

Supporting Information

Cu(I)-Catalyzed Microwave-Assisted Synthesis of 1,2,3-triazole linked with 4-thiazolidinones : A one-pot sequential approach

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Experimental procedures and analytical data

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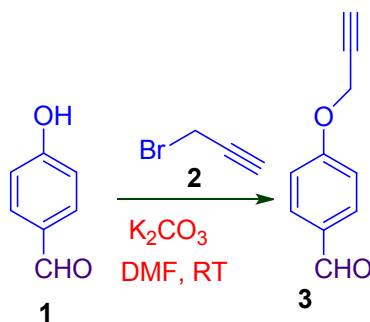
1. General considerations

All microwave assisted experiments were run in a closed vial applying a dedicated CEM-Discover monomode microwave apparatus operating at a frequency of 2.45 GHz with continuous irradiation power from 0 to 300 W (CEM Corporation, P.O. Box 200, Matthews, NC 28106). Analytical TLCs were performed on Merck silica gel 60_{F254} plates. All liquid column chromatographic separations were performed on column chromatography. IR spectra were recorded on a Perkin-Elmer 2000 FT-IR spectrometer at Department of Chemistry, University of Delhi. The ¹H and ¹³C NMR spectra (in CDCl₃) were recorded on a JEOL ECX-400P NMR/Bruker Avance at 400 MHz/300 MHz and 100 MHz/75 MHz, respectively at USIC, University of Delhi/Katholiek University Leuven, TMS was used as internal standard. The NMR spectra were processed by JEOL Delta™ NMR data processing software, the chemical shift values are on a δ scale and coupling constants (*J*) are in ppm and Hz respectively. Abbreviations used are: s (singlet), d (doublet), t (triplet), dd (double doublet) and m (multiplet). The high-resolution mass spectral data was obtained using a JEOL JMS-SX-102A spectrometer at Institute for Chemistry and Biochemistry, Free University Berlin, Germany. Melting points were recorded on a Buchi M-560 melting point apparatus and are uncorrected. All the chemicals and reagents like phenol, aniline, thioglycolic acid and propargyl bromide were purchased from commercial sources and used as received unless otherwise indicated.

2. Experimental procedures:

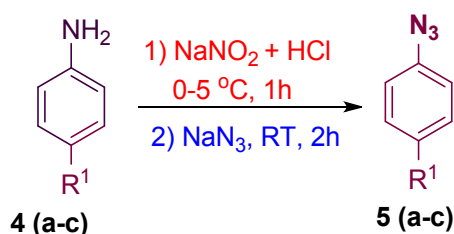
2.1 Synthetic procedures

2.1.1 General procedure for the synthesis¹ of 4-(prop-2-yn-1-yloxy) benzaldehyde (3)



A mixture of 4-hydroxy benzaldehyde (1 mmol) and propargyl bromide (1.2 mmol) in DMF (2 mL) as solvent was stirred with K_2CO_3 at r. t. for 24 h. The progress of the reaction was monitored with TLC [ethyl acetate/petroleum ether (1:4)]. After completion of the reaction, the mixture was extracted with ethyl acetate (3 x 50 mL). The combined ethyl acetate layers were dried over Na_2SO_4 , filtered and concentrated under reduced pressure. The crude product was directly used in the next step without any further purification.

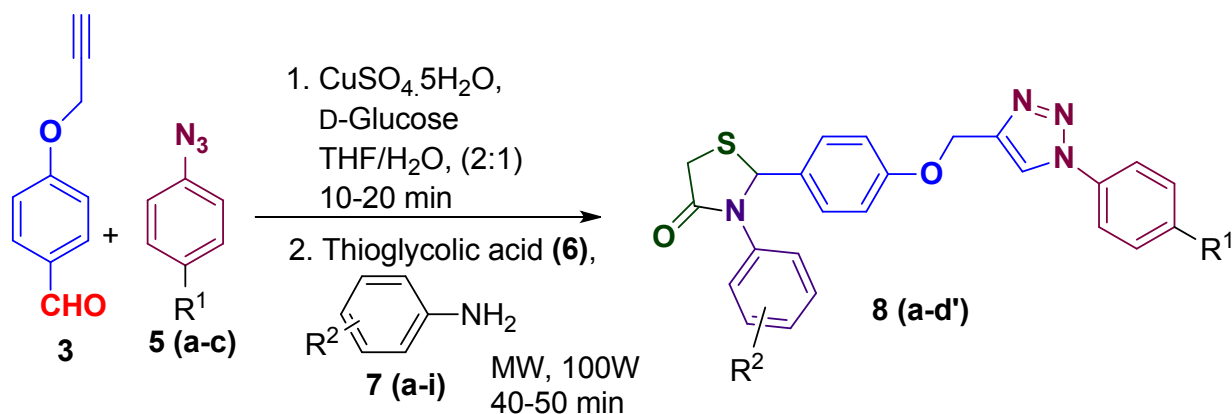
2.1.2 General procedure for the synthesis² of azidobenzene and its derivatives (5a-c)



S.No.	R ¹	Amine	Azide	Ref.
1	H	4a	5a	3(c)
2	Me	4b	5b	3(a)
3	OMe	4c	5c	3(b)

A mixture of appropriate aniline 4 (a-c) (1 mmol) in HCl (17 %, 5 mL) was stirred at 0 °C. Sodium nitrite (1.5 equiv., dissolved in 5 mL of water) was added dropwise and stirring continued at 0 °C. After 15 min, sodium azide (1.5 equiv., dissolved in 5 mL of water) was added dropwise at 0 °C and the mixture was stirred for 3-4 h. The progress of the reaction was monitored by TLC [ethyl acetate/petroleum ether (1:5)]. After completion of the reaction, the reaction mixture was extracted with ethyl acetate (3 x 50 mL). The combined ethyl acetate layers were dried over Na_2SO_4 , filtered and concentrated under reduced pressure. The crude product was directly used in the next step without any further purification.

2.1.3 Synthesis of 3-phenyl-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one and its derivatives (8a-d')



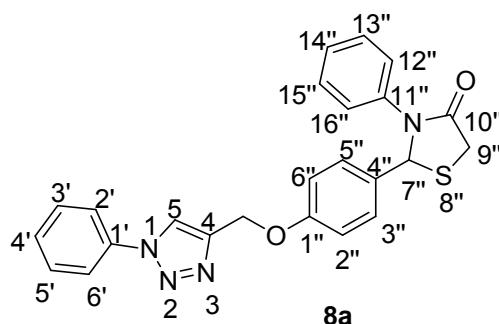
A mixture of the alkyne (1 mmol), the appropriate azide (1.2 mmol), $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (0.2 equiv) and D-Glucose were taken in THF/ H_2O (2:1) in microwave transparent glass vial equipped with a small magnetic stirring bar, and the vial was tightly sealed with a Teflon crimp cap. The mixture was then irradiated for 10-15 min at 70 °C and 100 W maximum power. The reaction mixture was cooled to r. t. and aniline (1.2 mmol) and thioglycolic acid (1.2 mmol) were added. The reaction mixture was irradiated again for 40-50 min at 70 °C and 100 W maximum power. The progress of the reaction was monitored by TLC [ethyl acetate/petroleum ether (1:2)]. After completion of the reaction, the mixture was extracted with ethyl acetate (3 x 50 mL). The combined ethyl acetate layers were dried over Na_2SO_4 , filtered and concentrated under reduced pressure. The crude product was purified by column chromatography over silica gel to yield the desired products **8a-d'**.

References:

1. M. Dabiri, P. Salehi, M. Bahramnejad, F. Sherafat, and M. Bararjanian, *Synth. Commun.* 2012, **42**, 3117;
2. V. Haridas, S. Sahu, and P.P.P. Kumar, *Tetrahedron Lett.* 2011, **52**, 6930.
3. (a) N. T. Pokhodylo, R. D. Savka, V. K. Matiichuk, and N. D. Obushak, *Russ. J. Gen. Chem.* 2009, **79**, 309; (b) O. Berger, A. Kaniti, B. C. Tranvan, H. Vial, S. A. Ward, G. A. Biagini, P. G. O'Neill, and P. M. Bray, *Chem. Med. Chem.* 2011, **6**, 2094; (c) J. Maury, L. Feray, M. P. Bertrand, A. Kapat, and P. Renaul, *Tetrahedron* 2012, **68**, 9606.

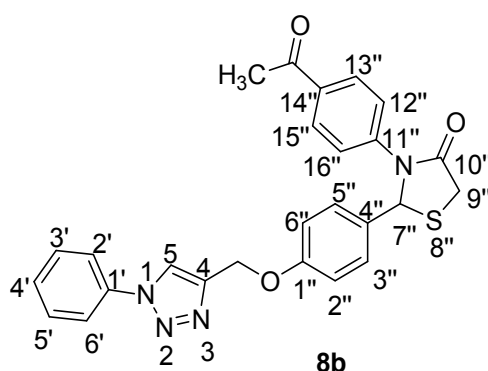
3 Analytical data

3.1 3-phenyl-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8a)



It was obtained as white solid having m. p. 169-171 °C in 75% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2931 (C-H, Ar), 1689 (C=O), 1226 (C-O), 765 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 8.00 (s, 1H, H-5), 7.72 (dd, J = 1.5, 6.5 Hz, 2H, Ar), 7.53-7.45 (m, 3H, Ar), 7.29-7.23 (m, 4H, Ar), 7.176-7.12 (m, 3H, Ar), 6.92 (dd, J = 2.1, 6.5 Hz, 2H, Ar), 6.07 (s, 1H, H-7''), 5.24 (s, 2H, -OCH₂), 3.98 (dd, J = 1.5, 16.1 Hz, 1H, H-9''), 3.87 (d, J = 16.0 Hz, 1H, H-9''); **¹³C NMR (75 MHz, CDCl₃)** δ 170.918 (C=O), 158.51 (C-1''), 144.56, 137.45, 136.90, 131.89, 129.80, 129.09, 128.95, 128.64, 127.12, 125.89, 120.95, 120.61, 115.01, 65.31 (C-7''), 61.99 (-OCH₂), 33.58 (C-9''); **HRMS** calcd. for C₂₄H₂₀N₄O₂SH: 429.5141; found [M+H]⁺: 429.5215.

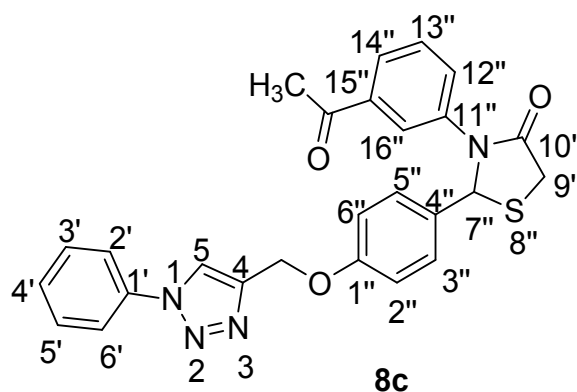
3.2 3-(4-acetylphenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl) thiazolidin-4-one (8b)



It was obtained as a white solid with a m. p. of 123-125 °C in 82% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2923 (-C-H, Ar), 1679 (C=O), 1599 (C=O), 1267 (C-O), 758 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 8.02 (s, 1H, H-5), 7.86 (d, J = 7.5 Hz, 2H, Ar), 7.72 (d, J = 7.32 Hz, 2H, Ar), 7.54-7.42 (m, 3H, Ar), 7.34-7.22 (m, 4H, Ar), 7.31 (d, J = 8.05 Hz, 2H, Ar), 7.25-7.21 (m, 2H, Ar),

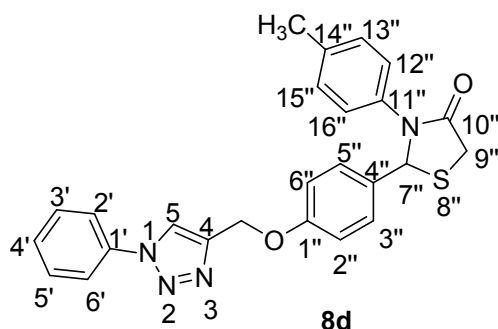
6.93 (d, $J = 8.02$ Hz, 2H, Ar), 6.19 (s, 1H, H-7''), 5.27 (s, 2H, -OCH₂), 3.96 (d, $J = 16.2$ Hz, 1H, H-9''), 3.86 (d, $J = 16.2$ Hz, 1H, H-9''), 2.52 (s, 3H, -COCH₃); ¹³C NMR (100 MHz, CDCl₃) δ 197.00 (-COCH₃), 171.03 (C-10''), 158.59 (C-1''), 144.39, 141.70, 136.81, 134.80, 131.18, 129.78, 129.11, 128.98, 128.34, 124.63, 121.02, 120.56, 115.15, 64.67 (C-7''), 61.90 (-OCH₂), 33.59 (C-9''), 26.49 (-COCH₃); HRMS calcd. for C₂₆H₂₂N₄O₃SH: 471.5508; found [M+H]⁺: 471.5514.

3.3 3-(3-acetylphenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8c)



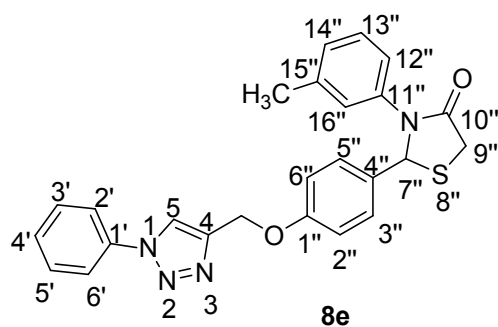
It was obtained as a brown semi solid in 76% yield. IR (KBr) ν_{\max} (cm⁻¹) = 2925 (C-H, Ar), 1685 (C=O), 1598 (C=O), 1240 (C-O), 758 (C-S-C); ¹H NMR (300 MHz, CDCl₃) δ 8.02 (s, 1H, H-5), 7.74-7.70 (m, 4H, Ar), 7.55-7.44 (m, 5H, Ar) 7.38-7.36 (m, 2H, Ar), 6.92 (dd, $J = 2.2, 6.5$ Hz, 2H, Ar), 6.14 (s, 1H, H-7''), 5.22 (s, 2H, -OCH₂), 3.98 (dd, $J = 1.7, 14.6$ Hz, 1H, H-9''), 3.88 (d, $J = 15.6$ Hz, 1H, H-9''), 2.50 (s, 3H, -COCH₃); ¹³C NMR (100 MHz, CDCl₃) δ 197.08 (-COCH₃), 171.12 (C-10''), 158.59 (C-1''), 144.38, 137.84, 137.76, 136.89, 131.16, 130.47, 129.77, 129.32, 128.98, 128.73, 126.89, 125.23, 121.02, 120.56, 115.06, 65.06 (C-7''), 61.83 (-OCH₂), 33.54 (C-9''), 26.56 (-COCH₃); HRMS calcd. for C₂₆H₂₂N₄O₃SH: 471.5508; found [M+H]⁺: 471.5521.

3.4 2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-(*p*-tolyl)thiazolidin-4-one
(8d)



It was obtained as a yellowish solid with a m. p. of 166.0-168.0 °C in 75% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2924 (C-H, Ar), 1681 (C=O), 1239 (C-O), 757 (C-S-C); **$^1\text{H NMR}$** (400 MHz, CDCl_3) δ 8.01 (s, 1H, H-5), 7.70 (d, $J = 8.05$ Hz, 2H, Ar), 7.49 (d, $J = 7.32$ Hz, 2H, Ar) 7.45-7.41 (m, 1H, Ar), 7.24-7.21 (m, 2H, Ar), 7.04 (d, $J = 7.32$ Hz, 2H, Ar), 6.97 (d, $J = 8.05$ Hz, 2H, Ar), 6.90 (d, $J = 8.05$ Hz, 2H, Ar), 6.00 (s, 1H, H-7''), 5.22 (s, 2H, -OCH₂), 3.95 (d, $J = 16.1$ Hz, 1H, H-9''), 3.85 (d, $J = 16.1$ Hz, 1H, H-9''), 2.22 (s, 3H, -CH₃); **$^{13}\text{C NMR}$** (100 MHz, CDCl_3) δ 170.12 (C-10''), 158.42 (C-1''), 144.45, 137.07, 136.78, 134.62, 131.92, 129.70, 128.89, 128.64, 125.84, 120.99, 120.52, 114.89, 65.35 (C-7''), 61.88 (-OCH₂), 33.46 (C-9''), 20.93 (-CH₃); **HRMS** calcd. for $\text{C}_{25}\text{H}_{22}\text{N}_4\text{O}_2\text{S}$: 443.5407; found $[\text{M}+\text{H}]^+$: 443.5414.

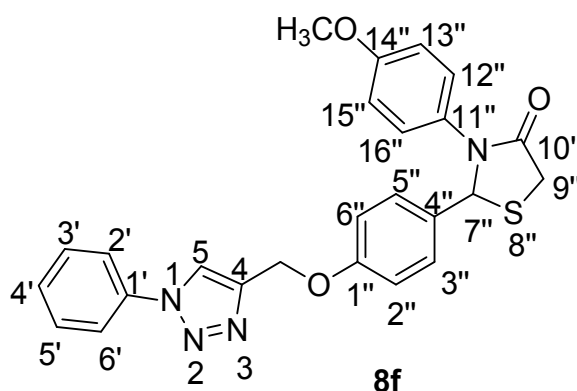
3.5 2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-(*m*-tolyl)thiazolidin-4-one
(8e)



It was obtained as a yellowish solid with a m. p. of 181-183 °C in 84% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2924 (C-H, Ar), 1681 (C=O), 1238 (C-O), 759 (C-S-C); **$^1\text{H NMR}$** (400 MHz, CDCl_3) δ 8.01 (s, 1H, H-5), 7.70 (d, $J = 7.32$ Hz, 2H, Ar), 7.52-7.49 (m, 2H, Ar), 7.45-7.41 (m, 1H, Ar), 7.24-7.21 (m, 2H, Ar), 7.13-7.09 (m, 1H, Ar), 6.95-6.85 (m, 5H, Ar), 6.02 (s, 1H, H-7''), 5.23 (s, 2H, -OCH₂), 3.95 (d, $J = 1.46, 16.11$ Hz, 1H, H-9''), 3.84 (d, $J = 16.11$ Hz, 1H, H-9''),

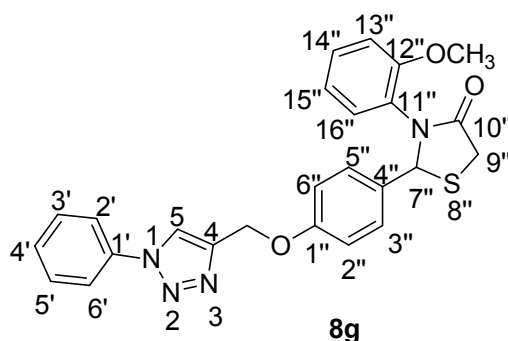
2.23 (s, 3H, -CH₃); ¹³C NMR (100 MHz, CDCl₃) δ 170.96 (C-10''), 158.43 (C-1''), 144.50, 139.00, 137.24, 136.82, 131.96, 129.75, 128.93, 128.81, 128.60, 128.05, 126.66, 122.93, 120.96, 120.56, 114.91, 65.36 (C-7''), 61.90 (-OCH₂), 33.52 (C-9''), 21.29 (-CH₃); HRMS calcd. for C₂₅H₂₂N₄O₂SH: 443.5407; found [M+H]⁺: 443.5419.

3.6 3-(4-methoxyphenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8f)



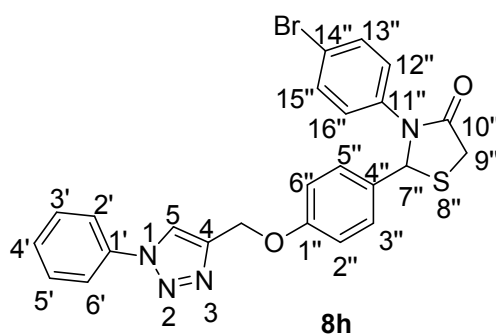
It was obtained as a brown semi solid in 82% yield. IR (KBr) ν_{\max} (cm⁻¹) = 2926 (C-H, Ar), 1676 (C=O), 1215 (C-O), 758 (C-S-C); ¹H NMR (300 MHz, CDCl₃) δ 8.02 (s, 1H, H-5), 7.72 (dd, *J* = 2.0, 7.6 Hz, 2H, Ar), 7.55-7.44 (m, 3H, Ar), 7.26-7.22 (m, 2H, Ar), 7.00-6.91 (m, 4H, Ar), 6.79-6.76 (m, 2H, Ar), 5.96 (s, 1H, H-7''), 5.24 (s, 2H, -OCH₂), 3.97 (dd, *J* = 1.7, 16.11 Hz, 1H, H-9''), 3.86 (d, *J* = 16.0 Hz, 1H, H-9'') 3.71 (s, 3H, -OCH₃); ¹³C NMR (100 MHz, CDCl₃) δ 171.14 (C-10''), 158.52 (C-1''), 144.51, 136.84, 131.91, 129.90, 129.77, 128.95, 128.83, 127.62, 120.97, 120.58, 114.91, 114.42, 65.67 (C-7''), 61.89 (-OCH₂), 55.28 (-OCH₃), 33.40 (C-9''); HRMS calcd. for C₂₅H₂₂N₄O₃SH: 459.5401; found [M+H]⁺: 459.5417.

3.7 3-(2-methoxyphenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8g)



It was obtained as a white solid with a m. p. of 168.0-170.0 °C in 76% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2926 (C-H, Ar), 1686 (C=O), 1236 (C-O), 761 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 8.00 (s, 1H, H-5), 7.69 (d, J = 8.79 Hz, 2H, Ar), 7.52-7.41 (m, 3H, Ar), 7.26-7.24 (m, 2H, Ar), 6.87-6.82 (m, 4H, Ar), 6.77-6.74 (m, 1H, Ar), 6.05 (s, 1H, H-7''), 5.20 (s, 2H, -OCH₂), 3.90-3.80 (m, 2H, H-9''), 3.79 (s, 3H, -OCH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 171.52 (C-10''), 158.45 (C-1''), 154.74, 144.50, 136.78, 131.32, 130.29, 129.74, 129.49, 129.39, 128.94, 125.24, 120.94, 120.71, 120.54, 114.53, 111.81, 64.35(C-7''), 61.79 (-OCH₂), 55.59 (-OCH₃), 33.24 (C-9''); **HRMS** calcd. for C₂₅H₂₂N₄O₃SH: 459.5401; found [M+H]⁺: 459.5409.

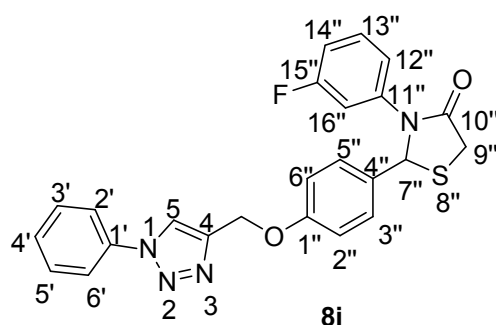
3.8 3-(4-bromophenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8h)



It was obtained as a yellow solid with a m. p. of 87.0-89.0 °C in 62% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2925 (C-H, Ar), 1685 (C=O), 1216 (C-O), 758 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 8.03 (s, 1H, H-5), 7.72 (d, J = 8.05 Hz, 2H, Ar), 7.53-7.43 (m, 3H, Ar), 7.38 (d, J = 8.79 Hz, 2H, Ar), 7.22 (d, J = 8.05 Hz, 2H, Ar), 7.02 (d, J = 8.05 Hz, 2H, Ar), 6.93 (d, J = 8.05 Hz, 2H, Ar), 6.04 (s, 1H, H-7''), 5.25 (s, 2H, -OCH₂), 3.95 (d, J = 16.11 Hz, 1H, H-9''), 3.85 (d, J =

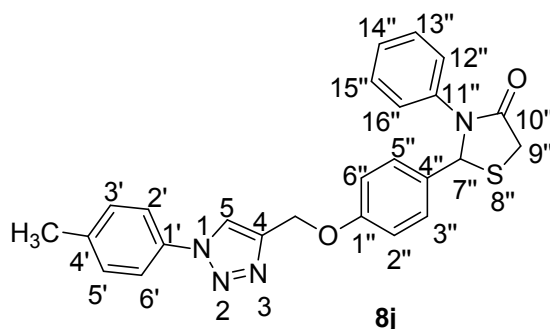
15.38 Hz, 1H, H-9''); ^{13}C NMR (100 MHz, CDCl_3) δ 170.90 (C-10''), 158.62 (C-1''), 144.49, 136.85, 136.45, 132.18, 131.32, 129.79, 128.99, 128.60, 127.23, 121.00, 120.59, 115.11, 65.05 (C-7''), 61.94 ($-\text{OCH}_2$), 33.48 (C-9''); HRMS calcd. for $\text{C}_{24}\text{H}_{19}\text{BrN}_4\text{O}_2\text{SH}$: 508.4102; found $[\text{M}+\text{H}]^+$: 508.4110.

3.9 3-(3-fluorophenyl)-2-(4-((1-phenyl-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8i)



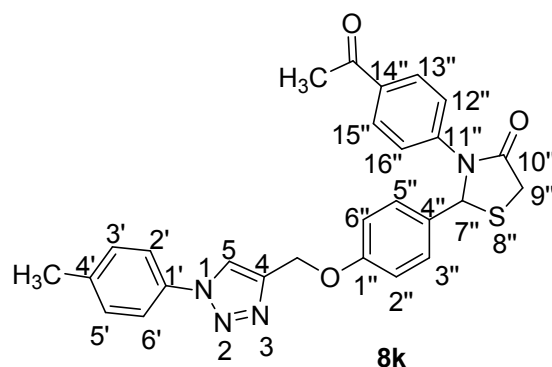
It was obtained as a white solid with a m. p. of 156.0-158.0 °C in 71% yield. IR (KBr) ν_{max} (cm^{-1}) = 2926 (C-H, Ar), 1675 (C=O), 1243 (C-O), 760 (C-S-C); ^1H NMR (400 MHz, CDCl_3) δ 8.01 (s, 1H, H-5), 7.72 (dd, J = 1.09, 8.01 Hz, 2H, Ar), 7.54-7.51 (m, 2H, Ar), 7.47-7.43 (m, 1H, Ar), 7.25-7.19 (m, 3H, Ar), 6.98-6.82 (m, 5H, Ar), 6.07 (s, 1H, H-7''), 5.24 (s, 2H, $-\text{OCH}_2$), 3.95 (dd, J = 1.6, 16.1 Hz, 1H, H-9''), 3.85 (d, J = 16.1 Hz, 1H, H-9''); ^{13}C NMR (100 MHz, CDCl_3) δ 170.94 (C-10''), 158.60 (C-1''), 144.47, 131.44, 129.79, 128.96, 128.43, 120.93, 120.60, 115.12, 114.01, 113.84, 113.08, 112.85, 64.99 (C-7''), 61.97 ($-\text{OCH}_2$), 33.48 (C-9''); HRMS calcd. for $\text{C}_{24}\text{H}_{19}\text{FN}_4\text{O}_2\text{SH}$: 447.1291; found $[\text{M}+\text{H}]^+$: 447.1296.

3.10 3-phenyl-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8j)



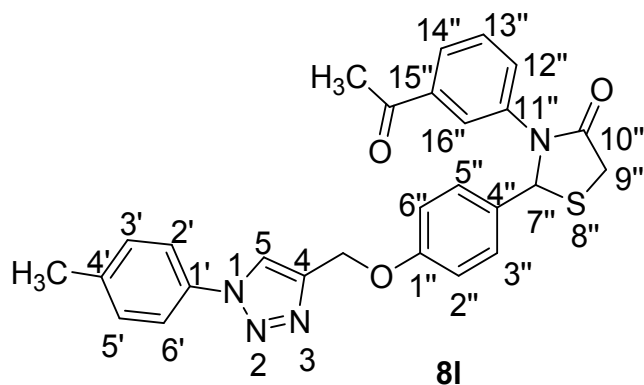
It was obtained as a dark brown solid with a m. p. of 152.0-154.0 °C in 85% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2925 (C-H, Ar), 1701 (C=O), 1228 (C-O), 826 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 8.05 (s, 1H, H-5), 7.72 (d, J = 8.05 Hz, 2H, Ar), 7.54-7.43 (m, 4H, Ar), 7.26-7.23 (m, 1H, Ar), 7.06 (d, J = 7.32 Hz, 2H, Ar), 6.99 (d, J = 8.05 Hz, 2H, Ar), 6.92 (d, J = 8.05 Hz, 2H, Ar), 6.02 (s, 1H, H-7''), 5.24 (s, 2H, -OCH₂), 3.97 (d, J = 15.38 Hz, 1H, H-9''), 3.87 (d, J = 16.11 Hz, 1H, H-9''), 2.24 (s, 2H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 171.48 (C-10''), 158.93 (C-1''), 144.97, 137.59, 137.29, 135.14, 132.44, 130.22, 129.41, 129.16, 126.35, 121.50, 121.03, 115.40, 65.87 (C-7''), 62.40 (-OCH₂), 33.97 (C-9''), 21.45 (-CH₃); **HRMS** calcd. for C₂₅H₂₂N₄O₂SH: 443.5407; found [M+H]⁺: 443.5401.

3.11 3-(4-acetylphenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8k)



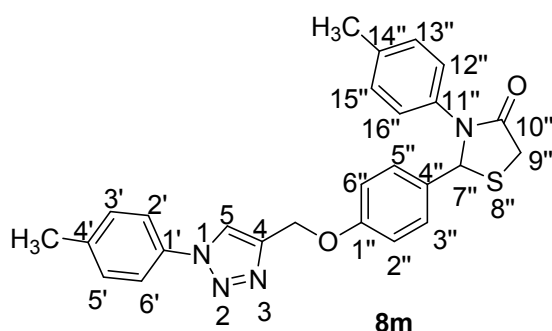
It was obtained as a white solid with a m. p. of 137.0-139.0 °C in 69 % yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2917 (C-H, Ar), 1683 (C=O), 1227 (C-O), 750 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 7.97 (s, 1H, H-5), 7.86 (d, J = 8.6 Hz, 2H, Ar), 7.58 (d, J = 8.6 Hz, 2H, Ar), 7.33-7.29 (m, 4H, Ar), 7.23 (d, J = 8.6 Hz Hz, 1H, Ar), 7.21 (m, 1H, Ar), 6.93 (d, J = 8.00 Hz, 2H, Ar), 6.18 (s, 1H, H-7), 5.22 (s, 2H, -OCH₂), 3.95 (d, J = 16.8 Hz, 1H, H-9''), 3.87 (d, J = 16.8 Hz, 1H, H-9''), 2.51 (s, 3H, -COCH₃), 2.41 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 197.05 (-COCH₃), 170.97 (C-10''), 158.49 (C-1''), 144.31, 141.67, 139.21, 134.85, 134.57, 131.14, 130.26, 129.13, 128.32, 124.62, 120.98, 120.47, 115.17, 64.91 (C-7''), 61.69 (-OCH₂), 33.60 (C-9''), 26.53 (-COCH₃), 21.08 (-CH₃); **HRMS** calcd. for C₂₇H₂₄N₄O₃SH: 485.5774; found [M+H]⁺: 485.5770.

3.12 3-(3-acetylphenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8l)



It was obtained as a dark brown semi solid in 74% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2923 (C-H, Ar), 1682 (C=O), 1240 (C-O), 757 (C-S-C); **^1H NMR (400 MHz, CDCl_3)** δ 7.98 (s, 1H, H-5), 7.73-7.70 (m, 2H, Ar), 7.57 (d, J = 8.72 Hz, 2H, Ar), 7.36-7.35 (m, 2H, Ar), 7.30-7.26 (m, 4H, Ar), 6.91 (d, J = 8.70 Hz, 2H, Ar), 6.13 (s, 1H, H-7''), 5.20 (s, 2H, $-\text{OCH}_2$), 3.97 (d, J = 16.03 Hz, 1H, H-9''), 3.88 (d, J = 16.03 Hz, 1H, H-9''), 2.49 (s, 3H, $-\text{COCH}_3$), 2.40 (s, 3H, $-\text{CH}_3$); **^{13}C NMR (100 MHz, CDCl_3)** δ 197.01 ($-\text{COCH}_3$), 171.06 (C-10''), 158.55 (C-1''), 144.19, 138.89, 137.76, 134.48, 131.03, 130.44, 130.21, 129.28, 128.69, 126.84, 125.21, 120.98, 120.43, 115.03, 65.02 (C-7''), 61.84 ($-\text{OCH}_2$), 33.52 (C-9''), 26.53 ($-\text{COCH}_3$), 21.04 ($-\text{CH}_3$); **HRMS** calcd. for $\text{C}_{27}\text{H}_{24}\text{N}_4\text{O}_3\text{SH}$: 485.5774; found $[\text{M}+\text{H}]^+$: 485.5779.

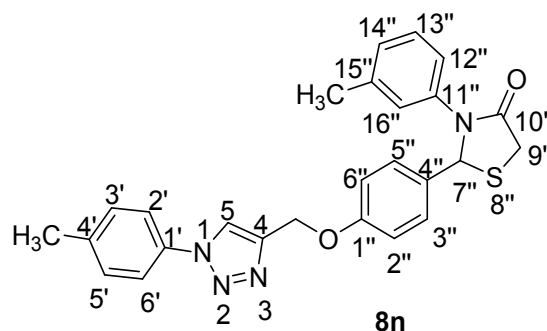
3.13 3-(*p*-tolyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8m)



It was obtained as a white solid with a m. p. of 159.0-161.0 $^{\circ}\text{C}$ in 87% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2925 (C-H, Ar), 1690 (C=O), 1232 (C-O), 819 (C-S-C); **^1H NMR (400 MHz, CDCl_3)** δ 7.97 (s, 1H, H-5), 7.59 (d, J = 2.48, 6.4 Hz, 2H, Ar), 7.31 (d, J = 8.4 Hz, 2H, Ar), 7.25-7.23 (m, 2H, Ar), 7.06 (d, J = 8.4 Hz, 2H, Ar), 7.04-6.97 (m, 2H, Ar), 6.93 (dd, J = 2.4, 6.8 Hz, 2H, Ar), 6.01 (s, 1H, H-7''), 5.22 (s, 2H, $-\text{OCH}_2$), 3.97 (dd, J = 1.6, 15.6 Hz, 1H, H-9''), 3.86 (d, J =

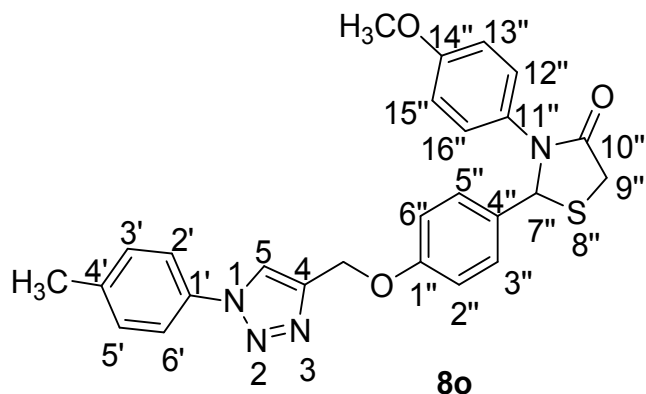
15.6 Hz, 1H, H-9"), 2.42 (s, 3H, -CH₃), 2.24 (s, 3H, -CH₃); ¹³C NMR (100 MHz, CDCl₃) δ 171.02 (C-10"), 158.47 (C-1"), 144.30, 139.08, 137.12, 134.63, 134.53, 131.90, 130.22, 129.73, 128.66, 125.87, 120.94, 120.45, 114.90, 65.39 (C-7"), 61.87 (-OCH₂), 33.48 (C-9"), 21.05 (-CH₃), 20.96 (-CH₃); HRMS calcd. for C₂₆H₂₄N₄O₂SH: 457.5673; found [M+H]⁺: 457.5679.

3.14 3-(*m*-tolyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8n)



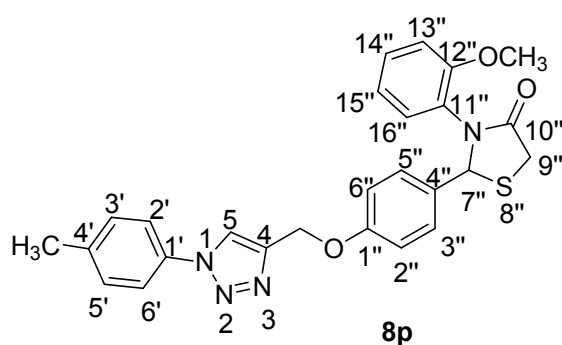
It was obtained as a white solid with a m. p. of 227.0-229.0 °C in 80% yield. IR (KBr) ν_{\max} (cm⁻¹) = 2926 (C-H, Ar), 1676 (C=O), 1237 (C-O), 824 (C-S-C); NMR (300 MHz, CDCl₃) δ 7.97 (s, 1H, H-5), 7.58 (dd, *J* = 2.4, 8.4 Hz, 2H, Ar), 7.32-7.21 (m, 4H, Ar), 7.16-7.1028 (m, 1H, Ar), 7.97-6.86 (m, 5H, Ar), 6.04 (s, 1H, H-7"), 5.22 (s, 2H, -OCH₂), 3.97 (dd, *J* = 2.4, 21.2 Hz, 2H, H-9"), 3.85 (d, *J* = 15.3 Hz, 1H, H-9"), 2.41 (s, 3H, -CH₃), 2.21 (s, 3H, -CH₃); ¹³C NMR (100 MHz, CDCl₃) δ 171.50 (C-10"), 158.95 (C-1"), 144.78, 139.57, 137.60, 135.12, 135.01, 132.38, 130.70, 130.22, 129.15, 126.35, 121.42, 120.94, 115.38, 65.88 (C-7"), 62.36 (-OCH₂), 33.96 (C-9"), 21.53 (-CH₃), 21.44 (-CH₃); HRMS calcd. for C₂₆H₂₄N₄O₂SH: 457.5673; found [M+H]⁺: 457.5670.

3.15 3-(4-methoxyphenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-5-one (8o)



It was obtained as a yellowish solid with a m. p. of 123.0-125.0 °C in 69% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2923 (C-H, Ar), 1678 (C=O), 1246 (C-O), 757 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 7.98 (s, 1H, H-5), 7.60 (d, J = 8.4 Hz, 2H, Ar), 7.32 (d, J = 8.0 Hz, 2H, Ar), 7.26-7.23 (m, 2H, Ar), 7.00 (dd, J = 2.0, 6.8 Hz, 2H, Ar), 6.94 (d, J = 8.4 Hz, 2H, Ar), 6.79 (dd, J = 2.7, 7.3 Hz, 2H, Ar), 5.96 (s, 1H, H-7''), 5.24 (s, 2H, -OCH₂), 3.98 (dd, J = 1.6, 15.6 Hz, 1H, H-9''), 3.87 (d, J = 16.0 Hz, 1H, H-9''), 3.73 (s, 3H, -OCH₃), 2.43 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 171.04 (C-10''), 158.53 (C-1''), 144.30, 139.12, 134.50, 131.90, 130.26, 129.93, 128.82, 127.62, 120.98, 120.48, 114.90, 114.41, 65.62 (C-7''), 61.90 (-OCH₂), 55.28 (-OCH₃), 33.40 (C-9''), 21.07 (-CH₃); **HRMS** calcd. for C₂₆H₂₄N₄O₃SH: 473.5667; found [M+H]⁺: 473.5660.

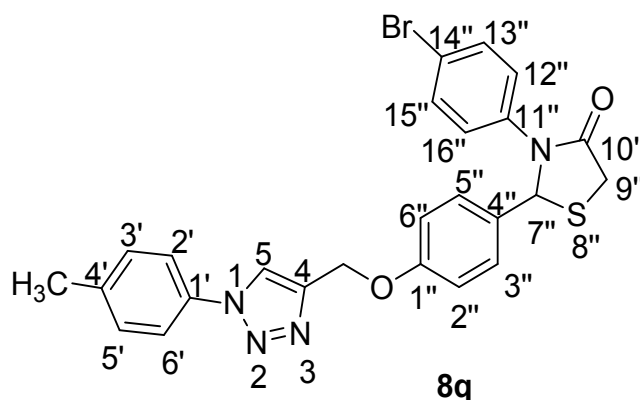
3.16 3-(2-methoxyphenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8p)



It was obtained as a white solid with a m. p. of 237.0-239.0 °C in 70% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2922 (C-H, Ar), 1672 (C=O), 1271 (C-O), 757 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 7.95 (s, 1H, H-5), 7.59 (d, J = 8.8 Hz, 2H, Ar), 7.32-7.14 (m, 5H, Ar), 6.90-6.75-7.20 (m, 5H, Ar), 6.06 (s, 1H, H-7''), 5.21 (s, 2H, -OCH₂), 3.90 (s, 2H, H-9''), 3.82 (s, 3H, -OCH₃), 2.42 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 171.10 (C-10''), 159.99 (C-12''), 158.45 (C-1''),

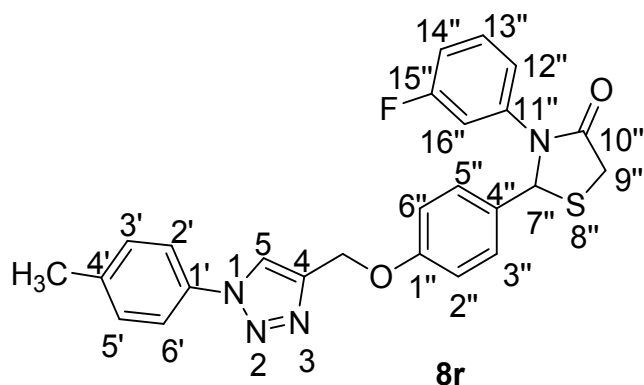
141.18, 137.18, 134.58, 131.92, 129.76, 128.69, 125.90, 122.25, 121.22, 120.03, 114.91, 114.78, 65.44 (C-7''), 61.82 (-OCH₂), 55.61 (-OCH₃), 33.50 (C-9''), 20.99 (-CH₃); **HRMS** calcd. for C₂₆H₂₄N₄O₃SH: 473.5667; found [M+H]⁺: 473.5662.

3.17 3-(4-bromophenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8q)



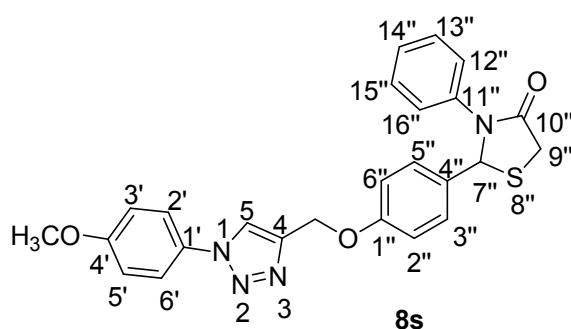
It was obtained as a white solid with a m. p. of 180.0-182.0 °C in 68% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2926 (C-H, Ar), 1684 (C=O), 1231 (C-O), 823 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 7.98 (s, 1H, H-5), 7.59 (d, *J* = 8.4 Hz, 2H, Ar), 7.40-7.36 (m, 2H, Ar), 7.31 (d, *J* = 8.4 Hz, 2H, Ar), 7.24-7.20 (m, 2H, Ar), 7.03 (d, *J* = 8.8 Hz, 2H, Ar), 6.94 (d, *J* = 8.8 Hz, 2H, Ar), 6.04 (s, 1H, H-7''), 5.23 (s, 2H, -OCH₂), 3.95 (dd, *J* = 1.2, 15.6 Hz, 1H, H-9''), 3.85 (d, *J* = 15.6 Hz, 1H, H-9''), 2.42 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 170.87 (C-10''), 158.64 (C-1''), 144.26, 139.10, 136.44, 134.55, 132.17, 131.26, 130.26, 128.57, 127.22, 120.97, 120.58, 120.46, 115.09, 64.98 (C-7''), 61.95 (-OCH₂), 33.47 (C-9''), 21.07 (-CH₃); **HRMS** calcd. for C₂₅H₂₁BrN₄O₂SH: 522.4368; found [M+H]⁺: 522.4360.

3.18 3-(3-fluorophenyl)-2-(4-((1-(*p*-tolyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8r)



It was obtained as a white solid with a m. p. of 276-278 °C in 76% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2928 (C-H, Ar), 1638 (C=O), 1255 (C-O), 825 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 8.05 (s, 1H, H-5), 7.41 (d, J = 8.05 Hz, 2H, Ar), 7.54 (t, J = 7.32 Hz, 2H, Ar), 7.49-7.45 (m, 1H, Ar), 7.26 (d, J = 8.05 Hz, 2H, Ar), 7.08 (d, J = 7.32 Hz, 2H, Ar), 7.01 (d, J = 8.05 Hz, 2H, Ar), 6.94 (d, J = 8.05 Hz, 1H, Ar), 6.04 (s, 1H, H-7''), 5.26 (s, 2H, -OCH₂), 3.98 (d, J = 16.11 Hz, 1H, H-9''), 3.88 (d, J = 16.11 Hz, 1H, H-9''), 2.26 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 170.04 (C-10''), 157.66 (C-1''), 143.11, 138.07, 133.64, 130.45, 129.37, 127.69, 120.84, 120.19, 119.47, 114.14, 112.86, 112.66, 112.19, 111.95, 63.74 (C-7''), 60.75 (-OCH₂), 32.56 (C-9''), 20.17 (-CH₃); **HRMS** calcd. for C₂₅H₂₁FN₄O₂SH: 461.5312; found [M+H]⁺: 461.5318.

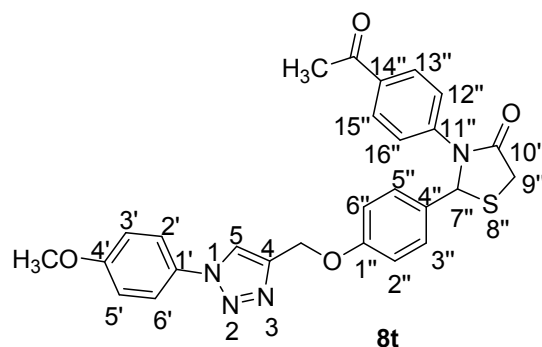
3.19 2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-phenylthiazolidin-4-one (8s)



It was obtained as a yellowish solid with a m. p. of 170.0-172.0 °C in 76 % yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2924 (C-H, Ar), 1683 (C=O), 1248 (C-O), 757 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 7.92 (s, 1H, H-5), 7.64-7.60 (m, 2H, Ar), 7.29-7.23 (m, 4H, Ar), 7.18-7.12 (m, 2H, Ar), 7.04-7.01 (m, 2H, Ar), 6.92 (d, J = 8.05 Hz, 2H, Ar), 6.07 (s, 1H, H-7''), 5.22 (s, 2H, -OCH₂), 4.00-3.85 (m, 5H, H-9'' & -OCH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 170.93 (C-10''), 159.88 (C-4'), 3.85 (m, 5H, H-9'' & -OCH₃);

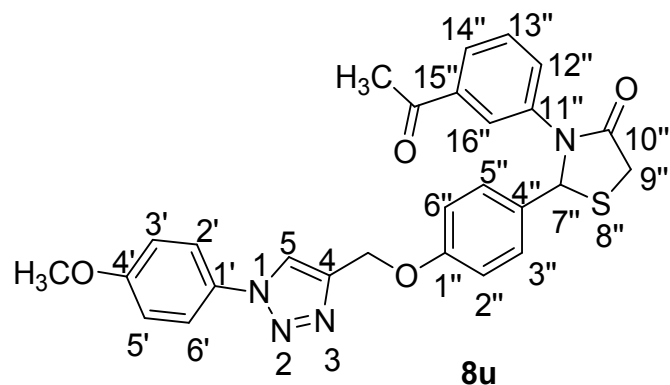
158.49 (C-1''), 144.23, 137.36, 131.75, 130.26, 129.04, 128.59, 127.09, 125.85, 122.20, 121.11, 114.93, 114.73, 65.28 (C-7''), 61.91 (-OCH₂), 55.58 (-OCH₃), 33.52 (C-9''); **HRMS** calcd. for C₂₅H₂₂N₄O₃SH: 459.5401; found [M+H]⁺: 459.5407.

3.20 3-(4-acetylphenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8t)



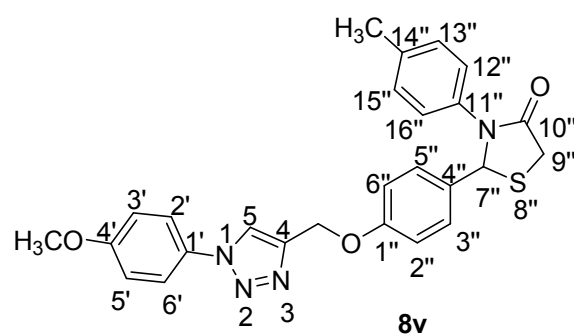
It was obtained as a yellow solid with a m. p. of 131.0-133.0 °C in 76% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2925 (C-H, Ar), 1685 (C=O), 1230 (C-O), 837 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 7.93 (s, 1H, H-5), 7.86 (dd, J = 2.8, 8.8 Hz, 2H, Ar), 7.60 (dd, J = 2.8, 8.8 Hz, 2H, Ar), 7.32 (dd, J = 2.8, 8.8 Hz, 2H, Ar), 7.26-7.22 (m, 2H, Ar), 7.03-6.99 (m, 2H, Ar), 6.94-6.91 (m, 2H, Ar), 6.18 (s, 1H, H-7''), 5.21 (s, 2H, -OCH₂), 3.99-3.83 (m, 5H, H-9'' & -OCH₃), 2.52 (s, 3H, -COCH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 197.37 (-COCH₃), 176.27 (C-10''), 171.16, 159.61 (C-4'), 158.57 (C-1''), 141.78, 134.72, 131.13, 129.14, 128.35, 124.68, 122.24, 115.15, 114.80, 64.70 (C-7''), 61.80 (-OCH₂), 55.61 (-OCH₃), 33.60 (C-9''), 26.50 (-COCH₃); **HRMS** calcd. for C₂₇H₂₄N₄O₄SH: 501.5768; found [M+H]⁺: 501.5760.

3.21 3-(3-acetylphenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8u)



It was obtained as a brown semi solid in 83% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2922 (C-H, Ar), 1683 (C=O), 1247 (C-O), 759 (C-S-C); **¹H NMR** (300 MHz, CDCl₃) δ 7.93 (s, 1H, H-5), 7.74-7.71 (m, 2H, Ar), 7.62-7.58 (m, 2H, Ar), 7.38-7.36 (m, 1H, Ar), 7.27-7.24 (m, 2H, Ar), 7.02-6.99 (m, 2H, Ar), 6.93-6.90 (m, 2H, Ar), 6.11 (s, 1H, H-7''), 5.20 (s, 2H, -OCH₂), 4.01-3.86 (m, 5H, H-9'' & -OCH₃), 2.50 (s, 3H, -COCH₃); **¹³C NMR** (100 MHz, CDCl₃) δ 197.12 (-COCH₃), 171.17 (C-10''), 159.94 (C-4'), 159.60 (C-1''), 144.09, 131.08, 130.48, 130.15, 129.31, 128.72, 126.91, 125.25, 122.21, 121.22, 115.04, 114.75, 65.08 (C-7''), 61.79 (-OCH₂), 55.59 (-OCH₃), 33.54 (C-9''), 26.55 (-COCH₃); **HRMS** calcd. for C₂₇H₂₄N₄O₄SH: 501.5768; found [M+H]⁺: 501.5762.

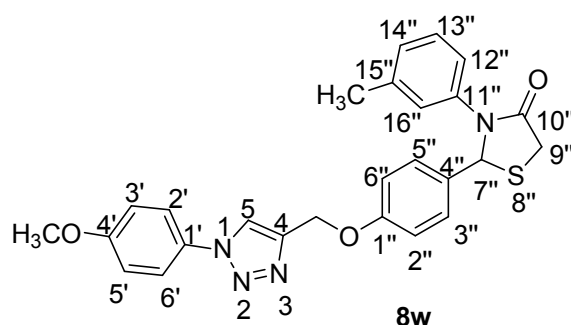
3.22 2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-(p-tolyl)thiazolidin-4-one (8v)



It was obtained as a white solid with a m. p. of 100-102 °C in 79% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2923 (C-H, Ar), 1683 (C=O), 1238 (C-O), 758 (C-S-C); **¹H NMR** (300 MHz, CDCl₃) δ 7.93 (s, 1H, H-5), 7.61 (dd, J = 2.8, 8.8 Hz, 2H, Ar), 7.26-7.22 (m, 2H, Ar), 7.07-6.97 (m, 6H, Ar), 6.92 (dd, J = 2.8, 8.8 Hz, 2H, Ar), 6.02 (s, 1H, H-7''), 5.21 (s, 2H, -OCH₂), 3.99-3.83 (m, 5H, H-9'' & -OCH₃), 2.24 (s, 3H, -CH₃); **¹³C NMR** (100 MHz, CDCl₃)

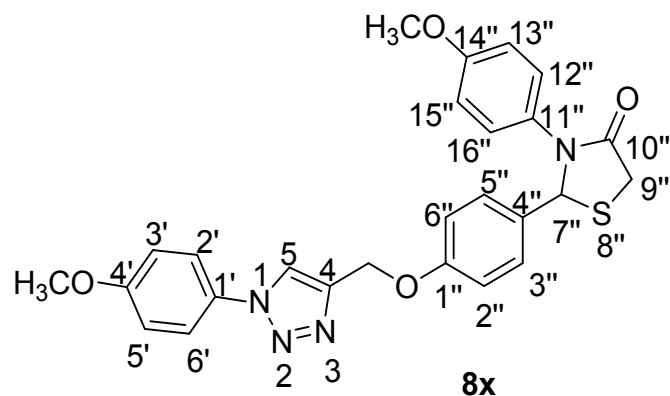
δ 171.10 (C-10"), 159.98 (C-4') , 158.45 (C-1"), 144.18, 137.18, 134.45, 131.92, 129.76, 128.69, 125.90, 122.25, 121.22, 114.91, 114.78, 65.44 (C-7"), 61.82 (-OCH₂), 55.61 (-OCH₃), 33.50 (C-9"), 20.99 (-CH₃); **HRMS** calcd. for C₂₆H₂₄N₄O₃SH: 473.5667; found [M+H]⁺: 473.5662.

3.23 2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)-3-(*m*-tolyl)thiazolidin-4-one (8w)



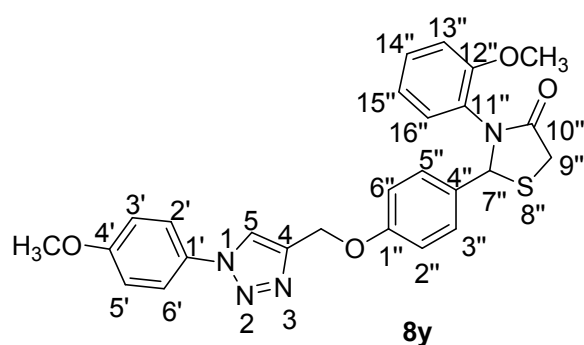
It was obtained as a white solid with a m. p. of 158.0-160.0 °C in 73 % yield. **IR** (KBr) ν_{max} (cm⁻¹) = 2925 (C-H, Ar), 1677 (C=O), 1241 (C-O), 833 (C-S-C); **¹H NMR (300 MHz, CDCl₃)** δ 7.93 (s, 1H, H-5), 7.60 (dd, *J* = 3.2, 8.8 Hz, 2H, Ar), 7.26-7.22 (m, 2H, Ar), 7.16-7.10 (m, 1H, Ar), 7.02-6.86 (m, 7H, Ar), 6.04 (s, 1H, H-7"), 5.21 (s, 2H, -OCH₂), 3.99-3.82 (m, 5H, H-9" & -OCH₃), 2.25 (s, 3H, -CH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 173.56 (C-10"), 171.09, 159.92 (C-4'), 158.40 (C-1"), 144.15, 138.98, 137.13, 131.83, 130.13, 128.78, 128.59, 128.07, 126.65, 122.93, 122.18, 121.20, 114.88, 114.72, 65.39 (C-7"), 61.79 (-OCH₂), 55.56 (-OCH₃), 33.49 (C-9"), 21.25 (-CH₃); **HRMS** calcd. for C₂₆H₂₄N₄O₃SH: 473.5667; found [M+H]⁺: 473.5665.

3.24 3-(4-methoxyphenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8x)



It was obtained as a white solid with a m. p. of 164.0-166.0 °C in 87% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2923 (C-H, Ar), 1681 (C=O), 1248 (C-O), 759 (C-S-C); **$^1\text{H NMR}$** (300 MHz, CDCl_3) δ 7.93 (s, 1H, H-5), 7.61 (d, J = 8.8 Hz, 2H, Ar), 7.24 (d, J = 8.8 Hz, 2H, Ar), 7.02-6.96 (m, 4H, Ar), 6.92 (d, J = 8.4 Hz, 2H, Ar), 6.77 (d, J = 8.8 Hz, 2H, Ar), 5.95 (s, 1H, H-7''), 5.22 (s, 2H, $-\text{OCH}_2$), 3.98-3.84 (m, 5H, H-9'' & $-\text{OCH}_3$), 3.71 (s, 3H, $-\text{OCH}_3$); **$^{13}\text{C NMR}$** (100 MHz, CDCl_3) δ 171.00 (C-10''), 159.98, 158.41 (C-1''), 144.17, 131.95, 130.17, 129.94, 128.81, 127.60, 122.25, 121.28, 114.91, 114.78, 114.40, 65.58 (C-7''), 61.89 ($-\text{OCH}_2$), 55.60 ($-\text{OCH}_3$), 55.28 ($-\text{OCH}_3$), 33.39 (C-9''); **HRMS** calcd. for $\text{C}_{26}\text{H}_{24}\text{N}_4\text{O}_4\text{SH}$: 489.5661; found $[\text{M}+\text{H}]^+$: 489.5658.

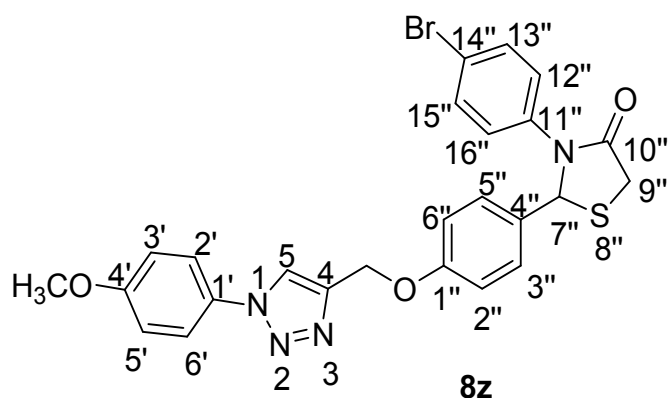
3.25 3-(2-methoxyphenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8y)



It was obtained as a yellow solid with a m. p. of 156.0-158.0 °C in 80% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2929 (C-H, Ar), 1682 (C=O), 1255 (C-O), 753 (C-S-C); **$^1\text{H NMR}$** (300 MHz, CDCl_3) δ 7.91 (s, 1H, H-5), 7.61 (dd, J = 3.2, 8.8 Hz, 2H, Ar), 7.28-7.25 (m, 2H, Ar), 7.20-7.14 (m, 1H, Ar), 7.03-6.99 (m, 2H, Ar), 6.90-6.78 (m, 5H, Ar), 6.06 (s, 1H, H-7''), 5.21 (s, 2H, $-\text{OCH}_2$), 3.91-3.82 (m, 8H, H-9'', 2 x $-\text{OCH}_3$); **$^{13}\text{C NMR}$** (100 MHz, CDCl_3) δ 171.32 (C-10''), 159.86

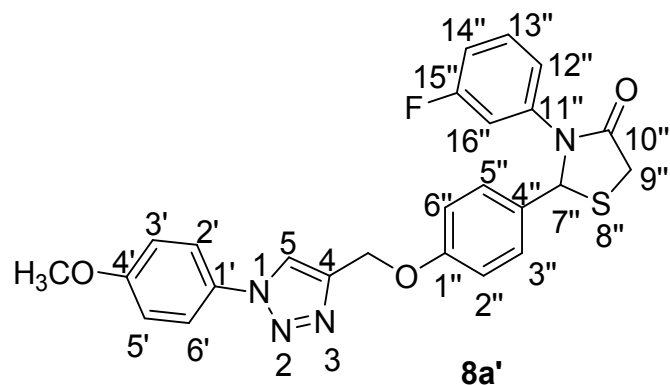
(C-4'), 158.48 (C-12''), 154.76 (C-1''), 144.22, 131.34, 130.32, 130.23, 129.44, 129.35, 125.32, 122.17, 121.10, 120.70, 114.71, 114.51, 111.80, 64.27 (C-7''), 61.84 (-OCH₂), 55.58 (-OCH₃), 33.22 (C-9''); **HRMS** calcd. for C₂₆H₂₄N₄O₄SH: 489.5661; found [M+H]⁺: 489.5665.

3.26 3-(4-bromophenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl) methoxy)phenyl)thiazolidin-4-one (8z)



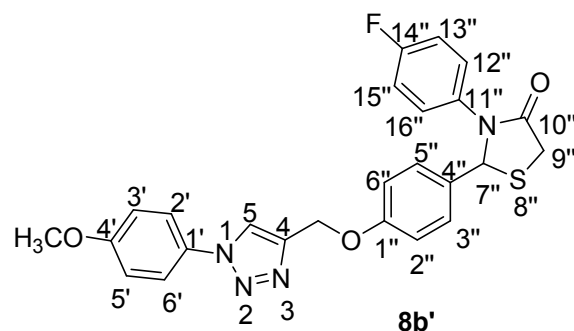
It was obtained as a yellow solid with a m. p. of 104.0-106.0 °C in 74% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2957 (C-H, Ar), 1637 (C=O), 1249 (C-O), 756 (C-S-C); **¹H NMR** (400 MHz, CDCl₃) δ 7.95 (s, 1H, H-5), 7.59 (d, *J* = 8.79 Hz, 2H, Ar), 7.36 (d, *J* = 8.79 Hz, 2H, Ar), 7.20 (d, *J* = 9.15 Hz, 2H, Ar), 7.00 (d, *J* = 8.79 Hz, 4H, Ar), 6.91 (d, *J* = 8.05 Hz, 2H, Ar), 6.02 (s, 1H, H-7''), 5.23 (s, 2H, -OCH₂), 3.95-3.82 (m, 5H, H-9'' & -OCH₃); **¹³C NMR** (100 MHz, CDCl₃) δ 171.11 (C-10''), 160.05 (C-4'), 158.59 (C-1''), 136.67, 132.19, 131.33, 130.17, 128.61, 127.24, 122.27, 121.26, 120.60, 115.10, 114.83, 65.00 (C-7''), 61.82 (OCH₂), 55.64 (-OCH₃), 33.49 (C-9''); **HRMS** calcd. for C₂₅H₂₁BrN₄O₃SH: 538.4362; found [M+H]⁺: 538.4368.

3.27 3-(3-fluorophenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl) methoxy)phenyl)thiazolidin-4-one (8a')



It was obtained as a yellowish solid with a m. p. of 167.0-169.0 °C in 75% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2922 (C-H, Ar), 1689 (C=O), 1255 (C-O), 756 (C-S-C); **^1H NMR (300 MHz, CDCl_3)** δ 7.92 (s, 1H, H-5), 6.97 (d, J = 8.8 Hz, 2H, Ar), 6.62-6.52 (m, 3H, Ar), 6.39-6.28 (m, 6H, Ar), 6.24-6.19 (m, 1H, Ar), 5.43 (s, 1H, H-7''), 4.59 (s, 2H, $-\text{OCH}_2$), 3.33-3.19 (m, 5H, H-9'' & $-\text{OCH}_3$); **^{13}C NMR (100 MHz, CDCl_3)** δ 170.95 (C-10''), 160.02 (C-4'), 158.56 (C-1''), 144.09, 139.04, 131.44, 130.21, 128.43, 122.30, 115.15, 114.81, 114.06, 113.09, 65.01 (C-7''), 62.02 ($-\text{OCH}_2$), 55.63 ($-\text{OCH}_3$), 33.49 (C-9''); **HRMS** calcd. for $\text{C}_{25}\text{H}_{21}\text{FN}_4\text{O}_3\text{SH}$: 477.5306; found $[\text{M}+\text{H}]^+$: 477.5300.

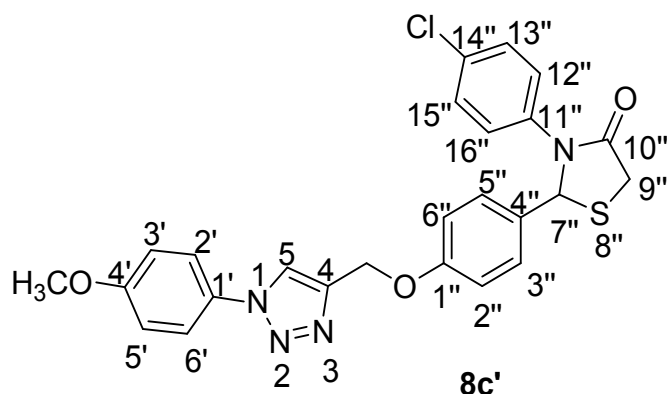
3.28 3-(4-fluorophenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8b')



It was obtained as a brown solid with a m. p. of 76.0-78.0 °C in 78% yield. **IR** (KBr) ν_{\max} (cm^{-1}) = 2925 (C-H, Ar), 1682 (C=O), 1237 (C-O), 757 (C-S-C); **^1H NMR (300 MHz, CDCl_3)** δ 7.93 (s, 1H, H-5), 7.61 (dd, J = 2.4, 8.8 Hz, 2H, Ar), 7.24-7.21 (m, 1H, Ar), 7.10-6.92 (m, 8H, Ar), 6.00 (s, 1H, H-7''), 5.23 (s, 2H, $-\text{OCH}_2$), 3.99-3.84 (m, 5H, H-9'' & $-\text{OCH}_3$); **^{13}C NMR (100 MHz, CDCl_3)** δ 170.01 (C-10''), 160.03 (C-4'), 158.47 (C-1''), 144.23, 131.42, 128.86,

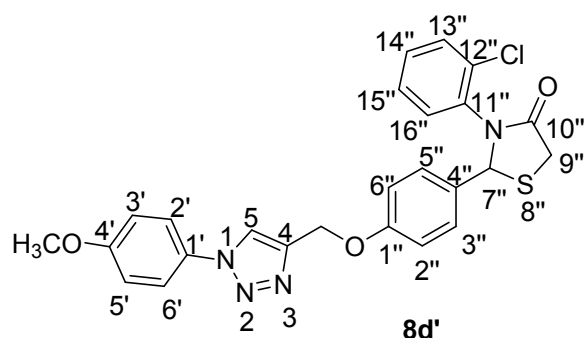
128.03, 122.24, 121.13, 116.20, 115.98, 115.04, 114.79, 65.38 (C-7''), 61.89 (-OCH₂), 55.68 (-OCH₃), 33.42; **HRMS** calcd. for C₂₅H₂₁FN₄O₃SH: 477.5306; found [M+H]⁺: 477.5302.

3.29 3-(4-chlorophenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8c')



It was obtained as a yellowish solid with a m. p. of. 84.0-86.0 °C in 85% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2923 (C-H, Ar), 1688 (C=O), 1249 (C-O), 757 (C-S-C); **¹H NMR (400 MHz, CDCl₃)** δ 7.98 (s, 1H, H-5), 7.61 (d, *J* = 8.79 Hz, 2H, Ar), 7.26-7.21 (m, 4H, Ar), 7.07 (d, *J* = 8.79 Hz, 2H, Ar), 7.02 (d, *J* = 8.79 Hz, 2H, Ar), 6.93 (d, *J* = 8.05 Hz, 2H, Ar), 6.03 (s, 1H, H-7''), 5.25 (s, 2H, -OCH₂), 3.97-3.84 (m, 5H, H-9'' & -OCH₃); **¹³C NMR (100 MHz, CDCl₃)** δ 171.01 (C-10''), 160.13 (C-4'), 158.59 (C-1''), 135.92, 132.65, 132.04, 131.37, 129.24, 128.63, 126.99, 122.28, 115.10, 114.85, 65.09 (C-7''), 61.83 (-OCH₂), 55.63 (-OCH₃), 33.47 (C-9''); **HRMS** calcd. for C₂₅H₂₁ClN₄O₃SH: 493.1101; found [M+H]⁺: 493.1107.

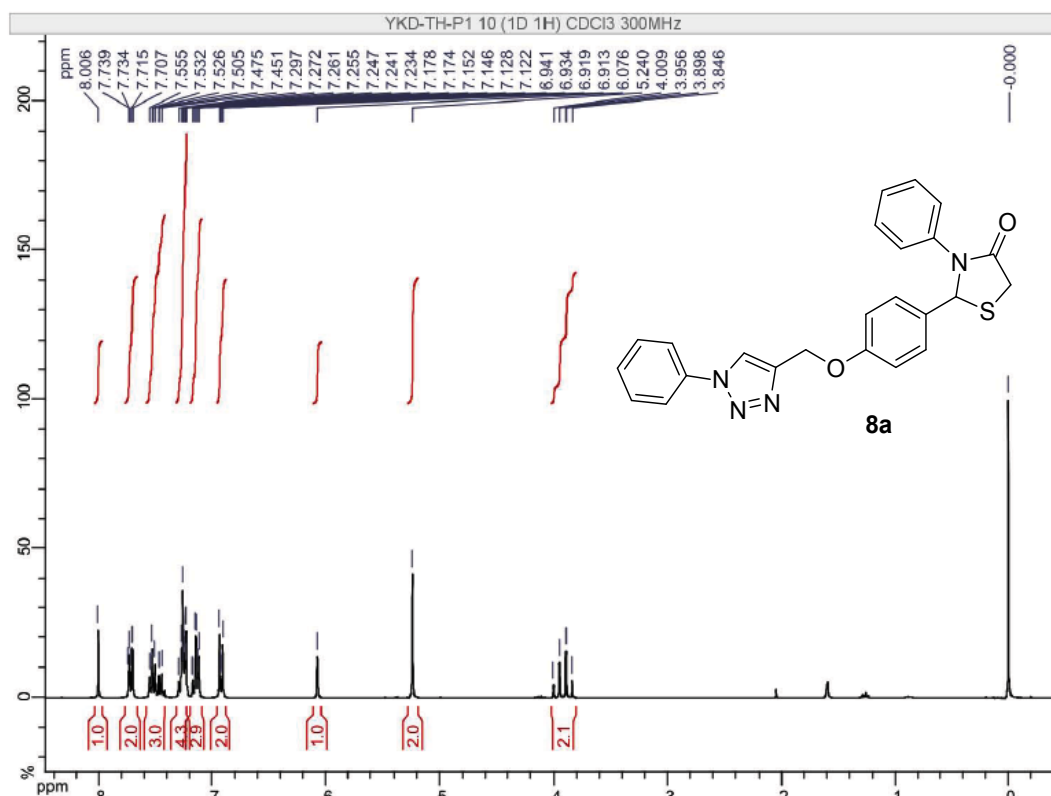
3.30 3-(2-chlorophenyl)-2-(4-((1-(4-methoxyphenyl)-1H-1,2,3-triazol-4-yl)methoxy)phenyl)thiazolidin-4-one (8d')



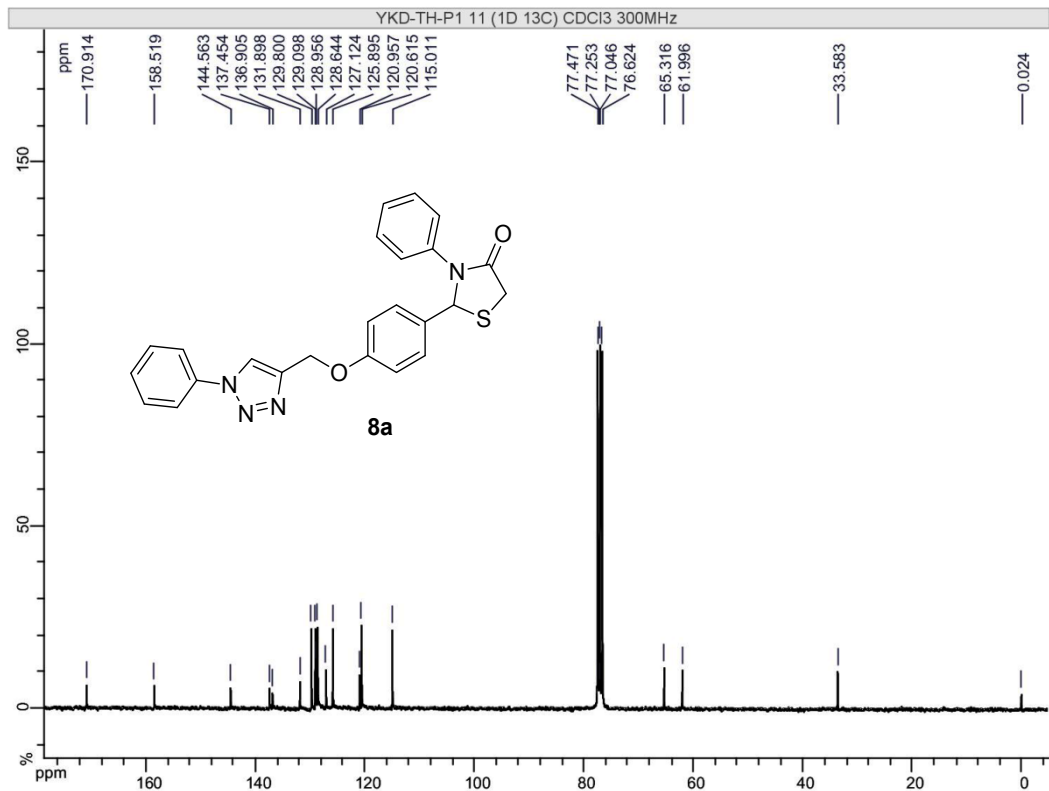
It was obtained as a light brown solid with a m. p. of 103.0-105.0 °C in 77% yield. **IR** (KBr) ν_{\max} (cm⁻¹) = 2930 (C-H, Ar), 1702 (C=O), 1256 (C-O), 830 (C-S-C); **¹H NMR (300 MHz,**

CDCl_3) δ 7.93 (s, 1H, H-5), 7.61 (d, $J = 8.79$ Hz, 2H, Ar), 7.42-7.38 (m, 1H, Ar), 7.32-7.29 (m, 2H, Ar), 7.23-7.07 (m, 3H, Ar), 7.03-7.00 (m, 2H, Ar), 6.93-6.90 (m, 2H, Ar), 6.04 (s, 1H, H-7"), 5.23 (s, 2H, $-\text{OCH}_2$), 3.94-3.81 (m, 5H, H-9" & $-\text{OCH}_3$); ^{13}C NMR (100 MHz, CDCl_3) δ 176.47 (C-10"), 159.98 (C-4'), 158.33 (C-1"), 144.37, 130.69, 130.28, 129.52, 122.28, 121.24, 115.00, 114.80, 62.14 (C-7"), 55.63 ($-\text{OCH}_2$), 51.54 ($-\text{OCH}_3$), 33.42 (C-9"); HRMS calcd. for $\text{C}_{25}\text{H}_{21}\text{ClN}_4\text{O}_3\text{SH}$: 493.1101; found $[\text{M}+\text{H}]^+$: 493.1112.

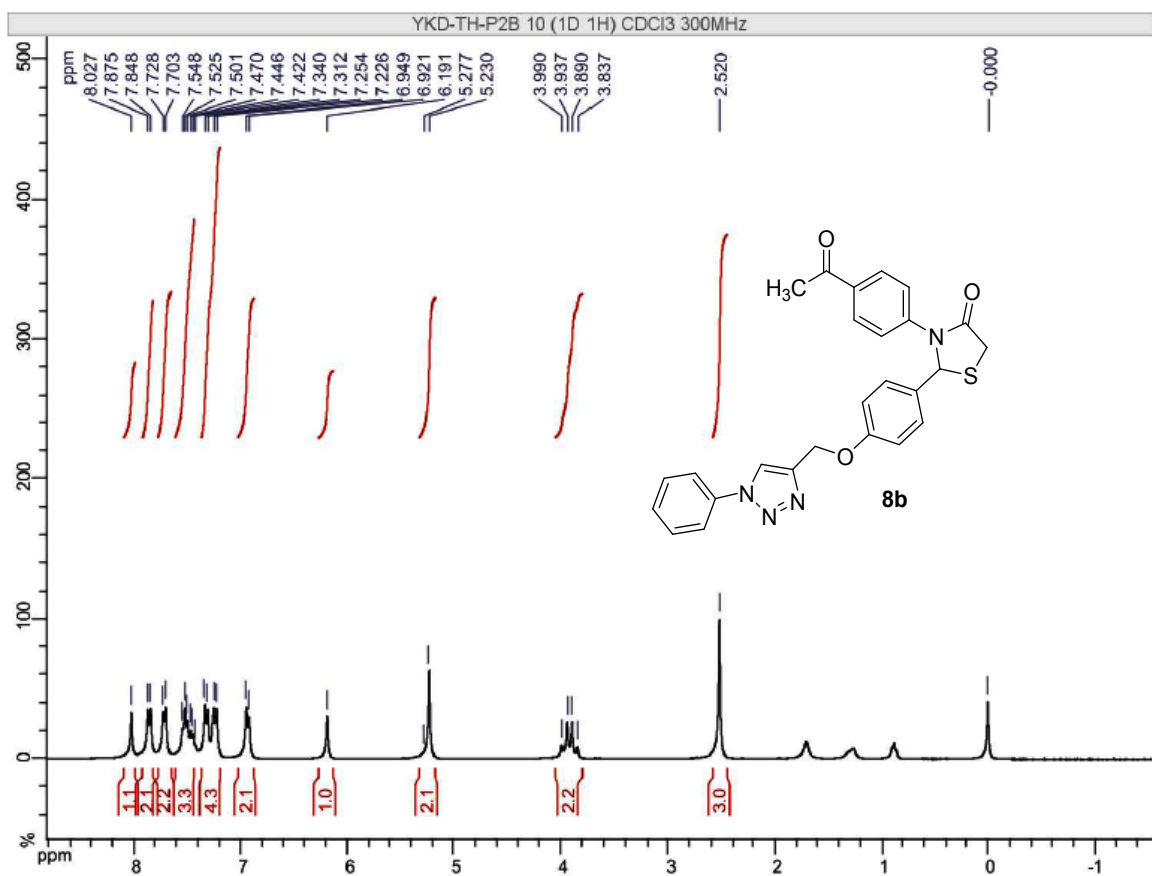
4. Copies of NMR spectra for new compound:



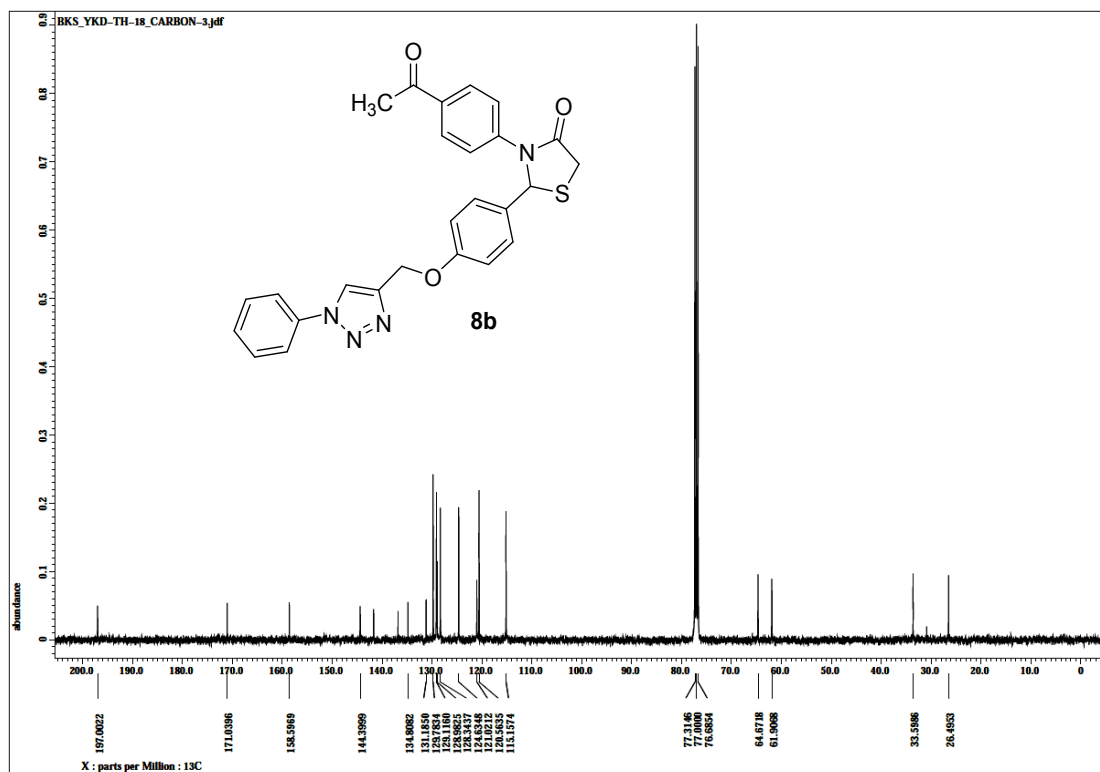
^1H Spectra of compound (**8a**) (300 MHz, CDCl_3)



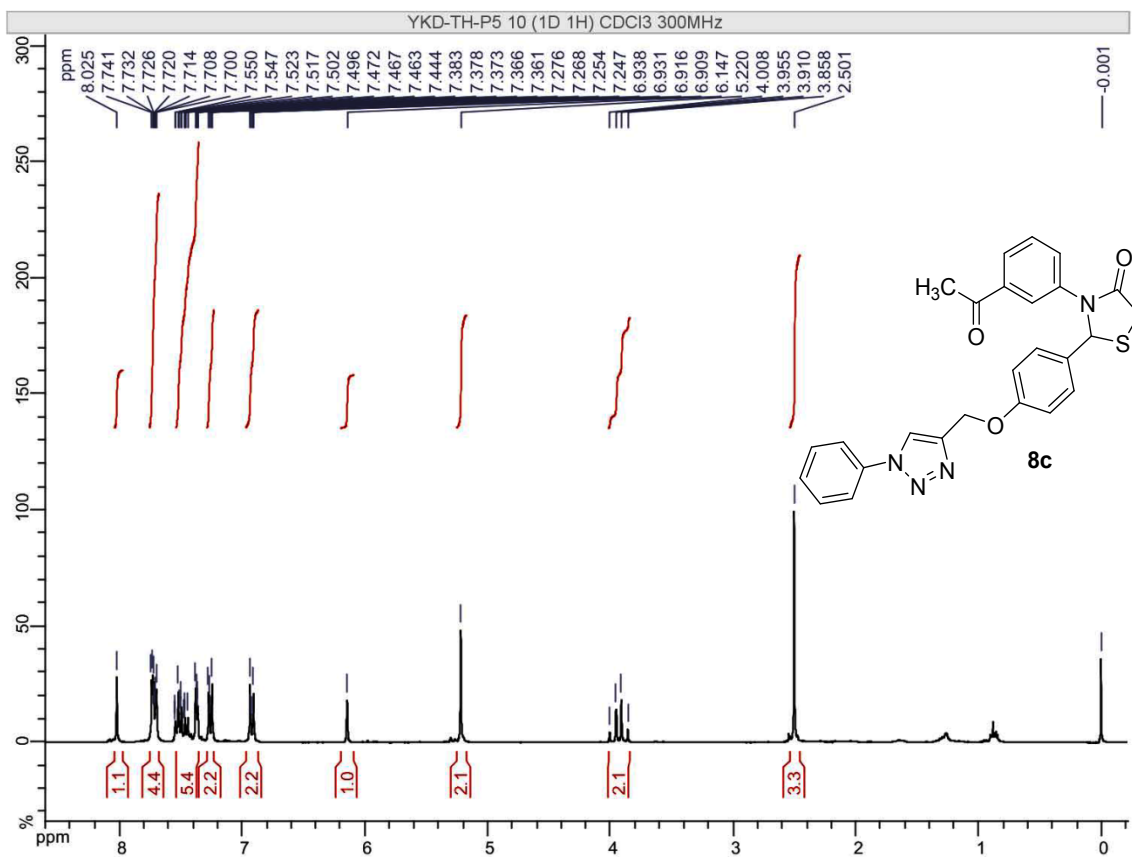
¹³C Spectra of compound (**8a**) (75 MHz, CDCl₃)



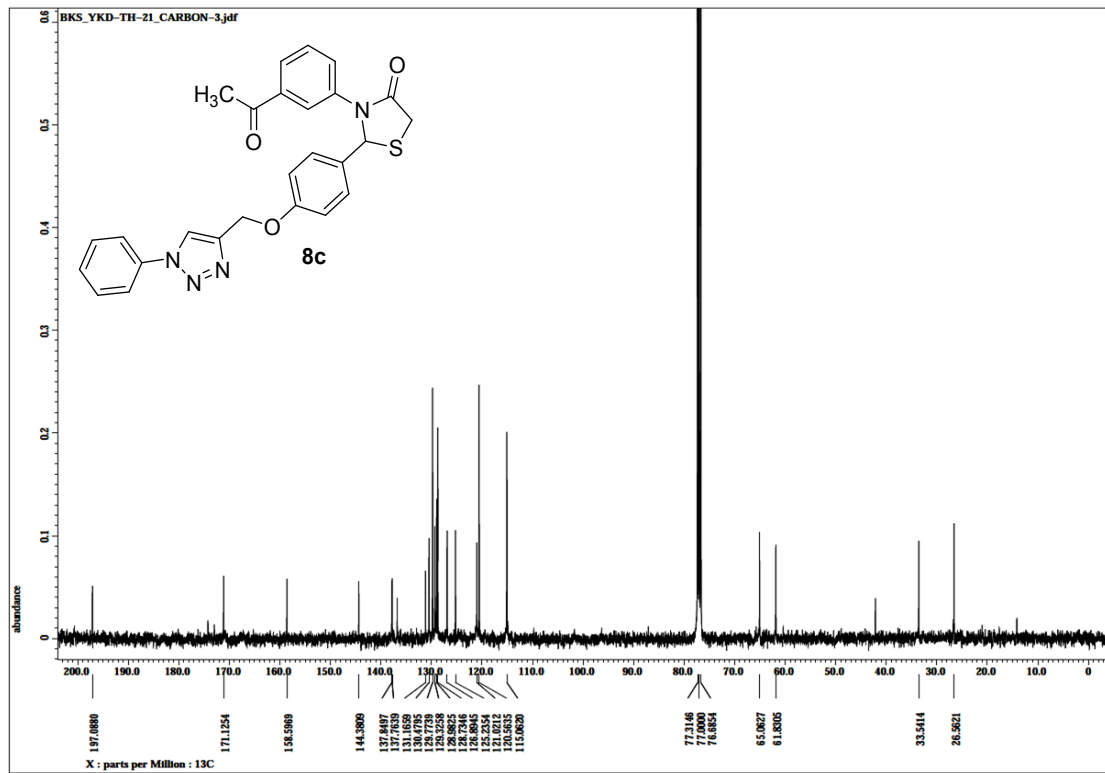
¹H Spectra of compound (8b) (300 MHz, CDCl₃)



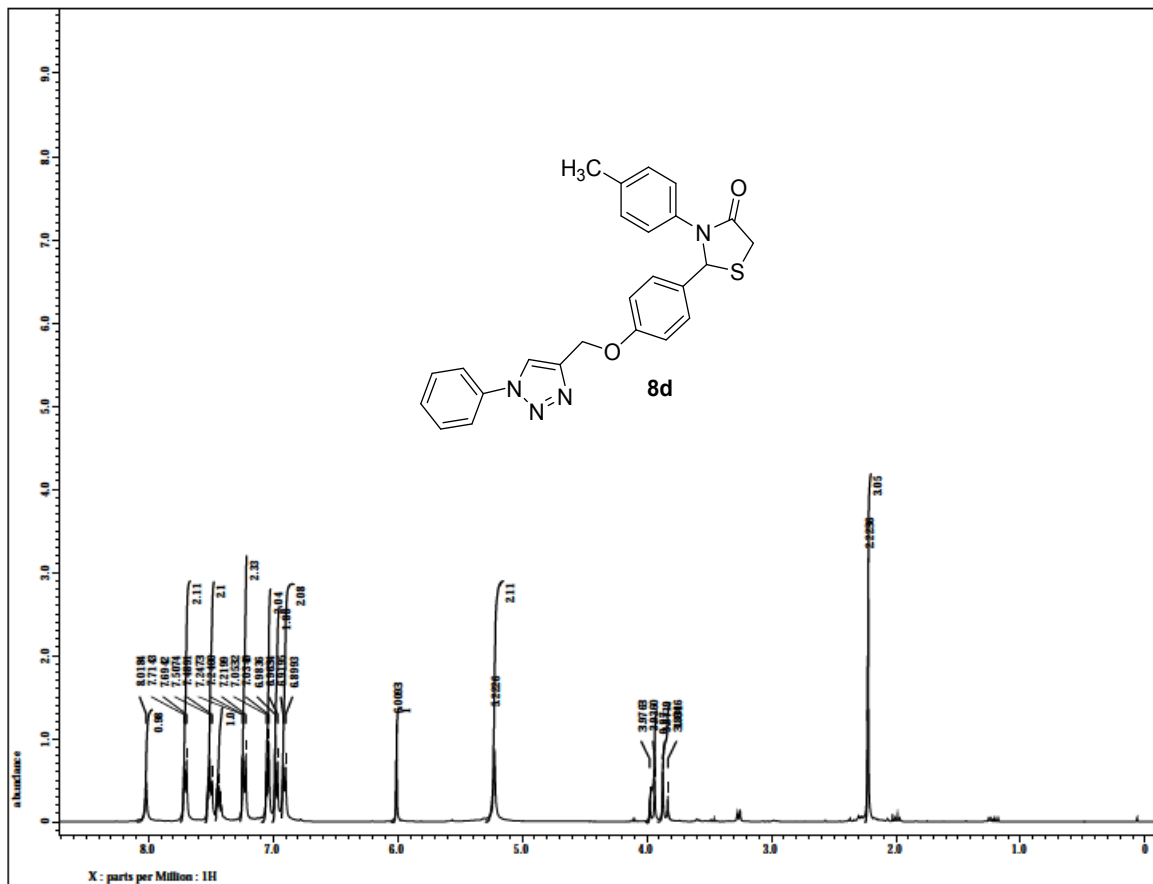
¹³C Spectra of compound (8b) (100 MHz, CDCl₃)



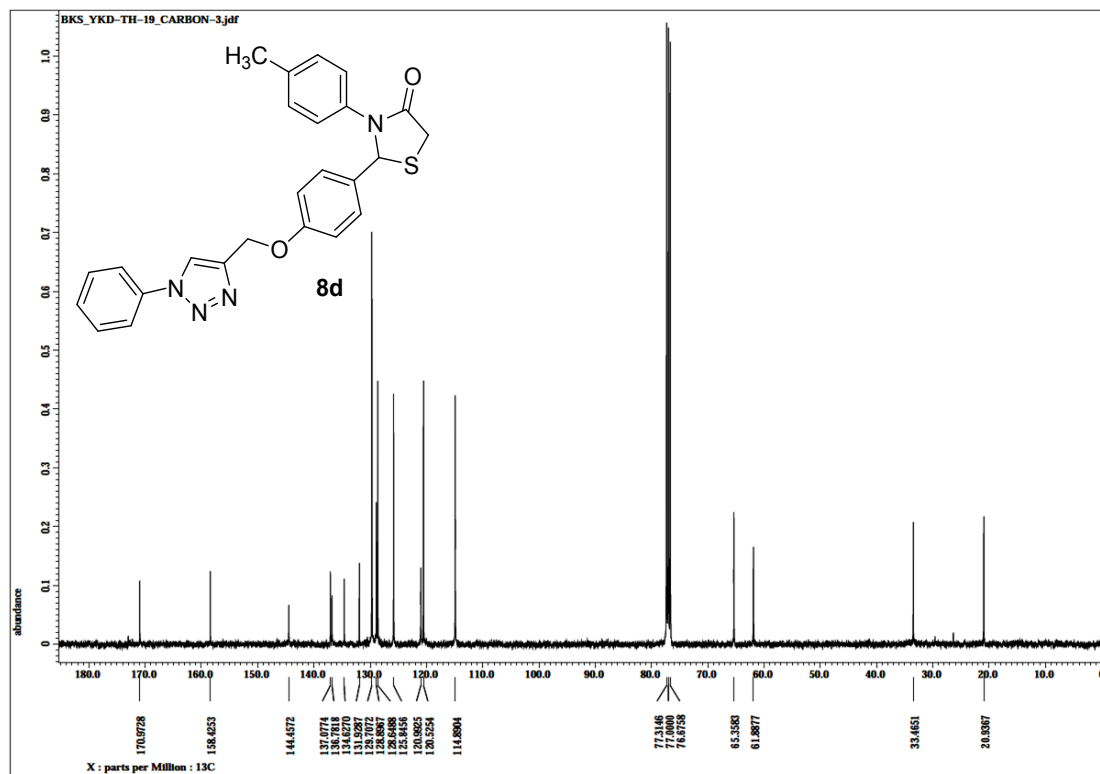
¹H Spectra of compound (**8c**) (300 MHz, CDCl₃)



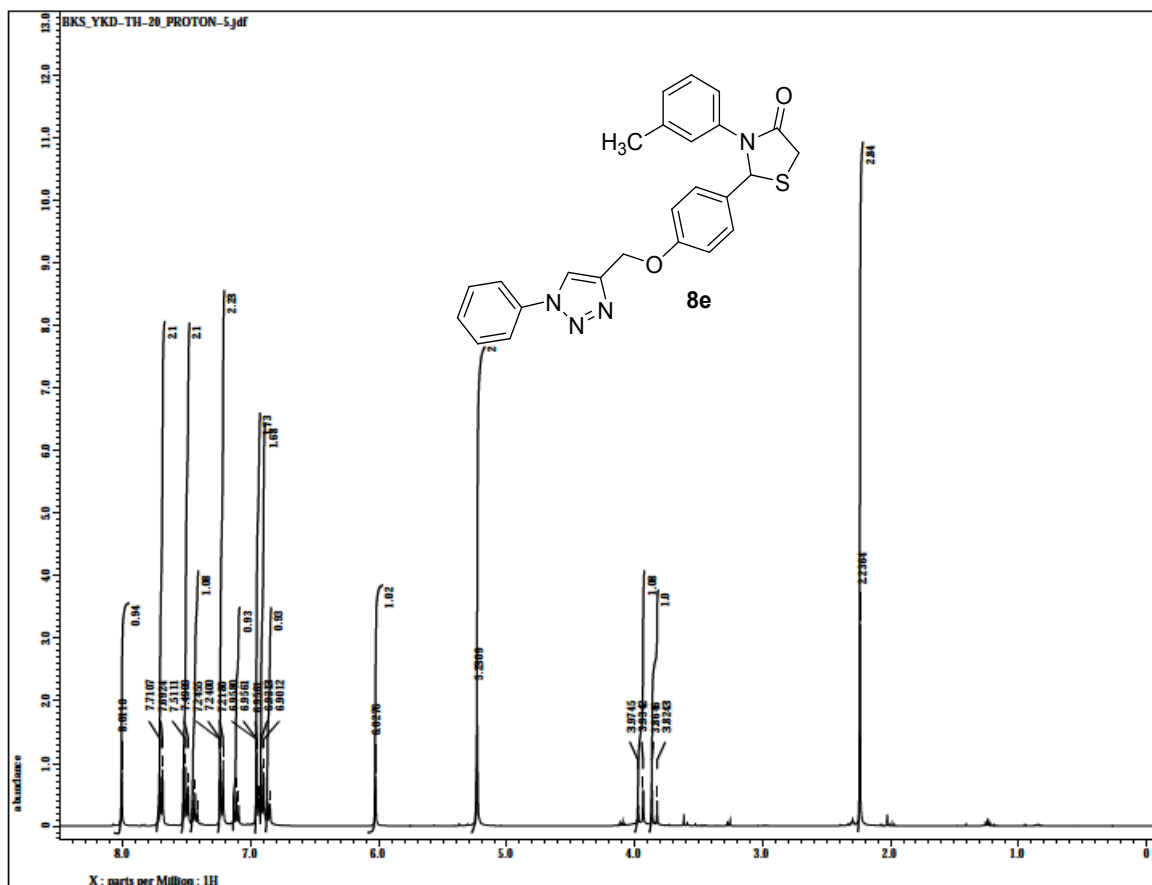
¹³C Spectra of compound (**8c**) (100 MHz, CDCl₃)



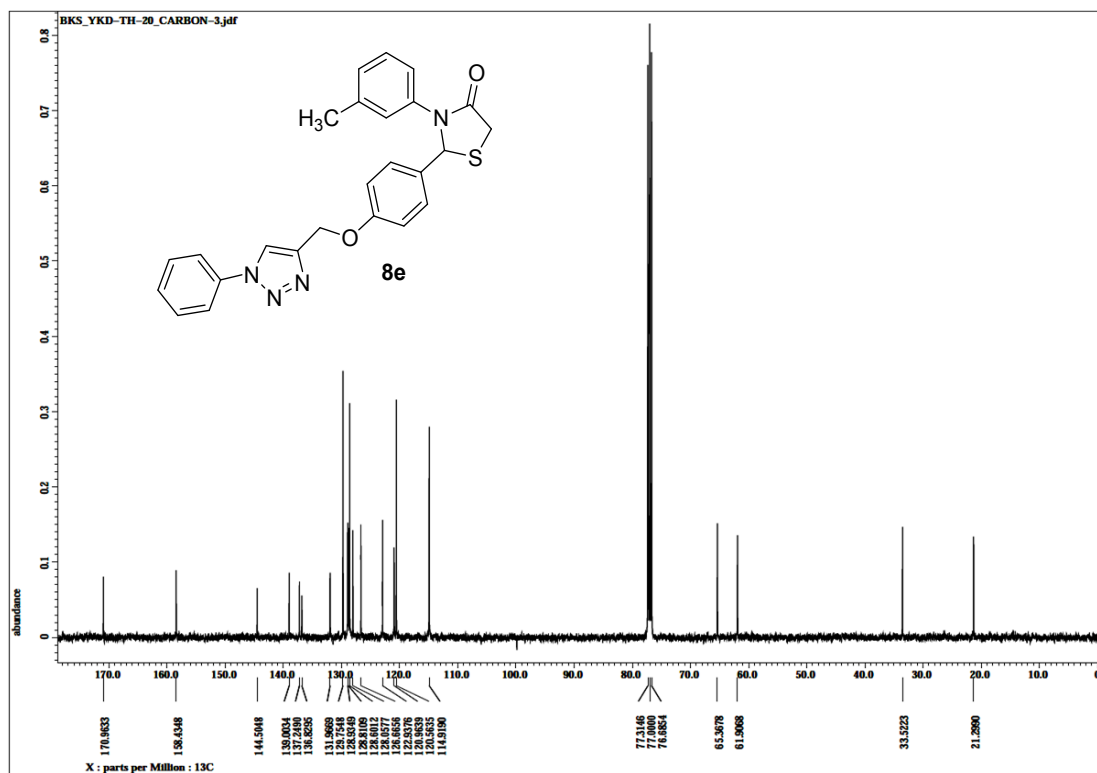
¹H Spectra of compound (**8d**) (400 MHz, CDCl₃)



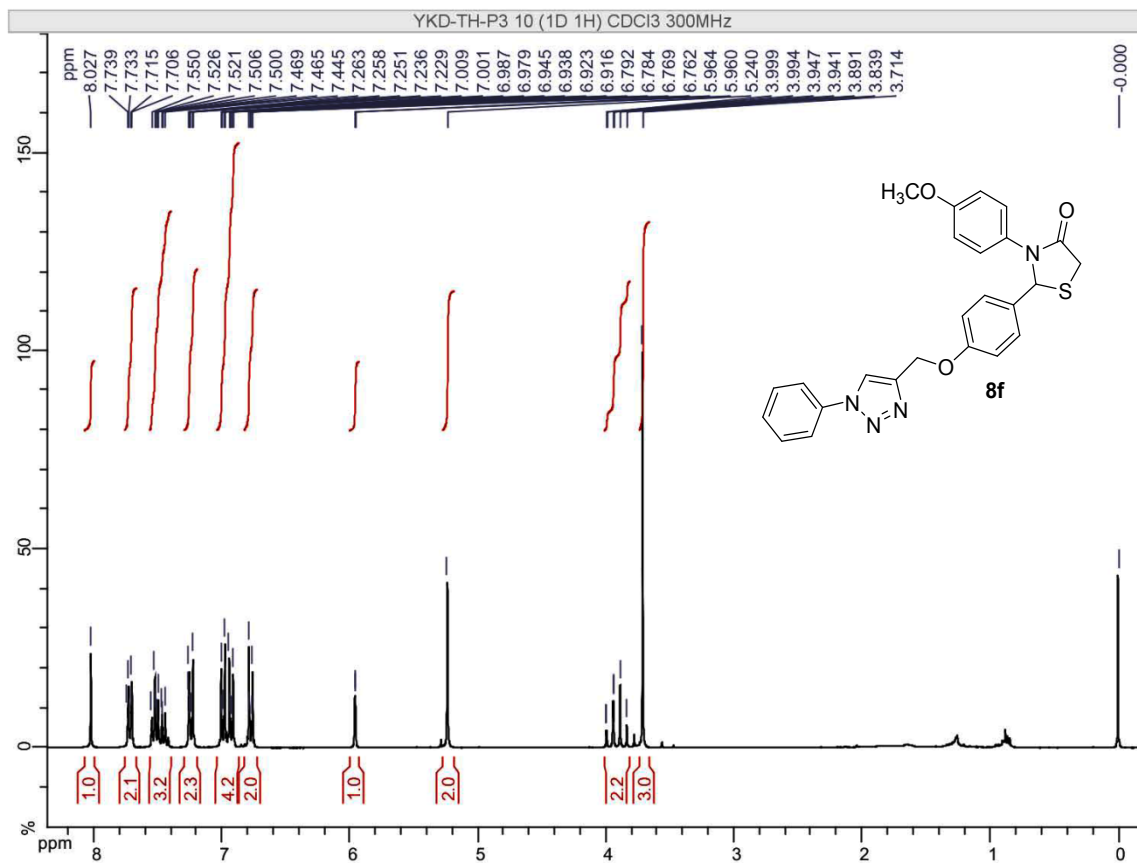
¹³C Spectra of compound (**8d**) (100 MHz, CDCl₃)



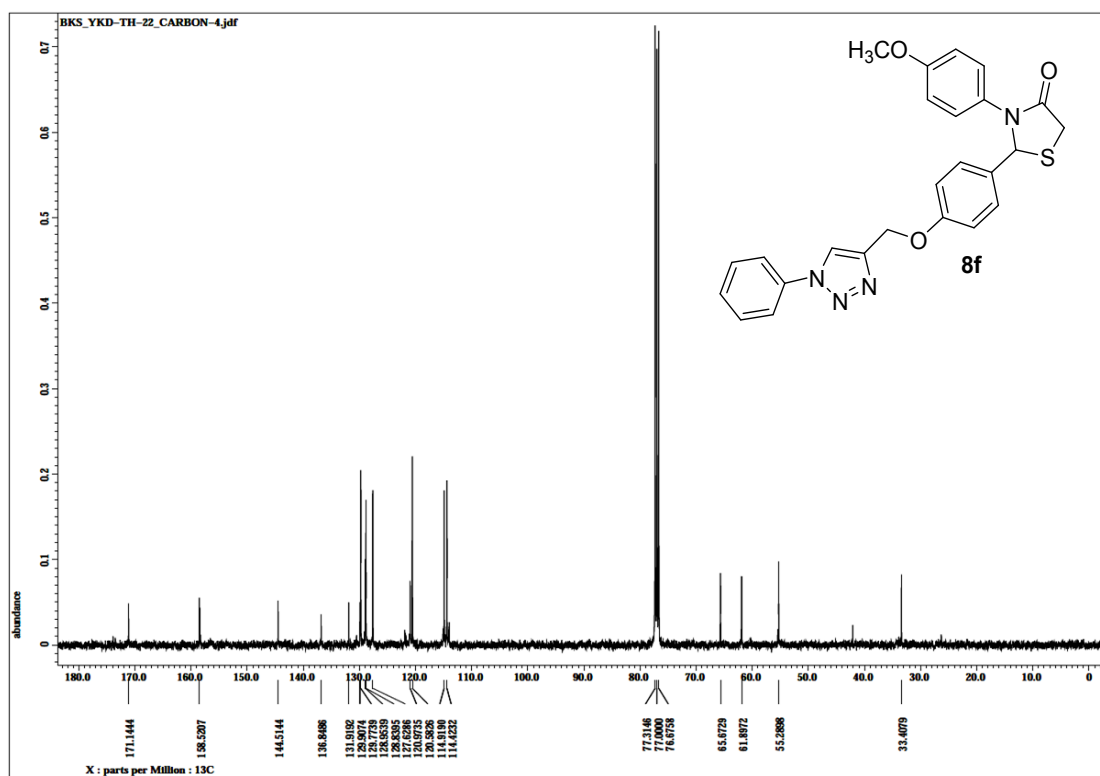
¹H Spectra of compound (8e) (400 MHz, CDCl₃)



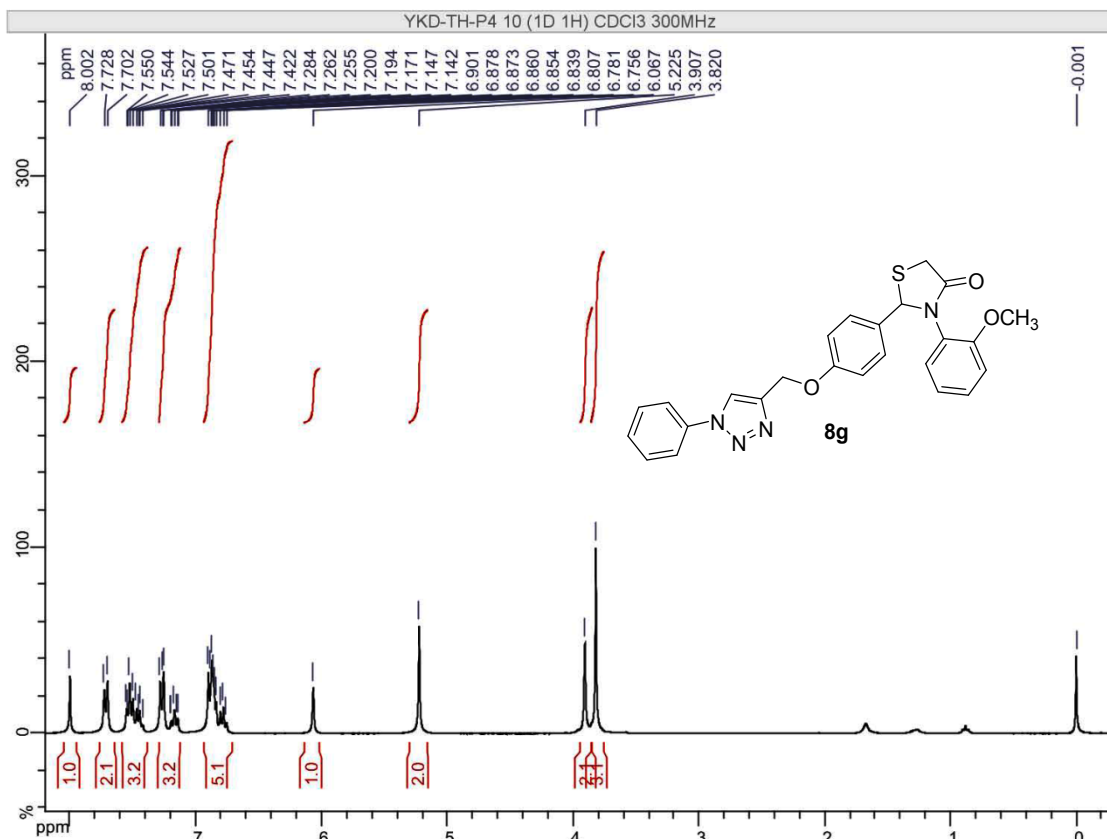
¹³C Spectra of compound (8e) (100 MHz, CDCl₃)



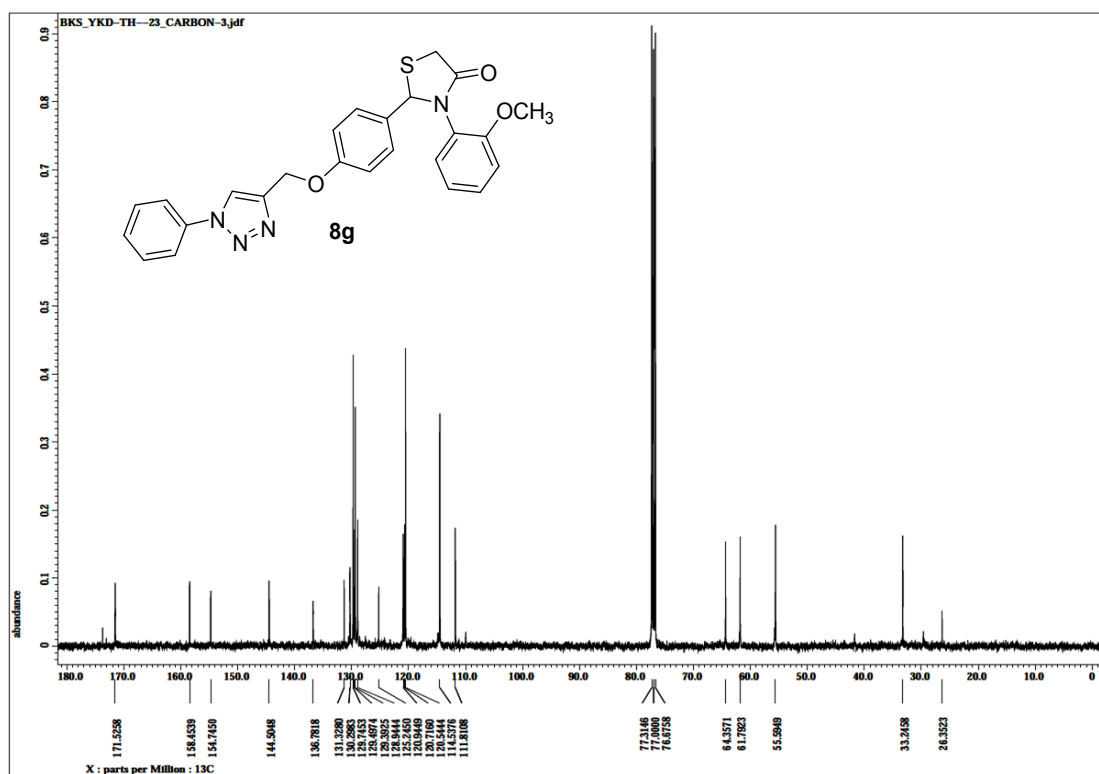
¹H Spectra of compound (**8f**) (300 MHz, CDCl₃)



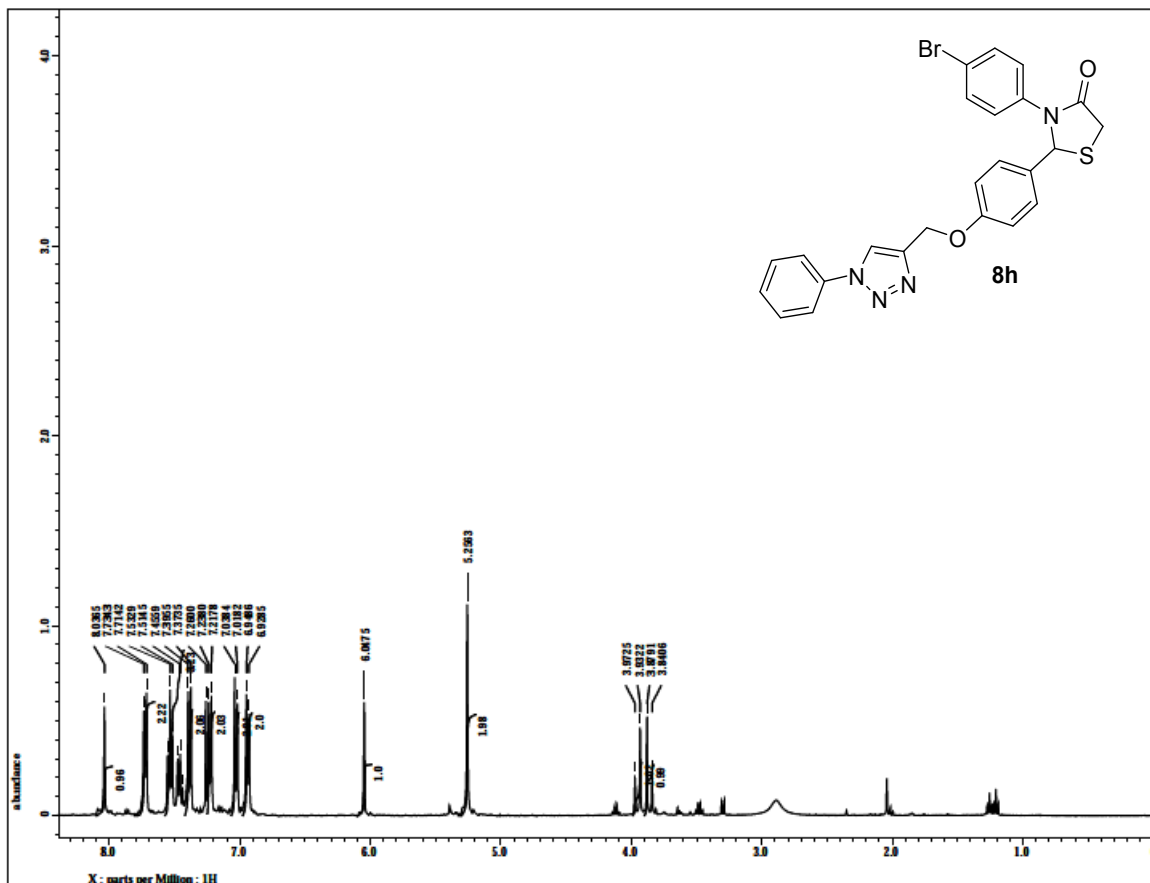
¹³C Spectra of compound (**8f**) (100 MHz, CDCl₃)



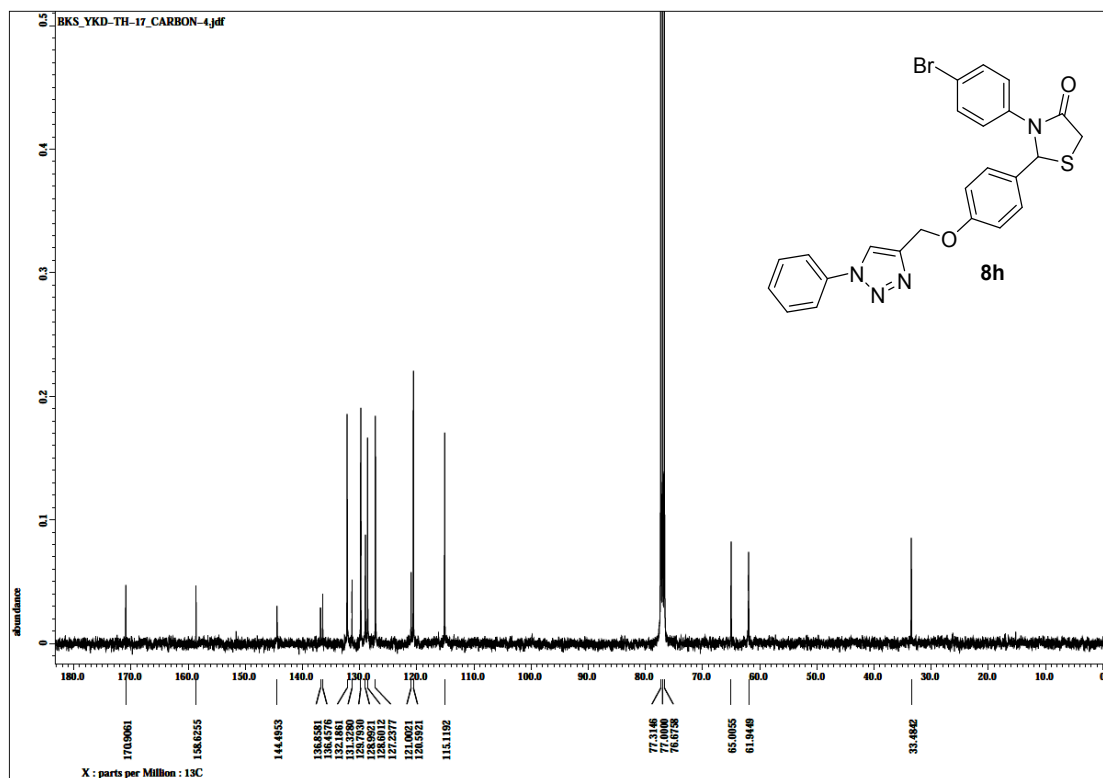
¹H Spectra of compound (**8g**) (300 MHz, CDCl₃)



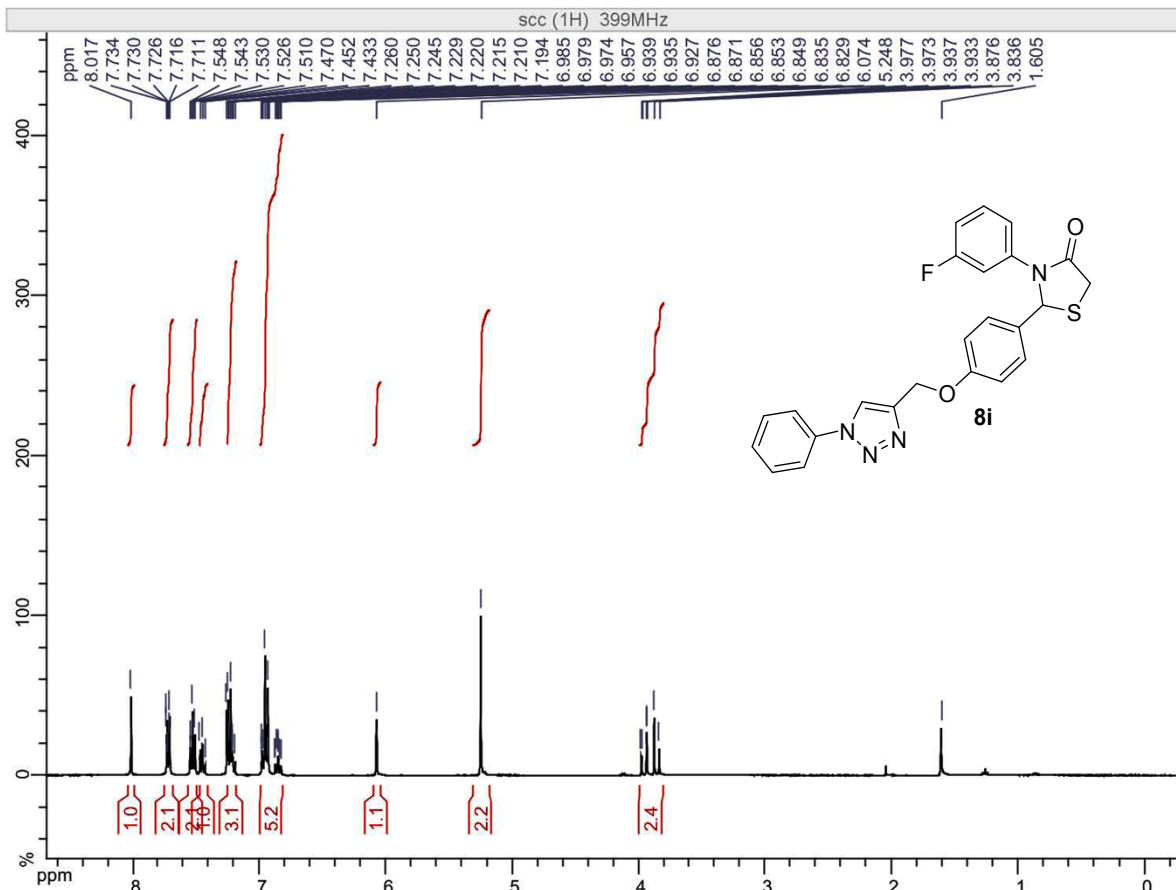
¹³C Spectra of compound (**8g**) (100 MHz, CDCl₃)



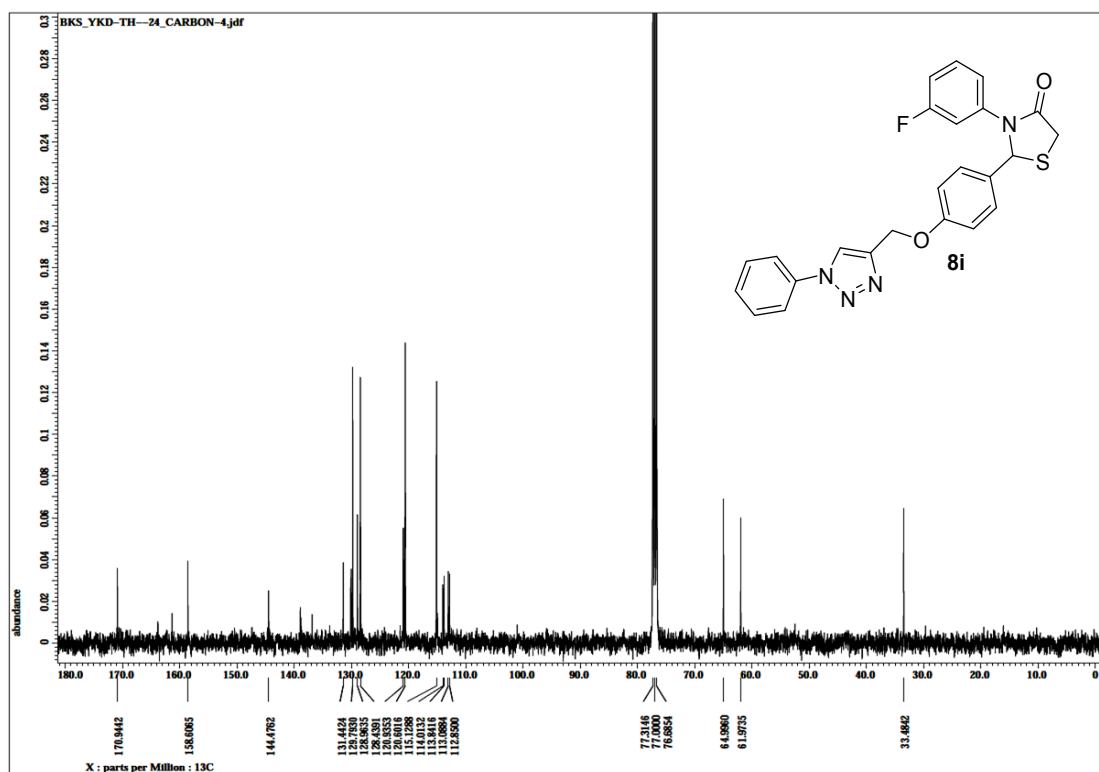
¹H Spectra of compound (**8h**) (400 MHz, CDCl₃)



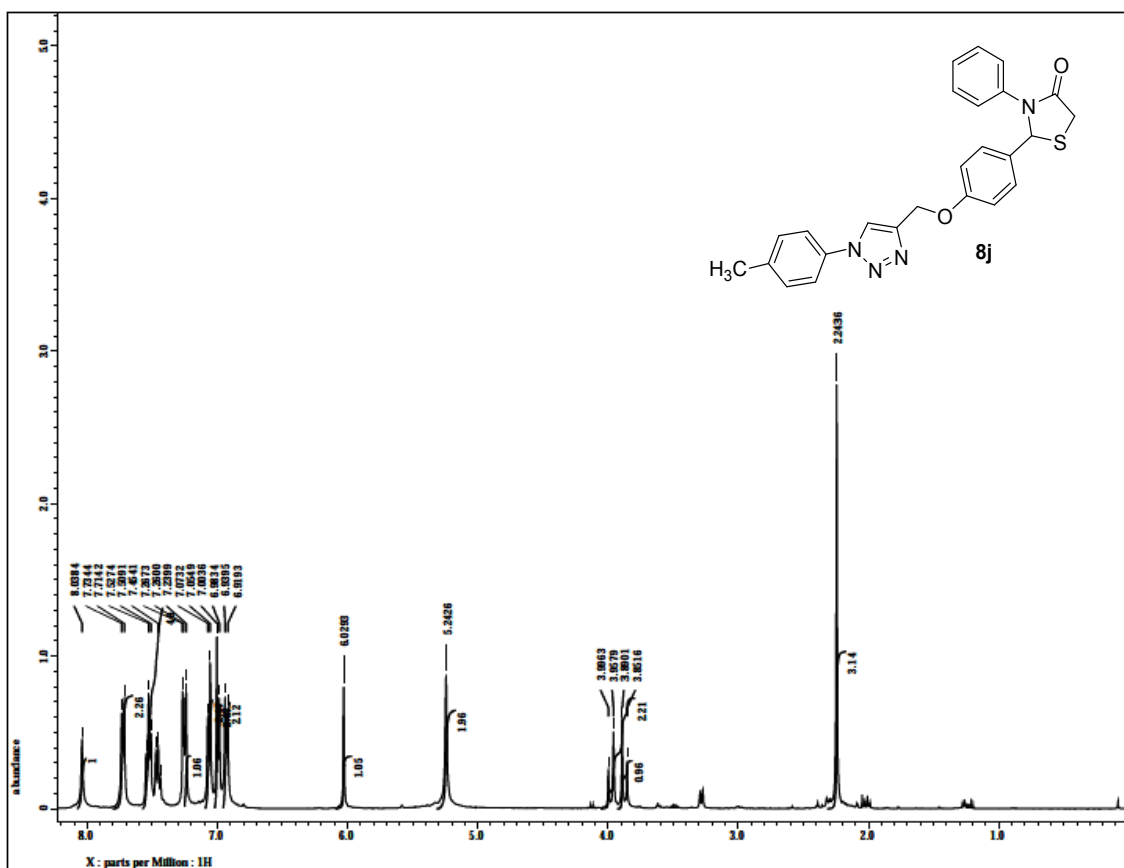
¹³C Spectra of compound (**8h**) (100 MHz, CDCl₃)



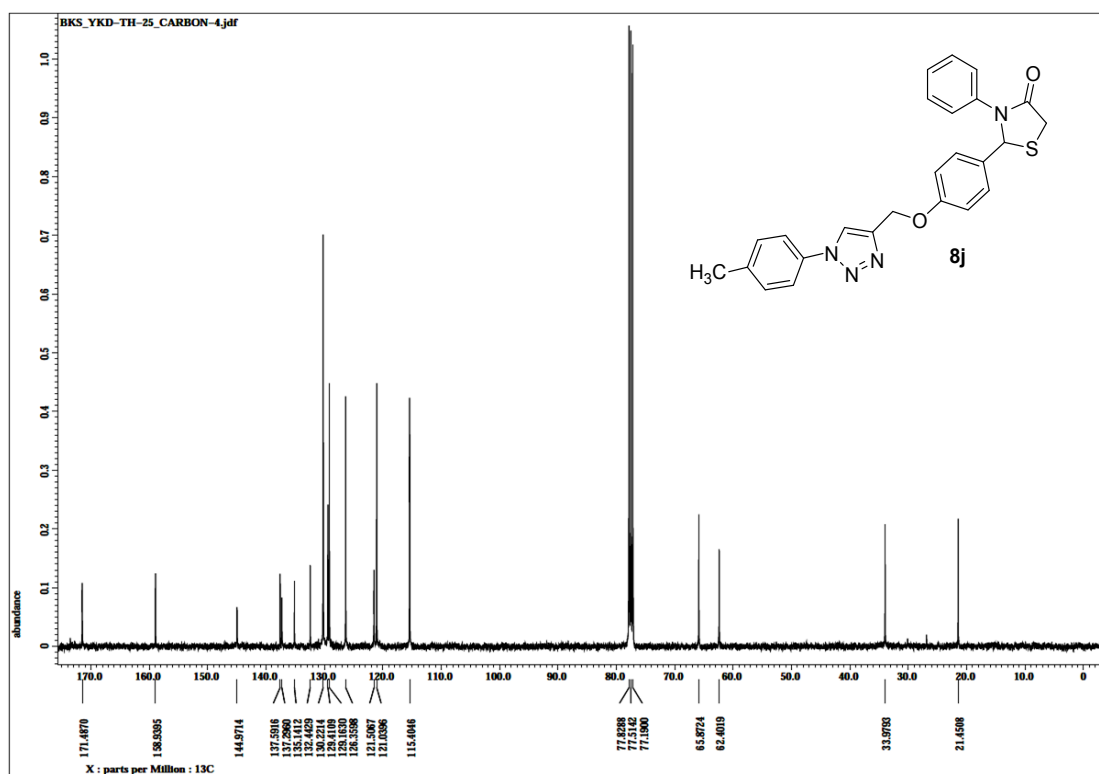
¹H Spectra of compound (8i) (400 MHz, CDCl₃)



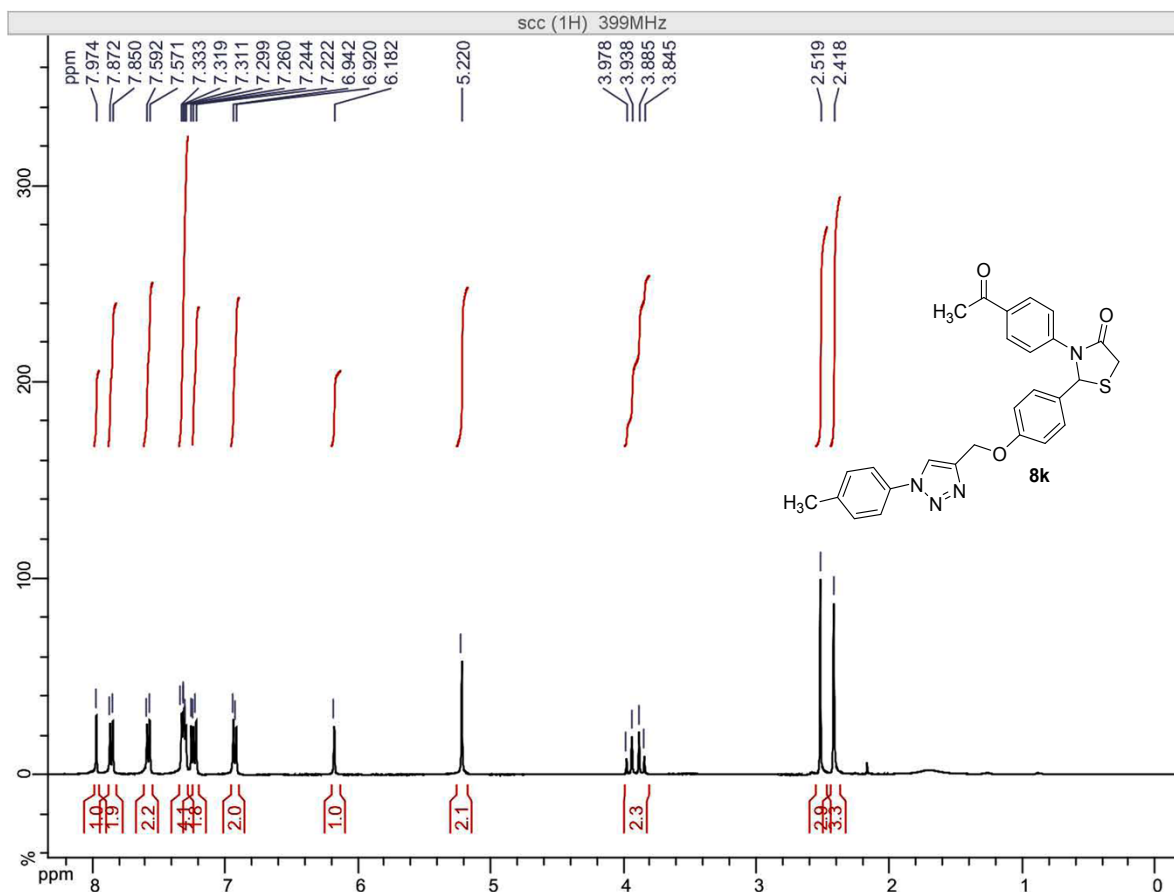
¹³C Spectra of compound (8i) (100 MHz, CDCl₃)



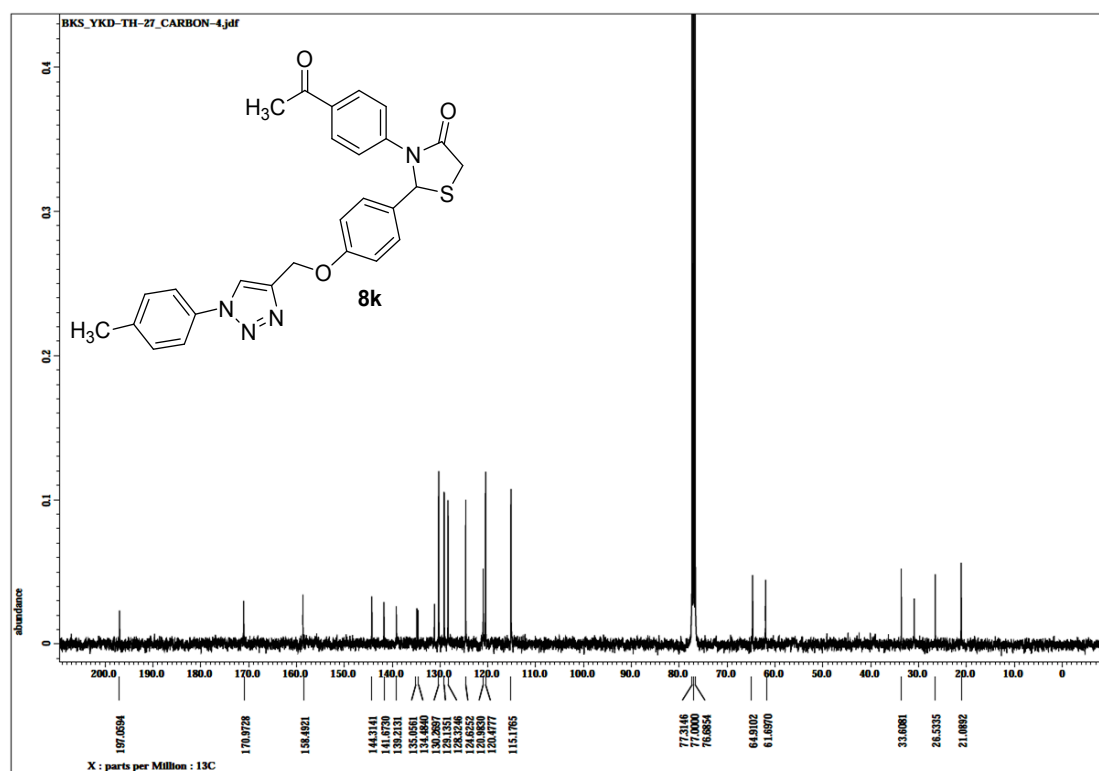
¹H Spectra of compound (8j) (400 MHz, CDCl₃)



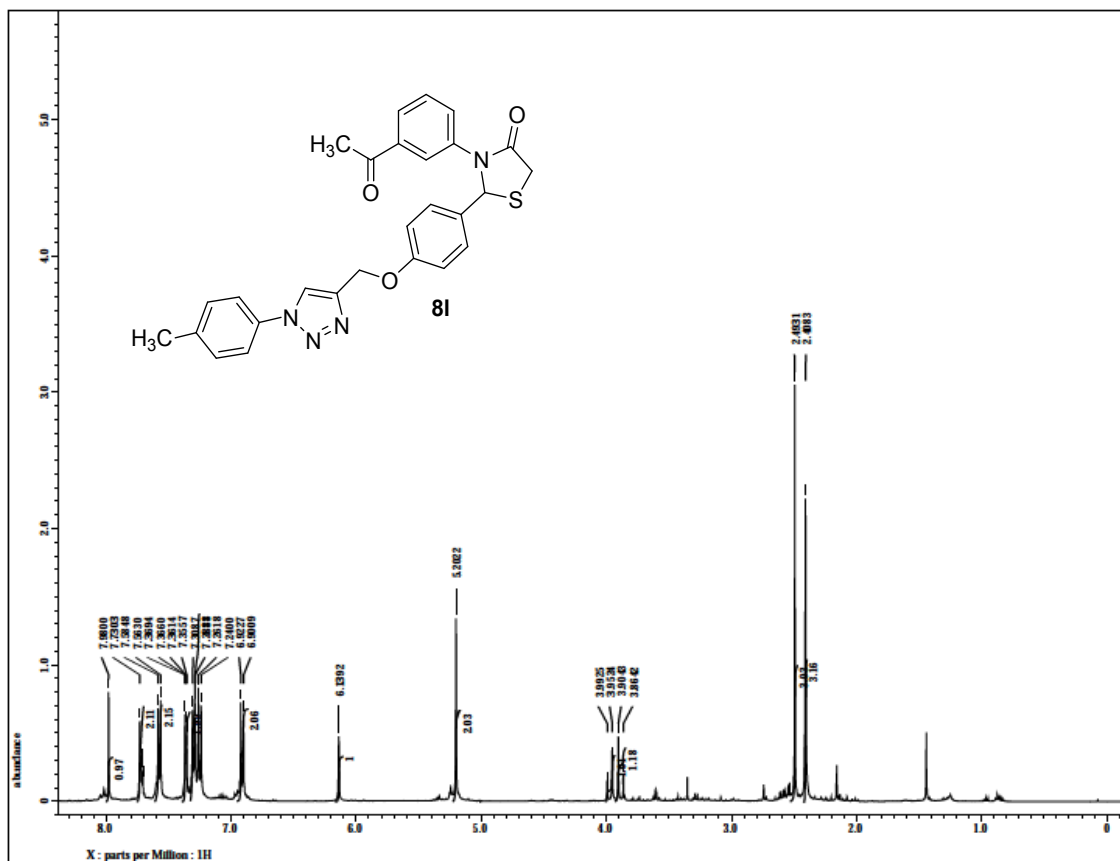
¹³C Spectra of compound (8j) (100 MHz, CDCl₃)



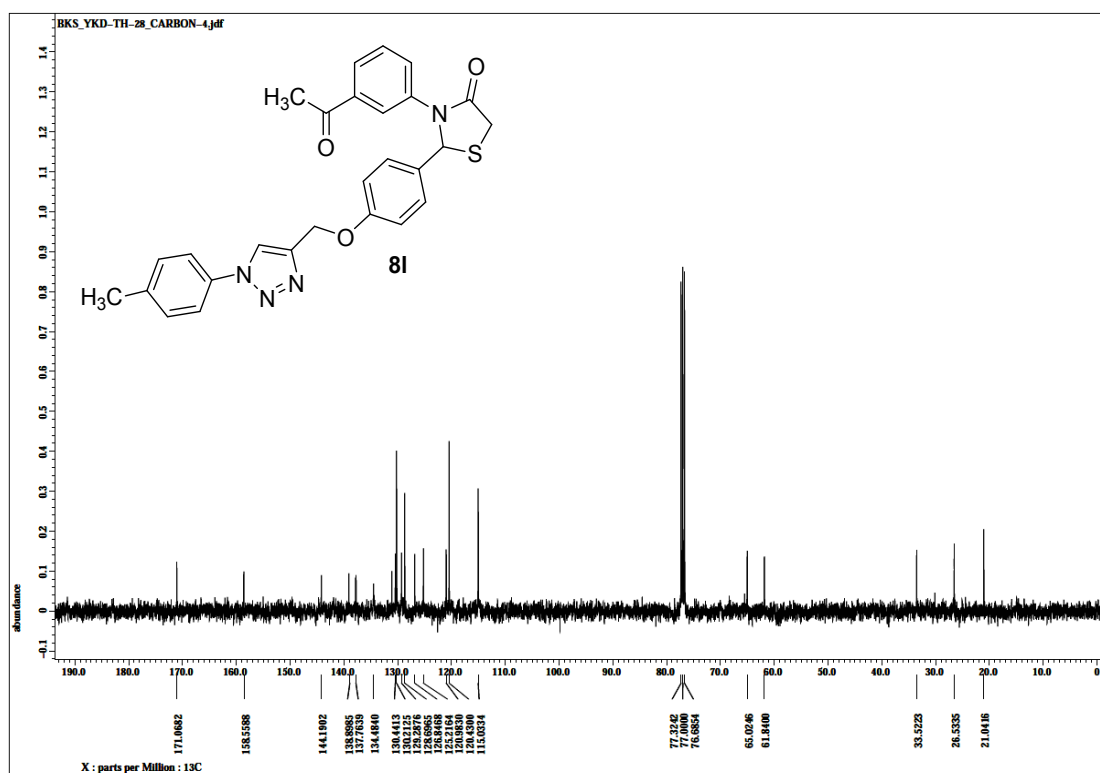
¹H Spectra of compound (**8k**) (400 MHz, CDCl₃)



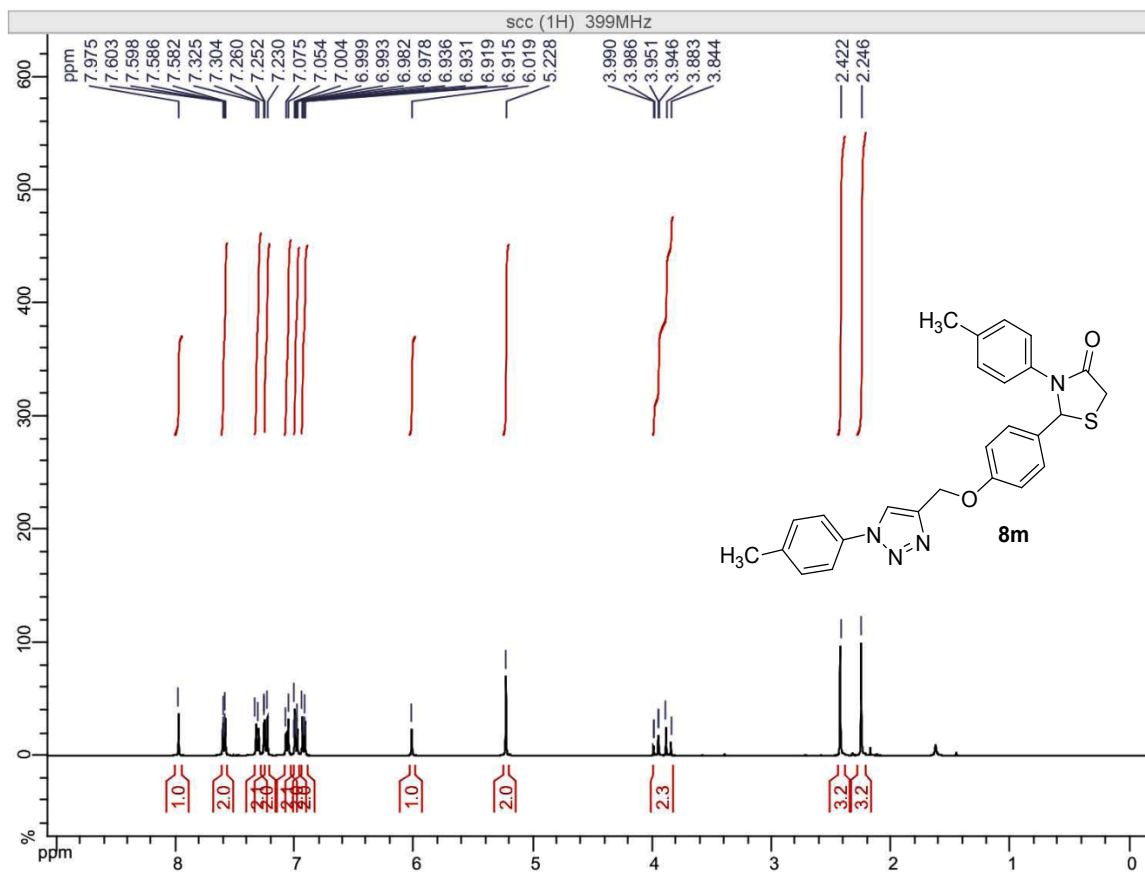
¹³C Spectra of compound (**8k**) (100 MHz, CDCl₃)



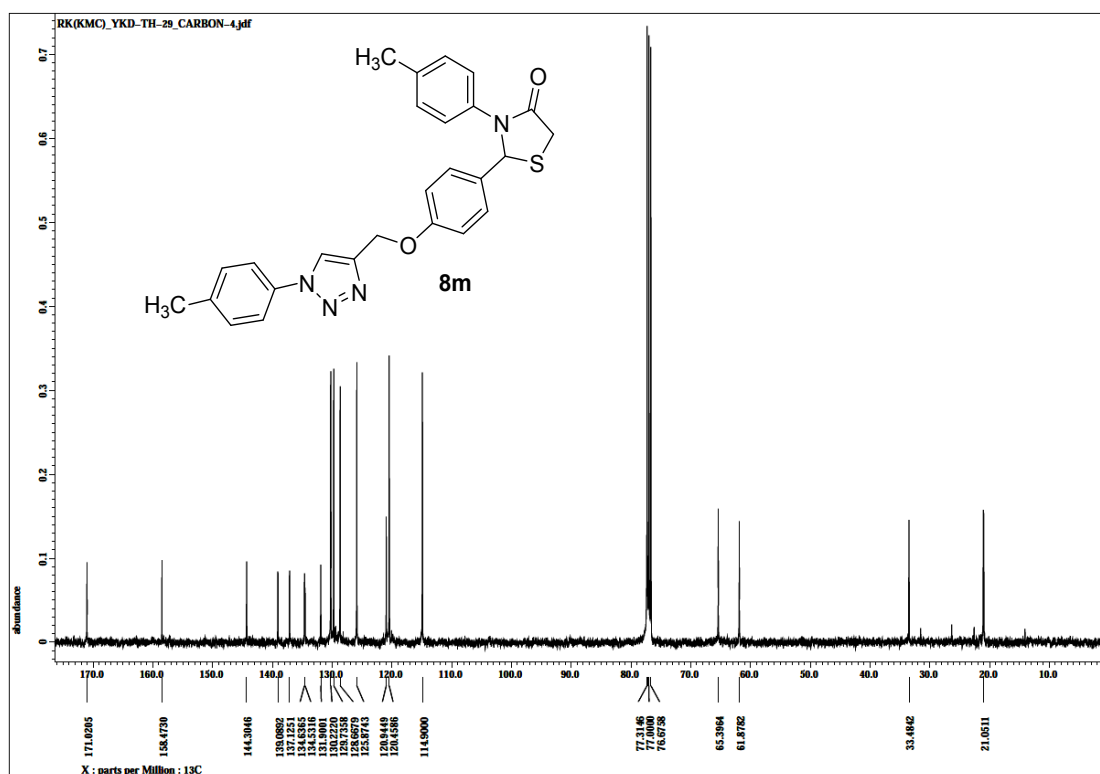
¹H Spectra of compound (**8I**) (400 MHz, CDCl₃)



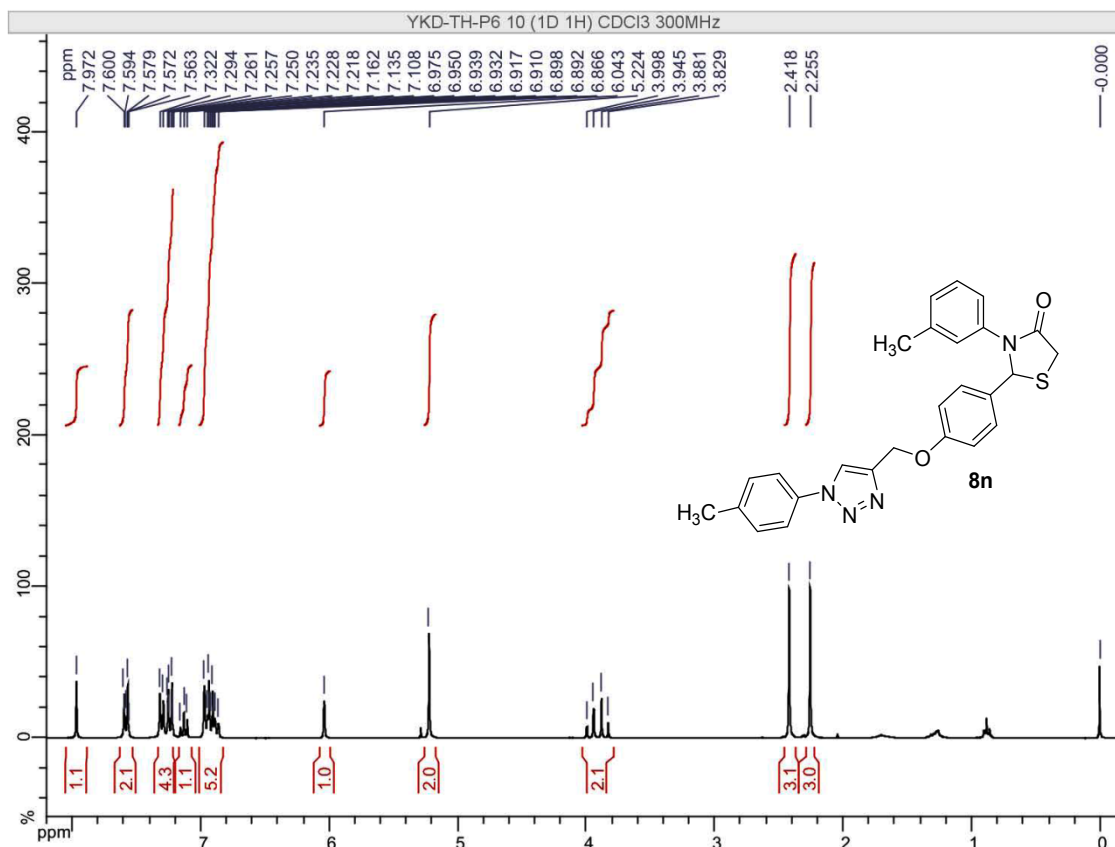
¹³C Spectra of compound (**8I**) (100 MHz, CDCl₃)



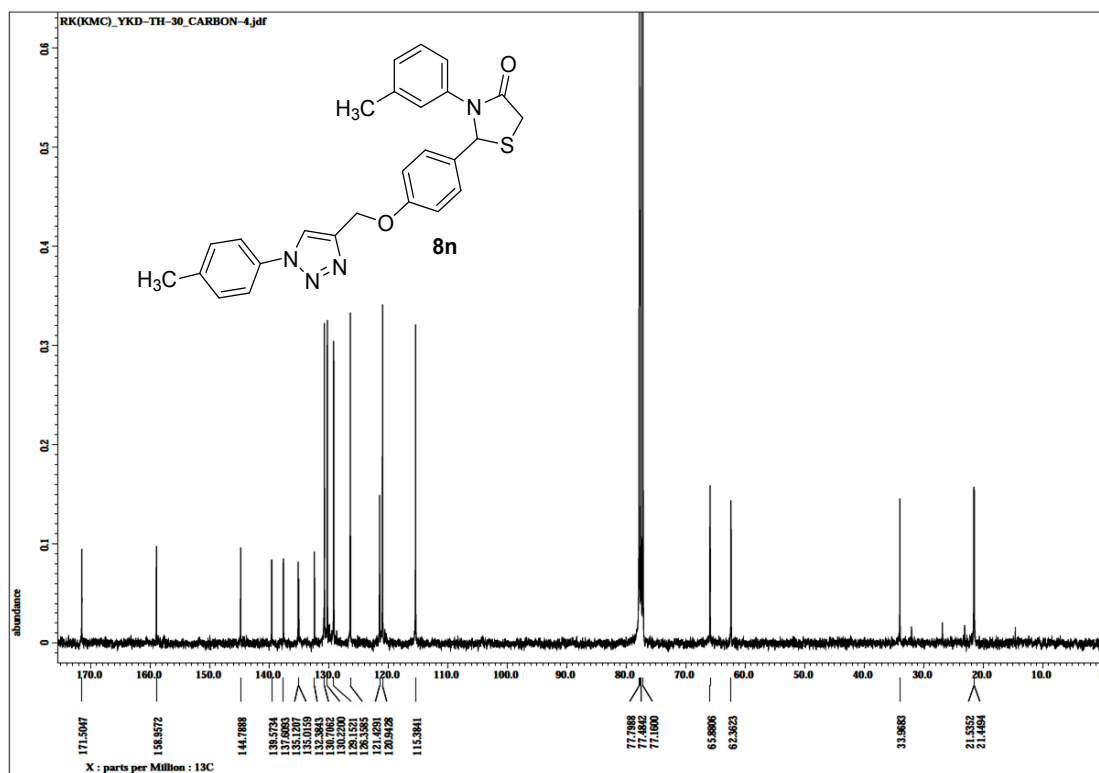
¹H Spectra of compound (**8m**) (400 MHz, CDCl₃)



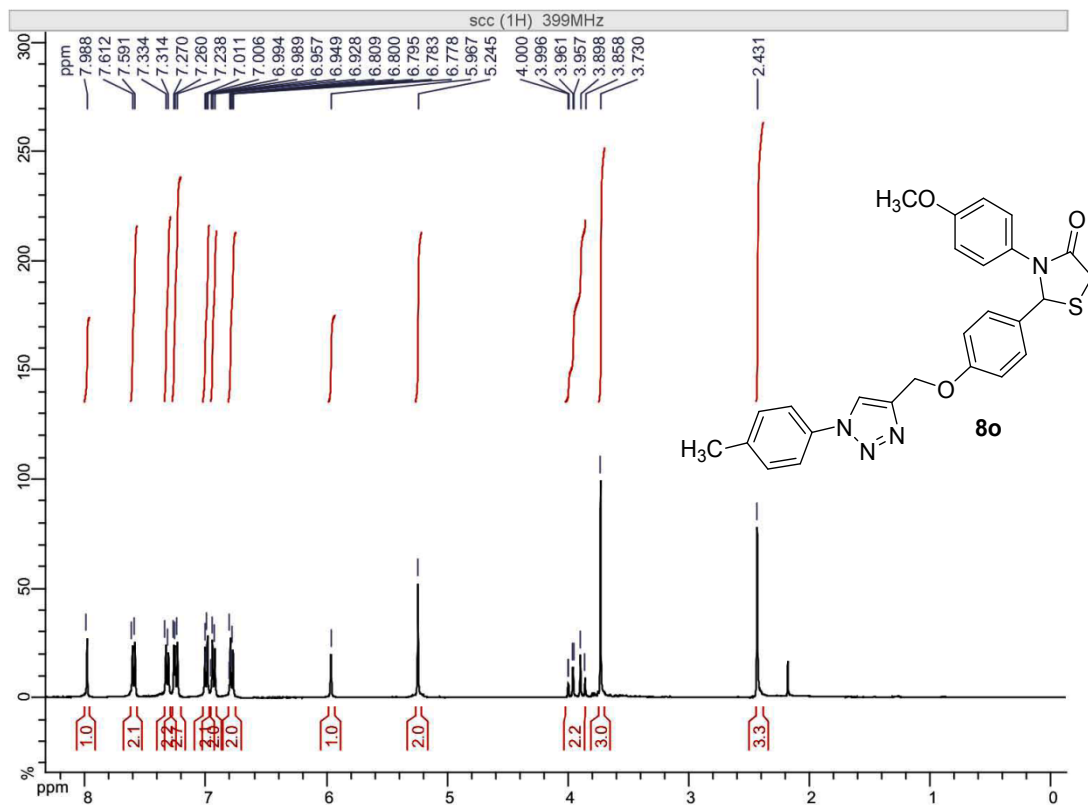
¹³C Spectra of compound (**8m**) (100 MHz, CDCl₃)



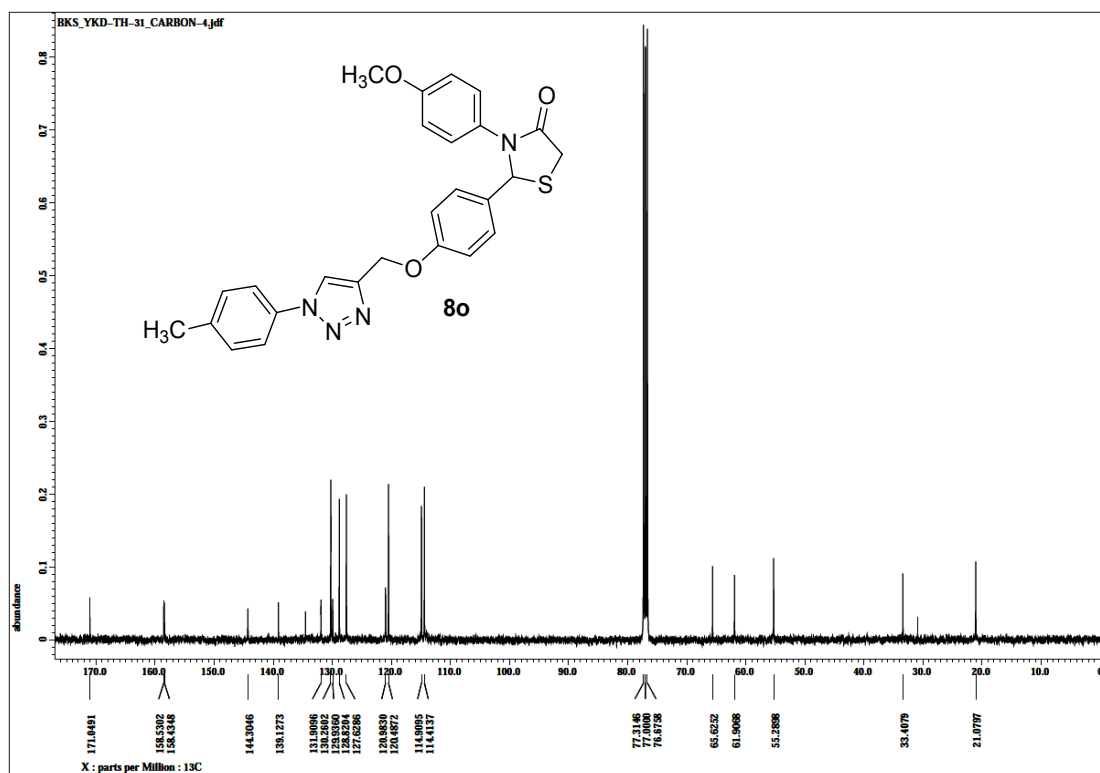
¹H Spectra of compound (**8n**) (300 MHz, CDCl₃)



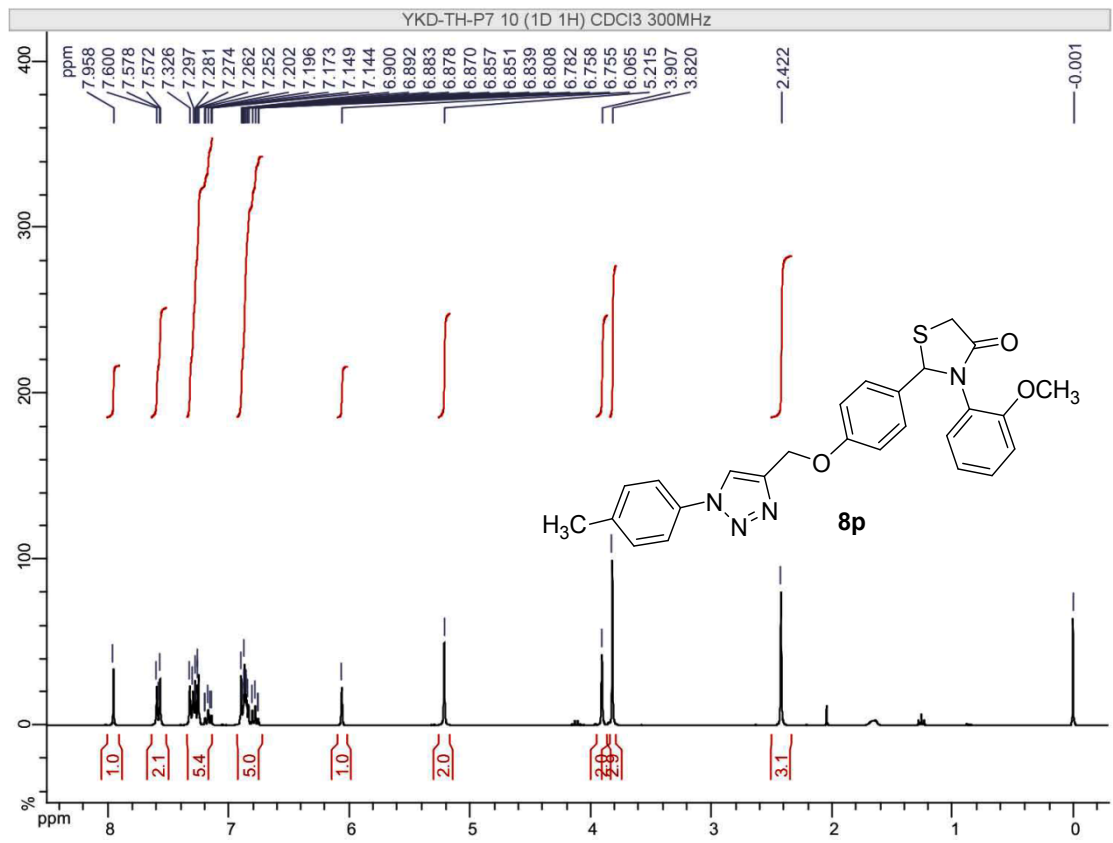
¹³C Spectra of compound (**8n**) (100 MHz, CDCl₃)



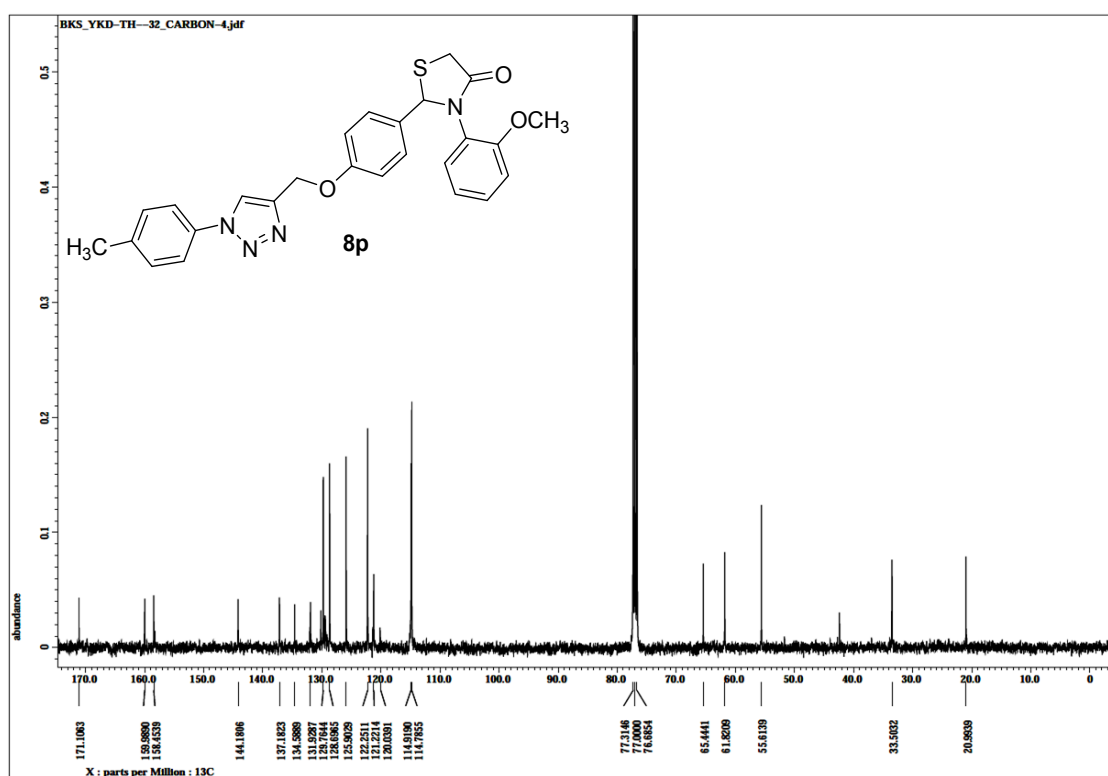
¹H Spectra of compound (**8o**) (400 MHz, CDCl₃)



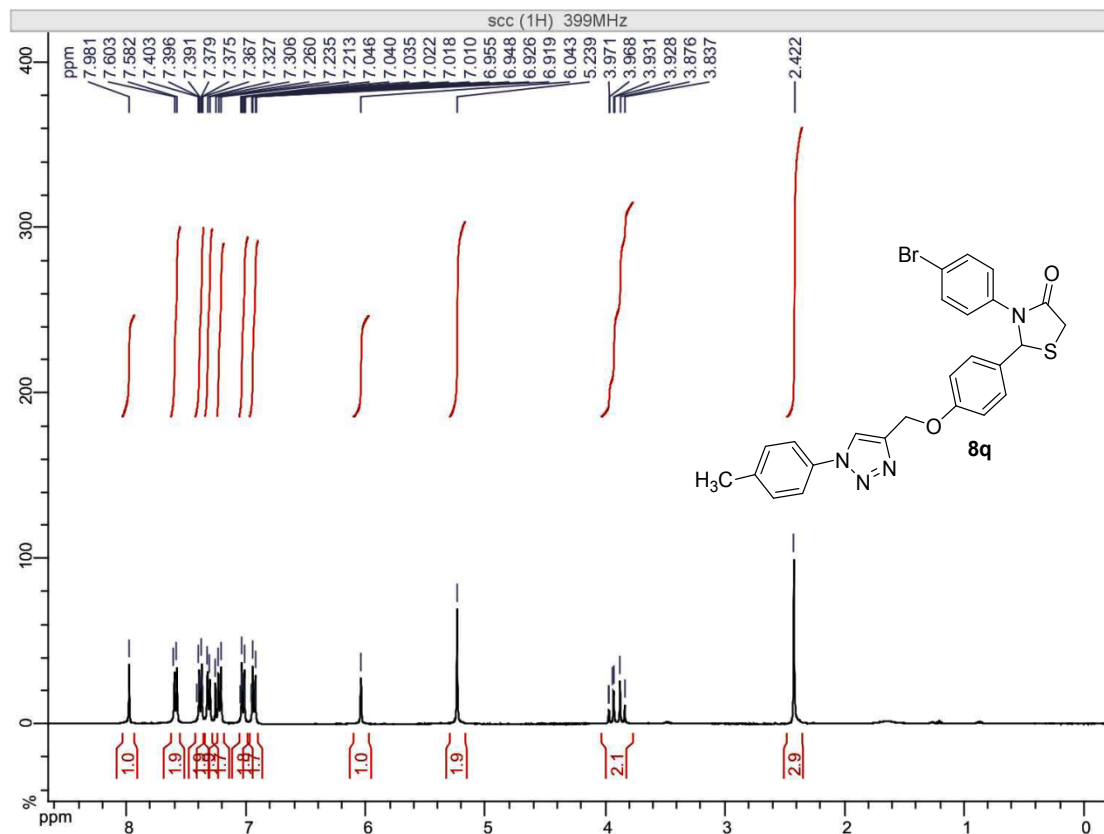
¹³C Spectra of compound (**8o**) (100 MHz, CDCl₃)



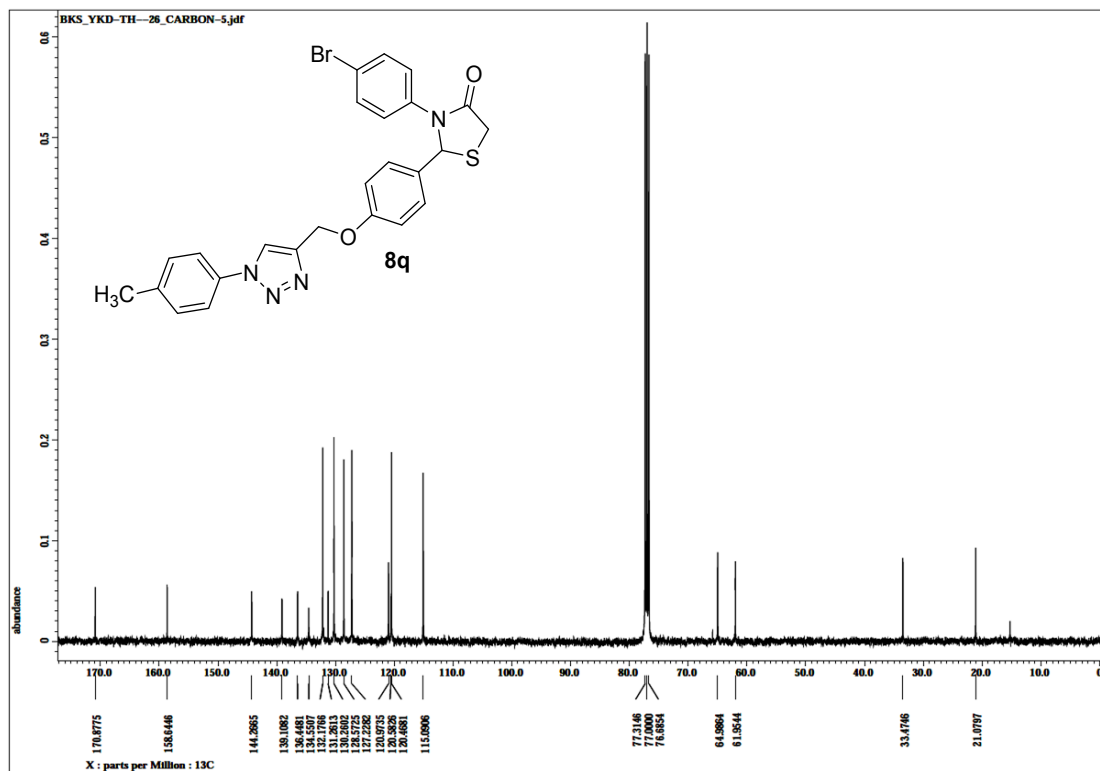
¹H Spectra of compound (**8p**) (300 MHz, CDCl₃)



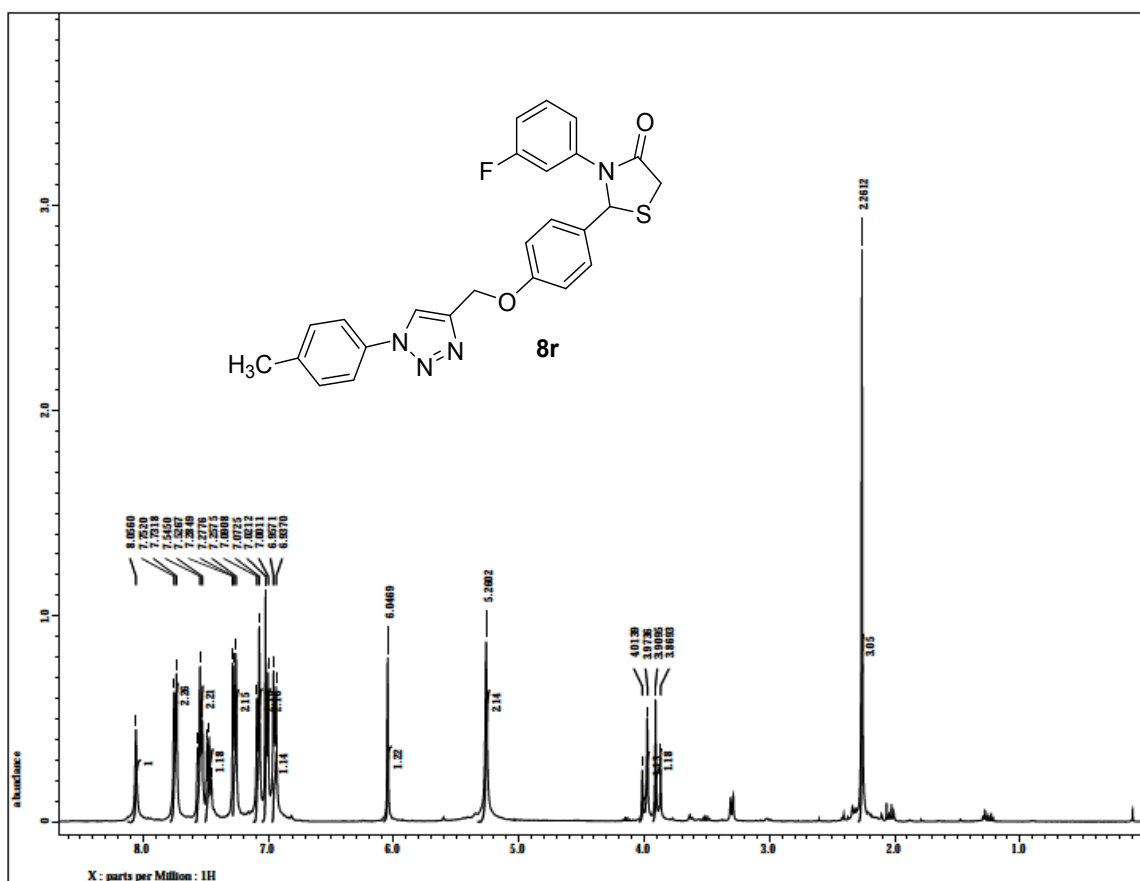
¹³C Spectra of compound (**8p**) (100 MHz, CDCl₃)



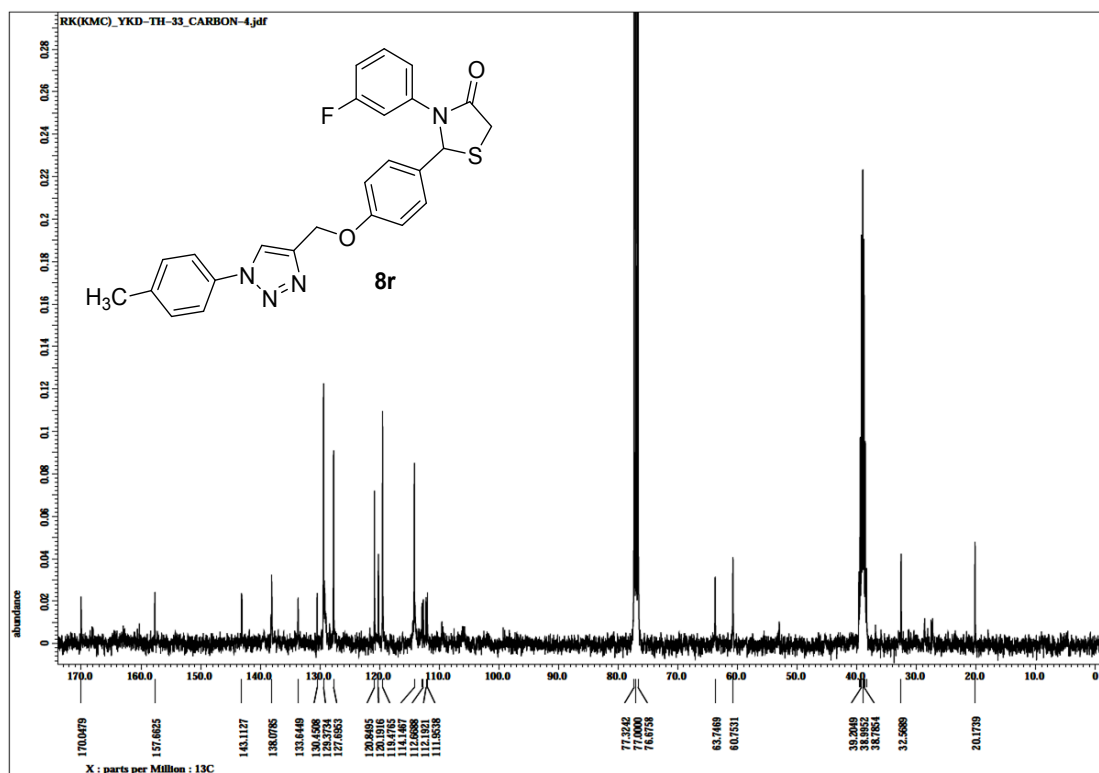
¹H Spectra of compound (**8q**) (400 MHz, CDCl₃)



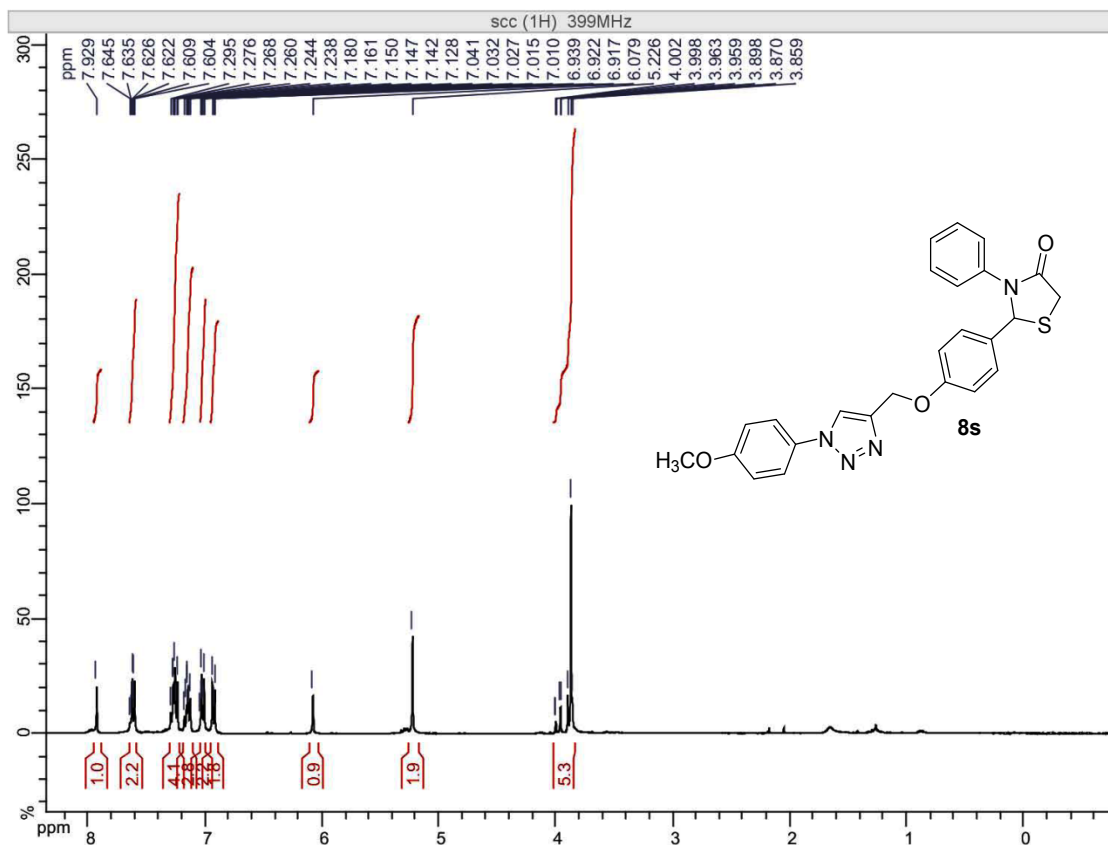
¹³C Spectra of compound (**8q**) (100 MHz, CDCl₃)



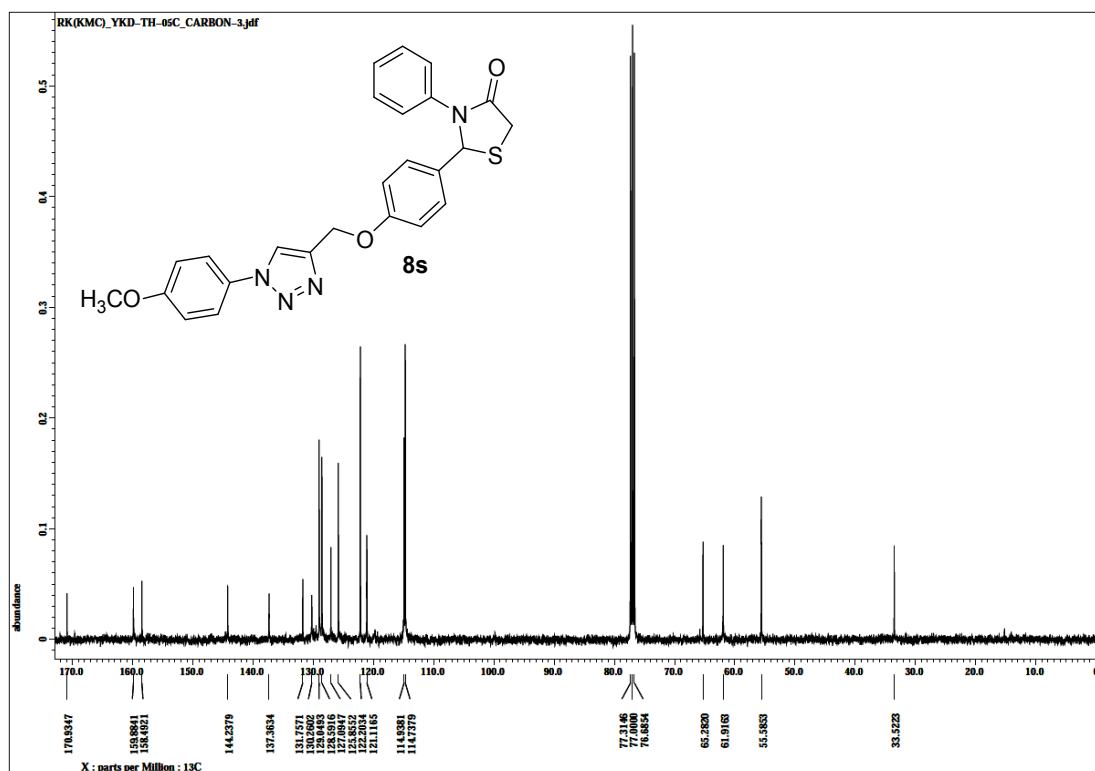
¹H Spectra of compound (**8r**) (400 MHz, CDCl₃)



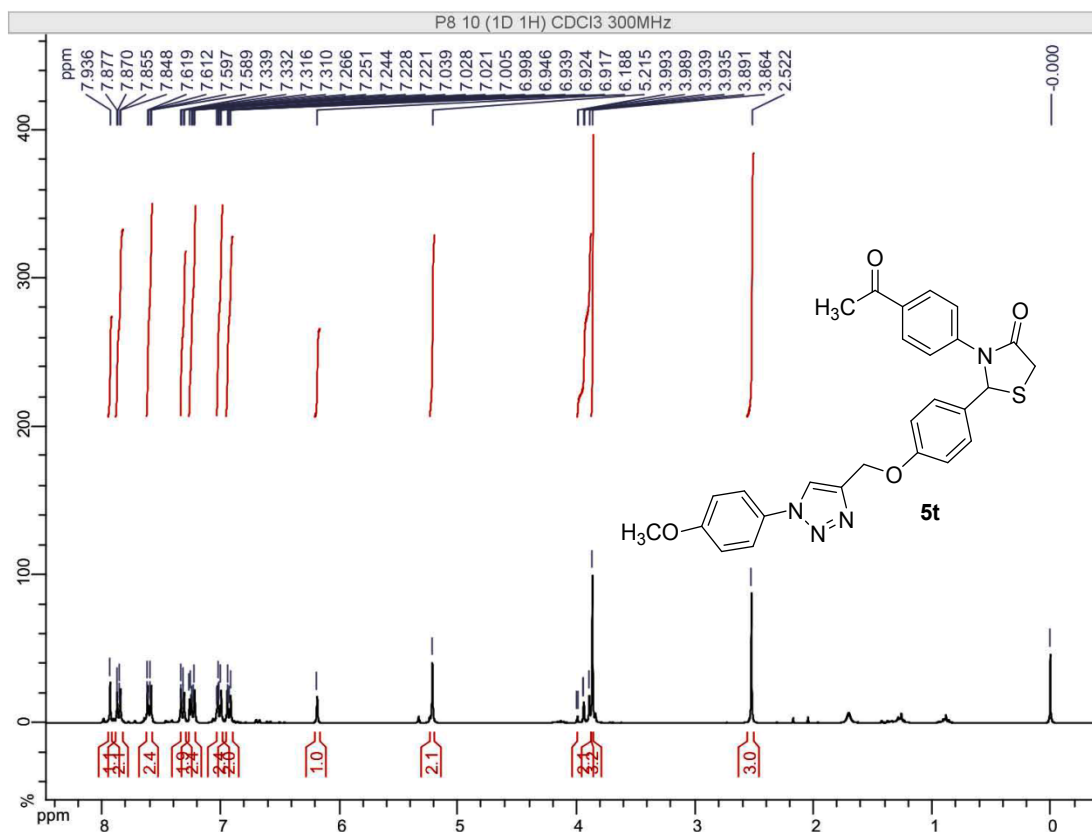
¹³C Spectra of compound (**8r**) (100 MHz, CDCl₃)



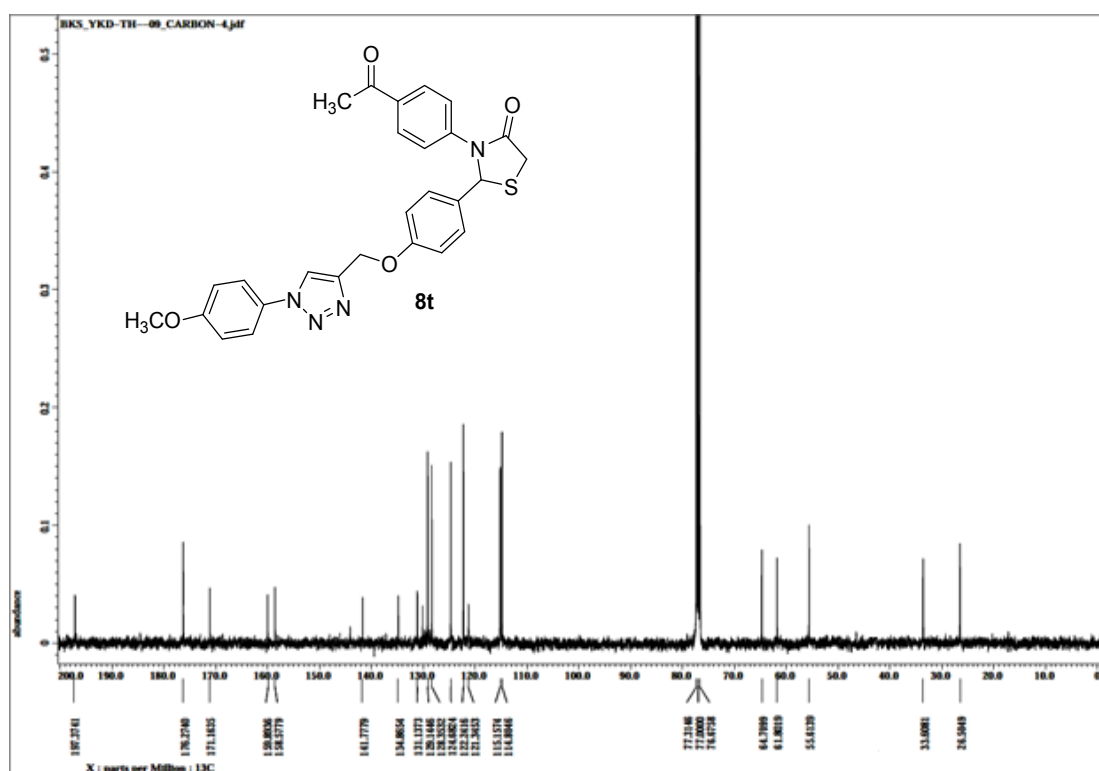
¹H Spectra of compound (8s) (400 MHz, CDCl₃)



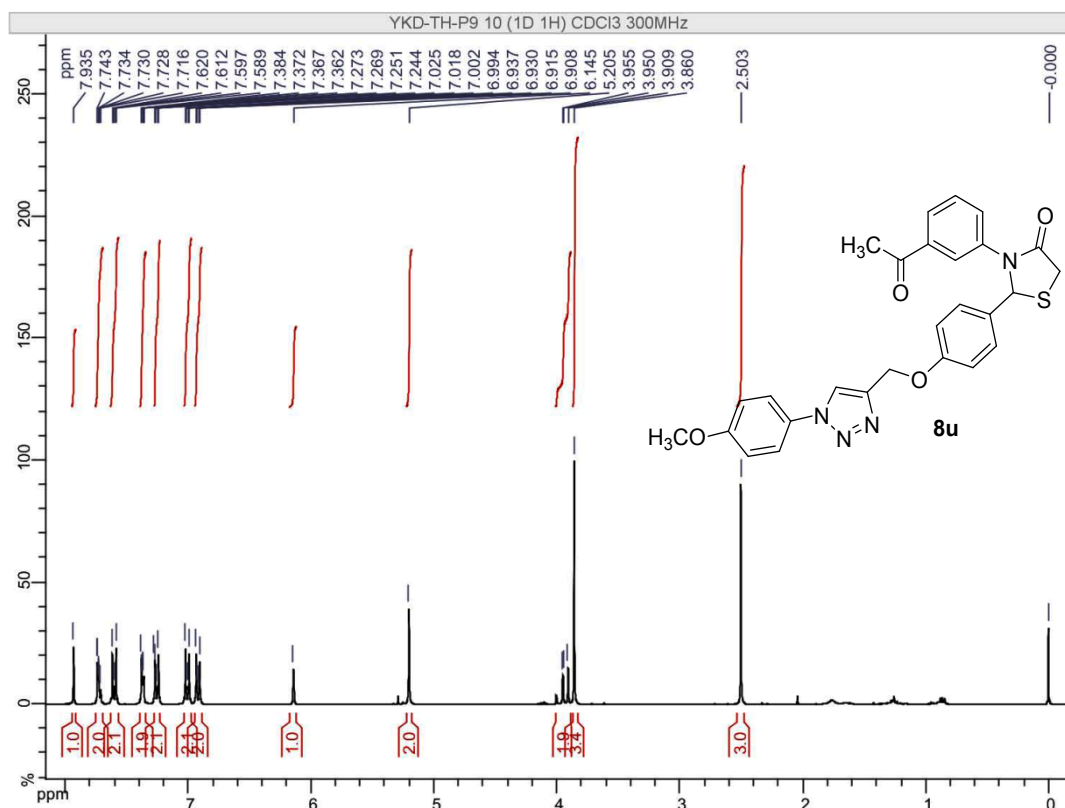
¹³C Spectra of compound (8s) (100 MHz, CDCl₃)



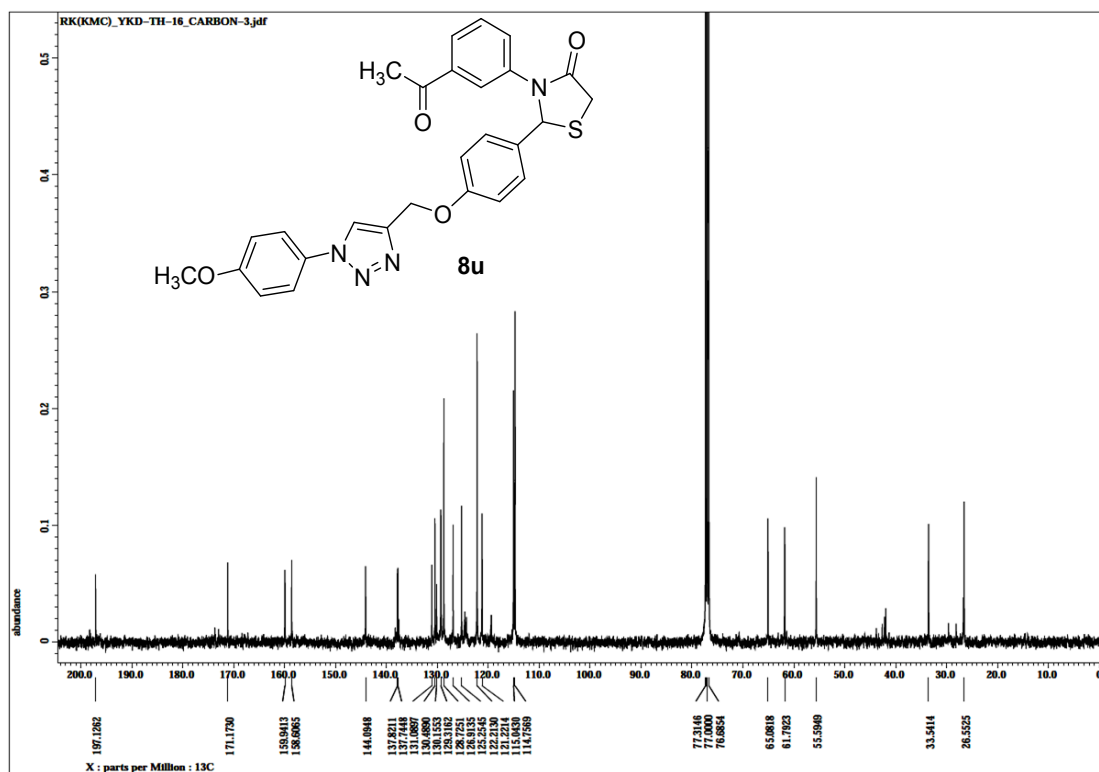
¹H Spectra of compound (**8t**) (300 MHz, CDCl₃)



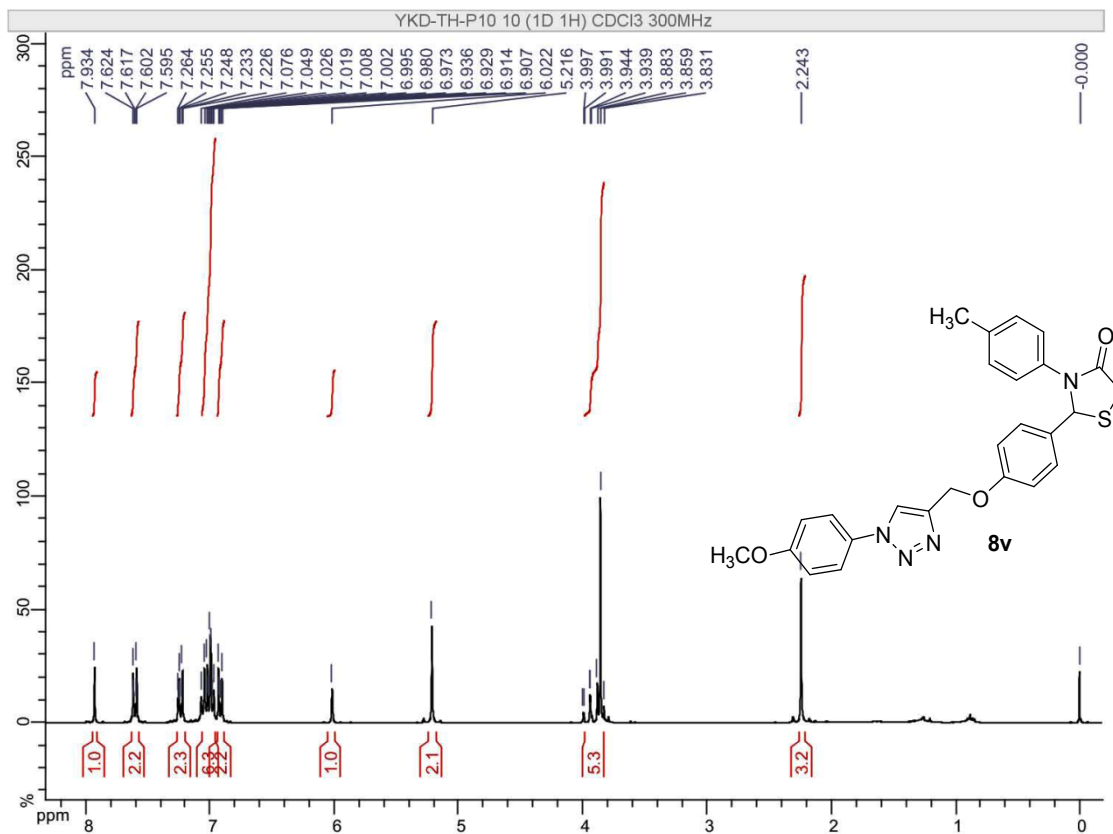
¹³C Spectra of compound (**8t**) (100 MHz, CDCl₃)



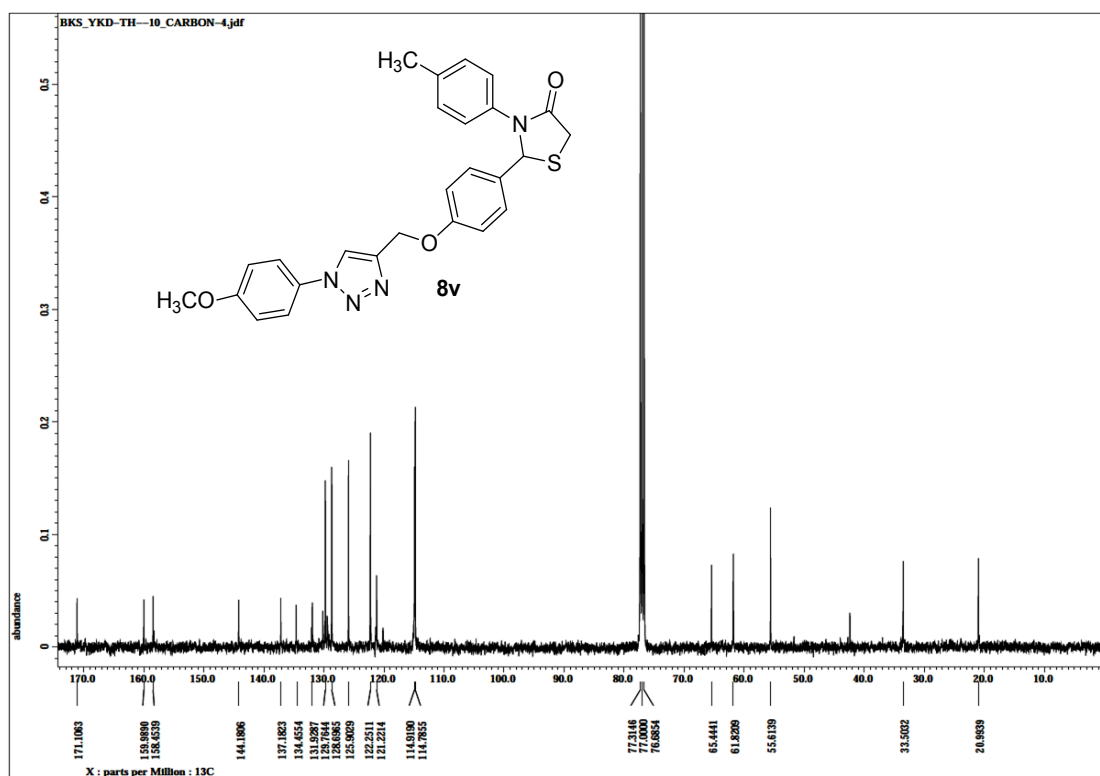
¹H Spectra of compound (**8u**) (300 MHz, CDCl₃)



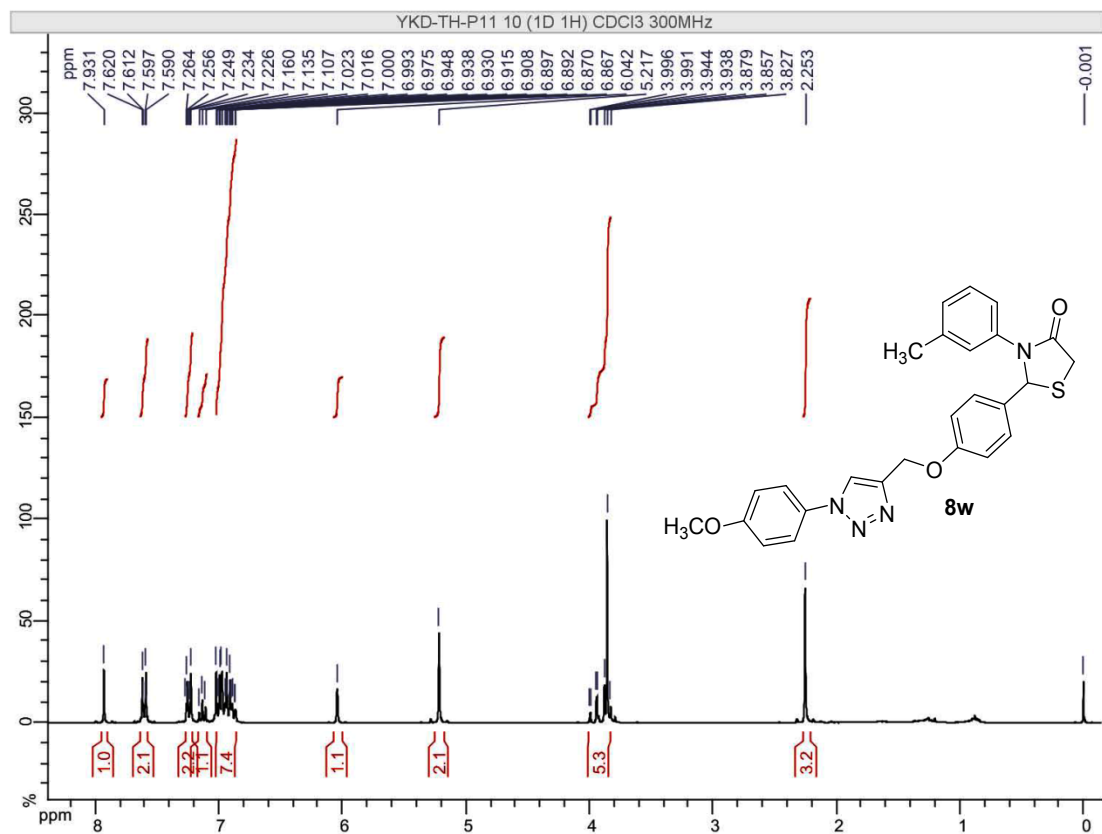
¹³C Spectra of compound (**8u**) (100 MHz, CDCl₃)



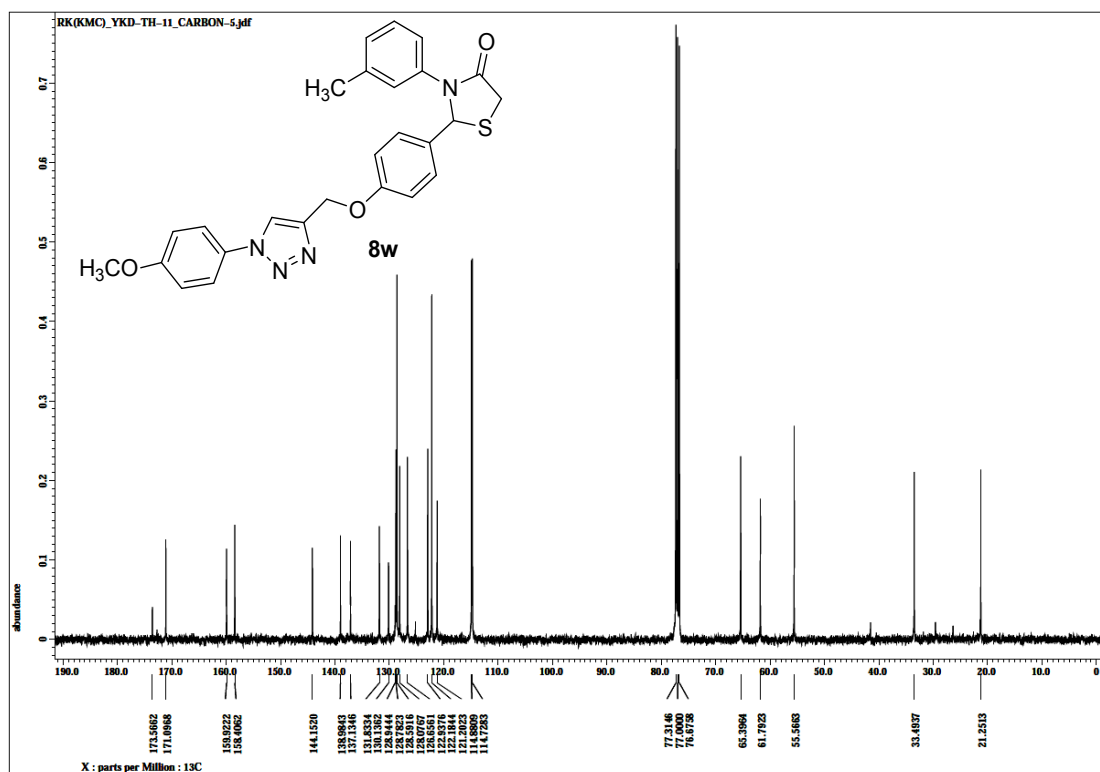
¹H Spectra of compound (**8v**) (300 MHz, CDCl₃)



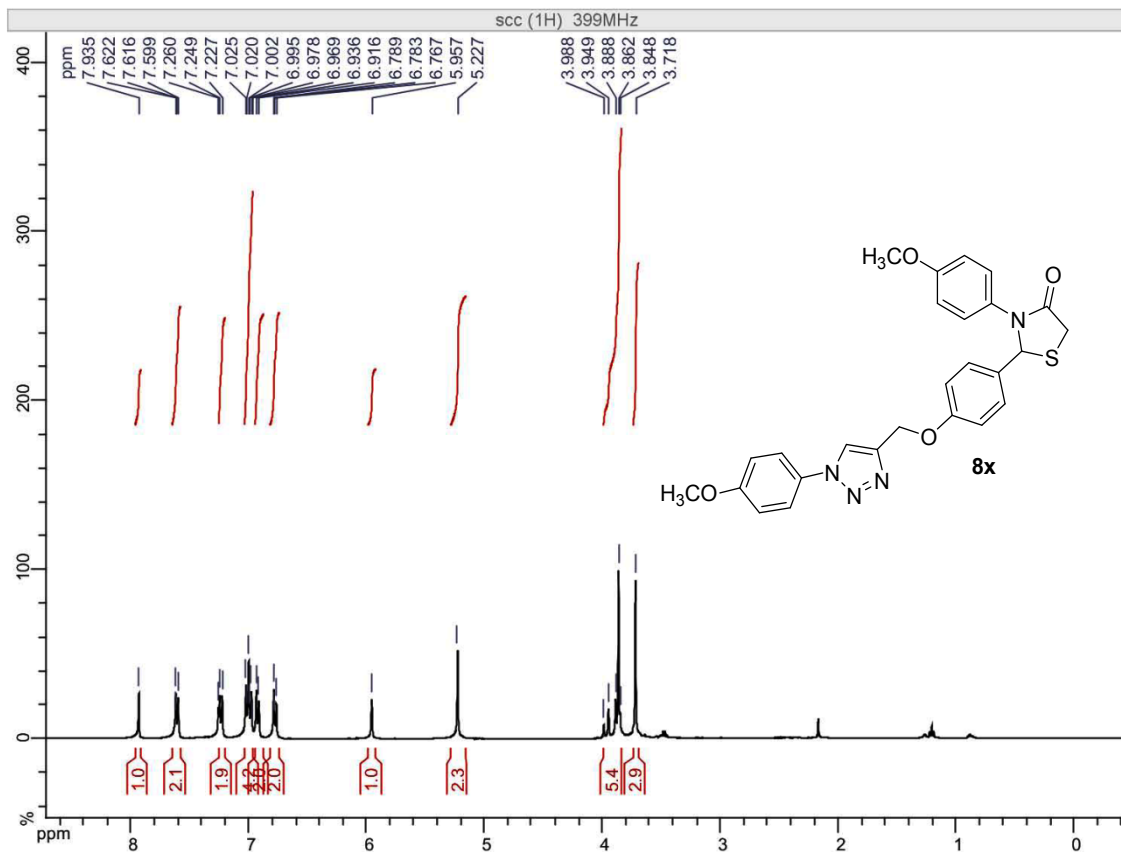
¹³C Spectra of compound (**8v**) (100 MHz, CDCl₃)



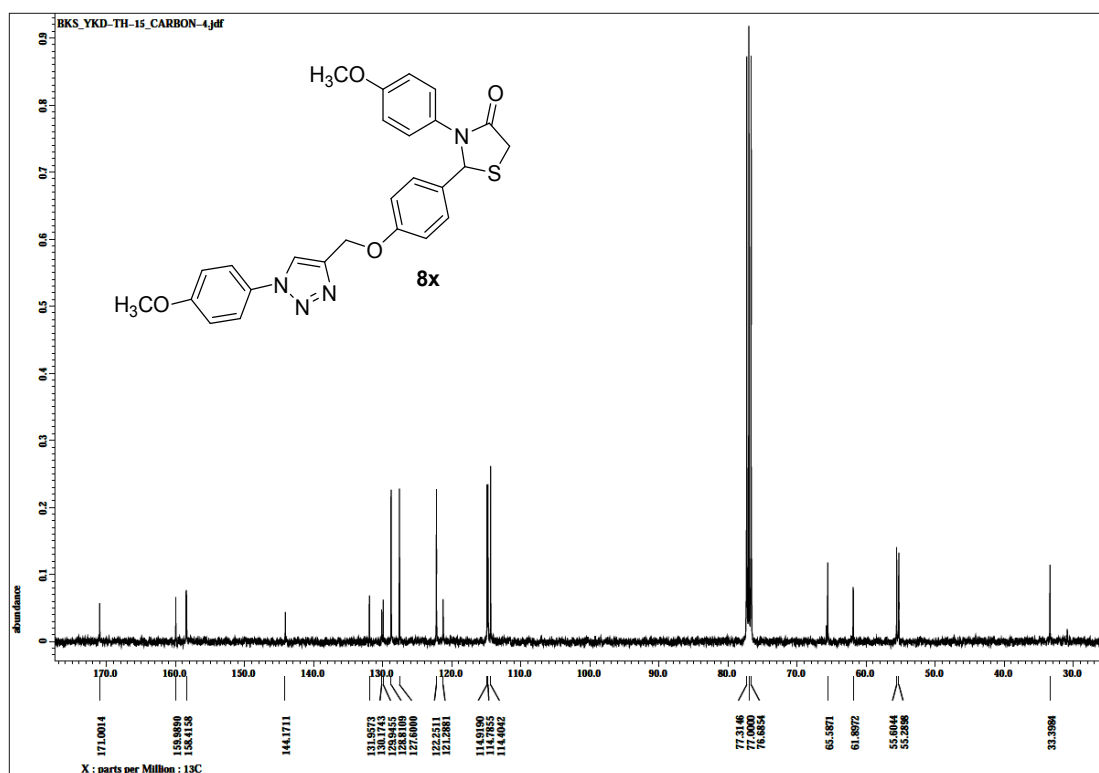
¹H Spectra of compound (**8w**) (300 MHz, CDCl₃)



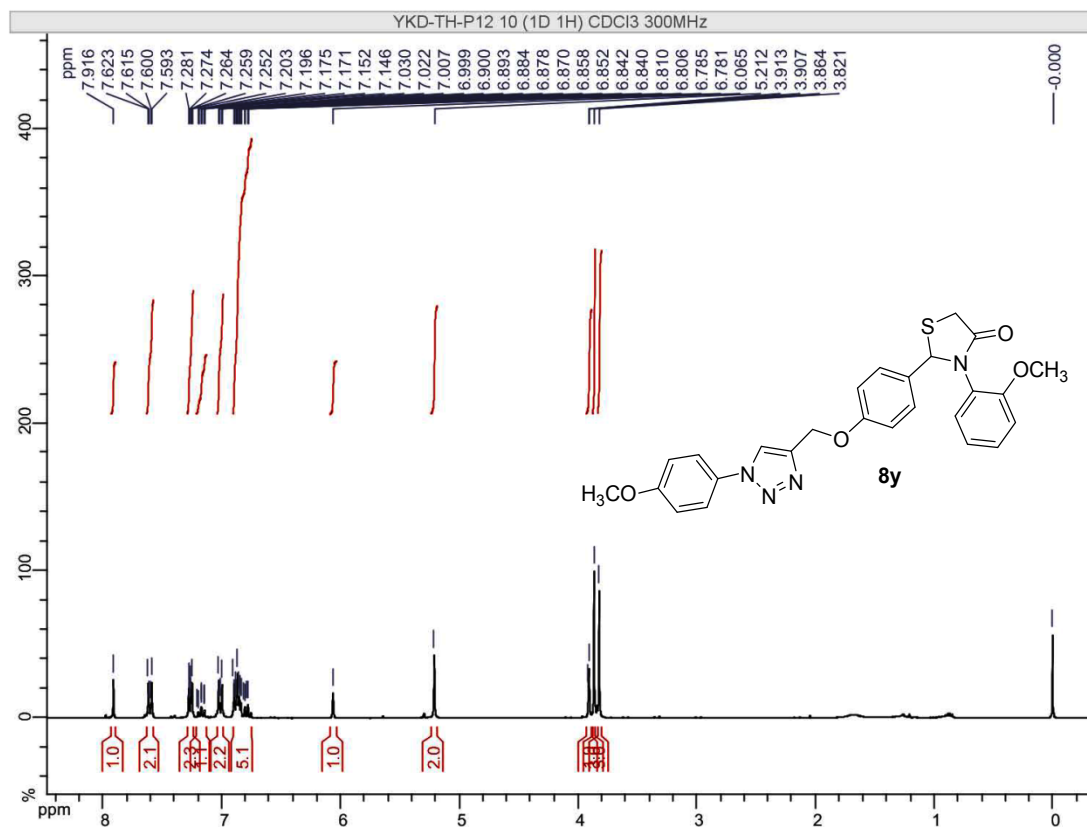
¹³C Spectra of compound (**8w**) (100 MHz, CDCl₃)



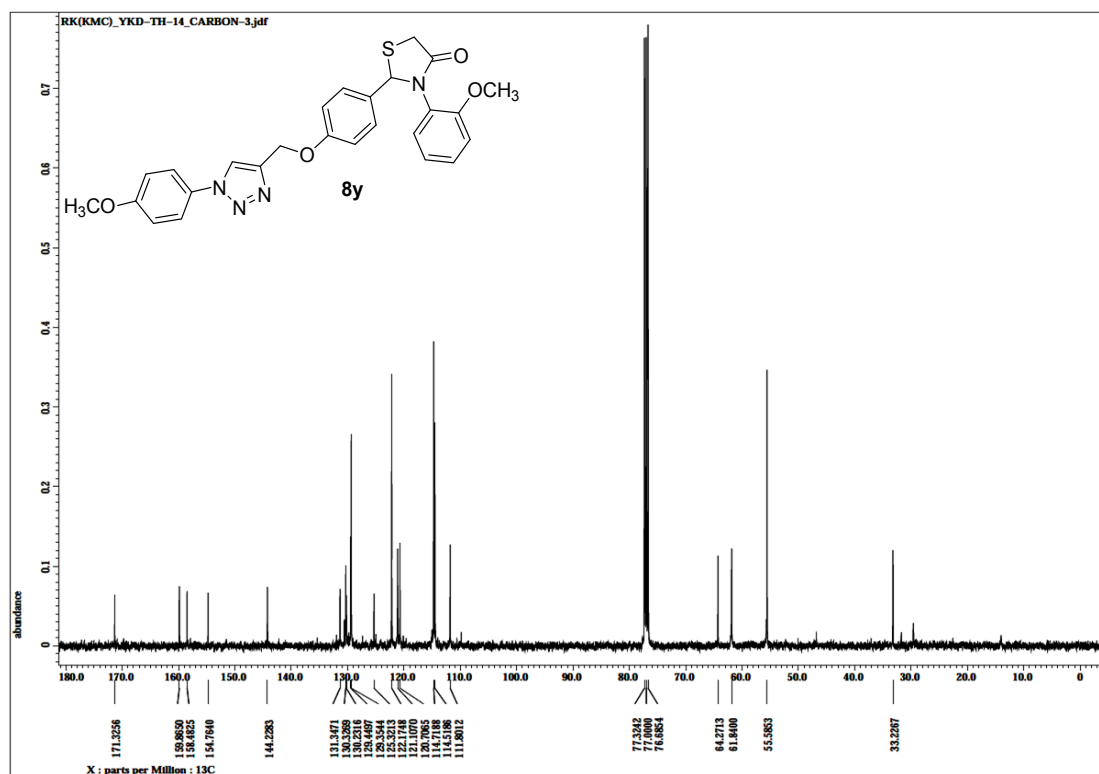
¹H Spectra of compound (**8x**) (300 MHz, CDCl₃)



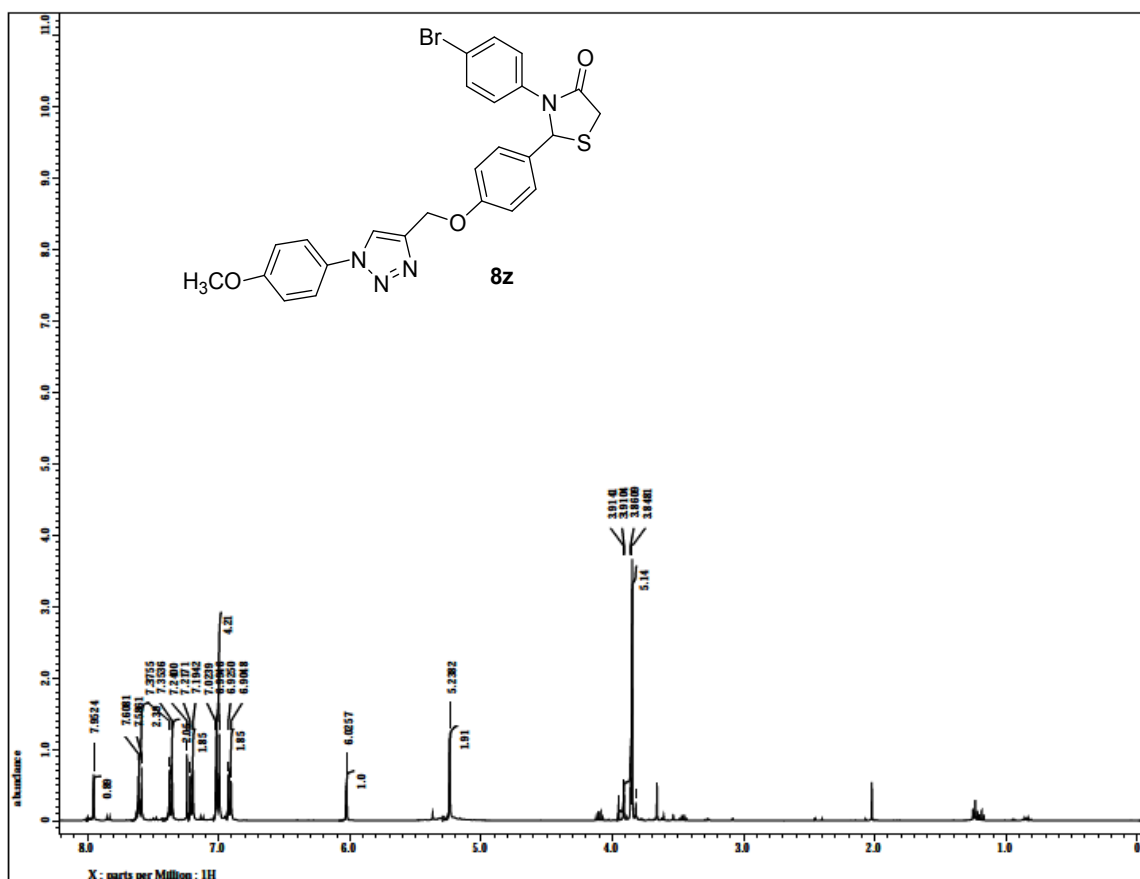
¹³C Spectra of compound (**8x**) (100 MHz, CDCl₃)



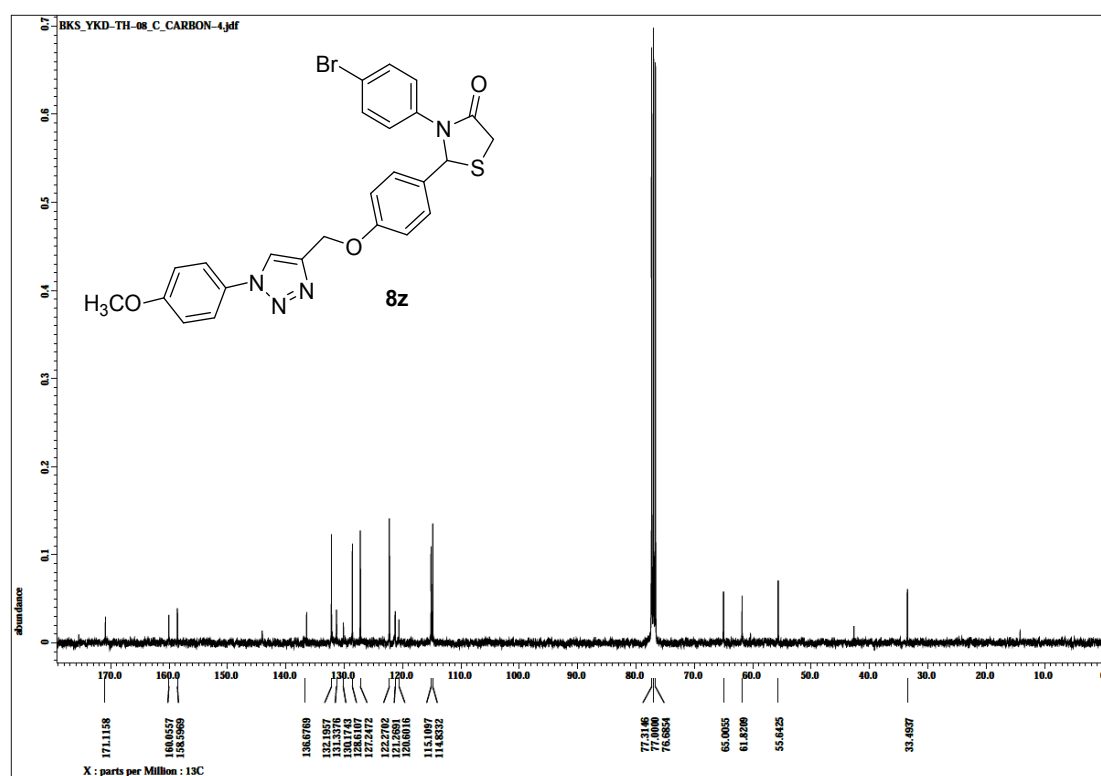
¹H Spectra of compound (**8y**) (300 MHz, CDCl₃)



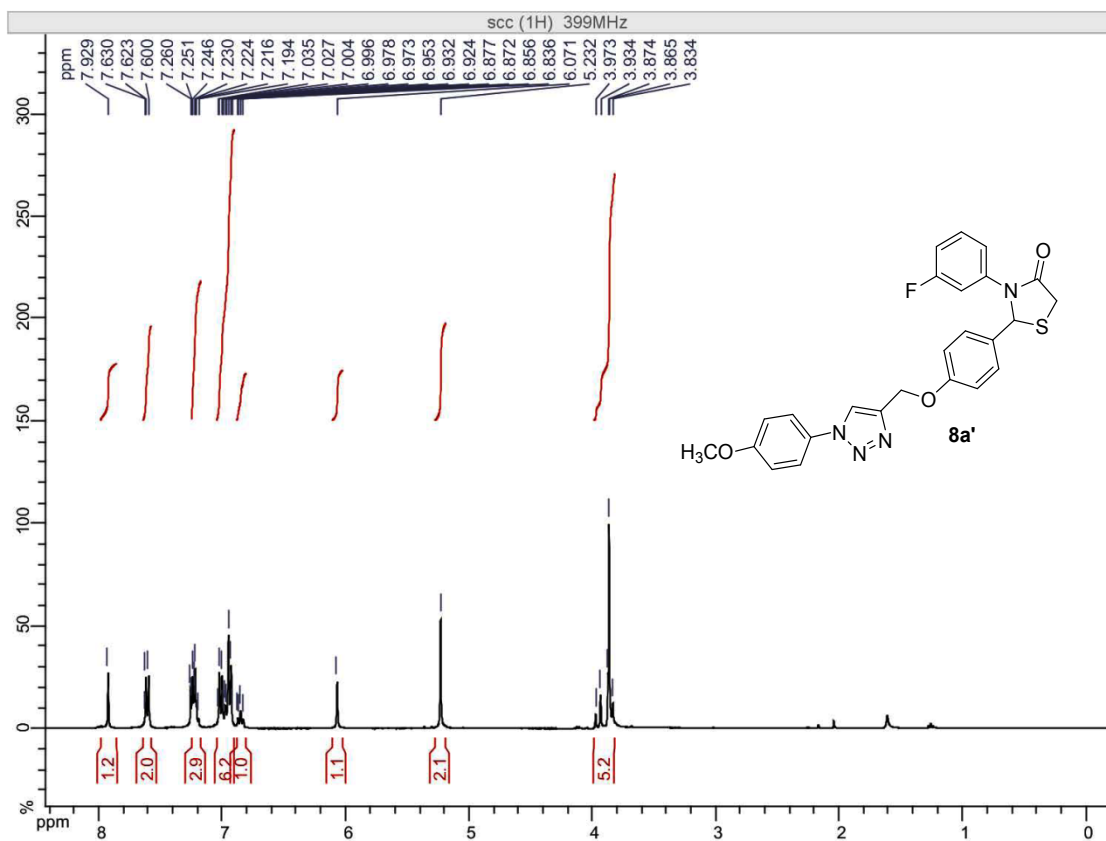
¹³C Spectra of compound (**8y**) (100 MHz, CDCl₃)



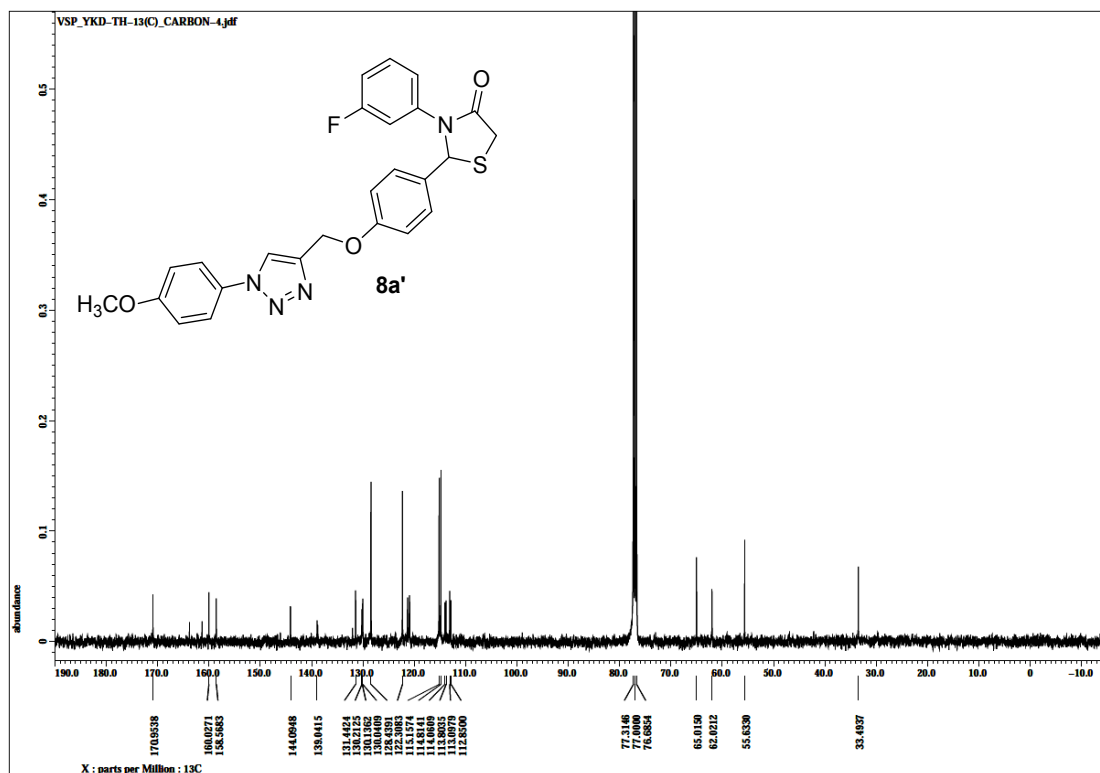
¹H Spectra of compound (**8z**) (400 MHz, CDCl₃)



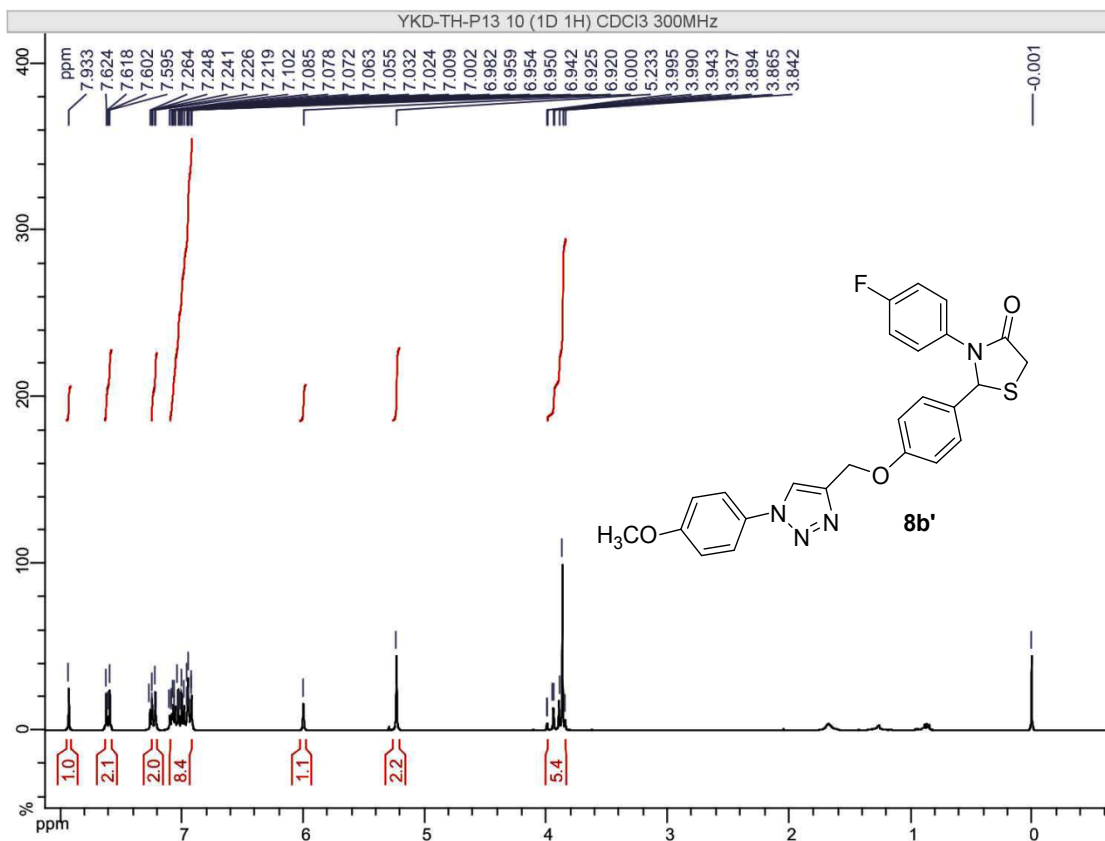
¹³C Spectra of compound (**8z**) (100 MHz, CDCl₃)



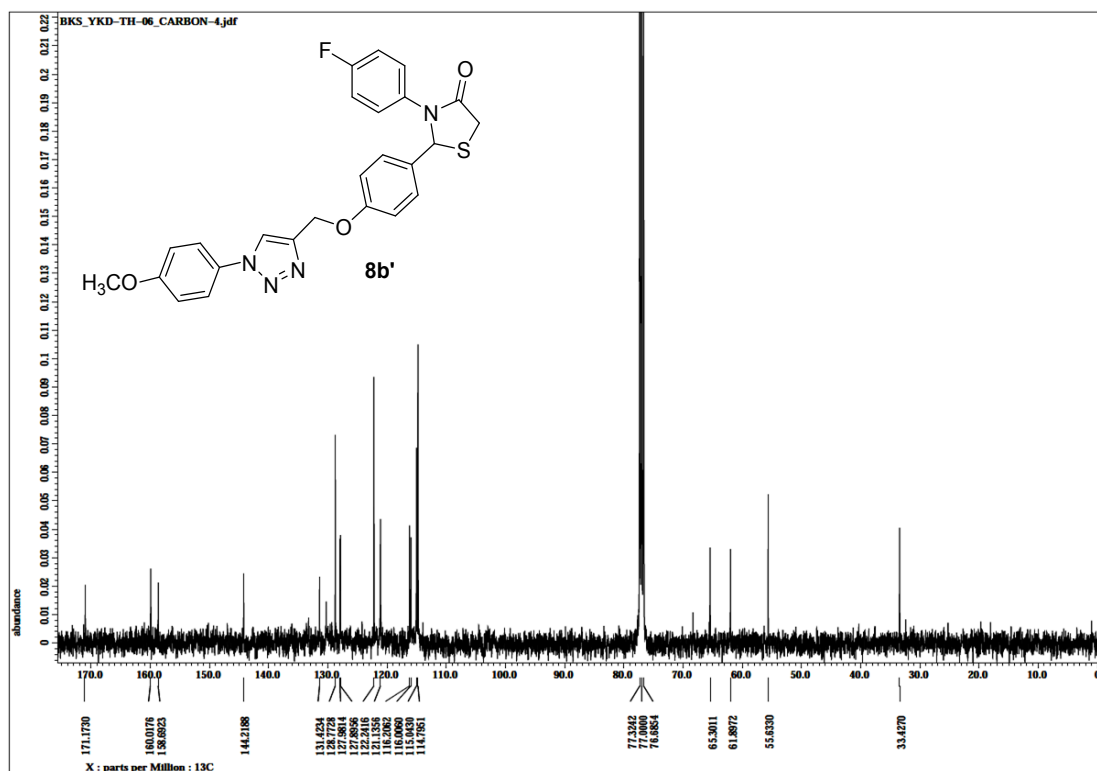
¹H Spectra of compound (**8a'**) (400 MHz, CDCl₃)



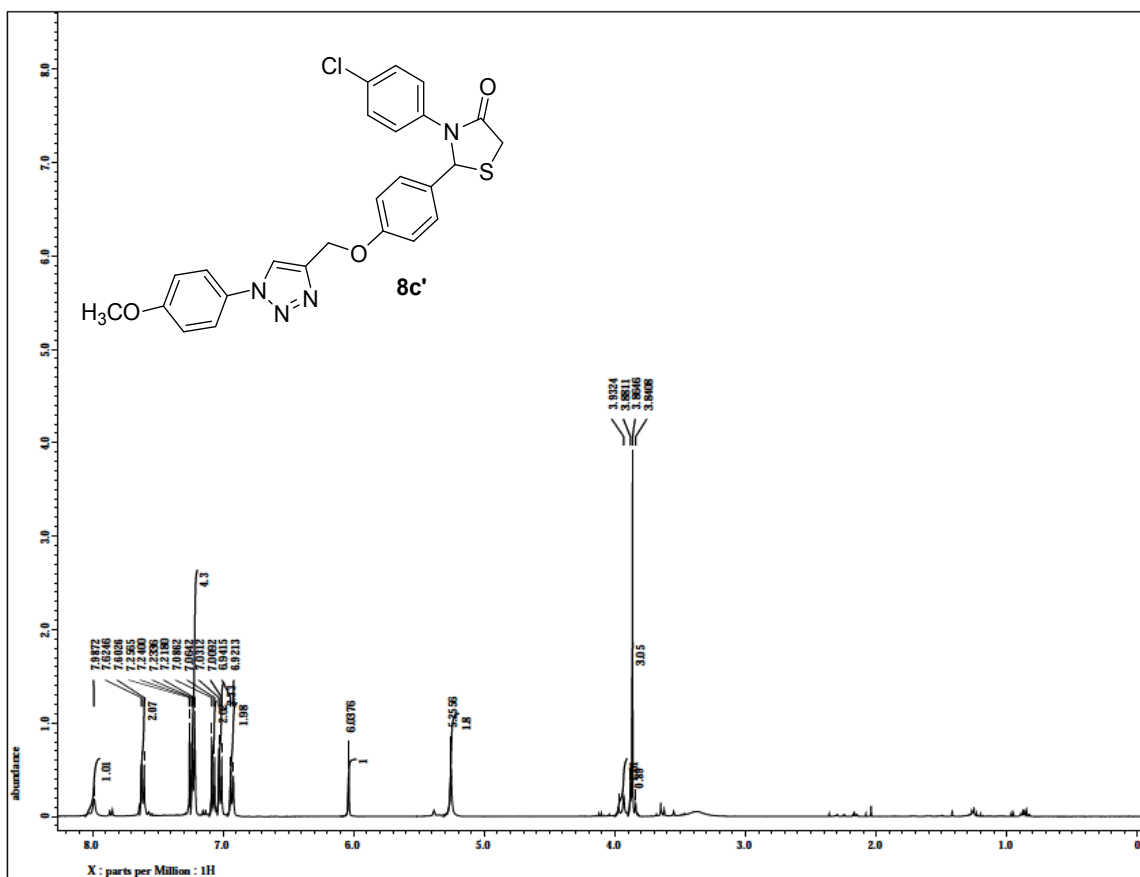
¹³C Spectra of compound (**8a'**) (100 MHz, CDCl₃)



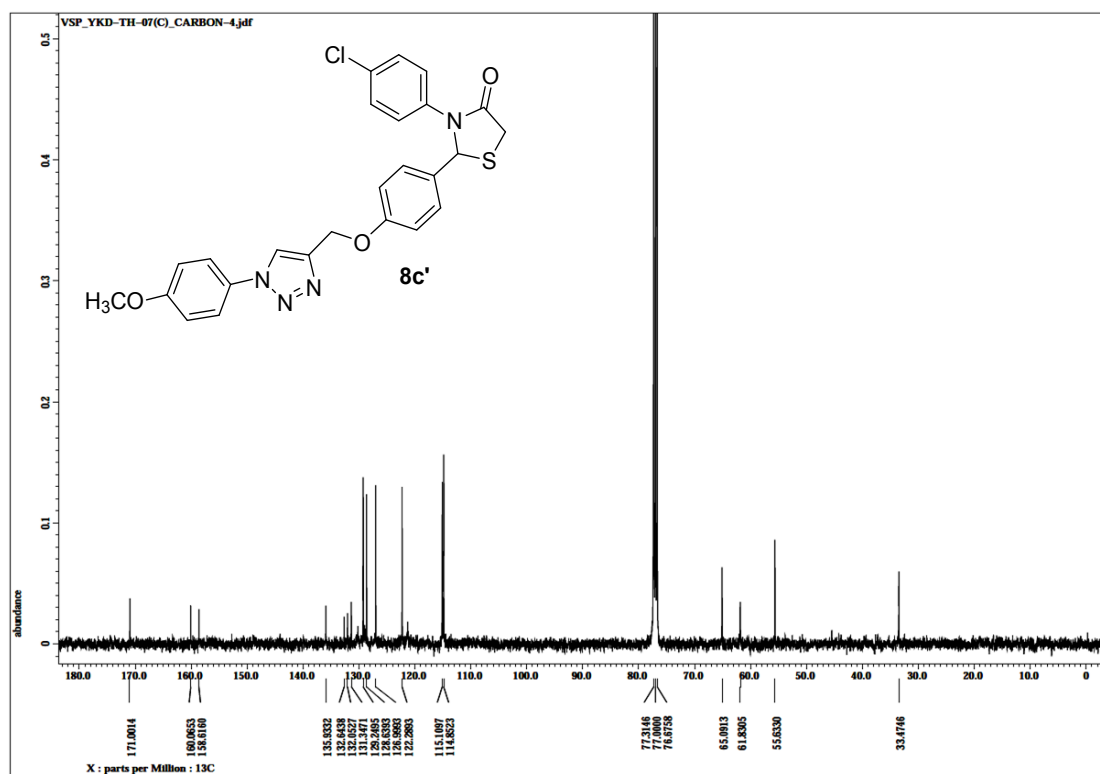
^1H Spectra of compound (**8b'**) (300 MHz, CDCl_3)



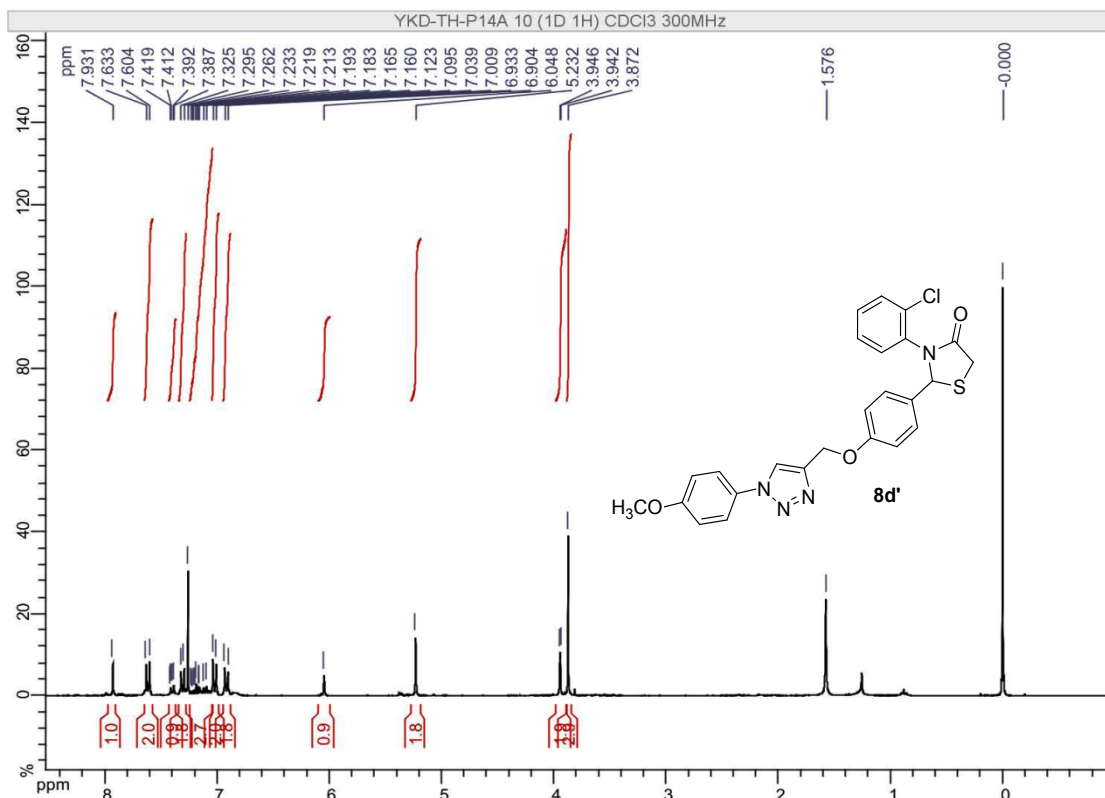
^{13}C Spectra of compound (**8b'**) (100 MHz, CDCl_3)



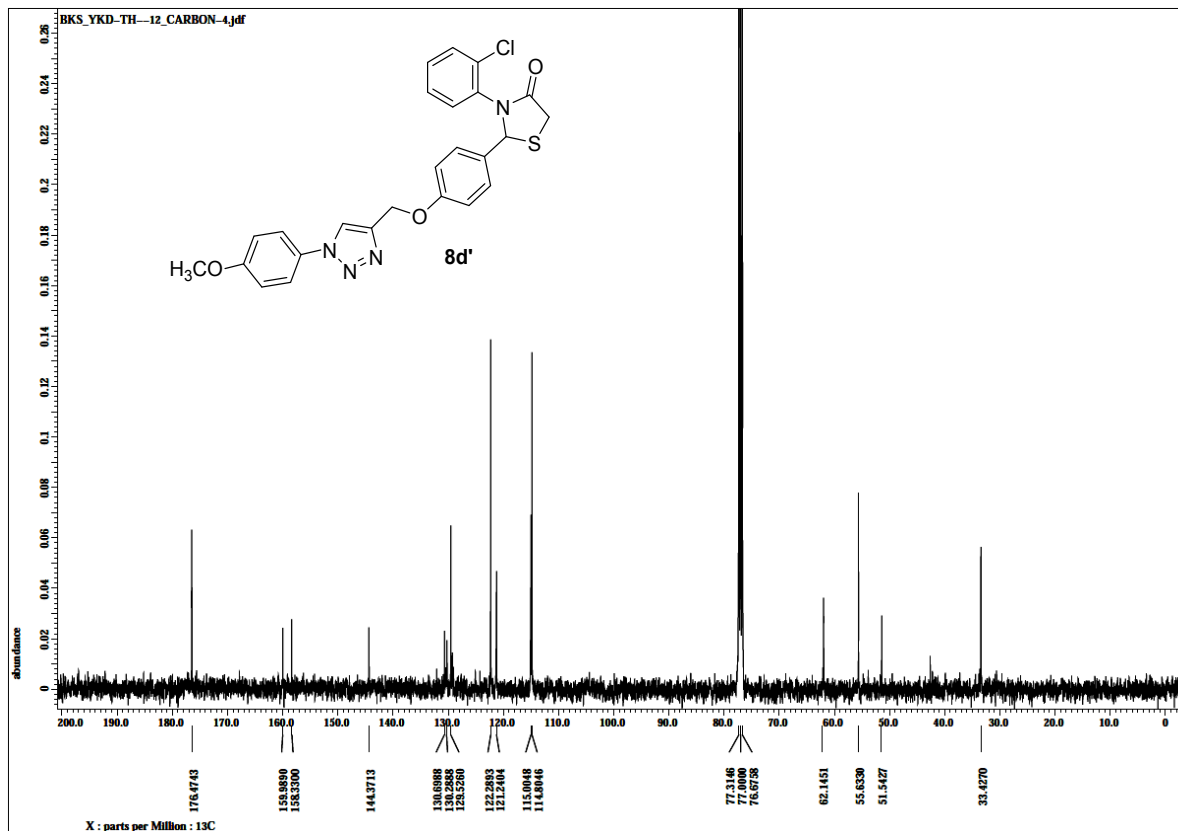
¹H Spectra of compound (**8c'**) (400 MHz, CDCl₃)



¹³C Spectra of compound (**8c'**) (100 MHz, CDCl₃)



¹H Spectra of compound (**8d'**) (300 MHz, CDCl₃)



¹³C Spectra of compound (**8d'**) (100 MHz, CDCl₃)