

Cinchona Alkaloid Based Chiral Catalysts act as Highly Efficient Multifunctional Organocatalyst for the Asymmetric Conjugate Addition of Malonates to Nitroolefins

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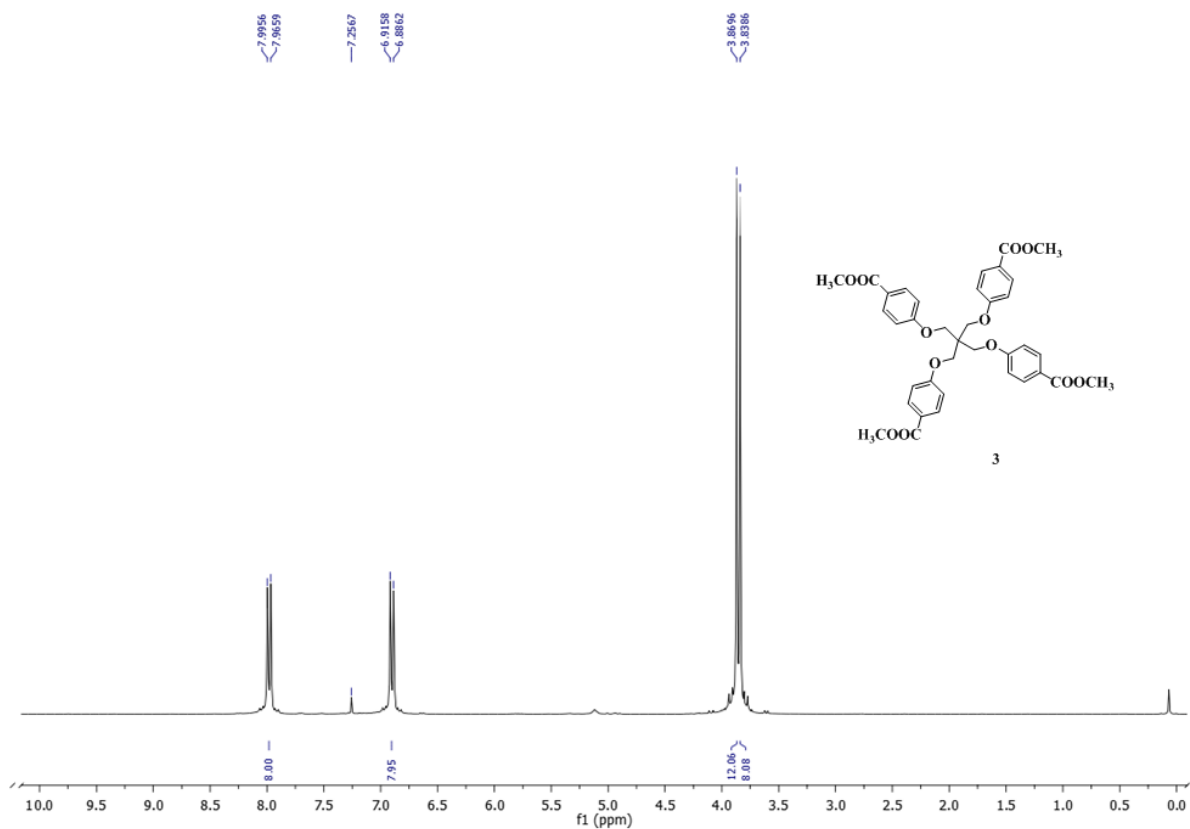


Figure S1. ¹H NMR Spectrum of tetra ester (3).

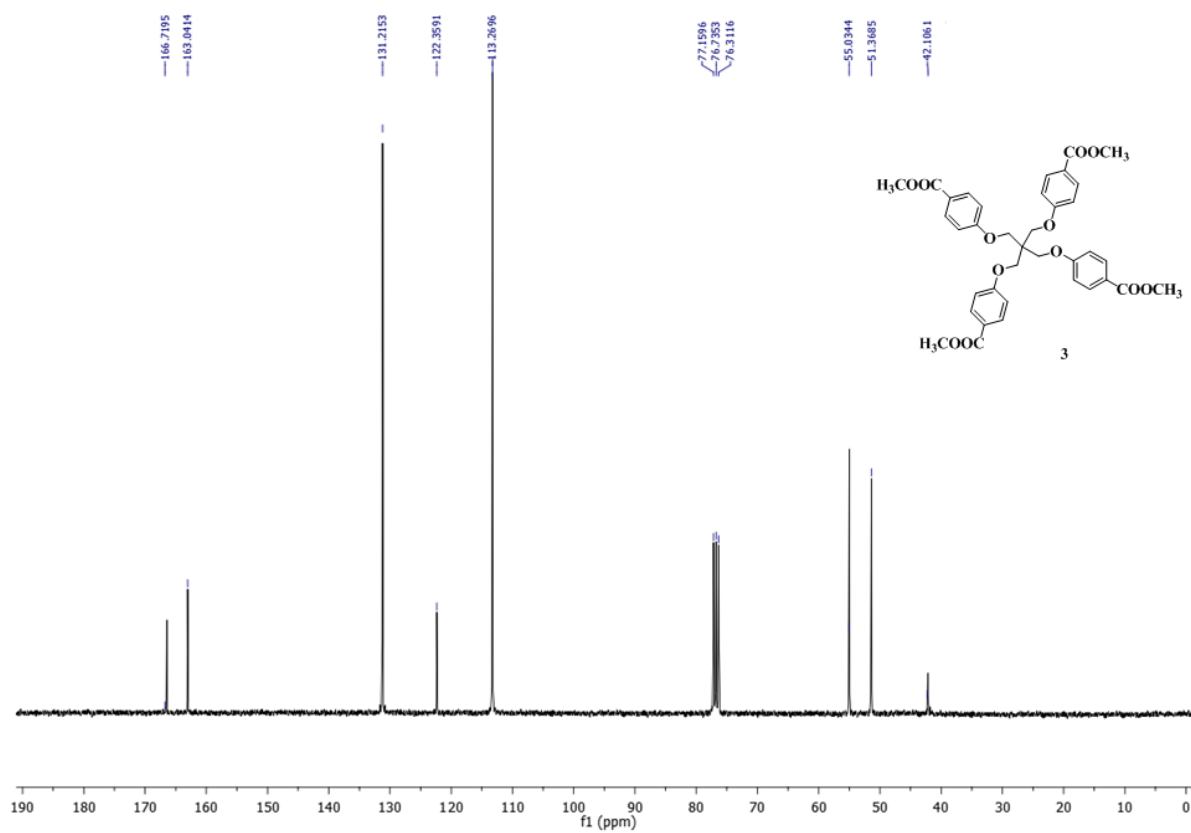


Figure S2. ¹³C NMR Spectrum of tetra ester (3).

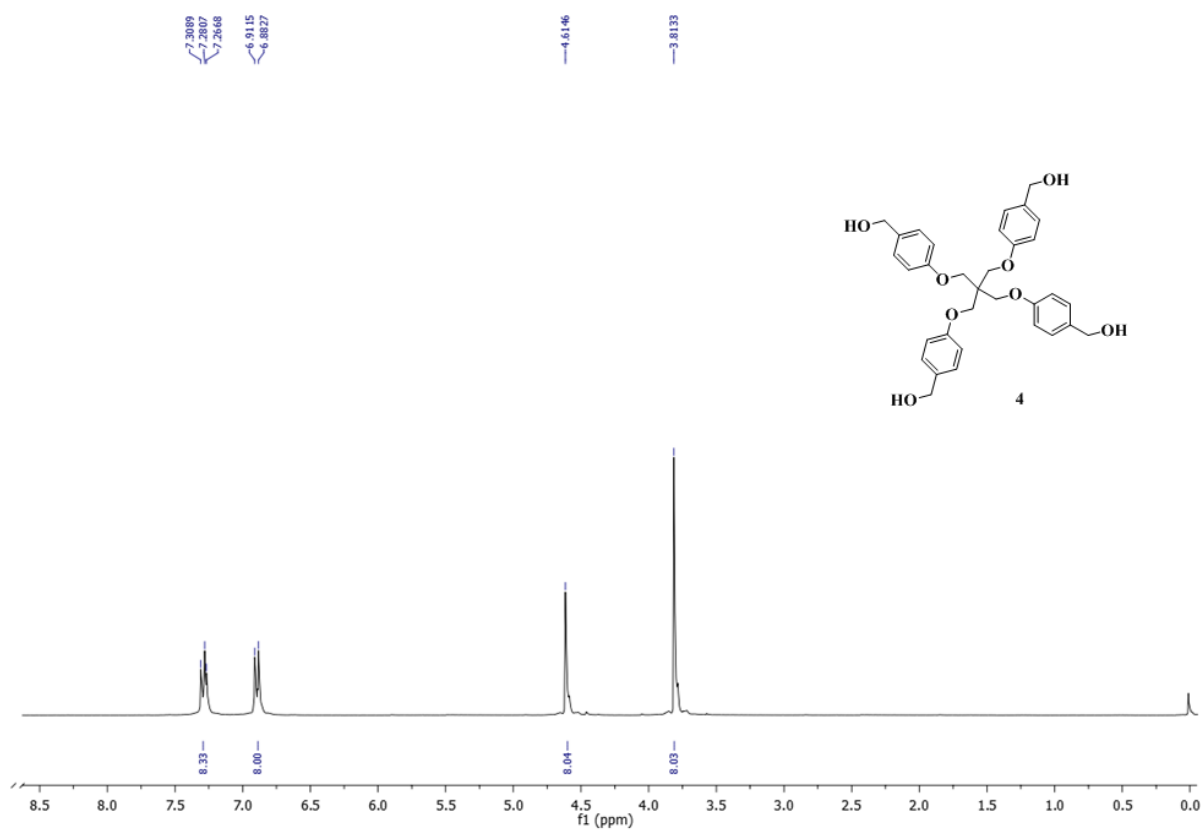


Figure S3. ¹H NMR Spectrum of tetra alcohol (4).

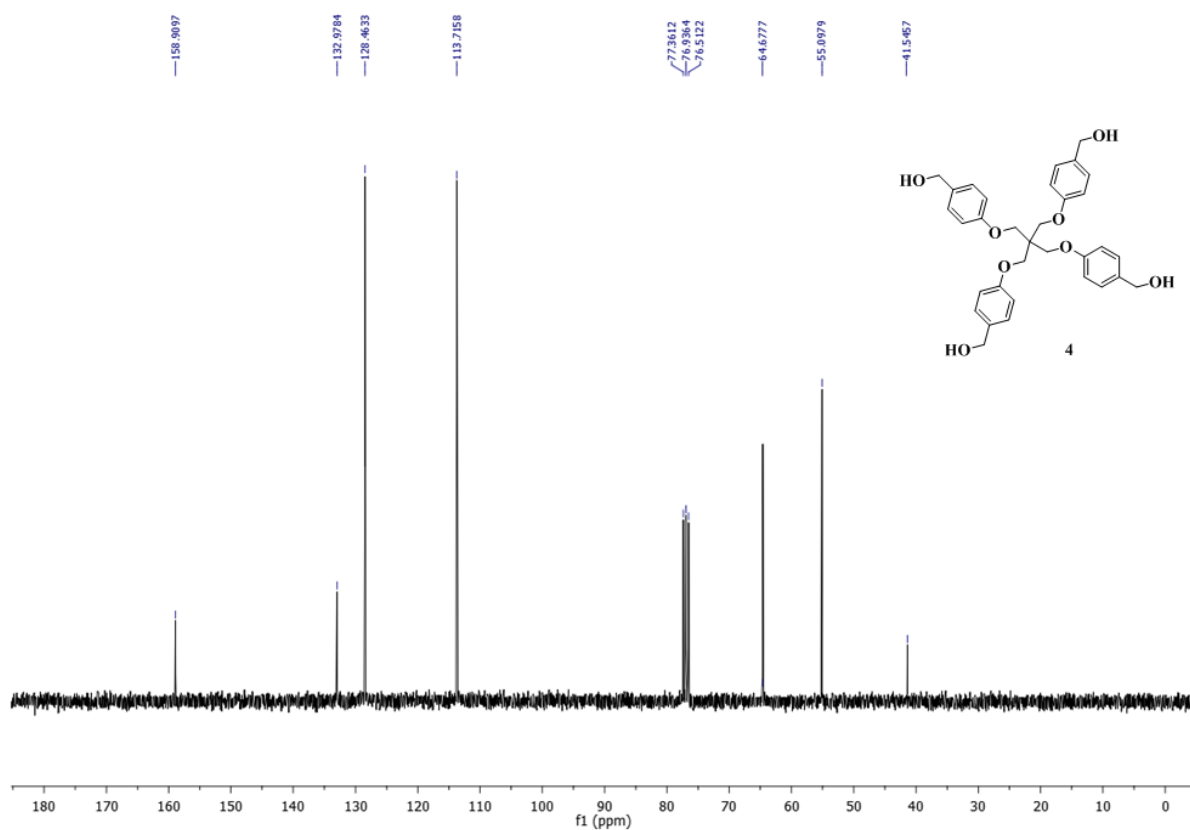


Figure S4. ¹³C NMR Spectrum of tetra alcohol (4).

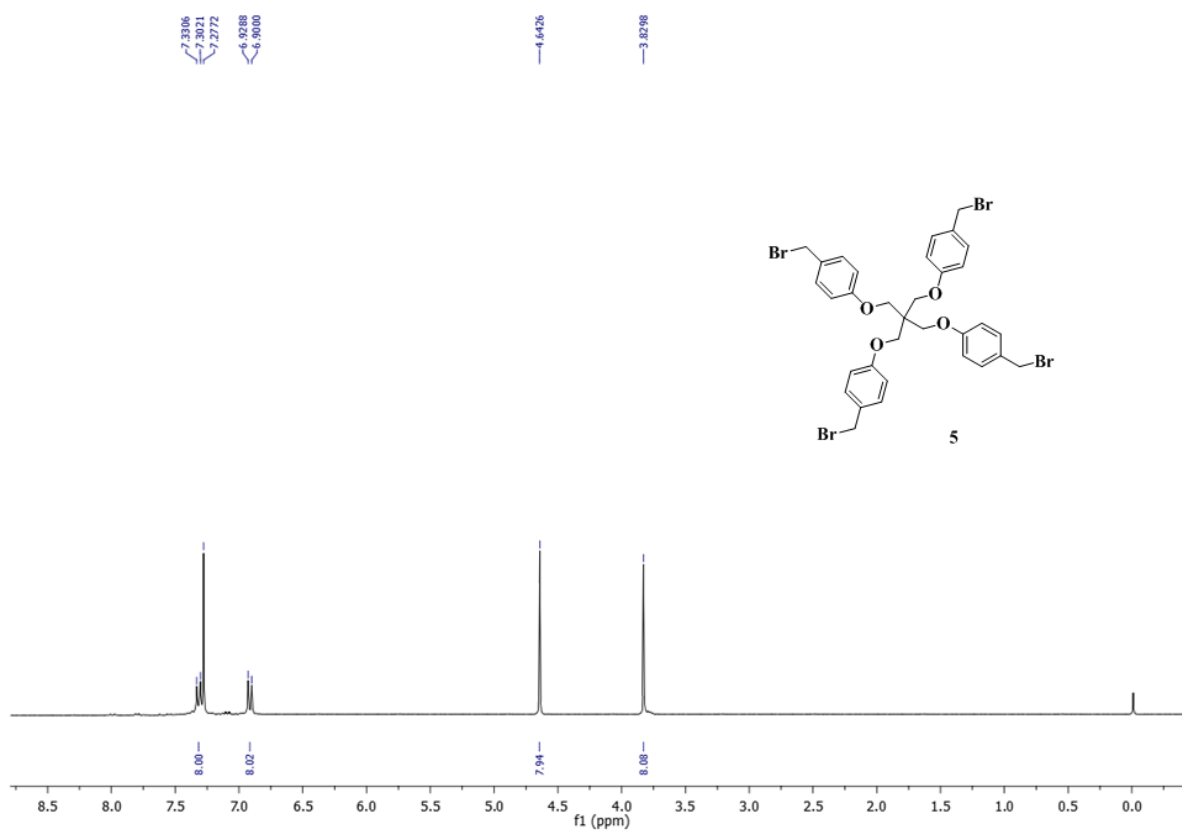


Figure S5. ¹H NMR Spectrum of tetra bromide (scaffold 5).

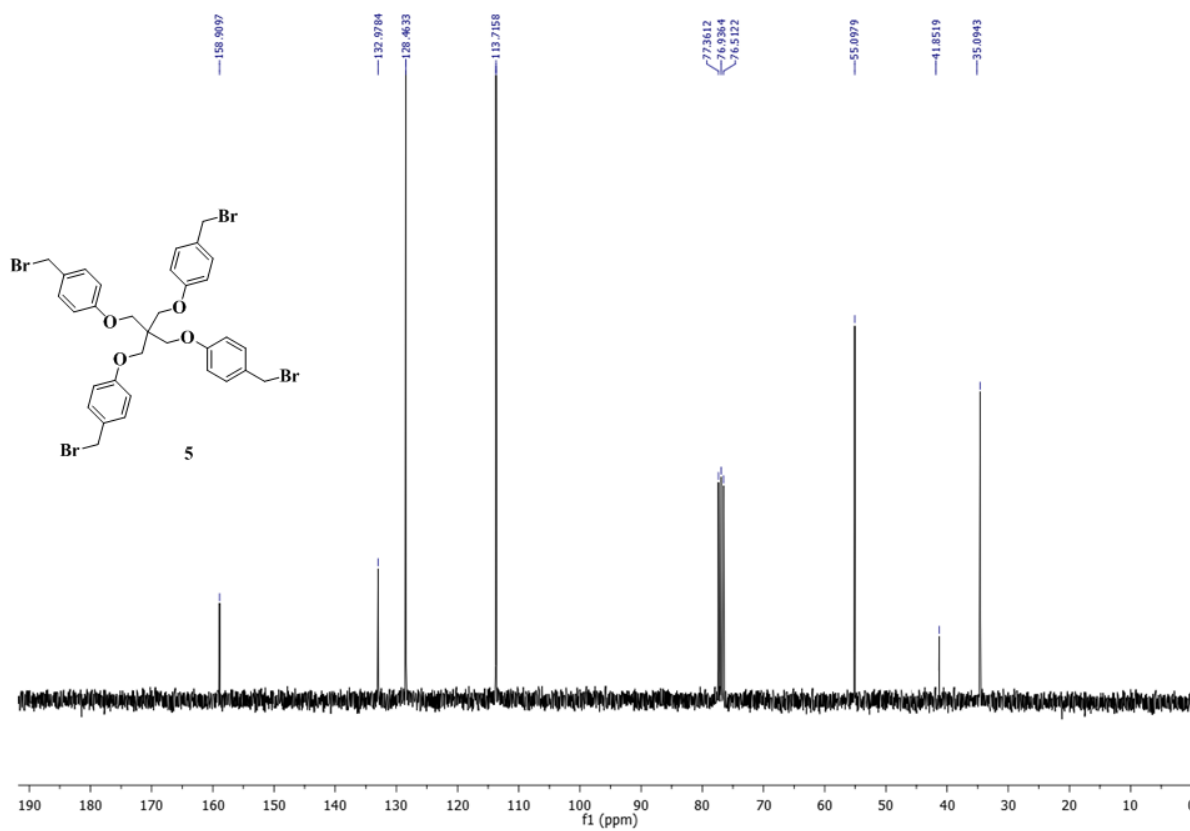


Figure S6. ¹³C NMR Spectrum of tetra bromide (scaffold 5).

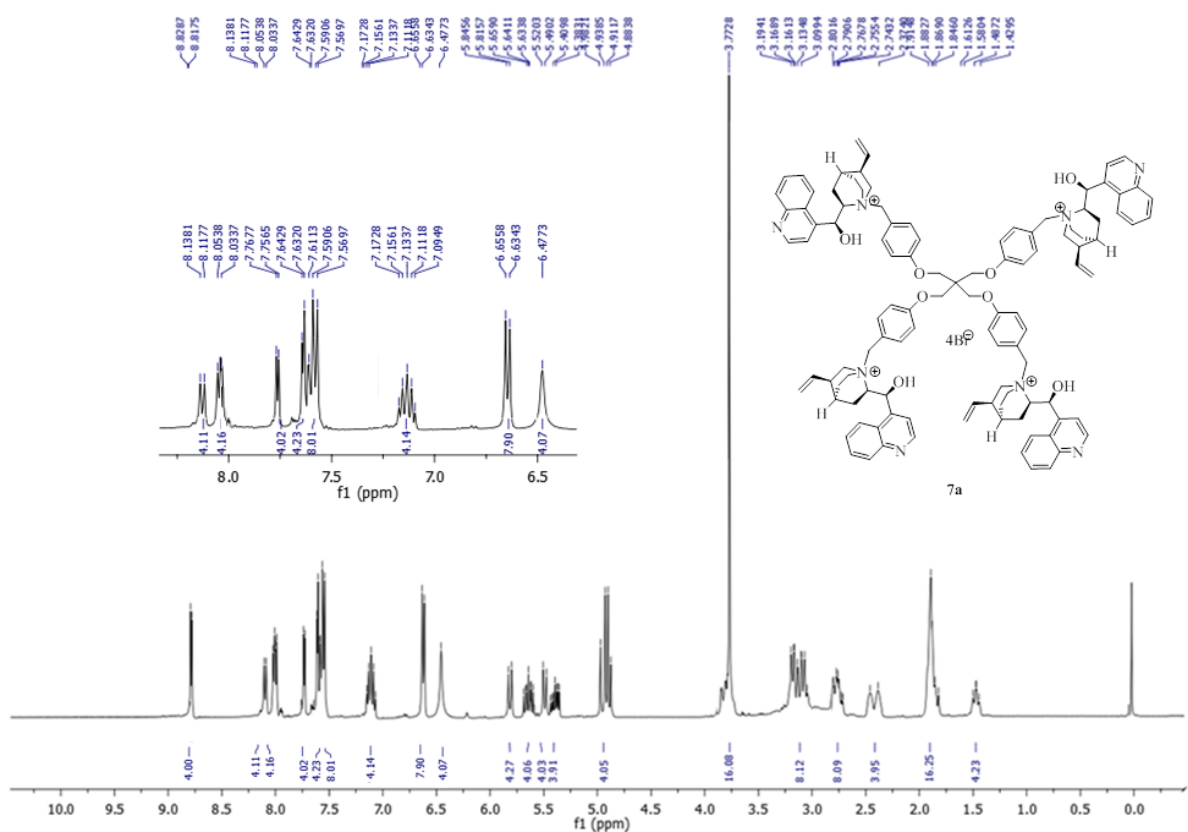


Figure S7. ¹H NMR Spectrum of CMOC 7a.

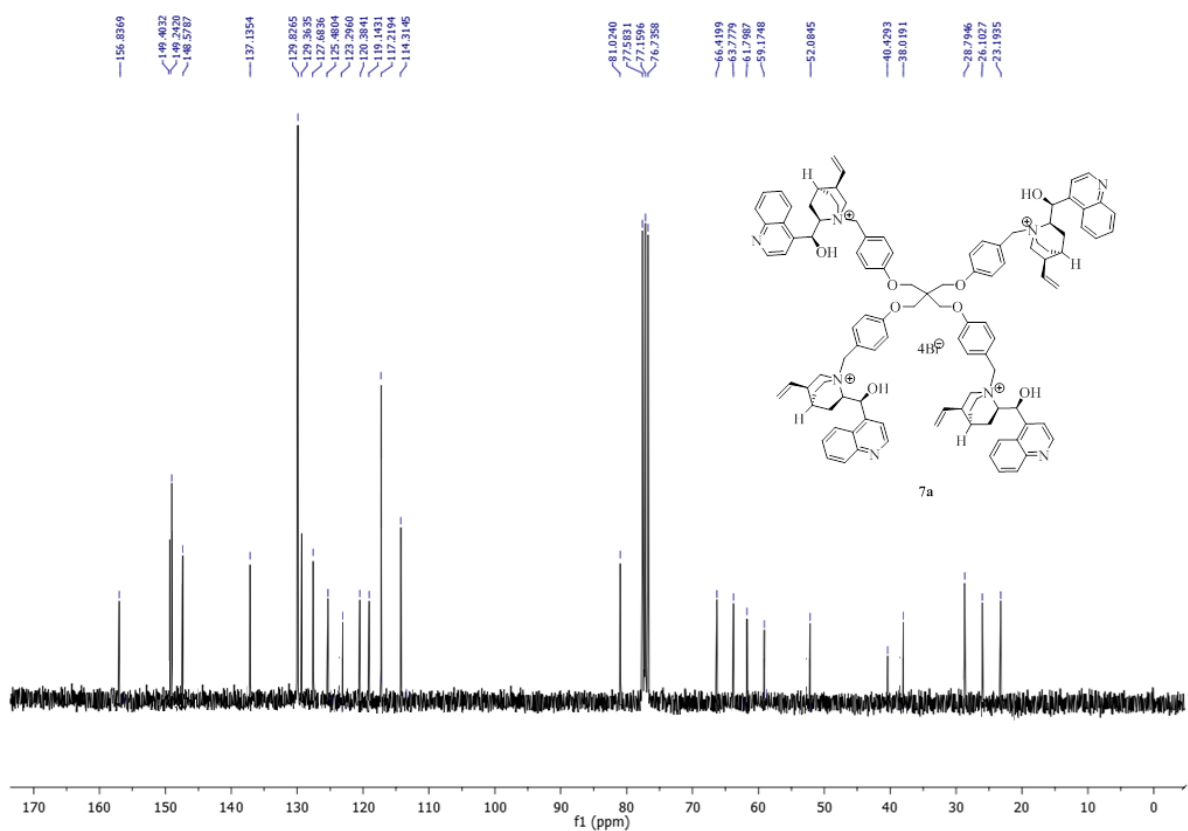


Figure S8. ¹³C NMR Spectrum of CMOC 7a.

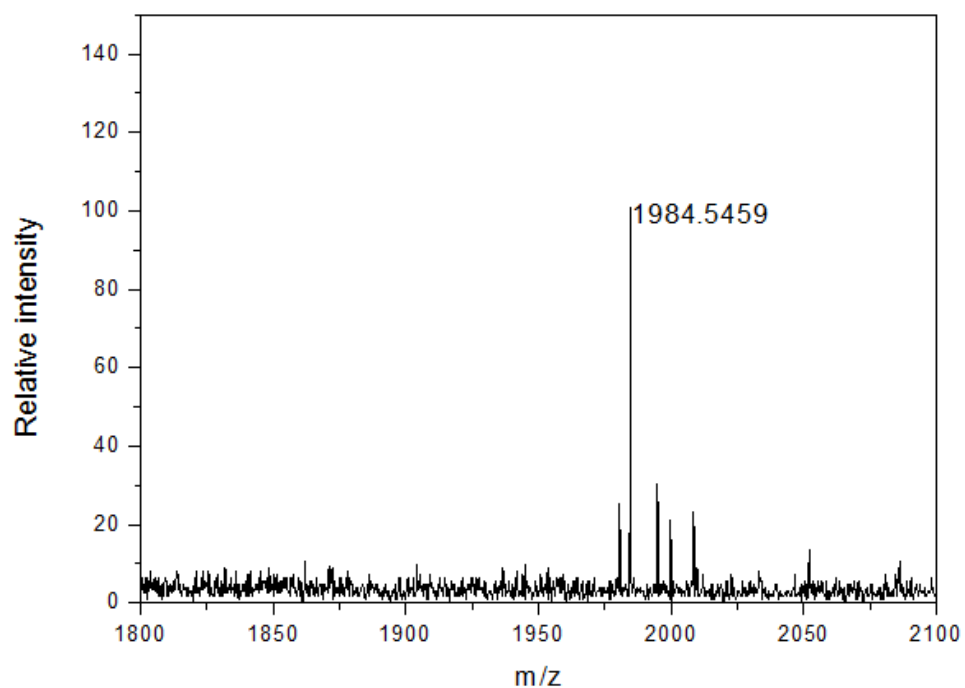


FIGURE S9. MALDI-TOF Spectrum of CMOC 7a.

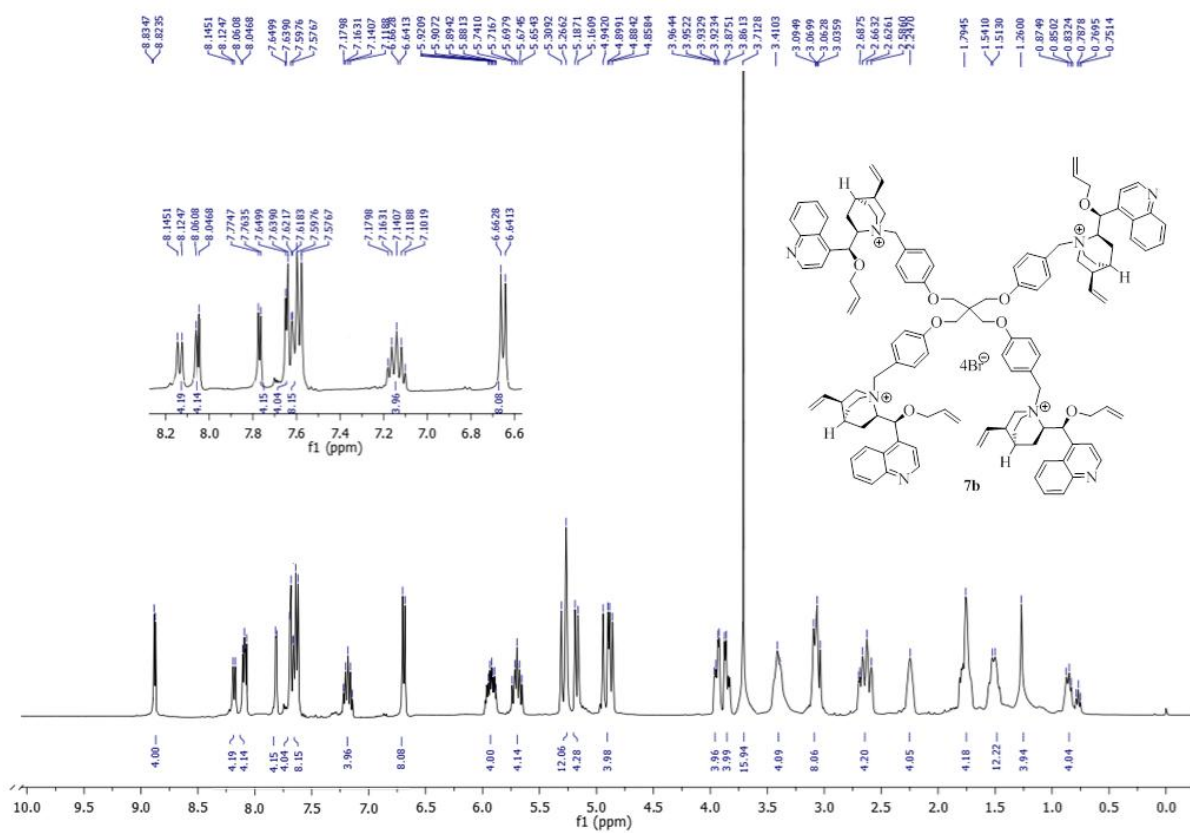


Figure S10. ^1H NMR Spectrum of CMOC 7b.

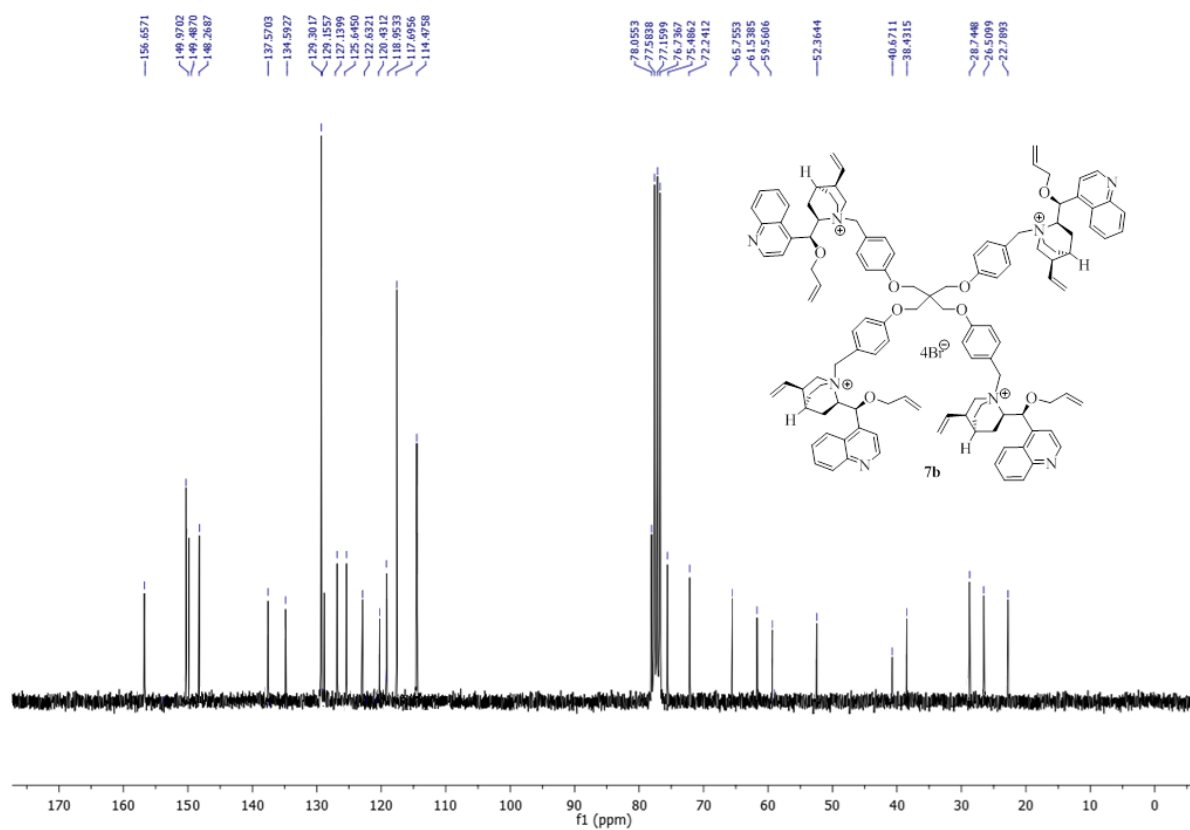


Figure S11. ^{13}C NMR Spectrum of CMOC 7b.

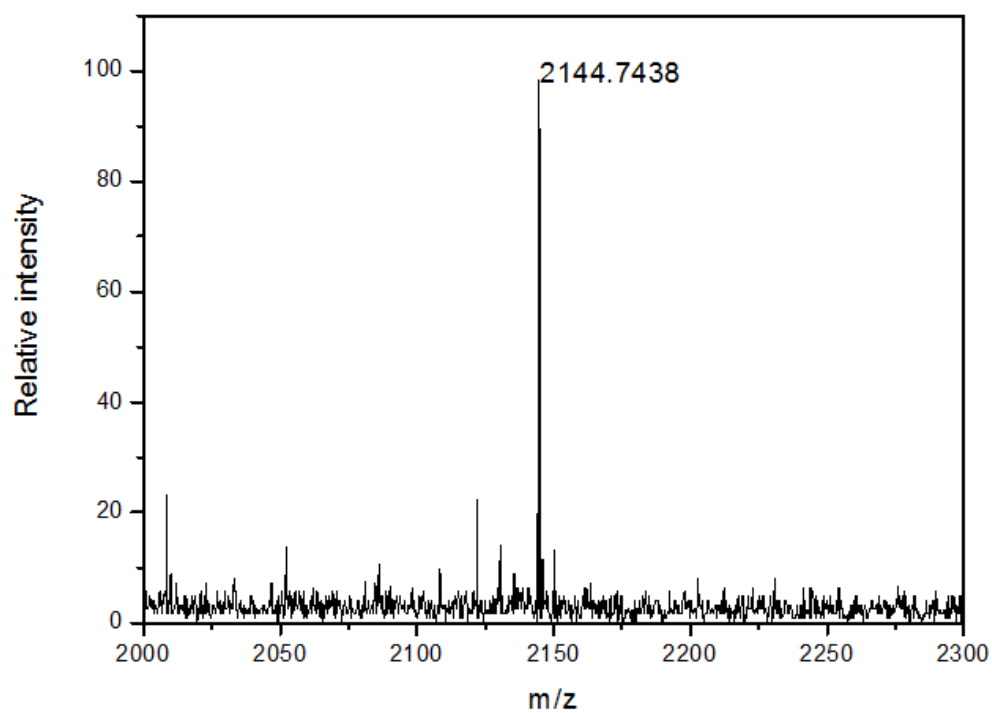


Figure S12. MALDI-TOF Spectrum of CMOC 7b

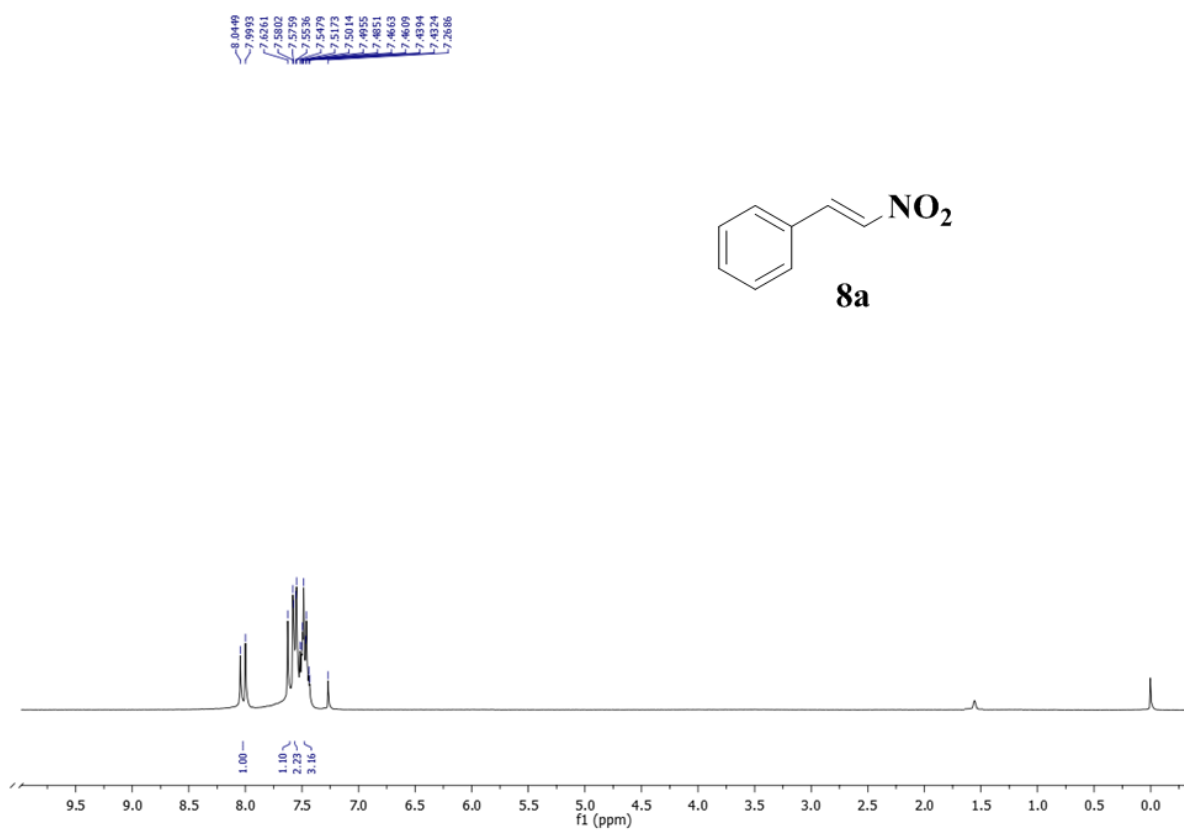


Figure S13. ¹H NMR Spectrum of (E)-(2-nitrovinyl) benzene (8a).

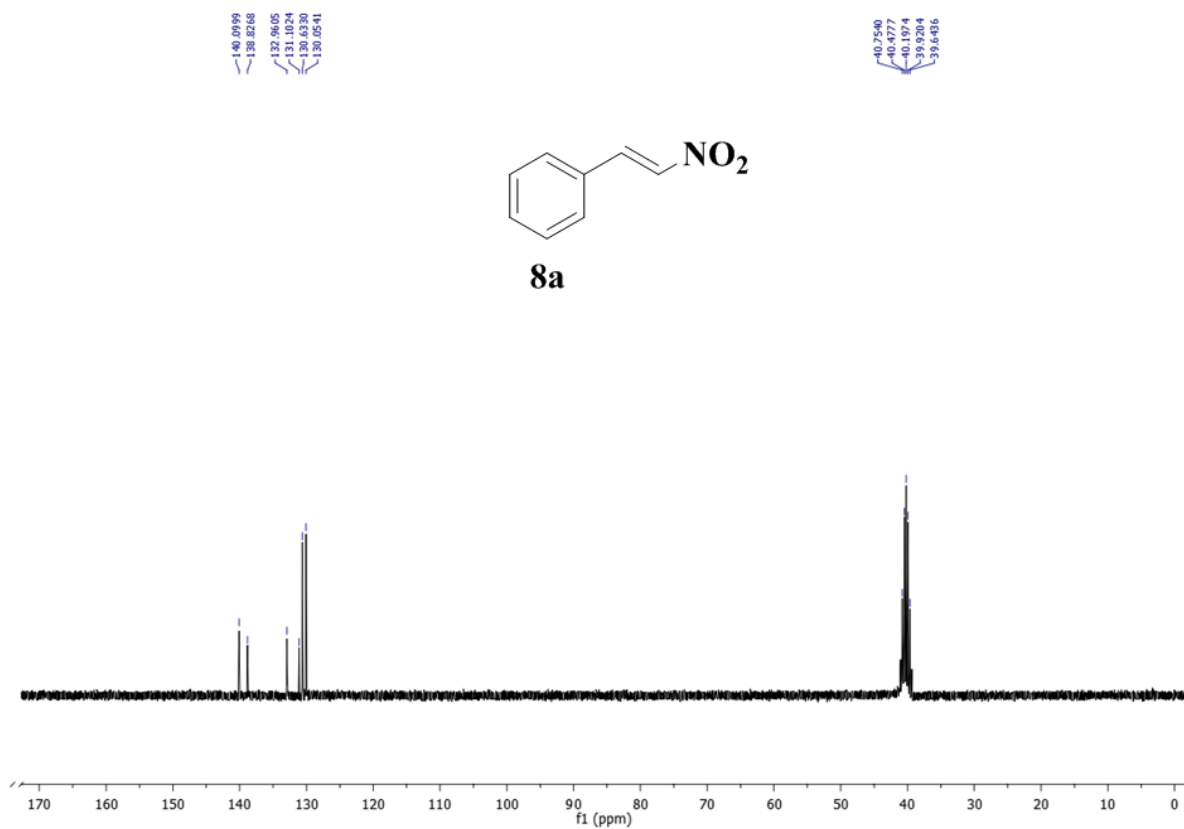


Figure S14. ¹³C NMR Spectrum of (E)-(2-nitrovinyl) benzene (8a).

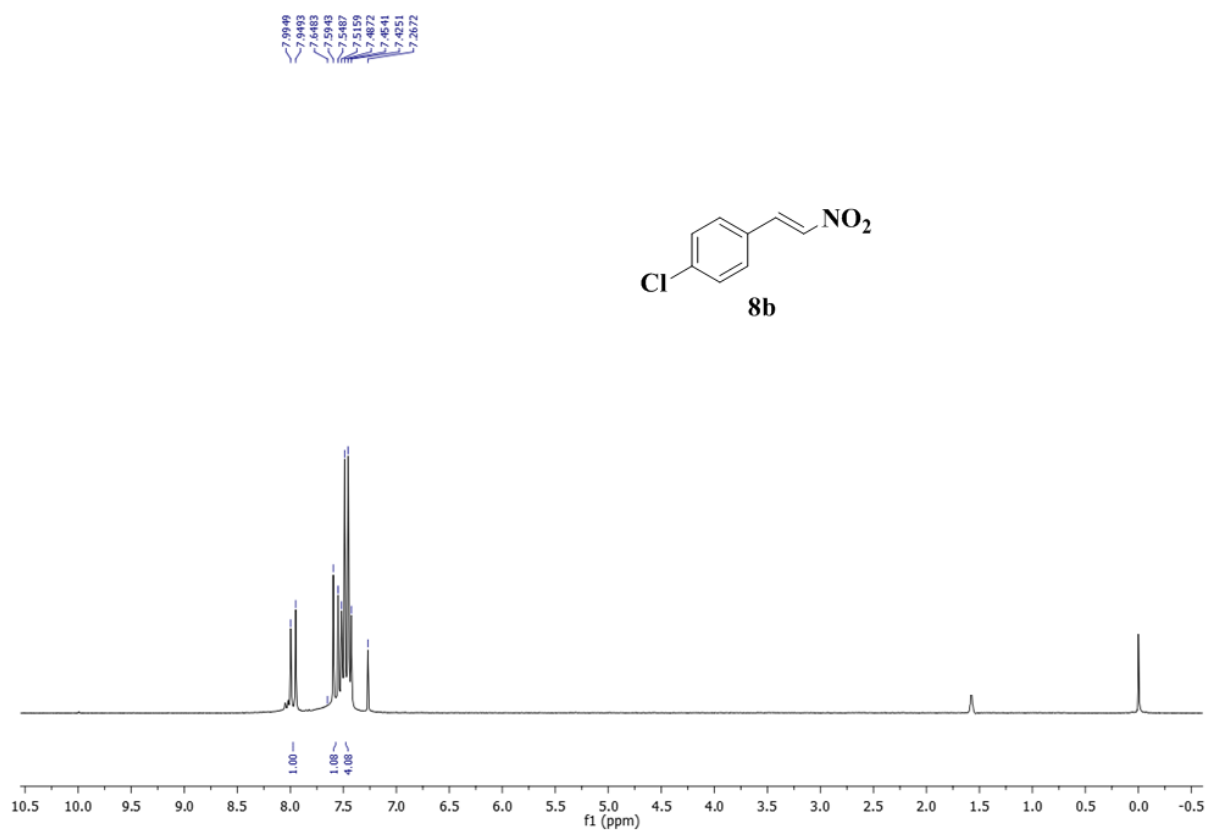


Figure S15. ¹H NMR Spectrum of (E)-1-chloro-4-(2-nitrovinyl) benzene (8b).

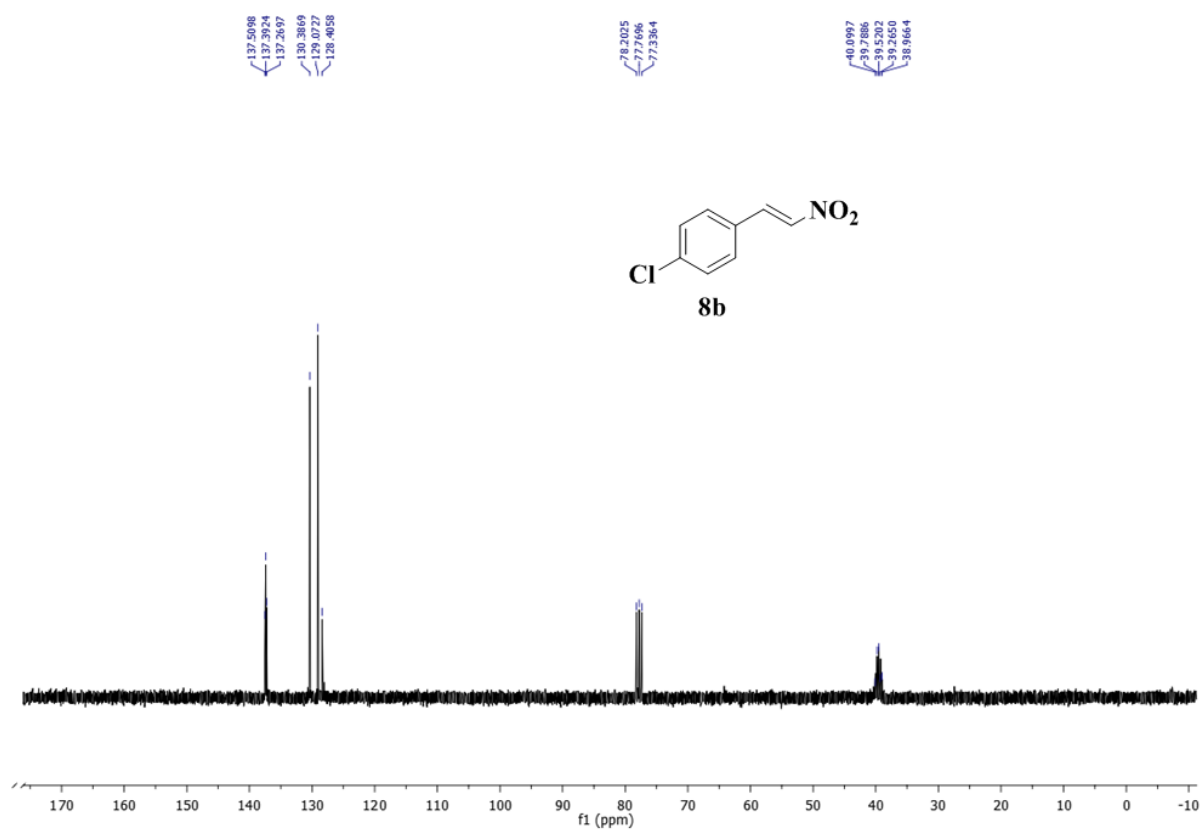


Figure S16. ¹³C NMR Spectrum of (E)-1-chloro-4-(2-nitrovinyl) benzene (8b).

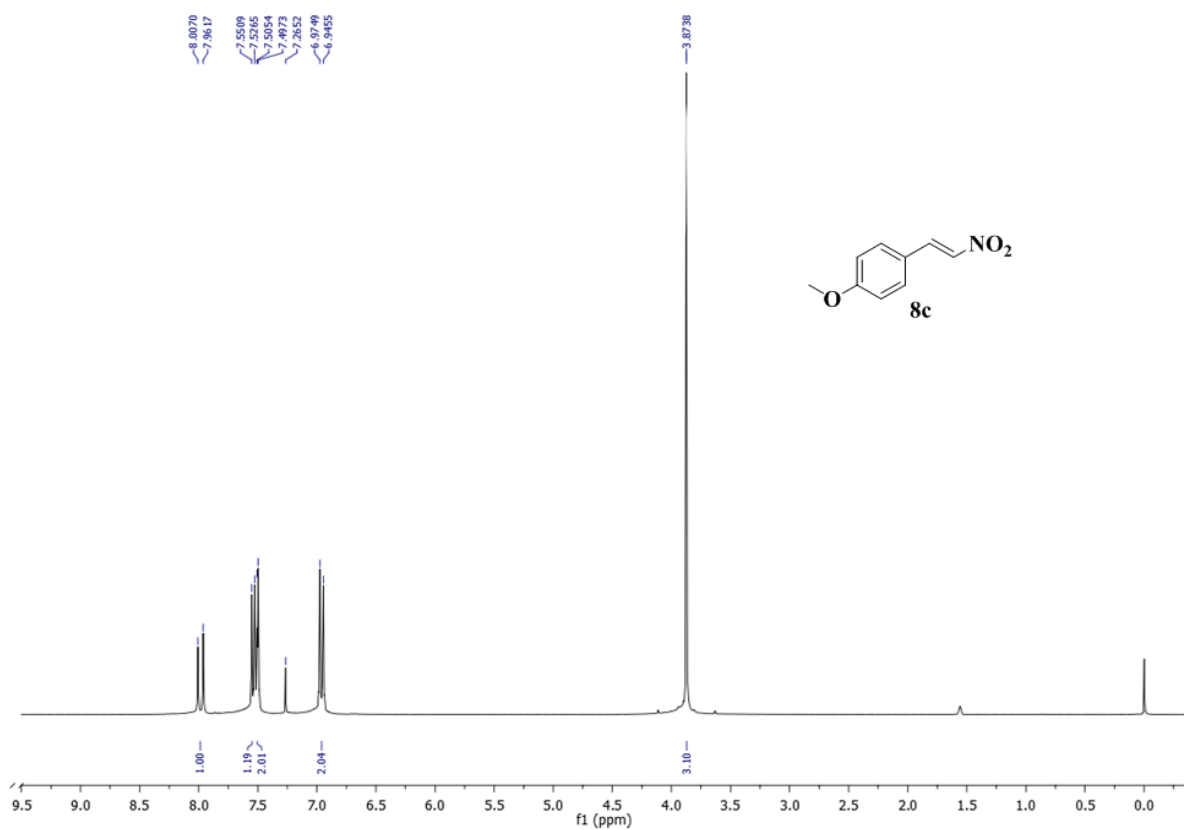


Figure S17. ¹H NMR Spectrum of (E)-1-methoxy-4-(2-nitrovinyl) benzene (8c).

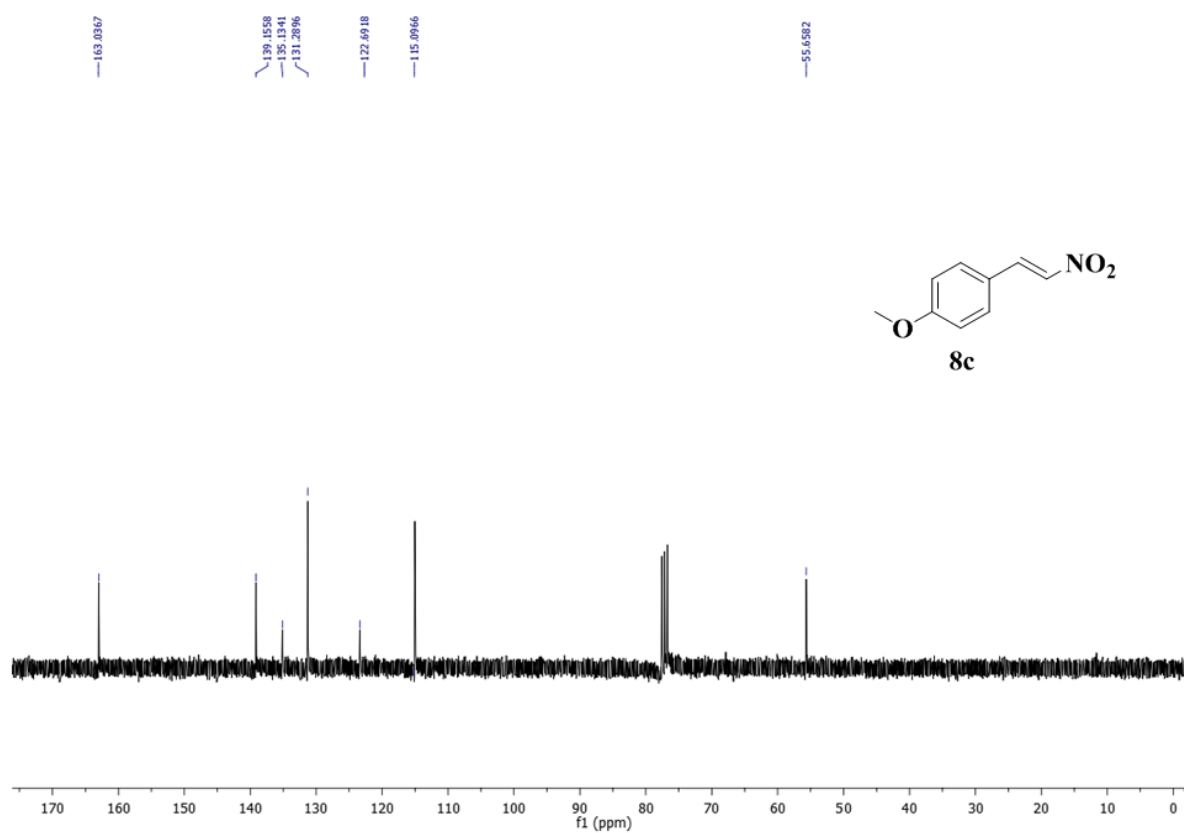


Figure S18. ¹³C NMR Spectrum of (E)-1-methoxy-4-(2-nitrovinyl) benzene (8c).

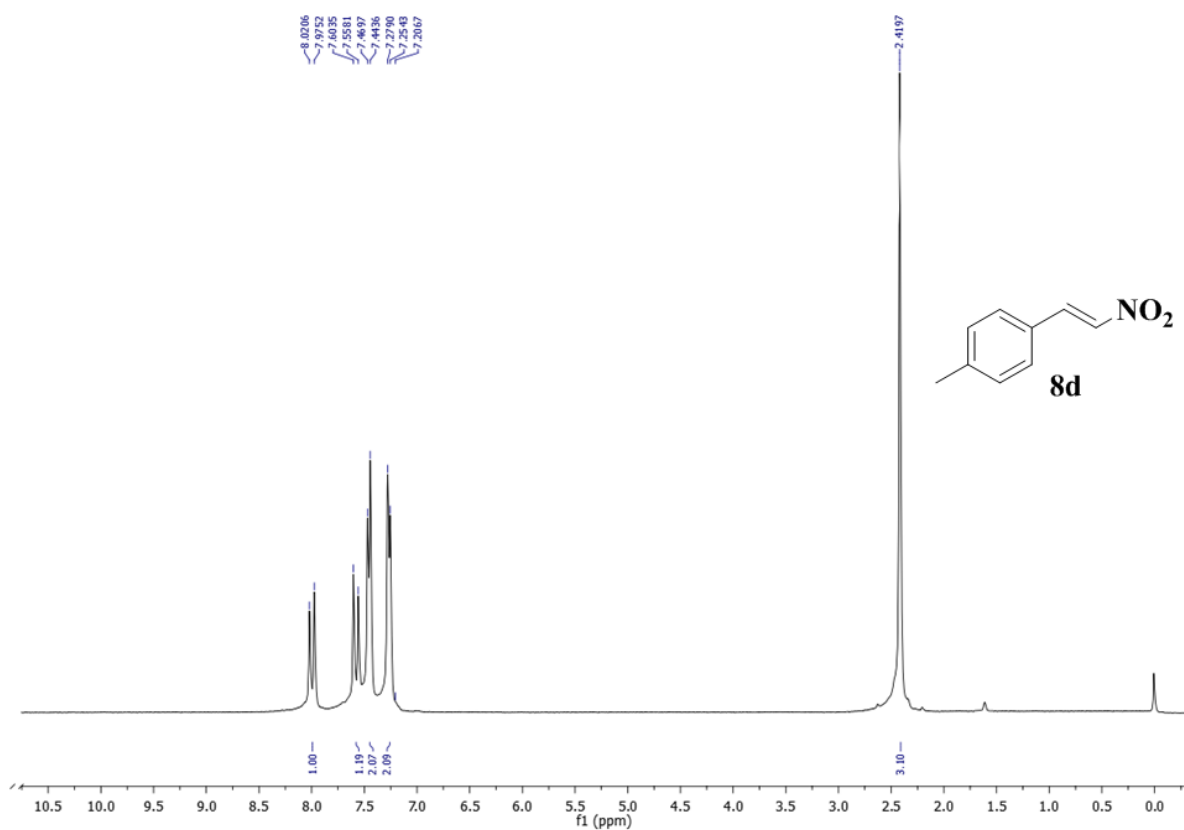


Figure S19. ¹H NMR Spectrum of (E)-1-methyl-4-(2-nitrovinyl) benzene (8d).

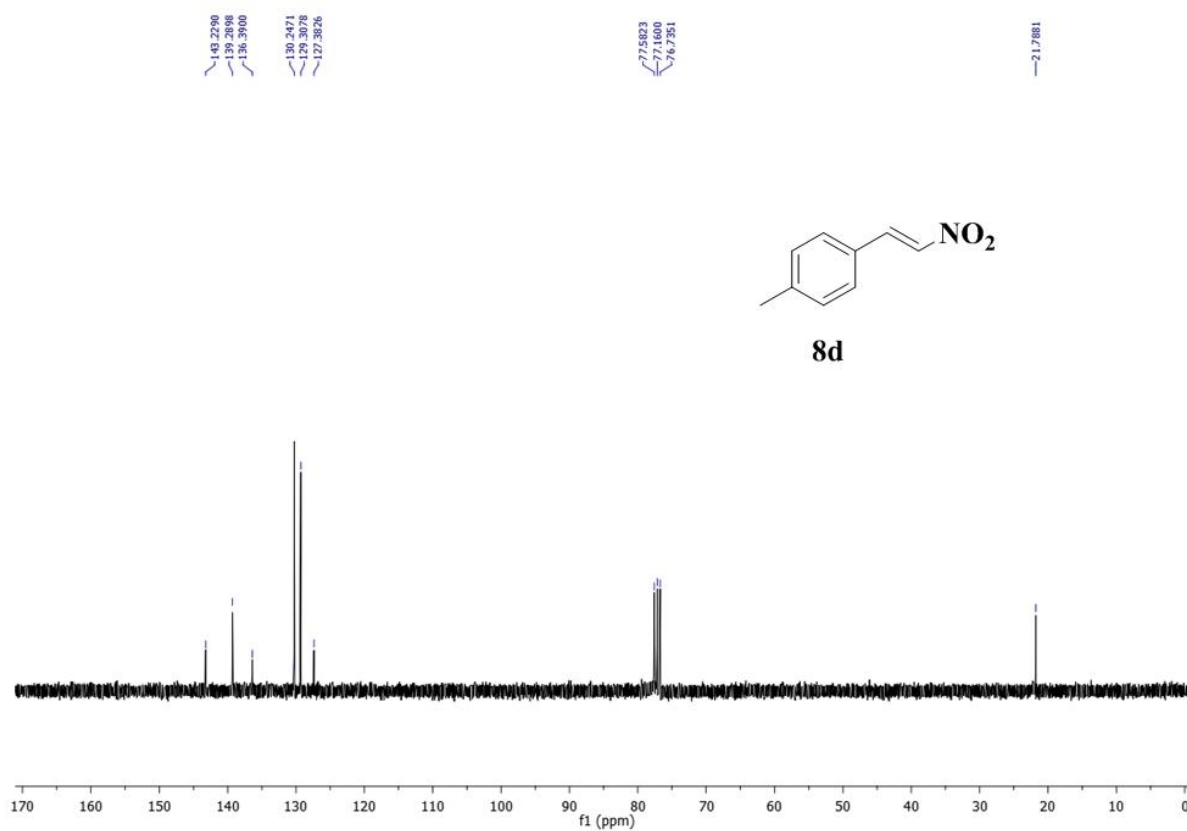


Figure S20. ¹³C NMR Spectrum of (E)-1-methyl-4-(2-nitrovinyl) benzene (8d).

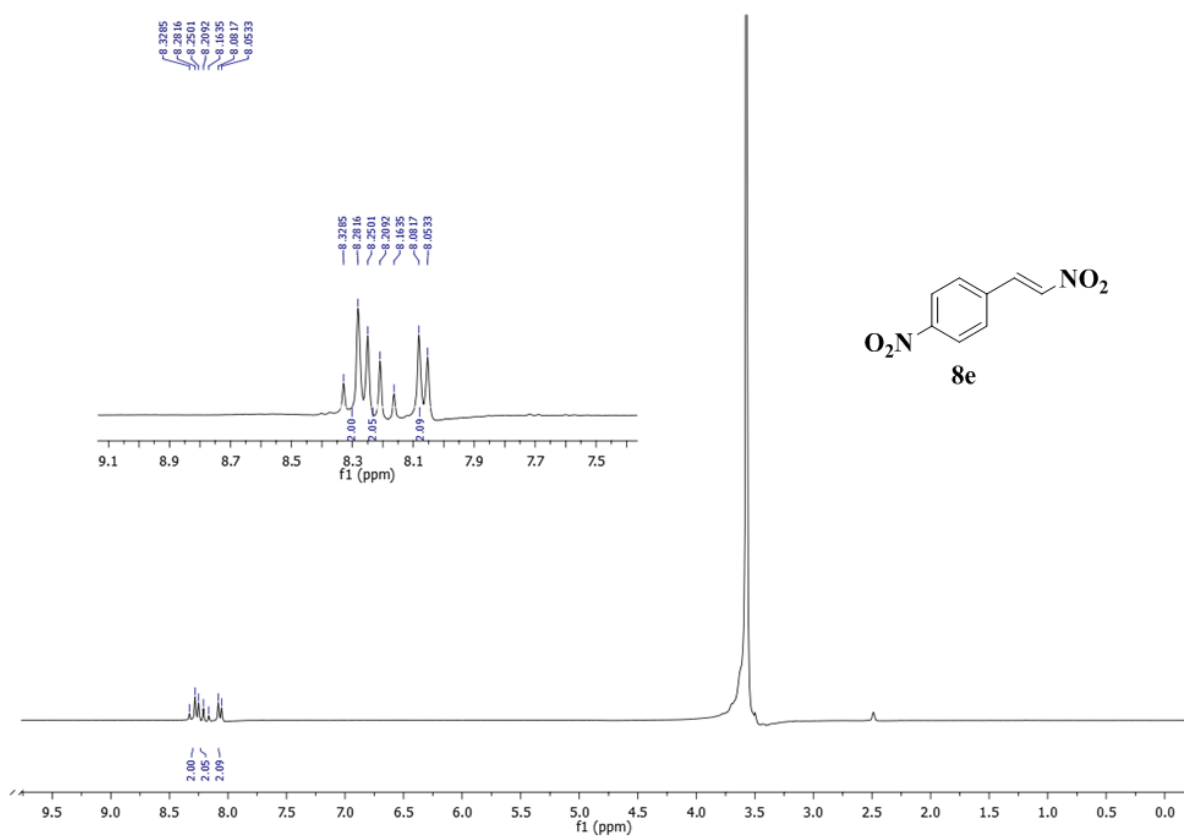


Figure S21. ¹H NMR Spectrum of (E)-1-nitro-4-(2-nitrovinyl) benzene (8e).

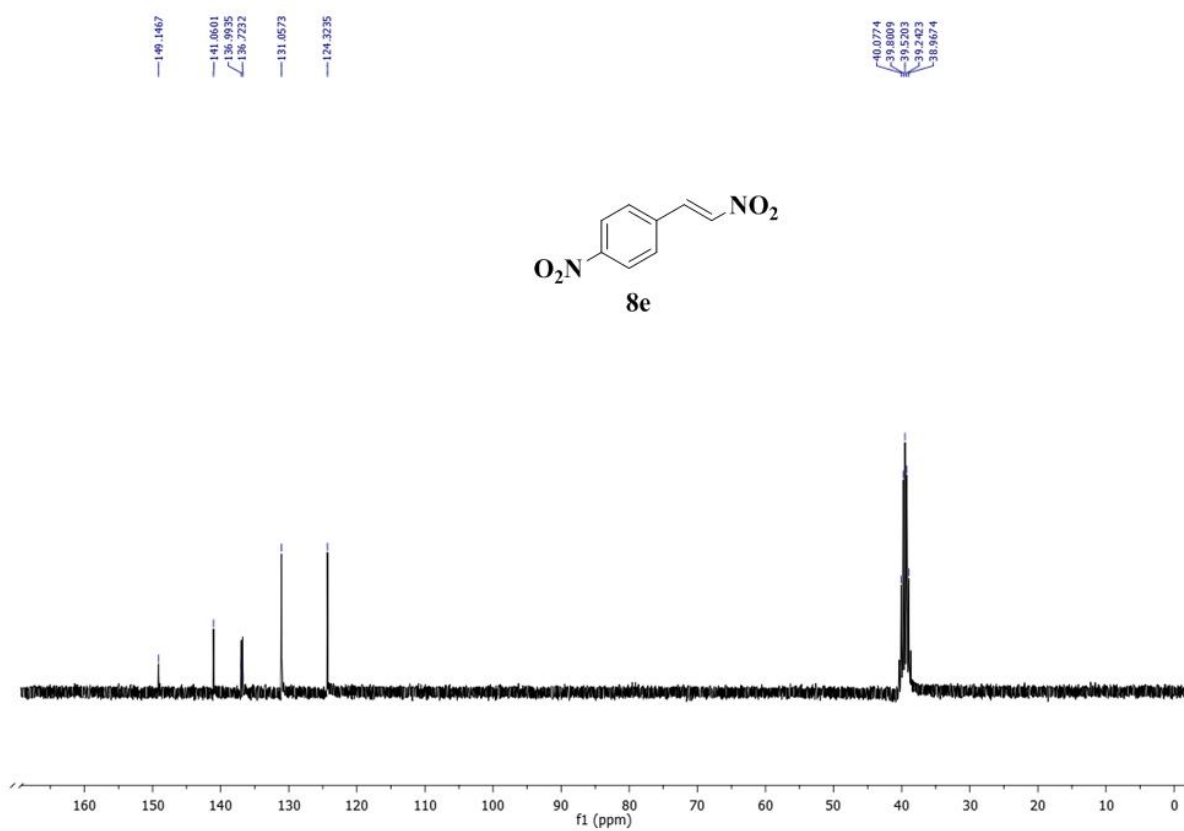


Figure S22. ¹³C NMR Spectrum of (E)-1-nitro-4-(2-nitrovinyl) benzene (8e).

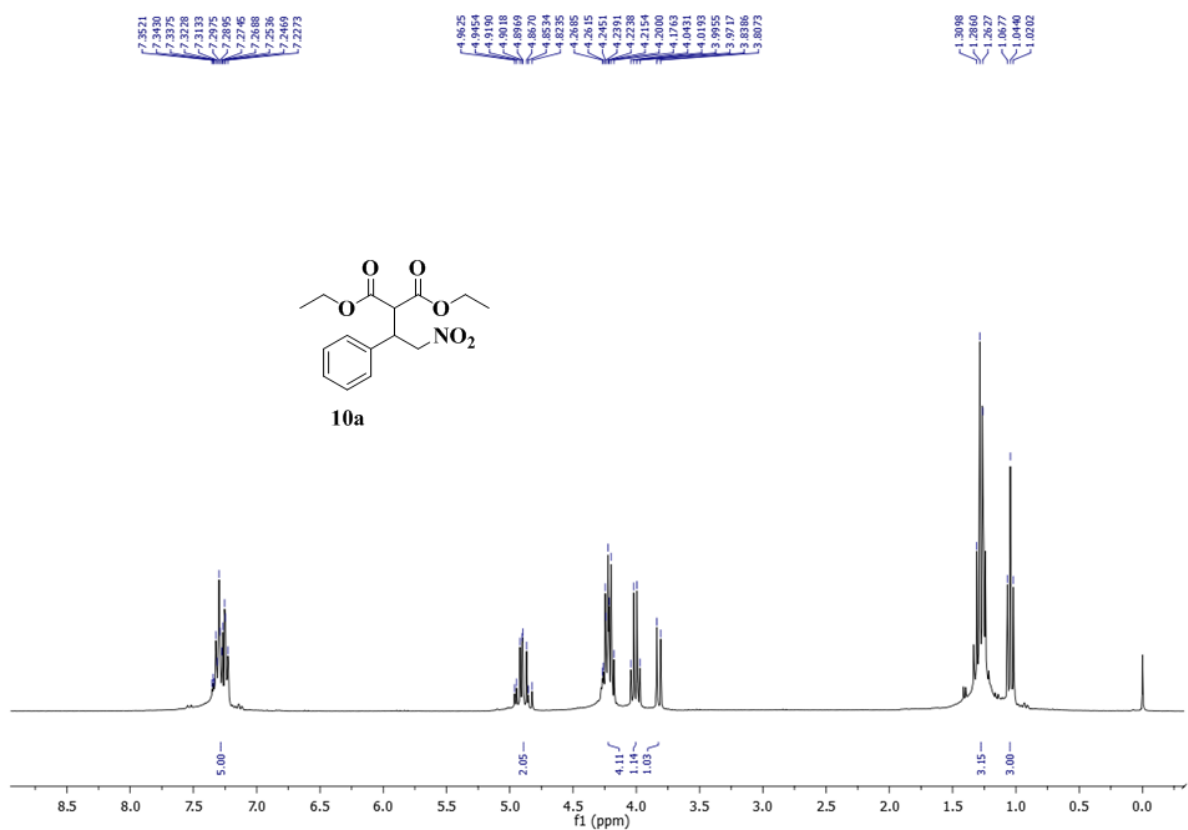


Figure S23. ¹H NMR Spectrum of diethyl 2-(2-nitro-1-phenylethyl) malonate (10a).

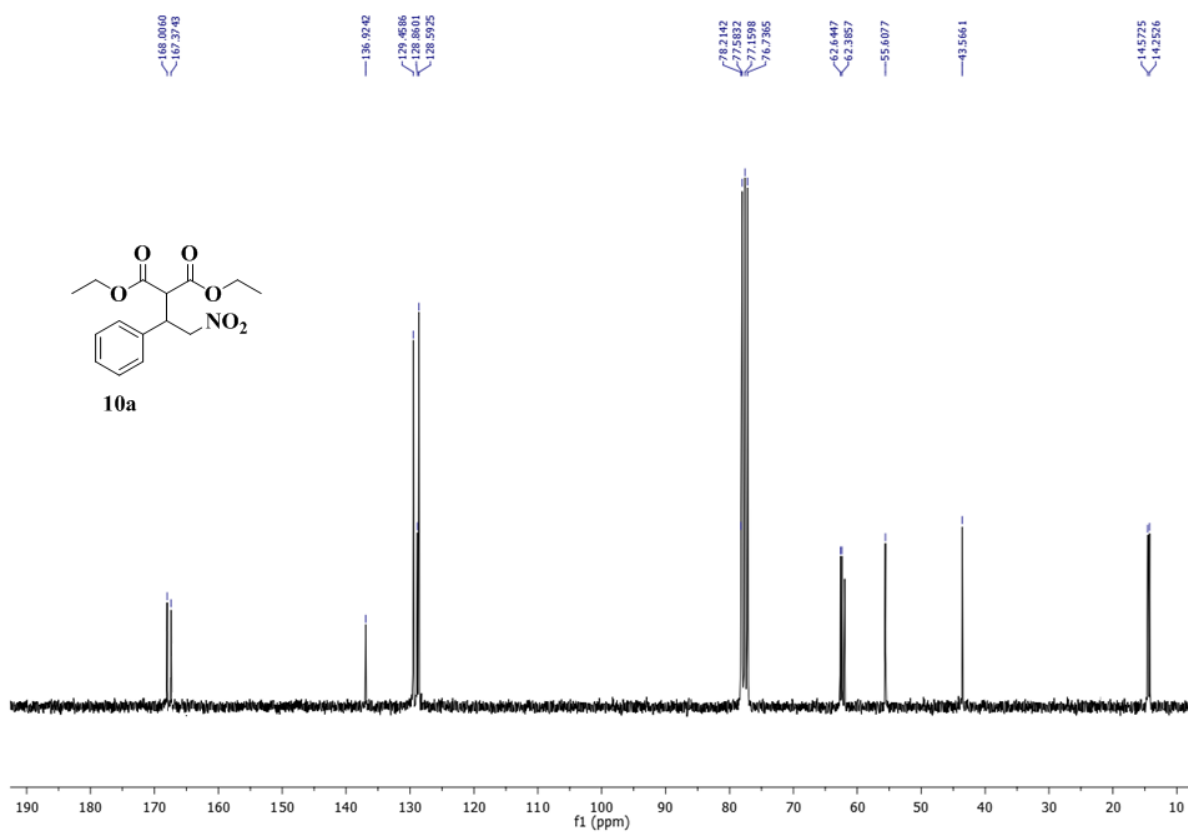


Figure S24. ¹³C NMR Spectrum of diethyl 2-(2-nitro-1-phenylethyl) malonate (10a).

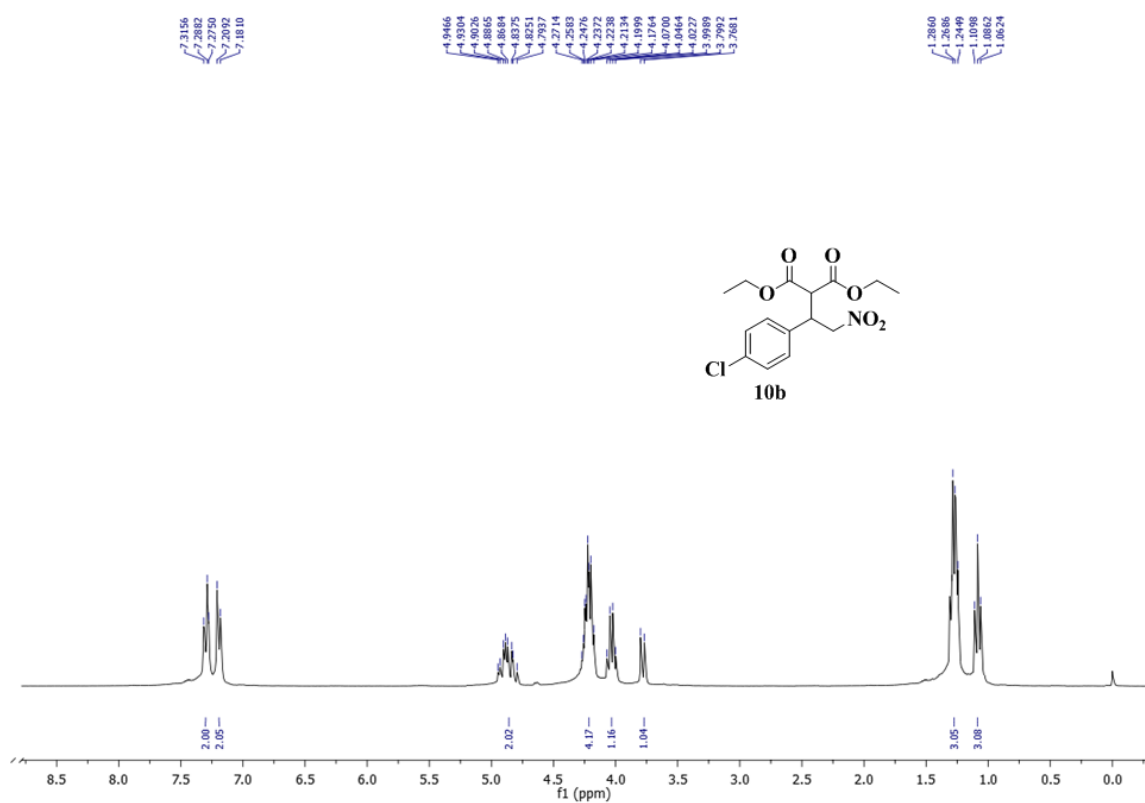


Figure S25. ¹H NMR Spectrum of diethyl 2-(1-(4-chlorophenyl)-2-nitroethyl) malonate (10b).

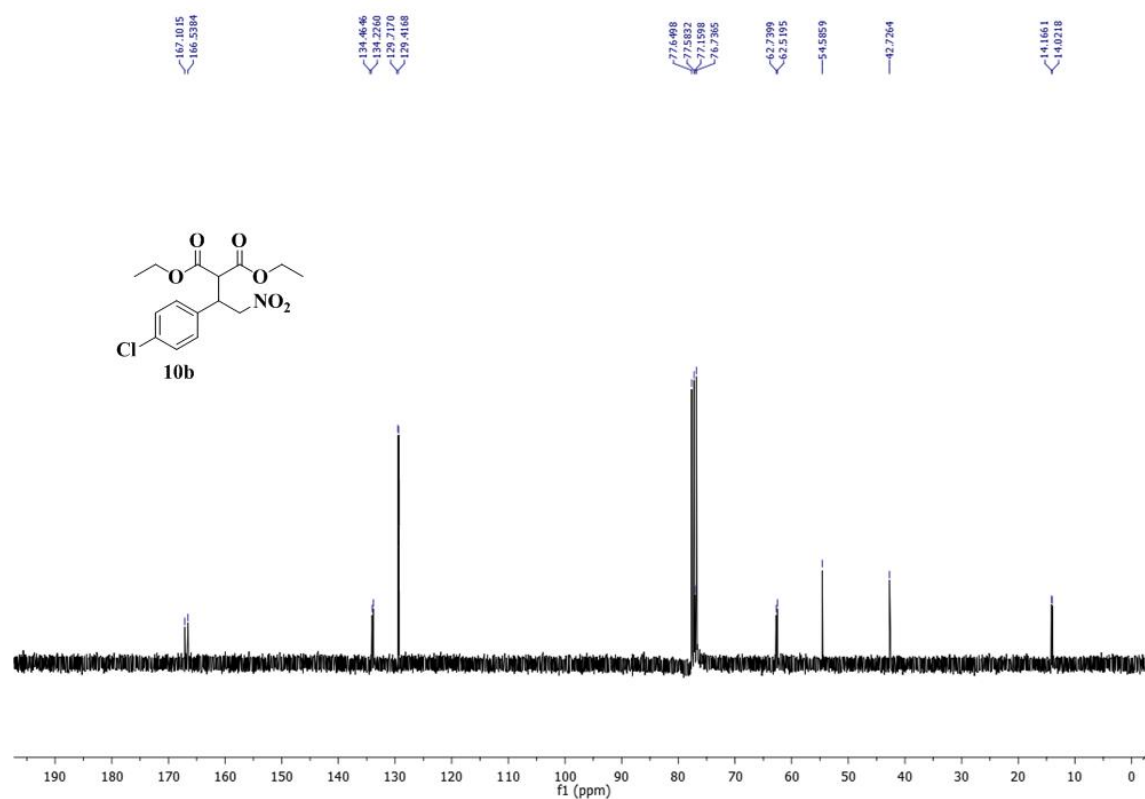


Figure S26. ¹³C NMR Spectrum of diethyl 2-(1-(4-chlorophenyl)-2-nitroethyl) malonate (10b).

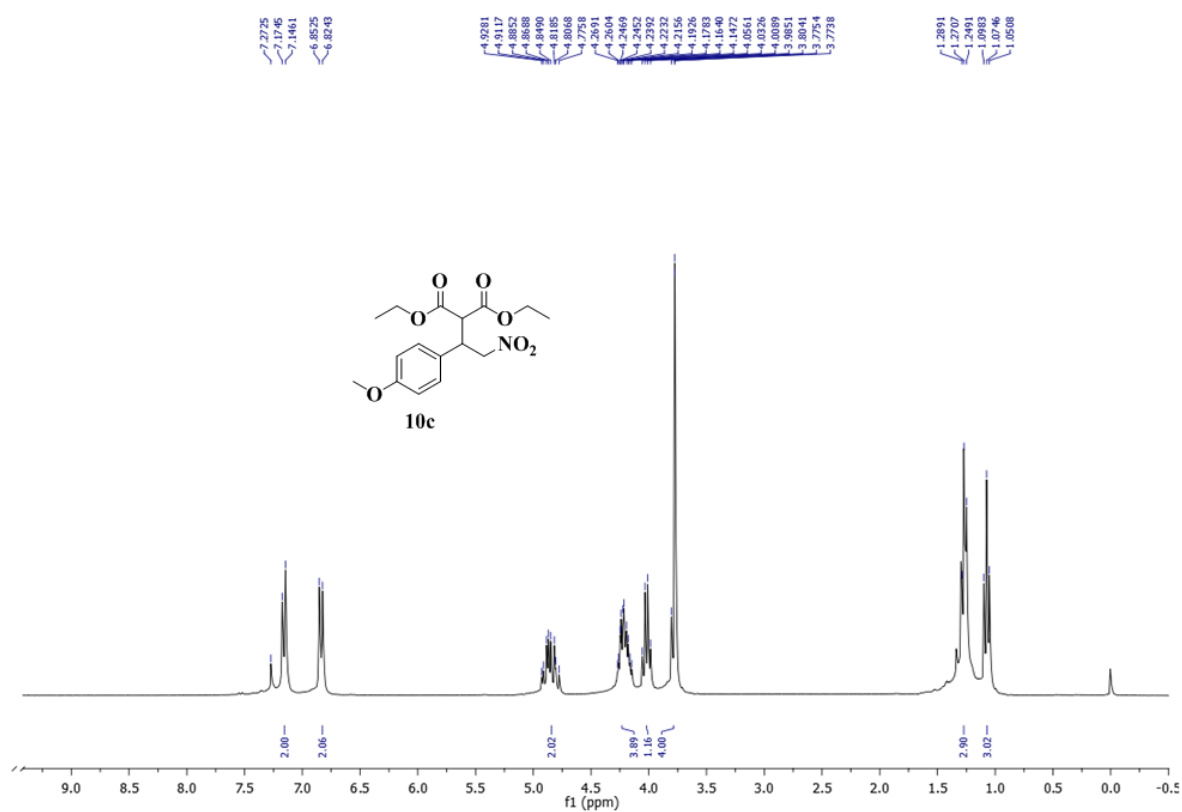


Figure S27. ¹H NMR Spectrum of diethyl 2-(1-(4-methoxyphenyl)-2-nitroethyl)malonate (10c).

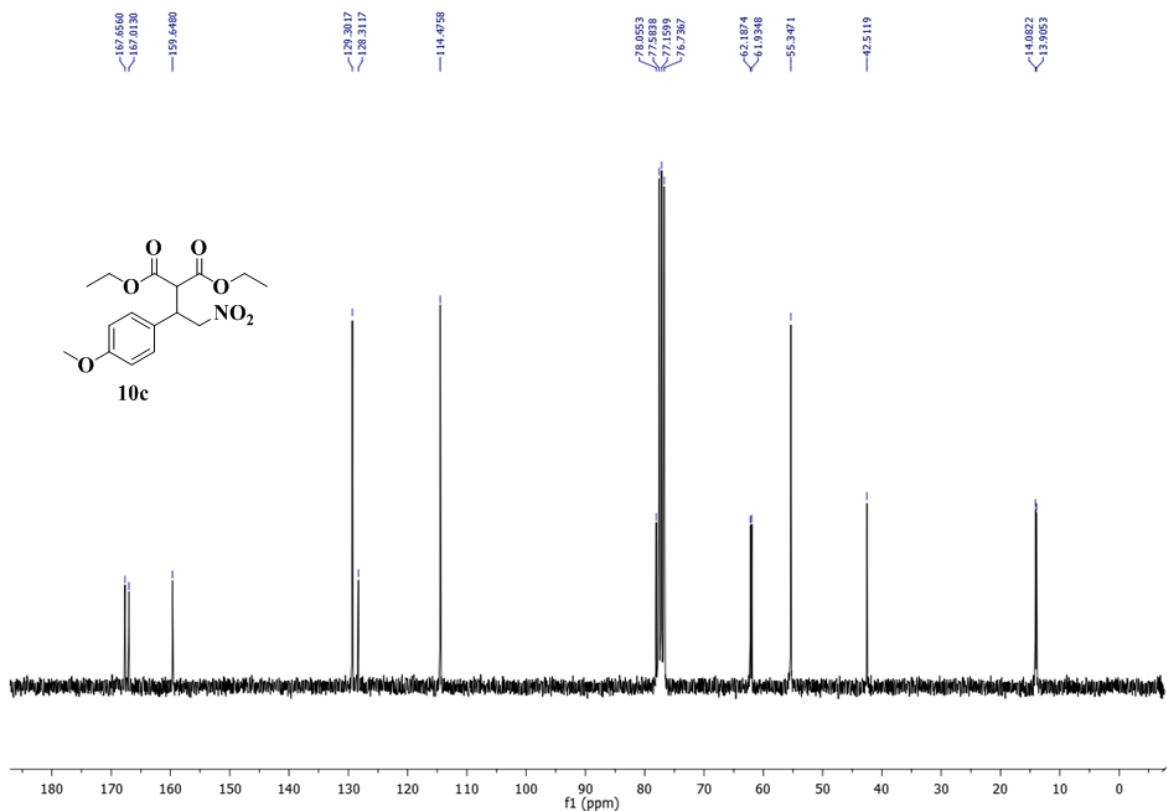


Figure S28. ¹³C NMR Spectrum of diethyl 2-(1-(4-methoxyphenyl)-2-nitroethyl)malonate (10c).

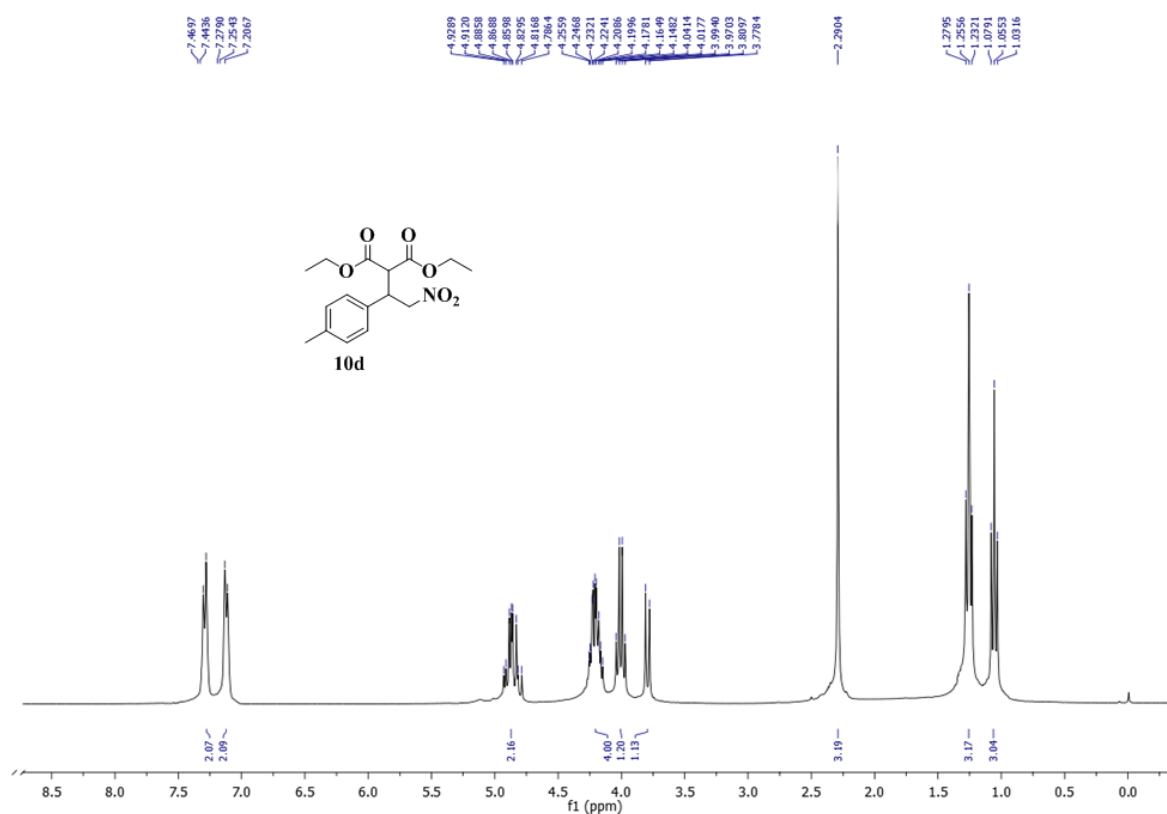


Figure S29. ¹H NMR Spectrum of diethyl 2-(2-nitro-1-p-tolyethyl)malonate (10d).

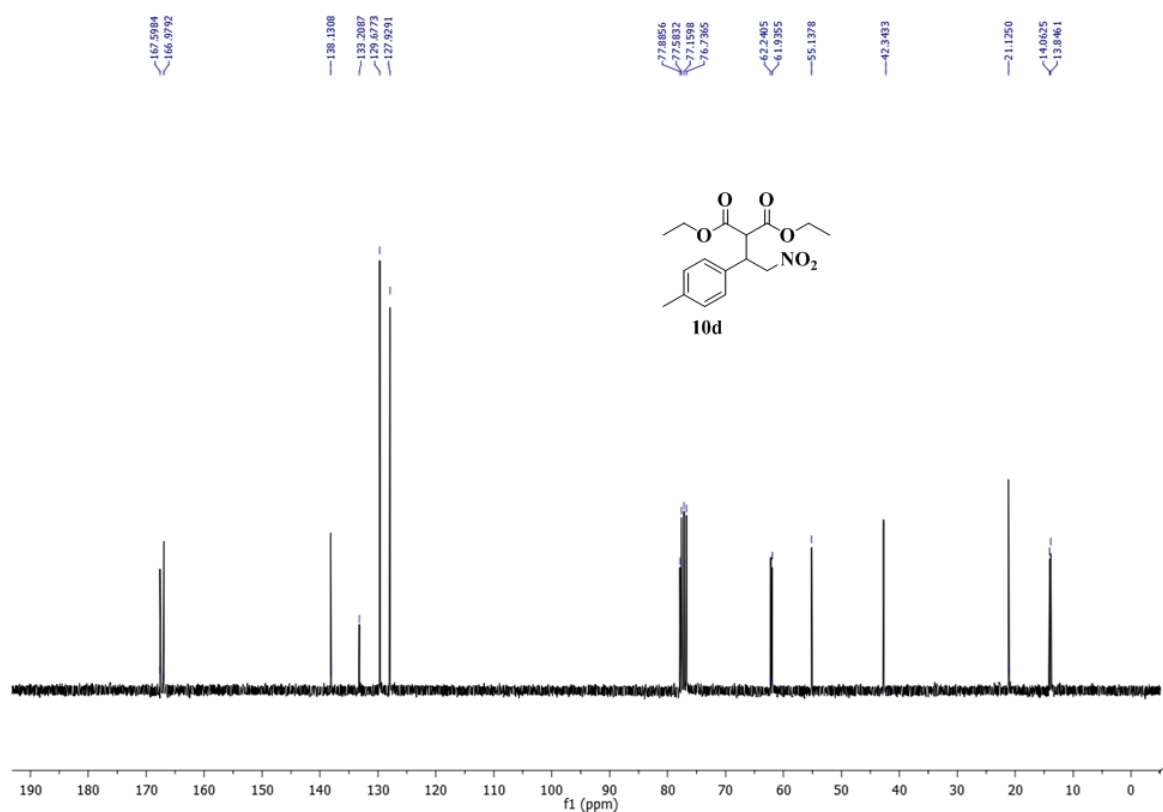


Figure S30. ¹³C NMR Spectrum of diethyl 2-(2-nitro-1-p-tolyethyl)malonate (10d).

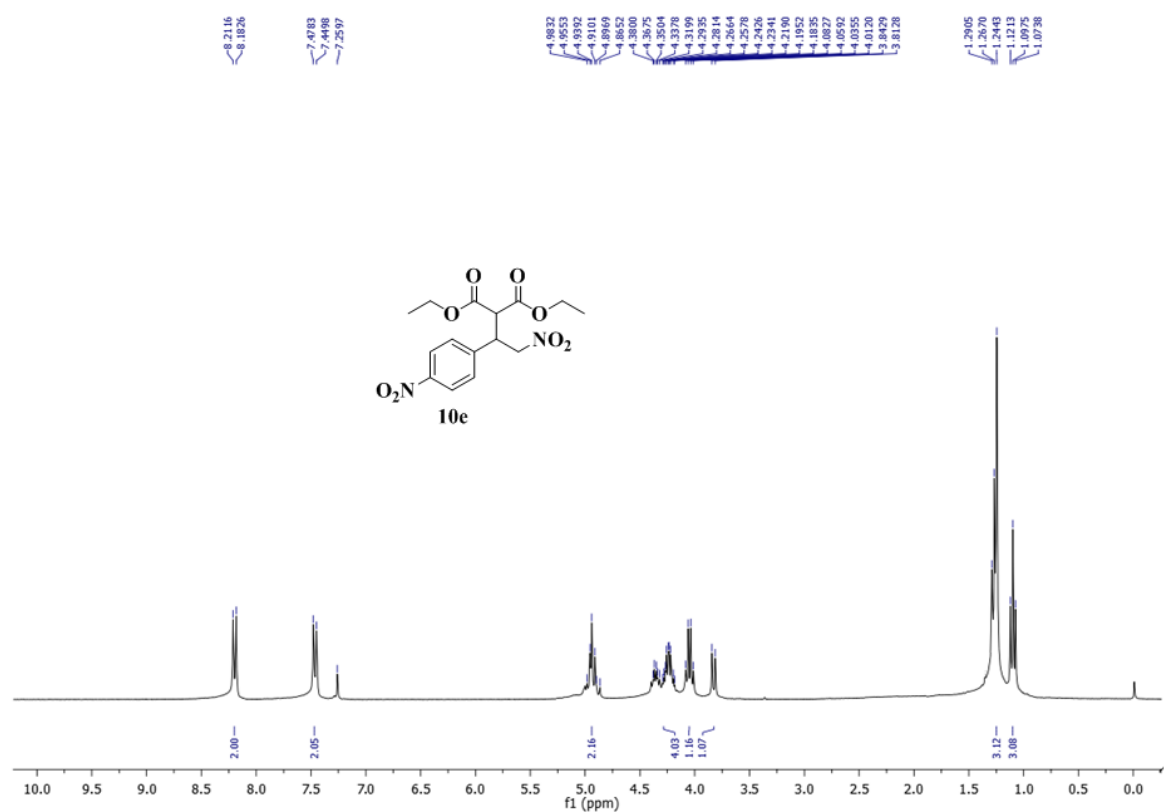


Figure S31. ¹H NMR Spectrum of diethyl 2-(2-nitro-1-(4-nitrophenyl) ethyl) malonate (**10e**).

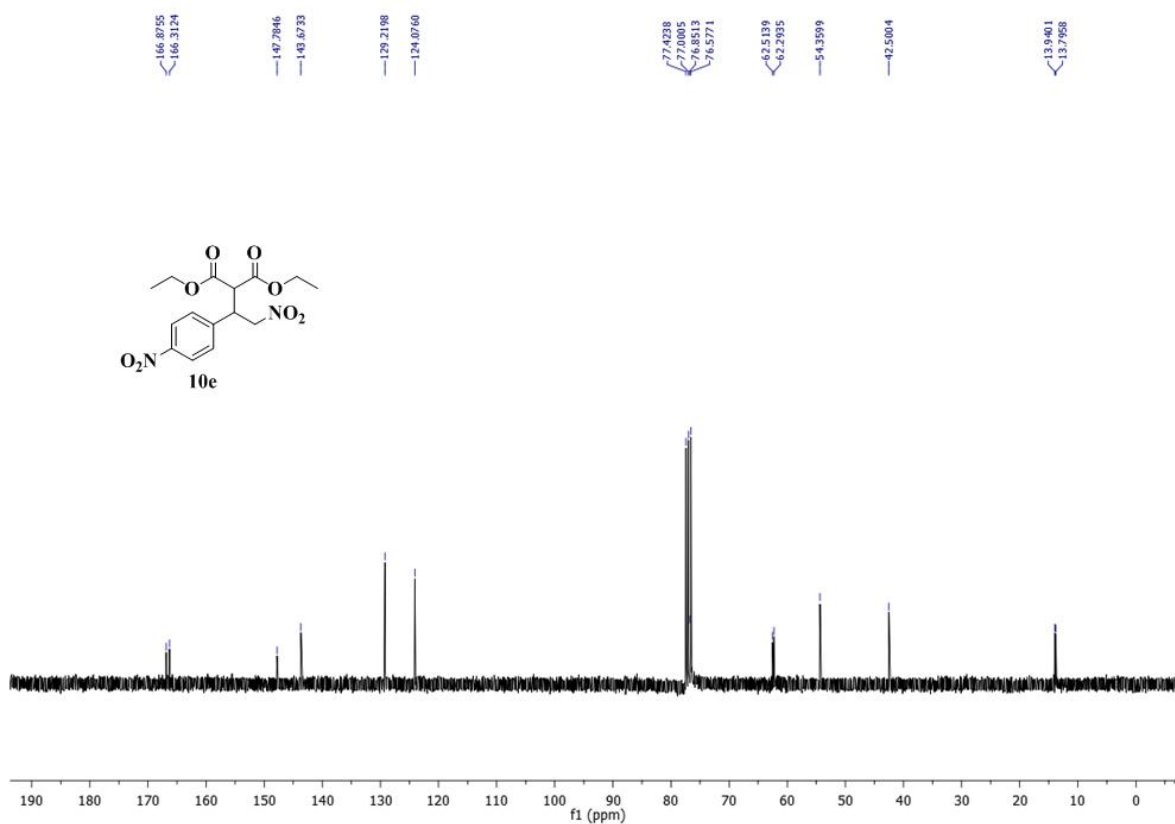


Figure S32. ¹³C NMR Spectrum of diethyl 2-(2-nitro-1-(4-nitrophenyl) ethyl) malonate (**10e**).

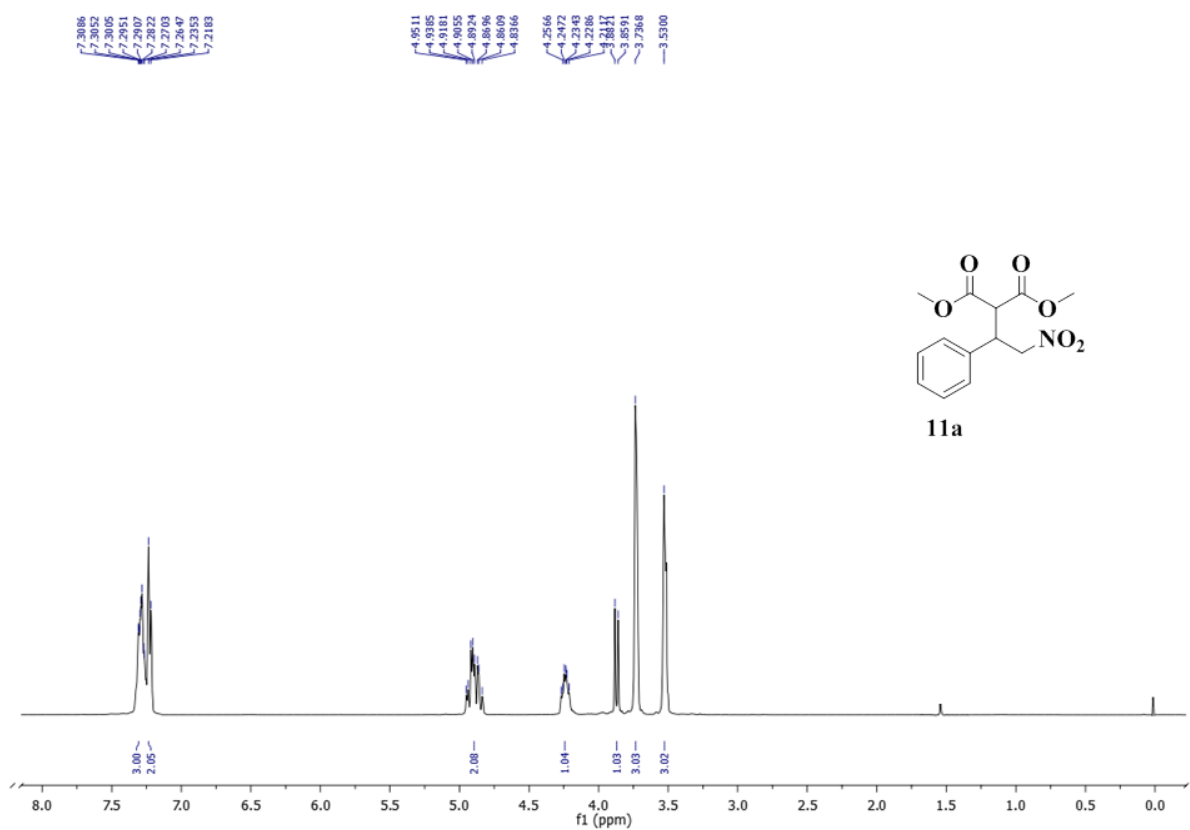


Figure S33. ¹H NMR Spectrum of dimethyl 2-(2-nitro-1-phenylethyl) malonate (11a).

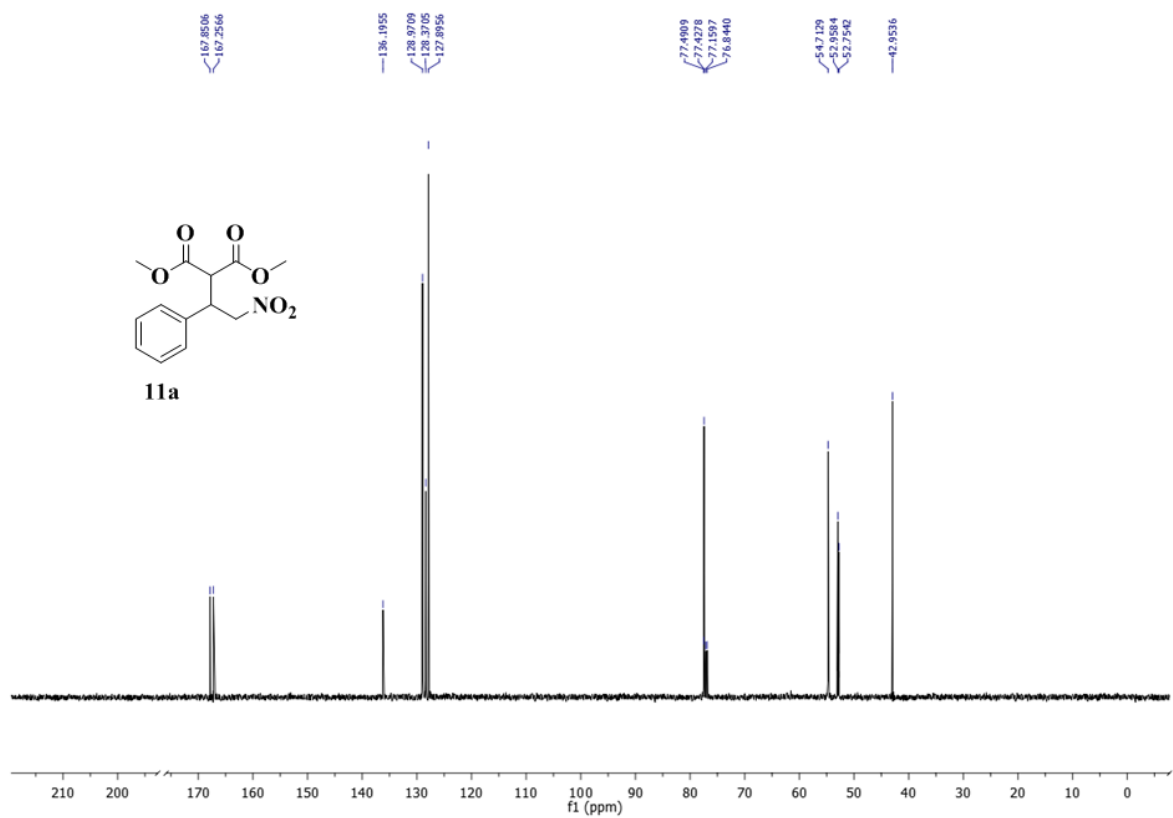


Figure S34. ¹³C NMR Spectrum of dimethyl 2-(2-nitro-1-phenylethyl) malonate (11a).

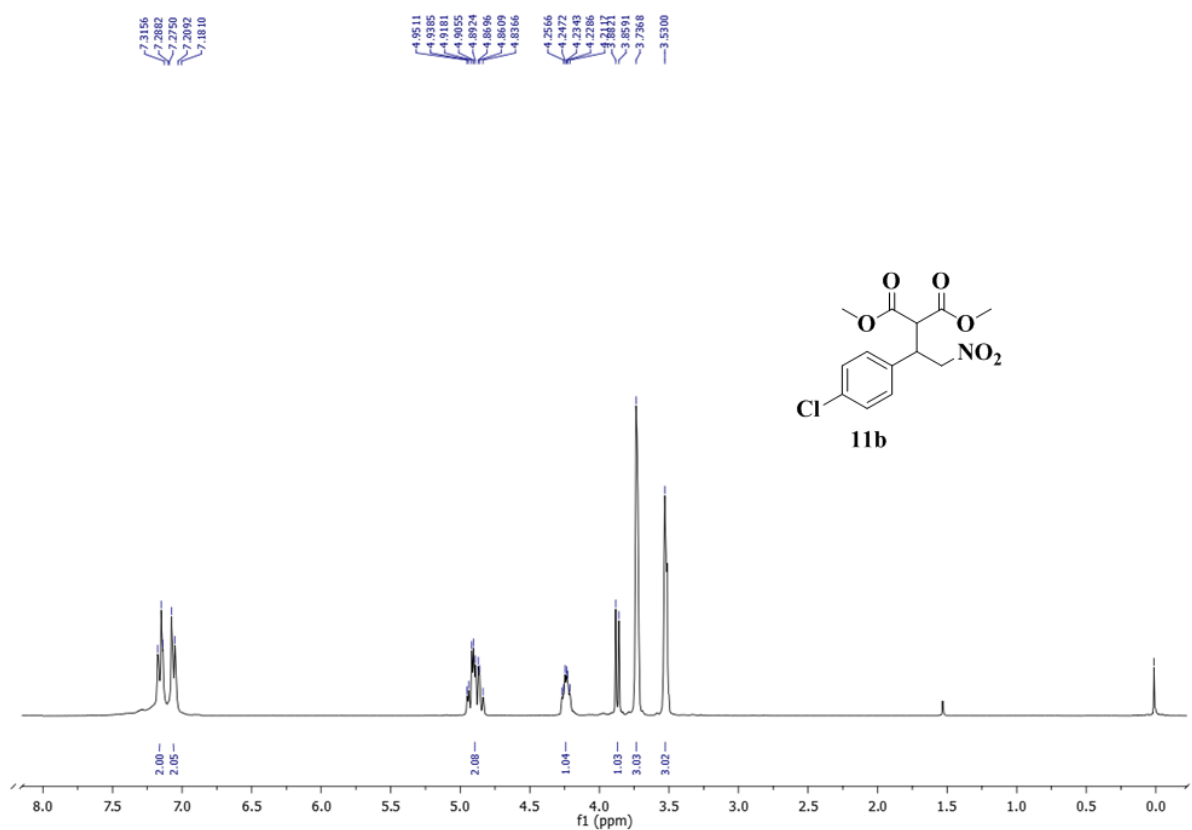


Figure S35. ¹H NMR Spectrum of dimethyl 2-(1-(4-chlorophenyl)-2-nitroethyl)malonate (11b).

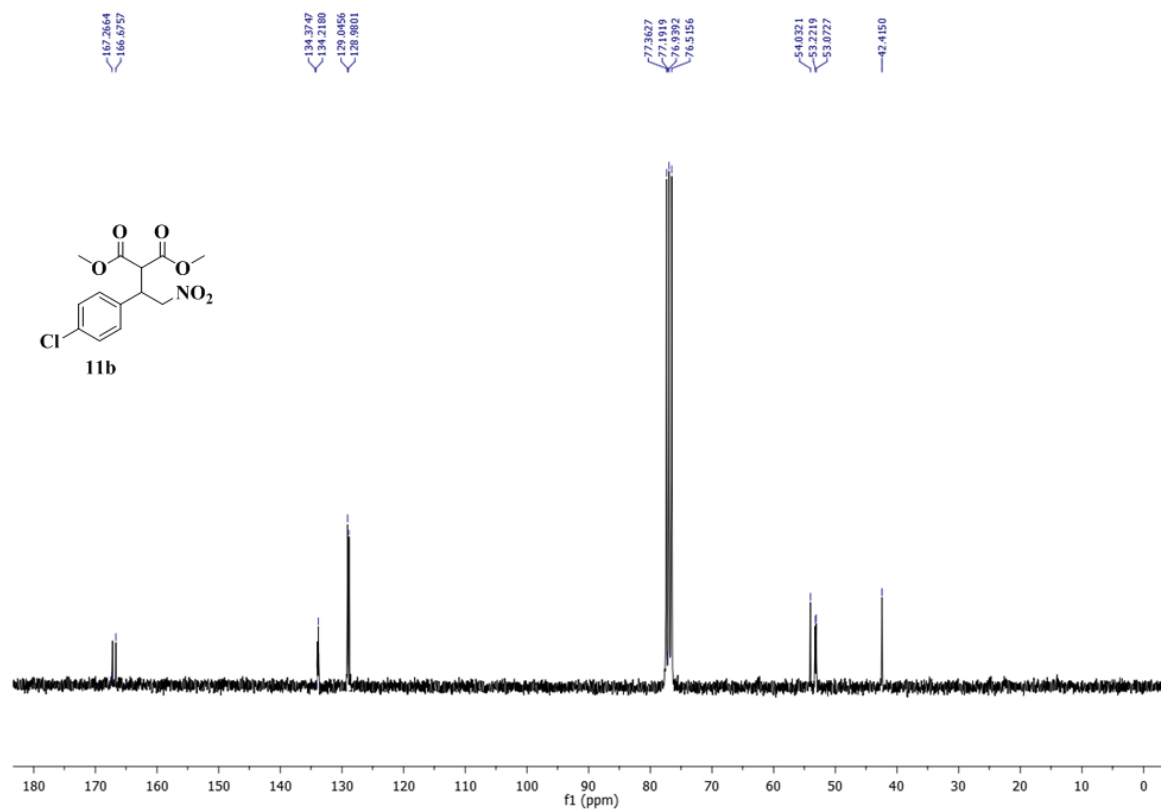


Figure S36. ¹³C NMR Spectrum of dimethyl 2-(1-(4-chlorophenyl)-2-nitroethyl)malonate (11b).

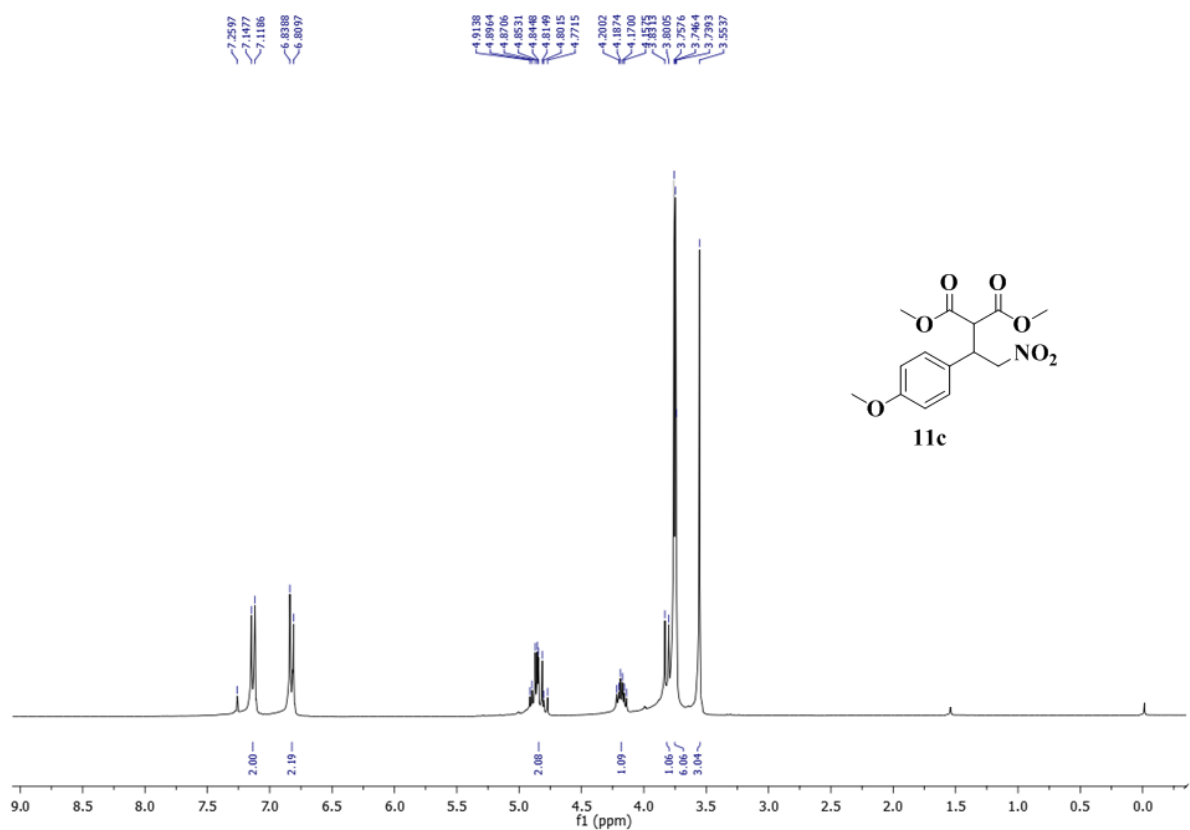


Figure S37. ¹H NMR Spectrum of dimethyl 2-(1-(4-methoxyphenyl)-2-nitroethyl) malonate (11c).

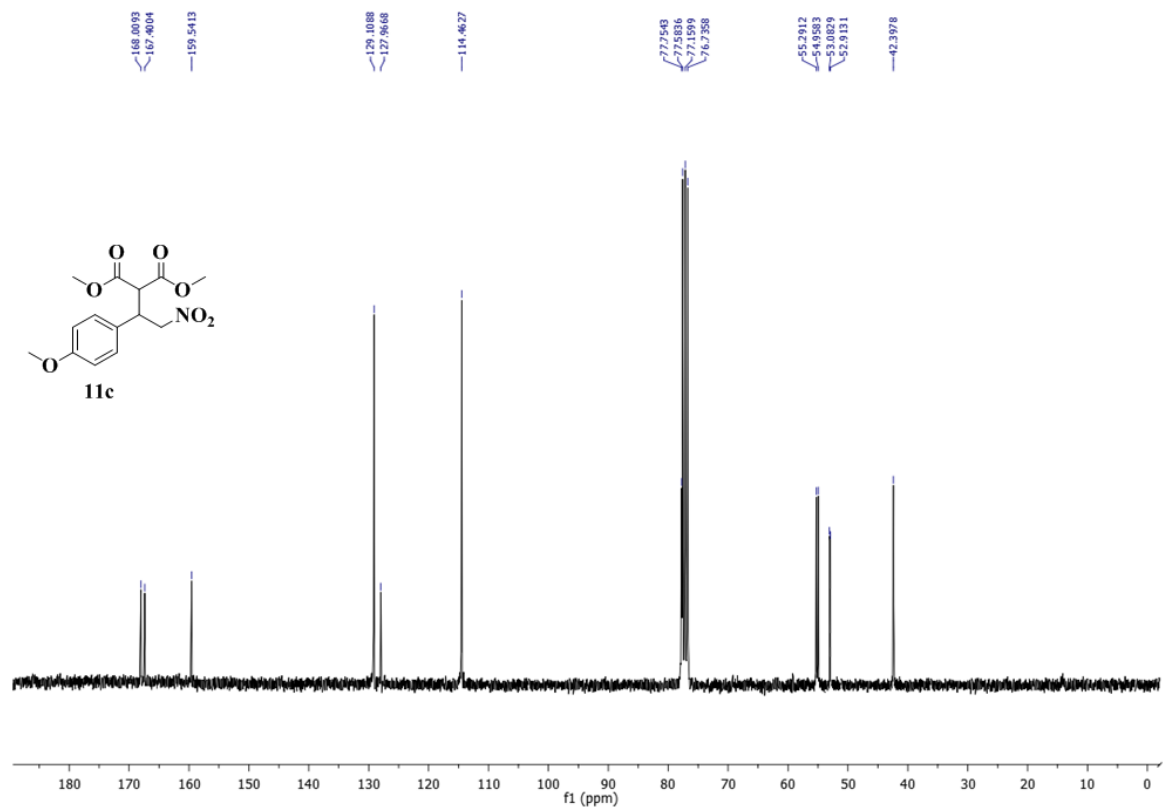


Figure S38. ¹³C NMR Spectrum of dimethyl 2-(1-(4-methoxyphenyl)-2-nitroethyl) malonate (11c).

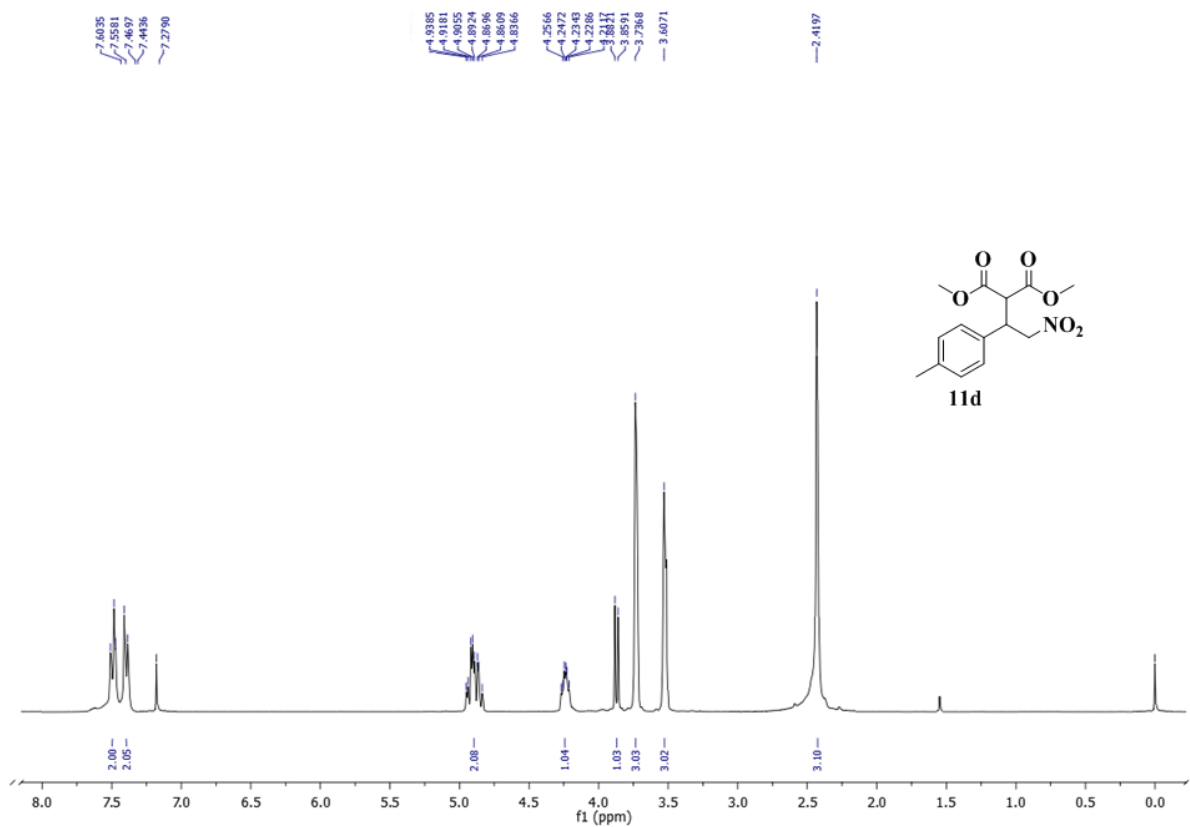


Figure S39. ¹H NMR Spectrum of dimethyl 2-(2-nitro-1-p-tolyylethyl) malonate (11d).

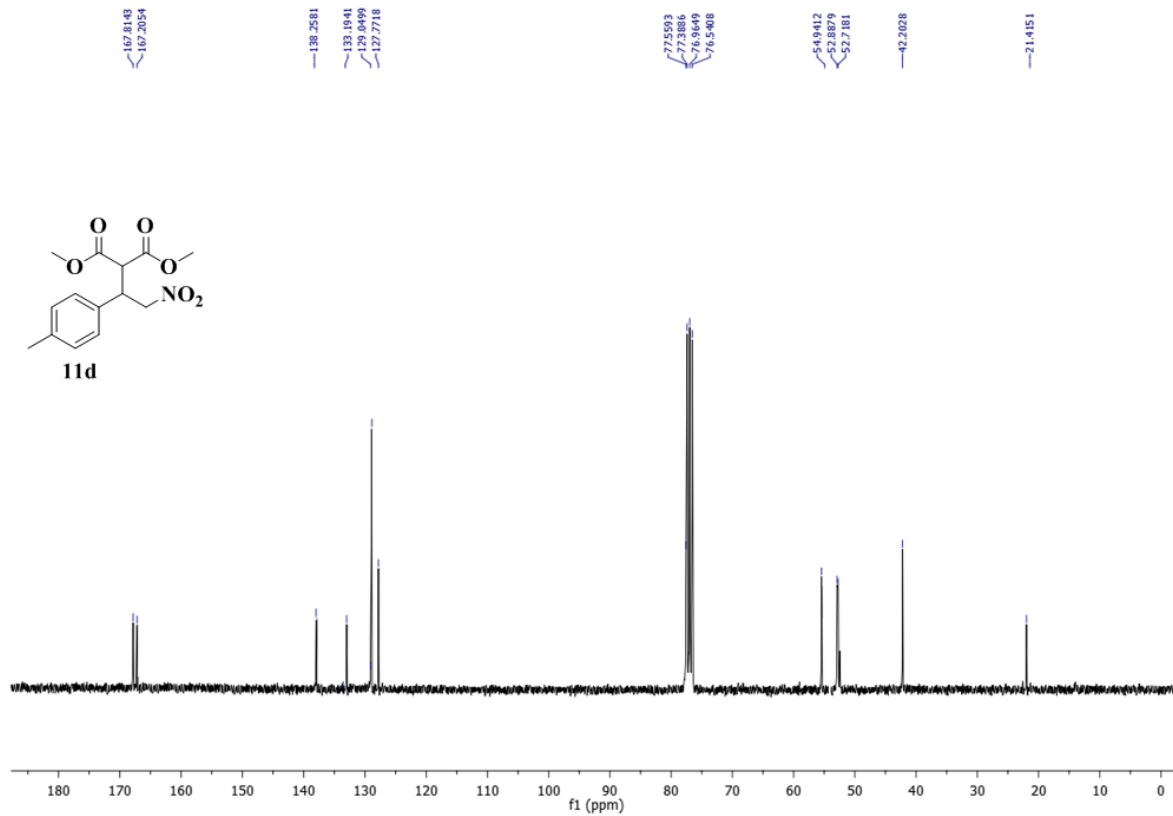


Figure S40. ¹³C NMR Spectrum of dimethyl 2-(2-nitro-1-p-tolyylethyl) malonate (11d).

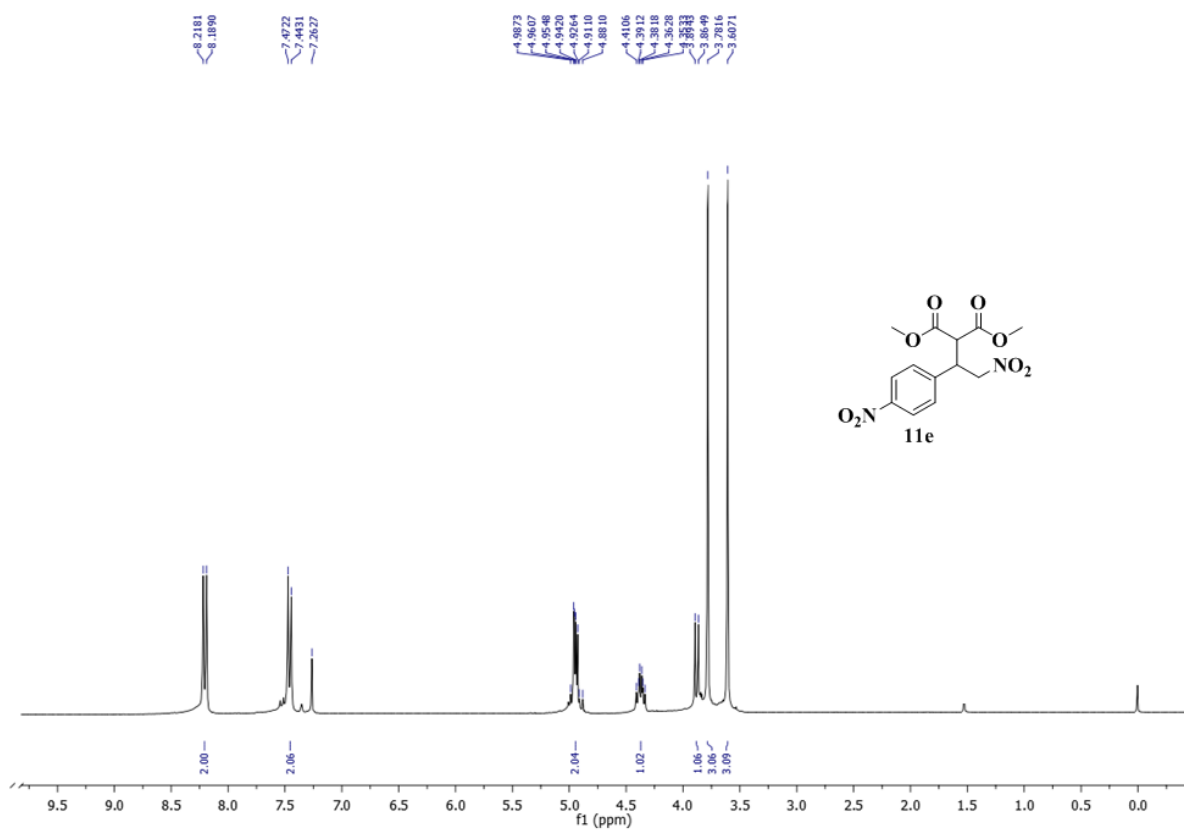


Figure S41. ¹H NMR Spectrum of dimethyl 2-(2-nitro-1-(4-nitrophenyl) ethyl) malonate (11e).

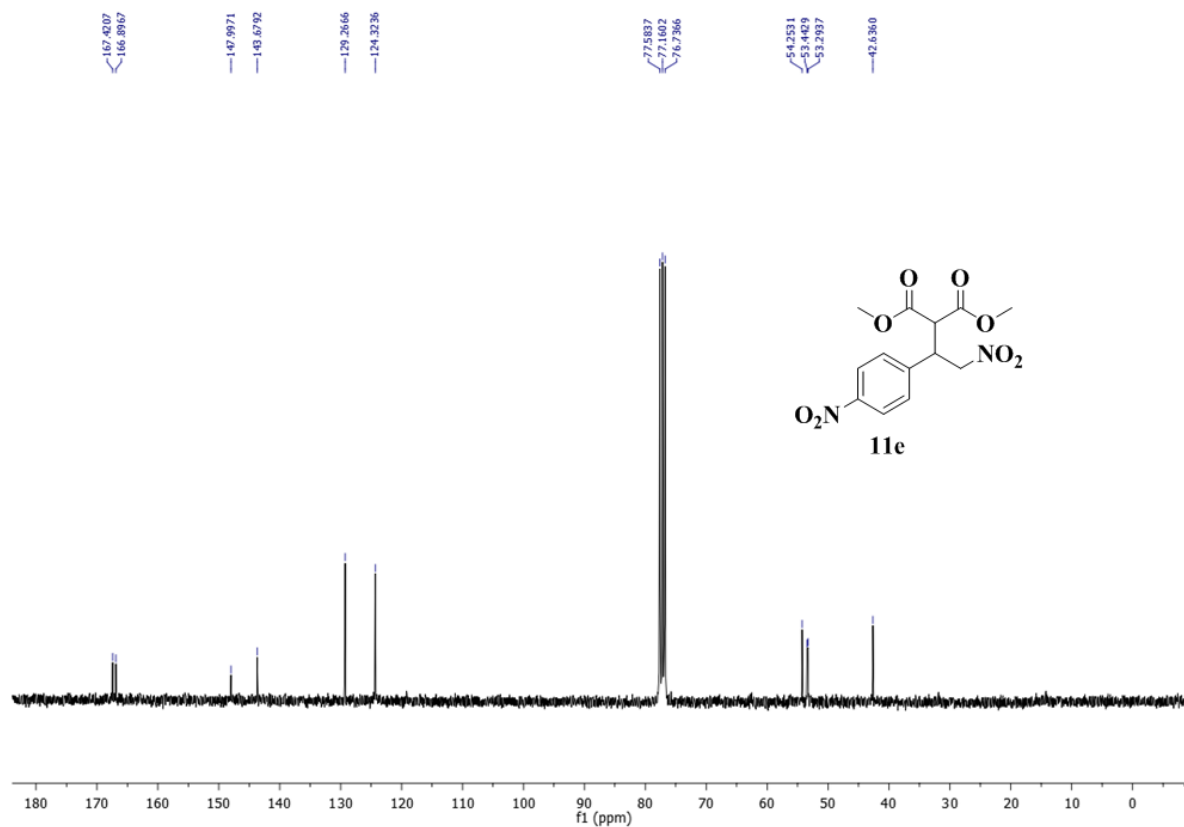


Figure S42. ¹³C NMR Spectrum of dimethyl 2-(2-nitro-1-(4-nitrophenyl) ethyl) malonate (11e).

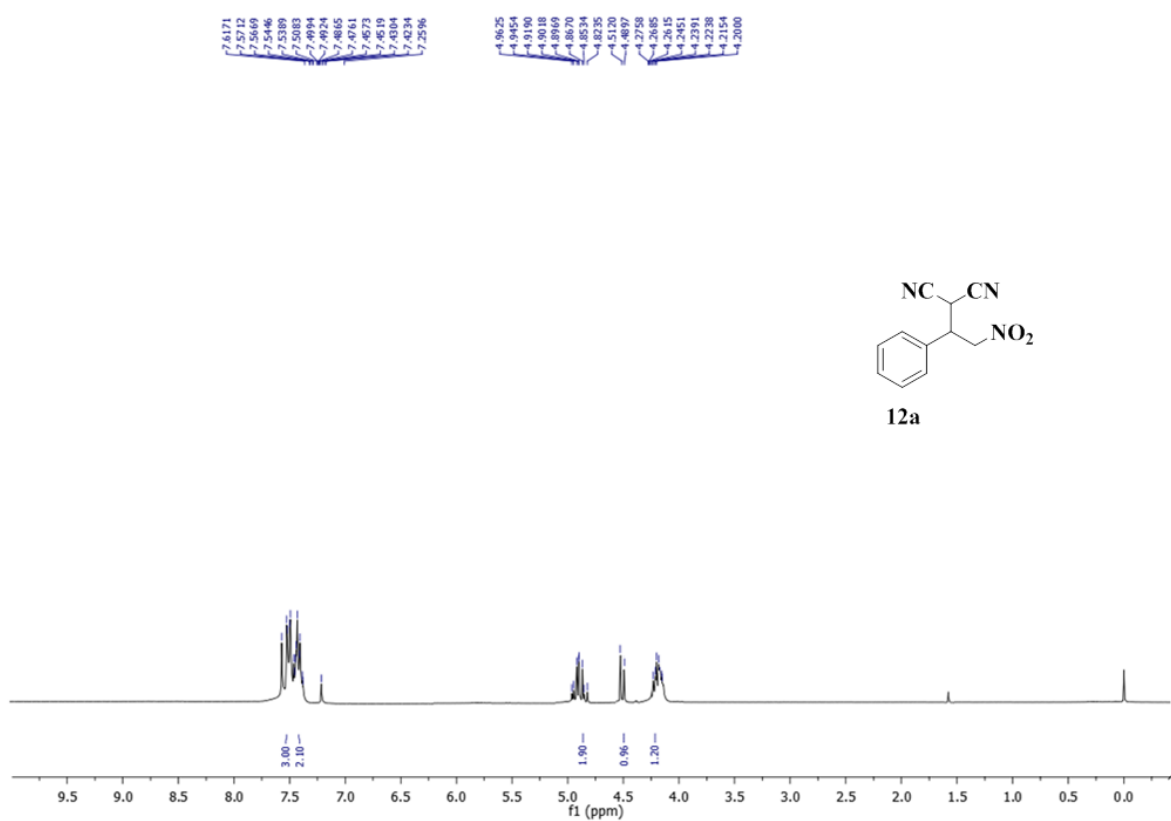


Figure S43. ¹H NMR Spectrum of 2-(2-nitro-1-phenylethyl) malononitrile (12a).

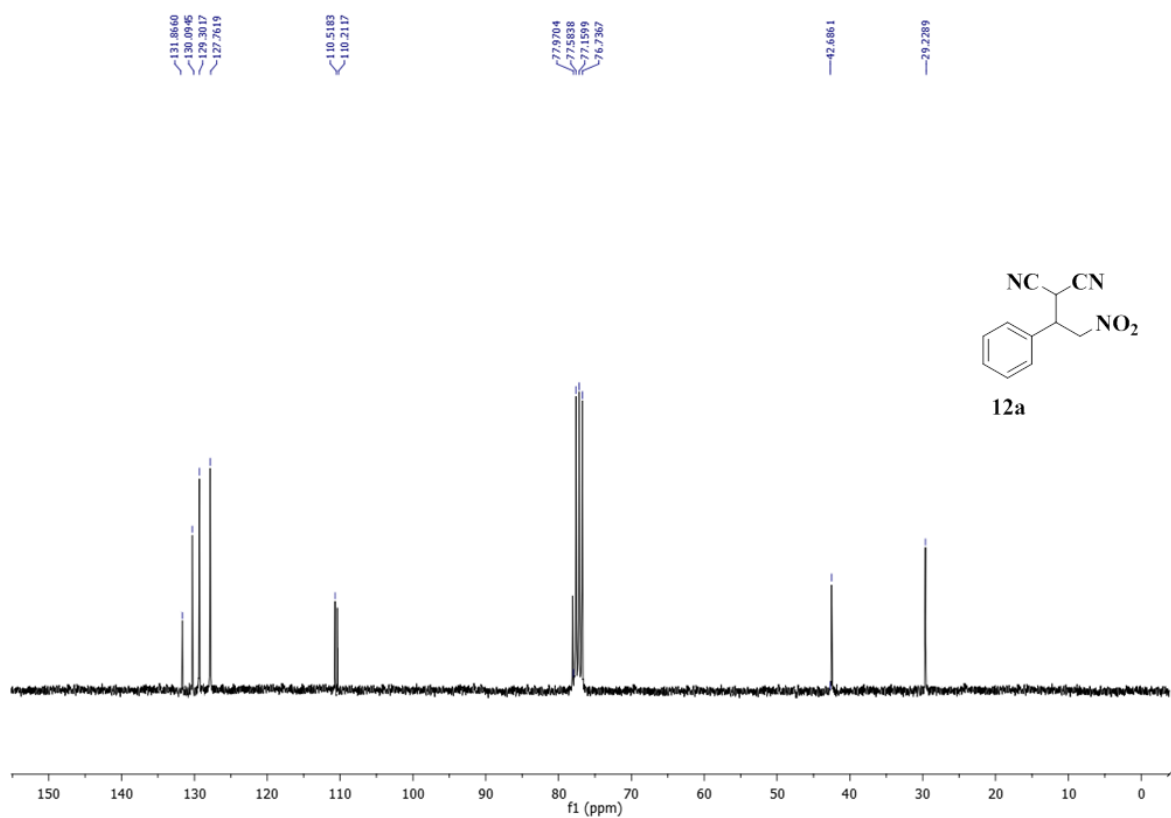


Figure S44. ¹³C NMR Spectrum of 2-(2-nitro-1-phenylethyl) malononitrile (12a).

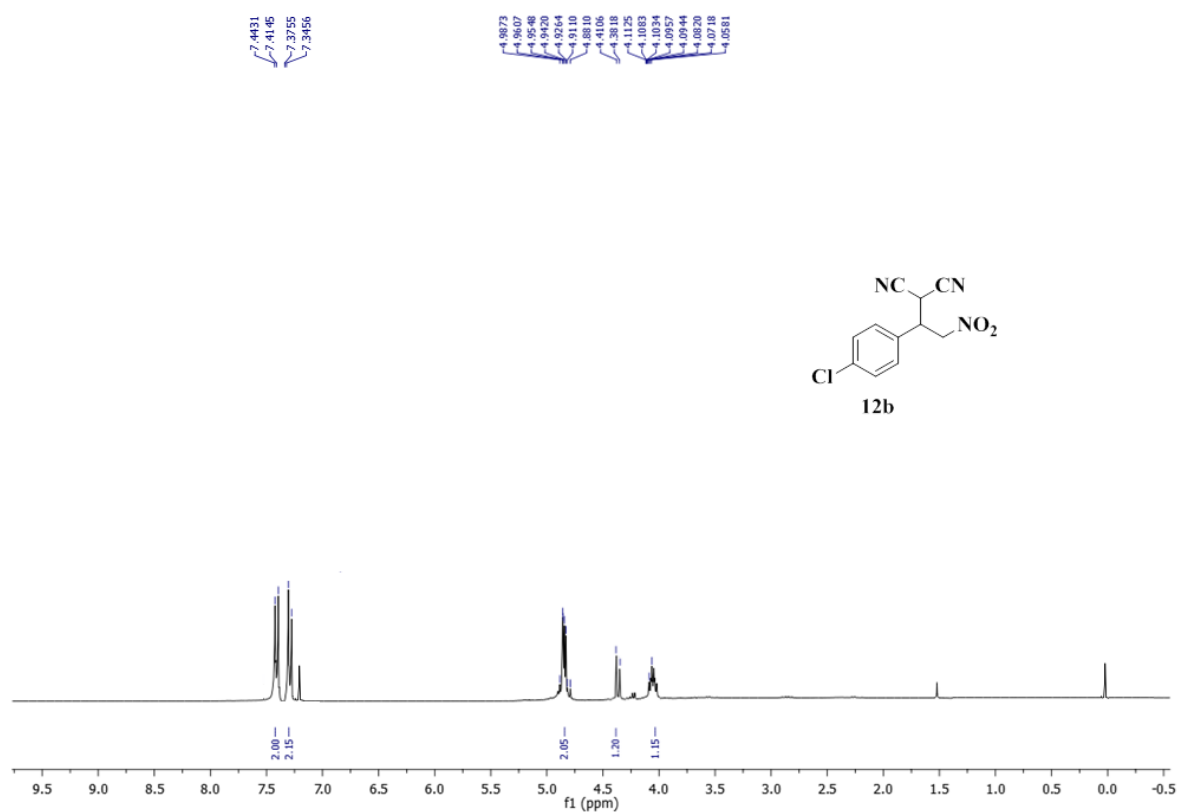


Figure S45. ¹H NMR Spectrum of 2-(1-(4-chlorophenyl)-2-nitroethyl) malononitrile (12b).

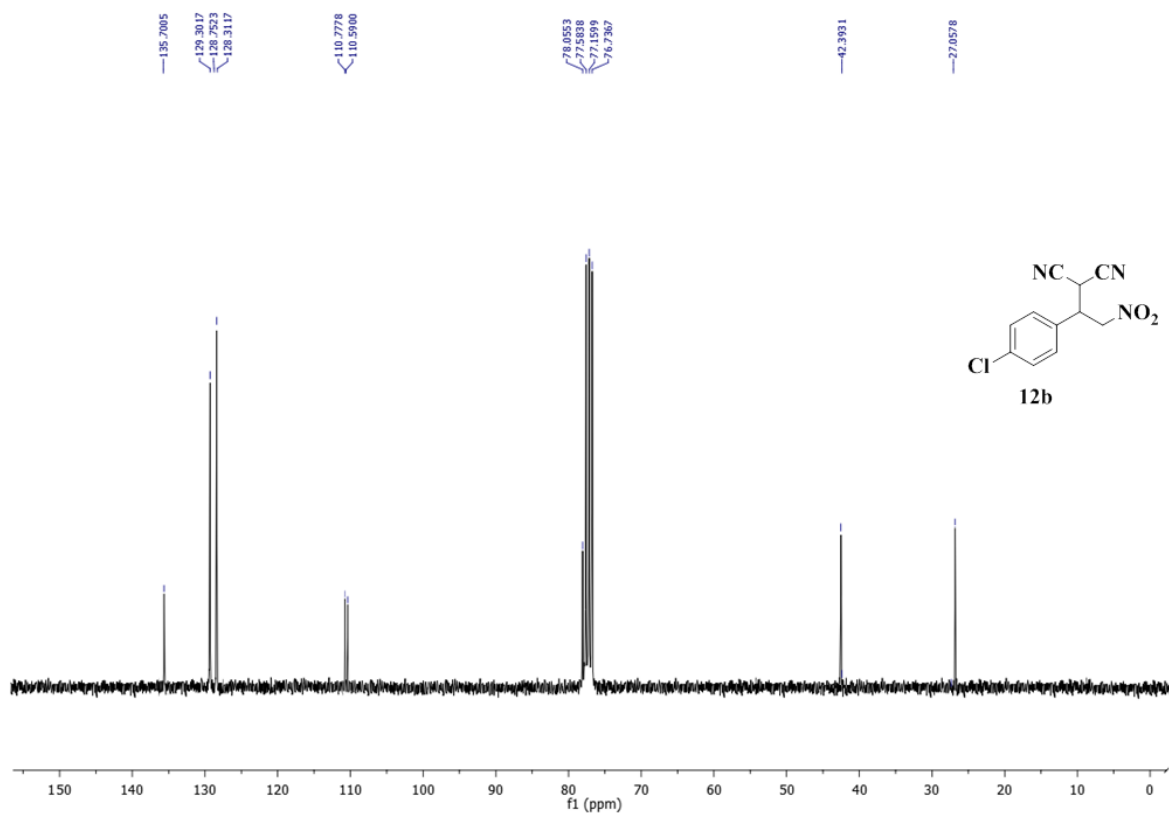


Figure S46. ¹³C NMR Spectrum of 2-(1-(4-chlorophenyl)-2-nitroethyl) malononitrile (12b).

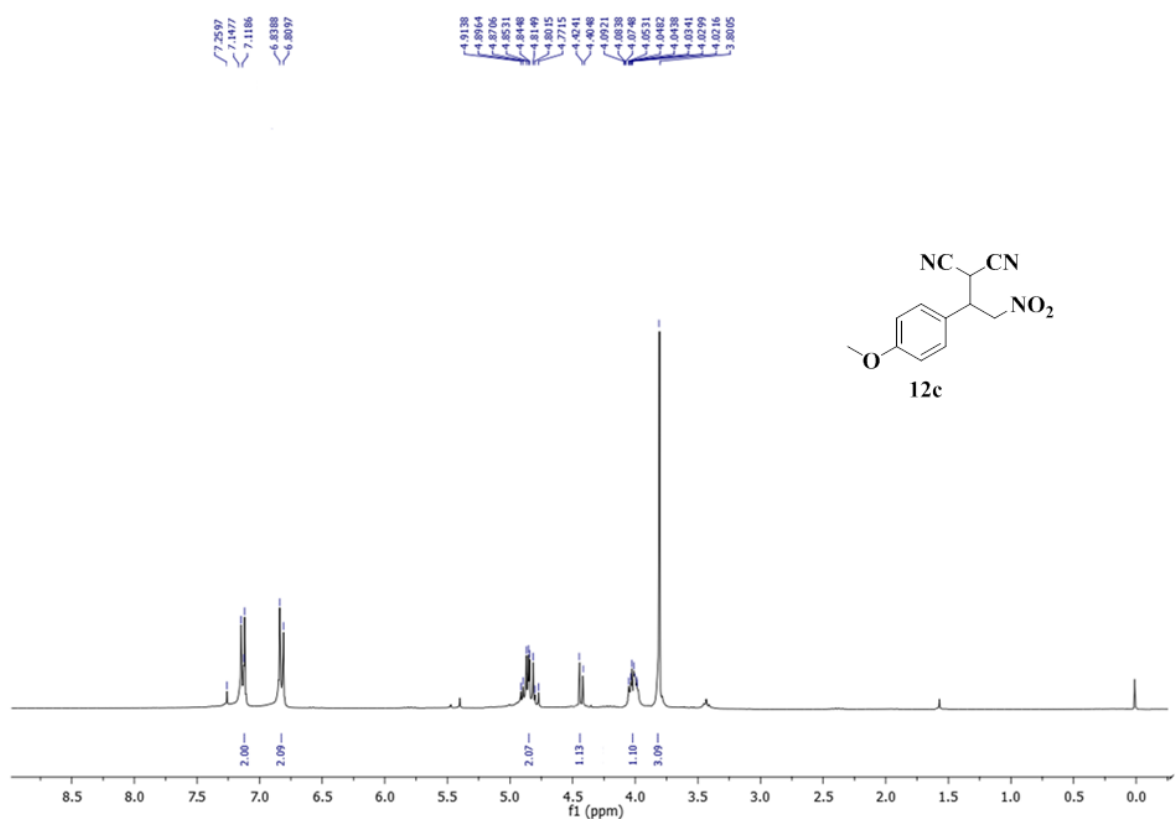


Figure S47. ¹H NMR Spectrum of 2-(1-(4-methoxyphenyl)-2-nitroethyl) malononitrile (12c).

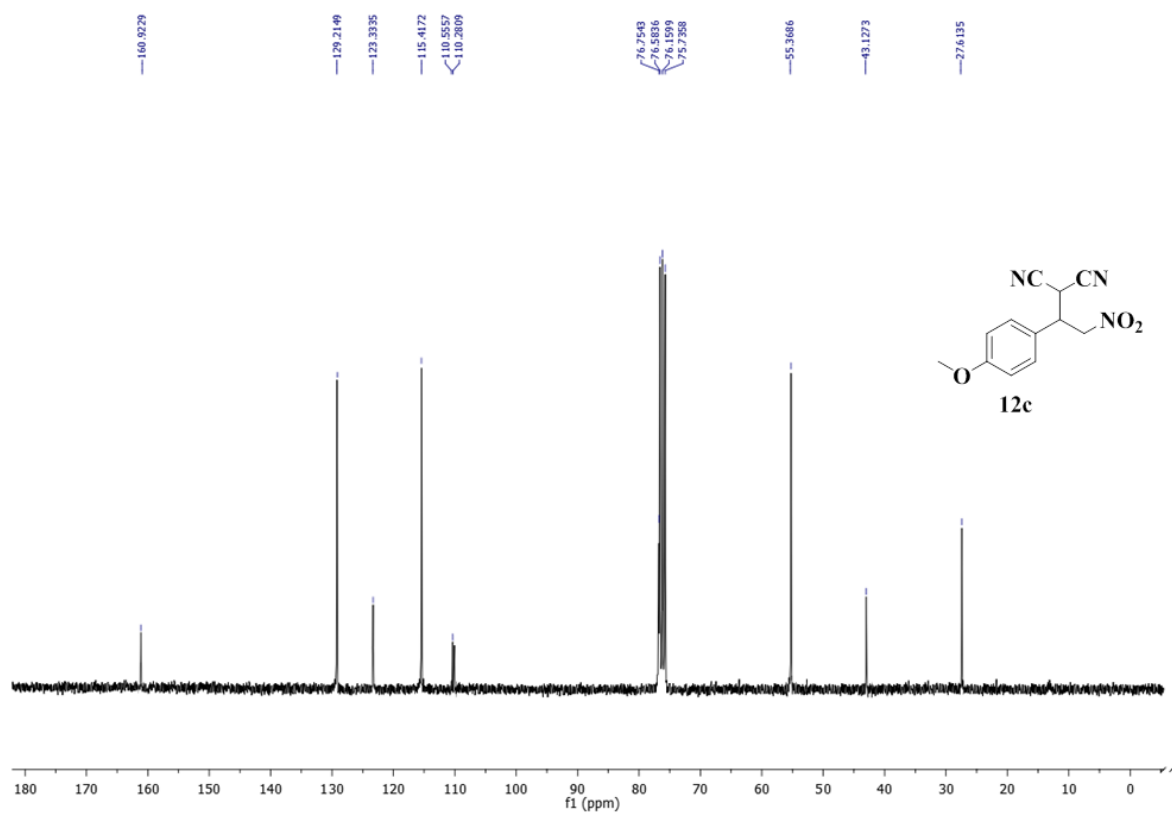


Figure S48. ¹³C NMR Spectrum of 2-(1-(4-methoxyphenyl)-2-nitroethyl) malononitrile (12c).

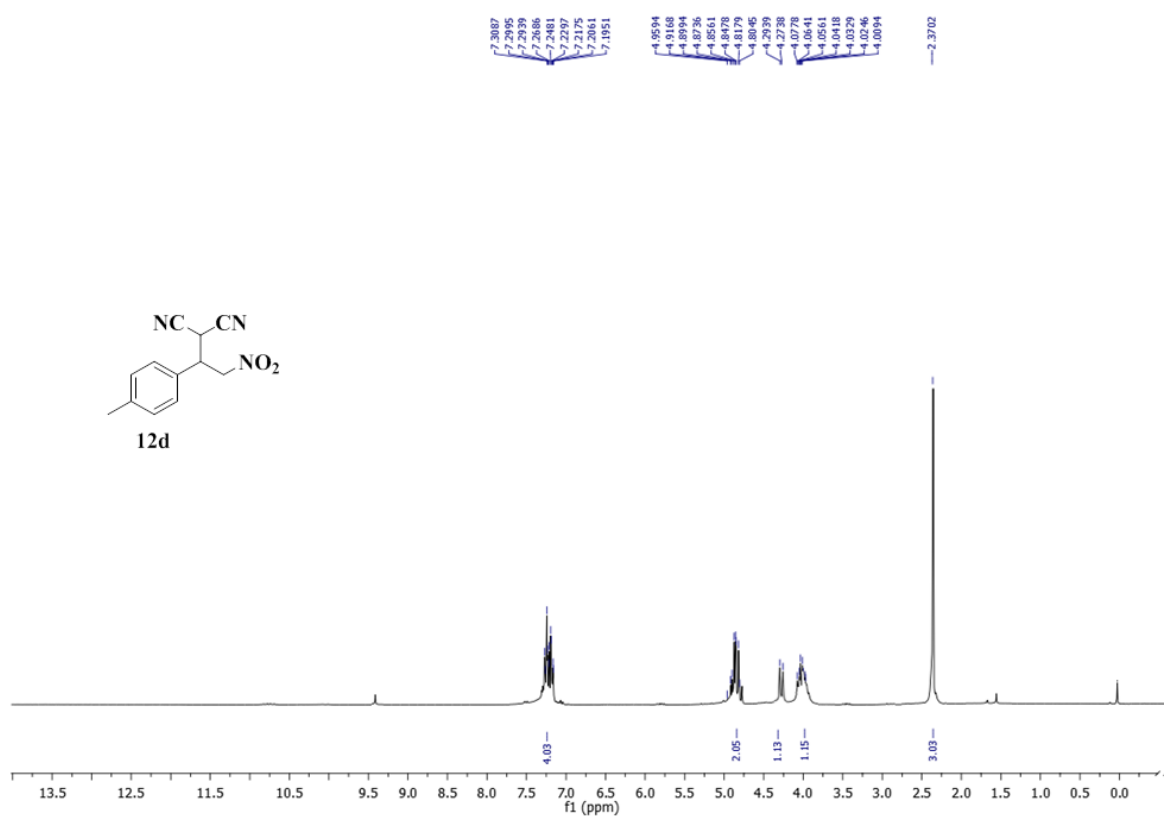


Figure S49. ¹H NMR Spectrum of 2-(2-nitro-1-p-tolyethyl) malononitrile (12d).

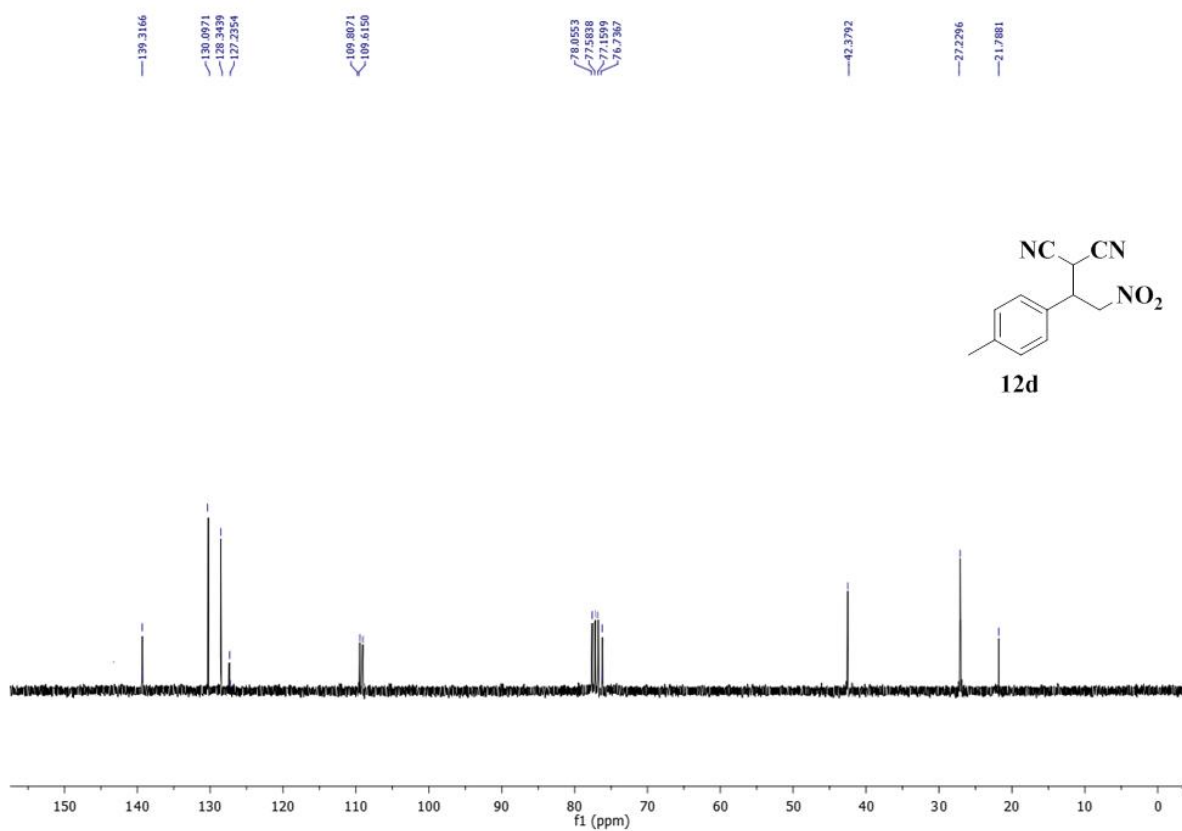


Figure S50. ¹³C NMR Spectrum of 2-(2-nitro-1-p-tolyethyl) malononitrile (12d).

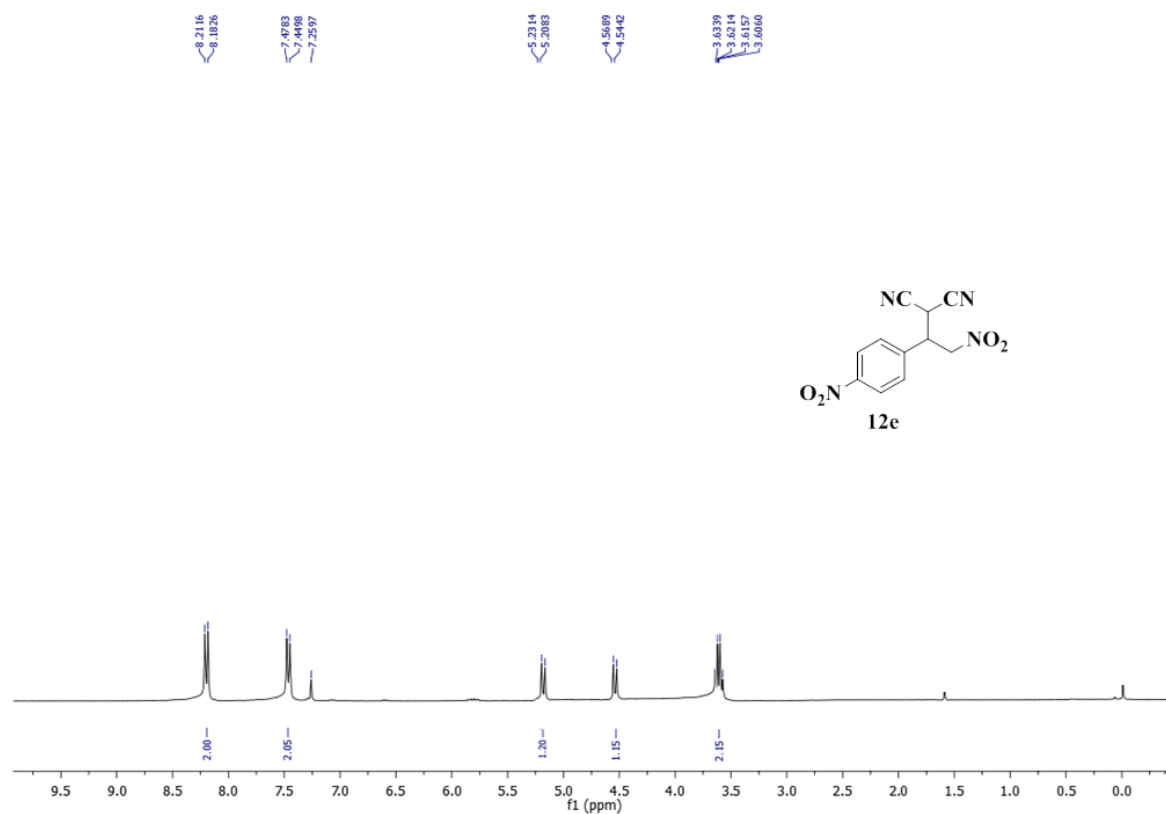


Figure S51. ¹H NMR Spectrum of 2-(2-nitro-1-(4-nitrophenyl)ethyl)malononitrile (12e).

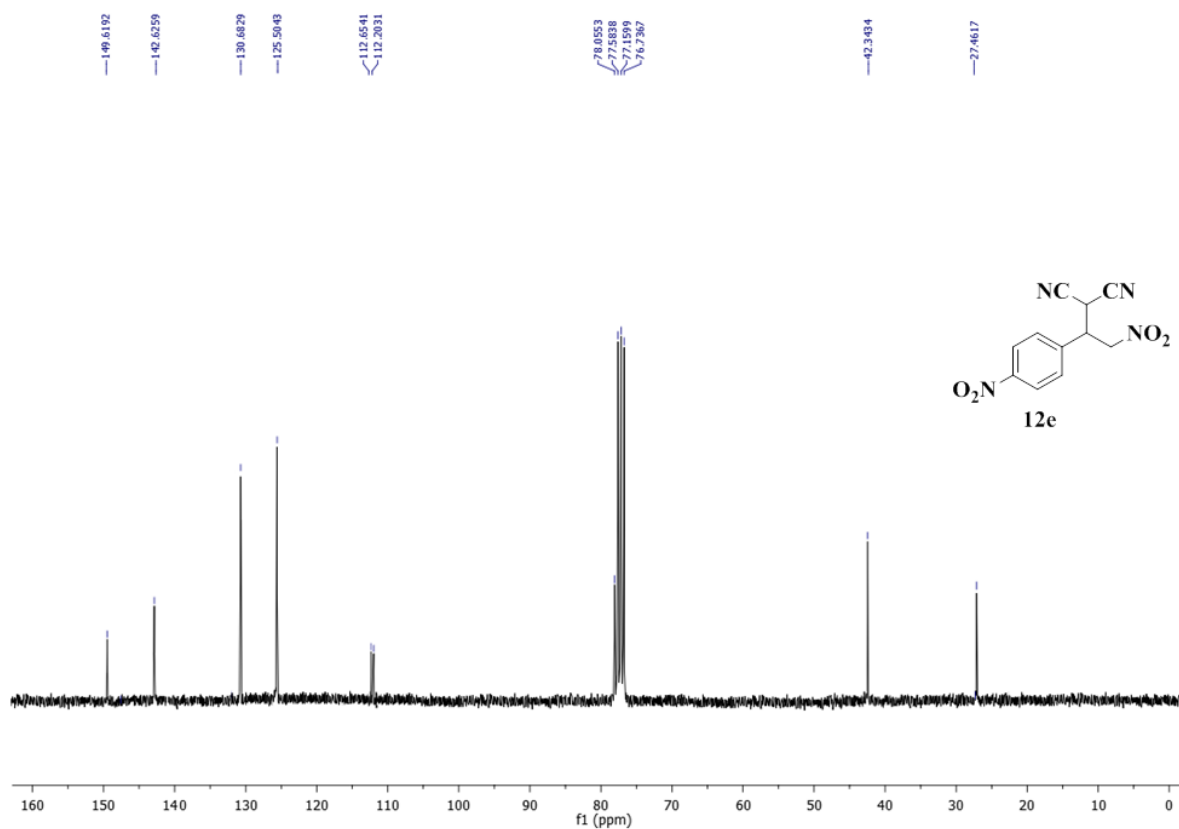
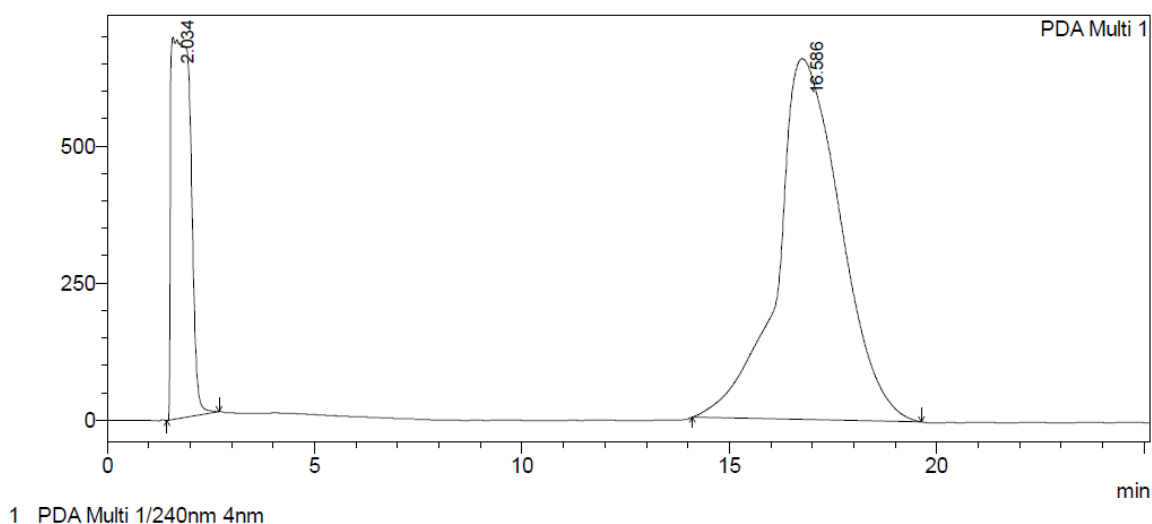


Figure S52. ¹³C NMR Spectrum of 2-(2-nitro-1-(4-nitrophenyl)ethyl)malononitrile (12e).

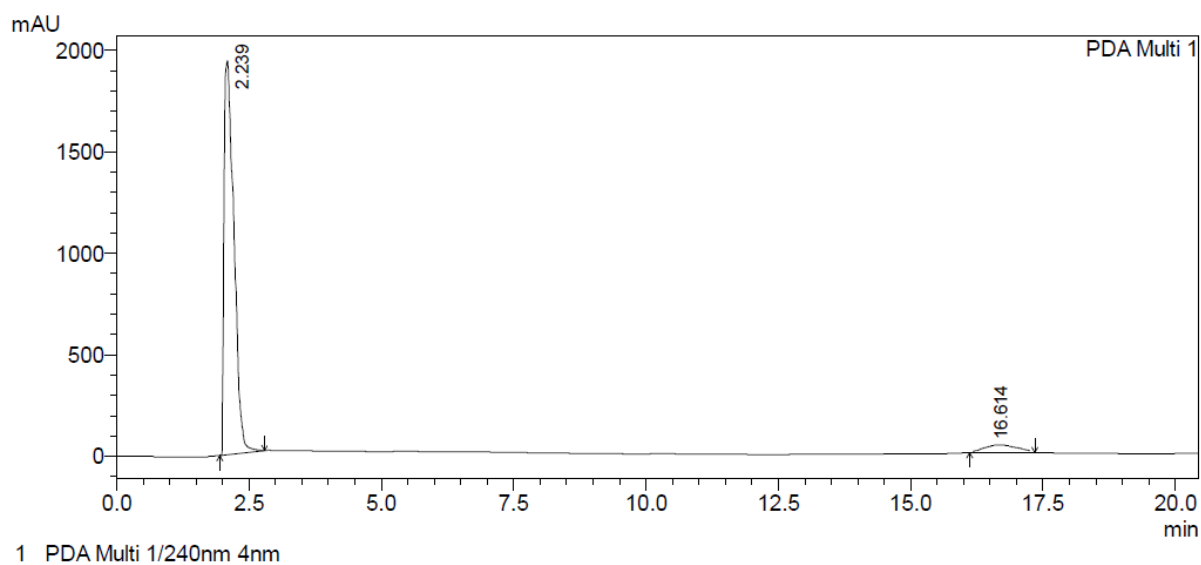


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.034	76184317	2339861	52.600	72.730
2	16.586	68652226	877315	47.400	27.270
Total		144836543	3217176	100.000	100.000

Figure S53. HPLC spectrum of 10a without CMOCs and Triethylamine/Ethanol Condition.

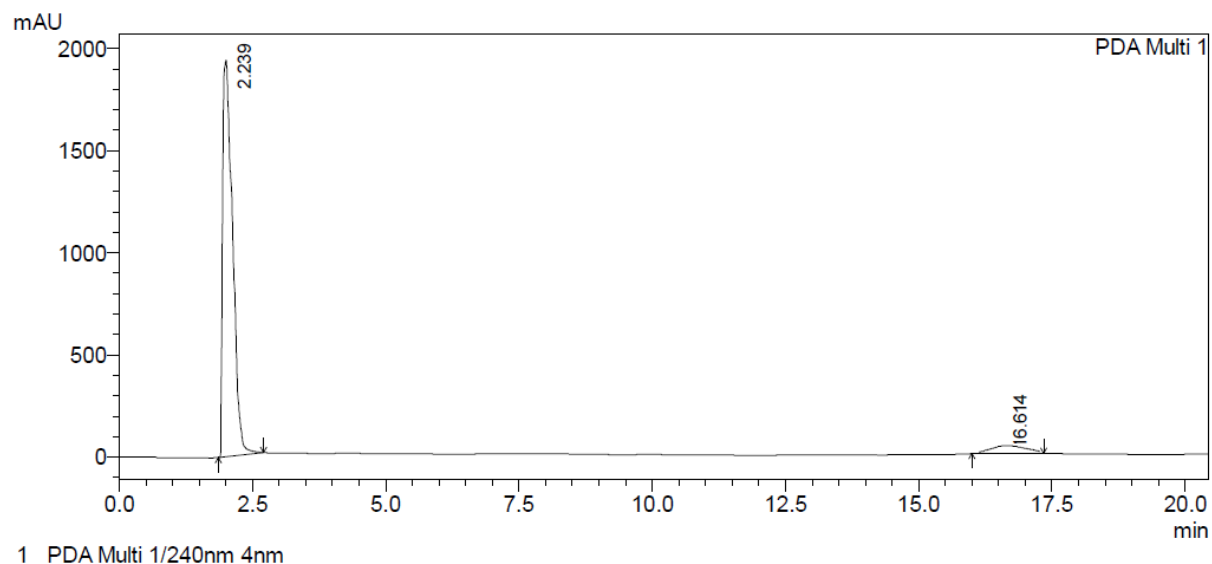


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	32726881	1883380	99.758	99.910
2	16.614	79341	1689	0.242	0.090
Total		32806222	1885069	100.000	100.000

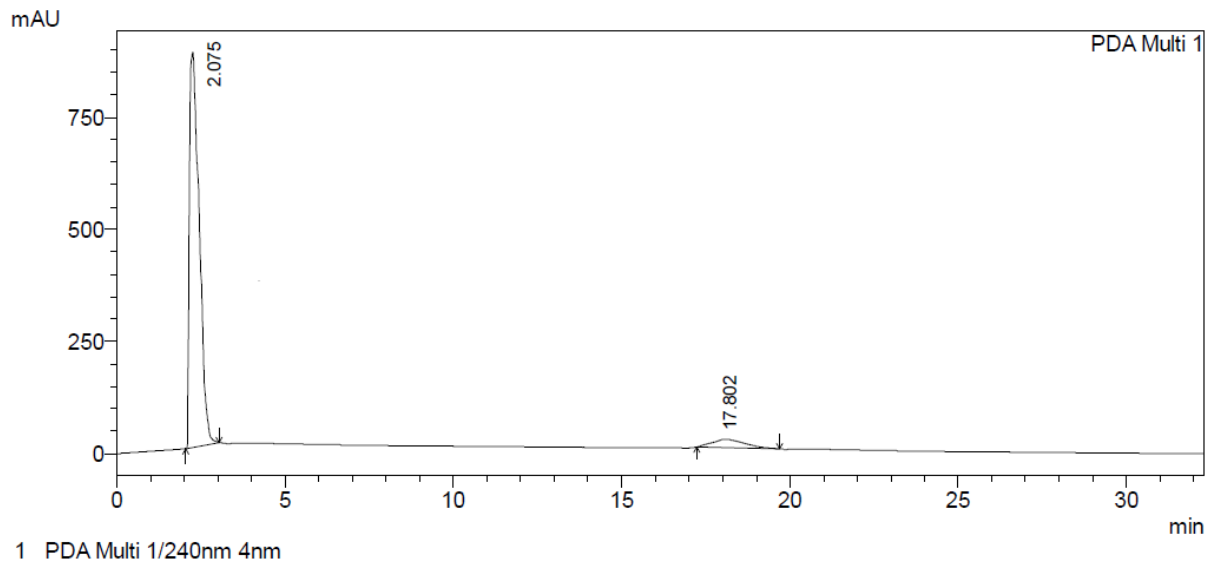
Figure S54. HPLC spectrum of 10a in the presence of CMOCs (7a) and Triethylamine/Ethanol condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

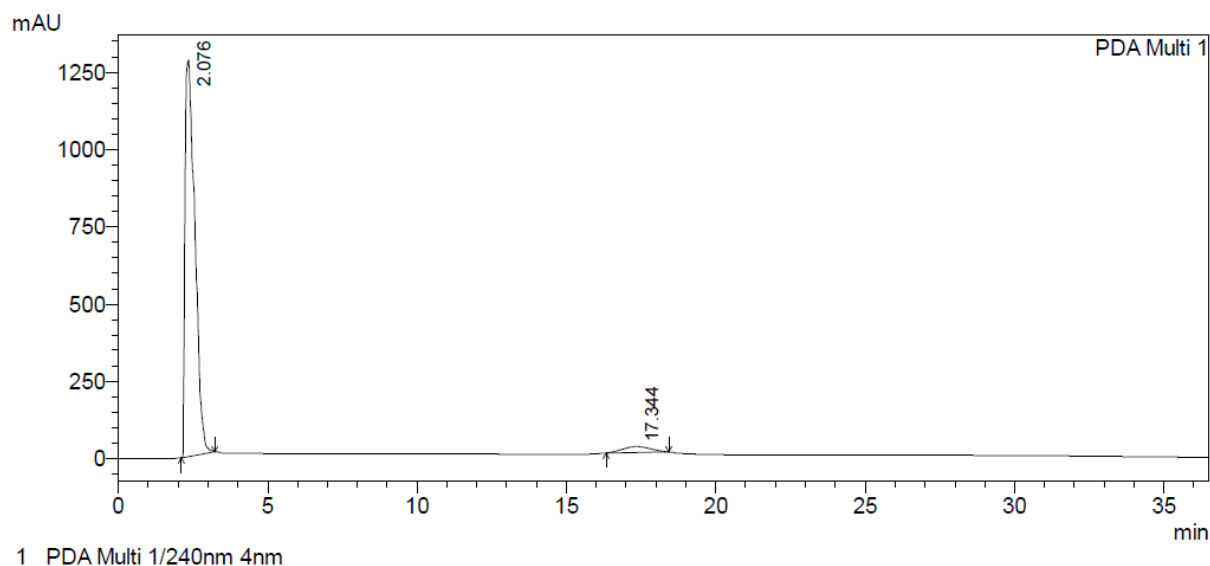
Figure S55. HPLC spectrum of 10a in the presence of CMOCs (7b) and Triethylamine/Ethanol condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.075	13028934	872394	91.401	97.982
2	17.802	1225763	17967	8.599	2.018
Total		14254697	890361	100.000	100.000

Figure S56. HPLC spectrum of 10a in the presence of CMOCs (7a) and K^tOBu /Ethanol condition.

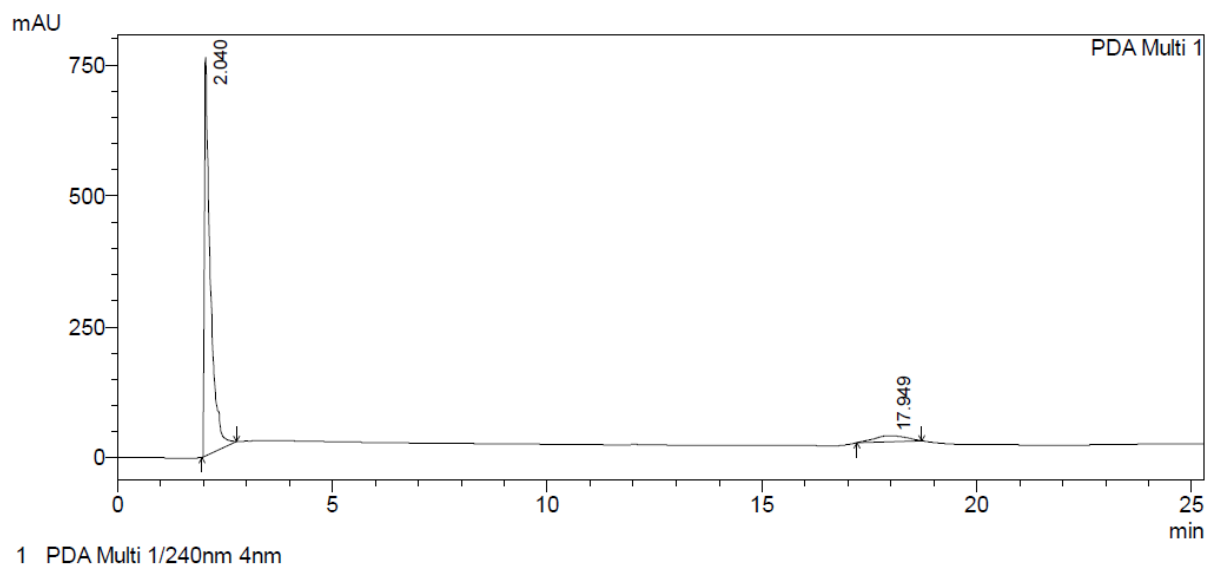


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	14690360	1273254	91.885	98.459
2	17.344	1297389	19932	8.115	1.541
Total		15987749	1293185	100.000	100.000

Figure S57. HPLC spectrum of 10a in the presence of CMOCs (7b) and K^tOBu /Ethanol condition.

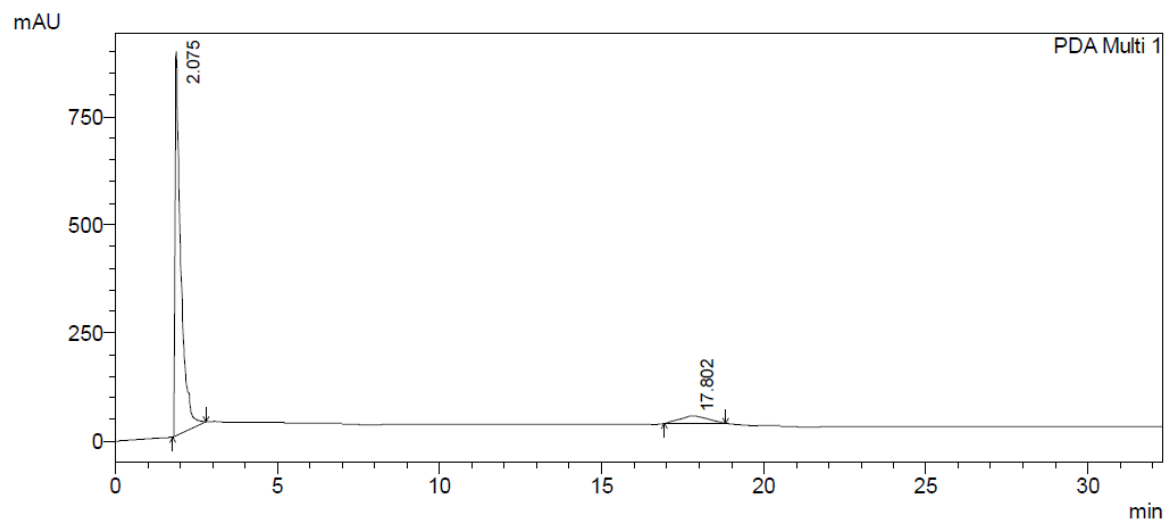


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.040	7357778	761254	92.662	98.527
2	17.949	582642	11378	7.338	1.473
Total		7940419	772632	100.000	100.000

Figure S58: HPLC spectrum of 10a in the presence of CMOCs (7a) and K₂CO₃ /Ethanol condition.



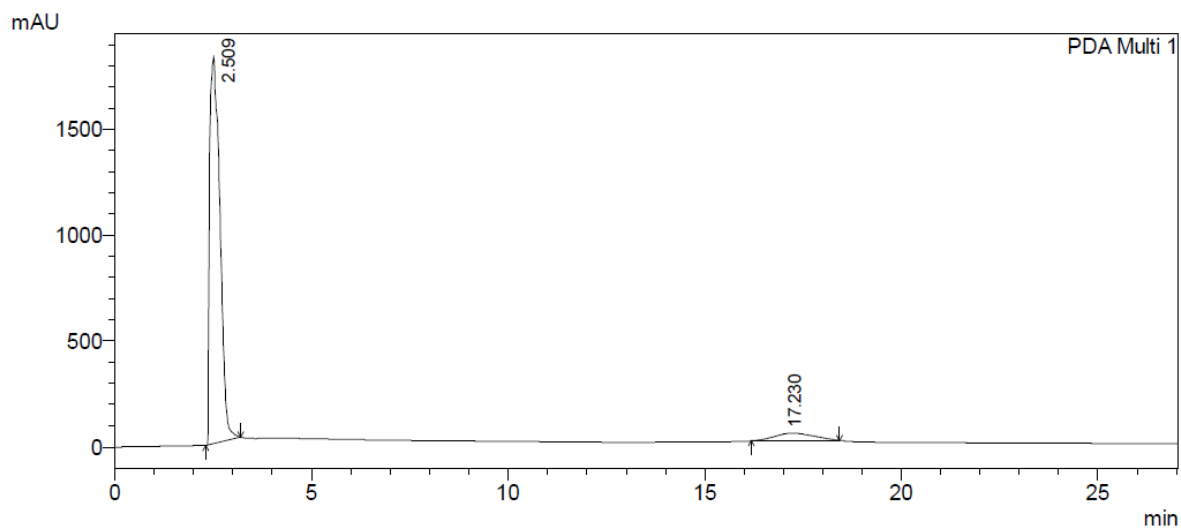
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.075	13112455	872682	92.831	98.126
2	17.802	1012562	16670	7.169	1.874
Total		14125017	889352	100.000	100.000

Figure S59: HPLC spectrum of 10a in the presence of CMOCs (7b) and K_2CO_3 /Ethanol condition.



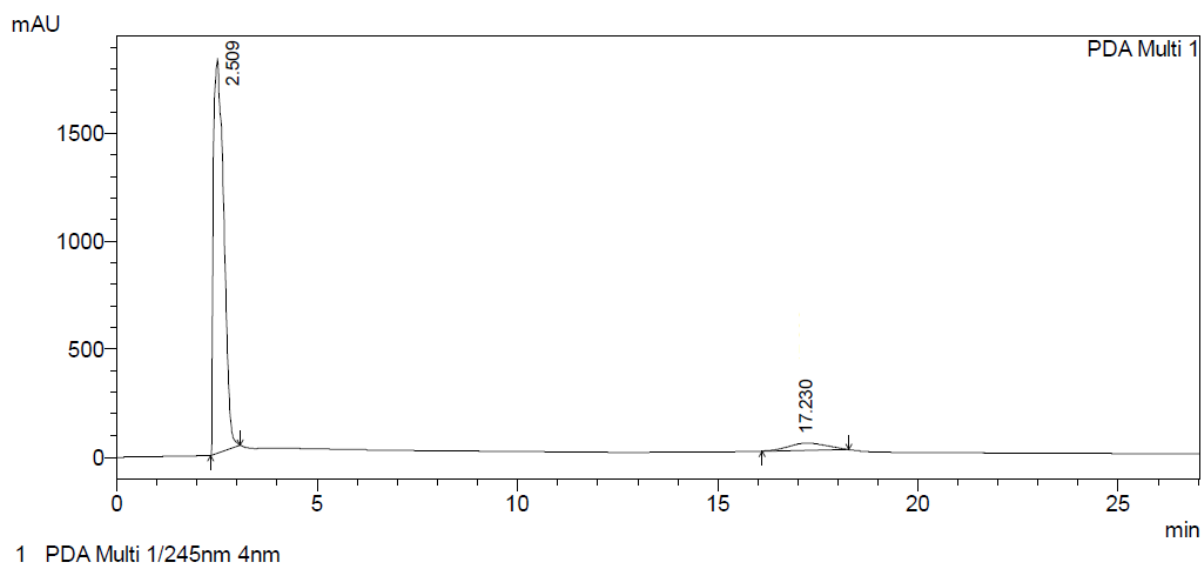
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	33093513	1831703	93.117	98.139
2	17.230	2446377	34737	6.883	1.861
Total		35539890	1866440	100.000	100.000

Figure S60. HPLC spectrum of 10a in the presence of CMOCs (7a) and Cs_2CO_3 /Ethanol condition

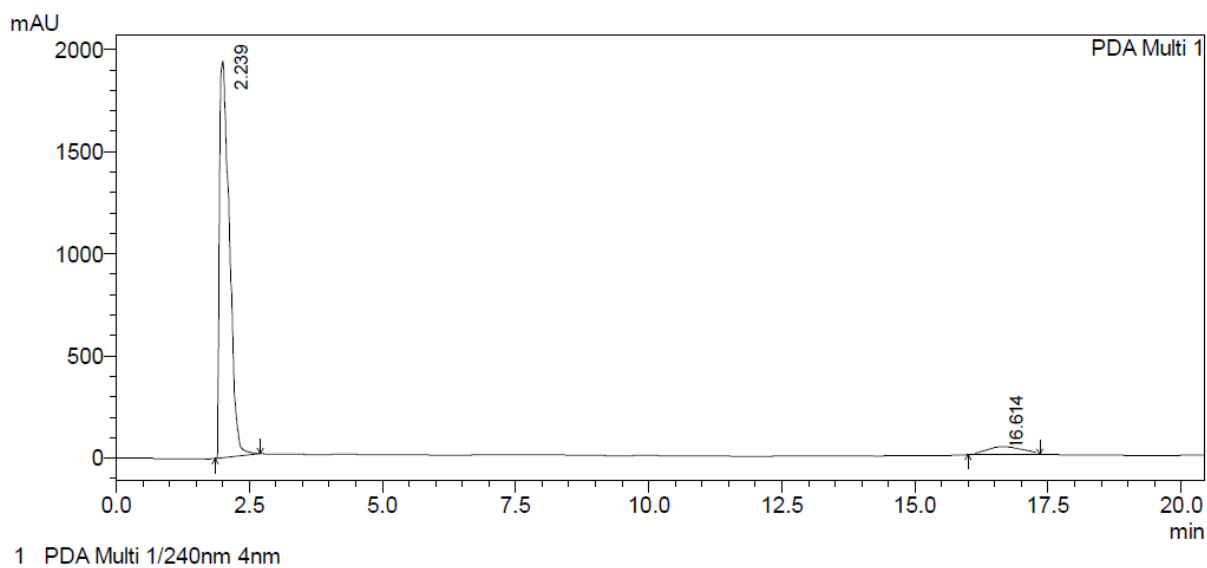


PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	32746910	1829346	93.635	98.222
2	17.230	2226143	33106	6.365	1.778
Total		34973053	1862452	100.000	100.000

Figure S61. HPLC spectrum of 10a in the presence of CMOCs (7b) and Cs_2CO_3 /Ethanol condition.

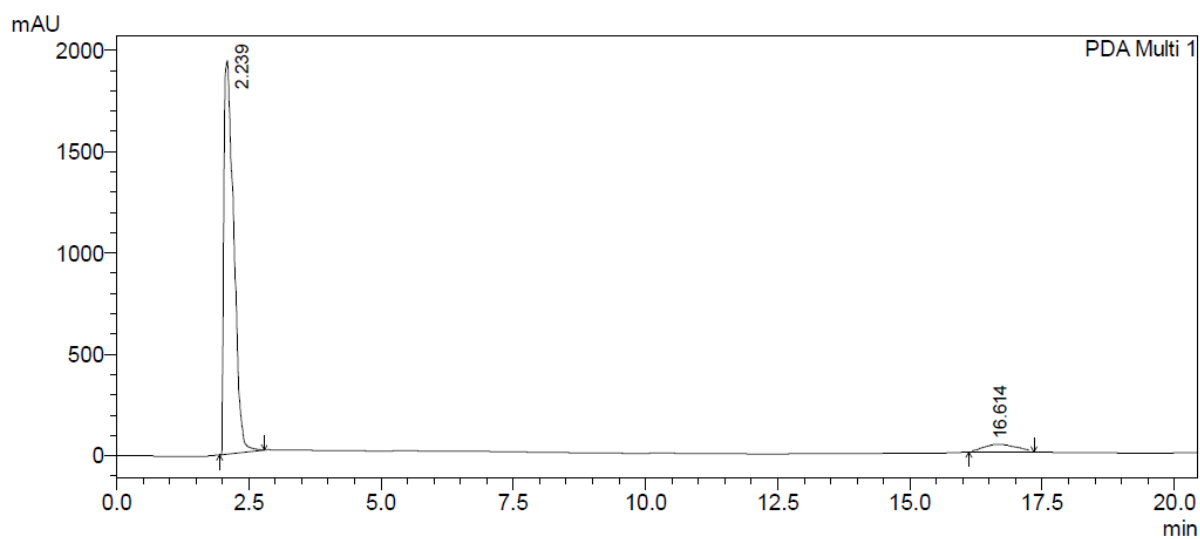


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

Figure S62. HPLC spectrum of 10a in the presence of CMOCs (7a) and Triethylamine/Ethanol condition.



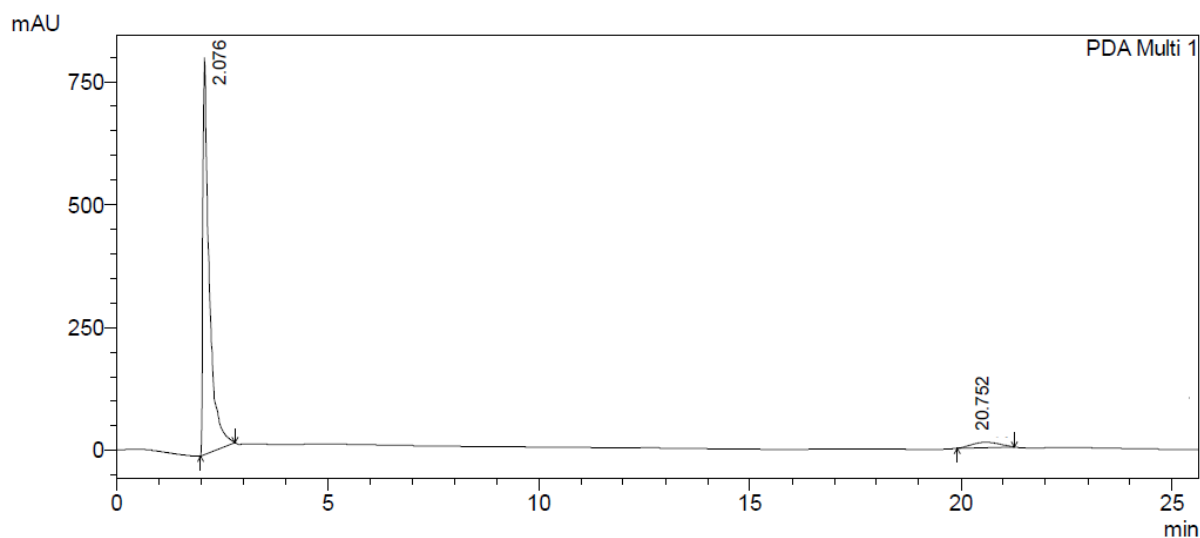
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	32726881	1883380	99.758	99.910
2	16.614	79341	1689	0.242	0.090
Total		32806222	1885069	100.000	100.000

Figure S63. HPLC spectrum of 10a in the presence of CMOCs (7b) and Triethylamine/Ethanol condition.



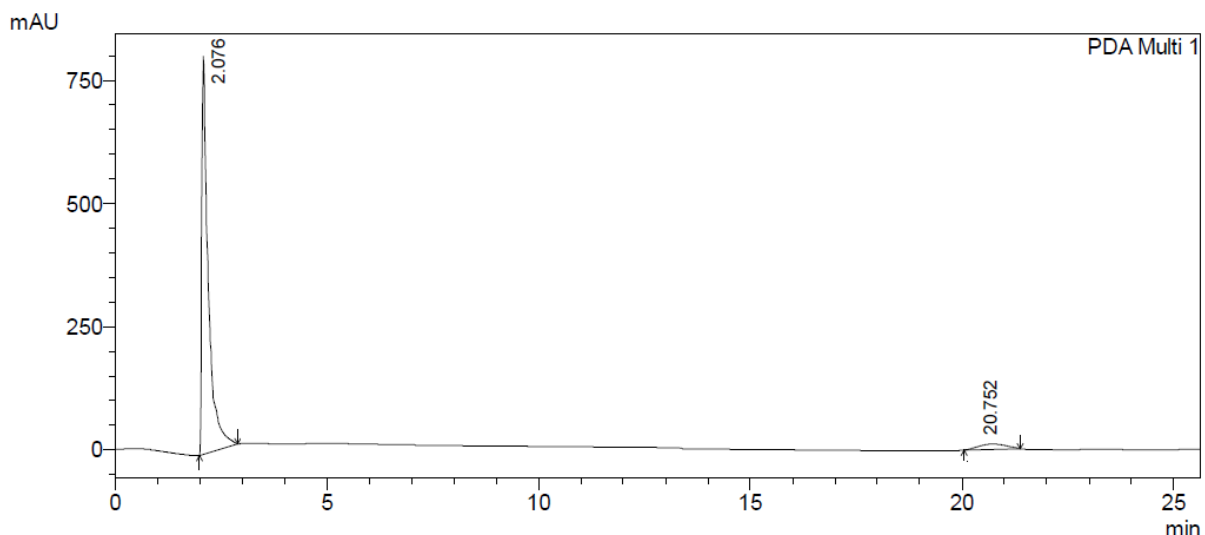
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8567573	808407	94.605	98.670
2	20.752	488580	10897	5.395	1.330
Total		9056153	819304	100.000	100.000

Figure S64. HPLC spectrum of 10a in the presence of CMOCs (7a) and DIEA/Ethanol condition.



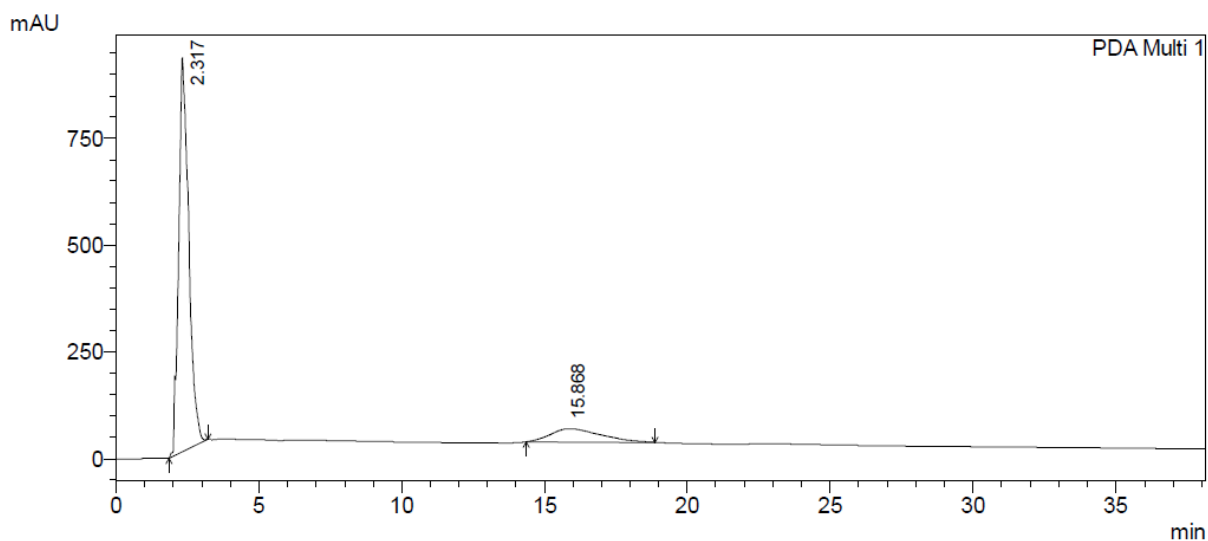
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8719460	808984	94.816	98.689
2	20.752	476749	10748	5.184	1.311
Total		9196209	819732	100.000	100.000

Figure S65. HPLC spectrum of 10a in the presence of CMOCs (7b) and DIEA/Ethanol condition.



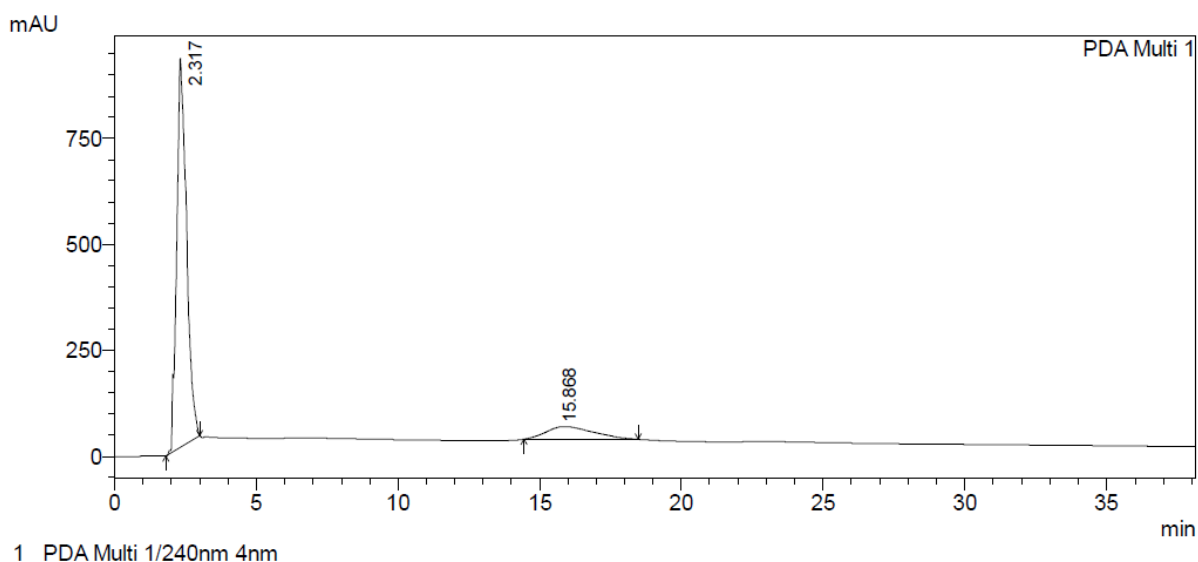
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22445862	922175	85.526	96.730
2	15.868	3798581	31178	14.474	3.270
Total		26244443	953354	100.000	100.000

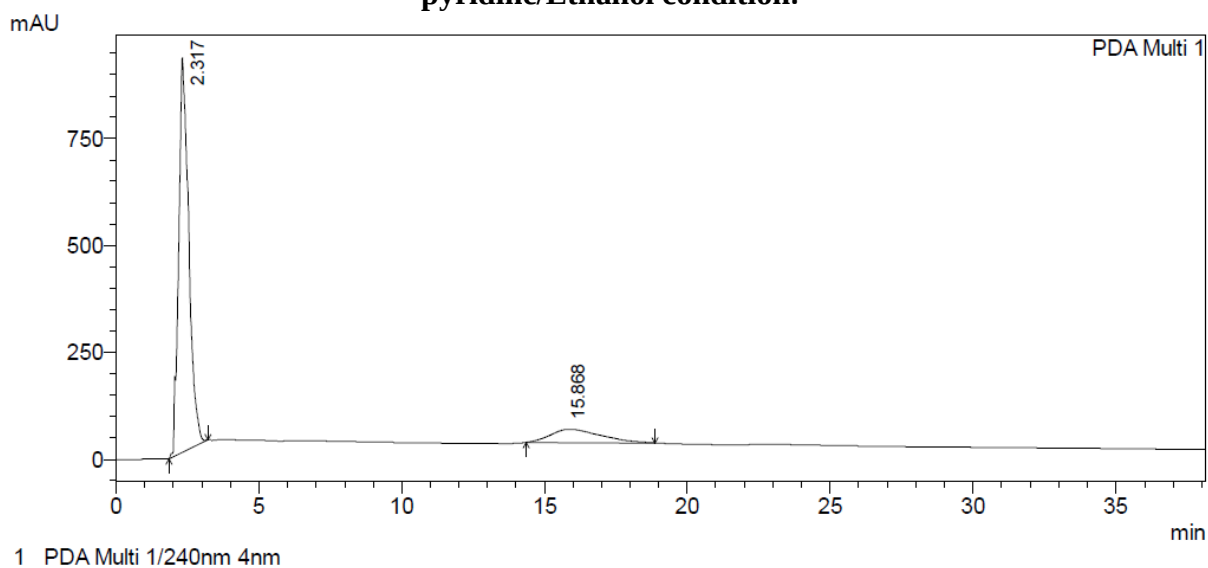
Figure S66. HPLC spectrum of 10a in the presence of CMOCs (7a) and pyridine/Ethanol condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22004478	917318	86.421	96.836
2	15.868	3457368	29969	13.579	3.164
Total		25461847	947287	100.000	100.000

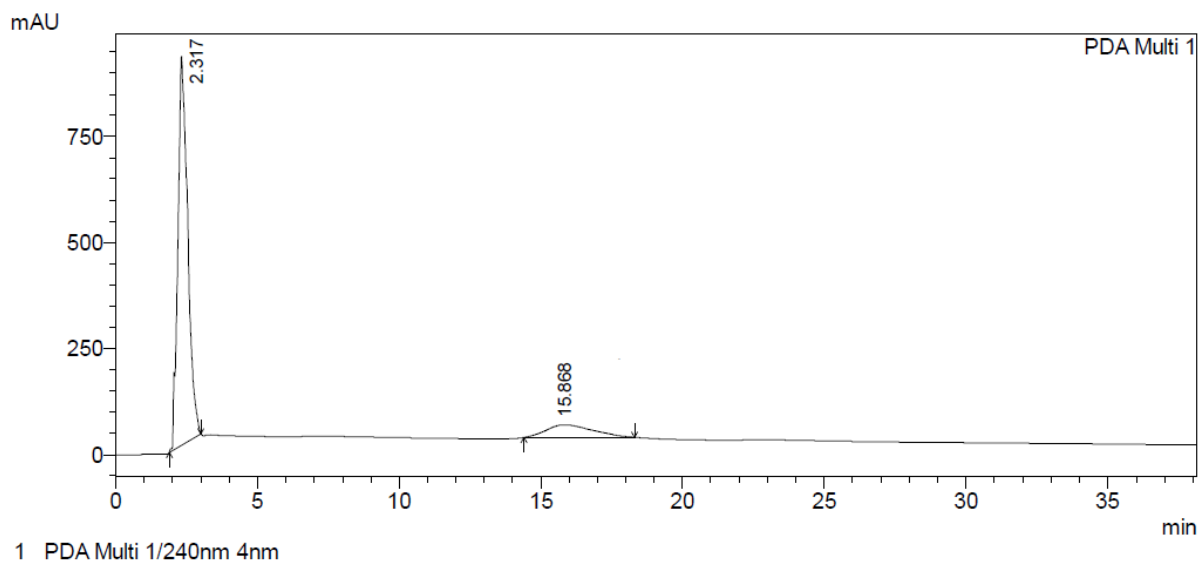
Figure S67. HPLC spectrum of 10a in the presence of CMOCs (7b) and pyridine/Ethanol condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22445862	922175	85.526	96.730
2	15.868	3798581	31178	14.474	3.270
Total		26244443	953354	100.000	100.000

Figure S68. HPLC spectrum of 10a in the presence of CMOCs (7a) and piperidine/Ethanol condition.

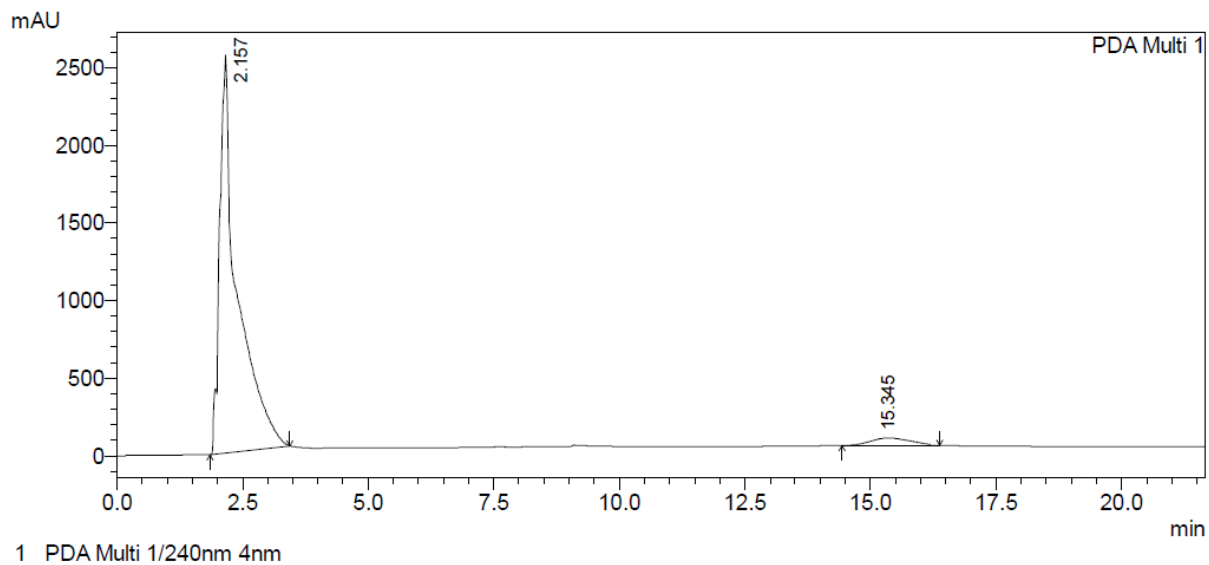


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	21950951	916321	86.681	96.859
2	15.868	3373012	29715	13.319	3.141
Total		25323962	946035	100.000	100.000

Figure S69. HPLC spectrum of 10a in the presence of CMOCs (7b) and piperidine/Ethanol condition.

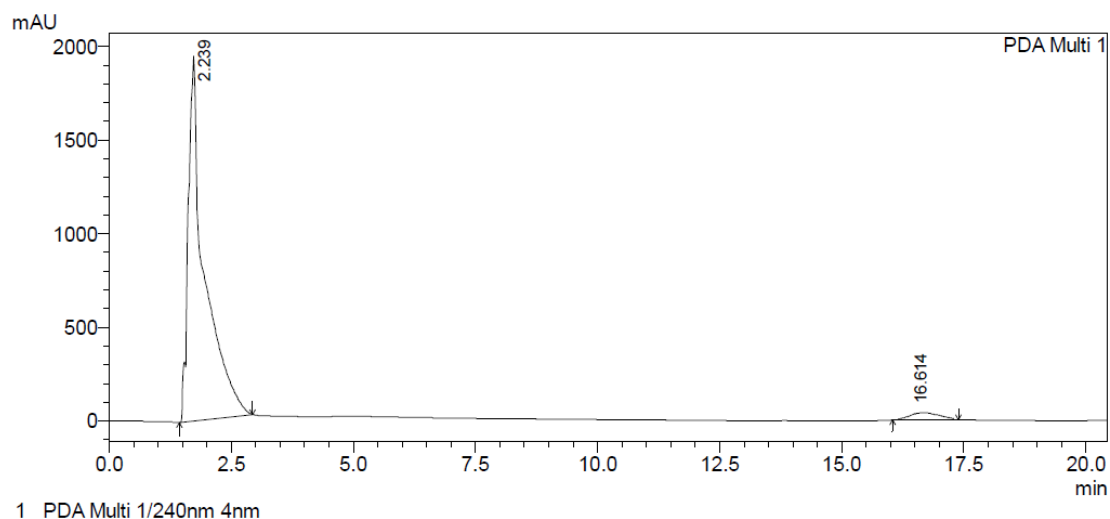


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.157	62568460	2563533	99.480	99.771
2	15.345	326800	5871	0.520	0.229
Total		62895260	2569404	100.000	100.000

Figure S70. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/methanol condition.

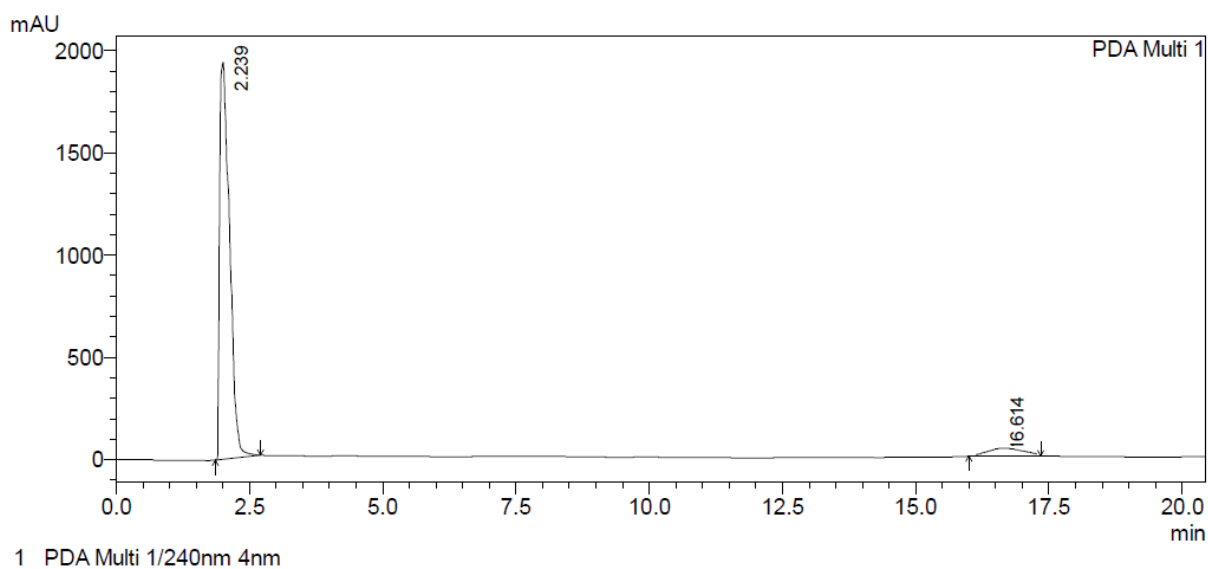


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

Figure S71. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/methanol condition.

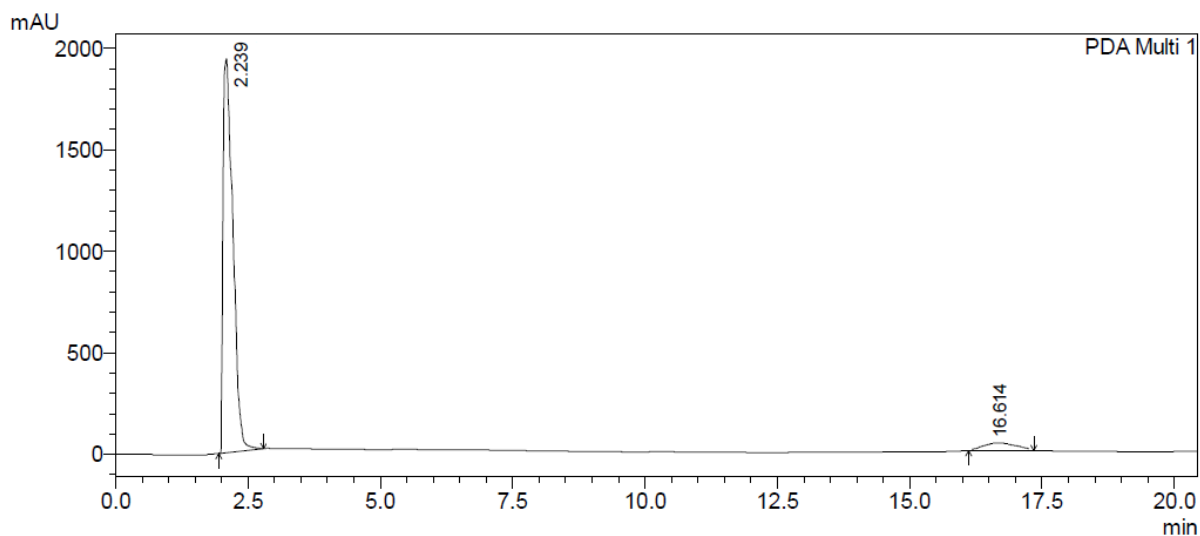


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

Figure S72. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol condition.



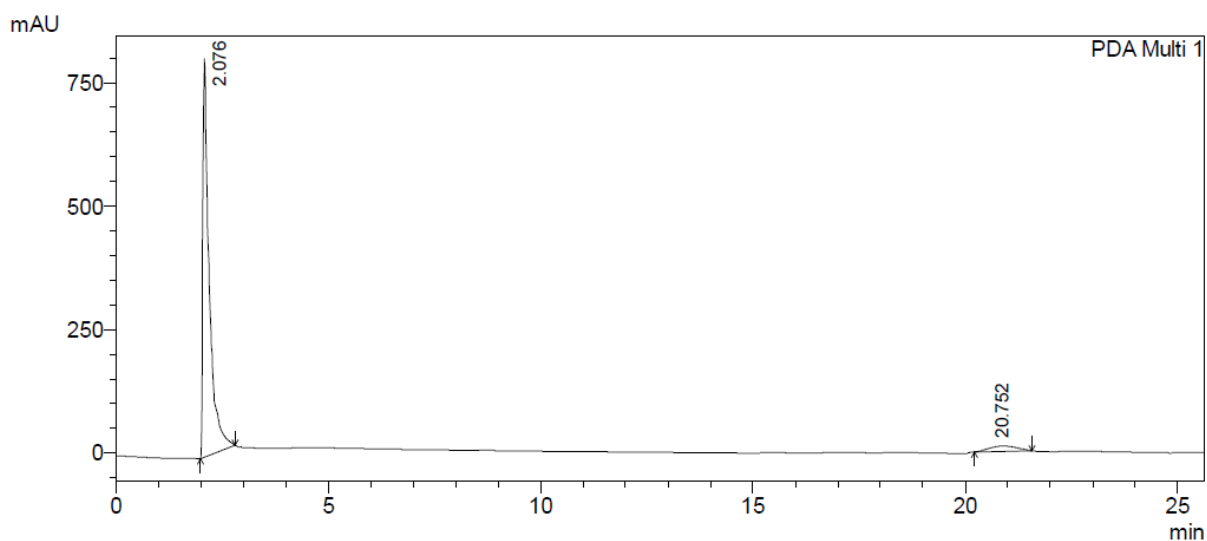
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	32726881	1883380	99.758	99.910
2	16.614	79341	1689	0.242	0.090
Total		32806222	1885069	100.000	100.000

Figure S73. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol condition.



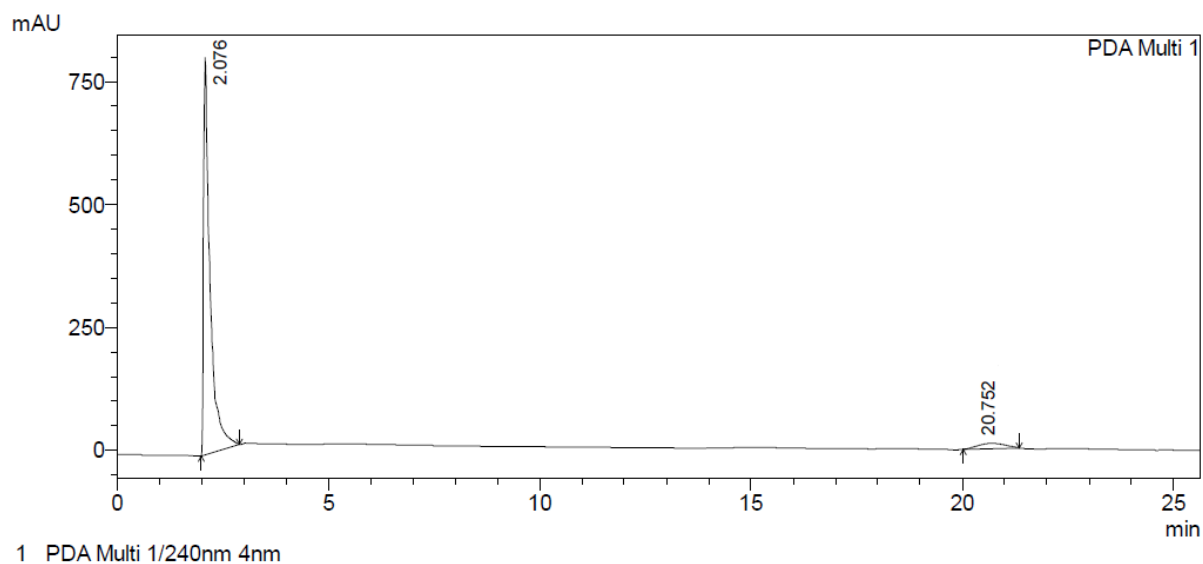
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8567573	808407	94.605	98.670
2	20.752	488580	10897	5.395	1.330
Total		9056153	819304	100.000	100.000

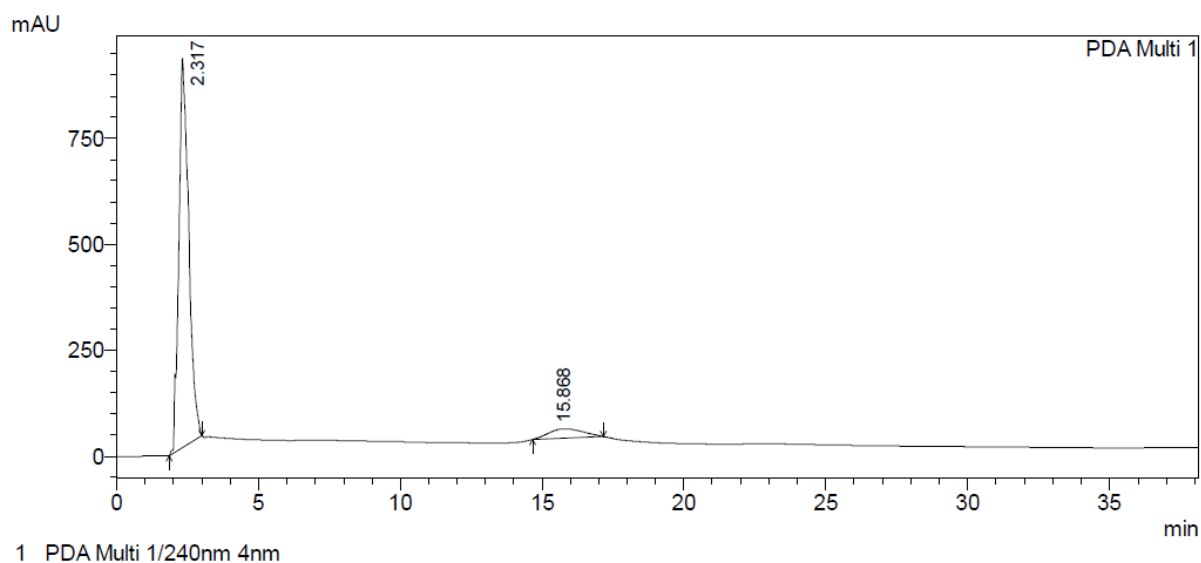
Figure S74. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/acetone condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8719460	808984	94.816	98.689
2	20.752	476749	10748	5.184	1.311
Total		9196209	819732	100.000	100.000

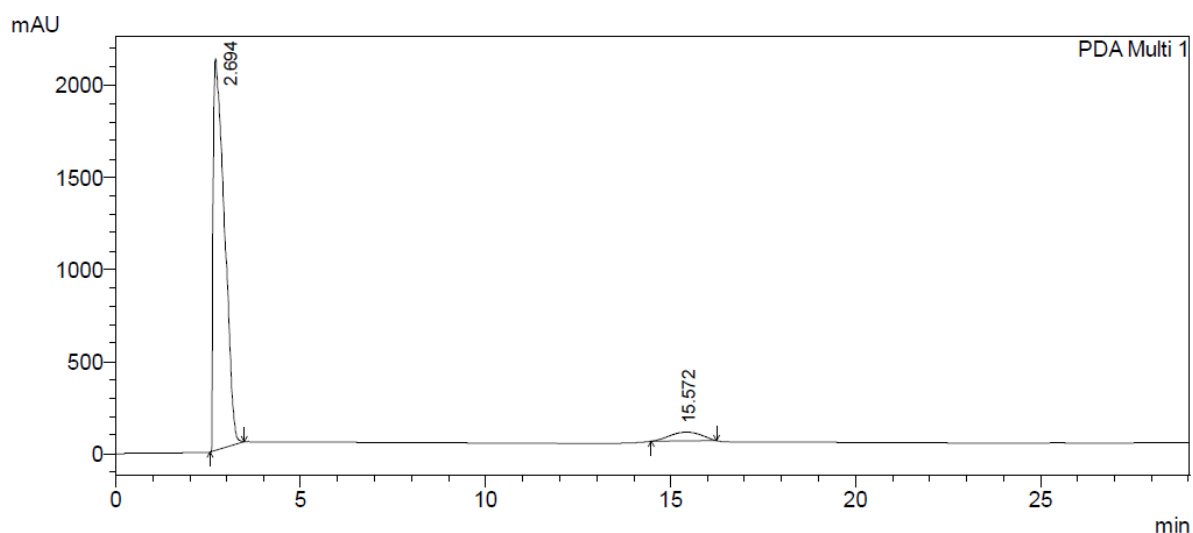
Figure S75. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/acetone condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22042844	917950	92.288	97.649
2	15.868	1842060	22103	7.712	2.351
Total		23884905	940053	100.000	100.000

Figure S76. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/DCM condition.



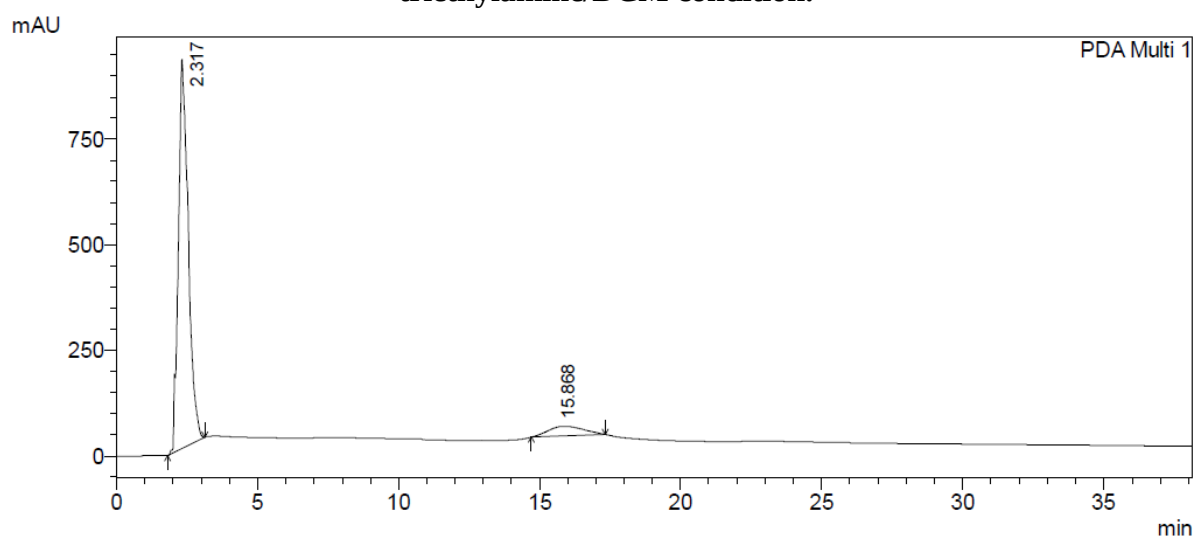
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.694	44617402	2127780	93.984	97.797
2	15.572	2855937	47930	6.016	2.203
Total		47473339	2175711	100.000	100.000

Figure S77. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/DCM condition.



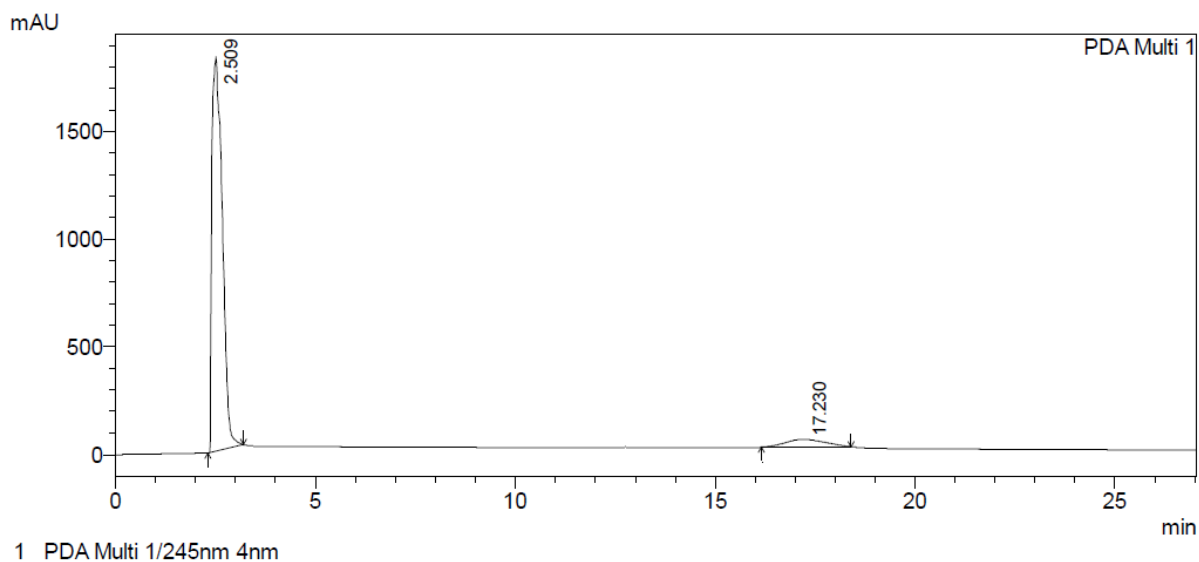
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22337670	921007	91.768	97.552
2	15.868	2003804	23117	8.232	2.448
Total		24341474	944124	100.000	100.000

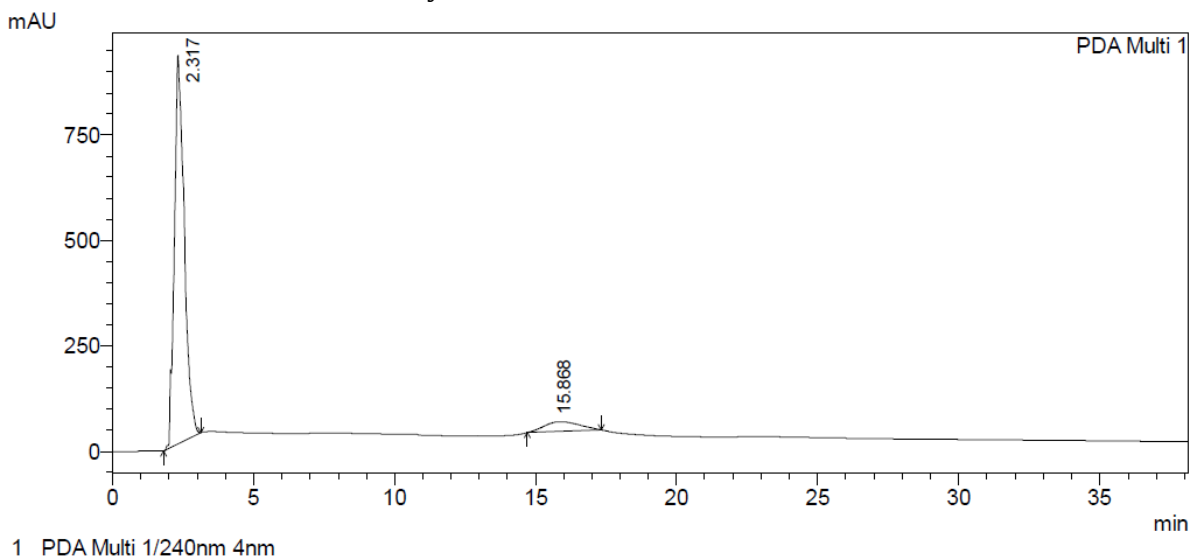
Figure S78. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/Chloroform condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	33093513	1831703	93.117	98.139
2	17.230	2446377	34737	6.883	1.861
Total		35539890	1866440	100.000	100.000

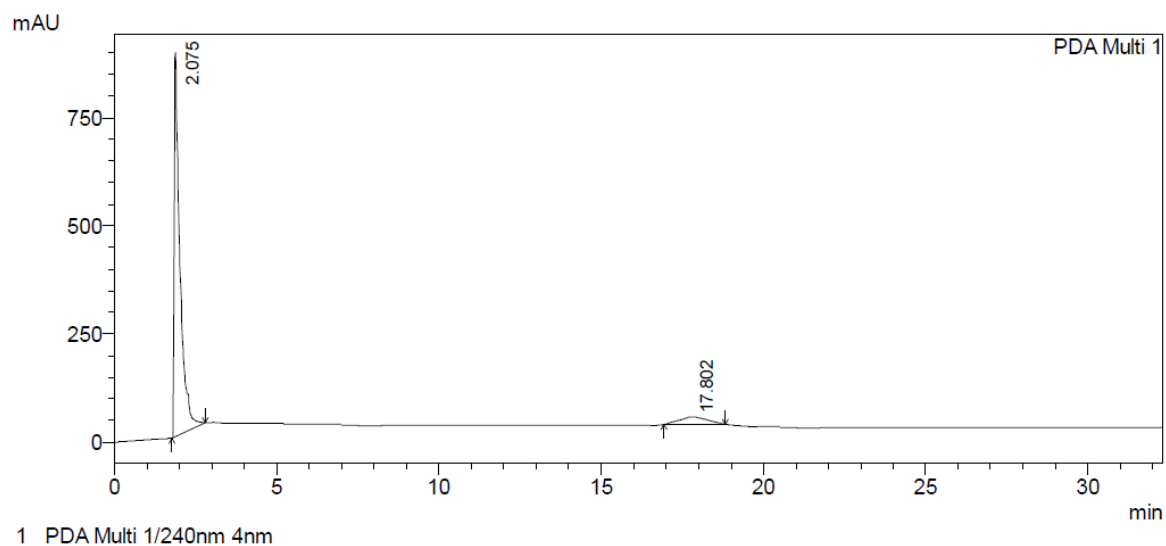
Figure S79. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/Chloroform condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22337670	921007	91.768	97.552
2	15.868	2003804	23117	8.232	2.448
Total		24341474	944124	100.000	100.000

Figure S80. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/THF condition.

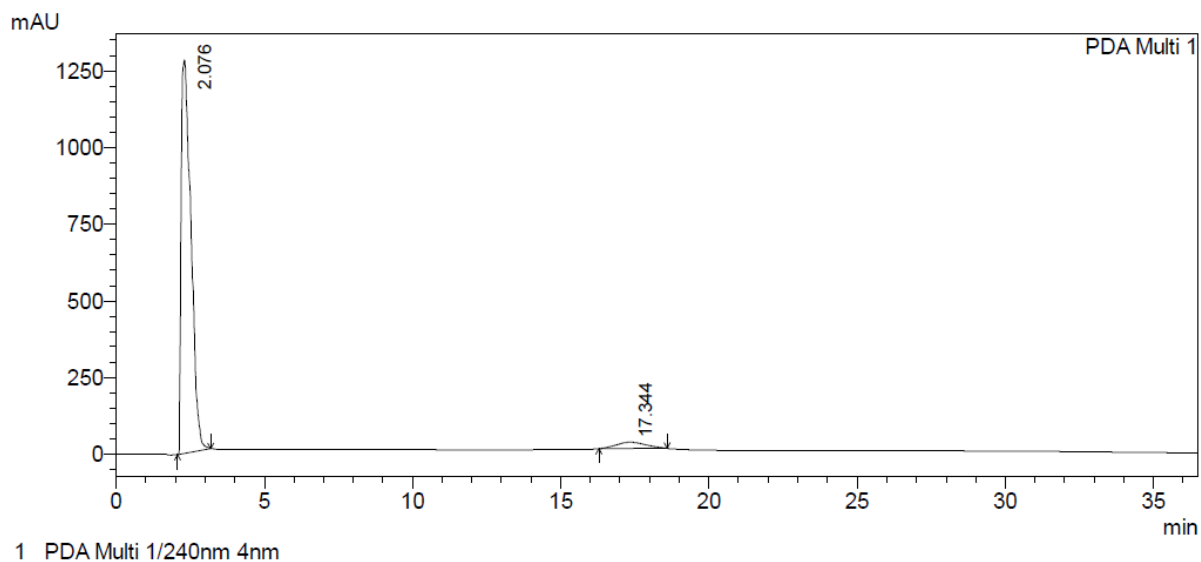


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.075	13112455	872682	92.831	98.126
2	17.802	1012562	16670	7.169	1.874
Total		14125017	889352	100.000	100.000

Figure S81. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/THF condition.

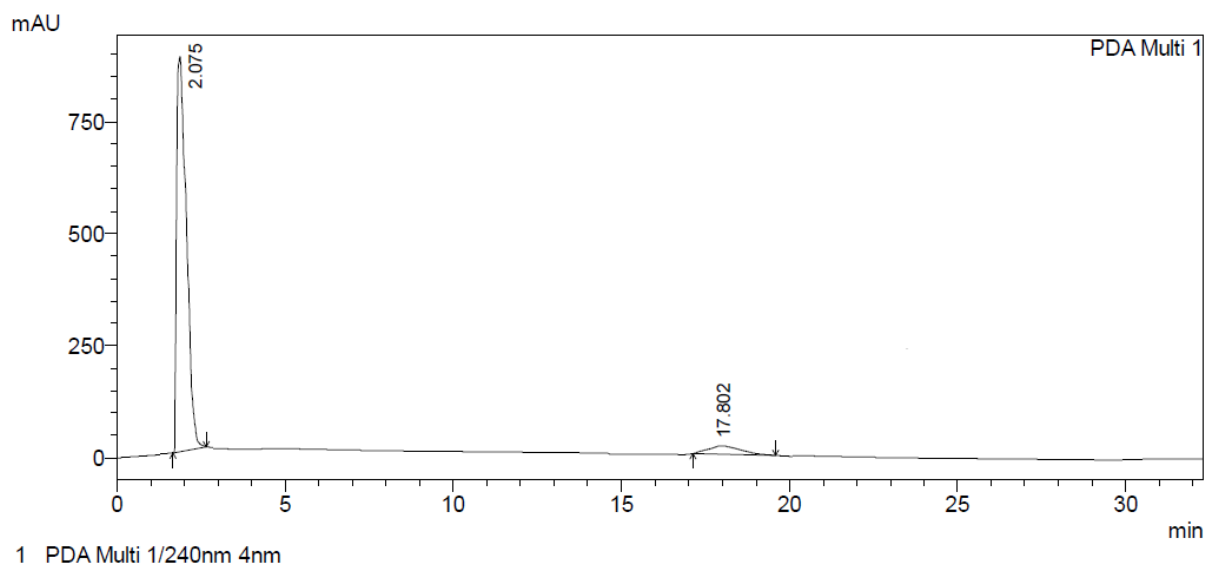


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	14728497	1273402	91.022	98.372
2	17.344	1452704	21071	8.978	1.628
Total		16181201	1294473	100.000	100.000

Figure S82. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/toluene condition.

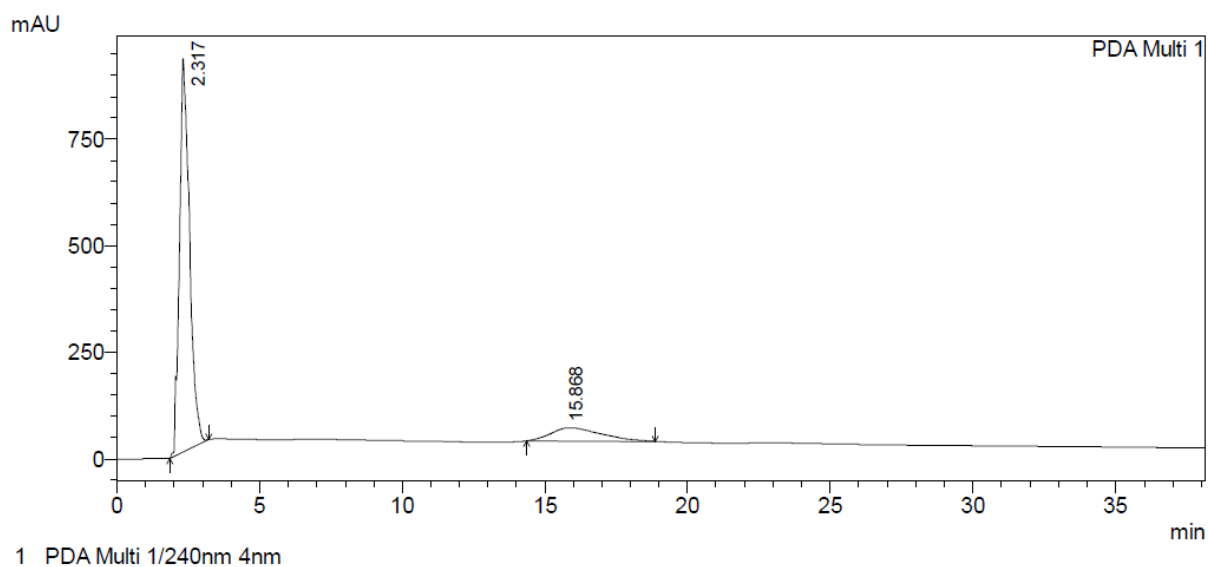


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.075	13028934	872394	91.401	97.982
2	17.802	1225763	17967	8.599	2.018
Total		14254697	890361	100.000	100.000

Figure S83. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/toluene condition.

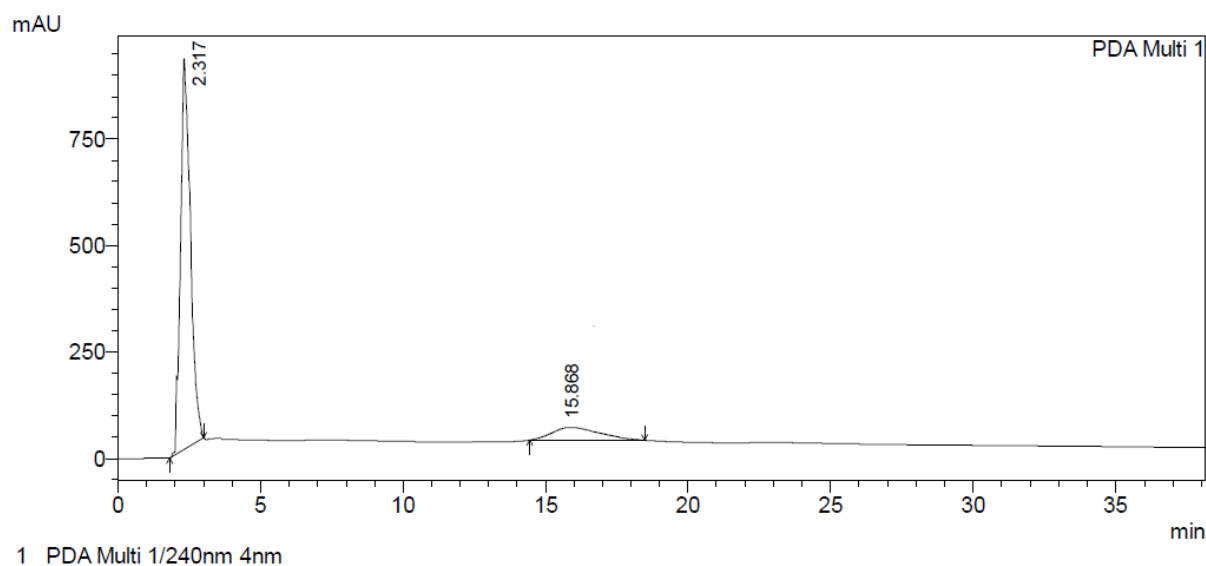


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22445862	922175	85.526	96.730
2	15.868	3798581	31178	14.474	3.270
Total		26244443	953354	100.000	100.000

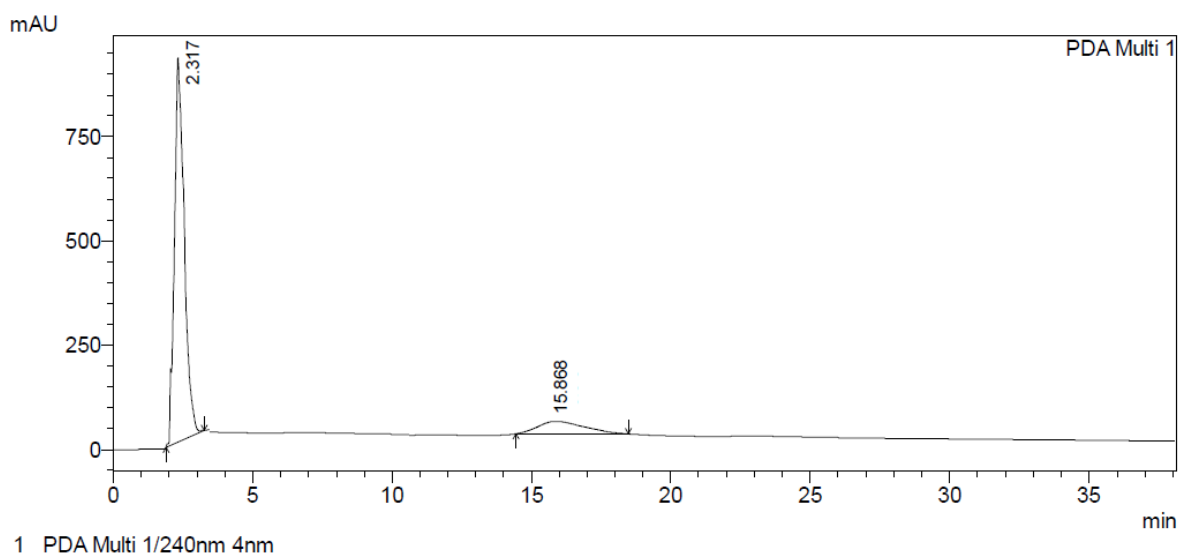
Figure S84. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol in ultrasonic condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22004478	917318	86.421	96.836
2	15.868	3457368	29969	13.579	3.164
Total		25461847	947287	100.000	100.000

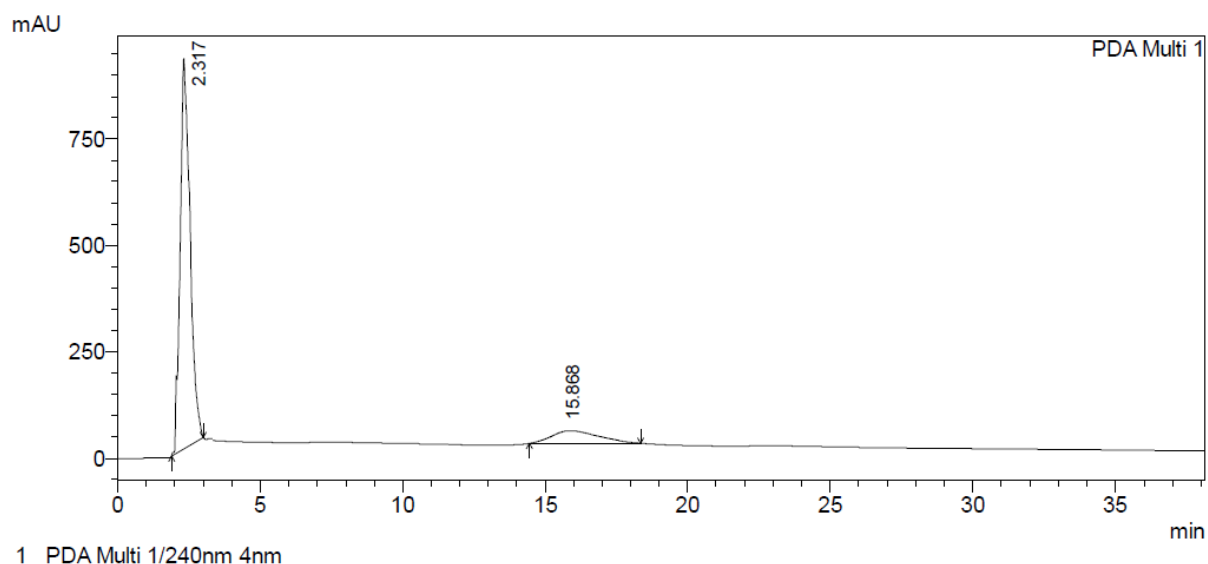
Figure S85. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol in ultrasonic condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	22359087	920419	86.608	96.847
2	15.868	3457368	29969	13.392	3.153
Total		25816455	950388	100.000	100.000

Figure S86. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol in 50°C condition.

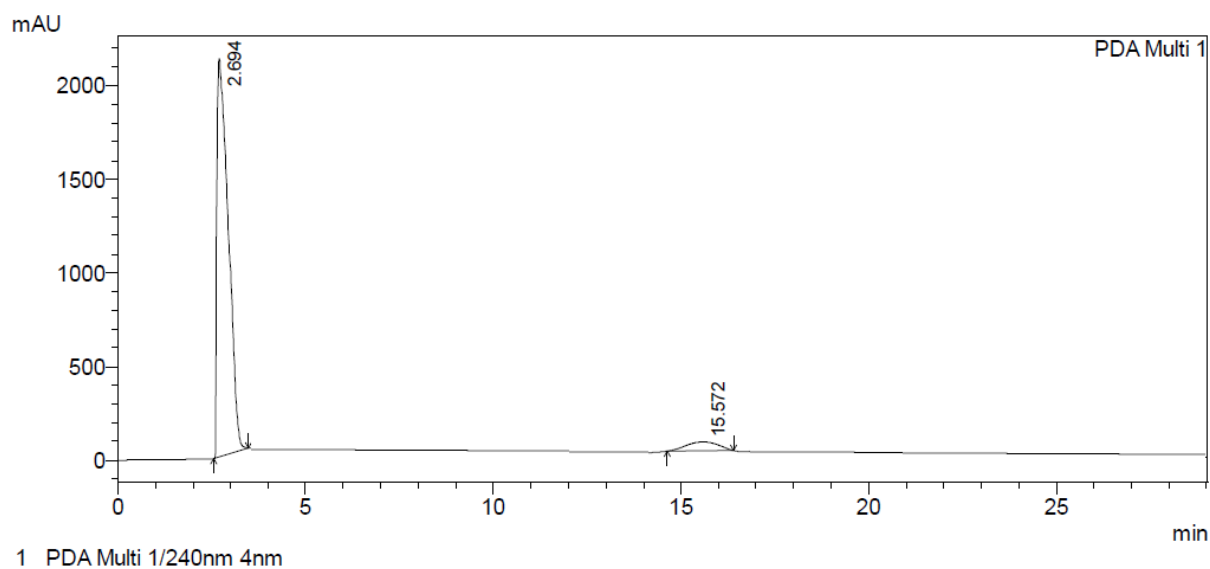


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.317	21950951	916321	86.681	96.859
2	15.868	3373012	29715	13.319	3.141
Total		25323962	946035	100.000	100.000

Figure S87. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol in 50°C condition.

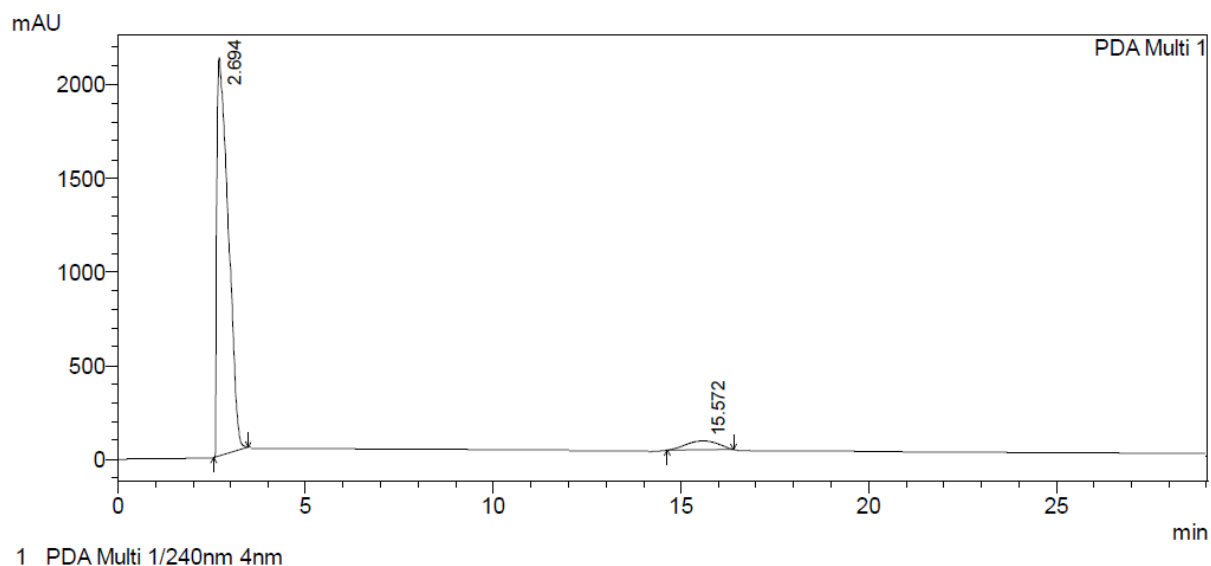


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.694	44617402	2127780	93.984	97.797
2	15.572	2855937	47930	6.016	2.203
Total		47473339	2175711	100.000	100.000

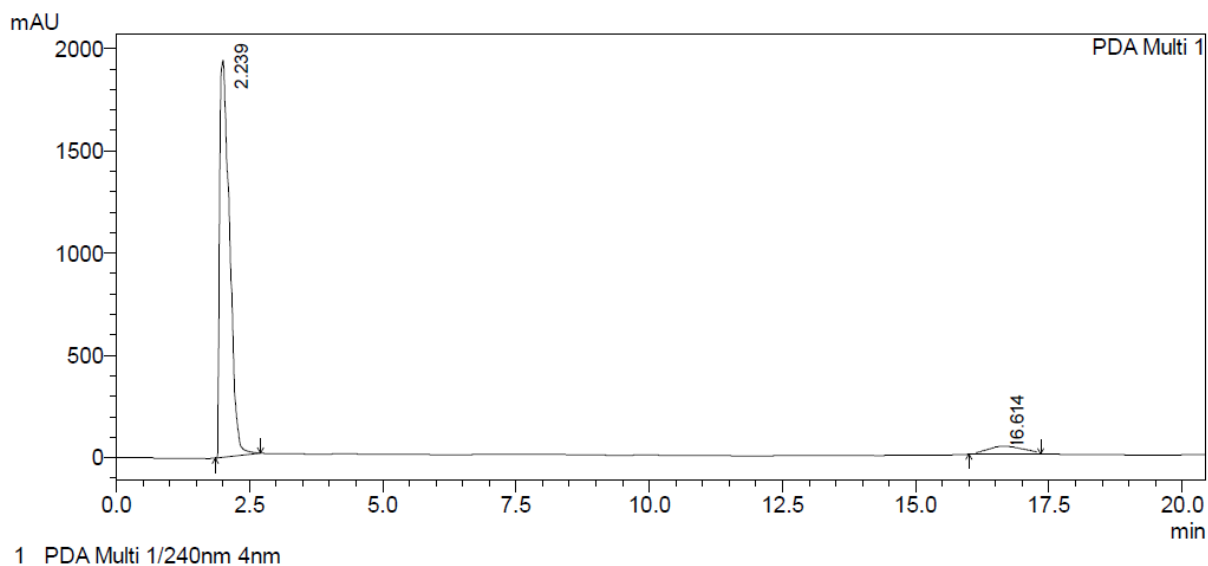
Figure S88. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol in -10°C condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.694	44617402	2127780	93.984	97.797
2	15.572	2855937	47930	6.016	2.203
Total		47473339	2175711	100.000	100.000

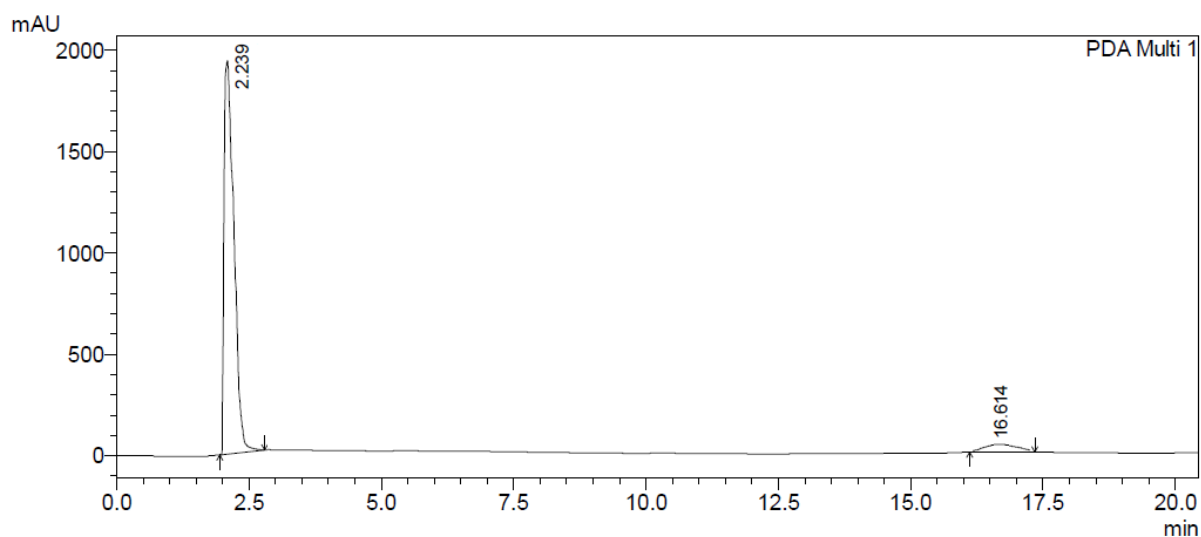
Figure S89. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol in -10°C condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

Figure S90. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



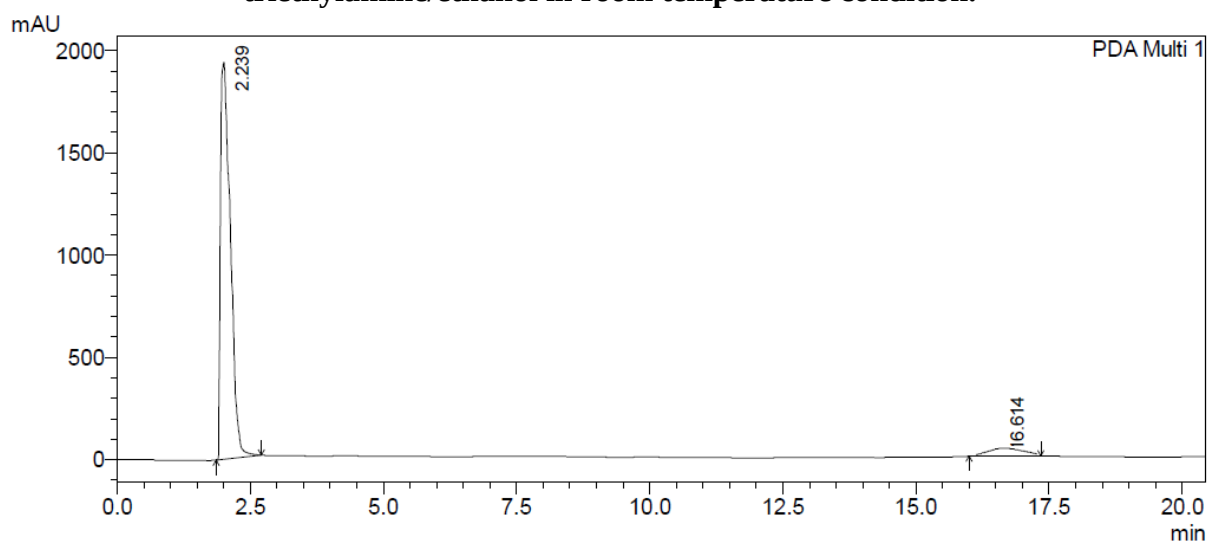
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	32726881	1883380	99.758	99.910
2	16.614	79341	1689	0.242	0.090
Total		32806222	1885069	100.000	100.000

Figure S91. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



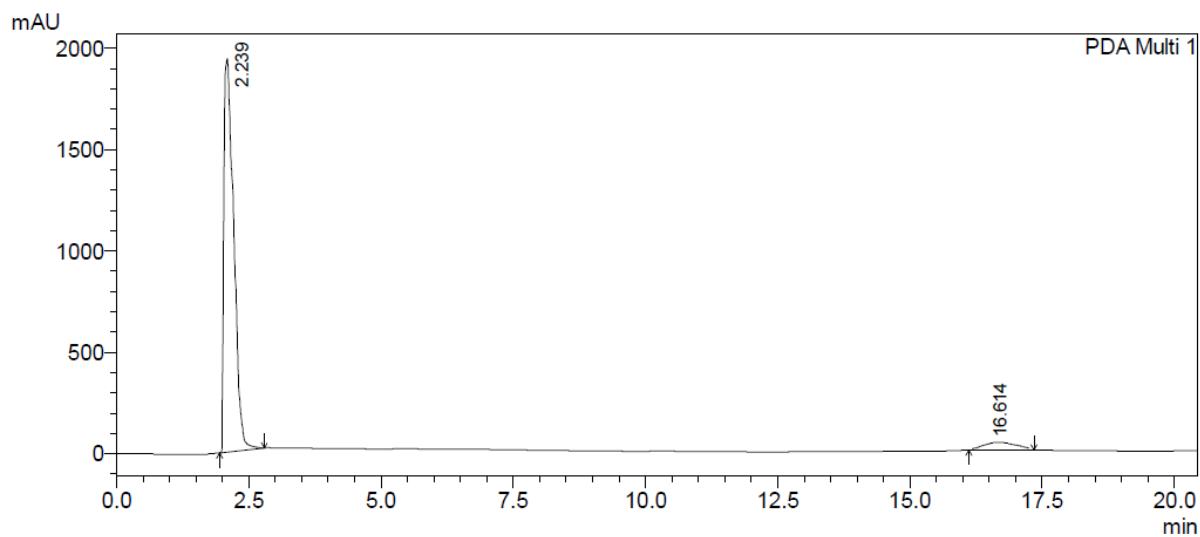
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	33068317	1900058	99.660	99.886
2	16.614	112816	2178	0.340	0.114
Total		33181133	1902235	100.000	100.000

Figure S92. HPLC spectrum of 10a in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



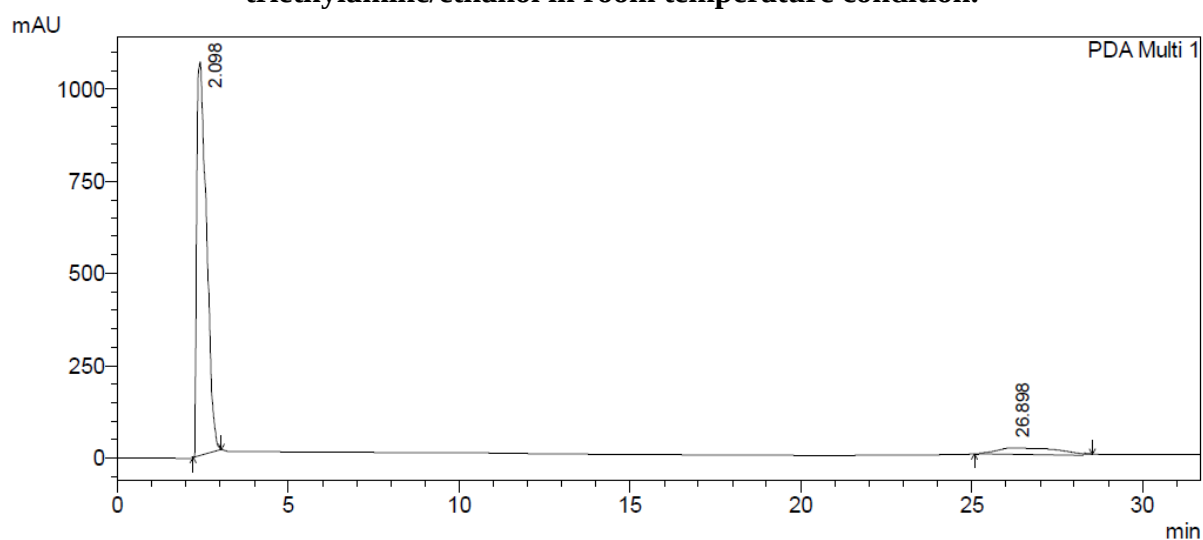
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.239	32726881	1883380	99.758	99.910
2	16.614	79341	1689	0.242	0.090
Total		32806222	1885069	100.000	100.000

Figure S93. HPLC spectrum of 10a in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



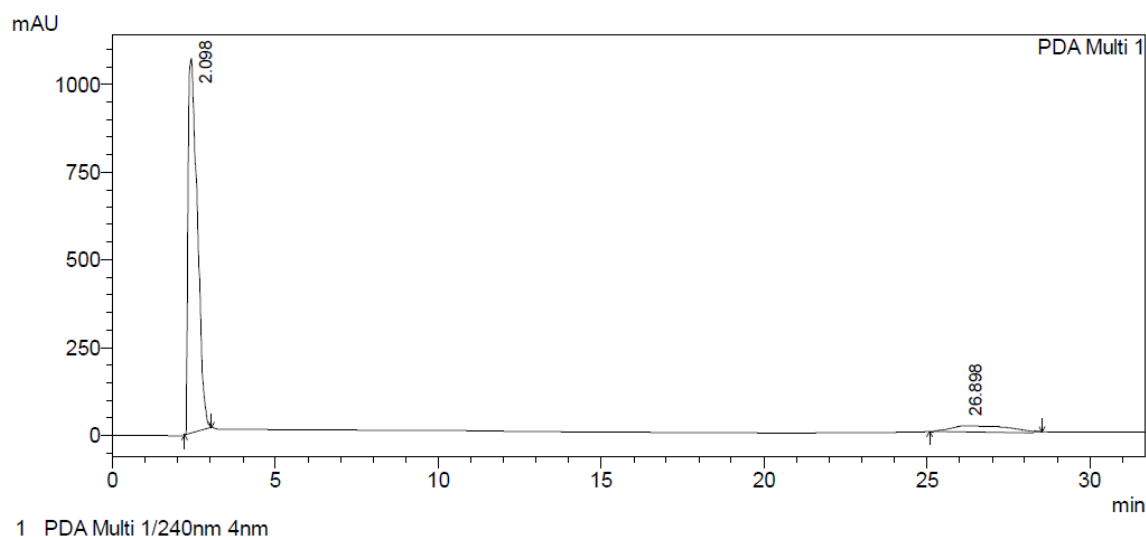
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.098	39485164	1049020	98.936	99.660
2	26.898	424506	3580	1.064	0.340
Total		39909670	1052600	100.000	100.000

Figure S94. HPLC spectrum of 11a in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



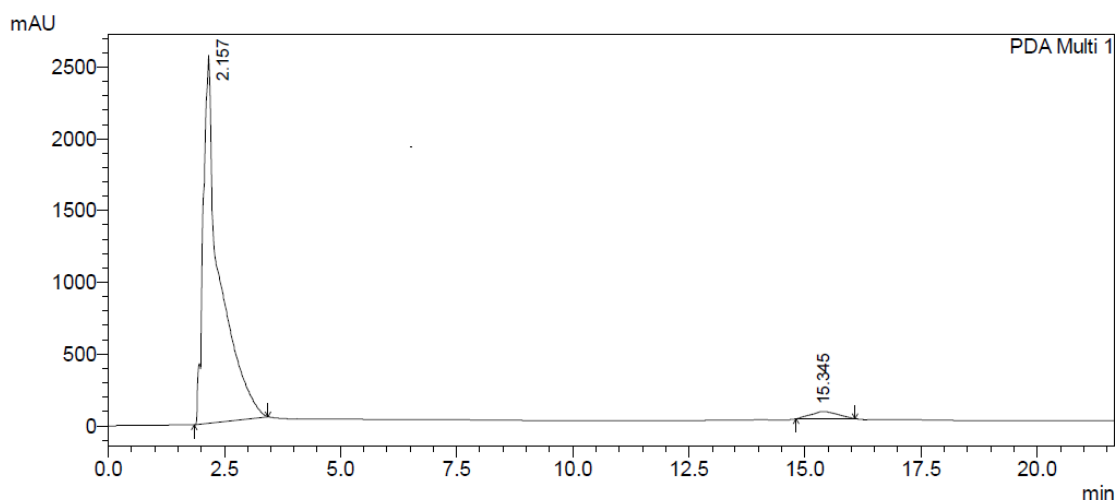
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.098	39485164	1049020	98.936	99.660
2	26.898	424506	3580	1.064	0.340
Total		39909670	1052600	100.000	100.000

Figure S95. HPLC spectrum of 11a in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



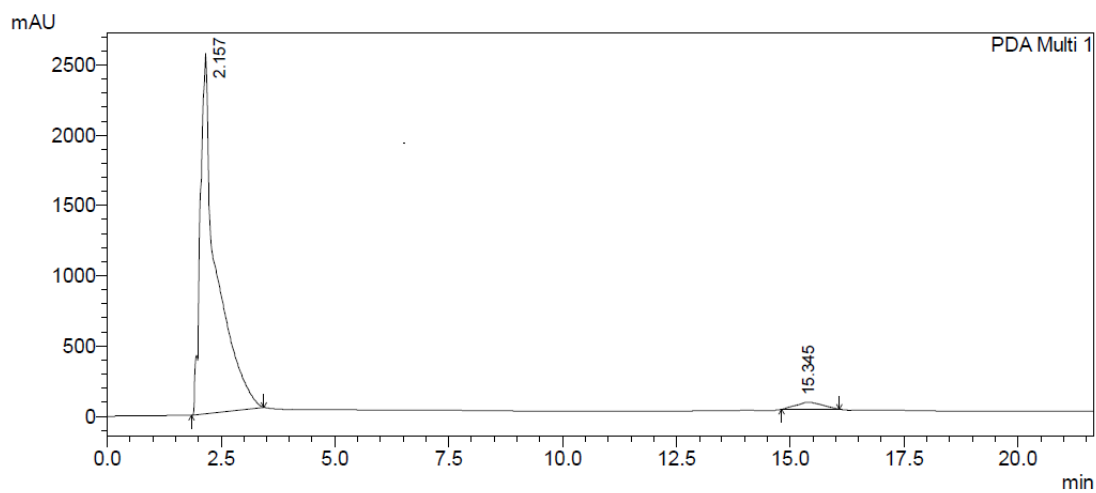
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.157	62568460	2563533	99.480	99.771
2	15.345	326800	5871	0.520	0.229
Total		62895260	2569404	100.000	100.000

Figure S96. HPLC spectrum of 12a in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



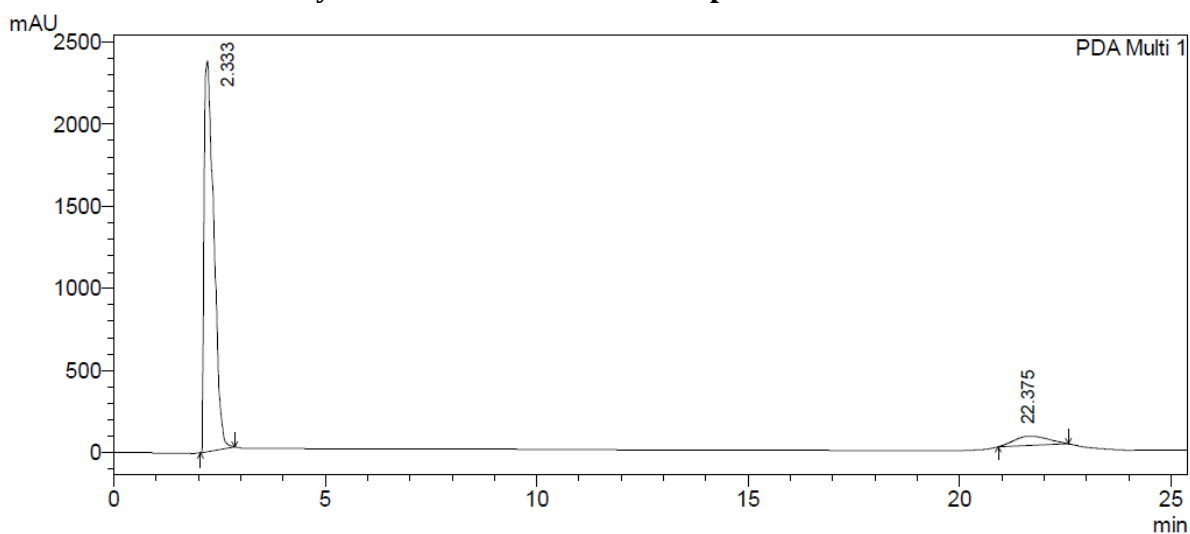
1 PDA Multi 1/240nm 4nm

PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.157	62568460	2563533	99.480	99.771
2	15.345	326800	5871	0.520	0.229
Total		62895260	2569404	100.000	100.000

Figure S97. HPLC spectrum of 12a in the presence of CMOs (7b) and triethylamine/ethanol in room temperature condition.



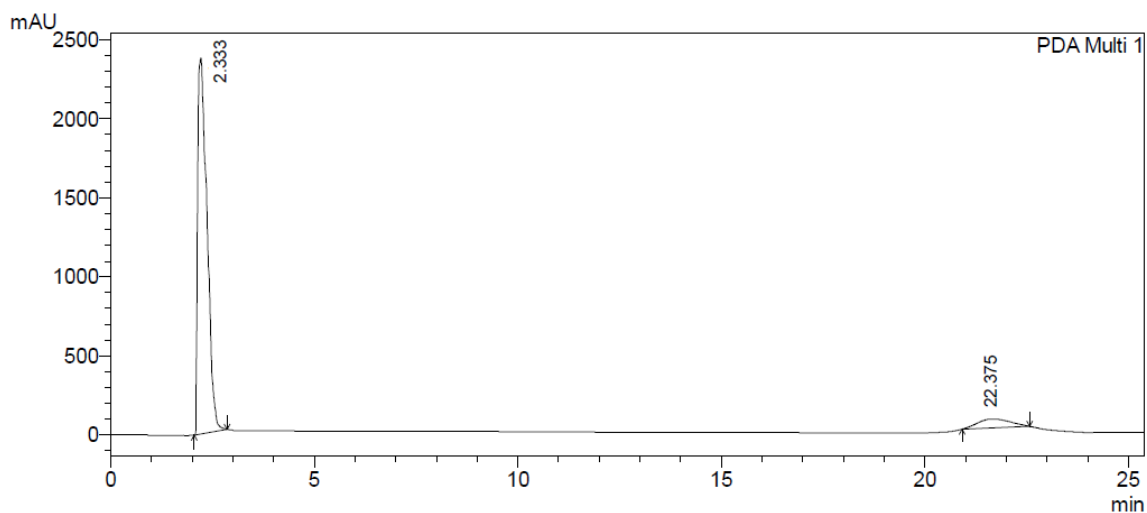
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S98. HPLC spectrum of 10b in the presence of CMOs (7a) and triethylamine/ethanol in room temperature condition.



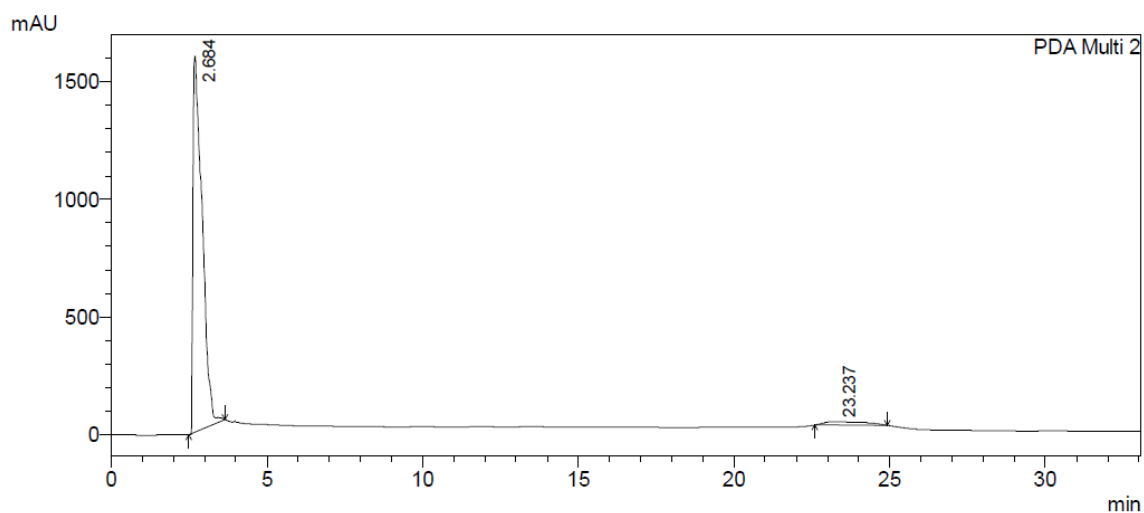
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S99. HPLC spectrum of 10b in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



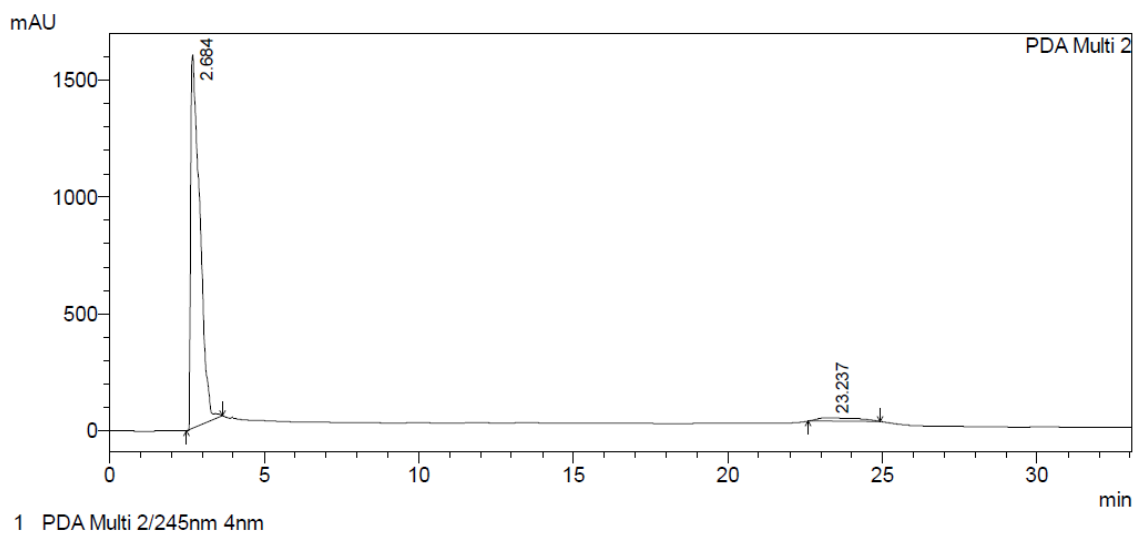
1 PDA Multi 2/245nm 4nm

PeakTable

PDA Ch2 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.684	32631181	1596976	95.952	99.089
2	23.237	1376568	14683	4.048	0.911
Total		34007749	1611658	100.000	100.000

Figure S100. HPLC spectrum of 11b in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



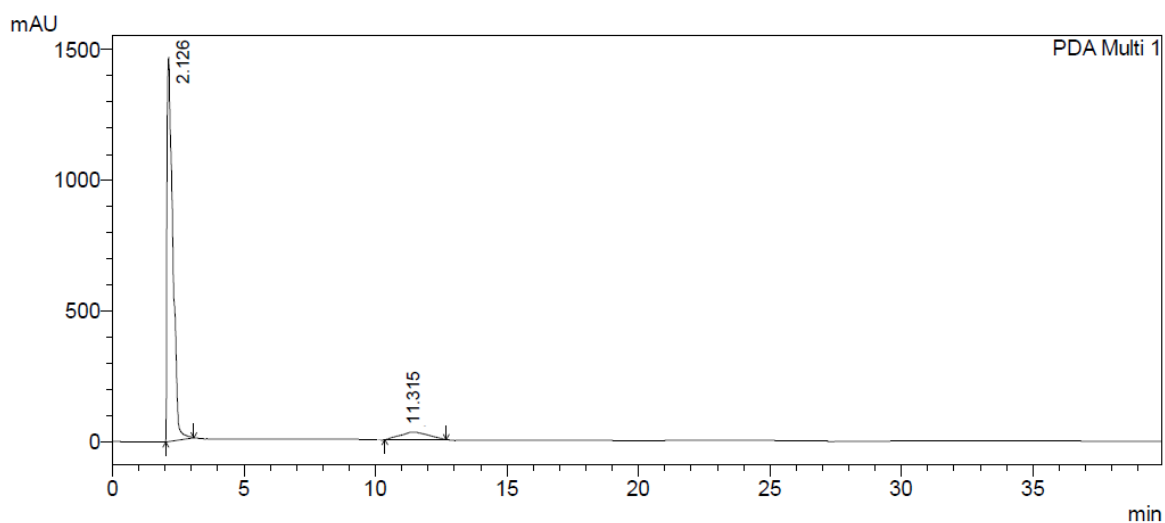
1 PDA Multi 2/245nm 4nm

PeakTable

PDA Ch2 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.684	32631181	1596976	95.952	99.089
2	23.237	1376568	14683	4.048	0.911
Total		34007749	1611658	100.000	100.000

Figure S101. HPLC spectrum of 11b in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



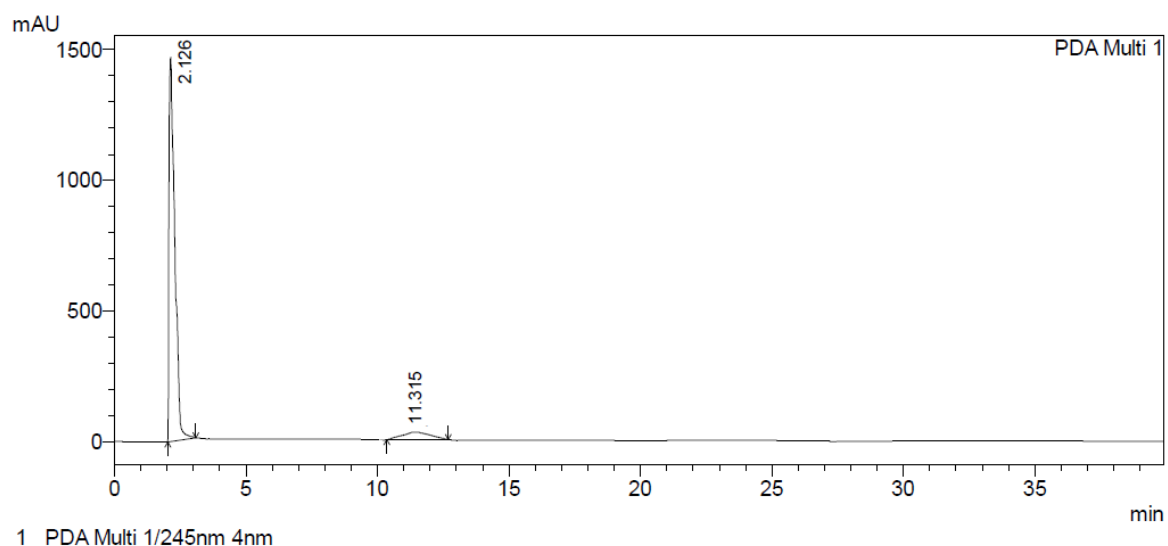
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.126	22498322	1468830	98.044	99.386
2	11.315	448762	9070	1.956	0.614
Total		22947085	1477901	100.000	100.000

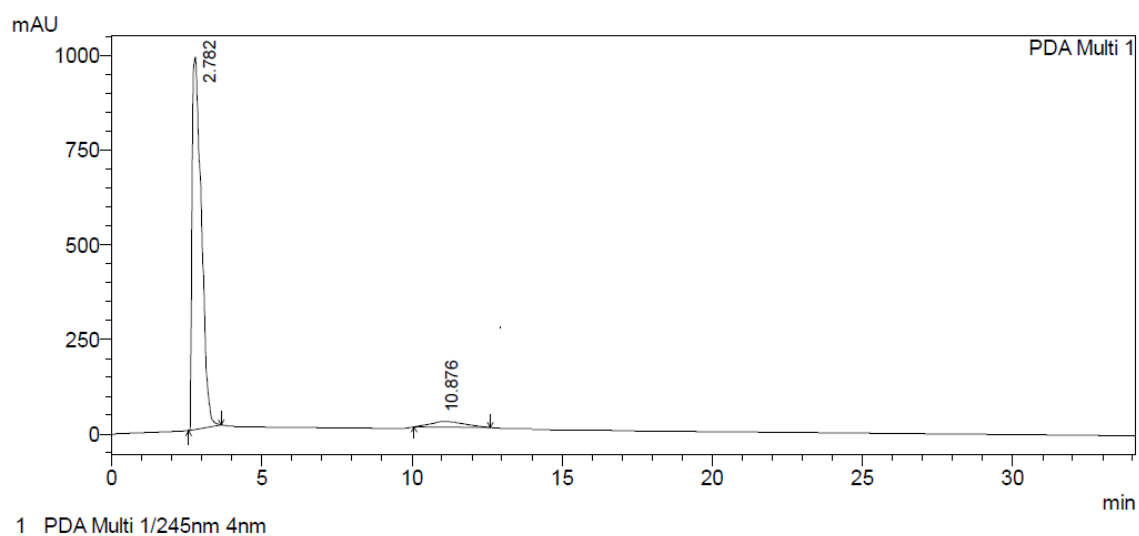
Figure S102. HPLC spectrum of 12b in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.126	22498322	1468830	98.044	99.386
2	11.315	448762	9070	1.956	0.614
Total		22947085	1477901	100.000	100.000

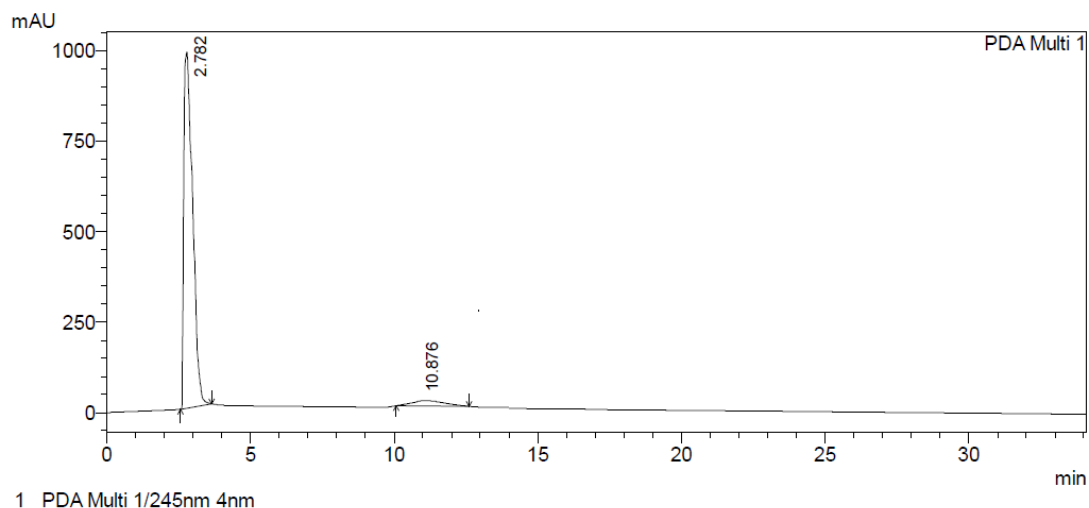
Figure S103. HPLC spectrum of 12b in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.782	21022699	984241	97.660	99.447
2	10.876	503727	5470	2.340	0.553
Total		21526426	989711	100.000	100.000

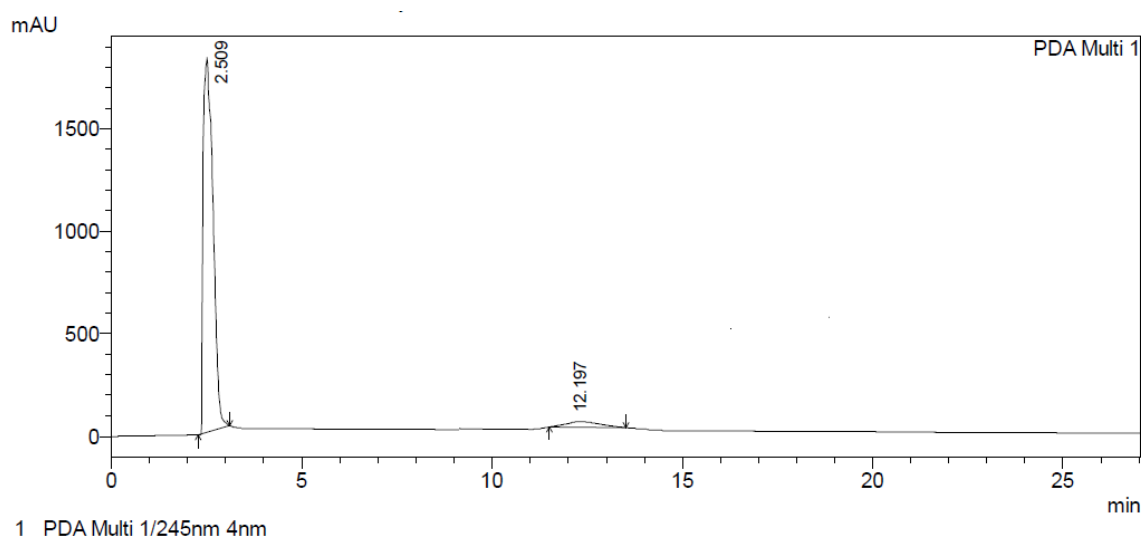
Figure S104. HPLC spectrum of 10c in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.782	21022699	984241	97.660	99.447
2	10.876	503727	5470	2.340	0.553
Total		21526426	989711	100.000	100.000

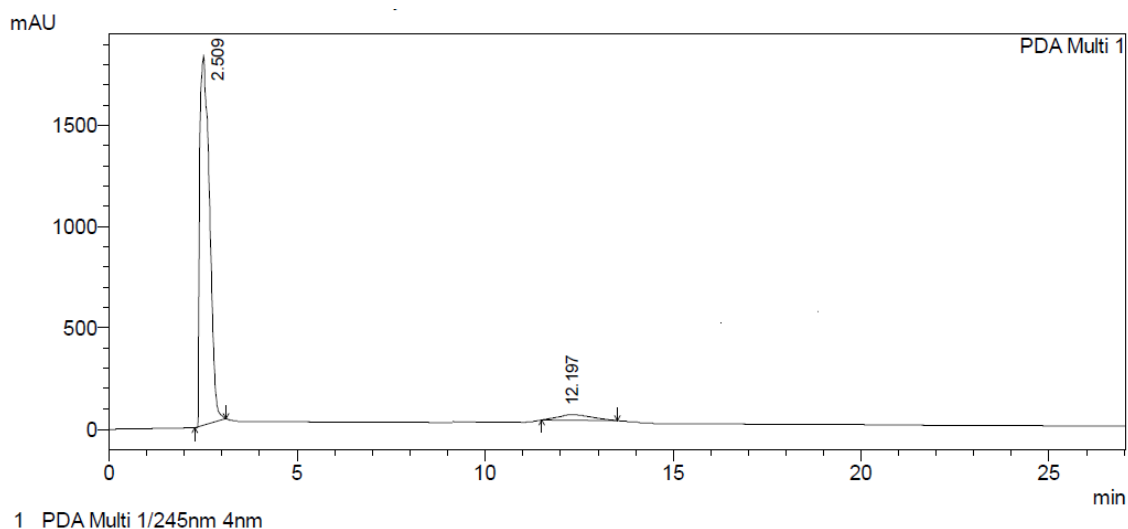
Figure S105. HPLC spectrum of 10c in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



PeakTable

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	32746217	1827600	95.449	99.105
2	12.197	1561180	16501	4.551	0.895
Total		34307397	1844101	100.000	100.000

Figure S106. HPLC spectrum of 11c in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.

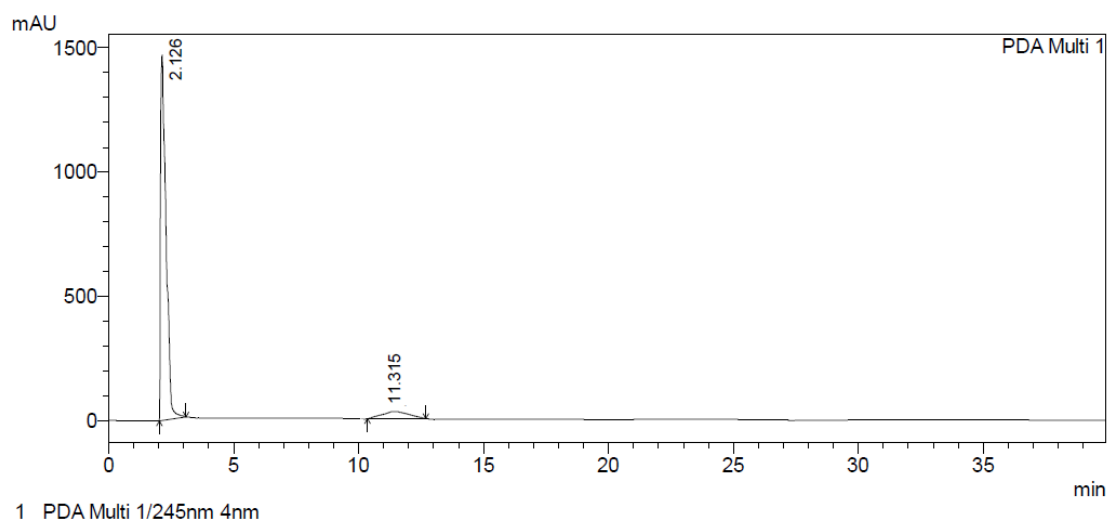


PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	32746217	1827600	95.449	99.105
2	12.197	1561180	16501	4.551	0.895
Total		34307397	1844101	100.000	100.000

Figure S107. HPLC spectrum of 11c in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.

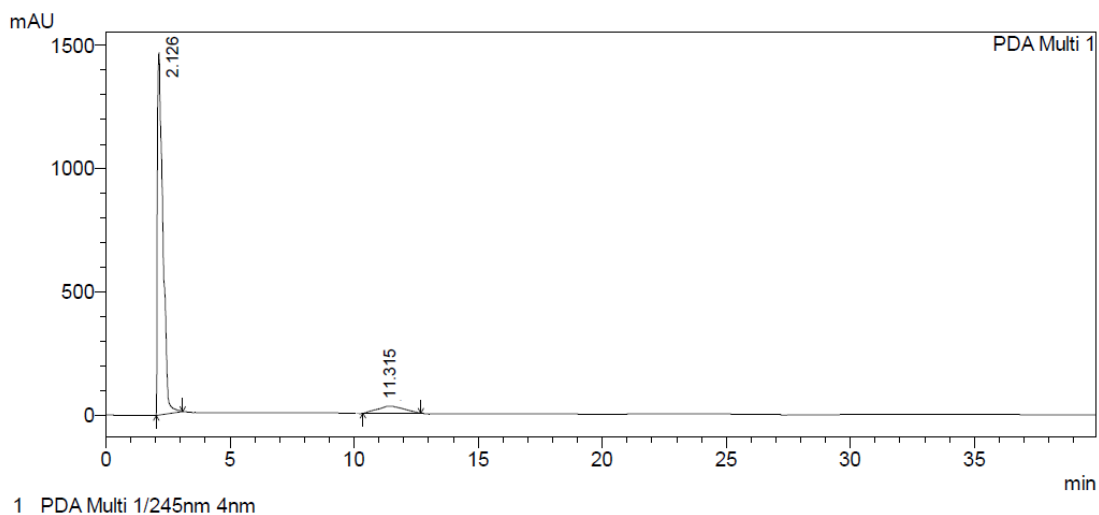


PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.126	22498322	1468830	98.044	99.386
2	11.315	448762	9070	1.956	0.614
Total		22947085	1477901	100.000	100.000

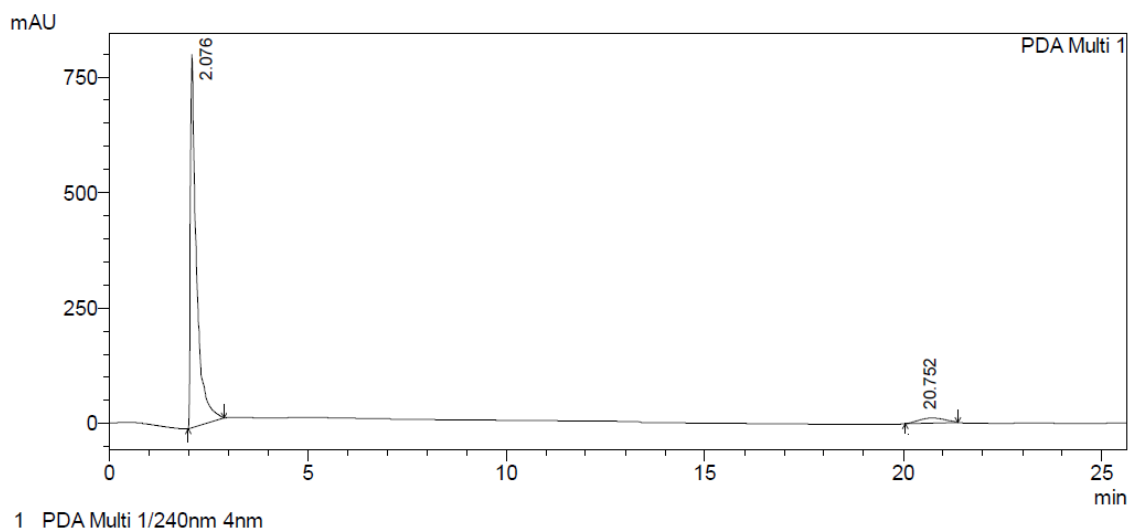
Figure S108. HPLC spectrum of 12c in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 245nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.126	22498322	1468830	98.044	99.386
2	11.315	448762	9070	1.956	0.614
Total		22947085	1477901	100.000	100.000

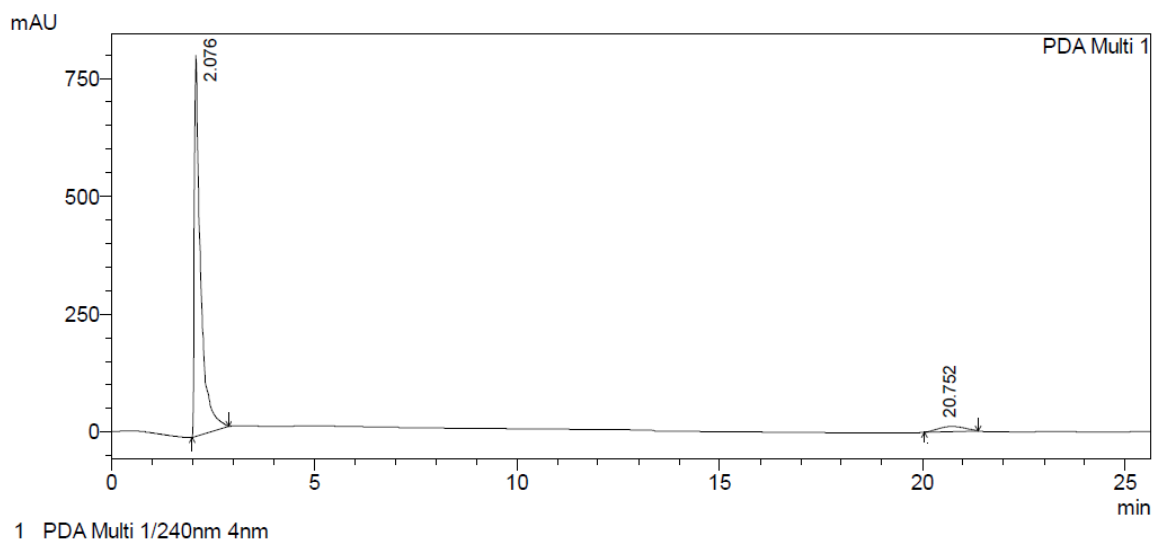
Figure S109. HPLC spectrum of 12c in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8719460	808984	94.816	98.689
2	20.752	476749	10748	5.184	1.311
Total		9196209	819732	100.000	100.000

Figure S110. HPLC spectrum of 10d in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.

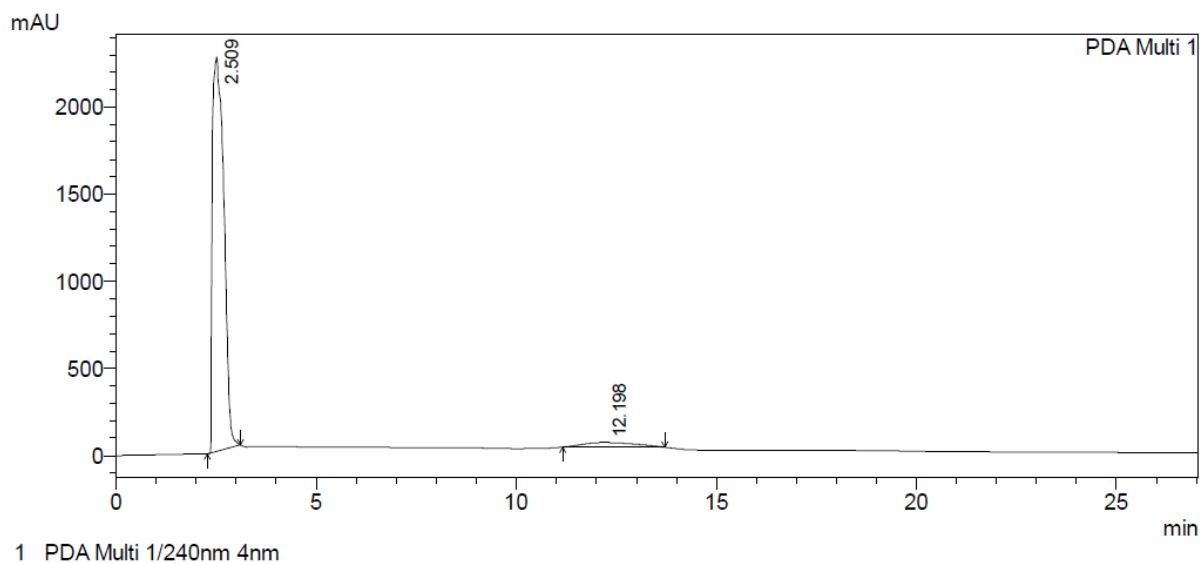


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8719460	808984	94.816	98.689
2	20.752	476749	10748	5.184	1.311
Total		9196209	819732	100.000	100.000

Figure S111. HPLC spectrum of 10d in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.

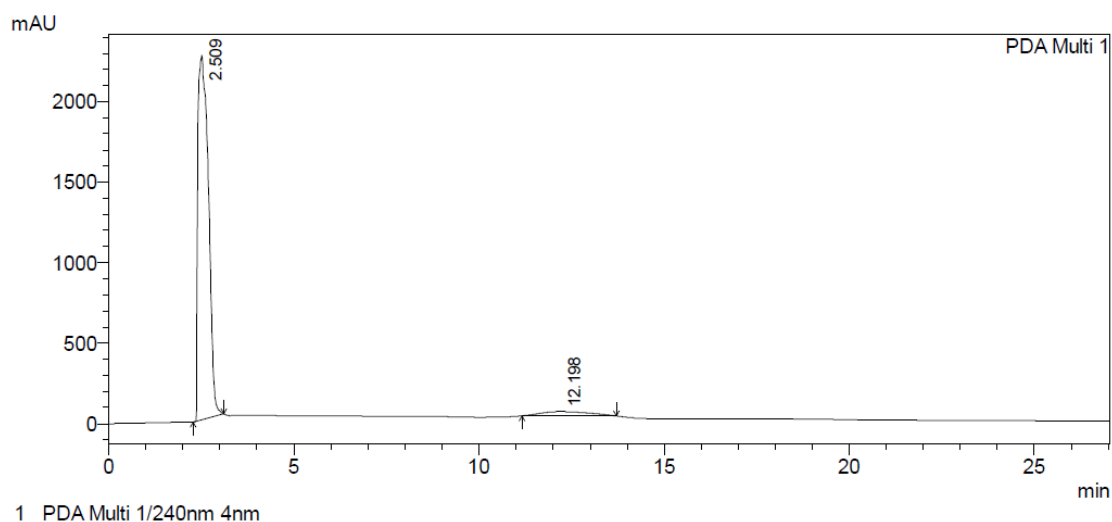


PeakTable

PDA Ch1 240nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	44671439	2262836	94.574	98.817
2	12.198	2562940	27079	5.426	1.183
Total		47234380	2289914	100.000	100.000

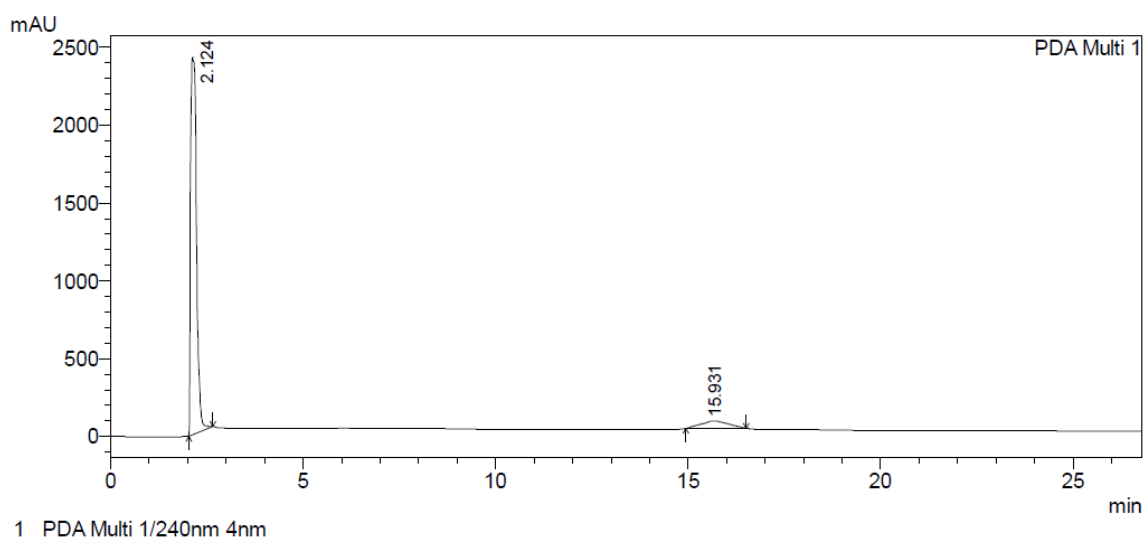
Figure S112. HPLC spectrum of 11d in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.509	44671439	2262836	94.574	98.817
2	12.198	2562940	27079	5.426	1.183
Total		47234380	2289914	100.000	100.000

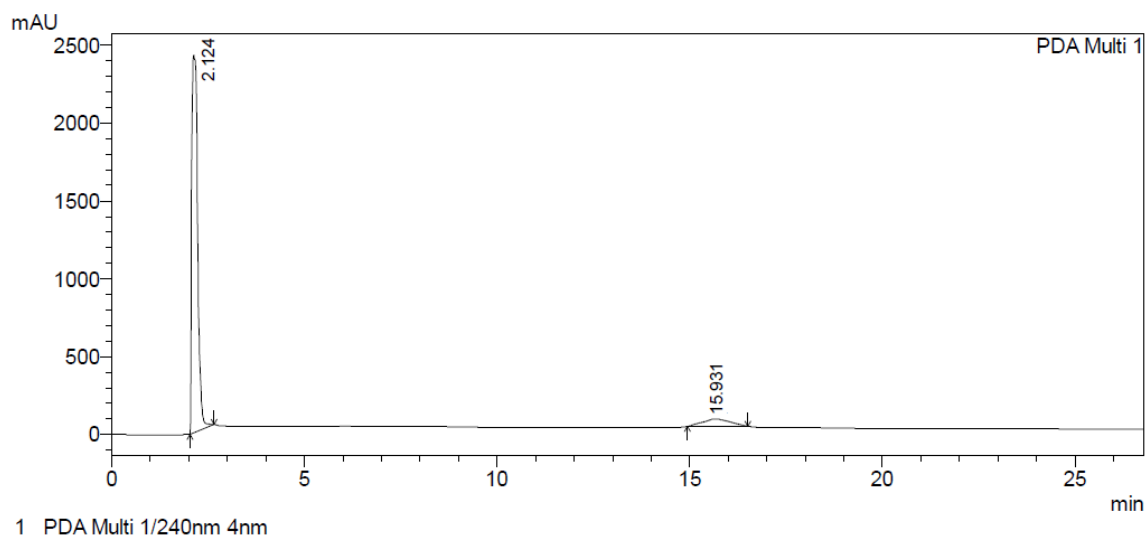
Figure S113. HPLC spectrum of 11d in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.124	25877496	2424786	98.655	99.807
2	15.931	352838	4698	1.345	0.193
Total		26230334	2429484	100.000	100.000

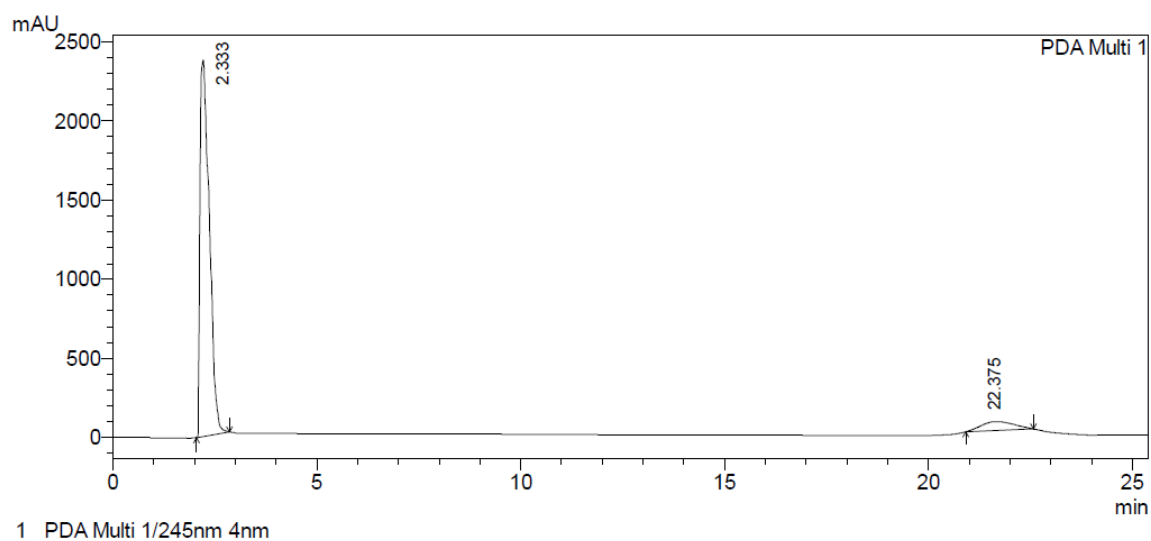
Figure S114. HPLC spectrum of 12d in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 240nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.124	25877496	2424786	98.655	99.807
2	15.931	352838	4698	1.345	0.193
Total		26230334	2429484	100.000	100.000

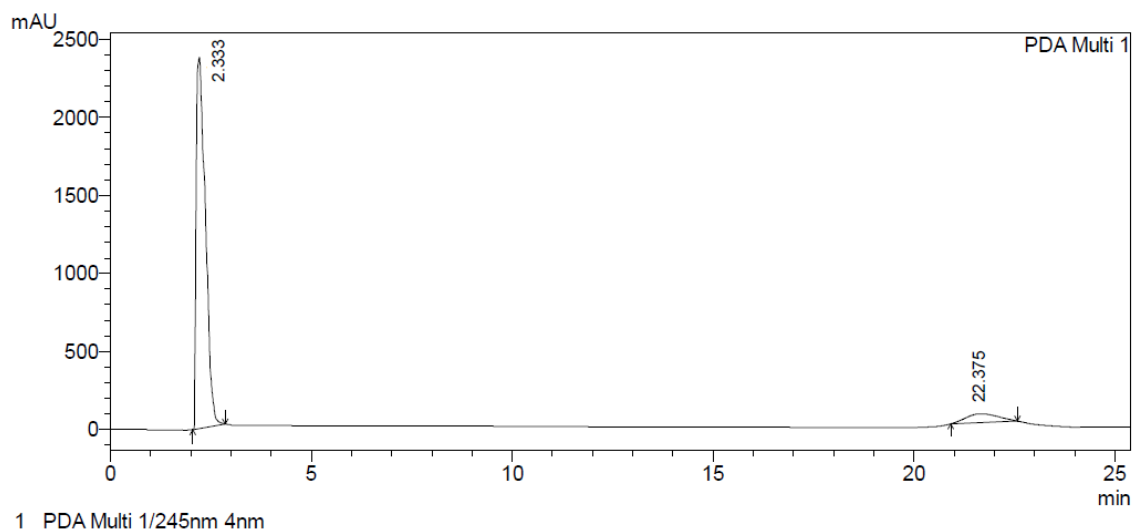
Figure S115. HPLC spectrum of 12d in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



PeakTable

PDA Ch1 245nm 4nm					
Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S116. HPLC spectrum of 10e in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



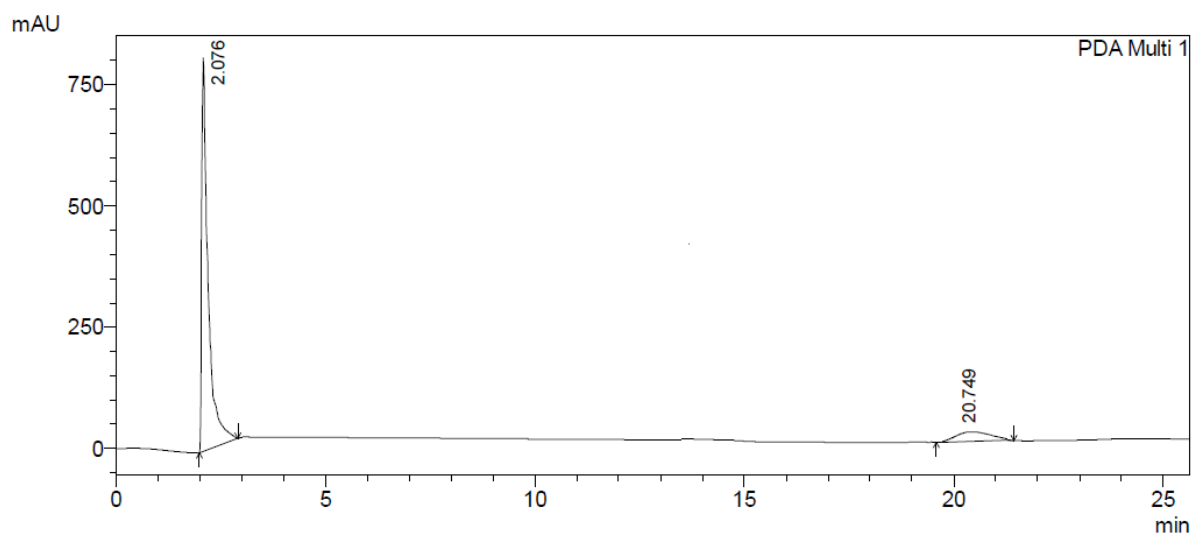
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S117. HPLC spectrum of 10e in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



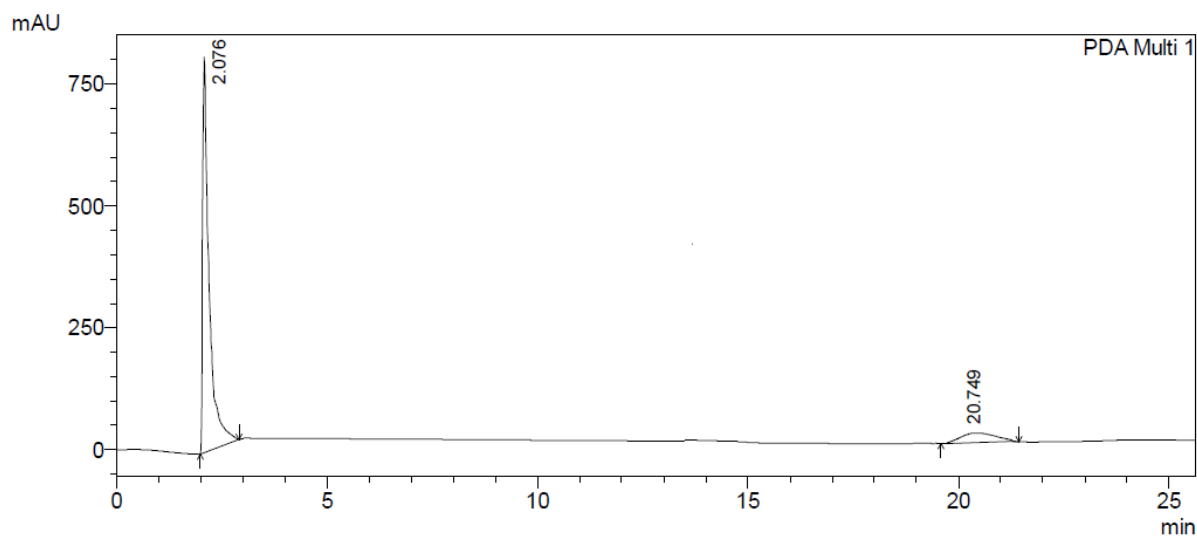
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8760757	810768	96.469	99.087
2	20.749	320684	7467	3.531	0.913
Total		9081441	818235	100.000	100.000

Figure S118. HPLC spectrum of 11e in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



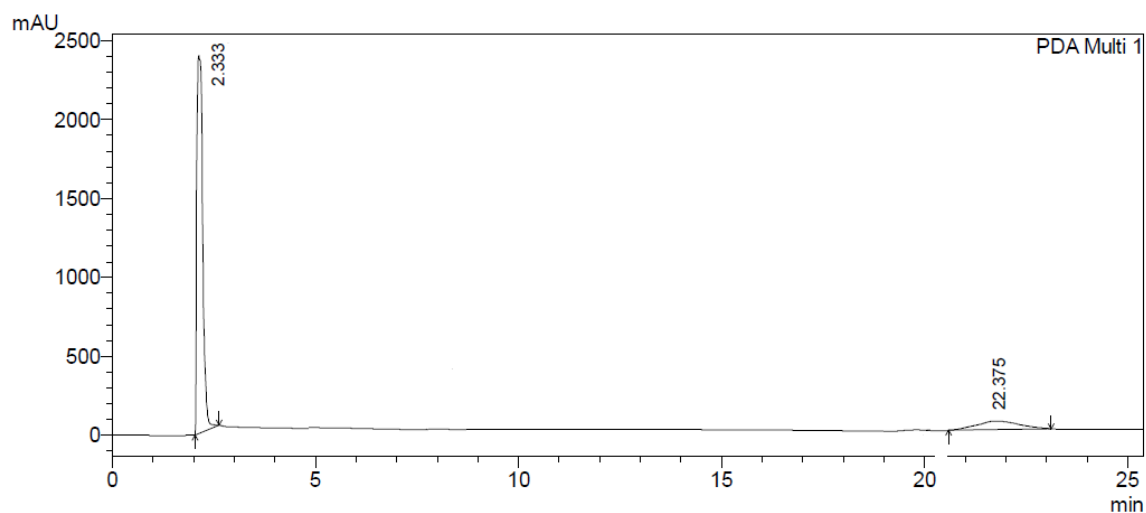
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.076	8760757	810768	96.469	99.087
2	20.749	320684	7467	3.531	0.913
Total		9081441	818235	100.000	100.000

Figure S119. HPLC spectrum of 11e in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.



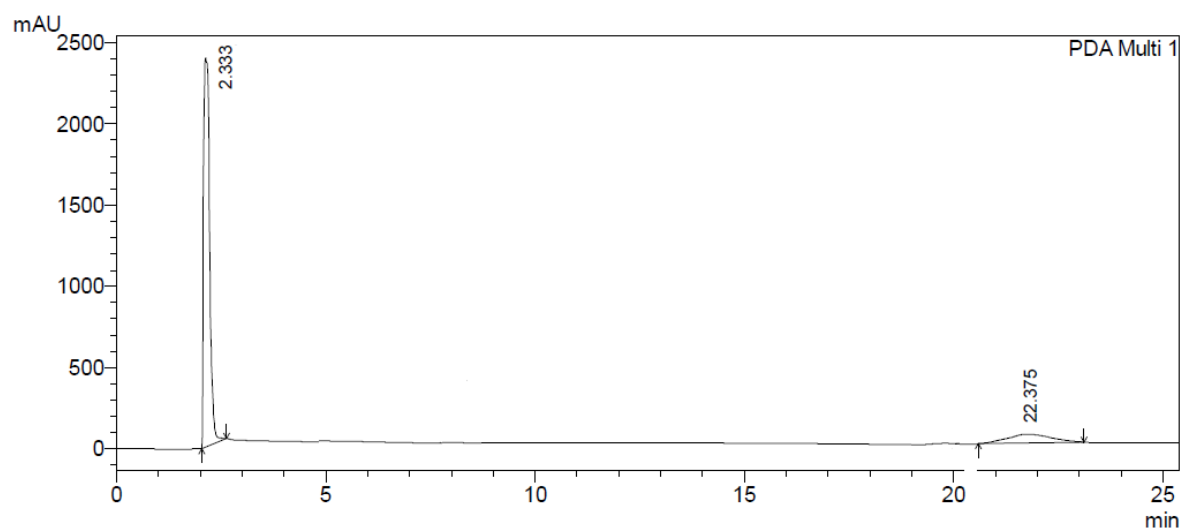
1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S120. HPLC spectrum of 12e in the presence of CMOCs (7a) and triethylamine/ethanol in room temperature condition.



1 PDA Multi 1/245nm 4nm

PeakTable

PDA Ch1 245nm 4nm

Peak#	Ret. Time	Area	Height	Area %	Height %
1	2.333	63171100	2310536	97.503	99.212
2	22.375	1617818	18362	2.497	0.788
Total		64788918	2328898	100.000	100.000

Figure S121. HPLC spectrum of 12e in the presence of CMOCs (7b) and triethylamine/ethanol in room temperature condition.