

Discovery of Novel Thiosemicarbazides Containing 1,3,5-Triazines Derivatives as Potential Synergists against Fluconazole-Resistant *Candida albicans*

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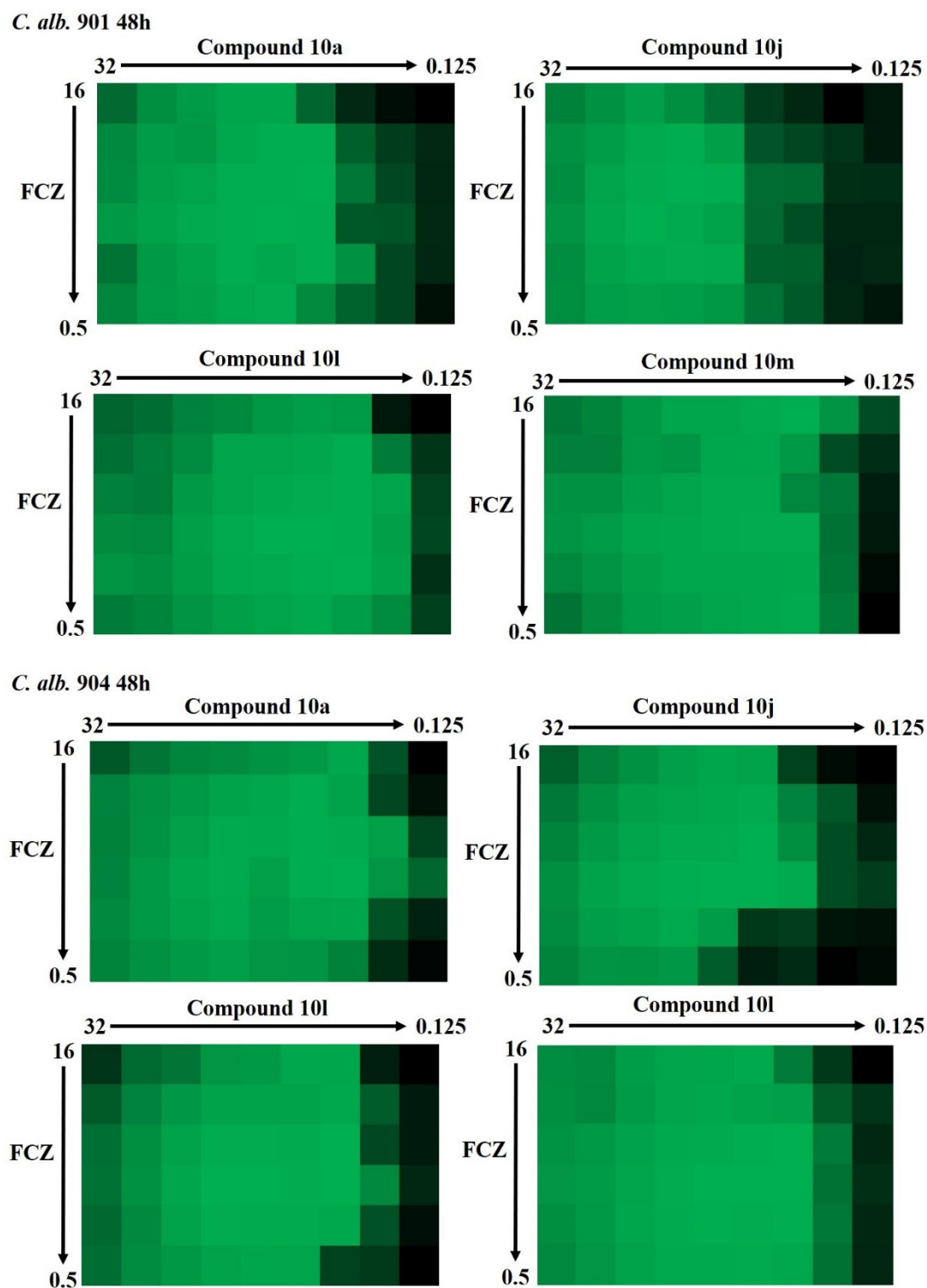


Figure S1. Checkerboard microdilution assay of FCZ with the target compounds **10a**, **10j**, **10l** and **10m**. The *in vitro* synergistic antifungal activity was shown in heat map. The color changes from green to black were used to express the relative growth of the fungi, if the color was greener, the inhibition was stronger. Abbreviations: *C. alb.*, *Candida albicans*; FCZ, fluconazole.

Table S1. Antifungal activity of compound **10l** against 8 *Cryptococcus* strains (MIC₈₀, µg/mL, 72h)

Species	Strains	FCZ	8	10l
<i>C. neoformans.</i>	HN-15	16.0	16.0	>64.0
<i>C. neoformans.</i>	HN-17	8.0	16.0	0.25
<i>C. neoformans.</i>	HN-19	16.0	16.0	0.5
<i>C. neoformans.</i>	HN-20	8.0	32.0	0.5
<i>C. neoformans.</i>	HN-68	4.0	16.0	≤0.125
<i>C. neoformans.</i>	BJ-3	8.0	32.0	≤0.125
<i>C. neoformans.</i>	BJ-72	16.0	16.0	0.25
<i>C. neoformans.</i>	BJ-95	4.0	16.0	≤0.125

Abbreviations: *C. neoformans.*, *Cryptococcus neoformans*; FCZ, fluconazole.

The characterization data of the compounds are given below:

1. *2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(2-fluorophenyl)acetamide (8b)*
White solid, yield: 65.2%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.88 (s, 1H), 8.85 (dd, *J* = 45.5, 18.0 Hz, 1H), 7.85 (t, *J* = 8.8 Hz, 1H), 7.74 – 7.54 (m, 2H), 7.52 – 7.06 (m, 10H), 6.87 (t, *J* = 33.9 Hz, 1H), 4.44 (d, *J* = 5.1 Hz, 2H), 3.63 (s, 2H), 3.14 – 2.98 (m, 2H), 1.78 – 1.38 (m, 6H), 1.15 – 1.07 (m, 3H), 0.96 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.34, 166.13, 165.99, 164.47, 163.06, 159.85, 155.74, 152.49, 139.66, 137.31, 129.40, 129.29, 128.94, 126.72, 126.57, 125.74, 125.64, 124.77, 124.72, 124.62, 120.24, 119.85, 116.03, 115.77, 115.40, 115.12, 46.98, 46.63, 43.18, 42.85, 42.49, 37.94, 31.07, 26.64, 25.92. MS (ESI) *m/z*: 558.0[M+H]⁺, C₃₁H₃₃F₂N₇O. Purity: 97.4% (LC-MS).
2. *2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(3-fluorophenyl)acetamide (8c)*
White solid, yield: 60.1%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.31 (s, 1H), 8.95 – 8.65 (m, 1H), 7.80 – 7.54 (m, 3H), 7.46 – 7.04 (m, 9H), 7.02 – 6.65 (m, 2H), 4.43 (s, 2H), 3.55 (s, 2H), 3.08 (s, 2H), 1.78 – 1.30 (m, 6H), 1.29 – 1.00 (d, *J* = 24.4 Hz, 3H), 0.97 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.32, 166.46, 166.28, 166.17, 164.55, 164.19, 163.05, 161.00, 159.84, 141.54, 141.39, 139.81, 137.33, 130.85, 130.73, 129.41, 129.27, 128.65, 120.22, 119.86, 115.38, 115.27, 115.10, 110.18, 109.90, 106.46, 106.11, 46.93, 46.61, 43.22, 37.91, 31.07, 26.64, 25.92. MS (ESI) *m/z*: 558.0[M+H]⁺, C₃₁H₃₃F₂N₇O. Purity: 98.8% (LC-MS).
3. *2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(4-fluorophenyl)acetamide (8d)*
White solid, yield: 64.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.15 (s, 1H), 8.97 – 8.64 (m, 1H), 7.80 – 7.54 (m, 4H), 7.47 – 7.02 (m, 9H), 6.83 (t, *J* = 34.5 Hz, 1H), 4.43 (s, 2H), 3.53 (s, 2H), 3.17 – 2.96 (m, 2H), 1.78 – 1.30 (m, 6H), 1.22 – 1.01 (m, 3H), 0.98 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 169.81, 166.41, 166.29, 166.12, 164.55, 163.03, 159.96, 159.85, 156.78, 156.51, 139.82, 137.35, 136.16, 129.41, 129.23, 128.90, 121.32, 121.21, 119.86, 115.84, 115.55, 115.39, 115.11, 47.07, 46.61, 43.12, 37.89, 31.06, 26.64, 25.92. MS (ESI) *m/z*: 558.0[M+H]⁺, C₃₁H₃₃F₂N₇O. Purity: 99.1% (LC-MS).
4. *2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(4-methoxyphenyl)acetamide (8e)*
White solid, yield: 54.6%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.95 (s, 1H), 8.91 – 8.71 (m, 1H), 7.79 – 7.56 (m, 2H), 7.49 (d, *J* = 8.9 Hz, 2H), 7.42 – 7.05 (m, 7H), 7.03 – 6.65 (m, 3H), 4.44 (d, *J* = 5.4 Hz, 2H), 3.70 (s, 3H), 3.50 (s, 2H), 3.10 – 3.02 (m, 2H), 1.78 – 1.34 (m, 6H), 1.38 – 1.06 (m, 3H), 0.96 – 0.68 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 169.39, 166.38, 166.29, 166.20, 166.16, 164.58, 163.06, 159.86, 155.60, 139.65, 137.37, 132.93, 129.41, 129.30, 129.19, 121.10, 120.30, 120.23, 120.11, 119.92, 119.83, 115.39, 115.11, 114.28, 55.61, 46.67, 43.12, 37.88, 31.07, 26.64, 25.93. MS (ESI) *m/z*: 570.0[M+H]⁺, C₃₂H₃₆FN₇O₂. Purity: 98.8% (LC-MS).
5. *2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(4-(2-methoxyethoxy)phenyl)acetamide (8f)*
White solid, yield: 48.7%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.95 (s, 1H), 8.97 – 8.65 (m, 1H), 7.77 – 7.54 (m, 2H), 7.48 (d, *J* = 8.9 Hz, 2H), 7.22 (dt, *J* = 17.1, 8.1 Hz, 7H), 7.03 – 6.64 (m, 3H), 4.44 (d, *J* = 6.2 Hz, 2H), 4.12 – 3.92 (m, 2H), 3.70 – 3.56 (m, 2H), 3.49 (s, 2H), 3.29 (s,

3H), 3.10 – 3.02 (m, 2H), 1.73 – 1.59 (m, 6H), 1.19 – 1.07 (m, 3H), 0.93 – 0.75 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 169.40, 166.30, 164.58, 163.06, 159.86, 154.79, 139.66, 137.37, 133.02, 129.41, 129.31, 129.18, 121.08, 119.84, 115.38, 115.10, 114.90, 70.90, 67.48, 58.61, 46.96, 46.64, 43.14, 37.92, 31.07, 26.65, 25.92. MS (ESI) *m/z*: 614.0[M+H]⁺, C₃₄H₄₀FN₇O₃. Purity: 97.5% (LC-MS).

6. 2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(4-fluorobenzyl)acetamide (**8g**)

White solid, yield: 66.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 8.96 – 8.65 (m, 1H), 8.47 (s, 1H), 7.78 – 7.52 (m, 2H), 7.46 – 7.21 (m, 5H), 7.20 – 7.02 (m, 6H), 6.84 (t, *J* = 35.7 Hz, 1H), 4.44 (s, 2H), 4.24 (d, *J* = 5.3 Hz, 2H), 3.38 (s, 2H), 3.13 – 2.96 (m, 2H), 1.80 – 1.33 (m, 6H), 1.26 – 1.00 (m, 3H), 0.98 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.96, 166.42, 166.29, 166.18, 164.56, 163.21, 163.06, 160.00, 159.86, 139.55, 137.57, 137.38, 136.24, 136.20, 129.67, 129.56, 129.41, 129.35, 129.17, 120.16, 119.74, 115.55, 115.39, 115.27, 115.10, 46.95, 46.66, 43.27, 43.12, 42.96, 42.24, 41.95, 38.07, 37.91, 31.07, 26.65, 25.93. MS (ESI) *m/z*: 572.0[M+H]⁺, C₃₂H₃₅F₂N₇O. Purity: 97.3% (LC-MS).

7. 2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(4-methylbenzyl)acetamide (**8h**)

White solid, yield: 62.8%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 8.92 – 8.71 (m, 1H), 8.43 (t, *J* = 5.8 Hz, 1H), 7.78 – 7.53 (m, 2H), 7.45 – 7.03 (m, 11H), 6.86 (t, *J* = 35.4 Hz, 1H), 4.45 (d, *J* = 5.4 Hz, 2H), 4.21 (d, *J* = 5.8 Hz, 2H), 3.38 (s, 2H), 3.15 – 2.99 (m, 2H), 2.26 (s, 3H), 1.77 – 1.50 (m, 6H), 1.17 – 1.14 (m, 3H), 0.98 – 0.73 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.85, 166.44, 166.31, 166.19, 164.57, 163.07, 159.87, 139.55, 137.37, 136.95, 136.22, 129.46, 129.24, 129.17, 127.66, 120.16, 120.03, 119.96, 119.71, 115.39, 115.11, 46.96, 46.63, 43.23, 42.97, 42.40, 42.27, 37.94, 31.08, 26.66, 25.93, 21.10. MS (ESI) *m/z*: 568.0[M+H]⁺, C₃₃H₃₈FN₇O. Purity: 97.6% (LC-MS).

8. 2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-(furan-2-ylmethyl)acetamide (**8i**)

White solid, yield: 70.1%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.00 – 8.42 (m, 1H), 8.44 (t, *J* = 5.1 Hz, 1H), 7.69 – 7.56 (m, 3H), 7.40 – 7.09 (m, 7H), 6.84 (t, *J* = 34.6 Hz, 1H), 6.37 (s, 1H), 6.19 (d, *J* = 2.3 Hz, 1H), 4.44 (d, *J* = 4.3 Hz, 2H), 4.24 (d, *J* = 5.4 Hz, 2H), 3.35 (s, 2H), 3.18 – 2.94 (m, 2H), 1.74 – 1.59 (m, 6H), 1.19 – 1.07 (m, 3H), 0.94 – 0.76 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.80, 166.28, 166.15, 164.54, 163.07, 159.86, 152.81, 142.51, 139.52, 137.35, 129.42, 129.30, 129.17, 120.15, 119.96, 119.71, 115.39, 115.11, 110.87, 107.16, 46.95, 46.65, 43.22, 42.97, 42.06, 37.92, 36.05, 31.07, 26.66, 25.93. MS (ESI) *m/z*: 544.0[M+H]⁺, C₃₀H₃₄FN₇O₂. Purity: 97.2% (LC-MS).

9. 2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)-N-((5-phenylfuran-2-yl)methyl)acetamide (**8g**)

White solid, yield: 62.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 8.98 – 8.66 (m, 1H), 8.52 (s, 1H), 7.80 – 7.53 (m, 4H), 7.49 – 7.02 (m, 10H), 7.00 – 6.65 (m, 2H), 6.30 (d, *J* = 2.6 Hz, 1H), 4.43 (s, 2H), 4.32 (d, *J* = 4.7 Hz, 2H), 3.39 (s, 2H), 3.14 – 2.97 (m, 2H), 1.81 – 1.34 (m, 6H), 1.29 – 1.01 (m, 3H), 0.98 – 0.68 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.92, 166.42, 166.31, 166.18, 164.58, 163.06, 159.86, 152.75, 152.59, 139.59, 137.37, 130.78, 129.42, 129.28, 129.17, 127.71, 123.65, 120.13, 119.75, 115.38, 115.11, 109.37, 106.92, 46.95, 46.64, 43.21, 43.00, 42.12, 37.94, 36.28, 31.07, 26.65, 25.92. MS (ESI) *m/z*: 620.0[M+H]⁺, C₃₆H₃₈FN₇O₂. Purity:

97.4% (LC-MS).

10. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(2-chlorophenyl)hydrazine-1-carboxamide (**9a**)
White solid, yield: 80.5%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.04 (s, 1H), 8.96 – 8.69 (m, 2H), 8.19 (s, 1H), 8.09 (d, *J* = 8.1 Hz, 1H), 7.80 – 7.56 (m, 2H), 7.47 – 7.22 (m, 5H), 7.14 (s, 4H), 7.01 (t, *J* = 7.4 Hz, 1H), 6.79 (d, *J* = 35.0 Hz, 1H), 4.45 (s, 2H), 3.54 – 3.43 (m, 2H), 3.10 (s, 2H), 1.81 – 1.48 (m, 6H), 1.25 – 1.07 (s, 3H), 0.96 – 0.71 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.81, 166.43, 166.29, 166.16, 164.56, 163.07, 162.77, 159.87, 155.24, 139.70, 137.34, 136.22, 129.64, 129.41, 129.24, 128.53, 128.05, 123.87, 122.43, 121.54, 120.06, 119.67, 115.40, 115.12, 46.92, 46.67, 43.18, 42.97, 37.96, 36.24, 31.08, 26.65, 25.93. MS (ESI) *m/z*: 632.0[M+H]⁺, C₃₂H₃₃ClFN₉O₂. Purity: 97.5% (LC-MS).
11. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(3-chlorophenyl)hydrazine-1-carboxamide (**9b**)
White solid, yield: 86.2%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.89 (s, 1H), 8.99 – 8.66 (m, 2H), 8.21 (s, 1H), 7.70 – 7.55 (m, 3H), 7.43 – 7.20 (m, 5H), 7.19 – 7.06 (m, 4H), 7.04 – 6.70 (m, 2H), 4.43 (s, 2H), 3.40 (s, 2H), 3.09 (s, 2H), 1.74 – 1.35 (m, 6H), 1.25 – 1.05 (m, 3H), 0.97 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.91, 166.29, 164.56, 163.07, 159.86, 155.63, 141.71, 139.68, 137.40, 133.52, 130.72, 129.31, 128.61, 121.94, 120.07, 119.69, 118.23, 117.26, 115.40, 115.12, 56.50, 46.97, 46.64, 43.15, 37.94, 31.08, 26.66, 25.93, 19.02. MS (ESI) *m/z*: 631.9[M+H]⁺, C₃₂H₃₃ClFN₉O₂. Purity: 95.9% (LC-MS).
12. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-chlorophenyl)hydrazine-1-carboxamide (**9c**)
White solid, yield: 80.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.88 (s, 1H), 8.96 – 8.67 (m, 2H), 8.14 (s, 1H), 7.81 – 7.55 (m, 2H), 7.48 (d, *J* = 8.6 Hz, 3H), 7.32 (d, *J* = 10.2 Hz, 4H), 7.12 (s, 4H), 6.85 (t, *J* = 33.5 Hz, 1H), 4.44 (s, 2H), 3.40 (s, 2H), 3.17 – 2.95 (s, 2H), 1.79 – 1.40 (m, 6H), 1.23 – 1.06 (m, 3H), 0.97 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.89, 166.30, 164.55, 163.07, 162.97, 155.68, 139.76, 139.13, 137.41, 129.30, 129.09, 128.94, 128.63, 125.99, 125.87, 120.40, 119.65, 115.40, 115.11, 56.50, 46.93, 46.66, 43.32, 42.87, 37.96, 31.08, 26.65, 25.93, 19.02. MS (ESI) *m/z*: 631.9[M+H]⁺, C₃₂H₃₃ClFN₉O₂. Purity: 97.3% (LC-MS).
13. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(2-fluorophenyl)hydrazine-1-carboxamide (**9d**)
White solid, yield: 76.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.99 (s, 1H), 8.98 – 8.67 (m, 1H), 8.57 (s, 1H), 8.39 (s, 1H), 8.00 (t, *J* = 7.5 Hz, 1H), 7.81 – 7.54 (m, 2H), 7.49 – 7.27 (m, 3H), 7.25 – 7.08 (m, 6H), 7.03 – 6.94 (m, 1H), 6.79 (d, *J* = 32.7 Hz, 1H), 4.44 (s, 2H), 3.40 (s, 2H), 3.18 – 2.97 (m, 2H), 1.84 – 1.39 (m, 6H), 1.29 – 0.99 (m, 3H), 0.98 – 0.65 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.72, 166.43, 166.30, 166.17, 164.56, 163.07, 159.86, 155.37, 154.32, 154.28, 151.11, 139.66, 137.58, 137.37, 129.41, 129.24, 128.59, 127.81, 127.67, 124.92, 124.88, 123.32, 123.22, 121.51, 120.09, 119.99, 119.82, 119.69, 115.62, 115.38, 115.12, 46.97, 46.64, 43.23, 43.03, 37.96, 31.07, 26.65, 25.92. MS (ESI) *m/z*: 615.9[M+H]⁺, C₃₂H₃₅F₂N₉O₂. Purity: 95.4% (LC-MS).
14. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(3-fluorophenyl)hydrazine-1-carboxamide (**9e**)
White solid, yield: 70.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.90 (s, 1H), 9.13 – 8.68 (m, 2H), 8.21 (s, 1H), 7.81 – 7.55 (m, 2H), 7.53 – 7.06 (m, 10H), 7.04 – 6.69 (m, 2H), 4.44 (s, 2H), 3.48

- 3.41 (m, 2H), 3.17 – 2.97 (m, 2H), 1.83 – 1.42 (m, 6H), 1.26 – 1.01 (m, 3H), 0.98 – 0.67 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 170.86, 166.11, 164.37, 163.06, 161.19, 155.61, 152.81, 142.15, 142.00, 139.55, 137.28, 130.70, 130.56, 129.31, 128.71, 120.28, 119.70, 115.41, 115.13, 114.49, 108.71, 108.42, 105.58, 105.23, 46.95, 46.59, 43.18, 37.94, 31.07, 26.64, 25.92. MS (ESI) m/z : 616.0[M+H] $^+$, C₃₂H₃₅F₂N₉O₂. Purity: 98.0% (LC-MS).
15. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-fluorophenyl)hydrazine-1-carboxamide (**9f**)
White solid, yield: 78.3%; ^1H NMR (300 MHz, DMSO- d_6) δ 9.87 (s, 1H), 8.96 – 8.65 (m, 2H), 8.08 (s, 1H), 7.78 – 7.55 (m, 2H), 7.44 (dd, J = 8.8, 4.9 Hz, 2H), 7.34 (t, J = 4.9 Hz, 2H), 7.25 – 7.01 (m, 6H), 6.85 (t, J = 31.3 Hz, 1H), 4.44 (s, 2H), 3.48 – 3.40 (m, 2H), 3.17 – 2.96 (m, 2H), 1.81 – 1.45 (m, 6H), 1.28 – 1.05 (m, 3H), 0.99 – 0.66 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 170.89, 166.25, 166.12, 164.53, 163.07, 159.86, 159.39, 156.24, 155.89, 139.63, 137.36, 136.44, 129.40, 129.30, 128.68, 120.68, 120.58, 119.94, 119.68, 115.72, 115.42, 115.13, 46.90, 46.67, 43.20, 37.93, 31.07, 26.64, 25.92. MS (ESI) m/z : 615.9[M+H] $^+$, C₃₂H₃₅F₂N₉O₂. Purity: 96.5% (LC-MS).
16. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*o*-tolyl)hydrazine-1-carboxamide (**9g**)
White solid, yield: 74.5%; ^1H NMR (300 MHz, DMSO- d_6) δ 9.94 (s, 1H), 8.96 – 8.65 (m, 1H), 8.35 (s, 1H), 7.91 (s, 1H), 7.78 – 7.54 (m, 3H), 7.34 (s, 3H), 7.25 – 7.02 (m, 6H), 7.02 – 6.69 (m, 2H), 4.44 (s, 2H), 3.51 – 3.41 (m, 2H), 3.17 – 2.93 (m, 2H), 2.16 (s, 3H), 1.81 – 1.41 (m, 6H), 1.21 – 1.05 (m, 3H), 0.91 – 0.70 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 170.71, 166.29, 164.55, 159.93, 155.95, 139.68, 137.62, 137.38, 130.62, 129.41, 129.27, 128.98, 128.68, 126.55, 123.59, 122.30, 120.06, 119.67, 115.41, 115.12, 56.51, 46.93, 46.65, 43.19, 37.92, 31.07, 26.65, 25.93, 19.02, 18.15. MS (ESI) m/z : 612.0[M+H] $^+$, C₃₃H₃₈FN₉O₂. Purity: 96.3% (LC-MS).
17. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*m*-tolyl)hydrazine-1-carboxamide (**9h**)
White solid, yield: 72.6%; ^1H NMR (300 MHz, DMSO- d_6) δ 10.12 (s, 1H), 9.22 – 8.85 (m, 1H), 8.85 (s, 1H), 8.28 (s, 1H), 8.04 – 7.80 (m, 2H), 7.71 – 7.45 (m, 5H), 7.41 – 7.31 (m, 5H), 7.28 – 6.96 (m, 2H), 4.69 (s, 2H), 3.73 – 3.65 (m, 2H), 3.41 – 3.23 (m, 2H), 2.76 (s, 3H), 2.01 – 1.62 (m, 6H), 1.51 – 1.29 (m, 3H), 1.24 – 0.92 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 170.85, 166.35, 166.13, 164.54, 155.74, 139.97, 139.66, 138.26, 137.35, 129.41, 129.29, 128.96, 128.69, 123.06, 119.68, 119.34, 116.02, 115.41, 115.12, 101.03, 46.74, 46.63, 43.36, 37.97, 31.07, 26.66, 25.93, 21.64. MS (ESI) m/z : 612.0[M+H] $^+$, C₃₃H₃₈FN₉O₂. Purity: 97.2% (LC-MS).
18. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*p*-tolyl)hydrazine-1-carboxamide (**9i**)
White solid, yield: 78.6%; ^1H NMR (300 MHz, DMSO- d_6) δ 9.86 (s, 1H), 9.03 – 8.67 (m, 1H), 8.58 (s, 1H), 8.00 (s, 1H), 7.78 – 7.51 (m, 2H), 7.43 – 7.00 (m, 11H), 6.85 (t, J = 27.3 Hz, 1H), 4.44 (s, 2H), 3.48 – 3.40 (m, 2H), 3.19 – 2.95 (m, 2H), 2.22 (s, 3H), 1.82 – 1.38 (m, 6H), 1.27 – 1.02 (m, 3H), 0.98 – 0.66 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 170.85, 166.40, 166.29, 166.17, 164.56, 163.07, 159.87, 155.82, 139.65, 137.50, 131.12, 129.50, 129.29, 128.70, 120.02, 119.68, 118.94, 115.40, 115.12, 46.89, 46.67, 43.20, 42.91, 37.95, 31.07, 26.65, 25.93, 20.78. MS (ESI) m/z : 612.0[M+H] $^+$, C₃₃H₃₈FN₉O₂. Purity: 97.1% (LC-MS).
19. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-(trifluoromethyl)phenyl)hydrazine-1-carboxamide (**9j**)

White solid, yield: 79.8%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.93 (s, 1H), 9.16 (s, 1H), 8.97 – 8.66 (m, 1H), 8.28 (s, 1H), 7.78 – 7.53 (m, 6H), 7.42 – 7.06 (m, 7H), 6.85 (t, *J* = 30.7 Hz, 1H), 4.40 (s, 2H), 3.55 – 3.41 (m, 2H), 3.19 – 2.95 (m, 2H), 1.78 – 1.41 (m, 6H), 1.27 – 1.03 (m, 3H), 0.98 – 0.68 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.89, 166.43, 166.30, 166.17, 164.57, 163.06, 159.87, 155.51, 143.91, 139.68, 137.35, 129.41, 129.30, 128.60, 126.81, 126.37, 123.22, 122.51, 122.09, 120.05, 119.69, 118.51, 115.40, 115.11, 46.94, 46.62, 43.24, 42.98, 37.96, 31.07, 26.64, 25.93. MS (ESI) *m/z*: 665.9[M+H]⁺, C₃₃H₃₅F₄N₉O₂. Purity: 97.2% (LC-MS).

20. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-(trifluoromethoxy)phenyl)hydrazine-1-carboxamide (**9k**)

White solid, yield: 82.6%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.90 (s, 1H), 8.99 – 8.68 (m, 2H), 8.17 (s, 1H), 7.77 – 7.47 (m, 4H), 7.39 – 7.07 (m, 9H), 6.90 (d, *J* = 32.3 Hz, 1H), 4.44 (s, 2H), 3.48 – 3.41 (m, 2H), 3.15 – 2.97 (m, 2H), 1.74 – 1.36 (m, 6H), 1.25 – 1.03 (m, 3H), 0.97 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 172.35, 166.43, 166.30, 166.18, 164.58, 163.08, 159.88, 139.98, 137.61, 137.33, 129.50, 129.42, 129.31, 127.25, 120.09, 119.97, 119.82, 115.38, 115.10, 52.02, 46.98, 46.66, 43.27, 43.15, 42.98, 38.08, 37.92, 31.07, 26.65, 25.93. MS (ESI) *m/z*: 681.9[M+H]⁺, C₃₃H₃₅F₄N₉O₃. Purity: 97.6% (LC-MS).

21. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-cyanophenyl)hydrazine-1-carboxamide (**9l**)

White solid, yield: 83.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.95 (s, 1H), 9.44 (s, 1H), 8.97 – 8.66 (m, 1H), 8.40 (s, 1H), 7.67 (dd, *J* = 18.0, 8.7 Hz, 6H), 7.47 – 7.07 (m, 7H), 6.85 (t, *J* = 29.8 Hz, 1H), 4.44 (s, 2H), 3.50 – 3.41 (m, 2H), 3.18 – 2.96 (m, 2H), 1.67 (m, 6H), 1.28 – 0.99 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.84, 166.29, 164.54, 163.06, 159.86, 155.31, 144.72, 139.64, 137.34, 133.62, 129.41, 129.30, 128.59, 119.76, 118.62, 115.40, 115.12, 103.73, 99.99, 46.93, 42.94, 37.96, 31.06, 26.65, 25.92. MS (ESI) *m/z*: 665.9[M+H]⁺, C₃₃H₃₅FN₁₀O₂. Purity: 96.5% (LC-MS).

22. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-nitrophenyl)hydrazine-1-carboxamide (**9m**)

Yellow solid, yield: 75.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.98 (s, 1H), 9.59 (d, *J* = 45.7 Hz, 1H), 8.97 – 8.64 (m, 1H), 8.45 (s, 1H), 8.17 (d, *J* = 9.1 Hz, 2H), 7.81 – 7.55 (m, 4H), 7.45 – 7.08 (m, 7H), 6.84 (t, *J* = 35.3 Hz, 1H), 4.44 (s, 2H), 3.51 – 3.42 (m, 2H), 3.18 – 2.95 (m, 2H), 1.74 – 1.39 (m, 6H), 1.28 – 1.01 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.87, 166.30, 166.16, 164.56, 163.07, 159.86, 155.18, 146.84, 141.57, 139.69, 137.37, 129.41, 129.31, 128.54, 126.84, 125.46, 119.71, 118.15, 115.40, 115.12, 112.84, 46.97, 46.63, 43.27, 37.95, 31.07, 26.65, 25.93. MS (ESI) *m/z*: 642.9[M+H]⁺, C₃₂H₃₅FN₁₀O₄. Purity: 97.3% (LC-MS).

23. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-benzylhydrazine-1-carboxamide (**9n**)

White solid, yield: 69.5%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 9.74 (s, 1H), 8.98 – 8.65 (m, 1H), 7.89 (s, 1H), 7.82 – 7.53 (m, 2H), 7.47 – 7.21 (m, 8H), 7.15 – 7.03 (m, 4H), 7.01 – 6.71 (m, 2H), 4.44 (s, 2H), 4.24 (d, *J* = 5.8 Hz, 2H), 3.36 (s, 2H), 3.17 – 2.97 (m, 2H), 1.76 – 1.35 (m, 6H), 1.28 – 1.03 (m, 3H), 0.94 – 0.74 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.88, 166.40, 166.28, 166.20, 164.56, 163.06, 159.87, 158.68, 140.96, 139.61, 137.63, 137.35, 129.41, 129.33, 128.76, 128.58, 127.53, 127.39, 126.99, 120.06, 119.95, 119.85, 119.65, 115.40, 115.12, 46.93,

46.63, 43.29, 43.11, 37.94, 31.08, 26.65, 25.93. MS (ESI) m/z : 612.0[M+H]⁺, C₃₃H₃₈FN₉O₂. Purity: 97.5% (LC-MS).

24. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(2-chlorophenyl)hydrazine-1-carbothioamide (**10a**)

White solid, yield: 78.6%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.33 – 9.99 (m, 1H), 9.95 – 9.66 (m, 1H), 9.45 (s, 1H), 8.99 – 8.65 (m, 1H), 7.79 – 7.56 (m, 2H), 7.49 (d, *J* = 7.8 Hz, 2H), 7.38 – 7.02 (m, 9H), 6.84 (t, *J* = 37.2 Hz, 1H), 4.44 (d, *J* = 5.0 Hz, 2H), 3.43 (t, *J* = 37.5 Hz, 2H), 3.16 – 2.95 (m, 2H), 1.79 – 1.29 (m, 6H), 1.26 – 1.01 (m, 3H), 0.98 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 182.18, 170.90, 166.42, 166.35, 166.19, 164.55, 163.04, 159.88, 139.70, 137.33, 131.00, 129.76, 129.56, 129.42, 128.30, 127.53, 119.91, 119.62, 115.41, 115.13, 46.92, 46.64, 43.31, 43.00, 37.94, 31.07, 26.65, 25.93. MS (ESI) m/z : 647.9[M+H]⁺, C₃₂H₃₅ClFN₉OS. Purity: 96.4% (LC-MS).

25. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(3-chlorophenyl)hydrazine-1-carbothioamide (**10b**)

White solid, yield: 75.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.14 (s, 1H), 9.92 – 9.54 (m, 2H), 8.99 – 8.63 (m, 1H), 7.65 (s, 3H), 7.47 – 7.03 (m, 10H), 6.84 (t, *J* = 32.1 Hz, 1H), 4.44 (s, 2H), 3.45 (s, 2H), 3.15 – 2.97 (m, 2H), 1.80 – 1.31 (m, 6H), 1.24 – 1.03 (m, 3H), 0.99 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.43, 170.69, 166.41, 166.28, 166.16, 164.54, 163.07, 159.86, 141.18, 139.68, 137.44, 132.66, 130.17, 129.53, 129.41, 129.31, 128.35, 125.19, 119.93, 119.65, 115.40, 115.13, 46.94, 46.74, 43.21, 42.93, 37.97, 31.07, 26.66, 25.93. MS (ESI) m/z : 647.9[M+H]⁺, C₃₂H₃₅ClFN₉OS. Purity: 95.4% (LC-MS).

26. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-chlorophenyl)hydrazine-1-carbothioamide (**10c**)

White solid, yield: 70.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.27 – 9.91 (m, 1H), 9.71 (s, 2H), 8.99 – 8.66 (m, 1H), 7.79 – 7.56 (m, 2H), 7.54 – 7.42 (m, 2H), 7.43 – 7.01 (m, 9H), 6.85 (t, *J* = 34.2 Hz, 1H), 4.44 (d, *J* = 5.6 Hz, 2H), 3.44 (s, 2H), 3.16 – 2.97 (m, 2H), 1.86 – 1.32 (m, 6H), 1.25 – 1.03 (m, 3H), 0.97 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.53, 170.71, 166.46, 166.28, 166.11, 164.52, 163.05, 159.84, 139.70, 138.62, 137.40, 129.53, 129.41, 129.33, 128.47, 127.68, 119.97, 119.65, 115.40, 115.12, 46.94, 46.65, 43.31, 43.08, 38.00, 31.07, 26.65, 25.93. MS (ESI) m/z : 647.9[M+H]⁺, C₃₂H₃₅ClFN₉OS. Purity: 96.5% (LC-MS).

27. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(2-fluorophenyl)hydrazine-1-carbothioamide (**10d**)

White solid, yield: 78.9%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.17 (s, 1H), 9.77 (s, 1H), 9.48 (s, 1H), 8.93 – 8.64 (m, 1H), 7.76 – 7.54 (m, 2H), 7.53 – 6.99 (m, 11H), 6.85 (t, *J* = 32.4 Hz, 1H), 4.44 (d, *J* = 4.8 Hz, 2H), 3.42 (t, *J* = 22.8 Hz, 2H), 3.16 – 2.98 (m, 2H), 1.79 – 1.31 (m, 6H), 1.26 – 1.00 (m, 3H), 0.97 – 0.67 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 182.65, 170.67, 166.33, 164.53, 163.06, 159.86, 139.66, 137.38, 129.54, 129.42, 128.37, 127.61, 124.40, 119.85, 119.60, 116.29, 116.02, 115.40, 115.13, 46.92, 46.63, 43.24, 43.01, 37.95, 31.06, 26.64, 25.93. MS (ESI) m/z : 631.9[M+H]⁺, C₃₂H₃₅F₂N₉OS. Purity: 97.2% (LC-MS).

28. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(3-fluorophenyl)hydrazine-1-carbothioamide (**10e**)

White solid, yield: 72.2%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.14 (s, 1H), 9.90 – 9.54 (m, 2H), 8.96 – 8.66 (m, 1H), 7.78 – 7.57 (m, 2H), 7.51 (d, *J* = 9.0 Hz, 1H), 7.45 – 7.06 (m, 9H), 6.98 (t, *J* = 8.5 Hz, 1H), 6.79 (t, *J* = 31.2 Hz, 1H), 4.43 (s, 2H), 3.44 (s, 2H), 3.15 – 2.95 (m, 2H), 1.80

- 1.36 (m, 6H), 1.80 – 1.37 (m, 3H), 0.98 – 0.67 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 181.40, 170.70, 166.30, 164.54, 163.62, 163.07, 160.42, 159.87, 141.51, 141.36, 139.73, 137.39, 130.10, 129.54, 129.42, 128.38, 120.04, 119.65, 115.41, 115.13, 111.89, 46.96, 46.62, 43.21, 42.98, 37.98, 31.08, 26.64, 25.93. MS (ESI) m/z : 631.9[M+H] $^+$, $\text{C}_{32}\text{H}_{35}\text{F}_2\text{N}_9\text{OS}$. Purity: 97.0% (LC-MS).
29. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-fluorophenyl)hydrazine-1-carbothioamide (**10f**)
White solid, yield: 65.7%; ^1H NMR (300 MHz, DMSO- d_6) δ 10.21 (s, 1H), 9.64 (s, 2H), 8.98 – 8.63 (m, 1H), 7.82 – 7.54 (m, 2H), 7.49 – 7.02 (m, 11H), 6.84 (t, J = 31.3 Hz, 1H), 4.44 (s, 2H), 3.55 – 3.39 (m, 2H), 3.19 – 2.96 (m, 2H), 1.83 – 1.36 (m, 6H), 1.25 – 0.99 (m, 3H), 0.98 – 0.66 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 181.83, 170.73, 166.42, 166.30, 166.17, 164.55, 163.08, 161.53, 159.87, 158.31, 139.69, 137.39, 135.93, 129.54, 129.42, 129.31, 128.41, 120.01, 119.62, 115.38, 115.08, 46.93, 46.63, 43.24, 42.93, 37.95, 31.07, 26.66, 25.93. MS (ESI) m/z : 631.9[M+H] $^+$, $\text{C}_{32}\text{H}_{35}\text{F}_2\text{N}_9\text{OS}$. Purity: 97.5% (LC-MS).
30. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*o*-tolyl)hydrazine-1-carbothioamide (**10g**)
White solid, yield: 73.6%; ^1H NMR (300 MHz, DMSO- d_6) δ 10.09 (s, 1H), 9.51 (s, 1H), 9.40 (s, 1H), 8.98 – 8.65 (m, 1H), 7.81 – 7.56 (m, 2H), 7.34 (s, 3H), 7.22 – 7.09 (m, 8H), 6.85 (t, J = 29.7 Hz, 1H), 4.44 (s, 2H), 3.43 (s, 2H), 3.19 – 2.97 (s, 2H), 2.16 (s, 3H), 1.73 – 1.43 (m, 6H), 1.21 – 1.06 (m, 3H), 0.96 – 0.72 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 182.14, 170.66, 166.41, 166.31, 166.14, 164.55, 163.07, 159.87, 139.67, 138.35, 137.37, 136.14, 135.27, 131.25, 130.54, 129.99, 129.57, 129.42, 129.32, 128.46, 127.71, 127.12, 126.34, 126.29, 119.96, 119.59, 115.40, 115.12, 46.96, 46.64, 43.26, 43.11, 42.95, 39.18, 37.97, 31.08, 26.66, 25.94, 25.60, 18.28, 18.10. MS (ESI) m/z : 628.0[M+H] $^+$, $\text{C}_{33}\text{H}_{38}\text{FN}_9\text{OS}$. Purity: 97.3% (LC-MS).
31. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*m*-tolyl)hydrazine-1-carbothioamide (**10h**)
White solid, yield: 68.2%; ^1H NMR (300 MHz, DMSO- d_6) δ 10.21 (s, 1H), 9.58 (s, 2H), 8.99 – 8.66 (m, 1H), 7.80 – 7.55 (m, 2H), 7.43 – 7.04 (m, 10H), 7.02 – 6.66 (m, 2H), 4.44 (s, 2H), 3.53 – 3.40 (m, 2H), 3.18 – 2.97 (m, 2H), 2.29 (s, 3H), 1.81 – 1.35 (m, 6H), 1.29 – 1.01 (m, 3H), 0.99 – 0.66 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 181.44, 170.69, 166.27, 164.54, 163.08, 159.87, 139.71, 139.46, 137.83, 137.36, 129.53, 129.42, 129.32, 128.46, 126.11, 119.95, 119.66, 115.40, 115.12, 46.67, 43.26, 37.96, 31.08, 26.66, 25.94, 21.40. MS (ESI) m/z : 627.9[M+H] $^+$, $\text{C}_{33}\text{H}_{38}\text{FN}_9\text{OS}$. Purity: 98.1% (LC-MS).
32. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(*p*-tolyl)hydrazine-1-carbothioamide (**10i**)
White solid, yield: 66.5%; ^1H NMR (300 MHz, DMSO- d_6) δ 10.16 (s, 1H), 9.53 (s, 2H), 8.97 – 8.63 (m, 1H), 7.80 – 7.53 (m, 2H), 7.50 – 7.01 (m, 11H), 6.84 (t, J = 35.8 Hz, 1H), 4.44 (d, J = 4.7 Hz, 2H), 3.52 – 3.38 (m, 2H), 3.15 – 2.96 (m, 2H), 2.28 (s, 3H), 1.80 – 1.32 (m, 6H), 1.27 – 1.02 (m, 3H), 0.94 – 0.68 (m, 2H). ^{13}C NMR (75 MHz, DMSO- d_6) δ 181.61, 170.63, 166.29, 164.55, 163.07, 159.87, 139.68, 137.34, 137.01, 134.65, 129.53, 129.41, 129.31, 129.04, 128.46, 126.00, 119.90, 119.64, 115.39, 115.12, 46.88, 46.64, 43.24, 43.01, 37.94, 31.06, 26.65, 25.93, 21.01. MS (ESI) m/z : 627.9[M+H] $^+$, $\text{C}_{33}\text{H}_{38}\text{FN}_9\text{OS}$. Purity: 98.0% (LC-MS).
33. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-(trifluoromethyl)phenyl)hydrazine-1-carbothioamide (**10j**)

White solid, yield: 67.4%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.17 (s, 1H), 9.86 (s, 2H), 8.95 – 8.67 (m, 1H), 7.90 – 7.51 (m, 6H), 7.49 – 7.03 (m, 7H), 6.85 (t, *J* = 31.3 Hz, 1H), 4.43 (s, 2H), 3.45 (s, 2H), 3.16 – 2.96 (m, 2H), 1.80 – 1.30 (m, 6H), 1.28 – 1.00 (m, 3H), 0.98 – 0.65 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.43, 166.24, 164.53, 163.07, 159.80, 143.47, 139.72, 137.34, 129.52, 129.40, 129.31, 128.37, 126.60, 125.97, 125.69, 125.53, 123.00, 120.00, 119.62, 115.40, 115.13, 46.92, 46.66, 43.27, 43.04, 37.95, 31.06, 30.98, 26.64, 25.92. MS (ESI) *m/z*: 681.9[M+H]⁺, C₃₃H₃₅F₄N₉OS. Purity: 97.6% (LC-MS).

34. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-(trifluoromethoxy)phenyl)hydrazine-1-carbothioamide (**10k**)

White solid, yield: 74.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.13 (s, 1H), 9.74 (s, 2H), 8.96 – 8.62 (m, 1H), 7.82 – 7.48 (m, 4H), 7.47 – 7.02 (m, 9H), 6.84 (t, *J* = 31.7 Hz, 1H), 4.43 (s, 2H), 3.43 (t, *J* = 14.4 Hz, 2H), 3.17 – 2.95 (m, 2H), 1.80 – 1.32 (m, 6H), 1.28 – 1.01 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.58, 166.57, 166.39, 166.16, 164.54, 163.06, 159.86, 139.68, 138.84, 137.45, 129.52, 129.41, 129.31, 128.35, 121.24, 120.00, 119.62, 118.89, 115.40, 115.12, 46.88, 46.64, 43.08, 37.89, 31.07, 26.65, 25.92. MS (ESI) *m/z*: 697.9[M+H]⁺, C₃₃H₃₅F₄N₉O₂S. Purity: 95.4% (LC-MS).

35. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-cyanophenyl)hydrazine-1-carbothioamide (**10l**)

White solid, yield: 80.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.54 – 9.70 (m, 3H), 8.99 – 8.66 (m, 1H), 7.90 – 7.55 (m, 6H), 7.53 – 7.02 (m, 7H), 6.85 (t, *J* = 30.8 Hz, 1H), 4.44 (s, 2H), 3.46 (s, 2H), 3.18 – 2.96 (m, 2H), 1.77 – 1.33 (m, 6H), 1.27 – 1.00 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.13, 166.27, 166.12, 164.51, 163.07, 159.86, 144.21, 139.73, 137.37, 132.82, 129.51, 129.42, 129.31, 128.34, 125.72, 125.28, 120.17, 120.00, 119.66, 119.43, 115.41, 115.12, 46.91, 46.63, 43.27, 42.97, 37.97, 31.07, 26.65, 25.93. MS (ESI) *m/z*: 639.0[M+H]⁺, C₃₃H₃₅FN₁₀OS. Purity: 96.8% (LC-MS).

36. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-(4-nitrophenyl)hydrazine-1-carbothioamide (**10m**)

Yellow solid (203 mg), yield: 77.2%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.59 – 9.61 (m, 3H), 9.03 – 8.60 (m, 1H), 8.21 (d, *J* = 8.6 Hz, 2H), 7.90 (d, *J* = 8.8 Hz, 2H), 7.66 (s, 2H), 7.48 – 7.03 (m, 7H), 6.85 (t, *J* = 33.4 Hz, 1H), 4.44 (s, 2H), 3.47 (s, 2H), 3.09 (s, 2H), 1.81 – 1.31 (m, 6H), 1.27 – 1.06 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.09, 170.78, 166.21, 166.04, 164.49, 163.07, 159.86, 146.25, 143.59, 139.71, 137.33, 129.51, 129.42, 129.32, 128.34, 125.03, 124.70, 124.40, 124.28, 120.03, 119.93, 119.67, 115.41, 115.13, 46.94, 46.65, 43.23, 42.98, 37.94, 31.07, 26.64, 25.93. MS (ESI) *m/z*: 658.9[M+H]⁺, C₃₂H₃₅FN₁₀O₃S. Purity: 97.5% (LC-MS).

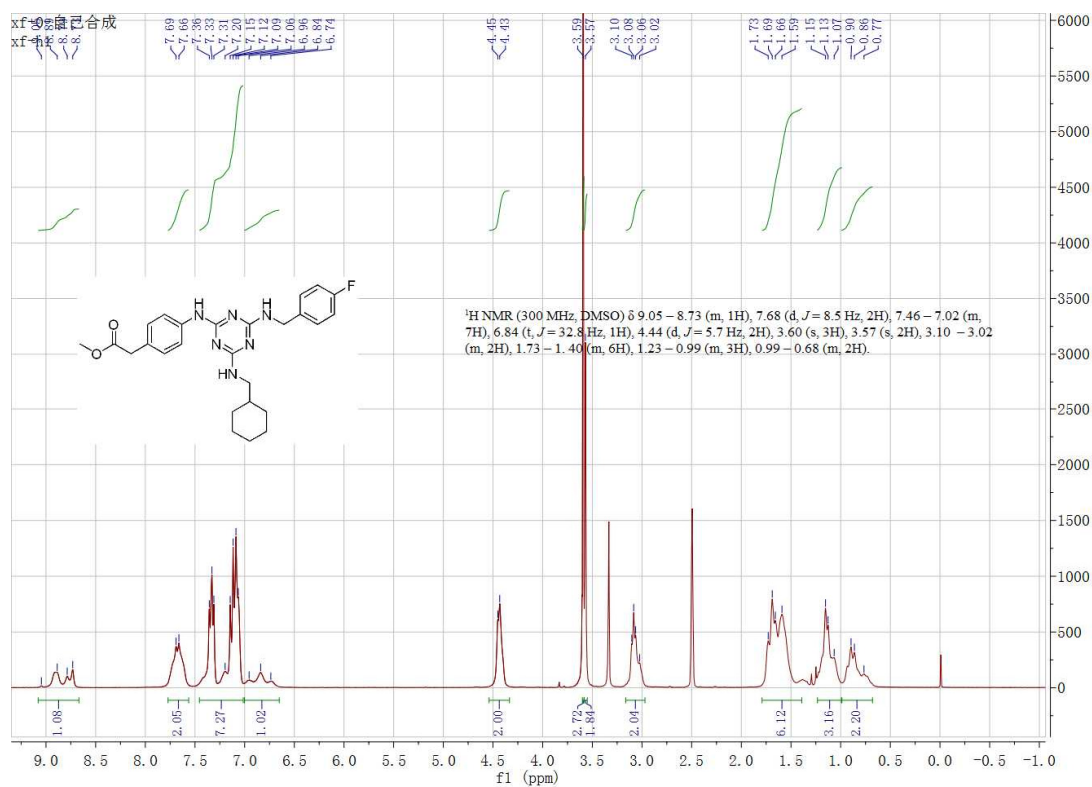
37. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-phenylhydrazine-1-carbothioamide (**10n**)

White solid, yield: 65.8%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.11 (s, 1H), 9.61 (s, 2H), 8.98 – 8.63 (m, 1H), 7.80 – 7.56 (m, 2H), 7.44 (d, *J* = 7.5 Hz, 2H), 7.33 (t, *J* = 7.6 Hz, 4H), 7.15 (dd, *J* = 15.6, 7.2 Hz, 6H), 6.84 (t, *J* = 34.0 Hz, 1H), 4.44 (s, 2H), 3.52 – 3.40 (m, 2H), 3.16 – 2.95 (m, 2H), 1.74 – 1.41 (m, 6H), 1.23 – 1.02 (m, 3H), 0.96 – 0.73 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 181.52, 170.70, 170.64, 166.44, 166.29, 166.16, 164.55, 163.07, 159.87, 139.70, 139.61, 137.38, 129.53, 129.42, 129.31, 128.57, 128.44, 125.93, 125.58, 125.44, 119.96, 119.63, 115.40, 115.12, 46.65, 43.24, 37.96, 31.08, 26.66, 25.93. MS (ESI) *m/z*: 614.0[M+H]⁺,

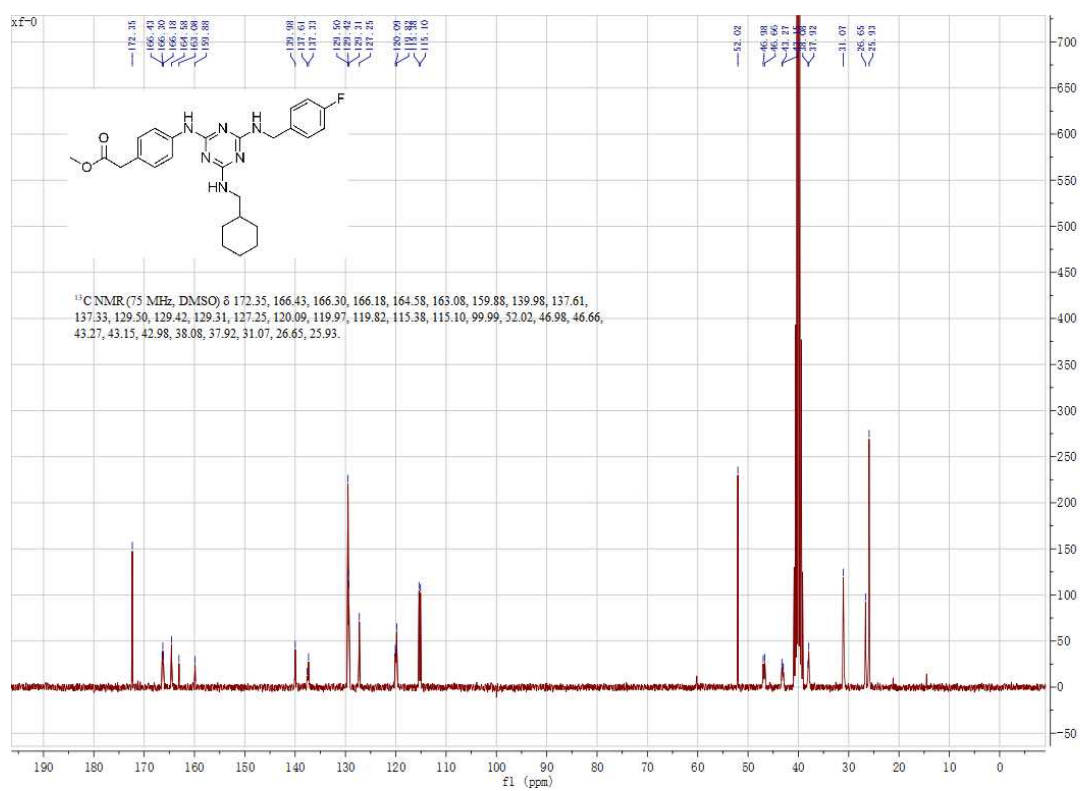
C₃₂H₃₆FN₉OS. Purity: 97.0% (LC-MS).

38. 2-(2-(4-((4-((cyclohexylmethyl)amino)-6-((4-fluorobenzyl)amino)-1,3,5-triazin-2-yl)amino)phenyl)acetyl)-N-benzylhydrazine-1-carbothioamide (**10o**)
White solid, yield: 60.3%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.08 (s, 1H), 9.42 (s, 1H), 8.97 – 8.64 (m, 1H), 8.50 (s, 1H), 7.86 – 7.52 (m, 2H), 7.49 – 7.05 (m, 11H), 7.03 – 6.64 (m, 1H), 4.74 (d, *J* = 5.7 Hz, 2H), 4.45 (d, *J* = 5.0 Hz, 2H), 3.41 (s, 2H), 3.17 – 2.98 (m, 2H), 1.87 – 1.29 (m, 6H), 1.25 – 1.05 (m, 3H), 0.99 – 0.66 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 182.69, 170.73, 166.42, 166.29, 166.13, 164.55, 163.08, 159.87, 139.76, 139.68, 137.38, 129.50, 129.31, 128.52, 128.40, 127.48, 127.07, 119.99, 119.86, 119.58, 115.40, 115.13, 47.17, 46.91, 46.62, 43.22, 42.93, 37.97, 31.07, 30.95, 26.66, 25.93. MS (ESI) *m/z*: 627.9[M+H]⁺, C₃₃H₃₈FN₉OS. Purity: 96.9% (LC-MS).
39. N²-(cyclohexylmethyl)-N⁴-(4-fluorobenzyl)-N⁶-(4-((4-chlorophenyl)amino)-1,3,4-oxadiazol-2-yl)methylphenyl)-1,3,5-triazine-2,4,6-triamine (**11c**)
White solid, yield: 55.2%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.55 (s, 1H), 9.06 – 8.72 (m, 1H), 7.81 – 7.62 (m, 2H), 7.55 (d, *J* = 8.9 Hz, 2H), 7.47 – 7.23 (m, 5H), 7.21 – 7.04 (t, *J* = 8.7 Hz, 4H), 6.85 (t, *J* = 34.5 Hz, 1H), 4.43 (s, 2H), 4.08 (s, 2H), 3.16 – 2.95 (m, 2H), 1.72 – 1.45 (m, 6H), 1.19 – 1.00 (m, 3H), 0.97 – 0.73 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 166.39, 166.28, 166.13, 164.55, 164.51, 163.07, 162.77, 160.14, 159.86, 159.73, 140.25, 140.22, 140.20, 138.23, 137.36, 137.31, 129.34, 129.01, 127.57, 125.69, 120.34, 120.11, 118.84, 115.39, 115.11, 100.03, 46.97, 46.63, 43.27, 37.90, 31.05, 30.57, 26.63, 25.91. MS (ESI) *m/z*: 614.0[M+H]⁺, C₃₂H₃₃ClFN₉O. Purity: 96.7% (LC-MS).
40. N²-(cyclohexylmethyl)-N⁴-(4-fluorobenzyl)-N⁶-(4-((5-(*p*-tolylamino)-1,3,4-oxadiazol-2-yl)methylphenyl)-1,3,5-triazine-2,4,6-triamine (**11i**)
White solid, yield: 48.6%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.23 (s, 1H), 9.03 – 8.71 (m, 1H), 7.83 – 7.61 (m, 2H), 7.49 – 7.05 (m, 11H), 6.86 (t, *J* = 34.7 Hz, 1H), 4.43 (s, 2H), 4.06 (s, 2H), 3.15 – 2.97 (m, 2H), 2.23 (s, 3H), 1.77 – 1.46 (m, 6H), 1.19 – 1.01 (m, 3H), 0.97 – 0.68 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 170.85, 166.40, 166.29, 166.17, 164.56, 163.07, 159.87, 155.82, 139.65, 137.50, 131.12, 129.50, 129.29, 128.70, 120.02, 119.68, 118.94, 115.40, 115.12, 46.89, 46.67, 43.20, 42.91, 37.95, 31.07, 26.65, 25.93, 20.78. MS (ESI) *m/z*: 594.0[M+H]⁺, C₃₃H₃₆FN₉O. Purity: 96.4% (LC-MS).
41. N²-(cyclohexylmethyl)-N⁴-(4-fluorobenzyl)-N⁶-(4-((5-((4-(trifluoromethyl)phenyl)amino)-1,3,4-oxadiazol-2-yl)methylphenyl)-1,3,5-triazine-2,4,6-triamine (**11j**)
White solid, yield: 47.1%; ¹H NMR (300 MHz, DMSO-*d*₆) δ 10.87 (s, 1H), 9.09 – 8.70 (m, 1H), 7.70 (s, 6H), 7.51 – 7.05 (m, 7H), 6.85 (t, *J* = 35.9 Hz, 1H), 4.43 (s, 2H), 4.11 (s, 2H), 3.12 – 2.97 (m, 2H), 1.81 – 1.38 (m, 6H), 1.25 – 1.08 (m, 3H), 0.96 – 0.69 (m, 2H). ¹³C NMR (75 MHz, DMSO-*d*₆) δ 166.35, 166.26, 166.18, 164.54, 163.06, 160.08, 159.92, 142.73, 140.27, 137.33, 129.41, 129.31, 129.03, 127.49, 126.87, 126.82, 122.34, 121.91, 120.31, 120.13, 117.21, 115.39, 115.11, 46.92, 46.66, 43.27, 42.91, 37.90, 31.05, 30.57, 26.62, 25.90. MS (ESI) *m/z*: 647.9[M+H]⁺, C₃₃H₃₃F₄N₉O. Purity: 96.2% (LC-MS).

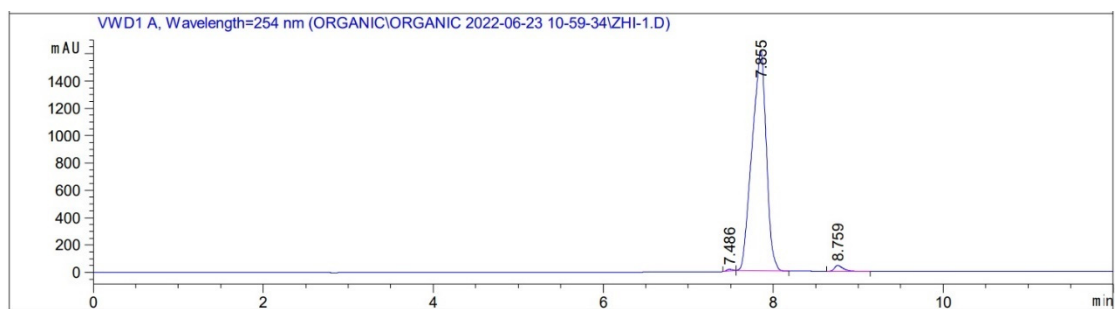
¹H NMR, ¹³C NMR, HPLC purity and ESI-MS of All Compounds



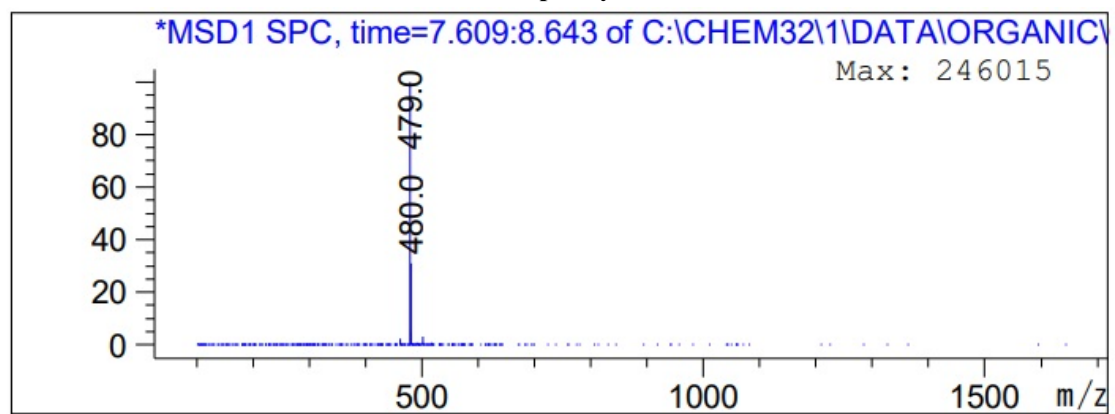
¹H-NMR of 4



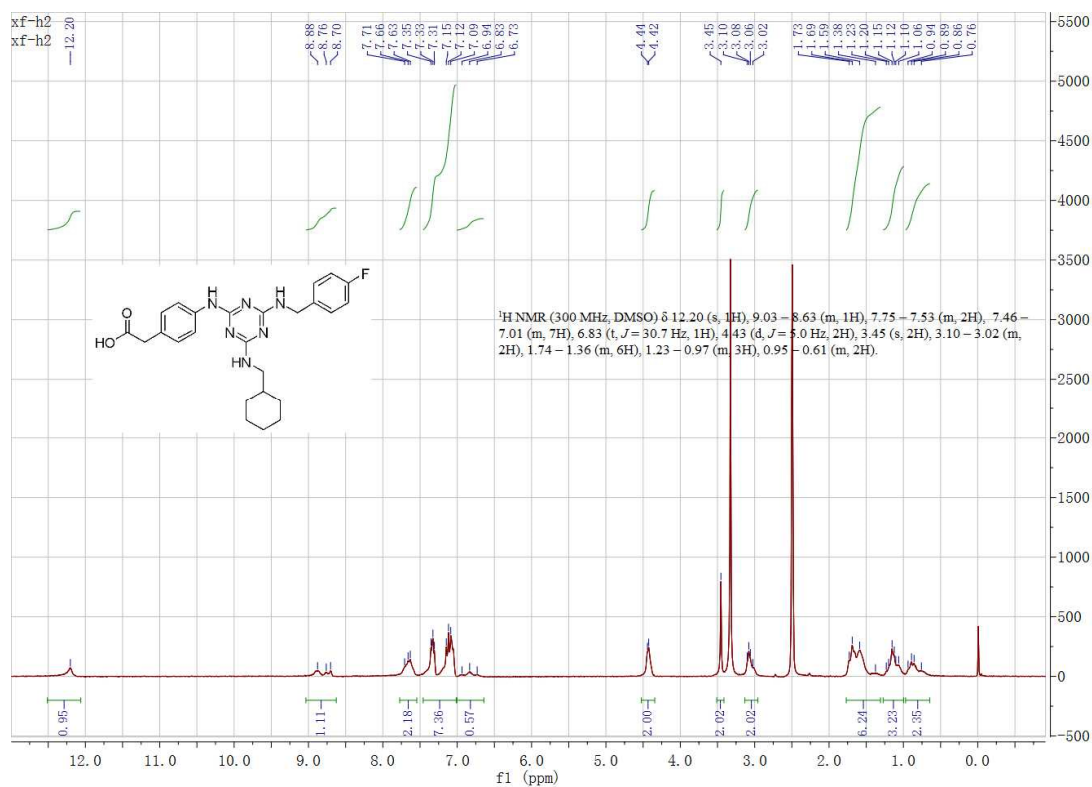
¹³C-NMR of 4



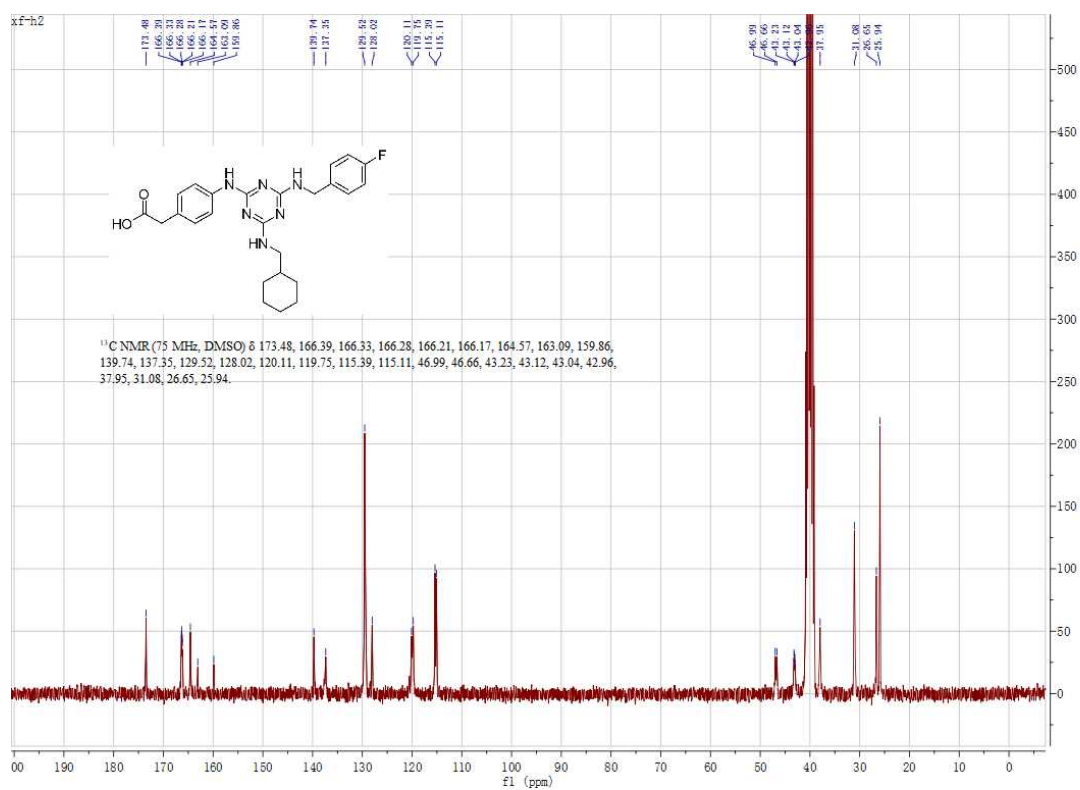
HPLC purity of 4



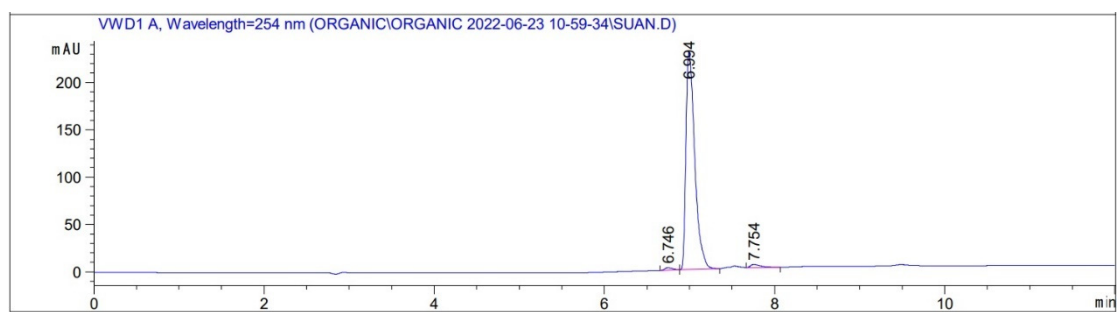
ESI-MS of 4



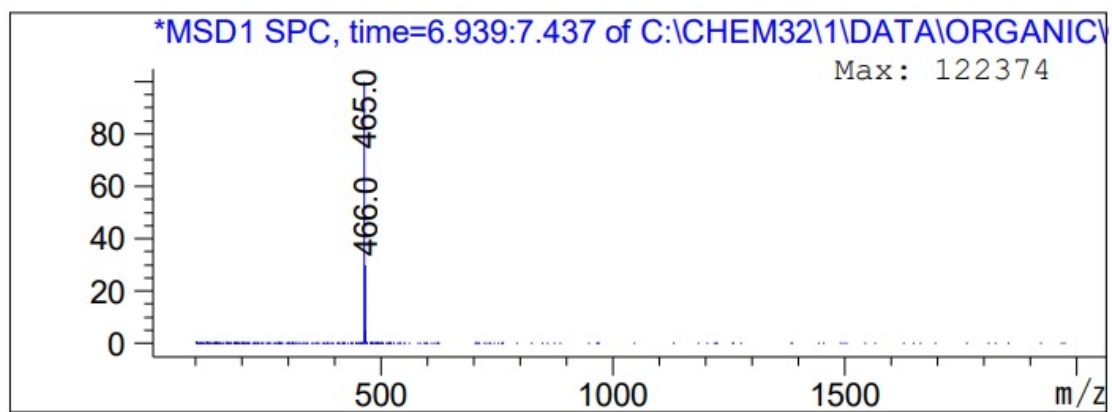
^1H -NMR of 5



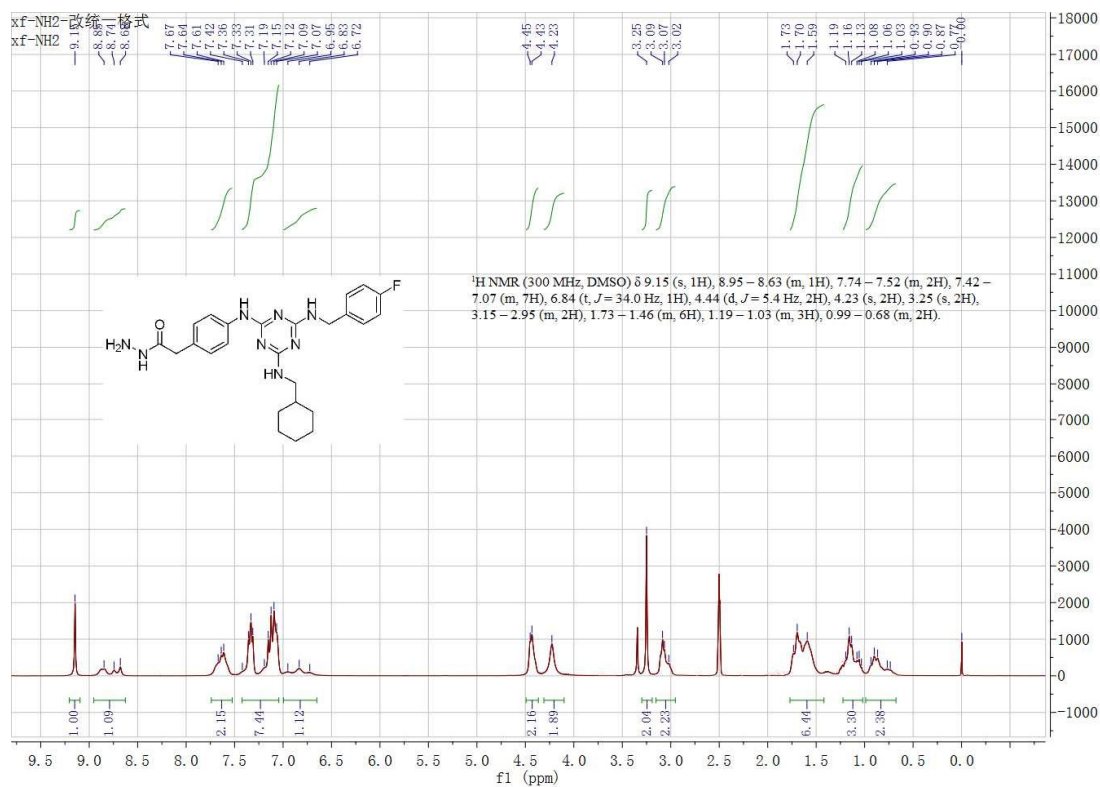
^{13}C -NMR of 5



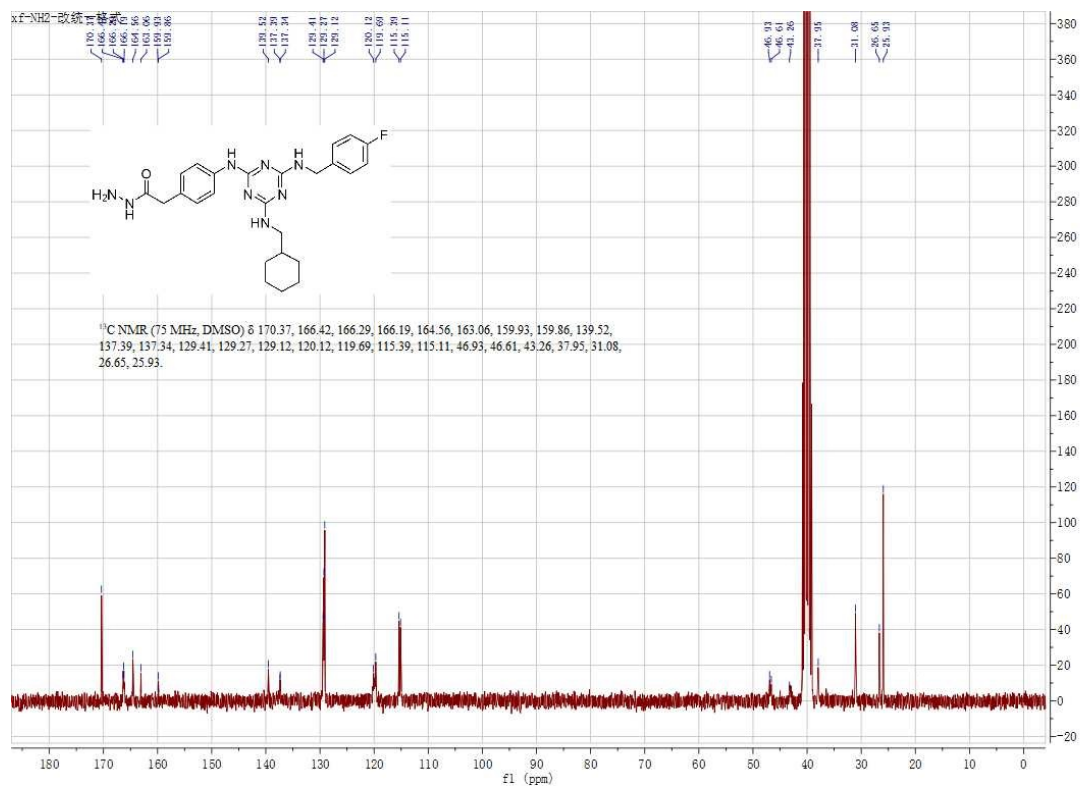
HPLC purity of 5



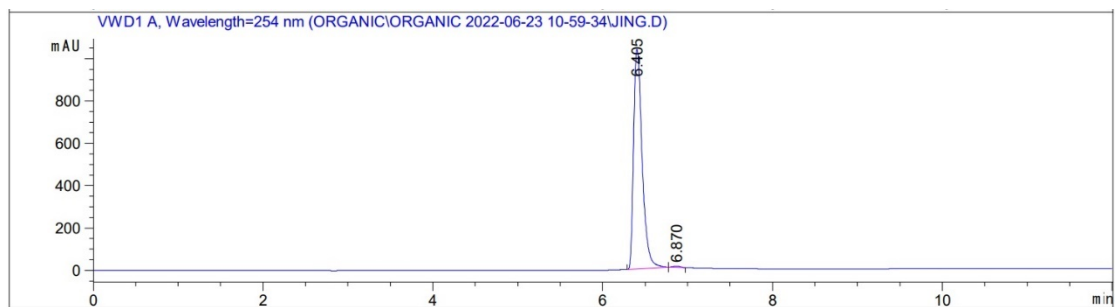
ESI-MS of 5



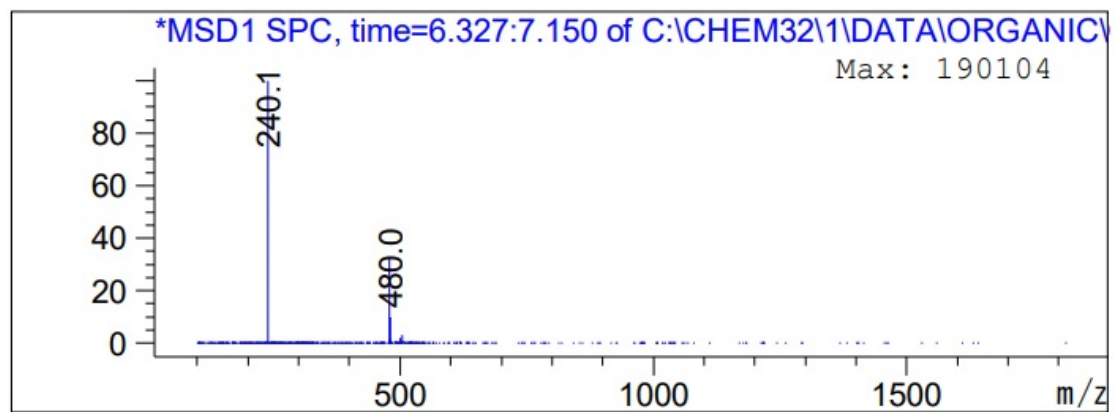
¹H-NMR of 6



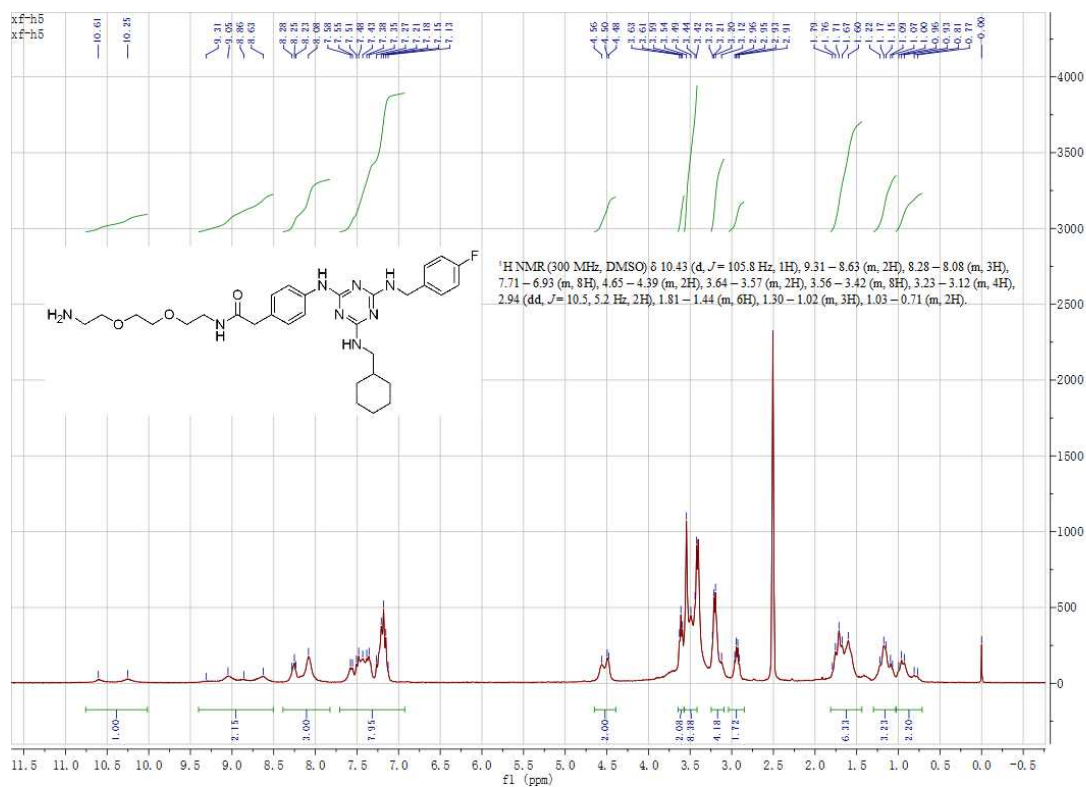
¹³C-NMR of 6



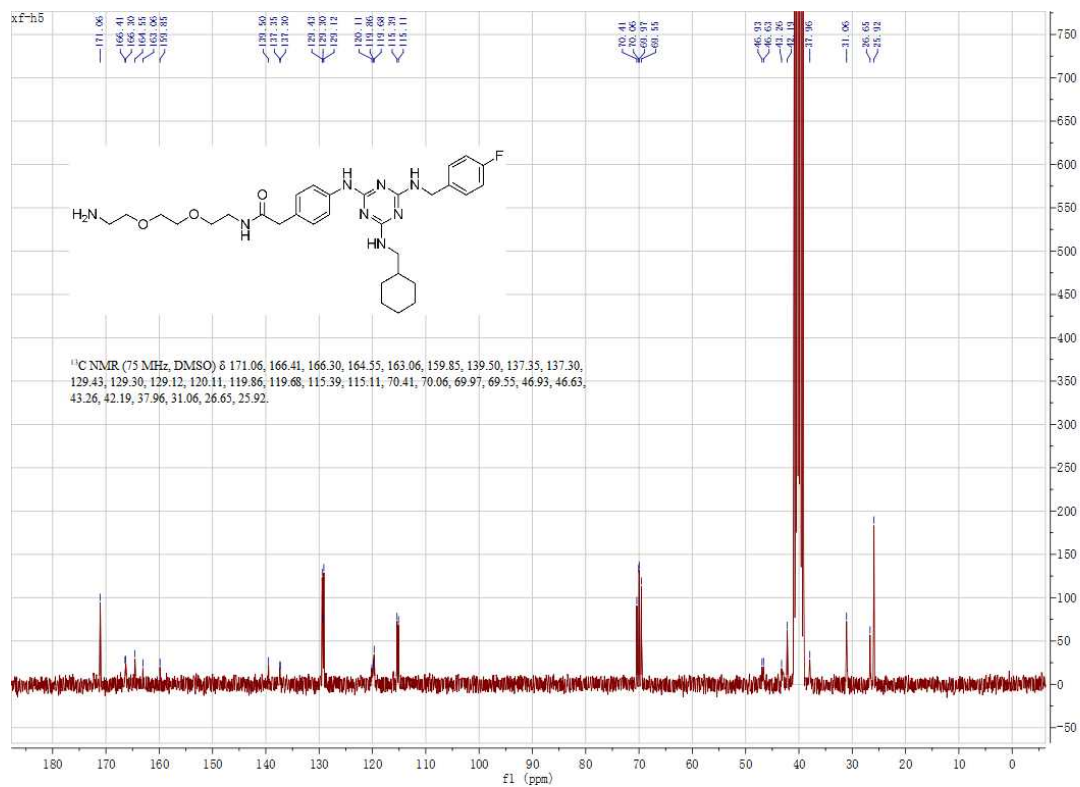
HPLC purity of 6



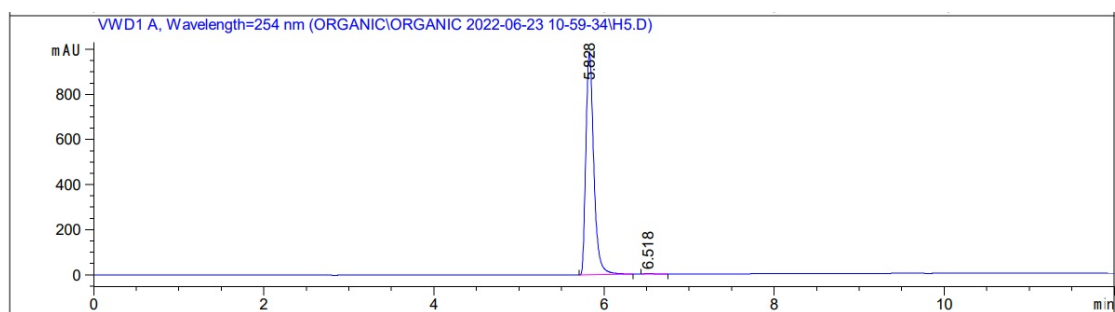
ESI-MS of 6



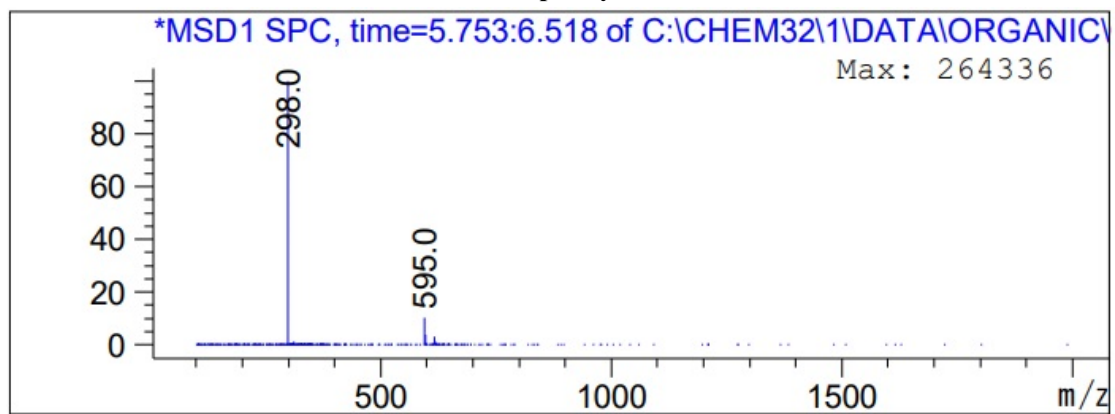
^1H -NMR of 8



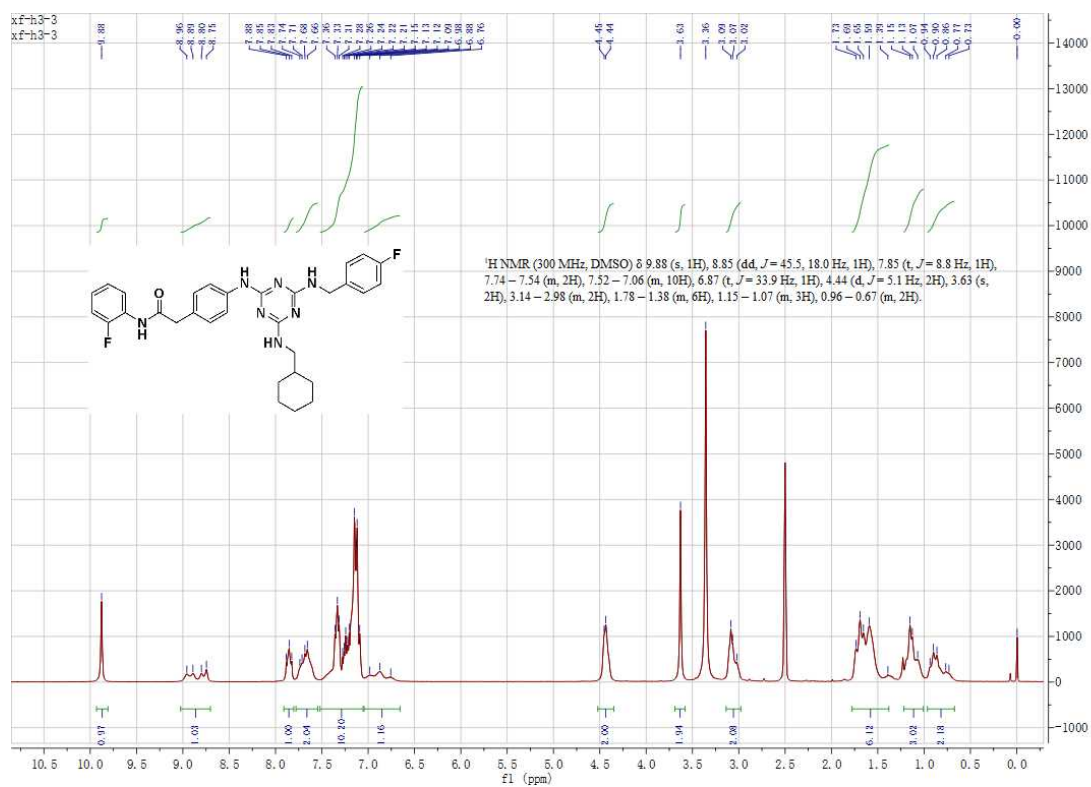
^{13}C -NMR of 8



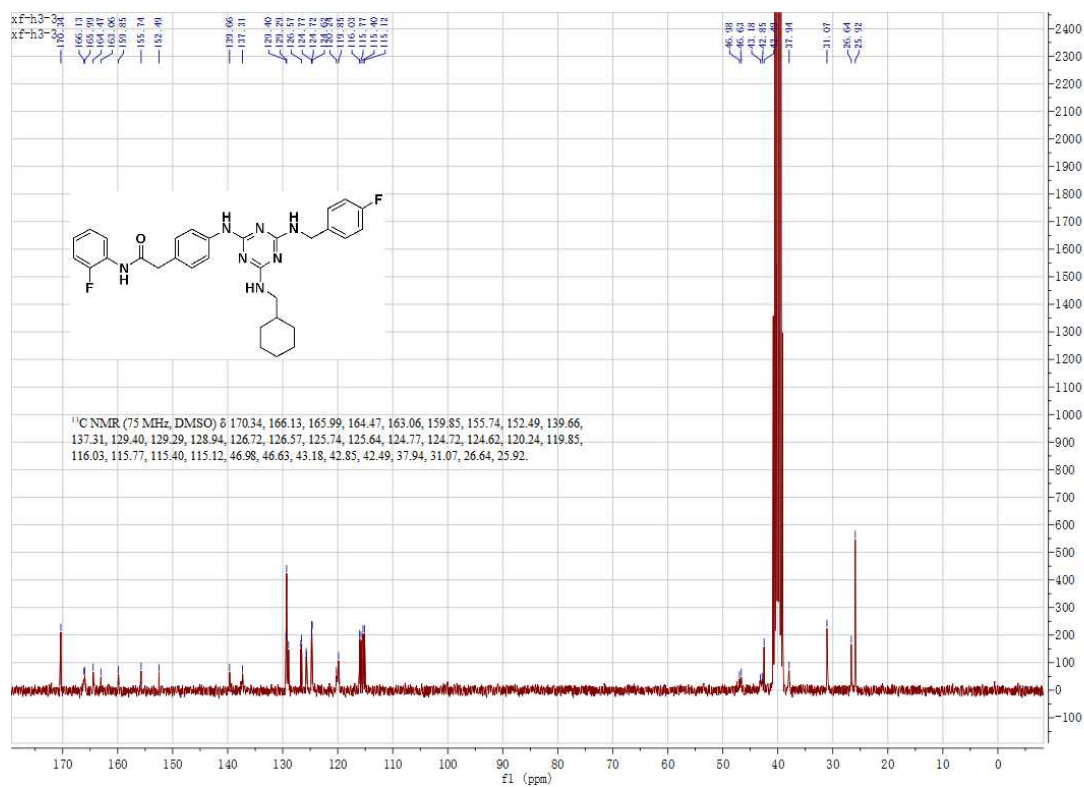
HPLC purity of 8



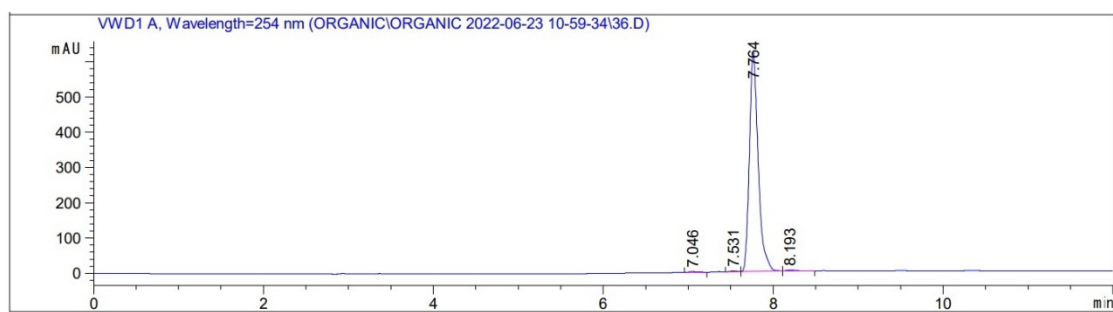
ESI-MS of 8



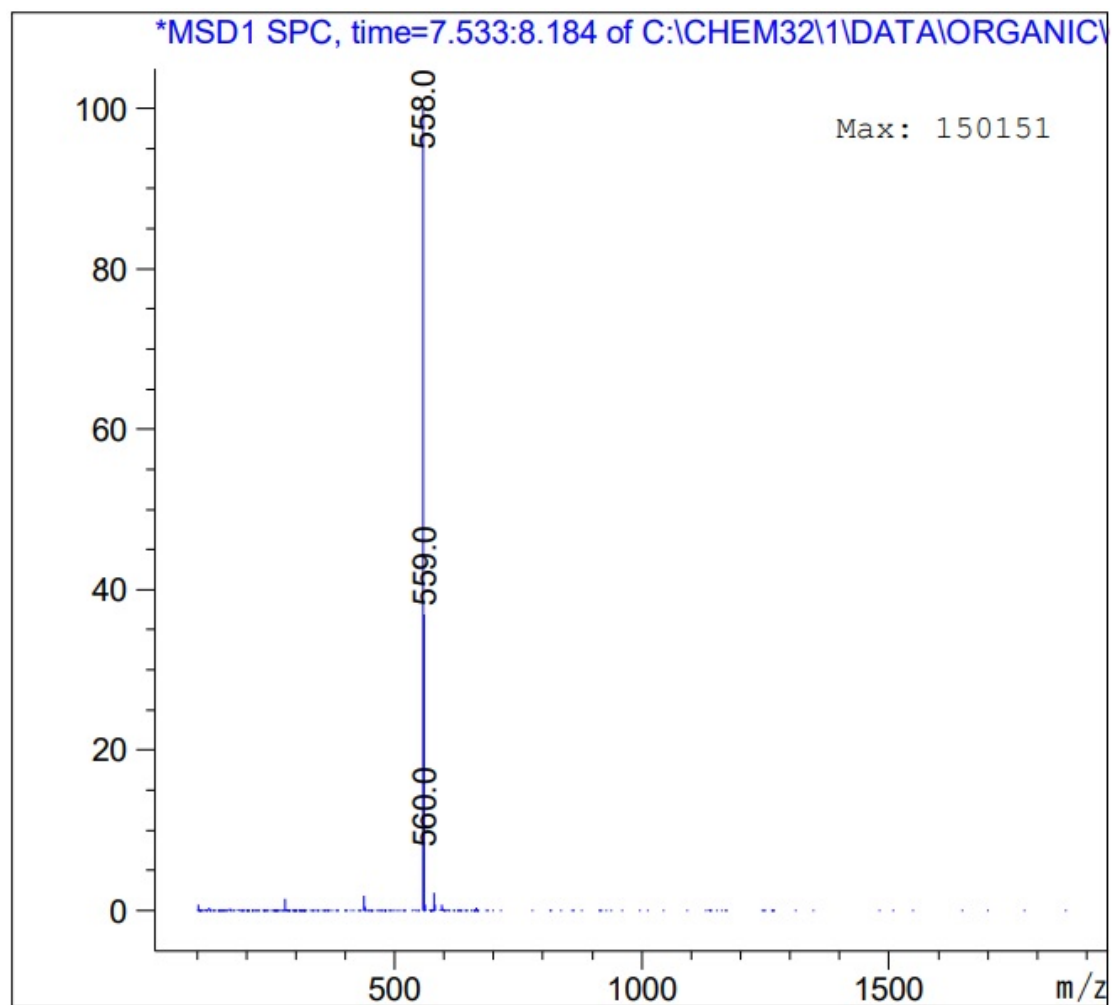
¹H-NMR of 8b



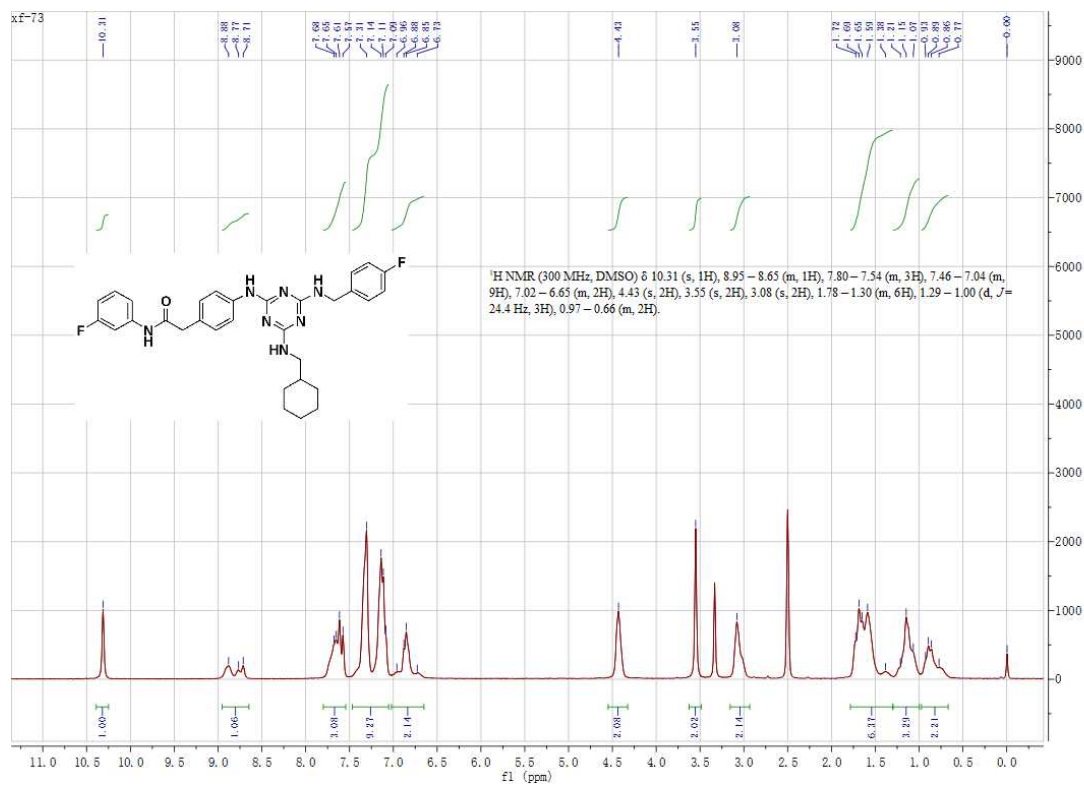
¹³C-NMR of 8b



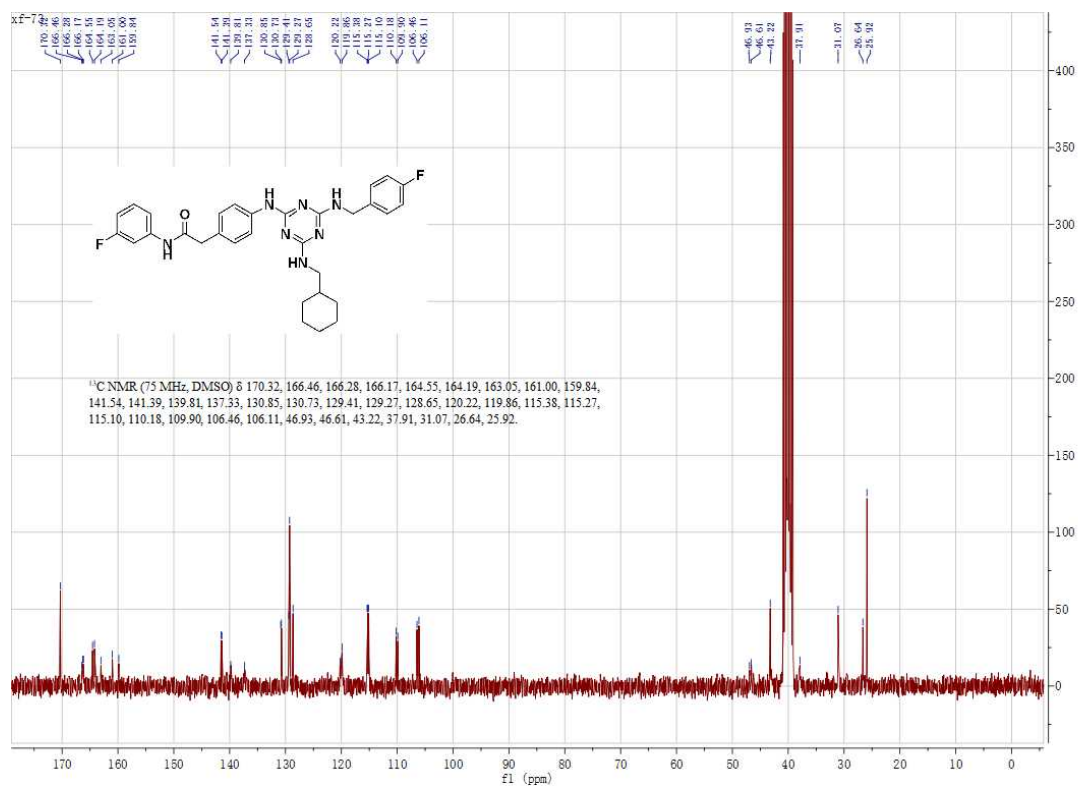
HPLC purity of 8b



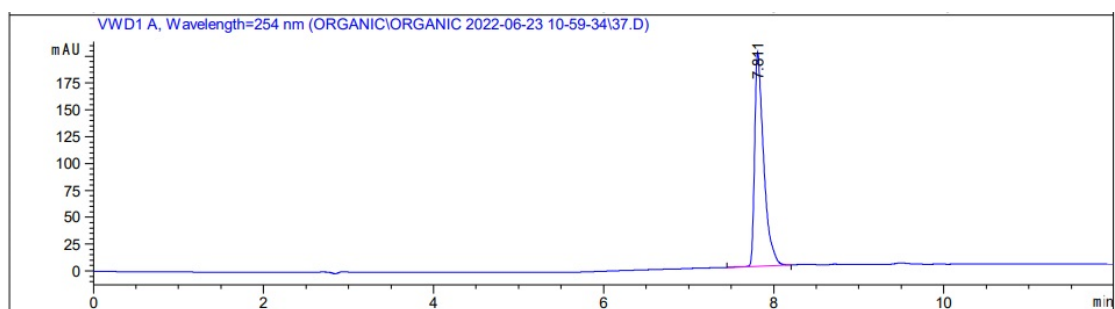
ESI-MS of 8b



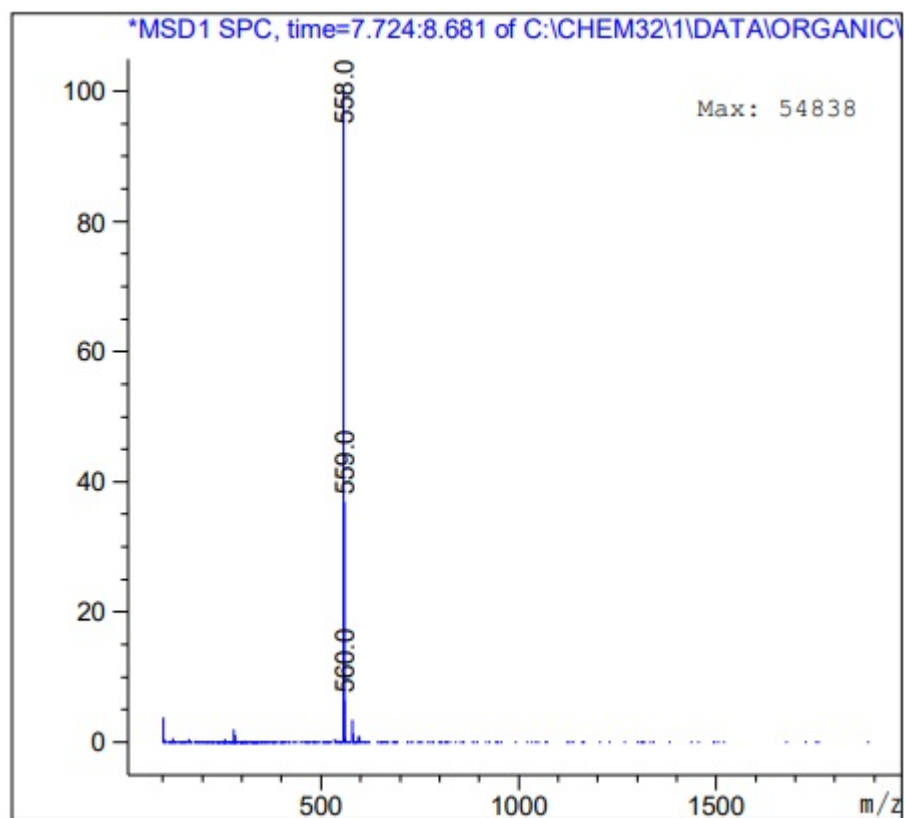
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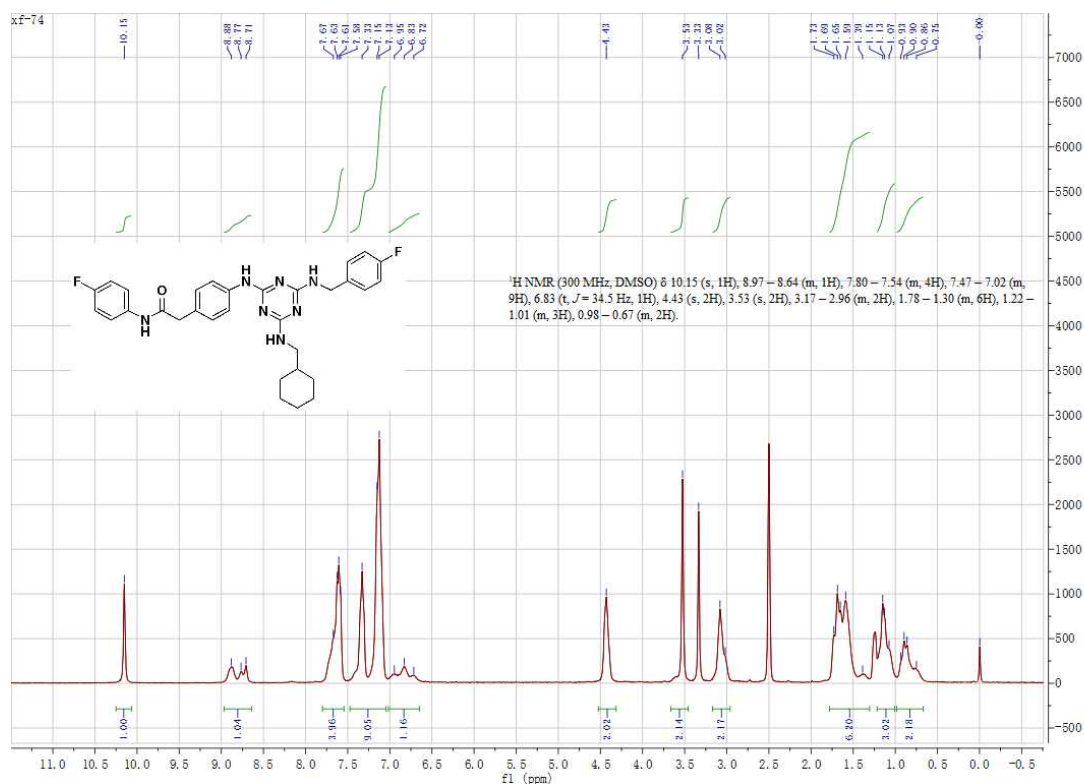
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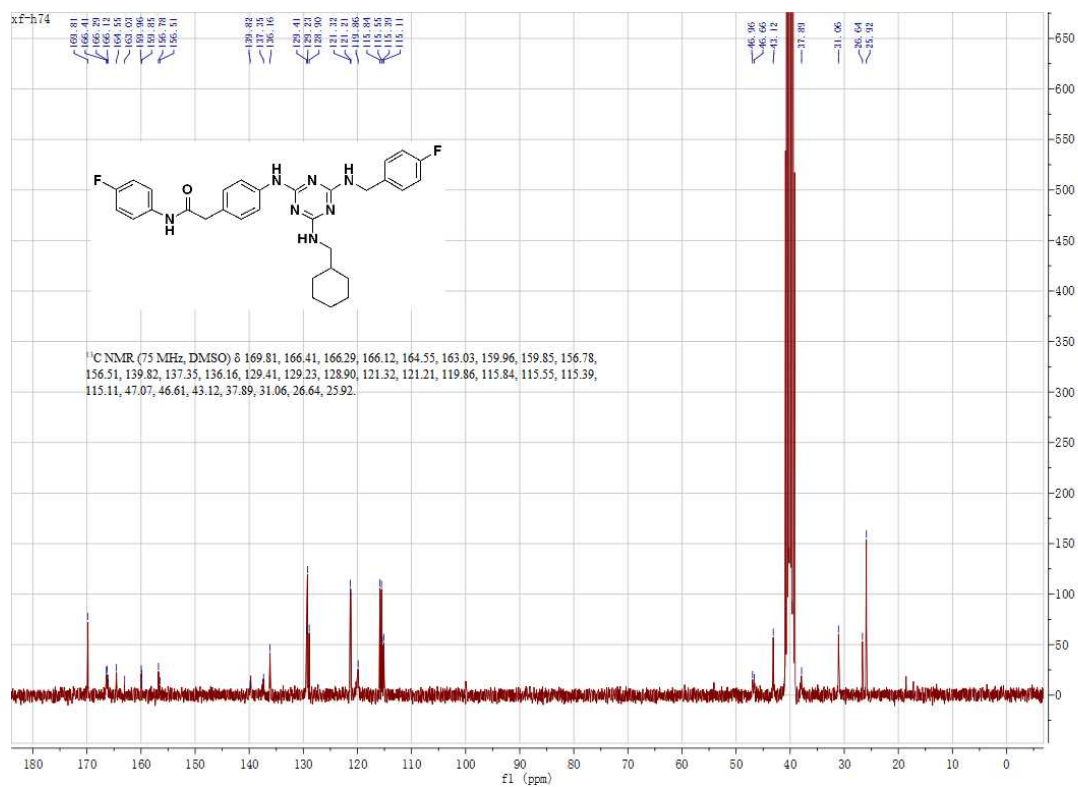
HPLC purity of 8c



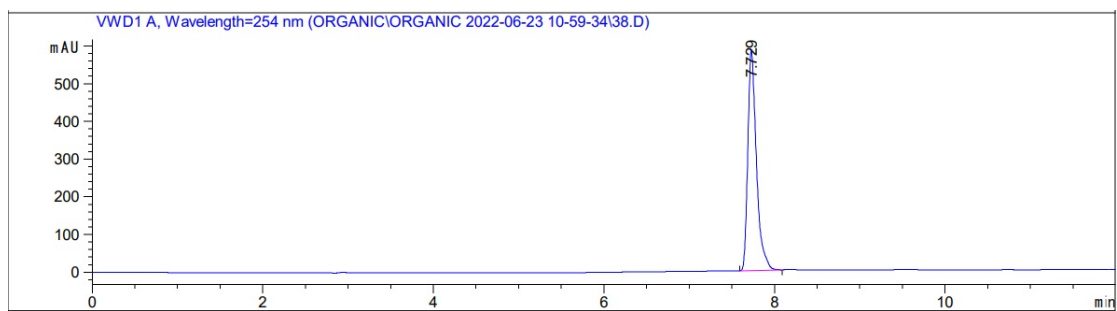
ESI-MS of 8c



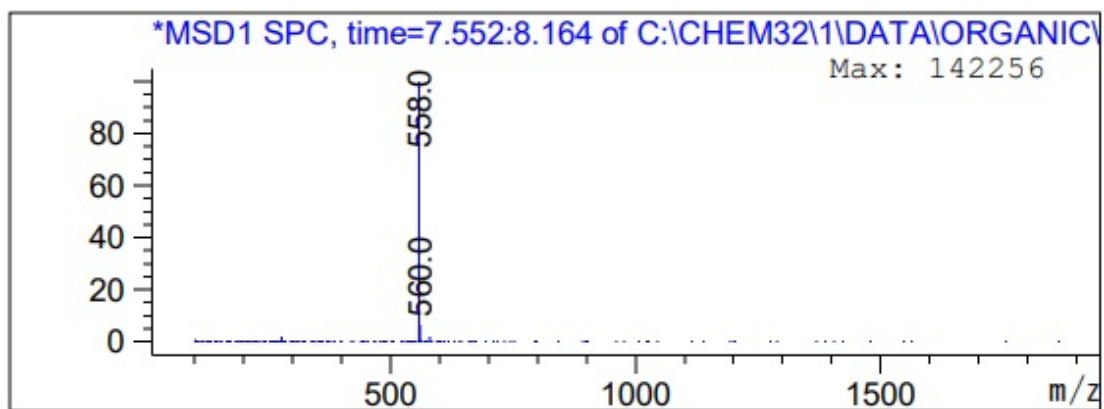
¹H-NMR of 8d



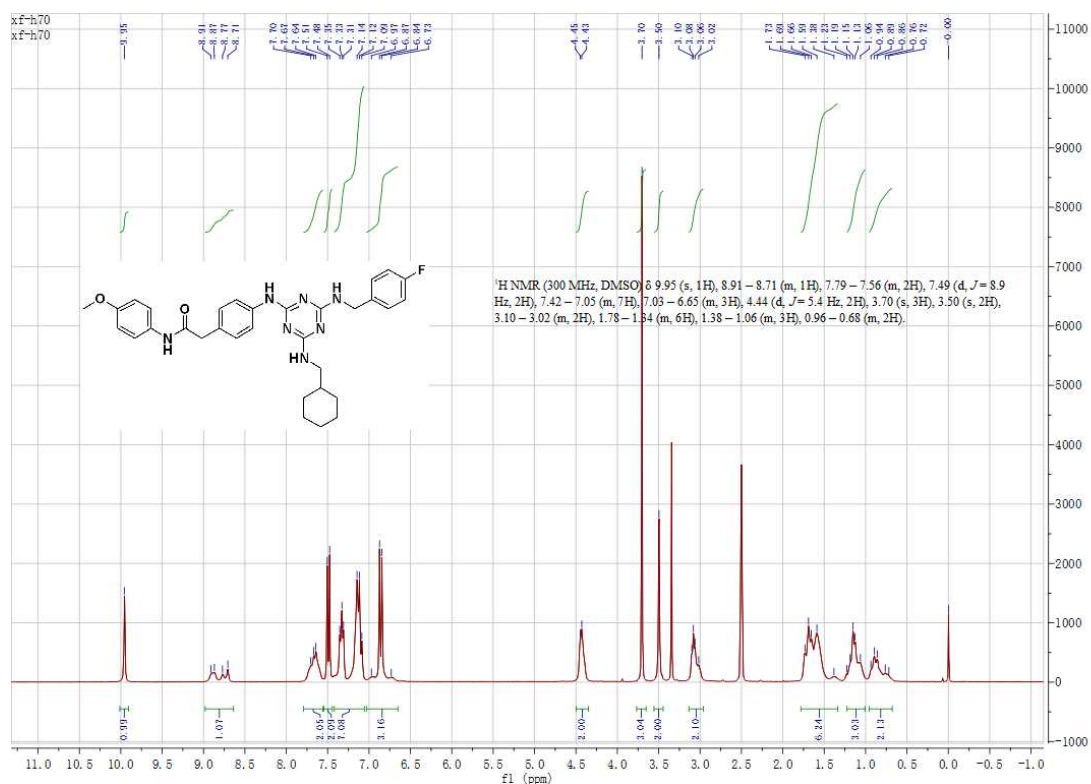
¹³C-NMR of 8d



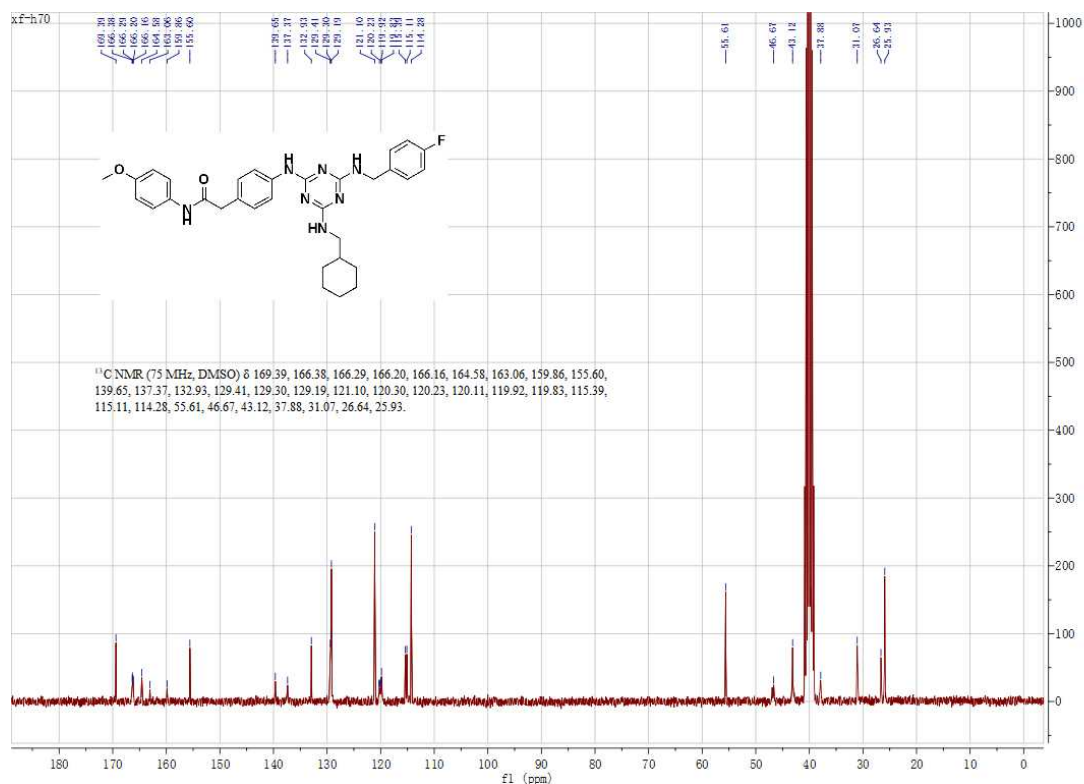
HPLC purity of 8d



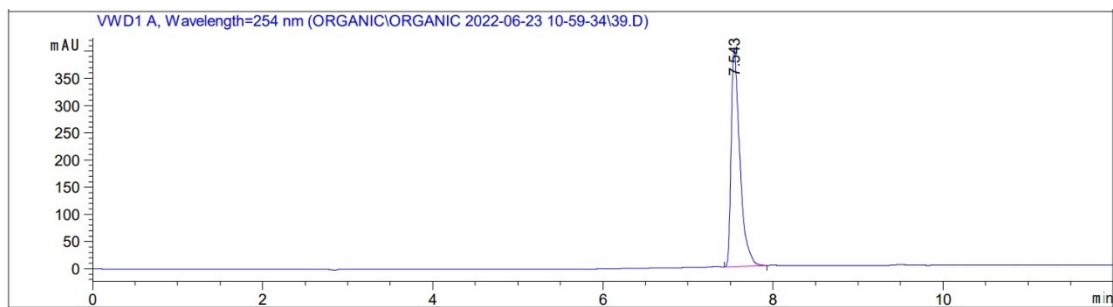
ESI-MS of 8d



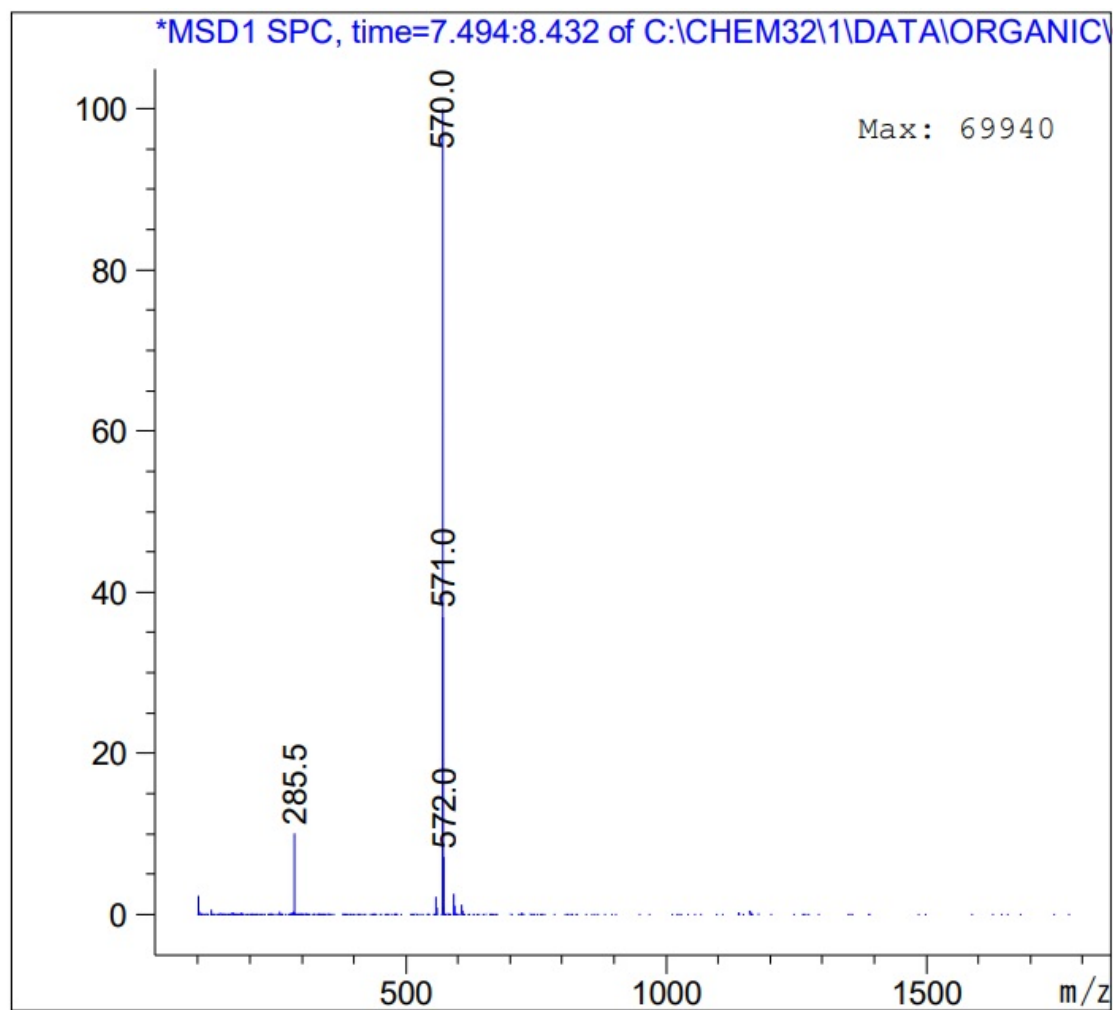
¹H-NMR of 8e



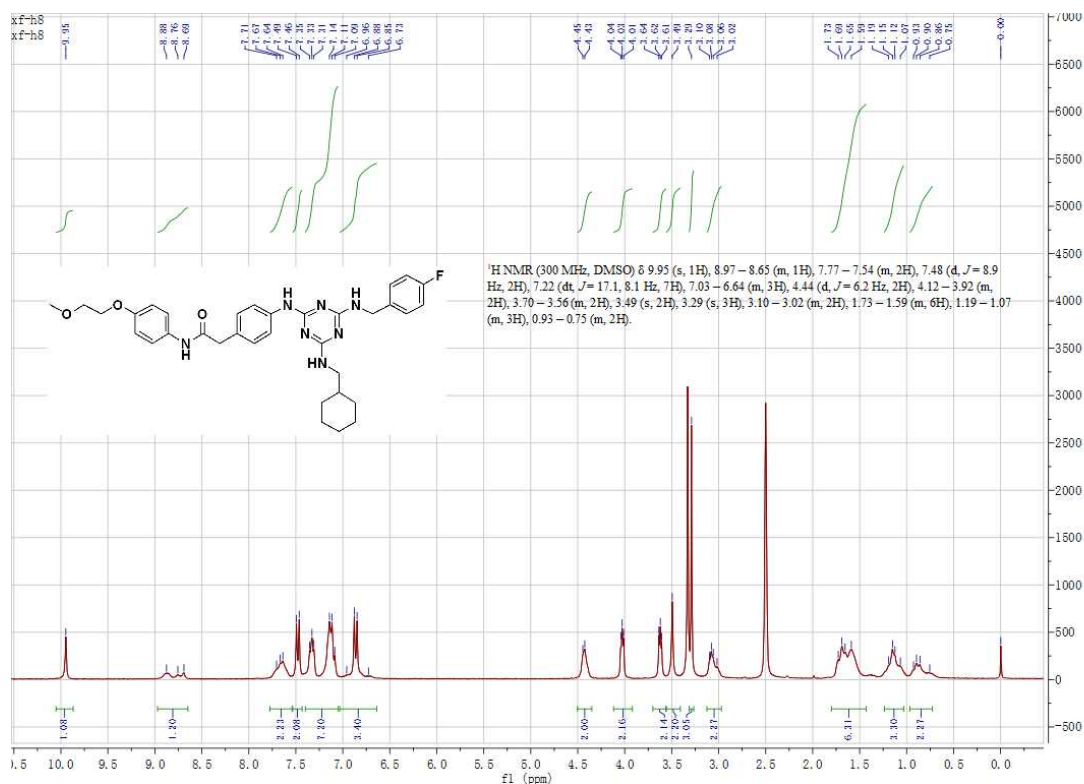
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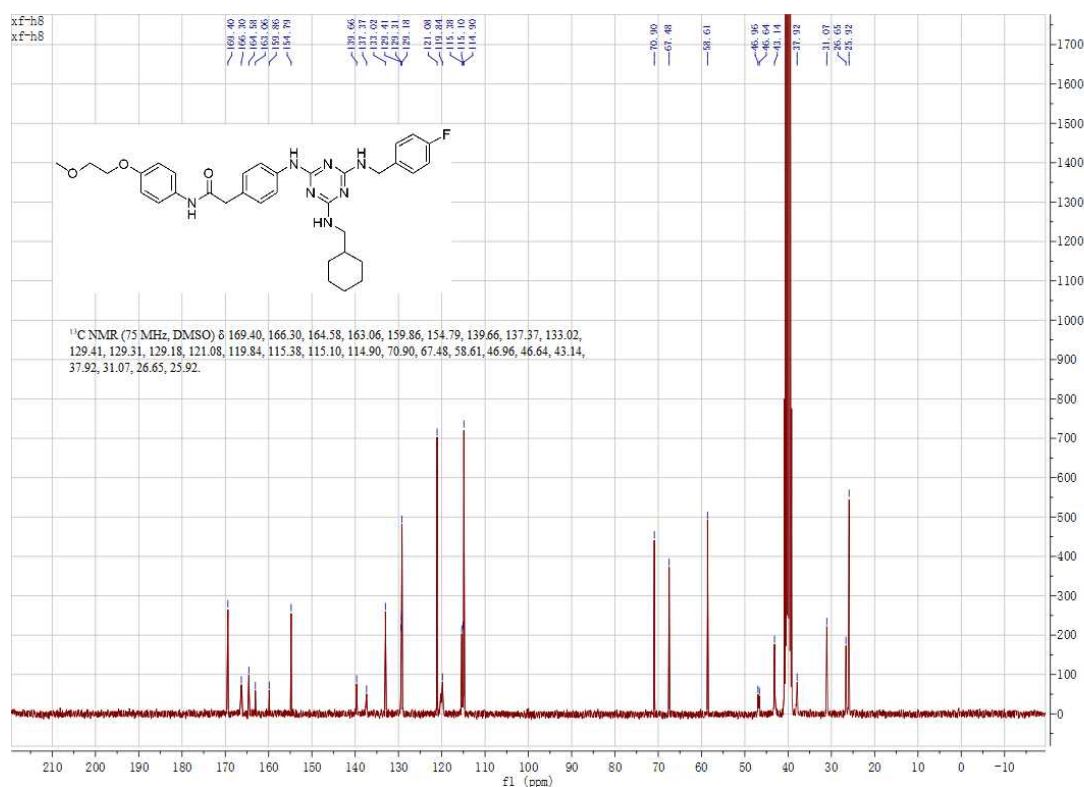
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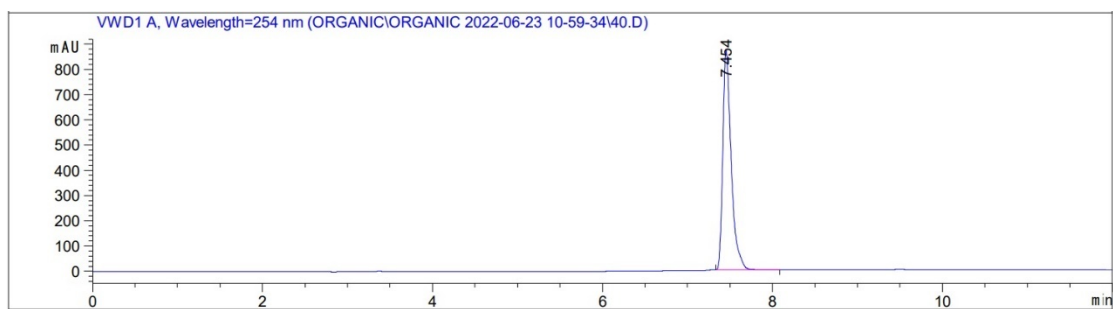
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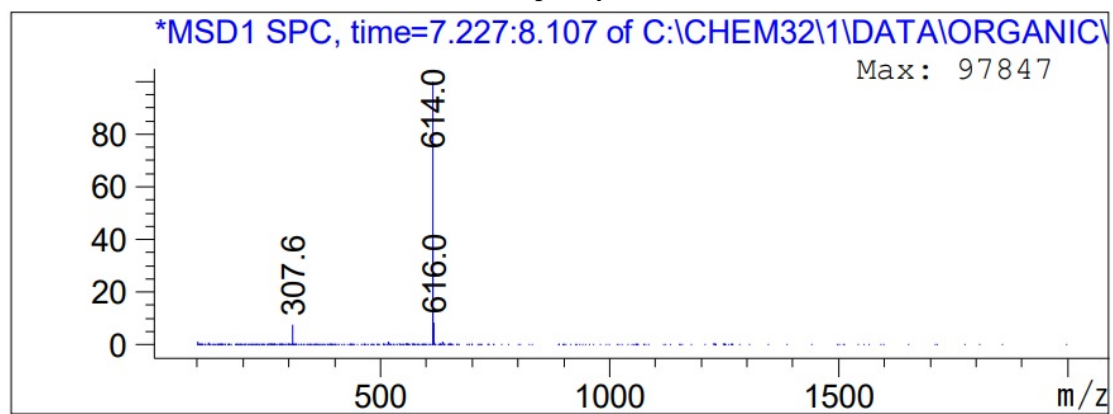
¹H-NMR of 8f



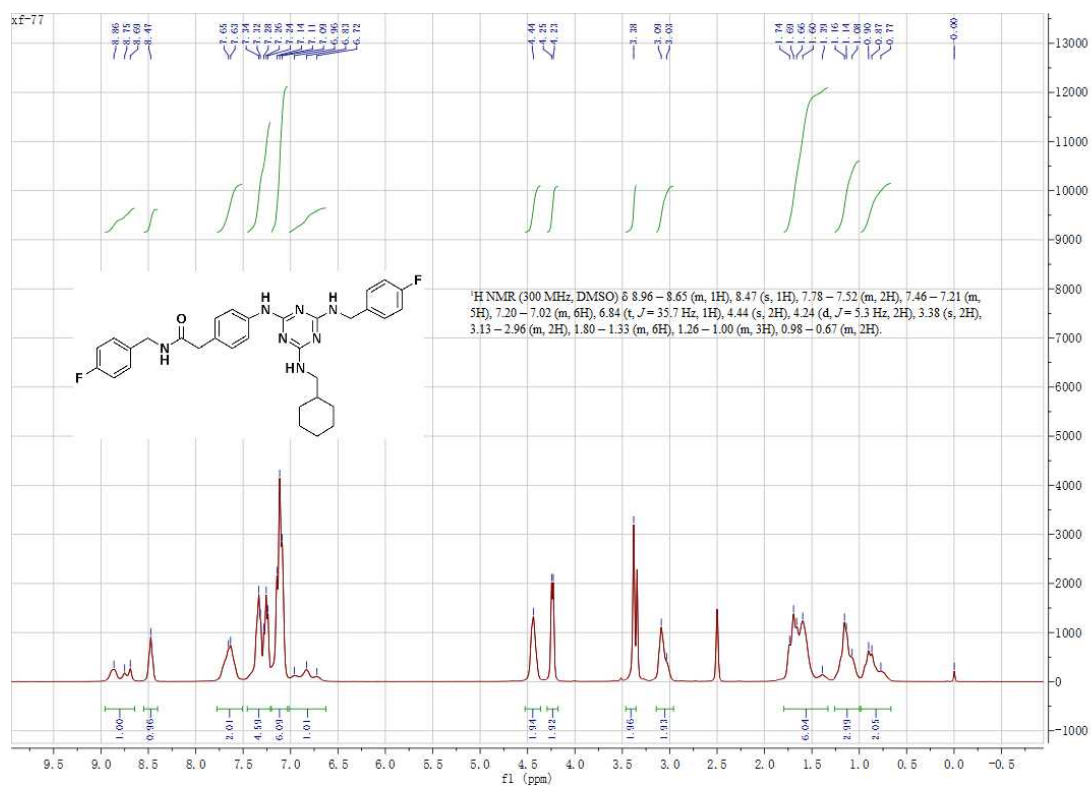
¹³C-NMR of 8f



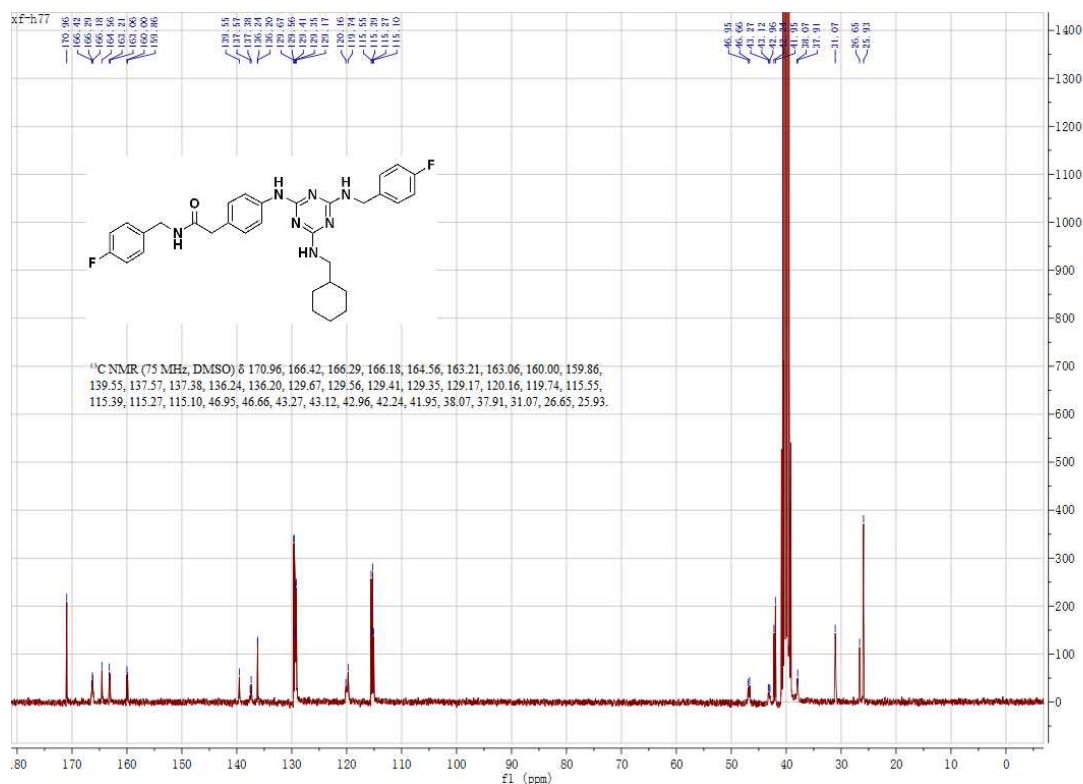
HPLC purity of 8f



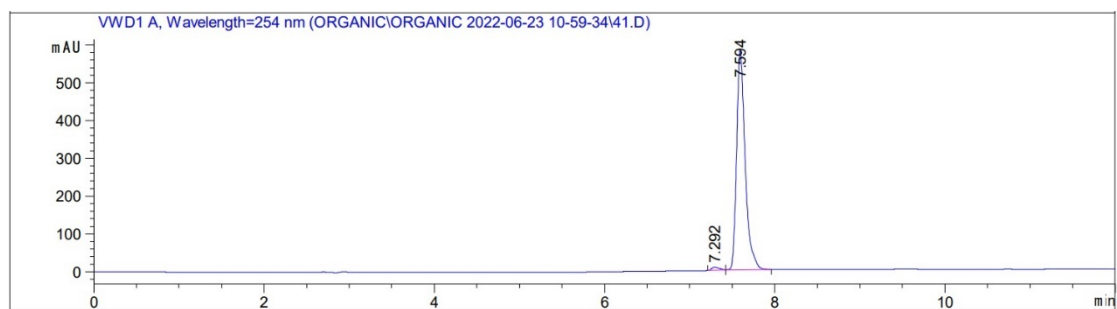
ESI-MS of 8f



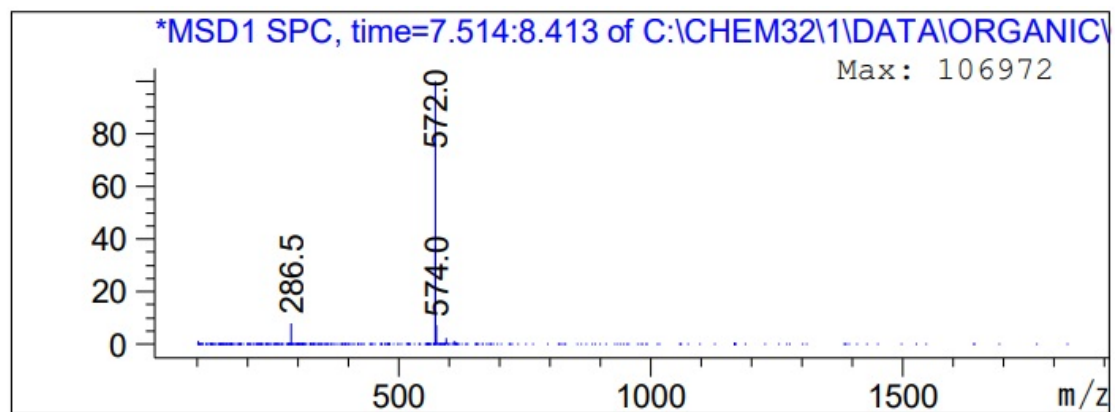
¹H-NMR of 8g



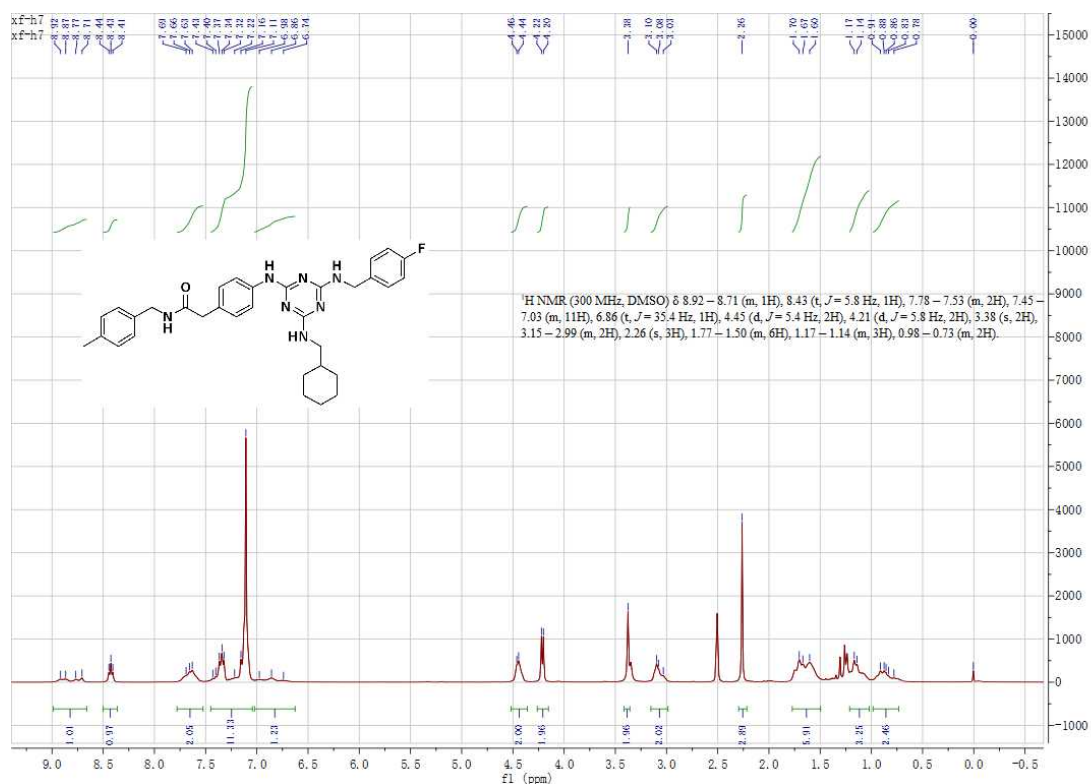
¹³C-NMR of 8g



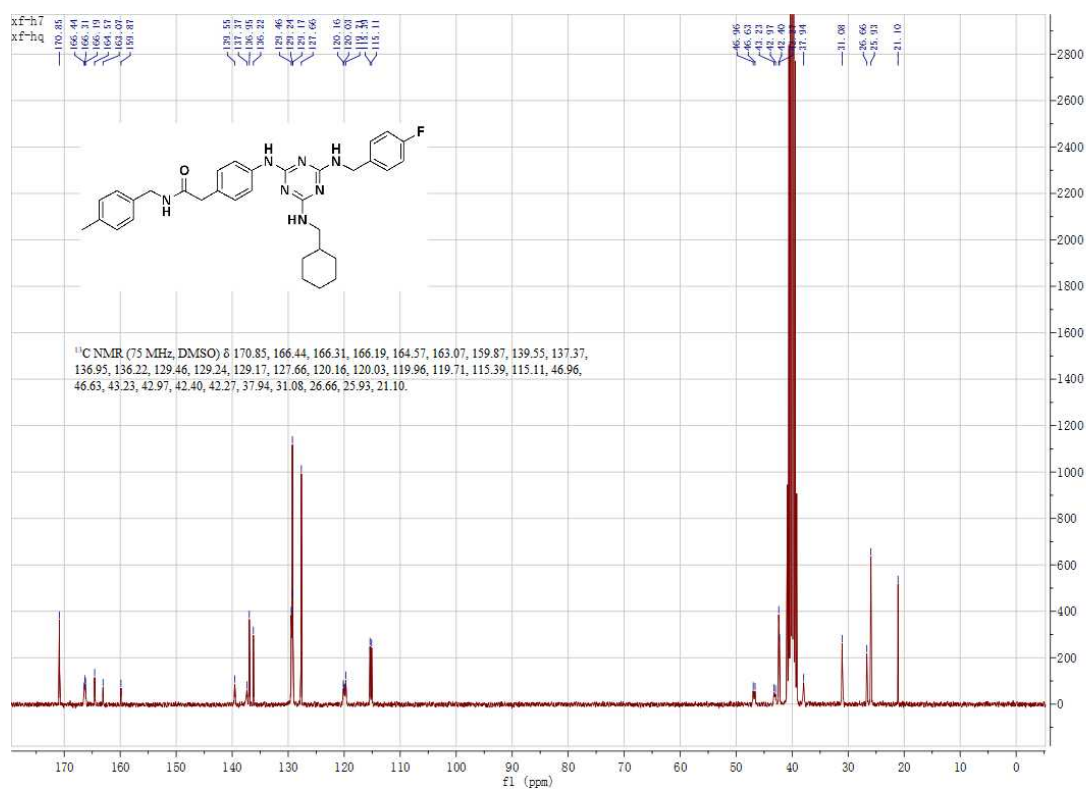
HPLC purity of 8g



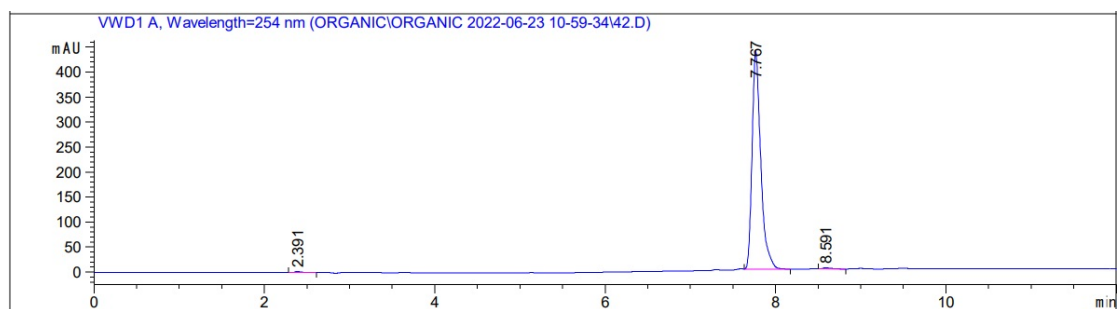
ESI-MS of 8g



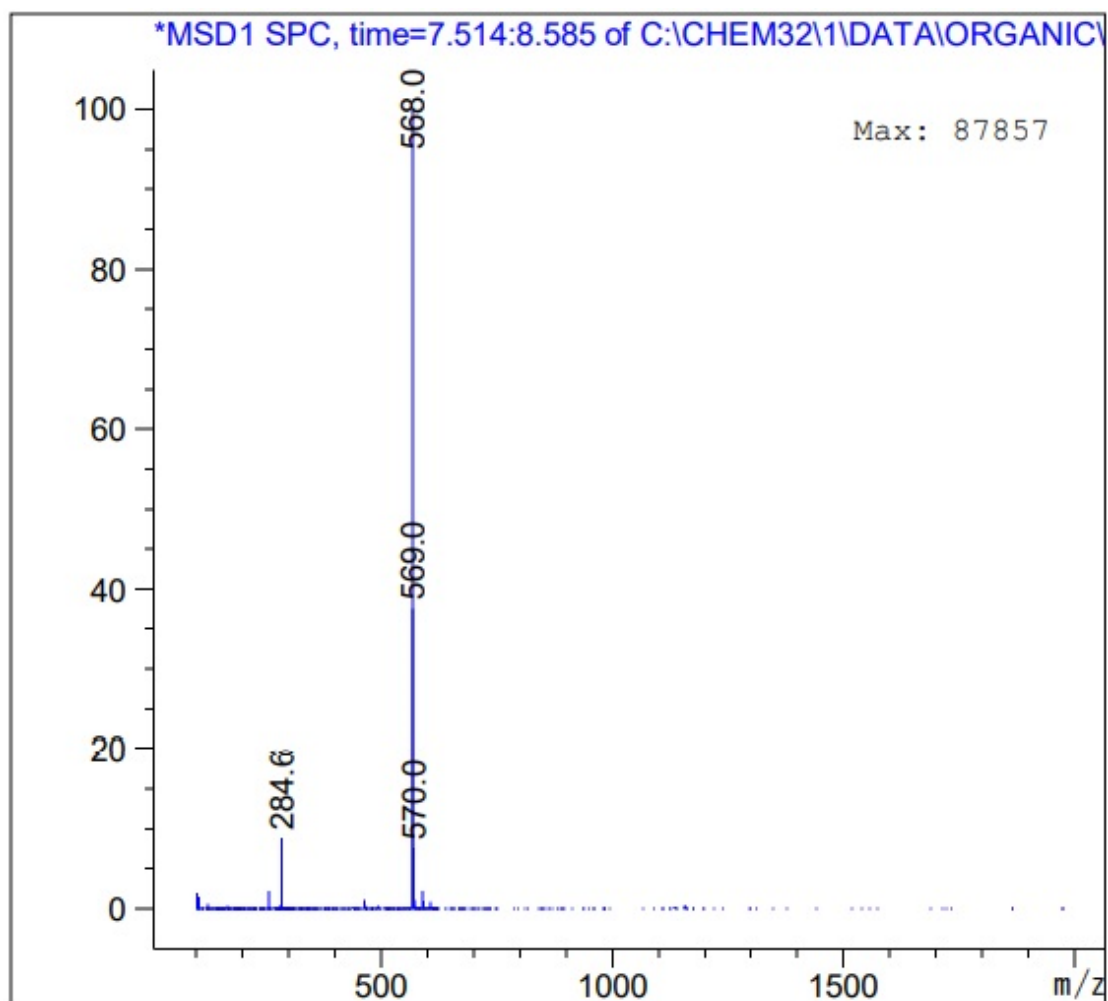
¹H-NMR of 8h



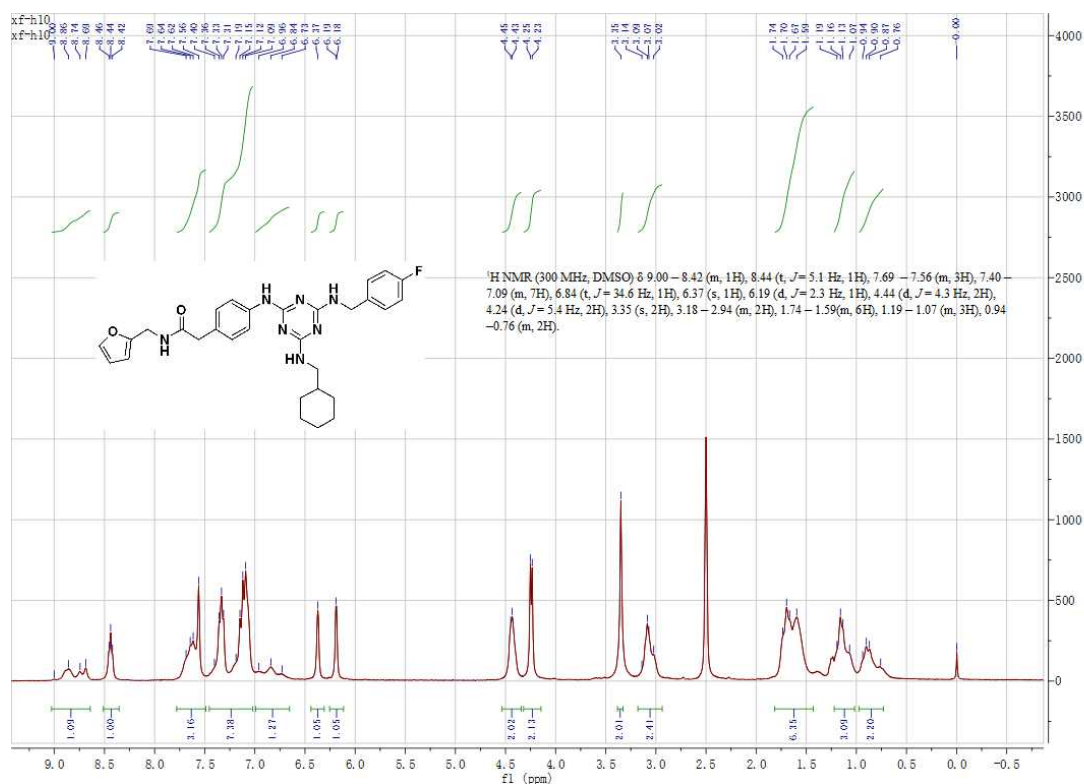
¹³C-NMR of 8h



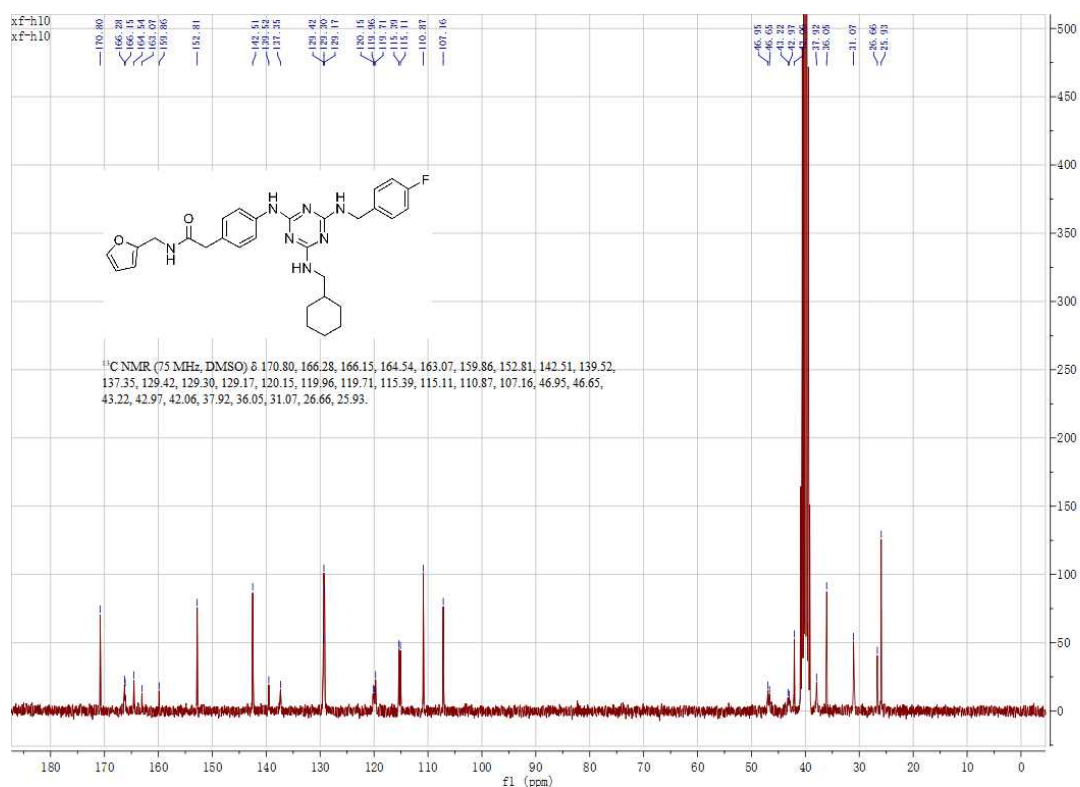
HPLC purity of 8h



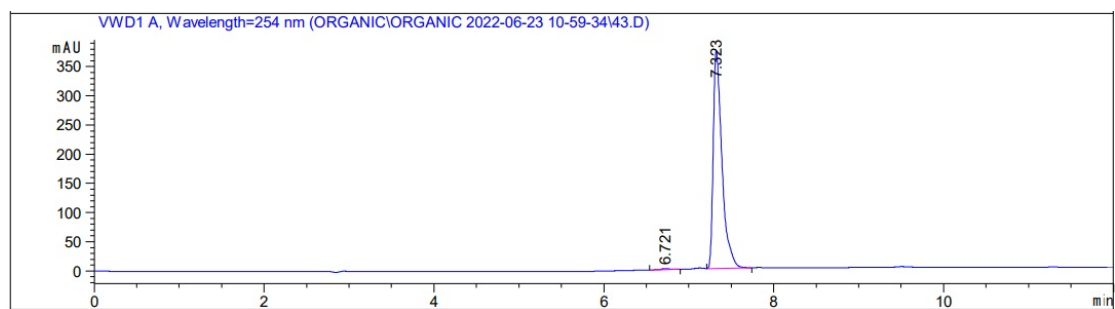
ESI-MS of 8h



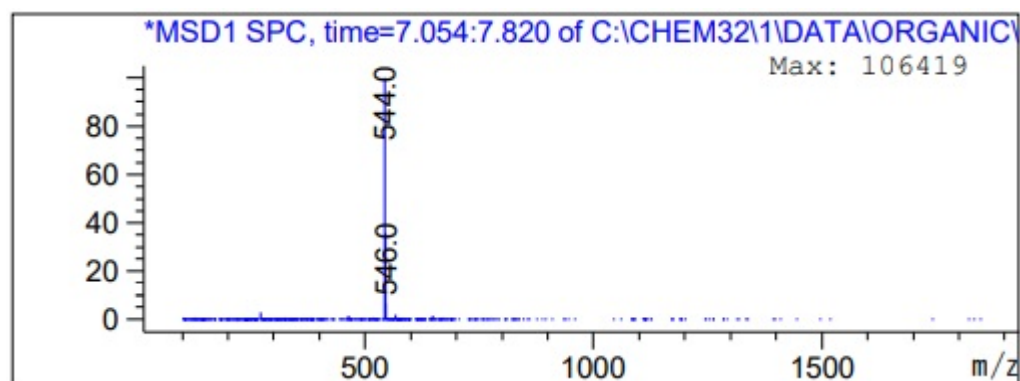
¹H-NMR of 8i



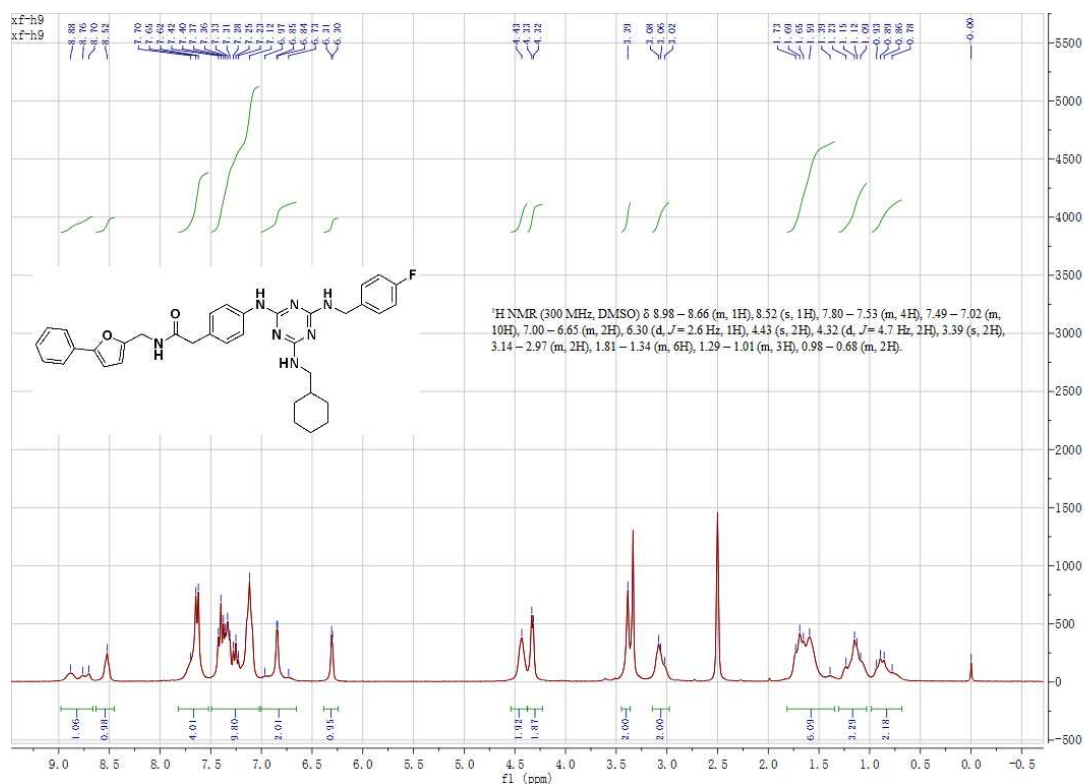
¹³C-NMR of 8i



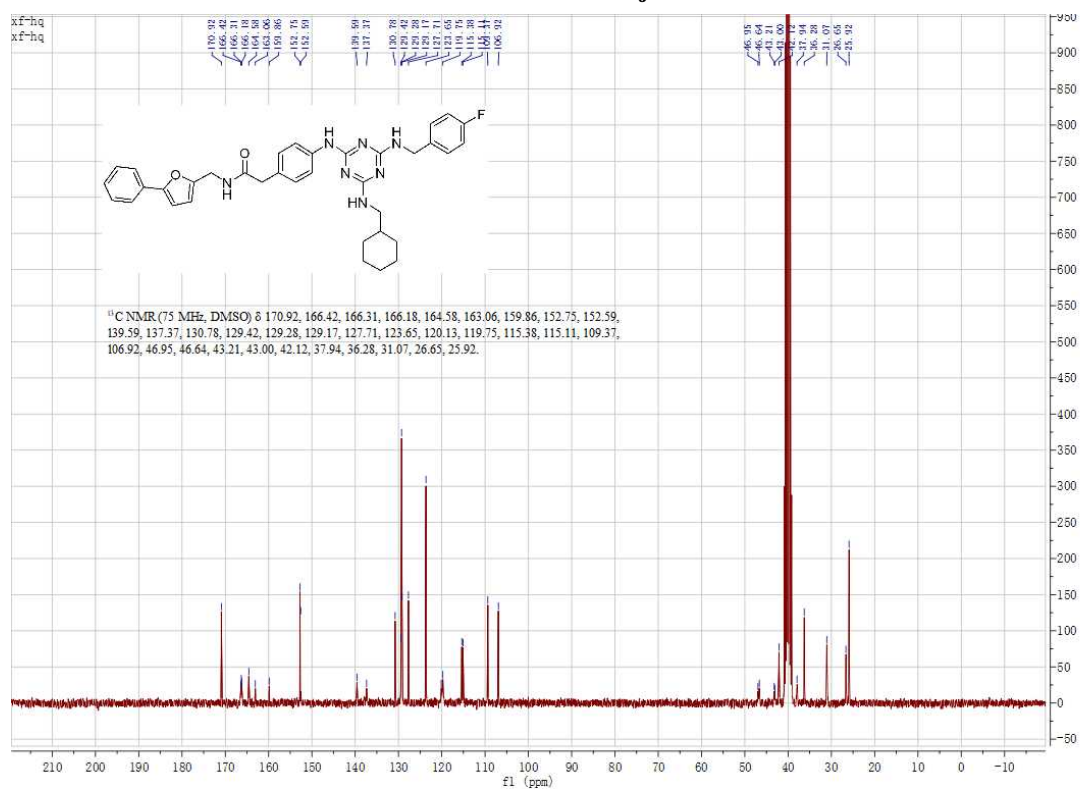
HPLC purity of 8i



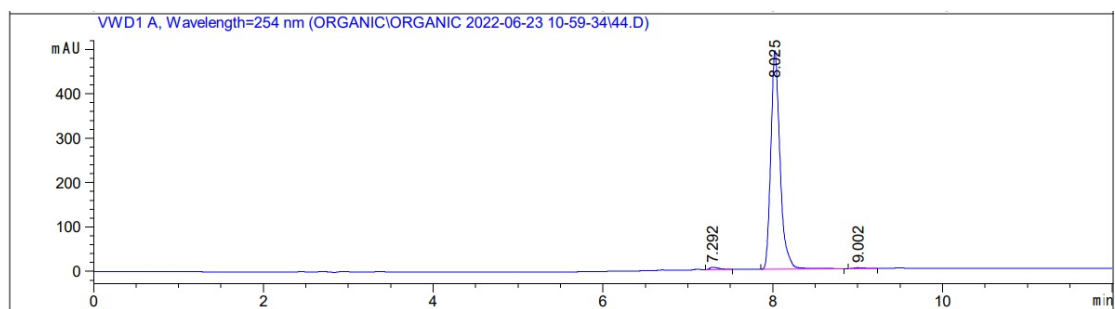
ESI-MS of 8i



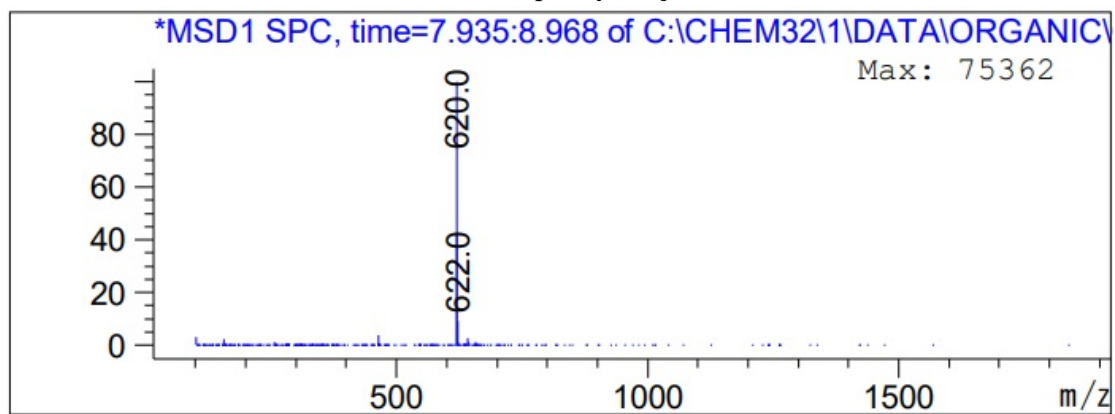
^1H -NMR of 8j



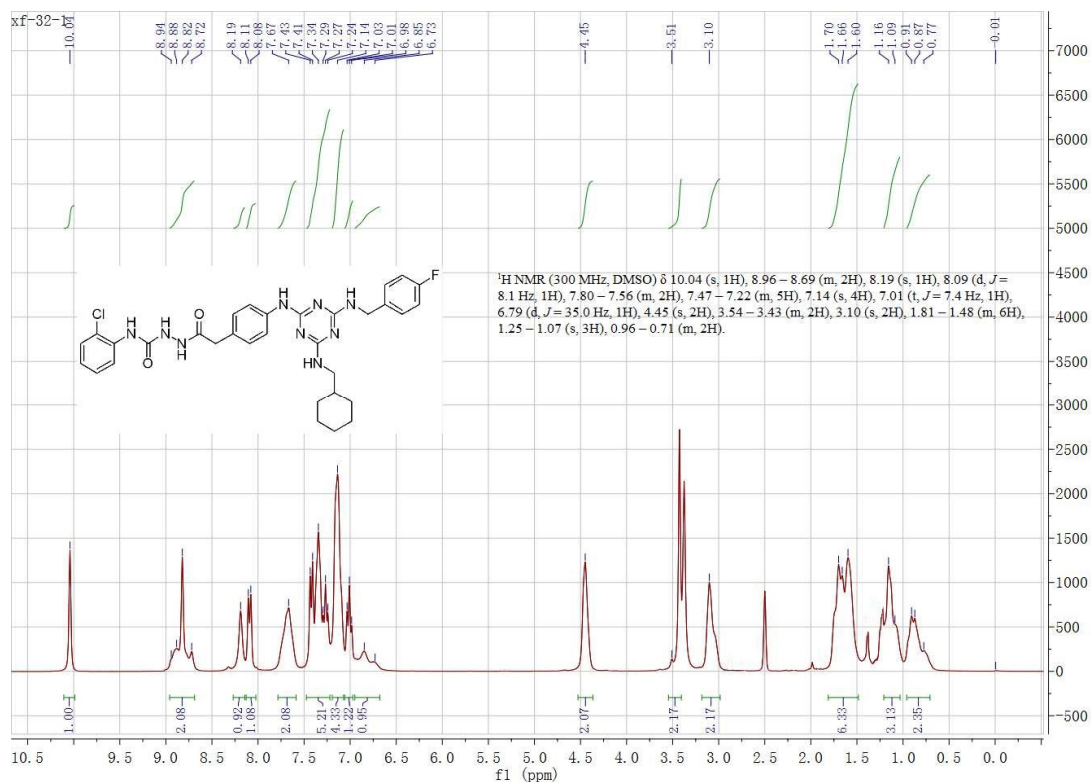
^{13}C -NMR of 8j



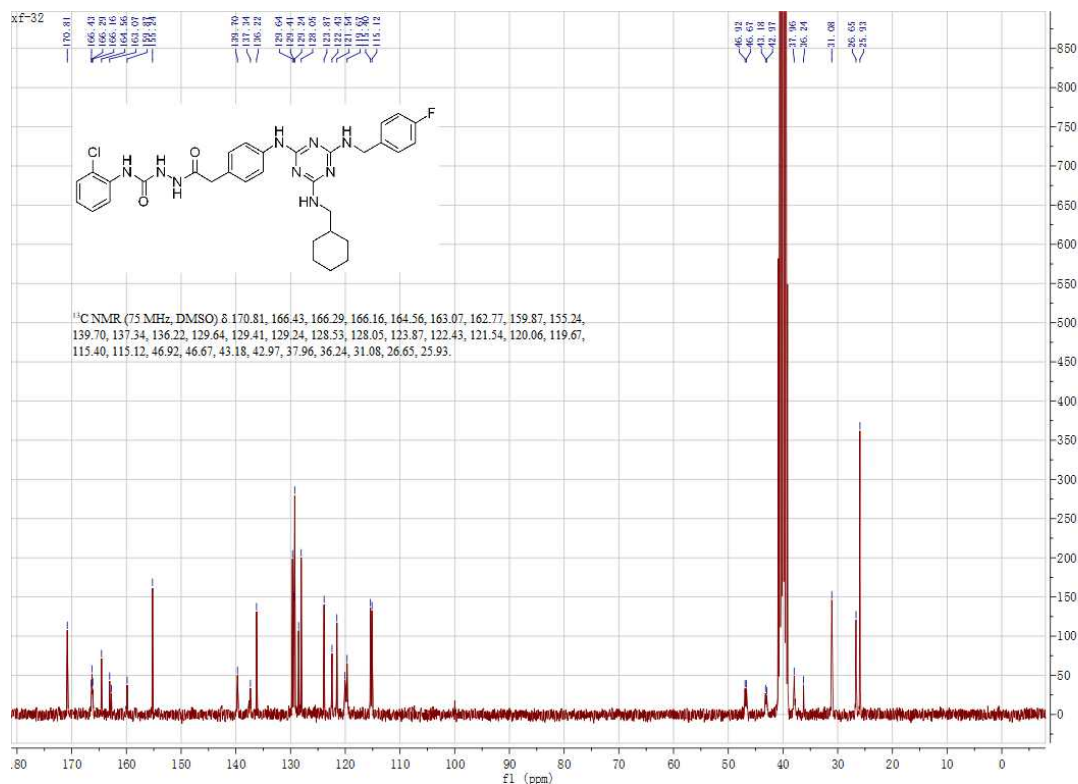
HPLC purity of 8j



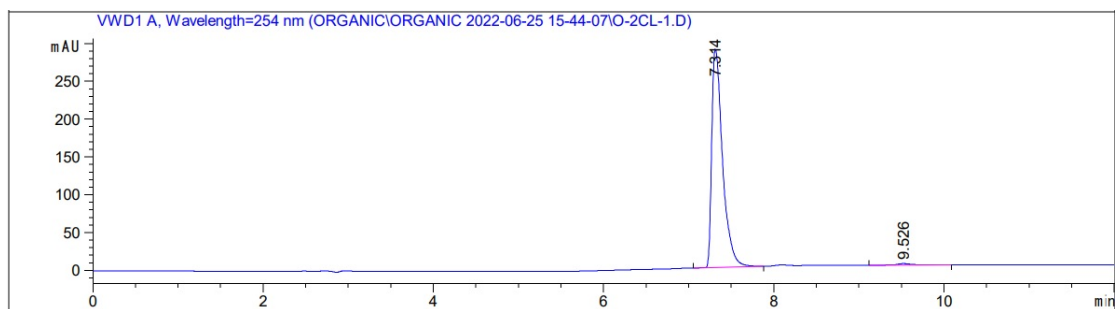
ESI-MS of 8j



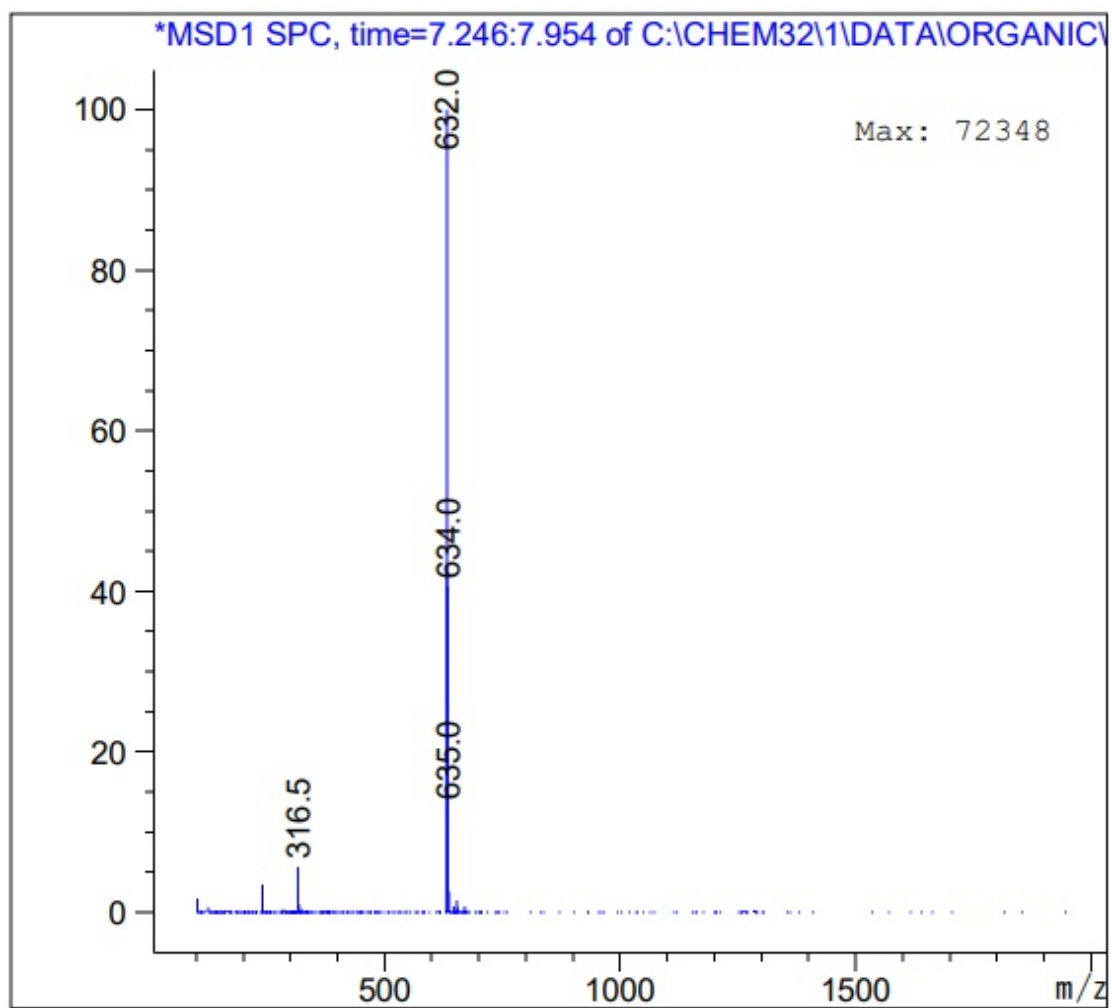
$^1\text{H-NMR}$ of 9a



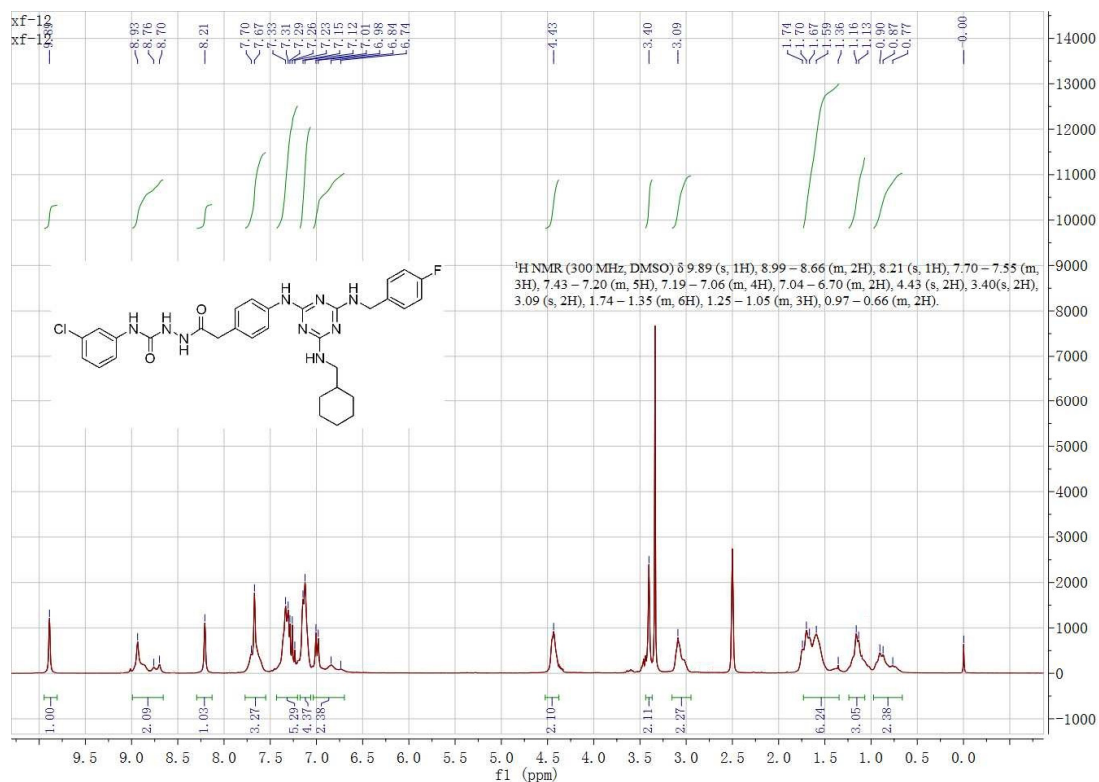
$^{13}\text{C-NMR}$ of 9a



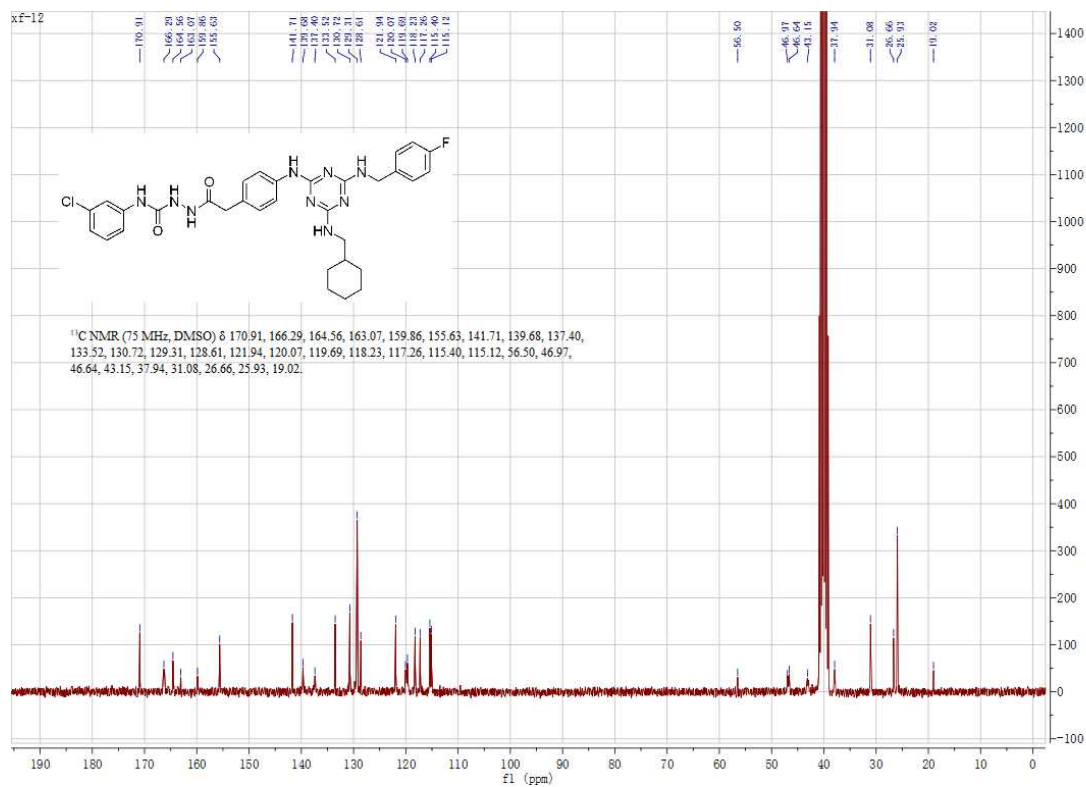
HPLC purity of 9a



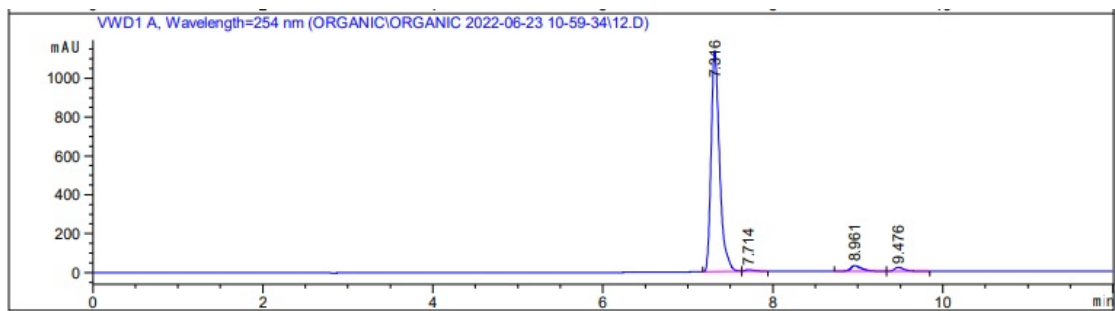
ESI-MS of 9a



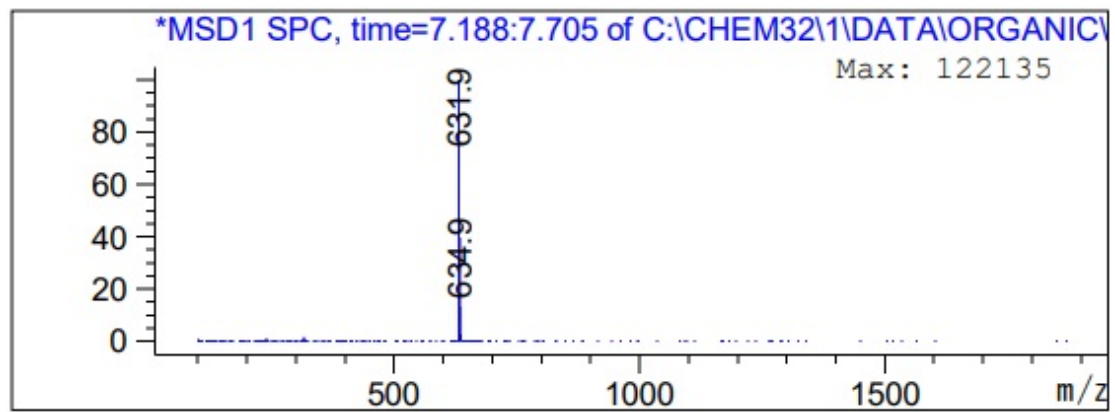
^1H -NMR of 9b



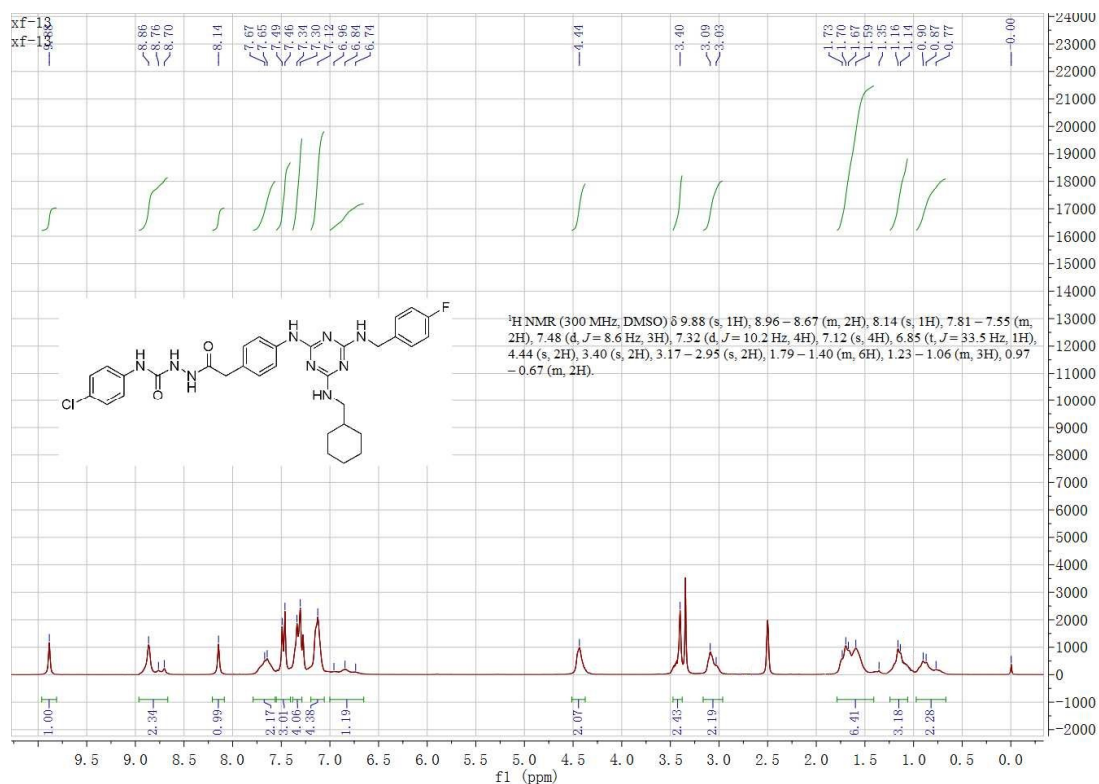
^{13}C -NMR of 9b



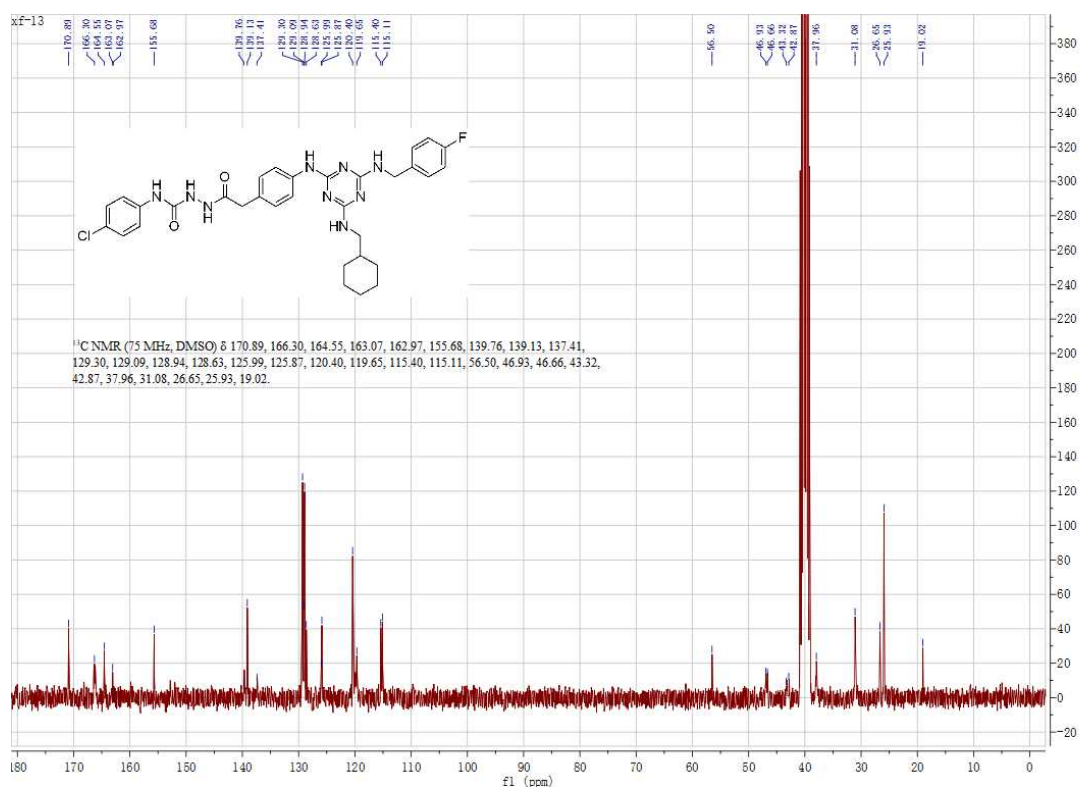
HPLC purity of 9b



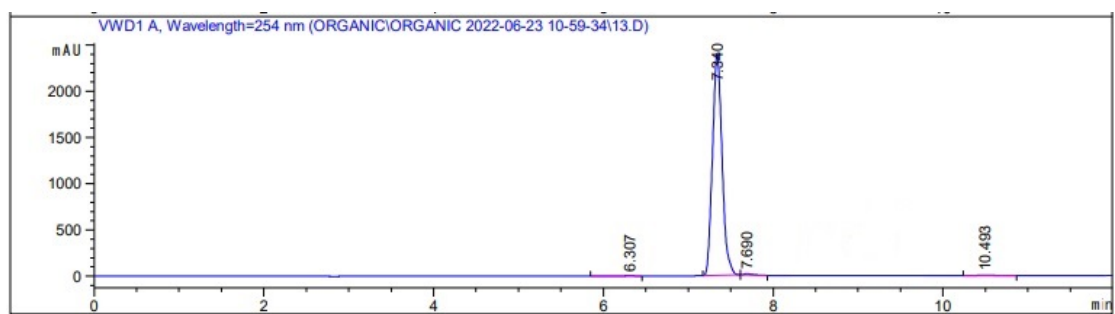
ESI-MS of 9b



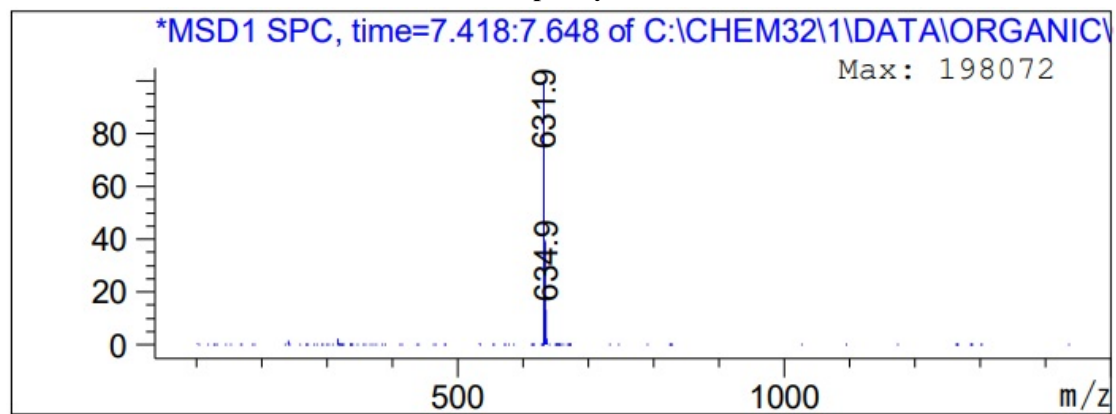
^1H -NMR of 9c



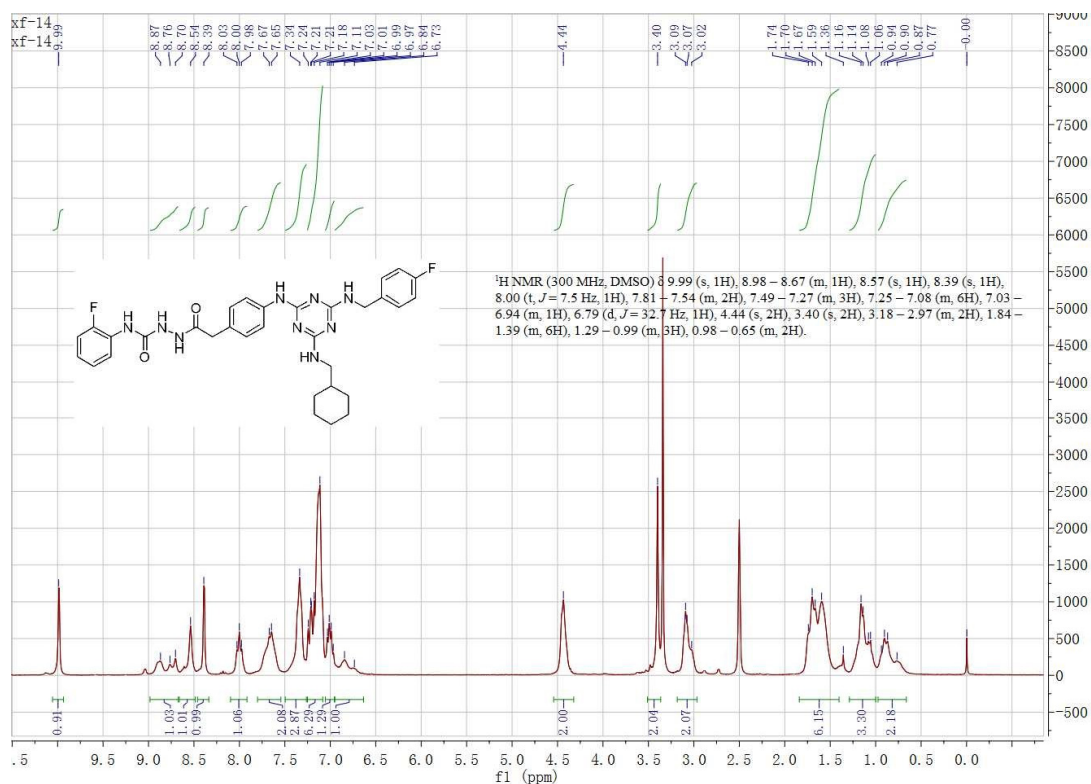
^{13}C -NMR of 9c



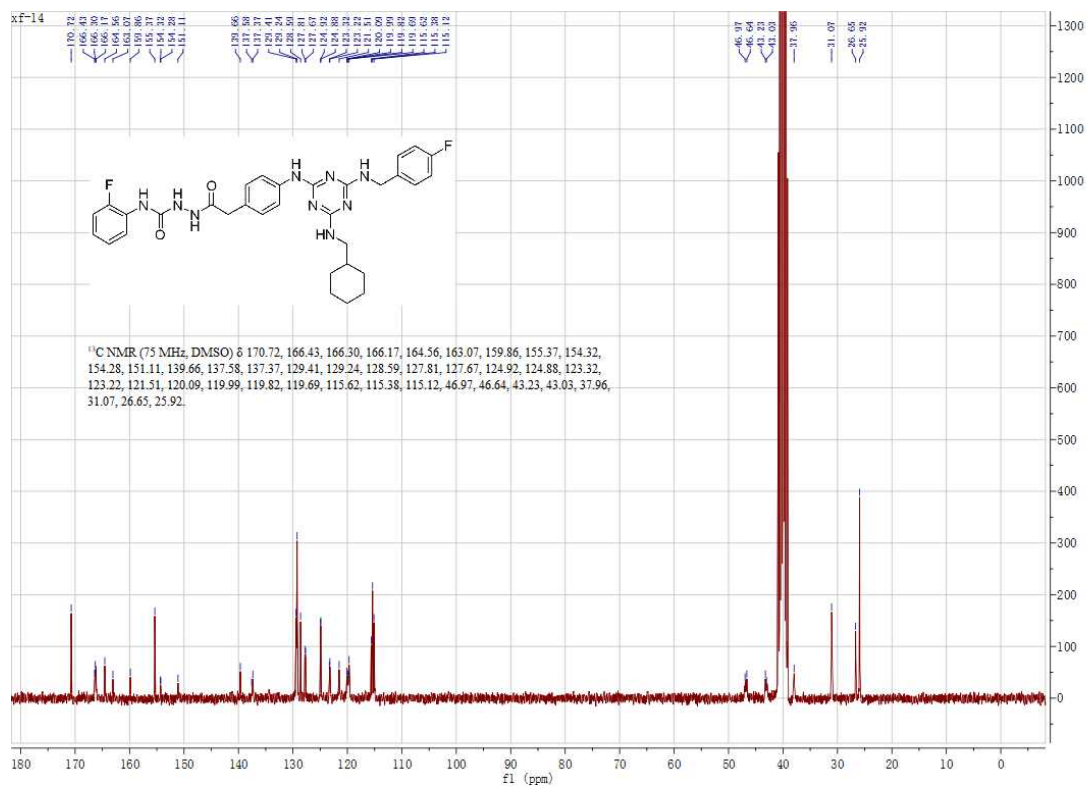
HPLC purity of 9c



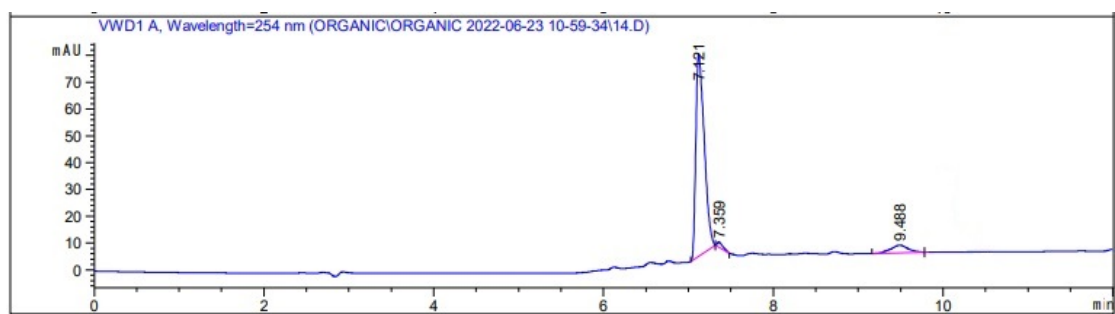
ESI-MS of 9c



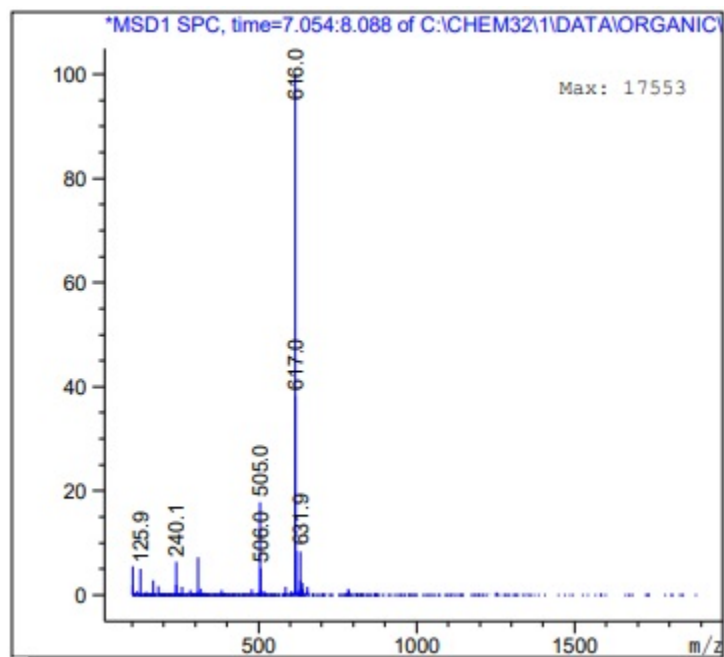
¹H-NMR of 9d



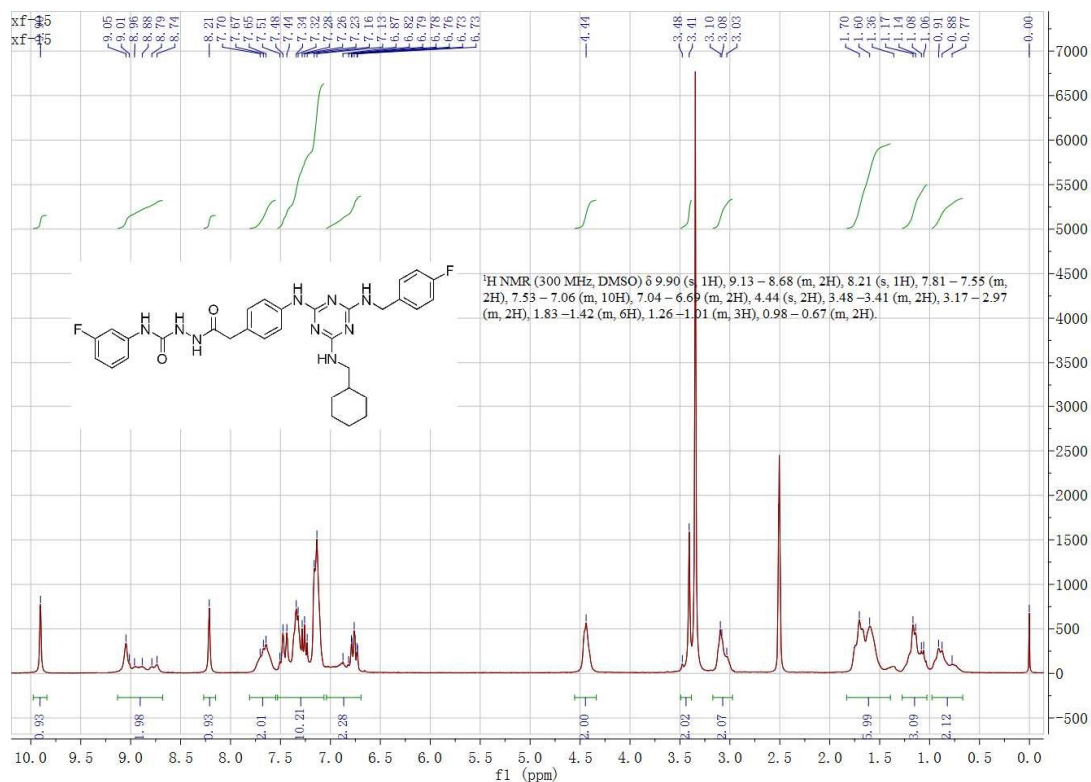
¹³C-NMR of 9d



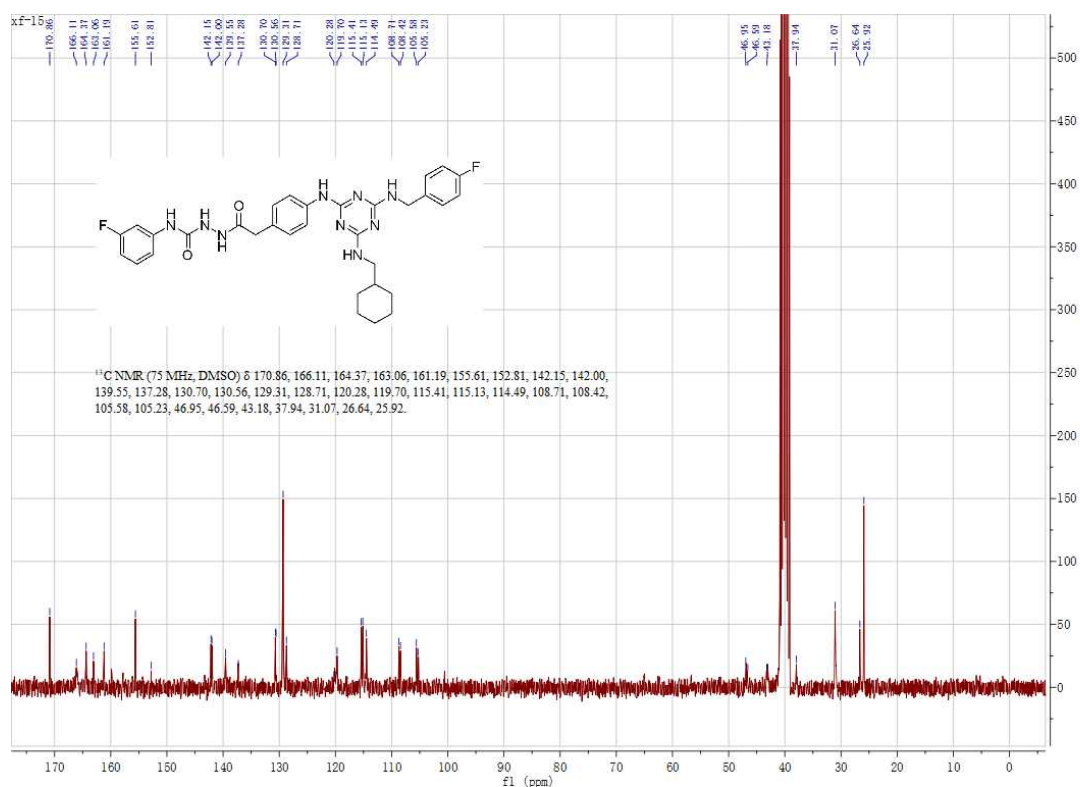
HPLC purity of 9d



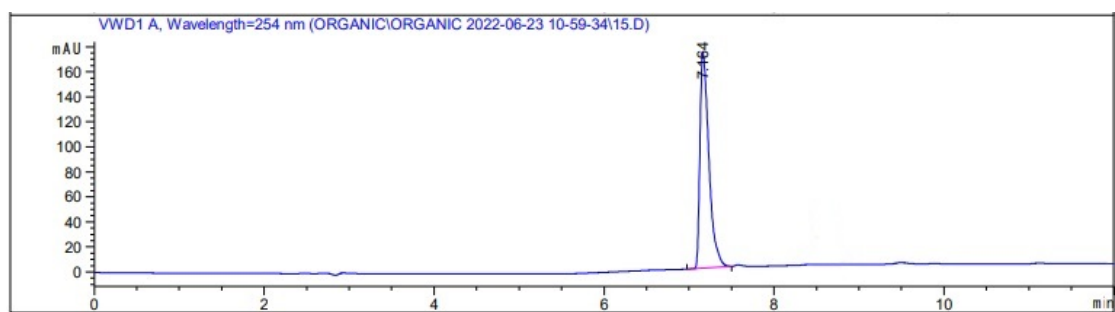
ESI-MS of 9d



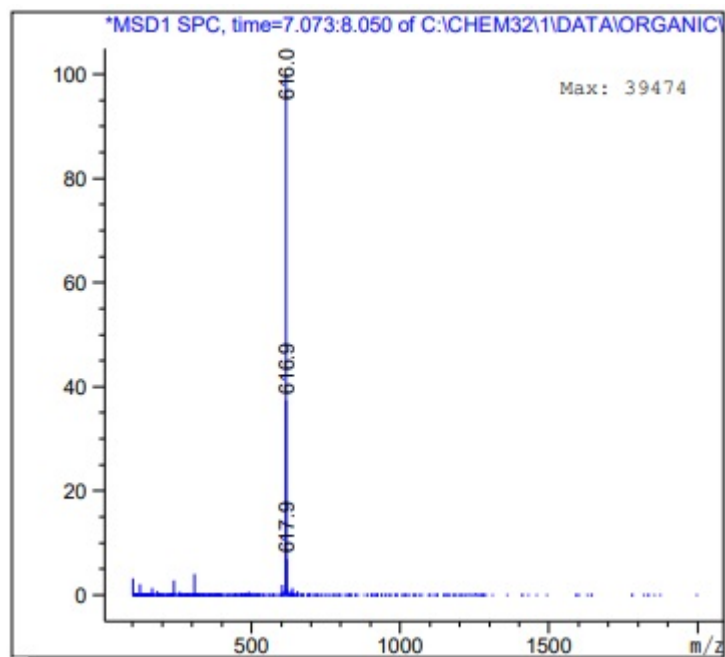
¹H-NMR of 9e



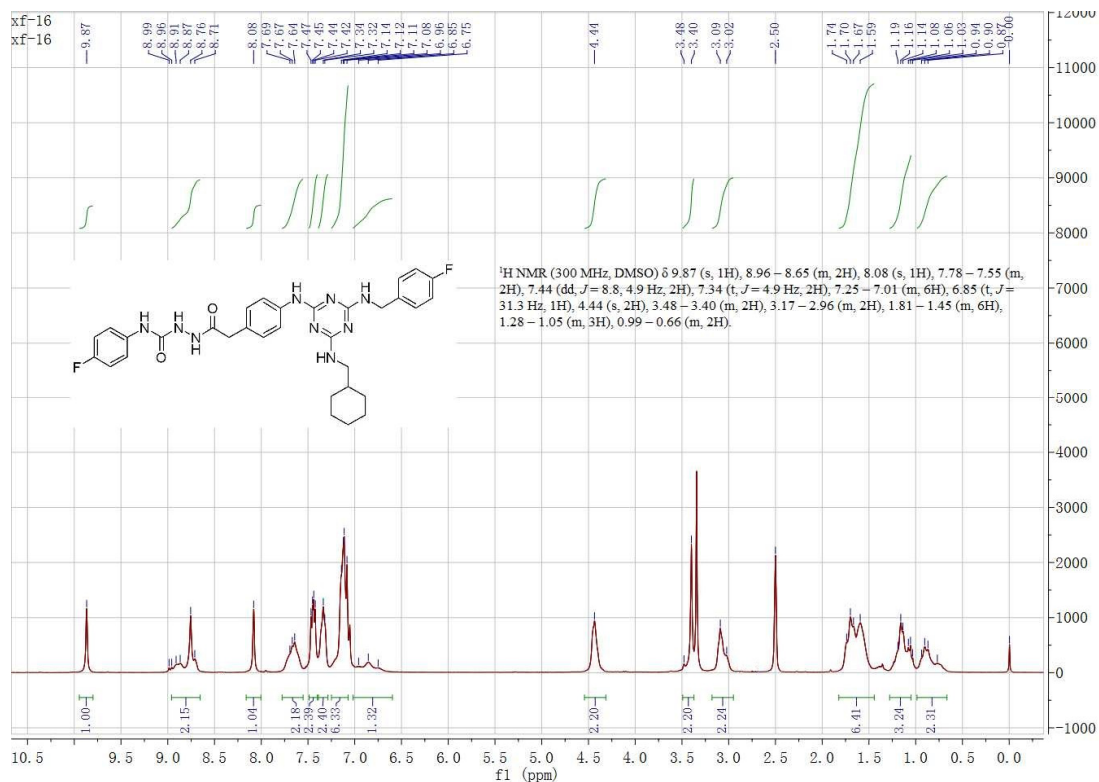
¹³C-NMR of 9e



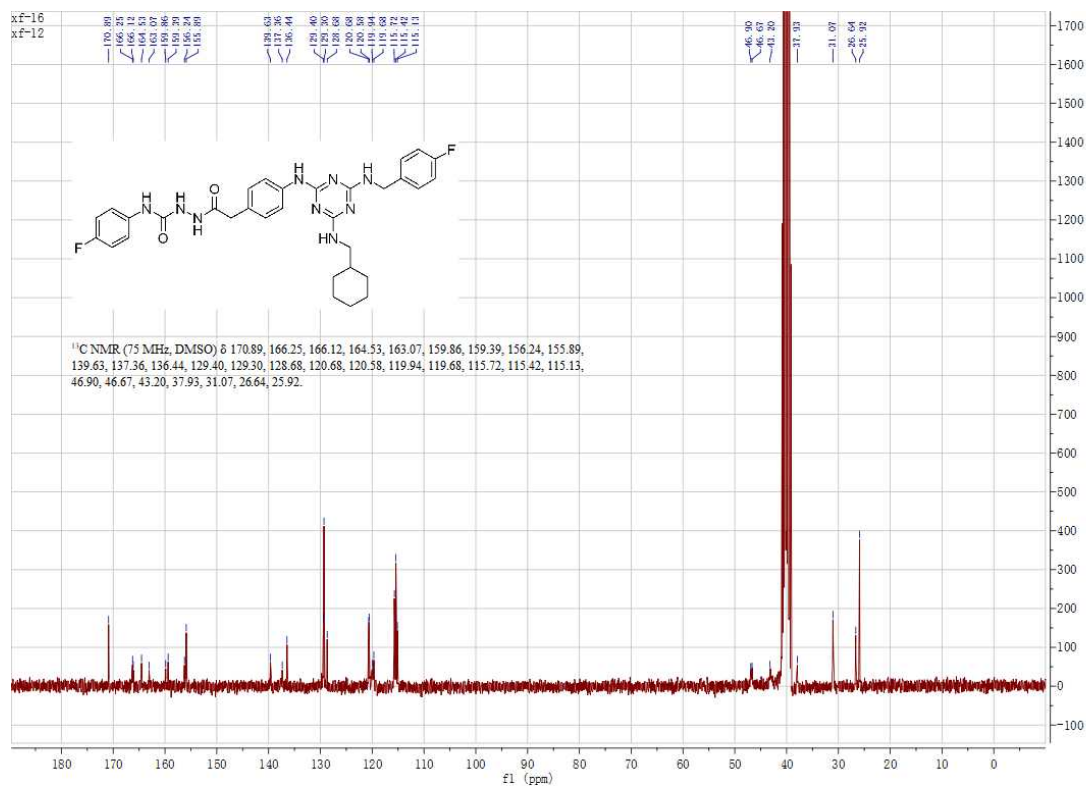
HPLC purity of 9e



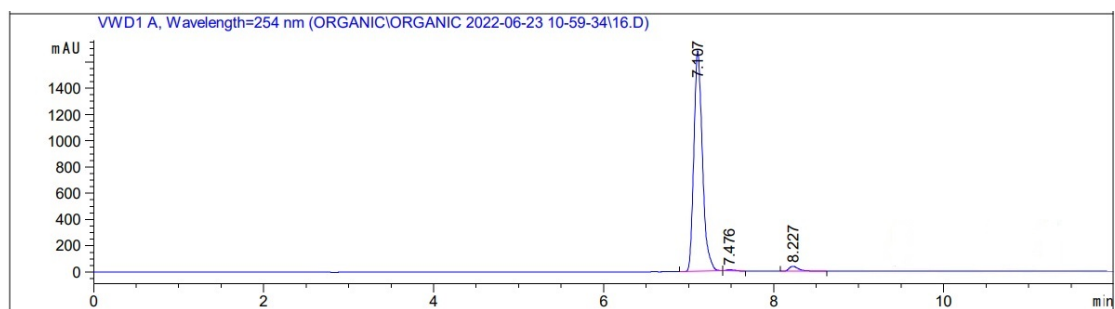
ESI-MS of 9e



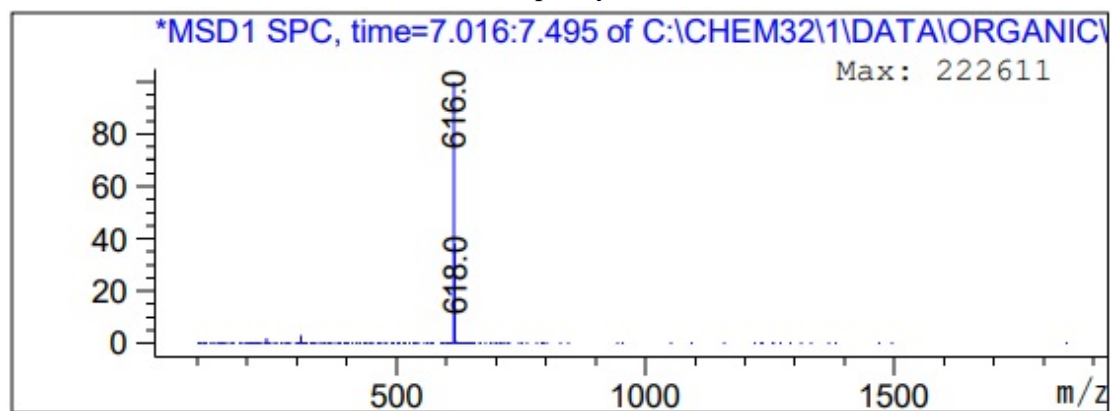
^1H -NMR of 9f



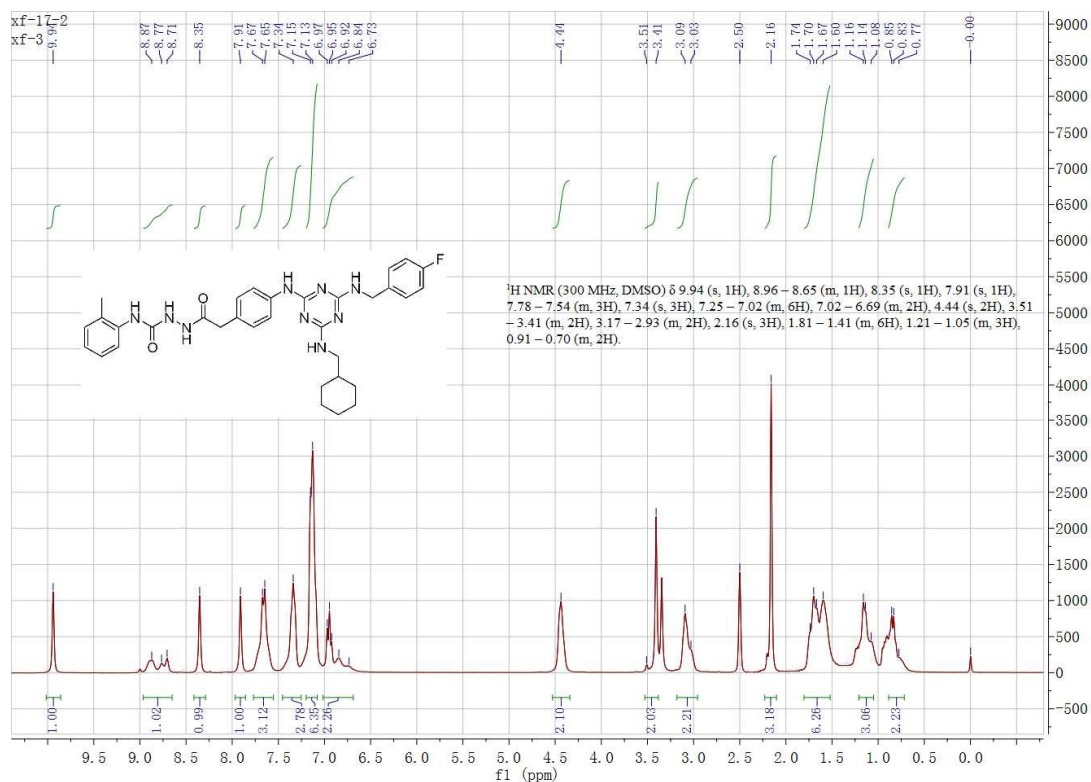
^{13}C -NMR of 9f



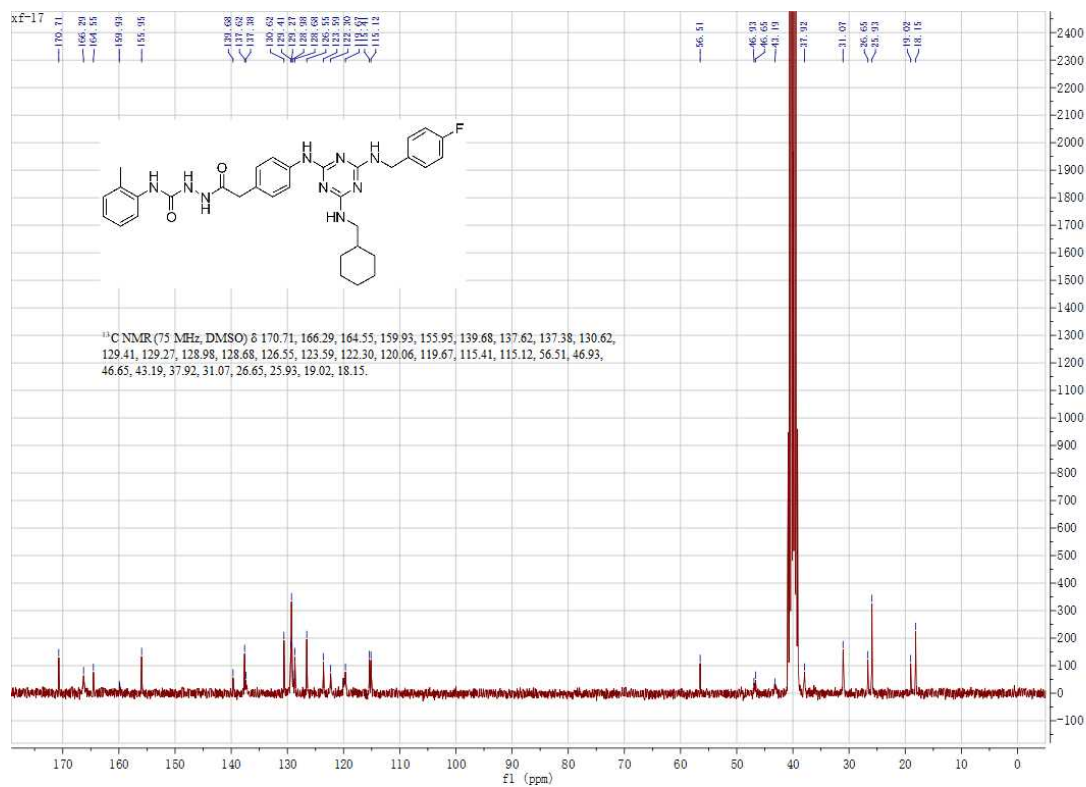
HPLC purity of 9f



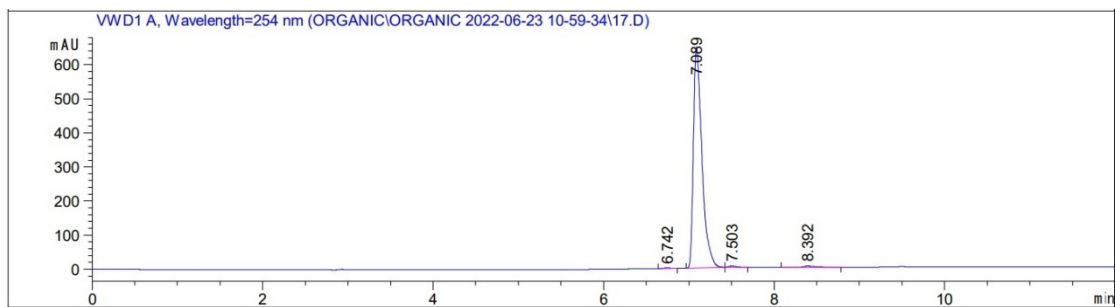
ESI-MS of 9f



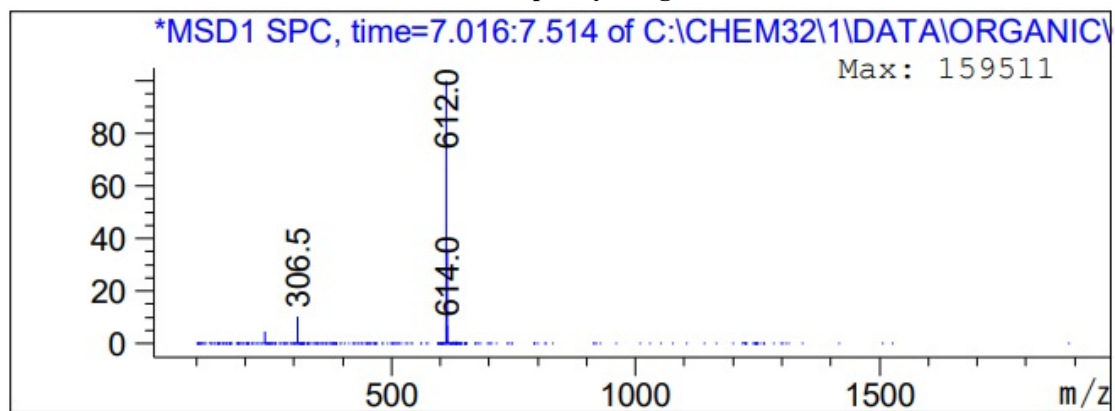
$^1\text{H-NMR}$ of 9g



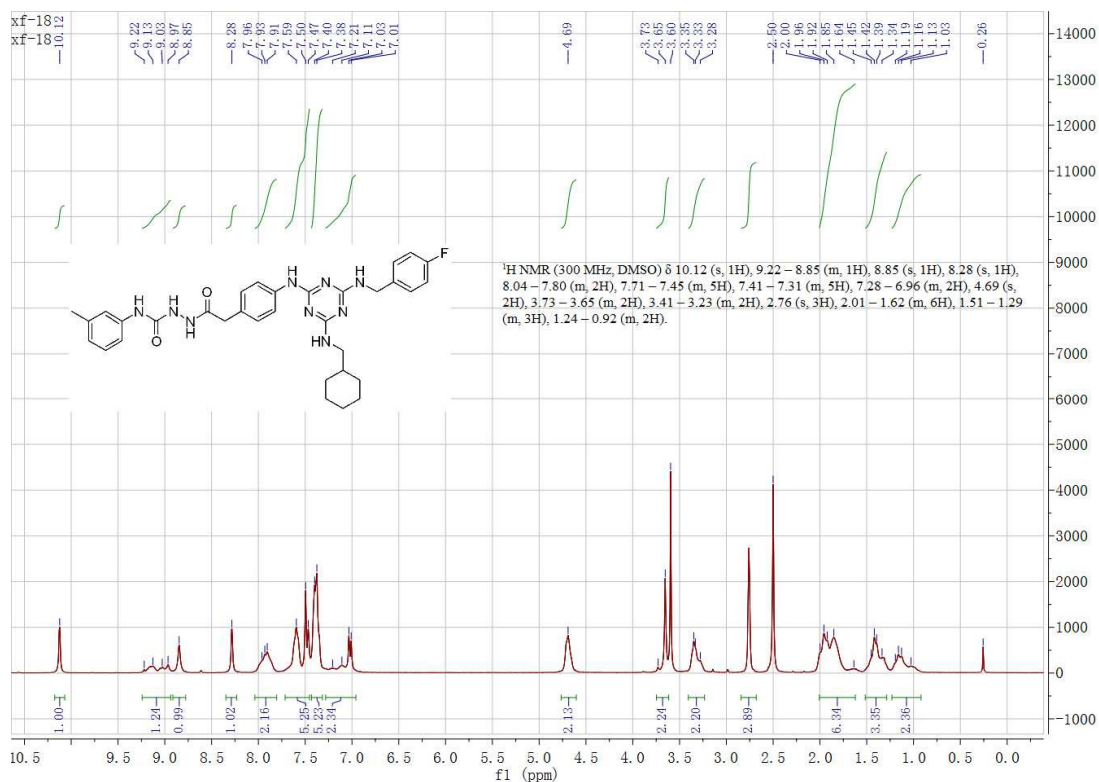
$^{13}\text{C-NMR}$ of 9g



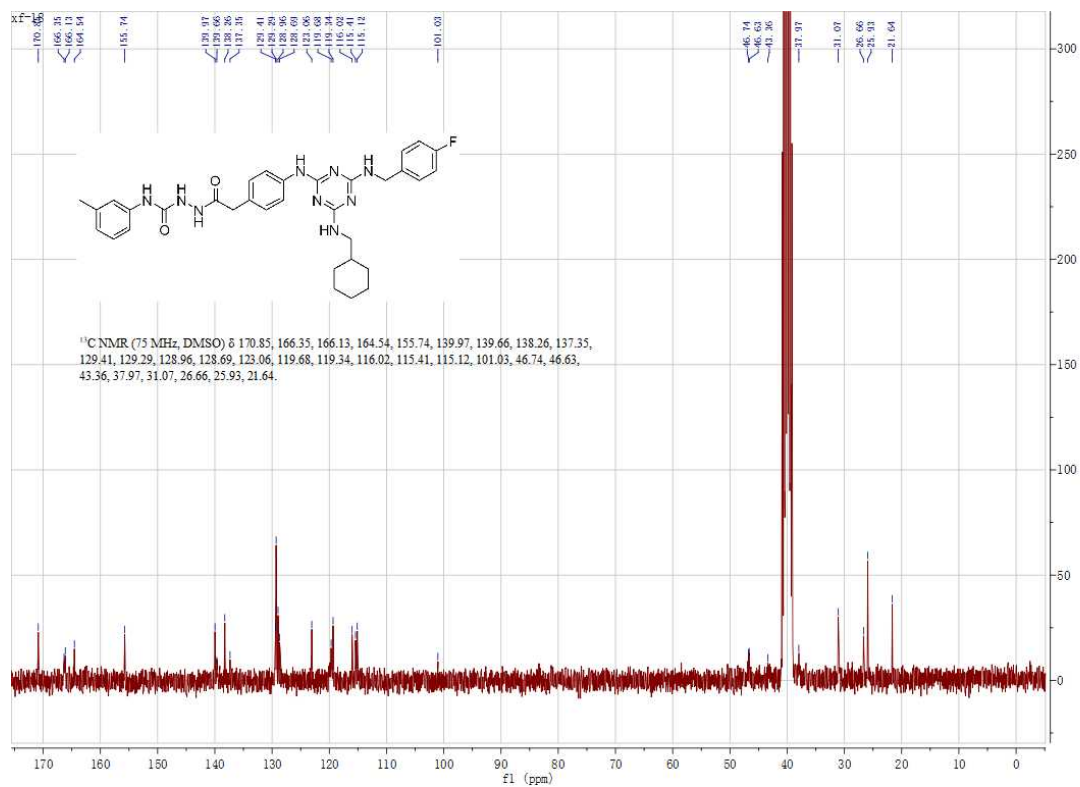
HPLC purity of 9g



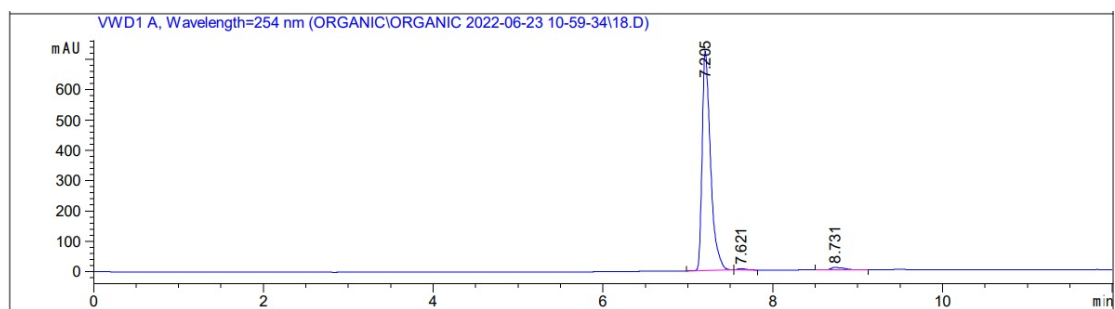
ESI-MS of 9g



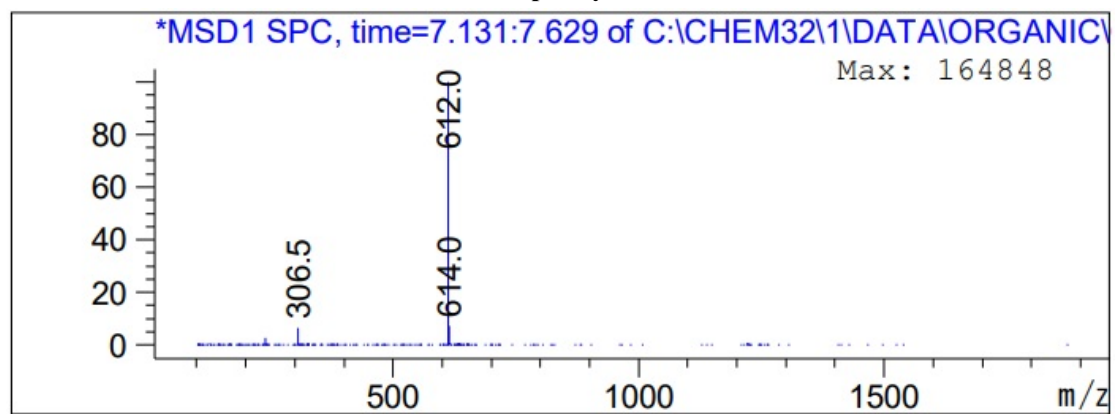
^1H -NMR of 9h



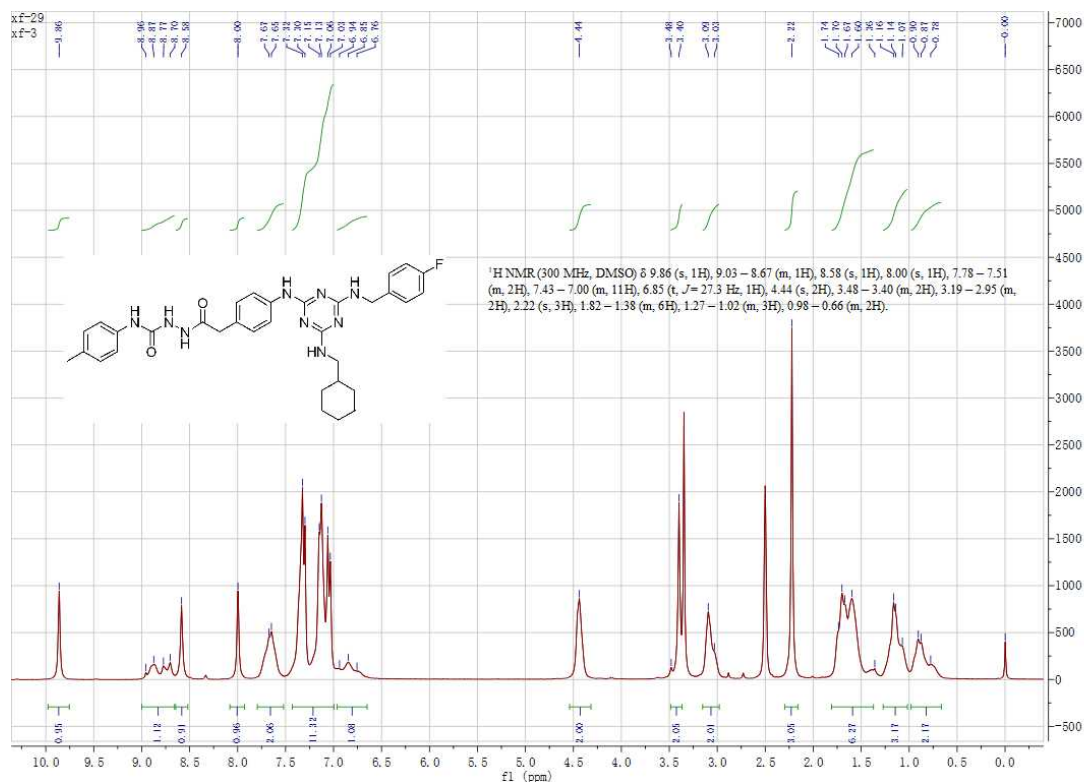
^{13}C -NMR of 9h



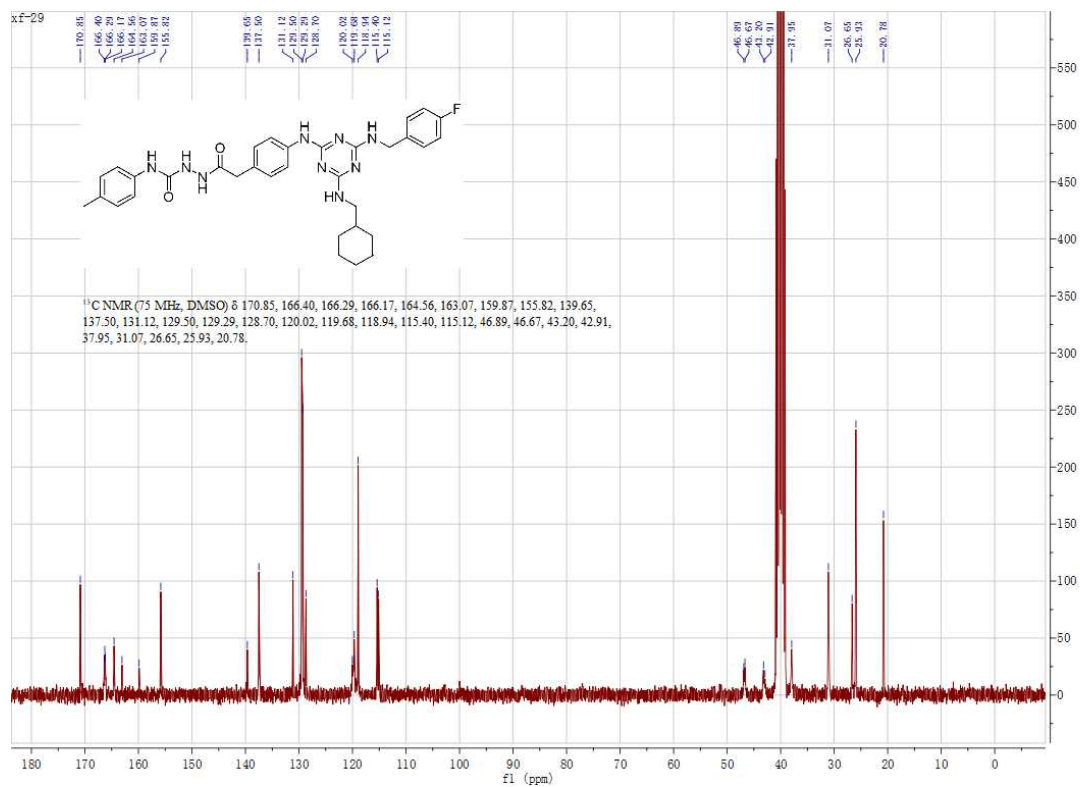
HPLC purity of 9h



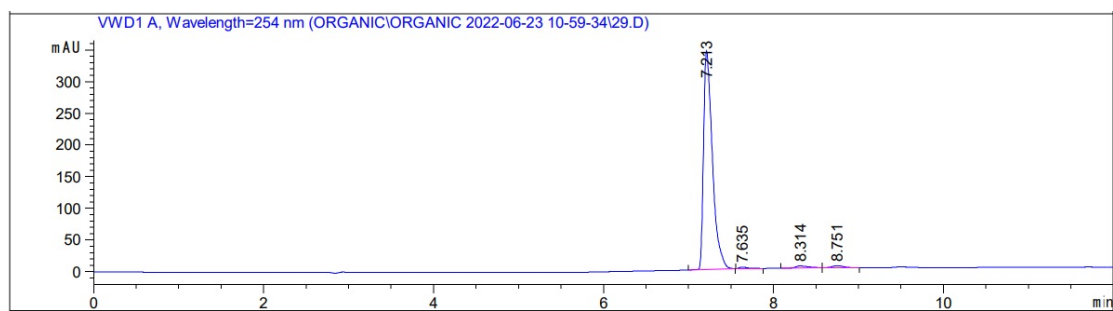
ESI-MS of 9h



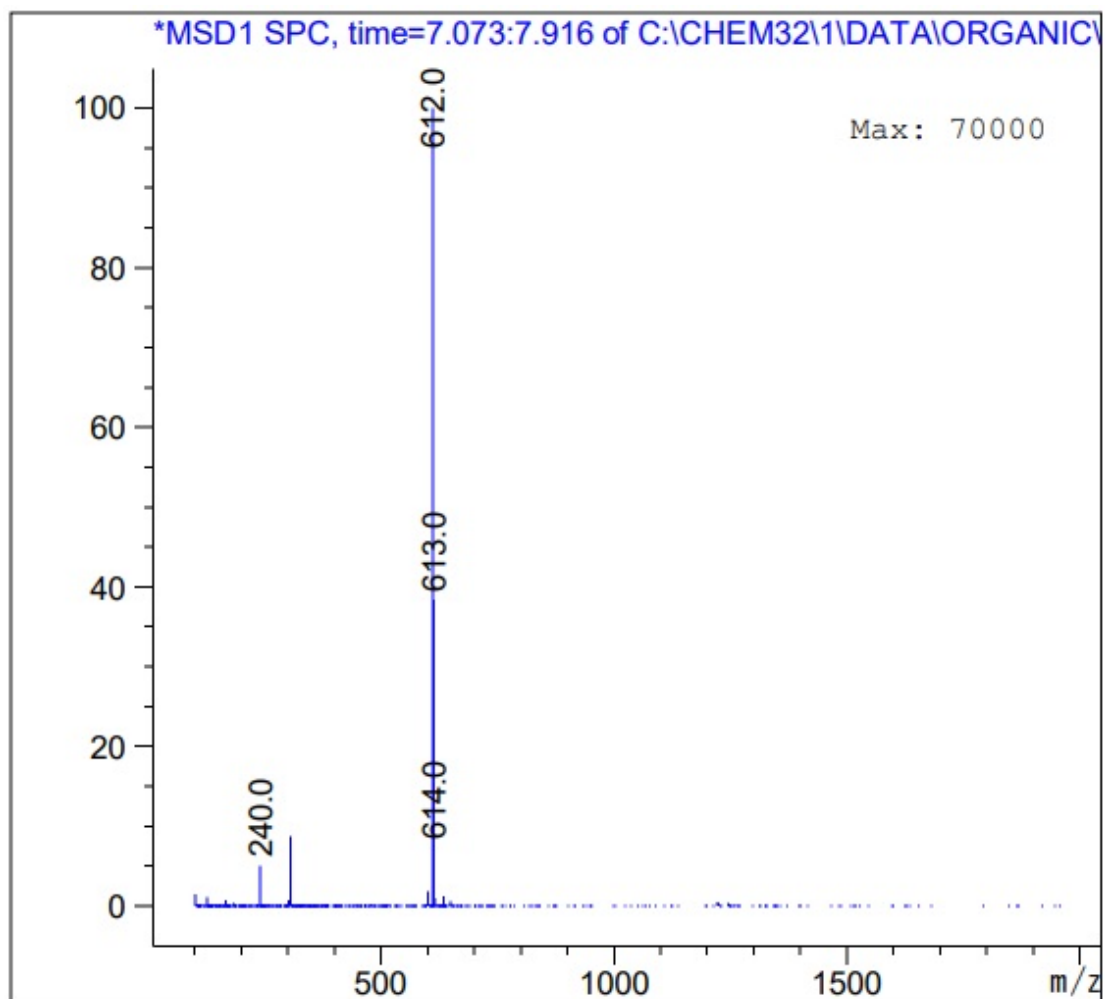
¹H-NMR of 9i



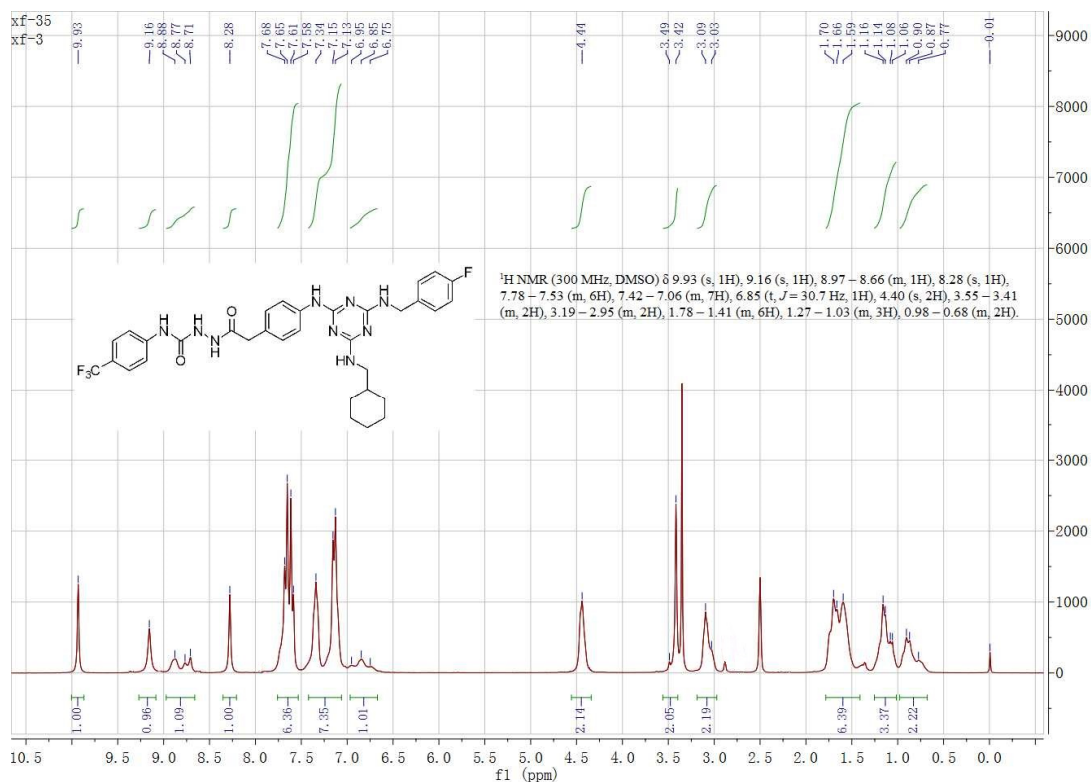
¹³C-NMR of 9i



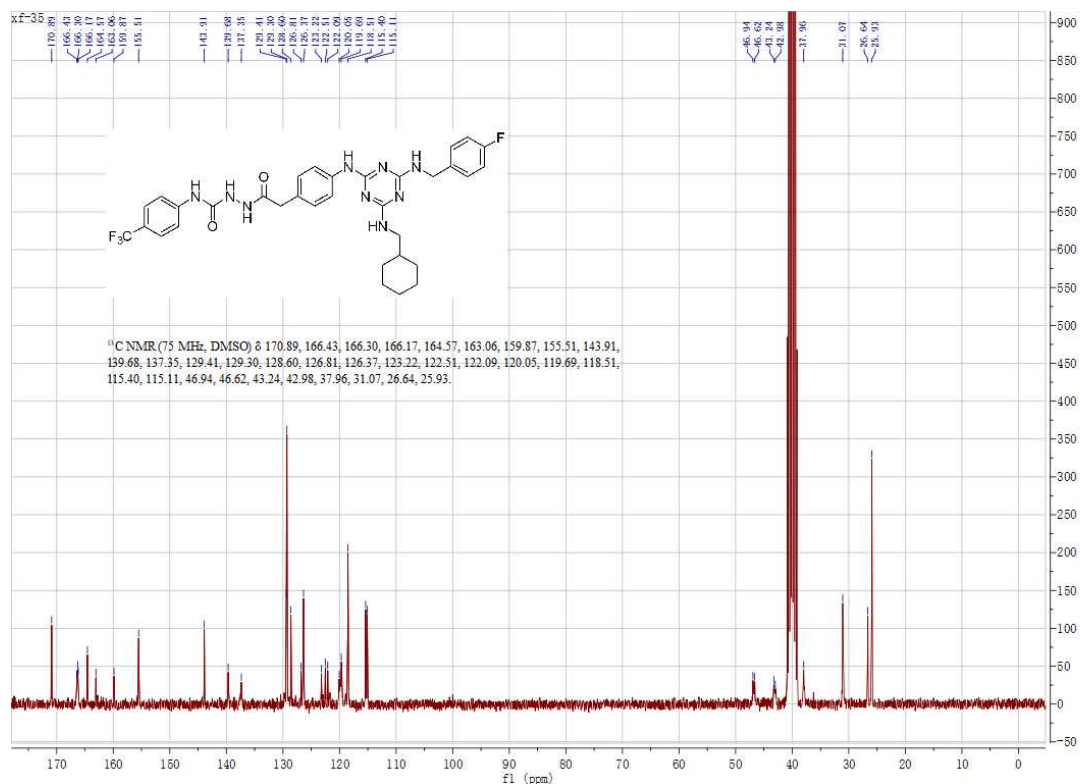
HPLC purity of 9i



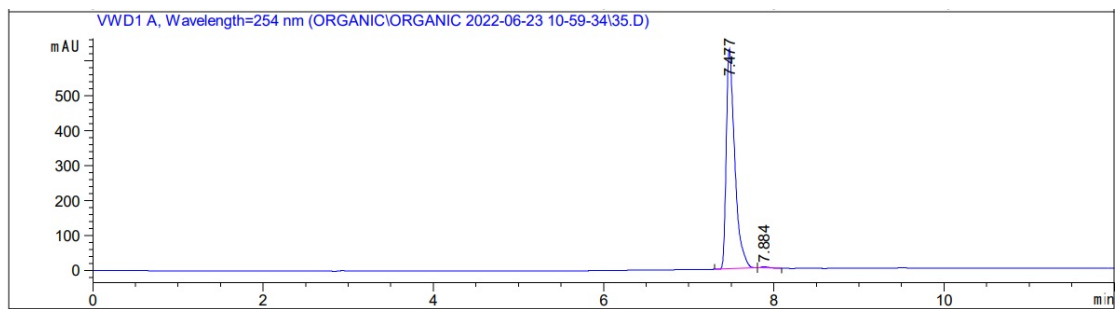
ESI-MS of 9i



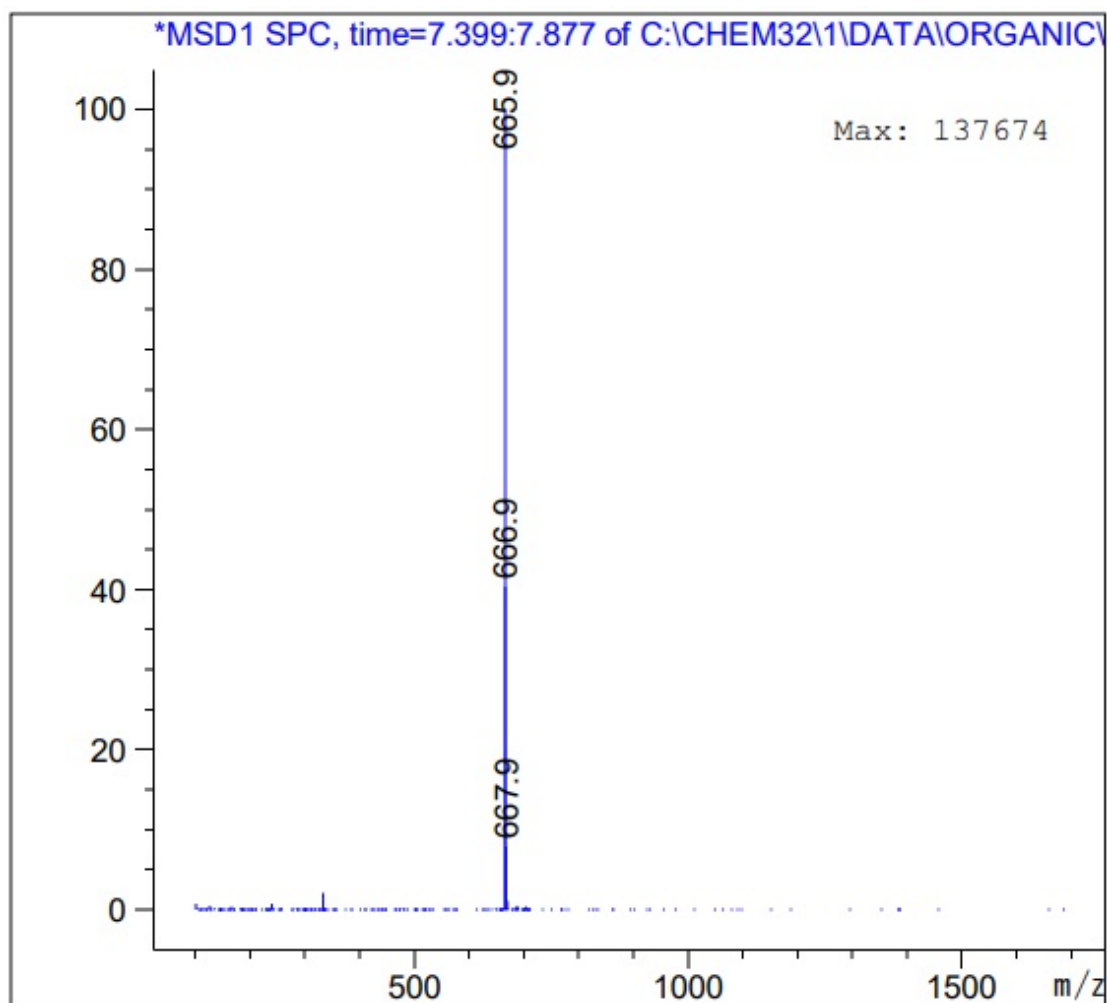
¹H-NMR of 9j



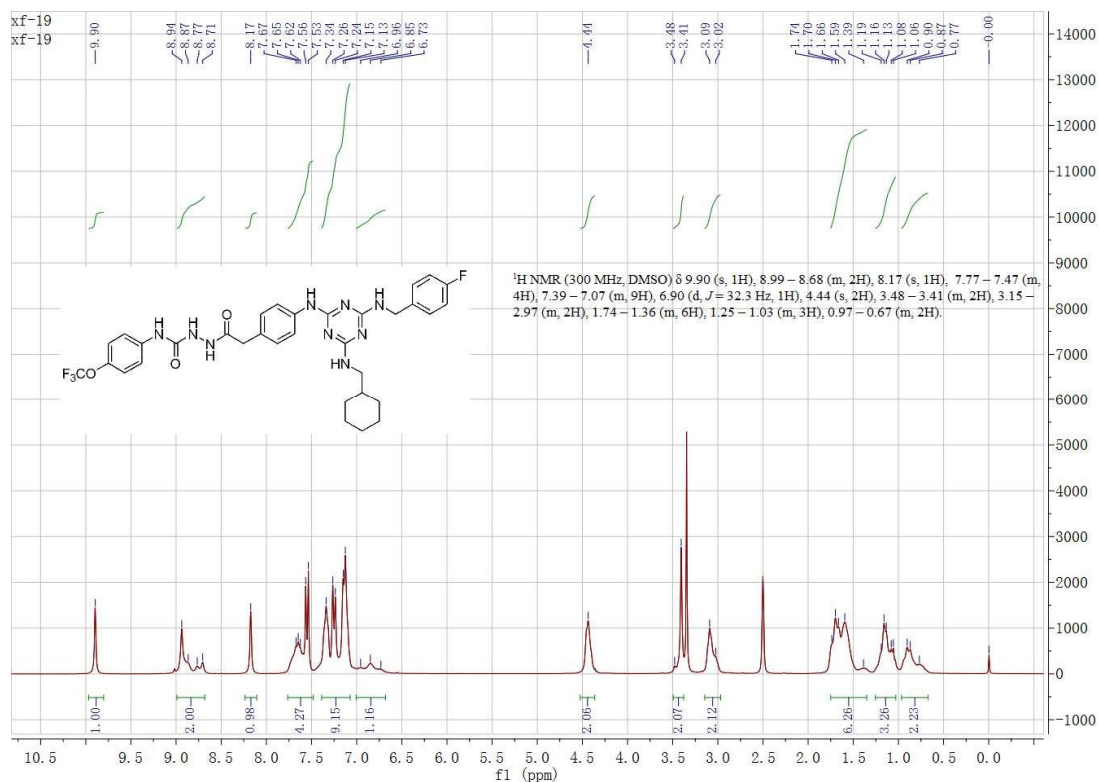
¹³C-NMR of 9j



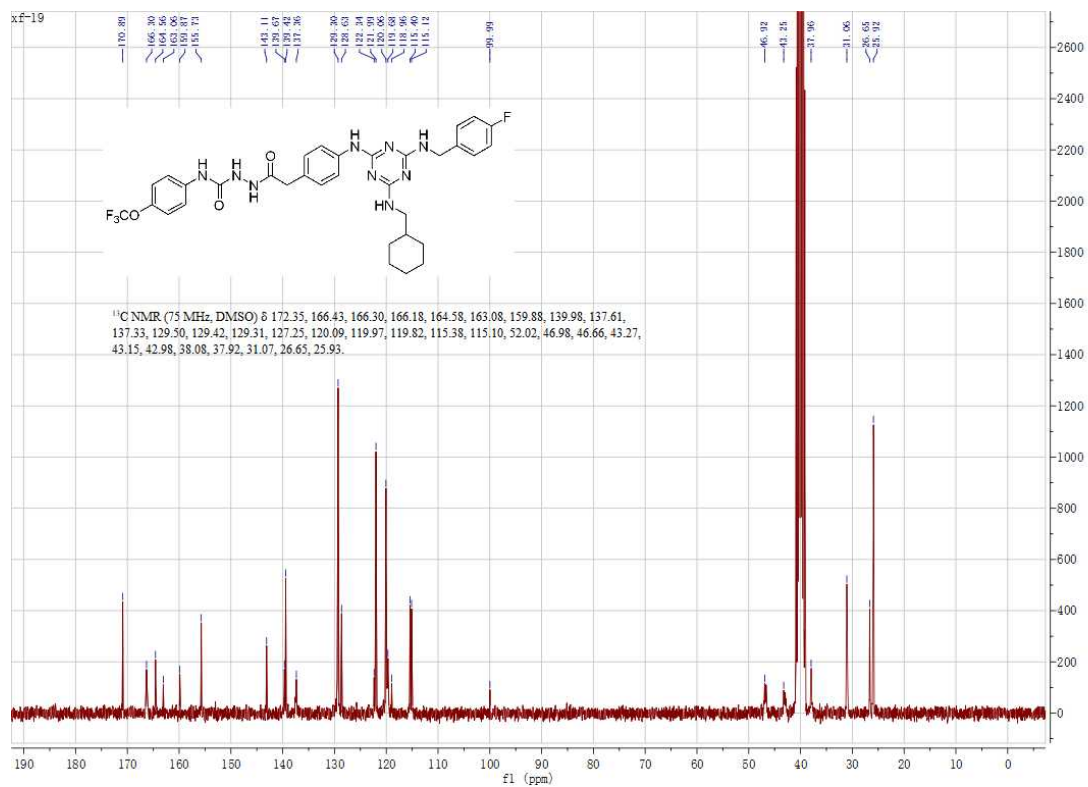
HPLC purity of 9j



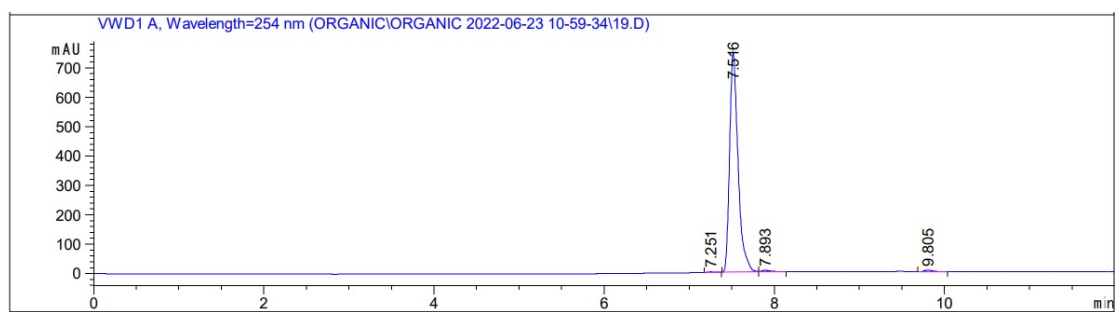
ESI-MS of 9j



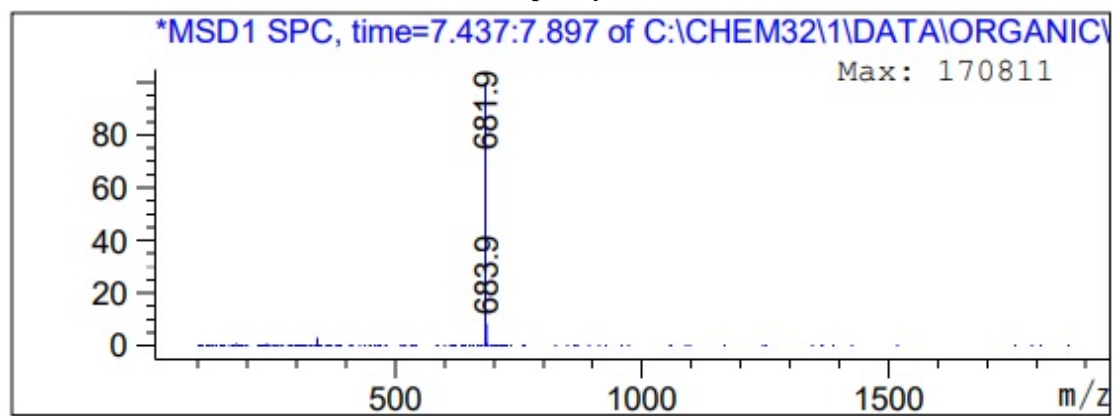
$^1\text{H-NMR}$ of 9k



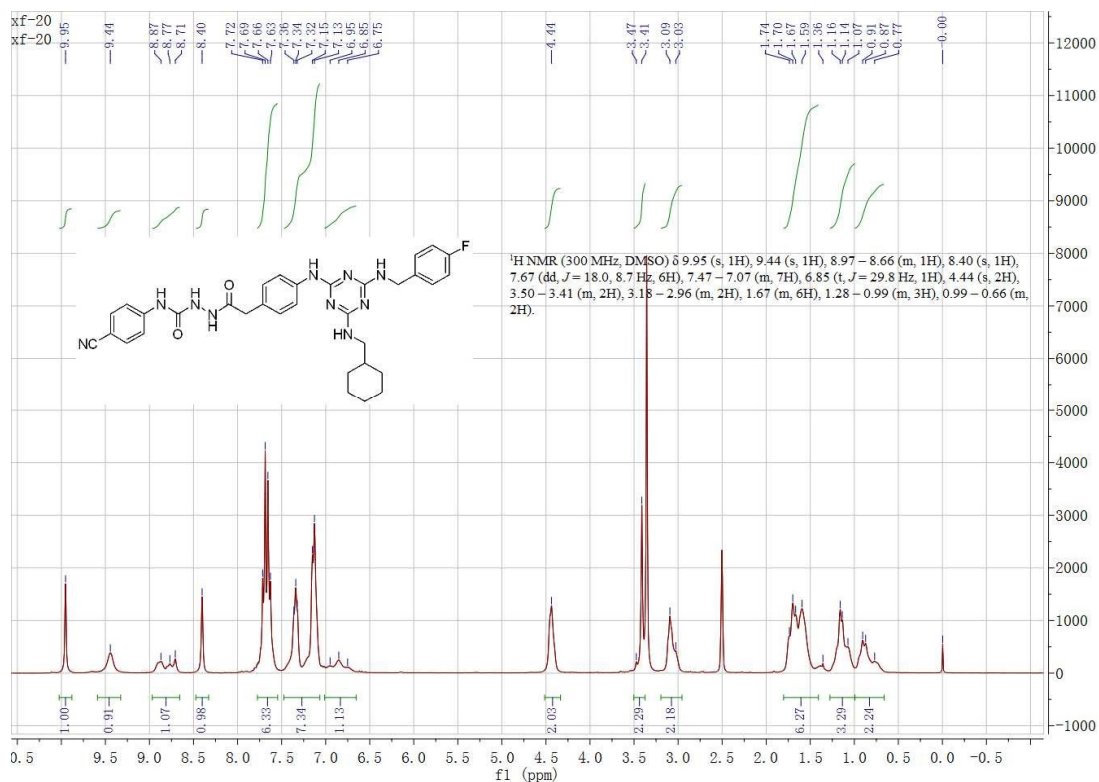
$^{13}\text{C-NMR}$ of 9k



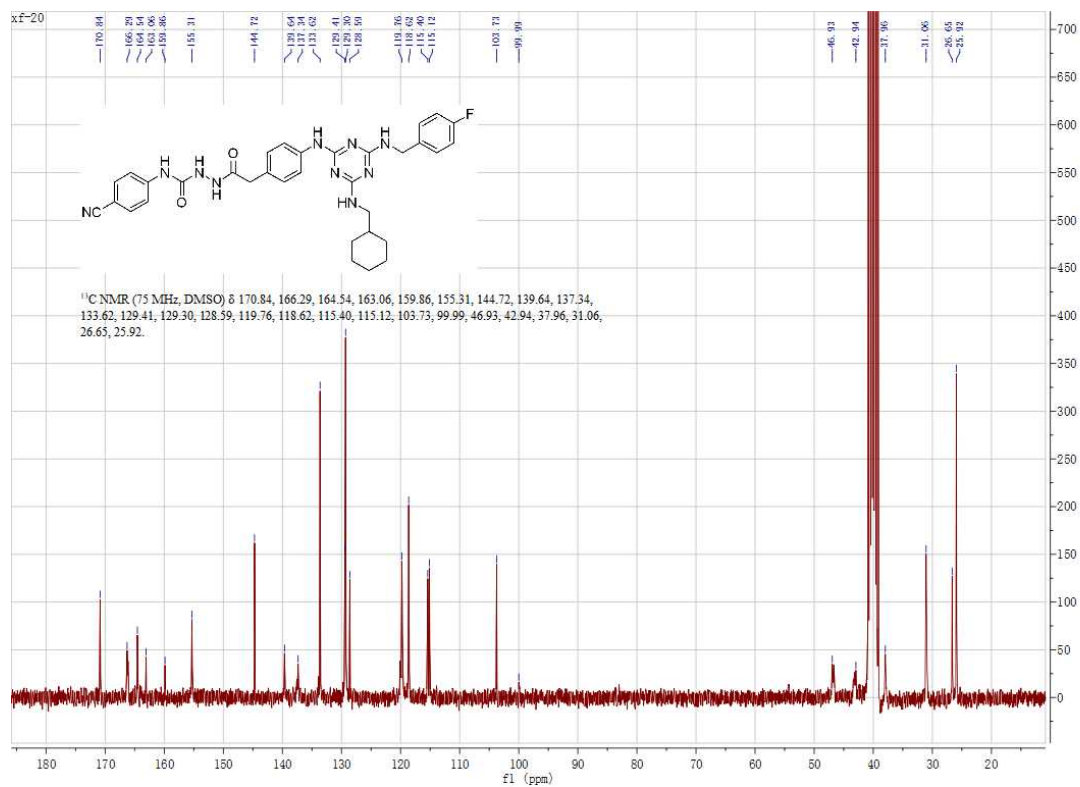
HPLC purity of 9k



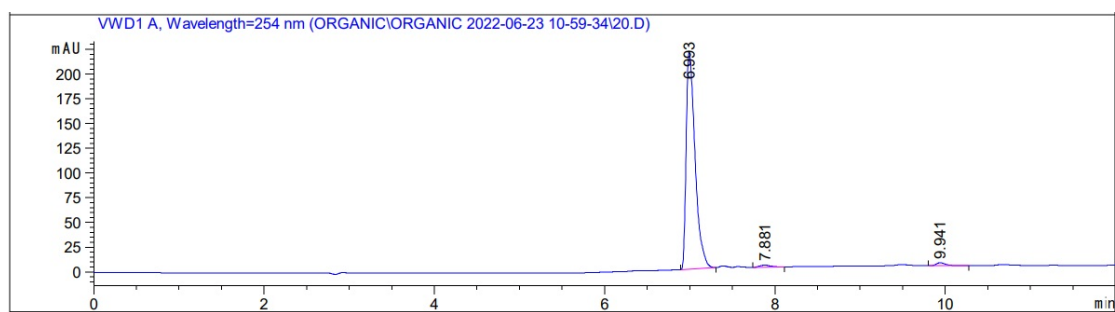
ESI-MS of 9k



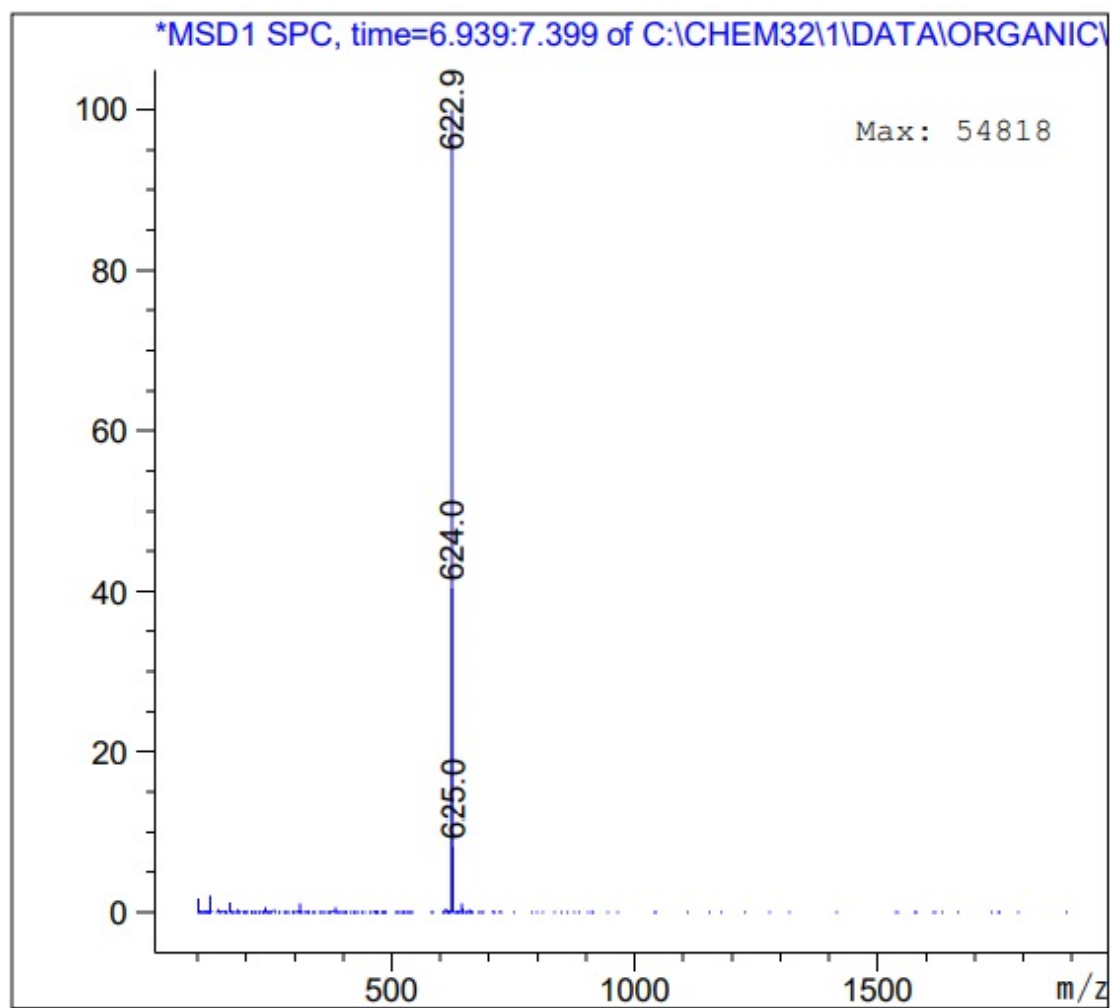
$^1\text{H-NMR}$ of 91



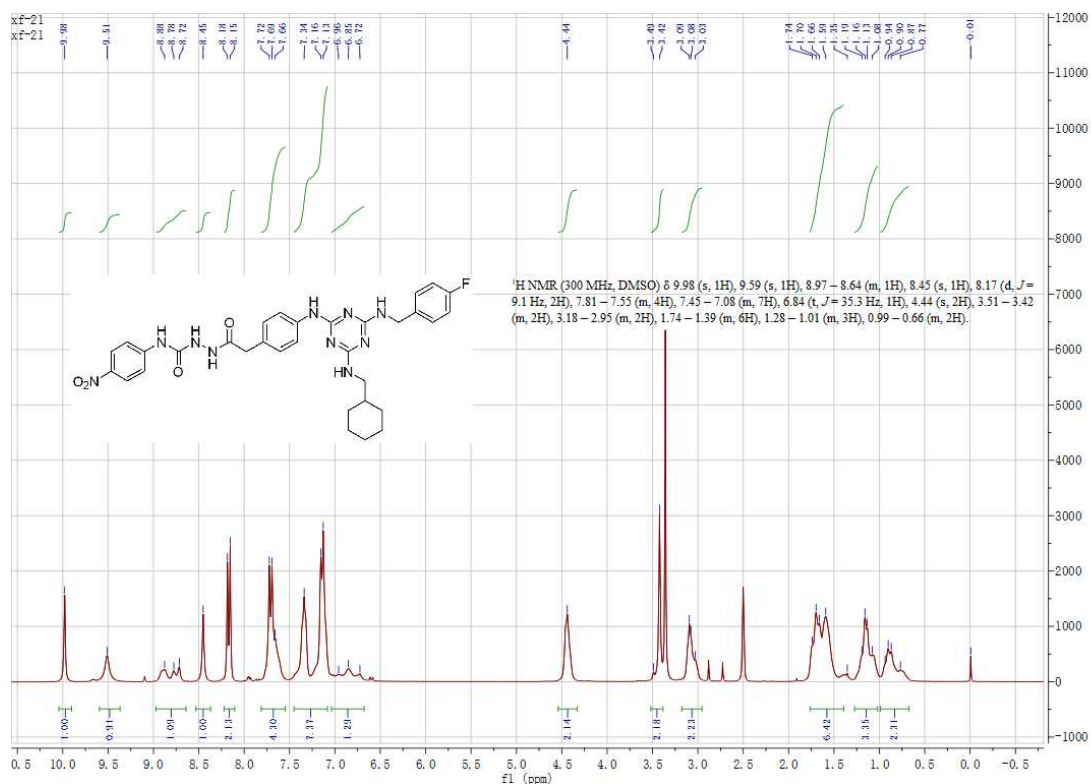
$^{13}\text{C-NMR}$ of 91



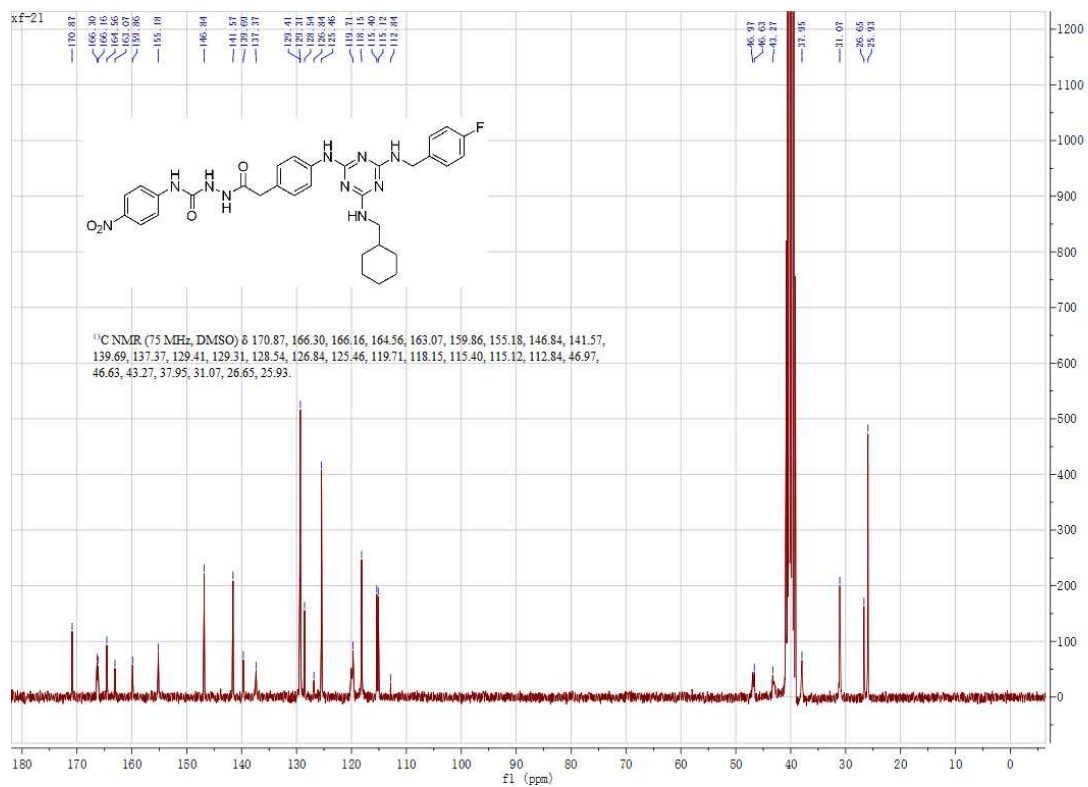
HPLC purity of 9I



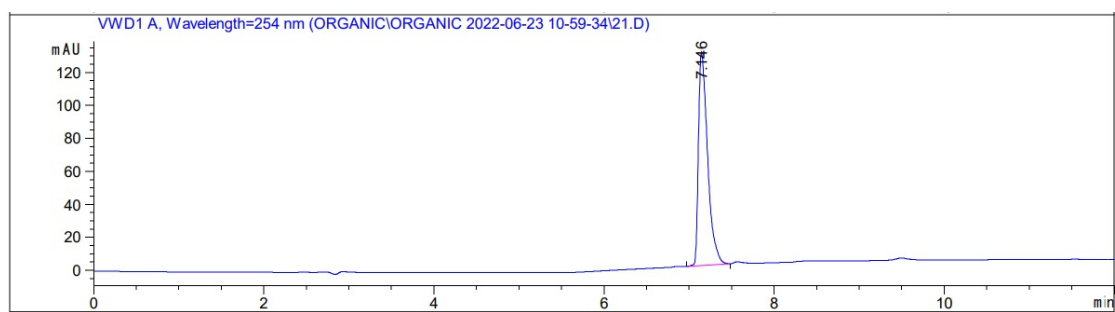
ESI-MS of 9I



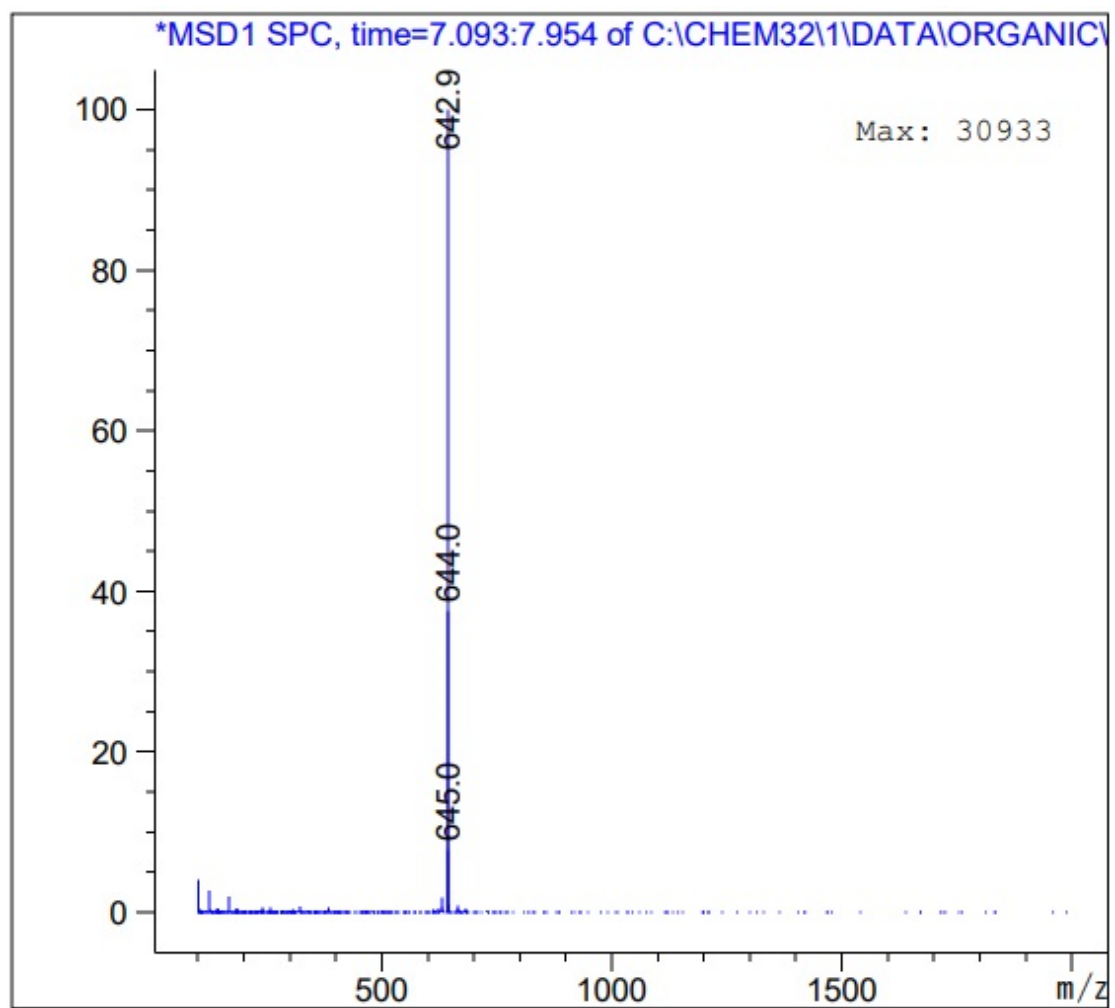
¹H-NMR of 9m



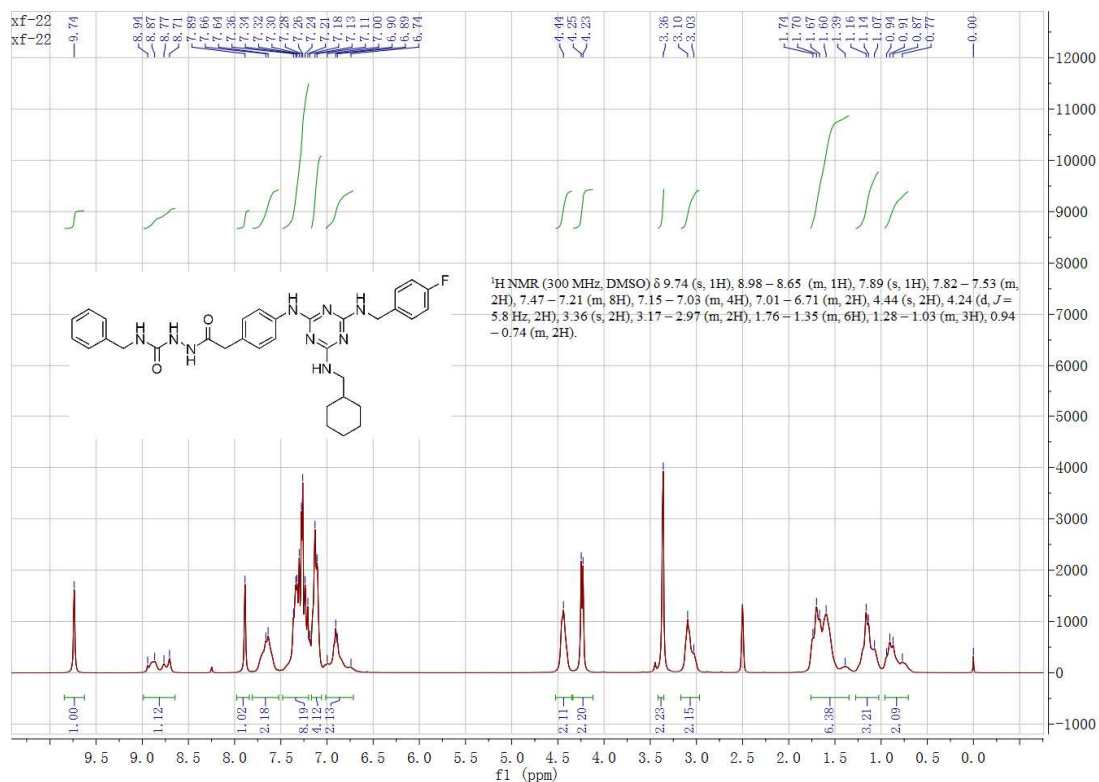
¹³C-NMR of 9m



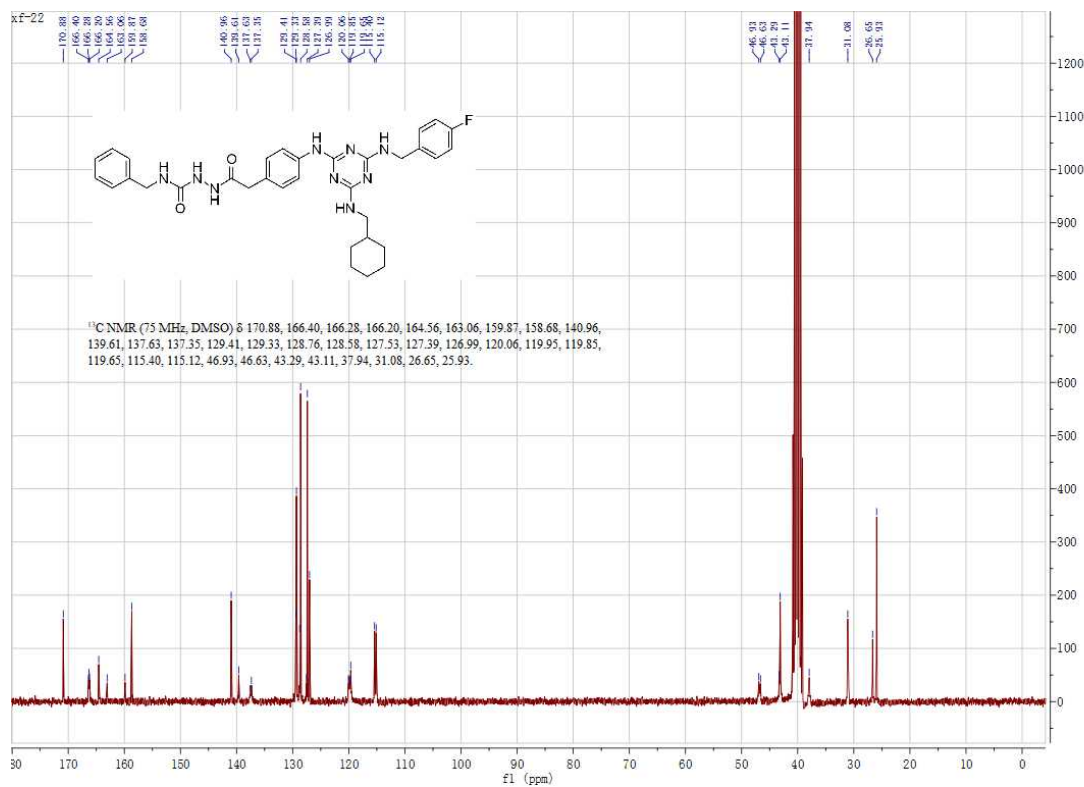
HPLC purity of 9m



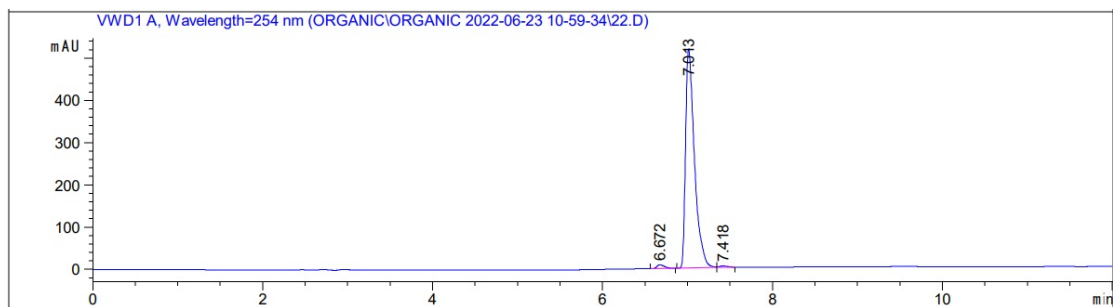
ESI-MS of 9m



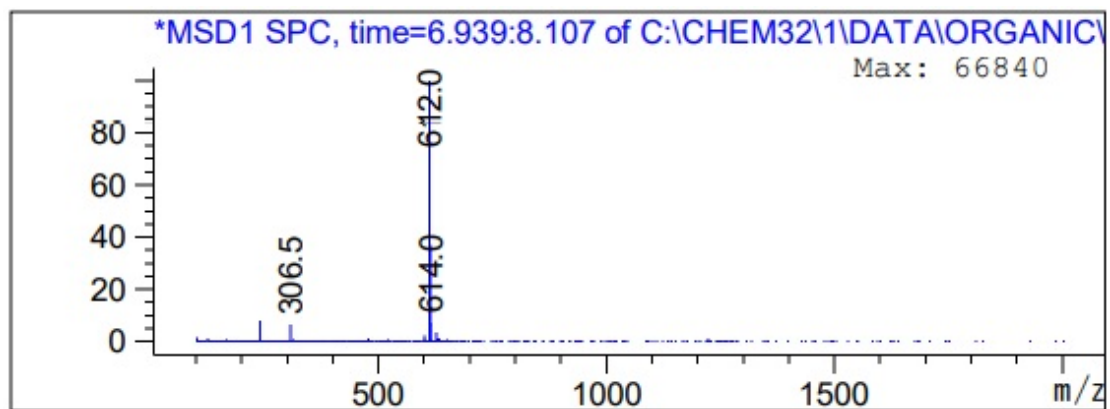
^1H -NMR of 9n



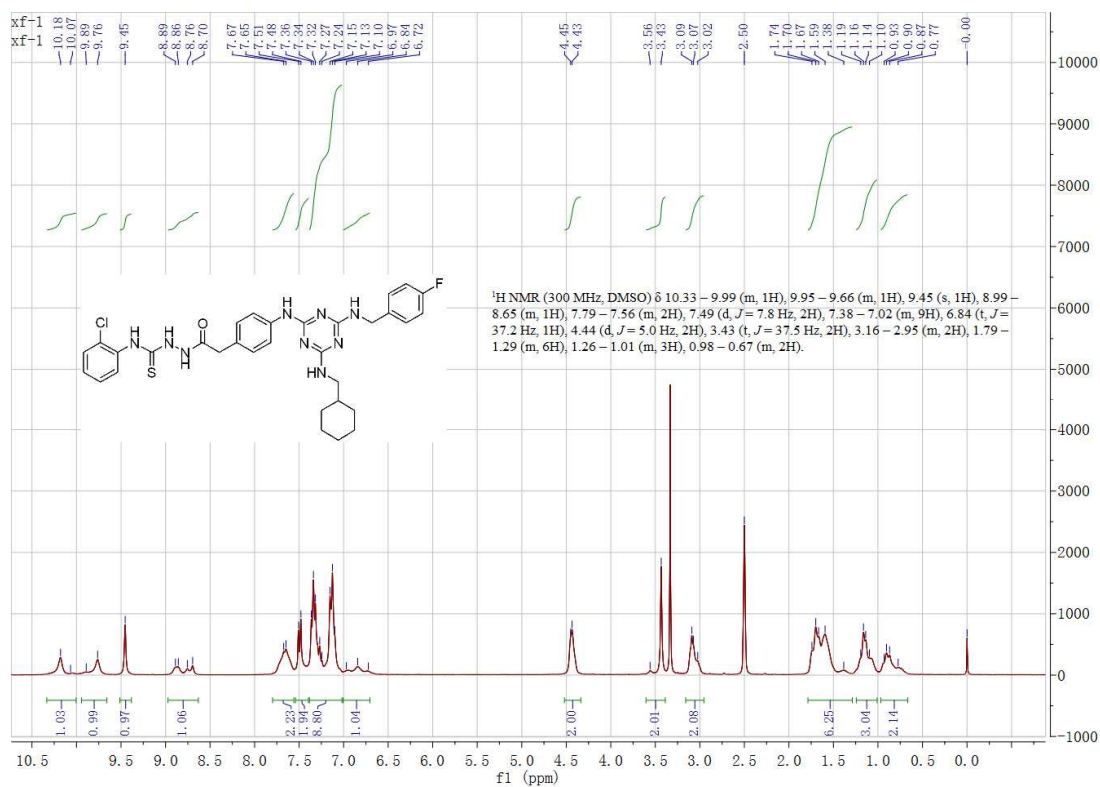
^{13}C -NMR of 9n



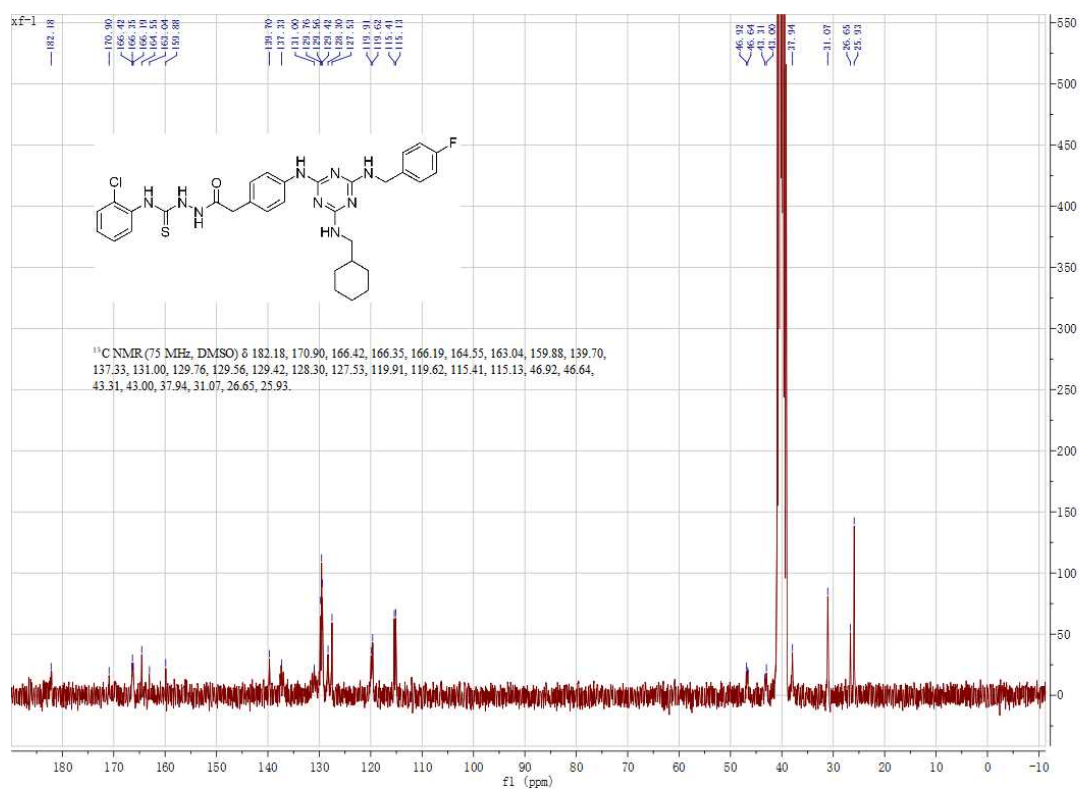
HPLC purity of 9n



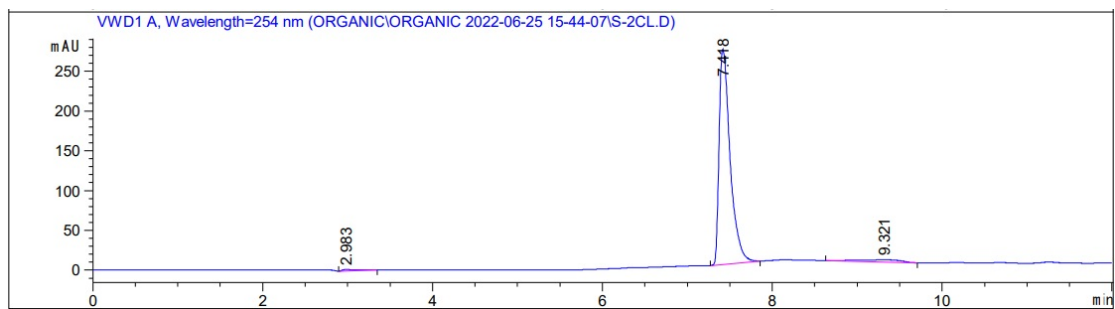
ESI-MS of 9n



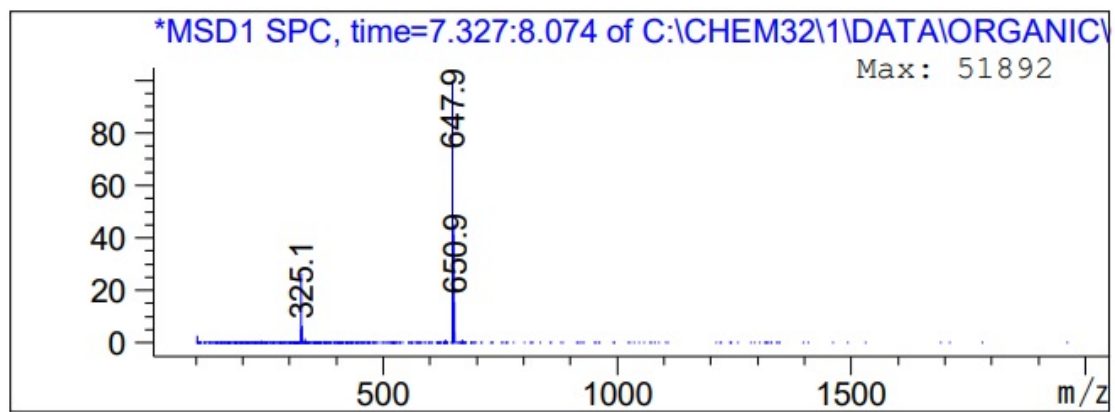
¹H-NMR of 10a



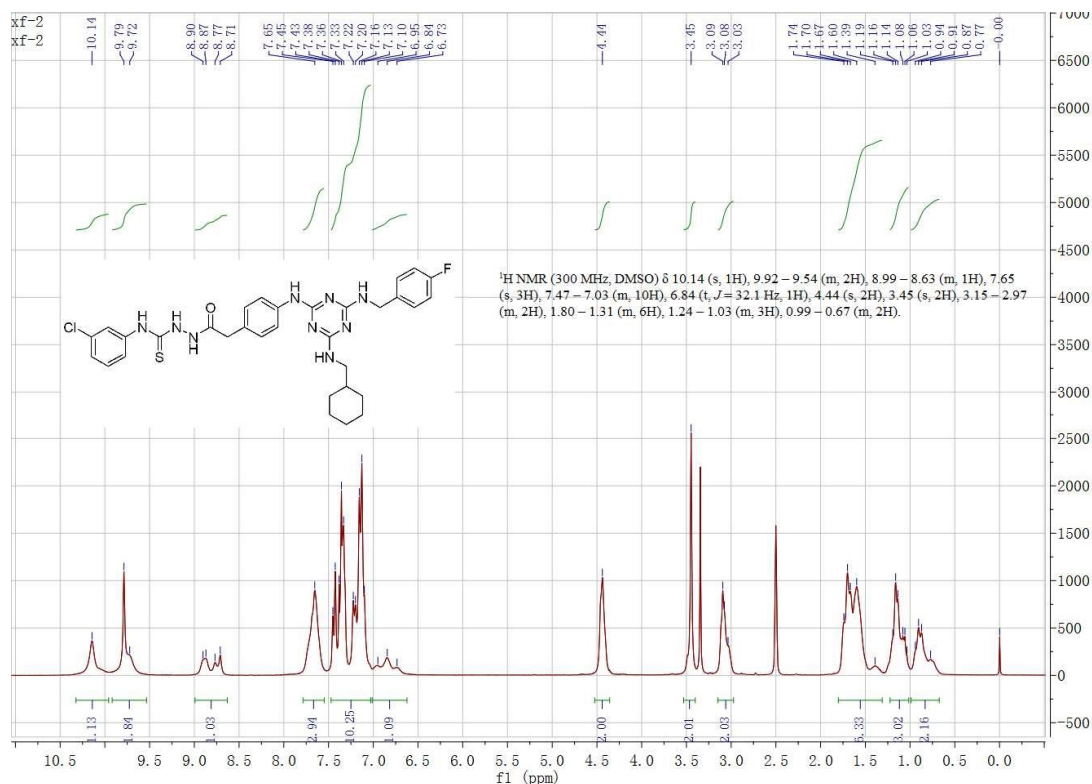
¹³C-NMR of 10a



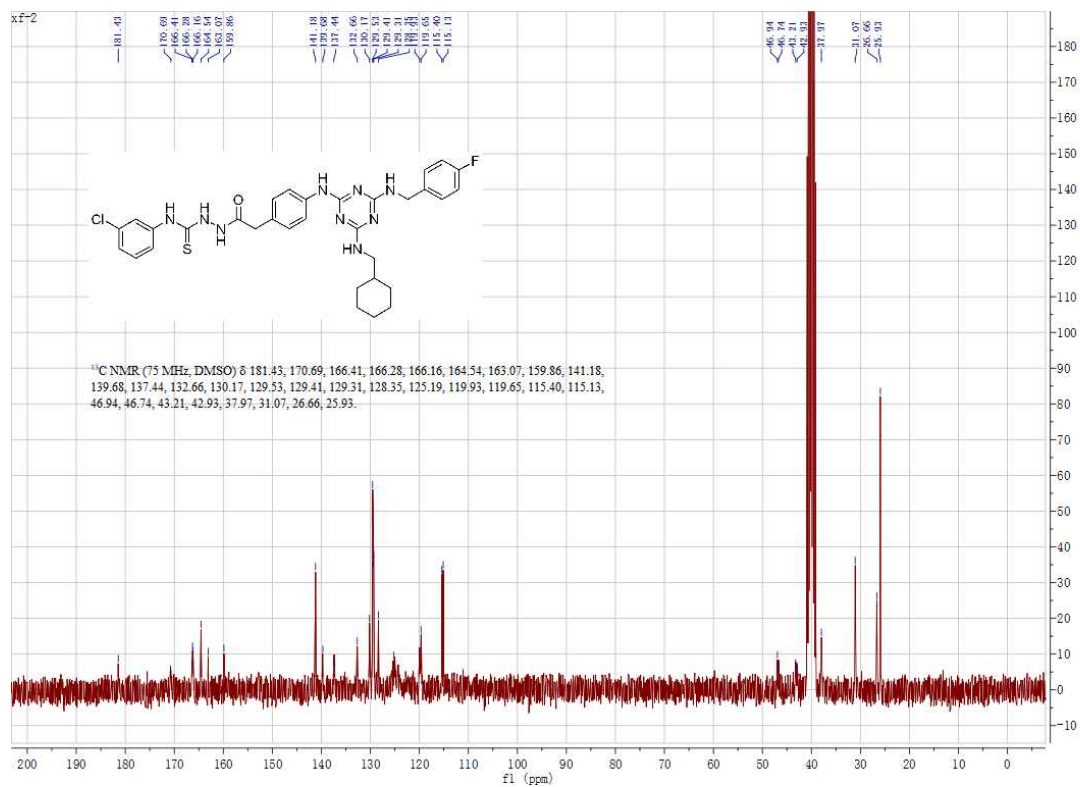
HPLC purity of 10a



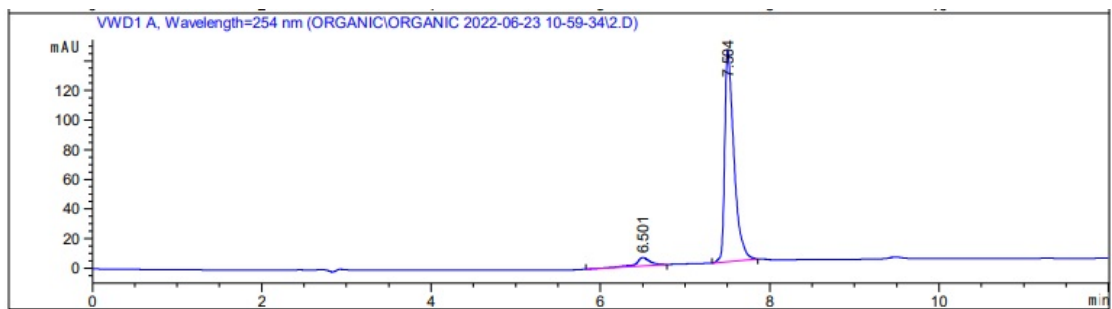
ESI-MS of 10a



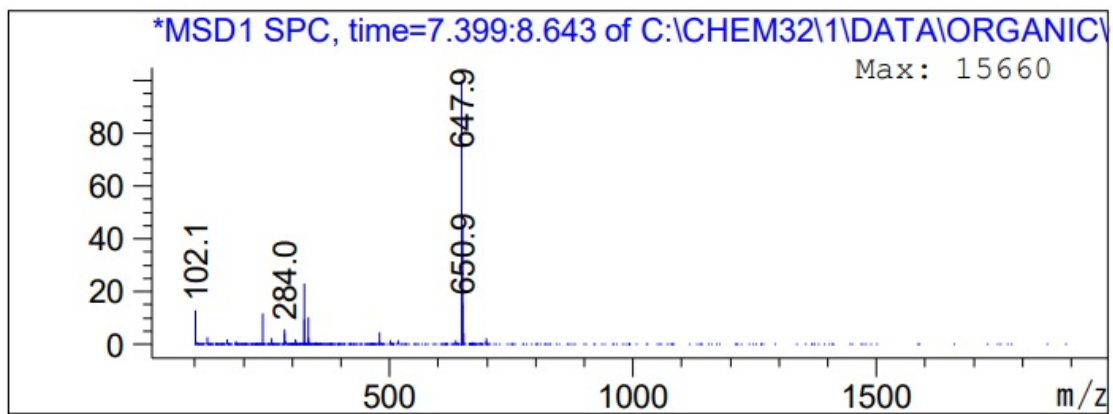
¹H-NMR of 10b



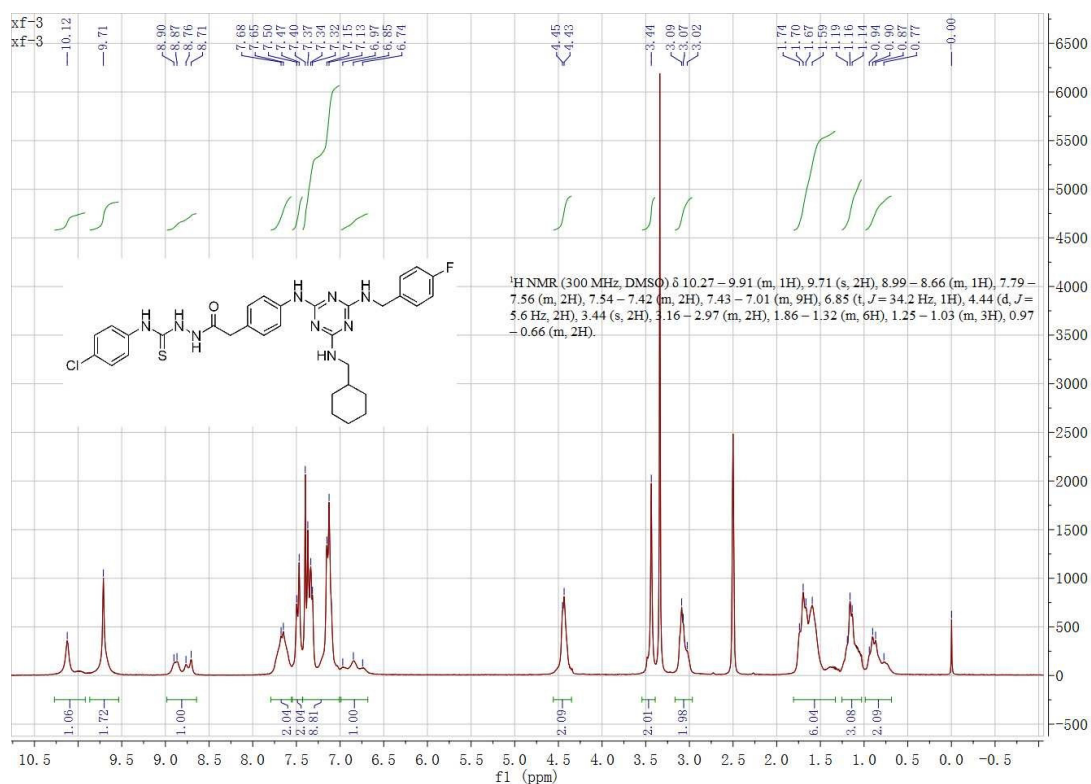
¹³C-NMR of 10b



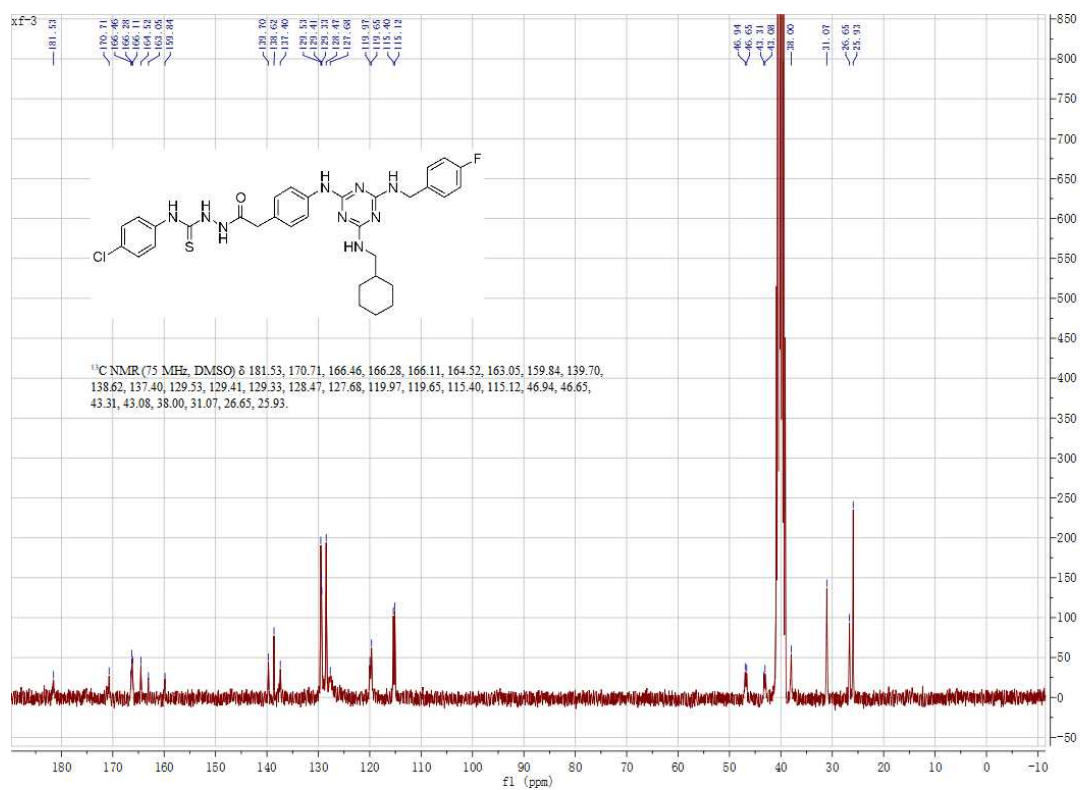
HPLC purity of 10b



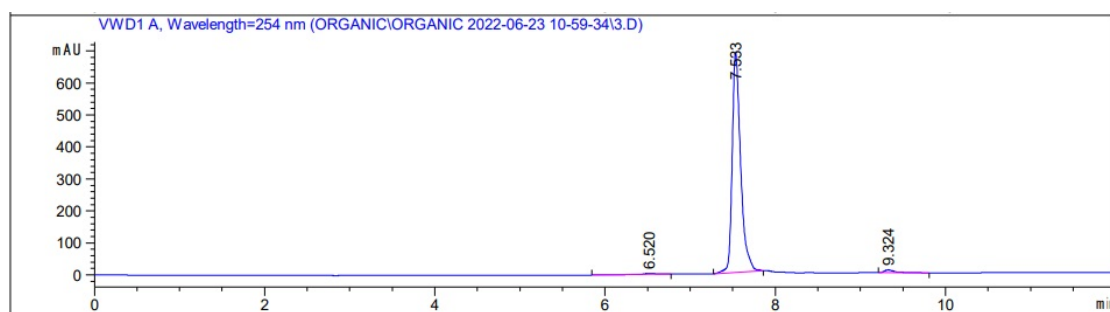
ESI-MS of 10b



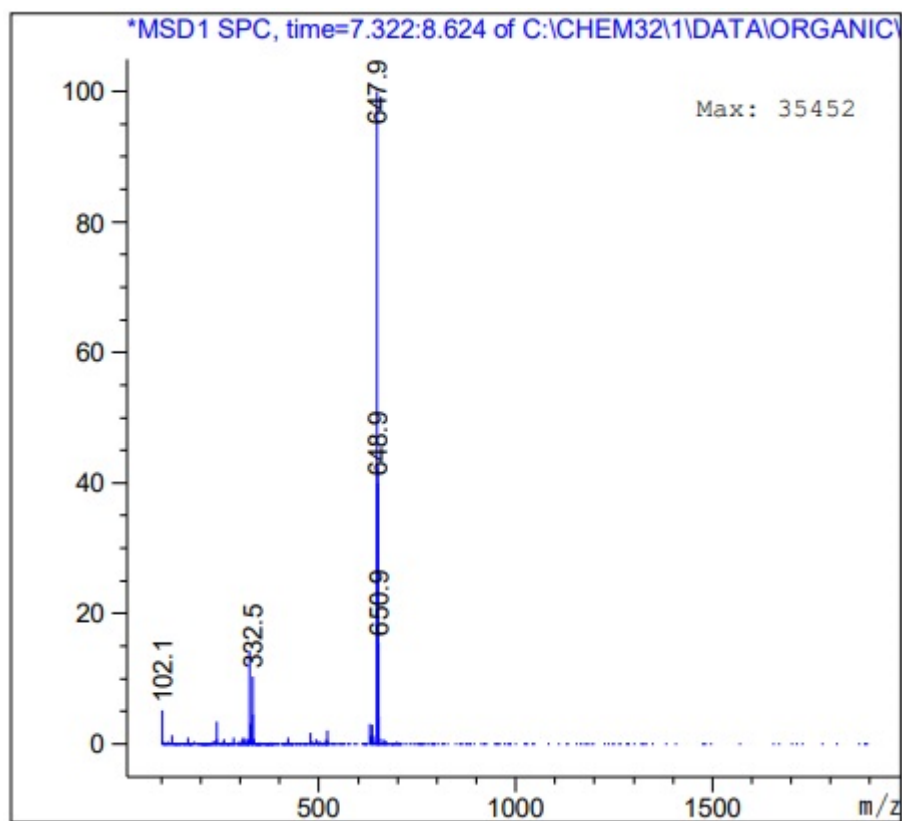
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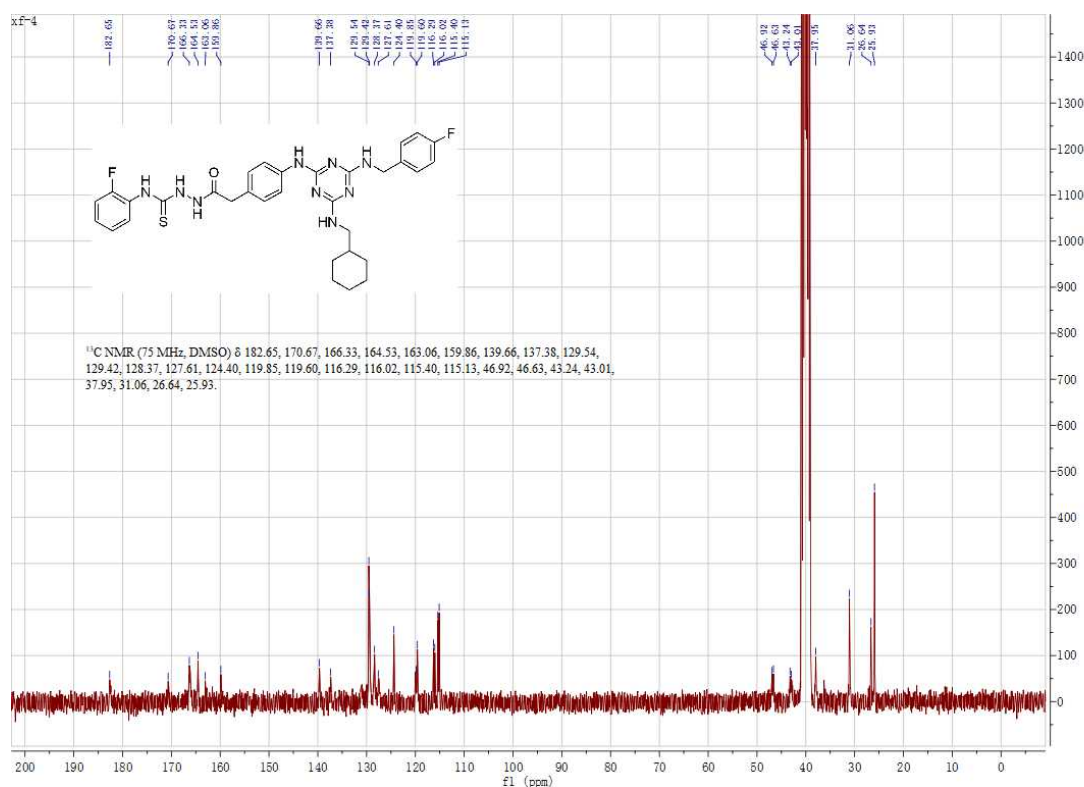
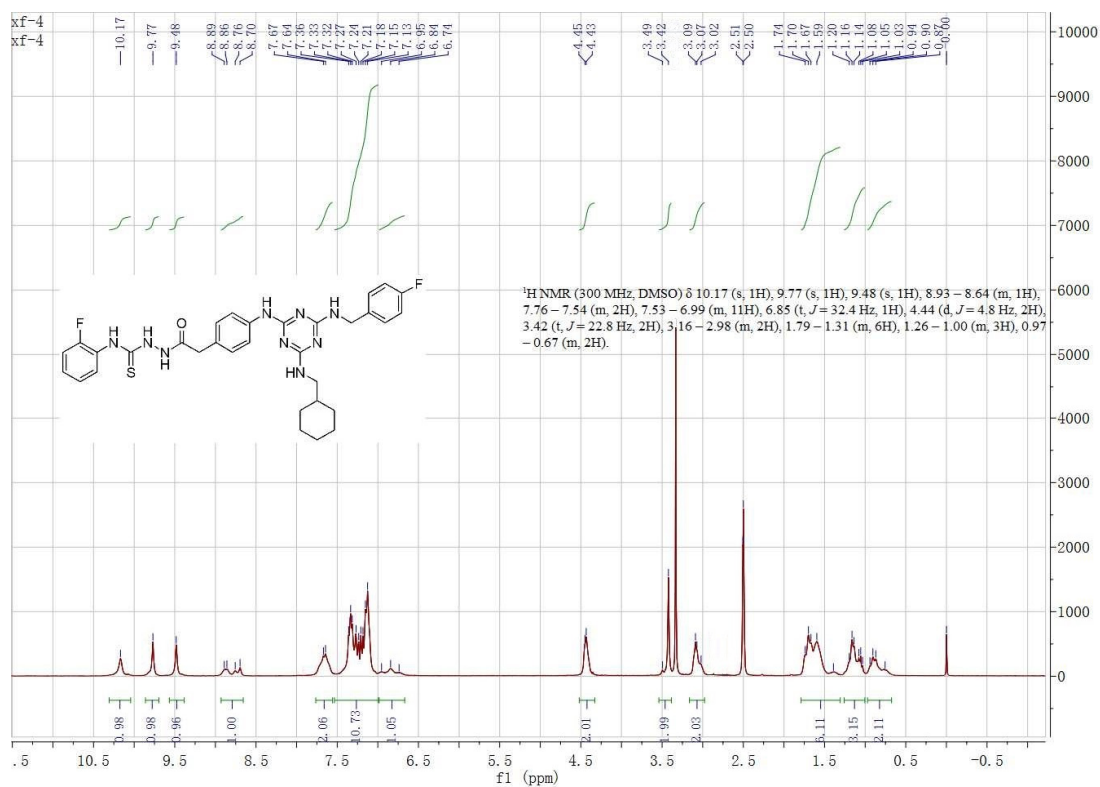
¹³C-NMR of 10c

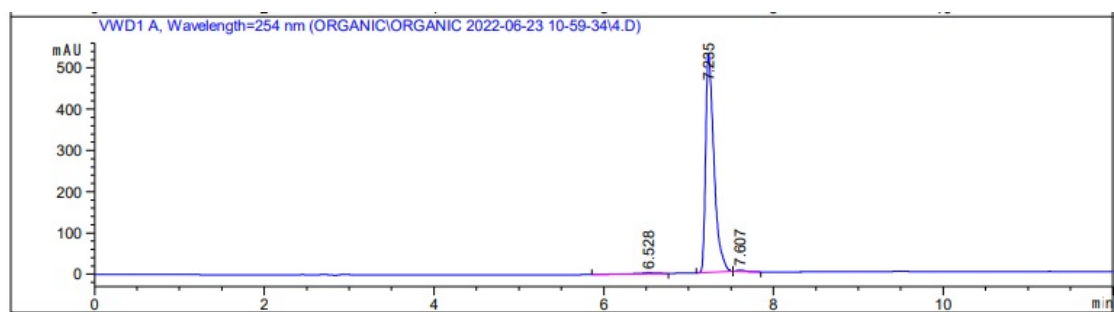


HPLC purity of 10c

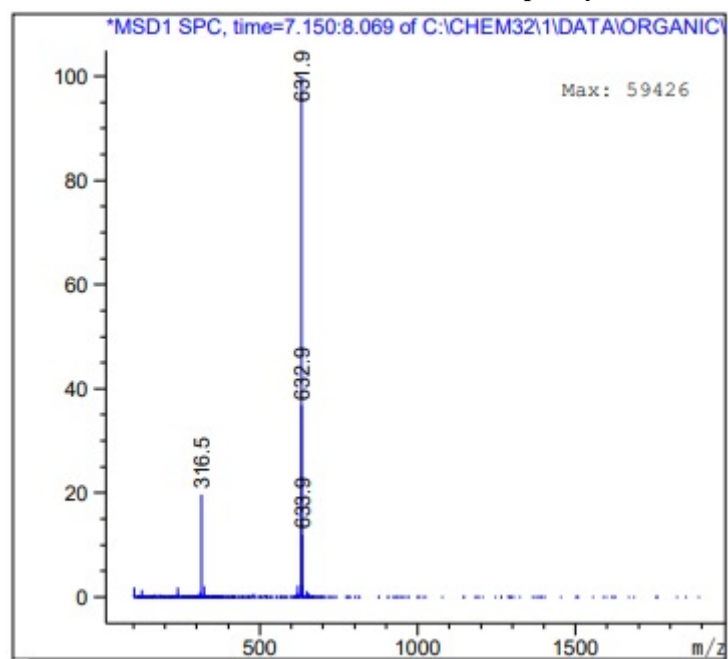


ESI-MS of 10c

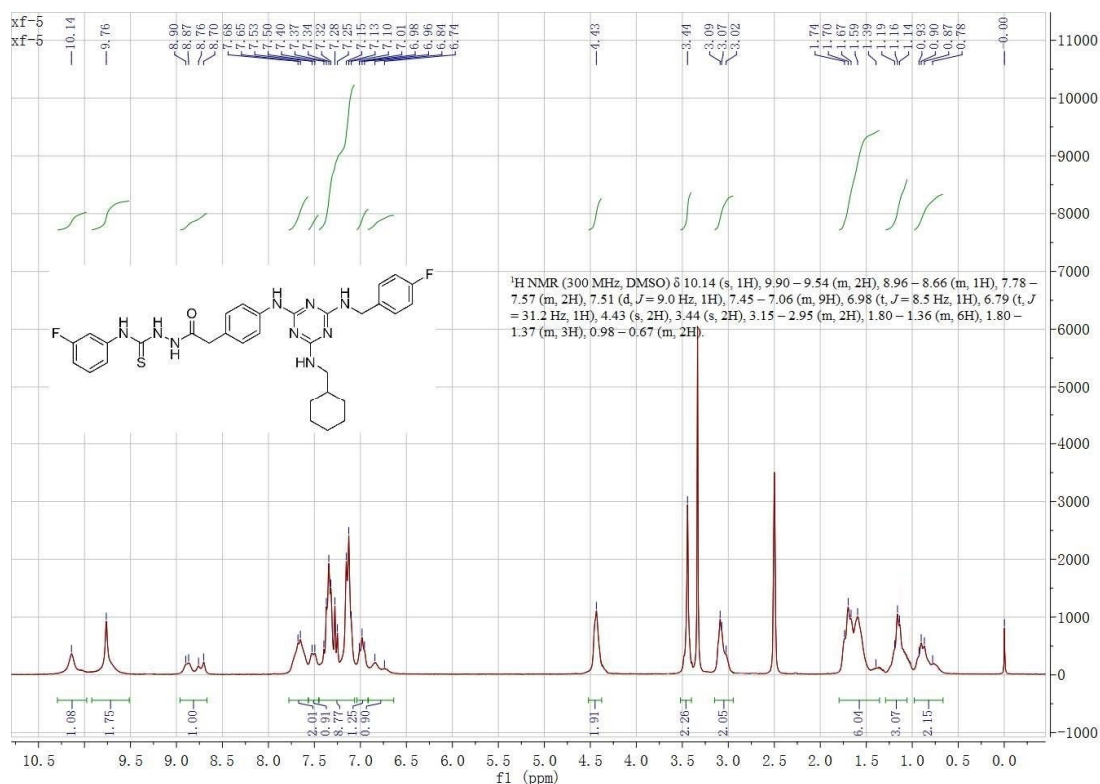




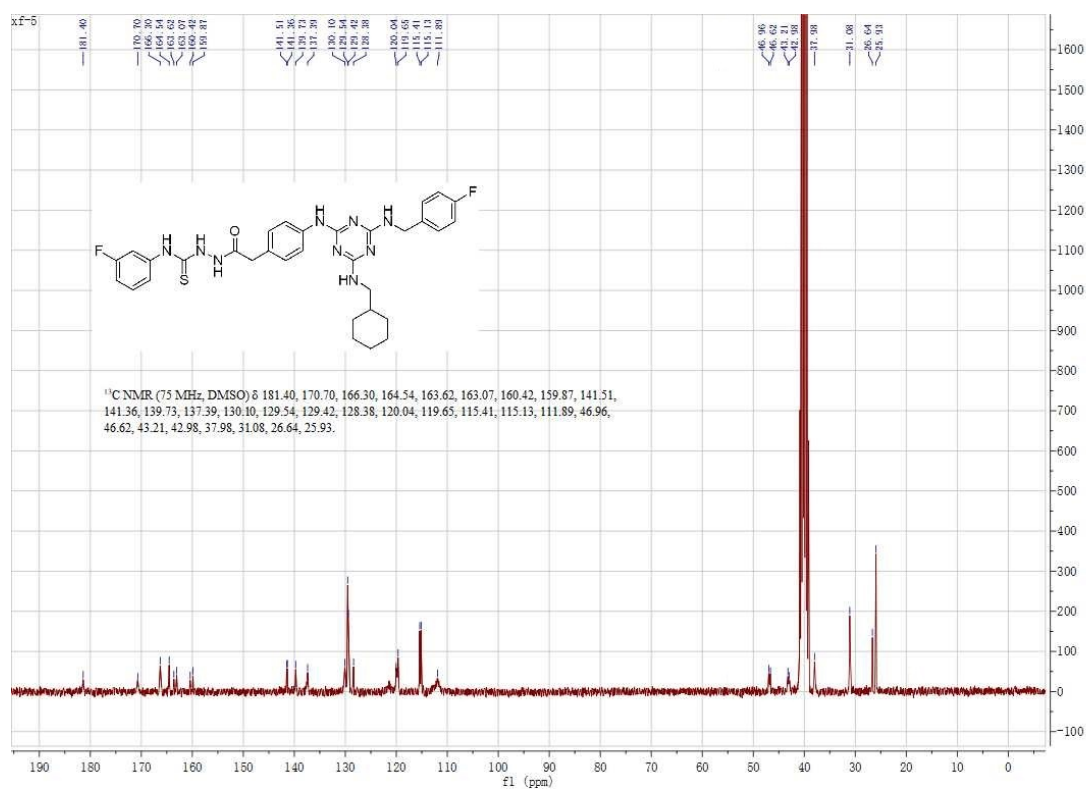
HPLC purity of 10d



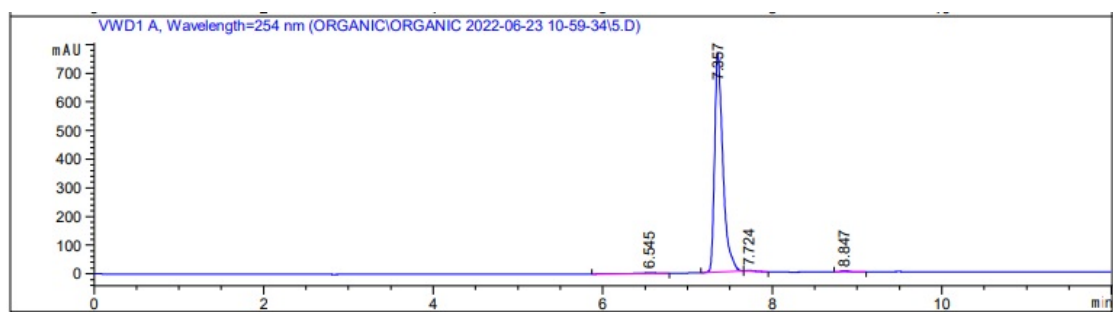
ESI-MS of 10d



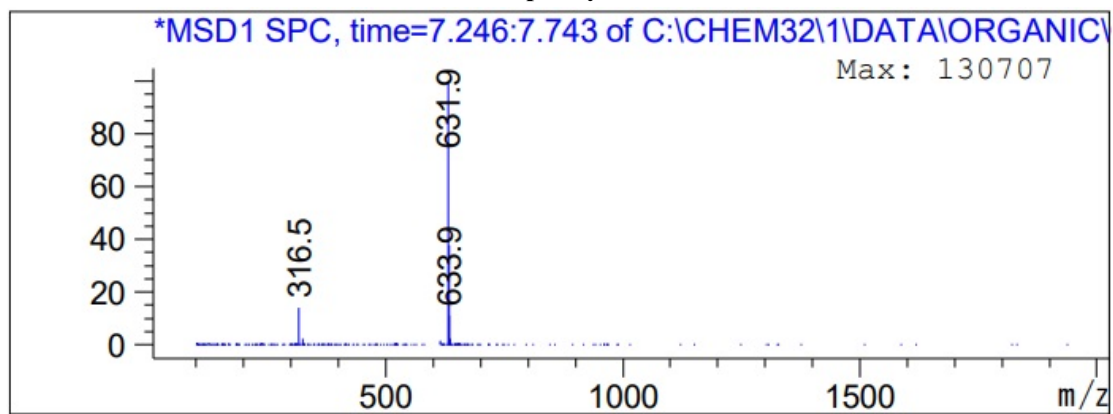
¹H-NMR of 10e



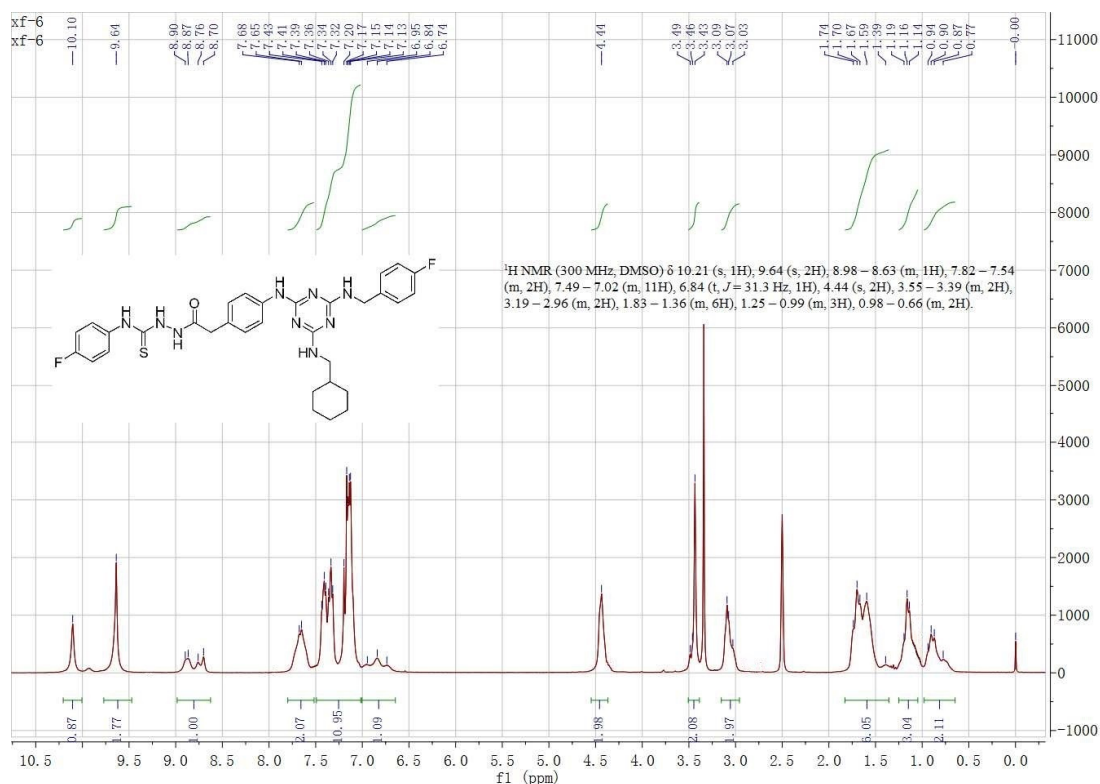
¹³C-NMR of 10e



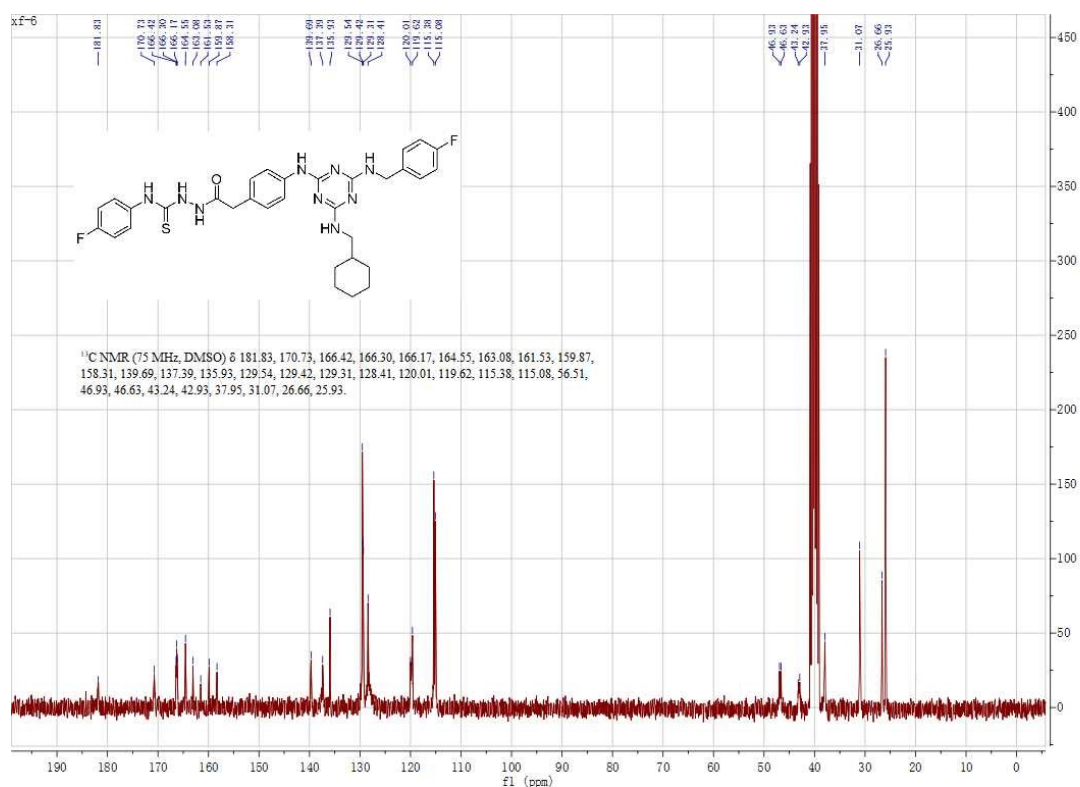
HPLC purity of 10e



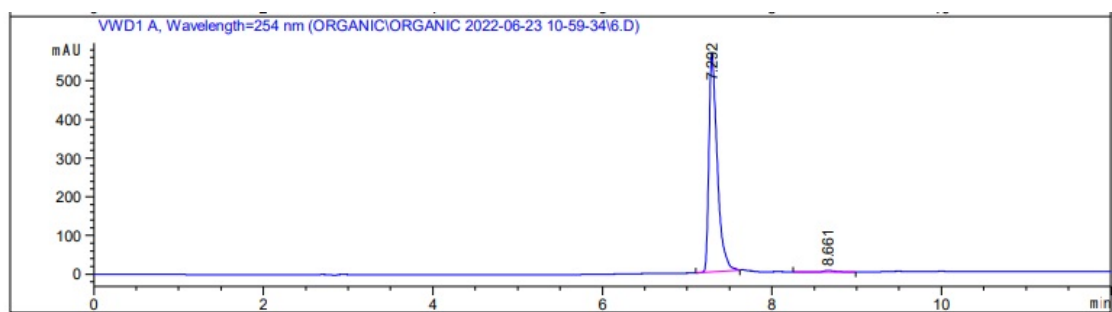
ESI-MS of 10e



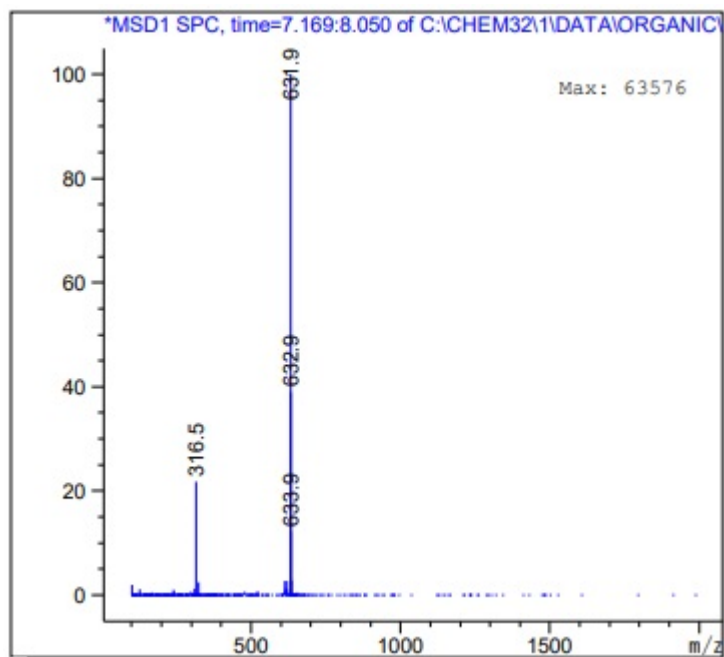
¹H-NMR of 10f



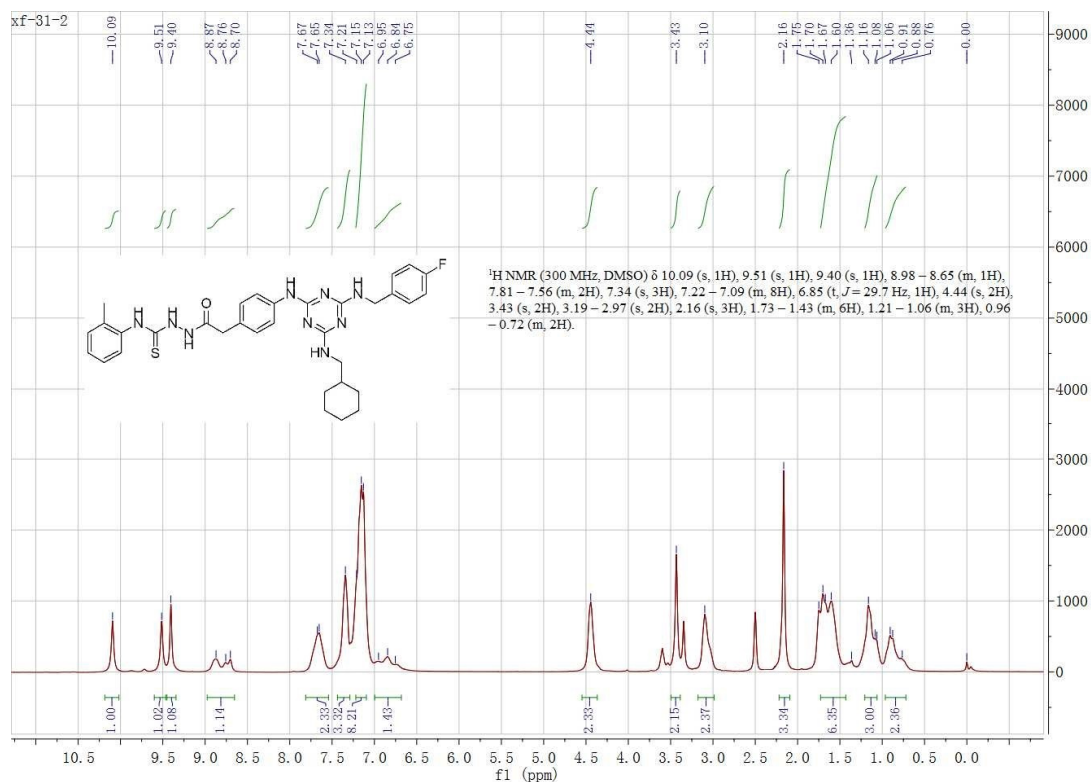
¹³C-NMR of 10f



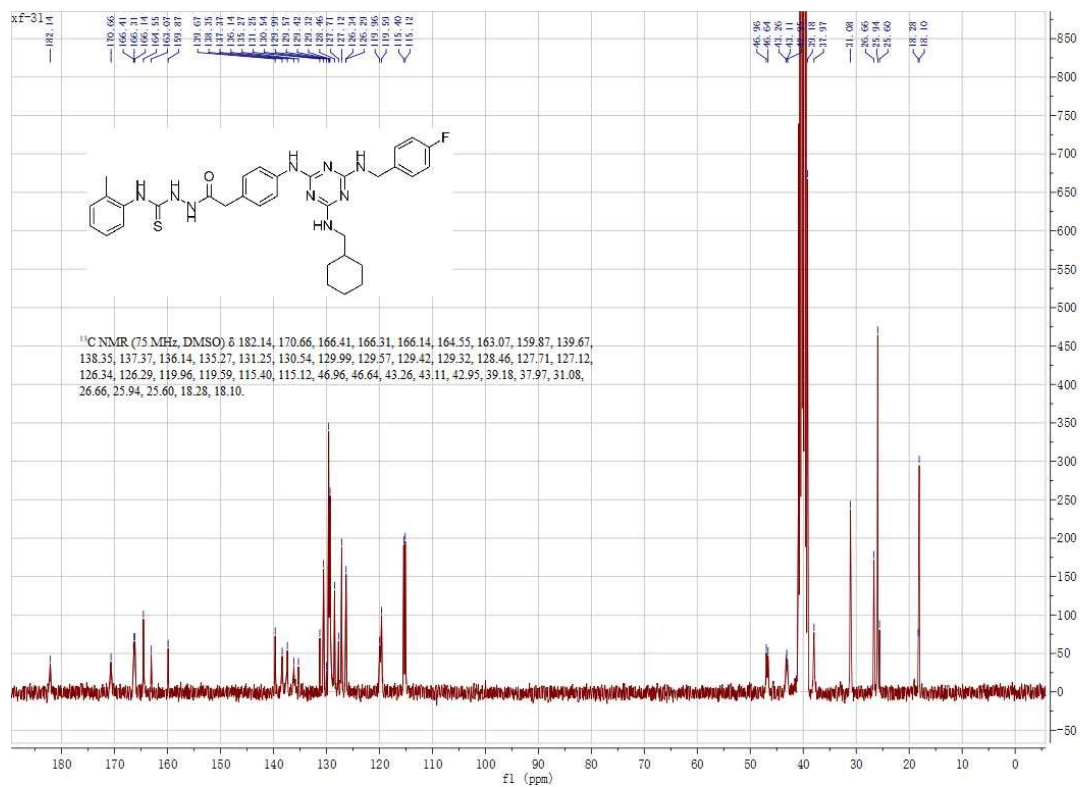
HPLC purity of 10f



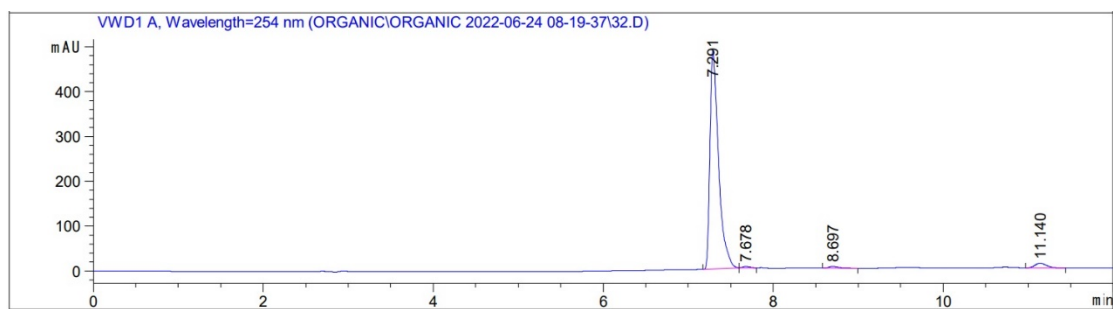
ESI-MS of 10f



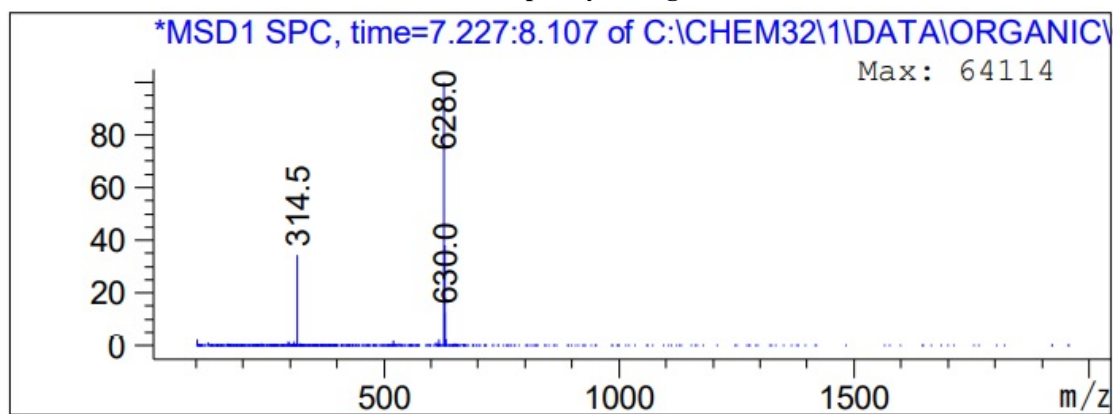
¹H-NMR of 10g



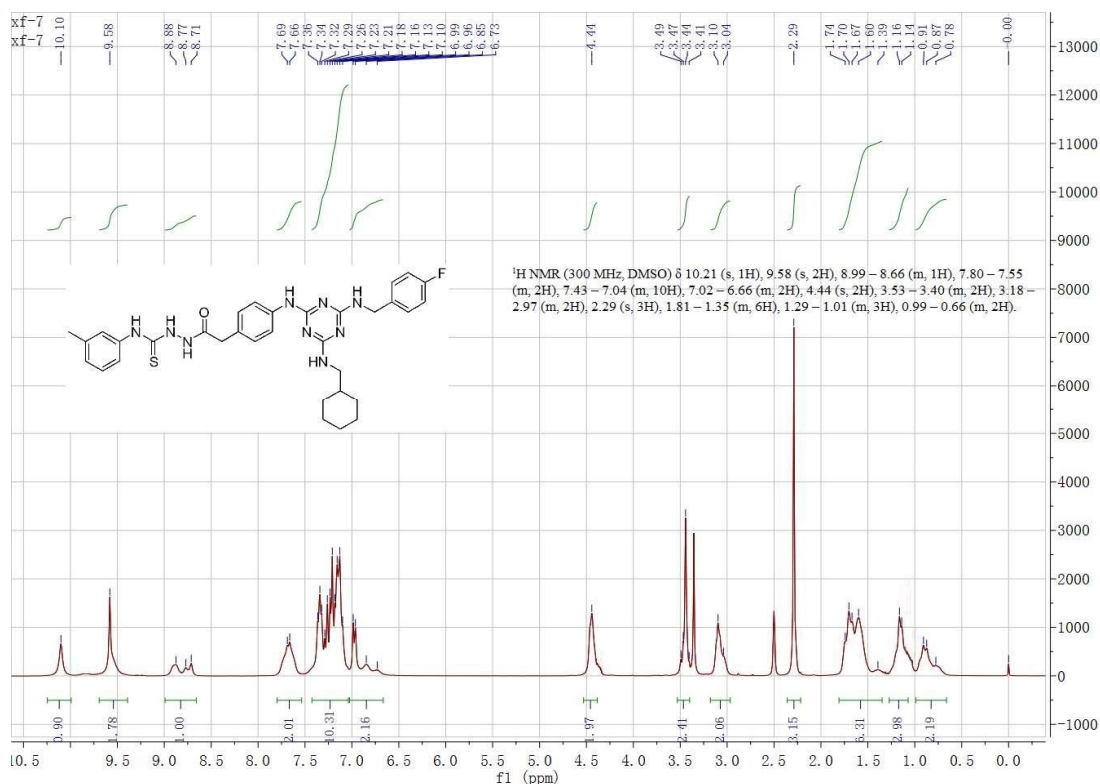
¹³C-NMR of 10g



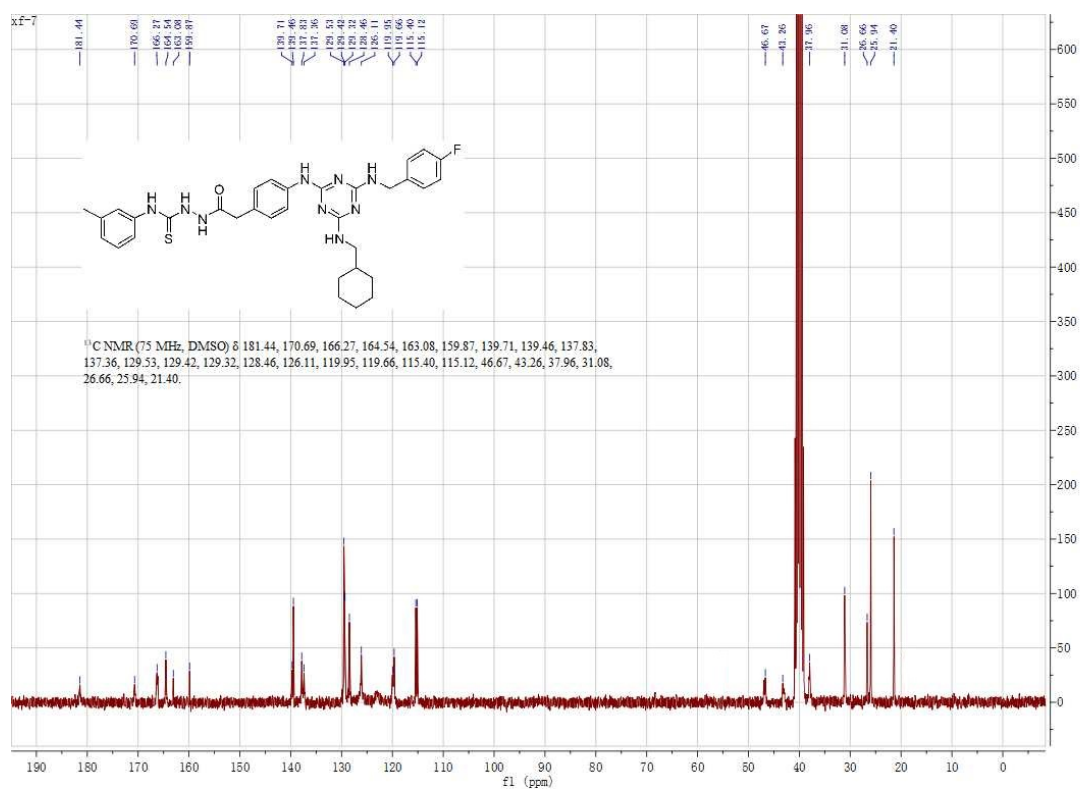
HPLC purity of 10g



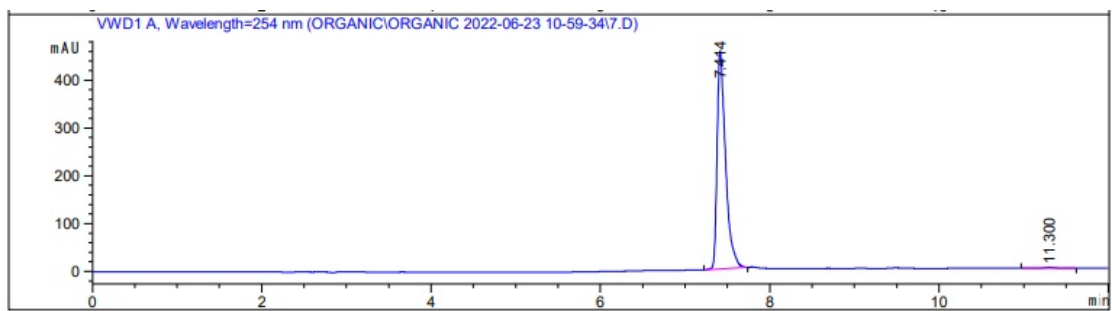
ESI-MS of 10g



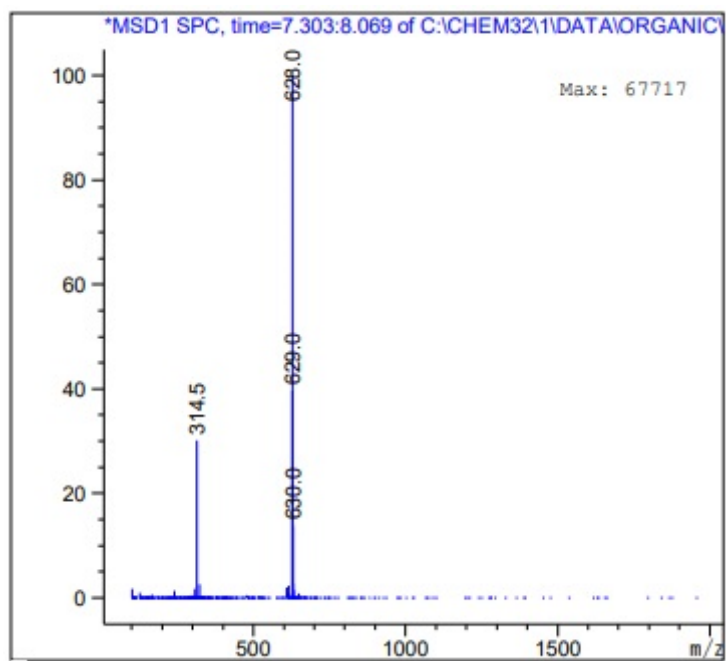
¹H-NMR of 10h



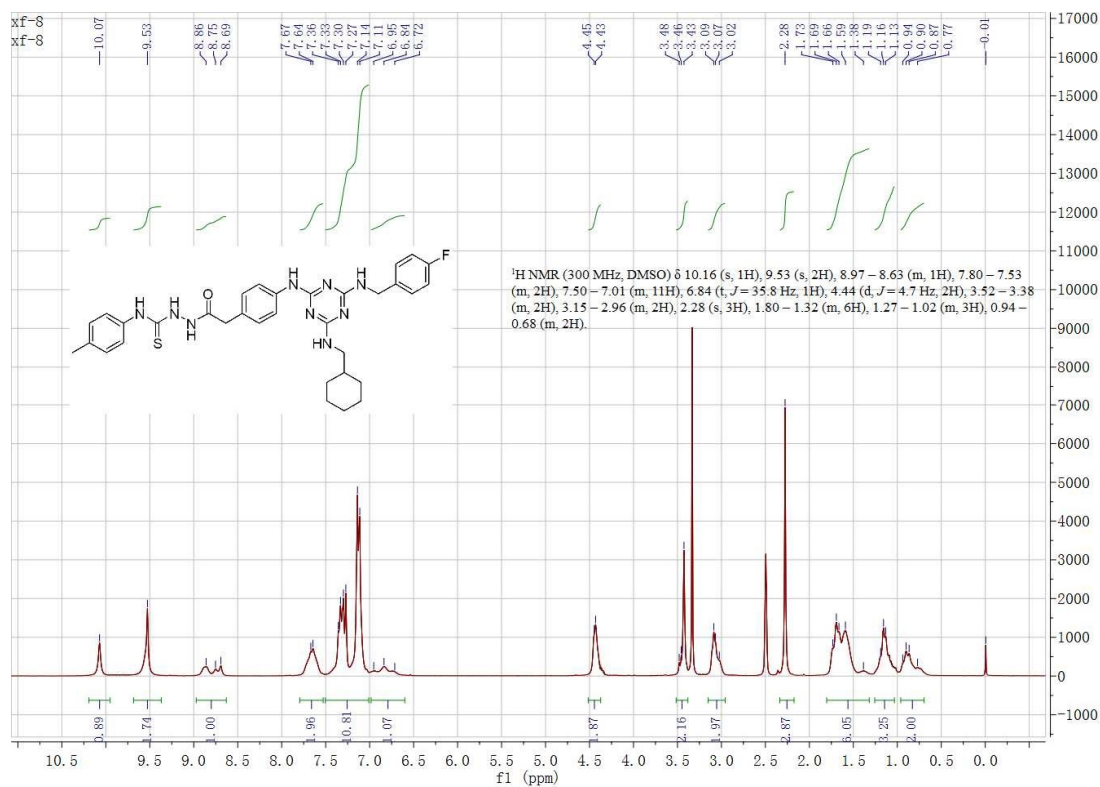
¹³C-NMR of 10h



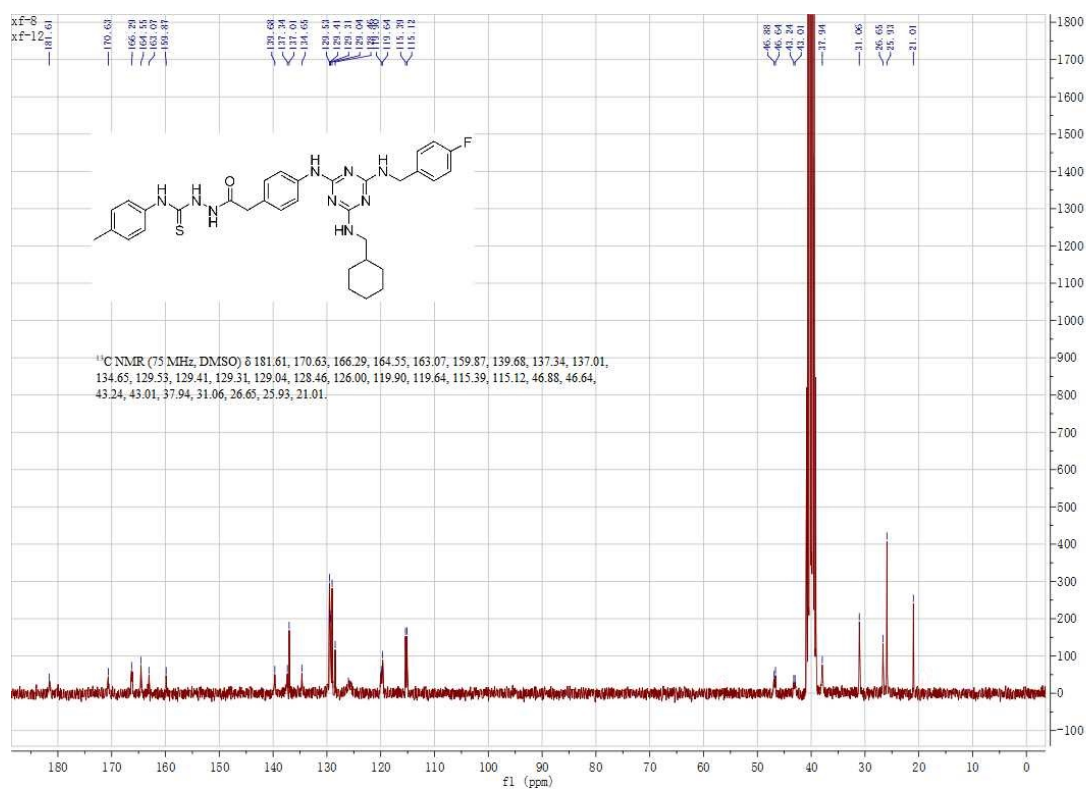
HPLC purity of 10h



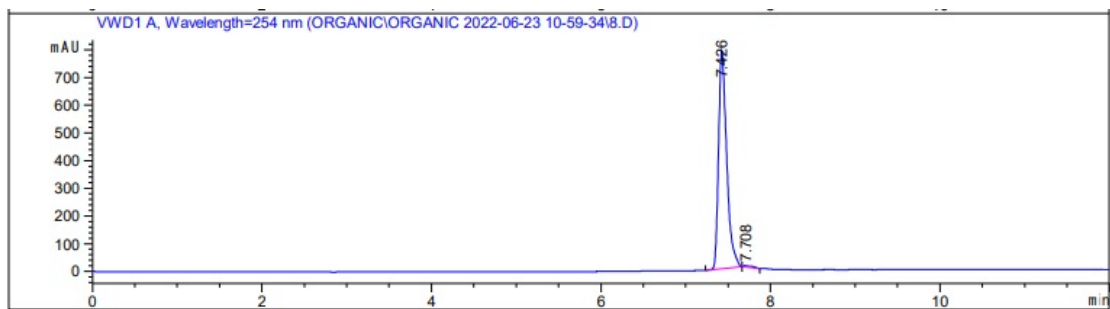
ESI-MS of 10h



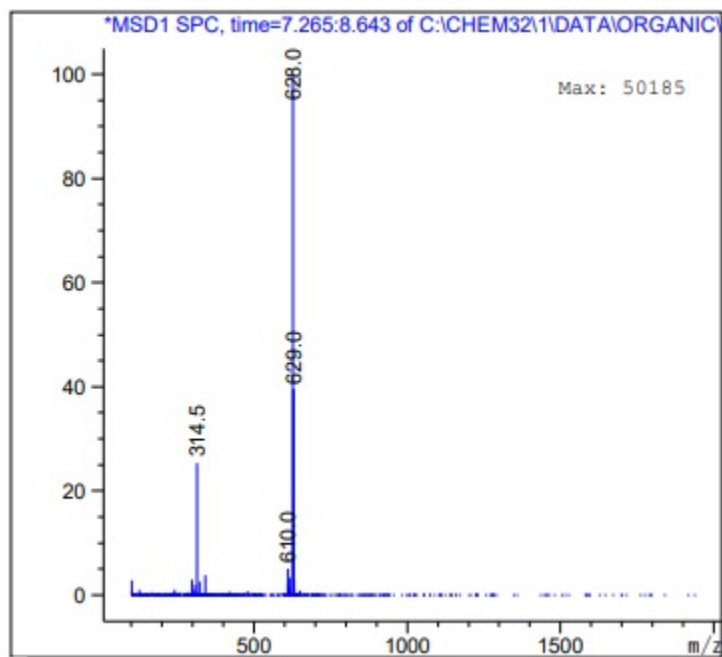
¹H-NMR of 10i



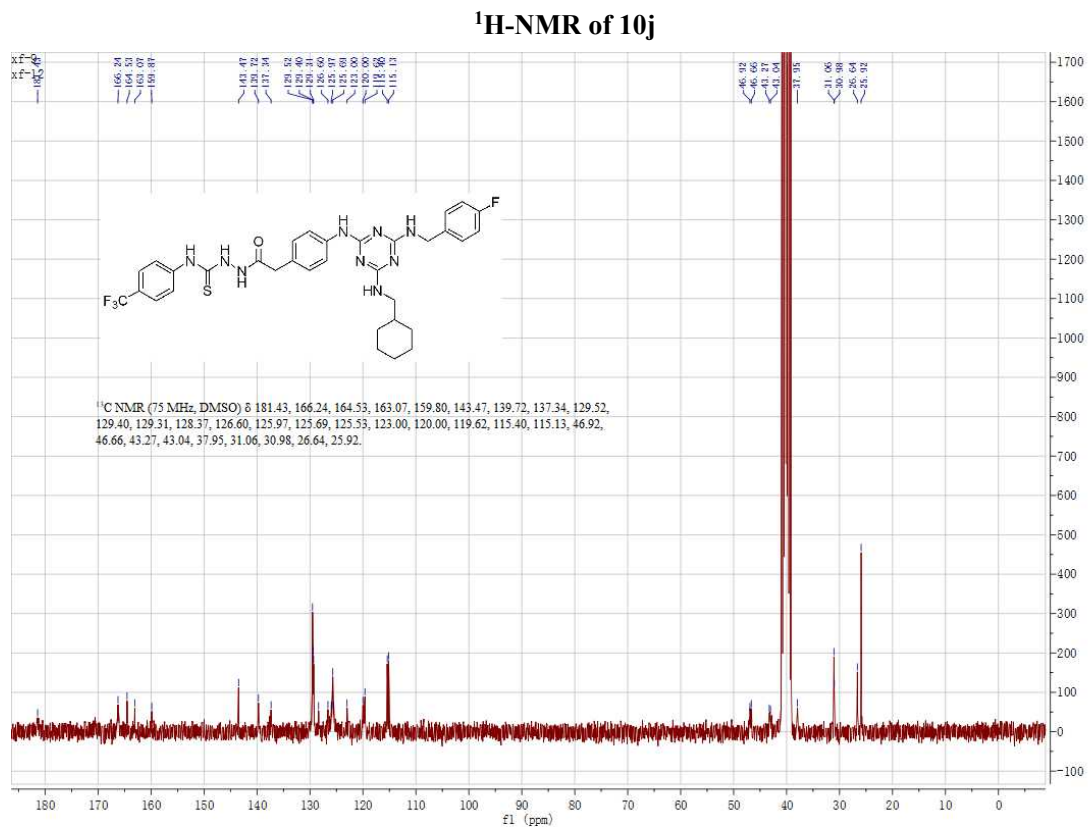
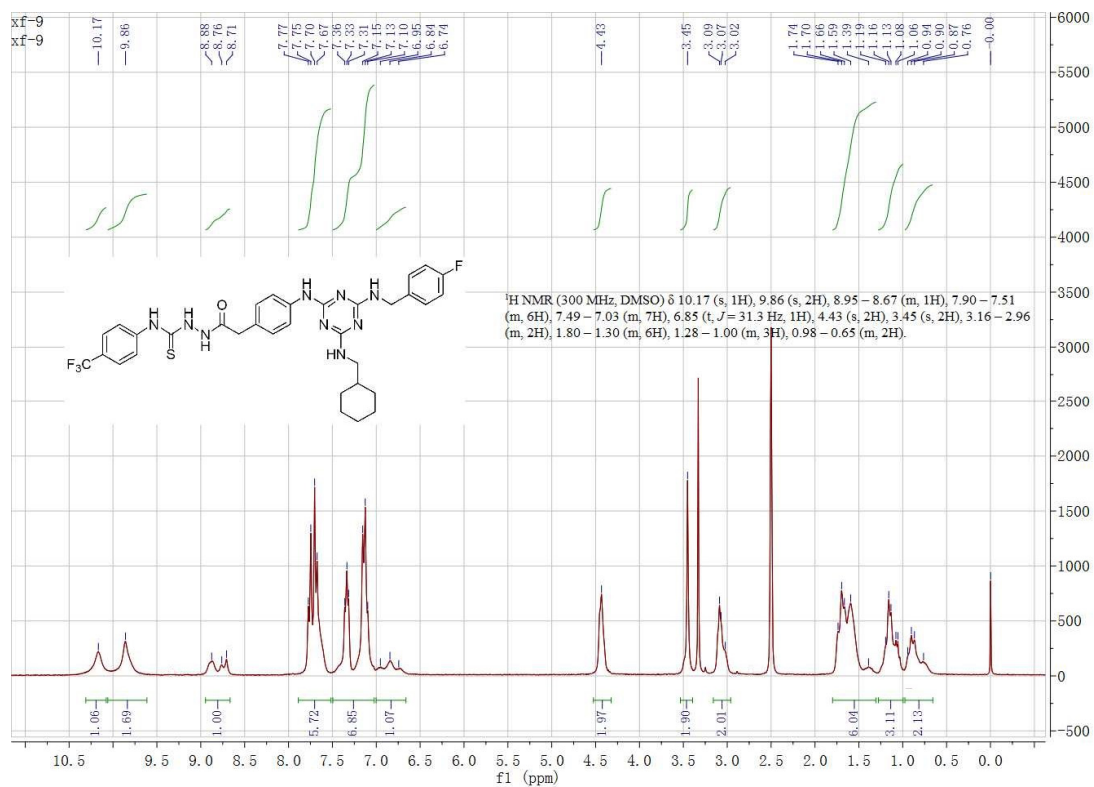
¹³C-NMR of 10i

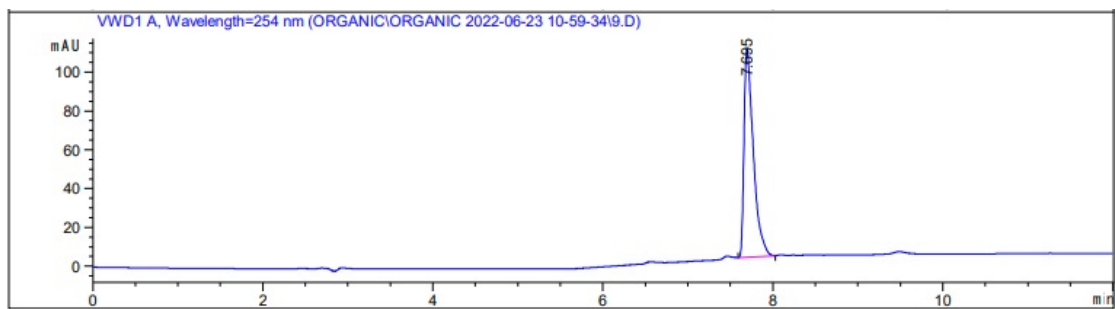


HPLC purity of 10i

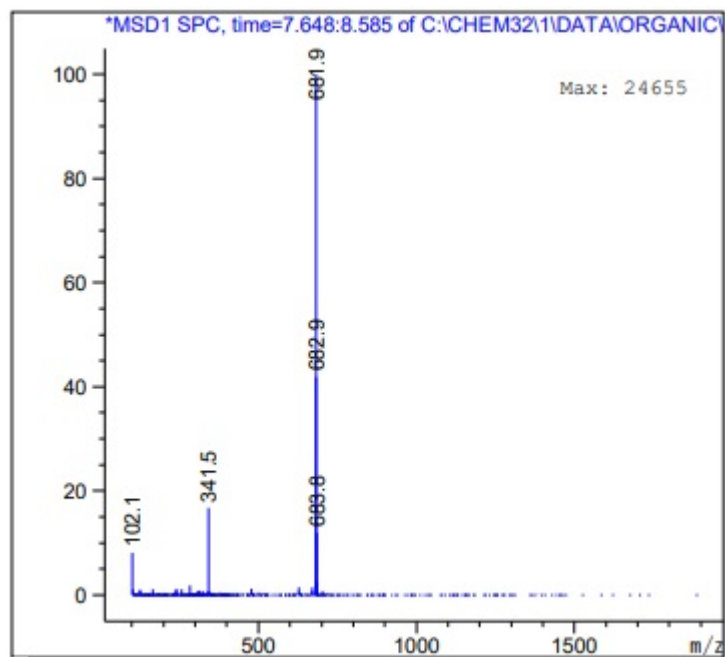


ESI-MS of 10i

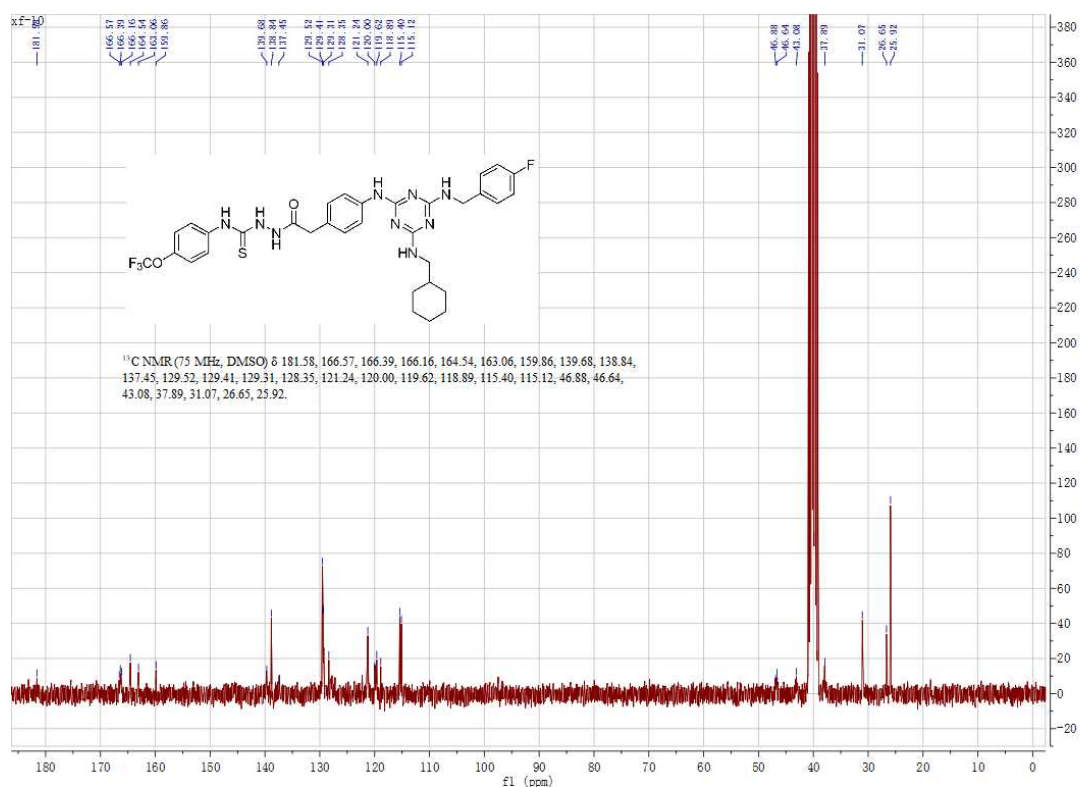
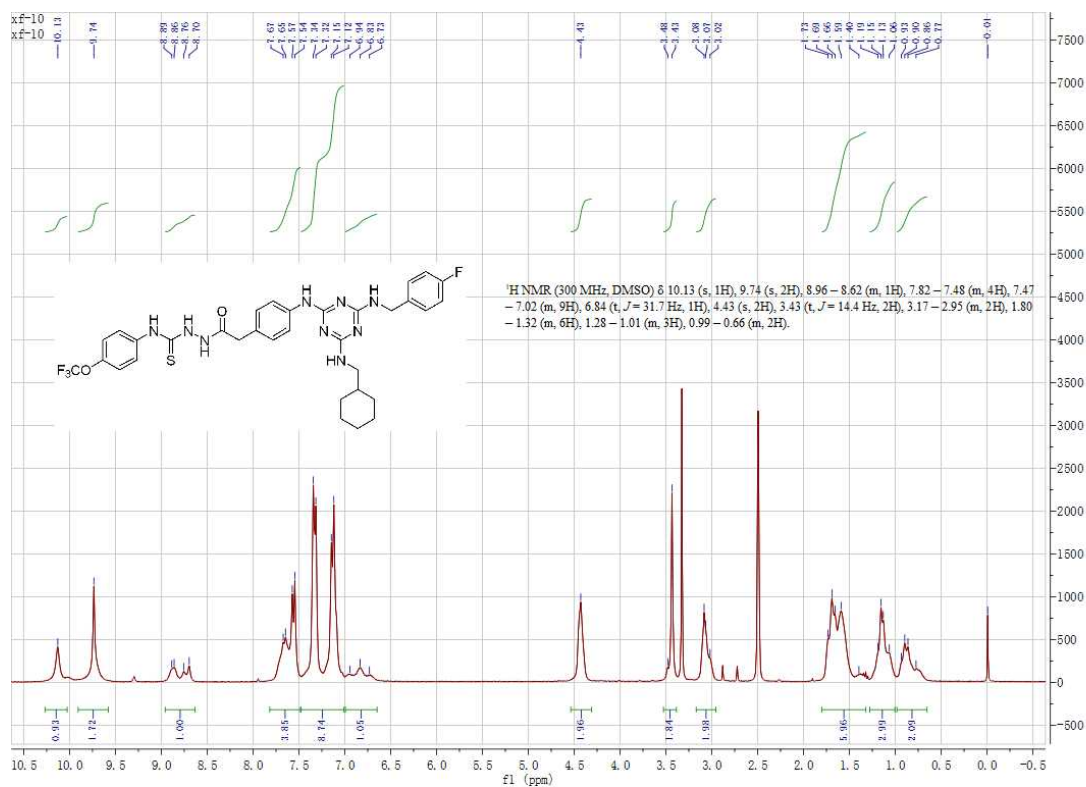


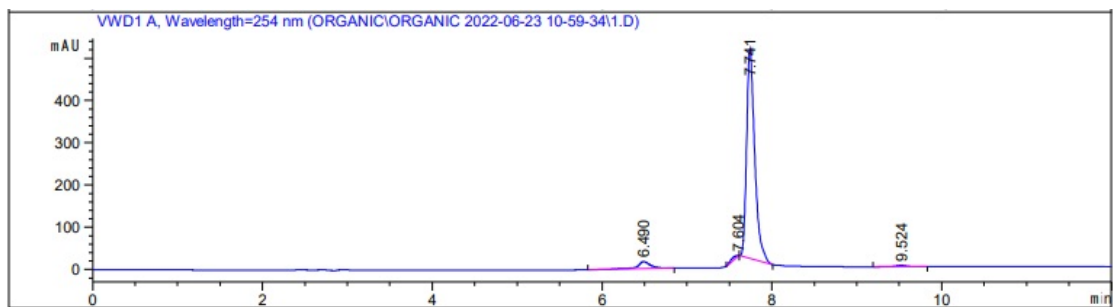


HPLC purity of 10j

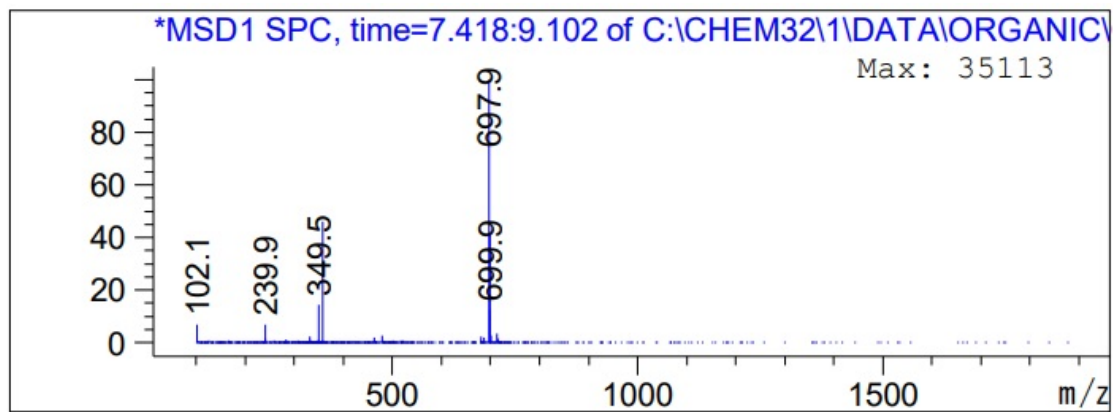


ESI-MS of 10j

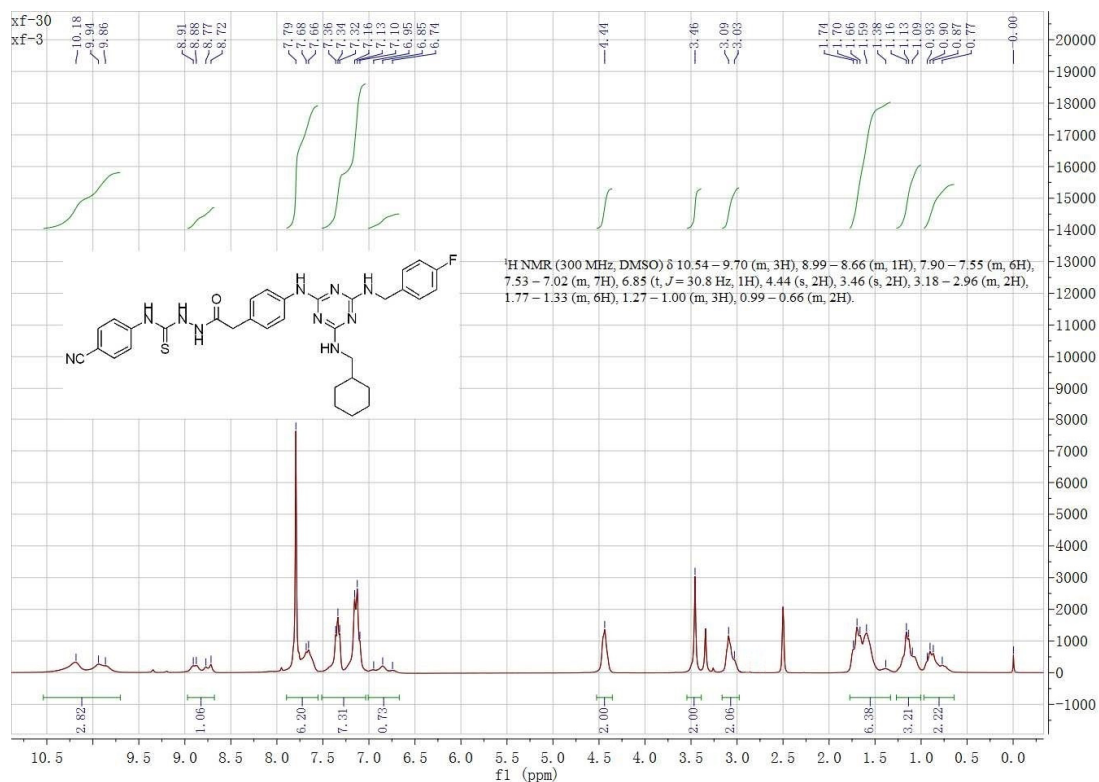




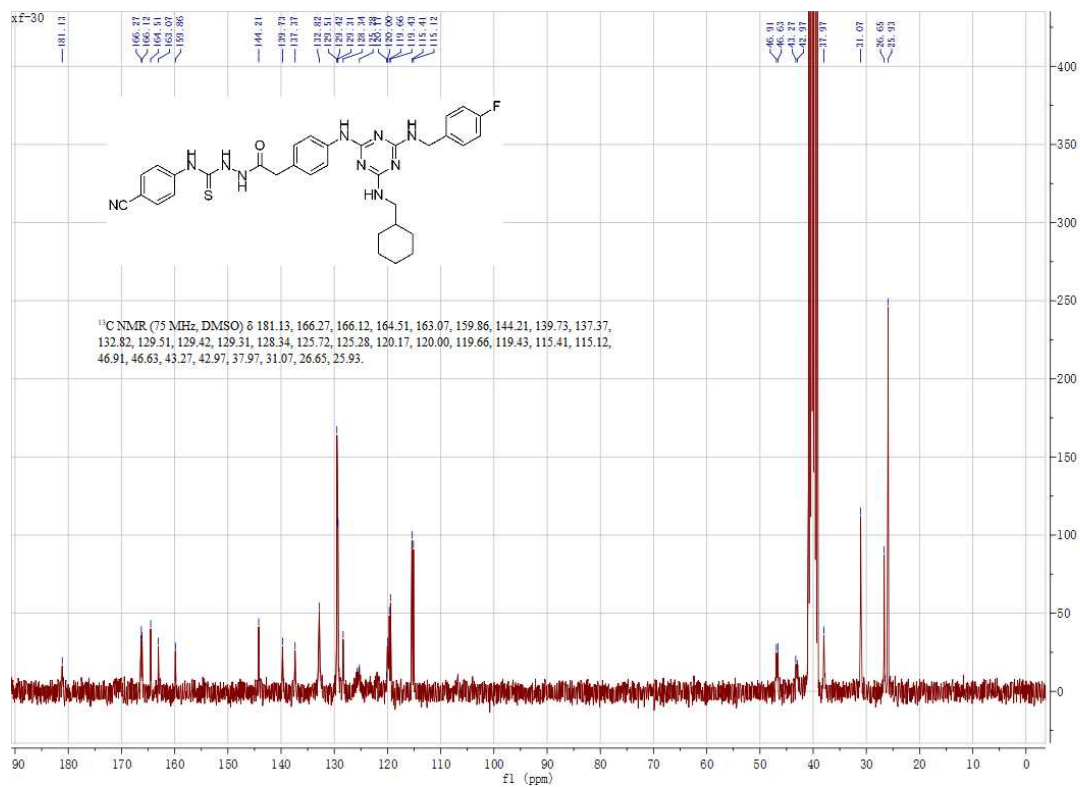
HPLC purity of 10k



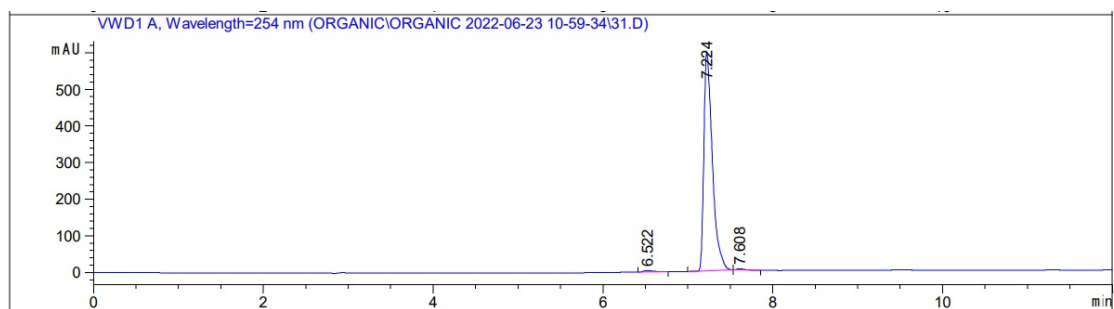
ESI-MS of 10k



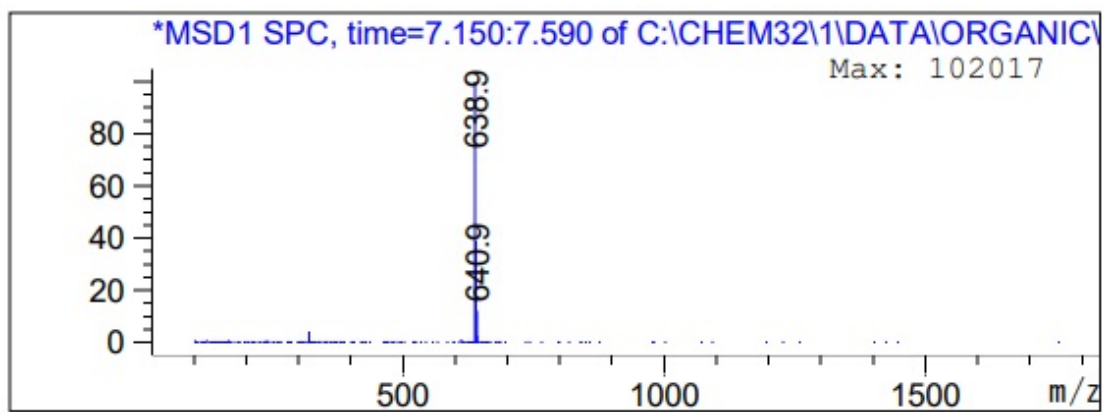
¹H-NMR of 10I



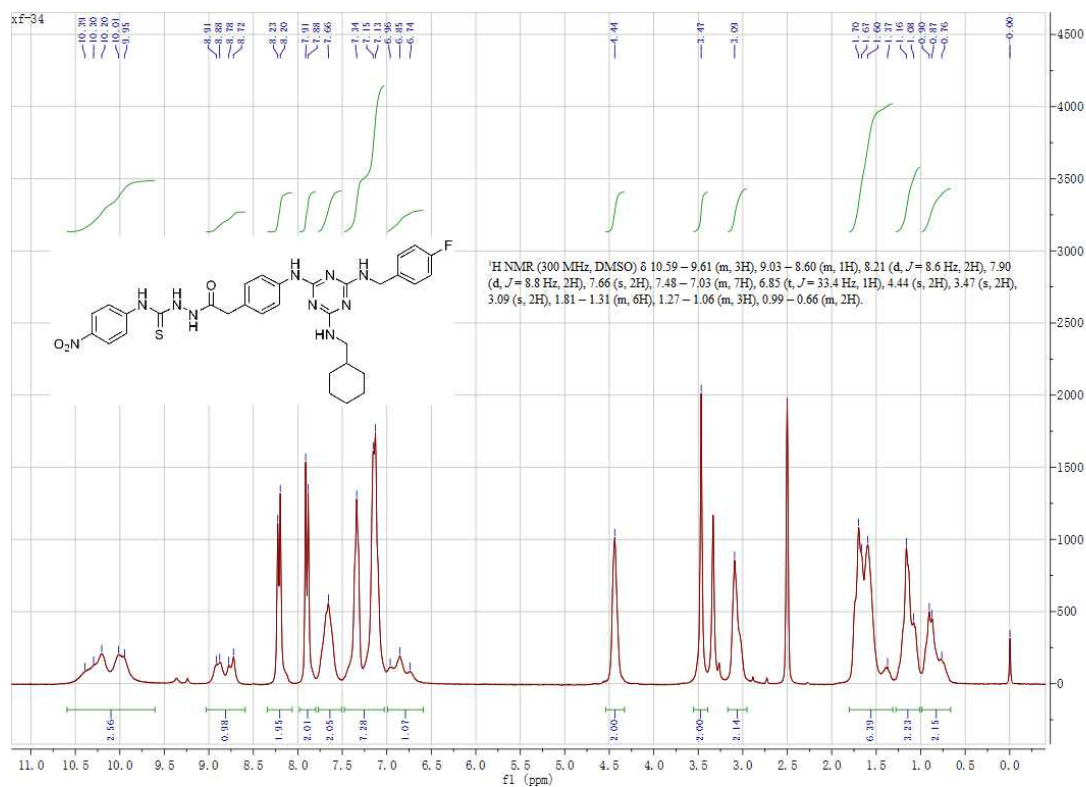
¹³C-NMR of 10I



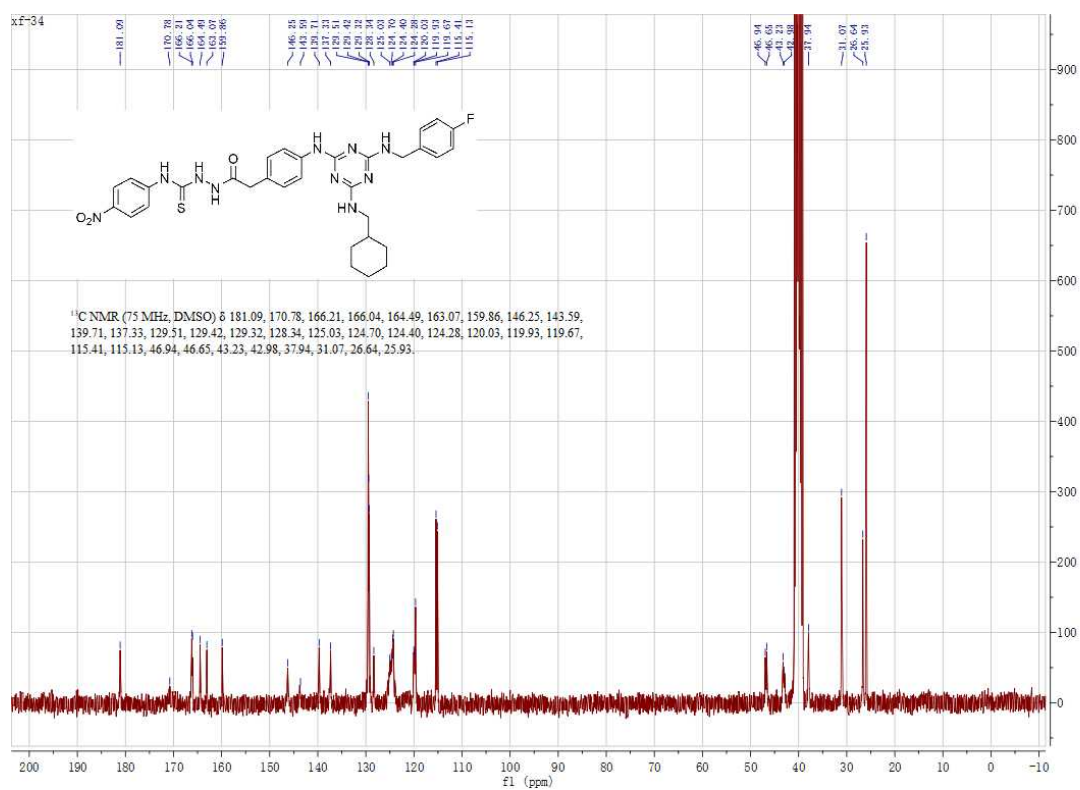
HPLC purity of 10l



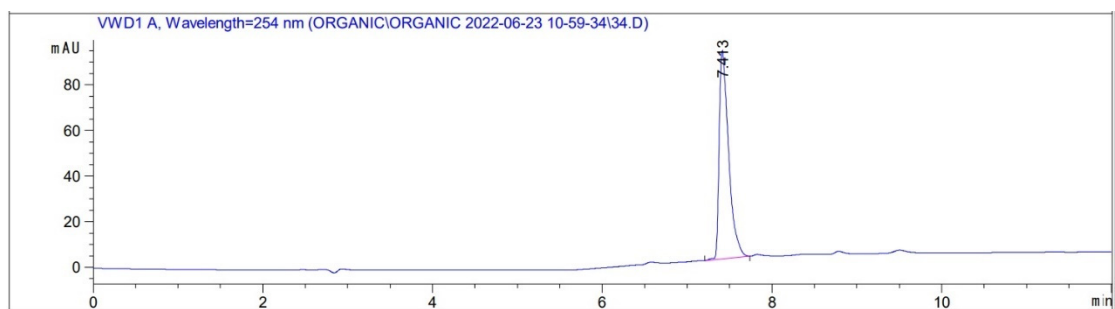
ESI-MS of 10l



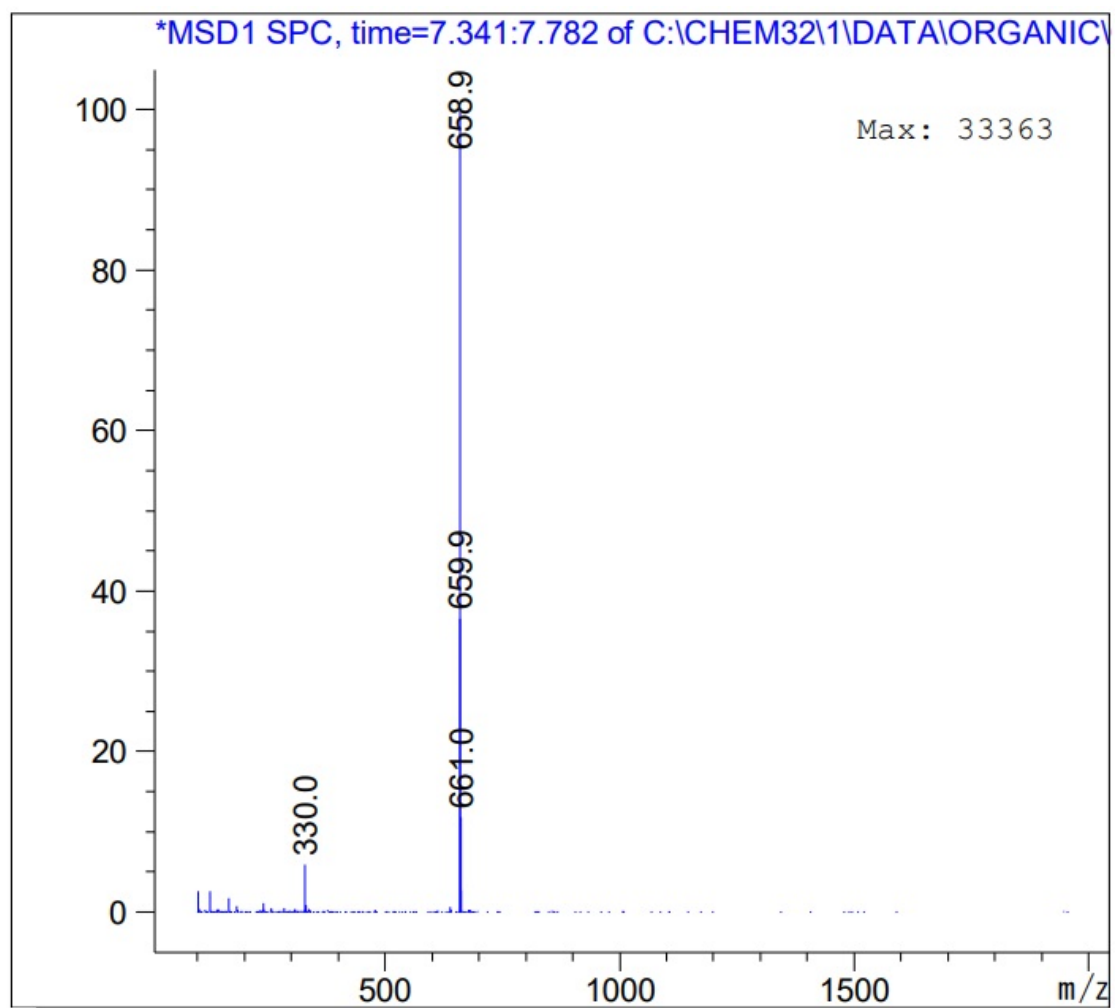
¹H-NMR of 10m



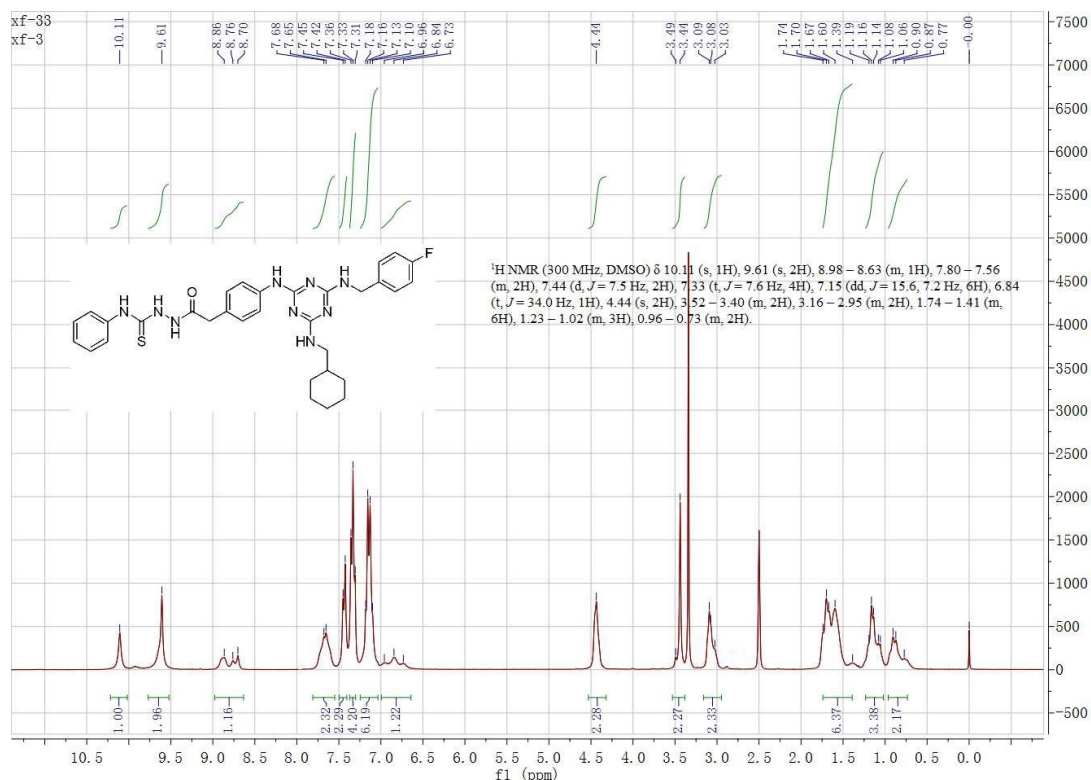
¹³C-NMR of 10m



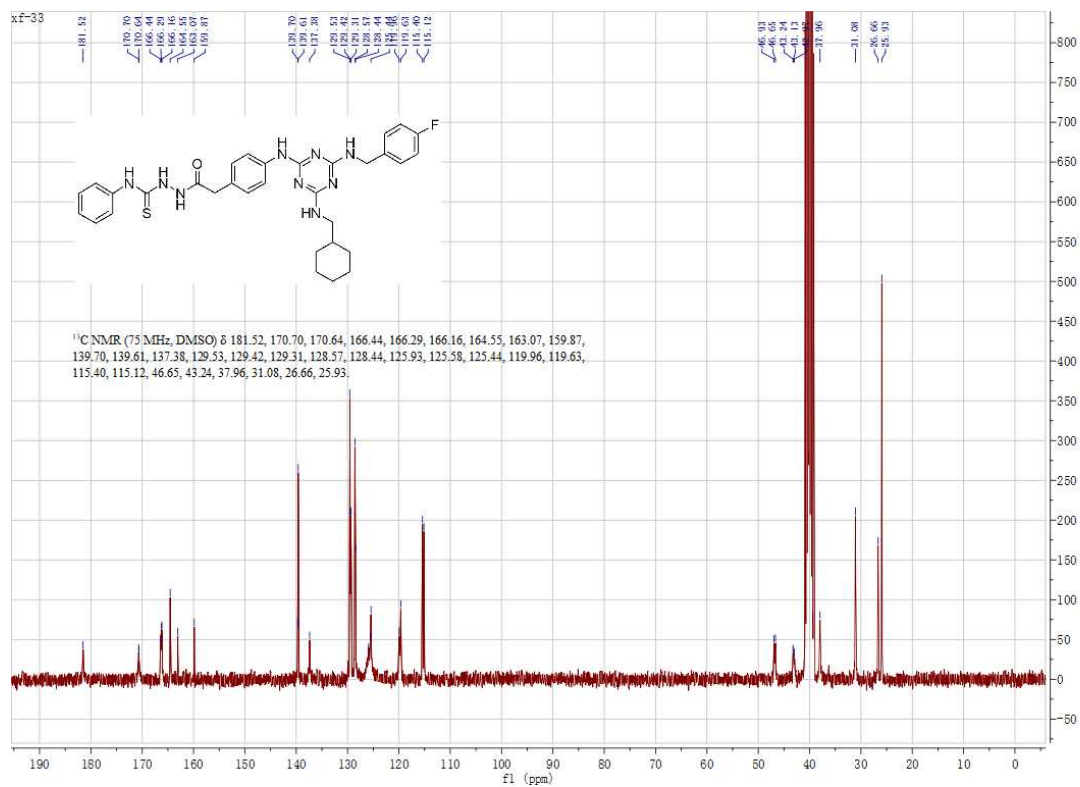
HPLC purity of 10m



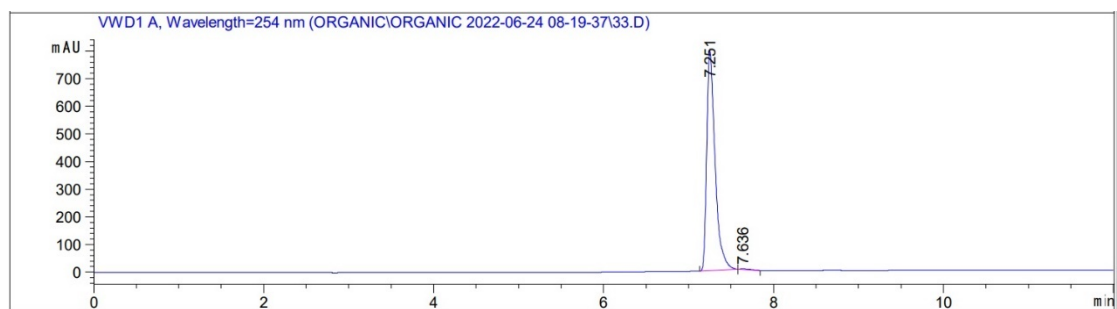
ESI-MS of 10m



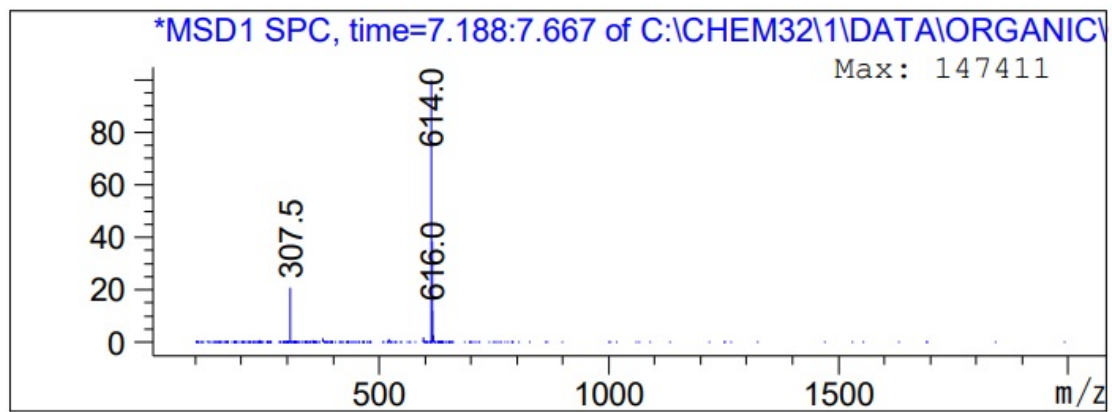
$^1\text{H-NMR}$ of 10n



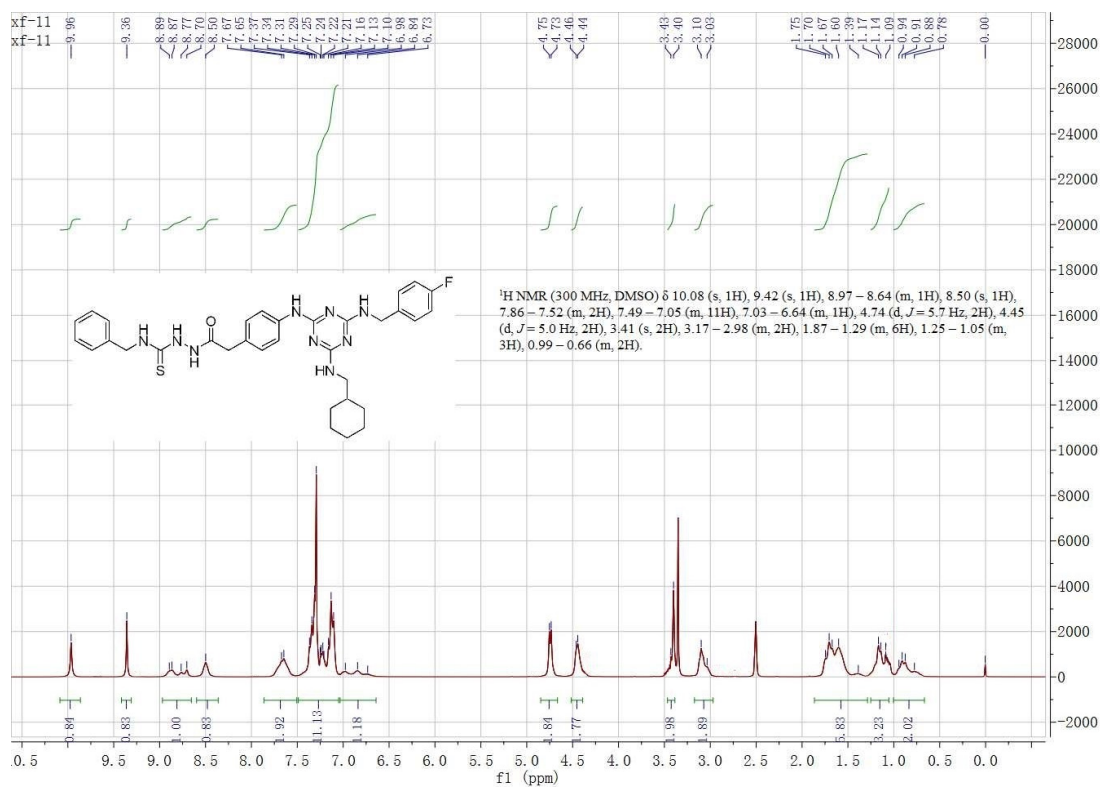
$^{13}\text{C-NMR}$ of 10n



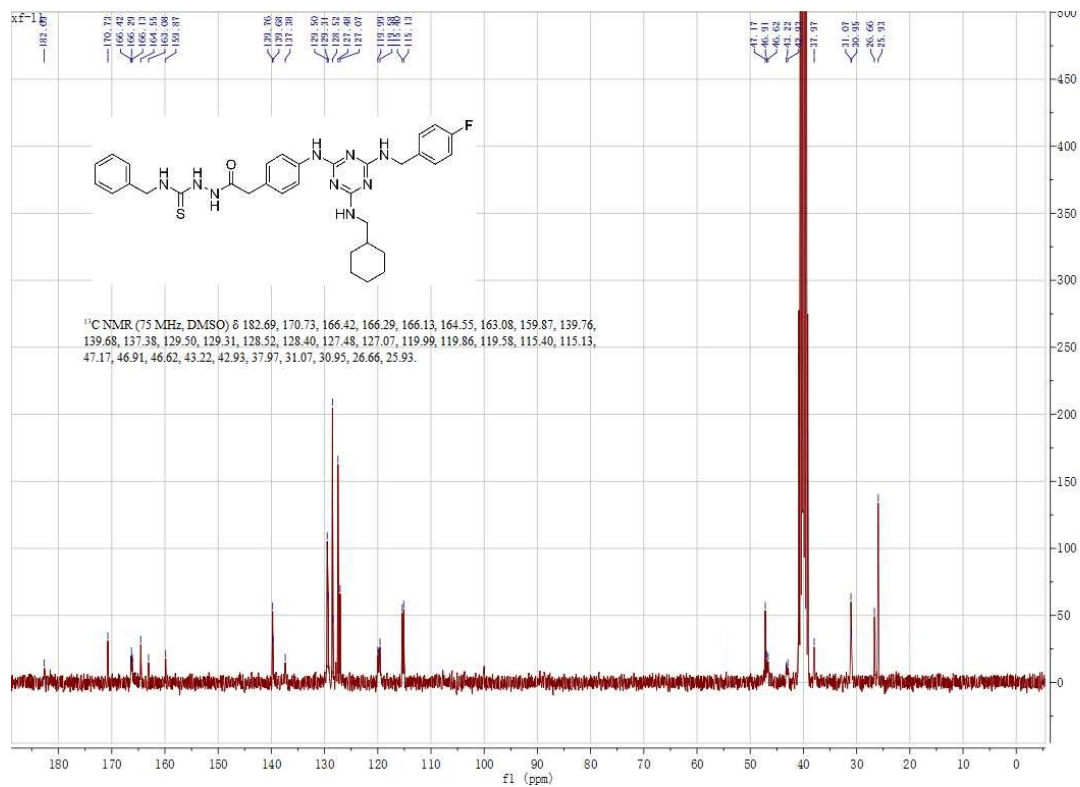
HPLC purity of 10n



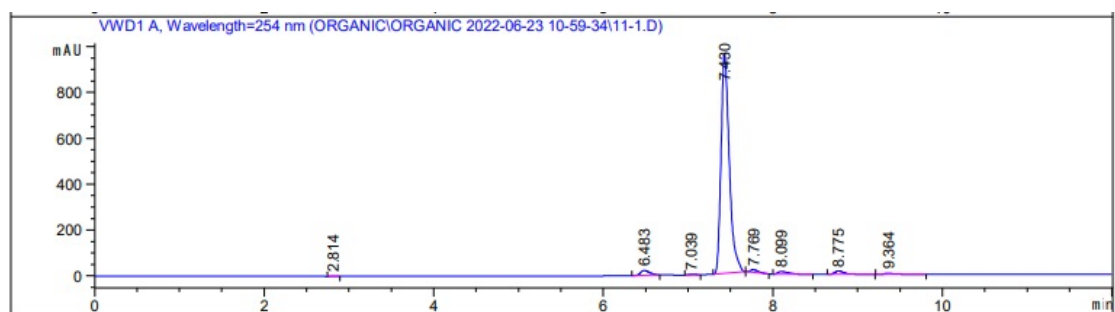
ESI-MS of 10n



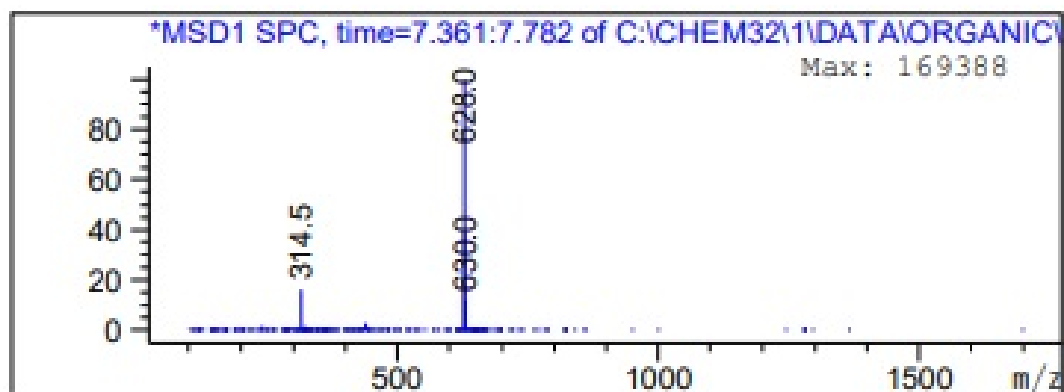
¹H-NMR of 10o



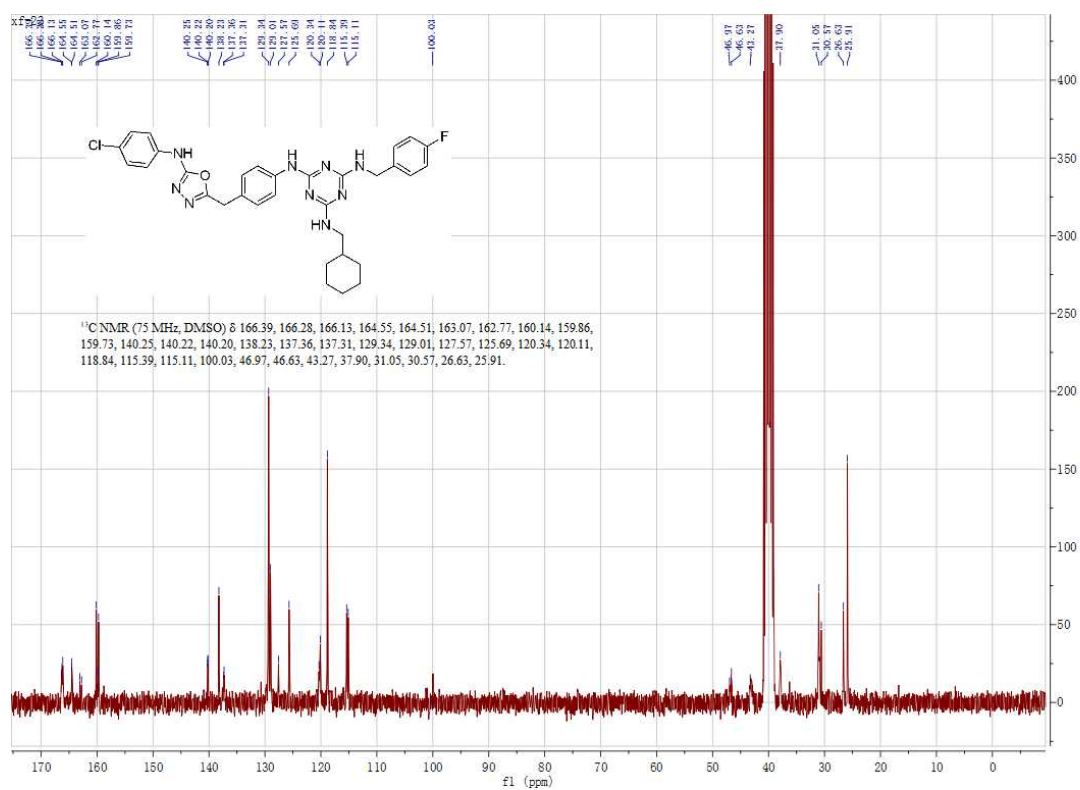
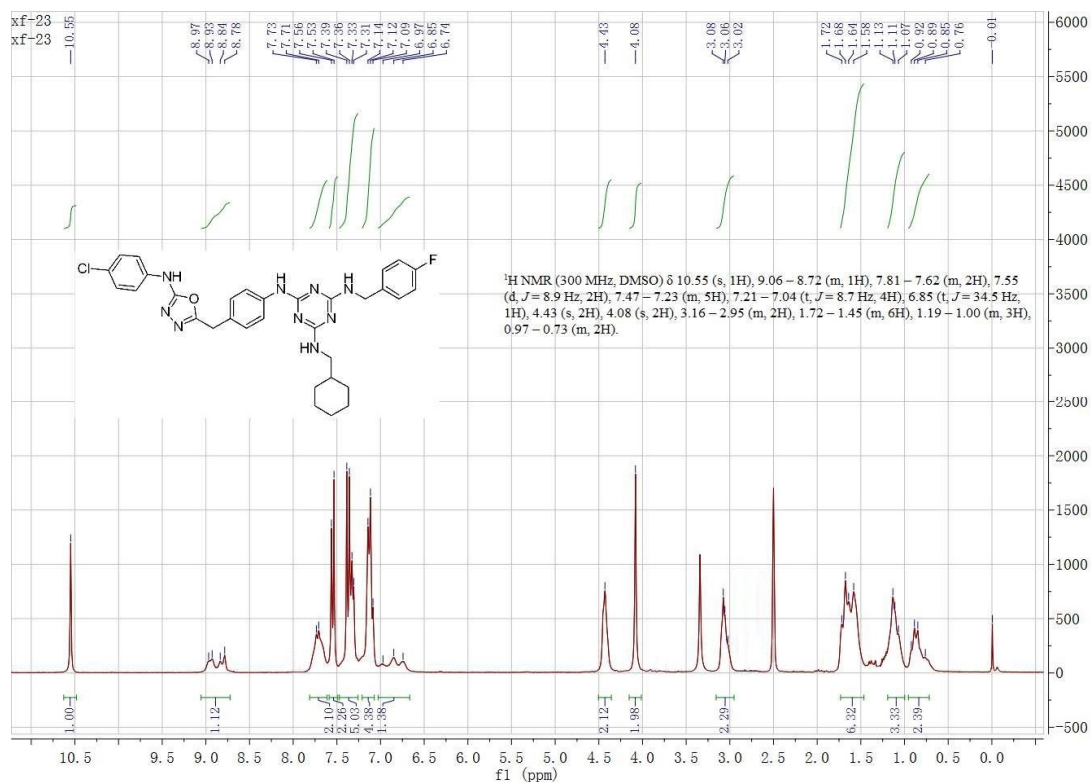
¹³C-NMR of 10o

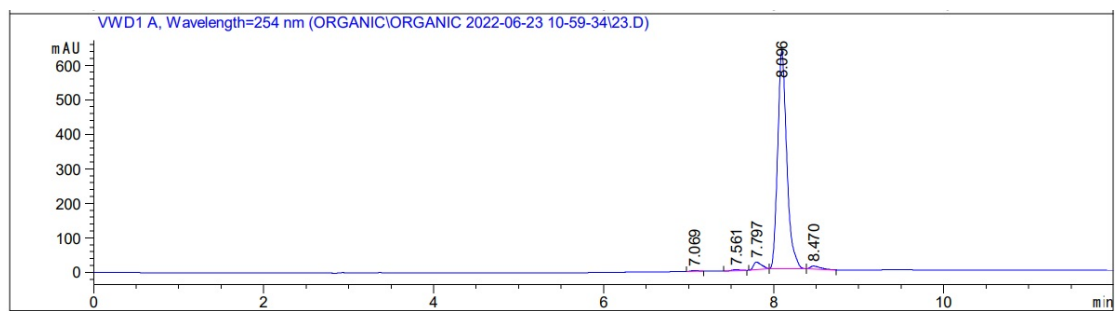


HPLC purity of 10o

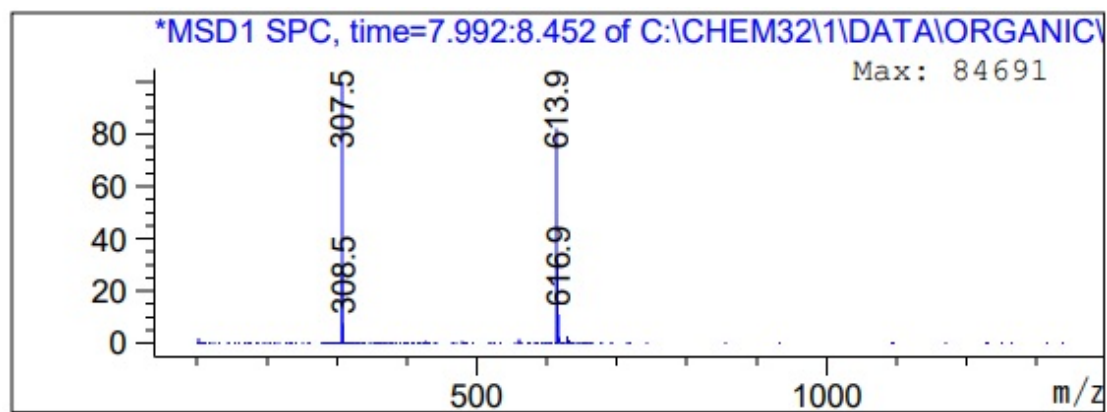


ESI-MS of 10o

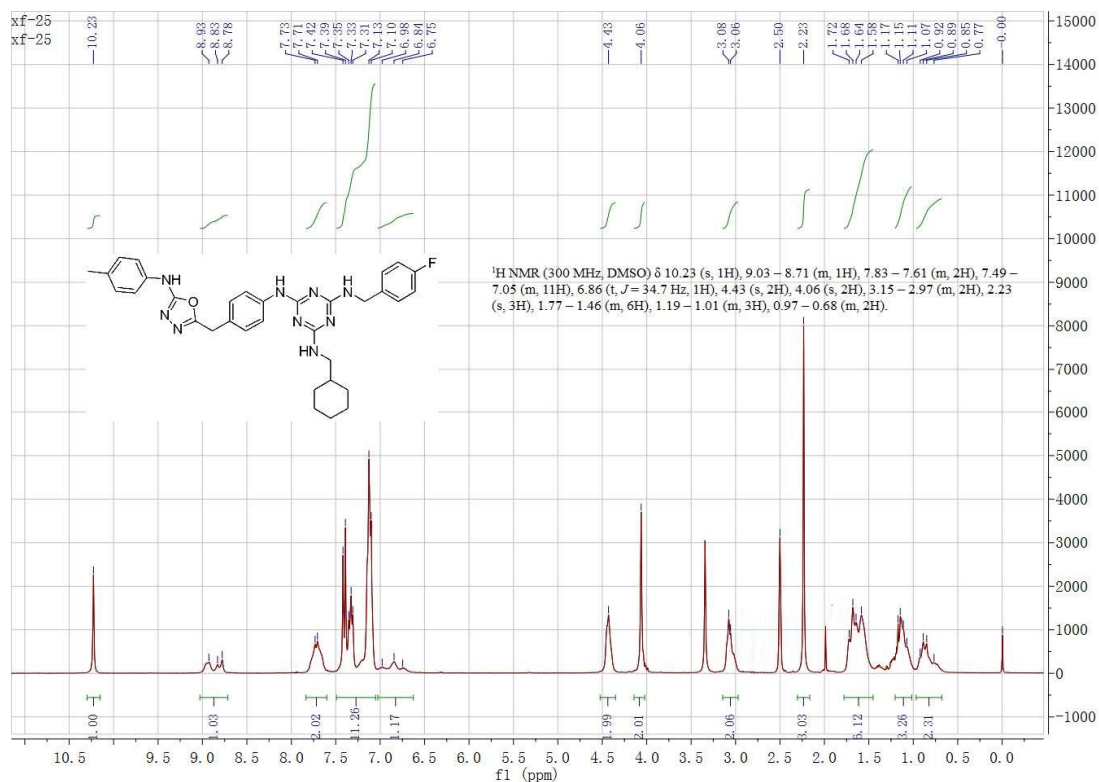




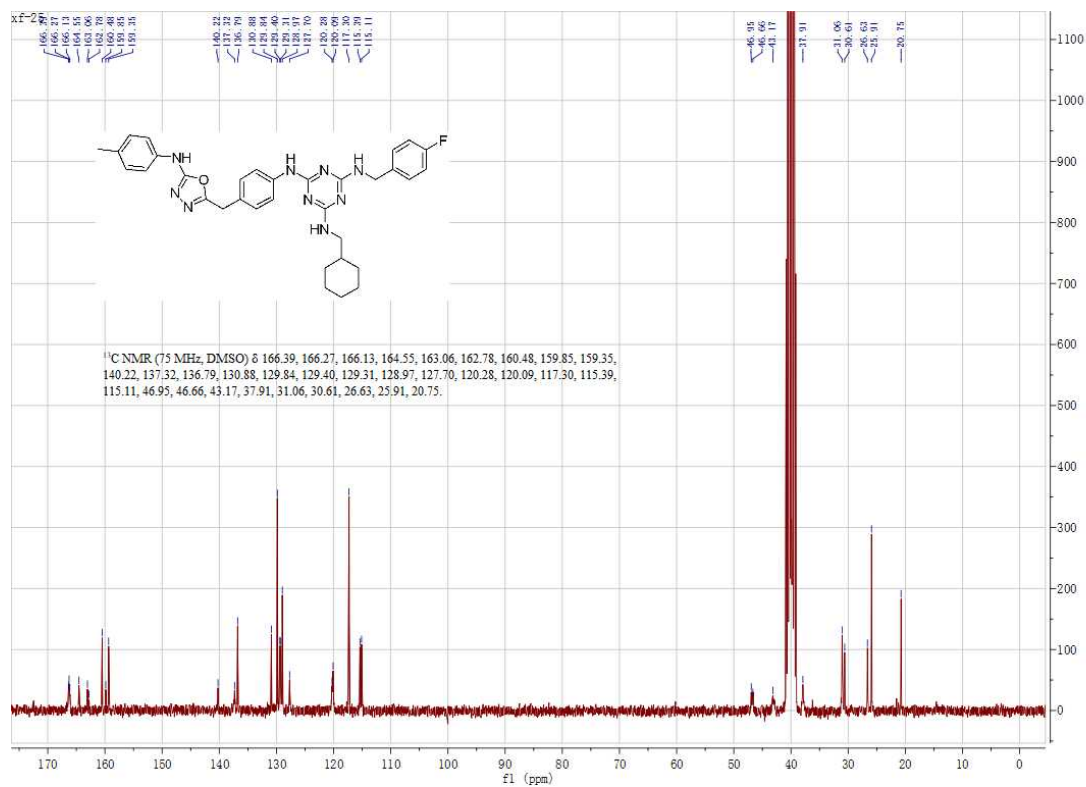
HPLC purity of 11c



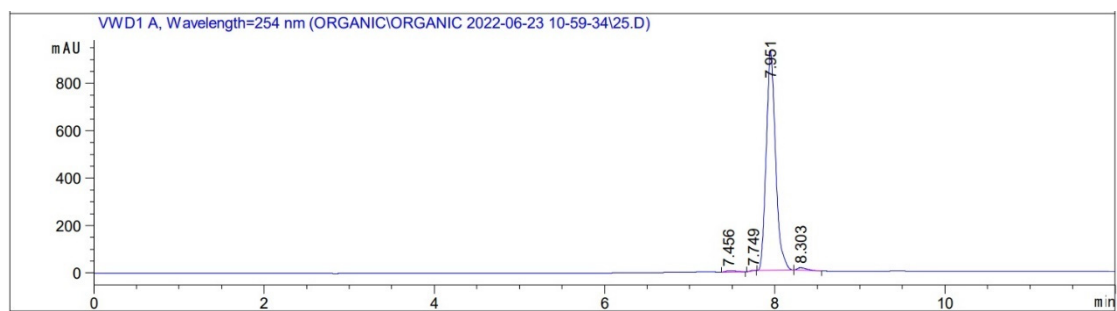
ESI-MS of 11c



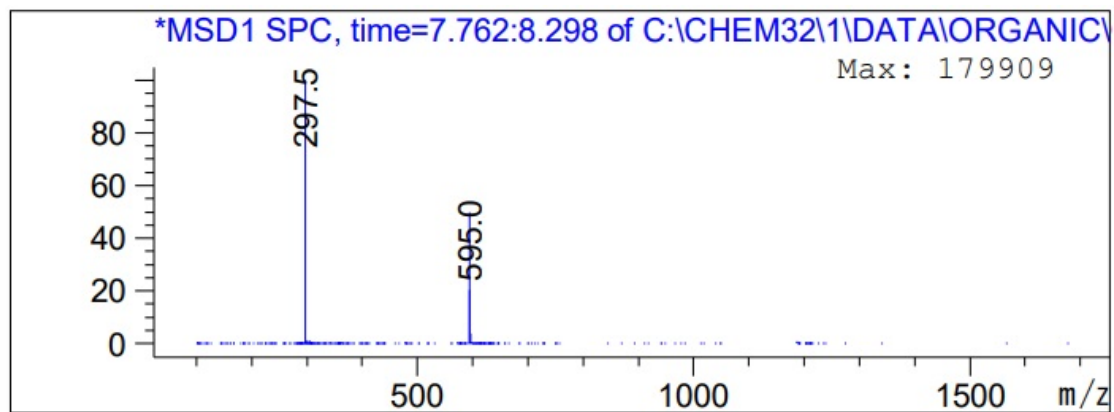
¹H-NMR of 11i



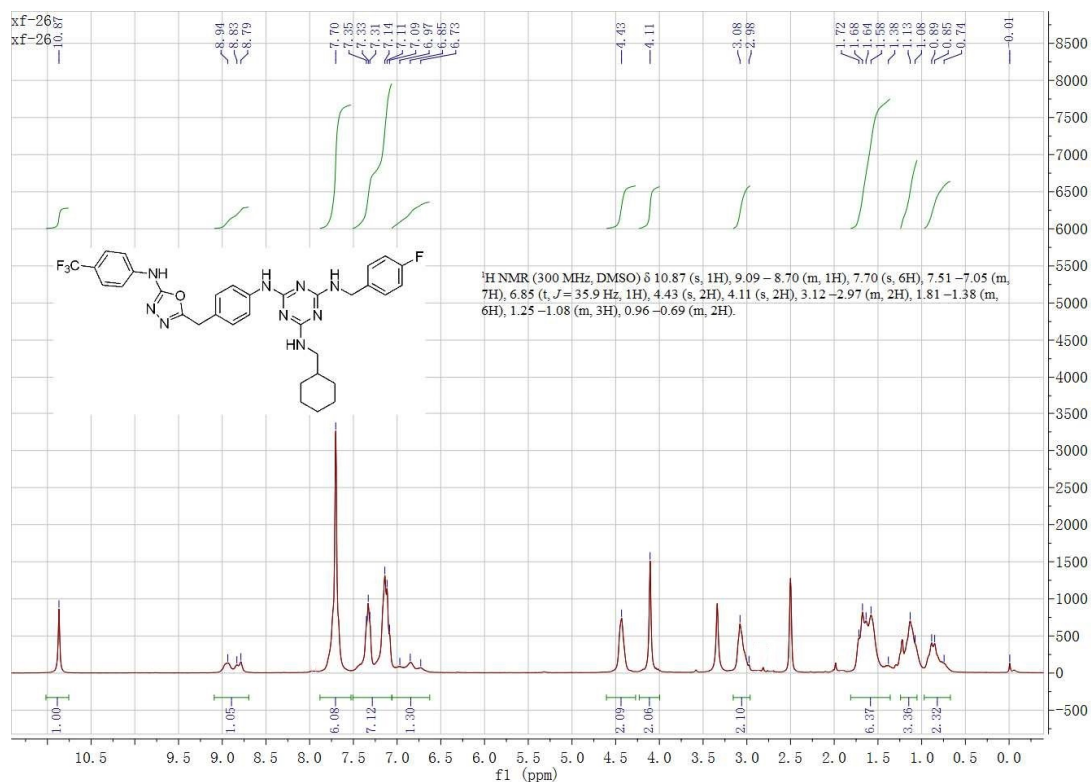
¹³C-NMR of 11i



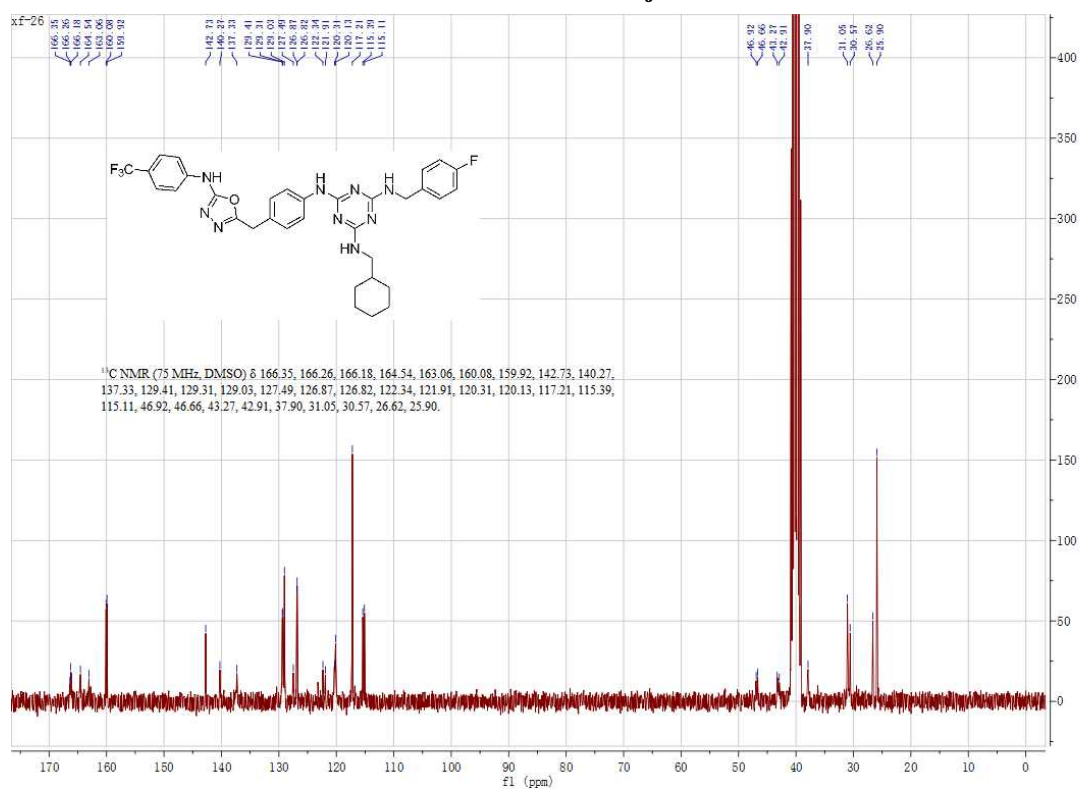
HPLC purity of 11i



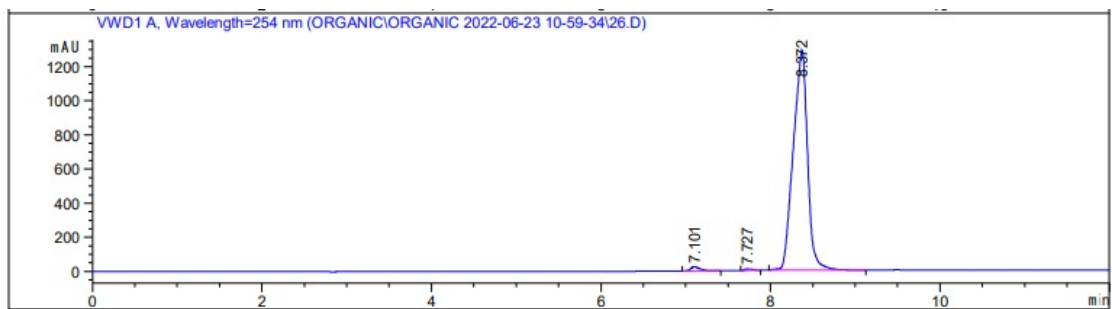
ESI-MS of 11i



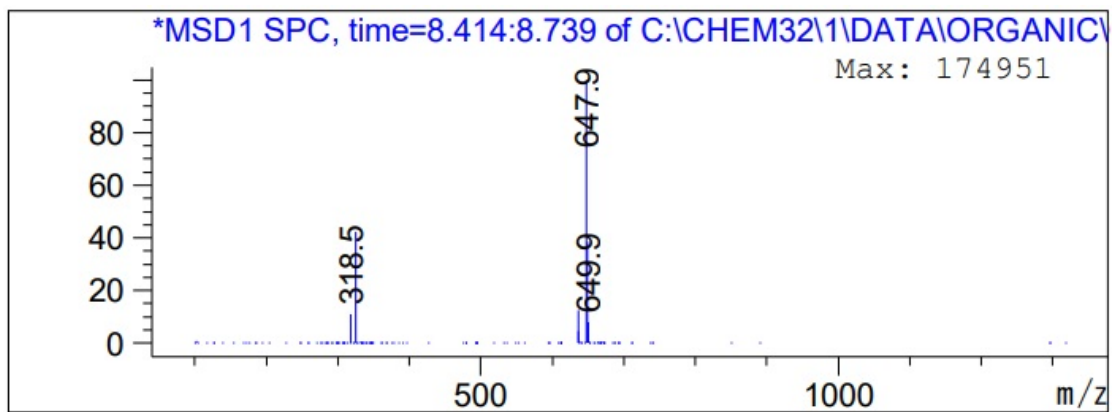
^1H -NMR of 11j



^{13}C -NMR of 11j



HPLC purity of 11j



ESI-MS of 11j