Supporting Information:

Enantioselective Rearrangement of Indolyl Carbonates Catalyzed by Chiral DMAP-*N*-oxides

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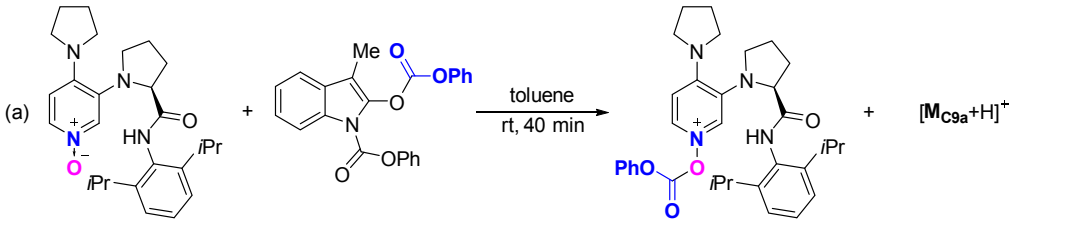
Contents

1. General information

^{1}H NMR spectra were recorded on Bruker Avance III HD 600 or Avance 400 MHz spectrometer. Chemical shifts are recorded in ppm relative to tetramethylsilane and with the solvent resonance as the internal standard. Data are reported as follows: chemical shift, multiplicity (s = singlet, d = doublet; t = triplet; q = quartet; sext = sextet; br = broad, m = multiplet), coupling constants (Hz), integration. ^{13}C NMR data were collected on Bruker Avance III HD 150 or Avance 100 MHz spectrometer. Chemical shifts are reported in ppm from the tetramethylsilane with the solvent resonance as internal standard. Enantiomer excesses were determined by chiral HPLC analysis on Chiralcel ADH/ODH/IE in comparison with the authentic racemates. Chiral HPLC analysis recorded on Thermo scientific Dionex Ultimate 3000 and Agilent Technologies 1260 Infinity. Optical rotations were reported as follows: $[\alpha]_D^T$ (c: g/100 mL, in solvent). Optical rotations recorded on Autopol Automatic Polarimeter. HRMS was recorded on an ABI/Sciex QStar Mass Spectrometer (ESI). Toluene and THF were freshly distilled from sodium under nitrogen prior to use. CH_2Cl_2 was distilled from CaH_2 under nitrogen prior to use. Other solvents used for work-up and purification purposes were purchased in technical grade quality and distilled by rotary evaporator before use. The chiral DMAP-*N*-oxides **C9a-C9f** and catalyst **C10a** were synthesized by the same procedure in the literature.[1]

2. HRMS experiments

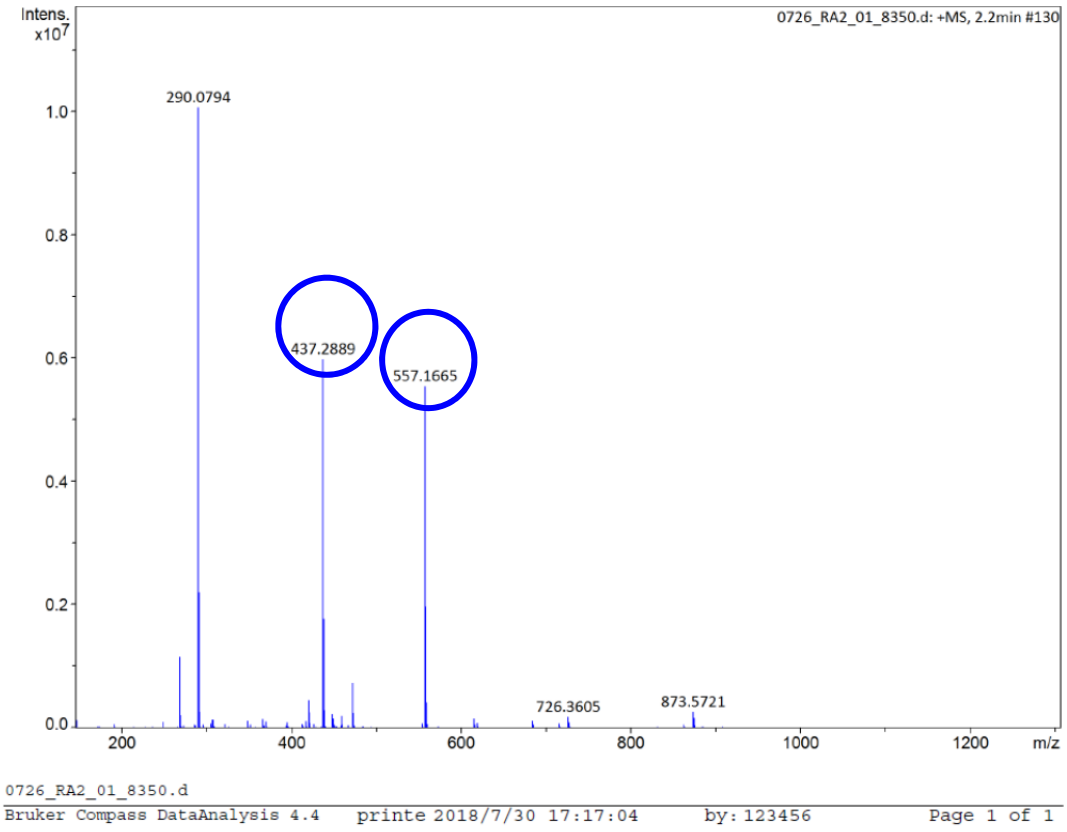


C9a
Formula: $C_{26}H_{36}N_4O_2$

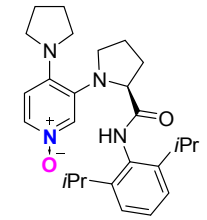
1a
(1.1 equiv)

Exact Mass: 557.3122
Found: 557.1665

Exact Mass: 437.2911
Found: 437.2889

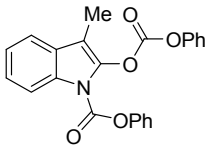


(b)

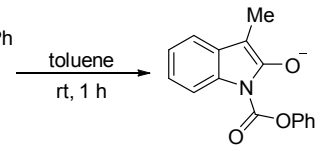


C9a
Formula: $C_{26}H_{36}N_4O_2$

+



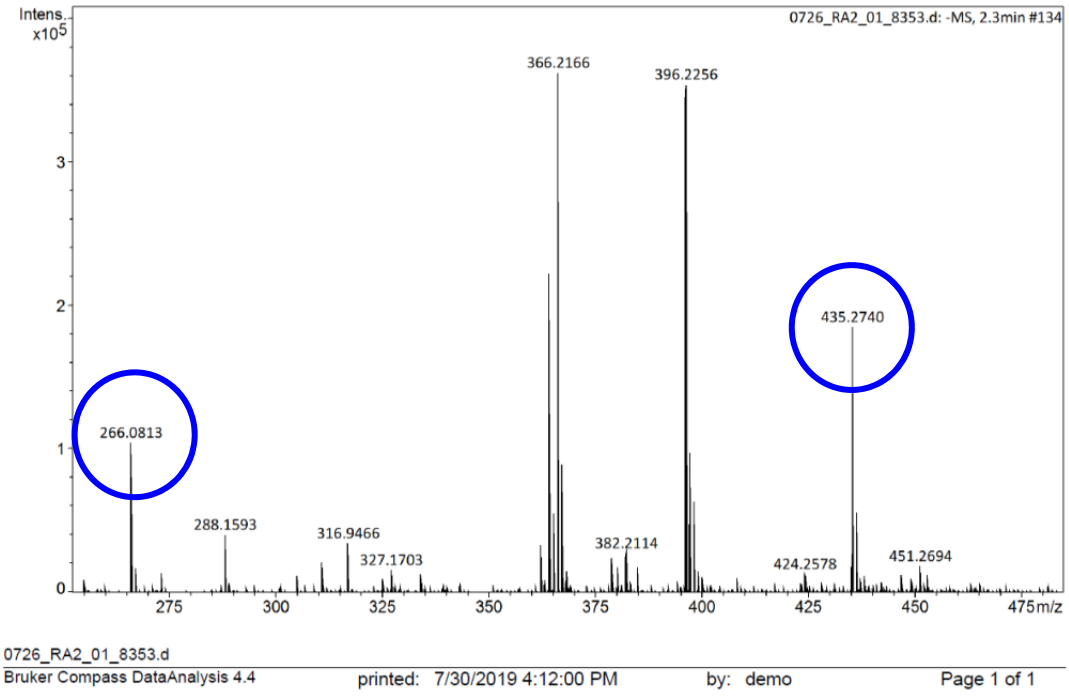
1a
(1.1 equiv)



Exact Mass: 266.0823
Found: 266.0813

+ $[\mathbf{M}_{\mathbf{C9a}}\text{-H}]^-$

Exact Mass: 435.2765
Found: 435.2740



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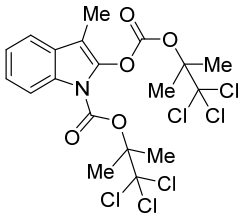
Bruker Compass DataAnalysis 4.4 printed: 7/30/2019 4:12:00 PM by: demo Page 1 of 1

3. Substrates Synthesis

Indolyl carbonates **1a-1t** were prepared according to literature precedents.[2-4] Among these substrates, indolyl carbonates **1d**, **1k, 1o, 1r,** and **1t** were new compounds and their characterization data were listed as follows.

1,1,1-Trichloro-2-methylpropan-2-yl 3-methyl-2-((((1,1,1-trichloro-2-methylpropan-2-yl)oxy) carbonyl)oxy)-1*H*-indole-1-carboxylate (1d)



1d

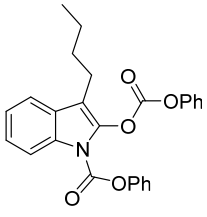
A colorless solid. m.p.: 160.4-161.2 °C.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.20 (d, *J* = 8.0 Hz, 1H), 7.49-7.42 (m, 1H), 7.35-7.30 (m, 1H), 7.30-7.24 (m, 1H), 2.18 (s, 3H), 2.10 (s, 6H), 2.02 (s, 6H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 149.2, 148.1, 138.3, 131.5, 127.9, 124.7, 123.5, 118.9, 115.9, 105.6, 105.5, 105.1, 92.4, 91.8, 21.9, 21.1, 7.0.

HRMS: exact mass calcd for $C_{19}H_{19}Cl_6NO_5Na^+$ $(M+Na)^+$ requires m/z 573.9287, found m/z 573.9284.

Phenyl 3-butyl-2-((phenoxycarbonyl)oxy)-1*H*-indole-1-carboxylate (1k)



1k

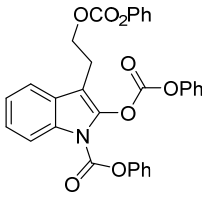
A colorless solid. m.p.: 115.0-115.8 °C.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.18 (d, *J* = 8.0 Hz, 1H), 7.62-7.54 (m, 1H), 7.51-7.42 (m, 2H), 7.40-7.28 (m, 7H), 7.25-7.21 (m, 1H), 7.11 (d, *J* = 8.0 Hz, 2H), 2.75 (d, *J* = 7.6 Hz, 2H), 1.77-1.65 (m, 2H), 1.45 (sext, *J* = 7.6 Hz, 2H), 0.98 (t, *J* = 7.6 Hz, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 151.4, 151.1, 150.1, 148.8, 137.2, 132.5, 129.9, 129.7, 127.8, 126.8, 126.7, 125.2, 123.8, 121.8, 120.9, 119.5, 115.8, 111.0, 31.2, 22.7, 22.3, 14.0.

HRMS: exact mass calcd for $C_{26}H_{23}NO_5Na^+$ $(M+Na)^+$ requires m/z 452.1468, found m/z 452.1475.

Phenyl 2-((phenoxycarbonyl)oxy)-3-(2-((phenoxycarbonyl)oxy)ethyl)-1*H*-indole -1-carboxylate (1o)



1o

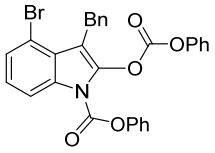
A colorless solid. m.p.: 146.2-147.6 °C.

^{1}H NMR (600 MHz, $CDCl_3$) δ 8.20 (d, *J* = 8.4 Hz, 1H), 7.64 (d, *J* = 7.8 Hz, 1H), 7.51-7.45 (m, 2H), 7.43-7.39 (m, 1H), 7.38-7.33 (m, 4H), 7.33-7.28 (m, 4H), 7.25-7.20 (m, 2H), 7.18-7.07 (m, 4H), 4.54 (t, *J* = 7.2 Hz, 2H), 3.23 (t, *J* = 7.2 Hz, 2H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 153.9, 151.3, 151.2, 151.0, 150.0, 148.6, 138.5, 132.5, 129.9, 129.7, 129.6, 127.2, 126.9, 126.7, 126.2, 125.6, 124.2, 121.7, 121.3, 120.9, 119.2, 115.9, 106.1, 66.9, 22.5.

HRMS: exact mass calcd for $C_{31}H_{23}NO_8Na^+$ $(M+Na)^+$ requires m/z 560.1316, found m/z 560.1317.

Phenyl 3-benzyl-4-bromo-2-((phenoxycarbonyl)oxy)-1*H*-indole-1-carboxylate (1r)



1r

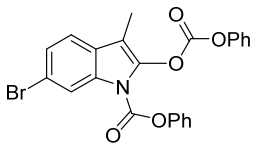
A colorless solid. m.p.: 174.2-176.3 °C.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.25 (d, *J* = 8.4 Hz, 1H), 7.49-7.44 (m, 3H), 7.37-7.29 (m, 9H), 7.24-7.19 (m, 3H), 6.96 (d, *J* = 8.0 Hz, 2H), 4.44 (s, 2H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 150.92, 150.88, 149.4, 148.3, 139.7, 139.6, 134.0, 130.0, 129.7, 129.0, 128.59, 128.56, 127.1, 126.8, 126.3, 126.1, 125.7, 121.6, 120.8, 115.0, 114.6, 109.7, 28.9.

HRMS: exact mass calcd for $C_{29}H_{20}BrNO_5Na^+$ $(M+Na)^+$ requires m/z 564.0417, found m/z 564.0415

Phenyl 6-bromo-3-methyl-2-((phenoxycarbonyl)oxy)-1*H*-indole-1-carboxylate (1t)



1t

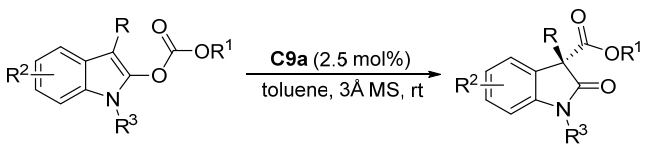
A colorless solid. m.p.: 157.1-161.3 °C.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.35 (s, 1H), 7.50-7.45 (m, 3H), 7.40-7.29 (m, 6H), 7.26-7.23 (m, 1H), 7.11 (d, J = 8.0 Hz, 2H), 2.26 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 151.2, 151.0, 150.0, 148.5, 137.5, 132.9, 129.9, 129.8, 127.2, 127.1, 127.0, 126.8, 121.7, 120.9, 120.5, 118.9, 118.8, 106.4, 7.2.

HRMS: exact mass calcd for $C_{23}H_{16}BrNO_5Na^+$ $(M+Na)^+$ requires m/z 488.0104, found m/z 488.0094

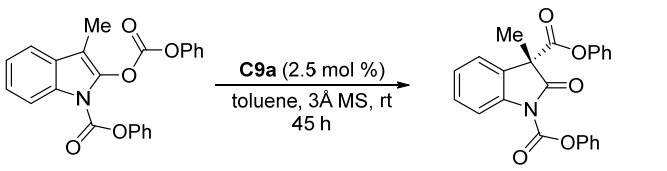
4. Typical procedure for the rearrangement of indolyl carbonates



1 **2**

In a test tube, indolyl carbonate **1** (0.05 mmol), catalyst **C9a** (0.6 mg, 2.5 mol%), and 3Å MS (40 mg) were added subsequently. Then, the tube was filled with N_2 gas. After that, toluene (0.5 mL) was added and the reaction was stirred at rt until reactant **1** was consumed (determined by TLC). Then, the reaction was quenched with iodomethane (0.05 mL). Subsequently, the crude mixture was purified by flash column chromatography on silica gel (gradient elution: i) pure petroleum ii) petroleum: CH_2Cl_2 = 1:10) to give the desired rearrangement product **2**.

5. Gram-scale synthesis of 2a



1a
3 mmol, 1.1640 g

2a
1.0940 g, 94% yield, 95% ee

In a 50 mL round bottom flask equipped with a magnetic stir bar, indolyl carbonate **1a** (1.1640 g, 3 mmol), catalyst **C9a** (33 mg, 2.5 mol %), and 3Å MS (2.4000 g) were added subsequently. Then, the round bottom flask was filled with N_2 gas. After that, toluene (30 mL) was added and the reaction was stirred at rt until reactant **1a** was consumed (45 h). Then, the reaction was quenched with iodomethane (3.0 mL). Subsequently, the crude mixture was extracted with EtOAc/H_2O, dried over Na_2SO_4 and concentrated *in vacuo*. Subsequently, the crude product was purified by flash column chromatography on silica gel (gradient elution: i) pure petroleum ii) petroleum: CH_2Cl_2 = 1:10) to give the desired rearrangement product **2a** in 1.0940 g.

6. References

(1) M.-S. Xie, Y.-F. Zhang, M. Shan, X.-X. Wu, G.-R. Qu and H.-M. Guo, *Angew. Chem., Int. Ed.,* 2019, **58**, 2839.

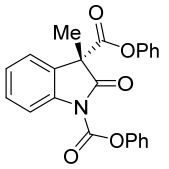
(2) H. Mandai, T. Fujiwara, K. Noda, K. Fujii, K. Mitsudo, T. Korenaga and S. Suga, *Org. Lett.*, 2015, **17**, 4436;

(3) H. Mandai, K. Fujii, H. Yasuhara, K. Abe, K. Mitsudo, T. Korenaga and S. Suga, *Nat. Commun.,* 2016, **7**. 11297.

(4) S. A. Shaw, P. Aleman, J. Christy, J. W. Kampf, P. Va and E. Vedejs, *J. Am. Chem. Soc.,* 2006, **128**, 925.

7. The analytical and spectral characterization data for the oxindoles

(*S*)-Diphenyl-3-methyl-2-oxoindoline-1,3-dicarboxylate (2a)



2a

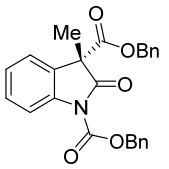
A pale yellow oil; 18.9 mg, 98% yield, 94% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 11.370 min (minor), 12.302 min (major).

$[\alpha]_D^{27}$ = +97.5 (c = 0.46, $CHCl_3$). The absolute configuration of compound (*S*)-**2a** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (600 MHz, $CDCl_3$) δ 8.05 (d, *J* = 8.4 Hz, 1H), 7.50-7.40 (m, 4H), 7.38-7.28 (m, 6H), 7.22 (t, *J* = 7.2 Hz, 1H), 6.98 (d, *J* = 7.8 Hz, 2H), 1.90 (s, 3H).

(*S*)-Dibenzyl-3-methyl-2-oxoindoline-1,3-dicarboxylate (2b)



2b

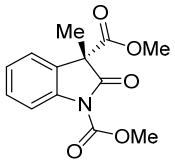
A colorless oil; 19.0 mg, 92% yield, 91% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 26.345 min (major), 31.578 min (minor).

$[\alpha]_D^{27}$ = 79.8 (c = 0.19, $CHCl_3$). The absolute configuration of compound (*S*)-**2b** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[2]

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.93 (d, *J* = 8.4 Hz, 1H), 7.56-7.47 (m, 2H), 7.42-7.31 (m, 4H), 7.26-7.20 (m, 4H), 7.19-7.13 (m, 1H), 7.12-7.06 (m, 2H), 5.46 (s, 2H), 5.11 (s, 2H), 1.74 (s, 3H).

(*S*)-Dimethyl-3-methyl-2-oxoindoline-1,3-dicarboxylate (2c)



2c

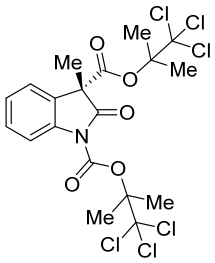
A colorless oil; 11.2 mg, 87% yield, 93% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 95/5, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 21.517 min (minor), 22.097 min (major).

$[\alpha]_D^{27}$ = +74.3 (c = 0.14, $CHCl_3$). The absolute configuration of compound (*S*)-**2c** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.96 (d, *J* = 8.0 Hz, 1H), 7.41-7.35 (m, 1H), 7.30-7.26 (m, 1H), 7.23-7.17 (m, 1H), 4.04 (s, 3H), 3.67 (s, 3H), 1.73 (s, 3H).

(*S*)-Bis(1,1,1-trichloro-2-methylpropan-2-yl)-3-methyl-2-oxoindoline-1,3-dicarboxylate (2d)



2d

A colorless solid; 24.3 mg, 88% yield, 91% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 5.543 min (major), 6.099 min (minor).

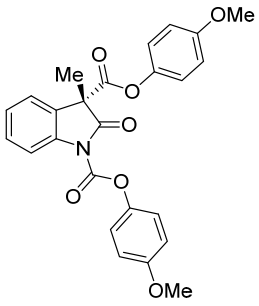
$[\alpha]_D^{27}$ = +85.6 (c = 0.75, $CHCl_3$). The absolute configuration of the product (*S*)-**2d** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.01 (d, *J* = 8.0 Hz, 1H), 7.39-7.32 (m, 1H), 7.28-7.24 (m, 1H), 7.22-7.16 (m, 1H), 2.10 (s, 3H), 2.09 (s, 3H), 1.85 (s, 3H), 1.72 (s, 3H), 1.64 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 172.4, 166.4, 148.0, 139.5, 129.6, 128.5, 125.3, 122.5, 116.1, 105.4, 105.3, 92.1, 90.2, 56.7, 21.79, 21.78, 21.3, 20.7, 18.8.

HRMS: exact mass calcd for $C_{19}H_{19}Cl_6NO_5Na^+$ $(M+Na)^+$ requires m/z 573.9287, found m/z 573.9287.

(*S*)-Bis(4-methoxyphenyl)-3-methyl-2-oxoindoline-1,3-dicarboxylate (2e)



2e

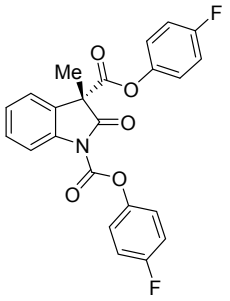
A colorless solid; 19.0 mg, 86% yield, 96% ee.

HPLC CHIRALCEL ADH, *n*-hexane/2-propanol = 90/10, flow rate = 1.0 mL/min, λ = 256 nm, retention time: 34.812 min (minor), 52.155 min (major).

$[\alpha]_D^{27}$ = +85.7 (c = 0.62, $CHCl_3$). The absolute configuration of compound (*S*)-**2e** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.04 (d, *J* = 8.0 Hz, 1H), 7.47-7.38 (m, 2H), 7.32-7.27 (m, 1H), 7.25-7.20 (m, 2H), 6.98-6.91 (m, 2H), 6.90-6.80 (m, 4H), 3.83 (s, 3H), 3.77 (s, 3H), 1.88 (s, 3H).

(*S*)-Bis(4-fluorophenyl)-3-methyl-2-oxoindoline-1,3-dicarboxylate (2f)



2f

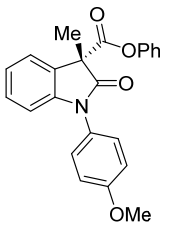
A colorless oil; 19.8 mg, 94% yield, 93% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 9.338min (minor), 10.020 min (major).

$[\alpha]_D^{27}$ = 95.4 (c = 0.23, $CHCl_3$). The absolute configuration of compound (*S*)-**2f** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.04 (d, *J* = 8.4 Hz, 1H), 7.50-7.39 (m, 2H), 7.34-7.27 (m, 3H), 7.18-7.09 (m, 2H), 7.06-6.98 (m, 2H), 6.97-6.90 (m, 2H), 1.89 (s, 3H).

***(S)*-Phenyl -1-(4-methoxyphenyl)-3-methyl-2-oxoindoline-3-carboxylate (2g)**



2g

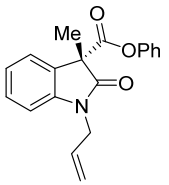
A colorless oil; 18.3 mg, 98% yield, 88% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 41.653 min (major), 50.765 min (minor).

$[\alpha]_D^{27}$ = -175 (c = 0.504, $CHCl_3$). The absolute configuration of compound (*S*)-**2g** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.43-7.27 (m, 6H), 7.20 (t, *J* = 7.6 Hz, 1H), 7.15 (t, *J* = 7.6 Hz, 1H), 7.08-7.02 (m, 2H), 7.02-6.96 (m, 2H), 6.82 (d, *J* = 8.0 Hz, 1H), 3.87 (s, 3H), 1.88 (s, 3H).

(*S*)-Phenyl -1-allyl-3-methyl-2-oxoindoline-3-carboxylate (2h)



2h

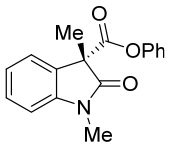
A colorless oil; 14.5 mg, 95% yield, 81% ee.

HPLC CHIRALCEL ADH, *n*-hexane/2-propanol = 90/10, flow rate = 1.0 mL/min, λ = 256 nm, retention time: 9.665 min (minor), 12.630 min (major).

$[\alpha]_D^{27}$ = 66.48 (c = 0.307, $CHCl_3$). The absolute configuration of compound (*S*)-**2h** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.37-7.29 (m, 4H), 7.19 (t, *J* = 7.6 Hz, 1H), 7.12 (t, *J* = 7.6 Hz, 1H), 6.95 (d, *J* = 8.4 Hz, 2H), 6.89 (d, *J* = 8.0 Hz, 1H), 5.91-5.82 (m, 1H), 5.28-5.19 (m, 2H), 4.54-4.45 (m, 1H), 4.40-4.28 (m, 1H),1.79 (s, 3H).

(*S*)-Phenyl-1,3-dimethyl-2-oxoindoline-3-carboxylate (2i)



2i

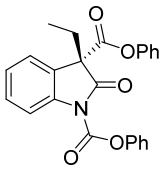
A colorless oil; 12.8 mg, 91% yield, 50% ee.

HPLC CHIRALCEL OD(H), *n*-hexane/2-propanol = 90/10, flow rate = 0.6 mL/min, λ = 256 nm, retention time: 13.400 min (minor), 15.830 min (major).

$[\alpha]_D^{27}$ = 30.9 (c = 0.204, $CHCl_3$). The absolute configuration of compound (*S*)-**2i** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.39-7.35 (m, 2H), 7.33-7.27 (m, 2H), 7.20-7.17 (m, 1H), 7.13 (t, *J* = 7.6 Hz, 1H), 6.96-6.90 (m, 3H), 3.30 (s, 3H), 1.78 (s, 3H).

(*S*)-Diphenyl-3-ethyl-2-oxoindoline-1,3-dicarboxylate (2j)



2j

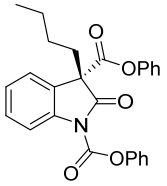
A colorless solid; 18.4 mg, 92% yield, 96% ee.

HPLC CHIRALCEL ADH, *n*-hexane/2-propanol = 90/10, flow rate = 1.0 mL/min, λ = 256 nm, retention time: 12.400 min (minor), 14.880 min (major).

$[\alpha]_D^{27}$ = +90.0 (c = 0.32, $CHCl_3$). The absolute configuration of compound (*S*)-**2j** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.05 (d, *J* = 8.0 Hz, 1H), 7.49-7.39 (m, 4H), 7.38-7.28 (m, 6H), 7.25-7.18 (m, 1H), 7.02-6.95 (m, 2H), 2.56 (dq, *J* = 14.0, 7.2 Hz, 1H), 2.42 (dq, *J* = 14.0, 7.2 Hz, 1H), 0.86 (t, *J* = 7.2 Hz, 3H).

(*S*)-Diphenyl-3-butyl-2-oxoindoline-1,3-dicarboxylate (2k)



2k

A colorless solid; 19.4 mg, 92% yield, 96% ee.

HPLC CHIRALCEL ADH, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 19.597 min (major), 22.448 min (minor).

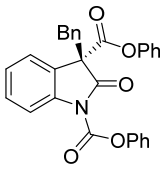
$[\alpha]_D^{27}$ = +31.4 (c = 0.78, $CHCl_3$). The absolute configuration of the product (*S*)-**2h** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.05 (d, *J* = 8.0 Hz, 1H), 7.48-7.40 (m, 4H), 7.36-7.28 (m, 6H), 7.25-7.19 (m, 1H), 7.01-6.95 (m, 2H), 2.54-2.44 (m, 1H), 2.42-2.32 (m, 1H), 1.39-1.29 (m, 2H), 1.27-1.20 (m, 1H), 1.12-1.00 (m 1H), 0.86 (t, *J* = 7.2 Hz, 3H).

^{13}C NMR (150 MHz, $CDCl_3$) δ 171.9, 167.5, 150.4, 150.2, 149.4, 139.9, 129.9, 129.8, 129.6, 127.0, 126.7, 126.5, 125.8, 123.3, 121.7, 121.3, 115.9, 60.4, 34.8, 25.9, 22.8, 13.9.

HRMS: exact mass calcd for $C_{26}H_{23}NO_5Na^+$ $(M+Na)^+$ requires m/z 452.1468, found m/z 452.1472.

(*S*)-Diphenyl-3-benzyl-2-oxoindoline-1,3-dicarboxylate (2l)



2l

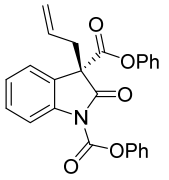
A colorless solid; 22.6 mg, 98% yield, 92% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 8.145 min (major), 9.283 min (minor).

$[\alpha]_D^{27}$= +33.1 (c = 0.24, $CHCl_3$). The absolute configuration of compound (*S*)-**2i** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.78 (d, *J* = 7.6 Hz, 1H), 7.52 (dd, *J* = 7.6, 1.6 Hz, 1H), 7.45-7.08 (m, 13H), 7.06-7.00 (m, 2H), 6.96-6.90 (m, 2H), 3.78 (d, *J* = 13.2 Hz, 1H), 3.68 (d, *J* = 13.2 Hz, 1H).

(*S*)-Diphenyl-3-allyl-2-oxoindoline-1,3-dicarboxylate (2m)



2m

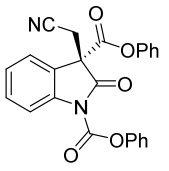
A colorless solid; 18.3 mg, 89% yield, 84% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 50/50, flow rate = 1.0 mL/min, λ = 256 nm, retention time: 6.277min (minor), 6.767 min (major).

$[\alpha]_D^{27}$= +77.5 (c = 0.60, $CHCl_3$). The absolute configuration of compound (*S*)-**2j** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (600 MHz, $CDCl_3$) δ 8.03 (d, *J* = 8.4 Hz, 1H), 7.50-7.40 (m, 4H), 7.38-7.27 (m, 6H), 7.23 (t, *J* = 7.2 Hz, 1H), 6.99 (d, *J* = 7.8 Hz, 2H), 5.58-5.47 (m, 1H), 5.18 (d, *J* = 16.8 Hz, 1H), 5.09 (d, *J* = 10.2 Hz, 1H), 3.18 (d, *J* = 7.2 Hz, 2H).

(*S*)-Diphenyl-3-(cyanomethyl)-2-oxoindoline-1,3-dicarboxylate (2n)



2n

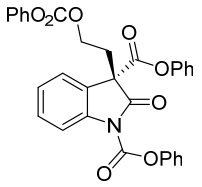
A pale yellow solid; 20.0 mg, 98% yield, 85% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 20.940 min (minor), 28.458 min (major).

$[\alpha]_D^{27}$ = +70.4 (c = 0.12, $CHCl_3$). The absolute configuration of compound (*S*)-**2k** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.17-8.08 (m, 1H), 7.60-7.52 (m, 2H), 7.50-7.43 (m, 2H), 7.42-7.30 (m, 6H), 7.28-7.23 (m, 1H), 7.03-6.93 (m, 2H), 3.51 (d, *J* = 16.8 Hz, 1H), 3.31 (d, *J* = 16.8 Hz, 1H).

(*S*)-Diphenyl-2-oxo-3-(2-((phenoxycarbonyl)oxy)ethyl)indoline-1,3-dicarboxylate (2o)



2o

A colorless oil; 25.2 mg, 94 % yield, 95% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 24.280 min (minor), 28.282 min (major).

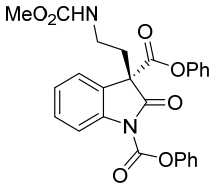
$[\alpha]_D^{27}$ = +46.0 (c = 0.57, $CHCl_3$). The absolute configuration of the product (*S*)-**2l** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.14 (d, *J* = 8.0 Hz, 1H), 7.55-7.47 (m, 1H), 7.46-7.41 (m, 1H), 7.38-7.28 (m, 7H), 7.25-7.17 (m, 5H), 7.15-7.08 (m, 2H), 7.02-6.95 (m, 2H), 4.45 (ddd, *J* = 9.2, 5.6, 3.6 Hz, 1H), 4.01 (td, *J* = 10.8, 4.4 Hz, 1H), 3.15 (ddd, *J* = 15.2, 10.8, 6.0 Hz, 1H), 2.85 (dt, *J* = 14.8, 4.0 Hz, 1H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 171.7, 167.1, 153.2, 151.0, 150.3, 150.2, 149.6, 140.3, 130.6, 129.64, 129.61, 129.59, 126.68, 126.58, 126.3, 125.9, 125.1, 123.4, 121.6, 121.2, 116.5, 64.1, 58.5, 33.0.

HRMS: exact mass calcd for $C_{31}H_{23}NO_8Na^+$ $(M+Na)^+$ requires m/z 560.1316, found m/z 560.1299.

(*S*)-Diphenyl-3-(2-((methoxycarbonyl)amino)ethyl)-2-oxoindoline-1,3-dicarboxylate (2p)



2p

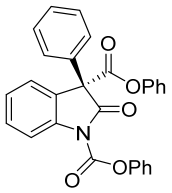
A colorless oil; 22.8 mg, 96% yield, 88% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 42.518 min (major), 49.835 min (minor).

$[\alpha]_D^{27}$ = +73.5 (c = 0.55, $CHCl_3$). The absolute configuration of compound (*S*)-**2m** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[3]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.05 (d, *J* = 8.4 Hz, 1H), 7.50-7.40 (m, 4H), 7.37-7.28 (m, 6H), 7.22 (t, *J* = 7.6 Hz, 1H), 7.01-6.92 (m, 2H), 4.75 (br, 1H), 3.58 (s, 3H), 3.36-3.12 (m, 2H), 2.81 (dt, *J* = 14.4, 7.6 Hz, 1H), 2.68-2.53 (m, 1H).

(*S*)-Diphenyl-2-oxo-3-phenylindoline-1,3-dicarboxylate (2q)



2q

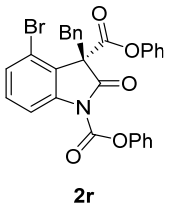
A colorless solid; 22.0 mg, 98% yield, 92% ee.

HPLC CHIRALCEL ADH, *n*-hexane/2-propanol = 90/10, flow rate = 1.0 mL/min, λ = 256 nm, retention time: 15.922 min (minor), 23.277 min (major).

$[\alpha]_D^{27}$ = +70.3 (c = 0.64, $CHCl_3$). The absolute configuration of compound (*S*)-**2n** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[2]

^{1}H NMR (400 MHz, $CDCl_3$) δ 8.16 (d, *J* = 8.0 Hz, 1H), 7.65 (dd, *J* = 7.6, 1.2 Hz, 1H), 7.56 (td, *J* = 7.6, 1.2 Hz, 1H), 7.48-7.20 (m, 14H), 7.11-7.00 (m, 2H).

(*S*)-Diphenyl-3-benzyl-4-bromo-2-oxoindoline-1,3-dicarboxylate (2r)



2r

A colorless oil; 23.5 mg, 87 % yield, 92% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time:12.035 min (minor), 15.068 min (major).

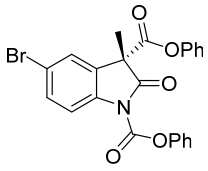
$[\alpha]_D^{27}$ = -765 (c = 0.200, $CHCl_3$). The absolute configuration of the product (*S*)-**2r** was assigned by analogy.

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.69 (d, *J* = 8.4 Hz, 1H), 7.49-7.35 (m, 5H), 7.31 (t, *J* = 7.6 Hz, 1H), 7.28-7.23 (m, 1H), 7.23-7.16 (m, 3H), 7.16-7.06 (m, 5H), 6.95 (d, *J* = 7.2 Hz, 2H), 4.06 (d, *J* = 13.6 Hz, 1H), 3.80 (d, *J* = 13.2 Hz, 1H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 170.5, 165.6, 150.5, 150.0, 148.5, 141.6, 133.5, 131.1, 129.8, 129.74, 129.65, 129.1, 128.2, 127.6, 126.8, 126.6, 126.3, 121.6, 121.5, 118.9, 114.5, 63.6, 38.3.

HRMS: exact mass calcd for $C_{29}H_{20}BrNO_5Na^+$ $(M+Na)^+$ requires m/z 564.0417, found m/z 564.0417

(*S*)-Diphenyl-5-bromo-3-methyl-2-oxoindoline-1,3-dicarboxylate (2s)



2s

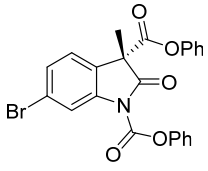
A colorless solid; 22.8 mg, 98% yield, 92% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 9.515 min (minor), 10.178 min (major).

$[\alpha]_D^{27}$ = +6.5 (c = 0.42, $CHCl_3$). The absolute configuration of compound (*S*)-**2o** was assigned by comparison with the (*S*)-enantiomer reported in the literature.[2]

^{1}H NMR (400 MHz, $CDCl_3$) δ 7.96 (d, *J* = 8.8 Hz, 1H), 7.60-7.54 (m, 2H), 7.49-7.41 (m, 2H), 7.39-7.21 (m, 6H), 7.04-6.98 (m, 2H), 1.90 (s, 3H).

(*S*)-Diphenyl -6-bromo-3-methyl-2-oxoindoline-1,3-dicarboxylate (2t)



2t

A colorless oil; 21.6 mg, 93 % yield, 93% ee.

HPLC CHIRALCEL IE, *n*-hexane/2-propanol = 80/20, flow rate = 0.8 mL/min, λ = 256 nm, retention time: 9.253 min (minor), 10.567 min (major).

$[\alpha]_D^{27}$ = -162.62 (c = 0.610, $CHCl_3$). The absolute configuration of the product (*S*)-**2t** was assigned by analogy.

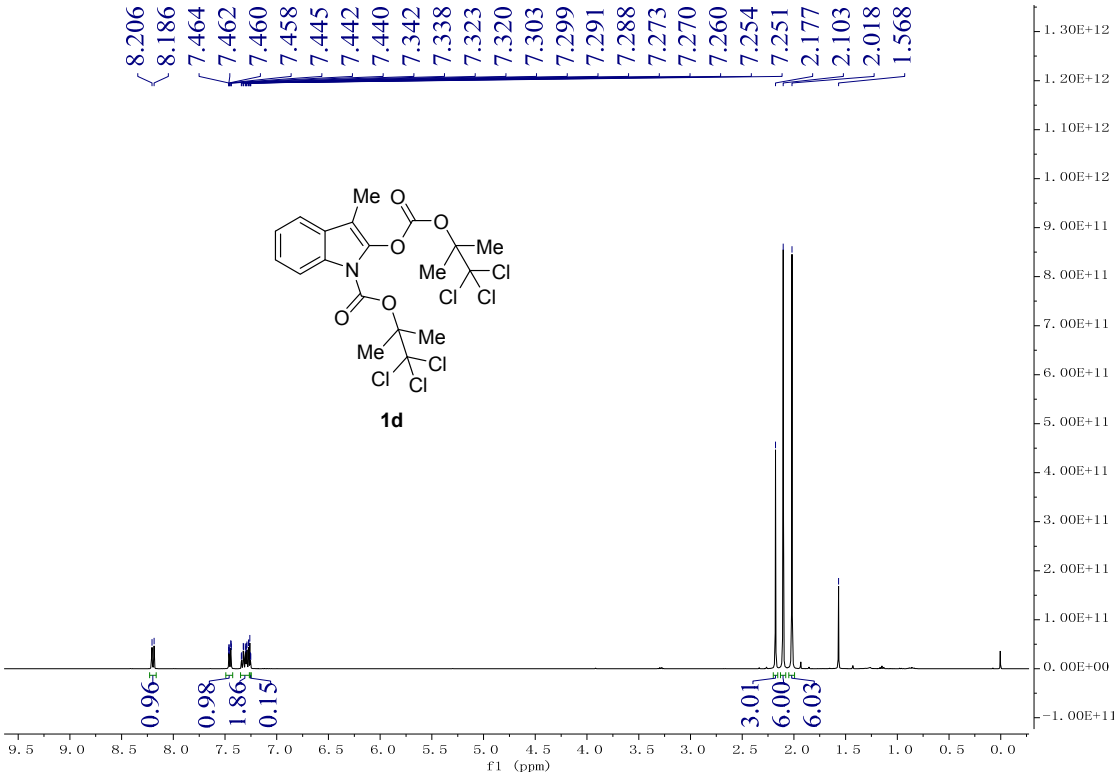
^{1}H NMR (400 MHz, $CDCl_3$) δ 8.28 (s, 1H), 7.50-7.42 (m, 3H), 7.39-7.28 (m, 6H), 7.26-7.21 (m, 1H), 6.98 (d, *J* = 8.4 Hz, 2H), 1.89 (s, 3H).

^{13}C NMR (100 MHz, $CDCl_3$) δ 171.9, 167.2, 150.3, 150.1, 149.3, 140.2, 129.8, 129.7, 128.9, 127.6, 126.9, 126.7, 124.3, 123.7, 121.5, 121.2, 119.6, 55.8, 20.9.

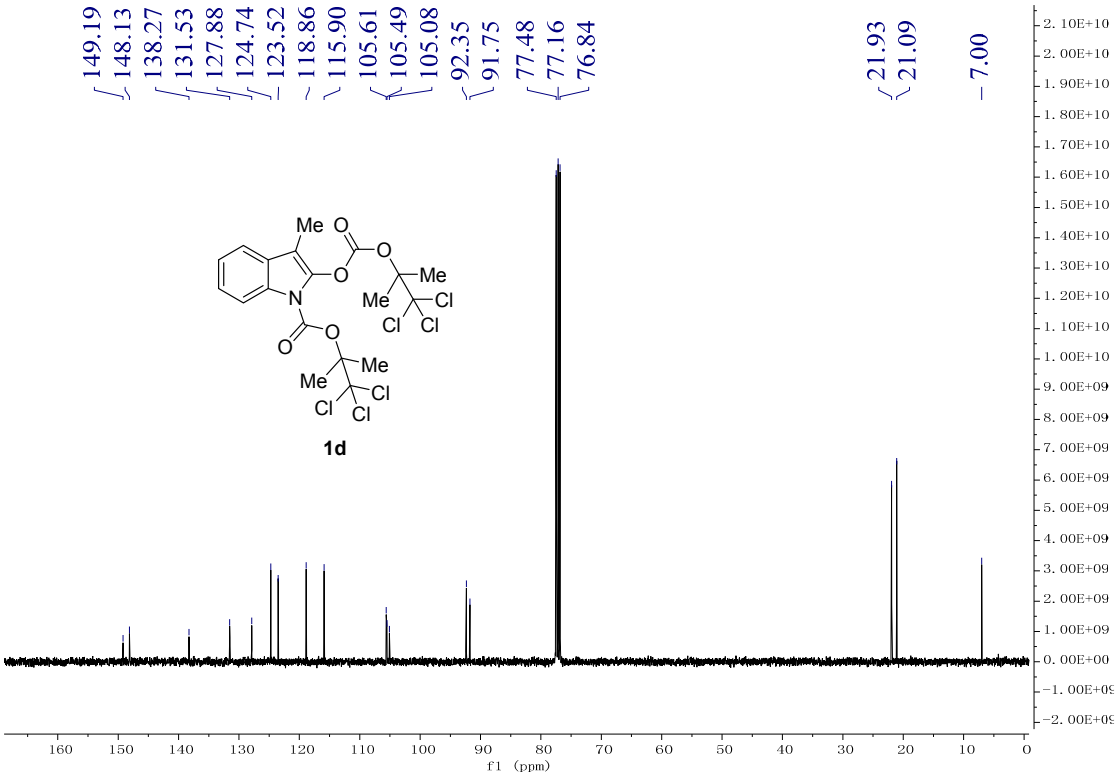
HRMS: exact mass calcd for $C_{23}H_{16}BrNO_5Na^+$ $(M+Na)^+$ requires m/z 488.0104, found m/z 488.0103.

8. Copies of NMR spectra

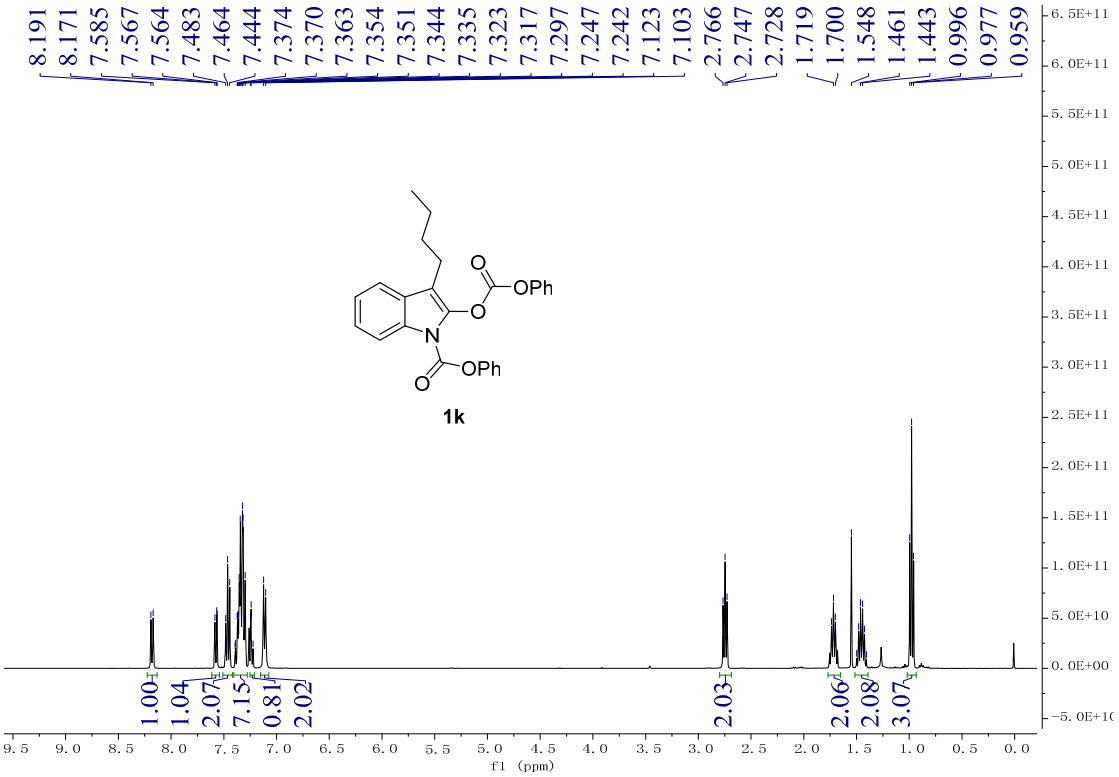
^{1}H NMR of 1d



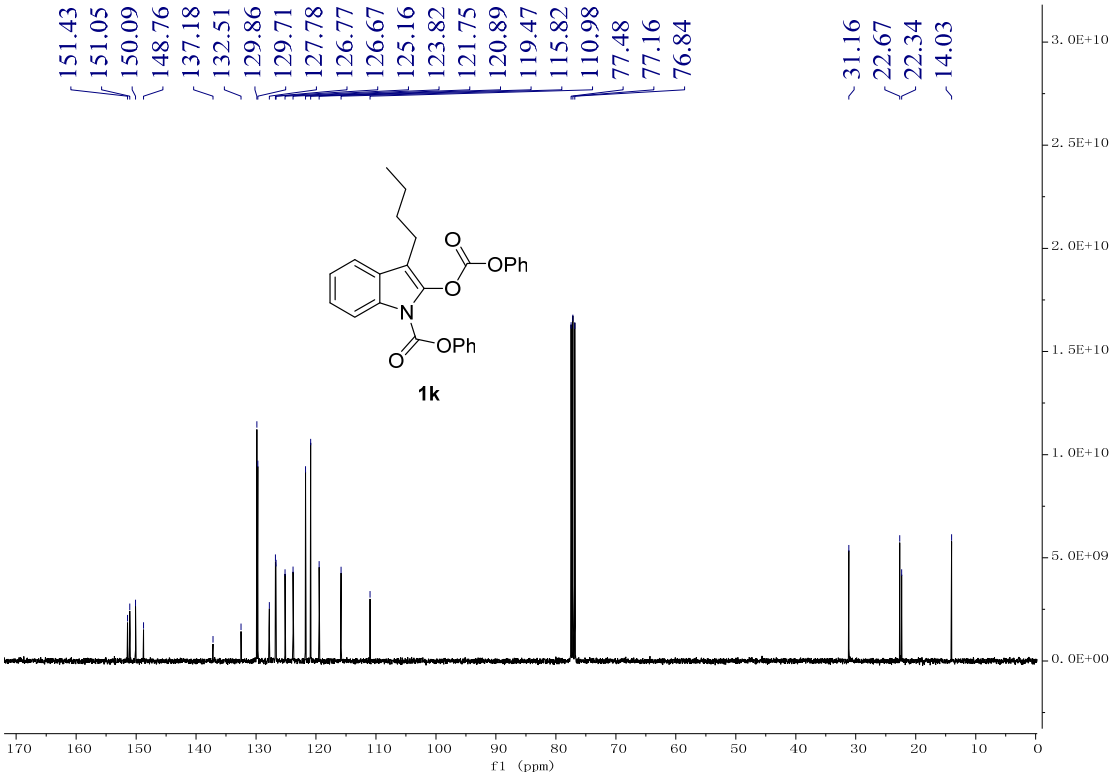
^{13}C NMR of 1d



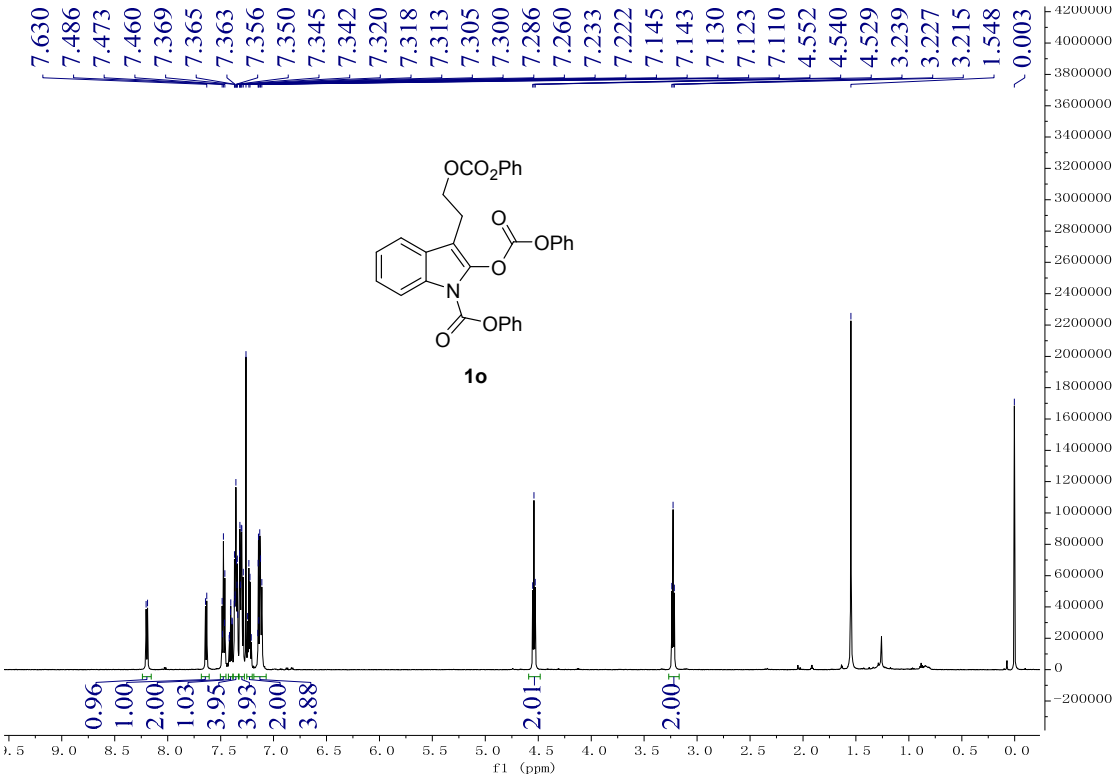
^{1}H NMR of 1h



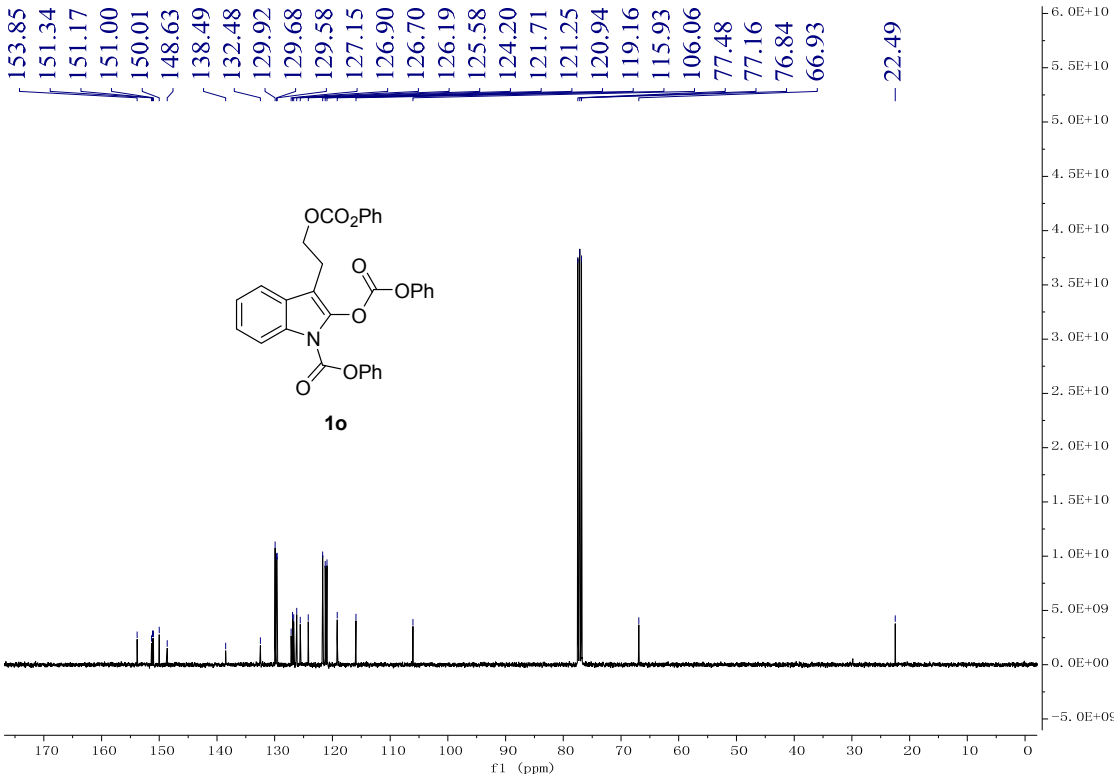
^{13}C NMR of 1h



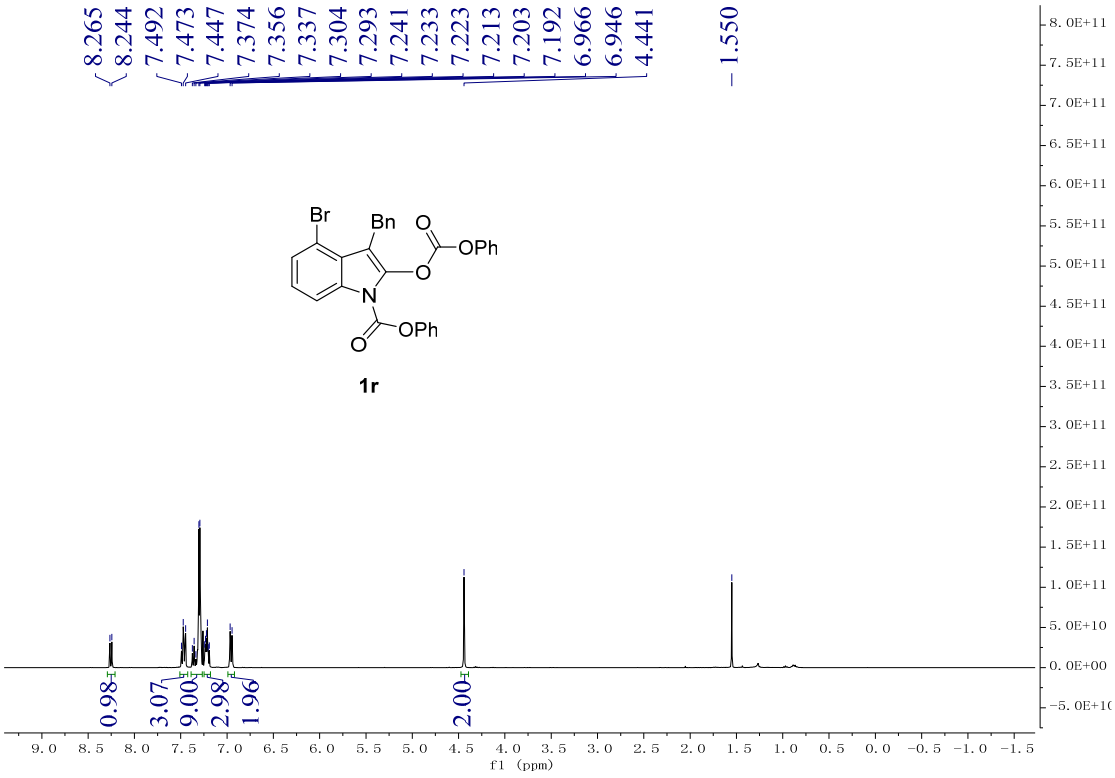
^{1}H NMR of 1l



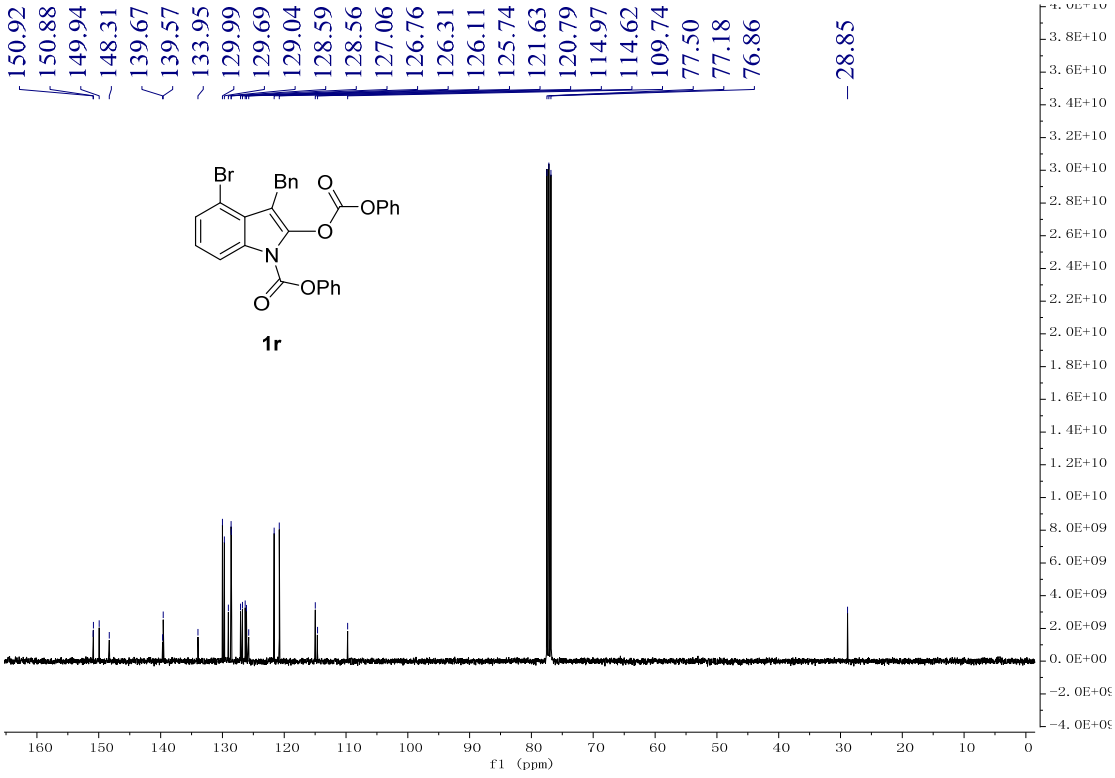
^{13}C NMR of 1l



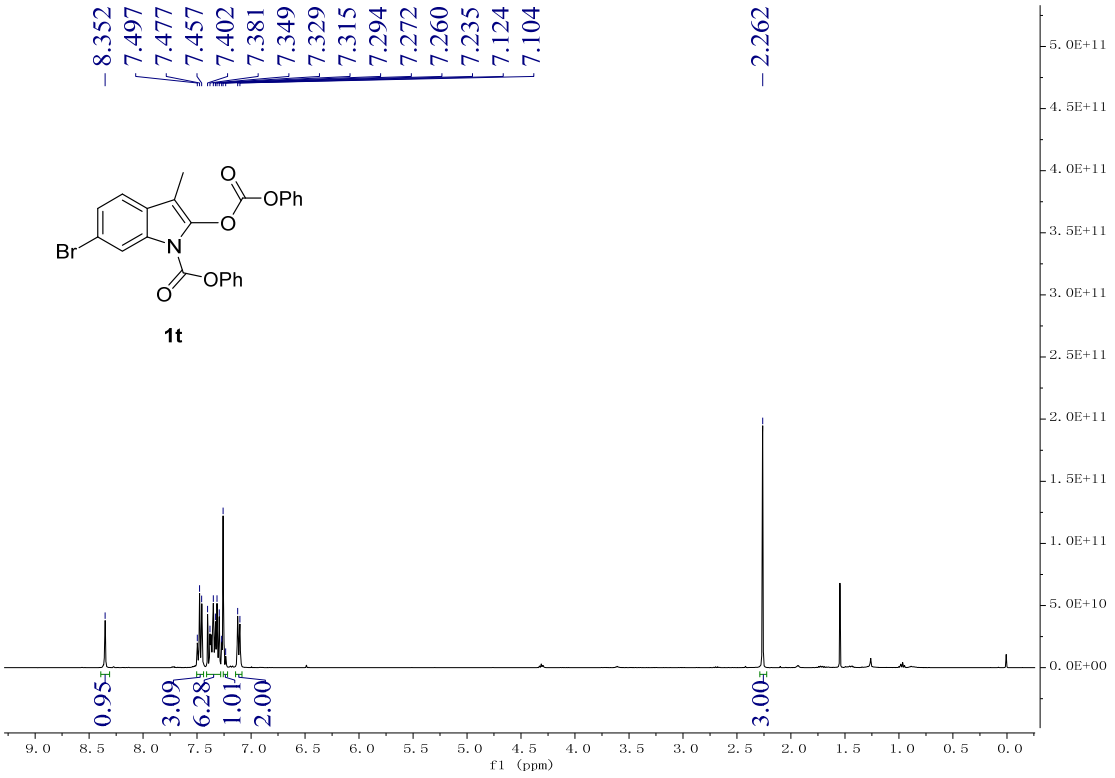
^{1}H NMR of 1r



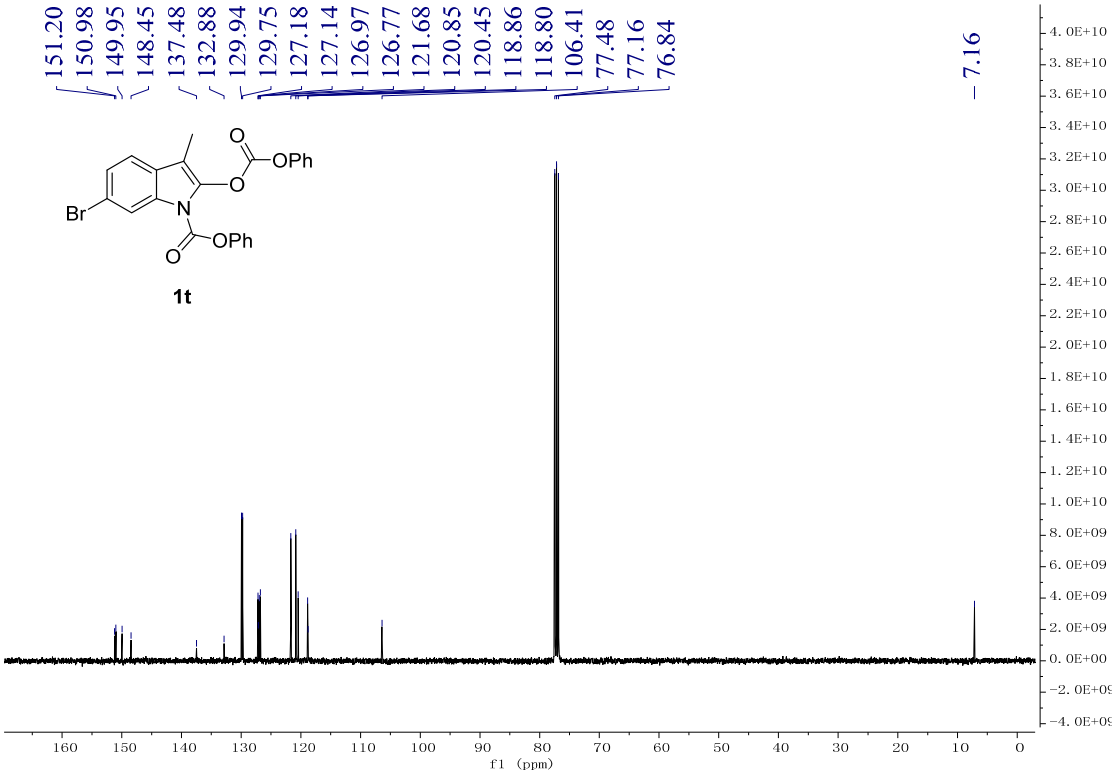
^{13}C NMR of 1r



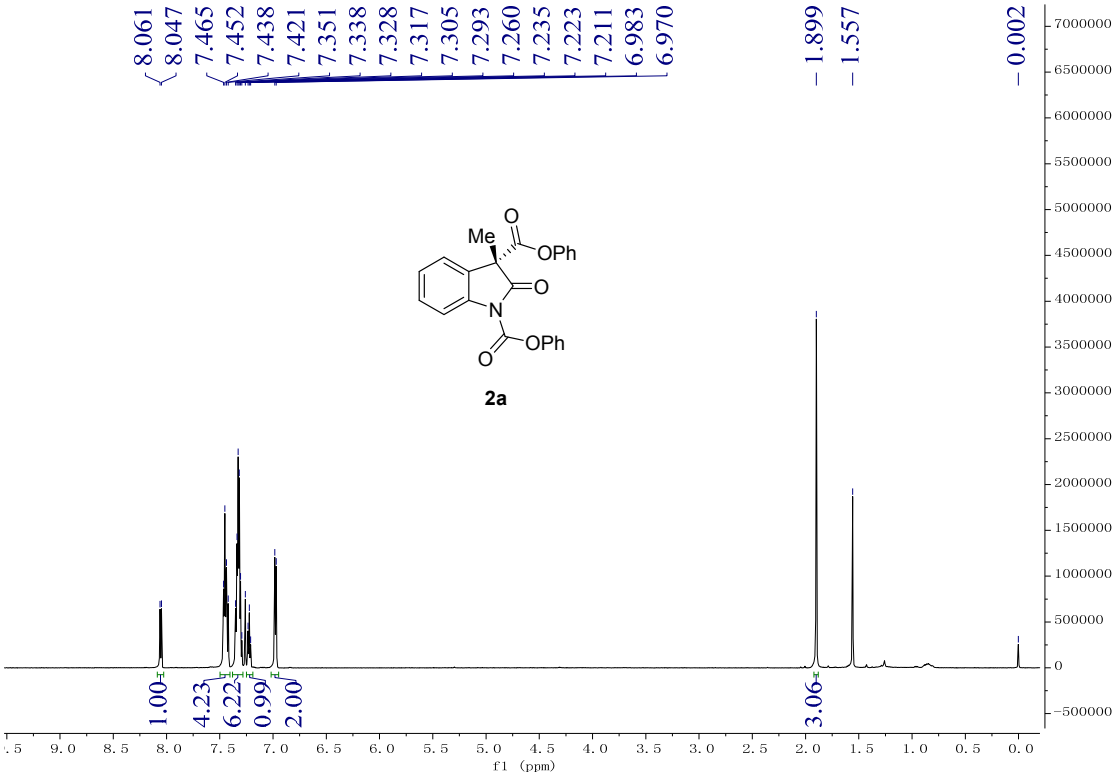
^{1}H NMR of 1t



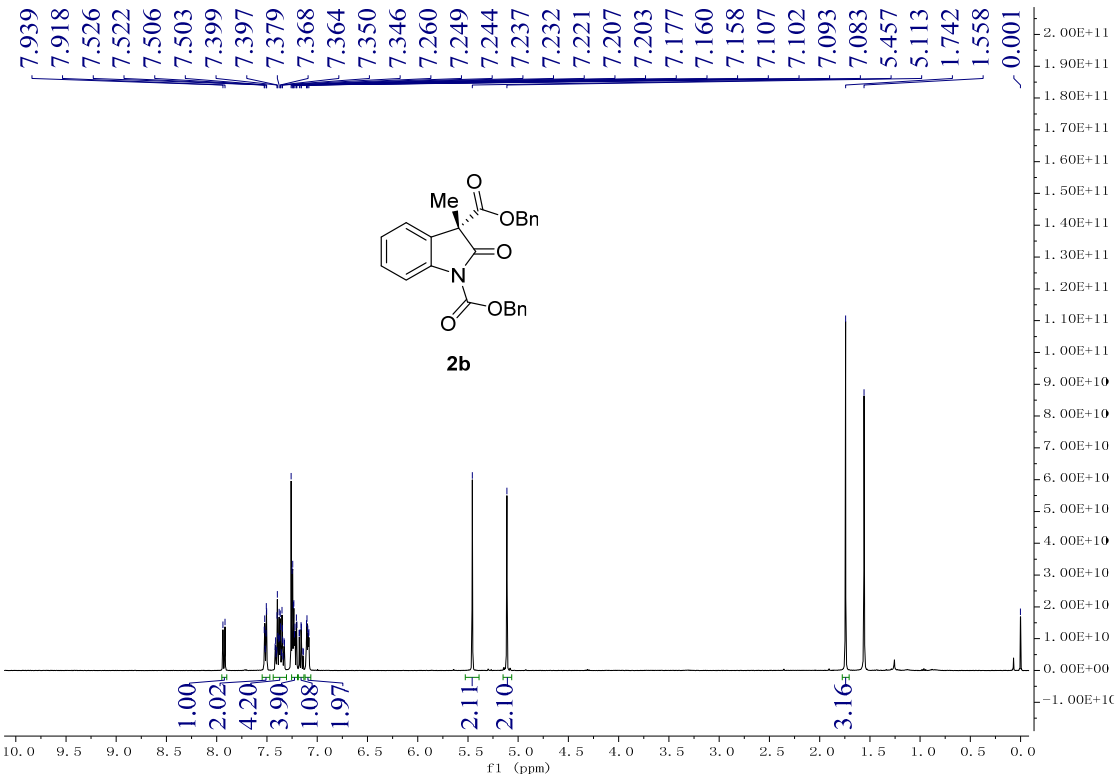
^{13}C NMR of 1t



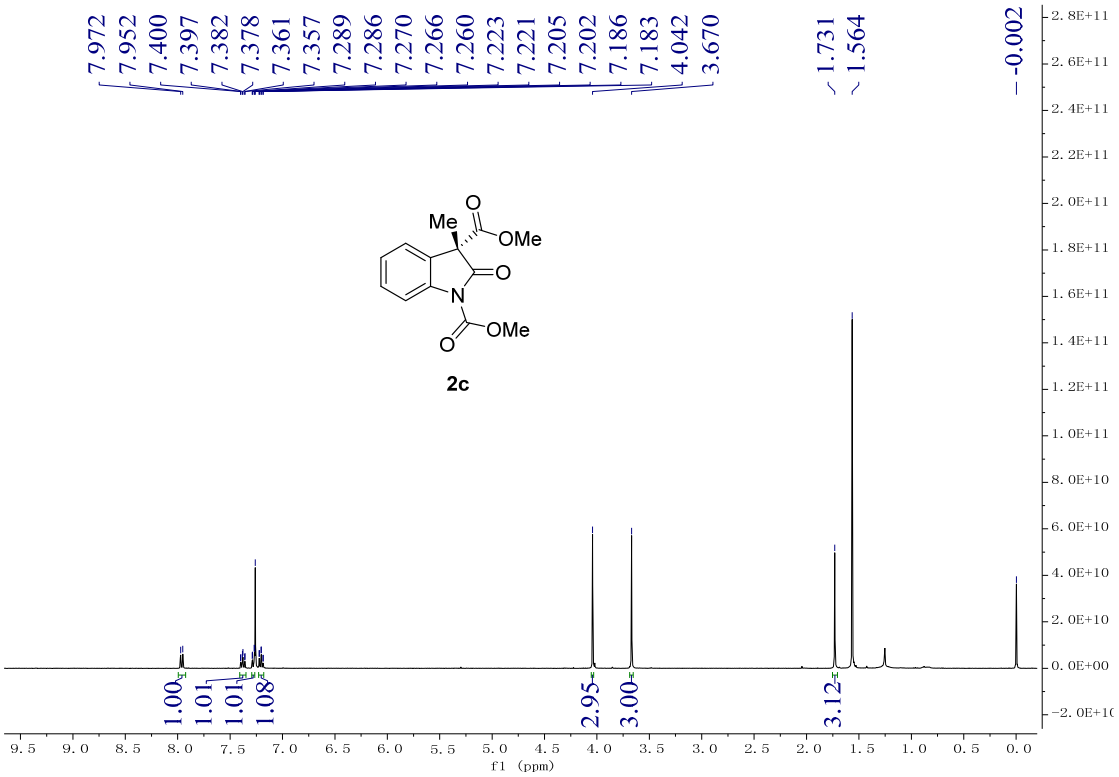
^{1}H NMR of 2a



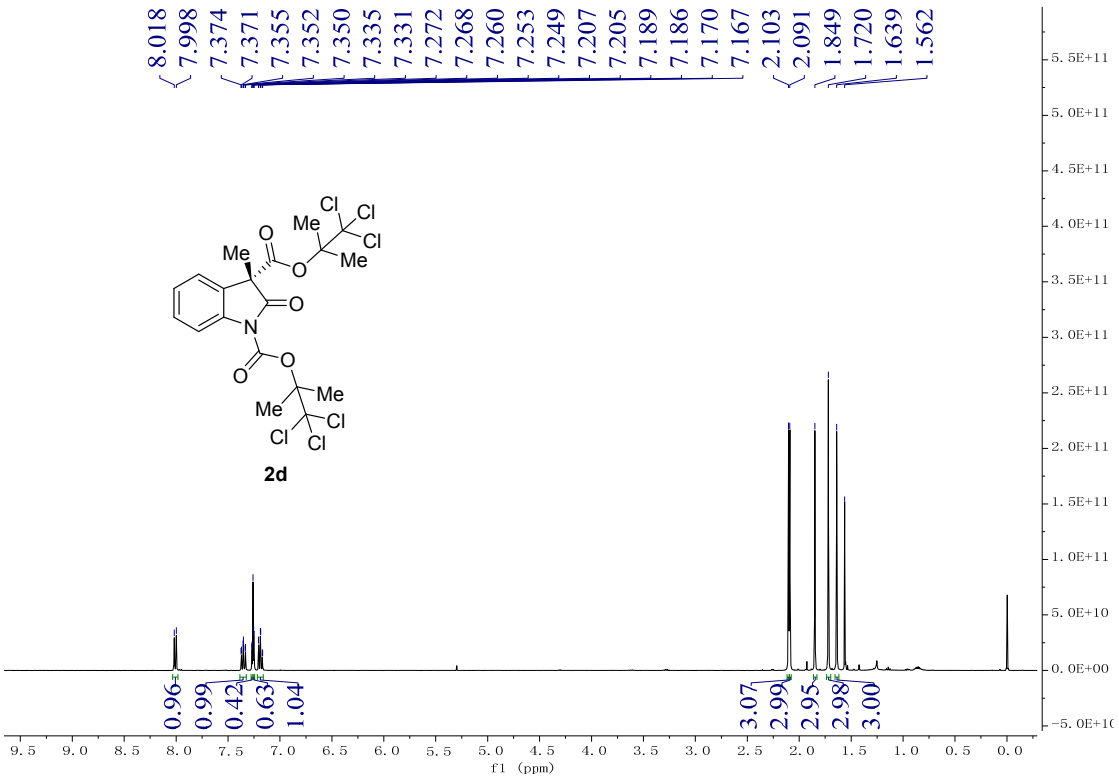
^{1}H NMR of 2b



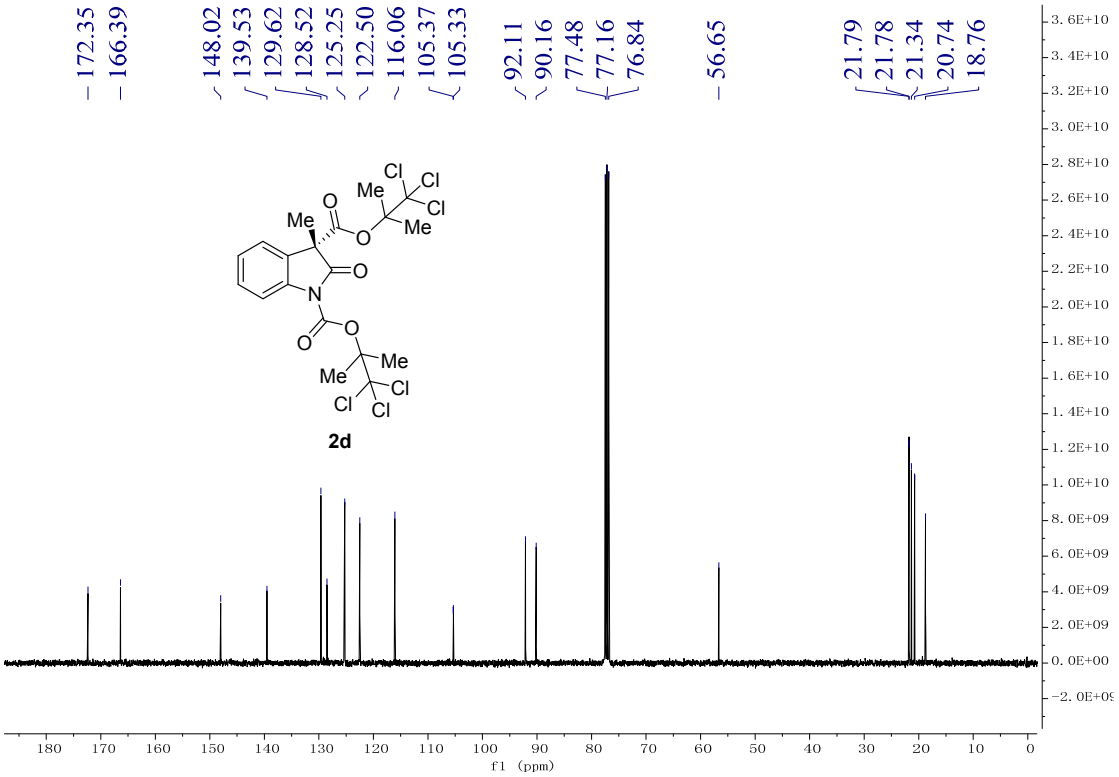
^{1}H NMR of 2c



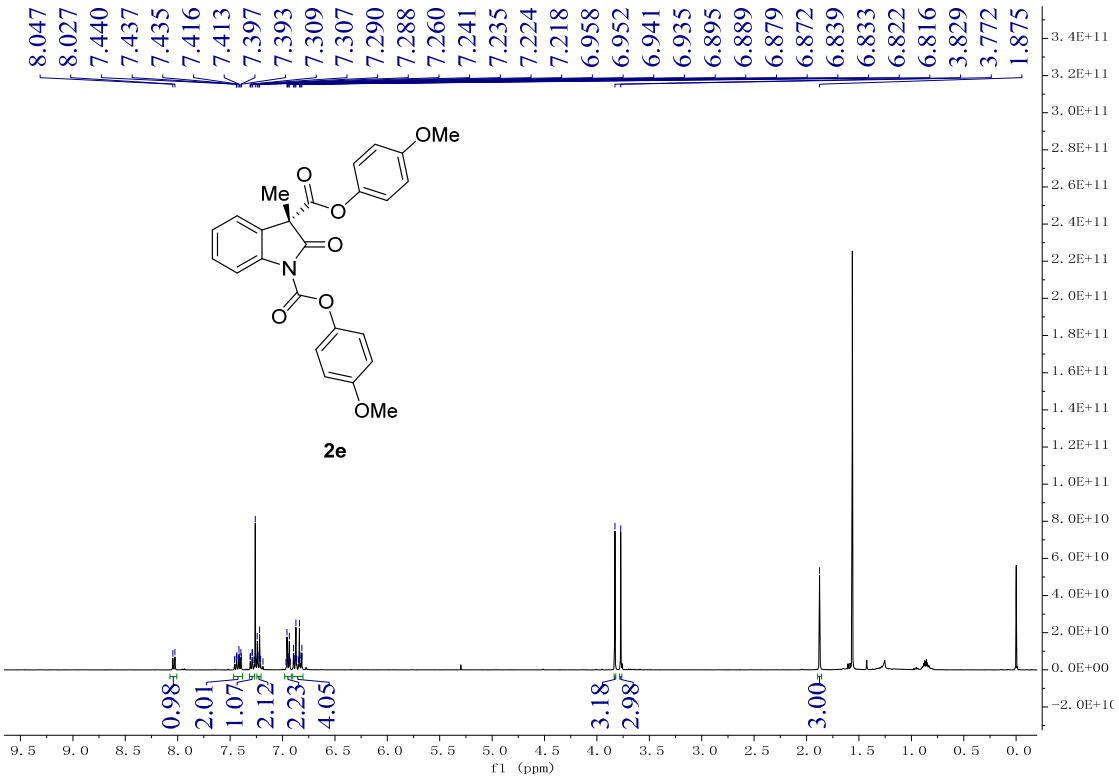
^{1}H NMR of 2d



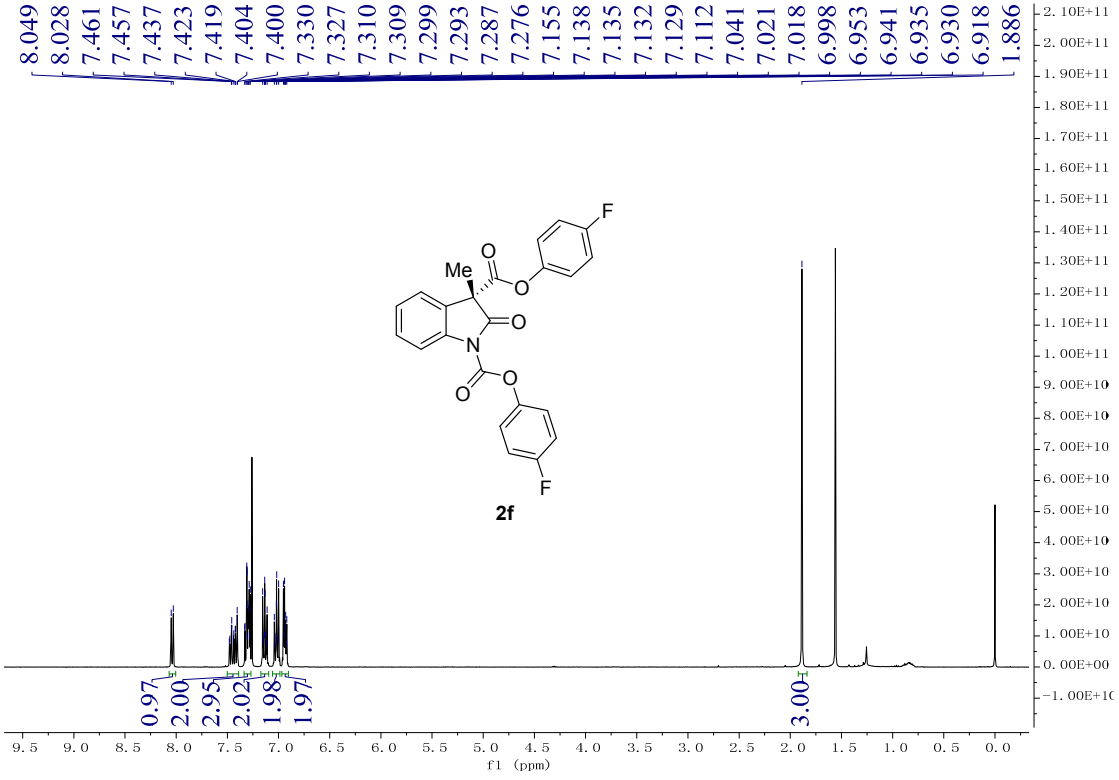
^{13}C NMR of 2d



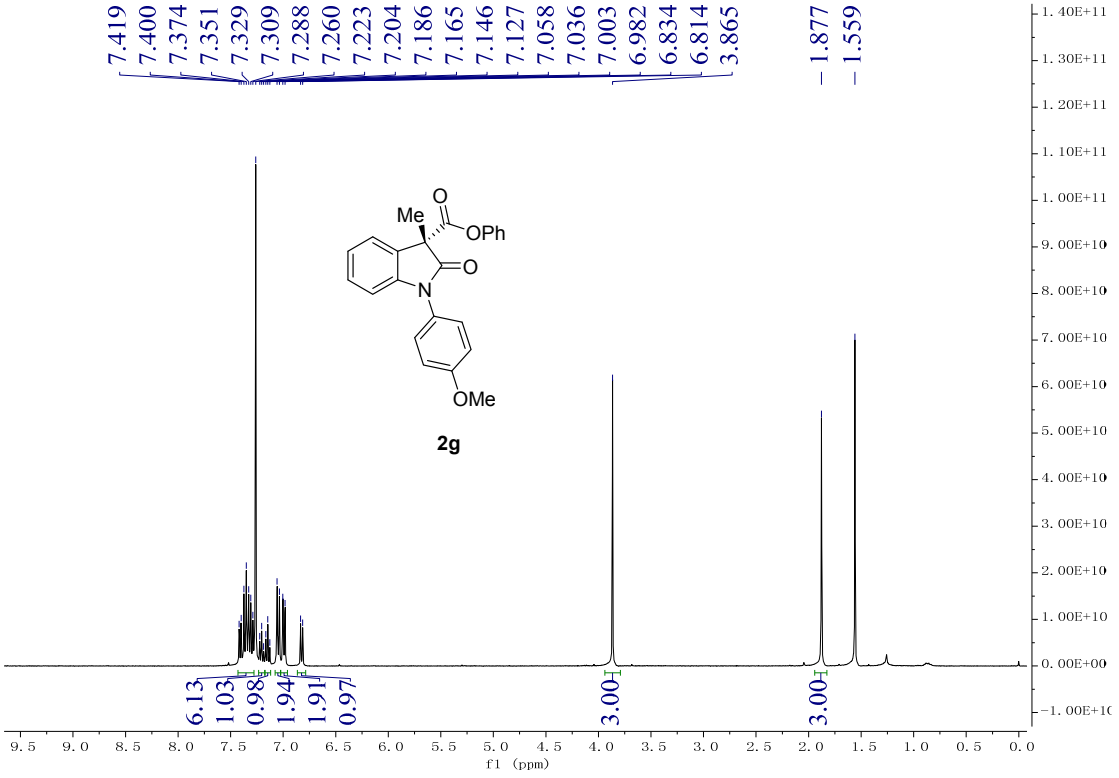
^{1}H NMR of 2e



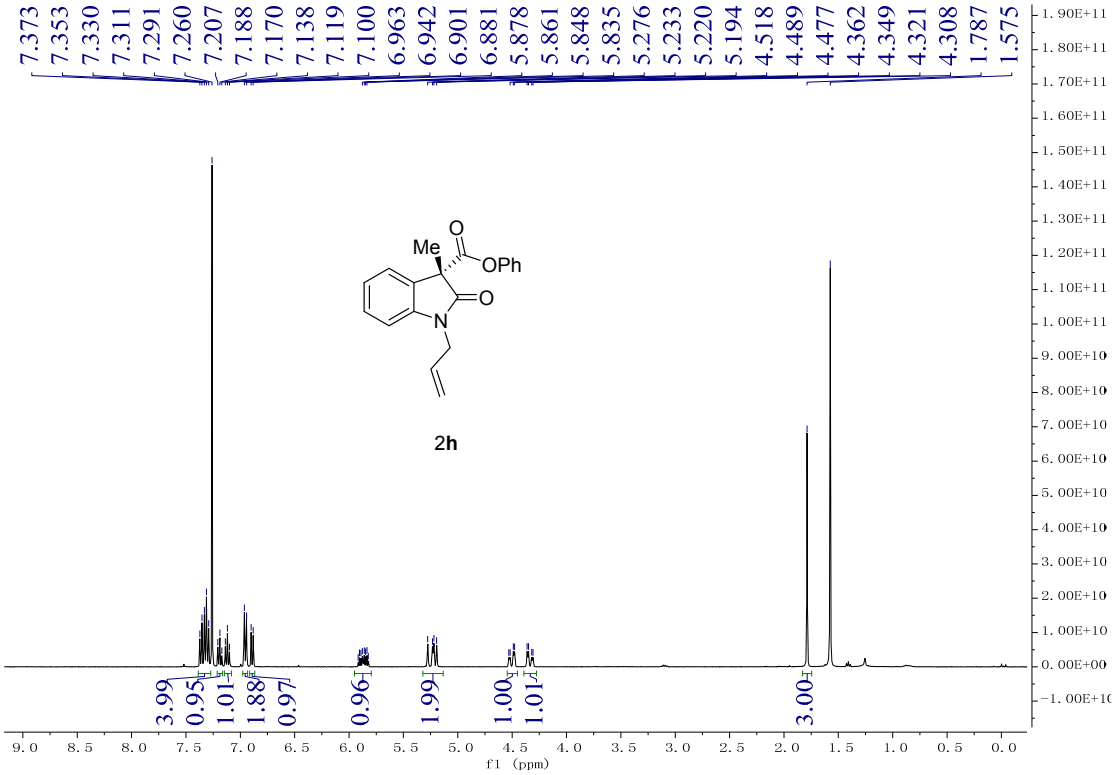
^{1}H NMR of 2f



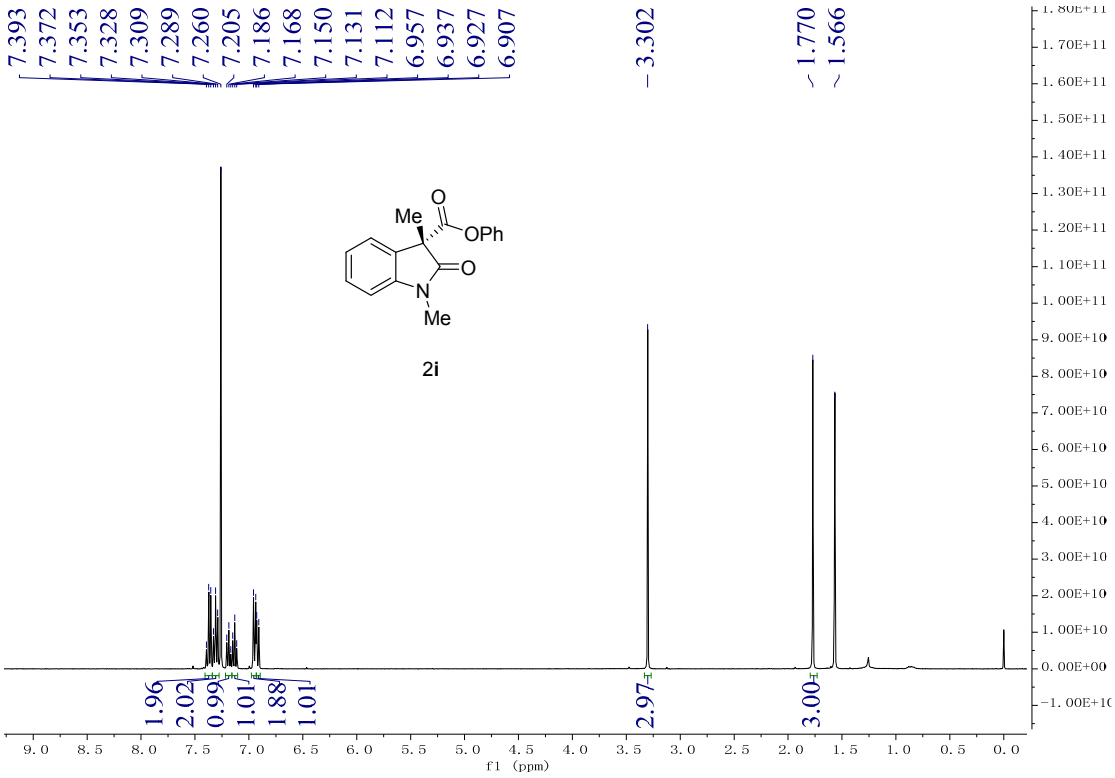
^{1}H NMR of 2g



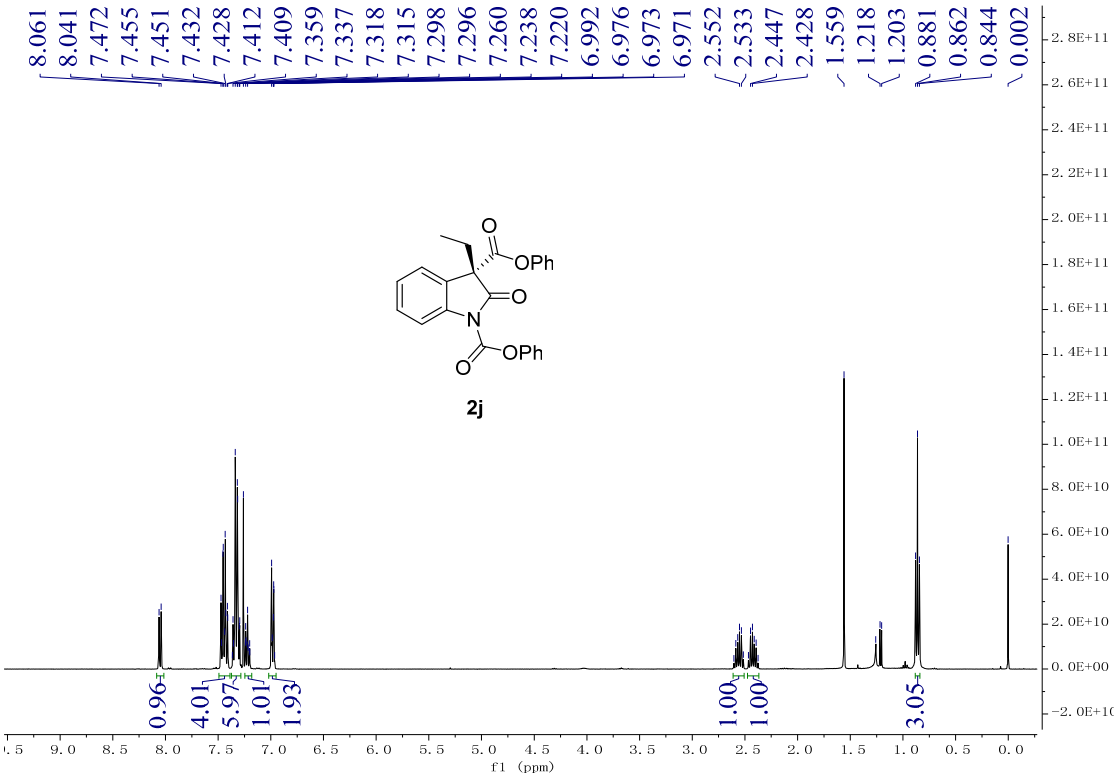
^{1}H NMR of 2h



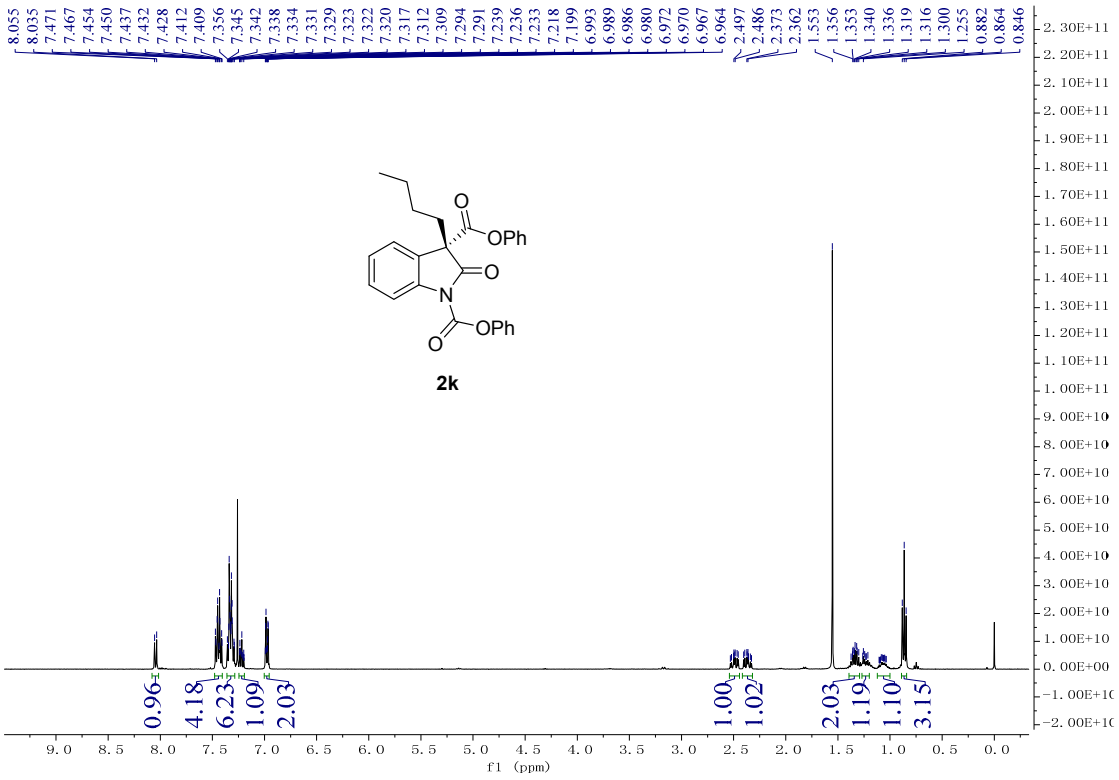
^{1}H NMR of 2i



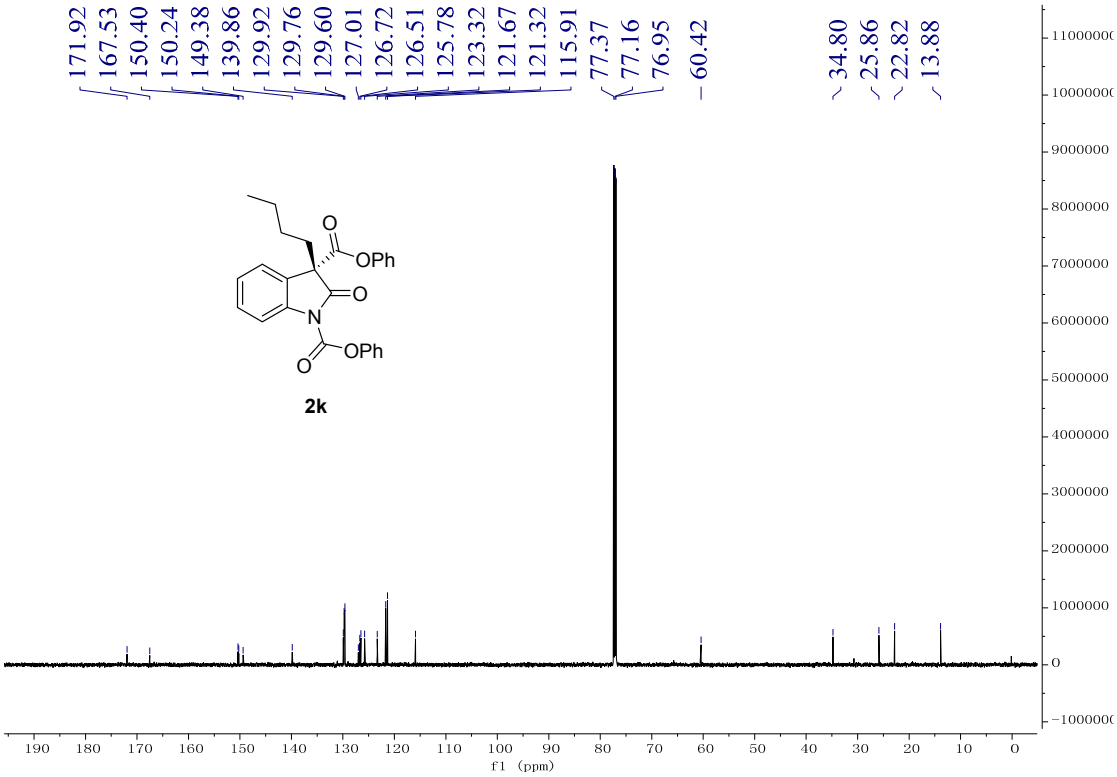
^{1}H NMR of 2j



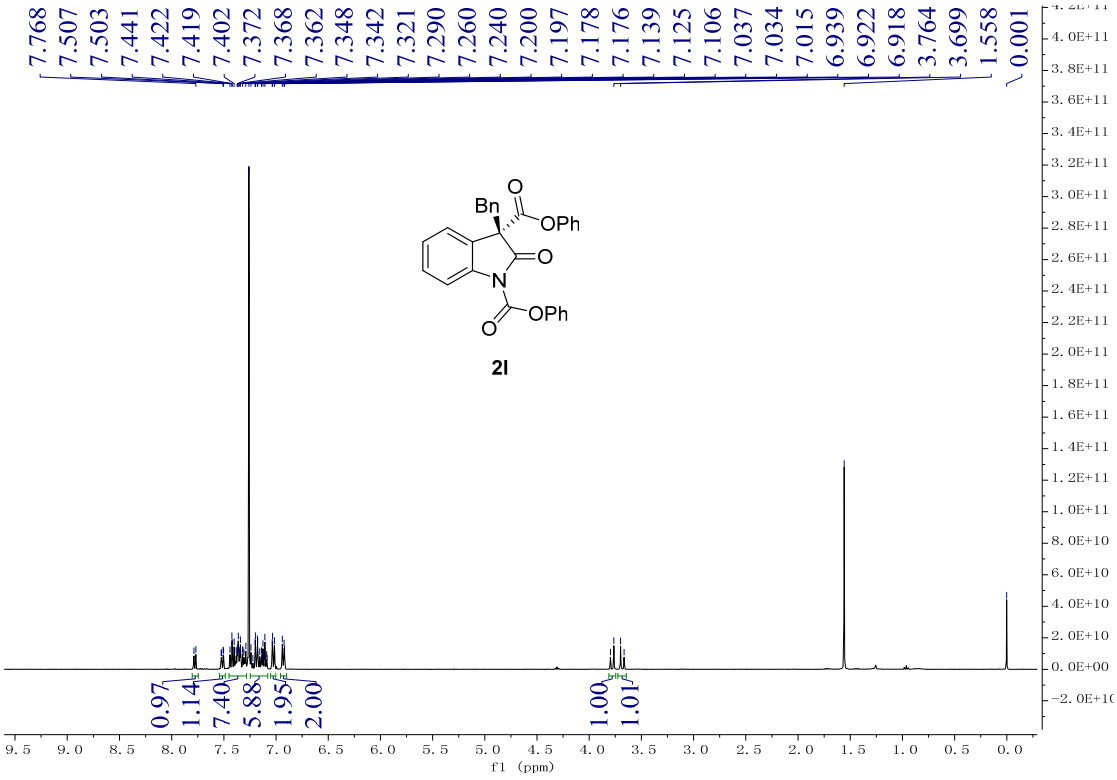
^{1}H NMR of 2k



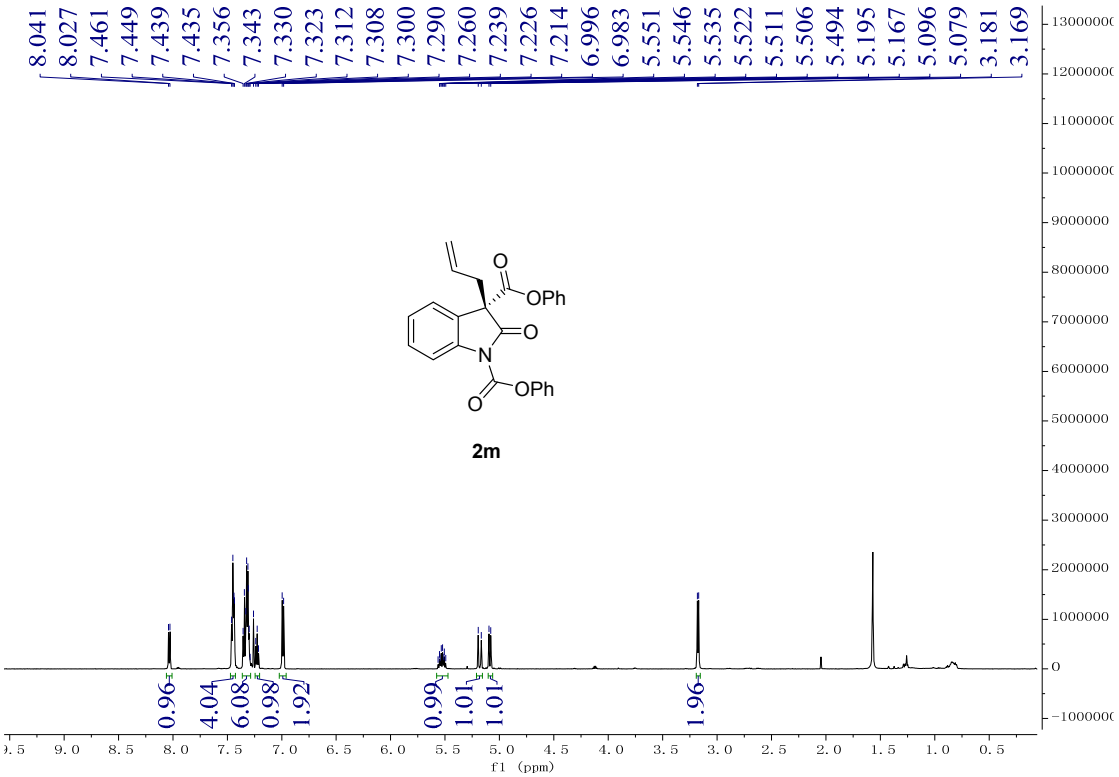
^{13}C NMR of 2k



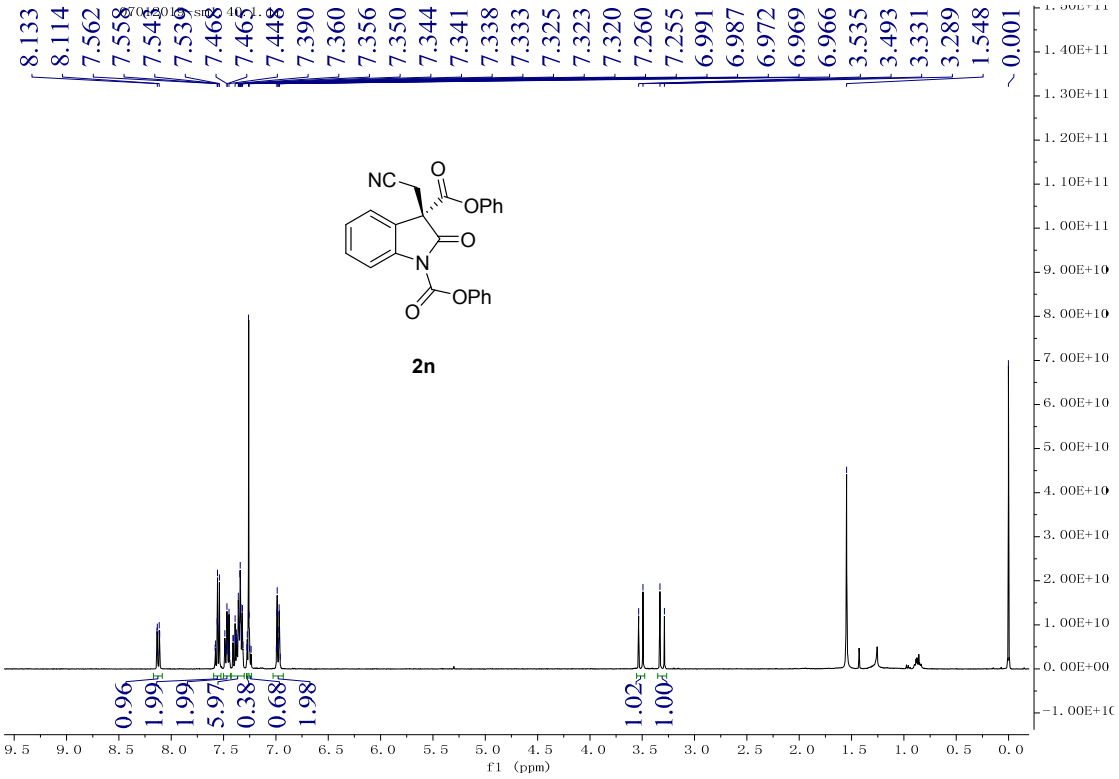
^{1}H NMR of 2l



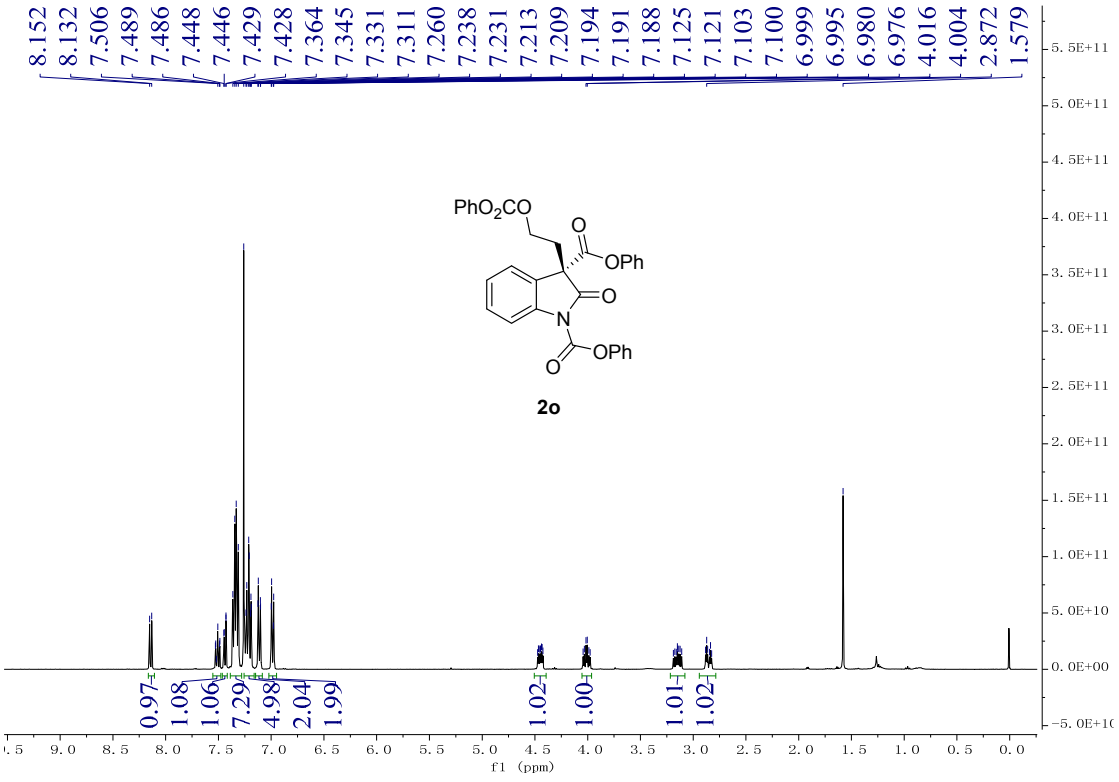
^{1}H NMR of 2m



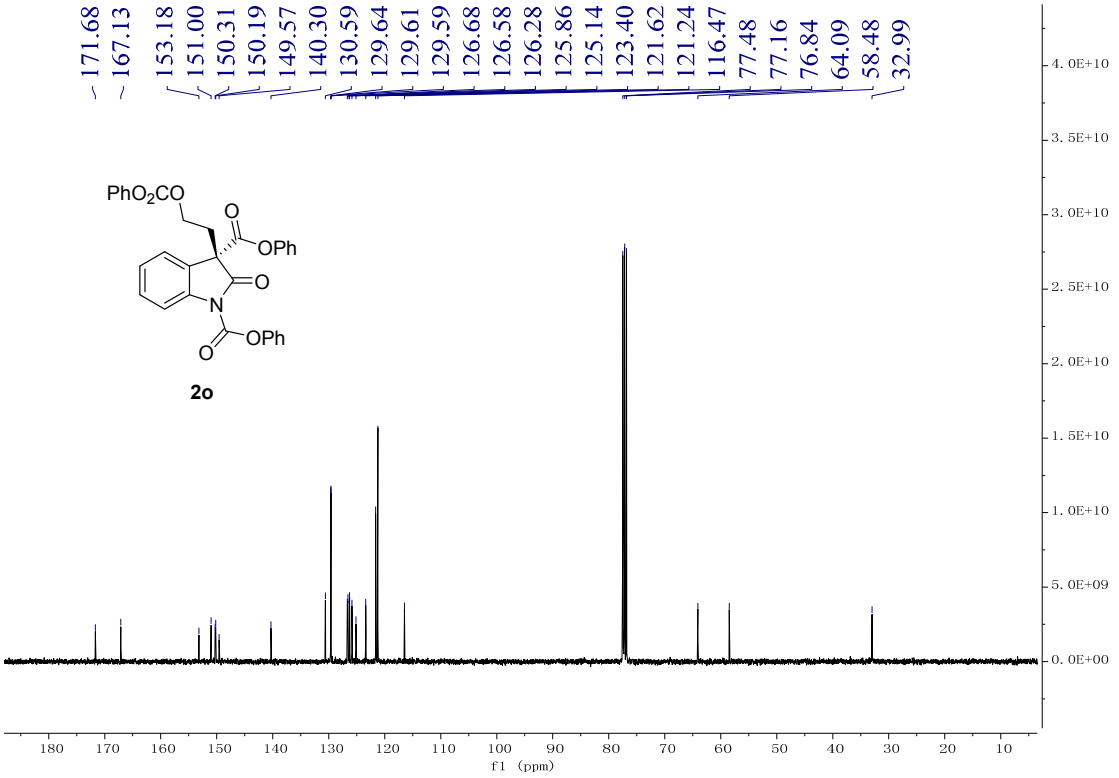
^{1}H NMR of 2n



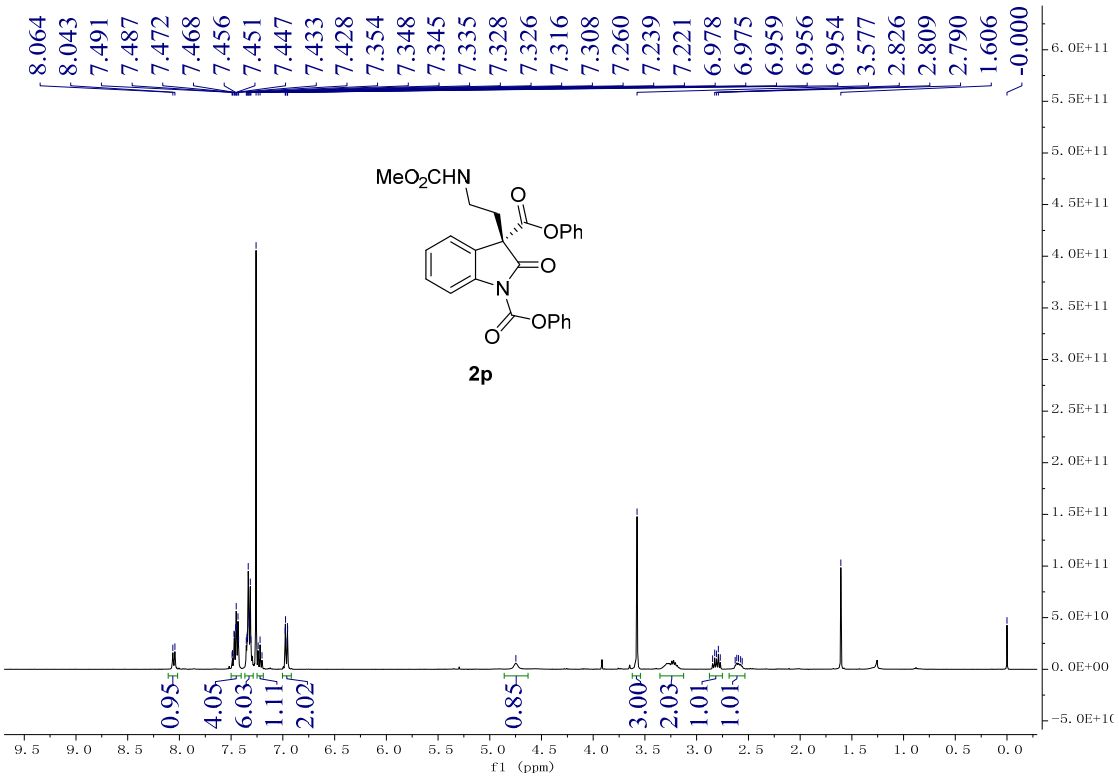
^{1}H NMR of 2o



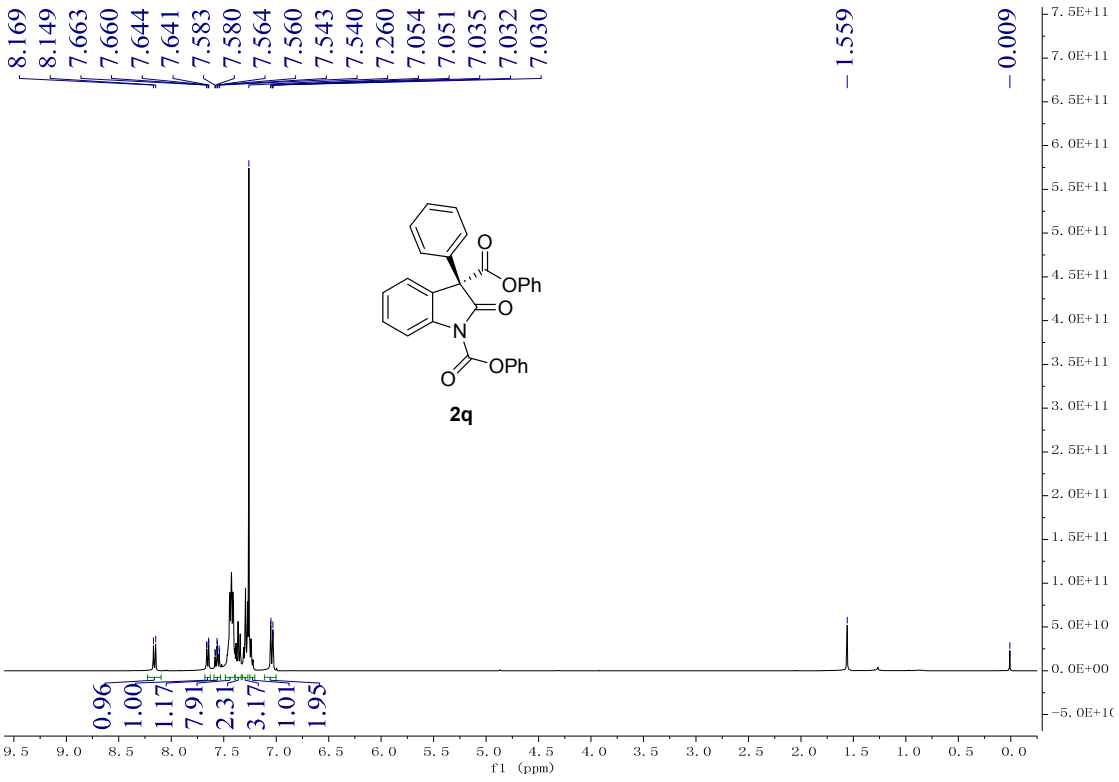
^{13}C NMR of 2o



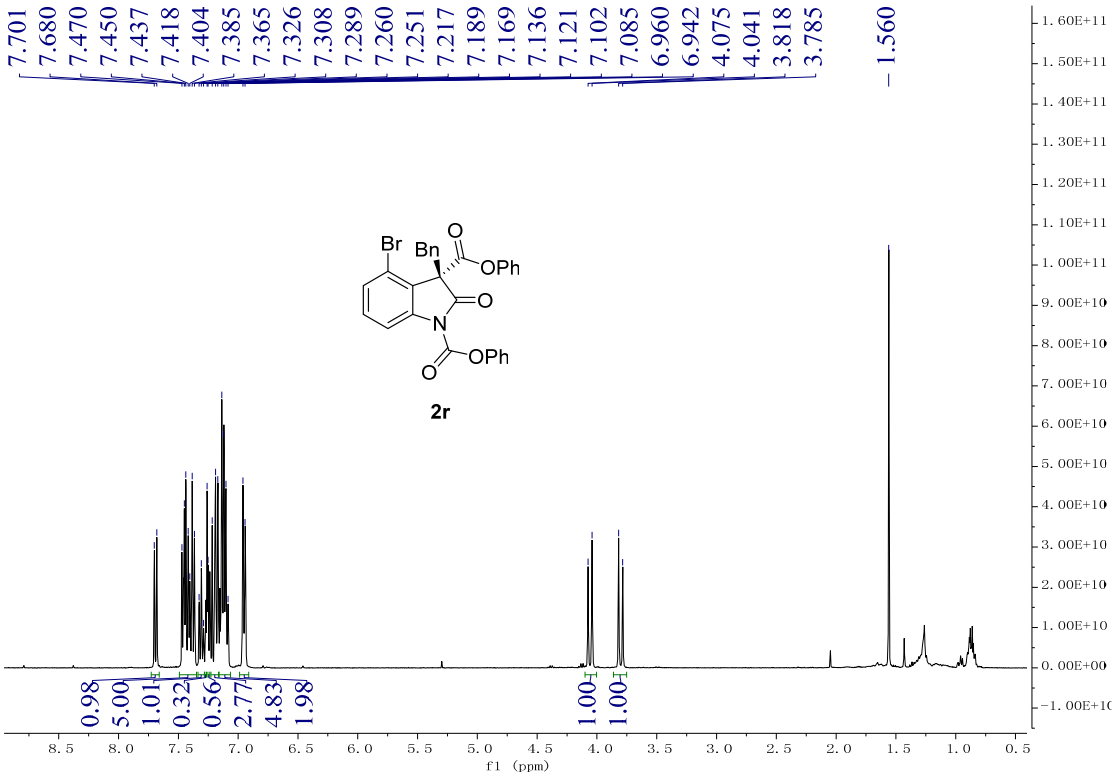
^{1}H NMR of 2p



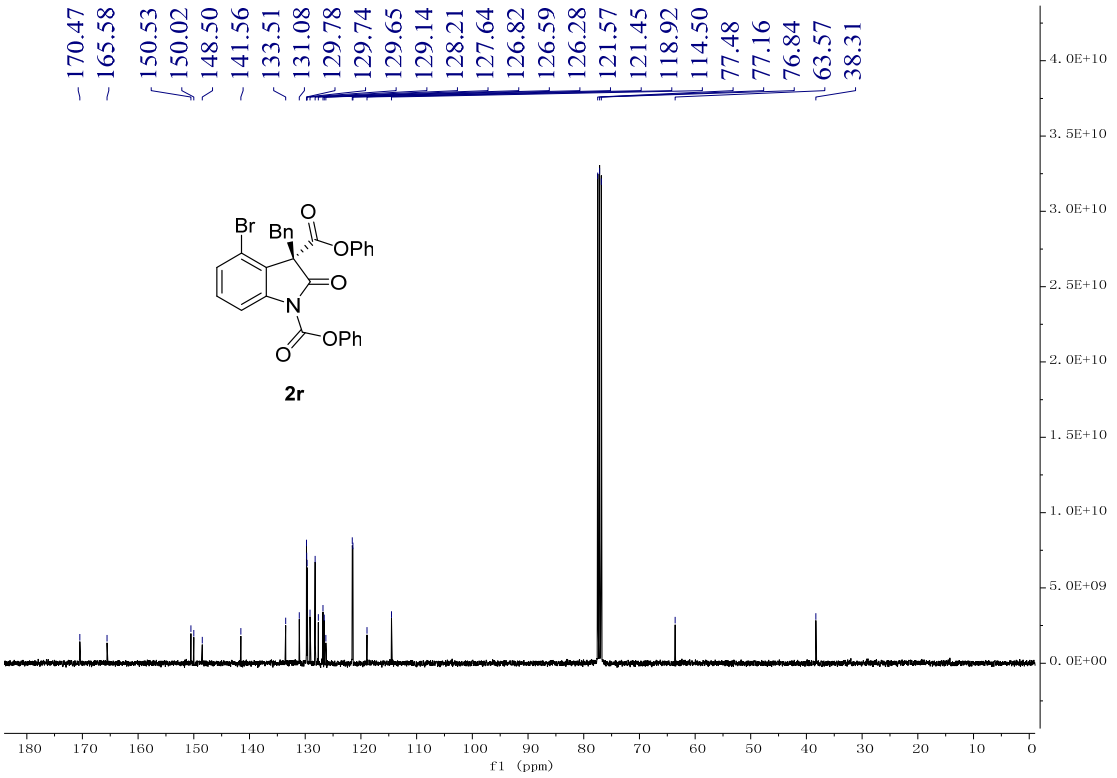
^{1}H NMR of 2q



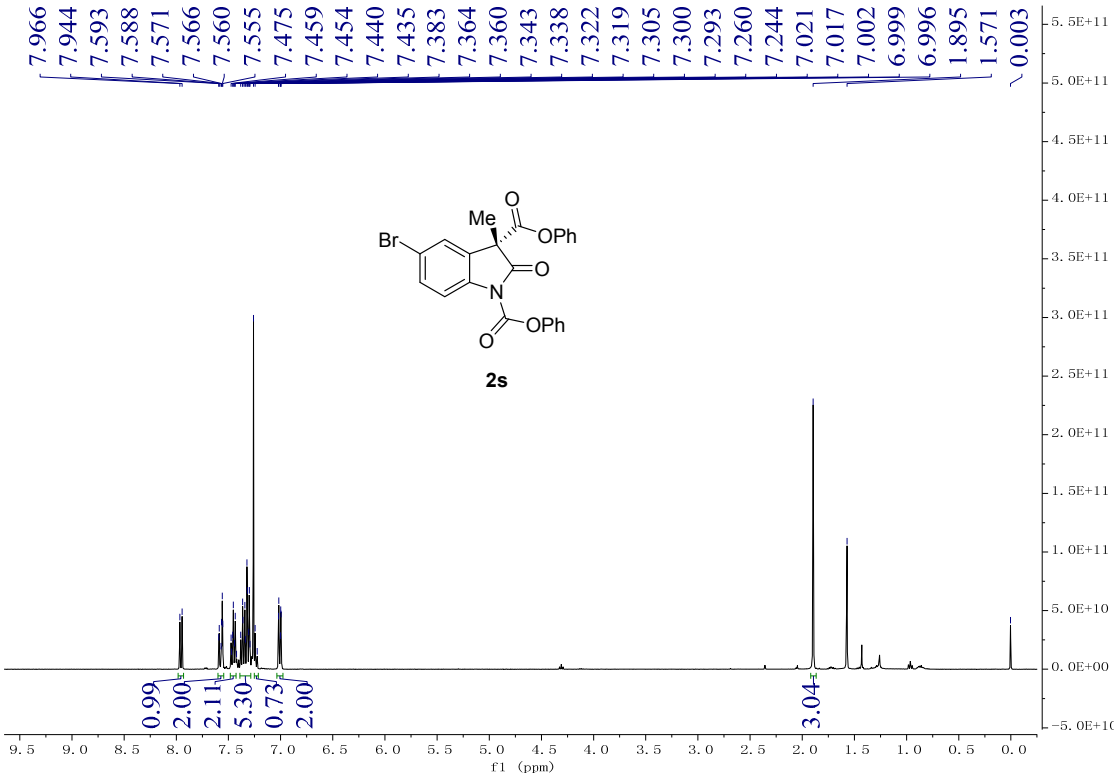
^{1}H NMR of 2r



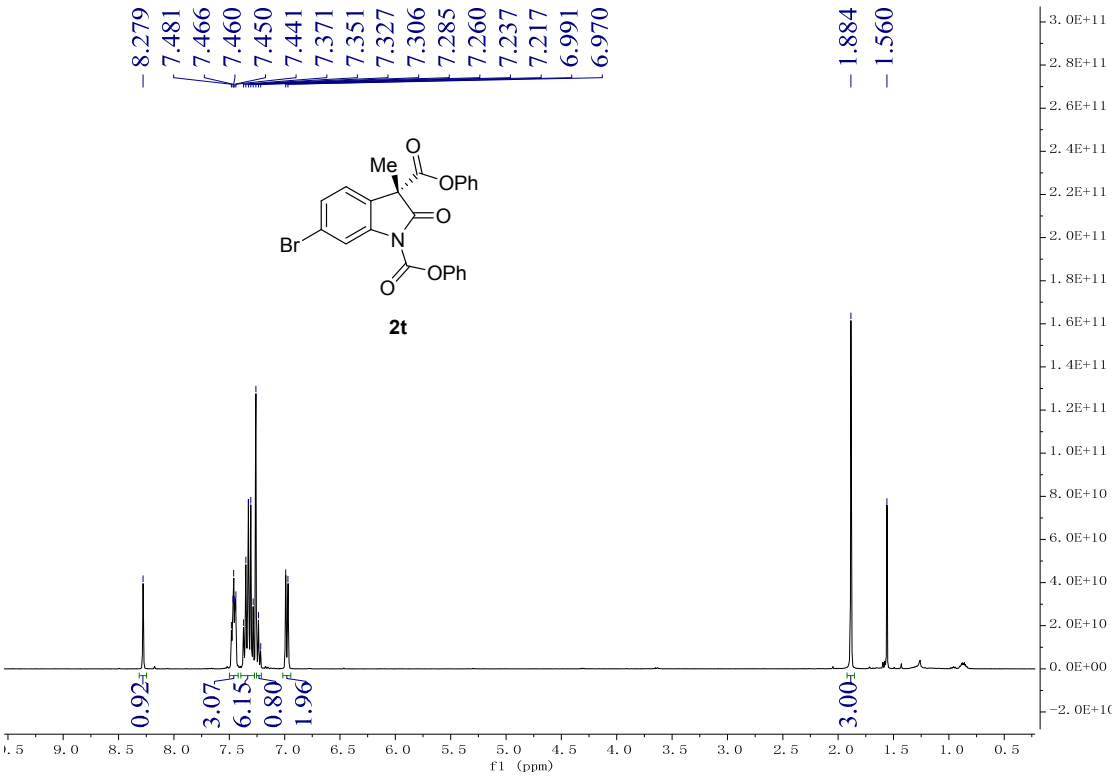
^{13}C NMR of 2r



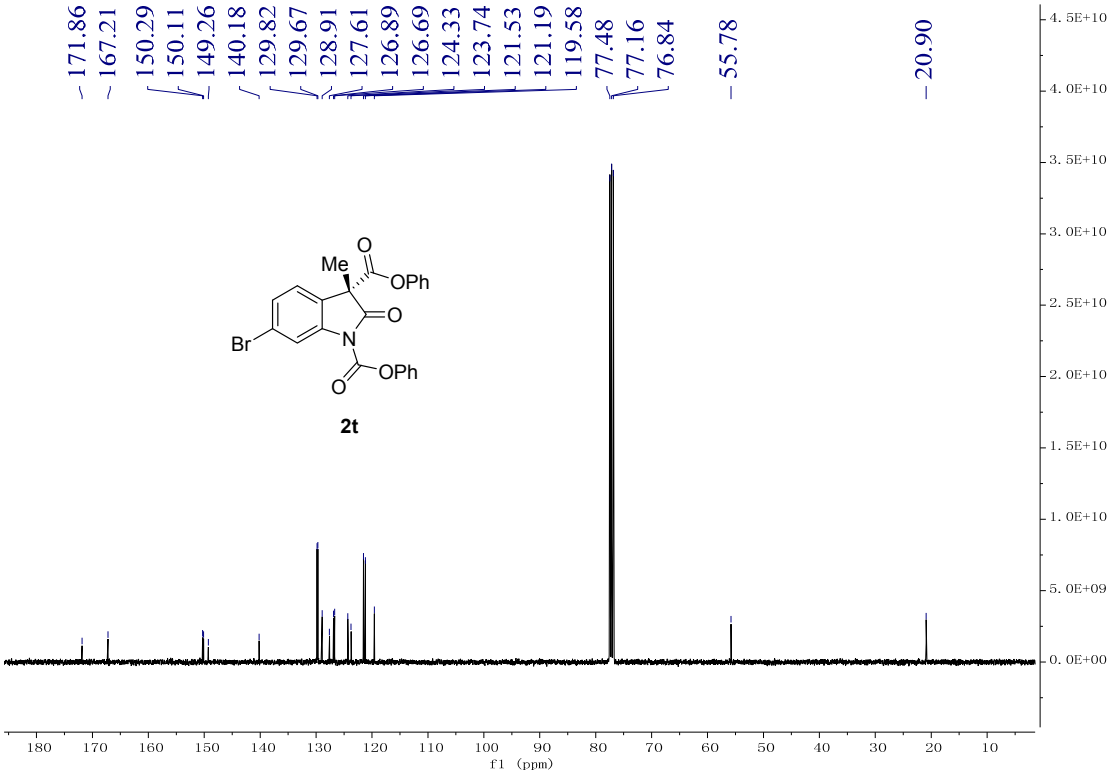
^{1}H NMR of 2s



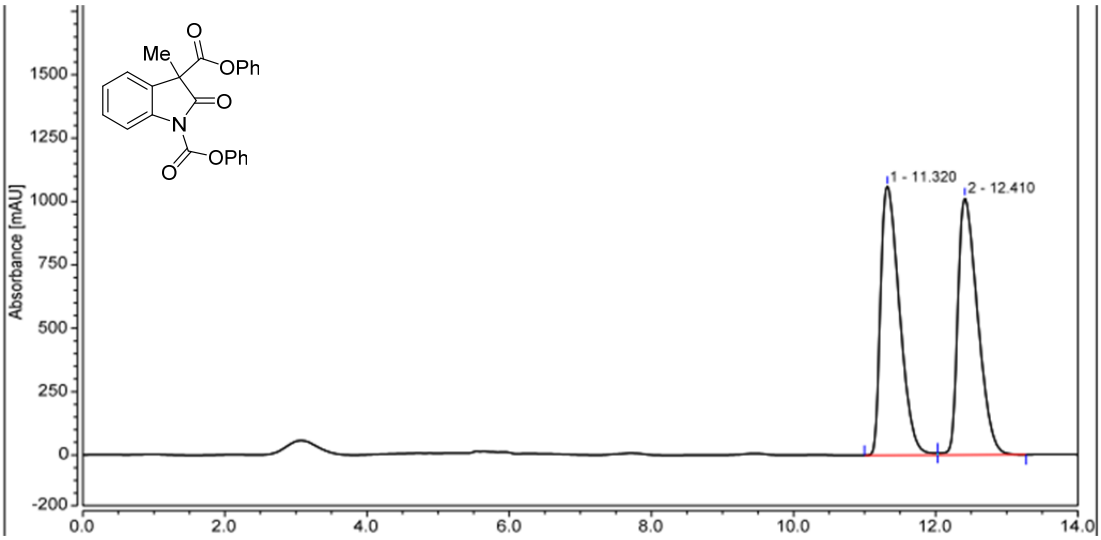
^{1}H NMR of 2t



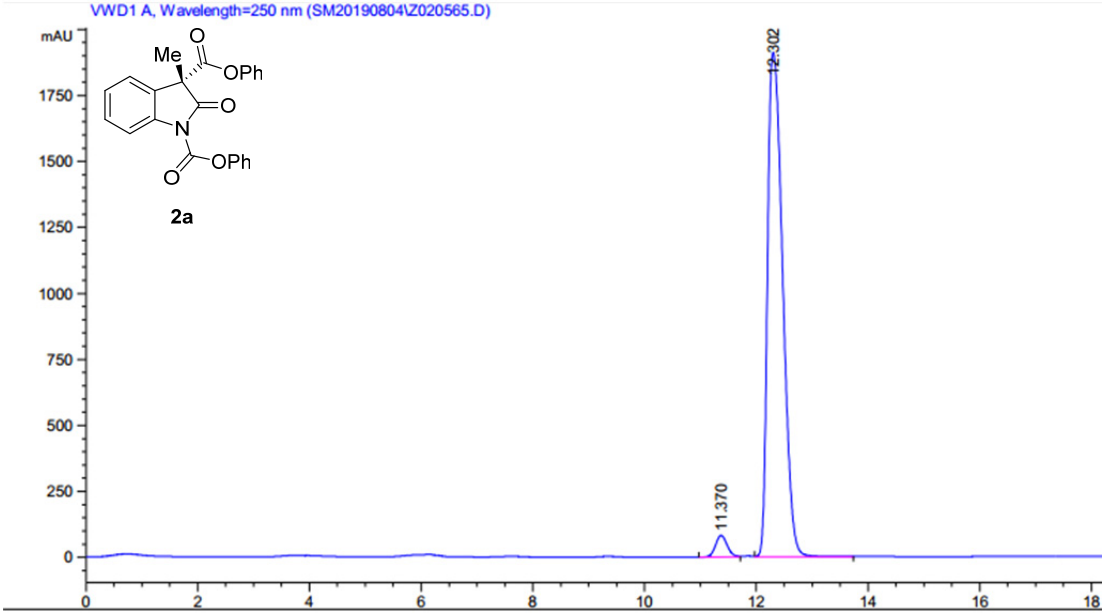
^{13}C NMR of 2t


171.86
167.21
150.29
150.11
149.26
140.18
129.82
129.67
128.91
127.61
126.89
126.69
124.33
123.74
121.53
121.19
119.58
77.48
77.16
76.84
55.78
20.90
Me
OPh
O
Br
N
OPh
O
2t
f1 (ppm)

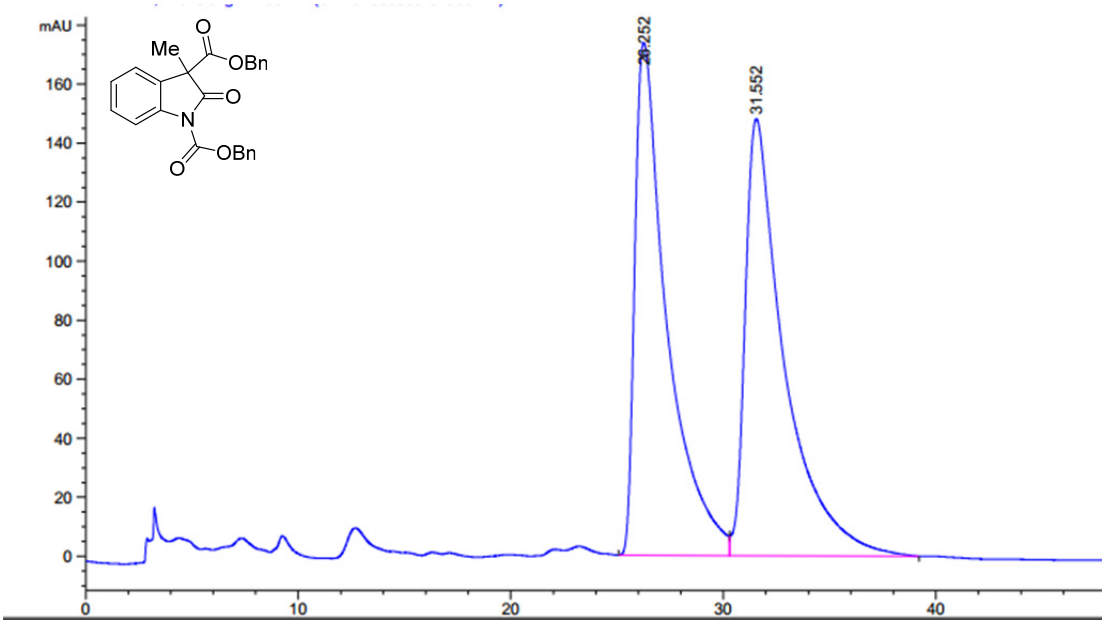
9. Copies of HPLC Spectra



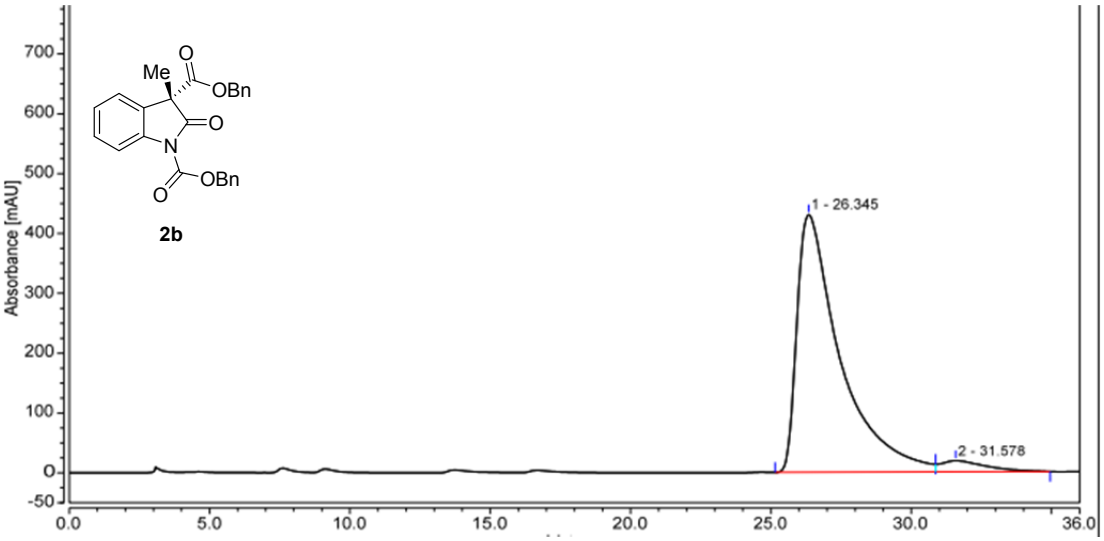
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	11.320	328.264	1061.528	50.13	51.16
2	12.410	326.509	1013.430	49.87	48.84
Total:		**654.773**	**2074.959**	**100.00**	**100.00**



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.370	BV	0.2256	1198.27612	82.08642	3.2336
2	12.302	VV	0.2990	3.58593e4	1910.61646	96.7664



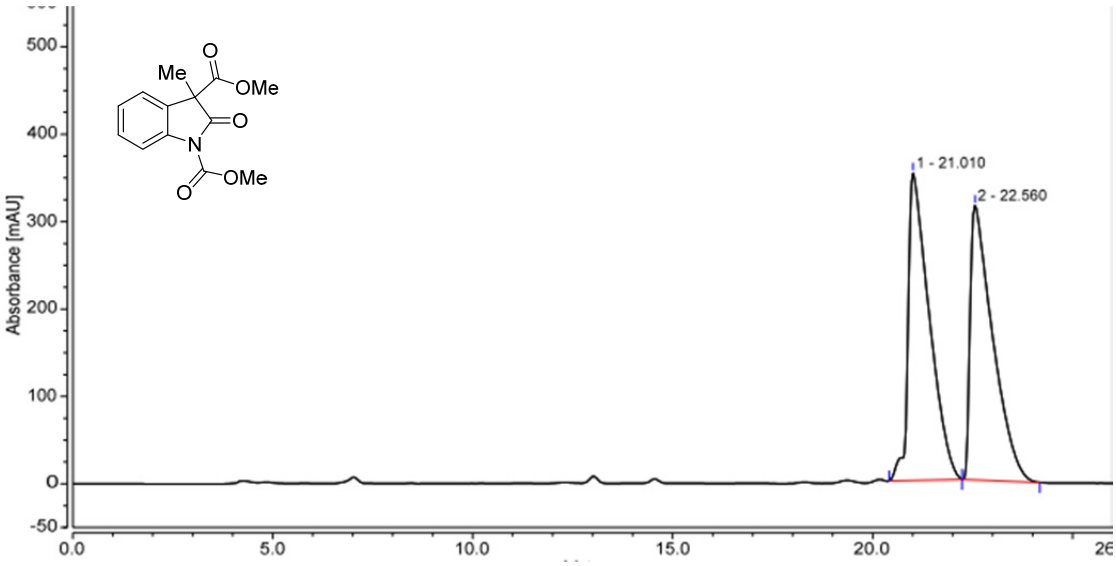
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	26.252	BV	1.4950	1.82735e4	173.74110	49.0803
2	31.552	VB	1.7662	1.89584e4	148.05878	50.9197



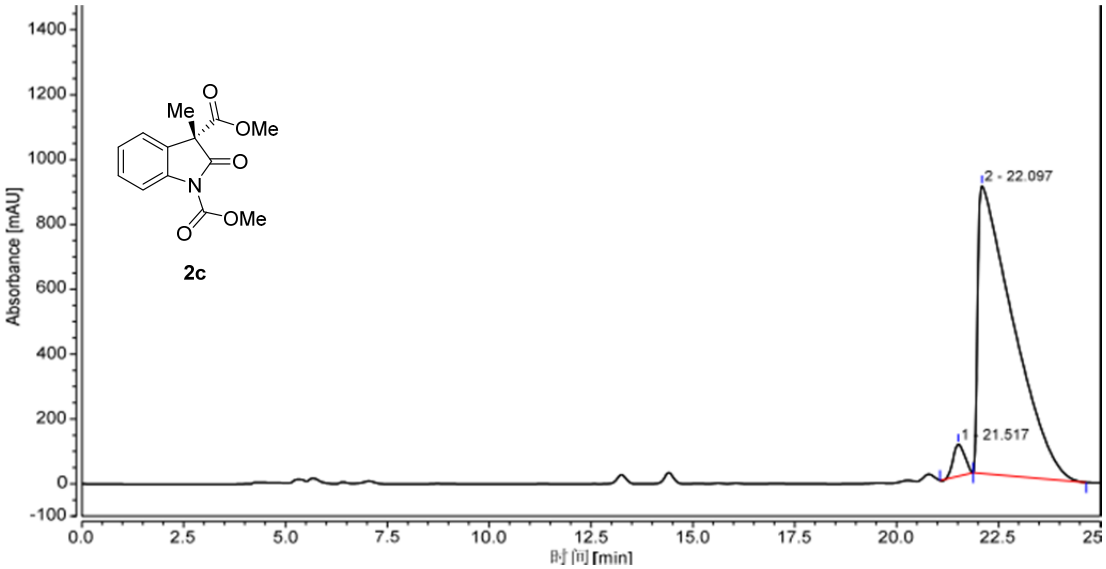
2b

积分结果

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	26.345	764.464	430.290	95.66	95.84
2	31.578	34.712	18.664	4.34	4.16
Total:		**799.176**	**448.954**	**100.00**	**100.00**

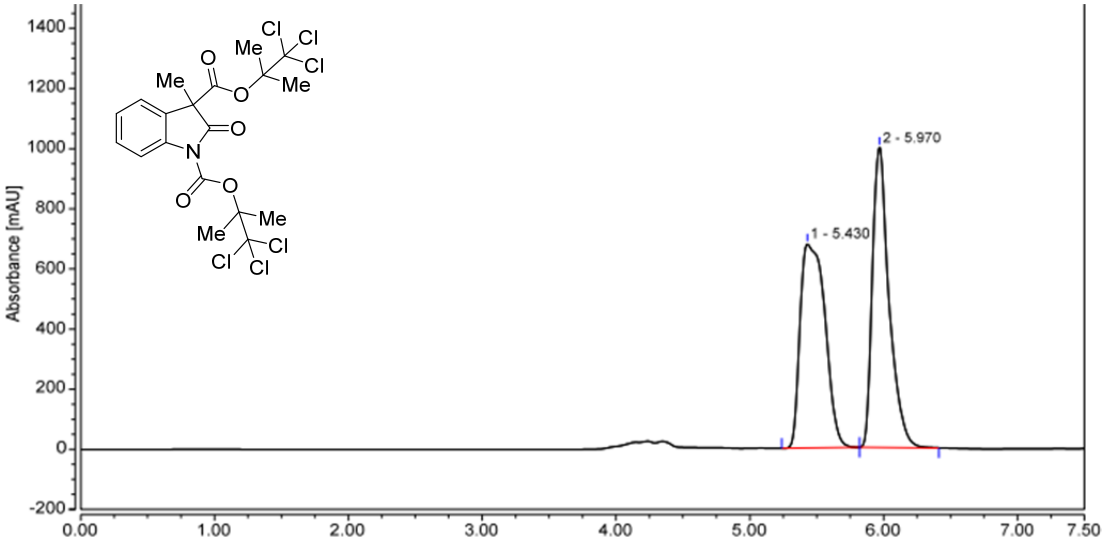


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	21.010	216.097	351.820	51.24	52.84
2	22.560	205.602	314.056	48.76	47.16
Total:		**421.700**	**665.875**	**100.00**	**100.00**

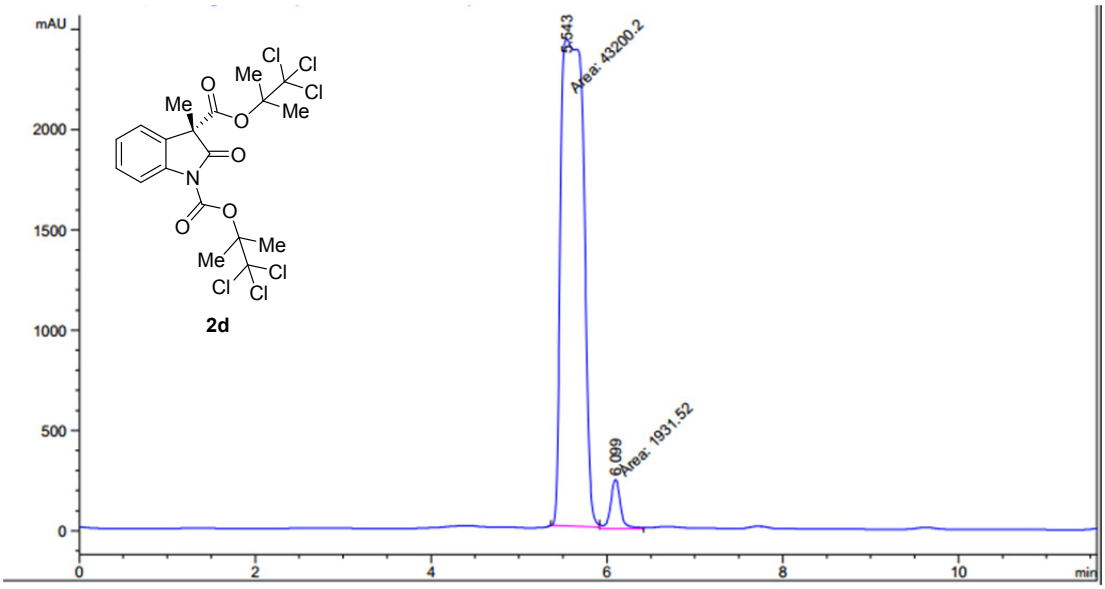


2c

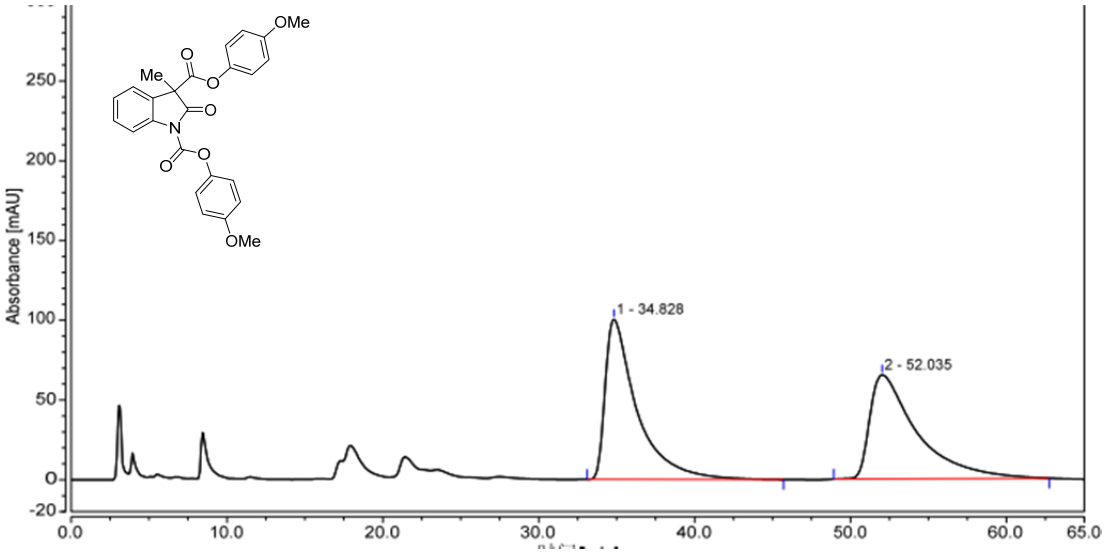
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	21.517	32.069	98.238	3.47	9.97
2	22.097	892.689	887.431	96.53	90.03
Total:		**924.758**	**985.669**	**100.00**	**100.00**



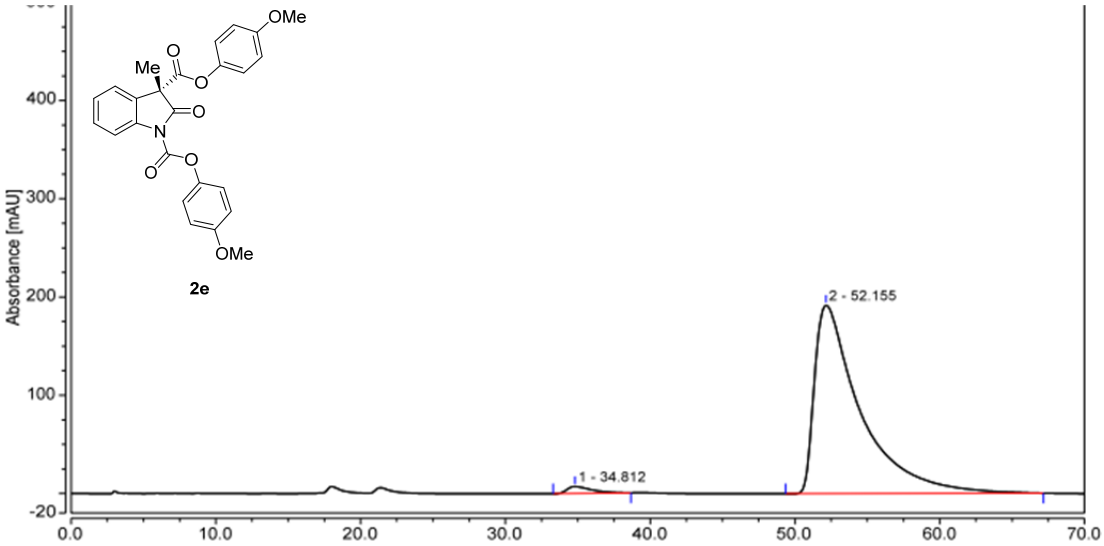
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	5.430	146.134	678.447	50.32	40.45
2	5.970	144.292	998.820	49.68	59.55
Total:		**290.426**	**1677.267**	**100.00**	**100.00**



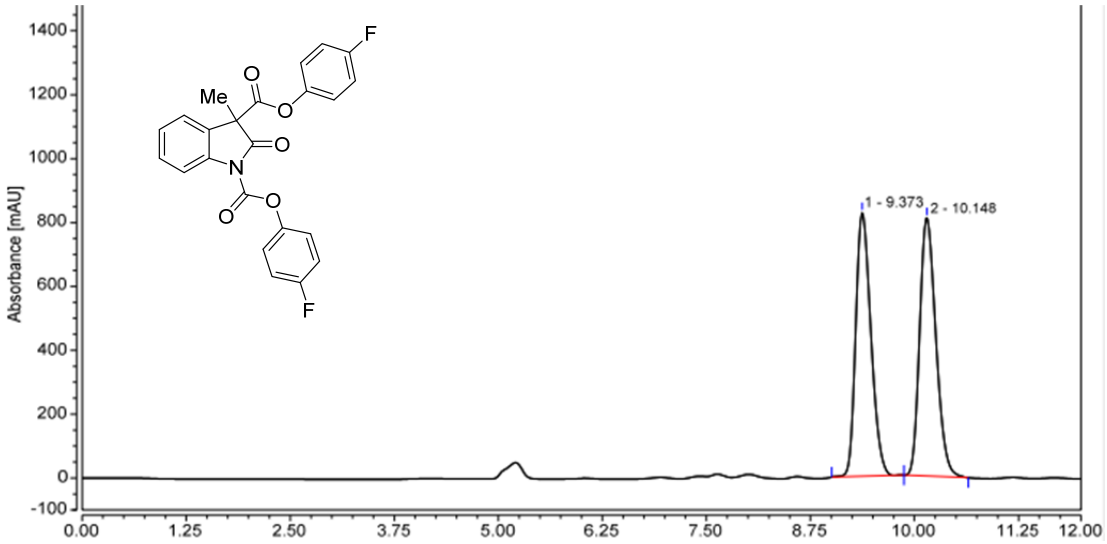
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	5.543	MM	0.2967	4.32002e4	2426.34473	95.7203
2	6.099	MM	0.1316	1931.51733	244.60286	4.2797



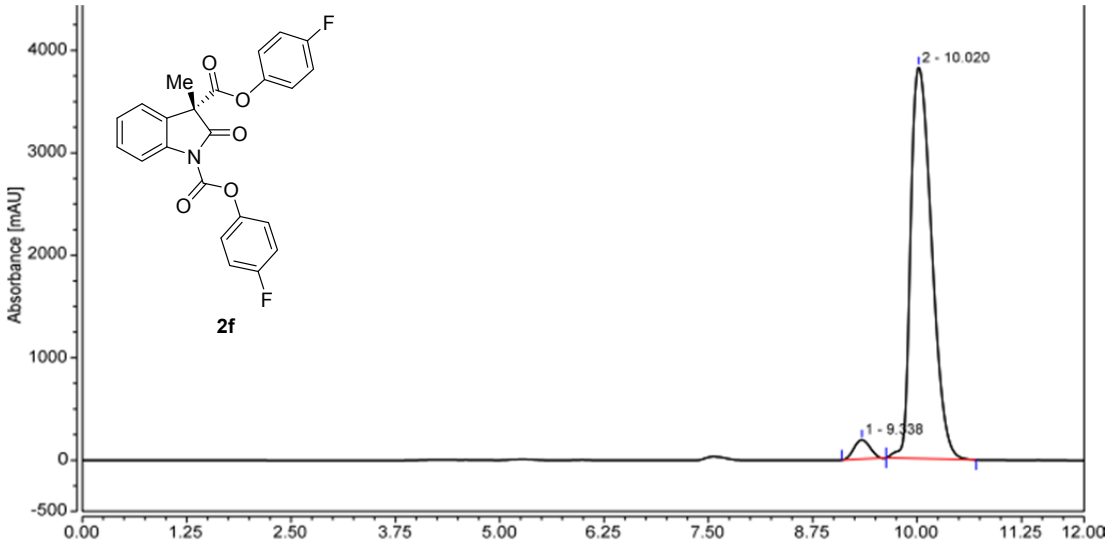
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	34.828	236.943	100.299	50.94	60.62
2	52.035	228.205	65.160	49.06	39.38
Total:		**465.148**	**165.459**	**100.00**	**100.00**



Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	34.812	13.681	6.987	1.90	3.51
2	52.155	706.138	191.832	98.10	96.49
Total:		**719.818**	**198.819**	**100.00**	**100.00**

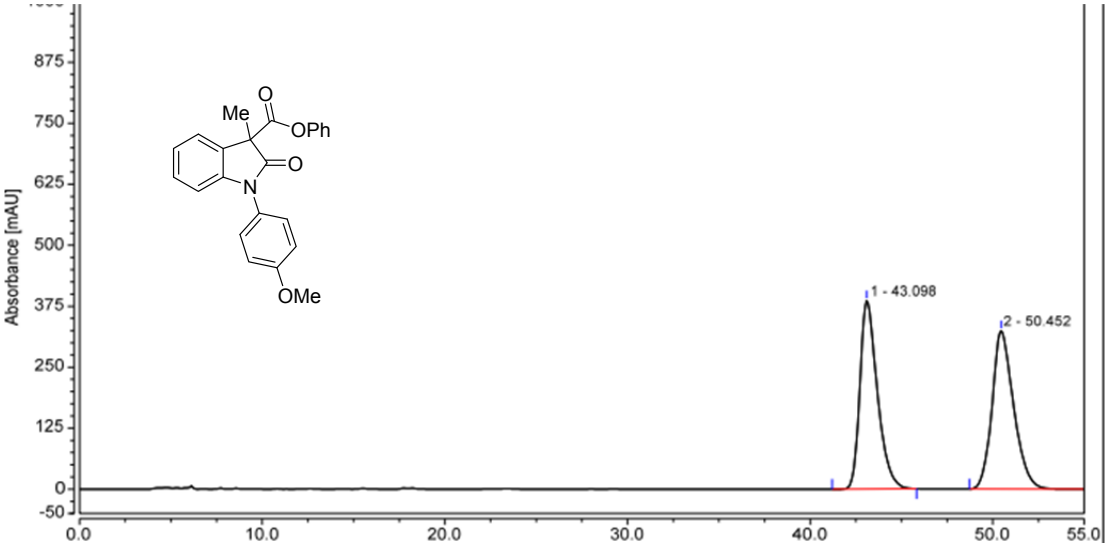


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.373	174.463	825.708	48.91	50.53
2	10.148	182.247	808.489	51.09	49.47
Total:		**356.710**	**1634.197**	**100.00**	**100.00**

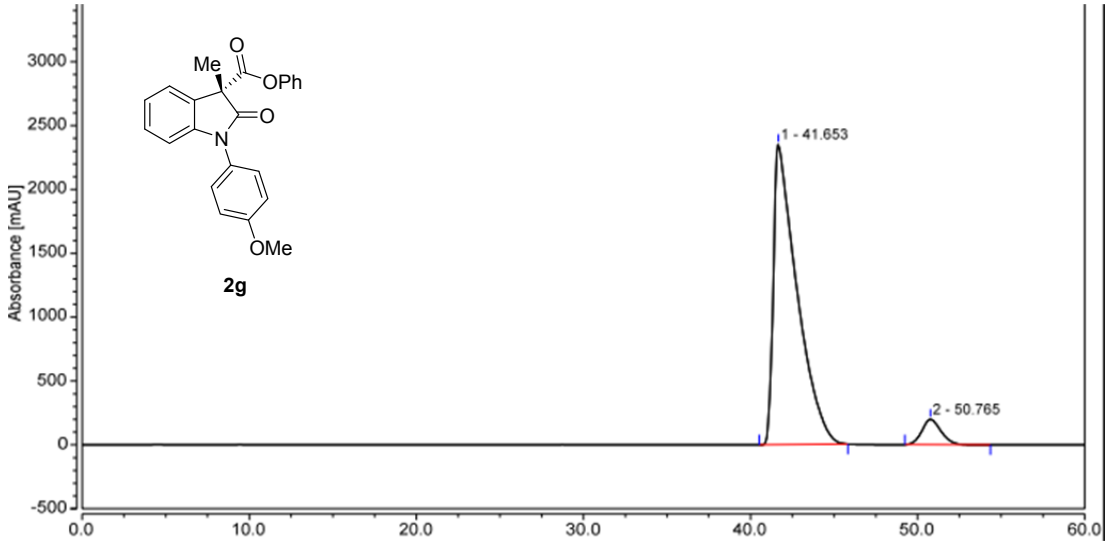


2f

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.338	41.644	186.965	3.61	4.66
2	10.020	1112.995	3821.341	96.39	95.34
Total:		**1154.639**	**4008.305**	**100.00**	**100.00**

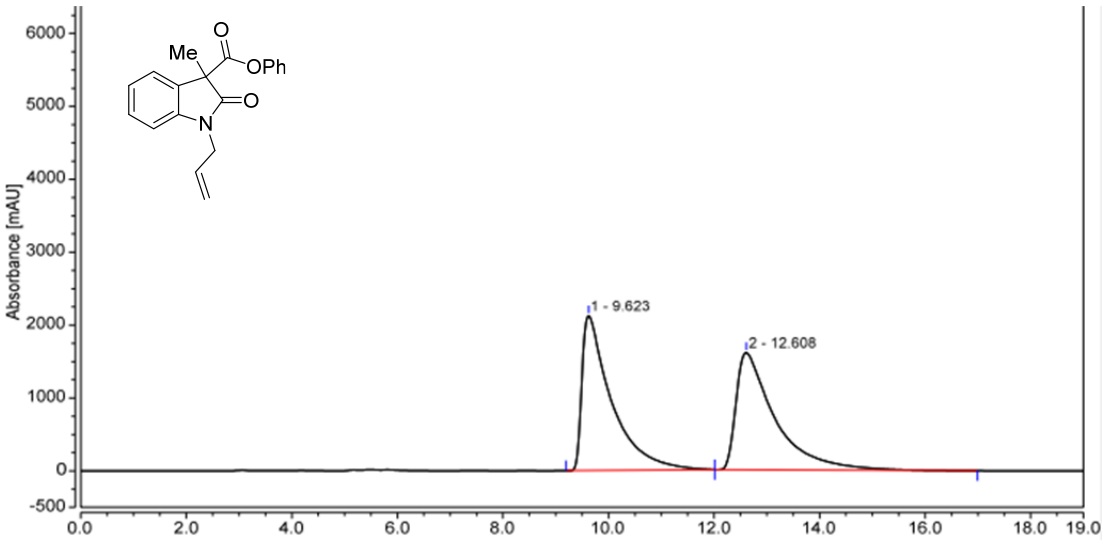


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	43.098	427.763	385.994	49.08	54.33
2	50.452	443.741	324.467	50.92	45.67
Total:		**871.504**	**710.461**	**100.00**	**100.00**

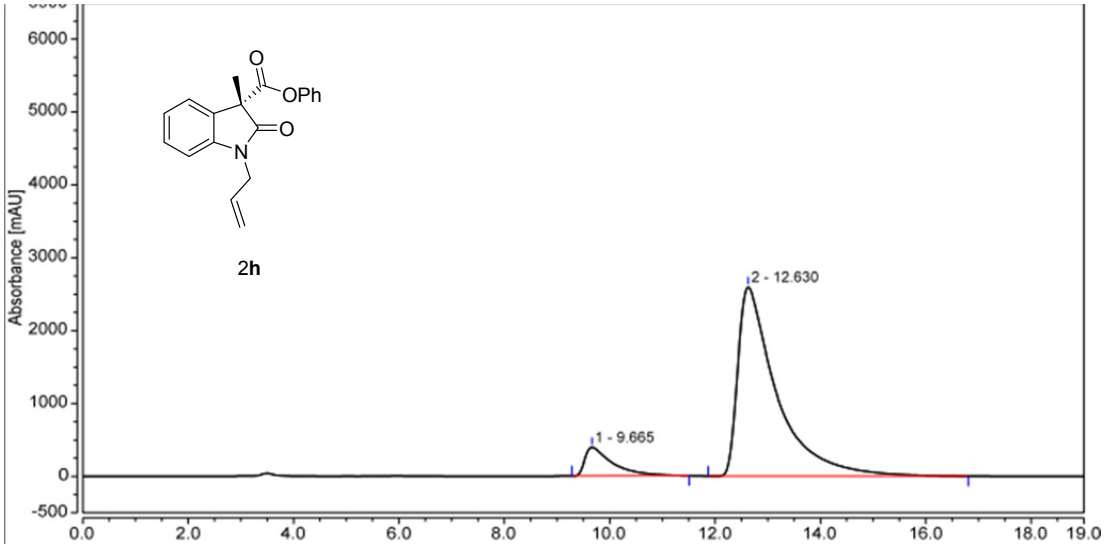


2g

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	41.653	3840.320	2352.058	93.60	92.23
2	50.765	262.372	198.025	6.40	7.77
Total:		**4102.692**	**2550.083**	**100.00**	**100.00**

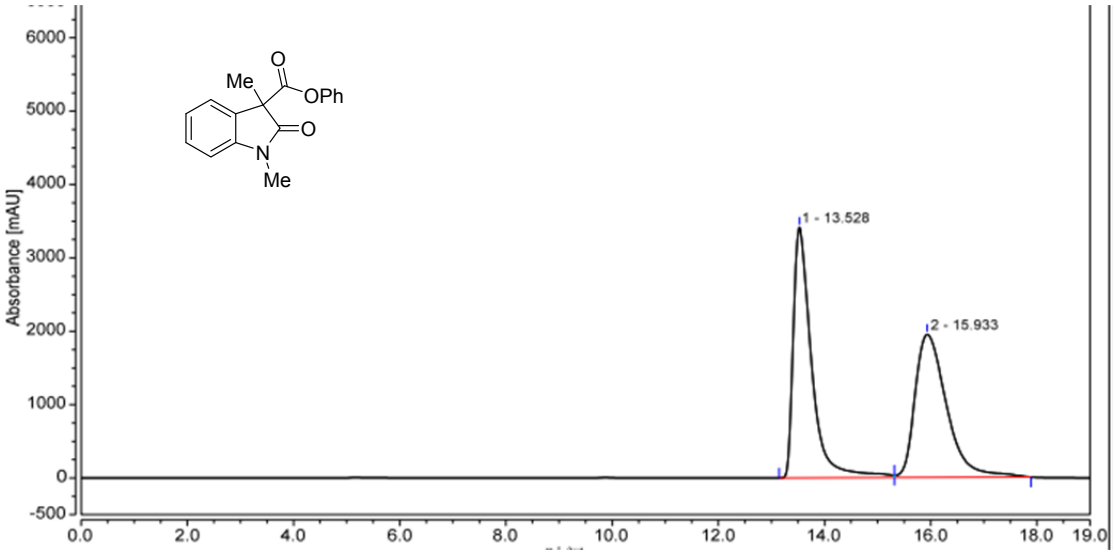


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.623	1377.298	2125.891	50.08	56.93
2	12.608	1373.030	1608.531	49.92	43.07
Total:		**2750.328**	**3734.422**	**100.00**	**100.00**

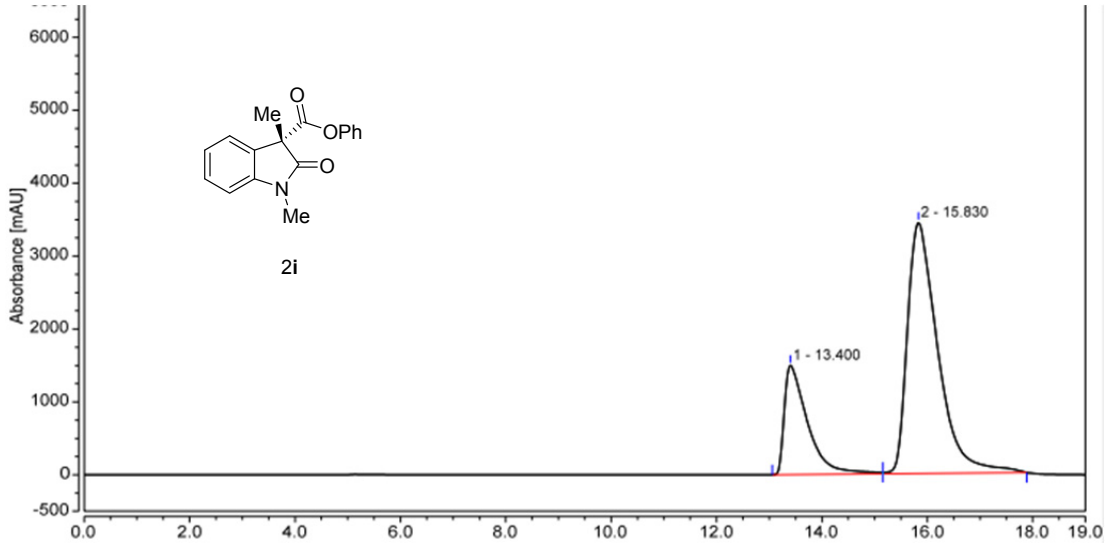


2h

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.665	237.790	391.848	9.68	13.12
2	12.630	2219.912	2594.100	90.32	86.88
Total:		**2457.702**	**2985.948**	**100.00**	**100.00**

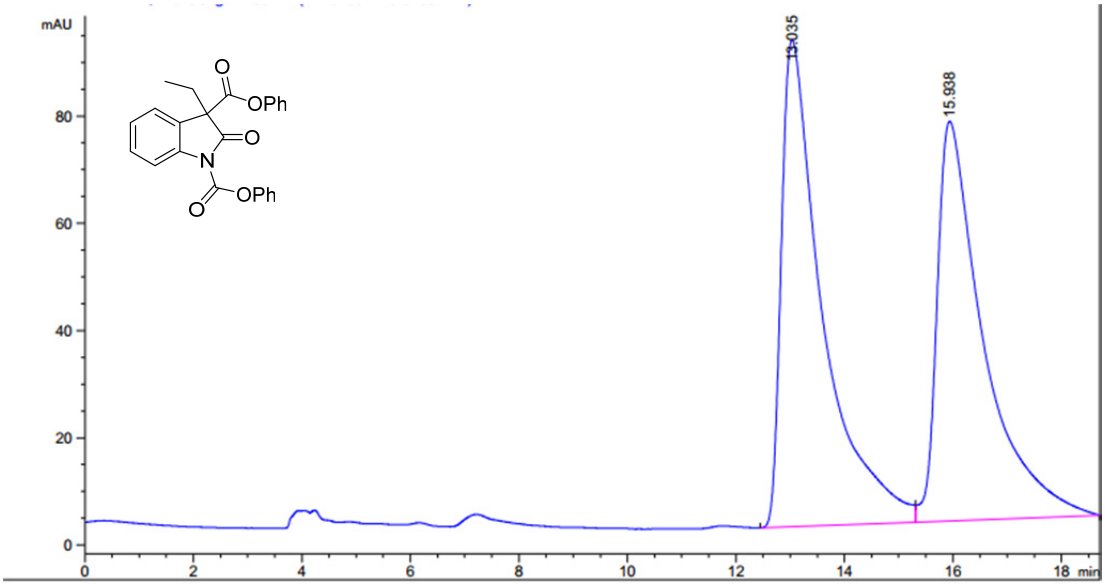


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	13.528	1365.006	3416.573	50.39	63.66
2	15.933	1344.098	1950.698	49.61	36.34
Total:		**2709.104**	**5367.272**	**100.00**	**100.00**

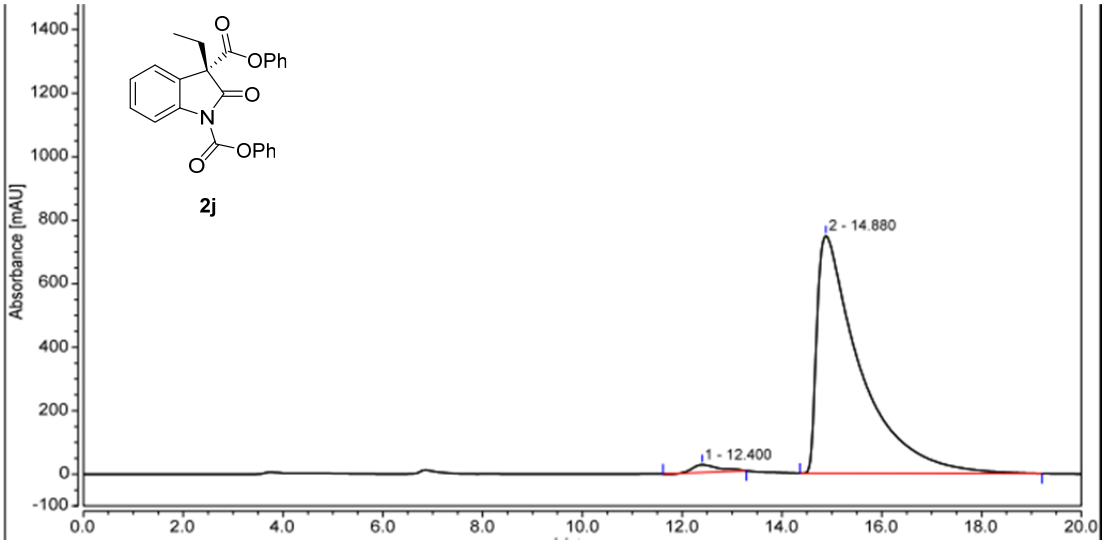


2i

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	13.400	765.240	1499.833	25.01	30.33
2	15.830	2293.962	3445.686	74.99	69.67
Total:		**3059.202**	**4945.518**	**100.00**	**100.00**

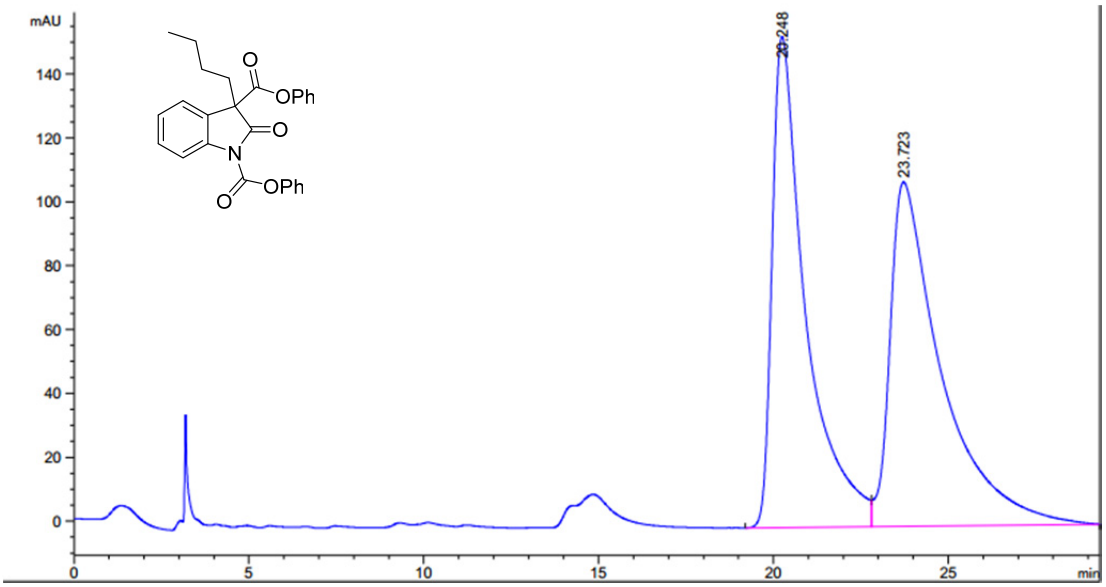


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	13.035	BV	0.7421	4765.00977	90.76213	52.0541
2	15.938	VBA	0.8327	4388.94775	74.52774	47.9459

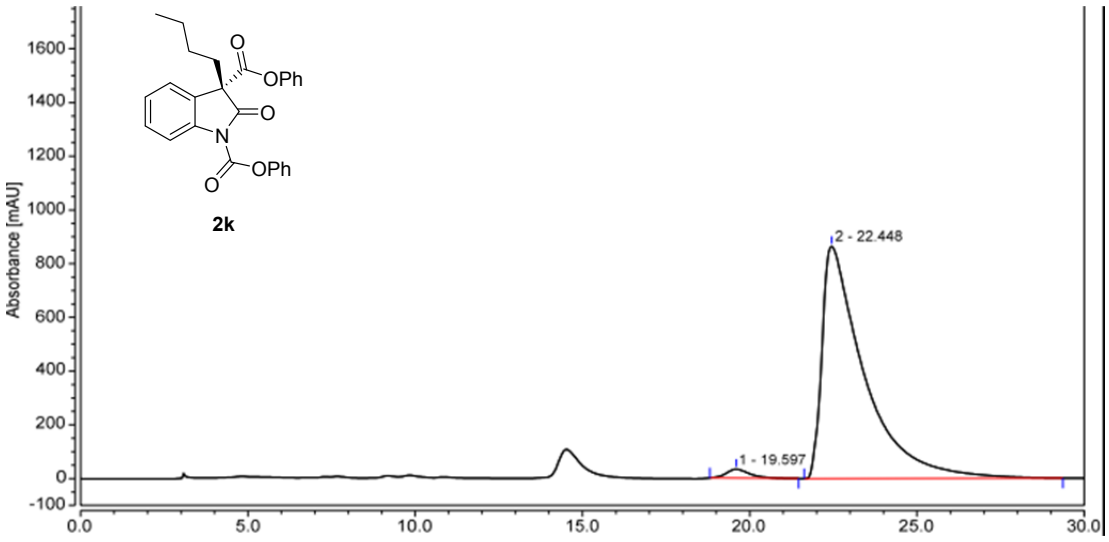


2j

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	12.400	14.386	24.019	1.88	3.11
2	14.880	750.424	748.314	98.12	96.89
Total:		**764.810**	**772.334**	**100.00**	**100.00**

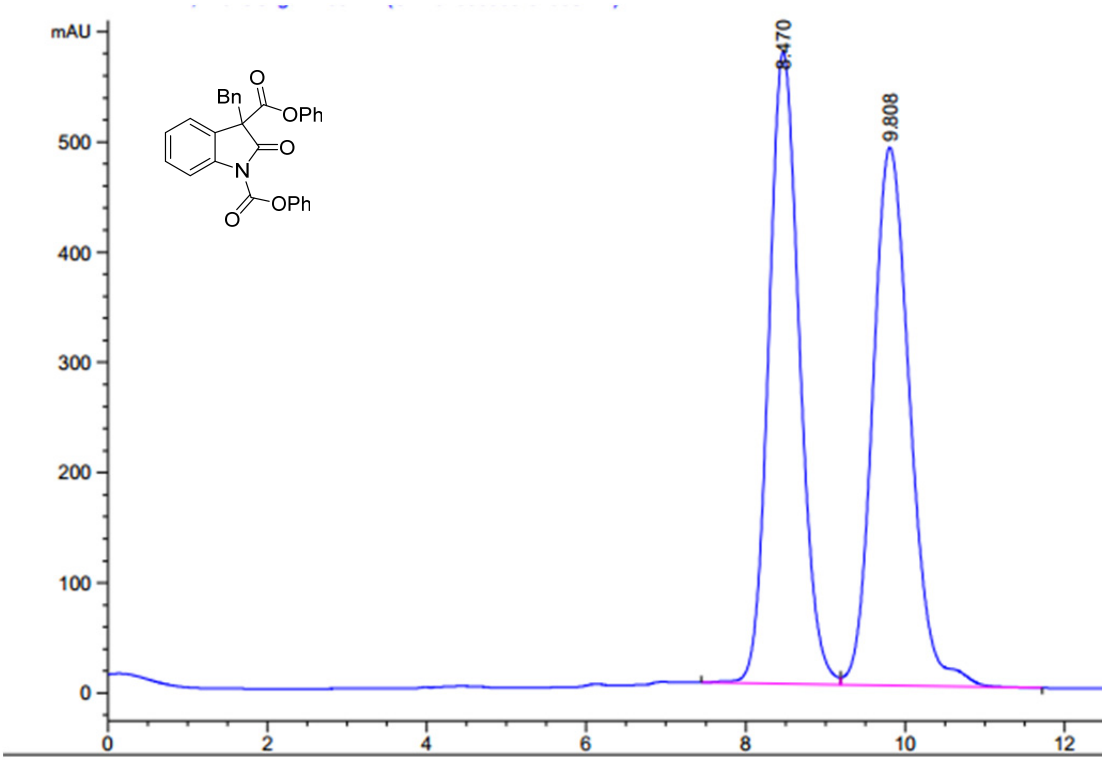


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	20.248	BV	0.9685	1.03027e4	153.67387	48.4500
2	23.723	VBA	1.4008	1.09619e4	107.76720	51.5500

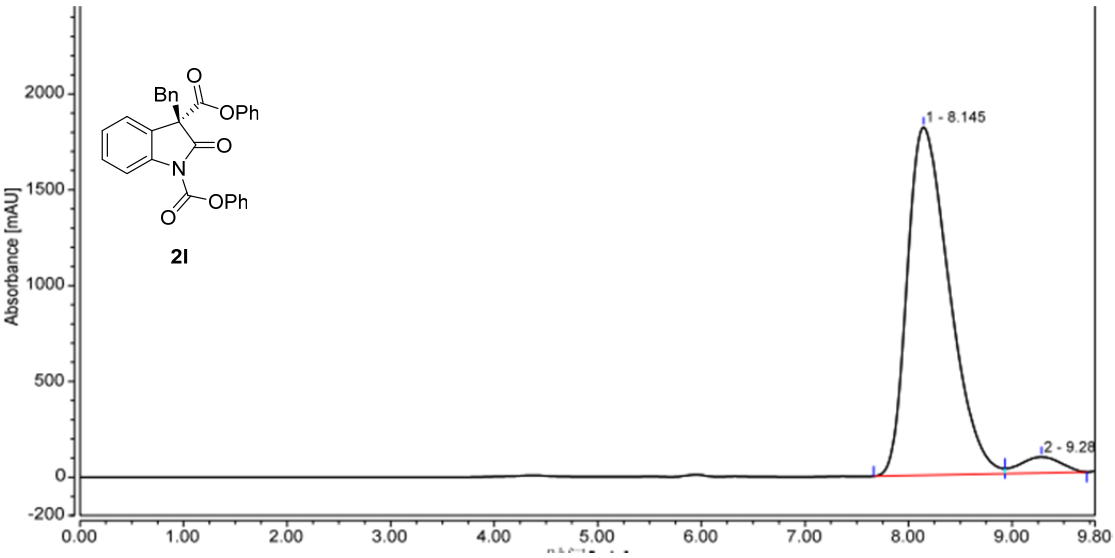


2k

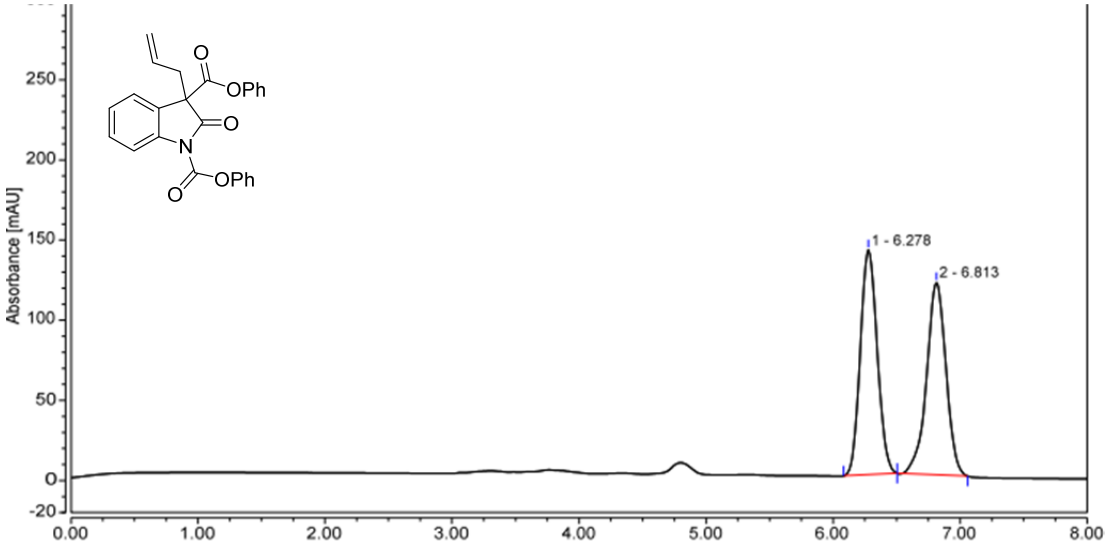
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	19.597	26.681	33.102	2.07	3.69
2	22.448	1261.620	864.320	97.93	96.31
Total:		**1288.301**	**897.421**	**100.00**	**100.00**



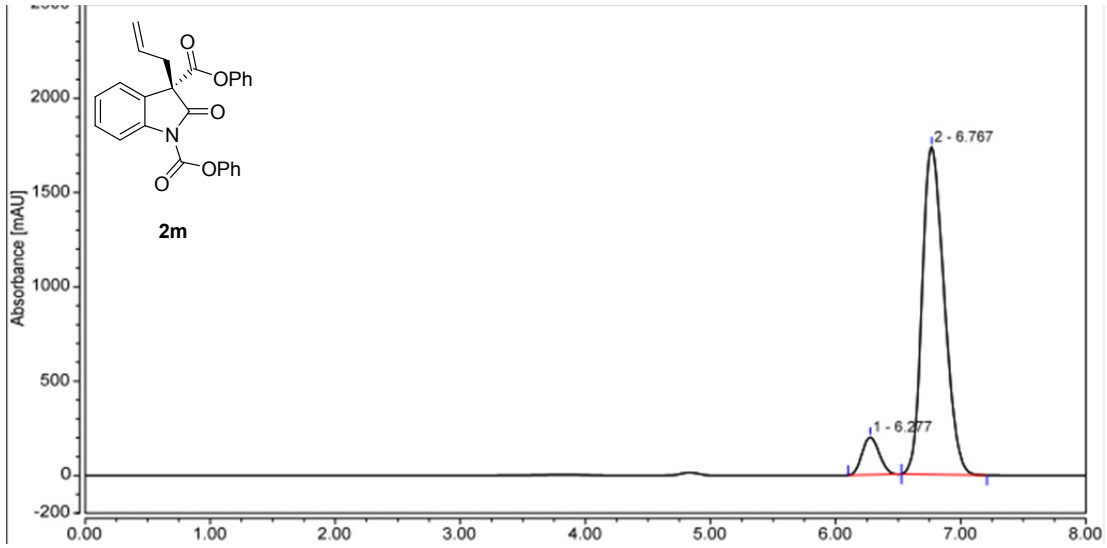
Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	8.470	BV	0.4133	1.53731e4	573.24371	49.3676
2	9.808	VB	0.5020	1.57670e4	488.19241	50.6324



Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	8.145	855.160	1816.486	95.77	95.62
2	9.283	37.765	83.221	4.23	4.38
Total:		**892.925**	**1899.707**	**100.00**	**100.00**

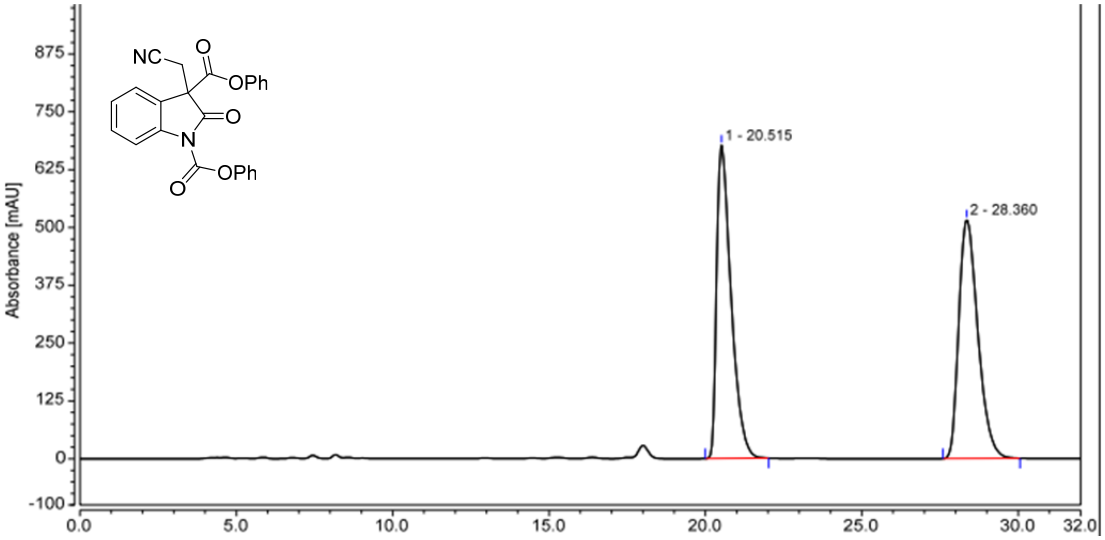


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	6.278	21.623	140.111	50.47	53.88
2	6.813	21.220	119.954	49.53	46.12
Total:		**42.843**	**260.065**	**100.00**	**100.00**

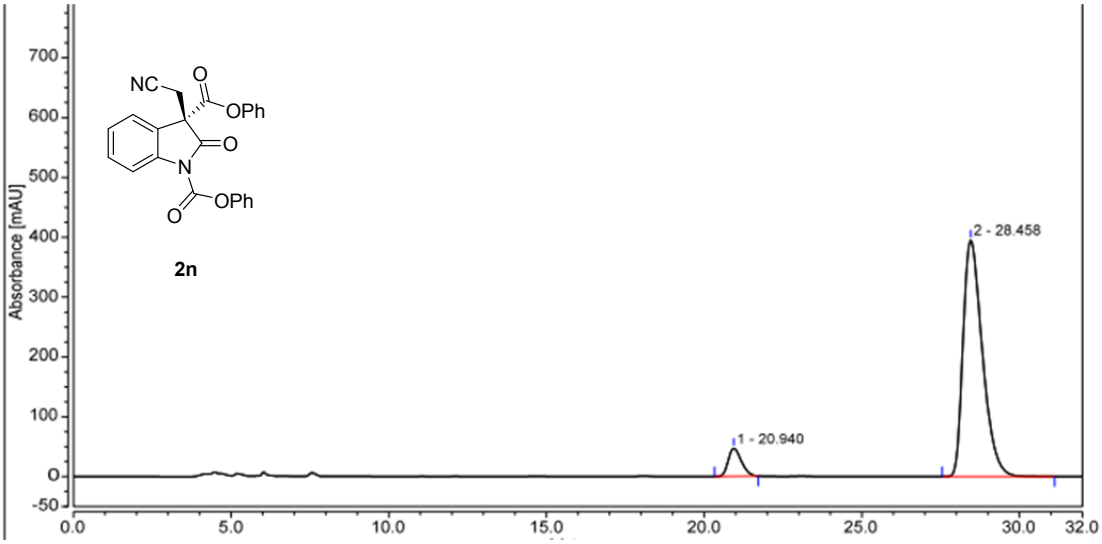


2m

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	6.277	31.526	198.780	8.19	10.27
2	6.767	353.363	1736.870	91.81	89.73
Total:		**384.888**	**1935.650**	**100.00**	**100.00**

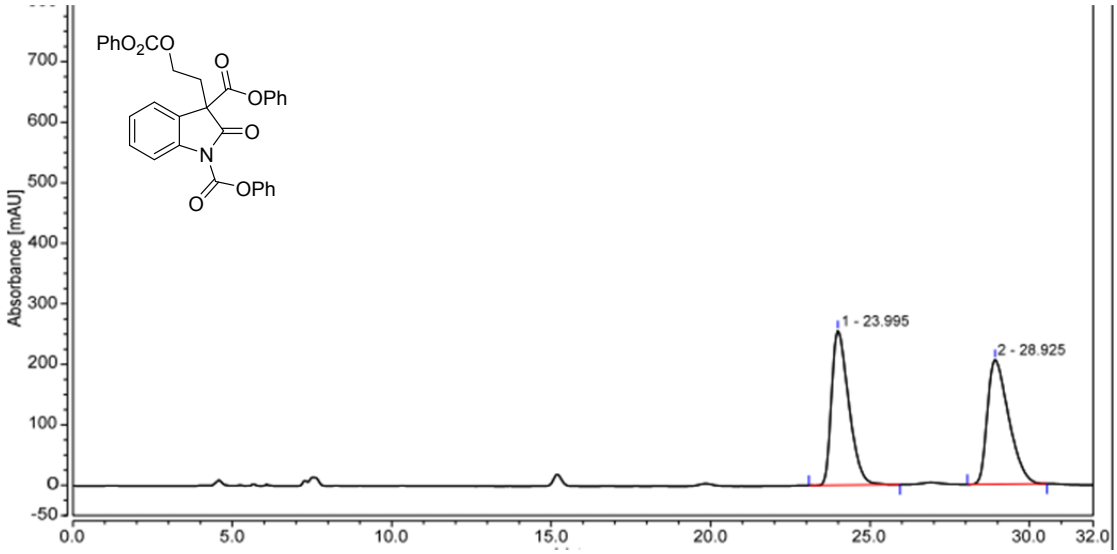


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	20.515	362.912	677.262	49.80	56.76
2	28.360	365.829	516.044	50.20	43.24
Total:		**728.740**	**1193.306**	**100.00**	**100.00**

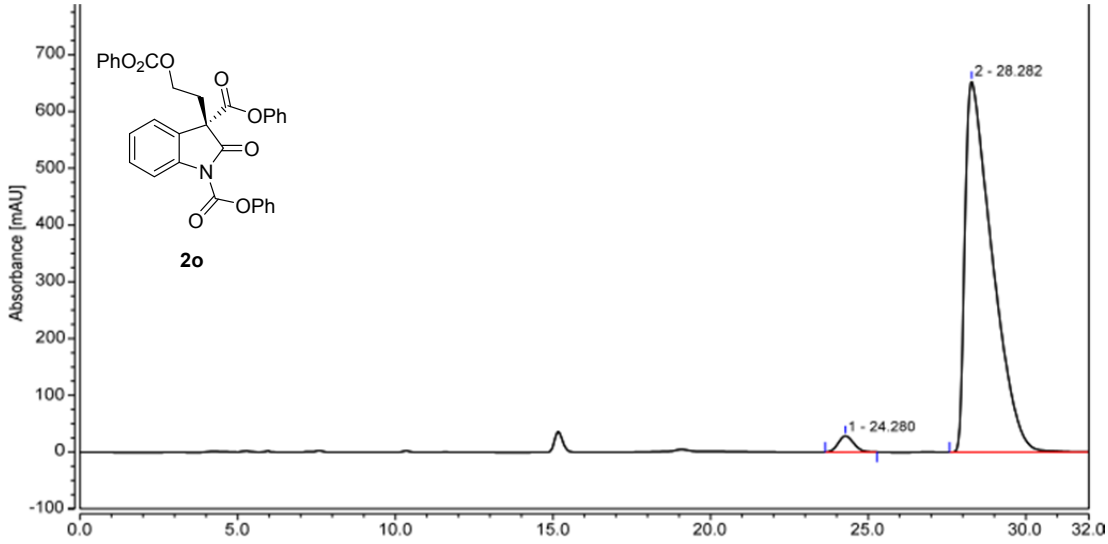


2n

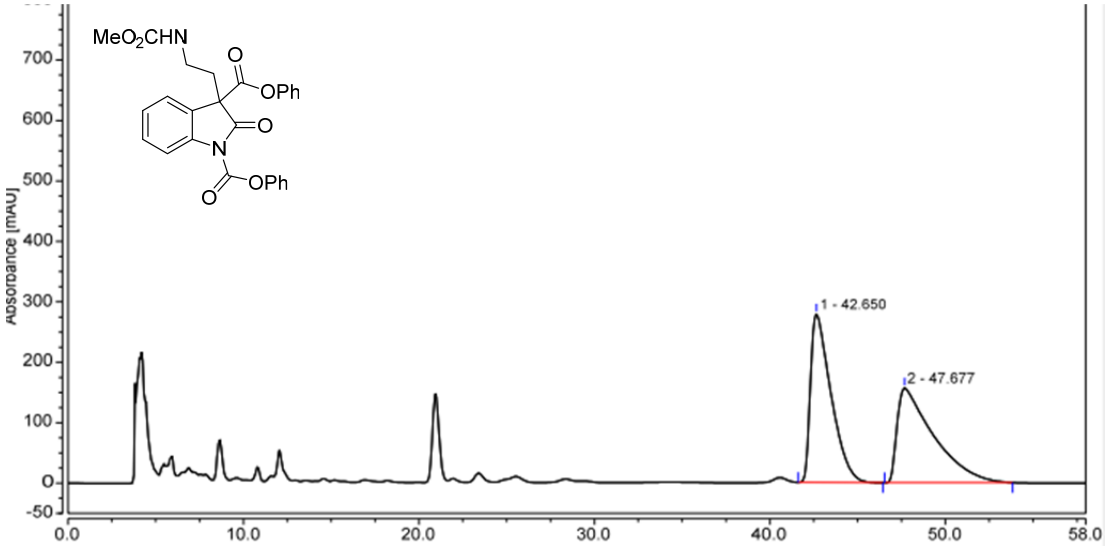
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	20.940	22.672	46.878	7.48	10.60
2	28.458	280.621	395.303	92.52	89.40
Total:		**303.293**	**442.181**	**100.00**	**100.00**



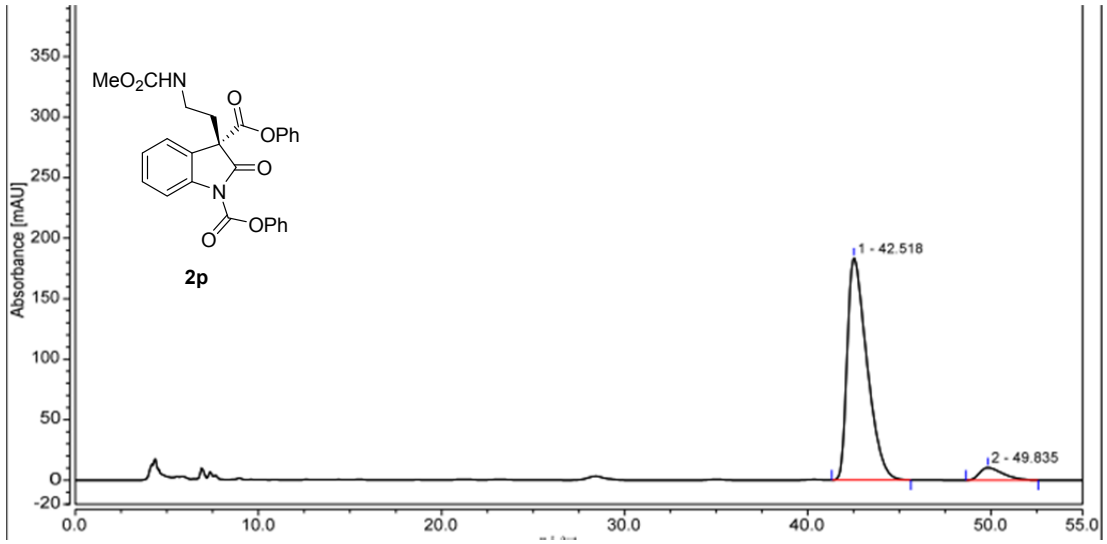
Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	23.995	160.739	255.285	50.16	55.39
2	28.925	159.690	205.567	49.84	44.61
Total:		**320.429**	**460.852**	**100.00**	**100.00**



Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	24.280	16.161	28.359	2.42	4.16
2	28.282	652.395	653.434	97.58	95.84
Total:		**668.556**	**681.792**	**100.00**	**100.00**

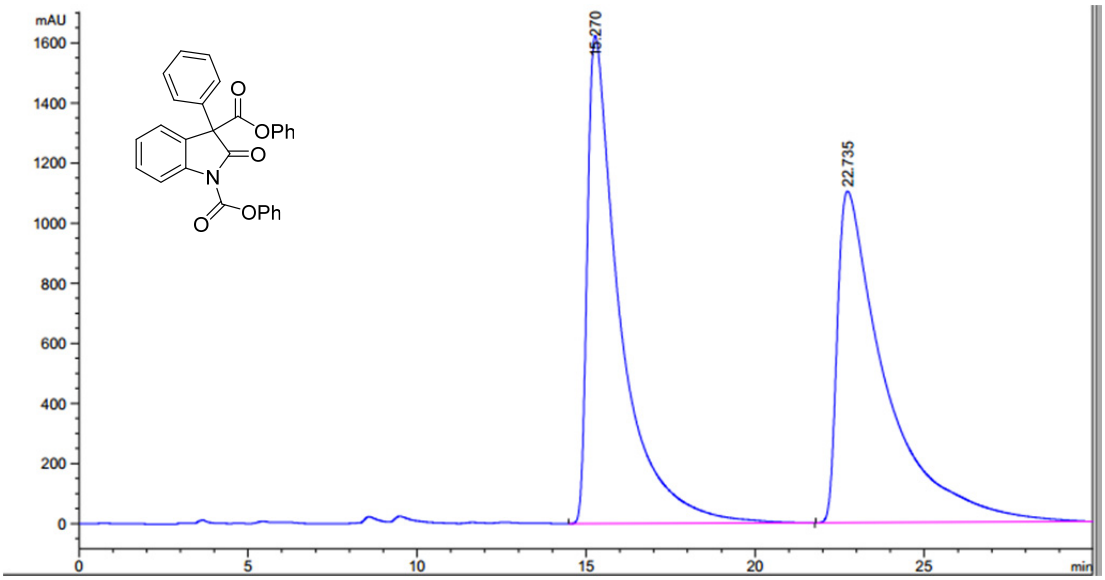


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	42.650	378.572	278.578	50.21	64.01
2	47.677	375.420	156.636	49.79	35.99
Total:		**753.992**	**435.213**	**100.00**	**100.00**

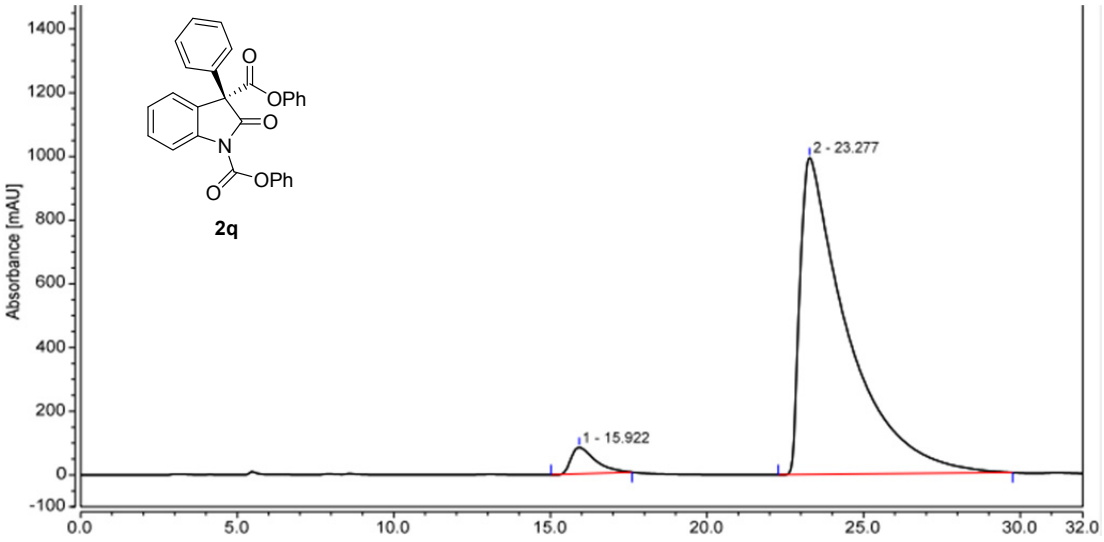


2p

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	42.518	229.389	183.516	93.80	94.70
2	49.835	15.152	10.277	6.20	5.30
Total:		**244.541**	**193.793**	**100.00**	**100.00**

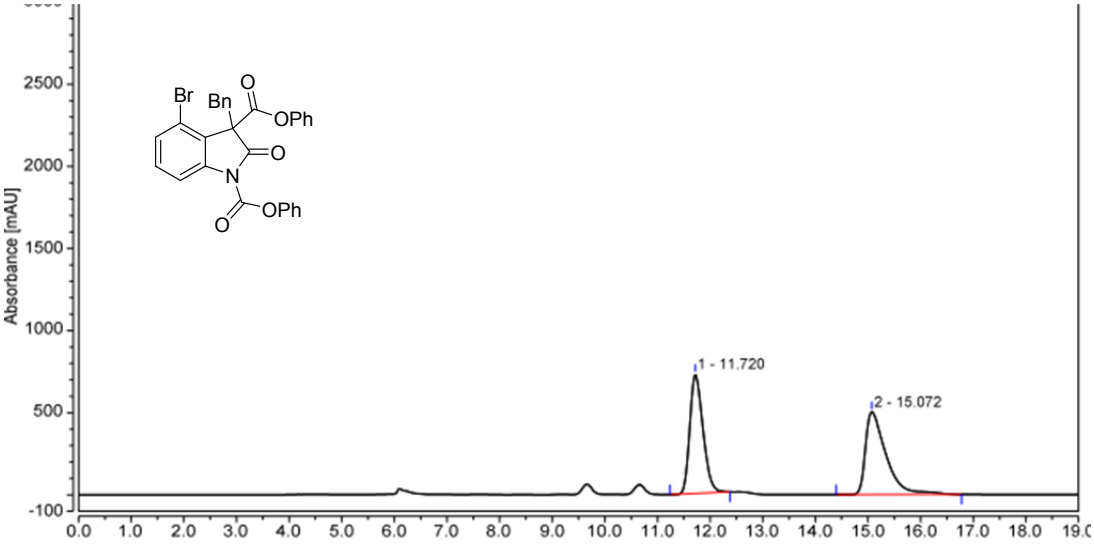


Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	15.270	BB	0.9386	1.08993e5	1624.32153	49.9349
2	22.735	BBA	1.3687	1.09277e5	1104.15698	50.0651

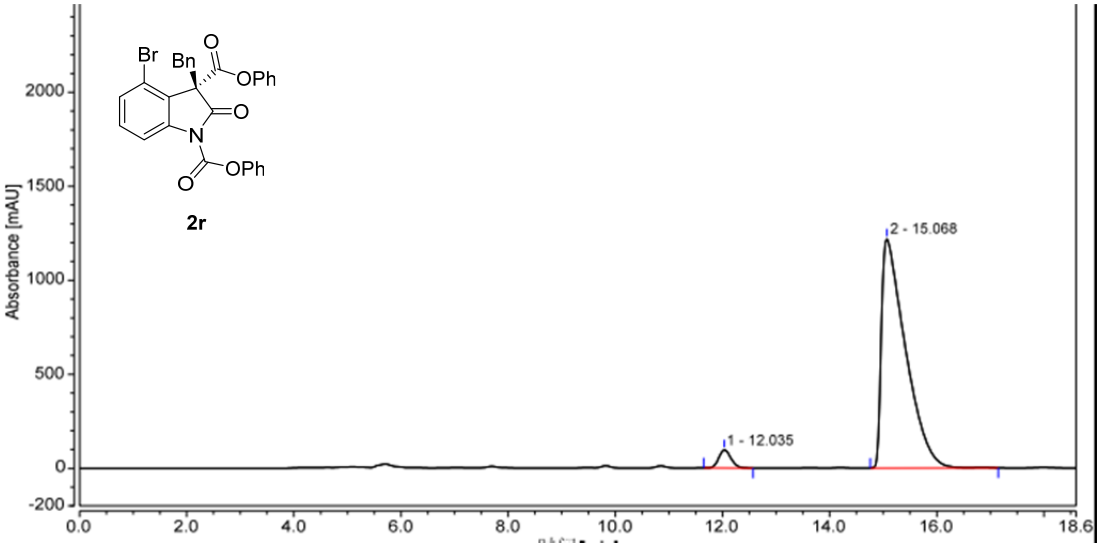


2q

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	15.922	74.524	82.762	4.11	7.69
2	23.277	1740.773	994.022	95.89	92.31
Total:		**1815.297**	**1076.784**	**100.00**	**100.00**

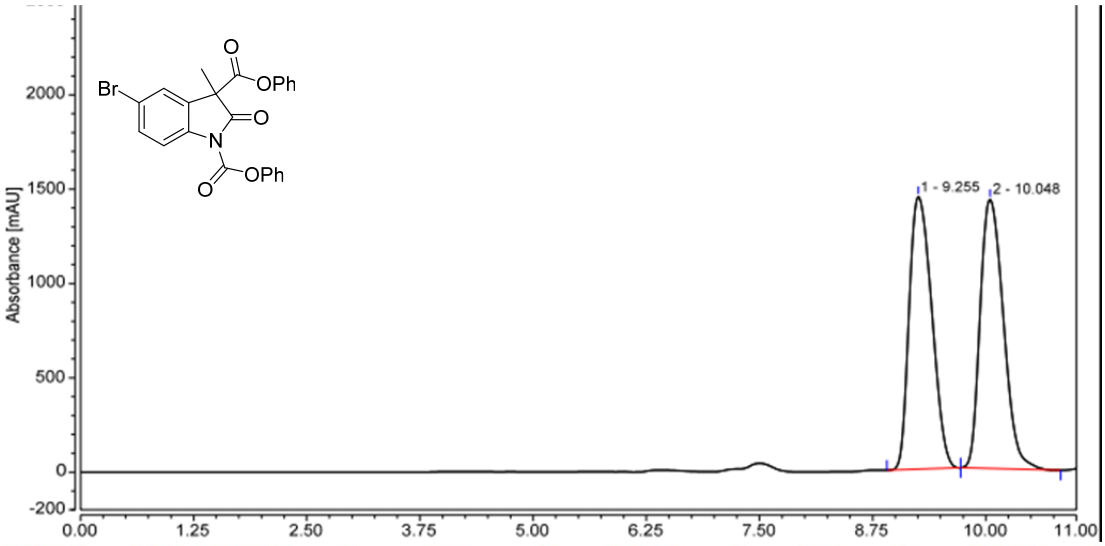


序号	峰名称	保留时间 min	峰面积 mAU*min	峰高 mAU	相对峰面积 %	相对峰高 %	样品量 n.a.
1		11.720	210.955	725.774	48.06	59.00	n.a.
2		15.072	227.991	504.369	51.94	41.00	n.a.
总和:			**438.946**	**1230.143**	**100.00**	**100.00**	

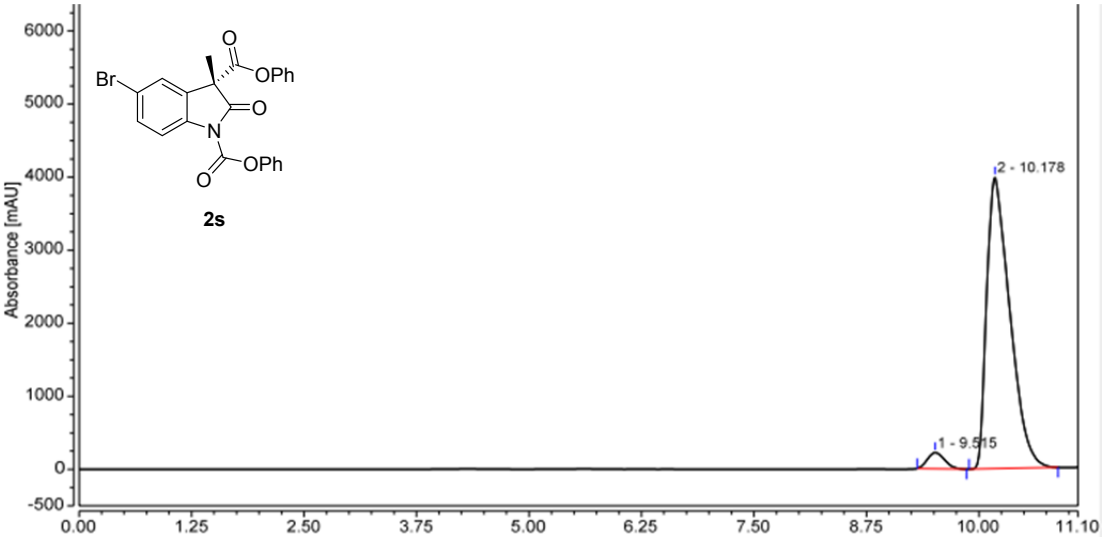


2r

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	12.035	25.112	95.701	3.81	7.28
2	15.068	633.850	1219.397	96.19	92.72
Total:		**658.962**	**1315.097**	**100.00**	**100.00**

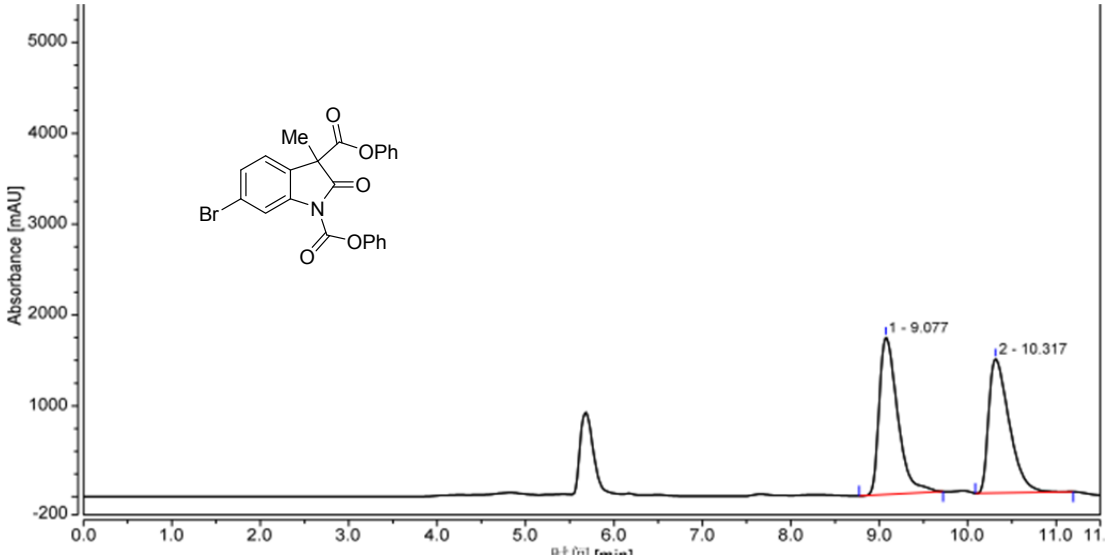


Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.255	418.346	1445.637	49.52	50.33
2	10.048	426.395	1426.888	50.48	49.67
Total:		**844.741**	**2872.525**	**100.00**	**100.00**

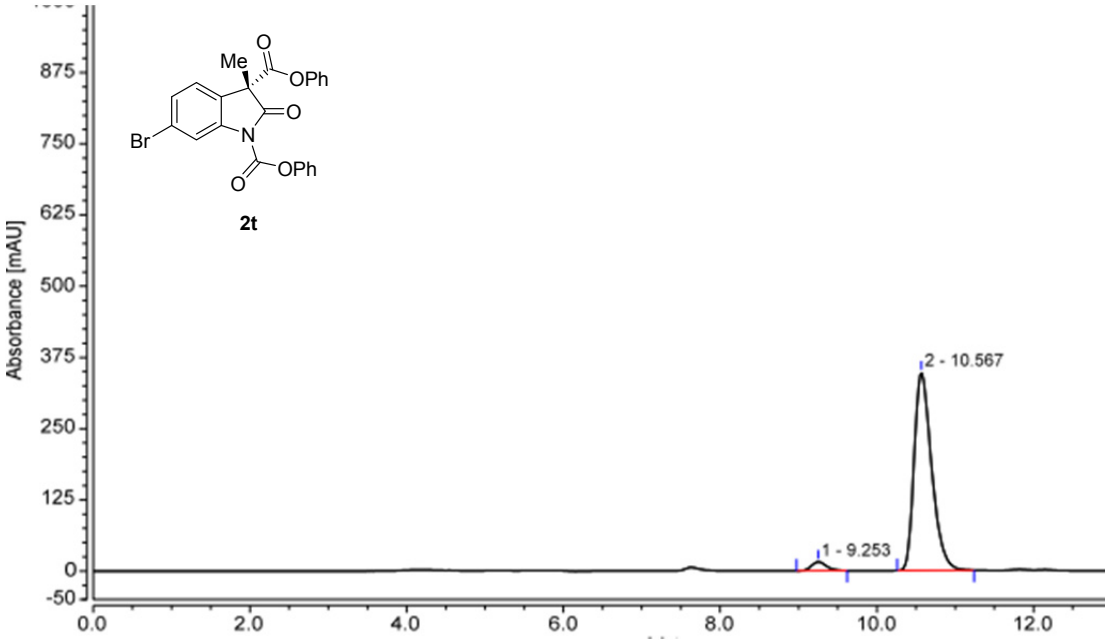


2s

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.515	48.433	220.776	3.91	5.24
2	10.178	1188.822	3994.564	96.09	94.76
Total:		**1237.255**	**4215.340**	**100.00**	**100.00**

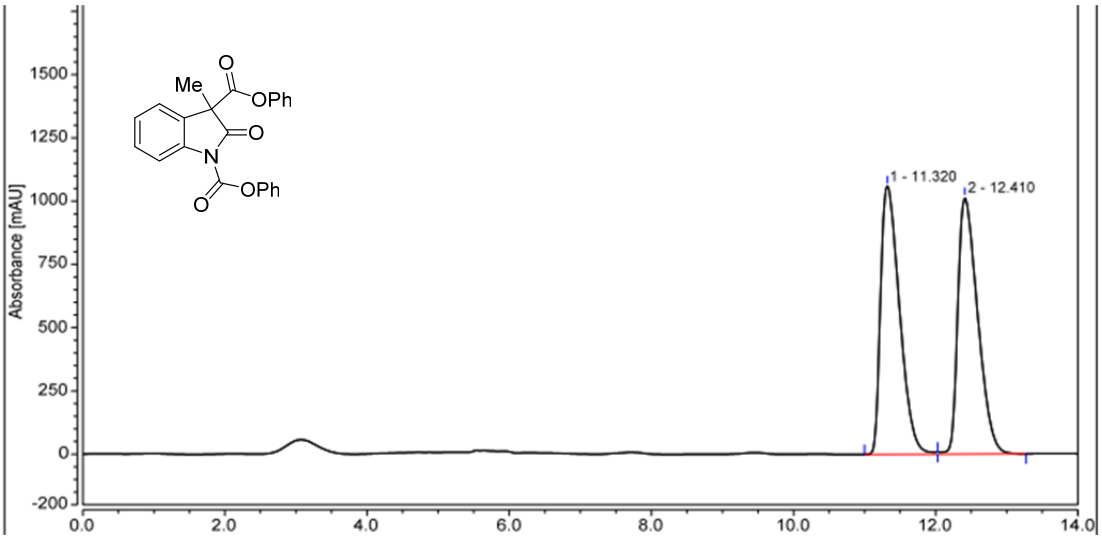


序号	峰名称	保留时间 min	峰面积 mAU*min	峰高 mAU	相对峰面积 %	相对峰高 %	样品量 n.a.
1		9.077	419.719	1730.363	51.22	53.96	n.a.
2		10.317	399.648	1476.297	48.78	46.04	n.a.
总和:			**819.367**	**3206.659**	**100.00**	**100.00**	



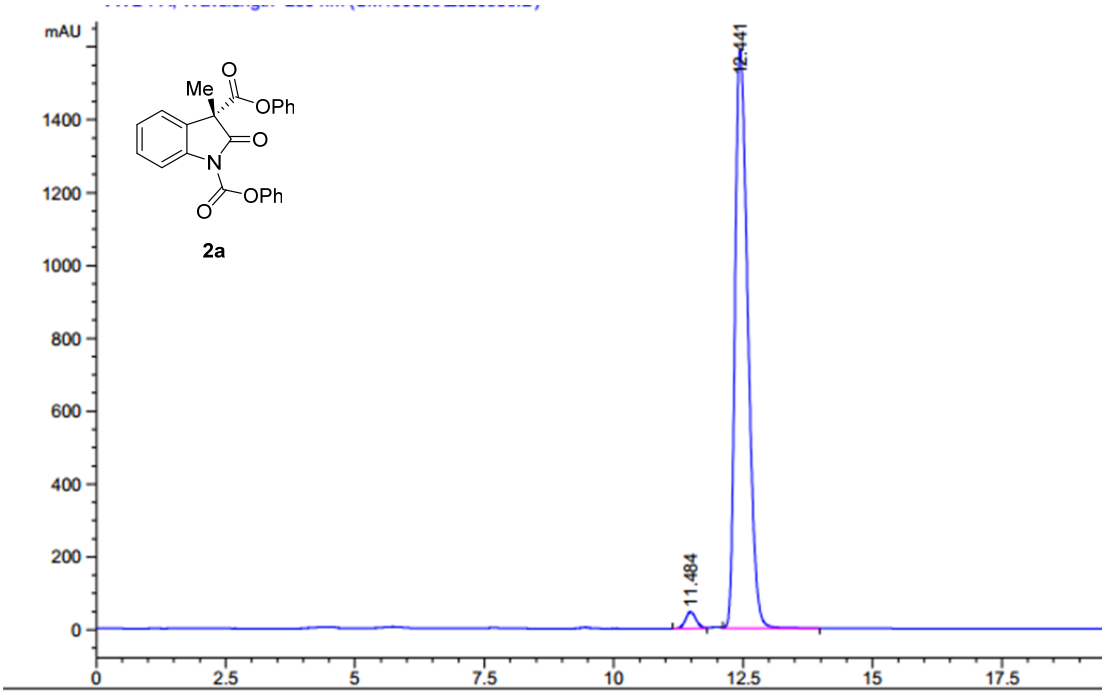
2t

Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	9.253	3.456	15.539	3.69	4.28
2	10.567	90.085	347.116	96.31	95.72
Total:		**93.541**	**362.655**	**100.00**	**100.00**



Peak	Retention Time min	Area mAU*min	Height mAU	Area %	Height %
1	11.320	328.264	1061.528	50.13	51.16
2	12.410	326.509	1013.430	49.87	48.84
Total:		**654.773**	**2074.959**	**100.00**	**100.00**

3 mmol scale



Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	11.484	BV	0.2190	649.43195	45.88321	2.3239
2	12.441	VB	0.2705	2.72960e4	1587.22070	97.6761