Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

for

Synthesis of thiazolidines via regioselective addition of unsymmetric thioureas to maleic acid derivatives

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Experimental Section

General Information: NMR spectroscopic data were recorded with Bruker DPX-300, Bruker Avance 400 and Bruker Avance 500 spectrometers (300.13, 400.13 and 500.03 MHz for ^{1}H, 75.47, 100.61 and 125.76 MHz for ^{13}C, respectively) in $CDCl_3$ and DMSO-d_6 and were referenced to residual solvent proton signals (δ_H = 7.26 and 2.50 ppm, respectively) and solvent carbon signals (δ_C = 77.00 and 39.52 ppm, respectively). DEPT spectra were used for carbon atoms signals assignment. The NMR spectroscopic signals of the thiazolidines atoms on the phenyl ring of former thiourea are referred to as "A" and the atoms on the phenyl ring of former maleimide to as "B". The diastereotopic protons of the CH_2-group of thiazolidines are marked by H^a and H^b. Melting points were determined with a Stuart SMP30 instrument and are uncorrected. Mass spectra were recorded with a Bruker Maxis HRMS-ESI-qTOF spectrometer (electrospray ionization mode). Single crystal X-ray data were obtained using an Agilent Technologies SuperNova Atlas and an Agilent Technologies Xcalibur Eos diffractometers. The samples were measured at a temperature of 100 K. The structures have been solved by the direct methods and refined by means of the SHELXL–97 program[1] incorporated in the *OLEX2* program package.[2] The carbon-bound H atoms were placed in calculated positions and were included in the refinement in the 'riding' model approximation, with $U_{iso}(H)$ set to $1.2U_{eq}(C)$ and C–H 0.97 Å for the CH_2 groups and $U_{iso}(H)$ set to $1.5U_{eq}(N)$ and C–H 0.96 Å for the CH_3 groups. Empirical absorption correction was applied in CrysAlis^{Pro} program complex[3] using spherical harmonics, implemented in SCALE3 ABSPACK scaling algorithm. Column chromatography was performed with Merck silica gel 60 (230-400 mesh). For TLC analysis Alugram SIL G/UV_{254} (Macherey-Nagel) plates were used. *N*-Benzyl-*N*'-phenylthiourea[4] was already available in our laboratory.

General procedure for the preparation of thioureas 3a-j.[5] Stirred mixture of appropriate amine (23 mmol) and isothiocyanate (23 mmol) in ethanol (25 mL) was refluxed until the reaction completion indicated by TLC. The reaction mixture was cooled in an ice bath, a precipitate was filtered and recrystallized from ethanol.

***N*-Ethyl-*N'*-(4-methoxyphenyl)thiourea (3a).** Pale beige crystals, yield 3.61 g (75%), mp 130-132 °C (lit.[6] 147 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.15 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 3.65 (dq, *J* = 5.5, 7.2 Hz, 2 H, CH_2); 3.82 (s, 3 H, OCH_3); 5.74 (br s, 1 H, NH); 6.92-6.96 (m, 2 H, H^m); 7.12-7.16 (m, 2 H, H^o); 7.55 (br s, 1 H, NH) ppm.

***N*-Ethyl-*N'*-(4-methylphenyl)thiourea (3b).**[7] Colorless crystals, yield 3.26 g (73%), mp 97-98 °C (lit.[8] 95-96 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.16 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.36 (s, 3 H, CH_3); 3.65 (dq, *J* = 5.4, 7.3 Hz, 2 H, CH_2); 5.89 (br s, 1 H, NH); 7.08 (d, *J* = 8.2 Hz, 2 H, H^m); 7.22 (d, *J* = 8.2 Hz, 2 H, H^o); 7.72 (br s, 1 H, NH) ppm.

***N*-Ethyl-*N'*-phenylthiourea (3c).**[9] Colorless crystals, yield 2.57 g (62%), mp 100-101 °C (lit.[10] 101-102 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.18 (t, *J* = 7.2 Hz, 3 H, CH_3); 3.67 (dq, *J* = 6.8, 7.2 Hz, 2 H, CH_2); 5.97 (br s, 1 H, NH); 7.20 (d, *J* = 7.5 Hz, 2 H, H^o); 7.30 (t, *J* = 7.5 Hz, 1 H, H^p); 7.41-7.45 (m, 2 H, H^m); 7.79 (br s, 1 H, NH) ppm.

***N*-(4-Chlorophenyl)-*N'*-ethylthiourea (3d).**[7] Colorless crystals, yield 3.80 g (77%), mp 116-117 °C (lit.[11] 119 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.19 (t, *J* = 7.3 Hz, 3 H, CH_3); 3.65 (dq, *J* = 7.3, 7.3 Hz, 2 H, CH_2); 5.90 (br s, 1 H, NH); 7.16 (d, *J* = 8.5 Hz, 2 H, H^o); 7.39 (d, *J* = 8.5 Hz, 2 H, H^m); 7.95 (br s, 1 H, NH) ppm.

***N*-Ethyl-*N'*-(4-fluorophenyl)thiourea (3e).** Pale beige crystals, yield 3.18 g (70%), mp 79-80 °C (lit.[12] 81-82 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.16 (t, *J* = 7.2 Hz, 3 H, CH_3); 3.65 (dq, *J* = 7.0, 7.3 Hz, 2 H, CH_2); 5.84 (br s, 1 H, NH); 7.08-7.13 (m, 2 H, H^o); 7.19-7.22 (m, 2 H, H^m); 8.13 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 14.2 (CH_3); 40.2 (CH_2); 117.0 (d, *J* = 22.7 Hz, C^m); 127.8 (d, *J* = 8.7 Hz, C^o); 132.0 (d, *J* = 2.6 Hz, C^i); 161.4 (d, *J* = 248.2 Hz, C^p); 180.7 (C=S) ppm.

***N*-Ethyl-*N'*-(4-nitrophenyl)thiourea (3f).** Yellow crystals, yield 3.39 g (66%), mp 174-175 °C (lit.[5] 159-160 °C). ^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.15 (t, *J* = 7.2 Hz, 3 H, CH_3); 3.48-3.54 (m, 2 H, CH_2); 7.79-7.82 (m, 2 H, H^o); 8.15-8.18 (m, 2 H, H^m); 8.26 (br s, 1 H, NH); 10.06 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 13.7 (CH_3); 38.8 (CH_2); 120.3, 124.5 ($C^{m,o}$); 141.7, 146.4 ($C^{i,p}$); 179.8 (C=S) ppm.

***N*-(2,6-Dimethylphenyl)-*N'*-methylthiourea (3g).**[13] Pink crystals, yield 3.13 g (70%), mp 137-139 °C (lit.[14] 140-141 °C). ^{1}H NMR (400 MHz, $CDCl_3$): δ = 2.26 (s, 6 H, 2 CH_3); 3.09 (d, *J* = 4.7 Hz, 3 H, NCH_3); 5.36 (br s, 1 H, NH); 7.14 (d, *J* = 7.4 Hz, 2 H, H^m); 7.18-7.22 (m, 1 H, H^p); 7.35 (br s, 1 H, NH) ppm.

***N*-Isopropyl-*N'*-phenylthiourea (3h).**[15] Colorless crystals, yield 3.44 g (77%), mp 101-102 °C (lit.[16] 101 °C) ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.20 (d, *J* = 6.6 Hz, 6 H, $CH(C\underline{H}_3)_2$); 4.60 (dsept, *J* = 6.6, 6.6 Hz, 1 H, $C\underline{H}(CH_3)_2$); 5.79 (br s, 1 H, NH); 7.18 (d, *J* = 7.6 Hz, 2 H, H^o); 7.28-7.32 (m, 1 H, H^p); 7.42-7.46 (m, 2 H, H^m); 7.67 (br s, 1 H, NH) ppm.

***N*-Cyclohexyl-*N'*-phenylthiourea (3i).**[17] Colorless crystals, yield 4.67 g (87%), mp 151-153 °C (lit.[18] 150.1-150.9 °C) ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.07-1.17 (m, 3 H, c-Hex); 1.34-1.44 (m, 2 H, c-Hex); 1.57-1.68 (m, 3 H, c-Hex); 2.03-2.07 (m, 2 H, c-Hex); 4.24-4.29 (br s, 1 H, NCH); 5.89 (br s, 1 H, NH); 7.18 (d, *J* = 7.6 Hz, 2 H, H^o); 7.27-7.31 (m, 1 H, H^p); 7.41-7.45 (m, 2 H, H^m); 7.75 (br s, 1 H, NH) ppm.

***N*-*tert*-Butyl-*N'*-phenylthiourea (3j).**[19] Colorless crystals, yield 3.96 g (83%), mp 120-122 °C (lit.[19] 120.5-121.5 °C). ^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.47 (s, 9 H, 3 CH_3); 7.04-7.08 (m, 1 H,

H^p); 7.26-7.30 (m, 2 H, H^o); 7.35 (br s, 1 H, NH); 7.43 (d, J = 7.6 Hz, 2 H, H^m); 9.26 (br s, 1 H, NH) ppm.

***N*-Ethyl-*N'*-isopropylthiourea (3k)**. Isopropylamine (1.0 mL, 0.69 g, 11.7 mmol) was added to a stirred solution of ethylisothiocyanate (1.0 mL, 1.02 g, 11.7 mmol) in diethyl ether (5 mL). After 2 h a precipitate was filtered, washed with diethyl ether (10 mL) and dried. Colorless crystals, yield 1.42 g, 83%, mp 108-109 °C.

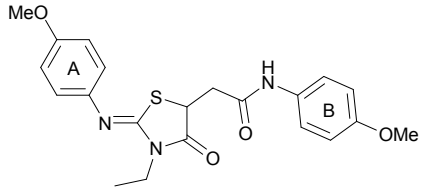
^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.04 (t, J = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 1.08 (d, J = 6.5 Hz, 6 H, $CH(C\underline{H}_3)_2$); 3.34 (br s, 2 H, CH_2); 4.22 (br s, 1 H, CH); 7.11 (br s, 1 H, NH); 7.16 (br s, 1 H, NH) ppm. ^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.22 (t, J = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 1.23 (d, J = 6.5 Hz, 6 H, $CH(C\underline{H}_3)_2$); 3.42 (br s, 2 H, CH_2); 4.23 (br s, 1 H, CH); 5.57 (br s, 1 H, NH); 5.73 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 14.1 ($CH_2\underline{C}H_3$); 22.5 ($CH(\underline{C}H_3)_2$); 38.9 (CH_2); 46.0 (CH); 180.1 (C=S) ppm.

HRMS (ESI), *m/z*: calcd for $C_6H_{14}N_2S$ $[M+H]^+$ 147.0950, found 147.0954.

General procedure for the preparation of thiazolidines 5aa-ff, 5ga-gf. Stirred mixture of thiourea **3a-g** (1 mmol) and *N*-arylmaleimide **4a-g** (1 mmol) in *i*-PrOH (5 mL) was refluxed for 3-5 h, and then was poured into water (30 mL). A precipitate was filtered, washed with water and recrystallized from ethanol/water (1:1) mixture.

2-(3-Ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)-acetamide (5aa). Beige crystals, yield 320 mg (77%), mp 171-172 °C.

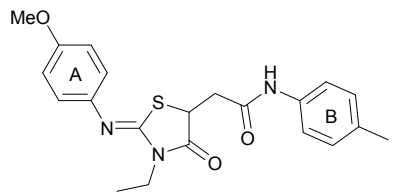


^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.29 (t, J = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.76 (dd, J = 16.1, 10.0 Hz, 1 H, H^a); 3.32 (dd, J = 16.1, 3.8 Hz, 1 H, H^b); 3.76 (s, 3 H, OCH_3); 3.78 (s, 3 H, OCH_3); 3.86-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.42 (dd, J = 10.0, 3.8 Hz, 1 H, SCH); 6.79-6.94 (m, 6 H, H^{mB}, $H^{o,mA}$); 7.34 (d, J = 8.9 Hz, 2 H, H^{oB}); 7.65 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.2, 40.3 (CH_2); 43.8 (SCH); 55.4 (2 OCH_3); 114.1, 114.5 (C^{mA}, C^{mB}); 121.8, 122.1 (C^{oA}, C^{oB}); 130.4 (C^{iB}); 141.1 (C^{iA}); 153.2 (C=N); 156.6, 156.7 (C^{pA}, C^{pB}); 166.9, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{21}H_{23}N_3O_4S$ $[M+H]^+$ 414.1482, found 414.1484.

2-(3-Ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methylphenyl)-acetamide (5ab). Beige crystals, yield 301 mg (76%), mp 169-170 °C.



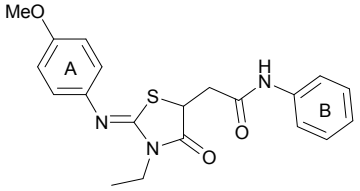
^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.29 (s, 3 H, CH_3); 2.79 (dd, J = 16.2, 9.9 Hz, 1 H, H^a); 3.35 (dd, J = 16.2, 4.0 Hz, 1 H, H^b); 3.79 (s, 3 H, OCH_3); 3.87-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.44 (dd, J = 9.9, 4.0 Hz, 1 H, SCH); 6.84-6.87

(m, 2 H, H^{mA}); 6.91-6.93 (m, 2 H, H^{oA}); 7.10 (d, J = 8.2 Hz, 2 H, H^{mB}); 7.34 (d, J = 8.2 Hz, 2 H, H^{oB}); 7.46 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.8 (CH_3); 38.2, 40.4 (CH_2); 43.8 (SCH); 55.4 (OCH_3); 114.4 (C^{mA}); 119.9 (C^{oB}); 122.1 (C^{oA}); 129.5 (C^{mB}); 134.3, 134.7 ($C^{i,pB}$); 141.1 (C^{iA}); 153.3 (C=N); 156.7 (C^{pA}); 167.0, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $[M+H]^+$ 398.1533, found 398.1539.

2-(3-Ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5ac).



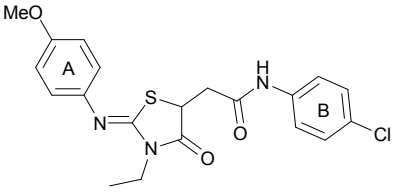
Pale yellow crystals, yield 295 mg (80%), mp 168-169 °C.

^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.80 (dd, J = 16.3, 10.0 Hz, 1 H, H^a); 3.37 (dd, J = 16.3, 3.6 Hz, 1 H, H^b); 3.78 (s, 3 H, OCH_3); 3.87-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, J = 10.0, 3.6 Hz, 1 H, SCH); 6.84-6.94 (m, 4 H, $H^{m,oA}$); 7.07-7.13 (m, 1 H, H^{pB}); 7.26-7.32 (m, 2 H, H^{mB}); 7.46 (d, J = 8.1 Hz, 2 H, H^{oB}); 7.80 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.3, 40.5 (CH_2); 43.7 (SCH); 55.4 (OCH_3); 114.5 (C^{mA}); 119.9 (C^{oB}); 122.1 (C^{oA}); 124.6 (C^{pB}); 129.0 (C^{mB}); 137.3 (C^{iB}); 141.1 (C^{iA}); 153.2 (C=N); 156.8 (C^{pA}); 167.1, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_3S$ $[M+H]^+$ 384.1376, found 384.1373.

***N*-(4-Chlorophenyl)-2-(3-ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-acetamide (5ad).** Colorless crystals, yield 284 mg (68%), mp 174-175 °C.

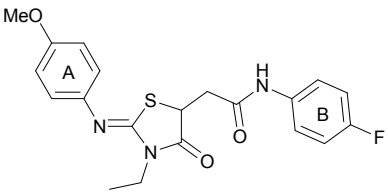


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.20 (t, J = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.93 (dd, J = 16.6, 9.4 Hz, 1 H, H^a); 3.24 (dd, J = 16.6, 3.5 Hz, 1 H, H^b); 3.73 (s, 3 H, OCH_3); 3.74-3.86 (m, 2 H, $C\underline{H}_2CH_3$); 4.54 (dd, J = 9.4, 3.5 Hz, 1 H, SCH); 6.85-6.93 (m, 4 H, $H^{o,mA}$); 7.34 (d, J = 8.8 Hz, 2 H, H^{mB}); 7.55 (d, J = 8.8 Hz, 2 H, H^{oB}); 10.25 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.4, 38.7 (CH_2); 43.3 (SCH); 55.2 (OCH_3); 114.4 (C^{mA}); 120.6, 122.0 ($C^{oA,B}$); 126.9 (C^{pB}); 128.7 (C^{mB}); 137.6 (C^{iB}); 141.2 (C^{iA}); 154.1, 156.1 (C=N, C^{pA}); 167.9, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}ClN_3O_3S$ $[M+H]^+$ 418.0987, found 418.0983.

2-(3-Ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)-acetamide (5ae). Colorless crystals, yield 320 mg (80%), mp 147-148 °C.

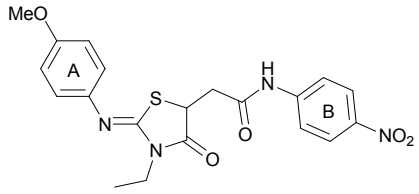


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.80 (dd, J = 16.2, 9.9 Hz, 1 H, H^a); 3.34 (dd, J = 16.2, 4.0 Hz, 1 H, H^b); 3.79 (s, 3 H, OCH_3); 3.86-4.00 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, J = 9.9, 4.0 Hz, 1 H, SCH); 6.85-6.93 (m, 4 H, $H^{m,oA}$); 6.97-7.01 (m, 2 H, H^{mB}); 7.41-7.46 (m, 2 H, H^{oB}); 7.64 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.3, 40.4 (CH_2); 43.7 (SCH); 55.4 (OCH_3); 114.5 (C^{mA}); 115.7 (d, *J* = 22.2 Hz, C^{mB}); 121.7 (d, *J* = 8.1 Hz, C^{oB}); 122.1 (C^{oA}); 133.3 (d, *J* = 2.4 Hz, C^{iB}); 141.0 (C^{iA}); 153.0, 156.8 (C=N, C^{pA}); 159.5 (d, *J* = 244.0 Hz, C^{pB}); 167.1, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}FN_3O_3S$ $[M+H]^+$ 402.1282, found 402.1280.

2-(3-Ethyl-2-(4-methoxyphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)-acetamide (5af). Yellow crystals, yield 334 mg (78%), mp 168-169 °C.

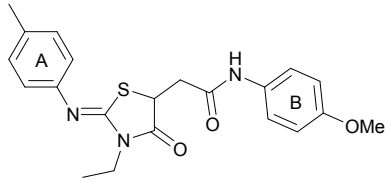


^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.31 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.89 (dd, *J* = 16.5, 9.1 Hz, 1 H, H^a); 3.42 (dd, *J* = 16.5, 4.4 Hz, 1 H, H^b); 3.79 (s, 3 H, OCH_3); 3.87-4.03 (m, 2 H, $C\underline{H}_2CH_3$); 4.46 (dd, *J* = 9.1, 4.4 Hz, 1 H, SCH); 6.83-6.96 (m, 4 H, $H^{m,oA}$); 7.69 (d, *J* = 9.0 Hz, 2 H, H^{oB}); 8.19 (d, *J* = 9.0 Hz, 2 H, H^{mB}); 8.48 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.5, 40.8 (CH_2); 43.3 (SCH); 55.4 (OCH_3); 114.5 (C^{mA}); 119.9, 122.0, 125.1 (C^{oA}, $C^{o,mB}$); 140.9, 143.3, 143.7 (C^{iA}, $C^{i,pB}$); 152.5 (C=N); 156.9 (C^{pA}); 167.6, 174.1 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}N_4O_5S$ $[M+H]^+$ 429.1227, found 429.1234.

2-(3-Ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)-acetamide (5ba). Colorless crystals, yield 275 mg (69%), mp 155-157 °C.

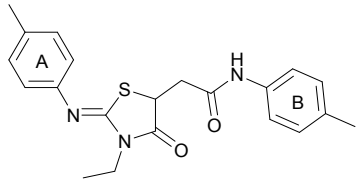


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.31 (s, 3 H, CH_3); 2.76 (dd, *J* = 16.2, 9.9 Hz, 1 H, H^a); 3.32 (dd, *J* = 16.2, 3.9 Hz, 1 H, H^b); 3.76 (s, 3 H, OCH_3); 3.87-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.42 (dd, *J* = 9.9, 3.9 Hz, 1 H, SCH); 6.81-6.87 (m, 4 H, H^{mB}, H^{oA}); 7.12 (d, *J* = 8.1 Hz, 2 H, H^{mA}), 7.33-7.35 (m, 2 H, H^{oB}); 7.59 (br s, 1H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.9 (CH_3); 38.2, 40.3 (CH_2); 43.8 (SCH); 55.4 (OCH_3); 114.1 (C^{mB}); 120.8, 122.0 (C^{oA}, C^{oB}); 129.8 (C^{mA}); 130.3, 134.1 (C^{pA}, C^{iB}); 145.4 (C^{iA}); 153.3 (C=N); 156.6 (C^{pB}); 166.9, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{21}H_{23}N_3O_3S$ $[M+H]^+$ 398.1533, found 398.1533.

2-(3-Ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methylphenyl)-acetamide (5bb). Colorless crystals, yield 304 mg (80%), mp 184-185 °C.

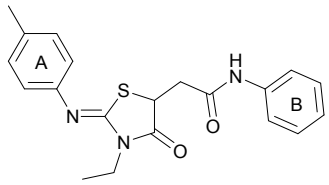


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.30 (s, 3 H, CH_3); 2.32 (s, 3 H, CH_3); 2.78 (dd, *J* = 16.0, 9.9 Hz, 1 H, H^a); 3.35 (dd, *J* = 16.0, 4.0 Hz, 1 H, H^b); 3.89-3.98 (m, 2 H, $C\underline{H}_2CH_3$); 4.44 (dd, *J* = 9.9, 4.0 Hz, 1 H, SCH); 6.86 (d, *J* = 8.1 Hz, 2 H, H^{oA}); 7.01-7.13 (m, 4 H, H^{mA}, H^{mB}); 7.33 (d, *J* = 8.2 Hz, 2 H, H^{oB}); 7.44 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.8, 20.9 (CH_3); 38.2, 40.5 (CH_2); 43.8 (SCH); 119.9, 120.8 (C^{oA}, C^{oB}); 129.5, 129.8 (C^{mA}, C^{mB}); 134.1, 134.3, 134.7 (C^{pA}, $C^{i,pB}$); 145.4 (C^{iA}); 153.3 (C=N); 166.9, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $[M+H]^+$ 382.1583, found 382.1586.

2-(3-Ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5bc).



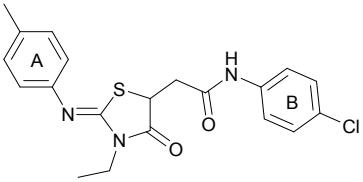
Colorless crystals, yield 268 mg (73%), mp 191-192 °C.

^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.32 (s, 3 H, CH_3); 2.79 (dd, *J* = 16.3, 10.0 Hz, 1 H, H^a); 3.36 (dd, *J* = 16.3, 3.7 Hz, 1 H, H^b); 3.85-4.02 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 10.0, 3.7 Hz, 1 H, SCH); 6.86 (d, *J* = 8.2 Hz, 2 H, H^{oA}); 7.05-7.15 (m, 3 H, H^{pB}, H^{mA}); 7.27-7.33 (m, 2 H, H^{mB}); 7.45 (d, *J* = 7.8 Hz, 2 H, H^{oB}); 7.72 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.9 (CH_3); 38.3, 40.6 (CH_2); 43.8 (SCH); 119.9, 120.8 (C^{oA}, C^{oB}); 124.6 (C^{pB}); 129.0, 129.8 (C^{mA}, C^{mB}); 134.2 (C^{pA}); 137.3 (C^{iB}); 145.4 (C^{iA}); 153.2 (C=N); 167.1, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_2S$ $[M+H]^+$ 368.1427, found 368.1423.

***N*-(4-Chlorophenyl)-2-(3-ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-acetamide (5bd).** Colorless crystals, yield 307 mg (76%), mp 175-176 °C.

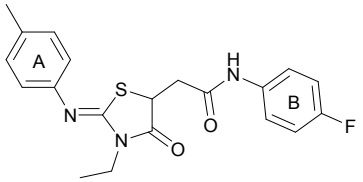


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.20 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.25 (s, 3 H, CH_3); 2.94 (dd, *J* = 16.6, 9.5 Hz, 1 H, H^a); 3.26 (dd, *J* = 16.6, 3.7 Hz, 1 H, H^b); 3.72-3.87 (m, 2 H, $C\underline{H}_2CH_3$); 4.54 (dd, *J* = 9.5, 3.7 Hz, 1 H, SCH); 6.81 (d, *J* = 8.2 Hz, 2 H, H^{oA}); 7.13 (d, *J* = 8.2 Hz, 2 H, H^{mA}); 7.34 (d, *J* = 8.8 Hz, 2 H, H^{mB}); 7.55 (d, *J* = 8.8 Hz, 2 H, H^{oB}); 10.25 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 20.4 (CH_3); 37.4, 38.7 (CH_2); 43.3 (SCH); 120.6, 120.8 (C^{oA}, C^{oB}); 128.7, 129.6 (C^{mA}, C^{mB}); 126.9 (C^{pB}); 133.1 (C^{pA}); 137.6 (C^{iB}); 145.7 (C^{iA}); 154.2 (C=N); 167.9, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}ClN_3O_2S$ $[M+H]^+$ 402.1038, found 402.1035.

2-(3-Ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)acetamide (5be). Colorless crystals, yield 284 mg (74%), mp 160-161 °C.

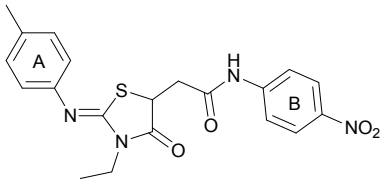


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.32 (s, 3 H, CH_3); 2.79 (dd, *J* = 16.2, 9.6 Hz, 1 H, H^a); 3.34 (dd, *J* = 16.2, 4.0 Hz, 1 H, H^b); 3.87-4.00 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 9.6, 4.0 Hz, 1 H, SCH); 6.86 (d, *J* = 8.2 Hz, 2 H, H^{oA}); 6.95-7.01 (m, 2 H, H^{mB}); 7.12 (d, *J* = 8.2 Hz, 2 H, H^{mA}); 7.39-7.44 (m, 2 H, H^{oB}); 7.69 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.9 (CH_3); 38.3, 40.4 (CH_2); 43.7 (SCH); 115.7 (d, *J* = 22.7 Hz, C^{mB}); 120.8 (C^{oA}); 121.7 (d, *J* = 7.8 Hz, C^{oB}); 129.8 (C^{mA}); 133.3 (d, *J* = 2.9 Hz, C^{iB}); 134.3 (C^{pA}); 145.3 (C^{iA}); 153.1 (C=N); 159.5 (d, *J* = 244.2 Hz, C^{pB}); 167.1, 174.0 (C=O) ppm. MAKC989

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}FN_3O_2S$ $[M+H]^+$ 386.1333, found 386.1337.

2-(3-Ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)acetamide (5bf). Beige crystals, yield 326 mg (79%), mp 177-179 °C.

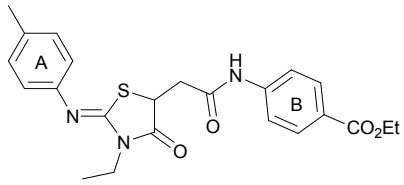


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.31 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.32 (s, 3 H, CH_3); 2.89 (dd, *J* = 16.5, 9.3 Hz, 1 H, H^a); 3.43 (dd, *J* = 16.5, 4.4 Hz, 1 H, H^b); 3.88-4.02 (m, 2 H, $C\underline{H}_2CH_3$); 4.45 (dd, *J* = 9.3, 4.4 Hz, 1 H, SCH); 6.86 (d, *J* = 8.1 Hz, 2 H, H^{oA}); 7.13 (d, *J* = 8.1 Hz, 2 H, H^{mA}); 7.69 (d, *J* = 8.8 Hz, 2 H, H^{oB}); 8.18 (d, *J* = 8.8 Hz, 2 H, H^{mB}); 8.52 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 20.9 (CH_3); 38.5, 40.8 (CH_2); 43.3 (SCH); 119.2, 120.7 (C^{oA}, C^{oB}); 125.1 (C^{mB}); 129.9 (C^{mA}); 134.4 (C^{pA}); 143.3, 143.7 (C^{i,pB}); 145.1 (C^{iA}); 152.6 (C=N); 167.6, 174.1 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}N_4O_4S$ $[M+H]^+$ 413.1278, found 413.1281.

Ethyl 4-(((3-ethyl-2-(4-methylphenyl)imino-4-oxo-1,3-thiazolidin-5-yl)acetyl)amino)benzoate (5bg). Beige crystals, yield 244 mg (56%), mp 179-180 °C.

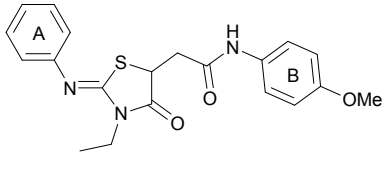


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.2 Hz, 3 H, $NCH_2C\underline{H}_3$); 1.38 (t, *J* = 7.2 Hz, 3 H, $OCH_2C\underline{H}_3$); 2.32 (s, 3 H, CH_3); 2.84 (dd, *J* = 16.5, 9.8 Hz, 1 H, H^a); 3.40 (dd, *J* = 16.5, 4.0 Hz, 1 H, H^b); 3.86-4.00 (m, 2 H, $NC\underline{H}_2CH_3$); 4.35 (q, *J* = 7.2 Hz, 2 H, $OC\underline{H}_2CH_3$); 4.44 (dd, *J* = 9.8, 4.0 Hz, 1 H, SCH); 6.86 (d, *J* = 8.1 Hz, 2 H, H^{oA}); 7.12 (d, *J* = 8.1 Hz, 2 H, H^{mA}); 7.56 (d, *J* = 8.5 Hz, 2 H, H^{mB}); 7.97 (d, *J* = 8.5 Hz, 2 H, H^{oB}); 8.20 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($OCH_2\underline{C}H_3$); 14.3 ($NCH_2\underline{C}H_3$); 20.9 (CH_3); 38.3, 40.7 ($CO\underline{C}H_2$, NCH_2); 43.6 (SCH); 60.9 (OCH_2); 118.8, 120.8 (C^{oA}, C^{mB}); 126.2 (C^{iB}); 129.8, 130.8 (C^{mA}, C^{oB}); 134.3 (C^{pA}); 141.5 (C^{pB}); 145.3 (C^{iA}); 153.0 (C=N); 167.1, 166.4, 174.0 (3 C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{23}H_{25}N_3O_4S$ $[M+H]^+$ 440.1638, found 440.1633.

2-(3-Ethyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)acetamide (5ca). Beige crystals, yield 271 mg (71%), mp 181-183 °C.



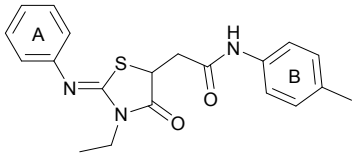
^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.31 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.77 (dd, *J* = 16.2, 10.0 Hz, 1 H, H^a); 3.43 (dd, *J* = 16.2, 3.8 Hz, 1 H, H^b); 3.76 (s, 3 H, OCH_3); 3.87-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.42

(dd, J = 10.0, 3.8 Hz, 1 H, SCH); 6.82 (d, J = 8.8 Hz, 2 H, H^{mB}); 6.96 (d, J = 7.6 Hz, 2 H, H^{oA}); 7.11 (t, J = 7.3 Hz, 1 H, H^{pA}); 7.30-7.36 (m, 4 H, H^{mA}, H^{oB}); 7.59 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.2, 40.2 (CH_2); 43.9 (SCH); 55.4 (OCH_3); 114.1 (C^{mB}); 121.0, 121.8 (C^{oA}, C^{oB}); 124.6 (C^{pA}); 129.2 (C^{mA}); 130.3 (C^{iB}); 148.0 (C^{iA}); 153.6 (C=N); 156.6 (C^{pB}); 166.9, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_3S$ $[M+H]^+$ 384.1376, found 384.1375.

2-(3-Ethyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-(4-methylphenyl)acetamide (5cb).



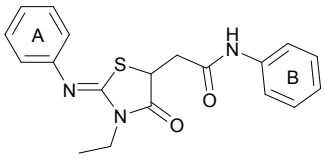
Colorless crystals, yield 287 mg (78%), mp 179-181 °C.

^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.30 (s, 3 H, CH_3); 2.79 (dd, J = 16.2, 10.1 Hz, 1 H, H^a); 3.35 (dd, J = 16.2, 3.8 Hz, 1 H, H^b); 3.88-4.00 (m, 2 H, $C\underline{H}_2CH_3$); 4.44 (dd, J = 10.1, 3.8 Hz, 1 H, SCH); 6.96 (d, J = 7.3 Hz, 2 H, H^{oA}); 7.01-7.13 (m, 3 H, H^{pA}, H^{mB}); 7.30-7.34 (m, 4 H, H^{mA}, H^{oB}); 7.48 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 20.8 (CH_3); 38.2, 40.3 (CH_2); 43.9 (SCH); 120.0, 121.0 (C^{oA}, C^{oB}); 124.6 (C^{pA}); 129.2, 129.5 (C^{mA}, C^{mB}); 134.3, 134.7 (C^{i,pB}); 147.9 (C^{iA}); 153.7 (C=N); 167.0, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $[M+H]^+$ 368.1427, found 368.1431.

2-(3-Ethyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5cc). Colorless crystals, yield 243 mg (69%), mp 166-168 °C.

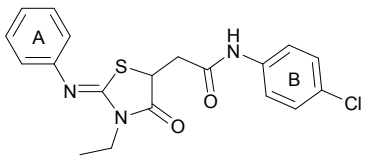


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.21 (t, J = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.94 (dd, J = 16.8, 9.8 Hz, 1 H, H^a); 3.25 (dd, J = 16.8, 3.5 Hz, 1 H, H^b); 3.73-3.90 (m, 2 H, $C\underline{H}_2CH_3$); 4.56 (dd, J = 9.8, 3.5 Hz, 1 H, SCH); 6.93 (d, J = 7.6 Hz, 2 H, H^{oA}); 7.01-7.05 (m, 1 H, H^p), 7.08-7.13 (m, 1 H, H^p); 7.26-7.36 (m, 4 H, H^{mA}, H^{mB}); 7.52 (d, J = 7.6 Hz, 2 H, H^{oB}); 10.11 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.4, 38.7 (CH_2); 43.5 (SCH); 119.1, 121.0 (C^{oA}, C^{oB}); 123.4, 124.2 (C^{pA}, C^{pB}); 128.2, 129.2 (C^{mA}, C^{mB}); 138.7 (C^{iB}); 148.2 (C^{iA}); 154.6 (C=N); 167.7, 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{19}N_3O_2S$ $[M+H]^+$ 354.1271, found 354.1270.

***N*-(4-Chlorophenyl)-2-(2-phenylimino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)acetamide (5cd).**



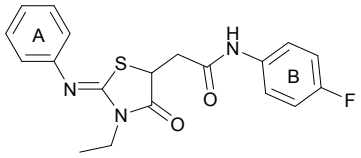
Colorless crystals, yield 283 mg (73%), mp 172-174 °C.

^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.31 (t, J = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.82 (dd, J = 16.3, 10.0 Hz, 1 H, H^a); 3.36 (dd, J = 16.3, 3.7 Hz, 1 H, H^b); 3.88-4.00 (m, 2 H, $C\underline{H}_2CH_3$); 4.44 (dd, J = 10.0, 3.7 Hz, 1 H, SCH); 6.96 (d, J = 8.6 Hz, 2 H, H^{oA}); 7.10-7.14 (m, 1 H, H^{pA}); 7.25-7.27 (m, 2 H, H^{mB}); 7.30-7.35 (m, 2 H, H^{mA}); 7.42 (d, J = 8.8 Hz, 2 H, H^{oB}); 7.65 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.3, 40.4 (CH_2); 43.7 (SCH); 120.9, 121.0 (C^{oA}, C^{oB}); 124.7 (C^{pA}); 129.0, 129.2 (C^{mA}, C^{mB}); 129.7 (C^{pB}); 135.9 (C^{iB}); 147.9 (C^{iA}); 153.3 (C=N); 167.0, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}ClN_3O_2S$ $[M+H]^+$ 388.0881, found 388.0880.

2-(3-Ethyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)acetamide (5ce).



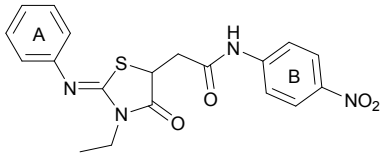
Colorless crystals, yield 285 mg (77%), mp 151-153 °C.

^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.31 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.80 (dd, *J* = 16.3, 9.9 Hz, 1 H, H^a); 3.35 (dd, *J* = 16.3, 3.8 Hz, 1 H, H^b); 3.86-4.01 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 9.9, 3.8 Hz, 1 H, SCH); 6.95-7.01 (m, 4 H, H^{oA}, H^{mB}); 7.10-7.14 (m, 1 H, H^{pA}); 7.30-7.34 (m, 2 H, H^{mA}); 7.39-7.44 (m, 2 H, H^{oB}); 7.78 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.6 ($CH_2\underline{C}H_3$); 38.3, 40.3 (CH_2); 43.7 (SCH); 115.7 (d, *J* = 22.6 Hz, C^{mB}); 121.0 (C^{oA}); 121.7 (d, *J* = 8.1 Hz, C^{oB}); 124.7 (C^{pA}); 129.2 (C^{mA}); 133.2 (d, *J* = 2.2 Hz, C^{iB}); 147.9 (C^{iA}); 153.4 (C=N); 159.5 (d, *J* = 243.5 Hz, C^{pB}); 167.1, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}FN_3O_2S$ $[M+H]^+$ 372.1177, found 372.1181.

2-(3-Ethyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)acetamide (5cf).



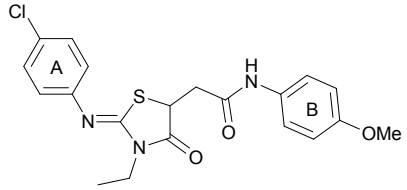
Yellow crystals, yield 311 mg (78%), mp 165-167 °C.

^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.22 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 3.05 (dd, *J* = 17.1, 9.3 Hz, 1 H, H^a); 3.32 (dd, *J* = 17.1, 3.6 Hz, 1 H, H^b); 3.74-3.89 (m, 2 H, $C\underline{H}_2CH_3$); 4.58 (dd, *J* = 9.3, 3.6 Hz, 1 H, SCH); 6.92 (d, *J* = 7.6 Hz, 2 H, H^{oA}); 7.09-7.13 (m, 1 H, H^{pA}); 7.32-7.36 (m, 2 H, H^{mA}); 7.76 (d, *J* = 9.2 Hz, 2 H, H^{oB}); 8.20 (d, *J* = 9.2 Hz, 2 H, H^{mB}); 10.76 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.3 ($CH_2\underline{C}H_3$); 37.6, 38.9 (CH_2); 43.3 (SCH); 119.0, 120.1 (C^{oA}, C^{oB}); 124.4 (C^{pA}); 125.1 (C^{mB}); 129.4 (C^{mA}); 142.5, 144.8 ($C^{i,pB}$); 148.3 (C^{iA}); 154.6 (C=N); 169.0, 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}N_4O_4S$ $[M+H]^+$ 399.1121, found 399.1121.

2-(2-(4-Chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)-acetamide (5da). Colorless crystals, yield 260 mg (62%), mp 188-189 °C.

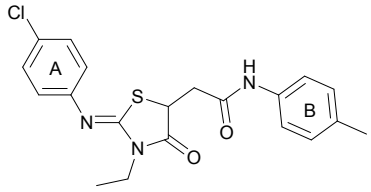


^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.80 (dd, *J* = 16.2, 9.9 Hz, 1 H, H^a); 3.34 (dd, *J* = 16.2, 3.8 Hz, 1 H, H^b); 3.78 (s, 3 H, OCH_3); 3.85-3.97 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 9.9, 3.8 Hz, 1 H, SCH); 6.82 (d, *J* = 8.9 Hz, 2 H, H^{mB}); 6.90 (d, *J* = 8.6 Hz, 2 H, H^{oA}); 7.27 (d, *J* = 8.6 Hz, 2 H, H^{mA}); 7.35 (d, *J* = 8.9 Hz, 2 H, H^{oB}); 7.52 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.3, 40.1 (CH_2); 44.0 (SCH); 55.4 (OCH_3); 114.2 (C^{mB}); 121.9, 122.5 (C^{oA}, C^{oB}); 129.3 (C^{mA}); 129.9, 130.2 (C^{pA}, C^{iB}); 146.5 (C^{iA}); 154.3 (C=N); 156.7 (C^{pB}); 166.7, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}ClN_3O_3S$ $[M+H]^+$ 418.0987, found 418.0991.

2-(2-(4-Chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methylphenyl)-acetamide (5db). Pale beige crystals, yield 282 mg (70%), mp 202-203 °C.

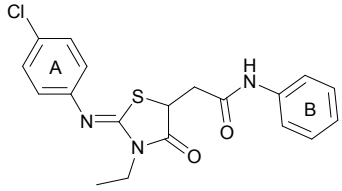


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.30 (s, 3 H, CH_3); 2.81 (dd, *J* = 16.3, 9.9 Hz, 1 H, H^a); 3.35 (dd, *J* = 16.3, 3.8 Hz, 1 H, H^b); 3.86-3.98 (m, 2 H, $C\underline{H}_2CH_3$); 4.44 (dd, *J* = 9.9, 3.8 Hz, 1 H, SCH); 6.90 (d, *J* = 8.7 Hz, 2 H, H^{oA}); 7.10 (d, *J* = 8.2 Hz, 2 H, H^{mB}); 7.27-7.34 (m, 4 H, H^{mA}, H^{oB}); 7.38 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 20.8 (CH_3); 38.3, 40.2 (CH_2); 43.9 (SCH); 120.0, 122.5 (C^{oA}, C^{oB}); 129.3, 129.5 (C^{mA}, C^{mB}); 129.9 (C^{pA}); 134.4, 134.6 ($C^{i,pB}$); 146.5 (C^{iA}); 154.4 (C=N); 166.8, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $[M+Na]^+$ 424.0857, found 424.0855.

2-(2-(4-Chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5dc). Pale yellow crystals, yield 271 mg (70%), mp 211-213 °C.

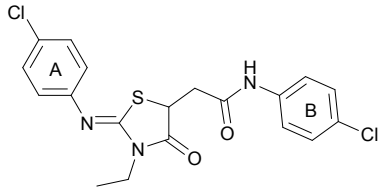


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.21 (t, *J* = 6.9 Hz, 3 H, $CH_2C\underline{H}_3$); 2.95 (dd, *J* = 16.8, 9.4 Hz, 1 H, H^a); 3.26 (dd, *J* = 16.8, 3.4 Hz, 1 H, H^b); 3.74-3.89 (m, 2 H, $C\underline{H}_2CH_3$); 4.55 (dd, *J* = 9.4, 3.4 Hz, 1 H, SCH); 6.92 (d, *J* = 7.9 Hz, 2 H, H^{oA}); 7.08-7.13 (m, 1 H, H^{pB}); 7.31-7.36 (m, 4 H, H^{mA}, H^{mB}); 7.55 (d, *J* = 7.9 Hz, 2 H, H^{oB}); 10.25 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.4, 39.5 (CH_2); 43.4 (SCH); 120.6, 121.0 (C^{oA}, C^{oB}); 124.1 (C^{pB}); 126.9 (C^{pA}); 128.2, 129.2 (C^{mA}, C^{mB}); 137.6 (C^{iB}); 148.2 (C^{iA}); 154.5 (C=N); 167.9, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}ClN_3O_2S$ $[M+H]^+$ 388.0881, found 388.0885.

***N*-(4-Chlorophenyl)-2-(2-(4-chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-acetamide (5dd).** Colorless crystals, yield 340 mg (81%), mp 166-167 °C.

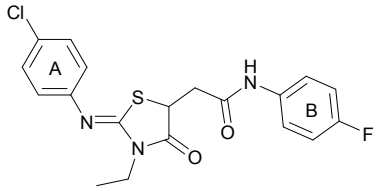


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.20 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.97 (dd, *J* = 16.8, 9.4 Hz, 1 H, H^a); 3.25 (dd, *J* = 16.8, 3.7 Hz, 1 H, H^b); 3.72-3.88 (m, 2 H, $C\underline{H}_2CH_3$); 4.57 (dd, *J* = 9.4, 3.7 Hz, 1 H, SCH); 6.95 (d, *J* = 8.5 Hz, 2 H, H^{oA}); 7.34 (d, *J* = 8.8 Hz, 2 H, H^{mB}); 7.38 (d, *J* = 8.5 Hz, 2 H, H^{mA}); 7.54 (d, *J* = 8.8 Hz, 2 H, H^{oB}); 10.26 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.4, 38.5 (CH_2); 43.5 (SCH); 120.6, 122.9 (C^{oA}, C^{oB}); 126.9, 128.2 (C^{pA}, C^{pB}); 128.7, 129.1 (C^{mA}, C^{mB}); 137.6 (C^{iB}); 147.1 (C^{iA}); 155.5 (C=N); 167.9, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}Cl_2N_3O_2S$ $[M+H]^+$ 422.0491, found 422.0496.

2-(2-(4-Chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)acetamide (5de). Colorless crystals, yield 257 mg (63%), mp 200-201 °C.

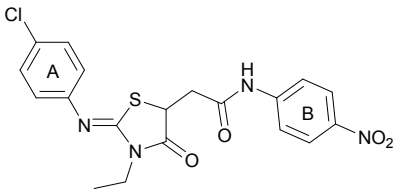


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.29 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.82 (dd, *J* = 16.3, 9.8 Hz, 1 H, H^a); 3.37 (dd, *J* = 16.3, 3.8 Hz, 1 H, H^b); 3.84-4.00 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 9.8, 3.8 Hz, 1 H, SCH); 6.88-6.92 (m, 2 H, H^{oA}); 6.97-7.01 (m, 2 H, H^{mB}); 7.27-7.30 (m, 2 H, H^{mA}); 7.39-7.44 (m, 2 H, H^{oB}); 7.70 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.3, 40.2 (CH_2); 43.8 (SCH); 115.7 (d, *J* = 22.7 Hz, C^{mB}); 121. 8 (d, *J* = 8.1 Hz, C^{oB}); 122.4 (C^{oA}); 129.3 (C^{mA}); 130.0 (C^{pA}); 133.2 (d, *J* = 2.2 Hz, C^{iB}); 146.5 (C^{iA}); 154.2 (C=N); 159.6 (d, *J* = 244.3 Hz, C^{pB}); 166.9, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}ClFN_3O_2S$ $[M+H]^+$ 406.0787, found 406.0783.

2-(2-(4-Chlorophenyl)imino-3-ethyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)acetamide (5df). Colorless crystals, yield 293 mg (68%), mp 173-174 °C.

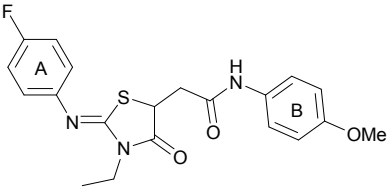


^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.31 (t, *J* = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.93 (dd, *J* = 16.6, 9.3 Hz, 1 H,H^a); 3.43 (dd, *J* = 16.6, 4.1 Hz, 1 H, H^b); 3.86-4.01 (m, 2 H, $C\underline{H}_2CH_3$); 4.46 (dd, *J* = 9.3, 4.1 Hz, 1 H, SCH); 6.89 (d, *J* = 8.4 Hz, 2 H, H^{oA}); 7.29 (d, *J* = 8.4 Hz, 2 H, H^{mA}); 7.68 (d, *J* = 8.8 Hz, 2 H, H^{oB}); 8.19 (d, *J* = 8.8 Hz, 2 H, H^{mB}); 8.31 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.5, 40.6 (CH_2); 43.5 (SCH); 119.2 (C^{oB}); 122.4 (C^{oA}); 125.1 (C^{mB}); 129.4 (C^{mA}); 130.1 (C^{pA}); 143.1, 143.8 ($C^{i,pB}$); 146.3 (C^{iA}); 153.7 (C=N); 167.5, 173.9 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}ClN_4O_4S$ $[M+H]^+$ 433.0731, found 433.0732.

2-(3-Ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)-acetamide (5ea). Colorless crystals, yield 290 mg (72%), mp 172-173 °C.

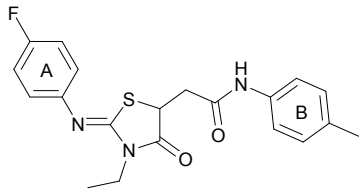


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.20 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.90 (dd, *J* = 17.7, 9.6 Hz, 1 H, H^a); 3.22 (dd, *J* = 17.7, 3.4 Hz, 1 H, H^b); 3.74-3.85 (m, 2 H, $C\underline{H}_2CH_3$); 4.54 (dd, *J* = 9.6, 3.4 Hz, 1 H, SCH); 6.86 (d, *J* = 9.0 Hz, 2 H, H^{mB}); 6.93-6.97 (m, 2 H, H^{oA}); 7.14-7.20 (m, 2 H, H^{mA}); 7.42 (d, *J* = 9.0 Hz, 2 H, H^{oB}); 9.97 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.4, 38.5 (CH_2); 43.6 (SCH); 55.1 (OCH_3); 113.9 (C^{mB}); 115.9 (d, J = 22.2 Hz, C^{mA}); 120.6 (C^{oB}); 122.6 (d, J = 8.4 Hz, C^{oA}); 131.8 (C^{iB}); 144.6 (d, J = 2.2 Hz, C^{iA}); 155.3 (C=N, C^{pB}); 159.0 (d, J = 239.9 Hz, C^{pA}); 167.1, 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}FN_3O_3S$ $[M+H]^+$ 402.1282, found 402.1284.

2-(3-Ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methylphenyl)acetamide (5eb). Colorless crystals, yield 289 mg (75%), mp 197-198 °C.

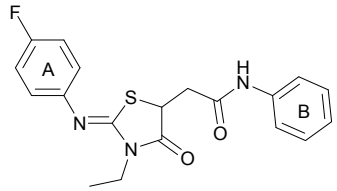


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 2.30 (s, 3 H, CH_3); 2.81 (dd, J = 16.2, 10.1 Hz, 1 H, H^a); 3.36 (dd, J = 16.2, 3.8 Hz, 1 H, H^b); 3.86-3.97 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, J = 10.1, 3.8 Hz, 1 H, SCH); 6.91-6.95 (m, 2 H, H^{oA}); 6.98-7.03 (m, 2H, H^{mA}); 7.10 (d, J = 8.2 Hz, 2 H, H^{mB}); 7.33 (d, J = 8.2 Hz, 2 H, H^{oB}); 7.43 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 20.8 (CH_3); 38.3, 40.2 (CH_2); 43.9 (SCH); 115.9 (d, J = 22.0 Hz, C^{mA}); 120.0 (C^{oB}); 122.4 (d, J = 8.1 Hz, C^{oA}); 129.5 (C^{mB}); 134.4, 134.6 ($C^{i,pB}$); 144.0 (d, J = 2.2 Hz, C^{iA}); 154.3 (C=N); 159.9 (d, J = 243.5 Hz, C^{pA}); 166.9, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $[M+H]^+$ 386.1333, found 386.1338.

2-(3-Ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5ec). Colorless crystals, yield 318 mg (86%), mp 183-185 °C.

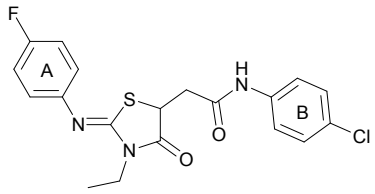


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.82 (dd, J = 16.3, 10.0 Hz, 1 H, H^a); 3.37 (dd, J = 16.3, 3.7 Hz, 1 H, H^b); 3.82-4.02 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, J = 10.0, 3.7 Hz, 1 H, SCH); 6.90-6.94 (m, 2 H, H^{oA}); 7.00-7.03 (m, 2 H, H^{mA}); 7.08-7.13 (m, 1 H, H^{pB}); 7.27-7.31 (m, 2 H, H^{mB}); 7.46 (d, J = 7.8 Hz, 2 H, H^{oB}); 7.73 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.3, 40.4 (CH_2); 43.8 (SCH); 115.9 (d, J = 22.7 Hz, C^{mA}); 119.9 (C^{oB}); 122.4 (d, J = 8.1 Hz, C^{oA}); 124.7 (C^{pB}); 129.1 (C^{mB}); 137.2 (C^{iB}); 144.0 (d, J = 2.2 Hz, C^{iA}); 154.2 (C=N); 160.0 (d, J = 242.8 Hz, C^{pA}); 167.0, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}FN_3O_2S$ $[M+H]^+$ 372.1177, found 372.1174.

***N*-(4-Chlorophenyl)-2-(3-ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-acetamide (5ed).** Colorless crystals, yield 298 mg (73%), mp 190-192 °C.

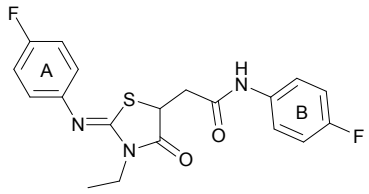


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.30 (t, J = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.82 (dd, J = 16.3, 9.7 Hz, 1 H, H^a); 3.35 (dd, J = 16.3, 4.0 Hz, 1 H, H^b); 3.85-4.01 (m, 2 H, $C\underline{H}_2CH_3$); 4.42 (dd, J = 9.7, 4.0 Hz, 1 H, SCH); 6.90-6.94 (m, 2 H, H^{oA}), 6.99-7.04 (m, 2H, H^{mA}); 7.25 (d, J = 8.7 Hz, 2 H, H^{mB}); 7.42 (d, J = 8.7 Hz, 2 H, H^{oB}); 7.77 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.4, 40.4 (CH_2); 43.7 (SCH); 116.0 (d, *J* = 22.8 Hz, C^{mA}); 121.1 (C^{oB}); 122.4 (d, *J* = 8.1 Hz, C^{oA}); 129.1 (C^{mB}); 129.8 (C^{pB}); 135.8 (C^{iB}); 143.9 (d, *J* = 2.2 Hz, C^{iA}); 153.9 (C=N); 160.0 (d, *J* = 243.5 Hz, C^{pA}); 167.0, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}ClFN_3O_2S$ $[M+H]^+$ 406.0787, found 406.0791.

2-(3-Ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)acetamide (5ee). Colorless crystals, yield 276 mg (71%), mp 174-176 °C.

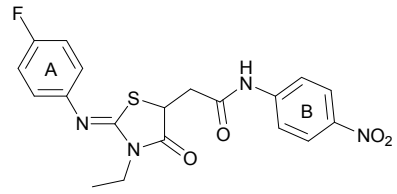


^{1}H NMR (300 MHz, $CDCl_3$): δ = 1.29 (t, *J* = 7.1 Hz, 3 H, $CH_2C\underline{H}_3$); 2.82 (dd, *J* = 16.3, 9.9 Hz, 1 H, H^a); 3.36 (dd, *J* = 16.3, 3.9 Hz, 1 H, H^b); 3.84-3.99 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 9.9, 3.9 Hz, 1 H, SCH); 6.89-7.05 (m, 6 H, $H^{m,oA}$, H^{mB}); 7.39-7.45 (m, 2 H, H^{oB}); 7.72 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 12.5 ($CH_2\underline{C}H_3$); 38.3, 40.2 (CH_2); 43.8 (SCH); 115.7 (d, *J* = 22.7 Hz, C^{mB}), 116.0 (d, *J* = 22.7 Hz, C^{mA}); 121.8 (d, *J* = 7.6 Hz, C^{oB}); 122.4 (d, *J* = 8.1 Hz, C^{oA}); 133.2 (d, *J* = 2.7 Hz, C^{iB}); 143.9 (d, *J* = 2.6 Hz, C^{iA}); 153.9 (C=N); 159.6 (d, *J* = 243.5 Hz, C^p), 160.0 (d, *J* = 244.6 Hz, C^p); 167.0, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}F_2N_3O_2S$ $[M+H]^+$ 390.1082, found 390.1087.

2-(3-Ethyl-2-(4-fluorophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)-acetamide (5ef). Beige crystals, yield 309 mg (74%), mp 211-213 °C.

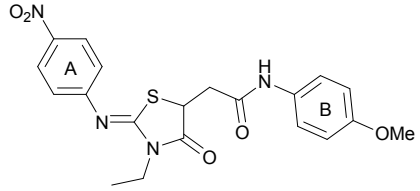


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.21 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 3.06 (dd, *J* = 17.1, 9.3 Hz, 1 H, H^a); 3.33 (dd, *J* = 17.1, 3.7 Hz, 1 H, H^b); 3.73-3.88 (m, 2 H, $C\underline{H}_2CH_3$); 4.59 (dd, *J* = 9.3, 3.7 Hz, 1 H, SCH); 6.94-6.96 (m, 2 H, H^{oA}); 7.14-7.20 (m, 2 H, H^{mA}); 7.77 (d, *J* = 9.3 Hz, 2 H, H^{oB}); 8.20 (d, *J* = 9.3 Hz, 2 H, H^{mB}); 10.74 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.5, 38.8 (CH_2); 43.2 (SCH); 115.9 (d, *J* = 22.6 Hz, C^{mA}); 118.8 (C^{oB}); 122.6 (d, *J* = 8.4 Hz, C^{oA}); 125.0 (C^{mB}); 142.3, 144.7 ($C^{i,pB}$); 144.6 (d, *J* = 2.9 Hz, C^{iA}); 155.1 (C=N); 159.0 (d, *J* = 240.6 Hz, C^{pA}); 168.9, 173.4 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}FN_4O_4S$ $[M+H]^+$ 417.1027, found 417.1026.

2-(3-Ethyl-2-(4-nitrophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)-acetamide (5fa). Pale yellow crystals, yield 155 mg (36%), mp 205-206 °C.

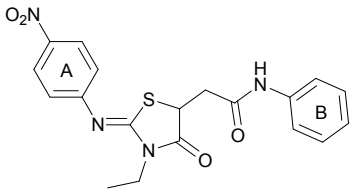


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.22 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 2.95 (dd, *J* = 16.6, 9.6 Hz, 1 H, H^a); 3.24 (dd, *J* = 16.6, 3.7 Hz, 1 H, H^b); 3.70 (s, 3 H, OCH_3); 3.76-3.84 (m, 2 H, $C\underline{H}_2CH_3$); 4.61 (dd, *J* = 9.6, 3.7 Hz, 1 H, SCH); 6.85 (d, *J* = 9.0 Hz, 2 H, H^{mB}); 7.17 (d, *J* = 8.8 Hz, 2 H, H^{oA}); 7.41 (d, *J* = 9.0 Hz, 2 H, H^{oB}); 8.23 (d, *J* = 8.8 Hz, 2 H, H^{mA}); 10.00 (s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.5, 38.2 (CH_2); 44.0 (SCH); 55.1 (OCH_3); 113.9 (C^{mB}); 120.6 (C^{oB}); 122.1 (C^{oA}); 125.2 (C^{mA}); 131.8 (C^{iB}); 143.7 (C^{pA}); 154.6, 155.3, 156.8 (C=N, C^{iA}, C^{pB}); 167.1, 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}N_4O_5S$ $[M+H]^+$ 429.1227, found 429.1232.

2-(3-Ethyl-2-(4-nitrophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5fc).



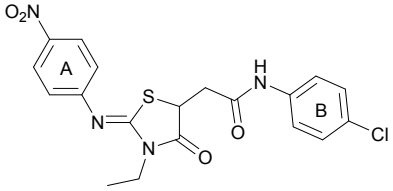
Colorless crystals, yield 248 mg (62%), mp 204-205 °C.

^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.22 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 3.00 (dd, *J* = 16.8, 9.6 Hz, 1 H, H^a); 3.28 (dd, *J* = 16.8, 3.5 Hz, 1 H, H^b); 3.75-3.90 (m, 2 H, $C\underline{H}_2CH_3$); 4.63 (dd, *J* = 9.6, 3.5 Hz, 1 H, SCH); 7.04 (t, *J* = 7.3 Hz, 1 H, H^{pB}); 7.17 (d, *J* = 8.8 Hz, 2 H, H^{oA}); 7.26-7.30 (m, 2 H, H^{mB}); 7.51 (d, *J* = 7.9 Hz, 2 H, H^{oB}); 8.23 (d, *J* = 8.8 Hz, 2 H, H^{mA}); 10.13 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.1 ($CH_2\underline{C}H_3$); 37.5, 38.3 (CH_2); 43.9 (SCH); 119.1 (C^{oB}); 122.1 (C^{oA}); 123.4 (C^{pB}); 125.2 (C^{mA}); 128.7 (C^{mB}); 138.1 (C^{iB}); 143.7 (C^{pA}); 154.6, 156.7 (C=N, C^{iA}); 167.7, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{18}N_4O_4S$ $[M+H]^+$ 399.1121, found 399.1123.

***N*-(4-Chlorophenyl)-2-(3-ethyl-2-(4-nitrophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-acetamide (5fd).** Pale yellow crystals, yield 310 mg (72%), mp 241-243 °C.

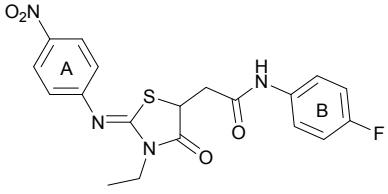


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.22 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 3.01 (dd, *J* = 16.9, 9.3 Hz, 1 H, H^a); 3.27 (dd, *J* = 16.9, 3.5 Hz, 1 H, H^b); 3.74-3.85 (m, 2 H, $C\underline{H}_2CH_3$); 4.63 (dd, *J* = 9.3, 3.5 Hz, 1 H, SCH); 7.16 (d, *J* = 8.8 Hz, 2 H, H^{oA}); 7.34 (d, *J* = 8.8 Hz, 2 H, H^{mB}); 7.54 (d, *J* = 8.8 Hz, 2 H, H^{oB}); 8.23 (d, *J* = 8.8 Hz, 2 H, H^{mA}); 10.28 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.2 ($CH_2\underline{C}H_3$); 37.5, 38.3 (CH_2); 43.8 (SCH); 120.6 (C^{oB}); 122.1 (C^{oA}); 125.2 (C^{mA}); 127.0 (C^{pB}); 128.7 (C^{mB}); 137.6 (C^{iB}); 143.7 (C^{pA}); 154.6, 156.7 (C=N, C^{iA}); 167.9, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}ClN_4O_4S$ $[M+H]^+$ 433.0731, found 433.0735.

2-(3-Ethyl-2-(4-nitrophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)acetamide (5fe). Colorless crystals, yield 324 mg (78%), mp 227-228 °C.

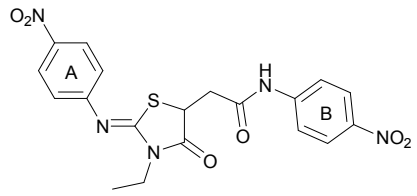


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.22 (t, *J* = 6.8 Hz, 3 H, $CH_2C\underline{H}_3$); 3.00 (dd, *J* = 16.8, 9.4 Hz, 1 H, H^a); 3.28 (dd, *J* = 16.8, 3.2 Hz, 1 H, H^b); 3.71-3.89 (m, 2 H, $C\underline{H}_2CH_3$); 4.62 (dd, *J* = 9.4, 3.2 Hz, 1 H, SCH); 7.10-7.18 (m, 4 H, H^{oA}, H^{mB}); 7.51-7.55 (m, 2 H, H^{oB}); 8.23 (d, *J* = 8.7 Hz, 2 H, H^{mA}); 10.20 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.1 ($CH_2\underline{C}H_3$); 37.2, 38.2 (CH_2); 43.9 (SCH); 115.1 (d, J = 22.0 Hz, C^{mB}); 120.9 (d, J = 8.1 Hz, C^{oB}); 122.1 (C^{oA}); 125.2 (C^{mA}); 135.0 (d, J = 2.3 Hz, C^{iB}); 143.7 (C^{pA}); 154.6, 156.7 (C=N, C^{iA}); 158.0 (d, J = 239.9 Hz, C^{pB}); 167.6, 173.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}FN_4O_4S$ $[M+H]^+$ 417.1027, found 417.1023.

2-(3-Ethyl-2-(4-nitrophenyl)imino-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)acetamide (5ff). Yellow crystals, yield 307 mg (69%), mp 234-235 °C.

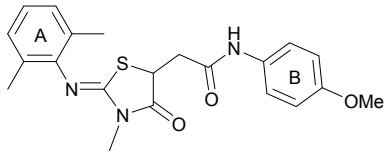


^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.23 (t, J = 6.9 Hz, 3 H, $CH_2C\underline{H}_3$); 3.11 (dd, J = 17.1, 9.2 Hz, 1 H, H^a); 3.36 (dd, J = 17.1, 3.4 Hz, 1 H, H^b); 3.78-3.84 (m, 2 H, $C\underline{H}_2CH_3$); 4.66 (dd, J = 9.2, 3.4 Hz, 1 H, SCH); 7.17 (d, J = 8.8 Hz, 2 H, H^{oA}); 7.76 (d, J = 9.2 Hz, 2 H, H^{oB}); 8.19-8.25 (m, 4 H, H^{mA}, H^{mB}); 10.75 (s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 12.1 ($CH_2\underline{C}H_3$); 37.6, 38.5 (CH_2); 43.6 (SCH); 118.8 (C^{oB}); 122.1 (C^{oA}); 125.0, 125.2 (C^{mA}, C^{mB}); 142.3, 143.7, 144.7 (C^{pA}, $C^{i,pB}$); 154.5, 156.6 (C=N, C^{iA}); 168.9, 173.4 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{19}H_{17}N_5O_6S$ $[M+H]^+$ 444.0972, found 444.0971.

2-(2-(2,6-Dimethylphenyl)imino-3-methyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-methoxyphenyl)acetamide (5ga). Beige crystals, yield 261 mg (66%), mp 192-193 °C.

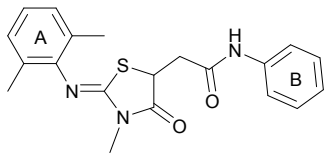


^{1}H NMR (400 MHz, $CDCl_3$): δ = 2.09 (s, 6 H, 2 CH_3); 2.83 (dd, J = 16.2, 9.2 Hz, 1 H, H^a); 3.25 (dd, J = 16.2, 3.8 Hz, 1 H, H^b); 3.39 (s, 3 H, NCH_3); 3.76 (s, 3 H, OCH_3); 4.40 (dd, J = 9.2, 3.8 Hz, 1 H, SCH); 6.81 (d, J = 8.9 Hz, 2 H, H^{mB}); 6.92 (t, J = 7.4 Hz, 1 H, H^{pA}); 7.01 (d, J = 7.4 Hz, 2 H, H^{mA}); 7.33 (d, J = 8.9 Hz, 2 H, H^{oB}); 7.52 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 17.7 (2 CH_3); 29.6 (NCH_3); 40.4 (CH_2); 43.9 (SCH); 55.4 (OCH_3); 114.1 (C^{mB}); 121.8 (C^{oB}); 124.1 (C^{pA}); 128.09 (C^{oA}); 128.13 (C^{mA}); 130.3 (C^{iB}); 145.5 (C^{iA}); 154.1 (C=N); 156.6 (C^{pB}); 166.7, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{21}H_{23}N_3O_3S$ $[M+H]^+$ 398.1533, found 398.1534.

2-(2-(2,6-Dimethylphenyl)imino-3-methyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (5gc). Pale pink crystals, yield 274 mg (75%), mp 167-168 °C.

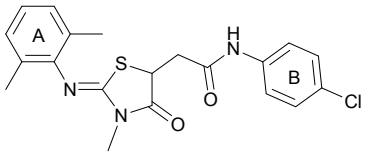


^{1}H NMR (400 MHz, $CDCl_3$): δ = 2.10 (s, 6 H, 2 CH_3); 2.86 (dd, J = 16.3, 9.3 Hz, 1 H, H^a); 3.28 (dd, J = 16.3, 3.8 Hz, 1 H, H^b); 3.40 (s, 3 H, NCH_3); 4.41 (dd, J = 9.3, 3.8 Hz, 1 H, SCH); 6.92 (t, J = 7.4 Hz, 1 H, H^{pA}); 7.01 (d, J = 7.4 Hz, 2 H, H^{mA}); 7.08-7.12 (m, 1 H, H^{pB}); 7.25-7.31 (m, 2 H, H^{mB}); 7.44 (d, J = 7.6 Hz, 2 H, H^{oB}); 7.65 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 17.7 (2 CH_3); 29.5 (NCH_3); 40.3 (CH_2); 44.0 (SCH); 119.8 (C^{oB}); 124.2, 124.7 (C^{pA}, C^{pB}); 128.0 (C^{oA}); 128.2 (C^{mA}); 129.0 (C^{mB}); 137.2 (C^{iB}); 145.4 (C^{iA}); 154.1 (C=N); 166.9, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_2S$ $[M+H]^+$ 368.1427, found 368.1426.

***N*-(4-Chlorophenyl)-2-(2-(2,6-dimethylphenyl)imino-3-methyl-4-oxo-1,3-thiazolidin-5-yl)acetamide (5gd).** Colorless crystals, yield 287 mg (71%), mp 193-195 °C.

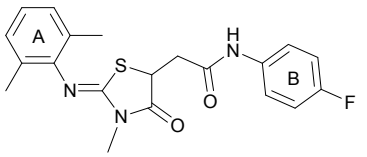


^{1}H NMR (300 MHz, $CDCl_3$): δ = 2.09 (s, 6 H, 2 CH_3); 2.87 (dd, *J* = 16.3, 9.0 Hz, 1 H, H^a); 3.27 (dd, *J* = 16.3, 4.0 Hz, 1 H,H^b); 3.40 (s, 3 H, NCH_3); 4.41 (dd, *J* = 9.0, 4.0 Hz, 1 H, SCH); 6.93 (t, *J* = 7.4 Hz, 1 H, H^{pA}); 7.01 (d, *J* = 7.4 Hz, 2 H, H^{mA}); 7.25 (d, *J* = 8.7 Hz, 2 H, H^{mB}); 7.40 (d, *J* = 8.7 Hz, 2 H, H^{oB}); 7.71 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 17.7 (2 CH_3); 29.6 (NCH_3); 40.4 (CH_2); 43.9 (SCH); 121.1 (C^{oB}); 124.2 (C^{pA}); 128.0 (C^{oA}); 128.2 (C^{mA}); 129.0 (C^{mB}); 129.7 (C^{pB}); 135.8 (C^{iB}); 145.4 (C^{iA}); 153.9 (C=N); 166.9, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}ClN_3O_2S$ $[M+H]^+$ 402.1038, found 402.1037.

2-(2-(2,6-Dimethylphenyl)imino-3-methyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-fluorophenyl)-acetamide (5ge). Colorless crystals, yield 253 mg (66%), mp 186-188 °C.

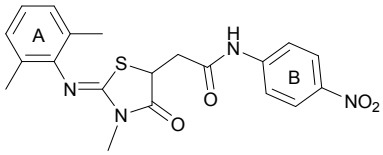


^{1}H NMR (300 MHz, $CDCl_3$): δ = 2.09 (s, 6 H, 2 CH_3); 2.86 (dd, *J* = 16.3, 9.3 Hz, 1 H, H^a); 3.28 (dd, *J* = 16.3, 3.7 Hz, 1 H, H^b); 3.40 (s, 3 H, NCH_3); 4.40 (dd, *J* = 9.3, 3.7 Hz, 1 H, SCH); 6.91-7.03 (m, 5 H, $H^{m,pA}$, H^{mB}); 7.37-7.43 (m, 2 H, H^{oB}); 7.42 (br s, 1 H, NH) ppm.

^{13}C NMR (75 MHz, $CDCl_3$): δ = 17.7 (2 CH_3); 29.6 (NCH_3); 40.2 (CH_2); 43.9 (SCH); 115.7 (d, *J* = 22.7 Hz, C^{mB}); 121.7 (d, *J* = 8.1 Hz, C^{oB}); 124.2 (C^{pA}); 128.0 (C^{oA}); 128.2 (C^{mA}); 133.2 (d, *J* = 2.8 Hz, C^{iB}); 145.4 (C^{iA}); 153.9 (C=N); 159.5 (d, *J* = 233.2 Hz, C^{pB}); 166.9, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}FN_3O_2S$ $[M+H]^+$ 386.1333, found 386.1338.

2-(2-(2,6-Dimethylphenyl)imino-3-methyl-4-oxo-1,3-thiazolidin-5-yl)-*N*-(4-nitrophenyl)-acetamide (5gf). Pale yellow crystals, yield 333 mg (81%), mp 204-206 °C.



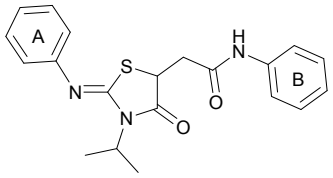
^{1}H NMR (400 MHz, $CDCl_3$): δ = 2.09 (s, 6 H, 2 CH_3); 2.96 (dd, *J* = 16.6, 8.6 Hz, 1 H, H^a); 3.35 (dd, *J* = 16.6, 4.2 Hz, 1 H, H^b); 3.42 (s, 3 H, NCH_3); 4.45 (dd, *J* = 8.6, 4.2 Hz, 1 H, SCH); 6.94 (t, *J* = 7.4 Hz, 1 H, C^{pA}); 7.01 (d, *J* = 7.4 Hz, 2 H, H^{mA}); 7.66 (d, *J* = 9.1 Hz, 2 H, H^{oB}); 8.15 (br s, 1 H, NH); 8.19 (d, *J* = 9.1 Hz, 2 H, H^{mB}) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 17.7 (2 CH_3); 29.7 (NCH_3); 40.6 (CH_2); 43.6 (SCH); 119.1 (C^{oB}); 124.3 (C^{pA}); 125.1 (C^{mB}); 128.0 (C^{oA}); 128.2 (C^{mA}); 143.2, 143.7, 145.3 (C^{iA}, $C^{i,pB}$); 153.5 (C=N); 167.5, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{20}N_4O_4S$ $[M+H]^+$ 413.1278, found 413.1276.

Reaction of thioureas 3h,i with *N*-phenylmaleimide (4c). Stirred mixture of *N*-alkyl-*N*′-phenylthiourea **3h** or **3i** (1 mmol) and *N*-phenylmaleimide (**4c**) (173 mg, 1 mmol) in *i*-PrOH (5 mL) was refluxed for indicated time (17 h for **3h**, 28 h for **3i**). Solvent was evaporated under reduced pressure and the residue was separated by column chromatography (hexane/EtOAc 6:1) to obtain thiazolidines **6h**,**7h** and **6i**,**7i**, respectively.

2-(3-Isopropyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (6h). Pale beige crystals, yield 93 mg (25%), mp 157-159 °C.

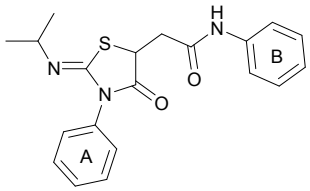


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.53 (d, *J* = 7.0 Hz, 3 H, CH_3); 1.54 (d, *J* = 7.0 Hz, 3 H, CH_3); 2.80 (dd, *J* = 16.0, 9.5 Hz, 1 H, H^a); 3.32 (dd, *J* = 16.0, 4.1 Hz, 1 H, H^b); 4.37 (dd, *J* = 9.5, 4.1 Hz, 1 H, SCH); 4.90 (sept, *J* = 7.0 Hz, 1 H, C<u>H</u>$(CH_3)_2$); 6.94 (d, *J* = 7.3 Hz, 2 H, H^{oA}); 7.09-7.13 (m, 2 H, H^{pA}, H^{pB}); 7.28-7.34 (m, 4 H, H^{mA}, H^{mB}); 7.44-7.47 (m, 3 H, H^{oB}, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 18.8 (2 CH_3); 40.7 (CH_2); 43.3 (SCH); 48.0 (NCH); 119.9, 120.9 (C^{oA}, C^{oB}); 124.6, 124.7 (C^{pA}, C^{pB}); 129.0, 129.3 (C^{mA}, C^{mB}); 137.3 (C^{iB}); 148.2 (C^{iA}); 153.4 (C=N); 167.0, 174.2 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_2S$ $[M+H]^+$ 368.1427, found 368.1428.

2-(2-Isopropylimino-4-oxo-3-phenyl-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (7h). Colorless crystals, 142 mg (39%), mp 208-209 °C (decomp.).

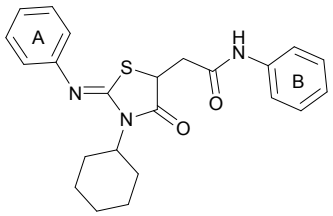


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.09 (d, *J* = 6.1 Hz, 3 H, CH_3); 1.10 (d, *J* = 6.1 Hz, 3 H, CH_3); 2.94 (dd, *J* = 16.2, 9.8 Hz, 1 H, H^a); 3.45 (dd, *J* = 16.2, 4.0 Hz, 1 H, H^b); 3.49 (sept, *J* = 6.1 Hz, 1 H, C<u>H</u>$(CH_3)_2$); 4.60 (dd, *J* = 9.8, 4.0 Hz, 1 H, SCH); 7.08 (m, 2 H, H^{pB}); 7.28-7.32 (m, 4 H, H^{oA}, H^{mB}); 7.35-7.39 (m, 1 H, H^{pA}); 7.35-7.45 (m, 4 H, H^{mA}, H^{oB}); 7.72 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 23.38, 23.41 (2 CH_3); 39.1 (CH_2); 43.1 (SCH); 52.9 (NCH); 119.1 (C^{oB}); 123.4 (C^{pB}); 128.0 (C^{pA}); 128.4, 128.7, 129.8 ($C^{m,oA}$, C^{mB}); 135.8 (C^{iA}); 138.7 (C^{iB}); 150.4 (C=N); 167.8, 173.4 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{20}H_{21}N_3O_2S$ $[M+H]^+$ 368.1427, found 368.1433.

2-(3-Cyclohexyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (6i). Colorless crystals, yield 75 mg (18%), mp 180-182 °C (decomp.).

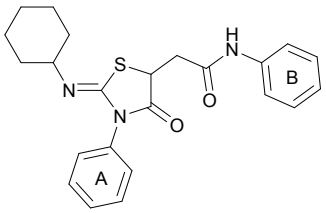


^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.18-1.42 (m, 3 H, c-Hex); 1.64-1.87 (m, 5 H, c-Hex); 2.35-2.45 (m, 2 H, c-Hex); 2.79 (dd, *J* = 16.2, 9.6 Hz, 1 H, H^a); 3.33 (dd, *J* = 16.2, 4.0 Hz, 1 H, H^b); 4.37 (dd, *J* = 9.6, 4.0 Hz, 1 H, SCH); 4.46-4.52 (m, 1 H, NCH); 6.93 (d, *J* = 7.4 Hz, 2 H, H^{oA}); 7.09-7.13 (m, 2 H, H^{pA}, H^{pB}); 7.28-7.34 (m, 4 H, H^{mA}, H^{mB}); 7.45-7.50 (m, 3 H, H^{oB}, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 25.1, 26.0, 28.1, 28.2 (c-Hex); 40.7 (CH_2); 43.2 (SCH); 56.0 (NCH); 119.9, 120.9 (C^{oA}, C^{oB}); 124.5, 124.6 (C^{pA}, C^{pB}); 129.0, 129.2 (C^{mA}, C^{mB}); 137.3 (C^{iB}); 148.3 (C^{iA}); 153.8 (C=N); 167.1, 174.4 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{23}H_{25}N_3O_2S$ $[M+H]^+$ 408.1740, found 408.1747.

2-(2-Cyclohexylimino-4-oxo-3-phenyl-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (7i). Colorless crystals, yield 145 mg (36%), mp 206-207 °C (decomp.).



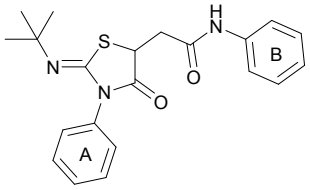
^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.14-1.19 (m, 1 H, c-Hex); 1.23-1.35 (m, 4 H, c-Hex); 1.54-1.56 (m, 1 H, c-Hex); 1.64-1.70 (m, 4 H, c-Hex); 2.93 (dd, *J* = 16.2, 10.0 Hz, 1 H, H^a); 3.14-3.19 (m, 1 H, NCH); 3.45 (dd, *J* = 16.2, 3.8 Hz, 1 H, H^b); 4.60 (dd, *J* = 10.0, 3.8 Hz, 1 H, SCH); 7.08-7.12 (m, 1 H, H^{pB}); 7.26-7.30 (m, 4 H, H^{oA}, H^{mB}); 7.33-7.37 (m, 1 H, H^{pA}); 7.40-7.45 (m, 4 H, H^{mA}, H^{oB}); 7.80 (br s, 1 H, NH) ppm.

^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.13-1.28 (m, 5 H, c-Hex); 1.53-1.66 (m, 5 H, c-Hex); 3.07-3.13 (m, 2 H, H^a, NCH); 3.32 (dd, *J* = 16.5, 3.7 Hz, 1 H, H^b); 4.70 (dd, *J* = 9.0, 3.7 Hz, 1 H, SCH); 7.04-7.08 (m, 1 H, H^{pB}); 7.30-7.34 (m, 4 H, H^{oA}, H^{mB}); 7.36-7.40 (m, 1 H, H^{pA}); 7.45-7.49 (m, 2 H, H^{mA}); 7.61 (d, *J* = 7.9 Hz, 2 H, H^{oB}); 10.2 (s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 24.5, 25.5, 29.7, 33.1, 33.2 (c-Hex); 40.8 (CH_2); 43.6 (SCH); 61.7 (NCH); 119.8 (C^{oB}), 124.4 (C^{pB}); 128.5 (C^{pA}); 128.0, 128.9, 129.0 ($C^{m,oA}$, C^{mB}); 135.1 (C^{iA}); 137.5 (C^{iB}); 149.2 (C=N); 167.3, 174.1 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{23}H_{25}N_3O_2S$ $[M+H]^+$ 408.1740, found 408.1745.

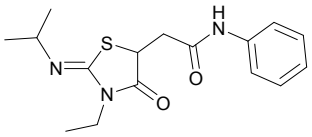
2-(2-*tert*-Butylimino-4-oxo-3-phenyl-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (7j). Reaction of thiourea 3j with *N*-phenylmaleimide (4c). Stirred mixture of *N*-*tert*-butyl-*N*′-phenylthiourea (**3j**) (208 mg, 1 mmol) and *N*-phenylmaleimide (**4c**) (173 mg, 1 mmol) in benzene (5 mL) was refluxed for 25 h. Solvent was evaporated under reduced pressure and the residue was separated by column chromatography (hexane/EtOAc 8:1). Colorless crystals, yield 208 mg (55%), mp 207-208 °C (decomp.).



^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.18 (s, 9 H, $(CH_3)_3$); 3.05 (dd, *J* = 16.4, 9.0 Hz, 1 H, H^a); 3.29 (dd, *J* = 16.4, 3.7 Hz, 1 H, H^b); 4.68 (dd, *J* = 9.0, 3.7 Hz, 1 H, SCH); 7.04-7.08 (m, 1 H, H^{pB}); 7.24 (d, *J* = 7.2 Hz, 2 H, H^{oA}); 7.29-7.38 (m, 3 H, H^{pA}, H^{mB}); 7.43-7.47 (m, 2 H, H^{mA}); 7.61 (d, *J* = 7.8 Hz, 2 H, H^{oB}); 10.2 (s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 29.2 (3 CH_3); 39.3 (CH_2); 43.9 (SCH); 53.9 ($\underline{C}(CH_3)_3$); 119.2 (C^{oB}), 123.4 (C^{pB}); 127.7 (C^{pA}); 128.4, 128.6, 128.8 ($C^{m,oA}$, C^{mB}); 136.3 (C^{iA}); 138.8 (C^{iB}); 146.3 (C=N); 167.8, 172.5 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{21}H_{23}N_3O_2S$ $[M+H]^+$ 382.1583, found 382.1589.

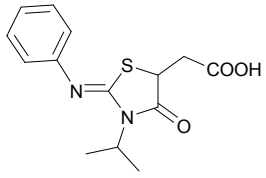
2-(3-Ethyl-2-isopropylimino-4-oxo-1,3-thiazolidin-5-yl)-*N*-phenylacetamide (7k). Reaction of thiourea 3k with *N*-phenylmaleimide (4c).  Stirred mixture of *N*-ethyl-*N*′-isopropylthiourea (**3k**) (146 mg, 1 mmol) and *N*-phenylmaleimide (**4c**) (173 mg, 1 mmol) in isopropyl alcohol (5 mL) was refluxed for 15 h. Solvent was evaporated under reduced pressure and the residue was recrystallized from ethanol/water (1:1) mixture. Colorless crystals, yield 264 mg (83%), mp 165-166 °C.

^{1}H NMR (400 MHz, $CDCl_3$): δ = 1.15-1.20 (m, 9 H, 3 CH_3); 2.78 (dd, *J* = 16.0, 9.7 Hz, 1 H, H^a); 3.39 (dd, *J* = 16.0, 4.0 Hz, 1 H, H^b); 3.45 (sept, *J* = 6.2 Hz, 1 H, C<u>H</u>$(CH_3)_2$); 3.71-3.85 (m, 2 H, NCH_2); 4.43 (dd, *J* = 9.7, 4.0 Hz, 1 H, SCH); 7.10-7.14 (m, 1 H, H^p); 7.30-7.34 (m, 2 H, H^m); 7.51 (d, *J* = 7.7 Hz, 2 H, H^o); 7.81 (br s, 1 H, NH) ppm.

^{13}C NMR (100 MHz, $CDCl_3$): δ = 12.4 (CH_2<u>C</u>H_3); 23.50, 23.54 (CH(<u>C</u>$H_3)_2$); 37.9, 41.0 (2 CH_2); 43.5 (SCH); 53.5 (<u>C</u>H$(CH_3)_2$); 119.9 (C^o); 124.6 (C^p); 129.0 (C^m); 137.5 (C^i); 148.2 (C=N); 167.4, 173.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{16}H_{21}N_3O_2S$ $[M+H]^+$ 320.1427, found 320.1418.

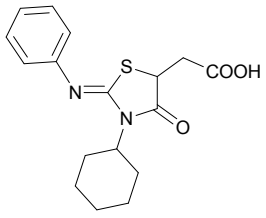
General procedure for the preparation of thiazolidinylacetic acids 9h,i,l. The stirred mixture of thiourea **3h,i,l** (1 mmol) and maleic anhydride (**8**) (98 mg, 1 mmol) in benzene (5 mL) was refluxed for the indicated amount of time. The solvent was evaporated under reduced pressure and the residue was recrystallized from CCl_4/*i*-PrOH mixture.

2-(3-Isopropyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)acetic acid (9h). During 21 h.  Colorless crystals, yield 207 mg (71%), mp 143-144 °C.

^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.42 (d, *J* = 6.8 Hz, 3 H, CH_3); 1.44 (d, *J* = 6.8 Hz, 3 H, CH_3); 2.88 (dd, *J* = 17.6, 8.4 Hz, 1 H, H^a); 2.99 (dd, *J* = 17.6, 3.9 Hz, 1 H, H^b); 4.40 (dd, *J* = 8.4, 3.9 Hz, 1 H, SCH); 4.75 (sept, *J* = 6.8 Hz, 1 H, NCH); 6.90 (d, *J* = 7.4 Hz, 2 H, H^o); 7.12 (t, *J* = 7.4 Hz, 1 H, H^p); 7.33-7.37 (m, 2 H, H^m); 12.7 (br s, 1 H, COOH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 18.3 (CH_3); 18.5 (CH_3); 36.7 (CH_2); 42.6 (SCH); 46.9 (NCH); 120.9 (C^o); 124.1 (C^p); 129.2 (C^m); 148.4 (C^i); 154.3 (C=N); 171.5 (C=O); 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{14}H_{16}N_2O_3S$ $[M+H]^+$ 293.0954, found 293.0955.

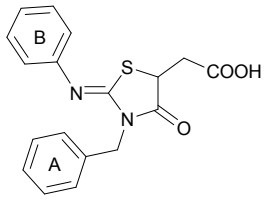
2-(3-Cyclohexyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)acetic acid (9i). During 21 h.  Colorless crystals, yield 290 mg (87%), mp 201-202 °C.

^{1}H NMR (400 MHz, DMSO-d_6): δ = 1.10-1.17 (m, 1 H, c-Hex); 1.25-1.34 (m, 2 H, c-Hex); 1.60-1.68 (m, 3 H, c-Hex); 1.79-1.82 (m, 2 H, c-Hex); 2.23-2.36 (m, 2 H, c-Hex); 2.86 (dd, *J* = 17.5, 8.4 Hz, 1 H, H^a); 2.99 (dd, *J* = 17.5, 3.6 Hz, 1 H, H^b); 4.31-4.41 (m, 2 H, SCH, NCH); 6.88 (d, *J* = 7.8 Hz, 2 H, H^o); 7.10-7.13 (m, 1 H, H^p); 7.33-7.37 (m, 2 H, H^m); 12.7 (br s, 1 H, COOH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6): δ = 24.5 (c-Hex-CH_2); 25.6 (c-Hex-CH_2); 25.7 (c-Hex-CH_2); 27.6 (c-Hex-CH_2); 27.7 (c-Hex-CH_2); 36.8 (CH_2); 42.6 (SCH); 54.9 (NCH); 120.9 (C^o); 124.1 (C^p); 129.2 (C^m); 148.5 (C^i); 154.6 (C=N); 171.5 (C=O); 173.7 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{17}H_{20}N_2O_3S$ $[M+H]^+$ 333.1267, found 333.1268.

2-(3-Benzyl-4-oxo-2-phenylimino-1,3-thiazolidin-5-yl)acetic acid (9l). During 21 h. Colorless crystals, yield 258 mg (76%), mp 197-199 °C.

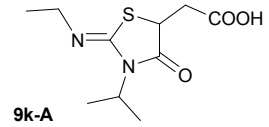


^{1}H NMR (400 MHz, DMSO-d_6): δ = 2.94 (dd, *J* = 17.6, 8.8 Hz, 1 H, H^a); 3.08 (dd, *J* = 17.6, 3.8 Hz, 1 H, H^b); 4.62 (dd, *J* = 8.8, 3.8 Hz, 1 H, SCH); 4.90 (d, *J* = 15.0 Hz, 1 H, NCH_2); 4.97 (d, *J* = 15.0 Hz, 1 H, NCH_2); 6.88 (d, *J* = 7.5 Hz, 2 H, H^{oB}); 7.11 (t, *J* = 7.5 Hz, 1 H, H^{pB}); 7.26-7.29 (m, 1 H, H^{pA}); 7.32-7.40 (m, 6 H, $H^{m,oA}$, H^{mB}); 12.8 (br s, 1 H, COOH) ppm.

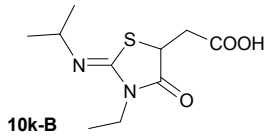
^{13}C NMR (100 MHz, DMSO-d_6): δ = 36.5 ($\underline{C}H_2COO$); 43.3 (SCH); 45.5 (NCH_2); 120.9 (C^{oB}); 124.3 (C^{pB}); 127.3 (C^{pA}); 127.5, 128.4 ($C^{m,oA}$); 129.3 (C^{mB}); 136.1 (C^{iA}); 147.9 (C^{iB}); 154.4 (C=N); 171.6 (C=O); 173.6 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{18}H_{16}N_2O_3S$ $[M+H]^+$ 341.0954, found 341.0953.

Reaction of thiourea 3k with maleic anhydride (8). The stirred mixture of thiourea **3k** (146 mg, 1 mmol) and maleic anhydride (**8**) (98 mg, 1 mmol) in benzene (5 mL) was refluxed for 15 h. The solvent was evaporated under reduced pressure and the residue was washed with a small portion of cold benzene. Mixture of two isomers **2-(2-ethylimino-3-isopropyl-4-oxo-1,3-thiazolidin-5-yl)acetic acid (9k-A)** and (**2-(3-ethyl-2-isopropylimino-4-oxo-1,3-thiazolidin-5-yl)acetic acid (10k-B)** in the ratio 1:1.8 was obtained. Colorless solid, yield 220 mg (90%).



9k-A



10k-B

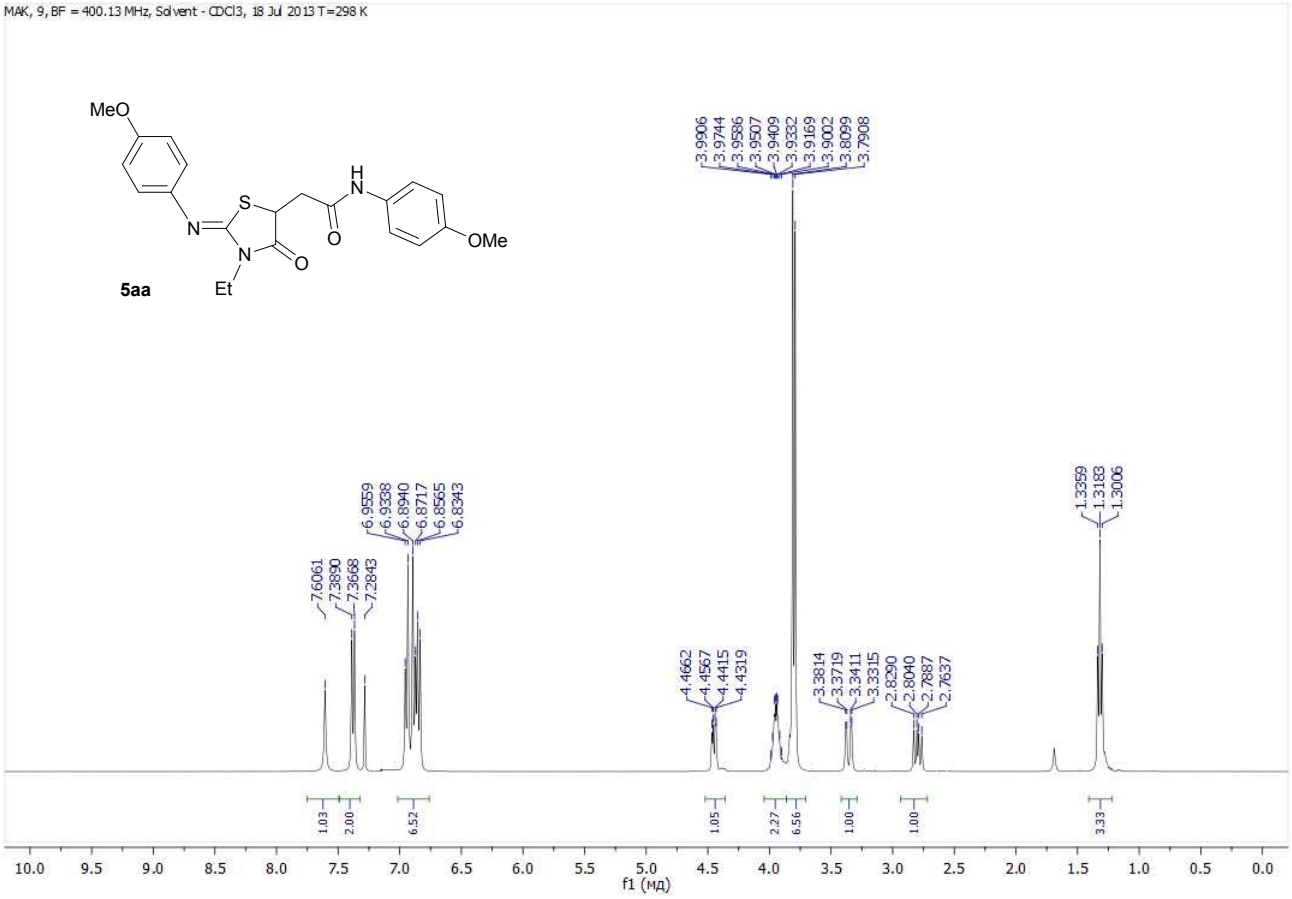
^{1}H NMR (400 MHz, DMSO-d_6) of isomer **9k-A**: δ = 1.16 (t, *J* = 7.2 Hz, 3 H, $CH_2C\underline{H}_3$); 1.31 (d, *J* = 6.9 Hz, 3 H, $CH(C\underline{H}_3)$); 1.33 (d, *J* = 6.9 Hz, 3 H, $CH(C\underline{H}_3)$); 2.82 (dd, *J* = 17.5, 8.5 Hz, 1 H, H^a); 2.99 (dd, *J* = 17.5, 3.8 Hz, 1 H, H^b); 3.19 (q, *J* = 7.2 Hz, 2 H, $C\underline{H}_2CH_3$); 4.35 (dd, *J* = 8.5, 3.8 Hz, 1 H, SCH); 4.62 (sept, *J* = 6.9 Hz, 1 H, $C\underline{H}(CH_3)$); 12.7 (br s, 1 H, COOH) ppm.

^{1}H NMR (400 MHz, DMSO-d_6) of isomer **10k-B**: δ = 1.06 (t, *J* = 7.0 Hz, 3 H, $CH_2C\underline{H}_3$); 1.10 (d, *J* = 6.2 Hz, 3 H, $CH(C\underline{H}_3)$); 1.11 (d, *J* = 6.2 Hz, 3 H, $CH(C\underline{H}_3)$); 2.83 (dd, *J* = 17.5, 8.9 Hz, 1 H, H^a); 3.04 (dd, *J* = 17.5, 3.8 Hz, 1 H, H^b); 3.38 (sept, *J* = 6.2 Hz, 1 H, $C\underline{H}(CH_3)$); 3.54-3.67 (m, 2 H, $C\underline{H}_2CH_3$); 4.43 (dd, *J* = 8.9, 3.8 Hz, 1 H, SCH); 12.7 (br s, 1 H, COOH) ppm.

^{13}C NMR (100 MHz, DMSO-d_6) of isomer **9k-A**: δ = 15.8 ($CH_2\underline{C}H_3$); 18.3, 18.4 ($CH(\underline{C}H_3)_2$); 37.1 ($\underline{C}H_2COO$); 42.4 (SCH); 46.2 ($\underline{C}H_2CH_3$); 46.3 ($\underline{C}H(CH_3)_2$); 149.0 (C=N); 171.5 (C=O); 173.1 (C=O) ppm.

^{13}C NMR (100 MHz, DMSO-d_6) of isomer **10k-B**: δ = 12.0 ($CH_2\underline{C}H_3$); 23.57, 23.63 ($CH(\underline{C}H_3)_2$); 37.0, 37.1 (2 CH_2); 42.9 (SCH); 52.7 ($\underline{C}H(CH_3)_2$); 150.7 (C=N); 171.6 (C=O); 172.8 (C=O) ppm.

HRMS (ESI), *m/z*: calcd for $C_{10}H_{16}N_2O_3S$ $[M+H]^+$ 245.0954, found 245.0957.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N
H
N
O
N
O
OMe
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3.9586
3.9507
3.9409
3.9332
3.9169
3.9002
3.8099
3.7908
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6.8565
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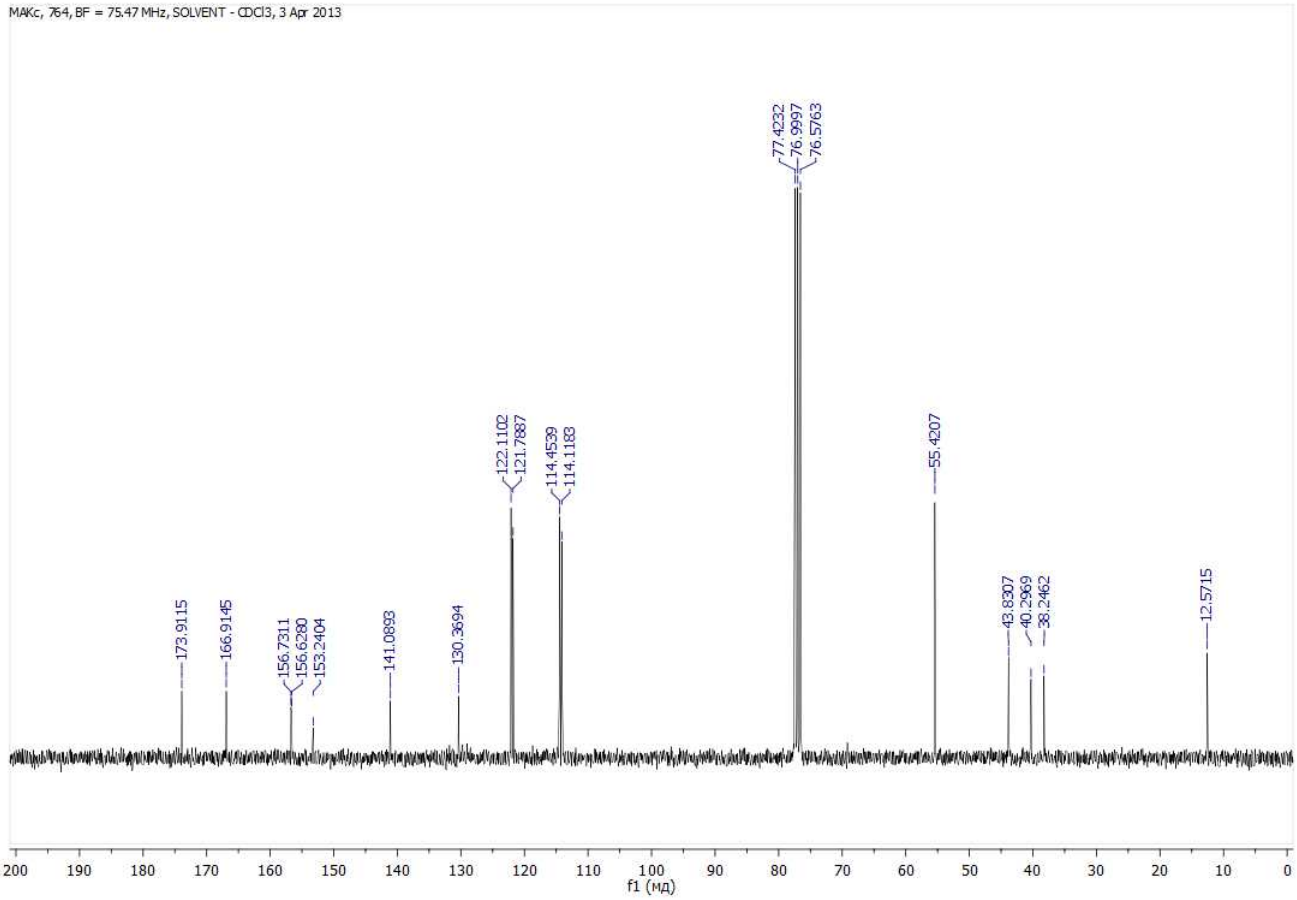
6.56
1.00
1.00
3.33
f1 (мд)


MAKc, 764, BF = 75.47 MHz, SOLVENT - CDCl3, 3 Apr 2013
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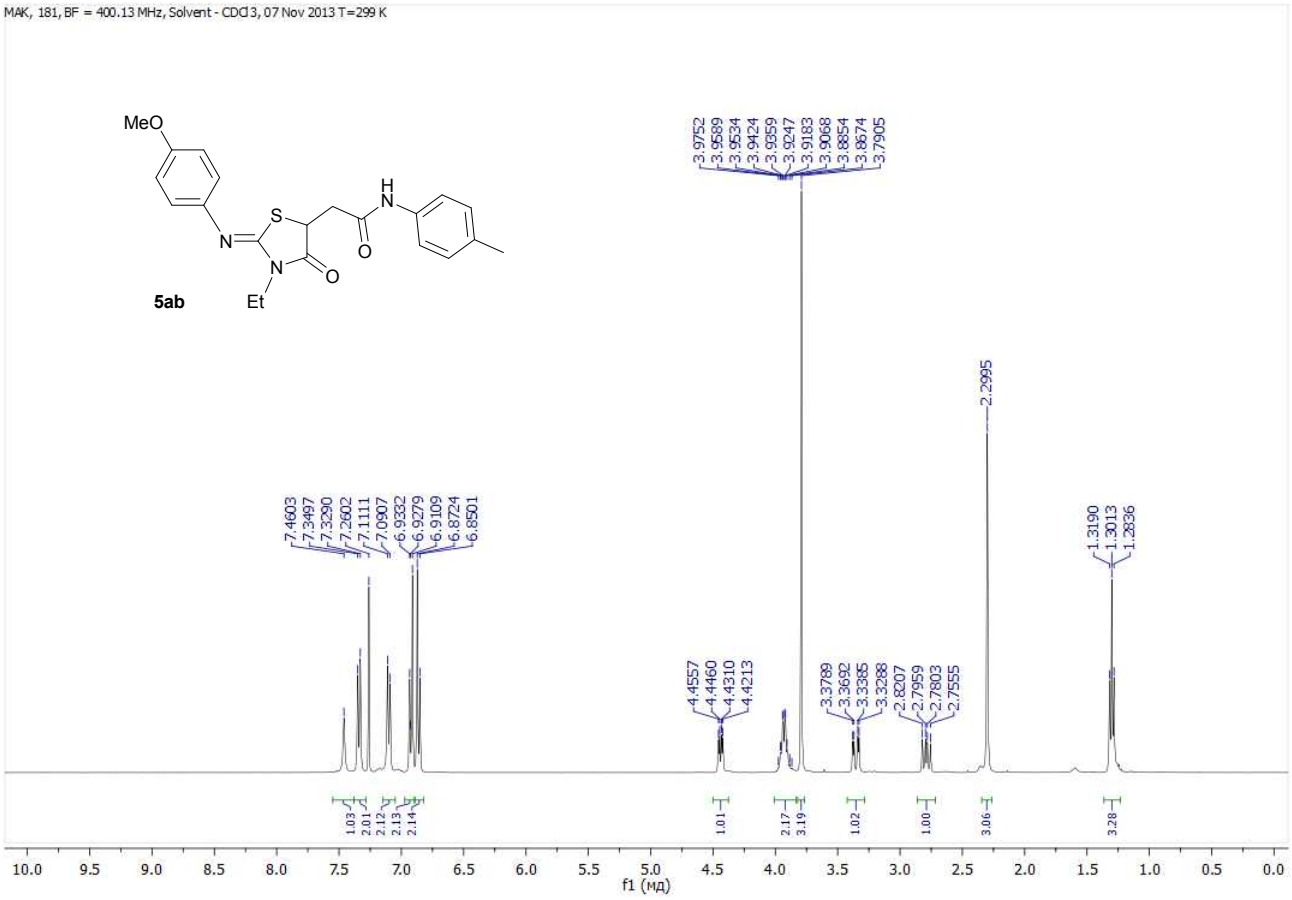
76.9997
76.5763
122.1102
121.7887
114.4539
114.1183
55.4207
173.9115
166.9145
156.7311
156.6280
153.2404
141.0893
130.3694
43.8307
40.2969
38.2462
12.5715
f1 (мд)


MAK, 181, BF = 400.13 MHz, Solvent - CDCl3, 07 Nov 2013 T=299 K
MeO
S
N
N
O
H
N
O
Et
5ab
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3.9589
3.9534
3.9424
3.9359
3.9247
3.9183
3.9068
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3.7905
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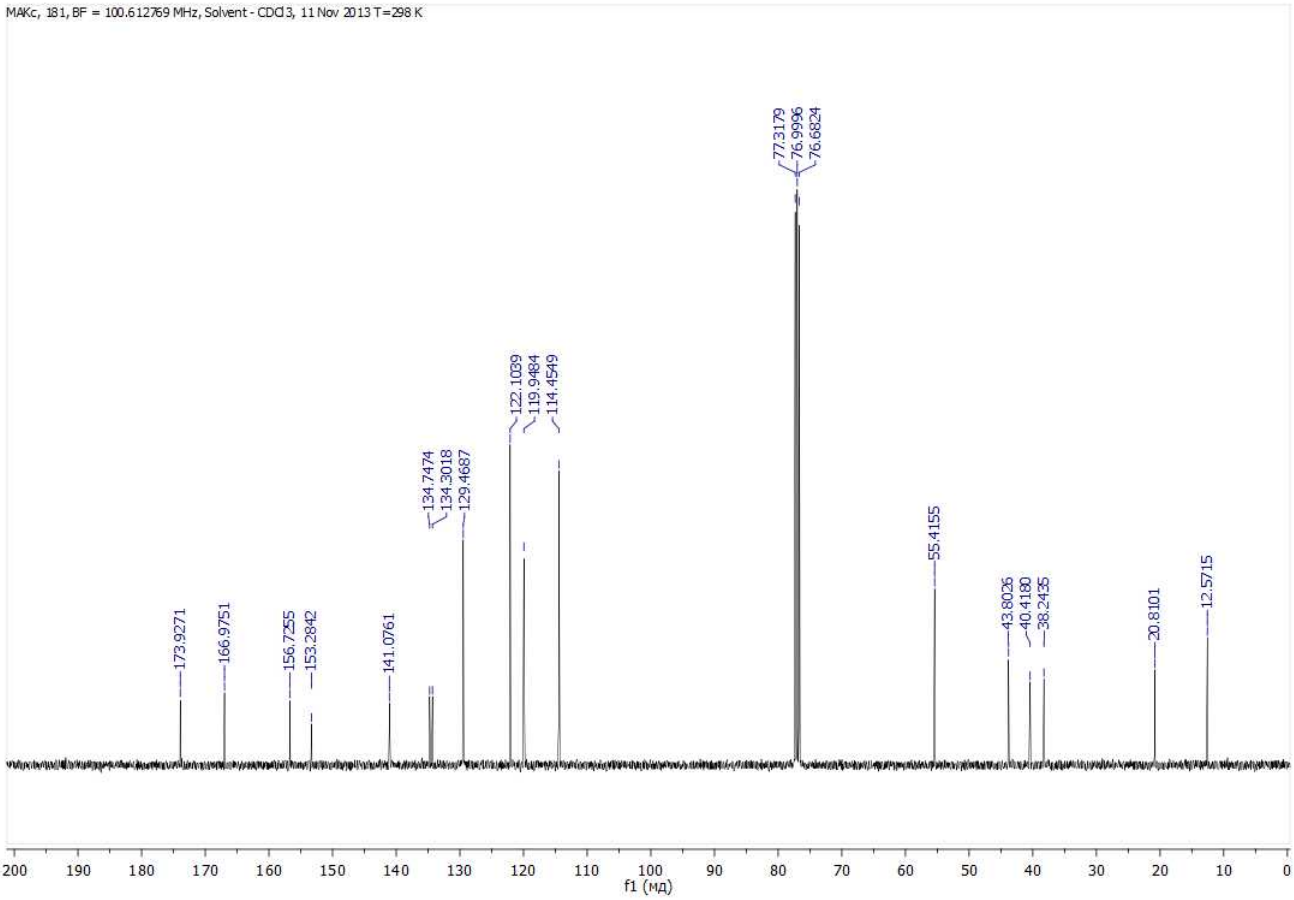
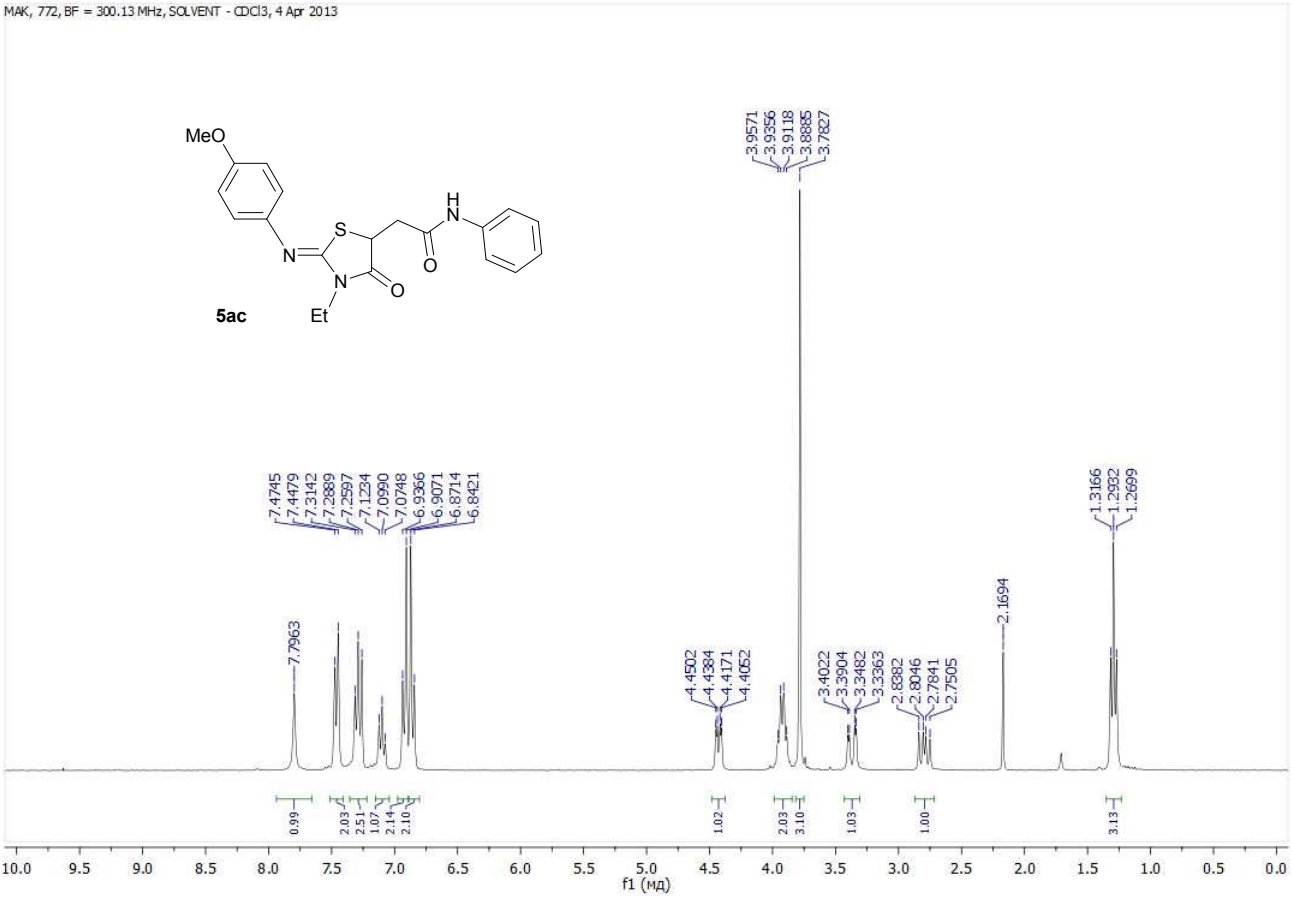
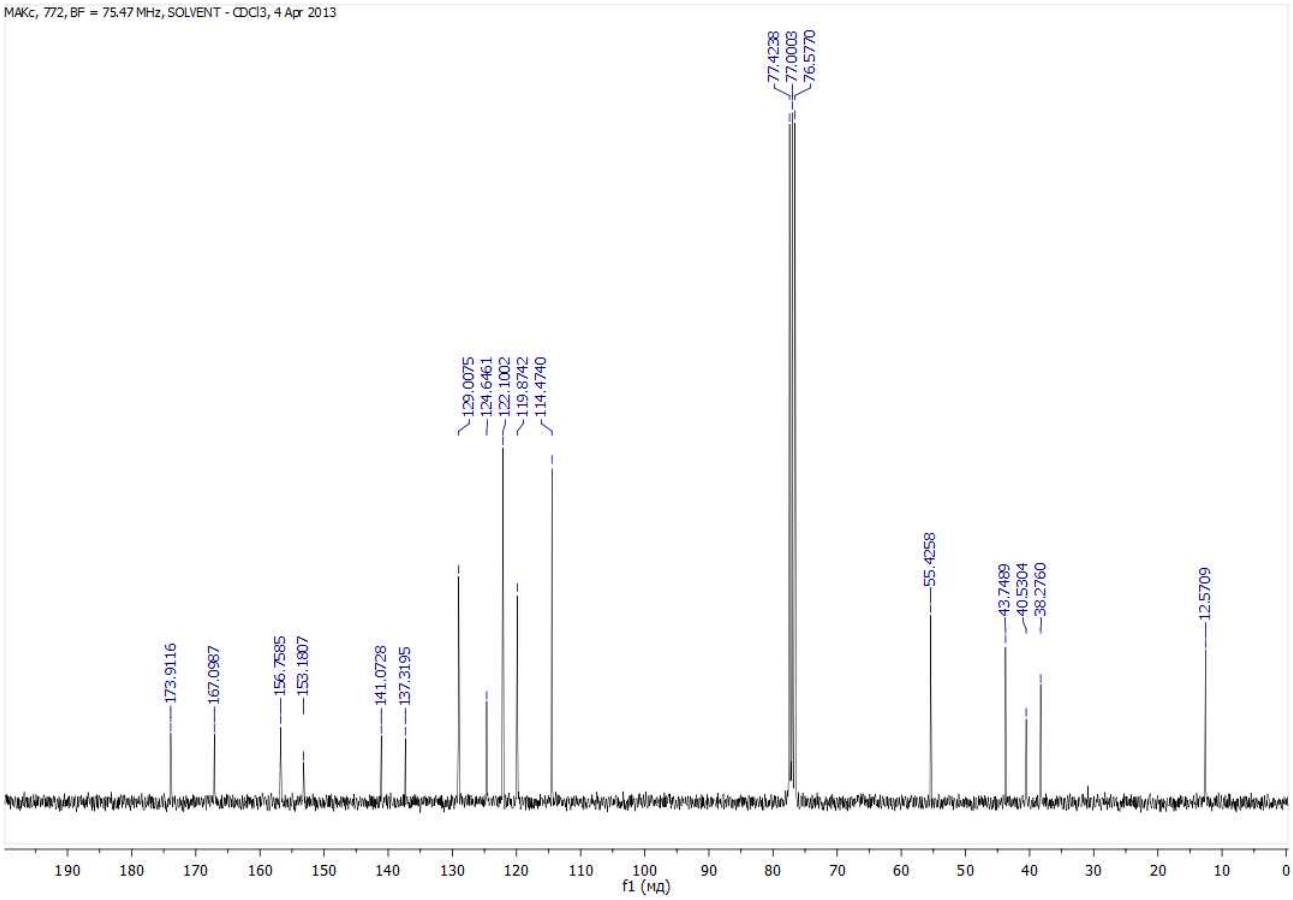
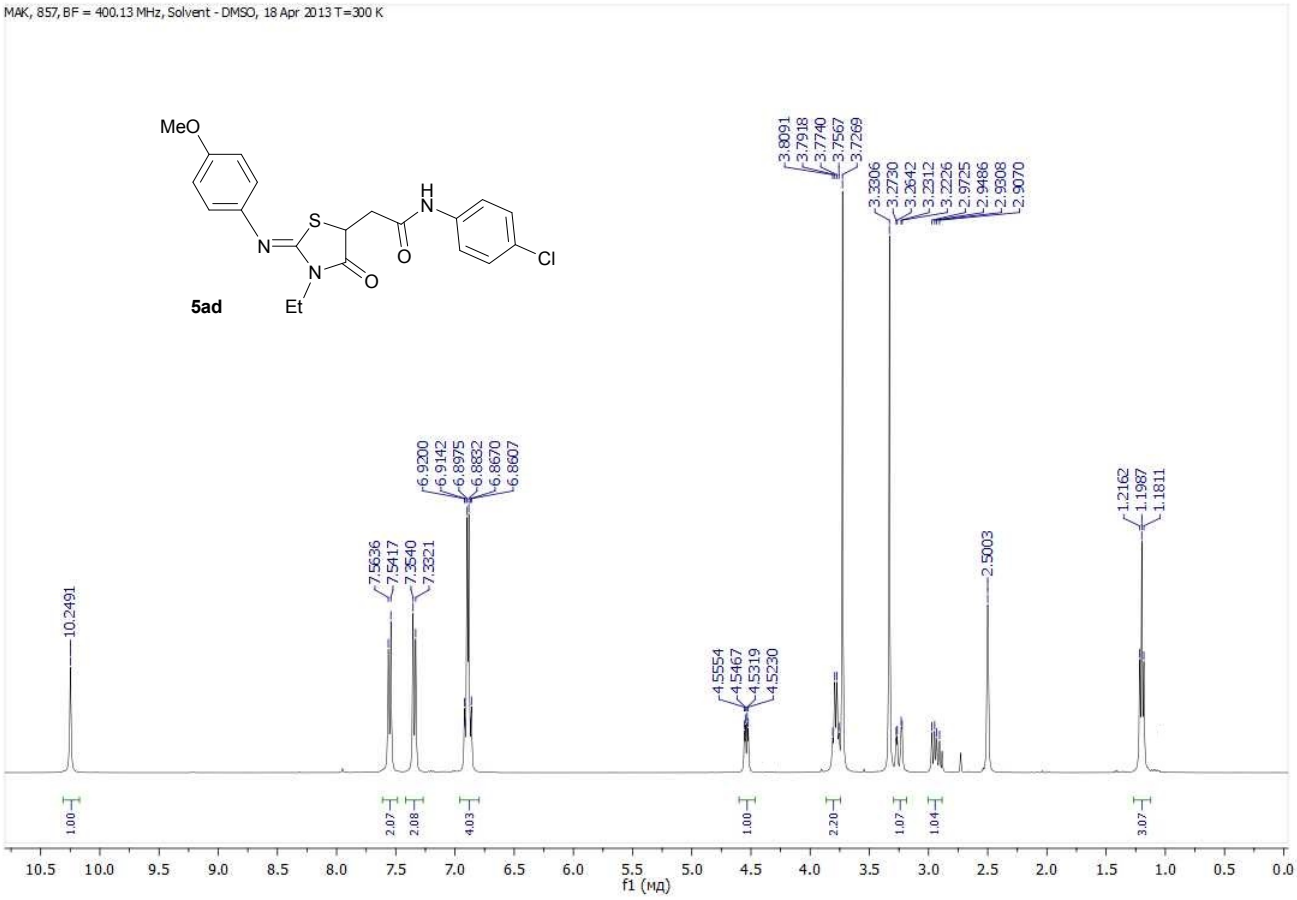
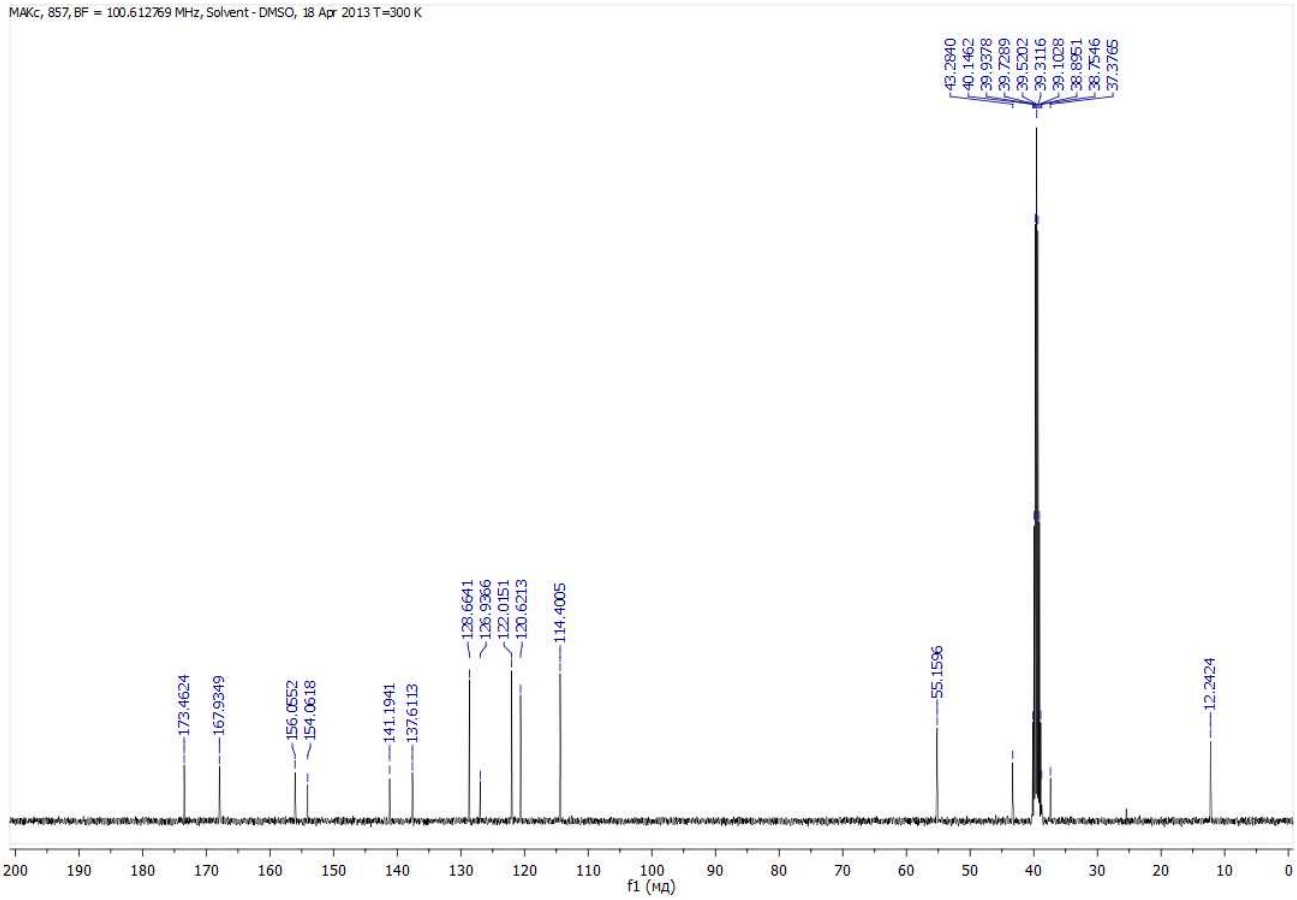
3.3789
3.3692
3.3385
3.3288
2.8207
2.7959
2.7803
2.7555
1.03
2.01
2.12
2.13
2.14
1.01
2.17
3.19
1.02
1.00
3.06
3.28
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (мд)

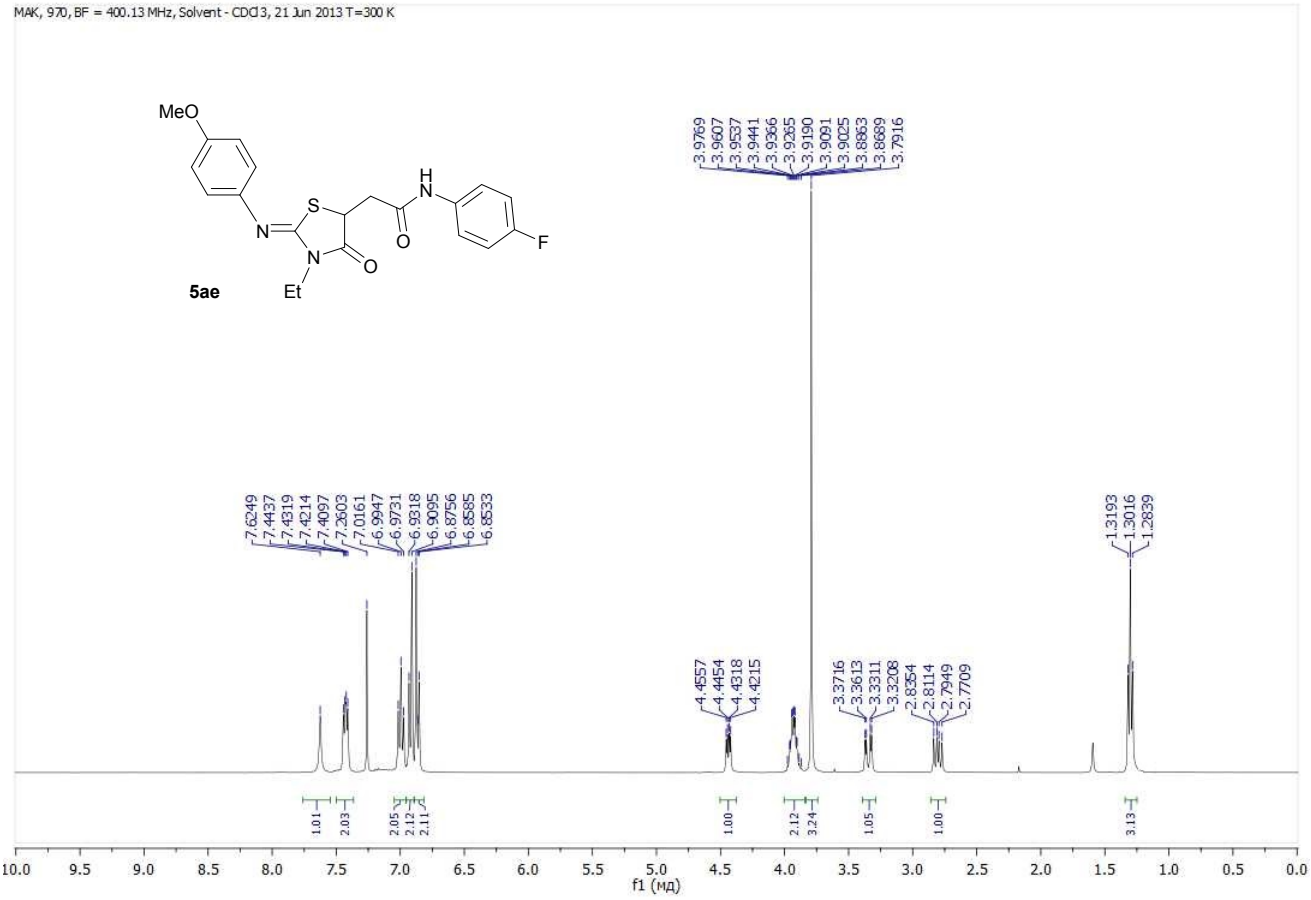

MAKc, 181, BF = 100.612769 MHz, Solvent - CDCl3, 11 Nov 2013 T=298 K
77.3179
76.9996
76.6824
122.1029
119.9484
114.4549
134.7474
134.3018
129.4687
55.4155
43.8026
40.4180
38.2435
20.8101
12.5715
173.9271
166.9751
156.7255
153.2842
141.0761
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (мд)

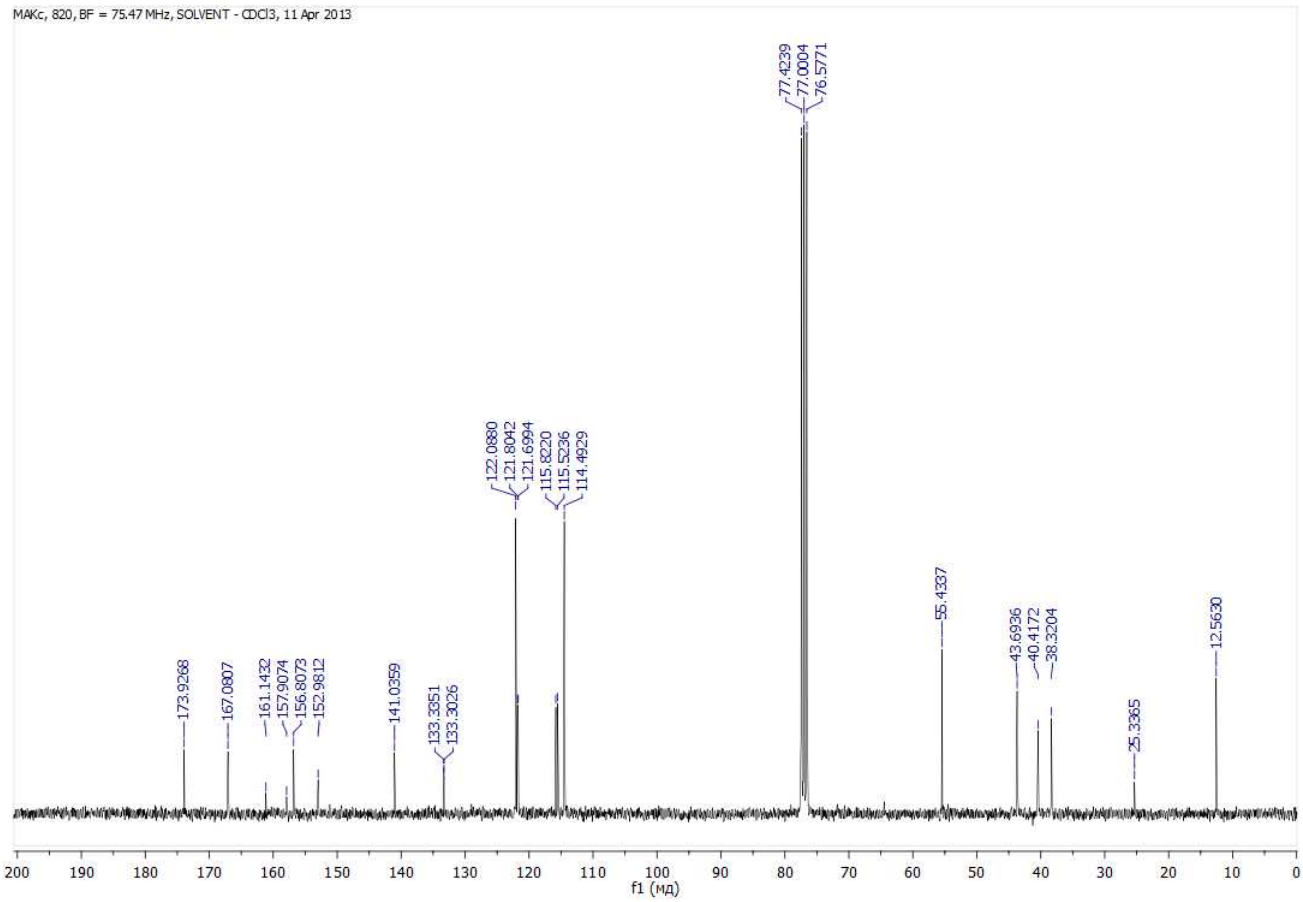

MAK, 772, BF = 300.13 MHz, SOLVENT - CDCl3, 4 Apr 2013
MeO
S
N
N
Et
O
O
H
N
5ac
3.9571
3.9356
3.9118
3.8885
3.7827
7.4745
7.4479
7.3142
7.2889
7.2597
7.1234
7.0990
7.0748
6.9366
6.9071
6.8714
6.8421
7.7963
4.4502
4.4384
4.4171
4.4062
3.4022
3.3904
3.3482
3.3363
2.8382
2.8046
2.7841
2.7505
2.1694
1.3166
1.2932
1.2699
0.99
2.03
2.51
1.07
2.14
2.10
1.02
2.03
3.10
1.03
1.00
3.13
f1 (мд)

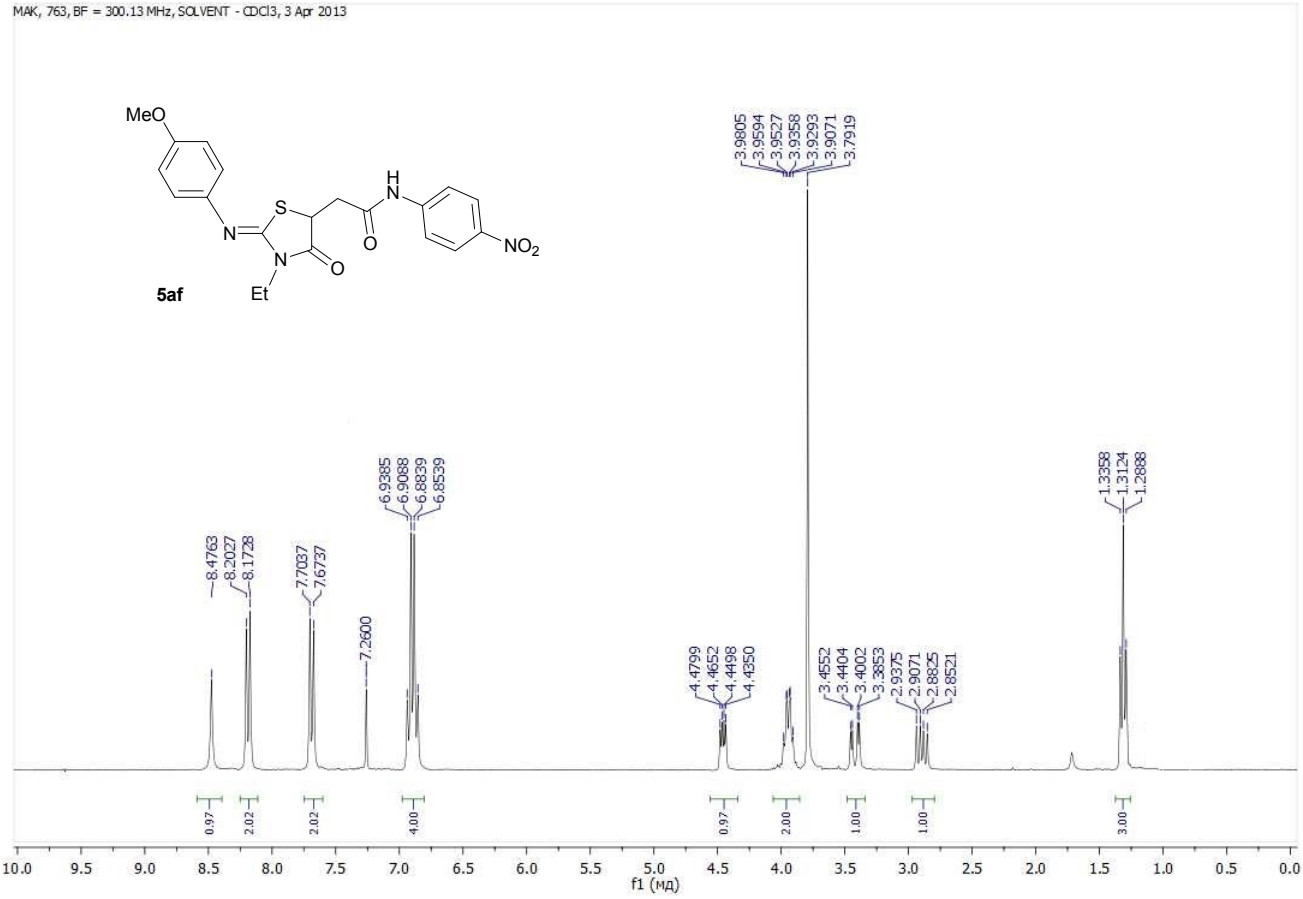

MAKc, 772, BF = 75.47 MHz, SOLVENT - CDCl3, 4 Apr 2013
77.4238
77.0009
76.5770
129.0075
124.6461
122.1002
119.8742
114.4740
55.4258
43.7489
40.5304
38.2760
12.5709
173.9116
167.0987
156.7585
153.1807
141.0728
137.3195
f1 (мд)

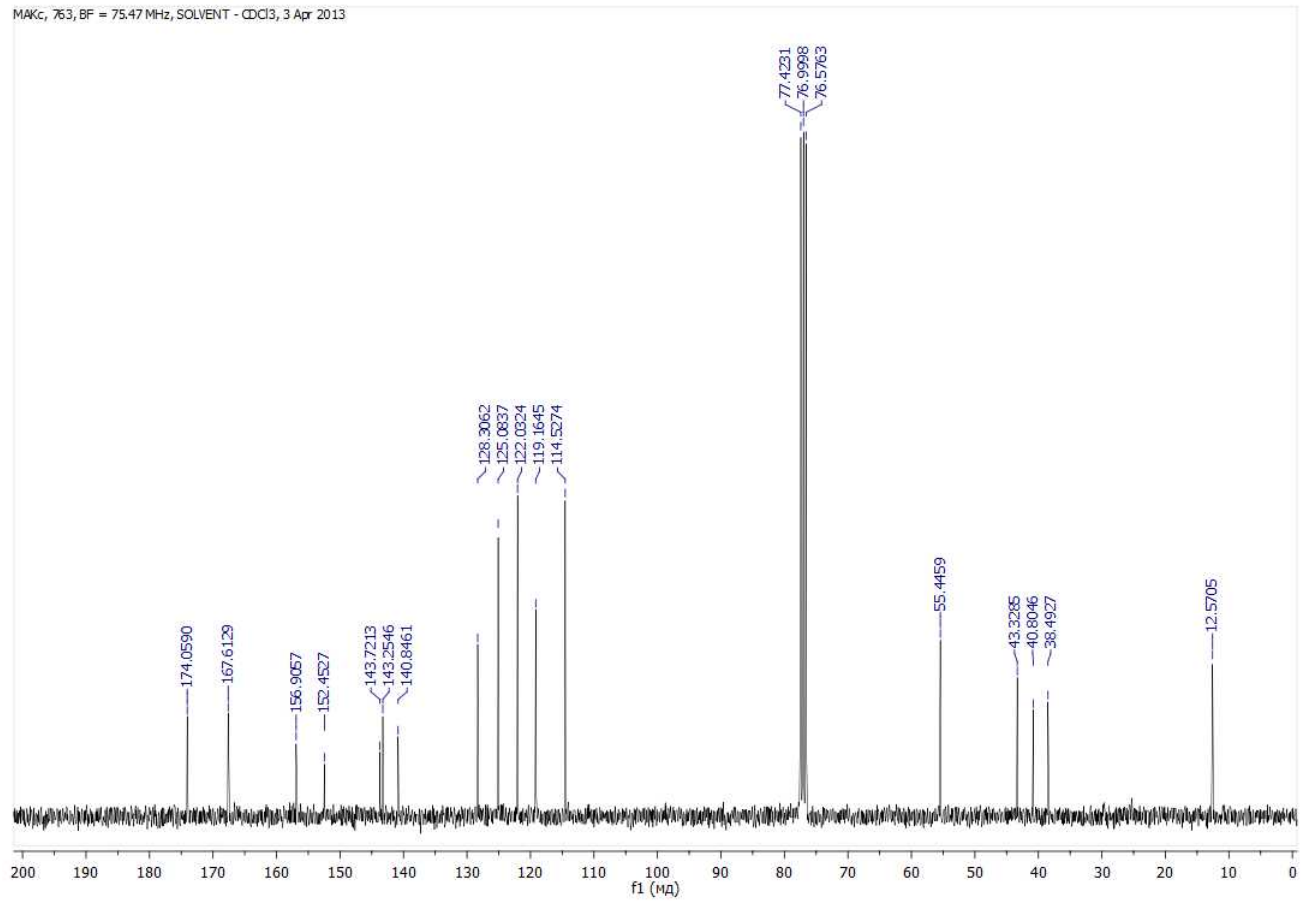

MAK, 857, BF = 400.13 MHz, Solvent - DMSO, 18 Apr 2013 T=300 K
MeO
S
N
N
H
N
O
O
Cl
Et
5ad
10.2491
7.5636
7.5417
7.3540
7.3321
6.9200
6.9142
6.8975
6.8832
6.8670
6.8607
4.5554
4.5467
4.5319
4.5230
3.8091
3.7918
3.7740
3.7567
3.7269
3.3306
3.2730
3.2642
3.2312
3.2226
2.9725
2.9486
2.9308
2.9070
2.5003
1.2162
1.1987
1.1811
1.00
2.07
2.08
4.03
1.00
2.20
1.07
1.04
3.07
f1 (мд)

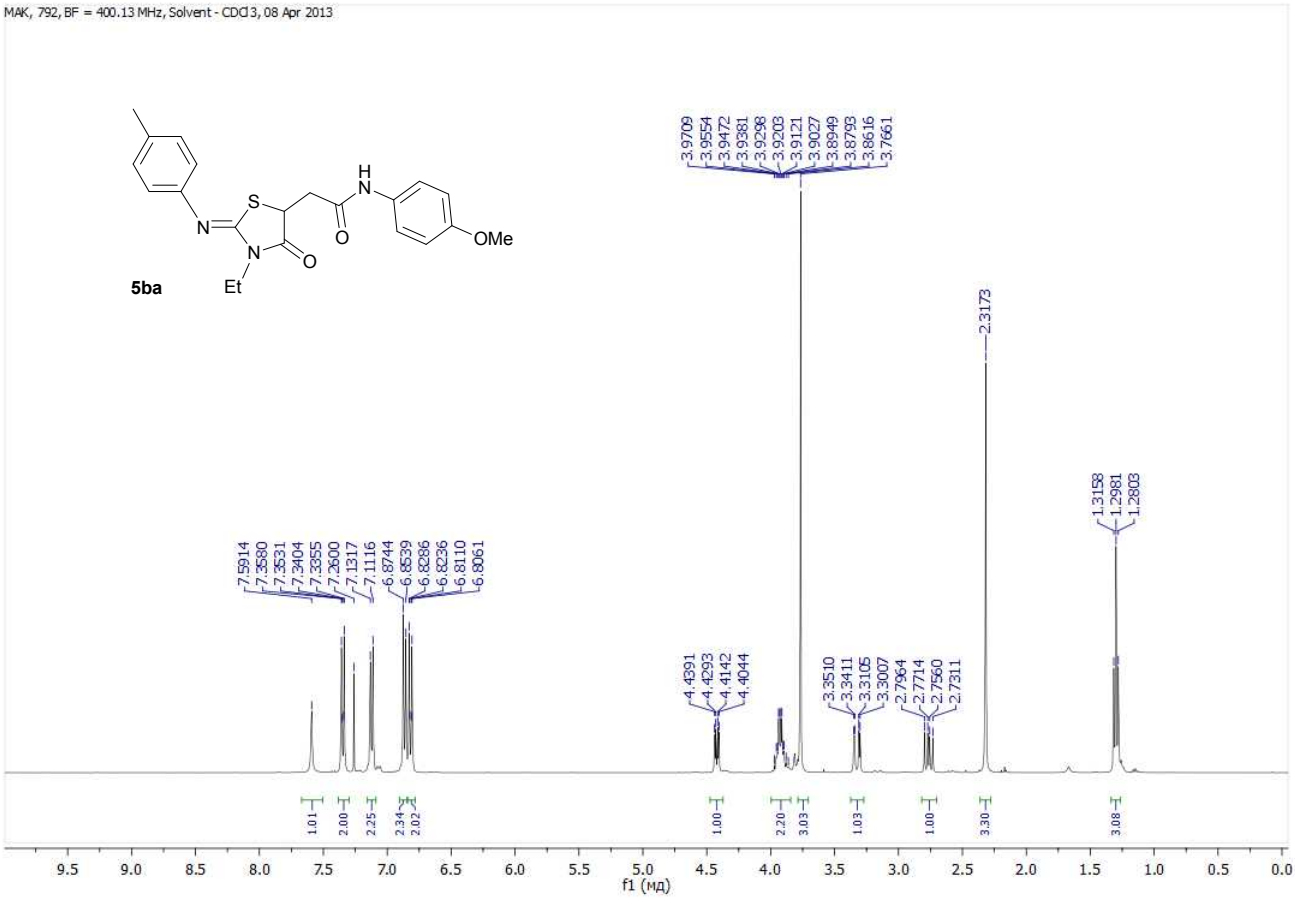

MAKc, 857, BF = 100.612769 MHz, Solvent - DMSO, 18 Apr 2013 T=300 K
43.2840
40.1462
39.9378
39.7289
39.5202
39.3116
39.1028
38.8951
38.7546
37.3765
173.4624
167.9349
156.0552
154.0618
141.1941
137.6113
128.6641
126.9366
122.0151
120.6213
114.4005
55.1596
12.2424
f1 (мд)

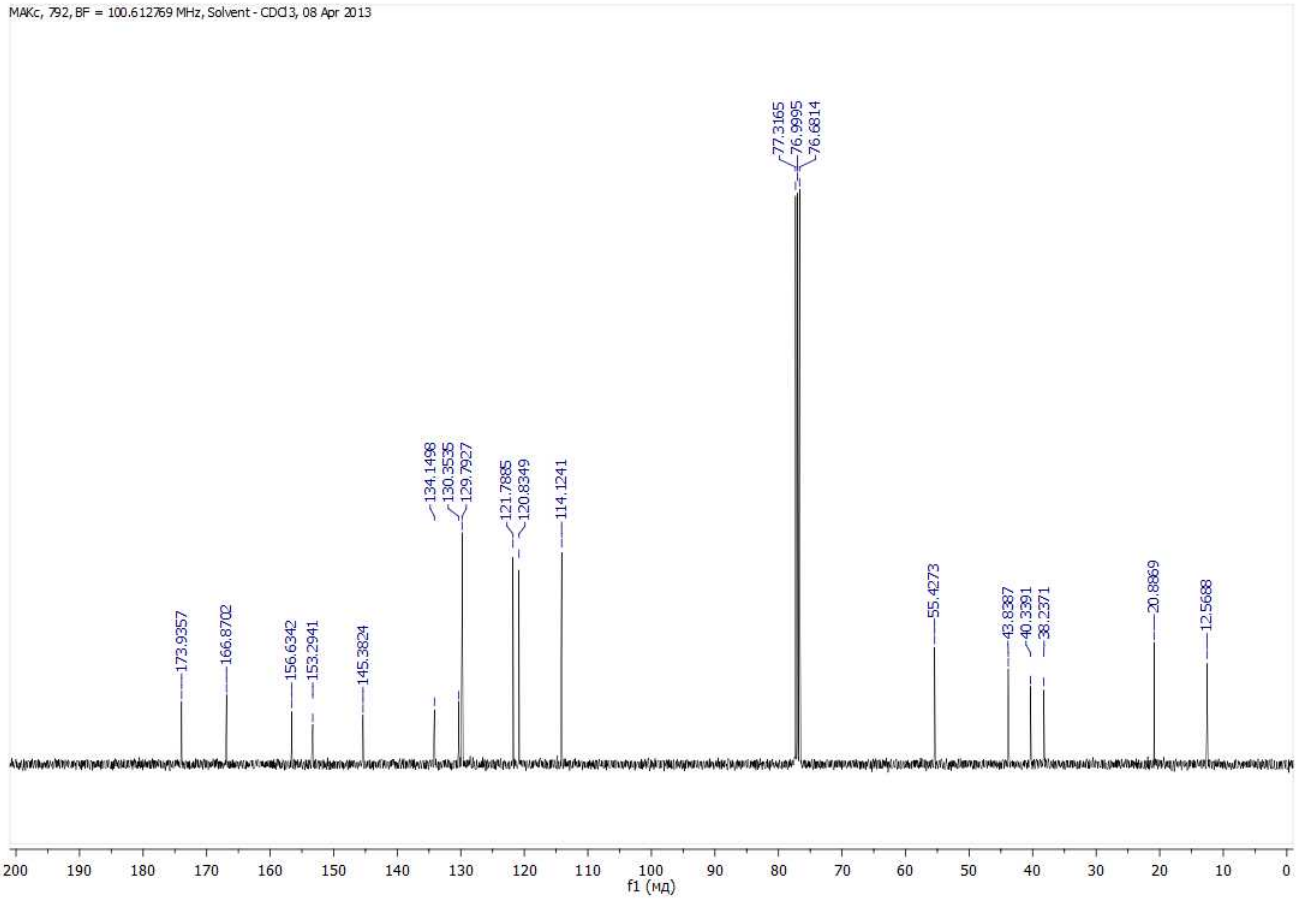

MAK, 970, BF = 400.13 MHz, Solvent - CDCl3, 21 Jun 2013 T=300 K
MeO
N
S
N
O
H
N
O
F
Et
5ae
f1 (мд)

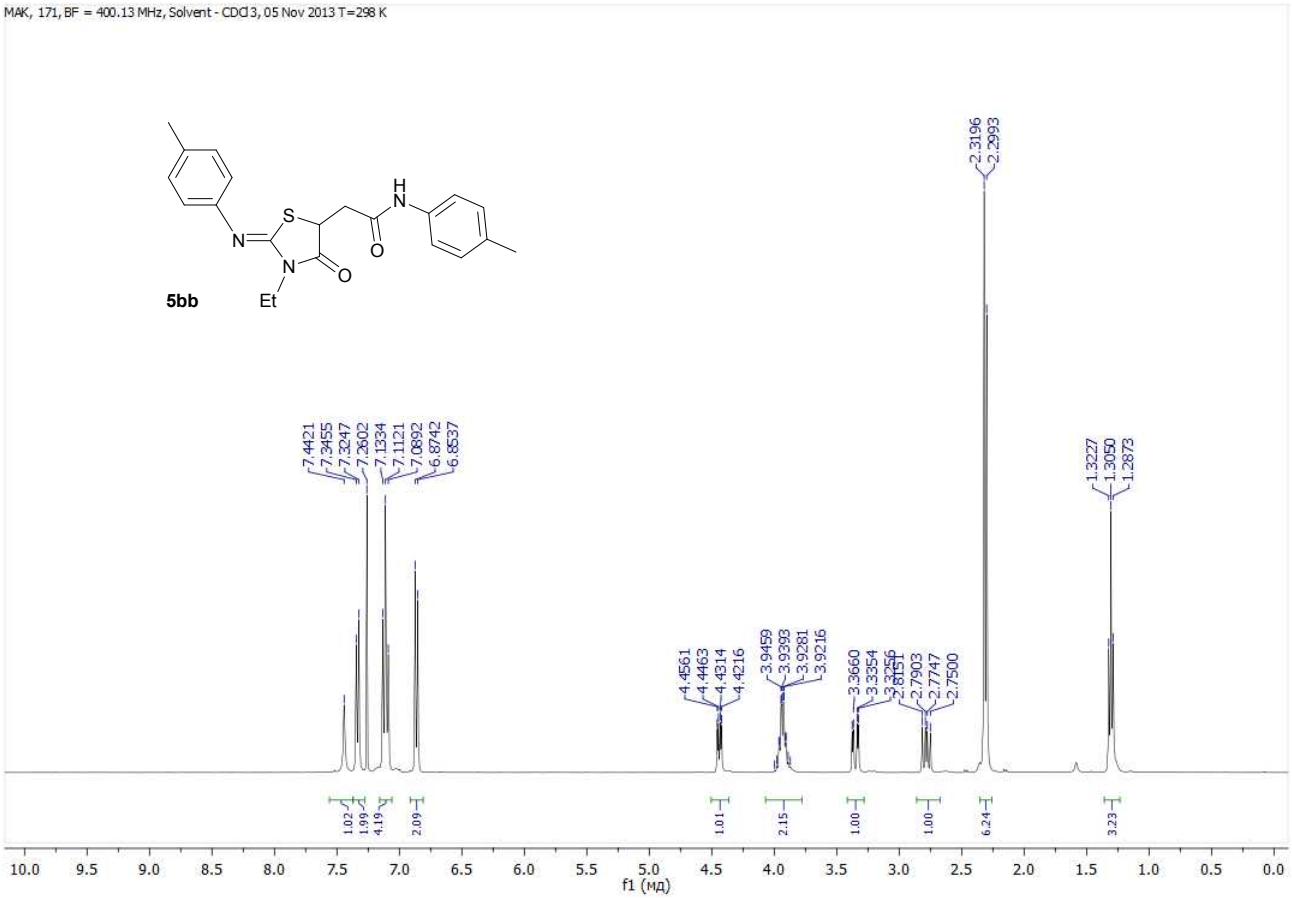

MAKc, 820, BF = 75.47 MHz, SOLVENT - CDCl3, 11 Apr 2013
f1 (мд)

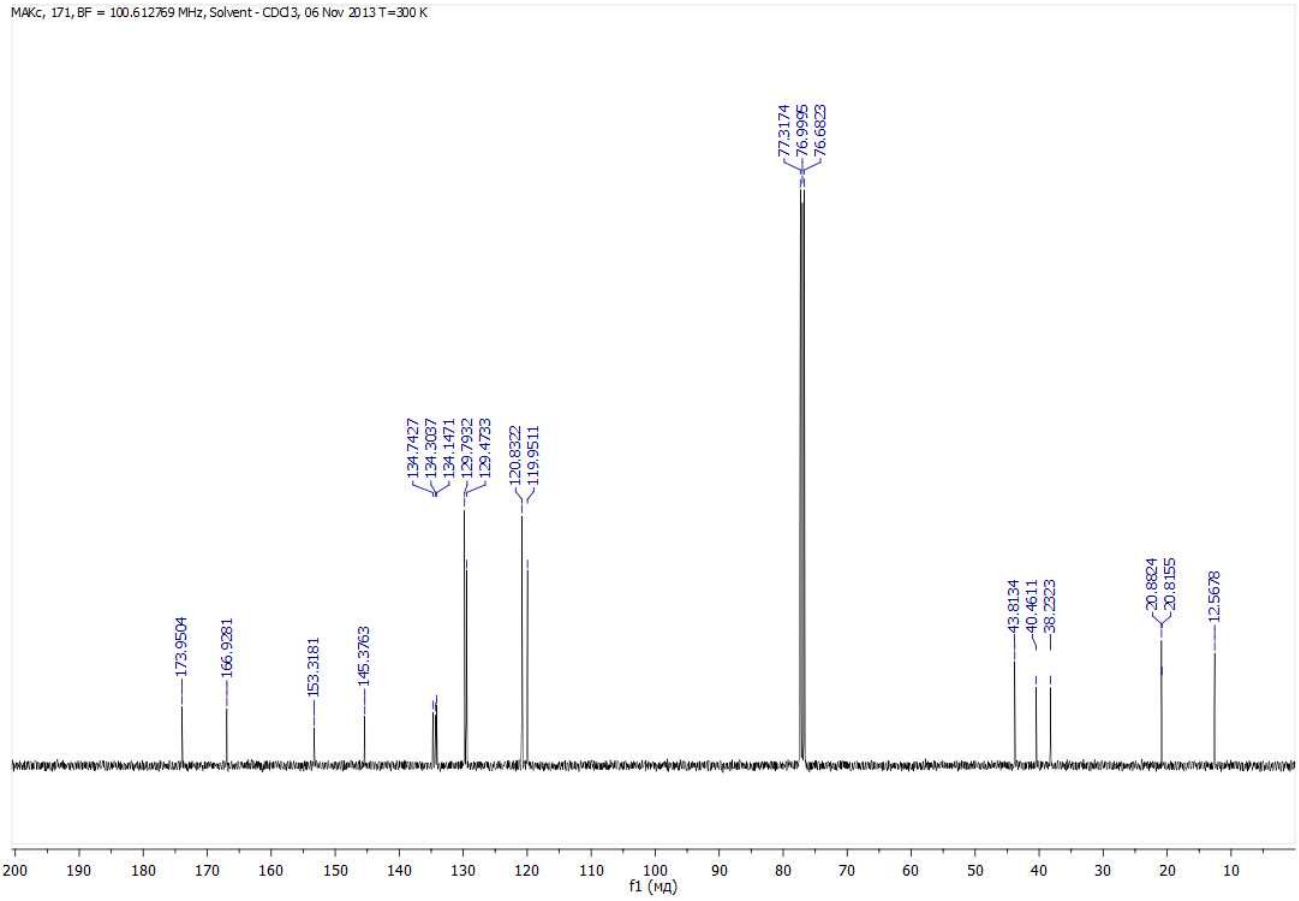

MAK, 763, BF = 300.13 MHz, SOLVENT - CDCl3, 3 Apr 2013
MeO
S
N
N
H
N
O
O
NO2
Et
5af
3.9805
3.9594
3.9527
3.9358
3.9293
3.9071
3.7919
8.4763
8.2027
8.1728
7.7037
7.6737
7.2600
6.9385
6.9088
6.8839
6.8539
4.4799
4.4652
4.4498
4.4350
3.4552
3.4404
3.4002
3.3853
2.9375
2.9071
2.8825
2.8521
1.3358
1.3124
1.2888
0.97
2.02
2.02
4.00
0.97
2.00
1.00
1.00
3.00
f1 (мд)

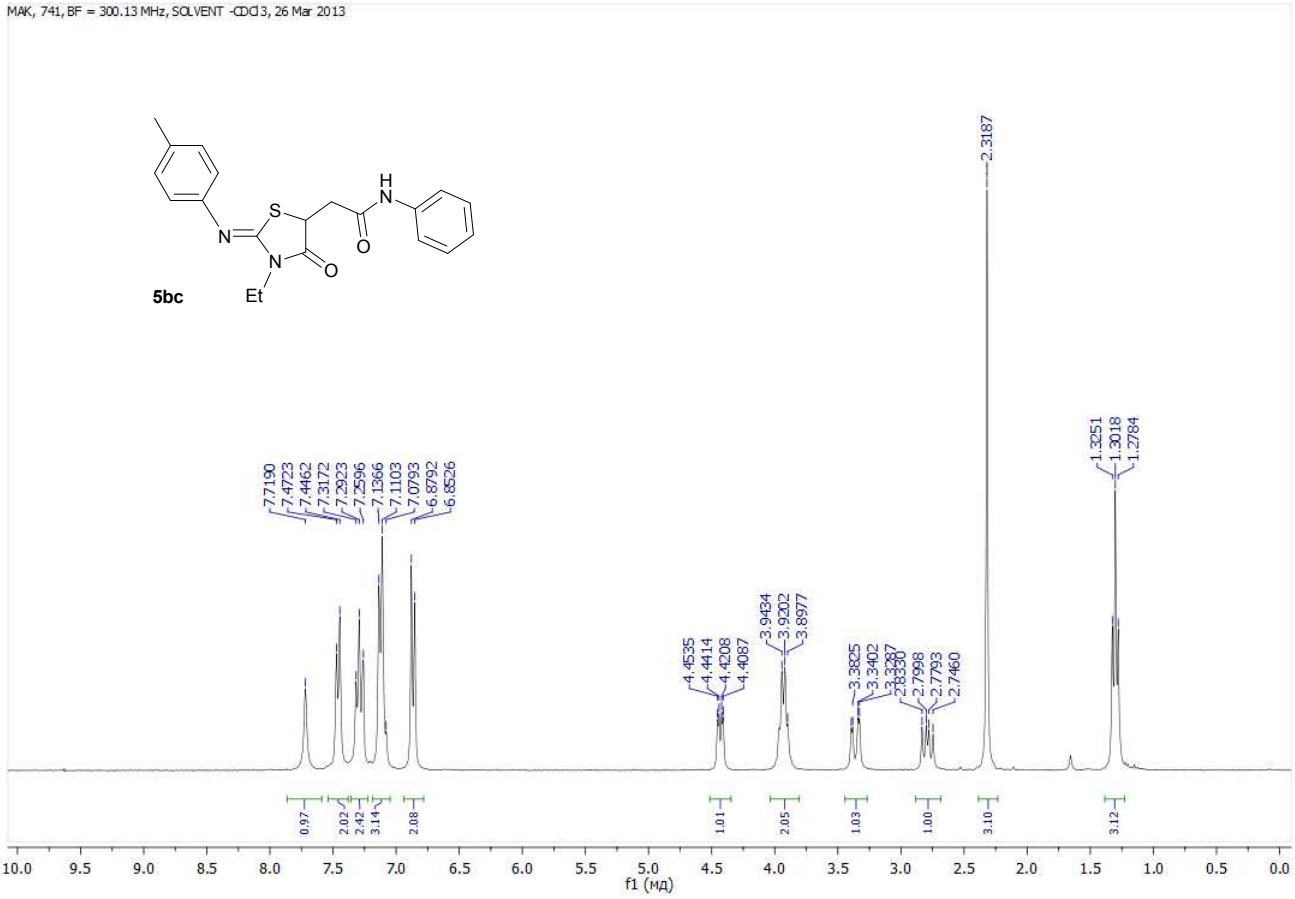

MAKc, 763, BF = 75.47 MHz, SOLVENT - CDCl3, 3 Apr 2013
77.4231
76.9998
76.5763
128.3062
125.0837
122.0324
119.1645
114.5274
174.0590
167.6129
156.9057
152.4527
143.7213
143.2546
140.8461
55.4459
43.3285
40.8046
38.4927
12.5705
f1 (мд)

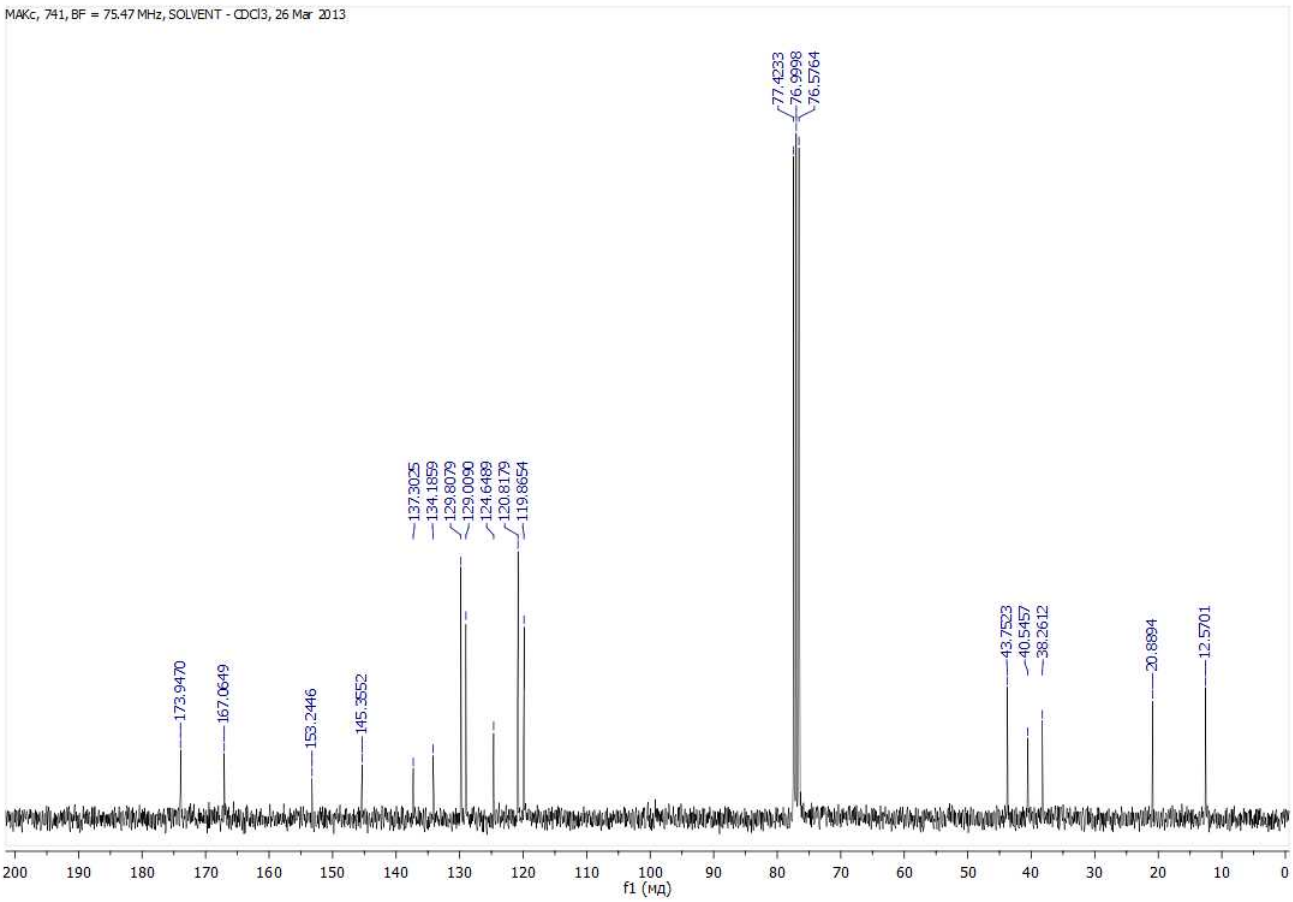

MAK, 792, BF = 400.13 MHz, Solvent - CDCl3, 08 Apr 2013
5ba
f1 (мд)

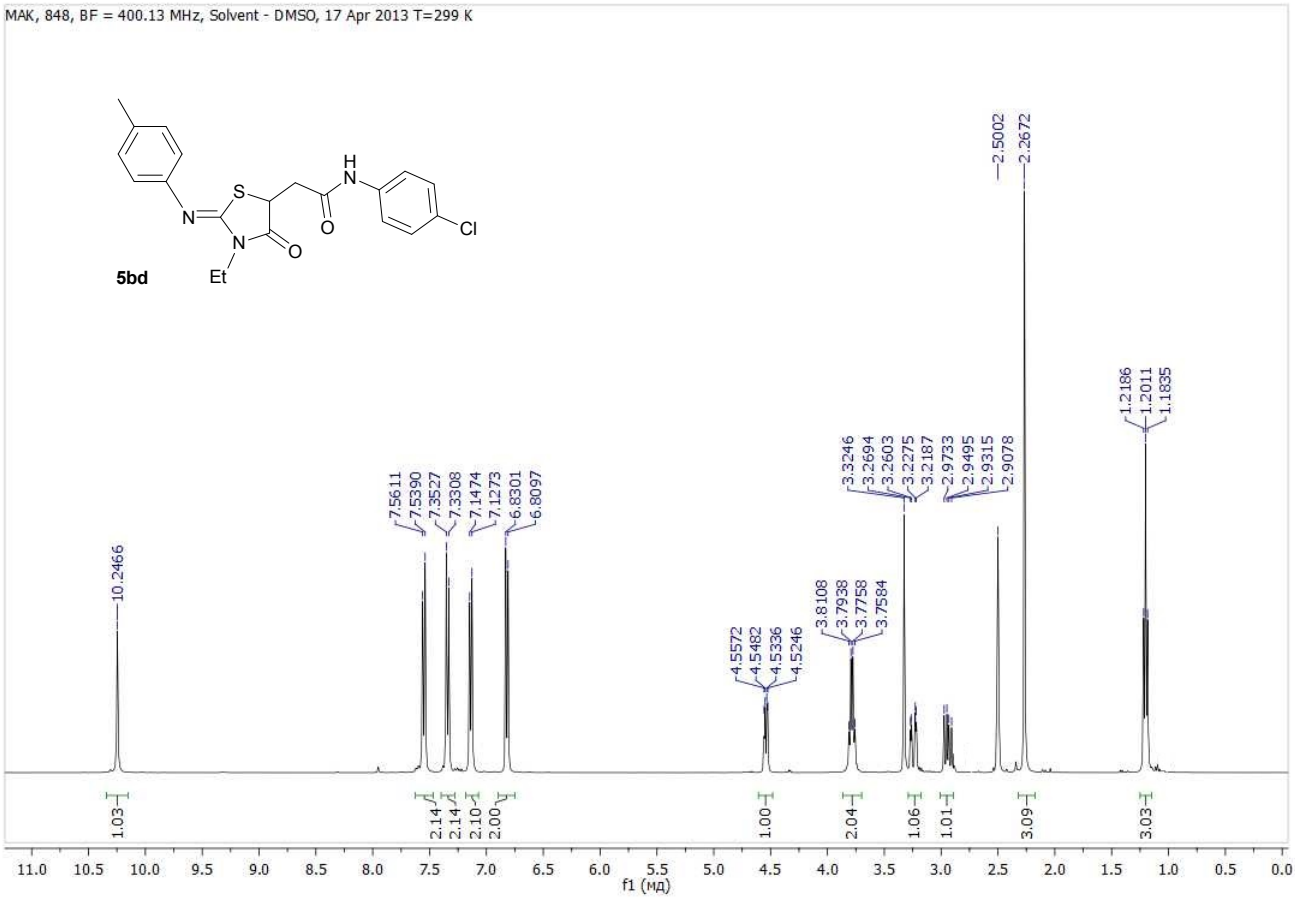

MAKc, 792, BF = 100.612769 MHz, Solvent - CDCl3, 08 Apr 2013
f1 (мд)

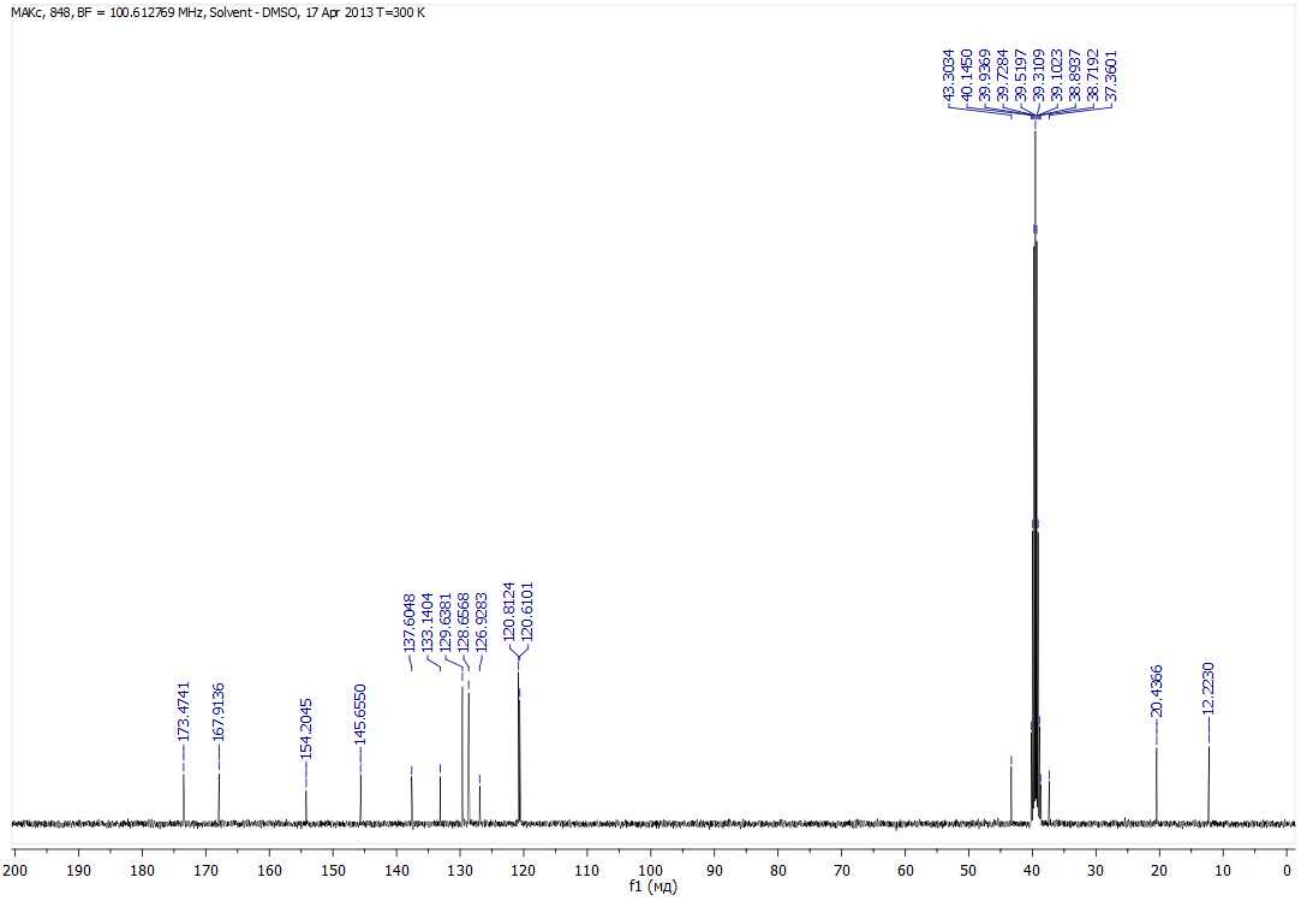

MAK, 171, BF = 400.13 MHz, Solvent - CDCl3, 05 Nov 2013 T=298 K
5bb
Et
7.4421
7.3455
7.3247
7.2602
7.1334
7.1121
7.0892
6.8742
6.8537
4.4561
4.4463
4.4314
4.4216
3.9459
3.9393
3.9281
3.9216
3.3660
3.3354
3.3256
2.8151
2.7903
2.7747
2.7500
2.3196
2.2993
1.3227
1.3050
1.2873
1.02
1.99
4.19
2.09
1.01
2.15
1.00
1.00
6.24
3.23
f1 (мд)

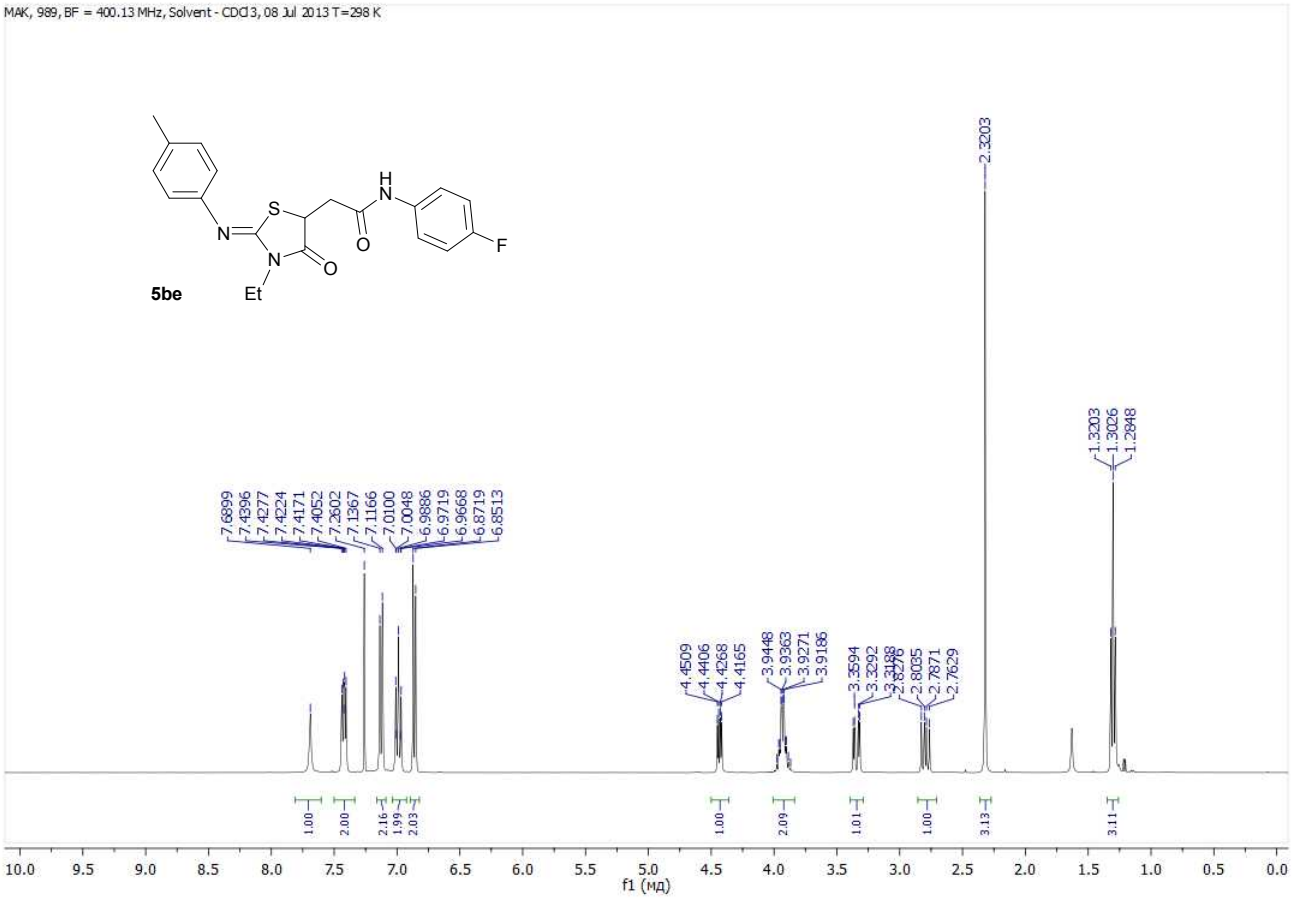

MAKc, 171, BF = 100.612769 MHz, Solvent - CDCl3, 06 Nov 2013 T=300 K
77.3174
76.9995
76.6823
134.7427
134.3037
134.1471
129.7932
129.4733
120.8322
119.9511
173.9504
166.9281
153.3181
145.3763
43.8134
40.4611
38.2323
20.8824
20.8155
12.5678
f1 (мд)

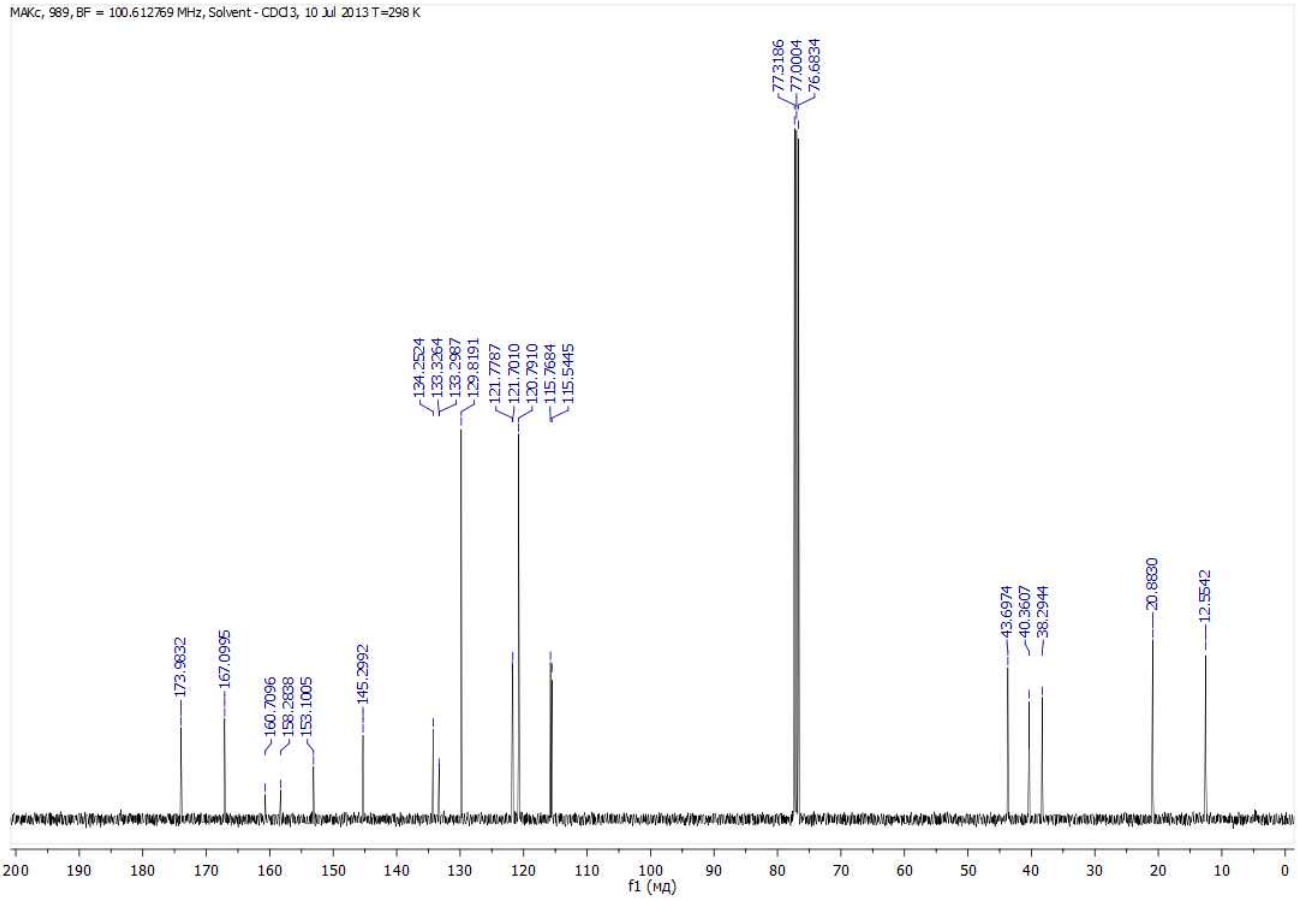

MAK, 741, BF = 300.13 MHz, SOLVENT -CDCl3, 26 Mar 2013
5bc
Et
7.7190
7.4723
7.4462
7.3172
7.2923
7.2596
7.1366
7.1103
7.0793
6.8792
6.8526
4.4535
4.4414
4.4208
4.4087
3.9434
3.9202
3.8977
3.8825
3.3402
3.3287
2.8330
2.7998
2.7793
2.7460
2.3187
1.3251
1.3018
1.2784
0.97
2.02
2.42
3.14
2.08
1.01
2.05
1.03
1.00
3.10
3.12
f1 (мд)

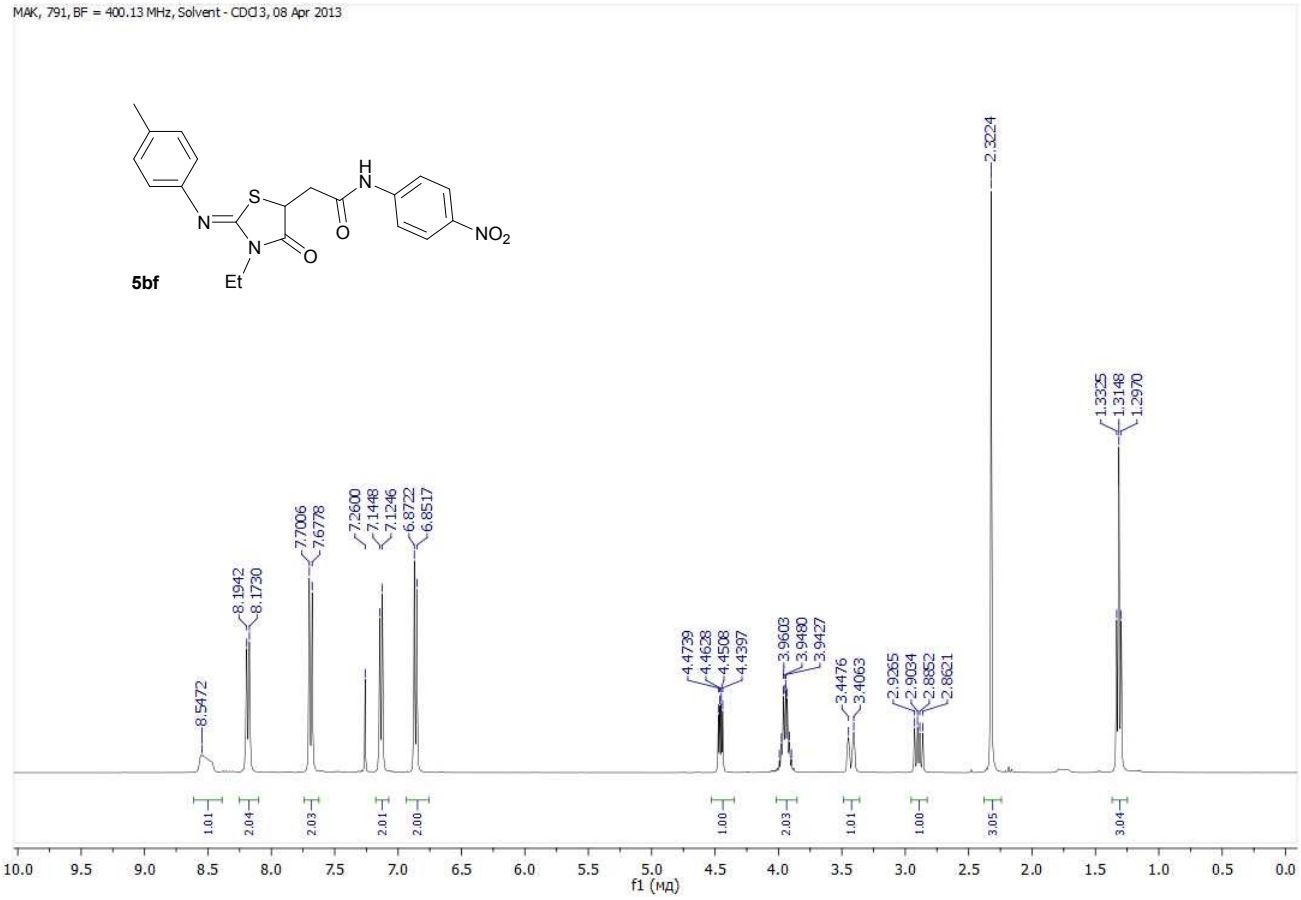

MAKc, 741, BF = 75.47 MHz, SOLVENT - CDCl3, 26 Mar 2013
77.4233
76.9998
76.5764
137.3025
134.1859
129.8079
129.0090
124.6489
120.8179
119.8654
173.9470
167.0649
153.2446
145.3552
43.7523
40.5457
38.2612
20.8894
12.5701
f1 (мд)

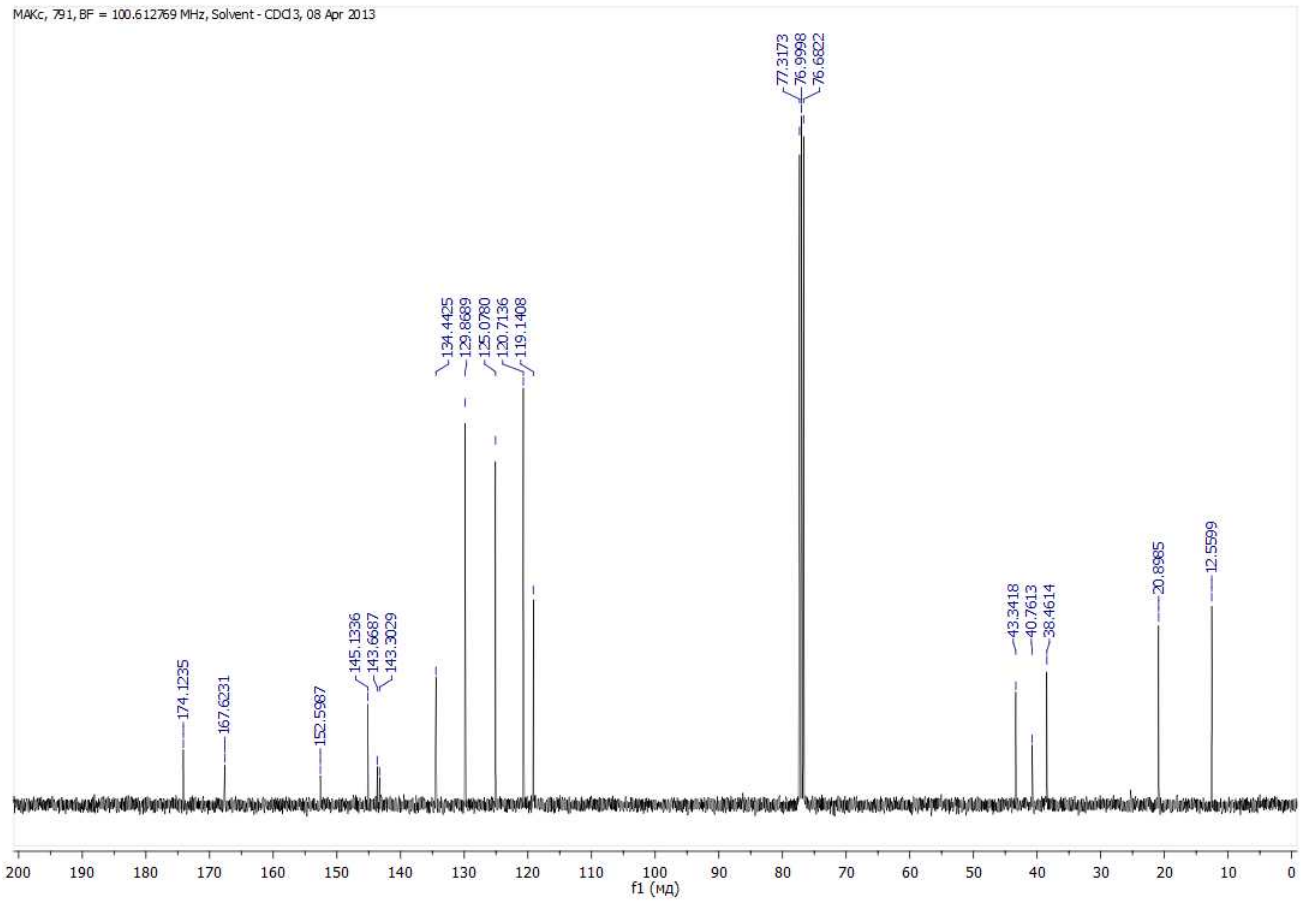

MAK, 848, BF = 400.13 MHz, Solvent - DMSO, 17 Apr 2013 T=299 K
5bd
Et
10.2466
7.5611
7.5390
7.3527
7.3308
7.1474
7.1273
6.8301
6.8097
4.5572
4.5482
4.5336
4.5246
3.8108
3.7938
3.7758
3.7584
3.3246
3.2694
3.2603
3.2275
3.2187
2.9733
2.9495
2.9315
2.9078
2.5002
2.2672
1.2186
1.2011
1.1835
1.03
2.14
2.14
2.10
2.00
1.00
2.04
1.06
1.01
3.09
3.03
f1 (мд)

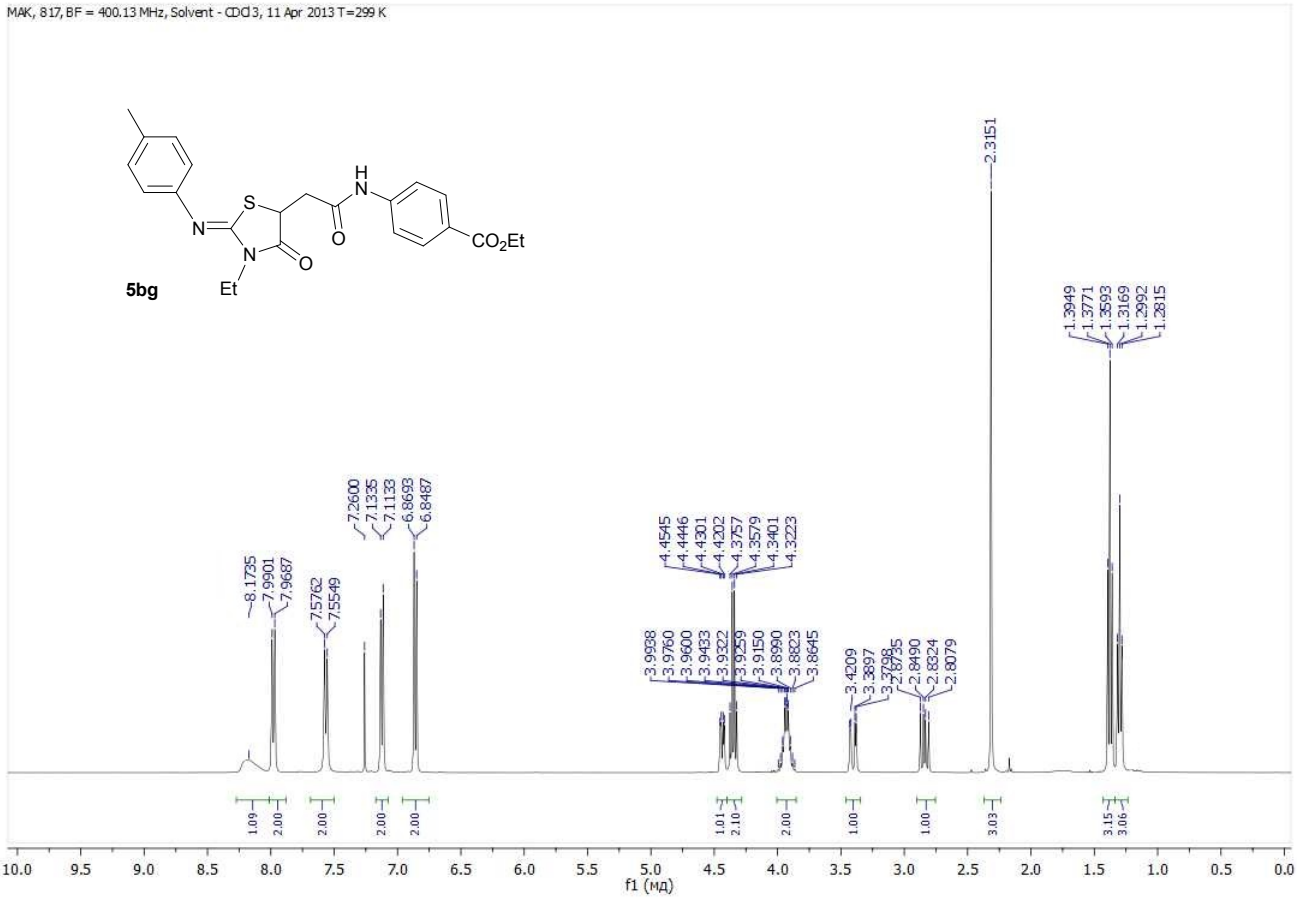

MAKc, 848, BF = 100.612769 MHz, Solvent - DMSO, 17 Apr 2013 T=300 K
173.4741
167.9136
154.2045
145.6550
137.6048
133.1404
129.6381
128.6568
126.9283
120.8124
120.6101
43.3034
40.1450
39.9369
39.7284
39.5197
39.3109
39.1023
38.8937
38.7192
37.3601
20.4366
12.2230
f1 (мд)

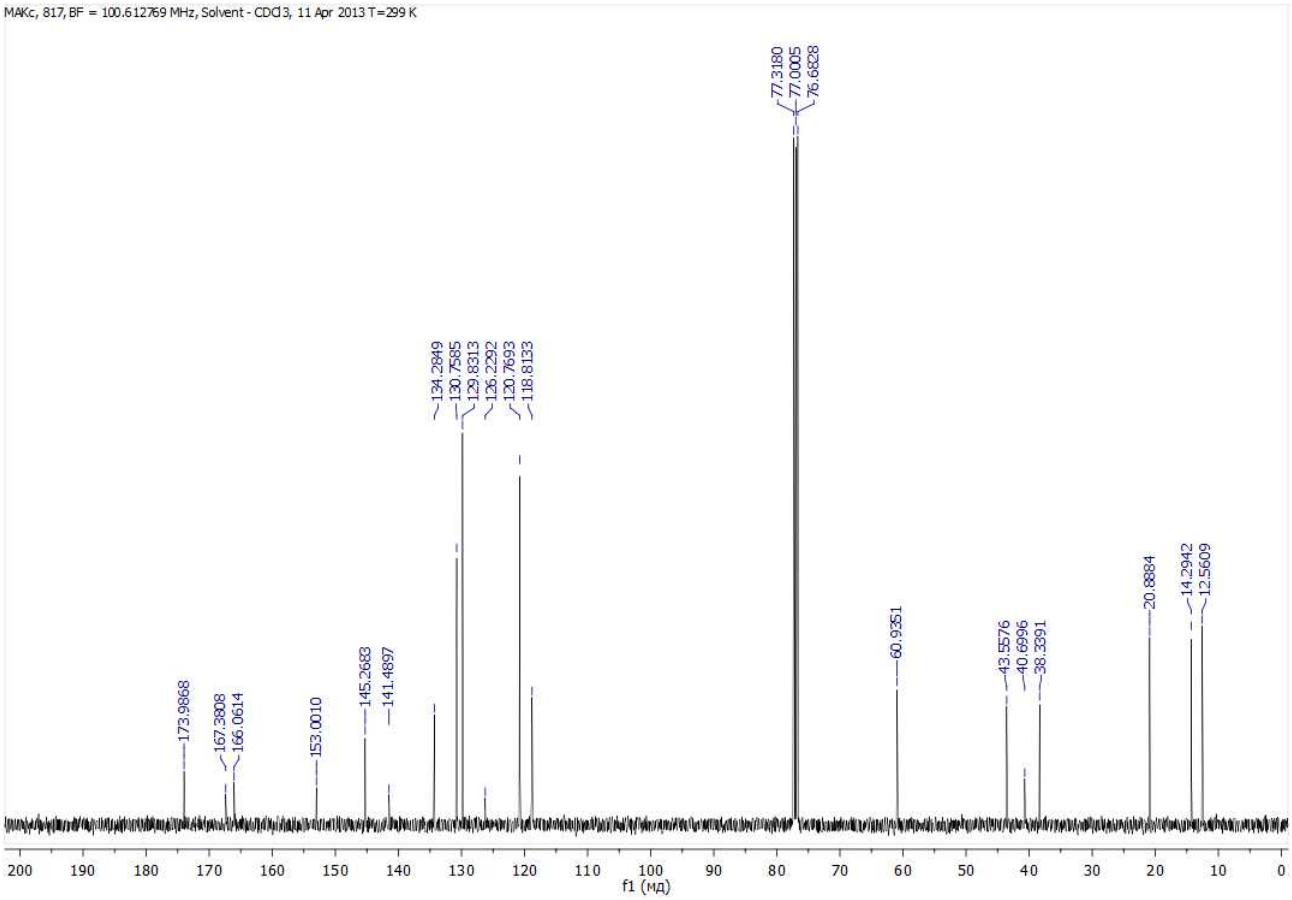

MAK, 989, BF = 400.13 MHz, Solvent - CDCl3, 08 Jul 2013 T=298 K
5be
Et
f1 (мд)

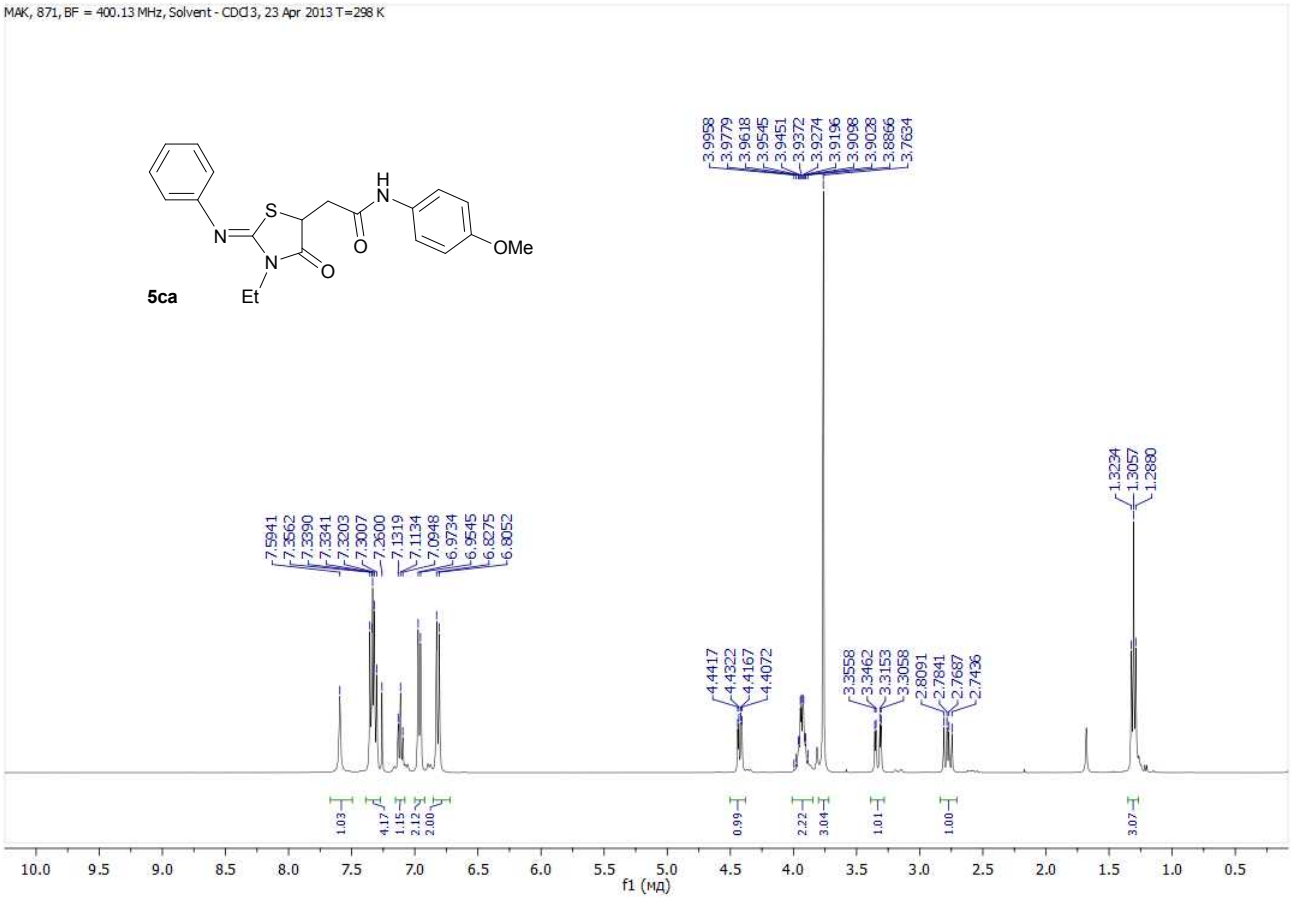

MAKc, 989, BF = 100.612769 MHz, Solvent - CDCl3, 10 Jul 2013 T=298 K
f1 (мд)

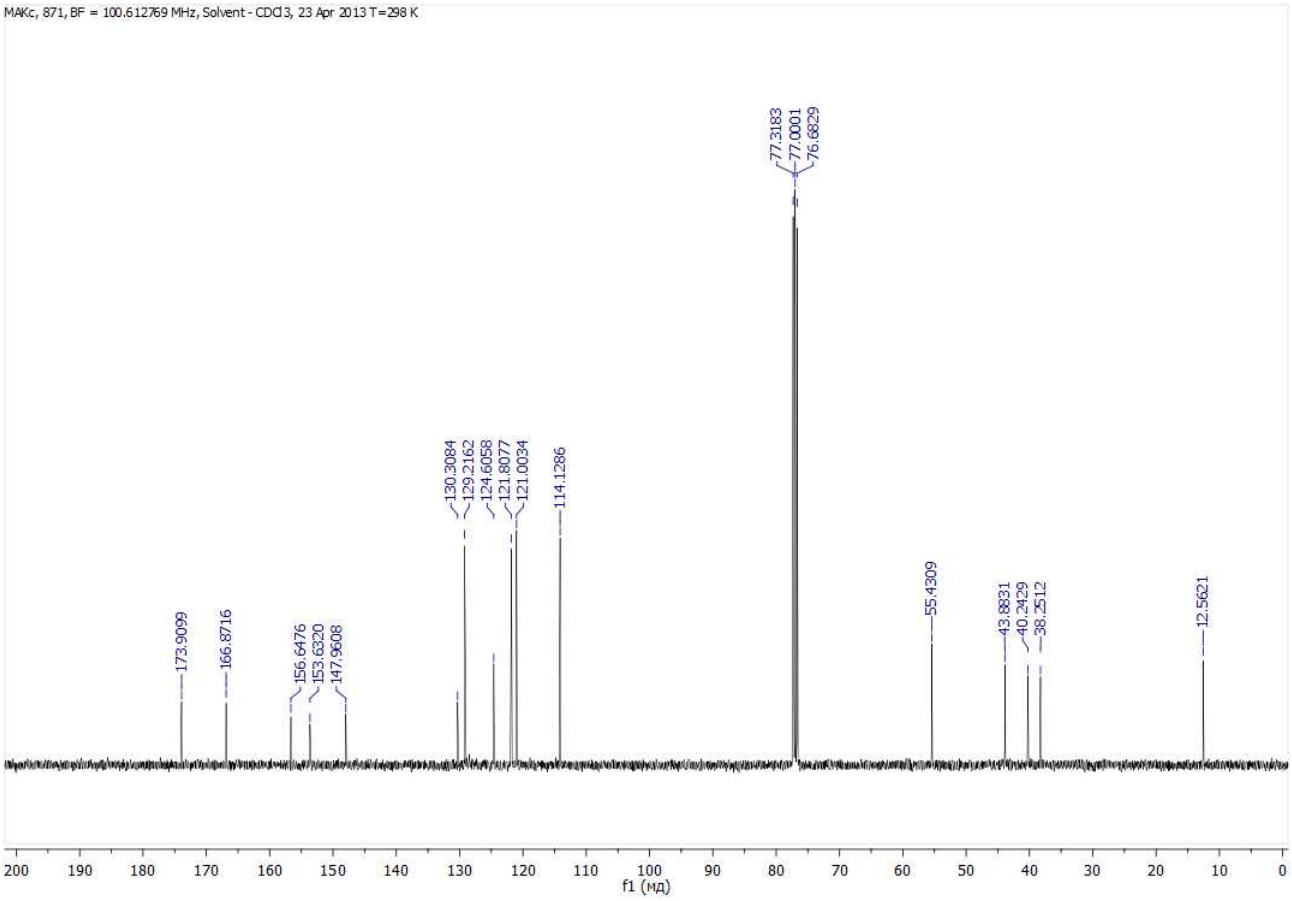

MAK, 791, BF = 400.13 MHz, Solvent - CDCl3, 08 Apr 2013
5bf
Et
8.5472
8.1942
8.1730
7.7006
7.6778
7.2600
7.1448
7.1246
6.8722
6.8517
4.4739
4.4628
4.4508
4.4397
3.9603
3.9480
3.9427
3.4476
3.4063
2.9265
2.9034
2.8852
2.8621
2.3224
1.3325
1.3148
1.2970
f1 (мд)

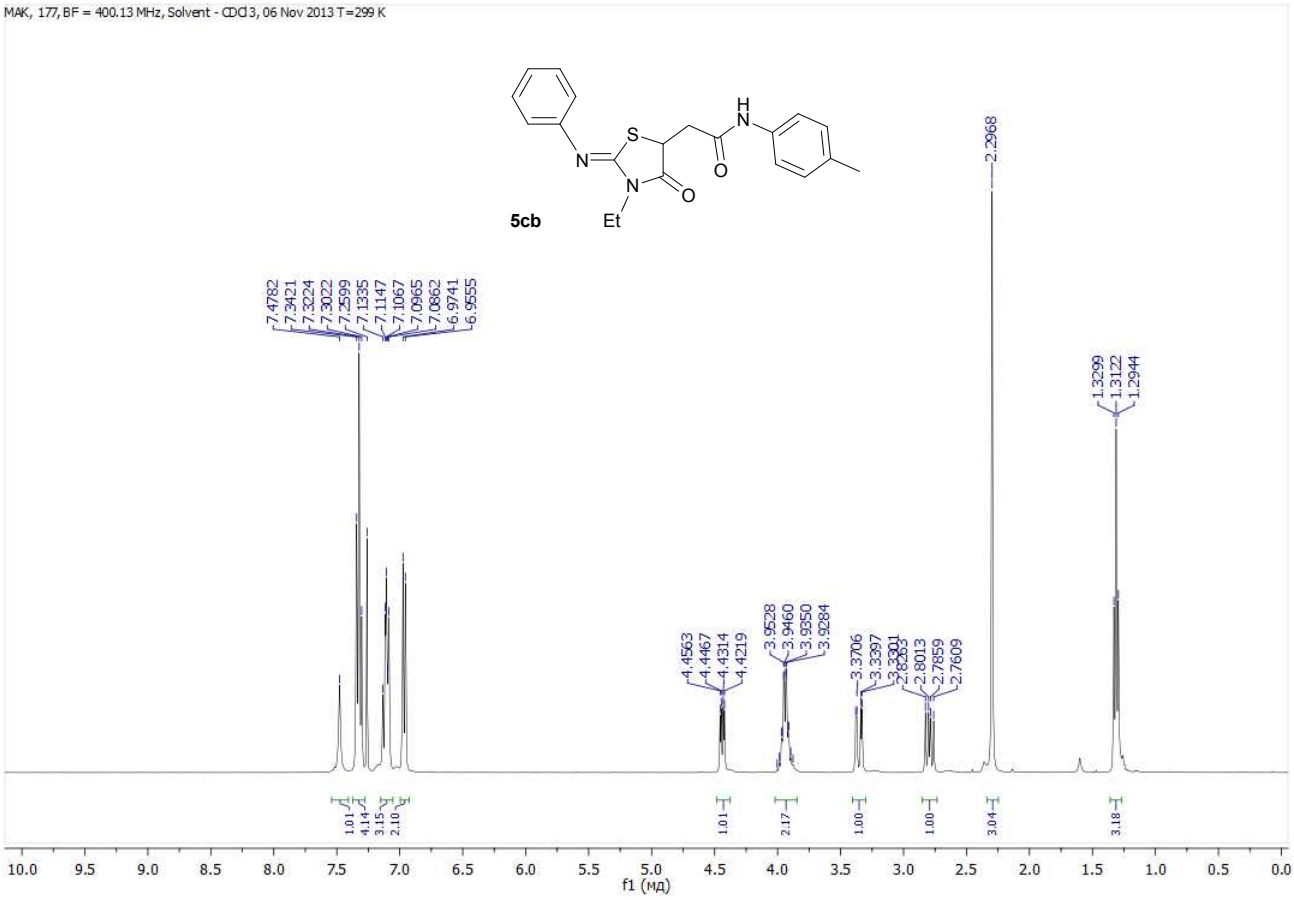

MAKc, 791, BF = 100.612769 MHz, Solvent - CDCl3, 08 Apr 2013
174.1235
167.6231
152.5887
145.1336
143.6687
143.3029
134.4425
129.8689
125.0780
120.7136
119.1408
77.3173
76.9998
76.6822
43.3418
40.7613
38.4614
20.8985
12.5599
f1 (мд)

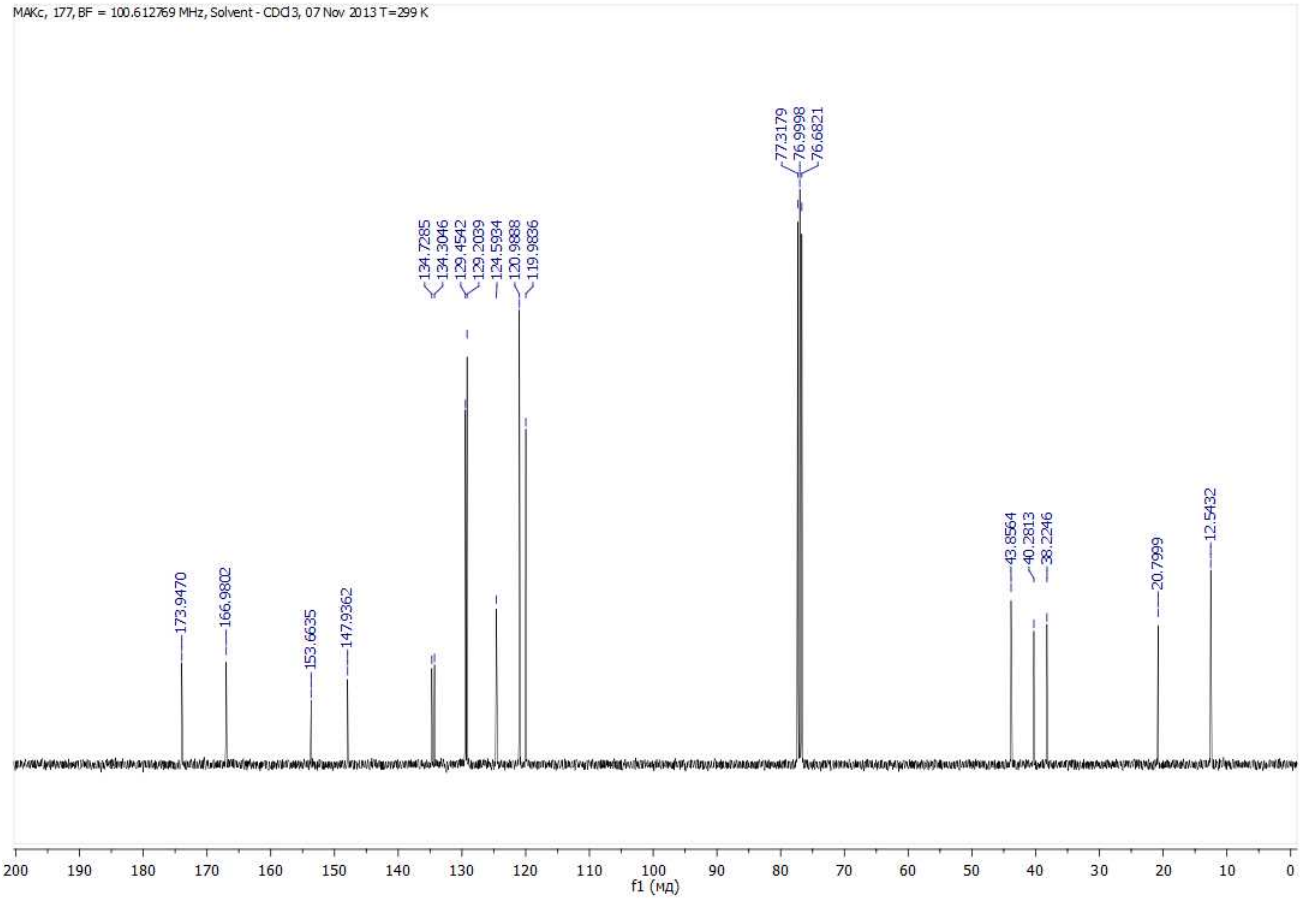

MAK, 817, BF = 400.13 MHz, Solvent - CDCl3, 11 Apr 2013 T=299 K
5bg
f1 (мд)

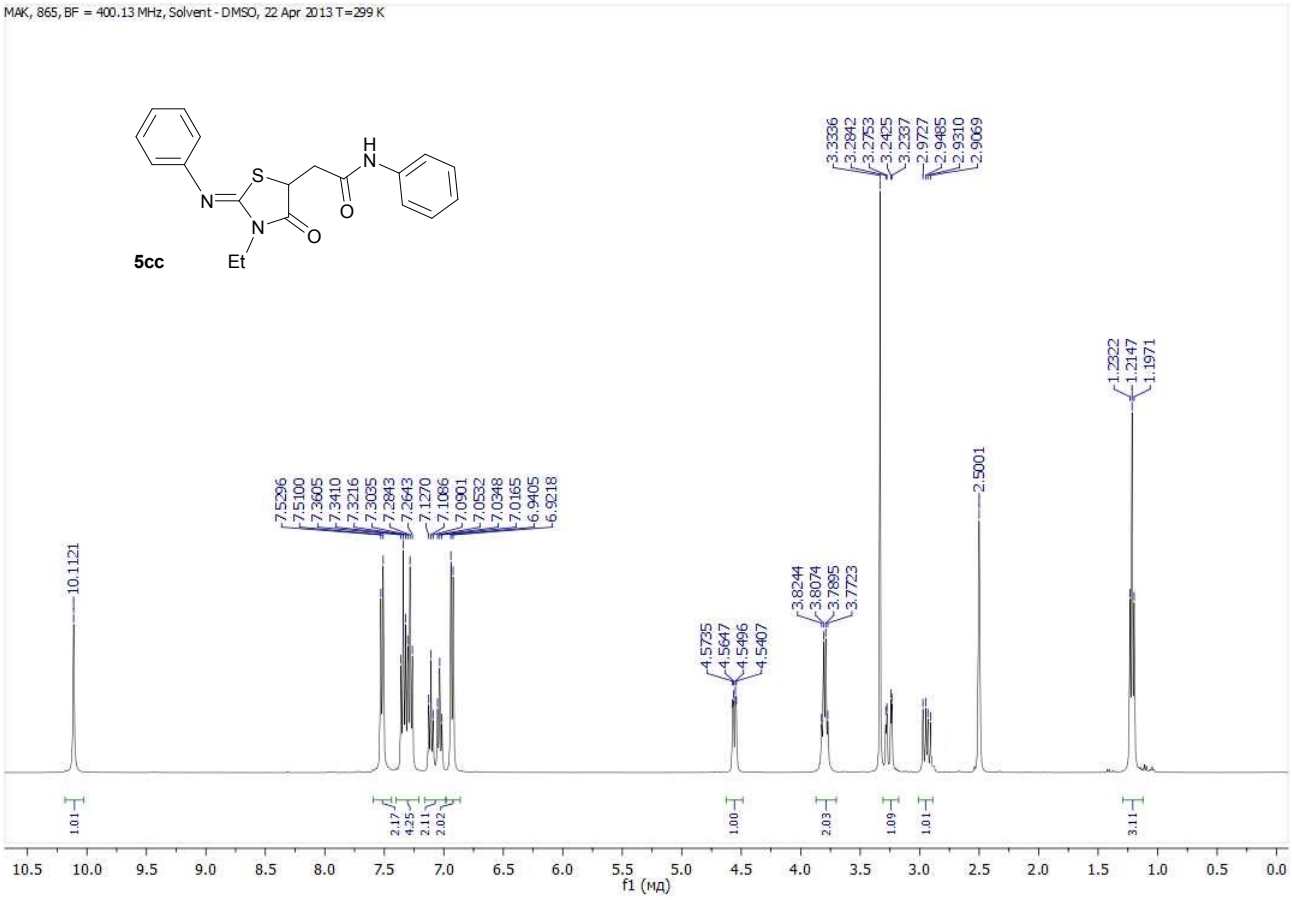

MAKc, 817, BF = 100.612769 MHz, Solvent - CDCl3, 11 Apr 2013 T=299 K
f1 (мд)

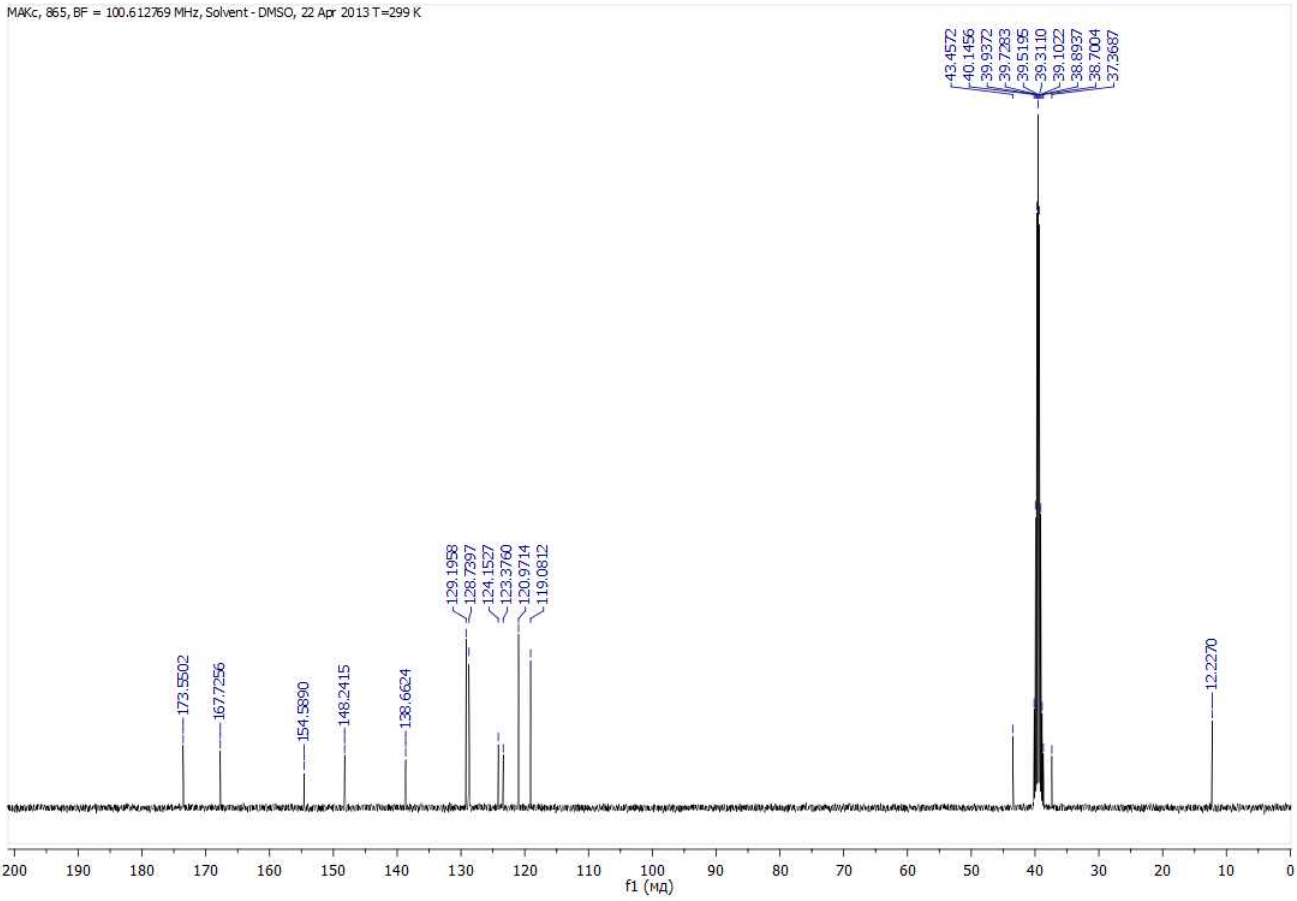

MAK, 871, BF = 400.13 MHz, Solvent - CDCl3, 23 Apr 2013 T=298 K
5ca
Et
OMe
f1 (мд)

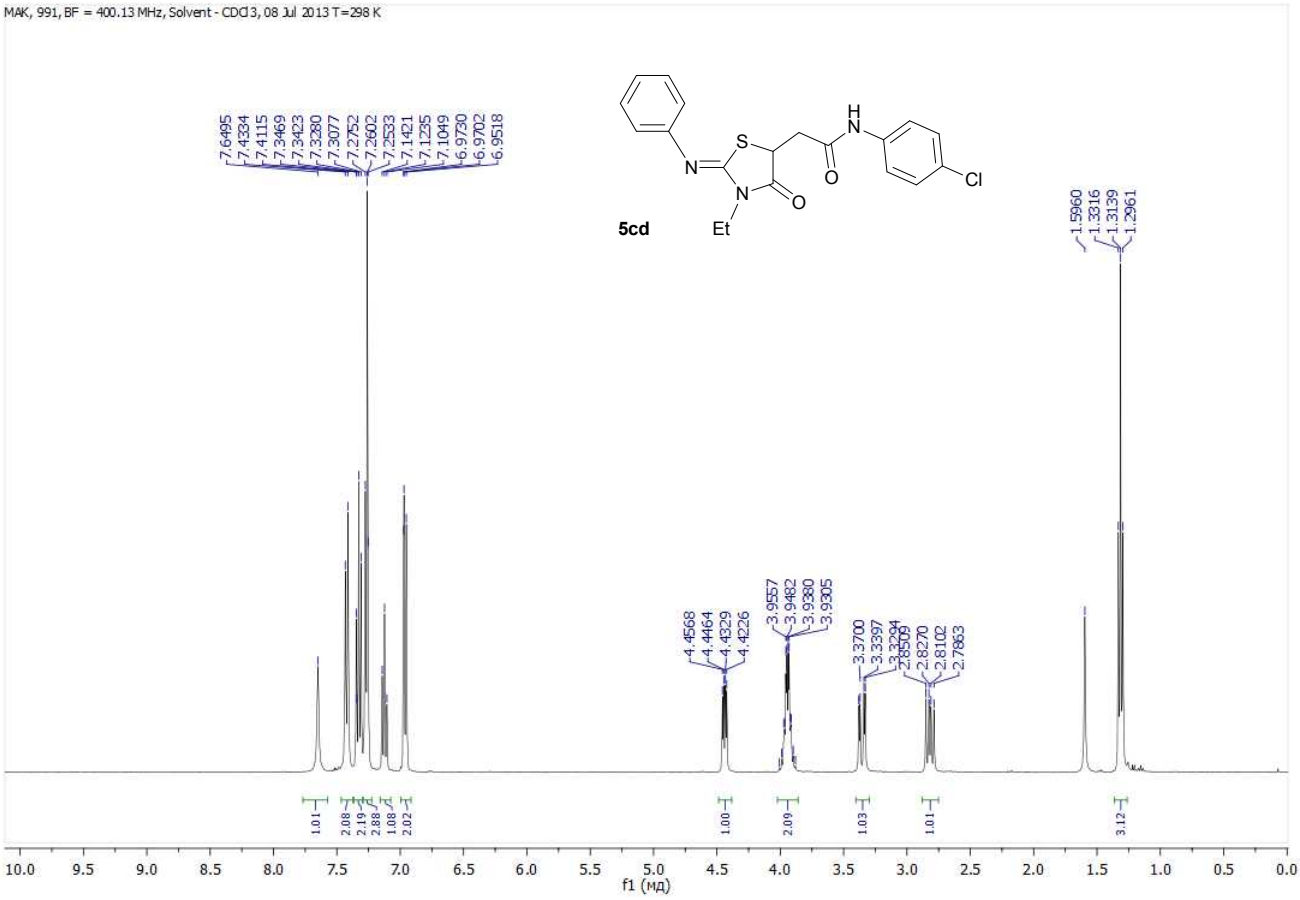

MAKc, 871, BF = 100.612769 MHz, Solvent - CDCl3, 23 Apr 2013 T=298 K
f1 (мд)

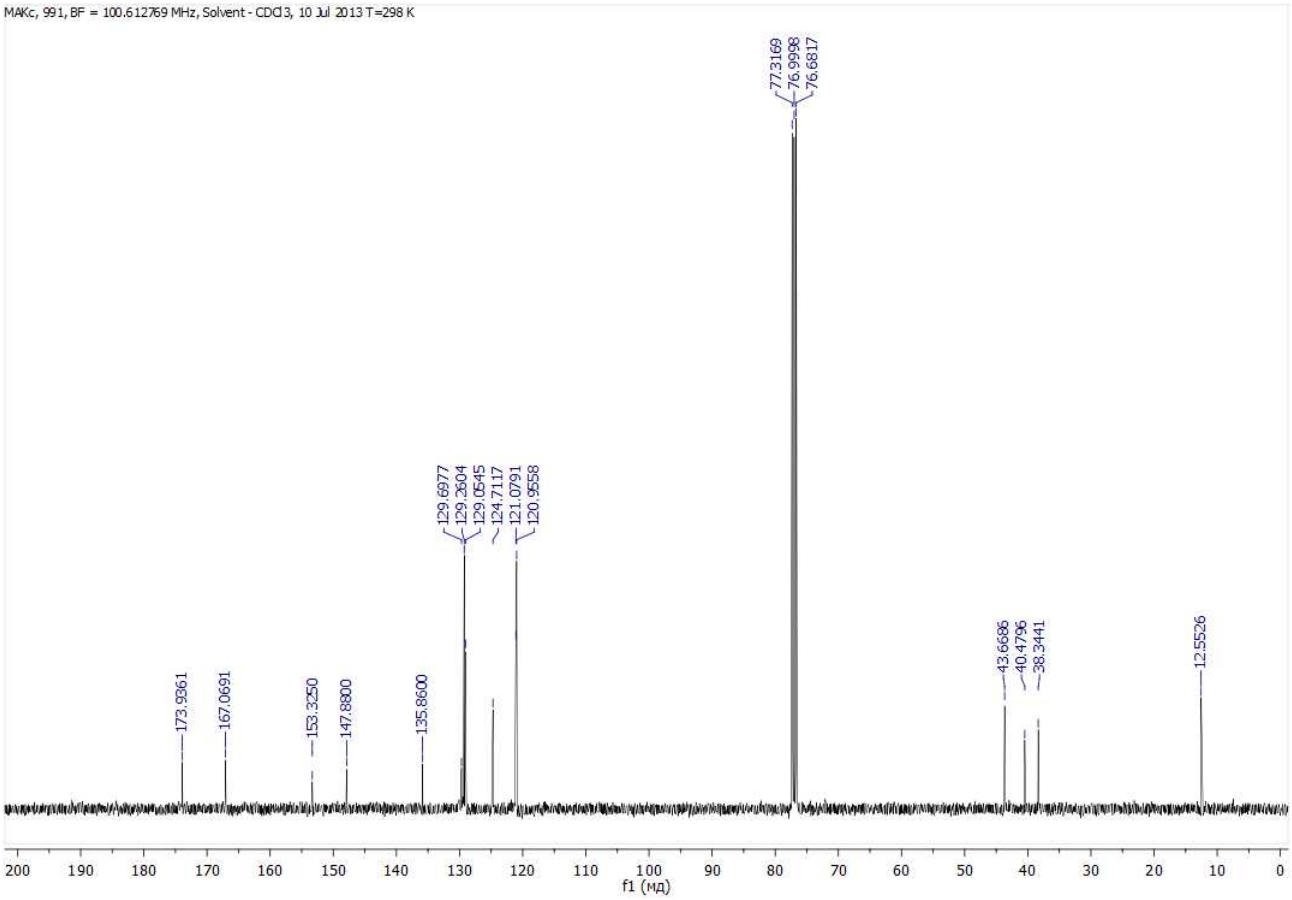

MAK, 177, BF = 400.13 MHz, Solvent - CDCl3, 06 Nov 2013 T=299 K
5cb
Et
f1 (мд)

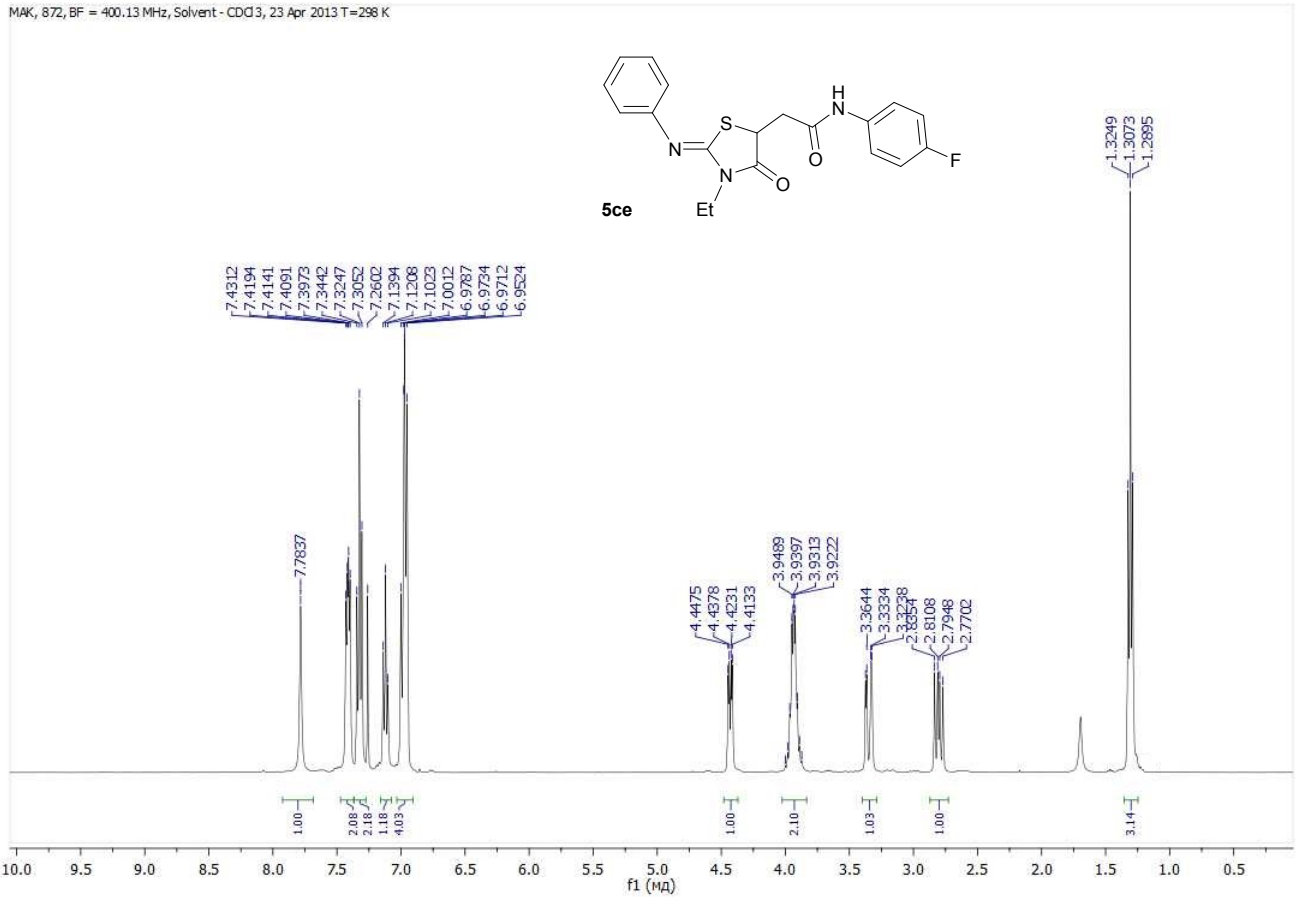

MAKc, 177, BF = 100.612769 MHz, Solvent - CDCl3, 07 Nov 2013 T=299 K
f1 (мд)

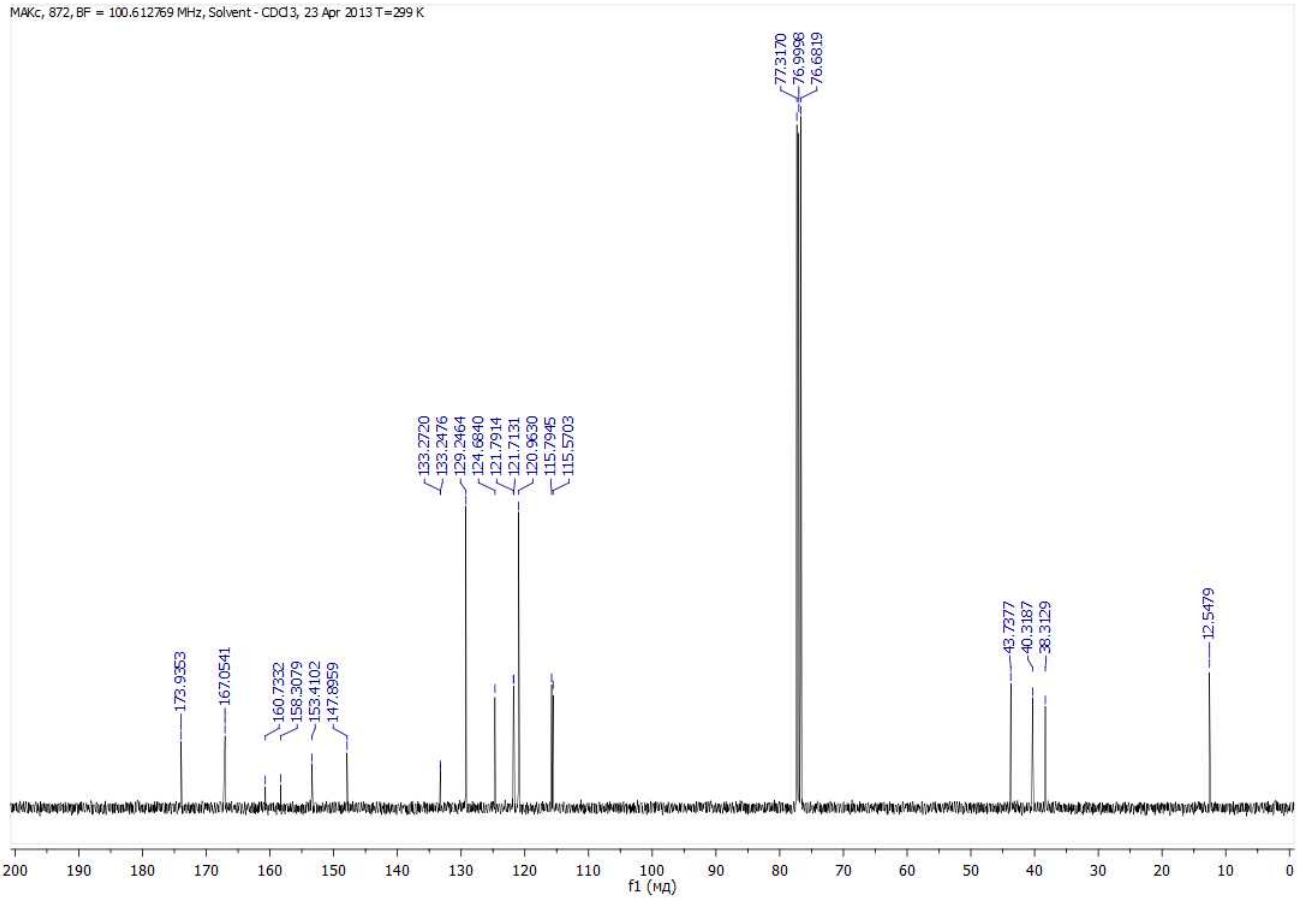

MAK, 865, BF = 400.13 MHz, Solvent - DMSO, 22 Apr 2013 T=299 K
5cc
Et
10.1121
7.5296
7.5100
7.3605
7.3410
7.3216
7.3095
7.2843
7.2643
7.1270
7.1086
7.0901
7.0532
7.0348
7.0165
6.9405
6.9218
4.5735
4.5647
4.5496
4.5407
3.8244
3.8074
3.7895
3.7723
3.3336
3.2842
3.2753
3.2425
3.2237
2.9727
2.9485
2.9310
2.9069
2.5001
1.2322
1.2147
1.1971
1.01
2.17
4.25
2.11
2.02
1.00
2.03
1.09
1.01
3.11
f1 (мд)

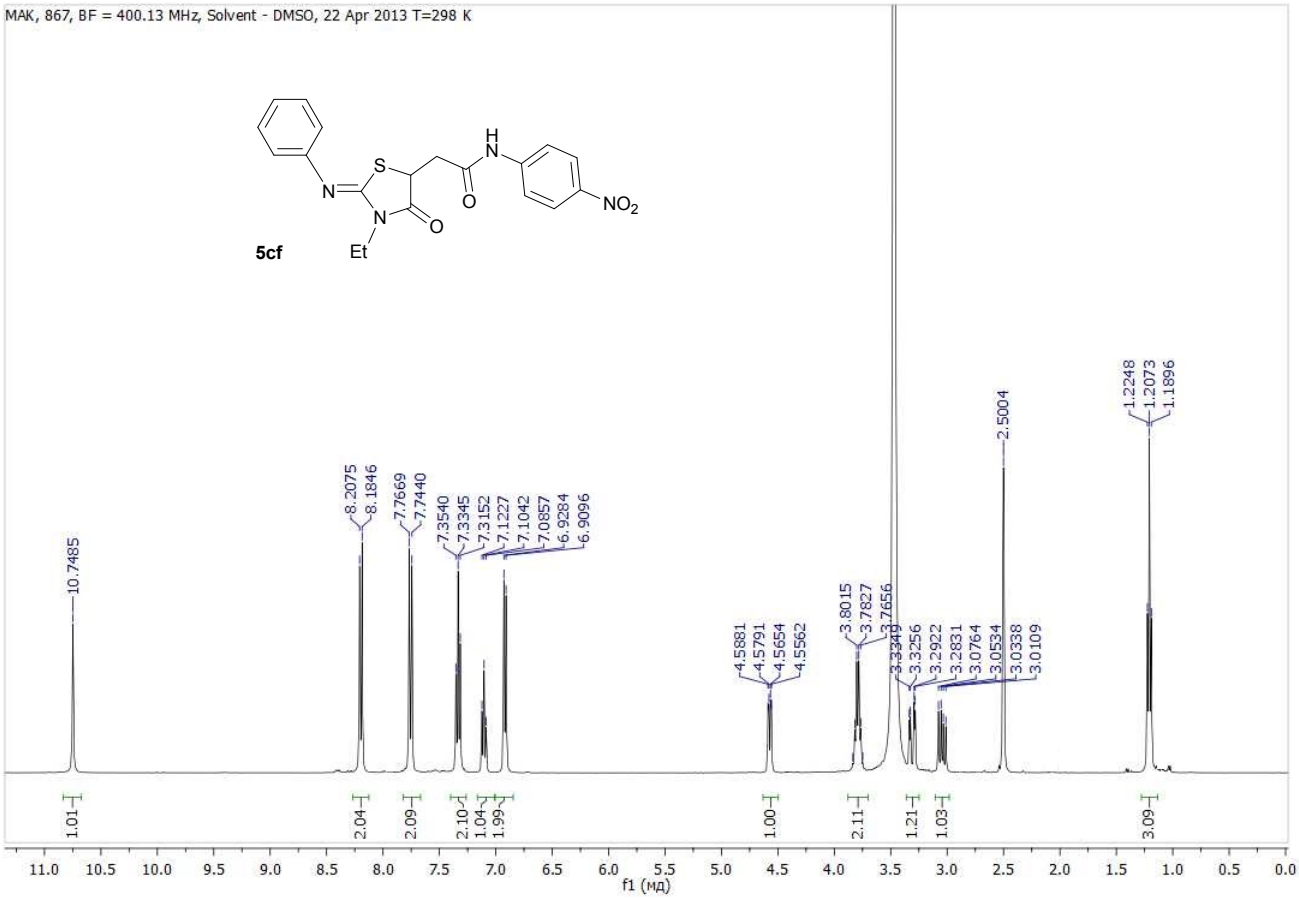

MAKc, 865, BF = 100.612769 MHz, Solvent - DMSO, 22 Apr 2013 T=299 K
43.4572
40.1456
39.9372
39.7383
39.5195
39.3110
39.1022
38.8937
38.7004
37.3687
173.5502
167.7256
154.5890
148.2415
138.6624
129.1958
128.7397
124.1527
123.3760
120.9714
119.0812
12.2270
f1 (мд)

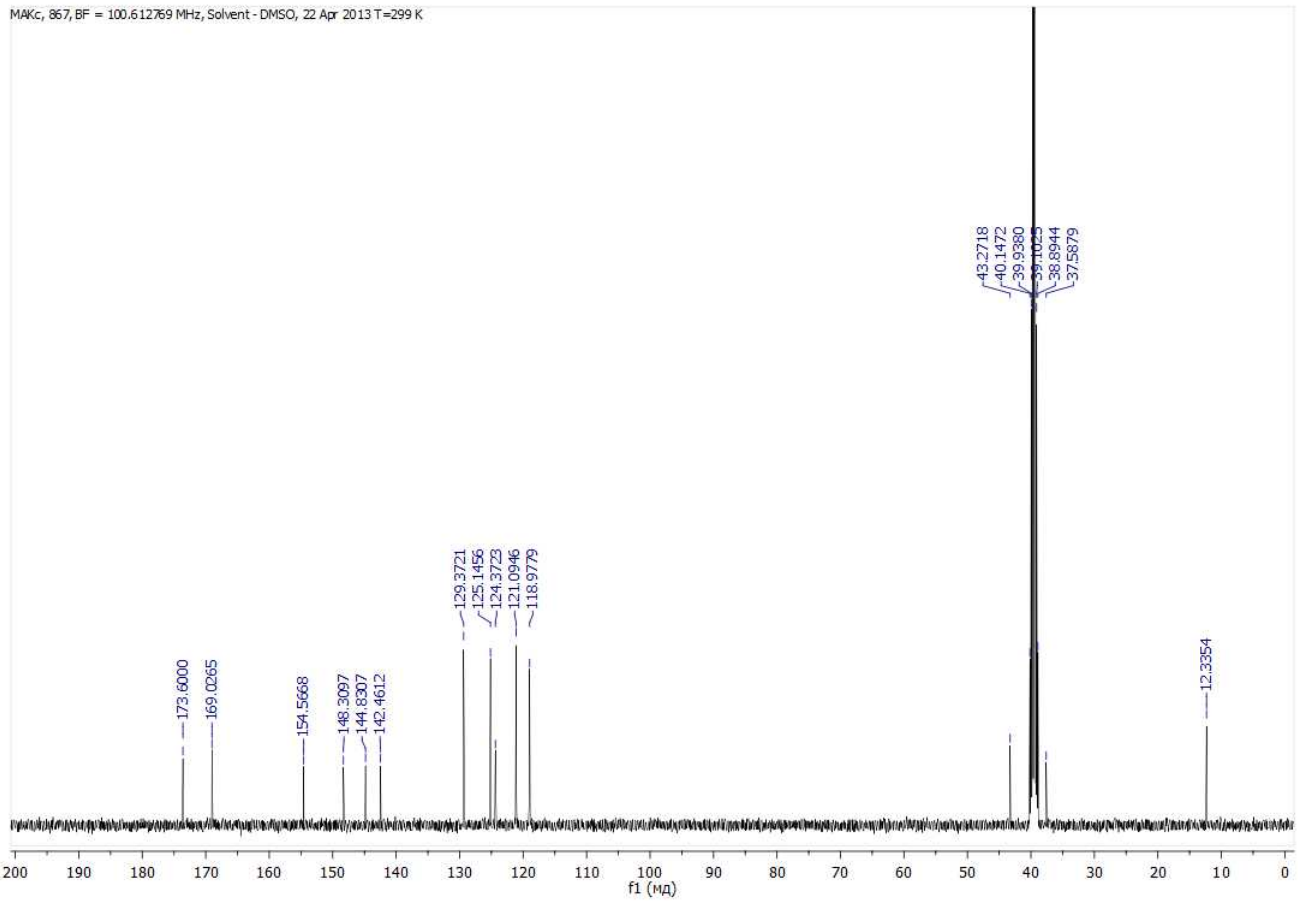

MAK, 991, BF = 400.13 MHz, Solvent - CDCl3, 08 Jul 2013 T=298 K
7.6495
7.4334
7.4115
7.3469
7.3423
7.3280
7.3077
7.2752
7.2602
7.2533
7.1421
7.1235
7.1049
6.9730
6.9702
6.9518
5cd
Et
Cl
1.5960
1.3316
1.3139
1.2961
4.4568
4.4464
4.4329
4.4226
3.9557
3.9482
3.9380
3.9305
3.3700
3.3397
2.8559
2.8270
2.8102
2.7863
1.01
2.08
2.19
2.88
1.08
2.02
1.00
2.09
1.03
1.01
3.12
f1 (мд)

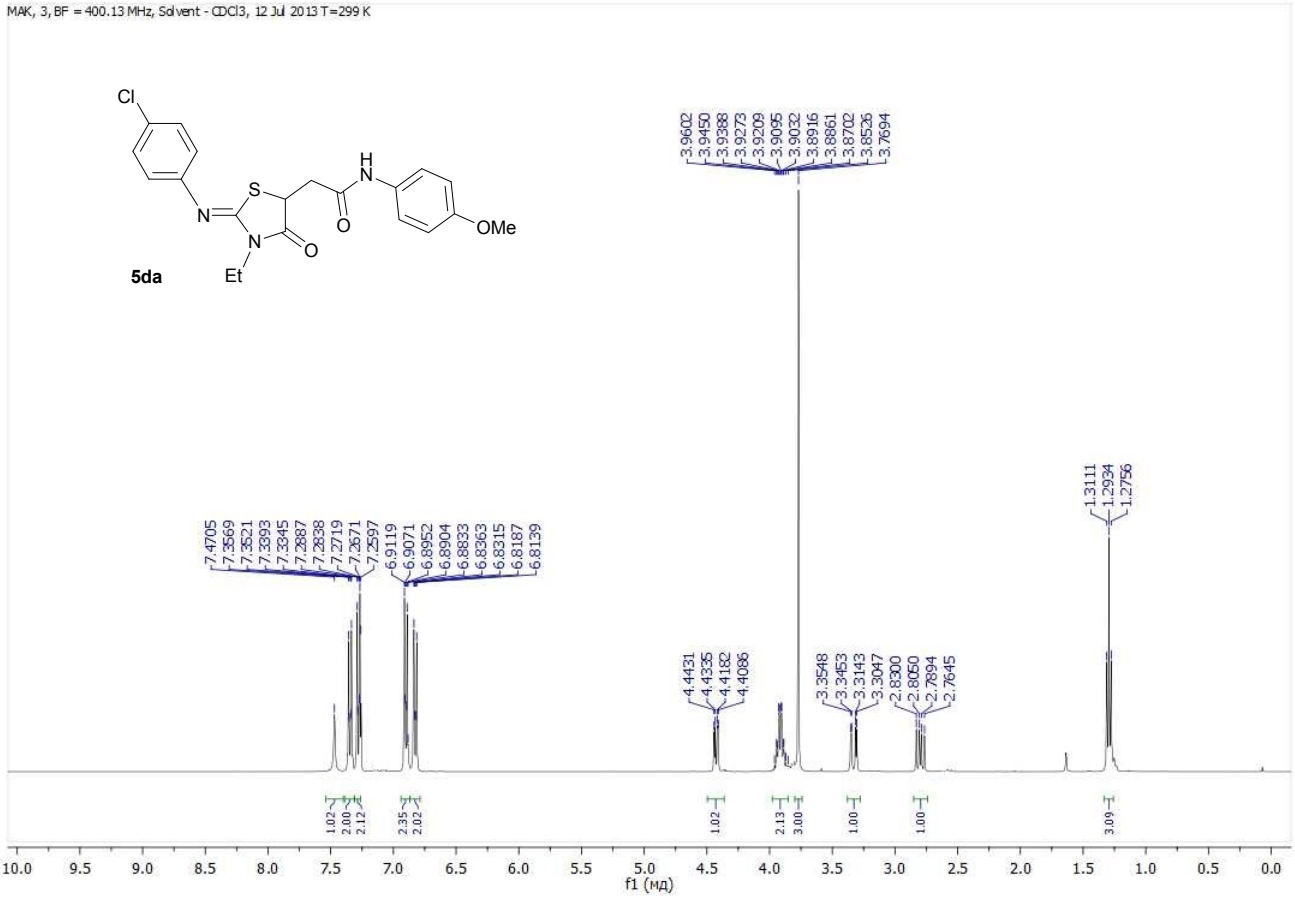

MAKc, 991, BF = 100.612769 MHz, Solvent - CDCl3, 10 Jul 2013 T=298 K
77.3169
76.9998
76.6817
129.6977
129.3604
129.0545
124.7117
121.0791
120.9558
173.9361
167.0691
153.3250
147.8800
135.8600
43.6686
40.4796
38.3441
12.5526
f1 (мд)

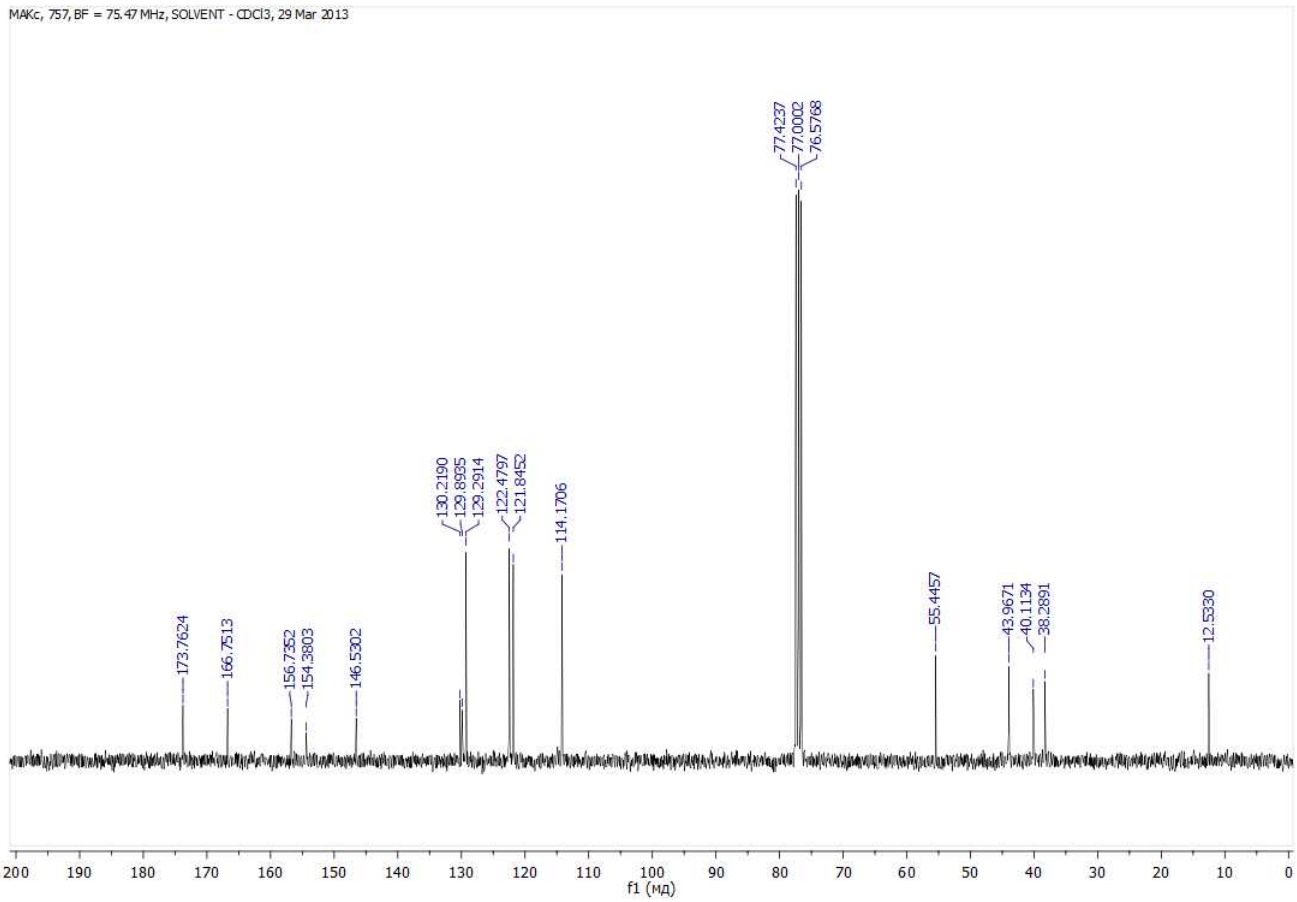

MAK, 872, BF = 400.13 MHz, Solvent - CDCl3, 23 Apr 2013 T=298 K
5ce
Et
f1 (мд)

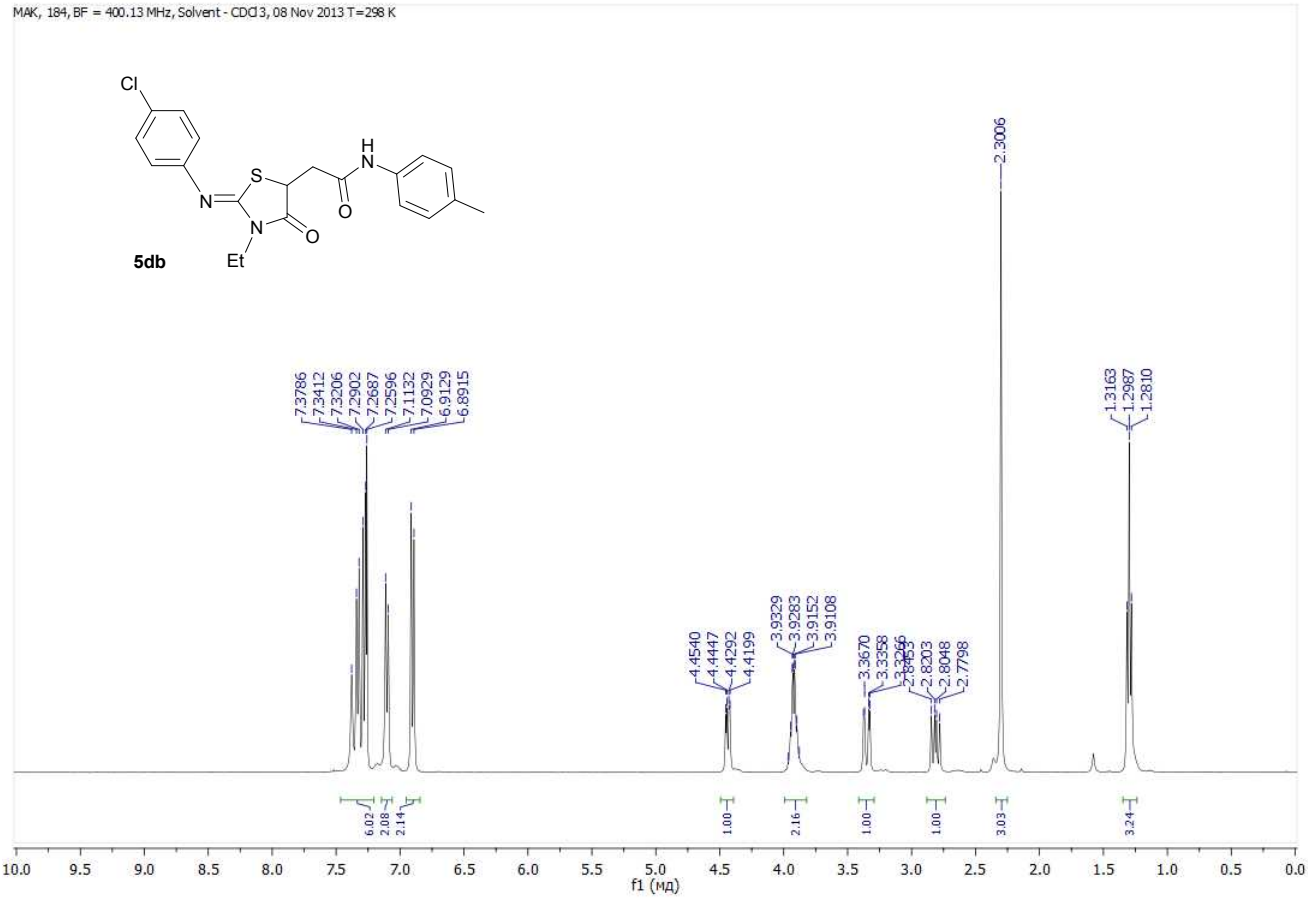

MAKc, 872, BF = 100.612769 MHz, Solvent - CDCl3, 23 Apr 2013 T=299 K
f1 (мд)

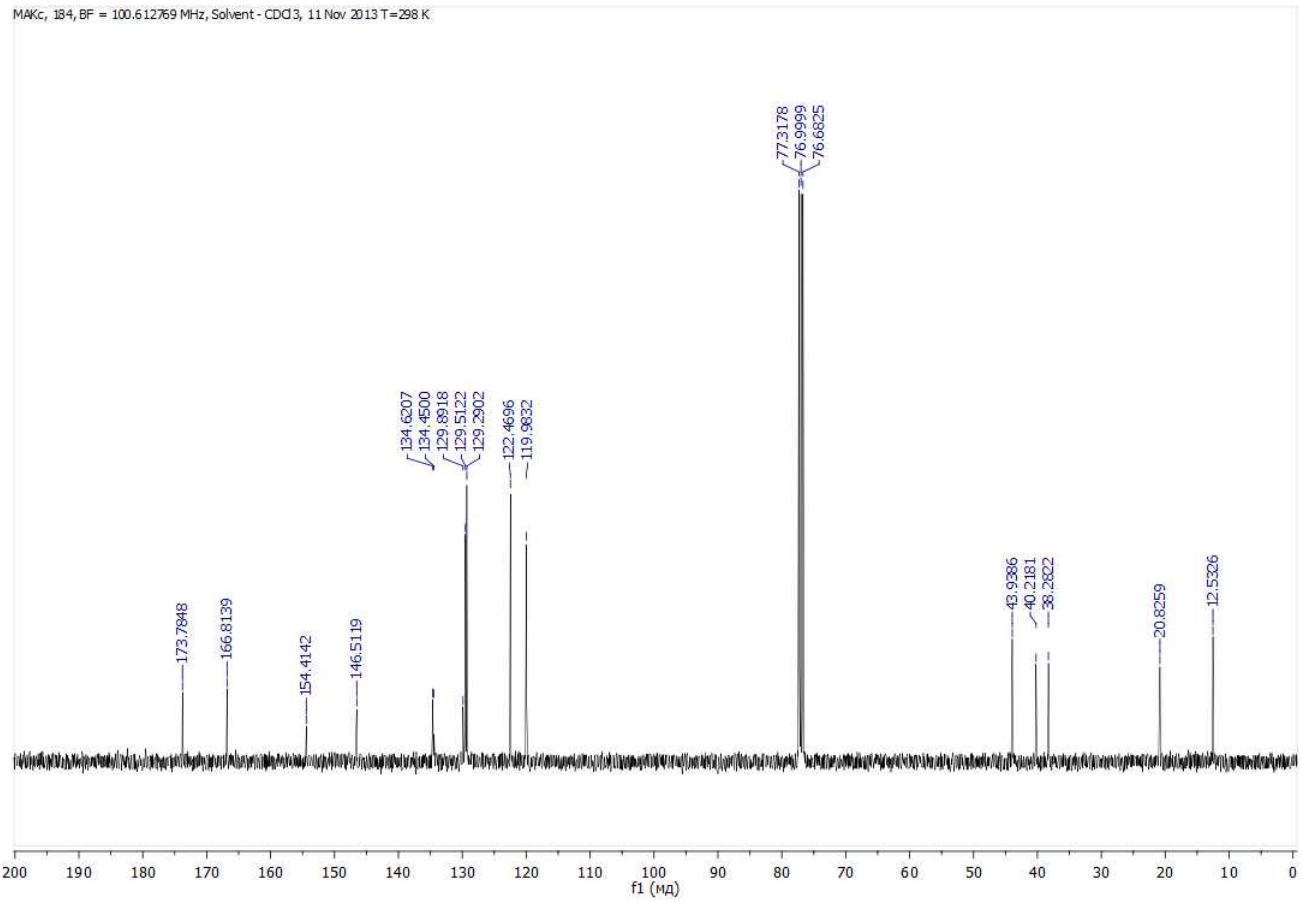

MAK, 867, BF = 400.13 MHz, Solvent - DMSO, 22 Apr 2013 T=298 K
5cf
10.7485
8.2075
8.1846
7.7669
7.7440
7.3540
7.3345
7.3152
7.1227
7.1042
7.0857
6.9284
6.9096
4.5881
4.5791
4.5654
4.5562
3.8015
3.7827
3.7656
3.3349
3.3256
3.2922
3.2831
3.0764
3.0534
3.0338
3.0109
2.5004
1.2248
1.2073
1.1896
1.01
2.04
2.09
2.10
1.04
1.99
1.00
2.11
1.21
1.03
3.09
f1 (мд)

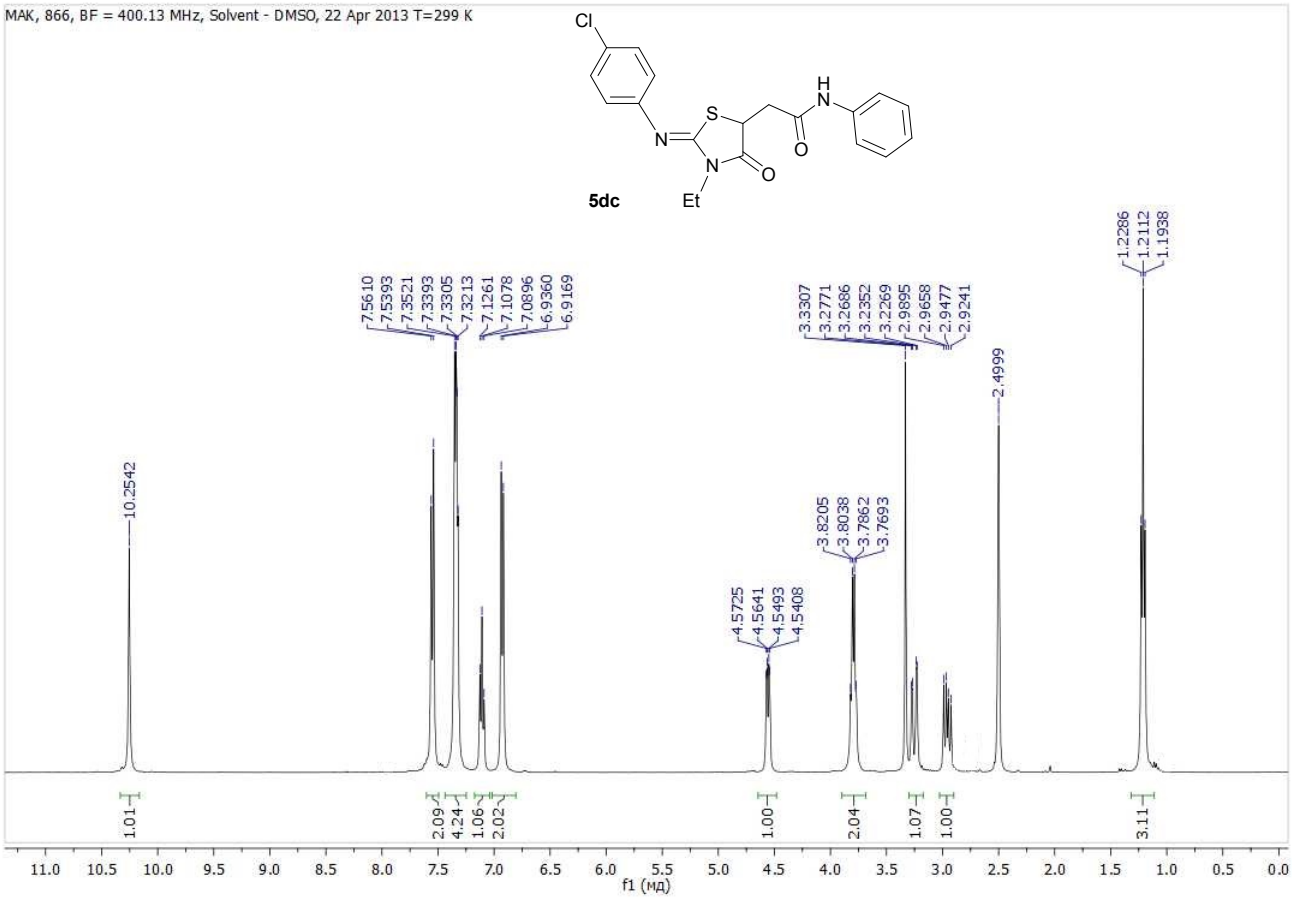

MAKc, 867, BF = 100.612769 MHz, Solvent - DMSO, 22 Apr 2013 T=299 K
173.6000
169.0265
154.5668
148.3097
144.8307
142.4612
129.3721
125.1456
124.3723
121.0946
118.9779
43.2718
40.1472
39.9380
39.1025
38.8944
37.5879
12.3354
f1 (мд)

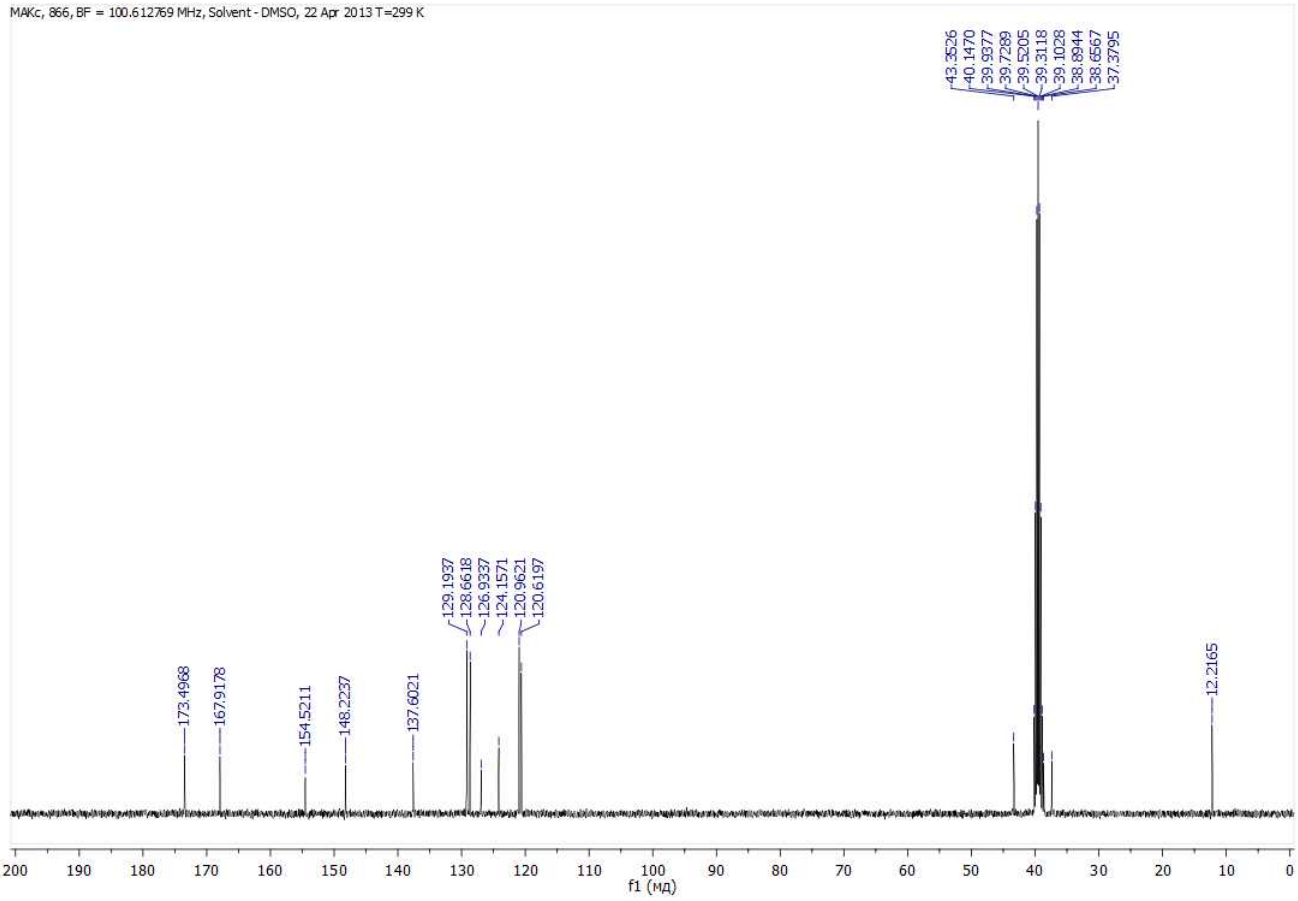

MAK, 3, BF = 400.13 MHz, Solvent - CDCl3, 12 Jul 2013 T=299 K
Cl
S
N
N
Et
O
O
H
N
OMe
5da
3.9602
3.9450
3.9388
3.9273
3.9209
3.9095
3.9032
3.8916
3.8861
3.8702
3.8526
3.7694
1.3111
1.2934
1.2756
7.4705
7.3569
7.3521
7.3393
7.3345
7.2887
7.2838
7.2719
7.2671
7.2597
6.9119
6.9071
6.8952
6.8904
6.8833
6.8363
6.8315
6.8187
6.8139
4.4431
4.4335
4.4182
4.4086
3.3548
3.3453
3.3143
3.3047
2.8300
2.8050
2.7894
2.7645
1.02
2.00
2.12
2.35
2.02
1.02
2.13
3.00
1.00
1.00
3.09
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (мд)

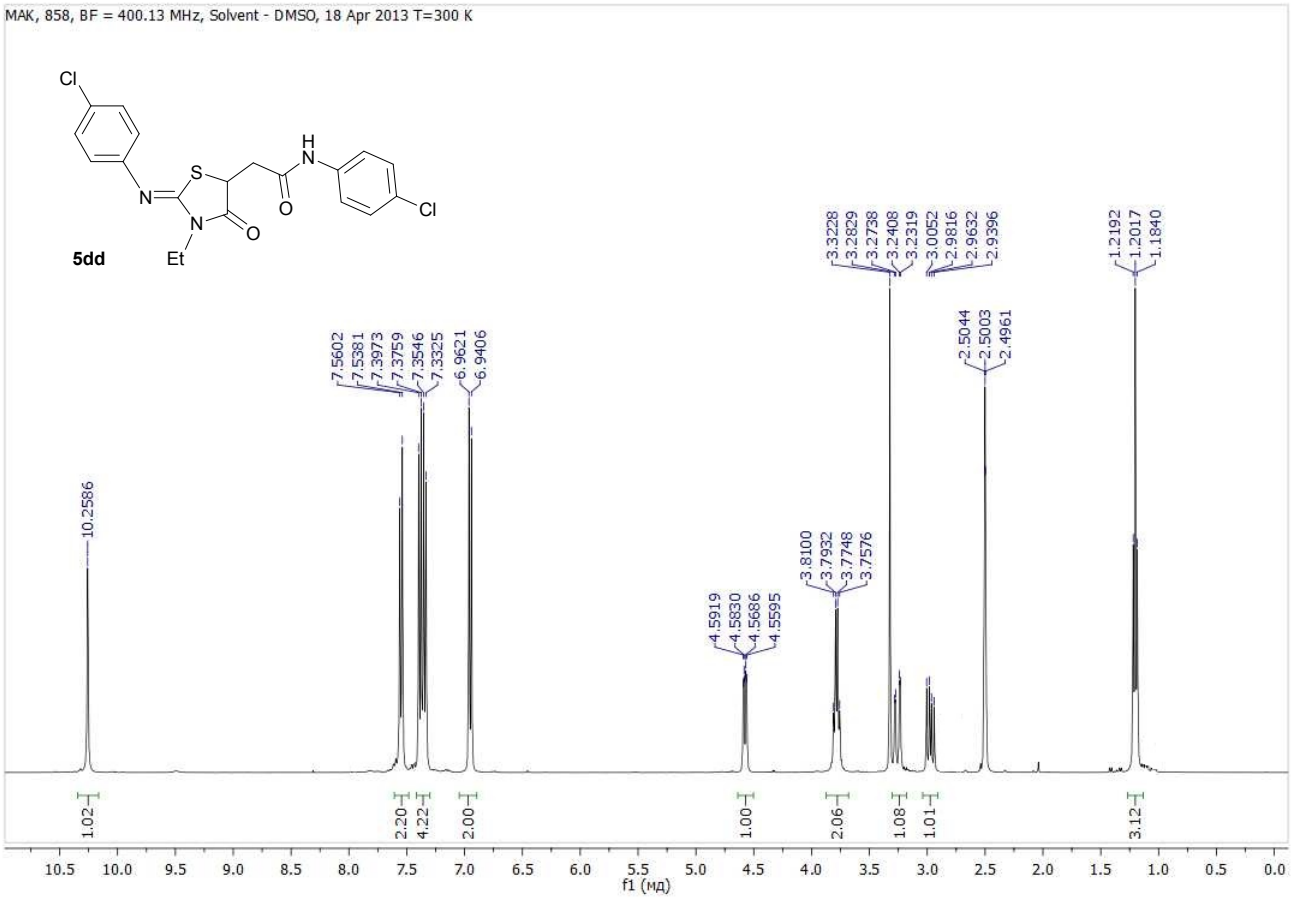

MAKc, 757, BF = 75.47 MHz, SOLVENT - CDCl3, 29 Mar 2013
77.4237
77.0002
76.5768
130.2190
129.8995
129.2914
122.4797
121.8452
114.1706
173.7624
166.7513
156.7352
154.3803
146.5302
55.4457
43.9671
40.1134
38.2891
12.5330
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (мд)

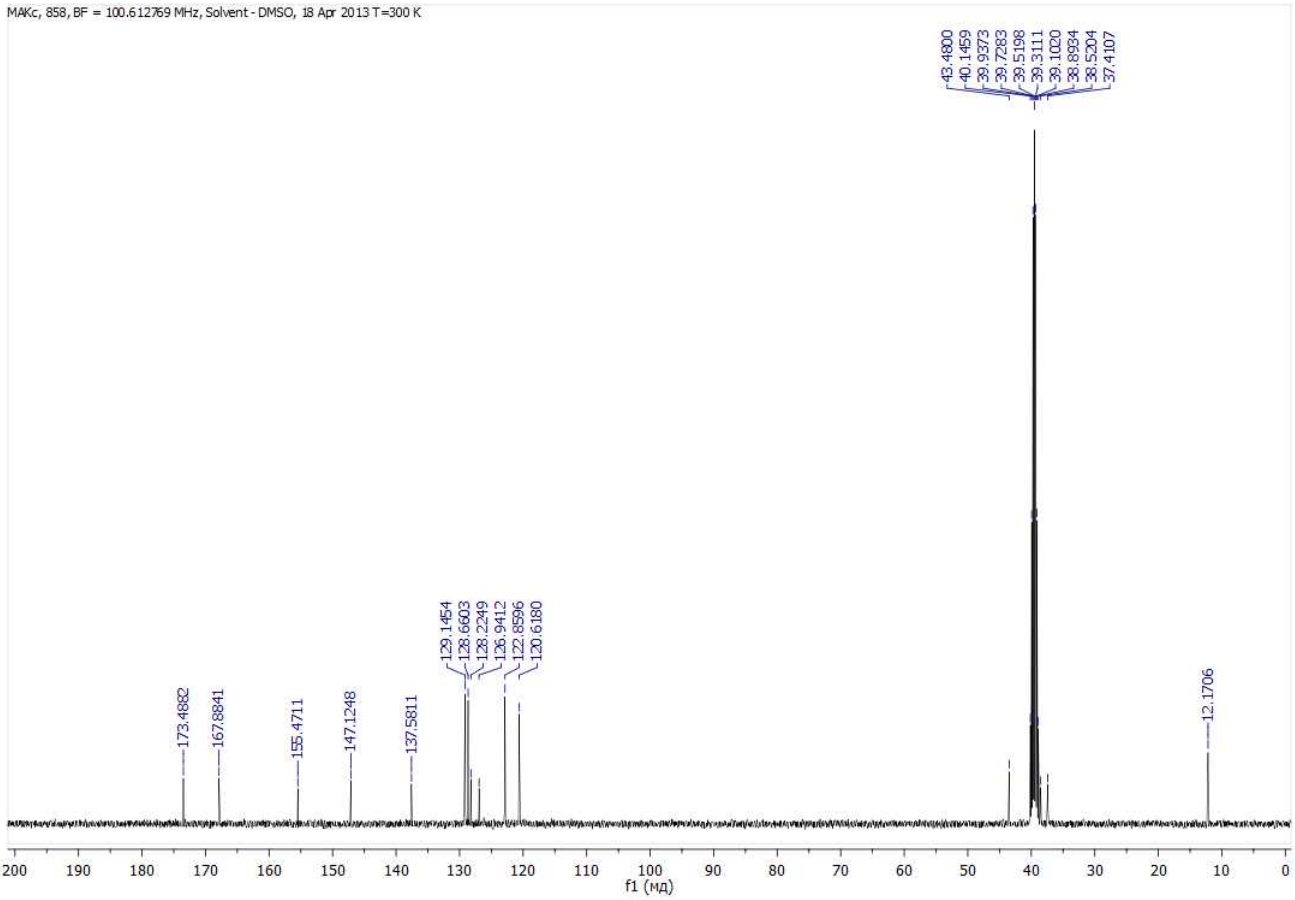

MAK, 184, BF = 400.13 MHz, Solvent - CDCl3, 08 Nov 2013 T=298 K
Cl
S
N
N
Et
O
O
H
N
5db
7.3786
7.3412
7.3206
7.2902
7.2687
7.2596
7.1132
7.0929
6.9129
6.8915
4.4540
4.4447
4.4292
4.4199
3.9329
3.9283
3.9152
3.9108
3.3670
3.3358
2.8203
2.8048
2.7798
2.3006
1.3163
1.2987
1.2810
6.02
2.08
2.14
1.00
2.16
1.00
1.00
3.03
3.24
f1 (мд)

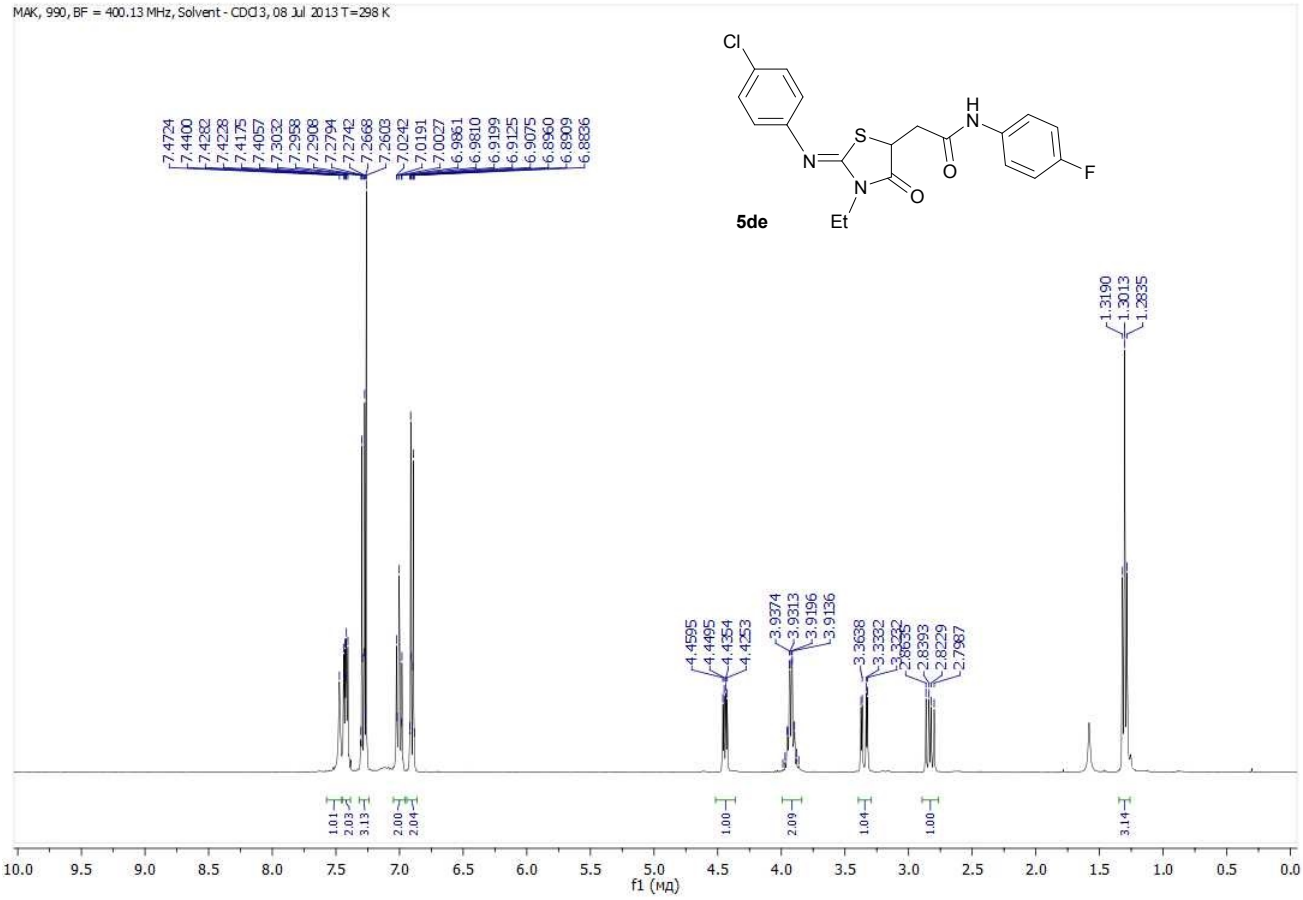

MAKc, 184, BF = 100.612769 MHz, Solvent - CDCl3, 11 Nov 2013 T=298 K
77.3178
76.9999
76.6825
134.6207
134.4500
129.8918
129.5122
129.2902
122.4696
119.9832
173.7848
166.8139
154.4142
146.5119
43.9386
40.2181
38.2822
20.8259
12.5326
f1 (мд)

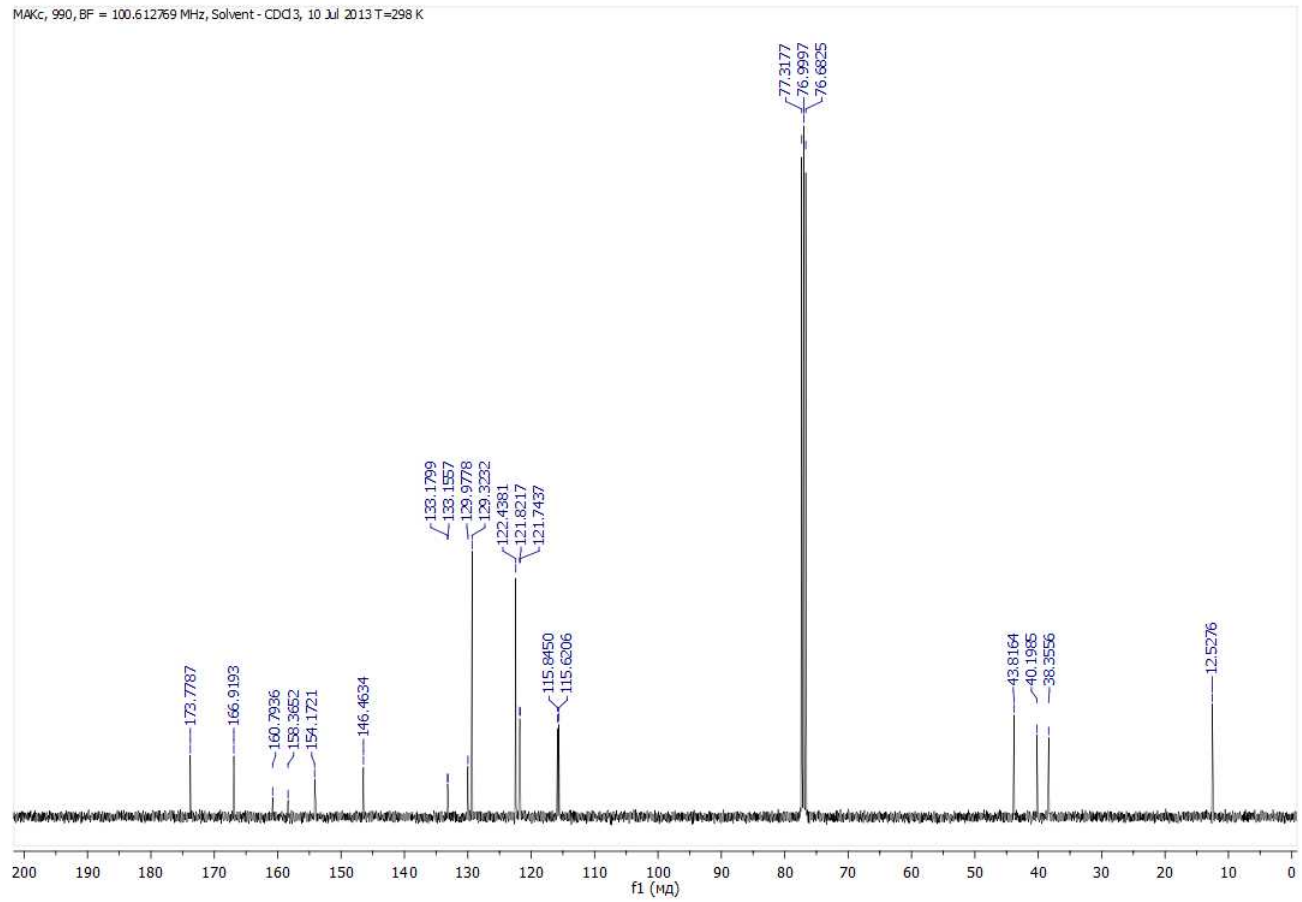

MAK, 866, BF = 400.13 MHz, Solvent - DMSO, 22 Apr 2013 T=299 K
Cl
S
N
N
H
N
O
O
Et
5dc
10.2542
7.5610
7.5393
7.3521
7.3393
7.3305
7.3213
7.1261
7.1078
7.0896
6.9360
6.9169
4.5725
4.5641
4.5493
4.5408
3.8205
3.8038
3.7862
3.7693
3.3307
3.2771
3.2686
3.2352
3.2269
2.9895
2.9658
2.9477
2.9241
2.4999
1.2286
1.2112
1.1938
1.01
2.09
4.24
1.06
2.02
1.00
2.04
1.07
1.00
3.11
f1 (мд)

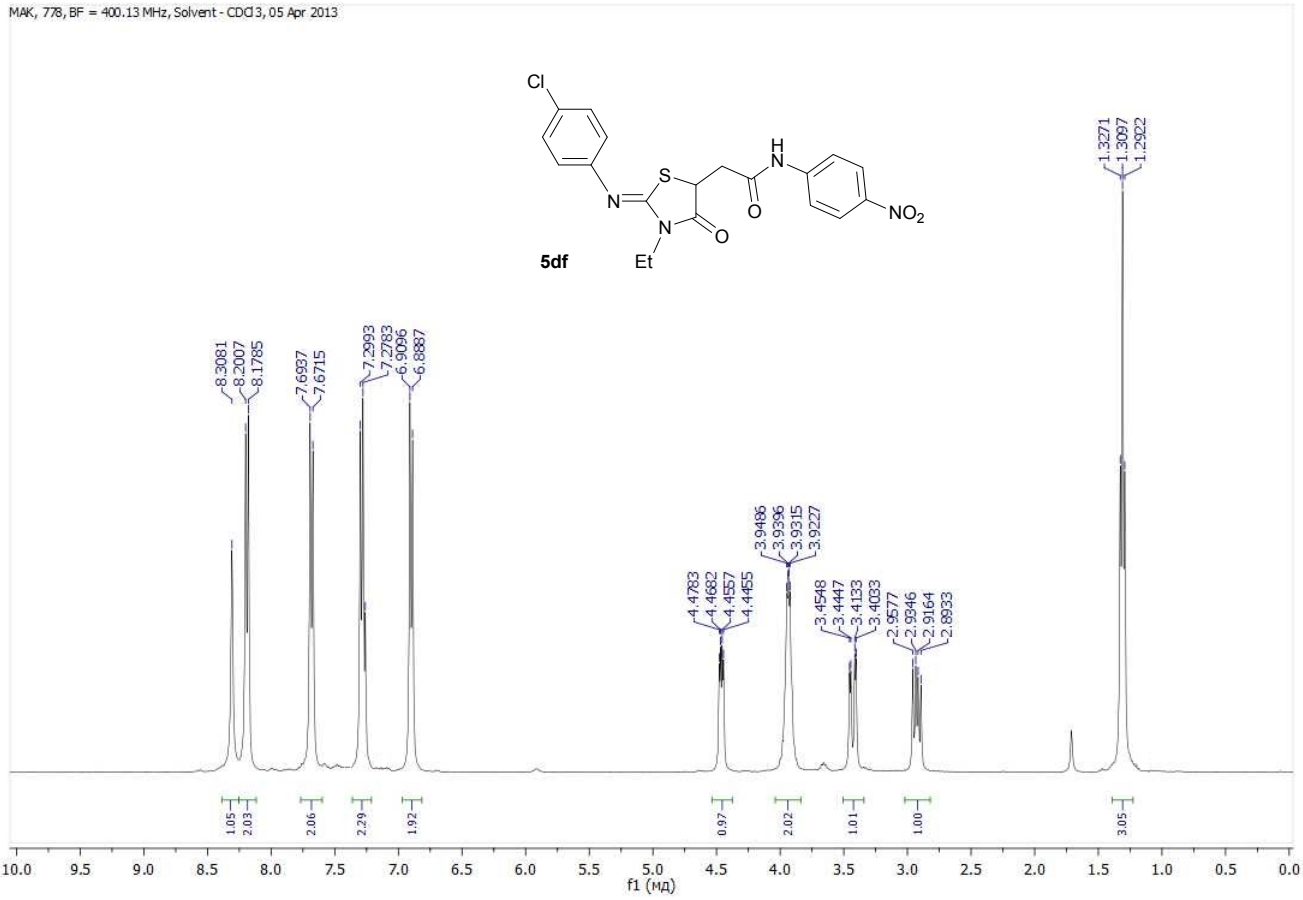

MAKc, 866, BF = 100.612769 MHz, Solvent - DMSO, 22 Apr 2013 T=299 K
43.3526
40.1470
39.9377
39.7289
39.5205
39.3118
39.1028
38.8944
38.6567
37.3795
173.4968
167.9178
154.5211
148.2237
137.6021
129.1937
128.6618
126.9337
124.1571
120.9621
120.6197
12.2165
f1 (мд)

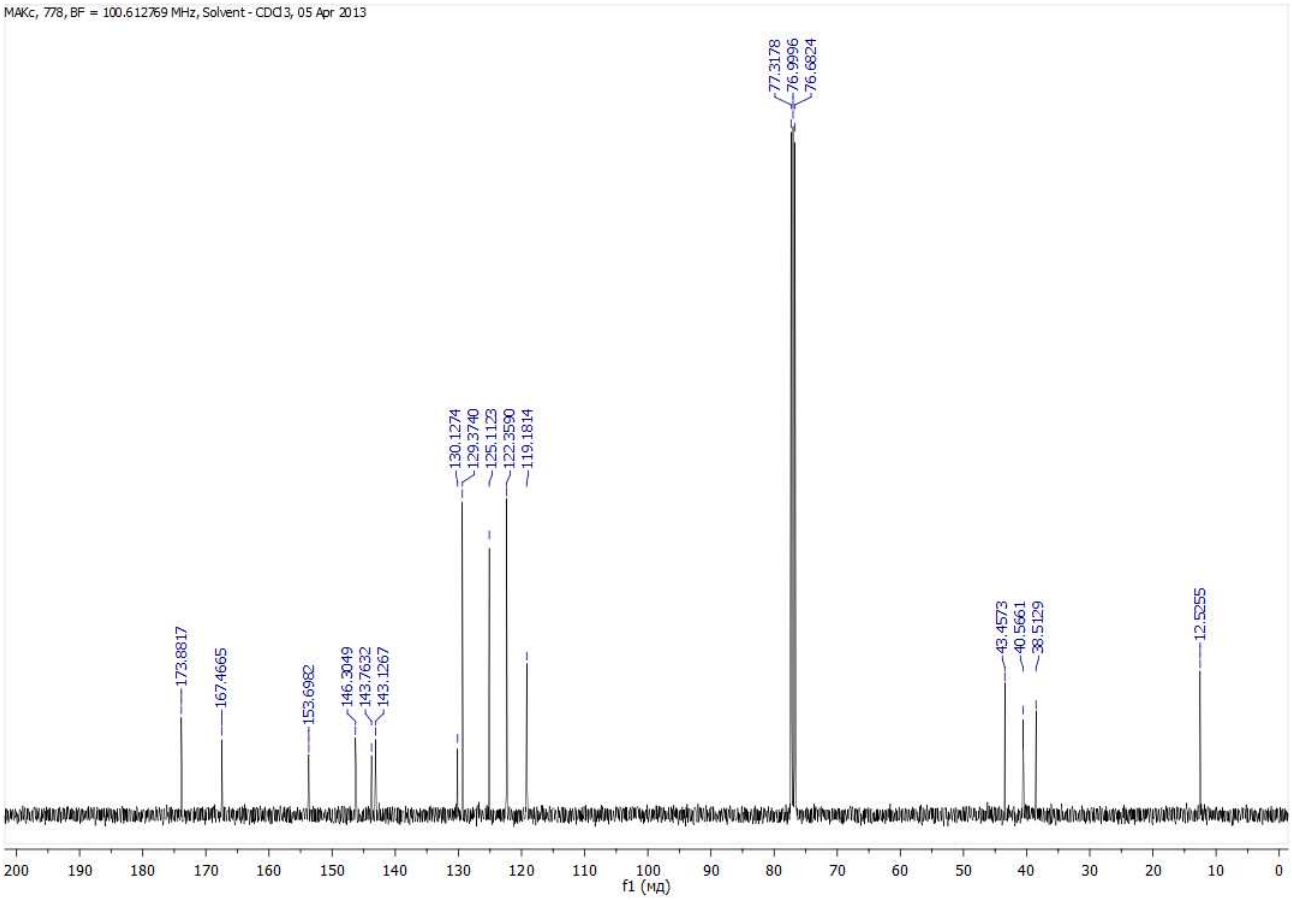

MAK, 858, BF = 400.13 MHz, Solvent - DMSO, 18 Apr 2013 T=300 K
Cl
S
N
N
Et
O
O
H
N
Cl
5dd
10.2586
7.5602
7.5381
7.3973
7.3759
7.3546
7.3325
6.9621
6.9406
4.5919
4.5830
4.5686
4.5595
3.8100
3.7932
3.7748
3.7576
3.3228
3.2829
3.2738
3.2408
3.2319
3.0052
2.9816
2.9632
2.9396
2.5044
2.5003
2.4961
1.2192
1.2017
1.1840
1.02
2.20
4.22
2.00
1.00
2.06
1.08
1.01
3.12
f1 (мд)

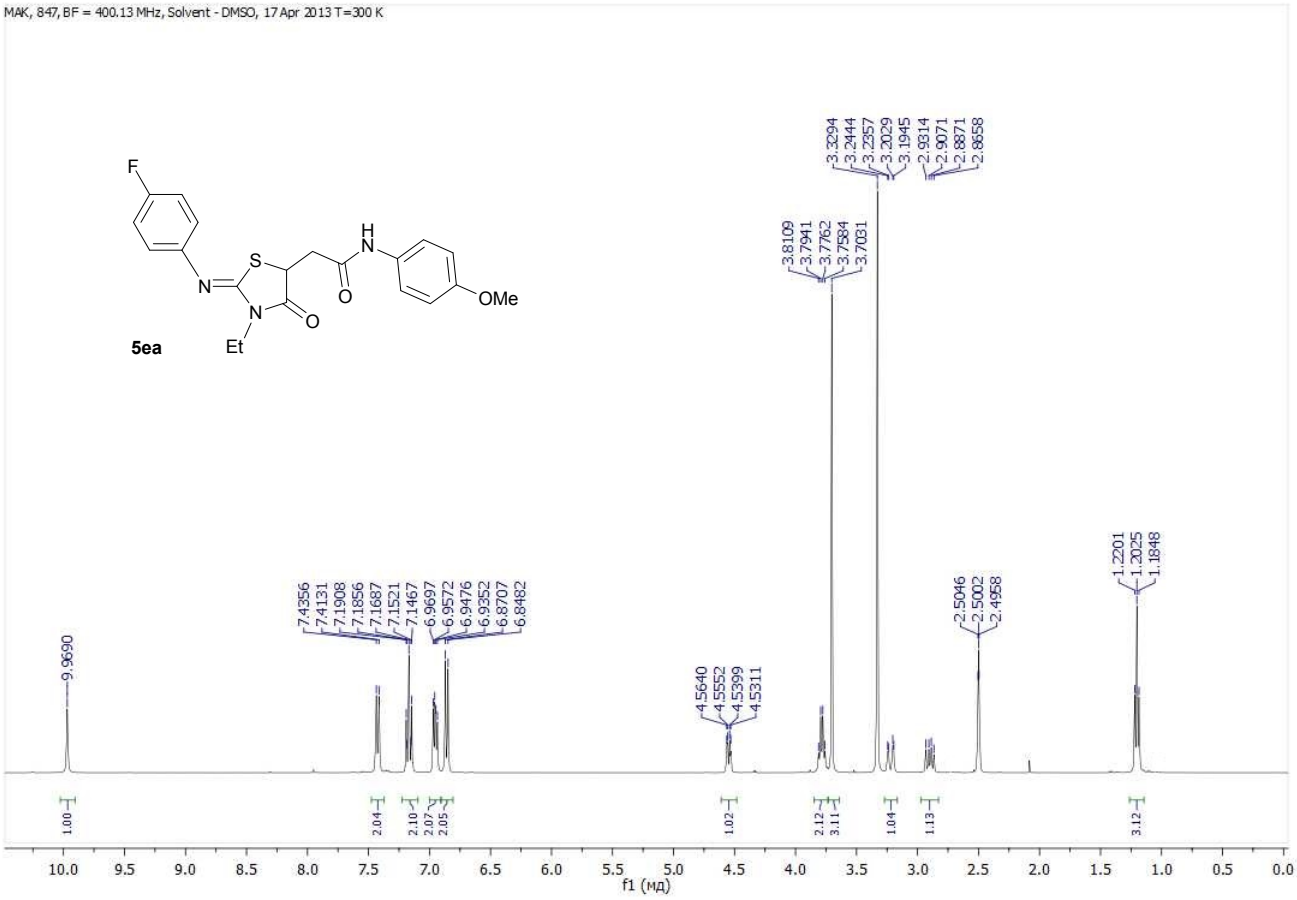

MAKc, 858, BF = 100.612769 MHz, Solvent - DMSO, 18 Apr 2013 T=300 K
173.4882
167.8841
155.4711
147.1248
137.5811
129.1454
128.6603
128.2249
126.9412
122.8596
120.6180
43.4800
40.1459
39.9373
39.7283
39.5198
39.3111
39.1020
38.8934
38.5204
37.4107
12.1706
f1 (мд)

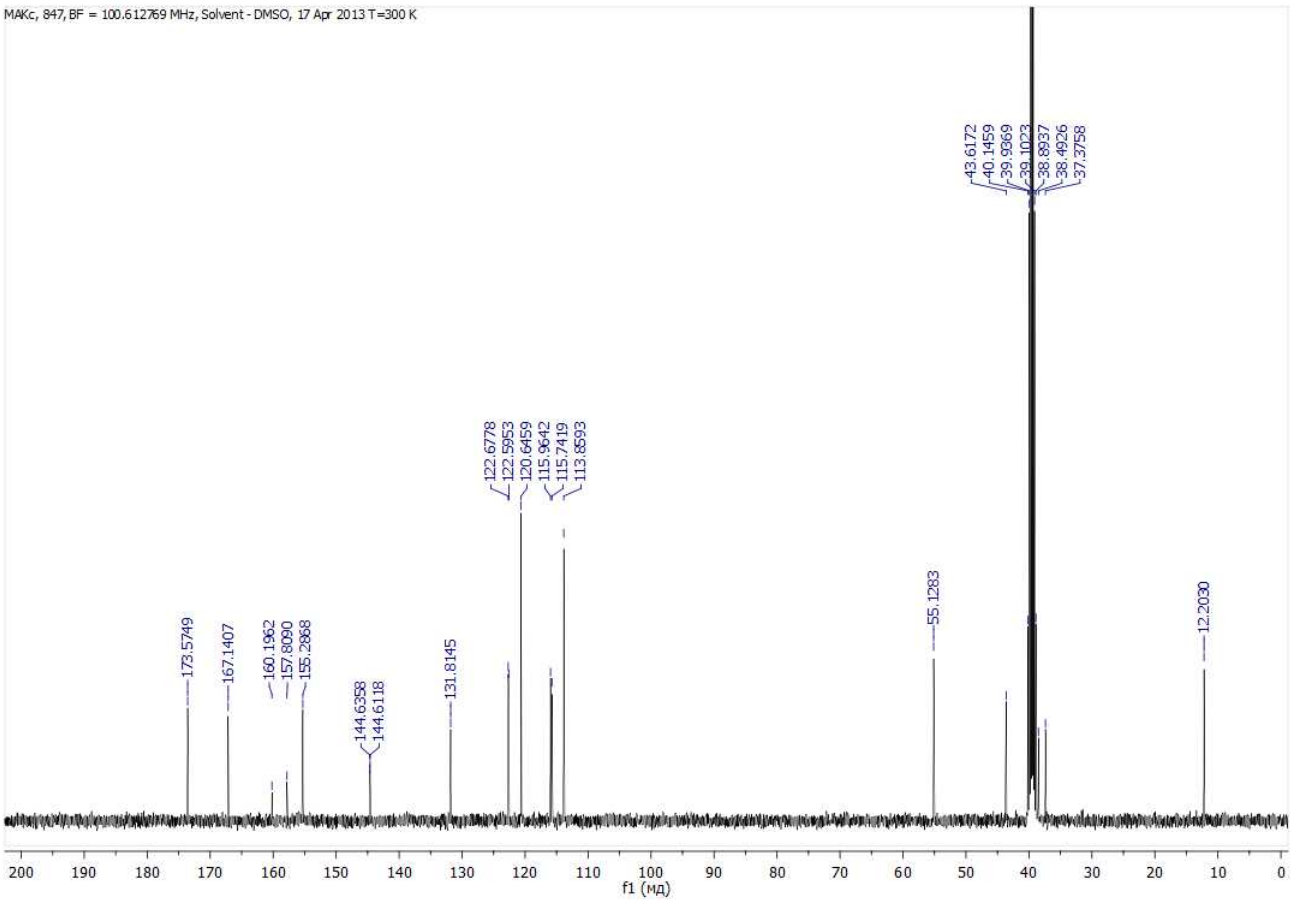

MAK, 990, BF = 400.13 MHz, Solvent - CDCl3, 08 Jul 2013 T=298 K
Cl
S
N
H
N
O
O
N
Et
F
5de
7.4724
7.4400
7.4282
7.4228
7.4175
7.4057
7.3032
7.2958
7.2908
7.2794
7.2742
7.2668
7.2603
7.0242
7.0191
7.0027
6.9861
6.9810
6.9199
6.9125
6.9075
6.8960
6.8909
6.8836
4.4595
4.4495
4.4354
4.4253
3.9374
3.9313
3.9196
3.9136
3.3638
3.3332
3.3232
2.8635
2.8393
2.8229
2.7987
1.3190
1.3013
1.2835
1.01
2.03
3.13
2.00
2.04
1.00
2.09
1.04
1.00
3.14
f1 (мд)

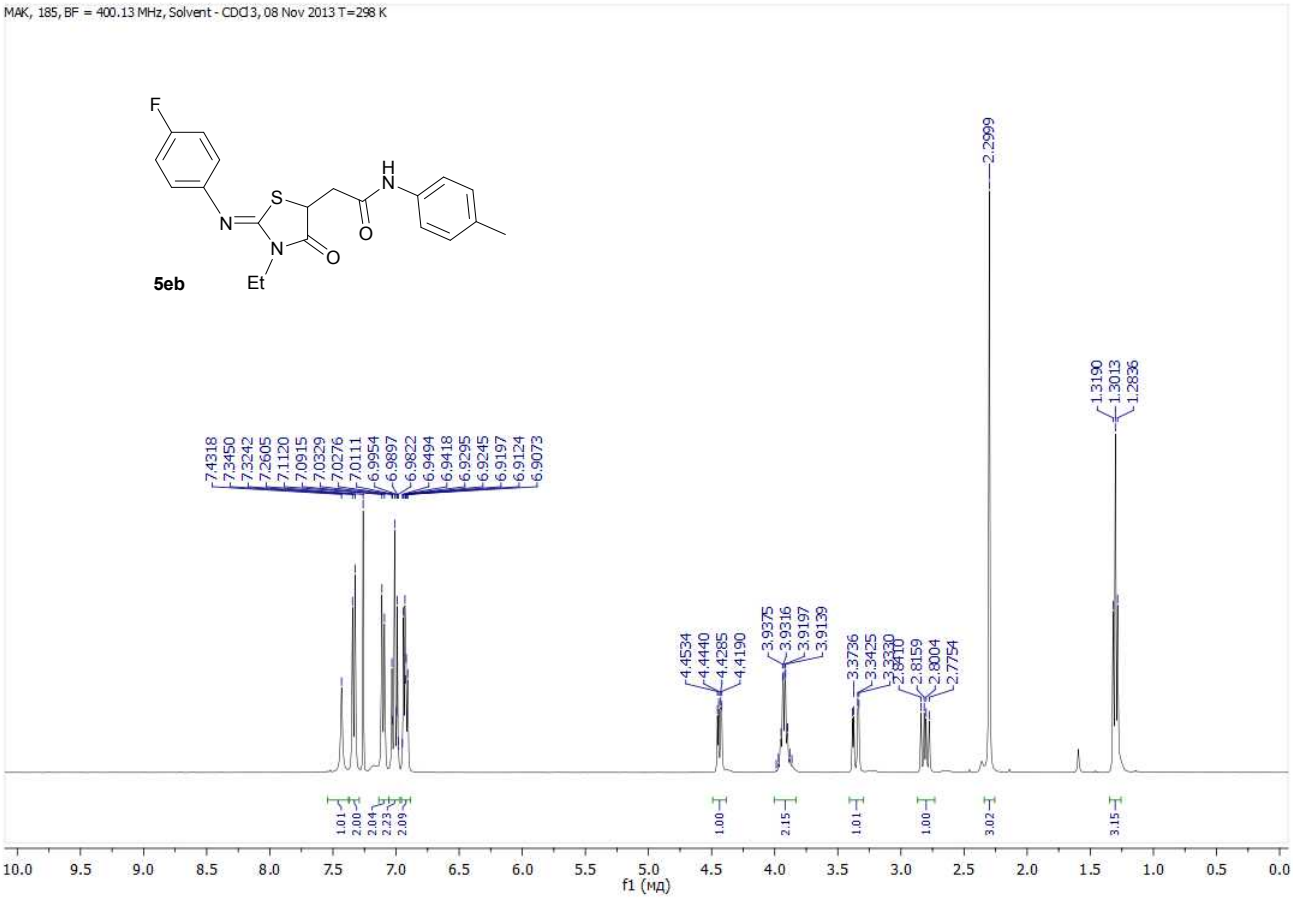

MAKc, 990, BF = 100.612769 MHz, Solvent - CDCl3, 10 Jul 2013 T=298 K
77.3177
76.9997
76.6825
133.1799
133.1557
129.9778
129.3232
122.4381
121.8217
121.7437
115.8450
115.6206
173.7787
166.9193
160.7936
158.3652
154.1721
146.4634
43.8164
40.1985
38.3556
12.5276
f1 (мд)

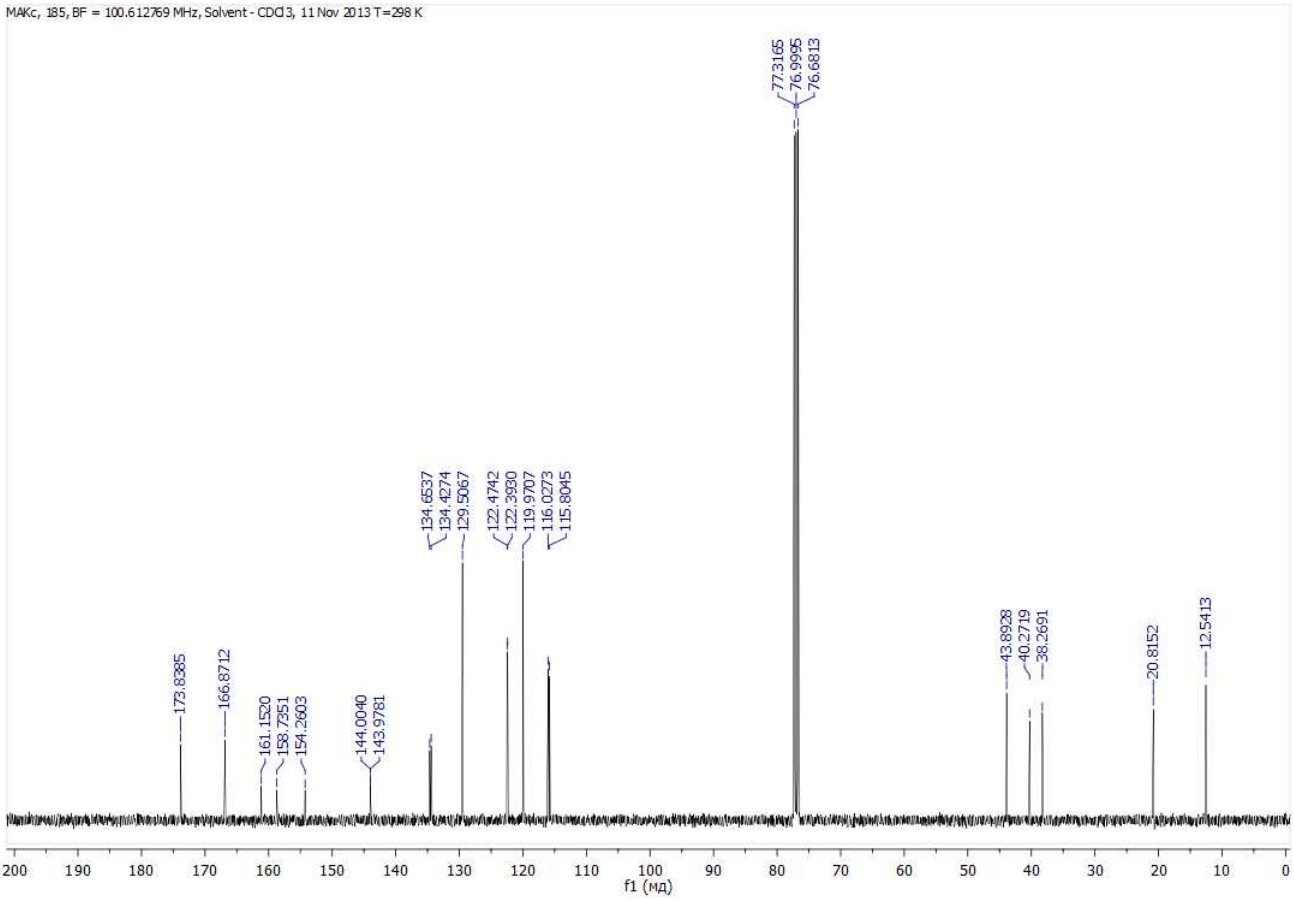

MAK, 778, BF = 400.13 MHz, Solvent - CDCl3, 05 Apr 2013
Cl
S
N
N
Et
O
O
H
N
NO2
5df
8.3081
8.2007
8.1785
7.6937
7.6715
7.2993
7.2783
6.9096
6.8887
4.4783
4.4682
4.4557
4.4455
3.9486
3.9396
3.9315
3.9227
3.4548
3.4447
3.4133
3.4033
2.9577
2.9946
2.9164
2.8933
1.3271
1.3097
1.2922
1.05
2.03
2.06
2.29
1.92
0.97
2.02
1.01
1.00
3.05
f1 (мд)

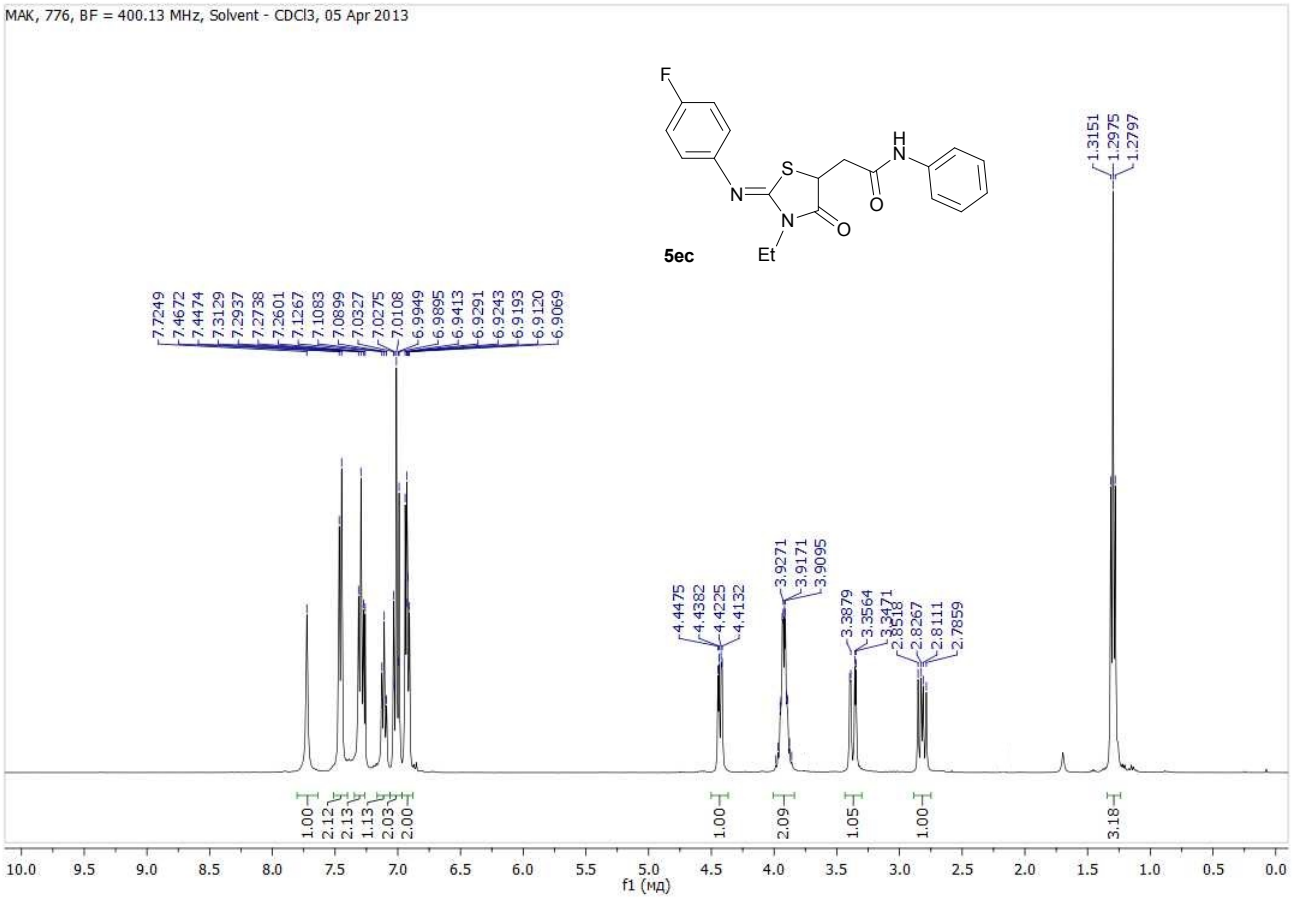

MAKc, 778, BF = 100.612769 MHz, Solvent - CDCl3, 05 Apr 2013
77.3178
76.9996
76.6824
173.8817
167.4665
153.6982
146.3049
143.7632
143.1267
130.1274
129.3740
125.1123
122.3590
119.1814
43.4573
40.5661
38.5129
12.5255
f1 (мд)

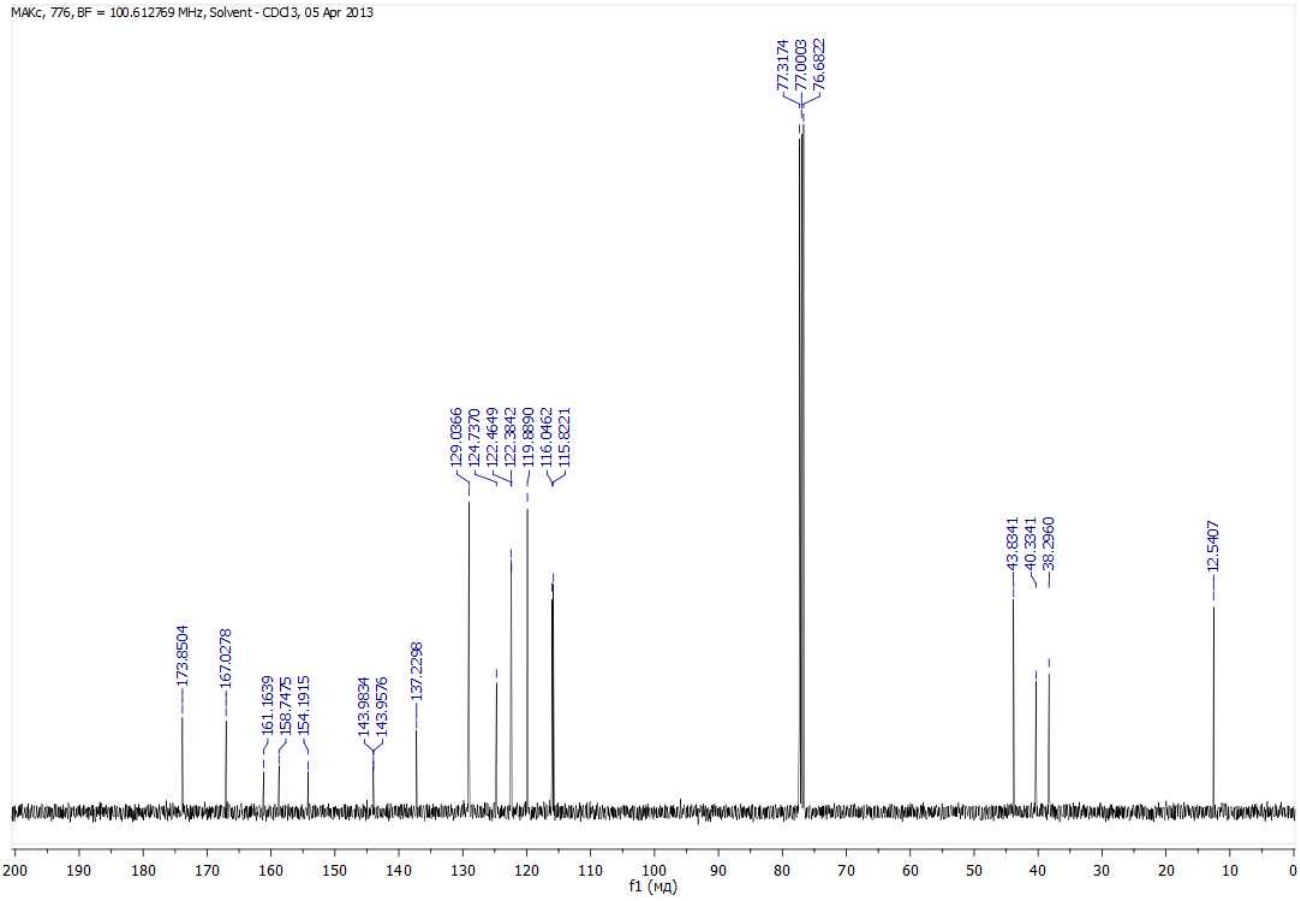

MAK, 847, BF = 400.13 MHz, Solvent - DMSO, 17 Apr 2013 T=300 K
F
S
N
N
O
H
N
O
OMe
Et
5ea
9.9690
7.4356
7.4131
7.1908
7.1856
7.1687
7.1521
7.1467
6.9697
6.9572
6.9476
6.9352
6.8707
6.8482
4.5640
4.5552
4.5399
4.5311
3.8109
3.7941
3.7762
3.7584
3.7031
3.3294
3.2444
3.2357
3.2029
3.1945
2.9314
2.9071
2.8871
2.8658
2.5046
2.5002
2.4958
1.2201
1.2025
1.1848
1.00
2.04
2.10
2.07
2.05
1.02
2.12
3.11
1.04
1.13
3.12
f1 (мд)

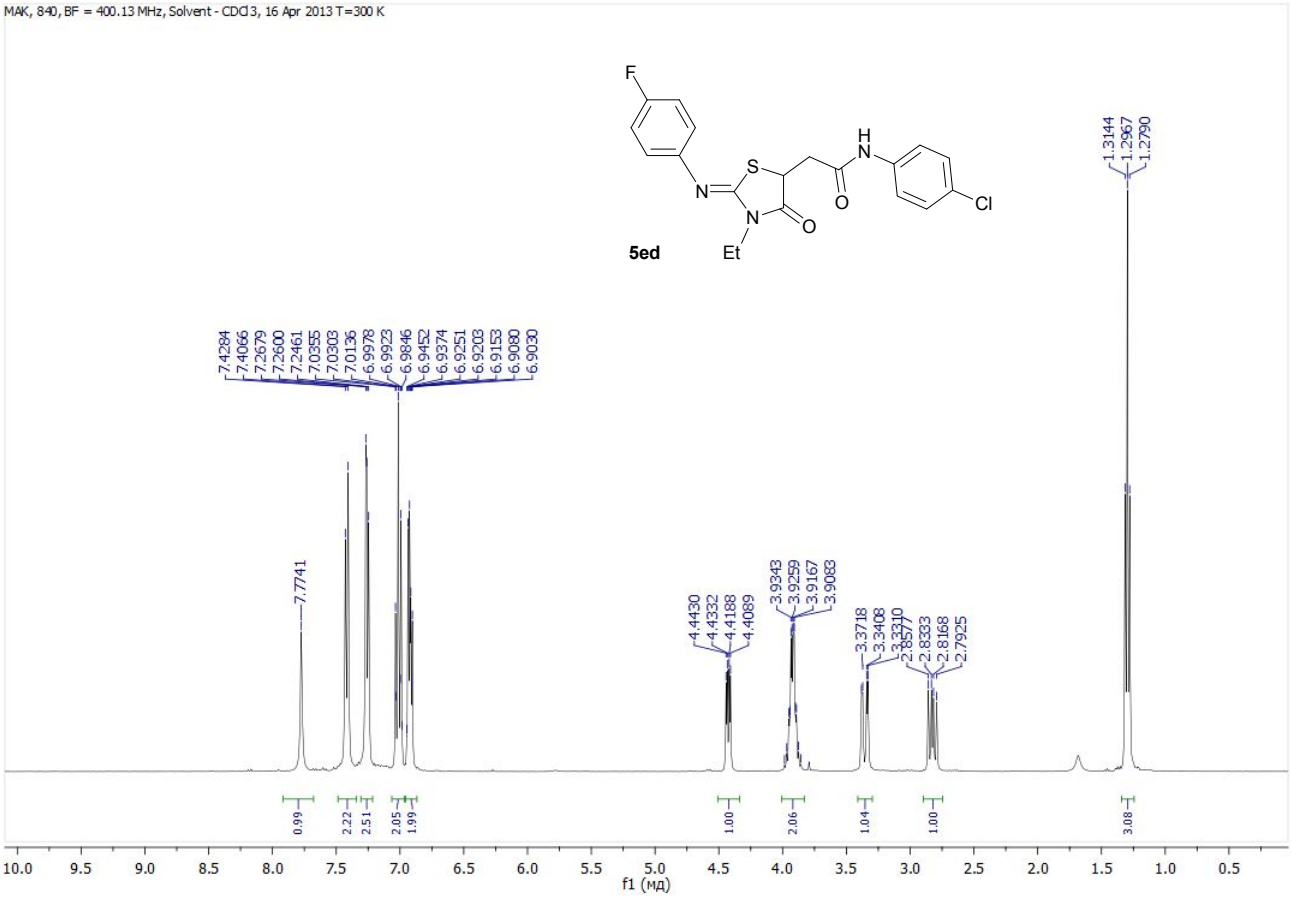

MAKc, 847, BF = 100.612769 MHz, Solvent - DMSO, 17 Apr 2013 T=300 K
173.5749
167.1407
160.1962
157.8090
155.2868
144.6358
144.6118
131.8145
122.6778
122.5953
120.6459
115.9642
115.7419
113.8593
55.1283
43.6172
40.1459
39.9969
39.1023
38.8837
38.4926
37.3758
12.2030
f1 (мд)

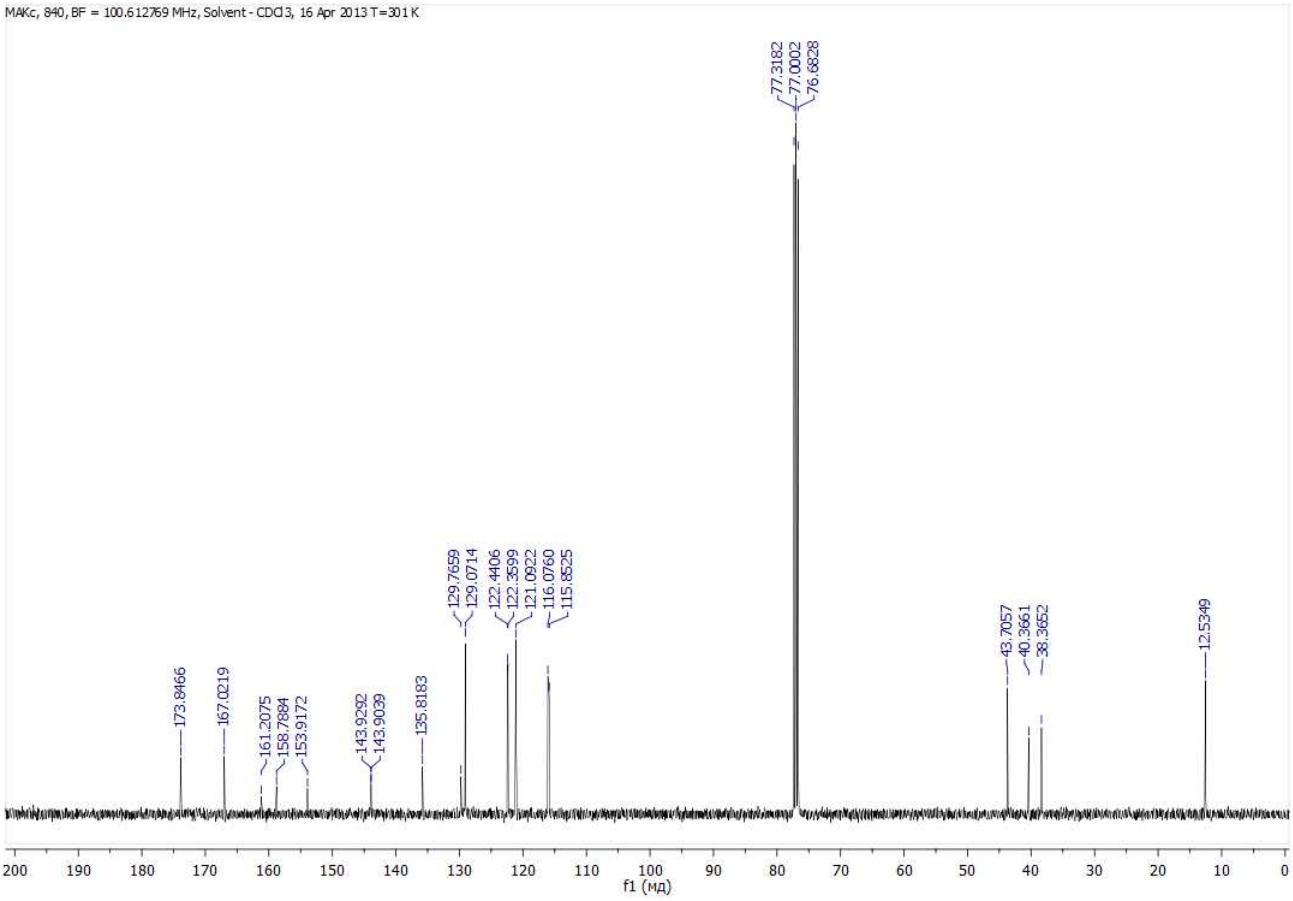

MAK, 185, BF = 400.13 MHz, Solvent - CDCl3, 08 Nov 2013 T=298 K
F
S
N
N
O
H
N
O
Et
5eb
2.2999
1.3190
1.3013
1.2836
7.4318
7.3450
7.3242
7.2605
7.1120
7.0915
7.0329
7.0276
7.0111
6.9954
6.9897
6.9822
6.9494
6.9418
6.9295
6.9245
6.9197
6.9124
6.9073
4.4534
4.4440
4.4285
4.4190
3.9375
3.9316
3.9197
3.9139
3.3736
3.3425
3.3330
2.8159
2.8004
2.7754
1.01
2.00
2.04
2.23
2.09
1.00
2.15
1.01
1.00
3.02
3.15
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
f1 (мд)

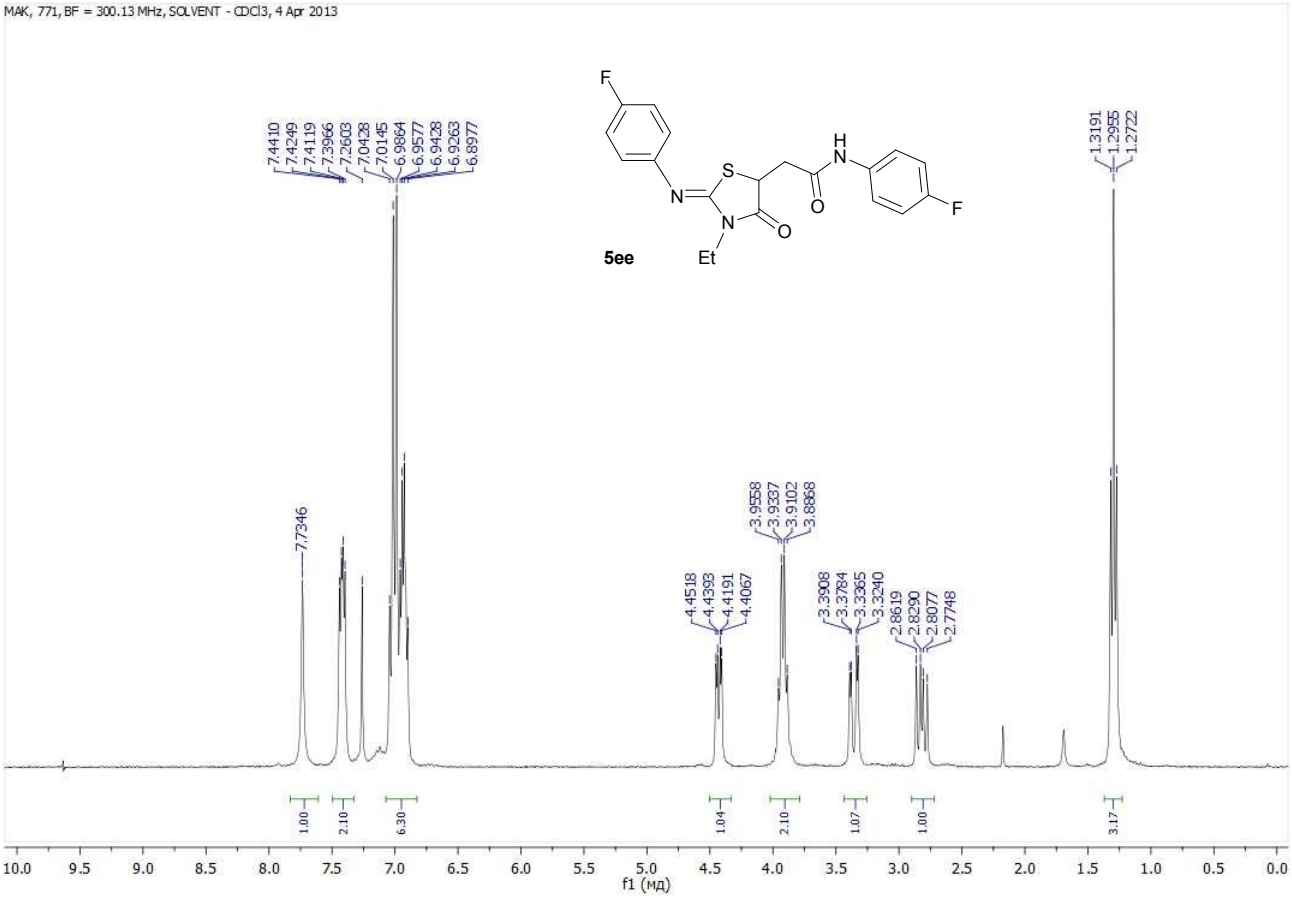

MAKc, 185, BF = 100.612769 MHz, Solvent - CDCl3, 11 Nov 2013 T=298 K
77.3165
76.9995
76.6813
134.6537
134.4274
129.5067
122.4742
122.3930
119.9707
116.0273
115.8045
173.8385
166.8712
161.1520
158.7351
154.2603
144.0040
143.9781
43.8928
40.2719
38.2691
20.8152
12.5413
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (мд)

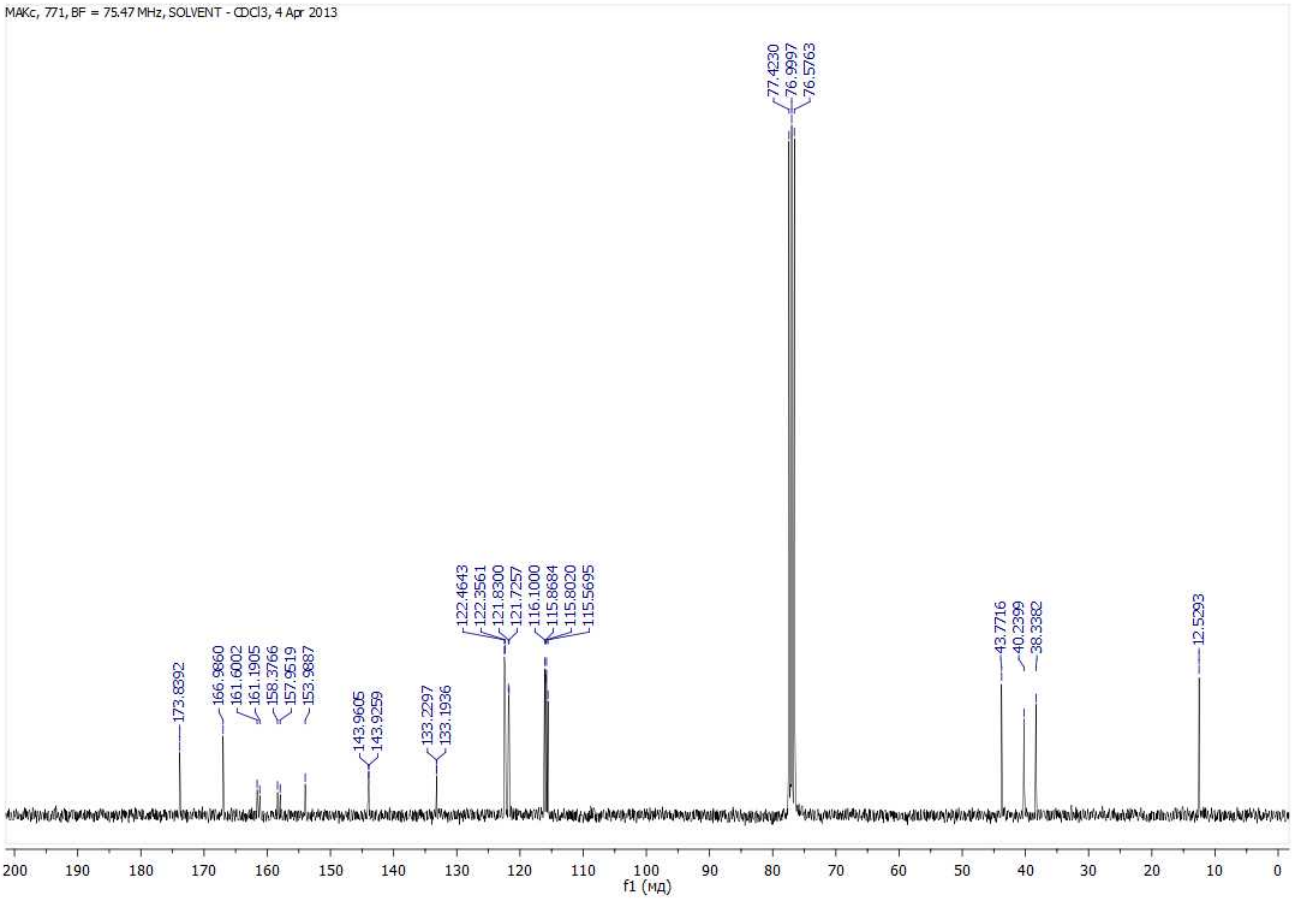

MAK, 776, BF = 400.13 MHz, Solvent - CDCl3, 05 Apr 2013
F
S
N
N
H
N
O
O
Et
5ec
7.7249
7.4672
7.4474
7.3129
7.2937
7.2738
7.2601
7.1267
7.1083
7.0899
7.0327
7.0275
7.0108
6.9949
6.9895
6.9413
6.9291
6.9243
6.9193
6.9120
6.9069
4.4475
4.4382
4.4225
4.4132
3.9271
3.9171
3.9095
3.3879
3.3564
3.3471
2.8518
2.8267
2.8111
2.7859
1.3151
1.2975
1.2797
1.00
2.12
2.13
1.13
2.03
2.00
1.00
2.09
1.05
1.00
3.18
f1 (мд)

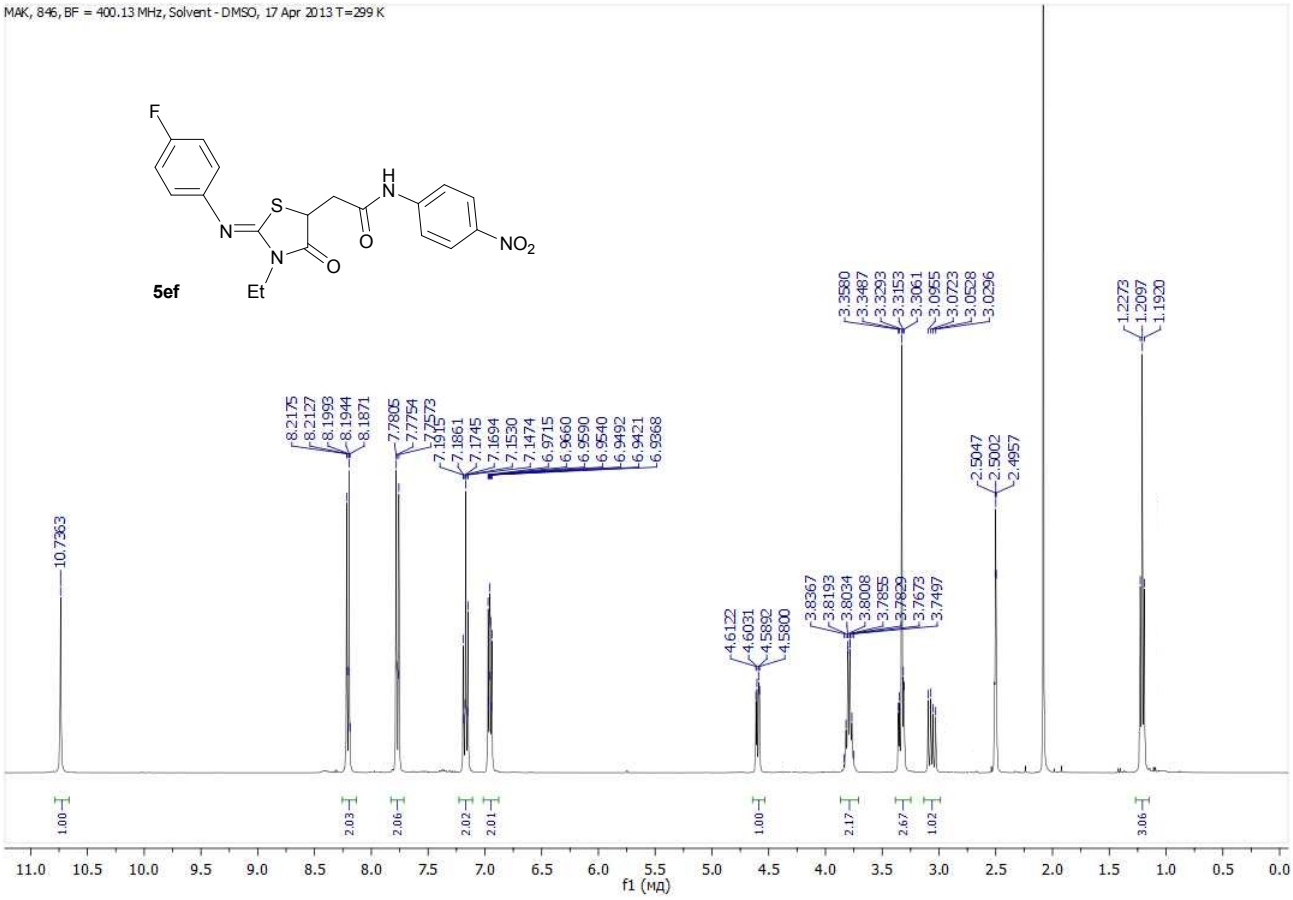

MAKc, 776, BF = 100.612769 MHz, Solvent - CDCl3, 05 Apr 2013
77.3174
77.0003
76.6822
129.0366
124.7370
122.4649
122.3842
119.8890
116.0462
115.8221
173.8504
167.0278
161.1639
158.7475
154.1915
143.9834
143.9576
137.2298
43.8841
40.3341
38.2960
12.5407
f1 (мд)

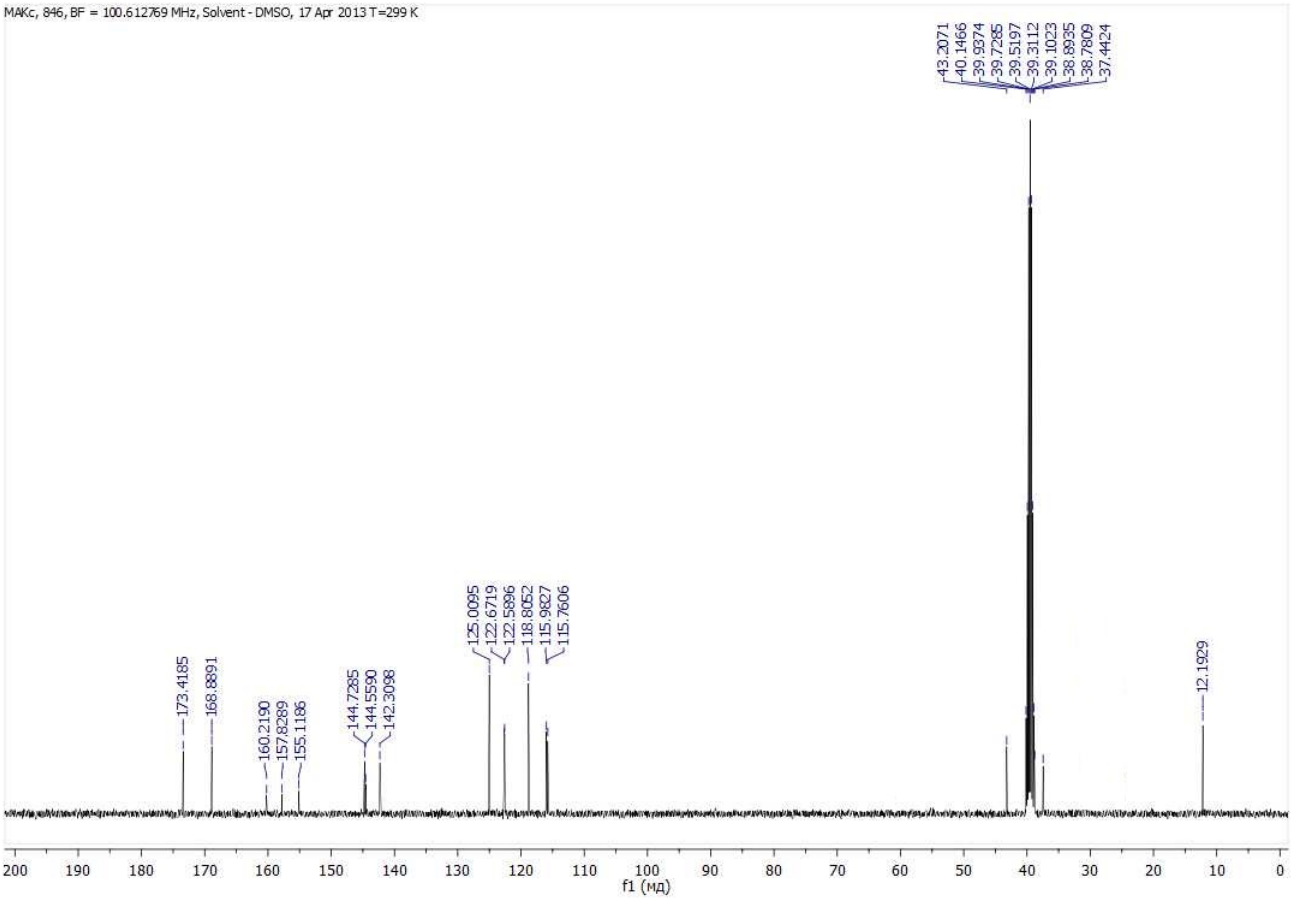

MAK, 840, BF = 400.13 MHz, Solvent - CDCl3, 16 Apr 2013 T=300 K
F
S
N
N
H
N
O
O
Cl
Et
5ed
7.4284
7.4066
7.2679
7.2600
7.2461
7.0355
7.0303
7.0136
6.9978
6.9923
6.9846
6.9452
6.9374
6.9251
6.9203
6.9153
6.9080
6.9030
7.7741
4.4430
4.4332
4.4188
4.4089
3.9343
3.9259
3.9167
3.9083
3.3718
3.3408
3.3310
2.8577
2.8333
2.8168
2.7925
1.3144
1.2967
1.2790
0.99
2.22
2.51
2.05
1.99
1.00
2.06
1.04
1.00
3.08
f1 (мд)

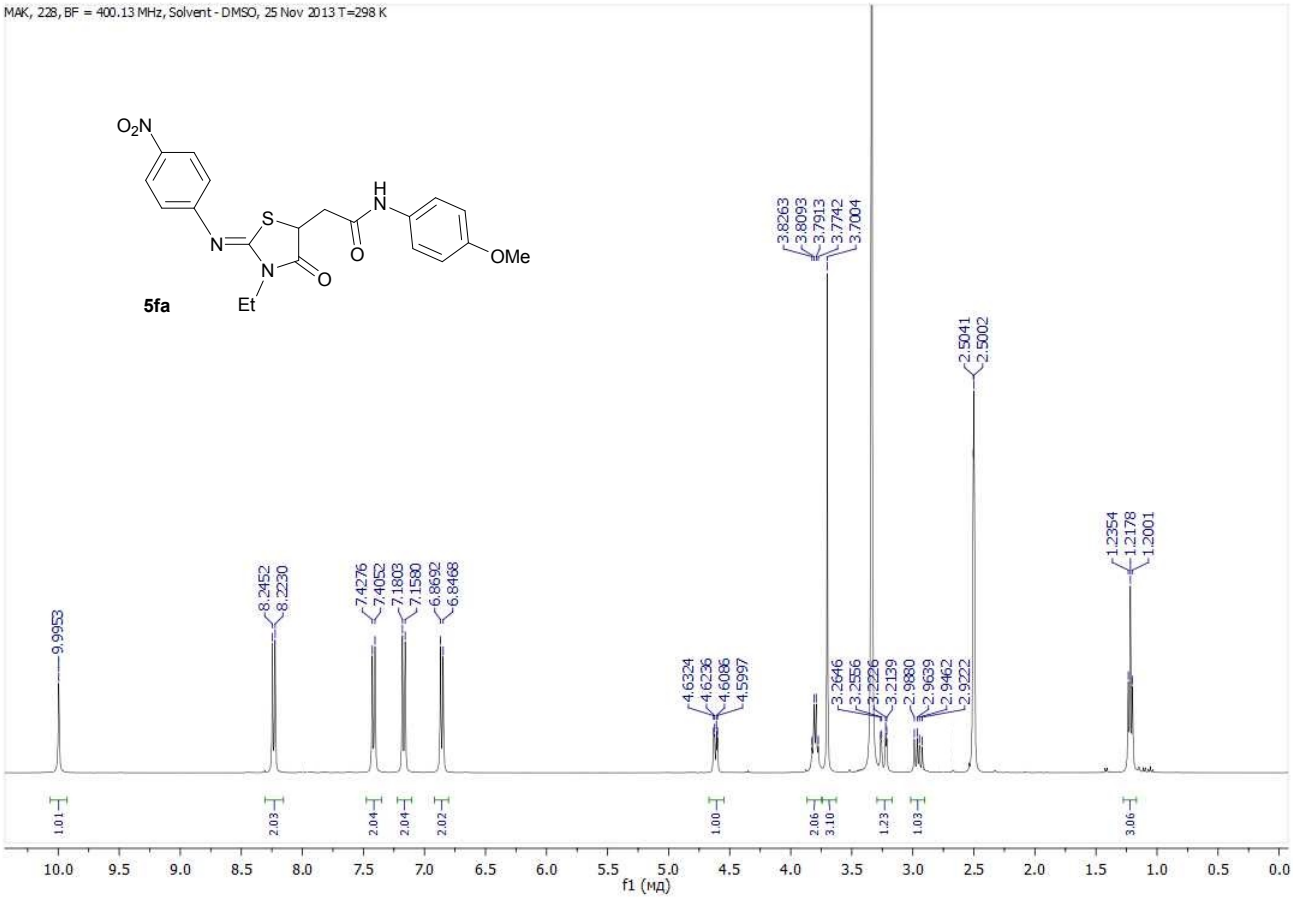

MAKc, 840, BF = 100.612769 MHz, Solvent - CDCl3, 16 Apr 2013 T=301 K
77.3182
77.0002
76.6828
173.8466
167.0219
161.2075
158.7884
153.9172
143.9292
143.9039
135.8183
129.7659
129.0714
122.4406
122.3599
121.0922
116.0760
115.8525
43.7057
40.3661
38.3652
12.5349
f1 (мд)

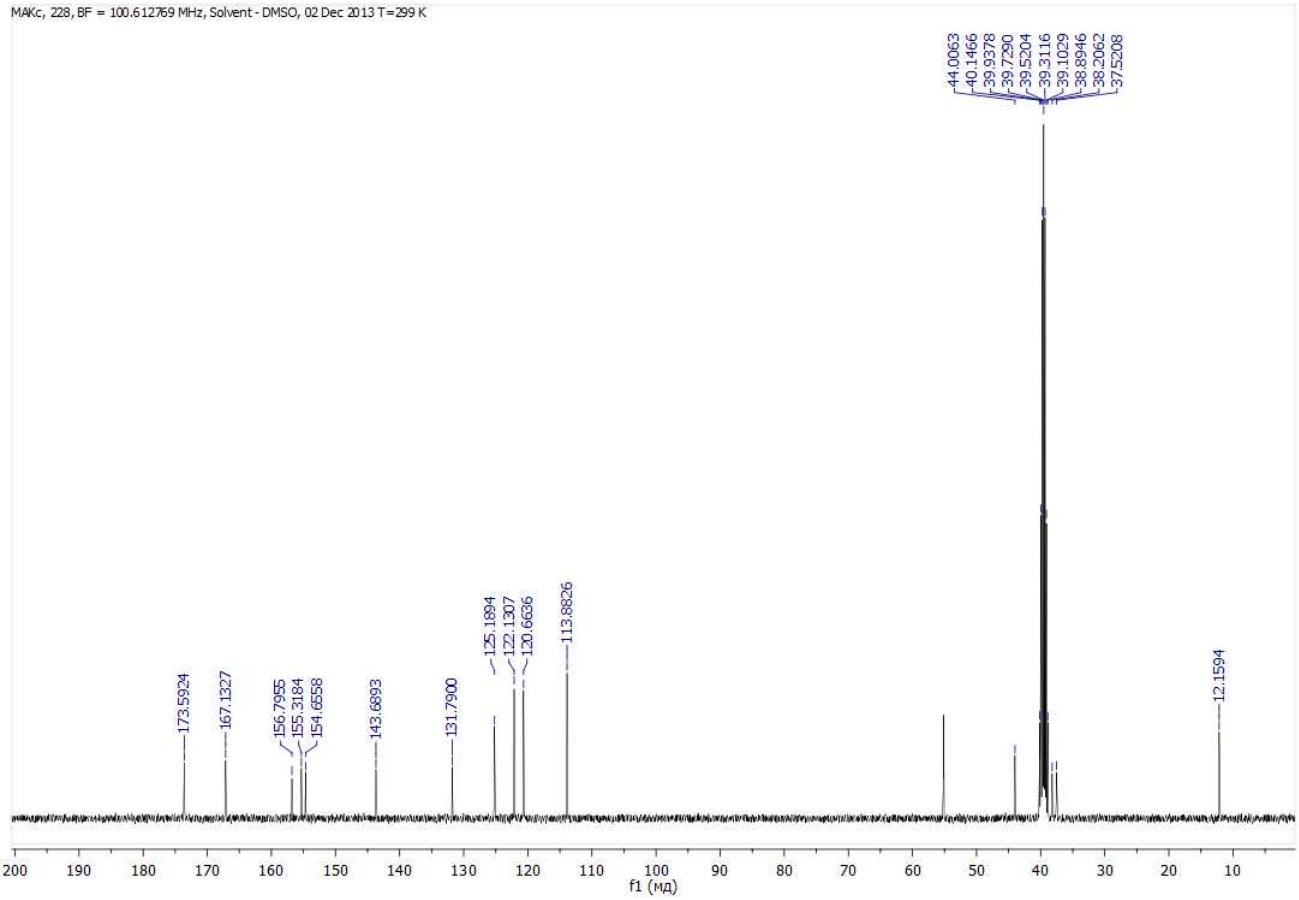

MAK, 771, BF = 300.13 MHz, SOLVENT - CDCl3, 4 Apr 2013
F
S
N
N
Et
O
H
N
O
F
5ee
7.4410
7.4249
7.4119
7.3966
7.2603
7.0428
7.0145
6.9864
6.9577
6.9428
6.9263
6.8977
7.7346
4.4518
4.4393
4.4191
4.4067
3.9558
3.9337
3.9102
3.8868
3.3908
3.3784
3.3365
3.3240
2.8619
2.8290
2.8077
2.7748
1.3191
1.2955
1.2722
1.00
2.10
6.30
1.04
2.10
1.07
1.00
3.17
f1 (мд)

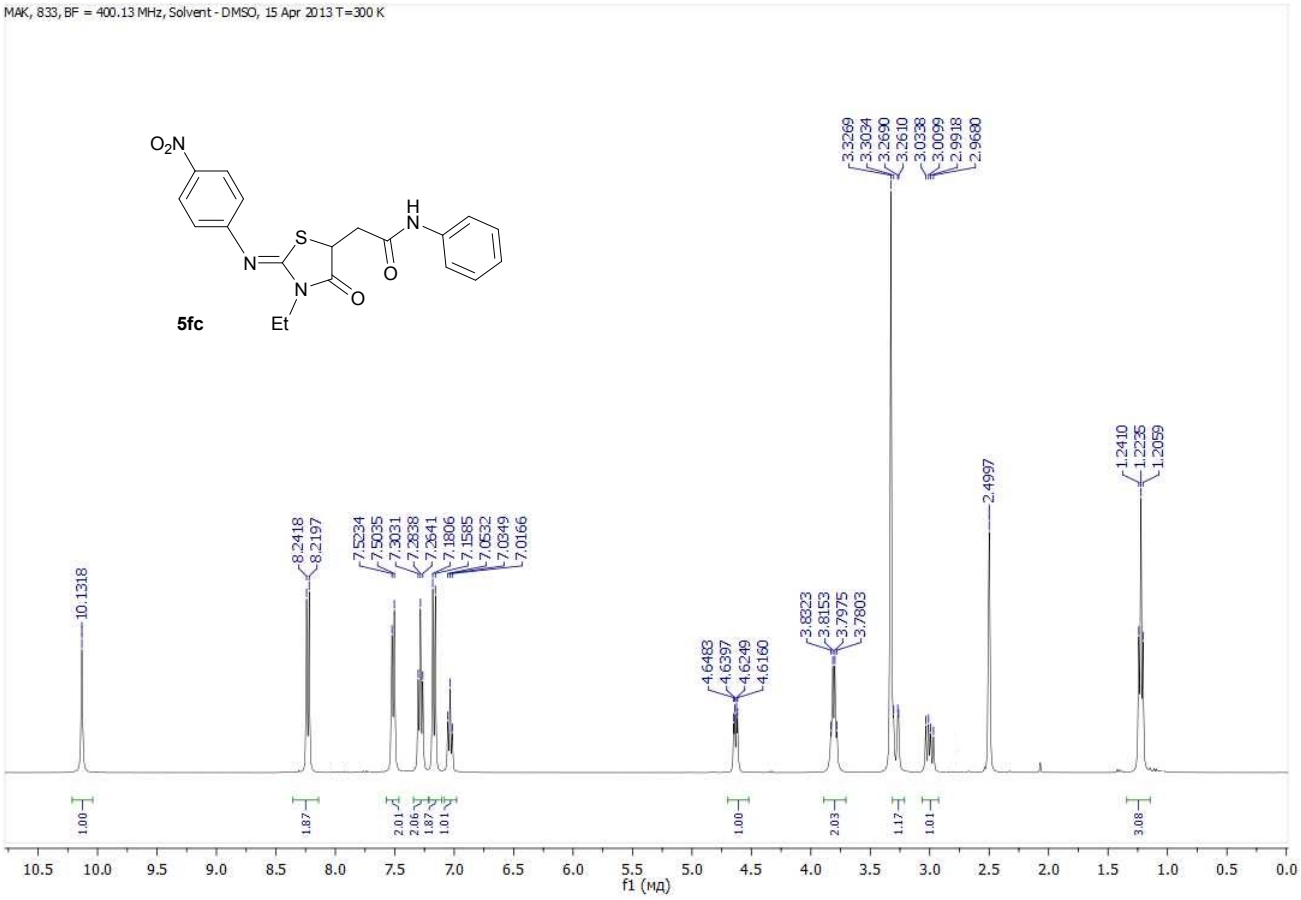

MAKc, 771, BF = 75.47 MHz, SOLVENT - CDCl3, 4 Apr 2013
77.4230
76.9997
76.5763
173.8392
166.9860
161.6002
161.1905
158.3766
157.9519
153.9887
143.9605
143.9259
133.2297
133.1936
122.4643
122.3561
121.8300
121.7257
116.1000
115.8684
115.8020
115.5695
43.7716
40.2399
38.3382
12.5293
f1 (мд)

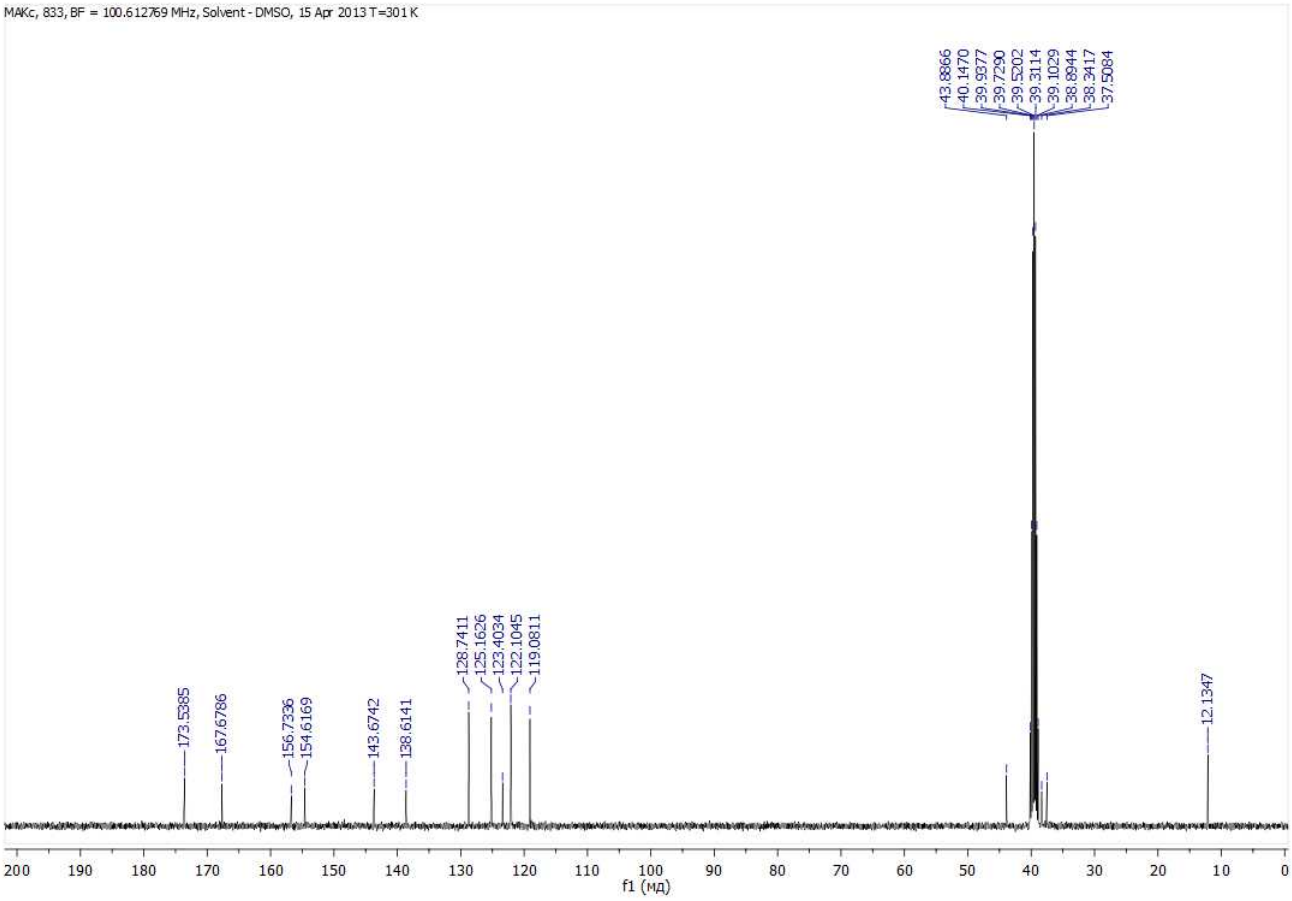

MAK, 846, BF = 400.13 MHz, Solvent - DMSO, 17 Apr 2013 T=299 K
F
S
N
H
N
O
N
O
NO2
Et
5ef
10.7363
8.2175
8.2127
8.1993
8.1944
8.1871
7.7805
7.7754
7.7573
7.1915
7.1861
7.1745
7.1694
7.1530
7.1474
6.9715
6.9660
6.9590
6.9540
6.9492
6.9421
6.9368
4.6122
4.6031
4.5892
4.5800
3.8367
3.8193
3.8034
3.8008
3.7855
3.7829
3.7673
3.7497
3.3580
3.3487
3.3293
3.3153
3.3061
3.0955
3.0723
3.0528
3.0296
2.5047
2.5002
2.4957
1.2273
1.2097
1.1920
1.00
2.03
2.06
2.02
2.01
1.00
2.17
2.67
1.02
3.06
f1 (мд)

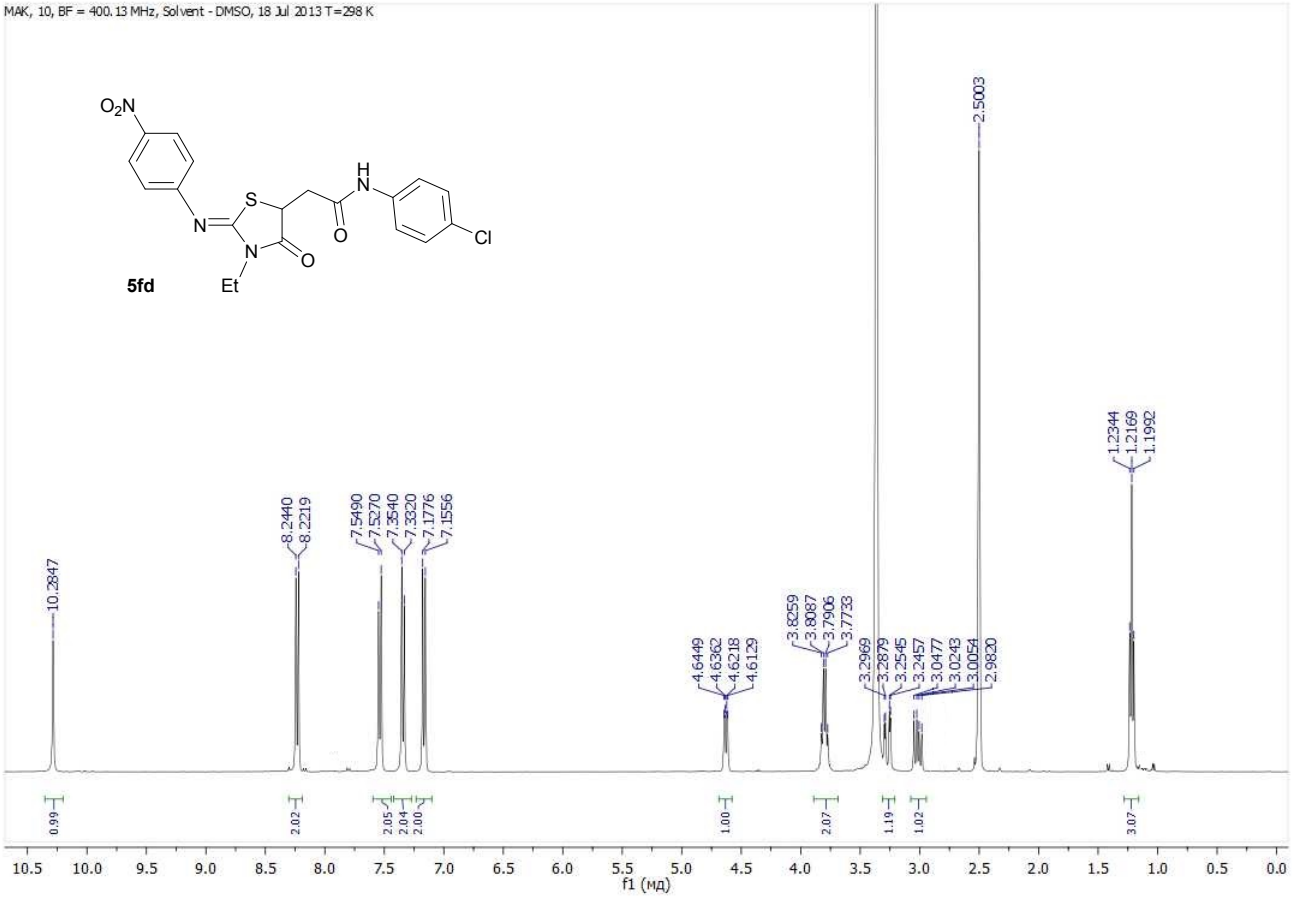

MAKc, 846, BF = 100.612769 MHz, Solvent - DMSO, 17 Apr 2013 T=299 K
43.2071
40.1466
39.9374
39.7285
39.5197
39.3112
39.1023
38.8935
38.7809
37.4424
173.4185
168.8891
160.2190
157.8289
155.1186
144.7285
144.5590
142.3098
125.0095
122.6719
122.5896
118.8052
115.9827
115.7606
12.1929
f1 (мд)

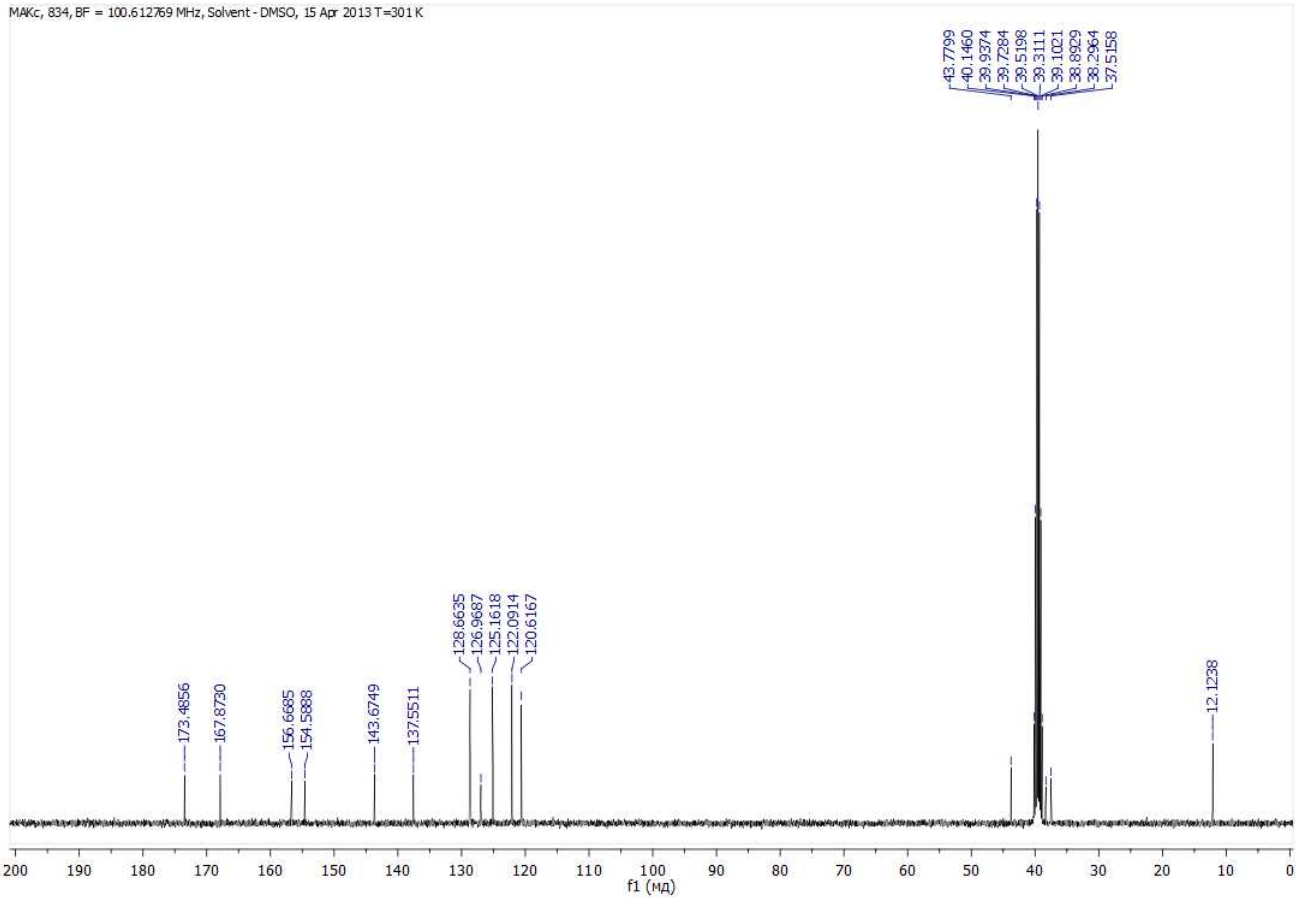

MAK, 228, BF = 400.13 MHz, Solvent - DMSO, 25 Nov 2013 T=298 K
5fa
9.9953
8.2452
8.2230
7.4276
7.4052
7.1803
7.1580
6.8692
6.8468
4.6324
4.6236
4.6086
4.5997
3.8263
3.8093
3.7913
3.7742
3.7004
3.2646
3.2556
3.2226
3.2139
2.9680
2.9639
2.9462
2.9222
2.5041
2.5002
1.2354
1.2178
1.2001
f1 (мд)

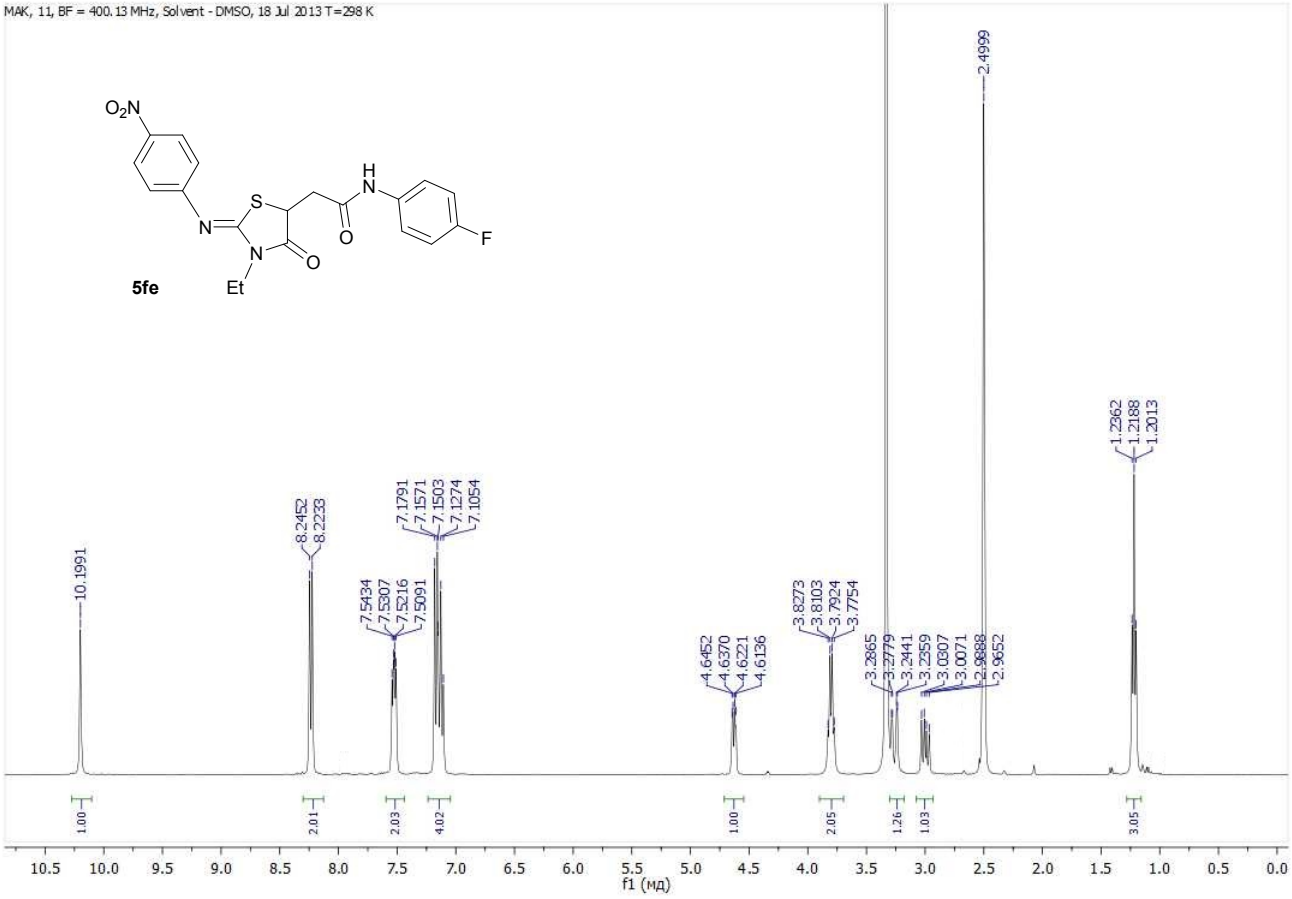

MAKc, 228, BF = 100.612769 MHz, Solvent - DMSO, 02 Dec 2013 T=299 K
173.5924
167.1327
156.7955
155.3184
154.6558
143.6893
131.7900
125.1894
122.1307
120.6636
113.8826
44.0063
40.1466
39.9378
39.7290
39.5204
39.3116
39.1029
38.8946
38.2062
37.5208
12.1594
f1 (мд)

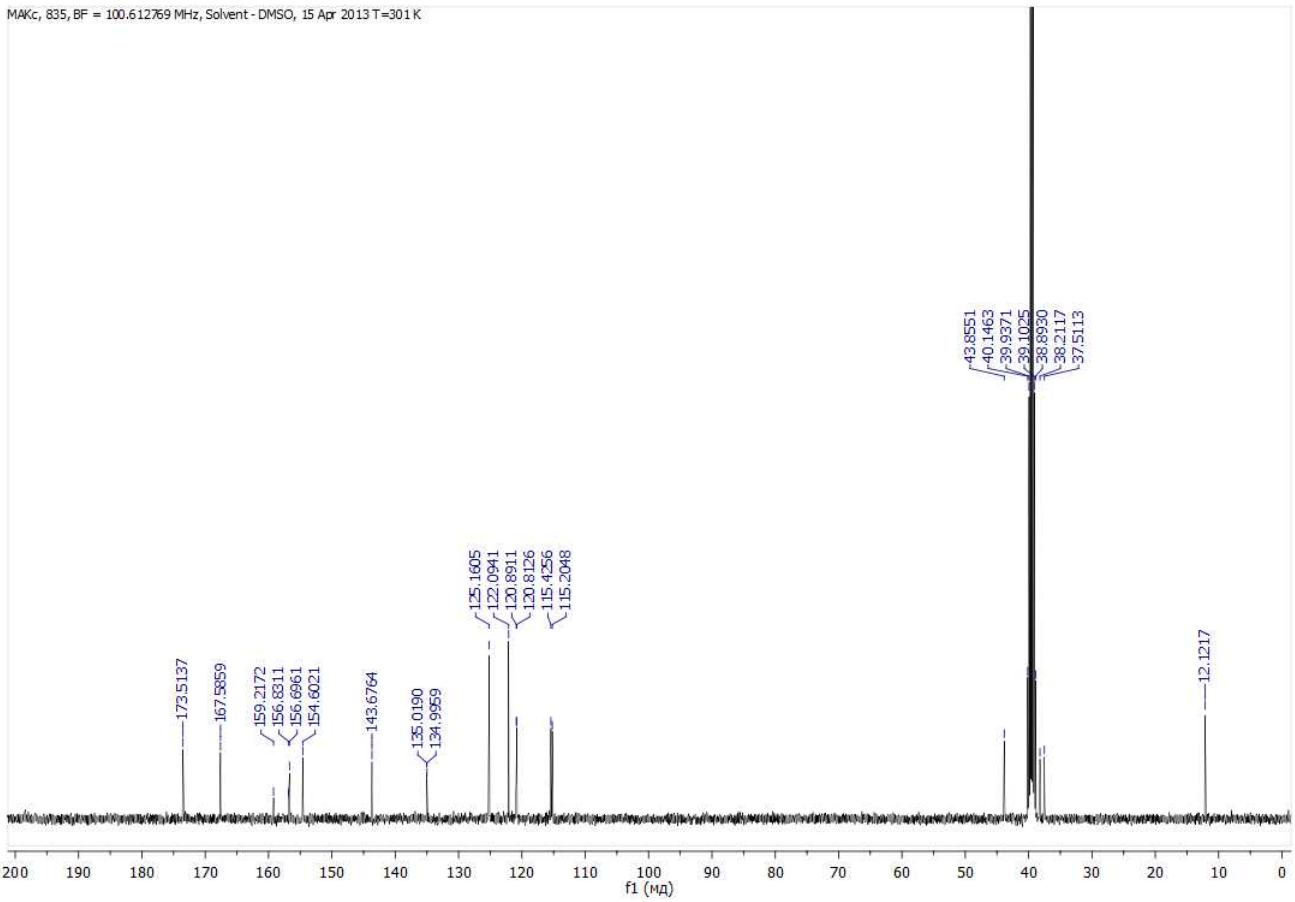

MAK, 833, BF = 400.13 MHz, Solvent - DMSO, 15 Apr 2013 T=300 K
O2N
N
S
N
O
H
N
O
Et
5fc
10.1318
8.2418
8.2197
7.5234
7.5035
7.3031
7.2838
7.2641
7.1806
7.1585
7.0532
7.0349
7.0166
4.6483
4.6397
4.6249
4.6160
3.8323
3.8153
3.7975
3.7803
3.3269
3.3034
3.2690
3.2610
3.0338
3.0099
2.9918
2.9680
2.4997
1.2410
1.2235
1.2059
1.00
1.87
2.01
2.06
1.87
1.01
1.00
2.03
1.17
1.01
3.08
f1 (мд)

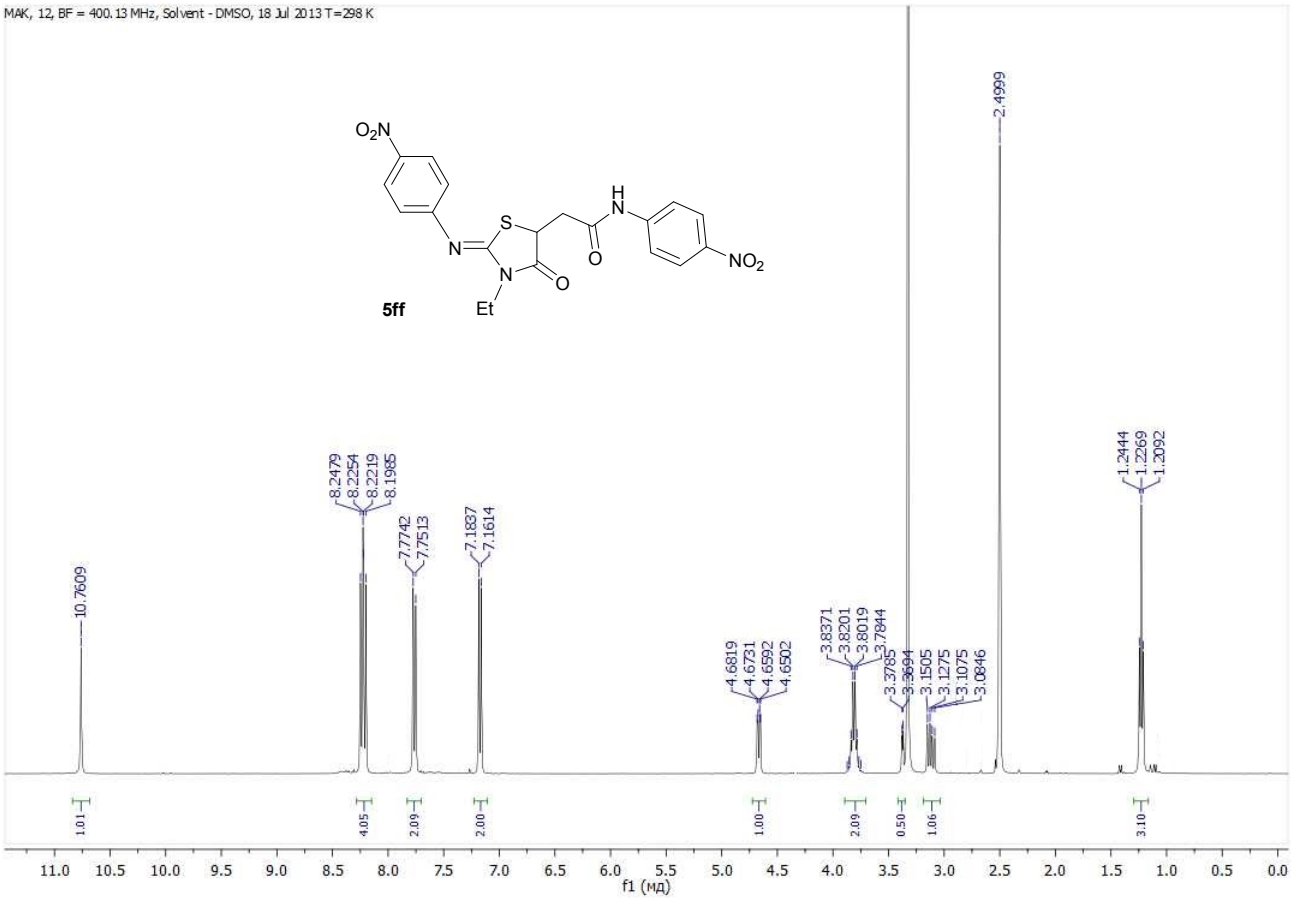

MAKc, 833, BF = 100.612769 MHz, Solvent - DMSO, 15 Apr 2013 T=301 K
43.8866
40.1470
39.9377
39.7290
39.5202
39.3114
39.1029
38.8944
38.3417
37.5084
173.5385
167.6786
156.7336
154.6169
143.6742
138.6141
128.7411
125.1626
123.4034
122.1045
119.0811
12.1347
f1 (мд)

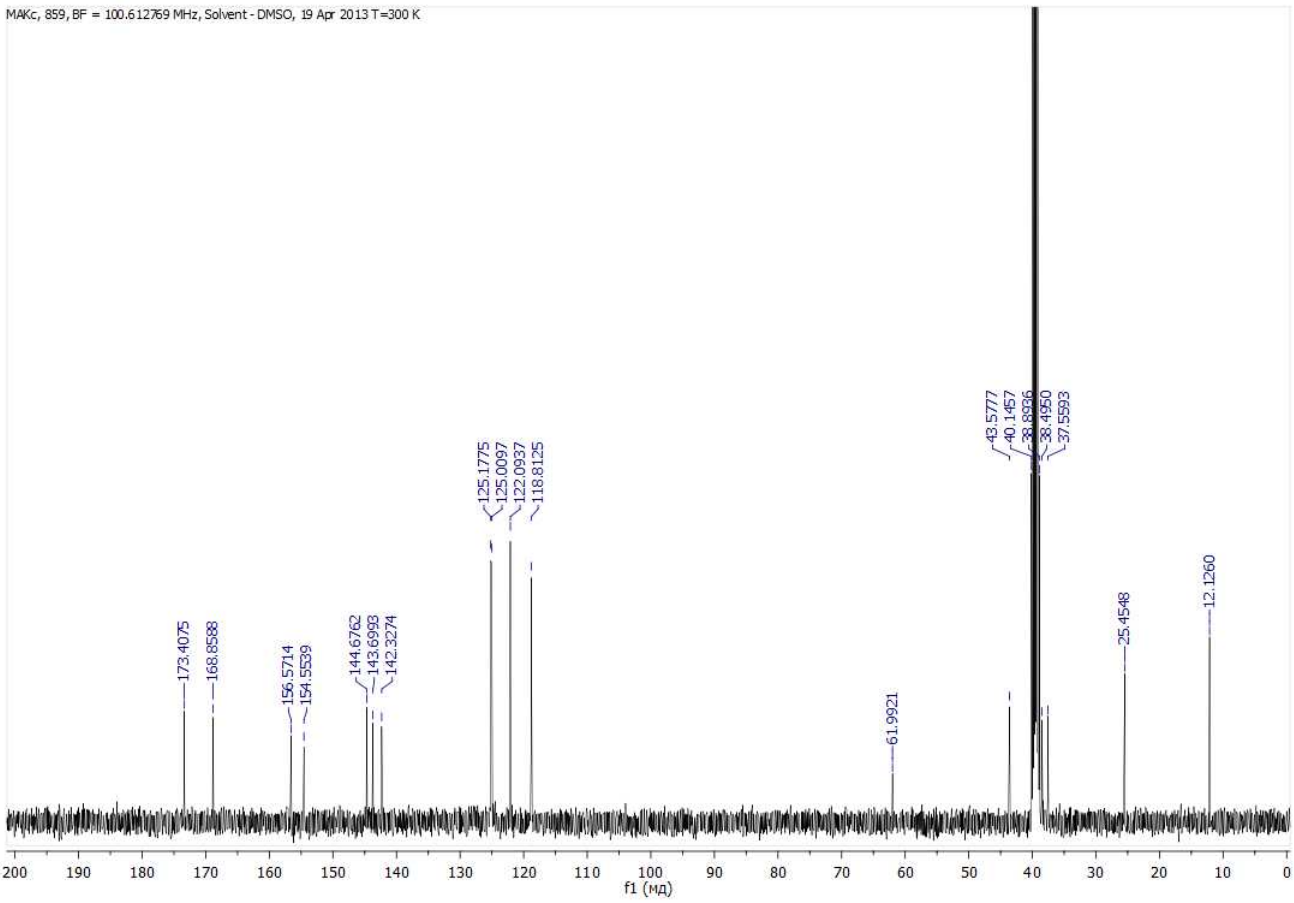

MAK, 10, BF = 400.13 MHz, Solvent - DMSO, 18 Jul 2013 T=298 K
O2N
S
N
N
O
H
N
O
Cl
Et
5fd
2.5003
1.2344
1.2169
1.1992
10.2847
8.2440
8.2219
7.5490
7.5270
7.3540
7.3320
7.1776
7.1556
4.6449
4.6362
4.6218
4.6129
3.8259
3.8087
3.7906
3.7733
3.2969
3.2879
3.2545
3.2457
3.0477
3.0243
3.0054
2.9820
0.99
2.02
2.05
2.04
2.00
1.00
2.07
1.19
1.02
3.07
f1 (мд)

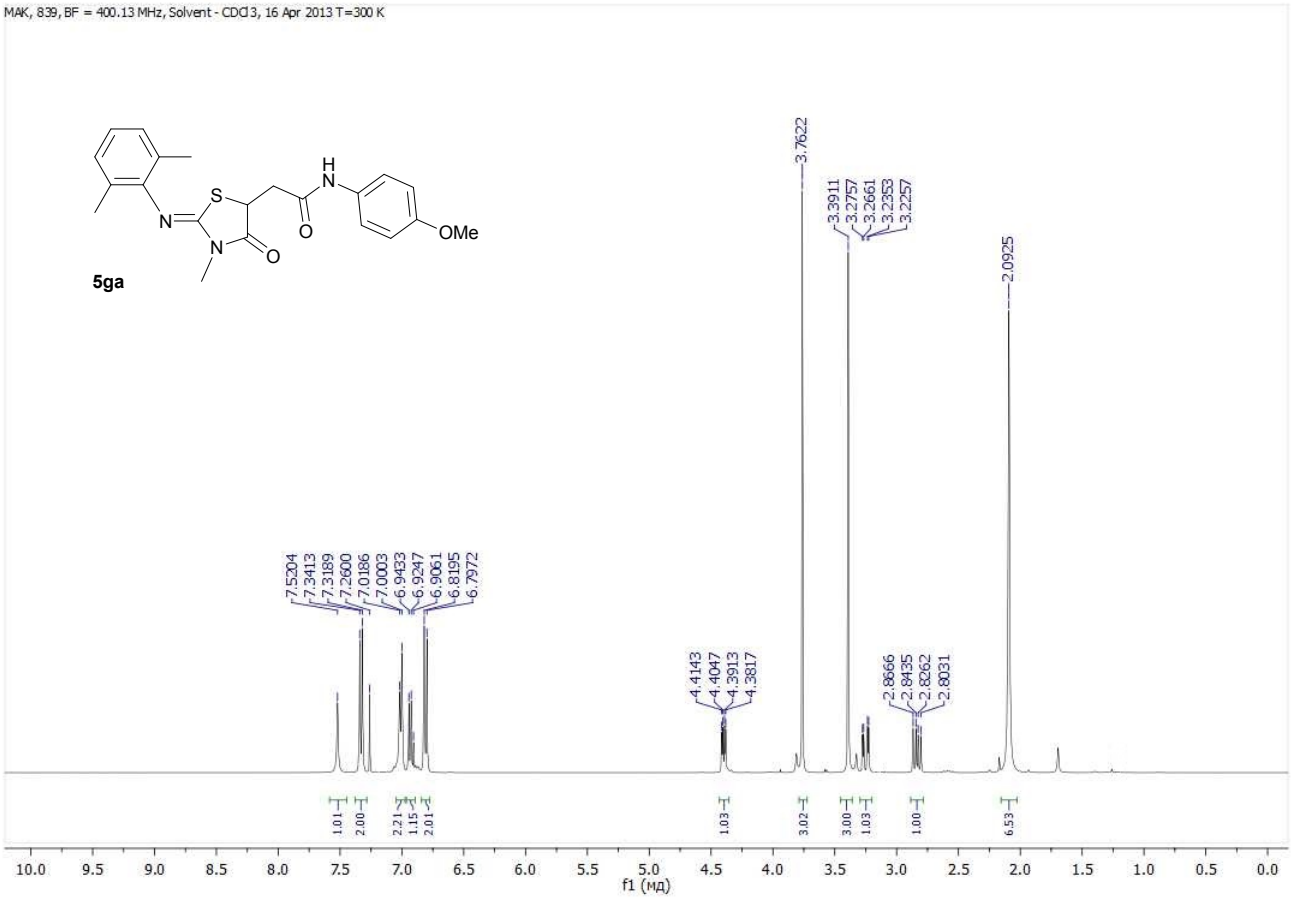

MAKc, 834, BF = 100.612769 MHz, Solvent - DMSO, 15 Apr 2013 T=301 K
43.7799
40.1460
39.9374
39.7284
39.5198
39.3111
39.1021
38.8929
38.2964
37.5158
173.4856
167.8730
156.6685
154.5888
143.6749
137.5511
128.6635
126.9687
125.1618
122.0914
120.6167
12.1238
f1 (мд)

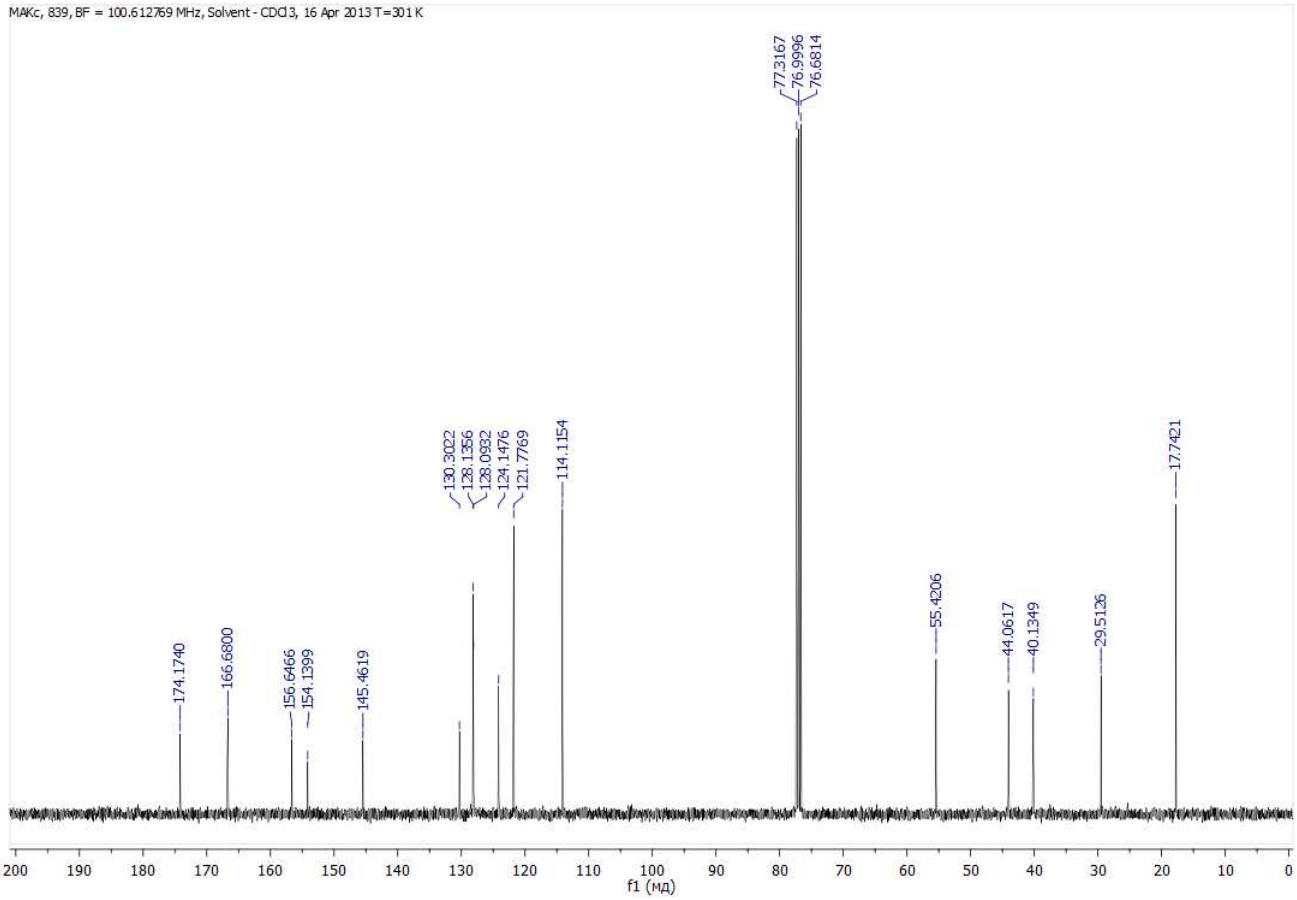

MAK, 11, BF = 400.13 MHz, Solvent - DMSO, 18 Jul 2013 T=298 K
5fe
10.1991
8.2452
8.2233
7.5434
7.5307
7.5216
7.5091
7.1791
7.1571
7.1503
7.1274
7.1054
4.6452
4.6370
4.6221
4.6136
3.8273
3.8103
3.7924
3.7754
3.2865
3.2779
3.2441
3.2359
3.0307
3.0071
2.9888
2.9652
2.4999
1.2962
1.2188
1.2013
f1 (мд)

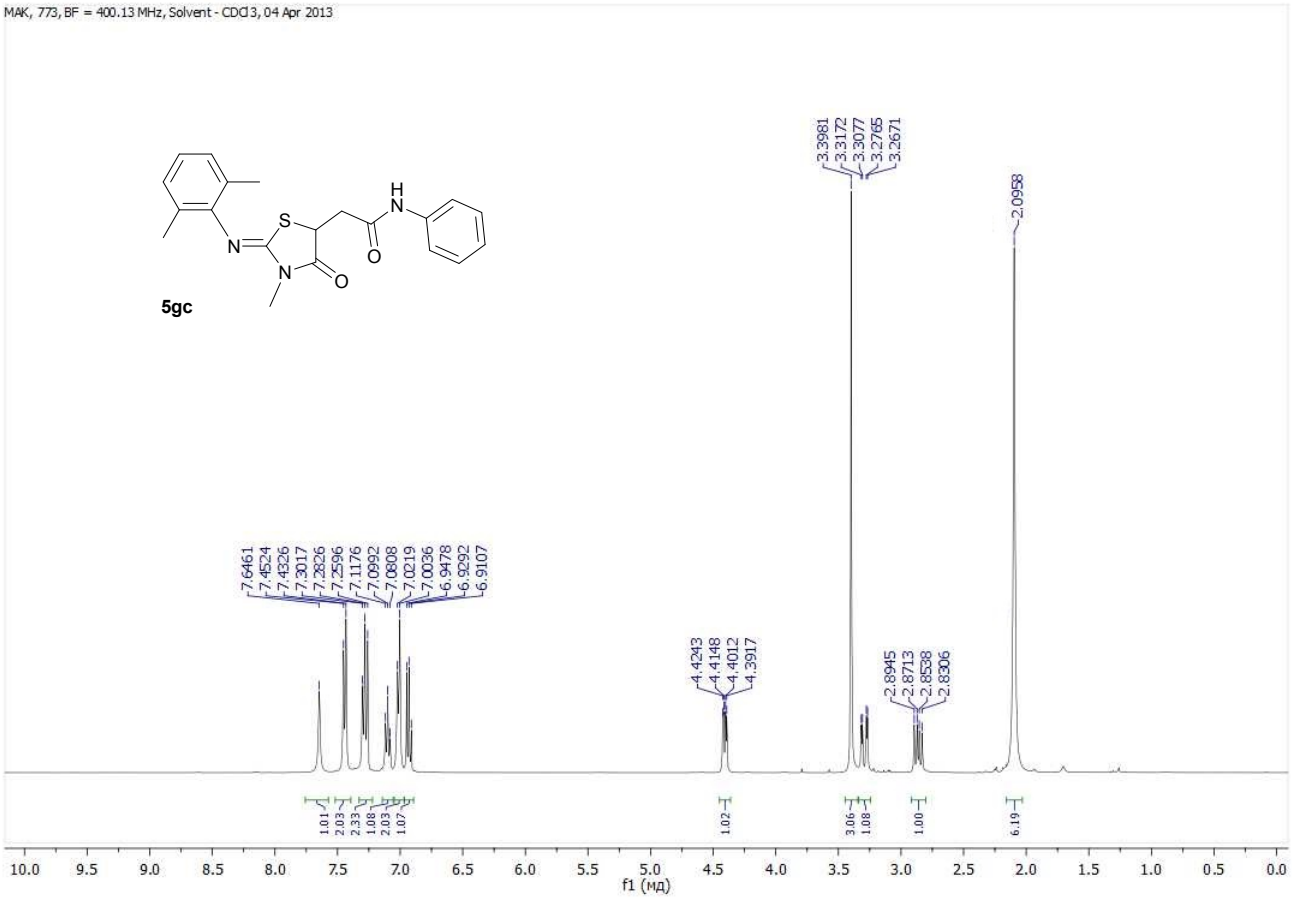

MAKc, 835, BF = 100.612769 MHz, Solvent - DMSO, 15 Apr 2013 T=301 K
173.5137
167.5859
159.2172
156.8311
156.6961
154.6021
143.6764
135.0190
134.9959
125.1605
122.0941
120.8911
120.8126
115.4256
115.2048
43.8551
40.1463
39.9371
39.1025
38.8930
38.2117
37.5113
12.1217
f1 (мд)

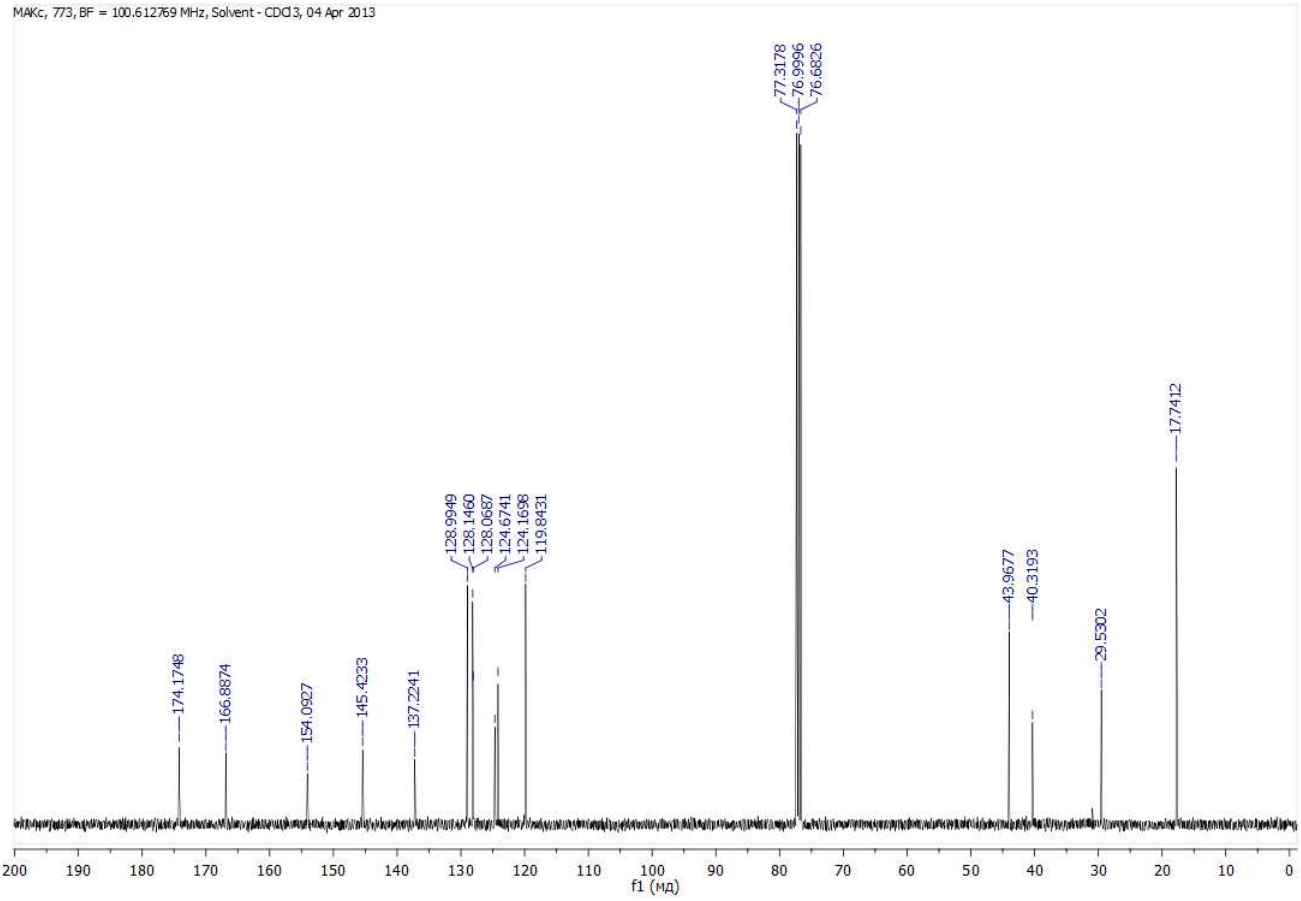

MAK, 12, BF = 400.13 MHz, Solvent - DMSO, 18 Jul 2013 T=298 K
5ff
10.7609
8.2479
8.2254
8.2219
8.1985
7.7742
7.7513
7.1837
7.1614
4.6819
4.6731
4.6592
4.6502
3.8371
3.8201
3.8019
3.7844
3.3785
3.3694
3.1505
3.1275
3.1075
3.0846
2.4999
1.2444
1.2269
1.2092
f1 (мд)

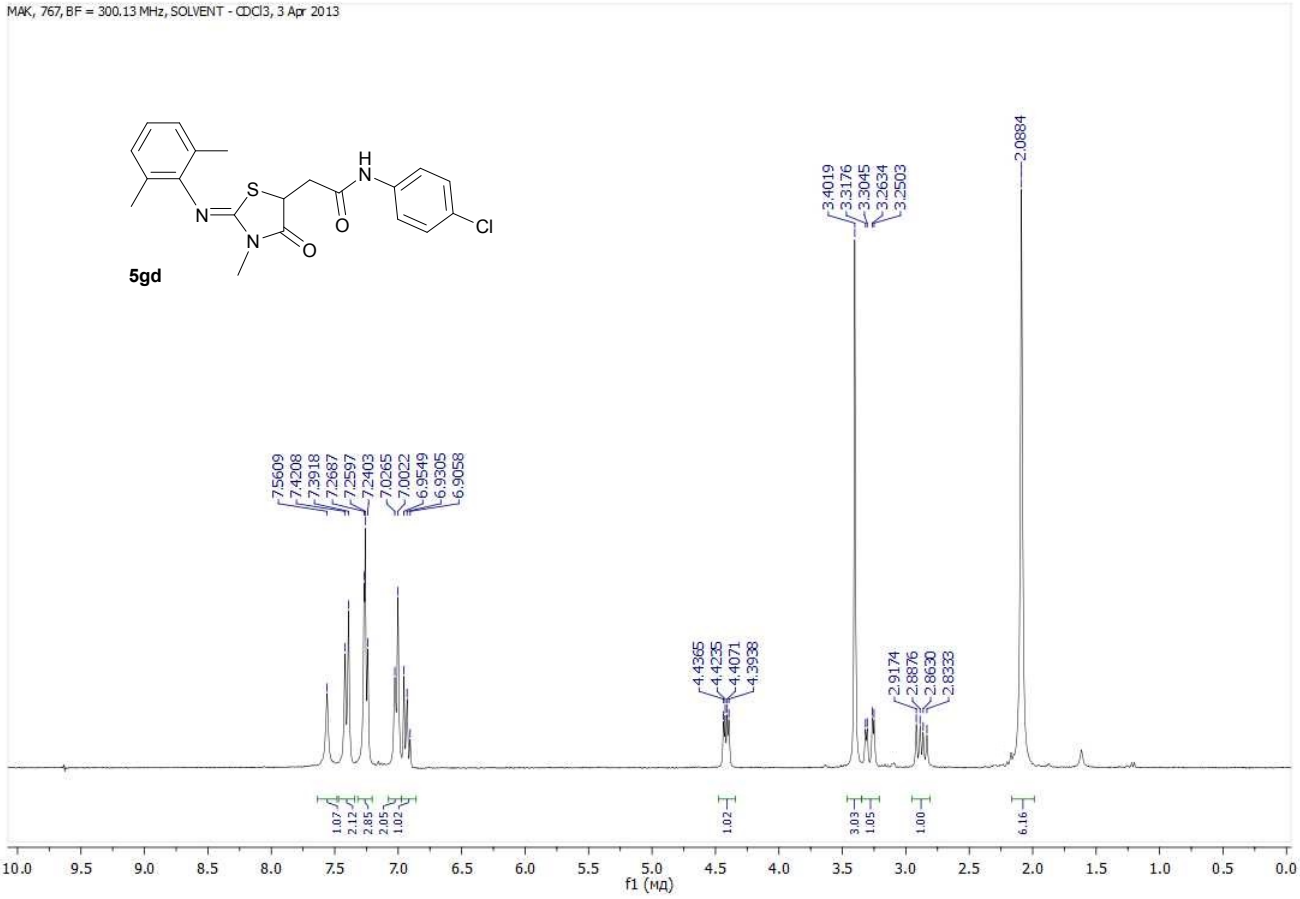

MAKc, 859, BF = 100.612769 MHz, Solvent - DMSO, 19 Apr 2013 T=300 K
173.4075
168.8588
156.5714
154.5539
144.6762
143.6993
142.3274
125.1775
125.0097
122.0937
118.8125
61.9921
43.5777
40.1457
39.8936
39.4950
37.5593
25.4548
12.1260
f1 (мд)

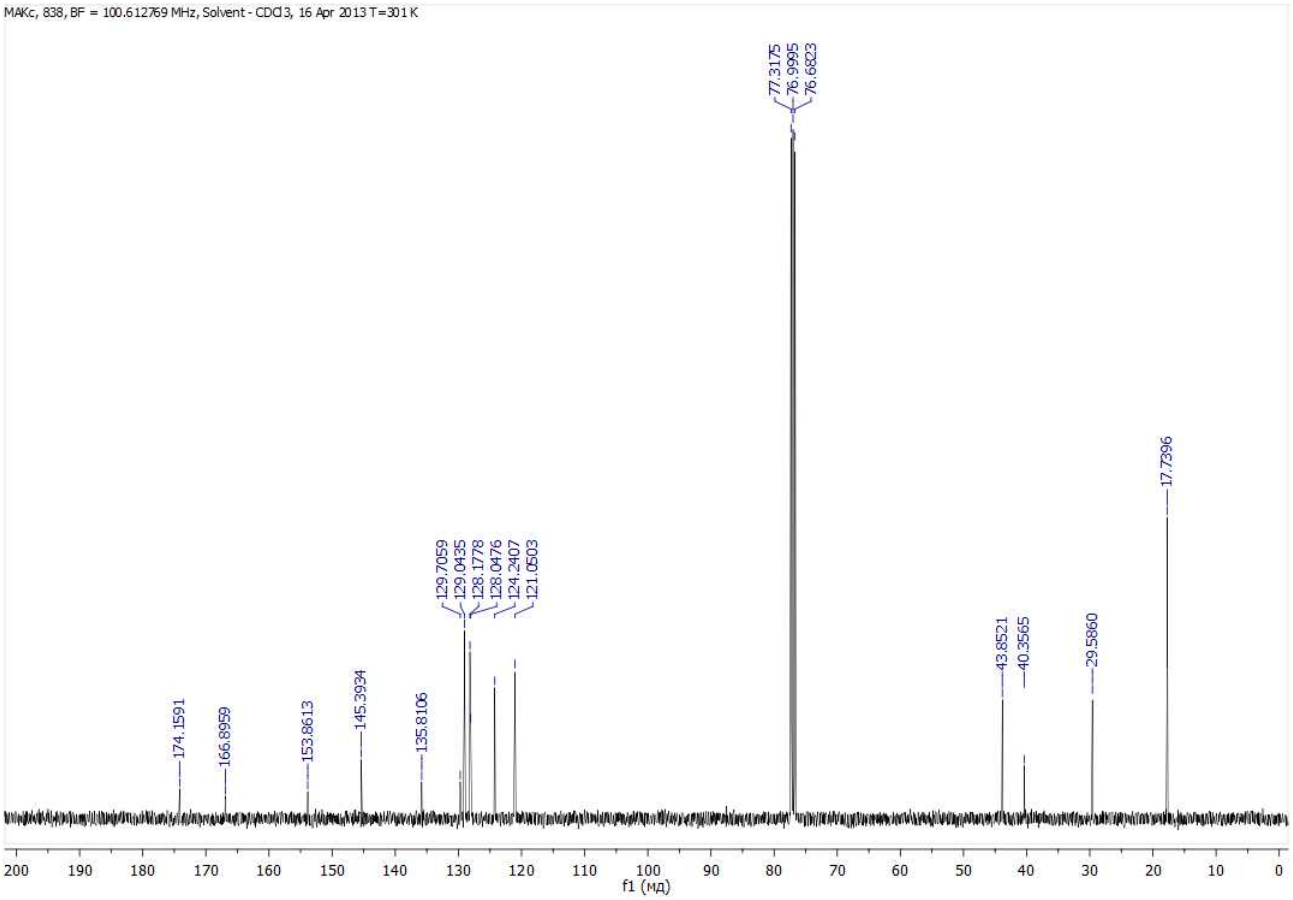

MAK, 839, BF = 400.13 MHz, Solvent - CDCl3, 16 Apr 2013 T=300 K
5ga
3.7622
3.3911
3.2757
3.2661
3.2353
3.2257
2.0925
7.5204
7.3413
7.3189
7.2600
7.0186
7.0003
6.9433
6.9247
6.9061
6.8195
6.7972
4.4143
4.4047
4.3913
4.3817
2.8666
2.8435
2.8262
2.8031
1.01
2.00
2.21
1.15
2.01
1.03
3.02
3.00
1.03
1.00
6.53
f1 (мд)

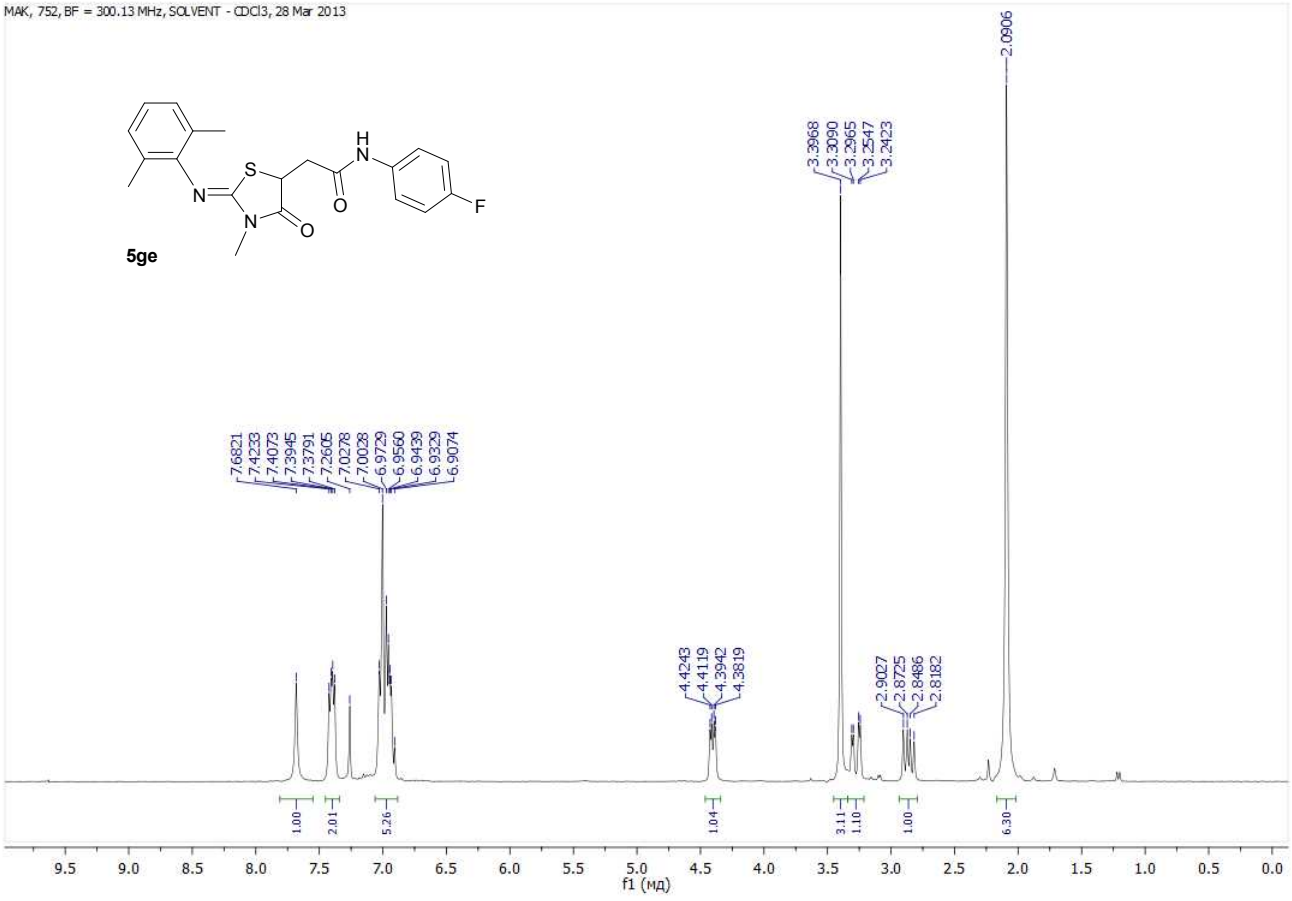

MAKc, 839, BF = 100.612769 MHz, Solvent - CDCl3, 16 Apr 2013 T=301 K
77.3167
76.9996
76.6814
130.3022
128.1356
128.0932
124.1476
121.7769
114.1154
55.4206
44.0617
40.1349
29.5126
17.7421
174.1740
166.6800
156.6466
154.1399
145.4619
f1 (мд)

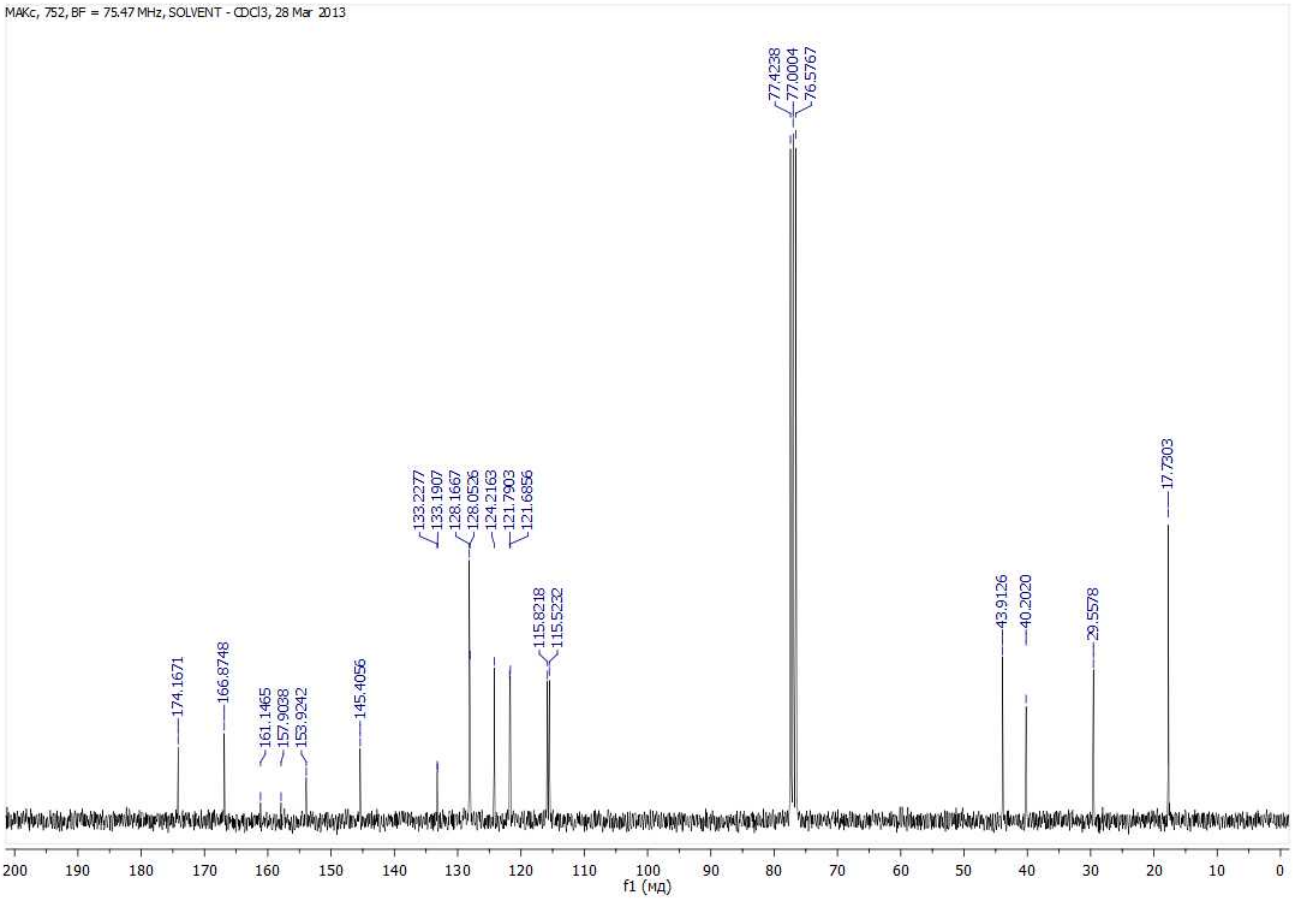

MAK, 773, BF = 400.13 MHz, Solvent - CDCl3, 04 Apr 2013
5gc
7.6461
7.4524
7.4326
7.3017
7.2826
7.2596
7.1176
7.0992
7.0808
7.0219
7.0036
6.9478
6.9292
6.9107
4.4243
4.4148
4.4012
4.3917
3.3981
3.3172
3.3077
3.2765
3.2671
2.8945
2.8713
2.8538
2.8306
2.0958
1.01
2.03
2.33
1.08
2.03
1.07
1.02
3.06
1.08
1.00
6.19
f1 (мд)

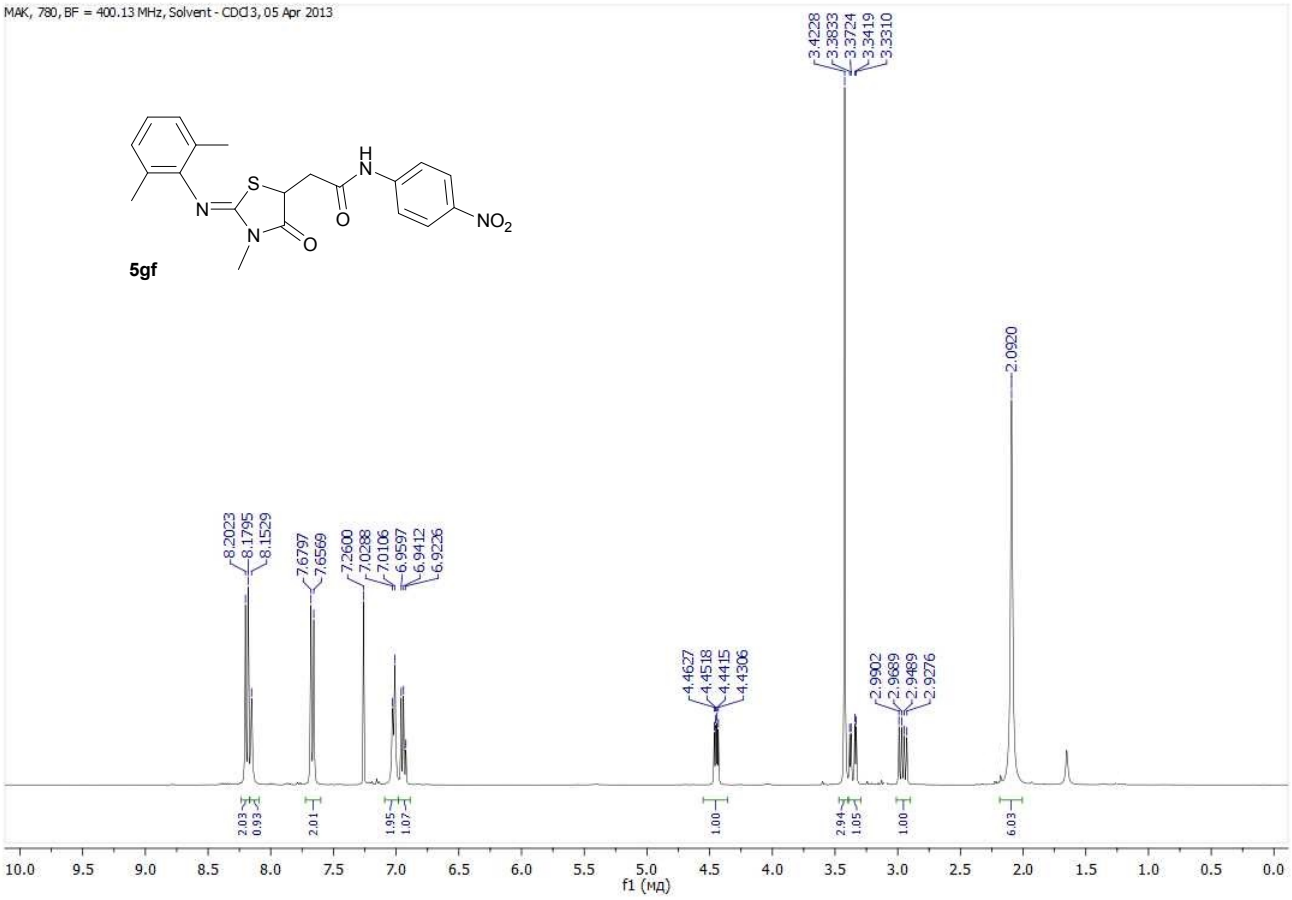

MAKc, 773, BF = 100.612769 MHz, Solvent - CDCl3, 04 Apr 2013
77.3178
76.9996
76.6826
174.1748
166.8874
154.0927
145.4233
137.2241
128.9949
128.1460
128.0687
124.6741
124.1698
119.8431
43.9677
40.3193
29.5302
17.7412
f1 (мд)

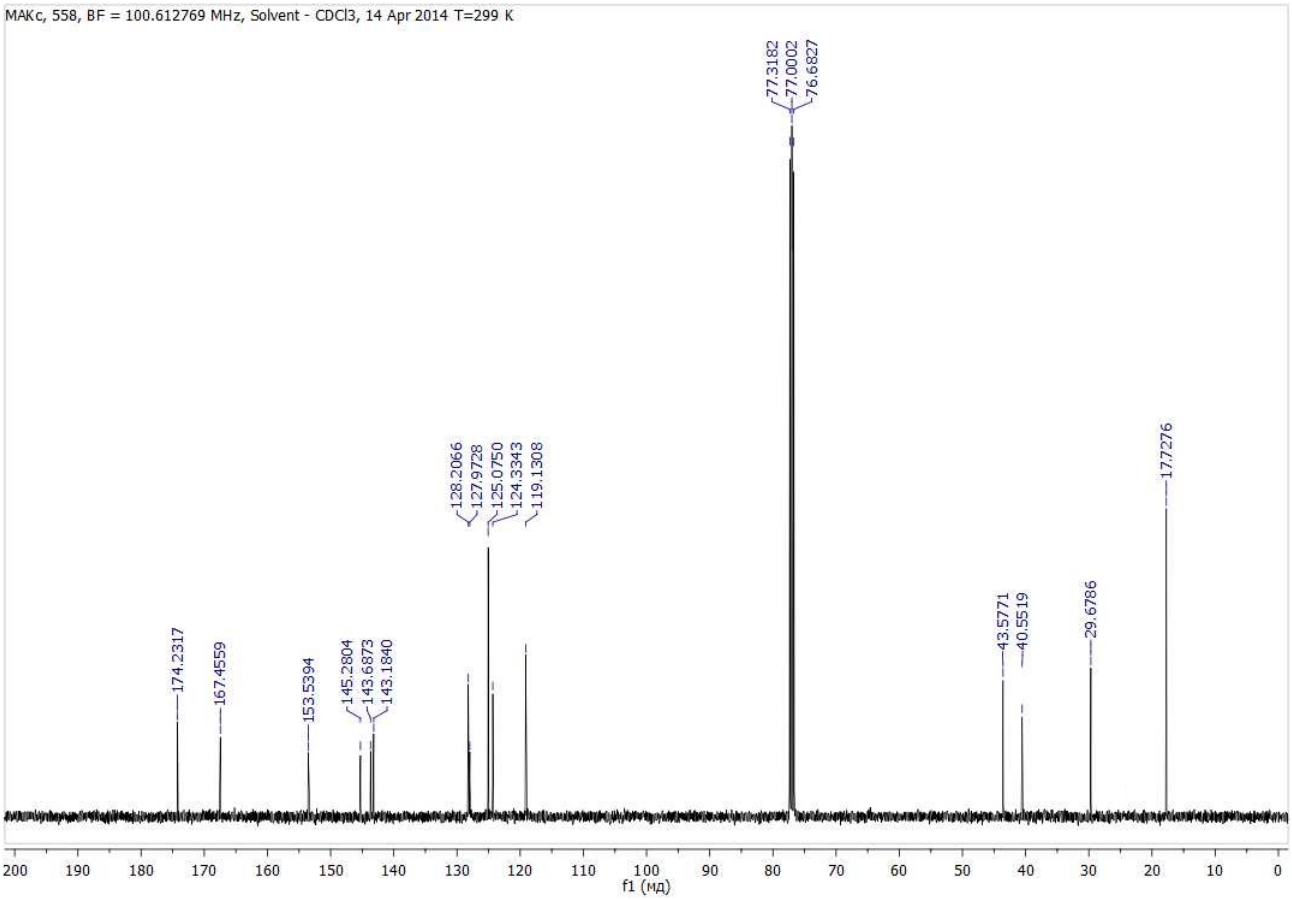

MAK, 767, BF = 300.13 MHz, SOLVENT - CDCl3, 3 Apr 2013
5gd
7.5609
7.4208
7.3918
7.2687
7.2597
7.2403
7.0265
7.0022
6.9549
6.9305
6.9058
4.4365
4.4235
4.4071
4.3938
3.4019
3.3176
3.3045
3.2634
3.2503
2.9174
2.8876
2.8630
2.8333
2.0884
1.07
2.12
2.85
2.05
1.02
1.02
3.03
1.05
1.00
6.16
f1 (мд)

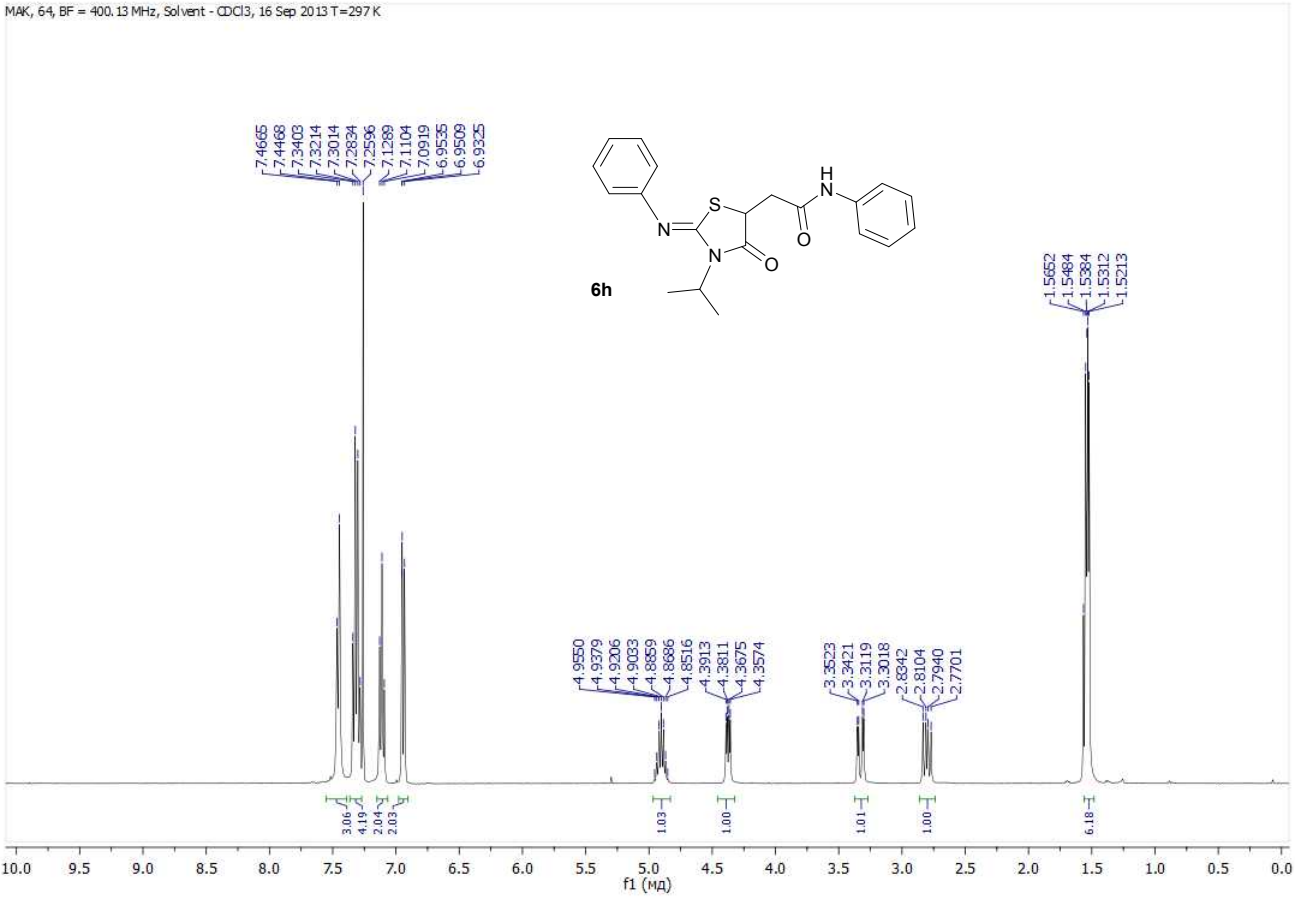

MAKc, 838, BF = 100.612769 MHz, Solvent - CDCl3, 16 Apr 2013 T=301 K
77.3175
76.9995
76.6823
174.1591
166.8959
153.8613
145.3934
135.8106
129.7059
129.0435
128.1778
128.0476
124.2407
121.0503
43.8521
40.3565
29.5860
17.7396
f1 (мд)

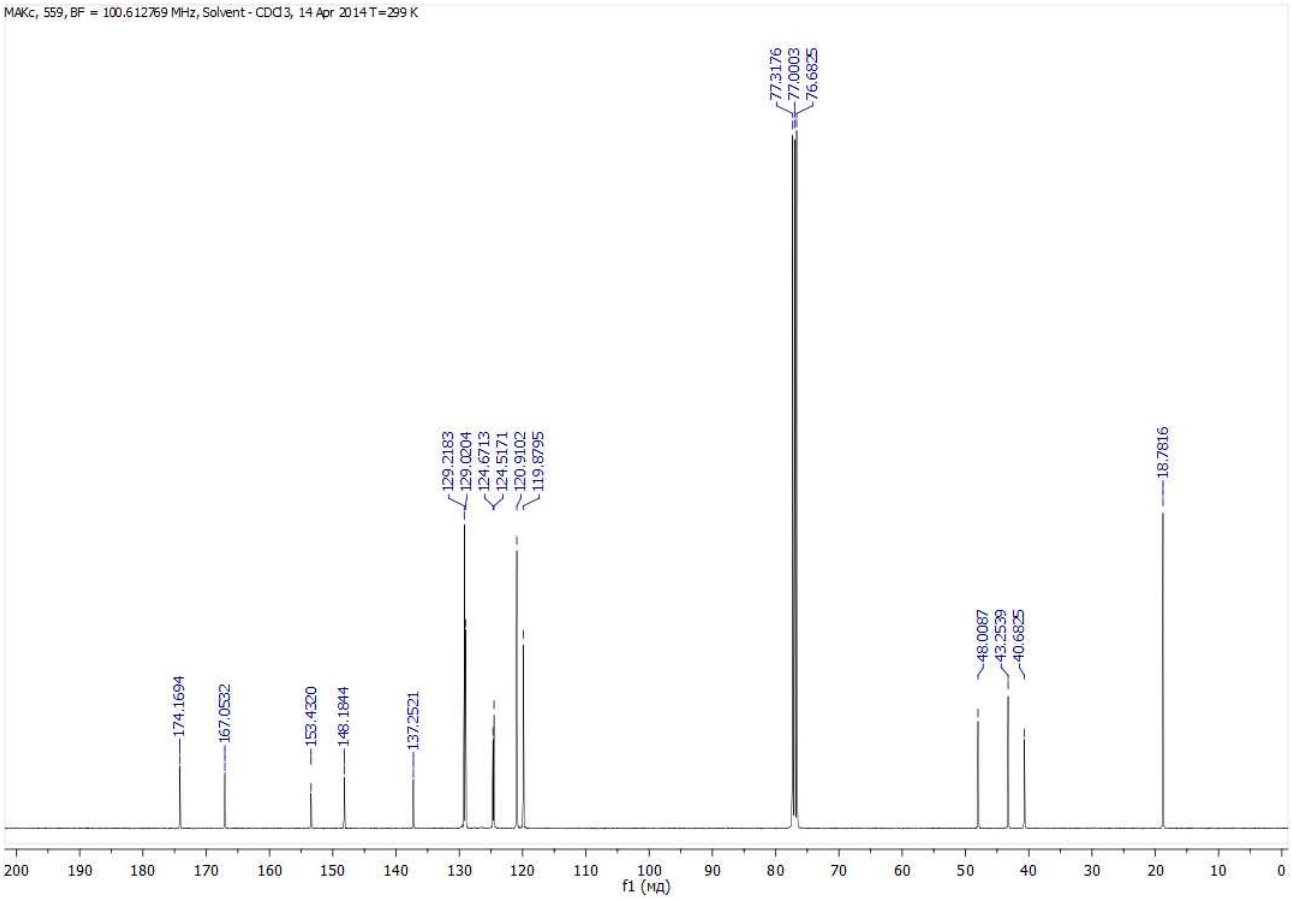

MAK, 752, BF = 300.13 MHz, SOLVENT - CDCl3, 28 Mar 2013
5ge
7.6821
7.4233
7.4073
7.3945
7.3791
7.2605
7.0278
7.0028
6.9729
6.9560
6.9439
6.9329
6.9074
4.4243
4.4119
4.3942
4.3819
3.3968
3.3090
3.2965
3.2547
3.2423
2.9027
2.8725
2.8486
2.8182
2.0906
1.00
2.01
5.26
1.04
3.11
1.10
1.00
6.30
f1 (мд)

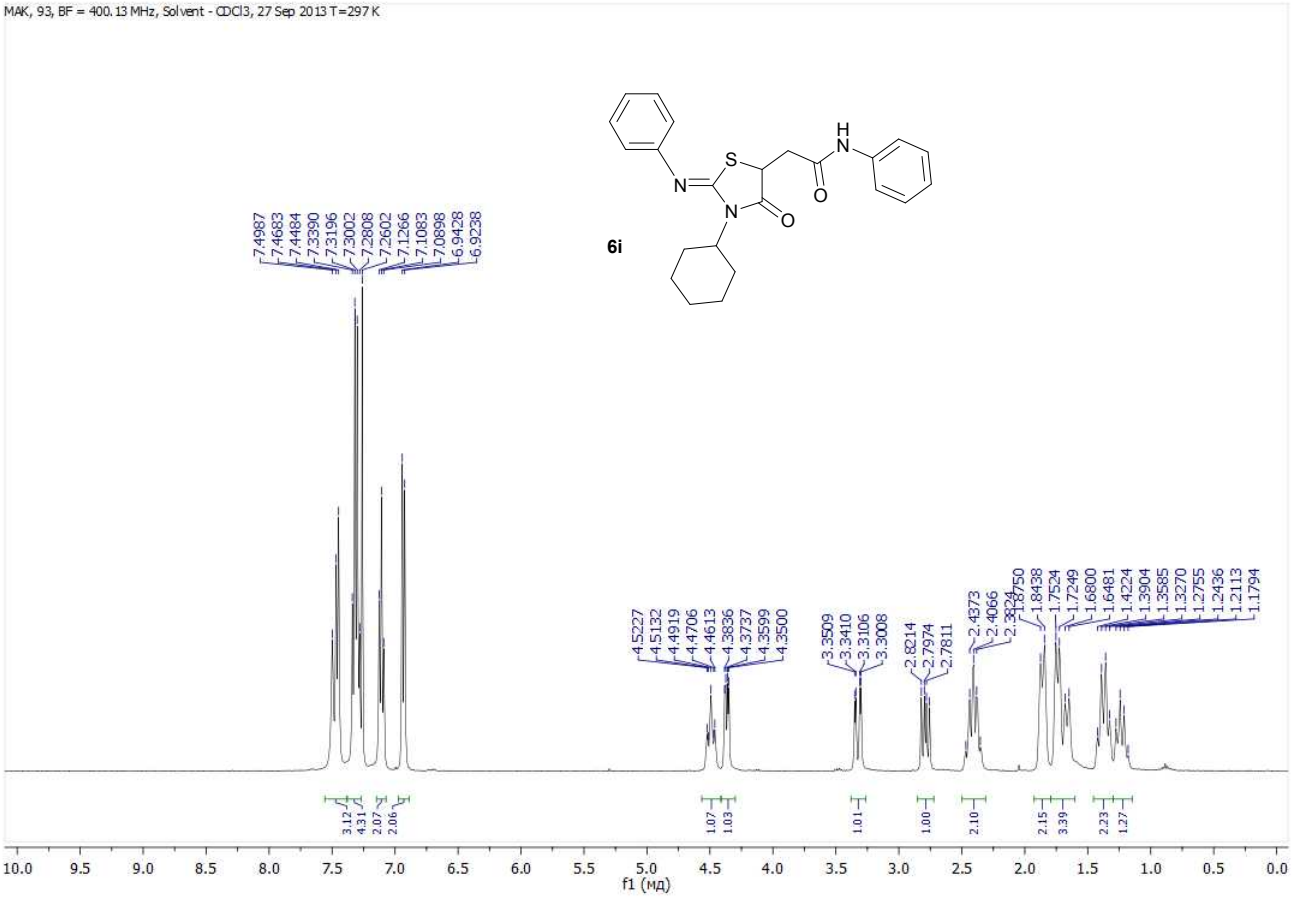

MAKc, 752, BF = 75.47 MHz, SOLVENT - CDCl3, 28 Mar 2013
174.1671
166.8748
161.1465
157.9038
153.9242
145.4056
133.2277
133.1907
128.1667
128.0526
124.2163
121.7903
121.6856
115.8218
115.5232
77.4238
77.0004
76.5767
43.9126
40.2020
29.5578
17.7303
f1 (мд)

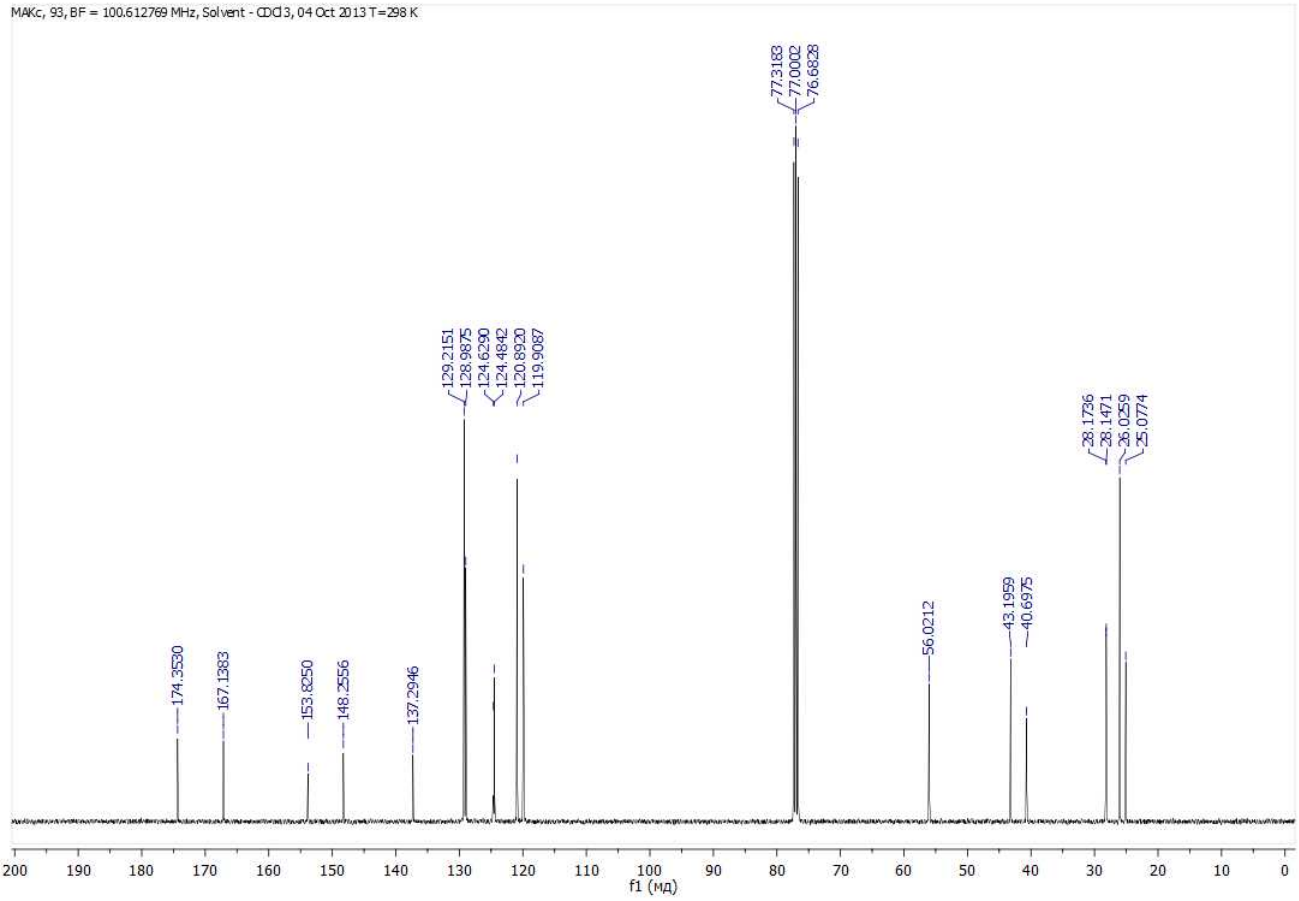

MAK, 780, BF = 400.13 MHz, Solvent - CDCl3, 05 Apr 2013
5gf
f1 (мд)

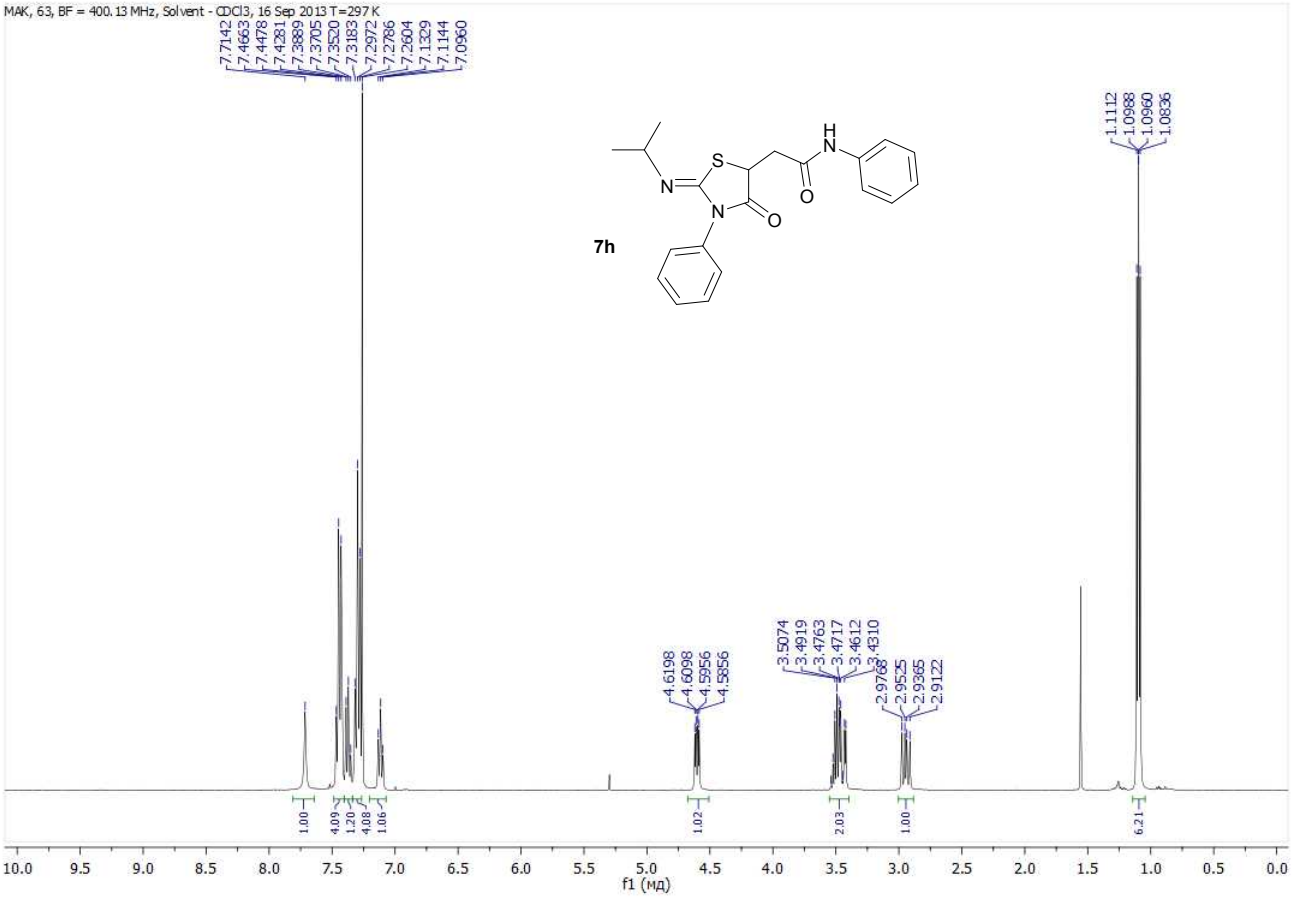

MAKc, 558, BF = 100.612769 MHz, Solvent - CDCl3, 14 Apr 2014 T=299 K
f1 (мд)


MAK, 64, BF = 400.13 MHz, Solvent - CDCl3, 16 Sep 2013 T=297 K
7.4665
7.4468
7.3403
7.3214
7.3014
7.2834
7.2596
7.1289
7.1104
7.0919
6.9535
6.9509
6.9325
6h
4.9550
4.9379
4.9206
4.9033
4.8859
4.8686
4.8516
4.3913
4.3811
4.3675
4.3574
3.3523
3.3421
3.3119
3.3018
2.8342
2.8104
2.7940
2.7701
1.5652
1.5484
1.5384
1.5312
1.5213
3.06
4.19
2.04
2.03
1.03
1.00
1.01
1.00
6.18
f1 (мд)

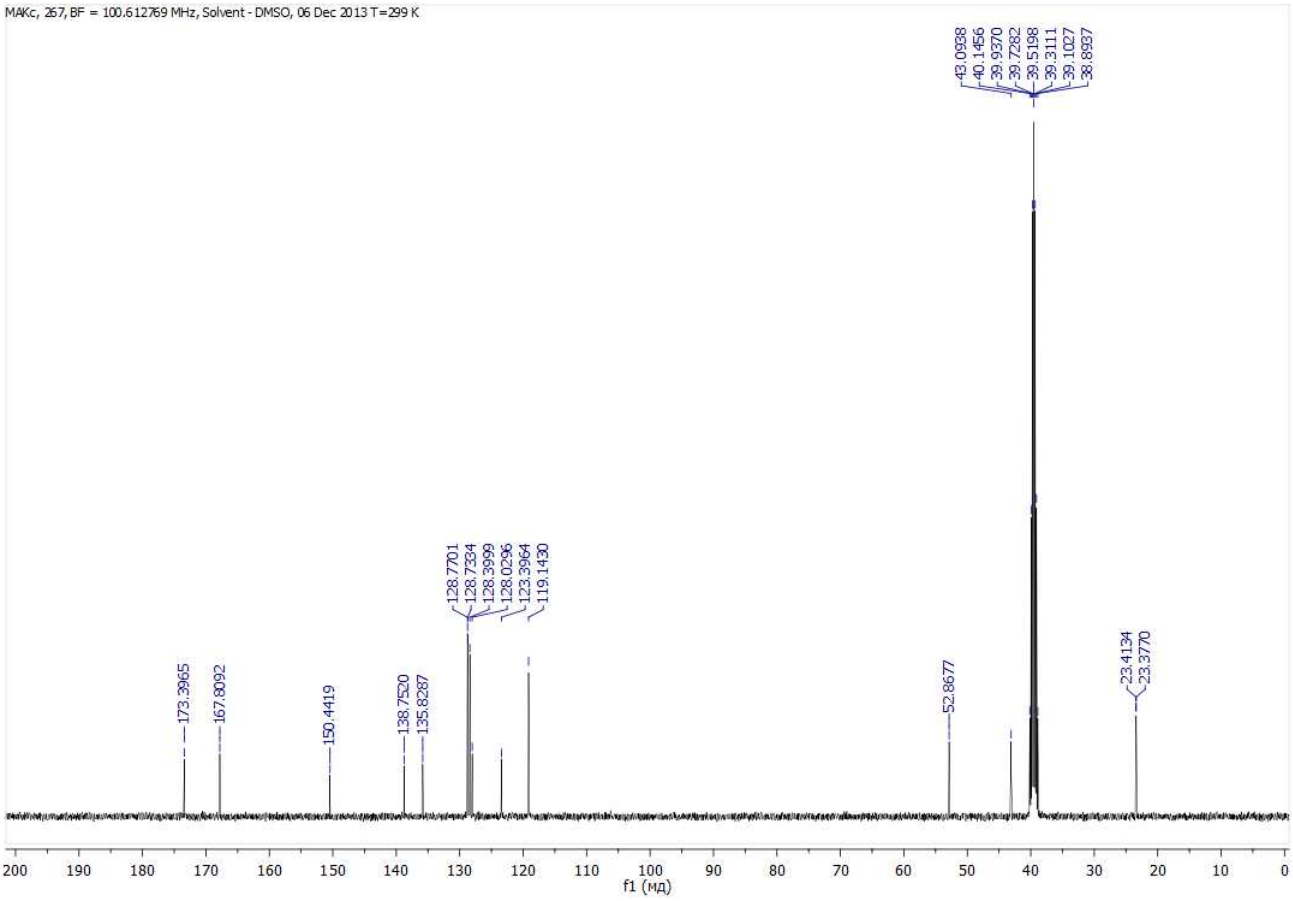

MAKc, 559, BF = 100.612769 MHz, Solvent - CDCl3, 14 Apr 2014 T=299 K
77.3176
77.0003
76.6825
129.2183
129.0204
124.6713
124.5171
120.9102
119.8795
174.1694
167.0532
153.4320
148.1844
137.2521
48.0087
43.2539
40.6825
18.7816
f1 (мд)

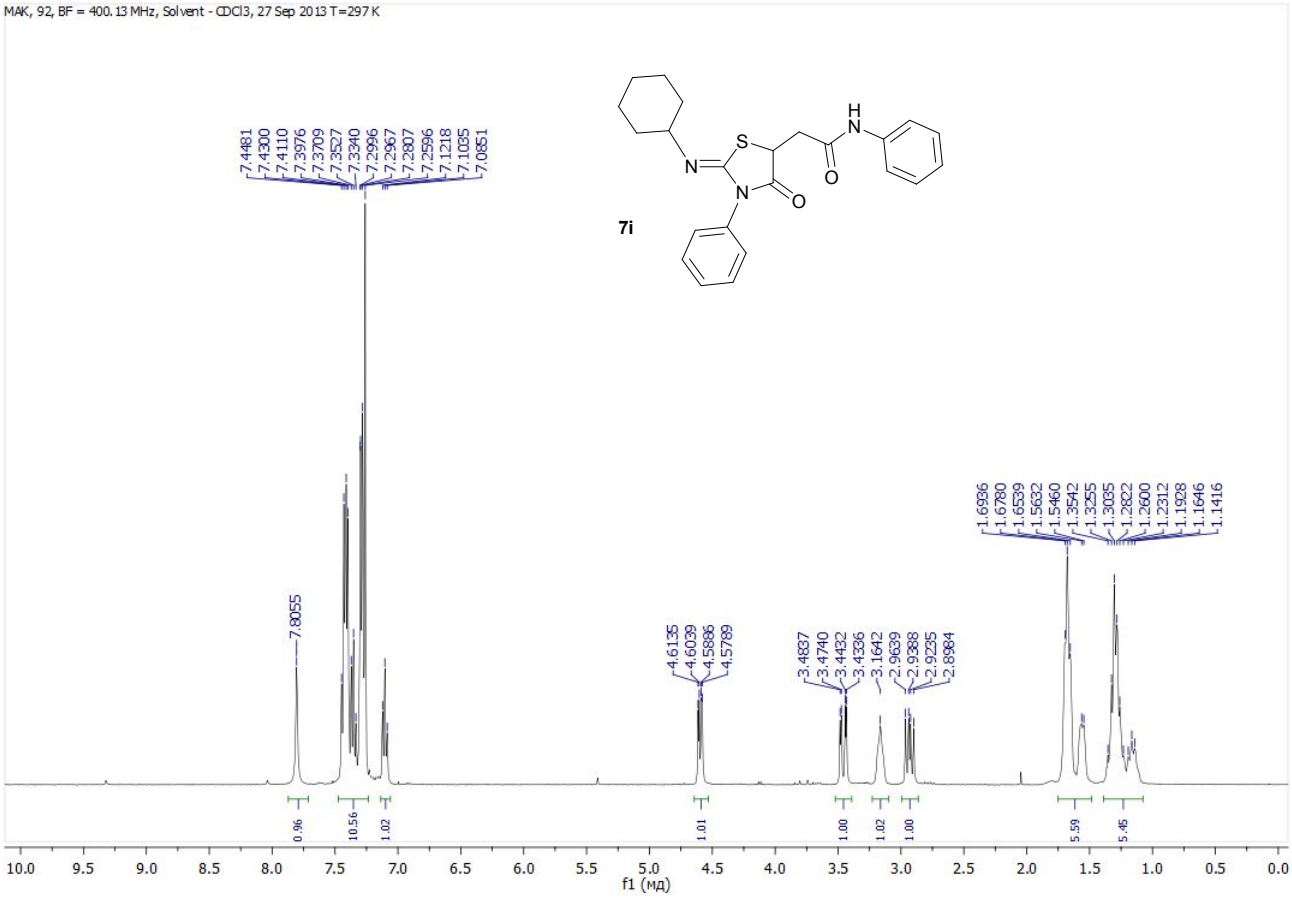

MAK, 93, BF = 400.13 MHz, Solvent - CDCl3, 27 Sep 2013 T=297 K
6i
f1 (мд)

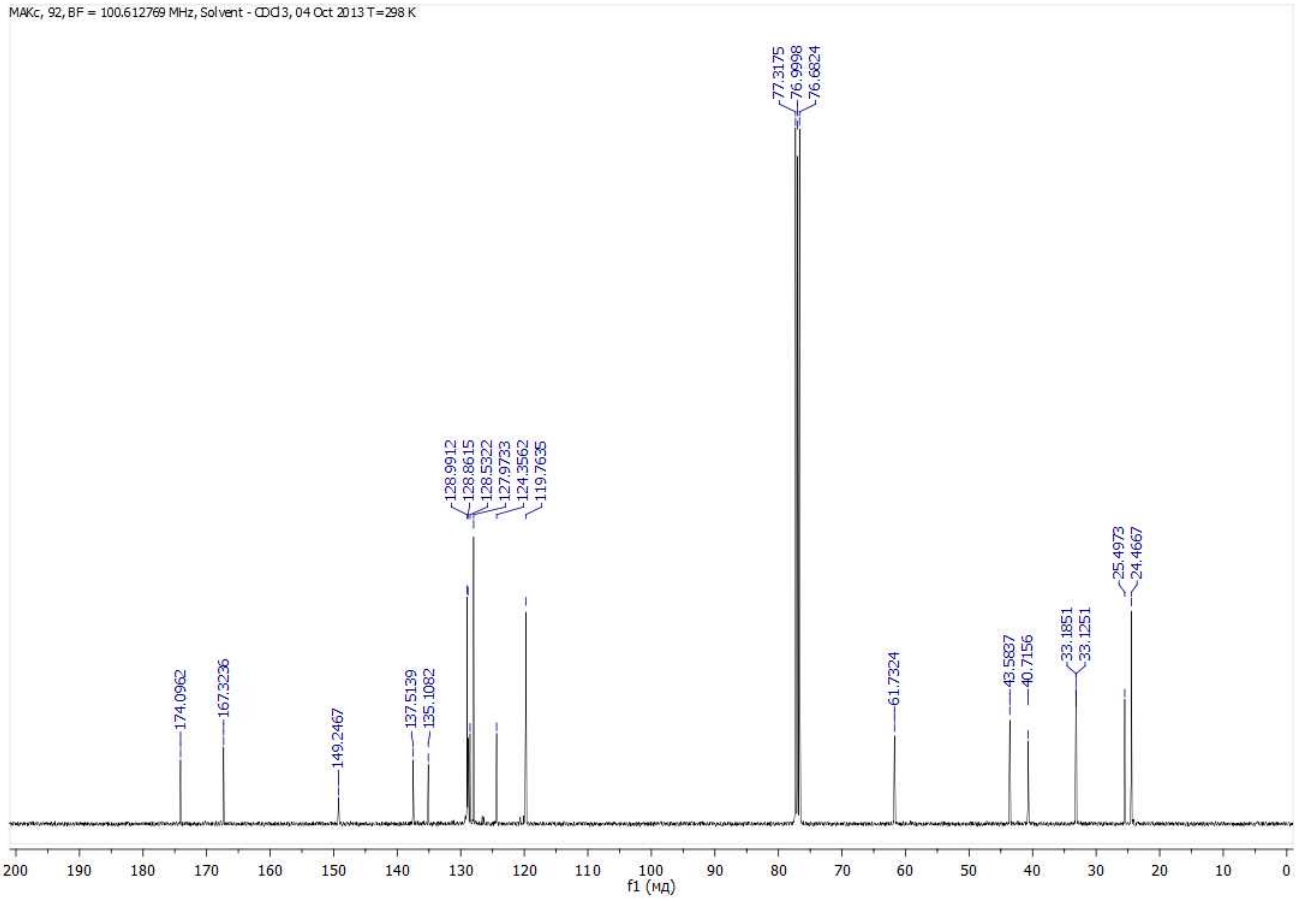

MAKc, 93, BF = 100.612769 MHz, Solvent - CDCl3, 04 Oct 2013 T=298 K
f1 (мд)

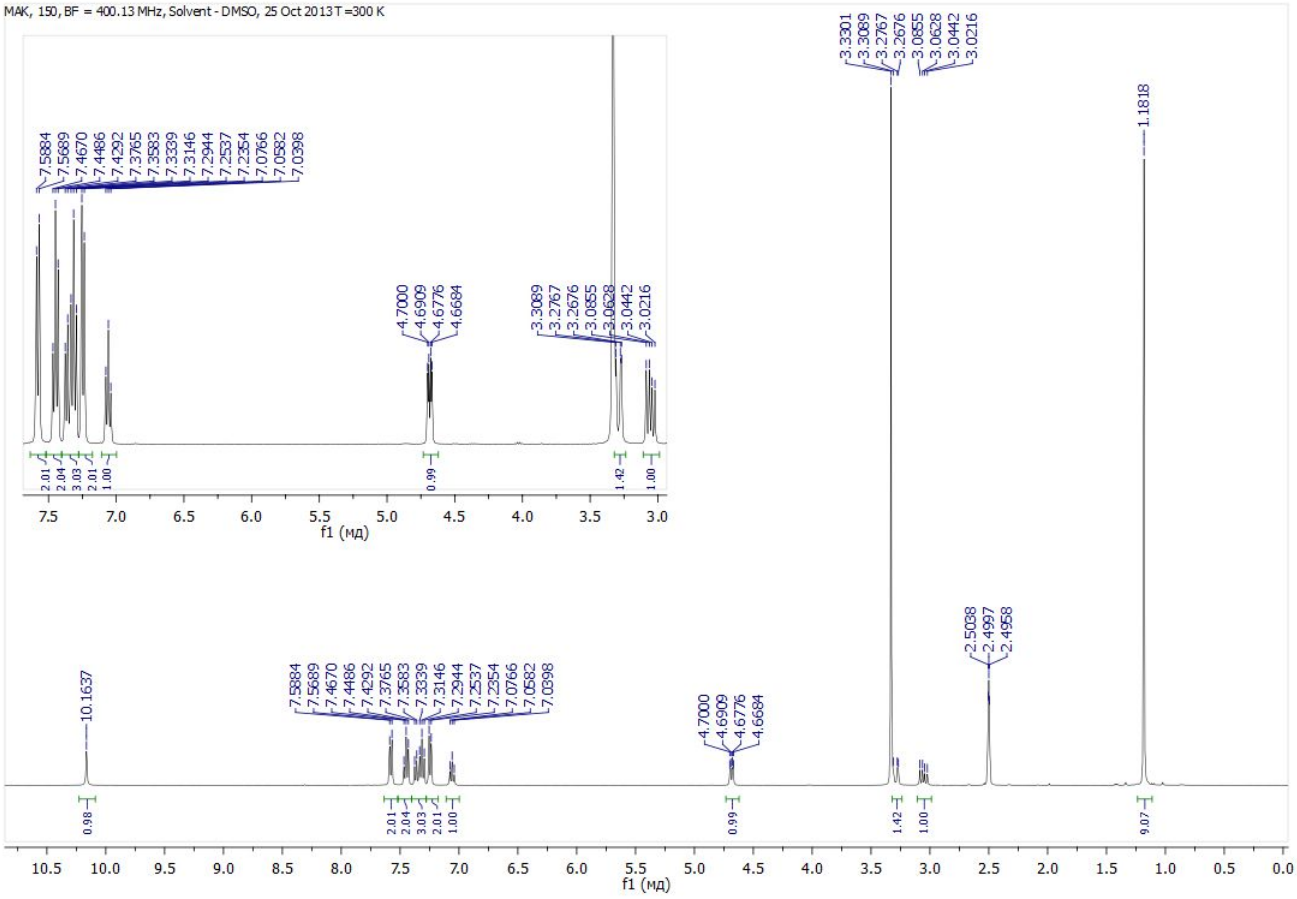

MAK, 63, BF = 400.13 MHz, Solvent - CDCl3, 16 Sep 2013 T=297 K
7.7142
7.4663
7.4478
7.4281
7.3889
7.3705
7.3520
7.3183
7.2972
7.2786
7.2604
7.1329
7.1144
7.0960
1.1112
1.0988
1.0960
1.0836
4.6198
4.6098
4.5956
4.5856
3.5074
3.4919
3.4763
3.4717
3.4612
3.4310
2.9768
2.9525
2.9365
2.9122
1.00
4.09
1.20
4.08
1.06
1.02
2.03
1.00
6.21
f1 (мд)

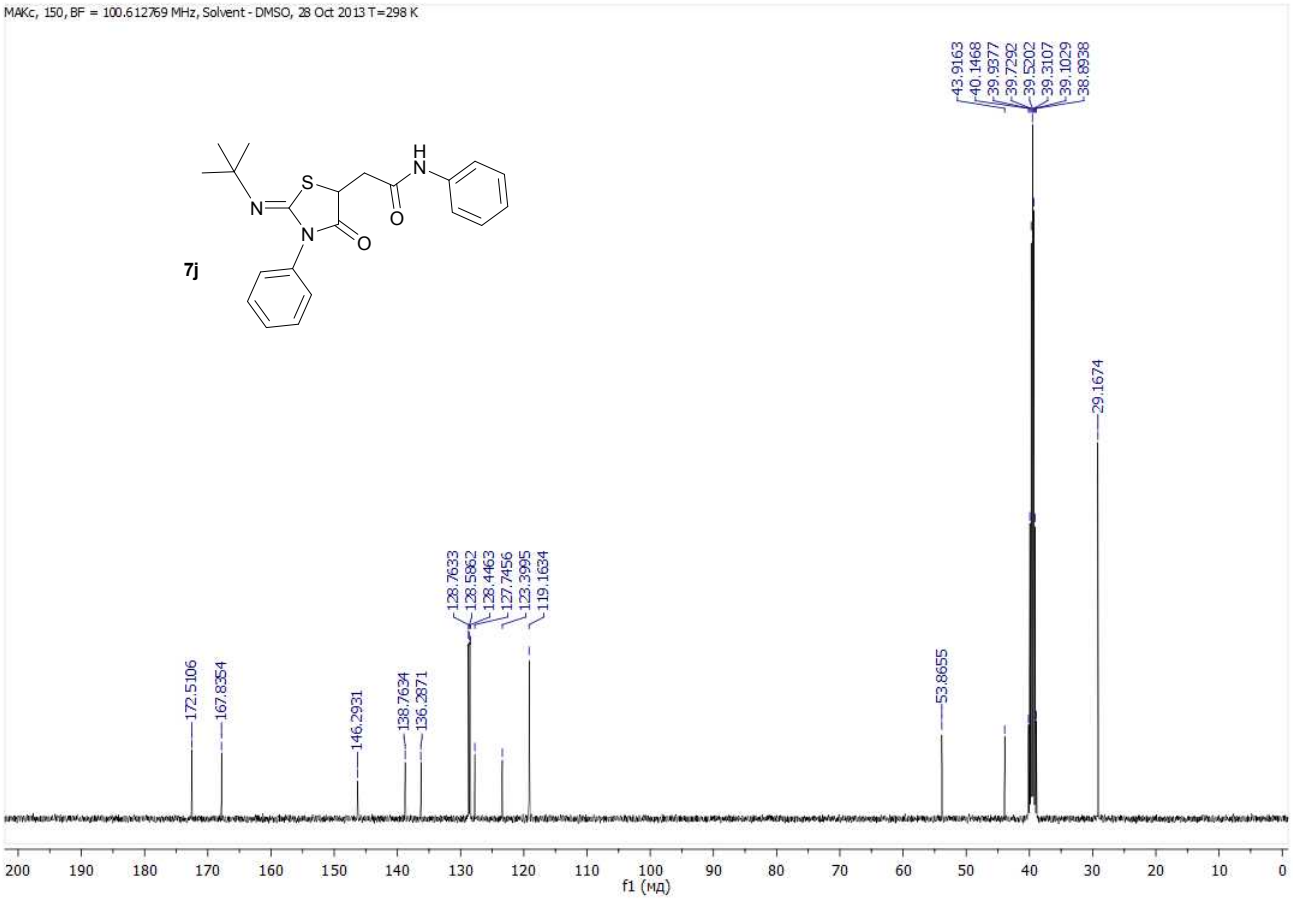
7h


MAKc, 267, BF = 100.612769 MHz, Solvent - DMSO, 06 Dec 2013 T=299 K
43.0938
40.1456
39.9370
39.7282
39.5198
39.3111
39.1027
38.8937
173.3965
167.8092
150.4419
138.7520
135.8287
128.7701
128.7334
128.3999
128.0296
123.3964
119.1430
52.8677
23.4134
23.3770
f1 (мд)

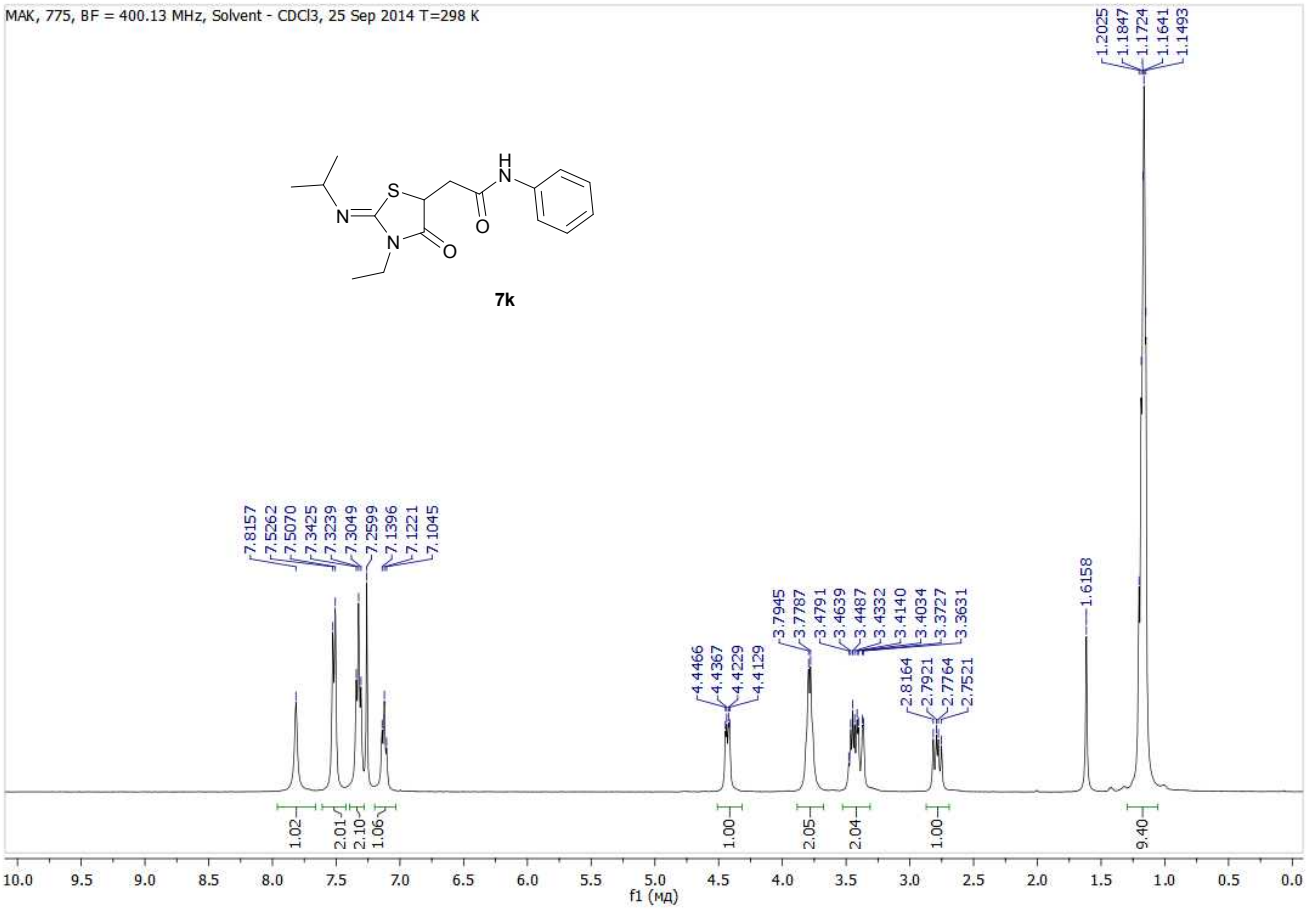

MAK, 92, BF = 400.13 MHz, Solvent - CDCl3, 27 Sep 2013 T=297 K
7i
f1 (мд)

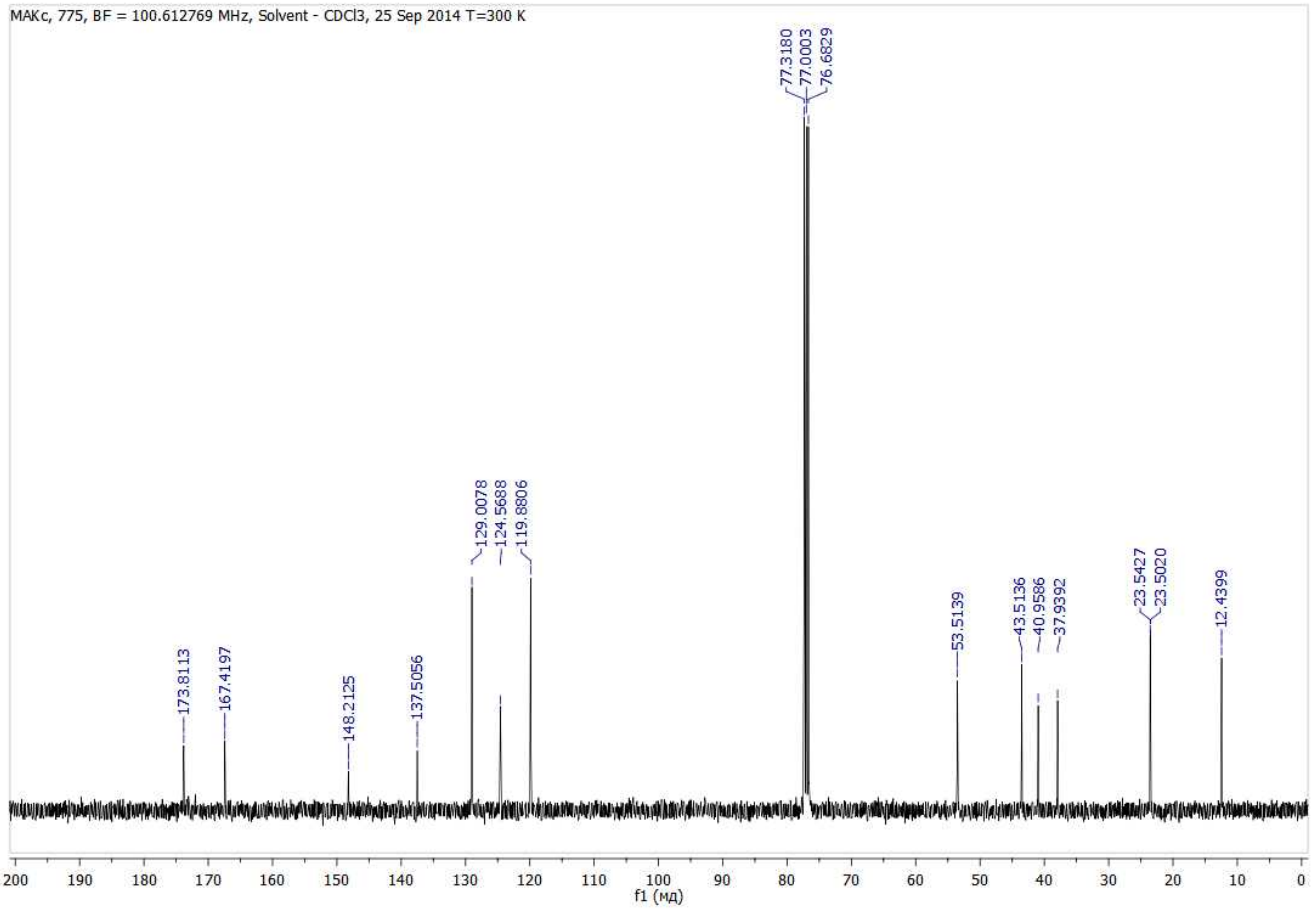

MAKc, 92, BF = 100.612769 MHz, Solvent - CDCl3, 04 Oct 2013 T=298 K
f1 (мд)

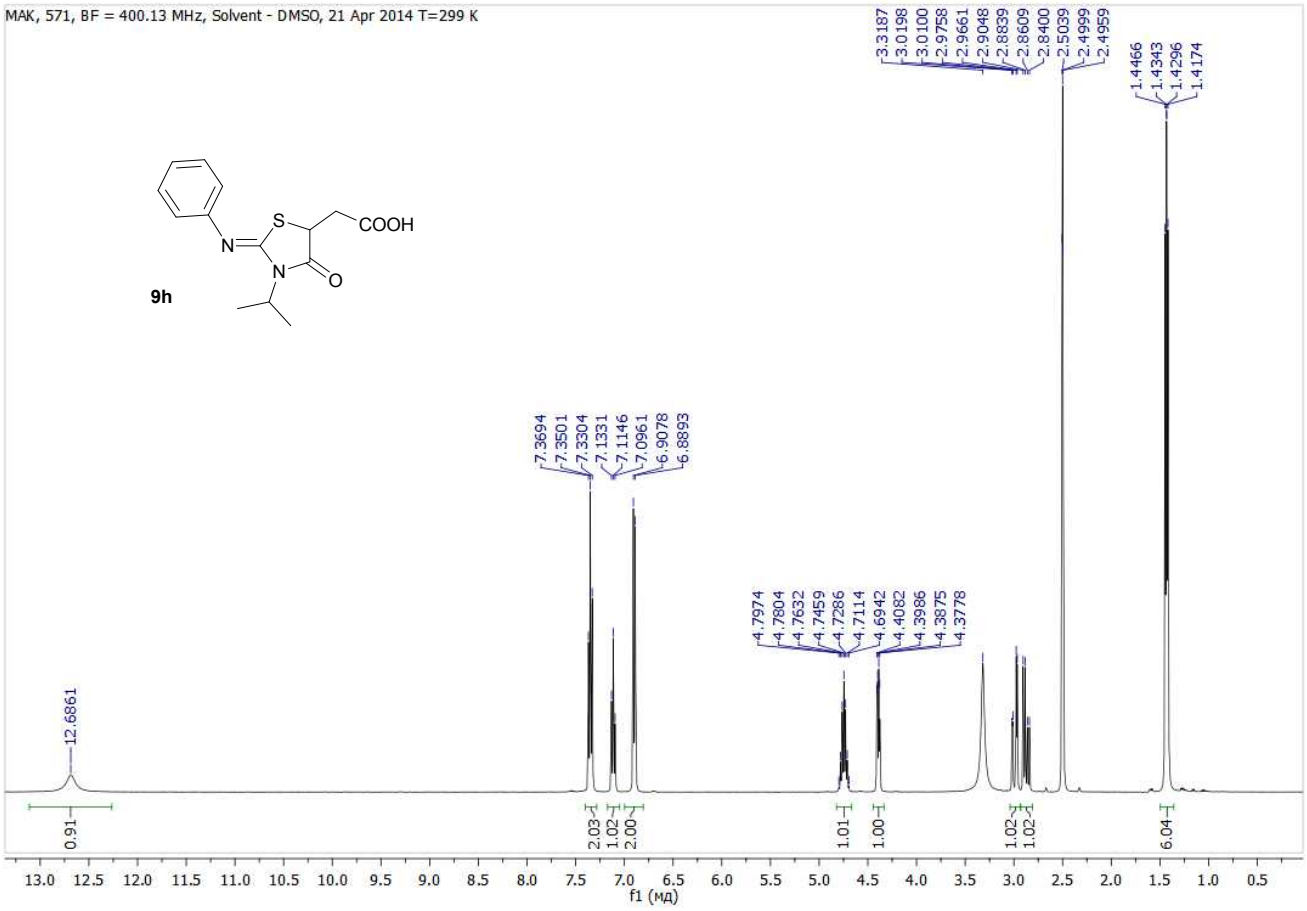

MAK, 150, BF = 400.13 MHz, Solvent - DMSO, 25 Oct 2013 T =300 K
f1 (мд)

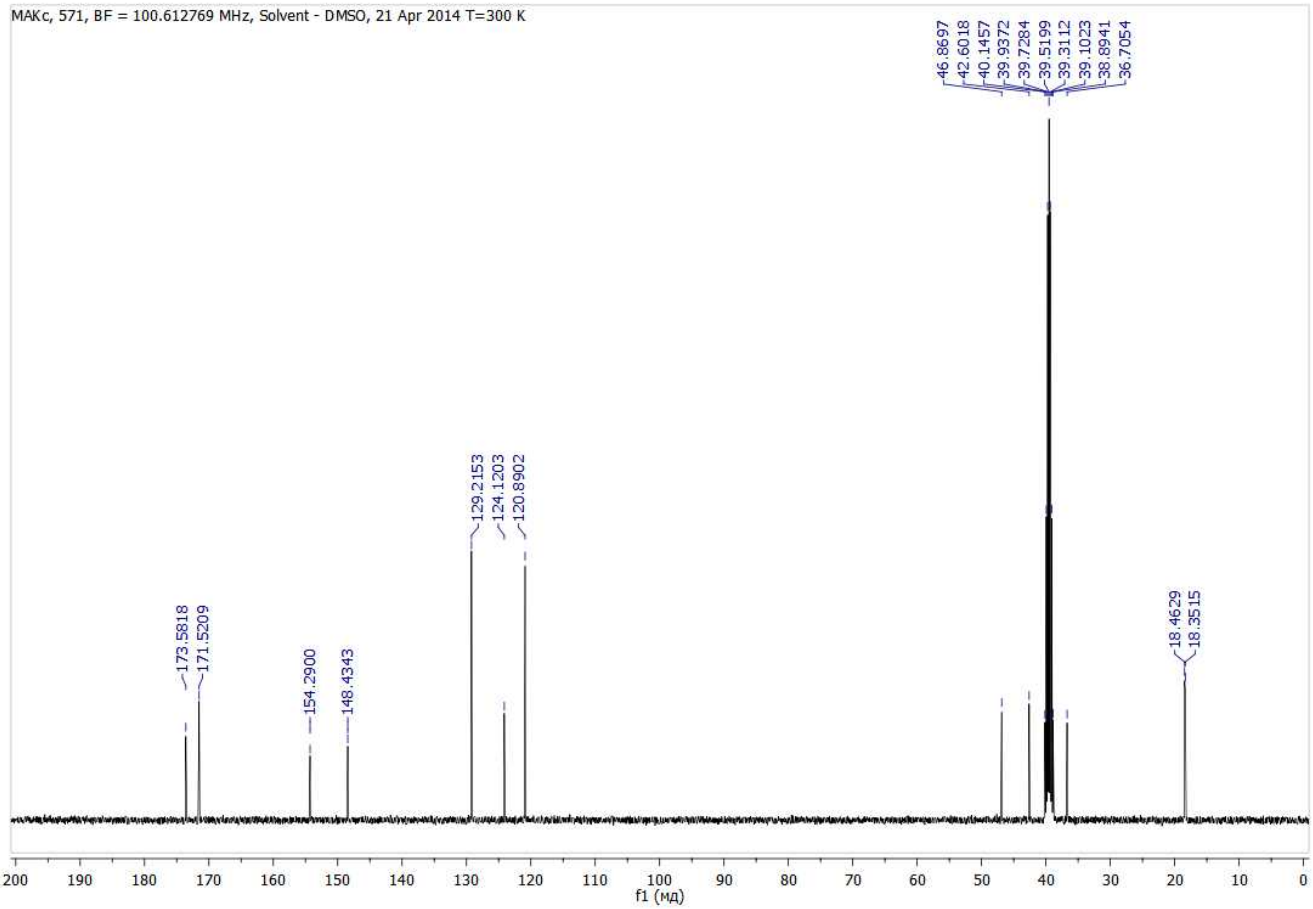

MAKc, 150, BF = 100.612769 MHz, Solvent - DMSO, 28 Oct 2013 T=298 K
f1 (мд)

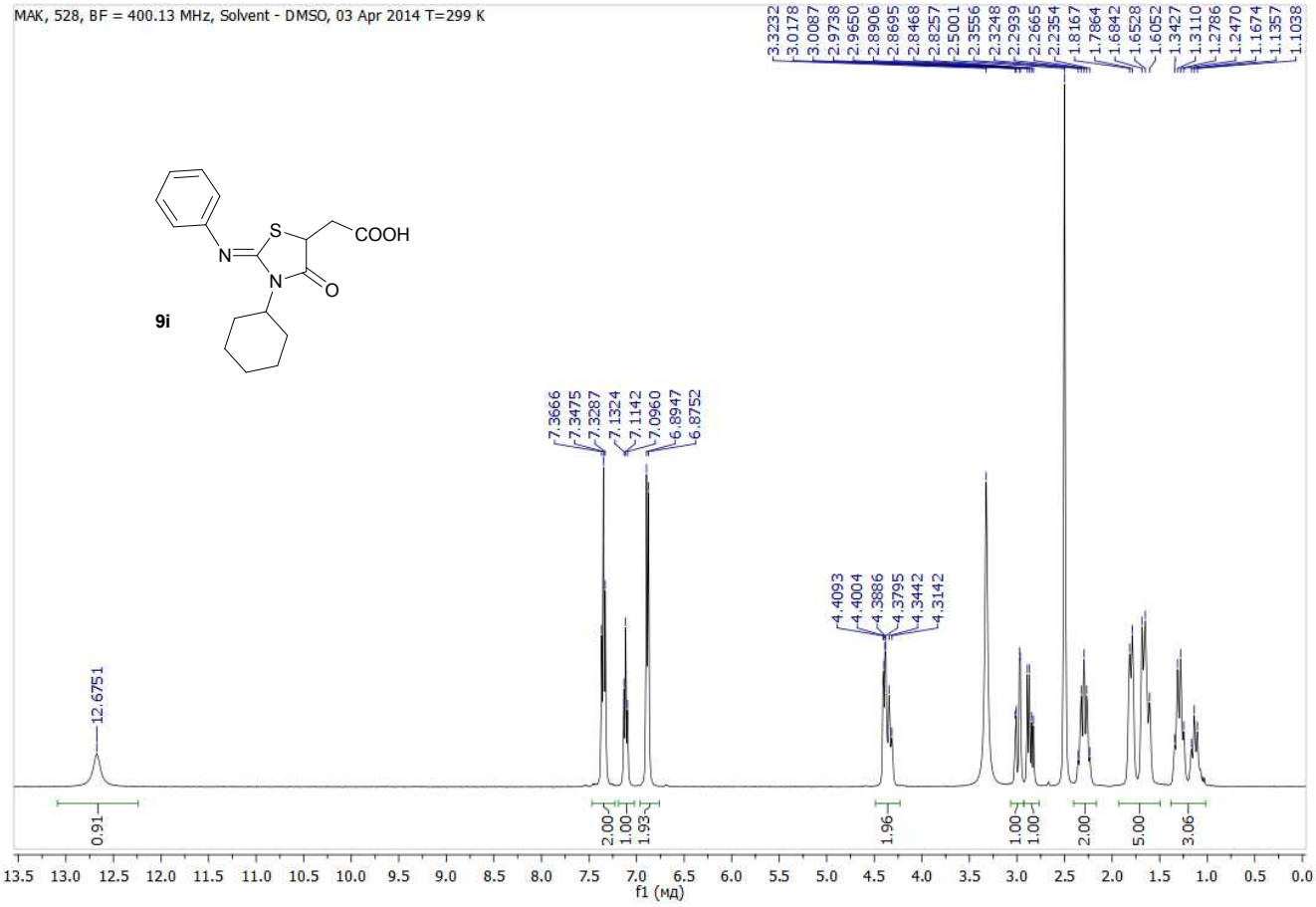
7j

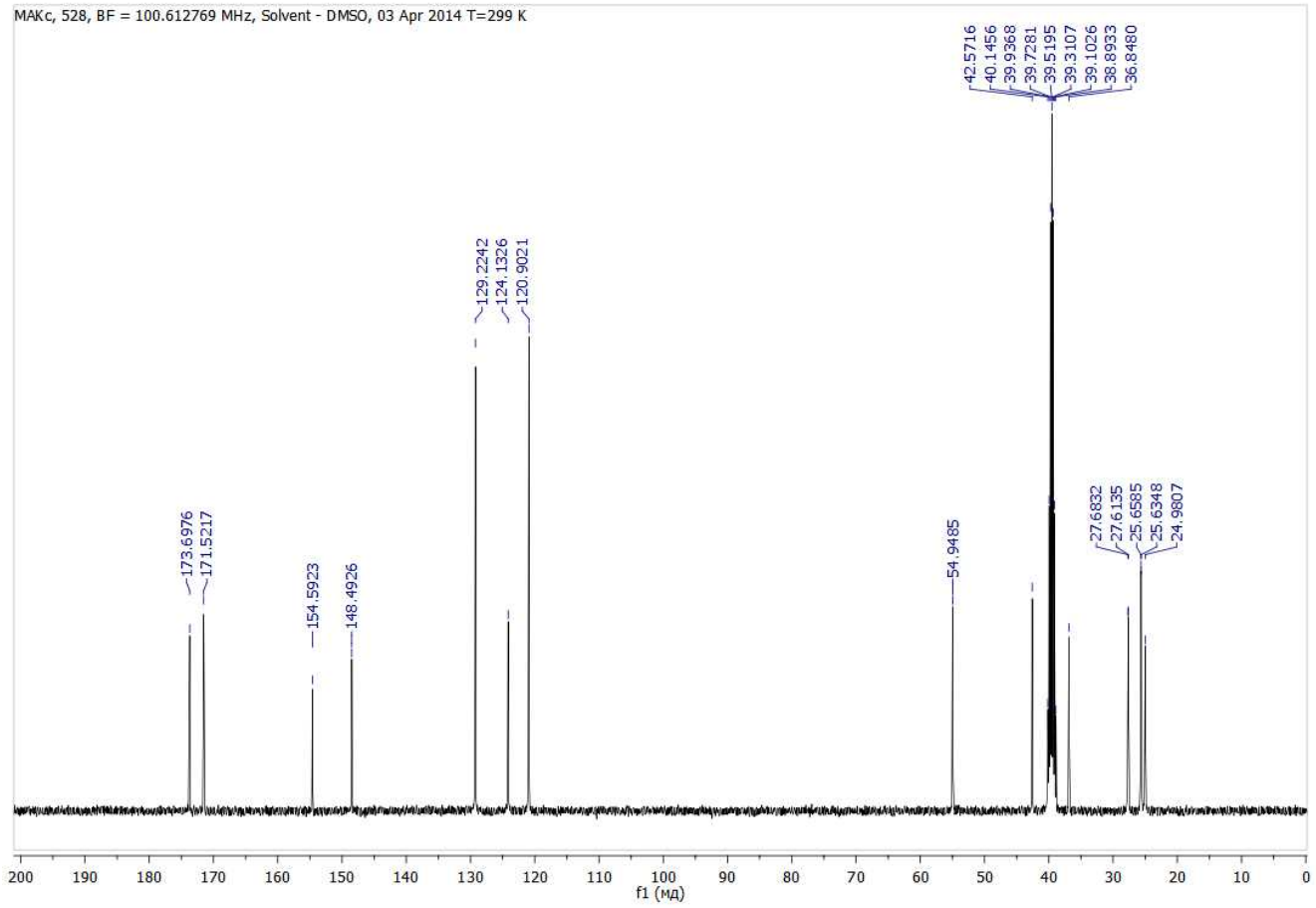

MAK, 775, BF = 400.13 MHz, Solvent - CDCl3, 25 Sep 2014 T=298 K
7k
f1 (мд)

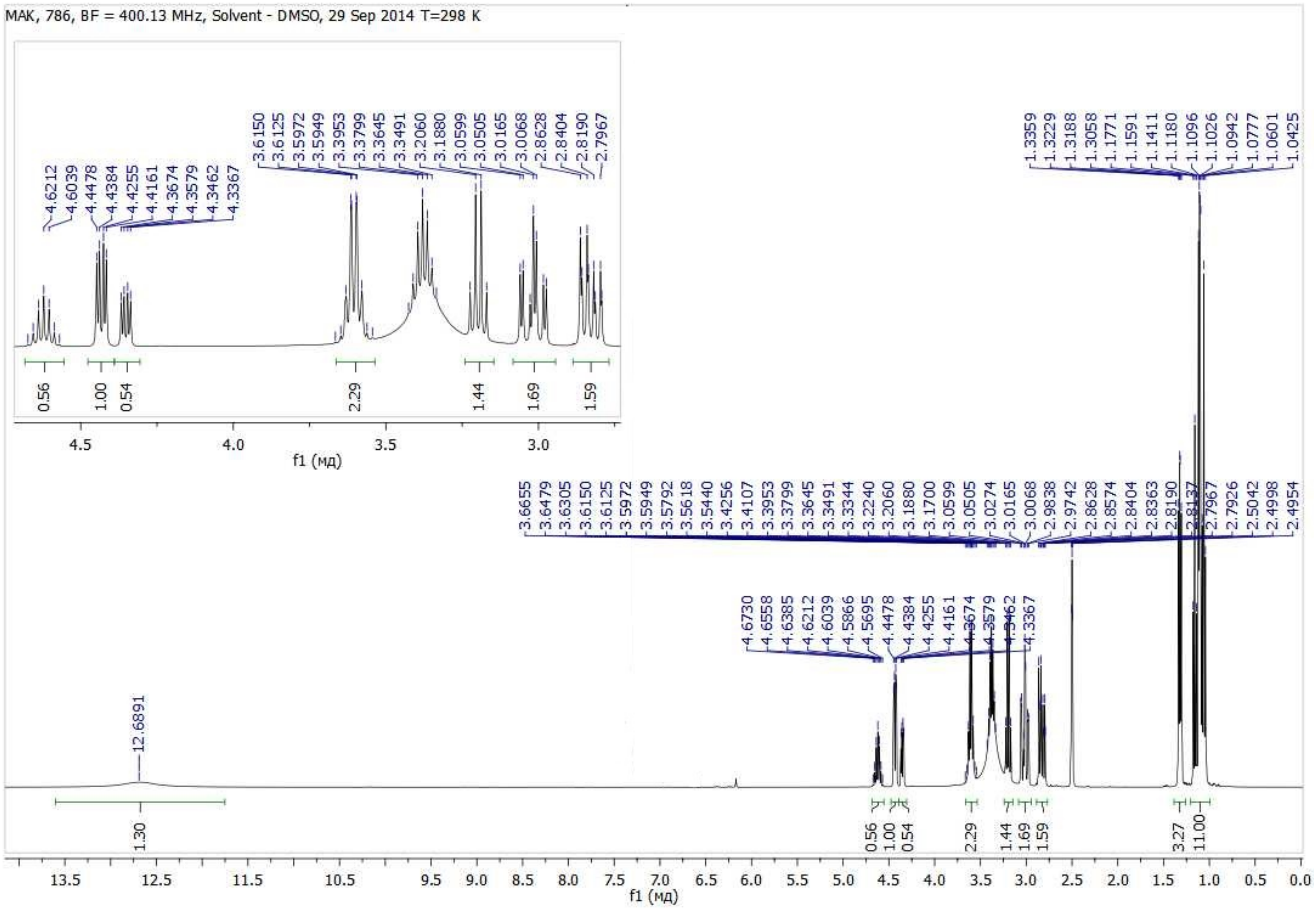

MAKc, 775, BF = 100.612769 MHz, Solvent - CDCl3, 25 Sep 2014 T=300 K
f1 (мд)

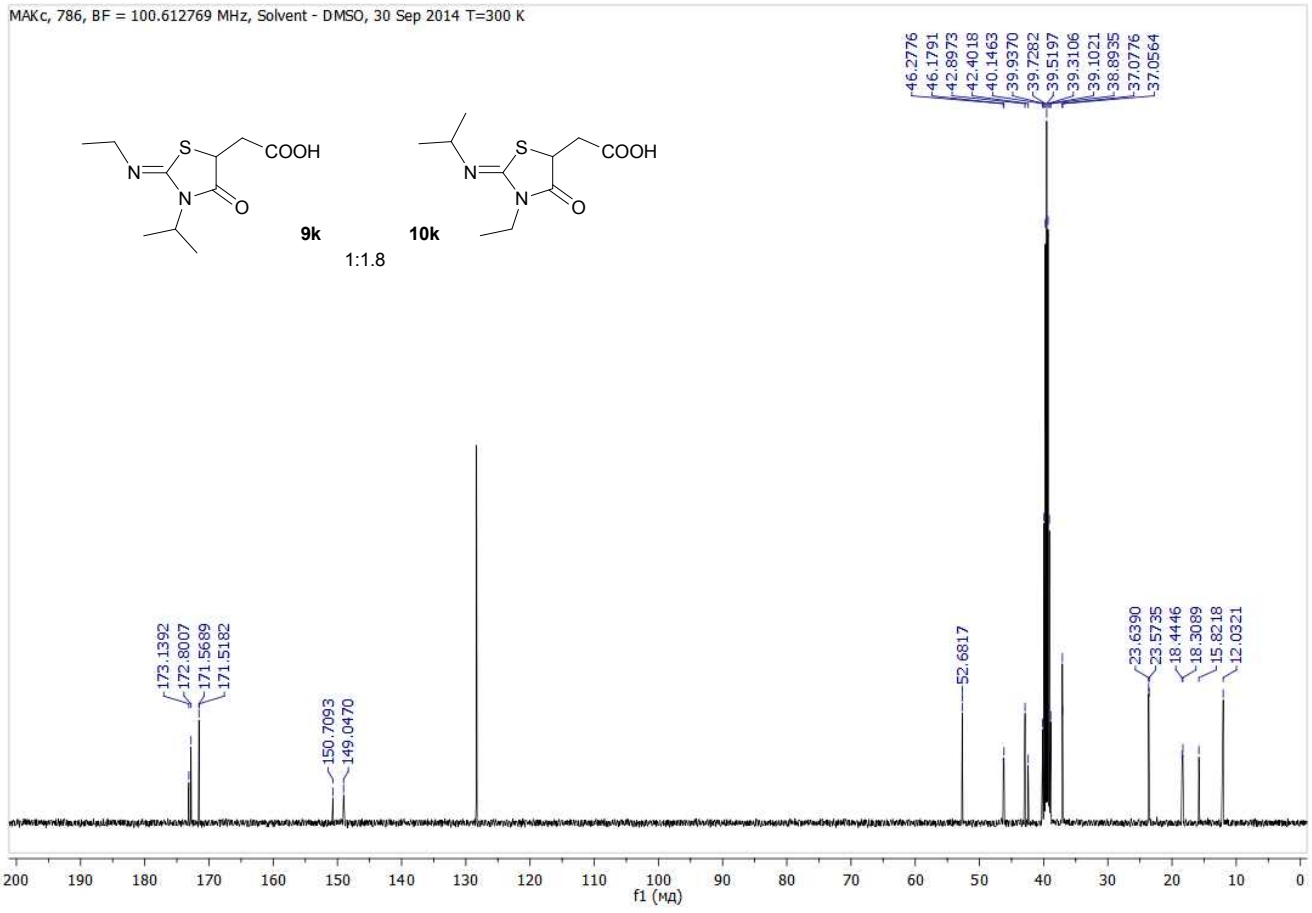

MAK, 571, BF = 400.13 MHz, Solvent - DMSO, 21 Apr 2014 T=299 K
9h
COOH
f1 (мд)

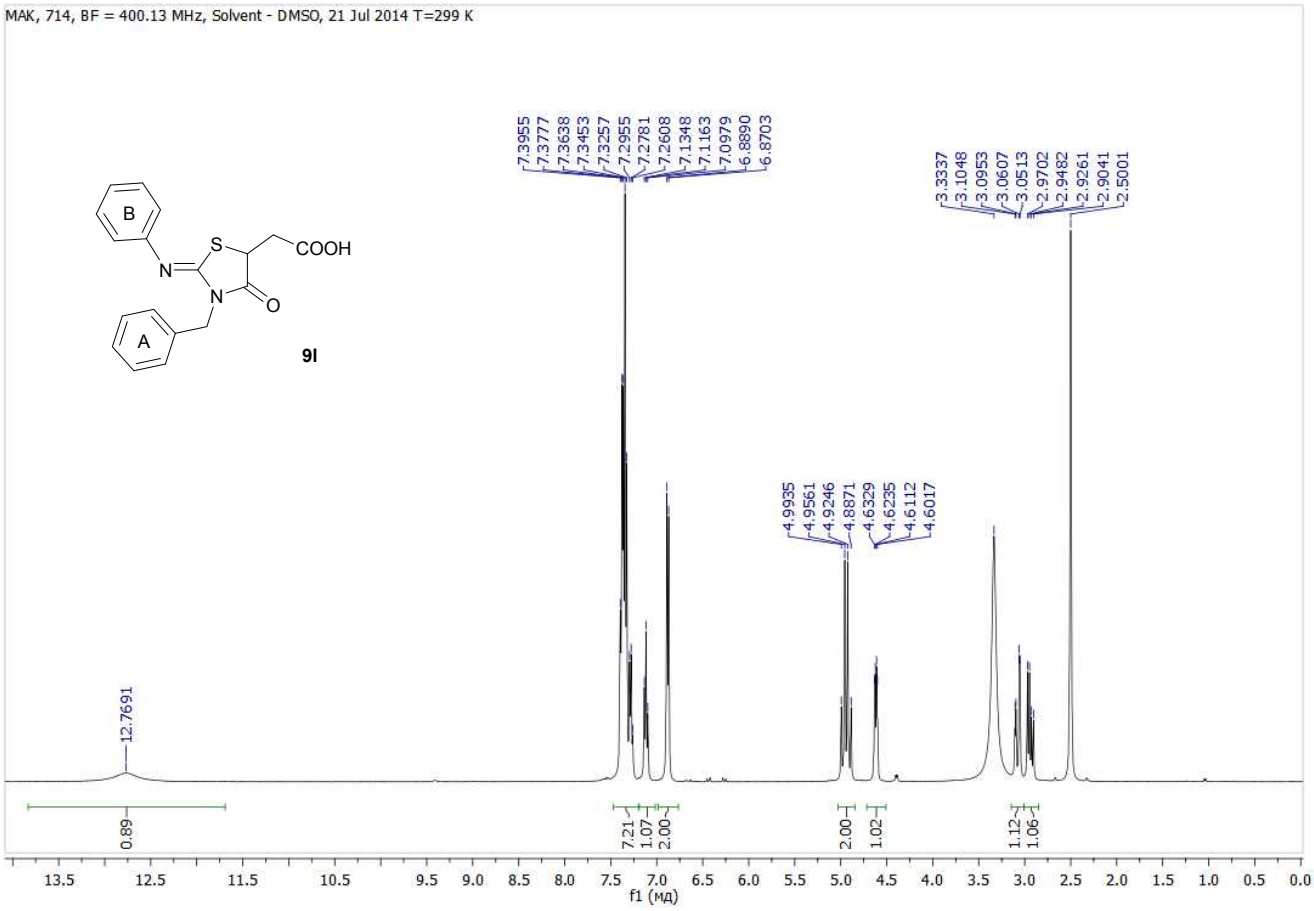

MAKc, 571, BF = 100.612769 MHz, Solvent - DMSO, 21 Apr 2014 T=300 K
f1 (мд)

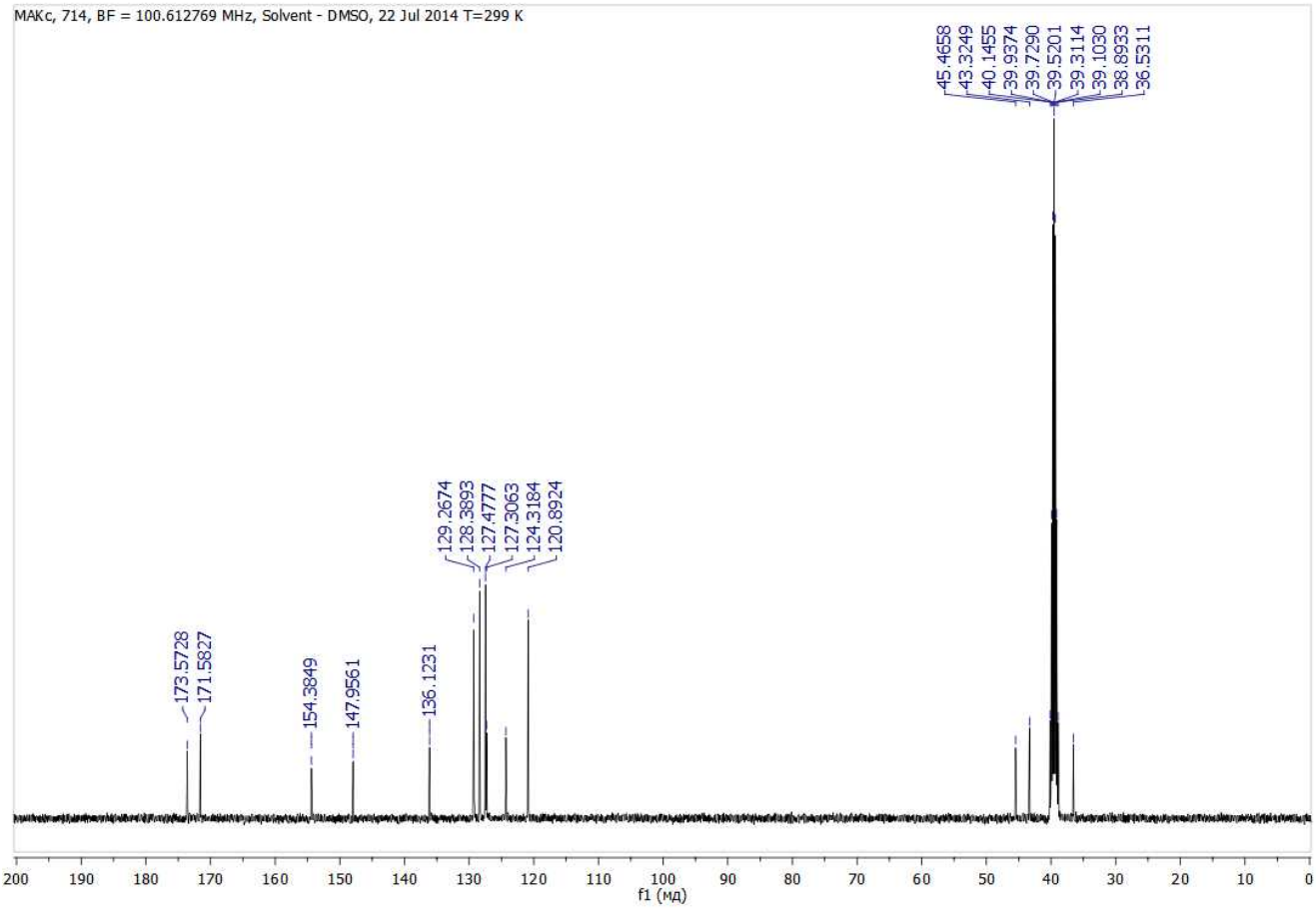

MAK, 528, BF = 400.13 MHz, Solvent - DMSO, 03 Apr 2014 T=299 K
9i
COOH
f1 (мд)


MAKc, 528, BF = 100.612769 MHz, Solvent - DMSO, 03 Apr 2014 T=299 K
f1 (мд)

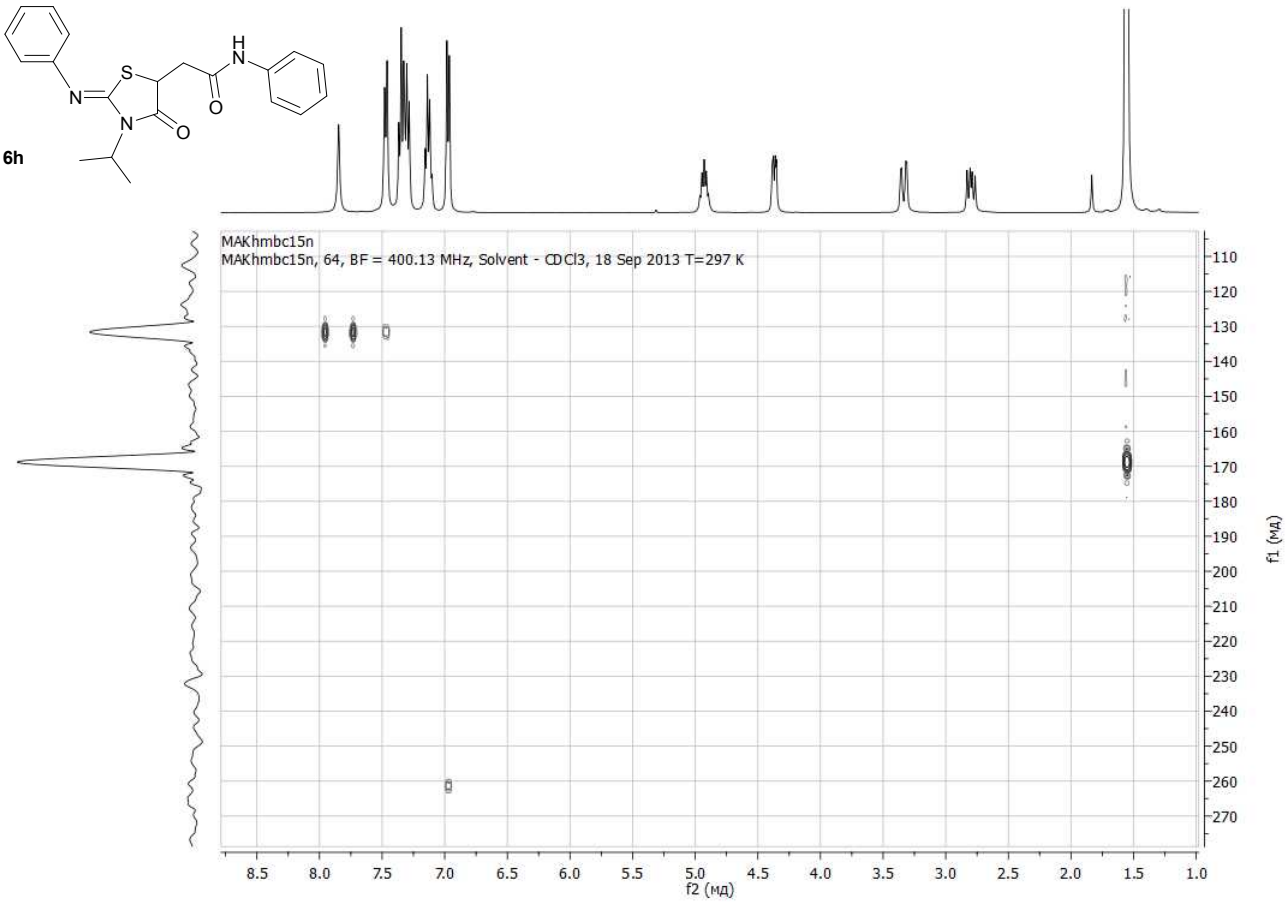

MAK, 786, BF = 400.13 MHz, Solvent - DMSO, 29 Sep 2014 T=298 K
f1 (мд)


MAKc, 786, BF = 100.612769 MHz, Solvent - DMSO, 30 Sep 2014 T=300 K
COOH
9k
10k
1:1.8
f1 (мд)

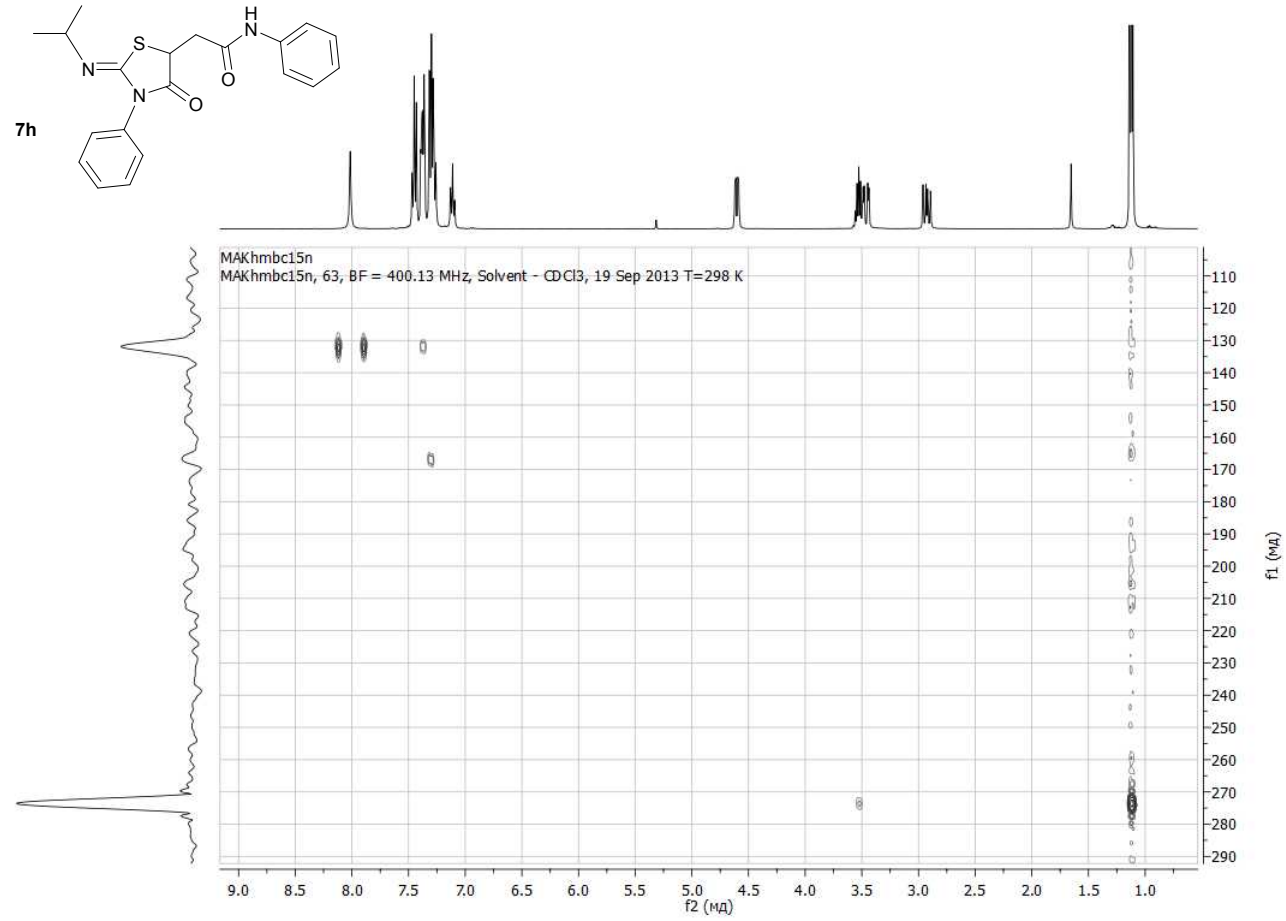

MAK, 714, BF = 400.13 MHz, Solvent - DMSO, 21 Jul 2014 T=299 K
B
A
S
N
N
O
COOH
9l
7.3955
7.3777
7.3638
7.3453
7.3257
7.2955
7.2781
7.2608
7.1348
7.1163
7.0979
6.8890
6.8703
3.3337
3.1048
3.0953
3.0607
3.0513
2.9702
2.9482
2.9261
2.9041
2.5001
4.9935
4.9561
4.9246
4.8871
4.6329
4.6235
4.6112
4.6017
12.7691
0.89
7.21
1.07
2.00
2.00
1.02
1.12
1.06
f1 (мд)

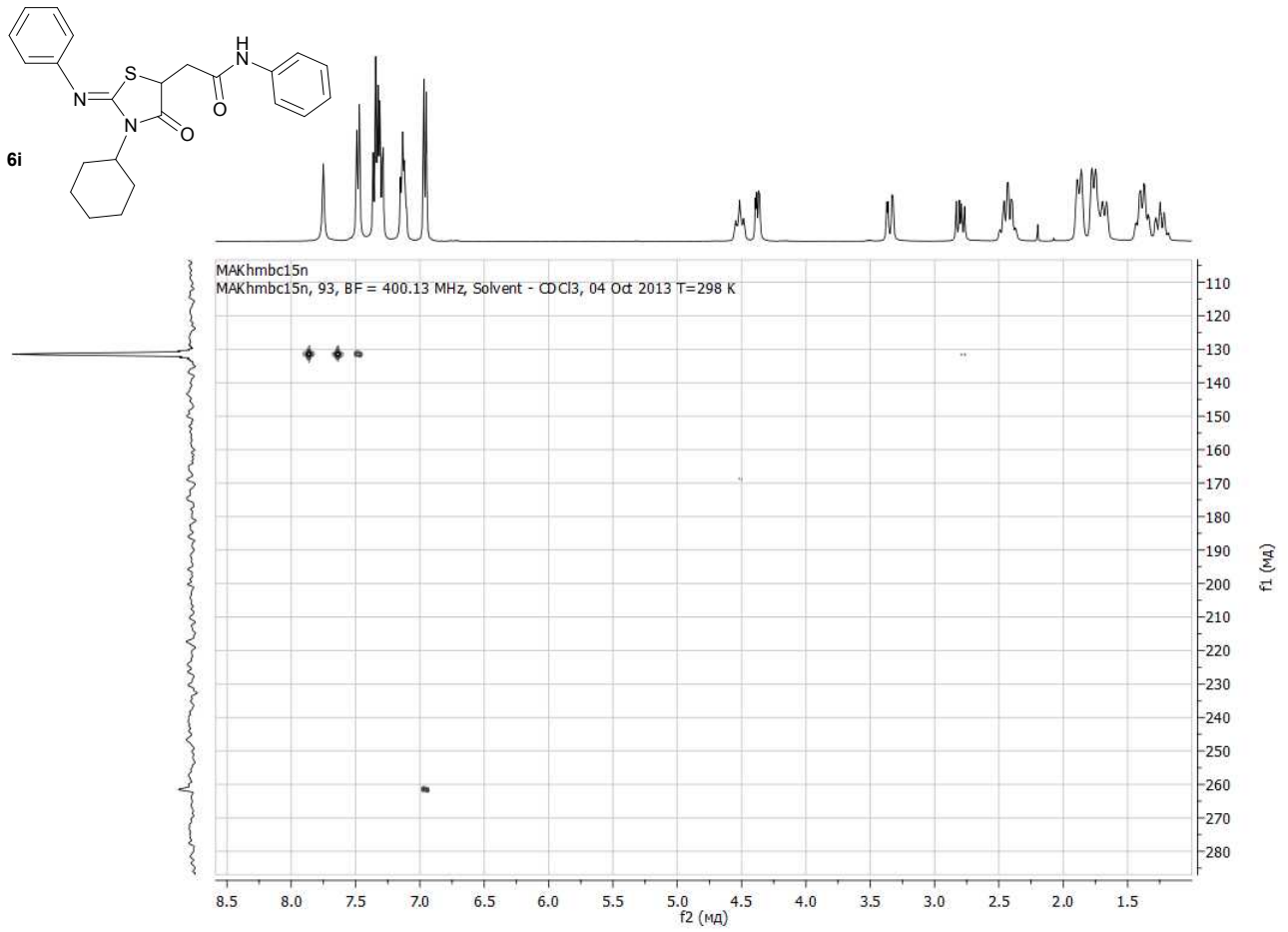

MAKc, 714, BF = 100.612769 MHz, Solvent - DMSO, 22 Jul 2014 T=299 K
45.4658
43.3249
40.1455
39.9374
39.7290
39.5201
39.3114
39.1030
38.8933
36.5311
129.2674
128.3893
127.4777
127.3063
124.3184
120.8924
173.5728
171.5827
154.3849
147.9561
136.1231
f1 (мд)

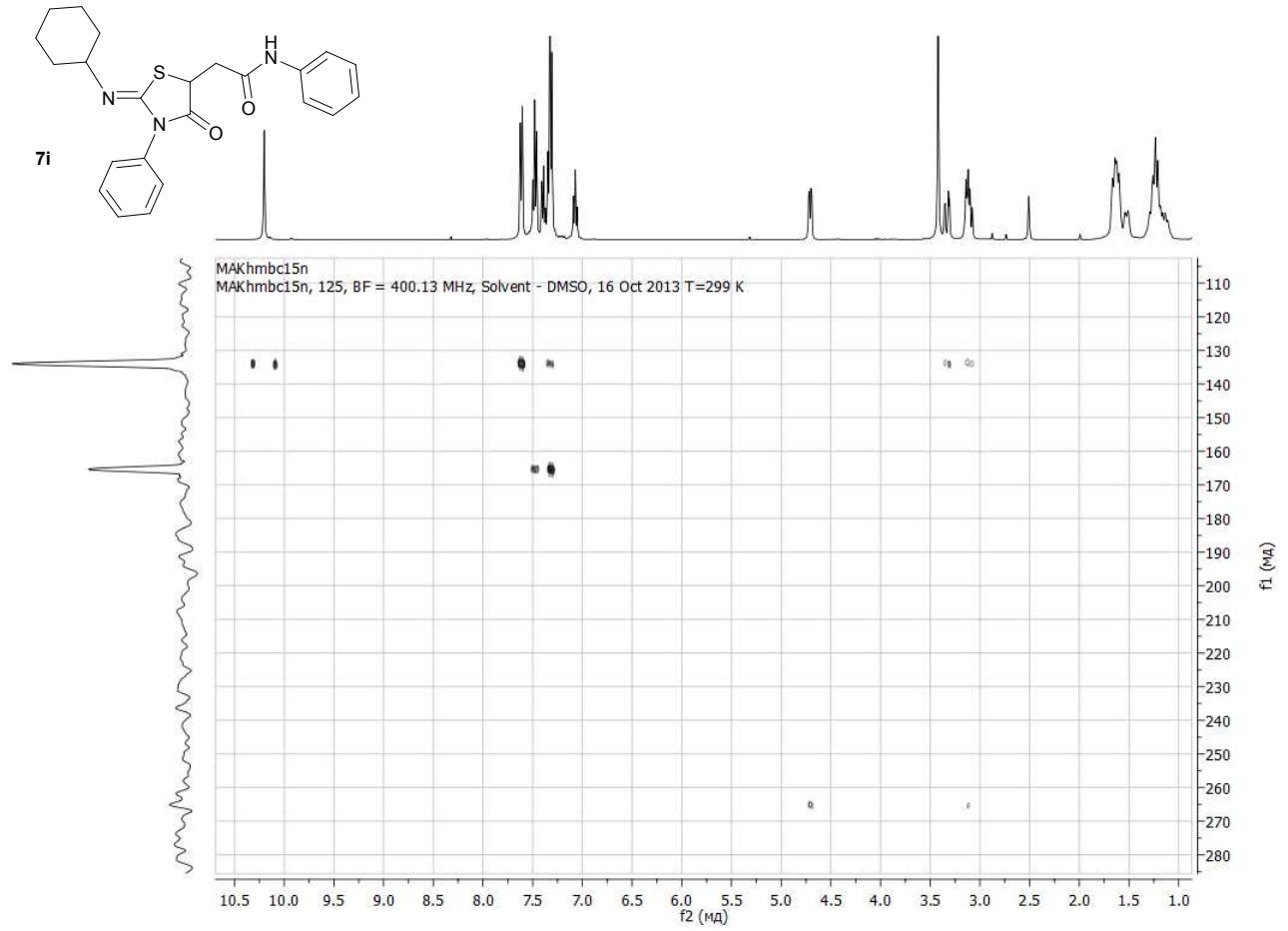
6h

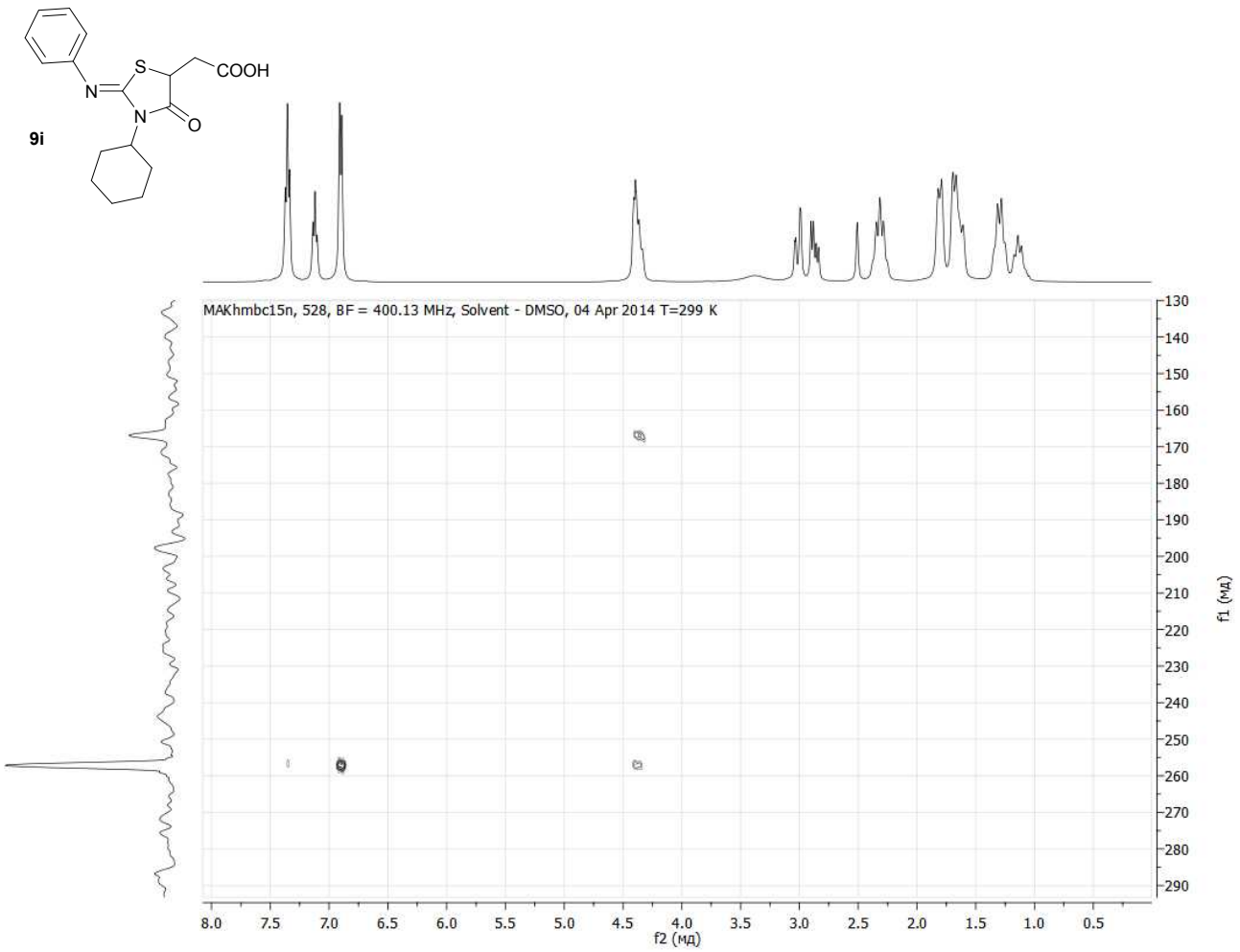

MAKhmbc15n
MAKhmbc15n, 64, BF = 400.13 MHz, Solvent - CDCl3, 18 Sep 2013 T=297 K
f2 (мд)
f1 (мд)

7h


MAKhmbc15n
MAKhmbc15n, 63, BF = 400.13 MHz, Solvent - CDCl3, 19 Sep 2013 T=298 K
f2 (мд)
f1 (мд)


6i
MAKhmbc15n
MAKhmbc15n, 93, BF = 400.13 MHz, Solvent - CDCl3, 04 Oct 2013 T=298 K
f2 (мд)
f1 (мд)


7i
MAKhmbc15n
MAKhmbc15n, 125, BF = 400.13 MHz, Solvent - DMSO, 16 Oct 2013 T=299 K
f2 (мд)
f1 (мд)


COOH
S
N
N
O
9i
MAKhmbc15n, 528, BF = 400.13 MHz, Solvent - DMSO, 04 Apr 2014 T=299 K
f1 (мд)
f2 (мд)

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