

Supporting Information

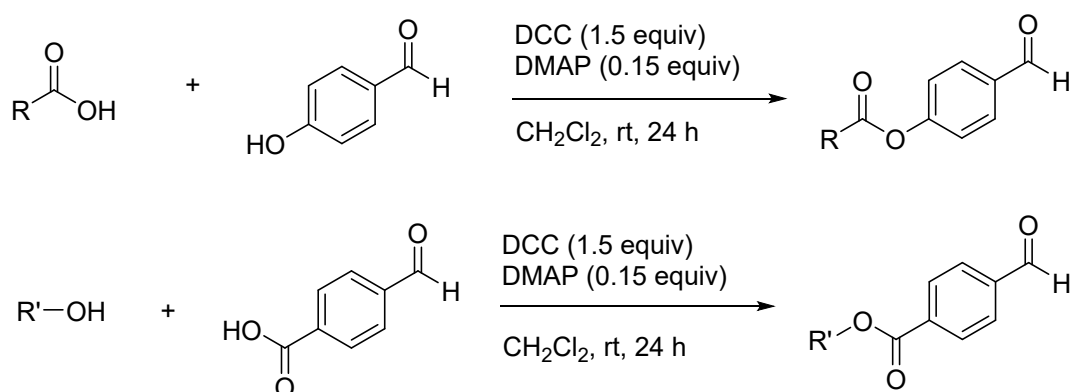
Expedient (3+3)-annulation of *in situ* generated azaoxyallyl cations with diaziridines

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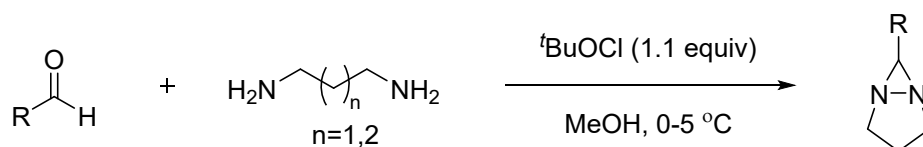
General Procedure for the Synthesis of 1t-w.

Step 1: General Procedure for the Synthesis of Esters³



First, carboxylic acid (1 mmol), dicyclohexylcarbodiimide (DCC) (309 mg, 1.5 mmol), 4-dimethylaminepyridine (DMAP) (18 mg, 0.15 mmol) and alcohol or phenol (1.2 mmol) were stirred in CH_2Cl_2 (10 mL) for 12 h at room temperature. The reaction mixture was then passed through a short pad of celite. The solvent was evaporated and the residue was purified on silica gel chromatography using ethyl acetate and hexane as an eluent.

Step 2: General Procedure for the Synthesis of Diaziridines¹



t-BuOCl (119 mg, 1.1 mmol) in MeOH (1 mL) was added dropwise to the stirring solution of 1,3-diaminopropane (148 mg, 2 mmol) in MeOH (10 mL) at 0 to 5 °C. Then the aldehyde (1 mmol) in MeOH (1-2 mL) was added and the stirring was continued for an additional 24 h at 0 to 5 °C. The solvent was evaporated and the residue was dissolved in CHCl_3 (10 mL). The solution was washed with water (10 mL) and dried (Na_2SO_4). Evaporation of the solvent gave a residue that was purified on silica gel column chromatography using ethyl acetate and hexane as an eluent.

General Procedure for the Synthesis of 3. α -Halohydroxamates **1** (0.2 mmol), diaziridines **2** (0.24 mmol) and K_2CO_3 (55 mg, 0.4 mmol) were stirred in CH_3CN (2 mL) at room temperature for 12 h. The progress of the reaction was monitored by TLC using ethyl acetate and hexane as eluent. The solvent was evaporated and the residue was dissolved in ethyl acetate (10 mL). The

solution was washed with water (5 mL) and dried (Na₂SO₄). Evaporation of the solvent gave a residue that was purified on silica gel column chromatography using ethyl acetate and hexane as an eluent.

Scale-up Synthesis of 3aa. α -Halohydroxamates **1a** (813 mg, 3 mmol), diaziridines **2a** (576 mg, 3.6 mmol) and K₂CO₃ (828 mg, 6 mmol) were subjected to the above described general procedure to produce **3aa** in 67% (705 mg) of yield.

Intermolecular Competitive Experiment Employing 2h and 2i. *N*-(Benzyloxy)-2-bromo-2-methylpropanamide **1a** (54 mg, 0.2 mmol), **2h** (45 mg, 0.24 mmol), **2i** (49 mg, 0.24 mmol) and K₂CO₃ (55 mg, 0.4 mmol) were stirred in CH₃CN (2 mL) at room temperature for 12 h. The solvent was evaporated and the work-up and purification were performed as described in the above general procedure to afford **3ah** and **3ai** in 40% and 31% yields, respectively.

Sample Preparation for Crystal Growth. The compound **3af** was dissolved in minimum volume of acetonitrile and kept at room temperature for slow evaporation (2 days). The block shaped crystal was then subjected to X-ray diffraction.

Crystal Data and Structure Refinement

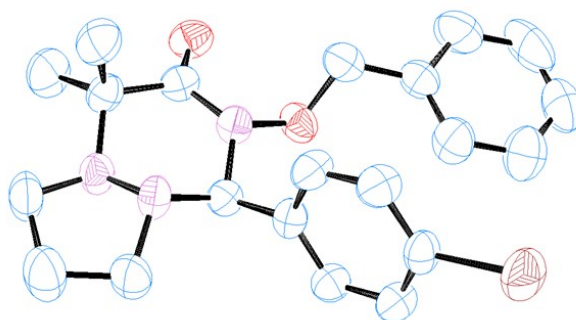
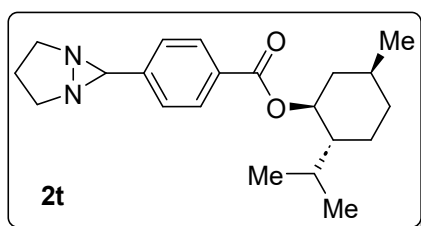


Figure S1. ORTEP diagram of 2-(benzyloxy)-1-(4-bromophenyl)-4,4-dimethyltetrahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one **3af** with 50% ellipsoid (CCDC 2225274). H-Atoms omitted for clarity.

Identification code	3af
Empirical formula	'C ₂₁ H ₂₄ Br N ₃ O ₂ '
Formula weight	430.34
Crystal habit, colour	Block /colourless

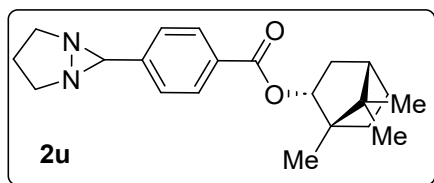
Crystal size, mm ³	0.35 x 0.31 x 0.28
Temperature, T/K	293 K
Wavelength, $\lambda/\text{\AA}$	0.71073
Crystal system	'Orthorhombic'
Space group	'P c a 21'
Unit cell dimensions	a = 16.8943(6) \AA b = 9.1586 (3) \AA c = 13.1298 (4) \AA $\alpha = 90$ $\beta = 90$ $\gamma = 90$
Volume, $V/\text{\AA}^3$	2031.55 (12)
Z	4
Calculated density, g cm ⁻³	1.407
Absorption coefficient, μ/mm^{-1}	2.044
$F(000)$	888
θ range for data collection	2.224 to 24.991°
Limiting indices	$-20 \leq h \leq 20, -10 \leq k \leq 10, -15 \leq l \leq 15$
Reflection collected / unique	3560/2836
Completeness to θ	99.9% ($\theta = 24.991^\circ$)
Absorption correction	None
Max. and min. transmission	0.975 and 0.980
Refinement method	'SHELXT 2018/2 (Sheldrick, 2018)'
Data / restraints / parameters	3560/1/246
Goodness-of-fit on F^2	0.921
Final R indices [$I > 2\sigma(I)$]	R1 = 0.0347, wR2 = 0.0983
R indices (all data)	R1 = 0.0536, wR2 = 0.1321

Characterization Data



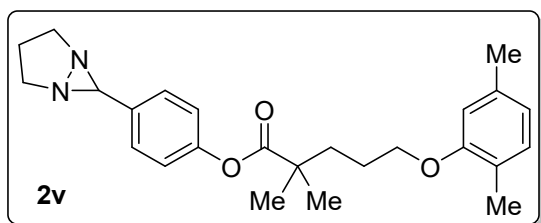
(1S,2R,5S)-2-Isopropyl-5-methylcyclohexyl 4-(1,5-diaza-

bicyclo[3.1.0]hexan-6-yl)benzoate 2t. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.29$; colorless solid; mp 68-69 °C; yield 77% (197 mg); ^1H NMR (400 MHz, CDCl_3) δ 8.00 (d, $J = 8.4$ Hz, 2H), 7.42 (d, $J = 8.4$ Hz, 2H), 4.95-4.88 (m, 1H), 3.61 (dd, $J = 12.0, 8.45$ Hz, 2H), 3.20-3.12 (m, 3H), 2.13 (d, $J = 12.0$ Hz, 1H), 1.96-1.87 (m, 3H), 1.76-1.66 (m, 3H), 1.60-1.51 (m, 2H), 1.11 (t, $J = 11.6$ Hz, 2H), 0.91 (t, $J = 7.2$ Hz, 6H), 0.78 (d, $J = 6.8$ Hz, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 166.0, 142.0, 131.1, 129.6, 127.4, 75.0, 56.3, 52.47, 52.45, 47.4, 41.1, 34.4, 31.5, 26.7, 23.9, 22.1, 21.7, 20.8, 16.7; FT-IR (neat) 2954, 2870, 1712, 1689, 1455, 1370, 1271, 1113, 1099, 1019 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{31}\text{N}_2\text{O}_2$: 343.2380, found: 343.2382.



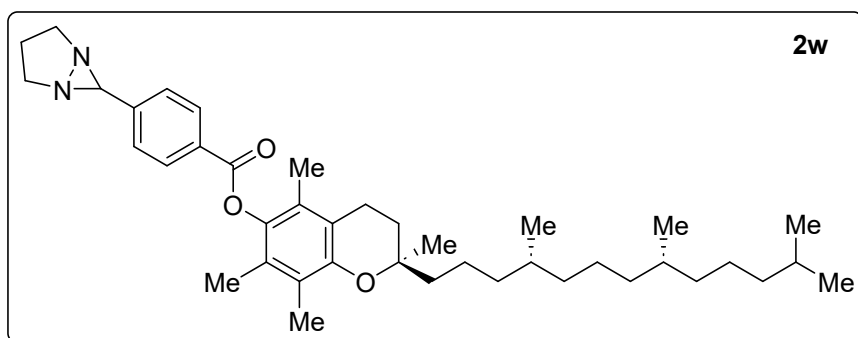
(1S,2R,4S)-1,7,7-Trimethylbicyclo[2.2.1]heptan-2-yl 4-

(1,5-diazabicyclo[3.1.0]hexan-6-yl)benzoate 2u. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.25$; thick liquid; yield 69% (175 mg); ^1H NMR (400 MHz, CDCl_3) δ 8.01 (d, $J = 8.0$ Hz, 2H), 7.43 (d, $J = 8.4$ Hz, 2H), 5.12-5.08 (m, 1H), 3.64-3.58 (m, 2H), 3.20-3.12 (m, 3H), 2.50-2.42 (m, 1H), 2.15-2.08 (m, 1H), 1.97-1.87 (m, 2H), 1.84-1.76 (m, 1H), 1.73 (t, $J = 4.4$ Hz, 1H), 1.44-1.36 (m, 1H), 1.34-1.27 (m, 1H), 1.13 (dd, $J = 13.6, 3.2$ Hz, 1H), 0.96 (s, 3H), 0.91 (d, $J = 4.0$ Hz, 6H); ^{13}C NMR (125 MHz, CDCl_3) δ 166.7, 142.1, 131.1, 129.5, 127.4, 80.7, 56.3, 52.4, 49.2, 48.0, 45.1, 37.0, 28.2, 27.5, 21.7, 19.8, 19.0, 13.7; FT-IR (neat) 2953, 2877, 1713, 1613, 1453, 1307, 1272, 1117, 1019 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{29}\text{N}_2\text{O}_2$: 341.2224, found: 341.2225.



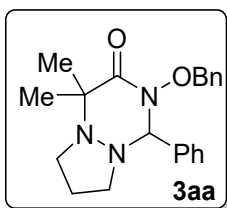
4-(1,5-Diazabicyclo[3.1.0]hexan-6-yl)phenyl 5-

(2,5-dimethylphenoxy)-2,2-dimethylpentanoate 2v. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.28$; thick liquid; yield 63% (192 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.35 (d, $J = 8.8$ Hz, 2H), 7.00 (d, $J = 8.4$ Hz, 3H), 6.66 (d, $J = 7.2$ Hz, 1H), 6.61 (s, 1H), 3.98-3.96 (m, 2H), 3.60-3.54 (m, 2H), 3.17-3.09 (m, 3H), 2.29 (s, 3H), 2.16 (s, 3H), 1.93-1.84 (m, 6H), 1.35 (s, 6H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 176.3, 157.0, 151.4, 136.5, 134.5, 130.4, 128.4, 123.7, 121.5, 120.8, 112.1, 67.9, 56.3, 52.3, 42.5, 37.2, 25.3, 25.2, 21.8, 21.5, 15.8; FT-IR (neat) 2927, 2875, 1747, 1613, 1508, 1263, 1194, 1160, 1112, 1045 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{25}\text{H}_{33}\text{N}_2\text{O}_3$: 409.2486, found: 409.2491.



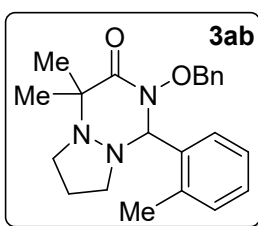
(R)-2,5,7,8-Tetramethyl

-2-((4R,8R)-4,8,12-trimethyltridecyl)chroman-6-yl 4-(1,5-diazabicyclo[3.1.0]hexan-6-yl)benzoate 2w. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.26$; colorless solid; mp 87-88 $^{\circ}\text{C}$; yield 65% (293 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.21 (d, $J = 8.4$ Hz, 2H), 7.50 (d, $J = 8.4$ Hz, 2H), 3.65-3.60 (m, 2H), 3.22-3.14 (m, 3H), 2.60 (t, $J = 6.8$ Hz, 2H), 2.11 (s, 3H), 2.03 (s, 3H), 1.99 (s, 3H), 1.95-1.77 (m, 4H), 1.55-1.47 (m, 2H), 1.39-1.33 (m, 3H), 1.30-1.20 (m, 12H), 1.16-1.03 (m, 7H), 0.87-0.83 (m, 12H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 165.0, 149.5, 142.8, 140.6, 130.2, 129.7, 127.6, 126.9, 125.2, 123.1, 117.5, 75.1, 56.1, 52.4, 39.4, 37.56, 37.51, 37.4, 37.3, 32.89, 32.88, 28.0, 24.92, 24.91, 24.5, 23.8, 22.8, 22.7, 21.7, 21.1, 20.7, 19.87, 19.80, 19.77, 19.75, 19.71, 13.1, 12.2, 11.9; FT-IR (neat) 2925, 2868, 1730, 1614, 1459, 1270, 1235, 1171, 1090, 1018 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{Na}]^+$ calcd for $\text{C}_{40}\text{H}_{60}\text{N}_2\text{NaO}_3$: 639.4496, found: 639.4502.



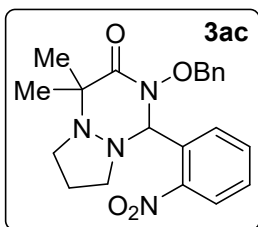
2-(Benzyloxy)-4,4-dimethyl-1-phenyltetrahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3aa.

Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.49$; colorless solid; mp 89-90 °C; yield 79% (55 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.47 (d, $J = 6.5$ Hz, 2H), 7.35-7.31 (m, 3H), 7.17-7.11 (m, 3H), 6.90-6.88 (m, 2H), 4.83 (d, $J = 9.0$ Hz, 1H), 4.72 (s, 1H), 4.01 (d, $J = 9.0$ Hz, 1H), 2.99-2.94 (m, 1H), 2.81-2.76 (m, 1H), 2.72-2.68 (m, 1H), 2.37 (q, $J = 8.5$ Hz, 1H), 1.93-1.82 (m, 2H), 1.48 (s, 3H), 1.35 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.6, 134.9, 129.7, 129.6, 129.3, 128.56, 128.51, 128.3, 86.4, 77.3, 64.0, 50.9, 45.3, 23.6, 23.4, 17.8; FT-IR (neat) 2978, 2935, 1672, 1455, 1384, 1364, 1211, 1182, 1044, 1028 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{26}\text{N}_3\text{O}_2$: 352.2020, found: 352.2022.



2-(Benzyloxy)-4,4-dimethyl-1-(o-tolyl)tetrahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ab.

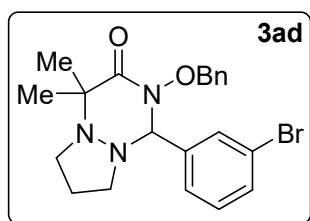
Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.45$; thick liquid; yield 65% (47 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.83 (m, 1H), 7.32-7.28 (m, 2H), 7.22-7.19 (m, 4H), 6.92 (d, $J = 6.0$ Hz, 2H), 5.24 (s, 1H), 4.86 (d, $J = 8.0$ Hz, 1H), 3.87 (d, $J = 7.6$ Hz, 1H), 3.07-3.01 (m, 1H), 2.89-2.83 (m, 2H), 2.43-2.36 (m, 4H), 2.01-1.91 (m, 2H), 1.56 (s, 3H), 1.42 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.9, 138.2, 134.8, 134.5, 130.4, 129.6, 129.0, 128.9, 128.5, 128.2, 126.3, 80.9, 77.5, 63.9, 50.5, 45.2, 23.55, 23.51, 19.7, 17.9; FT-IR (neat) 2975, 2872, 1682, 1455, 1376, 1351, 1280, 1230, 1206, 1010 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{22}\text{H}_{28}\text{N}_3\text{O}_2$: 366.2176, found: 366.2180.



2-(Benzyloxy)-4,4-dimethyl-1-(2-nitrophenyl)tetrahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ac.

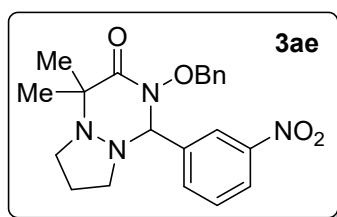
Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.41$; thick liquid; yield 59% (46 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.90 (s, 1H), 7.79 (d, $J = 8.4$ Hz, 1H), 7.62-7.58 (m, 1H), 7.52-7.48 (m, 1H), 7.25-7.21 (m, 3H),

7.14-7.11 (m, 2H), 5.68 (s, 1H), 4.91 (d, $J = 9.2$ Hz, 1H), 4.40 (d, $J = 9.2$ Hz, 1H), 3.05-2.99 (m, 1H), 2.88-2.82 (m, 1H), 2.76-2.73 (m, 2H), 2.06-1.98 (m, 1H), 1.96-1.87 (m, 1H), 1.52 (s, 3H), 1.41 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.2, 151.1, 134.4, 132.6, 131.2, 130.0, 129.6, 128.7, 128.4, 123.7, 76.8, 64.3, 50.1, 45.1, 24.1, 24.0, 23.3, 18.5; FT-IR (neat) 2977, 2880, 1676, 1527, 1454, 1353, 1280, 1202, 1090, 1009 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{N}_4\text{O}_4$: 397.1870, found: 397.1881.



2-(Benzyloxy)-1-(3-bromophenyl)-4,4-dimethyltetrahydro-6H-

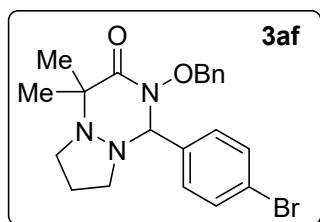
pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ad. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.44$; thick liquid; yield 69% (59 mg); ^1H NMR (500 MHz, CDCl_3) δ 7.64 (s, 1H), 7.56 (d, $J = 7.5$ Hz, 1H), 7.45 (d, $J = 7.5$ Hz, 1H), 7.32-7.24 (m, 4H), 7.03 (d, $J = 6.0$ Hz, 2H), 4.92 (d, $J = 9.0$ Hz, 1H), 4.70 (s, 1H), 4.13 (d, $J = 9.0$ Hz, 1H), 3.04-3.00 (m, 1H), 2.86-2.81 (q, $J = 8.0$ Hz, 1H), 2.79-2.76 (m, 1H), 2.40 (q, $J = 8.0$ Hz, 1H), 2.00-1.91 (m, 2H), 1.53 (s, 3H), 1.41 (s, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 171.6, 138.9, 134.7, 132.7, 132.2, 130.1, 129.7, 128.7, 128.4, 128.0, 122.5, 85.7, 77.2, 64.0, 51.0, 45.2, 23.6, 23.4, 17.8; FT-IR (neat) 2976, 2880, 1683, 1574, 1454, 1377, 1352, 1280, 1205, 1068 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{BrN}_3\text{O}_2$: 430.1125, found: 430.1132.



2-(Benzyloxy)-4,4-dimethyl-1-(3-nitrophenyl)tetrahydro-6H-

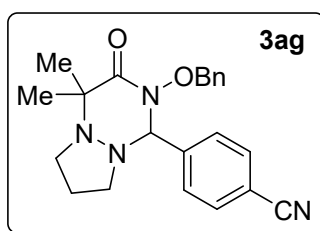
pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ae. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.42$; thick liquid; yield 61% (48 mg); ^1H NMR (400 MHz, CDCl_3) δ 8.18-8.71 (m, 2H), 7.72 (d, $J = 7.6$ Hz, 1H), 7.50-7.46 (m, 1H), 7.21-7.13 (m, 3H), 6.95-6.93 (m, 2H), 4.85 (d, $J = 10.0$ Hz, 1H), 4.74 (s, 1H), 4.21 (d, $J = 9.6$ Hz, 1H), 2.99-2.93 (m, 1H), 2.81-2.75 (m, 1H), 2.64-2.59 (m, 1H), 2.35 (q, $J = 8.4$ Hz, 1H), 1.95-1.81 (m, 2H), 1.48 (s, 3H), 1.36 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.7, 148.3, 138.8, 135.3, 134.7, 129.6, 129.4, 128.8, 128.5, 124.5, 124.1, 85.4, 77.2, 64.2, 50.9, 45.1, 23.7, 23.3, 17.9; FT-IR (neat) 2977, 2878,

1677, 1530, 1455, 1349, 1282, 1204, 1092, 1010 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{N}_4\text{O}_4$: 397.1870, found: 397.1867.



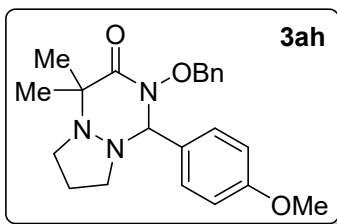
2-(Benzyloxy)-1-(4-bromophenyl)-4,4-dimethyltetrahydro-6H-

pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3af. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; R_f = 0.44; colorless solid; mp 127-128 $^{\circ}\text{C}$; yield 73% (62 mg); ^1H NMR (500 MHz, CDCl_3) δ 7.46 (d, J = 8.5 Hz, 2H), 7.31 (d, J = 8.0 Hz, 2H), 7.19-7.15 (m, 3H), 6.95 (d, J = 7.5 Hz, 2H), 4.83 (d, J = 9.0 Hz, 1H), 4.64 (s, 1H), 4.08 (d, J = 9.5 Hz, 1H), 2.97-2.92 (m, 1H), 2.79-2.74 (m, 1H), 2.68-2.64 (m, 1H), 2.32 (q, J = 8.5 Hz, 1H), 1.92-1.81 (m, 2H), 1.45 (s, 3H), 1.34 (s, 3H); ^{13}C NMR (150 MHz, CDCl_3) δ 171.7, 135.6, 134.8, 131.7, 130.9, 129.7, 128.7, 128.4, 123.6, 85.8, 77.2, 64.0, 50.9, 45.2, 23.6, 23.4, 17.7; FT-IR (neat) 2977, 2938, 2883, 1686, 1591, 1487, 1352, 1291, 1206, 1011 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{BrN}_3\text{O}_2$: 430.1125, found: 430.1130.



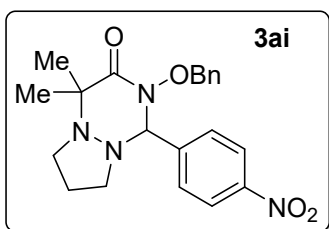
4-(2-(Benzyloxy)-4,4-dimethyl-3-oxohexahydro-6H-pyrazolo

[1,2-a][1,2,4]triazin-1-yl)benzotrile 3ag. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; R_f = 0.41; thick liquid; yield 63% (47 mg); ^1H NMR (500 MHz, CDCl_3) δ 8.15 (d, J = 8.0 Hz, 2H), 7.56 (d, J = 8.0 Hz, 2H), 7.21-7.15 (m, 3H), 6.95 (d, J = 7.5 Hz, 2H), 4.85 (d, J = 10.0 Hz, 1H), 4.74 (s, 1H), 4.18 (d, J = 9.5 Hz, 1H), 2.98-2.93 (m, 1H), 2.78 (q, J = 9.0 Hz, 1H), 2.59 (t, J = 7.5 Hz, 1H), 2.33 (q, J = 8.5 Hz, 1H), 1.94-1.89 (m, 1H), 1.86-1.81 (m, 1H), 1.47 (s, 3H), 1.36 (s, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 171.7, 148.7, 143.5, 134.7, 130.1, 129.6, 128.8, 128.7, 128.4, 123.6, 85.3, 77.2, 64.3, 50.8, 45.1, 23.8, 23.3, 17.8; FT-IR (neat) 2936, 2919, 2812, 2021, 1621, 1530, 1476, 1356, 1101, 1034 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{22}\text{H}_{25}\text{N}_4\text{O}_2$: 377.1972, found: 377.1974.



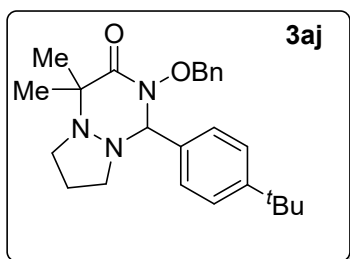
2-(Benzyloxy)-1-(4-methoxyphenyl)-4,4-dimethyltetrahydro-6H-

H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ah. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.43$; thick liquid; yield 78% (59 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.39 (d, $J = 8.0$ Hz, 2H), 7.17-7.13 (m, 3H), 6.96-6.94 (m, 2H), 6.86 (d, $J = 9.0$ Hz, 2H), 4.81 (d, $J = 9.0$ Hz, 1H), 4.66 (s, 1H), 4.02 (d, $J = 9.0$ Hz, 1H), 3.77 (s, 3H), 2.97-2.93 (m, 1H), 2.80-2.74 (m, 1H), 2.72-2.68 (m, 1H), 2.34 (q, $J = 8.5$ Hz, 1H), 1.92-1.81 (m, 2H), 1.46 (s, 3H), 1.34 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.6, 160.6, 135.0, 130.4, 129.7, 128.7, 128.5, 128.3, 113.8, 86.0, 63.9, 55.5, 50.9, 45.3, 23.6, 23.4, 17.7; FT-IR (neat) 2975, 2838, 1681, 1611, 1514, 1455, 1351, 1247, 1170, 1030 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{22}\text{H}_{28}\text{N}_3\text{O}_3$: 382.2125, found: 382.2123.



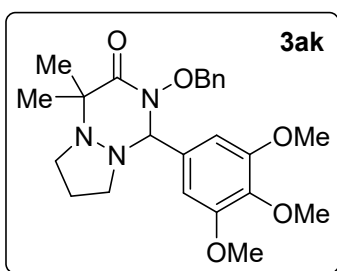
2-(Benzyloxy)-4,4-dimethyl-1-(4-nitrophenyl)tetrahydro-6H-

pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ai. Analytical TLC on silica gel, 2:3 ethyl acetate/hexane; $R_f = 0.40$; colorless solid; mp 97-98 $^\circ\text{C}$; yield 60% (47 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 8.15 (d, $J = 8.5$ Hz, 2H), 7.56 (d, $J = 8.5$ Hz, 2H), 7.22-7.14 (m, 3H), 6.95 (d, $J = 7.0$ Hz, 2H), 4.85 (d, $J = 10.0$ Hz, 1H), 4.74 (s, 1H), 4.19 (d, $J = 9.5$ Hz, 1H), 2.98-2.93 (m, 1H), 2.80-2.75 (m, 1H), 2.62-2.57 (m, 1H), 2.33 (q, $J = 8.5$ Hz, 1H), 1.94-1.90 (m, 1H), 1.87-1.82 (m, 1H), 1.47 (s, 3H), 1.36 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.7, 148.7, 143.5, 134.7, 130.1, 129.6, 128.8, 128.5, 123.6, 85.3, 77.2, 64.3, 50.8, 45.1, 23.8, 23.3, 17.8; FT-IR (neat) 2977, 2850, 1682, 1608, 1524, 1454, 1348, 1284, 1205, 1015 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{N}_4\text{O}_4$: 397.1870, found: 397.1876.



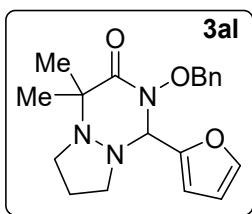
2-(Benzyloxy)-1-(4-(tert-butyl)phenyl)-4,4-dimethyltetra-

hydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3aj. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.42$; thick liquid; yield 71% (57 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.40 (d, $J = 8.0$ Hz, 2H), 7.36 (d, $J = 8.5$ Hz, 2H), 7.16-7.09 (m, 3H), 6.80 (d, $J = 7.0$ Hz, 2H), 4.87 (d, $J = 8.5$ Hz, 1H), 4.69 (s, 1H), 3.96 (d, $J = 9.0$ Hz, 1H), 2.98-2.94 (m, 1H), 2.80-2.72 (m, 2H), 2.36 (q, $J = 9.0$ Hz, 1H), 1.93-1.83 (m, 2H), 1.48 (s, 3H), 1.34 (s, 3H), 1.29 (s, 9H); $^{13}\text{C NMR}$ (150 MHz, CDCl_3) δ 171.6, 152.8, 134.7, 133.3, 129.8, 128.9, 128.5, 128.2, 125.3, 86.2, 77.2, 63.8, 51.0, 45.2, 34.8, 31.5, 23.49, 23.45, 17.7; FT-IR (neat) 2963, 2869, 1684, 1455, 1366, 1351, 1284, 1206, 1107, 1023 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{25}\text{H}_{34}\text{N}_3\text{O}_2$: 408.2646, found: 408.2661.



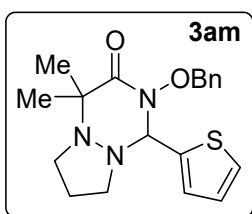
2-(Benzyloxy)-4,4-dimethyl-1-(3,4,5-trimethoxyphenyl)tetra-

hydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ak. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.41$; thick liquid; yield 75% (66 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.25-7.21 (m, 3H), 7.03 (dd, $J = 7.2, 1.6$ Hz, 2H), 6.75 (s, 2H), 4.96 (d, $J = 9.2$ Hz, 1H), 4.65 (s, 1H), 4.12 (d, $J = 9.2$ Hz, 1H), 3.89 (s, 3H), 3.85 (s, 6H), 3.06-3.01 (m, 1H), 2.88-2.82 (m, 2H), 2.42 (q, $J = 8.8$ Hz, 1H), 2.02-1.92 (m, 2H), 1.54 (s, 3H), 1.42 (s, 3H); $^{13}\text{C NMR}$ (150 MHz, CDCl_3) δ 171.5, 153.2, 139.0, 134.9, 132.0, 129.7, 128.6, 128.3, 106.2, 86.5, 64.3, 63.9, 61.1, 56.3, 50.9, 45.2, 23.6, 23.4, 17.8; FT-IR (neat) 2975, 2937, 2848, 1684, 1594, 1504, 1460, 1422, 1351, 1233, 1126, 1008 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{24}\text{H}_{32}\text{N}_3\text{O}_5$: 442.2336, found: 442.2336.



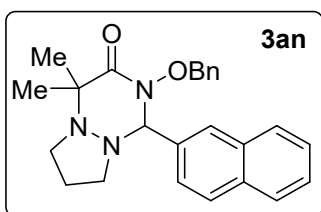
2-(Benzyloxy)-1-(furan-2-yl)-4,4-dimethyltetrahydro-6H-pyrazolo-

[1,2-a][1,2,4]triazin-3(4H)-one 3al. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.43$; thick liquid; yield 65% (44 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.50 (s, 1H), 7.28-7.26 (m, 3H), 7.19-7.17 (m, 2H), 6.55 (d, $J = 3.0$ Hz, 1H), 6.45-6.44 (m, 1H), 4.96 (d, $J = 9.0$ Hz, 1H), 4.93 (s, 1H), 4.27 (d, $J = 9.0$ Hz, 1H), 3.01-2.97 (m, 1H), 2.90-2.84 (m, 2H), 2.54 (q, $J = 9.0$ Hz, 1H), 2.02-1.94 (m, 2H), 1.48 (s, 3H), 1.38 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.5, 149.3, 143.1, 134.9, 129.7, 128.6, 128.3, 111.4, 110.7, 79.0, 77.2, 63.9, 50.9, 45.2, 23.7, 22.8, 18.1; FT-IR (neat) 3314, 2975, 2934, 2873, 1664, 1529, 1474, 1363, 1293, 1184, 1012 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{24}\text{N}_3\text{O}_3$: 342.1812, found: 342.1815.



2-(Benzyloxy)-4,4-dimethyl-1-(thiophen-2-yl)tetrahydro-6H-pyrazo-

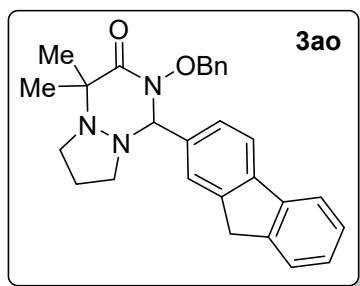
lo[1,2-a][1,2,4]triazin-3(4H)-one 3am. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.43$; thick liquid; yield 61% (43 mg); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.40 (d, $J = 5.0$ Hz, 1H), 7.28-7.27 (m, 3H), 7.20 (d, $J = 3.0$ Hz, 1H), 7.17-7.15 (m, 2H), 7.03-7.01 (m, 1H), 5.14 (s, 1H), 4.94 (d, $J = 9.5$ Hz, 1H), 4.12 (d, $J = 10.0$ Hz, 1H), 3.01-2.96 (m, 1H), 2.91 (q, $J = 8.5$ Hz, 2H), 2.59 (s, 1H), 1.99-1.93 (m, 2H), 1.49 (s, 3H), 1.39 (s, 3H); $^{13}\text{C NMR}$ (150 MHz, CDCl_3) δ 170.9, 139.6, 134.9, 129.7, 129.0, 128.6, 128.3, 127.8, 126.0, 80.8, 77.4, 64.2, 64.1, 50.6, 45.2, 24.4, 23.9; FT-IR (neat) 2976, 2935, 2880, 1674, 1454, 1373, 1305, 1231, 1208, 1020 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{19}\text{H}_{24}\text{N}_3\text{O}_2\text{S}$: 358.1584, found: 358.1585.



2-(Benzyloxy)-4,4-dimethyl-1-(naphthalen-2-yl)tetrahydro-6H-

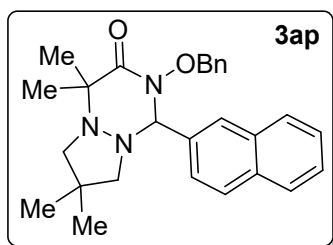
pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3an. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.40$; colorless solid; mp 92-93 $^{\circ}\text{C}$; yield 72% (57 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.89-7.85 (m, 4H), 7.73 (d, $J = 8.4$ Hz, 1H), 7.56-7.51 (m, 2H), 7.16 (t, $J = 7.2$

Hz, 1H), 7.08 (t, $J = 7.6$ Hz, 2H), 6.85 (d, $J = 7.2$ Hz, 2H), 4.93 (s, 1H), 4.91 (d, $J = 9.2$ Hz, 1H), 4.09 (d, $J = 9.2$ Hz, 1H), 3.08-3.03 (m, 1H), 2.90-2.84 (m, 1H), 2.78-2.72 (m, 1H), 2.48 (q, $J = 8.8$ Hz, 1H), 2.02-1.88 (m, 2H), 1.60 (s, 3H), 1.45 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.7, 134.7, 134.1, 133.8, 133.0, 129.6, 129.2, 128.5, 128.4, 128.27, 128.21, 127.9, 126.7, 126.4, 125.9, 86.6, 77.2, 64.0, 51.0, 45.3, 23.6, 23.5, 17.8; FT-IR (neat) 2976, 2935, 2880, 1681, 1454, 1376, 1308, 1281, 1207, 1015 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{25}\text{H}_{28}\text{N}_3\text{O}_2$: 402.2176, found: 402.2164.



2-(Benzyloxy)-1-(9H-fluoren-3-yl)-4,4-dimethyltetrahydro-

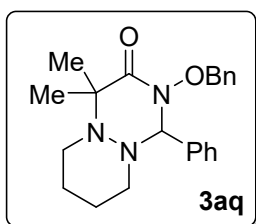
6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ao. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.41$; thick liquid; yield 70% (61 mg); ^1H NMR (500 MHz, CDCl_3) δ 7.82 (dd, $J = 13.5, 7.5$ Hz, 2H), 7.68 (s, 1H), 7.58 (d, $J = 7.5$ Hz, 1H), 7.54 (d, $J = 7.5$ Hz, 1H), 7.40 (t, $J = 7.5$ Hz, 1H), 7.33 (t, $J = 7.5$ Hz, 1H), 7.20-7.12 (m, 3H), 6.97 (d, $J = 7.5$ Hz, 2H), 4.91 (d, $J = 9.5$ Hz, 1H), 4.84 (s, 1H), 4.14 (d, $J = 9.0$ Hz, 1H), 3.92 (s, 2H), 3.07-3.02 (m, 1H), 2.89-2.84 (m, 1H), 2.83-2.79 (m, 1H), 2.46 (q, $J = 8.5$ Hz, 1H), 2.01-1.91 (m, 2H), 1.58 (s, 3H), 1.44 (s, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 171.6, 143.7, 143.4, 143.2, 141.3, 135.0, 134.9, 129.6, 128.5, 128.2, 128.1, 127.2, 127.0, 125.9, 125.3, 120.2, 119.7, 86.7, 77.2, 64.0, 51.0, 45.3, 37.0, 27.0, 23.6, 17.8; FT-IR (neat) 2976, 1938, 2880, 1682, 1455, 1377, 1352, 1282, 1207, 1006 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{28}\text{H}_{30}\text{N}_3\text{O}_2$: 440.2333, found: 440.2334.



2-(Benzyloxy)-4,4,7,7-tetramethyl-1-(naphthalen-2-yl)tetrahydro-

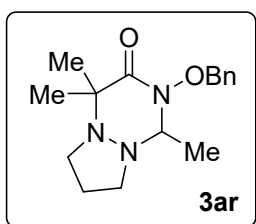
6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ap. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.45$; colorless solid; mp 130-131 $^\circ\text{C}$; yield 77% (66 mg); ^1H NMR (500 MHz, CDCl_3) δ 7.88-7.84 (m, 4H), 7.72 (d, $J = 8.0$ Hz, 1H), 7.55-7.51 (m, 2H), 7.15 (t, $J = 7.5$ Hz, 1H), 7.07 (t, $J = 7.5$ Hz, 2H), 6.84 (d, $J = 7.5$ Hz, 2H), 4.90-4.88 (m, 2H), 4.07 (d, $J = 9.5$

Hz, 1H), 2.81 (d, $J = 9.0$ Hz, 1H), 2.68 (d, $J = 9.0$ Hz, 1H), 2.46 (d, $J = 9.0$ Hz, 1H), 2.30 (d, $J = 8.5$ Hz, 1H), 1.60 (s, 3H), 1.39 (s, 3H), 1.11 (s, 3H), 1.07 (s, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 171.7, 134.8, 134.1, 134.0, 133.0, 129.7, 129.3, 128.49, 128.42, 128.28, 128.20, 127.9, 126.7, 126.4, 125.9, 87.0, 77.2, 64.9, 63.9, 59.7, 37.5, 28.4, 28.1, 23.5, 17.7; FT-IR (neat) 2960, 2933, 2873, 1685, 1455, 1366, 1306, 1213, 1174, 1017 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{27}\text{H}_{32}\text{N}_3\text{O}_2$: 430.2489, found: 430.2493.



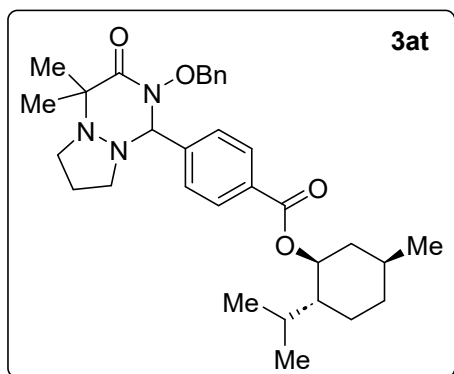
2-(Benzyloxy)-4,4-dimethyl-1-phenylhexahydropyridazino[1,2-a]

[1,2,4]triazin-3(4H)-one 3aq. Analytical TLC on silica gel, 1:4 ethyl acetate/hexane; $R_f = 0.39$; colorless solid; mp 138-139 $^\circ\text{C}$; yield 73% (53 mg); ^1H NMR (400 MHz, CDCl_3) δ 7.56-7.54 (m, 2H), 7.44-7.42 (m, 3H), 7.27-7.22 (m, 3H), 7.05-7.02 (m, 2H), 5.78 (s, 1H), 4.94 (d, $J = 9.2$ Hz, 1H), 4.01 (d, $J = 9.2$ Hz, 1H), 2.96-2.88 (m, 1H), 2.86-2.78 (m, 2H), 2.64 (dd, $J = 14.0, 3.2$ Hz, 1H), 1.81-1.74 (m, 5H), 1.65-1.58 (m, 1H), 1.33 (s, 3H), 1.14 (d, $J = 14.0$ Hz, 1H); ^{13}C NMR (150 MHz, CDCl_3) δ 172.3, 136.9, 134.9, 129.8, 129.6, 129.1, 128.7, 128.3, 77.1, 76.4, 63.1, 48.4, 38.6, 28.0, 24.7, 22.6, 16.7; FT-IR (neat) 2980, 2938, 1676, 1456, 1359, 1348, 1286, 1227, 1185, 1023, 1007 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{22}\text{H}_{28}\text{N}_3\text{O}_2$: 366.2176, found: 366.2186.



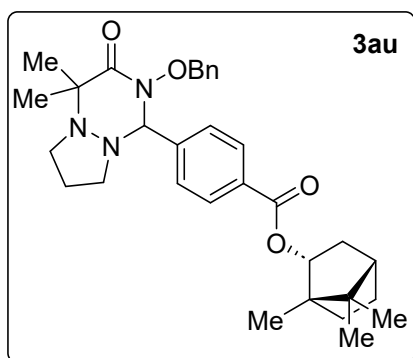
2-(Benzyloxy)-1,4,4-trimethyltetrahydro-6H-pyrazolo[1,2-a][1,2,4]

triazin-3(4H)-one 3ar. Analytical TLC on silica gel, 2:3 ethyl acetate/hexane; $R_f = 0.41$; thick liquid; yield 82% (47 mg); ^1H NMR (400 MHz, CDCl_3) δ 7.47 (dd, $J = 7.6, 2.0$ Hz, 2H), 7.38-7.33 (m, 3H), 5.03 (d, $J = 9.6$ Hz, 1H), 4.90 (d, $J = 9.6$ Hz, 1H), 4.03 (q, $J = 6.0$ Hz, 1H), 3.25-3.20 (m, 1H), 2.98-2.93 (m, 1H), 2.80-2.74 (m, 1H), 2.50-2.43 (q, $J = 8.4$ Hz, 1H), 2.04-1.96 (m, 2H), 1.37-1.35 (m, 9H); ^{13}C NMR (150 MHz, CDCl_3) δ 170.8, 135.1, 129.6, 128.7, 128.5, 79.0, 76.9, 63.7, 51.0, 44.9, 23.6, 23.4, 17.3, 17.2; FT-IR (neat) 2978, 2940, 2879, 1670, 1454, 1375, 1352, 1291, 1207, 1090, 1016 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{16}\text{H}_{24}\text{N}_3\text{O}_2$: 290.1863, found: 290.1869.



(1S,2R,5S)-2-Isopropyl-5-methylcyclohexyl 4-(2-(benzyloxy)-4,4-dimethyl-3-oxohexahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-1-yl)benzoate

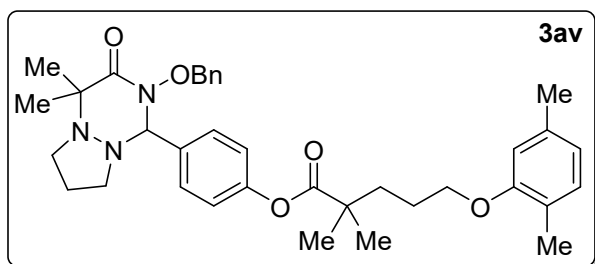
3at. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.43$; colorless solid; mp 76-77 °C; yield 59% (62 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.06 (dd, $J = 8.0, 3.6$ Hz, 2H), 7.57 (dd, $J = 8.0, 4.4$ Hz, 2H), 7.25-7.18 (m, 3H), 6.99 (t, $J = 8.0$ Hz, 2H), 4.98-4.89 (m, 2H), 4.79 (s, 1H), 4.17 (dd, $J = 17.6, 9.2$ Hz, 1H), 3.05-2.99 (m, 1H), 2.87-2.81 (m, 1H), 2.74-2.68 (m, 1H), 2.41 (q, $J = 8.4$ Hz, 1H), 2.16 (d, $J = 12.0$ Hz, 1H), 1.99-1.88 (m, 3H), 1.76 (d, $J = 11.6$ Hz, 2H), 1.61-1.57 (m, 2H), 1.54 (s, 3H), 1.42 (s, 3H), 1.14 (q, $J = 11.6$ Hz, 2H), 0.95-0.91 (m, 7H), 0.81 (dd, $J = 6.8, 5.2$ Hz, 3H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.7, 165.8, 141.2, 134.8, 132.1, 129.75, 129.70, 129.2, 128.6, 128.3, 85.9, 77.3, 75.3, 64.1, 50.8, 47.4, 45.2, 41.1, 34.4, 31.6, 26.8, 23.9, 23.7, 23.3, 22.1, 20.8, 17.8, 16.8; FT-IR (neat) 2984, 2930, 2870, 1712, 1689, 1455, 1352, 1271, 1113, 1099, 1019 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{32}\text{H}_{44}\text{N}_3\text{O}_4$: 534.3326, found: 534.3327.



(1S,2R,4S)-1,7,7-Trimethylbicyclo[2.2.1]heptan-2-yl 4-(2-(benzyloxy)-4,4-dimethyl-3-oxohexahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-1-yl)benzoate

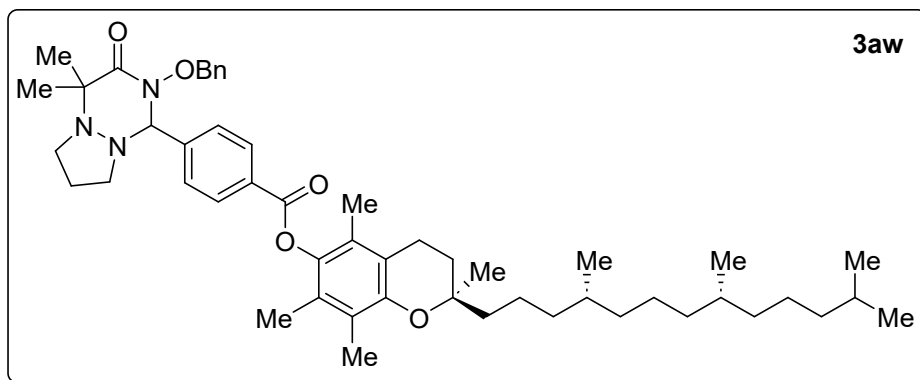
3au. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.44$; thick liquid; yield 52% (55 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.08 (d, $J = 6.8$ Hz, 2H), 7.59 (d, $J = 7.2$ Hz, 2H), 7.25-7.20 (m, 3H), 7.01-7.00 (m, 2H), 5.15 (d, $J = 9.6$ Hz, 1H), 4.91 (d, $J = 9.2$ Hz, 1H), 4.80 (s, 1H), 4.17 (dd, $J = 9.2, 4.8$ Hz, 1H), 3.05-2.99 (m, 1H), 2.87-2.81 (m, 1H), 2.74-2.68 (m, 1H), 2.53-2.46 (m, 1H), 2.41 (q, $J = 8.4$ Hz, 1H), 2.17-2.10 (m, 1H), 2.01-1.89 (m, 2H), 1.84-

1.78 (m, 1H), 1.75 (t, $J = 4.4$ Hz, 1H), 1.54 (s, 3H), 1.42 (s, 3H), 1.41-1.38 (m, 1H), 1.35-1.29 (m, 1H), 1.17-1.12 (m, 1H), 0.98 (s, 3H), 0.935-0.930 (m, 6H); ^{13}C NMR (125 MHz, CDCl_3) δ 171.7, 166.5, 141.3, 134.8, 132.1, 129.70, 129.69, 129.3, 128.6, 128.3, 85.9, 80.9, 64.1, 50.8, 49.3, 49.2, 48.0, 45.2, 45.1, 37.1, 37.0, 28.26, 28.23, 27.5, 23.7, 19.8, 19.0, 13.7; FT-IR (neat) 2955, 2875, 1716, 1694, 1454, 1377, 1272, 1117, 1102, 1020 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{32}\text{H}_{41}\text{N}_3\text{O}_4$: 532.3170, found: 532.3171.



4-(2-(Benzyloxy)-4,4-dimethyl-3-

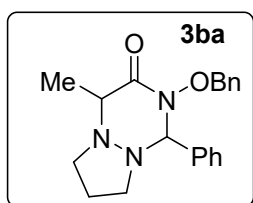
oxohexahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-1-yl)phenyl 5-(2,5-dimethylphenoxy)-2,2-dimethyl-pentanoate 3av. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.42$; thick liquid; yield 58% (69 mg); ^1H NMR (400 MHz, CDCl_3) δ 7.53 (d, $J = 8.0$ Hz, 2H), 7.24-7.20 (m, 3H), 7.08 (d, $J = 8.4$ Hz, 2H), 7.03-6.98 (m, 3H), 6.67 (d, $J = 7.6$ Hz, 1H), 6.62 (s, 1H), 4.91 (d, $J = 9.2$ Hz, 1H), 4.76 (s, 1H), 4.10 (d, $J = 8.8$ Hz, 1H), 3.99 (t, $J = 5.2$ Hz, 2H), 3.05-2.99 (m, 1H), 2.87-2.81 (m, 1H), 2.80-2.74 (m, 1H), 2.40 (q, $J = 8.8$ Hz, 1H), 2.29 (s, 3H), 2.17 (s, 3H), 1.99-1.92 (m, 2H), 1.90-1.88 (m, 4H), 1.53 (s, 3H), 1.41 (s, 3H), 1.39 (s, 6H); ^{13}C NMR (125 MHz, CDCl_3) δ 176.2, 171.7, 157.0, 152.0, 136.6, 134.8, 133.9, 130.5, 130.3, 129.8, 128.6, 128.3, 123.7, 121.7, 120.9, 112.1, 85.8, 77.3, 67.9, 64.0, 50.9, 45.2, 42.6, 37.3, 25.4, 25.29, 25.28, 23.6, 23.4, 21.5, 17.8, 15.9; FT-IR (neat) 2975, 2928, 2875, 1750, 1686, 1608, 1508, 1454, 1377, 1264, 1197, 1161, 1110, 1046 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{36}\text{H}_{46}\text{N}_3\text{O}_5$: 600.3432, found: 600.3432.



(R)-2,5,7,8-Tetra

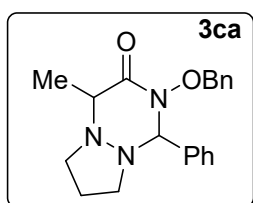
methyl-2-((4R,8R)-4,8,12-trimethyltridecyl)chroman-6-yl 4-(2-(benzyloxy)-4,4-dimethyl-3-oxohexahydro-6H-pyrazolo[1,2-a][1,2,4]triazin-1-yl)benzoate 3aw. Analytical TLC on

silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.41$; thick liquid; yield 47% (75 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 8.19 (d, $J = 8.4$ Hz, 2H), 7.58 (d, $J = 7.6$ Hz, 2H), 7.20-7.13 (m, 3H), 6.94 (dd, $J = 7.6, 1.6$ Hz, 2H), 4.89 (d, $J = 9.2$ Hz, 1H), 4.76 (s, 1H), 4.16 (d, $J = 9.6$ Hz, 1H), 2.99-2.94 (m, 1H), 2.82-2.75 (m, 1H), 2.72-2.68 (m, 1H), 2.55 (t, $J = 6.8$ Hz, 2H), 2.38 (q, $J = 8.4$ Hz, 1H), 2.05 (s, 3H), 2.00 (s, 3H), 1.96 (s, 3H), 1.93-1.83 (m, 2H), 1.79-1.72 (m, 2H), 1.49 (s, 3H), 1.47-1.42 (m, 2H), 1.36 (s, 3H), 1.34-1.30 (m, 3H), 1.26-1.14 (m, 12H), 1.09-0.96 (m, 7H), 0.80-0.77 (m, 12H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.7, 164.8, 149.7, 141.9, 140.7, 134.8, 130.8, 130.3, 129.7, 129.5, 128.7, 128.4, 126.9, 125.2, 123.3, 117.7, 85.9, 77.2, 75.2, 64.2, 50.9, 45.2, 39.5, 37.73, 37.70, 37.65, 37.62, 37.57, 37.54, 37.4, 32.95, 32.93, 32.8, 28.1, 24.96, 24.94, 24.5, 23.7, 23.3, 22.8, 22.7, 21.2, 20.8, 19.9, 19.8, 19.78, 19.75, 17.8, 13.2, 12.3, 12.0; FT-IR (neat) 2925, 2867, 1735, 1692, 1455, 1377, 1270, 1235, 1090, 1018 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{51}\text{H}_{73}\text{N}_3\text{O}_5$: 808.5623, found: 808.5623.



2-(Benzyloxy)-4-methyl-1-phenyltetrahydro-6H-pyrazolo[1,2-a][1,2,-

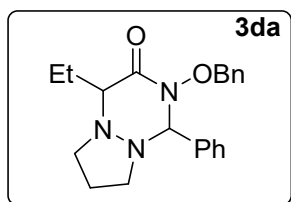
4]triazin-3(4H)-one 3ba. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.45$; colorless solid; mp 92-93 $^\circ\text{C}$; yield 82% (55 mg); major diastereomer (d.r. = 12:1); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.54 (d, $J = 6.4$ Hz, 2H), 7.45-7.39 (m, 3H), 7.23-7.18 (m, 3H), 6.96-6.94 (m, 2H), 4.96 (d, $J = 8.8$ Hz, 1H), 4.77 (s, 1H), 4.12 (d, $J = 8.8$ Hz, 1H), 3.40-3.33 (m, 2H), 2.78-2.72 (m, 1H), 2.45-2.34 (m, 2H), 2.01-1.94 (m, 2H), 1.43 (d, $J = 6.8$ Hz, 3H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 167.9, 136.0, 134.8, 129.7, 129.6, 129.2, 128.6, 128.5, 128.3, 86.1, 77.3, 64.9, 53.7, 50.9, 23.0, 14.6; FT-IR (neat) 3032, 2979, 2834, 1687, 1454, 1372, 1356, 1288, 1259, 1148, 999 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{20}\text{H}_{24}\text{N}_3\text{O}_2$: 338.1863, found: 338.1863.



2-(Benzyloxy)-4-methyl-1-phenyltetrahydro-6H-pyrazolo[1,2-a][1,-

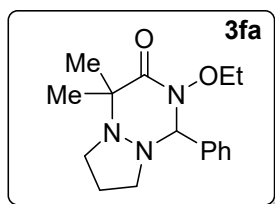
2,4]triazin-3(4H)-one 3ca. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.45$; colorless solid; mp 92-93 $^\circ\text{C}$; yield 80% (53 mg); major diastereomer (d.r. = 15:1); $^1\text{H NMR}$ (500 MHz, CDCl_3) δ 7.54 (d, $J = 7.0$ Hz, 2H), 7.45-7.39 (m, 3H), 7.24-7.19 (m, 3H), 6.95 (d,

$J = 7.0$ Hz, 2H), 4.96 (d, $J = 9.0$ Hz, 1H), 4.77 (s, 1H), 4.11 (d, $J = 9.0$ Hz, 1H), 3.40-3.34 (m, 2H), 2.78-2.73 (m, 1H), 2.45-2.35 (m, 2H), 2.02-1.96 (m, 2H), 1.44 (d, $J = 6.5$ Hz, 3H); ^{13}C NMR (125 MHz, CDCl_3) δ 168.0, 136.0, 134.8, 129.8, 129.7, 129.3, 128.6, 128.5, 128.3, 86.1, 77.3, 64.9, 53.7, 50.9, 23.0, 14.7; FT-IR (neat) 3032, 2979, 2834, 1687, 1454, 1372, 1356, 1288, 1259, 1148, 999 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{20}\text{H}_{24}\text{N}_3\text{O}_2$: 338.1863, found: 338.1863.



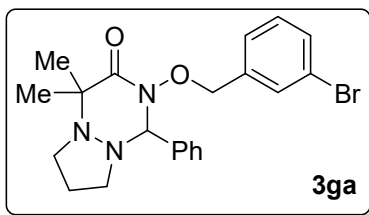
2-(Benzyloxy)-4-ethyl-1-phenyltetrahydro-6H-pyrazolo[1,2-a][1,-

2, 4]triazin-3(4H)-one 3da. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.44$; colorless solid; mp 84-85 $^\circ\text{C}$; yield 83% (58 mg); major diastereomer (d.r. = 7.6:1); ^1H NMR (400 MHz, CDCl_3) δ 7.50 (d, $J = 7.2$ Hz, 2H), 7.42-7.37 (m, 3H), 7.26-7.19 (m, 3H), 6.98-6.95 (m, 2H), 4.97 (d, $J = 9.6$ Hz, 1H), 4.75 (s, 1H), 4.21 (d, $J = 9.2$ Hz, 1H), 3.38-3.32 (m, 2H), 2.75-2.69 (m, 1H), 2.43-2.32 (m, 2H), 2.23-2.16 (m, 1H), 2.01-1.94 (m, 2H), 1.76-1.69 (m, 1H), 1.02 (t, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 167.1, 136.0, 134.9, 129.75, 129.70, 129.2, 128.6, 128.5, 128.3, 86.0, 77.3, 69.9, 53.1, 50.7, 23.1, 22.2, 9.3; FT-IR (neat) 2968, 2935, 2835, 1681, 1455, 1355, 1289, 1148, 1028, 1002 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{26}\text{N}_3\text{O}_2$: 352.2020, found: 352.2026.



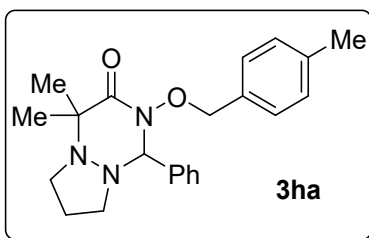
2-Ethoxy-4,4-dimethyl-1-phenyltetrahydro-6H-pyrazolo[1,2-a][1,-

2,4]triazin-3(4H)-one 3fa. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.38$; thick liquid; yield 54% (31 mg); ^1H NMR (400 MHz, CDCl_3) δ 7.52-7.50 (m, 2H), 7.38-7.34 (m, 3H), 4.83 (s, 1H), 3.91-3.83 (m, 1H), 3.25-3.18 (m, 1H), 3.06-3.00 (m, 1H), 2.87-2.81 (m, 1H), 2.80-2.74 (m, 1H), 2.45 (q, $J = 8.8$ Hz, 1H), 2.01-1.90 (m, 2H), 1.51 (s, 3H), 1.39 (s, 3H), 0.87 (t, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.4, 136.6, 129.5, 129.1, 128.3, 86.2, 77.3, 70.8, 63.9, 51.0, 45.2, 23.6, 23.4, 17.7, 13.3; FT-IR (neat) 2978, 2936, 2885, 1676, 1456, 1384, 1351, 1286, 1205, 1033 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{16}\text{H}_{24}\text{N}_3\text{O}_2$: 290.1863, found: 290.1864.



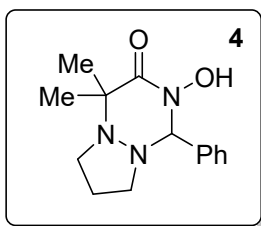
2-((3-Bromobenzyl)oxy)-4,4-dimethyl-1-phenyltetrahydro-

6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ga. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.40$; thick liquid; yield 72% (61 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.54-7.52 (m, 2H), 7.45-7.39 (m, 3H), 7.36 (d, $J = 8.0$ Hz, 1H), 7.07 (t, $J = 8.0$ Hz, 1H), 6.97-6.92 (m, 2H), 4.87 (d, $J = 9.2$ Hz, 1H), 4.77 (s, 1H), 4.02 (d, $J = 9.2$ Hz, 1H), 3.06-3.00 (m, 1H), 2.88-2.81 (m, 1H), 2.80-2.74 (m, 1H), 2.43 (q, $J = 8.8$ Hz, 1H), 2.01-1.89 (m, 2H), 1.54 (s, 3H), 1.41 (s, 3H); $^{13}\text{C NMR}$ (100 MHz, CDCl_3) δ 171.9, 137.1, 136.4, 132.5, 131.6, 129.8, 129.3, 128.6, 128.1, 122.2, 86.6, 76.4, 64.0, 50.9, 45.2, 23.6, 23.4, 17.7; FT-IR (neat) 2976, 2938, 2883, 1683, 1571, 1455, 1377, 1352, 1285, 1207, 1071 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{21}\text{H}_{25}\text{BrN}_3\text{O}_2$: 430.1125, found: 430.1126.



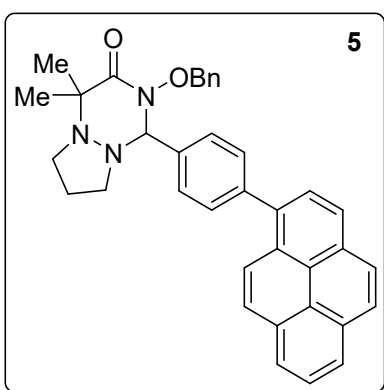
4,4-Dimethyl-2-((4-methylbenzyl)oxy)-1-phenyltetrahydro-

6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 3ha. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; $R_f = 0.41$; colorless solid; mp 101-102 $^\circ\text{C}$; yield 75% (54 mg); $^1\text{H NMR}$ (400 MHz, CDCl_3) δ 7.47 (d, $J = 7.2$ Hz, 2H), 7.37-7.30 (m, 3H), 6.94 (d, $J = 8.0$ Hz, 2H), 6.78 (d, $J = 7.6$ Hz, 2H), 4.80 (d, $J = 8.8$ Hz, 1H), 4.69 (s, 1H), 3.95 (d, $J = 8.8$ Hz, 1H), 2.98-2.92 (m, 1H), 2.80-2.74 (m, 1H), 2.72-2.66 (m, 1H), 2.35 (q, $J = 8.8$ Hz, 1H), 2.20 (s, 3H), 1.93-1.81 (m, 2H), 1.47 (s, 3H), 1.34 (s, 3H); $^{13}\text{C NMR}$ (125 MHz, CDCl_3) δ 171.6, 138.3, 136.6, 131.9, 129.7, 129.6, 129.3, 128.9, 128.4, 86.5, 76.9, 63.9, 50.9, 45.2, 23.6, 23.4, 21.3, 17.8; FT-IR (neat) 2925, 2853, 1684, 1519, 1456, 1376, 1353, 1286, 1206, 1012 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{22}\text{H}_{28}\text{N}_3\text{O}_2$: 366.2176, found: 366.2176.



2-Hydroxy-4,4-dimethyl-1-phenyltetrahydro-6H-pyrazolo[1,2-

a][1,2,4]triazin-3(4H)-one 4.⁴ Pd/C (10 wt. %, 20 mol %) and **3aa** (42 mg, 0.10 mmol) were stirred in MeOH (1.5 mL) under H₂ balloon for 6 h at room temperature. The reaction mixture was passed through a short pad of celite using EtOAc (10 mL). Evaporation of the solvent gave a residue that was purified on silica gel column chromatography. Analytical TLC on silica gel, 1:1 ethyl acetate/hexane; R_f = 0.42; colorless solid; mp 122-123 °C; yield 63% (16 mg); ¹H NMR (400 MHz, CDCl₃) δ 7.47-7.44 (m, 2H), 7.40-7.38 (m, 3H), 4.90 (s, 1H), 3.07-3.01 (m, 1H), 2.88-2.81 (m, 1H), 2.79-2.74 (m, 1H), 2.55 (q, *J* = 8.8 Hz, 1H), 2.03-1.96 (m, 1H), 1.95-1.88 (m, 1H), 1.51 (s, 3H), 1.41 (s, 3H); ¹³C NMR (125 MHz, CDCl₃) δ 169.0, 135.8, 129.7, 128.68, 128.62, 85.3, 63.1, 50.8, 45.1, 23.5, 23.3, 17.6; FT-IR (neat) 3210, 2976, 2926, 2853, 1645, 1456, 1352, 1290, 1204, 1177, 1031 cm⁻¹; HRMS (ESI) *m/z* [M+H]⁺ calcd for C₁₄H₂₁N₃O: 262.1550, found: 262.1550.



2-(Benzyloxy)-4,4-dimethyl-1-(4-(pyren-1-yl)phenyl)tetra-

hydro-6H-pyrazolo[1,2-a][1,2,4]triazin-3(4H)-one 5.⁵ Compound **3af** (42 mg, 0.1 mmol), pyrene-1-boronic acid (25 mg, 0.1 mmol), Pd(PPh₃)₄ (2.3 mg, 0.002 mmol), Na₂CO₃ (22 mg, 0.2 mmol), H₂O (50 μL) and toluene : EtOH (1:1, 2 mL) were refluxed at 100 °C for 6 h under nitrogen atmosphere. The reaction mixture was cooled to room temperature and passed through a short pad of celite using CH₂Cl₂ (10 ml). Evaporation of the solvent gave a residue that was purified on silica gel column chromatography to give **5**. Analytical TLC on silica gel, 3:7 ethyl acetate/hexane; R_f = 0.44; colorless solid; mp > 200 °C; yield 81% (44 mg); ¹H NMR (400 MHz, CDCl₃) δ 8.25-8.13 (m, 4H), 8.10 (s, 2H), 8.04-7.98 (m, 3H), 7.74 (d, *J* = 7.6 Hz, 2H), 7.68 (d, *J* = 8.0 Hz, 2H), 7.28-7.25 (m, 3H), 7.11-7.09 (m, 2H), 5.07 (d, *J* = 9.2 Hz, 1H), 4.93 (s, 1H), 4.32 (d, *J* = 9.2 Hz, 1H), 3.11-3.06 (m, 1H), 3.00-2.94 (m, 1H), 2.92-2.88 (m, 1H),

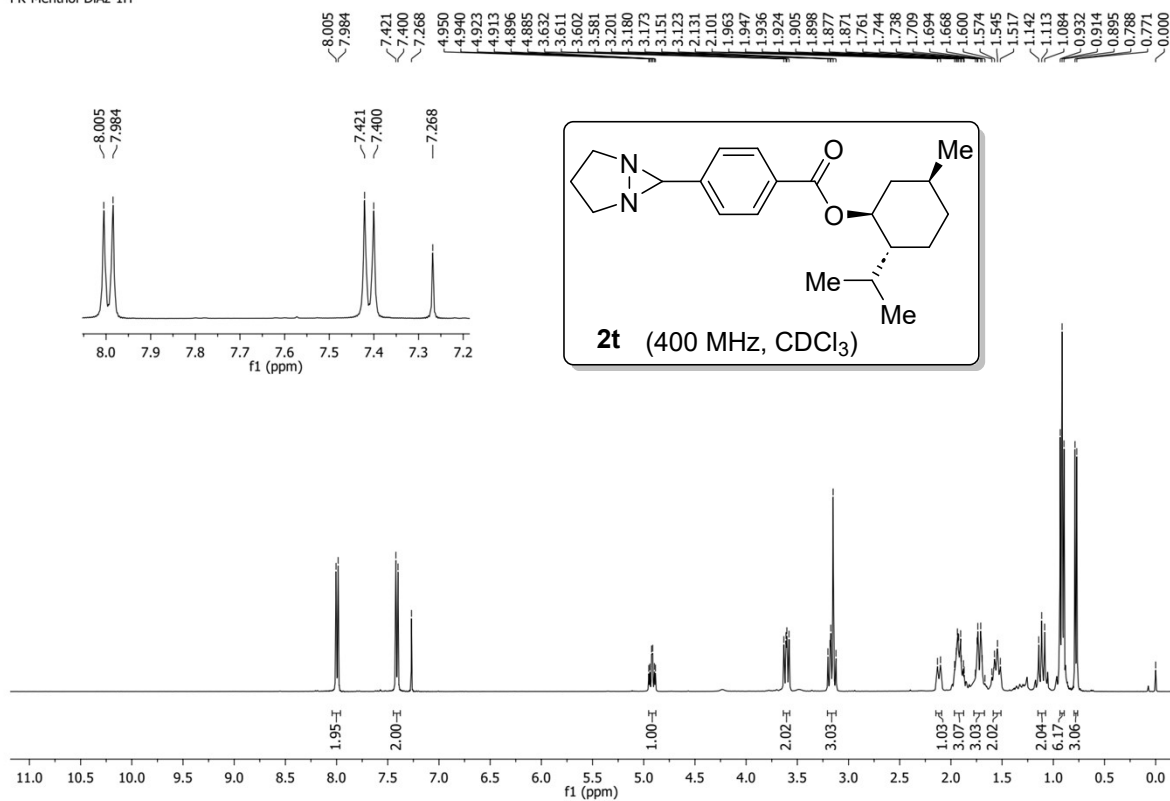
2.57 (q, $J = 8.8$ Hz, 1H), 2.08-1.98 (m, 2H), 1.61 (s, 3H), 1.47 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.8, 142.6, 137.1, 135.5, 135.0, 131.6, 131.0, 130.9, 130.7, 129.7, 129.4, 128.69, 128.63, 128.4, 127.8, 127.7, 127.6, 127.5, 126.2, 125.4, 125.16, 125.11, 125.0, 124.8, 86.4, 77.3, 64.1, 51.1, 45.3, 23.7, 23.5, 17.8; FT-IR (neat) 3037, 2976, 2935, 2875, 1681, 1602, 1455, 1377, 1351, 1281, 1207, 1006 cm^{-1} ; HRMS (ESI) m/z $[\text{M}+\text{H}]^+$ calcd for $\text{C}_{37}\text{H}_{34}\text{N}_3\text{O}_2$: 552.2646, found: 552.2646.

References

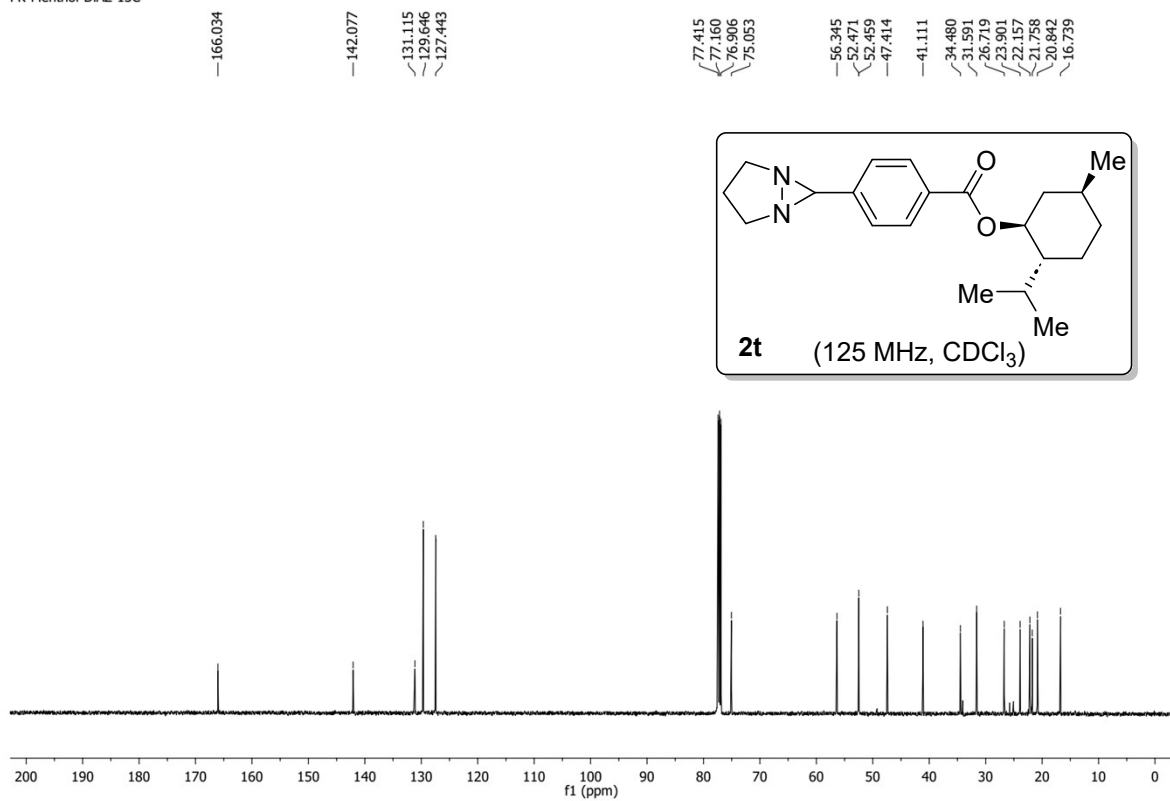
1. For preparation of diaziridines, see: (a) V. V. Kuznetsov, S. A. Kutepov, N. N. Makhova, K. A. Lyssenko and D. E. Dmitriev, *Russ. Chem. Bull.*, 2003, **52**, 665; (b) Y. B. Koptelov, *Russ. J. Org. Chem.*, 2006, **42**, 1510; (c) A. W. Beebe, E. F. Dohmeierb and G. Moura-Letts, *Chem. Commun.*, 2015, **51**, 13511; (d) A. O. Chagarovskiy, V. S. Vasin, V. V. Kuznetsov, O. A. Ivanova, V. B. Rybakov, A. N. Shumsky, N. N. Makhova and I. V. Trushkov, *Angew. Chem. Int. Ed.*, 2018, **57**, 10338; (e) S. Arora, V. Palani and T. R. Hoye, *Org. Lett.*, 2018, **20**, 8082.
2. For preparation of α -halohydroxamates, see: (a) C. S. Jeffrey, K. L. Barnes, J. A. Eickhoff and C. R. Carson, *J. Am. Chem. Soc.*, 2011, **133**, 7688; (b) I. M. Taily, D. Saha, and P. Banerjee, *J. Org. Chem.*, 2022, **87**, 2155.
3. (a) J. Cao, G. Wang, L. Gao, X. Cheng and S. Li, *Chem. Sci.*, 2018, **9**, 3664; (b) Y. Wang, J. Zhu, A. C. Durham, H. Lindberg and Y. -M. Wang, *J. Am. Chem. Soc.*, 2019, **141**, 19594; (c) L. Gao, X. Liu, G. Li, S. Chen, J. Cao, G. Wang and S. Li, *Org. Lett.*, 2022, **24**, 5698; (d) M. Mishra, P. K. Maharana, P. Karjee and T. Punniyamurthy, *Chem. Commun.*, 2022, **58**, 7090.
4. I. M. Taily, D. Saha and P. Banerjee, *J. Org. Chem.*, 2022, **87**, 2155.
5. M. Prieto, E. Zurita, E. Rosa, L. Muñoz, P. Lloyd-Williams and E. Giralt, *J. Org. Chem.*, 2004, **69**, 6812.

NMR (¹H and ¹³C) Spectra

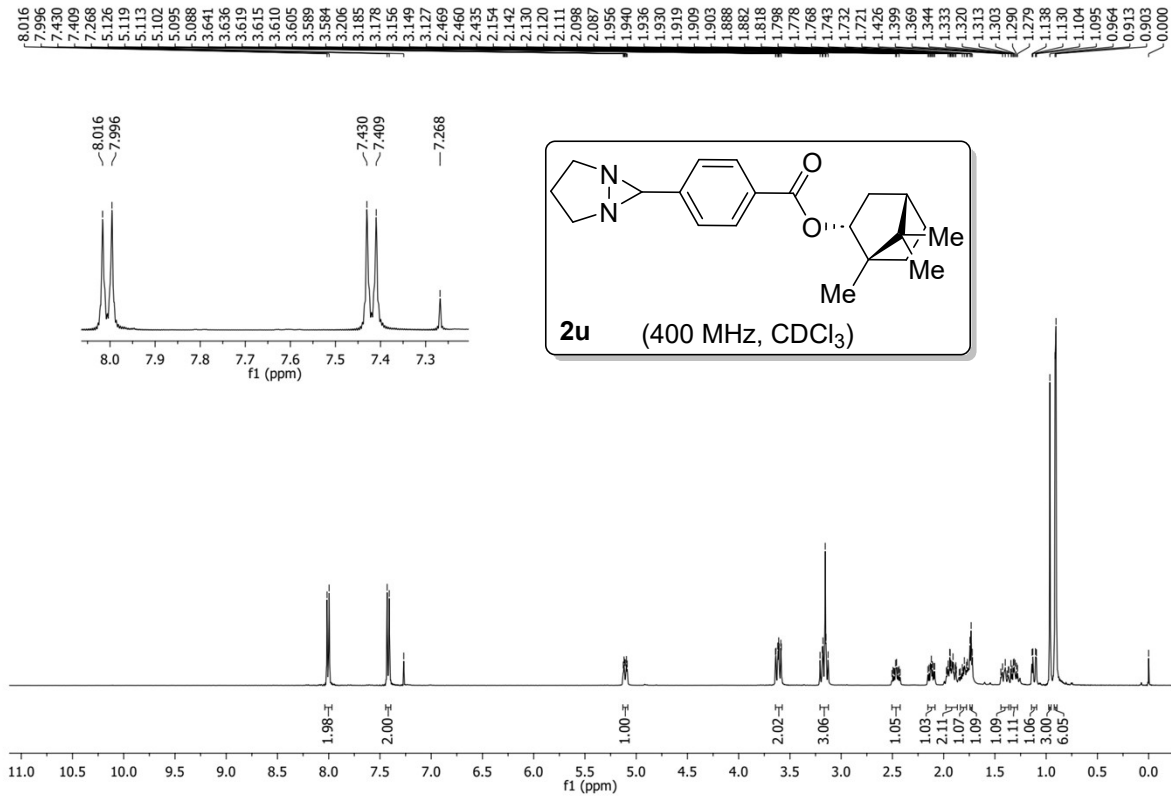
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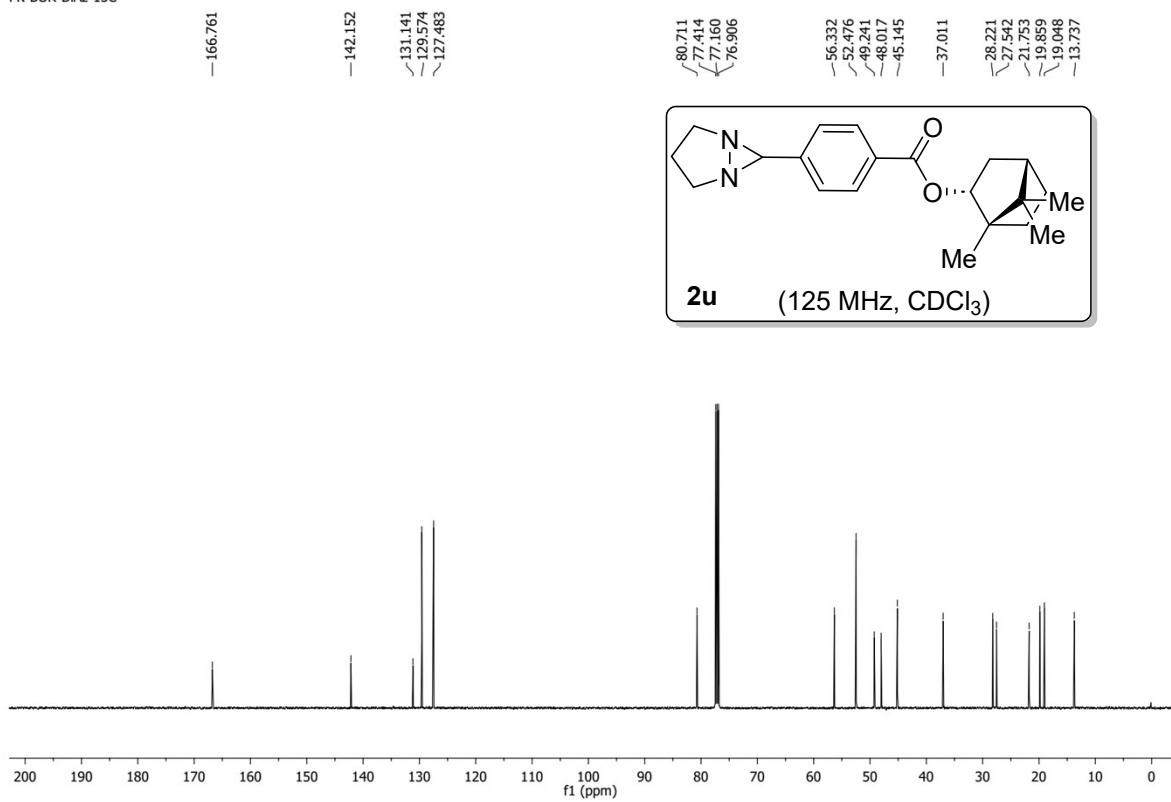
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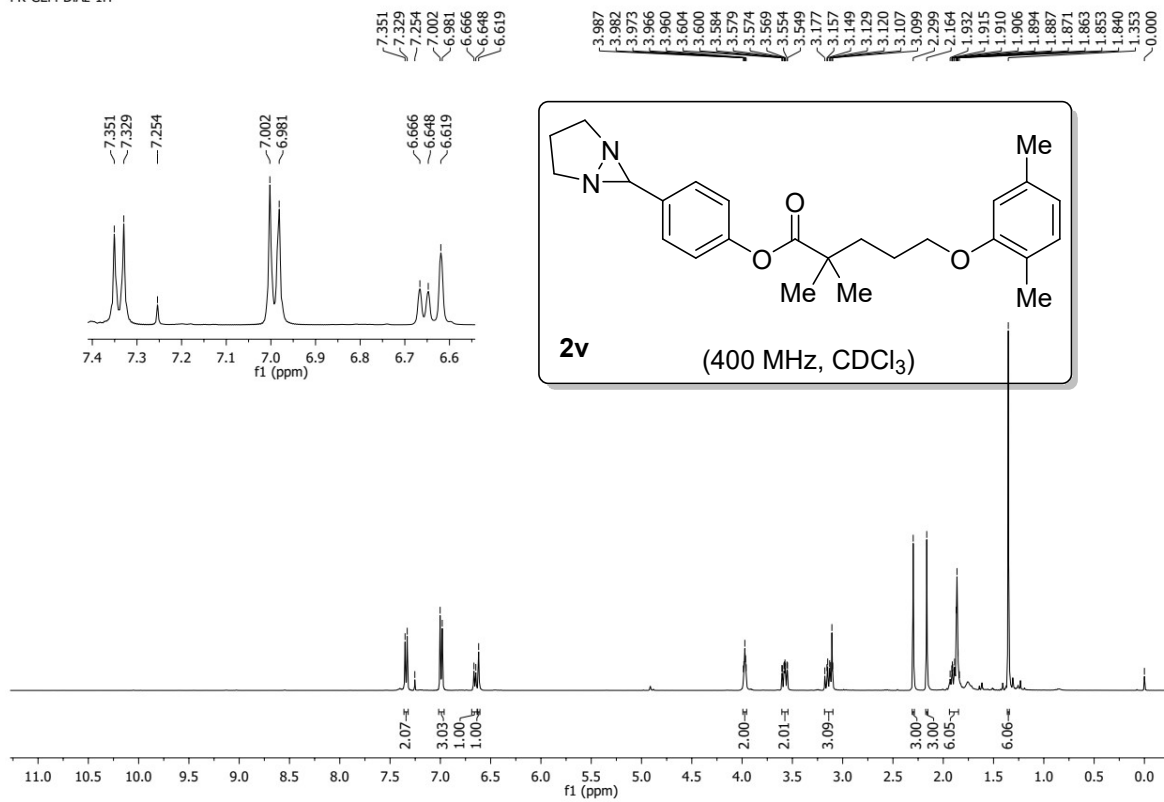
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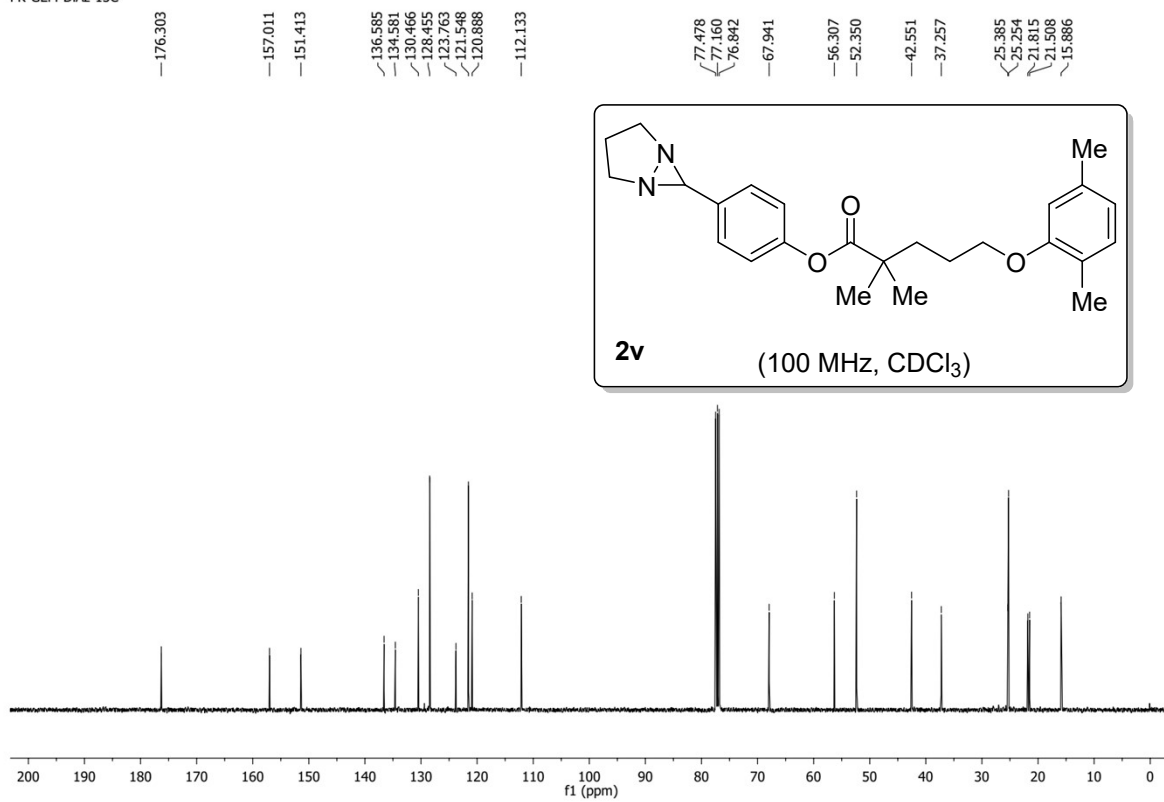
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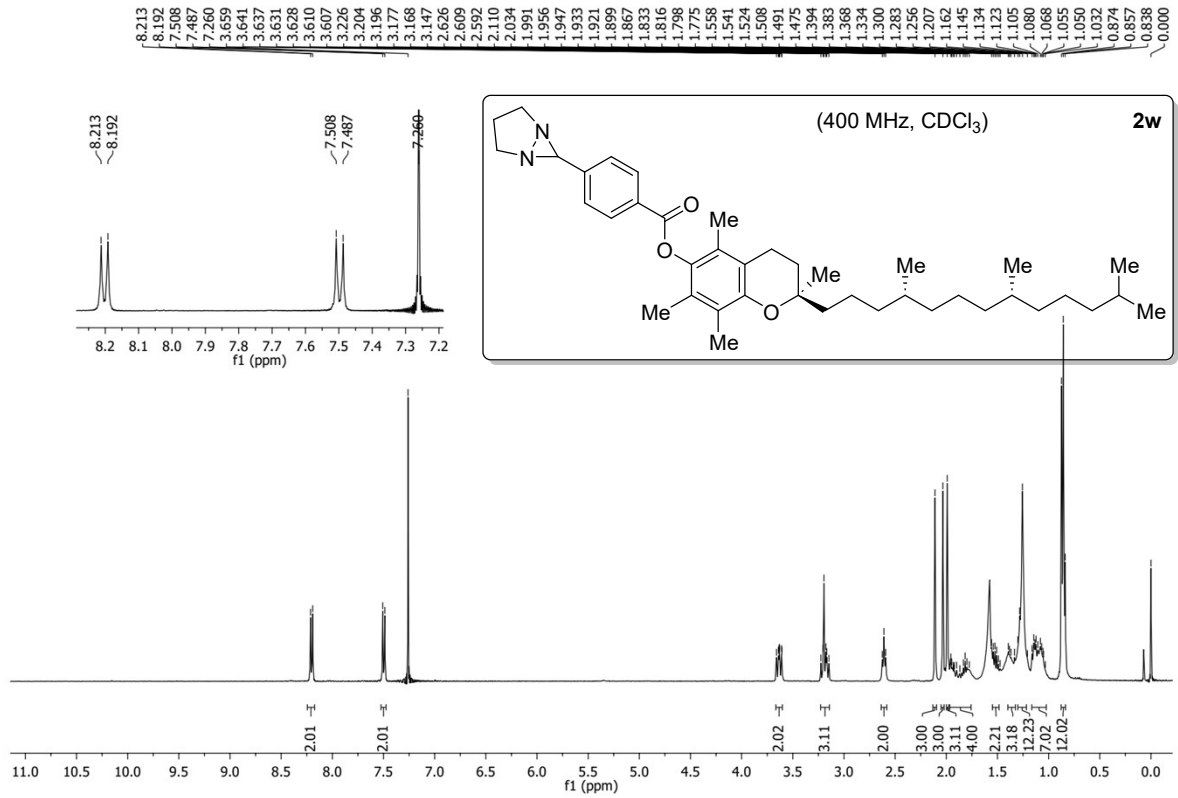
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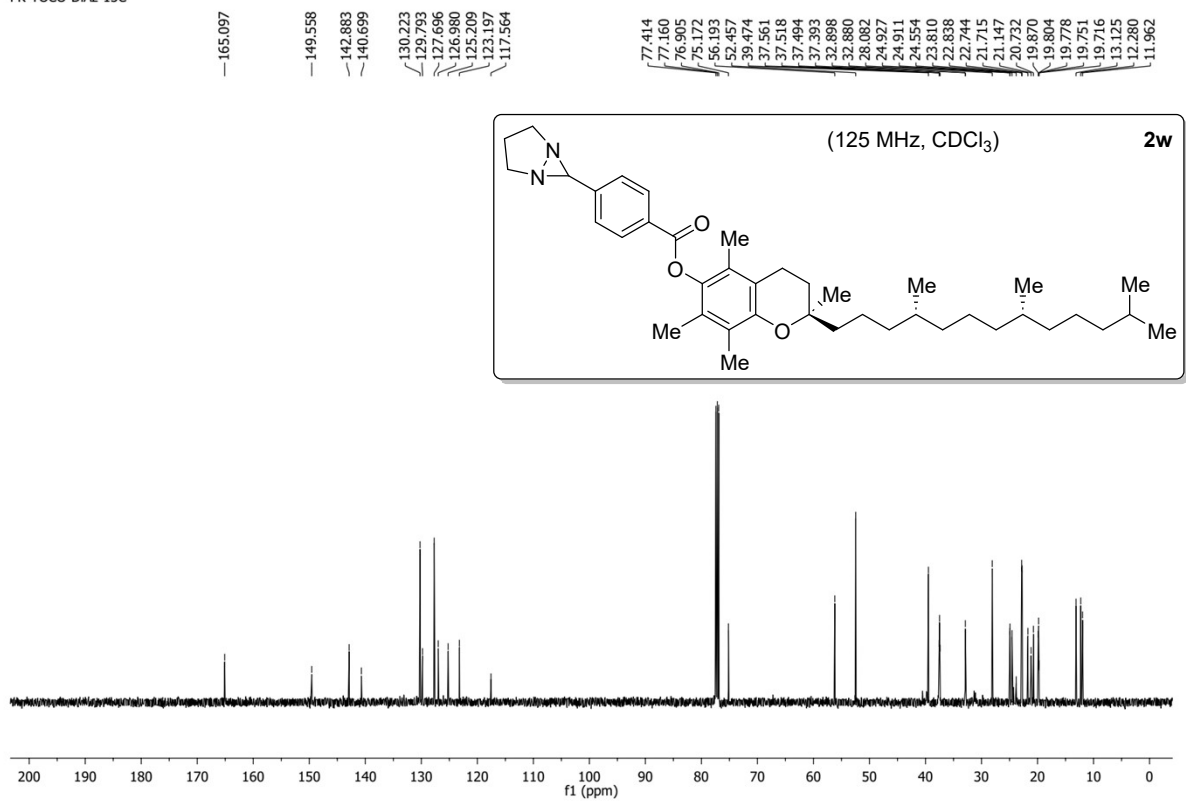
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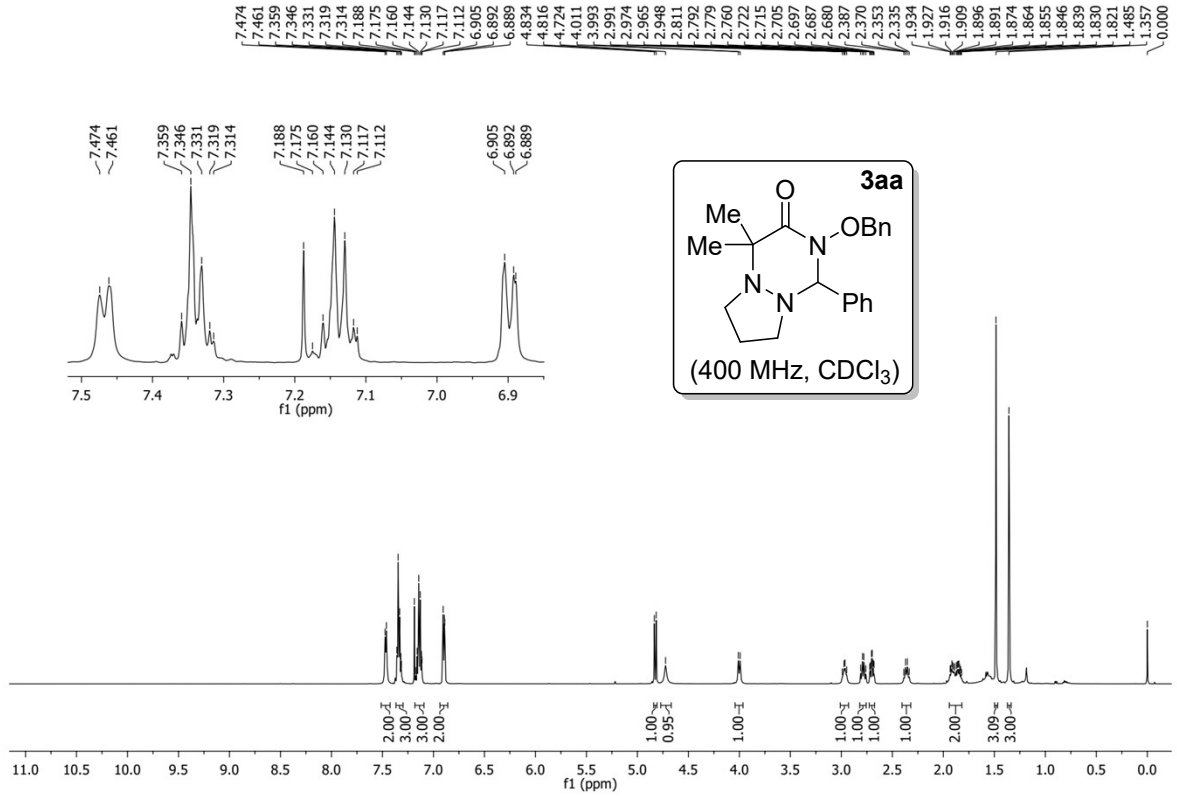
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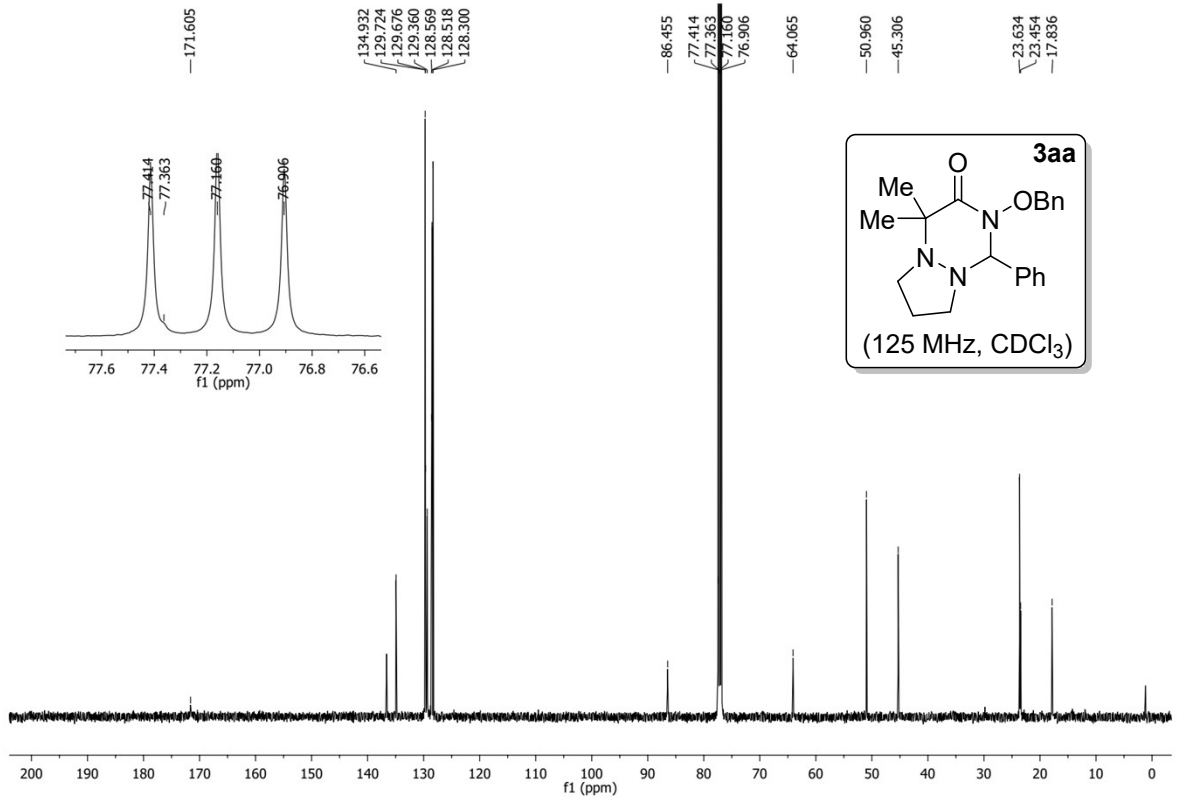
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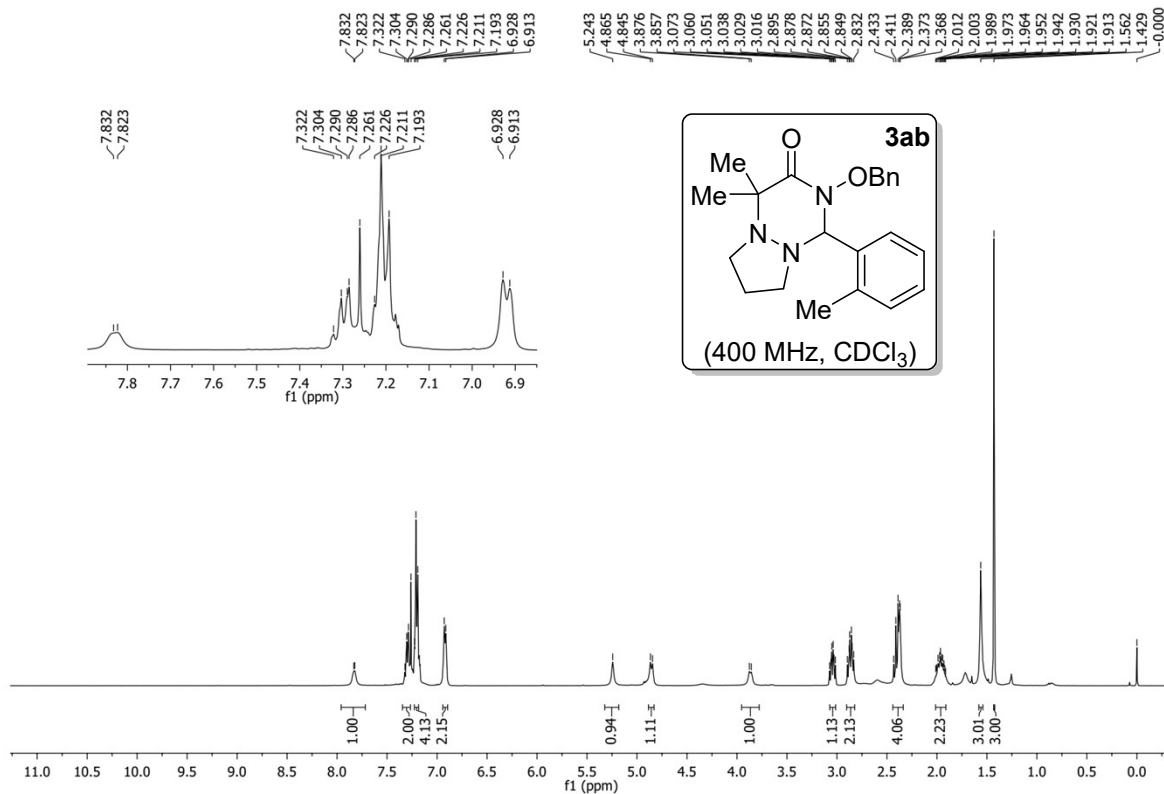
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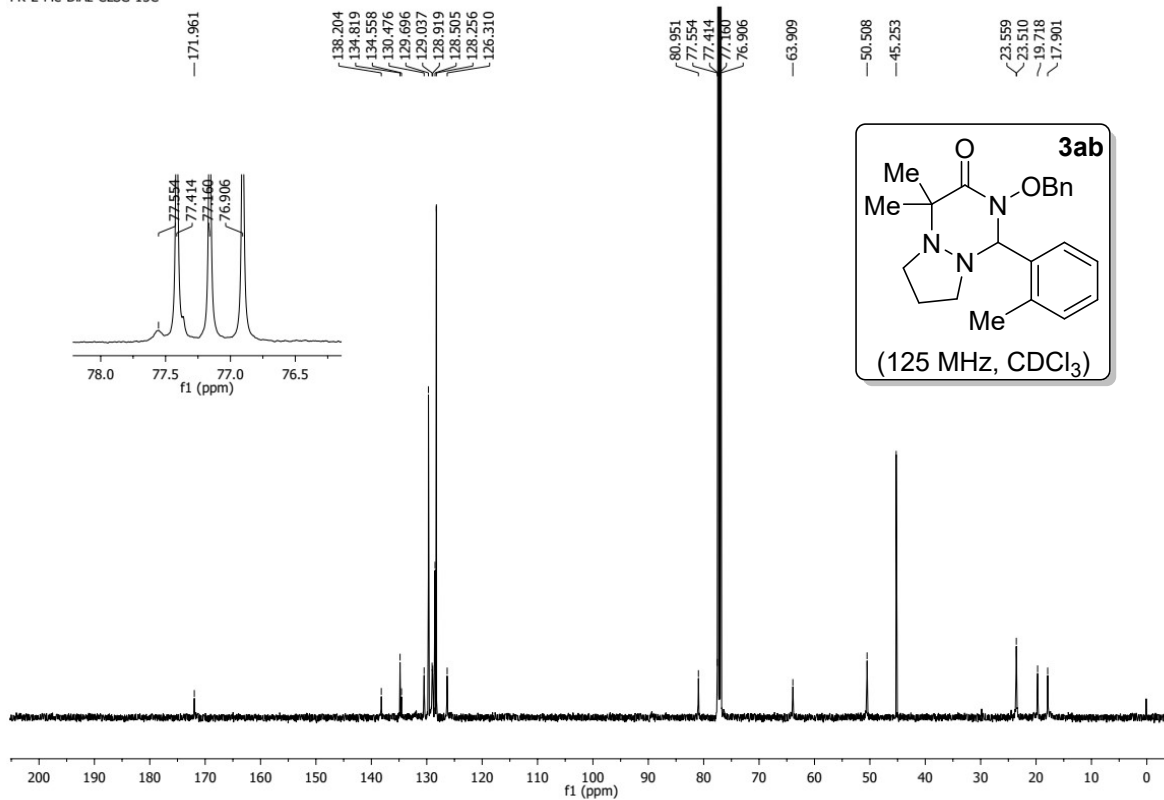
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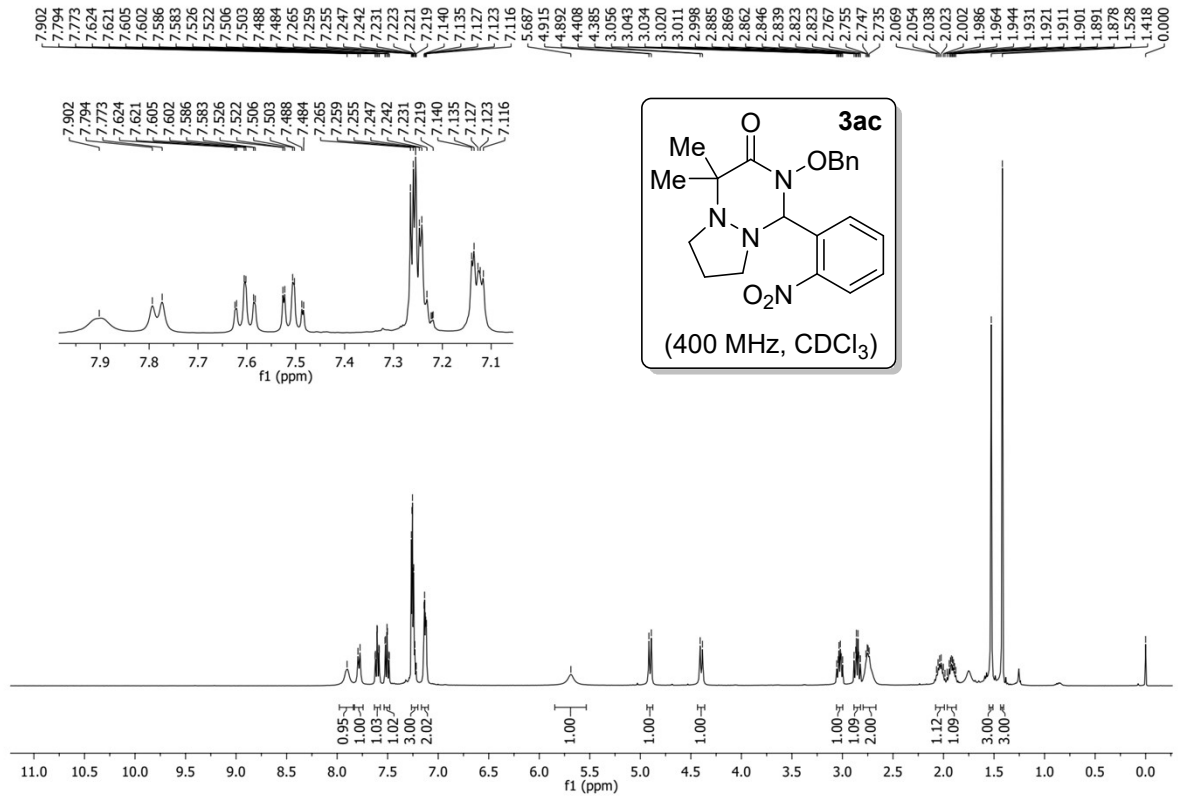
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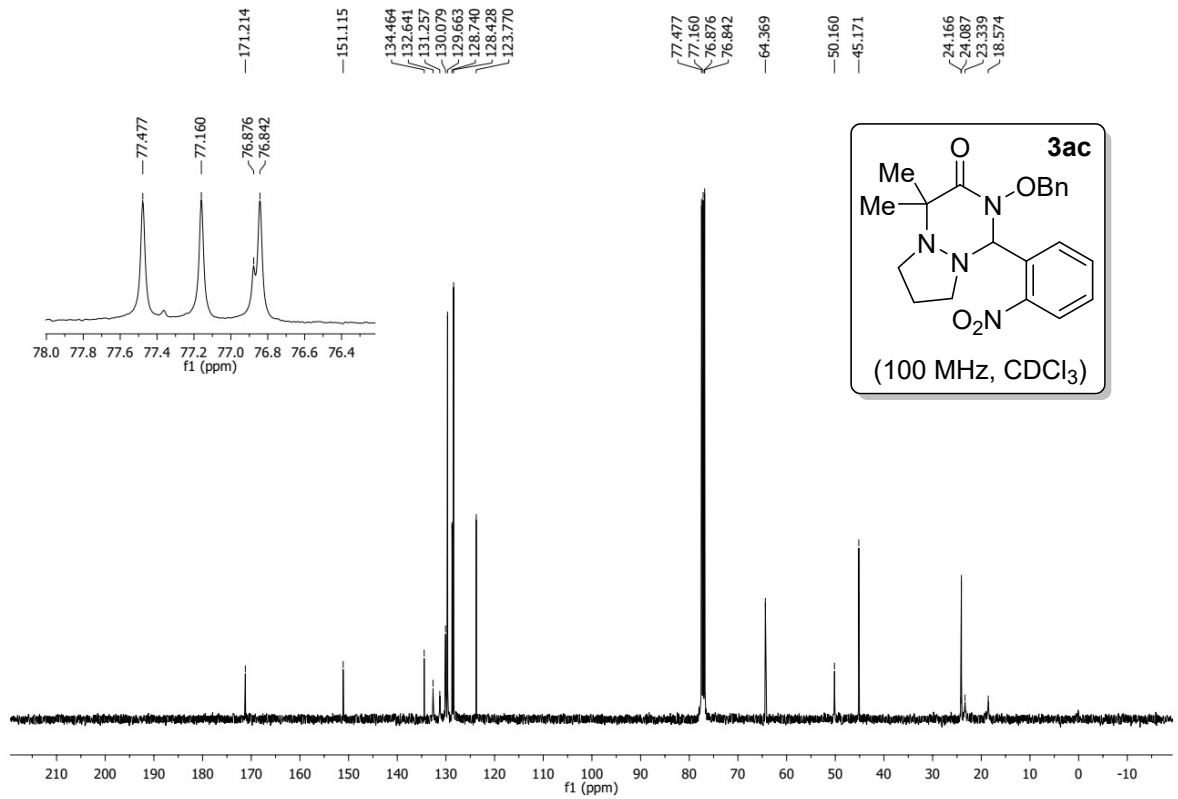
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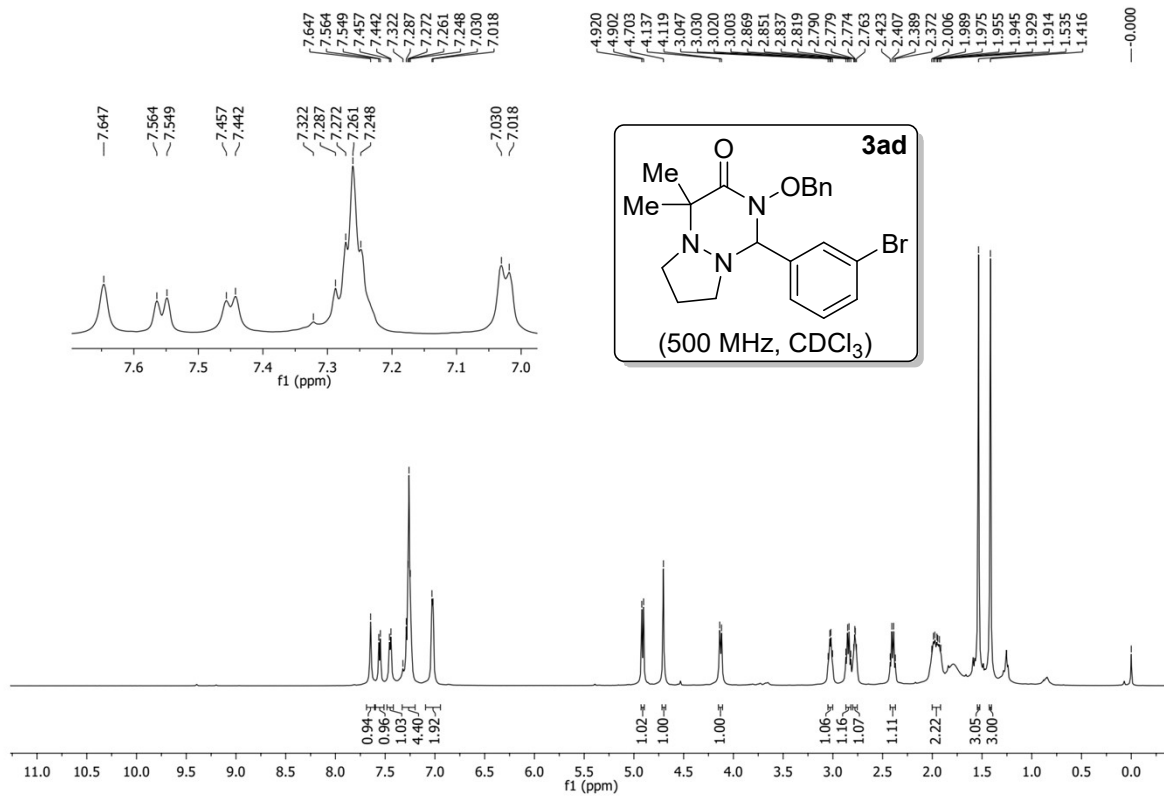
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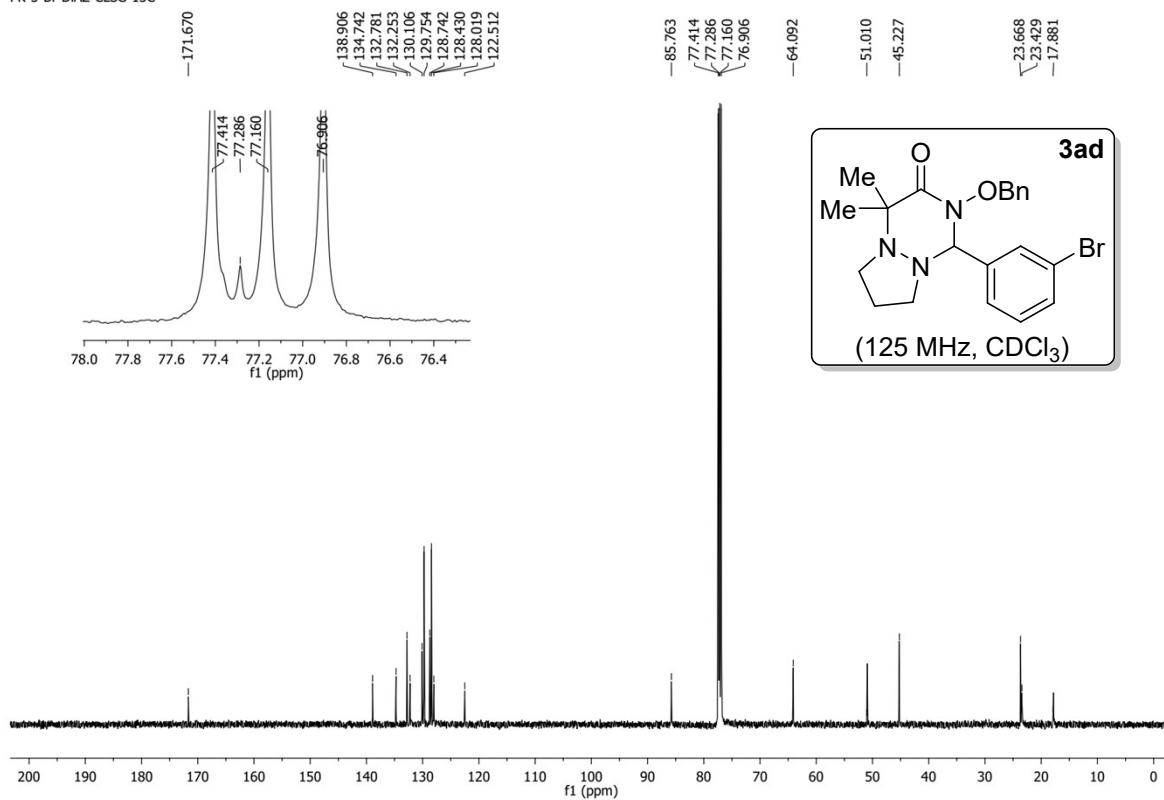
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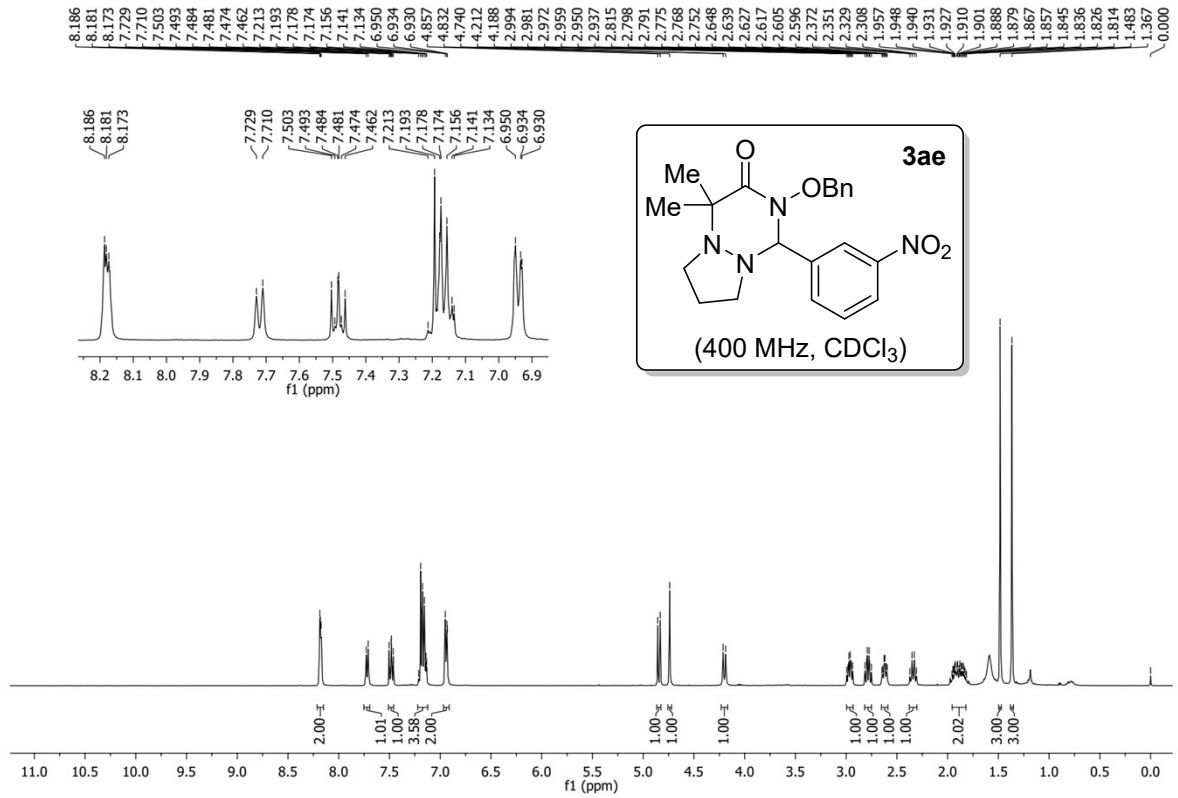
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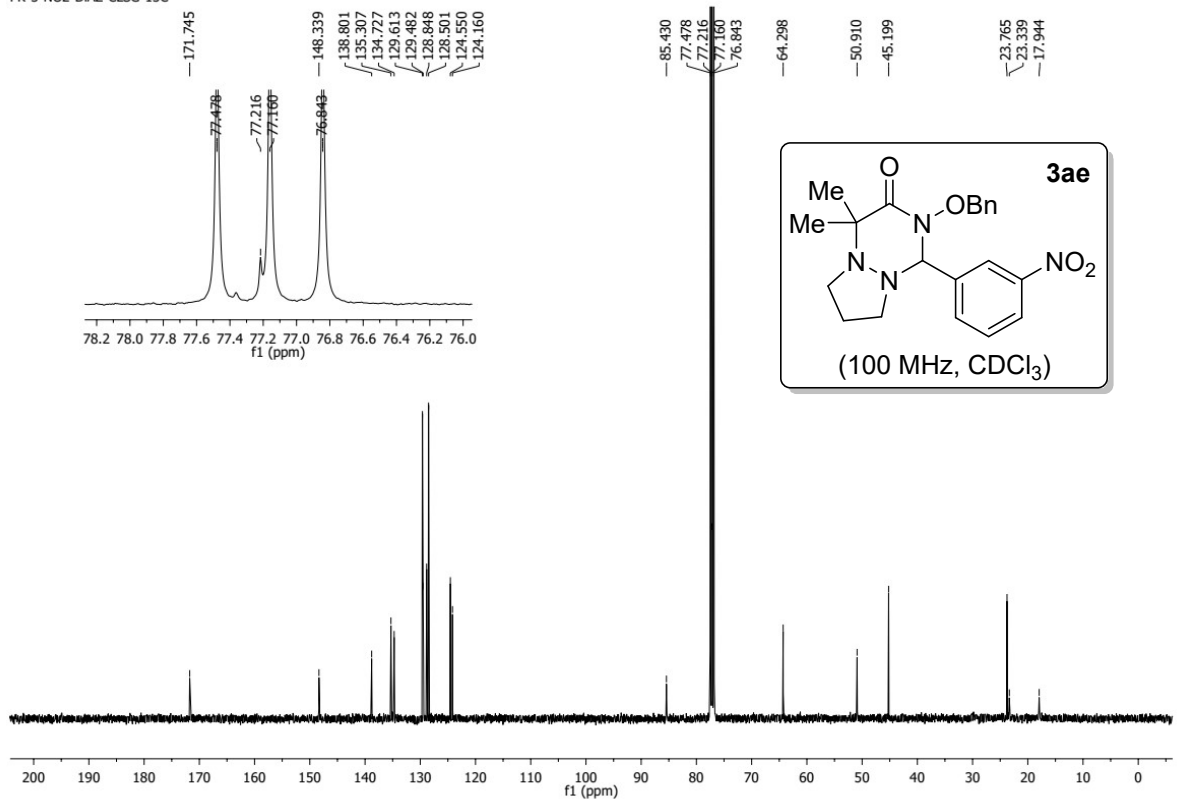
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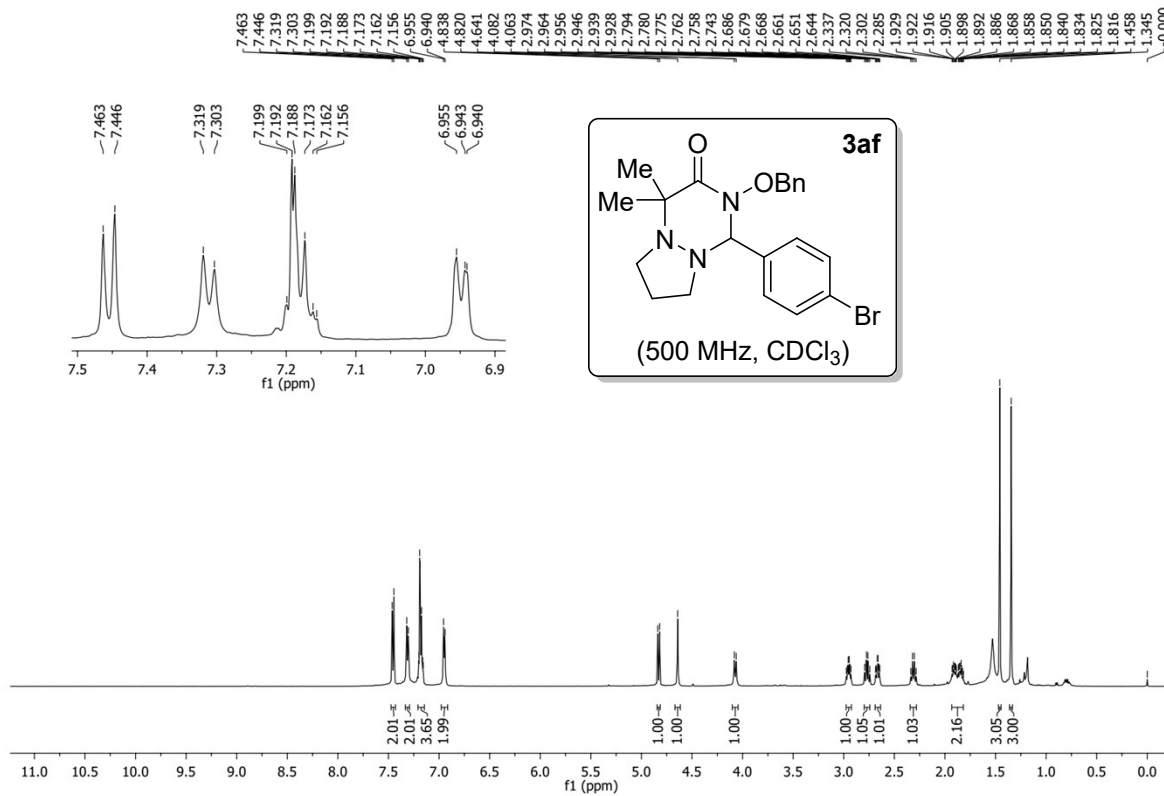
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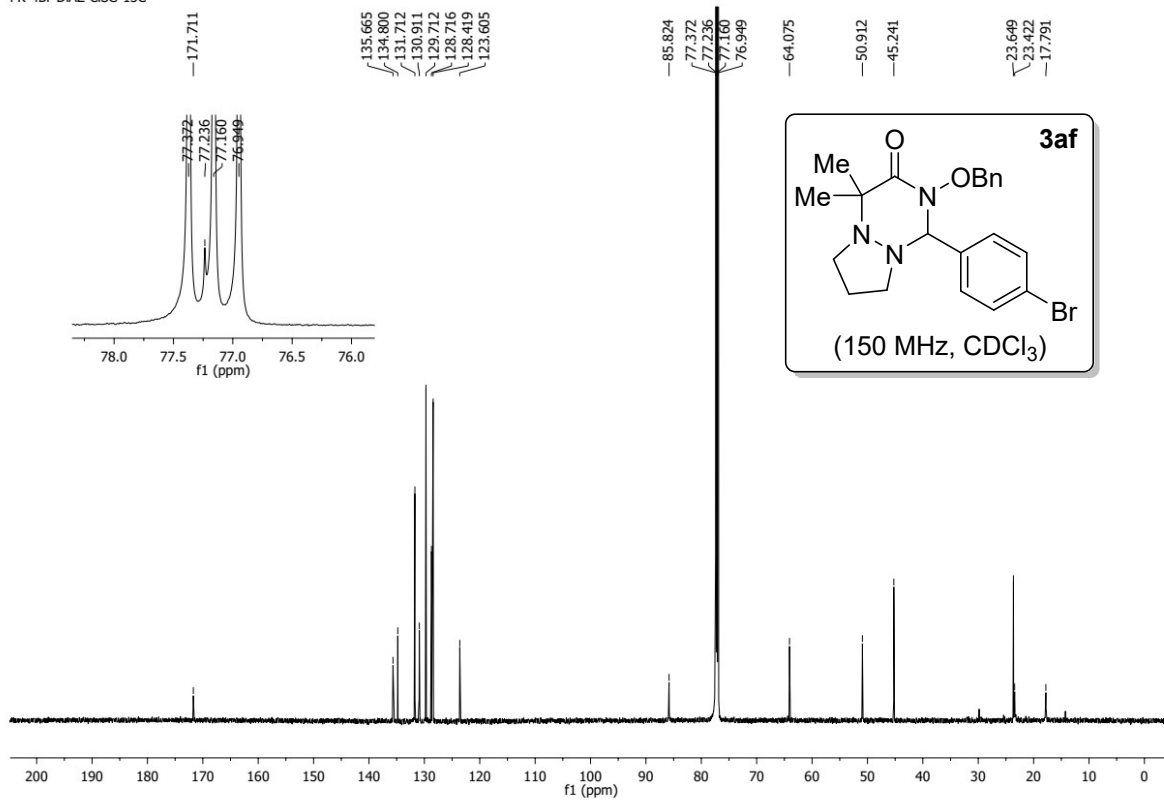
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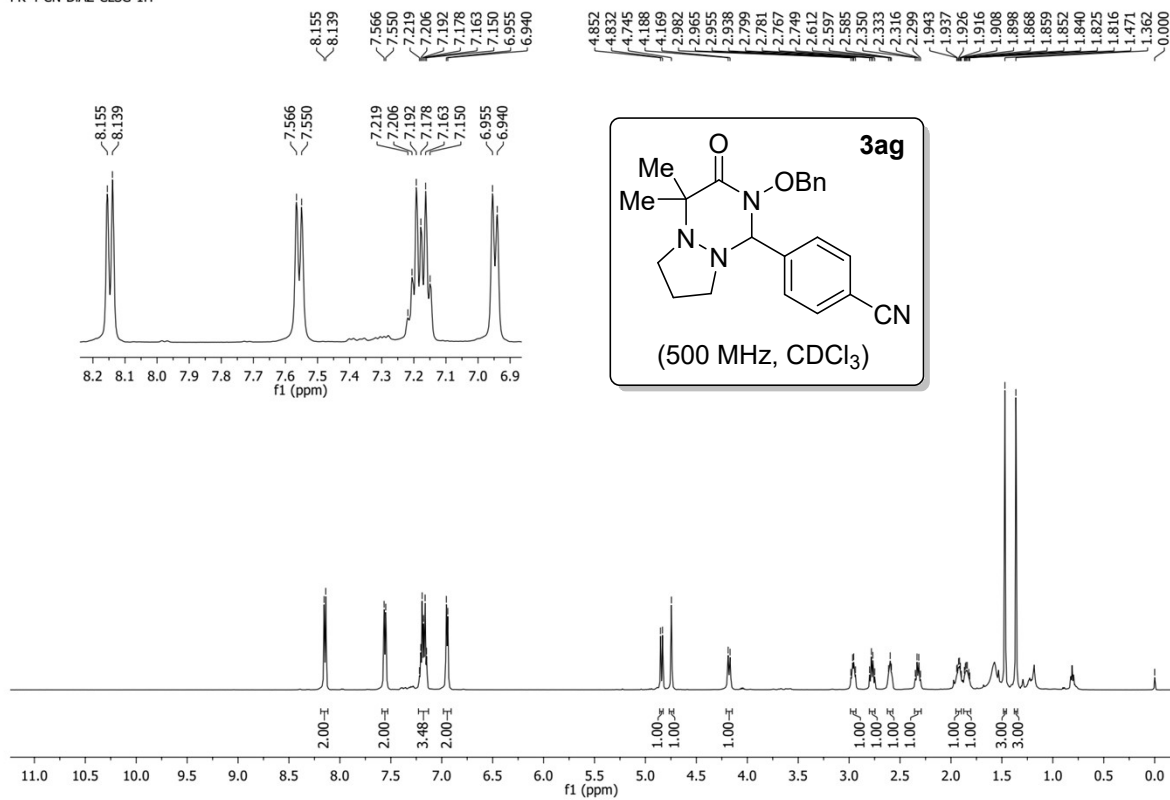
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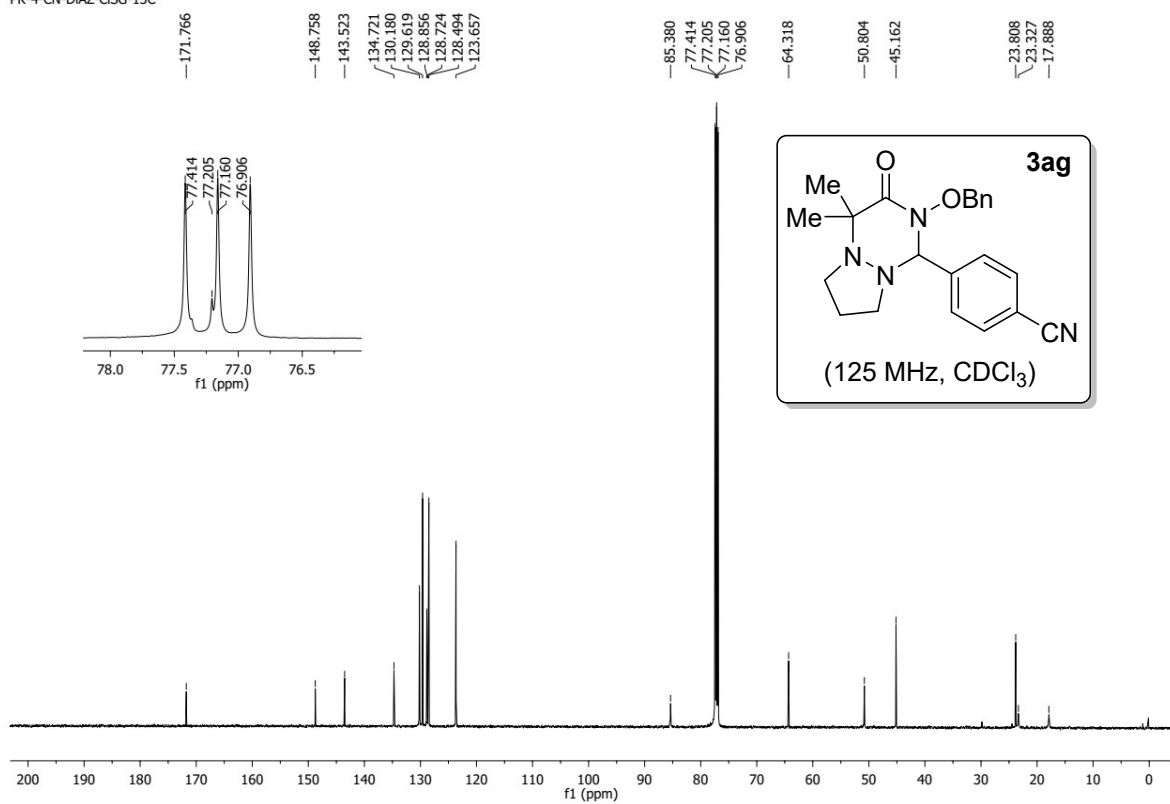
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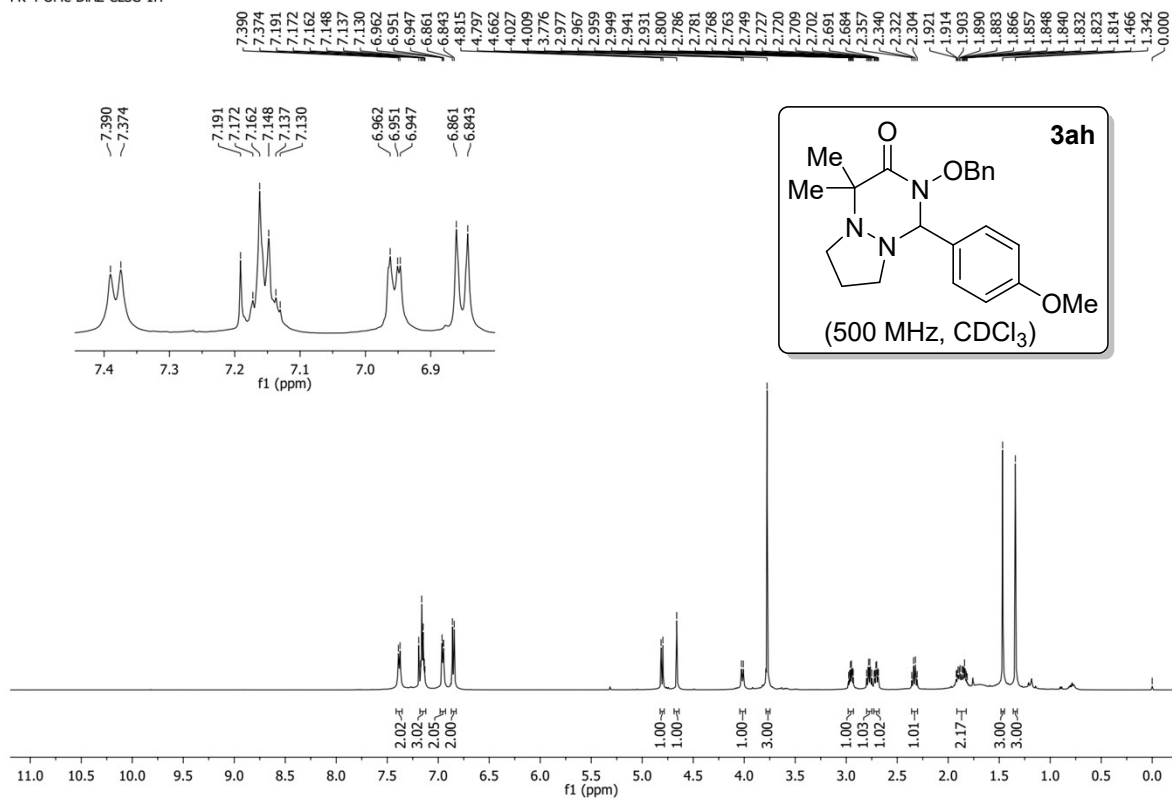
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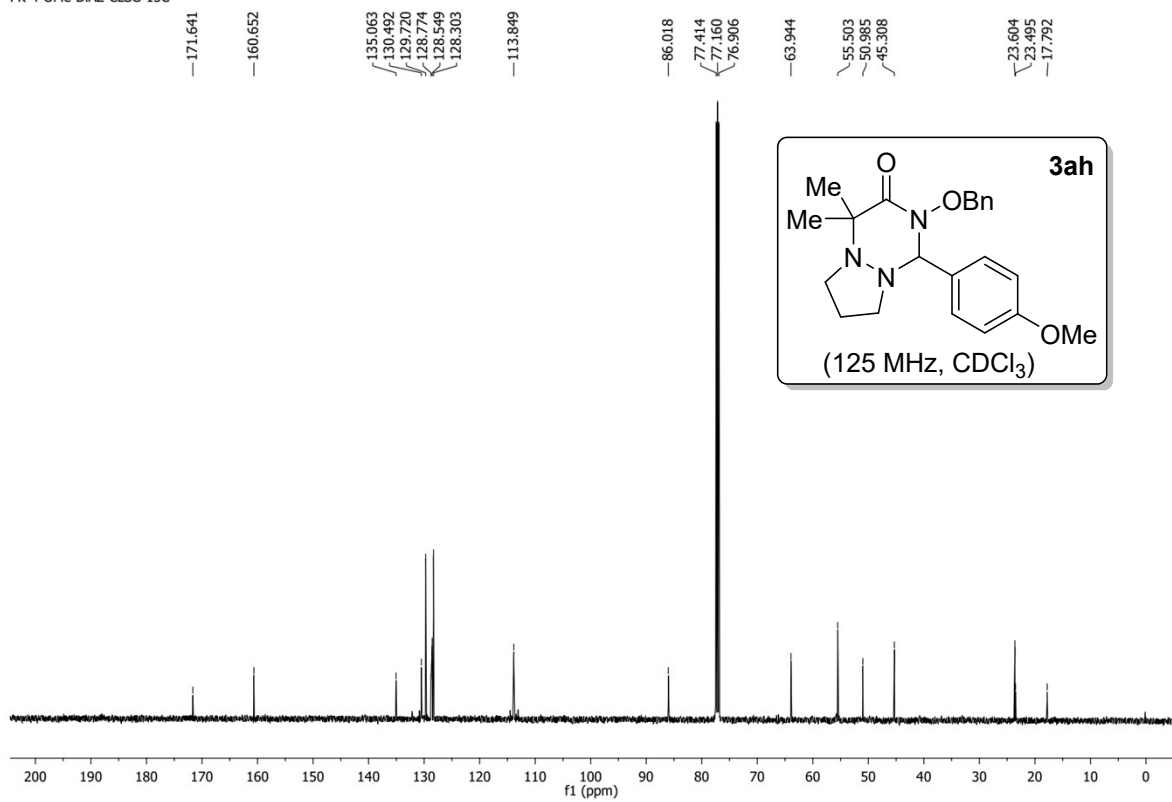
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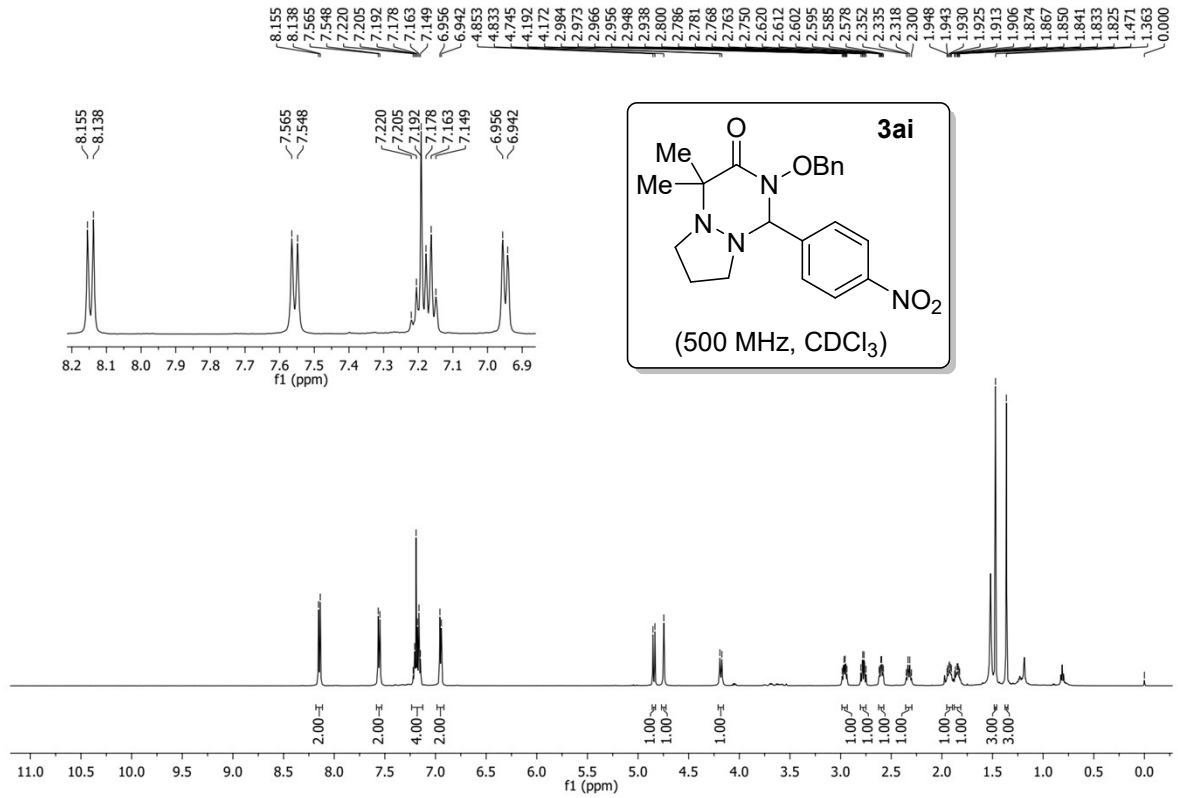
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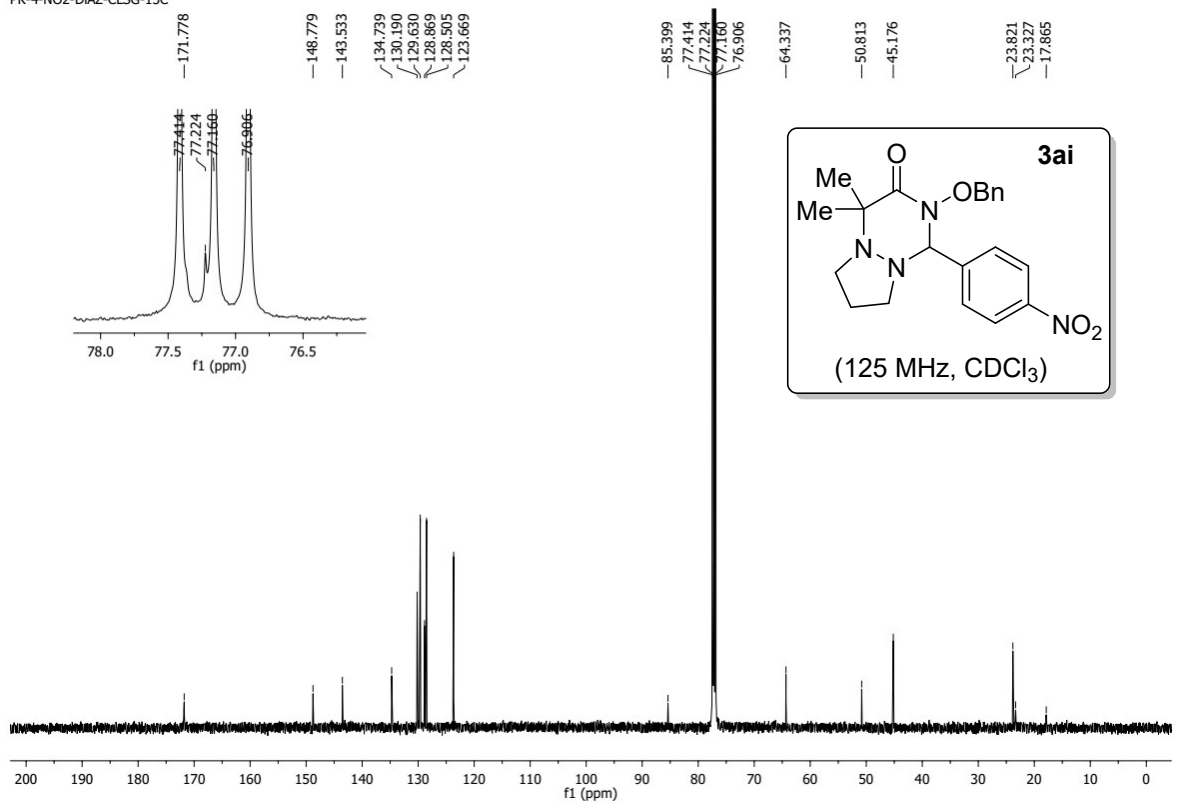
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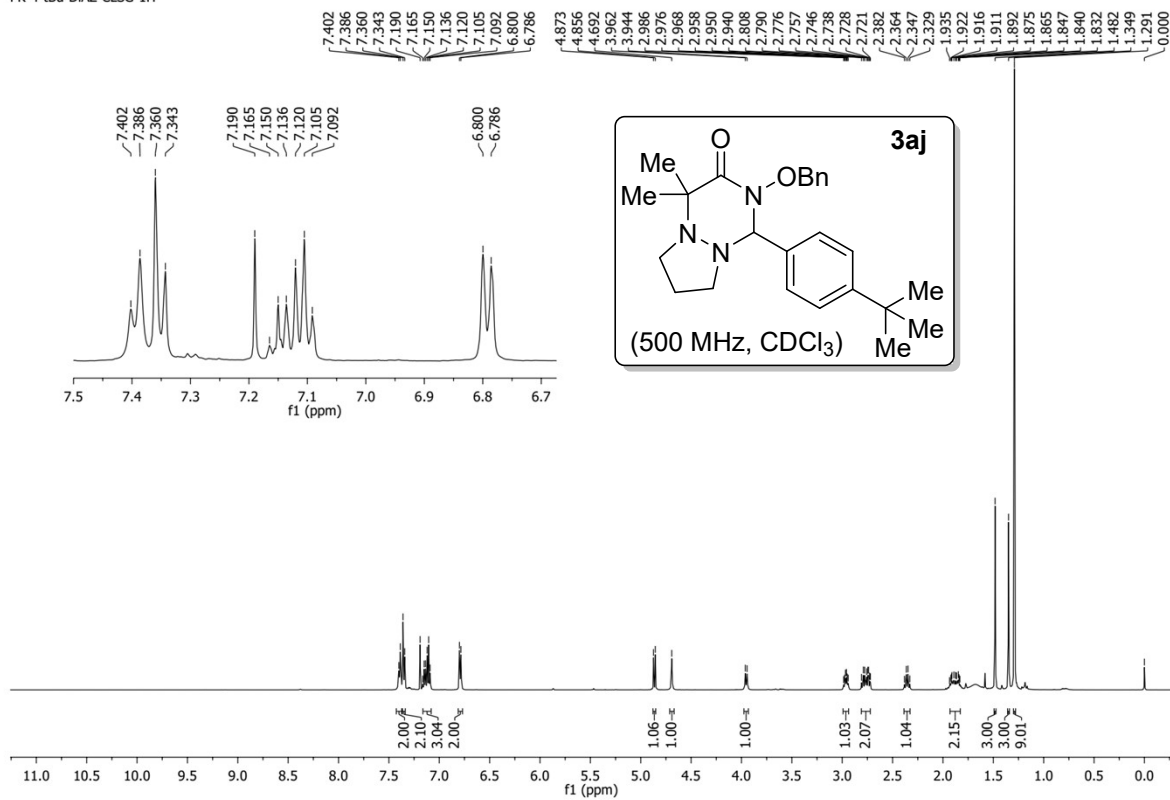
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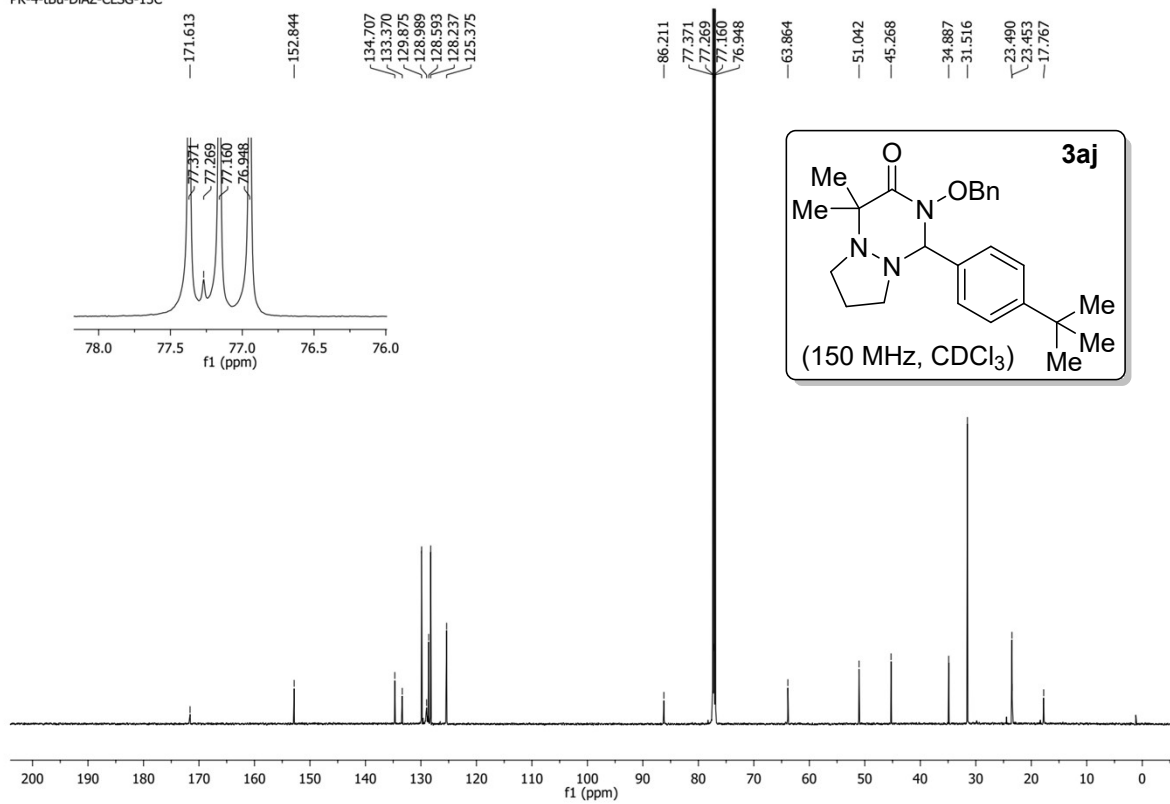
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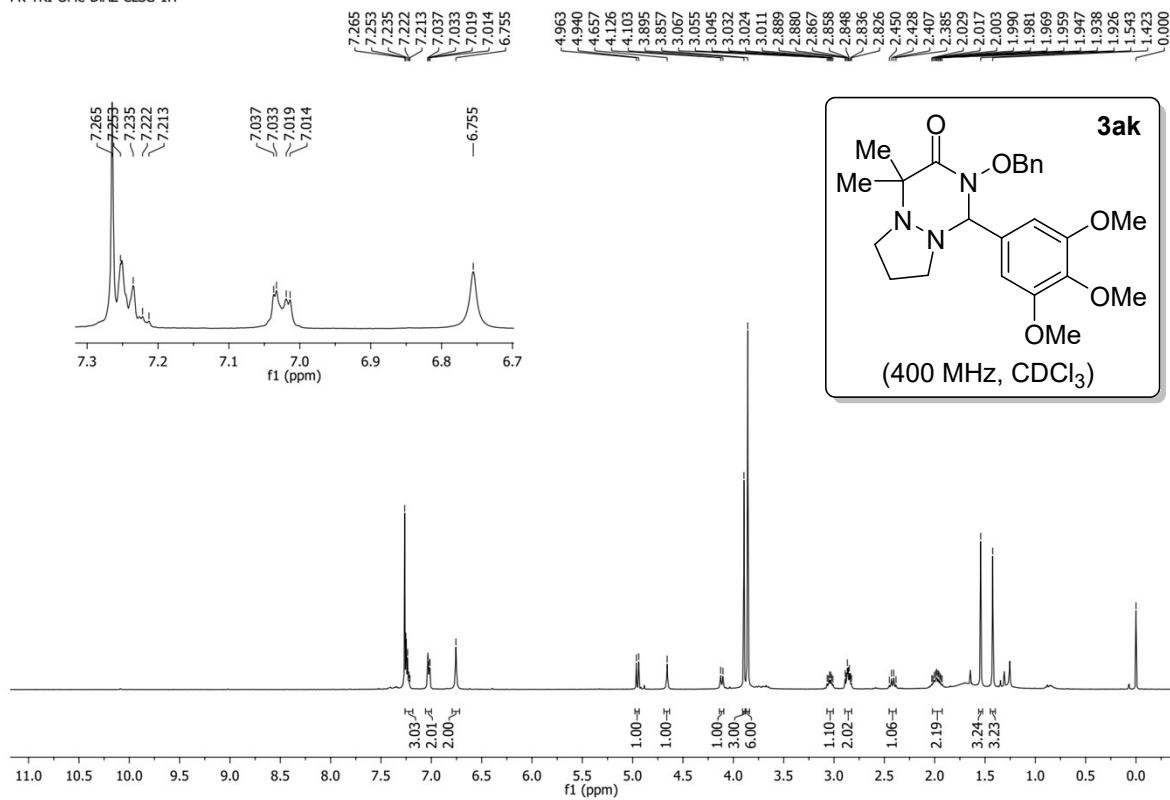
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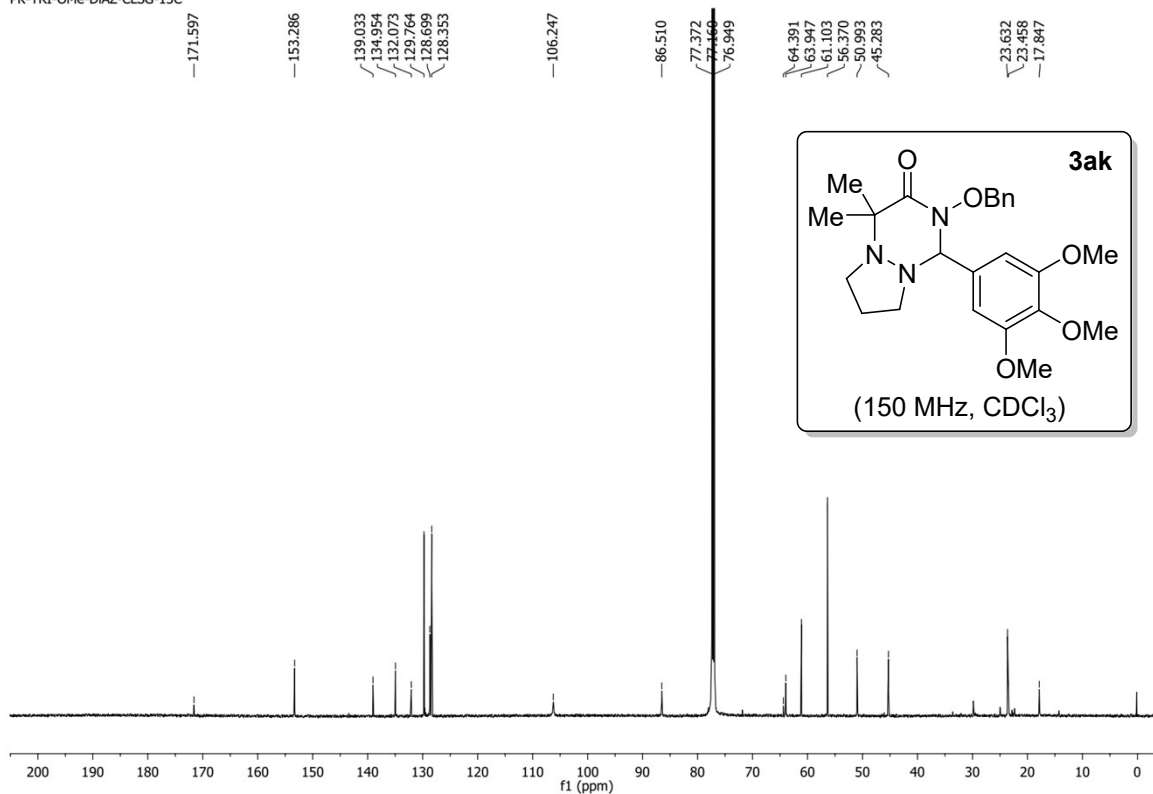
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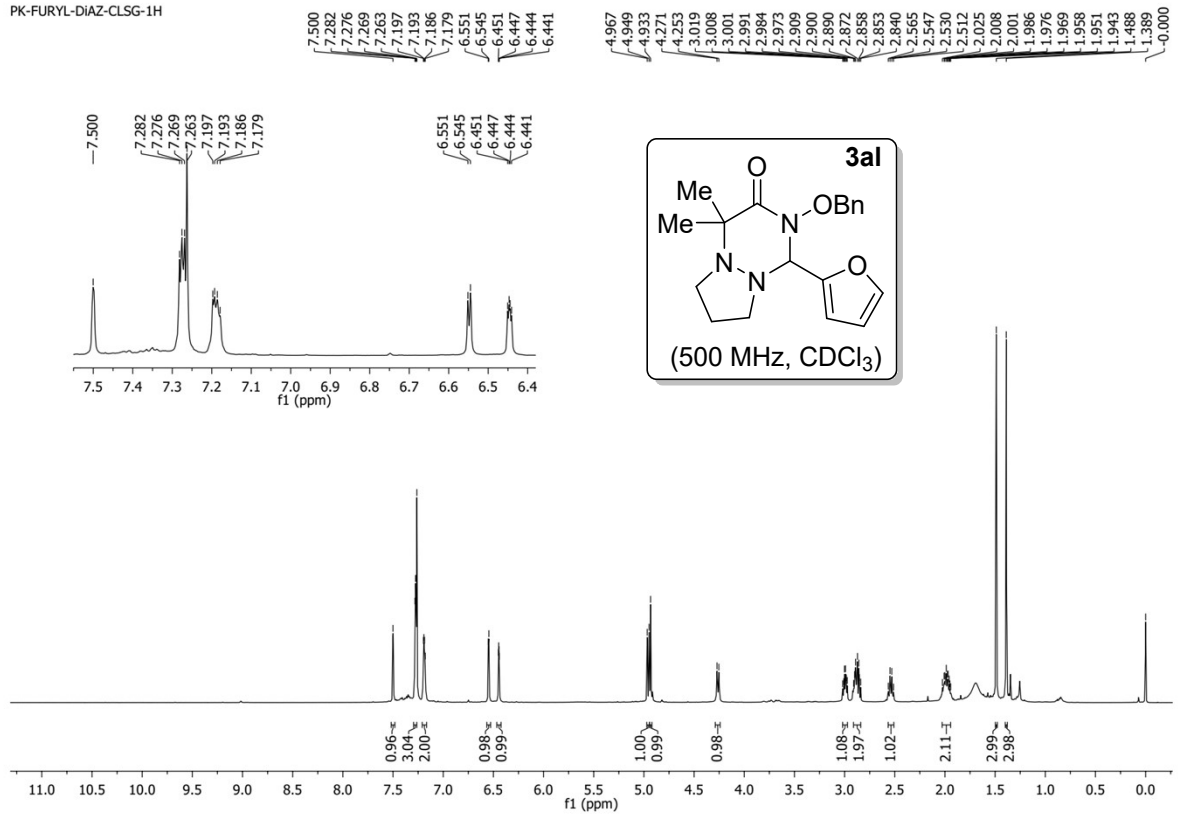
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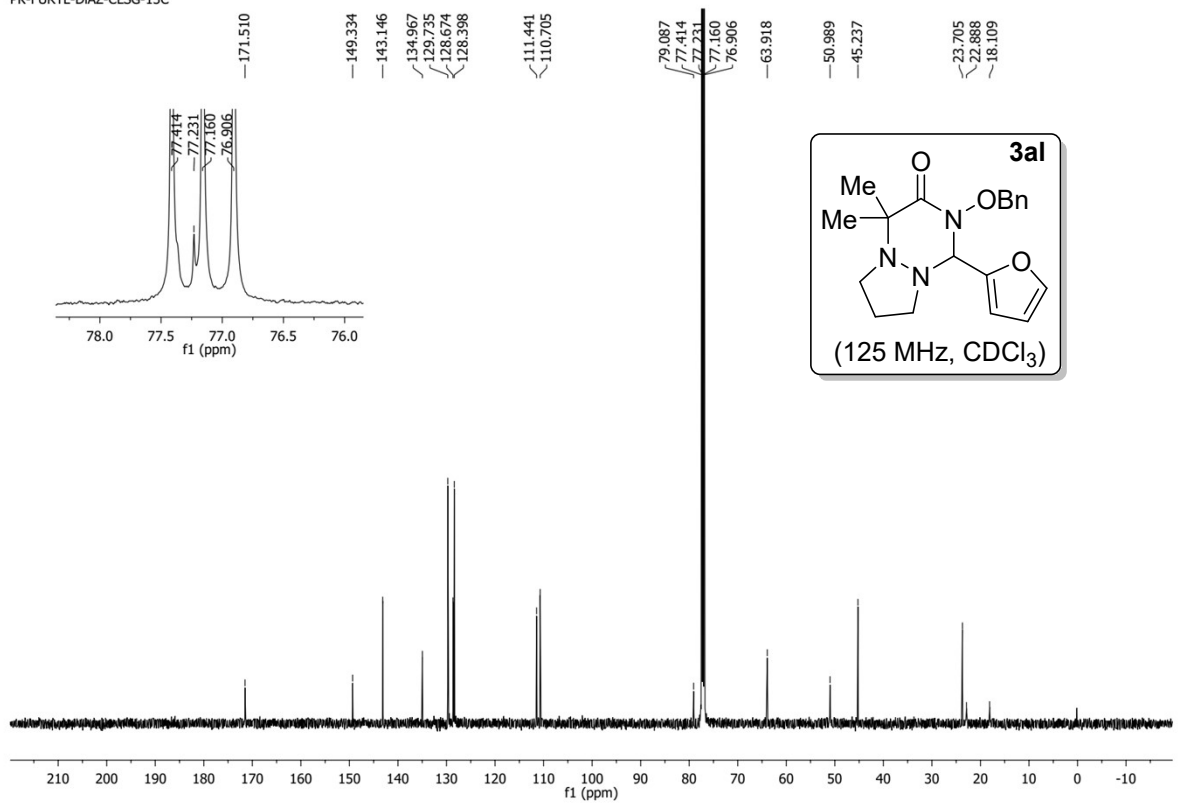
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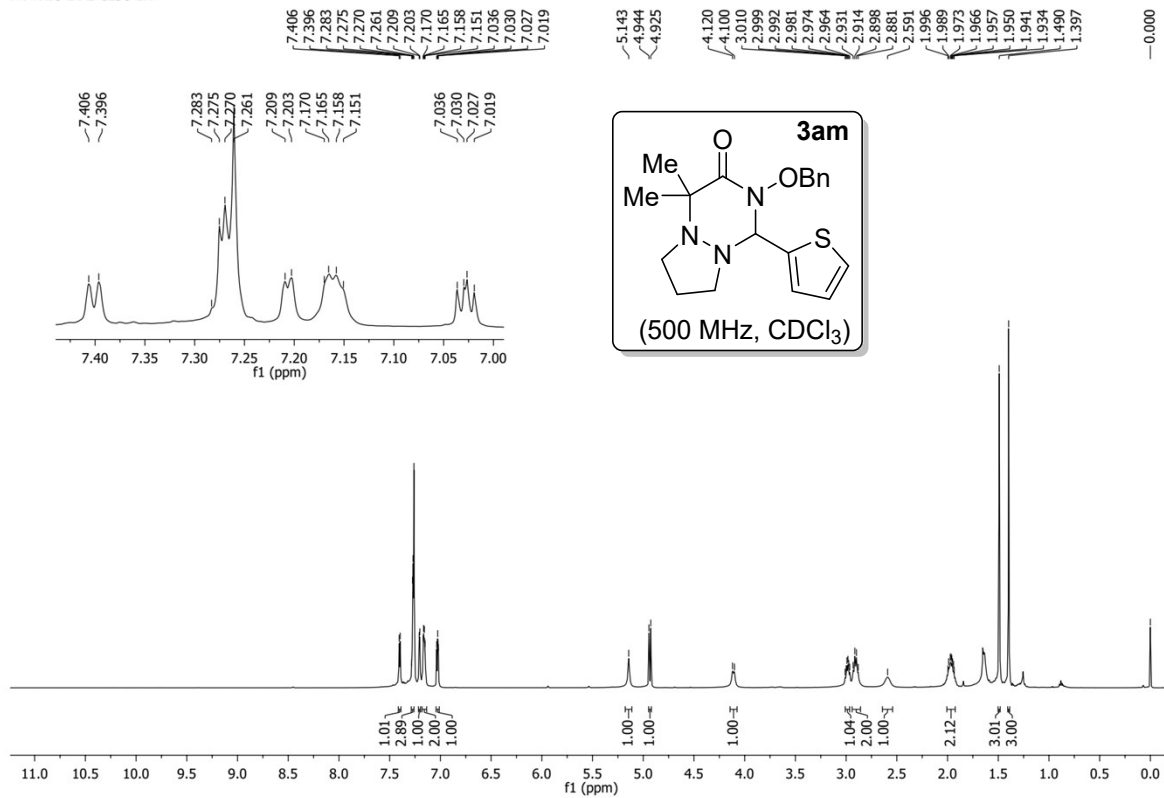
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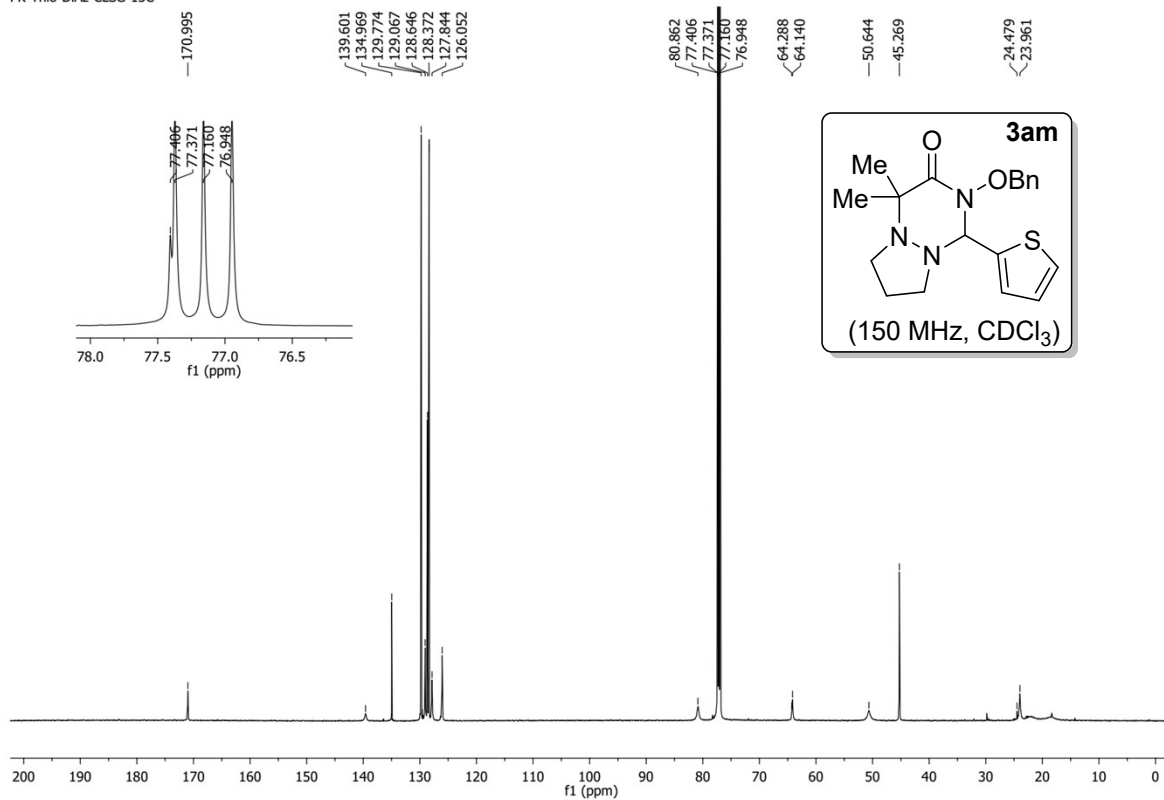
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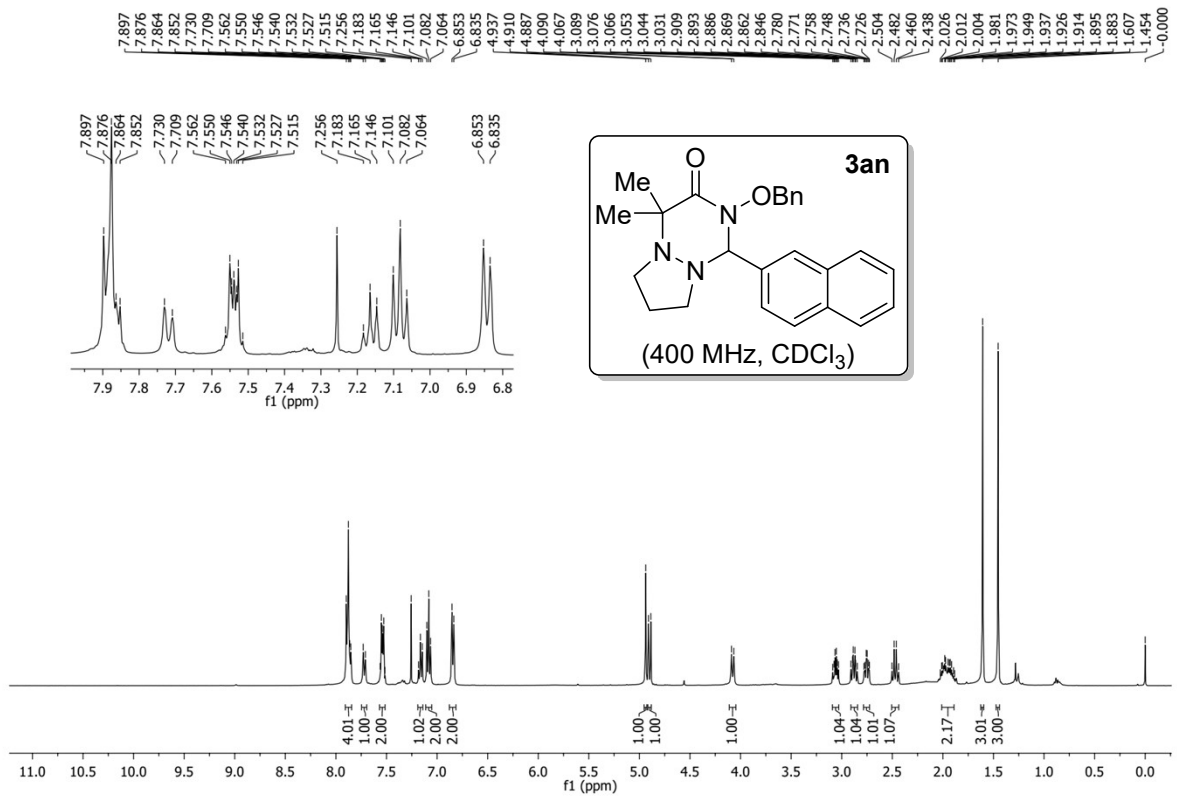
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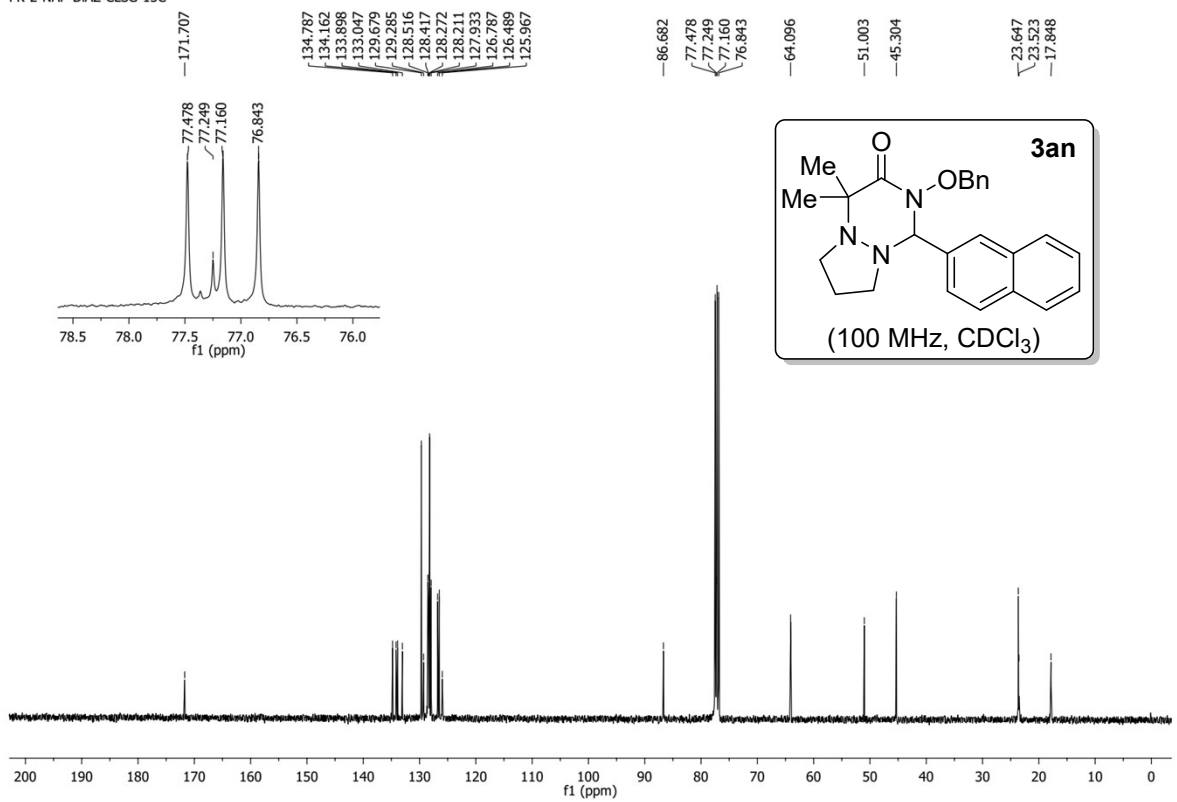
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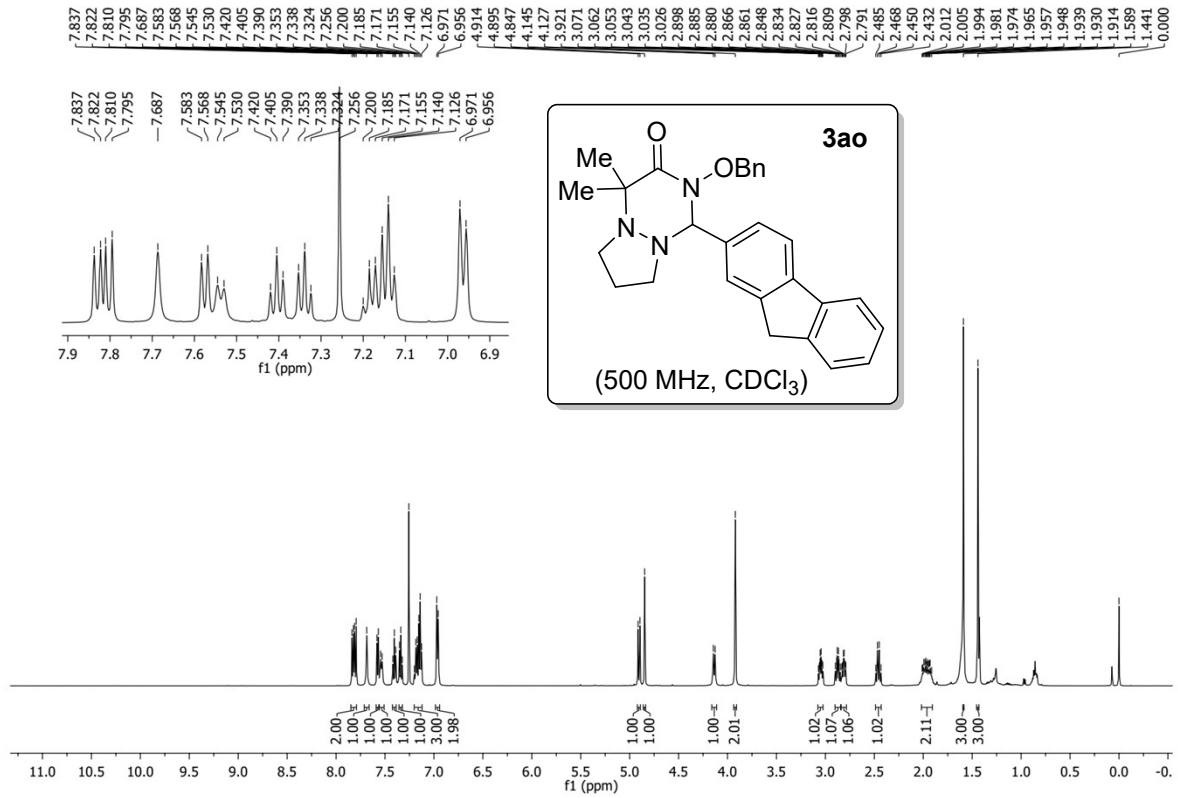
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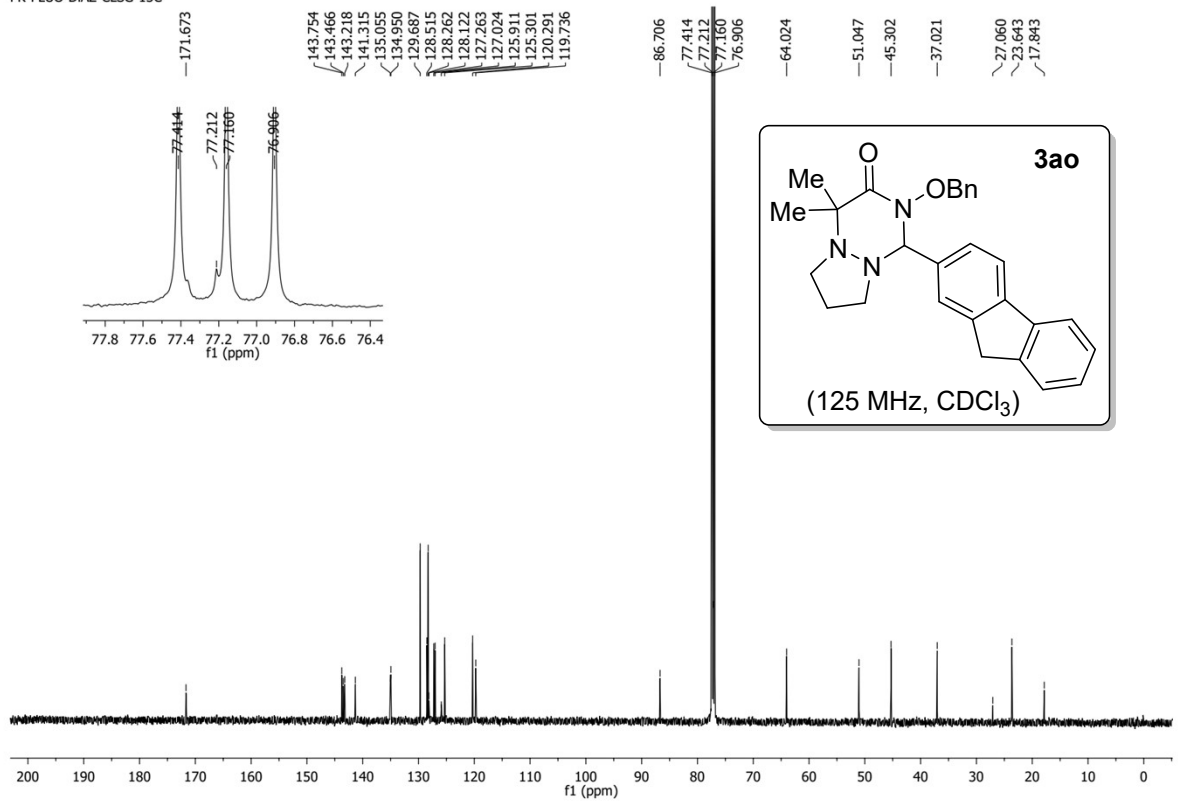
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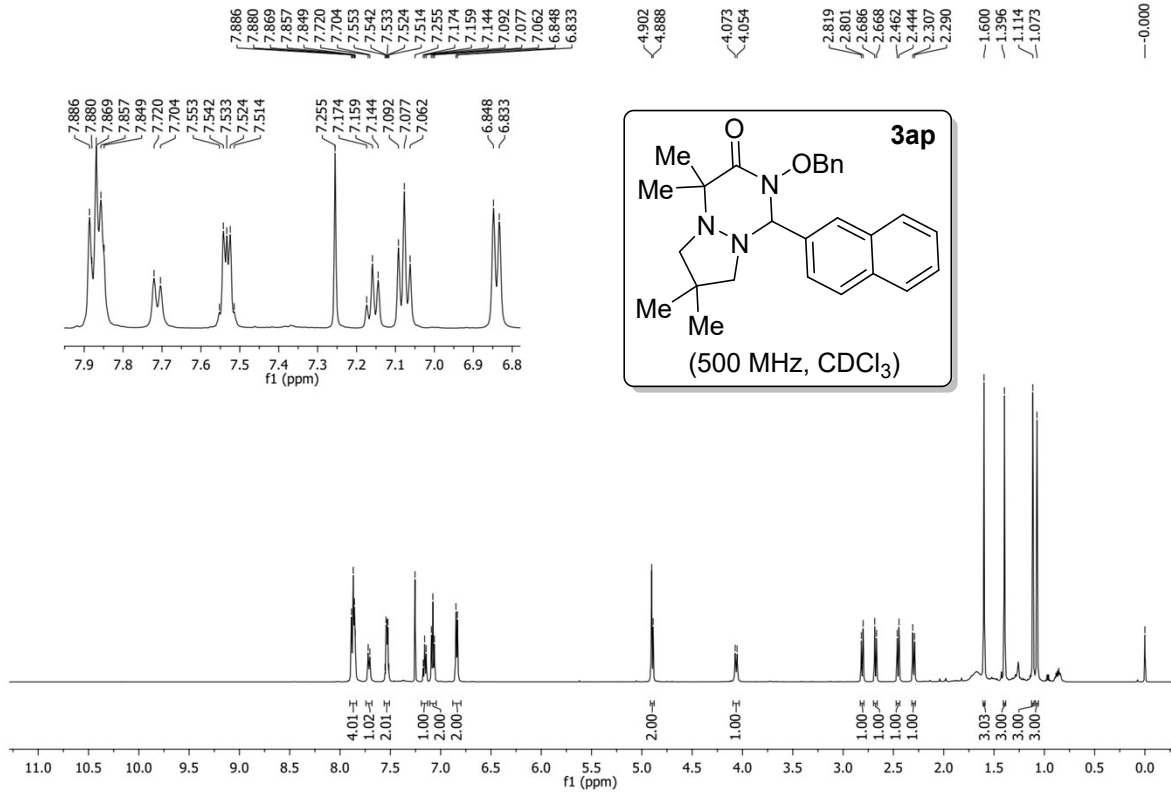
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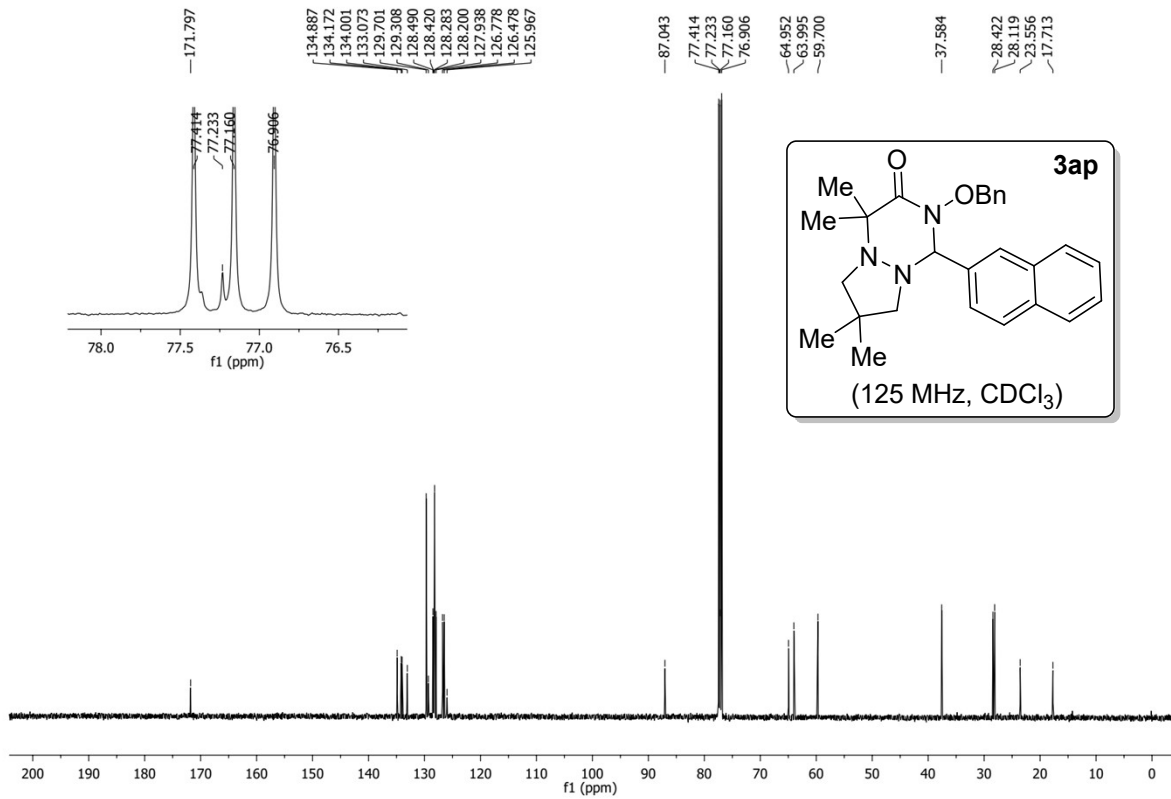
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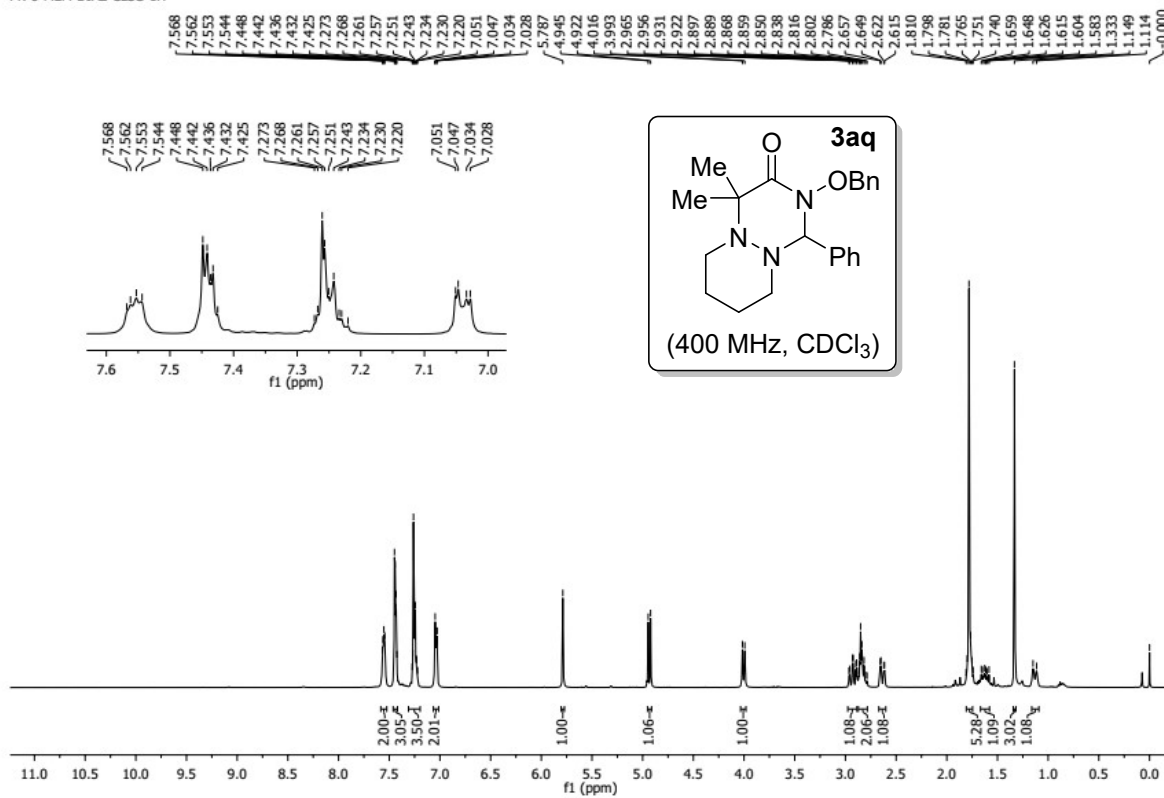
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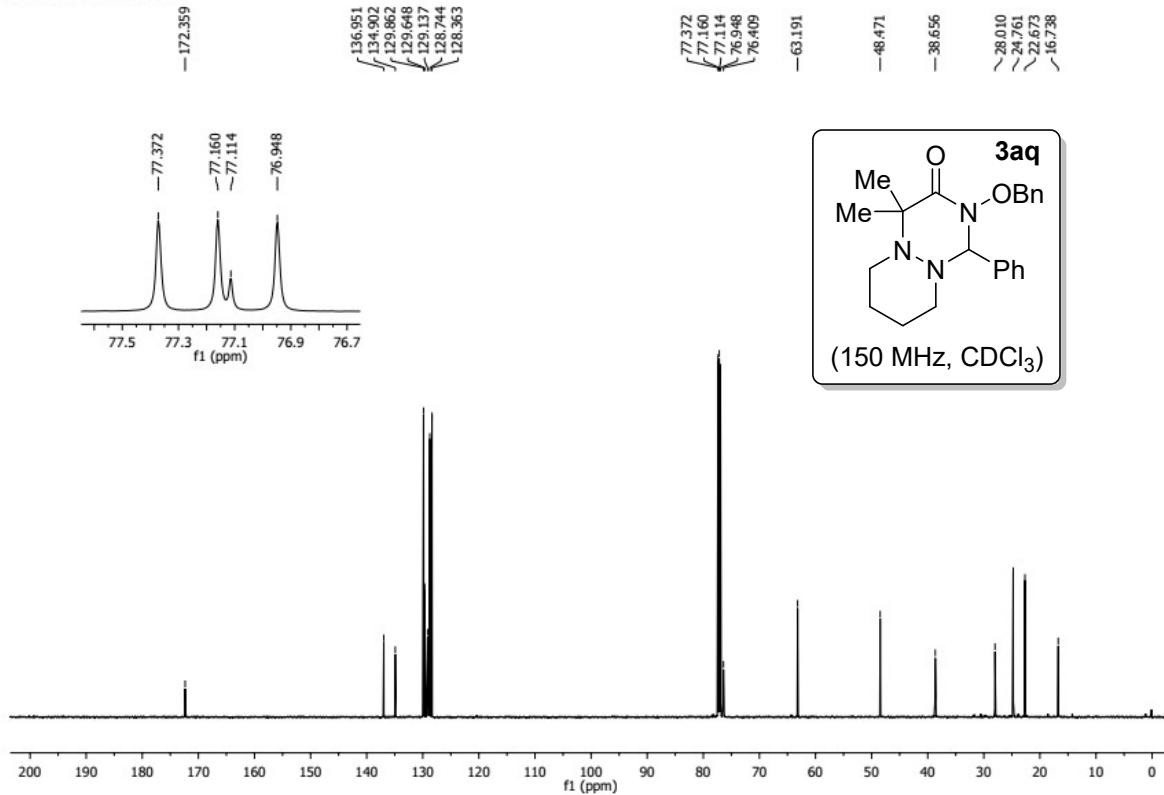
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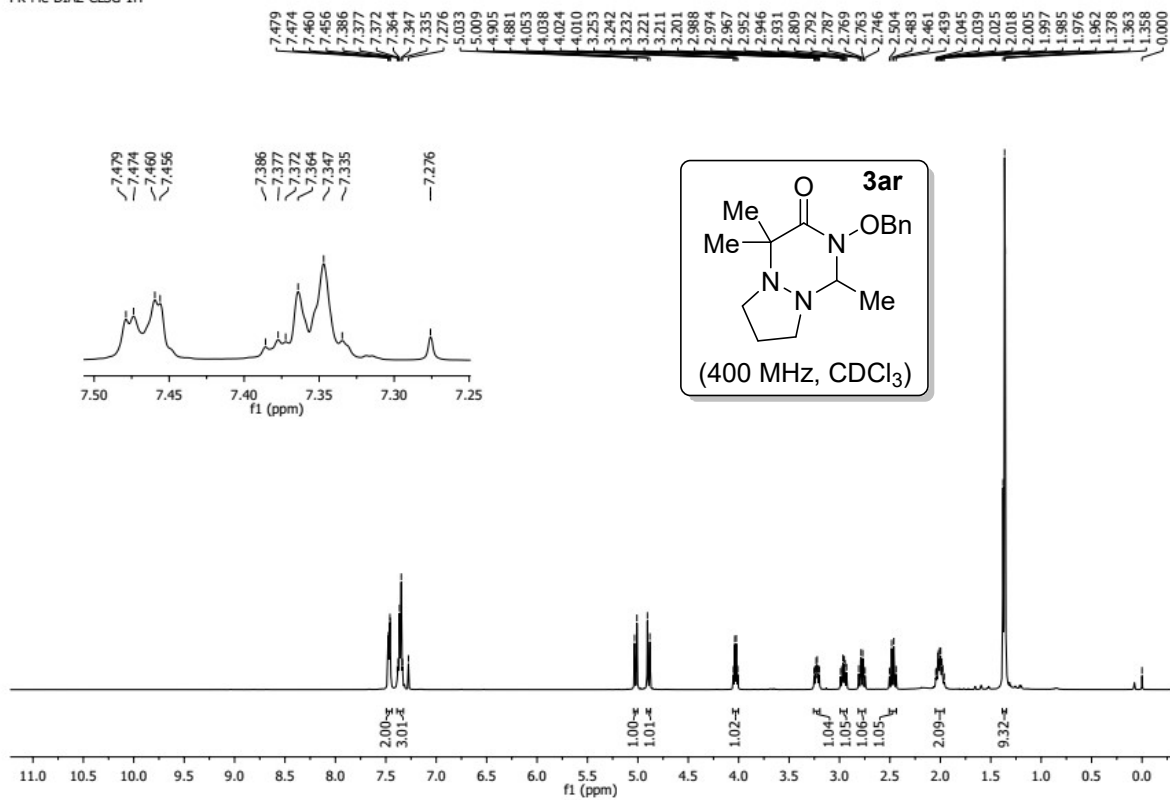
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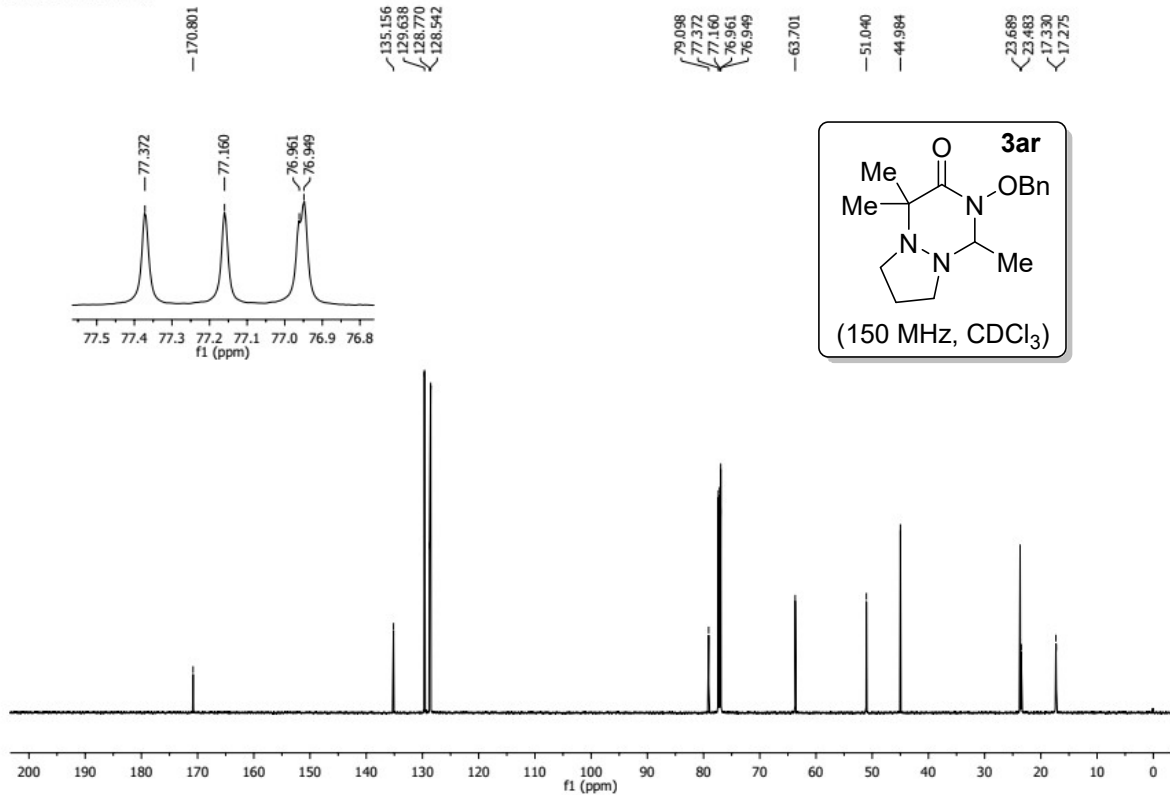
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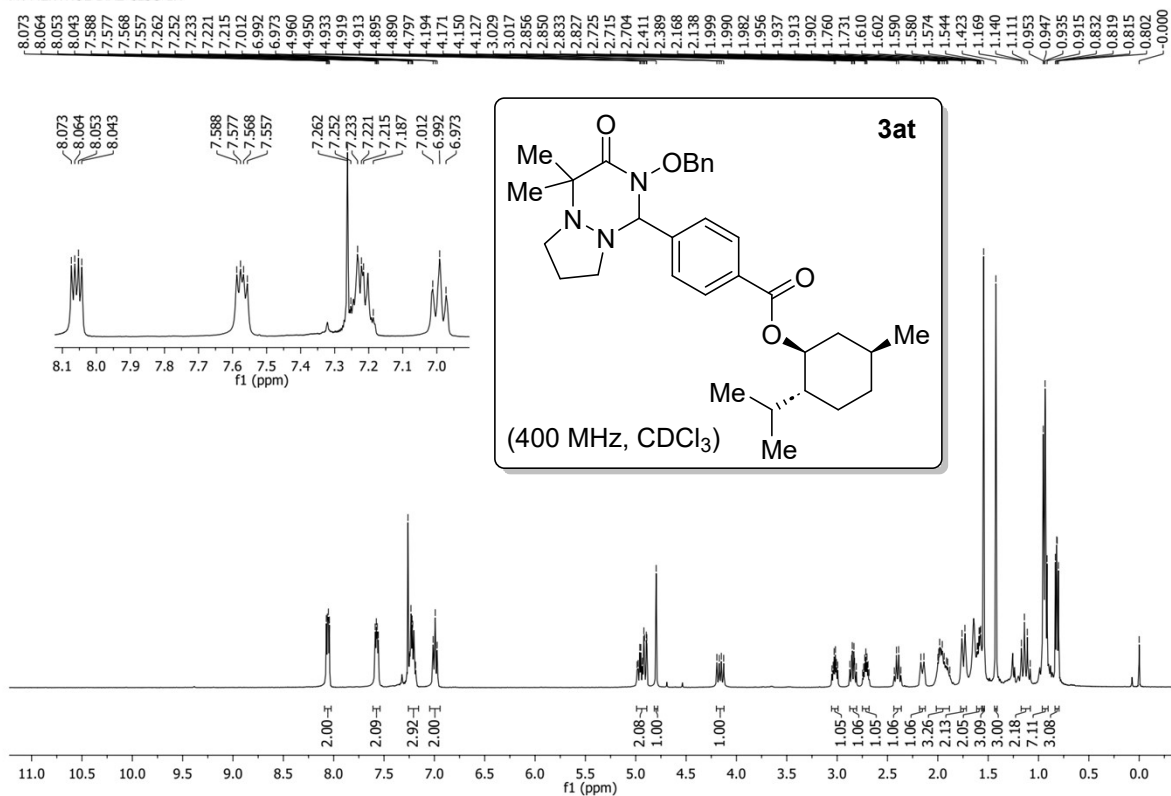
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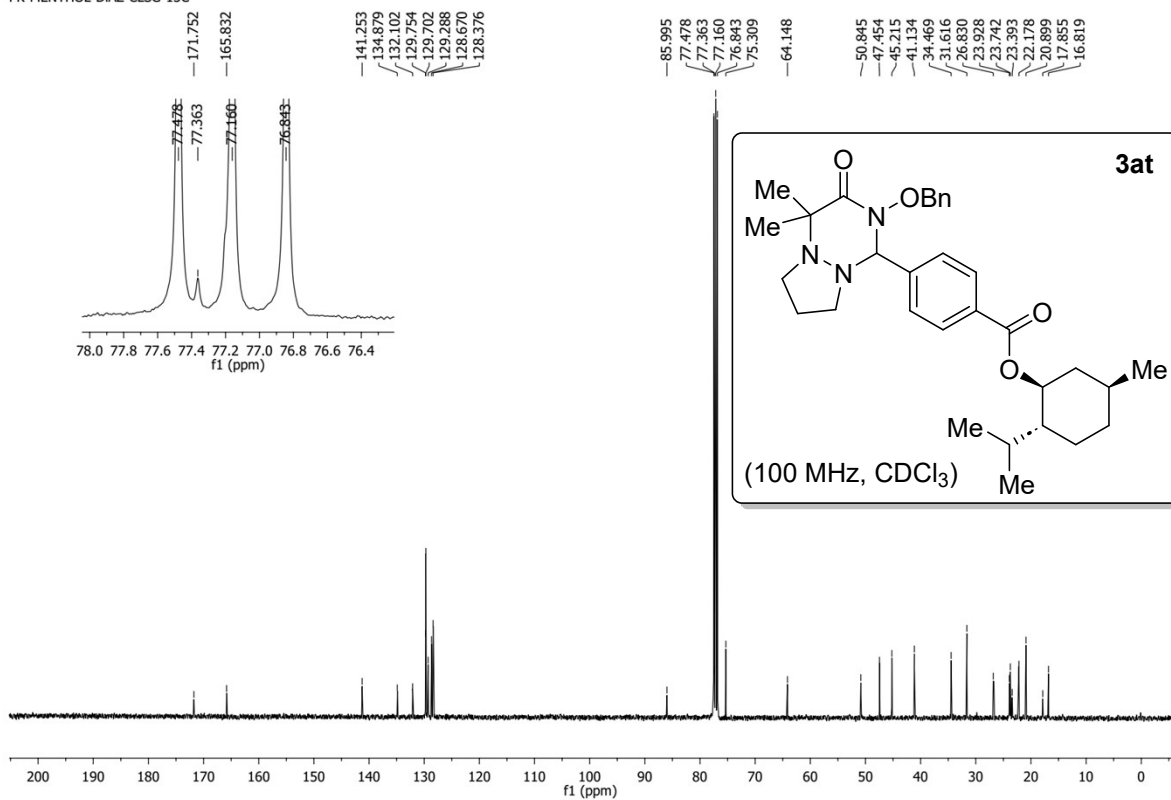
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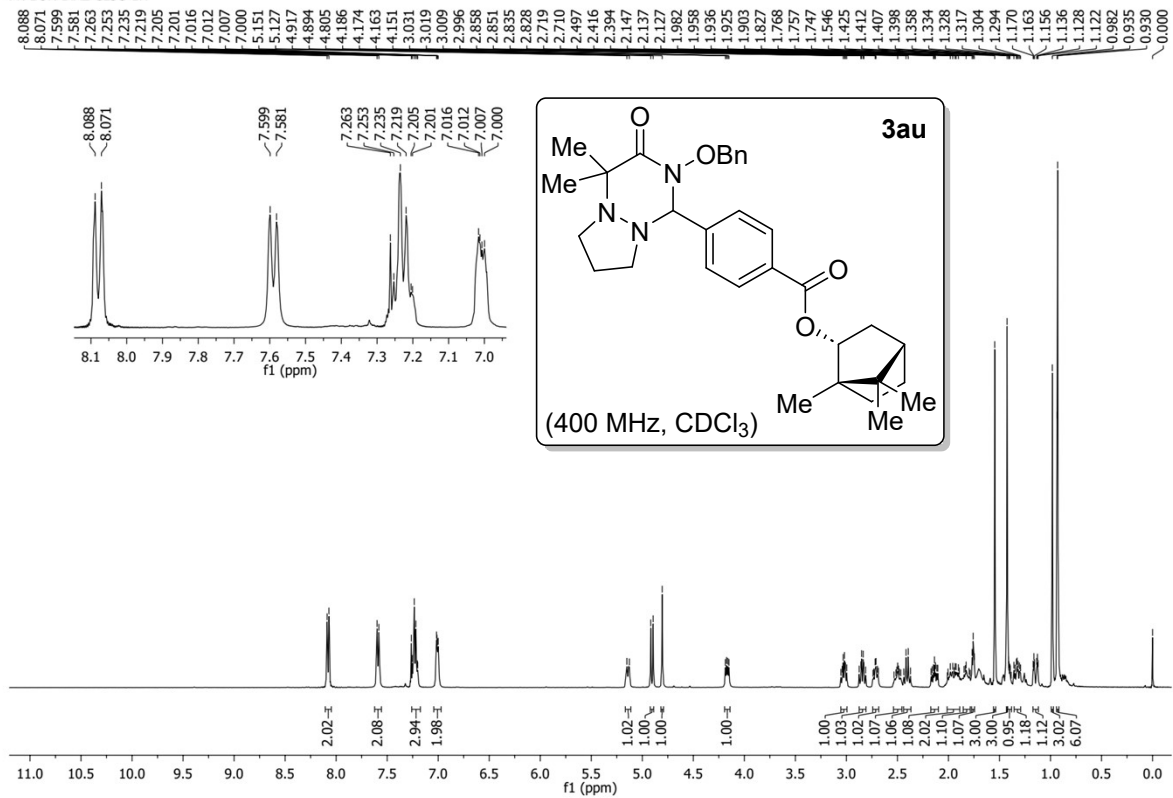
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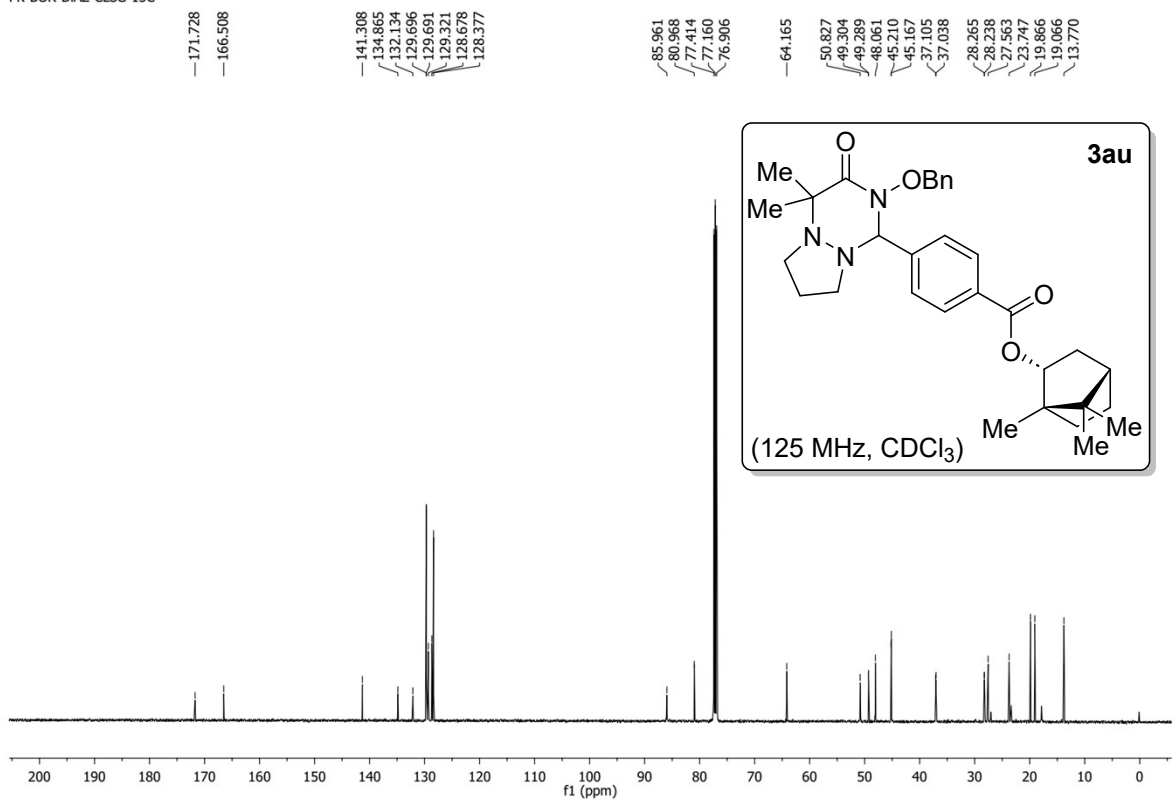
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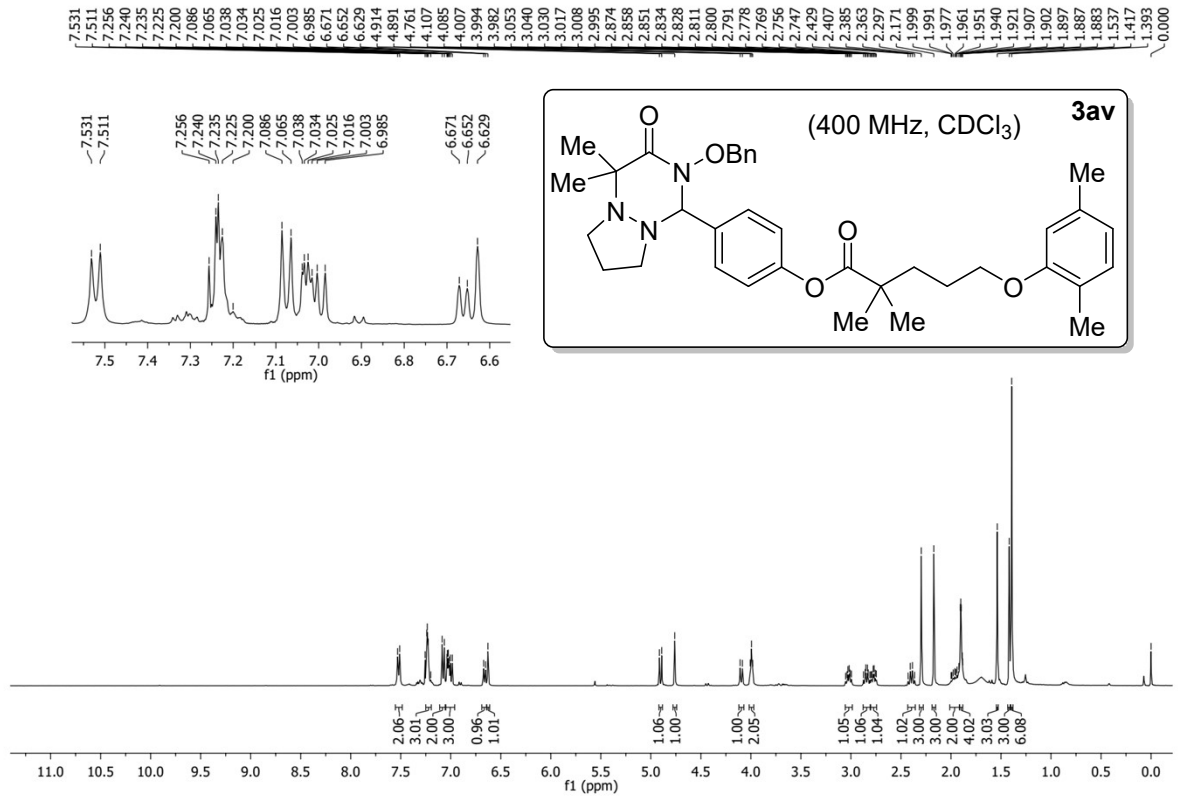
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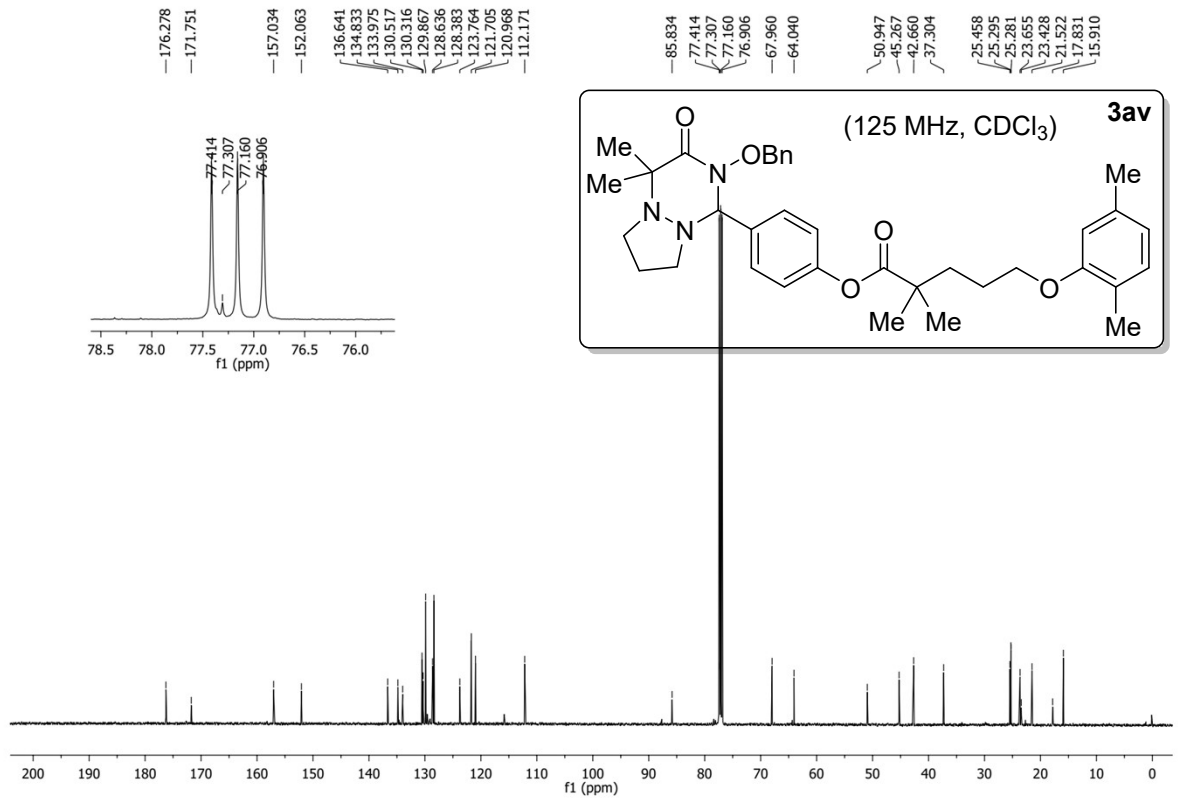
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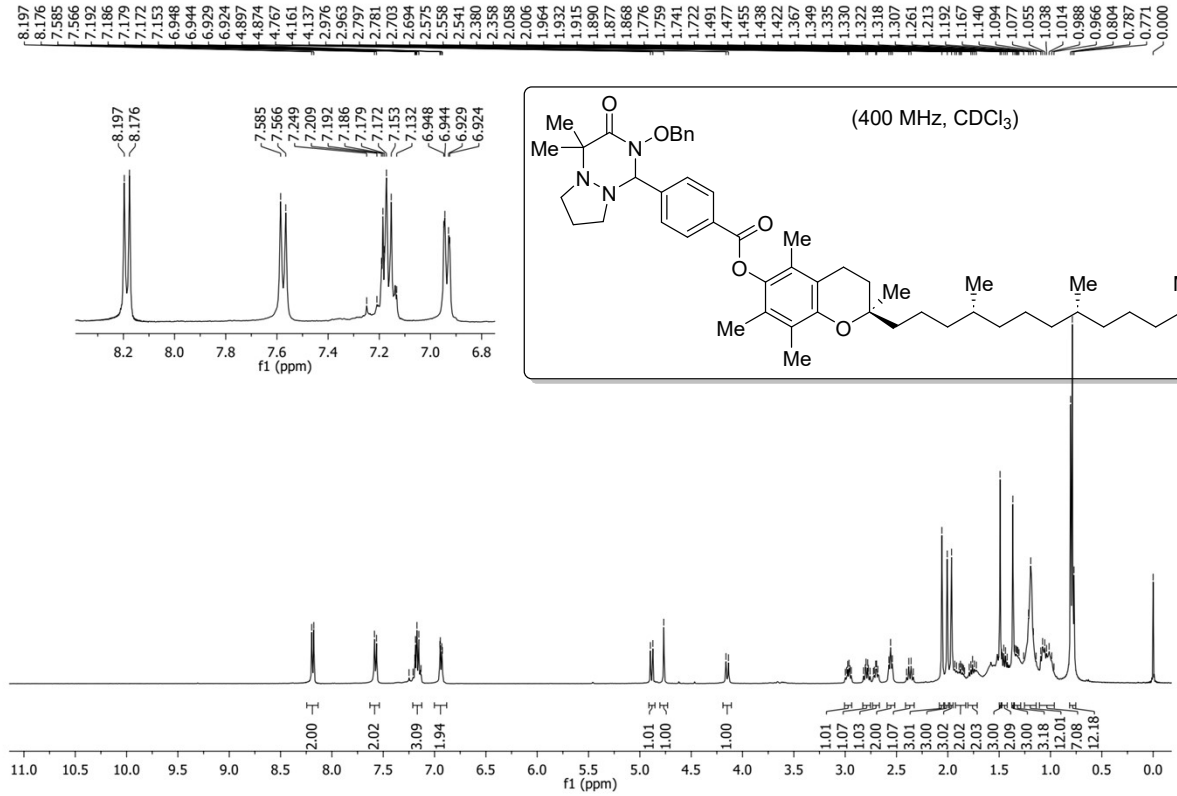
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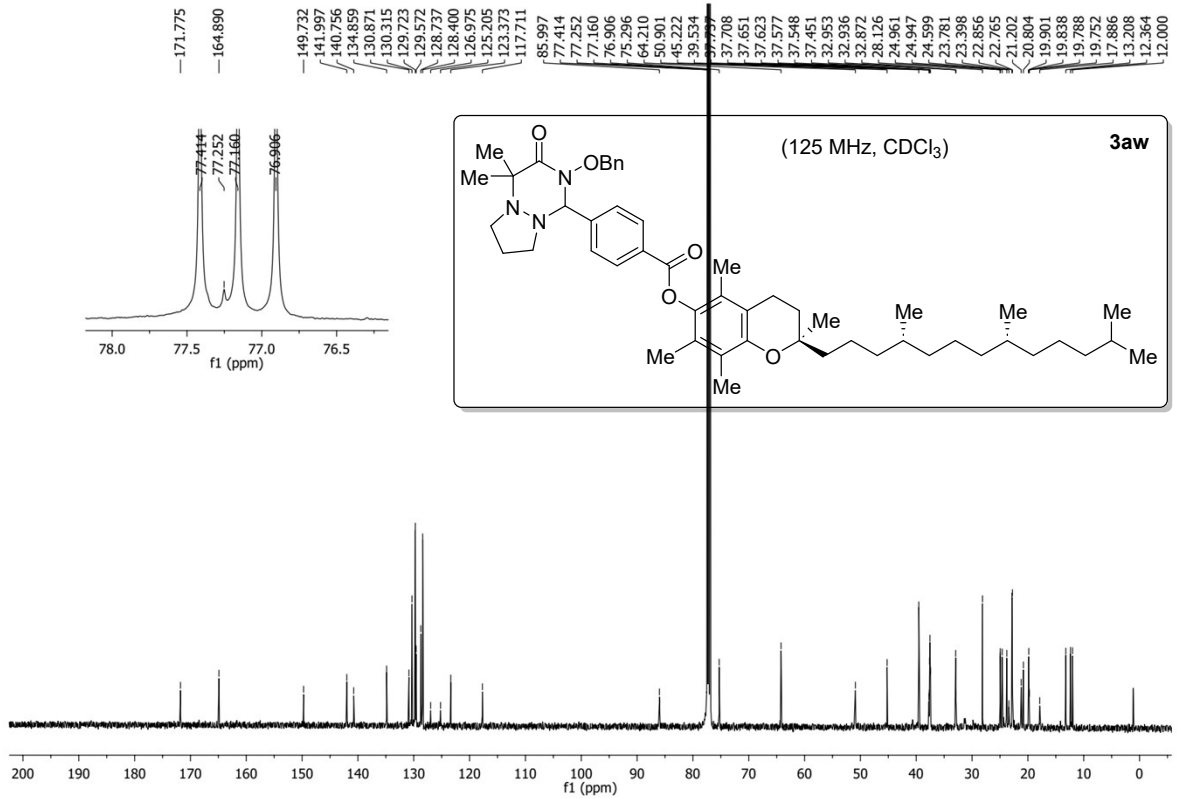
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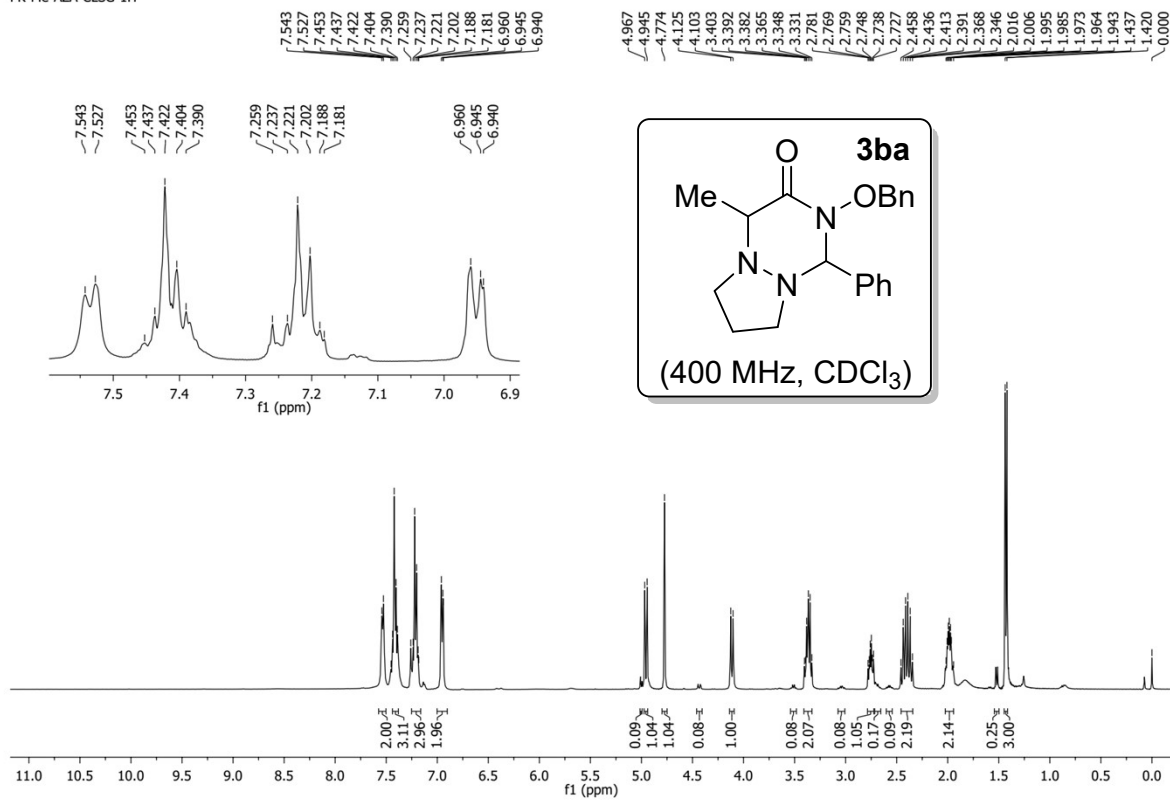
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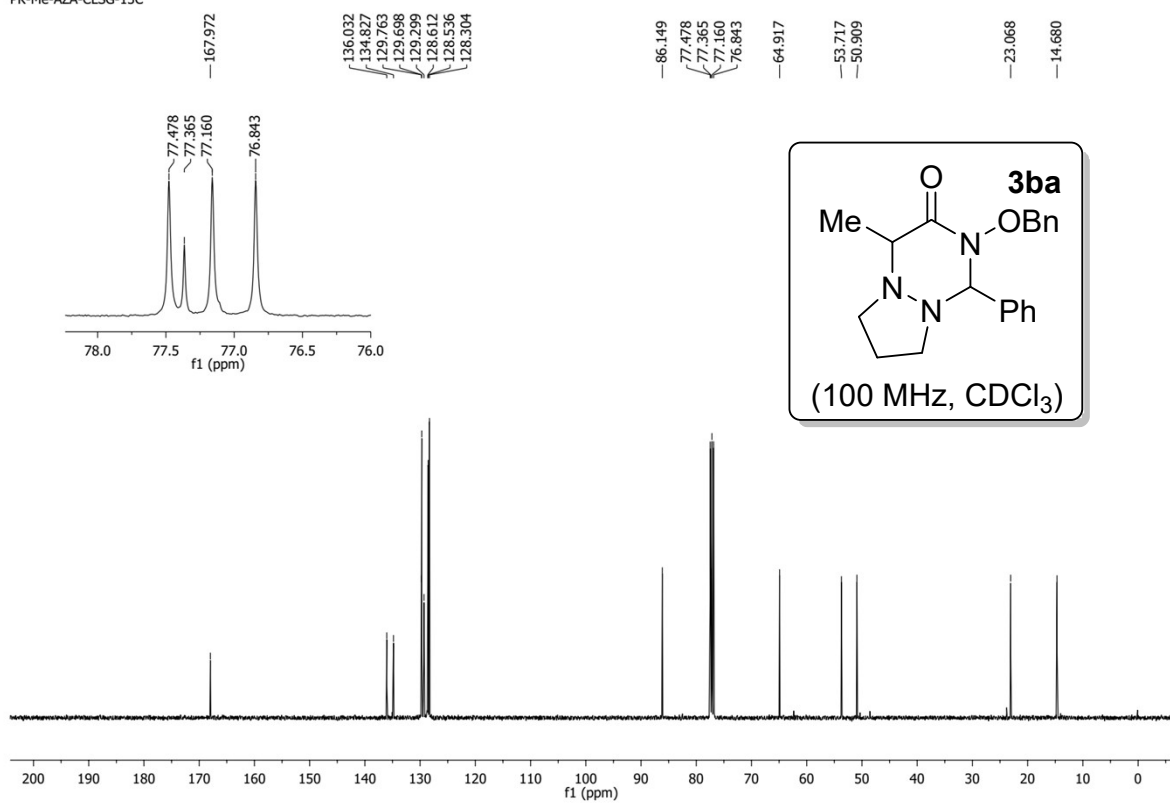
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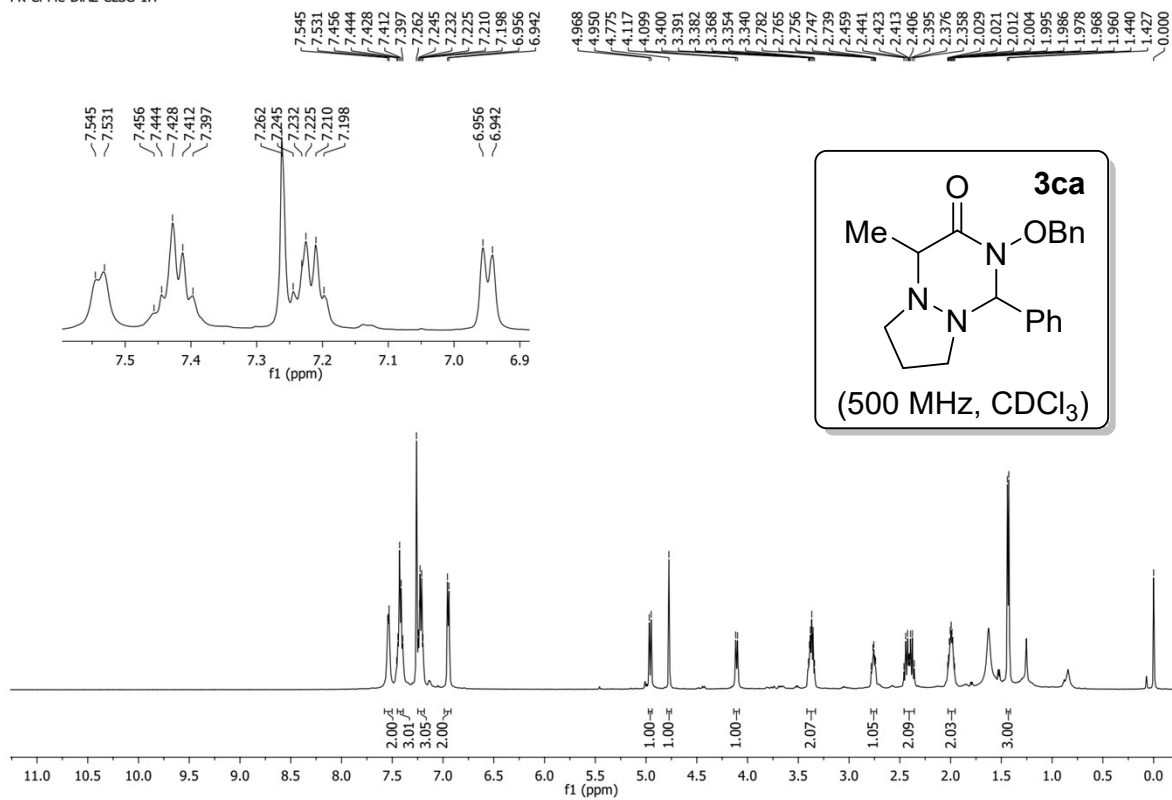
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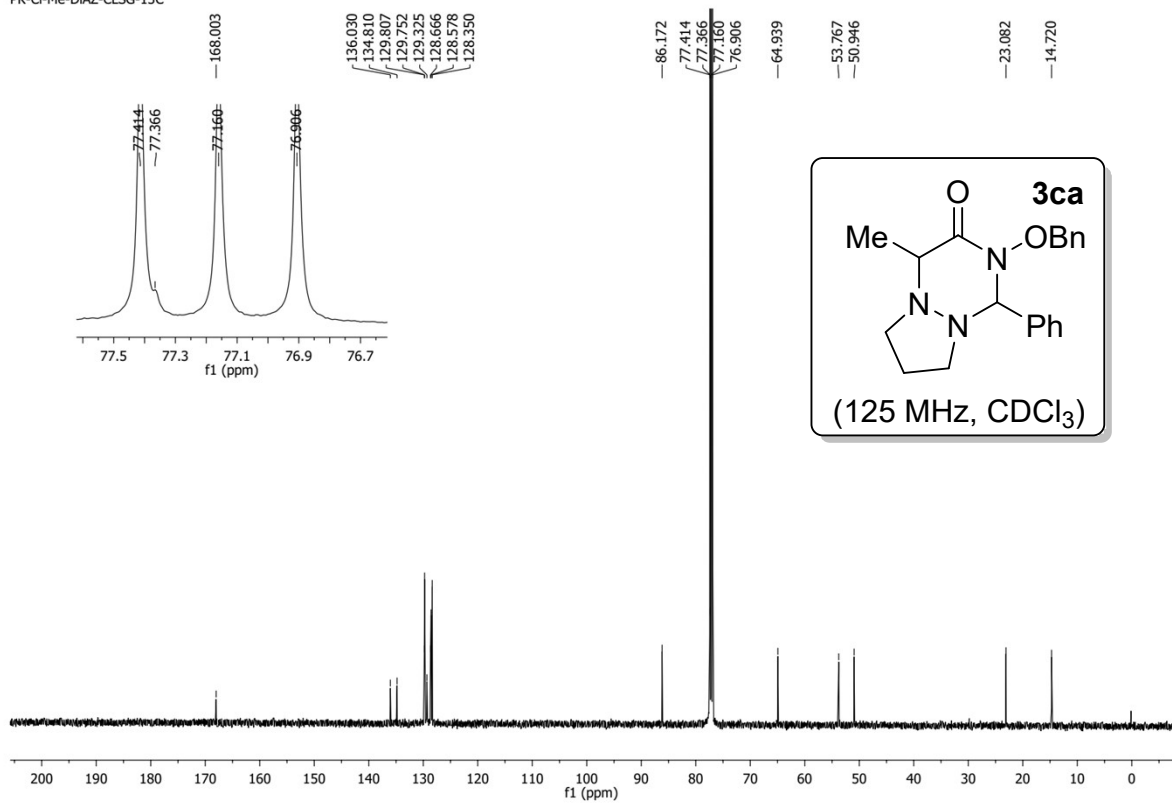
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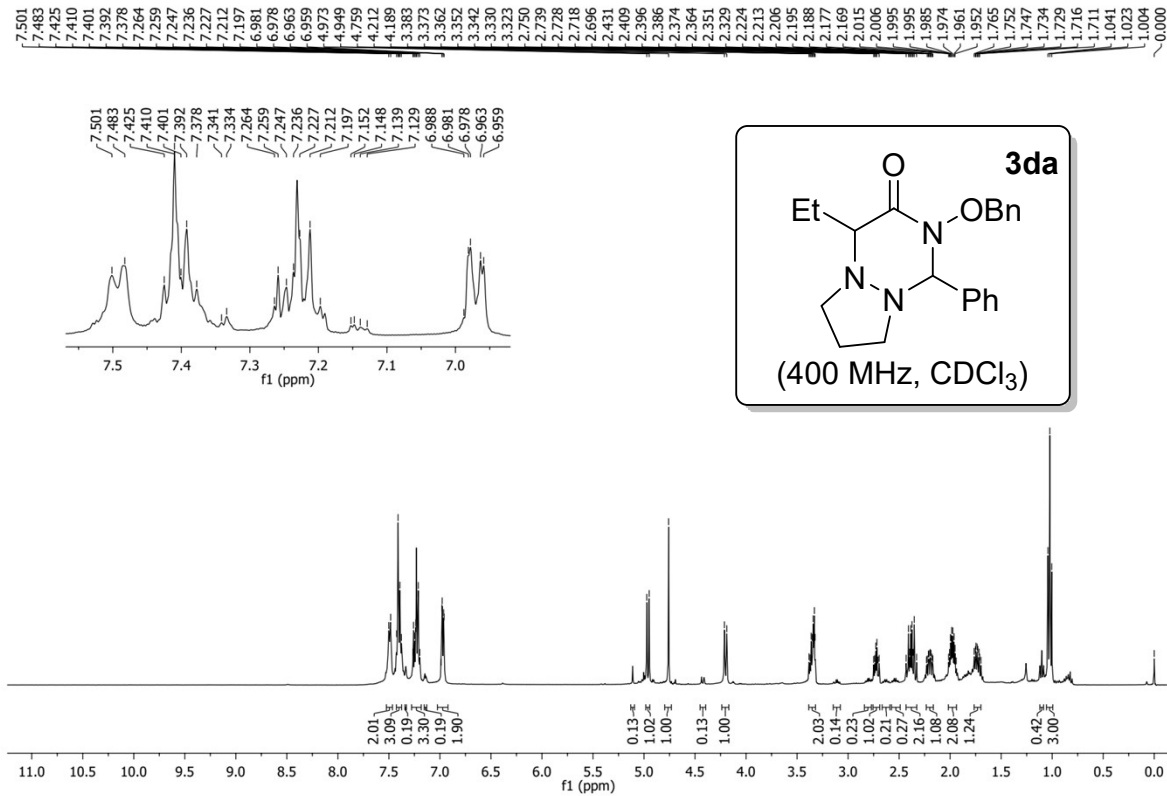
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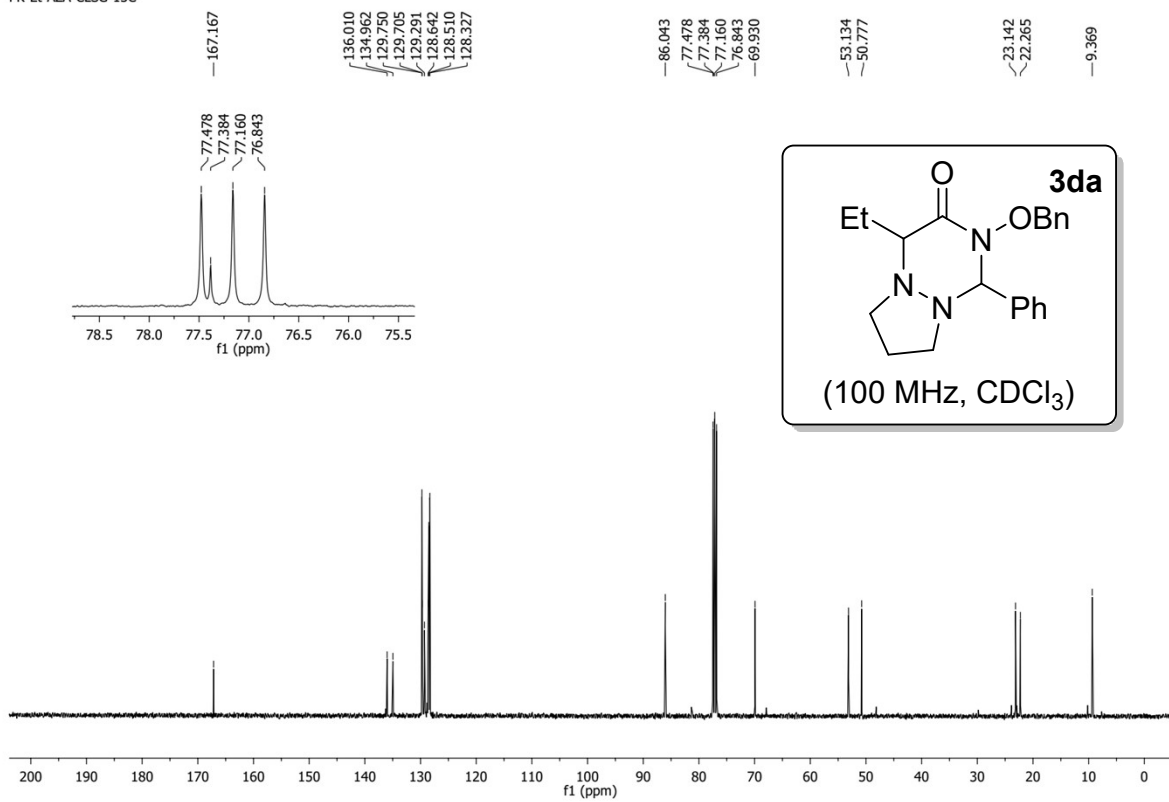
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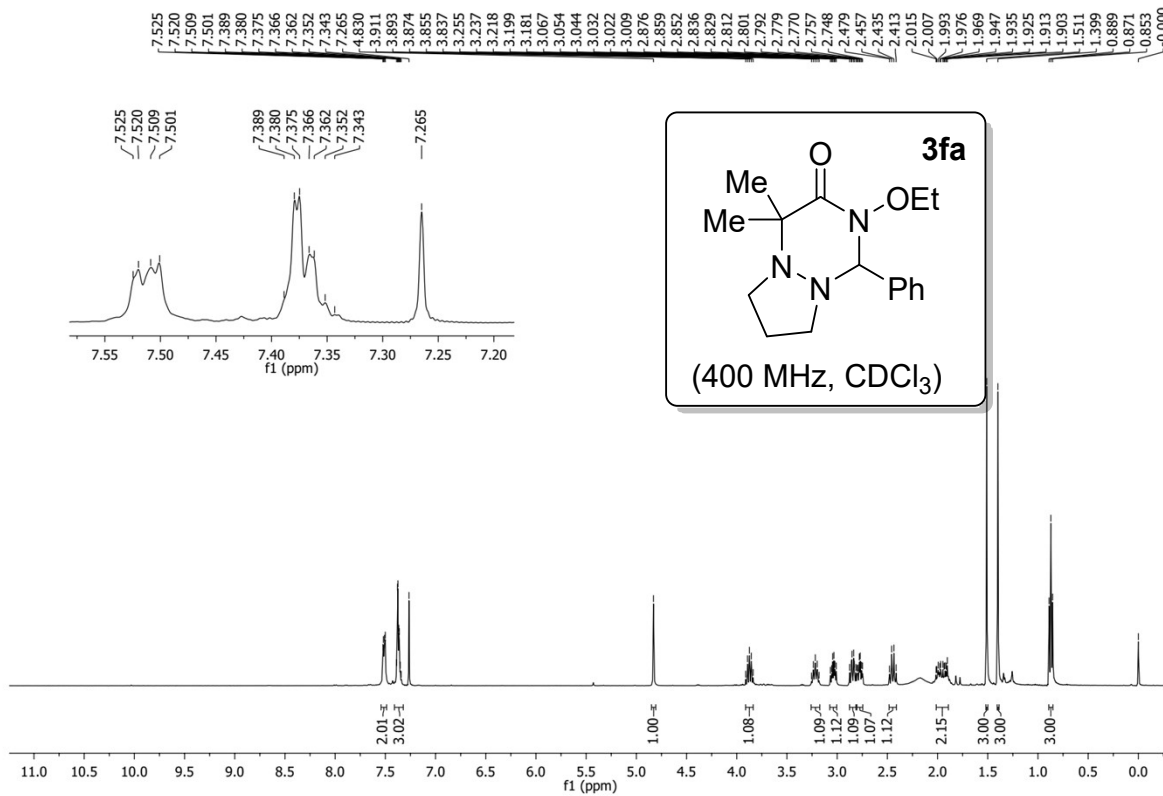
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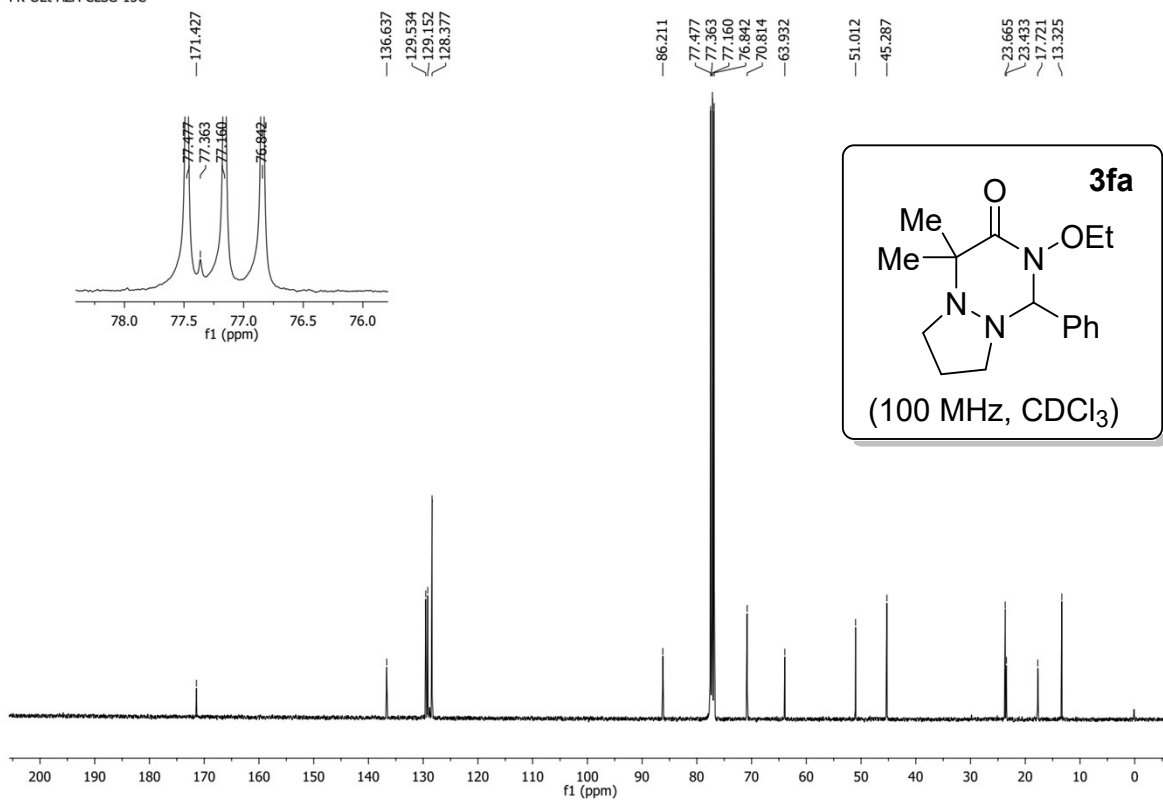
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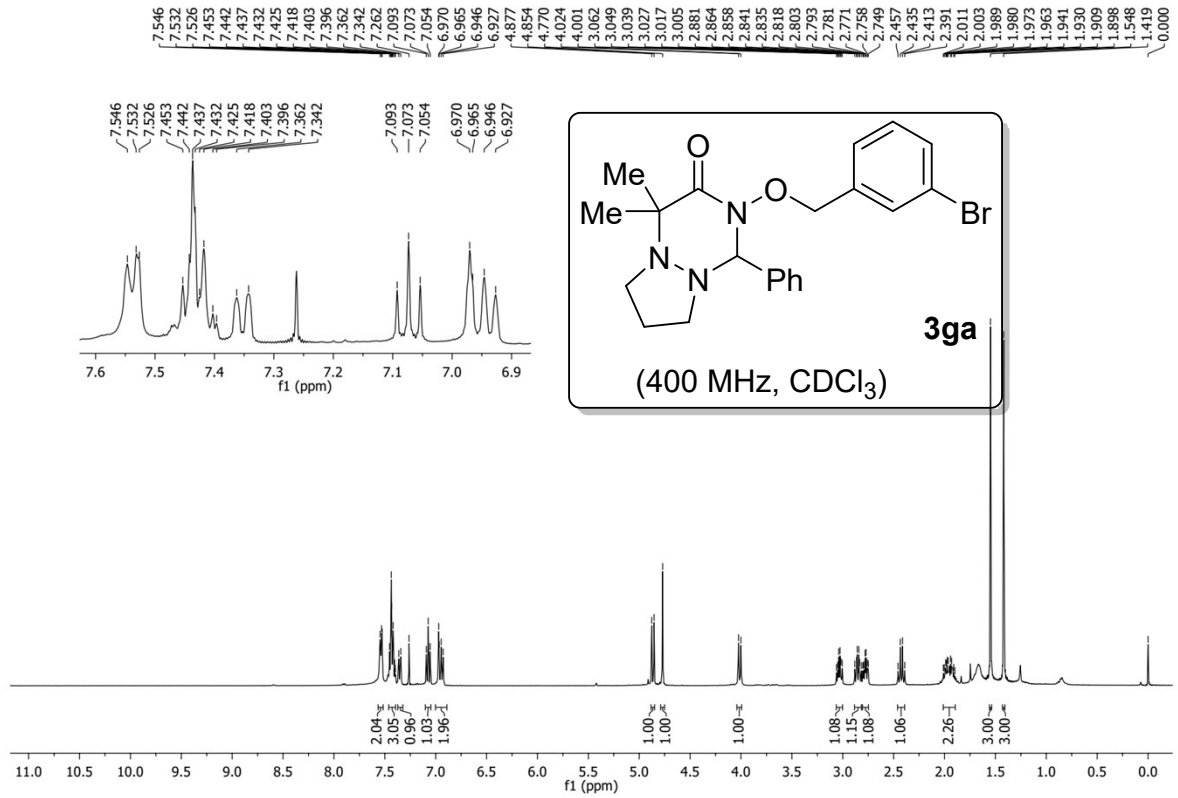
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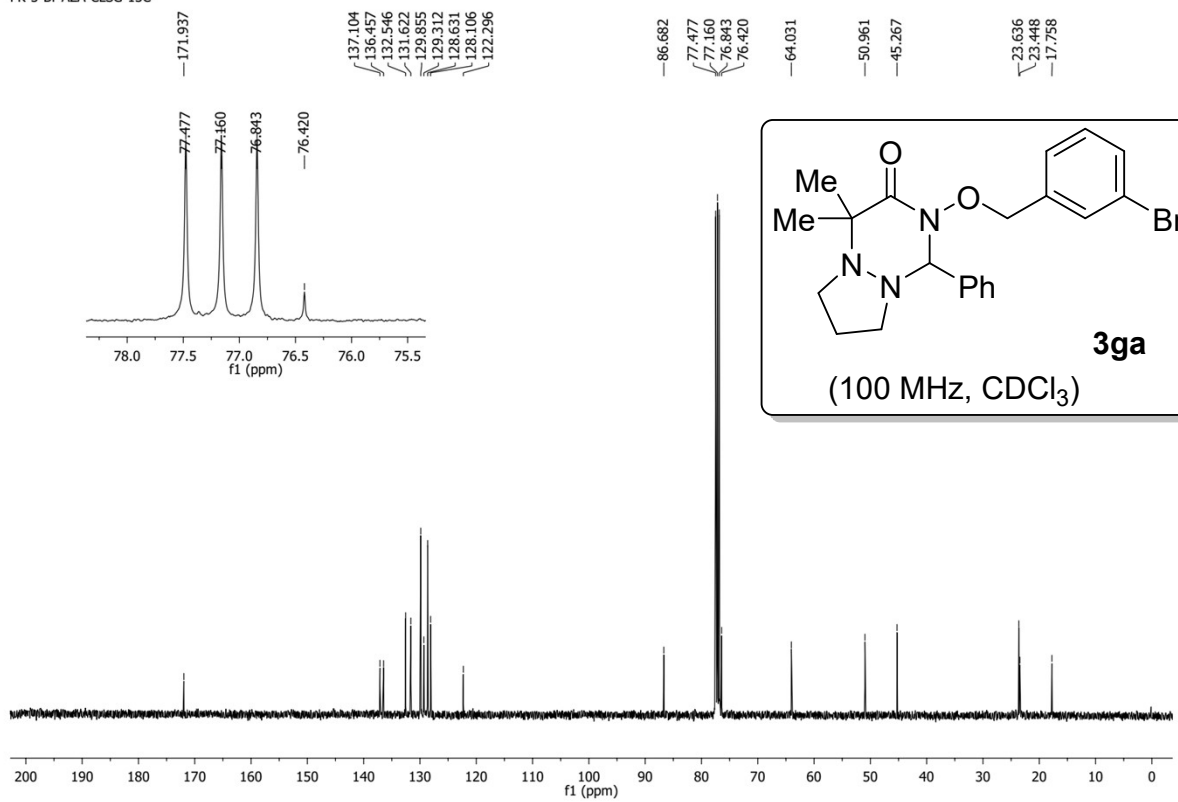
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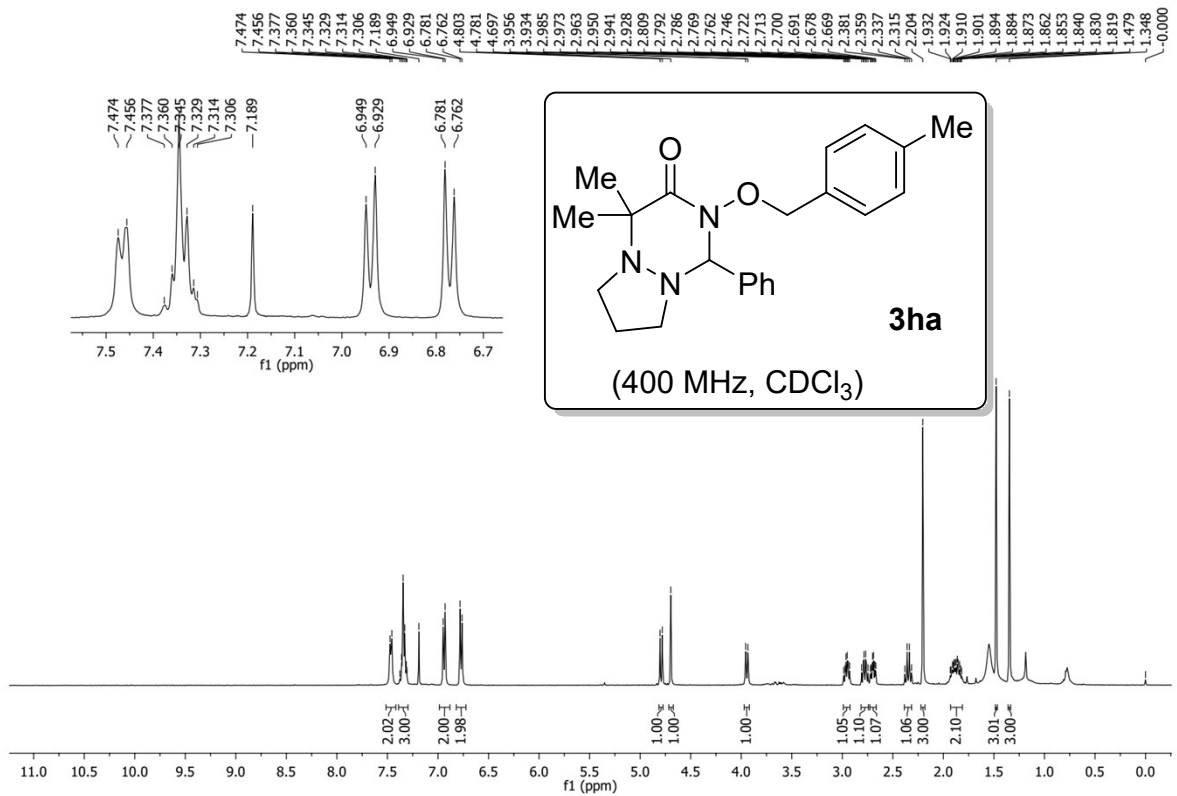
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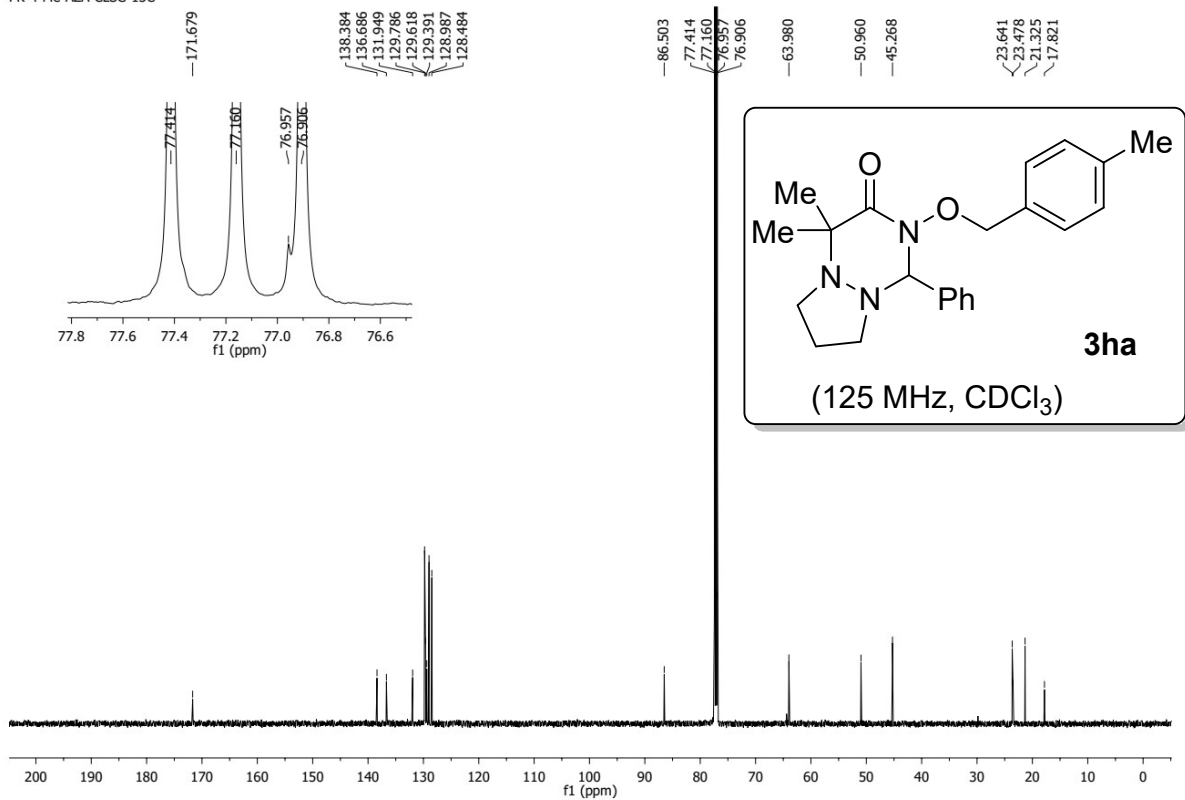
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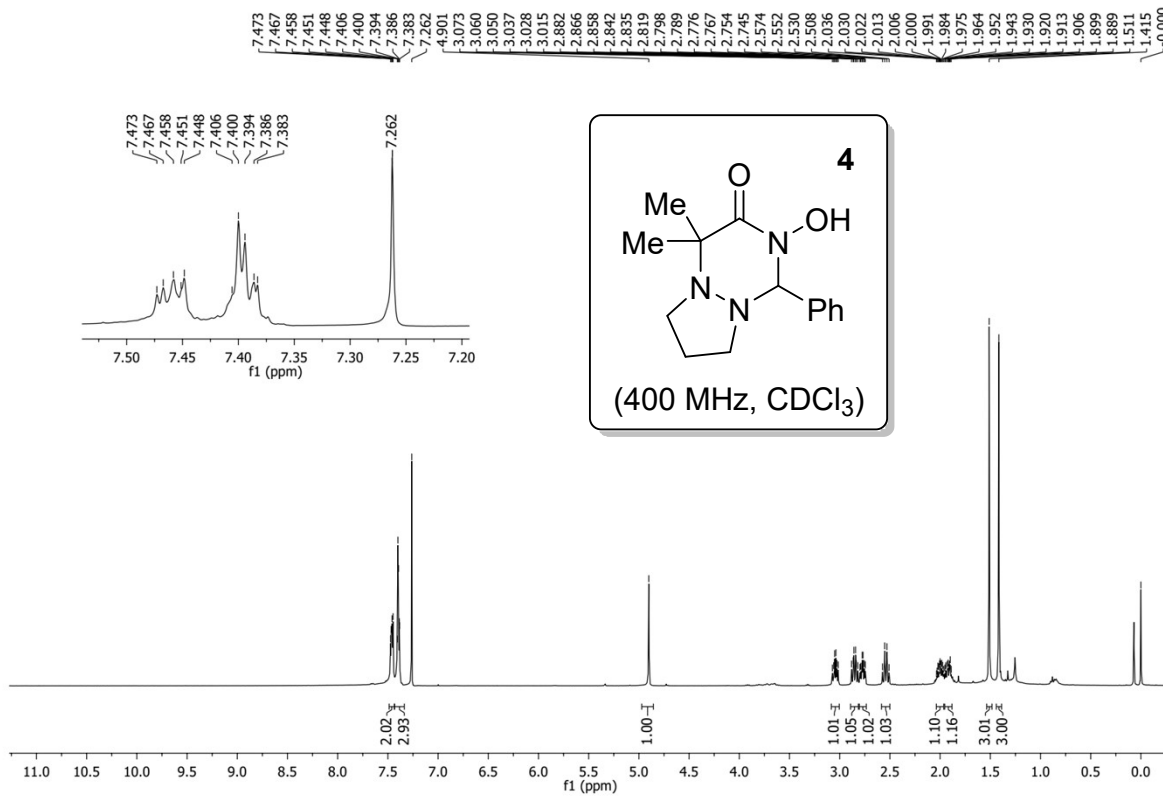
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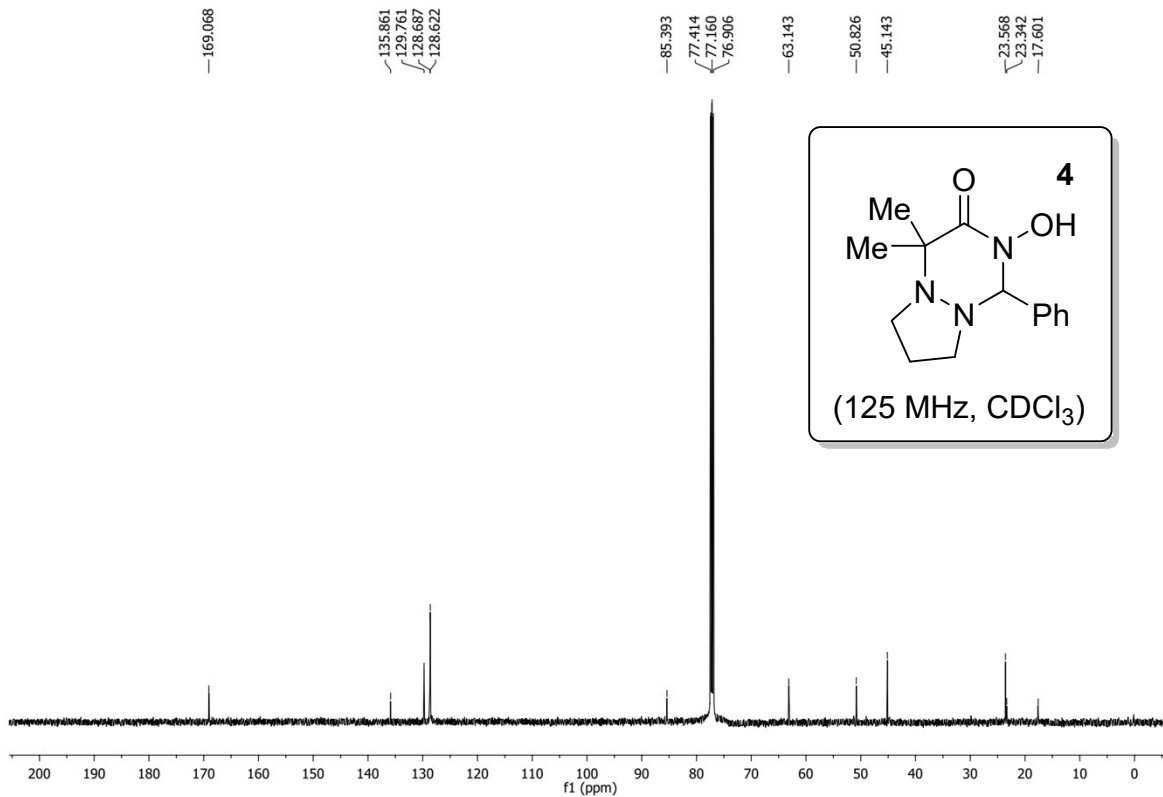
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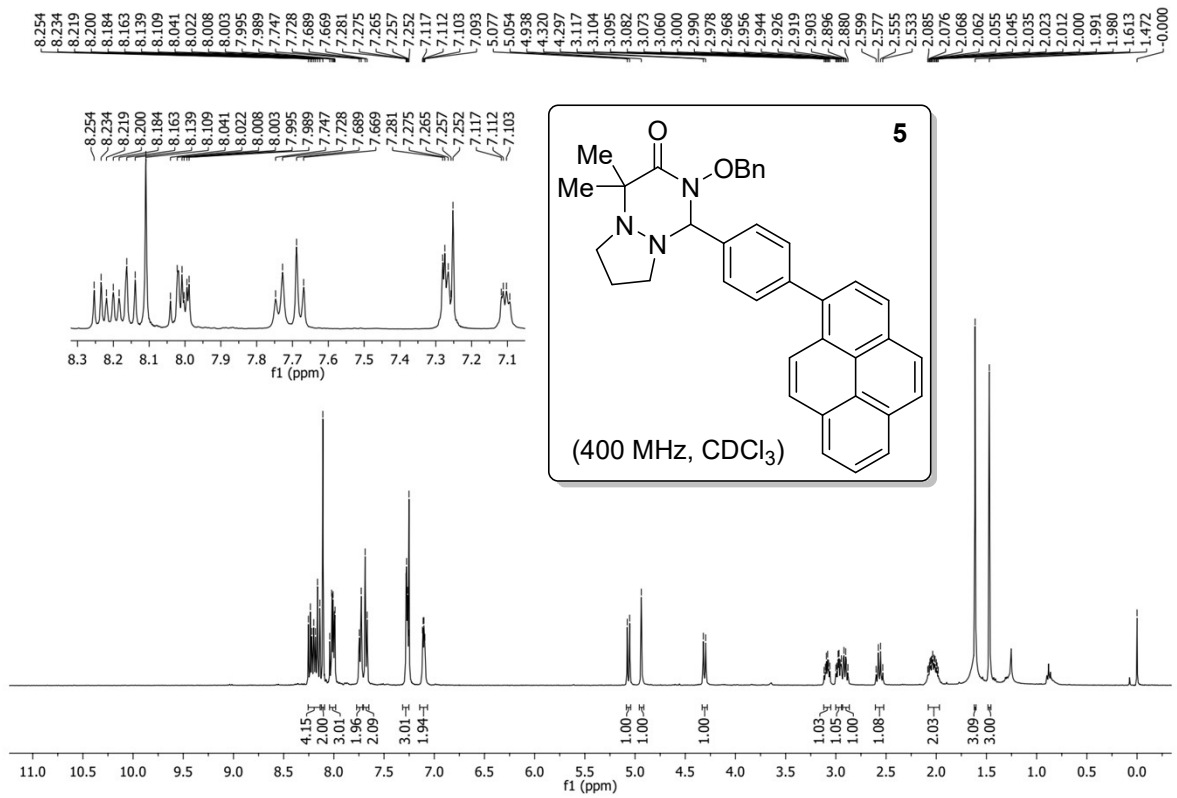
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