Supporting Information

Synthesis of novel 1,2,4-triazole derivatives containing the quinazolinylpiperidinyl moiety and *N*-(substituted phenyl)acetamide group as efficient bactericides against the phytopathogenic bacterium *Xanthomonas oryzae* pv. *oryzae*

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Table of Contents

N-(4-acetylphenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7a) 59.1 mg, yield: 81%, as a brown solid; mp 119–120 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.65 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 10.0 Hz, 3H), 7.78–7.74 (m, 2H), 7.66 (d, J = 5.0 Hz, 2H), 7.60 (d, J = 5.0 Hz, 3H), 7.51–7.47 (m, 3H), 4.20 (d, J = 15.0 Hz, 2H), 4.14 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 2.49 (s, 3H), 1.94–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 197.1, 166.8, 164.2, 158.6, 154.1, 151.8, 150.4, 143.6, 133.4, 133.2, 132.5, 130.8, 130.7, 130.1, 128.5, 128.0, 126.1, 125.8, 118.9, 116.4, 49.2, 37.4, 32.5, 30.3, 27.0; IR (KBr, ν/cm^{-1}): 1676 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{31}H_{30}N_7O_2S$: 564.2176; found: 564.2179.

N-(4-fluorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7b) 52.8 mg, yield: 75%, as a white solid; mp 111–113 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.39 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 5.0 Hz, 1H), 7.75 (t, J = 5.0 Hz, 2H), 7.61 (d, J = 5.0 Hz, 3H), 7.56–7.47 (m, 5H), 7.13 (t, J = 5.0 Hz, 2H), 4.20 (d, J = 15.0 Hz, 2H), 4.09 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.91–2.86 (m, 1H), 1.94–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.1, 164.2, 158.6, 154.1, 151.6, 150.5, 135.6, 133.3, 130.9, 130.7, 128.3, 128.0, 126.2, 125.8, 121.6, 121.5, 116.3, 116.0, 115.8, 49.2, 37.2, 32.5, 30.2; IR (KBr, ν/cm^{-1}): 1669 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{27}FN_7OS$: 540.1976; found: 540.1982.

N-(4-bromophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7c) 68.0 mg, yield: 88%, as a white solid; mp 113–115 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.46 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 5.0 Hz, 1H), 7.78–7.74 (m, 2H), 7.61–7.60 (m, 3H), 7.51–7.46 (m, 7H), 4.20 (d, J = 15.0 Hz, 2H), 4.09 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.91–2.85 (m, 1H), 1.94–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.3, 164.2, 158.6, 154.1, 151.8, 150.4, 138.7, 133.4, 133.2, 132.2, 130.8, 130.7, 128.5, 128.0, 126.1, 125.8, 121.6, 116.4, 115.6, 49.2, 37.4, 32.5, 30.3; IR (KBr, ν/cm^{-1}): 1683 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd

for $C_{29}H_{27}BrN_7OS$: 600.1175; found: 600.1177.

N-(4-nitrophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7d) 64.9 mg, yield: 88%, as a pale yellow solid; mp 120–123 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.94 (s, 1H), 8.56 (s, 1H), 8.21 (d, J = 10.0 Hz, 2H), 7.91 (d, J = 5.0 Hz, 1H), 7.79–7.75 (m, 4H), 7.60–7.58 (m, 3H), 7.51–7.50 (m, 3H), 4.20 (d, J = 15.0 Hz, 2H), 4.16 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 1.93–1.86 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 167.2, 164.2, 158.7, 154.1, 151.7, 150.3, 145.4, 143.0, 135.6, 133.3, 130.9, 130.7, 128.4, 128.0, 126.2, 125.8, 125.6, 119.4, 116.3, 49.2, 37.4, 32.5, 30.2; IR (KBr, ν/cm^{-1}): 1700 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{27}N_8O_3S$: 567.1921; found: 567.1926.

N-(2,4-difluorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7e) 43.1 mg, yield; 60%, as a white solid; mp 205–206 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.17 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.84–7.78 (m, 1H), 7.76–7.74 (m, 2H), 7.62–7.59 (m, 3H), 7.51–7.47 (m, 3H), 7.31 (t, J = 10.0 Hz, 1H), 7.04 (t, J = 10.0 Hz, 1H), 4.20 (d, J = 15.0 Hz, 2H), 4.13 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 1.95–1.84 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.8, 164.2, 158.6, 154.1, 151.8, 150.4, 133.4, 133.2, 130.8, 130.7, 128.5, 128.0, 126.1, 125.8, 125.7, 125.6, 116.4, 111.9, 111.8, 111.6, 104.9, 104.7, 104.5, 49.2, 36.9, 32.6, 30.3; IR (KBr, ν/cm^{-1}): 1679 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{26}F_2N_7OS$: 558.1882; found: 558.1884.

N-(4-(trifluoromethyl)-phenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7f) 58.4 mg, yield: 77%, as a white solid; mp 115–116 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.66 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.78–7.73 (m, 4H), 7.66 (d, J = 5.0 Hz, 2H), 7.60 (d, J = 5.0 Hz, 3H), 7.51–7.47 (m, 3H), 4.20 (d, J = 15.0 Hz, 2H), 4.13 (s, 2H), 3.13 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 1.95–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.8, 164.2, 158.6, 154.1, 151.8, 150.4, 142.9, 133.4, 133.2, 130.8, 130.7, 128.5, 128.0, 126.8,

126.7, 126.1, 125.8, 124.2, 123.9, 123.8, 123.6, 119.5, 116.4, 49.2, 37.4, 32.5, 30.3; IR (KBr, ν/cm^{-1}): 1609 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{30}H_{27}F_3N_7OS$: 590.1944; found: 590.1945.

N-(3-fluorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7g) 48.7 mg, yield: 70%, as a white solid; mp 120–122 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.53 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.78–7.74 (m, 2H), 7.61–7.60 (m, 3H), 7.53–7.48 (m, 4H), 7.35–7.30 (m, 1H), 7.24 (d, J = 5.0 Hz, 1H), 6.86 (t, J = 10.0 Hz, 1H), 4.20 (d, J = 15.0 Hz, 2H), 4.10 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.91–2.87 (m, 1H), 1.94–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.5, 164.2, 163.6, 161.7, 158.6, 154.2, 151.8, 150.4, 141.1, 133.4, 133.2, 130.8, 130.7, 128.5, 128.0, 126.1, 125.8, 116.4, 115.4, 110.6, 106.5, 49.2, 37.3, 32.5, 30.3; IR (KBr, ν/cm^{-1}): 1683 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{27}FN_7OS$: 540.1976; found: 540.1979.

N-(2,6-difluorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7h) 66.1 mg, yield: 92%, as a white solid; mp 258–260 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.09 (s, 1H), 8.57 (s, 1H), 7.92 (d, J = 15.0 Hz, 1H), 7.77–7.75 (m, 2H), 7.63–7.58 (m, 3H), 7.51–7.48 (m, 3H), 7.35–7.29 (m, 1H), 7.13 (t, J = 5.0 Hz, 2H), 4.21 (d, J = 15.0 Hz, 2H), 4.17 (s, 2H), 3.13 (t, J = 10.0 Hz, 2H), 2.92–2.87 (m, 1H), 1.96–1.85 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.5, 164.3, 159.0, 158.5, 157.1, 154.2, 151.8, 150.2, 133.4, 133.2, 130.8, 130.7, 128.5, 128.0, 126.1, 125.8, 116.4, 112.5, 112.4, 49.2, 36.2, 32.5, 30.3; IR (KBr, ν/cm^{-1}): 1672 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{26}F_2N_7OS$: 558.1882; found: 558.1886.

N-(2-nitrophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7i) 43.2 mg, yield: 59%, as a brown solid; mp 99–100 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.68 (s, 1H), 8.56 (s, 1H), 7.97 (d, J = 5.0 Hz, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.79–7.75 (m, 3H), 7.70 (t, J = 10.0 Hz, 1H), 7.63–

7.60 (m, 3H), 7.51–7.47 (m, 3H), 7.35 (t, J = 10.0 Hz, 1H), 4.20 (d, J = 15.0 Hz, 2H), 4.12 (s, 2H), 3.13 (t, J = 10.0 Hz, 2H), 2.92–2.87 (m, 1H), 1.95–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.8, 164.2, 158.7, 154.1, 151.8, 150.0, 142.0, 134.9, 133.4, 133.2, 131.8, 130.8, 130.7, 128.5, 128.0, 126.1, 125.9, 125.8, 125.6, 125.3, 116.4, 49.2, 36.8, 32.5, 30.3; IR (KBr, v/cm^{-1}): 1696 (C=O); ESI-HRMS m/z: [M + H]$^+$ calcd for $C_{29}H_{27}N_8O_3S$: 567.1921; found: 567.1924.

N-(2,6-dimethylphenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7j) 41.2 mg, yield: 58%, as a white solid; mp 238–240 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 9.59 (s, 1H), 8.57 (s, 1H), 7.92 (d, J = 10.0 Hz, 1H), 7.79–7.75 (m, 2H), 7.64–7.60 (m, 3H), 7.52–7.48 (m, 3H), 7.05–6.99 (m, 3H), 4.22 (d, J = 15.0 Hz, 2H), 4.10 (s, 2H), 3.13 (t, J = 10.0 Hz, 2H), 2.93–2.87 (m, 1H), 2.06 (s, 6H), 1.94–1.84 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 165.9, 164.3, 158.5, 154.2, 151.8, 150.4, 135.7, 135.2, 133.5, 133.2, 130.8, 130.7, 128.5, 128.2, 128.1, 127.1, 126.1, 125.8, 116.4, 49.3, 36.4, 32.5, 30.4, 18.5; IR (KBr, v/cm^{-1}): 1680 (C=O); ESI-HRMS m/z: [M + H]$^+$ calcd for $C_{31}H_{32}N_7OS$: 550.2383; found: 550.2386.

N-(2-(trifluoromethyl)phenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7k) 54.9 mg, yield: 72%, as a pink solid; mp 169–172 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 9.95 (s, 1H), 8.56 (s, 1H), 7.92 (d, J = 10.0 Hz, 1H), 7.77–7.76 (m, 2H), 7.70 (d, J = 10.0 Hz, 1H), 7.67–7.60 (m, 4H), 7.52–7.47 (m, 4H), 7.42 (t, J = 10.0 Hz, 1H), 4.22 (d, J = 15.0 Hz, 2H), 4.12 (s, 2H), 3.13 (t, J = 10.0 Hz, 2H), 2.93–2.88 (m, 1H), 1.97–1.85 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 167.4, 164.3, 158.6, 154.1, 151.8, 150.4, 135.5, 133.6, 133.4, 133.2, 130.8, 130.7, 129.9, 128.5, 128.0, 127.3, 126.9, 126.8, 126.1, 125.8, 122.9, 116.1, 49.2, 36.6, 32.5, 30.3; IR (KBr, v/cm^{-1}): 1695 (C=O); ESI-HRMS m/z: [M + H]$^+$ calcd for $C_{30}H_{27}F_3N_7OS$: 590.1944; found: 590.1944.

N-(3-acetylphenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-

triazol-3-yl)thio)acetamide (7l) 66.1 mg, yield: 91%, as a white solid; mp 165–166 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.52 (s, 1H), 8.56 (s, 1H), 8.12 (s, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.78–7.74 (m, 3H), 7.65 (d, J = 10.0 Hz, 1H), 7.62–7.58 (m, 3H), 7.51–7.43 (m, 4H), 4.20 (d, J = 15.0 Hz, 2H), 4.11 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 2.52 (s, 3H), 1.94–1.83 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 198.1, 166.5, 164.2, 158.6, 154.2, 151.8, 150.4, 139.7, 137.9, 133.4, 133.2, 130.8, 130.7, 129.8, 128.5, 128.1, 126.1, 125.8, 124.2, 124.1, 118.7, 116.4, 49.2, 37.3, 32.5, 30.3, 27.3; IR (KBr, v/cm^{-1}): 1669 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{31}H_{30}N_7O_2S$: 564.2176; found: 564.2180.

N-(4-methoxyphenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7m) 64.8 mg, yield: 91%, as a white solid; mp 160–163 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.15 (s, 1H), 8.56 (s, 1H), 7.91 (d, J = 10.0 Hz, 1H), 7.76 (d, J = 5.0 Hz, 2H), 7.60 (d, J = 5.0 Hz, 3H), 7.51–7.47 (m, 3H), 7.43 (d, J = 10.0 Hz, 2H), 6.85 (d, J = 10.0 Hz, 2H), 4.21 (d, J = 15.0 Hz, 2H), 4.05 (s, 2H), 3.68 (s, 3H), 3.13 (t, J = 10.0 Hz, 2H), 2.92–2.86 (m, 1H), 1.93–1.84 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 165.5, 164.3, 158.5, 155.9, 154.1, 151.8, 150.5, 133.5, 133.2, 132.5, 130.8, 130.7, 128.5, 128.1, 126.1, 125.8, 121.2, 116.4, 114.5, 55.7, 49.2, 37.4, 32.5, 30.3; IR (KBr, v/cm^{-1}): 1668 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{30}H_{30}N_7O_2S$: 552.2176; found: 552.2182.

N-(3-nitrophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7n) 55.4 mg, yield: 75%, as a white solid; mp 209–211 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.81 (s, 1H), 8.57 (t, J = 2.1 Hz, 1H), 8.55 (s, 1H), 7.90 (d, J = 10.0 Hz, 2H), 7.84 (d, J = 10.0 Hz, 1H), 7.78–7.73 (m, 2H), 7.61–7.58 (m, 4H), 7.52–7.46 (m, 3H), 4.20 (d, J = 15.0 Hz, 2H), 4.13 (s, 2H), 3.12 (t, J = 10.0 Hz, 2H), 2.93–2.87 (m, 1H), 1.94–1.84 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 167.0, 164.2, 158.6, 154.1, 151.8, 150.3, 148.5, 140.4, 133.4, 133.2, 130.9, 130.8, 130.7, 128.5, 128.0, 126.1, 125.8, 125.6, 118.6, 116.4, 113.7, 49.2, 37.2, 32.5, 30.3; IR (KBr, v/cm^{-1}): 1680 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{27}N_8O_3S$:

567.1921; found: 567.1924.

N-(4-chlorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7o) 65.9 mg, yield: 92%, as a white solid; mp 115–117 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 7.71 (s, 1H), 7.15 (d, J = 10.0 Hz, 1H), 6.97–6.96 (m, 2H), 6.81–6.78 (m, 4H), 6.73–6.69 (m, 3H), 6.67–6.65 (m, 2H), 6.47 (d, J = 10.0 Hz, 2H), 3.59 (d, J = 15.0 Hz, 2H), 3.17 (s, 2H), 2.33 (d, J = 10.0 Hz, 2H), 2.20–2.14 (m, 1H), 1.27–1.14 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 166.0, 163.8, 158.2, 152.5, 150.5, 150.0, 136.3, 132.1, 132.0, 129.7, 129.2, 128.1, 127.7, 126.7, 126.1, 124.9, 124.5, 120.2, 115.4, 48.3, 35.7, 32.2, 29.1. IR (KBr, ν/cm^{-1}): 1688 (C=O). ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{27}ClN_7OS$: 556.1680; found: 556.1687.

N-(2,4-dichlorophenyl)-2-((4-phenyl-5-(1-(quinazolin-4-yl)piperidin-4-yl)-4H-1,2,4-triazol-3-yl)thio)acetamide (7p) 44.0 mg, yield: 58%, as a brown solid; mp 90–92 °C; ^{1}H NMR (500 MHz, DMSO-d_6): 10.01 (s, 1H), 8.53 (s, 1H), 7.88 (d, J = 10.0 Hz, 1H), 7.77–7.73 (m, 3H), 7.61–7.57 (m, 4H), 7.48–7.45 (m, 3H), 7.37–7.35 (m, 1H), 4.18 (d, J = 15.0 Hz, 2H), 4.12 (s, 2H), 3.09 (t, J = 10.0 Hz, 2H), 2.89–2.84 (m, 1H), 1.92–1.81 (m, 4H); ^{13}C NMR (125 MHz, DMSO-d_6): 167.0, 164.2, 158.6, 154.2, 151.8, 150.4, 134.4, 133.4, 133.2, 130.9, 130.7, 129.8, 129.5, 128.5, 128.2, 128.0, 127.0, 126.6, 126.1, 125.8, 116.4, 49.2, 36.8, 32.5, 30.3; IR (KBr, ν/cm^{-1}): 1688 (C=O); ESI-HRMS m/z: $[M + H]^+$ calcd for $C_{29}H_{26}Cl_2N_7OS$: 590.1291; found: 590.1293.

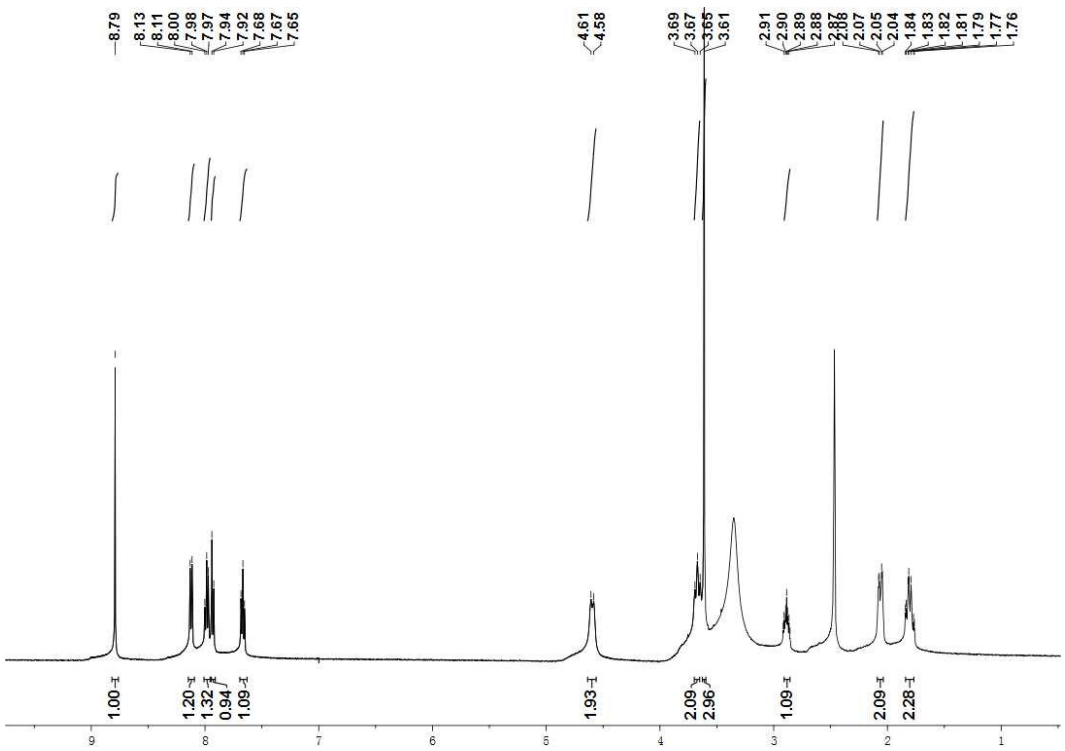

Figure S1. ^{1}H NMR spectrum of intermediate **2** (DMSO-d_6)

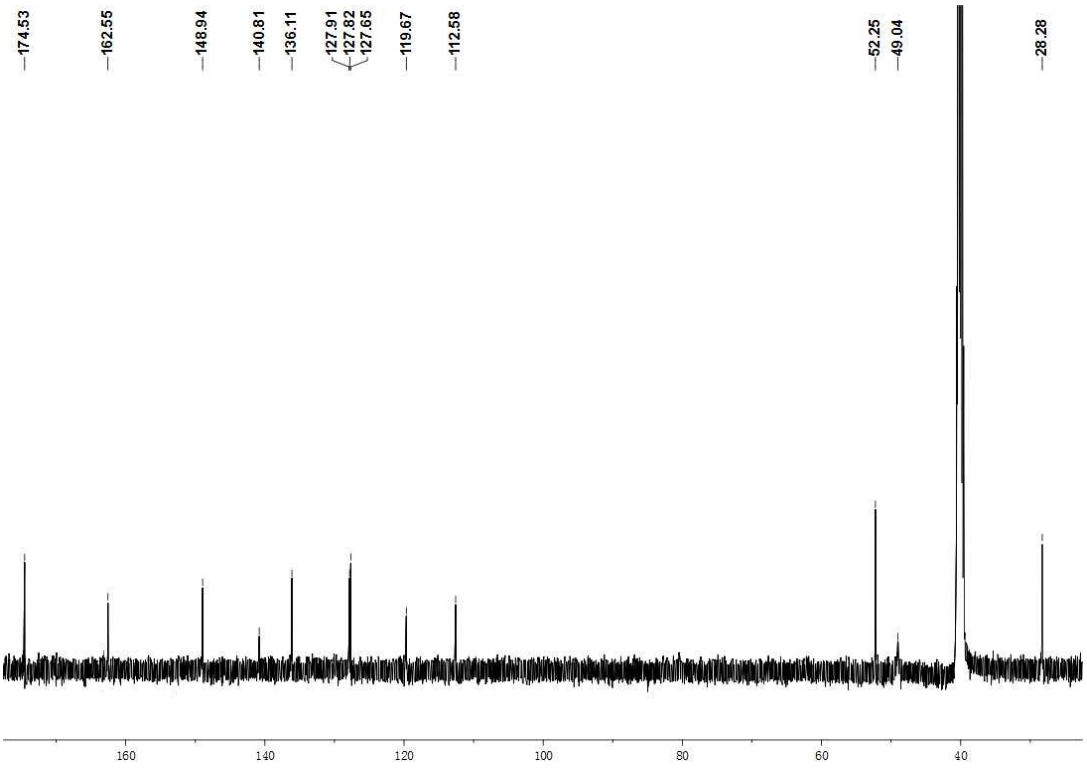

Figure S2. ^{13}C NMR spectrum of intermediate **2** (DMSO-d_6)

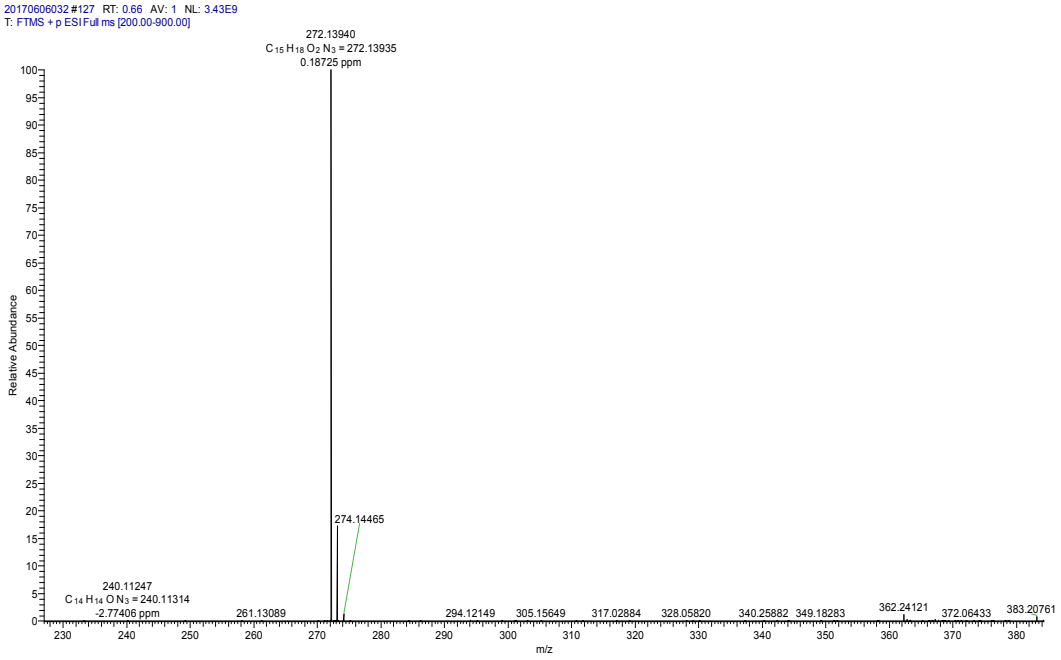

Figure S3. HRMS-ESI spectrum of intermediate **2**

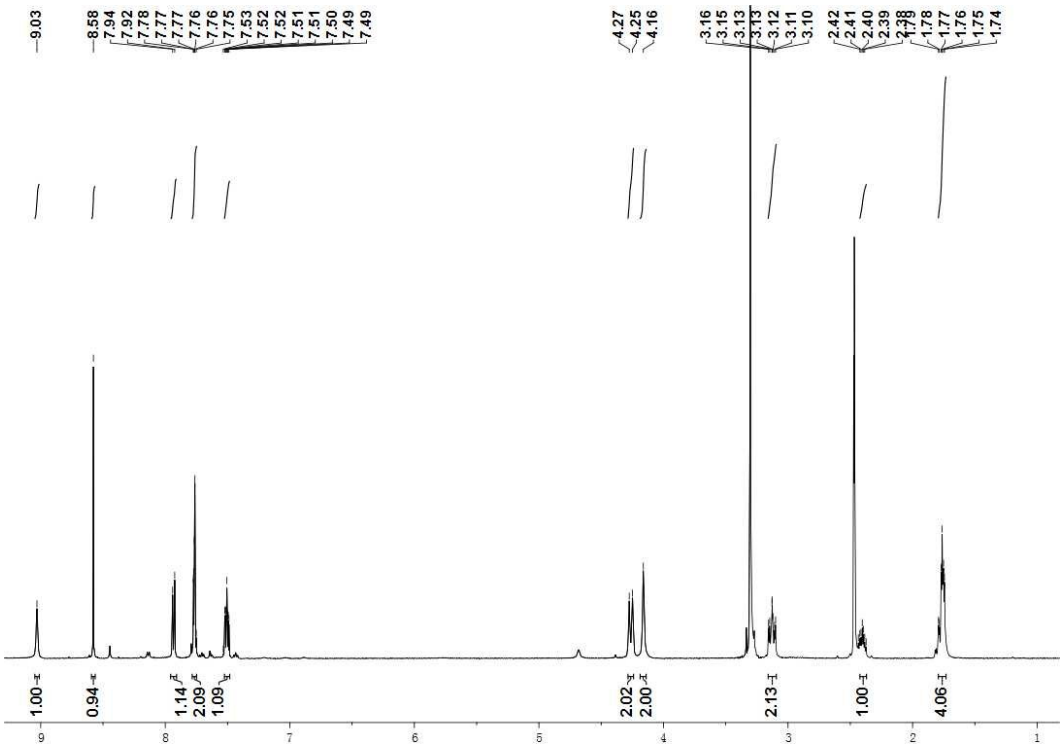

Figure S4. ^{1}H NMR spectrum of intermediate **3** (DMSO-d_6)

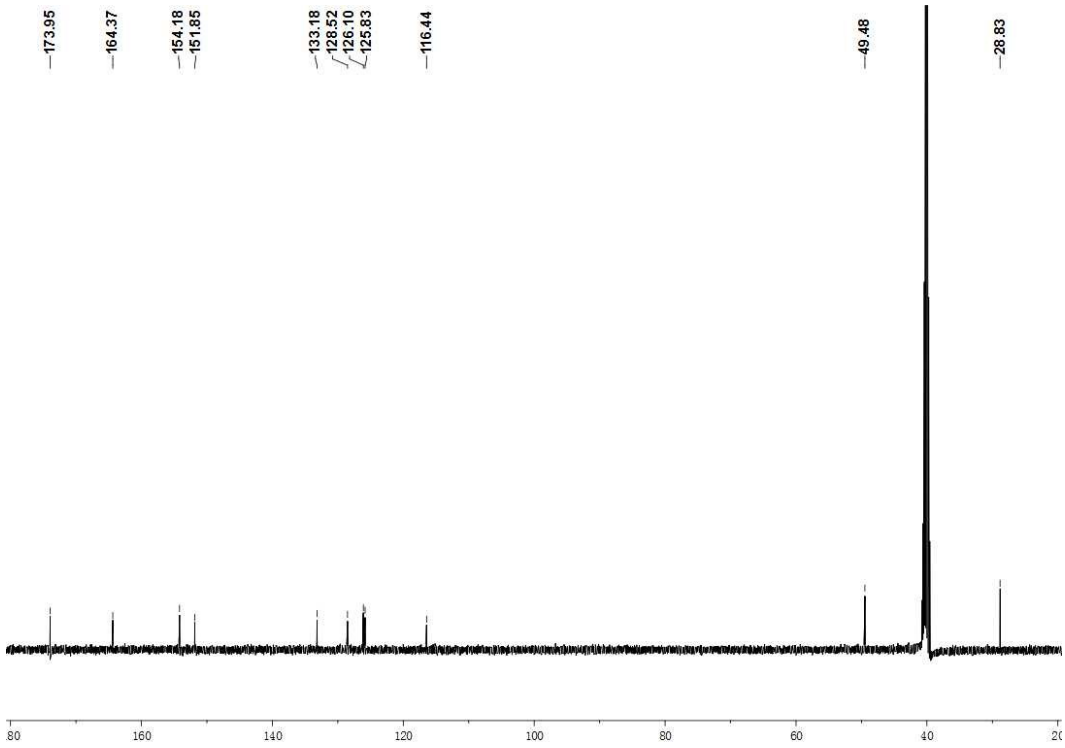

Figure S5. ^{13}C NMR spectrum of intermediate **3** (DMSO-d_6)

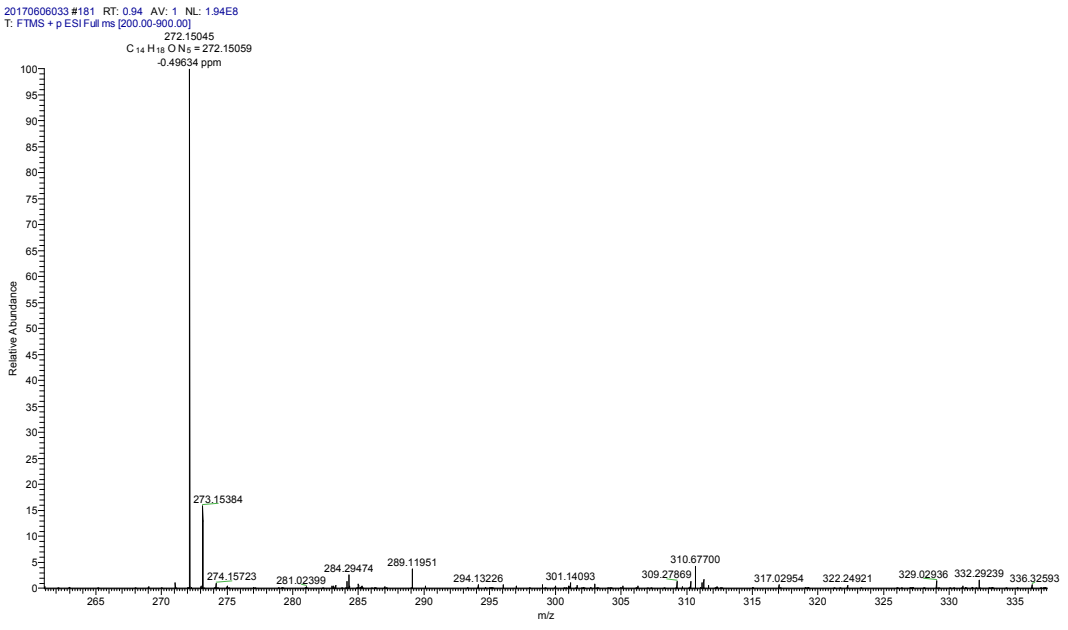

Figure S6. HRMS-ESI spectrum of intermediate **3**

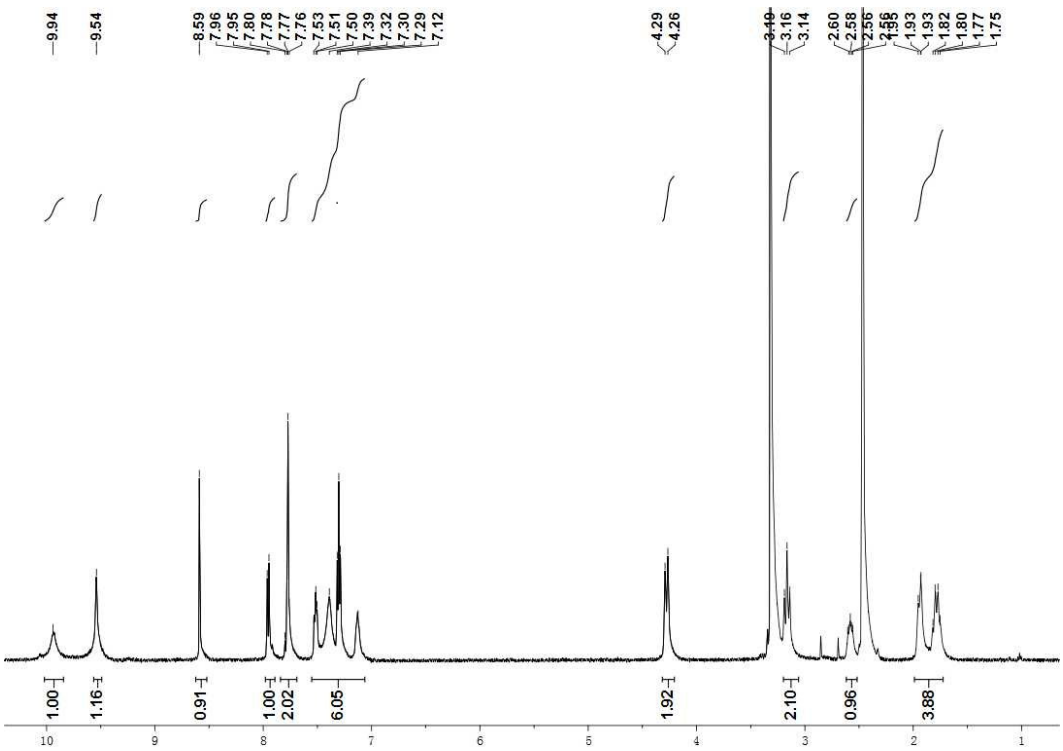

Figure S7. ^{1}H NMR spectrum of intermediate **4** (DMSO-d_6)

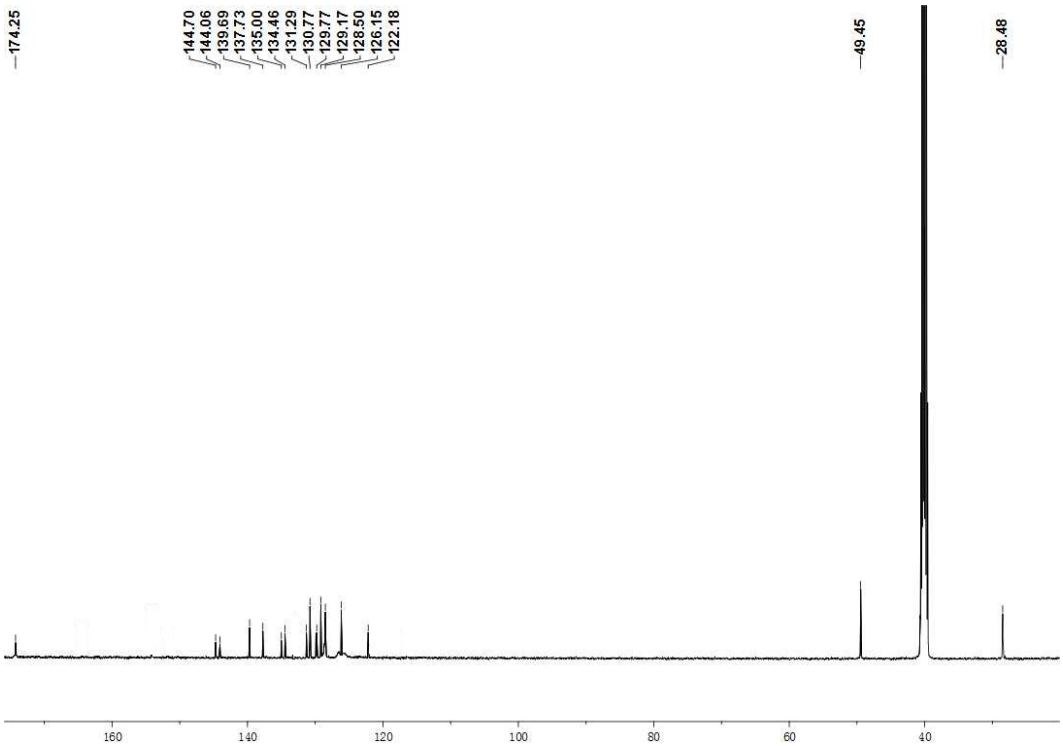

Figure S8. ^{13}C NMR spectrum of intermediate **4** (DMSO-d_6)

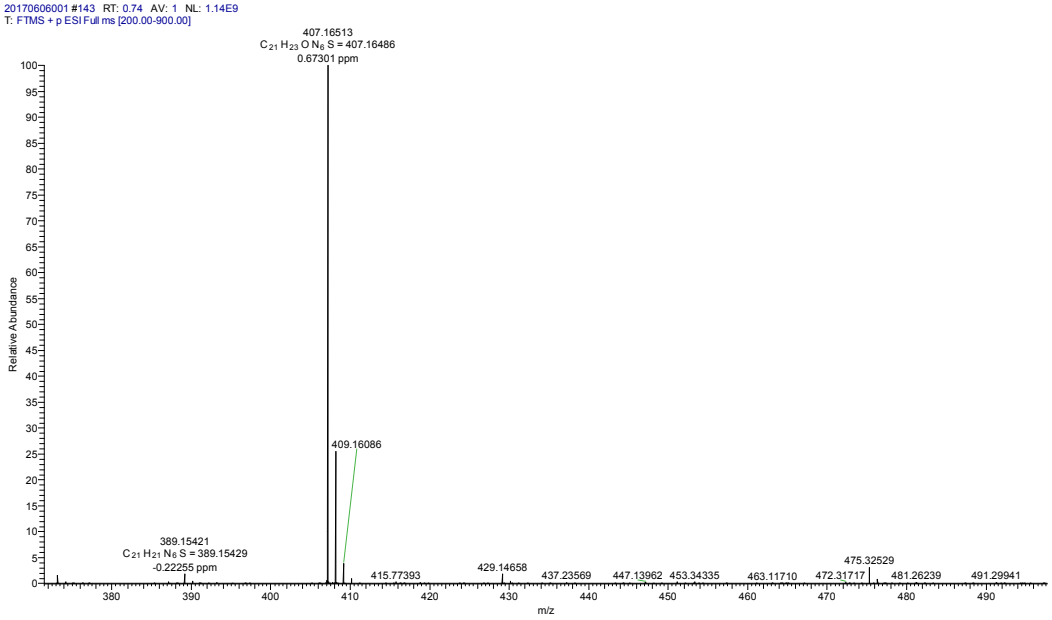

Figure S9. HRMS-ESI spectrum of intermediate **4**

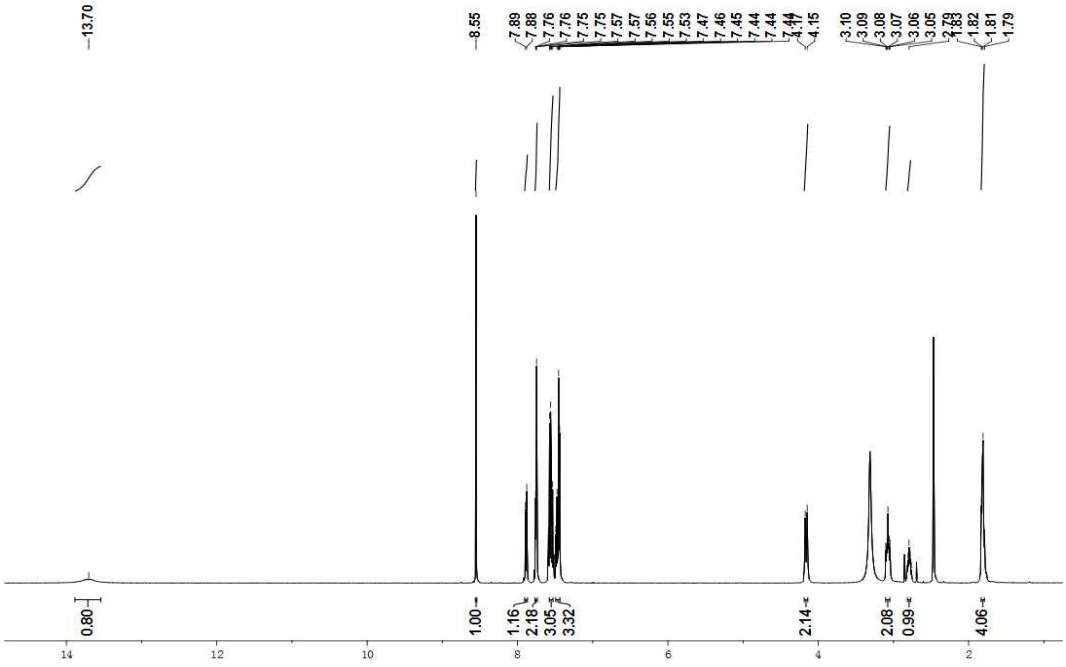

Figure S10. ^{1}H NMR spectrum of intermediate **5** (DMSO-d_6)

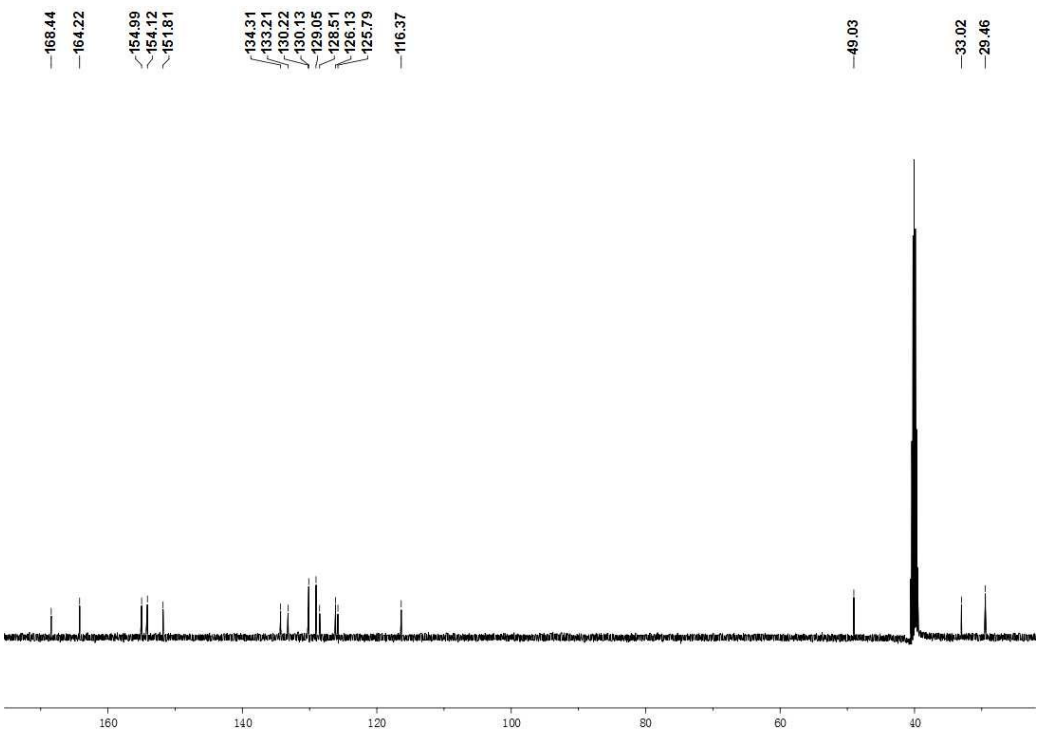

Figure S11. ^{13}C NMR spectrum of intermediate **5** (DMSO-d_6)

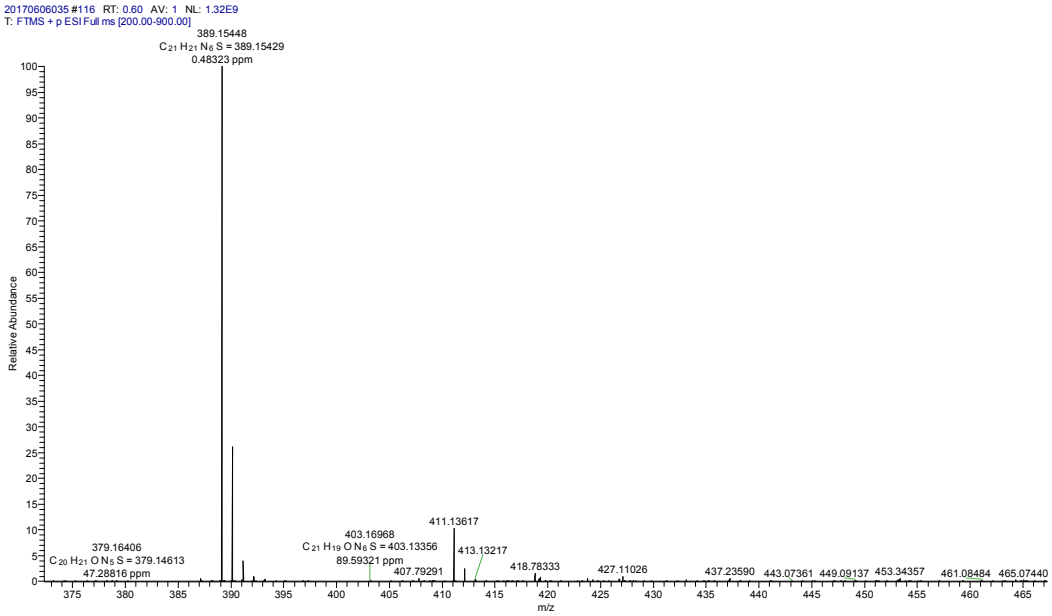

Figure S12. HRMS-ESI spectrum of intermediate **5**

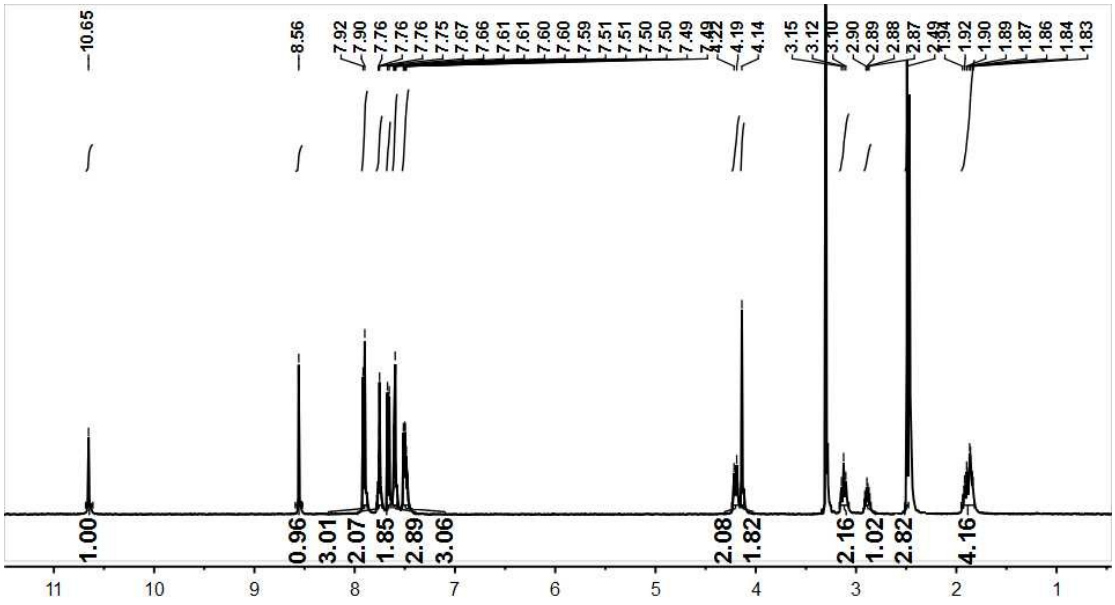

Figure S13. ^{1}H NMR spectrum of compound **7a** (DMSO-d_6)

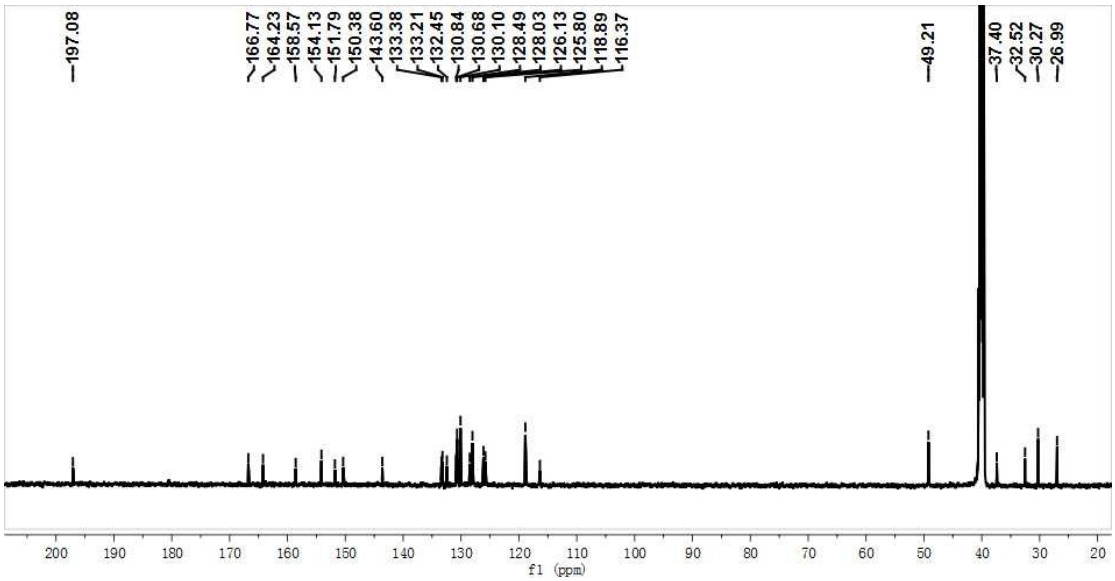

Figure S14. ^{13}C NMR spectrum of compound **7a** (DMSO-d_6)

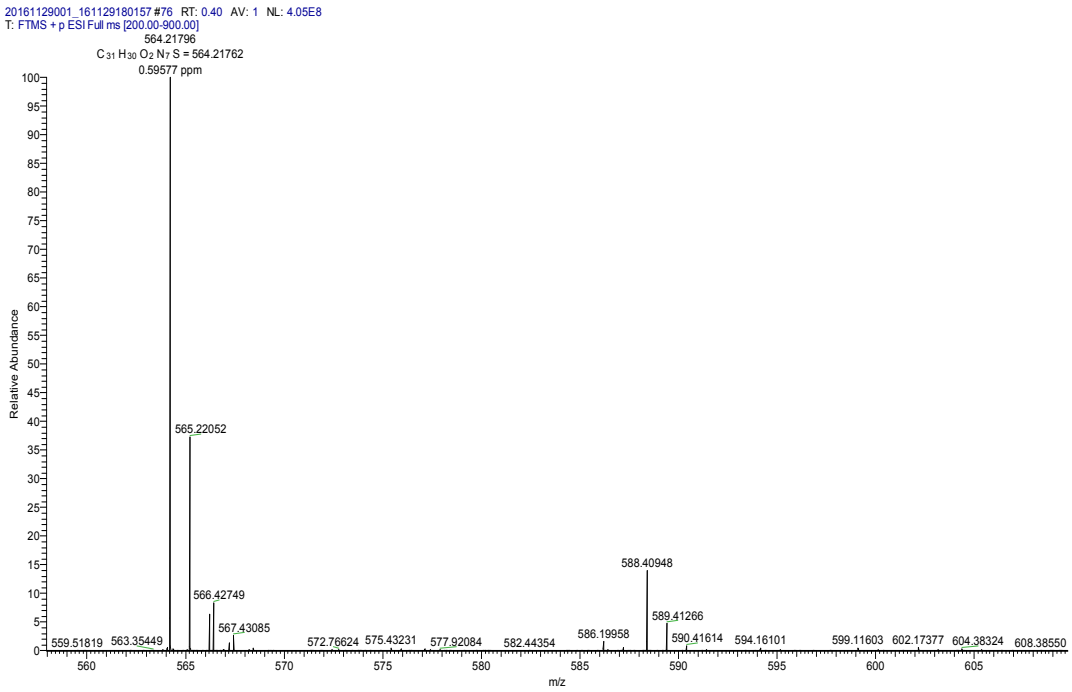

Figure S15. HRMS-ESI spectrum of compound **7a**

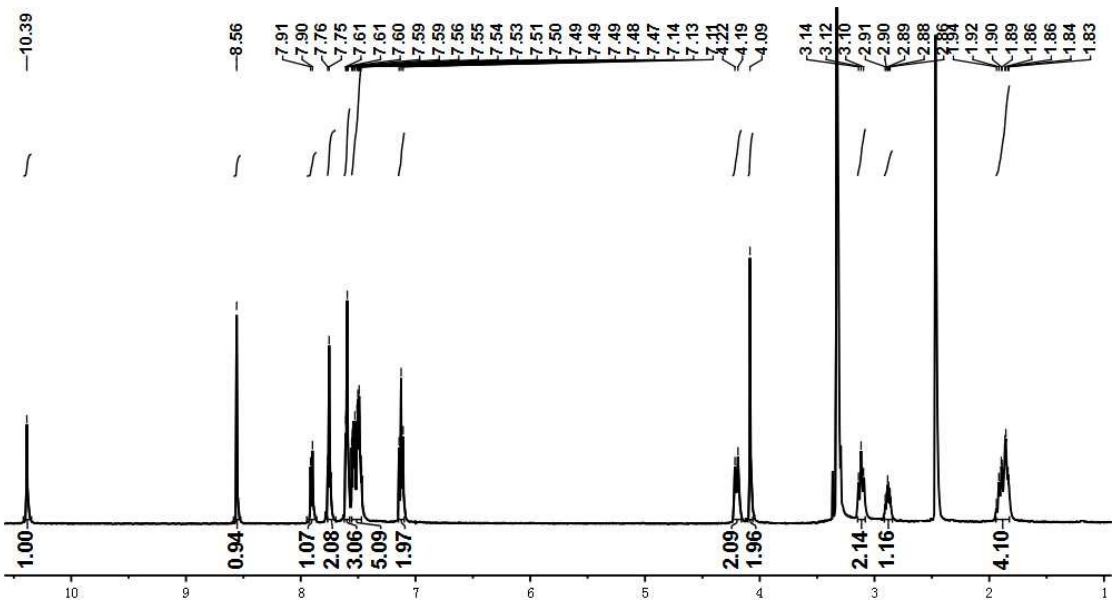

Figure S16. ^{1}H NMR spectrum of compound **7b** (DMSO-d_6)

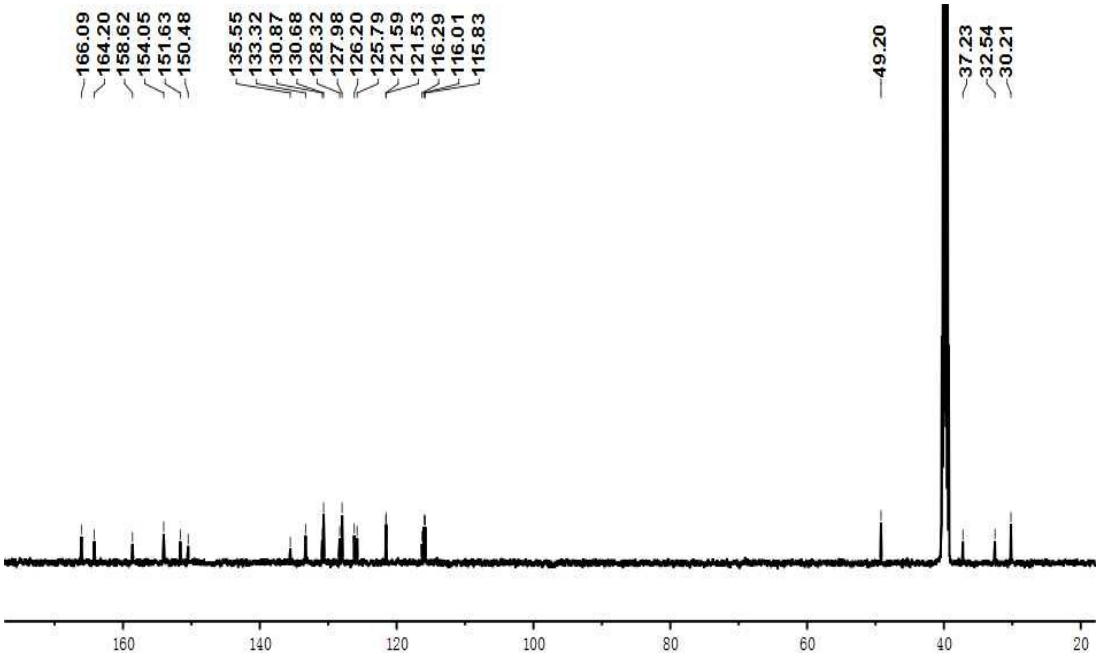

Figure S17. ^{13}C NMR spectrum of compound **7b** (DMSO-d_6)

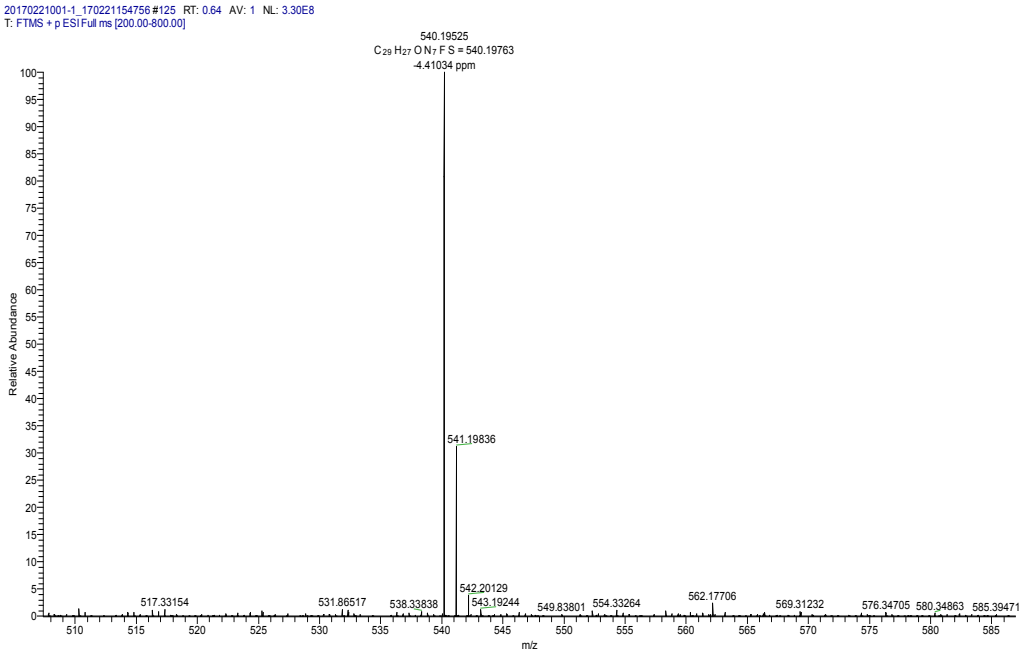

Figure S18. HRMS-ESI spectrum of compound **7b**

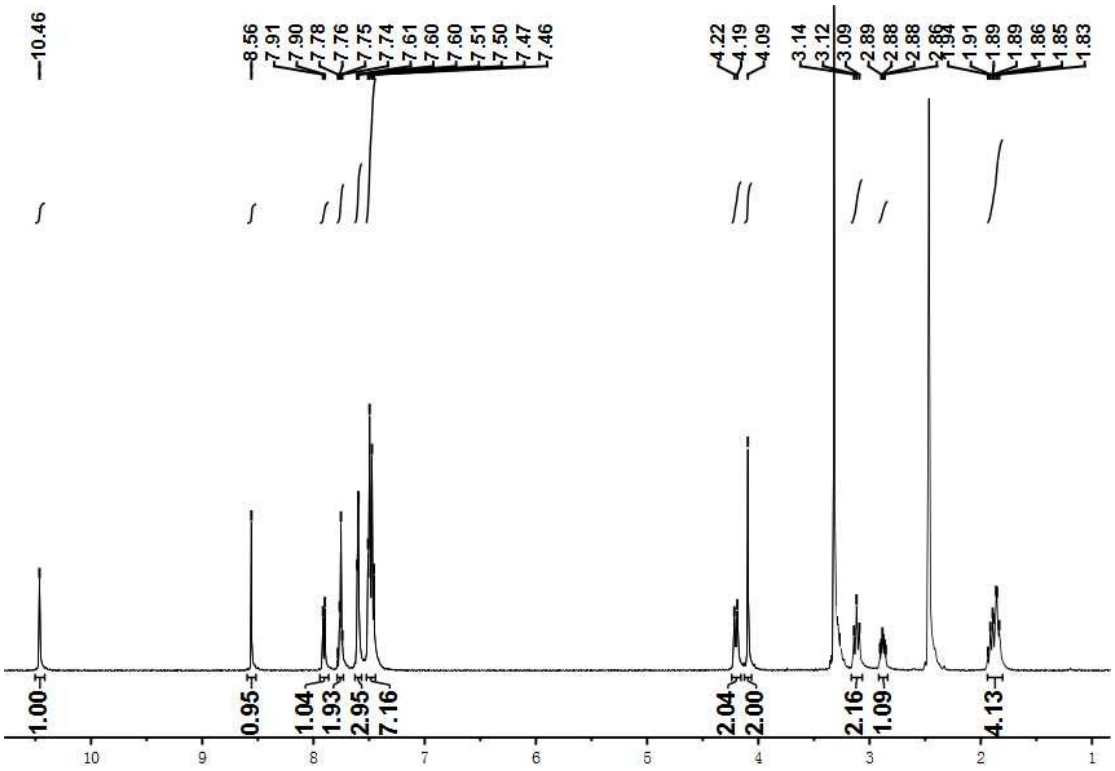

Figure S19. ^{1}H NMR spectrum of compound **7c** (DMSO-d_6)

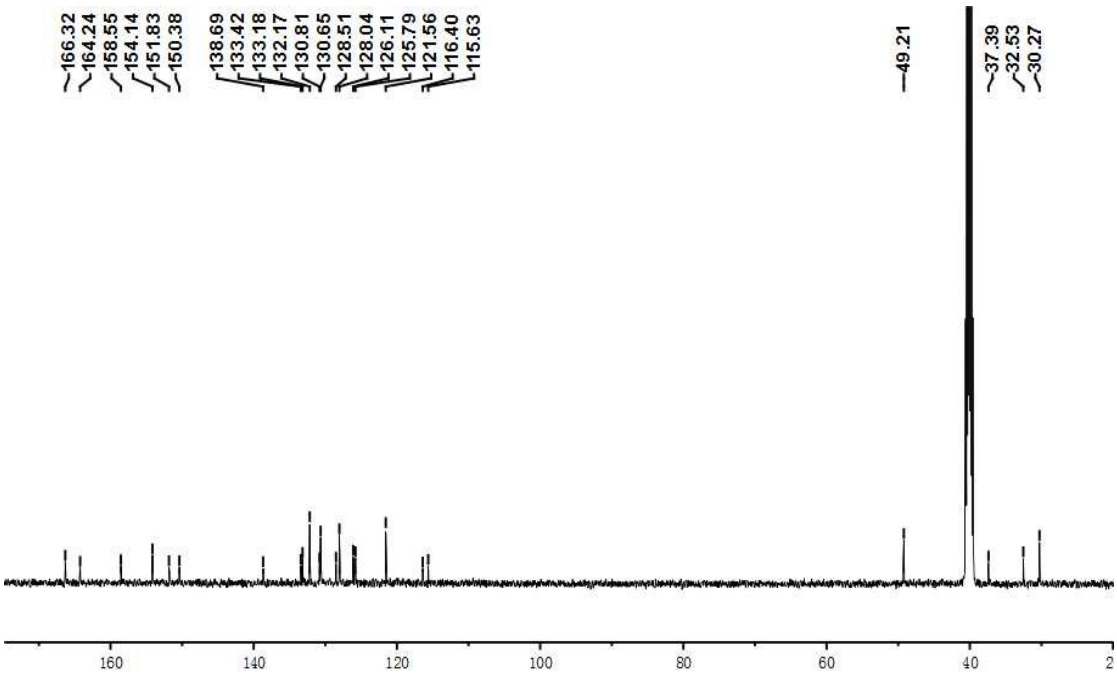

Figure S20. ^{13}C NMR spectrum of compound **7c** (DMSO-d_6)

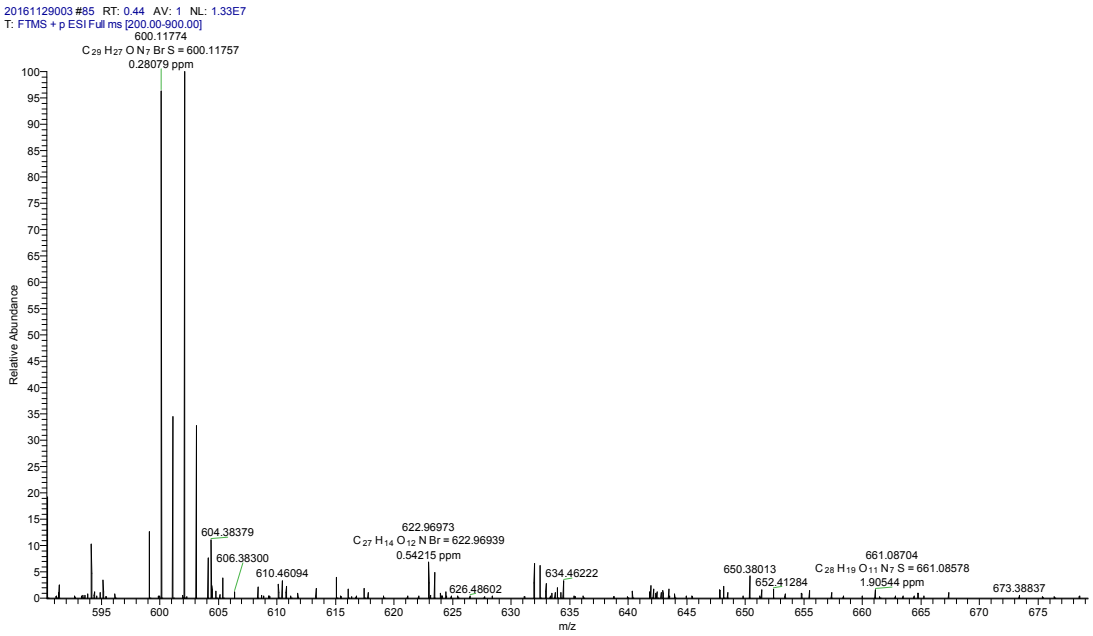

Figure S21. HRMS-ESI spectrum of compound **7c**

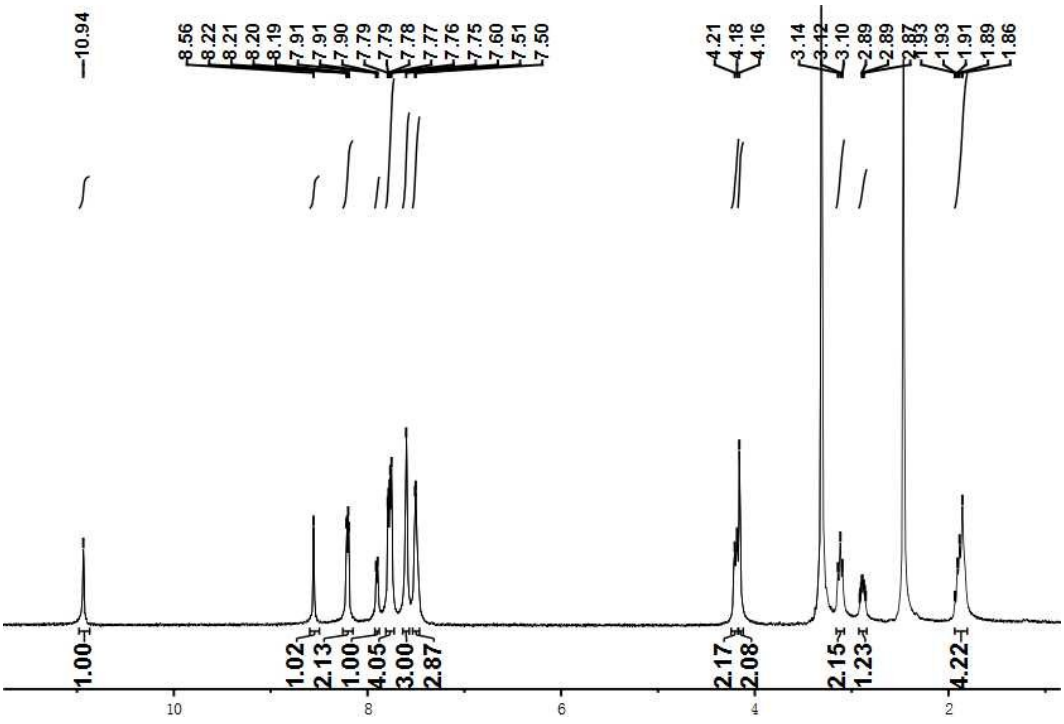

Figure S22. ^{1}H NMR spectrum of compound **7d** (DMSO-d_6)

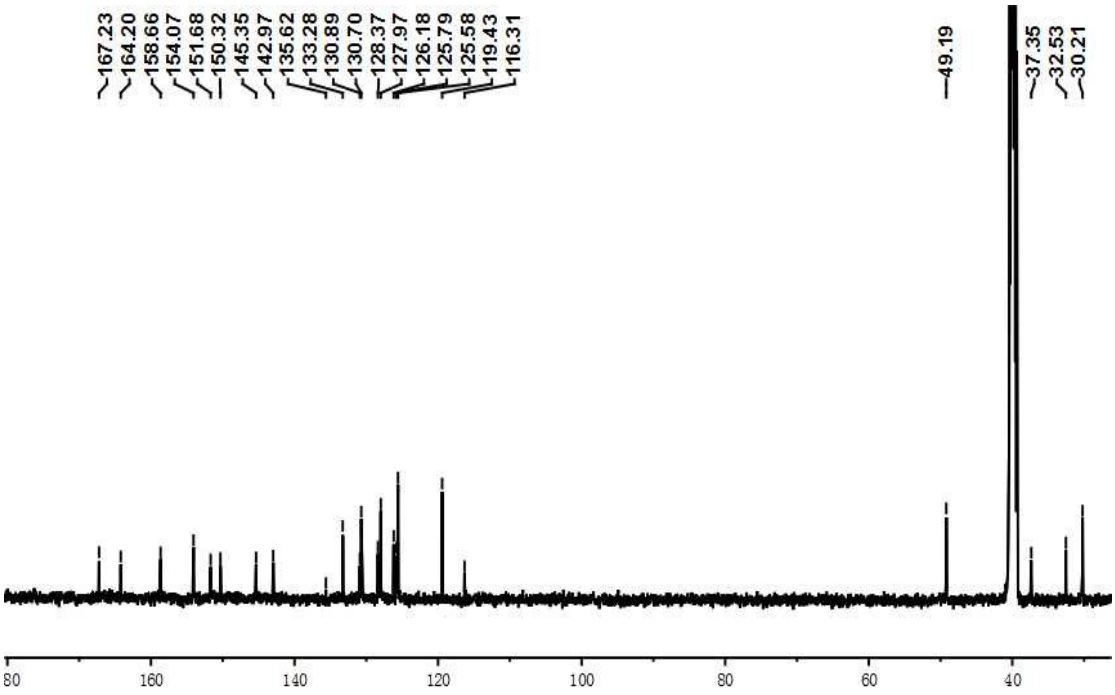

Figure S23. ^{13}C NMR spectrum of compound **7d** (DMSO-d_6)

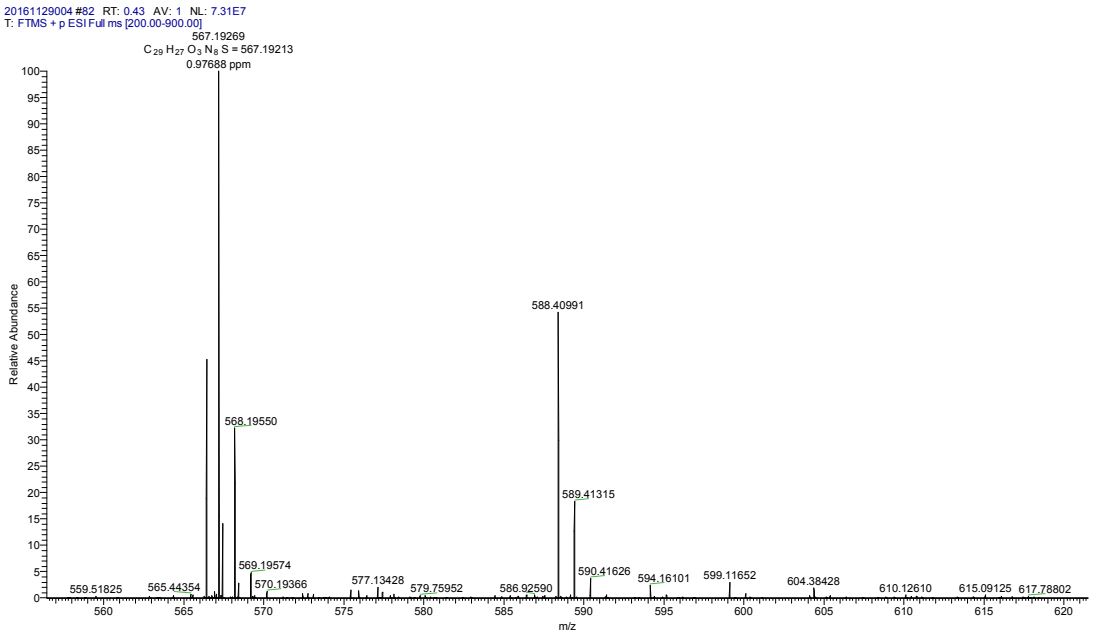

Figure S24. HRMS-ESI spectrum of compound **7d**

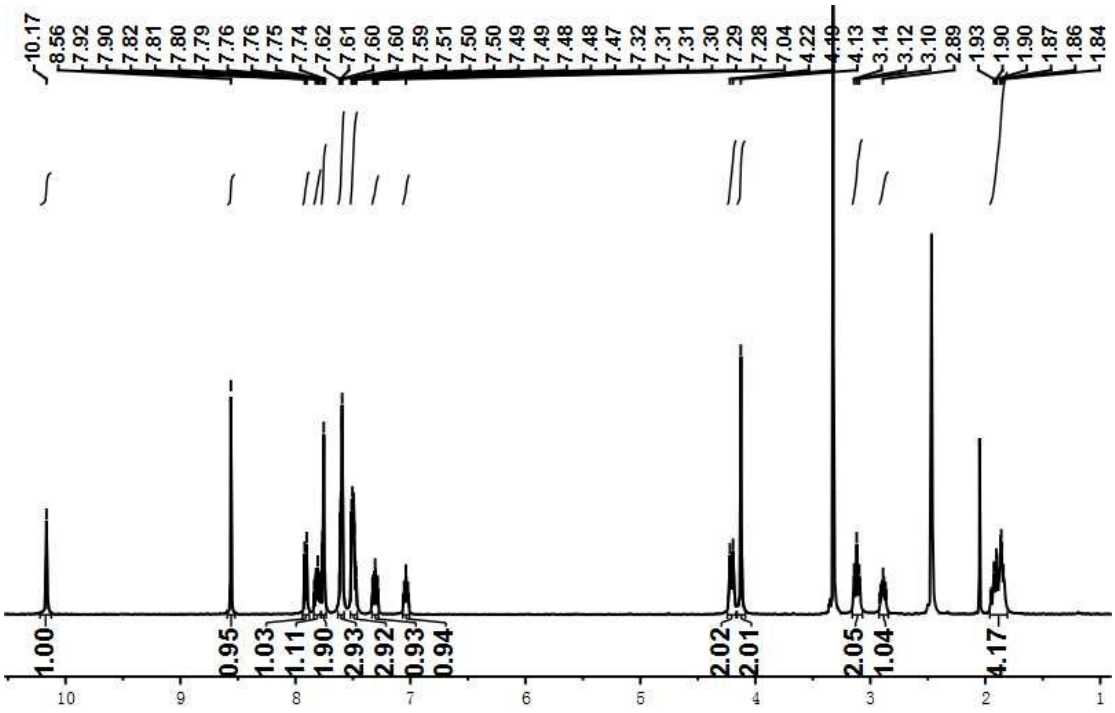

Figure S25. ^{1}H NMR spectrum of compound **7e** (DMSO-d_6)

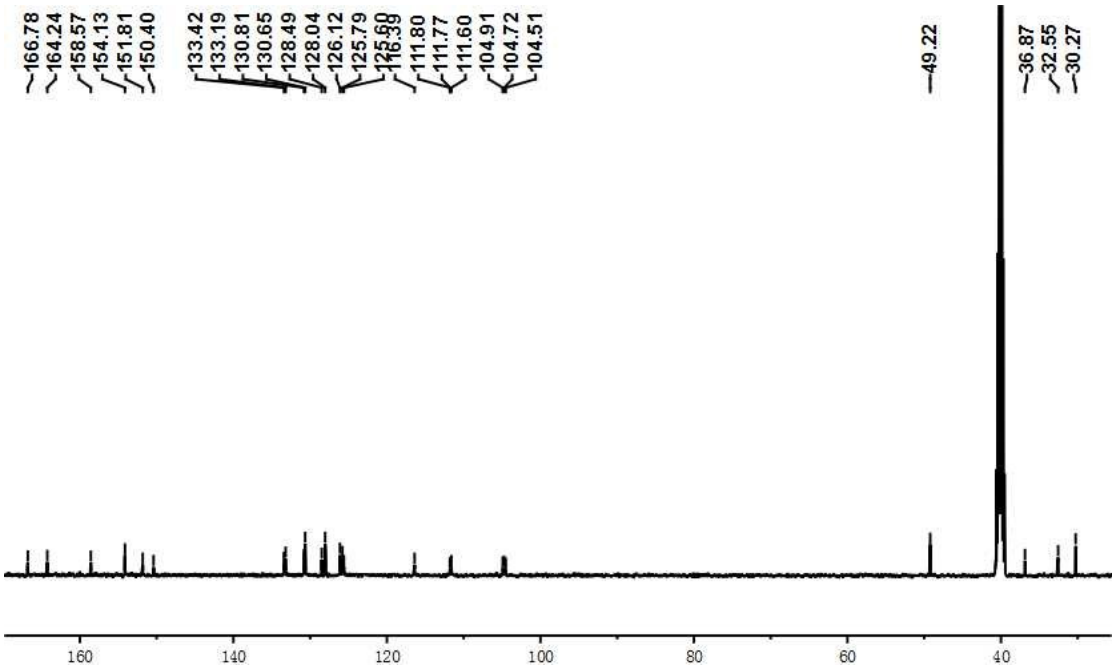

Figure S26. ^{13}C NMR spectrum of compound **7e** (DMSO-d_6)

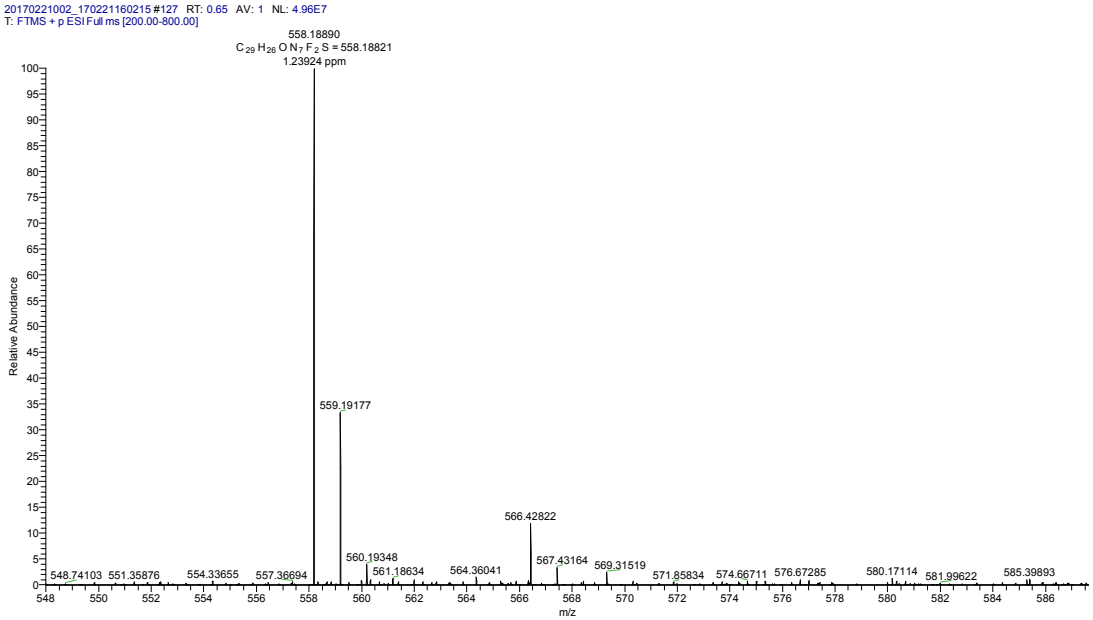

Figure S27. HRMS-ESI spectrum of compound **7e**

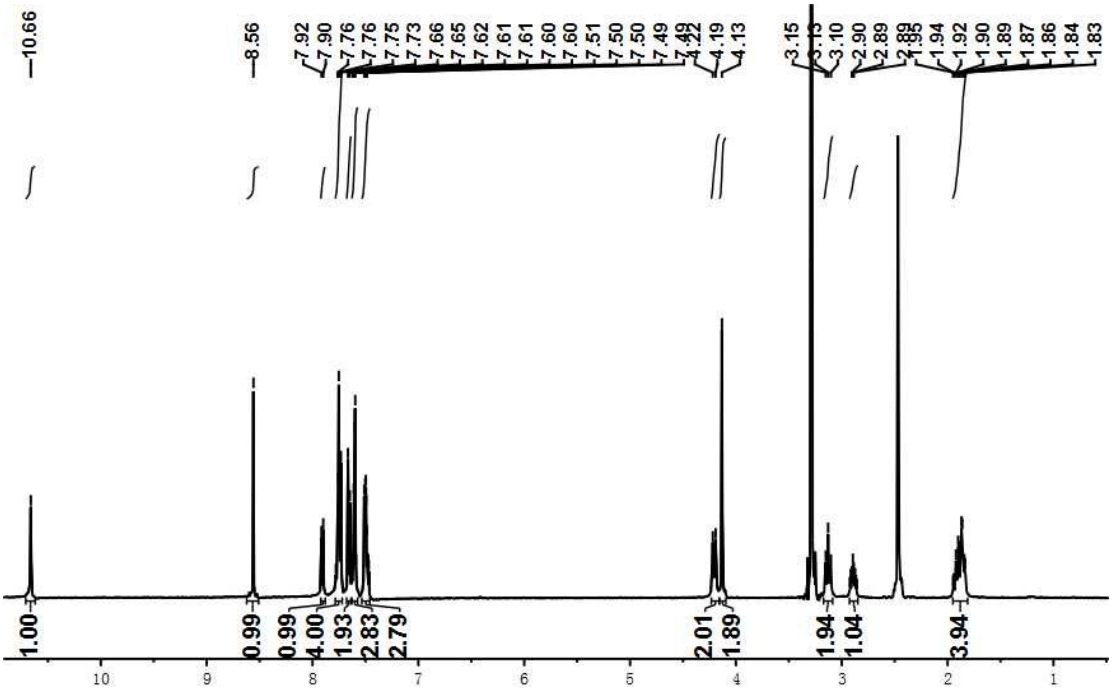

Figure S28. ^{1}H NMR spectrum of compound **7f** (DMSO-d_6)

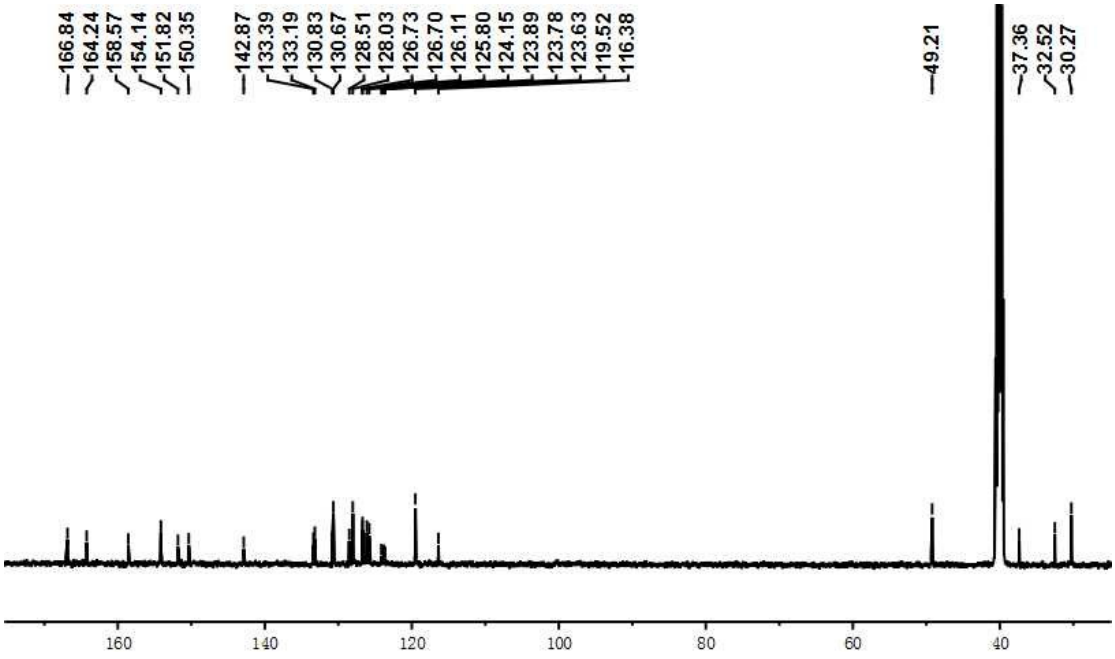

Figure S29. ^{13}C NMR spectrum of compound **7f** (DMSO-d_6)

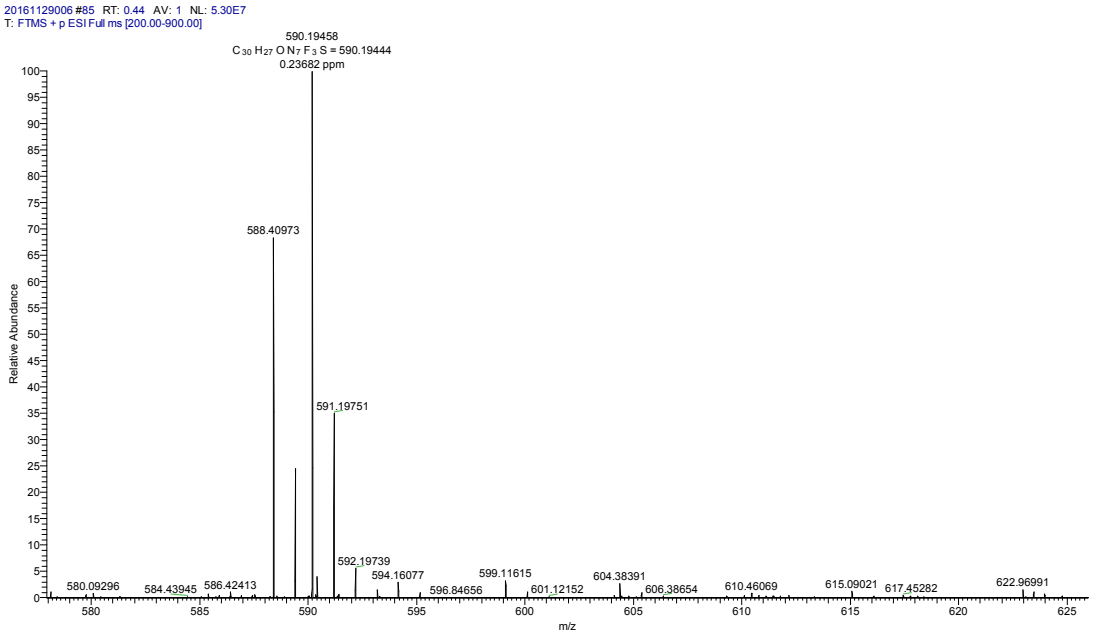

Figure S30. HRMS-ESI spectrum of compound **7f**

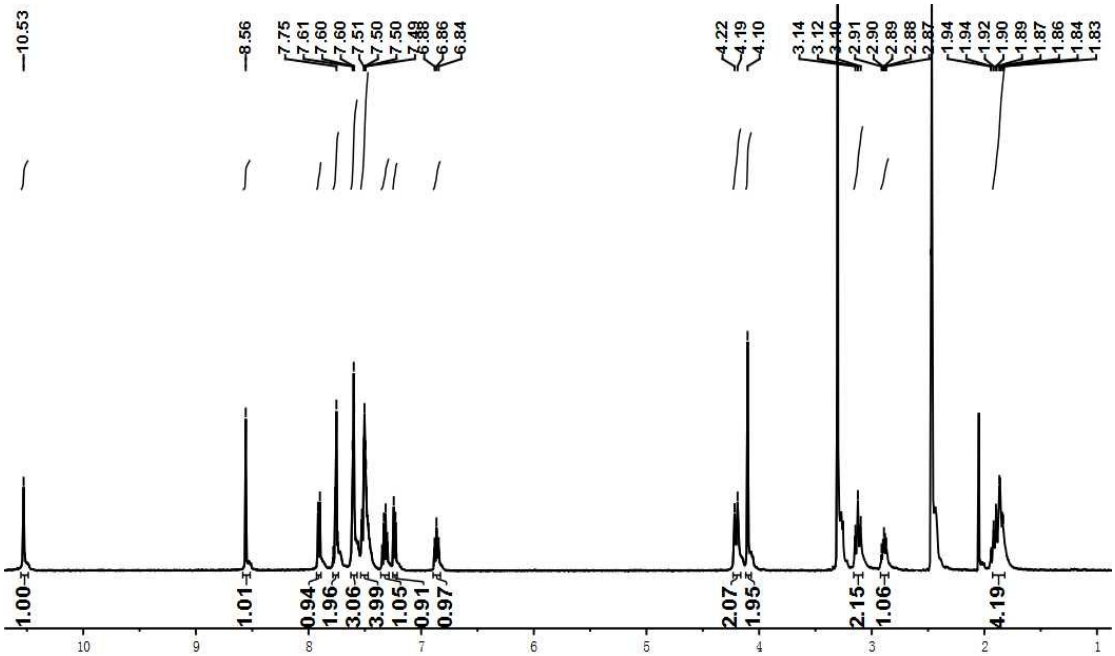

Figure S31. ^{1}H NMR spectrum of compound **7g** (DMSO-d_6)

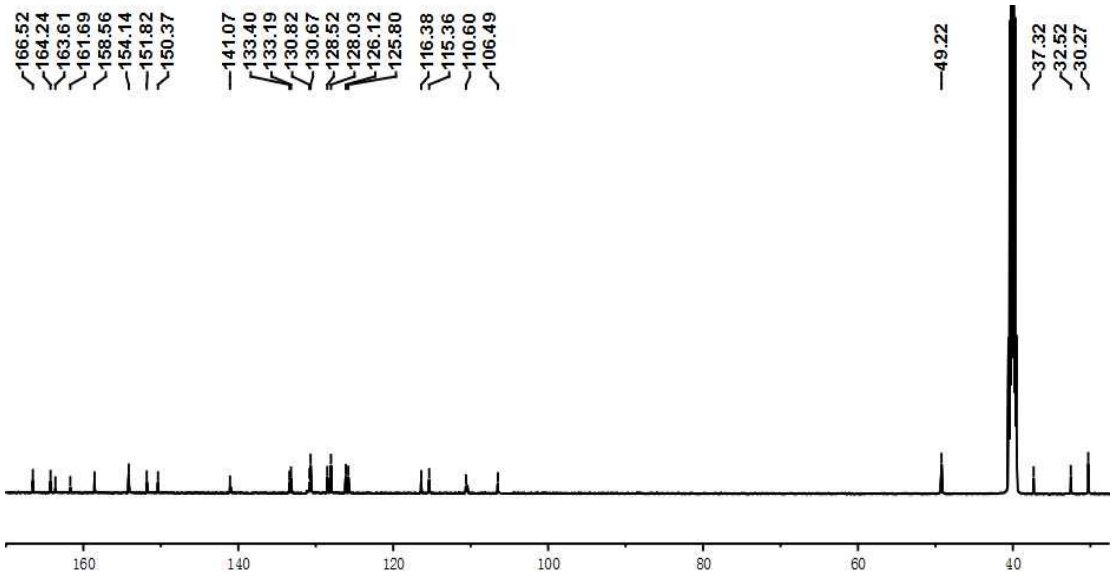

Figure S32. ^{13}C NMR spectrum of compound **7g** (DMSO-d_6)

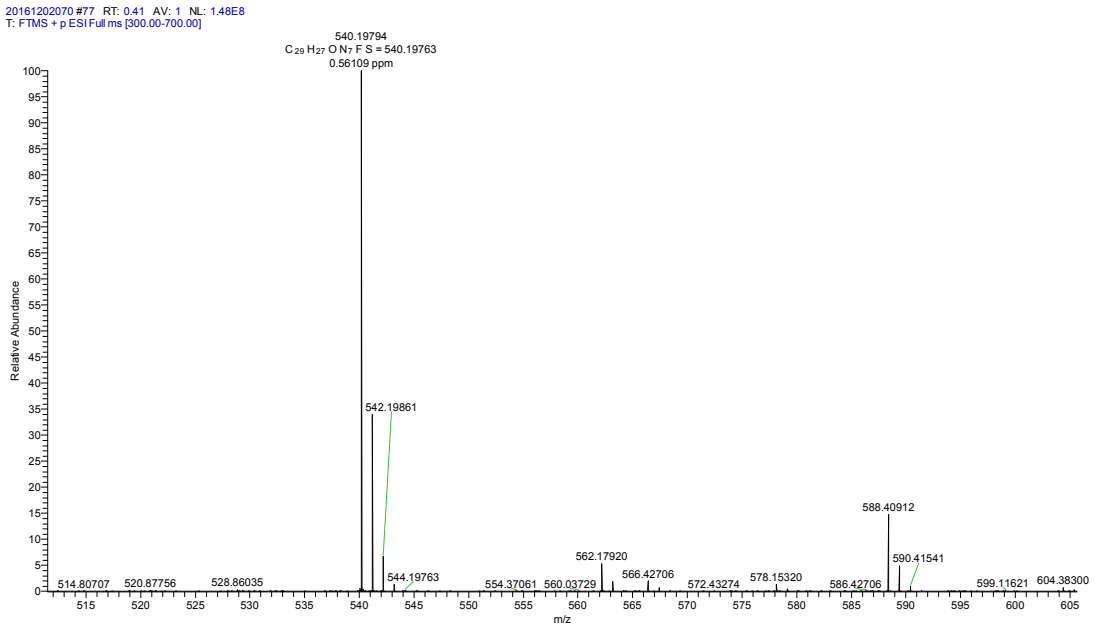

Figure S33. HRMS-ESI spectrum of compound **7g**

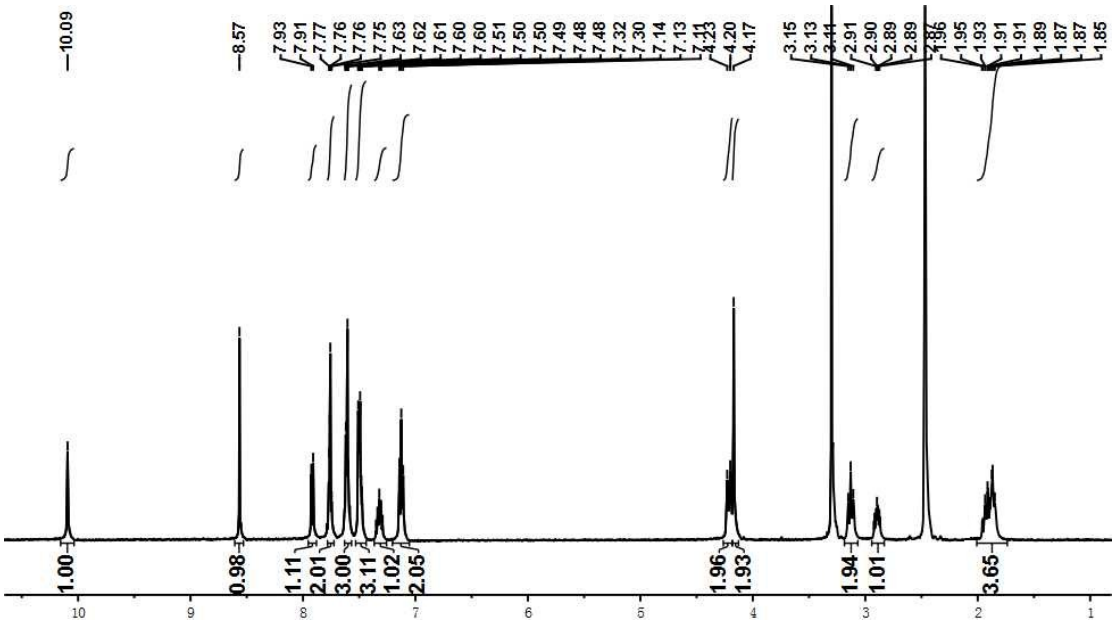

Figure S34. ^{1}H NMR spectrum of compound **7h** (DMSO-d_6)

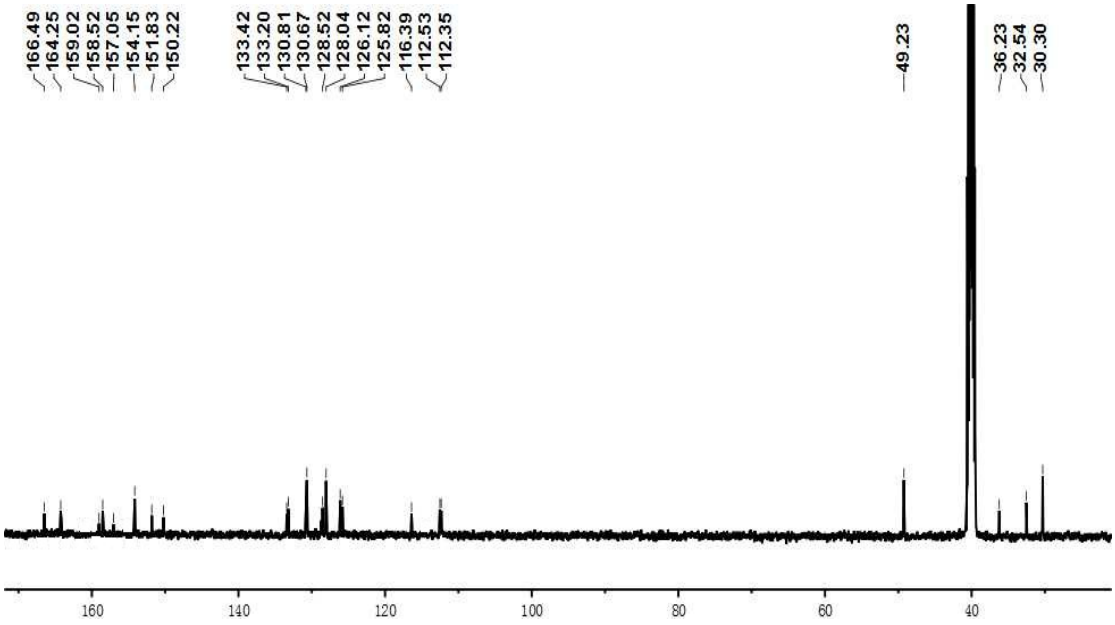

Figure S35. ^{13}C NMR spectrum of compound **7h** (DMSO-d_6)

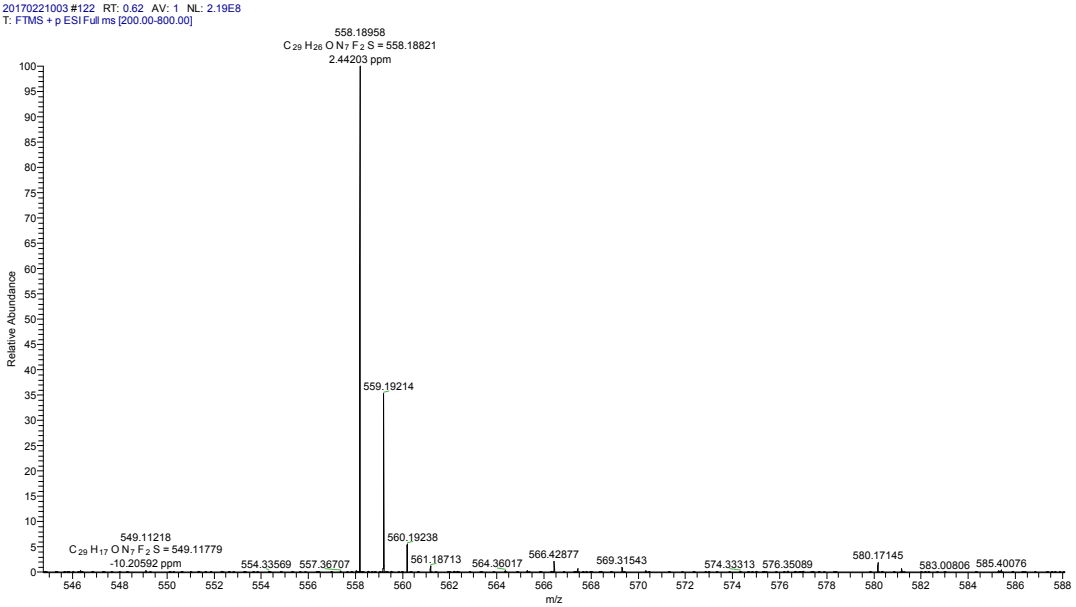

Figure S36. HRMS-ESI spectrum of compound **7h**

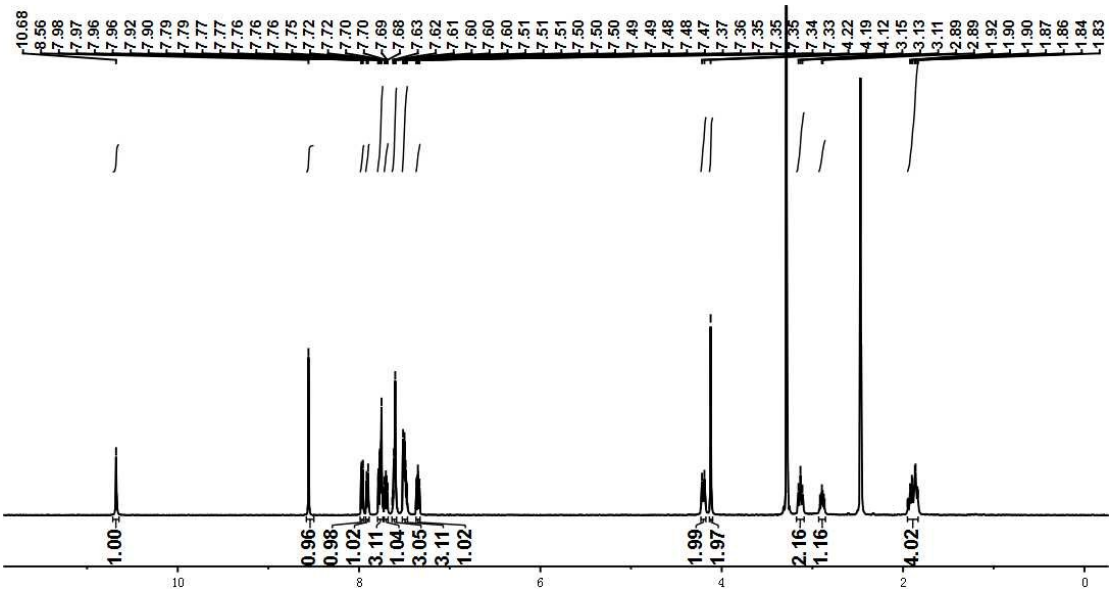

Figure S37. [1]H NMR spectrum of compound **7i** (DMSO-d_6)

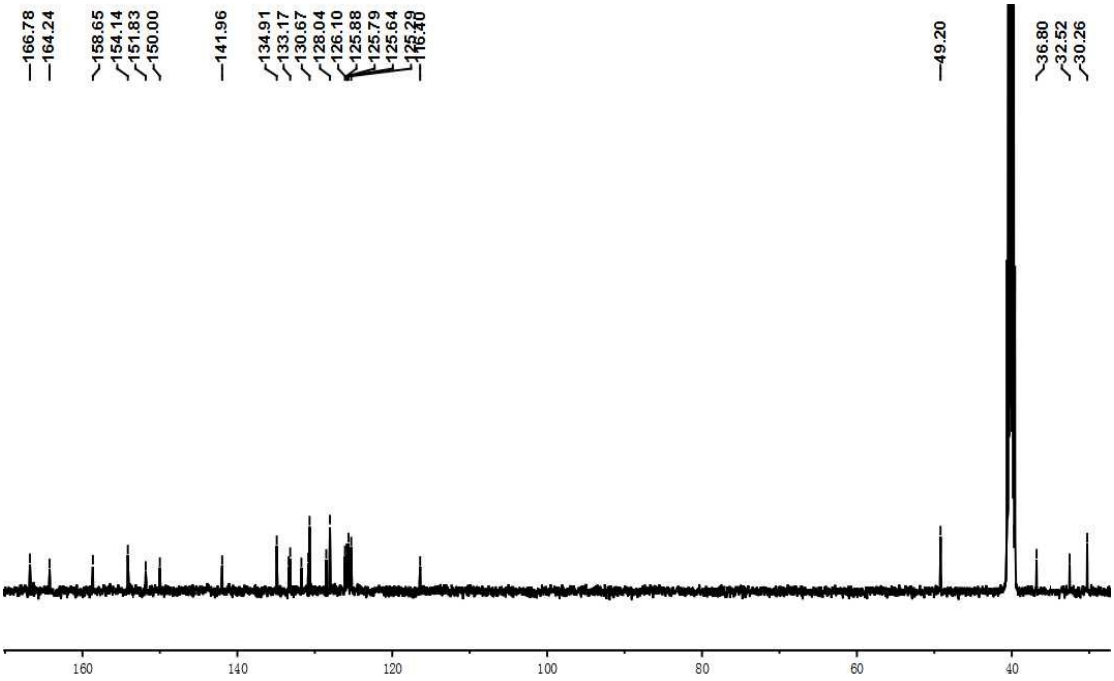

Figure S38. [13]C NMR spectrum of compound **7i** (DMSO-d_6)

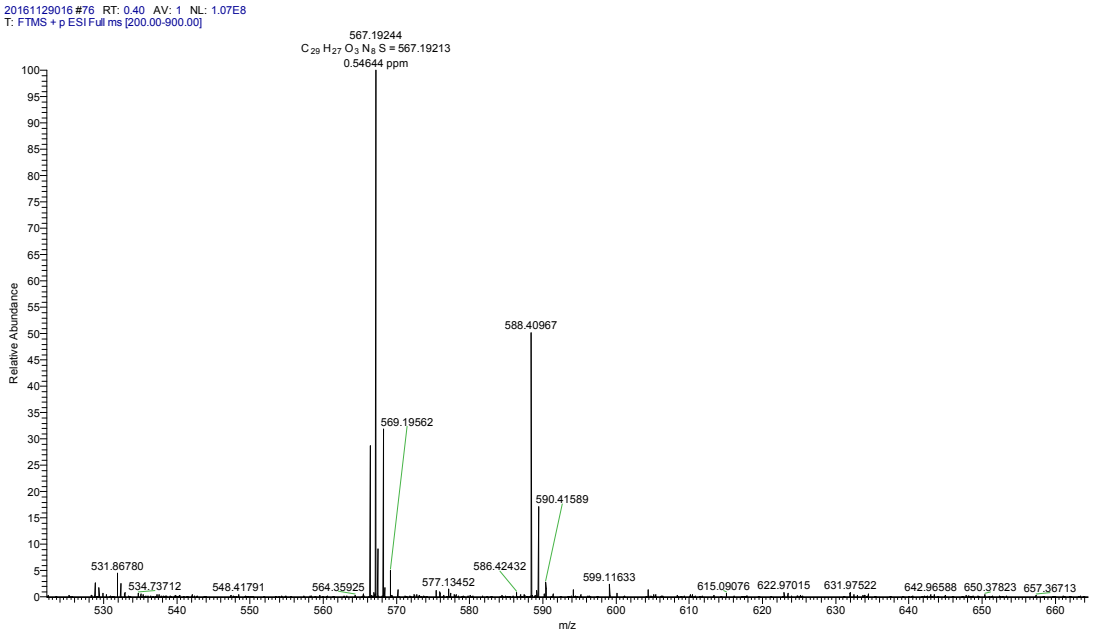

Figure S39. HRMS-ESI spectrum of compound **7i**

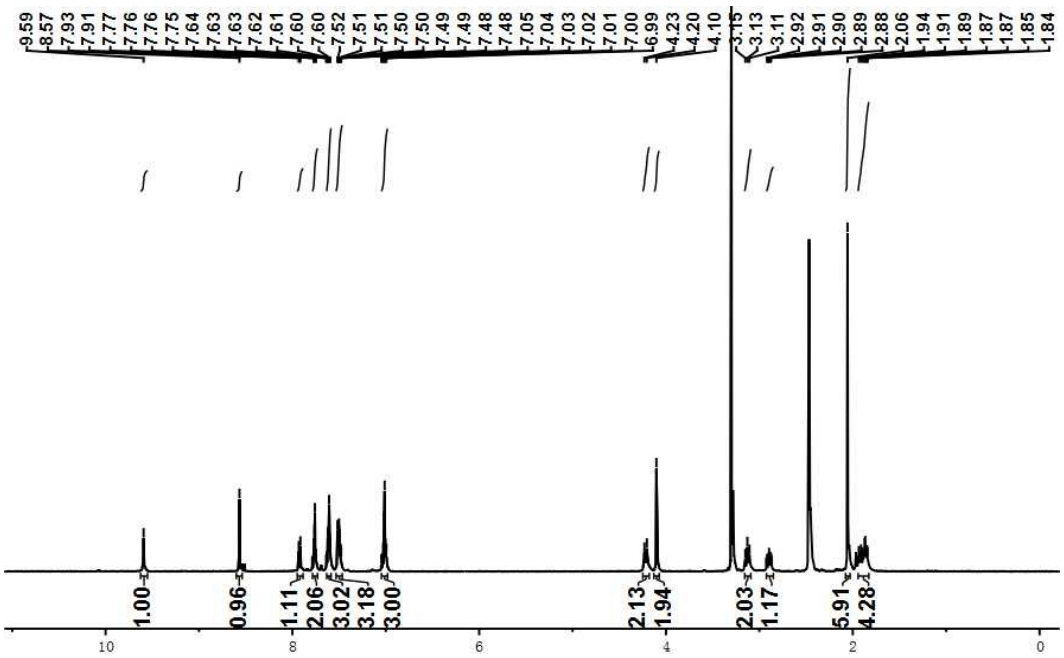

Figure S40. ^{1}H NMR spectrum of compound **7j** (DMSO-d_6)

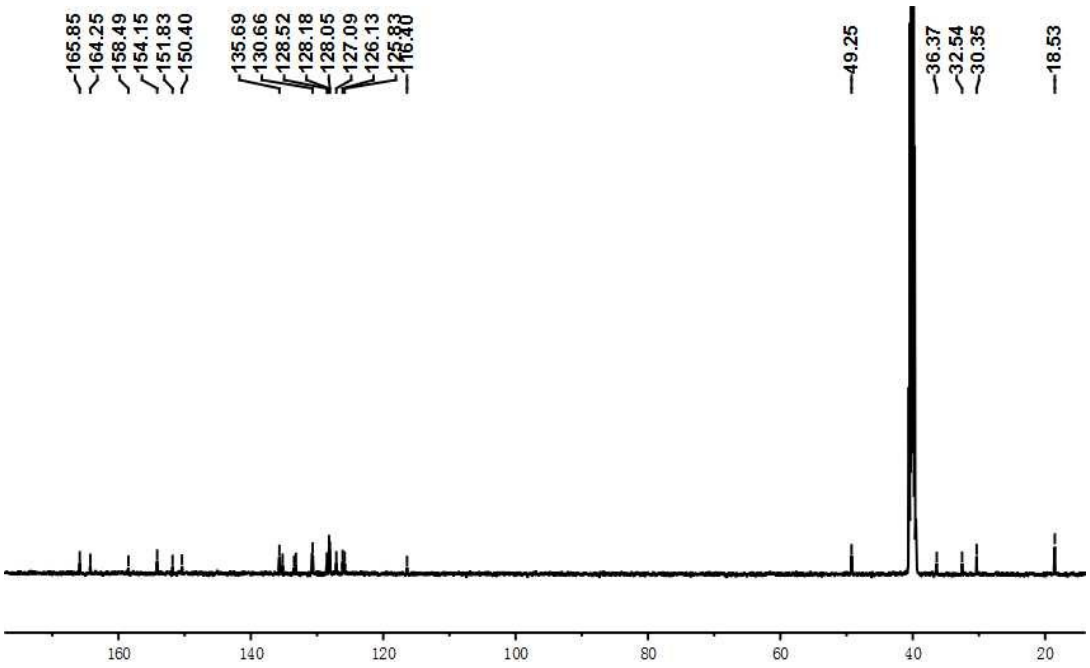

Figure S41. ^{13}C NMR spectrum of compound **7j** (DMSO-d_6)

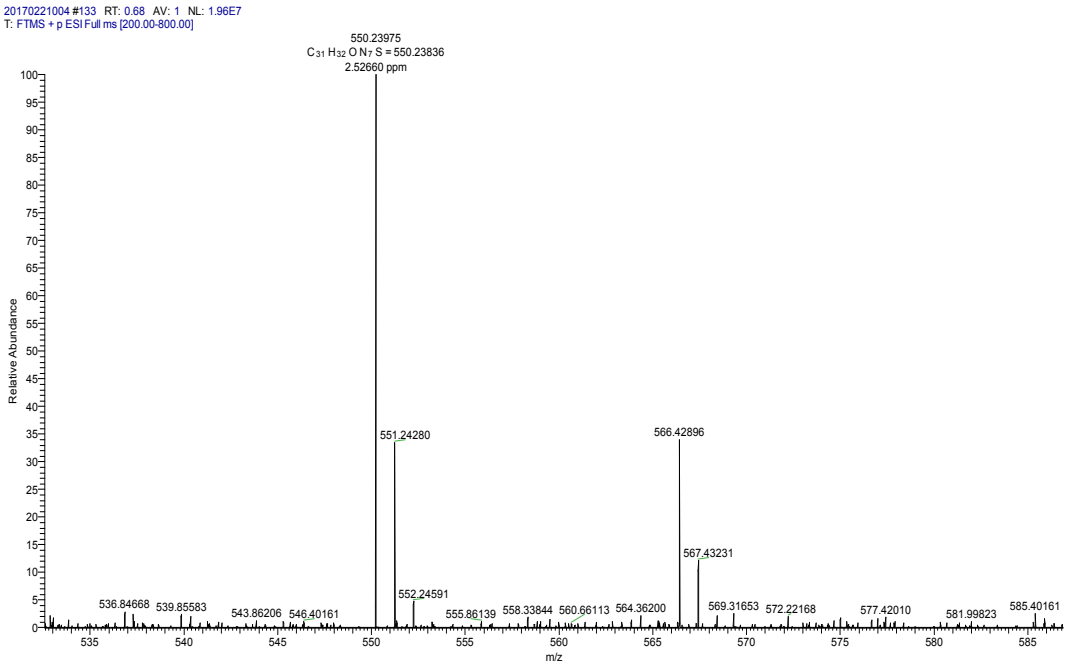

Figure S42. HRMS-ESI spectrum of compound **7j**

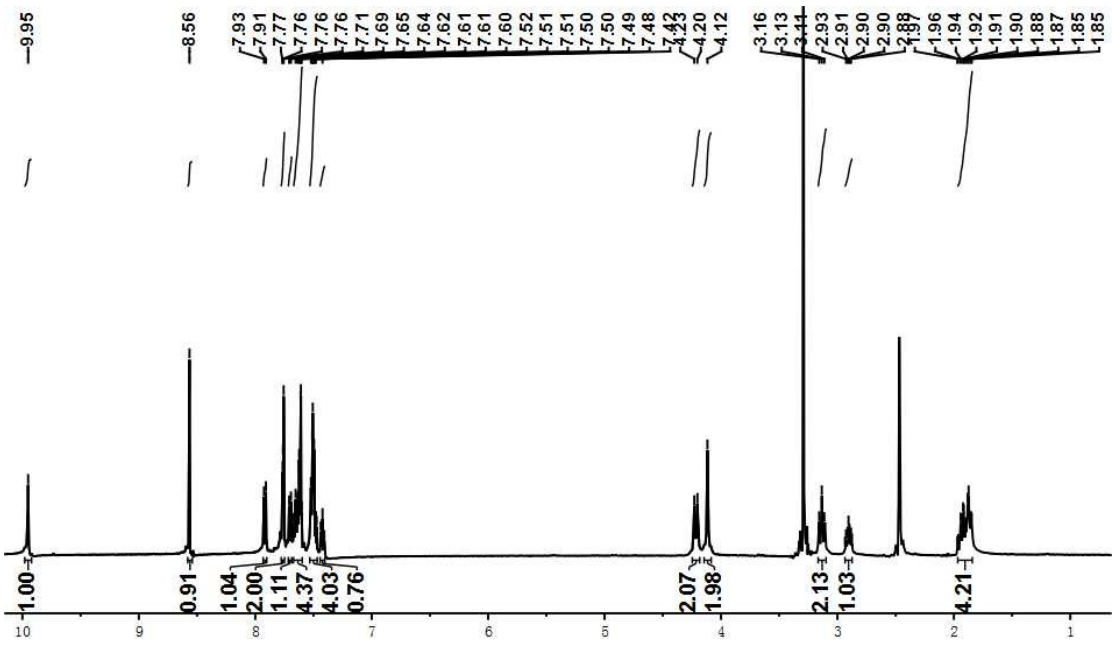

Figure S43. ^{1}H NMR spectrum of compound **7k** (DMSO-d_6)

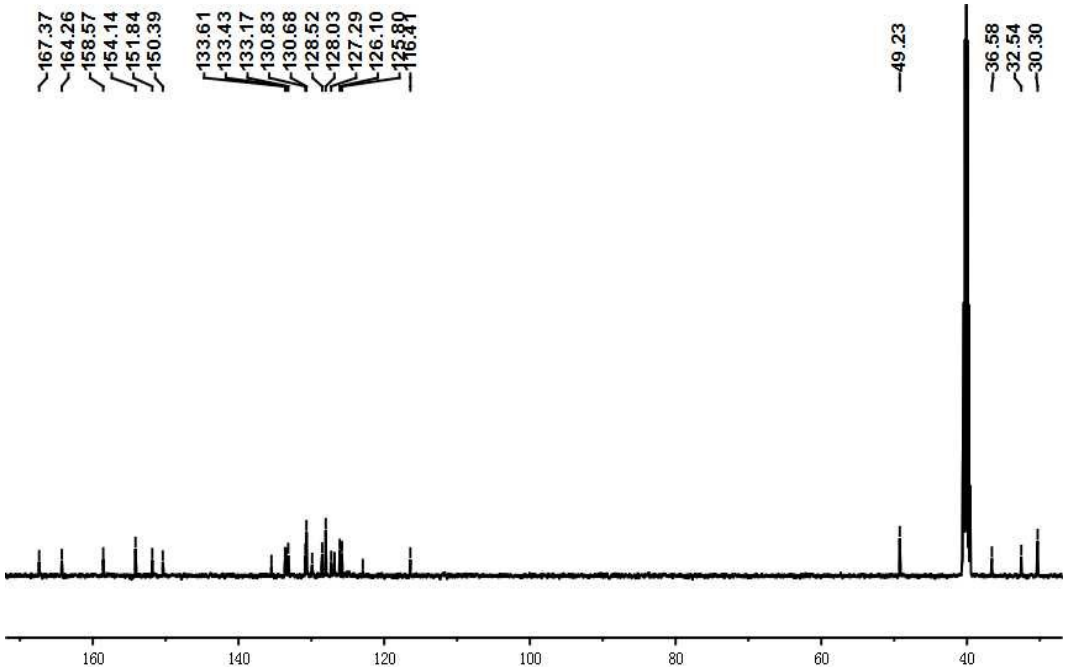

Figure S44. ^{13}C NMR spectrum of compound **7k** (DMSO-d_6)

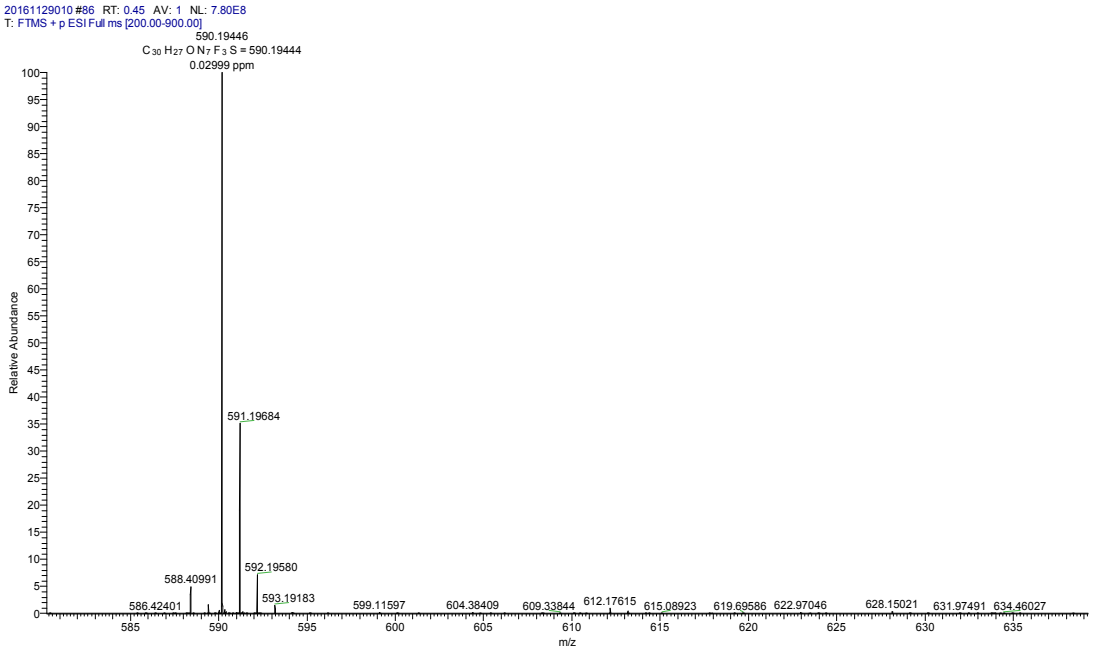

Figure S45. HRMS-ESI spectrum of compound **7k**

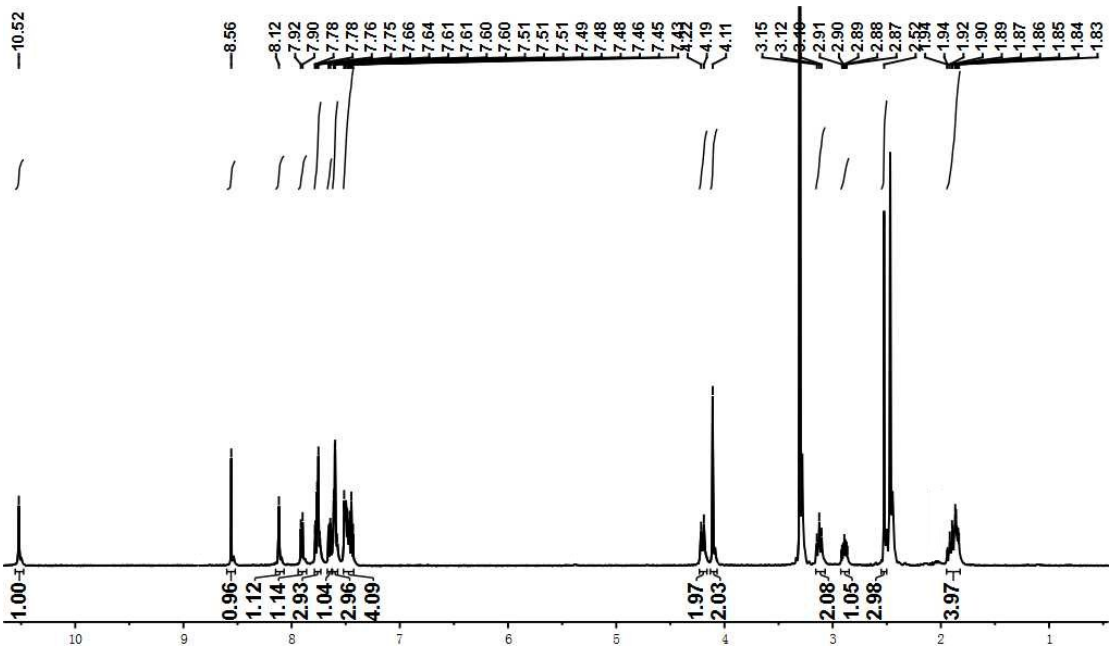

Figure S46. ^{1}H NMR spectrum of compound **7l** (DMSO-d_6)

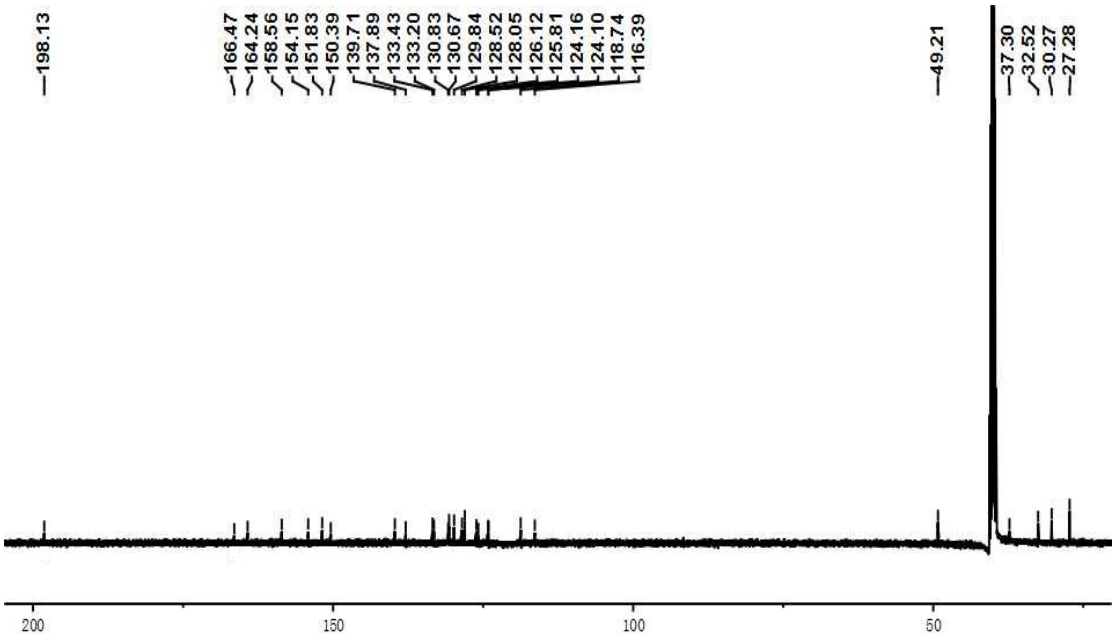

Figure S47. ^{13}C NMR spectrum of compound **7l** (DMSO-d_6)

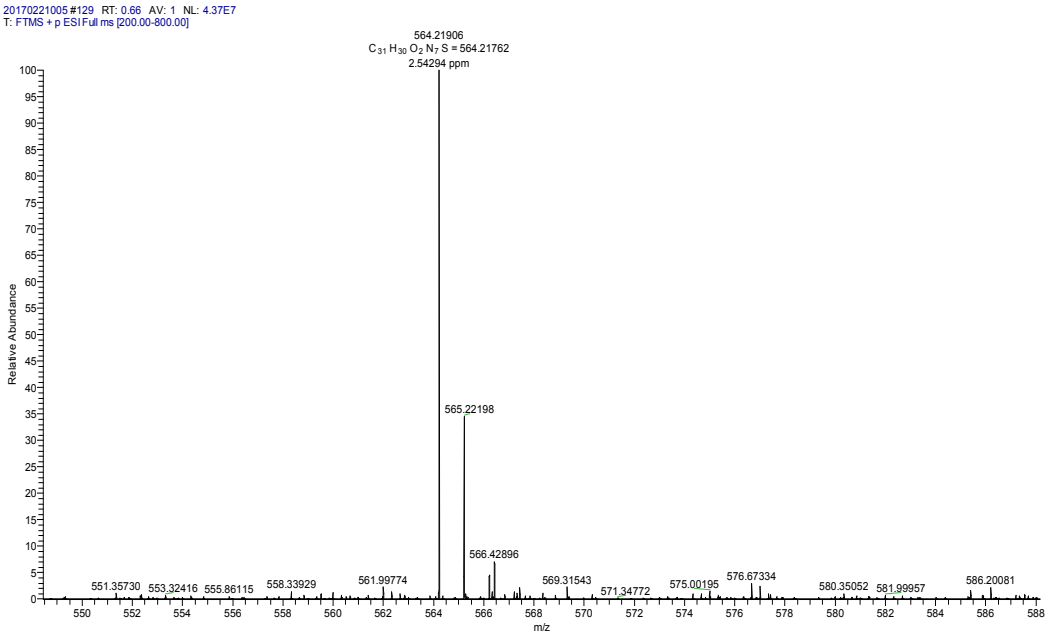

Figure S48. HRMS-ESI spectrum of compound **7l**

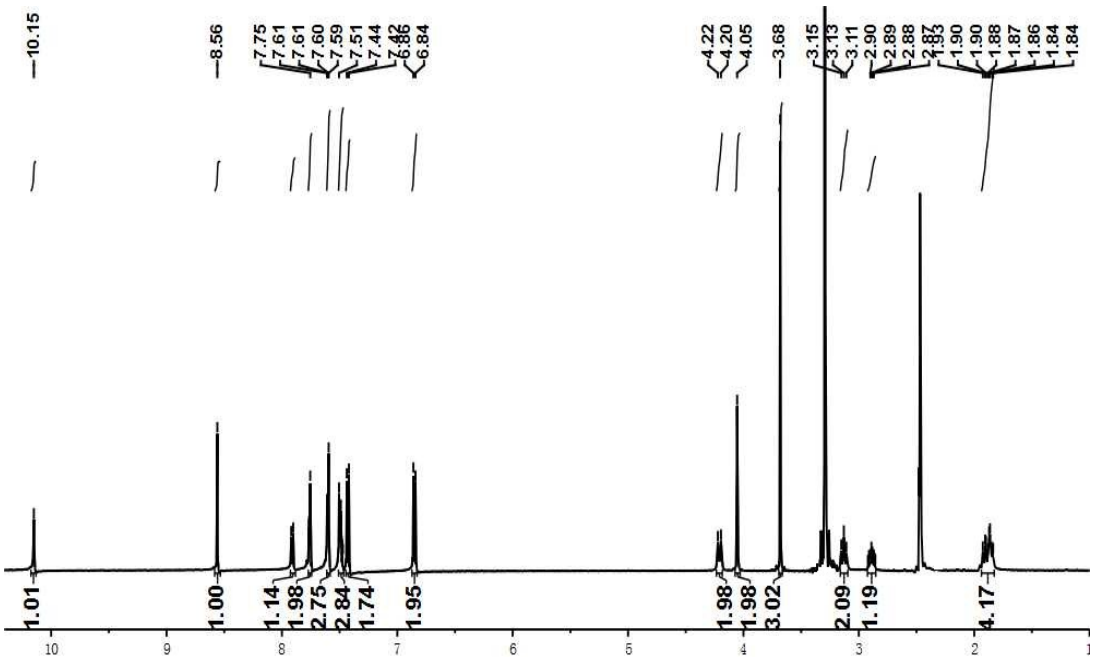

Figure S49. ^{1}H NMR spectrum of compound **7m** (DMSO-d_6)

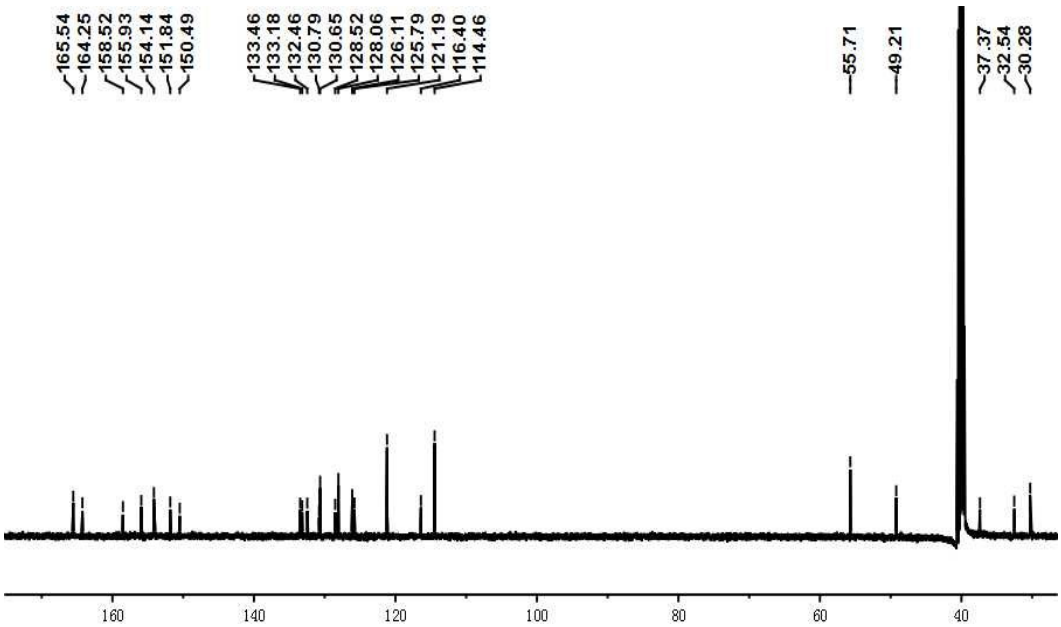

Figure S50. ^{13}C NMR spectrum of compound **7m** (DMSO-d_6)

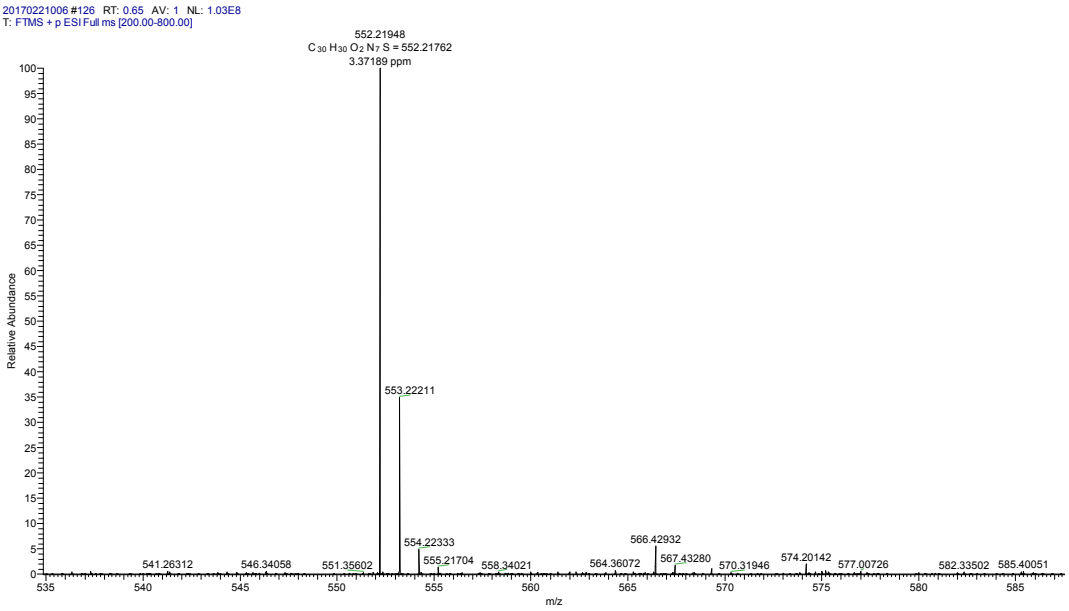

Figure S51. HRMS-ESI spectrum of compound **7m**

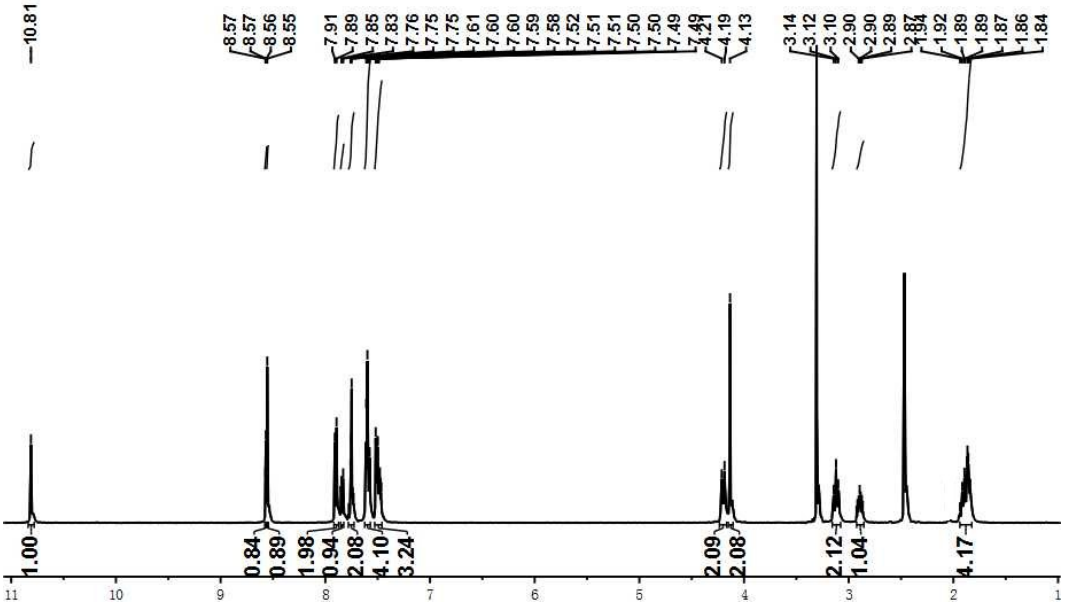

Figure S52. ^{1}H NMR spectrum of compound **7n** (DMSO-d_6)

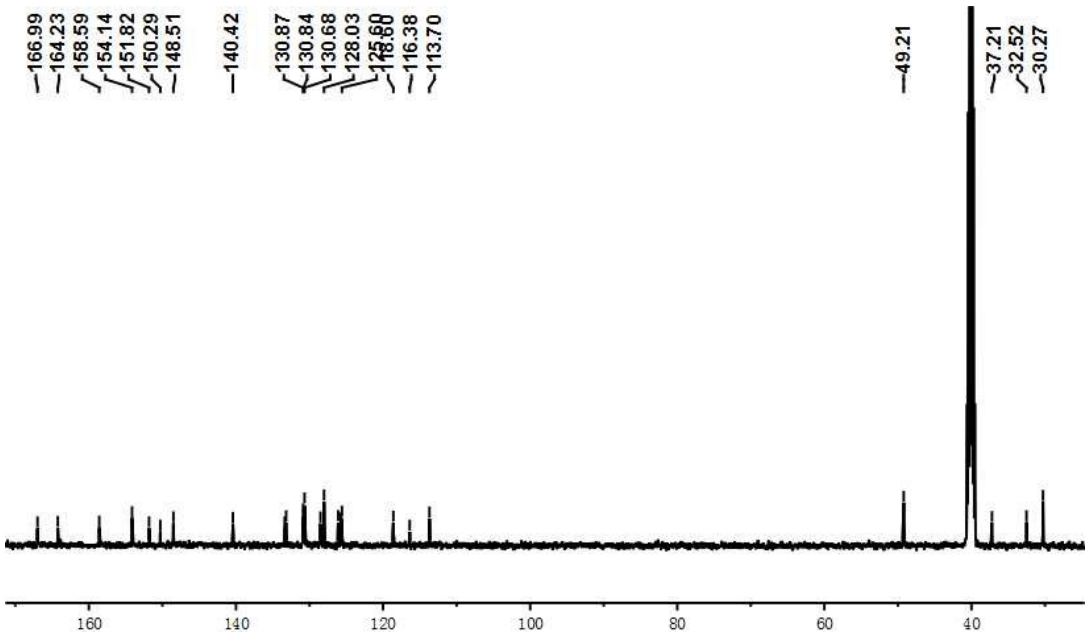

Figure S53. ^{13}C NMR spectrum of compound **7n** (DMSO-d_6)

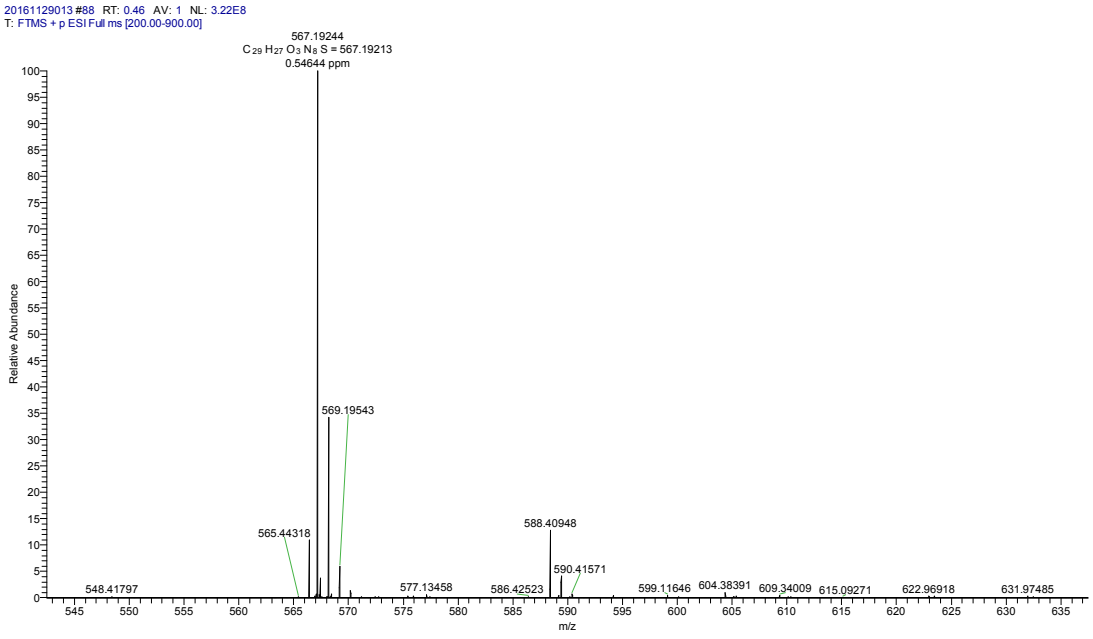

Figure S54. HRMS-ESI spectrum of compound **7n**

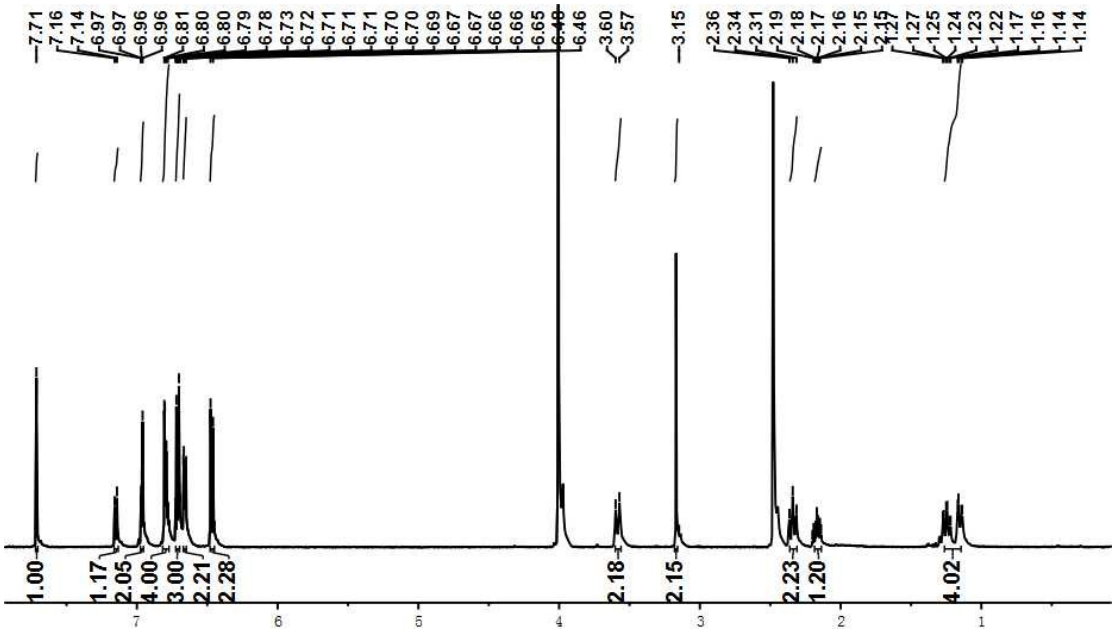

Figure S55. ^{1}H NMR spectrum of compound **7o** (DMSO-d_6)

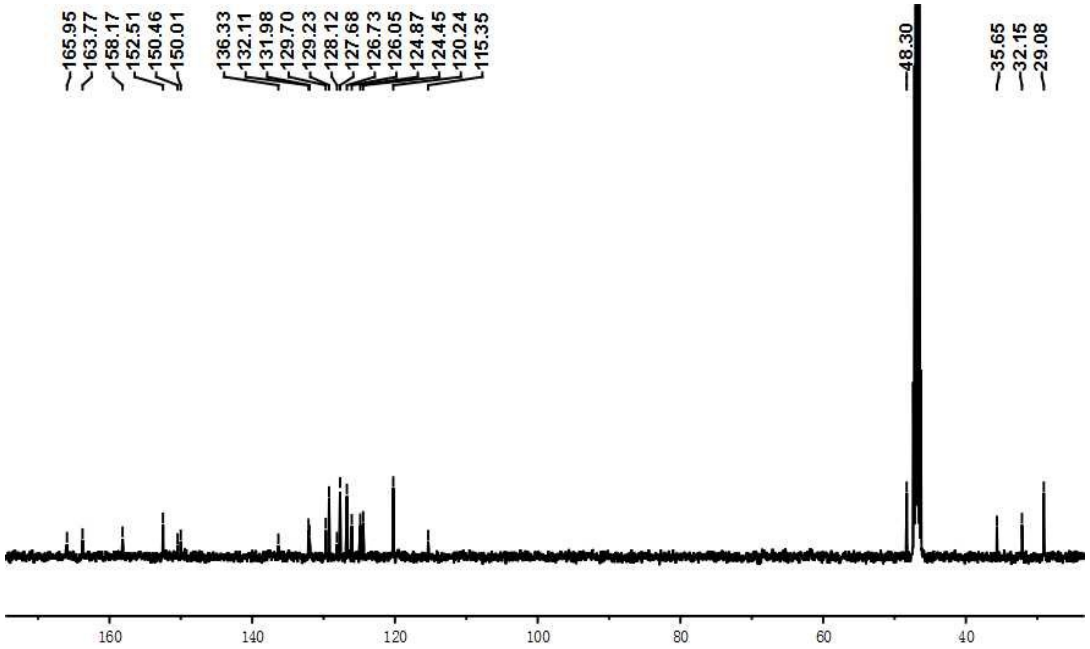

Figure S56. ^{13}C NMR spectrum of compound **7o** (DMSO-d_6)

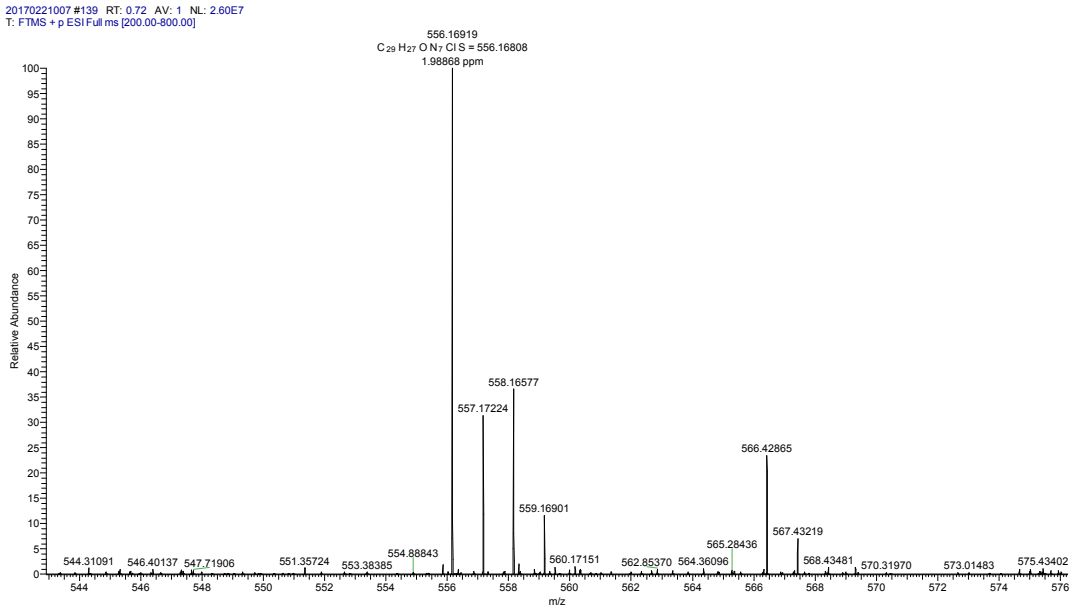

Figure S57. HRMS-ESI spectrum of compound **7o**

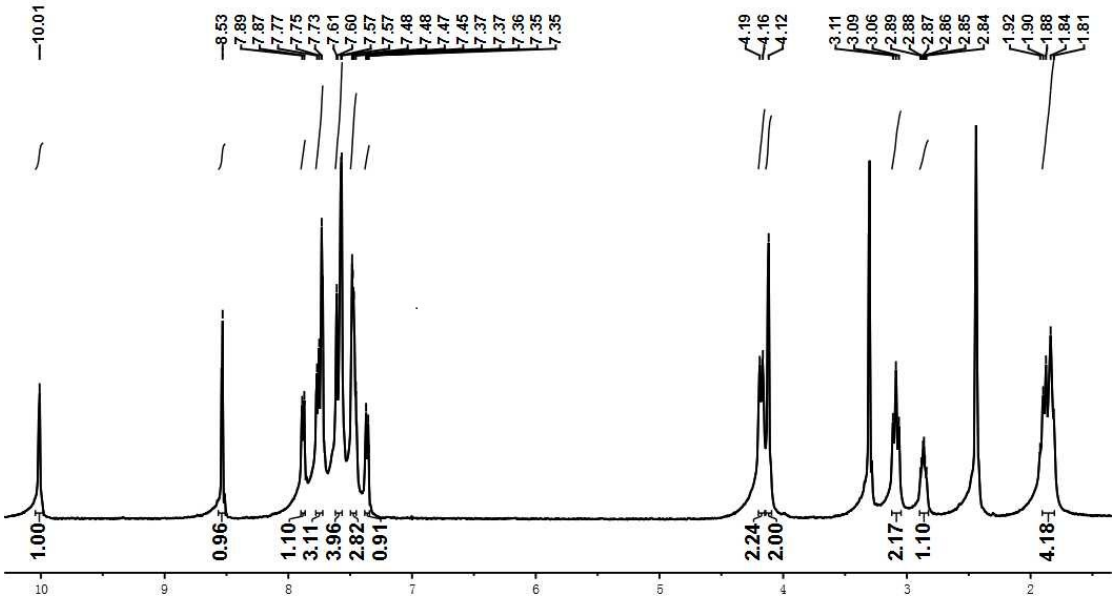

Figure S58. ^{1}H NMR spectrum of compound **7p** (DMSO-d_6)

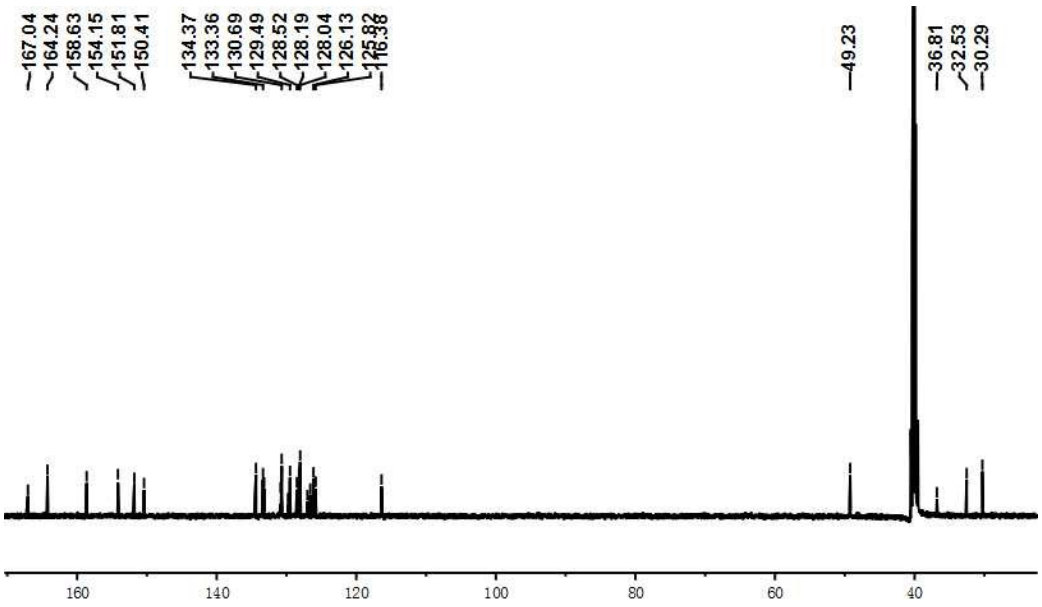

Figure S59. ^{13}C NMR spectrum of compound **7p** (DMSO-d_6)

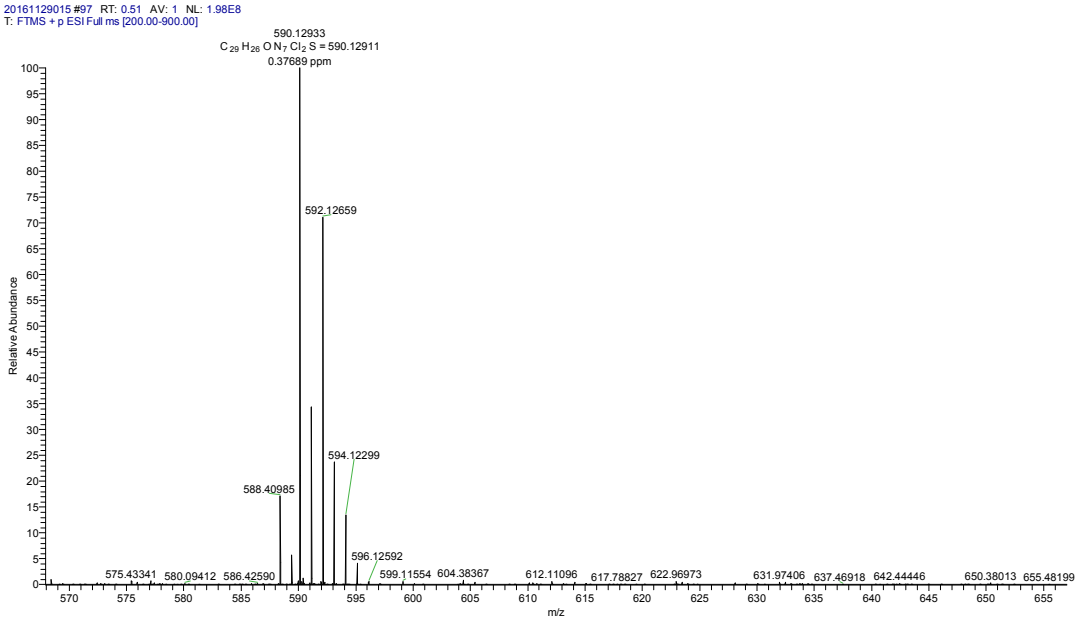

Figure S60. HRMS-ESI spectrum of compound **7p**