

Supporting information for

Synthesis of α -D-galactose-based azacrown ethers and their application as enantioselective catalysts in Michael reactions

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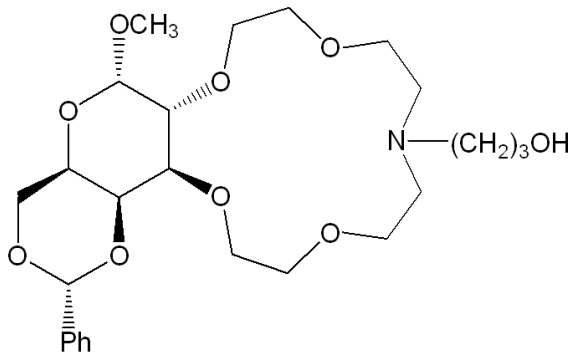
^bInstitute of Organic Chemistry, Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary

Content

¹H and ¹³C NMR spectrum of crown ether **4a**

¹H and ¹³C NMR spectrum of crown ether **4b**

HPLC spectra of selected chiral compounds



5.538

4.955

4.948

4.321

4.314

4.282

4.280

4.257

4.086

4.084

4.062

4.059

3.934

3.927

3.914

3.907

3.429

1.677

1.666

1.656

1.646

1.635

1500

1000

500

0

2.02

3.03

0.98

1.00

0.99

0.99

1.00

1.06

16.36

2.99

5.80

6.99

7.0

6.0

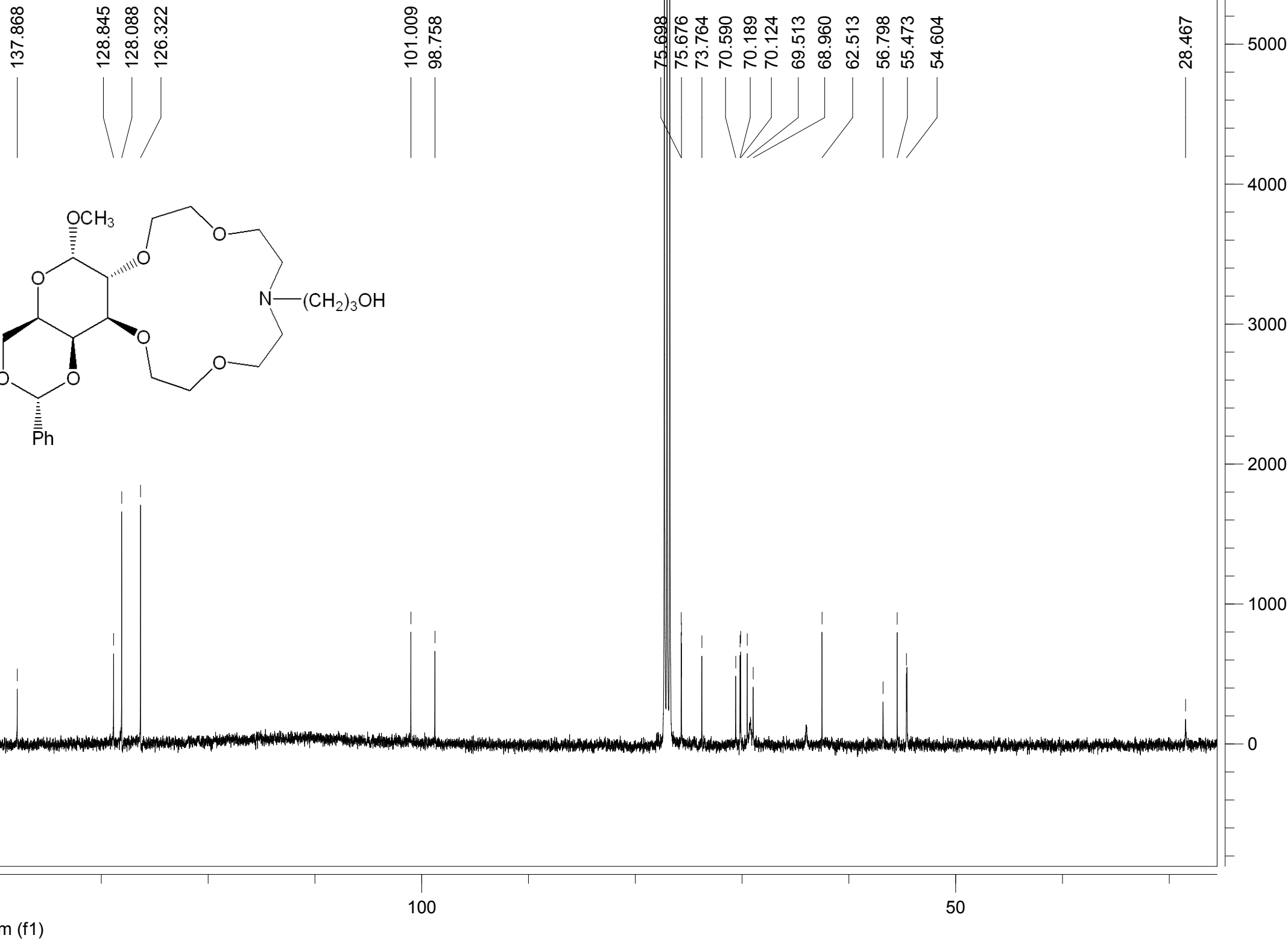
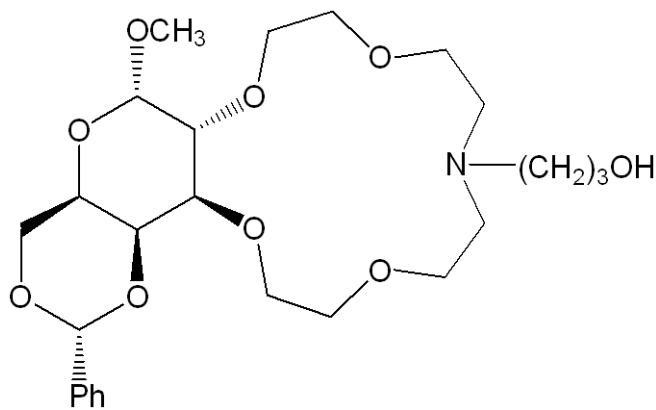
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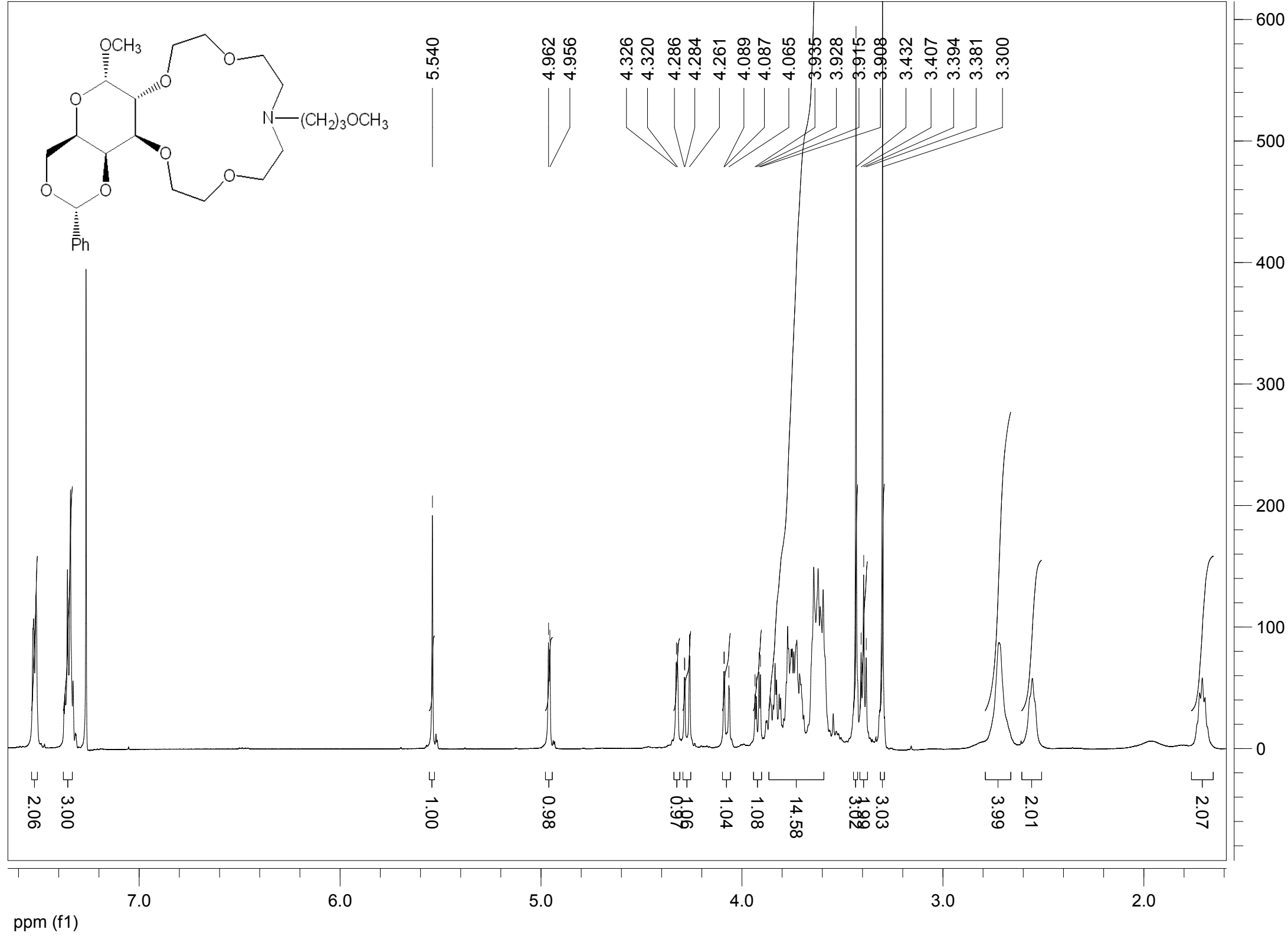
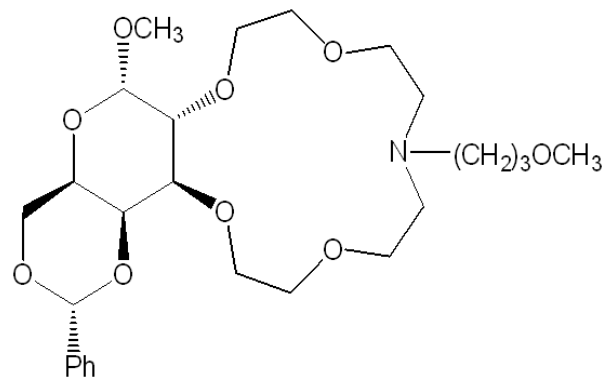
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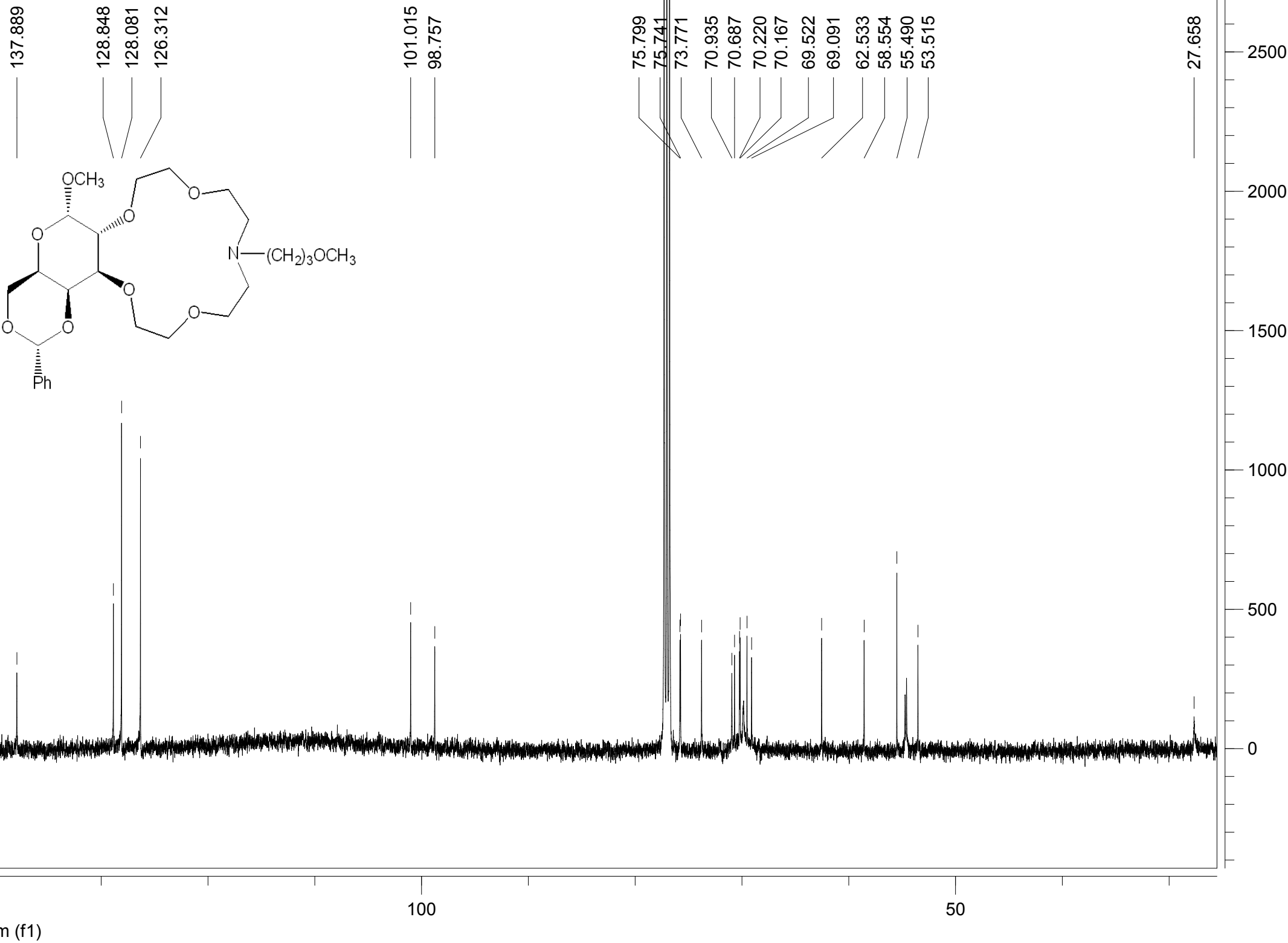
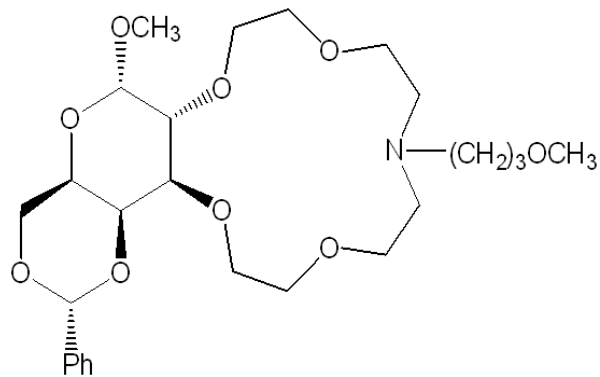
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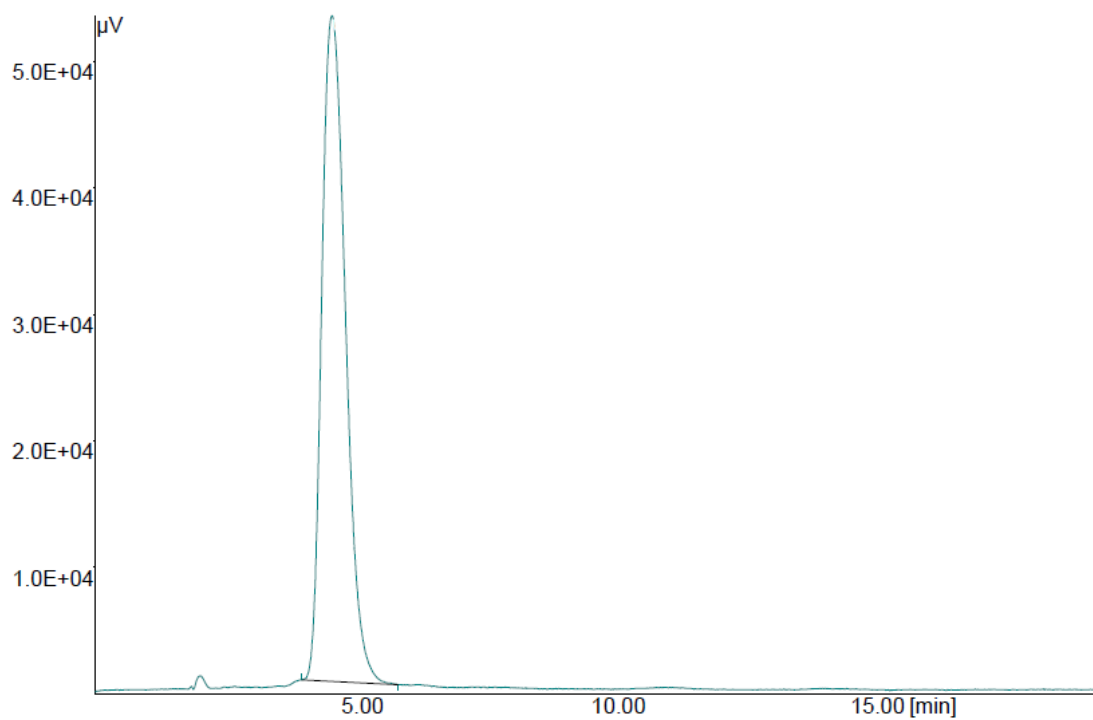
2.0

ppm (f1)









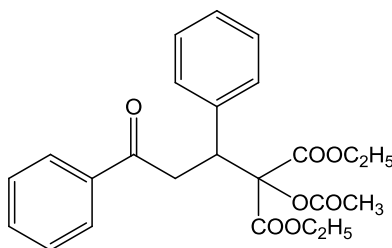
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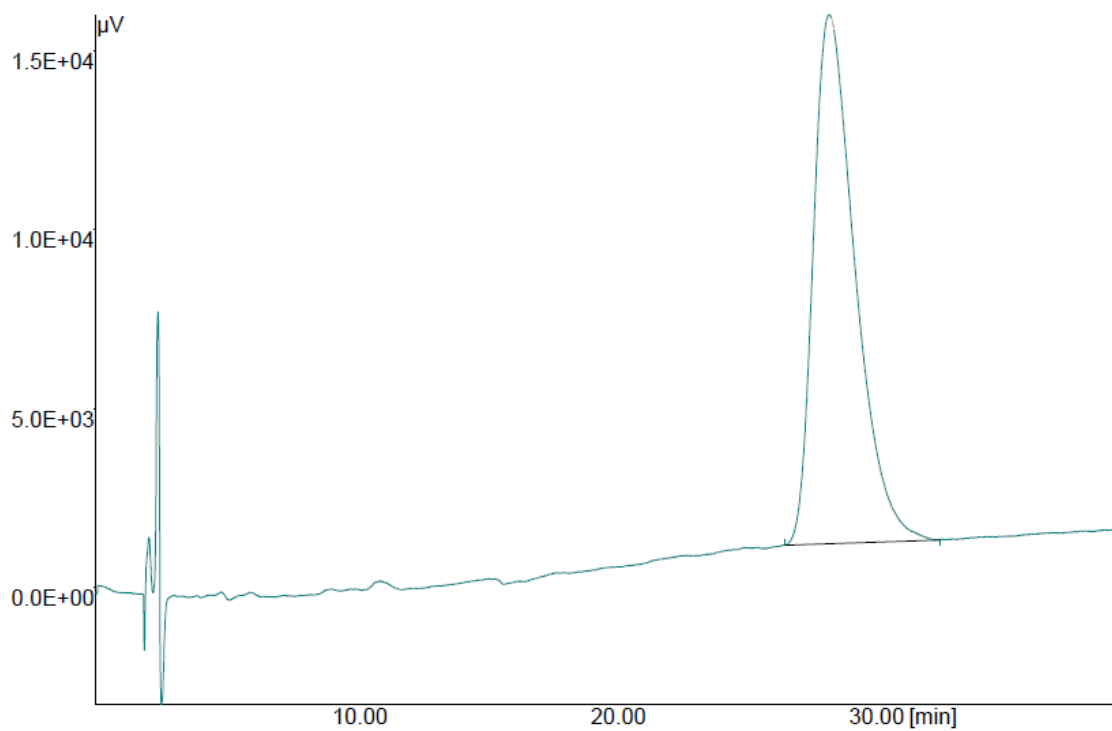
AS-H hexane:2-propanol 9:1, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	4.575	1679709.500	0.000

Total Area of Peak = 1679709.500 [μV.sec]



10a, with catalyst **4a**



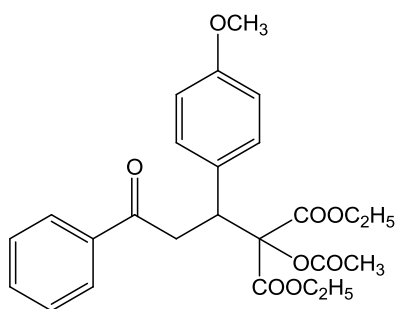
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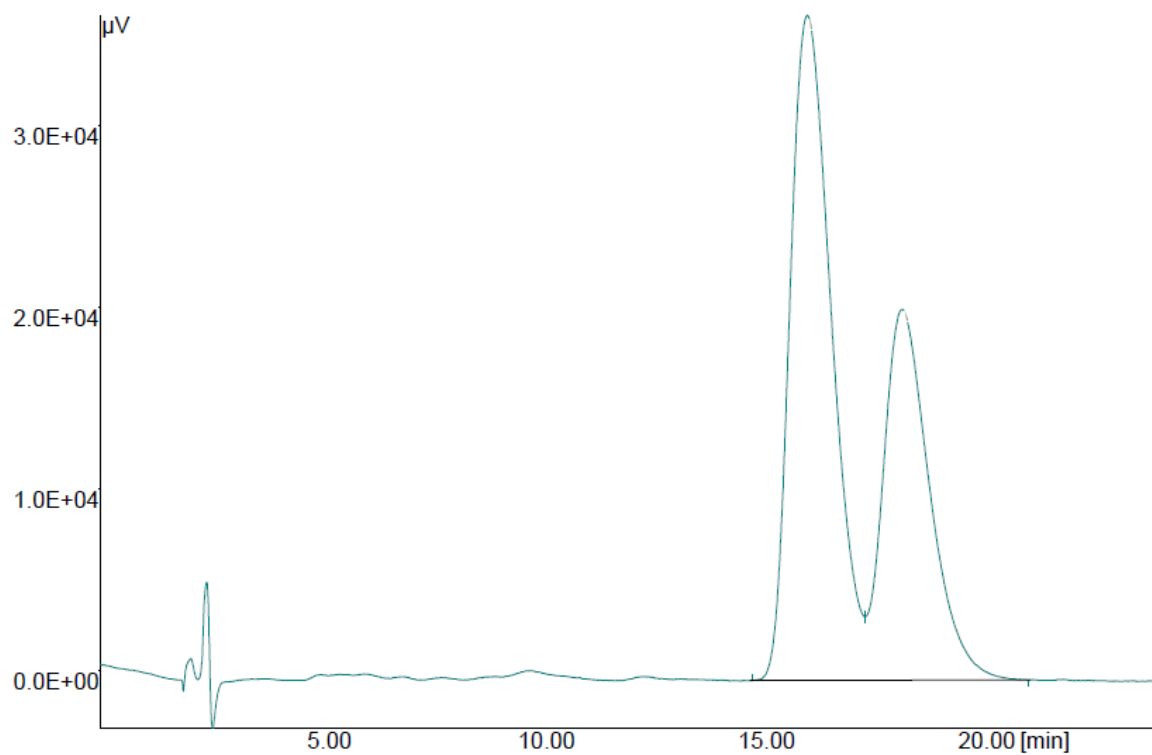
AD-H hexane:2-propanol 9:1, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	28.400	1645929.889	0.000

Total Area of Peak = 1645929.889 [μV.sec]



10d, with catalyst **4a**



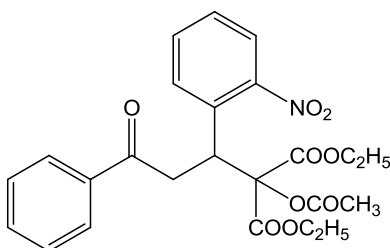
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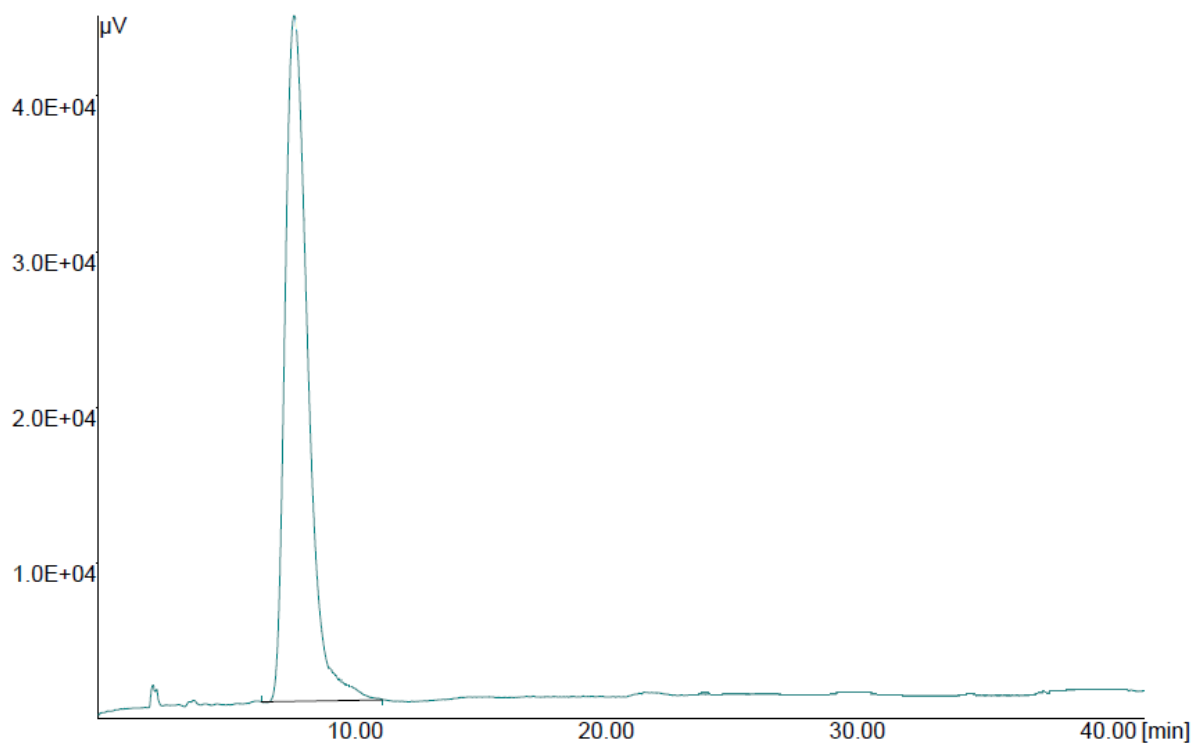
AD-H hexane:2-propanol 9:1, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	16.058	2389597.883	0.000
#2	18.225	1488846.777	0.000

Total Area of Peak = 3878444.661 [μV.sec]



10e, with catalyst **4a**



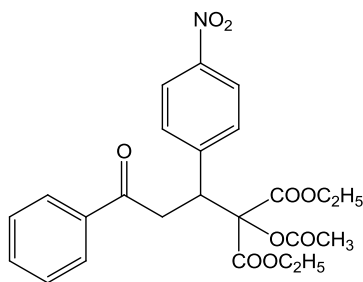
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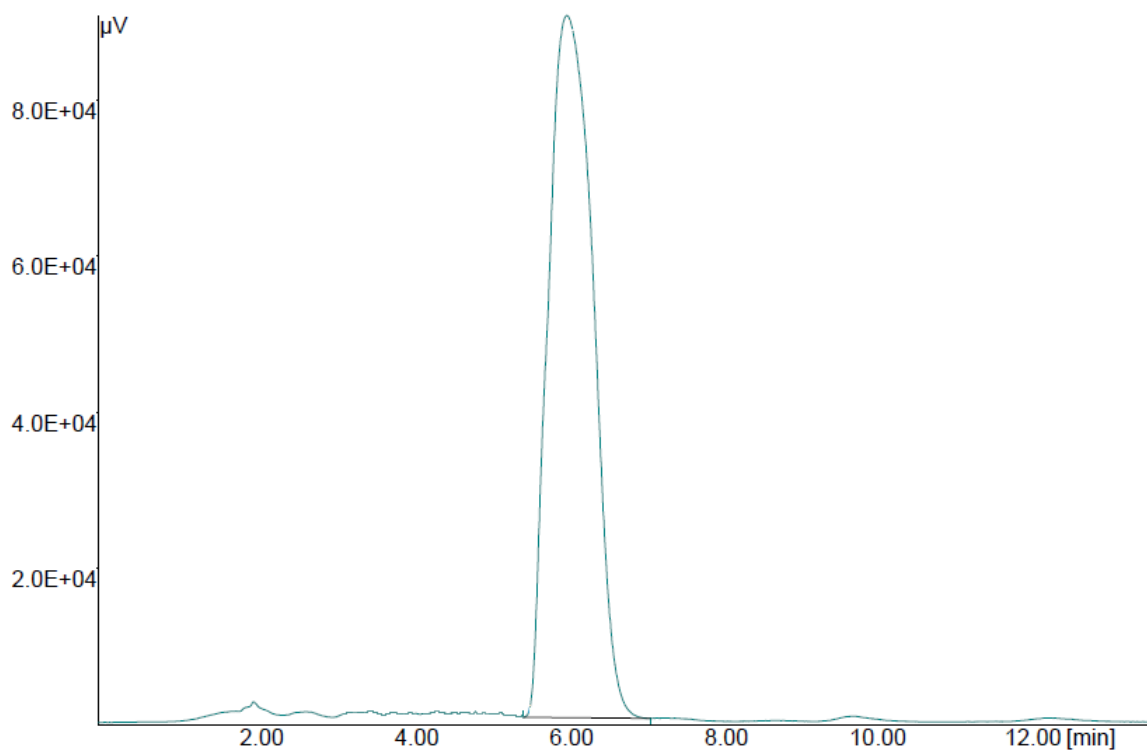
AS-H hexane:2-propanol 8:2, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	7.800	2730263.671	0.000

Total Area of Peak = 2730263.671 [μV.sec]



10g, with catalyst **4b**



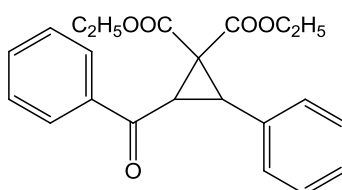
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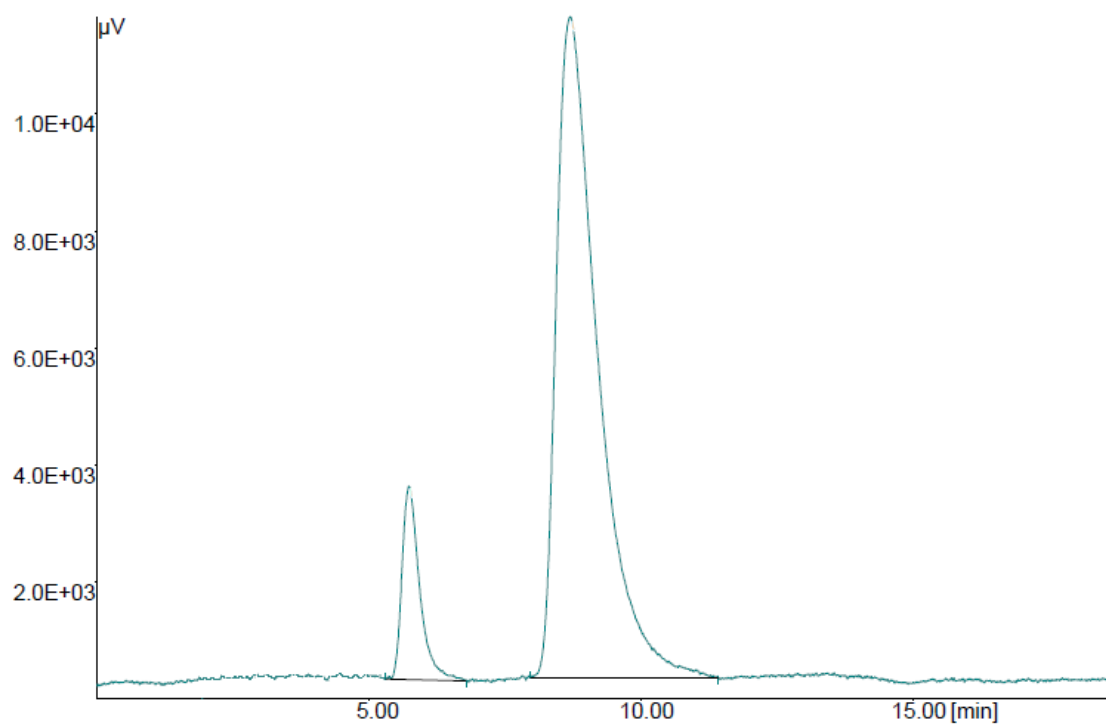
AD-H hexane:2-propanol 8:2, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	6.050	3585430.500	0.000

Total Area of Peak = 3585430.500 [μV.sec]



12, with catalyst **4b**



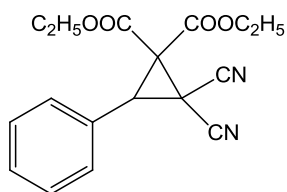
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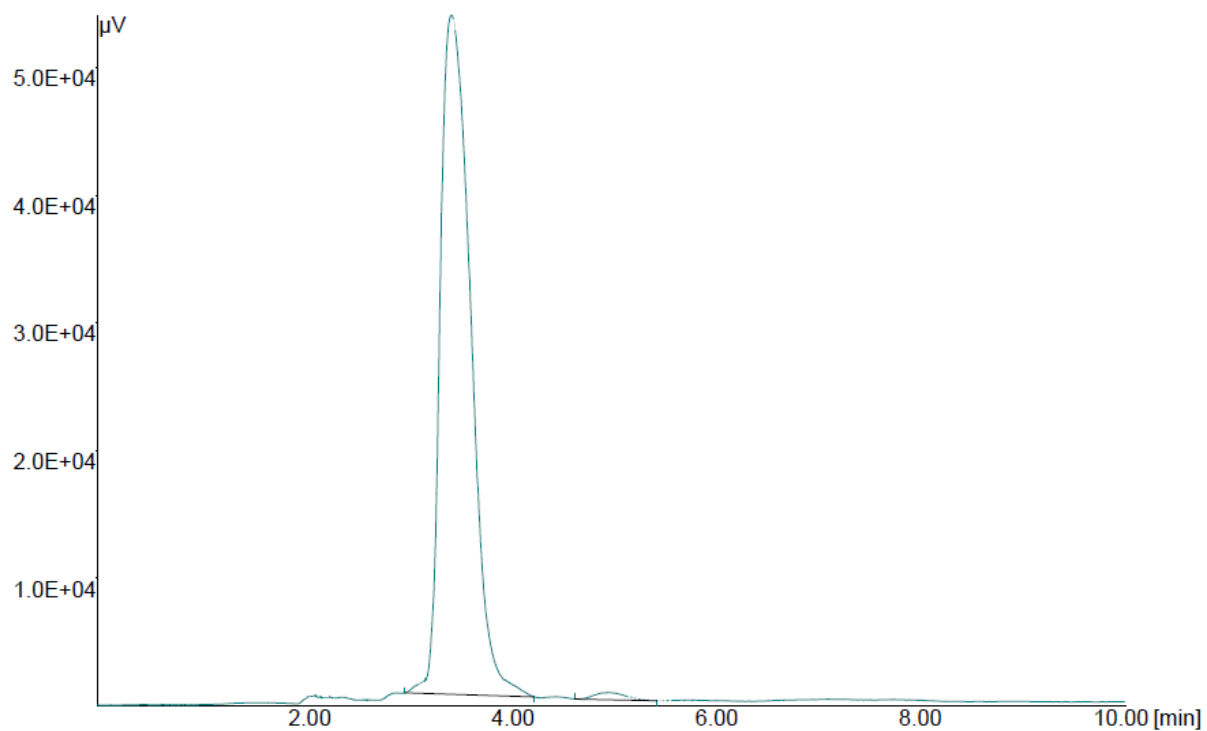
AS-H hexane:2-propanol 9:1, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	5.733	74908.500	0.000
#2	8.708	599563.659	0.000

Total Area of Peak = 674472.159 [μV.sec]



15a, with catalyst **4b**



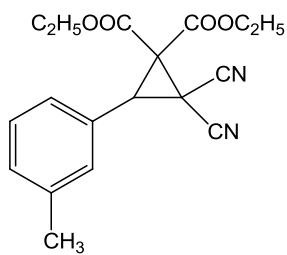
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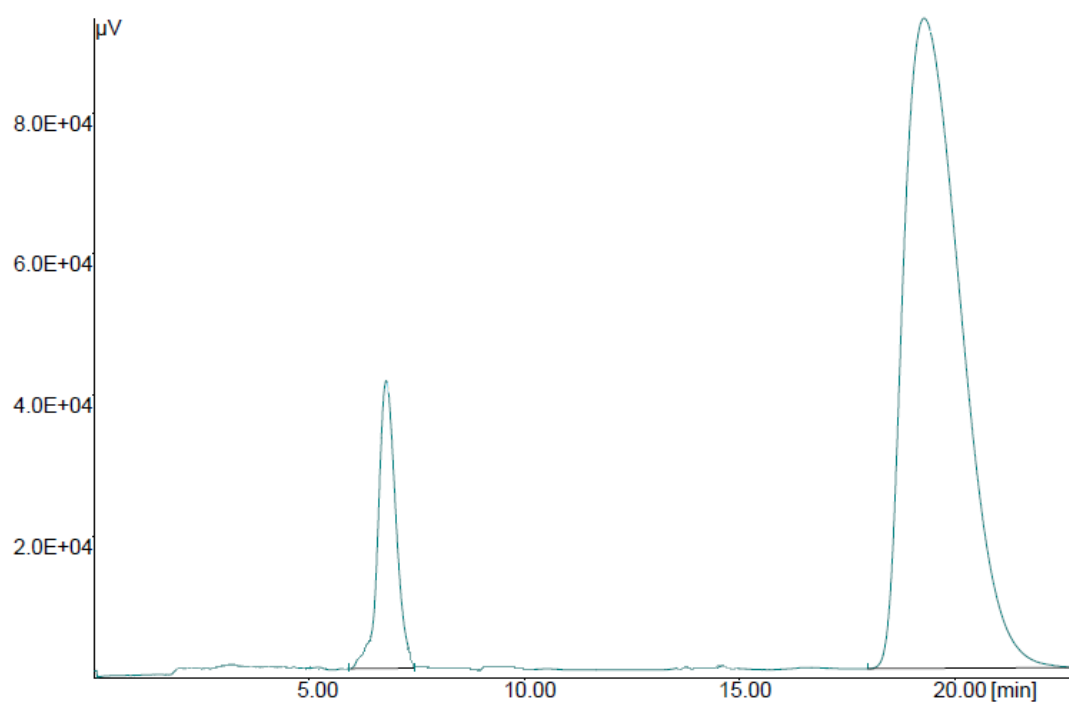
AD-H hexane:2-propanol 8:2, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	3.483	1103579.000	0.000
#2	5.017	12026.706	0.000

Total Area of Peak = 1115605.706 [μV.sec]



15c, with catalyst **4a**



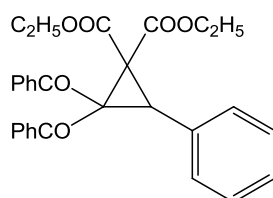
File name: RZ-16-115001.CH1

Info:

AD-H hexane:2-propanol 8:2, 2 ml/min, 256 nm, 20 °C

Peak	RT	Area [μV.sec]	Quantity
#1	6.783	1180350.311	0.000
#2	19.292	8475878.000	0.000

Total Area of Peak = 9656228.311 [μV.sec]



17, with catalyst **4b**