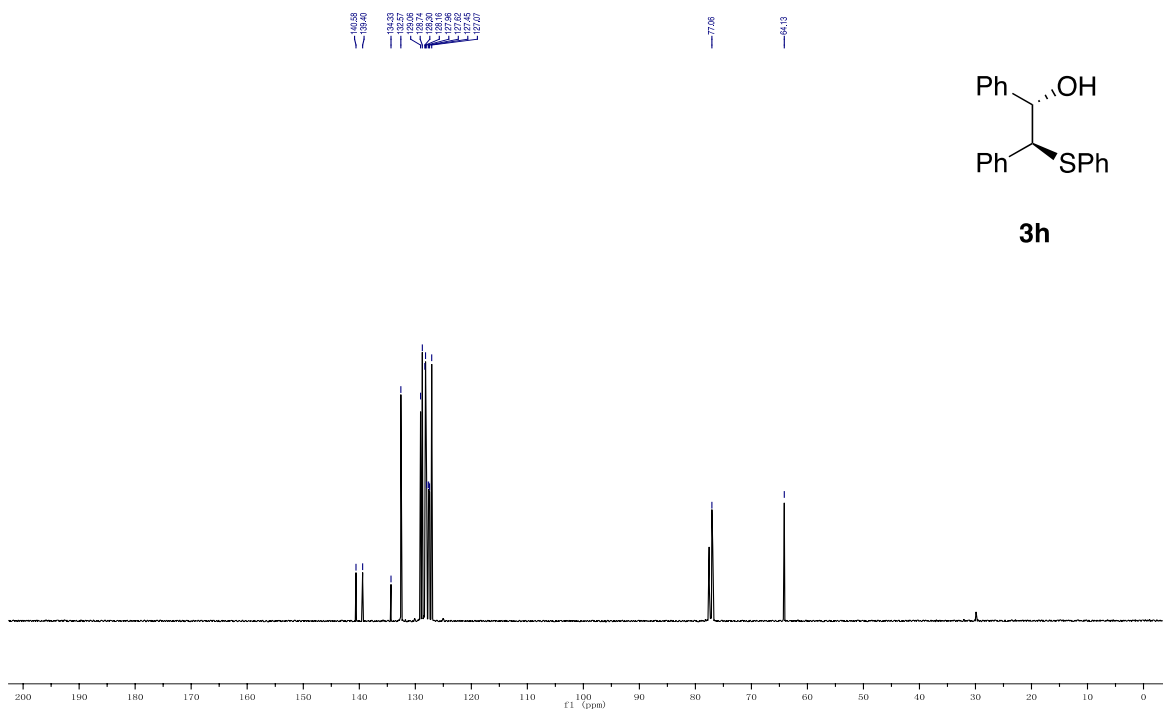
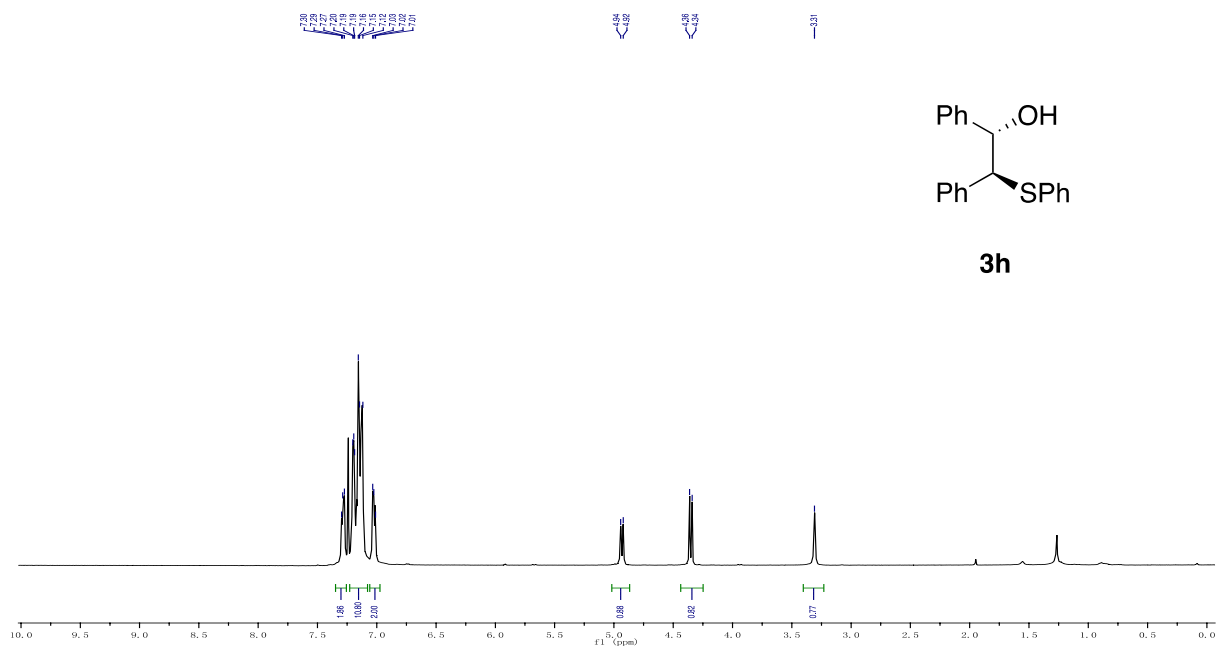
GI4-177(OD_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	7.09	269.3	0.48	82.9	49.774
2	7.88	245.4	0.52	83.7	50.226
Total		514.7		166.6	100.000

GI4-201(OD_15).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	7.12	20.0	0.42	5.5	4.437
2	7.91	371.3	0.46	118.6	95.563
Total		391.3		124.1	100.000

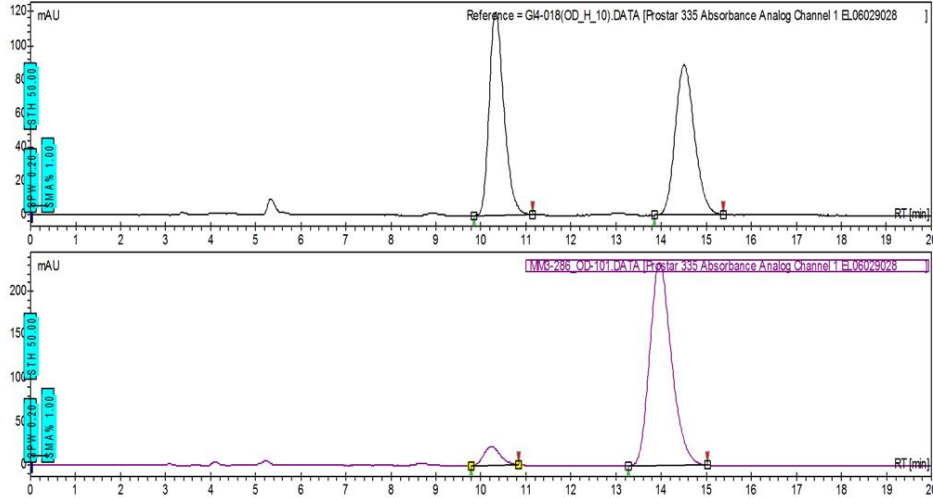




Chromatogram : MM3-286_OD-101_channel1

System : HPLC
 Method : Ingle
 User : User1

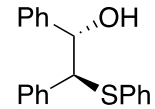
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Peak results :

GI4-018(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

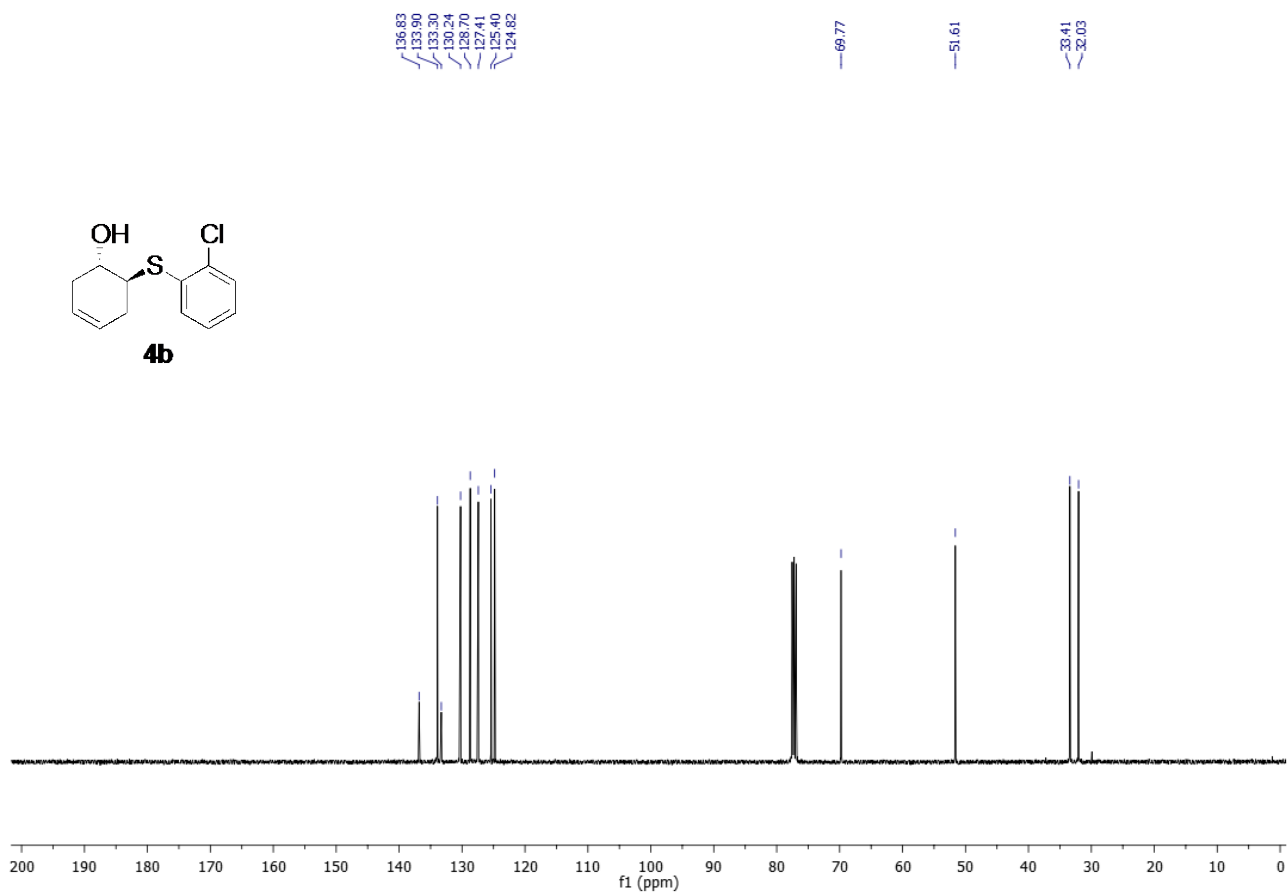
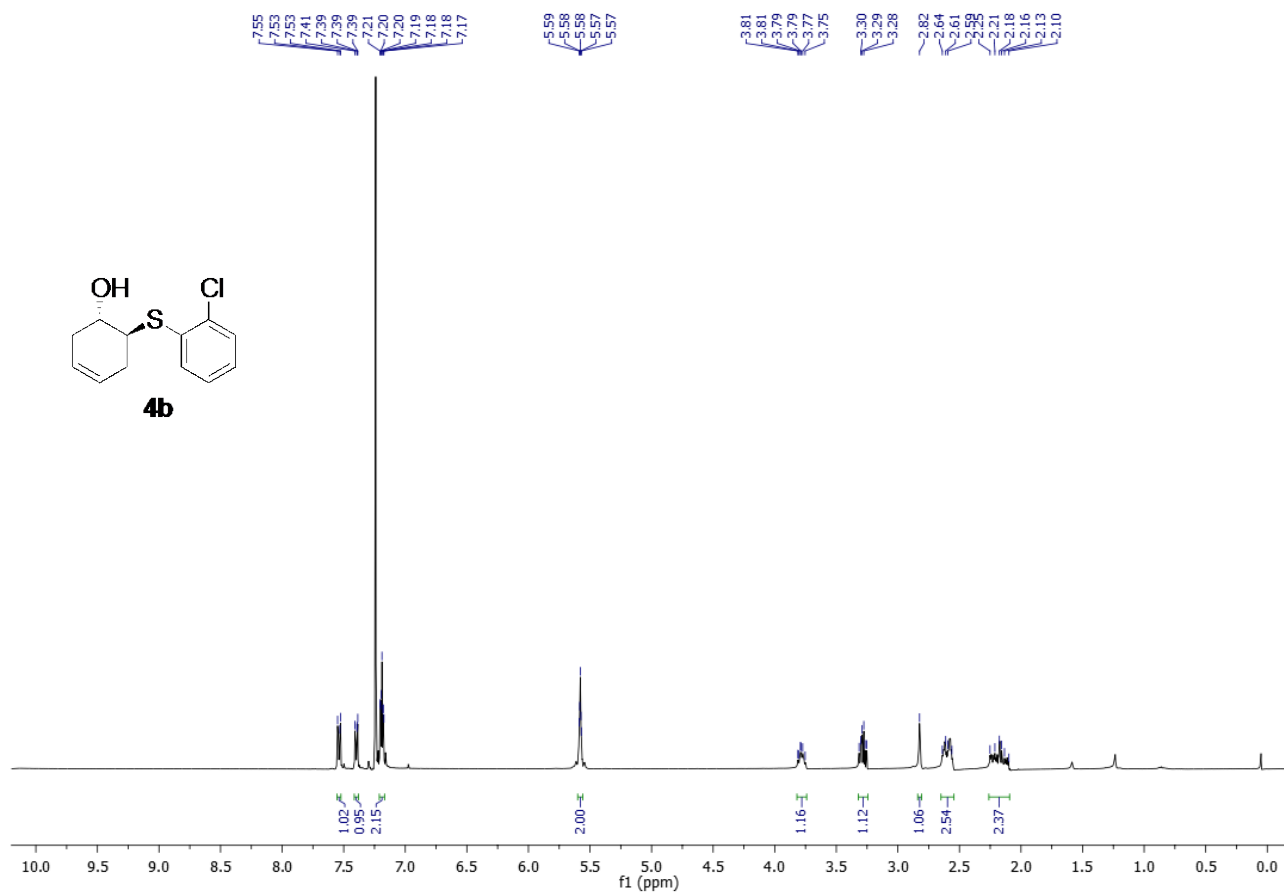
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	10.32	119.7	0.60	45.4	50.673
2	14.51	88.7	0.79	44.2	49.327
Total		208.4		89.5	100.000



MM3-286_OD-101.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	10.23	21.8	0.67	9.1	6.486
2	13.96	233.2	0.89	130.7	93.514
Total		255.0		139.8	100.000

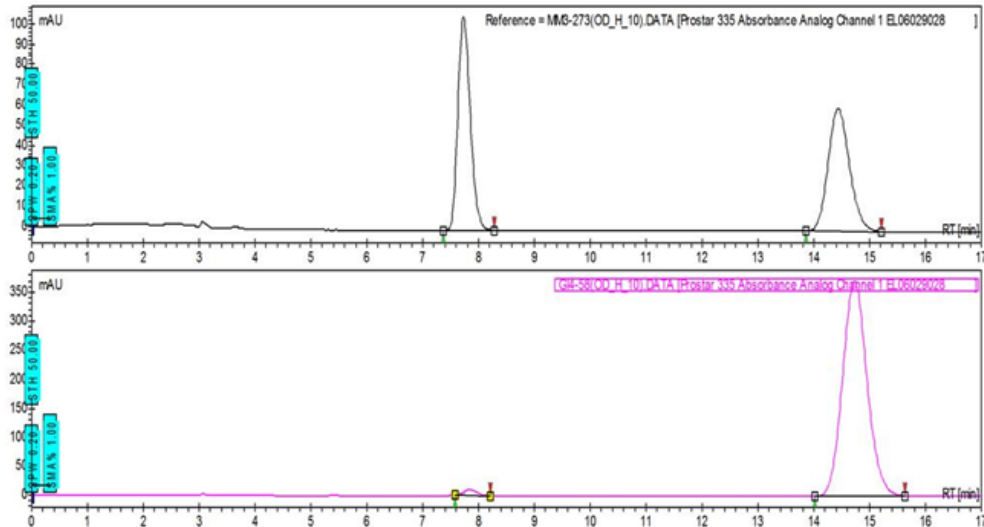
3h



Chromatogram : GI4-58(OD_H_10)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 10/15/2011 10:38:24 PM
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Printed : 7/17/2012 3:21:42 PM



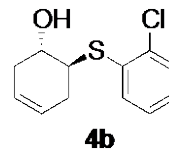
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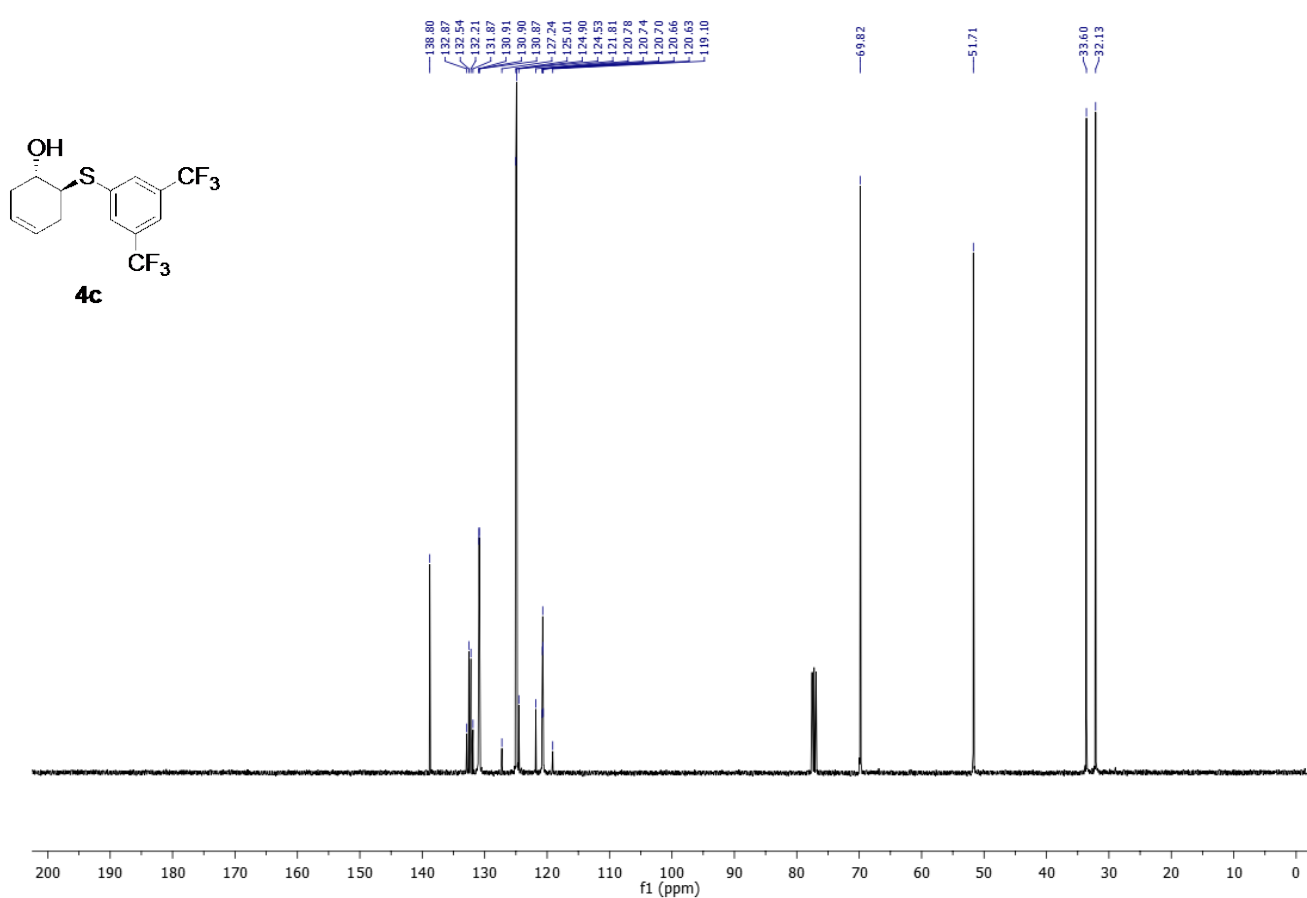
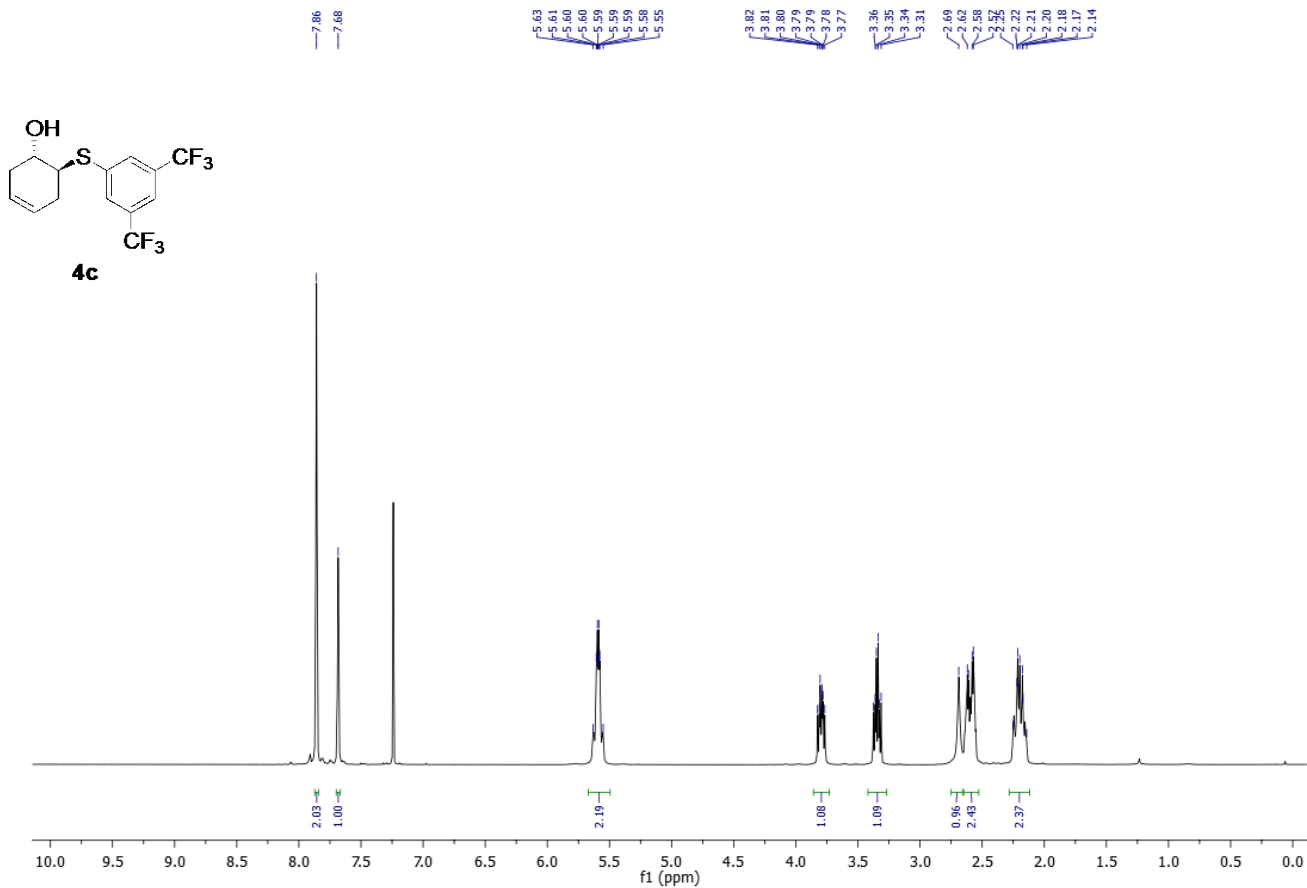
MM3-273(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	7.73	105.5	0.41	27.1	50.108
2	14.44	60.6	0.71	27.0	49.892
Total		166.1		54.2	100.000

GI4-58(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	7.85	10.0	0.44	2.7	1.407
2	14.73	370.0	0.81	188.3	98.593
Total		380.0		191.0	100.000

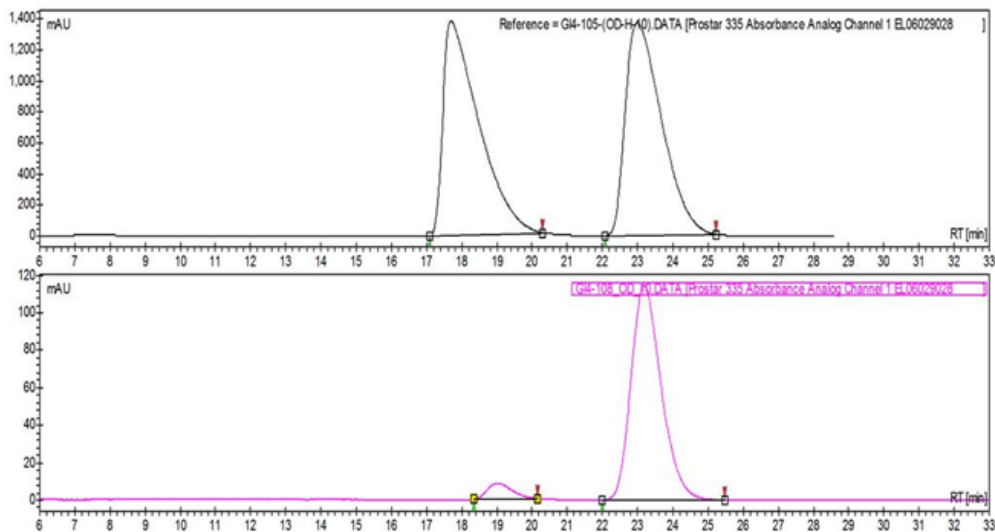




Chromatogram : GI4-108_OD_10_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 2/7/2012 11:34:19 PM
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Printed : 7/17/2012 3:23:28 PM



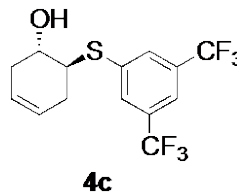
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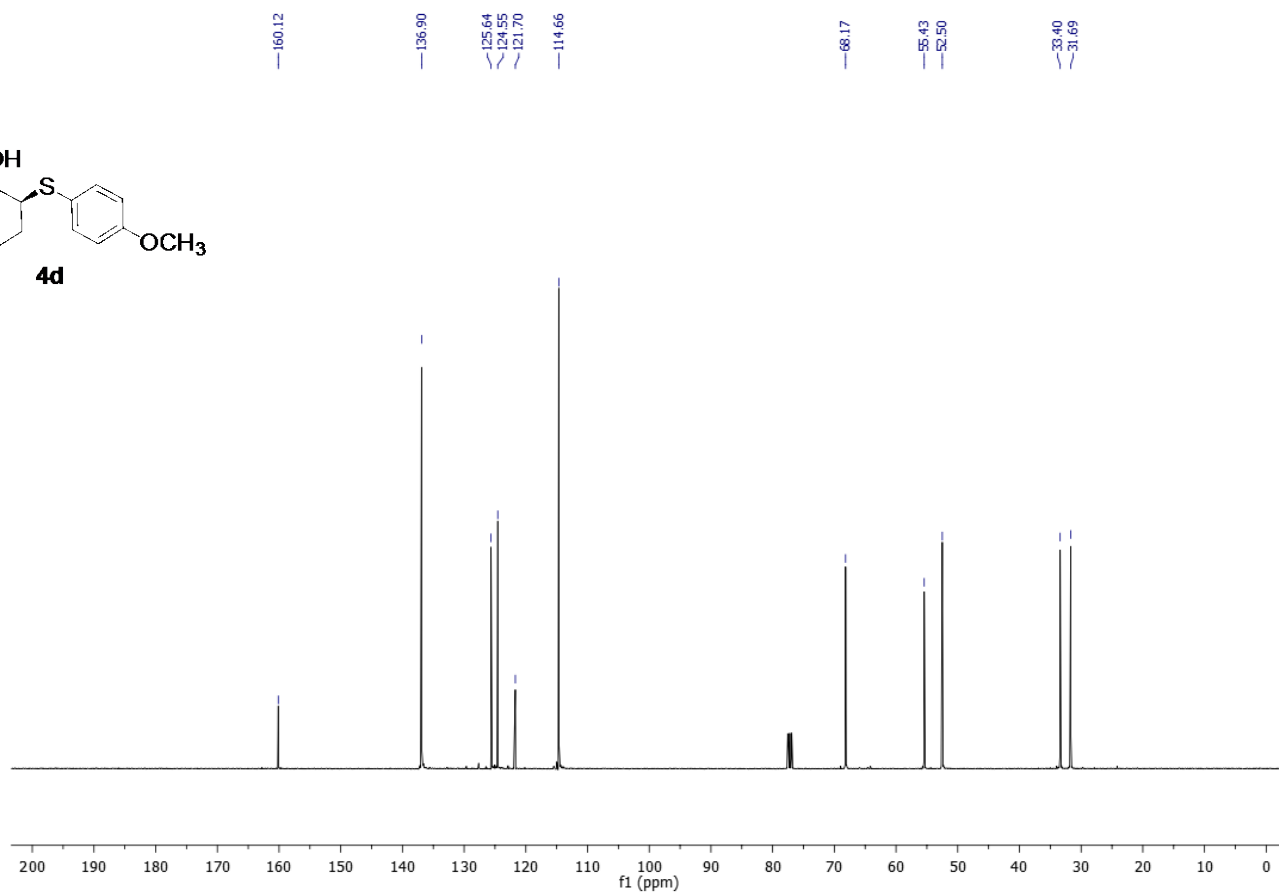
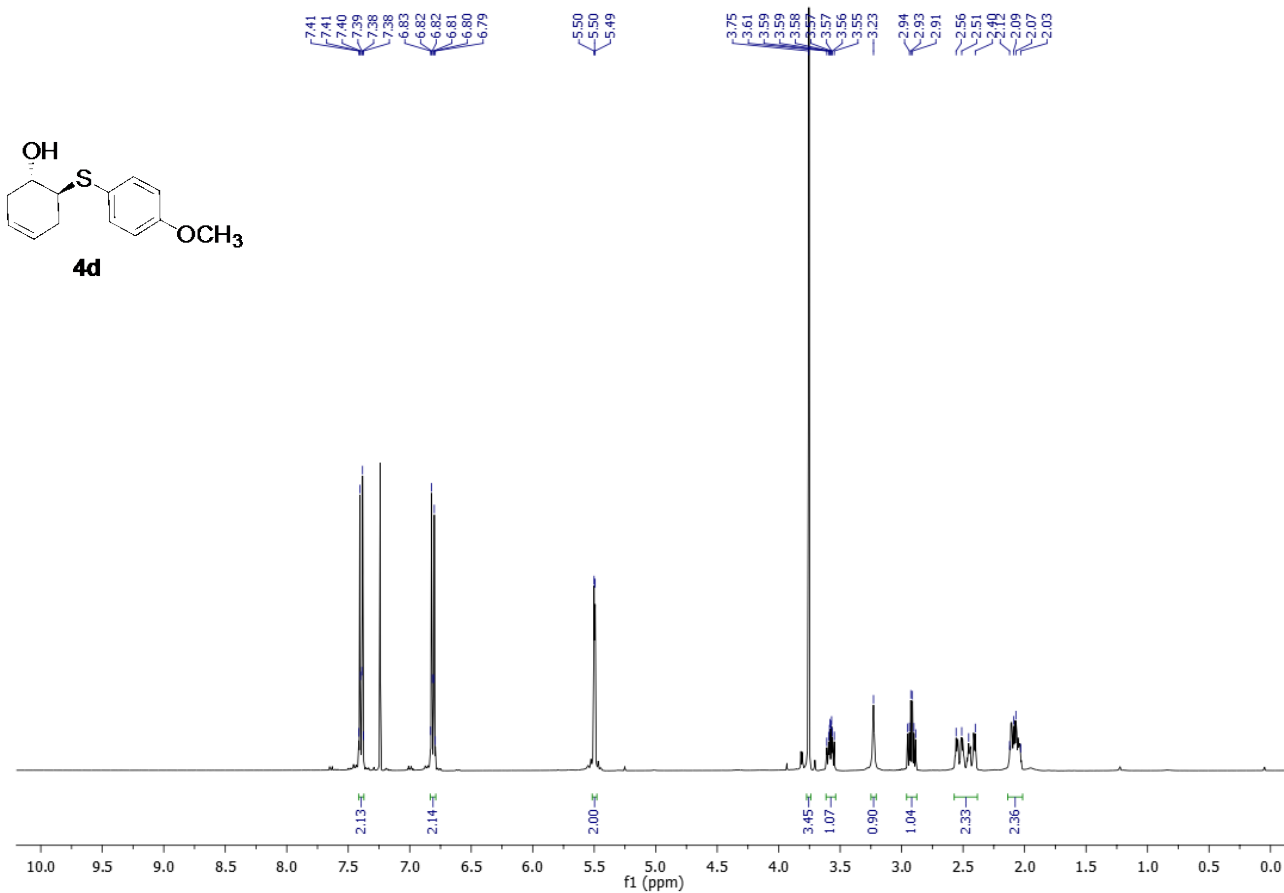
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Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	17.69	1379.6	1.92	1626.5	49.950
2	22.99	1367.3	1.91	1629.7	50.050
Total		2746.9		3256.2	100.000

GI4-108_OD_10.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	19.01	8.5	1.29	6.9	5.734
2	23.19	114.7	1.57	113.6	94.266
Total		123.2		120.5	100.000

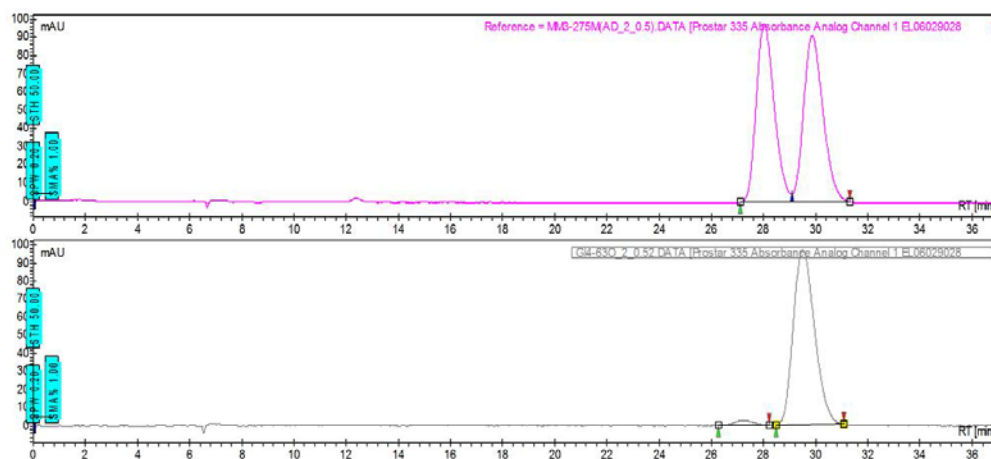




Chromatogram : GI4-63O_2_0.52_channel1

System : HPLC
Method : Ingle
User : User1

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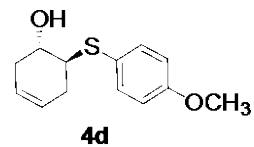
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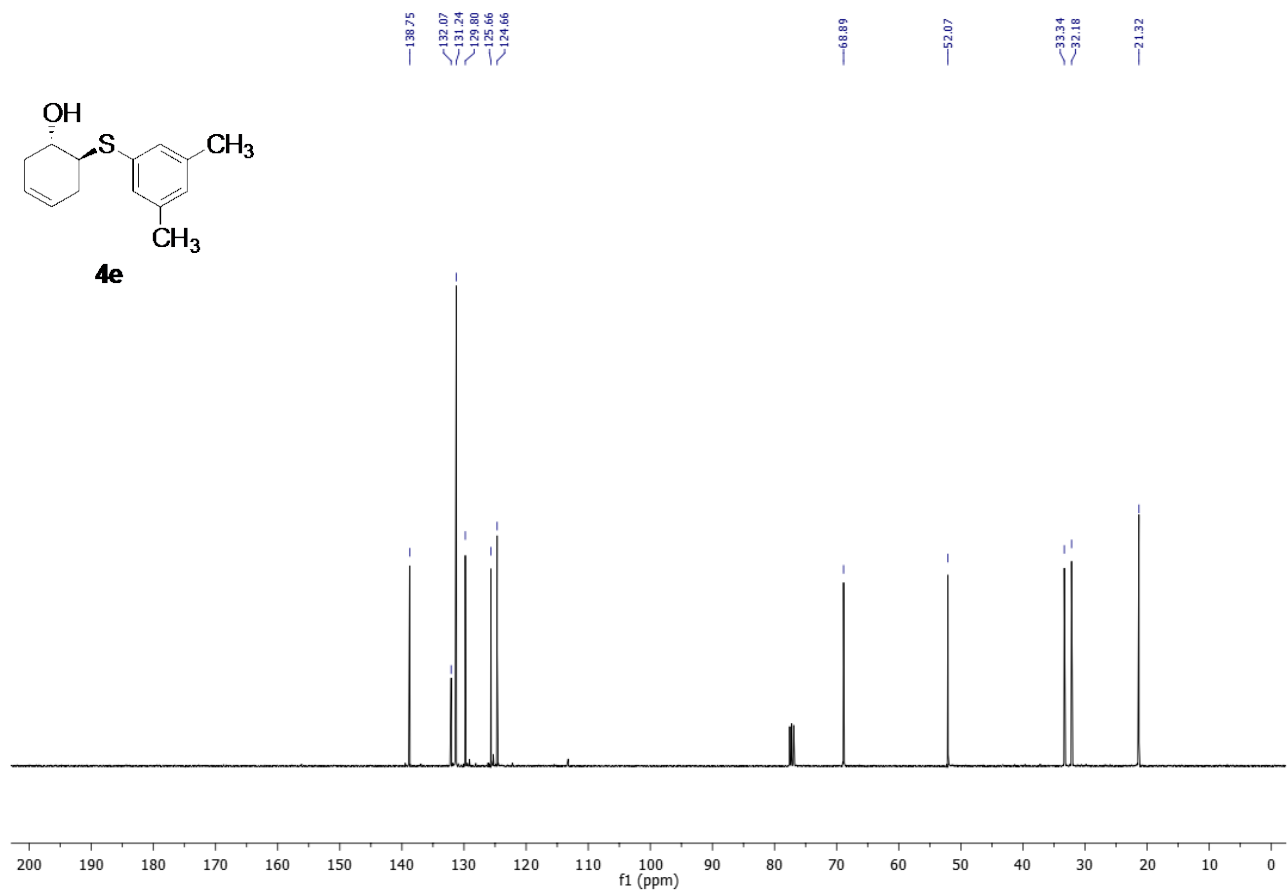
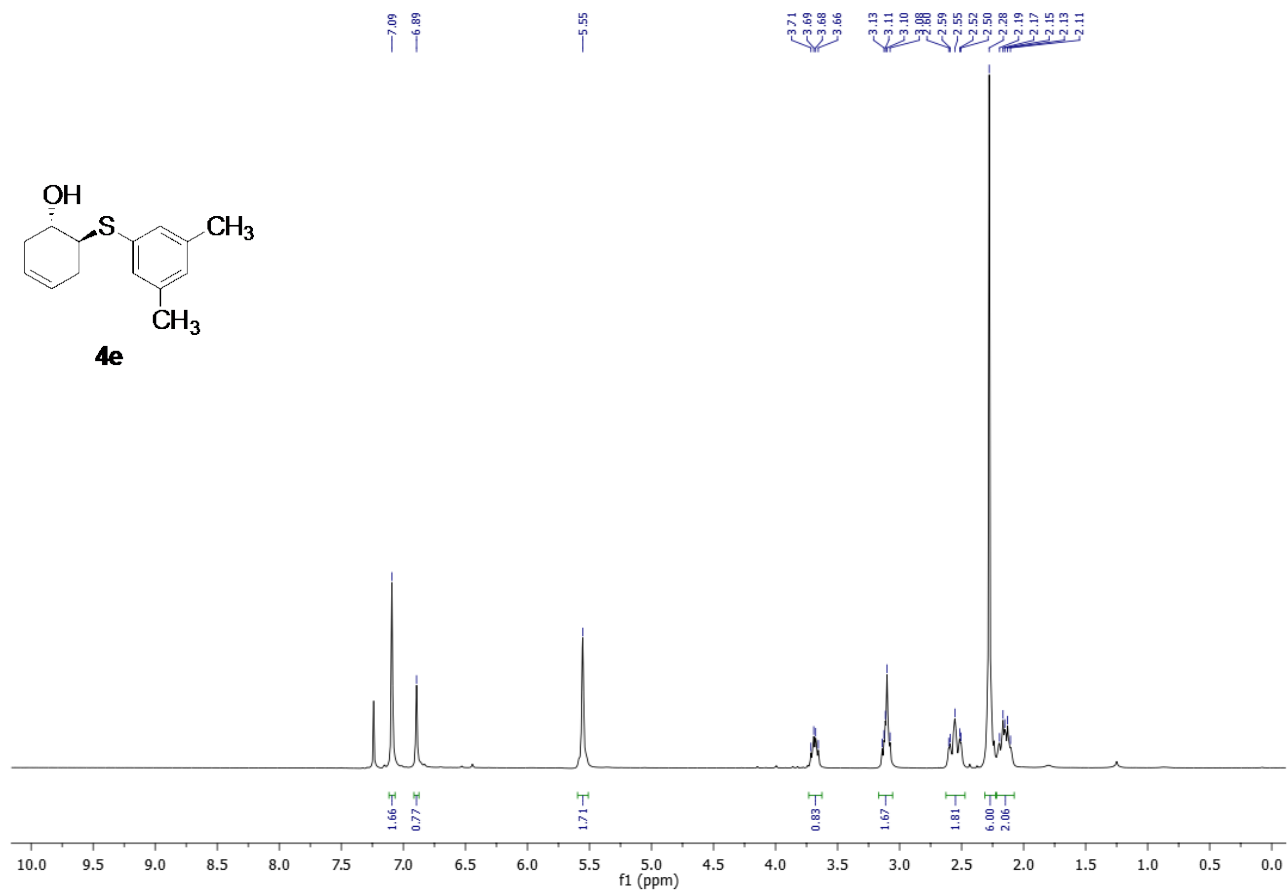
MM3-275M(AD_2_0.5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width [Min]	USP [Min]	Area [mAU.Min]	Area % [%]
1	28.03	97.9	1.28		78.6	49.843
2	29.87	91.2	1.37		79.1	50.157
Total		189.1			157.6	100.000

GI4-63O_2_0.52.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width [Min]	USP [Min]	Area [mAU.Min]	Area % [%]
2	27.17	2.9	1.32		2.3	2.471
1	29.51	97.1	1.51		91.9	97.529
Total		100.0			94.2	100.000

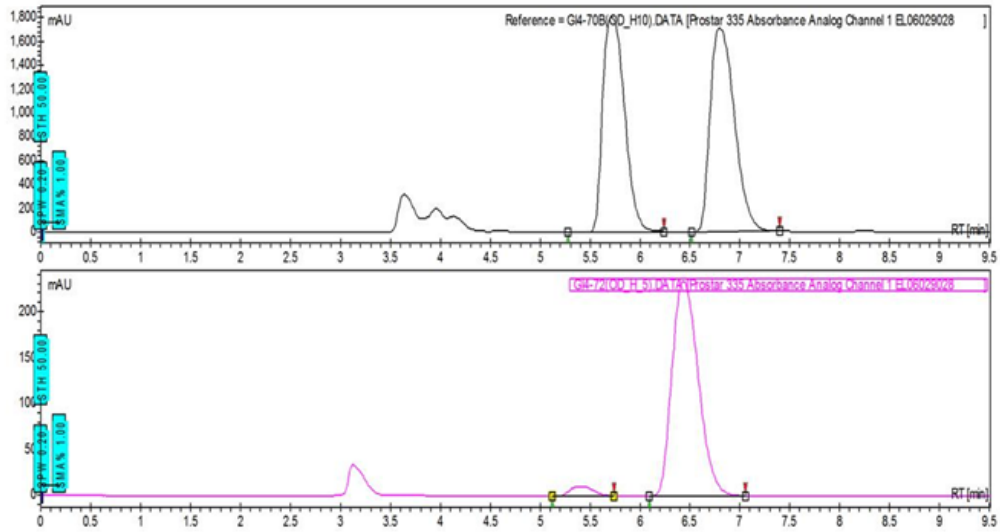




Chromatogram : G14-72(OD_H_10)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 10/28/2011 4:21:00 PM
Processed : 10/28/2011 4:37:35 PM
Printed : 7/17/2012 3:25:46 PM



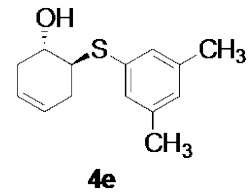
Peak results :

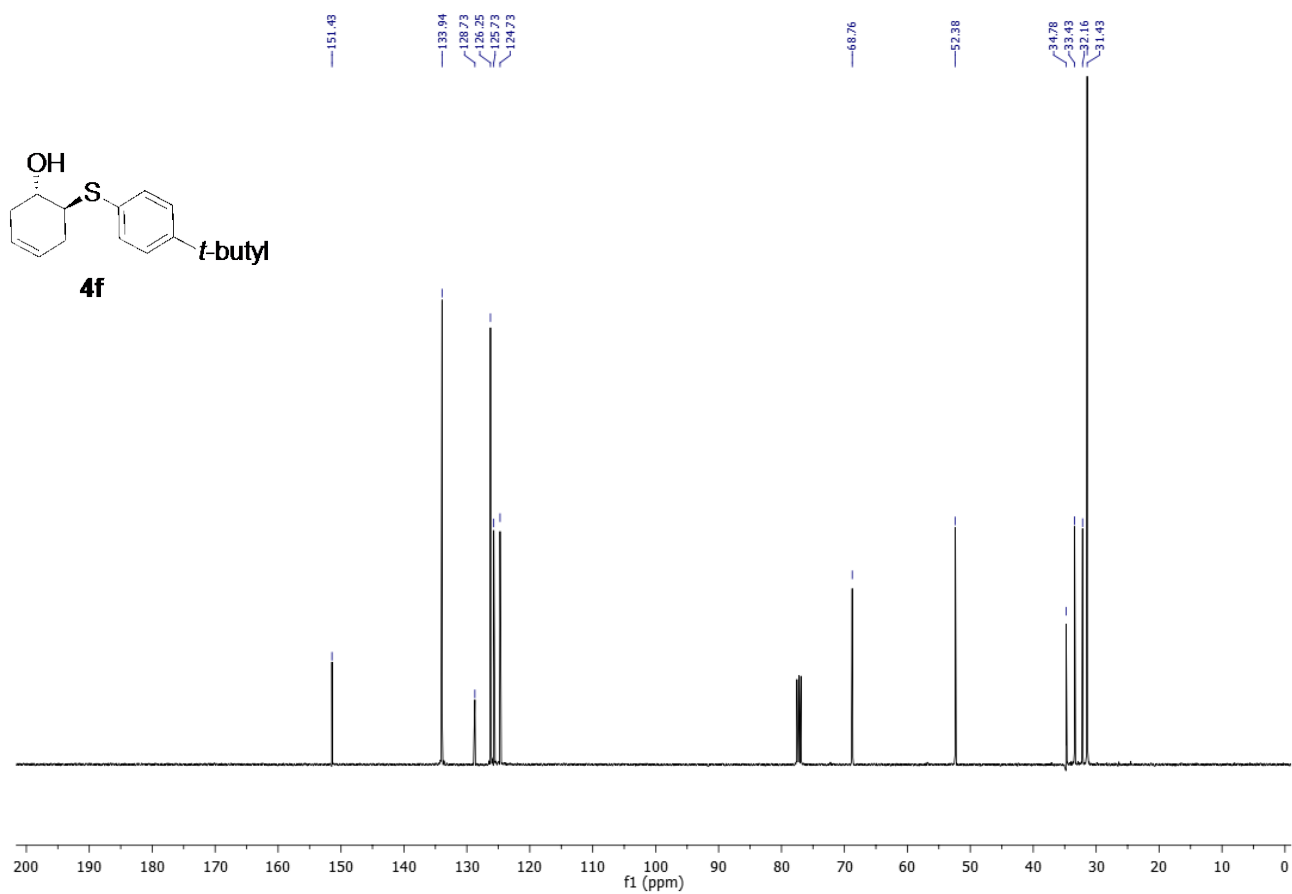
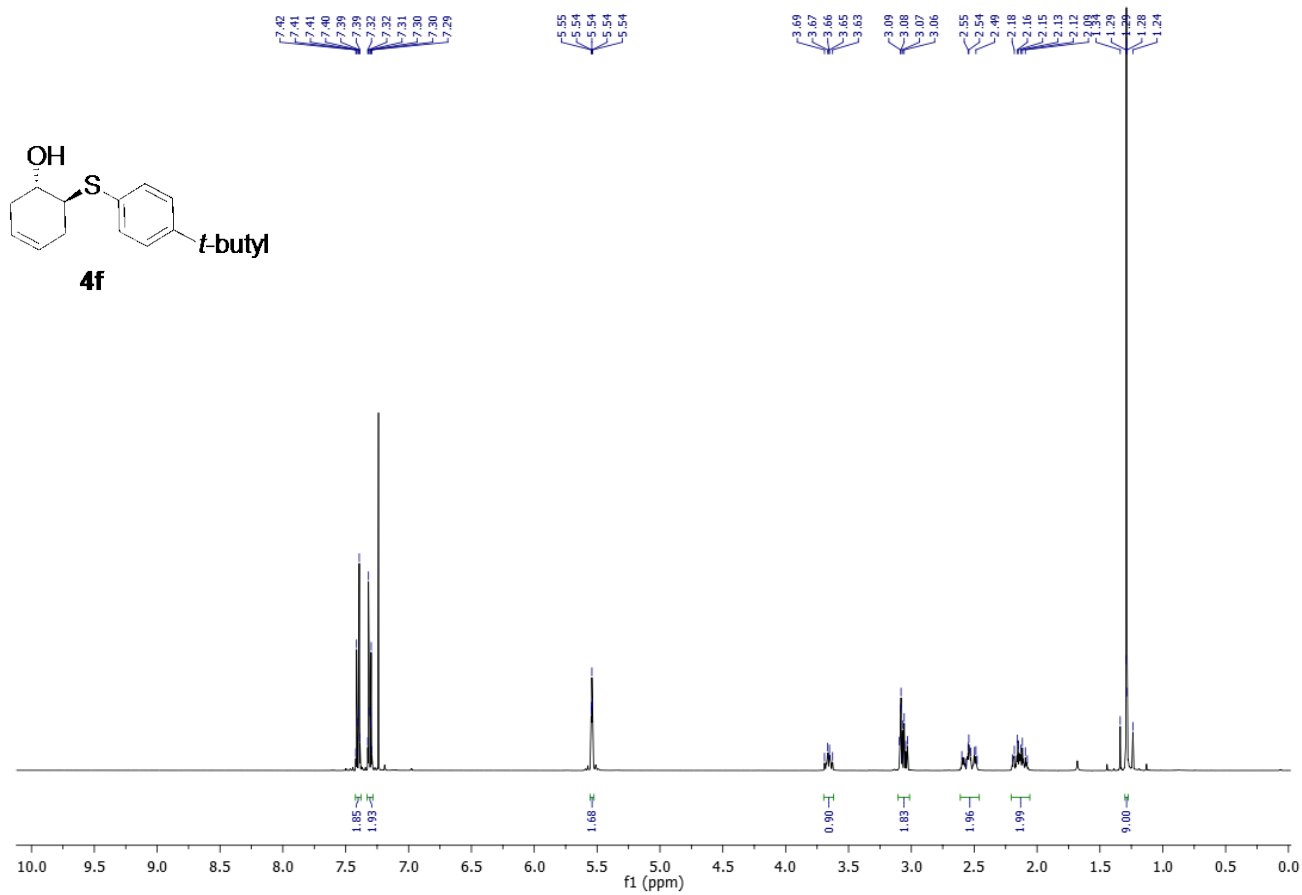
G14-70B(OD_H10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.72	1799.3	0.37	453.5	48.467
2	6.80	1707.6	0.43	482.2	51.533
Total		3506.9		935.6	100.000

G14-72(OD_H_5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.40	11.2	0.42	2.9	3.948
2	6.43	234.8	0.48	71.7	96.052
Total		245.9		74.7	100.000

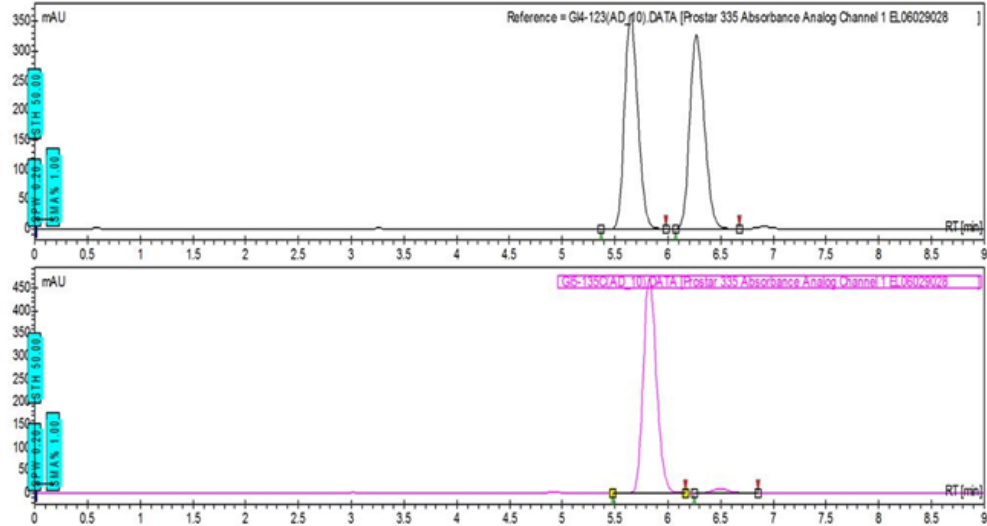




Chromatogram : GI5-135C(AD_10)_channel1

System : HPLC
Method : Ingle
User : User1

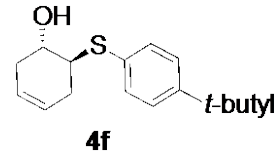
Acquired : 3/7/2012 5:46:12 PM
Processed : 3/7/2012 6:29:18 PM
Printed : 7/17/2012 3:31:06 PM



Peak results :

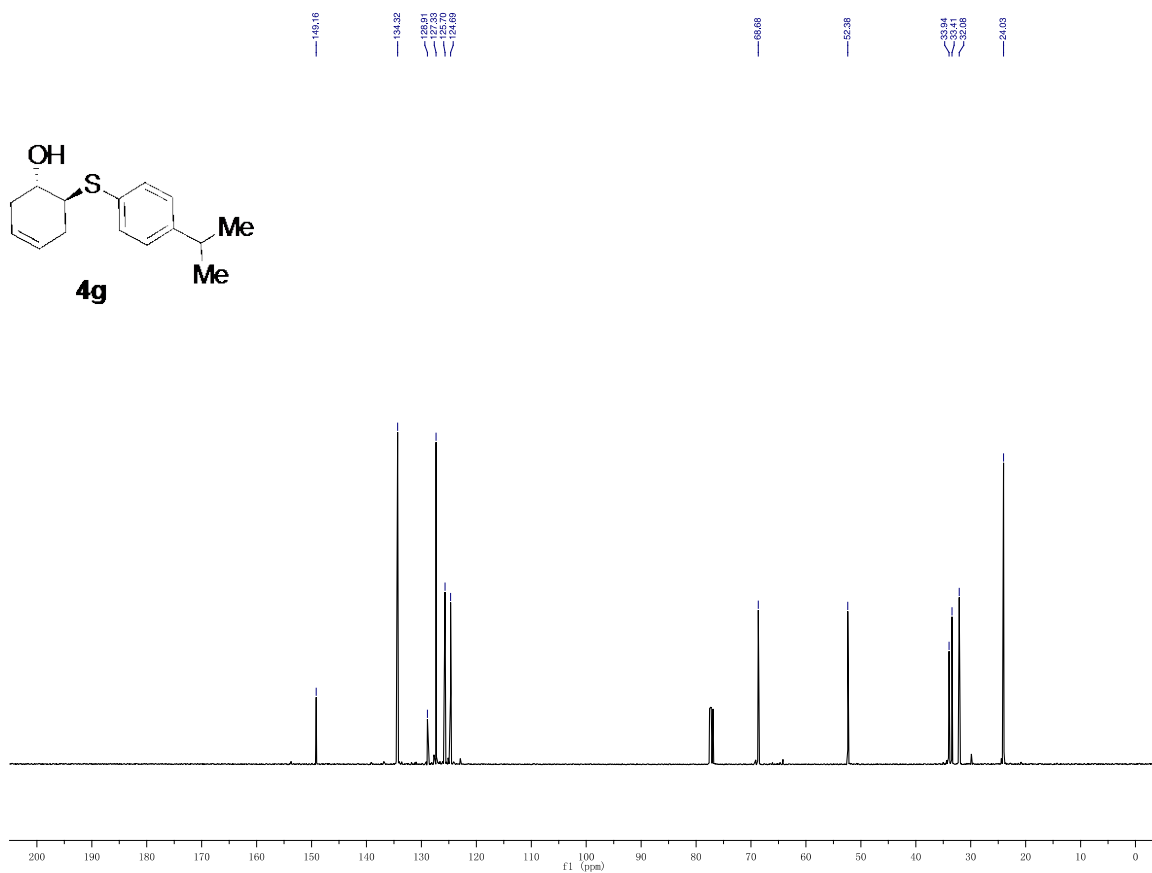
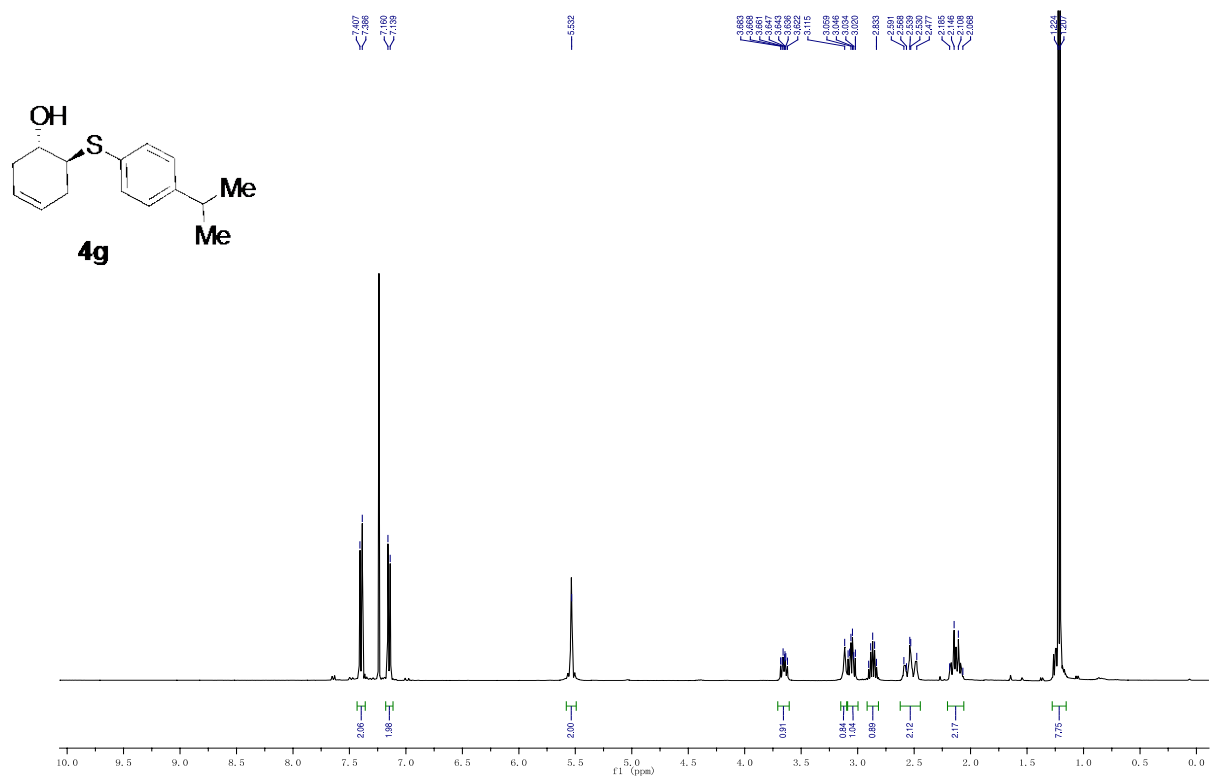
GI4-123(AD_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.65	362.1	0.24	53.0	50.346
2	6.27	325.9	0.26	52.2	49.654
Total		688.1		105.2	100.000



GI5-135C(AD_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

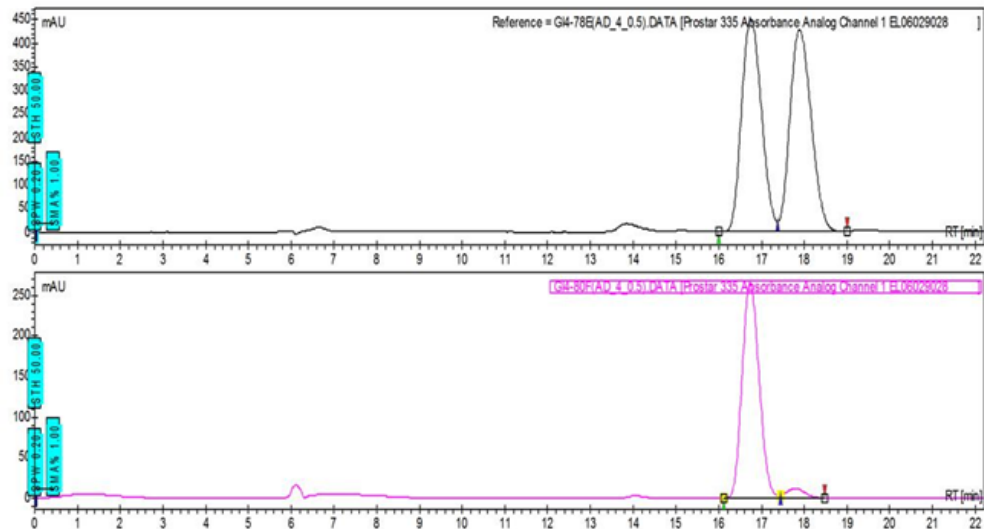
Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.83	469.3	0.24	68.6	97.944
2	6.49	9.0	0.26	1.4	2.056
Total		478.3		70.0	100.000



Chromatogram : GI4-80F(AD_4_0.5)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 7/19/2012 6:55:26 PM
Processed : 7/19/2012 9:32:38 PM
Printed : 7/19/2012 9:45:01 PM



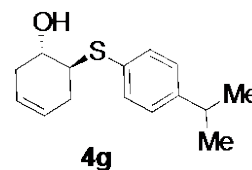
Peak results :

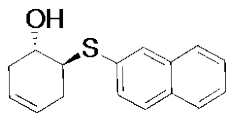
GI4-78E(AD_4_0.5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.75	450.8	0.87	244.1	49.754
2	17.89	427.5	0.92	246.5	50.246
Total		878.3		490.6	100.000

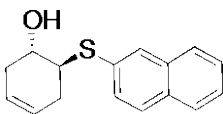
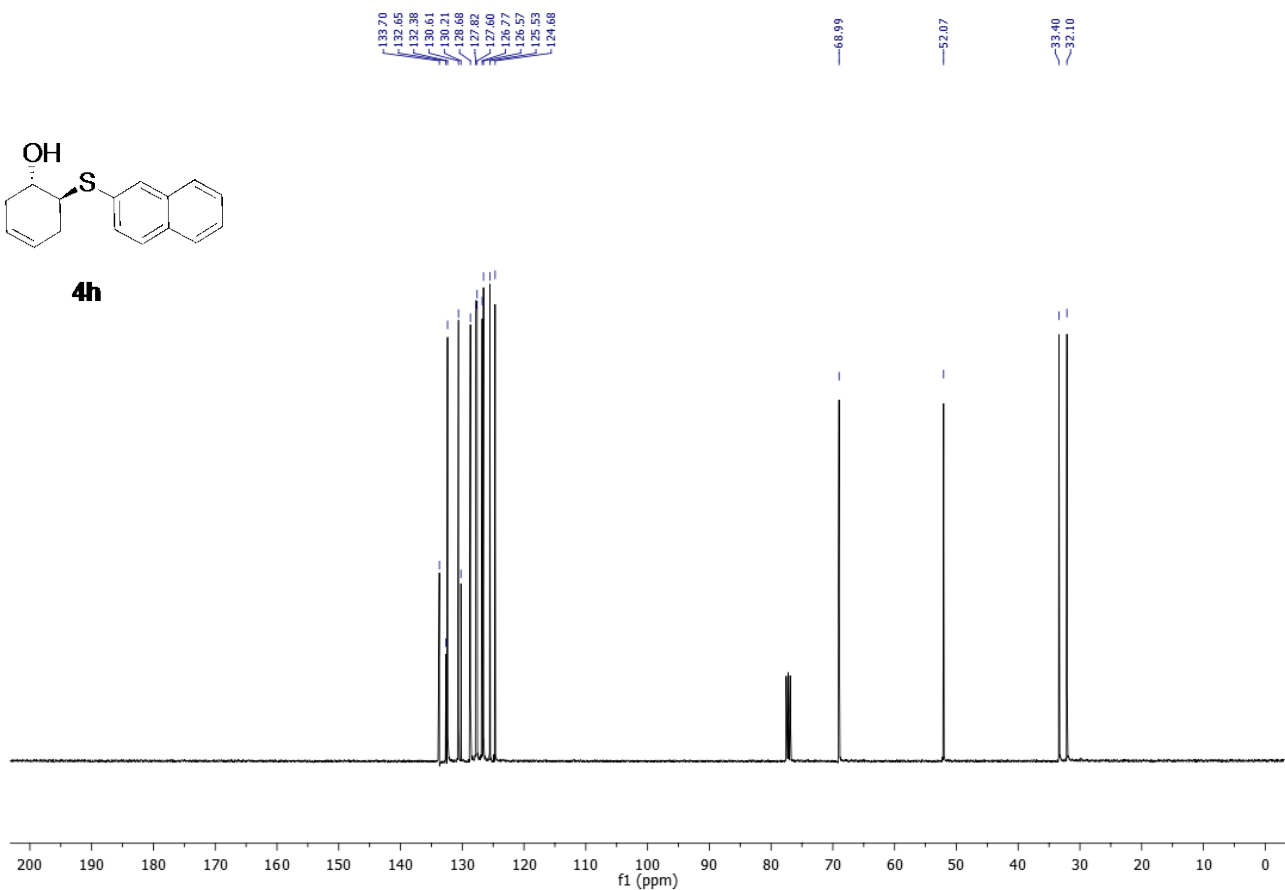
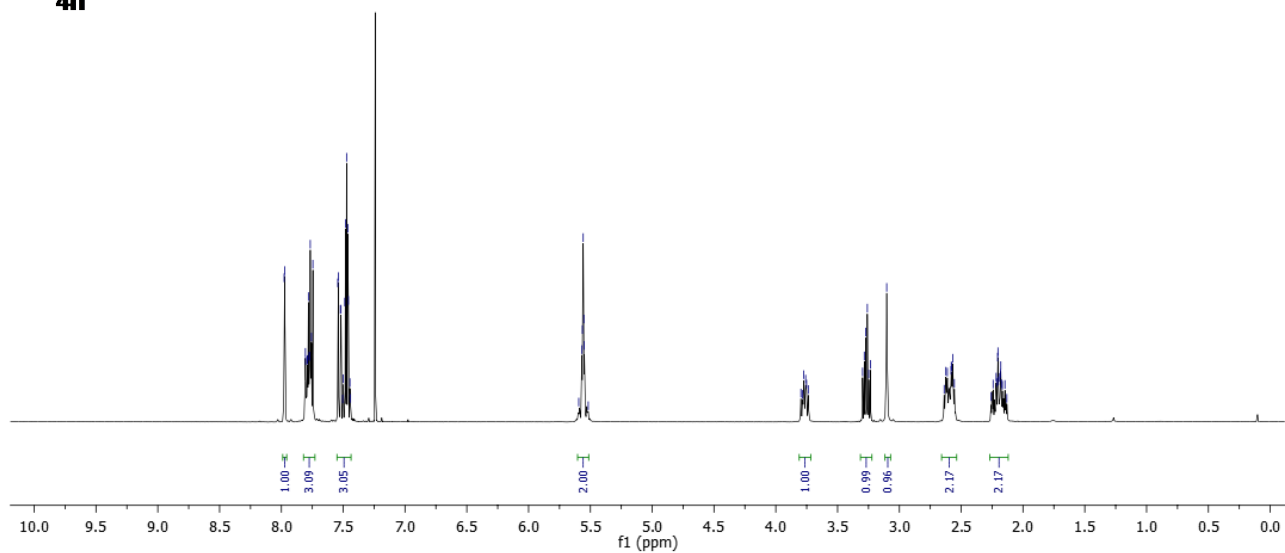
GI4-80F(AD_4_0.5).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.73	264.9	0.74	122.6	95.445
2	17.79	11.8	0.76	5.9	4.555
Total		276.7		128.5	100.000





4h

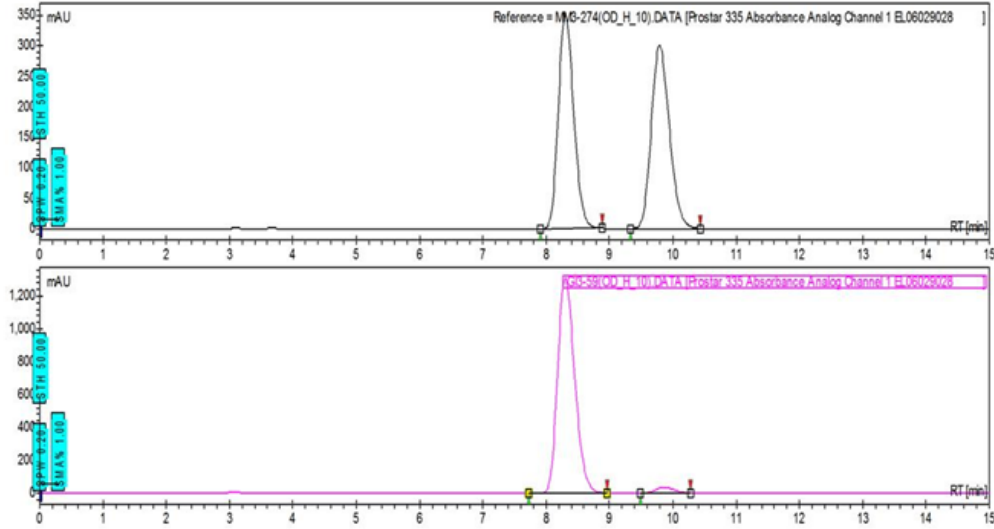


4h

Chromatogram : GI3-59(OD_H_10)_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 10/15/2011 11:02:47 PM
Processed : 10/15/2011 11:45:21 PM
Printed : 7/17/2012 3:33:27 PM



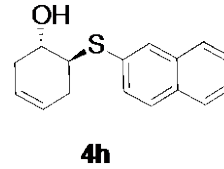
Peak results :

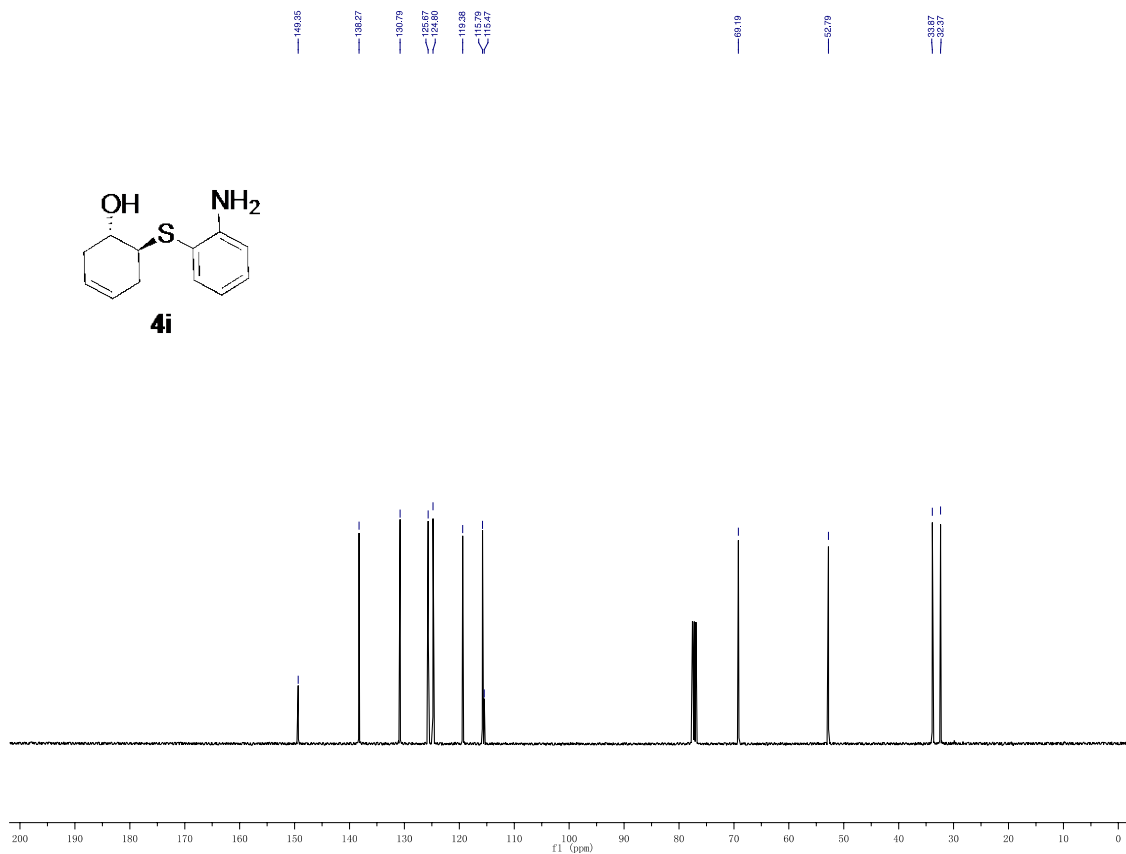
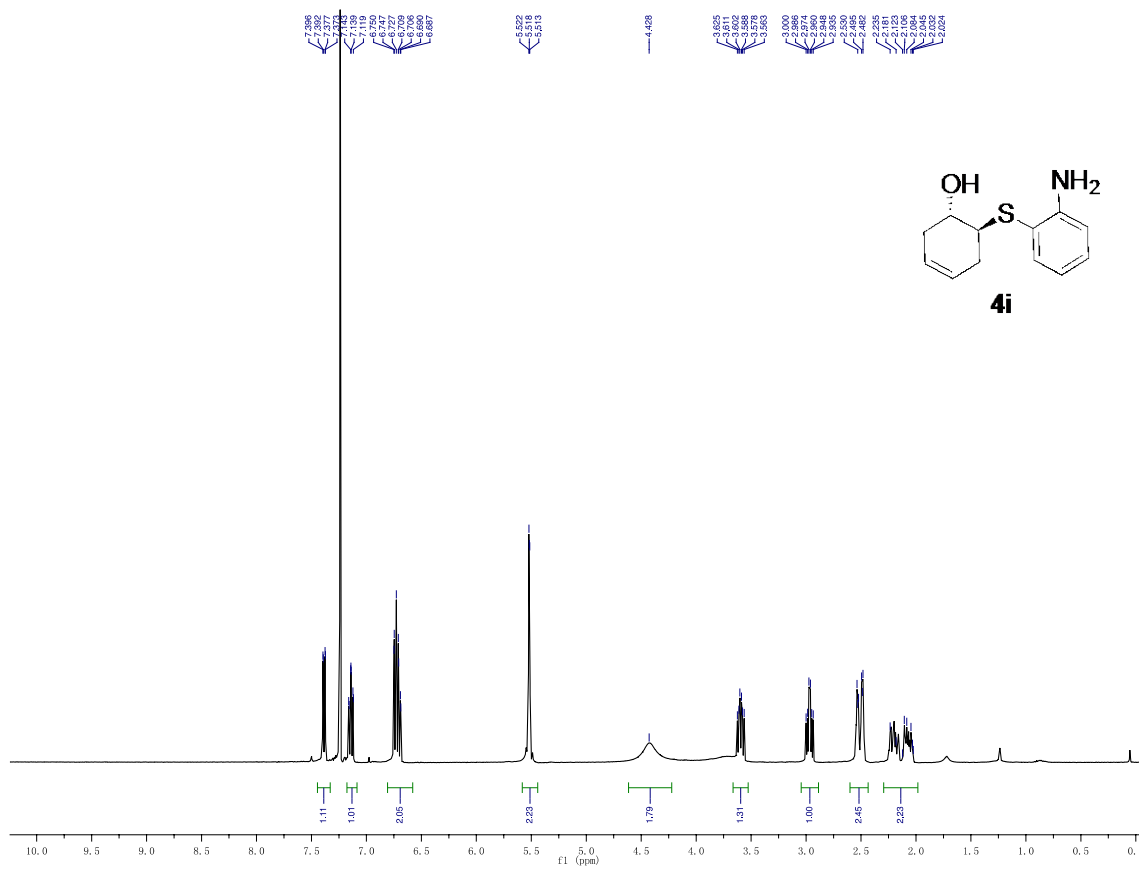
MM3-274(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.31	352.4	0.45	99.5	49.957
2	9.79	300.4	0.53	99.6	50.043
Total		652.8		199.1	100.000

GI3-59(OD_H_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.31	1308.6	0.50	410.4	97.221
2	9.87	35.1	0.54	11.7	2.779
Total		1343.7		422.1	100.000

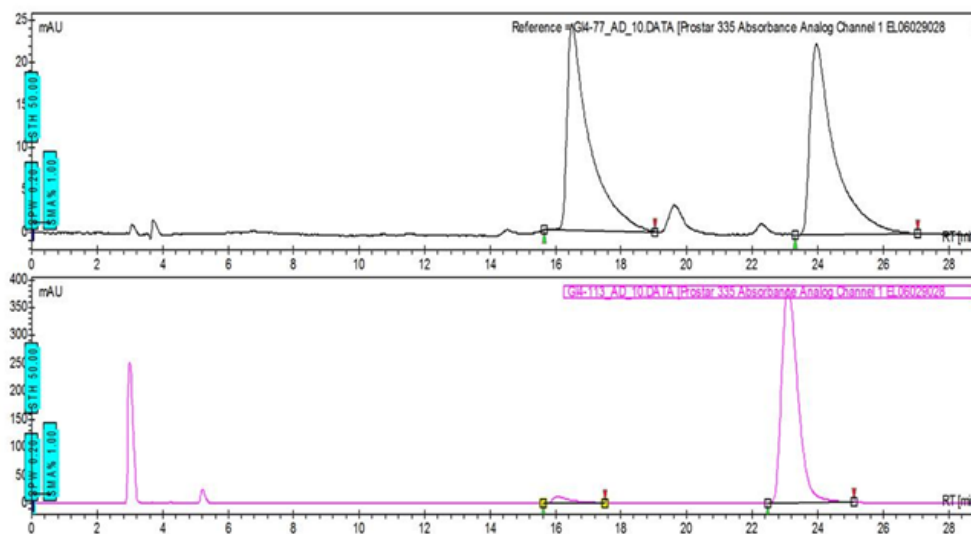




Chromatogram : GI4-113_AD_10_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 2/13/2012 3:58:45 PM
Processed : 7/17/2012 3:36:06 PM
Printed : 7/17/2012 3:37:52 PM



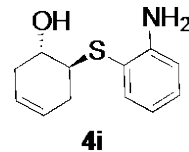
Peak results :

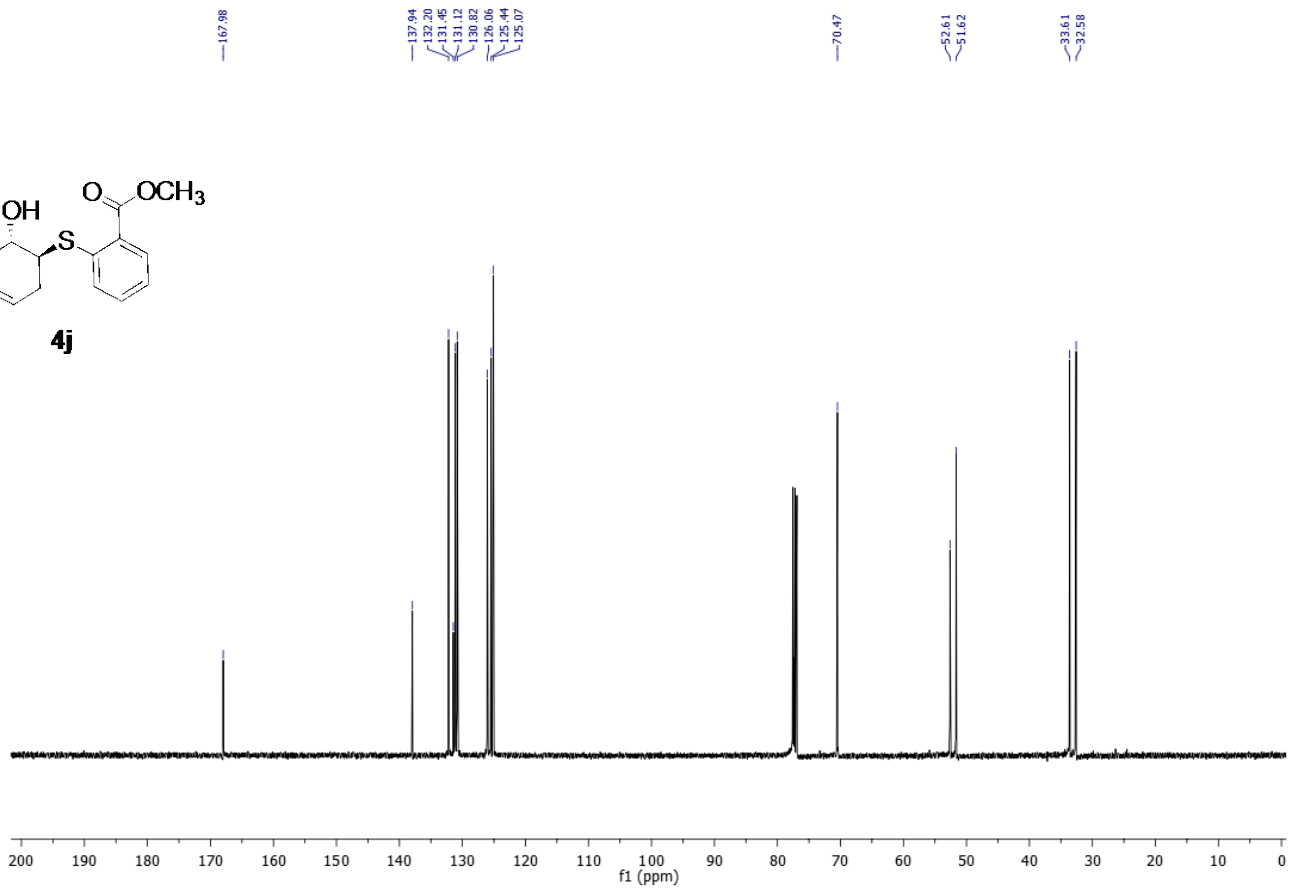
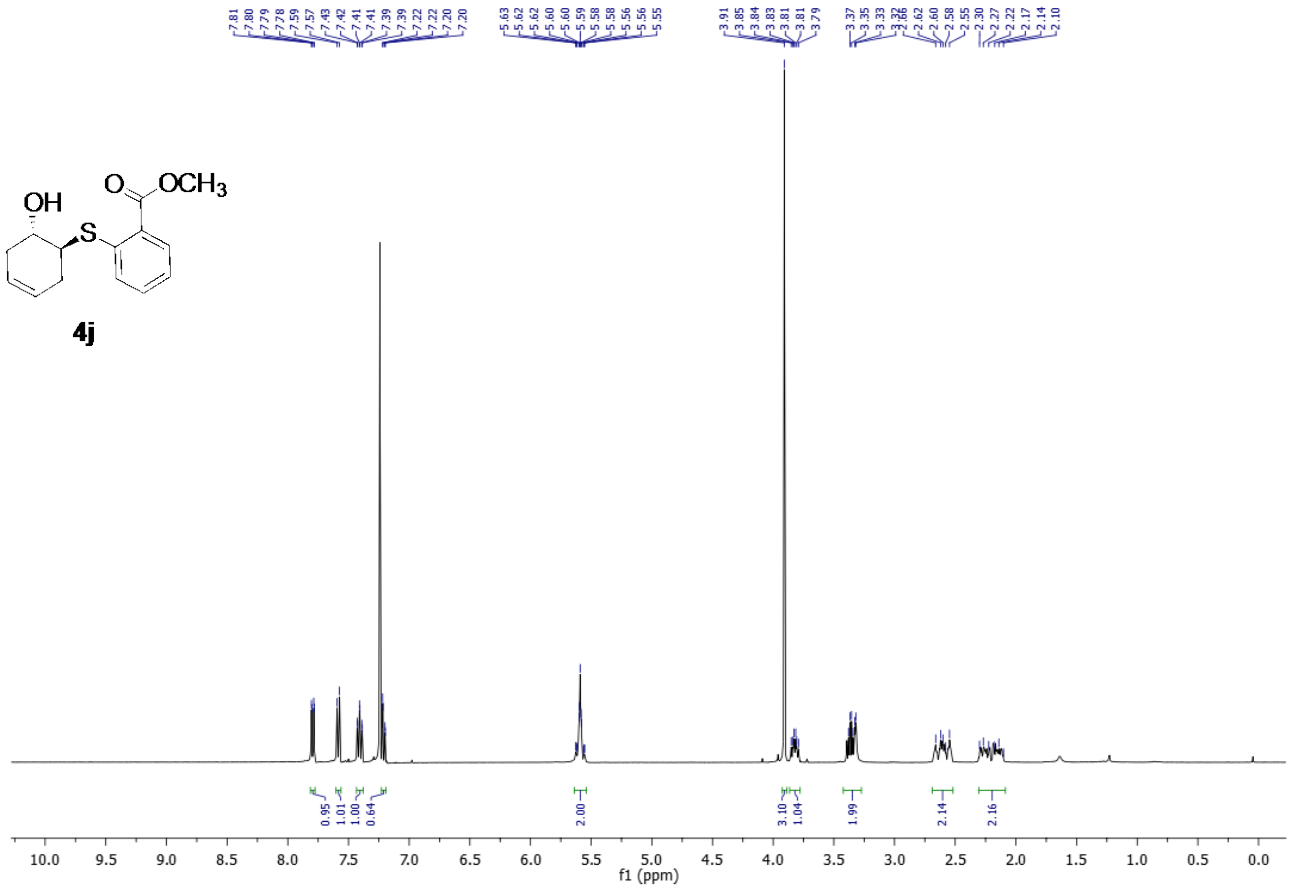
GI4-77_AD_10.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.51	24.3	1.01	19.0	49.505
2	23.96	22.4	1.12	19.4	50.495
Total		46.7		38.5	100.000

GI4-113_AD_10.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	16.05	11.7	0.84	7.2	3.161
2	23.09	383.8	0.89	221.2	96.839
Total		395.6		228.5	100.000

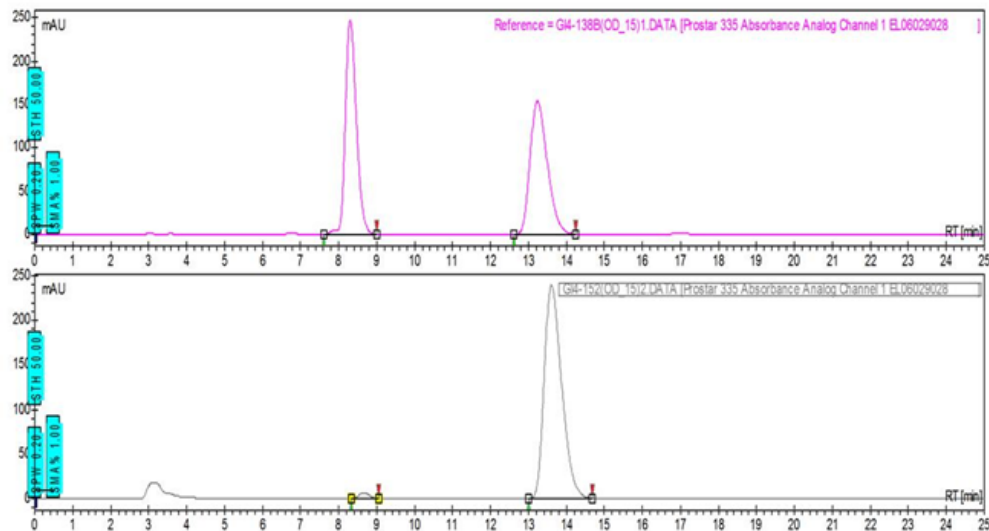




Chromatogram : GI4-152(OD_15)2_channel1

System : HPLC
Method : Ingle
User : User1

Acquired : 3/23/2012 7:49:12 PM
Processed : 3/23/2012 8:15:57 PM
Printed : 7/17/2012 3:39:36 PM



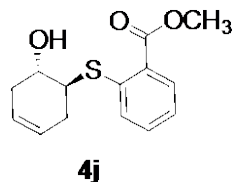
Peak results :

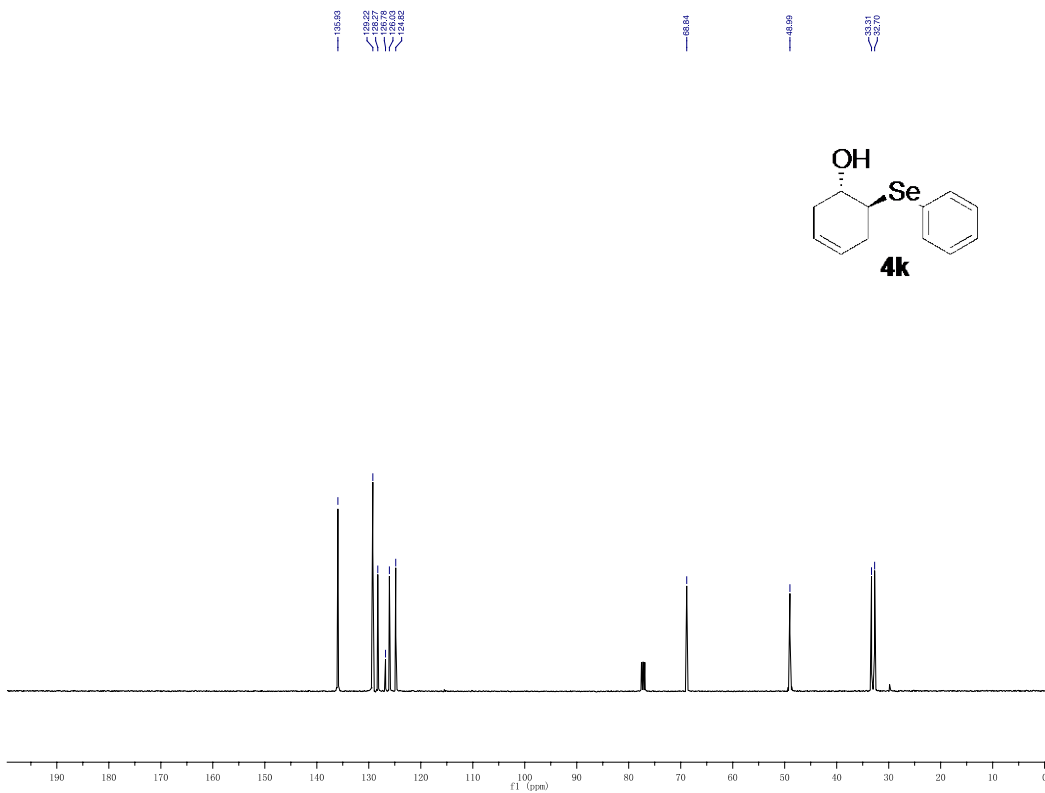
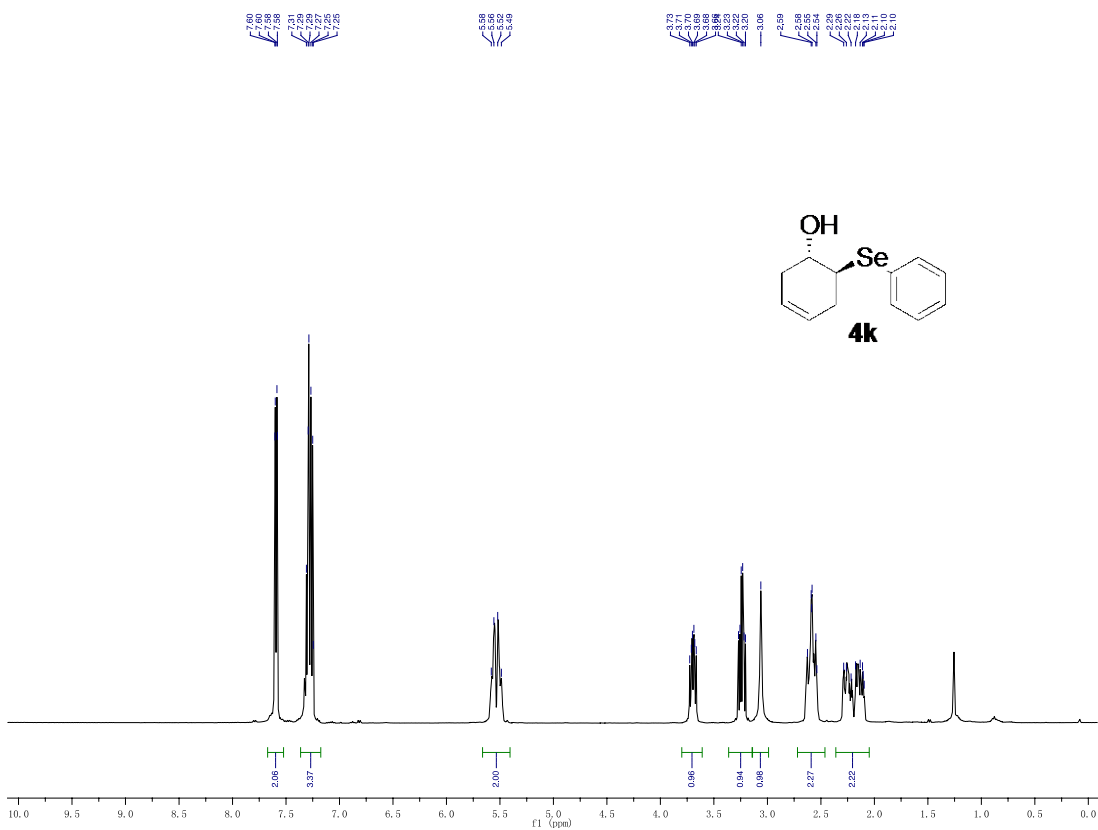
GI4-138B(OD_15)1.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.31	246.3	0.53	83.1	50.424
2	13.24	154.2	0.84	81.7	49.576
Total		400.6		164.8	100.000

GI4-152(OD_15)2.DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	8.65	7.2	0.51	2.3	1.749
2	13.60	238.9	0.85	127.5	98.251
Total		246.1		129.8	100.000

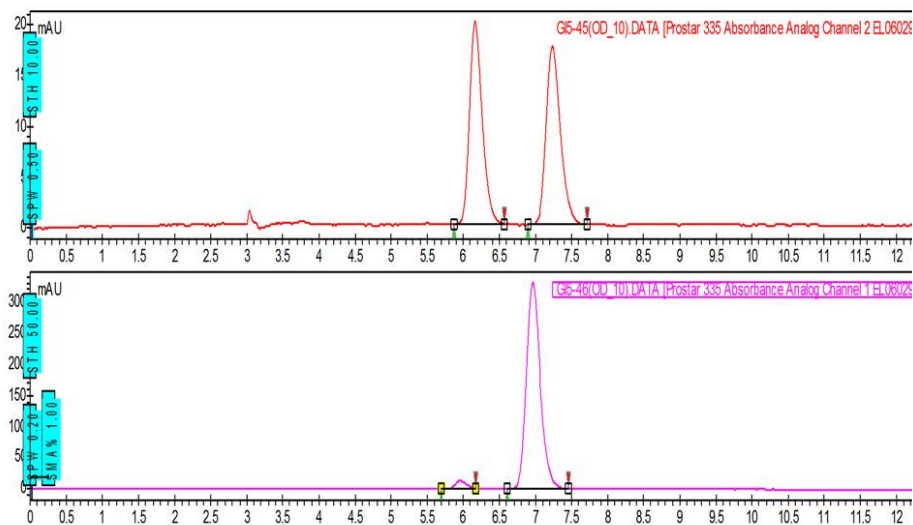




Chromatogram : G15-46(OD_10)_channel1

System : HPLC
 Method : Ingle
 User : User1

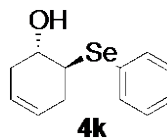
Acquired : 9/1/2012 12:33:43 PM
 Processed : 9/1/2012 1:15:42 PM
 Printed : 9/2/2012 10:01:55 PM



Peak results :

G15-45(OD_10).DATA [Prostar 335 Absorbance Analog Channel 2 EL06029028]

Index	Name	Time [Min]	Quantity [% Area]	Height [mAU]	Area [mAU.Min]	Area % [%]
1	UNKNOWN	6.16	50.16	20.0	4.0	50.160
2	UNKNOWN	7.24	49.84	17.6	4.0	49.840
Total			100.00	37.5	8.0	100.000



G15-46(OD_10).DATA [Prostar 335 Absorbance Analog Channel 1 EL06029028]

Index	Time [Min]	Height [mAU]	Width USP [Min]	Area [mAU.Min]	Area % [%]
1	5.96	12.7	0.30	2.3	3.027
2	6.96	331.8	0.36	75.0	96.973
Total		344.4		77.3	100.000

