

Supporting Information

Discovery of novel chemical scaffolds as RhoA inhibitors using virtual screening, synthesis, and bioactivity evaluation

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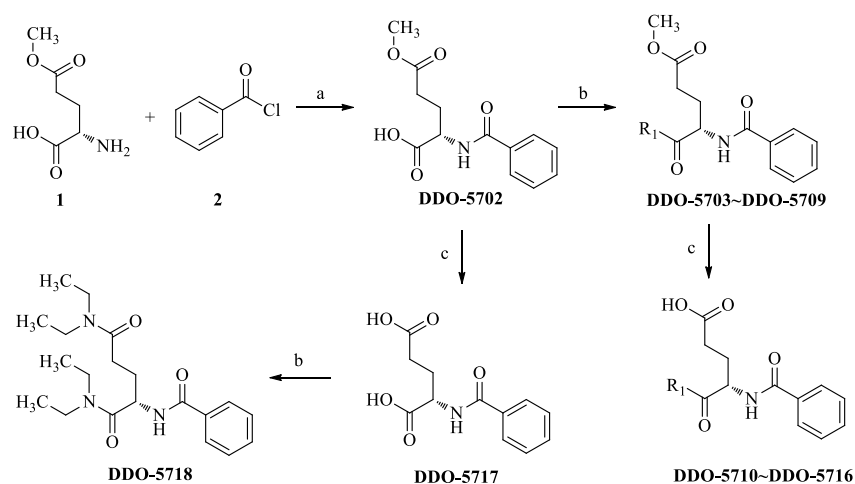
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Chemical synthesis and analytical data

Reagents and methods

All reagents were purchased from commercial sources. Organic solutions were concentrated in a rotary evaporator (BüchiRotavapor) below 55 °C under reduced pressure. Reactions were monitored by thin-layer chromatography (TLC) on 0.25 mm silica gel plates (GF254) and visualized under UV light. Melting points were determined with a Melt-Temp II apparatus. The ¹H NMR and ¹³C NMR spectra were measured on a Bruker AV-300 instrument using deuterated solvents with tetramethylsilane (TMS) as internal standard. EI-MS was collected on shimadzu GCMS-2010 instruments. ESI-mass and high resolution mass spectra (HRMS) were recorded on a Water Q-Tofmicro mass spectrometer. Analytical results are within 0.40% of the theoretical values. The purity (≥95%) of the compounds is verified by the HPLC study performed on Agilent C18 (4.6 mm × 150 mm, 3.5 μm) column using a mixture of solvent methanol/water with bits of trifluoroacetic acid at a flow rate of 0.5 mL/min and peak detection at 254 nm under UV. Some of our derived compounds may exist enantiomers.



2-Benzamido-5-methoxy-5-oxopentanoic acid (DDO-5702). To a stirred mixture of **1** (4.0 g, 24.8 mmol) and sodium bicarbonate (5.2 g, 62.0 mmol) in diethyl ether/H₂O (v:v = 1:1) was added dropwise benzoyl chloride **2** (5.2 g, 37.2 mmol) at 0 °C. The mixture was stirred overnight at room temperature. The reaction mixture was acidizing with hydrochloric acid. Then, the mixture was extracted with EtOAc and the combined organic layer was washed with brine and dried over anhydrous Na₂SO₄, filtered and concentrated to afford a crude product which was recrystallized from diethyl ether to give the titled compound as a white solid (5.6 g, 85.1%). M.p.150-152 °C. ¹HNMR (300 MHz, CDCl₃) δ 7.78 (d, J = 7.2 Hz, 2H, -Ar-H), 7.45-7.59 (m, 4H, -Ar-H, -NH), 4.79-4.80 (m, 1H, -CH), 3.70 (s, 3H, -OCH₃), 2.56-2.67 (m, 2H, -CH₂), 2.23-2.39 (m, 2H, -CH₂); HRMS (ESI): calcd. for C₁₃H₁₅NO₅ [M + H]⁺ 266.1023, found 266.1026. HPLC (80% methanol in water): t_R = 2.77 min, 98.83%.

General procedure for preparation of DDO-5703~DDO-5709. To a stirred solution of DDO-5702 (0.3 g, 1.13 mmol) in dry dichloromethane (15 mL) was added 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide hydrochloride (EDCI, 0.43 g, 2.26 mmol)

and 1-hydroxybenzotriazole (HOBT, 0.36 g, 2.26 mmol) at room temperature for 1 h. Then amines (1.70mmol) was added and stirred overnight at room temperature. The mixture was poured into ice water and extracted with EtOAc. The combined organic layer was washed with NaHCO₃ solution and brine solution, dried over Na₂SO₄, and concentrated under vacuum. The residue was purified by silica gel column chromatography to afford products.

Methyl 4-benzamido-5-(diethylamino)-5-oxopentanoate (DDO-5703). Yield: 69%. M.p. 106-108 °C. ¹HNMR(300 MHz, CDCl₃) δ 7.83 (d, J = 6.96 Hz, 2H, -Ar-H), 7.31-7.52(m, 1H, -Ar-H), 7.29-7.31(m, 2H, -Ar-H), 5.17-5.18(m, 1H, -CH), 3.61(s, 3H, -OCH₃), 3.27-3.48(m, 4H, -CH₂), 2.45-2.52(m, 2H, -CH₂), 2.06(m, 2H, -CH₂), 1.31(t, J = 7.14 Hz, 3H, -CH₃), 1.16(t, J = 7.12Hz, 3H, -CH₃); ¹³CNMR (75 MHz, DMSO) δ 172.97, 170.28, 166.22, 133.76, 131.33, 127.47, 51.31, 48.56, 40.97, 29.59, 26.62, 14.20, 12.85; HRMS (ESI): calcd. for C₁₇H₂₄N₂O₄ [M + H]⁺ 321.1809, found 321.1808. HPLC (80% methanol in water): t_R = 4.12 min, 99.37%.

Methyl 4-benzamido-5-(ethylamino)-5-oxopentanoate (DDO-5704). Yield: 72.15%. M.p.:129-131 °C. ¹HNMR(300 MHz, DMSO) δ 8.43 (d, J = 6.96 Hz, 1H, -NH), 7.87-7.97(m, 3H, -Ar-H), 7.43-7.53(m, 3H, -Ar-H), 4.37(d, J = 7.68 Hz, 1H, -CH), 3.56(d, J = 2.7 Hz, 3H, -OCH₃), 3.05-3.09(m, 2H, -CH₂), 2.34-2.49(m, 2H, -CH₂), 1.92-2.02(m, 2H, -CH₂), 0.98-1.01(m, 3H, -CH₃); HRMS (ESI): calcd. for C₁₅H₂₀N₂O₄ [M + H]⁺ 293.1496, found 293.1494. HPLC (80% methanol in water): t_R = 3.65 min, 98.38%.

Methyl 4-benzamido-5-(dimethylamino)-5-oxopentanoate (DDO-5705). Yield: 63.52%. M.p.:112-114 °C. ¹HNMR(300 MHz, CDCl₃) δ 7.82(d, J = 7.05 Hz, 2H, -Ar-H), 7.41-7.53(m, 1H, -Ar-H), 7.26(d, J = 4.86 Hz, 2H, -Ar-H), 5.19-5.26(m, 1H, -CH), 3.69(s, 3H, -OCH₃), 3.22(s, 3H, -CH₃), 3.00(s, 3H, -CH₃), 2.84(s, 3H, -CH₃), 2.43-2.54(m, 2H, -CH₂), 2.19-2.26(m, 1H, -CH₂), 1.74-1.92(m, 1H, -CH₂); HRMS (ESI): calcd. for C₁₅H₂₀N₂O₄ [M + H]⁺ 293.1496, found 293.1497. HPLC (80% methanol in water): t_R = 3.62 min, 99.28%.

Methyl 4-benzamido-5-oxo-5-(piperidin-1-yl)pentanoate (DDO-5706). Yield: 66.5%. M.p.:108-110 °C. ¹HNMR(300 MHz, DMSO) δ 8.57(d, J = 7.02 Hz, 1H, -NH), 7.87 (d, J = 7.14 Hz, 2H, -Ar-H), 7.45-7.53(m, 3H, -Ar-H), 4.92(s, 1H, -CH), 3.81(s, 3H, -CH₃), 3.33-3.57(m, 4H, -CH₂), 2.38-2.71(m, 2H, -CH₂), 1.88-1.93(m, 2H, -CH₂), 1.44-1.56(m, 6H, -CH₂); HRMS (ESI): calcd. for C₁₈H₂₄N₂O₄ [M + H]⁺ 333.1809, found 333.181. HPLC (80% methanol in water): t_R = 4.33 min, 99.39%.

Methyl 4-benzamido-5-((4-bromophenyl)amino)-5-oxopentanoate (DDO-5707). Yield: 73.81%. M.p.:156-157 °C. ¹HNMR(300 MHz, DMSO) δ 10.26(s, 1H, -NH), 8.66(d, J = 7.26 Hz, 1H, -NH), 7.89 (d, J = 6.90 Hz, 2H, -Ar-H), 7.47-7.60(m, 7H, -Ar-H), 4.54 (dd, J = 7.68 Hz, 1H, -CH), 3.56(s, 3H, -OCH₃), 2.48-2.50(m, 2H, -CH₂), 2.03-2.13(m, 2H, -CH₂); HRMS (ESI): calcd. for C₁₉H₁₉BrN₂O₄ [M + H]⁺ 419.0601, found 419.0596. HPLC (80% methanol in water): t_R = 6.14 min, 99.59%.

Methyl 4-benzamido-5-((4-chlorophenyl)amino)-5-oxopentanoate (DDO-5708). Yield: 73.13%. M.p.:150-152 °C. ¹HNMR(300 MHz, DMSO) δ 10.26(s, 1H, -NH), 8.65(d, J = 7.44 Hz, 1H, -NH), 7.90 (d, J = 6.90 Hz, 2H, -Ar-H), 7.64(d, J = 8.82 Hz, 2H, -Ar-H), 7.44-7.55(m, 3H, -Ar-H), 7.36(d, J = 8.79 Hz, 2H, -Ar-H) 4.54(dd, J = 6.75 Hz, 1H, -CH), 3.56(s, 3H, -CH₃), 2.42-2.49(m, 2H, -CH₂), 2.06-2.11(m, 2H, -CH₂); HRMS (ESI): calcd. for C₁₉H₁₉ClN₂O₄ [M + H]⁺ 375.1106, found 375.1106. HPLC (80% methanol in water): t_R = 5.73 min, 99.86%.

Methyl 4-benzamido-5-((4-methoxyphenyl)amino)-5-oxopentanoate (DDO-5709). Yield:

78.78%. M.p.:139-141 °C. ¹HNMR(300 MHz, DMSO) δ 9.97(s, 1H, -NH), 8.60(d, J = 7.38 Hz, 1H, -NH), 7.90 (d, J = 6.99 Hz, 2H, -Ar-H), 7.44-7.54(m, 5H, -Ar-H), 6.87(d, J = 9.06 Hz, 2H, -Ar-H), 4.54 (dd, J = 6.54 Hz, 1H, -CH), 3.70(s, 3H, -CH₃), 3.56(s, 3H, -CH₃), 2.41-2.50(m, 2H, -CH₂), 2.05-2.12(m, 2H, -CH₂); ¹³CNMR (75 MHz, CDCl₃) δ 173.61, 168.89, 167.38, 155.92, 132.83, 131.54, 130.40, 128.14, 126.78, 121.21, 113.53, 54.95, 53.14, 51.44, 29.91, 27.29; HRMS (ESI): calcd. for C₂₀H₂₂N₂O₅ [M + H]⁺ 371.1601, found 371.1603. HPLC (80% methanol in water): t_R = 4.29 min, 98.45%.

4-Benzamido-5-(diethylamino)-5-oxopentanoic acid (DDO-5710). Yield: 83.66%. M.p.:165-167 °C. ¹HNMR(300 MHz, DMSO) δ 12.17(s, 1H, -OH), 8.52 (d, J = 8.13 Hz, 1H, -NH), 7.88(d, J = 7.08 Hz, 2H, -Ar-H), 7.43-7.53(m, 3H, -Ar-H), 4.85(dd, J = 7.38 Hz, 1H, -CH), 3.44-3.54(m, 1H, -CH₂), 3.34-3.42(m, 2H, -CH₂), 3.08-3.15(m, 1H, -CH₂), 2.33(t, J = 6.90 Hz, 2H, -CH₂), 1.85-1.92(m, 2H, -CH₂), 1.18(t, J = 6.84 Hz, 3H, -CH₃), 1.01(t, J = 6.96 Hz, 3H, -CH₃); ¹³CNMR (75 MHz, CDCl₃) δ 175.49, 170.43, 167.14, 132.94, 131.38, 128.04, 126.82, 48.21, 41.49, 40.17, 29.30, 28.28, 13.95, 12.34; HRMS (ESI): calcd. for C₁₆H₂₂N₂O₄ [M + H]⁺ 307.1652, found 307.1657. HPLC (80% methanol in water): t_R = 2.85 min, 99.10%.

4-Benzamido-5-(ethylamino)-5-oxopentanoic acid (DDO-5711). Yield: 83.84%. M.p.: 170-172 °C. ¹HNMR(300 MHz, DMSO) δ 12.17(s, 1H, -OH), 8.45 (d, J = 7.77 Hz, 1H, -NH), 7.97-8.01(m, 1H, -Ar-H), 7.91(d, J = 7.11 Hz, 2H, -Ar-H), 7.46-7.56(m, 2H, -Ar-H), 4.39-4.40(m, 1H, -CH), 3.03-3.12(m, 2H, -CH₂), 2.23-2.33(m, 2H, -CH₂), 1.91-2.04(m, 2H, -CH₂), 1.02(t, J = 7.20 Hz, 3H, -CH₃); HRMS (ESI): calcd. for C₁₄H₁₈N₂O₄ [M + H]⁺ 279.1339, found 279.1342. HPLC (80% methanol in water): t_R = 2.79 min, 98.47%.

4-Benzamido-5-(dimethylamino)-5-oxopentanoic acid (DDO-5712). Yield: 56.02%. M.p.: 156-158 °C. ¹HNMR(300 MHz, DMSO) δ 8.54 (d, J = 7.08 Hz, 1H, -NH), 7.88(d, J = 7.20 Hz, 2H, -Ar-H), 7.43-7.53(m, 3H, -Ar-H), 4.90(d, J = 7.38 Hz, 1H, -CH), 3.09(s, 3H, -CH₃), 2.84(s, 3H, -CH₃), 1.88-1.90(m, 2H, -CH₂), 1.82(s, 2H, -CH₂); HRMS (ESI): calcd. for C₁₄H₁₈N₂O₄ [M + H]⁺ 279.1339, found 279.1343. HPLC (80% methanol in water): t_R = 2.79 min, 98.56%.

4-Benzamido-5-oxo-5-(piperidin-1-yl)pentanoic acid (DDO-5713). Yield: 76.56%. M.p.: 202-204 °C. ¹HNMR(300 MHz, DMSO) δ 12.18(s, 1H, -OH), 8.58(d, J = 8.10 Hz, 1H, -NH), 7.90 (d, J = 6.96 Hz, 2H, -Ar-H), 7.45-7.58(m, 3H, -Ar-H), 4.93-4.97 (m, 1H, -CH), 3.37-3.59(m, 4H, -CH₂), 2.31-2.52(m, 2H, -CH₂), 1.83-1.96(m, 2H, -CH₂), 1.48-1.60(m, 6H, -CH₂); HRMS (ESI): calcd. for C₁₇H₂₂N₂O₄ [M + H]⁺ 319.1652, found 319.1649. HPLC (80% methanol in water): t_R = 2.90 min, 98.82%.

4-Benzamido-5-((4-bromophenyl)amino)-5-oxopentanoic acid (DDO-5714). Yield: 75.87%. M.p.: 194-196 °C. ¹HNMR(300 MHz, DMSO) δ 10.39(s, 1H, -NH), 8.71(d, J = 6.63 Hz, 1H, -NH), 7.92 (d, J = 6.66 Hz, 2H, -Ar-H), 7.46-7.83(m, 7H, -Ar-H), 4.55 (d, J = 5.25 Hz, 1H, -CH), 2.36-2.64(m, 2H, -CH₂), 2.06-2.20(m, 2H, -CH₂); HRMS (ESI): calcd. for C₁₈H₁₇BrN₂O₄ [M + H]⁺ 405.0444, found 405.0438. HPLC (80% methanol in water): t_R = 3.14 min, 98.92%.

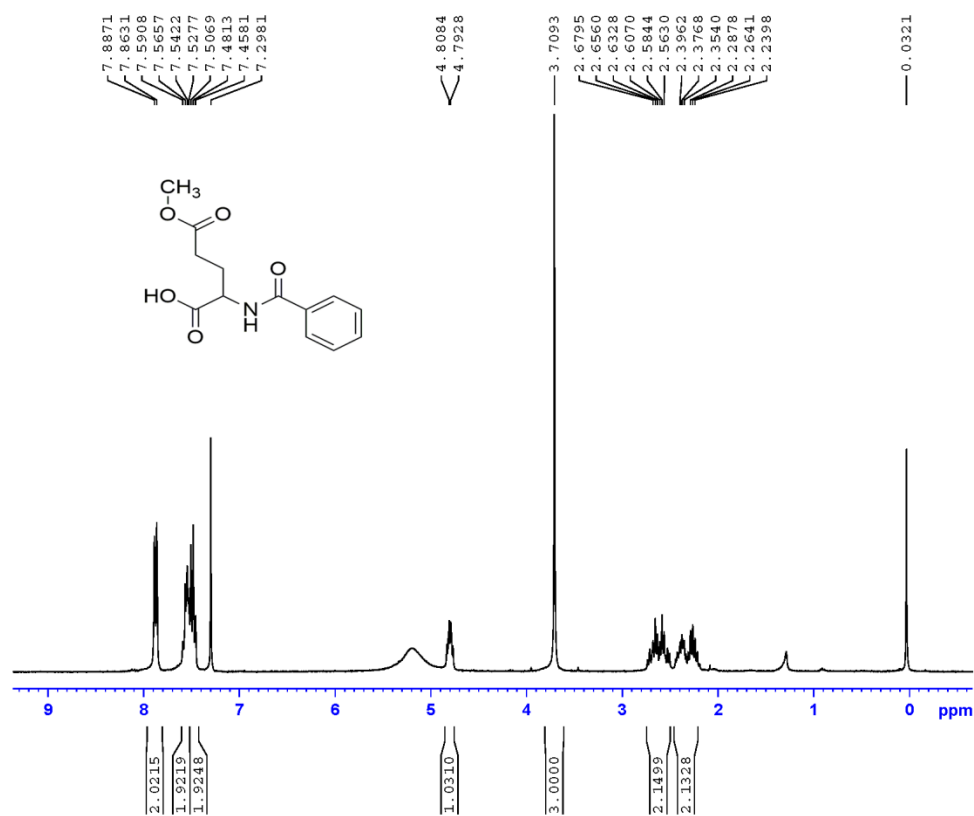
4-Benzamido-5-((4-chlorophenyl)amino)-5-oxopentanoic acid (DDO-5715). Yield: 76.18%. M.p.: 195-197 °C. ¹HNMR(300 MHz, DMSO) δ 12.24(s, 1H, -OH), 10.29(s, 1H, -NH), 8.68(d, J = 7.29 Hz, 1H, -NH), 7.93 (d, J = 7.02 Hz, 2H, -Ar-H), 7.67(d, J = 8.88 Hz, 2H, -Ar-H), 7.47-7.57(m, 3H, -Ar-H), 7.38(d, J = 8.79 Hz, 2H, -Ar-H), 4.56 (dd, J = 6.45 Hz, 1H, -CH), 2.35-2.52(m, 2H, -CH₂), 2.05-2.10(m, 2H, -CH₂); HRMS (ESI): calcd. for

$C_{18}H_{17}ClN_2O_4$ [M + H]⁺ 361.095, found 361.095. HPLC (80% methanol in water): t_R = 3.04 min, 99.92%.

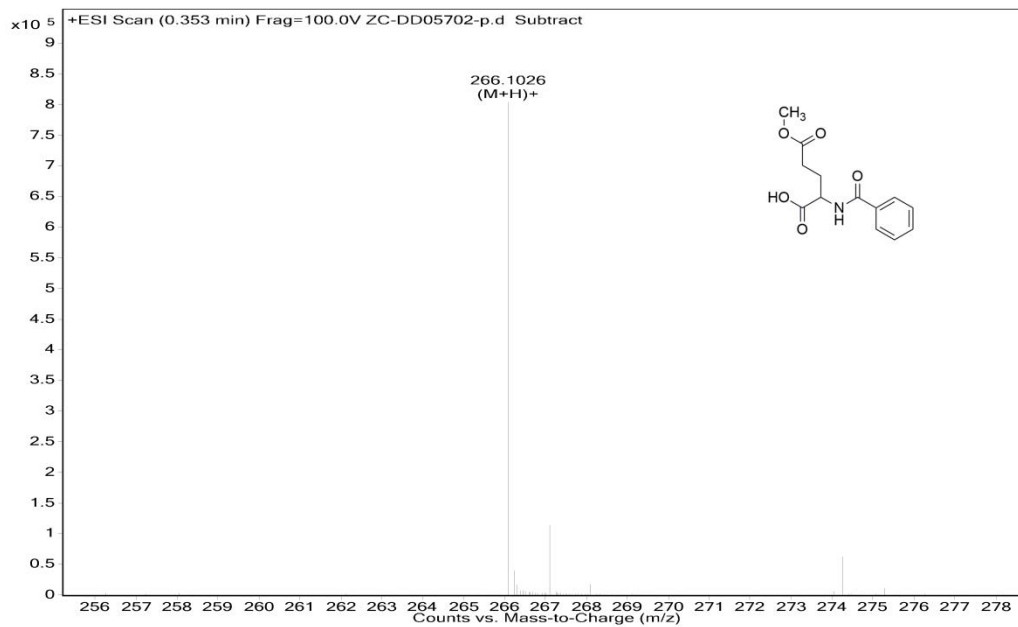
4-Benzamido-5-((4-methoxyphenyl)amino)-5-oxopentanoic acid (DDO-5716). Yield: 76.22%. M.p.: 192-194 °C. ¹HNMR(300 MHz, DMSO) δ 9.97(s, 1H, -NH), 8.59(d, J = 7.62 Hz, 1H, -NH), 7.91 (d, J = 7.11 Hz, 2H, -Ar-H), 7.45-7.56(m, 5H, -Ar-H), 6.86(t, J = 8.85 Hz, 2H, -Ar-H) 4.54(dd, J = 7.29 Hz, 1H, -CH), 3.70(s, 3H, -OCH₃), 2.26-2.49(m, 2H, -CH₂), 2.02-2.21(m, 2H, -CH₂); ¹³CNMR (75 MHz, DMSO) δ 179.22, 169.85, 166.94, 151.95, 142.17, 134.26, 131.55, 128.16, 127.53, 120.85, 113.77, 55.11, 53.69, 26.44, 24.56; HRMS (ESI): calcd. for $C_{19}H_{20}N_2O_5$ [M + H]⁺ 357.1445, found 357.145. HPLC (80% methanol in water): t_R = 2.74 min, 98.97%.

2-Benzamidopentanedioic acid (DDO-5717). Yield: 81.83% ; M.p.: 140-142 °C. ¹HNMR(300 MHz, D₂O) δ 7.63-7.66(m, 2H, -Ar-H), 7.48(t, J = 6.12 Hz, 1H, -Ar-H), 7.39(t, J = 7.74 Hz, 2H, -Ar-H), 4.49(dd, J = 5.13 Hz, 1H, -CH), 2.44(t, J = 7.23 Hz, 2H, -CH₂), 2.17-2.19(m, 1H, -CH₂), 2.03-2.06(m, 1H, -CH₂); HRMS (ESI): calcd. for $C_{12}H_{13}NO_5$ [M + H]⁺ 252.0866, found 252.0867. HPLC (80% methanol in water): t_R = 2.70 min, 99.27%.

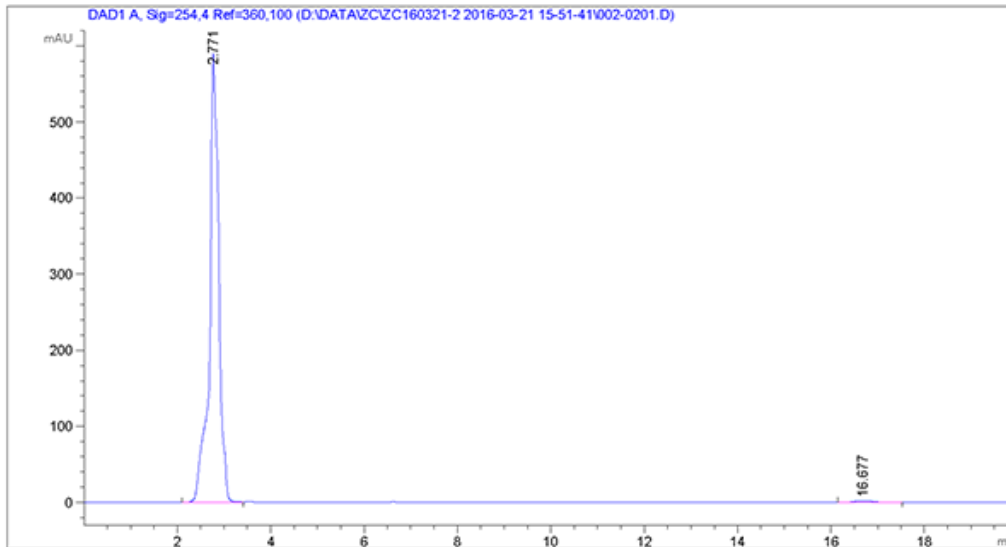
2-Benzamido-N1,N1,N5,N5-tetraethylpentanediamide (DDO-5718). Yield: 59.8%; M.p.: 97-98 °C. ¹HNMR(300 MHz, DMSO) δ 8.55 (d, J = 7.59 Hz, 1H, -NH), 7.88(d, J = 7.26 Hz, 2H, -Ar-H), 7.42-7.52(m, 3H, -Ar-H), 4.81(d, J = 7.38 Hz, 1H, -CH), 3.59-3.66(m, 1H, -CH₂), 3.41-3.47(m, 2H, -CH₂), 3.20-3.36(m, 4H, -CH₂), 3.04-3.14(m, 1H, -CH₂), 2.31-2.49(m, 2H, -CH₂), 1.95(d, J = 19.32 Hz, 2H, -CH₂), 1.02-1.07(m, 12H, -CH₃); HRMS (ESI): calcd. for $C_{20}H_{31}N_3O_3$ [M + H]⁺ 362.2438, found 362.2436. HPLC (80% methanol in water): t_R = 4.32 min, 98.83%.



Supplementary Fig. 1 ^1H NMR (300 MHz, CDCl_3) of DDO-5702

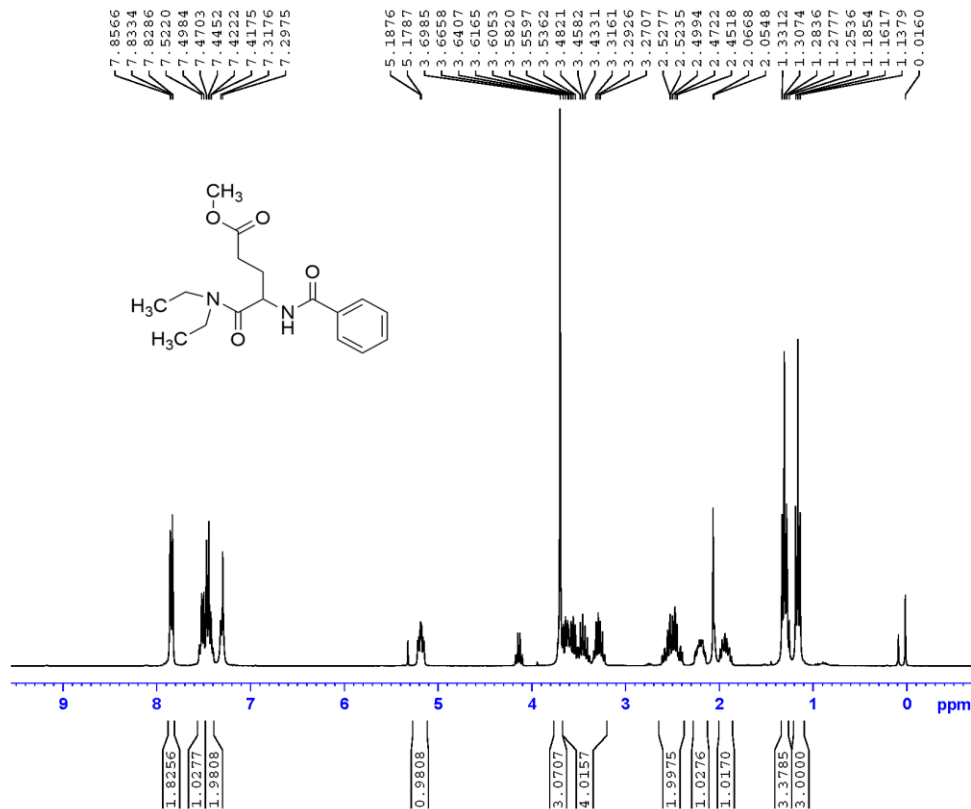


Supplementary Fig. 2 HR-MS (ESI) of DDO-5702

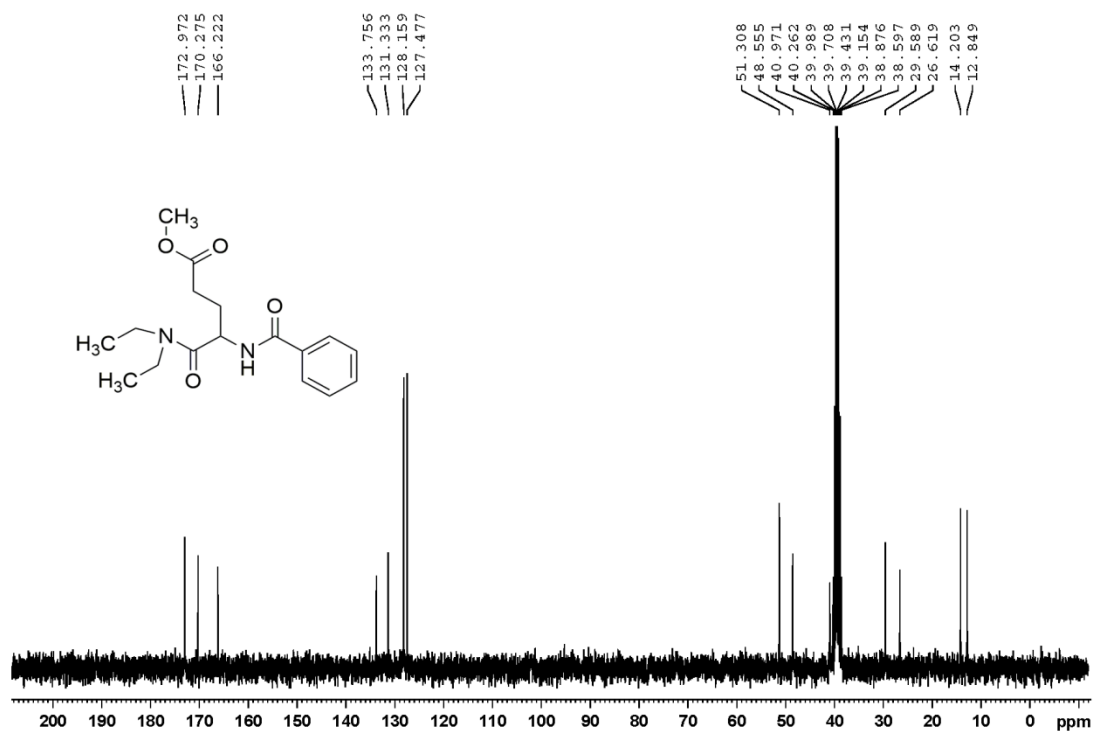


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.771	BB	0.3073	9382.75195	590.68726	98.8311
2	16.677	BB	0.3753	110.97214	1.69280	1.1689

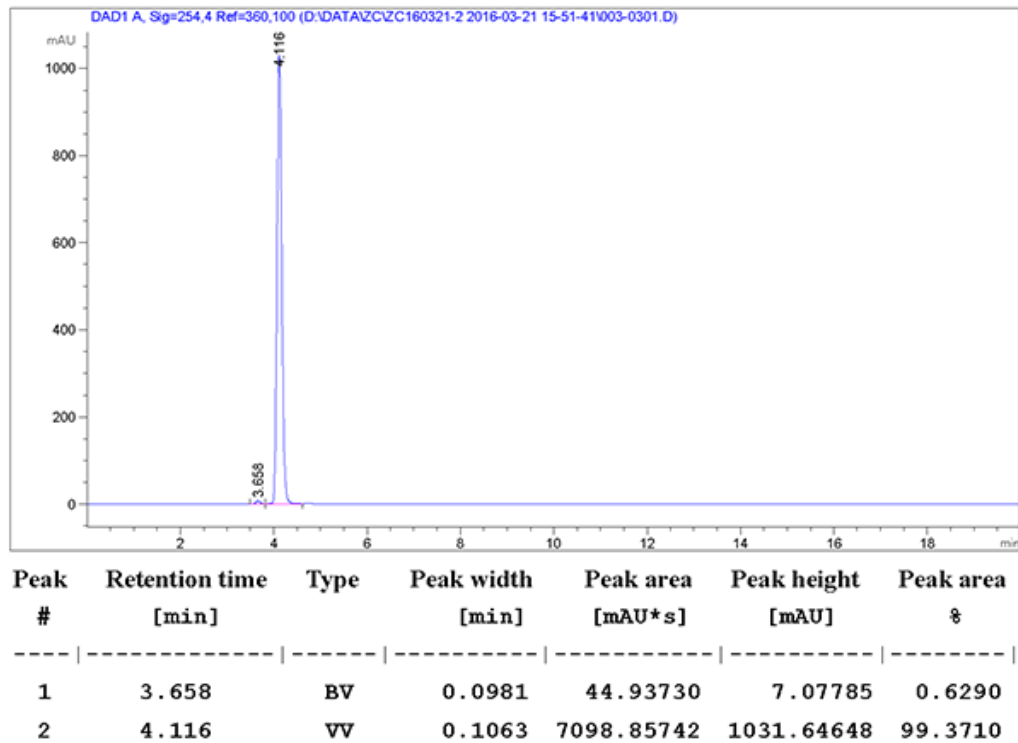
Supplementary Fig. 3 HPLC of DDO-5702



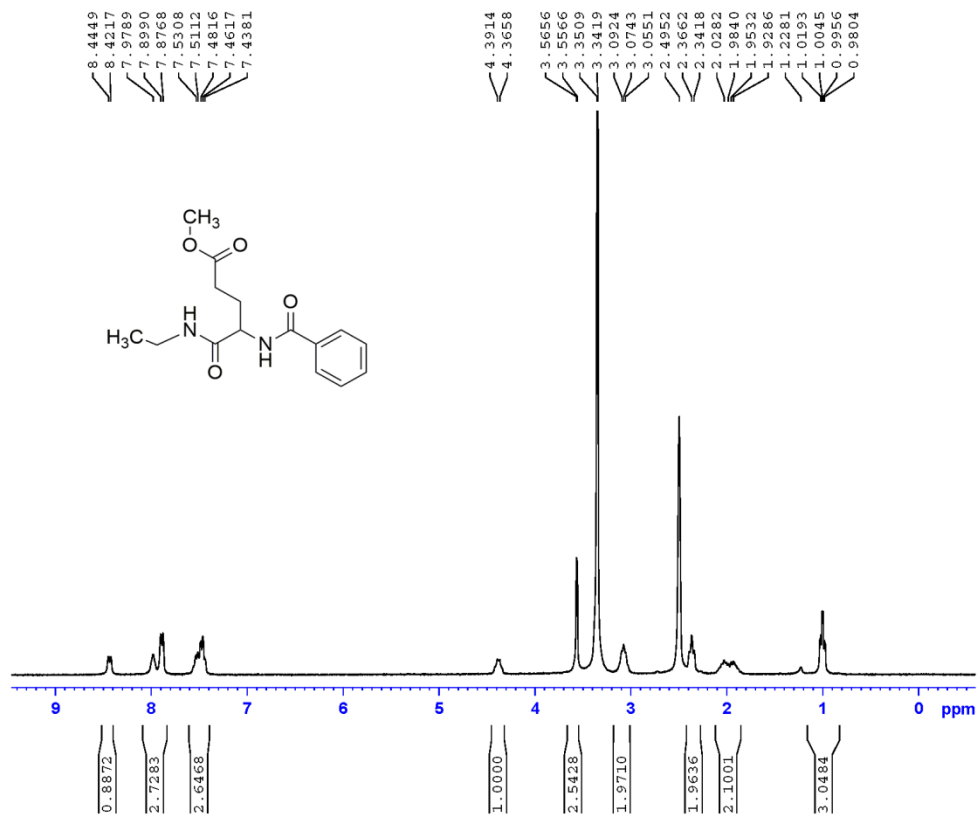
Supplementary Fig. 4 ¹H NMR (300 MHz, CDCl₃) of DDO-5703



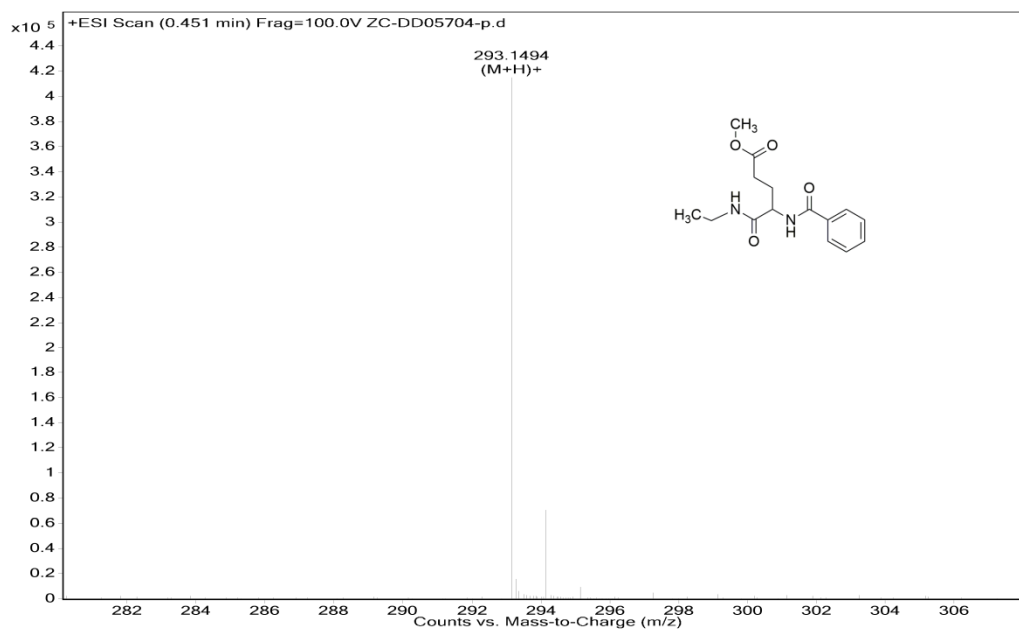
Supplementary Fig. 5 ¹³C NMR (75 MHz, CDCl₃) of DDO-5703



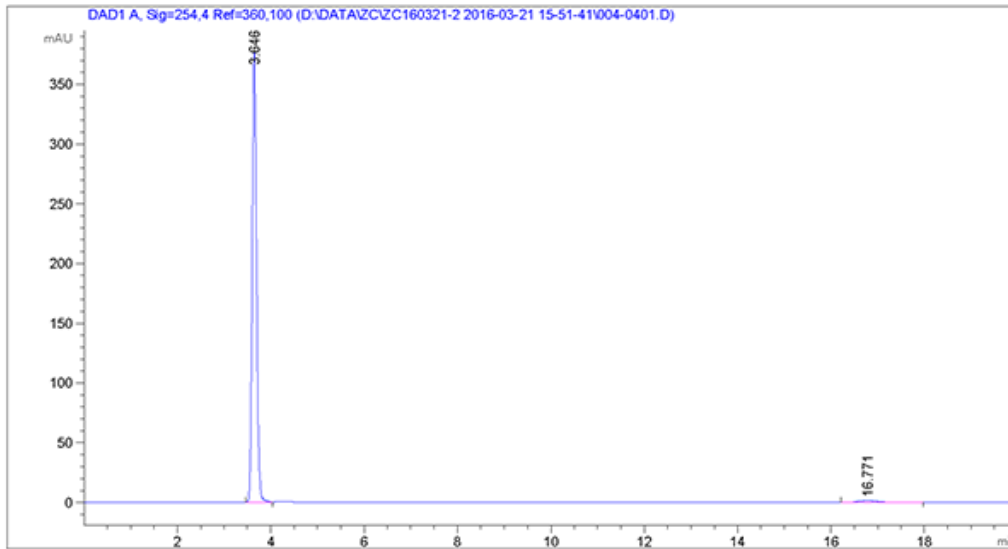
Supplementary Fig. 6 HPLC of DDO-5703



Supplementary Fig. 7 ^1H NMR (300 MHz, DMSO) of DDO-5704

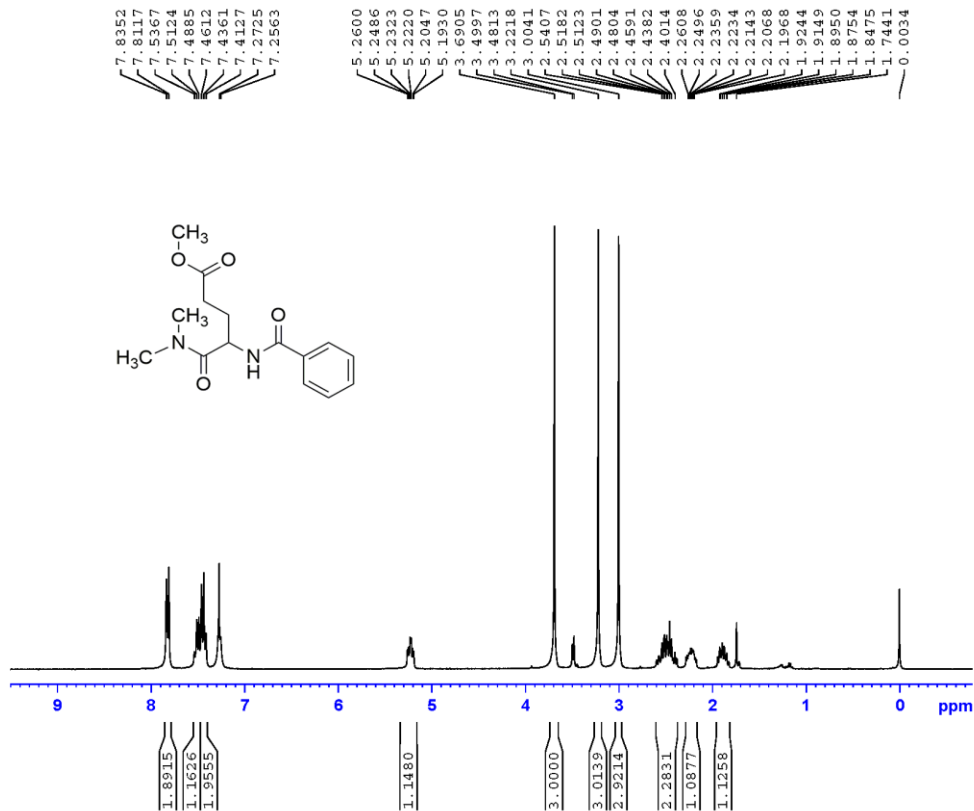


Supplementary Fig. 8 HR-MS (ESI) of DDO-5704

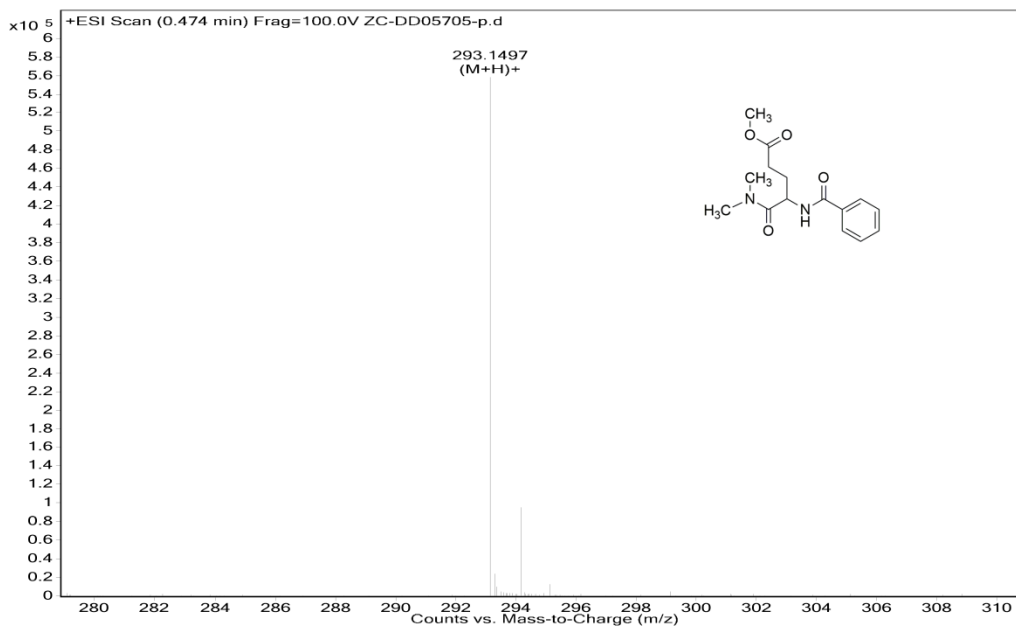


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	3.646	BB	0.0980	2393.93237	377.32944	98.3816
2	16.771	BB	0.3835	39.38092	1.54418	1.6184

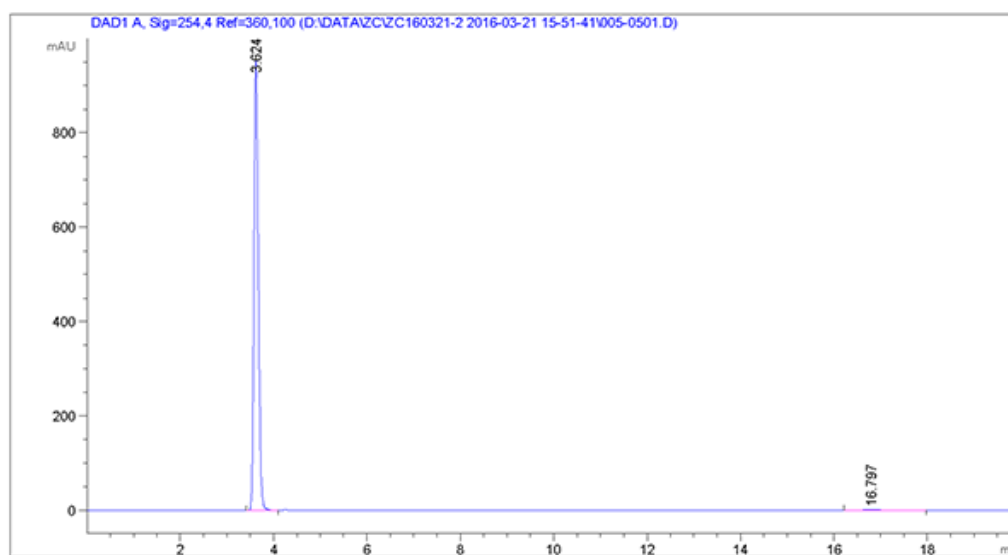
Supplementary Fig. 9 HPLC of DDO-5704



Supplementary Fig. 10 ¹H NMR (300 MHz, CDCl₃) of DDO-5705

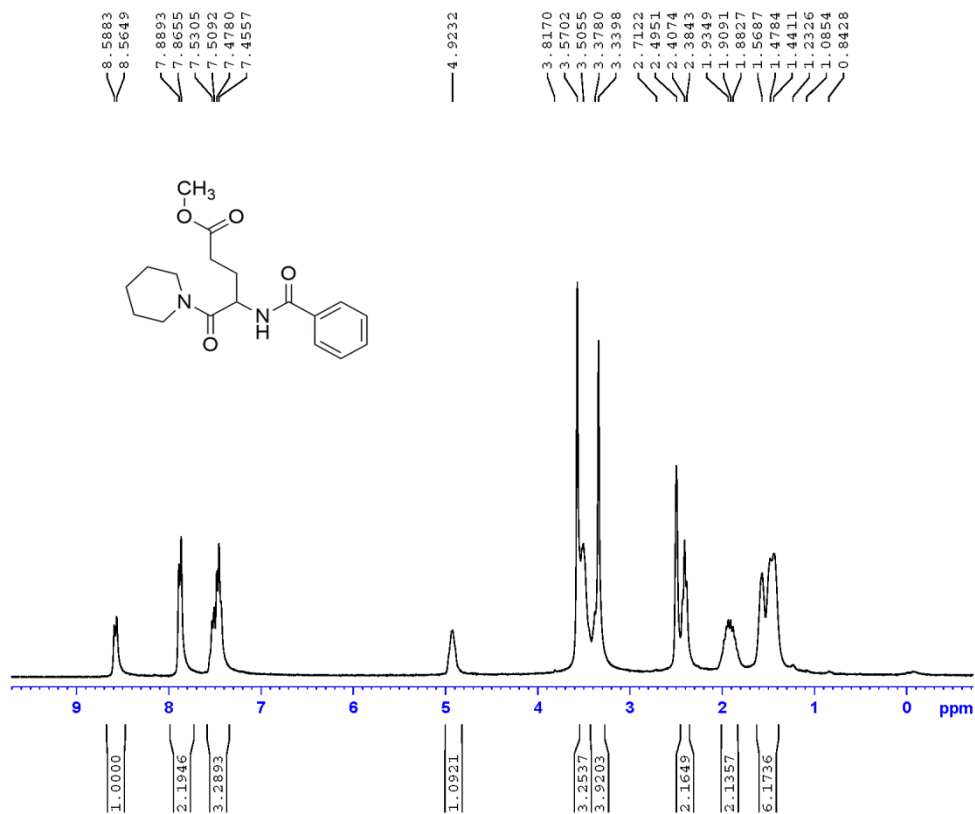


Supplementary Fig. 11 HR-MS (ESI) of DDO-5705

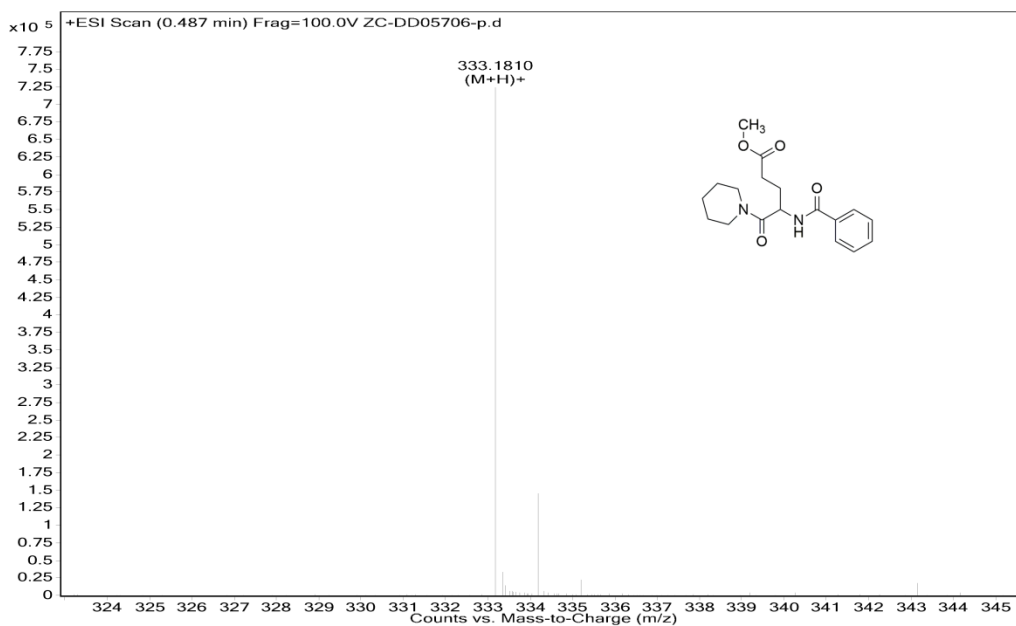


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	3.624	BB	0.0981	6044.99316	952.38562	99.2800
2	16.797	BB	0.3788	43.83801	1.72317	0.7200

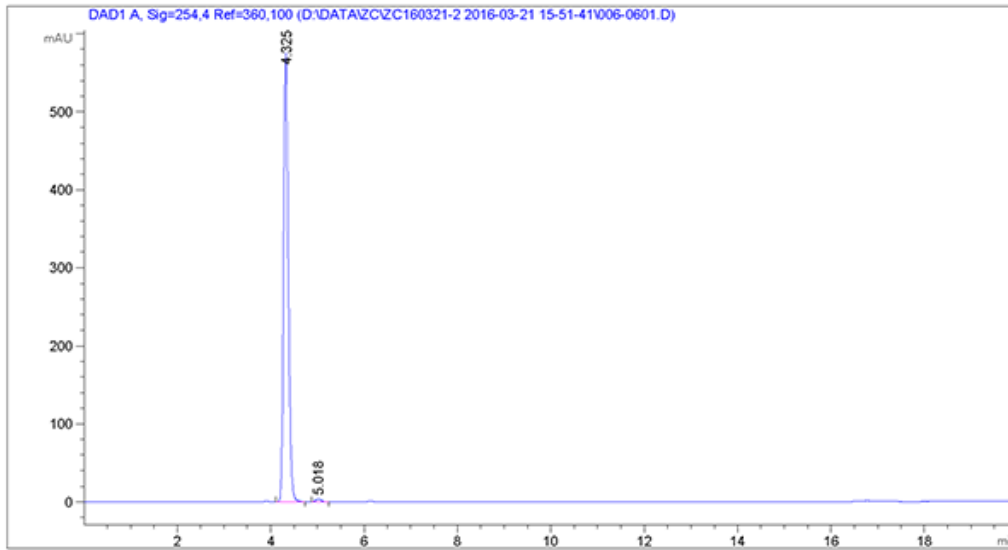
Supplementary Fig. 12 HPLC of DDO-5705



Supplementary Fig. 13 ¹H NMR (300 MHz, DMSO) of DDO-5706

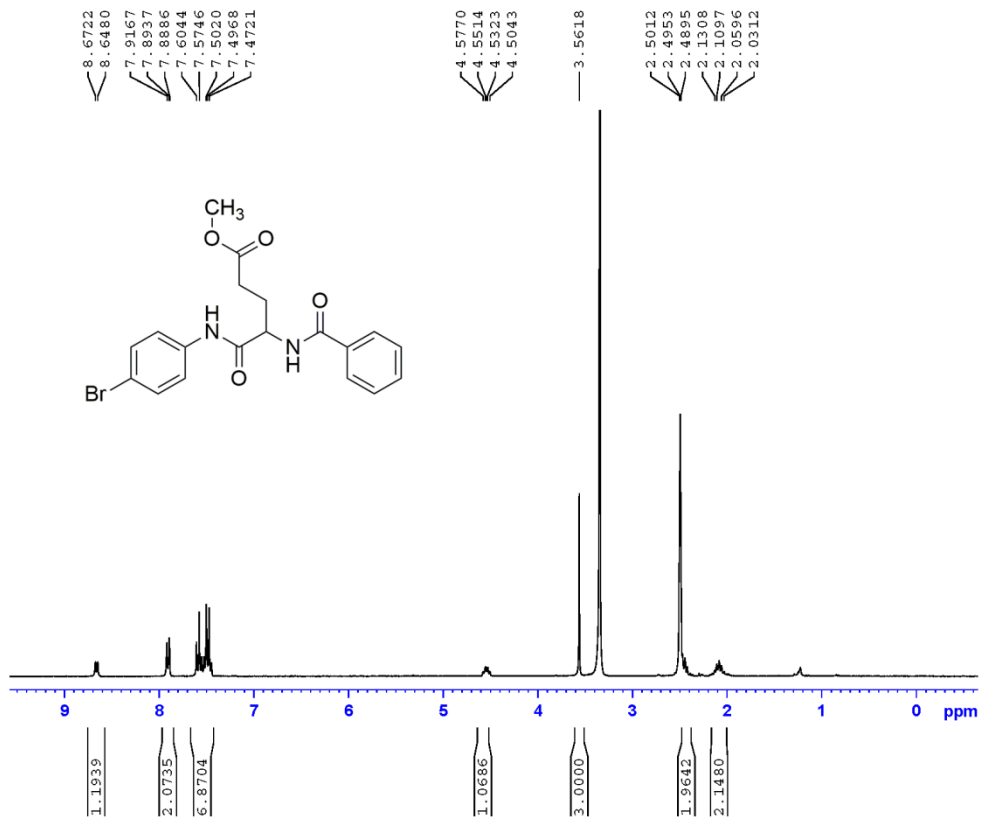


Supplementary Fig. 14 HR-MS (ESI) of DDO-5706

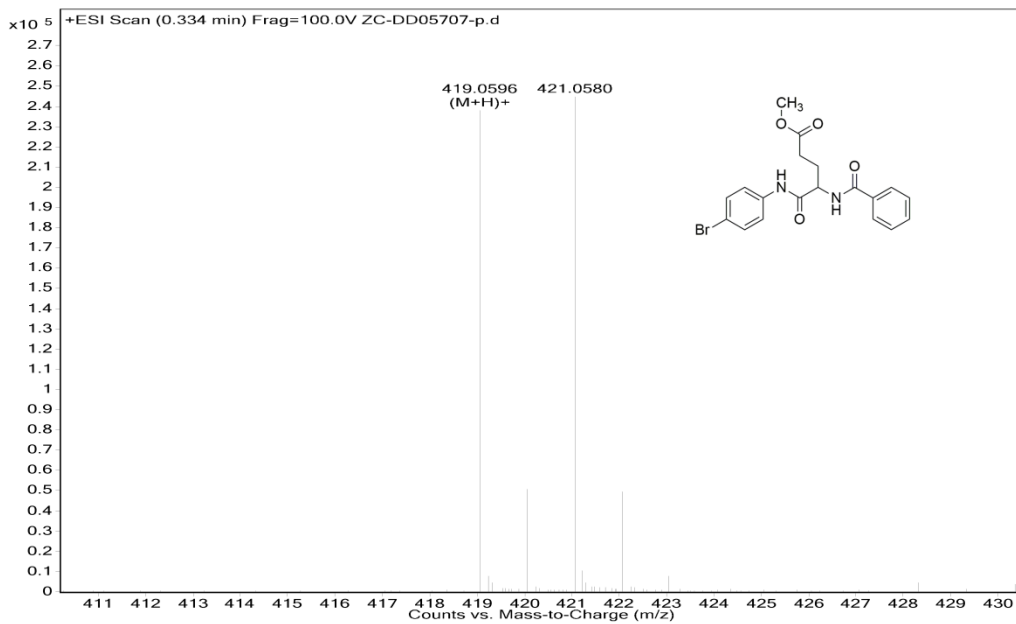


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	4.325	BB	0.1079	4041.79712	575.76794	99.3912
2	5.018	BB	0.1174	24.75686	3.30384	0.6088

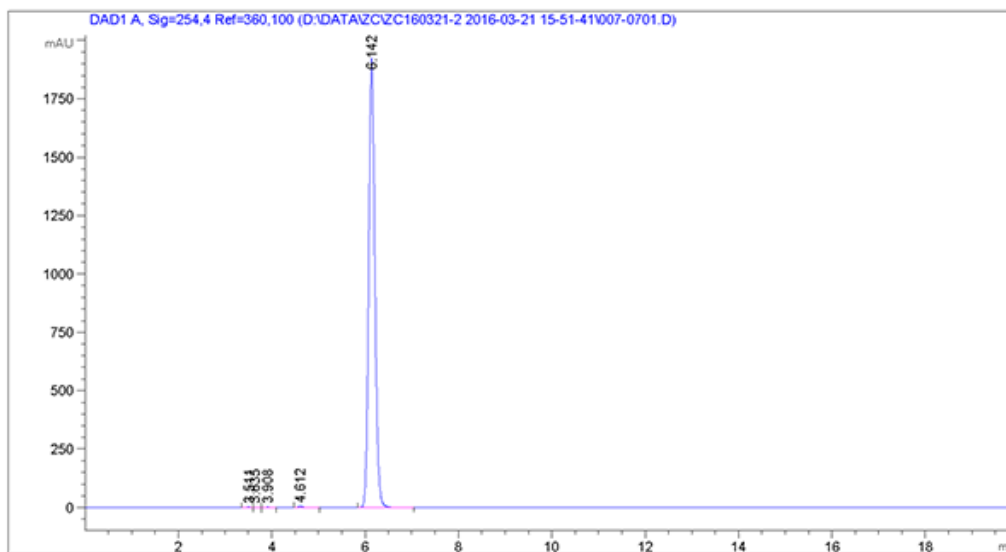
Supplementary Fig. 15 HPLC of DDO-5706



Supplementary Fig. 16 ¹H NMR (300 MHz, DMSO) of DDO-5707

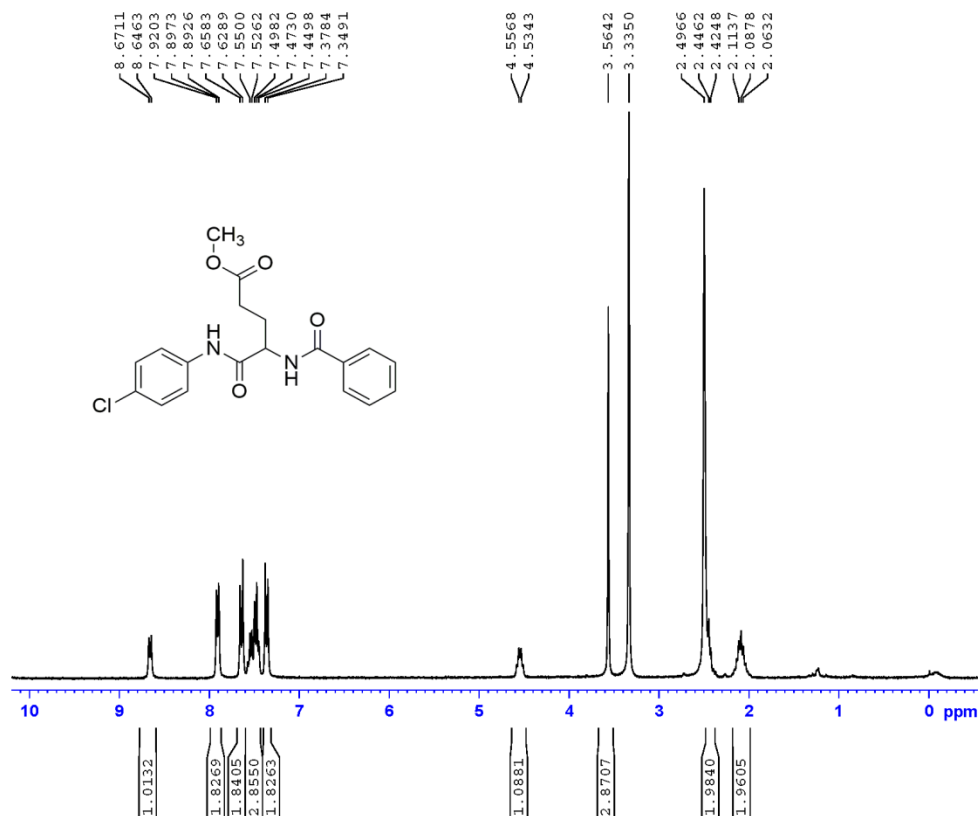


Supplementary Fig. 17 HR-MS (ESI) of DDO-5707

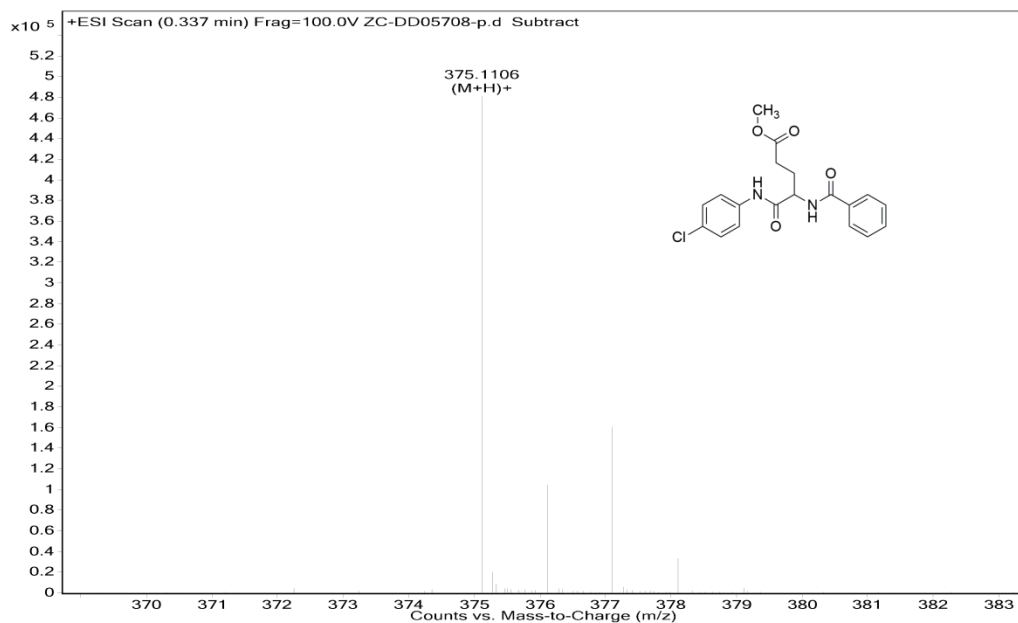


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	3.511	BV	0.0922	15.84367	2.55890	0.0892
2	3.635	VV	0.0944	6.79298	1.09537	0.0383
3	3.908	VB	0.1102	14.49370	2.05796	0.0816
4	4.612	BB	0.1103	34.22631	4.73637	0.1927
5	6.142	BB	0.1402	1.76874e4	1925.60974	99.5982

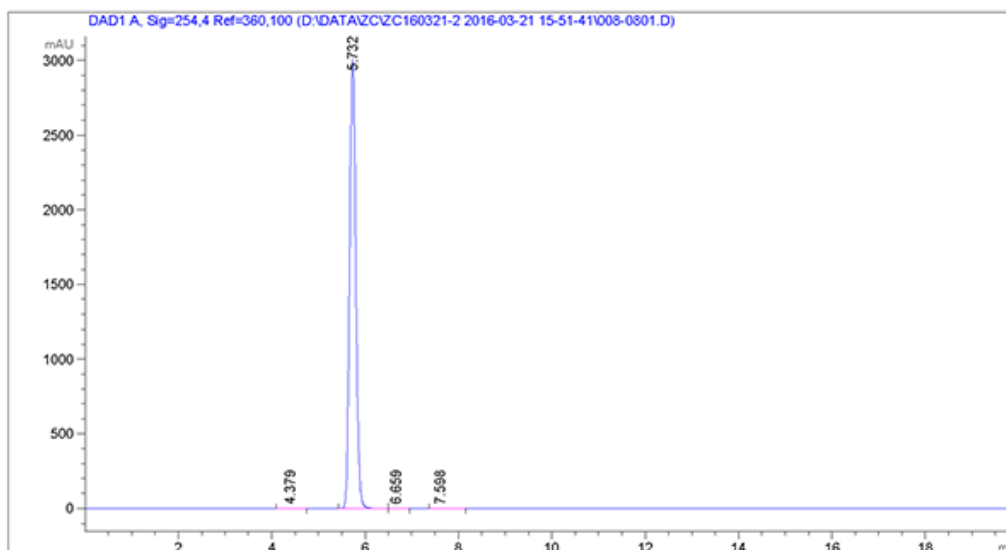
Supplementary Fig. 18 HPLC of DDO-5707



Supplementary Fig. 19 ^1H NMR (300 MHz, DMSO) of DDO-5708

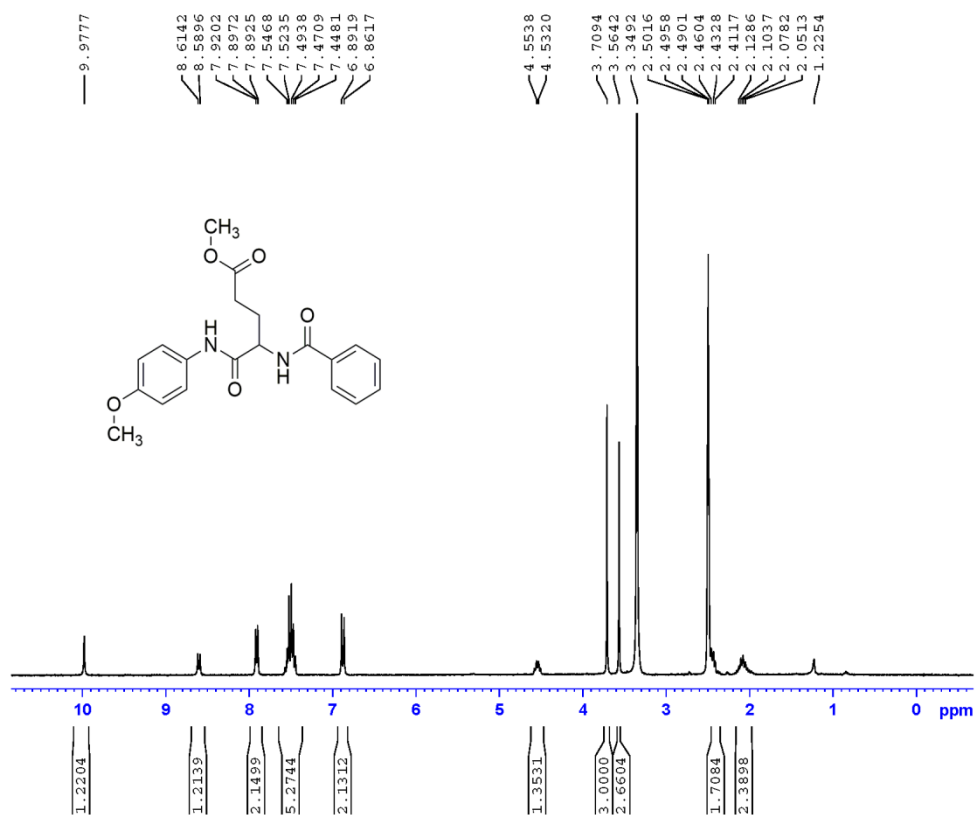


Supplementary Fig. 20 HR-MS (ESI) of DDO-5708

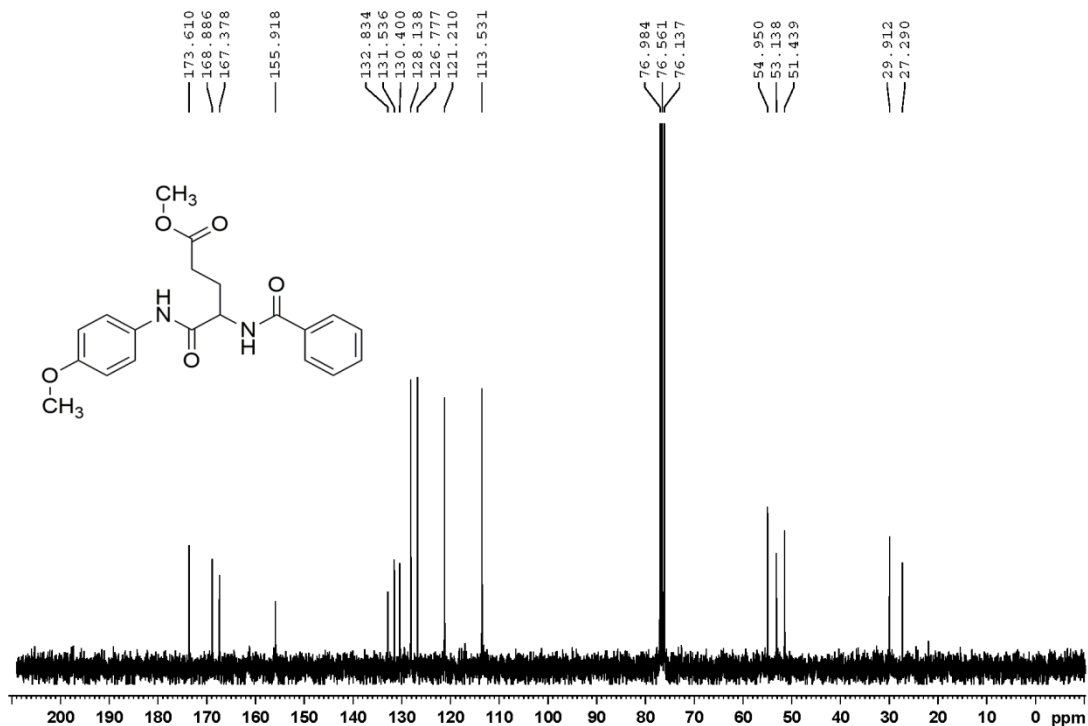


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	4.379	BB	0.1560	12.92496	1.14226	0.0467
2	5.732	BV	0.1430	2.76290e4	3012.27124	99.8649
3	6.659	VB	0.1655	10.04289	2.43976	0.0363
4	7.598	BB	0.1672	14.41418	1.34362	0.0521

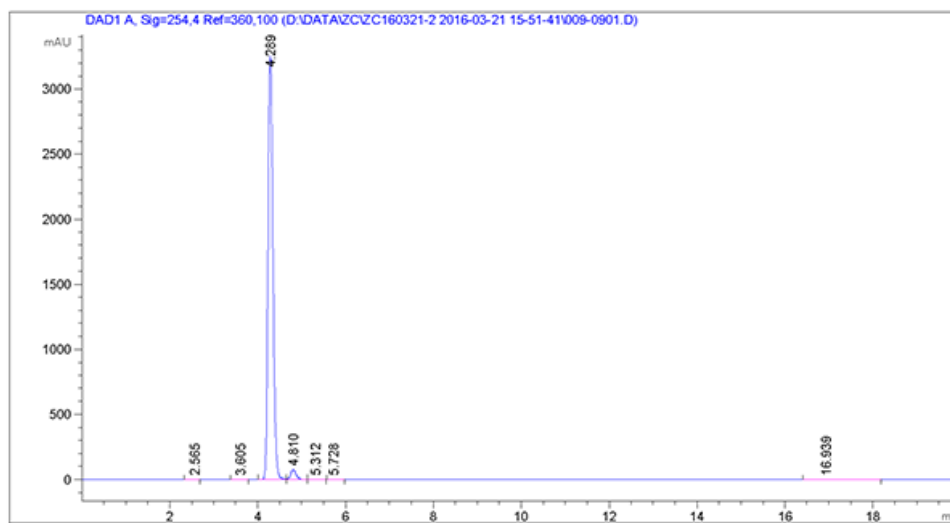
Supplementary Fig. 21 HPLC of DDO-5708



Supplementary Fig. 22 ¹H NMR (300 MHz, DMSO) of DDO-5709

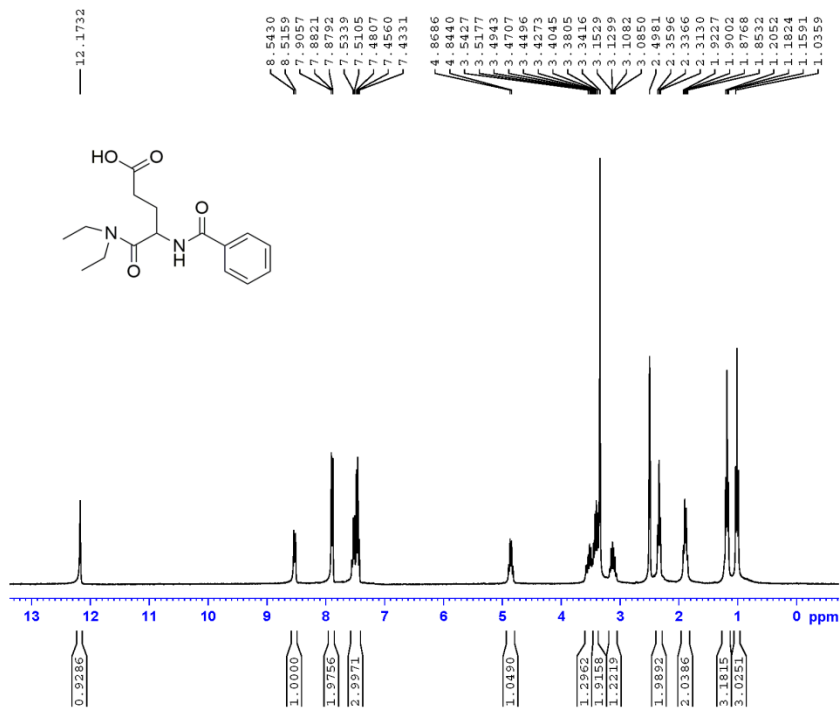


Supplementary Fig. 23 ¹³C NMR (75 MHz, CDCl₃) of DDO-5709

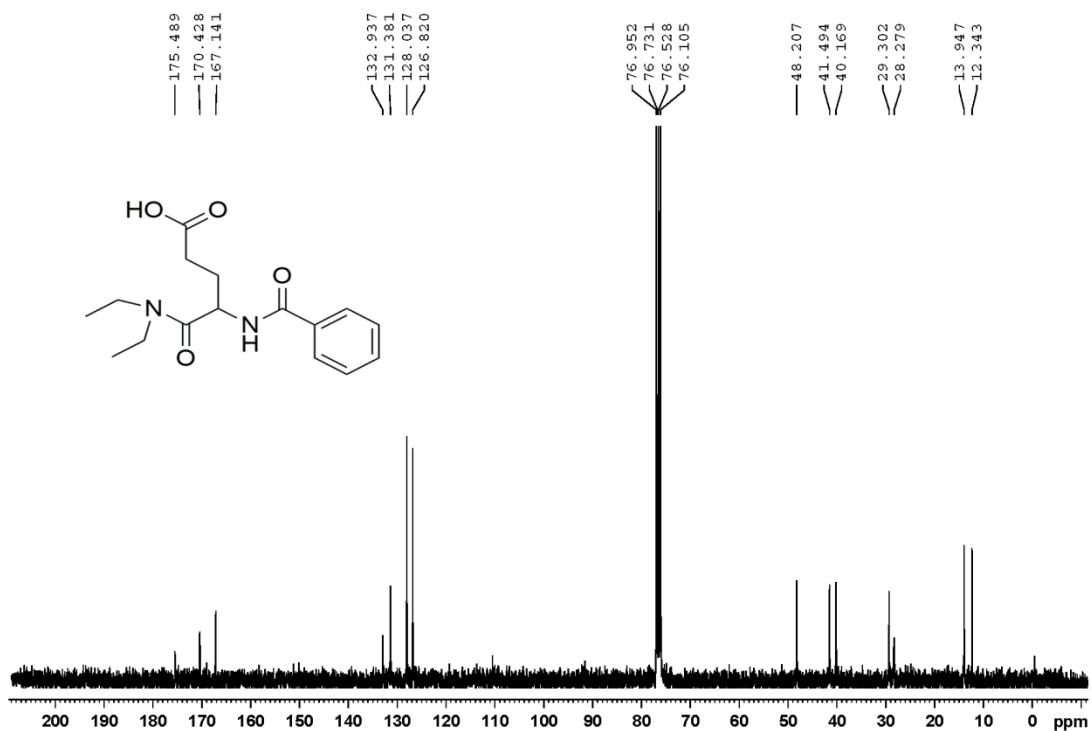


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.565	BV	0.1068	13.48192	1.77086	0.0518
2	3.605	BB	0.1660	26.24895	2.15709	0.1009
3	4.289	BV	0.1226	2.56285e4	3254.78052	98.4499
4	4.810	VB	0.1263	291.01223	75.58290	1.1179
5	5.312	BB	0.1363	19.73229	2.25041	0.0758
6	5.728	BB	0.1330	13.66351	1.61026	0.0525
7	16.939	BB	0.3762	39.33923	1.53898	0.1512

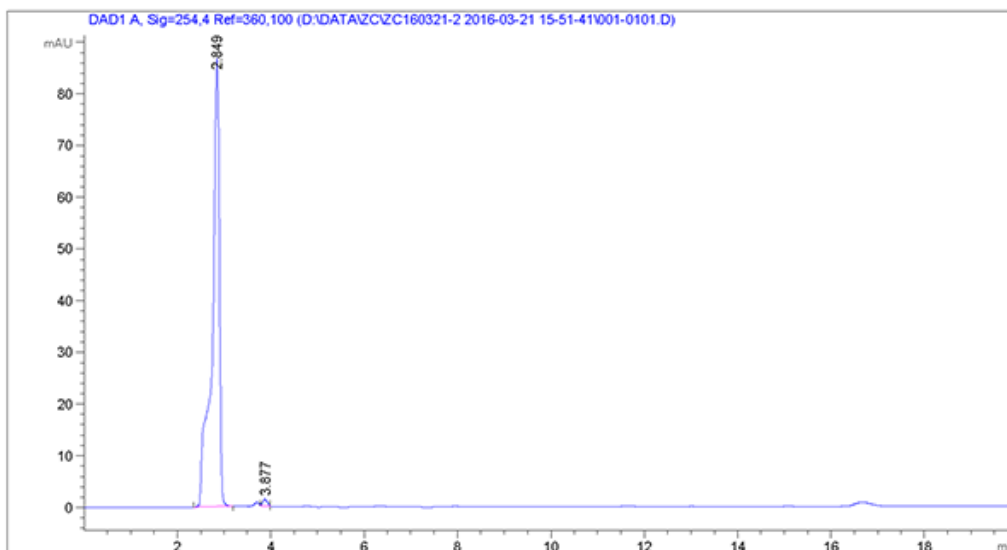
Supplementary Fig. 24 HPLC of DDO-5709



Supplementary Fig. 25 $^1\text{H NMR}$ (300 MHz, DMSO) of DDO-5710

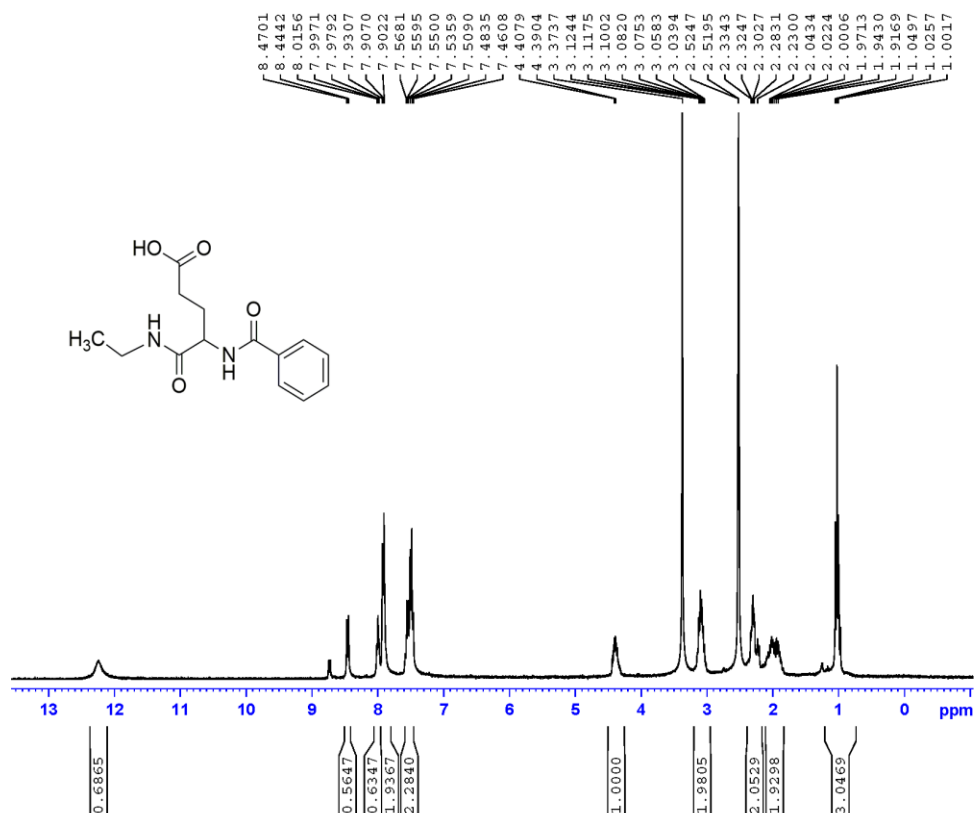


Supplementary Fig. 26 $^{13}\text{C NMR}$ (75 MHz, CDCl_3) of DDO-5710

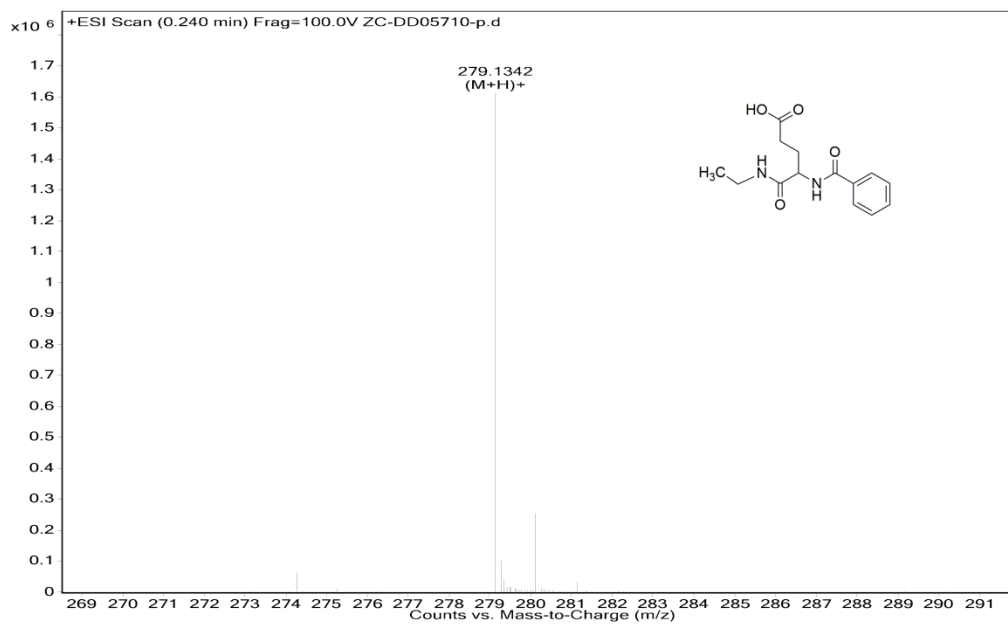


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.849	BB	0.1575	952.66371	86.77528	99.09999
2	3.877	VV	0.1113	8.65281	1.72317	0.9001

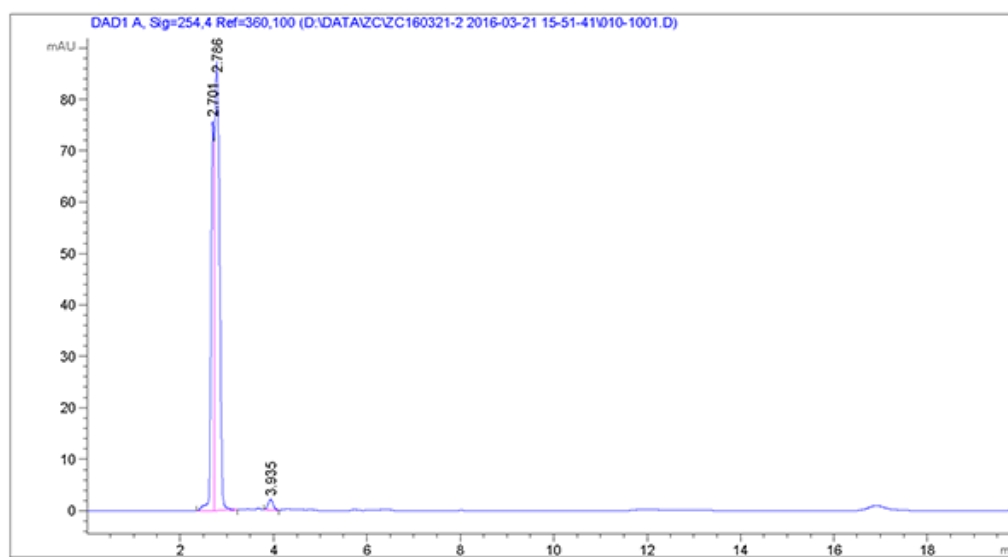
Supplementary Fig. 27 HPLC of DDO-5710



Supplementary Fig. 28 ¹H NMR (300 MHz, DMSO) of DDO-5711

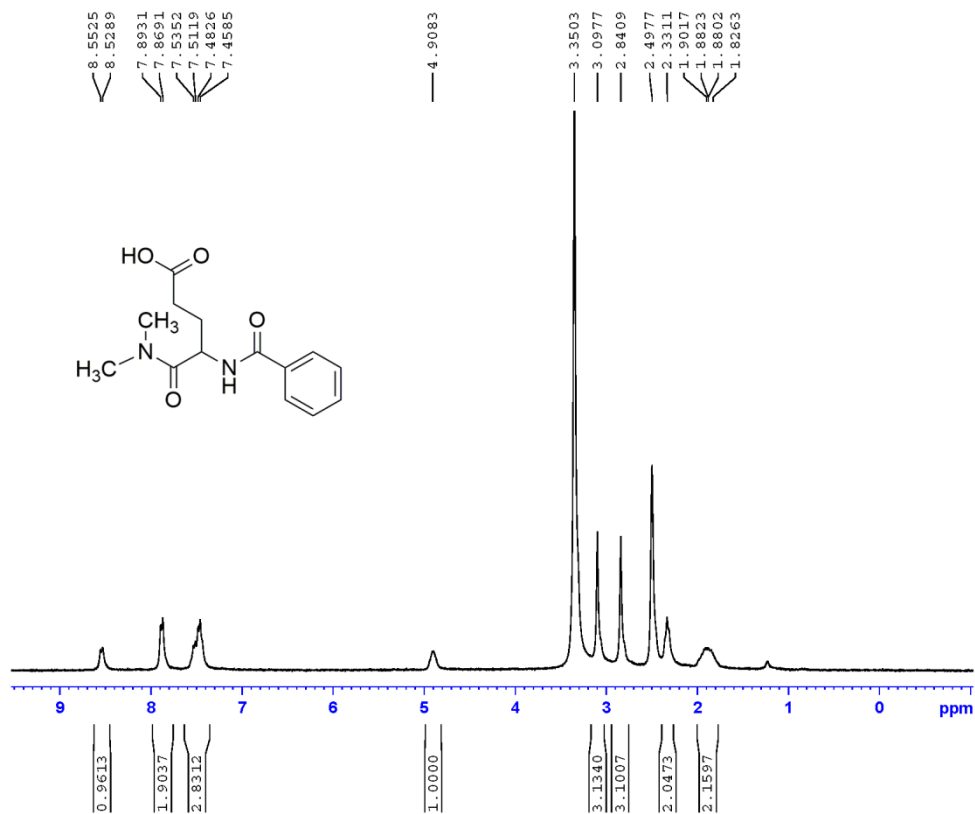


Supplementary Fig. 29 HR-MS (ESI) of DDO-5711

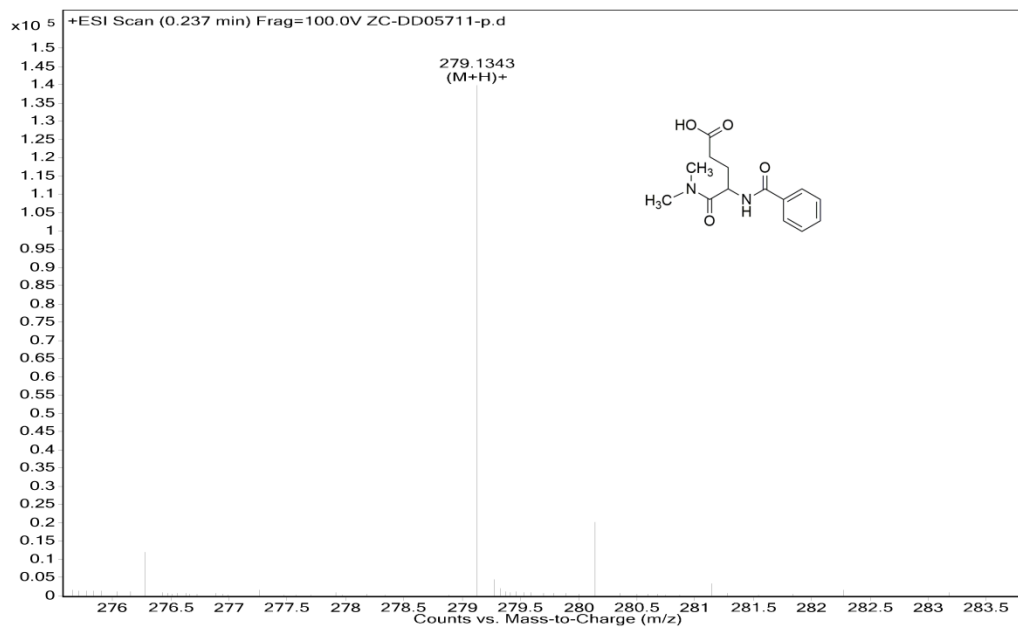


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.701	BV	0.0641	325.46301	75.78884	33.4249
2	2.786	VB	0.1125	633.34796	87.44965	65.0445
3	3.935	BB	0.1161	14.90439	2.02062	1.5307

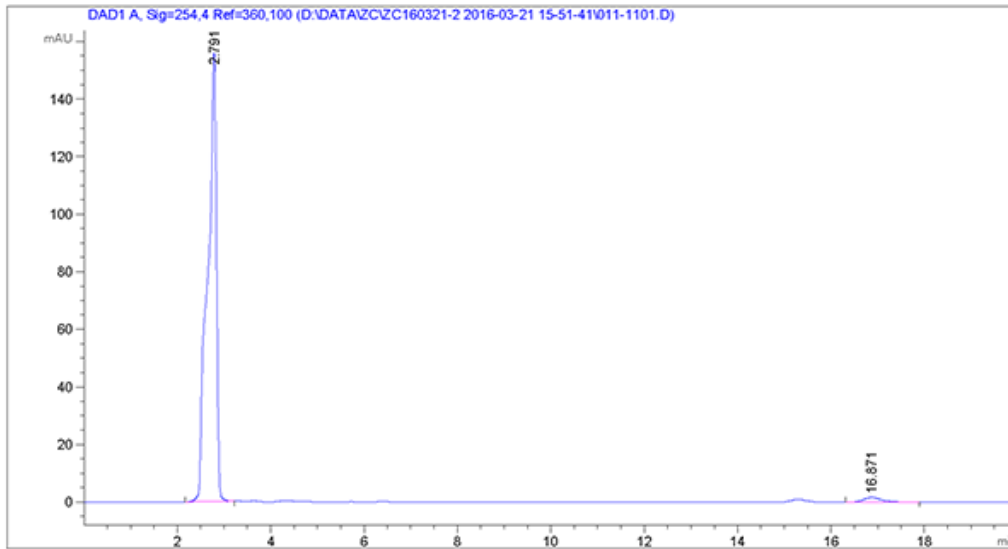
Supplementary Fig. 30 HPLC of DDO-5711



Supplementary Fig. 31 ¹H NMR (300 MHz, DMSO) of DDO-5712

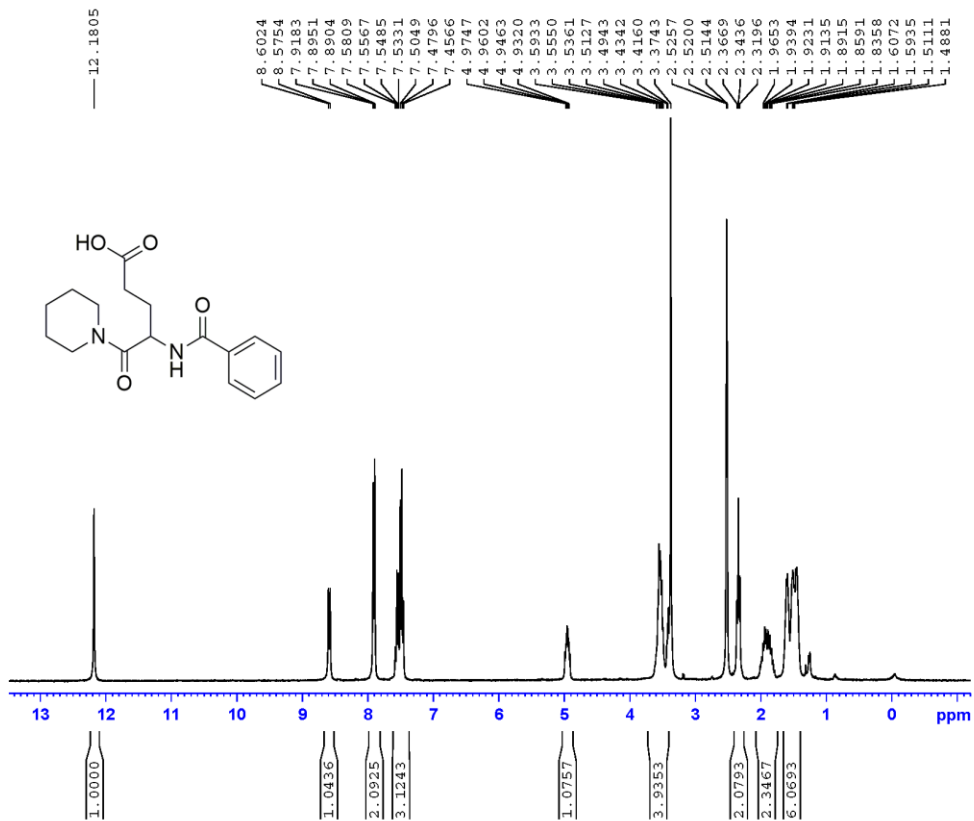


Supplementary Fig. 32 HR-MS (ESI) of DDO-5712

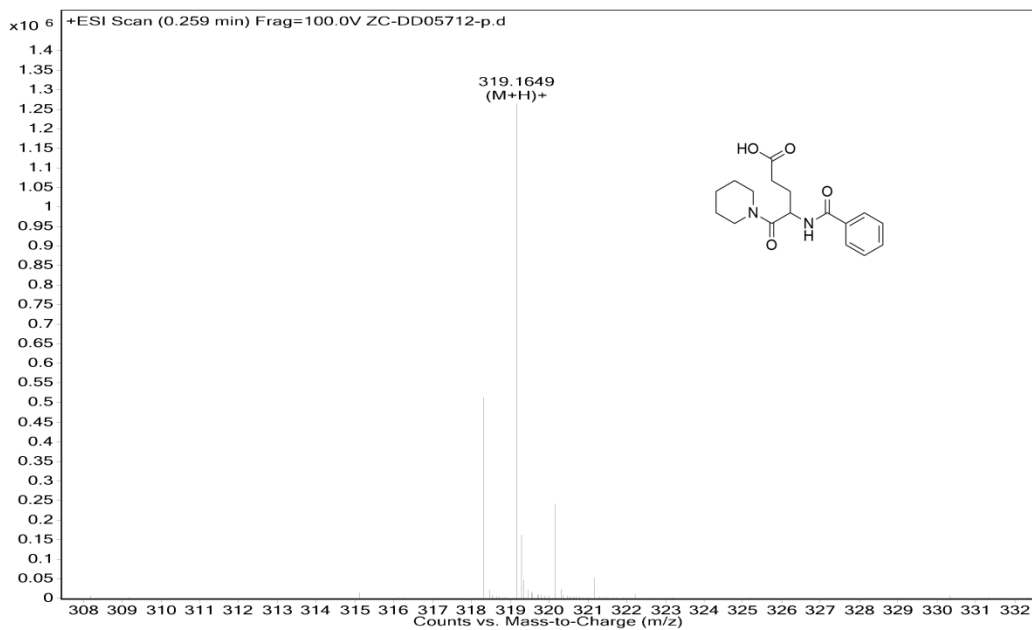


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.791	BB	0.1754	8876.05371	155.88206	98.5609
2	16.871	BB	0.3799	129.60037	1.57648	1.4391

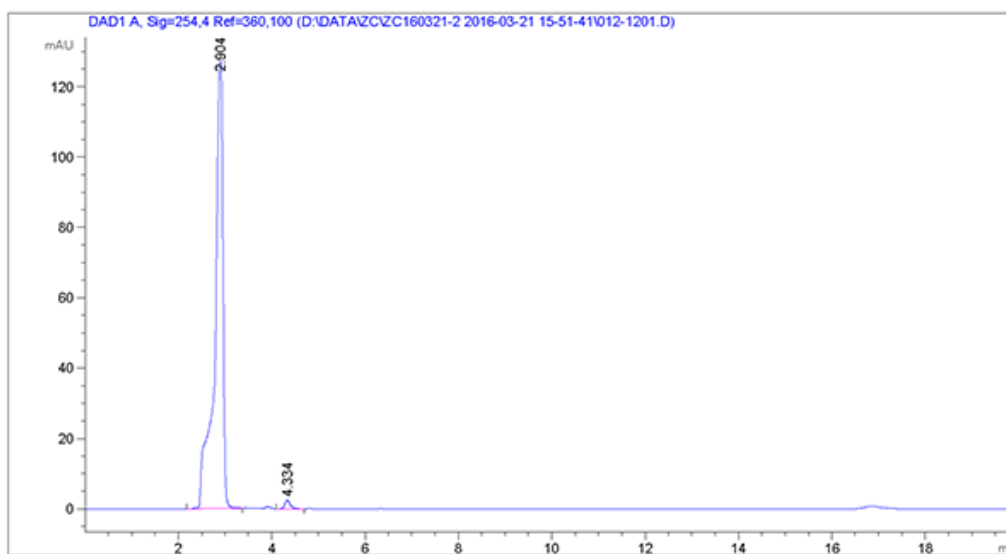
Supplementary Fig. 33 HPLC of DDO-5712



Supplementary Fig. 34 ¹H NMR (300 MHz, DMSO) of DDO-5713

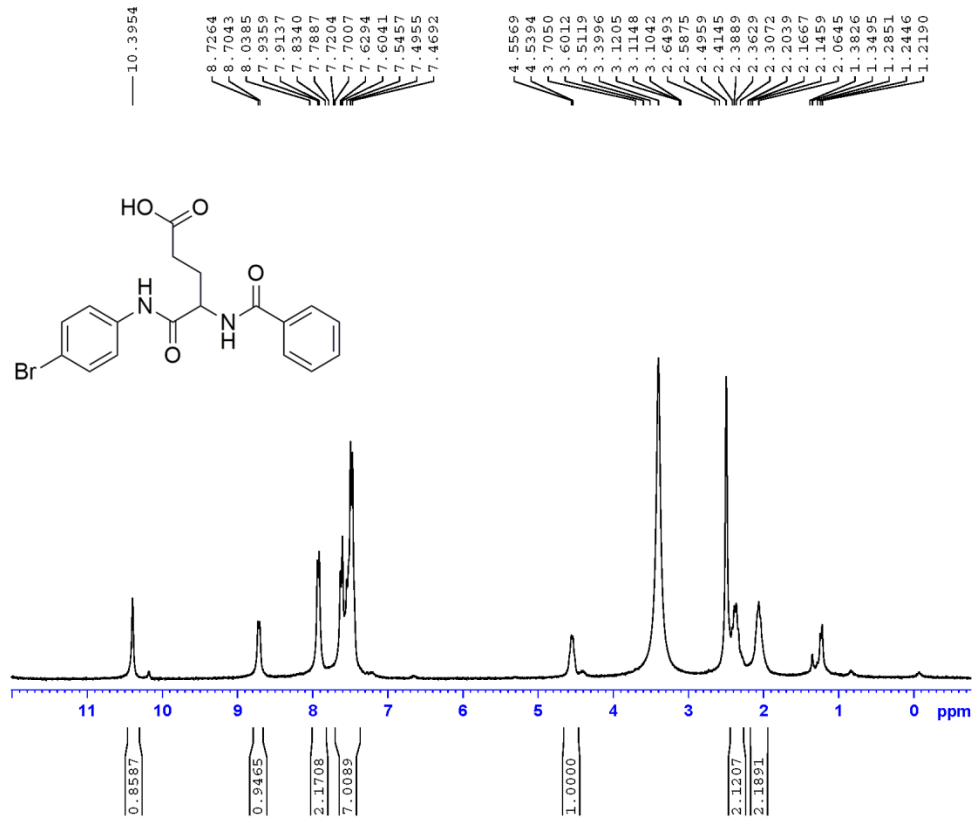


Supplementary Fig. 35 HR-MS (ESI) of DDO-5713

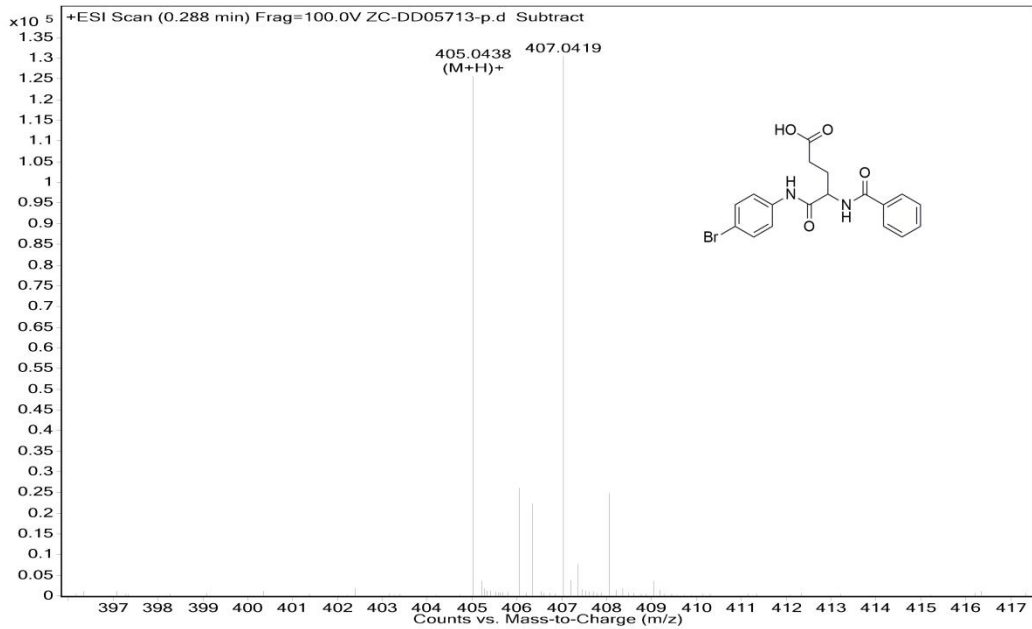


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.904	BB	0.1849	1563.66064	127.64718	98.8265
2	4.334	BB	0.1160	18.56741	2.40654	1.1735

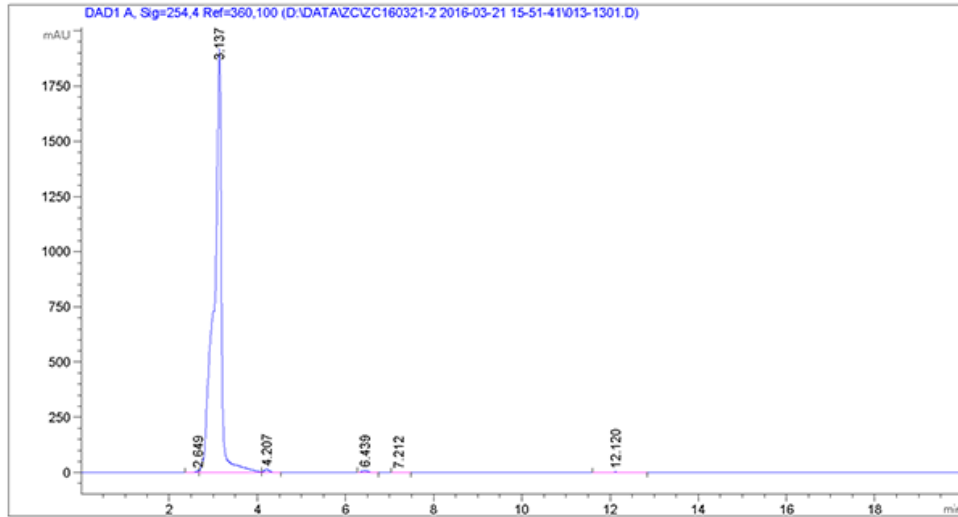
Supplementary Fig. 36 HPLC of DDO-5713



Supplementary Fig. 37 ¹H NMR (300 MHz, DMSO) of DDO-5714

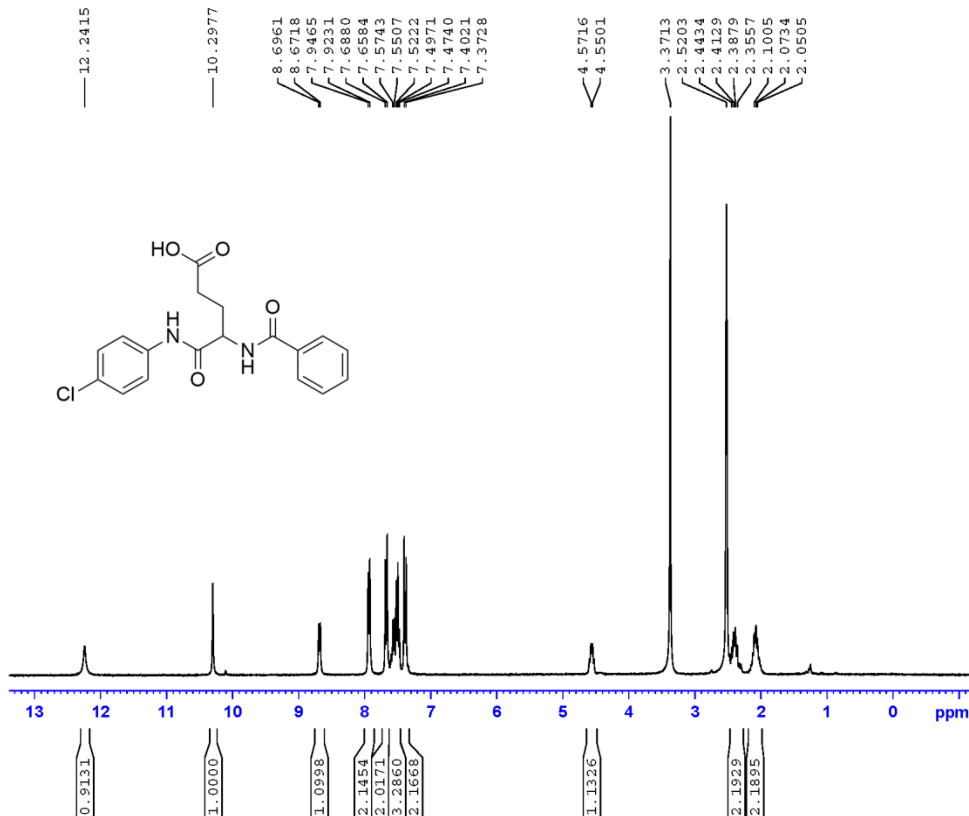


Supplementary Fig. 38 HR-MS (ESI) of DDO-5714

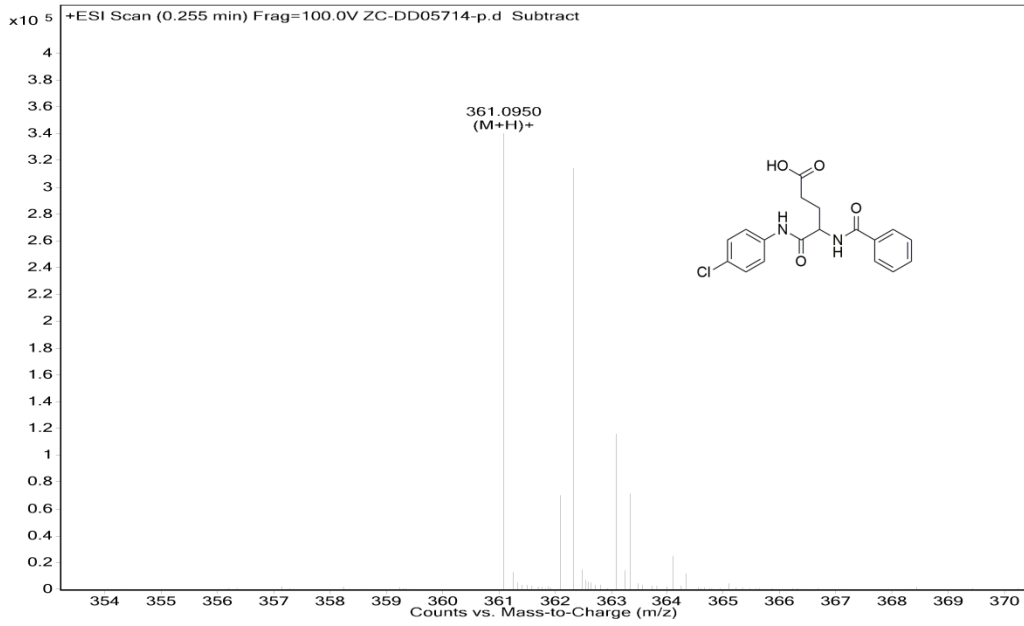


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.649	BV	0.0693	25.55136	5.42314	0.1126
2	3.137	VV	0.1604	2.24393e4	1919.11340	98.9243
3	4.207	VB	0.1076	99.12284	13.83706	0.4370
4	6.439	VB	0.1407	71.28300	7.79778	0.3143
5	7.212	BB	0.1559	11.61020	1.14897	0.0512
6	12.120	BB	0.2589	36.43829	2.15893	0.1606

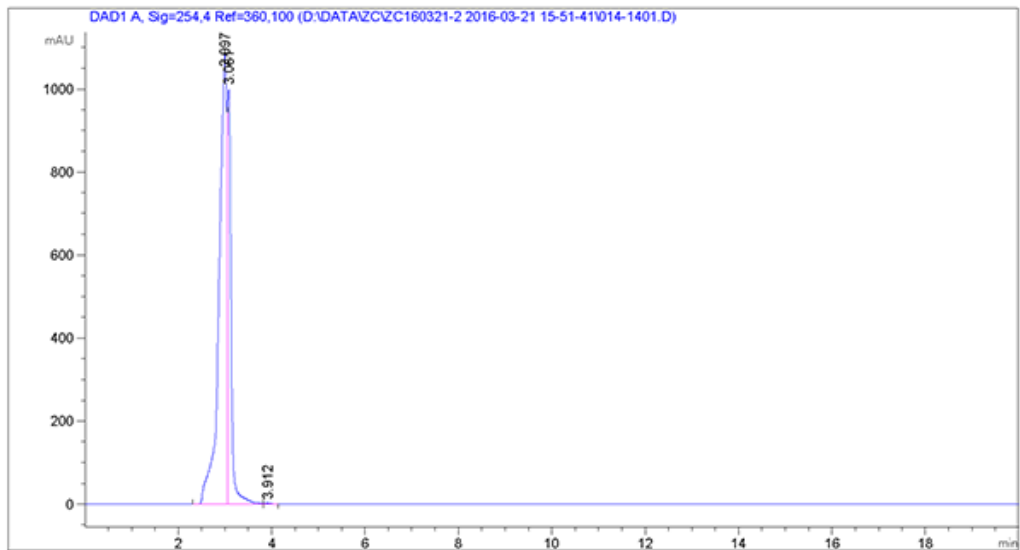
Supplementary Fig. 39 HPLC of DDO-5714



Supplementary Fig. 40 ¹H NMR (300 MHz, DMSO) of DDO-5715

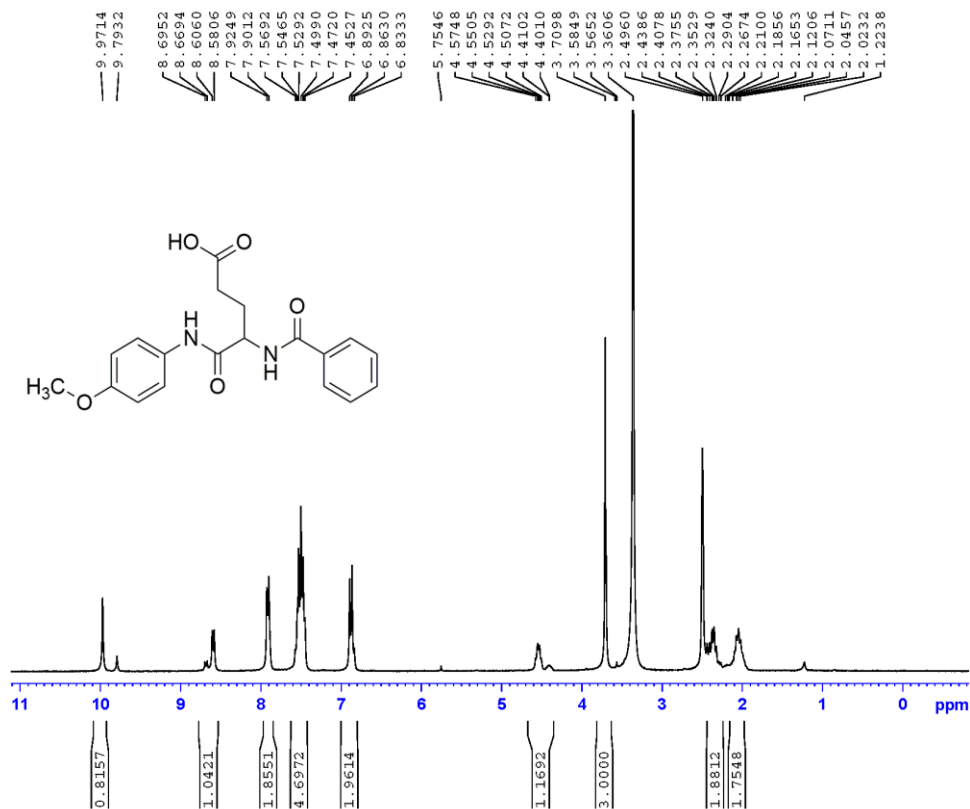


Supplementary Fig. 41 HR-MS (ESI) of DDO-5715

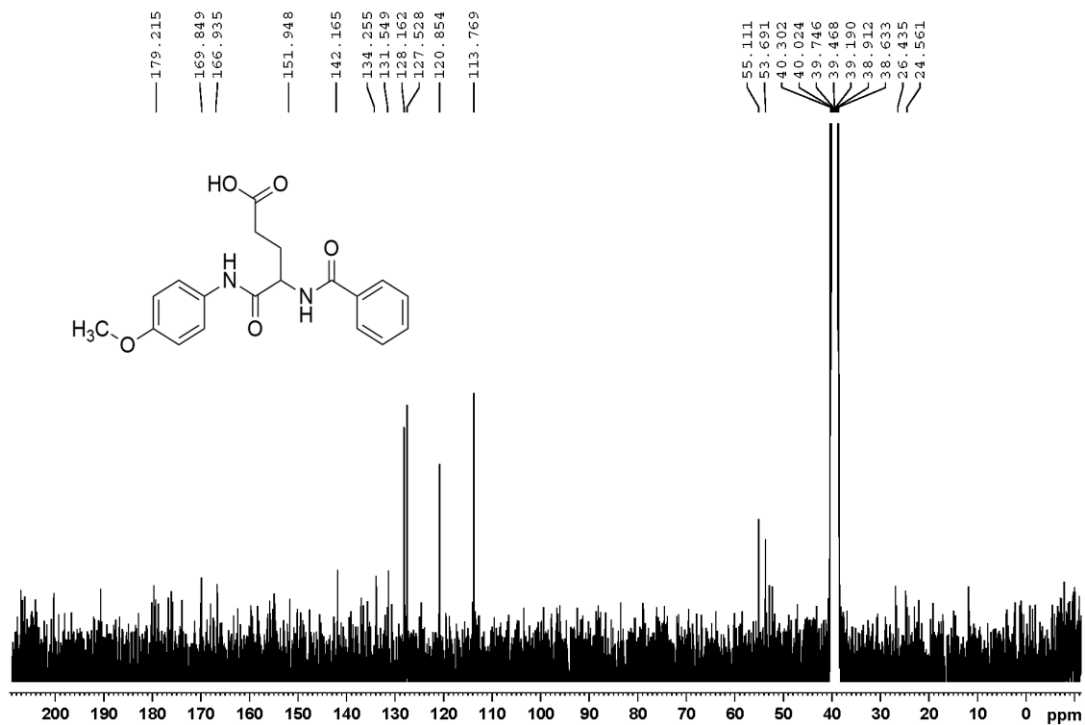


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.997	BV	0.1589	1.23294e4	1081.98181	68.8860
2	3.081	VV	0.0808	5554.44580	1000.61011	31.0334
3	3.912	VB	0.1344	14.42400	1.58106	0.0806

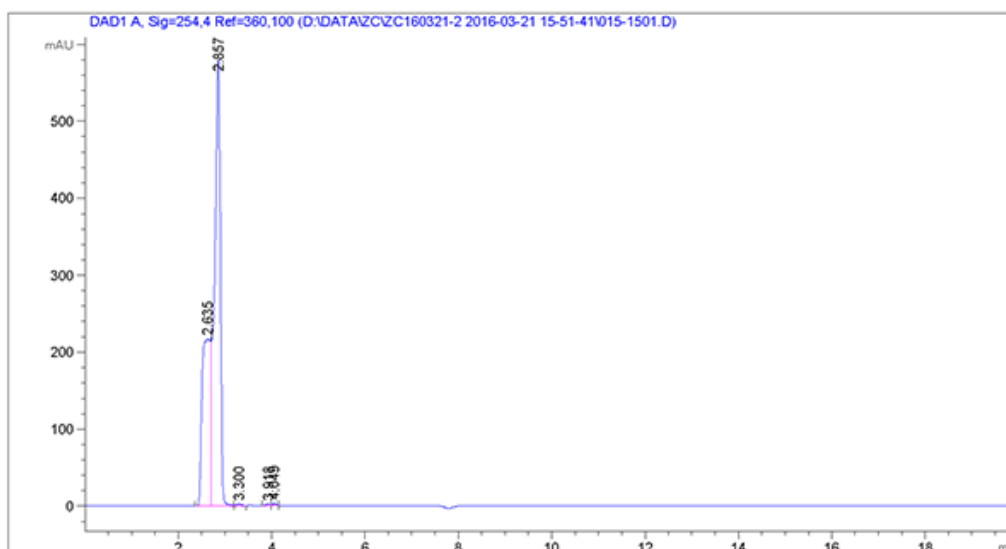
Supplementary Fig. 42 HPLC of DDO-5715



Supplementary Fig. 43 ¹H NMR (300 MHz, DMSO) of DDO-5716

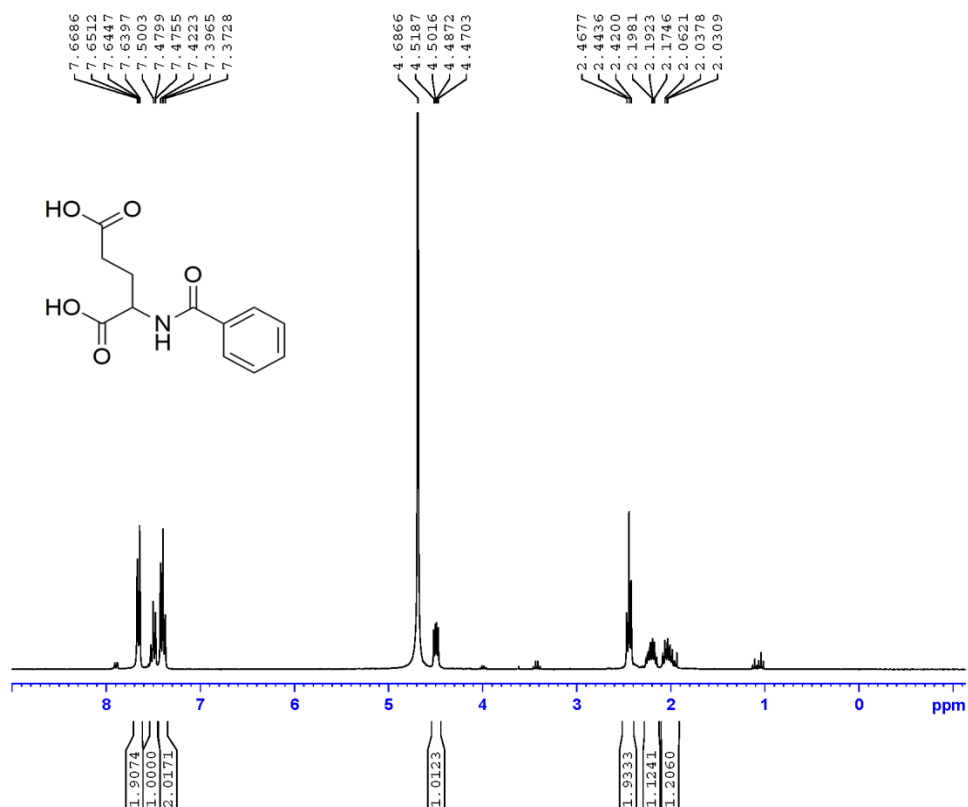


Supplementary Fig. 44 ¹³C NMR (75 MHz, CDCl₃) of DDO-5716

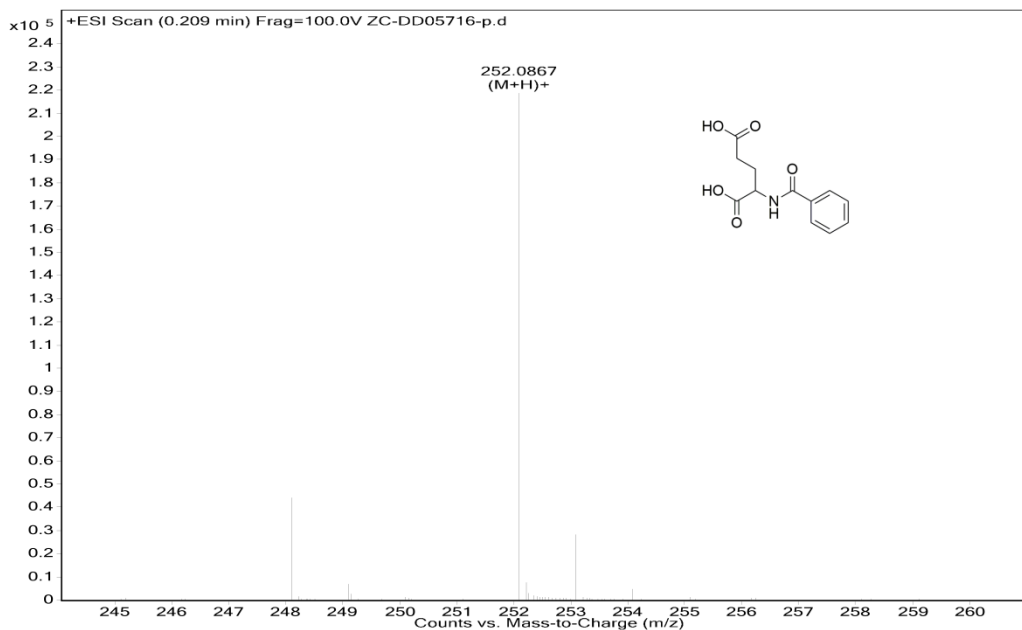


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.635	BV	0.1962	2640.53662	216.59180	31.4362
2	2.857	VV	0.1321	5672.61539	579.46503	67.5338
3	3.300	VB	0.0912	30.50760	2.24722	0.3632
4	3.918	BV	0.0924	26.45056	2.01758	0.3149
5	4.049	VB	0.0952	29.55843	2.37090	0.3519

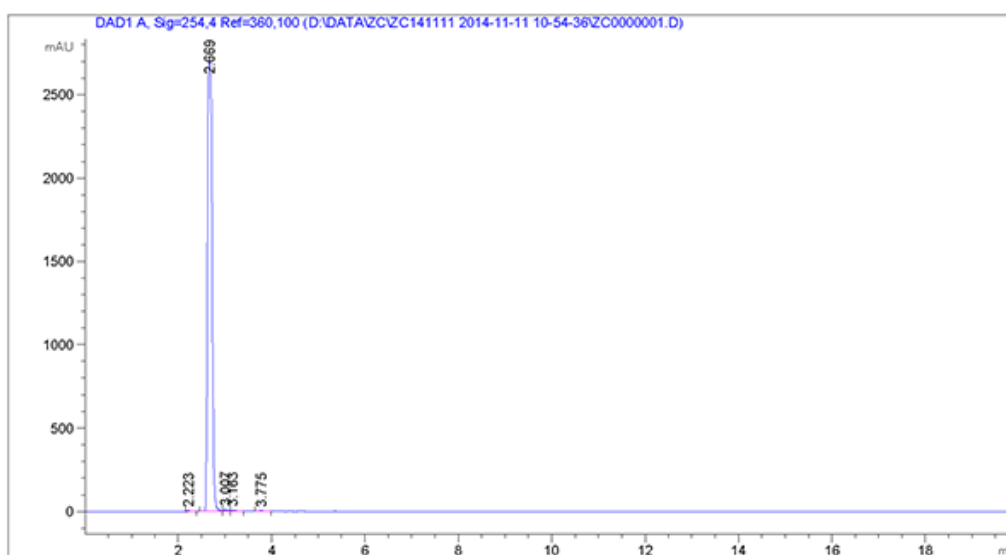
Supplementary Fig. 45 HPLC of DDO-5716



Supplementary Fig. 46 ¹H NMR (300 MHz, D₂O) of DDO-5717

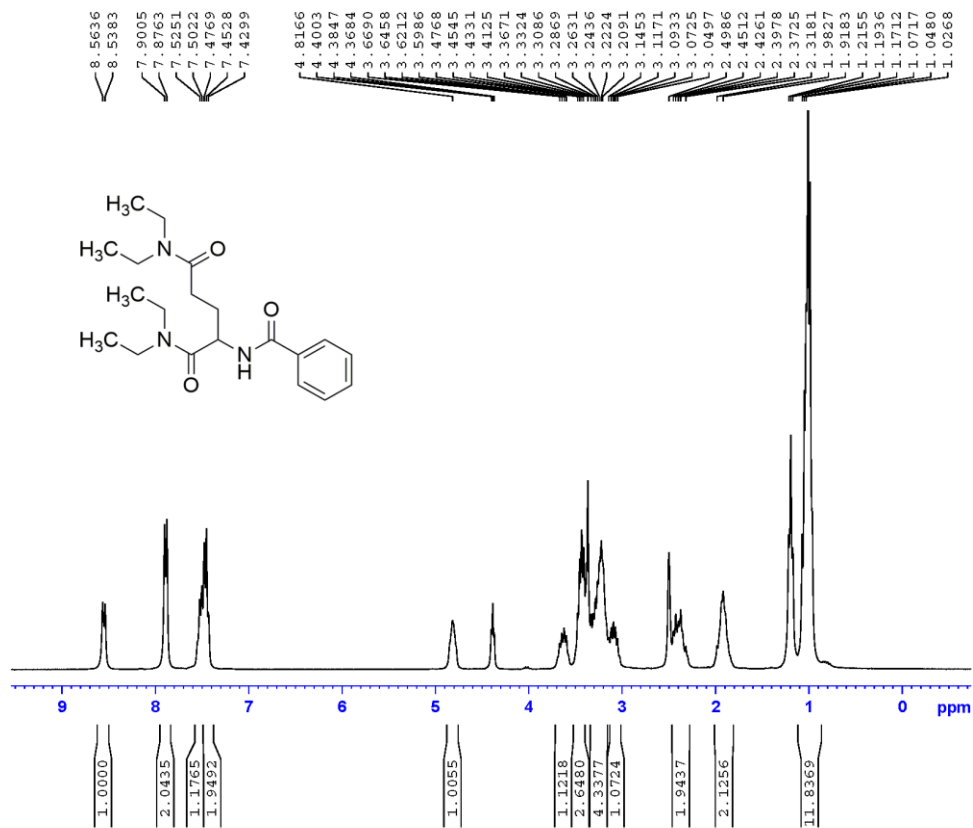


Supplementary Fig. 47 HR-MS (ESI) of DDO-5717

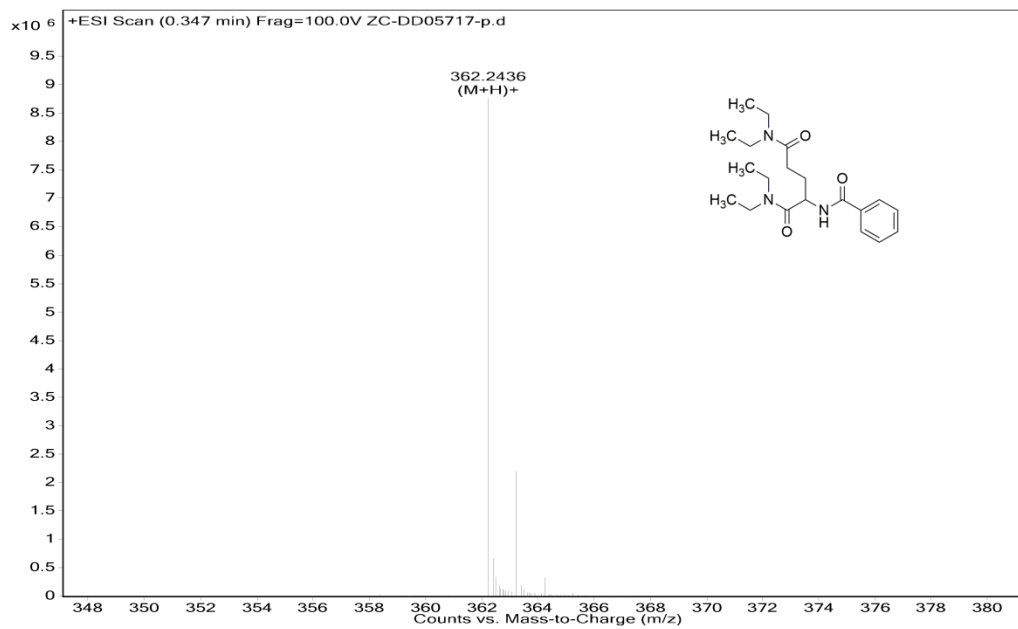


Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	2.223	BB	0.0698	15.27095	3.31248	0.0821
2	2.669	BV	0.0958	1.84647e4	2700.99268	99.2665
3	3.007	VV	0.0842	60.34696	10.03527	0.3244
4	3.163	VB	0.0983	37.39946	5.43642	0.2011
5	3.775	BV	0.0891	23.41782	3.95512	0.1259

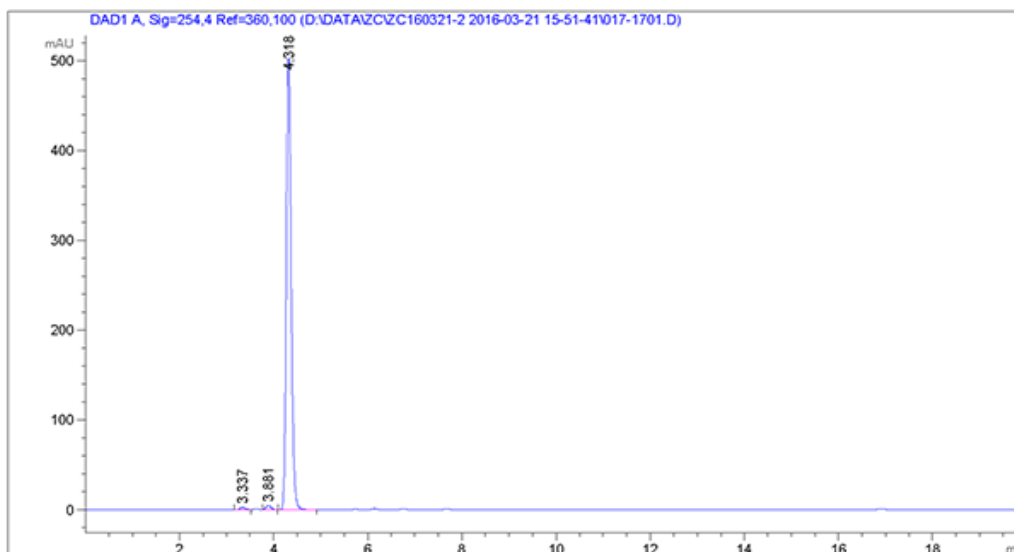
Supplementary Fig. 48 HPLC of DDO-5717



Supplementary Fig. 49 ¹H NMR (300 MHz, DMSO) of DDO-5718



Supplementary Fig. 50 HR-MS (ESI) of DDO-5718



Peak #	Retention time [min]	Type	Peak width [min]	Peak area [mAU*s]	Peak height [mAU]	Peak area %
1	3.337	BV	0.1044	19.07712	2.70076	0.5101
2	3.881	VB	0.1075	24.76921	4.44964	0.6623
3	4.318	BB	0.1097	3696.03212	502.51224	98.8276

Supplementary Fig. 51 HPLC of DDO-5718