Exploration of hydrazine-based small molecules as metal chelators for KDM4 inhibition

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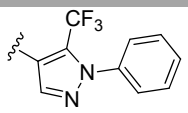
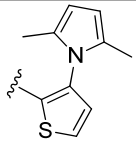
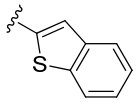
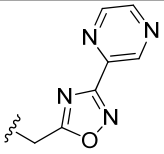
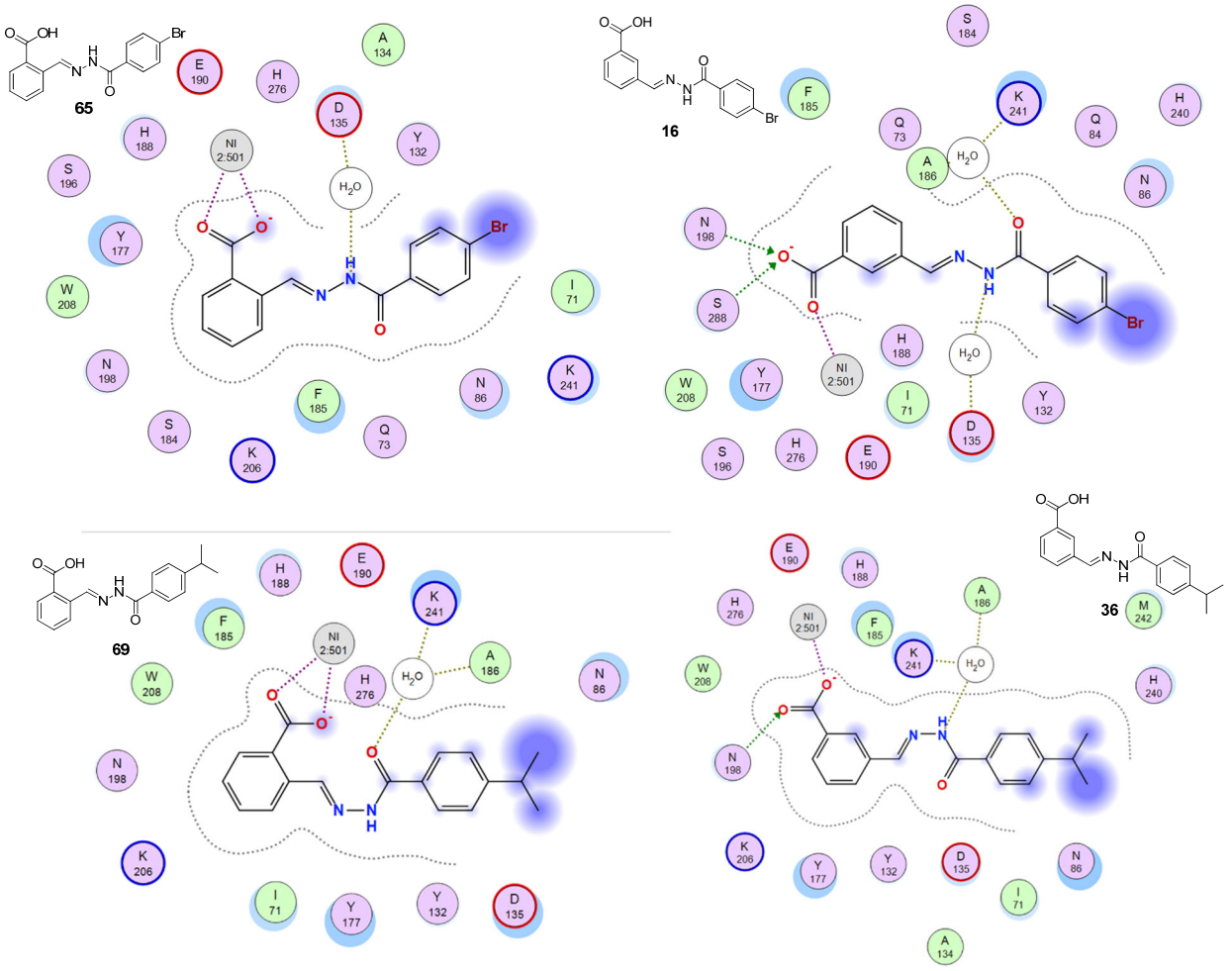
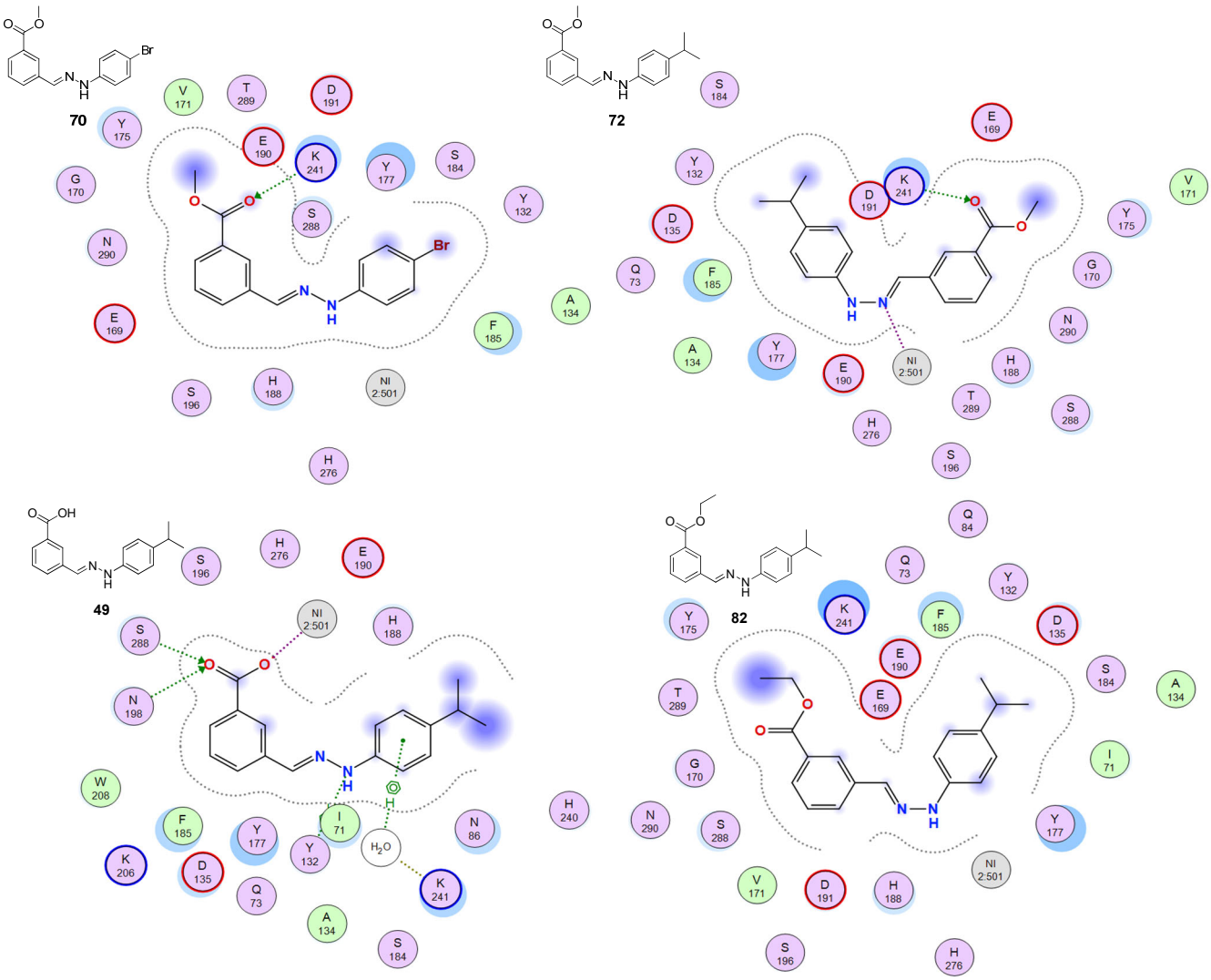
Table S1. Selection of analogues from Library 1 that exhibited no KDM4A inhibitory activity.

Analogue	R_1	R_2	KDM4A activity at 20 µM	KDM4A activity at 1 µM
S1			97%	110%
S2			99%	105%
S3			104%	99%
S4			103%	95%
S5			98%	98%

Ligand interaction maps (Molecular Operating Environment)





Synthetic methods and characterisation

(*E*)-3-((2-carbamoylhydrazono)methyl)benzoic acid (9)

3-Formylbenzoic acid (300 mg, 2.0 mmol, 1.0 eq.) and semicarbazide dihydrochloride (444 mg, 4.0 mmol, 2.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. The reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was recrystallised from ethanol to afford the desired product as a white solid (170 mg, 35%). Mp 189-191 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.04 (bs, 1H), 10.28 (s, 1H), 8.14 (s, 1H), 8.02 (d, J = 7.8 Hz, 1H), 7.91 (s, 1H), 7.90 (d, J = 7.8 Hz, 1H), 7.51 (t, J = 7.8 Hz, 1H), 6.48 (bs, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.1, 156.6, 138.5, 135.2, 131.4, 130.3, 129.6, 128.9, 127.4. IR (neat) ν_{max}: 3477 (N-H), 3151 (N-H), 3000 (O-H), 1703 (C=O), 1695 (C=O). UPLC-MS (80% Solvent B) t_R 1.167 min, (ESI-) *m/z*: 206 ($C_9H_9N_3O_3$) [M, 100%].

(*E*)-3-((2-(4-methoxybenzoyl)hydrazono)methyl)benzoic acid (10)

3-Formylbenzoic acid (108 mg, 0.7 mmol, 1.0 eq.) and 4-methoxybenzhydrazide (121 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (186

mg, 86%). Mp 317-319 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.15 (bs, 1H), 11.84 (s, 1H), 8.50 (s, 1H), 8.32 (s, 1H), 7.98 (d, J = 7.2 Hz, 1H), 7.92 (d, J = 7.8 Hz, 1H), 7.92 (d, J = 7.8 Hz, 2H), 7.59 (t, J = 7.8 Hz, 1H), 7.07 (d, J = 9.0 Hz, 2H), 3.84 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 162.7, 162.1, 146.1, 135.0, 131.5, 131.4, 130.5, 129.6, 129.3, 127.3, 125.3, 113.8, 55.5. IR (neat) ν_{max}: 3262 (N-H), 3000 (O-H), 2838 (O-CH_3), 1693 (C=O), 1690 (C=O). UPLC-MS (80% Solvent B) t_R 0.506 min, (ESI+) *m/z*: 299 ($C_{16}H_{15}N_2O_4$) [M+H, 100%]; (ESI-) *m/z*: 297 ($C_{16}H_{13}N_2O_4$) [M-H, 100%].

(*E*)-3-((2-(3-methoxybenzoyl)hydrazono)methyl)benzoic acid (11)

3-Formylbenzoic acid (102 mg, 0.7 mmol, 1.0 eq.) and 3-methoxybenzhydrazide (114 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a brown solid (176 mg, 87%). Mp 300-303 °C. ^{1}H NMR (600 MHz, methanol-d_4) δ 8.40 (s, 1H), 8.36 (s, 1H), 8.19 (d, J = 7.8 Hz, 1H), 8.09 (d, J = 7.8 Hz, 1H), 7.55 (t, J = 7.8 Hz, 1H), 7.52-7.50 (m, 2H), 7.42 (t, J = 7.8 Hz, 1H), 7.13 (dd, J = 7.8, 1.8 Hz, 1H, 3.89 (s, 3H). ^{13}C NMR (151 MHz, methanol-d_4) δ 168.2, 165.5, 159.8, 148.3, 134.5, 134.0, 131.4, 131.2, 131.0, 129.6, 129.6, 128.8, 119.6, 118.1, 112.8, 55.0. IR (neat) ν_{max}: 3247 (N-H), 2900 (O-H), 2834 (O-CH_3), 1675 (C=O), 1656 (C=O). UPLC-MS (80% Solvent B) t_R 0.511 min, (ESI+) *m/z*: 299 ($C_{16}H_{15}N_2O_4$) [M+H, 100%]; (ESI-) *m/z*: 297 ($C_{16}H_{15}N_2O_4$) [M-H, 100%].

(*E*)-3-((2-(2-methoxybenzoyl)hydrazono)methyl)benzoic acid (12)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and 2-methoxybenzhydrazide (166 mg, 1.0 mmol, 1.0 eq.) were combined with methanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) and recrystallised from methanol to afford the desired product as a white crystalline solid (236 mg, 79%). Mp 252-254 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 11.57 (s, 1H), 8.40 (s, 1H), 8.31 (s, 1H), 7.98 (d, J = 7.7 Hz, 1H), 7.92 (d, J = 7.7 Hz, 1H), 7.63 (dd, J = 7.5, 1.7 Hz, 1H), 7.59 (t, J = 7.7 Hz, 1H), 7.54-7.49 (m, 1H), 7.18 (d, J = 8.3 Hz, 1H), 7.07 (t, J = 7.4 Hz, 1H), 3.89 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 162.5, 156.7, 146.4, 134.8, 132.3, 131.5, 131.4, 130.5, 129.9, 129.3, 127.4, 123.3, 120.6, 112.0, 55.9. IR (neat) ν_{max}: 3277 (N-H), 3000 (O-H, acid), 2850 (O-CH_3), 1714 (C=O), 1704 (C=O). UPLC-MS (80% Solvent B) t_R 0.553 min, (ESI+) *m/z*: 299 ($C_{16}H_{15}N_2O_4$) [M+H, 100%]; (ESI-) *m/z*: 297 ($C_{16}H_{13}N_2O_4$) [M-H, 100%].

(*E*)-3-((2-(4-chlorobenzoyl)hydrazono)methyl)benzoic acid (13)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-chlorobenzhydrazide (112 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (140 mg, 70%). Mp 292-294 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 12.03 (s, 1H), 8.50 (s, 1H), 8.33 (s, 1H), 7.99 (d, J = 7.7 Hz, 1H), 7.95 (d, J = 8.3 Hz, 3H), 7.62 (d, J = 8.3 Hz, 2H), 7.59 (d, J = 7.7 Hz, 1H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.0, 162.2, 147.1, 136.7, 134.7, 132.0, 131.6, 131.5, 130.7, 129.7 (2C), 129.3, 128.7 (2C), 127.4. IR (neat) ν_{max}: 3207 (N-H), 2800 (O-H), 1683 (C=O), 1645

(C=O), 753 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.545 min, (ESI-) *m/z*: 300 ($C_{15}H_9{}^{35}ClN_2O_3$) [M-2H, 100%], *m/z*: 302 ($C_{15}H_9{}^{37}ClN_2O_3$) [M-H, 35%].

(*E*)-3-((2-(3-chlorobenzoyl)hydrazono)methyl)benzoic acid (14)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and 3-chlorobenzhydrazide (171 mg, 1.0 mmol, 1.0 eq.) were combined with methanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (303 mg, 75%). Mp 269-271 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 12.05 (s, 1H), 8.50 (s, 1H), 8.33 (s, 1H), 8.00 (d, J = 7.7 Hz, 1H), 7.97 (s, 1H), 7.96 (d, J = 7.9 Hz, 1H), 7.89 (d, J = 7.7 Hz, 1H), 7.69 (d, J = 7.9 Hz, 1H), 7.61 (t, J = 6.5 Hz, 1H), 7.58 (t, J = 6.5 Hz, 1H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 166.9, 161.8, 147.3, 135.3, 134.7, 133.3, 131.7, 131.6, 131.5, 130.7, 130.6, 129.3, 127.42, 127.37, 126.5. IR (neat) ν_{max}: 3217 (N-H), 3000 (O-H), 1684 (C=O), 1645 (C=O), 753 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.545 min, (ESI+) *m/z*: 303 ($C_{15}H_{12}{}^{35}ClN_2O_3$) [M+H, 30%], *m/z*: 305 ($C_{15}H_{12}{}^{37}ClN_2O_3$) [M+H, 10%]; (ESI-) *m/z*: 301 ($C_{15}H_{10}{}^{35}ClN_2O_3$) [M-H, 100%], *m/z*: 303 ($C_{15}H_{10}{}^{37}ClN_2O_3$) [M-H, 35%].

(*E*)-3-((2-(2-chlorobenzoyl)hydrazono)methyl)benzoic acid (15)

3-Formylbenzoic acid (104 mg, 0.7 mmol, 1.0 eq.) and 2-chlorobenzhydrazide (121 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (151 mg, 73%). Mp 252-254 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.07 (bs, 1H), 12.05 (s, 1H), 8.33 (s, 1H), 8.32 (s, 1H), 8.00 (dt, J = 7.8, 1.2 Hz, 1H), 7.95 (d, J = 7.8 Hz, 1H), 7.61-7.57 (m, 3H), 7.53 (t, J = 7.2 Hz, 1H), 7.47 (t, J = 7.2 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 162.6, 147.0, 135.2, 134.5, 131.5, 131.5, 131.4, 131.3, 130.8, 129.8, 129.3, 123.3, 127.5, 127.3. IR (neat) ν_{max}: 3190 cm^{-1} (N-H), 2850 cm^{-1} (O-H), 1695 cm^{-1} (C=O), 1661 cm^{-1} (C=O), 752 cm^{-1} (C-Cl). UPLC-ms (80% Solvent B) t_R 0.517 min, (ESI+) *m/z*: 303 ($C_{15}H_{12}{}^{35}ClN_2O_3$) [M+H, 100%], *m/z*: 305 ($C_{15}H_{12}{}^{37}ClN_2O_3$) [M+H, 35%]; (ESI-) *m/z*: 301 ($C_{15}H_{10}{}^{35}ClN_2O_3$) [M-H, 100%], *m/z*: 303 ($C_{15}H_{10}{}^{37}ClN_2O_3$) [M-H, 35%].

* ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.07 (bs, 1H), 12.07 (s, 1H), 8.13 (s, 1H), 7.94 (s, 1H), 7.89 (dt, J = 7.8, 1.2 Hz, 1H), 7.59 (d, J = 7.8 Hz, 1H), 7.53 (t, J = 7.2 Hz, 1H), 7.50-7.43 (m, 4H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.7, 166.7, 143.4, 135.8, 134.4, 130.6, 130.5, 130.4, 130.4, 129.8, 129.1, 129.0, 128.8, 127.5, 126.9.

(*E*)-3-((2-(4-bromobenzoyl)hydrazono)methyl)benzoic acid (16)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-bromobenzhydrazide (118 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (181 mg, 75%). Mp 296-298 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.18 (bs, 1H), 12.03 (s, 1H), 8.51 (s, 1H), 8.33 (s, 1H), 7.99 (d, J = 7.6 Hz, 1H), 7.95 (d, J = 7.6 Hz, 1H), 7.88 (d, J = 8.4 Hz, 2H), 7.77 (d, J = 8.4 Hz, 2H), 7.60 (t, J = 7.6 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 162.3, 147.1, 134.7, 132.4, 131.6 (2C), 131.5, 130.7, 129.8 (2C), 129.3 (2C), 127.4, 125.7. IR (neat) ν_{max}: 3000 (O-H), 2974 (NH), 1684 (C=O), 1645 (C=O). UPLC-MS (80% Solvent B) t_R 0.548 min, (ESI+) *m/z*: 347

($C_{15}H_{12}{}^{79}BrN_2O_3$) [M+H, 10%], *m/z*: 349 ($C_{15}H_{12}{}^{81}BrN_2O_3$) [M+H, 10%]; (ESI-) *m/z*: 345 ($C_{15}H_{10}{}^{79}BrN_2O_3$) [M-H, 85%], *m/z*: 347 ($C_{15}H_{10}{}^{81}BrN_2O_3$) [M-H, 100%].

(*E*)-5-((2-(4-bromobenzoyl)hydrazono)methyl)-2-hydroxybenzoic acid (17)

5-Formyl-2-hydroxybenzoic acid (100 mg, 0.6 mmol, 1.0 eq.) and 4-bromobenzhydrazide (129 mg, 0.6 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (78 mg, 36%). Mp 265-267 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 11.87 (s, 1H), 8.39 (s, 1H), 8.15 (d, J = 1.8 Hz, 1H), 7.88 (dd, J = 8.6, 1.8 Hz, 1H), 7.86 (d, J = 8.4 Hz, 2H), 7.75 (d, J = 8.4 Hz, 2H), 7.06 (d, J = 8.6 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 171.5, 162.5, 162.1, 147.2, 133.9, 132.5, 131.5 (2C), 129.7 (2C), 129.3, 125.6, 125.5, 117.9, 113.5. IR (neat) ν_{max}: 3229 (N-H), 3100 (O-H), 2900 (O-H), 1673 (C=O), 1655 (C=O). UPLC-MS (80% Solvent B) t_R 0.579 min, (ESI+) *m/z*: 363 ($C_{15}H_{12}{}^{79}BrN_2O_4$) [M+H, 25%], *m/z*: 365 ($C_{15}H_{12}{}^{81}BrN_2O_4$) [M+H, 20%]; (ESI-) *m/z*: 361 ($C_{15}H_{10}{}^{79}BrN_2O_4$) [M-H, 100%], *m/z*: 363 ($C_{15}H_{10}{}^{81}BrN_2O_4$) [M-H, 100%].

(*E*)-5-((2-(4-bromobenzoyl)hydrazono)methyl)-2-fluorobenzoic acid (18)

5-Formyl-2-fluorobenzoic acid (84 mg, 0.5 mmol, 1.0 eq.) and 4-bromobenzhydrazide (108 mg, 0.5 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (120 mg, 66%). Mp 279-281 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.36 (bs, 1H), 12.03 (s, 1H), 8.46 (s, 1H), 8.25 (d, J = 5.3 Hz, 1H), 7.98-7.97 (m, 1H), 7.87 (d, J = 8.4 Hz, 2H), 7.76 (d, J = 8.4 Hz, 2H), 7.42 (t, J = 9.5 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 164.6 (d, $^3J_{CF}$ = 3.0 Hz), 161.8 (d, $^1J_{CF}$ = 261 Hz), 162.3, 146.1, 133.2 (d, $^3J_{CF}$ = 9.1 Hz), 132.3, 131.6, 130.8 (d, $^4J_{CF}$ = 3.0 Hz), 130.3, 129.8, 125.7, 119.9 (d, $^3J_{CF}$ = 11.1 Hz), 117.8 (d, $^2J_{CF}$ = 24.2 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -106.28. IR (neat) ν_{max}: 3213 (N-H), 3000 (O-H), 1685 (C=O), 1654 (C=O). UPLC-MS (80% Solvent B) t_R 0.556 min, (ESI+) *m/z*: 365 ($C_{15}H_{12}{}^{79}BrFN_2O_3$) [M+H, 10%], *m/z*: 367 ($C_{15}H_{12}{}^{81}BrFN_2O_3$) [M+H, 10%]; (ESI-) *m/z*: 363 ($C_{15}H_{10}{}^{79}BrFN_2O_3$) [M-H, 100%], *m/z*: 365 ($C_{15}H_{10}{}^{81}BrFN_2O_3$) [M-H, 85%].

(*E*)-3-((2-(3-bromobenzoyl)hydrazono)methyl)benzoic acid (19)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 3-bromobenzhydrazide (118 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (191 mg, 92%). Mp 270-272 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 12.05 (s, 1H), 8.50 (s, 1H), 8.33 (s, 1H), 8.10 (s, 1H), 8.00 (d, J = 7.7 Hz, 1H), 7.95 (d, J = 7.7 Hz, 1H), 7.93 (d, J = 7.9 Hz, 1H), 7.81 (dd, J = 7.9, 0.7 Hz, 1H), 7.60 (t, J = 7.7 Hz, 1H), 7.51 (t, J = 7.9 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 161.8, 147.4, 135.5, 134.7, 134.6, 131.6, 131.5, 130.8, 130.7, 130.2, 129.3, 127.5, 126.9, 121.8. IR (neat) ν_{max}: 3066 (N-H), 3000 (O-H), 1684 (C=O), 1645 (C=O). UPLC-MS (50% Solvent B) t_R 1.160 min, (ESI+) *m/z*: 346 ($C_{15}H_{12}{}^{79}BrN_2O_3$) [M+H, 100%], *m/z*: 348 ($C_{15}H_{12}{}^{81}BrN_2O_3$) [M+H, 100%]; (ESI-) *m/z*: 344 ($C_{15}H_{10}{}^{79}BrN_2O_3$) [M-H, 100%], *m/z*: 346 ($C_{15}H_{10}{}^{81}BrN_2O_3$) [M-H, 100%].

(*E*)-3-((2-(2-bromobenzoyl)hydrazono)methyl)benzoic acid (20)

3-Formylbenzoic acid (101 mg, 0.7 mmol, 1.0 eq.) and 2-bromobenzhydrazide (145 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (188 mg, 81%). Mp 264-267 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.83 (bs, 1H), 12.03 (s, 1H), 8.33 (s, 1H), 8.32 (s, 1H), 8.00 (dt, J = 7.8, 1.8 Hz, 1H), 7.95 (dt, J = 7.8, 1.8 Hz, 1H), 7.73 (dd, J = 7.8, 1.2 Hz, 1H), 7.60 (t, J = 7.8 Hz, 1H), 7.56 (dd, J = 7.8, 1.8 Hz, 1H), 7.51 (td, J = 7.2, 1.2 Hz, 1H), 7.49-7.38 (m, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.4, 164.0, 147.4, 137.8, 135.0, 133.3, 132.1, 132.0, 131.9, 131.2, 129.8, 129.8, 128.2, 128.0, 120.0. IR (neat) ν_{max}: 3190 (N-H), 2800 (O-H), 1696 (C=O), 1659 (C=O), 688 (C-Br). UPLC-MS (80% Solvent B) t_R 0.519 min, (ESI+) *m/z*: 347 ($C_{15}H_{12}{}^{79}BrN_2O_3$) [M+H, 95%], *m/z*: 349 ($C_{15}H_{12}{}^{81}BrN_2O_3$) [M+H, 100%]; (ESI-) *m/z*: 345 ($C_{15}H_{10}{}^{79}BrN_2O_3$) [M-H, 75%], *m/z*: 347 ($C_{15}H_{10}{}^{81}BrN_2O_3$) [M-H, 75%].

* ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.83 (bs, 1H), 12.06 (s, 1H), 8.14 (s, 1H), 7.94 (s, 1H), 7.89 (dt, J = 7.8, 1.8 Hz, 1H), 7.69 (dd, J = 7.8, 1.2 Hz, 1H), 7.59 (dd, J = 7.8, 1.8 Hz, 1H), 7.49-7.38 (m, 4H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 169.9, 167.2, 143.8, 138.5, 134.9, 132.5, 131.9, 131.1, 131.0, 130.9, 129.6, 129.3, 128.0, 127.8, 119.4.

(*E*)-3-((2-(4-nitrobenzoyl)hydrazono)methyl)benzoic acid (21)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-nitrobenzhydrazide (120 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a yellow solid (192 mg, 97%). Mp 290-292 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.61 (bs, 1H), 12.25 (s, 1H), 8.53 (s, 1H), 8.39 (d, J = 8.7 Hz, 2H), 8.34 (s, 1H), 8.17 (d, J = 8.7 Hz, 2H), 8.01 (d, J = 7.7 Hz, 1H), 7.97 (d, J = 7.7 Hz, 1H), 7.61 (t, J = 7.7 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 161.7, 149.4, 147.9, 139.0, 134.5, 131.7, 131.5, 130.9, 129.32, 129.25 (2C), 127.5, 123.7 (2C). IR (neat) ν_{max}: 3389 (N-H), 2820 (O-H), 1688 (C=O), 1662 (C=O), 1522 (NO_2), 1344 (NO_2). UPLC-MS (80% Solvent B) t_R 0.520 min, (ESI-) *m/z*: 311 ($C_{15}H_9N_3O_5$) [M-2H, 100%].

(*E*)-3-((2-(4-hydroxybenzoyl)hydrazono)methyl)benzoic acid (22)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-hydroxybenzhydrazide (91 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. After this period, the solution was filtered, and the resultant solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (113 mg, 66%). Mp 272-275 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.11 (bs, 1H), 11.75 (s, 1H), 10.15 (s, 1H), 8.48 (s, 1H), 8.30 (s, 1H), 7.97 (d, J = 7.6 Hz, 1H), 7.92 (d, J = 7.6 Hz, 1H), 7.81 (d, J = 8.6 Hz, 2H), 7.58 (t, J = 7.6 Hz, 1H), 6.87 (d, J = 8.6 Hz, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 162.9, 160.8, 145.8, 135.0, 131.44, 131.40, 130.4, 129.8, 129.3 (2C), 127.3 (2C), 123.8, 115.1. IR (neat) ν_{max}: 3285 (N-H), 3200 (O-H), 3000 (O-H), 1684 (C=O), 1622 (C=O). UPLC-MS (80% Solvent B) t_R 0.485 min, (ESI+) *m/z*: 284 ($C_{15}H_{12}N_2O_4$) [M, 45%].

(*E*)-3-((2-(3-hydroxybenzoyl)hydrazono)methyl)benzoic acid (23)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and 3-hydroxybenzhydrazide (152 mg, 1.0 mmol, 1.0 eq.) were combined with methanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford a 1:1 co-crystal of the desired product and methanol as a white solid (170 mg, 54%). Mp 153-156 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.17 (bs, 1H), 11.88 (s, 1H), 9.77 (bs, 1H), 8.50 (s, 1H), 8.31 (s, 1H), 7.98 (d, J = 7.7 Hz, 1H), 7.93 (d, J = 7.6 Hz, 1H), 7.59 (t, J = 7.7 Hz, 1H), 7.37-7.28 (m, 3H), 6.98 (d, J = 7.5 Hz, 1H), 4.09 (d, J = 5.1 Hz, 1H, methanol), 3.17 (d, J = 4.5 Hz, 3H, methanol). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 163.3, 157.4, 146.6, 134.9, 134.7, 131.5, 131.4, 130.5, 129.6, 129.3, 127.3, 118.8, 118.1, 114.6, 48.6 (methanol. IR (neat) ν_{max}: 3390 (O-H), 3210 (N-H), 3000 (O-H), 1690 (C=O), 1631 (C=O). UPLC-MS (80% Solvent B) t_R 0.487 min, (ESI+) *m/z*: 285 ($C_{15}H_{13}N_2O_4$) [M+H, 50%]; (ESI-) *m/z*: 283 ($C_{15}H_{11}N_2O_4$) [M+H, 90%].

(*E*)-3-((2-(2-hydroxybenzoyl)hydrazono)methyl)benzoic acid (24)

3-Formylbenzoic acid (105 mg, 0.7 mmol, 1.0 eq.) and 2-hydroxybenzhydrazide (108 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL MW vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (176 mg, 88%). Mp 291-295 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.11 (bs, 1H), 11.93 (s, 1H), 11.78 (bs, 1H), 8.53 (s, 1H), 8.34 (s, 1H), 8.00 (d, J = 7.8 Hz, 1H), 7.96 (d, J = 7.8 Hz, 1H), 7.90 (dd, J = 7.8, 1.8 Hz, 1H), 7.61 (t, J = 7.8 Hz, 1H), 7.45 (t, J = 7.2 Hz, 1H), 6.99 (d, J = 8.4 Hz, 1H), 6.97 (t, J = 7.2 Hz, H1). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 164.7, 158.8, 147.6, 134.6, 133.9, 131.6, 131.4, 130.8, 129.3, 128.7, 127.5, 119.0, 117.3, 116.1. IR (neat) ν_{max}: 3243 (N-H), 3053 (O-H), 2900 (O-H), 1677 (C=O), 1637 (C=O). UPLC-MS (80% Solvent B) t_R 0.527 min, (ESI+) *m/z*: 285 ($C_{15}H_{13}N_2O_4$) [M+H, 100%], *m/z*: 307 ($C_{15}H_{12}N_2O_4Na$) [M+Na, 55%]; (ESI-) *m/z*: 283 ($C_{15}H_{11}N_2O_4$) [M-H, 100%].

(*E*)-3-((2-isonicotinoylhydrazono)methyl)benzoic acid (25)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and nicotinohydrazide (90 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (143 mg, 89%). Mp 384-387 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 12.48 (bs, 1H), 12.19 (s, 1H), 8.80 (dd, J = 4.5, 1.5 Hz, 2H), 8.53 (s, 1H), 8.34 (s, 1H), 7.99 (dd, J = 15.5, 7.8 Hz, 2H), 7.84 (dd, J = 4.5, 1.5 Hz, 2H), 7.61 (t, J = 7.8 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 161.8, 150.4 (2C), 148.0, 140.4, 134.5, 131.7, 131.5, 130.9, 129.3, 127.5, 121.6 (2C). IR (neat) ν_{max}: 3200 (N-H), 3000 (O-H), 1713 (C=O), 1651 (C=O). UPLC-MS (80% solvent B) t_R 0.491 min, (ESI+) *m/z*: 269 ($C_{14}H_{11}N_3O_3$) [M, 100%].

(*E*)-2-hydroxy-5-((2-isonicotinoylhydrazono)methyl)benzoic acid (26)

5-Formyl-2-hydroxybenzoic acid (100 mg, 0.6 mmol, 1.0 eq.) and isonicotinohydrazide (82 mg, 0.6 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated (in a sand bath) at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired

product as a yellow solid (70 mg, 41%). Mp 273-275 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.03 (s, 1H), 8.79 (d, J = 4.6 Hz, 2H), 8.41 (s, 1H), 8.17 (s, 1H), 7.90 (d, J = 8.6 Hz, 1H), 7.82 (d, J = 4.6 Hz, 2H), 7.06 (d, J = 8.6 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 171.4, 162.7, 161.5, 150.3 (2C), 148.1, 140.6, 134.0, 129.5, 125.4, 121.6 (2C), 118.0, 113.6. IR (neat) ν_{max}: 3305 (N-H), 3000 (O-H), 1660 (C=O), 1657 (C=O). UPLC-MS (80% Solvent B) t_R 0.507 min, (ESI+) *m/z*: 286 ($C_{14}H_{12}N_3O_4$) [M+H, 100%]; (ESI-) *m/z*: 284 ($C_{14}H_{10}N_3O_4$) [M-H, 100%].

(*E*)-2-fluoro-5-((2-isonicotinoylhydrazono)methyl)benzoic acid (27)

5-Formyl-2-fluorobenzoic acid (84 mg, 0.5 mmol, 1.0 eq.) and isonicotinohydrazide (69 mg, 0.5 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (120 mg, 66%). Mp 265-267 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.45 (bs, 1H), 12.19 (s, 1H), 8.79 (dd, J = 4.5, 1.4 Hz, 2H), 8.48 (s, 1H), 8.26 (dd, J = 7.1, 2.1 Hz, 1H), 8.01-7.99 (m, 1H), 7.82 (dd, J = 4.5, 1.4 Hz, 2H), 7.45-7.42 (m, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 164.6 (d, $^{3}J_{CF}$ = 2.9 Hz), 162.0 (d, $^{1}J_{CF}$ = 261 Hz), 161.8, 150.4, 147.0, 140.4, 133.3 (d, $^{3}J_{CF}$ = 8.3 Hz), 130.6 (d, $^{4}J_{CF}$ = 3.3 Hz), 130.4, 131.6, 119.9 (d, $^{3}J_{CF}$ = 11.1 Hz), 117.8 (d, $^{2}J_{CF}$ = 23.5 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -106.13. IR (neat) ν_{max}: 3175 (N-H), 3000 (O-H), 1668 (C=O), 1611 (C=O). UPLC-MS (80% Solvent B) t_R 0.492 min, (ESI+) *m/z*: 288 ($C_{14}H_{11}FN_3O_3$) [M+H, 55%]; (ESI-) *m/z*: 286 ($C_{14}H_9FN_3O_3$) [M-H, 90%].

(*E*)-3-((2-nicotinoylhydrazono)methyl)benzoic acid (28)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and nicotinohydrazide (151 mg, 1.1 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (145 mg, 77%). Mp 288-290 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.94 (bs, 1H), 12.14 (s, 1H), 9.08 (s, 1H), 8.78 (d, J = 3.7 Hz, 1H), 8.50 (s, 1H), 8.34 (s, 1H), 8.27 (d, J = 7.8 Hz, 1H), 8.00 (d, J = 7.6 Hz, 1H), 7.97 (d, J = 7.6 Hz, 1H), 7.63-7.57 (m, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 161.9, 152.4, 148.6, 147.4, 135.5, 134.6, 131.6, 131.5, 130.8, 129.3, 129.1, 127.5, 123.7. IR (neat) ν_{max}: 3185 (N-H), 3000 (O-H), 1648 (C=O), 1646 (C=O). UPLC-MS (80% Solvent B) t_R 0.478 min, (ESI+) *m/z*: 270 ($C_{14}H_{12}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 268 ($C_{14}H_{10}N_3O_3$) [M-H, 100%].

(*E*)-2-hydroxy-5-((2-nicotinoylhydrazono)methyl)benzoic acid (29)

5-Formyl-2-hydroxybenzoic acid (100 mg, 0.6 mmol, 1.0 eq.) and nicotinohydrazide (85 mg, 0.6 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 70 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (81 mg, 47%). Mp 284-287 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 11.98 (s, 1H), 9.06 (s, 1H), 8.76 (s, 1H), 8.39 (s, 1H), 8.25 (d, J = 6.2 Hz, 1H), 8.16 (s, 1H), 7.90 (d, J = 7.6 Hz, 1H), 7.57 (s, 1H), 7.06 (d, J = 8.0 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 171.5, 162.6, 161.6, 152.2, 148.5, 147.5, 135.6, 134.0, 129.4, 129.3, 125.5, 123.7, 118.0, 113.6. IR (neat) ν_{max}: 3301 (N-H), 3000 (O-H), 1685 (C=O), 1675 (C=O). UPLC-MS (80% Solvent B) t_R 0.509 min, (ESI+) *m/z*: 286 ($C_{14}H_{12}N_3O_4$) [M+H, 80%]; (ESI-) *m/z*: 284 ($C_{14}H_{10}N_3O_4$) [M-H, 100%].

(*E*)-2-fluoro-5-((2-nicotinoylhydrazono)methyl)benzoic acid (30)

5-Formyl-2-fluorobenzoic acid (84 mg, 0.5 mmol, 1.0 eq.) and nicotinohydrazide (69 mg, 0.5 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (113 mg, 78%). Mp 267-268 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.23 (bs, 1H), 12.14 (s, 1H), 9.07 (d, J = 1.2 Hz, 1H), 8.77 (d, J = 3.7 Hz, 1H), 8.46 (s, 1H), 8.26 (d, J = 7.5 Hz, 2H), 8.00-7.99 (m, 1H), 7.58 (dd, J = 7.7, 4.9 Hz, 1H), 7.46-7.40 (m, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 164.6 (d, $^{3}J_{CF}$ = 2.6 Hz), 161.94 (d, $^{1}J_{CF}$ = 261 Hz), 161.86, 152.4, 148.6, 146.4, 140.4, 135.5, 133.2 (d, $^{3}J_{CF}$ = 9.1 Hz), 130.7 (d, $^{4}J_{CF}$ = 3.0 Hz), 130.4, 129.1, 123.7, 119.9 (d, $^{3}J_{CF}$ = 11.2 Hz), 117.8 (d, $^{2}J_{CF}$ = 23.3 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -106.55. IR (neat) ν_{max}: 3195 (N-H), 3000 (O-H), 1692 (C=O), 1648 (C=O). UPLC-MS (80% Solvent B) t_R 0.494 min, (ESI+) *m/z*: 288 ($C_{14}H_{11}FN_3O_3$) [M+H, 95%]; (ESI-) *m/z*: 286 ($C_{14}H_9FN_3O_3$) [M-H, 100%].

(*E*)-3-((2-picolinoylhydrazono)methyl)benzoic acid (31)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and picolinohydrazide (137 mg, 1.0 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (202 mg, 75%). Mp 242-245 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.17 (bs, 1H), 12.25 (s, 1H), 8.73 (2 overlapping singlets, 2H), 8.30 (s, 1H), 8.15 (d, J = 7.8 Hz, 1H), 8.07 (td, J = 7.7, 1.6 Hz, 1H), 8.00 (d, J = 7.7 Hz, 1H), 7.93 (d, J = 7.7 Hz, 1H), 7.69-7.67 (m, 1H), 7.60 (t, J = 7.7 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 160.5, 149.5, 148.5, 148.2, 138.1, 134.8, 131.43, 131.42, 130.7, 129.3, 127.6, 127.1, 122.8. IR (neat) ν_{max}: 3277 (N-H), 3000 (O-H), 1711 (C=O), 1656 (C=O). UPLC-MS (80% Solvent B) t_R 0.518 min, (ESI+) *m/z*: 270 ($C_{14}H_{12}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 268 ($C_{14}H_{10}N_3O_3$) [M-H, 100%].

(*E*)-3-((2-(1*H*-pyrrole-2-carbonyl)hydrazono)methyl)benzoic acid (32)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 1*H*-pyrrole-2-carbohydrazide (83 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as an off-white solid (110 mg, 71%). Mp 243-245 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.34 (bs, 1H), 12.07 (s, 1H), 9.17 (s, 1H), 8.04 (d, J = 7.3 Hz, 1H), 7.95 (s, 1H), 7.90 (dd, J = 7.8, 1.1 Hz, 1H), 7.64 (t, J = 7.5 Hz, 1H), 7.53 (td, J = 7.7, 1.2 Hz, 1H), 7.34 (s, 1H), 6.70 (dd, J = 3.4, 1.7 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1 (2C), 154.4, 146.6, 146.0, 134.6, 132.0, 130.7, 130.3, 129.6, 126.7, 115.0, 112.0. IR (neat) ν_{max}: 3360 (N-H), 3000 (O-H), 2942 (N-H), 1678 (C=O), 1616 (C=O). UPLC-MS (50% Solvent B) t_R 0.678 min, (ESI+) *m/z*: 257 ($C_{13}H_{11}N_3O_3$) [M, 100%].

(*E*)-3-((2-(1-methyl-1*H*-imidazole-5-carbonyl)hydrazono)methyl)benzoic acid (33)

3-Formylbenzoic acid (101 mg, 0.7 mmol, 1.0 eq.) and 1-methyl-1*H*-imidazole-5-carbohydrazide (96 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The

crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (163 mg, 89%). Mp 299-301 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.96 (bs, 1H), 11.79 (s, 1H), 8.41 (s, 1H), 8.29 (s, 1H), 7.97 (d, J = 7.8 Hz, 1H), 7.92 (d, J = 7.8 Hz, 1H), 7.87 (s, 1H), 7.73 (s, 1H), 7.59 (t, J = 7.8 Hz, 1H), 3.87 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 157.7, 145.8, 142.7, 134.8, 132.9, 131.5, 131.4, 130.5, 129.3, 127.3, 124.5, 33.6. IR (neat) ν_{max}: 3232 (N-H), 3054 (N-CH_3), 3000 (O-H), 1878 (C=N), 1698 (C=O), 1659 (C=O). UPLC-MS (80% Solvent B) t_R 0.493 min, (ESI+) *m/z*: 273 ($C_{13}H_{13}N_4O_3$) [M+H, 100%]; (ESI-) *m/z*: 271 ($C_{13}H_{11}N_4O_3$) [M-H, 100%].

(*E*)-3-((2-(adamantane-1-carbonyl)hydrazono)methyl)benzoic acid (34)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and adamantane carbohydrazide (213 mg, 1.1 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford a 1:1 co-crystal of the desired product and ethanol as a white crystalline solid (205 mg, 58%). Mp 261-263 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.09 (bs, 1H), 10.91 (s, 1H), 8.44 (s, 1H), 8.25 (s, 1H), 7.95 (d, J = 7.7 Hz, 1H), 7.86 (d, J = 7.7 Hz, 1H), 7.56 (t, J = 7.7 Hz, 1H), 4.34 (s, 1H), 3.44 (q, J = 6.8 Hz, 2H, ethanol), 2.01 (s, 3H), 1.88 (s, 6H), 1.70 (s, 5H), 1.05 (t, J = 6.8 Hz, 3H, ethanol). ^{13}C NMR (151 MHz, DMSO-d_6) δ 173.4, 167.0, 145.5, 135.0, 131.4, 131.3, 130.3, 129.2, 127.1, 56.0 (ethanol), 38.3 (4C), 36.0 (3C), 27.6 (3C), 18.6 (ethanol). IR (neat) ν_{max}: 3230 (N-H), 3000 (O-H), 2974 (C-H), 2909 (C-H), 2852 (C-H), 1688 (C=O), 1660 (C=O). UPLC-MS (80% Solvent B) t_R 0.626 min, (ESI+) *m/z*: 327 ($C_{19}H_{23}N_2O_3$) [M+H, 100%]; (ESI-) *m/z*: 325 ($C_{19}H_{21}N_2O_3$) [M-H, 100%].

(*E*)-3-((2-(4-(dimethylamino)benzoyl)hydrazono)methyl)benzoic acid (35)

3-Formylbenzoic acid (105 mg, 0.7 mmol, 1.0 eq.) and 4-dimethylaminobenzhydrazide (138 mg, 0.77 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a creamy-coloured solid (122 mg, 56%). Mp 260-262 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.13 (bs, 1H), 11.65 (s, 1H), 8.48 (s, 1H), 8.30 (s, 1H), 7.96 (d, J = 7.7 Hz, 1H), 7.91 (d, J = 7.7 Hz, 1H), 7.83 (d, J = 8.9 Hz, 2H), 7.58 (t, J = 7.7 Hz, 1H), 6.76 (d, J = 8.9 Hz, 2H), 3.33 (s, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0 (2C), 152.5, 145.1, 135.2, 131.4, 131.3, 130.2 (2C), 129.2 (2C), 127.1, 119.3, 110.8 (2C), 39.7 (2C). IR (neat) ν_{max}: 3000 (O-H), 2980 (NH), 2922 (C-H), 1679 (C=O), 1595 (C=O). UPLC-MS (80% Solvent B) t_R 0.512 min, (ESI+) *m/z*: 312 ($C_{17}H_{18}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 310 ($C_{17}H_{16}N_3O_3$) [M-H, 100%].

(*E*)-3-((2-(4-isopropylbenzoyl)hydrazono)methyl)benzoic acid (36)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and (4-isopropyl)benzhydrazide (107 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (68 mg, 37%). Mp 219-222 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.04 (bs, 1H), 11.89 (s, 1H), 8.50 (s, 1H), 8.32 (s, 1H), 7.98 (d, J = 7.6 Hz, 1H), 7.94 (d, J = 7.6 Hz, 1H), 7.86 (d, J = 7.8 Hz, 2H), 7.59 (t, J = 7.6 Hz, 1H), 7.41 (d, J = 7.8 Hz, 2H), 2.97 (sept, J = 6.9 Hz, 1H), 1.24 (d, J = 6.9 Hz, 6H).

^{13}C NMR (101 MHz, DMSO-d_6) δ 167.0, 163.2, 152.6, 146.5, 134.9, 131.50, 131.45, 130.9, 130.5, 129.3 (2C), 127.8, 127.3, 126.5 (2C), 33.4, 23.6 (2C). IR (neat) ν_{max}: 3233 (NH), 3000 (O-H), 2958 (C-H), 1703 (C=O), 1687 (C=O). UPLC-MS (80% Solvent B) t_R 0.593 min, (ESI-) *m/z*: 308 ($C_{18}H_{16}N_2O_3$) [M-2H, 100%].

(*E*)-3-((2-(4-(*tert*-butyl)benzoyl)hydrazono)methyl)benzoic acid (37)

3-Formylbenzoic acid (150 mg, 1.0 mmol, 1.0 eq.) and 4-(*tert*-butyl)benzhydrazide (192 mg, 1.0 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (213 mg, 78%). Mp decomp. >265 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.17 (bs, 1H), 11.89 (s, 1H), 8.50 (s, 1H), 8.32 (s, 1H), 7.98 (d, J = 7.6 Hz, 1H), 7.94 (d, J = 7.6 Hz, 1H), 7.86 (d, J = 8.1 Hz, 2H), 7.59 (t, J = 7.6 Hz, 1H), 7.55 (d, J = 8.1 Hz, 2H), 1.32 (s, 9H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 163.2, 154.8, 146.5, 134.9, 131.48, 131.45, 130.6, 130.5, 129.2 (2C), 127.5, 127.3, 125.3 (2C), 34.7, 30.9 (3C). IR (neat) ν_{max}: 3217 (NH), 3000 (O-H), 2964 (C-H), 1725 (C=O), 1687 (C=O). UPLC-MS (80% Solvent B) t_R 0.636 min, (ESI-) *m/z*: 323 ($C_{19}H_{19}N_2O_3$) [M-H, 100%].

(*E*)-3-((2-(4-(trifluoromethyl)benzoyl)hydrazono)methyl)benzoic acid (38)

3-Formylbenzoic acid (104 mg, 0.7 mmol, 1.0 eq.) and 4-(trifluoromethyl)benzhydrazide (142 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (193 mg, 83%). Mp 288-291 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.20 (bs, 1H), 12.17 (s, 1H), 8.53 (s, 1H), 8.34 (s, 1H), 8.13 (d, J = 7.8 Hz, 2H), 8.00 (dt, J = 7.8, 1.8 Hz, 1H), 7.97 (dt, J = 7.8, 1.8 Hz, 1H), 7.93 (d, J = 8.4 Hz, 2H), 7.61 (t, J = 7.8 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 162.1, 147.6, 137.1, 134.6, 131.6, 131.6 (q, $^2J_{CF}$ = 31.7 Hz), 131.5, 130.8, 129.3, 128.6, 127.5, 125.5 (q, $^3J_{CF}$ = 3.0 Hz), 123.9 (q, $^1J_{CF}$ = 271.8 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -59.66. IR (neat) ν_{max}: 3477 (N-H), 3224 (N-H), 2900 (O-H), 1685 (C=O), 1652 (C=O), 1132 (C-F). UPLC-MS (80% Solvent B) t_R 0.557 min, (ESI+) *m/z*: 337 ($C_{16}H_{12}F_3N_2O_3$) [M+H, 40%], 359 ($C_{16}H_{11}F_3N_2O_3Na$) [M+Na, 100%], 375 ($C_{16}H_{11}F_3N_2O_3K$) [M+K, 15%]; (ESI-) *m/z*: 335 ($C_{16}H_{10}F_3N_2O_3$) [M-H, 100%].

(*E*)-3-((2-(3-(trifluoromethyl)benzoyl)hydrazono)methyl)benzoic acid (39)

3-Formylbenzoic acid (100 mg, 0.7 mmol, 1.0 eq.) and 3-(trifluoromethyl)benzhydrazide (139 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (187 mg, 76%). Mp 308-311 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.17 (bs, 1H), 12.17 (s, 1H), 8.53 (s, 1H), 8.35 (s, 1H), 8.26 (s, 1H), 8.24 (d, J = 7.8 Hz, 1H), 8.00 (d, J = 7.8 Hz, 1H), 7.99-7.95 (m, 2H), 7.79 (t, J = 7.8 Hz, 1H), 7.60 (t, J = 7.8 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.4, 162.3, 148.0, 135.1, 134.7, 132.3, 132.1, 131.9, 131.2, 130.3, 129.7, 129.7 (q, $^2J_{CF}$ = 32.2 Hz), 127.9, 124.7 (q, $^3J_{CF}$ = 3.9 Hz), 124.4 (q, $^1J_{CF}$ = 272.7 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -59.36. IR (neat) ν_{max}: 3470 cm^{-1} (N-H), 2900 cm^{-1} (O-H), 1675 cm^{-1} (C=O), 1643 cm^{-1} (C=O), 1132 cm^{-1} (C-F). UPLC-MS (80% Solvent B) t_R 0.557 min, (ESI+) *m/z*: 337 ($C_{16}H_{12}F_3N_2O_3$) [M+H, 100%], 359

($C_{16}H_{11}F_3N_2O_3Na$) [M+Na, 25%], 375 ($C_{16}H_{11}F_3N_2O_3K$) [M+K, 5%]; (ESI-) *m/z*: 335 ($C_{16}H_{10}F_3N_2O_3$) [M-H, 100%].

(*E*)-3-((2-(3,5-bis(trifluoromethyl)benzoyl)hydrazono)methyl)benzoic acid (40)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 3,5-(*bis*-trifluoromethyl)benzhydrazide (180 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (176 mg, 73%). Mp 292-293 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 12.33 (s, 1H), 8.57 (s, 2H), 8.53 (s, 1H), 8.40 (s, 1H), 8.36 (s, 1H), 8.00 (dd, J = 12.0, 7.8 Hz, 2H), 7.62 (t, J = 7.7 Hz, 1H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 166.9, 160.4, 148.2, 144.2, 135.6, 134.5, 131.7, 131.5, 131.0, 130.6 (q, $^2J_{CF}$ = 33.4 Hz, 2C), 129.4, 128.6 (q, $^4J_{CF}$ = 2.9 Hz, 2C), 127.6, 125.5 (unresolved multiplet), 123.1 (q, $^1J_{CF}$ = 274 Hz, 2C). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -58.88. IR (neat) ν_{max}: 3196 (N-H), 3000 (O-H), 1687 (C=O), 1684 (C=O). UPLC-MS (80% Solvent B) t_R 0.667 min, (ESI+) *m/z*: 404 ($C_{17}H_{10}F_6N_2O_3$) [M, 80%], *m/z*: 426 ($C_{17}H_{10}F_6N_2O_3Na$) [M+Na, 30%]; (ESI-) *m/z*: 402 ($C_{17}H_8F_6N_2O_3$) [M-2H, 100%].

(*E*)-3-((2-(4-(trifluoromethoxy)benzoyl)hydrazono)methyl)benzoic acid (41)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-(trifluoromethoxy)benzhydrazide (145 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (135 mg, 64%). Mp 281-283 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.18 (bs, 1H), 12.07 (s, 1H), 8.51 (s, 1H), 8.34 (s, 1H), 8.06 (d, J = 8.4 Hz, 2H), 7.98 (dd, J = 15.8, 7.7 Hz, 3H), 7.60 (t, J = 7.7 Hz, 1H), 7.55 (d, J = 8.4 Hz, 2H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 166.9, 162.1, 150.6, 147.2, 134.7, 132.4, 131.6, 131.5, 130.7, 130.1 (2C), 129.3, 127.4, 120.9 (2C), 120.1 (q, $^1J_{CF}$ = 258 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -54.94. IR (neat) ν_{max}: 3215 (N-H), 3000 (O-H), 1687 (C=O), 1644 (C=O), 1147 (O-C). UPLC-MS (80% Solvent B) t_R 0.575 min, (ESI-) *m/z*: 352 ($C_{16}H_{11}F_3N_2O_4$) [M, 100%]; (ESI-) *m/z*: 350 ($C_{16}H_9F_3N_2O_4$) [M-2H, 100%].

(*E*)-3-((2-(pyridin-4-yl)hydrazono)methyl)benzoic acid (42)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-hydrazinylpyridine hydrochloride (96 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (117 mg, 81%). Mp 305-308 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.81 (s, 1H), 8.40 (s, 1H), 8.37-8.36 (m, 2H), 8.34 (s, 1H), 8.06 (d, J = 7.6 Hz, 1H), 8.01 (d, J = 7.7 Hz, 1H), 7.61 (t, J = 7.7 Hz, 1H), 7.23 (s, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 155.0, 146.6, 134.1, 131.5, 131.4, 131.0, 129.4 (2C), 127.8 (2C). IR (neat) ν_{max}: 3486 (N-H), 3000 (O-H), 1700 (C=O), 1645 (C=O). UPLC-MS (80% Solvent B) t_R 0.505 min, (ESI+) *m/z*: 242 ($C_{13}H_{12}N_3O_2$) [M+H, 100%].

(*E*)-3-((2-(3-chloro-4-methylphenyl)hydrazono)methyl)benzoic (43)

3-Chloro-4-methylphenylhydrazine hydrochloride (127 mg, 0.66 mmol, 1.1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A

Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the solvent was removed *in vacuo*, the resultant residue taken up in ethyl acetate (10 mL) and washed with water (3 x 10 mL). The organic residue was dried over $MgSO_4$ and dried *in vacuo* to afford the desired product as a pale brown solid (131 mg, 76%). Mp 187-190 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.52 (s, 1H), 8.17 (s, 1H), 7.91 (s, 1H), 7.89 (d, J = 7.8 Hz, 1H), 7.85 (d, J = 7.7 Hz, 1H), 7.51 (t, J = 7.7 Hz, 1H), 7.18 (d, J = 8.3 Hz, 1H), 7.11 (d, J = 2.0 Hz, 1H), 6.92 (dd, J = 8.3, 2.0 Hz, 1H), 2.23 (s, 3H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.3, 144.5, 136.3, 136.0, 133.8, 131.7, 131.6, 129.7, 129.0, 128.8, 126.4, 124.9, 111.9, 111.1, 18.7. IR (neat) ν_{max}: 3375 (N-H), 3278 (C-H), 3200 (O-H), 1691 (C=O), 683 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.889 min, (ESI+) *m/z*: 289 ($C_{15}H_{14}{}^{35}ClN_2O_2$) [M+H, 35%], *m/z*: 305 ($C_{15}H_{14}{}^{37}ClN_2O_2$) [M+H, 10%]; (ESI-) *m/z*: 287 ($C_{15}H_{12}{}^{35}ClN_2O_2$) [M-H, 100%], *m/z*: 289 ($C_{15}H_{12}{}^{37}ClN_2O_2$) [M-H, 35%].

(*E*)-3-((2-(3,4-dichlorophenyl)hydrazono)methyl)benzoic acid (44)

3,4-Dichlorophenylhydrazine hydrochloride (141 mg, 0.66 mmol, 1.1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the solvent was removed *in vacuo*, the resultant residue taken up in ethyl acetate (10 mL) and washed with water (3 x 10 mL). The organic residue was dried over $MgSO_4$ and dried *in vacuo* to afford the desired product as a brown solid (148 mg, 80%). Mp 184-187 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.14 (bs, 1H), 10.76 (s, 1H), 8.20 (s, 1H), 7.96 (s, 1H), 7.90 (dd, J = 17.5, 7.7 Hz, 2H), 7.52 (t, J = 7.7 Hz, 1H), 7.44 (d, J = 8.8 Hz, 1H), 7.25 (d, J = 2.4 Hz, 1H), 7.02 (dd, J = 8.8, 2.4 Hz, 1H). (Residual EtOAc peaks at 4.02, 1.98 and 1.17 ppm. Product contains 4.9% EtOAc by mass, calculated from the peak at 4.01 ppm that integrates to 0.36 and is representative of 2 protons). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.3, 145.2 (2C), 137.8, 135.7, 131.6, 131.0, 129.9, 129.1, 129.0, 126.7, 119.7, 113.0, 112.4. (Residual EtOAc peaks at 59.8, 20.8, 14.1 ppm). IR (neat) ν_{max}: 3297 (N-H), 3000 (O-H), 1710 (C=O), 685 (C-Cl), 676 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.902 min, (ESI+) *m/z*: 309 ($C_{14}H_{11}{}^{35}Cl_2N_2O_2$) [M+H, 40%], *m/z*: 311 ($C_{14}H_{11}{}^{35}Cl^{37}ClN_2O_2$) [M+H, 25%], *m/z*: 313 ($C_{14}H_{11}{}^{37}Cl_2N_2O_2$) [M+H, 5%]; (ESI-) *m/z*: 307 ($C_{14}H_9{}^{35}Cl_2N_2O_2$) [M-H, 100%], *m/z*: 309 ($C_{14}H_9{}^{35}Cl^{37}ClN_2O_2$) [M-H, 65%], *m/z*: 311 ($C_{14}H_9{}^{37}Cl_2N_2O_2$) [M-H, 10%].

(*E*)-3-((2-(4-bromophenyl)hydrazono)methyl)benzoic acid (45)

4-Bromophenylhydrazine hydrochloride (147 mg, 0.66 mmol, 1.1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the solvent was removed in vacuo, the resultant residue taken up in ethyl acetate (10 mL) and washed with water (3 x 10 mL). The organic residue was dried over $MgSO_4$ and concentrated *in vacuo* to afford the desired product as an off-white solid (46 mg, 24%). Mp decomp. >225 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.05 (bs, 1H), 10.88 (s, 1H), 8.18 (s, 1H), 7.98 (s, 1H), 7.86 (t, J = 8.3 Hz, 2H), 7.50 (t, J = 7.7 Hz, 1H), 7.37 (d, J = 8.8 Hz, 2H), 7.05 (d, J = 8.8 Hz, 2H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.2, 144.5, 136.4, 136.1, 131.8 (2C), 131.4, 129.8, 129.0, 128.7, 126.2, 114.0 (2C), 109.7. IR (neat) ν_{max}: 3315 (N-H), 3069 (O-H), 1684 (C=O), 504 (C-Br). UPLC-MS (80% Solvent B) t_R 0.790 min, (ESI-) m/z: 317 ($C_{14}H_{10}{}^{79}BrN_2O_2$) [M-H, 100%], *m/z*: 319 ($C_{14}H_{10}{}^{81}BrN_2O_2$) [M-H, 100%].

(*E*)-3-((2-(4-chlorophenyl)hydrazono)methyl)benzoic acid (46)

4-Chlorophenylhydrazine hydrochloride (118 mg, 0.66 mmol, 1.1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the solvent was removed *in vacuo*, the resultant residue taken up in ethyl acetate (10 mL) and washed with water (3 x 10 mL). The organic residue was dried over $MgSO_4$ and concentrated *in vacuo* to afford the desired product as an off-white solid (117 mg, 71%). Mp 216-217 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.03 (bs, 1H), 10.60 (s, 1H), 8.19 (s, 1H), 7.93 (s, 1H), 7.90-7.83 (m, 2H), 7.51 (t, J = 7.7 Hz, 1H), 7.30-7.24 (m, 2H), 7.12-7.04 (m, 2H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.2, 144.1, 136.4, 136.1, 131.3, 129.9, 129.09, 129.05 (2C), 128.8, 126.3, 122.3, 113.6 (2C). IR (neat): ν_{max}: 3371 (N-H), 3319 (O-H), 1682 (C=O), 685 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.753 min, (ESI+) *m/z*: 275 ($C_{14}H_{12}{}^{35}ClN_2O_2$) [M+H, 50%], *m/z*: 277 ($C_{14}H_{12}{}^{37}ClN_2O_2$) [M+H, 15%]; (ESI-) *m/z*: 273 ($C_{14}H_{10}{}^{35}ClN_2O_2$) [M-H, 100%], *m/z*: 275 ($C_{14}H_{10}{}^{37}ClN_2O_2$) [M-H, 35%].

(*E*)-3-((2-(2,4-dichlorophenyl)hydrazono)methyl)benzoic acid (47)

2,4-Dichlorophenylhydrazine hydrochloride (143 mg, 0.66 mmol, 1.1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as an off-white solid (59 mg, 32%). Mp decomp. 250 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 13.06 (bs, 1H), 10.20 (s, 1H), 8.38 (s, 1H), 8.18 (s, 1H), 7.90 (d, J = 7.7 Hz, 2H), 7.55 (dd, J = 12.3, 6.0 Hz, 2H), 7.48 (d, J = 2.3 Hz, 1H), 7.34 (dd, J = 8.9, 2.3 Hz, 1H). ^{13}C NMR (101 MHz, DMSO-d_6) δ 167.1, 140.5, 140.2, 135.7, 131.4, 130.3, 129.4, 129.2, 128.7, 128.2, 126.6, 122.5, 116.8, 115.1. IR (neat) ν_{max}: 3321 (N-H), 3100 (O-H), 1699 (C=O), 680 (C-Cl). UPLC-MS (80% Solvent B) t_R 1.059 min, (ESI+) *m/z*: 309 ($C_{14}H_{11}{}^{35}Cl_2N_2O_2$) [M+H, 25%], *m/z*: 311 ($C_{14}H_{11}{}^{35}Cl^{37}Cl_2N_2O_2$) [M+H, 15%]; (ESI-) *m/z*: 307 ($C_{14}H_9{}^{35}Cl_2N_2O_2$) [M-H, 100%], *m/z*: 309 ($C_{14}H_9{}^{35}Cl^{37}ClN_2O_2$) [M-H, 70%], *m/z*: 311 ($C_{14}H_9{}^{37}Cl_2N_2O_2$) [M-H, 10%].

(*E*)-3-((2-(2,4-difluorophenyl)hydrazono)methyl)benzoic acid (48)

2,4-Difluorophenylhydrazine hydrochloride (119 mg, 0.66 mmol, 1,1 eq.) and sodium hydroxide (26 mg, 0.66 mmol, 1.1 eq.) were combined with methanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the solvent was removed *in vacuo*, the residue was taken up in ethyl acetate (20 mL) and washed with water (2 x 20 mL). The organic solution was reduced *in vacuo*, and the residue loaded onto silica and purified by column chromatography (0-10% MeOH in DCM) to afford the desired product as a tan solid (146 mg, 88%). Mp 150-152 °C. ^{1}H NMR (600 MHz, methanol-d_4) δ 8.29 (t, J = 1.7 Hz, 1H), 8.00 (s, 1H), 7.94 (dt, J = 7.8, 1.7 Hz, 1H), 7.88 (dt, J = 7.8, 1.7 Hz, 1H), 7.60-7.54 (m, 1H), 7.48 (t, J = 7.8 Hz, 1H), 6.93-6.88 (m, 2H). ^{13}C NMR (151 MHz, methanol-d_4) δ 170.0, 157.0 (dd, $^1J_{CF}$ = 238.4, $^3J_{CF}$ = 10.8 Hz), 150.4 (dd, $^1J_{CF}$ = 242.6, $^3J_{CF}$ = 11.7 Hz), 139.2, 137.8, 132.5, 131.8*, 131.2, 130.3, 129.8, 128.2, 115.7 (dd, $^3J_{CF}$ = 8.7, $^3J_{CF}$ = 4.3 Hz), 112.1 (d, $^2J_{CF}$ = 22.0, $^4J_{CF}$ = 3.5 Hz), 104.3 (d, $^2J_{CF}$ = 27.0, $^2J_{CF}$ = 22.5 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -121.96, -127.91. IR (neat): ν_{max}: 3352 (N-H), 3000 (O-H), 1689 (C=O), 752 (C-F), 724 (C-F). UPLC-MS (50% Solvent B) t_R 2.583 min; (ESI-) *m/z*: 275 ($C_{14}H_8F_2N_2O_2$) [M-H, 100%]. * Not observed but confirmed by HSQC and HMBC correlations

(*E*)-3-((2-(4-isopropylphenyl)hydrazono)methyl)benzoic acid (49)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and **(**4-isopropylphenyl)hydrazine hydrochloride (123 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h. The reaction mixture was loaded onto silica and purified by column chromatography (0-10% MeOH in DCM) to afford the desired product as an orange solid (98 mg, 51%). Mp decomp. >170 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.36 (s, 1H), 8.16 (s, 1H), 7.88 (s, 1H), 7.85 (d, J = 7.7 Hz, 1H), 7.82 (d, J = 7.7 Hz, 1H), 7.50 (t, J = 7.7 Hz, 1H), 7.11 (d, J = 8.4 Hz, 2H), 7.01 (d, J = 8.4 Hz, 2H), 2.79 (sept, J = 6.9 Hz, 1H), 1.17 (d, J = 6.9 Hz, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.3, 143.2, 139.1, 136.5, 134.8, 131.3, 129.6, 129.0, 128.3, 126.9 (2C), 126.1, 112.1 (2C), 32.7, 24.2 (2C). IR (neat) ν_{max}: 3294 (N-H), 2900 (O-H), 2948 (N-H), 1680 (C=O). UPLC-MS (80% Solvent B) t_R 0.947 min, (ESI+) *m/z*: 282 ($C_{17}H_{18}N_2O_2$) [M, 100%]; (ESI-) *m/z*: 280 ($C_{17}H_{16}N_2O_2$) [M-2H, 100%].

(*E*)-2-((2-(4-bromobenzoyl)hydrazono)methyl)benzoic acid (50)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-bromobenzhydrazide (118 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a fluffy white solid (113 mg, 54%). Mp 205-207 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.13 (s, 1H), 9.20 (s, 1H), 8.07 (d, J = 7.8 Hz, 1H), 7.90 (t, J = 7.4 Hz, 3H), 7.75 (dd, J = 8.3, 4.0 Hz, 2H), 7.65 (t, J = 8.3 Hz, 1H), 7.54 (t, J = 7.4 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 162.3, 146.9, 134.5, 132.4, 132.0, 131.5, 131.4, 130.7, 130.3, 129.9, 129.7, 129.1, 126.7, 125.6. IR (neat) ν_{max}: 3000 (O-H), 2974 (NH), 1692 (C=O), 1684 (C=O). UPLC-MS (80% Solvent B) t_R 0.556 min, (ESI+) *m/z*: 347 ($C_{15}H_{12}{}^{79}BrN_2O_3$) [M+H, 35%], *m/z*: 349 ($C_{15}H_{12}{}^{81}BrN_2O_3$) [M+H, 30%]; (ESI-) *m/z*: 345 ($C_{15}H_{10}{}^{79}BrN_2O_3$) [M-H, 100%], *m/z*: 347 ($C_{15}H_{10}{}^{81}BrN_2O_3$) [M-H, 100%].

***(E)*-2-((2-(3-bromobenzoyl)hydrazono)methyl)benzoic acid (51)**

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 3-bromobenzhydrazide (142 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a fluffy white solid (160 mg, 77%). Mp 205-207 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.36 (bs, 1H), 12.15 (bs, 1H), 9.20 (s, 1H), 8.13 (s, 1H), 8.08 (d, J = 7.8 Hz, 1H), 7.94 (d, J = 7.8 Hz, 1H), 7.91 (d, J = 7.4 Hz, 1H), 7.81 (d, J = 7.8 Hz, 1H), 7.66 (t, J = 7.4 Hz, 1H), 7.54 (t, J = 7.4 Hz, 1H), 7.50 (t, J = 7.8 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 161.7, 147.1, 135.5, 134.54, 134.49, 132.0, 130.7, 130.8, 130.4, 130.2, 129.8, 127.0, 126.7, 121.7. IR (neat) ν_{max}: 3200 (O-H), 2974 (N-H), 1688 (C=O), 1634 (C=O), 753 (C-Br). UPLC-MS (80% Solvent B) t_R 0.557 min, (ESI-) *m/z*: 345 ($C_{15}H_{10}{}^{79}BrN_2O_3$) [M-H, 100%], *m/z*: 347 ($C_{15}H_{10}{}^{81}BrN_2O_3$) [M-H, 100%].

(*E*)-2-((2-isonicotinoylhydrazono)methyl)benzoic acid (52)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and isonicotinohydrazide (90 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed

with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (94 mg, 58%). Mp 189-191 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.37 (bs, 1H), 12.29 (s, 1H), 9.22 (s, 1H), 8.78 (d, J = 5.6 Hz, 2H), 8.08 (d, J = 7.8 Hz, 1H), 7.92 (d, J = 7.6 Hz, 1H), 7.85 (d, J = 5.8 Hz, 2H), 7.66 (t, J = 7.5 Hz, 1H), 7.55 (t, J = 7.4 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 161.8, 150.3 (2C), 147.8, 140.4, 134.4, 132.1, 130.8, 130.4, 129.9, 126.8, 121.6 (2C). IR (neat) ν_{max}: 3150 (O-H), 2986 (N-H), 1656 (C=O), 1645 (C=O). UPLC-MS (80% Solvent B) t_R 0.488 min, (ESI+) *m/z*: 270 ($C_{14}H_{12}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 268 ($C_{14}H_{10}N_3O_3$) [M-H, 100%].

(*E*)-2-((2-nicotinoylhydrazono)methyl)benzoic acid (53)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and nicotinohydrazide (90 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (108 mg, 67%). Mp 191-193 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.36 (bs, 1H), 12.24 (s, 1H), 9.20 (s, 1H), 9.08 (s, 1H), 8.77 (d, J = 3.8 Hz, 1H), 8.28 (d, J = 7.8 Hz, 1H), 8.09 (d, J = 7.8 Hz, 1H), 7.92 (d, J = 7.7 Hz, 1H), 7.66 (t, J = 7.5 Hz, 1H), 7.58-7.53 (m, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 162.0, 152.3, 148.7, 147.2, 135.6, 134.5, 132.1, 130.7, 130.4, 129.8, 129.1, 126.7, 123.6. IR (neat) ν_{max}: 3220 (O-H), 2974 (N-H), 1695 (C=O), 1657 (C=O). UPLC-MS (80% Solvent B) t_R 0.489 min, (ESI+) *m/z*: 270 ($C_{14}H_{12}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 268 ($C_{14}H_{10}N_3O_3$) [M-H, 100%].

(*E*)-2-((2-(4-(dimethylamino)benzoyl)hydrazono)methyl)benzoic acid (54)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-(dimethylamino)benzhydrazide (118 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (1 x 2 mL) to afford the desired product as a yellow solid (94 mg, 50%). Mp 210-212 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.26 (bs, 1H), 11.76 (s, 1H), 9.14 (s, 1H), 8.06 (d, J = 6.5 Hz, 1H), 7.88 (d, J = 7.7 Hz, 1H), 7.85 (d, J = 8.9 Hz, 2H), 7.63 (t, J = 7.5 Hz, 1H), 7.50 (t, J = 7.5 Hz, 1H), 6.75 (d, J = 8.9 Hz, 2H), 3.00 (s, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.2 (2C), 152.5, 135.0, 131.9 (2C), 130.5, 130.2 (2C), 129.2 (2C), 126.5, 119.4, 110.8 (2C), 39.7 (2C). IR (neat) ν_{max}: 3200 (O-H), 2974 (N-H), 1674 (C=O), 1600 (C=O). UPLC-MS (80% Solvent B) t_R 0.518 min, (ESI+) *m/z*: 312 ($C_{17}H_{18}N_3O_3$) [M+H, 70%]; (ESI-) *m/z*: 310 ($C_{17}H_{16}N_3O_3$) [M-H, 100%].

(*E*)-2-((2-(4-isopropybenzoyl)hydrazono)methyl)benzoic acid (55)

2-Formylbenzoic acid (75 mg, 0.5 mmol, 1.0 eq.) and **(**4-isopropyl)benzhydrazide (89 mg, 0.5 mmol, 1.0 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (94 mg, 59%). Mp 191-193 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.34 (bs, 1H), 12.00 (s, 1H), 9.18 (s, 1H), 8.07 (d, J = 7.6 Hz, 1H), 7.90 (d, J = 7.966 Hz, 1H), 7.88 (d, J = 8.0 Hz, 2H), 7.65 (t, J = 7.6 Hz, 1H), 7.53 (t, J = 7.6 Hz, 1H), 7.39 (d, J = 8.0 Hz, 2H), 2.97 (sept, J = 6.9 Hz, 1H), 1.24 (d, J = 6.9 Hz, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 163.2, 152.5, 146.2, 134.7, 132.0, 130.9, 130.7, 130.3, 129.6, 127.9 (2C), 126.6, 126.4 (2C), 33.4, 23.7 (2C). IR (neat) ν_{max}: 2900 (O-H), 2871 (N-H),

1675 (C=O), 1626 (C=O). UPLC-MS (80% Solvent B) t_R 0.618 min, (ESI+) *m/z*: 311 ($C_{18}H_{19}N_2O_3$) [M+H, 35%]; (ESI-) *m/z*: 309 ($C_{18}H_{17}N_2O_3$) [M-H, 100%].

(*E*)-2-((2-(4-(trifluoromethyl)benzoyl)hydrazono)methyl)benzoic acid (56)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 4-(trifluoromethyl)benzhydrazide (135 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (125 mg, 62%). Mp 209-211 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.36 (bs, 1H), 12.27 (s, 1H), 9.23 (s, 1H), 8.14 (d, J = 7.8 Hz, 2H), 8.09 (d, J = 7.8 Hz, 1H), 7.92-7.91 (m, 3H), 7.66 (t, J = 7.3 Hz, 1H), 7.55 (t, J = 7.3 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 162.2, 147.4, 137.1, 134.5, 132.1, 131.6 (q, $^2J_{CF}$ = 32.0 Hz), 130.8, 130.4, 129.8, 128.7 (2C), 126.7, 125.4 (q, $^3J_{CF}$ = 3.0 Hz, 2C), 124.4 (q, $^1J_{CF}$ = 271.8 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -59.27. IR (neat) ν_{max}: 2900 (O-H), 2871 (N-H), 1675 (C=O), 1626 (C=O). UPLC-MS (80% Solvent B) t_R 0.563 min, (ESI-) *m/z*: 335 ($C_{16}H_{10}F_3N_2O_3$) [M-H, 100%].

(*E*)-2-((2-(4-(*tert*-butyl)benzoyl)hydrazono)methyl)benzoic acid (57)

2-Formylbenzoic acid (96 mg, 0.64 mmol, 1.0 eq.) and 4-(*tert*-butyl)benzhydrazide (137 mg, 0.70 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (138 mg, 67%). Mp 198-200 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.33 (bs, 1H), 12.01 (s, 1H), 9.18 (s, 1H), 8.08 (d, J = 7.7 Hz, 1H), 7.89 (m, 3H), 7.65 (t, J = 7.7 Hz, 1H), 7.53 (t, J = 9.6 Hz, 3H), 1.32 (s, 9H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 163.2, 154.7, 146.3, 134.7, 132.0, 130.7, 130.5, 130.3, 129.6, 127.6 (2C), 126.6, 125.2 (2C), 34.7, 30.9 (3C). IR (neat) ν_{max}: 2961 (N-H), 2900 (O-H), 1677 (C=O), 1627 (C=O). UPLC-MS (80% Solvent B) t_R 0.629 min, (ESI+) *m/z*: 325 ($C_{19}H_{21}N_2O_3$) [M+H, 100%]; (ESI-) *m/z*: 323 ($C_{19}H_{19}N_2O_3$) [M-H, 100%].

(*E*)-2-((2-(1*H*-pyrrole-2-carbonyl)hydrazono)methyl)benzoic acid (58)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 1*H*-pyrrole-2-carbohydrazide (83 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (118 mg, 77%). Mp 200-202 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.29 (s, 1H), 11.69 (2 overlapping signals, 2H), 9.08 (s, 1H), 8.05 (d, J = 7.7 Hz, 1H), 7.89 (dd, J = 7.7, 1.2 Hz, 1H), 7.64 (t, J = 7.7 Hz, 1H), 7.51 (td, J = 7.7, 1.2 Hz, 1H), 7.01 (2 overlapping signals, 2H), 6.17 (s, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.2 (2 overlapping signals), 134.9 (2 overlapping signals), 132.0, 130.4, 130.3, 129.2 (2 overlapping signals), 126.5, 122.8 (2 overlapping signals), 109.0. IR (neat) ν_{max}: 3346 (N-H), 3000 (O-H), 1680 (C=O), 1678 (C=O). UPLC-MS (80% Solvent B) t_R 0.499 min, (ESI+) *m/z*: 258 ($C_{13}H_{12}N_3O_3$) [M+H, 65%]; (ESI-) *m/z*: 256 ($C_{13}H_{10}N_3O_3$) [M-H, 100%].

(*E*)-2-((2-(1-methyl-1*H*-imidazole-5-carbonyl)hydrazono)methyl)benzoic acid (59)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 1-methyl-1*H*-imidazole-5-carbohydrazide (92 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave

vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20°C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (103 mg, 63%). Mp 204-205 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.32 (bs, 1H), 11.90 (s, 1H), 9.10 (s, 1H), 8.03 (s, 1H), 7.90 (dd, *J* = 7.7, 1.0 Hz, 1H), 7.86 (s, 1H), 7.76 (s, 1H), 7.64 (t, *J* = 7.7 Hz, 1H), 7.52 (td, *J* = 7.7, 1.0 Hz, 1H), 3.86 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1, 156.5, 145.6, 142.7, 134.7, 133.0, 132.0, 130.6, 130.4, 129.5, 126.5, 124.5, 33.6. IR (neat) ν_{max}: 3050 (O-H), 2961 (N-H), 1647 (C=O), 1644 (C=O). UPLC-MS (80% Solvent B) t_R 0.513 min, (ESI+) *m/z*: 273 ($C_{13}H_{13}N_4O_3$) [M+H, 100%]; (ESI-) *m/z*: 271 ($C_{13}H_{11}N_4O_3$) [M-H, 100%].

(*E*)-2-((2-(3-(4-hydroxyphenyl)propanoyl)hydrazono)methyl)benzoic acid (60)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and 3-(4-hydroxyphenyl)propanehydrazide (119 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a fluffy white solid (0.4:0.6 isomers) (117 mg, 63%). Mp 191-193 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.28 (bs, 1H), 11.52 (s, 0.4H), 11.37 (s, 0.6H), 9.14 (d, *J* = 13.7 Hz, 1H), 8.89 (s, 0.4H), 8.69 (s, 0.6H), 7.96 (dd, *J* = 37.0, 7.8 Hz, 1H), 7.90-7.83 (m, 1H), 7.60 (dt, *J* = 12.3, 7.6 Hz, 1H), 7.49 (ddd, *J* = 15.0, 8.1, 1.0 Hz, 1H), 7.03 (dd, *J* = 13.4, 8.4 Hz, 2H), 6.70-6.62 (m, 2H), 2.87 (t, *J* = 7.5 Hz, 1H), 2.78 (dd, *J* = 12.3, 5.3 Hz, 2H), 2.45 (t, *J* = 7.7 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 173.8 (2 overlapping signals), 168.13, 168.09, 155.53, 155.46, 144.6, 141.7, 134.7, 134.5, 131.99, 131.95, 131.4, 131.1, 130.5, 130.4 (2 overlapping signals), 130.2, 129.4, 129.21, 129.18 (2C), 129.1 (2C), 126.5, 126.4, 115.10 (2C), 115.06 (2C), 36.3, 34.3, 29.9, 29.3. IR (neat) ν_{max}: 3416 (O-H), 3000 (O-H), 2974 (N-H), 1686 (C=O), 1644 (C=O). UPLC-MS (70% Solvent B) t_R 0.524 min, (ESI+) *m/z*: 313 ($C_{17}H_{17}N_2O_4$) [M+H, 35%], *m/z*: 335 ($C_{17}H_{17}N_2O_4Na$) [M+H, 50%]; (ESI-) *m/z*: 311 ($C_{17}H_{15}N_2O_4$) [M-H, 100%].

(*E*)-2-((2-(furan-2-carbonyl)hydrazono)methyl)benzoic acid (61)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 e.q) and furan-2-carbohydrazide (83 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a white solid (73 mg, 47%). Mp 187-189 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.34 (bs, 1H), 12.07 (s, 1H), 9.17 (s, 1H), 8.04 (d, *J* = 7.3 Hz, 1H), 7.95 (s, 1H), 7.90 (dd, *J* = 7.8, 1.1 Hz, 1H), 7.64 (t, *J* = 7.5 Hz, 1H), 7.53 (td, *J* = 7.7, 1.2 Hz, 1H), 7.34 (s, 1H), 6.70 (dd, *J* = 3.4, 1.7 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.1 (2 overlapping signals), 154.4, 146.6, 146.0, 134.6, 132.0, 130.7, 130.3, 129.6, 126.7, 115.0, 112.0. IR (neat) ν_{max}: 3000 (O-H), 2781 (N-H), 1678 (C=O). UPLC-MS (50% Solvent B) t_R 0.655 min, (ESI+) *m/z*: 259 ($C_{13}H_{11}N_2O_4$) [M+H, 100%]; (ESI-) *m/z*: 257 ($C_{13}H_9N_2O_4$) [M-H, 100%].

(*E*)-2-((2-(3-chloro-4-methylphenyl)hydrazono)methyl)benzoic acid (62)

3-Chloro-4-methylphenylhydrazine hydrochloride (167 mg, 0.9 mmol, 1.0 eq.) and sodium hydroxide (35 mg, 0.9 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (129 mg, 0.9 mmol, 1.0 eq.) was added and the vial was capped and heated (in a sand bath) at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and

filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (215 mg, 87%). Mp 160-162 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 8.58 (s, 1H), 8.32 (d, J = 7.8 Hz, 1H), 8.03-8.00 (m, 2H), 7.92 (td, J = 7.8, 1.8 Hz, 1H), 7.72 (d, J = 1.8 Hz, 1H), 7.54-7.48 (m, 2H), 2.40 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 158.3, 140.7, 139.0, 134.9, 134.1, 132.7, 132.5, 131.0, 129.2, 127.6, 127.1, 126.3, 126.2, 124.6, 19.3. IR (neat) ν_{max}: 3058 (N-H), 1655 (C=O), 761 (C-Cl). UPLC-MS (80% Solvent B) t_R 1.084 min, (ESI+) *m/z*: 271 ($C_{15}H_{12}{}^{35}ClN_2O$) [M+H-$H_2O$, 100%], *m/z*: 273 ($C_{15}H_{12}{}^{37}ClN_2O$) [M+H-$H_2O$, 35%]; (ESI-) *m/z*: 287 ($C_{15}H_{12}{}^{35}ClN_2O_2$) [M-H, 70%], *m/z*: 289 ($C_{15}H_{12}{}^{37}ClN_2O_2$) [M-H, 30%].

(*E*)-2-((2-(3,4-dichlorophenyl)hydrazono)methyl)benzoic acid (63)

3,4-Dichlorophenylhydrazine hydrochloride (187 mg, 0.9 mmol, 1.0 eq.) and sodium hydroxide (35 mg, 0.9 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (132 mg, 0.9 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a yellow solid (111 mg, 41%). Mp 203-206 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.21 (bs, 1H), 10.90 (s, 1H), 8.70 (s, 1H), 8.10 (dd, J = 7.8, 1.2 Hz, 1H), 7.85 (dd, J = 7.8, 1.2 Hz, 1H), 7.58 (td, J = 7.8, 1.2 Hz, 1H), 7.43-7.40 (m, 2H), 7.26 (d, J = 2.4 Hz, 1H), 7.01 (dd, J = 9.0, 2.4 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.5, 145.3, 137.4, 135.4, 131.9, 131.7, 131.0, 130.4, 129.1, 128.1, 125.9, 119.7, 113.0, 112.5. IR (neat) ν_{max}: 3326 (N-H), 2900 (O-H), 1697 (C=O), 807 (C-Cl), 750 (C-Cl). UPLC-MS (80% Solvent B) t_R 1.158 min, (ESI+) *m/z*: 309 ($C_{14}H_{11}{}^{35}Cl_2N_2O_2$) [M+H, 100%], *m/z*: 311 ($C_{14}H_{11}{}^{35}Cl^{37}ClN_2O_2$) [M+H, 65%], *m/z*: 313 ($C_{14}H_{11}{}^{37}Cl_2N_2O_2$) [M+H, 10%]; (ESI-) *m/z*: 307 ($C_{14}H_{10}{}^{35}Cl_2N_2O_2$) [M-H, 100%], *m/z*: 309 ($C_{14}H_{10}{}^{35}Cl^{37}ClN_2O_2$) [M-H, 70%], *m/z*: 311 ($C_{14}H_{10}{}^{37}Cl_2N_2O_2$) [M-H, 10%].

(*E*)-2-((2-(3-bromophenyl)hydrazono)methyl)benzoic acid (64)

3-Bromophenylhydrazine hydrochloride (179 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (32 mg, 0.8 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (120 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a brown solid (196 mg, 77%). Mp 139-141 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 8.58 (s, 1H), 8.31 (d, J = 7.8 Hz, 1H), 8.01-7.97 (m, 2H), 7.91 (ddd, J = 8.4, 6.8, 1.8 Hz, 1H), 7.87 (t, J = 1.8 Hz, 1H), 7.67 (ddd, J = 8.1, 2.0, 1.0 Hz, 1H), 7.61 (ddd, J = 8.1, 2.0, 1.0 Hz, 1H), 7.48 (t, J = 7.8 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 158.3, 143.1, 139.2, 134.1, 132.5, 130.5, 130.4, 129.2, 128.7, 127.6, 127.2, 126.3, 125.1, 120.9. IR (neat) ν_{max}: 3050 (C-H), 1654 (C=O), 677 (C-Br). UPLC-MS (80% Solvent B) t_R 0.927 min, (ESI+) *m/z*: 301 ($C_{14}H_{10}{}^{79}BrN_2O$) [M+H-$H_2O$, 100%], *m/z*: 303 ($C_{14}H_{10}{}^{81}BrN_2O$) [M+H-$H_2O$, 100%].

(*E*)-2-((2-(4-bromophenyl)hydrazono)methyl)benzoic acid (65)

4-Bromophenylhydrazine hydrochloride (179 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (32 mg, 0.9 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (120 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C

for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (223 mg, 87%). Mp 169-172 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 8.60 (s, 1H), 8.33 (d, J = 7.8 Hz, 1H), 8.03-7.99 (m, 2H), 7.93 (ddd, J = 7.8, 6.6, 1.8 Hz, 1H), 7.71 (d, J = 9.0 Hz, 2H), 7.61 (d, J = 9.0 Hz, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 158.3, 141.1, 139.2, 134.1, 132.6, 131.5, 129.3, 128.1, 127.6, 127.2, 126.3, 120.3. IR (neat) ν_{max}: 3061 (C-H), 1656 (C=O), 683 (C-Br). UPLC-MS (80% Solvent B) t_R 0.907 min, (ESI+) *m/z*: 301 ($C_{14}H_{10}{}^{79}BrN_2O$) [M+H-$H_2O$, 100%], *m/z*: 303 ($C_{14}H_{10}{}^{81}BrN_2O$) [M+H-$H_2O$, 100%].

(*E*)-2-((2-(4-chlorophenyl)hydrazono)methyl)benzoic acid (66)

4-Chlorophenylhydrazine hydrochloride (152 mg, 0.9 mmol, 1.0 eq.) and sodium hydroxide (34 mg, 0.9 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (128 mg, 0.9 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (188 mg, 81%). Mp 165-167 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 8.59 (s, 1H), 8.32 (d, J = 7.8 Hz, 1H), 8.03-7.98 (m, 2H), 7.92 (ddd, J = 7.8, 6.6, 1.8 Hz, 1H), 7.67 (d, J = 8.4 Hz, 2H), 7.57 (d, J = 8.4 Hz, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 158.3, 140.7, 139.1, 134.1, 132.5, 131.9, 129.3, 128.6, 127.8, 127.6, 127.2, 126.3. IR (neat) ν_{max}: 3058 (C-H), 1655 (C=O), 599 (C-Cl). UPLC-MS (80% Solvent B) t_R 0.855 min, (ESI+) *m/z*: 257 ($C_{14}H_{10}{}^{35}ClN_2O$) [M+H-$H_2O$, 100%], *m/z*: 259 ($C_{14}H_{10}{}^{37}ClN_2O$) [M+H-$H_2O$, 35%]; (ESI-) *m/z*: 275 ($C_{14}H_{10}{}^{37}ClN_2O_2$) [M-H, 100%].

(*E*)-2-((2-(2,4-dichlorophenyl)hydrazono)methyl)benzoic acid (67)

2,4-Dichlorophenylhydrazine hydrochloride (183 mg, 0.9 mmol, 1.0 eq.) and sodium hydroxide (34 mg, 0.9 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (128 mg, 0.9 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a yellow solid (209 mg, 79%). Mp 225-228 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.12 (bs, 1H), 10.35 (s, 1H), 8.97 (s, 1H), 8.07 (d, J = 7.8 Hz, 1H), 7.82 (dd, J = 7.8, 1.2 Hz, 1H), 7.57 (t, J = 7.8 Hz, 1H), 7.57 (d, J = 8.4 Hz, 1H), 7.46 (d, J = 2.4 Hz, 1H), 7.42 (td, J = 7.8, 1.2 Hz, 1H), 7.30 (dd, J = 9.0, 2.4 Hz, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.5, 140.7, 139.7, 135.3, 131.7, 130.1, 129.9, 128.7, 128.3, 128.1, 126.1, 122.5, 116.9, 115.3. IR (neat) ν_{max}: 3326 (N-H), 3073 (C-H), 3000 (O-H), 1700 (C=O), 749.6 (C-Cl). UPLC-MS (80% Solvent B) t_R 1.215 min, (ESI+) *m/z*: 309 ($C_{14}H_{11}{}^{35}Cl_2N_2O_2$) [M+H, 100%], *m/z*: 311 ($C_{14}H_{11}{}^{35}Cl^{37}ClN_2O_2$) [M+H, 75%], *m/z*: 313 ($C_{14}H_{11}{}^{37}Cl_2N_2O_2$) [M+H, 10%]; (ESI-) *m/z*: 307 ($C_{14}H_9{}^{35}Cl_2N_2O_2$) [M-H, 100%], *m/z*: 309 ($C_{14}H_9{}^{35}Cl^{37}ClN_2O_2$) [M-H, 75%], *m/z*: 311 ($C_{14}H_9{}^{37}Cl_2N_2O_2$) [M-H, 10%].

(*E*)-2-((2-(2,4-difluorophenyl)hydrazono)methyl)benzoic acid (68)

2,4-Difluorophenylhydrazine hydrochloride (151 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (33 mg, 0.8 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. 2-Formylbenzoic acid (126 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under

vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a yellow solid (150 mg, 65%). Mp 176-178 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 10.49 (s, 1H), 8.82 (s, 1H), 8.07 (dd, J = 7.8, 1.2 Hz, 1H), 7.81 (d, J = 7.8, 1.2 Hz, 1H), 7.57-7.54 (m, 1H), 7.50 (td, J = 9.0, 6.0 Hz, 1H), 7.39 (td, J = 7.8, 1.2 Hz, 1H), 7.20 (ddd, J = 12.0, 9.0, 3.0 Hz), 7.01-6.98 (m, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 168.6, 154.9 (dd, $^{1}J_{CF}$ = 237.5 Hz, $^{3}J_{CF}$ = 11.0 Hz), 148.5 (dd, $^{1}J_{CF}$ = 243.1 Hz, $^{3}J_{CF}$ = 12.1 Hz), 138.0, 135.6, 131.6, 130.4 (dd, $^{2}J_{CF}$ = 9.7 Hz, $^{4}J_{CF}$ = 3.0 Hz), 130.1, 129.5, 127.9, 125.9, 114.4 (dd, $^{3}J_{CF}$ = 4.5 Hz, $^{3}J_{CF}$ = 4.5 Hz), 111.5 (dd, $^{2}J_{CF}$ = 21.7 Hz, $^{4}J_{CF}$ = 3.4 Hz), 103.9 (dd, $^{2}J_{CF}$ = 27.1 Hz, $^{2}J_{CF}$ = 22.3 Hz). IR (neat) ν_{max}: 3368 (N-H), 3065 (C-H), 2900 (O-H), 1695 (C=O), 1269 (C-F), 1253 (C-F). UPLC-MS t_R 0.766 min, (ESI+) *m/z*: 277 ($C_{14}H_{12}F_2N_2O_2$) [M+H, 100%]; (ESI-) *m/z*: 275 ($C_{14}H_{10}F_2N_2O_2$) [M-H, 100%].

(*E*)-2-((2-(4-isopropylphenyl)hydrazono)methyl)benzoic acid (69)

2-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and **(**4-isopropylphenyl)hydrazine hydrochloride (123 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated (in a sand bath) at 100 °C for 18 h. Upon completion, the reaction mixture was reduced by half and chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a golden crystalline solid (26 mg, 14%). Mp 86-88 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 8.57 (s, 1H), 8.32 (d, J = 7.9 Hz, 1H), 8.02-7.98 (m, 2H), 7.93-7.90 (m, 1H), 7.51 (d, J = 8.4 Hz, 2H), 7.37 (d, J = 8.4 Hz, 2H), 2.97 (sept, J = 6.9 Hz, 1H), 1.25 (d, J = 6.9 Hz, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 158.3, 147.8, 139.7, 138.6, 133.9, 132.3, 129.3, 127.7, 127.0, 126.4 (2C), 126.2, 125.9 (2C), 33.2, 23.9 (2C). IR (neat) ν_{max}: 2955 (N-H), 2896 (C-H), 1757 (C=O). UPLC-MS (80% Solvent B) t_R 1.045 min, (ESI+) *m/z*: 265 ($C_{17}H_{17}N_2O$) [M+H-H_2O, 100%].

(*E*)-methyl 3-((2-(4-bromophenyl)hydrazono)methyl)benzoate (70)

4-Bromophenylhydrazine hydrochloride (182 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (33 mg, 0.8 mmol, 1.0 eq.) were combined with methanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. Methyl-3-formylbenzoate (133 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (156 mg, 59%). Mp 200-203 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 10.65 (s, 1H), 8.19 (s, 1H), 7.94 (s, 1H), 7.93 (dt, J = 7.8, 1.2 Hz, 1H), 7.87 (dt, J = 7.8, 1.2 Hz, 1H), 7.54 (t, J = 7.8 Hz, 1H), 7.39 (d, J = 8.4 Hz, 2H), 7.04 (d, J = 8.4 Hz, 2H), 3.88 (s, 3H). 166.1, 144.4, 136.2, 136.2, 131.8 (2C), 130.2, 130.2, 129.2, 128.6, 126.1, 114.1 (2C), 109.9, 52.3. IR (neat) ν_{max}: 3304 (N-H), 2948 (C-H), 1712 (C=O), 1645 (C=O), 752 (C-Br). UPLC-MS (80% Solvent B) t_R 1.484 min, (ESI+) *m/z*: 333 ($C_{15}H_{13}{}^{79}BrN_2O_2$) [M+H, 100%], *m/z*: 335 ($C_{15}H_{13}{}^{81}BrN_2O_2$) [M+H, 100%]; (ESI-) *m/z*: 331 ($C_{15}H_{13}{}^{79}BrN_2O_2$) [M-H, 100%], *m/z*: 333 ($C_{15}H_{13}{}^{81}BrN_2O_2$) [M-H, 100%].

(*E*)-methyl 3-((2-(3-bromophenyl)hydrazono)methyl)benzoate (71)

Methyl-3-formylbenzoate (100 mg, 0.61 mmol, 1.0 eq.) and 3-bromophenylhydrazine hydrochloride (144 mg, 0.67 mmol, 1.1 eq.) were combined with methanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford

the desired product as a creamy yellow solid (125 mg, 53%). Mp 150-152 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.67 (s, 1H), 8.19 (s, 1H), 7.96-7.95 (m, 2H), 7.88 (d, J = 7.7 Hz, 1H), 7.55 (t, J = 7.7 Hz, 1H), 7.25 (s, 1H), 7.18 (t, J = 8.0 Hz, 1H), 7.04 (d, J = 8.0 Hz, 1H), 6.92 (d, J = 8.0 Hz, 1H), 3.88 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.1, 146.7, 136.9, 136.1, 131.2, 130.3, 130.2, 129.3, 128.7, 126.3, 122.5, 121.4, 114.2, 111.2, 52.3. IR (neat) ν_{max}: 3305 (N-H), 2952 (C-H), 1708 (C=O), 678 (C-Br). UPLC-MS (80% Solvent B) t_R 1.330 min, (ESI+) *m/z*: 331 ($C_{15}H_{14}{}^{79}BrN_2O_2$) [M+H, 75%], *m/z*: 333 ($C_{15}H_{14}{}^{81}BrN_2O_2$) [M+H, 90%]; (ESI-) *m/z*: 331 ($C_{15}H_{12}{}^{79}BrN_2O_2$) [M-H, 70%], *m/z*: 333 ($C_{15}H_{12}{}^{81}BrN_2O_2$) [M-H, 75%].

(*E*)-methyl 3-((2-(4-isopropylphenyl)hydrazono)methyl)benzoate (72)

Methyl-3-formylbenzoate (100 mg, 0.61 mmol, 1.0 eq.) and (4-isopropylphenyl)hydrazine hydrochloride (125 mg, 0.67 mmol, 1.1 eq.) were combined with methanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a golden crystalline solid (51 mg, 26%). Mp 127-129 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.39 (s, 1H), 8.17 (s, 1H), 7.89-7.89 (m, 2H), 7.84 (d, J = 7.7 Hz, 1H), 7.52 (t, J = 7.7 Hz, 1H), 7.11 (d, J = 8.5 Hz, 2H), 7.01 (d, J = 8.5 Hz, 2H), 3.88 (s, 3H), 2.80 (hept, J = 6.9 Hz, 1H), 1.17 (d, J = 6.9 Hz, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.2, 143.1, 139.1, 136.7, 134.5, 130.1, 129.9, 129.2, 128.1, 126.9 (2C), 125.8, 112.1 (2C), 52.3, 32.7, 24.2 (2C). IR (neat) ν_{max}: 3300 (N-H), 2954 (C-H), 1695 (C=O), 1648. UPLC-MS (80% Solvent B) t_R 1.715 min, (ESI+) *m/z*: 297 ($C_{18}H_{20}N_2O_2$) [M-H, 100%]; (ESI-) *m/z*: 295 ($C_{18}H_{18}N_2O_2$) [M-H, 100%].

(*E*)-methyl 3-((2-(4-chlorophenyl)hydrazono)methyl)benzoate (73)

4-Chlorophenylhydrazine hydrochloride (147 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (33 mg, 0.8 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. Methyl-3-formylbenzoate (133 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (185 mg, 79%). Mp 199-201 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.64 (s, 1H), 8.20 (t, J = 1.8 Hz, 1H), 7.94 (s, 1H), 7.93 (dd, J = 7.8, 1.2 Hz, 1H), 7.87 (dd, J = 7.8, 1.2 Hz, 1H), 7.54 (t, J = 7.8 Hz, 1H), 7.27 (d, J = 7.2 Hz, 2H), 7.09 (d, J = 7.2 Hz, 2H), 3.88 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.1, 144.0, 136.3, 136.1, 130.2, 130.2, 129.2, 129.0, 128.5, 126.1, 122.3, 113.6, 52.3. IR (neat) ν_{max}: 3307 (N-H), 2948 (C-H), 1712 (C=O). UPLC-MS (80% Solvent B) t_R 1.366 min, (ESI+) *m/z*: 289 ($C_{15}H_{14}{}^{35}ClN_2O_2$) [M+H, 100%], *m/z*: 291 ($C_{15}H_{14}{}^{37}ClN_2O_2$) [M+H, 35%]; (ESI-) *m/z*: 287 ($C_{15}H_{12}{}^{35}ClN_2O_2$) [M-H, 100%], *m/z*: 289 ($C_{15}H_{12}{}^{37}ClN_2O_2$) [M-H, 35%].

(*E*)-methyl 3-((2-(2,4-dichlorophenyl)hydrazono)methyl)benzoate (74)

2,4-Dichlorophenylhydrazine hydrochloride (172 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (35 mg, 0.9 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. Methyl-3-formylbenzoate (131 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (110 mg, 43%). Mp 179-181 °C.

^{1}H NMR (600 MHz, DMSO-d_6) δ 10.20 (s, 1H), 8.36 (s, 1H), 8.19 (t, J = 1.8 Hz, 1H), 7.95 (dt, J = 7.8, 1.2 Hz, 1H), 7.92 (dt, J = 7.8, 1.2 Hz, 1H), 7.58-7.55 (m, 2H), 7.48 (d, J = 2.4 Hz, 1H), 7.34 (dd, J = 9.0, 2.4 Hz, 1H), 3.89 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.0, 140.4, 140.0, 135.9, 130.6, 130.2, 129.4, 129.1, 128.7, 128.2, 122.6, 116.9, 115.2, 52.3. IR (neat) ν_{max}: 3326 (N-H), 2959 (C-H), 1721 (C=O). UPLC-MS (80% Solvent B) t_R 2.371 min, (ESI+) *m/z*: 323 ($C_{15}H_{13}{}^{35}Cl_2N_2O_2$) [M+H, 100%], *m/z*: 325 ($C_{15}H_{13}{}^{35}Cl^{37}ClN_2O_2$) [M+H, 75%], *m/z*: 327 ($C_{15}H_{13}{}^{37}Cl_2N_2O_2$) [M+H, 10%]; (ESI-) *m/z*: 321 ($C_{15}H_{11}{}^{35}Cl_2N_2O_2$) [M-H, 100%], *m/z*: 323 ($C_{15}H_{11}{}^{35}Cl^{37}ClN_2O_2$) [M-H, 75%], *m/z*: 325 ($C_{15}H_{11}{}^{37}Cl_2N_2O_2$) [M-+H, 10%].

(*E*)-methyl 3-((2-(2,4-difluorophenyl)hydrazono)methyl)benzoate (75)

2,4-Difluorophenylhydrazine hydrochloride (145 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (33 mg, 0.8 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. Methyl-3-formylbenzoate (130 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (159 mg, 70%). Mp 186-188 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 10.38 (s, 1H), 8.17 (t, J = 1.8 Hz, 1H), 8.17 (s, 1H), 7.92 (dt, J = 7.8, 1.2 Hz, 1H), 7.89 (dt, J = 7.8, 1.2 Hz, 1H), 7.55 (t, J = 7.8 Hz, 1H), 7.50 (td, J = 9.6, 5.4 Hz, 1H), 7.25-7.21 (m, 1H), 7.05-7.01 (m, 1H), 3.88 (s, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.1, 154.9 (dd, $^{1}J_{CF}$ = 237.1, $^{3}J_{CF}$ = 10.6 Hz), 148.5 (dd, $^{1}J_{CF}$ = 243.1, $^{3}J_{CF}$ = 12.1 Hz), 138.2, 136.1, 130.3, 130.2 (dd, $^{3}J_{CF}$ = 10.6, $^{3}J_{CF}$ = 3.0 Hz), 130.2, 129.3, 128.7, 126.1, 114.3 (dd, $^{3}J_{CF}$ = 9.6, $^{3}J_{CF}$ = 4.5 Hz), 111.5 (dd, $^{2}J_{CF}$ = 22.7, $^{3}J_{CF}$ = 3.0 Hz), 103.9 (dd, $^{2}J_{CF}$ = 27.2, $^{2}J_{CF}$ = 22.7 Hz), 52.3. ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -121.53, -127.48. IR (neat) ν_{max}: 3323 (N-H), 2971 (C-H), 1714 (C=O), 751 (C-F). UPLC-MS (80% Solvent B) t_R 1.227 min, (ESI+) *m/z*: 291 ($C_{15}H_{13}F_2N_2O_2$) [M+H, 100%]; (ESI-) *m/z*: 289 ($C_{15}H_{11}F_2N_2O_2$) [M-H, 100%].

(*E*)-methyl 3-((2-(3-chloro-4-methylphenyl)hydrazono)methyl)benzoate (76)

3-Chloro-4-methylphenylhydrazine hydrochloride (153 mg, 0.8 mmol, 1.0 eq.) and sodium hydroxide (34 mg, 0.9 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the solution was stirred at ambient temperature for 20 min. Methyl-3-formylbenzoate (129 mg, 0.8 mmol, 1.0 eq.) was added and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold water (2 x 5 mL), cold ethanol (2 x 2 mL), and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (182 mg, 76%). Mp 176-178 °C. ^{1}H NMR (600 MHz, $CDCl_3$) δ 8.21 (s, 1H), 7.96 (d, J = 7.8 Hz, 1H), 7.91 (d, J = 7.8 Hz, 1H), 7.87 (s, 1H), 7.45 (t, J = 7.2 Hz, 1H), 7.19 (s, 1H), 7.10 (d, J = 8.4 Hz, 1H), 6.88 (d, J = 7.8 Hz, 1H), 3.95 (s, 3H), 2.30 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 143.5, 136.6, 135.7, 135.2, 131.5, 130.8, 130.2, 129.6, 128.9, 127.7, 127.5, 113.5, 111.4, 52.4, 19.3. IR (neat) ν_{max}: 3296 (N-H), 2952 (C-H), 2921 (C-H), 1704 (C=O). UPLC-MS (80% Solvent B) t_R 1.790 min, (ESI+) *m/z*: 303 ($C_{16}H_{14}{}^{35}ClN_2O_2$) [M+H, 100%], *m/z*: 305 ($C_{16}H_{14}{}^{37}ClN_2O_2$) [M+H, 35%]; (ESI-) *m/z*: 301 ($C_{16}H_{12}{}^{35}ClN_2O_2$) [M-H, 100%], *m/z*: 303 ($C_{16}H_{12}{}^{37}ClN_2O_2$) [M-H, 35%].

(*E*)-methyl 3-((2-(4-bromobenzoyl)hydrazono)methyl)benzoate (77)

Methyl-3-formyl benzoate (164 mg, 1.0 mmol, 1.1 eq.) and 4-bromobenzhydrazide (196 mg, 0.91 mmol, 1.0 eq.) were combined with ethanol (40 mL) in a 100 mL round-bottomed flask. A Teflon-coated stirrer bar was added, and the reaction was heated at 100 °C for 19 h. Upon completion, the

reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a fluffy white solid (230 mg, 70%). Mp 179-180 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 12.05 (s, 1H), 8.51 (s, 1H), 8.36 (s, 1H), 8.01 (d, J = 7.7 Hz, 1H), 7.97 (d, J = 7.7 Hz, 1H), 7.88 (d, J = 8.4 Hz, 2H), 7.77 (d, J = 8.4 Hz, 2H), 7.63 (t, J = 7.7 Hz, 1H), 3.90 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.9, 162.4, 146.9, 134.9, 132.3, 132.2, 131.6 (2C), 130.5, 130.3, 129.8 (2C), 129.5, 127.0, 125.7, 52.4. IR (neat) ν_{max}: 3205 (N-H, amine), 3063 (C-H), 1722 (C=O), 1645 (C=O), 750 (C-Br). UPLC-MS (50% Solvent B) t_R 2.133 min, (ESI+) *m/z*: 361 ($C_{16}H_{14}{}^{79}BrN_2O_3$) [M+H, 100%], *m/z*: 363 ($C_{16}H_{14}{}^{81}BrN_2O_3$) [M+H, 100%]; (ESI-) *m/z*: 359 ($C_{16}H_{12}{}^{79}BrN_2O_3$) [M-H, 100%], *m/z*: 361 ($C_{16}H_{12}{}^{81}BrN_2O_3$) [M-H, 100%].

(*E*)-methyl 3-((2-(3-bromobenzoyl)hydrazono)methyl)benzoate (78)

Methyl-3-formyl benzoate (100 mg, 0.61 mmol, 1.0 eq.) and 3-bromobenzhydrazide (144 mg, 0.67 mmol, 1.1 eq. were combined with methanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated (in a sand bath) at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (154 mg, 70%). Mp 146-147 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.07 (s, 1H), 8.50 (s, 1H), 8.36 (s, 1H), 8.10 (s, 1H), 8.02 (d, J = 7.7 Hz, 1H), 7.98 (d, J = 7.7 Hz, 1H), 7.93 (d, J = 7.9 Hz, 1H), 7.82 (d, J = 7.9 Hz, 1H), 7.63 (t, J = 7.7 Hz, 1H), 7.52 (t, J = 7.9 Hz, 1H), 3.90 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.9, 161.8, 147.2, 135.5, 134.8, 134.6, 132.2, 130.8, 130.5, 130.3, 130.2, 129.5, 127.1, 126.9, 121.8, 52.4. IR (neat) ν_{max}: 3300 (N-H, amine), 2961 (C-H), 1724 (C=O), 1640 (C=O), 751 (C-Br). UPLC-MS (80% Solvent B) t_R 0.708 min, (ESI-) *m/z*: 359 ($C_{16}H_{12}{}^{79}BrN_2O_3$) [M-H, 100%]; *m/z*: 361 ($C_{16}H_{12}{}^{81}BrN_2O_3$) [M-H, 100%].

(*E*)-methyl 3-((2-nicotinoylhydrazono)methyl)benzoate (79)

Methyl-3-formyl benzoate (180 mg, 1.1 mmol, 1.1 eq.) and pyridine-3-carbohydrazide (137 mg, 1.0 mmol, 1.0 eq.) were combined with methanol (40 mL) in a 100 mL round-bottomed flask. A Teflon-coated stirrer bar was added, and the reaction was heated at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a crystalline white solid (258 mg, 91%). Mp 165-166 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 12.16 (s, 1H), 9.08 (s, 1H), 8.78 (d, J = 4.0 Hz, 1H), 8.51 (s, 1H), 8.37 (s, 1H), 8.27 (d, J = 7.6 Hz, 1H), 8.02 (d, J = 7.7 Hz, 1H), 7.99 (d, J = 7.7 Hz, 1H), 7.63 (t, J = 7.7 Hz, 1H), 7.58 (d, J = 7.6, 4.0 Hz, 1H), 3.90 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.9, 161.9, 152.4, 148.6, 147.2, 135.6, 134.8, 132.2, 130.6, 130.3, 129.5, 129.1, 127.1, 123.7, 52.4. IR (neat) ν_{max}: 3179 (N-H, amine), 3025 (C-H), 1725 (C=O), 1652 (C=O). UPLC-MS (80% Solvent B) t_R 0.519 min, (ESI+) *m/z*: 284 ($C_{15}H_{14}N_3O_3$) [M+H, 100%]; (ESI-) *m/z*: 282 ($C_{15}H_{12}N_3O_3$) [M-H, 100%].

(*E*)-methyl 3-((2-(4-isopropylbenzoyl)hydrazono)methyl)benzoate (80)

Methyl-3-formylbenzoate (82 mg, 0.5 mmol, 1.0 eq.) and (4-isopropyl)benzhydrazide (89 mg, 0.5 mmol, 1.0 eq.) were combined with ethanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (115 mg, 74%). Mp 189-191 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 11.92 (s, 1H), 8.51 (s, 1H), 8.36 (s, 1H), 8.00 (d, J = 7.7 Hz, 1H), 7.96 (d, J = 7.7 Hz, 1H), 7.86 (d, J = 8.0 Hz, 2H), 7.62 (t, J = 7.7 Hz, 1H), 7.41 (d, J = 8.0 Hz, 2H), 3.90 (s, 3H), 2.97 (sept, J = 6.9 Hz, 1H), 1.24 (d, J = 6.9 Hz, 6H). ^{13}C

NMR (151 MHz, DMSO-d_6) δ 165.9, 163.2, 152.6, 146.3, 135.1, 132.1, 130.9, 130.32, 130.25, 129.5 (2C), 127.8, 126.9, 126.5 (2C), 52.4, 33.5, 23.6 (2C). IR (neat) ν_{max}: 2964 (N-H), 2880 (C-H), 1723 (C=O), 1648 (C=O). UPLC-MS (80% Solvent B) t_R 0.789 min, (ESI-) *m/z:* 323 ($C_{19}H_{19}N_2O_3$) [M-H, 100%].

(*E*)-methyl 3-((2-(1*H*-pyrrole-2-carbonyl)hydrazono)methyl)benzoate (81)

Methyl-3-formylbenzoate (82 mg, 0.5 mmol, 1.0 eq.) and 1*H*-pyrrole-2-carbohydrazide (63 mg, 0.5 mmol, 1.0 eq.) were combined with methanol (4 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 100 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold methanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (62 mg, 46%). Mp 198-200 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 11.75 (s, 1H), 11.57 (s, 1H), 8.41 (s, 1H), 8.32 (s, 1H), 8.00-7.97 (m, 1H), 7.94 (d, *J* = 7.4 Hz, 1H), 7.62 (t, *J* = 7.7 Hz, 1H), 6.99 (s, 1H), 6.19 (s, 1H), 3.90 (s, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.9 (2C), 135.2, 130.2 (2C), 130.0 (2C), 129.4 (2C), 123.0 (2C), 109.1 (2C), 52.4. IR (neat) ν_{max}: 3295 (C-H), 3259 (C-H), 2952 (N-H), 1710 (C=O), 1626 (C=O). UPLC-MS (80% Solvent B) t_R 0.562 min, (ESI+) *m/z*: 272 ($C_{14}H_{14}N_3O_3$) [M+H, 85%], (ESI-) *m/z*: 270 ($C_{14}H_{12}N_3O_3$) [M-H, 100%], *m/z*: 306 ($C_{14}H_{12}N_3O_3Cl$) [M-H+Cl, 100%].

(*E*)-ethyl 3-((2-(4-isopropylphenyl)hydrazono)methyl)benzoate (82)

3-Formylbenzoic acid (985 mg, 6.57 mmol, 1.0 eq.), (4-isopropylphenyl)hydrazine hydrochloride (1351 mg, 7.23 mmol, 1.1 eq.) and ethanol (15 mL) were combined in a 10-20 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 80 °C for 4 h. Upon completion, the crude mixture was dried *in vacuo,* loaded onto silica and purified by column chromatography (0-10% MeOH in DCM + 1% acetic acid) to afford the desired product as an orange solid (688 mg, 35%). Mp 128-130 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 10.39 (s, 1H), 8.17 (s, 1H), 7.87 (dd, *J* = 22.3, 6.9 Hz, 3H), 7.52 (t, *J* = 7.7 Hz, 1H), 7.06 (dd, *J* = 39.1, 8.5 Hz, 4H), 4.34 (q, *J* = 6.9 Hz, 2H), 2.79 (dt, *J* = 13.7, 6.9 Hz, 1H), 1.34 (t, *J* = 6.9 Hz, 3H), 1.17 (d, *J* = 6.9 Hz, 6H). ^{13}C NMR (101 MHz, DMSO-d_6 δ 165.7, 143.1, 139.1, 136.6, 134.6, 130.4, 129.8, 129.1, 128.1, 126.9 (2C), 125.8, 112.1 (2C), 60.9, 32.7, 24.2 (2C), 14.2. IR (neat) ν_{max}: 3297 (C-H), 2958 (N-H), 1699 (C=O), 1568 (C-C). UPLC-MS (80% Solvent B) t_R 2.436 min, (ESI+) *m/z*: 310 ($C_{19}H_{22}N_2O_2$) [M, 100%]; (ESI-) *m/z*: 308 ($C_{19}H_{20}N_2O_2$) [M-2H, 100%], *m/z*: 344 ($C_{19}H_{20}N_2O_2Cl$) [M-2H+Cl, 100%].

(*E*)-ethyl 3-((2-(4-chlorophenyl)hydrazono)methyl)benzoate (83)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.), 4-chlorophenylhydrazine hydrochloride (118 mg, 0.66 mmol, 1.1 eq.) and ethanol (3 mL) were combined in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (47 mg, 26%). Mp 167-169 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 10.62 (s, 1H), 8.19 (s, 1H), 7.93 (d, *J* = 5.6 Hz, 2H), 7.89-7.85 (m, 1H), 7.54 (t, *J* = 7.7 Hz, 1H), 7.30-7.24 (m, 2H), 7.12-7.06 (m, 2H), 4.35 (q, *J* = 7.1 Hz, 2H), 1.35 (t, *J* = 7.1 Hz, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.6, 144.0, 136.2, 136.2, 130.5, 130.1, 129.2 (2C), 129.0, 128.5, 126.1, 122.3, 113.56 (2C), 60.9, 14.2. IR (neat) ν_{max}: 3293 (C-H), 2995 (N-H), 1694 (C=O), 1530 (C-C), 753 (C-Cl). UPLC-MS (80% Solvent B) t_R 1.727 min, (ESI-) *m/z*: 300 ($C_{16}H_{13}{}^{35}ClN_2O_2$) [M-2H, 100%], *m/z*: 302 ($C_{16}H_{13}{}^{37}ClN_2O_2$) [M-2H, 35%].

(*E*)-ethyl 3-((2-(4-bromophenyl)hydrazono)methyl)benzoate (84)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.), 4-bromophenylhydrazine hydrochloride (134 mg, 0.66 mmol, 1.1 eq.) and ethanol (3 mL) were combined in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 1 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 1 mL) and cold diethyl ether (2 x 1 mL) to afford the desired product as a white solid (73 mg, 26%). Mp 170-172 °C. ^{1}H NMR (400 MHz, DMSO-d_6) δ 10.63 (s, 1H), 8.19 (s, 1H), 7.93 (d, J = 6.3 Hz, 2H), 7.88 (dt, J = 7.8, 1.3 Hz, 1H), 7.54 (t, J = 7.7 Hz, 1H), 7.45-7.33 (m, 2H), 7.09-7.01 (m, 2H), 4.35 (q, J = 7.1 Hz, 2H), 1.35 (t, J = 7.1 Hz, 3H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 165.6, 144.4, 136.3, 136.2, 131.8 (2C), 130.4, 130.1, 129.2, 128.5, 126.1, 114.1 (2C), 109.9, 60.9, 14.2. IR (neat) ν_{max}: 3288 (N-H), 1695 (C=O), 1529 (C-C), 753 (C-Br). UPLC-MS (80% Solvent B) t_R 1.885 min, (ESI-) *m/z*: 346 ($C_{16}H_{14}{}^{79}BrN_2O_2$) [M-H, 100%], *m/z*: 348 ($C_{16}H_{14}{}^{81}BrN_2O_2$) [M-H, 100%].

(*E*)-3-((2-(1-phenyl-5-(trifluoromethyl)-1*H*-pyrazole-4-carbonyl)hydrazono)methyl)benzoic acid (S1)

3-Formylbenzoic acid (100 mg, 0.7 mmol, 1.0 eq.) and 1-phenyl-5-(trifluoromethyl)-1*H*-pyrazole-4-carbohydrazide (183 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (230 mg, 85%). Mp 270-272 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.14 (bs, 1H), 12.13 (s, 1H), 8.40 (s, 1H), 8.34 (s, 1H), 8.29 (s, 1H), 8.01 (d, J = 7.8 Hz, 1H), 7.96 (d, J = 7.8 Hz, 1H), 7.64-7.54 (m, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 163.0, 147.0, 139.8, 138.7, 134.5, 131.6, 131.5, 130.8, 130.2, 129.8 (q, $^{2}J_{CF}$ = 39.3 Hz), 129.5, 129.3, 127.5, 126.0, 119.6, 119.3 (q, $^{1}J_{CF}$ = 271.8 Hz). ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -52.67. IR (neat) ν_{max}: 3035 (N-H), 3000 (O-H), 1684 (C=O), 1645 (C=O), 1136 (C-F). UPLC-MS (80% Solvent B) t_R 0.556 min, (ESI+) *m/z*: 403 ($C_{19}H_{14}F_3N_4O_3$) [M+H, 100%]; (ESI-) *m/z*: 401 ($C_{19}H_{12}F_3N_4O_3$) [M-H, 100%].

* ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.14 (bs, 1H), 12.15 (s, 1H), 8.22 (s, 1H), 8.19 (s, 1H), 8.18 (s, 1H), 7.96 (d, J = 7.8 Hz, 1H), 7.81 (d, J = 7.8 Hz, 1H), 7.64-7.54 (m, 6H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 156.8, 143.4, 140.4, 138.6, 134.3, 131.7, 131.3, 130.5, 130.1, 129.8 (q, J = 39.3 Hz), 129.5, 129.2, 127.0, 126.1, 119.4 (q, J = 271.8 Hz), 118.9. ^{19}F NMR (376 MHz, DMSO-d_6, TFA) δ -53.43.

(*E*)-3-((2-(3-(2,5-dimethyl-1*H*-pyrrol-1-yl)thiophene-2-carbonyl)hydrazono)methyl)benzoic acid (S2)

3-Formylbenzoic acid (100 mg, 0.7 mmol, 1.0 eq.) and 3-(2,5-dimethyl-1*H*-pyrrol-1-yl)-2-thiophenecarbohydrazide (161 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a yellow solid (172 mg, 76%). Mp 220-223 °C. ^{1}H NMR (600 MHz, methanol-d_4) δ 8.25 (s, 1H), 8.08 (d, J = 7.8 Hz, 1H). 8.06 (d, J = 7.8 Hz, 1H), 7.86 (d, J = 5.4 Hz, 1H), 7.51 (t, J = 7.8 Hz, 1H), 7.41 (s, 1H), 7.15 (d, J = 4.8 Hz, 1H), 6.17 (s, 2H), 2.05 (s, 6H). ^{13}C NMR (151 MHz, methanol-d_4) δ 168.6, 157.8, 148.9, 137.4, 134.0, 134.0, 132.4, 133.0, 131.9, 131.7, 130.3, 129.6, 129.4, 129.0, 108.8, 12.5. IR (neat) ν_{max}: 3039 (N-H), 2937 (C-H), 2900 (O-H), 1682 (C=O), 1632 (C=O).

UPLC-MS (80% Solvent B) t_R 0.661 min, (ESI+) *m/z*: 368 ($C_{19}H_{17}N_3O_3S$) [M+H, 100%], (ESI-) *m/z*: 366 ($C_{19}H_{17}N_3O_3S$) [M-H, 100%].

(*E*)-3-((2-(furan-2-carbonyl)hydrazono)methyl)benzoic acid (S3)

3-Formylbenzoic acid (90 mg, 0.6 mmol, 1.0 eq.) and furan-2-carbohydrazide (83 mg, 0.66 mmol, 1.1 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and heated in a sand bath at 50 °C for 19 h. Upon completion, the reaction mixture was chilled at -20 °C for 3 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 5 mL) and cold diethyl ether (2 x 5 mL) to afford the desired product as a creamy-coloured solid (133 mg, 85%). Mp 265-267 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 11.96 (s, 1H), 8.50 (s, 1H), 8.30 (s, 1H), 7.99 (dt, *J* = 7.8, 1.2 Hz, 1H), 7.96 (s, 1H), 7.93 (d, *J* = 7.4 Hz, 1H), 7.59 (t, *J* = 7.8 Hz, 1H), 7.32 (s, 1H), 6.72 (s, 1H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 166.9, 154.3, 146.9, 146.5, 146.0, 134.7, 131.5, 131.4, 130.6, 129.3, 127.4, 115.2, 112.2. IR (neat) ν_{max}: 3085 (N-H), 3000 (O-H), 1695 (C=O), 1670 (C=O). UPLC-MS (50% Solvent B) t_R 0.651 min, (ESI+) *m/z*: 259 ($C_{13}H_{11}N_2O_4$) [M+H, 100%], (ESI-) *m/z*: 257 ($C_{13}H_9N_2O_4$) [M-H, 100%].

(*E*)-3-((2-(benzo[*b*]thiophene-2-carbonyl)hydrazono)methyl)benzoic acid (S4)

3-Formylbenzoic acid (101 mg, 0.7 mmol, 1.0 eq.) and benzo[*b*]thiophene-2-carbohydrazide (132 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (191 mg, 88%). Mp 277-280 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 12.15 (s, 1H), 8.45 (s, 1H), 8.41 (s, 1H), 8.24 (s, 1H), 8.14 (d, *J* = 7.8 Hz, 1H), 8.08-7.97 (m, 3H), 7.66 (t, *J* = 8.4 Hz, 1H), 7.52-7.48 (m, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 167.0, 158.4, 147.2, 140.4, 139.1, 138.2, 134.6, 131.8, 131.5, 130.8, 129.3, 127.6, 126.7, 126.0, 125.5, 125.2, 122.9. IR (neat) ν_{max}: 3273 (N-H), 2900 (O-H), 1684 (C=O), 1626 (C=O), 748 (C-S). UPLC-MS (80% Solvent B) t_R 0.580 min, (ESI+) *m/z*: 325 ($C_{17}H_{13}N_2O_3S$) [M+H, 100%], *m/z*: 347 ($C_{17}H_{12}N_2O_3SNa$) [M+Na, 100%], *m/z*: 363 ($C_{17}H_{12}N_2O_3SK$) [M+K, 50%], (ESI-) *m/z*: 323 ($C_{17}H_{11}N_2O_3S$) [M-H, 100%].

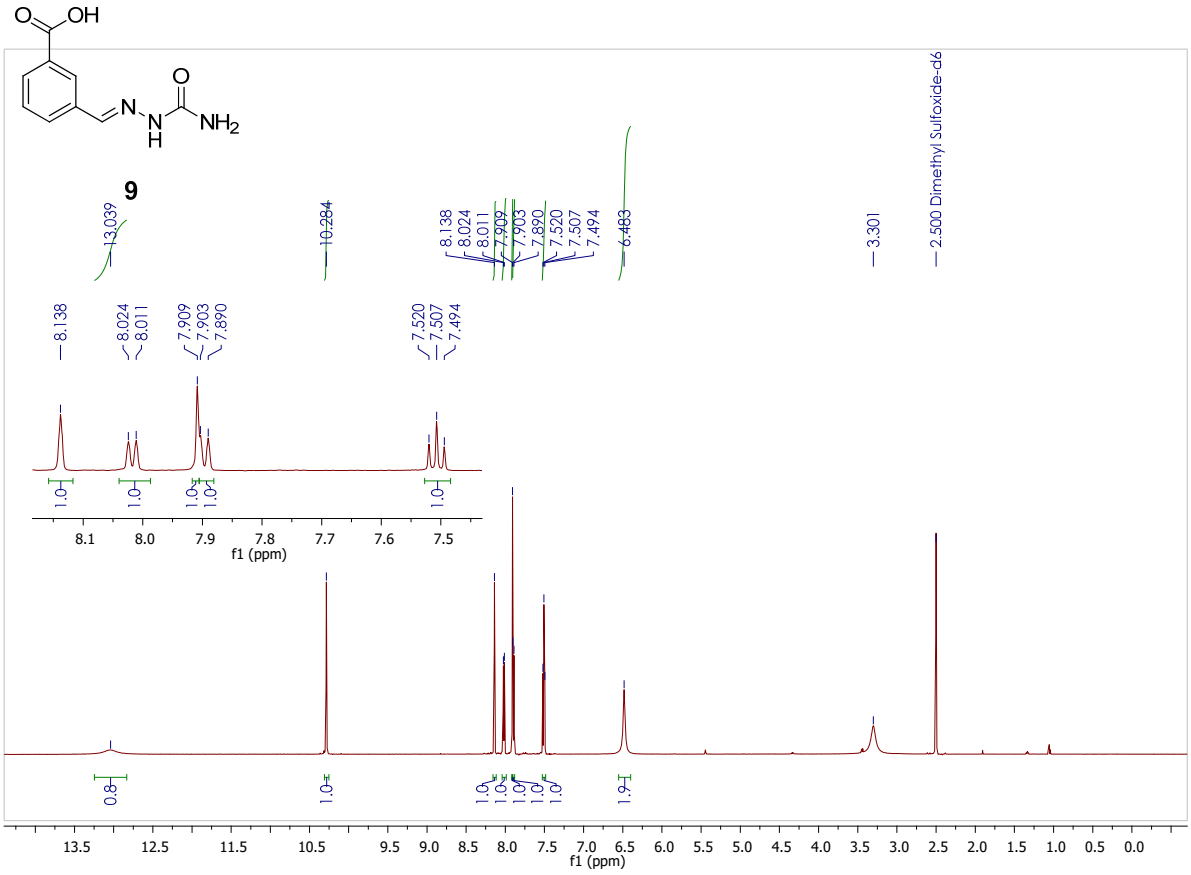
* ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.16 (bs, 1H), 12.27 (s, 1H), 8.53 (s, 1H), 8.35 (s, 1H), 8.28 (s, 1H), 8.08-7.97 (m, 4H), 7.62 (t, *J* = 7.8 Hz, 1H), 7.52-7.48 (m, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 161.8, 143.9, 143.0, 140.5, 137.4, 134.5, 133.3, 132.0, 131.9, 131.0, 130.7, 129.5, 128.6, 126.9, 125.7, 125.0, 122.5 .

(*E*)-3-((2-(2-(3-(pyrazin-2-yl)-1,2,4-oxadiazol-5-yl)acetyl)hydrazono)methyl)benzoic acid (S5)

3-Formylbenzoic acid (102 mg, 0.7 mmol, 1.0 eq.) and 2-(3-pyrazin-2-yl-1,2,4-oxasiazol-5-yl)ethanohydrazide (150 mg, 0.7 mmol, 1.0 eq.) were combined with ethanol (3 mL) in a 2-5 mL μwave vial. A Teflon-coated stirrer bar was added, and the vial was capped and irradiated at 120 °C for 20 min. Upon completion, the reaction mixture was chilled at -20 °C for 19 h and filtered under vacuum. The crude solid was washed with cold ethanol (2 x 2 mL) and cold diethyl ether (2 x 2 mL) to afford the desired product as a white solid (219 mg, 91%). Mp 245-248 °C. ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.04 (bs, 1H), 11.93 (s, 1H), 9.26 (d, *J* = 1.2 Hz, 1H), 8.89-8.85 (m, 2H), 8.19 (s, 1H), 8.10 (s, 1H), 7.95 (d, *J* = 7.8 Hz, 1H), 7.90 (d, *J* = 7.8 Hz, 1H), 7.53 (t, *J* = 7.8 Hz, 1H), 4.64 (s, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 176.2, 167.2, 166.9, 166.2, 147.2, 145.3, 143.8, 143.6, 141.5, 134.2, 131.7, 130.8, 130.6, 129.1, 127.6, 32.4. IR (neat) ν_{max}: 3274 (N-H), 3080 (C-H), 3000 (O-H), 1687 (C=O), 1677 (C=O). UPLC-MS (80% Solvent B) t_R 0.480 min, (ESI+) *m/z*: 353 ($C_{16}H_{12}N_6O_4$) [M+H, 35%], *m/z*: 375

($C_{16}H_{12}N_6O_4Na$) [M+Na, 100%], *m/z*: 391 ($C_{16}H_{12}N_6O_4K$) [M+K, 35%]; (ESI-) *m/z*: 351 ($C_{16}H_{11}N_6O_4$) [M-H, 100%].

* ^{1}H NMR (600 MHz, DMSO-d_6) δ 13.04 (bs, 1H), 12.04 (s, 1H), 9.27 (d, J = 1.2 Hz, 1H), 8.89-8.85 (m, 2H), 8.31 (s, 1H), 8.30 (s, 1H), 7.99 (d, J = 7.8 Hz, 1H), 7.95 (d, J = 7.8 Hz, 1H), 7.58 (t, J = 7.8 Hz, 1H), 4.28 (s, 2H). ^{13}C NMR (151 MHz, DMSO-d_6) δ 175.7, 166.9, 166.3, 161.3, 147.2, 146.8, 145.3, 143.8, 141.5, 134.4, 131.6, 131.4, 130.8, 129.2, 127.7, 33.3.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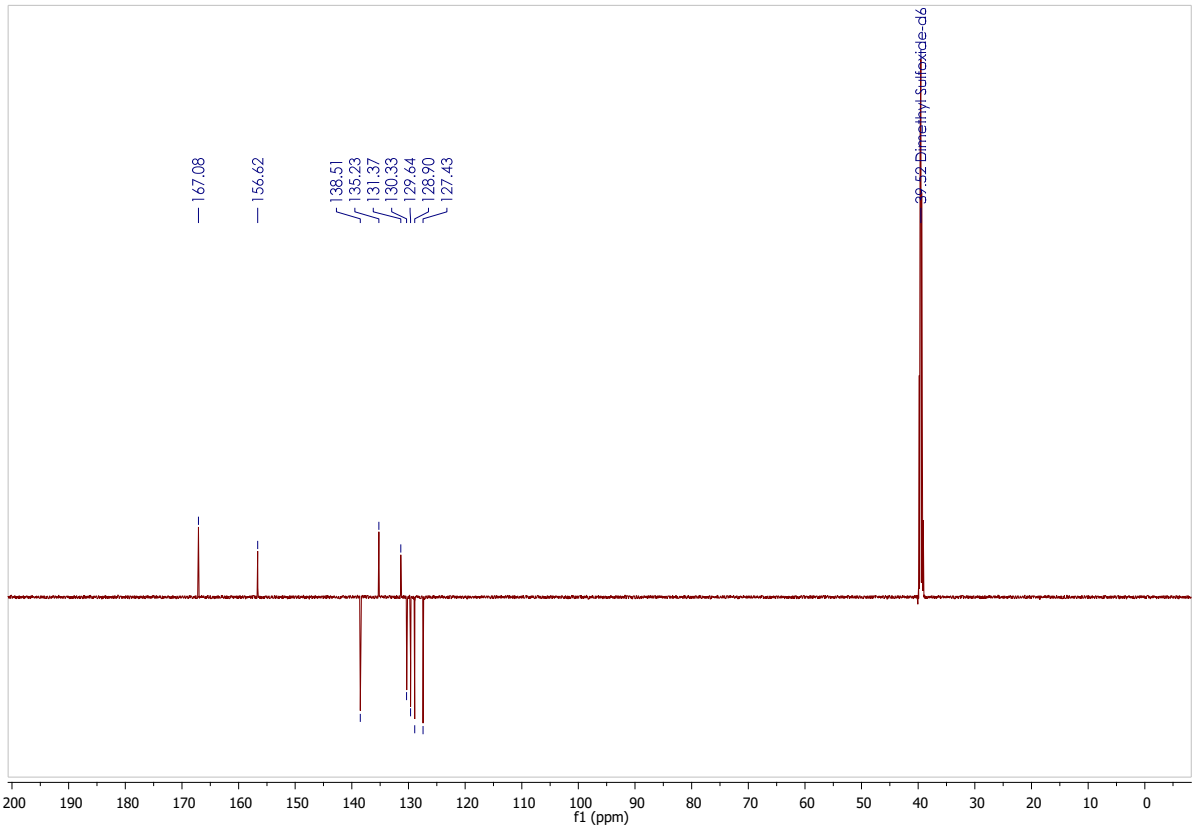
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LCMS Report

Agilent Technologies

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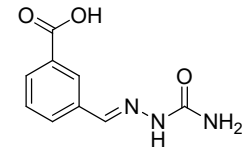

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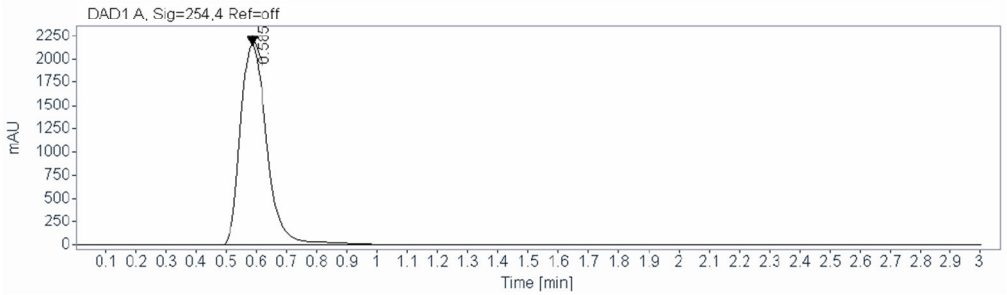

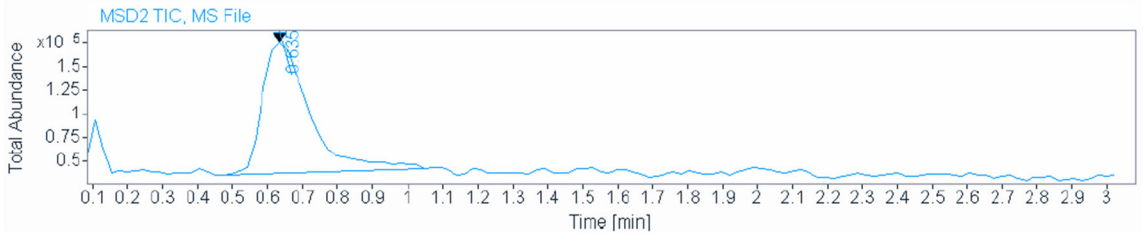

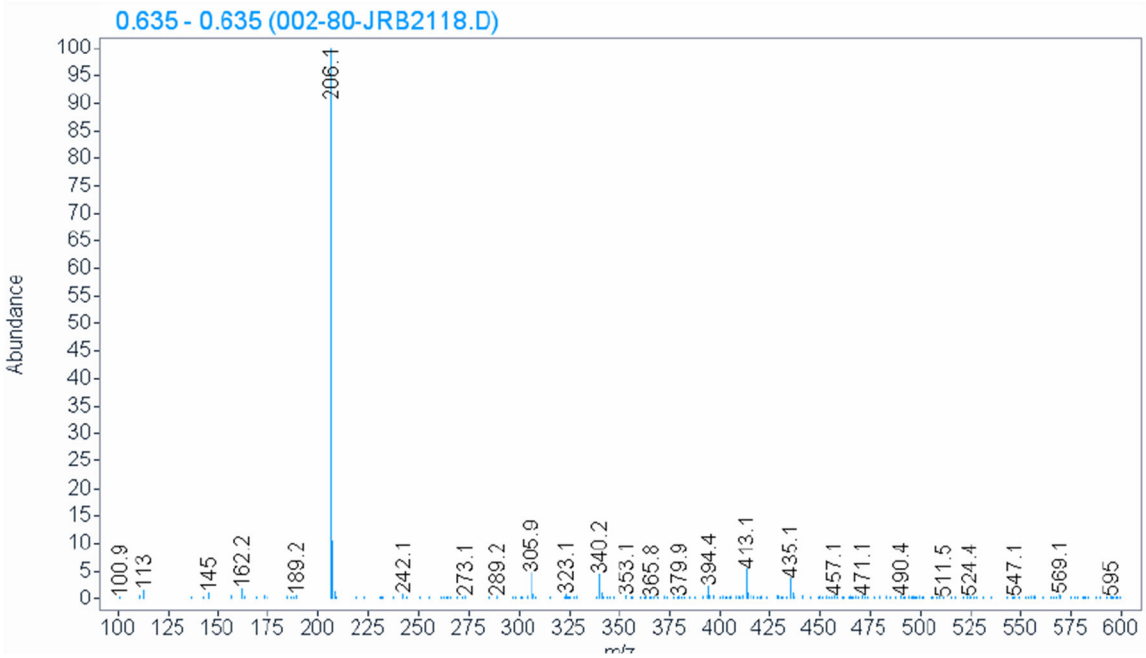

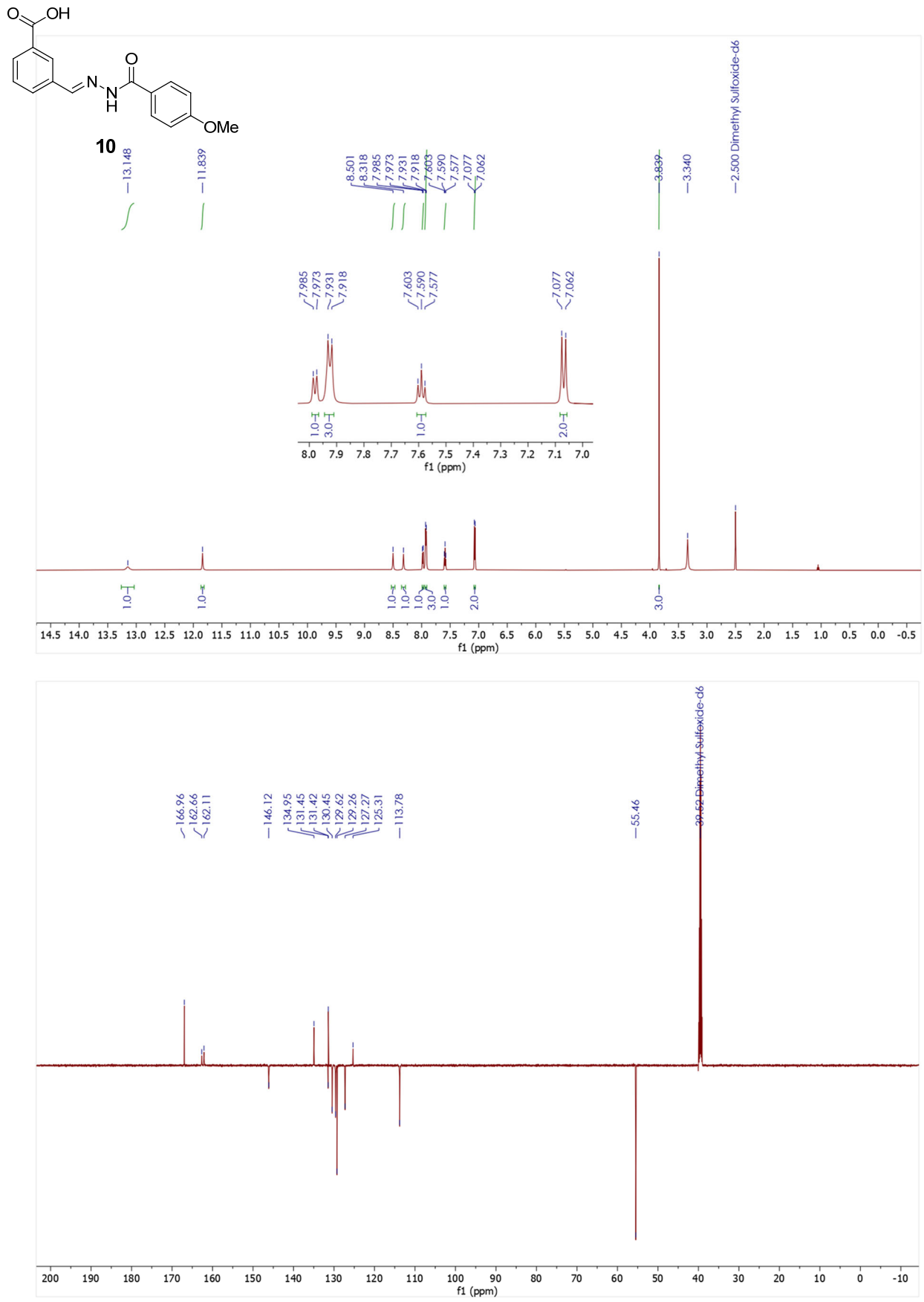
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LCMS Report

Agilent Technologies

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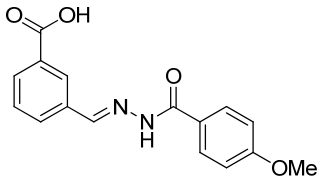
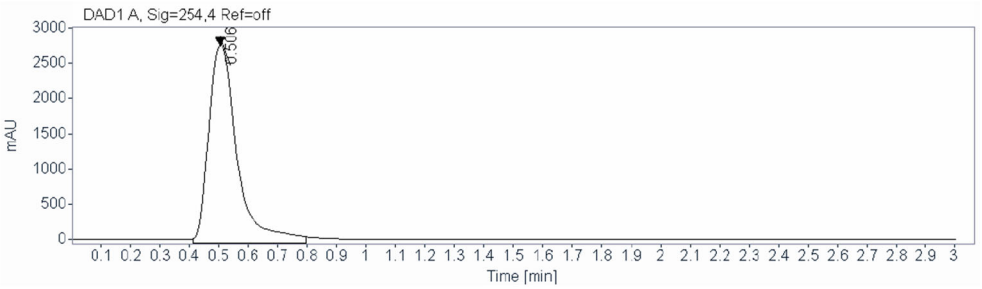
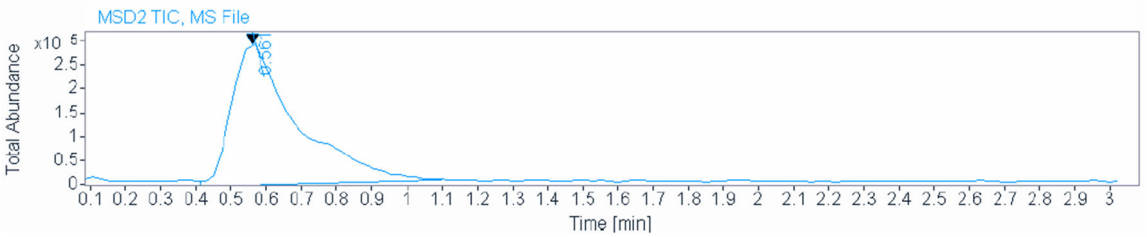
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

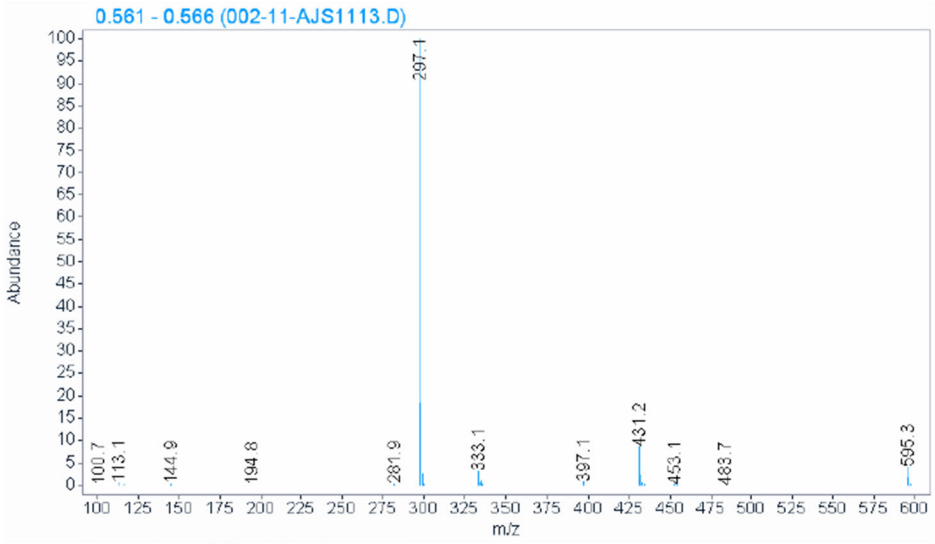


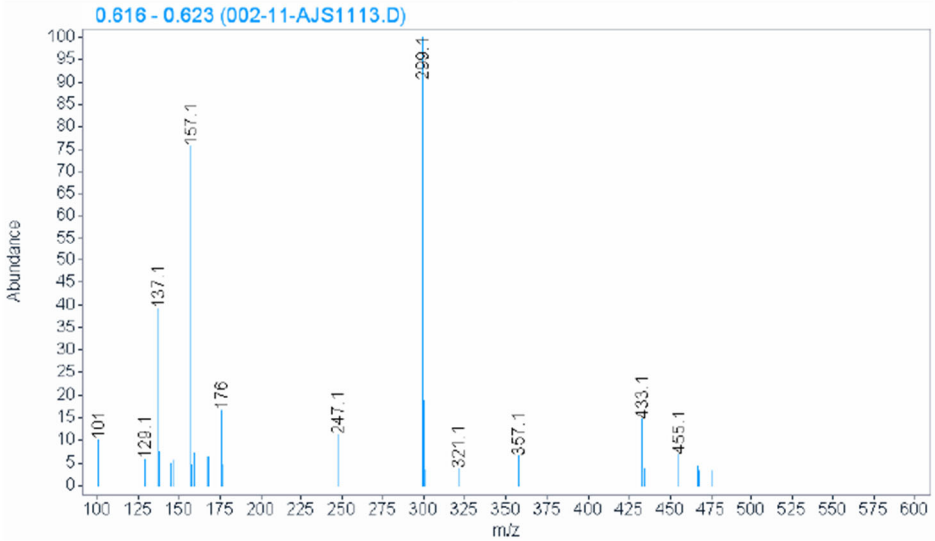
Molecular Weight: 298.293

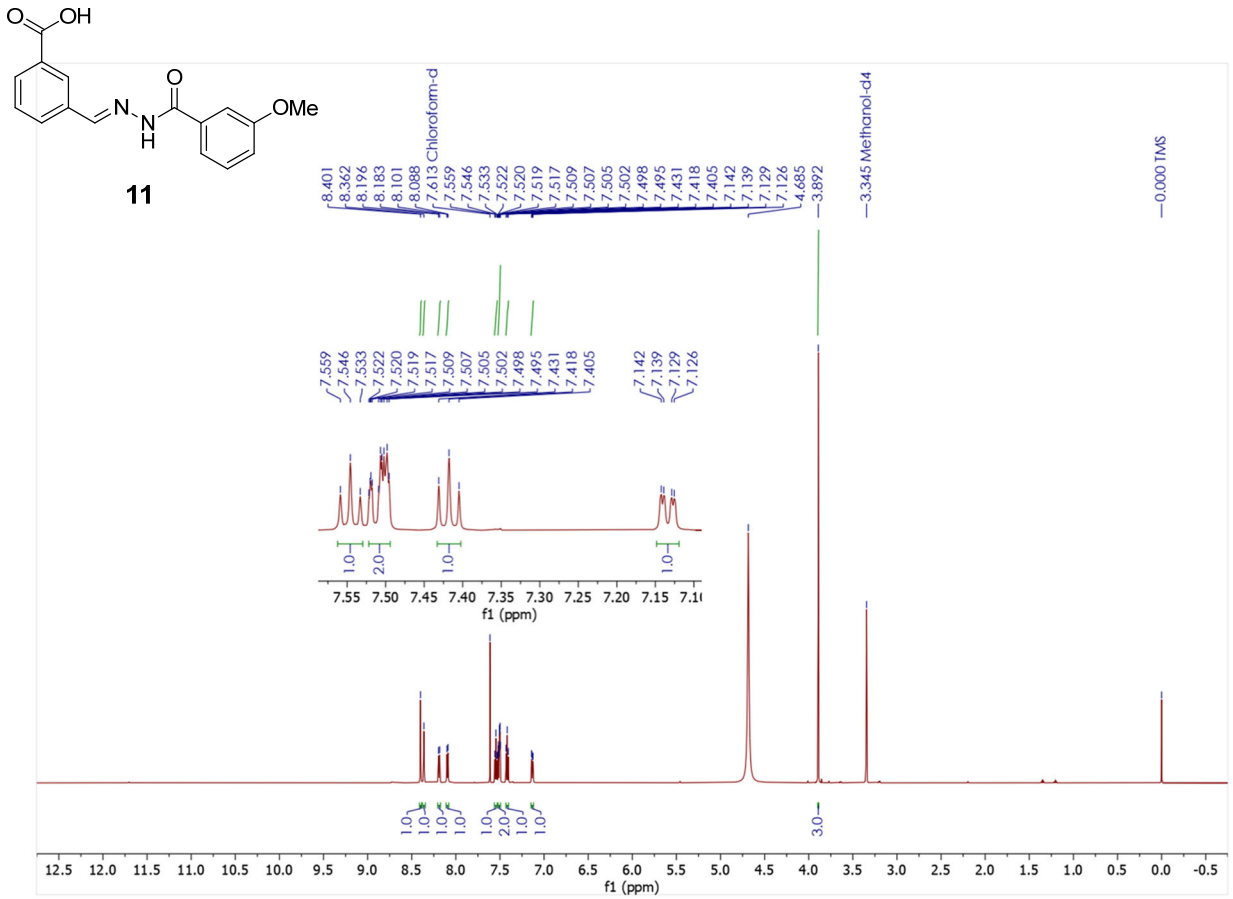
10

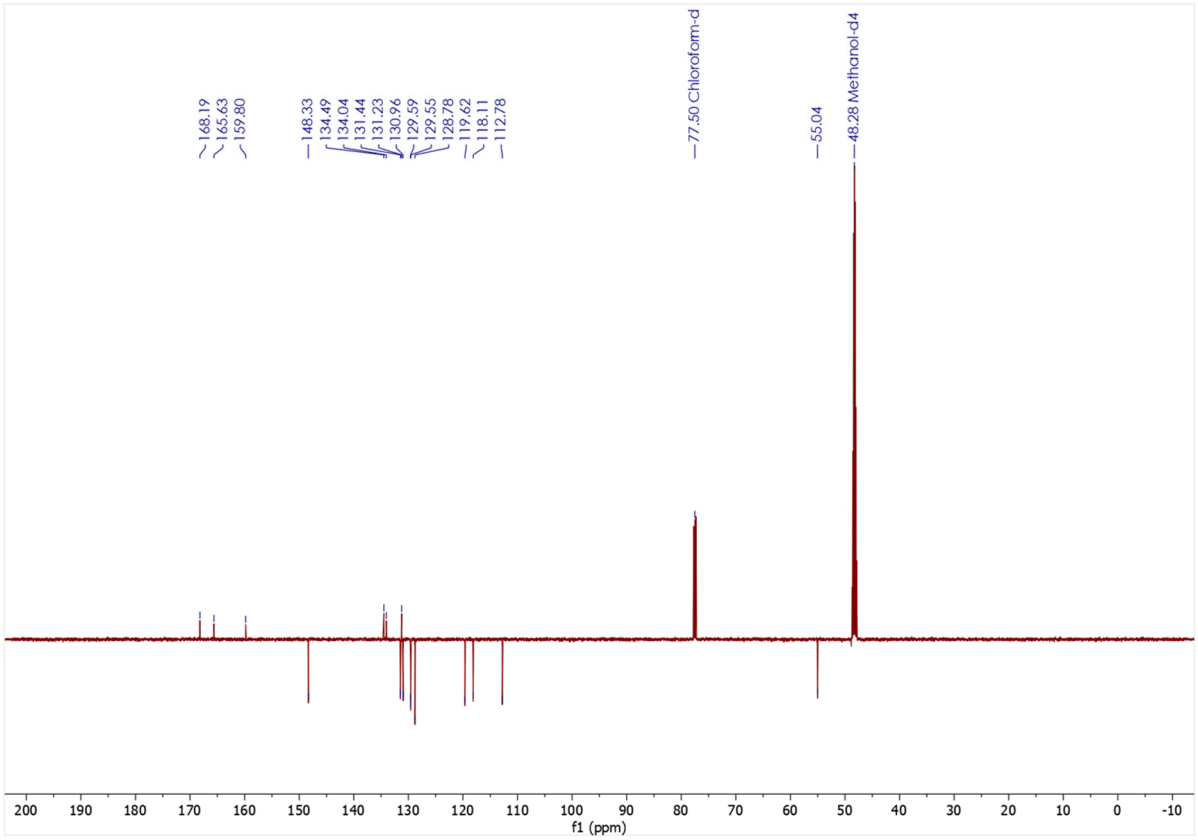








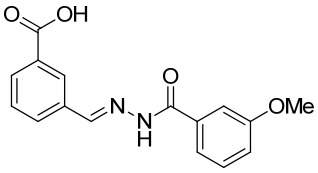

OH
O
N
H
O
OMe
11
8.401
8.362
8.196
8.183
8.101
8.088
7.613 Chloroform-d
7.559
7.546
7.533
7.522
7.520
7.519
7.517
7.509
7.507
7.505
7.502
7.498
7.495
7.431
7.418
7.405
7.142
7.139
7.129
7.126
4.685
3.892
3.345 Methanol-d4
0.000 TMS
1.0
2.0
1.0
1.0
3.0
f1 (ppm)


168.19
165.63
159.80
148.33
134.49
134.04
131.44
131.23
130.96
129.59
129.55
128.78
119.62
118.11
112.78
77.50 Chloroform-d
55.04
48.28 Methanol-d4
f1 (ppm)

LCMS Report

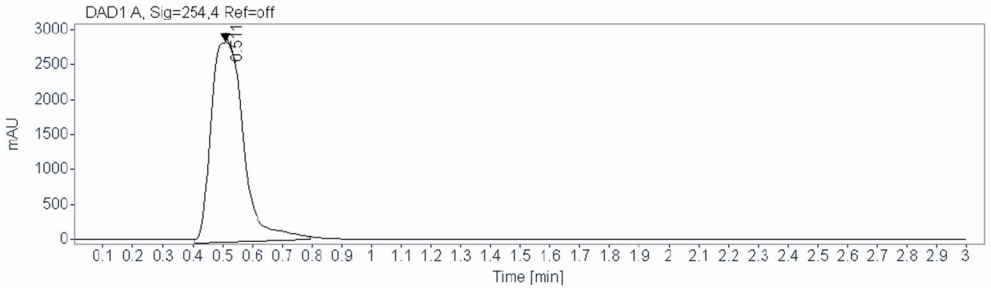
Agilent Technologies

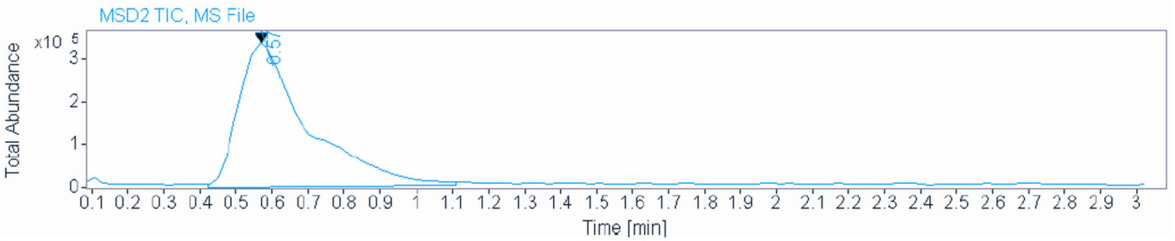
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\003-12-AJS1112.D		
Sample name:	AJS1112		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	12
Injection date:	7/25/2023 2:55:27 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

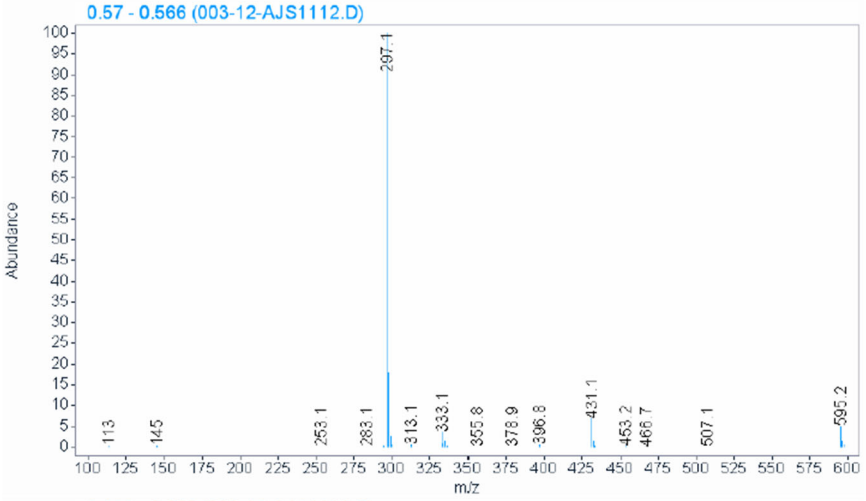


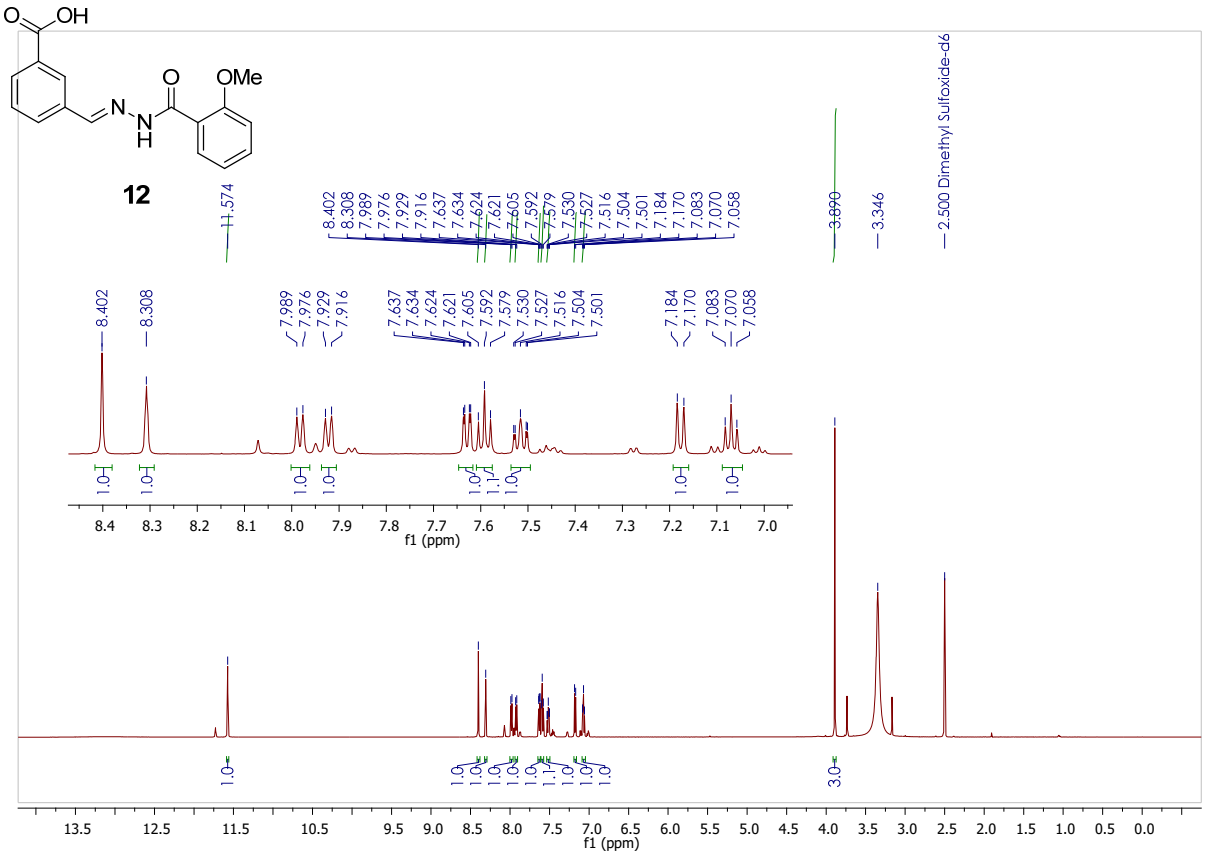
Molecular Weight: 298.293

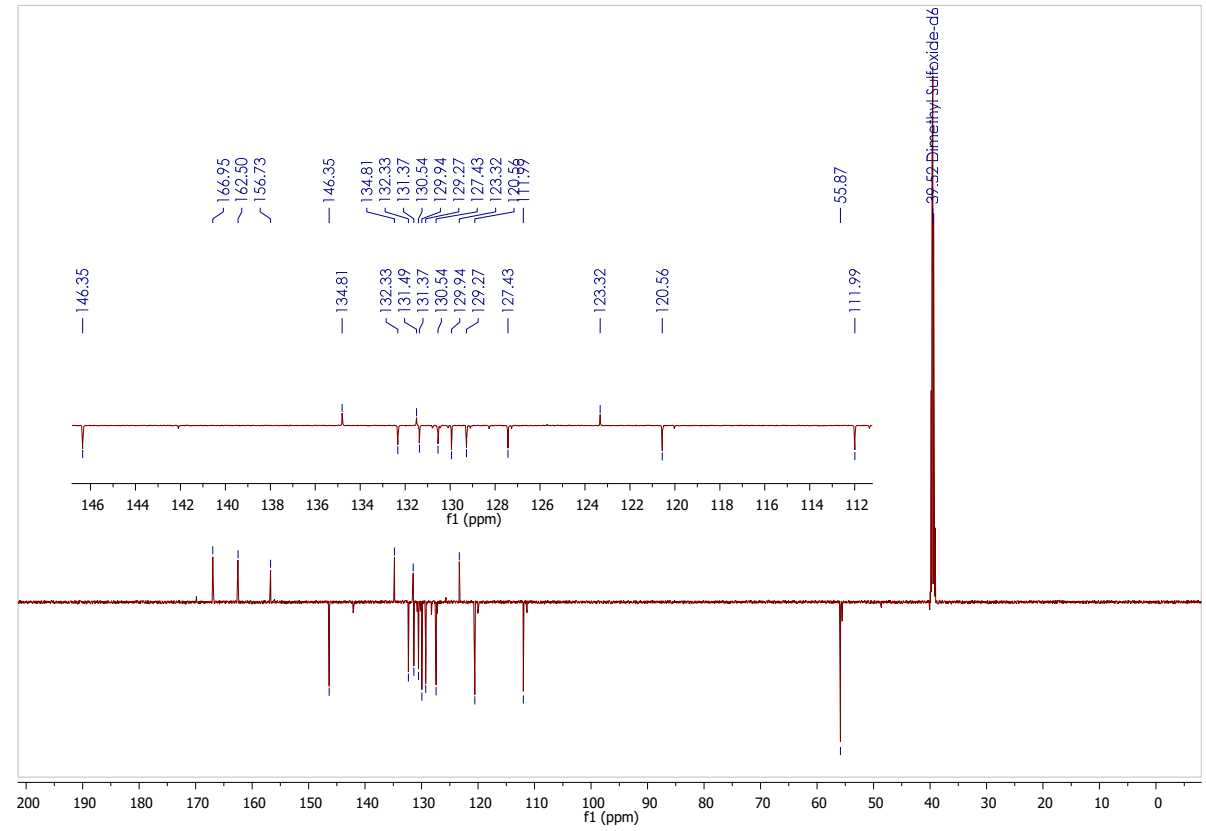
11







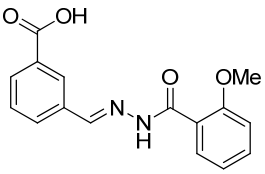

12
11.574
8.402
8.308
7.989
7.976
7.929
7.916
7.637
7.634
7.624
7.621
7.605
7.592
7.579
7.530
7.527
7.516
7.504
7.501
7.184
7.170
7.083
7.070
7.058
3.890
3.346
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.95
162.50
156.73
146.35
134.81
132.33
131.37
130.54
129.94
129.27
127.43
123.32
120.56
111.99
55.87
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

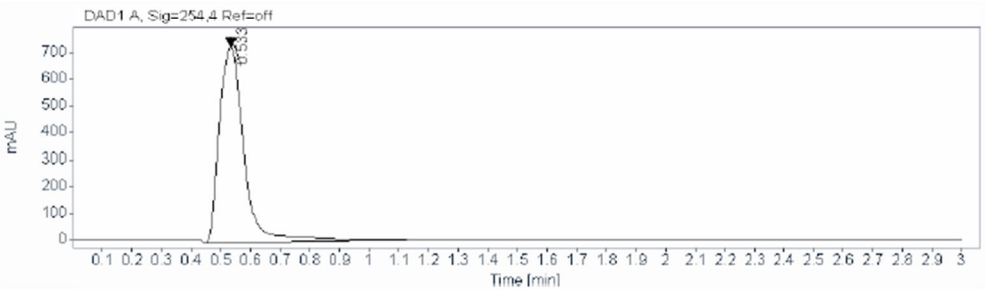
Agilent Technologies

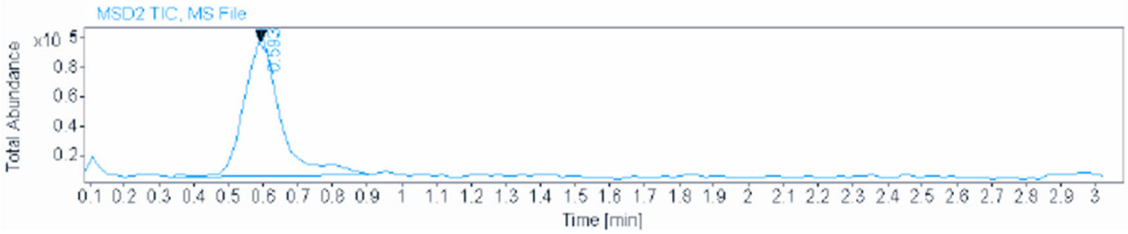
Data file:	D:\Chem32\1\Data\JRB\JRB4019 4022 4023B 4024 2023-07-24 14-54-21\004-78-JRB4023B.D		
Sample name:	JRB4023B		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	78
Injection date:	7/24/2023 3:10:43 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

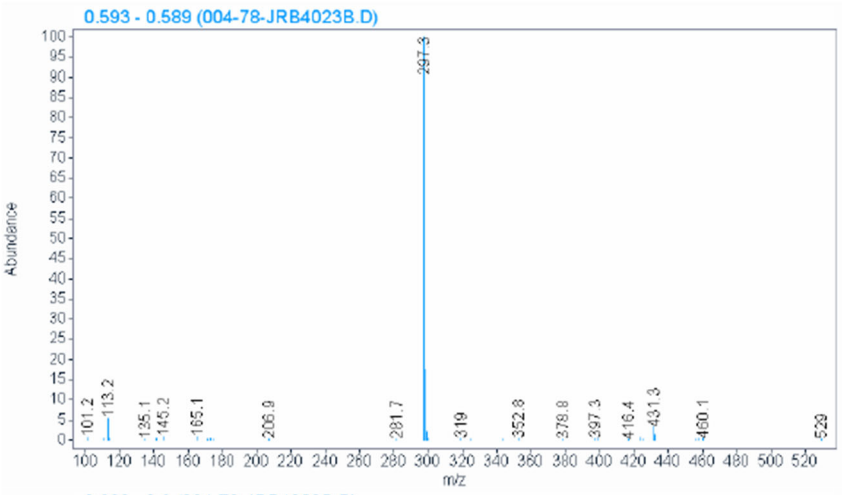


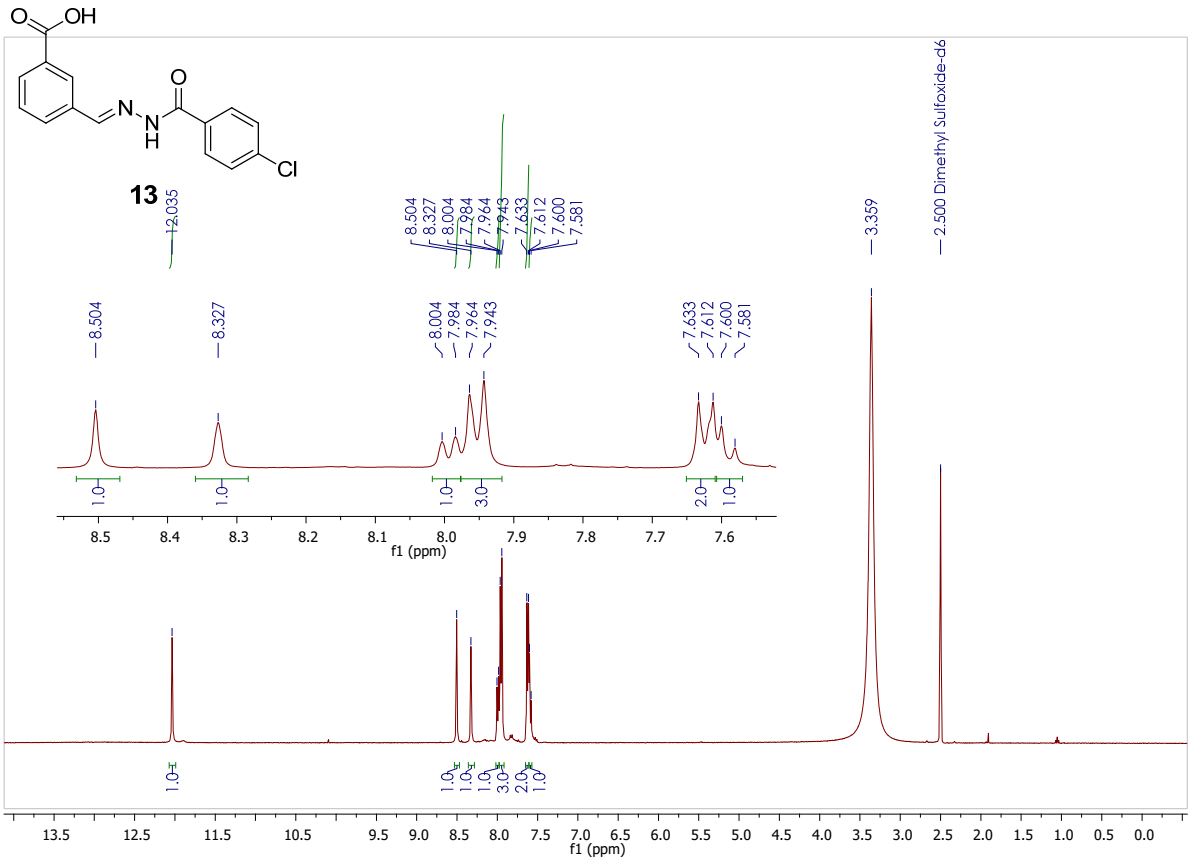
Molecular Weight: 298.293

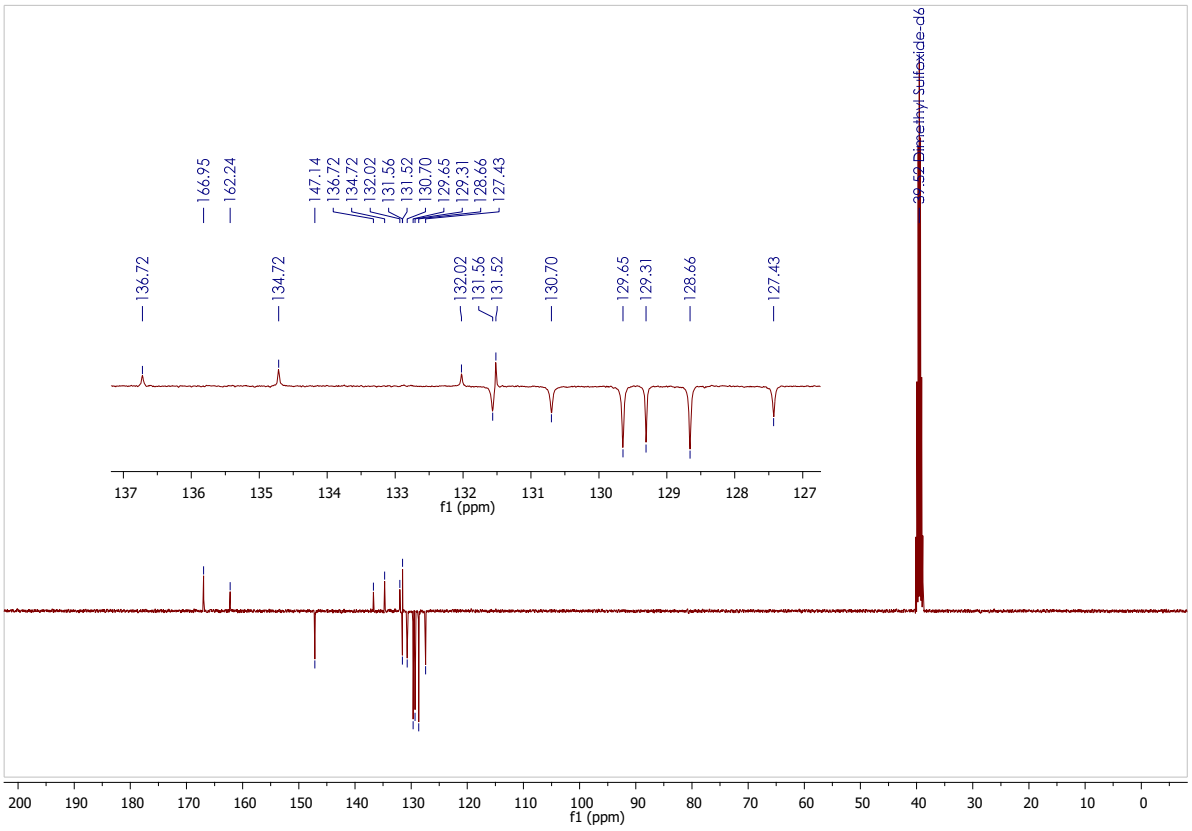
12







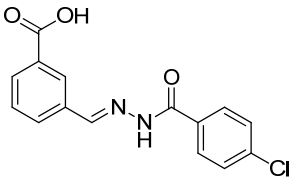

13
12.035
8.504
8.327
8.004
7.984
7.964
7.943
7.633
7.612
7.600
7.581
3.359
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.95
162.24
147.14
136.72
134.72
132.02
131.56
131.52
130.70
129.65
129.31
128.66
127.43
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

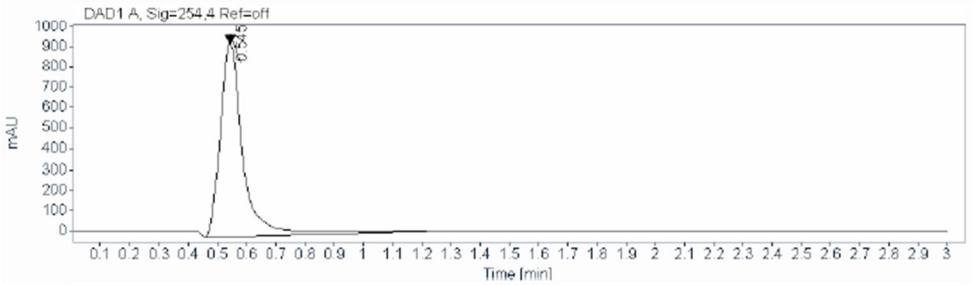
Agilent Technologies

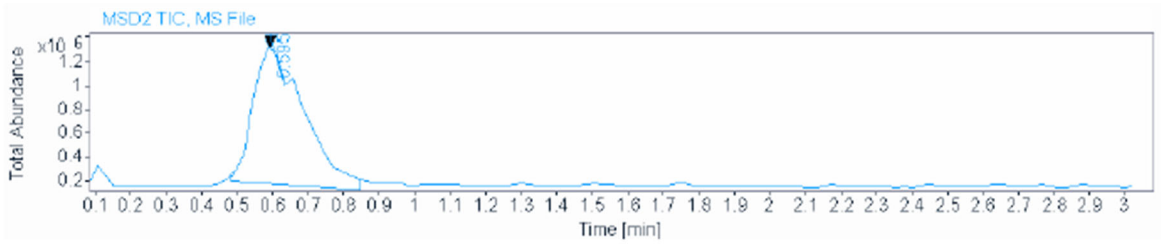
Data file:	D:\Chem32\1\Data\MH\MH4030-4036 2022-03-07 10-54-23\006-65-MH4034.D		
Sample name:	MH4034		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	65
Injection date:	3/7/2022 11:19:16 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

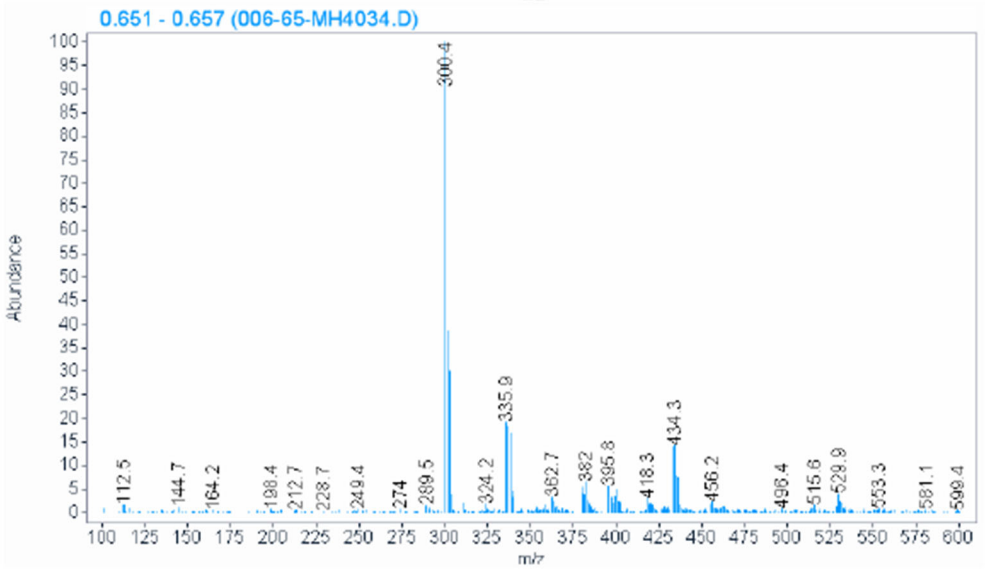


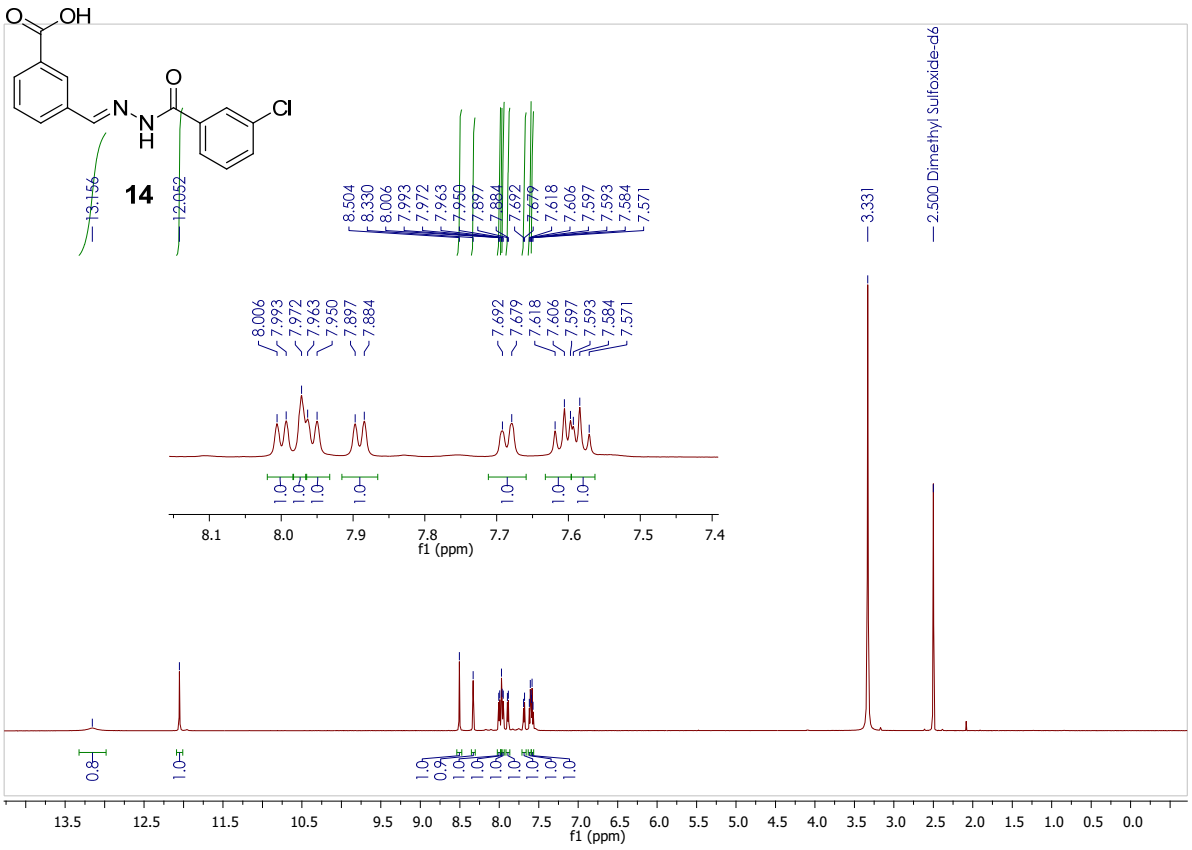
Molecular Weight: 302.712

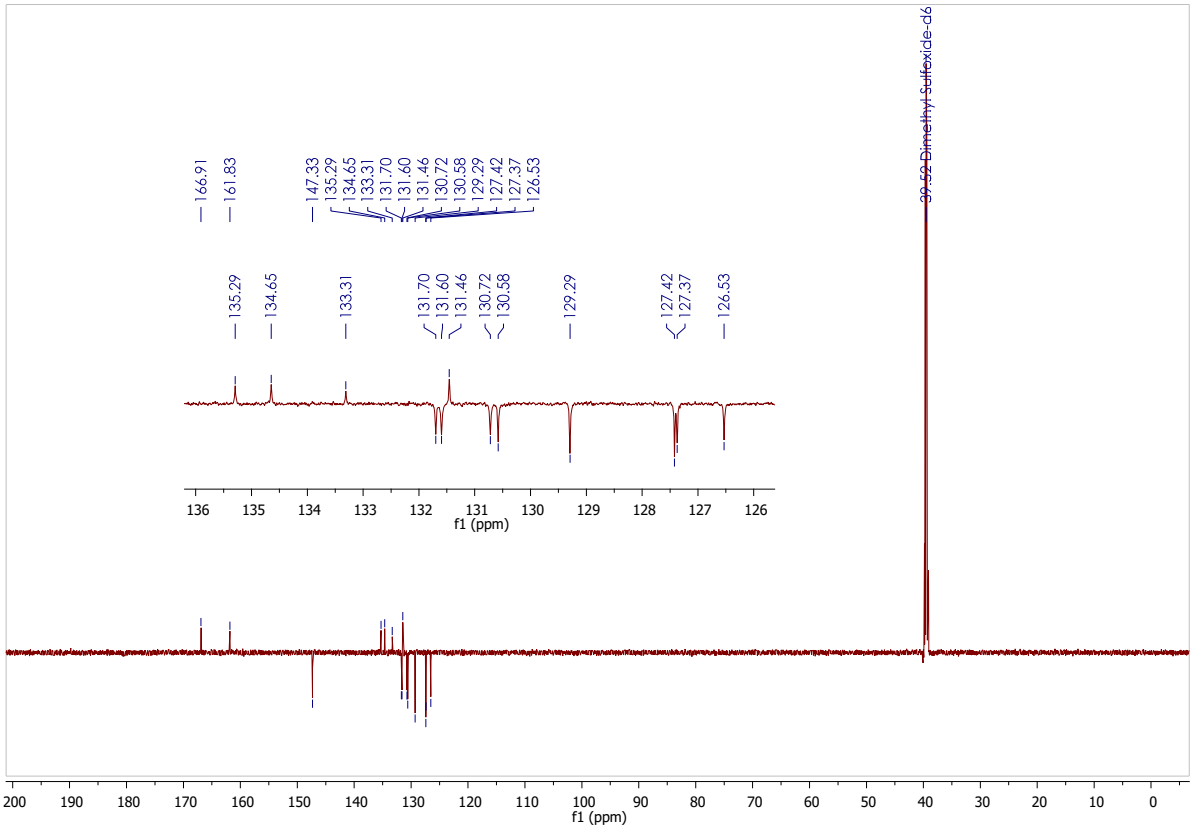
13







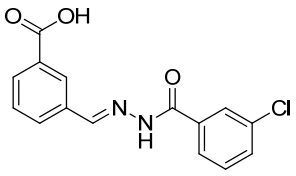

14
13.156
12.052
8.504
8.330
8.006
7.993
7.972
7.963
7.950
7.897
7.884
7.692
7.679
7.618
7.606
7.597
7.593
7.584
7.571
3.331
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.91
161.83
147.33
135.29
134.65
133.31
131.70
131.60
131.46
130.72
130.58
129.29
127.42
127.37
126.53
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

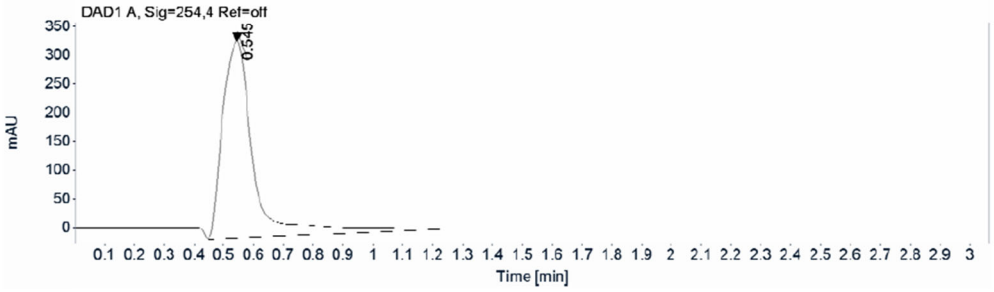
Agilent Technologies

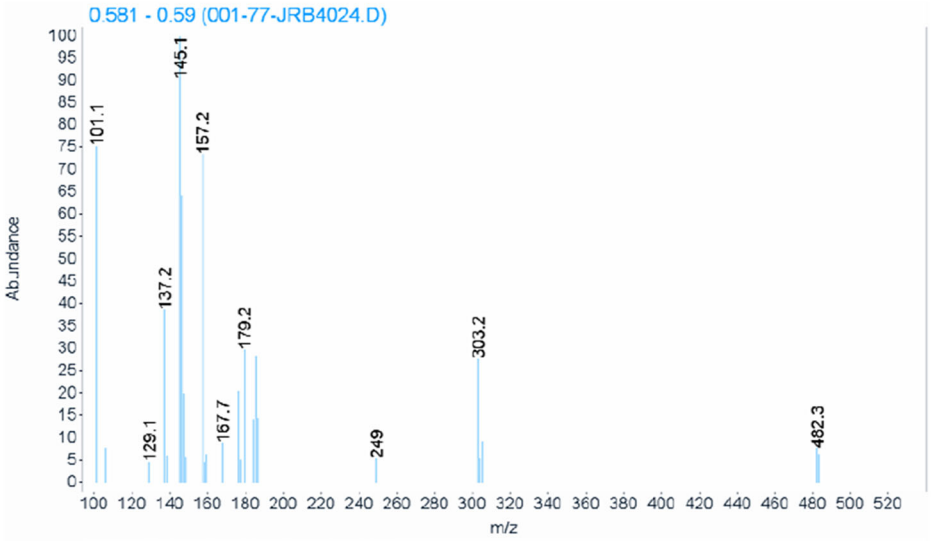
Data file:	D:\Chem32\1\Data\JRB\JRB4024 2023-07-24 16-11-49\001-77-JRB4024.D		
Sample name:	JRB4024		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	77
Injection date:	7/24/2023 4:13:42 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

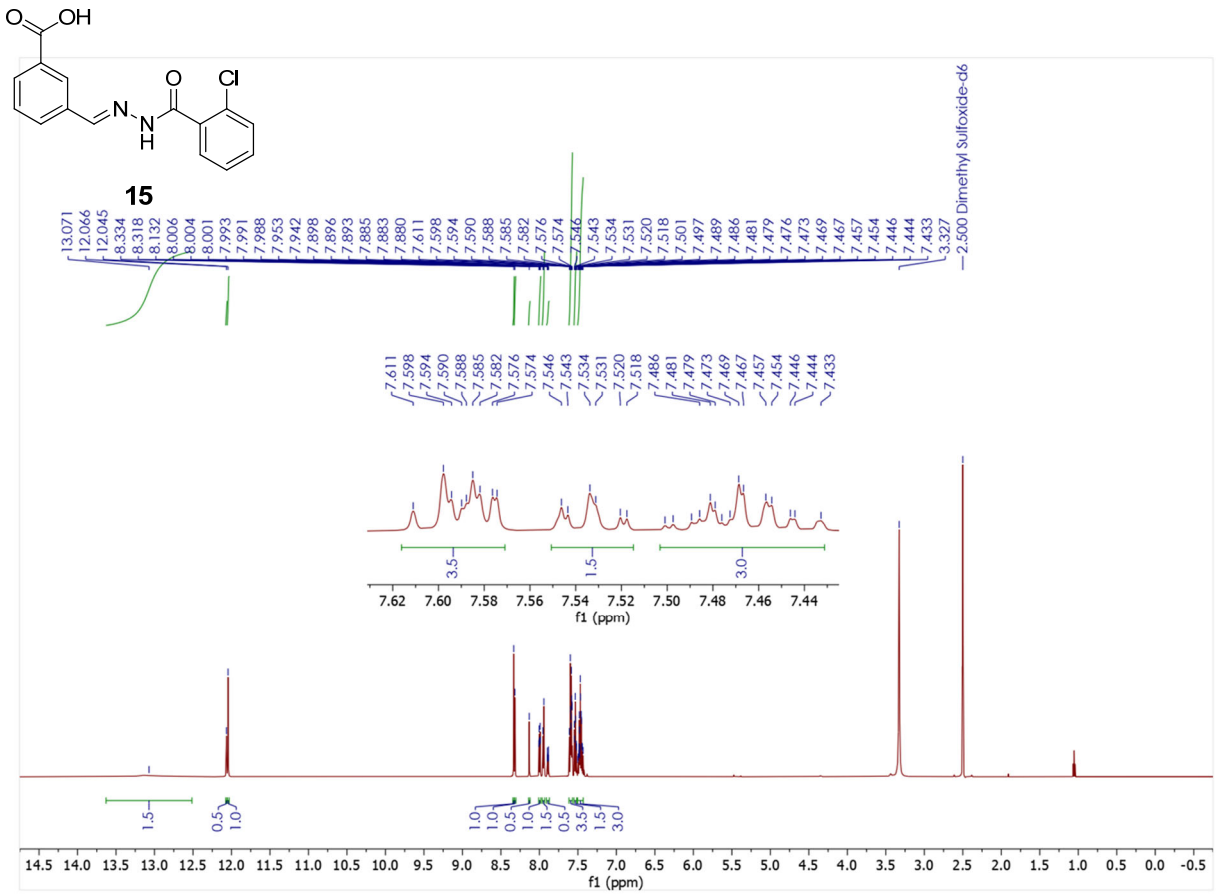


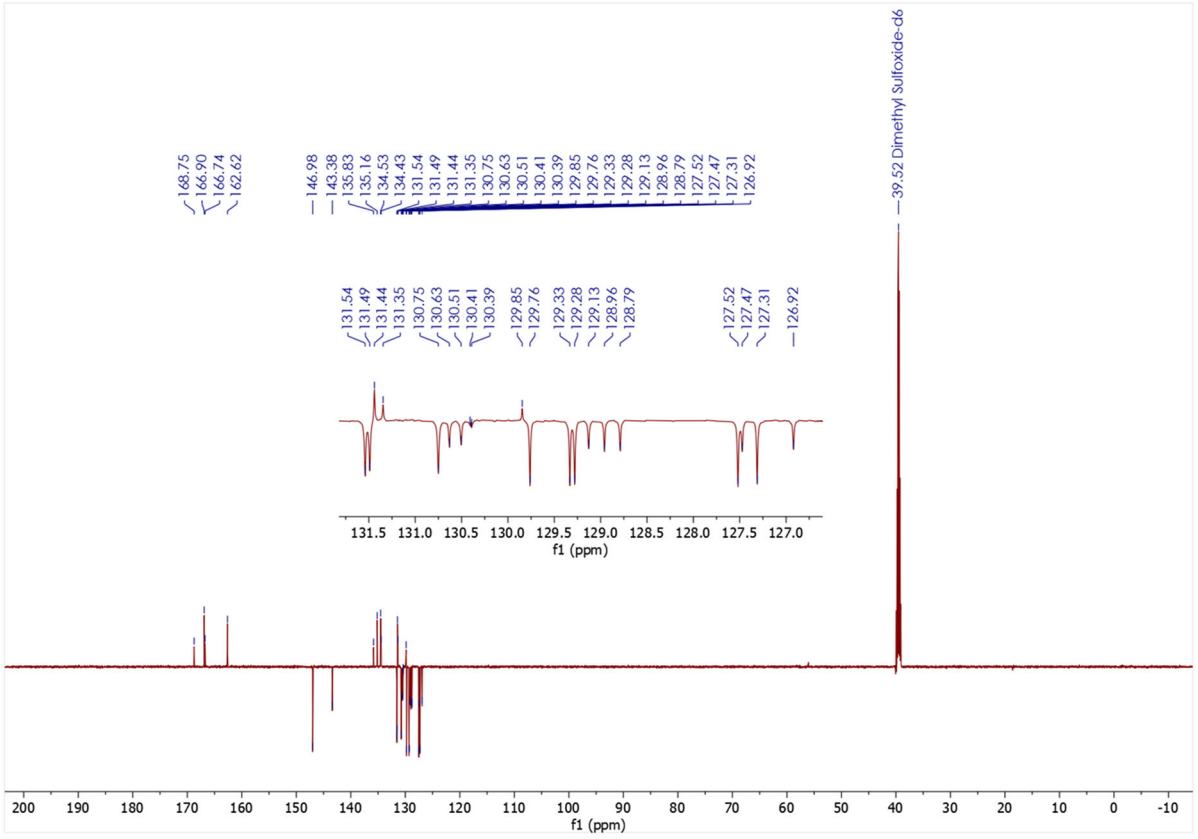
Molecular Weight: 302.712

14





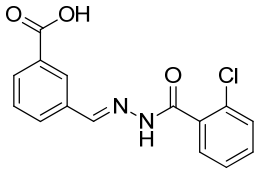

15
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

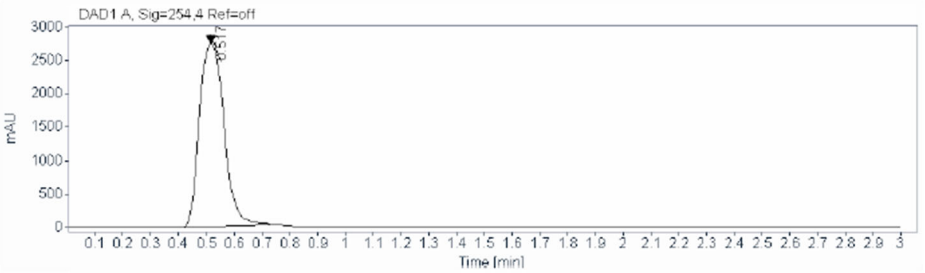
Agilent Technologies

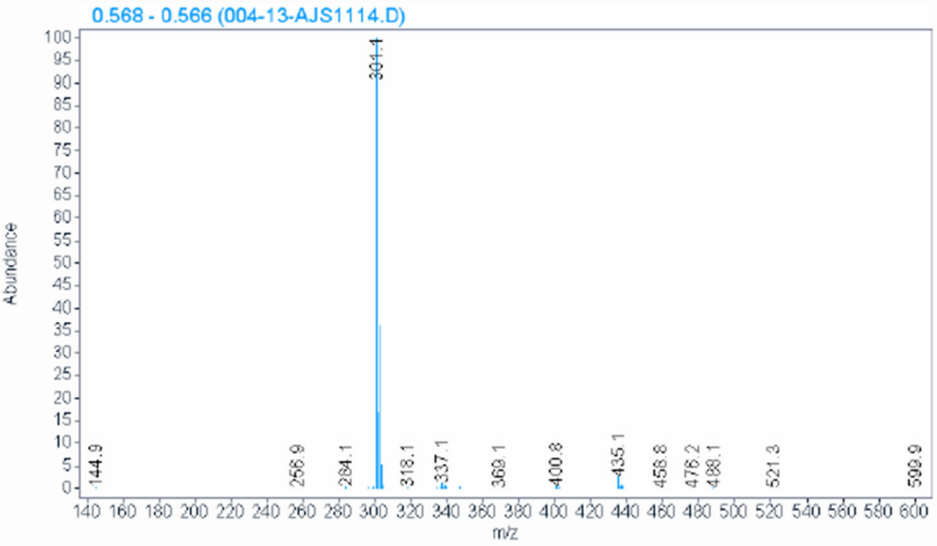
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\004-13-AJS1114.D		
Sample name:	AJS1114		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	13
Injection date:	7/25/2023 3:00:05 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

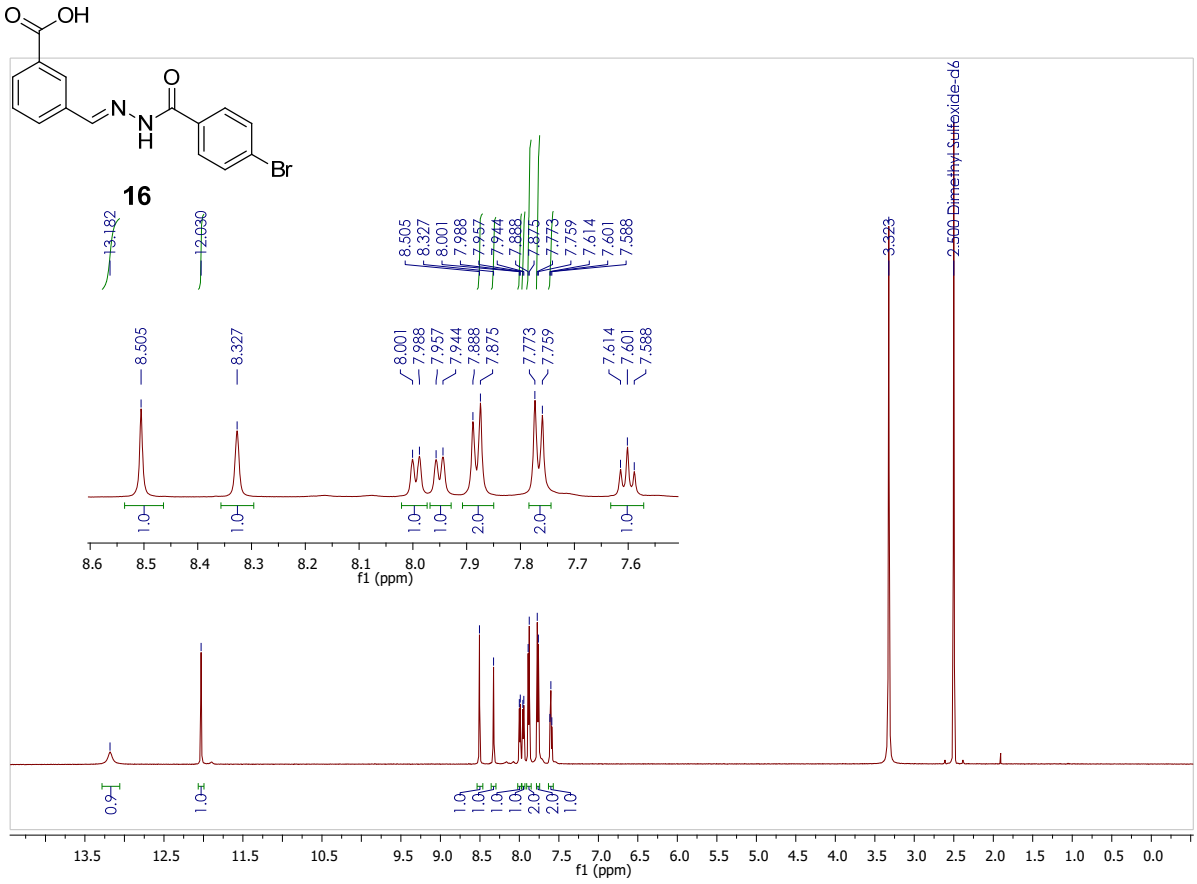


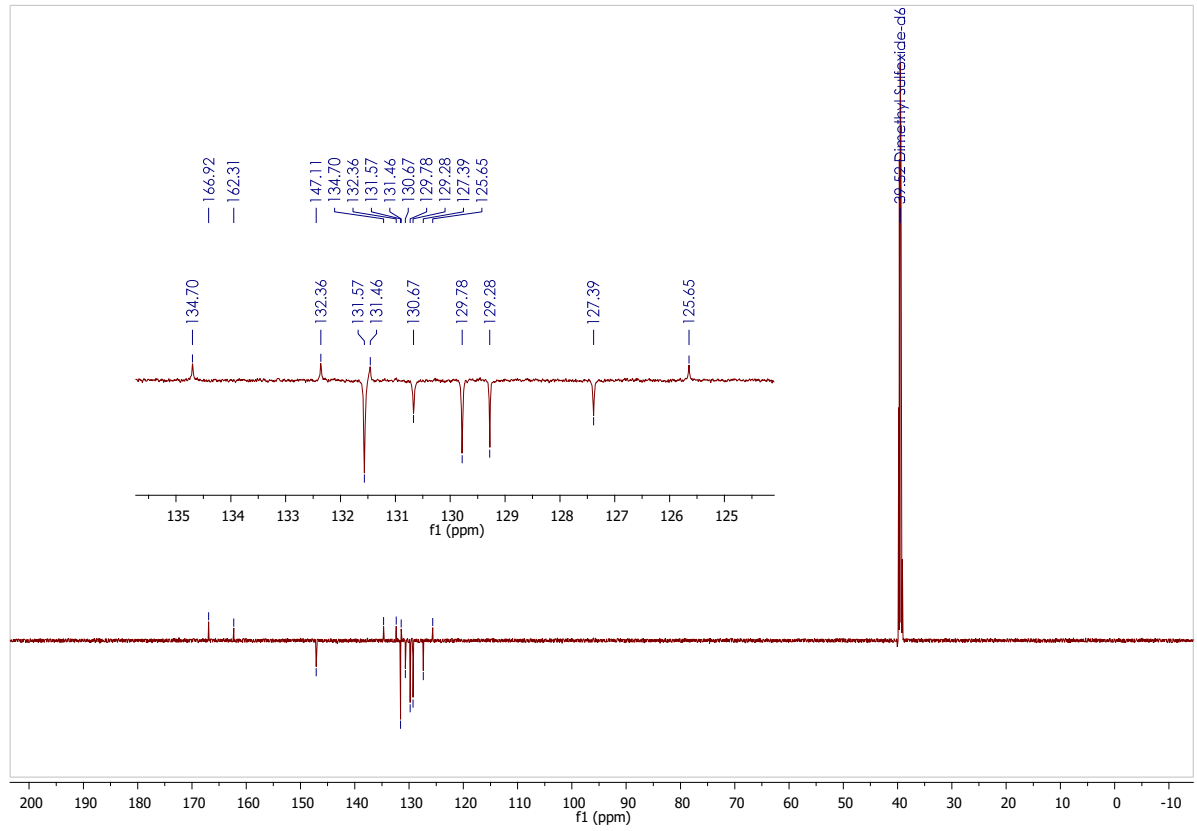
Molecular Weight: 302.712

15





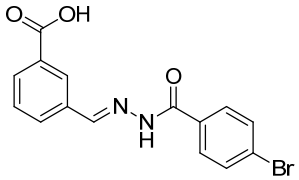

O
OH
N
N
H
O
Br
16
13.182
12.930
8.505
8.327
8.001
7.988
7.957
7.944
7.888
7.875
7.773
7.759
7.614
7.601
7.588
3.323
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.92
162.31
147.11
134.70
132.36
131.57
131.46
130.67
129.78
129.28
127.39
125.65
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

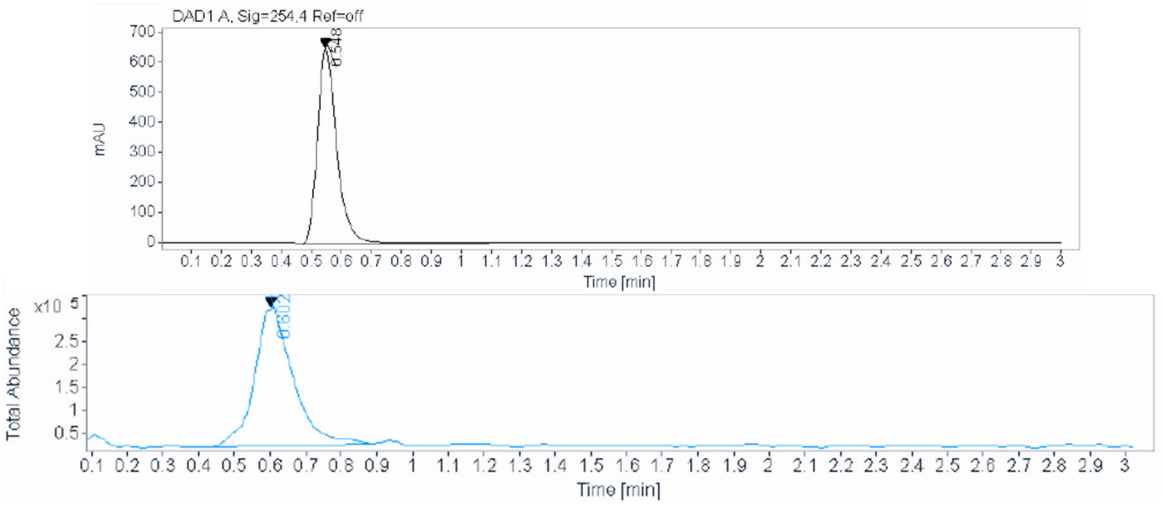
Agilent Technologies

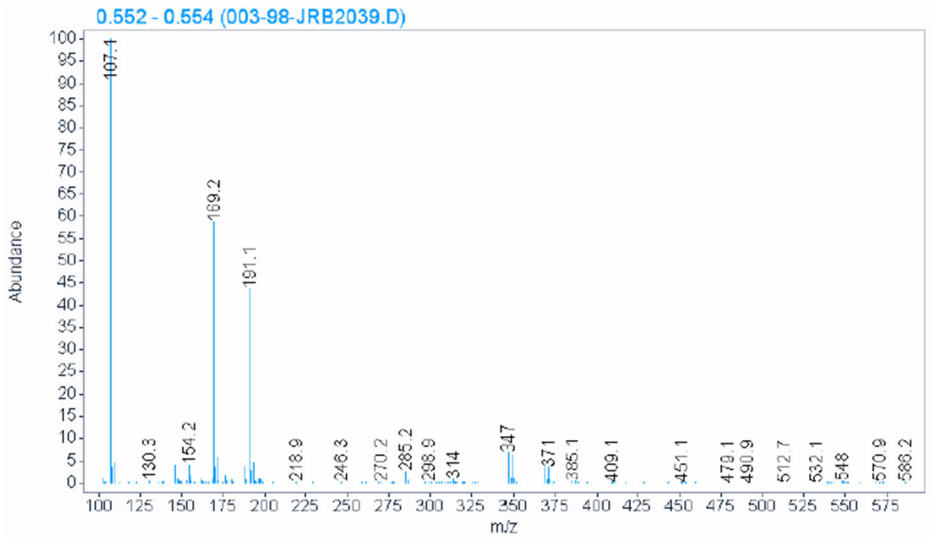
Data file:	D:\Chem32\1\Data\JRB\JRB2031 2038 2039 2021-11-26 16-23-36\003-98-JRB2039.D		
Sample name:	JRB2039		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	98
Injection date:	11/26/2021 4:34:37 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

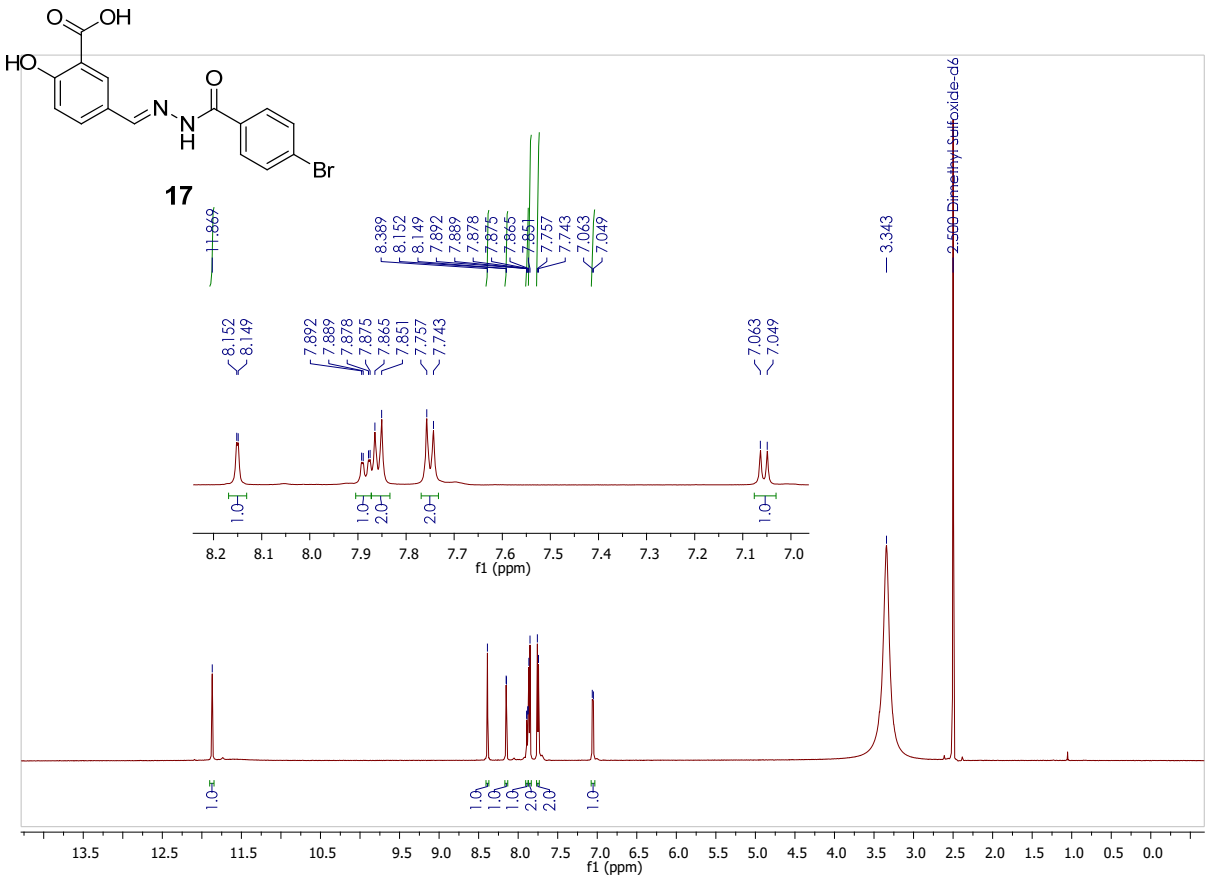


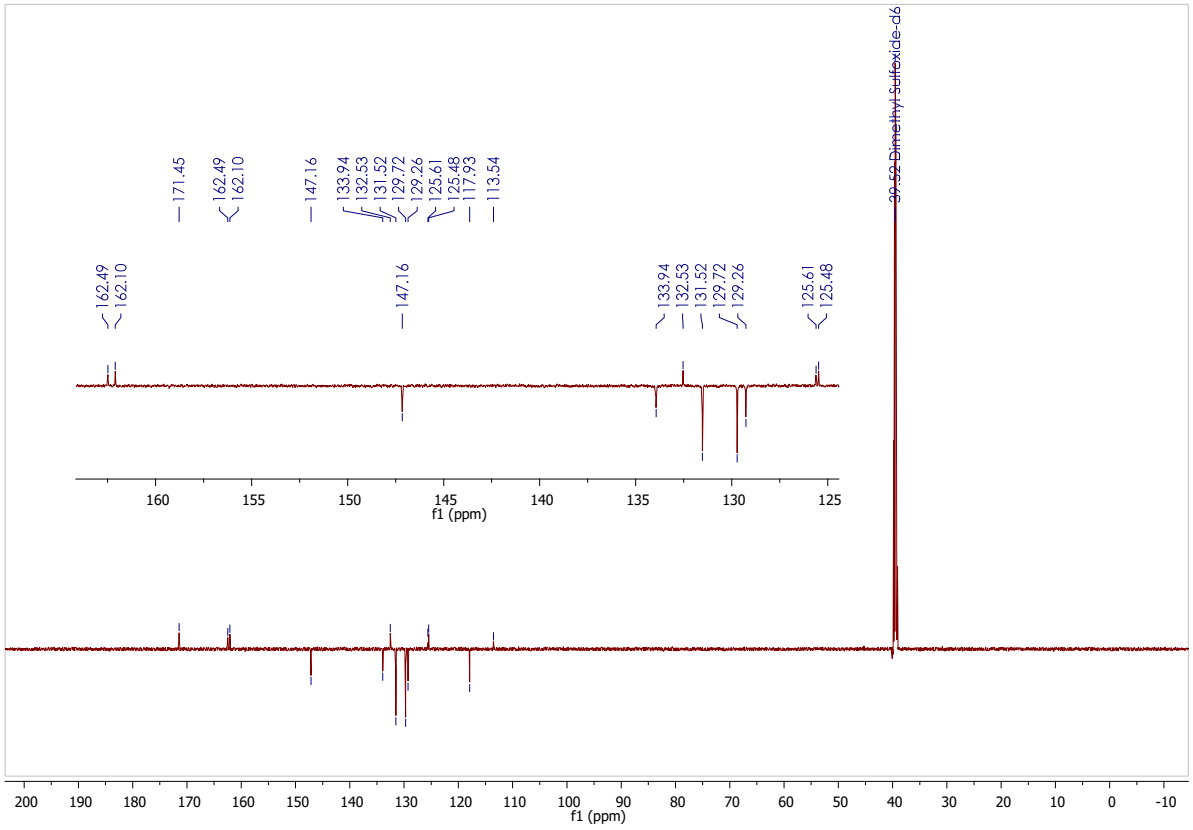
Molecular Weight: 347.163

16





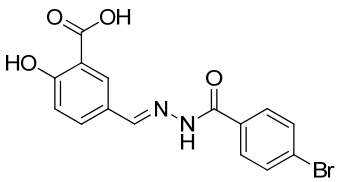

O
OH
HO
N
N
H
O
Br
17
11.869
8.389
8.152
8.149
7.892
7.889
7.878
7.875
7.865
7.851
7.757
7.743
7.063
7.049
3.343
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


171.45
162.49
162.10
147.16
133.94
132.53
131.52
129.72
129.26
125.61
125.48
117.93
113.54
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

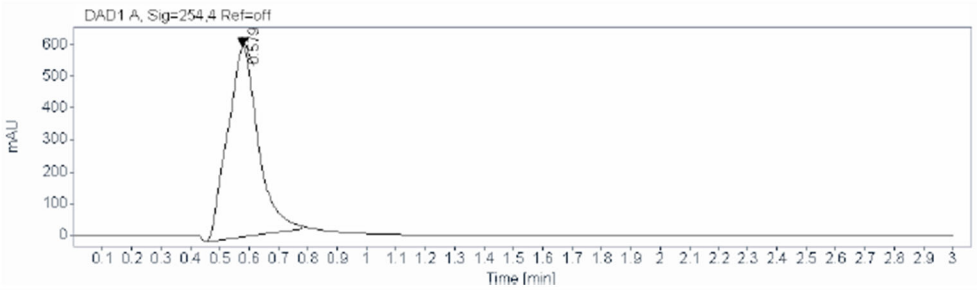
Agilent Technologies

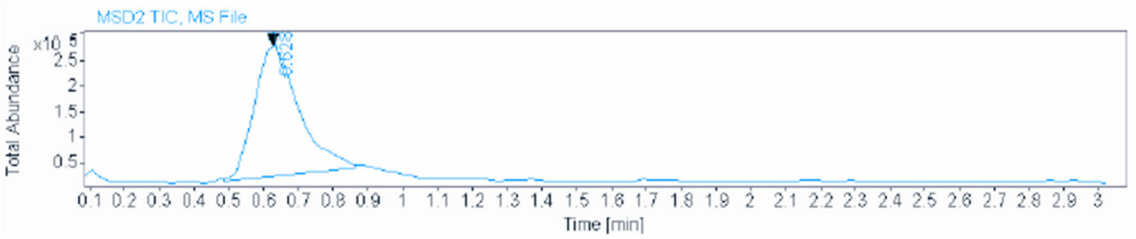
Data file:	D:\Chem32\1\Data\JRB\JRB3066 3157 3158 3160 2023-07-24 12-35-44\005-97-JRB3160.D		
Sample name:	JRB3160		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	97
Injection date:	7/24/2023 12:56:33 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

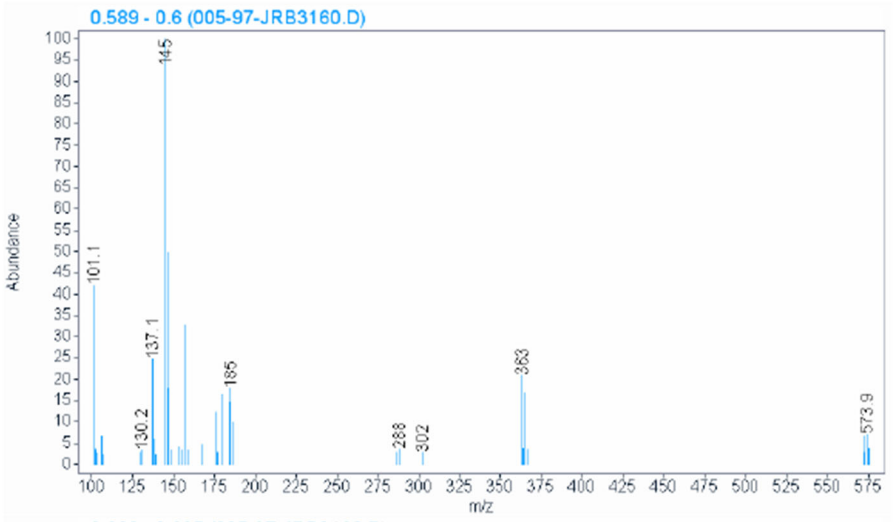


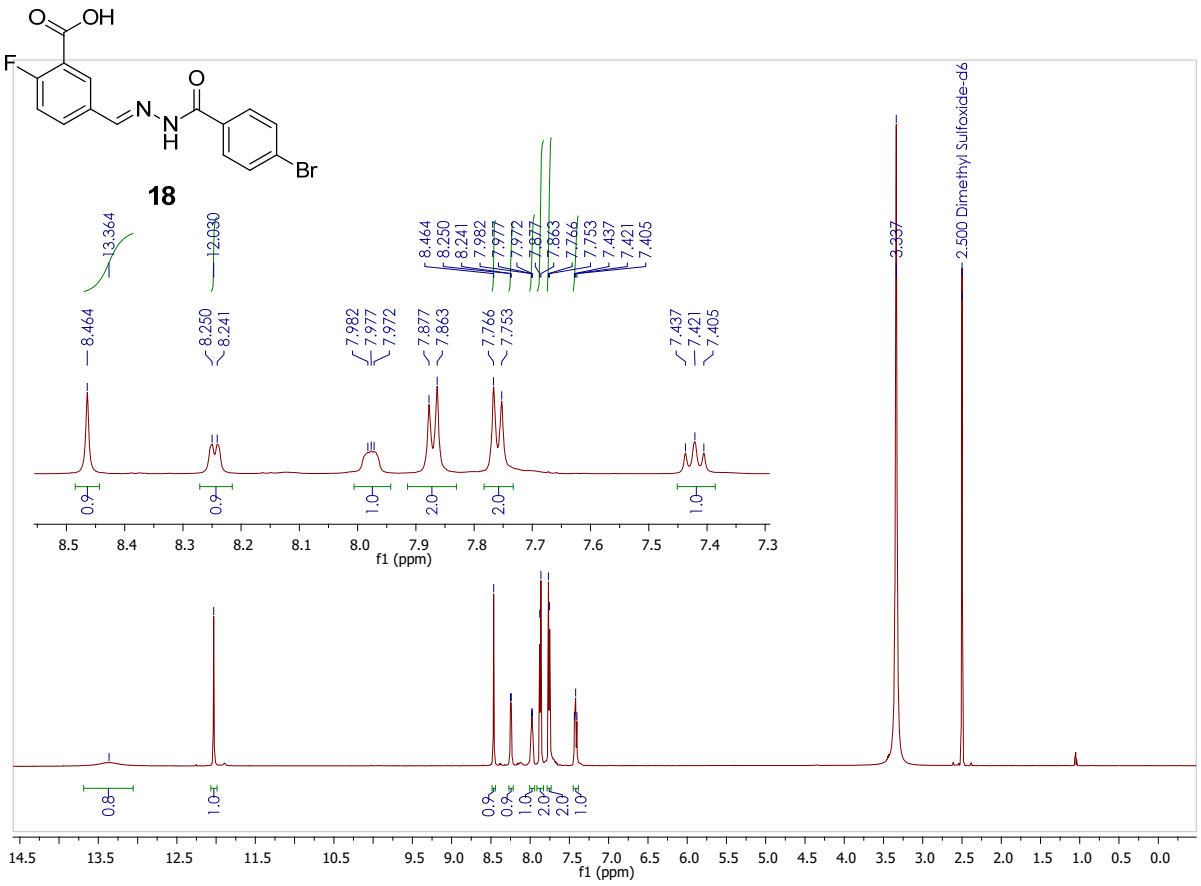
Molecular Weight: 363.163

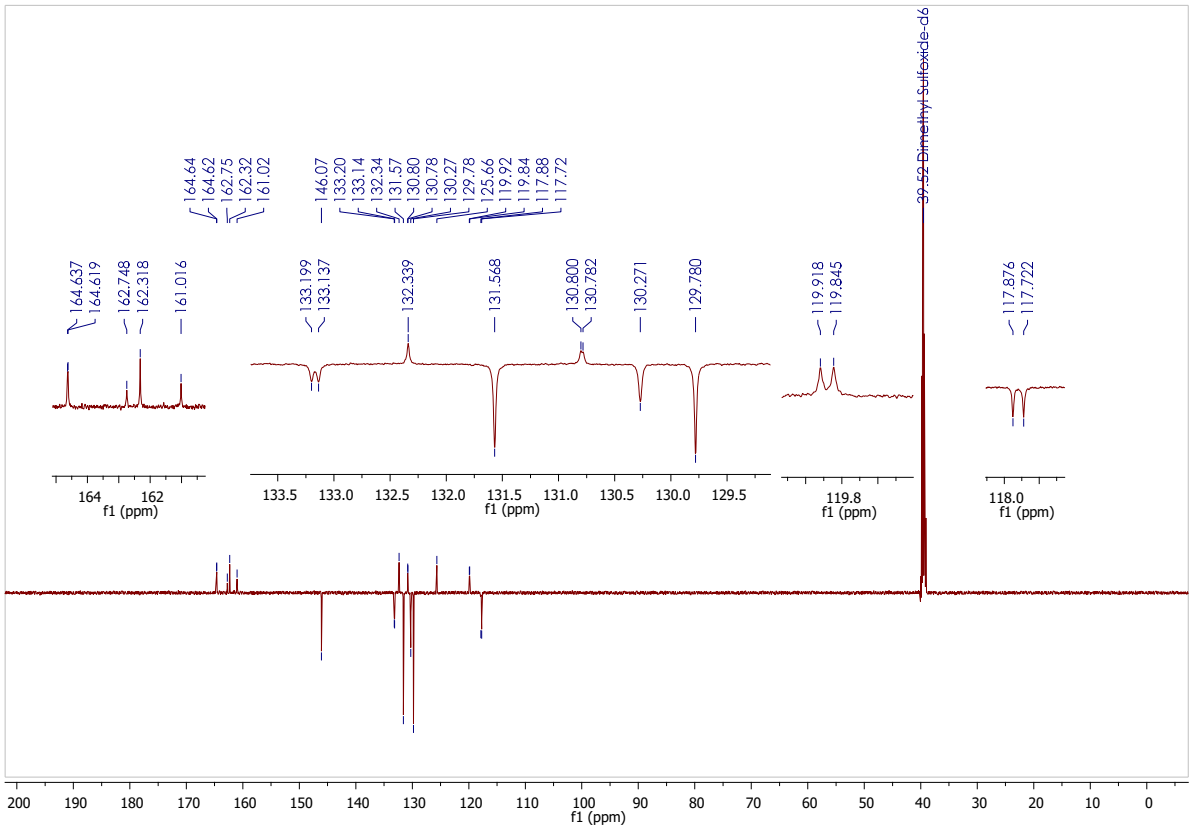
17

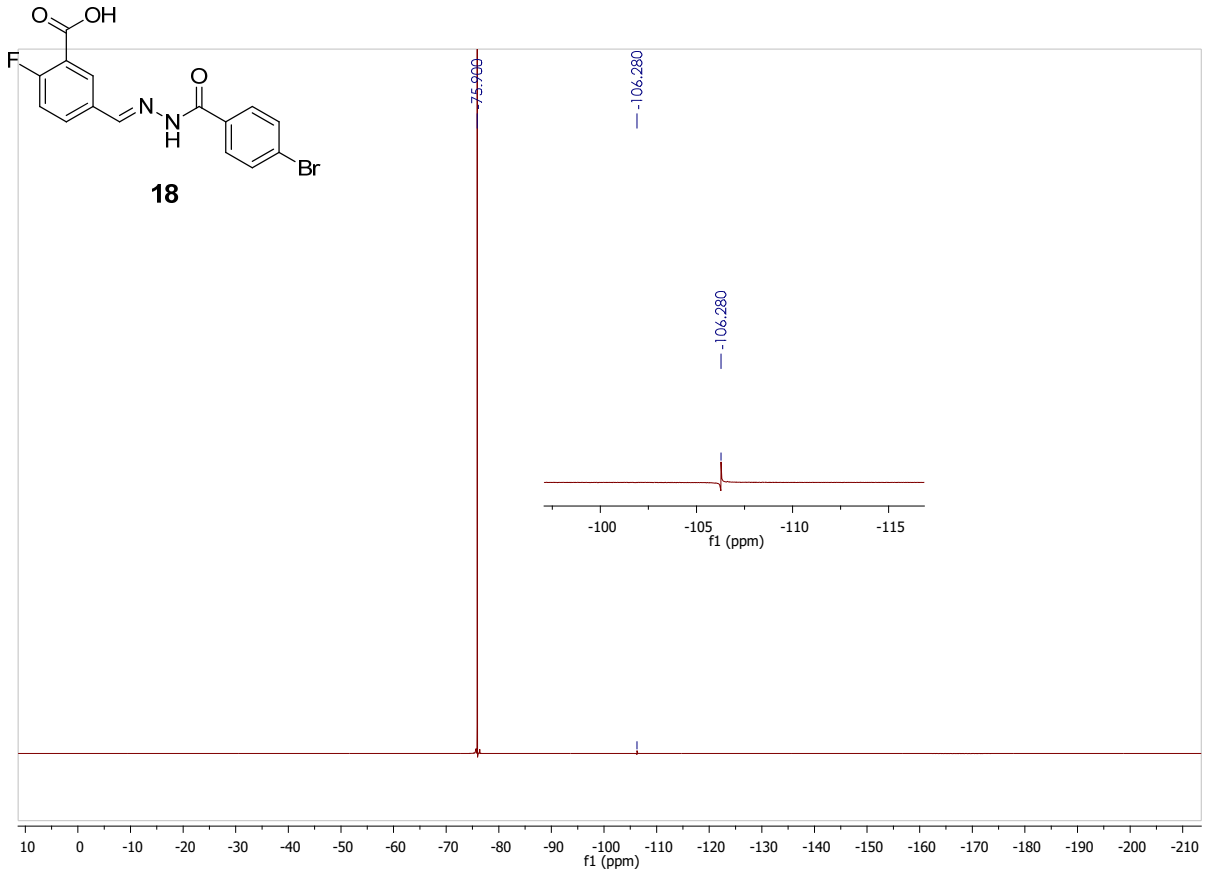







O
OH
F
N
N
H
O
Br
18
13.364
12.030
8.464
8.250
8.241
7.982
7.977
7.972
7.877
7.863
7.766
7.753
7.437
7.421
7.405
3.337
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

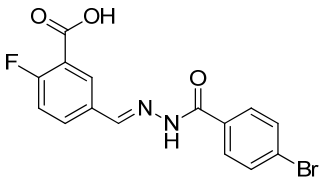

164.64
164.62
162.75
162.32
161.02
146.07
133.20
133.14
132.34
131.57
130.80
130.78
130.27
129.78
125.66
119.92
119.84
117.88
117.72
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
F
N
N
H
O
Br
18
-75.900
-106.280
-106.280
-100
-105
-110
-115
f1 (ppm)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

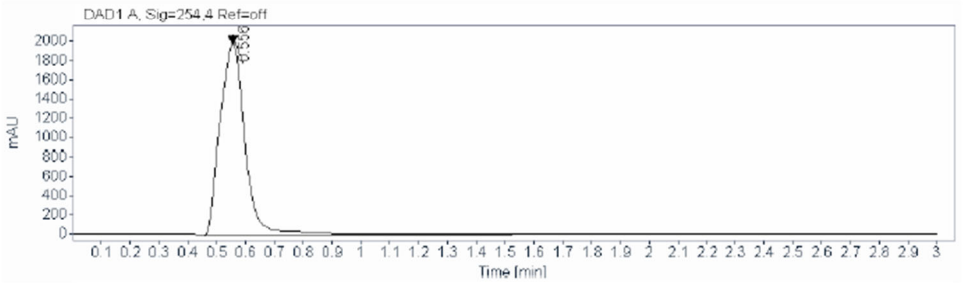
Agilent Technologies

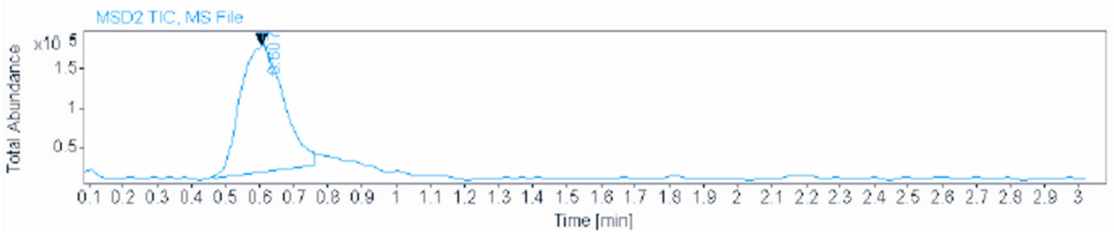
Data file:	D:\Chem32\1\Data\JRB\JRB3189 3196 4001 4002 2023-07-24 12-59-52\004-94-JRB4001.D		
Sample name:	JRB4001		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	94
Injection date:	7/24/2023 1:15:35 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

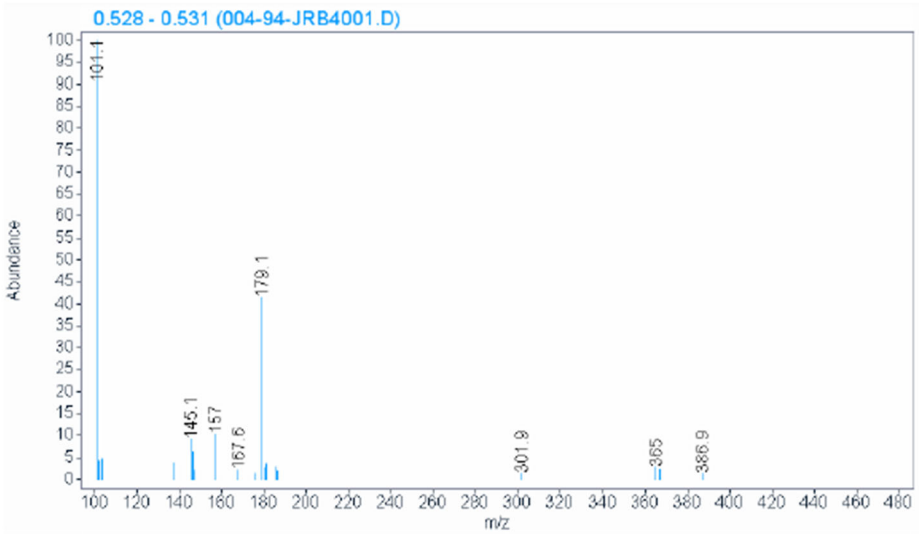


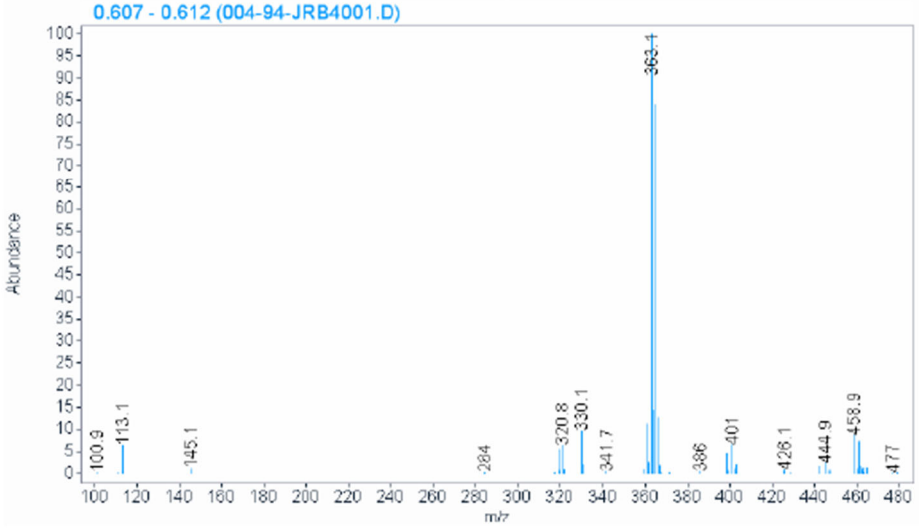
Molecular Weight: 365.154

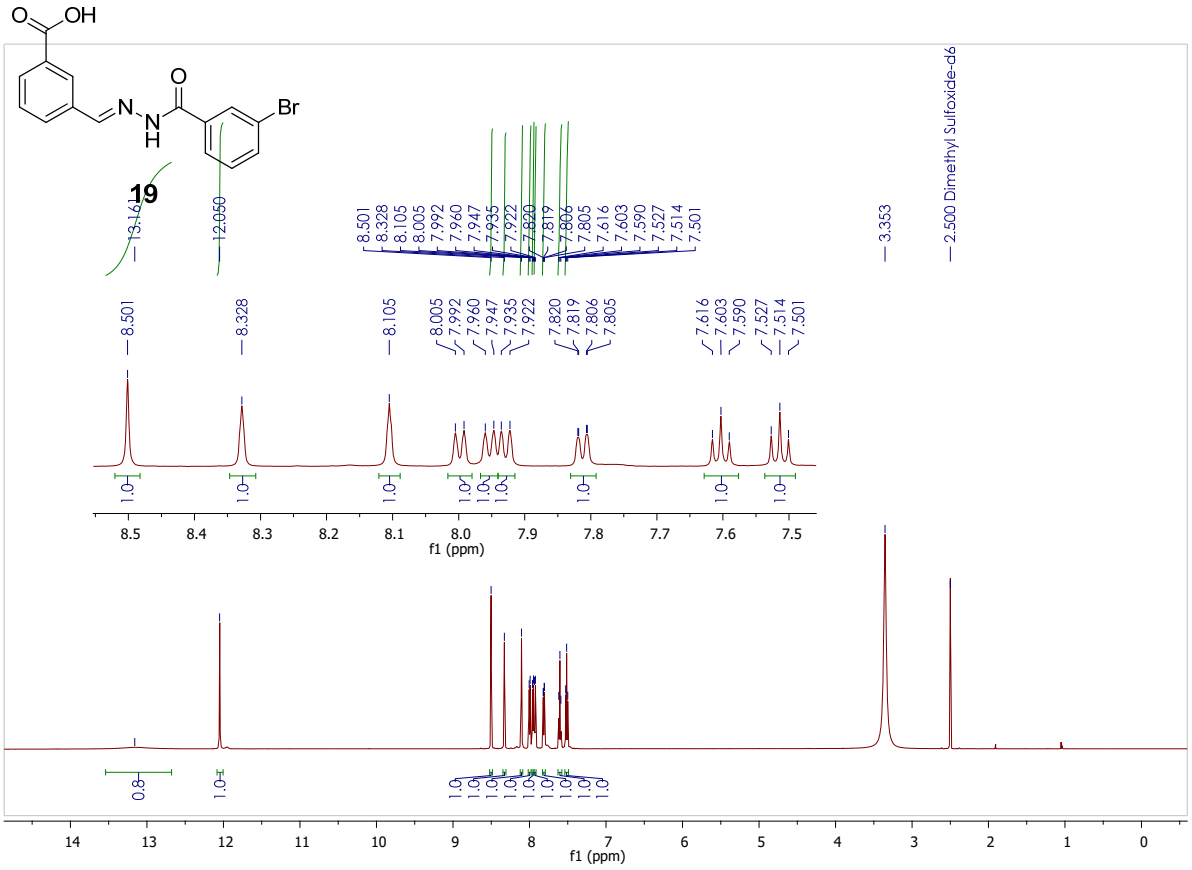
18

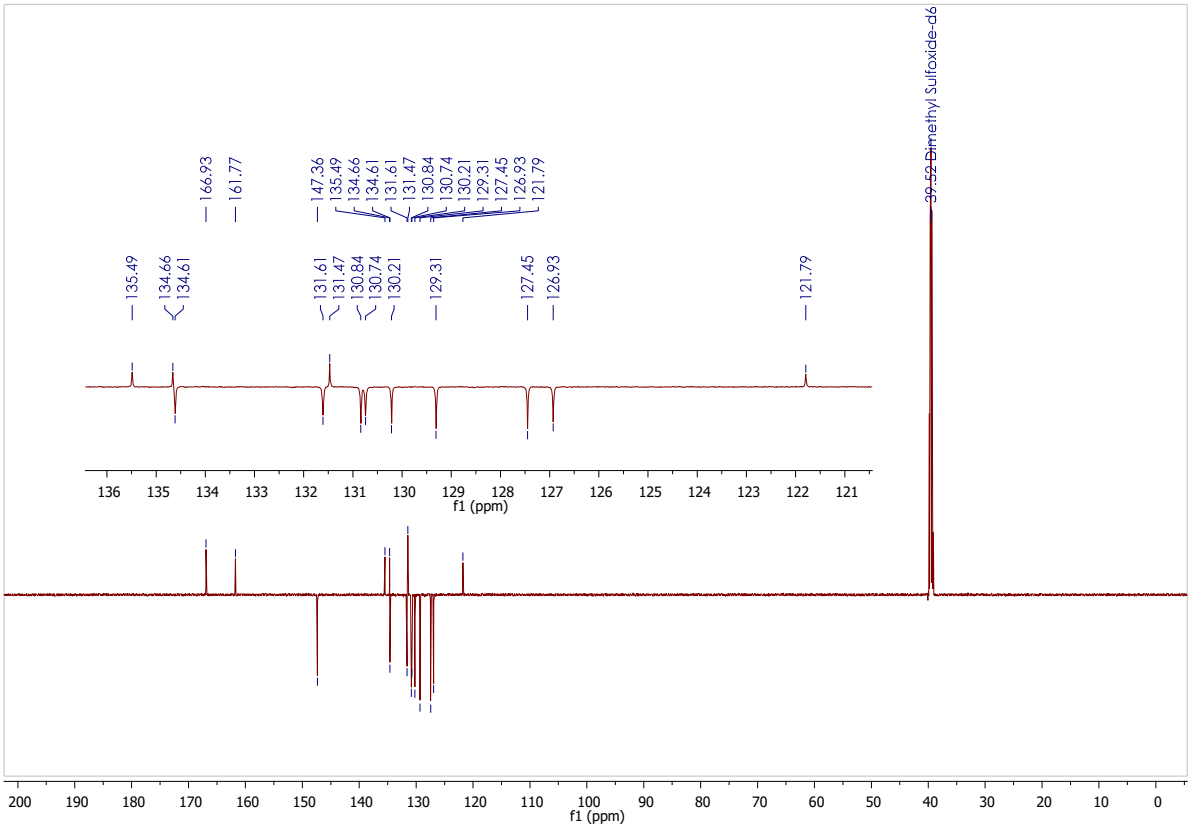








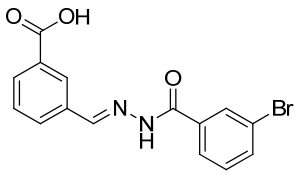

O
OH
N
N
H
O
Br
19
13.160
12.050
8.501
8.328
8.105
8.005
7.992
7.960
7.947
7.935
7.922
7.820
7.819
7.806
7.805
7.616
7.603
7.590
7.527
7.514
7.501
3.353
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.93
161.77
147.36
135.49
134.66
134.61
131.61
131.47
130.84
130.74
130.21
129.31
127.45
126.93
121.79
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

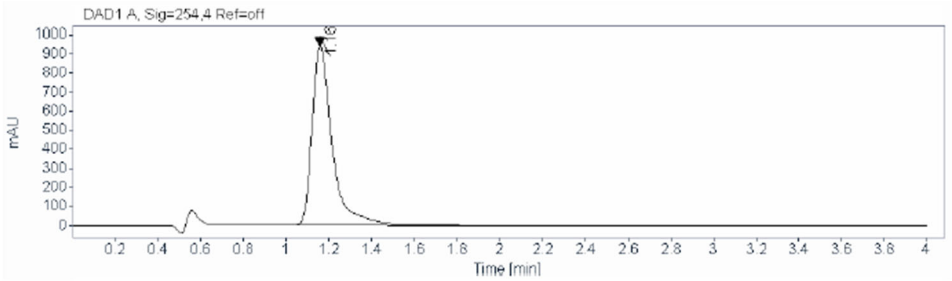
Agilent Technologies

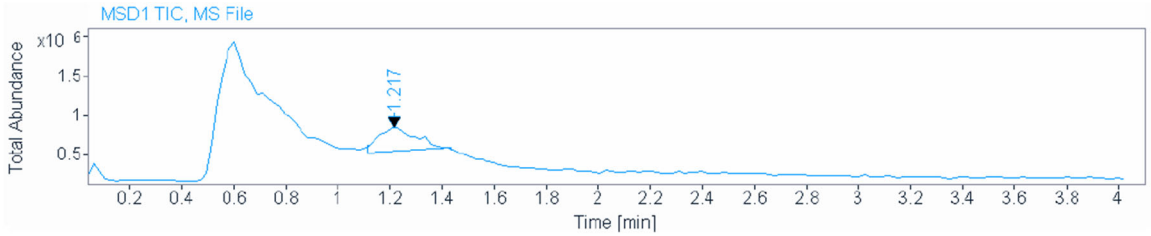
Data file:	D:\Chem32\1\Data\JRB\JRB2073 2071 2083 2085 2022-01-31 15-44-02\001-100-JRB2073.D		
Sample name:	JRB2073		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	100
Injection date:	1/31/2022 3:45:53 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/14/2016 12:06:24 PM		

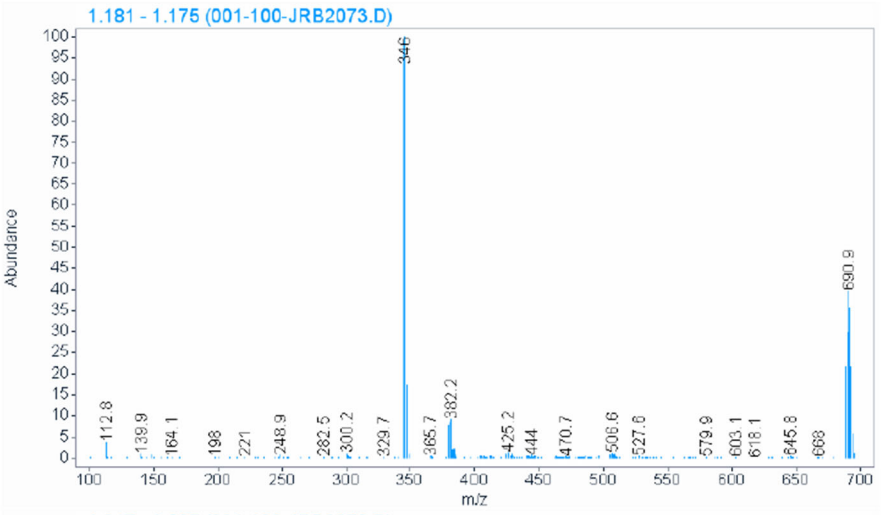


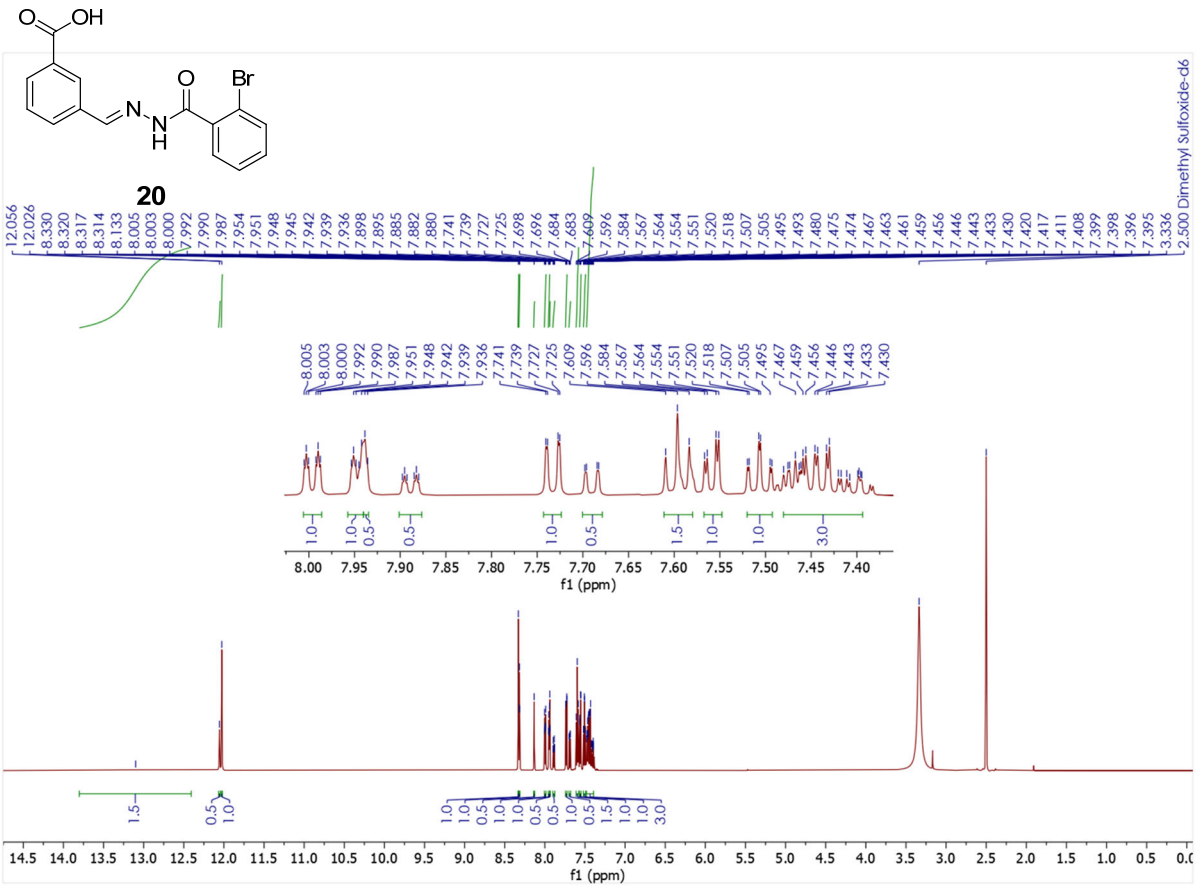
Molecular Weight: 347.163

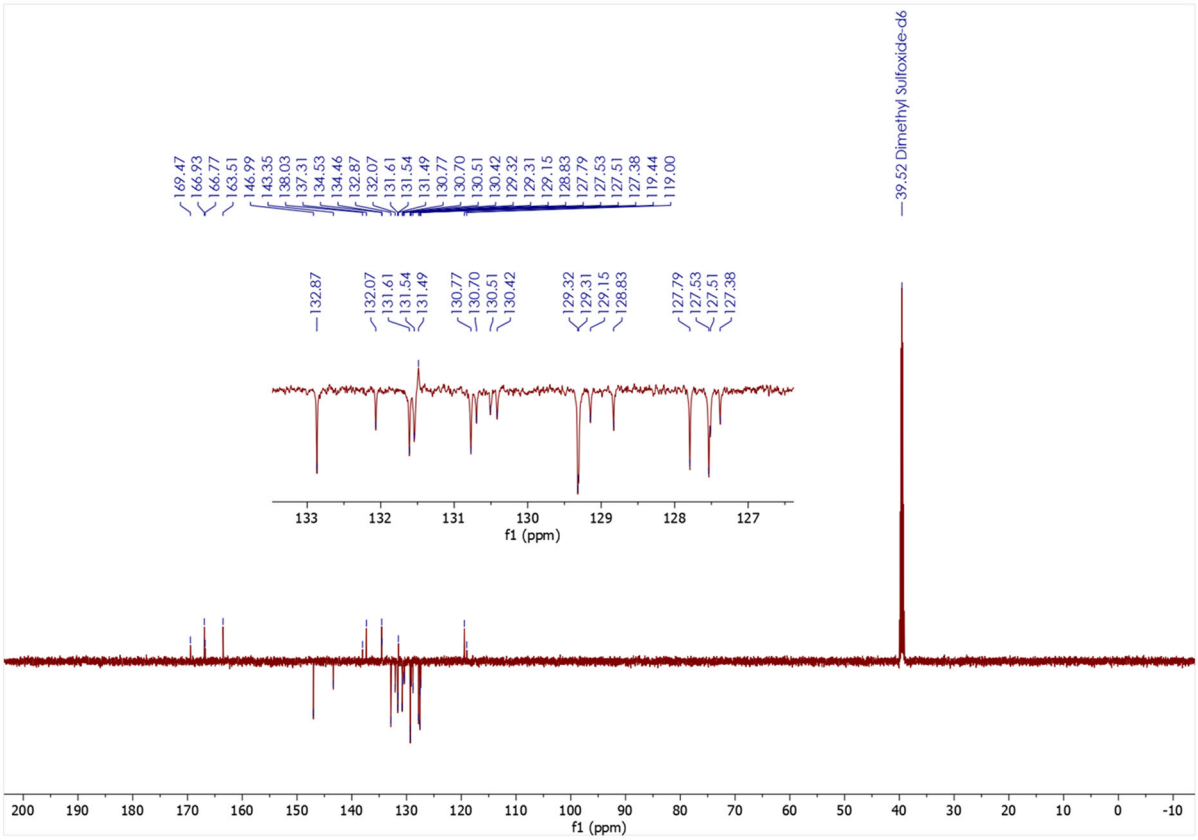
19







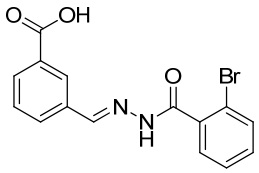

20
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

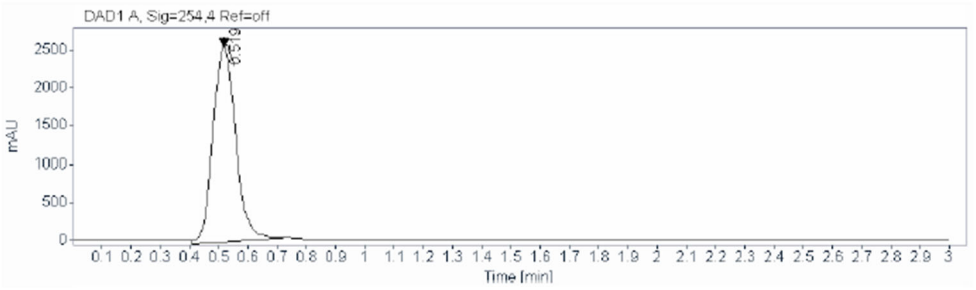
Agilent Technologies

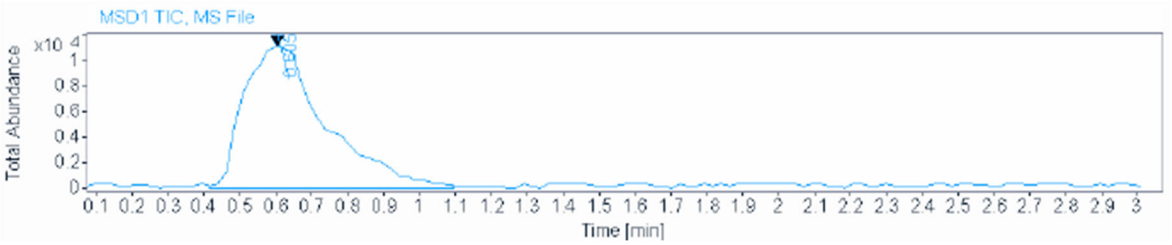
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\005-14-AJS1138-1.D		
Sample name:	AJS1138-1		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	14
Injection date:	7/25/2023 3:04:49 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

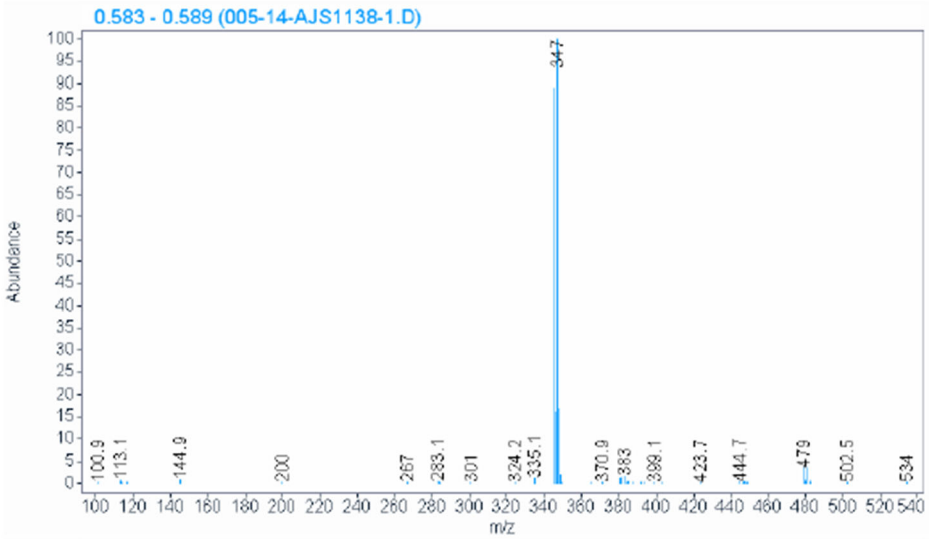


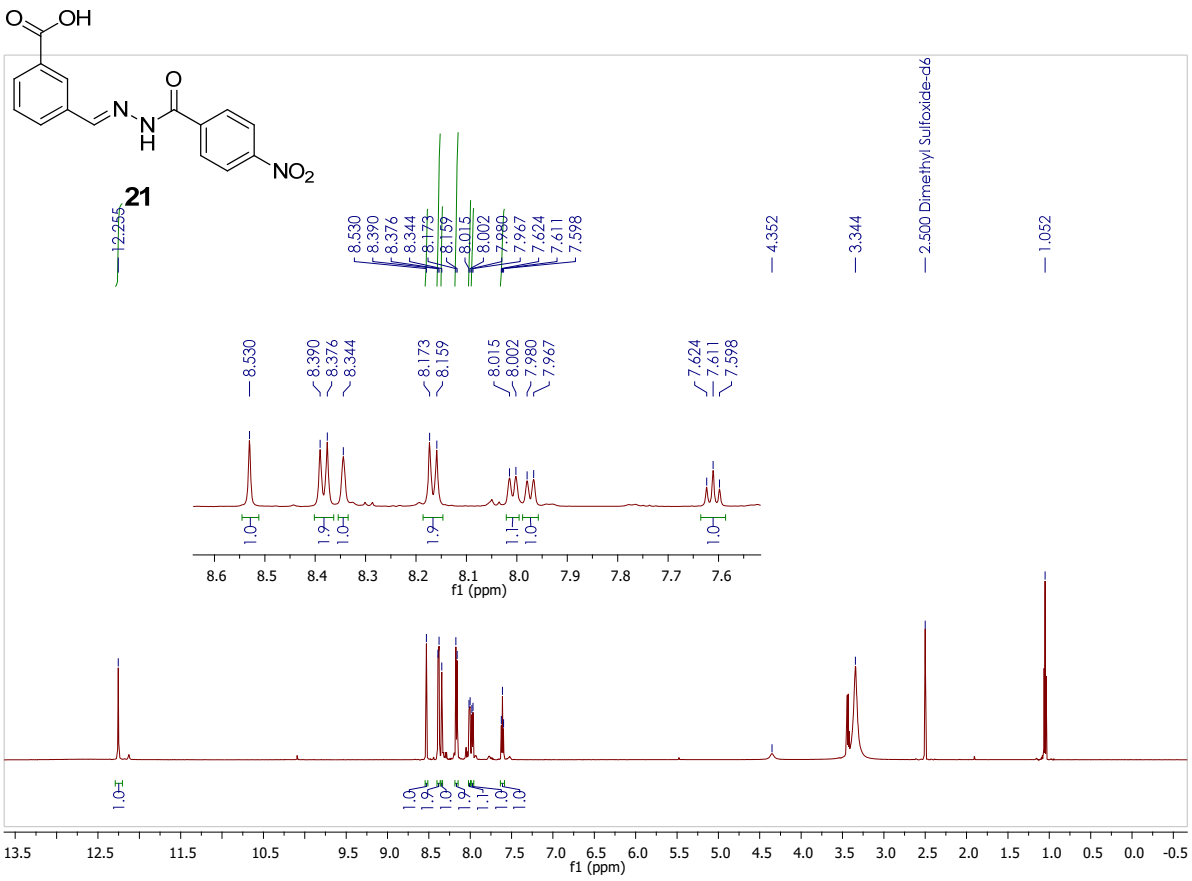
Molecular Weight: 347.163

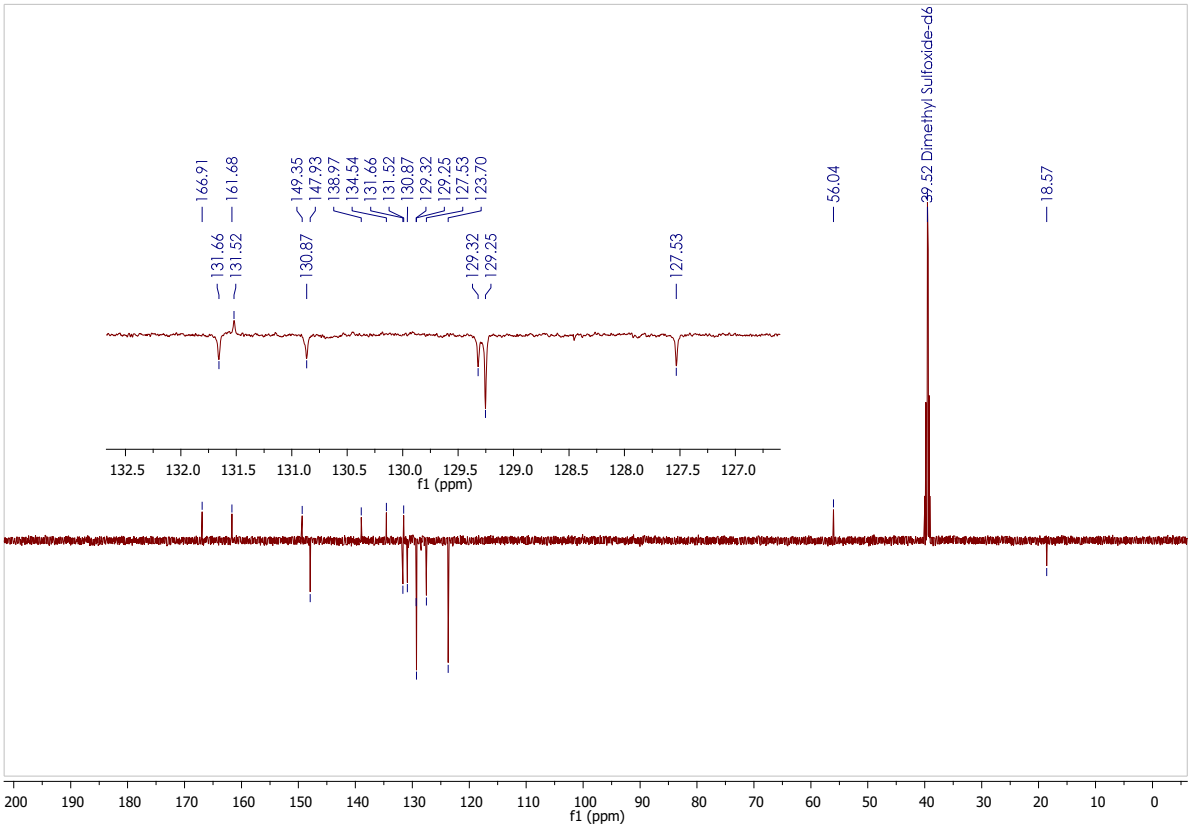
20







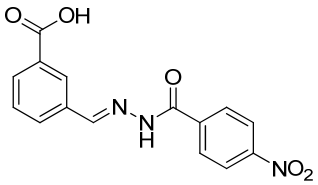

21
12.255
8.530
8.390
8.376
8.344
8.173
8.159
8.015
8.002
7.980
7.967
7.624
7.611
7.598
4.352
3.344
2.500 Dimethyl Sulfoxide-d6
1.052
f1 (ppm)


166.91
161.68
149.35
147.93
138.97
134.54
131.66
131.52
130.87
129.32
129.25
127.53
123.70
56.04
39.52 Dimethyl Sulfoxide-d6
18.57
f1 (ppm)

LCMS Report

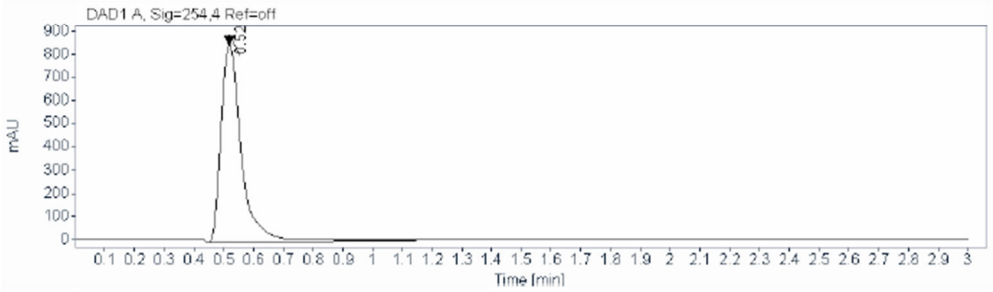
Agilent Technologies

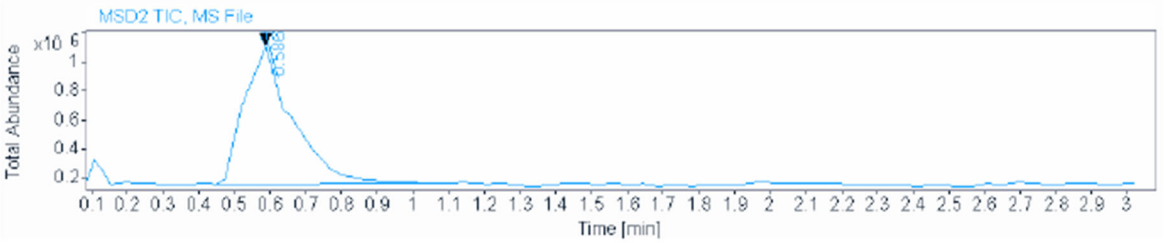
Data file:	D:\Chem32\1\Data\MH\mh4017-4021 2022-03-04 11-47-59\004-64-MH4019.D		
Sample name:	MH4019		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	64
Injection date:	3/4/2022 12:03:36 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

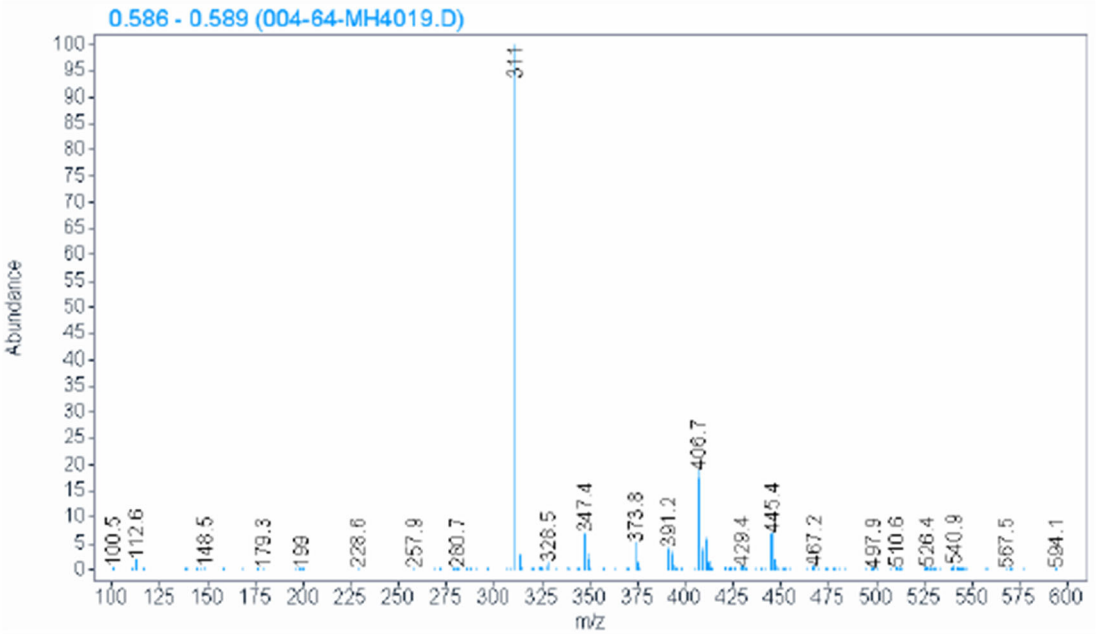


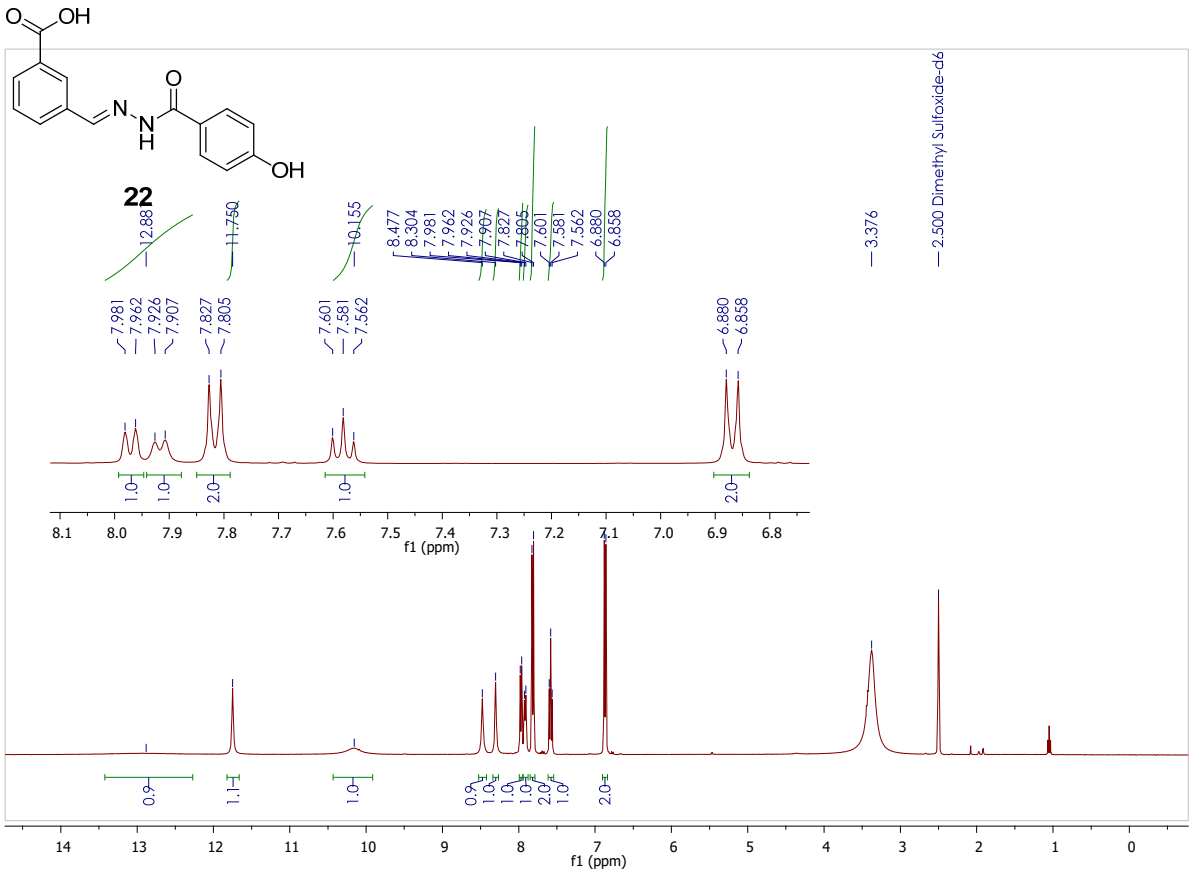
Molecular Weight: 313.265

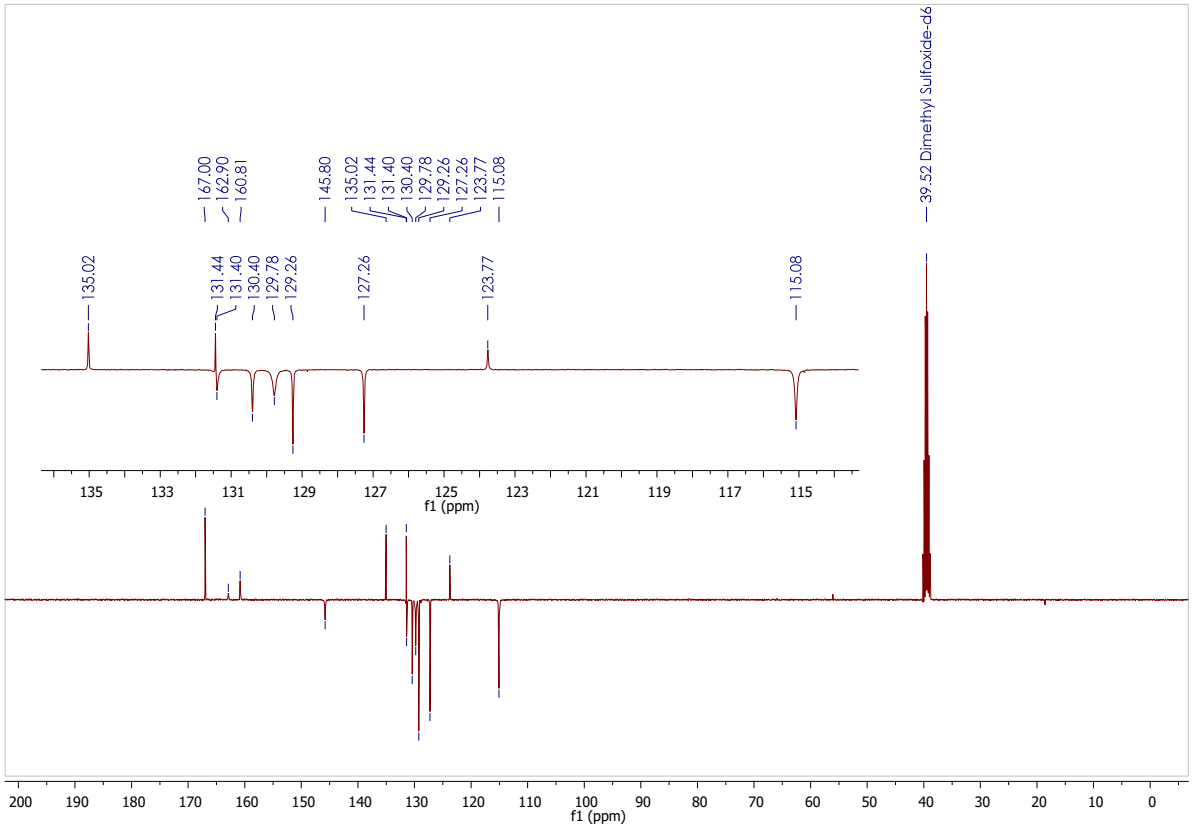
21







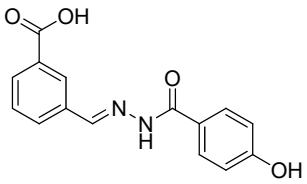

22
12.888
11.750
10.155
8.477
8.304
7.981
7.962
7.926
7.907
7.827
7.805
7.601
7.581
7.562
6.880
6.858
3.376
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


167.00
162.90
160.81
145.80
135.02
131.44
131.40
130.40
129.78
129.26
127.26
123.77
115.08
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

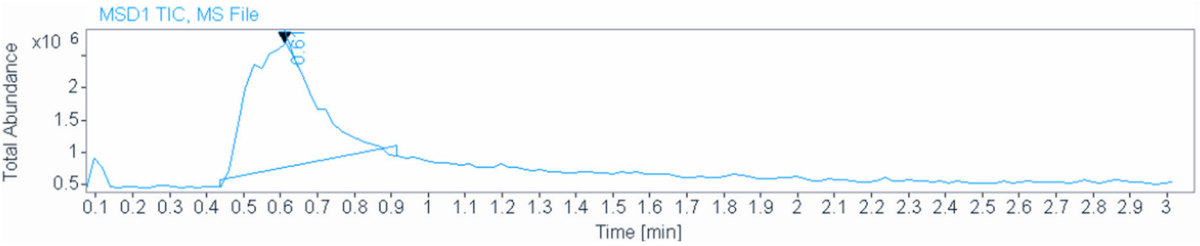
Agilent Technologies

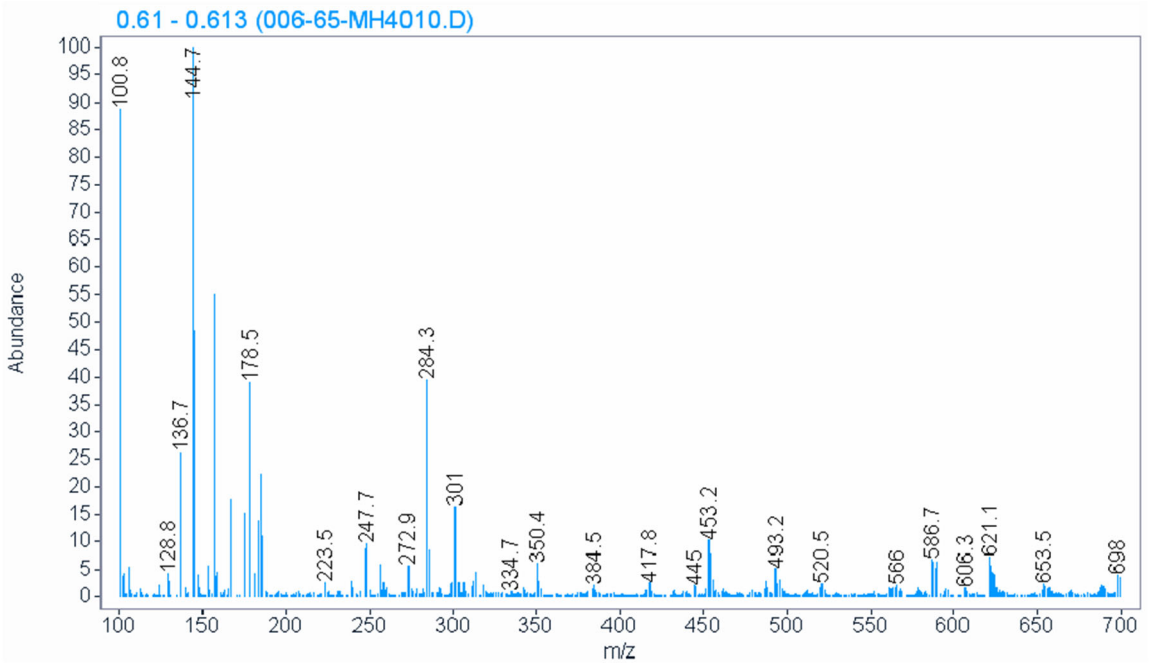
Data file:	D:\Chem32\1\Data\MH\MH4006-4010 and MH4014 2022-03-01 12-11-51\006-65-MH4010.D		
Sample name:	MH4010		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	65
Injection date:	3/1/2022 12:37:39 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/13/2021 10:05:44 AM		

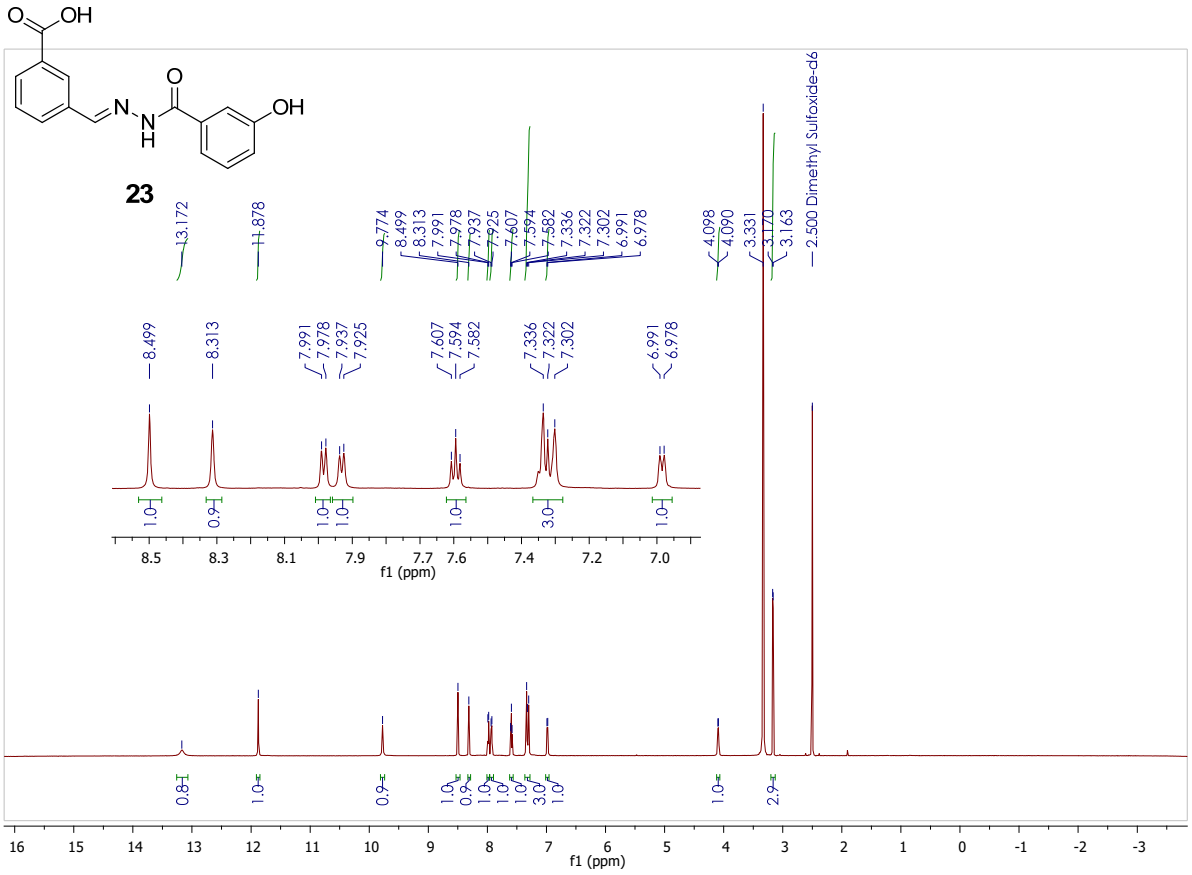


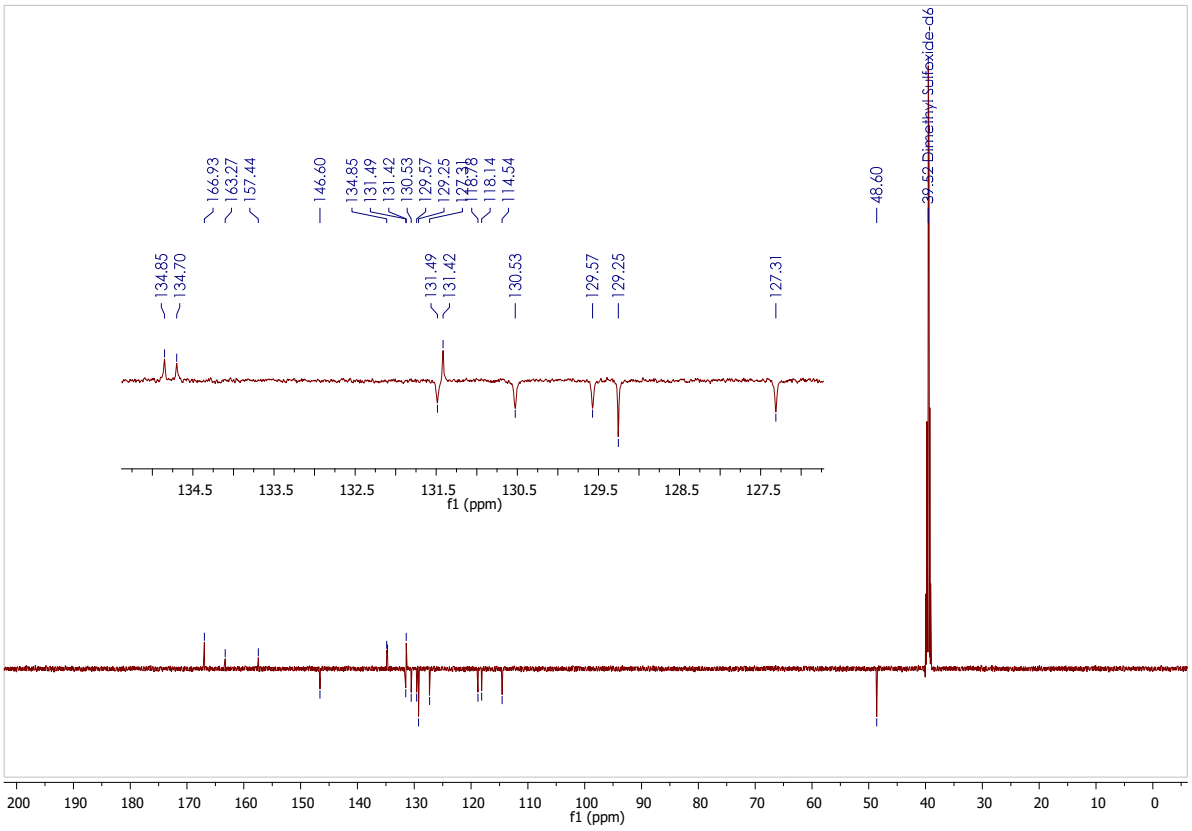
Molecular Weight: 284.267

22





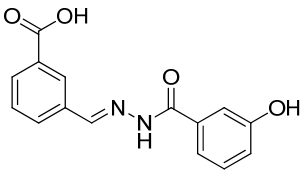

23
13.172
11.878
9.774
8.499
8.313
7.991
7.978
7.937
7.925
7.607
7.594
7.582
7.336
7.322
7.302
6.991
6.978
4.098
4.090
3.331
3.170
3.163
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.93
163.27
157.44
146.60
134.85
131.49
131.42
130.53
129.57
129.25
127.31
118.78
118.14
114.54
48.60
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

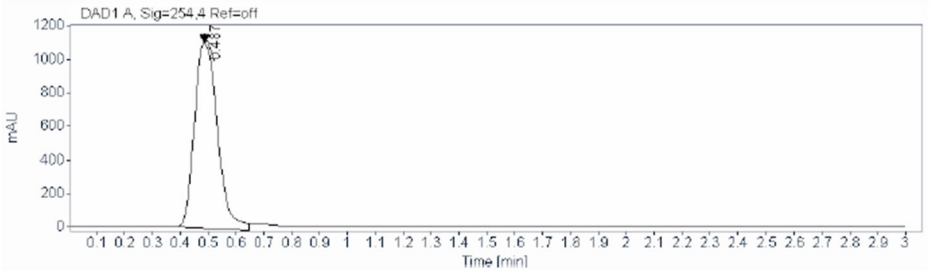
Agilent Technologies

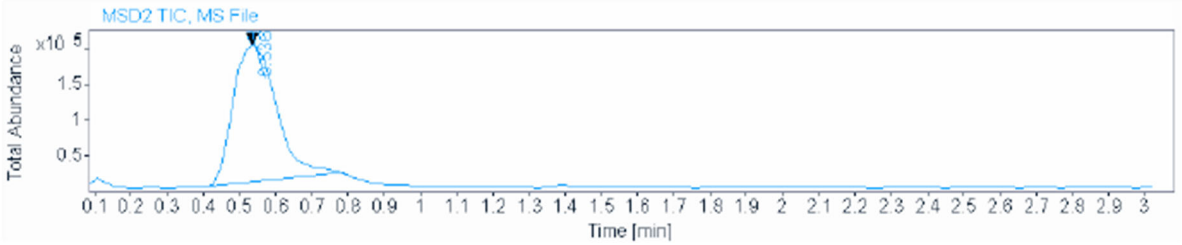
Data file:	D:\Chem32\1\Data\JRB\JRB4025-4027-2 2023-07-24 15-27-22\003-75-JRB4026.D		
Sample name:	JRB4026		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	75
Injection date:	7/24/2023 3:40:18 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

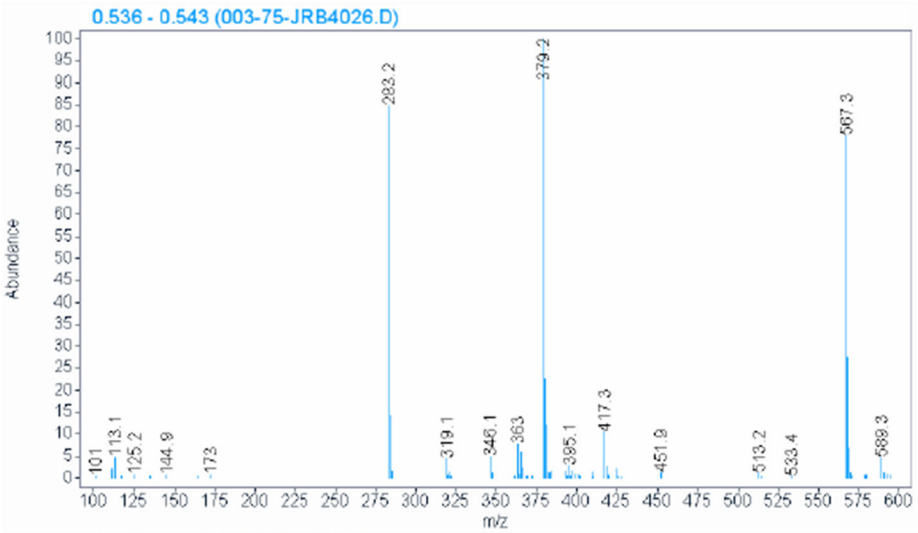


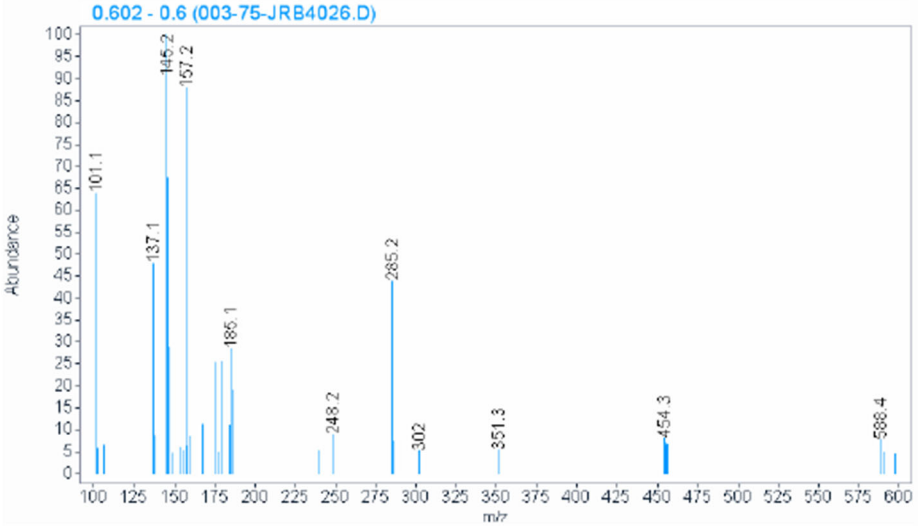
Molecular Weight: 284.267

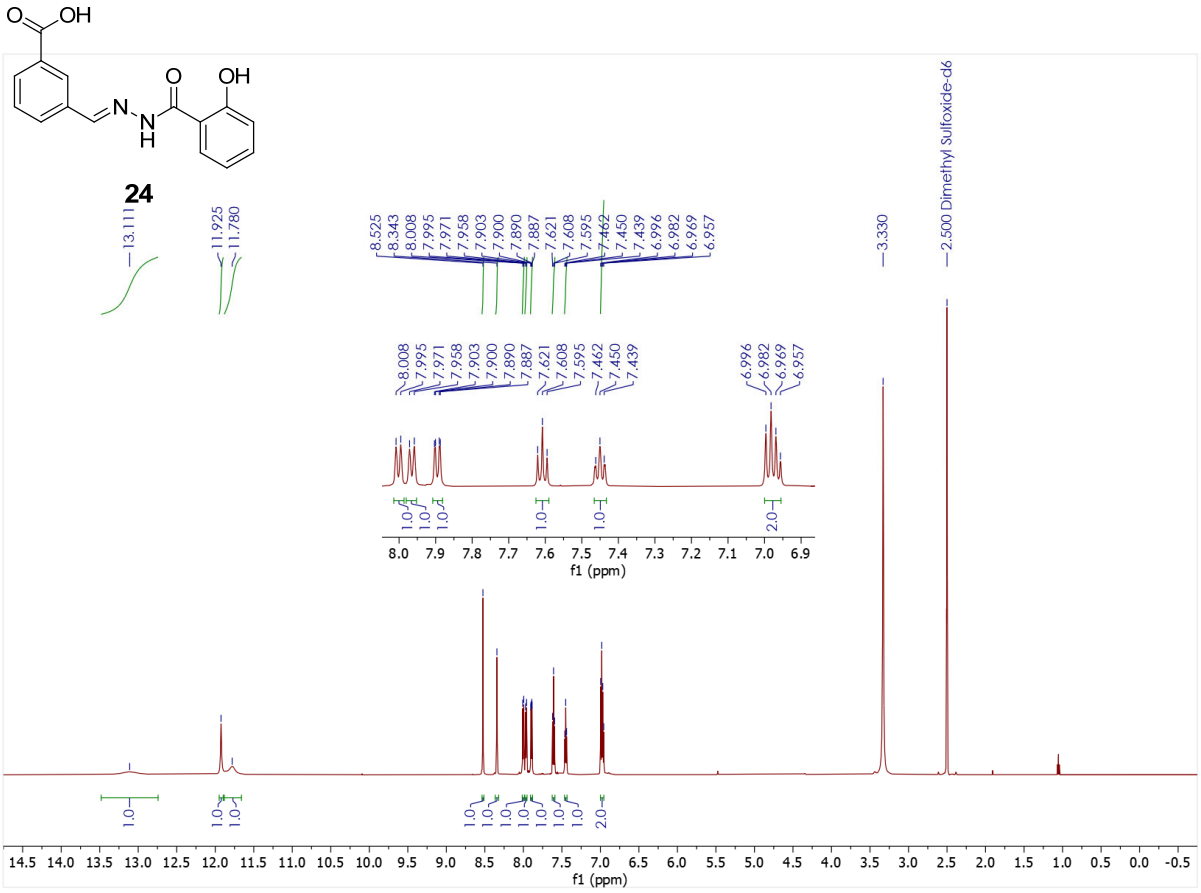
23

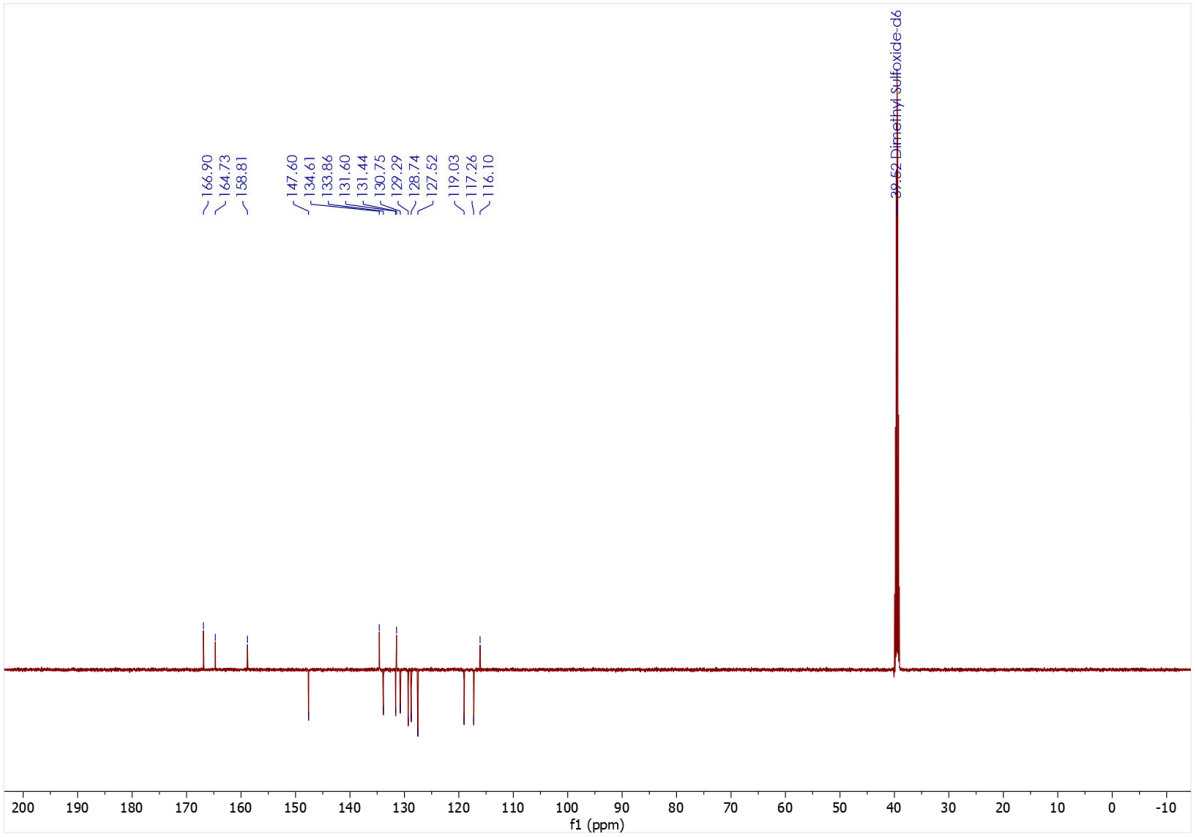








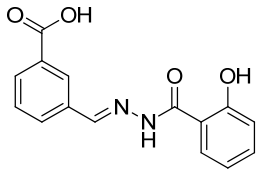

O
OH
N
N
H
O
OH
24
13.111
11.925
11.780
8.525
8.343
8.008
7.995
7.971
7.958
7.903
7.900
7.890
7.887
7.621
7.608
7.595
7.462
7.450
7.439
6.996
6.982
6.969
6.957
3.330
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.90
164.73
158.81
147.60
134.61
133.86
131.60
131.44
130.75
129.29
128.74
127.52
119.03
117.26
116.10
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

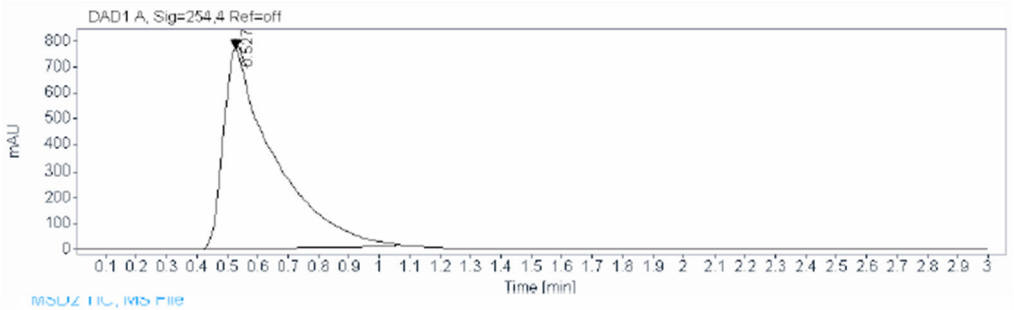
Agilent Technologies

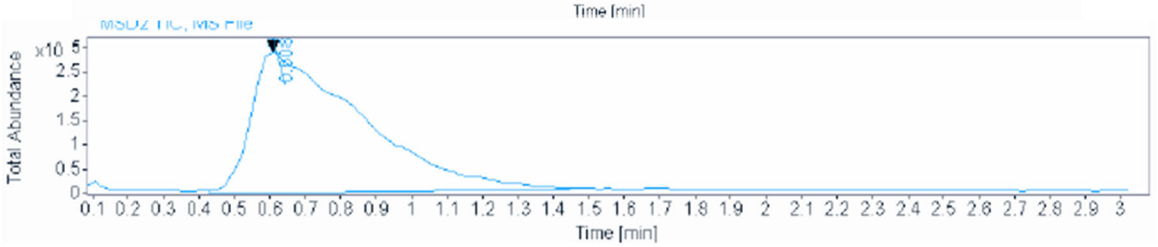
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\006-15-AJS1111.D		
Sample name:	AJS1111		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	15
Injection date:	7/25/2023 3:09:29 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

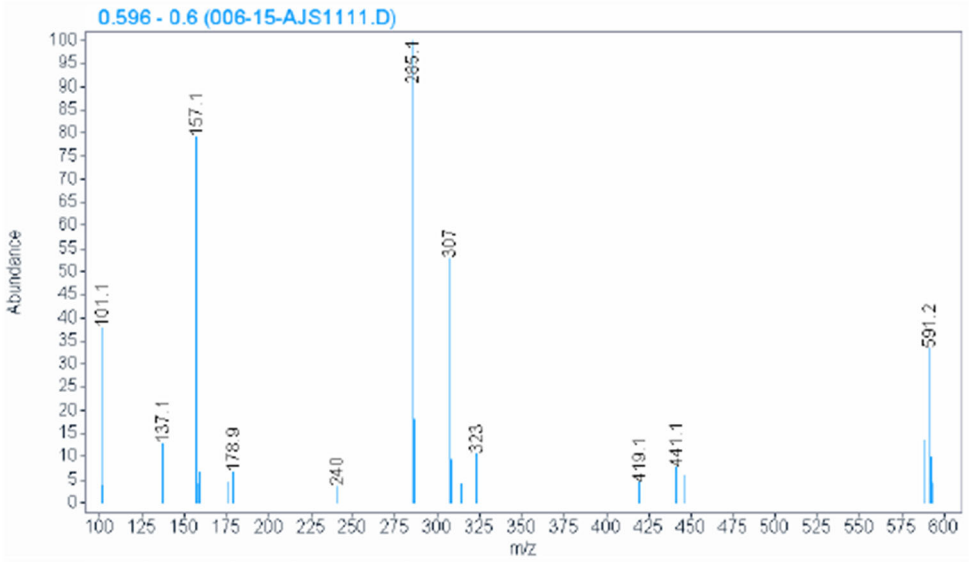


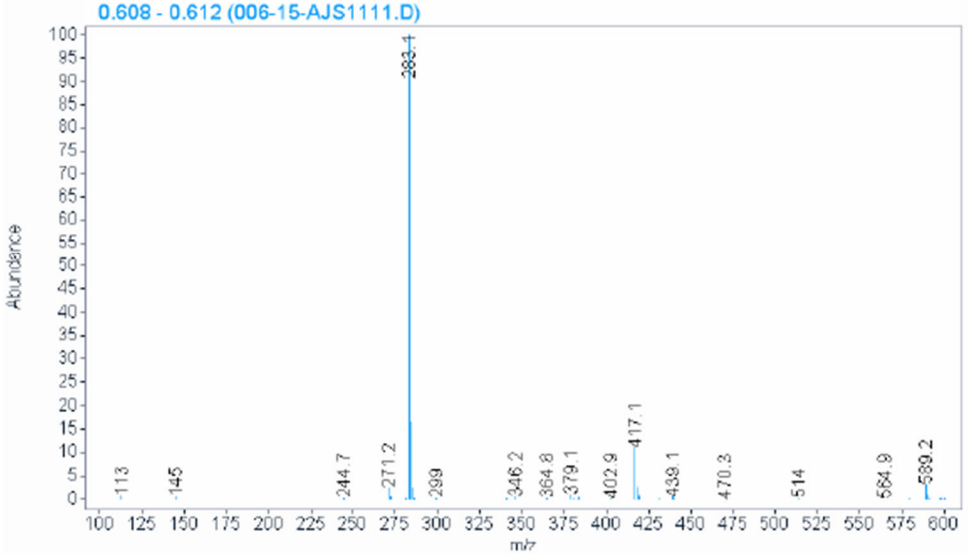
Molecular Weight: 284.267

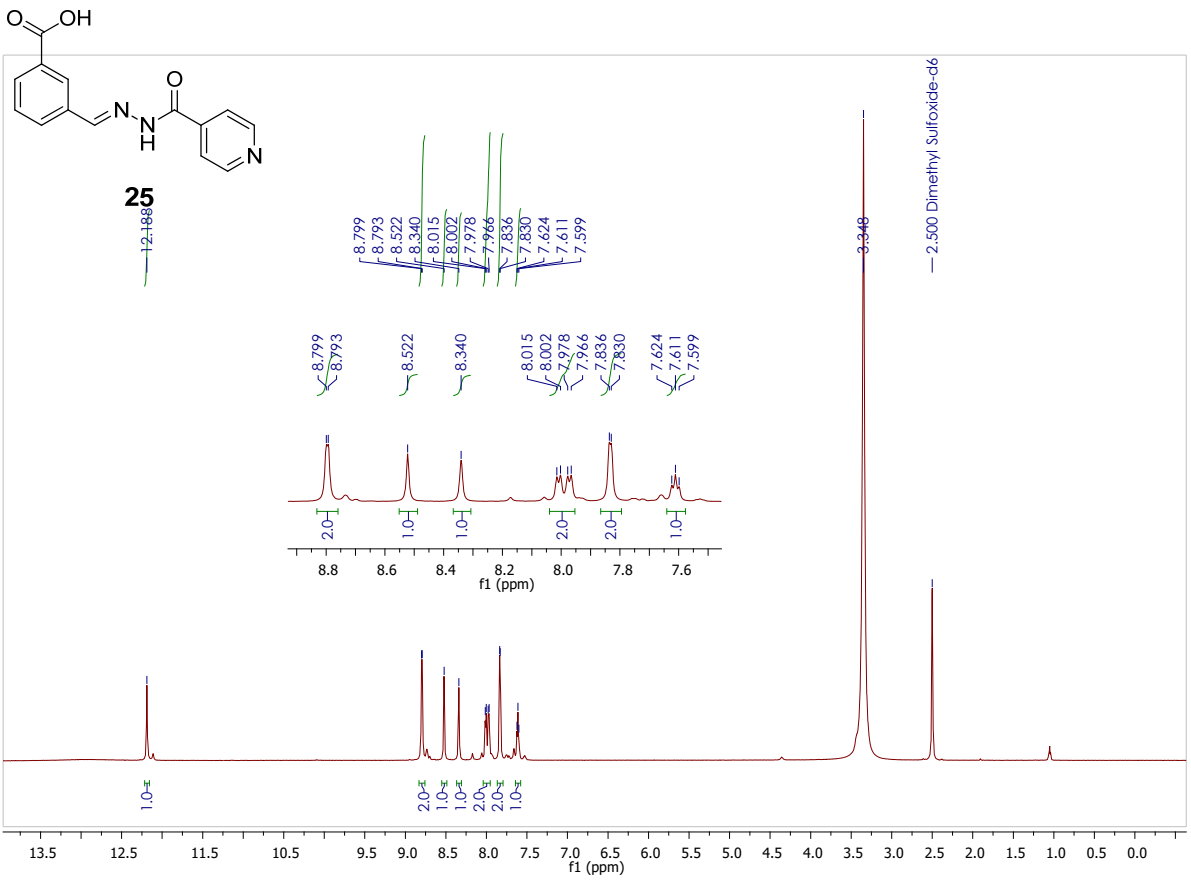
24

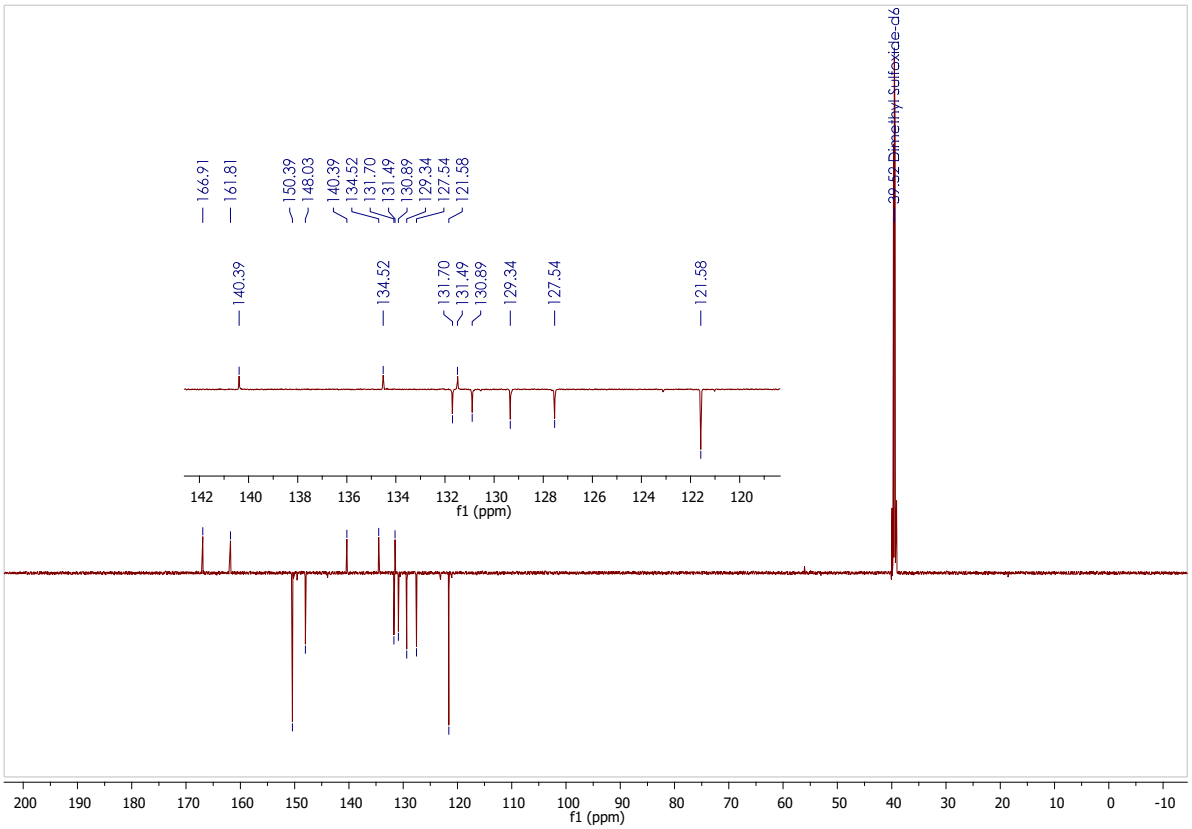








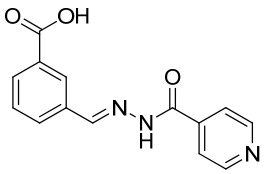

25
12.188
8.799
8.793
8.522
8.340
8.015
8.002
7.978
7.966
7.836
7.830
7.624
7.611
7.599
3.348
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.91
161.81
150.39
148.03
140.39
134.52
131.70
131.49
130.89
129.34
127.54
121.58
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

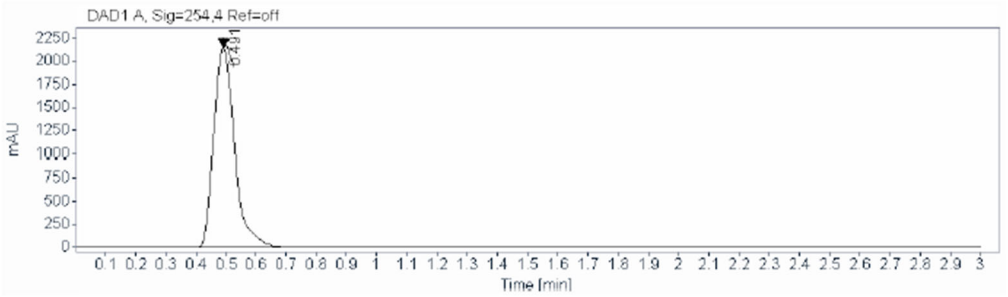
Agilent Technologies

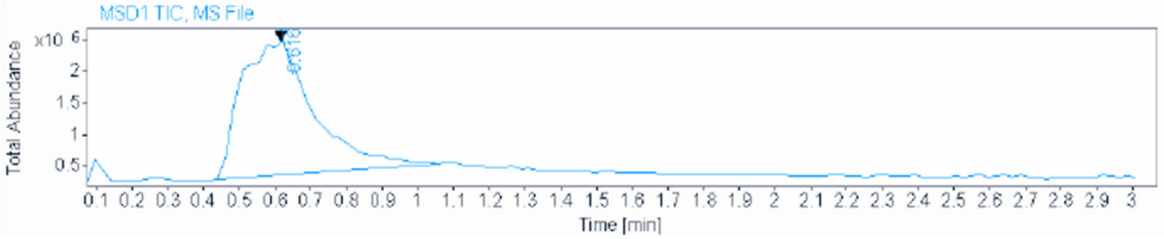
Data file:	D:\Chem32\1\Data\MH\MH4027-29, MH4013-14 2022-03-04 13-12-27\004-74-MH4029.D		
Sample name:	MH4029		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	74
Injection date:	3/4/2022 1:28:06 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

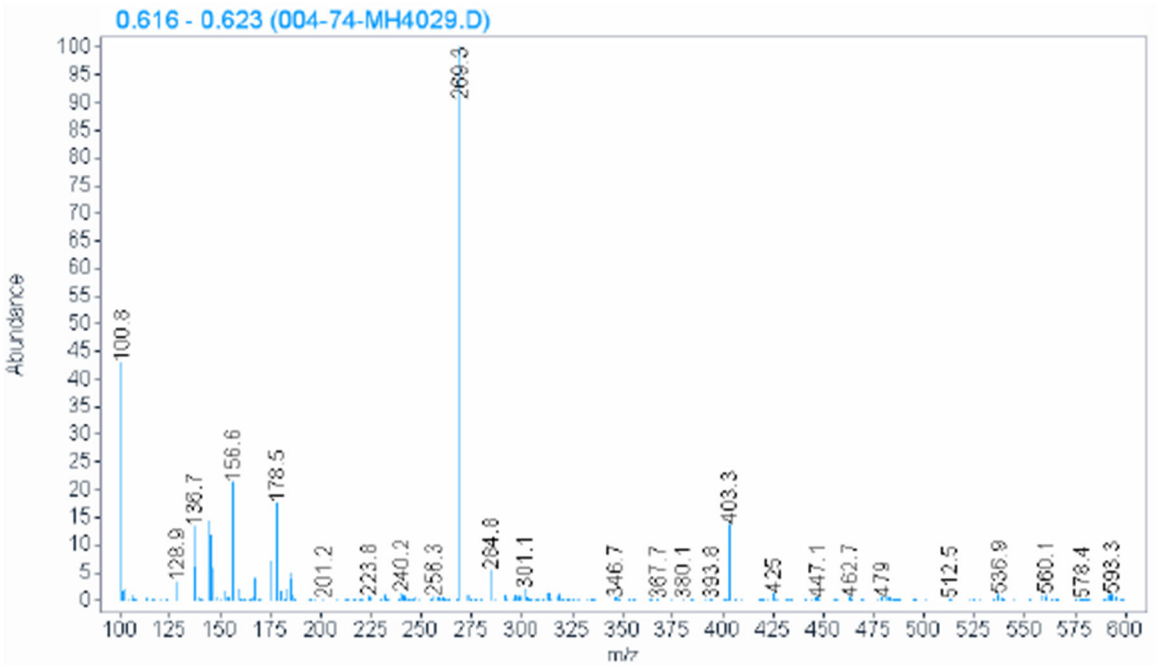


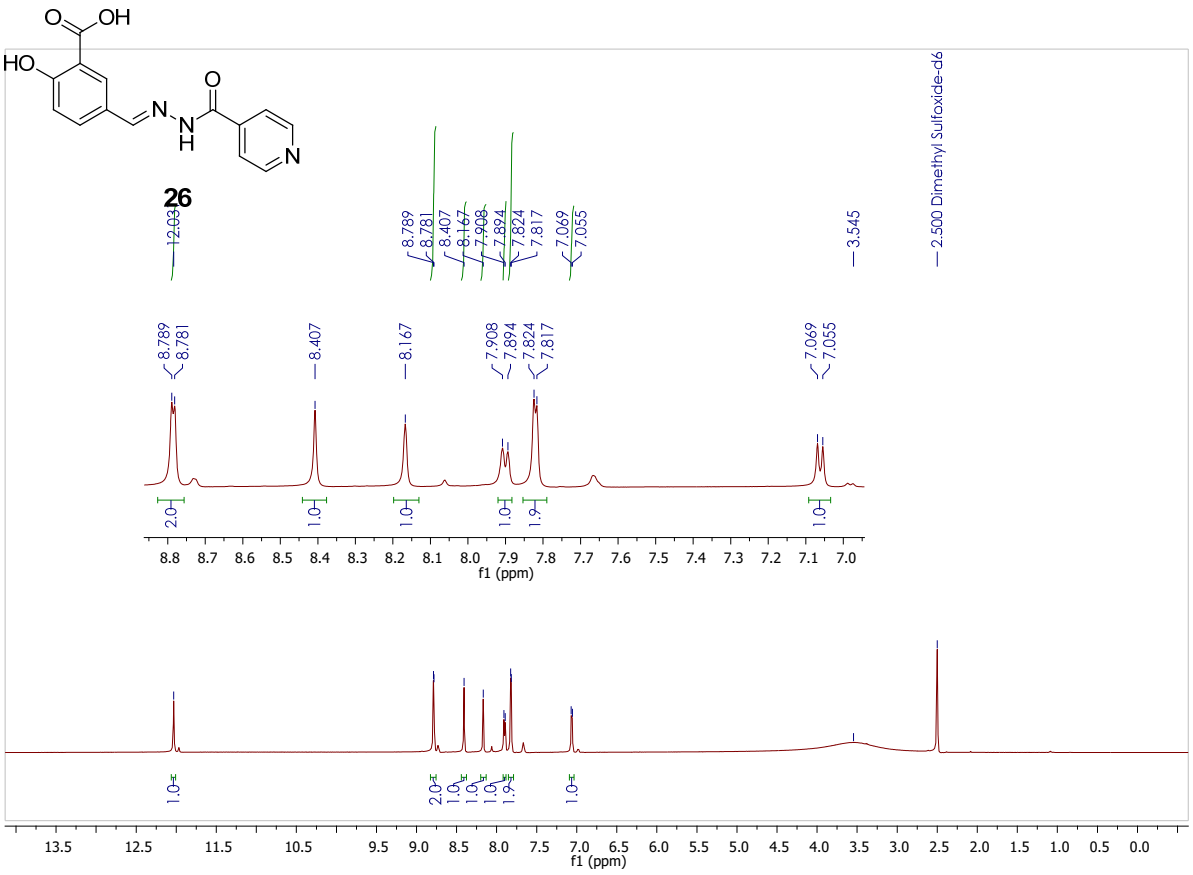
Molecular Weight: 269.255

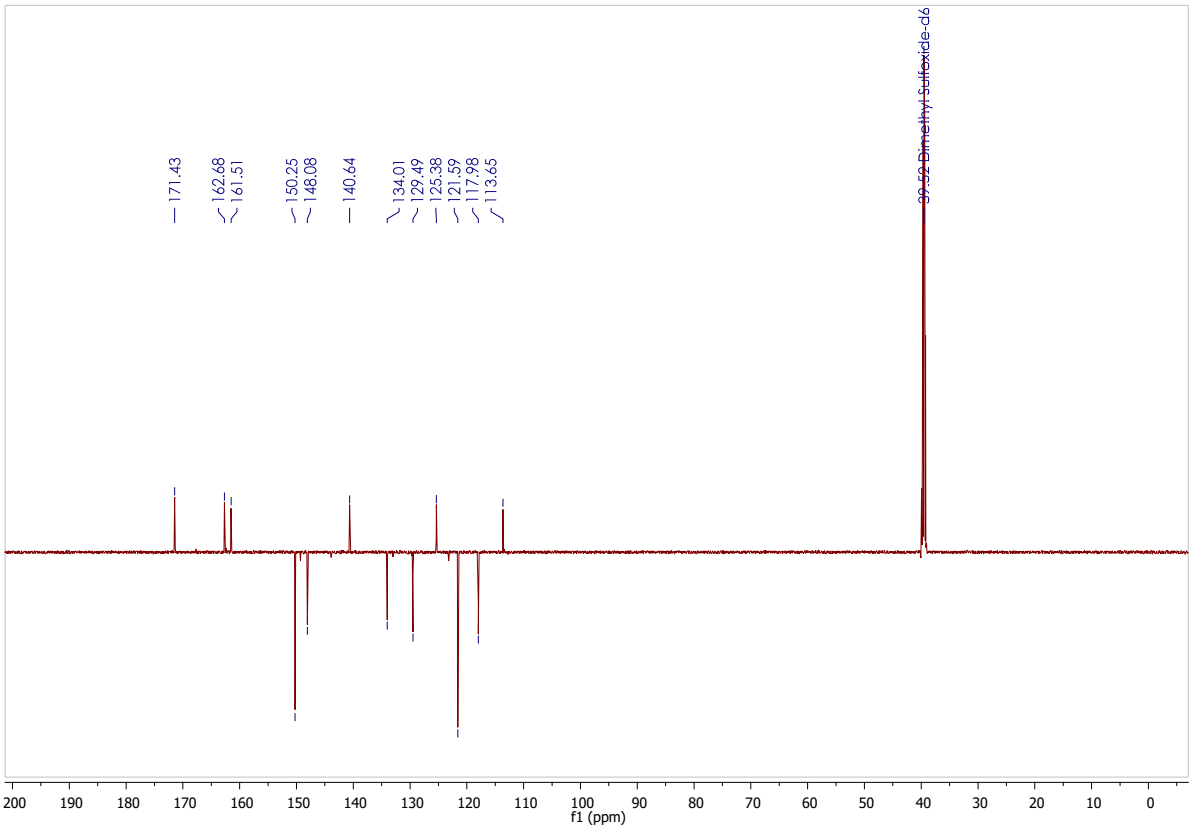
25







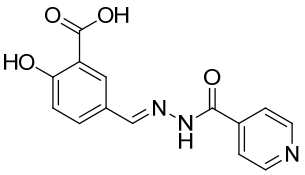

26
12.03
8.789
8.781
8.407
8.167
7.908
7.894
7.824
7.817
7.069
7.055
3.545
2.500 Dimethyl Sulfoxide-d6
2.0
1.0
1.0
1.0
1.9
1.0
f1 (ppm)


171.43
162.68
161.51
150.25
148.08
140.64
134.01
129.49
125.38
121.59
117.98
113.65
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

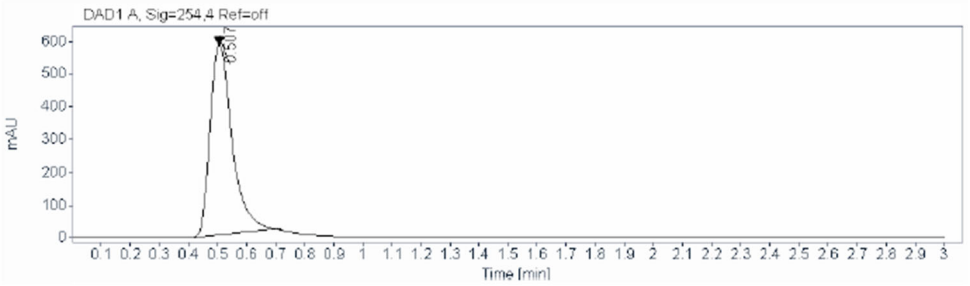
Agilent Technologies

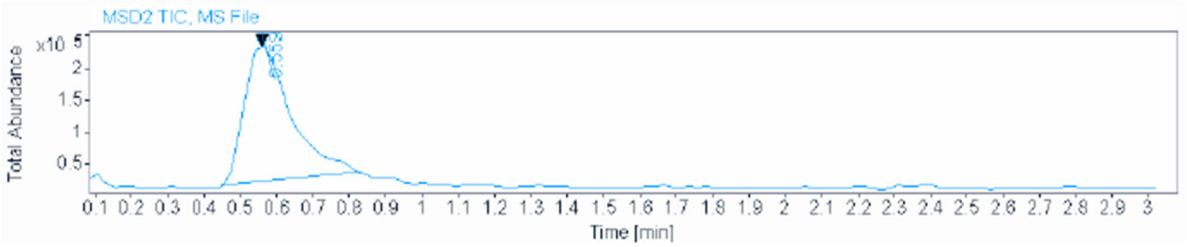
Data file:	D:\Chem32\1\Data\JRB\JRB3066 3157 3158 3160 2023-07-24 12-35-44\004-98-JRB3158.D		
Sample name:	JRB3158		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	98
Injection date:	7/24/2023 12:51:52 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

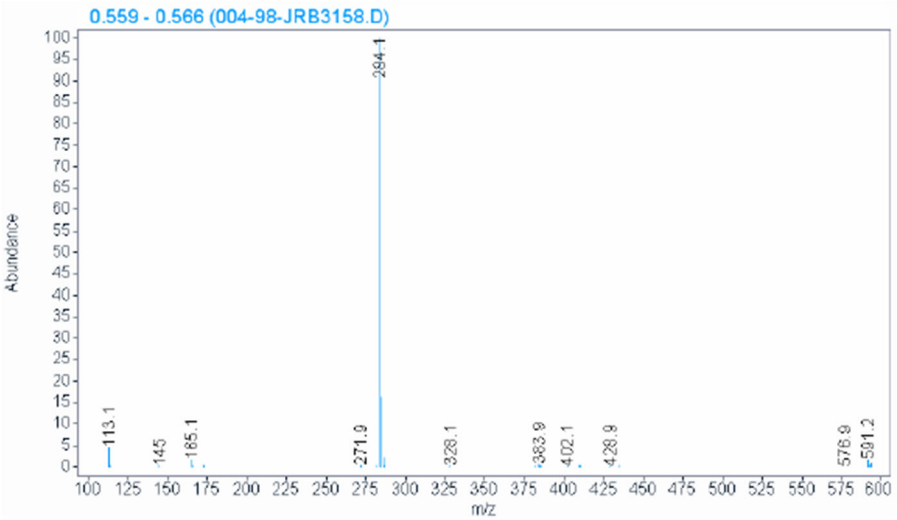


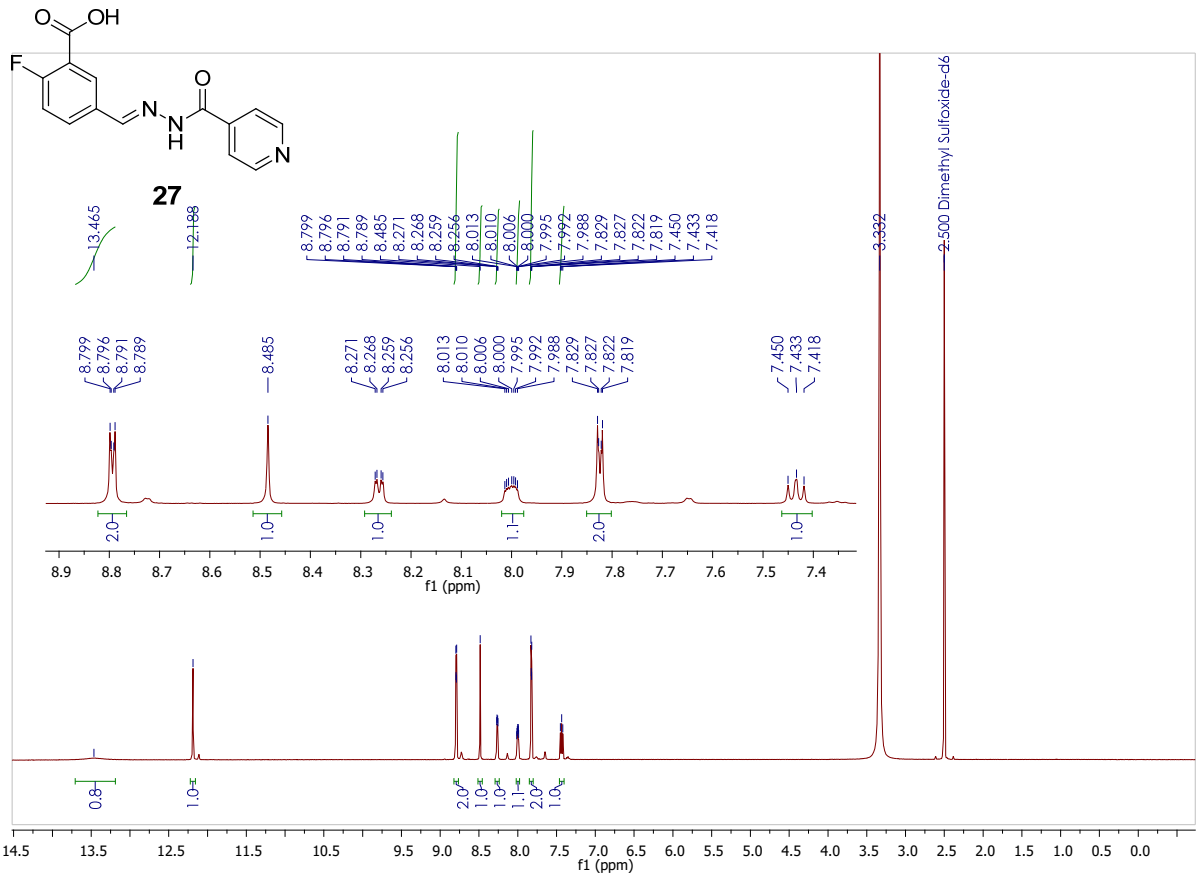
Molecular Weight: 285.255

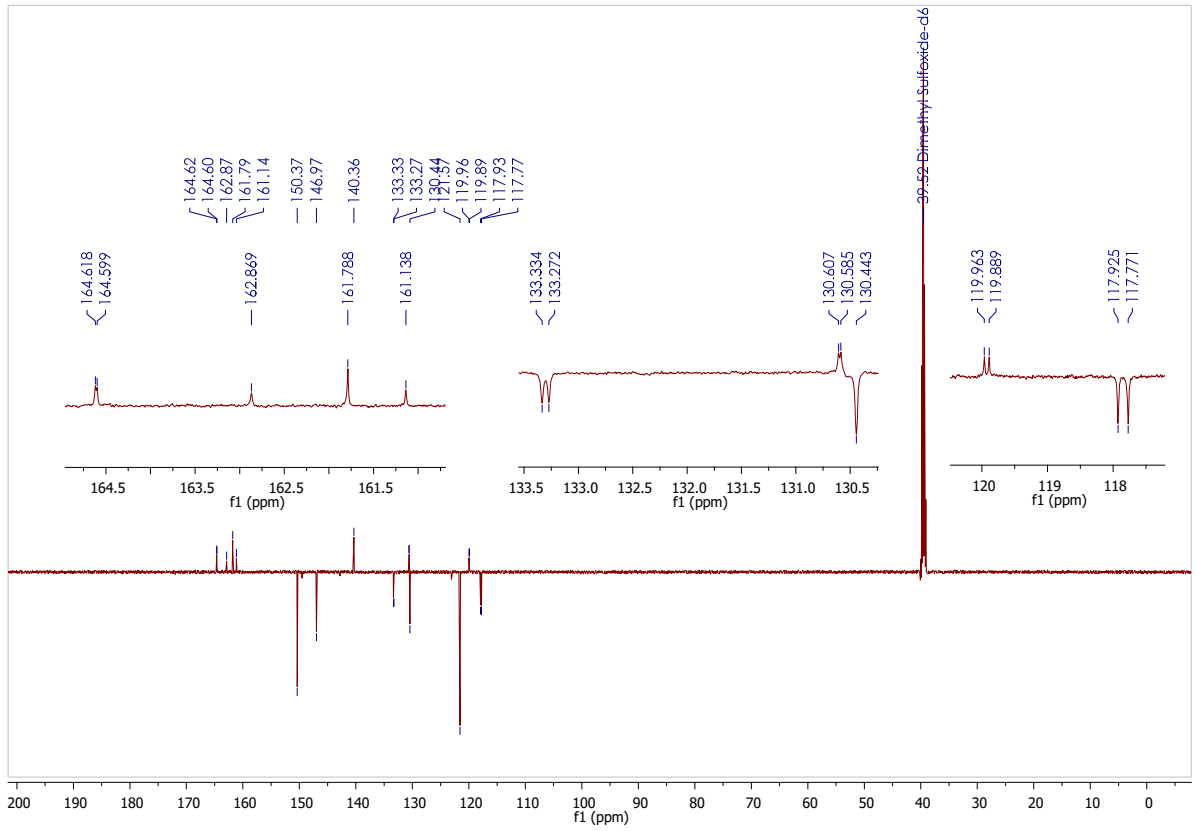
26

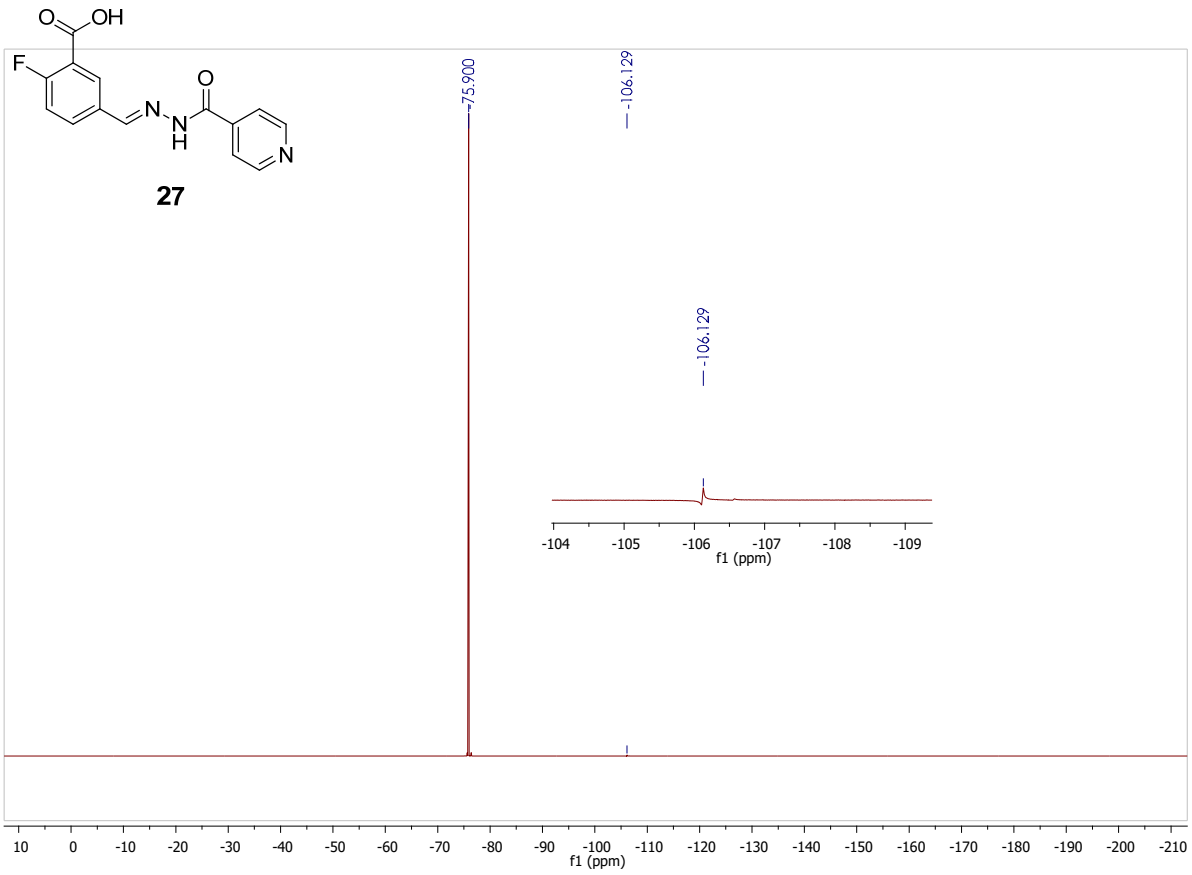







27
13.465
12.188
8.799
8.796
8.791
8.789
8.485
8.271
8.268
8.259
8.256
8.013
8.010
8.006
8.000
7.995
7.992
7.988
7.829
7.827
7.822
7.819
7.450
7.433
7.418
3.332
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

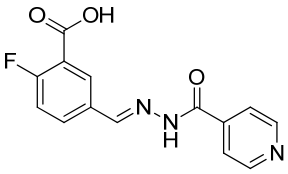

164.62
164.60
162.87
161.79
161.14
150.37
146.97
140.36
133.33
133.27
130.44
130.37
119.96
119.89
117.93
117.77
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
F
N
N
H
O
N
27
-75.900
-106.129
-106.129
-104
-105
-106
-107
-108
-109
f1 (ppm)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

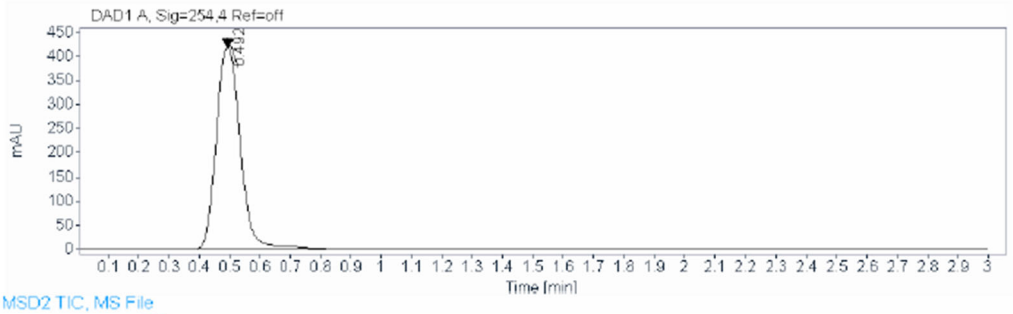
Agilent Technologies

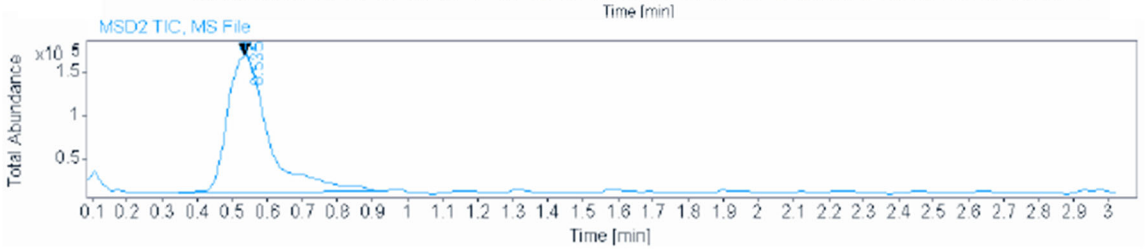
Data file:	D:\Chem32\1\Data\JRB\JRB3189 3196 4001 4002 2023-07-24 12-59-52\005-93-JRB4002.D		
Sample name:	JRB4002		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	93
Injection date:	7/24/2023 1:20:11 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

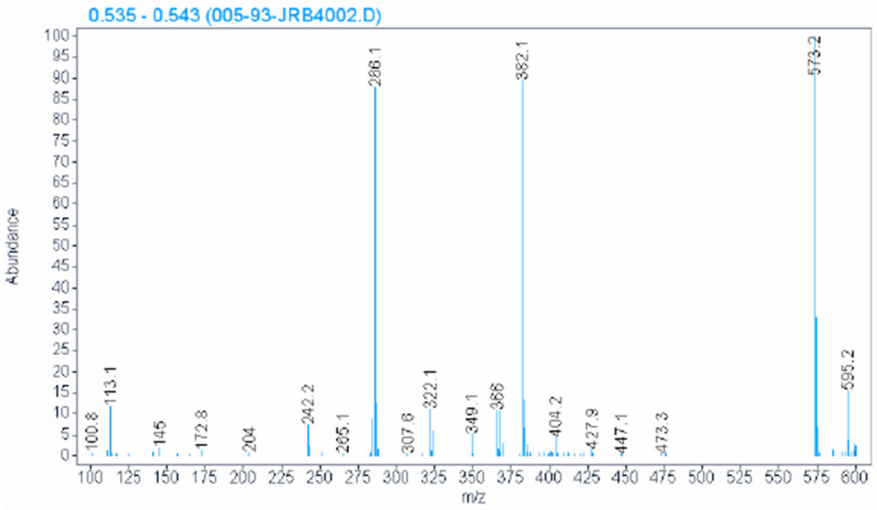


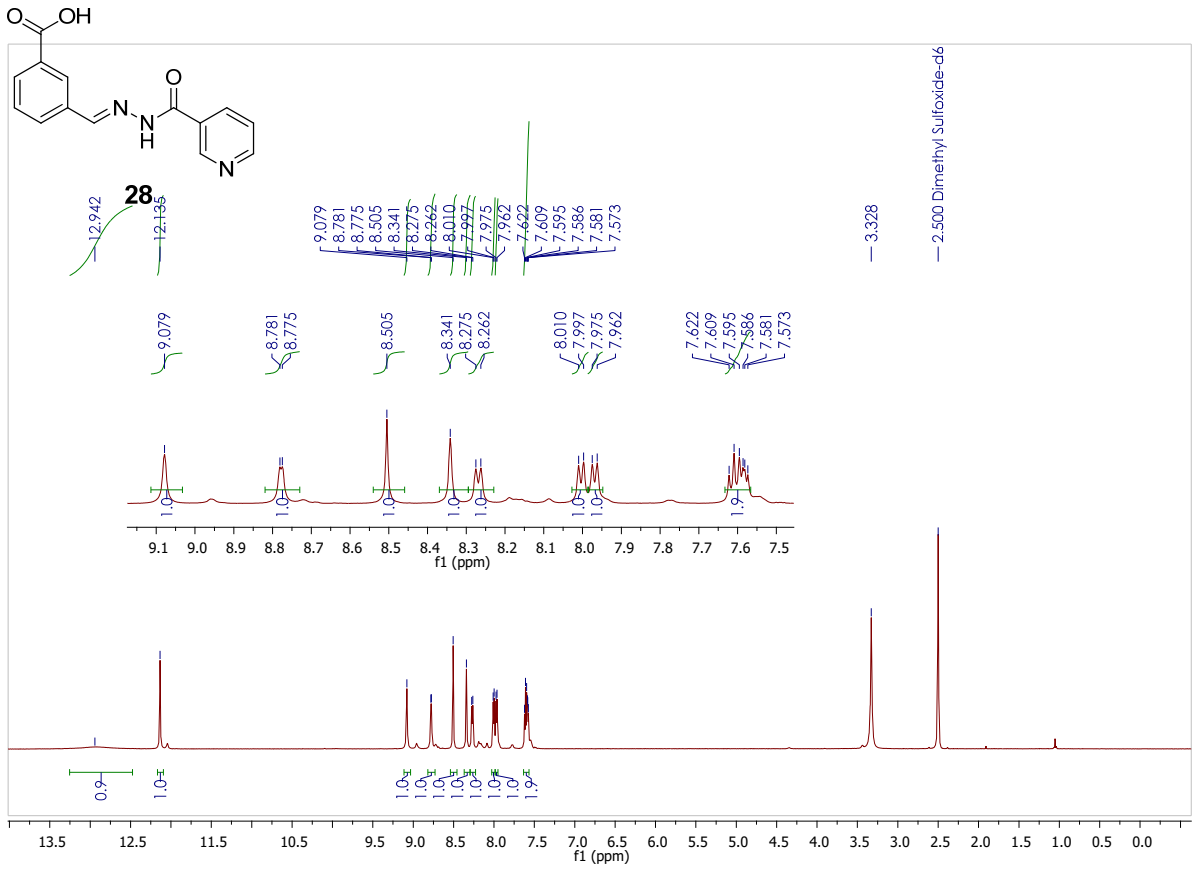
Molecular Weight: 287.246

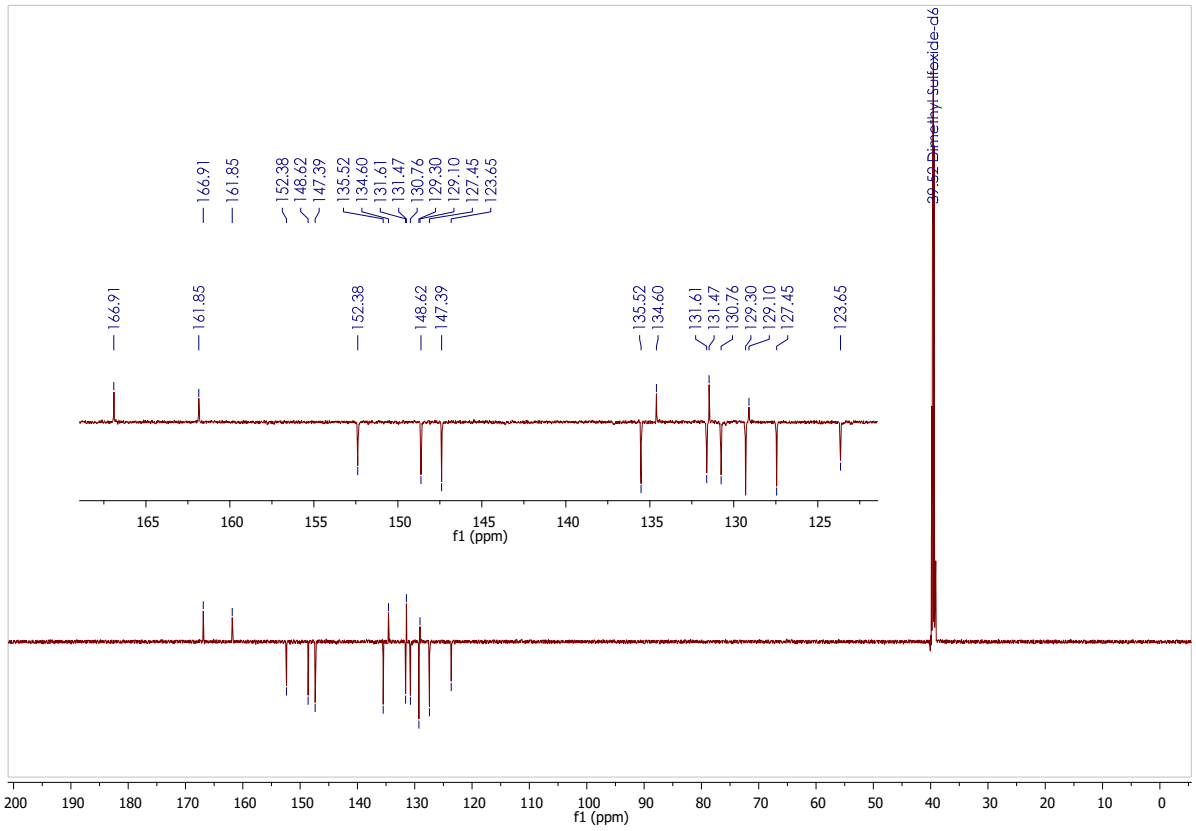
27







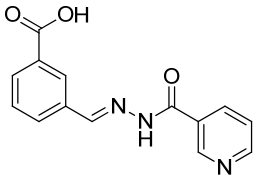

28
12.942
12.135
9.079
8.781
8.775
8.505
8.341
8.275
8.262
8.010
7.997
7.975
7.962
7.622
7.609
7.595
7.586
7.581
7.573
3.328
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.91
161.85
152.38
148.62
147.39
135.52
134.60
131.61
131.47
130.76
129.30
129.10
127.45
123.65
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

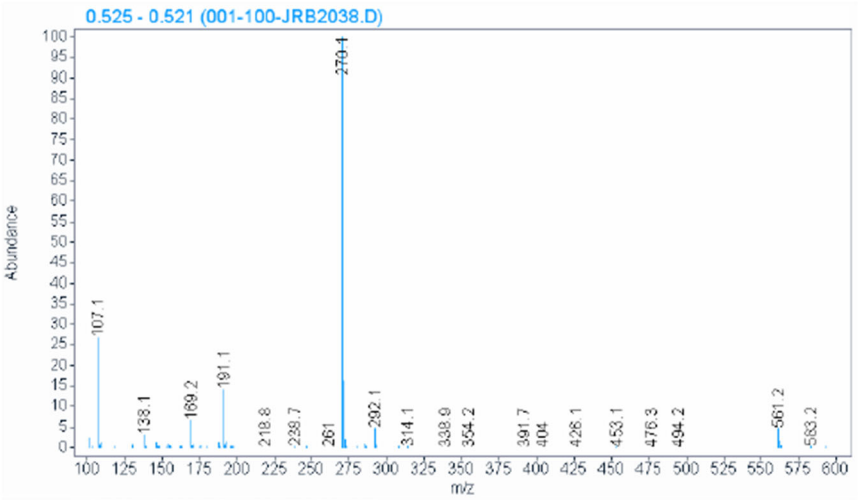
Agilent Technologies

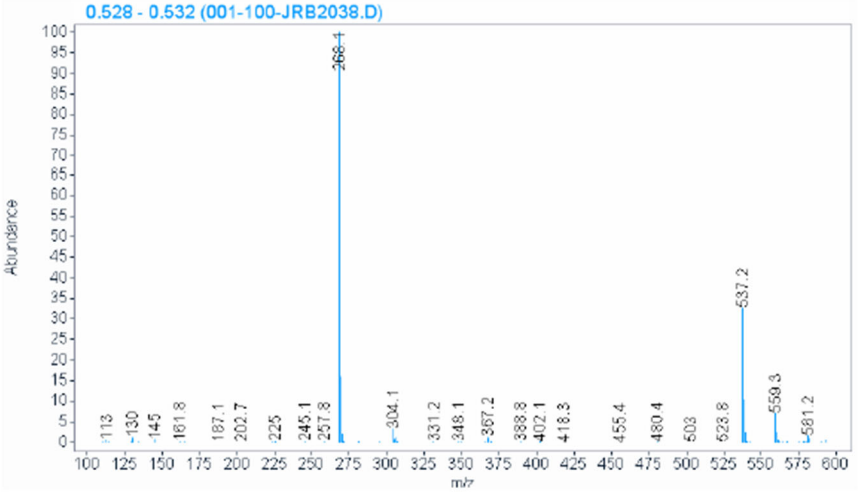
Data file:	D:\Chem32\1\Data\JRB\JRB2031 2038 2039 2021-11-26 16-23-36\001-100-JRB2038.D		
Sample name:	JRB2038		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	100
Injection date:	11/26/2021 4:25:21 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

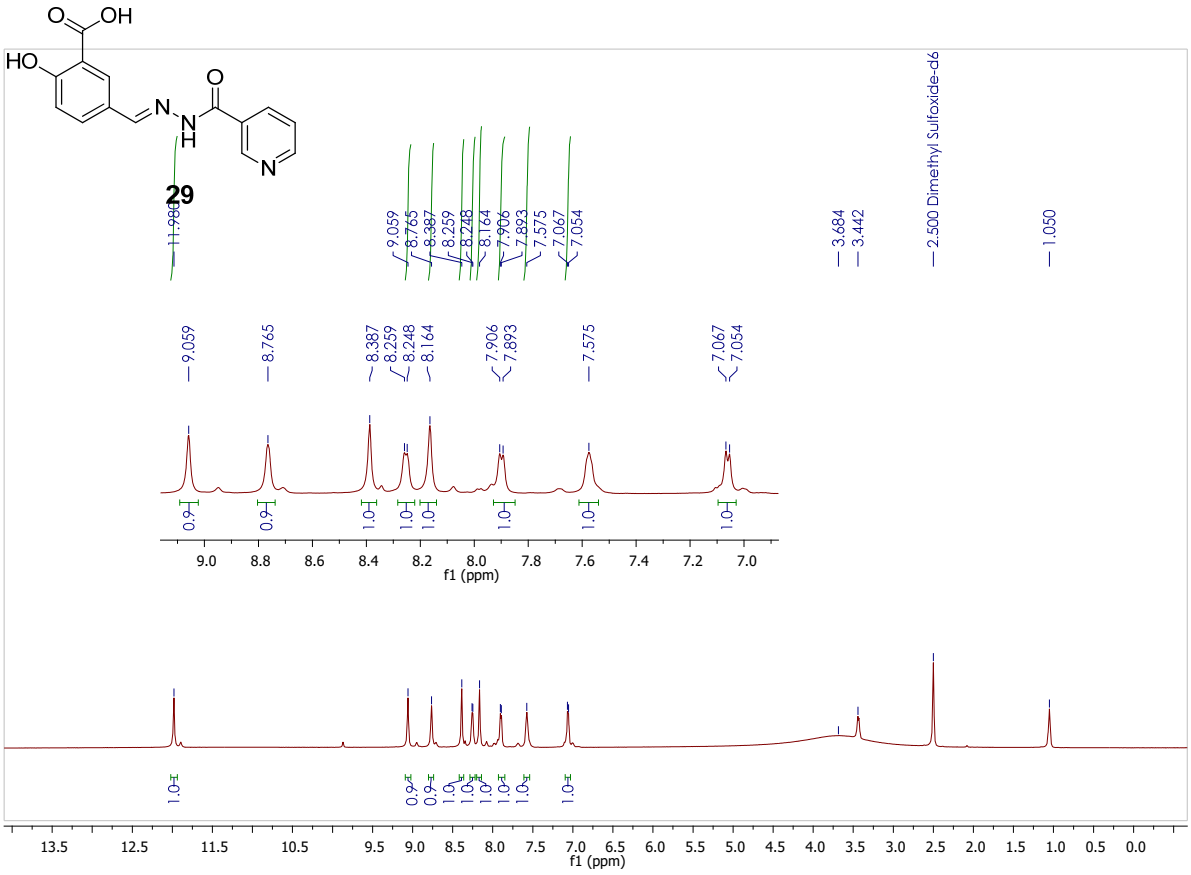


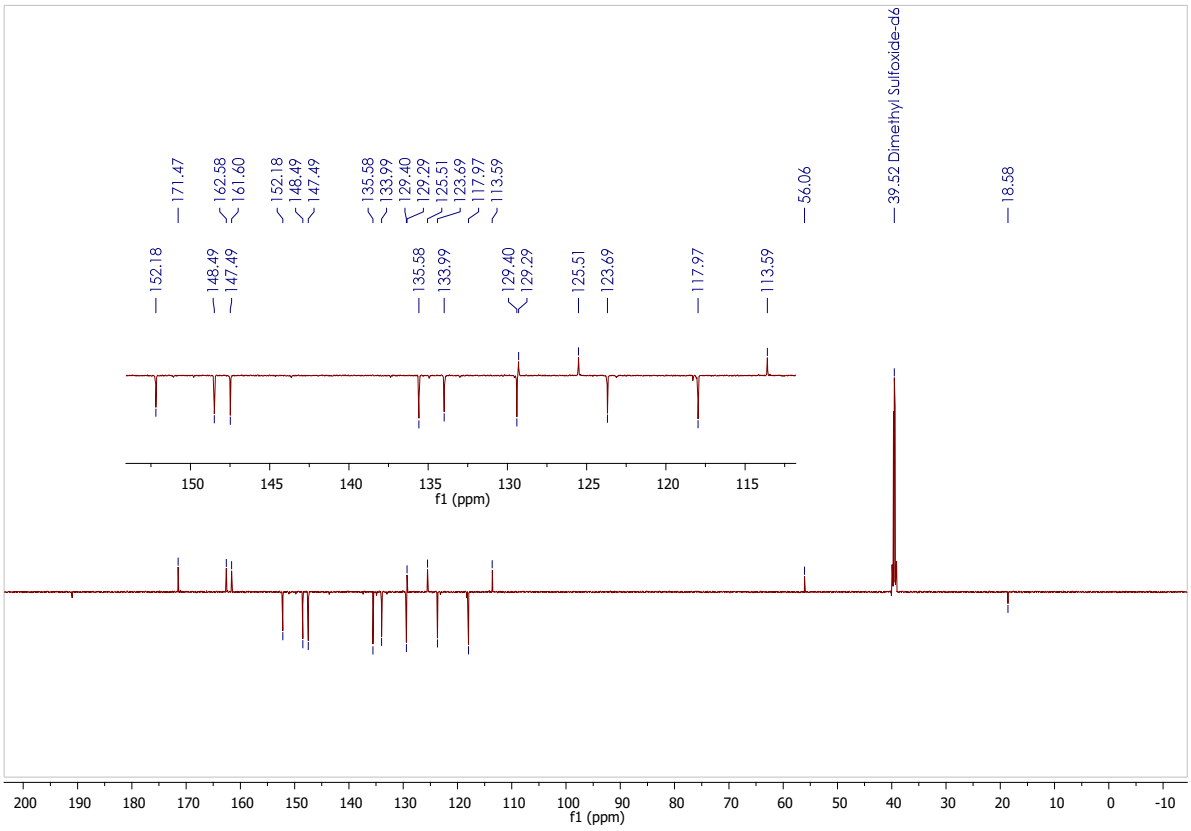
Molecular Weight: 269.255

28





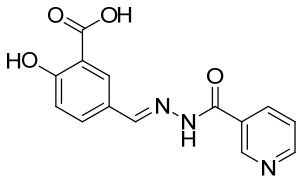

29
11.988
9.059
8.765
8.387
8.259
8.248
8.164
7.906
7.893
7.575
7.067
7.054
3.684
3.442
2.500 Dimethyl Sulfoxide-d6
1.050
f1 (ppm)


171.47
162.58
161.60
152.18
148.49
147.49
135.58
133.99
129.40
129.29
125.51
123.69
117.97
113.59
56.06
39.52 Dimethyl Sulfoxide-d6
18.58
f1 (ppm)

LCMS Report

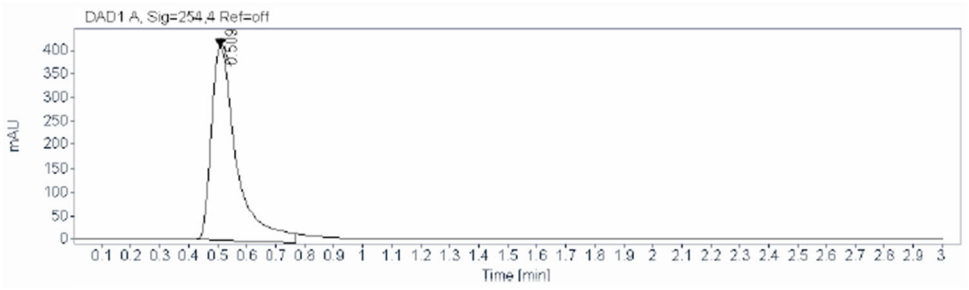
Agilent Technologies

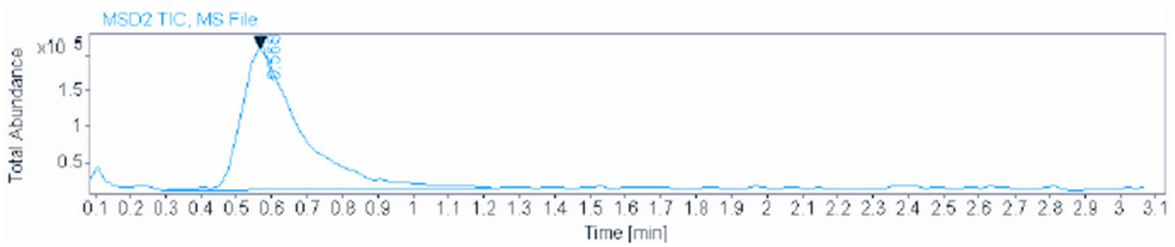
Data file:	D:\Chem32\1\Data\JRB\JRB3066 3157 3158 3160 2023-07-24 12-35-44\003-99-JRB3157.D		
Sample name:	JRB3157		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	99
Injection date:	7/24/2023 12:47:12 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

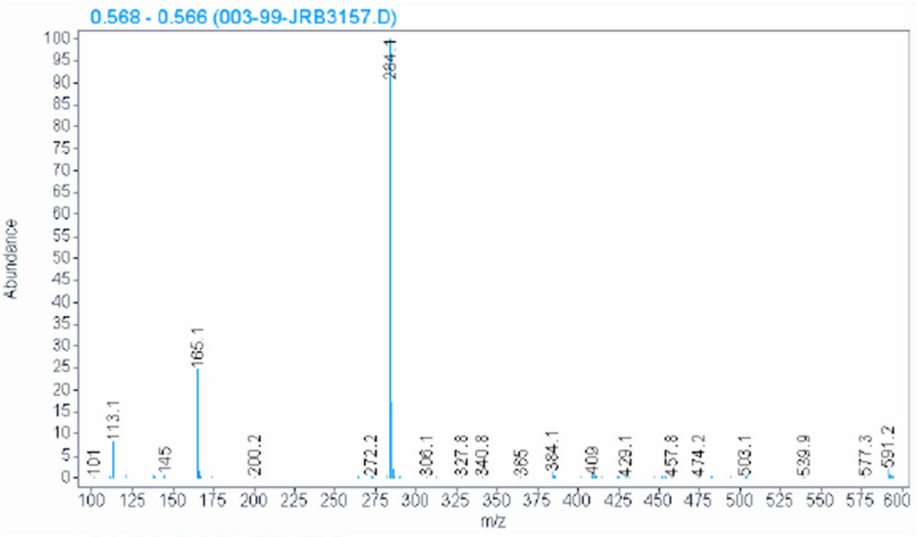


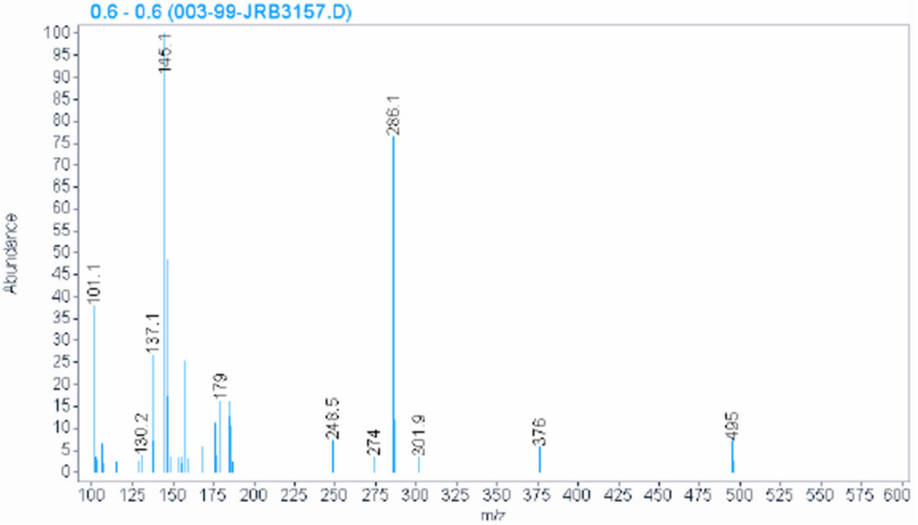
Molecular Weight: 285.255

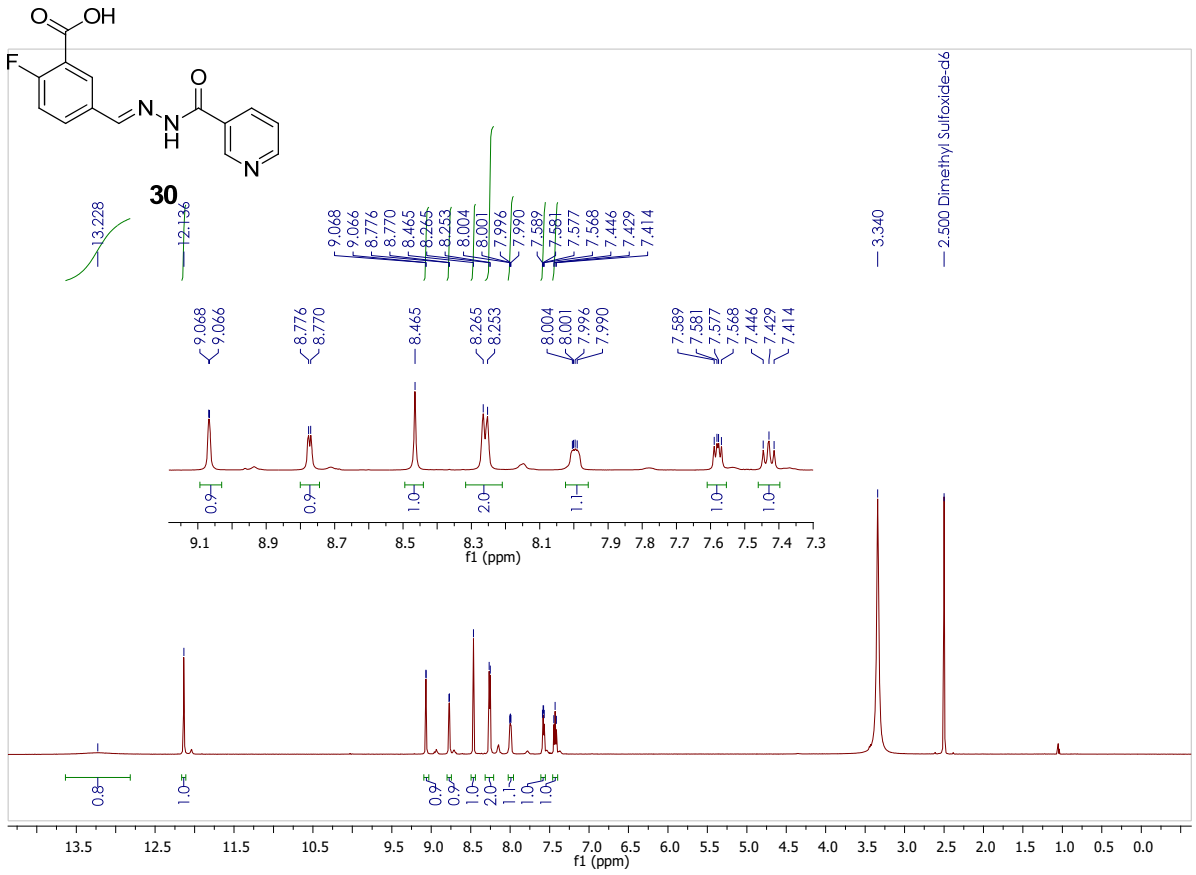
29

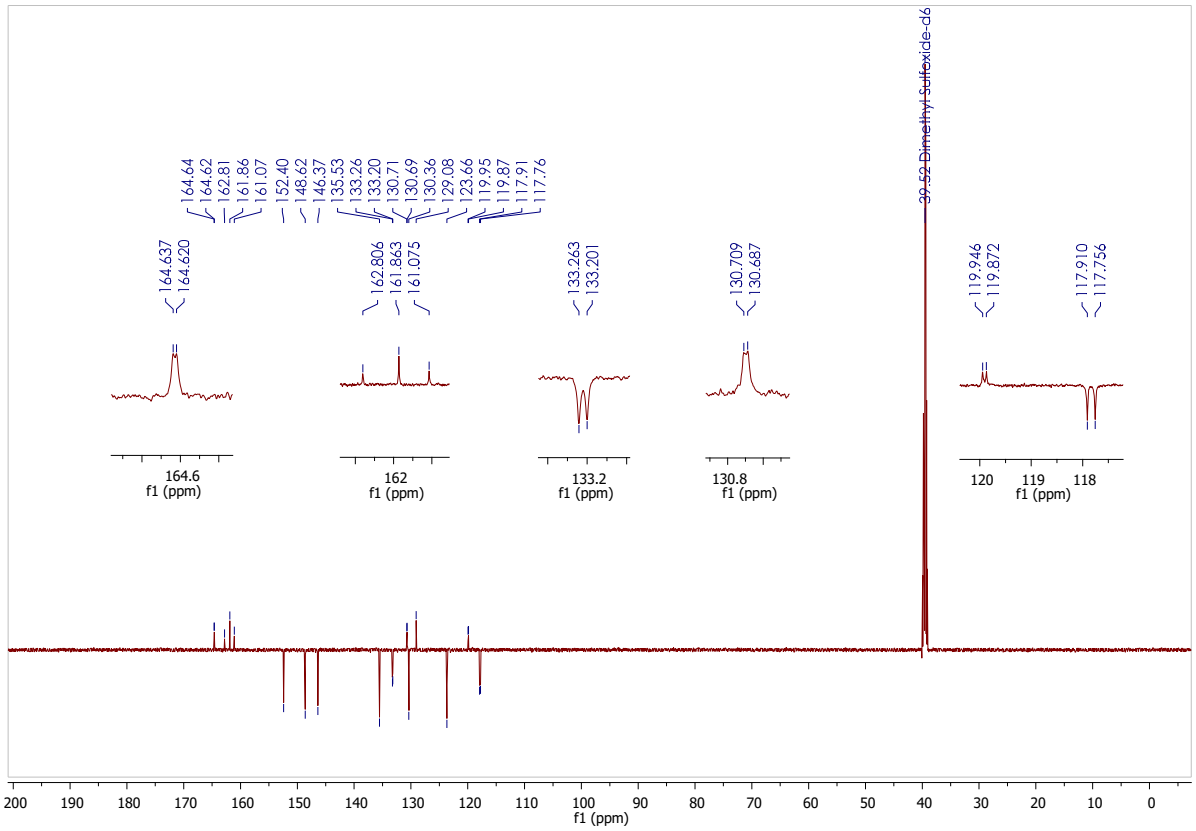


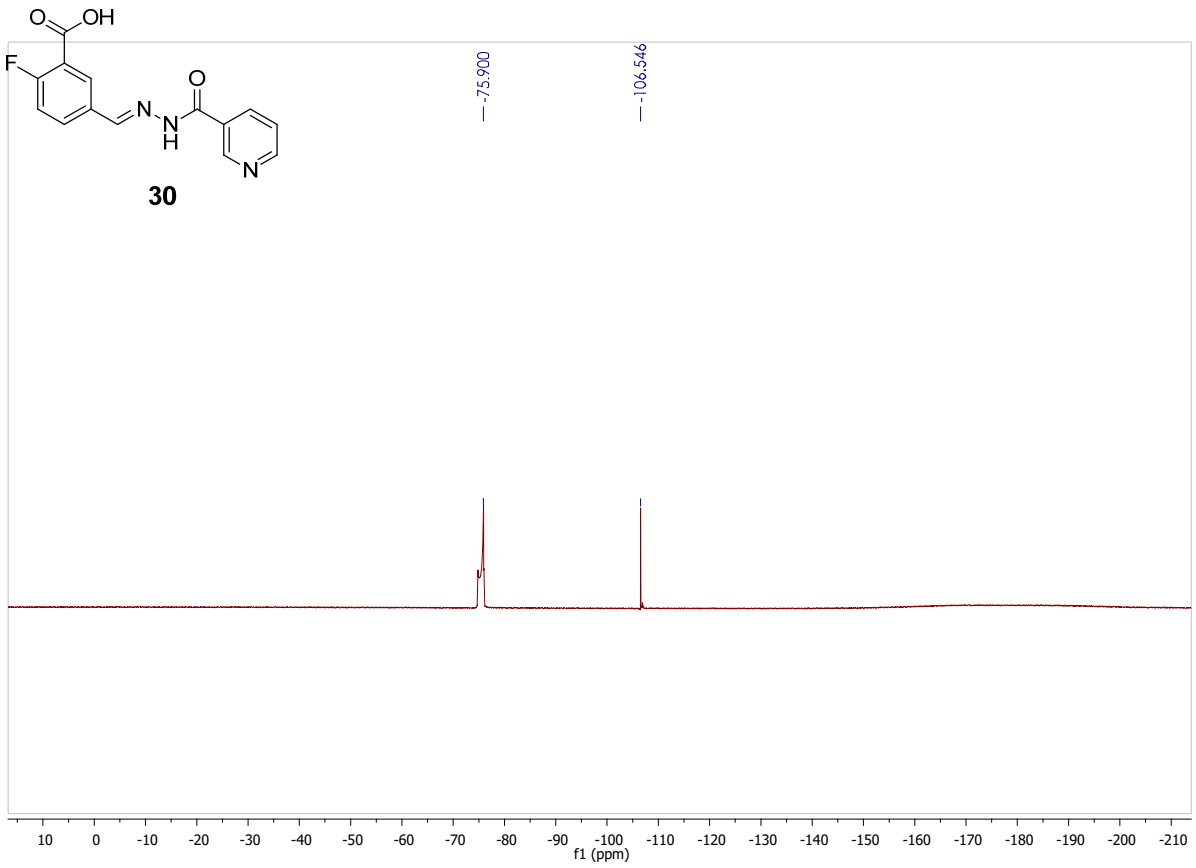







30
13.228
12.136
9.068
9.066
8.776
8.770
8.465
8.265
8.253
8.004
8.001
7.996
7.990
7.589
7.581
7.577
7.568
7.446
7.429
7.414
3.340
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

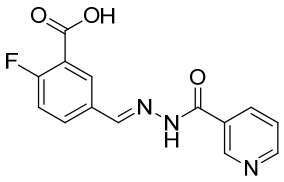

164.64
164.62
162.81
161.86
161.07
152.40
148.62
146.37
135.53
133.26
133.20
130.71
130.69
130.36
129.08
123.66
119.95
119.87
117.91
117.76
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
F
N
N
H
O
N
30
-75.900
-106.546
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

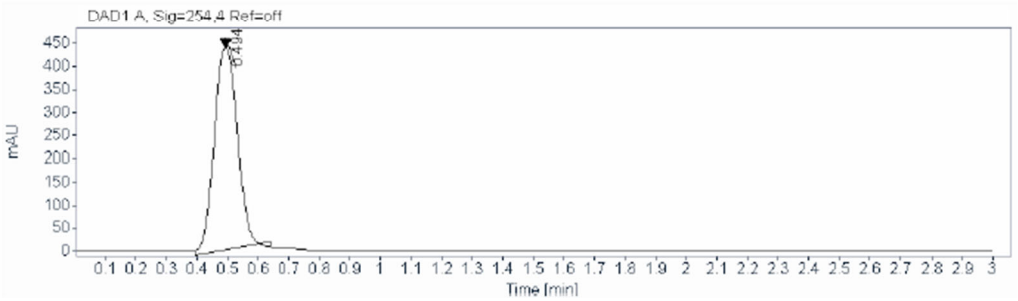
Agilent Technologies

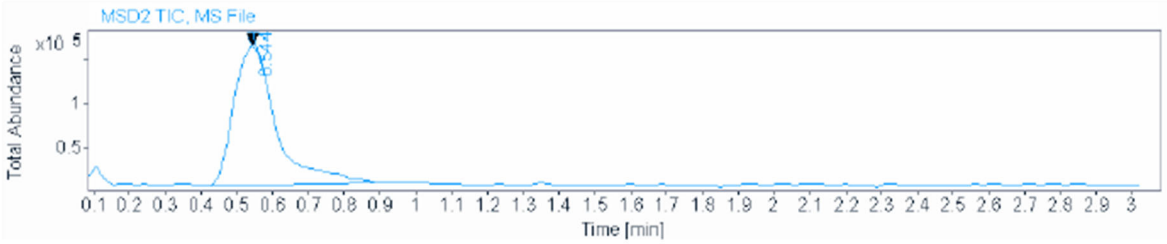
Data file:	D:\Chem32\1\Data\JRB\JRB4003 4007-4009 2023-07-24 14-06-38\002-90-JRB4003.D		
Sample name:	JRB4003		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	90
Injection date:	7/24/2023 2:13:12 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

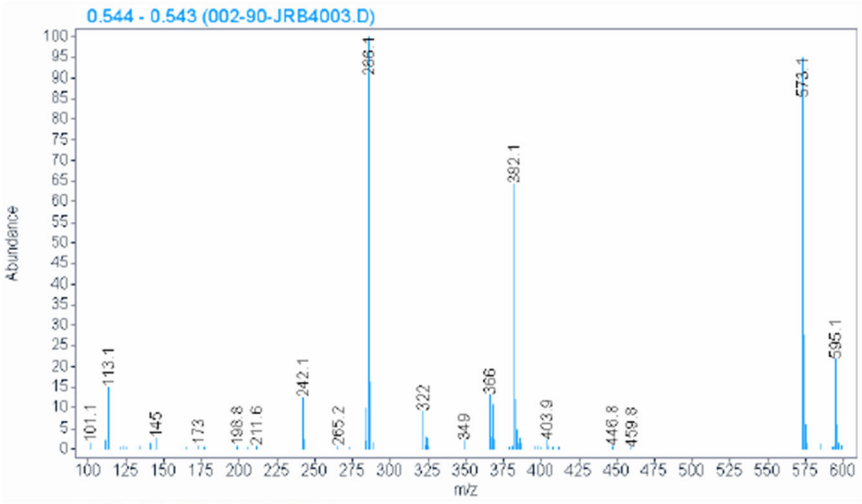


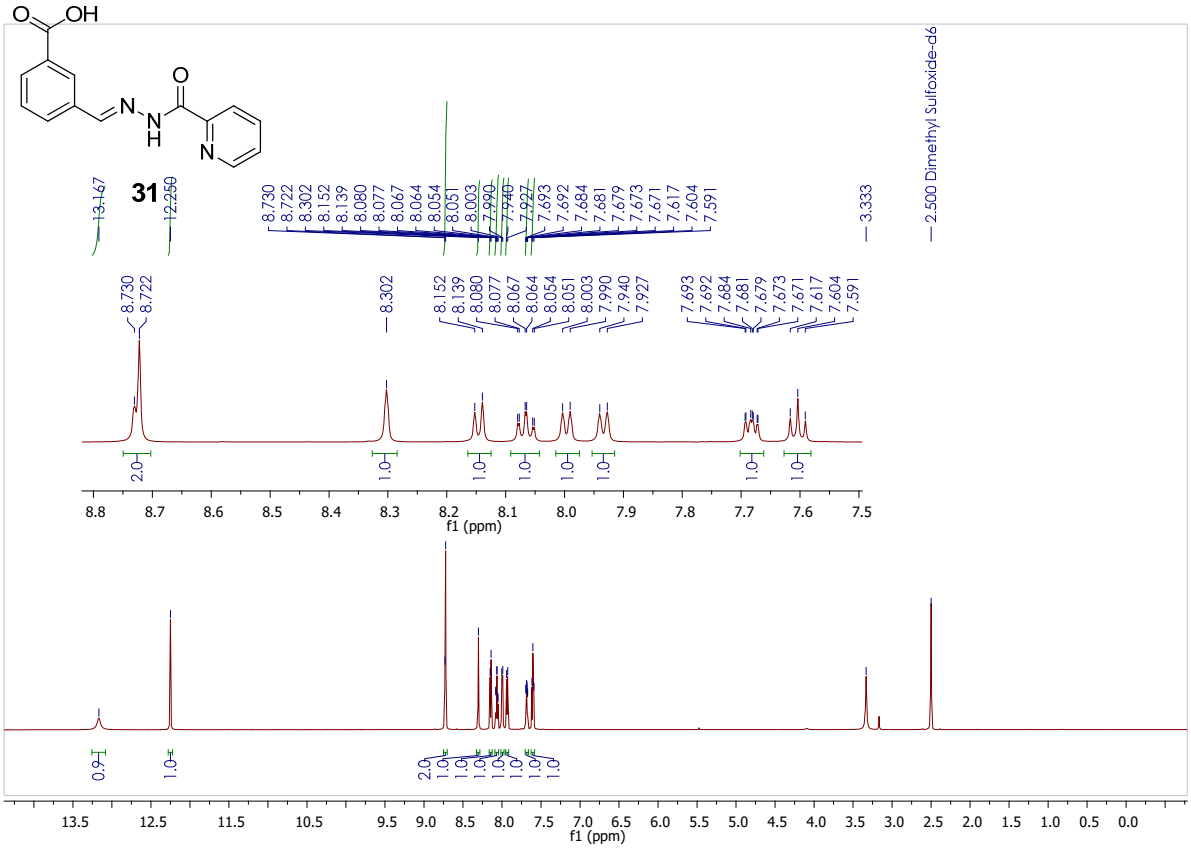
Molecular Weight: 287.246

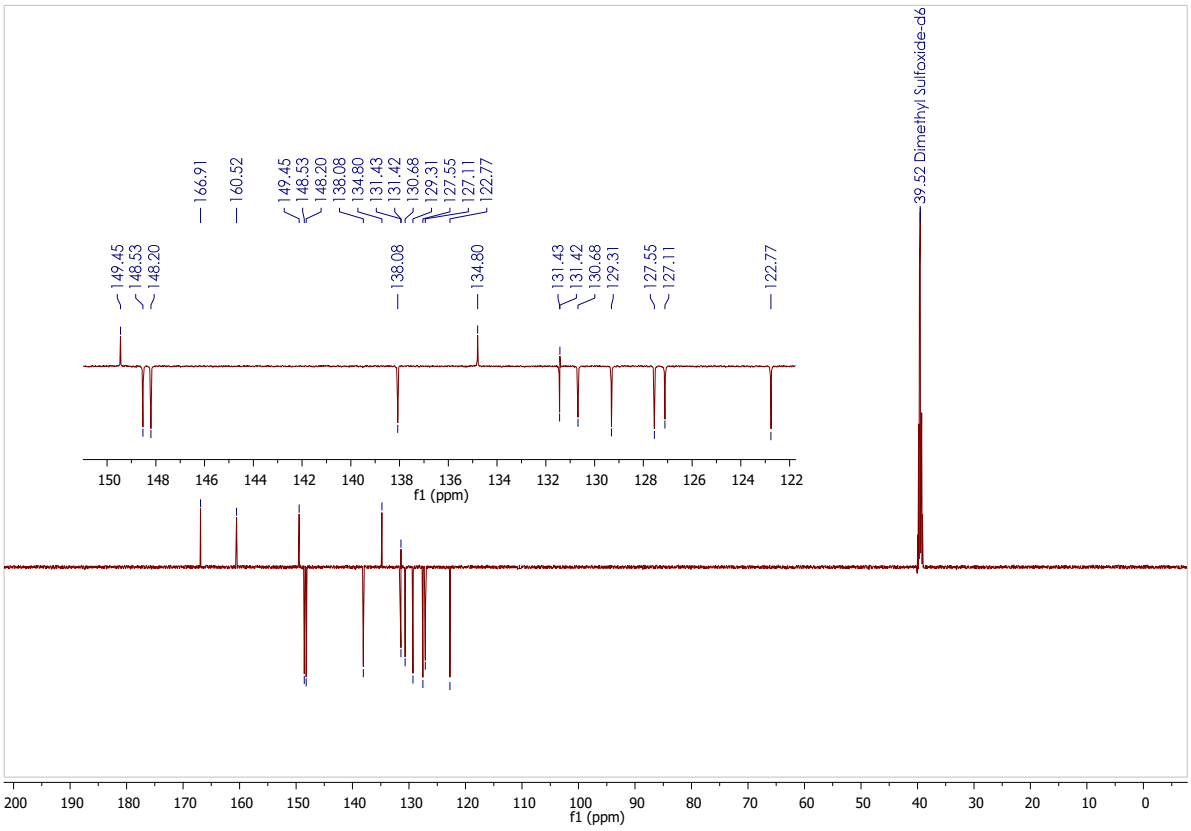
30







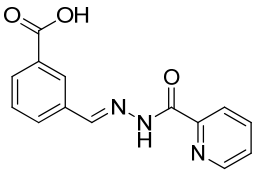

31
13.147
12.250
8.730
8.722
8.302
8.152
8.139
8.080
8.077
8.067
8.064
8.054
8.051
8.003
7.990
7.940
7.927
7.693
7.692
7.684
7.681
7.679
7.673
7.671
7.617
7.604
7.591
3.333
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.91
160.52
149.45
148.53
148.20
138.08
134.80
131.43
131.42
130.68
129.31
127.55
127.11
122.77
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

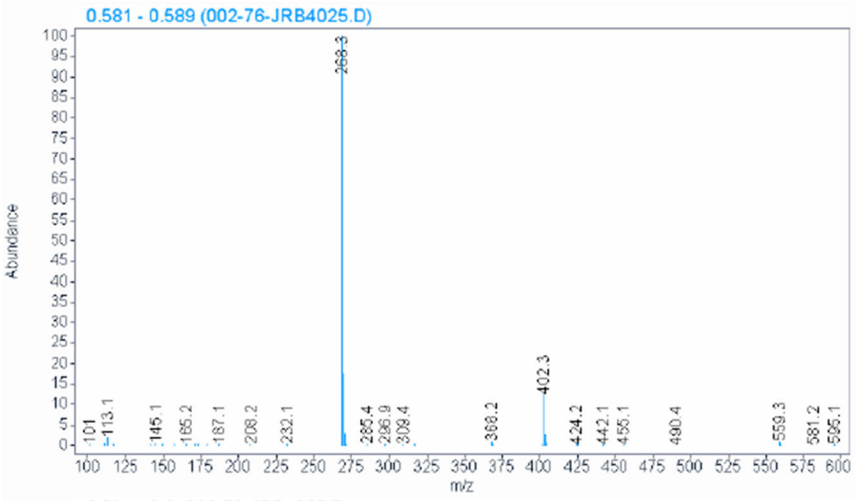
Agilent Technologies

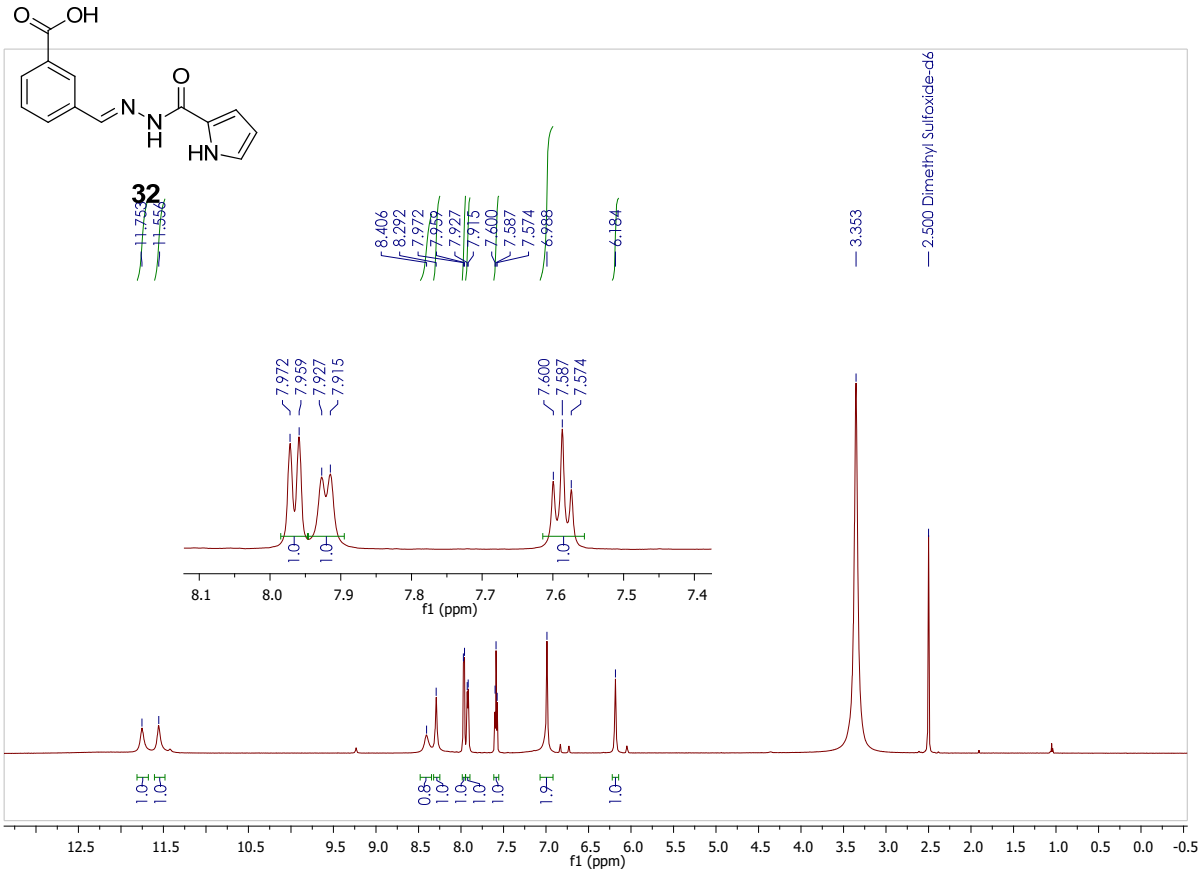
Data file:	D:\Chem32\1\Data\JRB\JRB4025-4027-2 2023-07-24 15-27-22\002-76-JRB4025.D		
Sample name:	JRB4025		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	76
Injection date:	7/24/2023 3:35:33 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

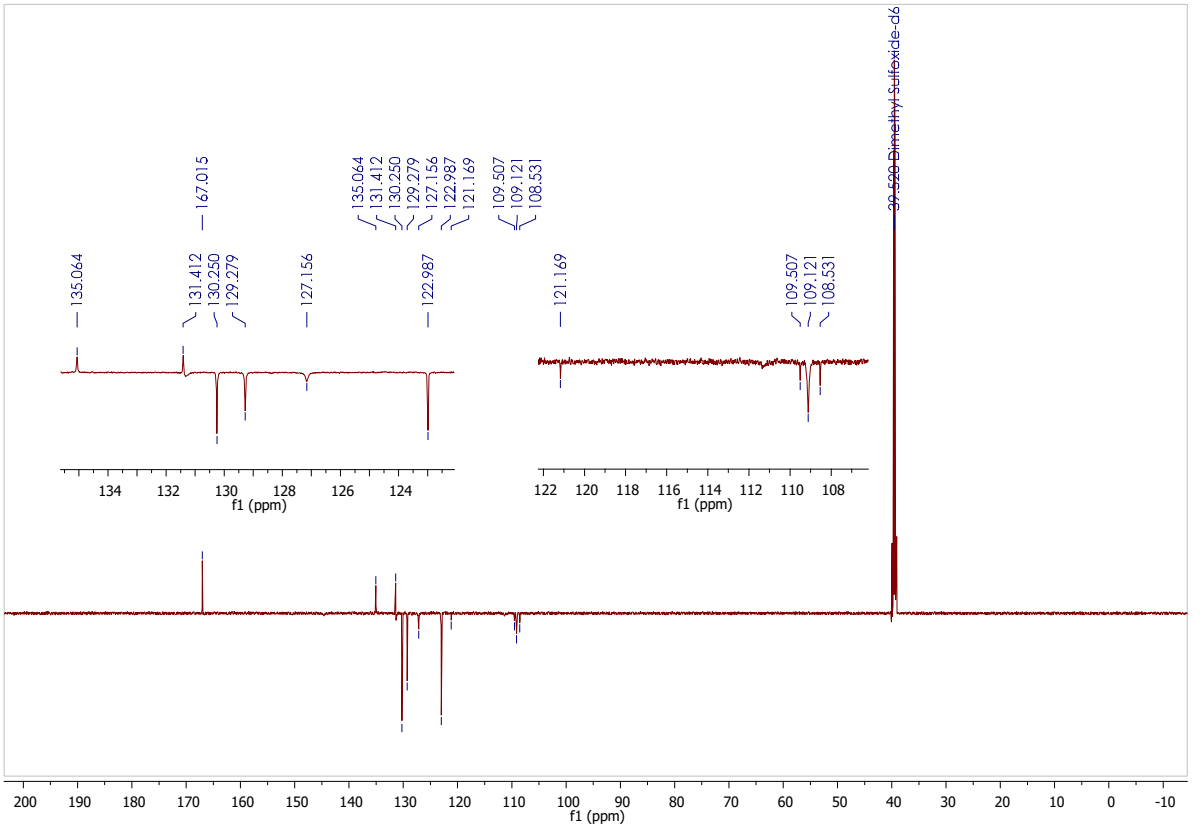


Molecular Weight: 269.255

31



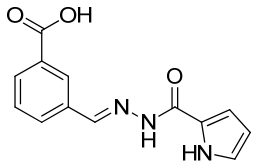

O
OH
N
N
H
O
HN
32
11.753
11.553
8.406
8.292
7.972
7.959
7.927
7.915
7.600
7.587
7.574
6.988
6.184
3.353
2.500 Dimethyl Sulfoxide-d6
7.972
7.959
7.927
7.915
7.600
7.587
7.574
1.0
1.0
1.0
f1 (ppm)
1.0
1.0
0.8
1.0
1.0
1.0
1.9
1.0
f1 (ppm)


167.015
135.064
131.412
130.250
129.279
127.156
122.987
121.169
109.507
109.121
108.531
39.520 Dimethyl Sulfoxide-d6
135.064
131.412
130.250
129.279
127.156
122.987
121.169
109.507
109.121
108.531
f1 (ppm)
f1 (ppm)
f1 (ppm)

LCMS Report

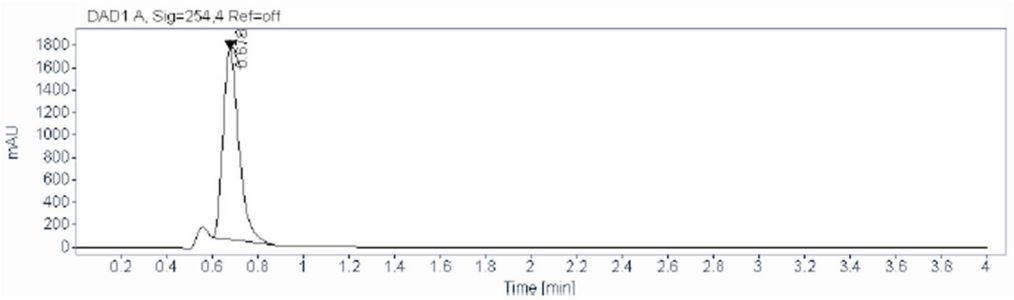
Agilent Technologies

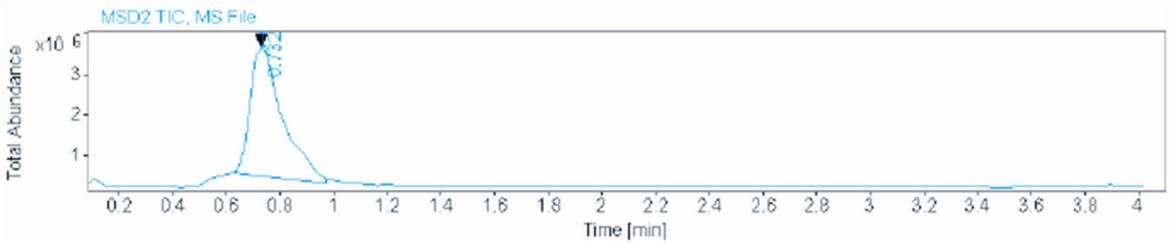
Data file:	D:\Chem32\1\Data\JRB\JRB2072 2080 2084 2081 2070 2022-01-31 15-09-41\006-86-JRB2070.D		
Sample name:	JRB2070		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	86
Injection date:	1/31/2022 3:38:49 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/14/2016 12:06:24 PM		

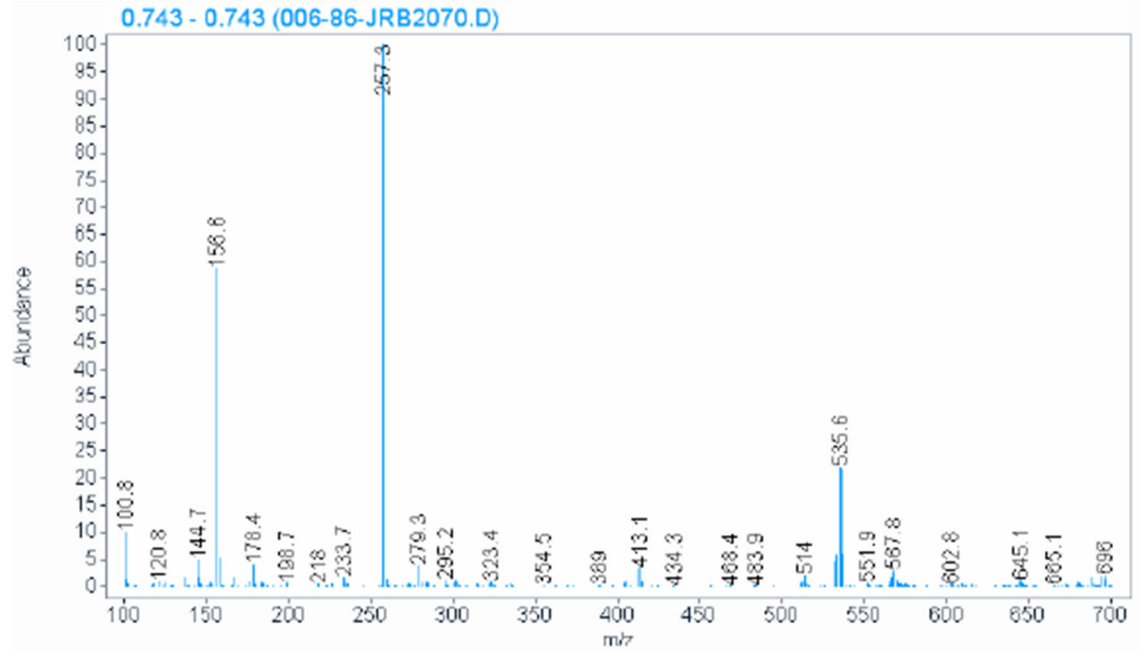


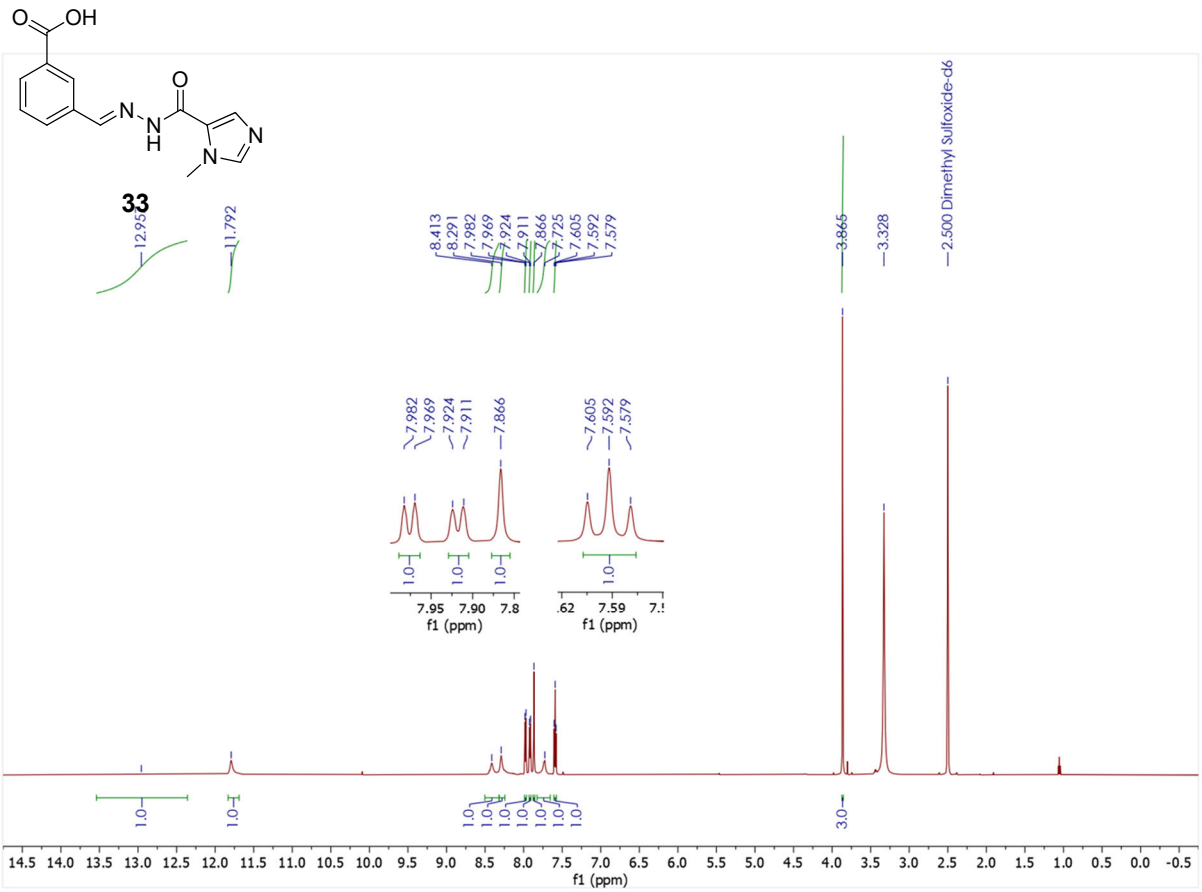
Molecular Weight: 257.245

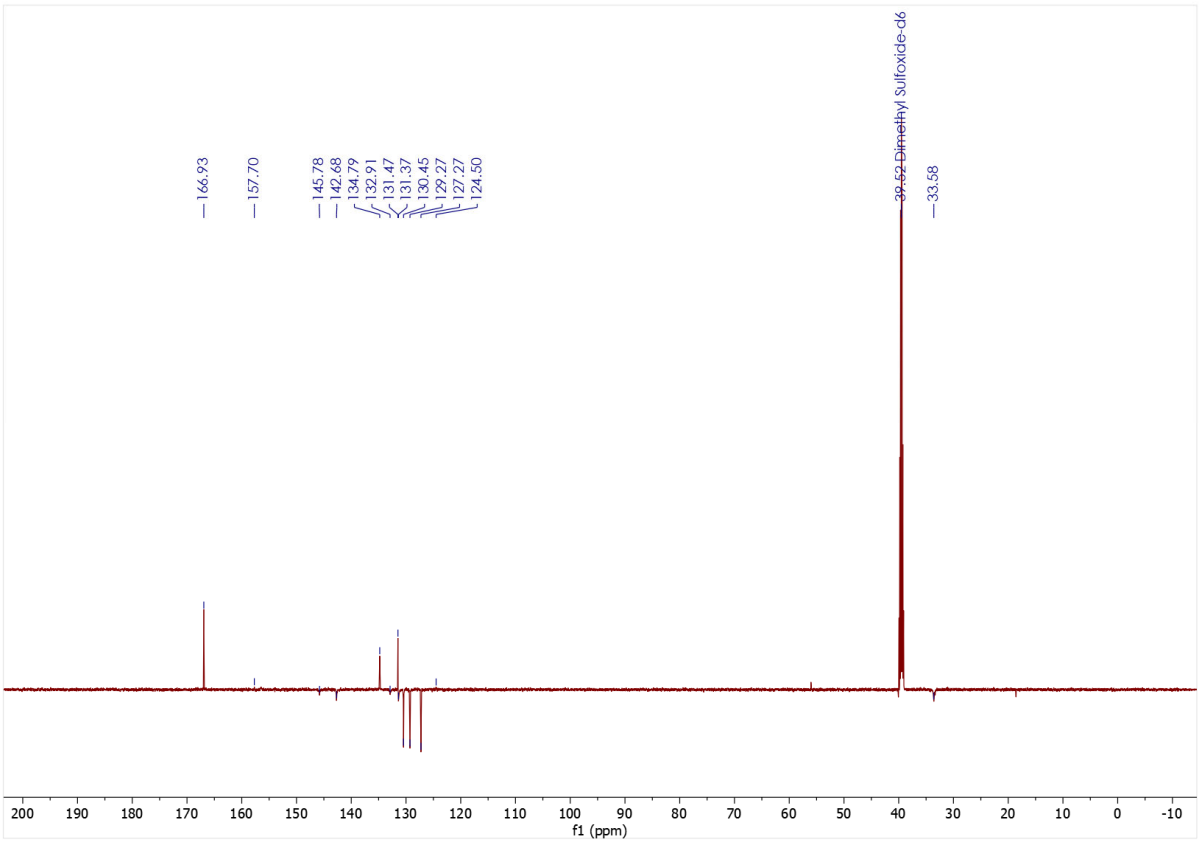
32







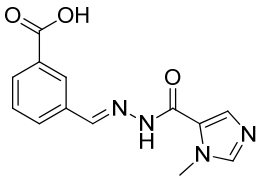

O
OH
N
N
H
O
N
N
33
12.951
11.792
8.413
8.291
7.982
7.969
7.924
7.911
7.866
7.725
7.605
7.592
7.579
3.865
3.328
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.93
157.70
145.78
142.68
134.79
132.91
131.47
131.37
130.45
129.27
127.27
124.50
39.52 Dimethyl Sulfoxide-d6
33.58
f1 (ppm)

LCMS Report

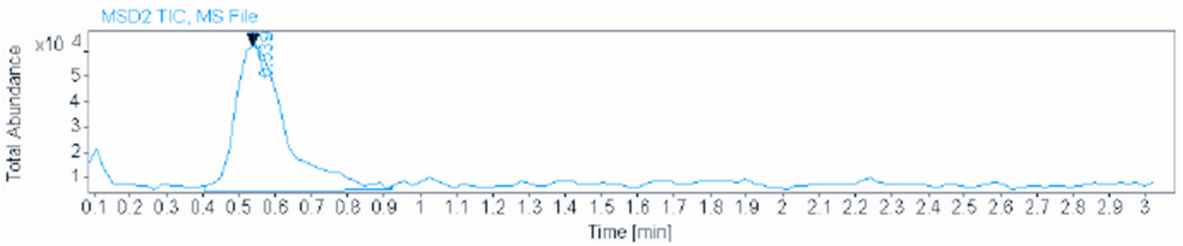
Agilent Technologies

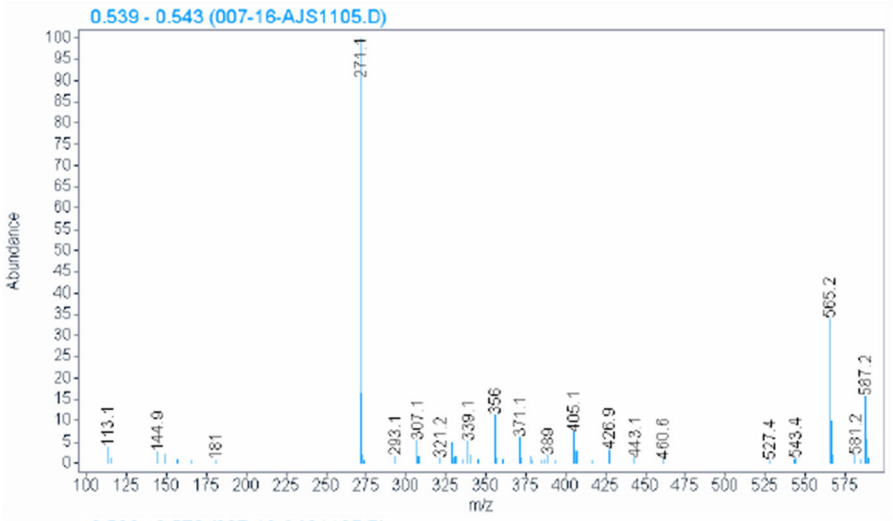
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\007-16-AJS1105.D		
Sample name:	AJS1105		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	16
Injection date:	7/25/2023 3:14:09 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

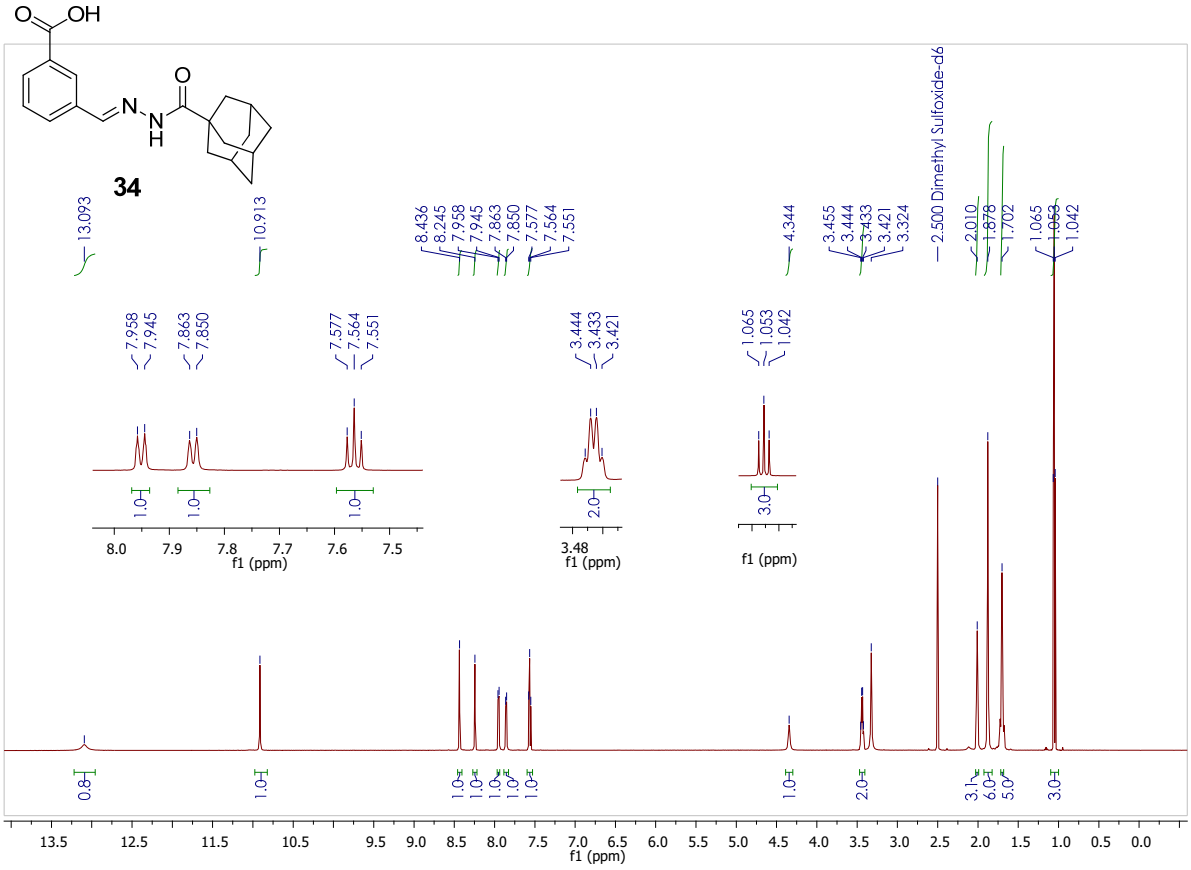


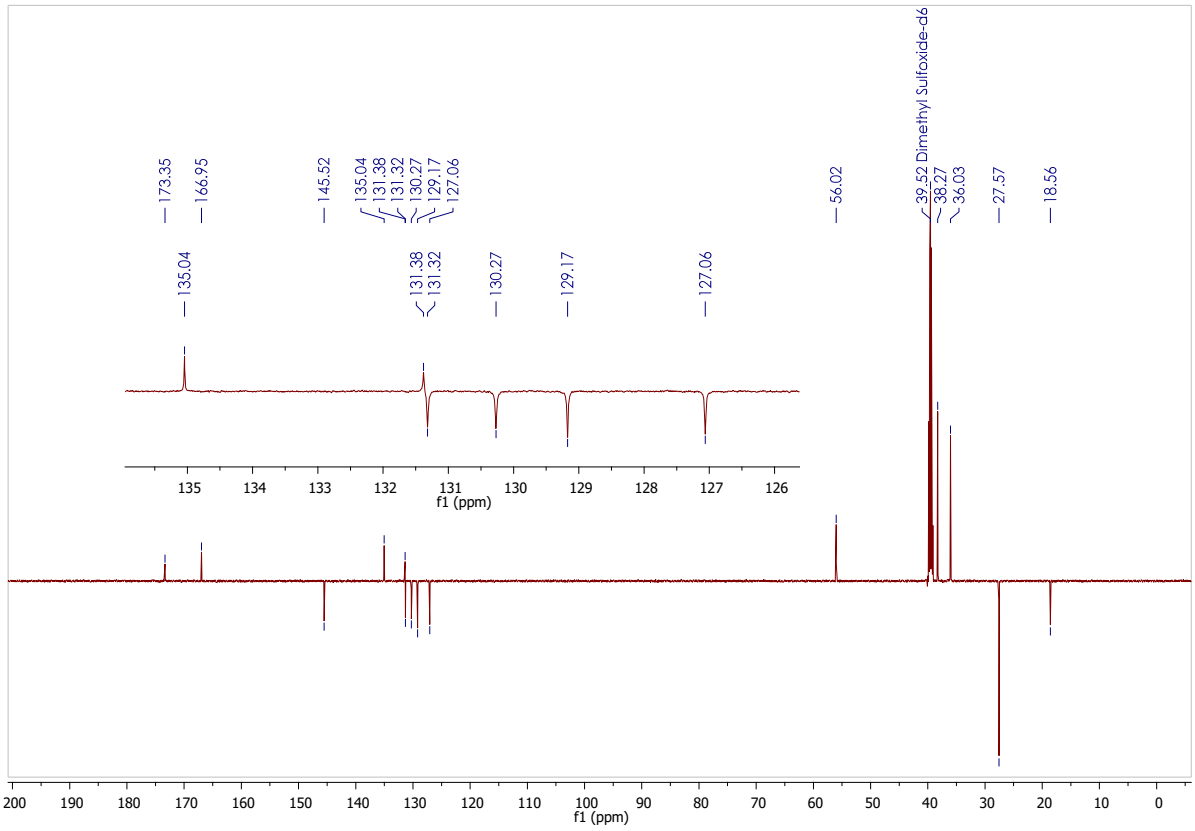
Molecular Weight: 272.259

33





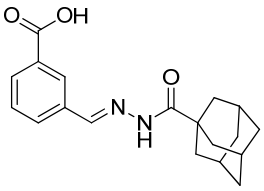

34
13.093
10.913
8.436
8.245
7.958
7.945
7.863
7.850
7.577
7.564
7.551
4.344
3.455
3.444
3.433
3.421
3.324
2.500 Dimethyl Sulfoxide-d6
2.010
1.878
1.702
1.065
1.053
1.042
f1 (ppm)


173.35
166.95
145.52
135.04
131.38
131.32
130.27
129.17
127.06
56.02
39.52 Dimethyl Sulfoxide-d6
38.27
36.03
27.57
18.56
f1 (ppm)

LCMS Report

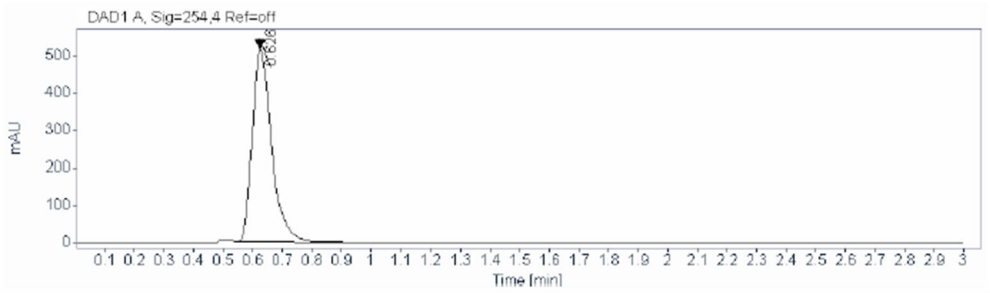
Agilent Technologies

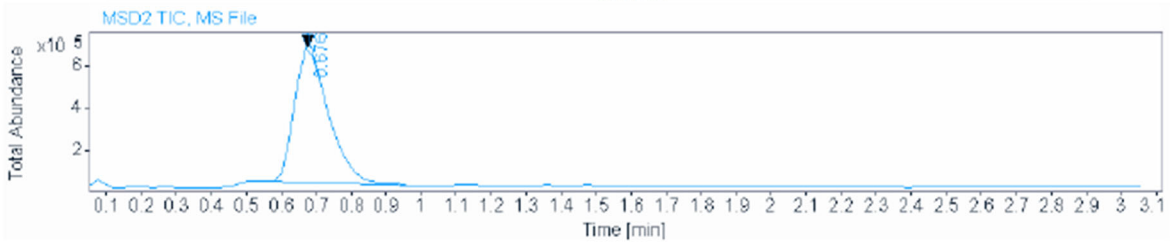
Data file:	D:\Chem32\1\Data\JRB\JRB2037 2021-11-26 12-45-35\001-100-JRB2037.D		
Sample name:	JRB2037		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	100
Injection date:	11/26/2021 12:47:21 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

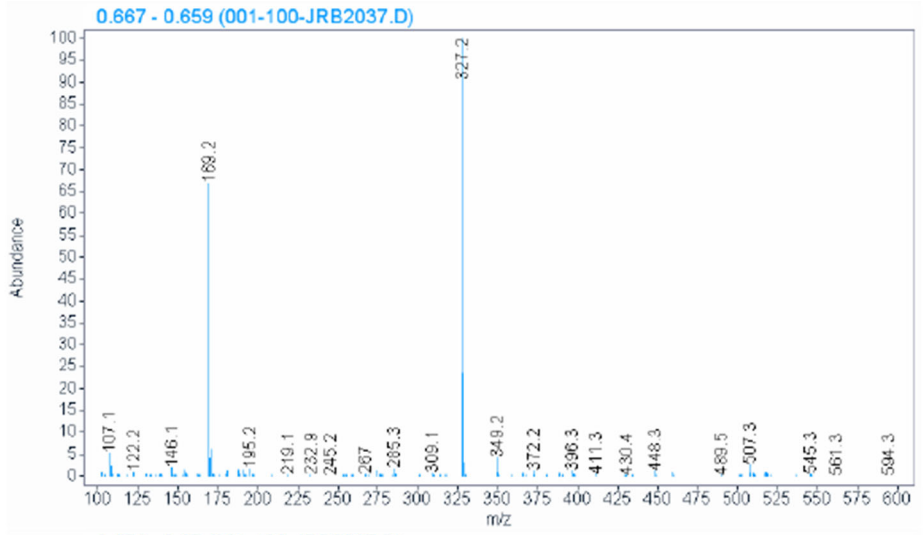


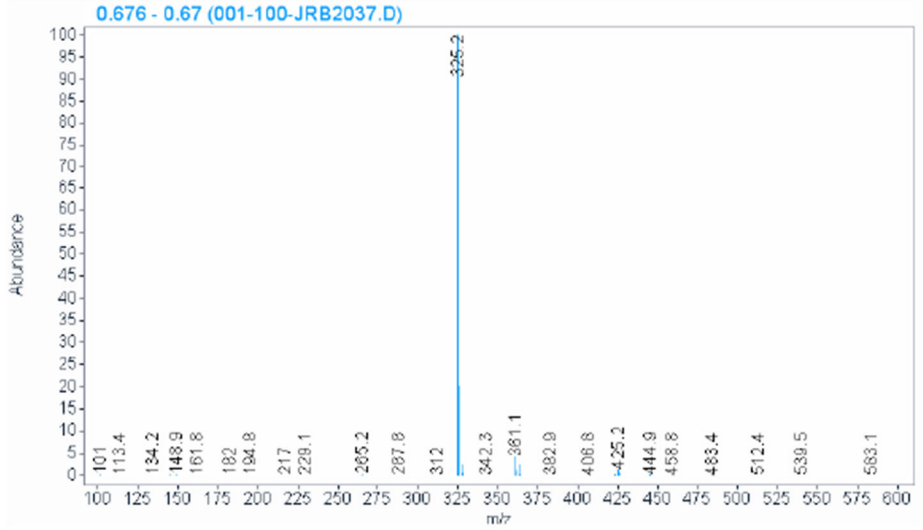
Molecular Weight: 326.390

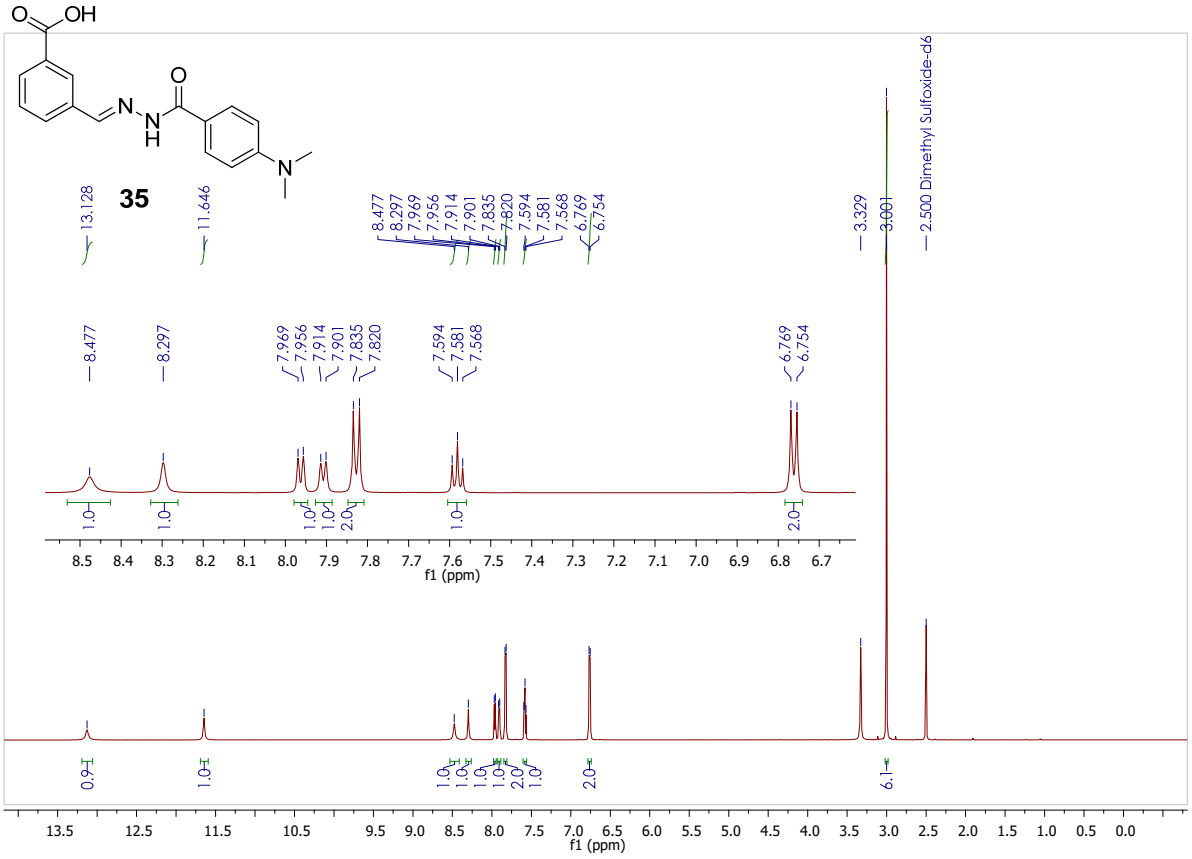
34

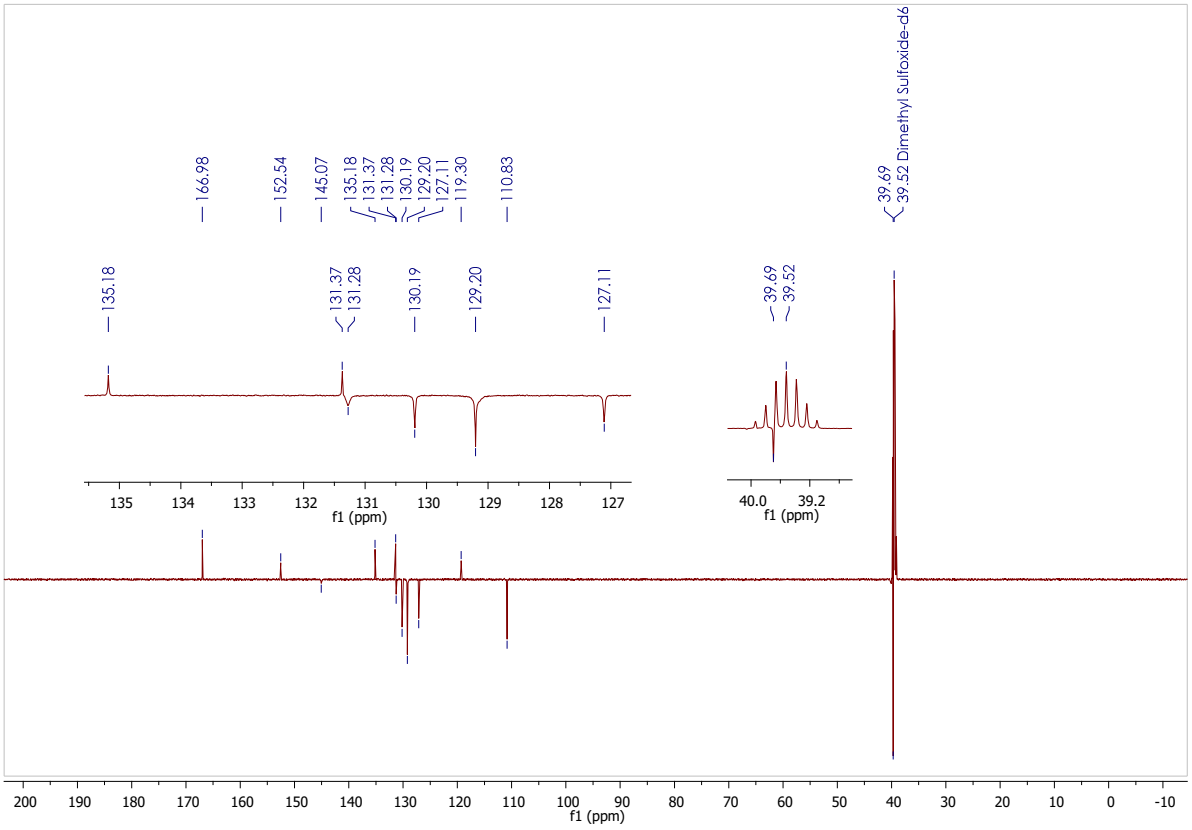








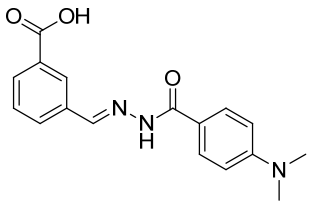

35
13.128
11.646
8.477
8.297
7.969
7.956
7.914
7.901
7.835
7.820
7.594
7.581
7.568
6.769
6.754
3.329
3.001
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.98
152.54
145.07
135.18
131.37
131.28
130.19
129.20
127.11
119.30
110.83
39.69
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

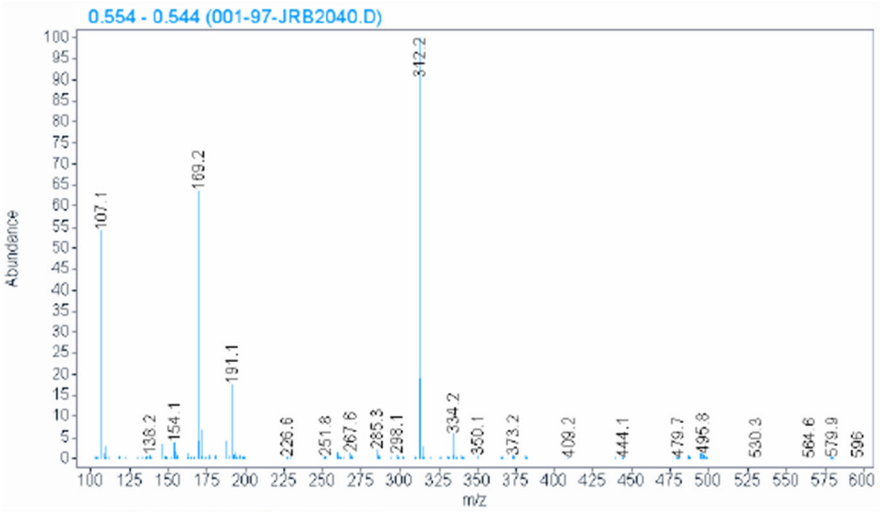
Agilent Technologies

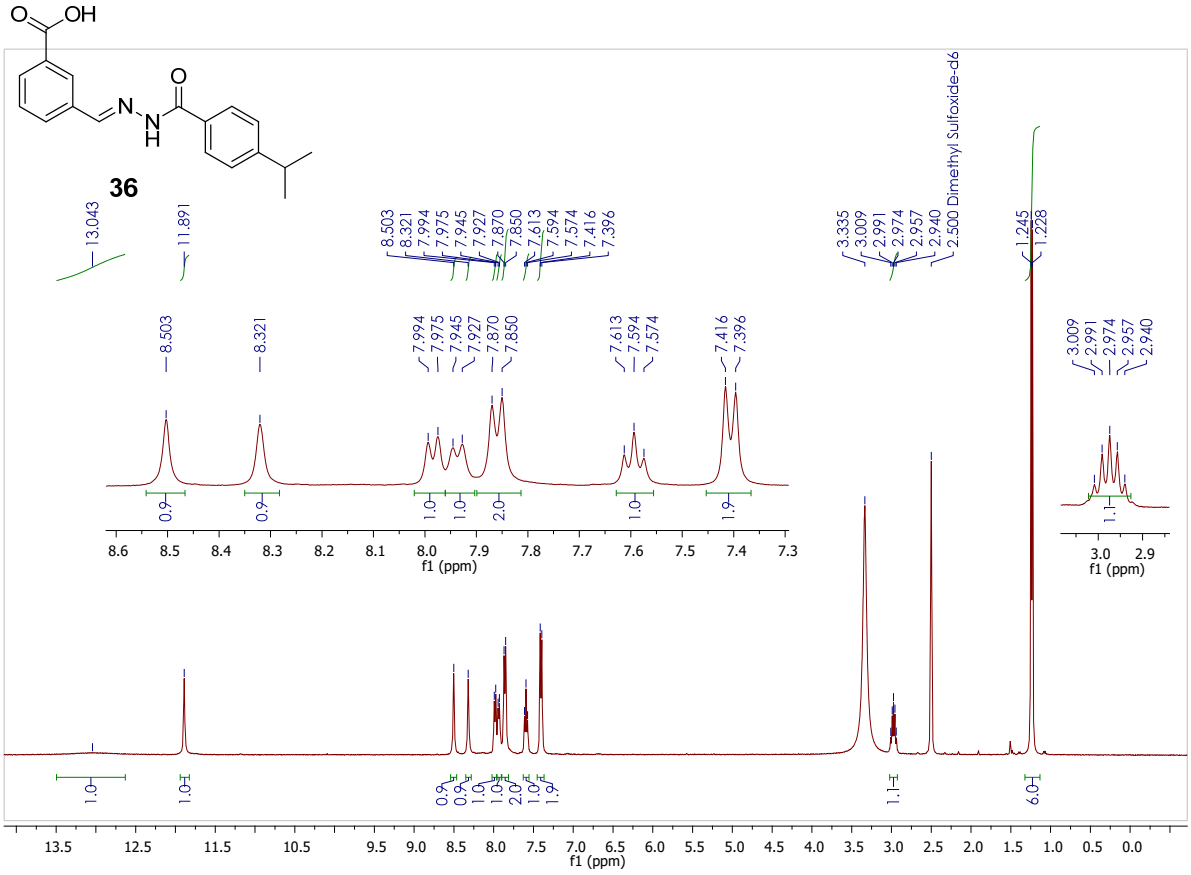
Data file:	D:\Chem32\1\Data\JRB\JRB2040 2021-11-26 16-38-25\001-97-JRB2040.D		
Sample name:	JRB2040		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	97
Injection date:	11/26/2021 4:40:04 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

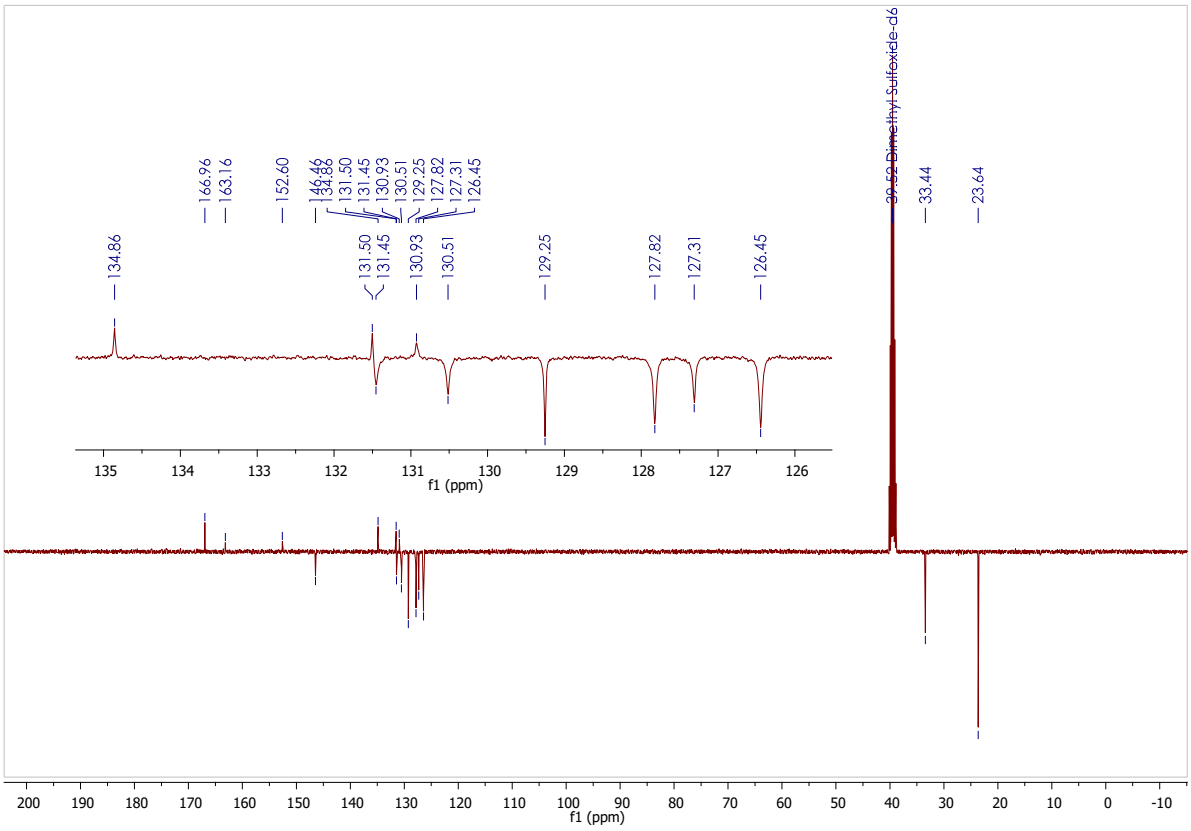


Molecular Weight: 311.335

35



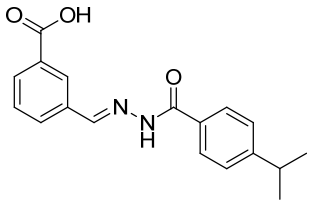

36
13.043
11.891
8.503
8.321
7.994
7.975
7.945
7.927
7.870
7.850
7.613
7.594
7.574
7.416
7.396
3.335
3.009
2.991
2.974
2.957
2.940
2.500 Dimethyl Sulfoxide-d6
1.245
1.228
f1 (ppm)


166.96
163.16
152.60
146.46
134.86
131.50
131.45
130.93
130.51
129.25
127.82
127.31
126.45
39.52 Dimethyl Sulfoxide-d6
33.44
23.64
f1 (ppm)

LCMS Report

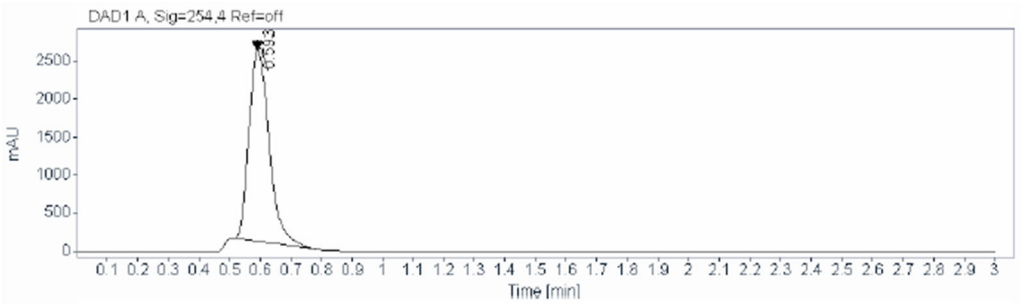
Agilent Technologies

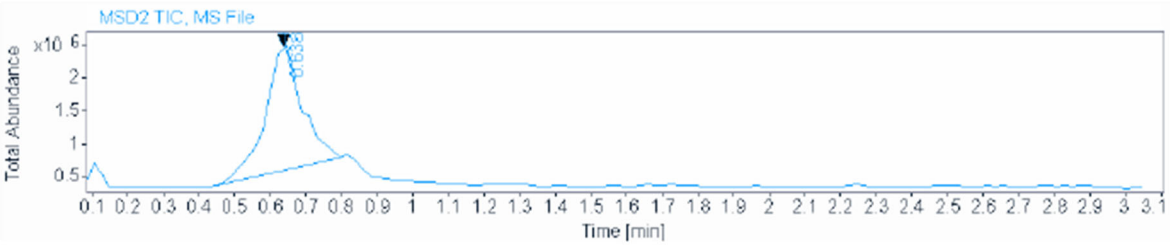
Data file:	D:\Chem32\1\Data\MH\MH4006-4010 and MH4014 2022-03-01 12-11-51\003-62-MH4007.D		
Sample name:	MH4007		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	62
Injection date:	3/1/2022 12:23:47 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/13/2021 10:05:44 AM		

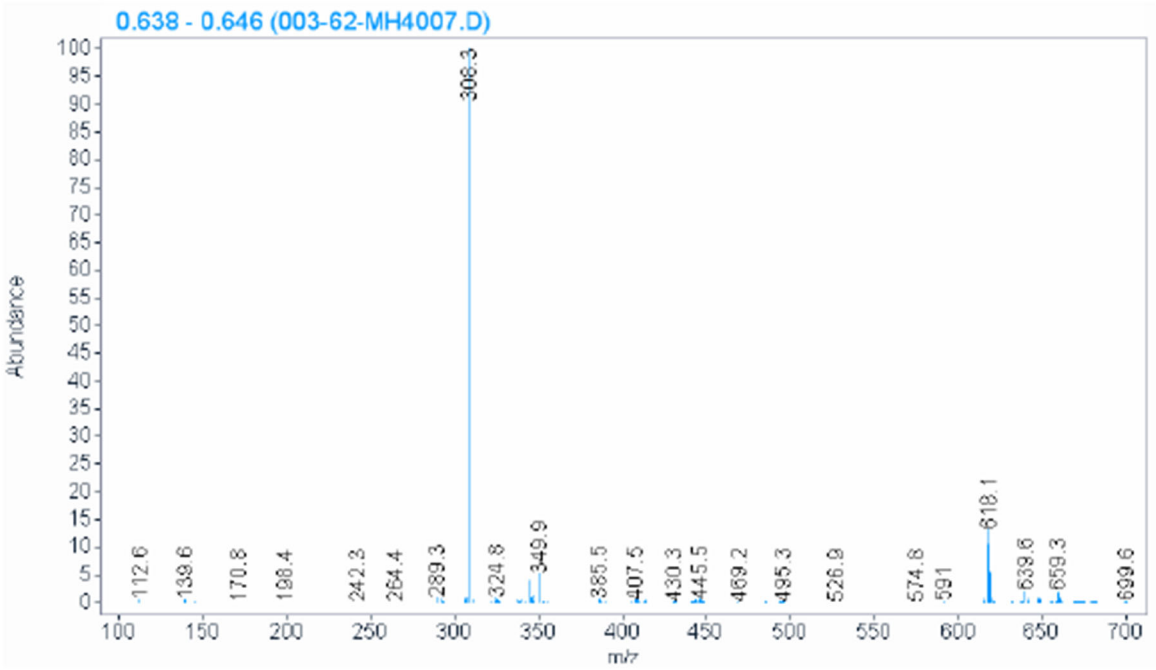


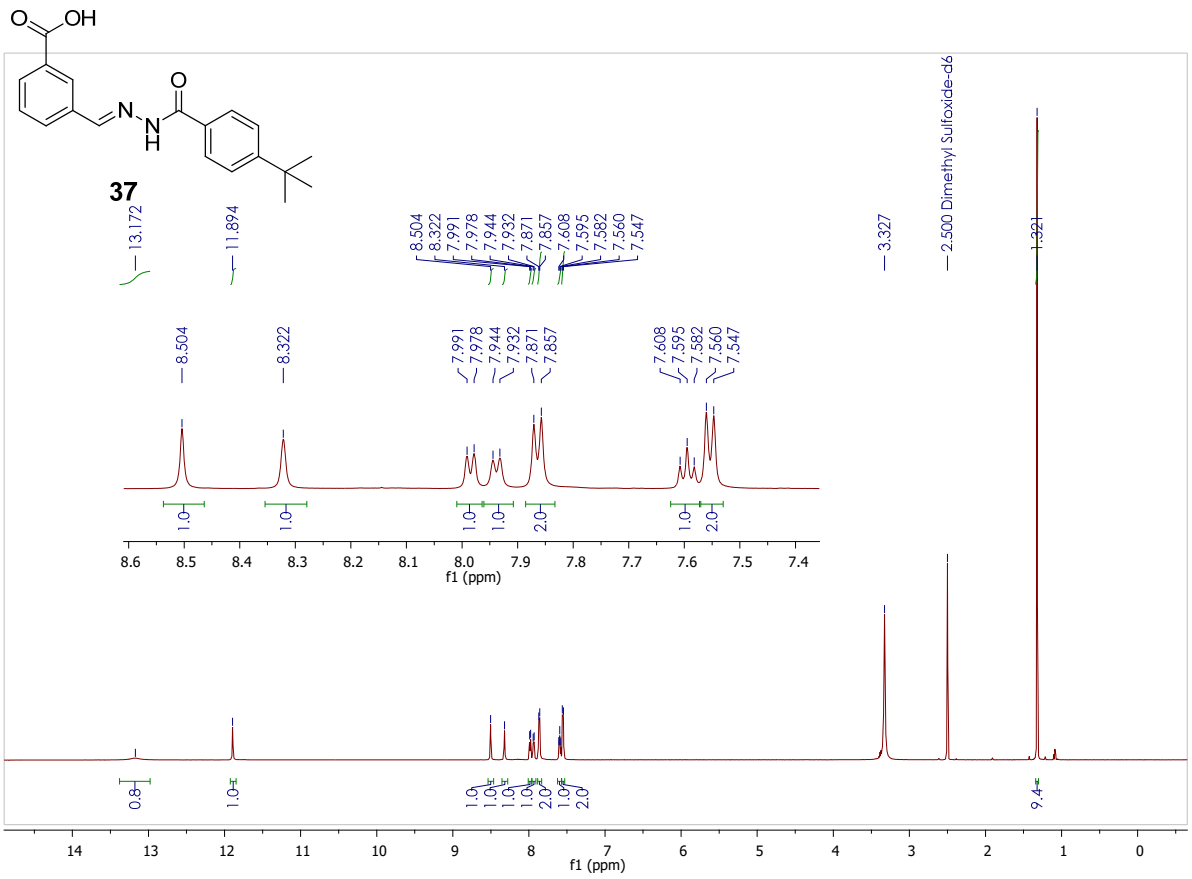
Molecular Weight: 310.347

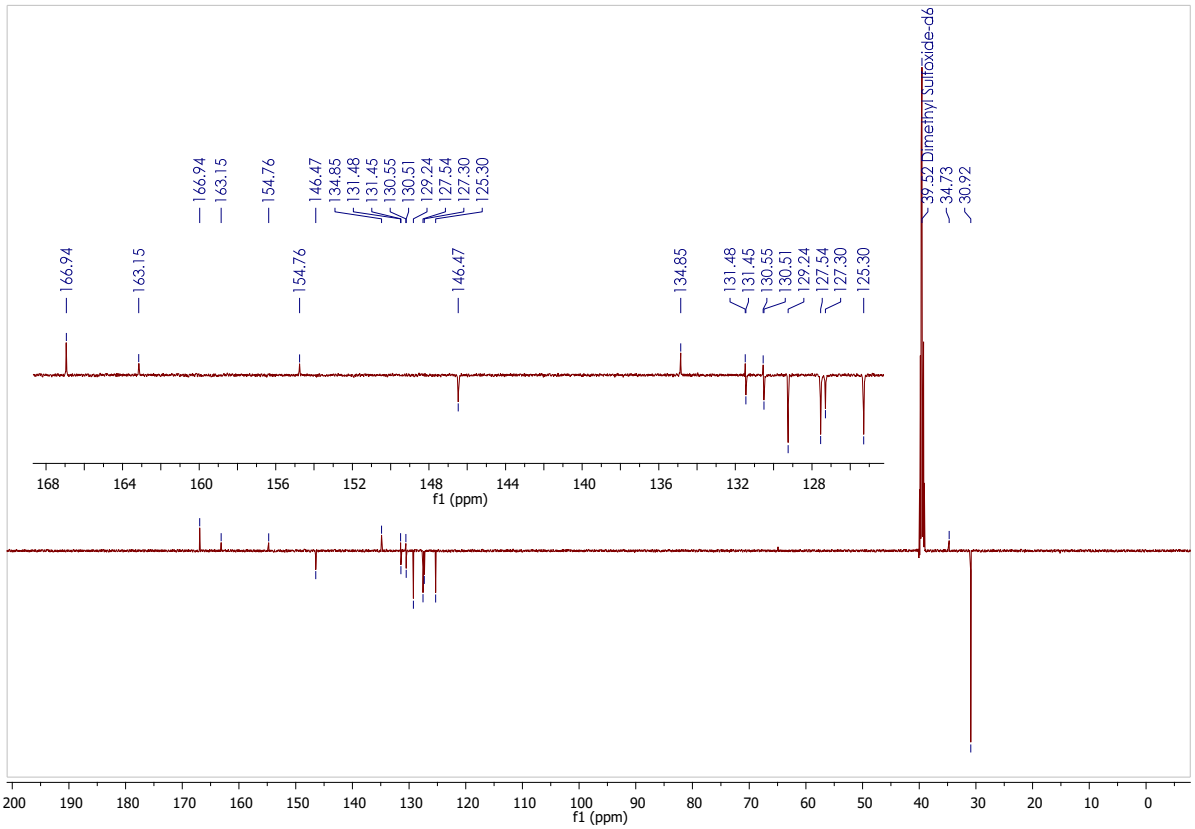
36







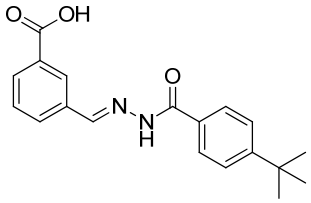

37
13.172
11.894
8.504
8.322
7.991
7.978
7.944
7.932
7.871
7.857
7.608
7.595
7.582
7.560
7.547
3.327
2.500 Dimethyl Sulfoxide-d6
1.321
f1 (ppm)


166.94
163.15
154.76
146.47
134.85
131.48
131.45
130.55
130.51
129.24
127.54
127.30
125.30
39.52 Dimethyl Sulfoxide-d6
34.73
30.92
f1 (ppm)

LCMS Report

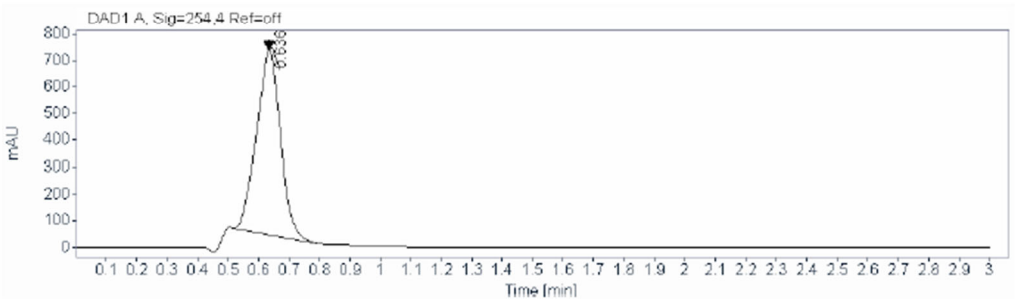
Agilent Technologies

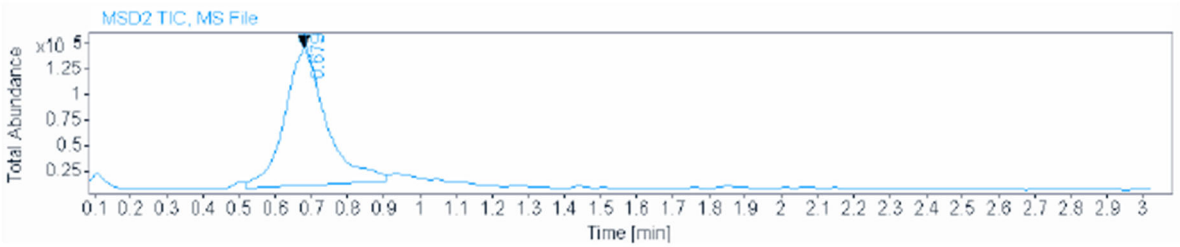
Data file:	D:\Chem32\1\Data\JRB\JRB4003 4007-4009 2023-07-24 14-06-38\003-89-JRB4007.D		
Sample name:	JRB4007		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	89
Injection date:	7/24/2023 2:17:57 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

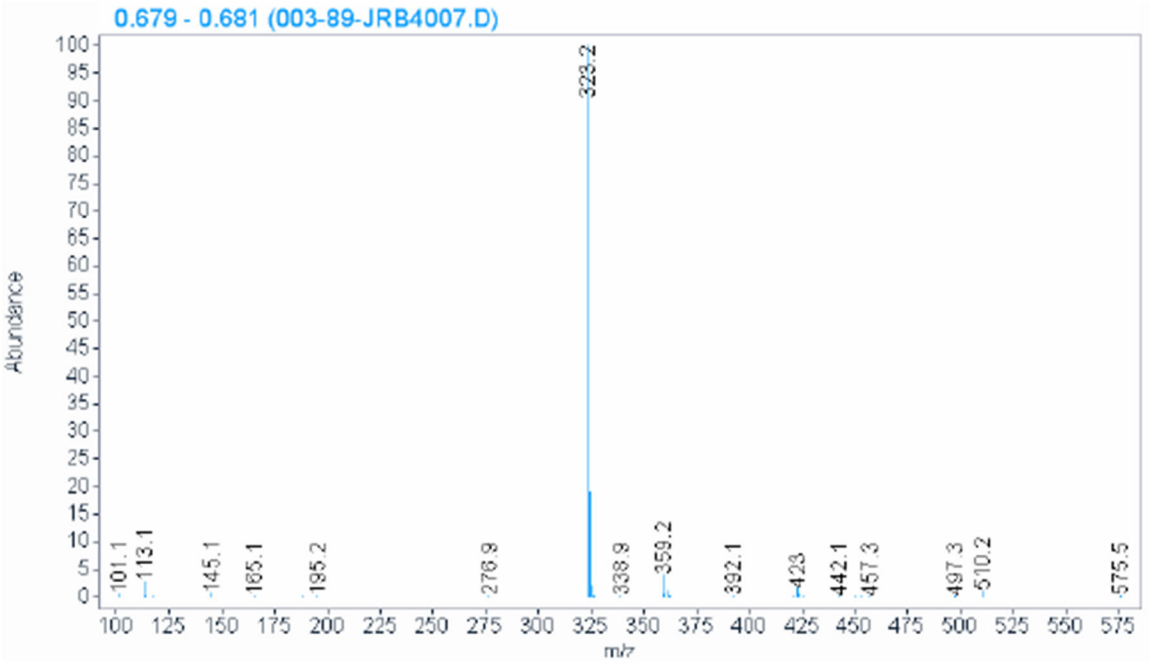


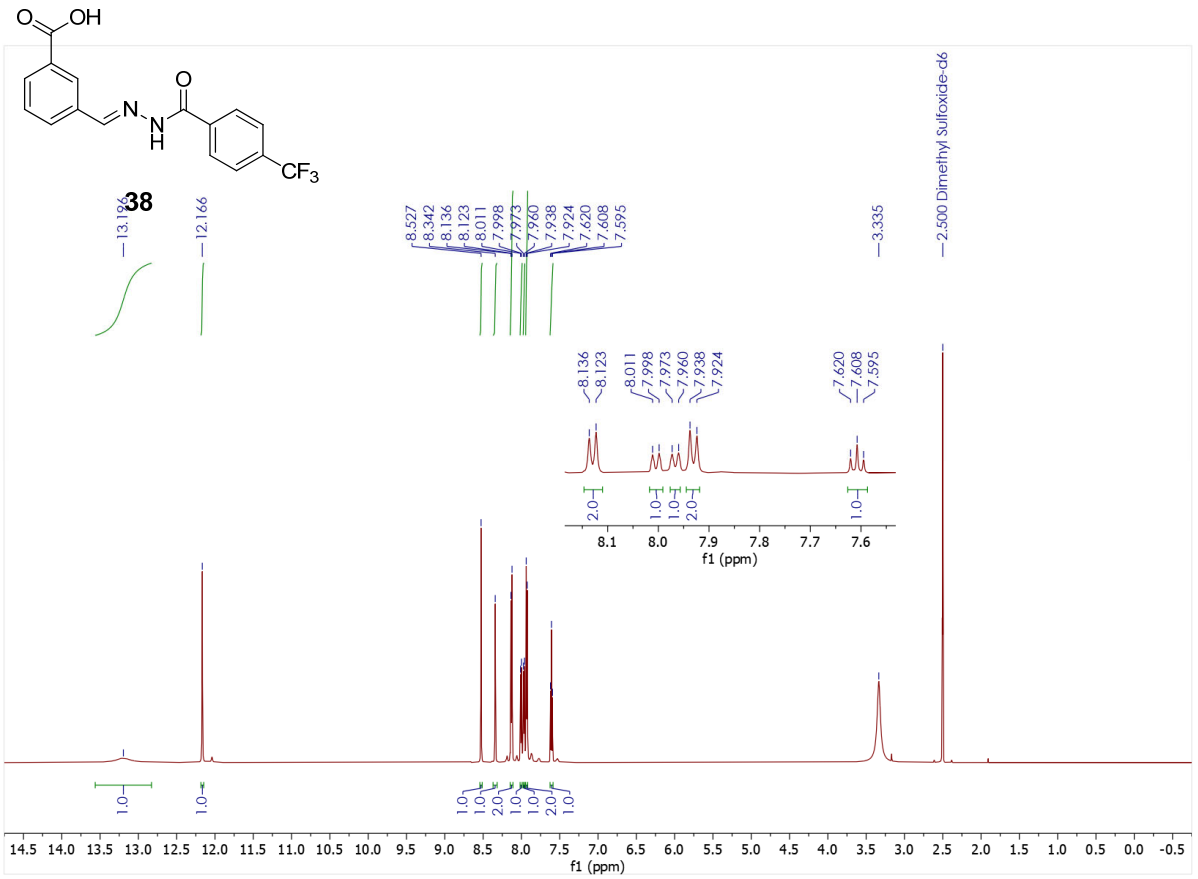
Molecular Weight: 324.374

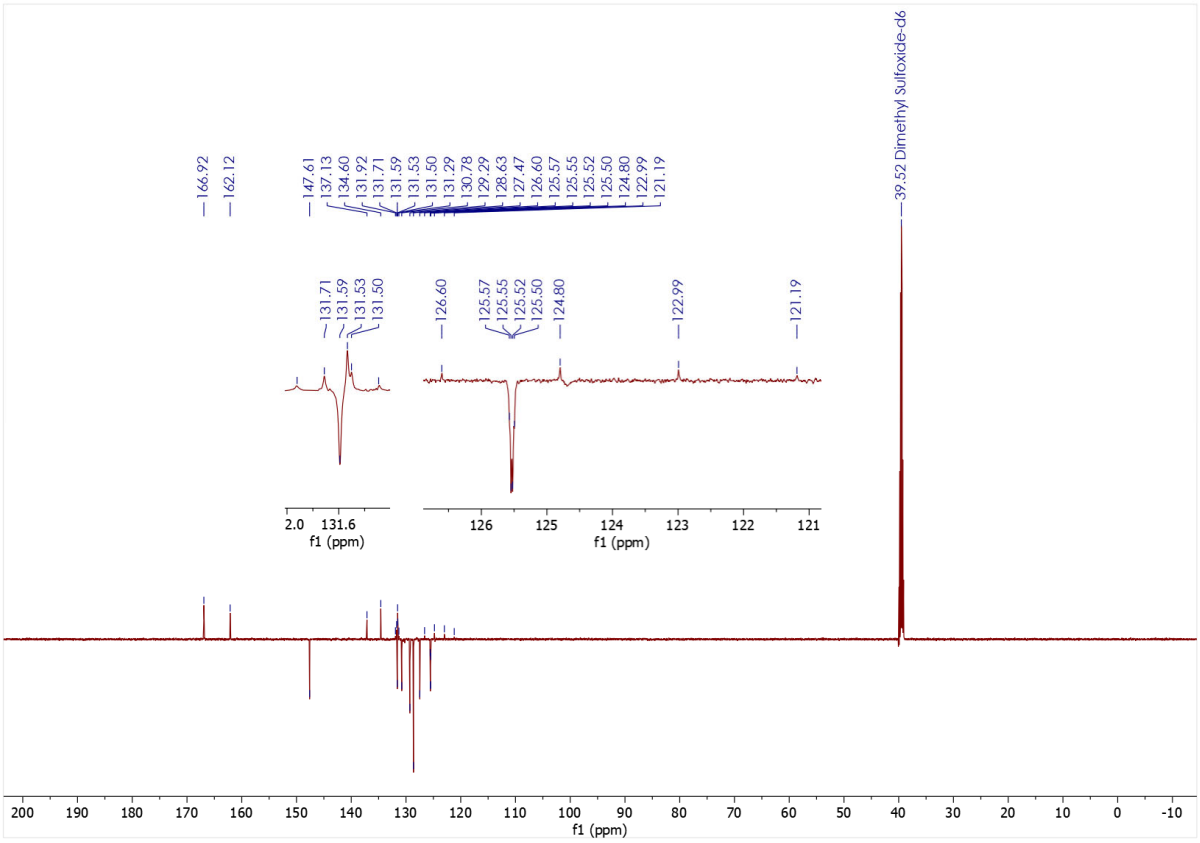
37

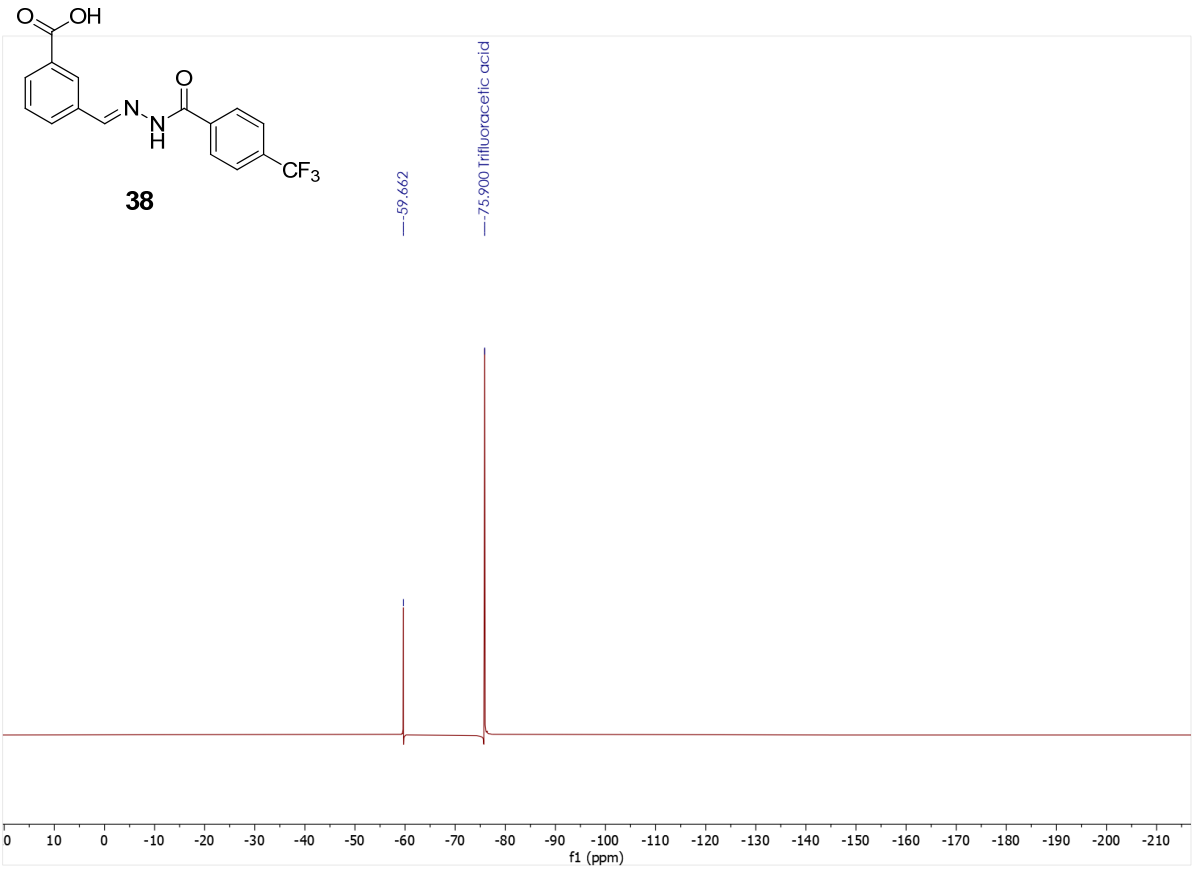







38
13.186
12.166
8.527
8.342
8.136
8.123
8.011
7.998
7.973
7.960
7.938
7.924
7.620
7.608
7.595
3.335
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

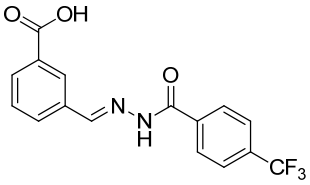

166.92
162.12
147.61
137.13
134.60
131.92
131.71
131.59
131.53
131.50
131.29
130.78
129.29
128.63
127.47
126.60
125.57
125.55
125.52
125.50
124.80
122.99
121.19
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
N
N
H
O
CF3
38
-59.662
-75.900 Trifluoracetic acid
0
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

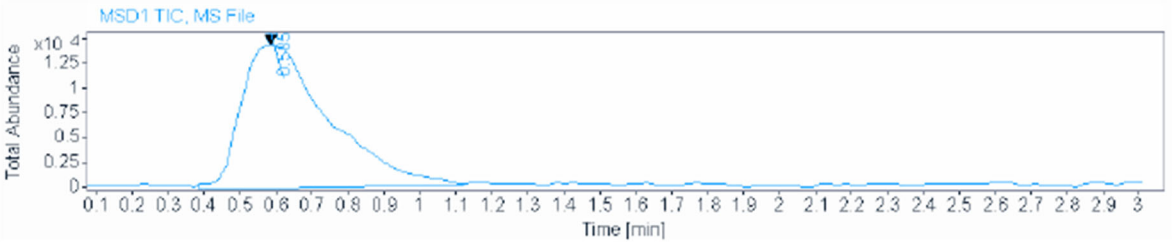
Agilent Technologies

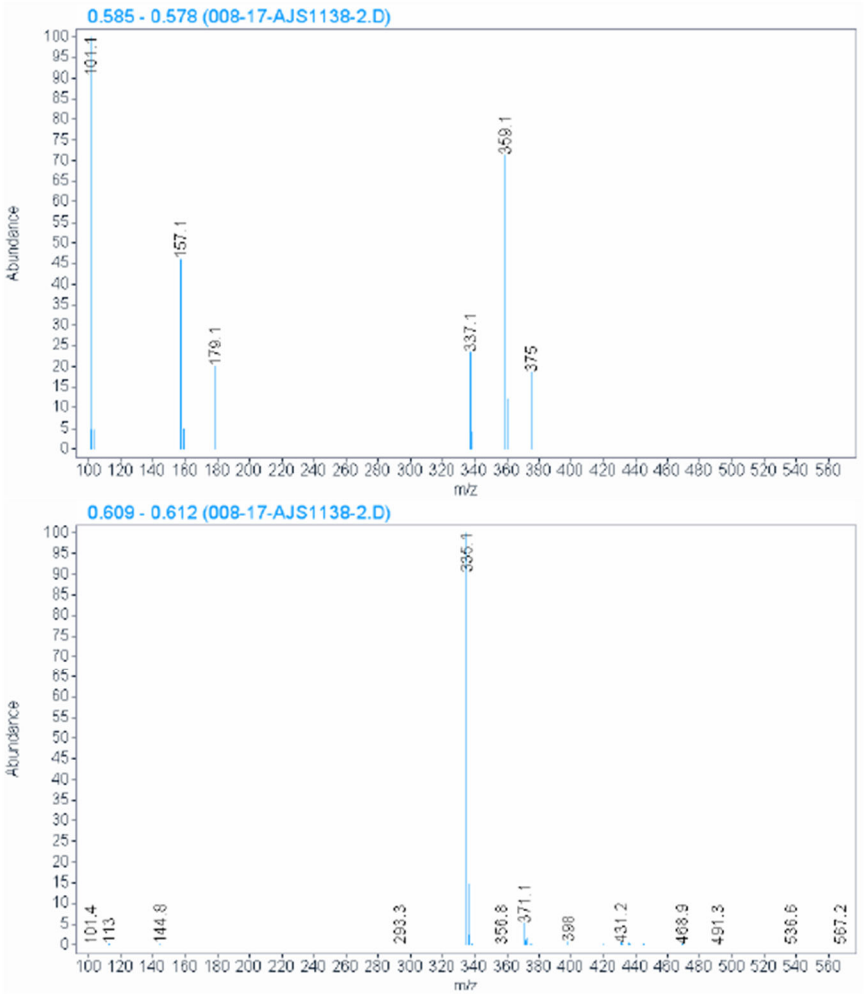
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\008-17-AJS1138-2.D		
Sample name:	AJS1138-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	17
Injection date:	7/25/2023 3:18:49 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

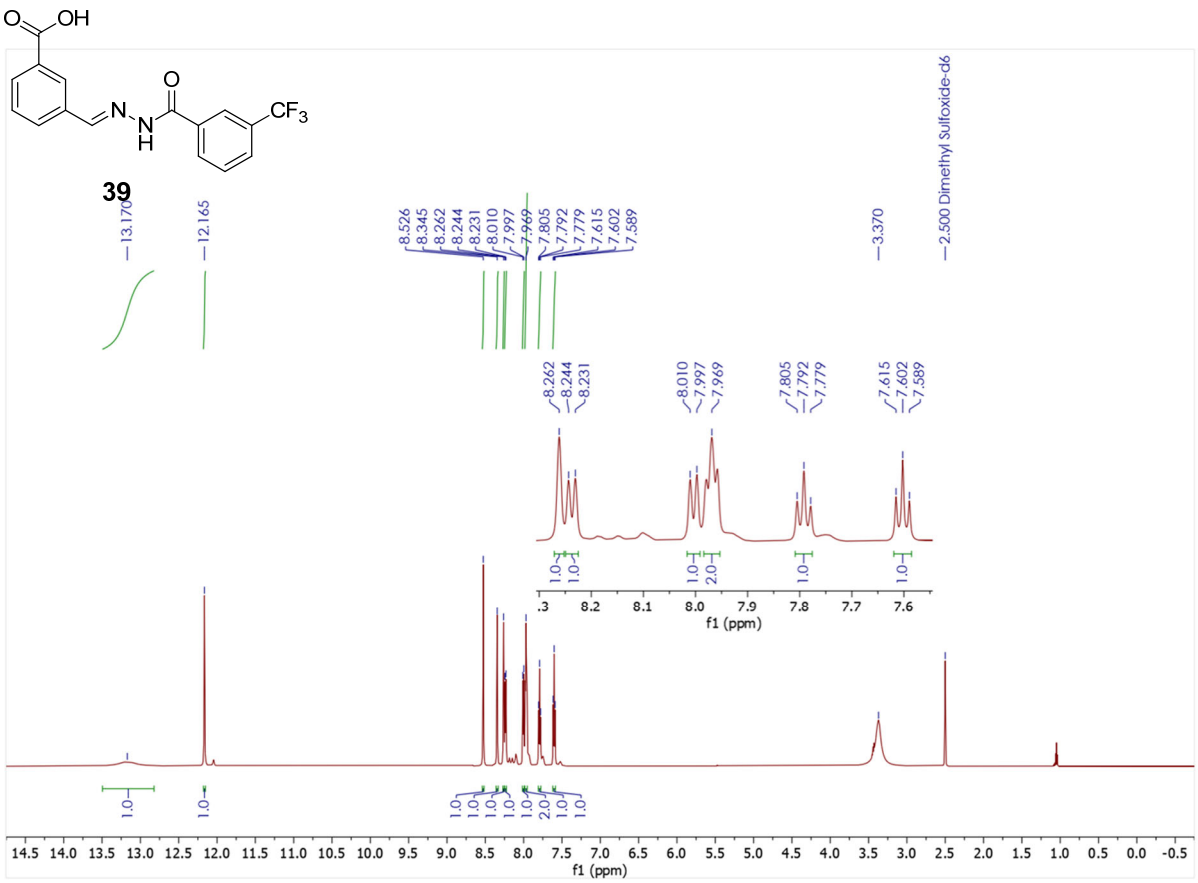


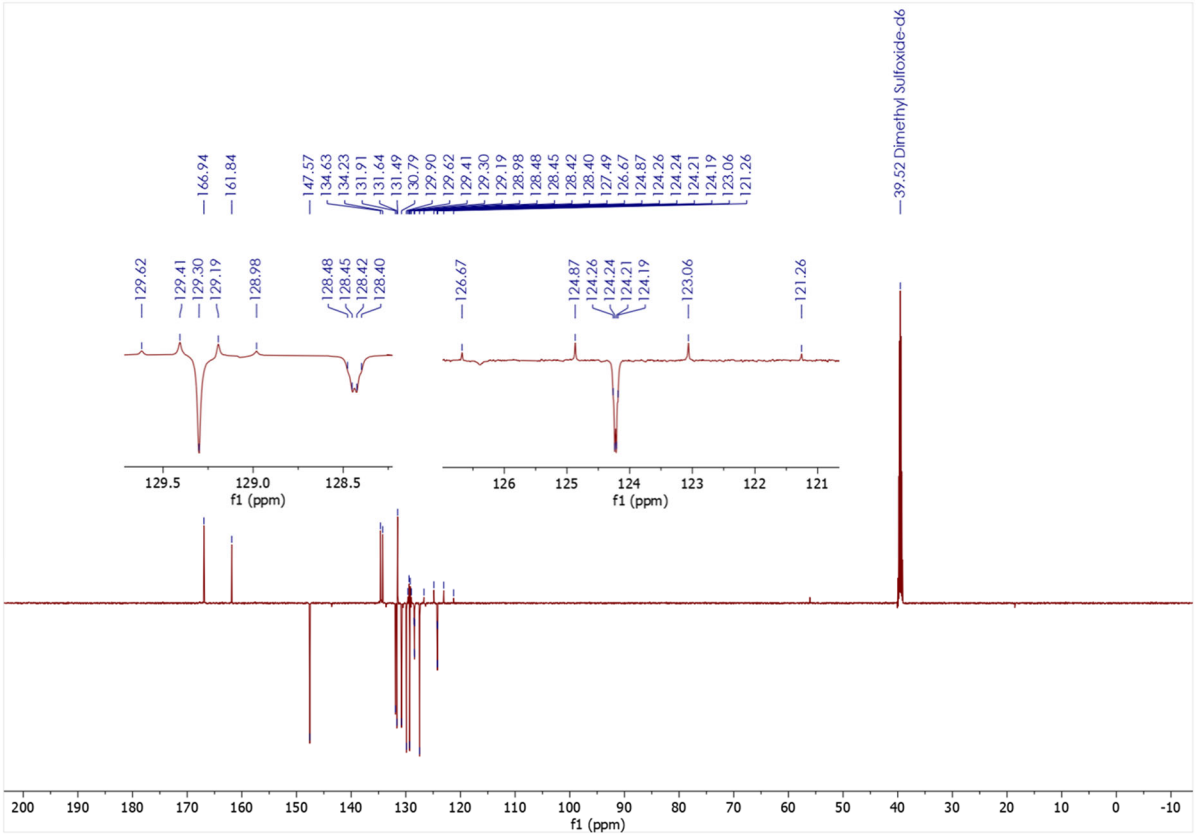
Molecular Weight: 336.265

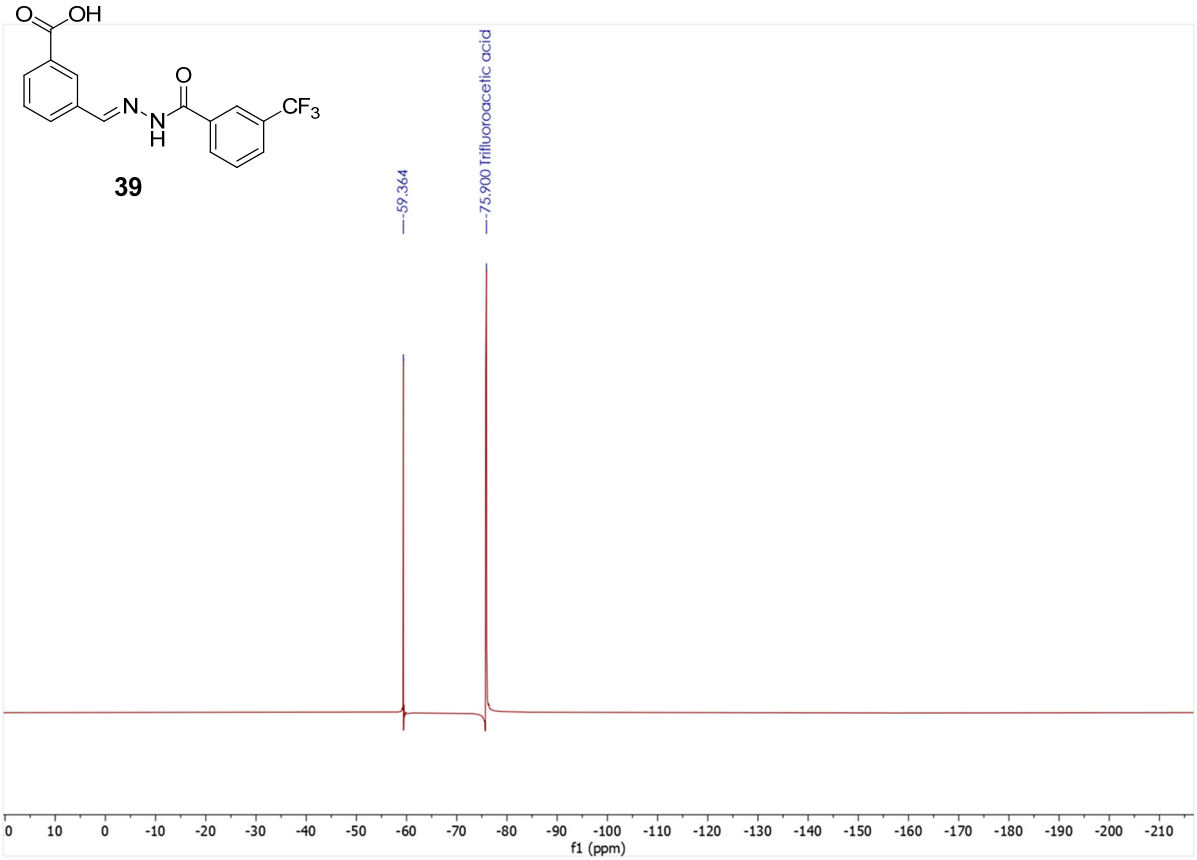
38






O
OH
N
N
H
O
CF3
39
13.170
12.165
8.526
8.345
8.262
8.244
8.231
8.010
7.997
7.969
7.805
7.792
7.779
7.615
7.602
7.589
3.370
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

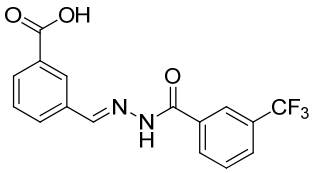

166.94
161.84
147.57
134.63
134.23
131.91
131.64
131.49
130.79
129.90
129.62
129.41
129.30
129.19
128.98
128.48
128.45
128.42
128.40
126.67
124.87
124.26
124.24
124.21
124.19
123.06
121.26
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
N
N
H
O
CF3
39
-59.364
-75.900 Trifluoroacetic acid
0
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

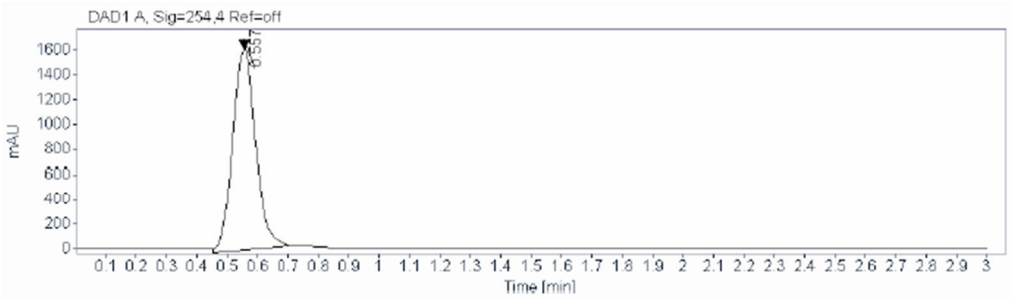
Agilent Technologies

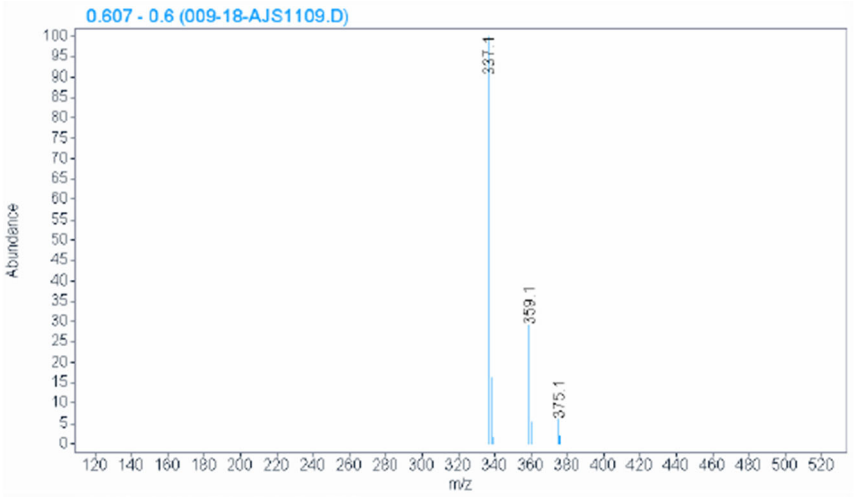
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\009-18-AJS1109.D		
Sample name:	AJS1109		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	18
Injection date:	7/25/2023 3:23:33 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

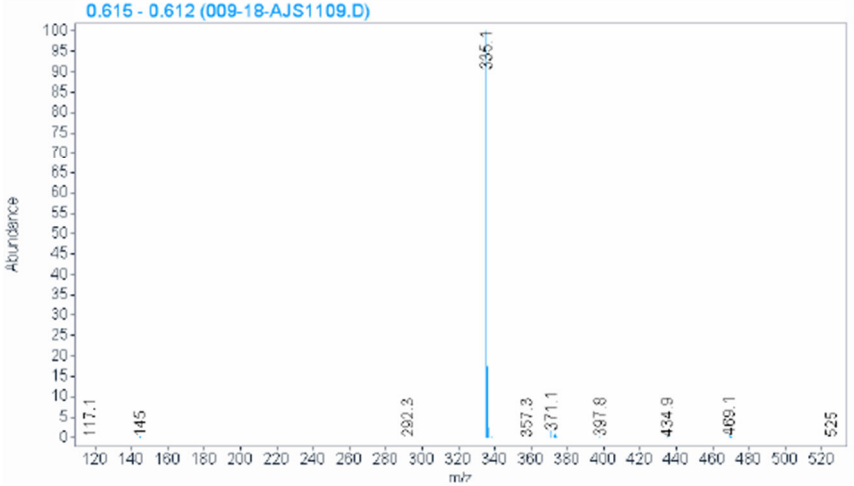


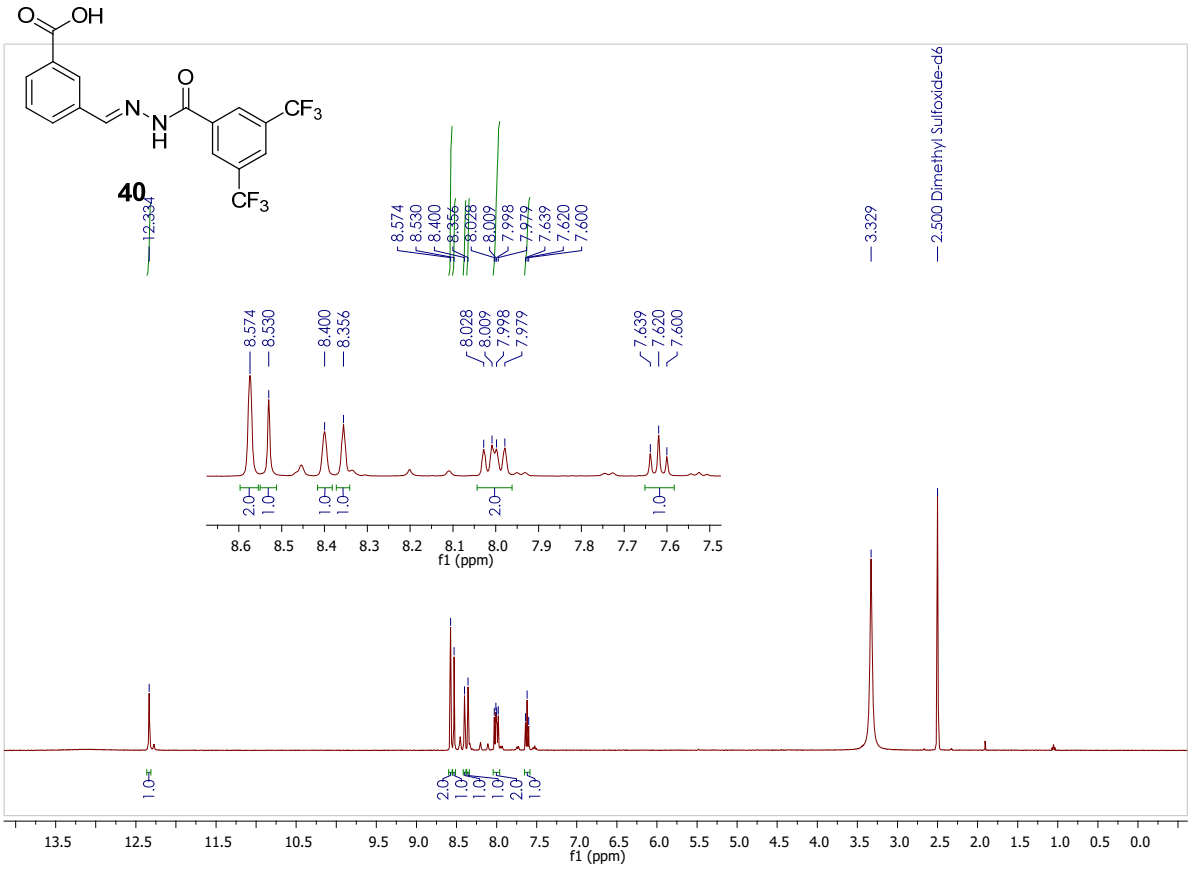
Molecular Weight: 336.265

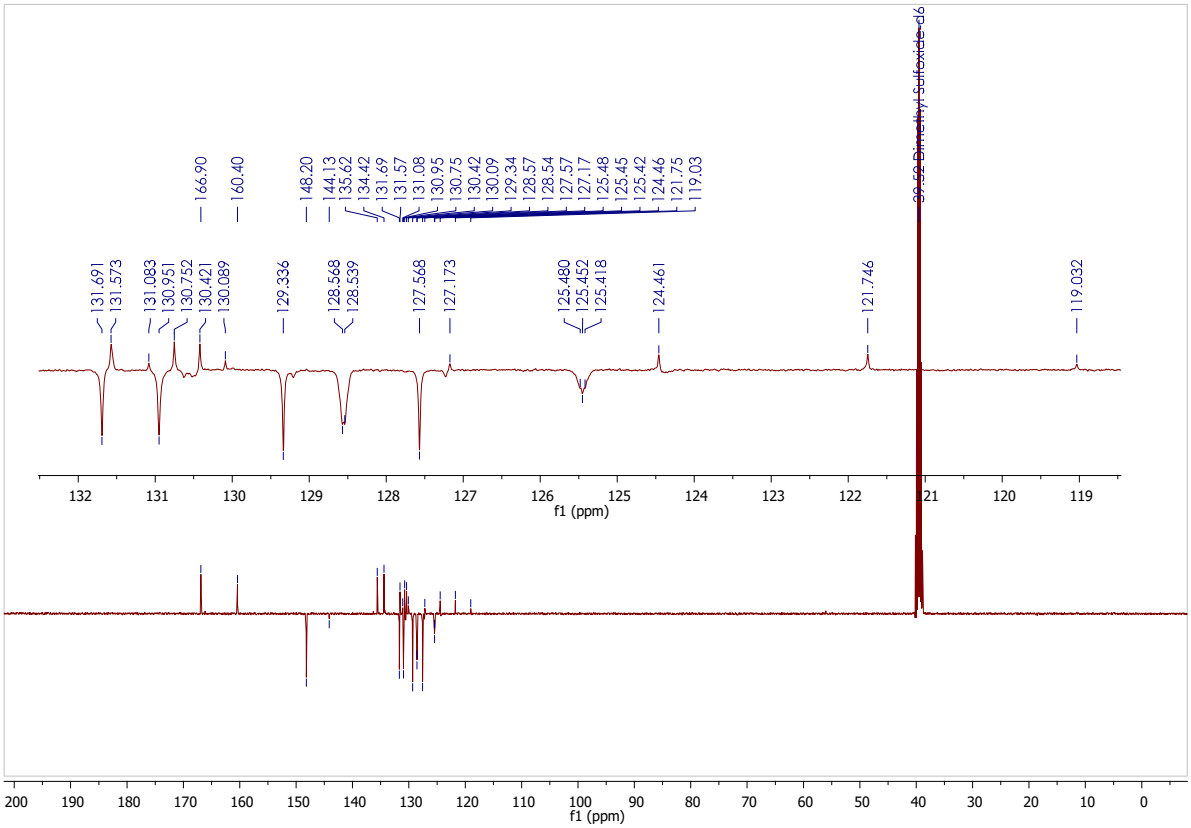
39

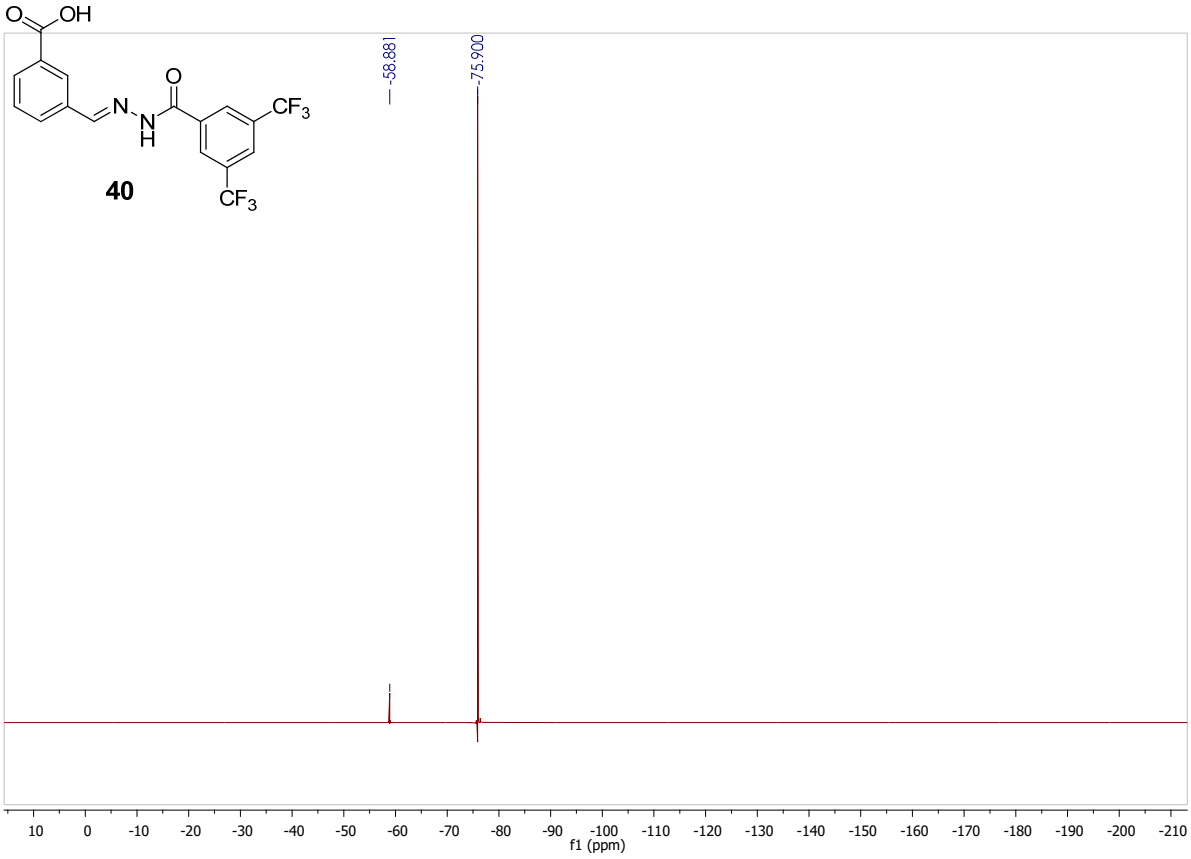







O
OH
N
N
H
O
CF3
CF3
40
12.334
8.574
8.530
8.400
8.356
8.028
8.009
7.998
7.979
7.639
7.620
7.600
3.329
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

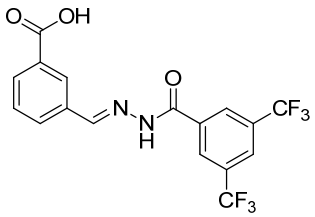

166.90
160.40
148.20
144.13
135.62
134.42
131.69
131.57
131.08
130.95
130.75
130.42
130.09
129.34
128.57
128.54
127.57
127.17
125.48
125.45
125.42
124.46
121.75
119.03
39.52 Dimethyl Sulfoxide-d6
131.691
131.573
131.083
130.951
130.752
130.421
130.089
129.336
128.568
128.539
127.568
127.173
125.480
125.452
125.418
124.461
121.746
119.032
f1 (ppm)


O
OH
N
N
H
O
CF3
CF3
40
-58.881
-75.900
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

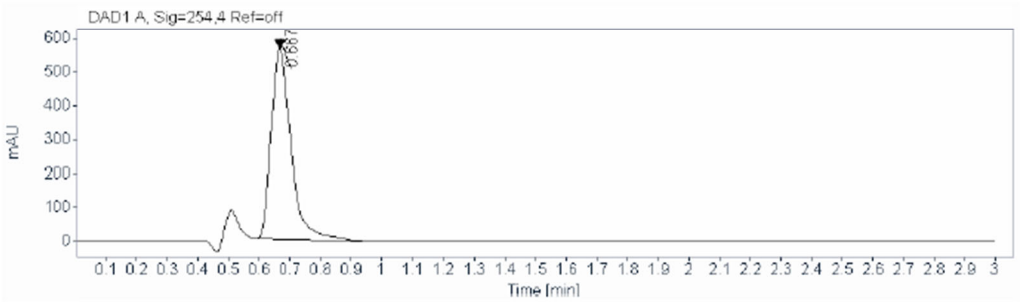
Agilent Technologies

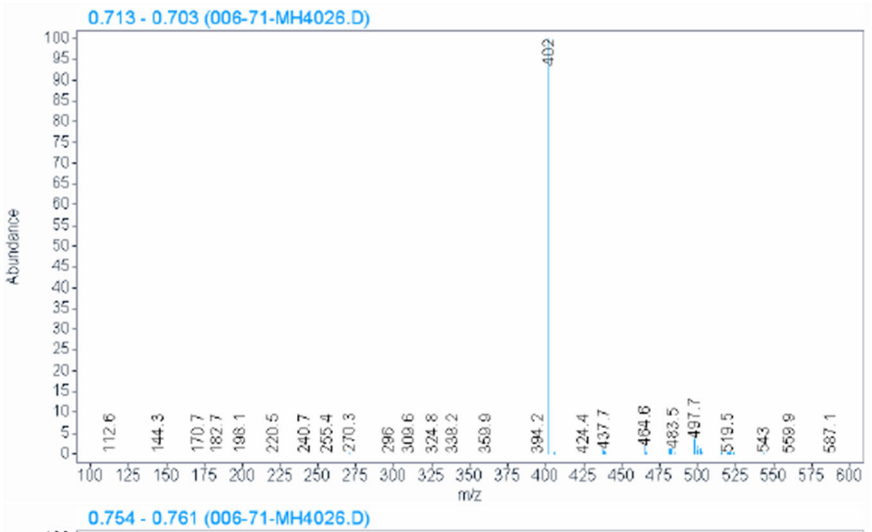
Data file:	D:\Chem32\1\Data\MH\mh40222-4026 2022-03-04 12-44-11\006-71-MH4026.D		
Sample name:	MH4026		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	71
Injection date:	3/4/2022 1:09:15 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

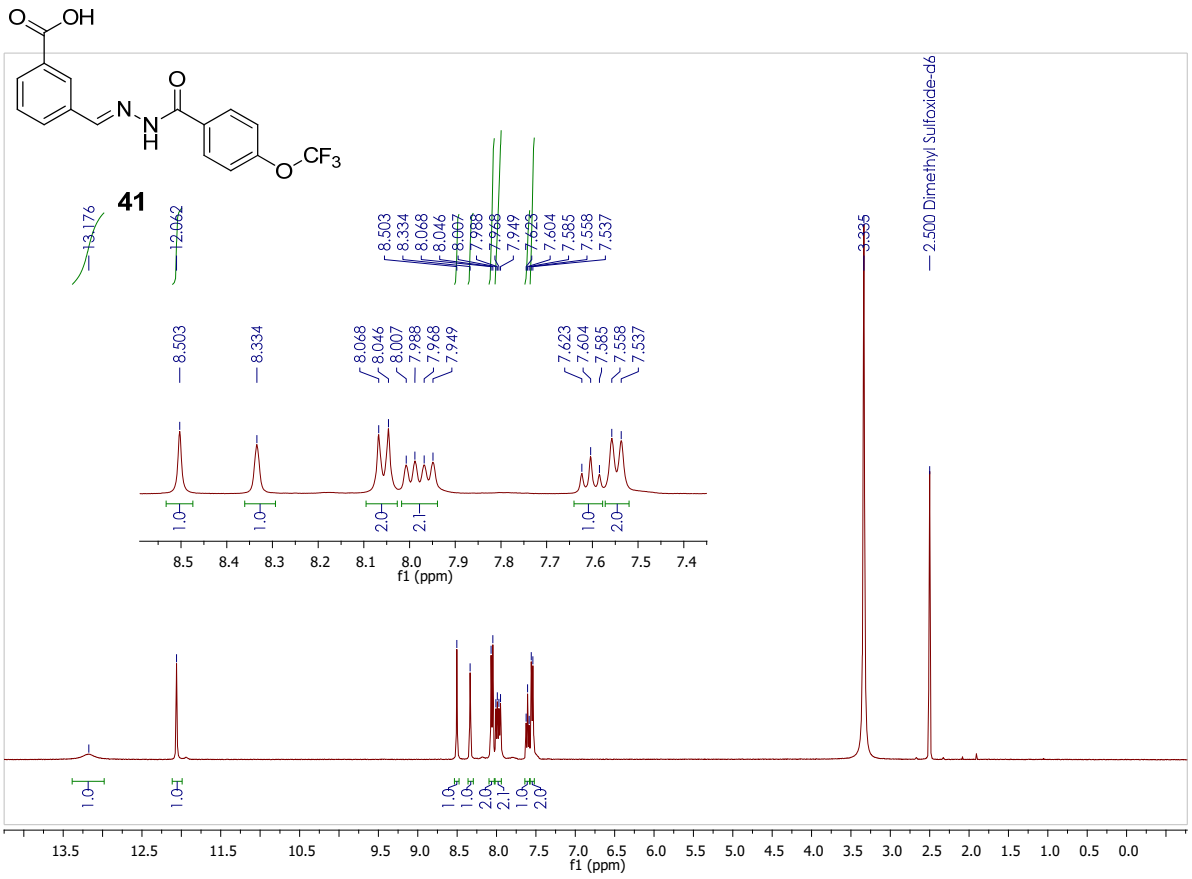


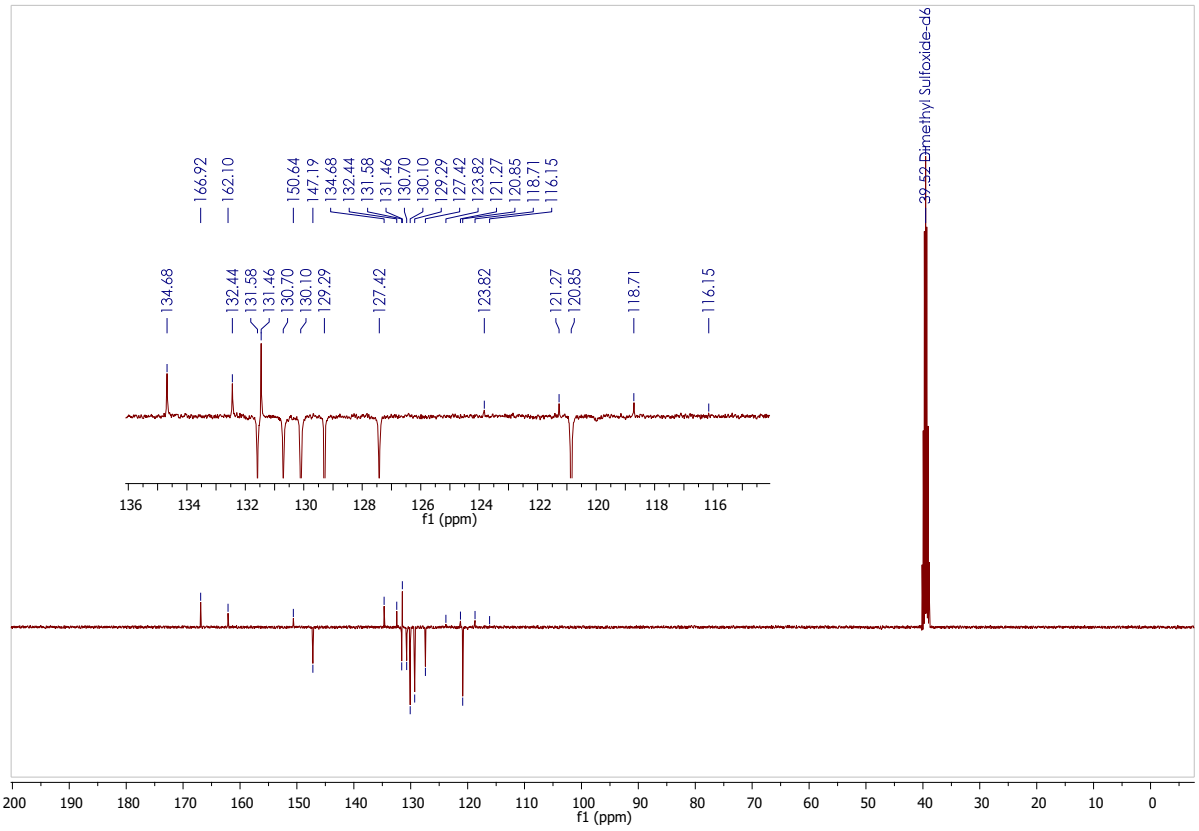
Molecular Weight: 404.263

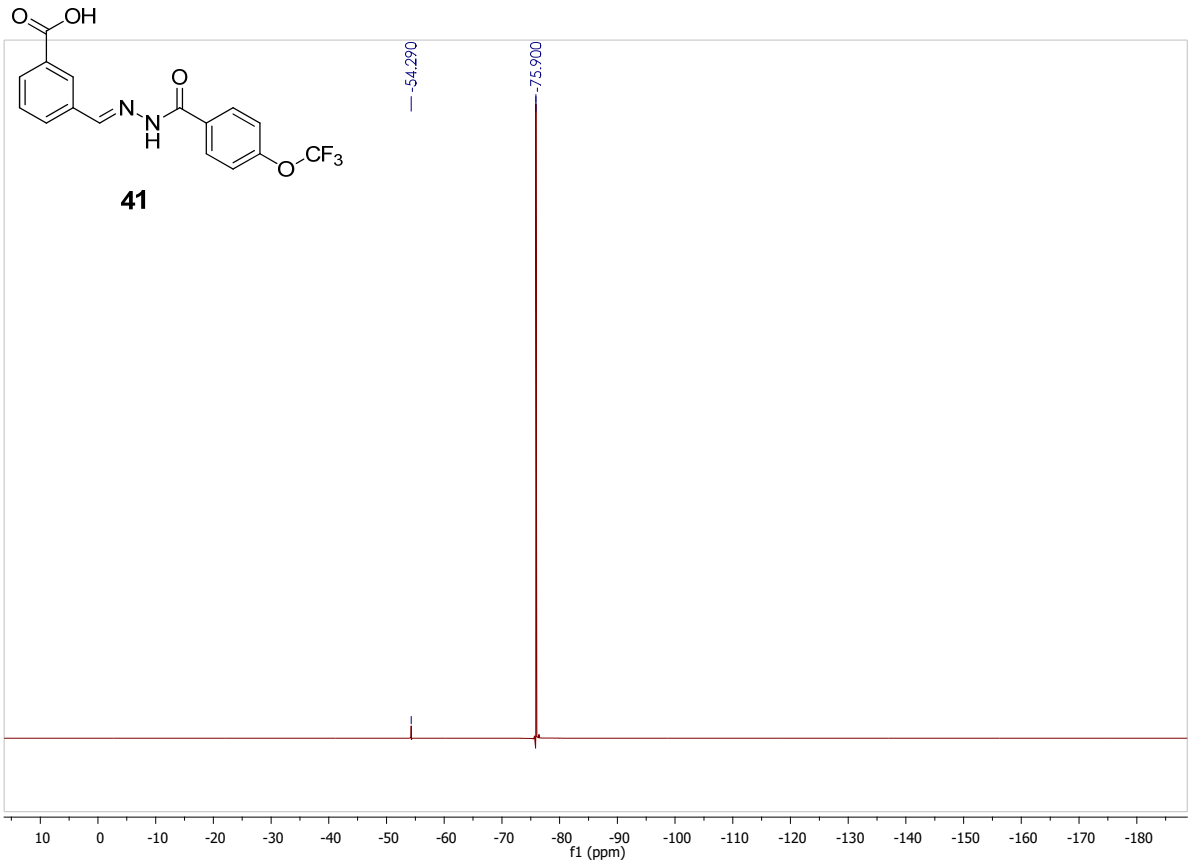
40






41
13.176
12.062
8.503
8.334
8.068
8.046
8.007
7.988
7.968
7.949
7.623
7.604
7.585
7.558
7.537
3.335
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)

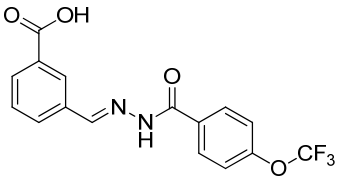

166.92
162.10
150.64
147.19
134.68
132.44
131.58
131.46
130.70
130.10
129.29
127.42
123.82
121.27
120.85
118.71
116.15
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


O
OH
N
N
H
O
O
CF3
41
-54.290
-75.900
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
f1 (ppm)

LCMS Report

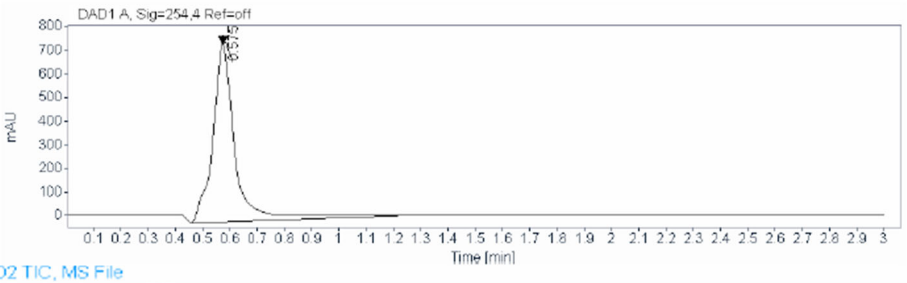
Agilent Technologies

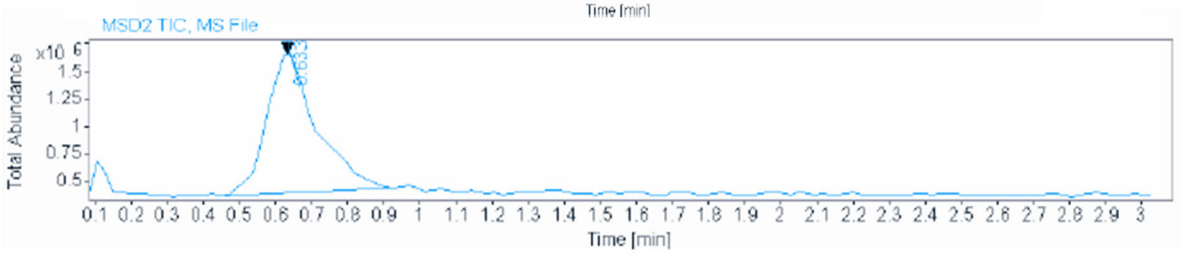
Data file:	D:\Chem32\1\Data\MH\MH4006-4010 and MH4014 2022-03-01 12-11-51\005-64-MH4009.D		
Sample name:	MH4009		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	64
Injection date:	3/1/2022 12:33:03 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_80% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/13/2021 10:05:44 AM		

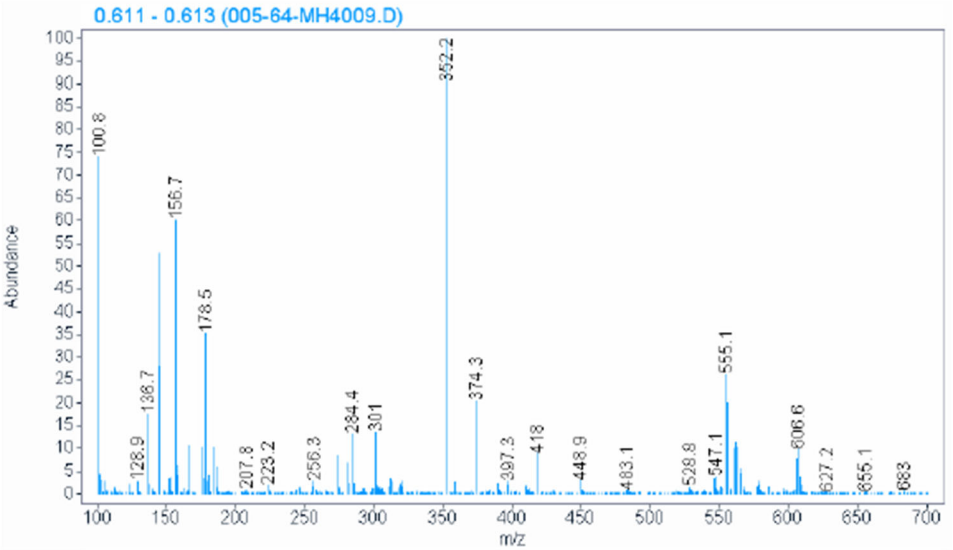


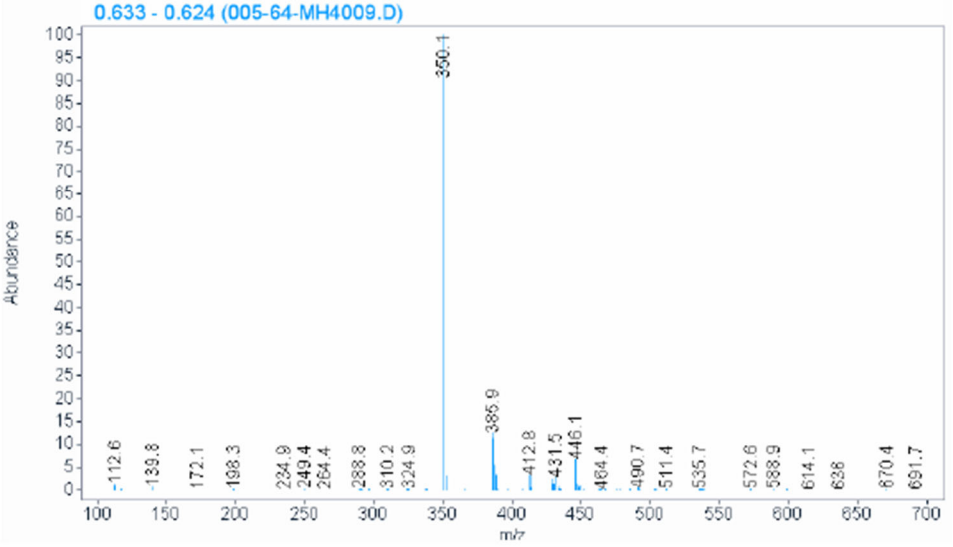
Molecular Weight: 352.265

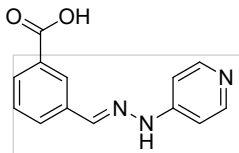
41



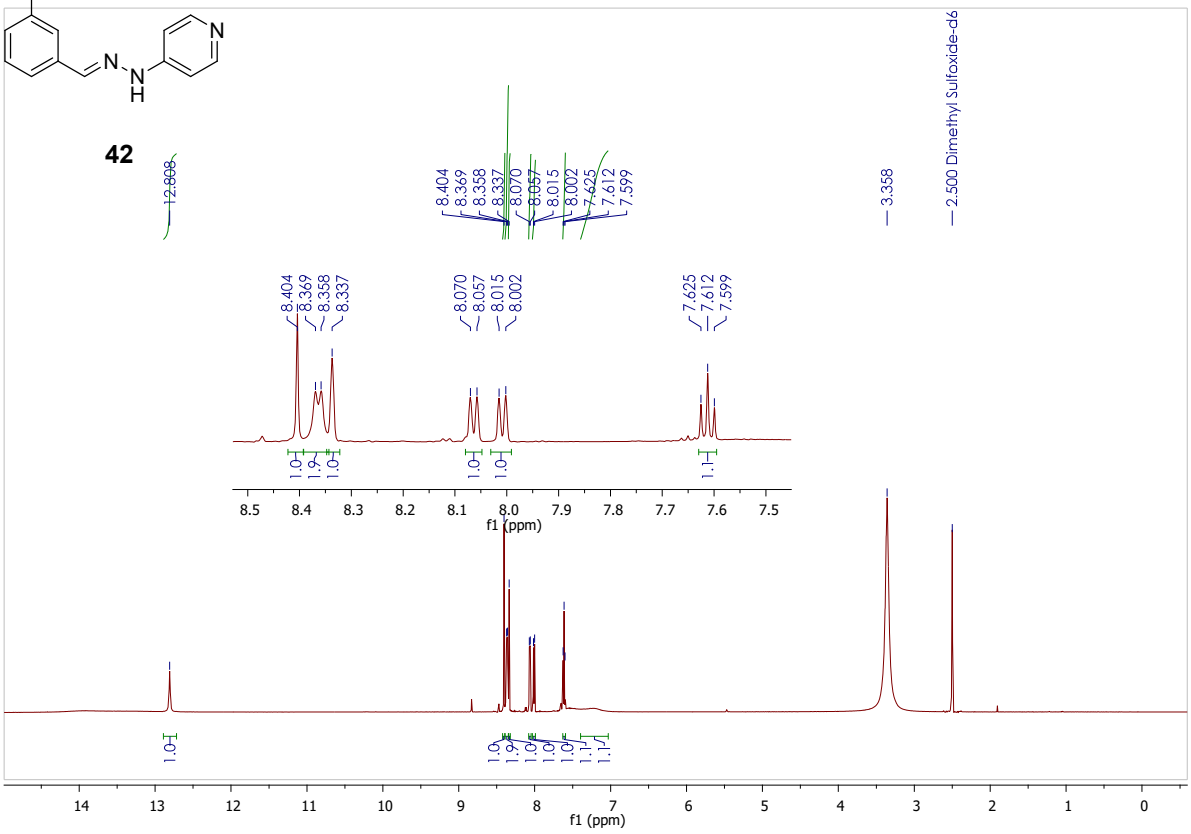


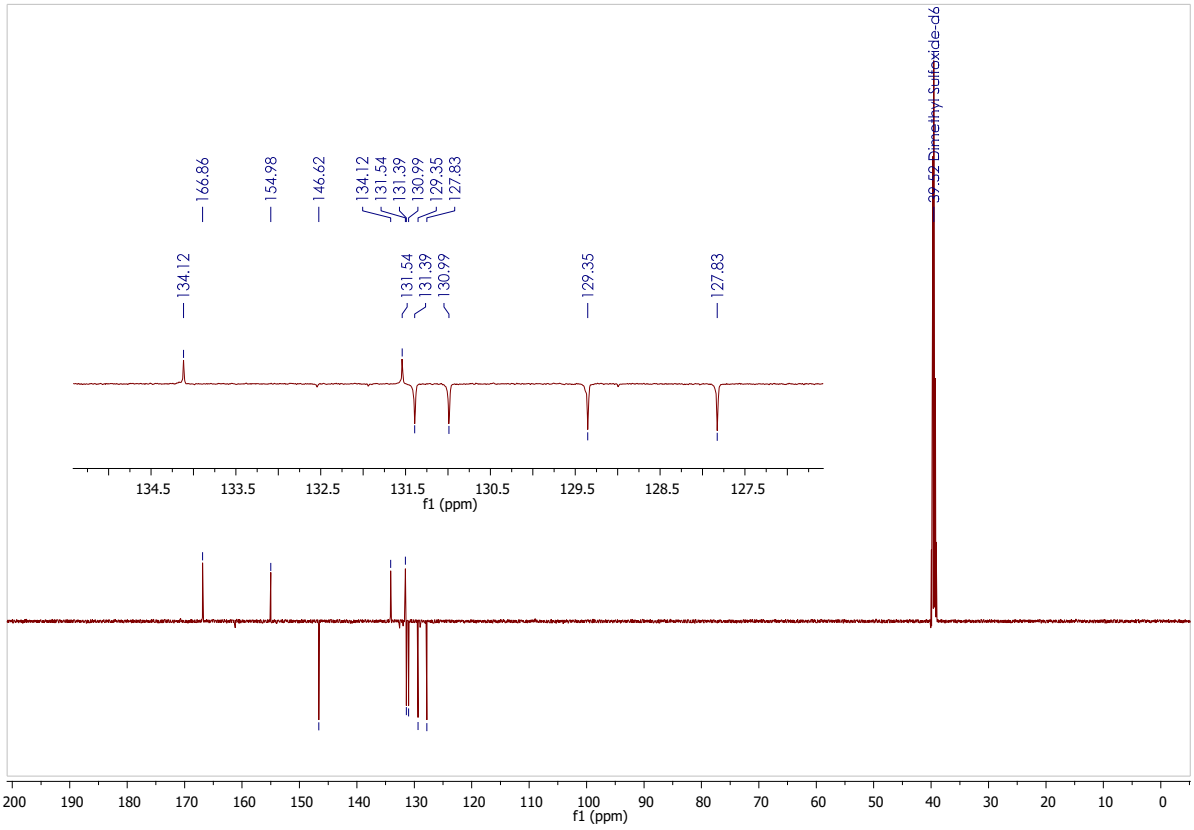






42

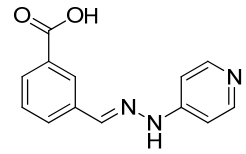

12.908
8.404
8.369
8.358
8.337
8.070
8.057
8.015
8.002
7.625
7.612
7.599
3.358
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.86
154.98
146.62
134.12
131.54
131.39
130.99
129.35
127.83
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

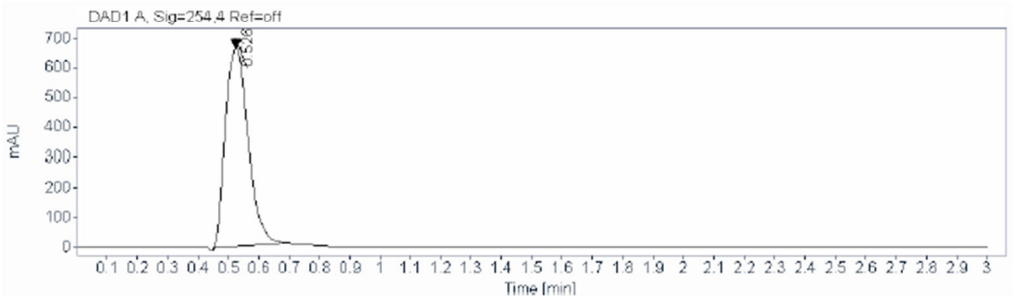
Agilent Technologies

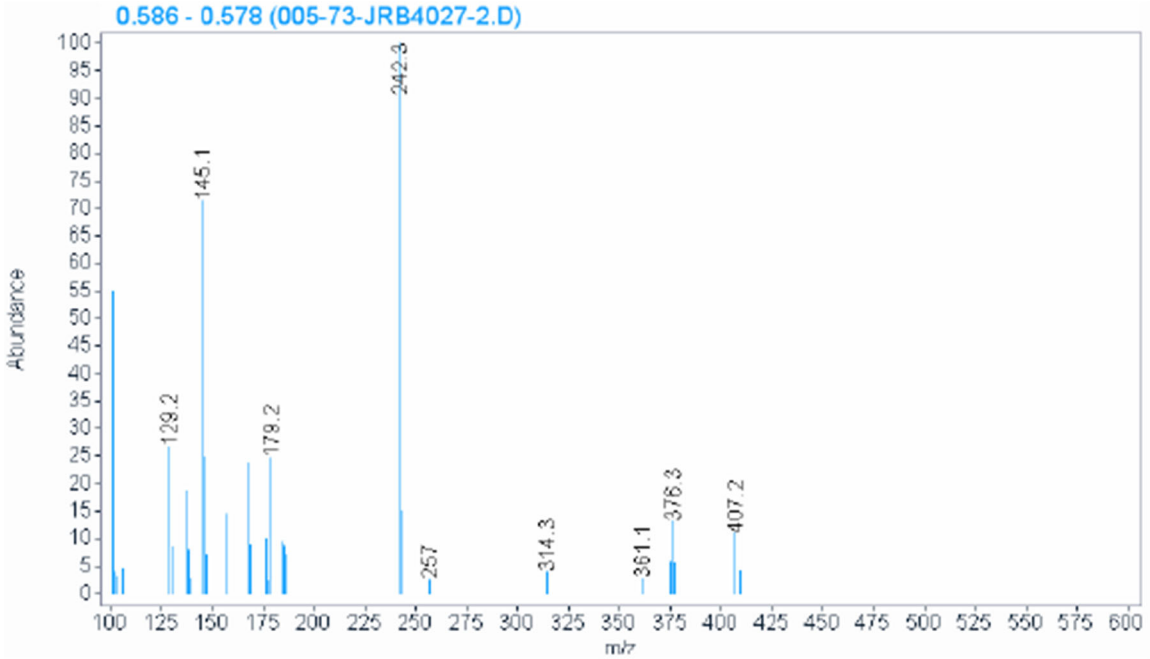
Data file:	D:\Chem32\1\Data\JRB\JRB4025-4027-2 2023-07-24 15-27-22\005-73-JRB4027-2.D		
Sample name:	JRB4027-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	73
Injection date:	7/24/2023 3:49:41 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

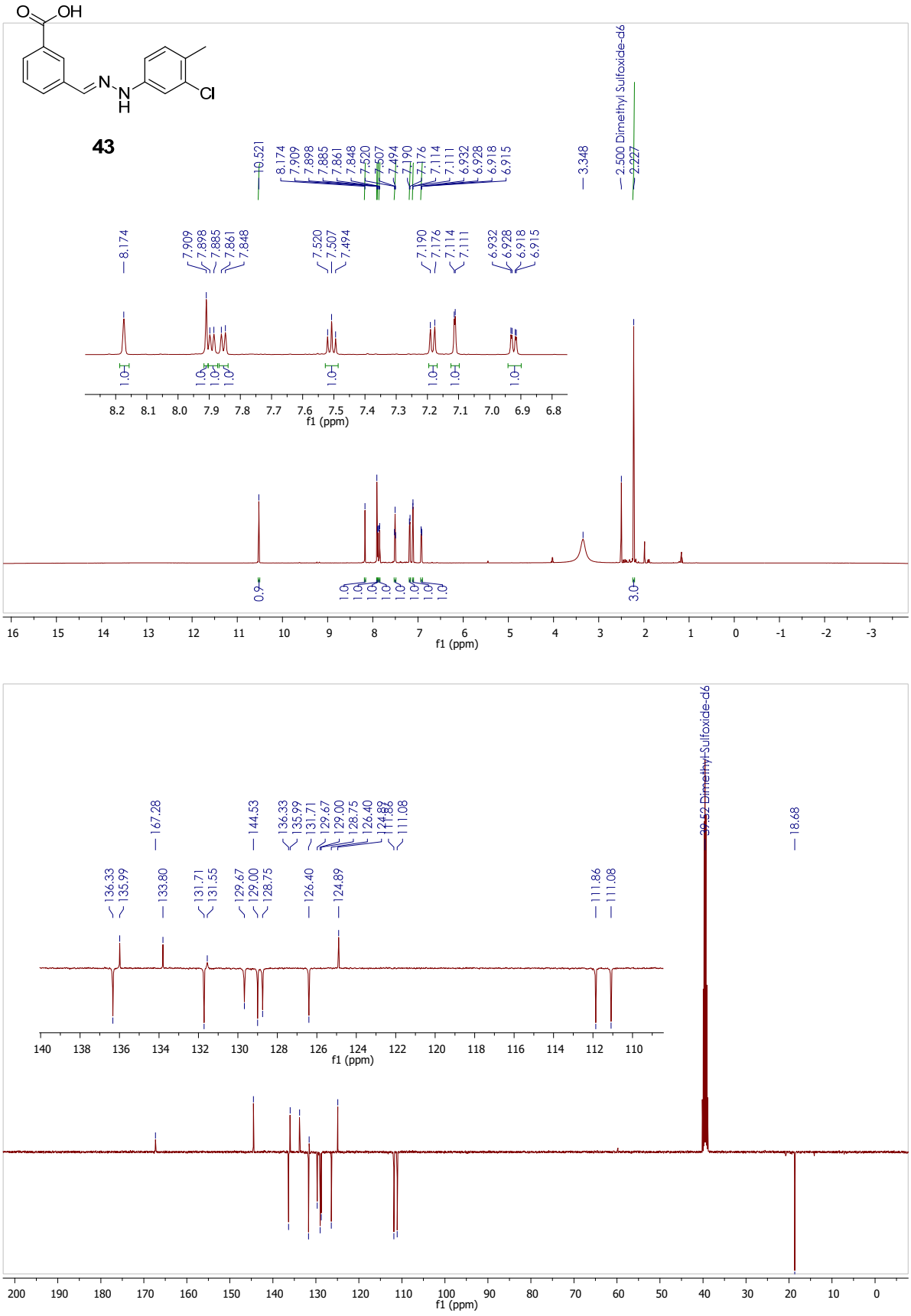


Molecular Weight: 241.245

42



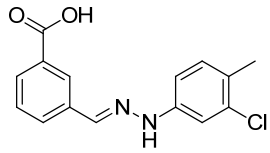



O
OH
N
N
H
Cl
43
10.521
8.174
7.909
7.898
7.885
7.861
7.848
7.520
7.507
7.494
7.190
7.176
7.114
7.111
6.932
6.928
6.918
6.915
3.348
2.500 Dimethyl Sulfoxide-d6
2.227
f1 (ppm)
167.28
144.53
136.33
135.99
131.71
129.67
129.00
128.75
126.40
124.89
111.86
111.08
39.52 Dimethyl Sulfoxide-d6
18.68
f1 (ppm)

LCMS Report

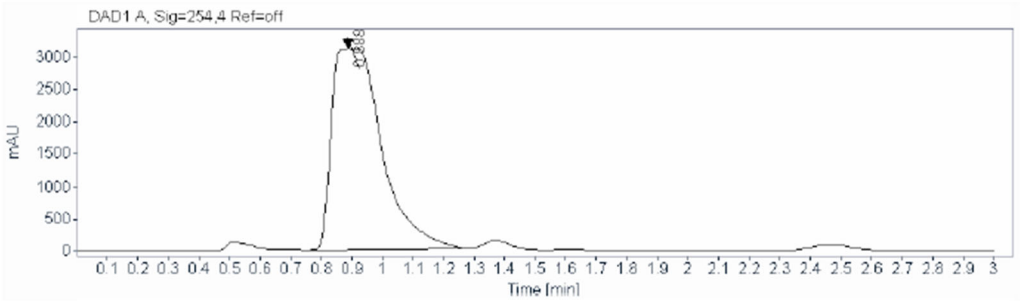
Agilent Technologies

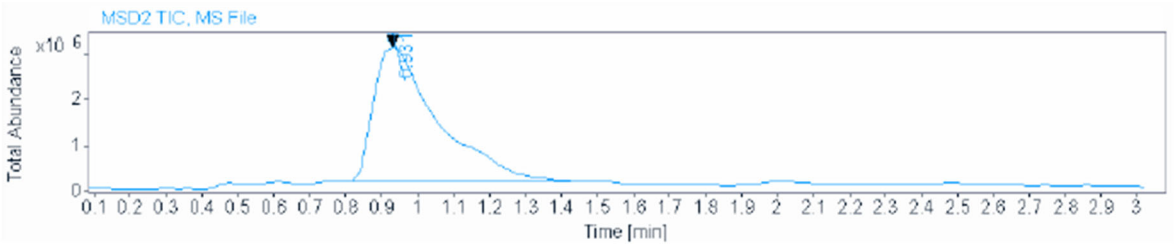
Data file:	D:\Chem32\1\Data\MH\mh4042-47 2022-03-23 11-51-40\005-74-mh4045.D		
Sample name:	mh4045		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	74
Injection date:	3/23/2022 12:11:39 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

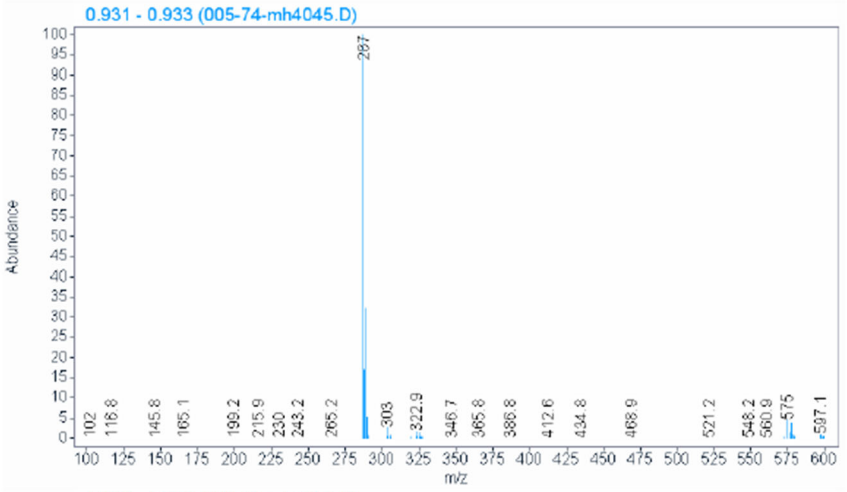


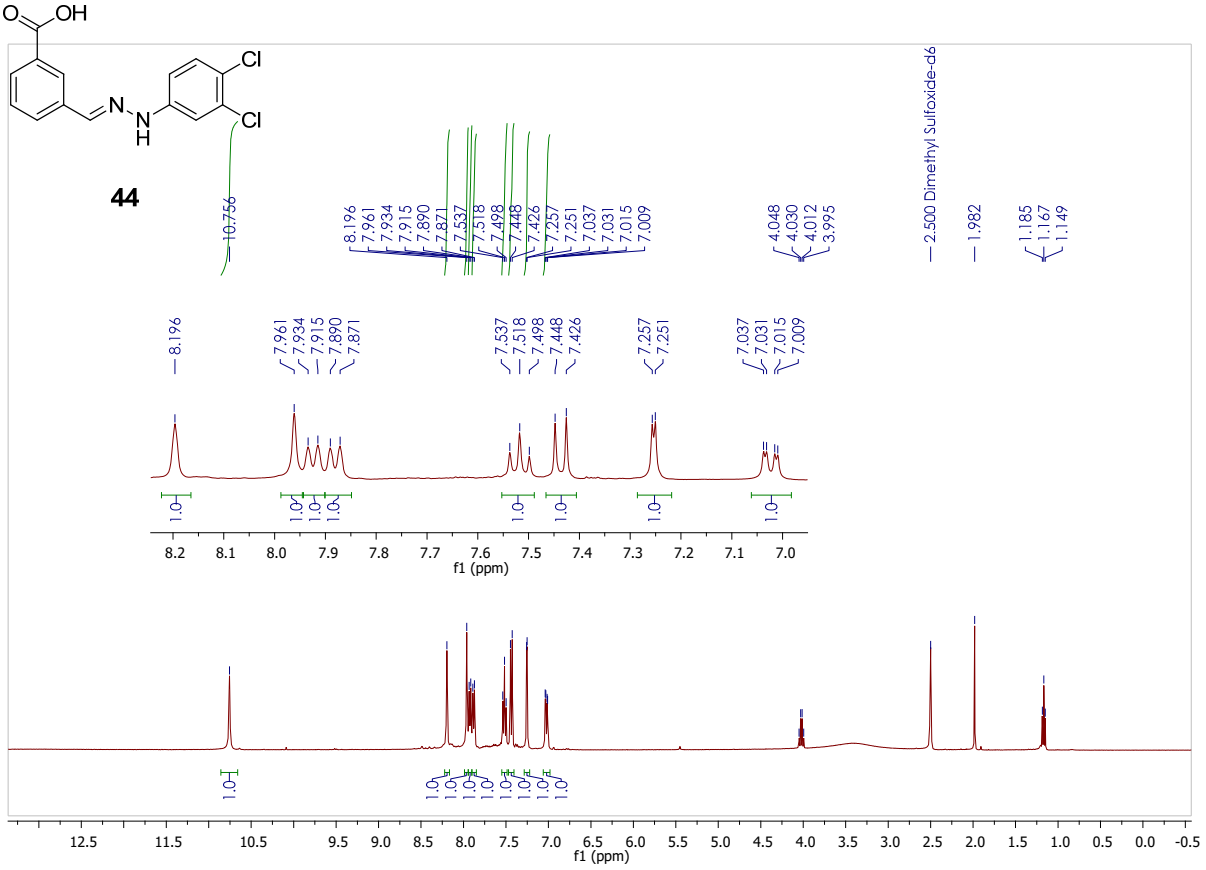
Molecular Weight: 288.729

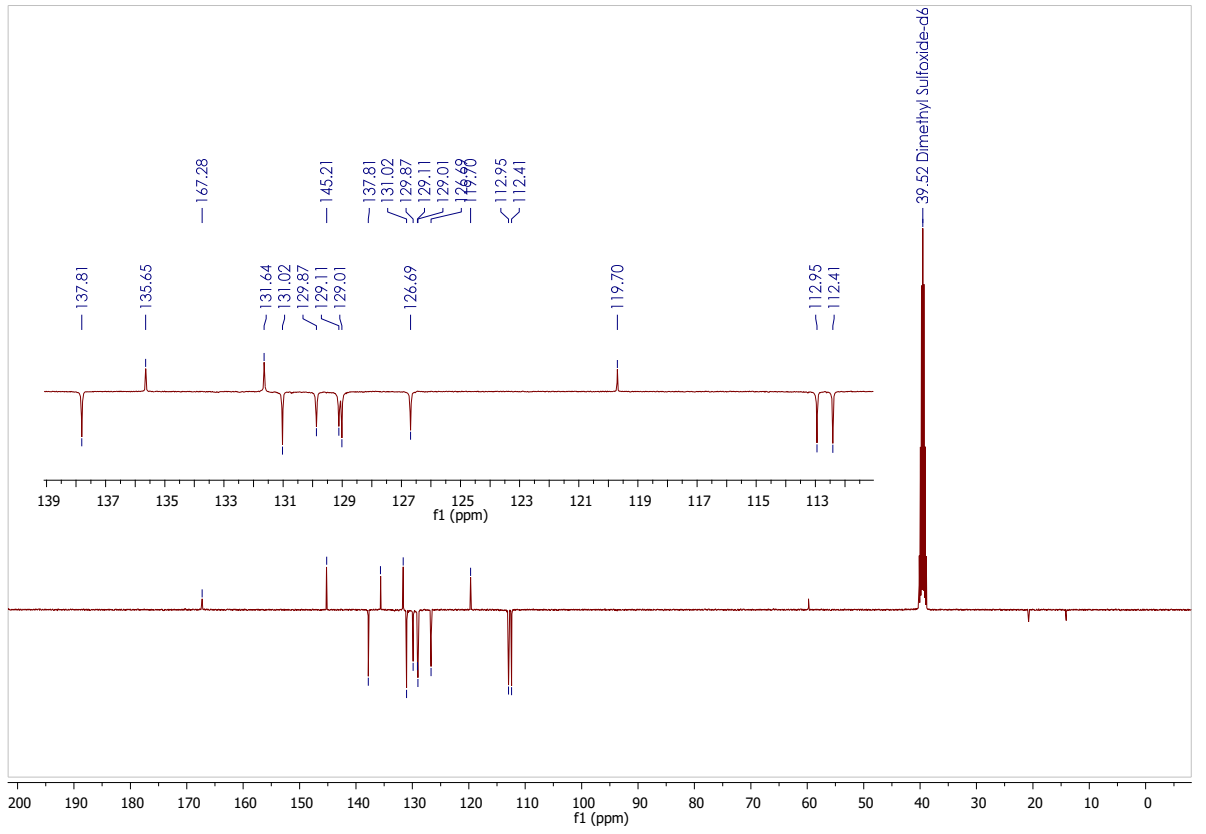
43







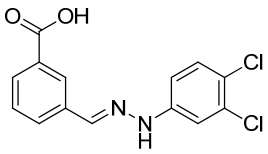

O
OH
Cl
Cl
N
N
H
44
10.756
8.196
7.961
7.934
7.915
7.890
7.871
7.537
7.518
7.498
7.448
7.426
7.257
7.251
7.037
7.031
7.015
7.009
4.048
4.030
4.012
3.995
2.500 Dimethyl Sulfoxide-d6
1.982
1.185
1.167
1.149
f1 (ppm)


167.28
145.21
137.81
131.02
129.87
129.11
129.01
126.69
119.70
112.95
112.41
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

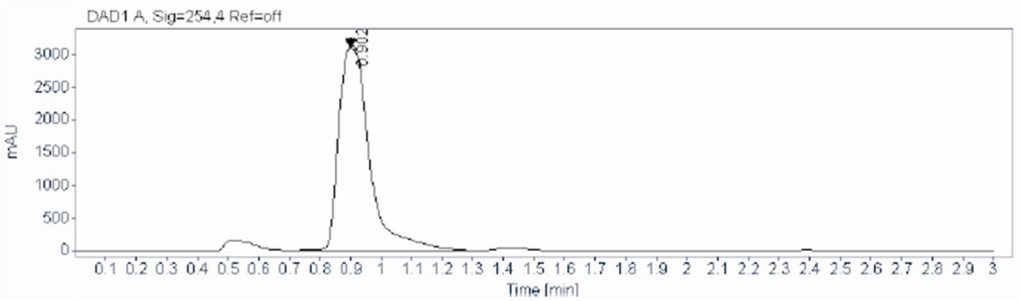
Agilent Technologies

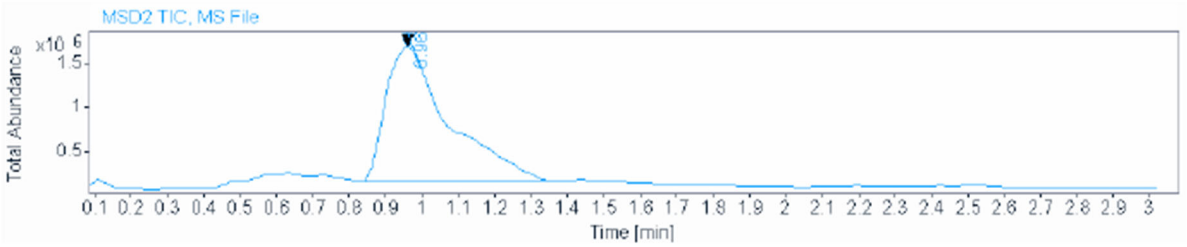
Data file:	D:\Chem32\1\Data\MH\mh4042-47 2022-03-23 11-51-40\003-72-mh4043.D		
Sample name:	mh4043		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	72
Injection date:	3/23/2022 12:02:24 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

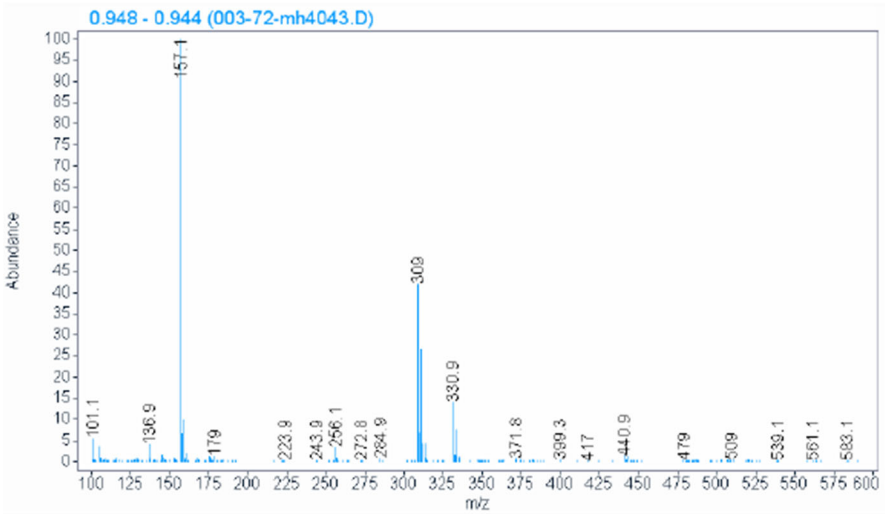


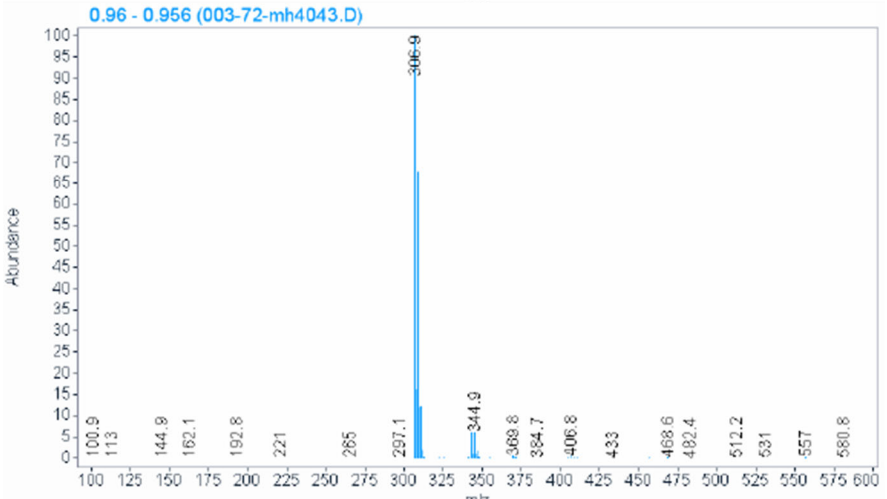
Molecular Weight: 309.147

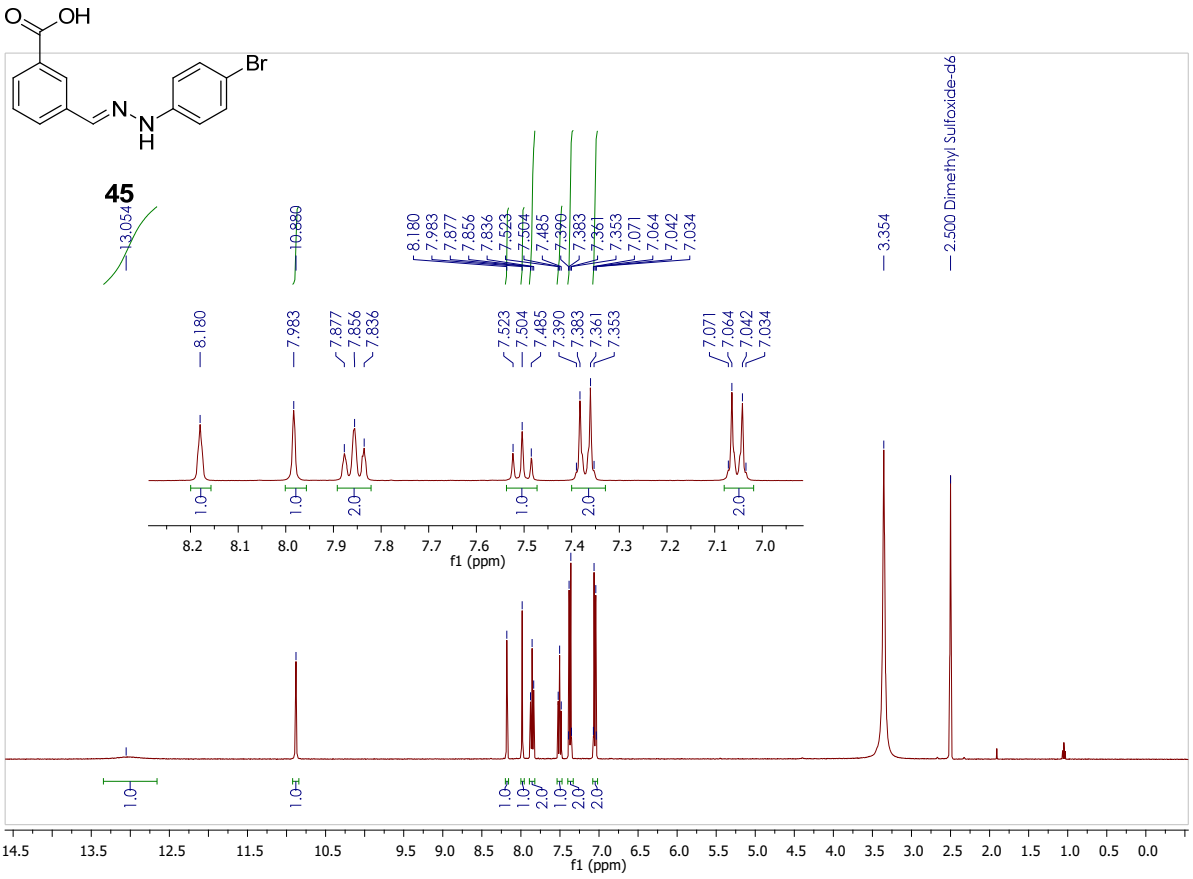
44

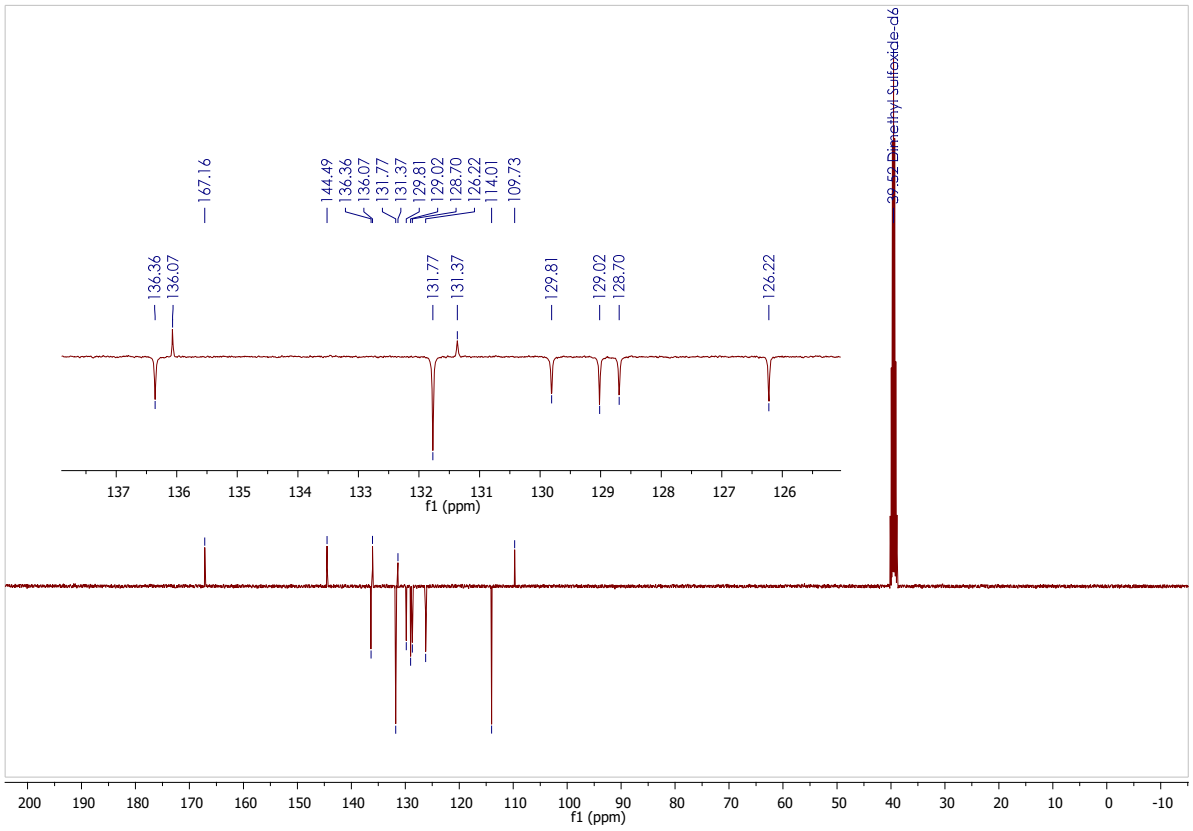








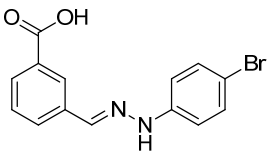

O
OH
Br
N
N
H
45
13.054
10.880
8.180
7.983
7.877
7.856
7.836
7.523
7.504
7.485
7.390
7.383
7.361
7.353
7.071
7.064
7.042
7.034
3.354
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


167.16
144.49
136.36
136.07
131.77
131.37
129.81
129.02
128.70
126.22
114.01
109.73
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

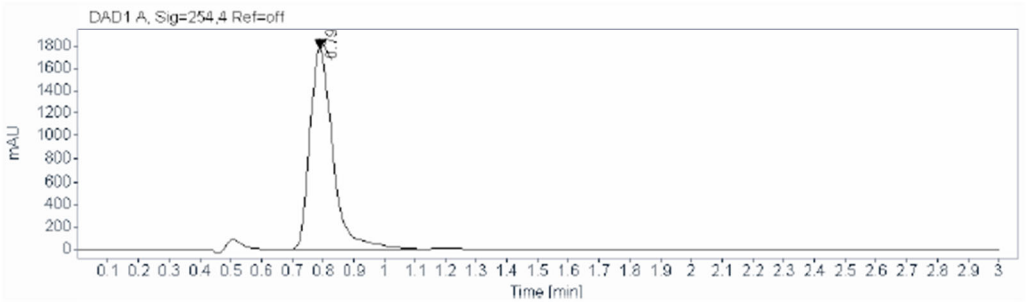
Agilent Technologies

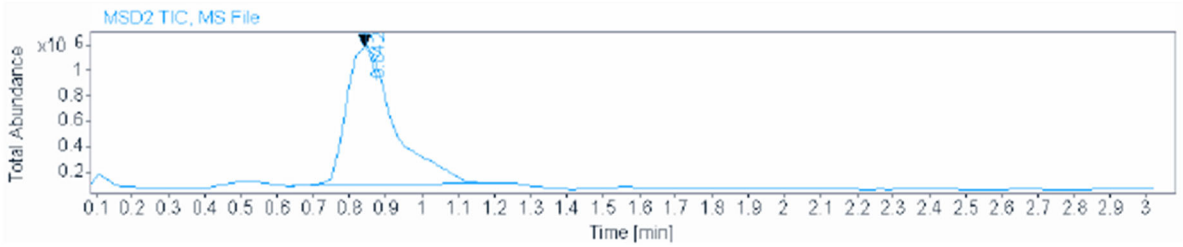
Data file:	D:\Chem32\1\Data\MH\mh4042-47 2022-03-23 11-51-40\004-73-mh4044.D		
Sample name:	mh4044		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	73
Injection date:	3/23/2022 12:06:54 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

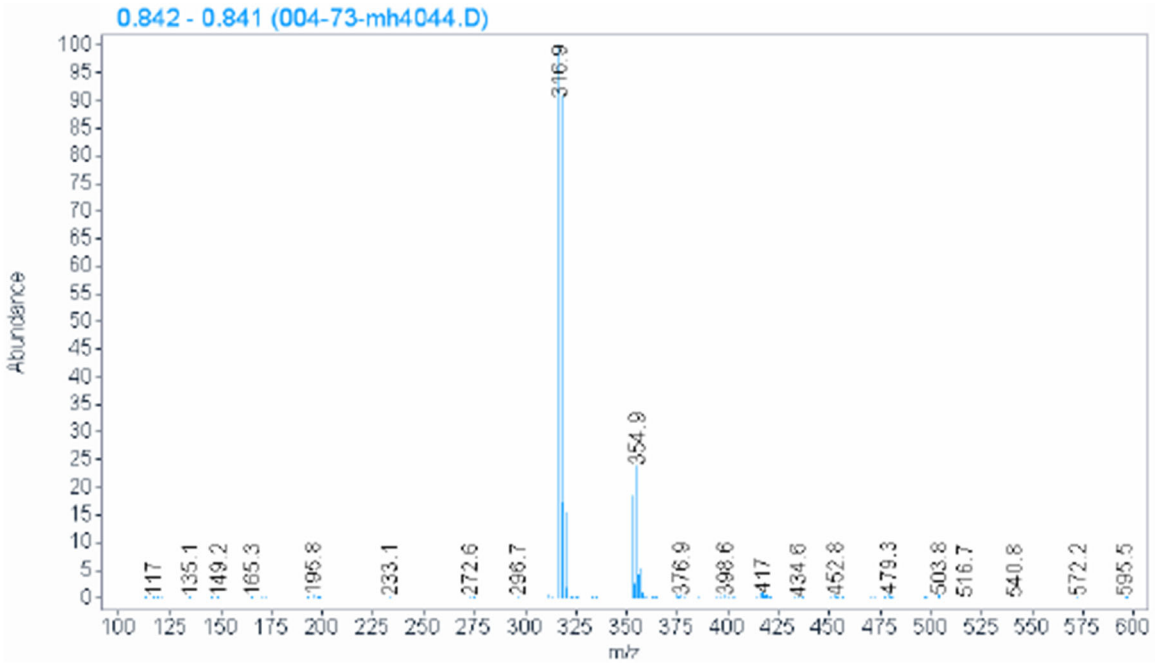


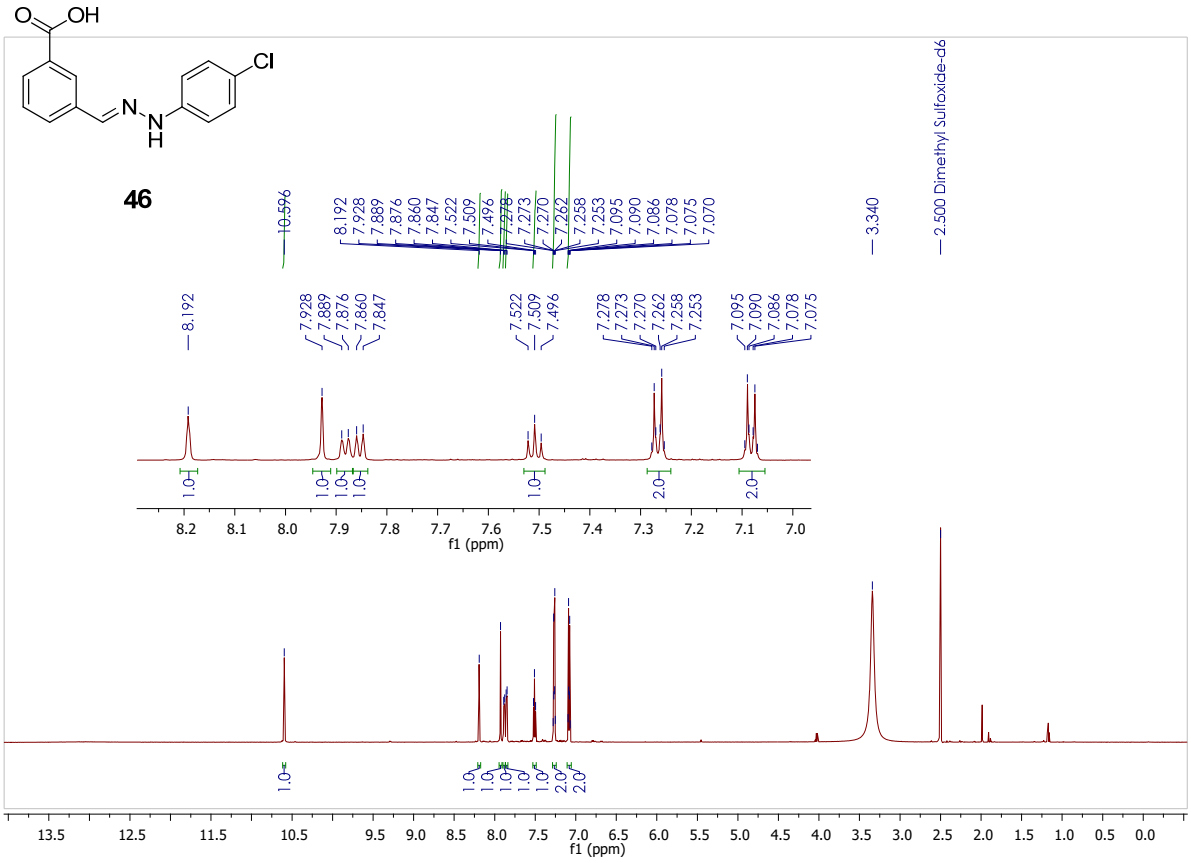
Molecular Weight: 319.153

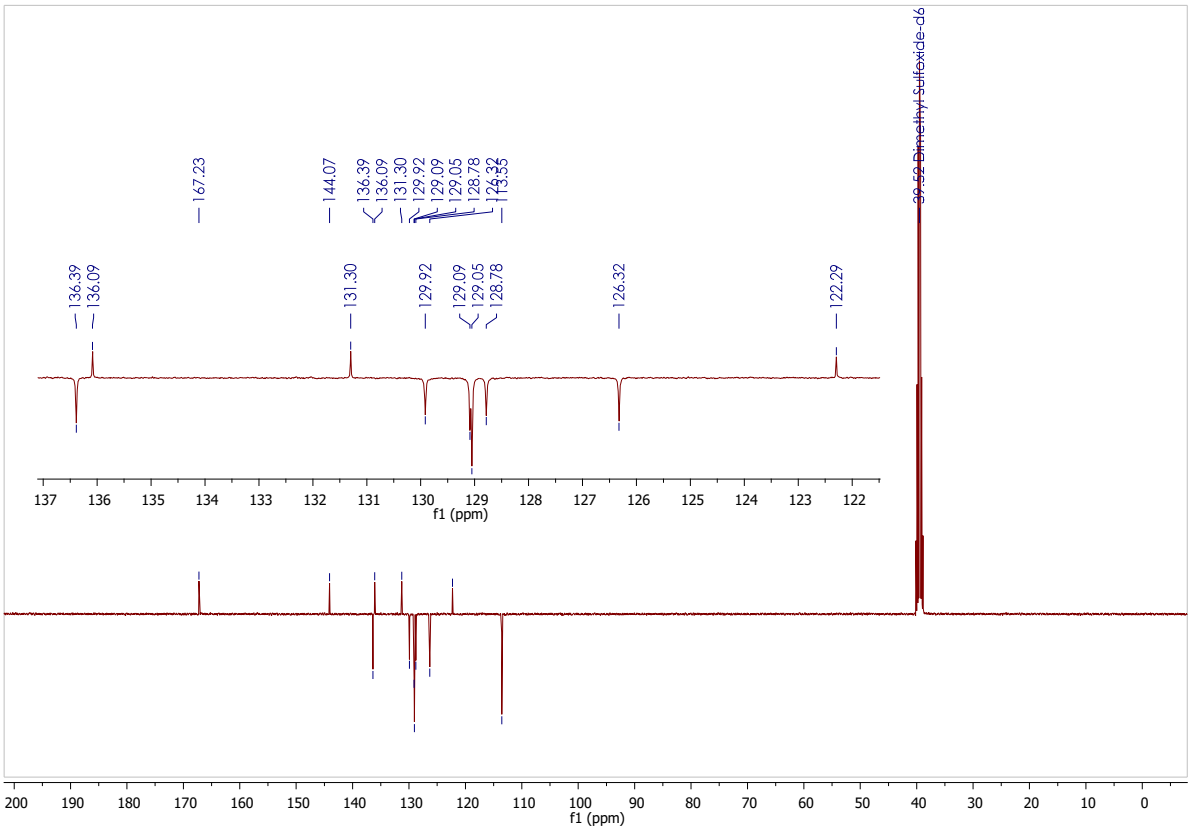
45







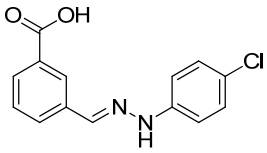

O
OH
Cl
N
N
H
46
10.596
8.192
7.928
7.889
7.876
7.860
7.847
7.522
7.509
7.496
7.278
7.273
7.270
7.262
7.258
7.253
7.095
7.090
7.086
7.078
7.075
7.070
3.340
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


167.23
144.07
136.39
136.09
131.30
129.92
129.09
129.05
128.78
126.32
122.29
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

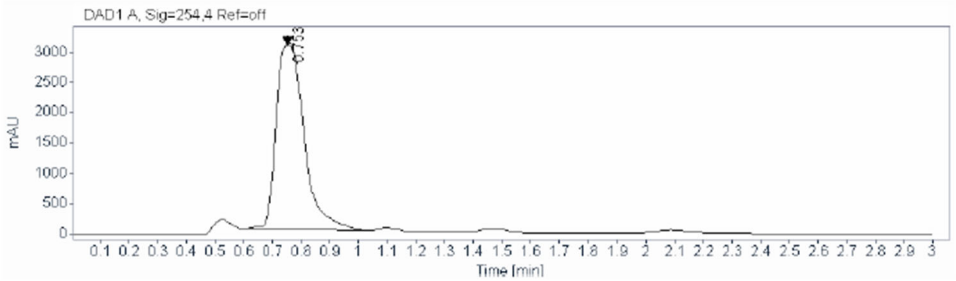
Agilent Technologies

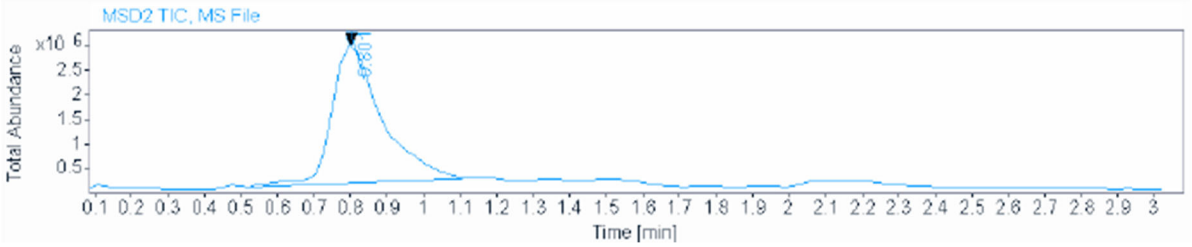
Data file:	D:\Chem32\1\Data\MH\mh4042-47 2022-03-23 11-51-40\006-75-mh4046.D		
Sample name:	mh4046		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	75
Injection date:	3/23/2022 12:16:23 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

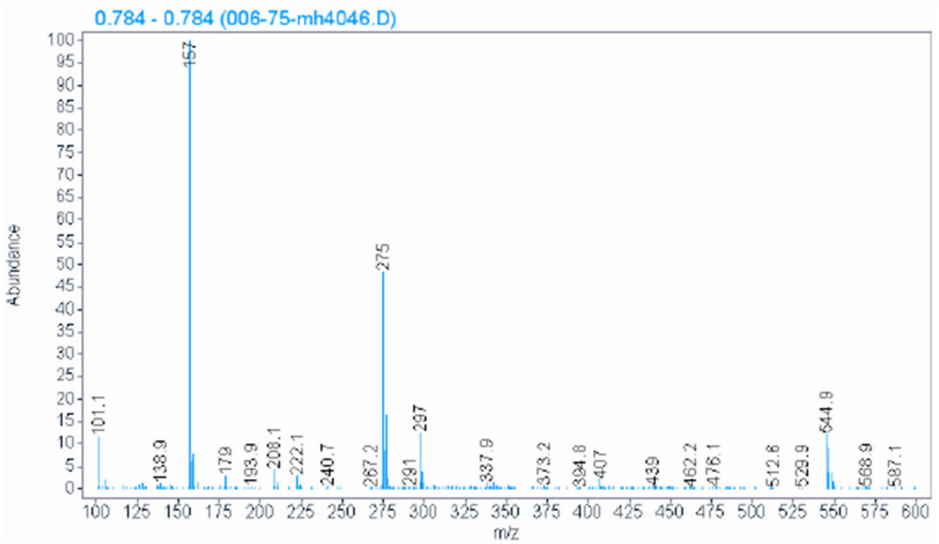


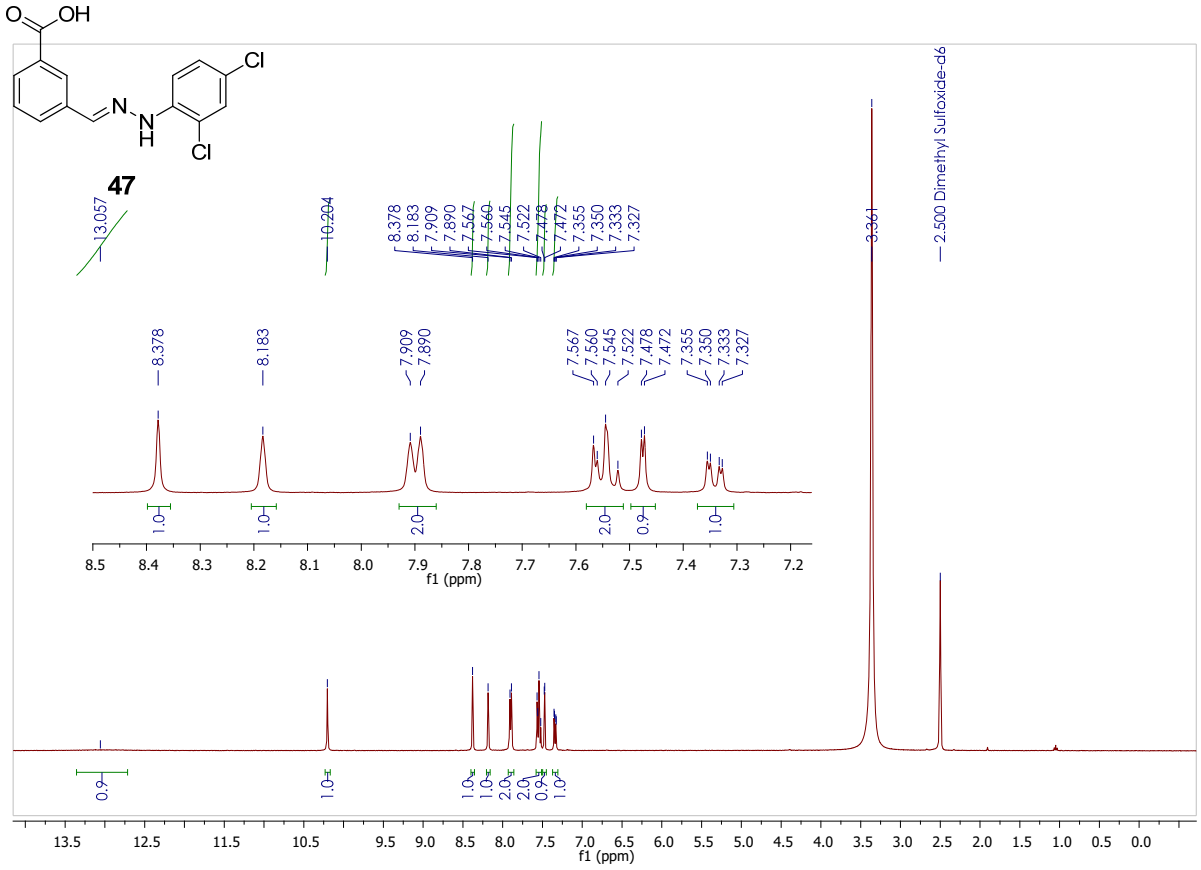
Molecular Weight: 274.702

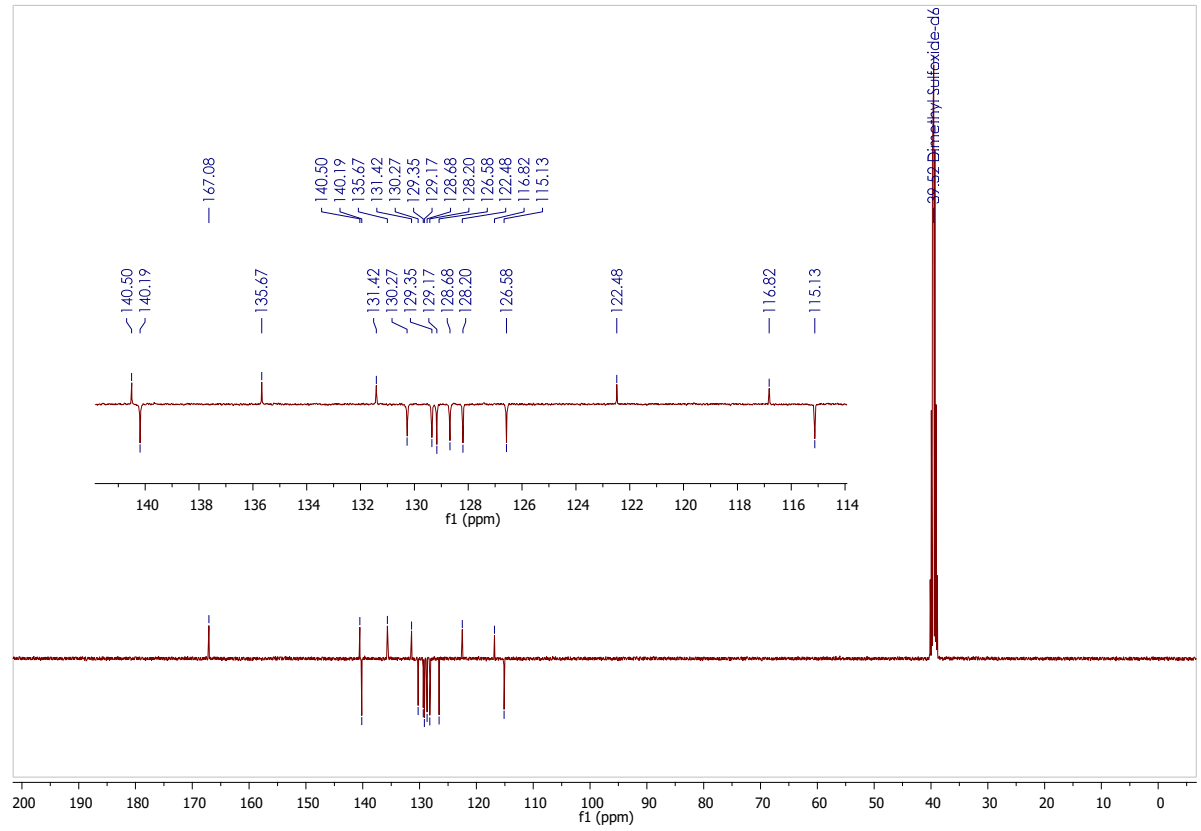
46







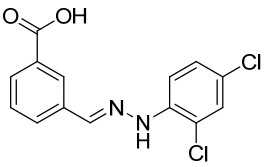

O
OH
Cl
N
N
H
Cl
47
13.057
10.204
8.378
8.183
7.909
7.890
7.567
7.560
7.545
7.522
7.478
7.472
7.355
7.350
7.333
7.327
3.361
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


167.08
140.50
140.19
135.67
131.42
130.27
129.35
129.17
128.68
128.20
126.58
122.48
116.82
115.13
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

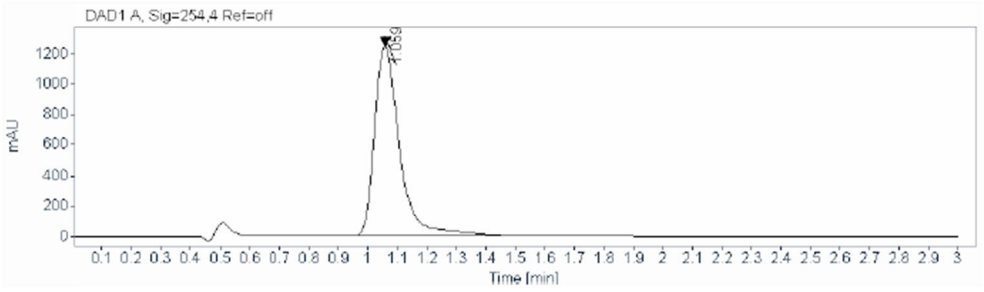
Agilent Technologies

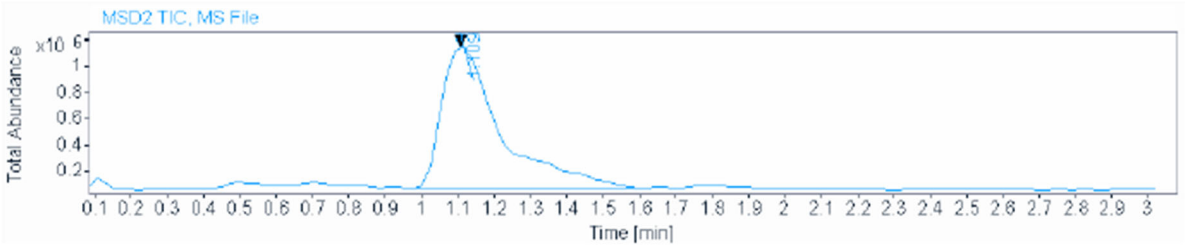
Data file:	D:\Chem32\1\Data\MH\mh4042-47 2022-03-23 11-51-40\007-76-mh4047.D		
Sample name:	mh4047		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	76
Injection date:	3/23/2022 12:21:03 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

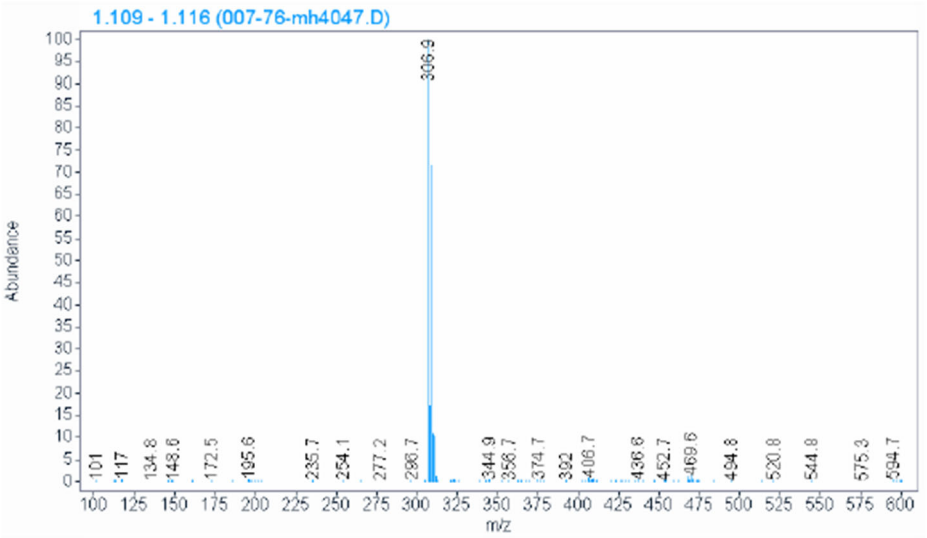


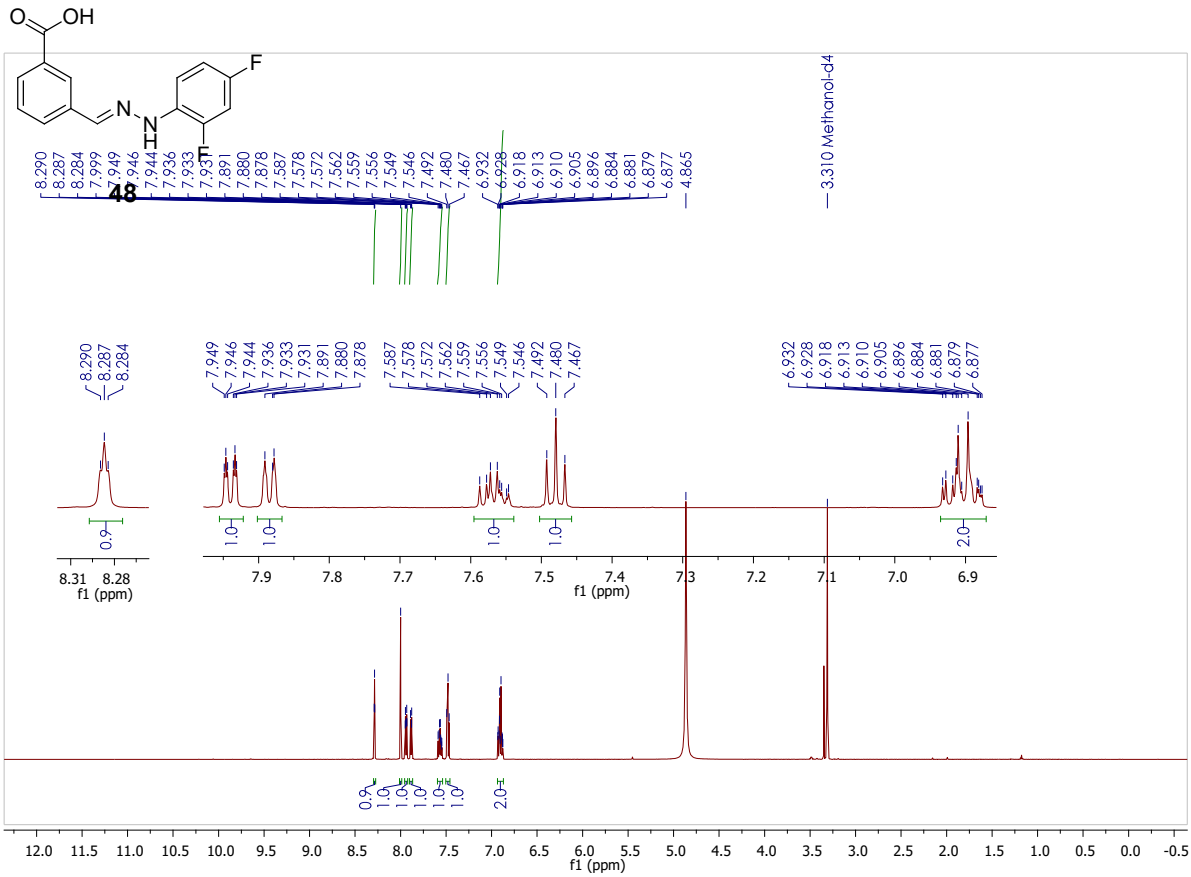
Molecular Weight: 309.147

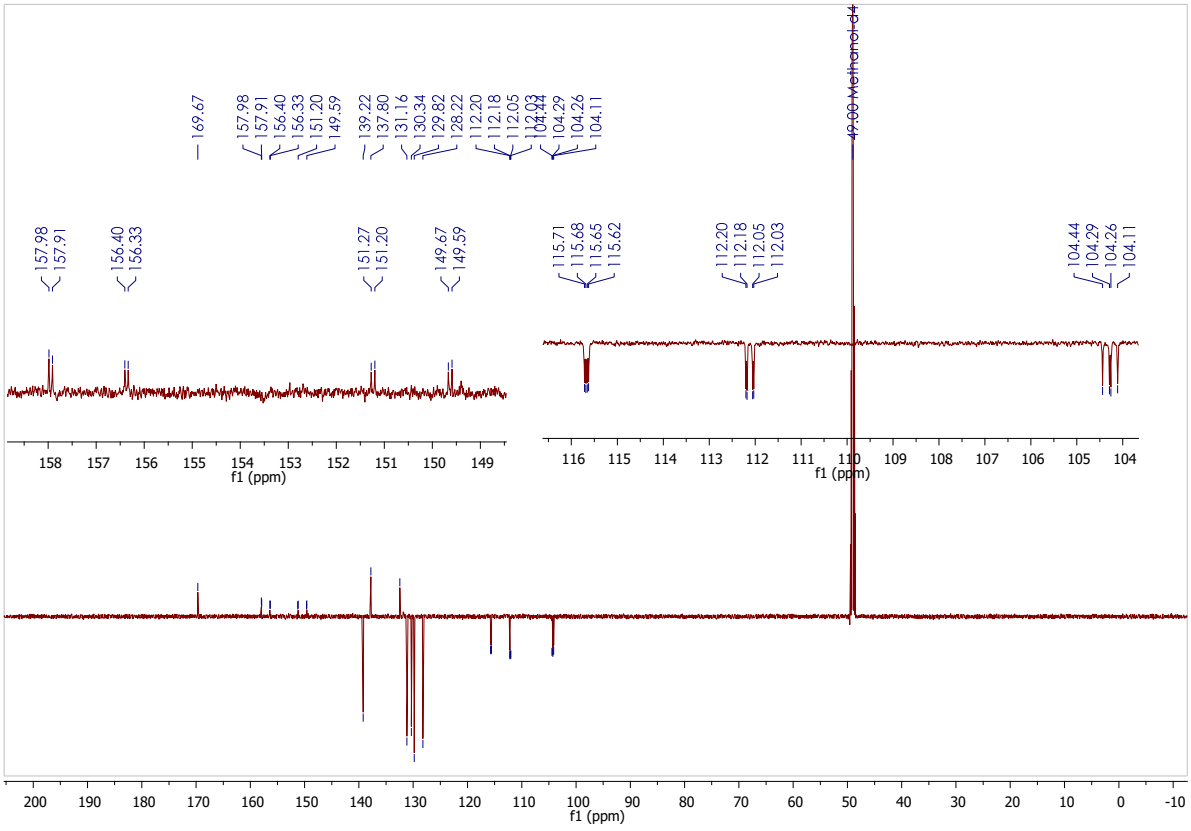
47

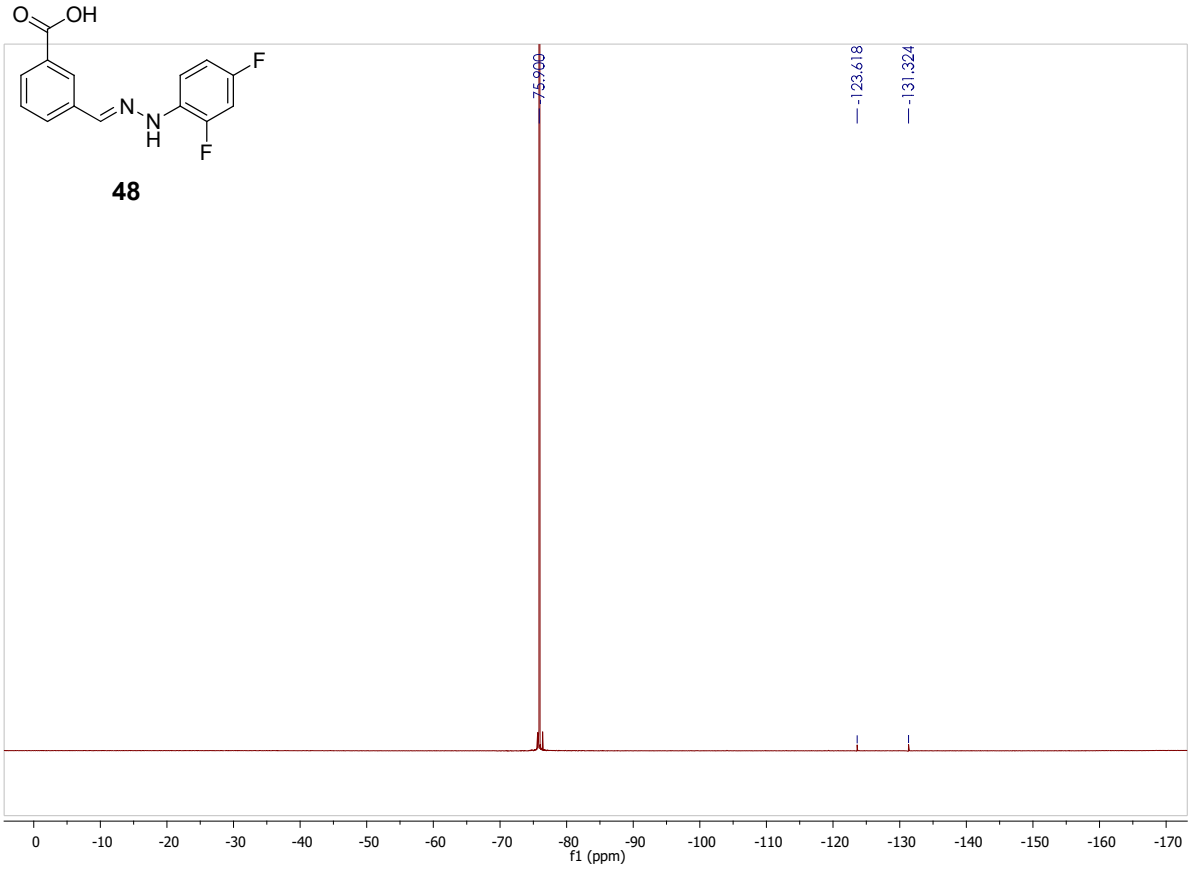







O
OH
F
N
N
H
F
48
3.310 Methanol-d4
8.290
8.287
8.284
7.999
7.949
7.946
7.944
7.936
7.933
7.931
7.891
7.880
7.878
7.587
7.578
7.572
7.562
7.559
7.556
7.549
7.546
7.492
7.480
7.467
6.932
6.928
6.918
6.913
6.910
6.905
6.896
6.884
6.881
6.879
6.877
4.865
f1 (ppm)

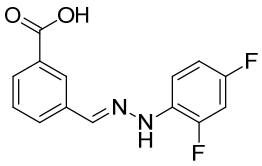

169.67
157.98
157.91
156.40
156.33
151.20
149.59
139.22
137.80
131.16
130.34
129.82
128.22
112.20
112.18
112.05
112.03
104.44
104.29
104.26
104.11
49.00 Methanol-d4
f1 (ppm)


O
OH
N
N
H
F
F
48
-75.900
-123.618
-131.324
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
f1 (ppm)

LCMS Report

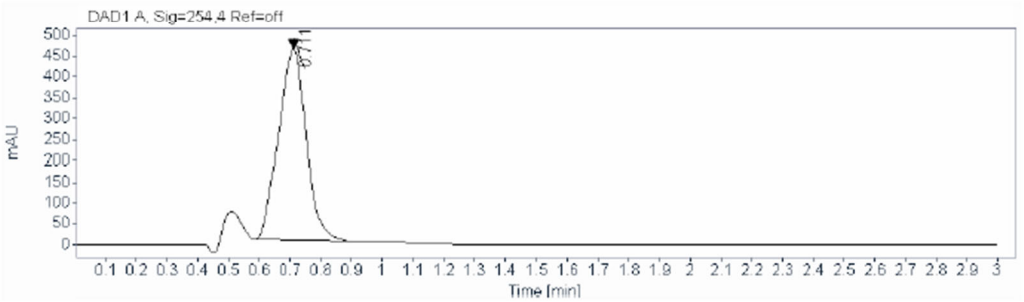
Agilent Technologies

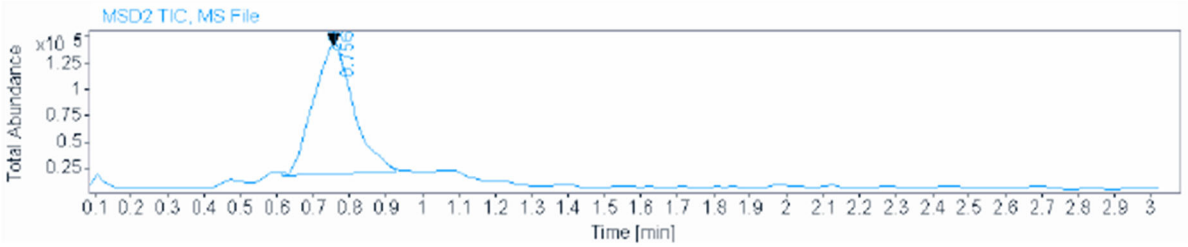
Data file:	D:\Chem32\1\Data\JRB\JRB4019 4022 4023B 4024 2023-07-24 14-54-21\003-79-JRB4022.D		
Sample name:	JRB4022		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	79
Injection date:	7/24/2023 3:05:49 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

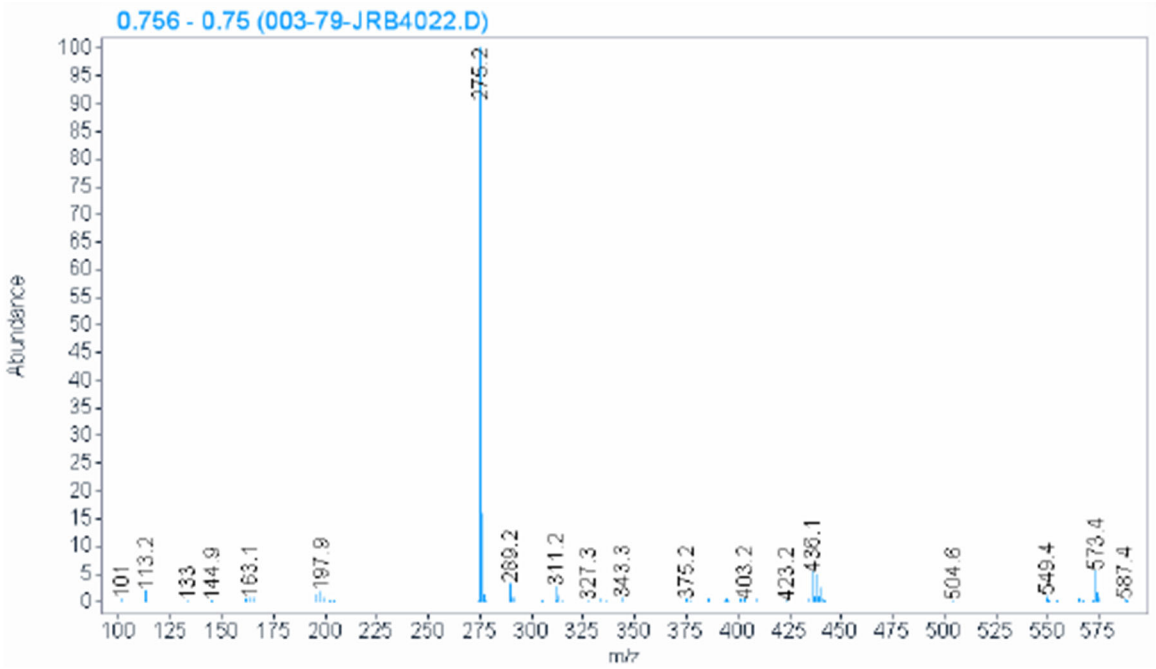


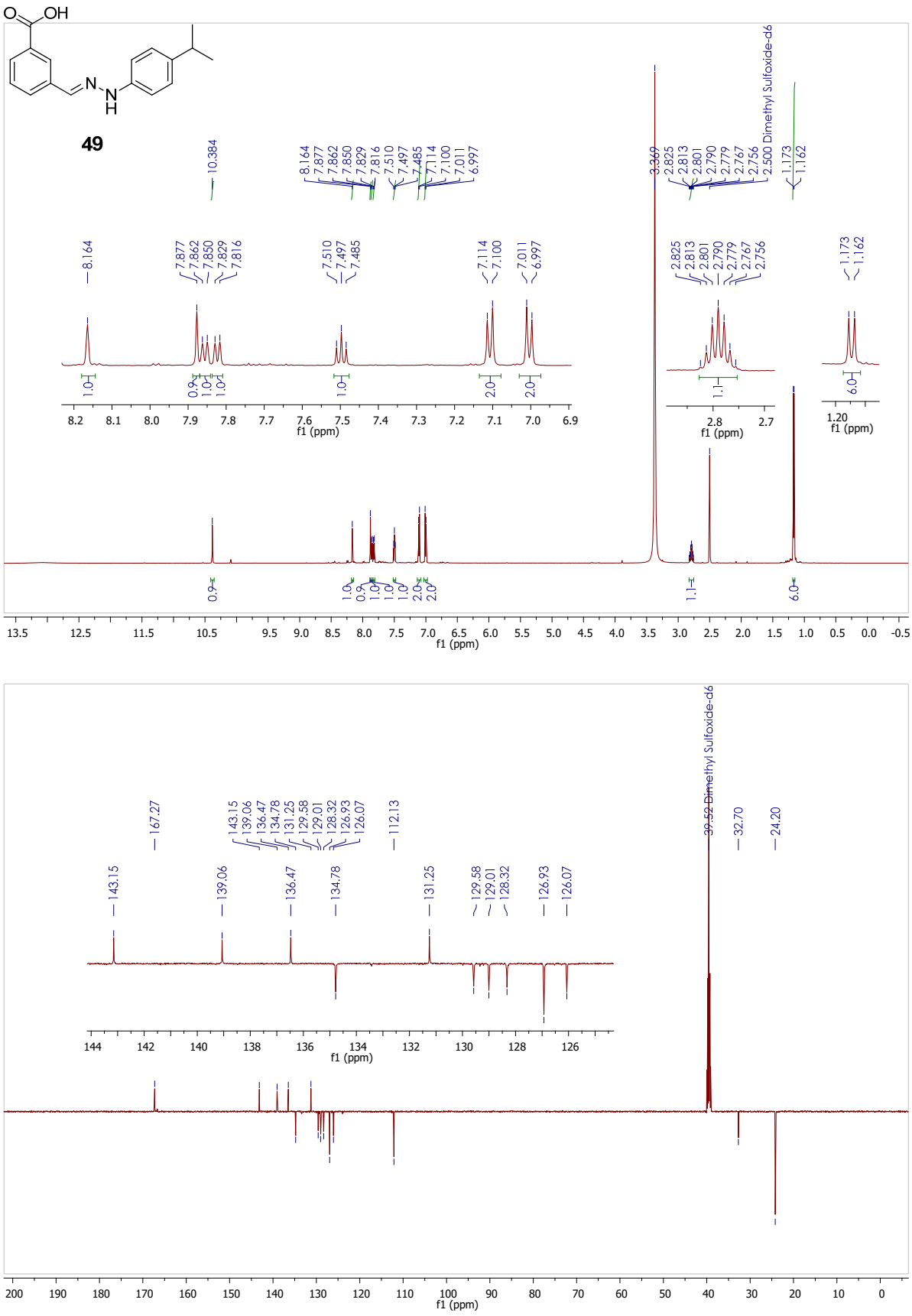
Molecular Weight: 276.238

48







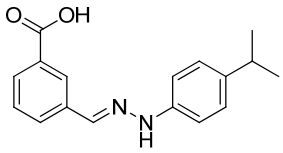

O
OH
N
N
H
49
10.384
8.164
7.877
7.862
7.850
7.829
7.816
7.510
7.497
7.485
7.114
7.100
7.011
6.997
3.369
2.825
2.813
2.801
2.790
2.779
2.767
2.756
2.500 Dimethyl Sulfoxide-d6
1.173
1.162
f1 (ppm)

167.27
143.15
139.06
136.47
134.78
131.25
129.58
129.01
128.32
126.93
126.07
112.13
39.52 Dimethyl Sulfoxide-d6
32.70
24.20
f1 (ppm)

LCMS Report

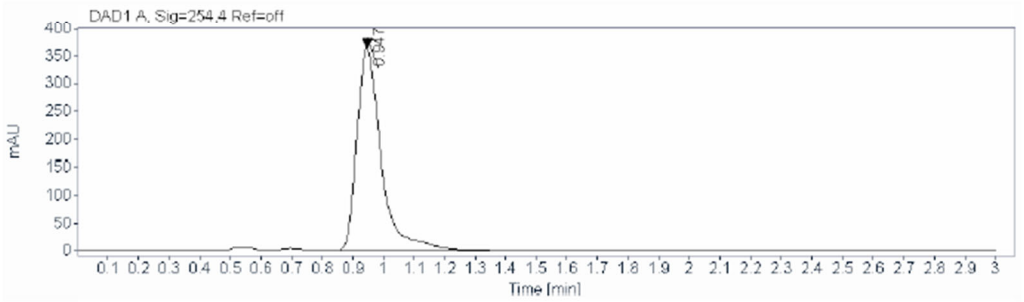
Agilent Technologies

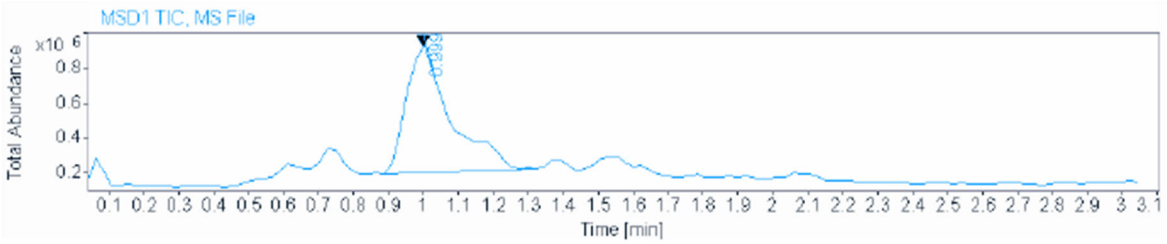
Data file:	D:\Chem32\1\Data\JRB\Pre-April 2022\JRB2098-T24 2022-02-11 11-45-51\001-61-jrb2098-t24.D		
Sample name:	jrb2098-t24		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	61
Injection date:	2/11/2022 11:47:32 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

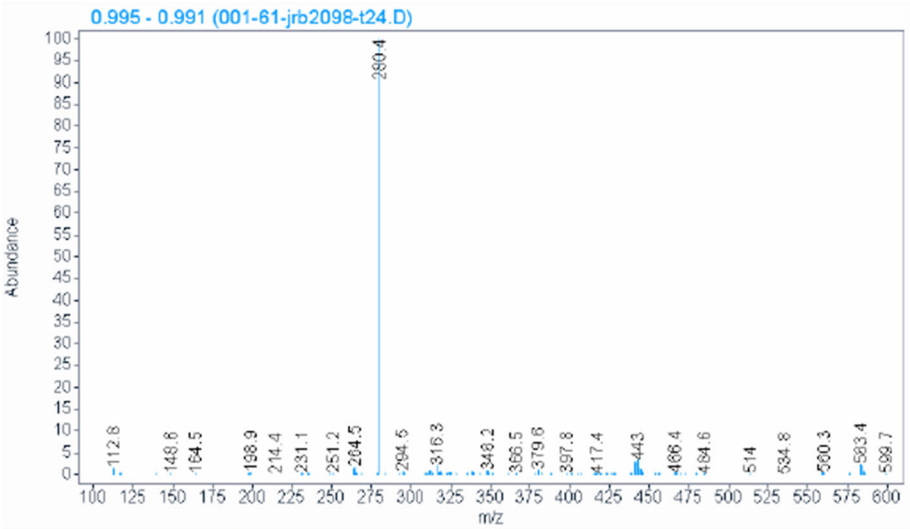


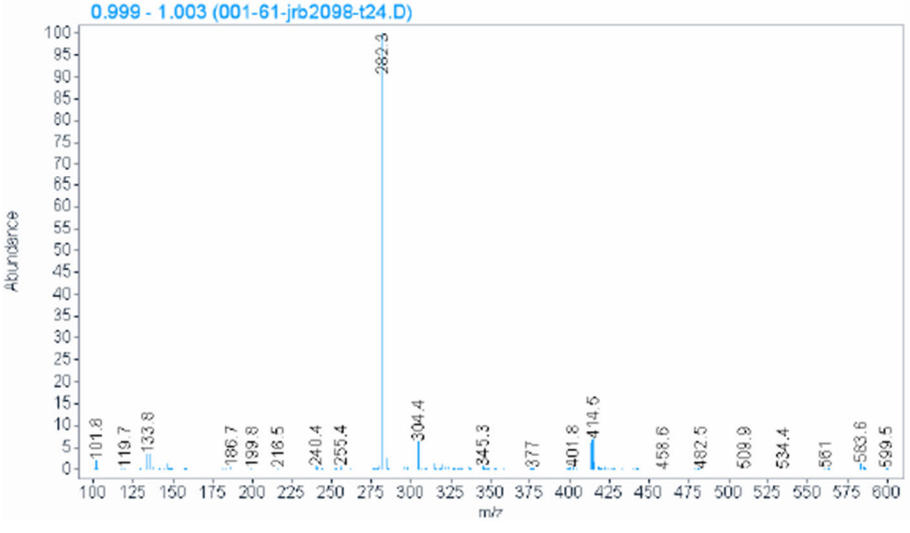
Molecular Weight: 282.337

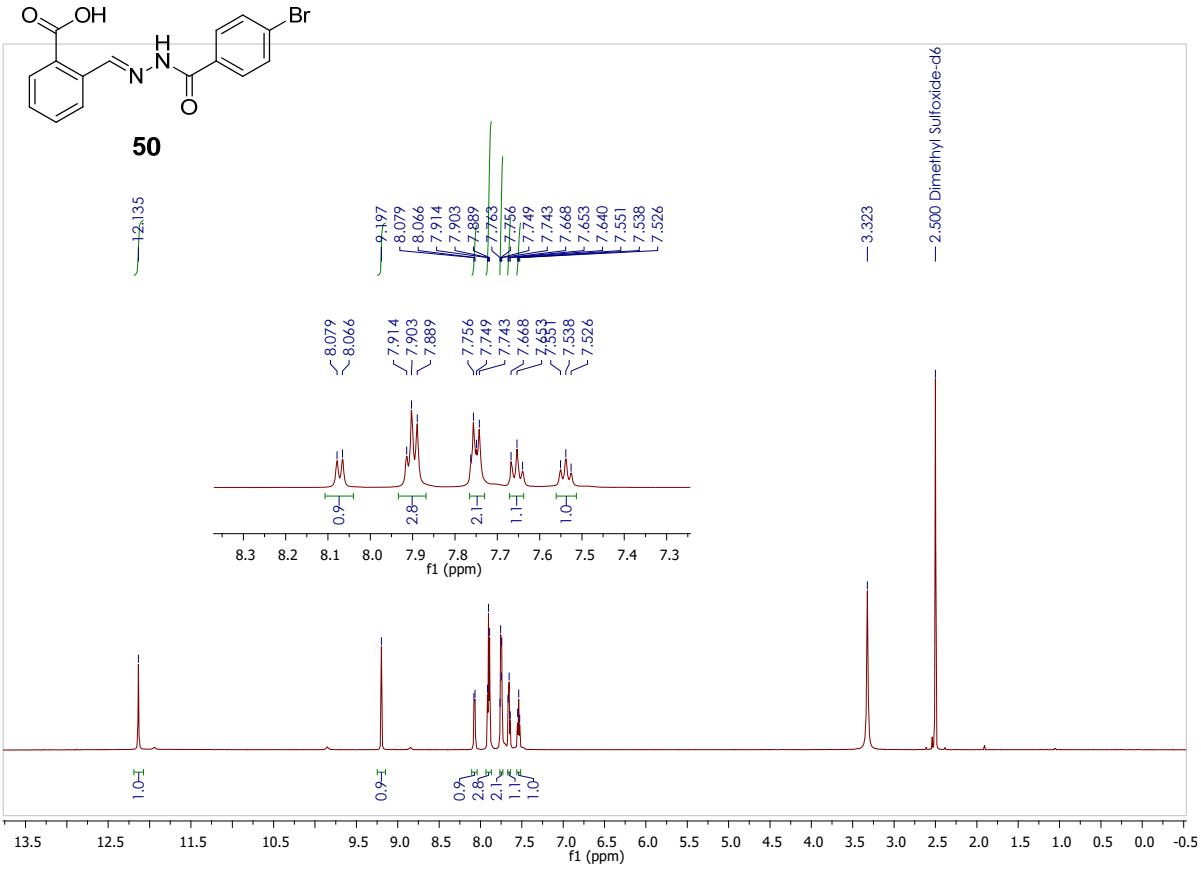
49

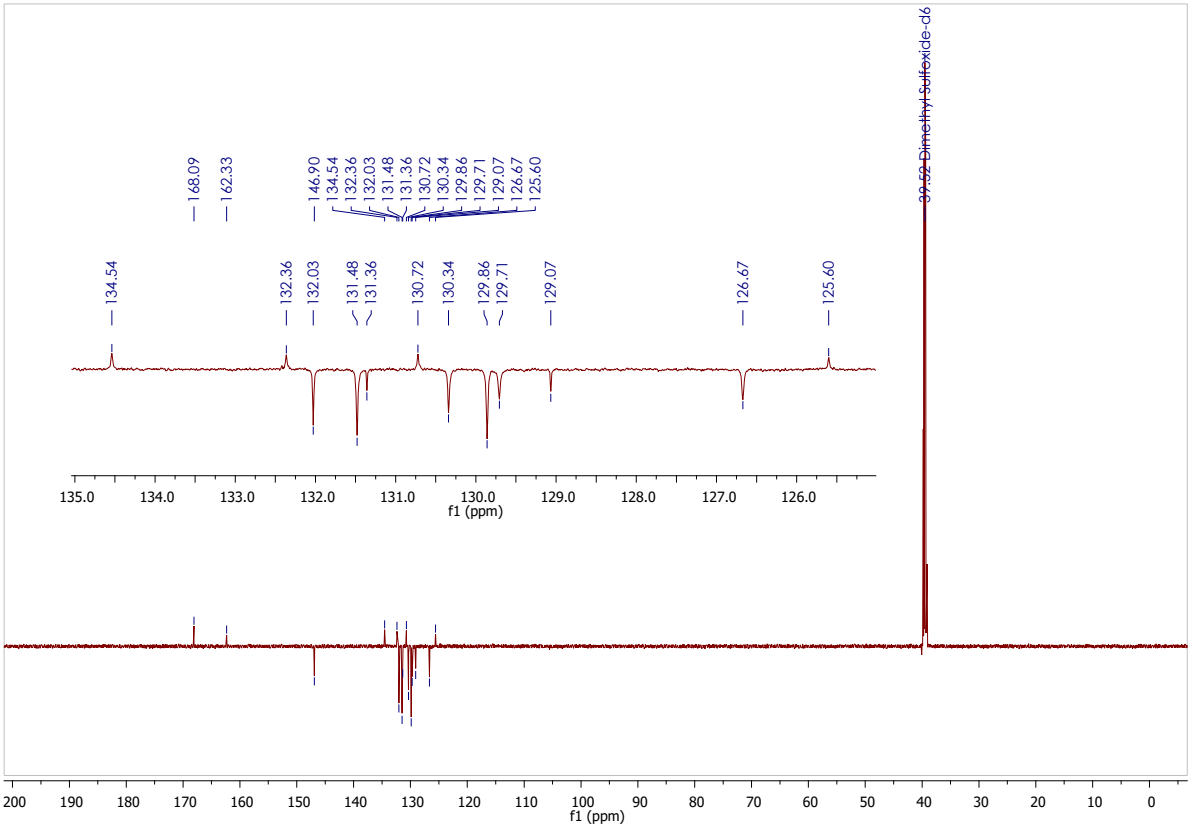








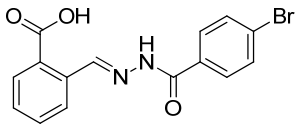

O
OH
Br
H
N
N
O
50
12.135
9.197
8.079
8.066
7.914
7.903
7.889
7.763
7.756
7.749
7.743
7.668
7.653
7.640
7.551
7.538
7.526
3.323
2.500 Dimethyl Sulfoxide-d6
0.9
2.8
2.1
1.1
1.0
f1 (ppm)


168.09
162.33
146.90
134.54
132.36
132.03
131.48
131.36
130.72
130.34
129.86
129.71
129.07
126.67
125.60
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

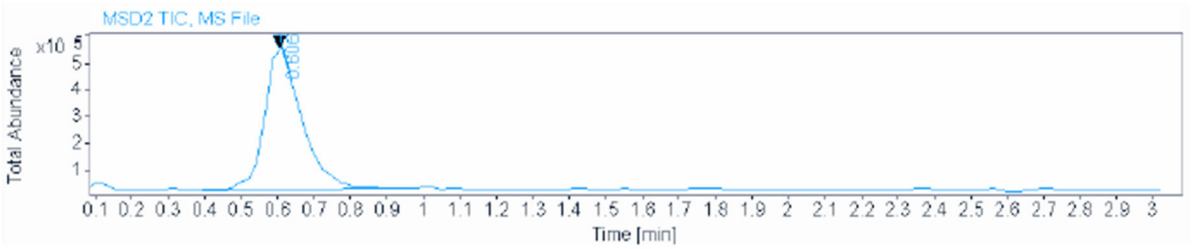
Agilent Technologies

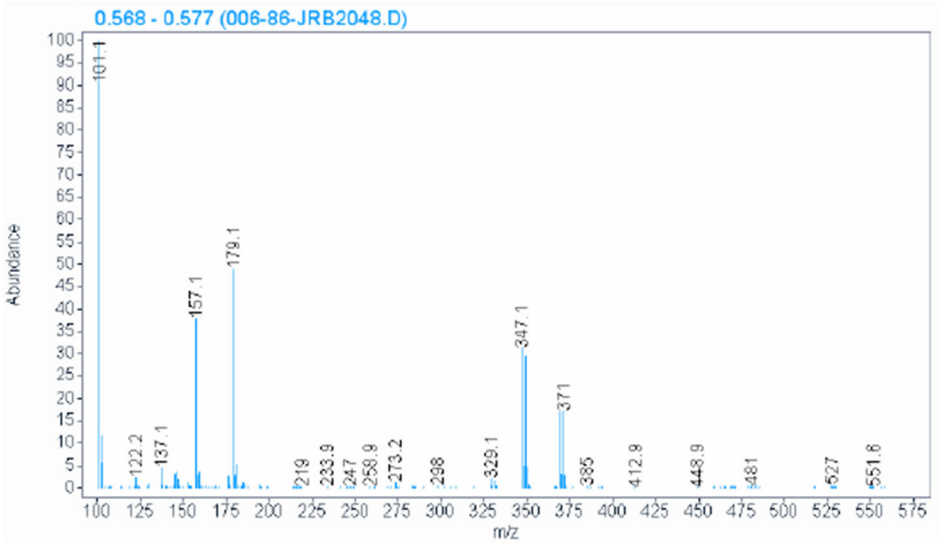
Data file:	D:\Chem32\1\Data\JRB\JRB2030 2035 2048 AJS1017 2021-12-03 09-05-12\006-86-JRB2048.D		
Sample name:	JRB2048		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	86
Injection date:	12/3/2021 9:30:05 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

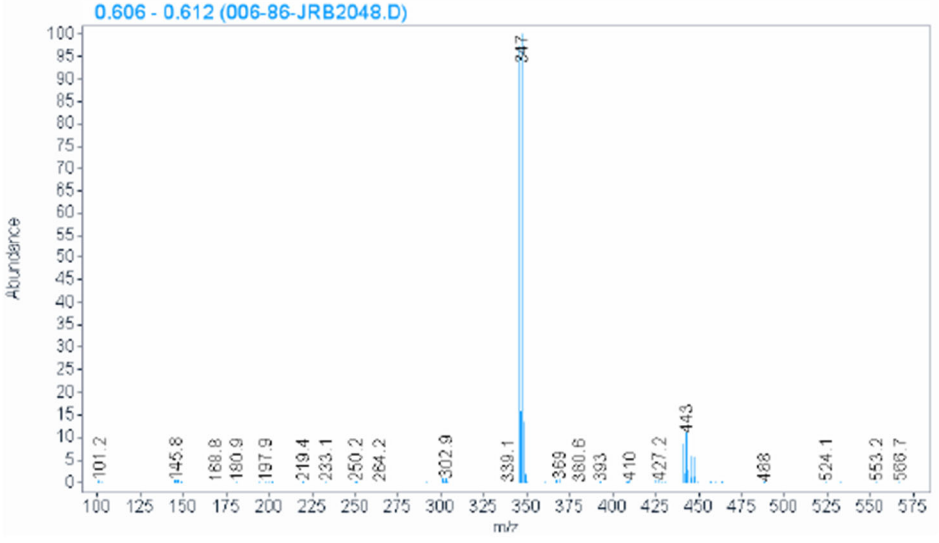


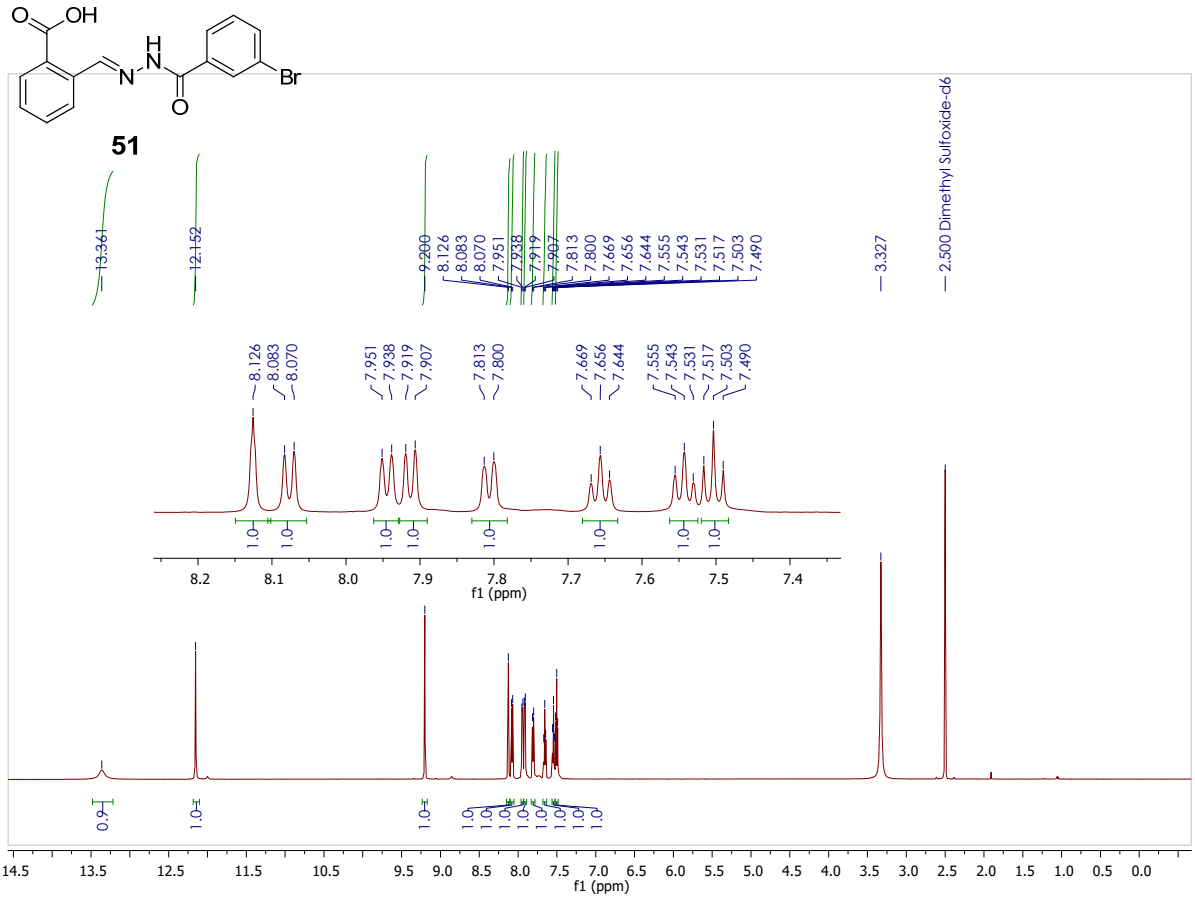
Molecular Weight: 347.163

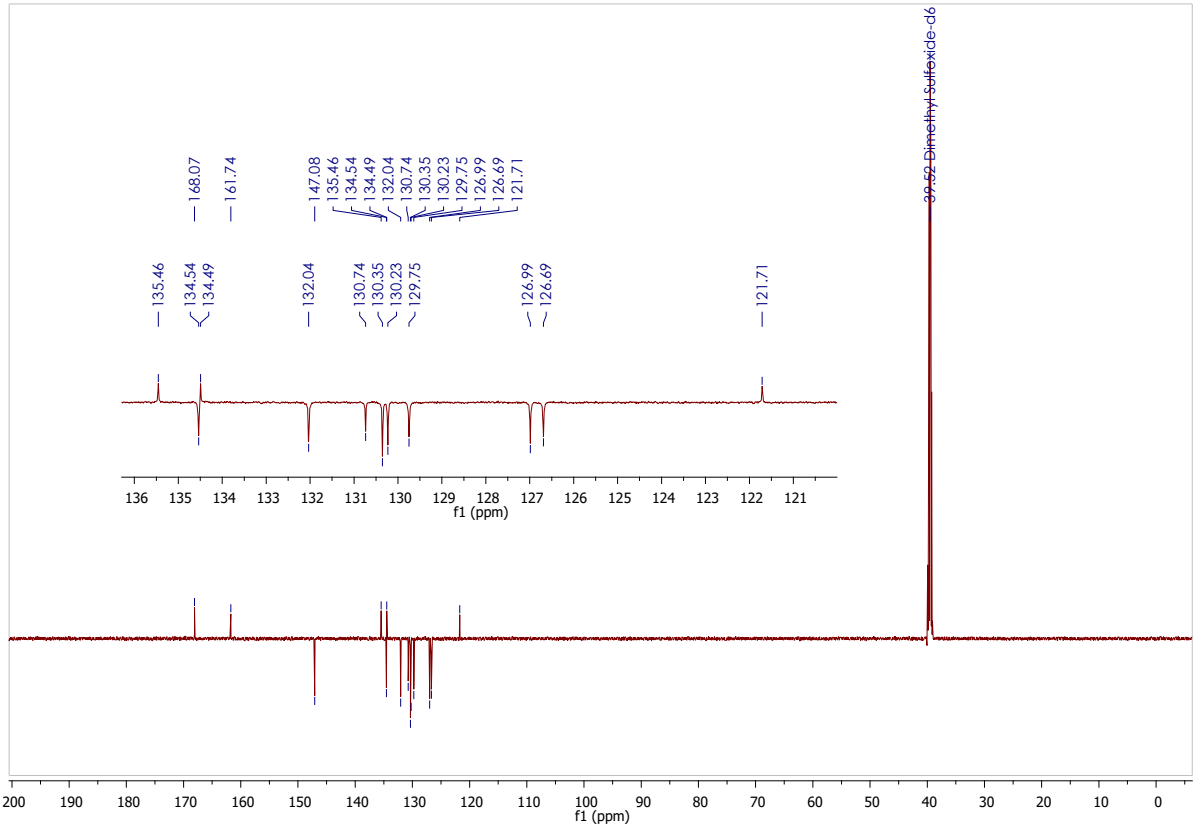
50







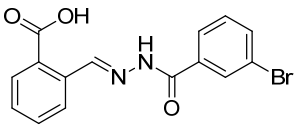

O
OH
H
N
N
O
Br
51
13.361
12.152
9.200
8.126
8.083
8.070
7.951
7.938
7.919
7.907
7.813
7.800
7.669
7.656
7.644
7.555
7.543
7.531
7.517
7.503
7.490
3.327
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.07
161.74
147.08
135.46
134.54
134.49
132.04
130.74
130.35
130.23
129.75
126.99
126.69
121.71
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

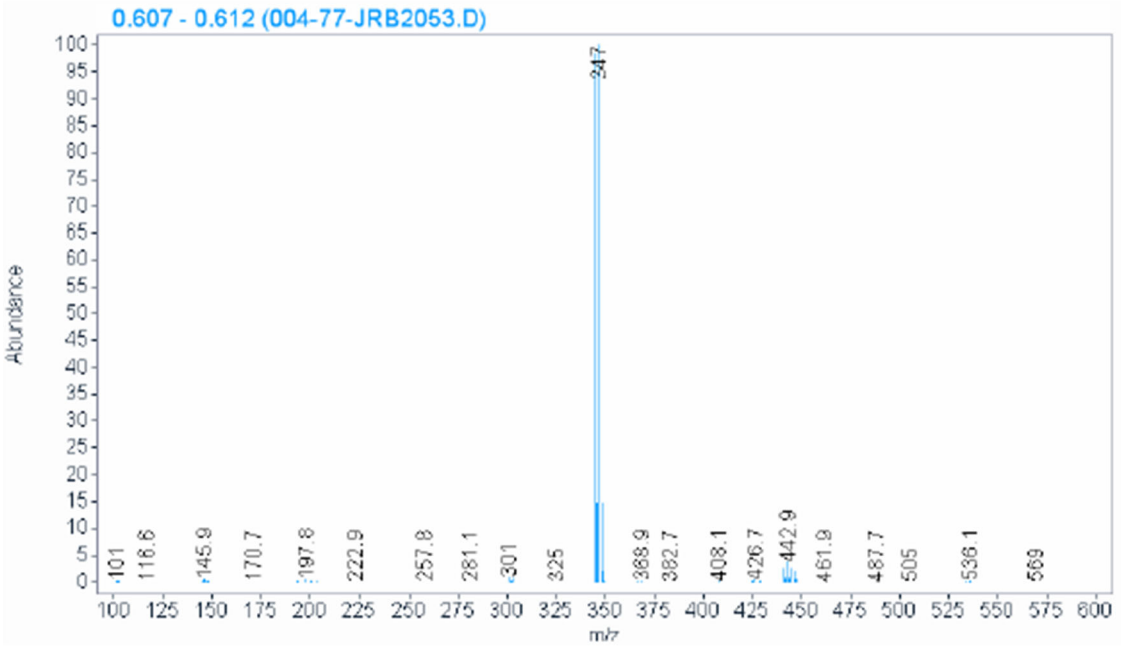
Agilent Technologies

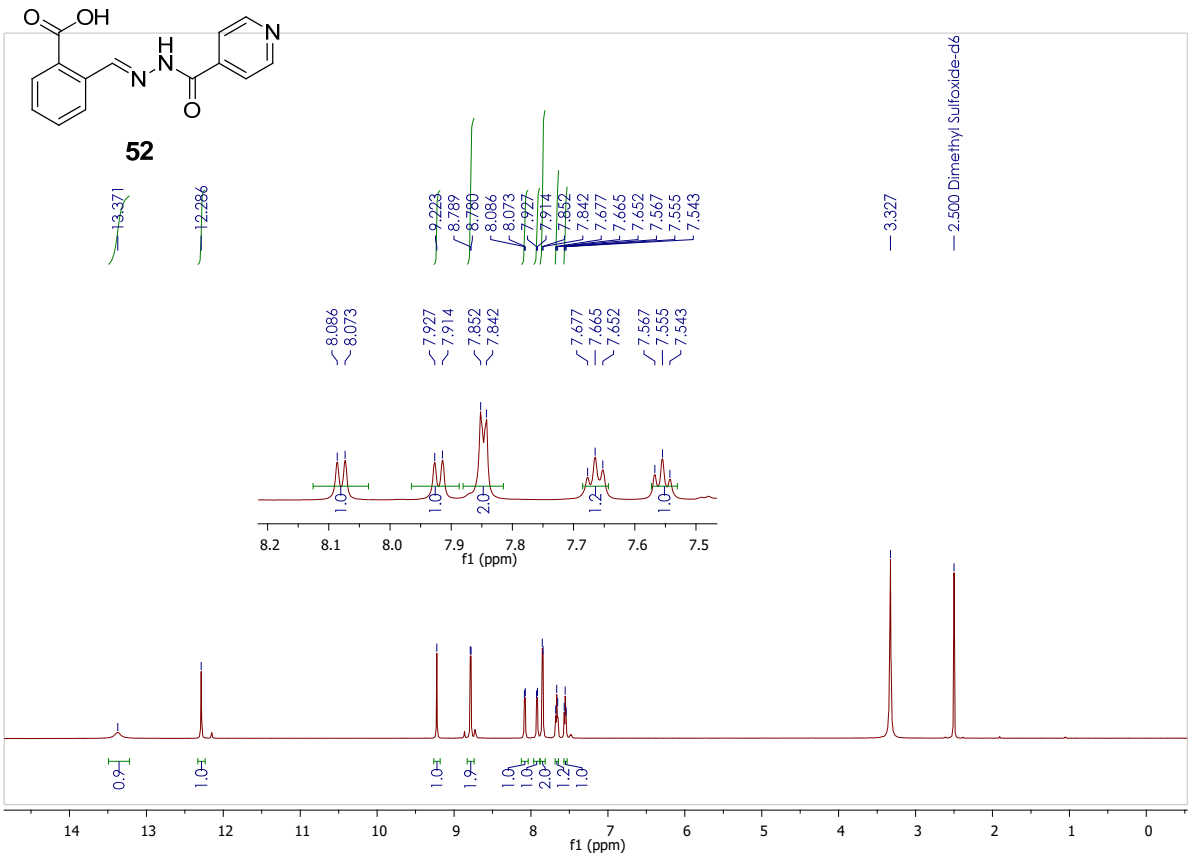
Data file:	D:\Chem32\1\Data\JRB\JRB2050-2055 2021-12-03 09-45-10\004-77-JRB2053.D		
Sample name:	JRB2053		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	77
Injection date:	12/3/2021 10:01:06 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

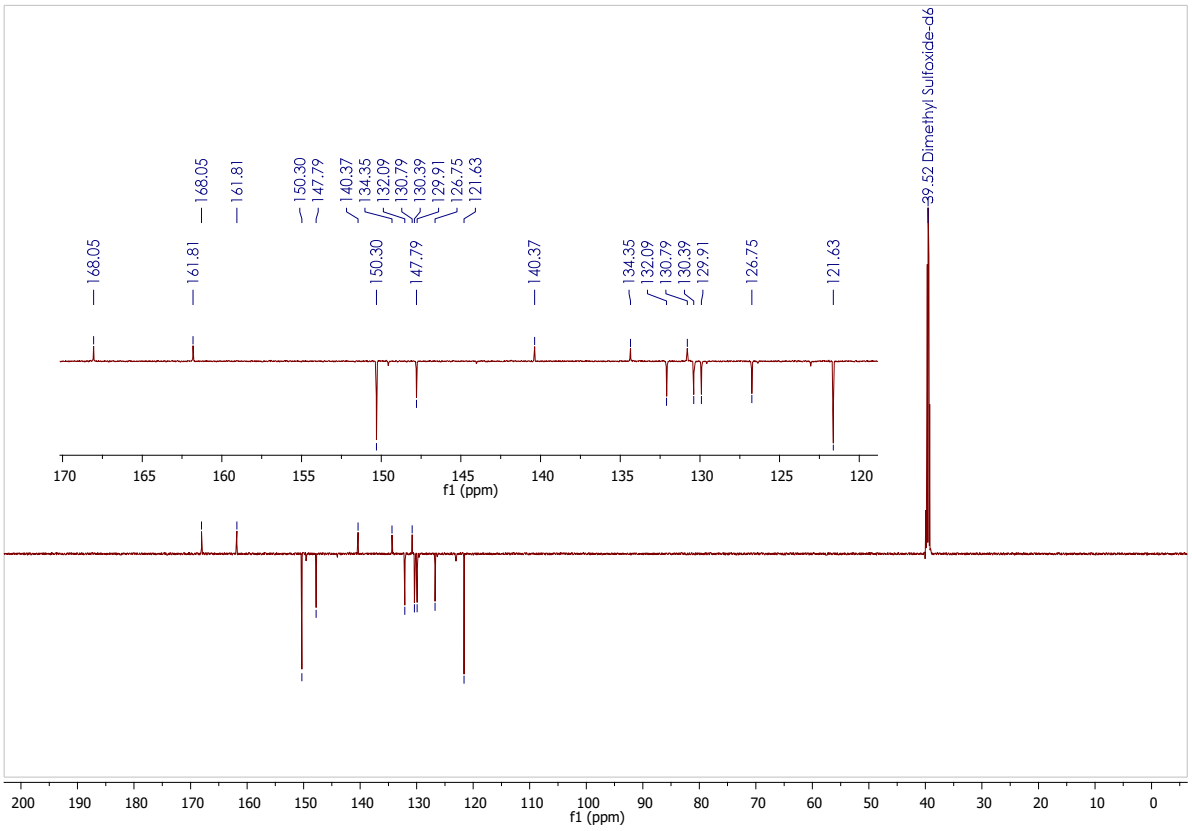


Molecular Weight: 347.163

51



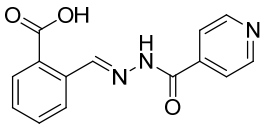

52
13.371
12.286
9.223
8.789
8.780
8.086
8.073
7.927
7.914
7.852
7.842
7.677
7.665
7.652
7.567
7.555
7.543
3.327
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.05
161.81
150.30
147.79
140.37
134.35
132.09
130.79
130.39
129.91
126.75
121.63
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

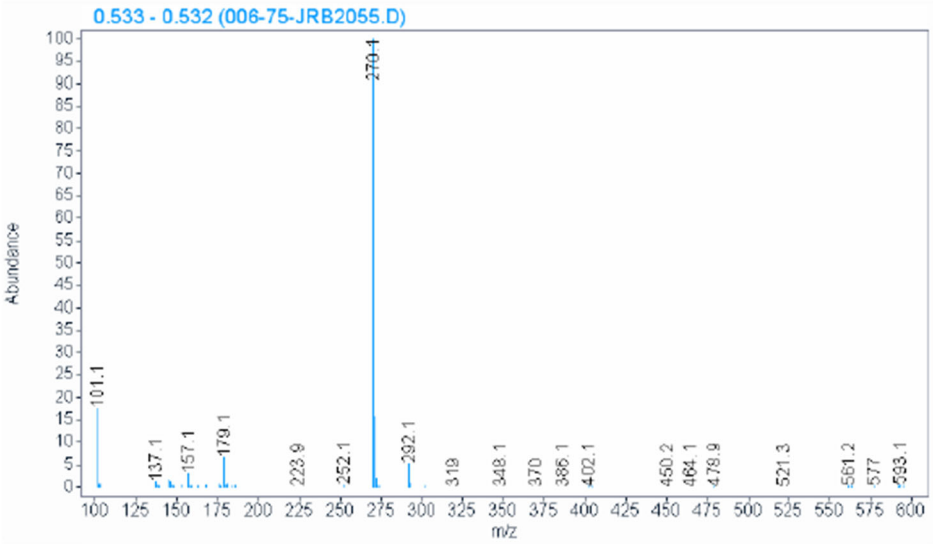
Agilent Technologies

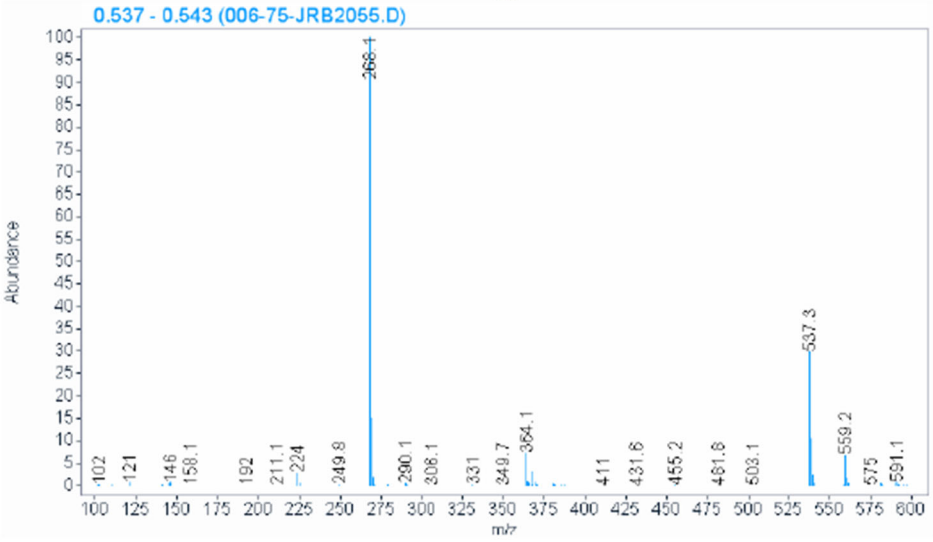
Data file:	D:\Chem32\1\Data\JRB\JRB2050-2055 2021-12-03 09-45-10\006-75-JRB2055.D		
Sample name:	JRB2055		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	75
Injection date:	12/3/2021 10:10:33 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

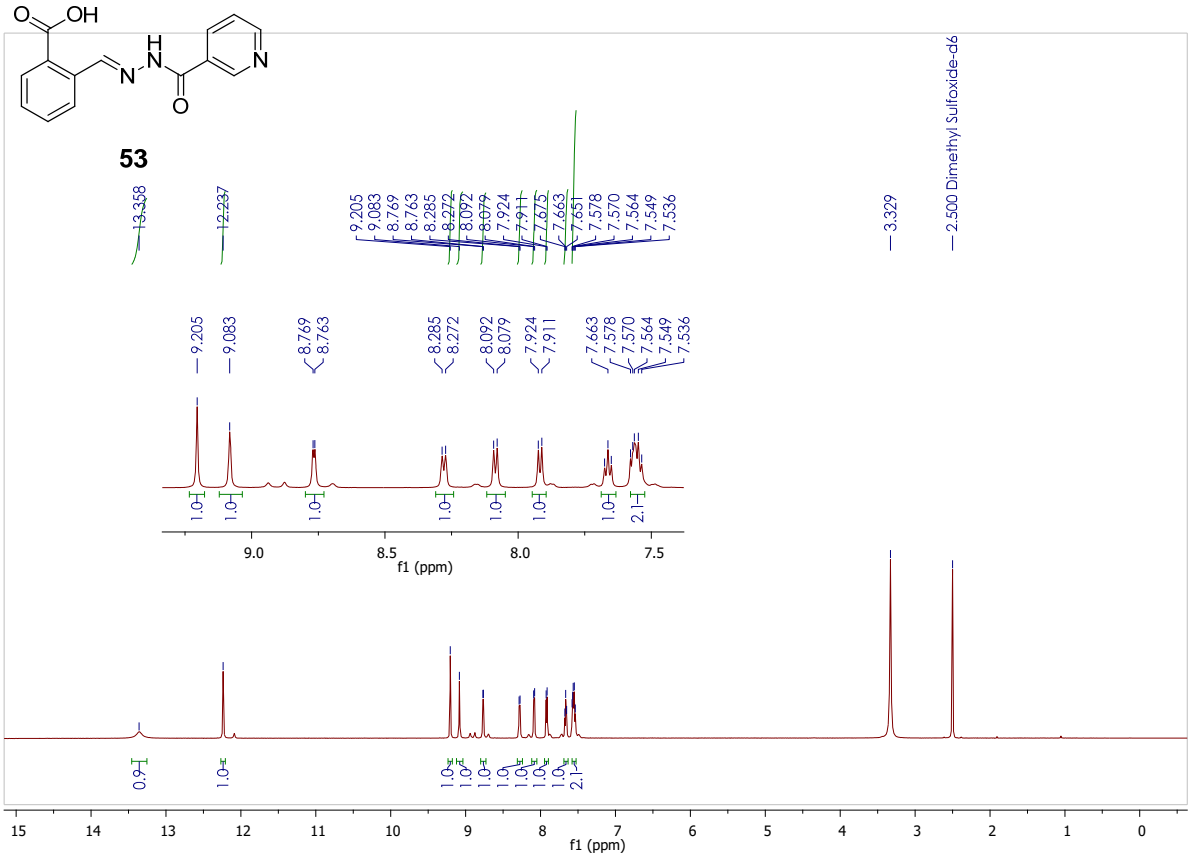


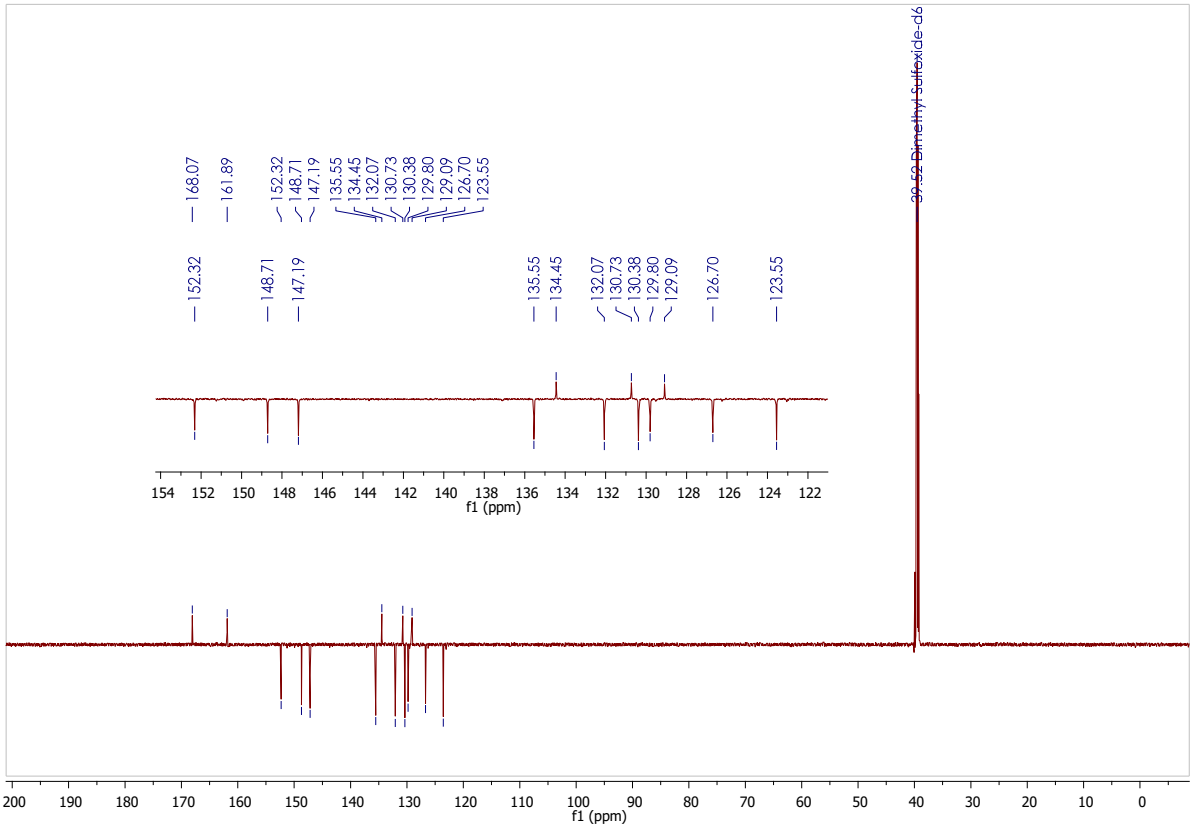
Molecular Weight: 269.255

52





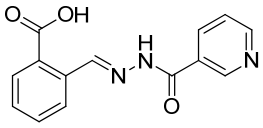

53
13.358
12.237
9.205
9.083
8.769
8.763
8.285
8.272
8.092
8.079
7.924
7.911
7.675
7.663
7.651
7.578
7.570
7.564
7.549
7.536
3.329
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.07
161.89
152.32
148.71
147.19
135.55
134.45
132.07
130.73
130.38
129.80
129.09
126.70
123.55
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

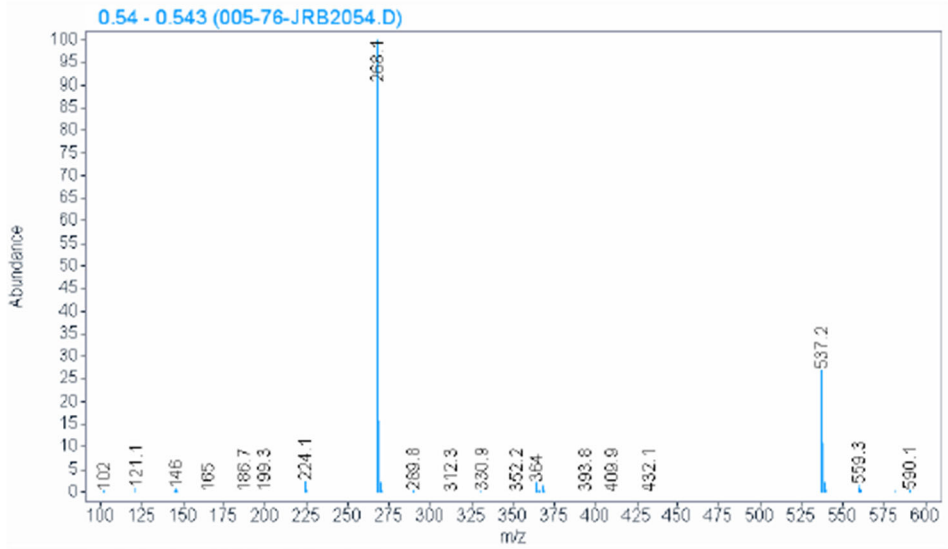
Agilent Technologies

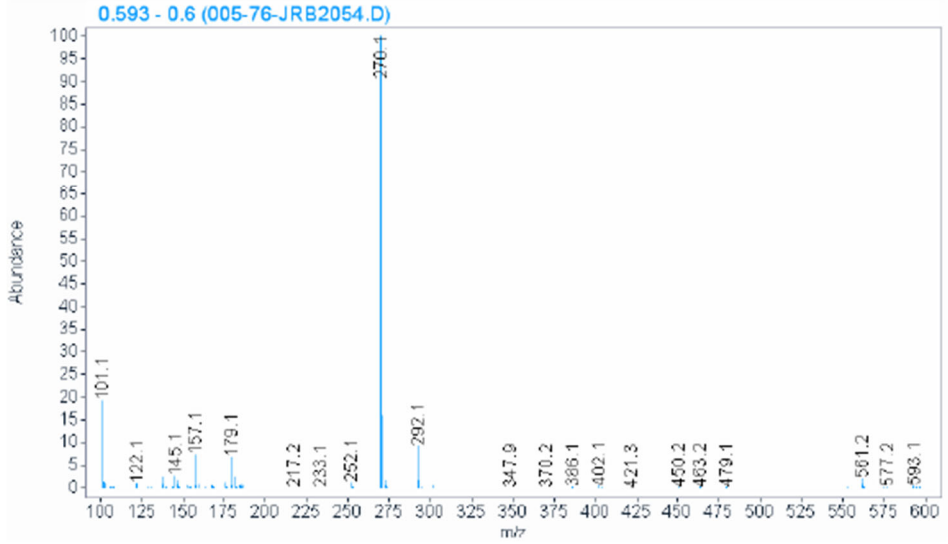
Data file:	D:\Chem32\1\Data\JRB\JRB2050-2055 2021-12-03 09-45-10\005-76-JRB2054.D		
Sample name:	JRB2054		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	76
Injection date:	12/3/2021 10:05:48 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

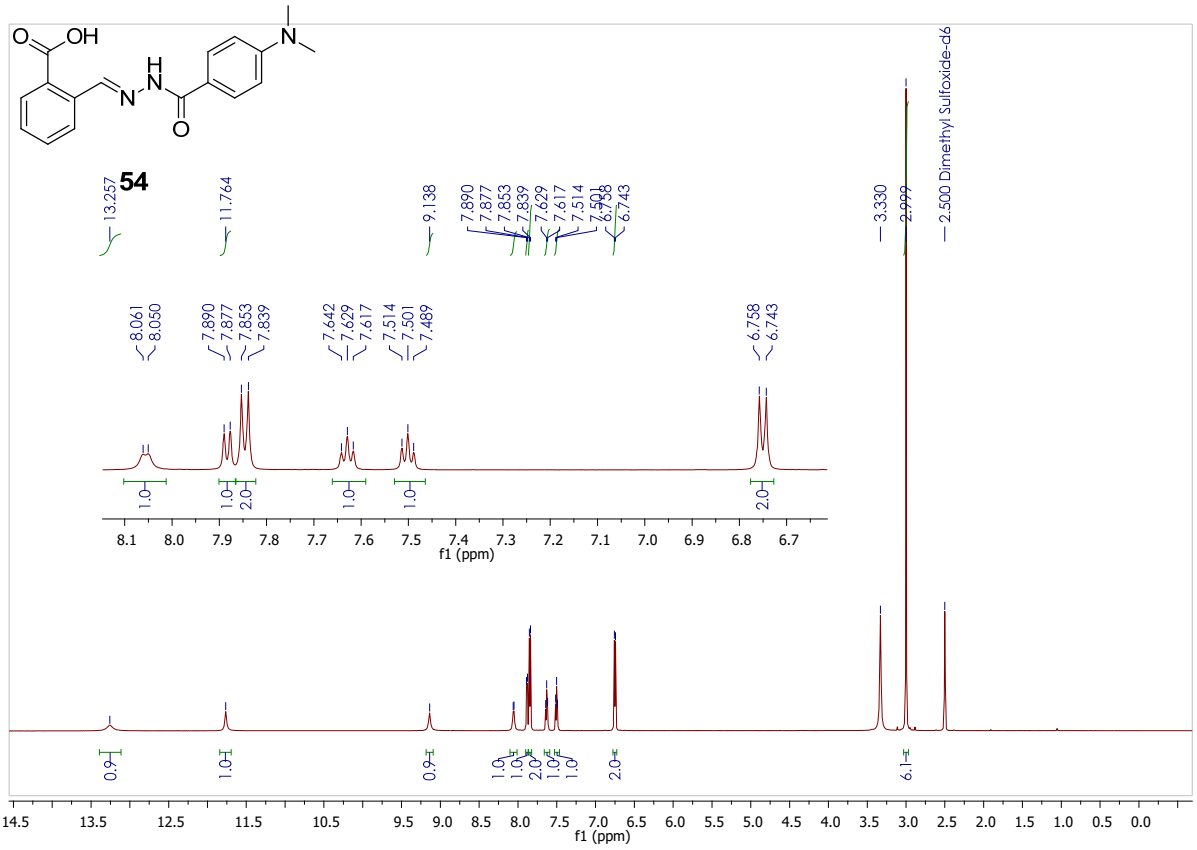


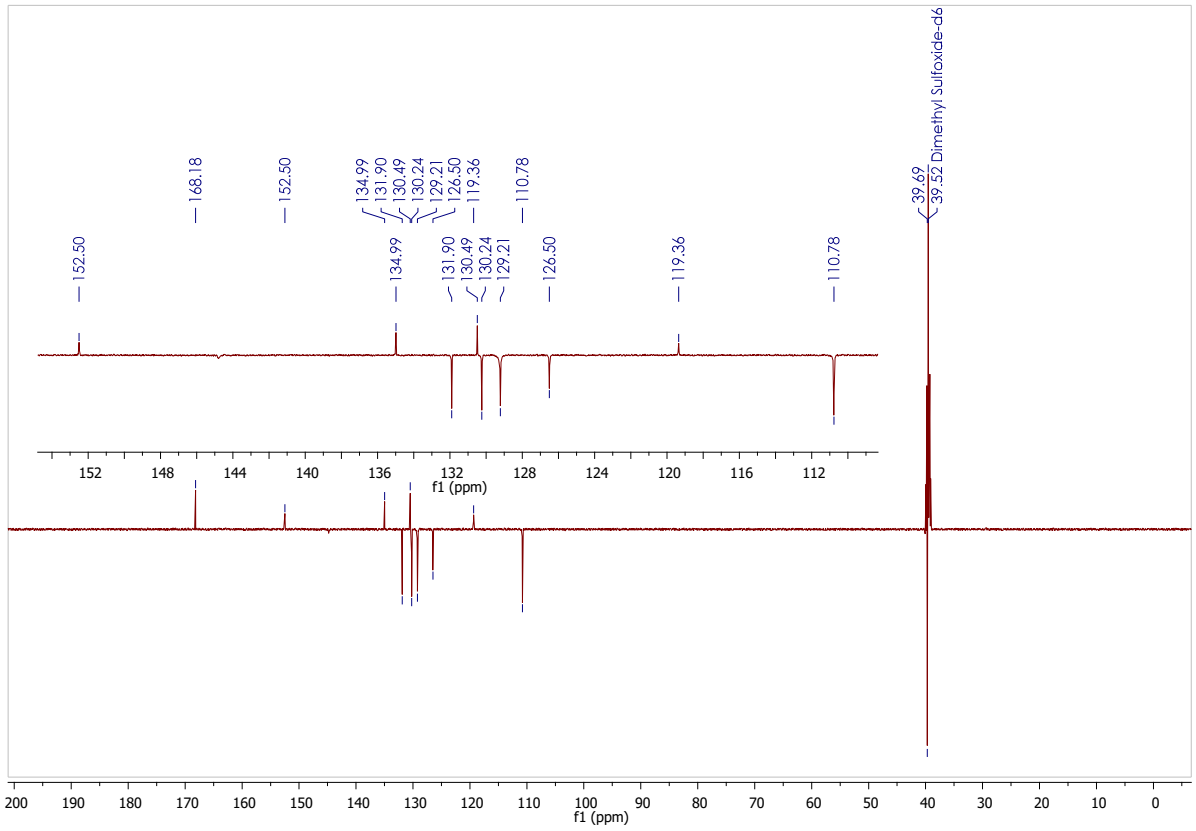
Molecular Weight: 269.255

53





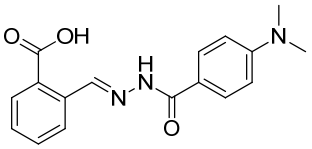

54
13.257
11.764
9.138
7.890
7.877
7.853
7.839
7.629
7.617
7.514
7.501
6.758
6.743
3.330
2.499
2.500 Dimethyl Sulfoxide-d6
8.061
8.050
7.642
7.629
7.617
7.514
7.501
7.489
f1 (ppm)


168.18
152.50
134.99
131.90
130.49
130.24
129.21
126.50
119.36
110.78
39.69
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

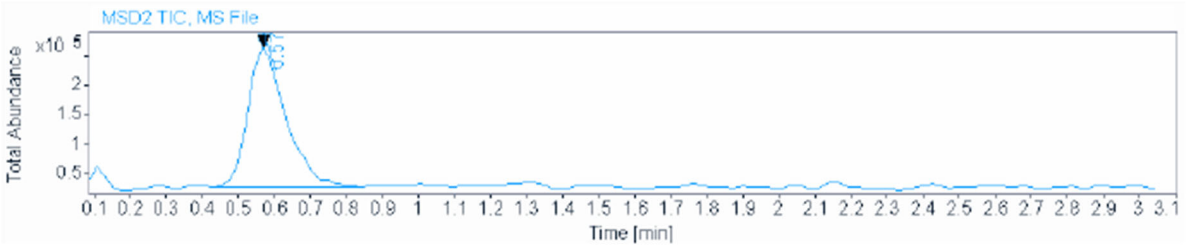
Agilent Technologies

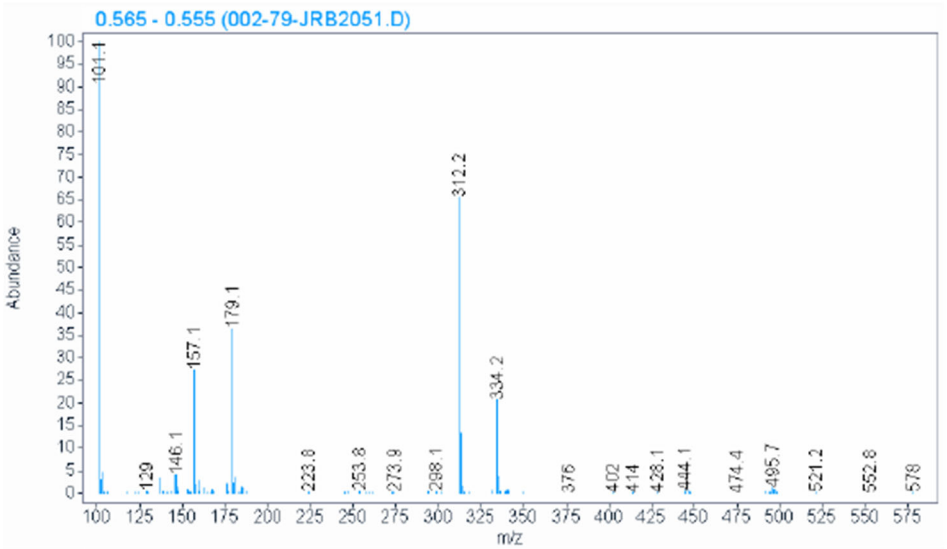
Data file:	D:\Chem32\1\Data\JRB\JRB2050-2055 2021-12-03 09-45-10\002-79-JRB2051.D		
Sample name:	JRB2051		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	79
Injection date:	12/3/2021 9:51:41 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

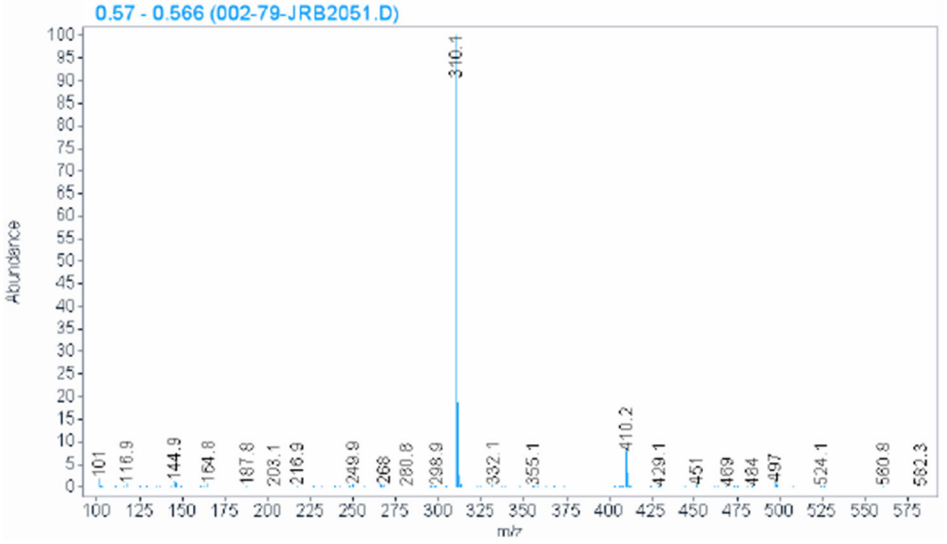


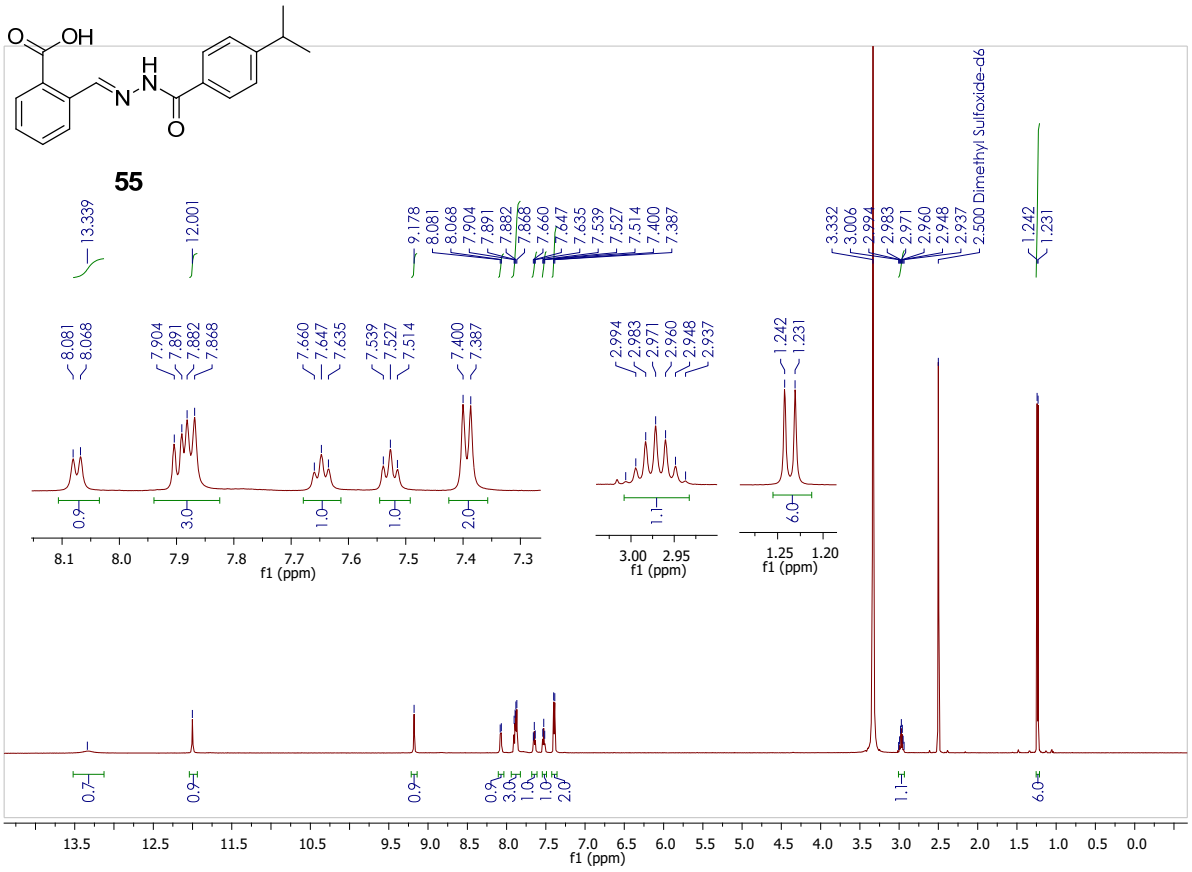
Molecular Weight: 311.335

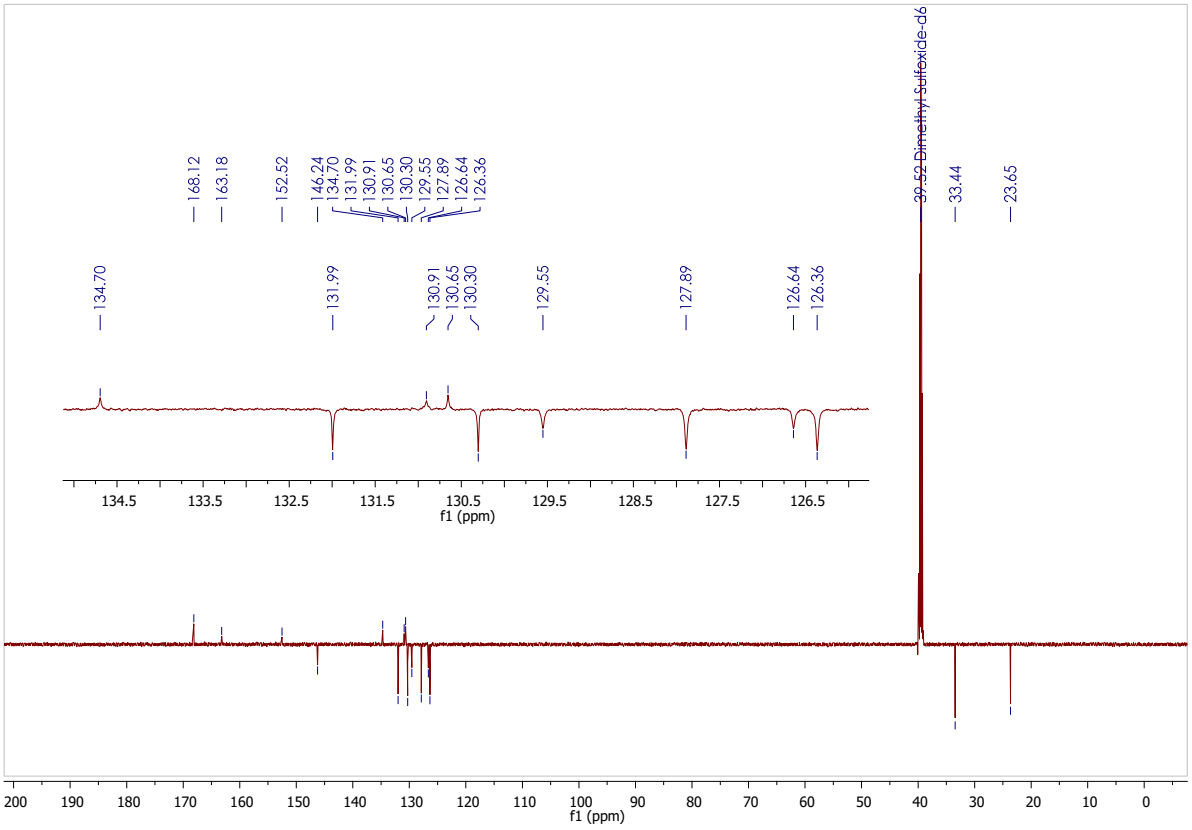
54







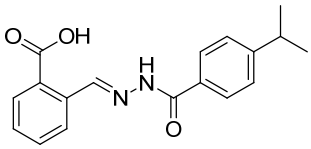

55
13.339
12.001
9.178
8.081
8.068
7.904
7.891
7.882
7.868
7.660
7.647
7.635
7.539
7.527
7.514
7.400
7.387
3.332
3.006
2.994
2.983
2.971
2.960
2.948
2.937
2.500 Dimethyl Sulfoxide-d6
1.242
1.231
f1 (ppm)


168.12
163.18
152.52
146.24
134.70
131.99
130.91
130.65
130.30
129.55
127.89
126.64
126.36
39.52 Dimethyl Sulfoxide-d6
33.44
23.65
f1 (ppm)

LCMS Report

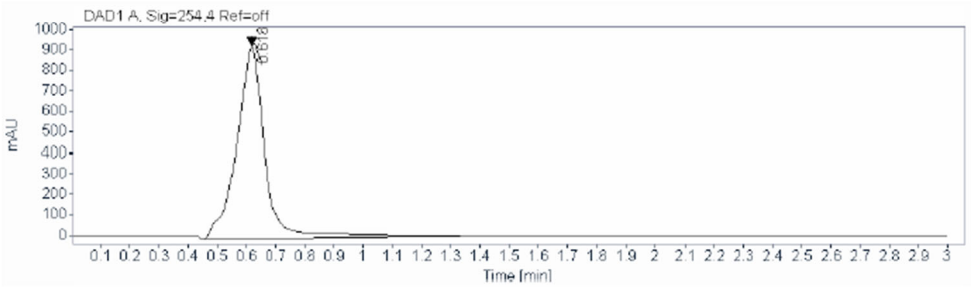
Agilent Technologies

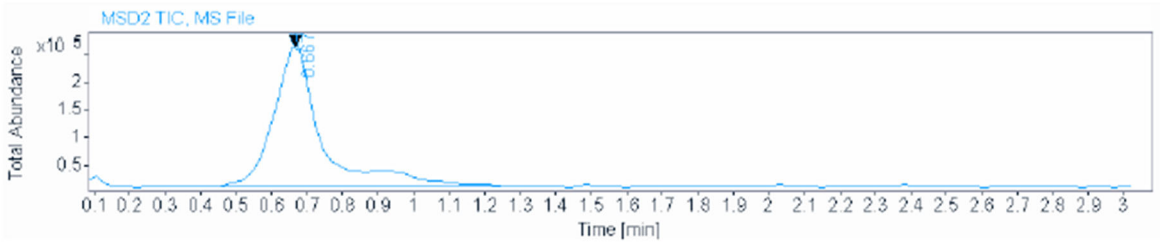
Data file:	D:\Chem32\1\Data\JRB\JRB3189 3196 4001 4002 2023-07-24 12-59-52\002-96-JRB3189.D		
Sample name:	JRB3189		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	96
Injection date:	7/24/2023 1:06:20 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

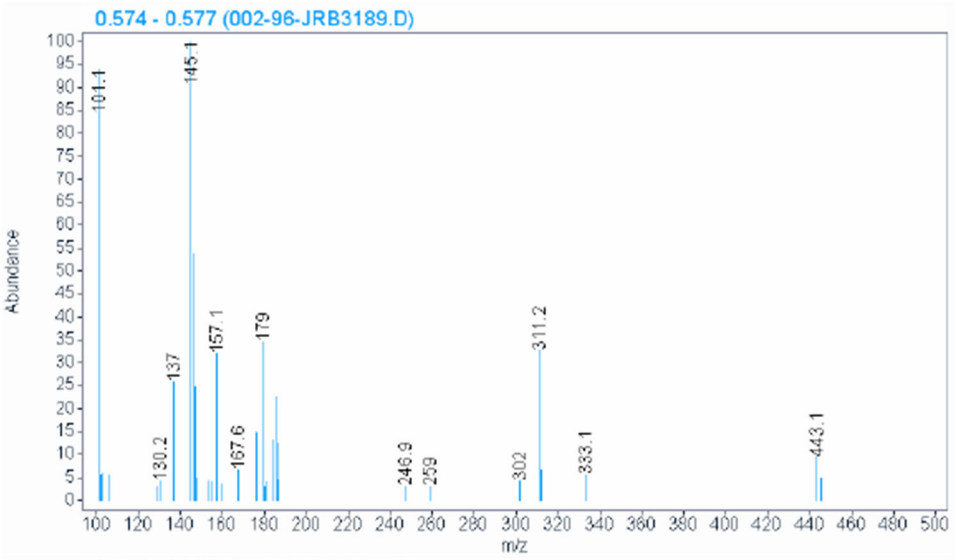


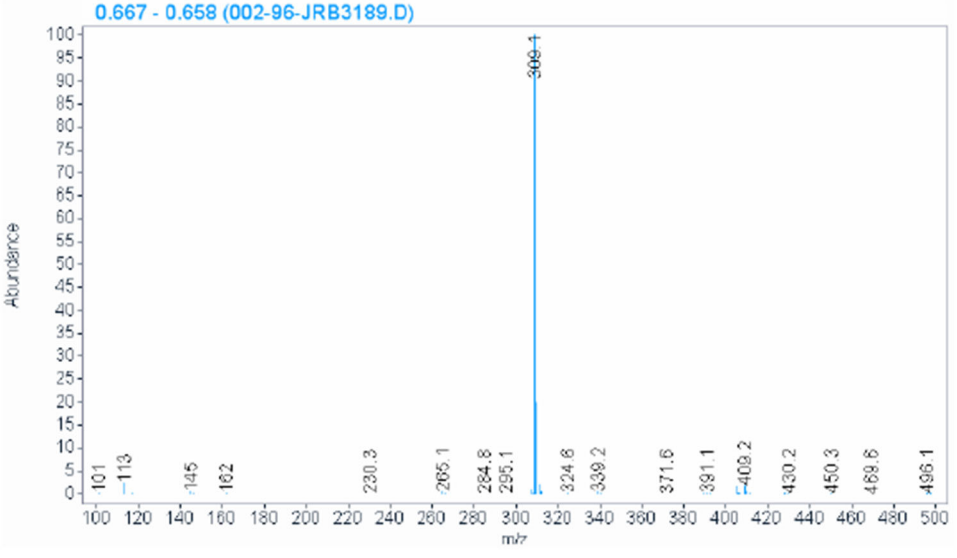
Molecular Weight: 310.347

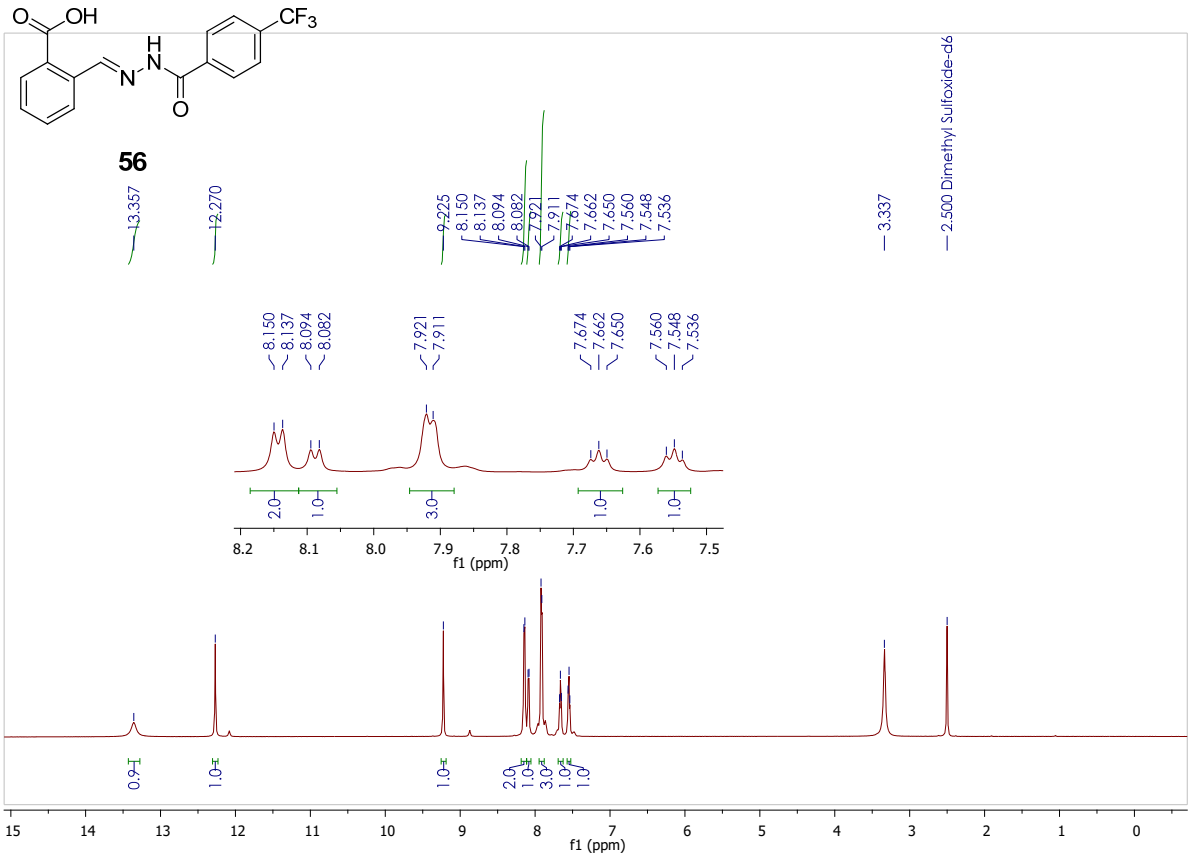
55

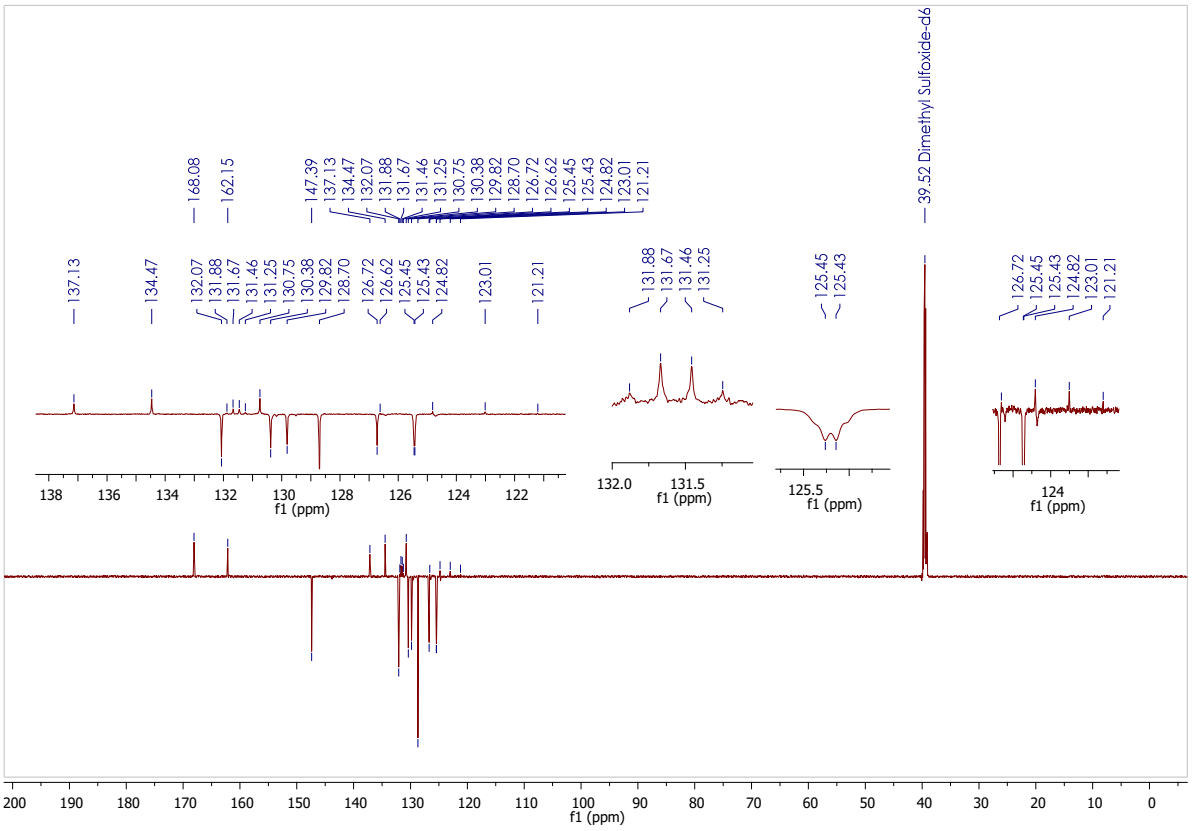


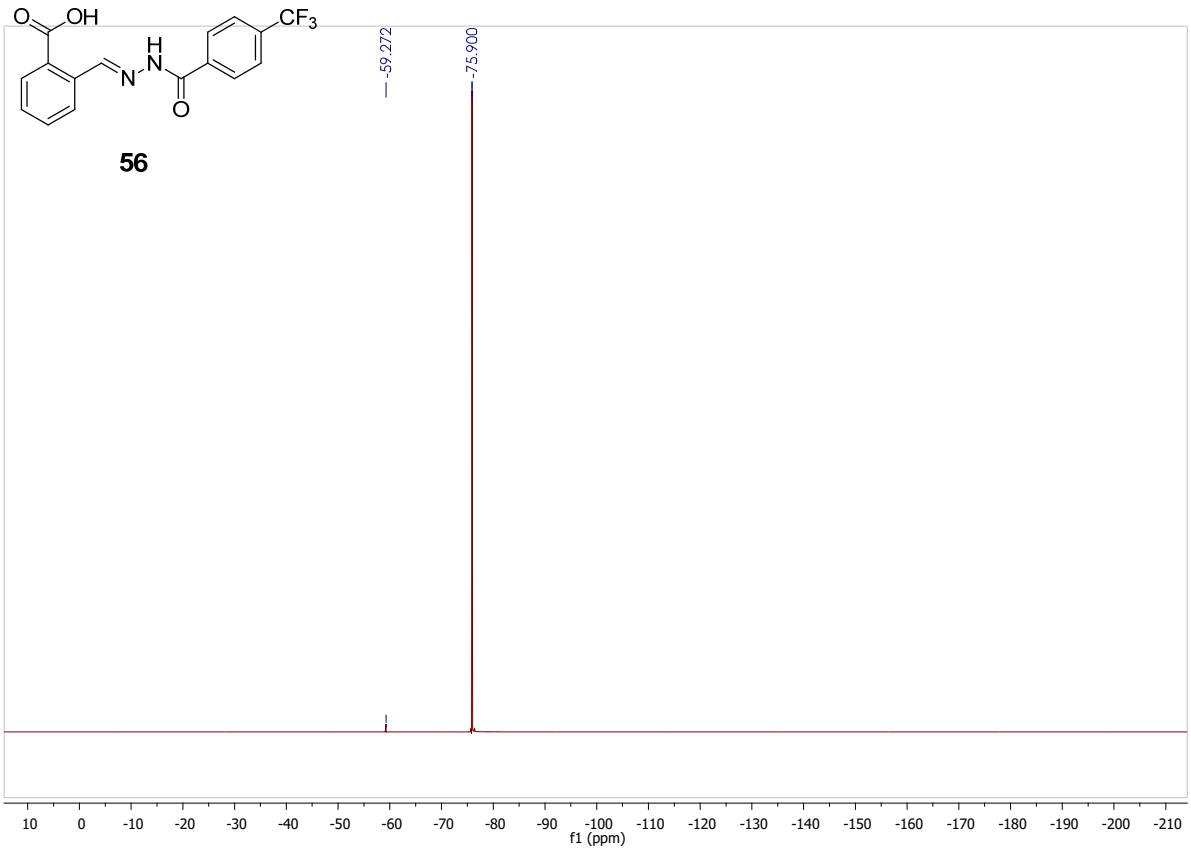







O
OH
CF3
H
N
N
O
56
13.357
12.270
9.225
8.150
8.137
8.094
8.082
7.921
7.911
7.674
7.662
7.650
7.560
7.548
7.536
3.337
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.08
162.15
147.39
137.13
134.47
132.07
131.88
131.67
131.46
131.25
130.75
130.38
129.82
128.70
126.72
126.62
125.45
125.43
124.82
123.01
121.21
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

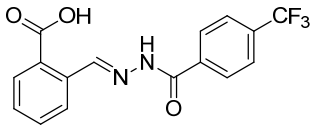

O
OH
CF3
H
N
N
O
-59.272
-75.900
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

56

LCMS Report

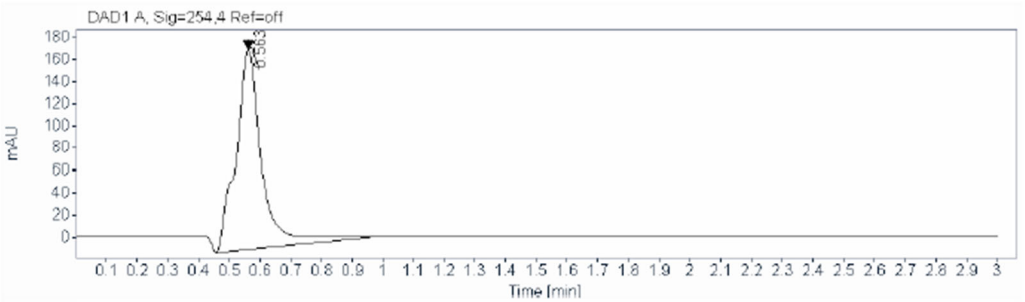
Agilent Technologies

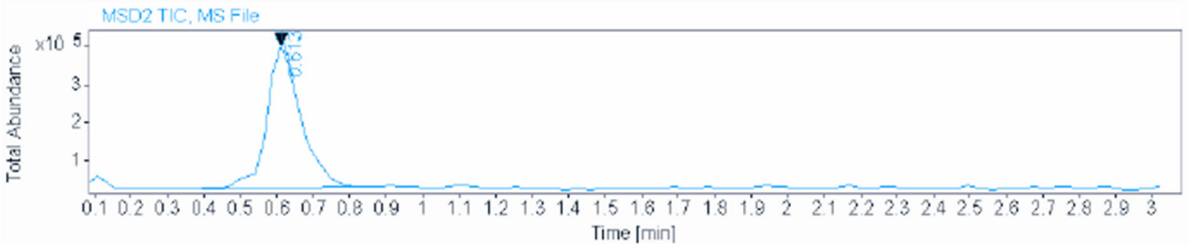
Data file:	D:\Chem32\1\Data\JRB\JRB2050-2055 2021-12-03 09-45-10\003-78-JRB2052.D		
Sample name:	JRB2052		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	78
Injection date:	12/3/2021 9:56:23 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

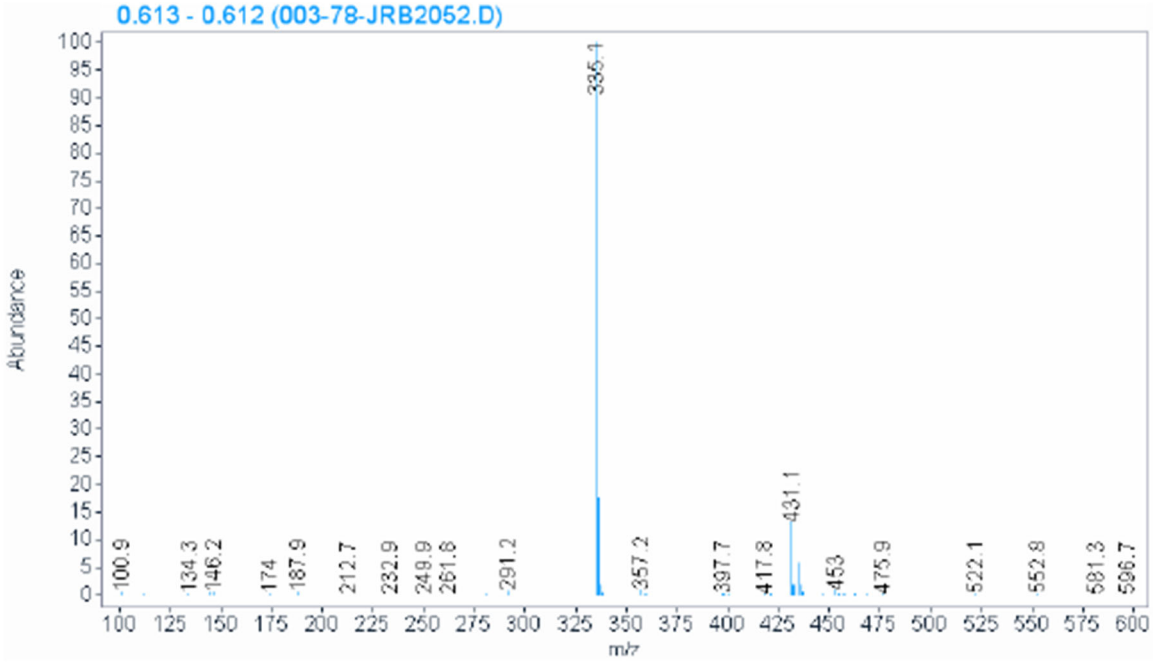


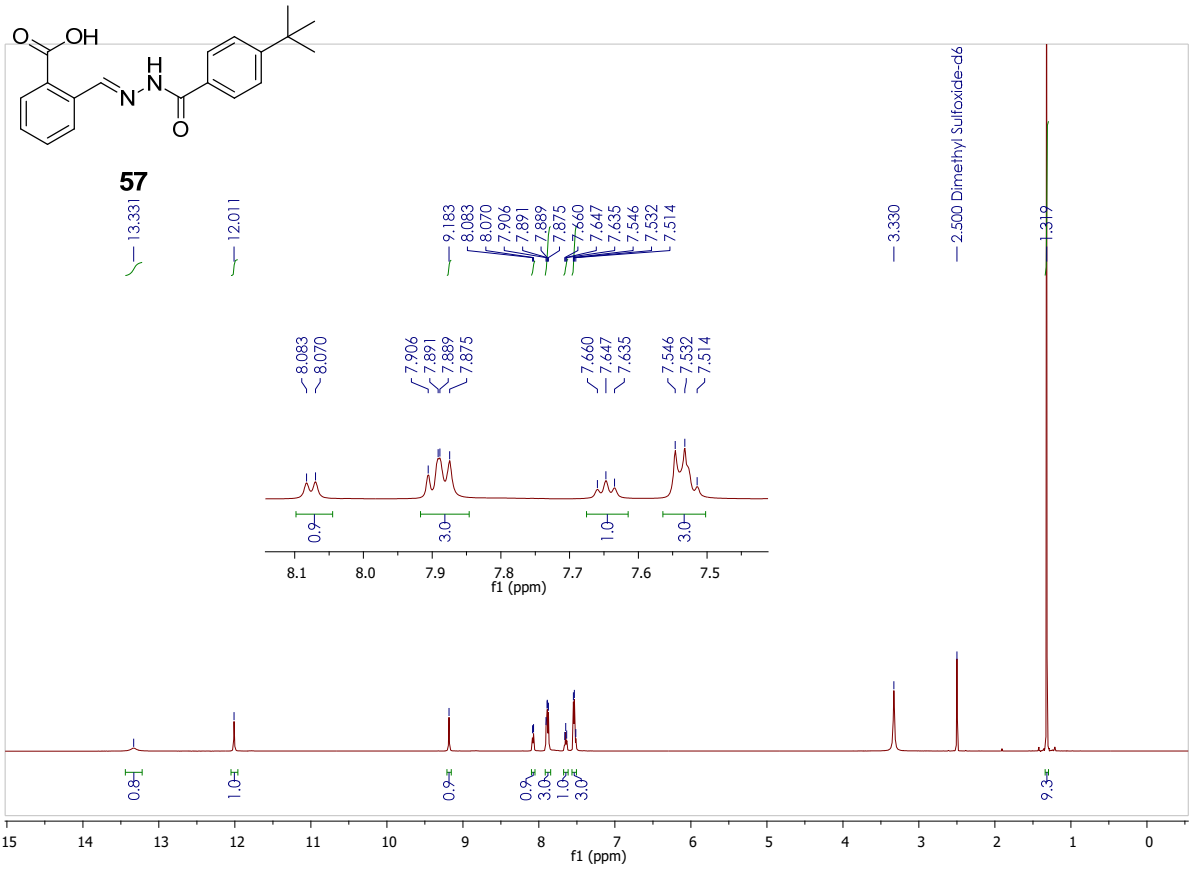
Molecular Weight: 336.265

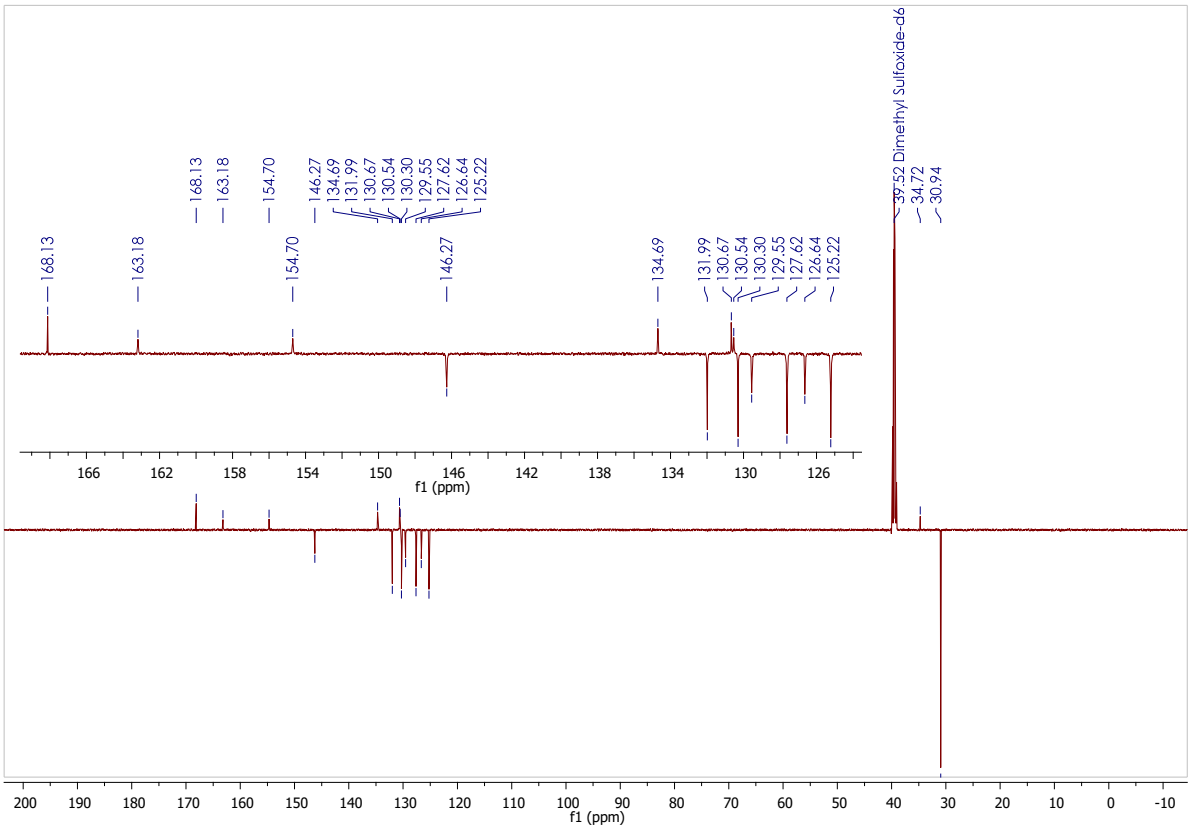
56







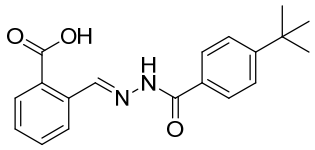

57
13.331
12.011
9.183
8.083
8.070
7.906
7.891
7.889
7.875
7.660
7.647
7.635
7.546
7.532
7.514
3.330
2.500 Dimethyl Sulfoxide-d6
1.319
f1 (ppm)


168.13
163.18
154.70
146.27
134.69
131.99
130.67
130.54
130.30
129.55
127.62
126.64
125.22
39.52 Dimethyl Sulfoxide-d6
34.72
30.94
f1 (ppm)

LCMS Report

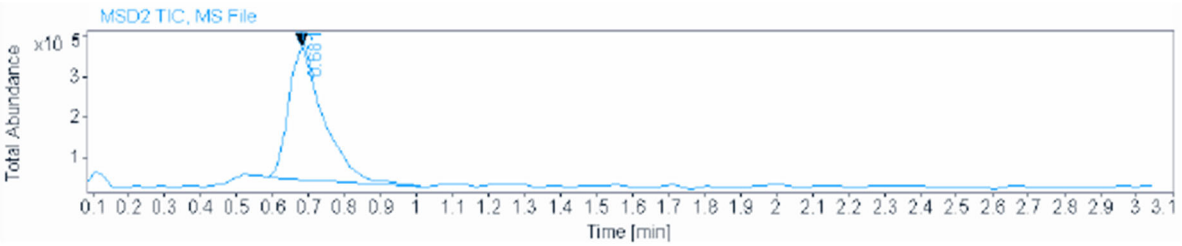
Agilent Technologies

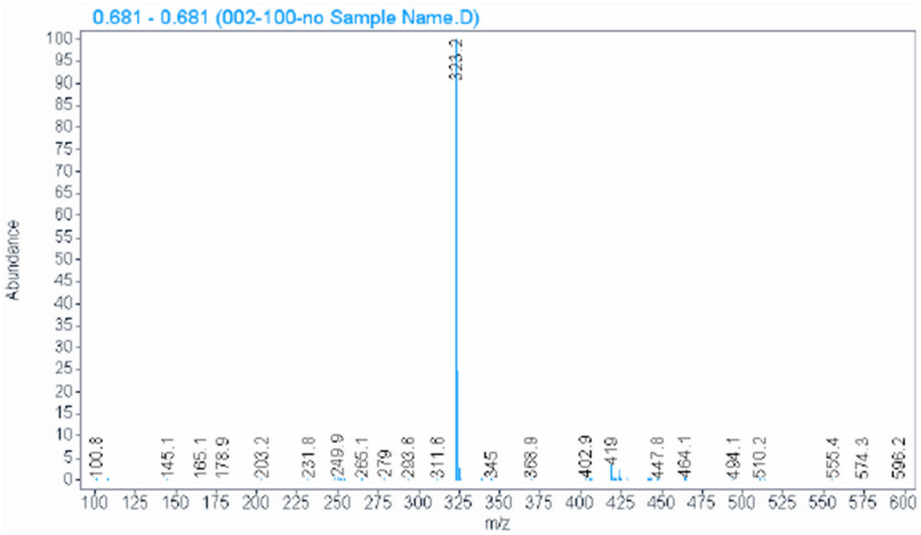
Data file:	D:\Chem32\1\Data\JRB\JRB2057 2059 2060 2061 2021-12-09 12-15-05\002-100-no Sample Name.D		
Sample name:			
Description:	JRB2057		
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	100
Injection date:	12/9/2021 12:21:32 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

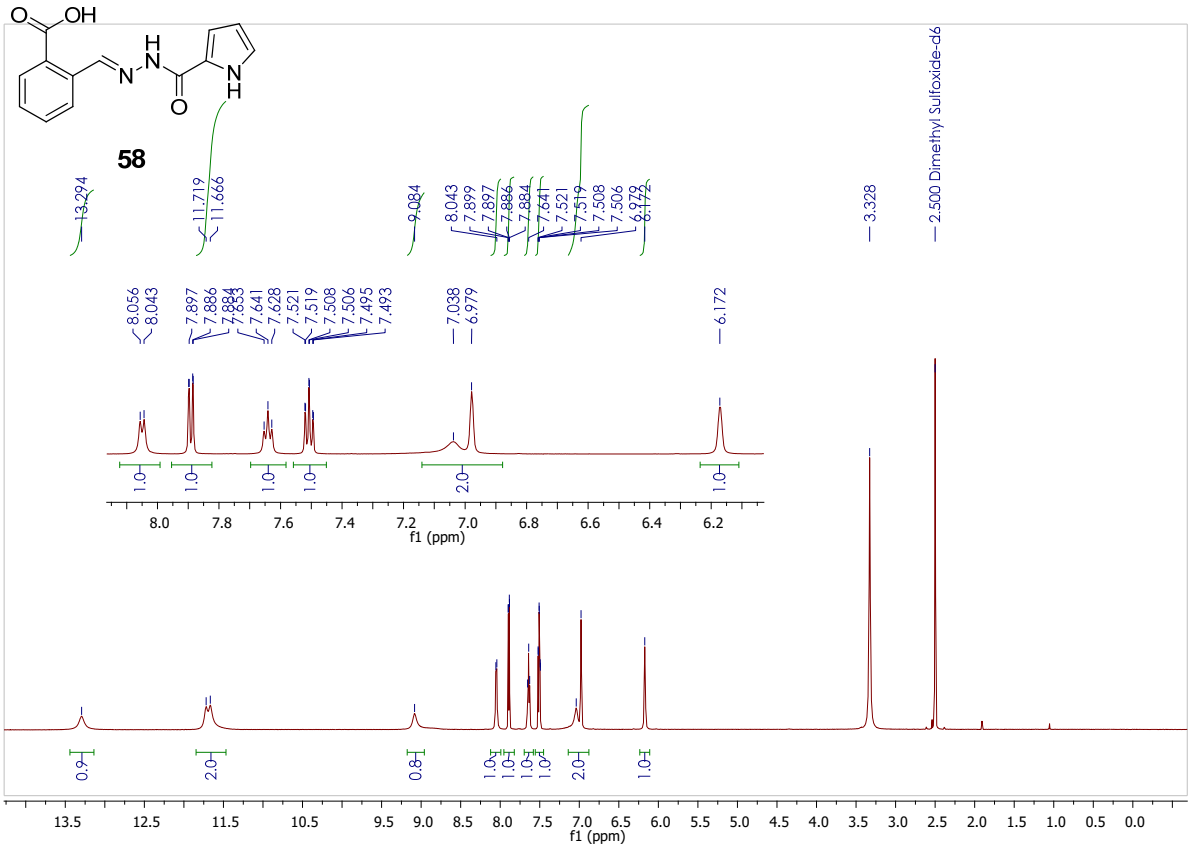


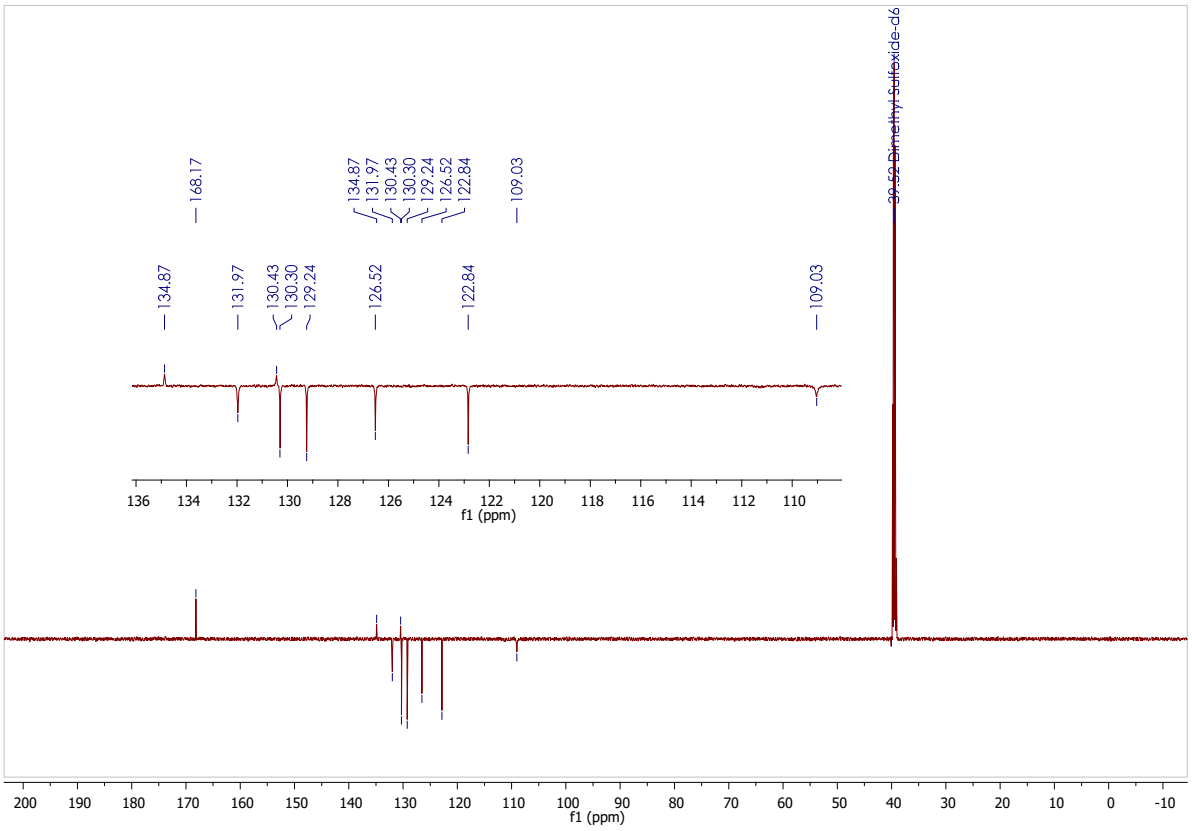
Molecular Weight: 324.374

57





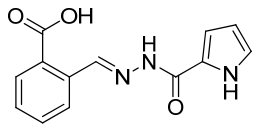

58
13.294
11.719
11.666
9.084
8.043
7.899
7.897
7.887
7.886
7.884
7.641
7.521
7.519
7.508
7.506
6.979
6.172
3.328
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.17
134.87
131.97
130.43
130.30
129.24
126.52
122.84
109.03
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

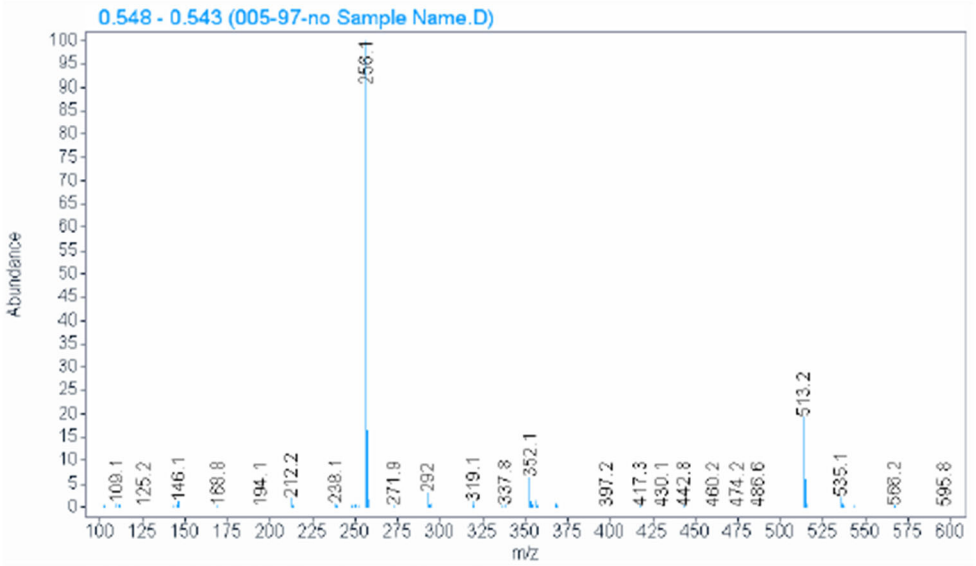
Agilent Technologies

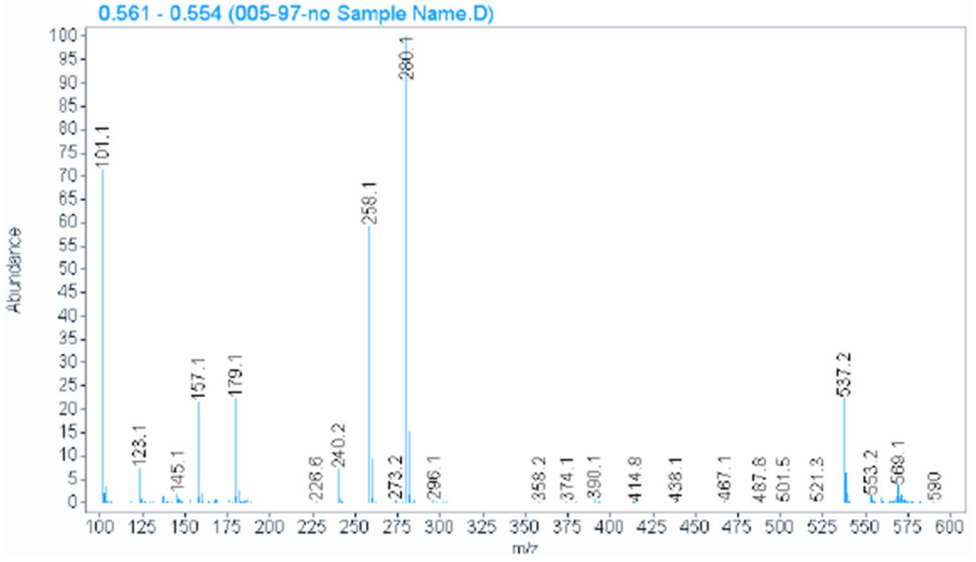
Data file:	D:\Chem32\1\Data\JRB\JRB2057 2059 2060 2061 2021-12-09 12-15-05\005-97-no Sample Name.D		
Sample name:			
Description:	JRB2061		
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	97
Injection date:	12/9/2021 12:35:28 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		



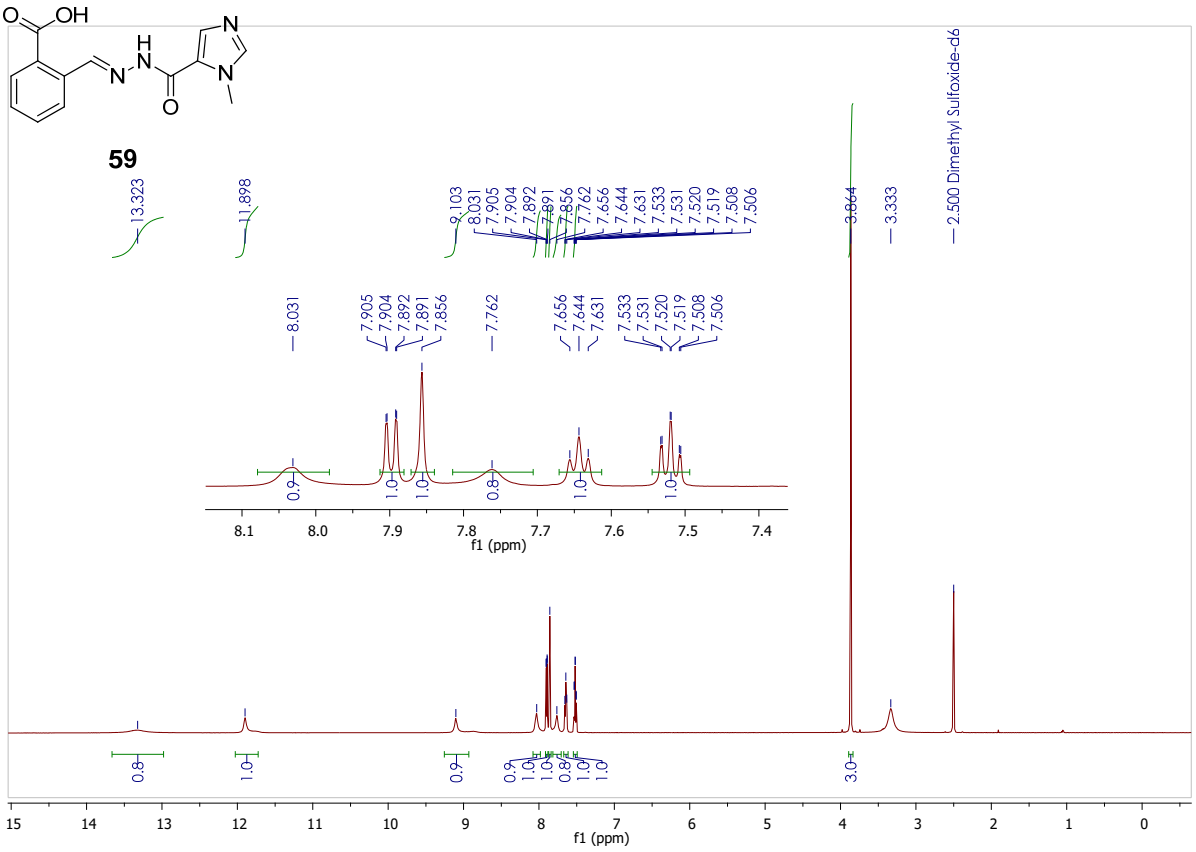
Molecular Weight: 257.245

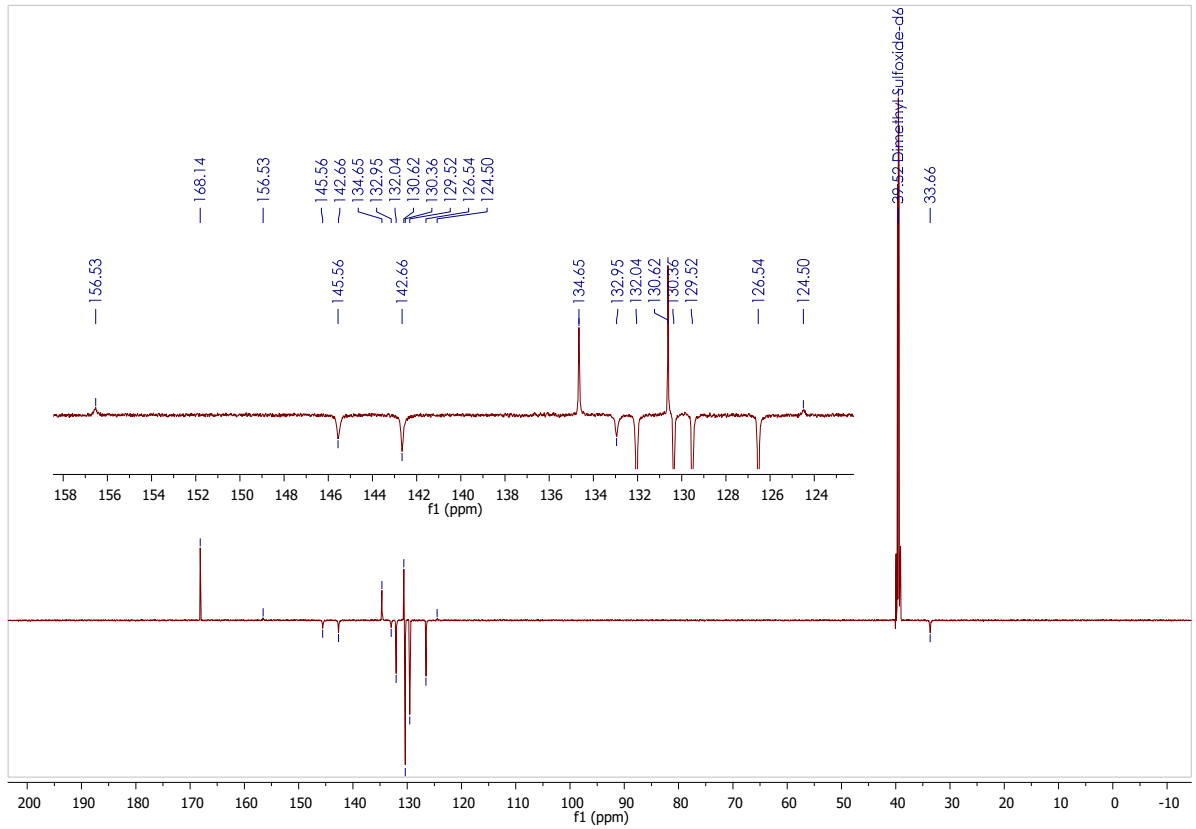
58





.38

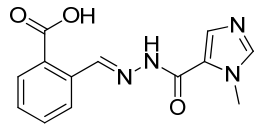

59
13.323
11.898
9.103
8.031
7.905
7.904
7.892
7.891
7.856
7.762
7.656
7.644
7.631
7.533
7.531
7.520
7.519
7.508
7.506
3.864
3.333
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.14
156.53
145.56
142.66
134.65
132.95
132.04
130.62
130.36
129.52
126.54
124.50
39.52 Dimethyl Sulfoxide-d6
33.66
f1 (ppm)

LCMS Report

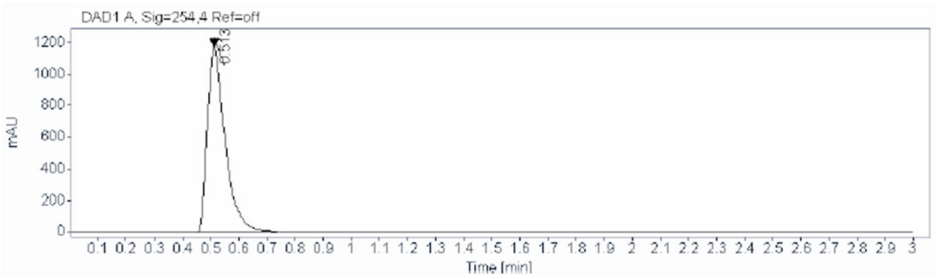
Agilent Technologies

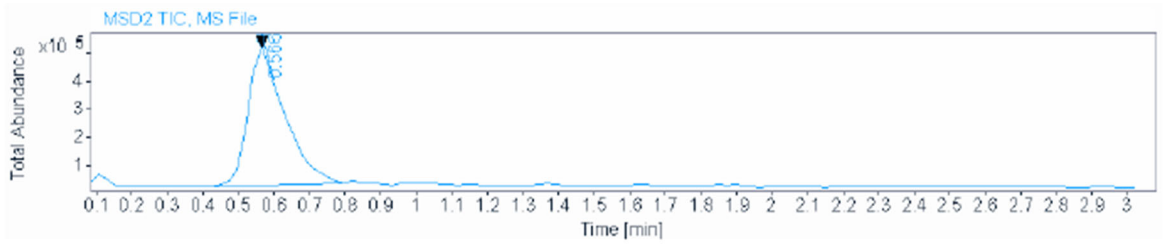
Data file:	D:\Chem32\1\Data\JRB\JRB2057 2059 2060 2061 2021-12-09 12-15-05\004-98-no Sample Name.D		
Sample name:			
Description:	JRB2060		
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	98
Injection date:	12/9/2021 12:30:50 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

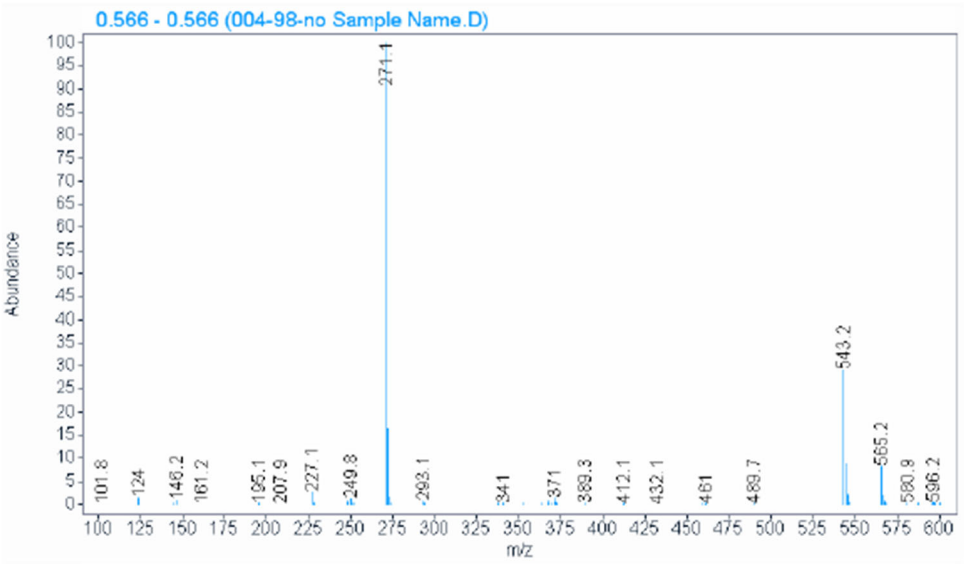


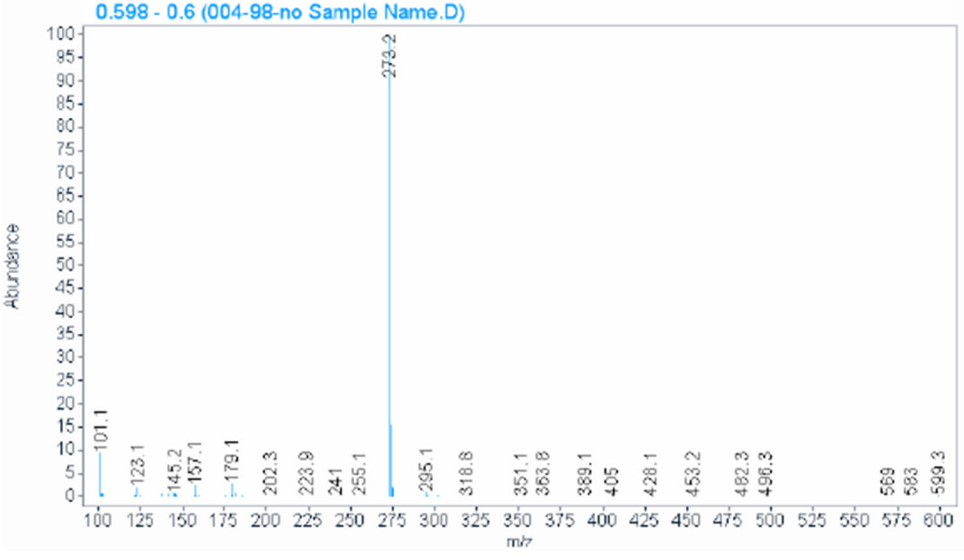
Molecular Weight: 272.259

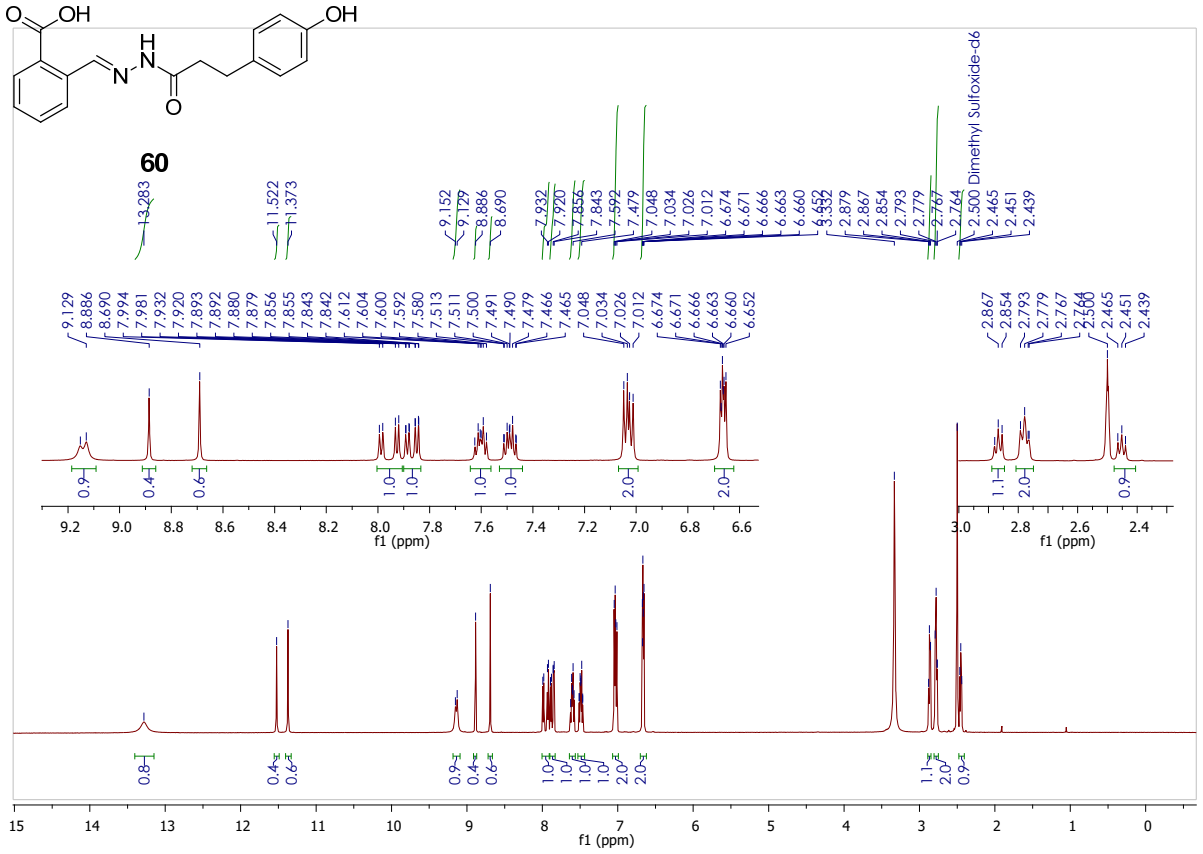
59

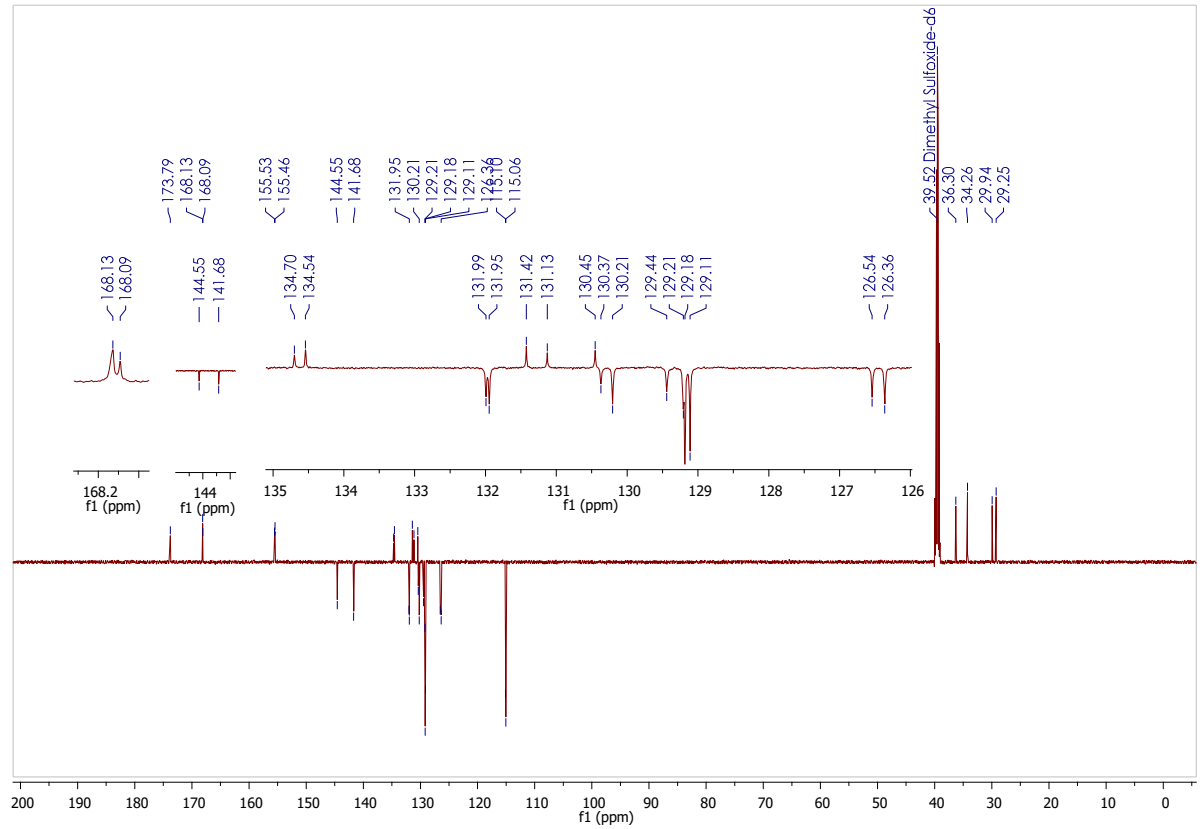








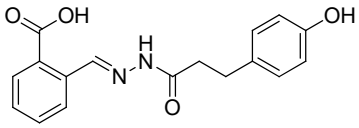

60
f1 (ppm)


f1 (ppm)

LCMS Report

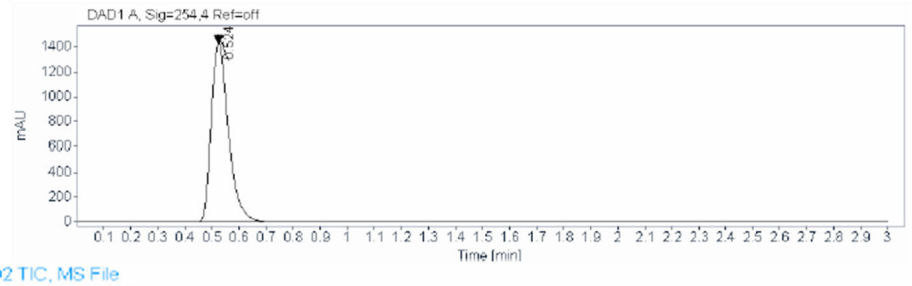
Agilent Technologies

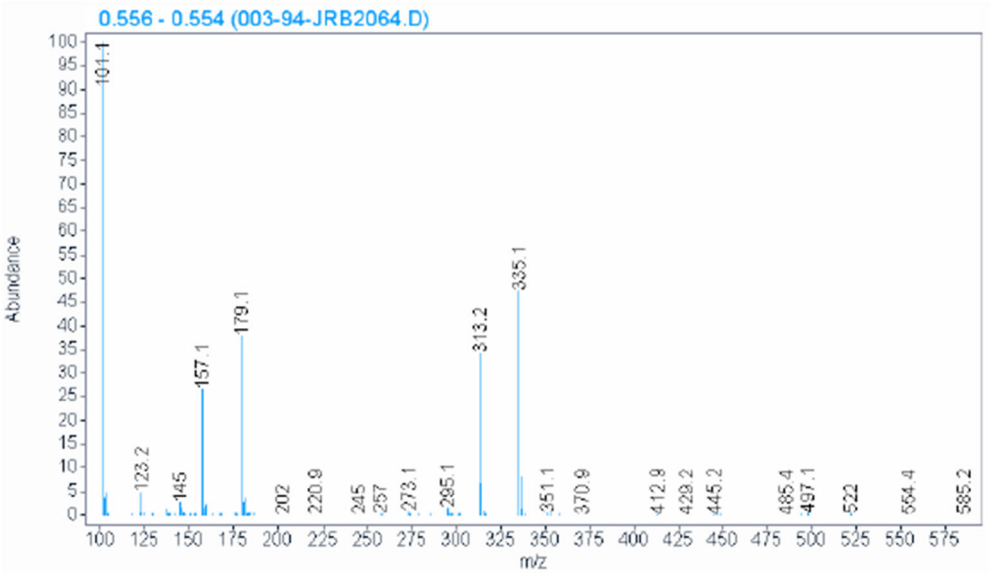
Data file:	D:\Chem32\1\Data\JRB\JRB2063 2064 2021-12-09 13-07-22\003-94-JRB2064.D		
Sample name:	JRB2064		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	94
Injection date:	12/9/2021 1:18:20 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 70% B_3MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 70%B_3MINS.M	**Acq. operator:**	SYSTEM
Last changed:	5/19/2016 3:53:37 PM		

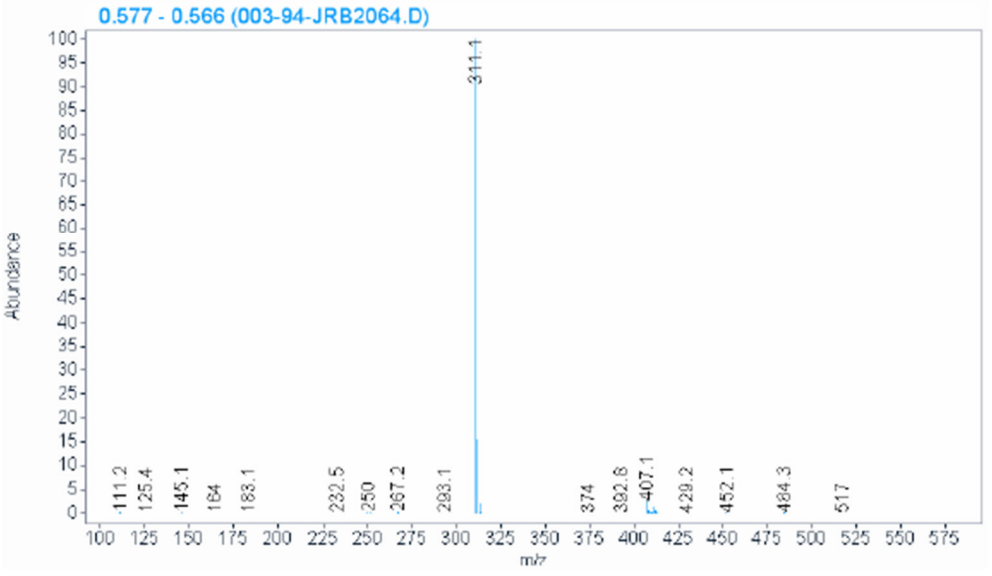


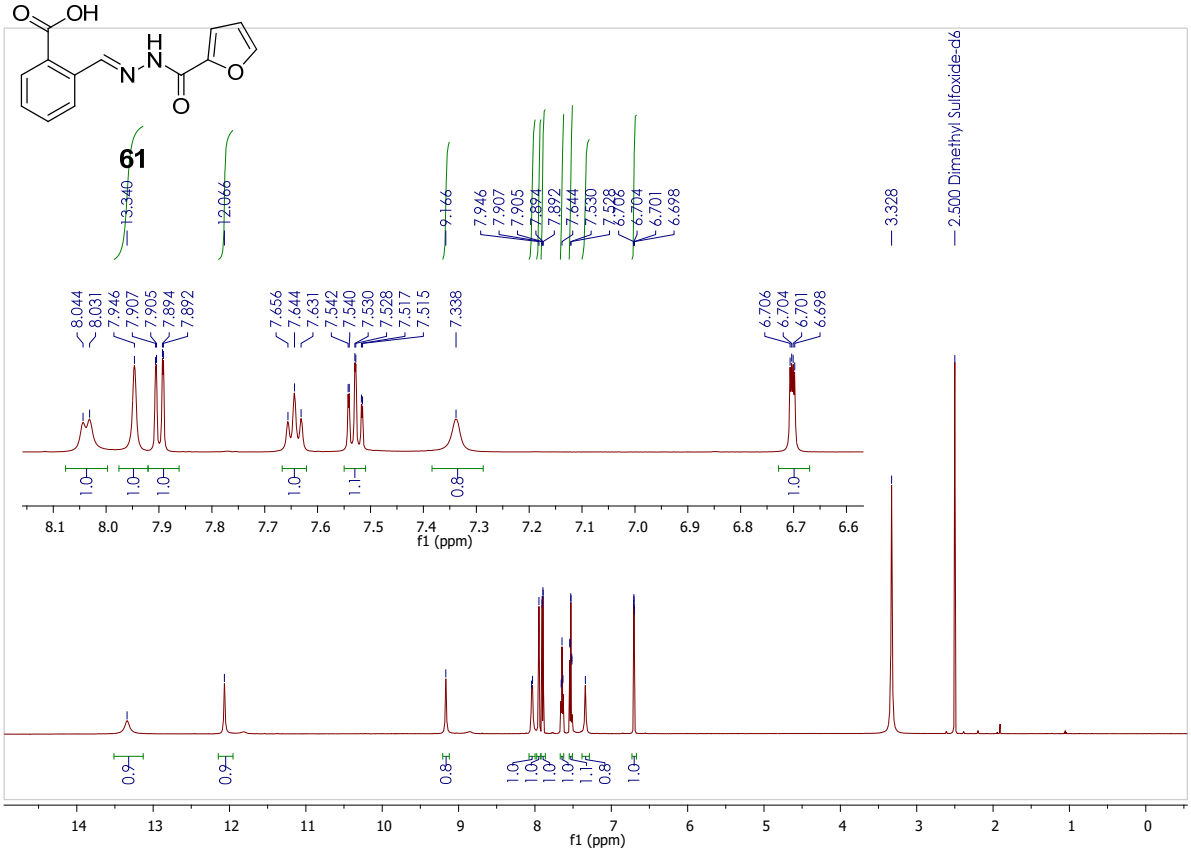
Molecular Weight: 312.320

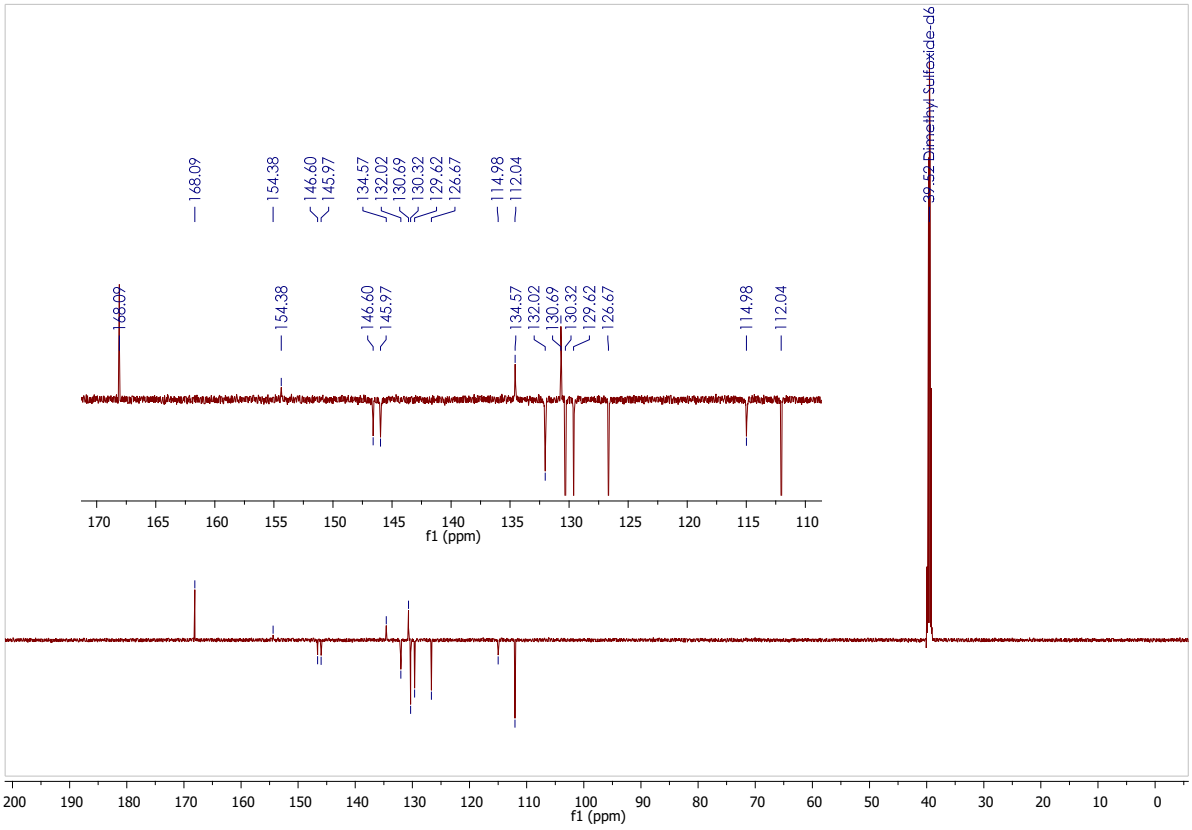
60







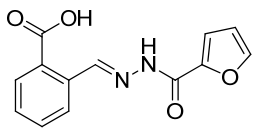

61
13.340
12.066
9.166
7.946
7.907
7.905
7.894
7.892
7.644
7.530
7.528
6.706
6.704
6.701
6.698
3.328
2.500 Dimethyl Sulfoxide-d6
8.044
8.031
7.656
7.644
7.631
7.542
7.540
7.530
7.528
7.517
7.515
7.338
f1 (ppm)


168.09
154.38
146.60
145.97
134.57
132.02
130.69
130.32
129.62
126.67
114.98
112.04
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

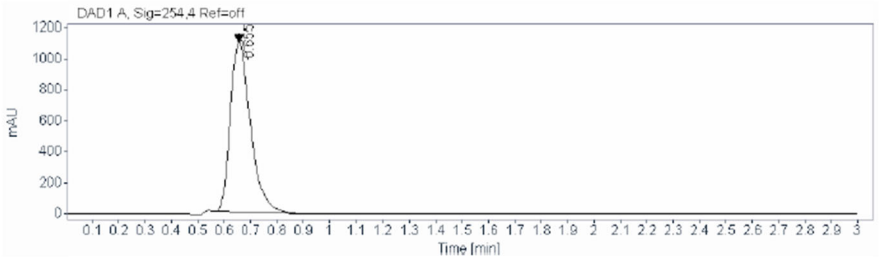
Agilent Technologies

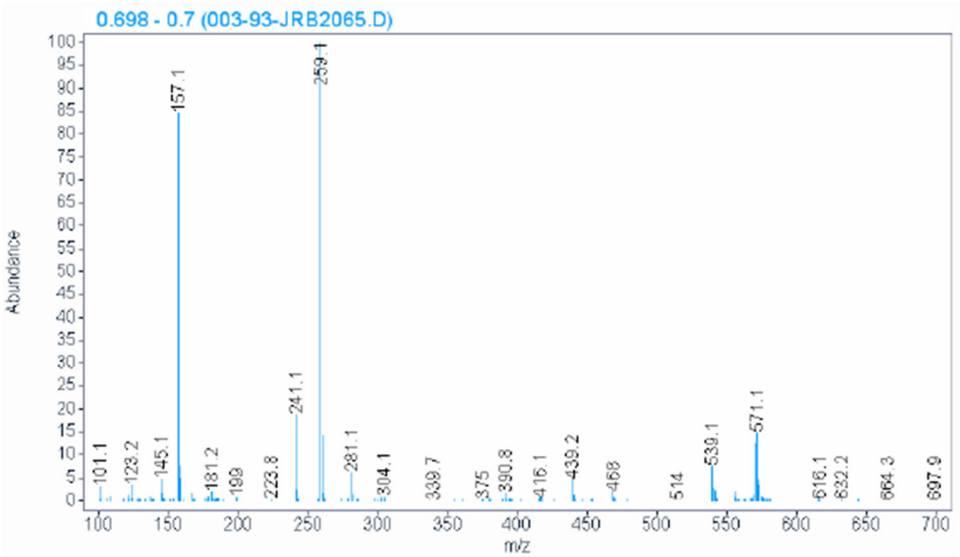
Data file:	D:\Chem32\1\Data\JRB\JRB2063 2064 2065 2021-12-09 12-53-19\003-93-JRB2065.D		
Sample name:	JRB2065		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	93
Injection date:	12/9/2021 1:04:09 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_3MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_3MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/11/2021 3:05:21 PM		

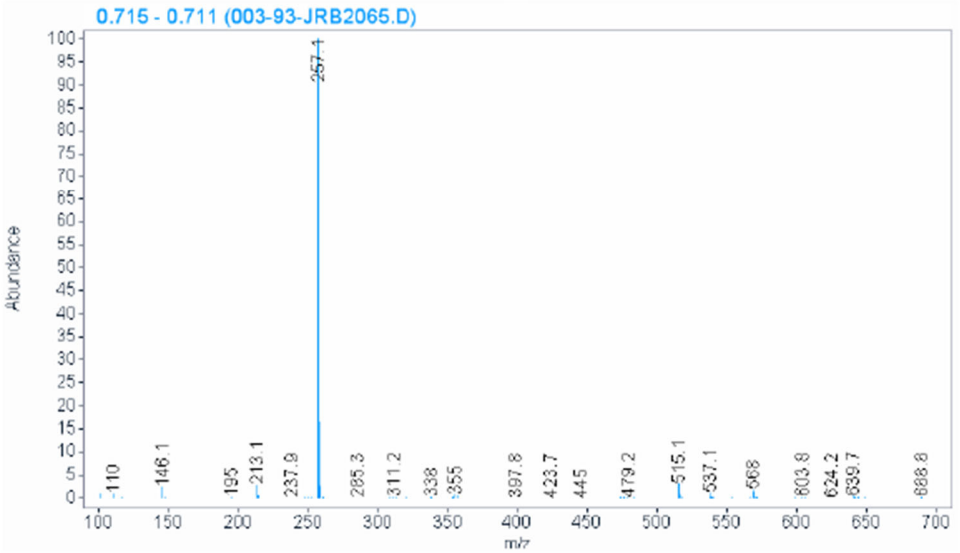


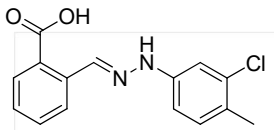
Molecular Weight: 258.229

61

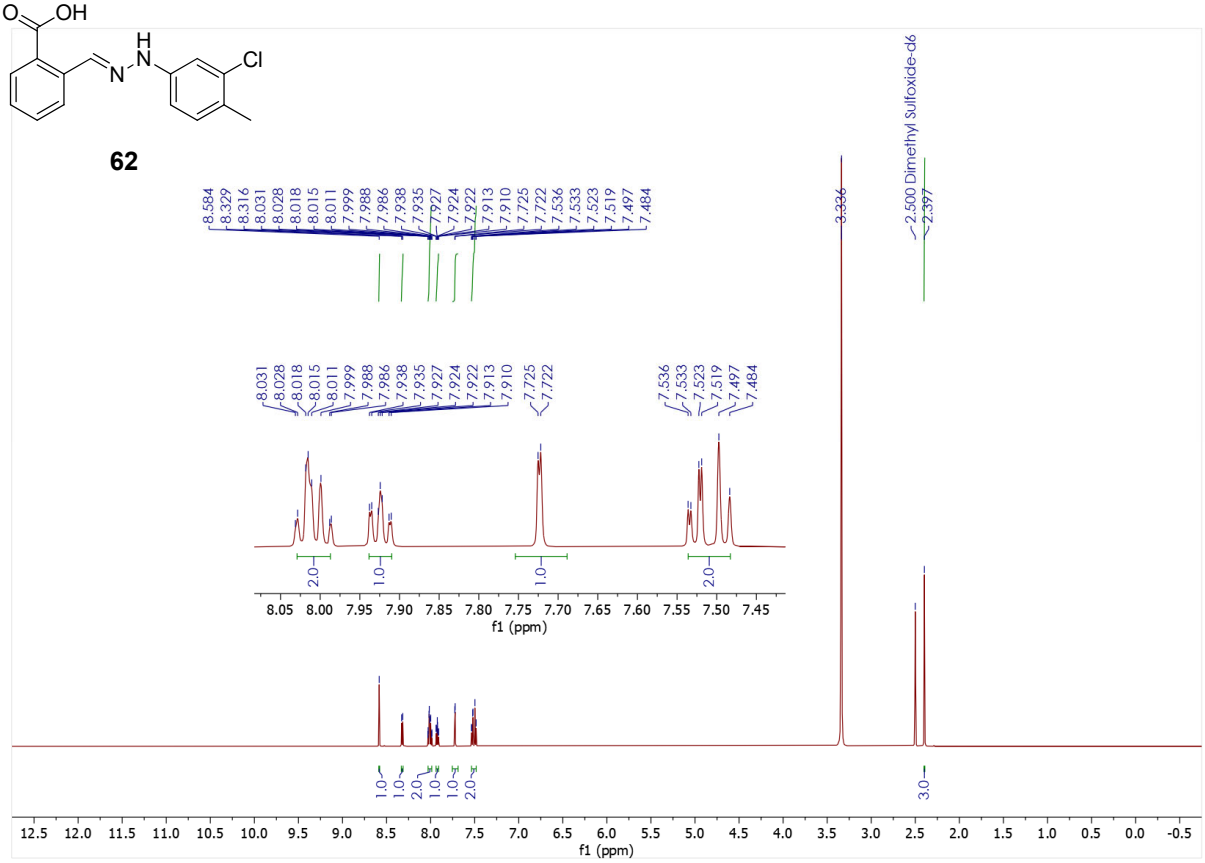


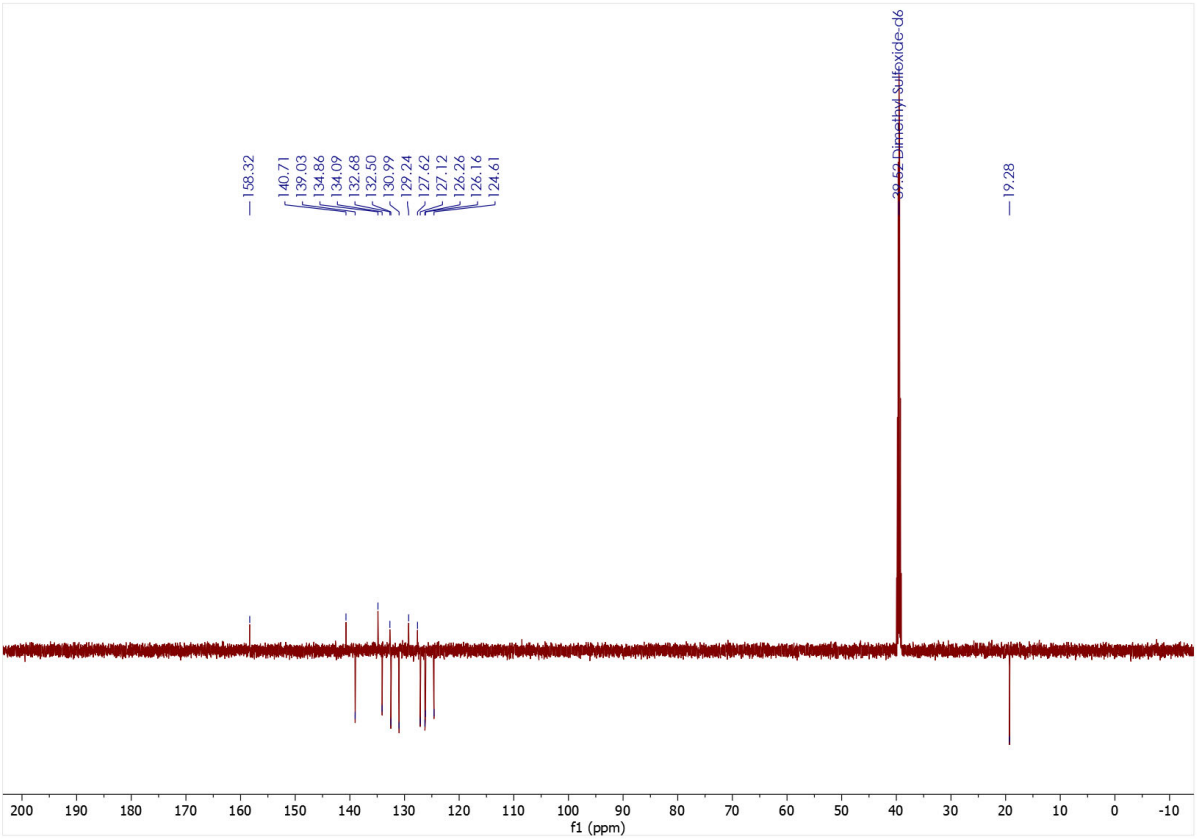





O
OH
H
N
N
Cl

62

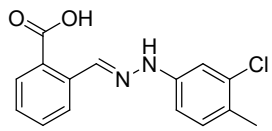

8.584
8.329
8.316
8.031
8.028
8.018
8.015
8.011
7.999
7.988
7.986
7.938
7.935
7.927
7.924
7.922
7.913
7.910
7.725
7.722
7.536
7.533
7.523
7.519
7.497
7.484
3.336
2.500 Dimethyl Sulfoxide-d6
2.397
2.0
1.0
1.0
2.0
8.05 8.00 7.95 7.90 7.85 7.80 7.75 7.70 7.65 7.60 7.55 7.50 7.45
f1 (ppm)
1.0
1.0
2.0
1.0
1.0
2.0
3.0
12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)


158.32
140.71
139.03
134.86
134.09
132.68
132.50
130.99
129.24
127.62
127.12
126.26
126.16
124.61
39.59 Dimethyl Sulfoxide-d6
19.28
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

LCMS Report

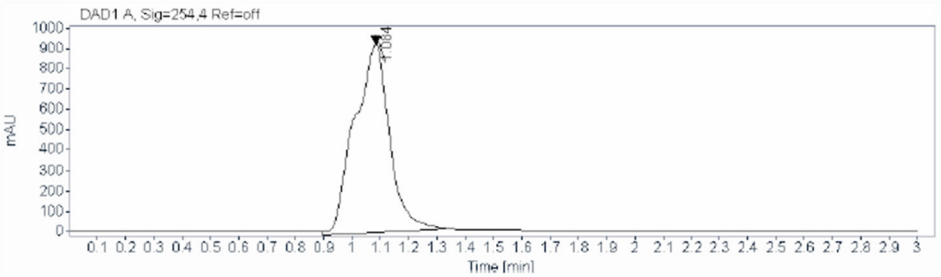
Agilent Technologies

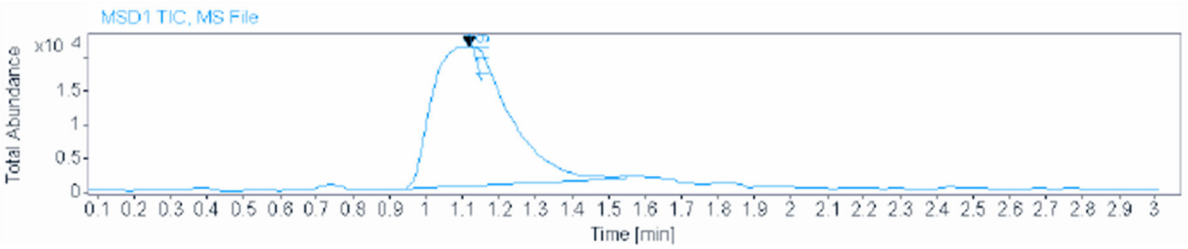
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\002-41-AJS1138-3.D		
Sample name:	AJS1138-3		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	41
Injection date:	7/31/2023 12:59:10 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

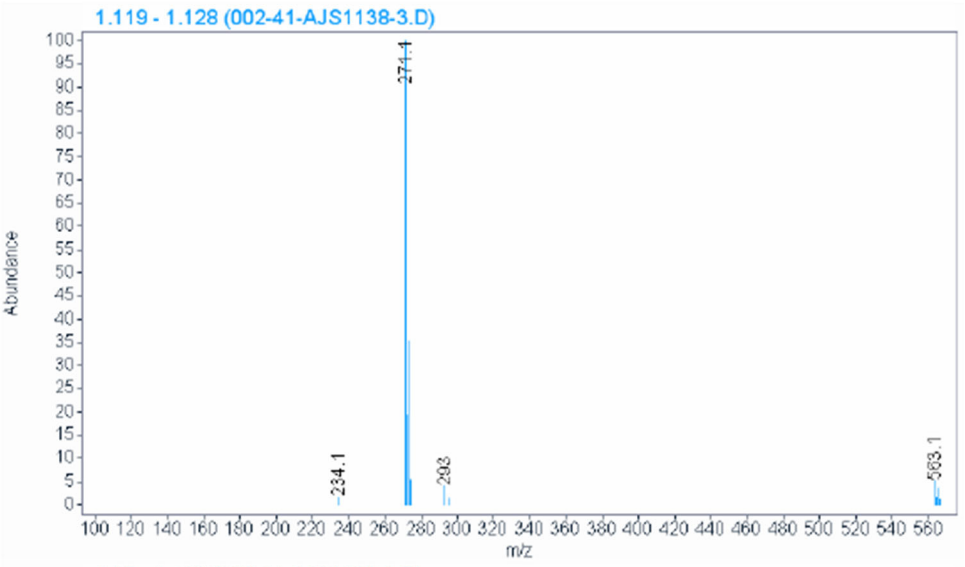


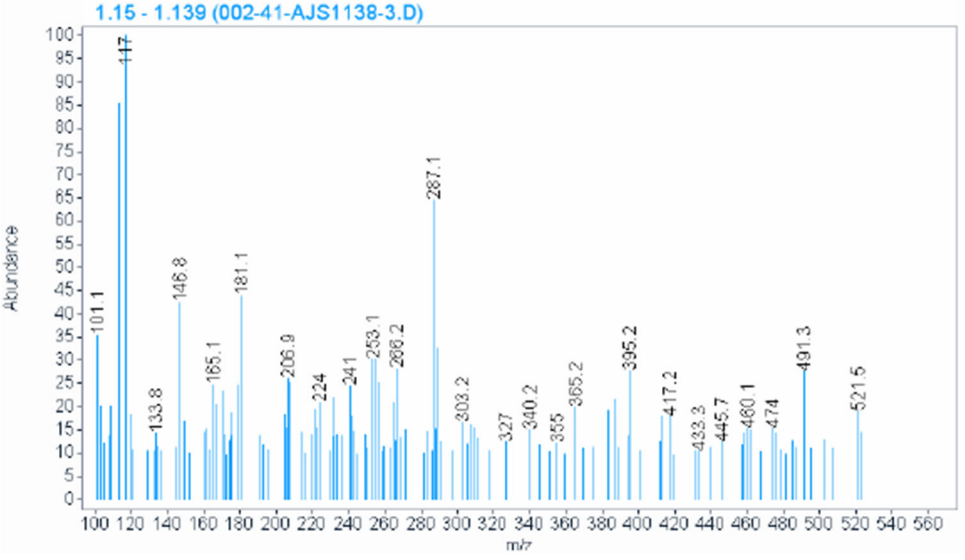
Molecular Weight: 288.729

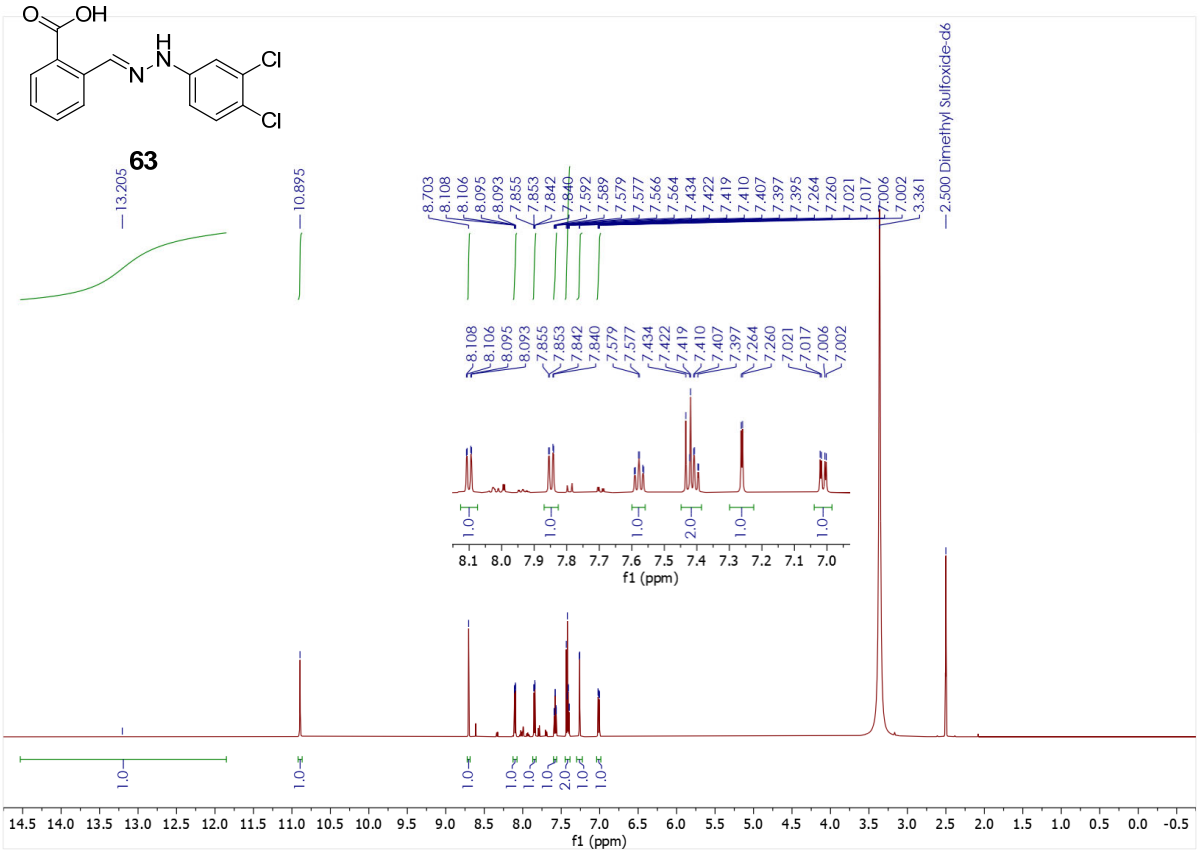
62

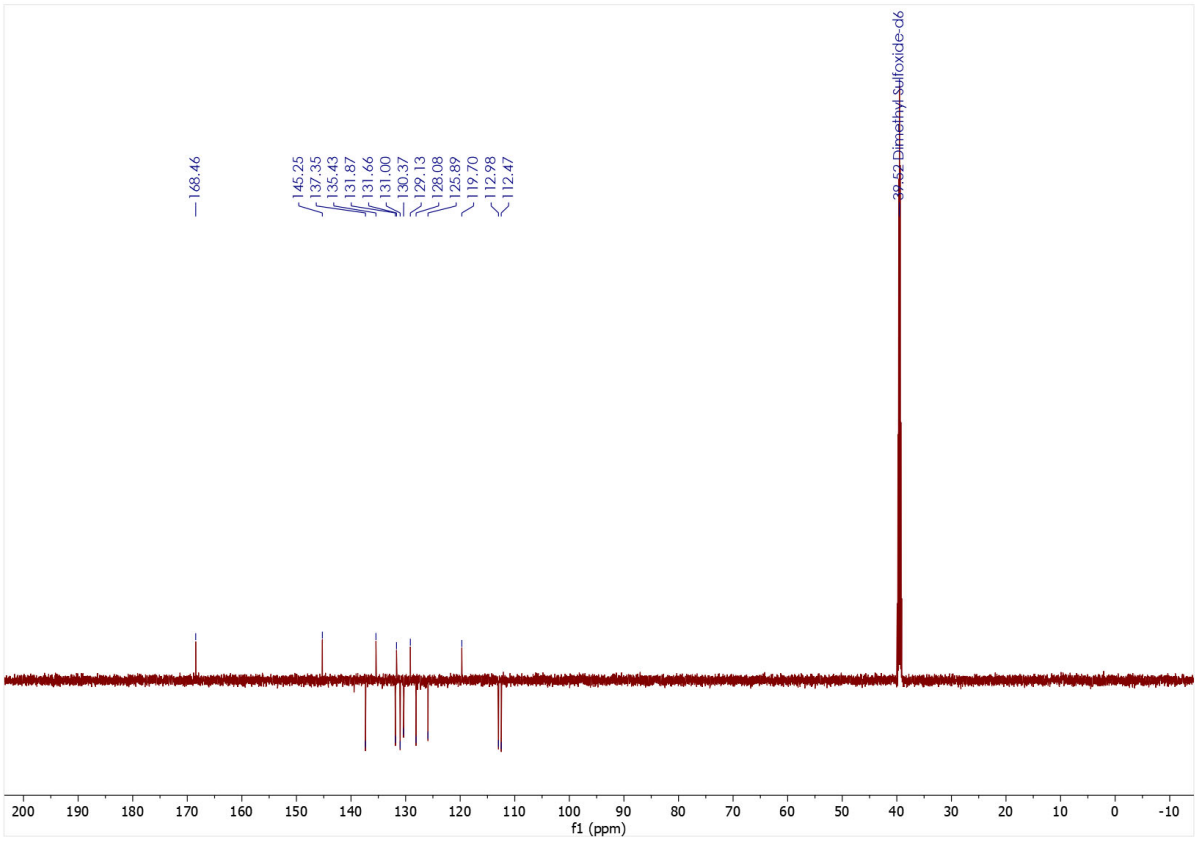








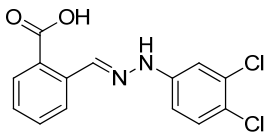

O
OH
H
N
N
Cl
Cl
63
13.205
10.895
8.703
8.108
8.106
8.095
8.093
7.855
7.853
7.842
7.840
7.592
7.589
7.579
7.577
7.566
7.564
7.434
7.422
7.419
7.410
7.407
7.397
7.395
7.264
7.260
7.021
7.017
7.006
7.002
3.361
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


168.46
145.25
137.35
135.43
131.87
131.66
131.00
130.37
129.13
128.08
125.89
119.70
112.98
112.47
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

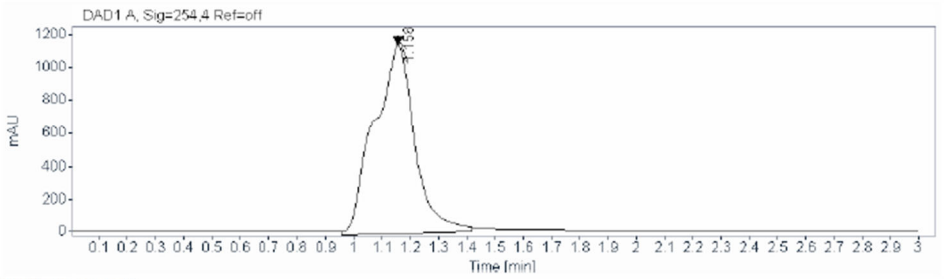
Agilent Technologies

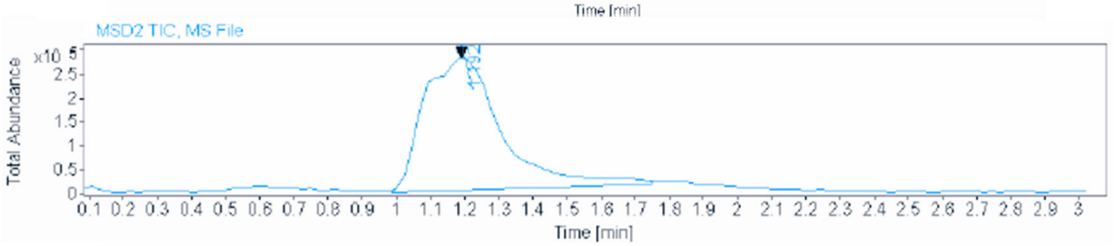
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\003-42-AJS1139-1.D		
Sample name:	AJS1139-1		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	42
Injection date:	7/31/2023 1:03:52 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

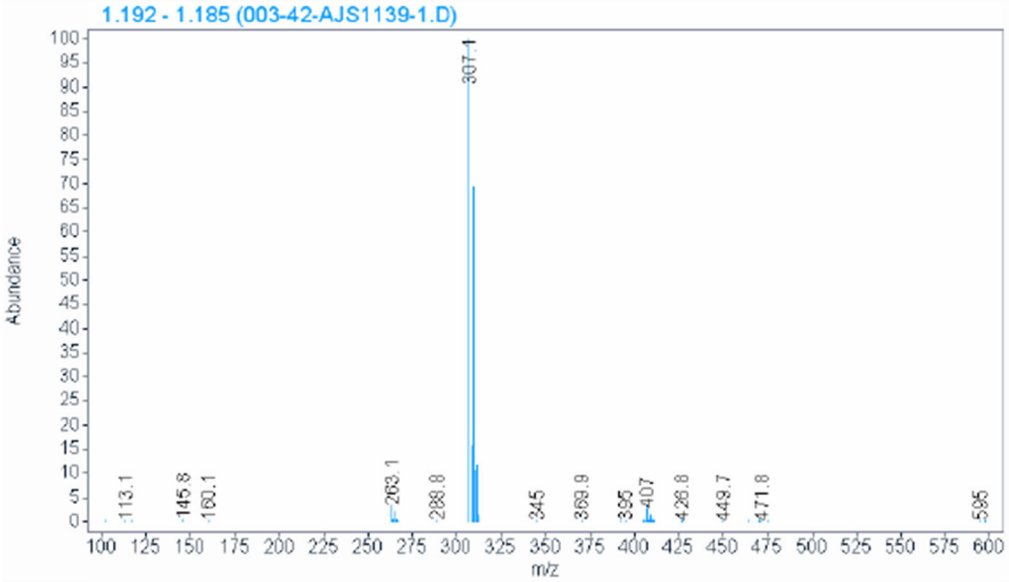


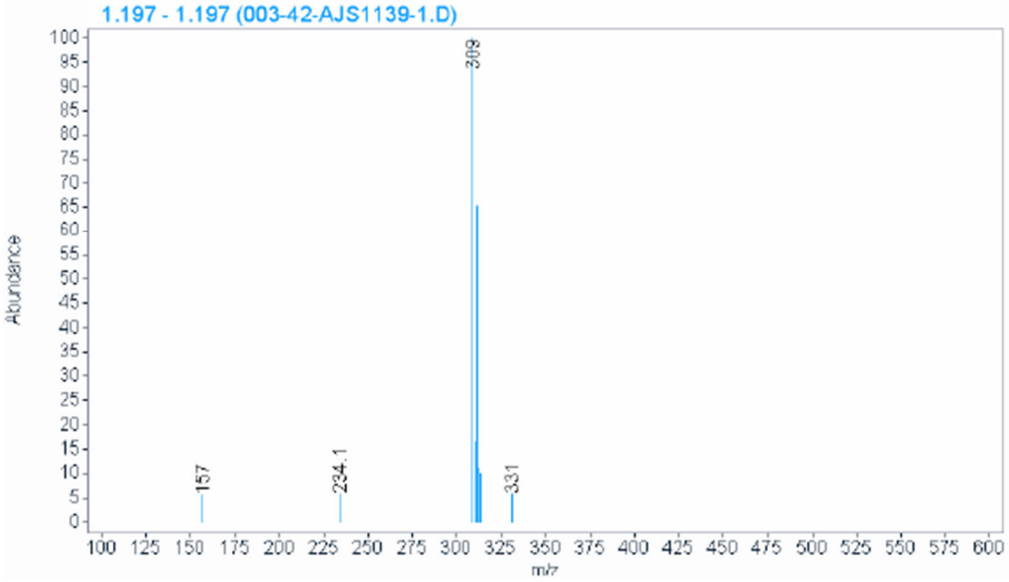
Molecular Weight: 309.147

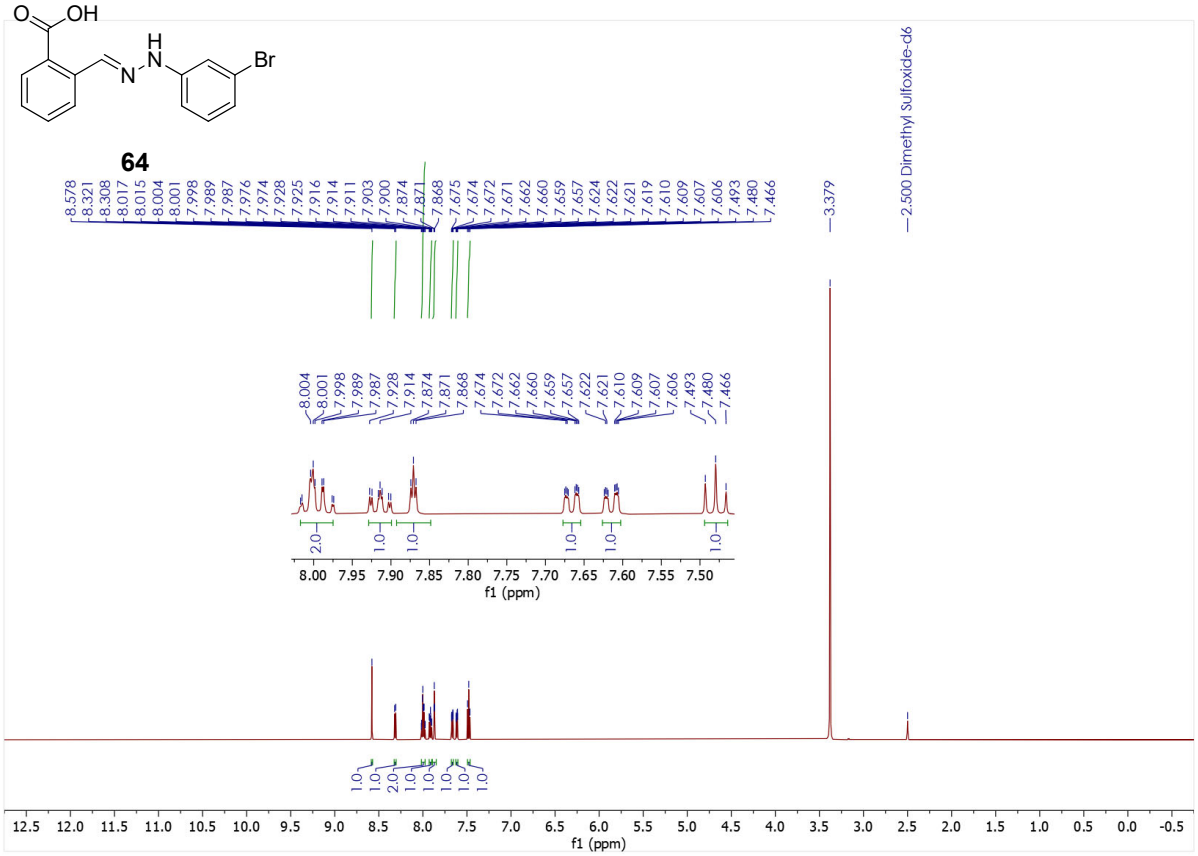
63

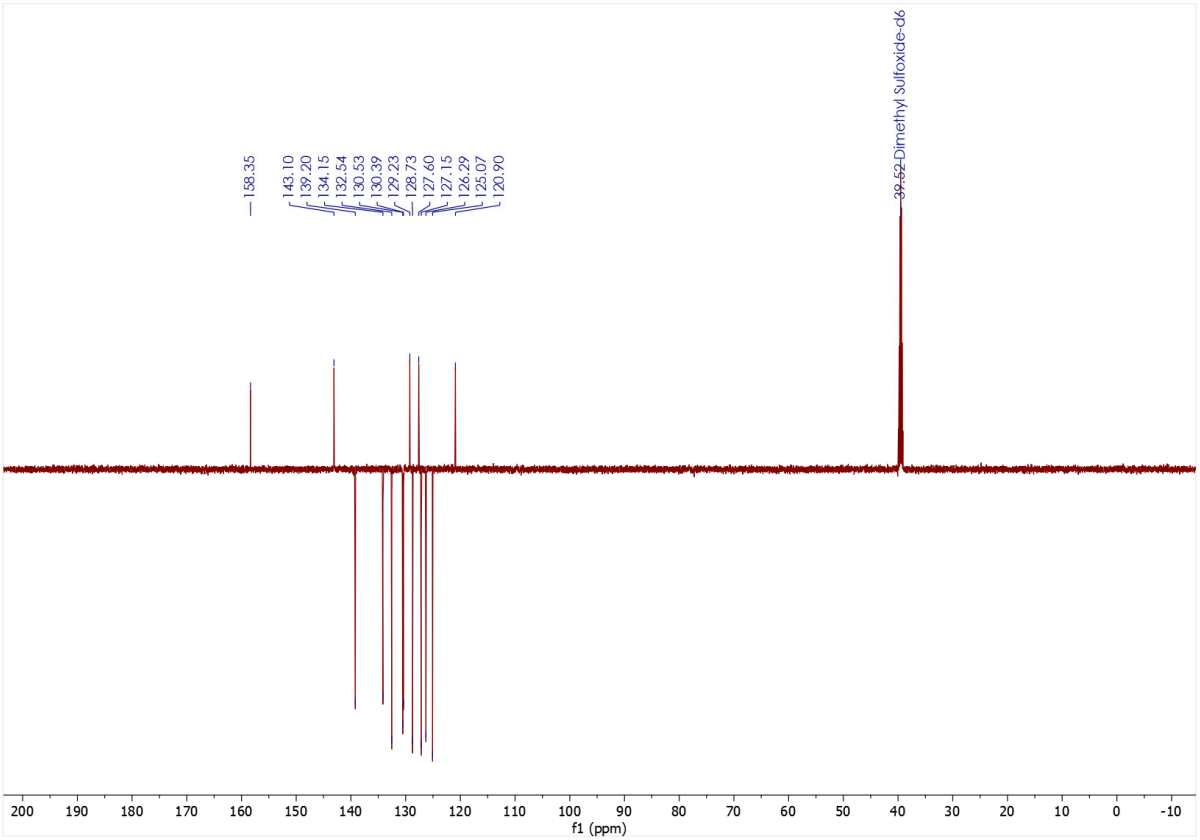








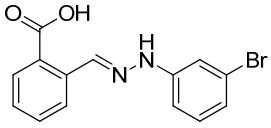

O
OH
H
N
N
Br
64
8.578
8.321
8.308
8.017
8.015
8.004
8.001
7.998
7.989
7.987
7.976
7.974
7.928
7.925
7.916
7.914
7.911
7.903
7.900
7.874
7.871
7.868
7.675
7.674
7.672
7.671
7.662
7.660
7.659
7.657
7.624
7.622
7.621
7.619
7.610
7.609
7.607
7.606
7.493
7.480
7.466
3.379
2.500 Dimethyl Sulfoxide-d6
2.0
1.0
1.0
1.0
1.0
1.0
8.00 7.95 7.90 7.85 7.80 7.75 7.70 7.65 7.60 7.55 7.50
f1 (ppm)
1.0
1.0
2.0
1.0
1.0
1.0
1.0
12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)


158.35
143.10
139.20
134.15
132.54
130.53
130.39
129.23
128.73
127.60
127.15
126.29
125.07
120.90
39.52 Dimethyl Sulfoxide-d6
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

LCMS Report

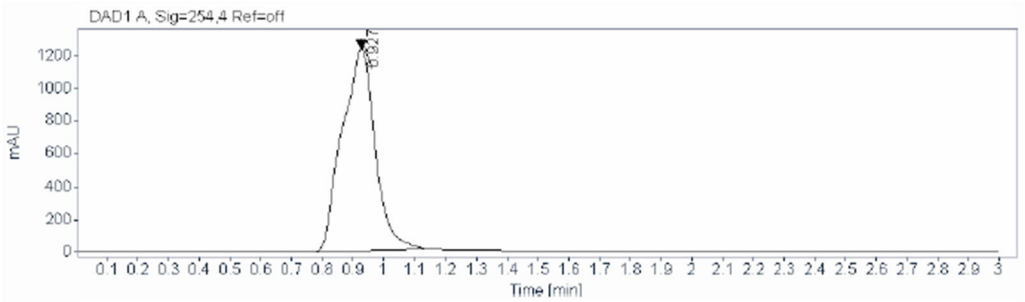
Agilent Technologies

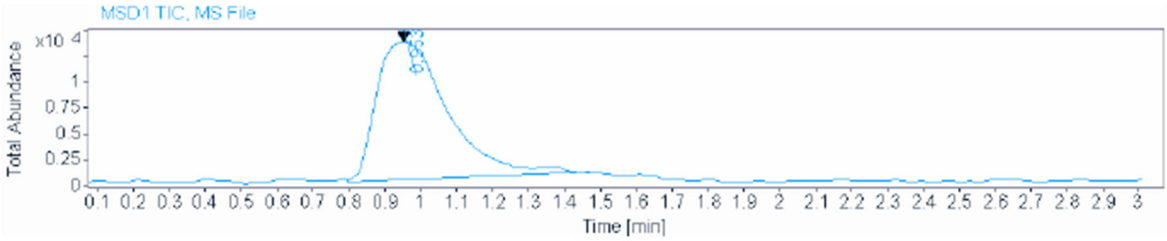
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\008-47-AJS1140-3.D		
Sample name:	AJS1140-3		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	47
Injection date:	7/31/2023 1:27:25 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

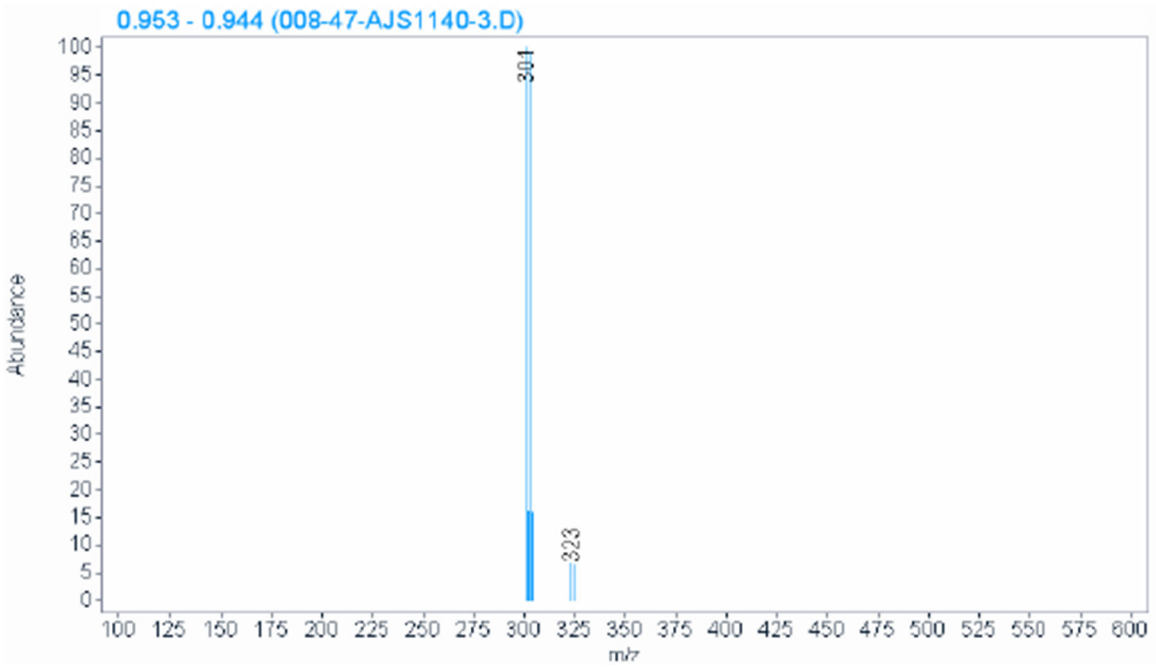


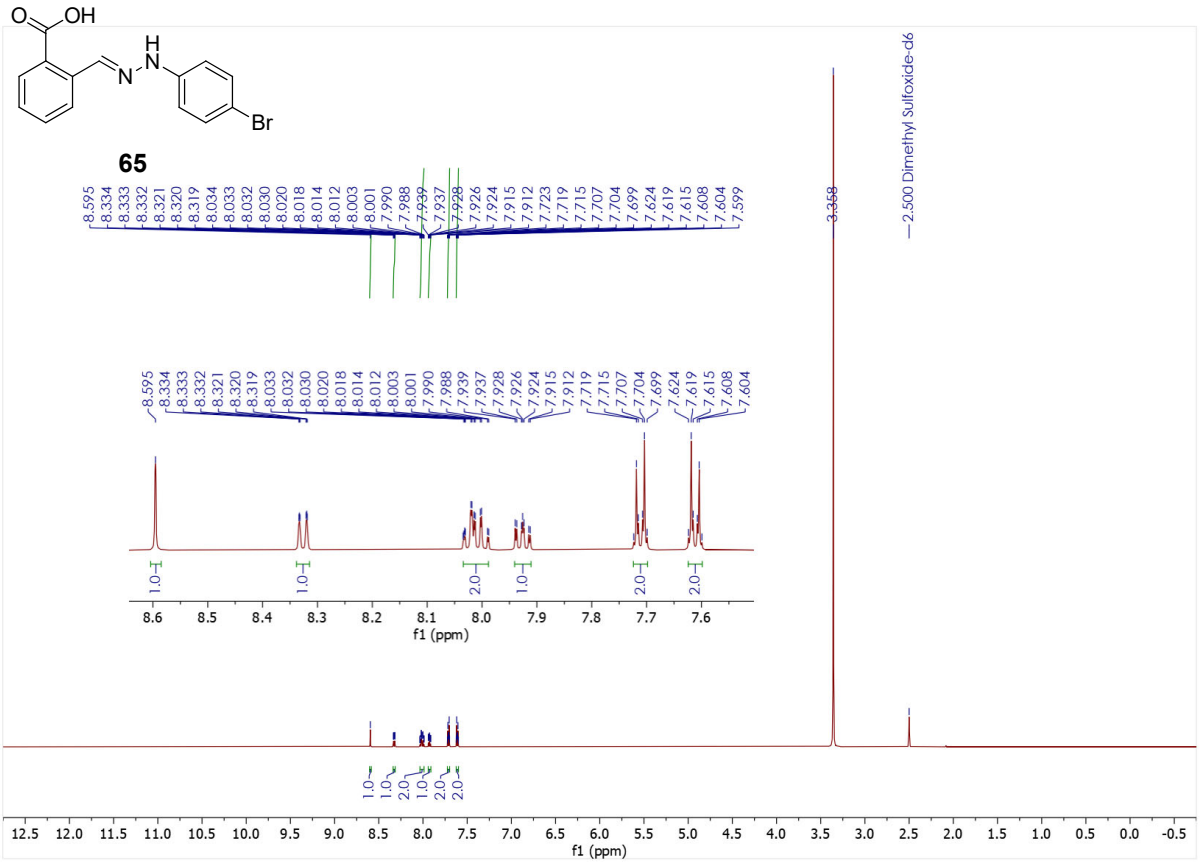
Molecular Weight: 319.153

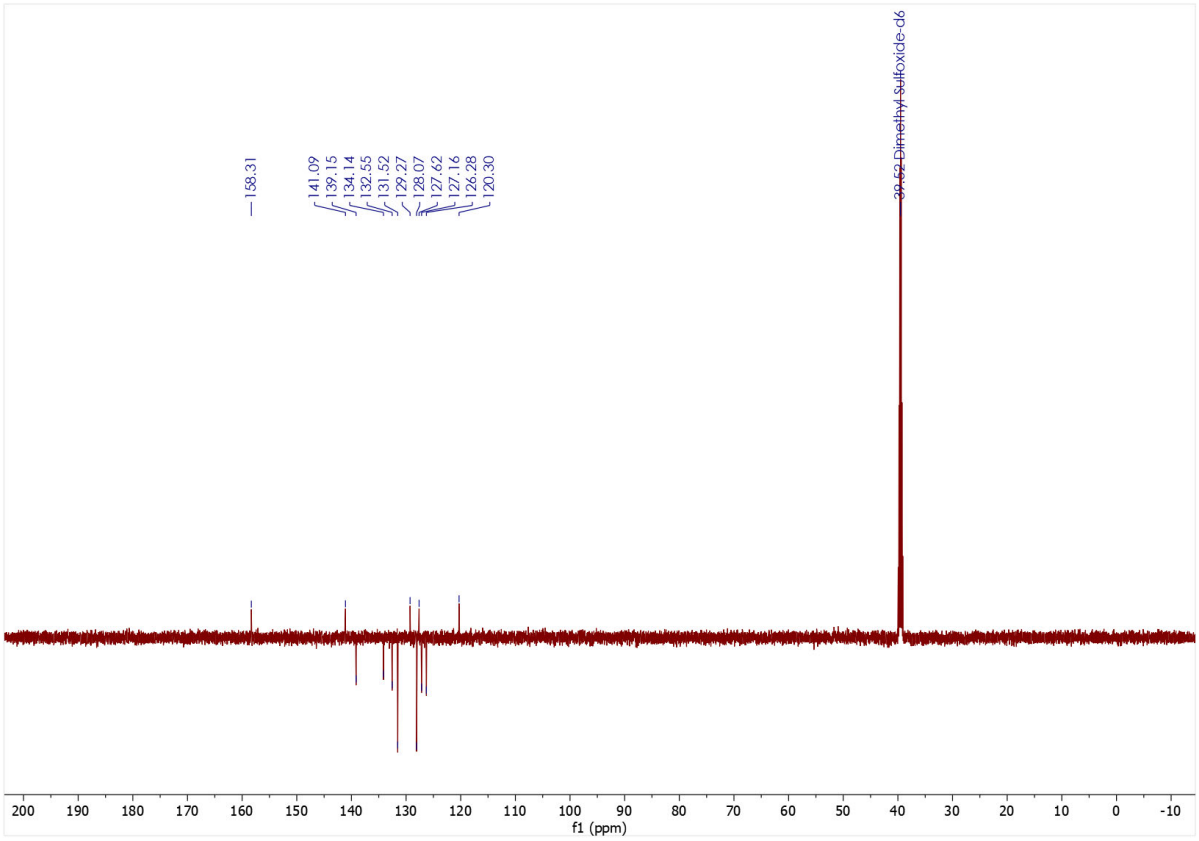
64







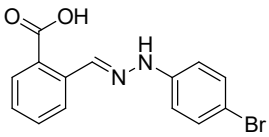

65
Br
8.595
8.334
8.333
8.332
8.321
8.320
8.319
8.034
8.033
8.032
8.030
8.020
8.018
8.014
8.012
8.003
8.001
7.990
7.988
7.939
7.937
7.928
7.926
7.924
7.915
7.912
7.723
7.719
7.715
7.707
7.704
7.699
7.624
7.619
7.615
7.608
7.604
7.599
3.358
2.500 Dimethyl Sulfoxide-d6
1.0
1.0
2.0
1.0
2.0
2.0
f1 (ppm)


158.31
141.09
139.15
134.14
132.55
131.52
129.27
128.07
127.62
127.16
126.28
120.30
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

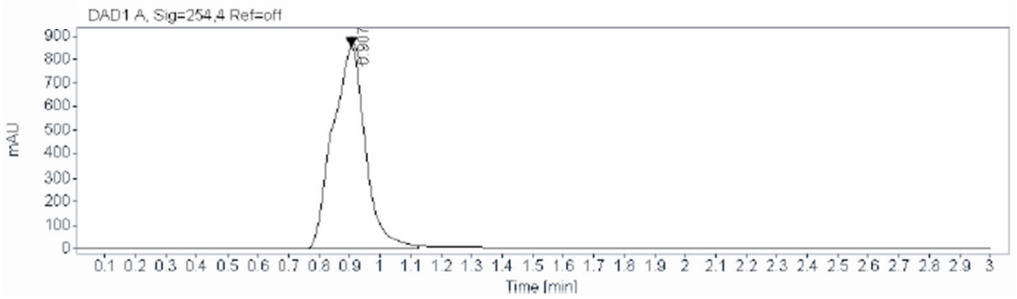
Agilent Technologies

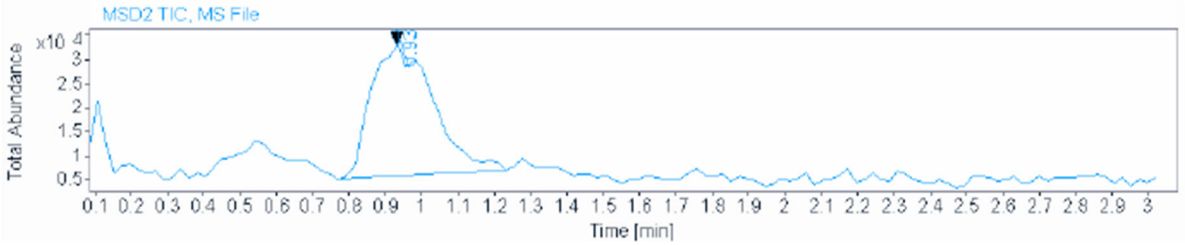
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\004-43-AJS1139-2.D		
Sample name:	AJS1139-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	43
Injection date:	7/31/2023 1:08:37 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

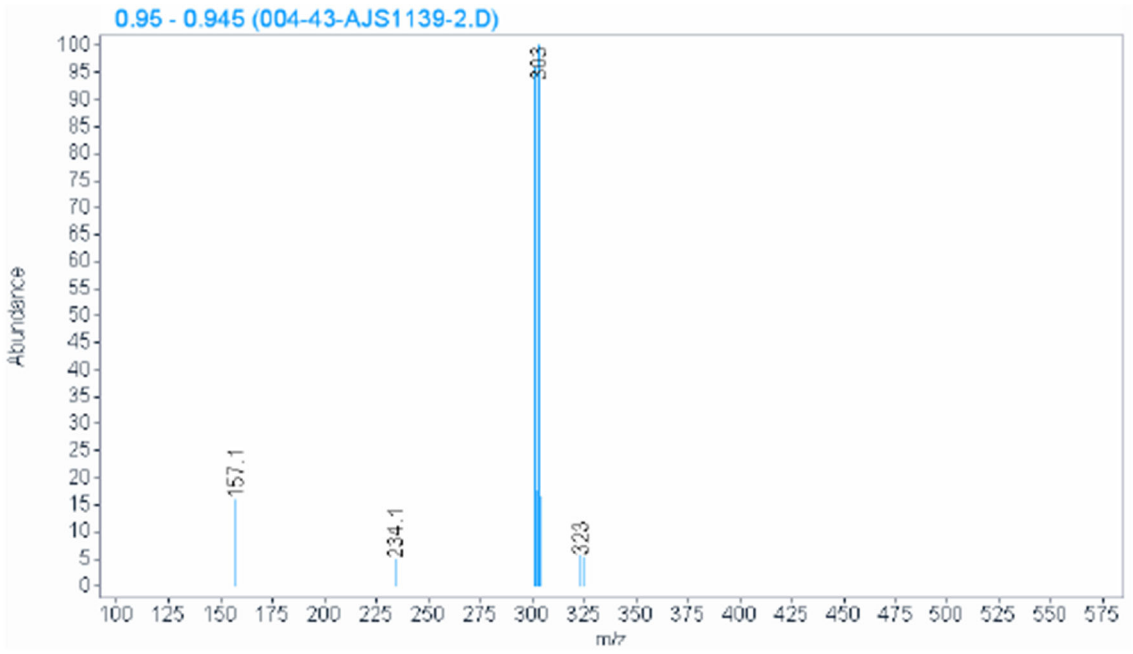


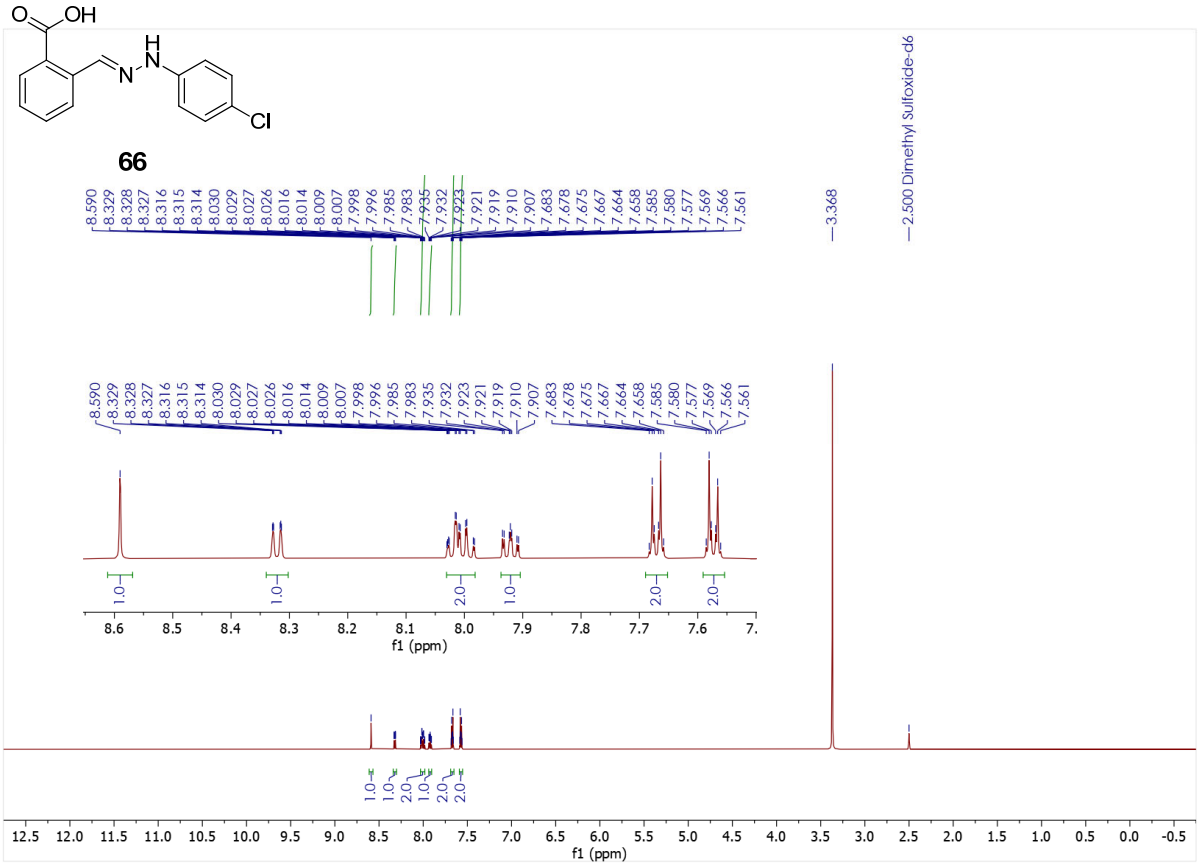
Molecular Weight: 319.153

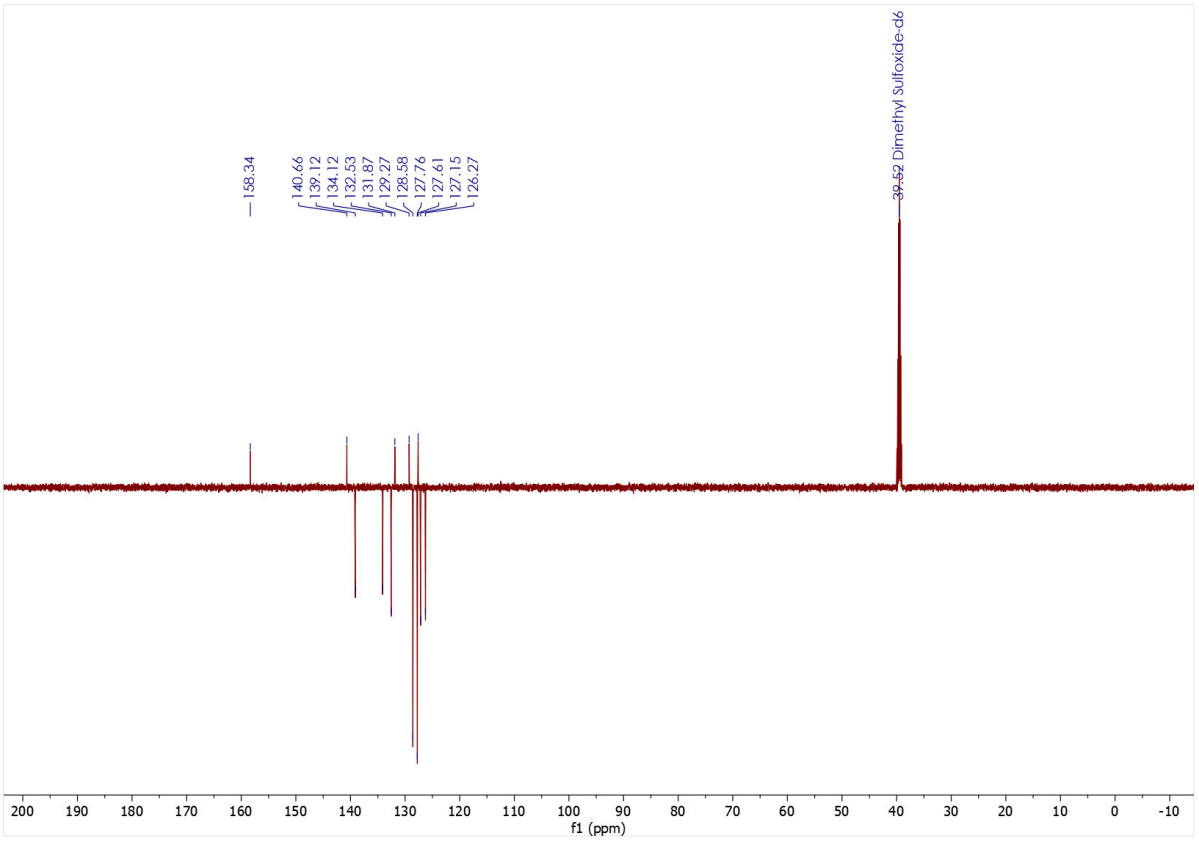
65







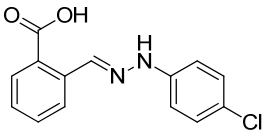

66
8.590
8.329
8.328
8.327
8.316
8.315
8.314
8.030
8.029
8.027
8.026
8.016
8.014
8.009
8.007
7.998
7.996
7.985
7.983
7.935
7.932
7.923
7.921
7.919
7.910
7.907
7.683
7.678
7.675
7.667
7.664
7.658
7.585
7.580
7.577
7.569
7.566
7.561
3.368
2.500 Dimethyl Sulfoxide-d6
1.0
1.0
2.0
1.0
2.0
2.0
f1 (ppm)


158.34
140.66
139.12
134.12
132.53
131.87
129.27
128.58
127.76
127.61
127.15
126.27
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

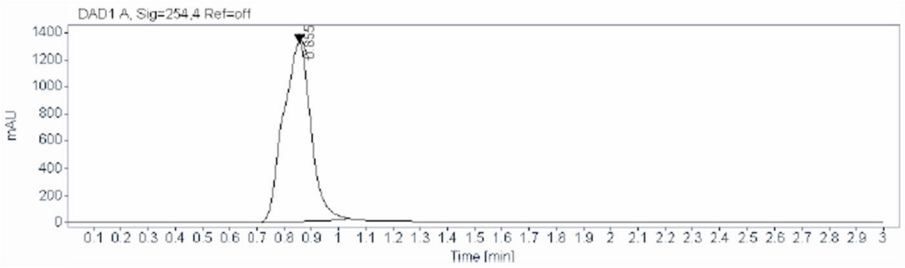
Agilent Technologies

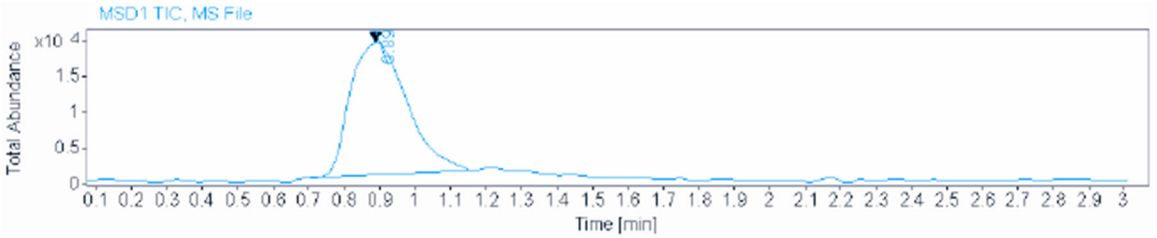
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\005-44-AJS1139-3.D		
Sample name:	AJS1139-3		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	44
Injection date:	7/31/2023 1:13:18 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

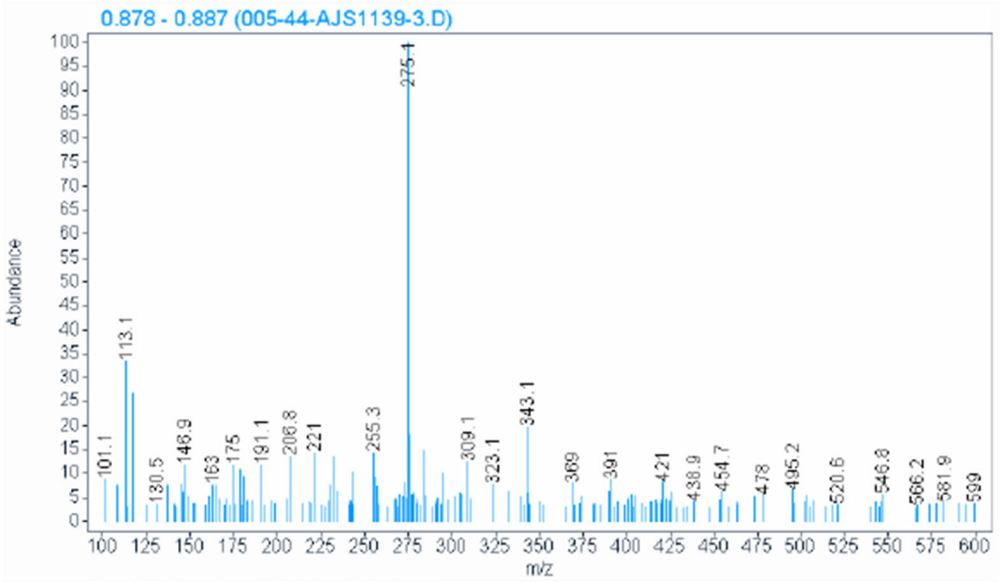


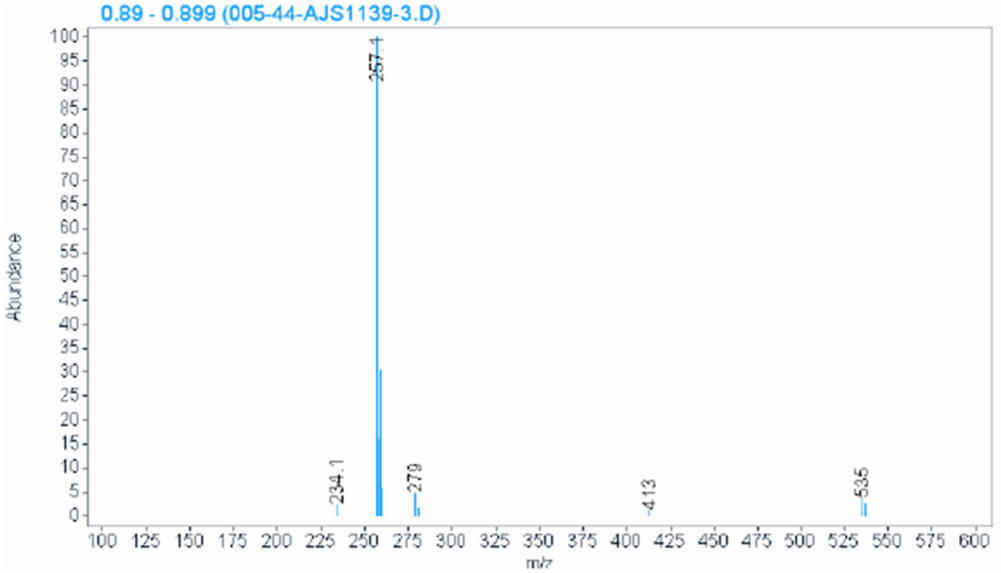
Molecular Weight: 274.702

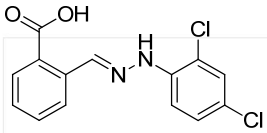
66



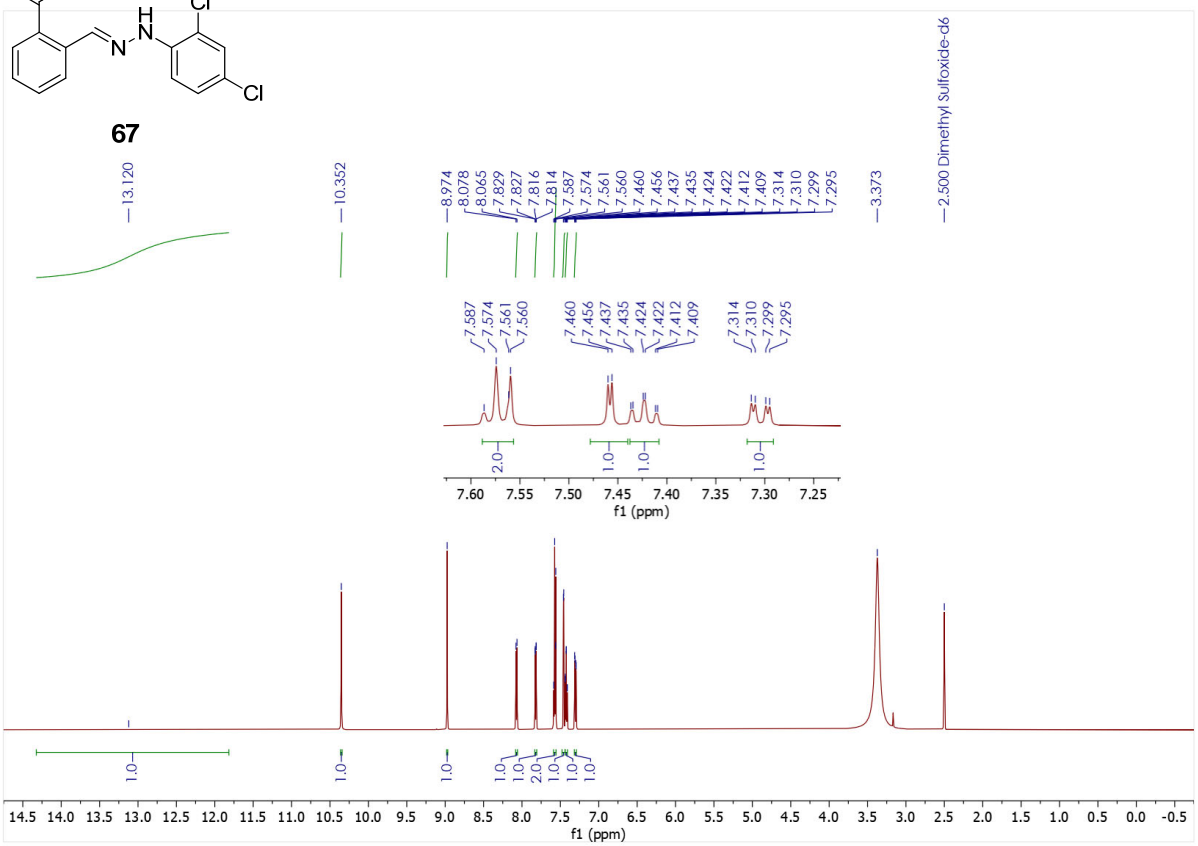


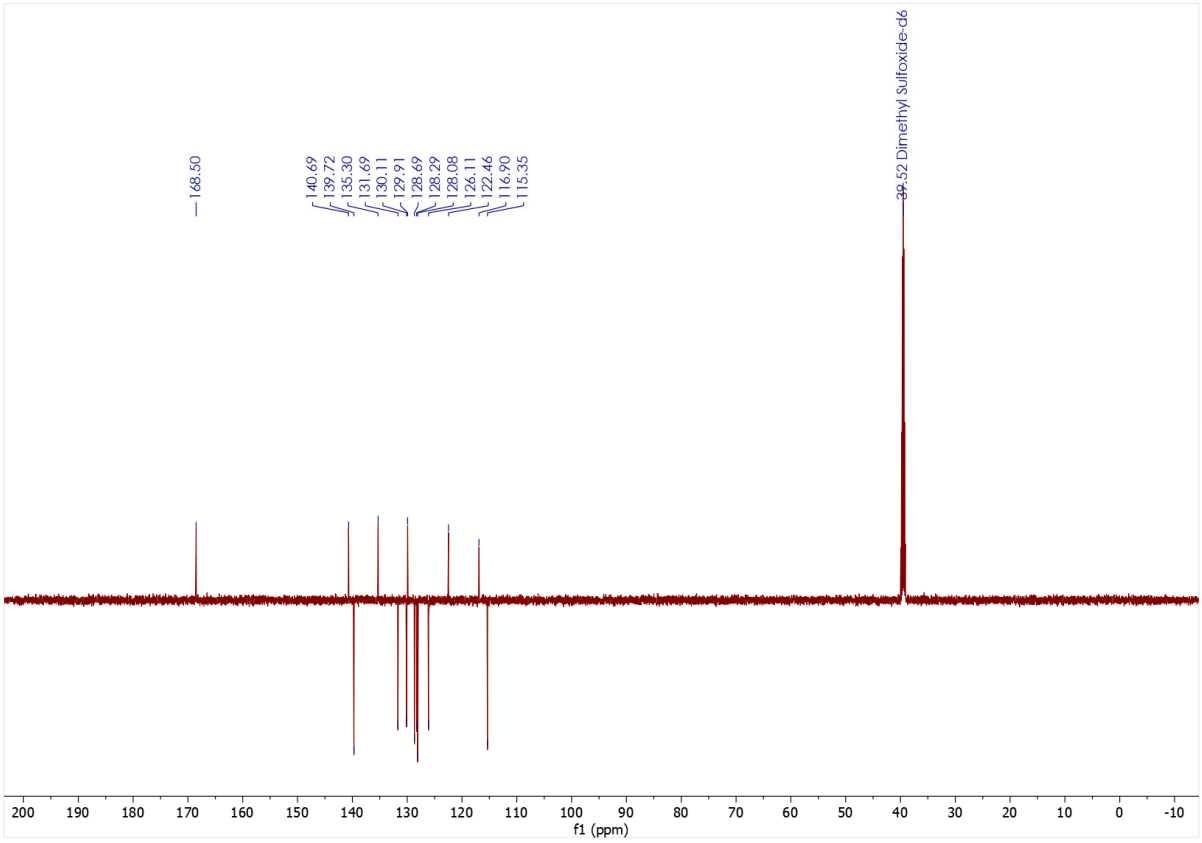





O
OH
H
N
N
Cl
Cl

67

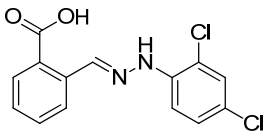

13.120
10.352
8.974
8.078
8.065
7.829
7.827
7.816
7.814
7.587
7.574
7.561
7.560
7.460
7.456
7.437
7.435
7.424
7.422
7.412
7.409
7.314
7.310
7.299
7.295
3.373
2.500 Dimethyl Sulfoxide-d6
2.0
1.0
1.0
1.0
7.60 7.55 7.50 7.45 7.40 7.35 7.30 7.25
f1 (ppm)
1.0
1.0
1.0
1.0
2.0
1.0
1.0
1.0
14.5 14.0 13.5 13.0 12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)


168.50
140.69
139.72
135.30
131.69
130.11
129.91
128.69
128.29
128.08
126.11
122.46
116.90
115.35
39.52 Dimethyl Sulfoxide-d6
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)

LCMS Report

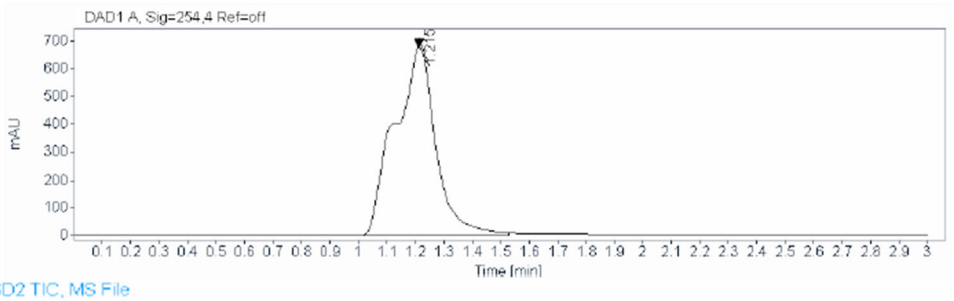
Agilent Technologies

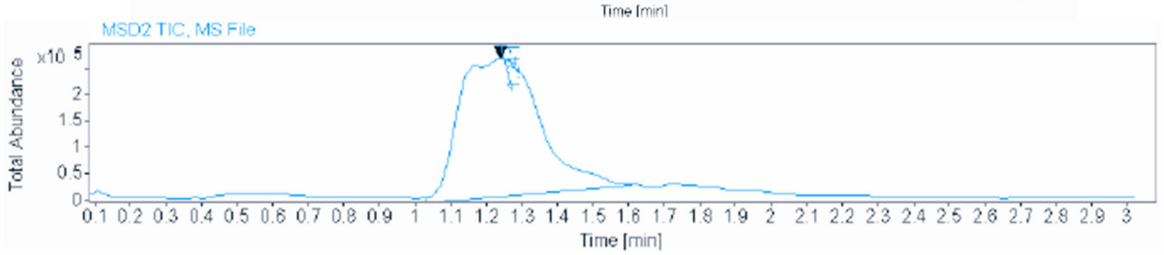
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\006-45-AJS1140-1.D		
Sample name:	AJS1140-1		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	45
Injection date:	7/31/2023 1:17:58 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

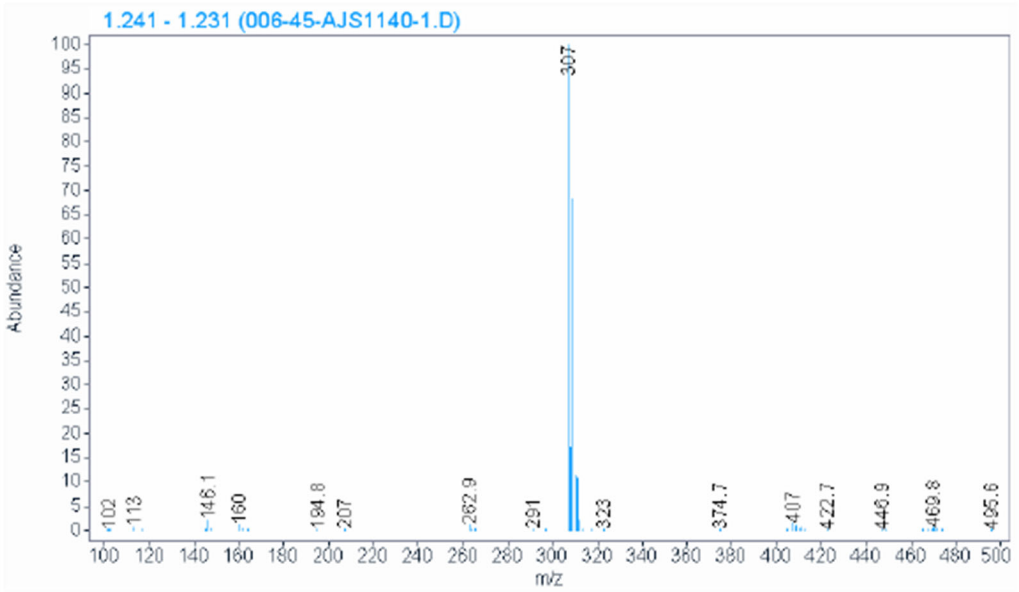


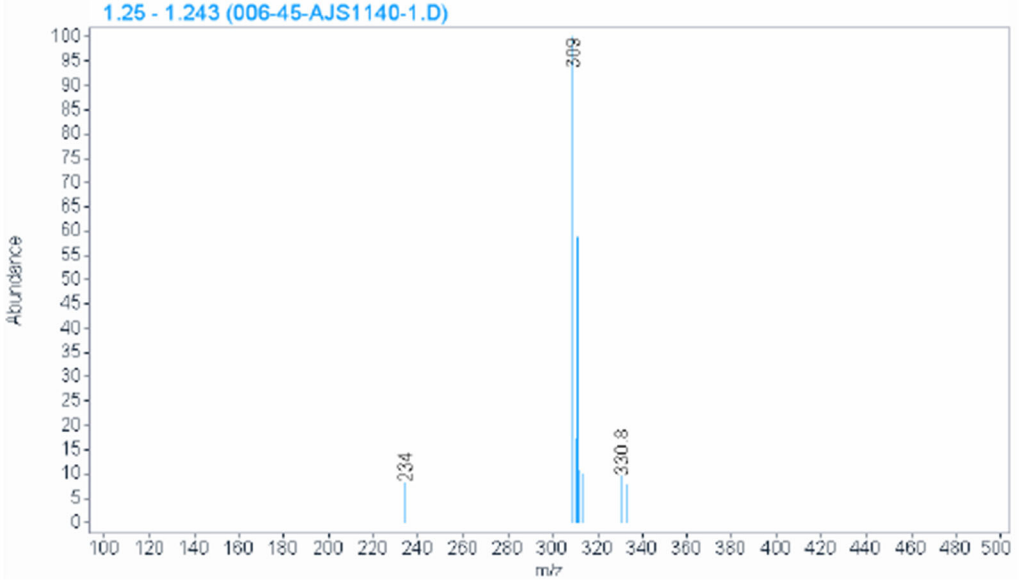
Molecular Weight: 309.147

67

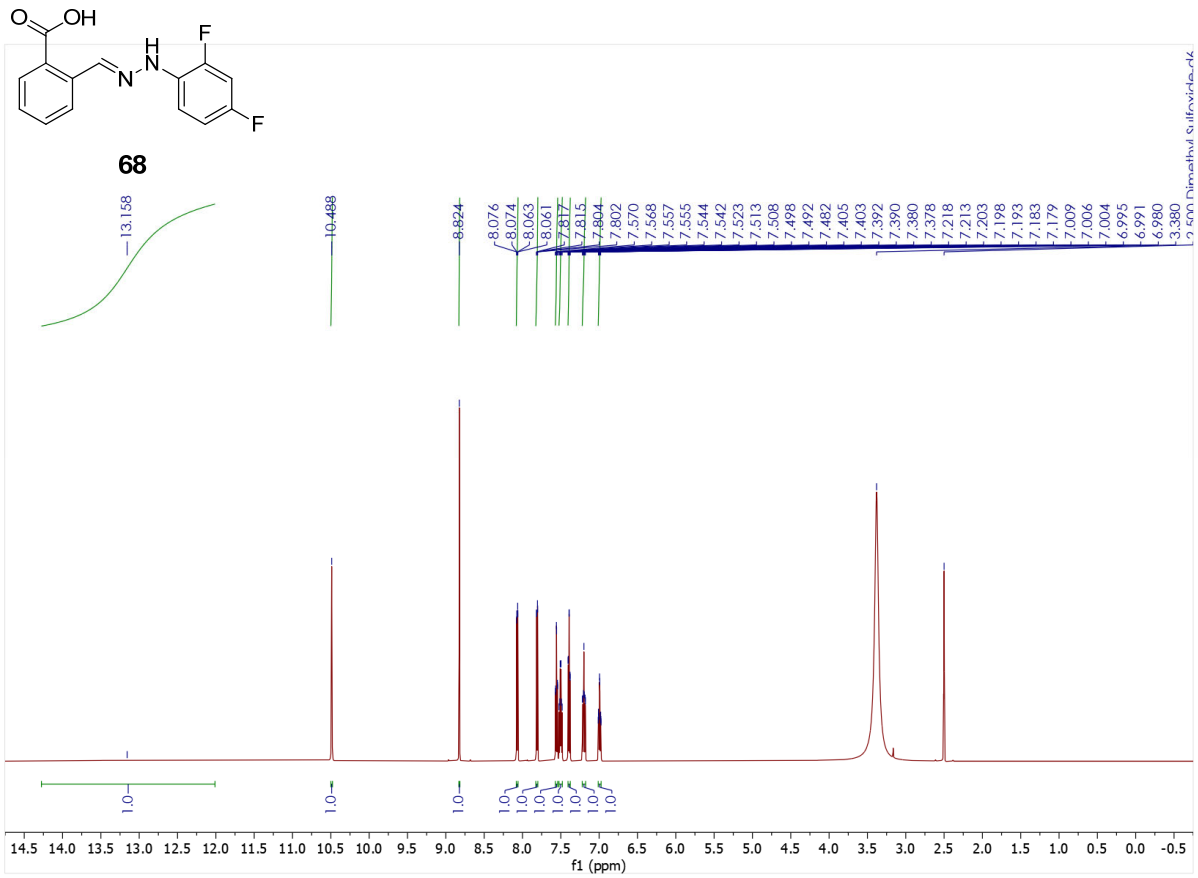




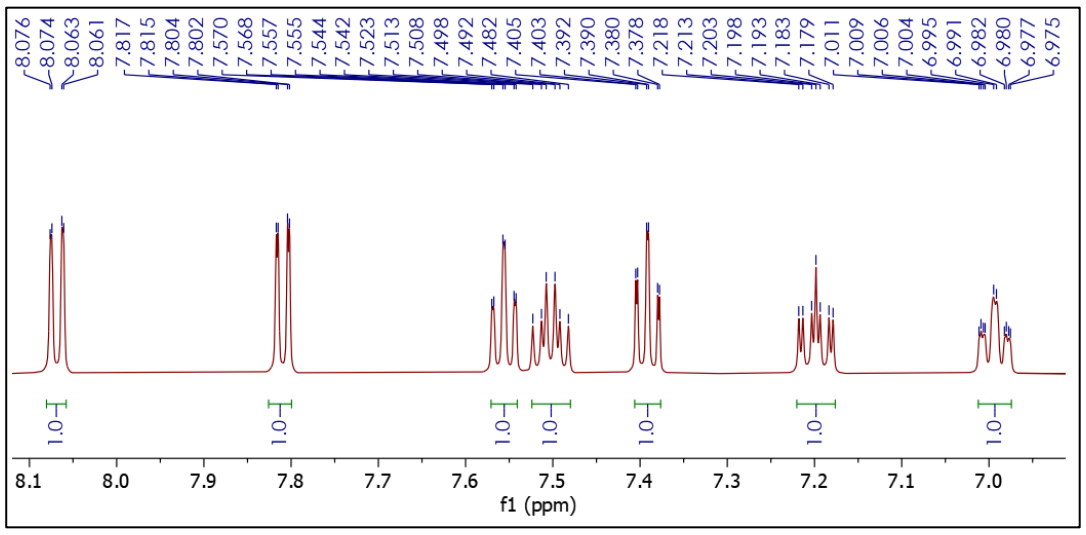


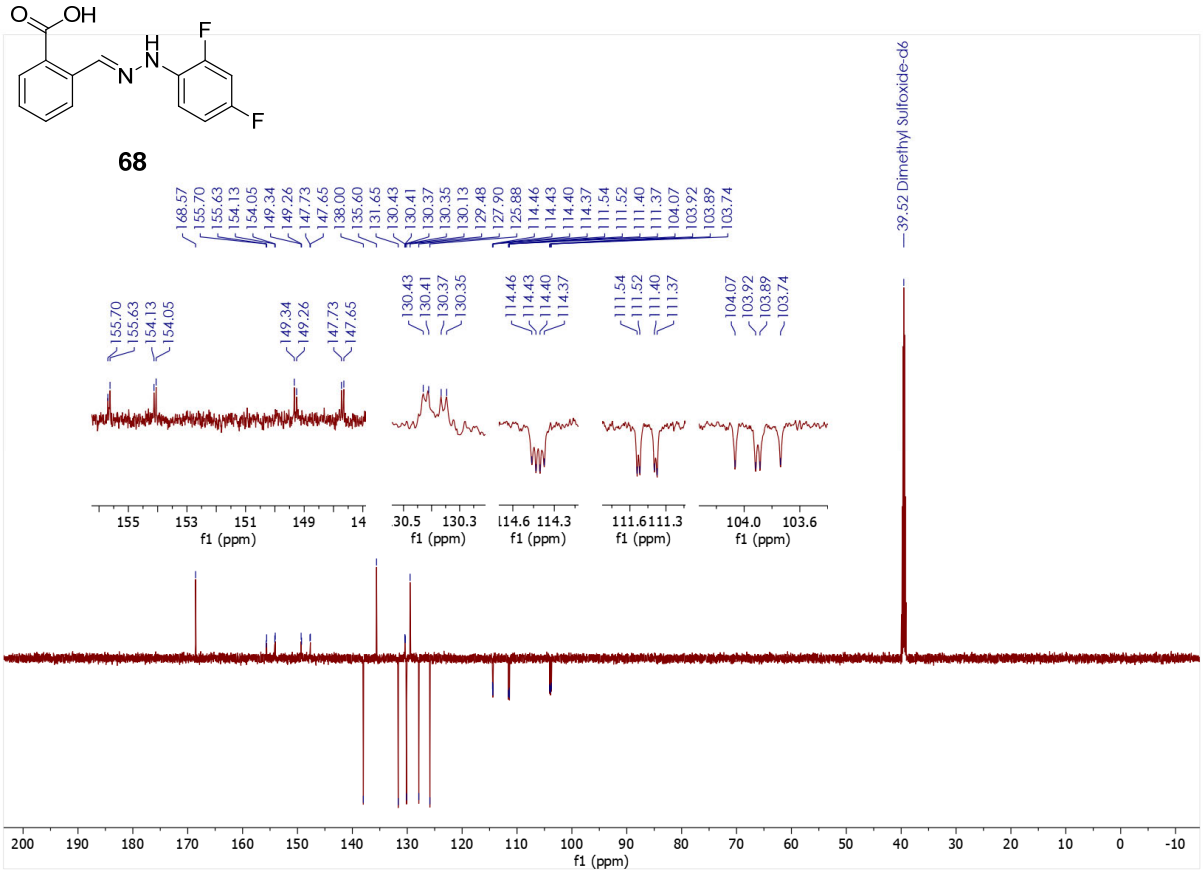


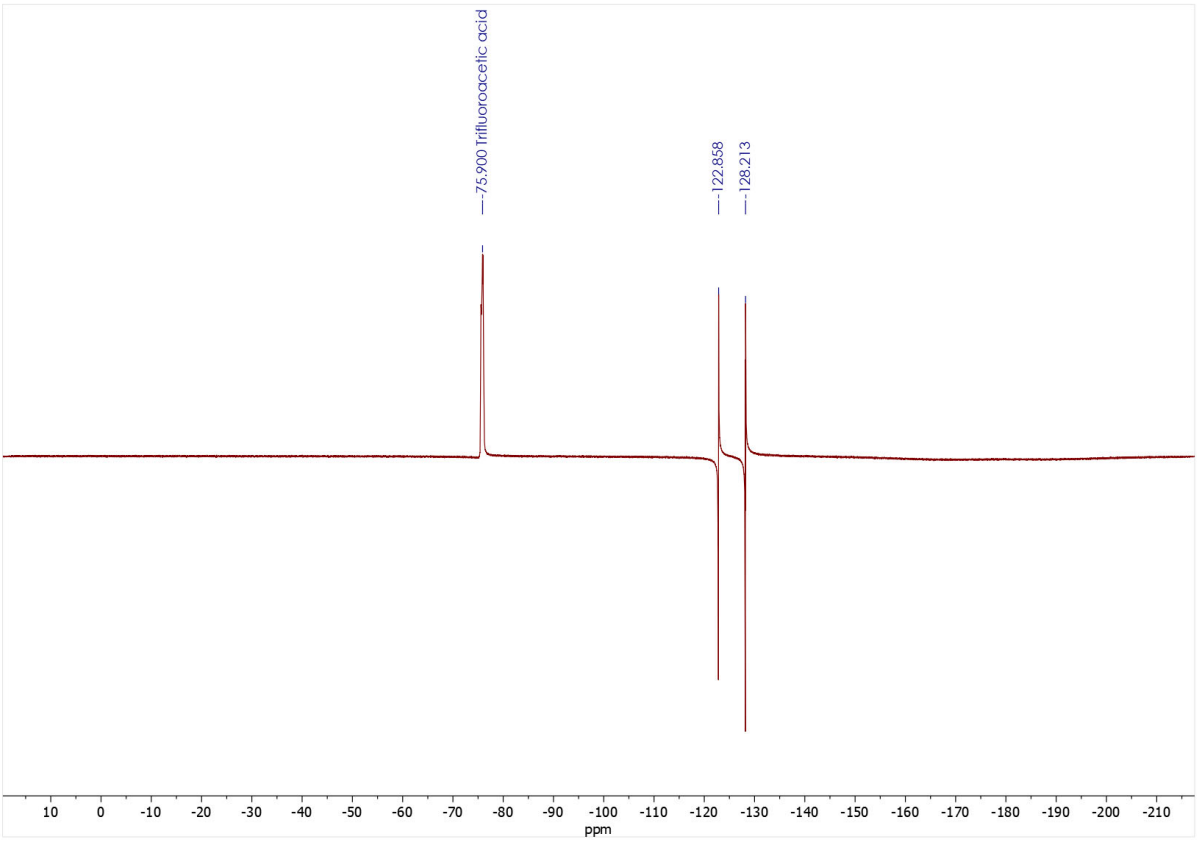
.56



Aromatic expansion of the proton spectra:



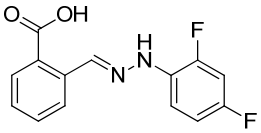

O
OH
H
N
N
F
F
68
168.57
155.70
155.63
154.13
154.05
149.34
149.26
147.73
147.65
138.00
135.60
131.65
130.43
130.41
130.37
130.35
130.13
129.48
127.90
125.88
114.46
114.43
114.40
114.37
111.54
111.52
111.40
111.37
104.07
103.92
103.89
103.74
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)


-75.900 Trifluoroacetic acid
-122.858
-128.213
ppm

LCMS Report

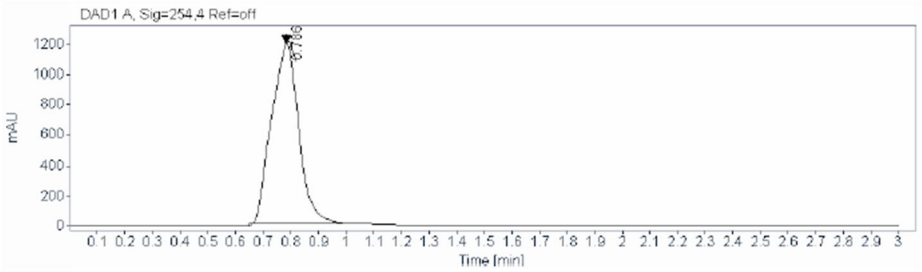
Agilent Technologies

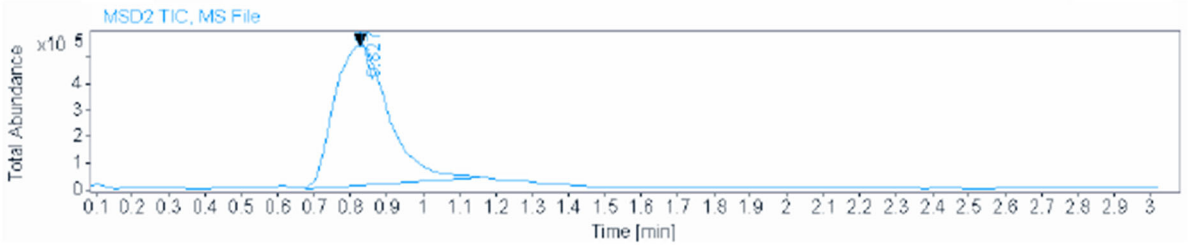
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\007-46-AJS1140-2.D		
Sample name:	AJS1140-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	46
Injection date:	7/31/2023 1:22:39 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	6/17/2024 4:15:11 PM		

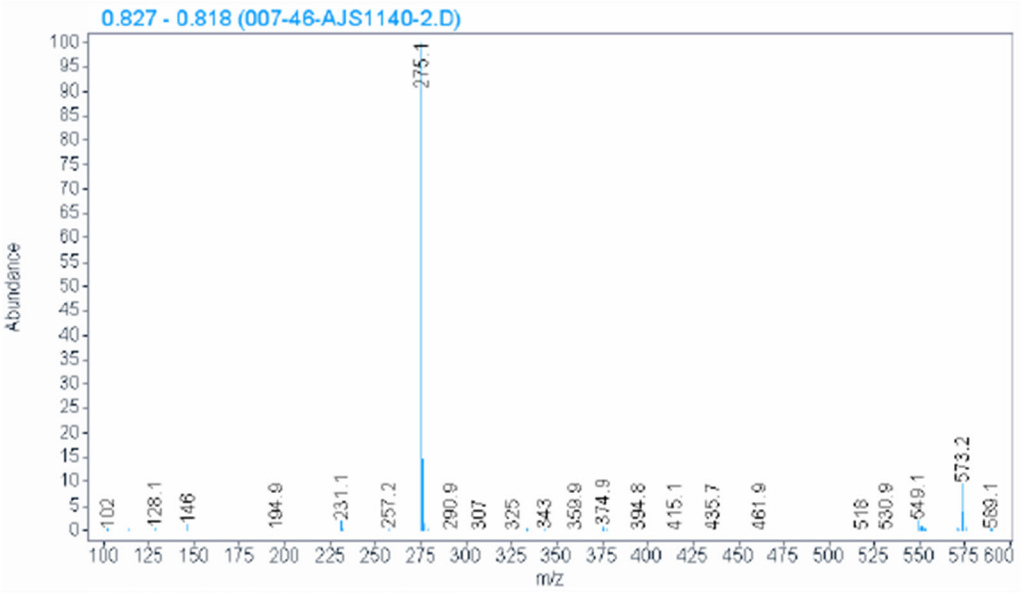


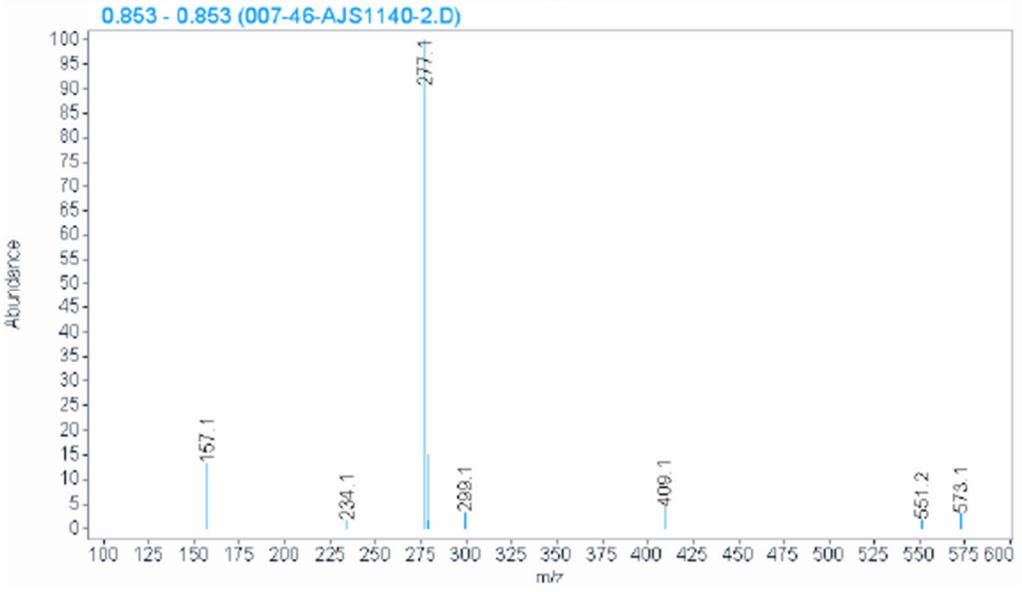
Molecular Weight: 276.238

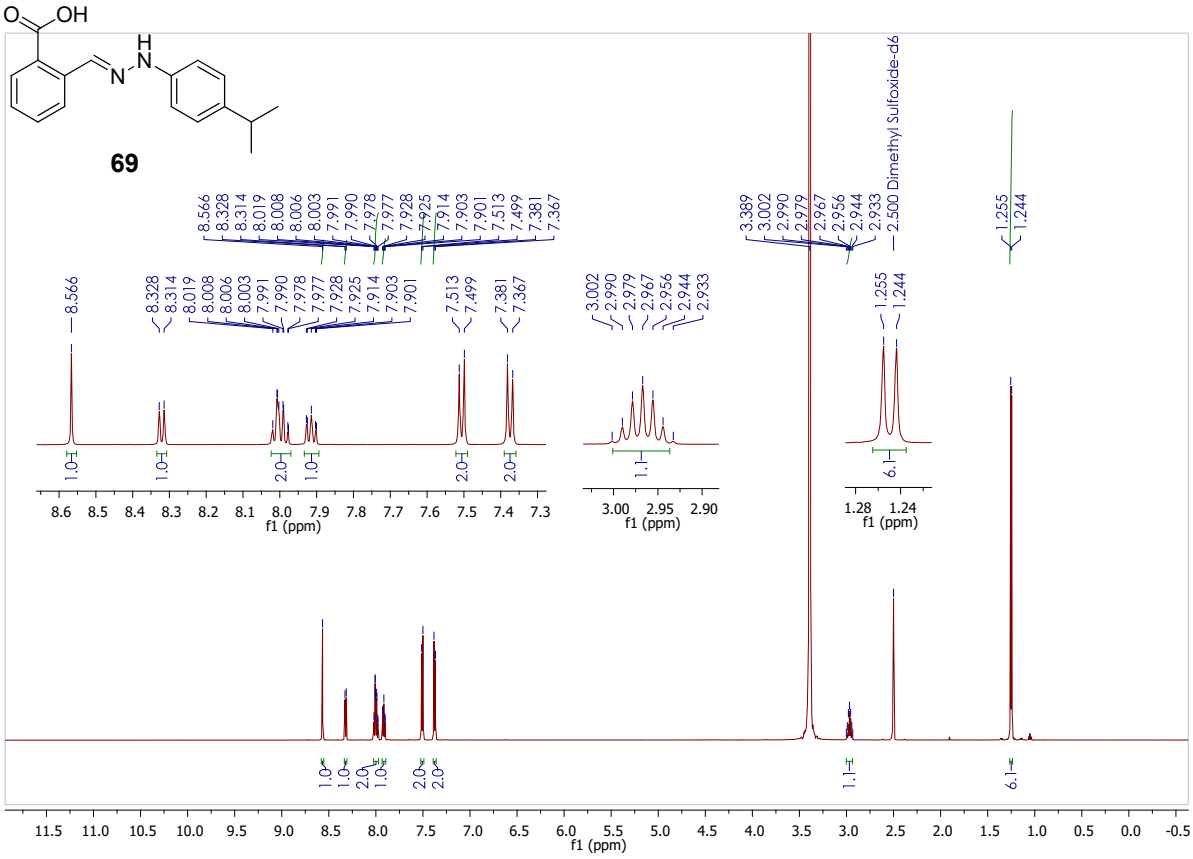
68

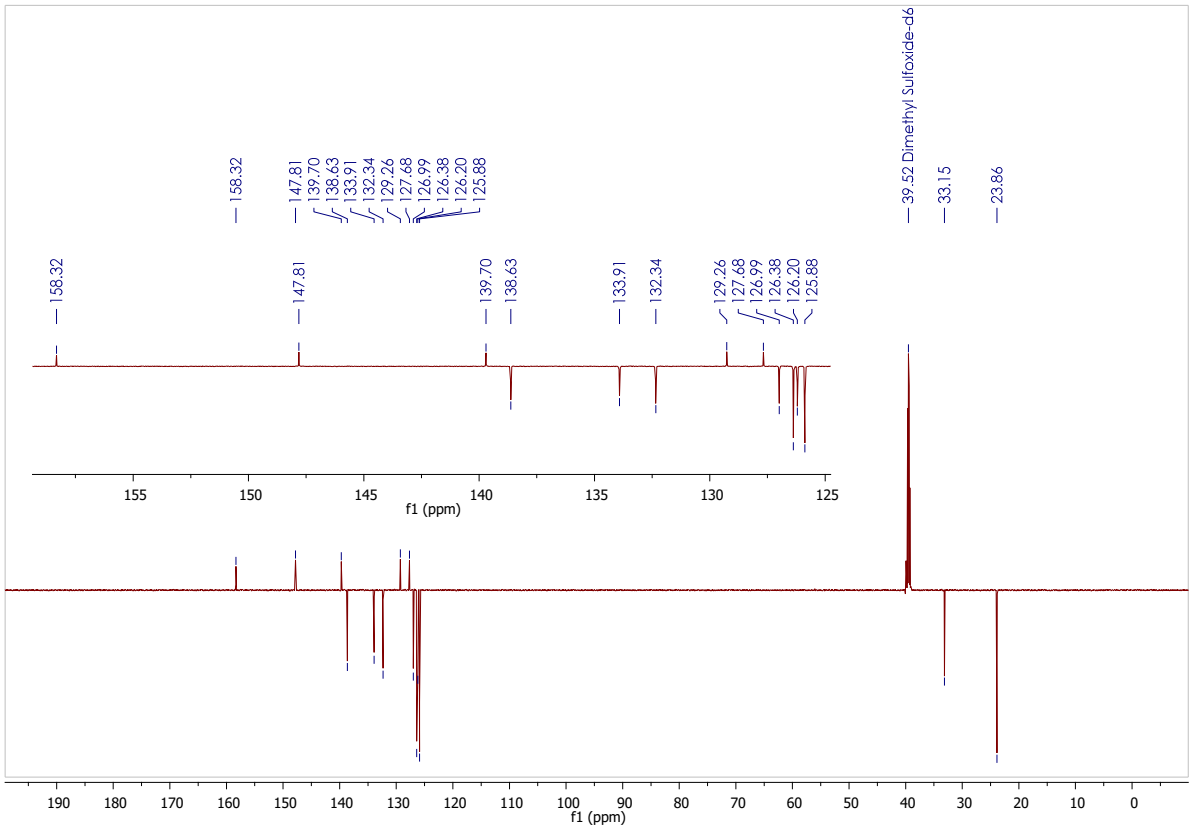








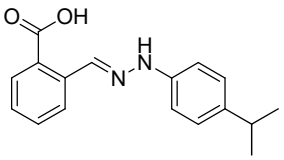

O
OH
H
N
N
69
8.566
8.328
8.314
8.019
8.008
8.006
8.003
7.991
7.990
7.978
7.977
7.928
7.925
7.914
7.903
7.901
7.513
7.499
7.381
7.367
3.389
3.002
2.990
2.979
2.967
2.956
2.944
2.933
2.500 Dimethyl Sulfoxide-d6
1.255
1.244
f1 (ppm)


158.32
147.81
139.70
138.63
133.91
132.34
129.26
127.68
126.99
126.38
126.20
125.88
39.52 Dimethyl Sulfoxide-d6
39.15
23.86
f1 (ppm)

LCMS Report

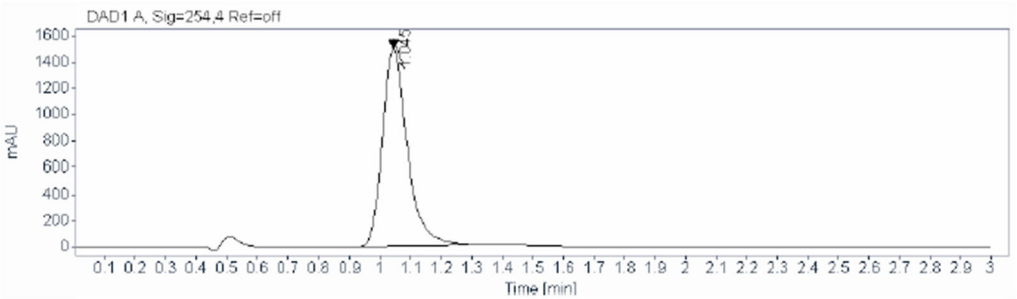
Agilent Technologies

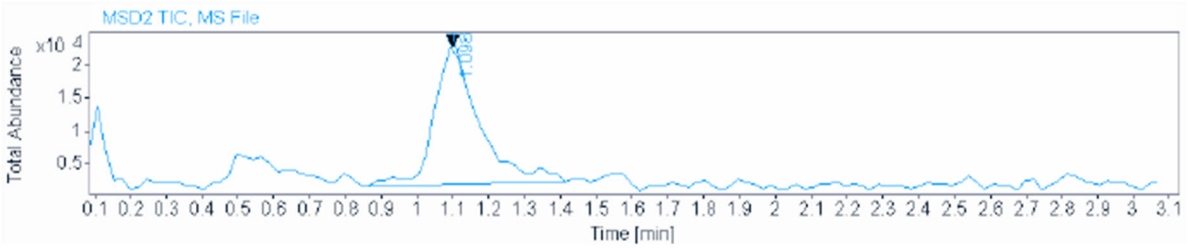
Data file:	D:\Chem32\1\Data\JRB\JRB-DATA 2022-09-13 12-15-42\006-76-JRB2095.D		
Sample name:	JRB2095		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	76
Injection date:	9/13/2022 12:41:15 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

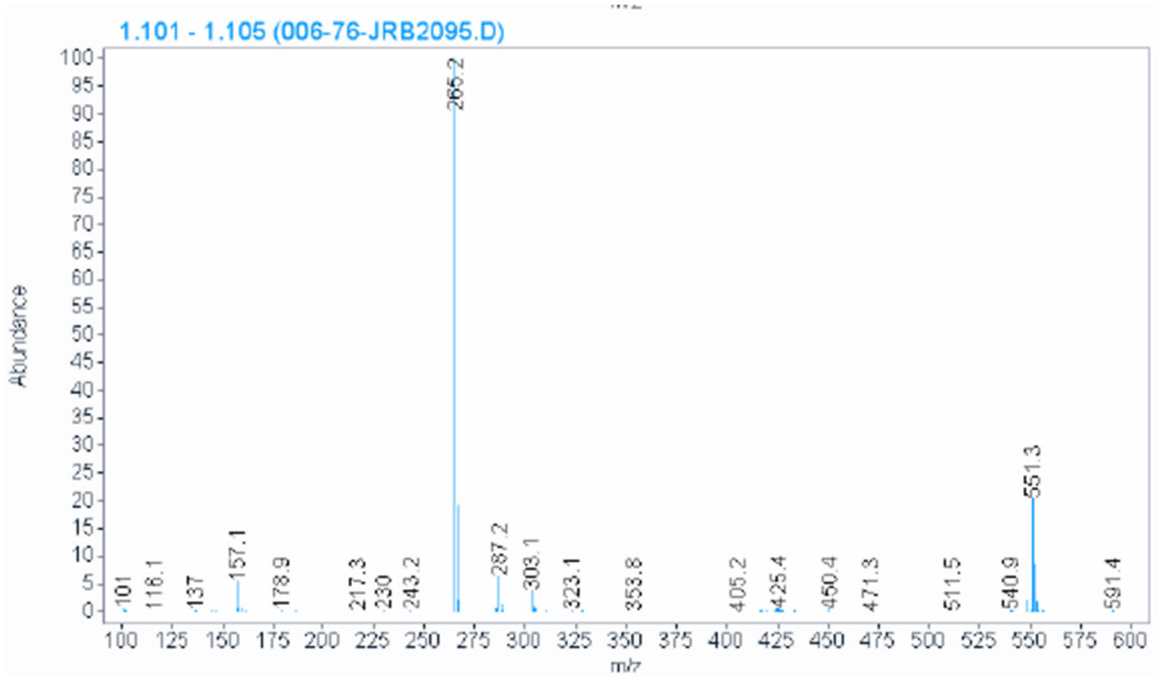


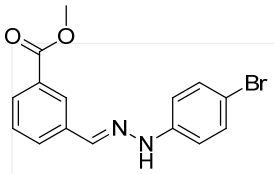
Molecular Weight: 282.337

69

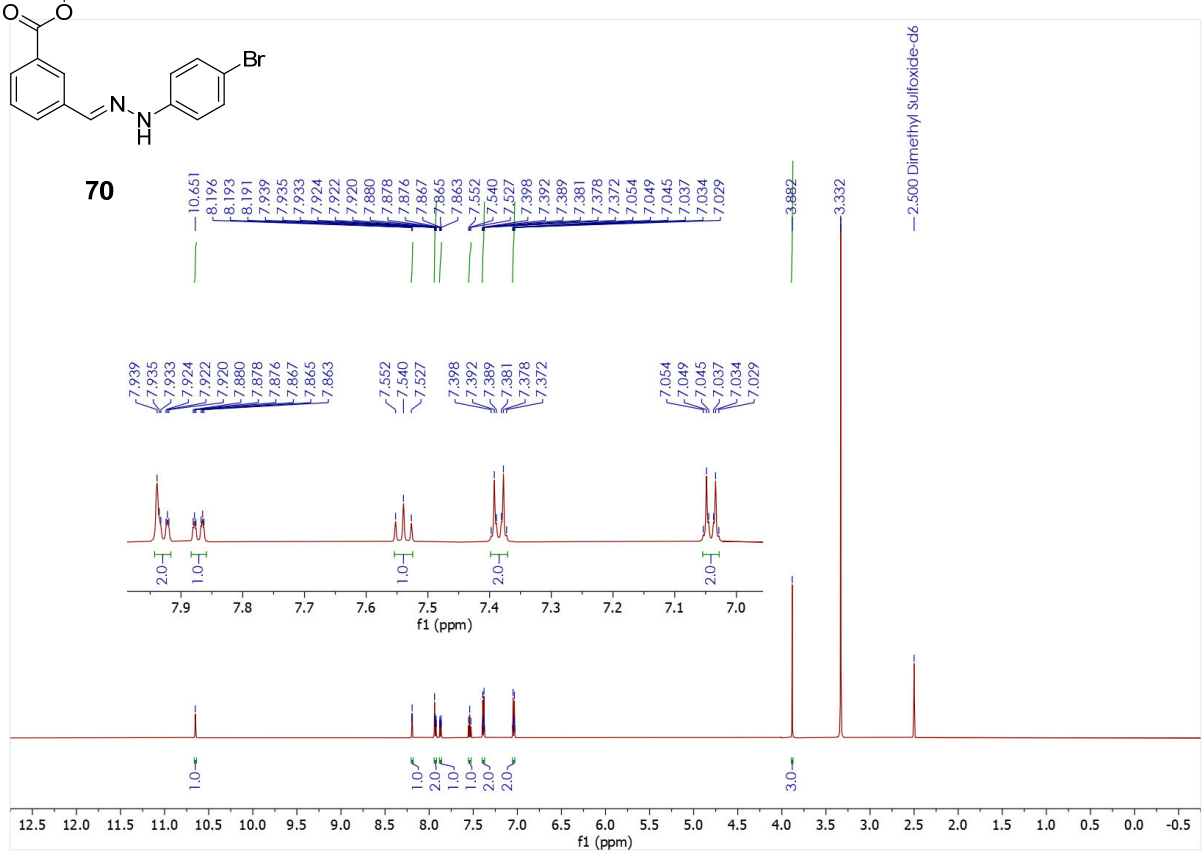


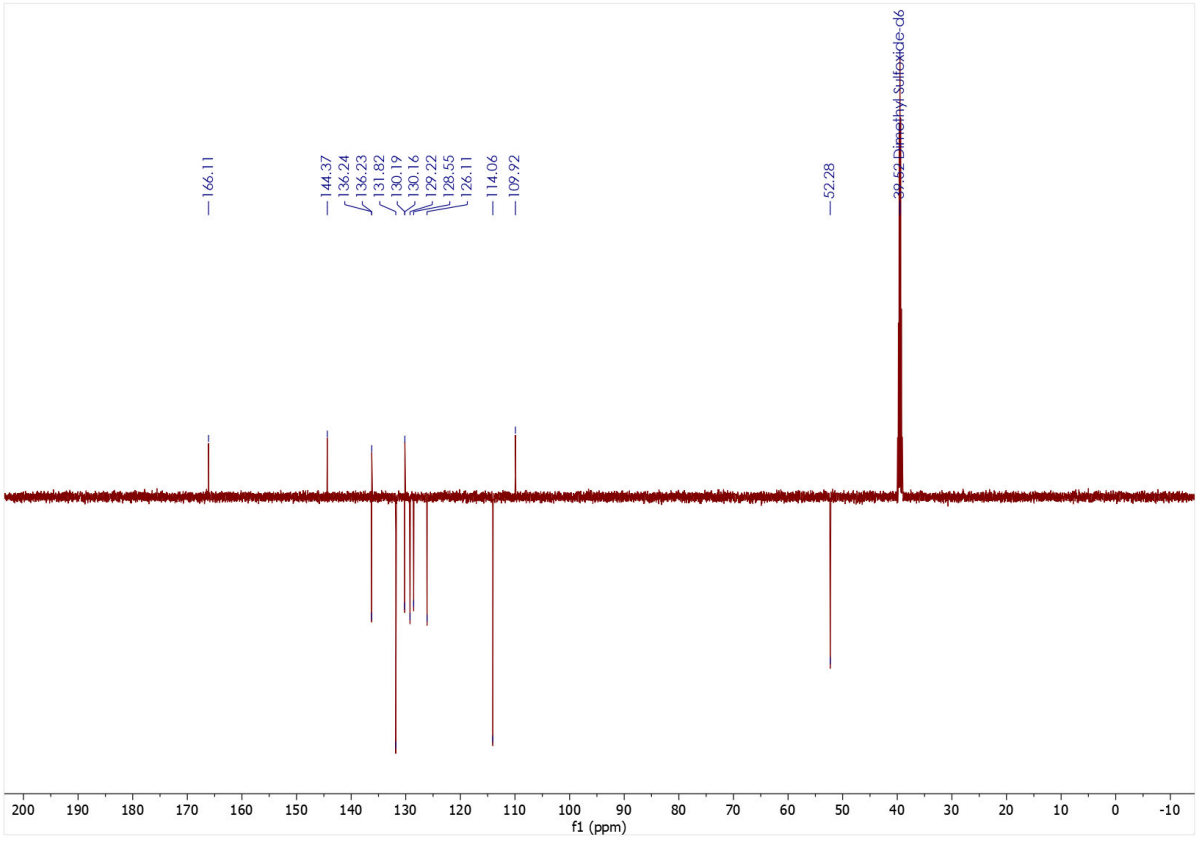





O
O
Br
N
N
H

70

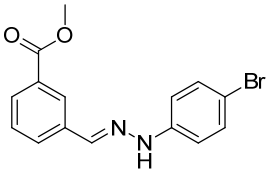

10.651
8.196
8.193
8.191
7.939
7.935
7.933
7.924
7.922
7.920
7.880
7.878
7.876
7.867
7.865
7.863
7.552
7.540
7.527
7.398
7.392
7.389
7.381
7.378
7.372
7.054
7.049
7.045
7.037
7.034
7.029
3.882
3.332
2.500 Dimethyl Sulfoxide-d6
2.0
1.0
1.0
2.0
2.0
7.9
7.8
7.7
7.6
7.5
7.4
7.3
7.2
7.1
7.0
f1 (ppm)
1.0
1.0
2.0
1.0
1.0
2.0
2.0
3.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
f1 (ppm)


166.11
144.37
136.24
136.23
131.82
130.19
130.16
129.22
128.55
126.11
114.06
109.92
52.28
39.52 Dimethyl Sulfoxide-d6
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
f1 (ppm)

LCMS Report

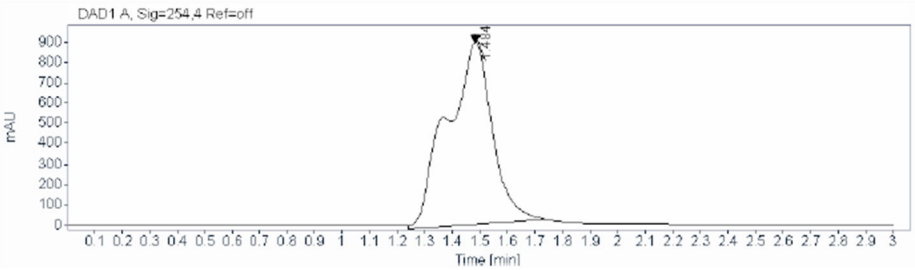
Agilent Technologies

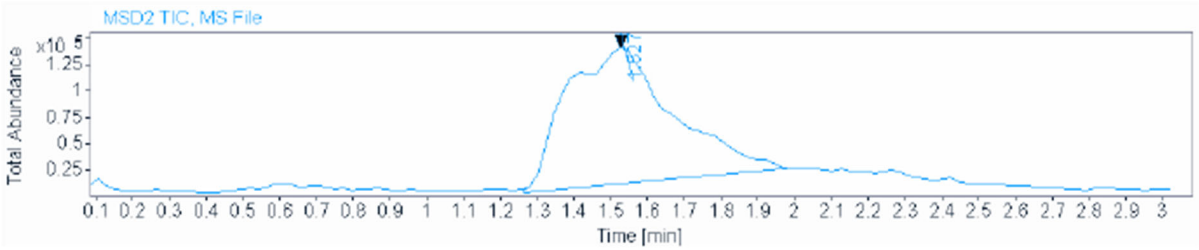
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\013-52-AJS1136-1.D		
Sample name:	AJS1136-1		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	52
Injection date:	7/31/2023 1:50:52 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

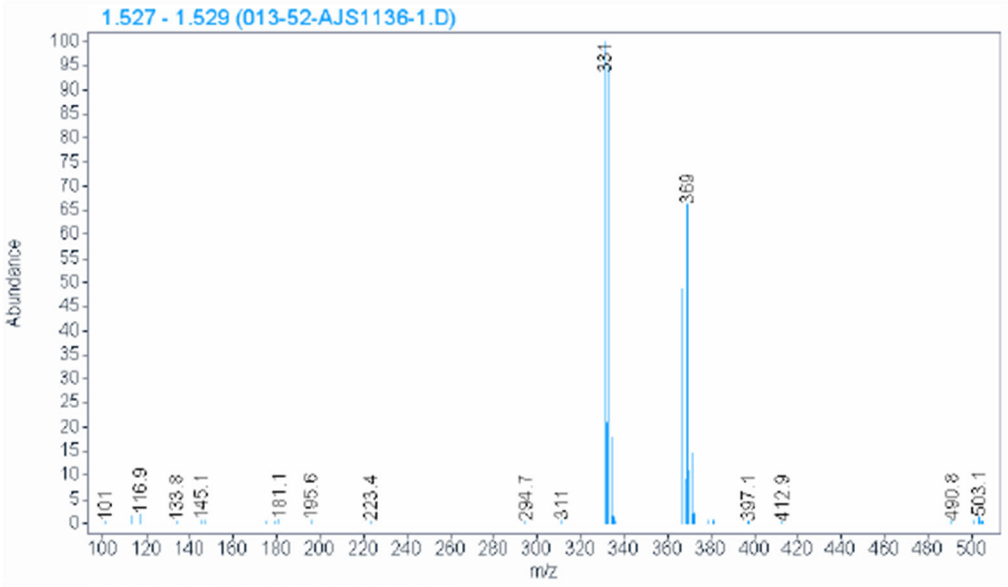


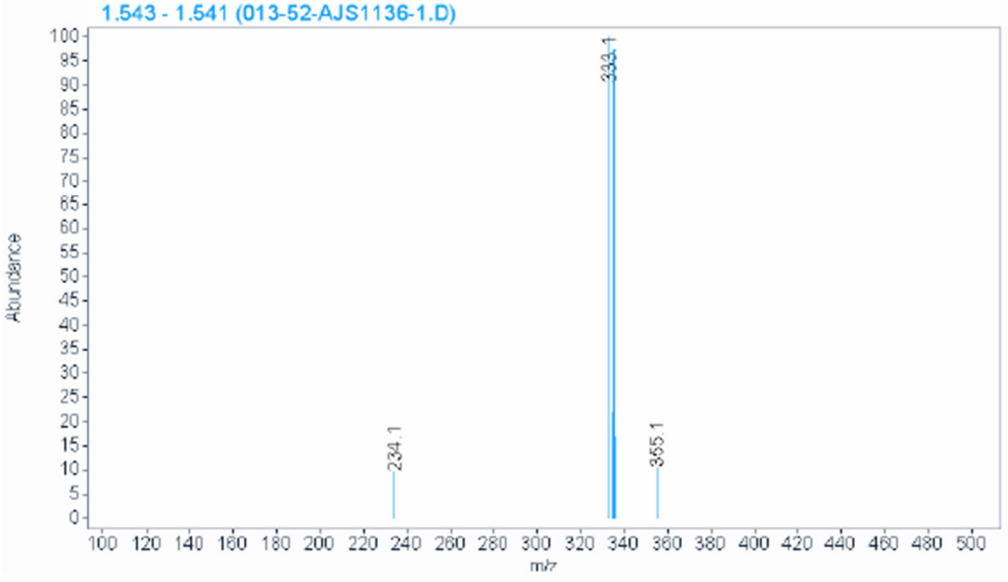
Molecular Weight: 333.180

70

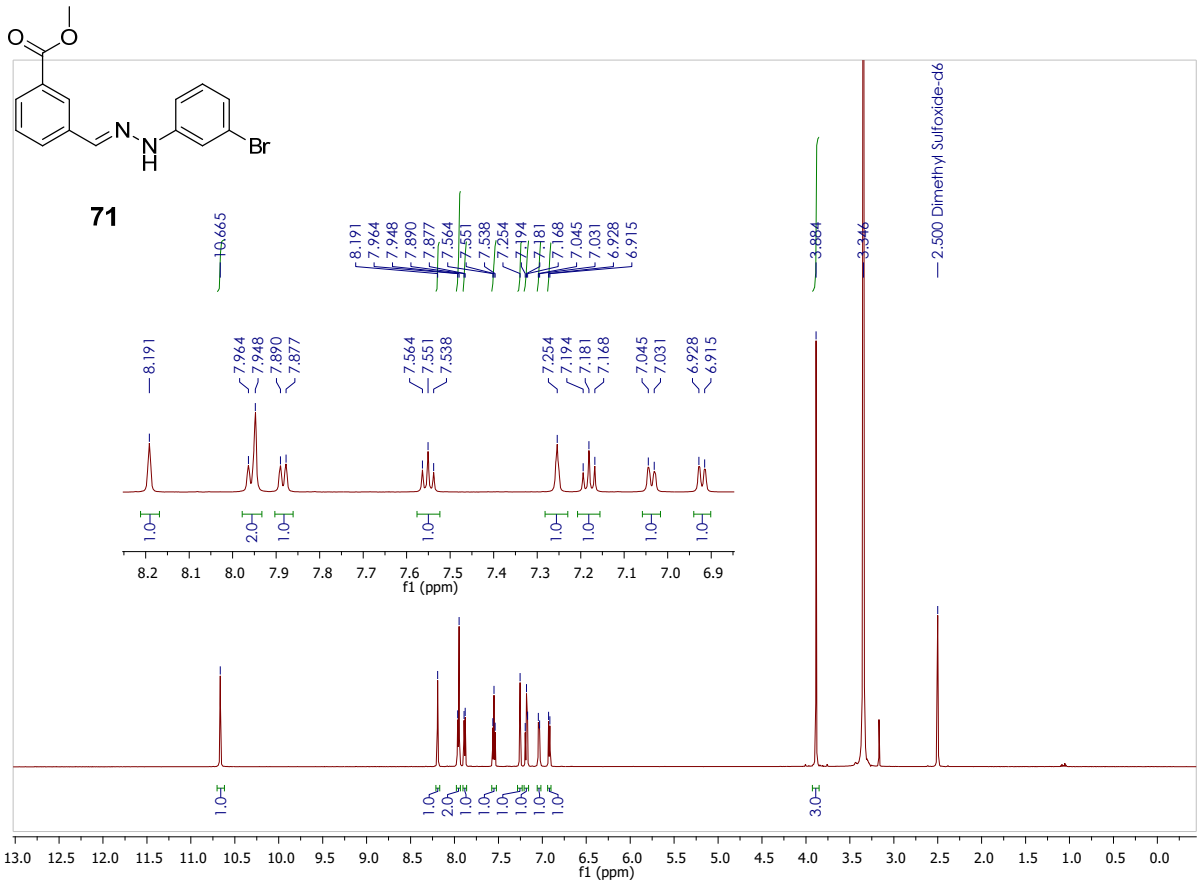


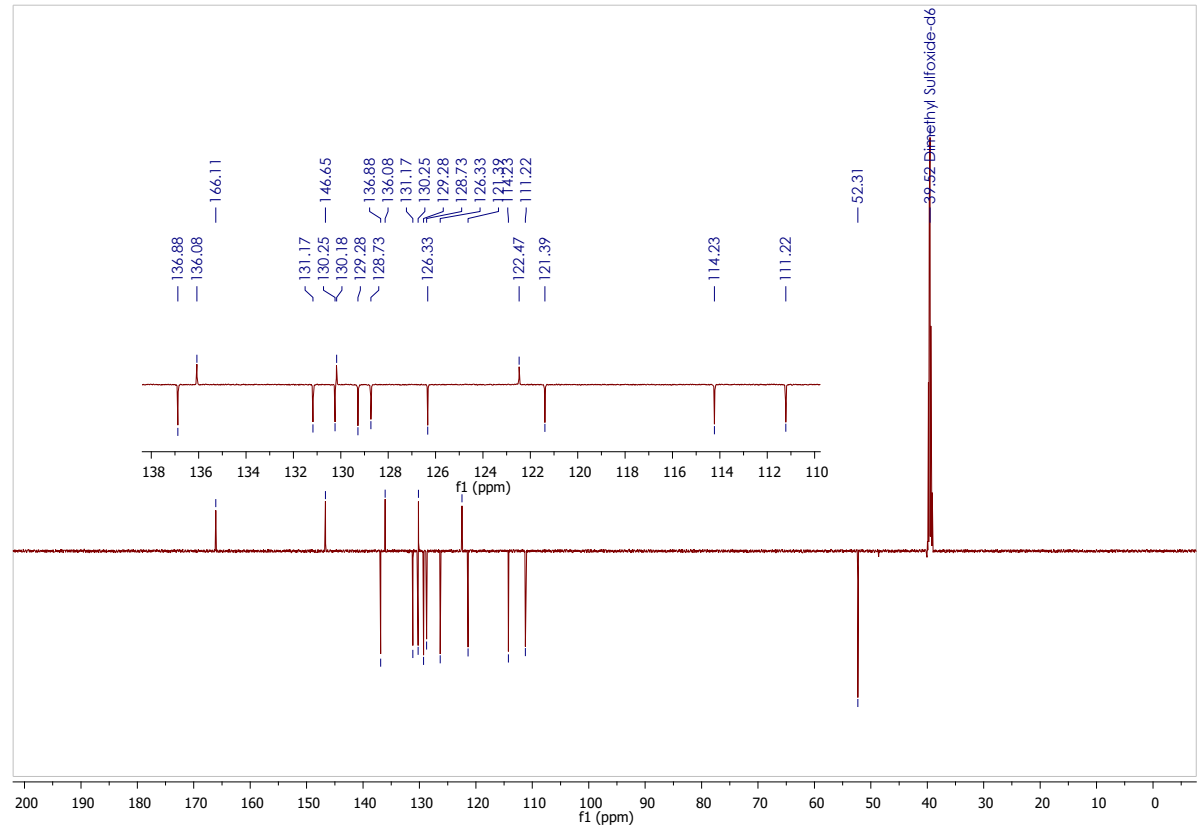






3

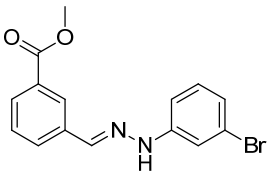

71
Br
10.665
8.191
7.964
7.948
7.890
7.877
7.564
7.551
7.538
7.254
7.194
7.181
7.168
7.045
7.031
6.928
6.915
3.884
3.346
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.11
146.65
136.88
136.08
131.17
130.25
129.28
128.73
126.33
122.47
121.39
114.23
111.22
52.31
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

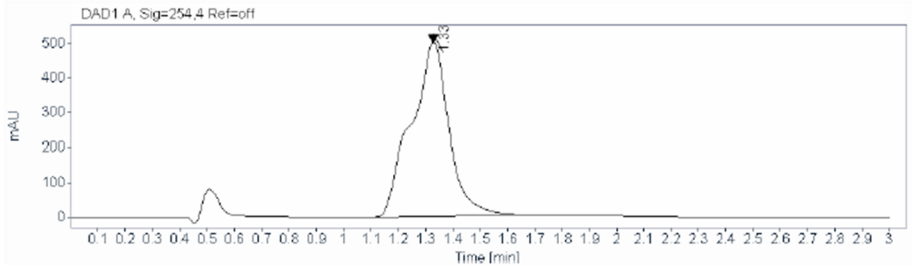
Agilent Technologies

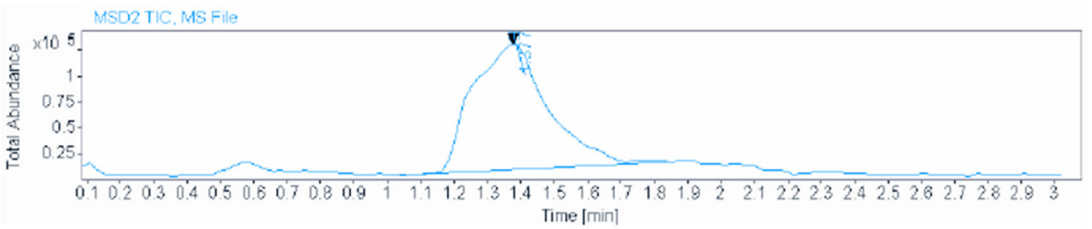
Data file:	D:\Chem32\1\Data\JEN\JRB3150 3151 2023-04-28 10-07-04\002-95-JRB3150-1.D		
Sample name:	JRB3150-1		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	95
Injection date:	4/28/2023 10:13:29 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

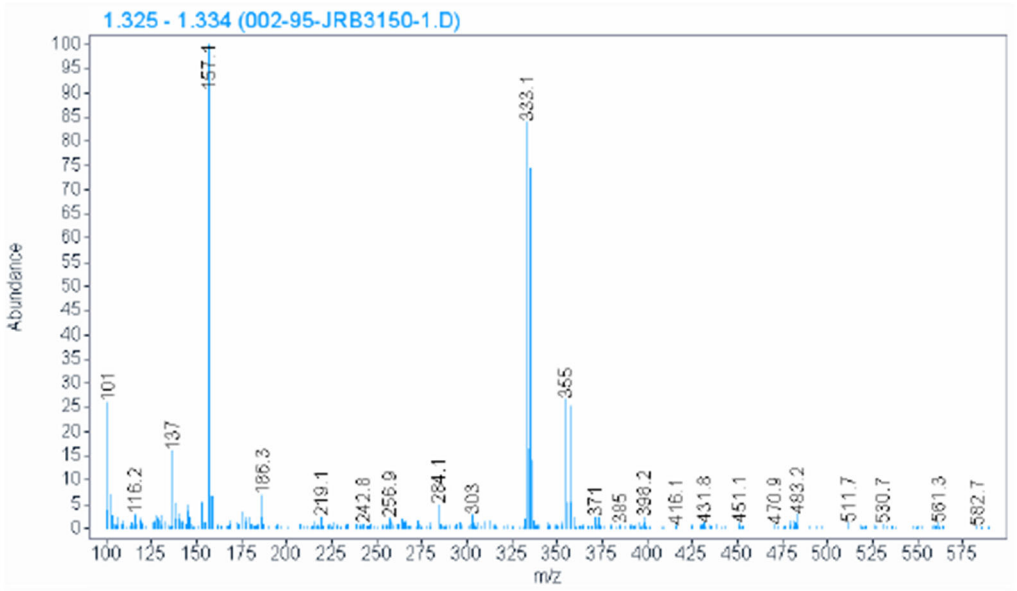


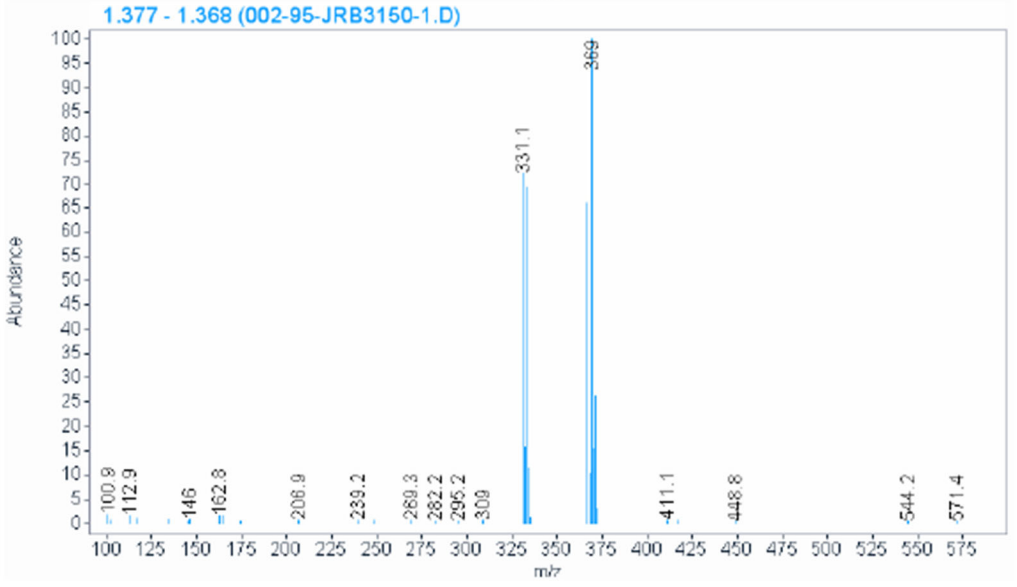
Molecular Weight: 333.180

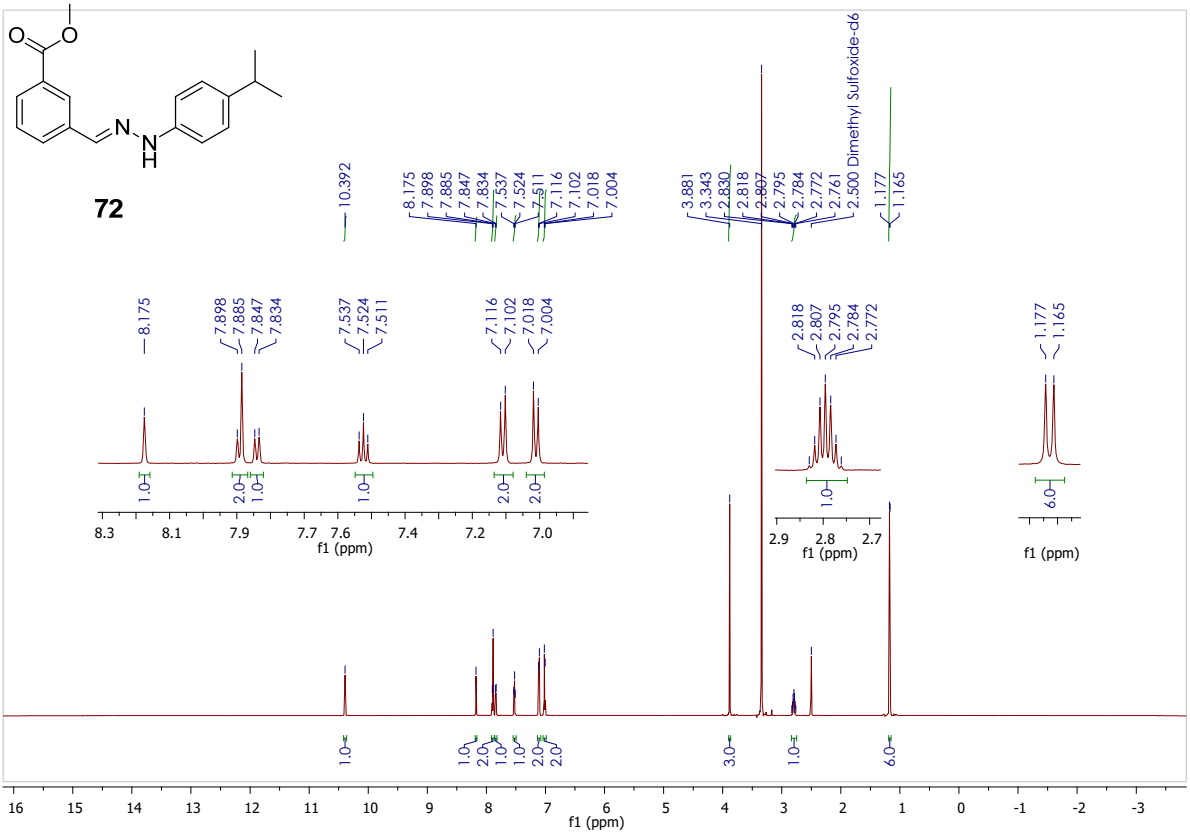
71

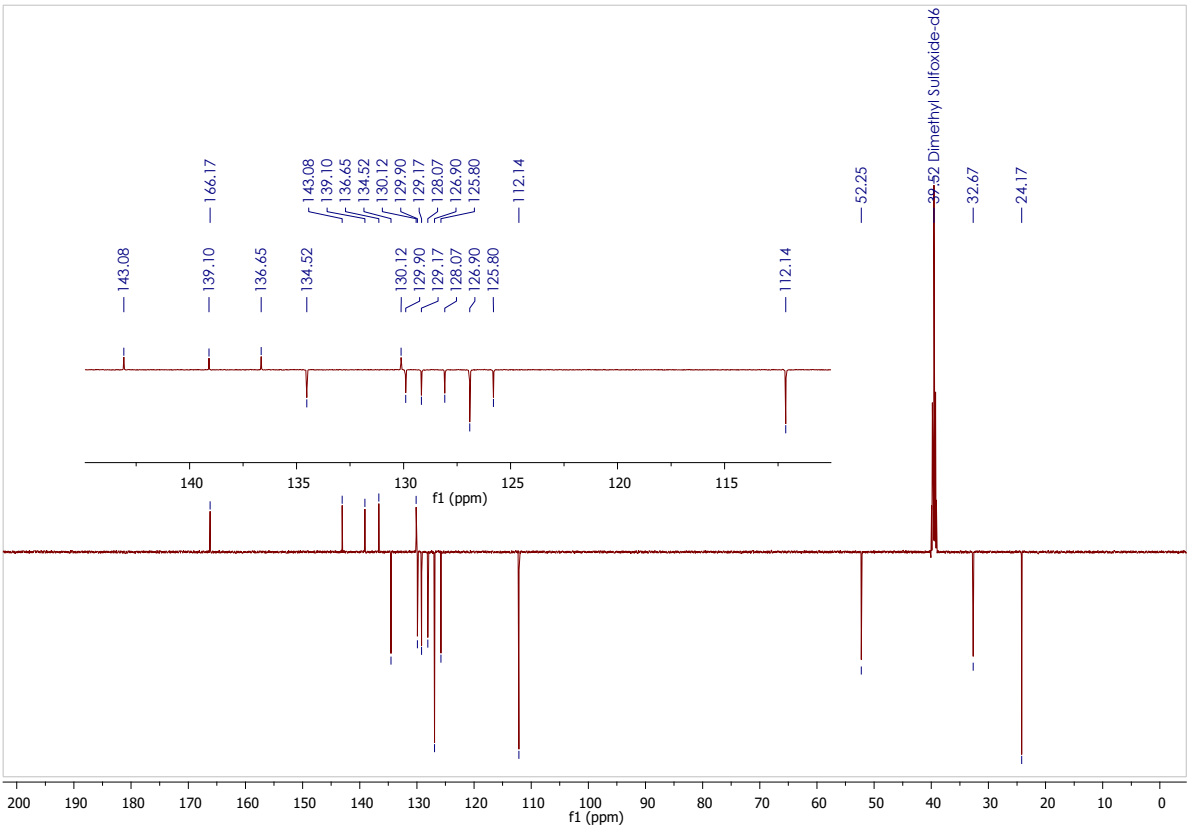








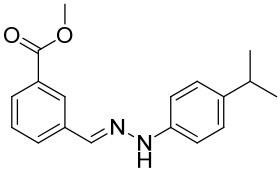

72
10.392
8.175
7.898
7.885
7.847
7.834
7.537
7.524
7.511
7.116
7.102
7.018
7.004
3.881
3.343
2.830
2.818
2.807
2.795
2.784
2.772
2.761
2.500 Dimethyl Sulfoxide-d6
1.177
1.165
f1 (ppm)


143.08
139.10
136.65
134.52
130.12
129.90
129.17
128.07
126.90
125.80
112.14
166.17
52.25
39.52 Dimethyl Sulfoxide-d6
32.67
24.17
f1 (ppm)

LCMS Report

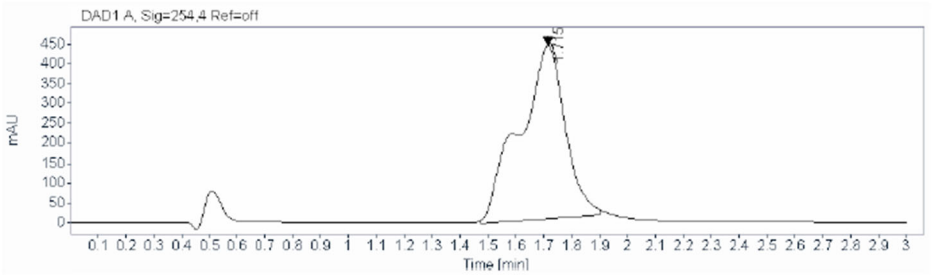
Agilent Technologies

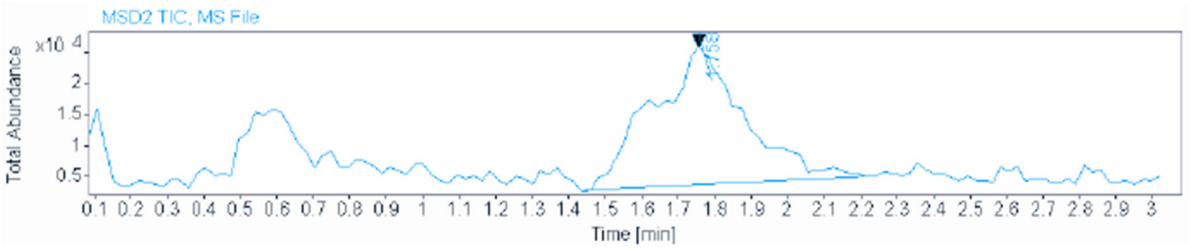
Data file:	D:\Chem32\1\Data\JEN\JRB3150 3151 2023-04-28 10-07-04\003-94-JRB3150-2.D		
Sample name:	JRB3150-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	94
Injection date:	4/28/2023 10:18:07 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

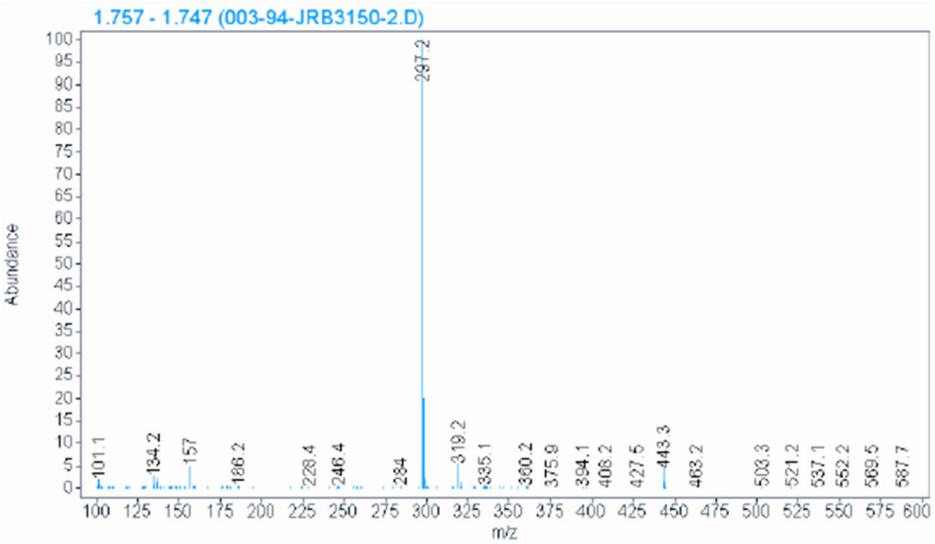


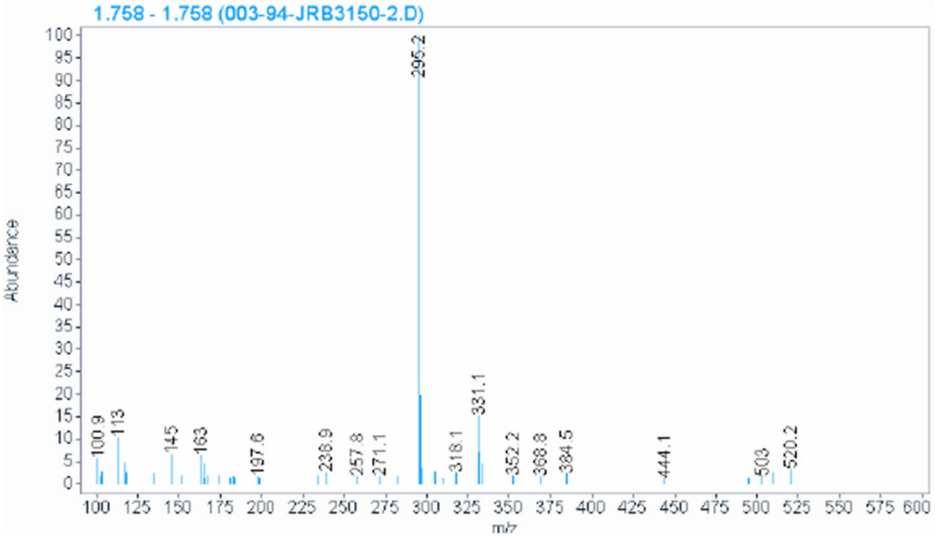
Molecular Weight: 296.364

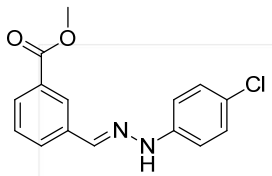
72



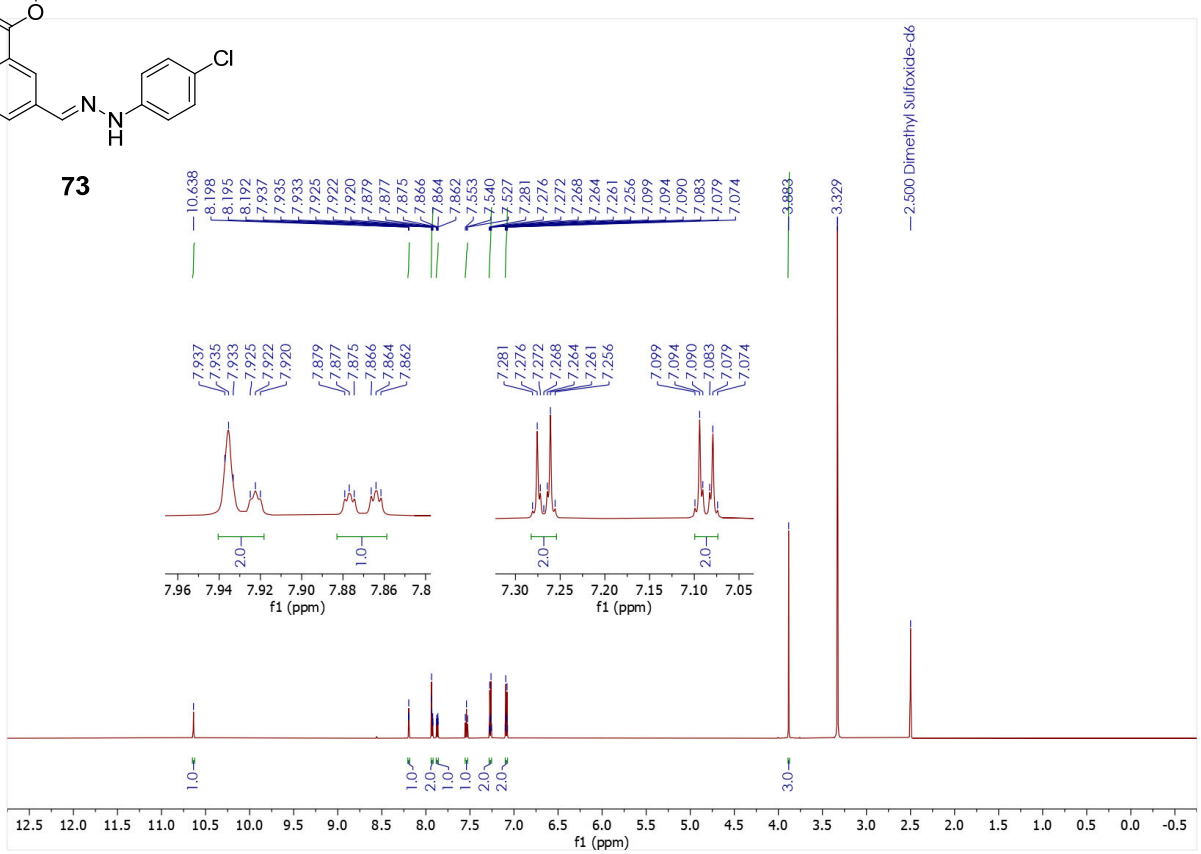


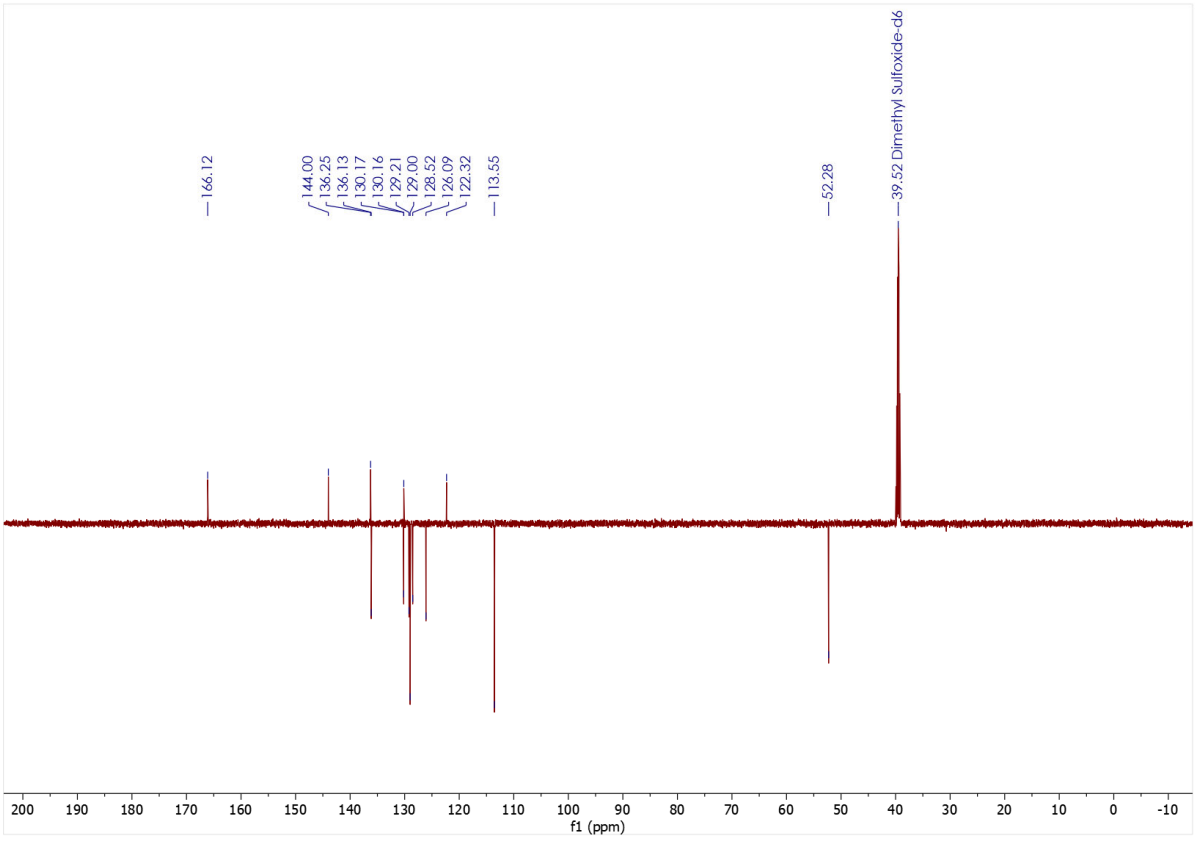






73

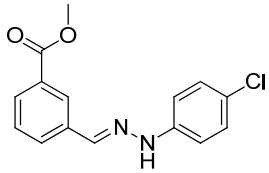

10.638
8.198
8.195
8.192
7.937
7.935
7.933
7.925
7.922
7.920
7.879
7.877
7.875
7.866
7.864
7.862
7.553
7.540
7.527
7.281
7.276
7.272
7.268
7.264
7.261
7.256
7.099
7.094
7.090
7.083
7.079
7.074
3.883
3.329
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.12
144.00
136.25
136.13
130.17
130.16
129.21
129.00
128.52
126.09
122.32
113.55
52.28
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

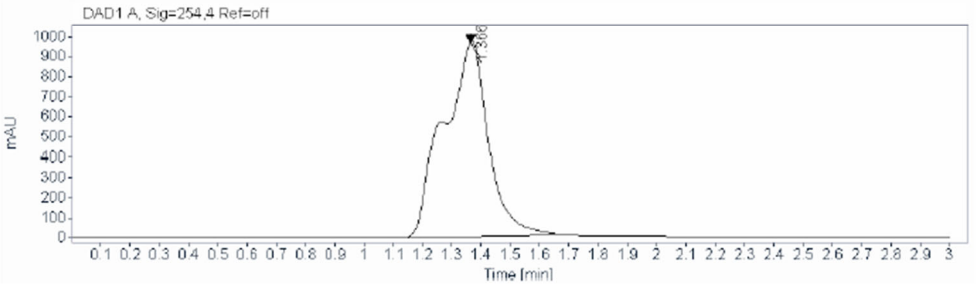
Agilent Technologies

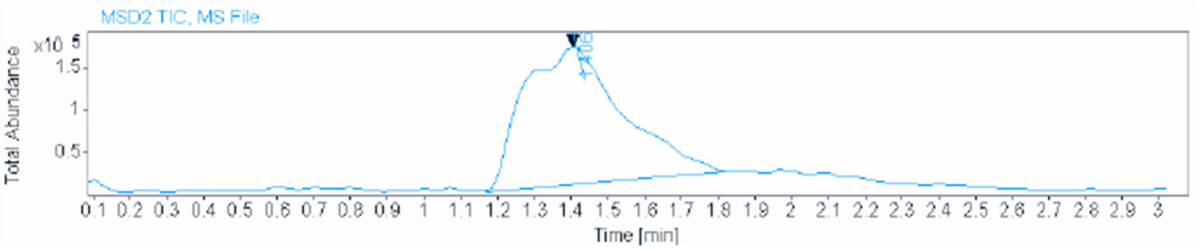
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\011-50-AJS1135-2.D		
Sample name:	AJS1135-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	50
Injection date:	7/31/2023 1:41:34 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

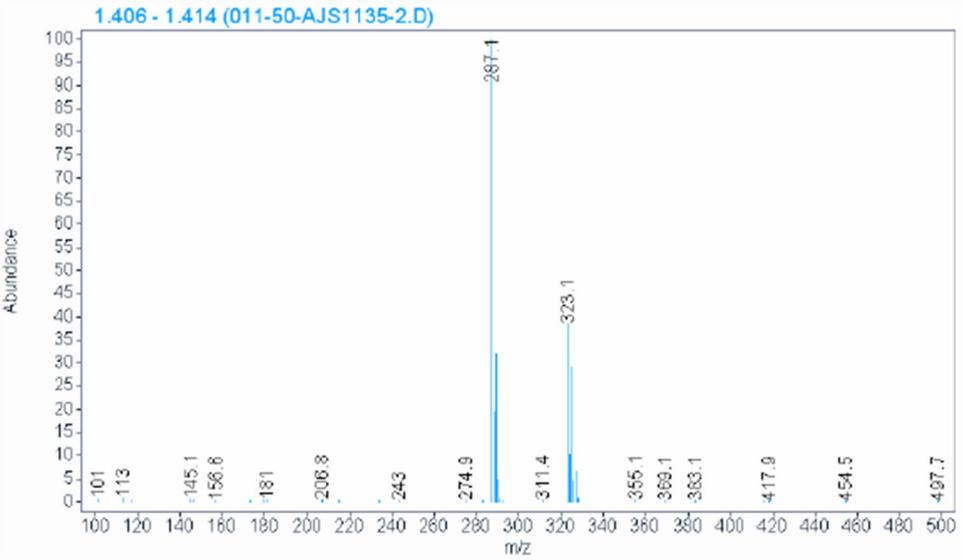


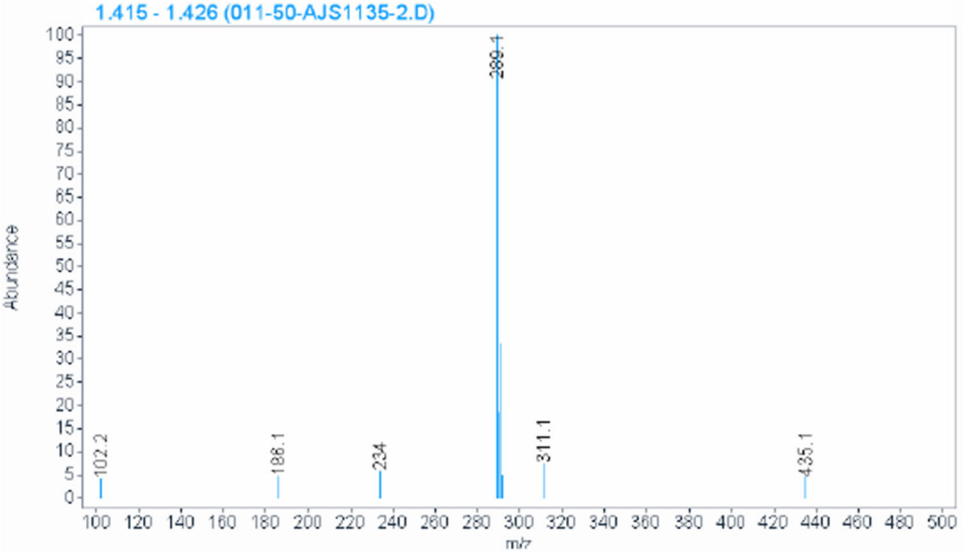
Molecular Weight: 288.729

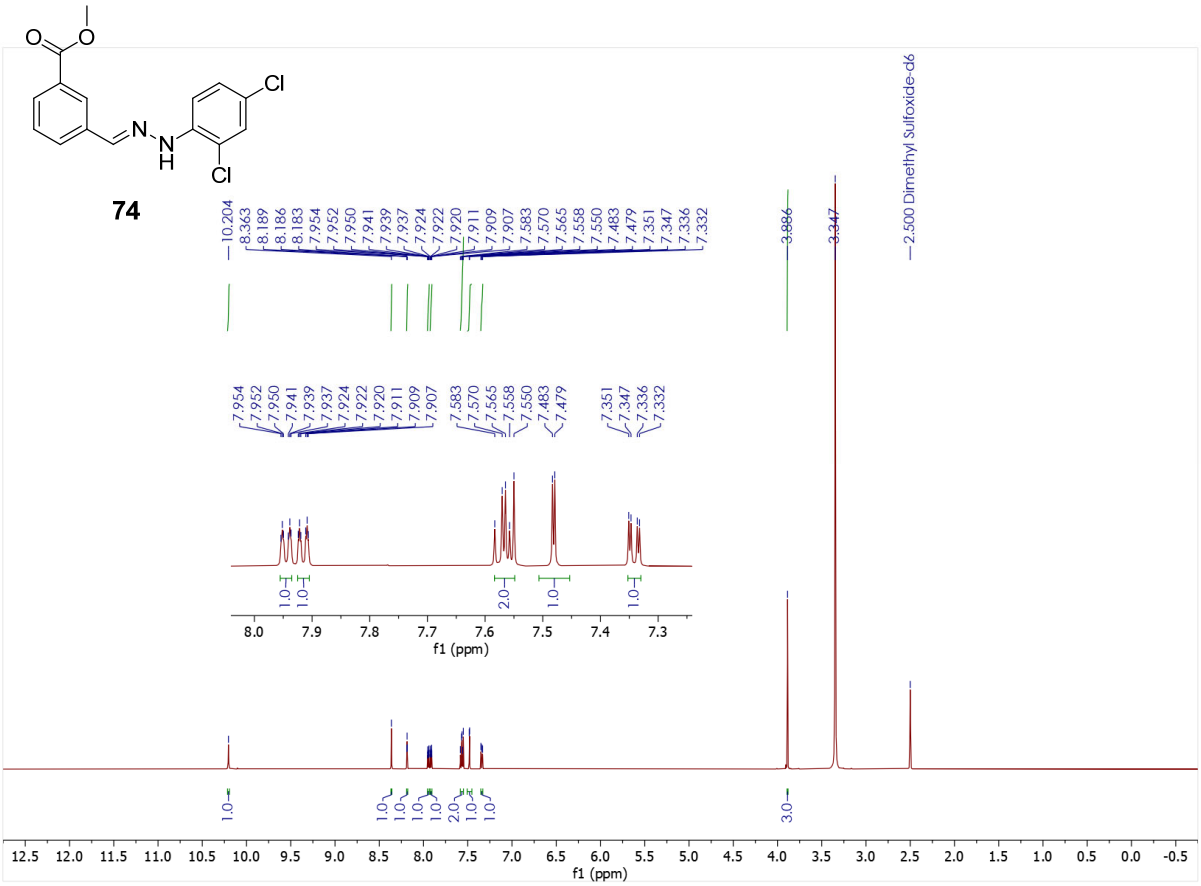
73

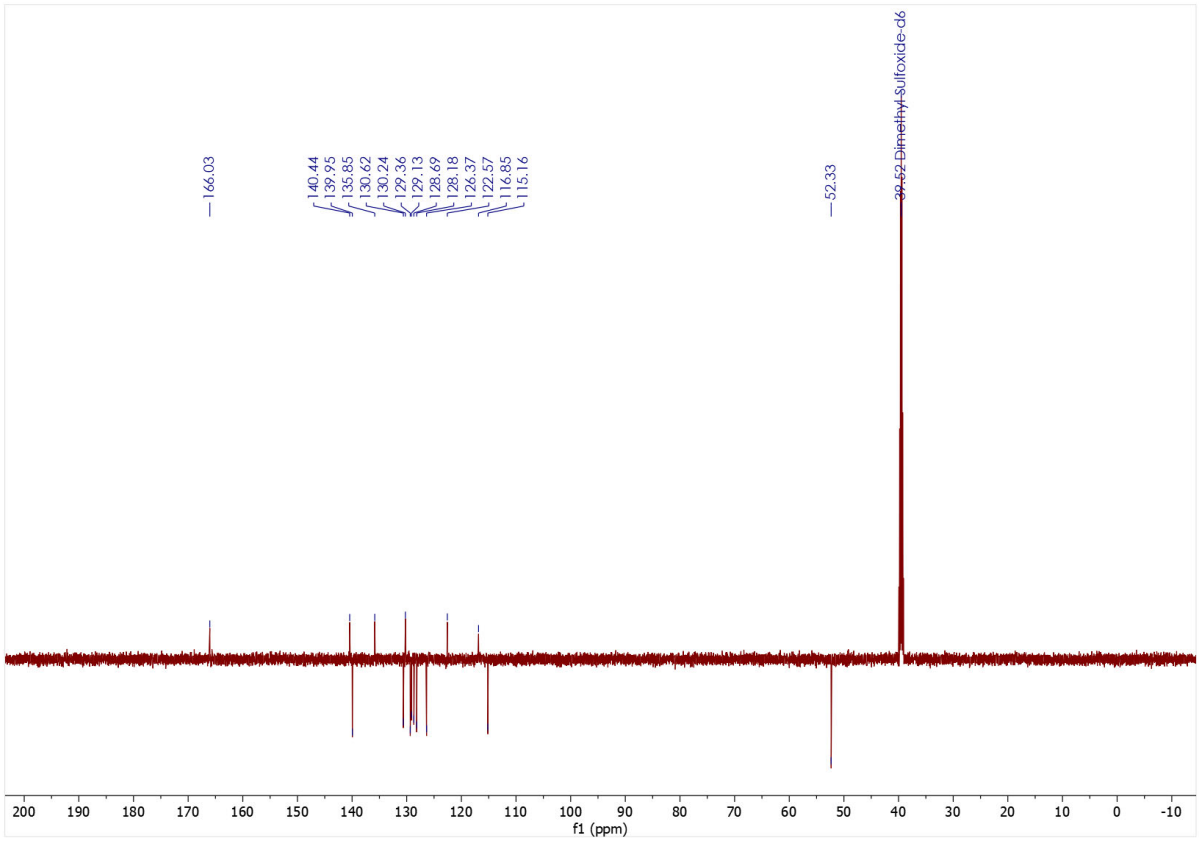








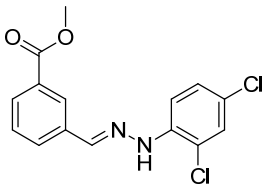

74
10.204
8.363
8.189
8.186
8.183
7.954
7.952
7.950
7.941
7.939
7.937
7.924
7.922
7.920
7.911
7.909
7.907
7.583
7.570
7.565
7.558
7.550
7.483
7.479
7.351
7.347
7.336
7.332
3.886
3.347
2.500 Dimethyl Sulfoxide-d6
1.0
1.0
2.0
1.0
1.0
f1 (ppm)
1.0
1.0
1.0
2.0
1.0
1.0
3.0
f1 (ppm)


166.03
140.44
139.95
135.85
130.62
130.24
129.36
129.13
128.69
128.18
126.37
122.57
116.85
115.16
52.33
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

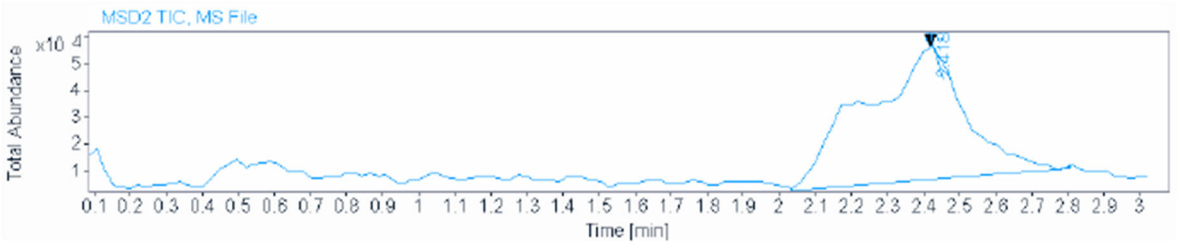
Agilent Technologies

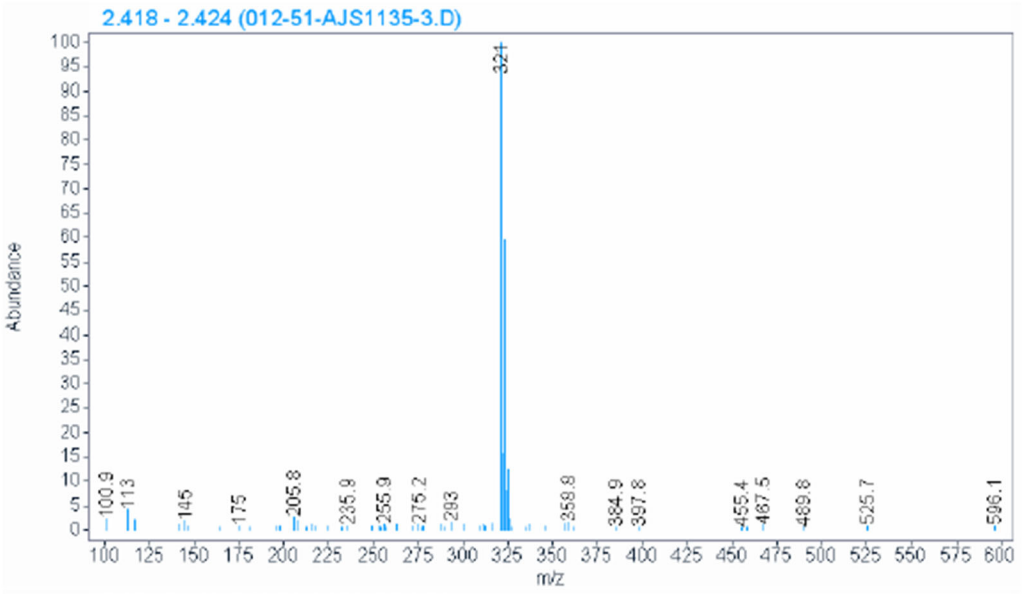
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\012-51-AJS1135-3.D		
Sample name:	AJS1135-3		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	51
Injection date:	7/31/2023 1:46:13 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

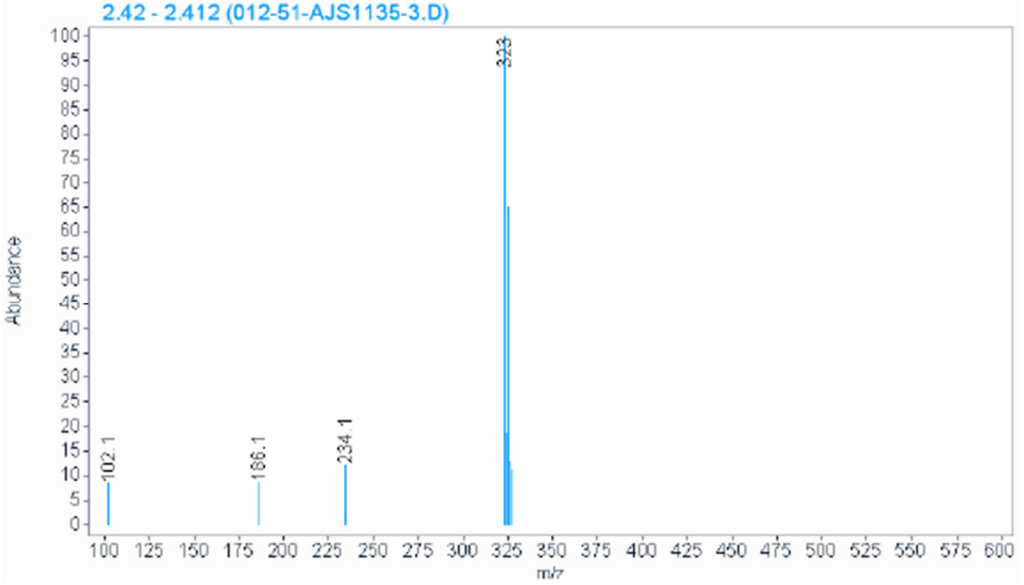


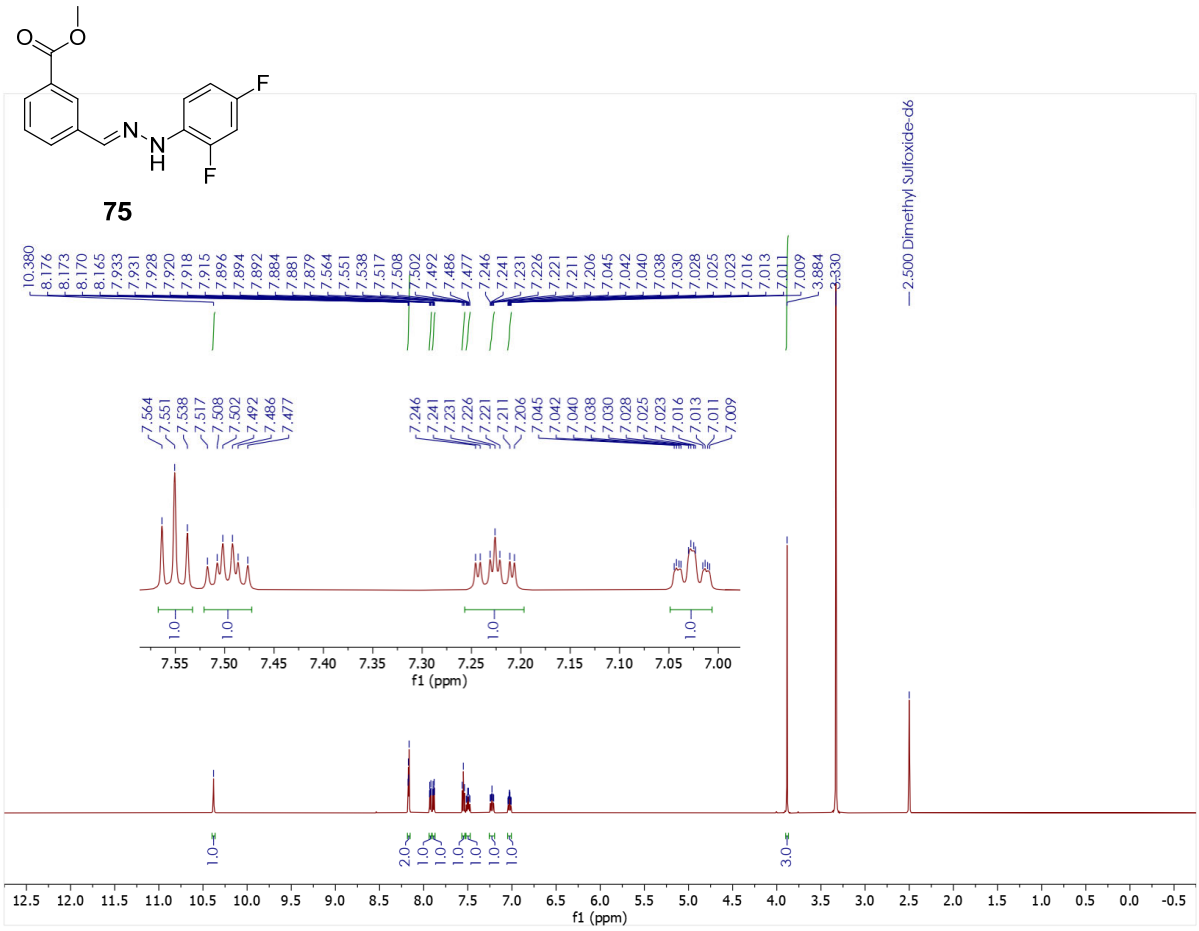
Molecular Weight: 323.174

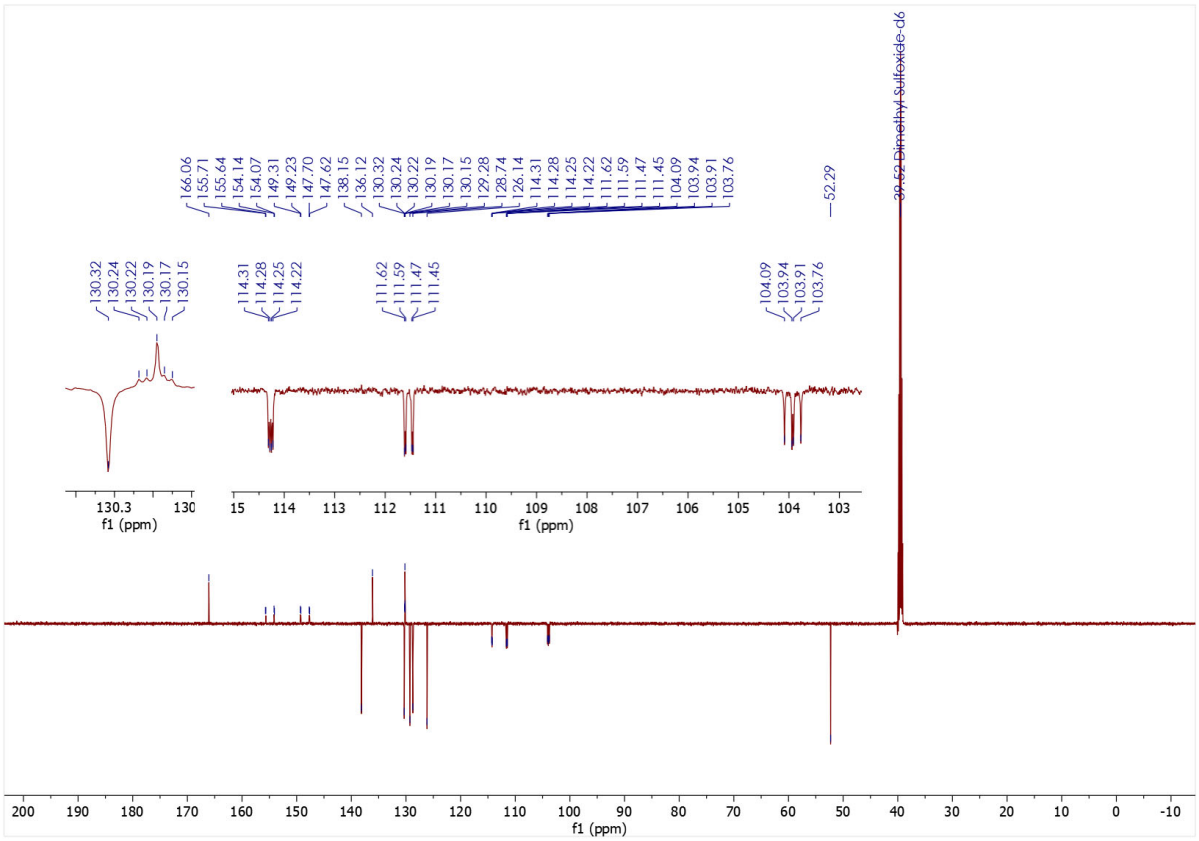
74

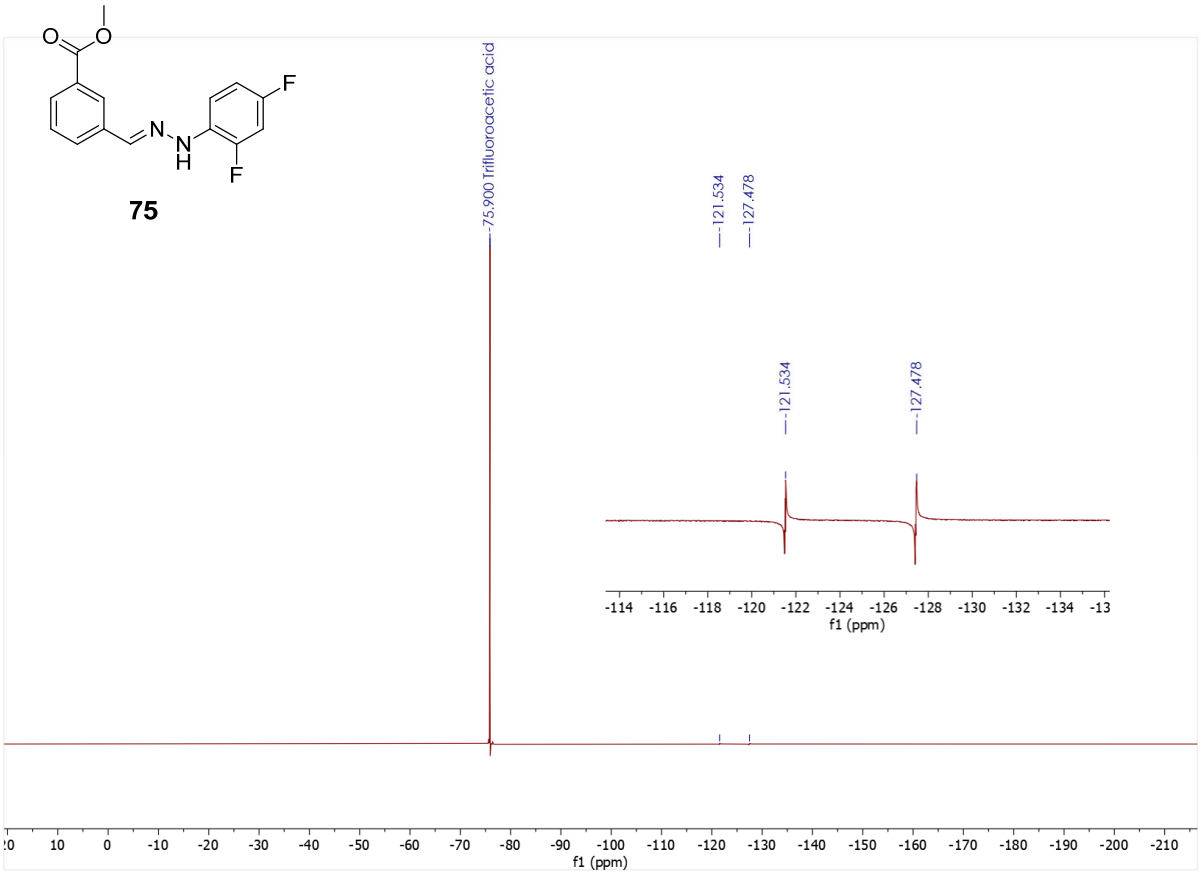







O
O
F
N
N
H
F
75
10.380
8.176
8.173
8.170
8.165
7.933
7.931
7.928
7.920
7.918
7.915
7.896
7.894
7.892
7.884
7.881
7.879
7.564
7.551
7.538
7.517
7.508
7.502
7.492
7.486
7.477
7.246
7.241
7.231
7.226
7.221
7.211
7.206
7.045
7.042
7.040
7.038
7.030
7.028
7.025
7.023
7.016
7.013
7.011
7.009
3.884
3.330
2.500 Dimethyl Sulfoxide-d6
1.0
1.0
1.0
1.0
7.55 7.50 7.45 7.40 7.35 7.30 7.25 7.20 7.15 7.10 7.05 7.00
f1 (ppm)
1.0
2.0
1.0
1.0
1.0
1.0
1.0
3.0
12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 -0.5
f1 (ppm)

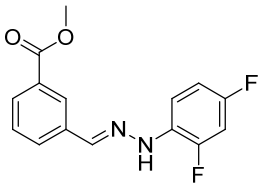

166.06
155.71
155.64
154.14
154.07
149.31
149.23
147.70
147.62
138.15
136.12
130.32
130.24
130.22
130.19
130.17
130.15
129.28
128.74
126.14
114.31
114.28
114.25
114.22
111.62
111.59
111.47
111.45
104.09
103.94
103.91
103.76
52.29
39.52 Dimethyl Sulfoxide-d6
130.32
130.24
130.22
130.19
130.17
130.15
114.31
114.28
114.25
114.22
111.62
111.59
111.47
111.45
104.09
103.94
103.91
103.76
130.3 130
f1 (ppm)
15 114 113 112 111 110 109 108 107 106 105 104 103
f1 (ppm)
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10
f1 (ppm)


O
O
F
N
N
H
F
75
-75.900 trifluoroacetic acid
-121.534
-127.478
-121.534
-127.478
-114 -116 -118 -120 -122 -124 -126 -128 -130 -132 -134 -13
f1 (ppm)
10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140 -150 -160 -170 -180 -190 -200 -210
f1 (ppm)

LCMS Report

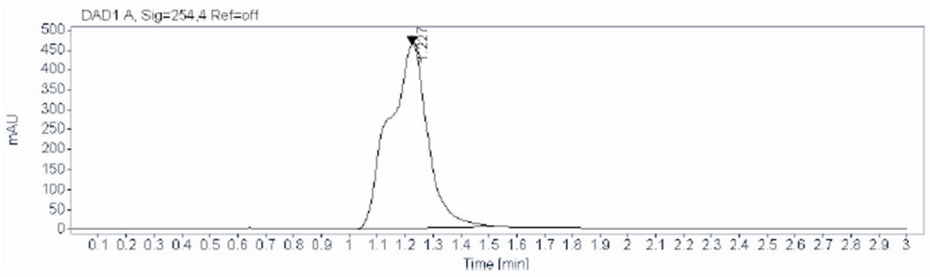
Agilent Technologies

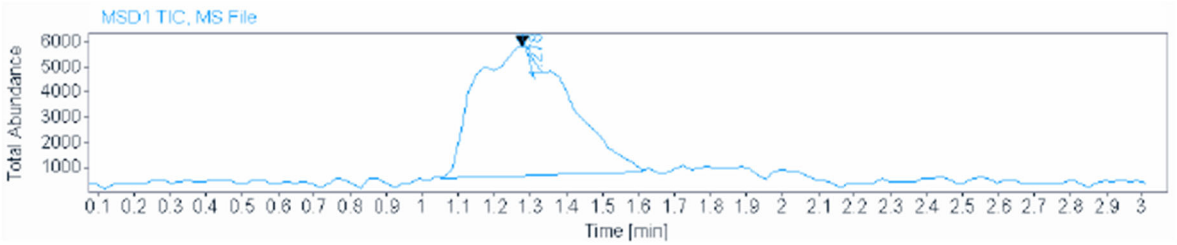
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\014-53-AJS1136-2.D		
Sample name:	AJS1136-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	53
Injection date:	7/31/2023 1:55:33 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

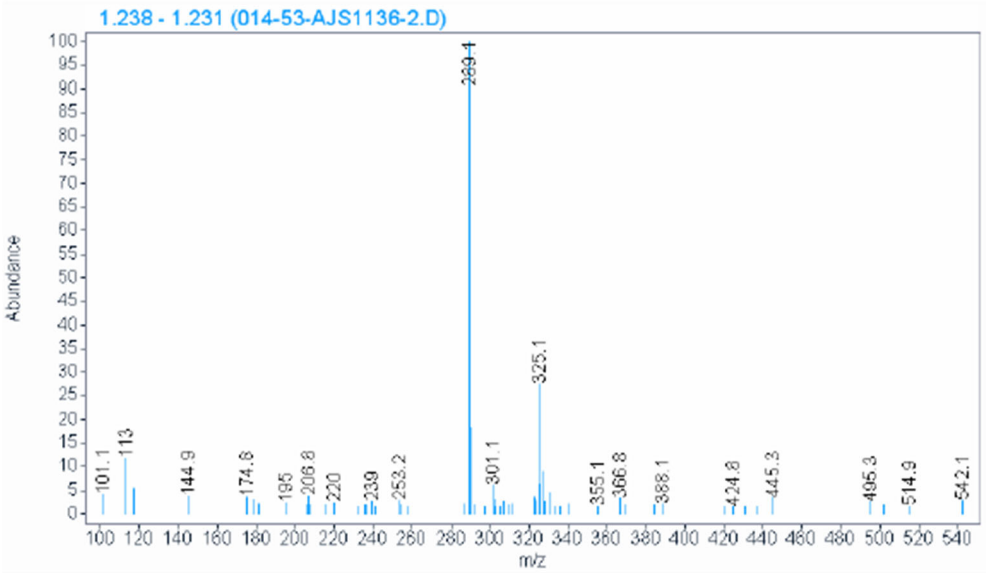


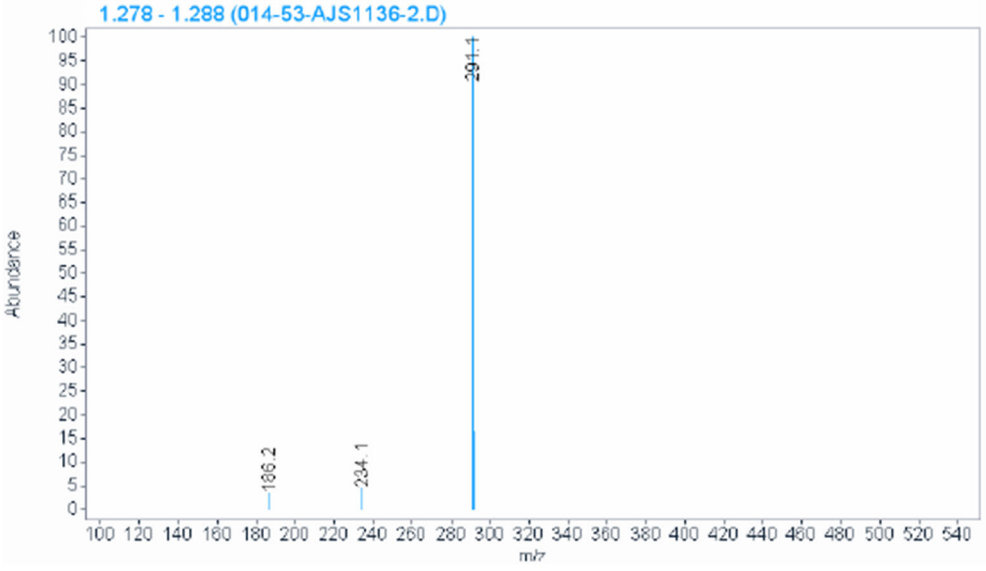
Molecular Weight: 290.265

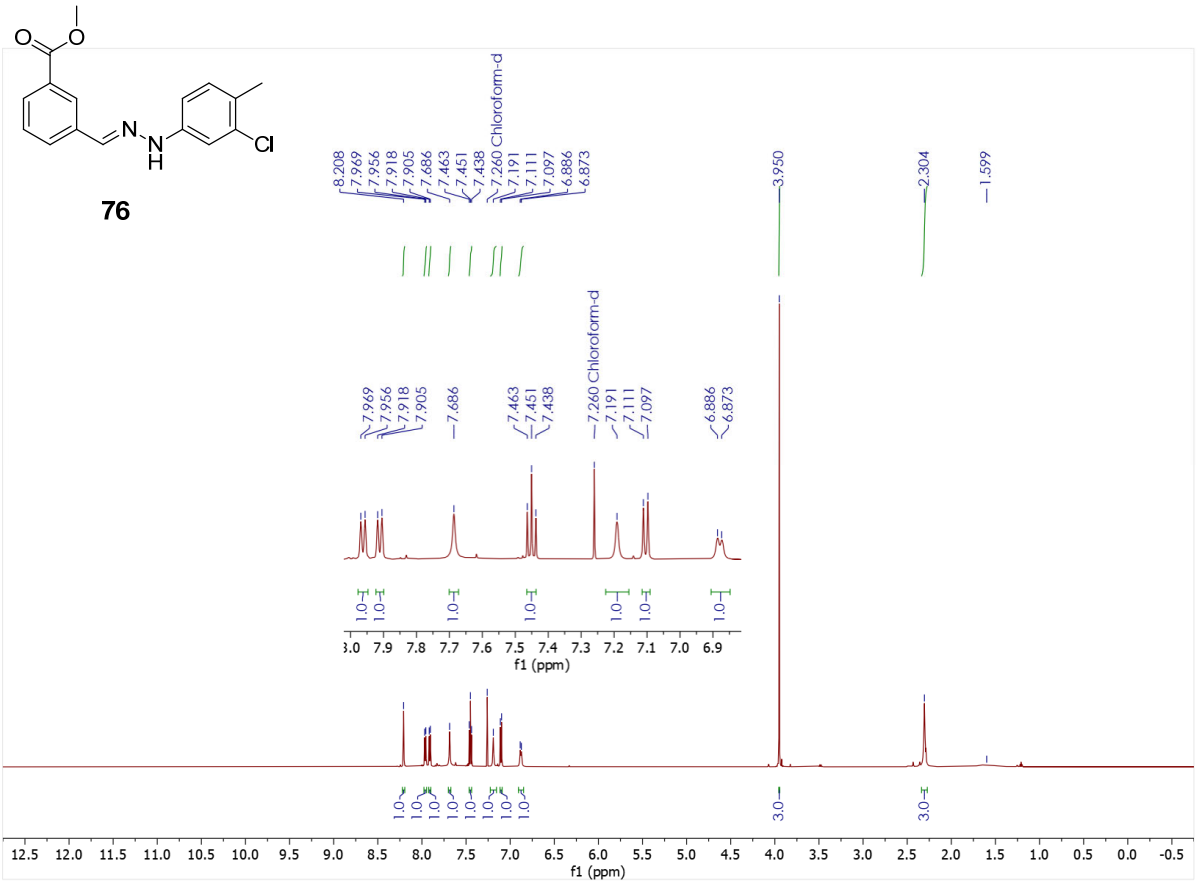
75

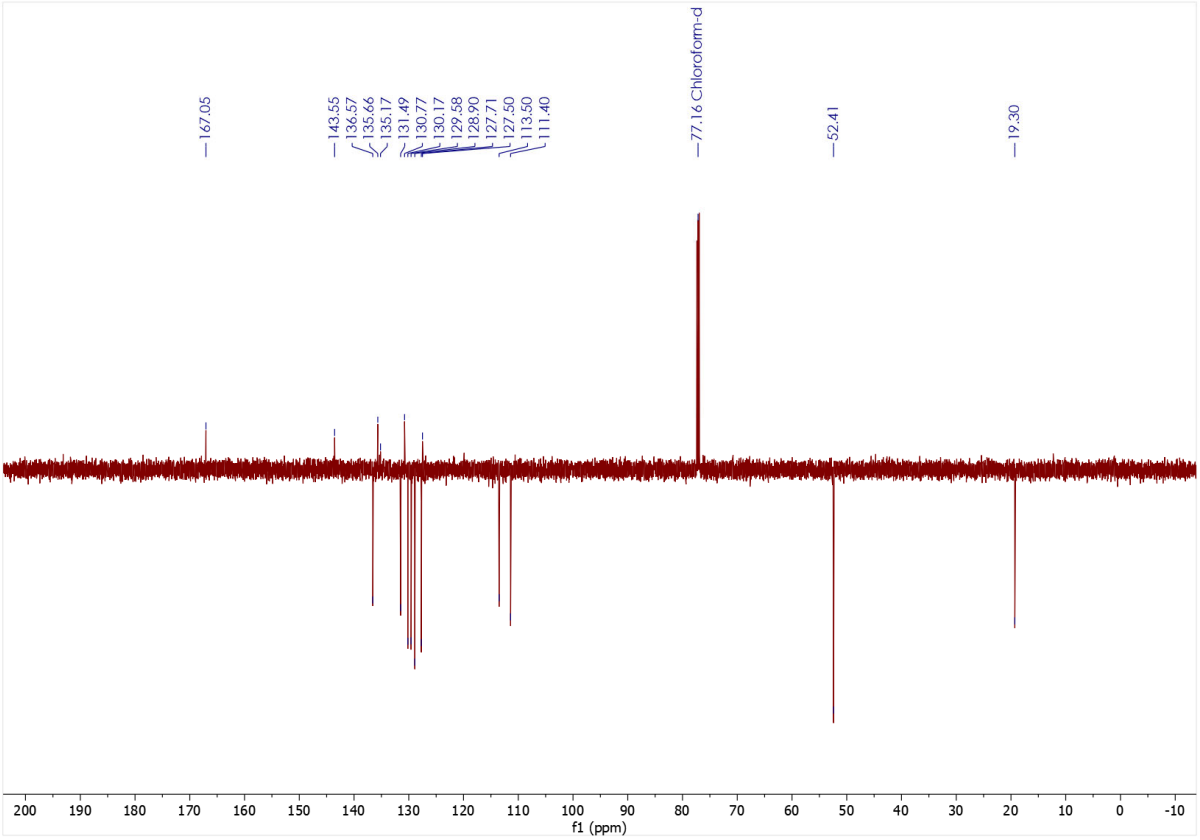








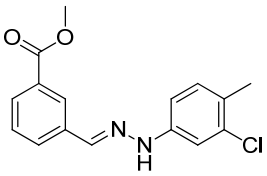

76
8.208
7.969
7.956
7.918
7.905
7.686
7.463
7.451
7.438
7.260 Chloroform-d
7.191
7.111
7.097
6.886
6.873
3.950
2.304
1.599
f1 (ppm)


167.05
143.55
136.57
135.66
135.17
131.49
130.77
130.17
129.58
128.90
127.71
127.50
113.50
111.40
77.16 Chloroform-d
52.41
19.30
f1 (ppm)

LCMS Report

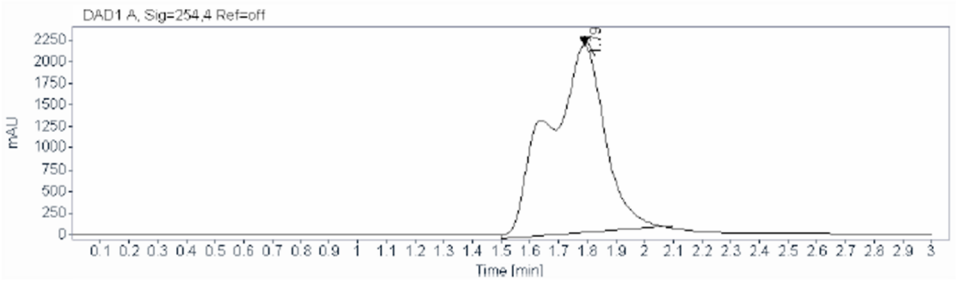
Agilent Technologies

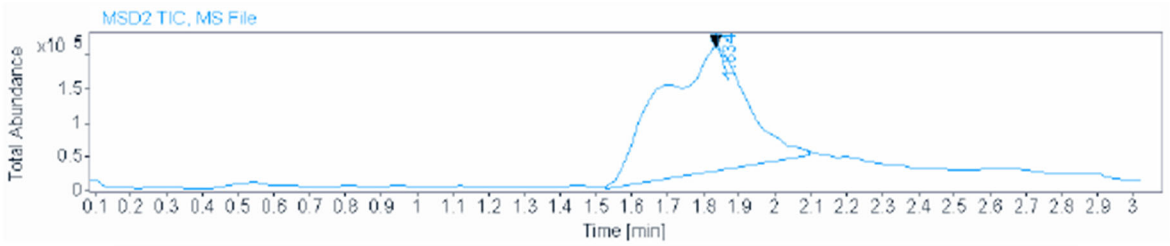
Data file:	D:\Chem32\1\Data\AJS\AJS Table4+ 2023-07-31 12-52-45\017-56-AJS1137-2.D		
Sample name:	AJS1137-2		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	56
Injection date:	7/31/2023 2:09:51 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

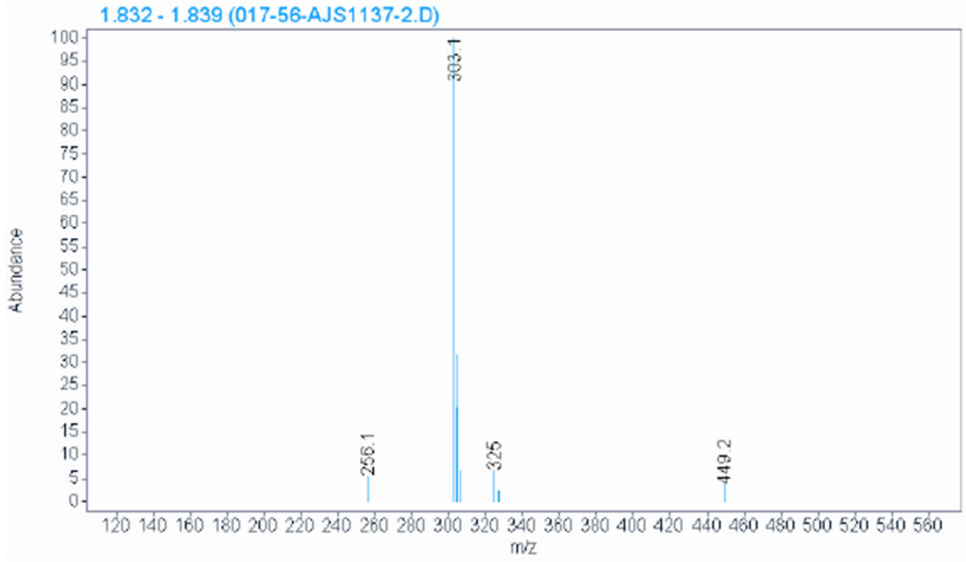


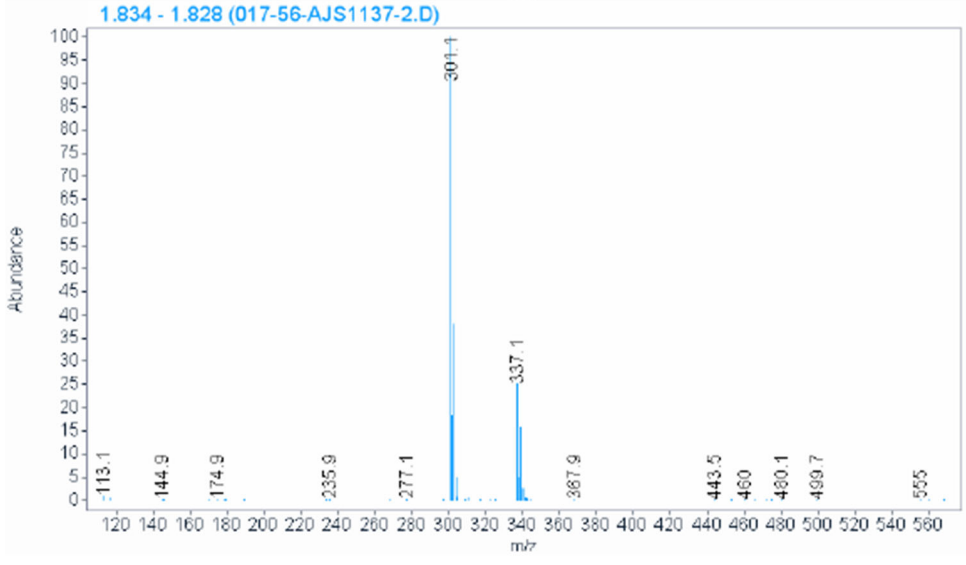
Molecular Weight: 302.756

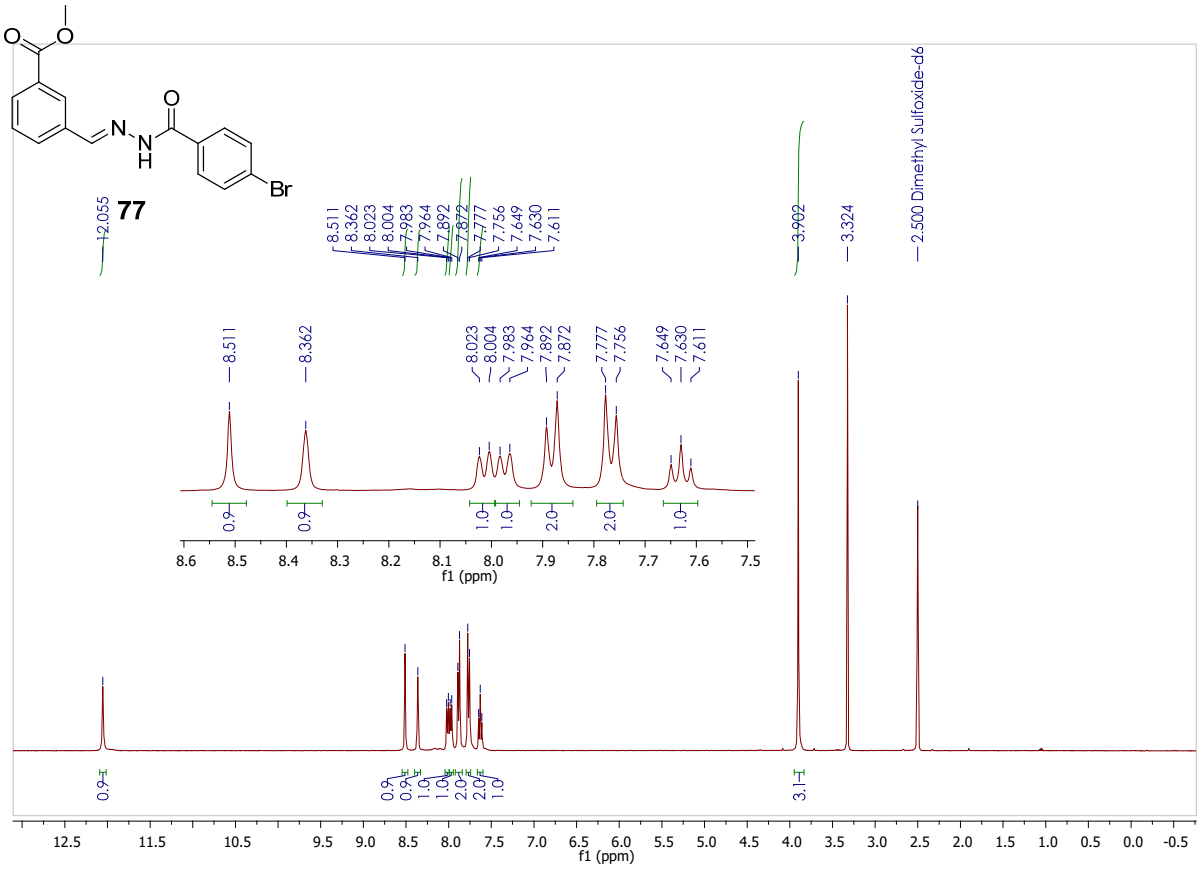
76

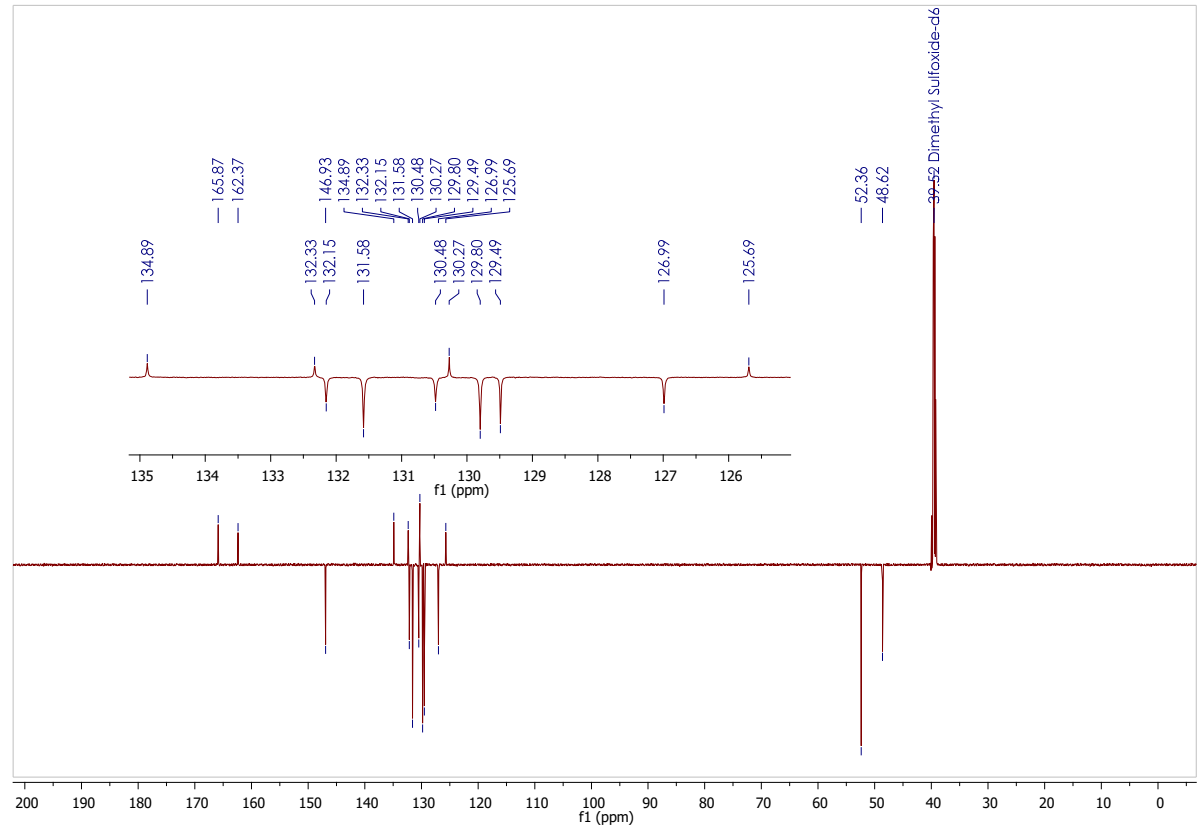








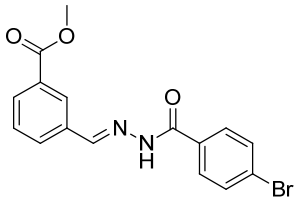

77
12.055
8.511
8.362
8.023
8.004
7.983
7.964
7.892
7.872
7.777
7.756
7.649
7.630
7.611
3.902
3.324
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


165.87
162.37
146.93
134.89
132.33
132.15
131.58
130.48
130.27
129.80
129.49
126.99
125.69
52.36
48.62
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

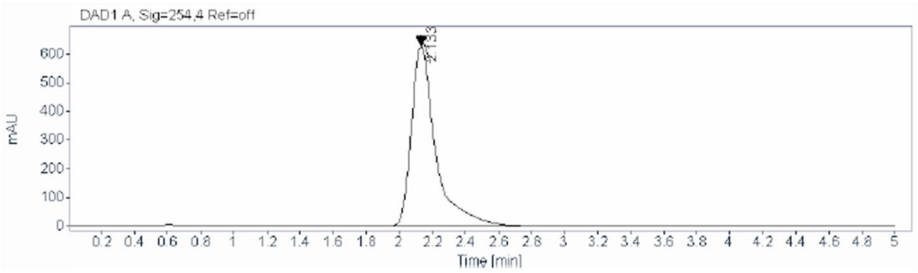
Agilent Technologies

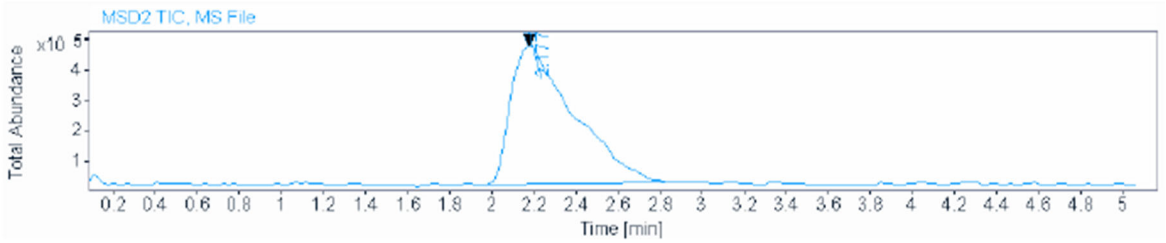
Data file:	D:\Chem32\1\Data\JRB\JRB2023 2024 2021-11-23 12-21-42\003-99-JRB2024.D		
Sample name:	JRB2024		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	99
Injection date:	11/23/2021 12:36:53 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 50% B.M_REDUCED FLOW.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 50% B.M_REDUCED FLOW.M	**Acq. operator:**	SYSTEM
Last changed:	5/15/2019 9:20:00 AM		

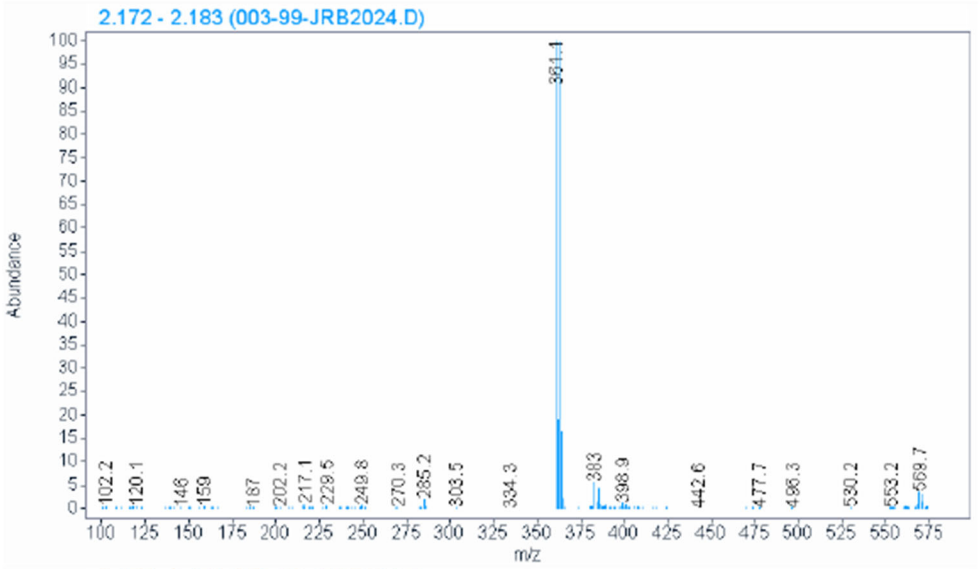


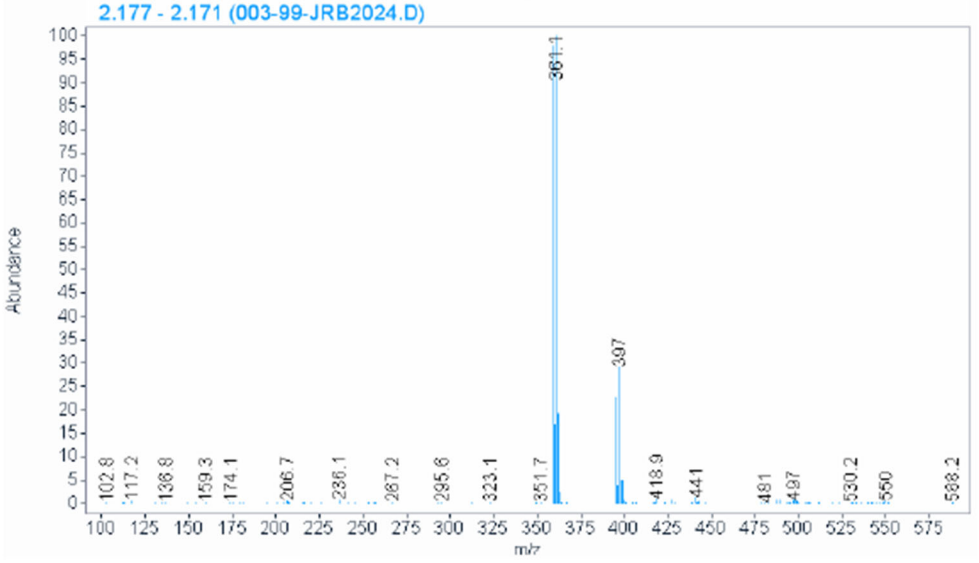
Molecular Weight: 361.190

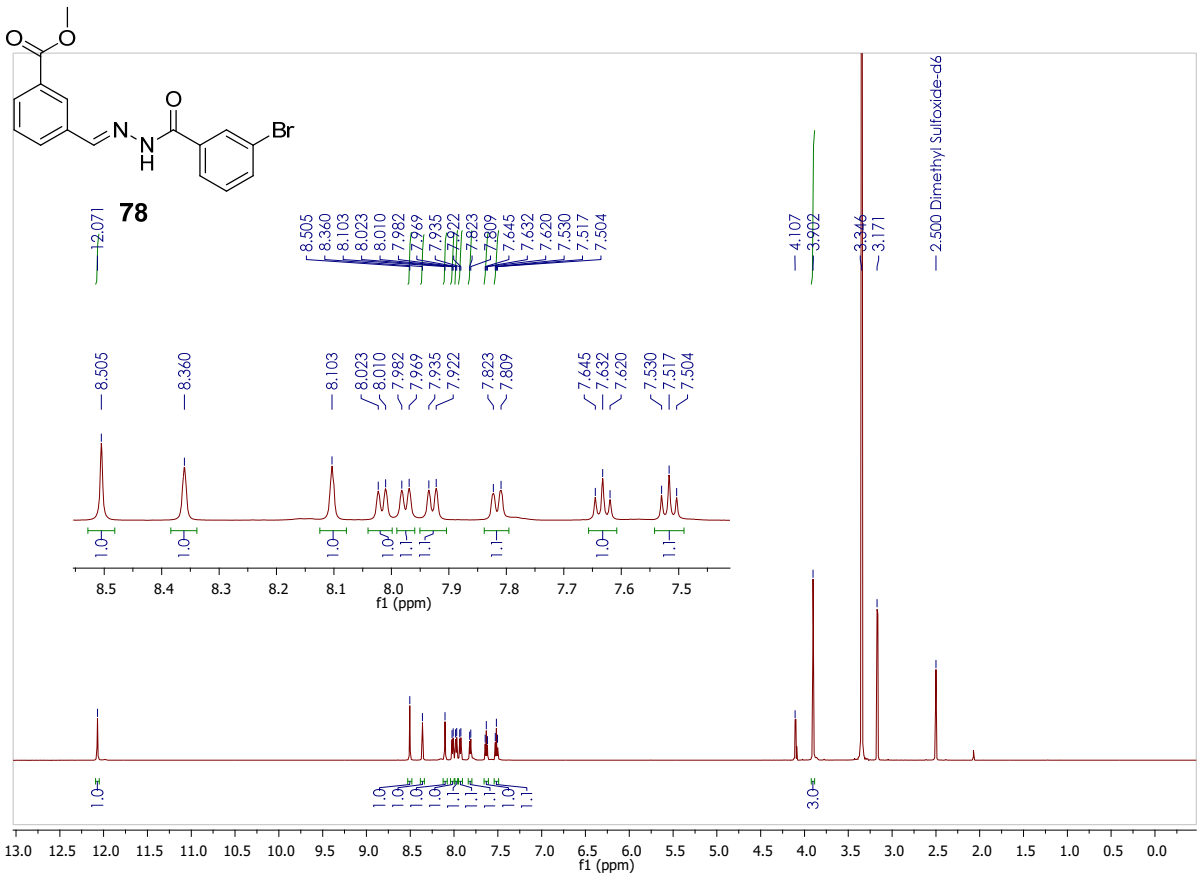
77

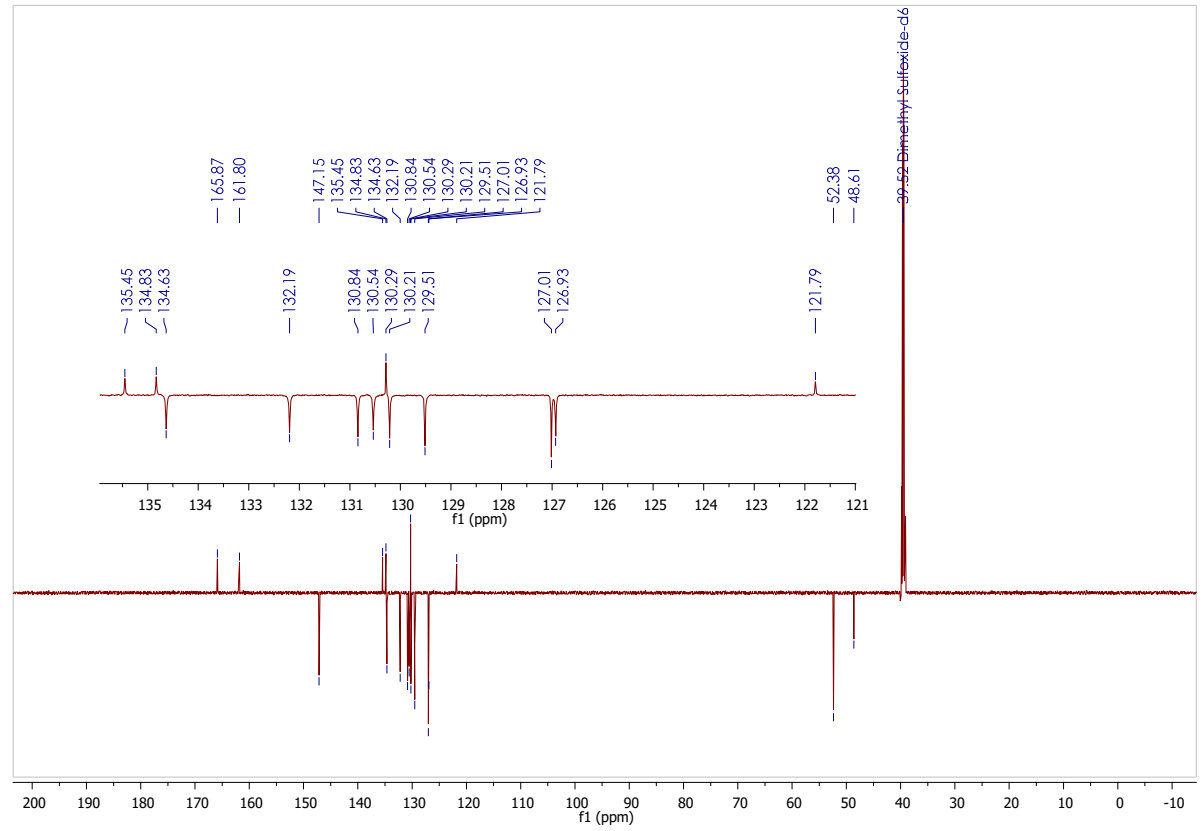








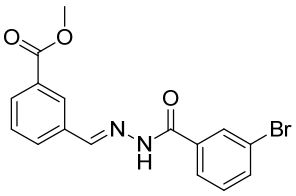

78
12.071
8.505
8.360
8.103
8.023
8.010
7.982
7.969
7.935
7.922
7.823
7.809
7.645
7.632
7.620
7.530
7.517
7.504
4.107
3.962
3.346
3.171
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


165.87
161.80
147.15
135.45
134.83
134.63
132.19
130.84
130.54
130.29
130.21
129.51
127.01
126.93
121.79
52.38
48.61
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

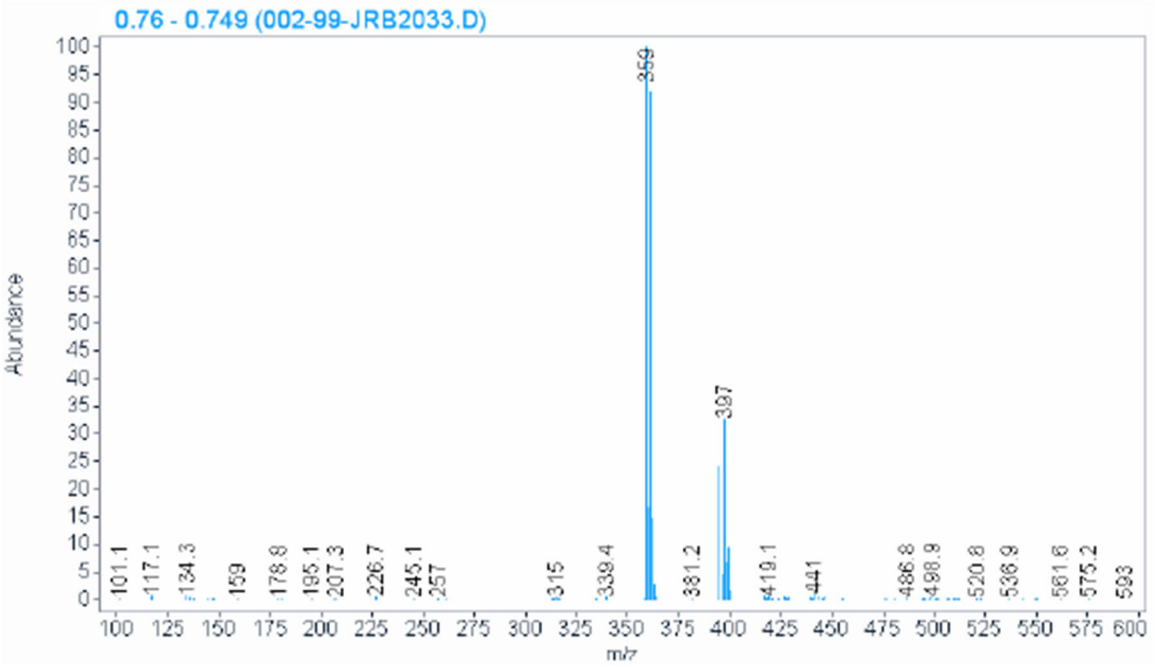
Agilent Technologies

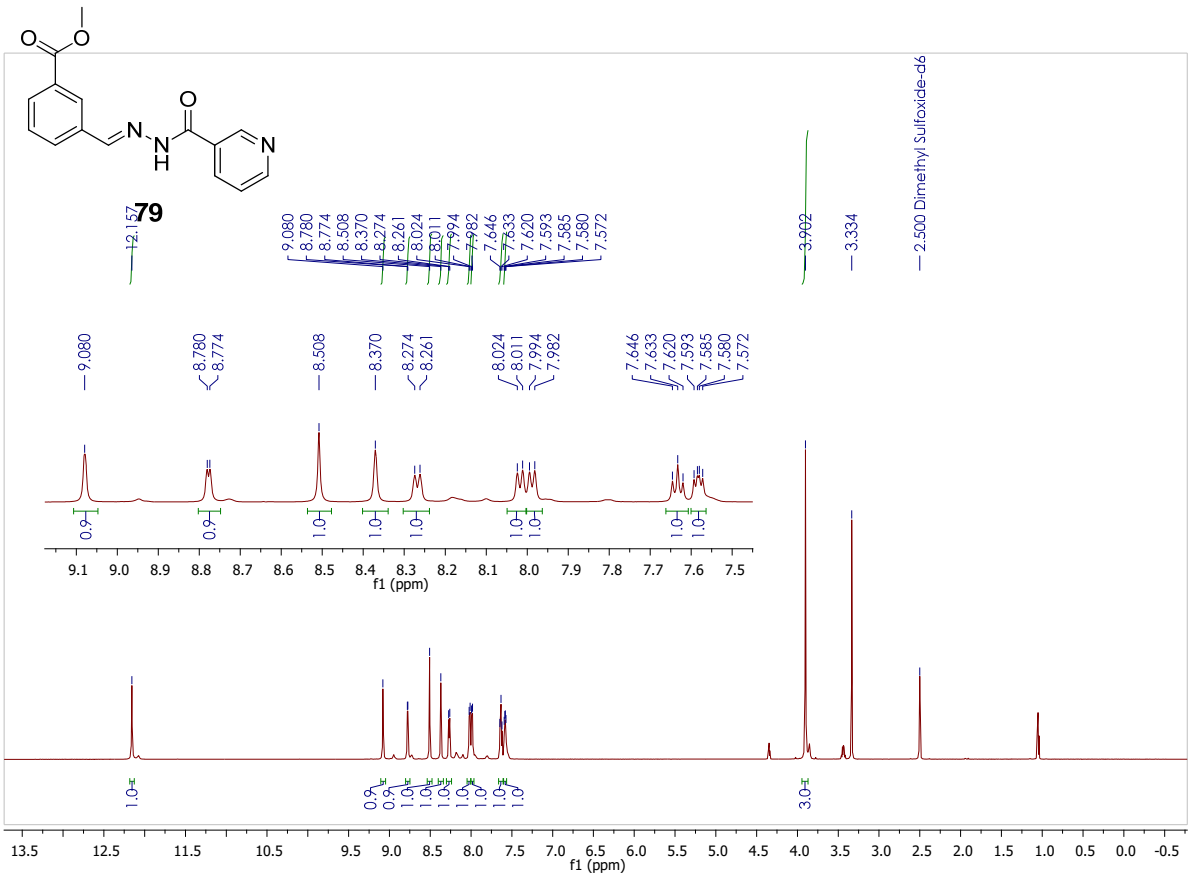
Data file:	D:\Chem32\1\Data\JRB\JRB2036 2033 2021-11-26 11-46-33\002-99-JRB2033.D		
Sample name:	JRB2033		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	99
Injection date:	11/26/2021 11:53:05 AM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

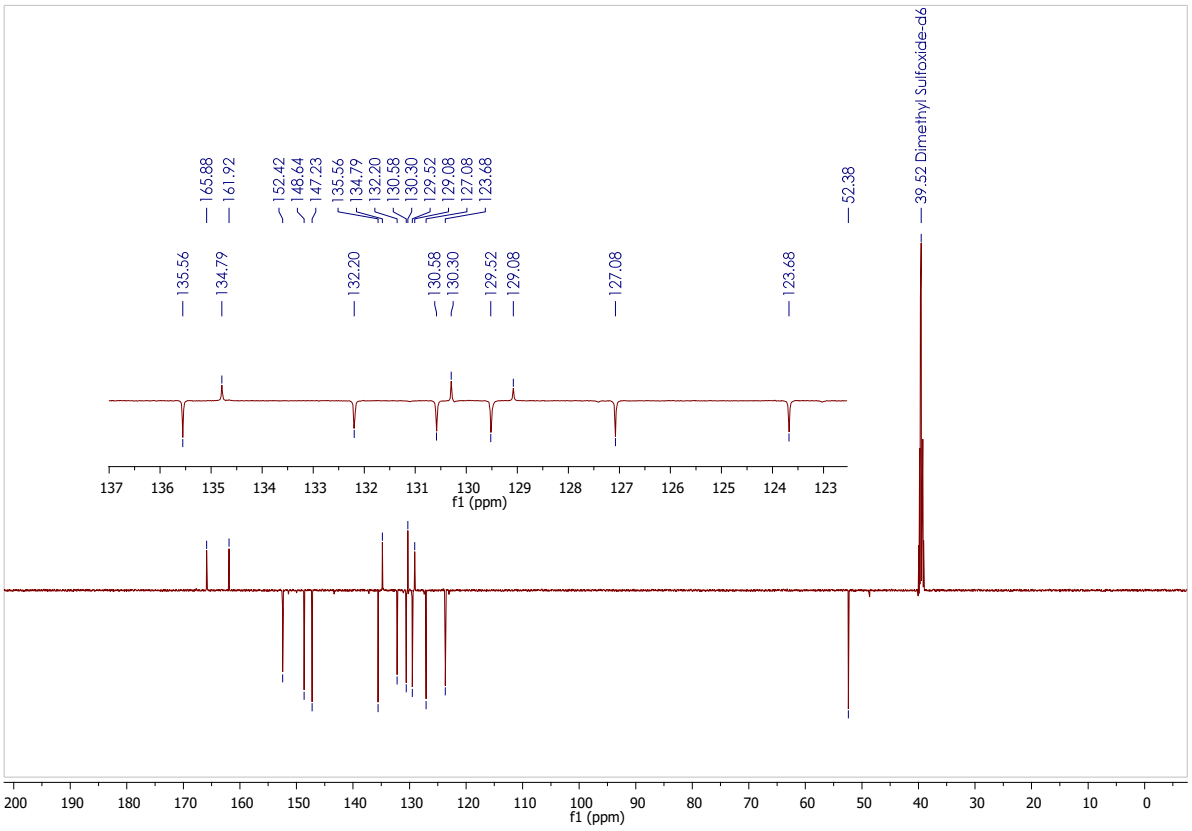


Molecular Weight: 361.190

78



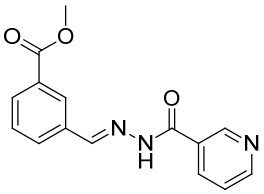

79
12.157
9.080
8.780
8.774
8.508
8.370
8.274
8.261
8.024
8.011
7.994
7.982
7.646
7.633
7.620
7.593
7.585
7.580
7.572
3.992
3.334
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


165.88
161.92
152.42
148.64
147.23
135.56
134.79
132.20
130.58
130.30
129.52
129.08
127.08
123.68
52.38
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

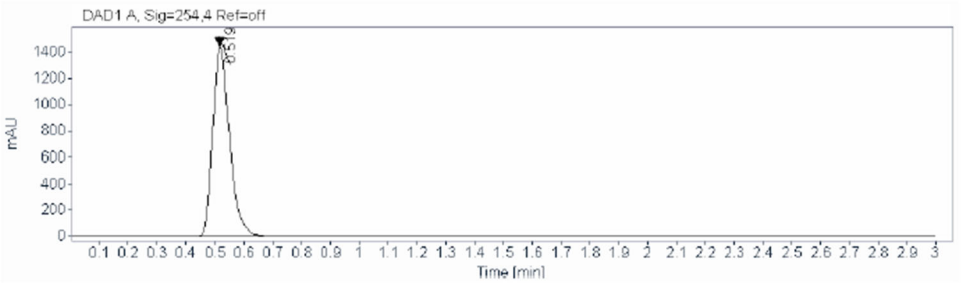
Agilent Technologies

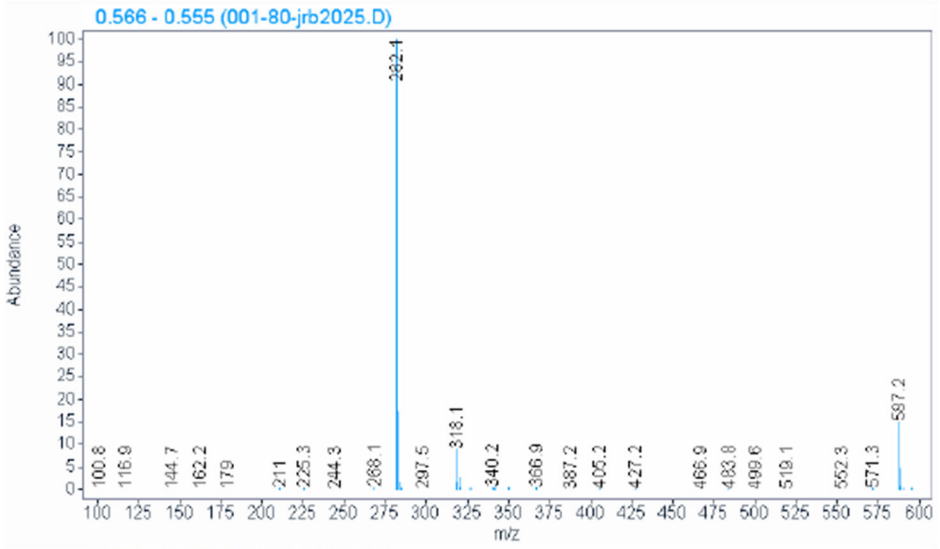
Data file:	D:\Chem32\1\Data\JRB\jrb2025-2032 2021-11-25 17-02-14\001-80-jrb2025.D		
Sample name:	jrb2025		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	80
Injection date:	11/25/2021 5:04:00 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/25/2021 10:50:38 AM		

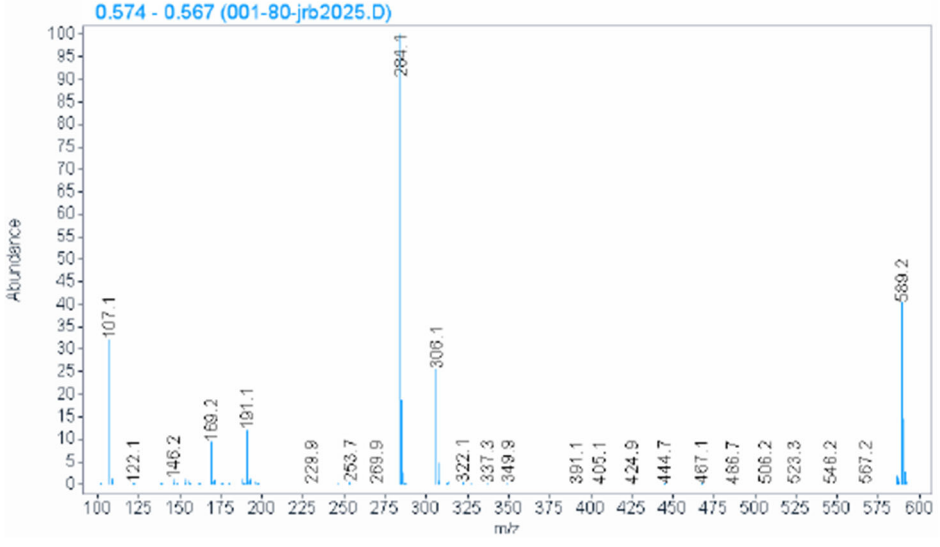


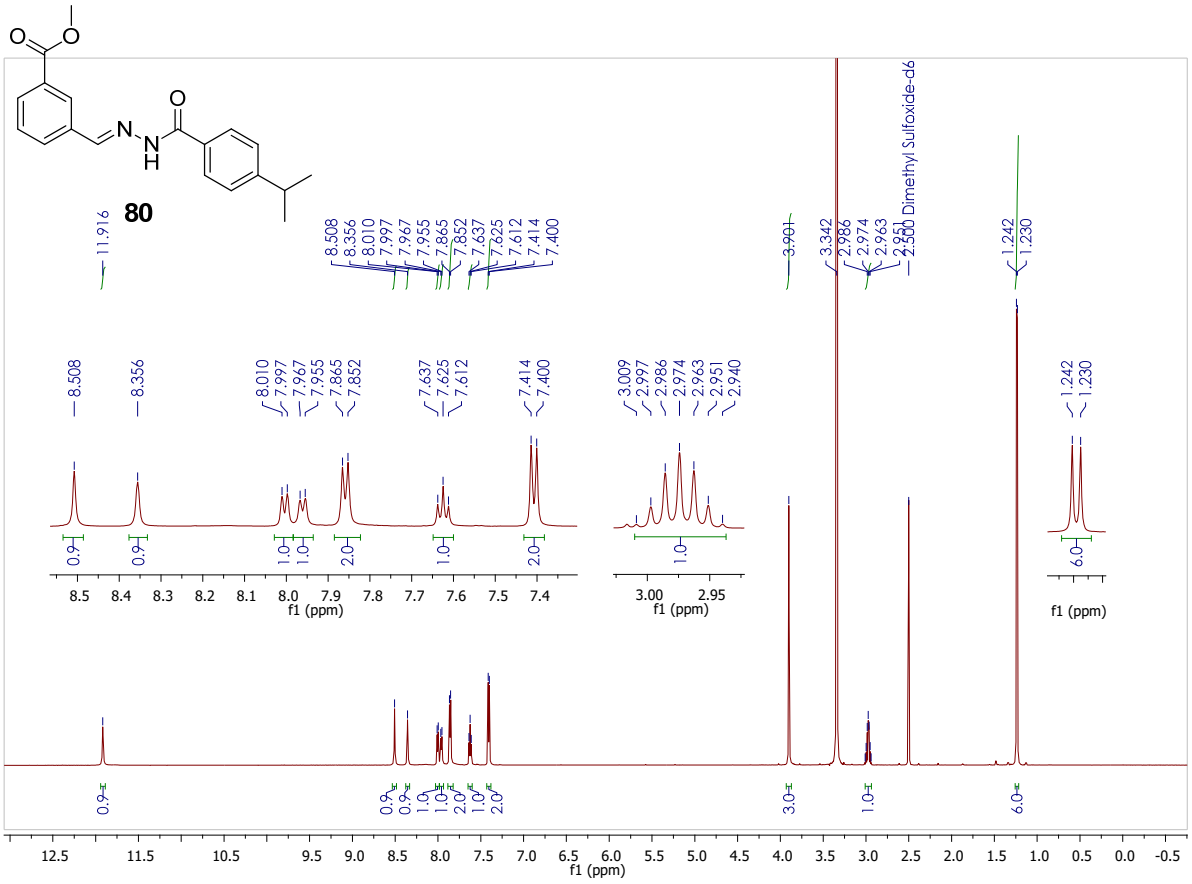
Molecular Weight: 283.282

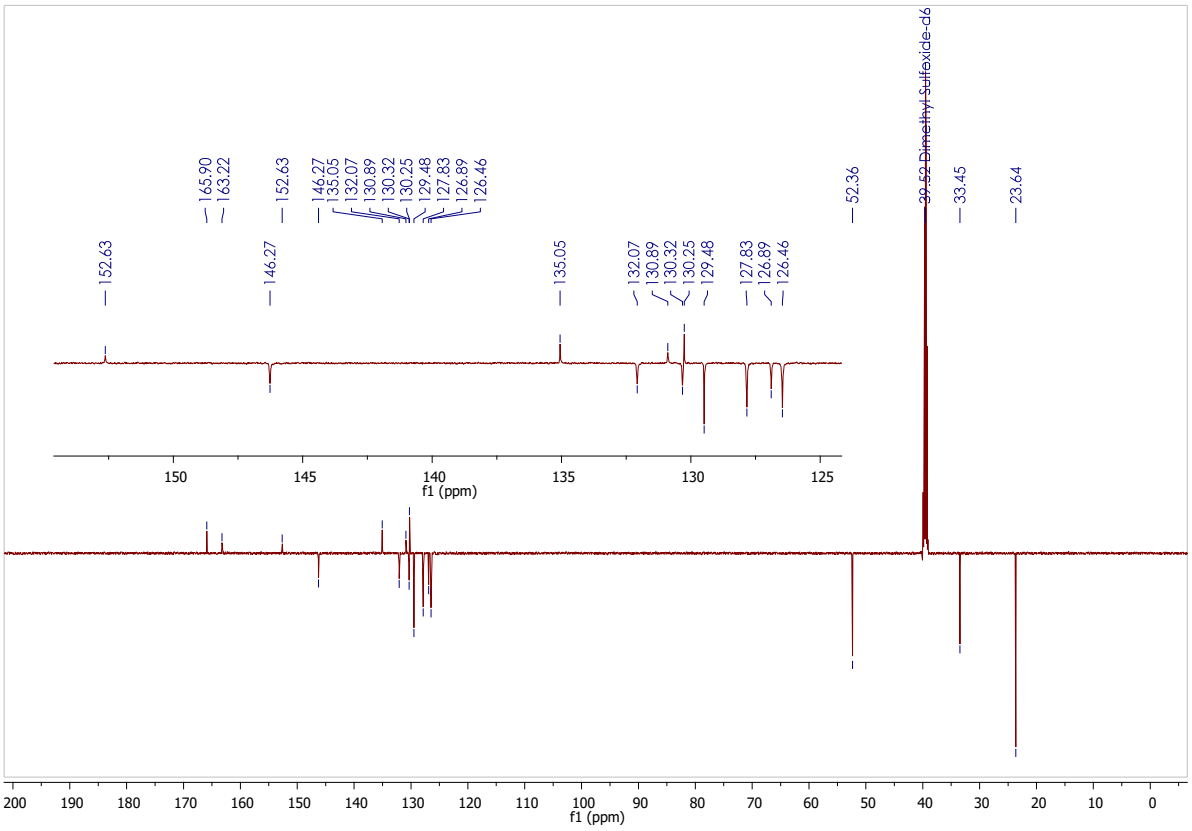
79







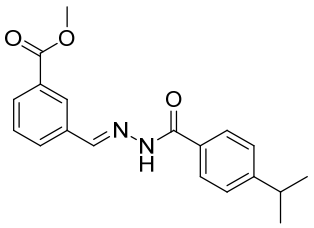

80
11.916
8.508
8.356
8.010
7.997
7.967
7.955
7.865
7.852
7.637
7.625
7.612
7.414
7.400
3.901
3.342
2.986
2.974
2.963
2.951
2.500 Dimethyl Sulfoxide-d6
1.242
1.230
f1 (ppm)


165.90
163.22
152.63
146.27
135.05
132.07
130.89
130.32
130.25
129.48
127.83
126.89
126.46
52.36
39.52 Dimethyl Sulfoxide-d6
33.45
23.64
f1 (ppm)

LCMS Report

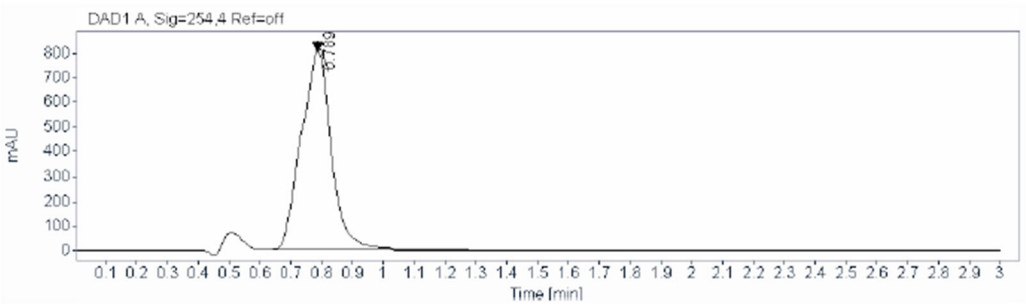
Agilent Technologies

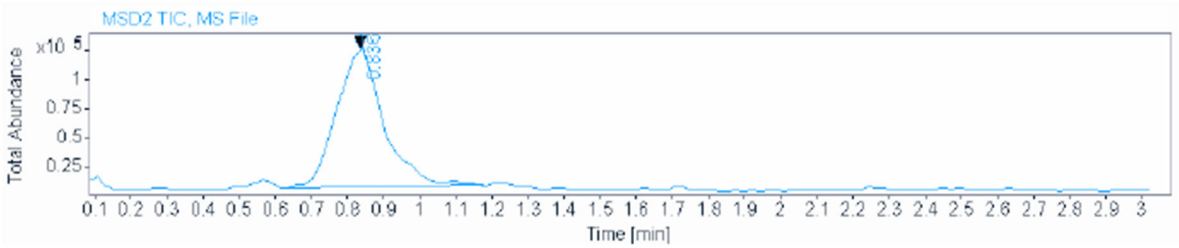
Data file:	D:\Chem32\1\Data\JRB\JRB4028 4030 4031 2023-07-24 15-53-04\003-71-JRB4030.D		
Sample name:	JRB4030		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	71
Injection date:	7/24/2023 4:03:59 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

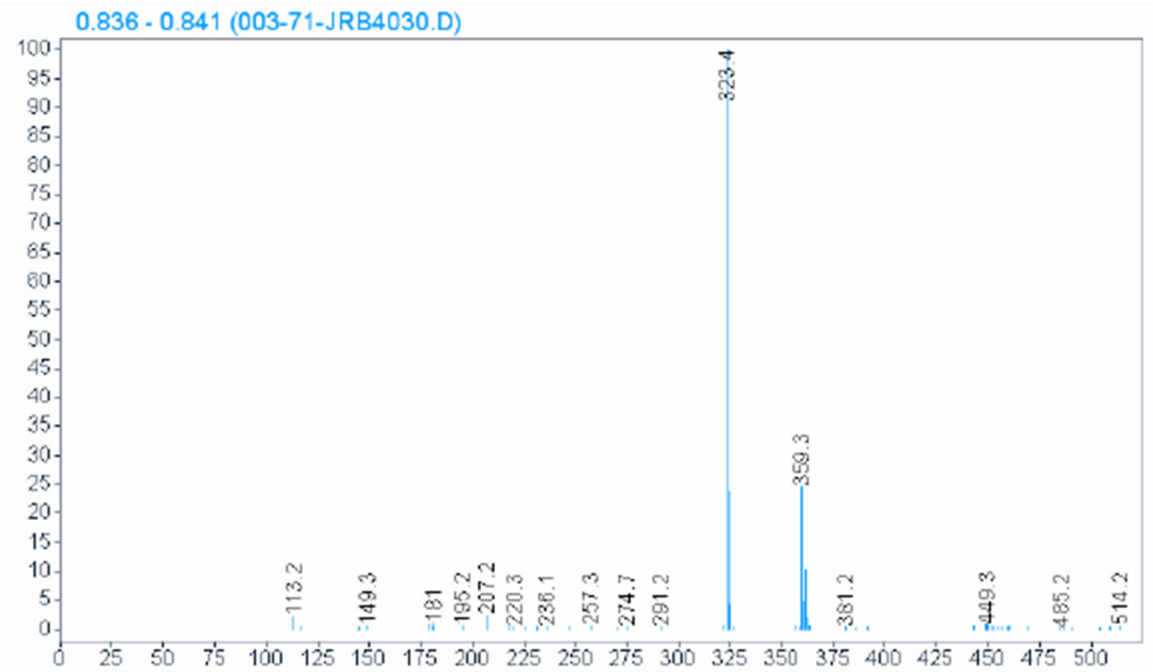


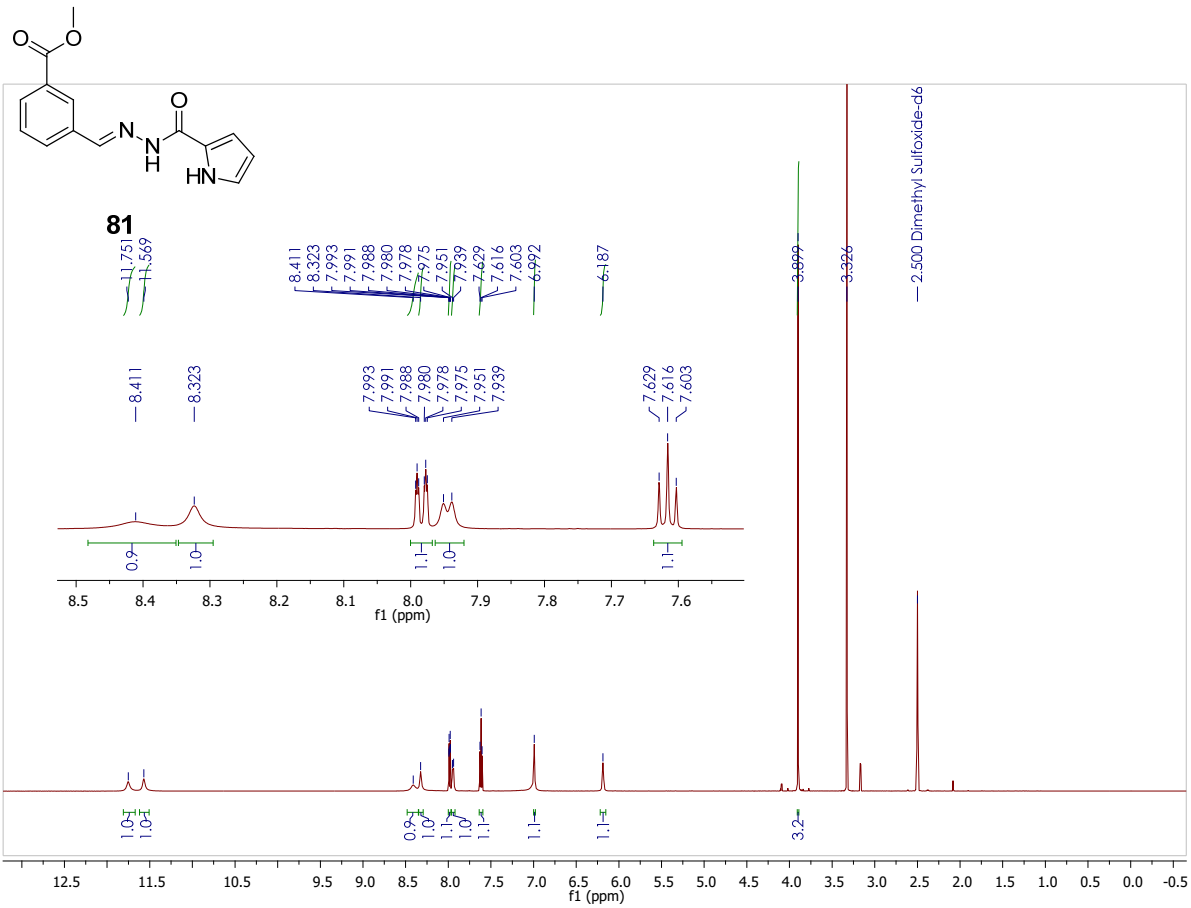
Molecular Weight: 324.374

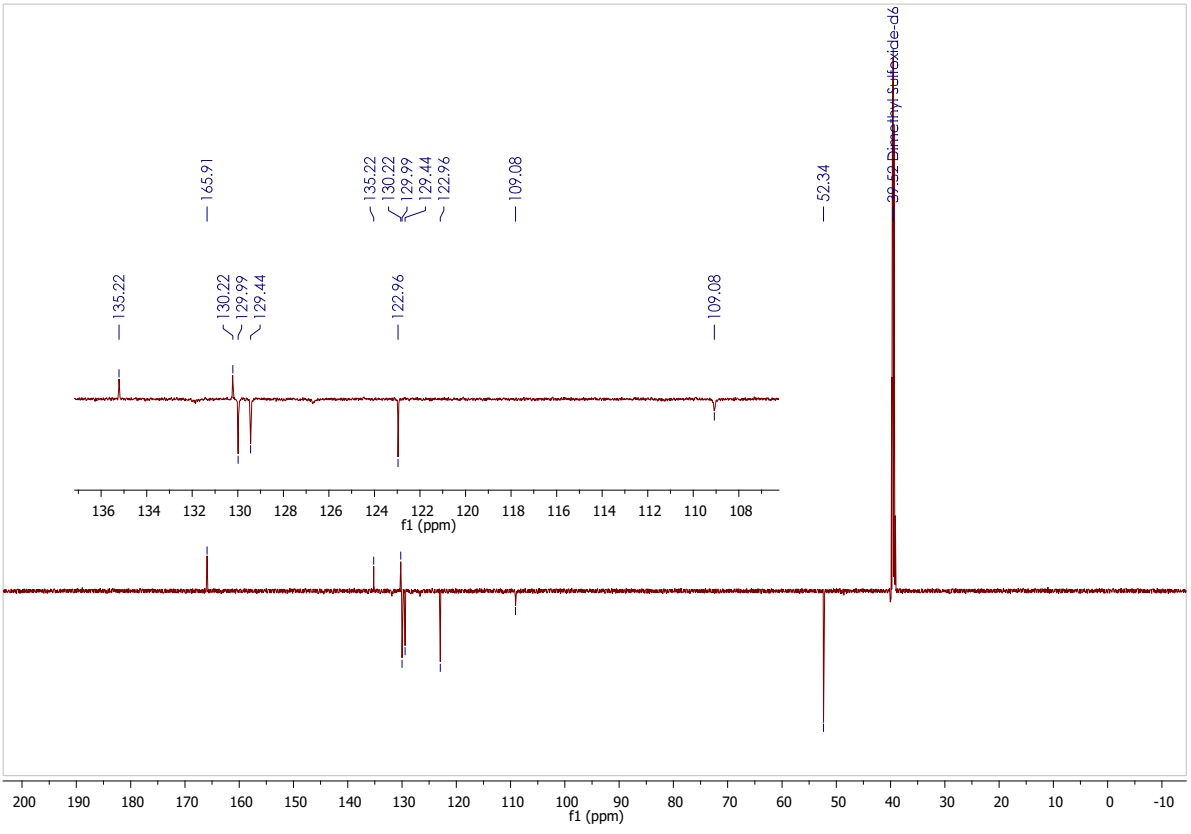
80







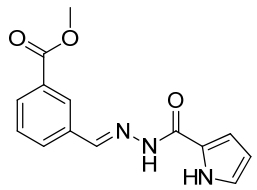

81
11.751
11.569
8.411
8.323
7.993
7.991
7.988
7.980
7.978
7.975
7.951
7.939
7.629
7.616
7.603
6.992
6.187
3.899
3.326
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


165.91
135.22
130.22
129.99
129.44
122.96
109.08
52.34
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

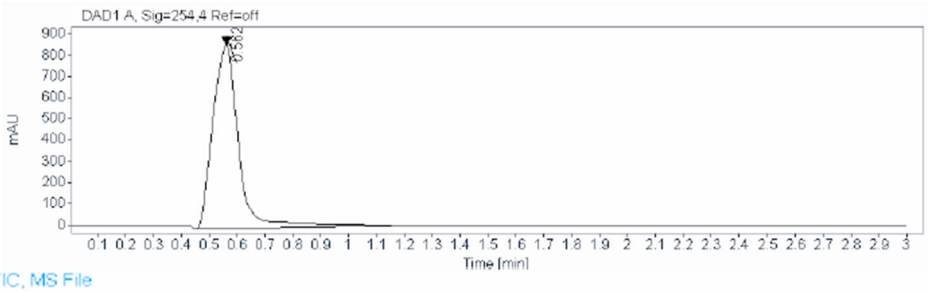
Agilent Technologies

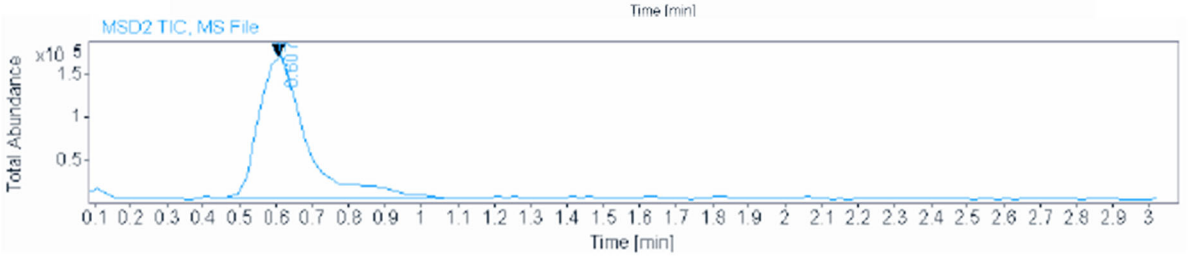
Data file:	D:\Chem32\1\Data\JRB\JRB4028 4030 4031 2023-07-24 15-53-04\004-82-JRB4031.D		
Sample name:	JRB4031		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	82
Injection date:	7/24/2023 4:08:31 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

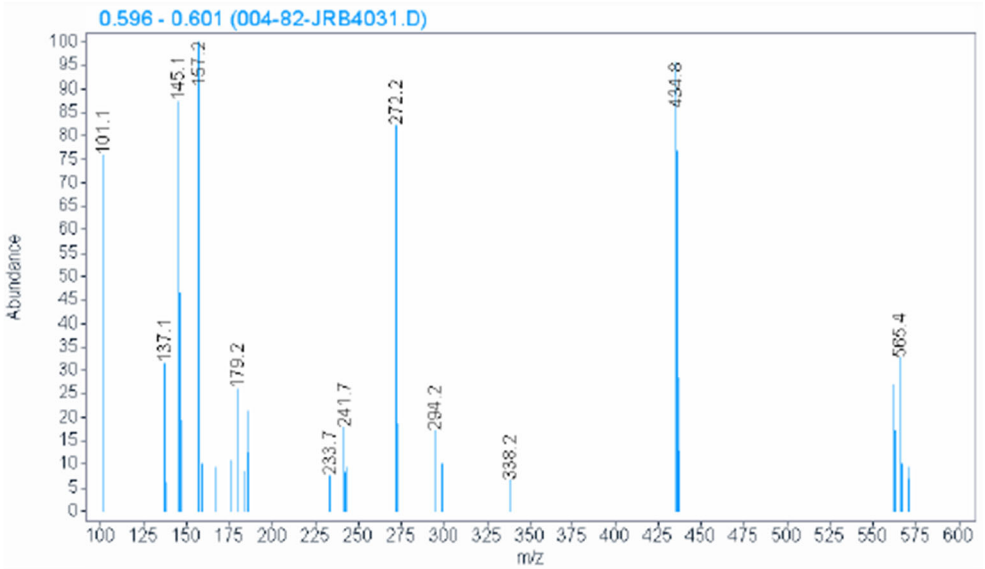


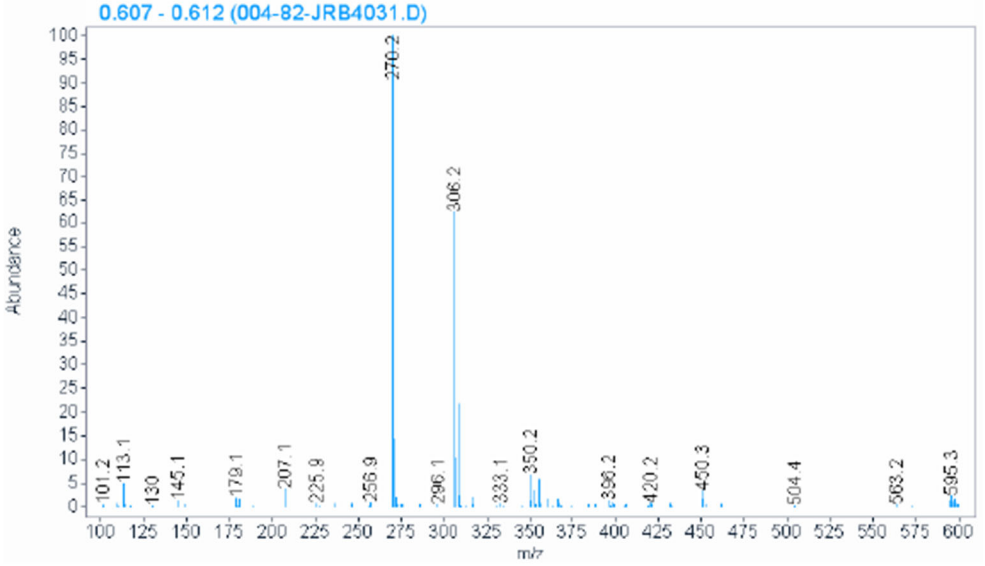
Molecular Weight: 271.271

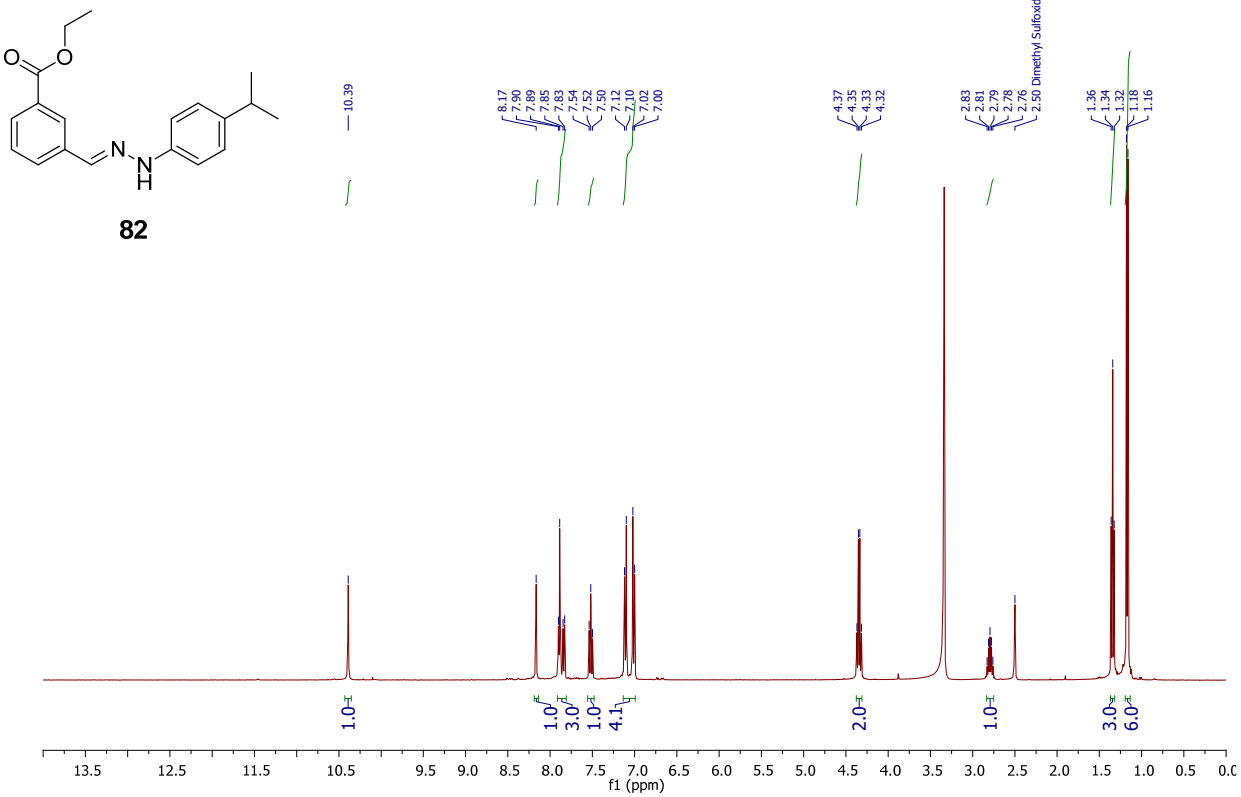
81

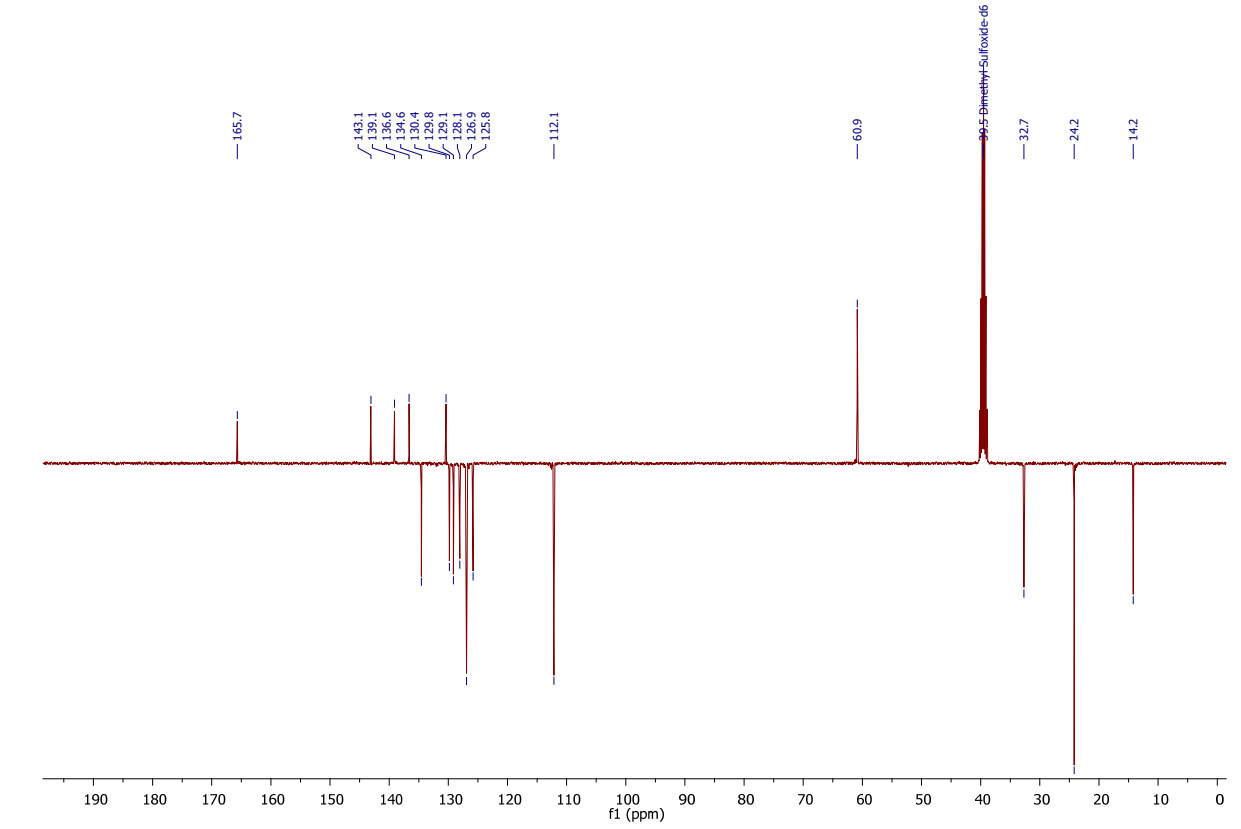








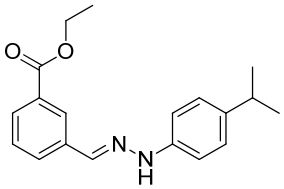

82
10.39
8.17
7.90
7.89
7.85
7.83
7.54
7.52
7.50
7.12
7.10
7.02
7.00
4.37
4.35
4.33
4.32
2.83
2.81
2.79
2.78
2.76
2.50 Dimethyl Sulfoxide-d6
1.36
1.34
1.32
1.18
1.16
1.0
1.0
3.0
1.0
4.1
2.0
1.0
3.0
6.0
f1 (ppm)


165.7
143.1
139.1
136.6
134.6
130.4
129.8
129.1
128.1
126.9
125.8
112.1
60.9
39.5 Dimethyl Sulfoxide-d6
32.7
24.2
14.2
f1 (ppm)

LCMS Report

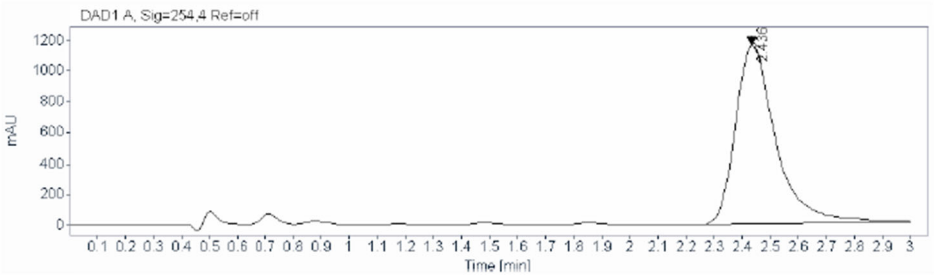
Agilent Technologies

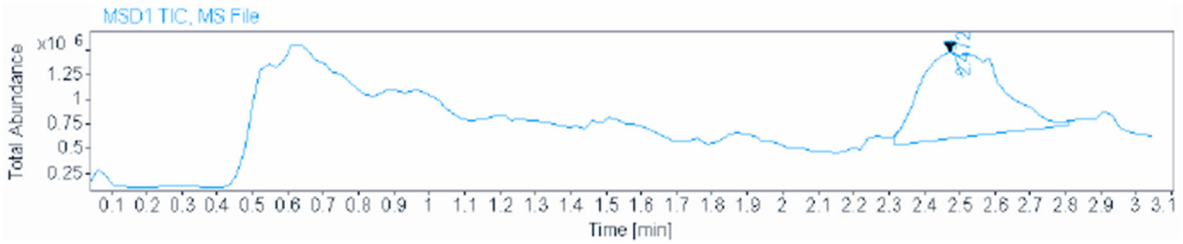
Data file:	D:\Chem32\1\Data\MH\MH4004 f4-13 and f15-58 2022-04-08 13-24-06\001-71-MH4004 f6-13.D		
Sample name:	MH4004 f6-13		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	71
Injection date:	4/8/2022 1:26:59 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

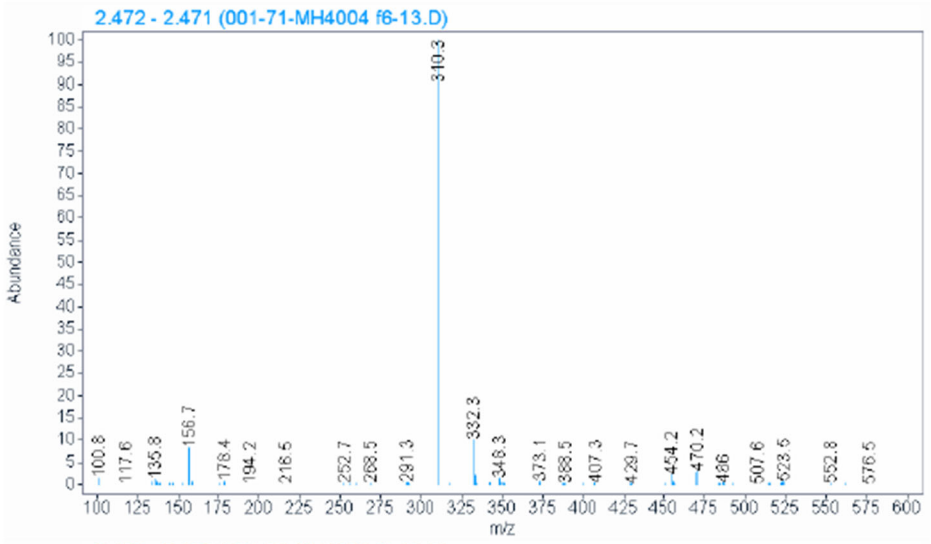


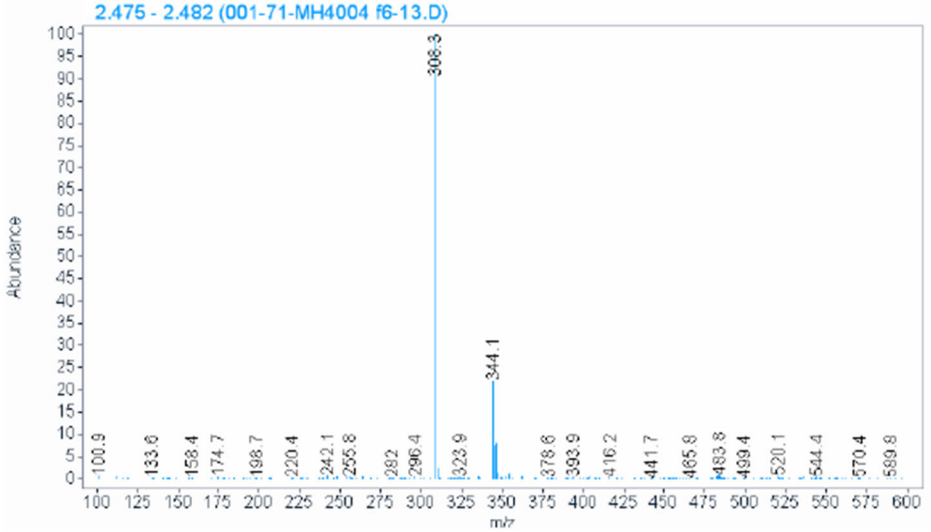
Molecular Weight: 310.390

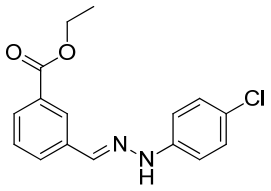
82



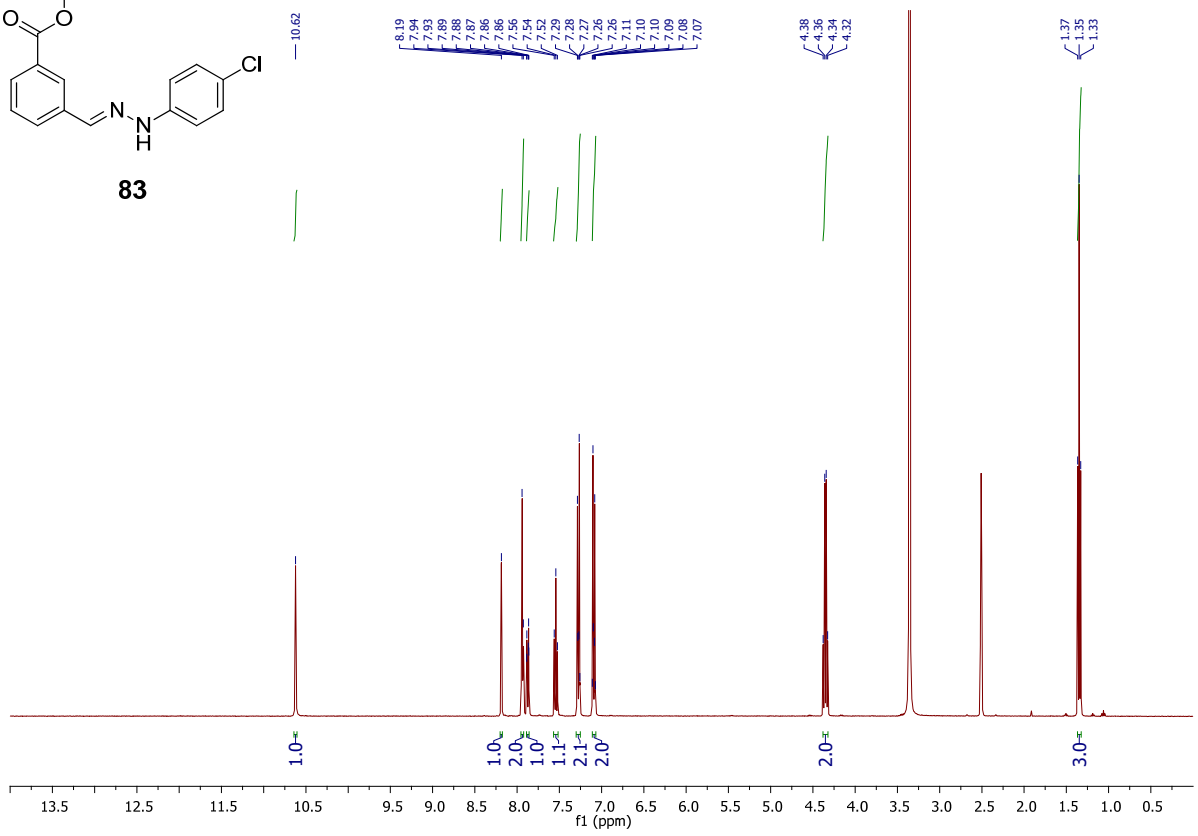


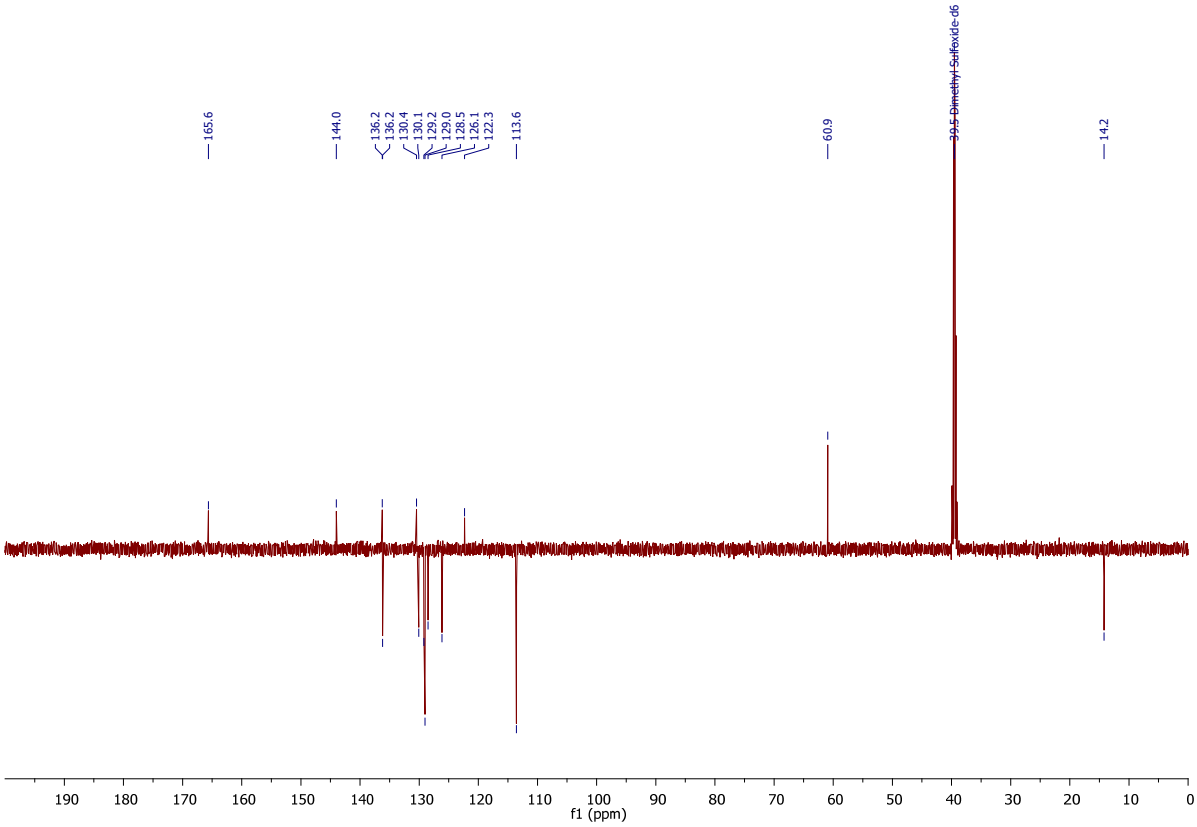





O
O
Cl
N
N
H

83

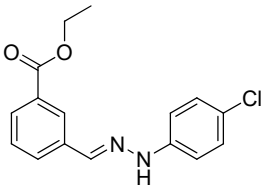

10.62
8.19
7.94
7.93
7.89
7.88
7.87
7.86
7.86
7.56
7.54
7.52
7.29
7.28
7.27
7.26
7.26
7.11
7.10
7.10
7.09
7.08
7.07
4.38
4.36
4.34
4.32
1.37
1.35
1.33
1.0
1.0
2.0
1.0
1.1
2.1
2.0
2.0
3.0
f1 (ppm)


165.6
144.0
136.2
136.2
130.4
130.1
129.2
129.0
128.5
126.1
122.3
113.6
60.9
39.5 Dimethyl Sulfoxide-d6
14.2
f1 (ppm)

LCMS Report

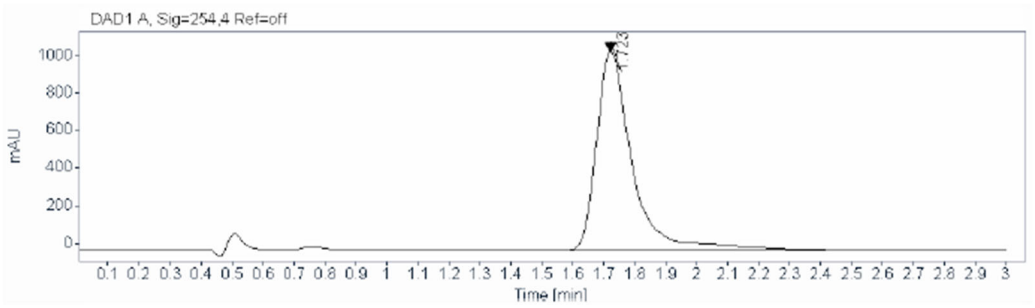
Agilent Technologies

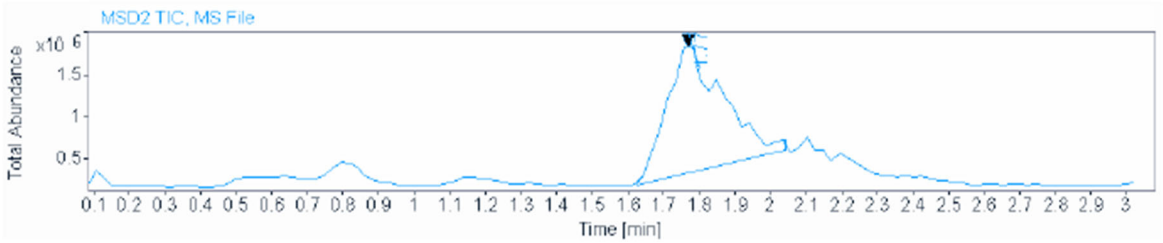
Data file:	D:\Chem32\1\Data\AJS\mh4017-4021 2022-03-04 12-16-02\006-66-MH4021.D		
Sample name:	MH4021		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	66
Injection date:	3/4/2022 12:40:58 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	6/21/2024 5:34:02 PM		

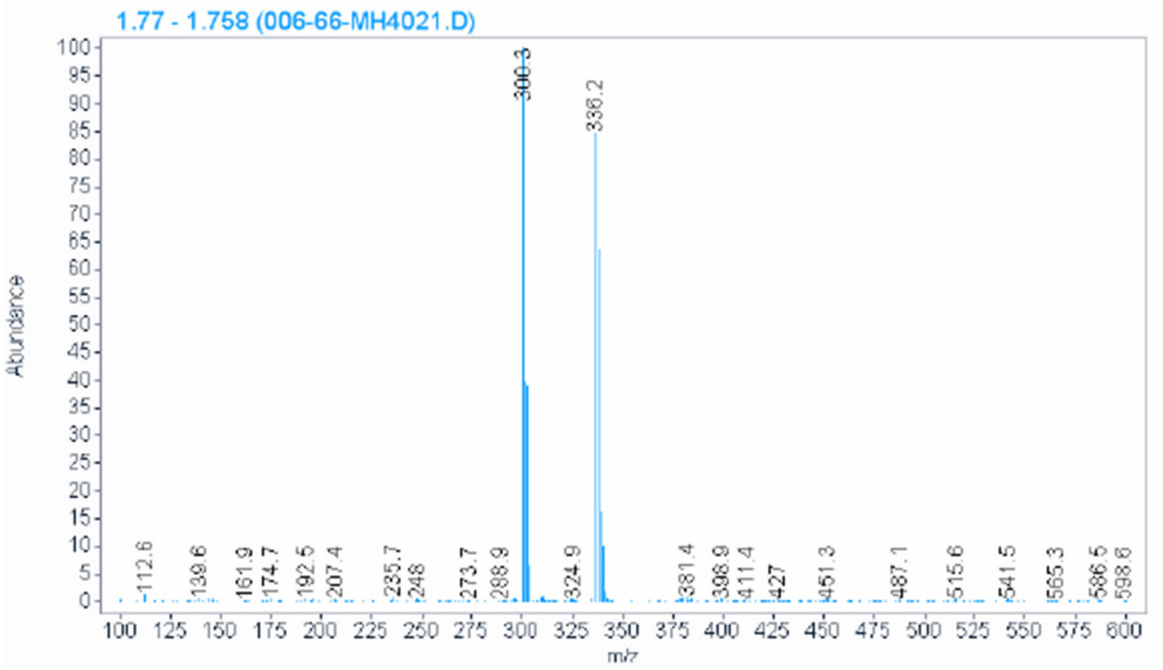


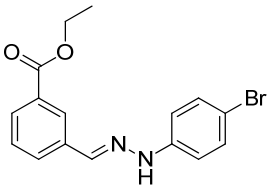
Molecular Weight: 302.756

83

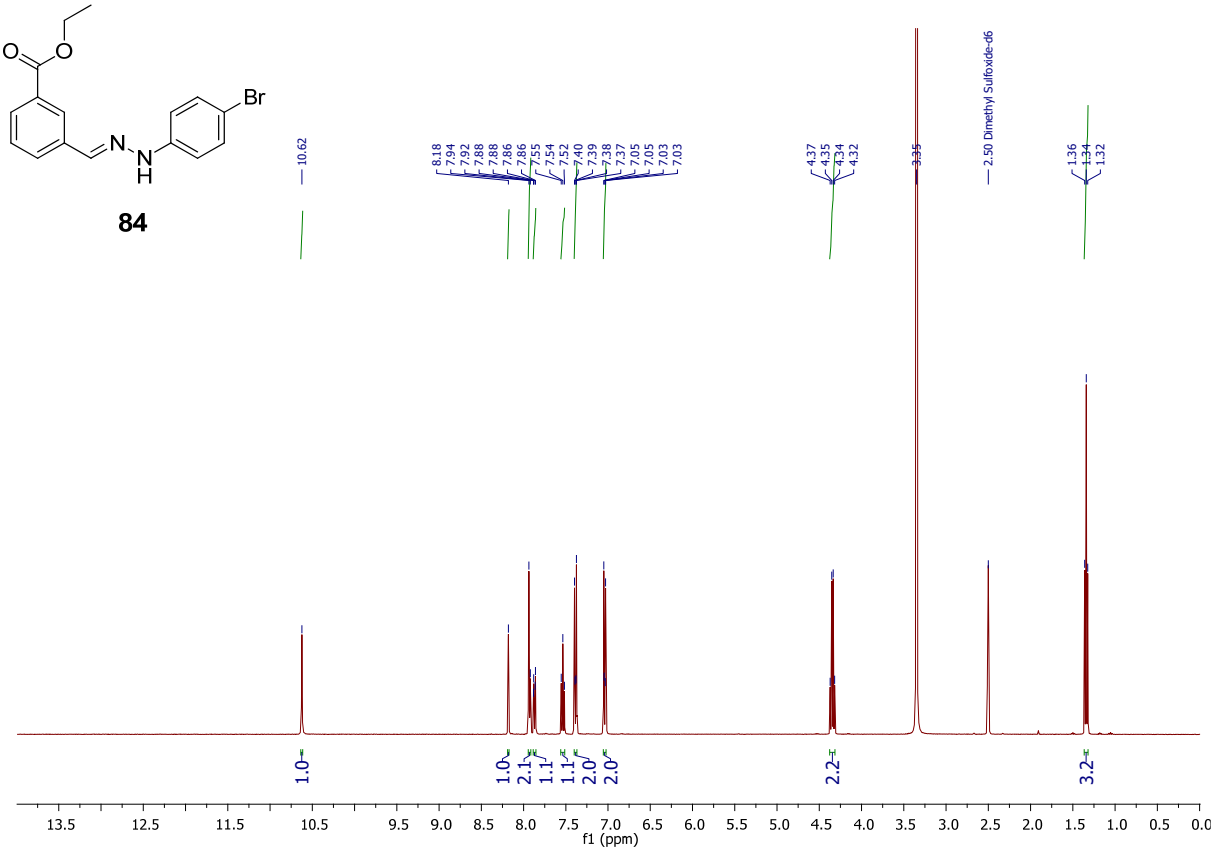


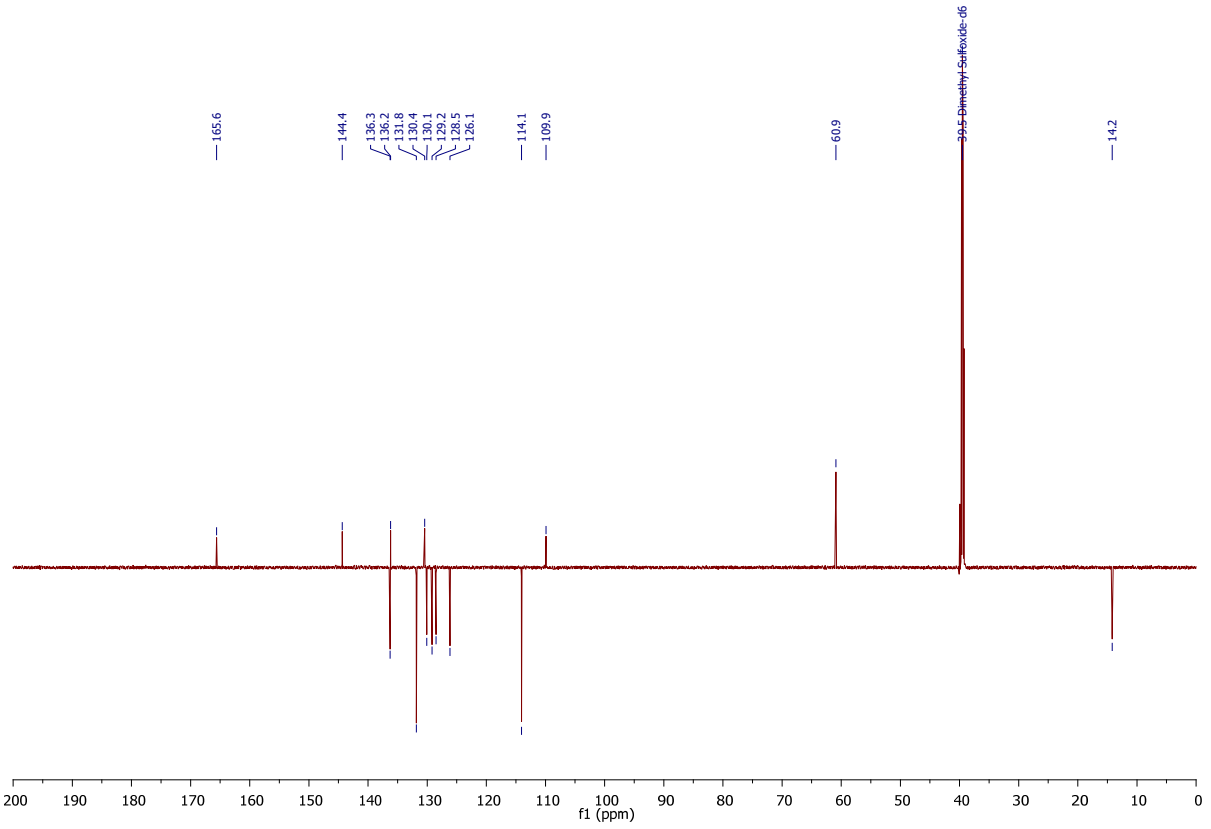





O
O
N
N
H
Br

84

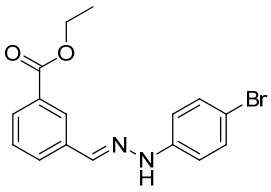

10.62
8.18
7.94
7.92
7.88
7.88
7.86
7.86
7.55
7.54
7.52
7.40
7.39
7.38
7.37
7.05
7.05
7.03
7.03
4.37
4.35
4.34
4.32
3.35
2.50 Dimethyl Sulfoxide-d6
1.36
1.34
1.32
1.0
1.0
2.1
1.1
1.1
2.0
2.0
2.2
3.2
13.5
12.5
11.5
10.5
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (ppm)


165.6
144.4
136.3
136.2
131.8
130.4
130.1
129.2
128.5
126.1
114.1
109.9
60.9
39.5 Dimethyl Sulfoxide-d6
14.2
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

LCMS Report

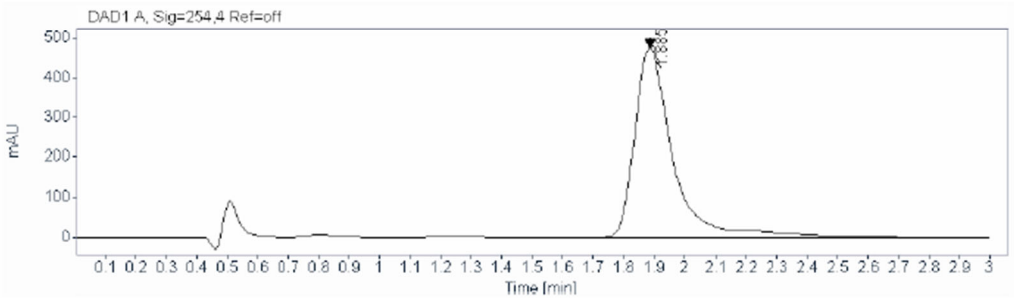
Agilent Technologies

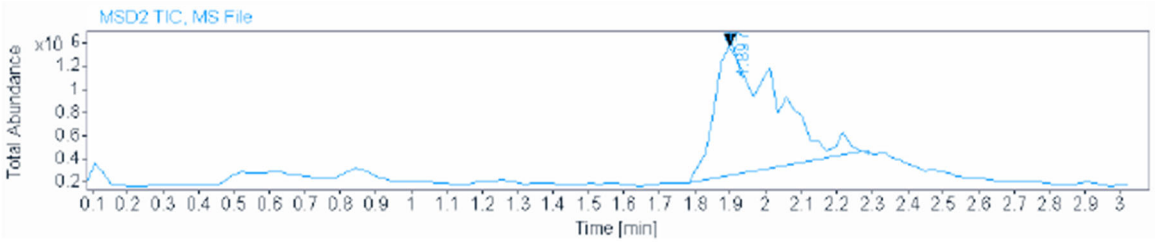
Data file:	D:\Chem32\1\Data\MH\mh40222-4026 2022-03-04 12-44-11\002-67-MH4022.D		
Sample name:	MH4022		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	67
Injection date:	3/4/2022 12:50:36 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

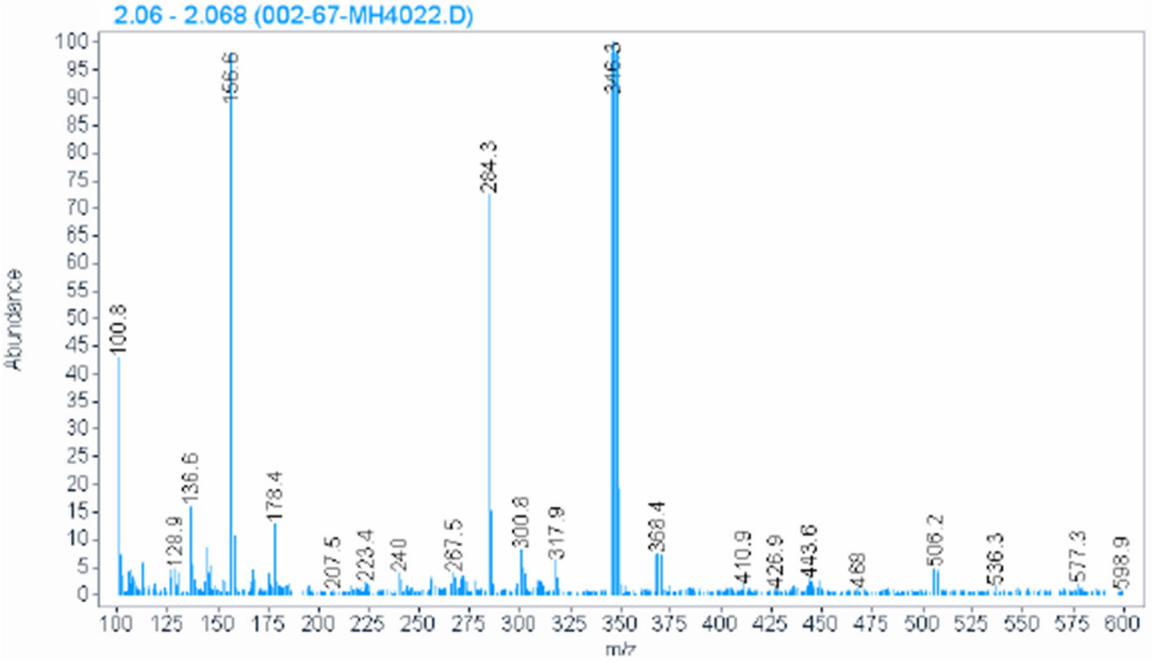


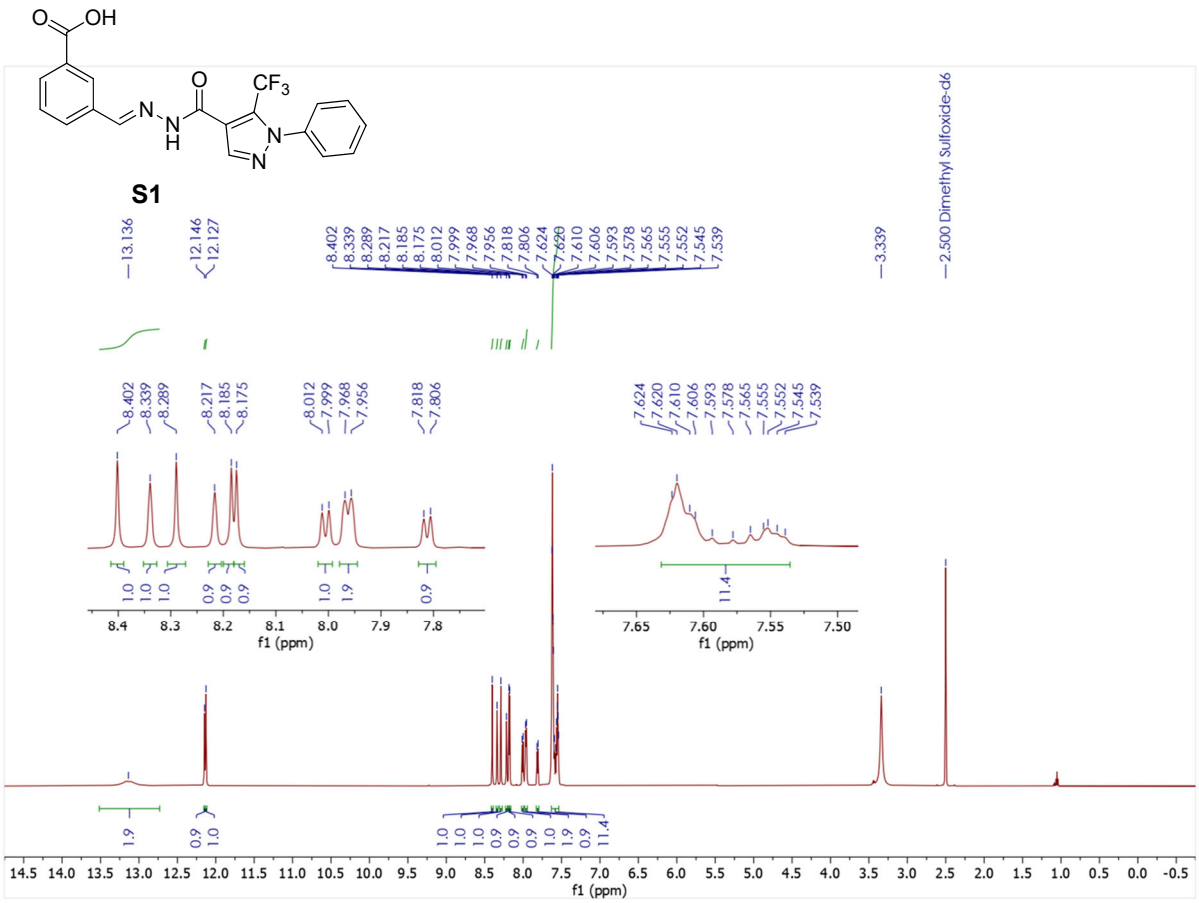
Molecular Weight: 347.207

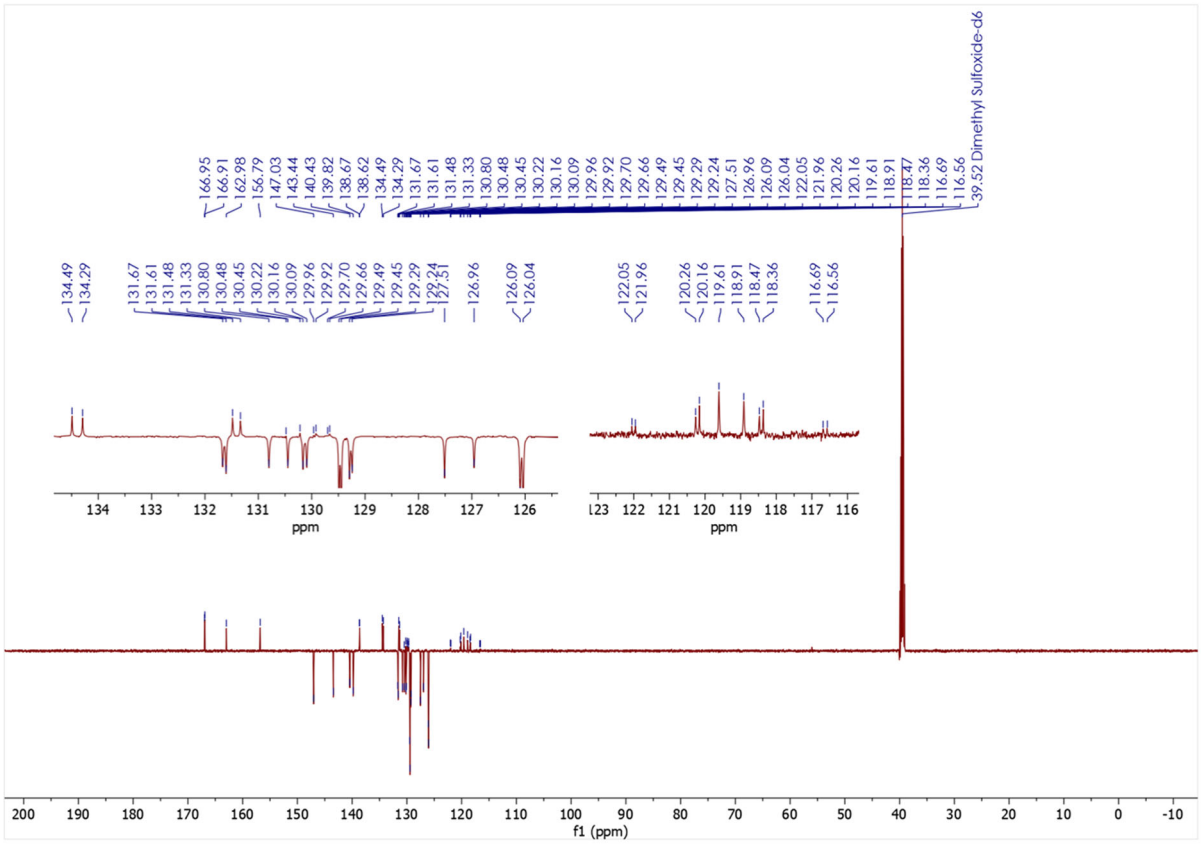
84

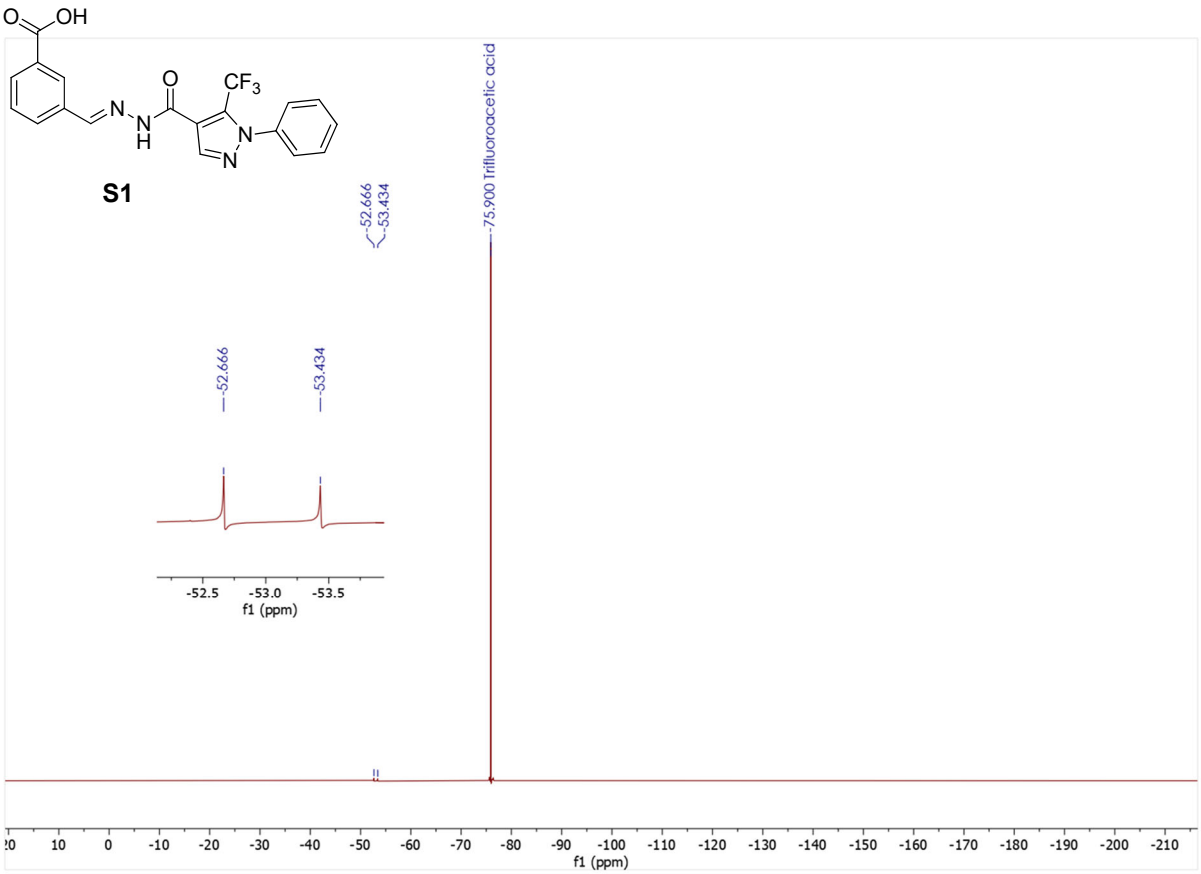







S1
2.500 Dimethyl Sulfoxide-d6
3.339
f1 (ppm)

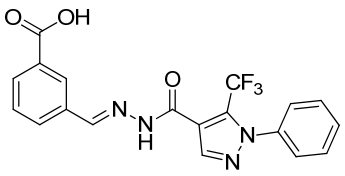

39.52 Dimethyl Sulfoxide-d6
ppm
f1 (ppm)


O
OH
O
CF3
N
N
H
N
S1
-52.666
-53.434
-75.900 Trifluoroacetic acid
-52.666
-53.434
-52.5
-53.0
-53.5
f1 (ppm)
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
-150
-160
-170
-180
-190
-200
-210
f1 (ppm)

LCMS Report

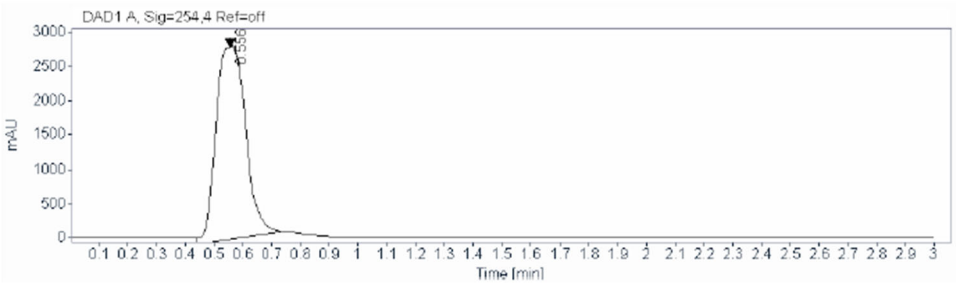
Agilent Technologies

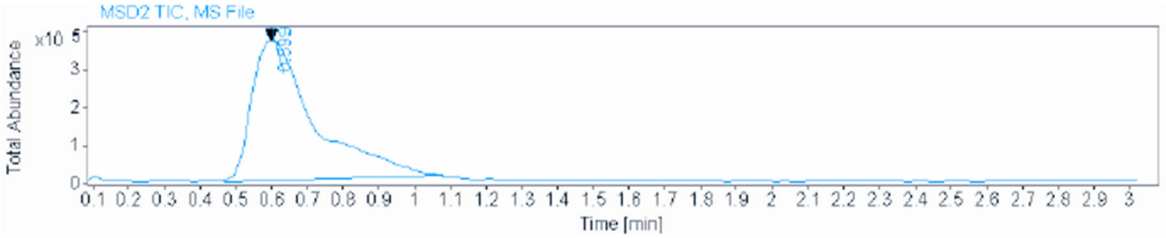
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\010-19-AJS1108.D		
Sample name:	AJS1108		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	19
Injection date:	7/25/2023 3:28:22 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

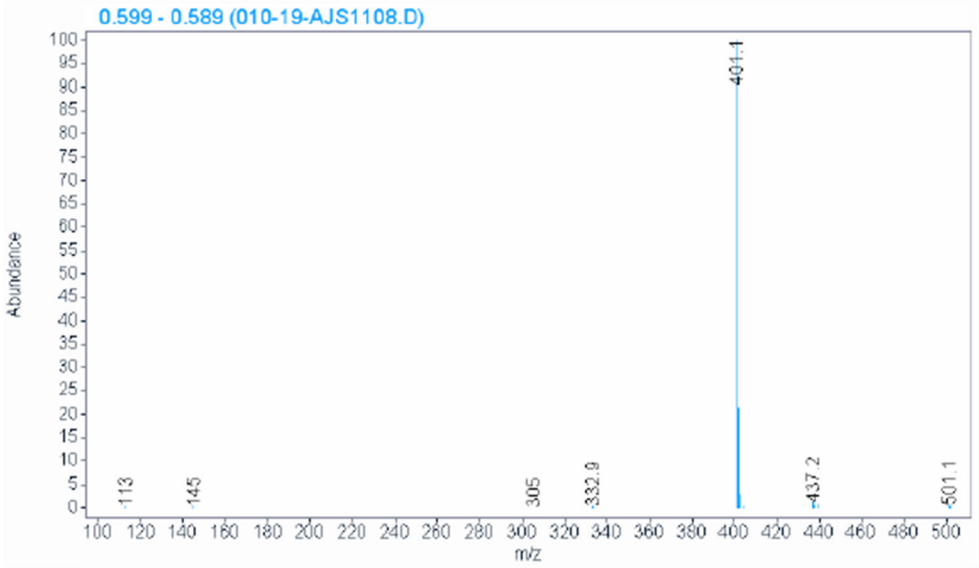


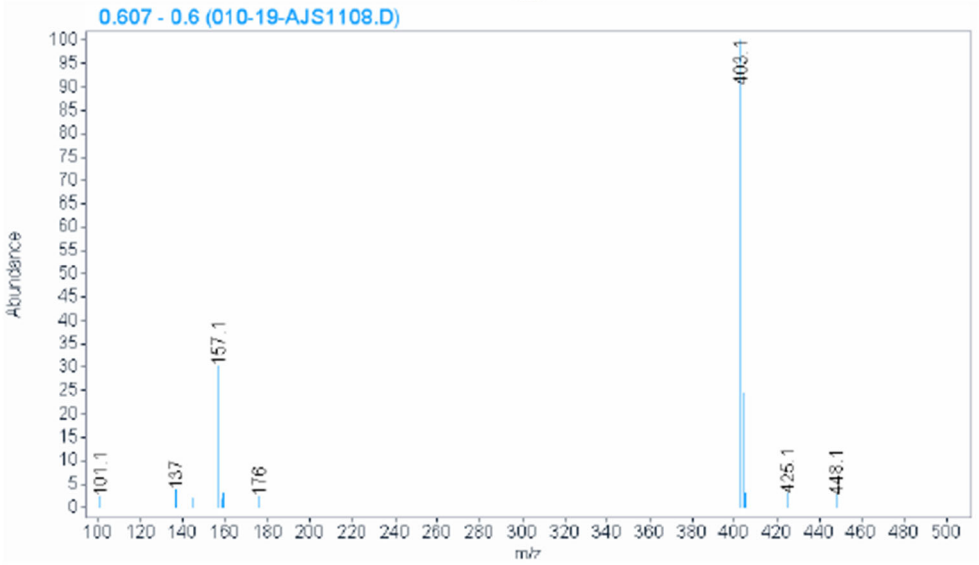
Molecular Weight: 402.327

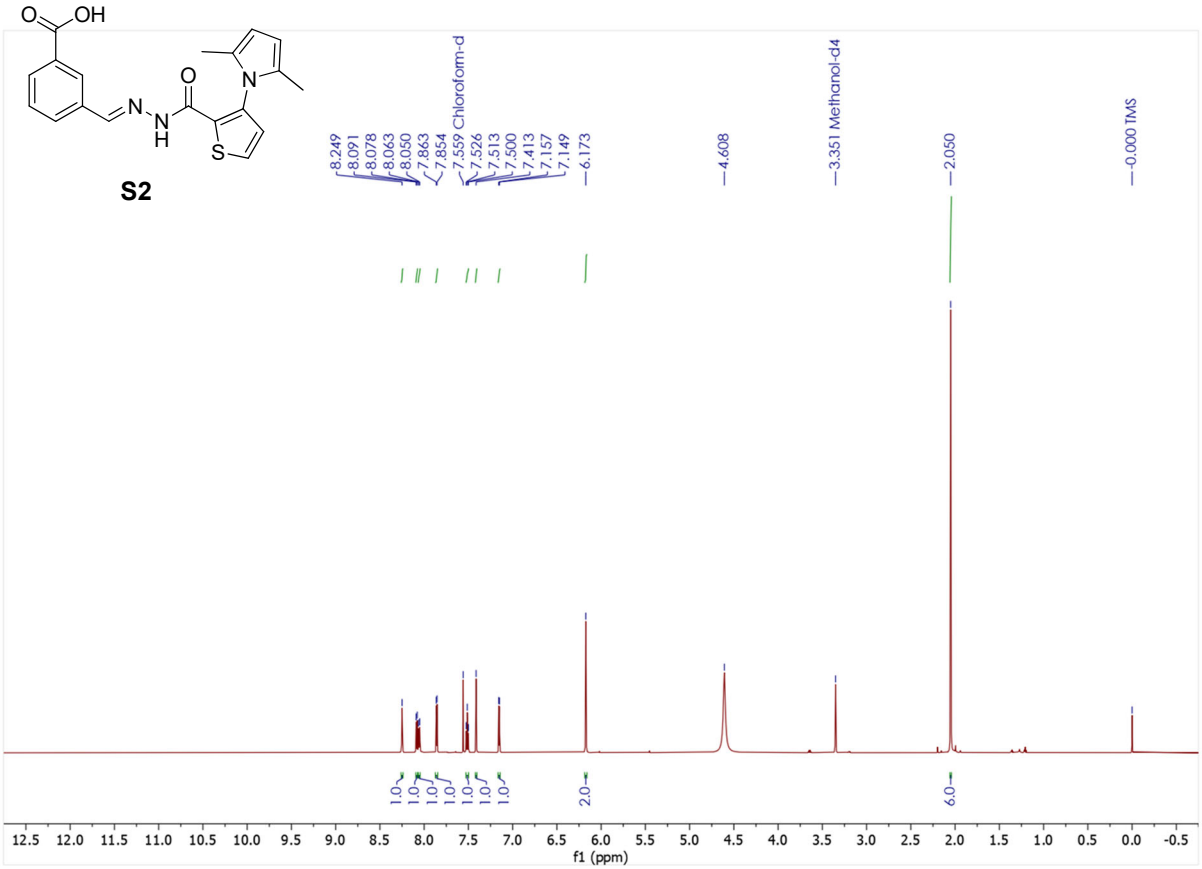
S1

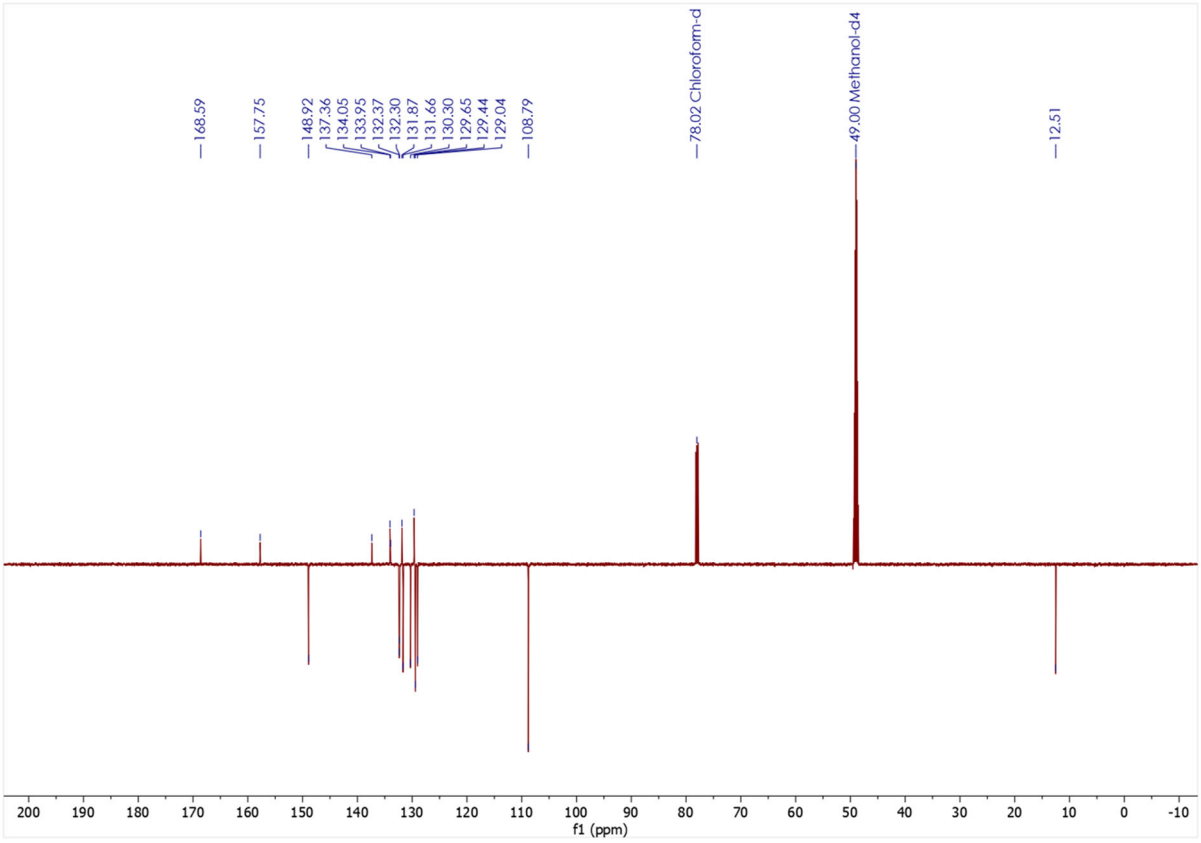








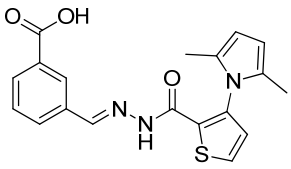

S2
8.249
8.091
8.078
8.063
8.050
7.863
7.854
7.559 Chloroform-d
7.526
7.513
7.500
7.413
7.157
7.149
6.173
4.608
3.351 Methanol-d4
2.050
-0.000 TMS
1.0
1.0
1.0
1.0
1.0
1.0
1.0
2.0
6.0
f1 (ppm)


168.59
157.75
148.92
137.36
134.05
133.95
132.37
132.30
131.87
131.66
130.30
129.65
129.44
129.04
108.79
78.02 Chloroform-d
49.00 Methanol-d4
12.51
f1 (ppm)

LCMS Report

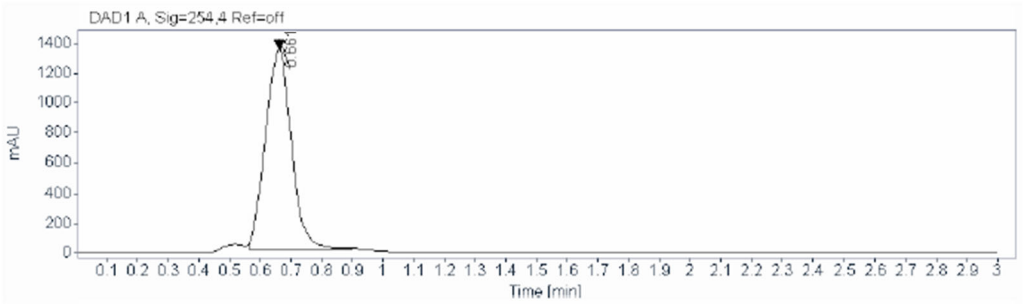
Agilent Technologies

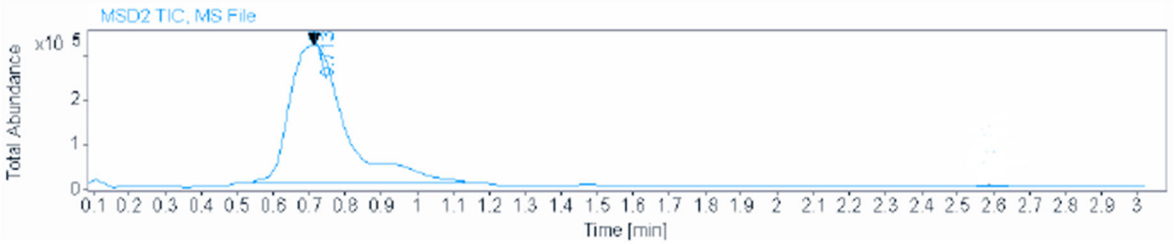
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\011-20-AJS1107.D		
Sample name:	AJS1107		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	20
Injection date:	7/25/2023 3:33:08 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	6/21/2024 5:37:01 PM		

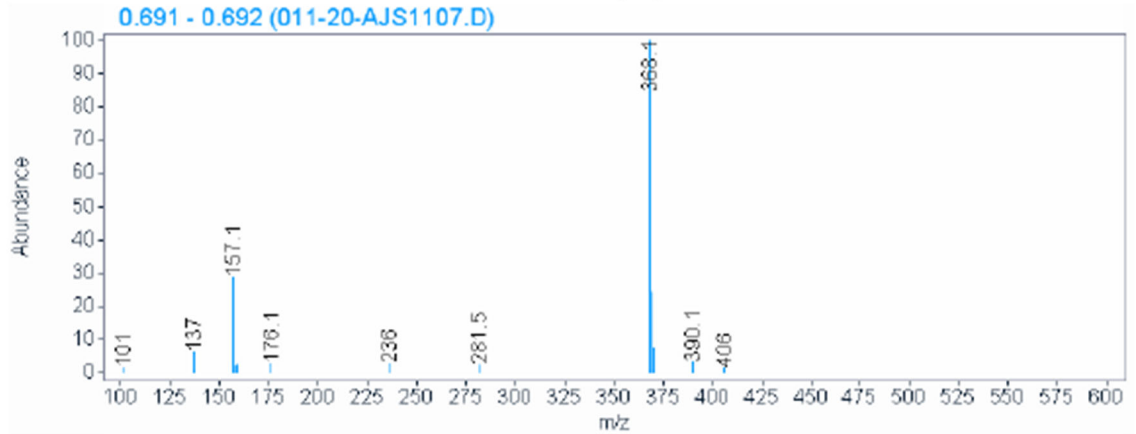


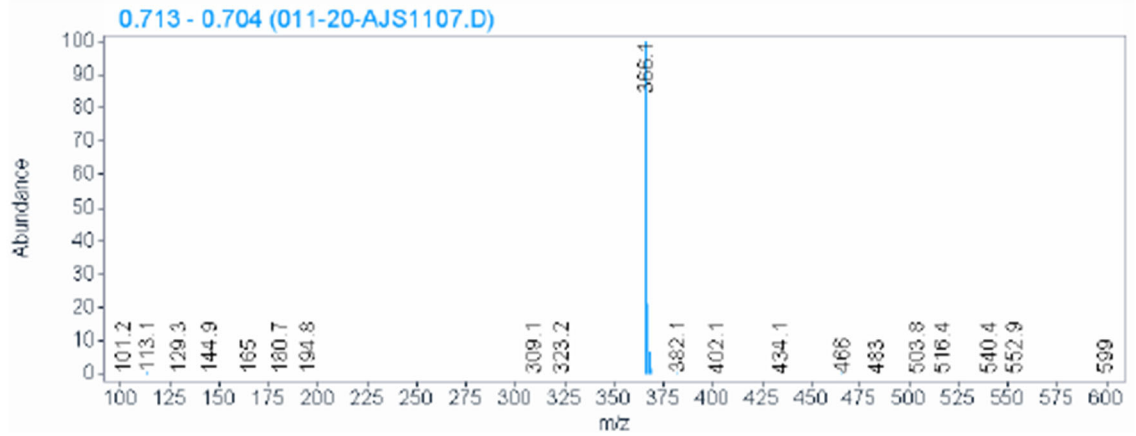
Molecular Weight: 367.422

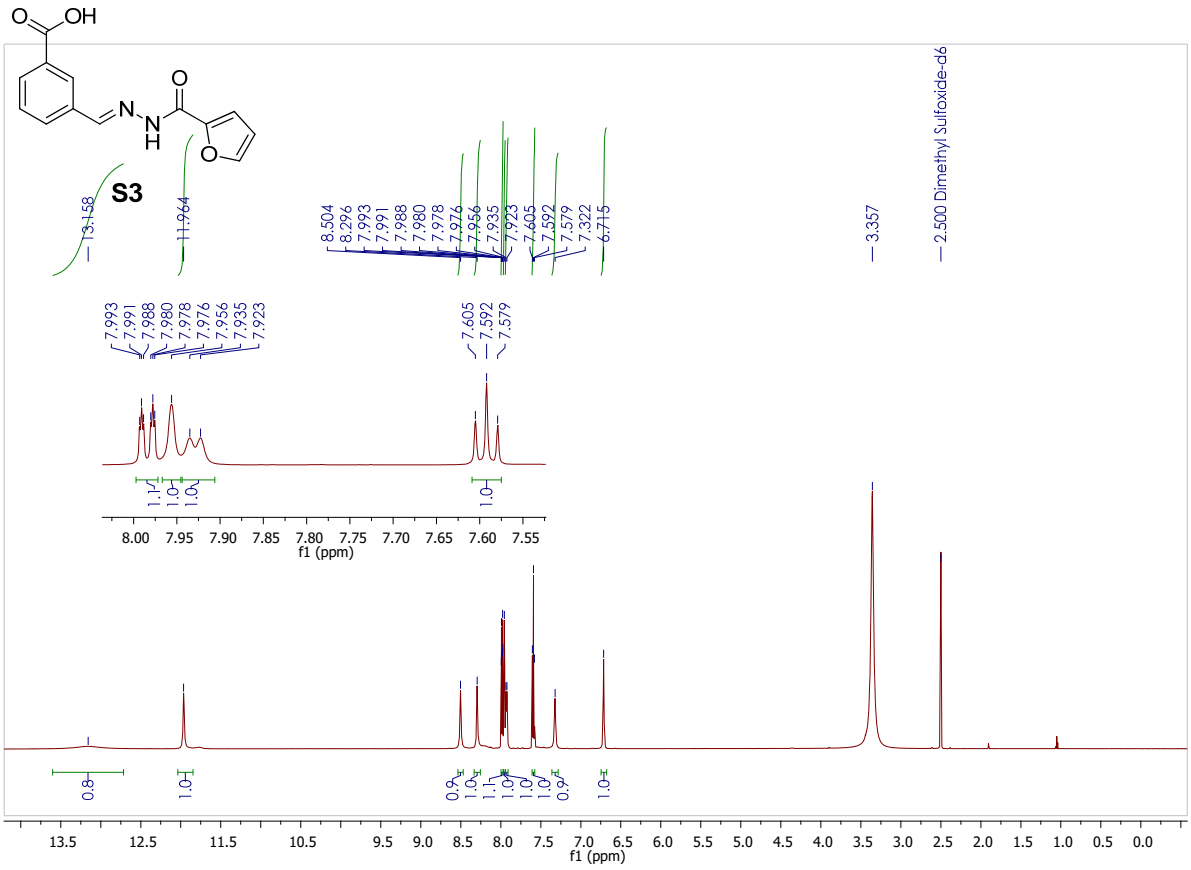
S2

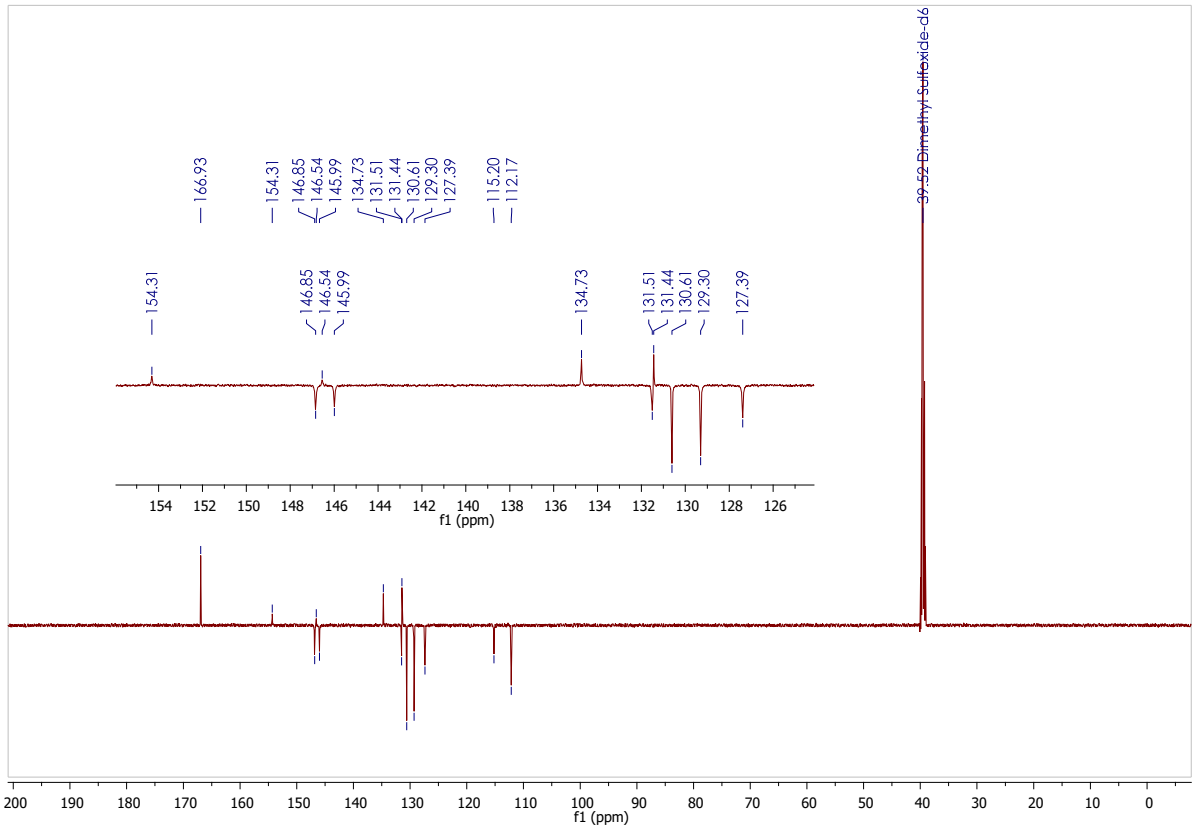








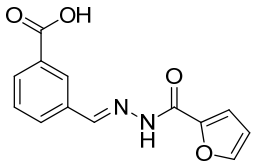

S3
13.158
11.964
8.504
8.296
7.993
7.991
7.988
7.980
7.978
7.976
7.956
7.935
7.923
7.605
7.592
7.579
7.322
6.715
3.357
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


166.93
154.31
146.85
146.54
145.99
134.73
131.51
131.44
130.61
129.30
127.39
115.20
112.17
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

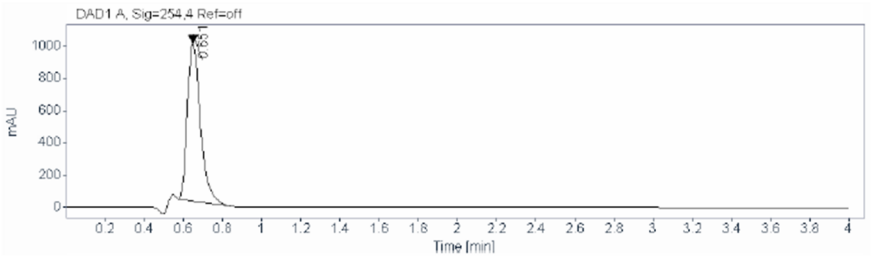
Agilent Technologies

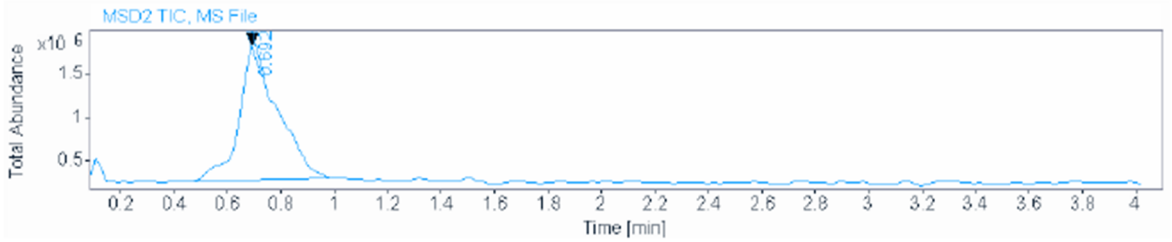
Data file:	D:\Chem32\1\Data\JRB\JRB2072 2080 2084 2081 2070 2022-01-31 15-09-41\003-89-JRB2080.D		
Sample name:	JRB2080		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	89
Injection date:	1/31/2022 3:22:00 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC_50% B_0.4MLMIN-1_4MINS.M	**Acq. operator:**	SYSTEM
Last changed:	7/14/2016 12:06:24 PM		

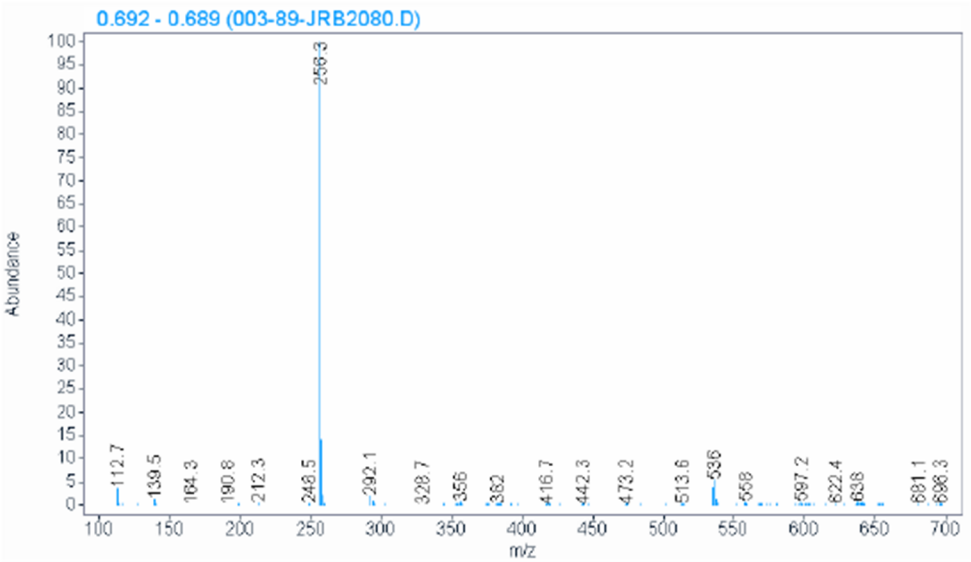


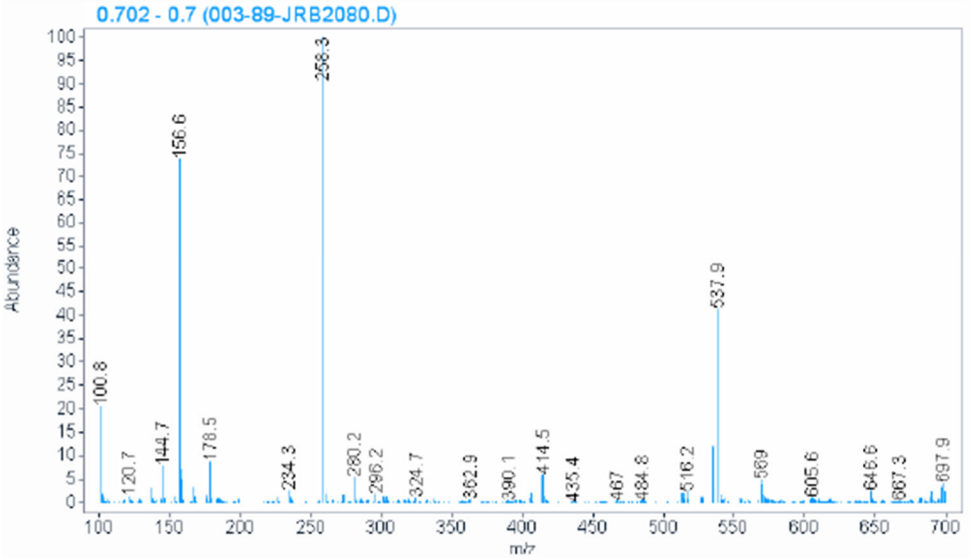
Molecular Weight: 258.229

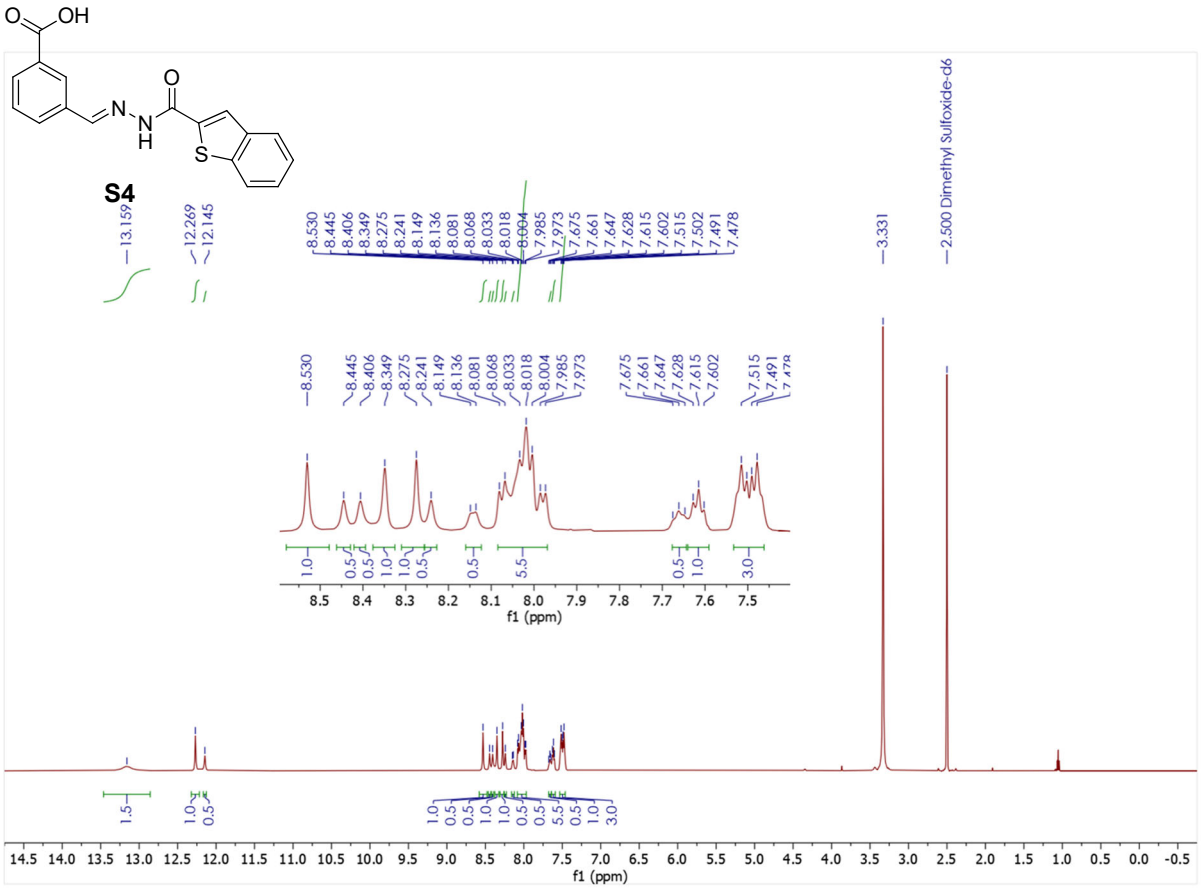
S3

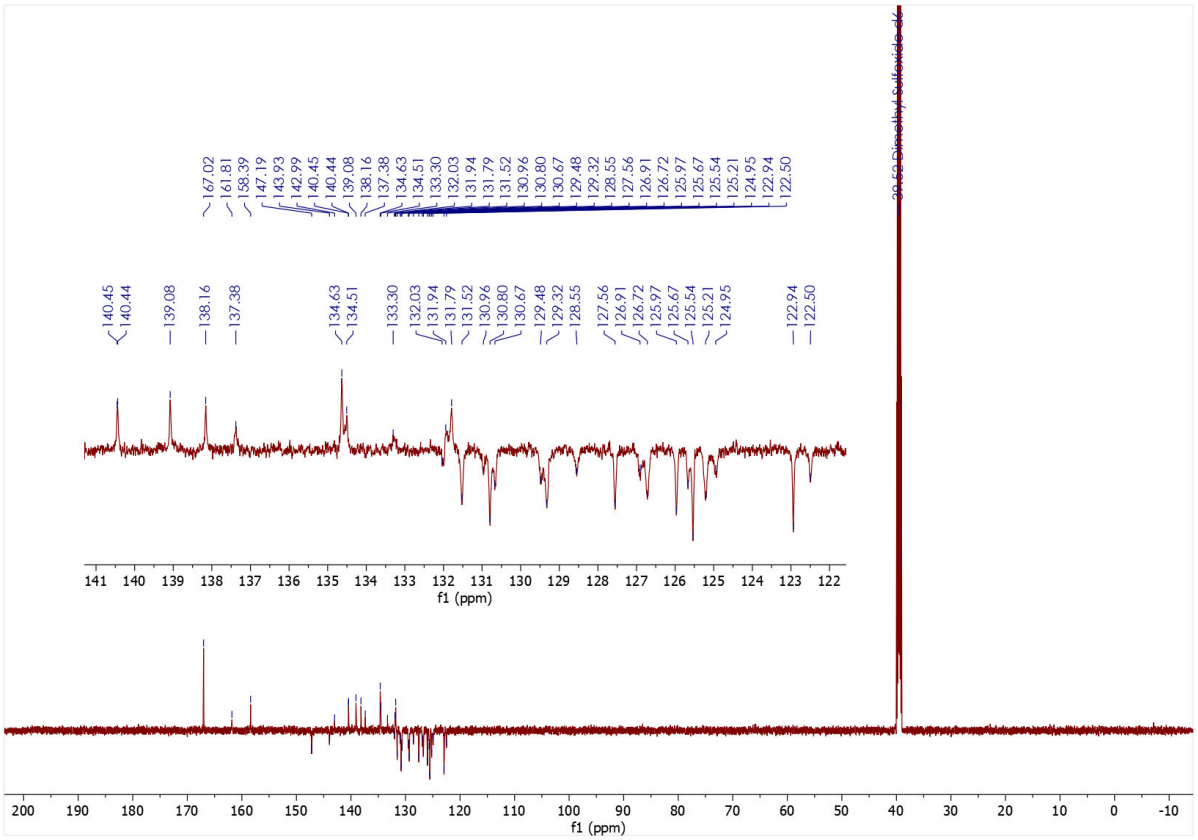








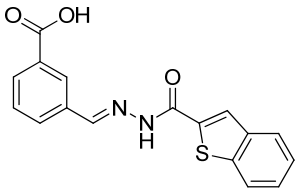

S4
13.159
12.269
12.145
8.530
8.445
8.406
8.349
8.275
8.241
8.149
8.136
8.081
8.068
8.033
8.018
8.004
7.985
7.973
7.675
7.661
7.647
7.628
7.615
7.602
7.515
7.502
7.491
7.478
3.331
2.500 Dimethyl Sulfoxide-d6
f1 (ppm)


167.02
161.81
158.39
147.19
143.93
142.99
140.45
140.44
139.08
138.16
137.38
134.63
134.51
133.30
132.03
131.94
131.79
131.52
130.96
130.80
130.67
129.48
129.32
128.55
127.56
126.91
126.72
125.97
125.67
125.54
125.21
124.95
122.94
122.50
39.52 Dimethyl Sulfoxide-d6
f1 (ppm)

LCMS Report

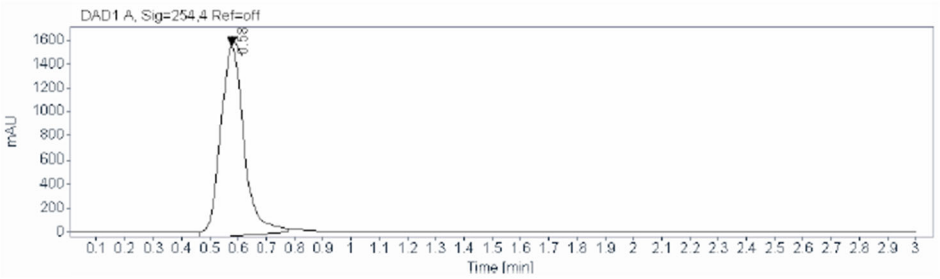
Agilent Technologies

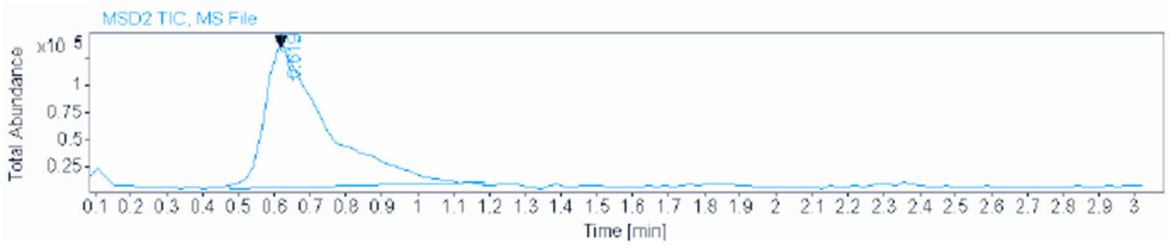
Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\012-21-AJS1110.D		
Sample name:	AJS1110		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	21
Injection date:	7/25/2023 3:37:51 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		

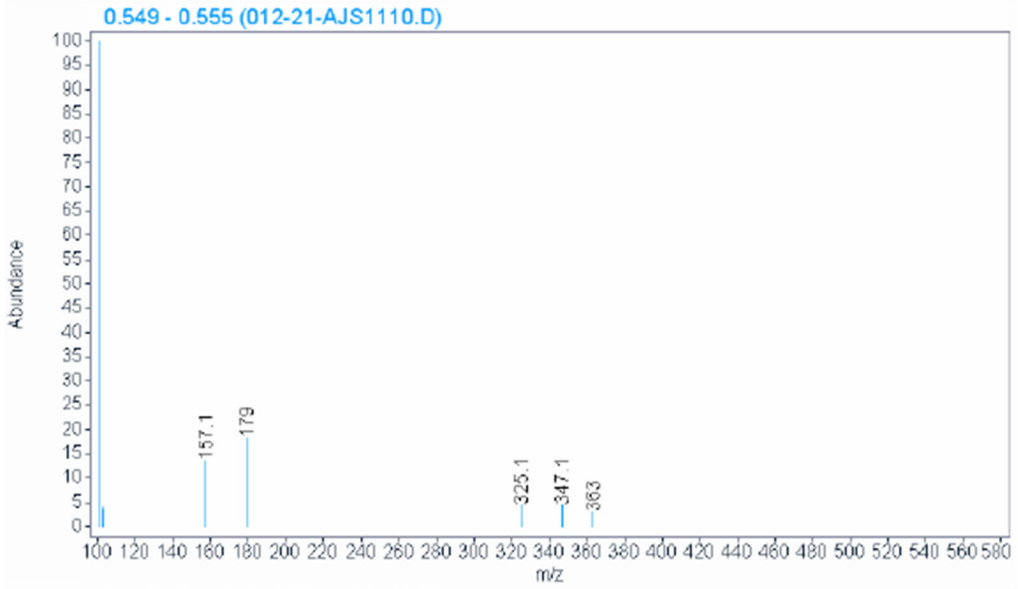


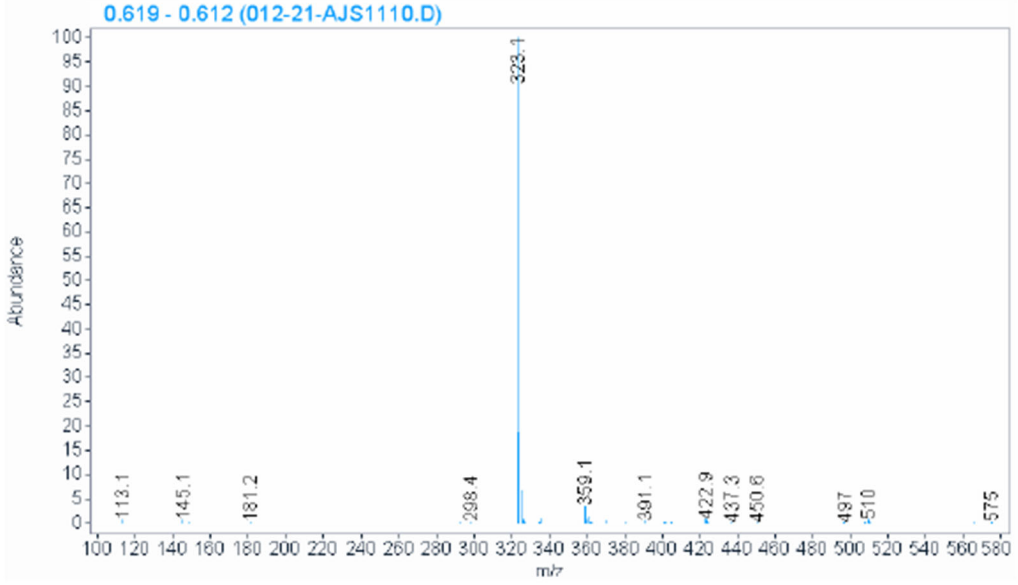
Molecular Weight: 324.354

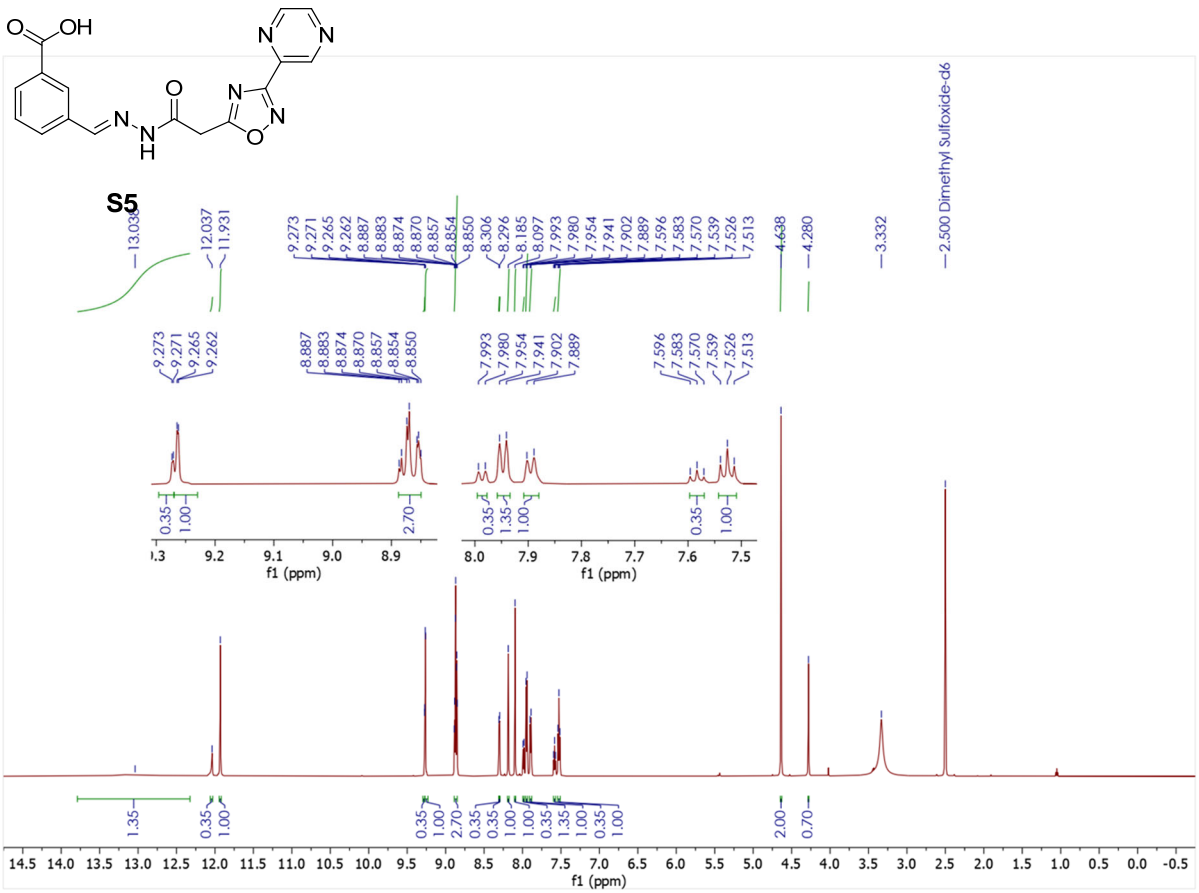
S4

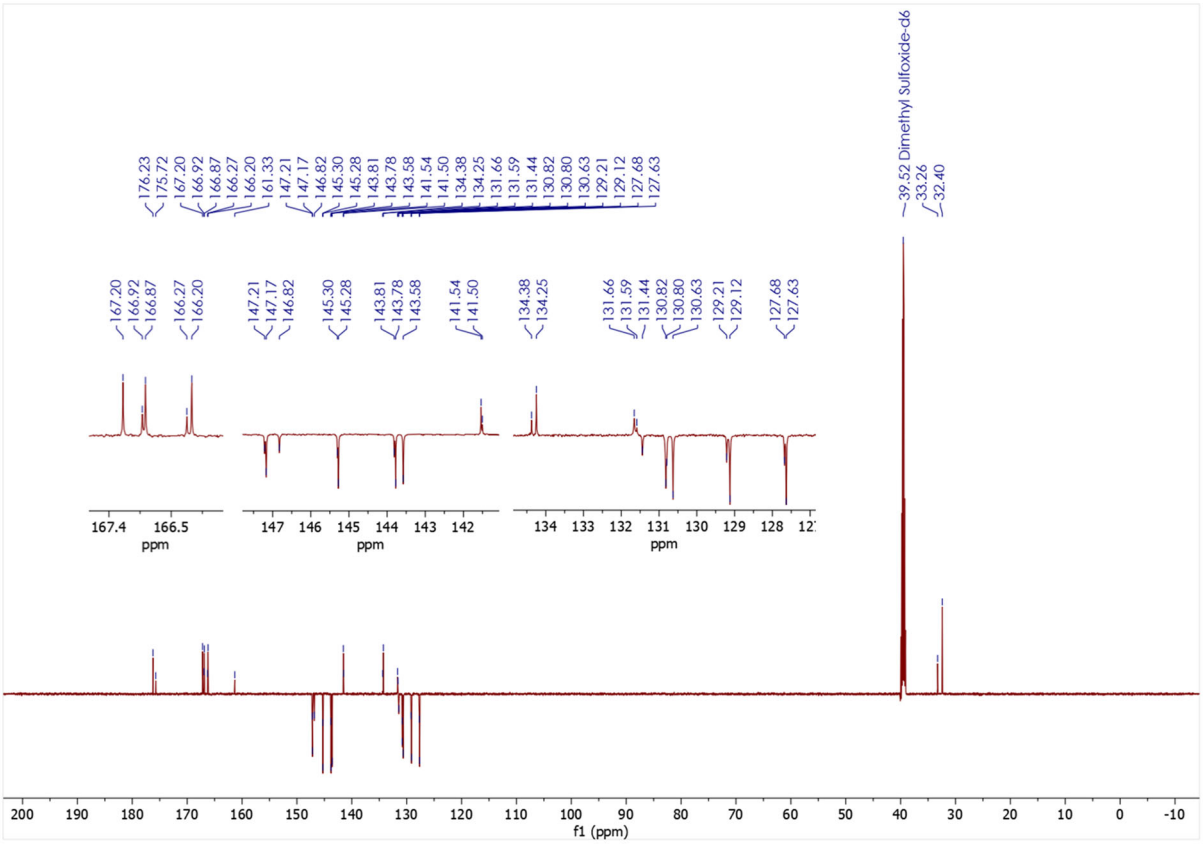








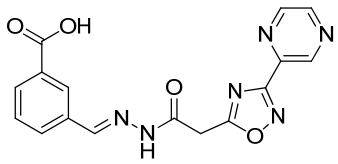

S5
f1 (ppm)


f1 (ppm)

LCMS Report

Agilent Technologies

Data file:	D:\Chem32\1\Data\AJS\AJS Table1 2023-07-25 14-45-29\013-22-AJS1106.D		
Sample name:	AJS1106		
Description:			
Sample amount:	0.000	**Sample type:**	Sample
Instrument:	LCMS	**Location:**	22
Injection date:	7/25/2023 3:42:32 PM	**Injection:**	1 of 1
Acq. method:	LCMS ISOCRATIC 80% B_3 MINS.M	**Injection volume:**	2.000
Analysis method:	LCMS ISOCRATIC 80%B_3 MINS.M	**Acq. operator:**	SYSTEM
Last changed:	11/26/2021 9:20:48 AM		



Molecular Weight: 352.304

S5