Supporting Information File

SYNTHESIS, STRUCTURE AND PROPERTIES OF N-PHENYL-2-(THIAZOL-4-YL)ACETAMIDES

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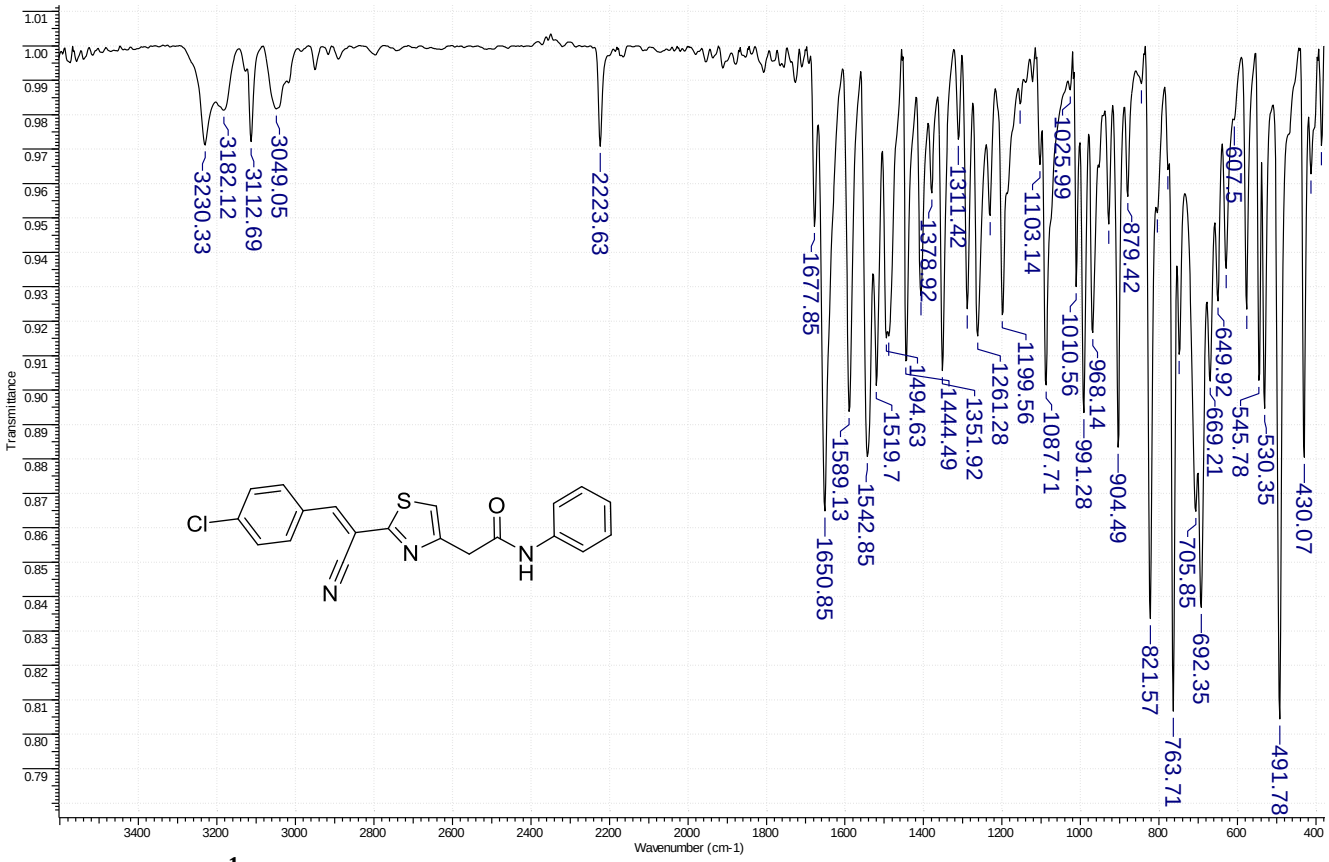
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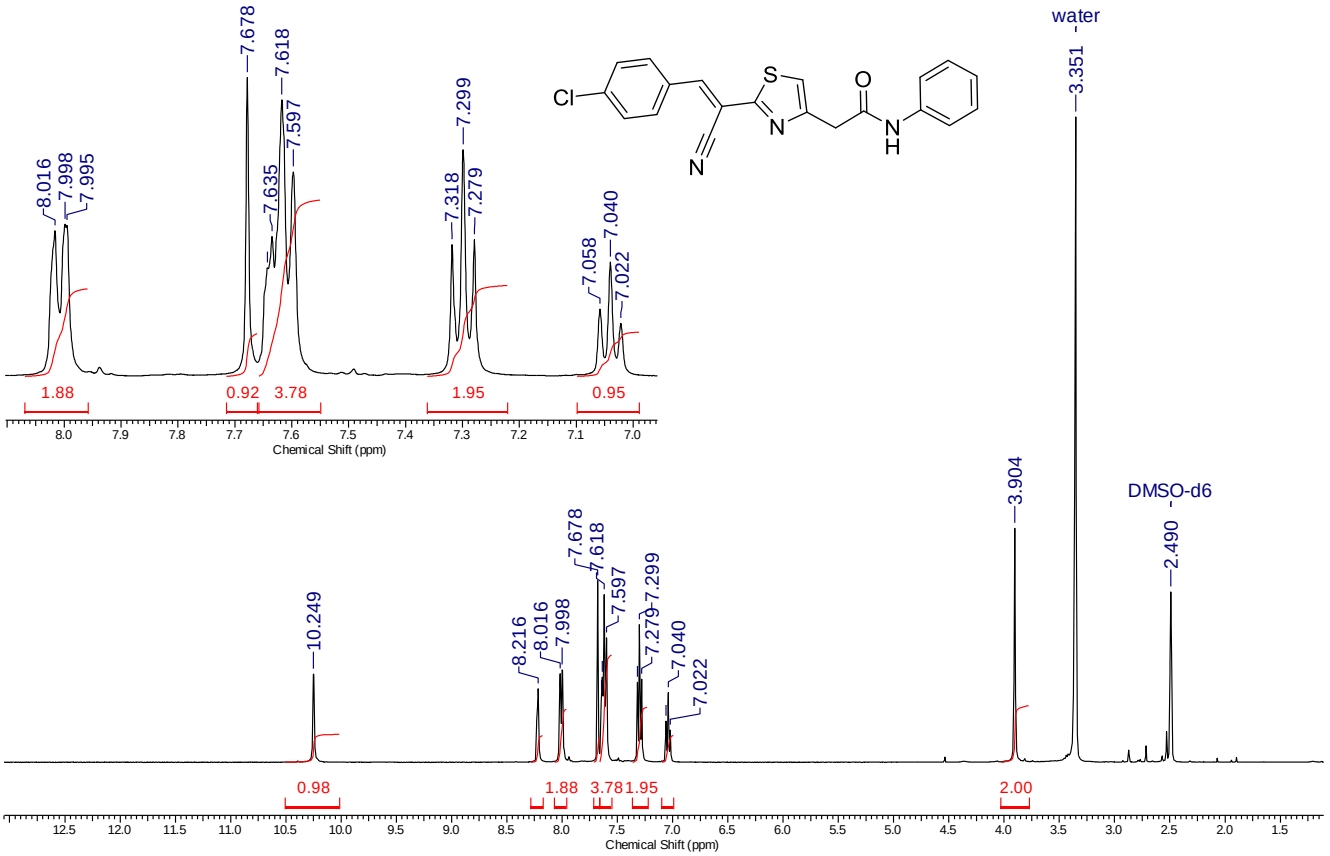
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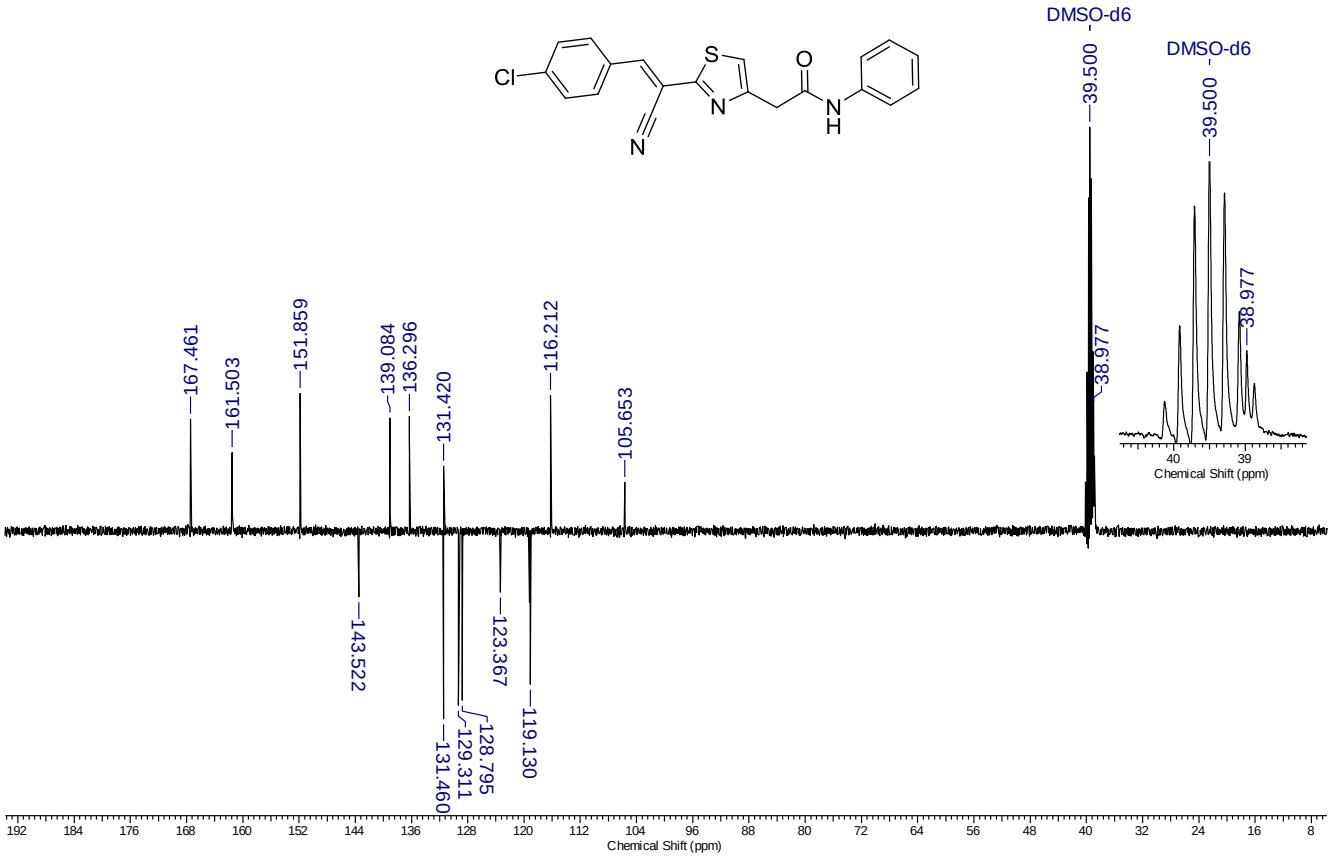
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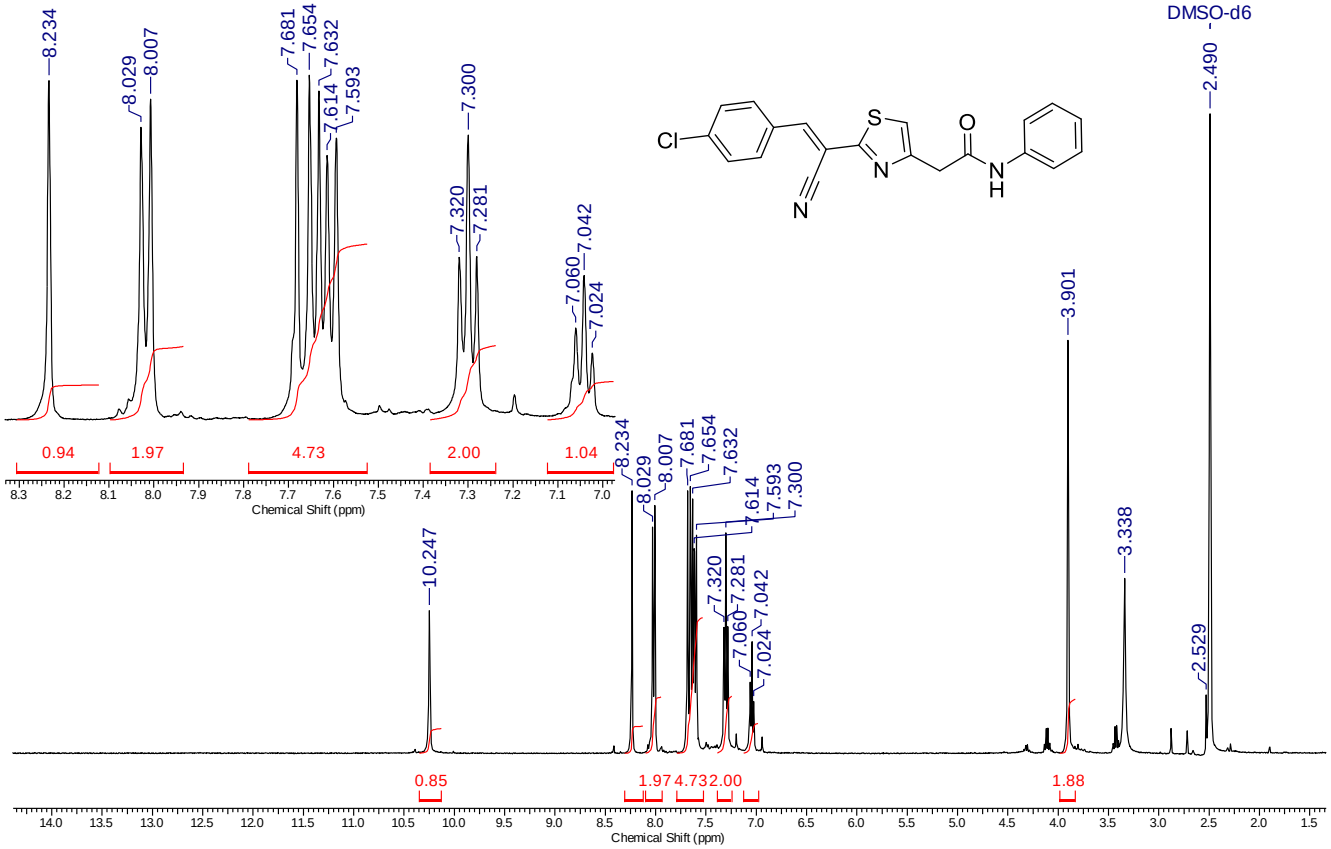
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14a



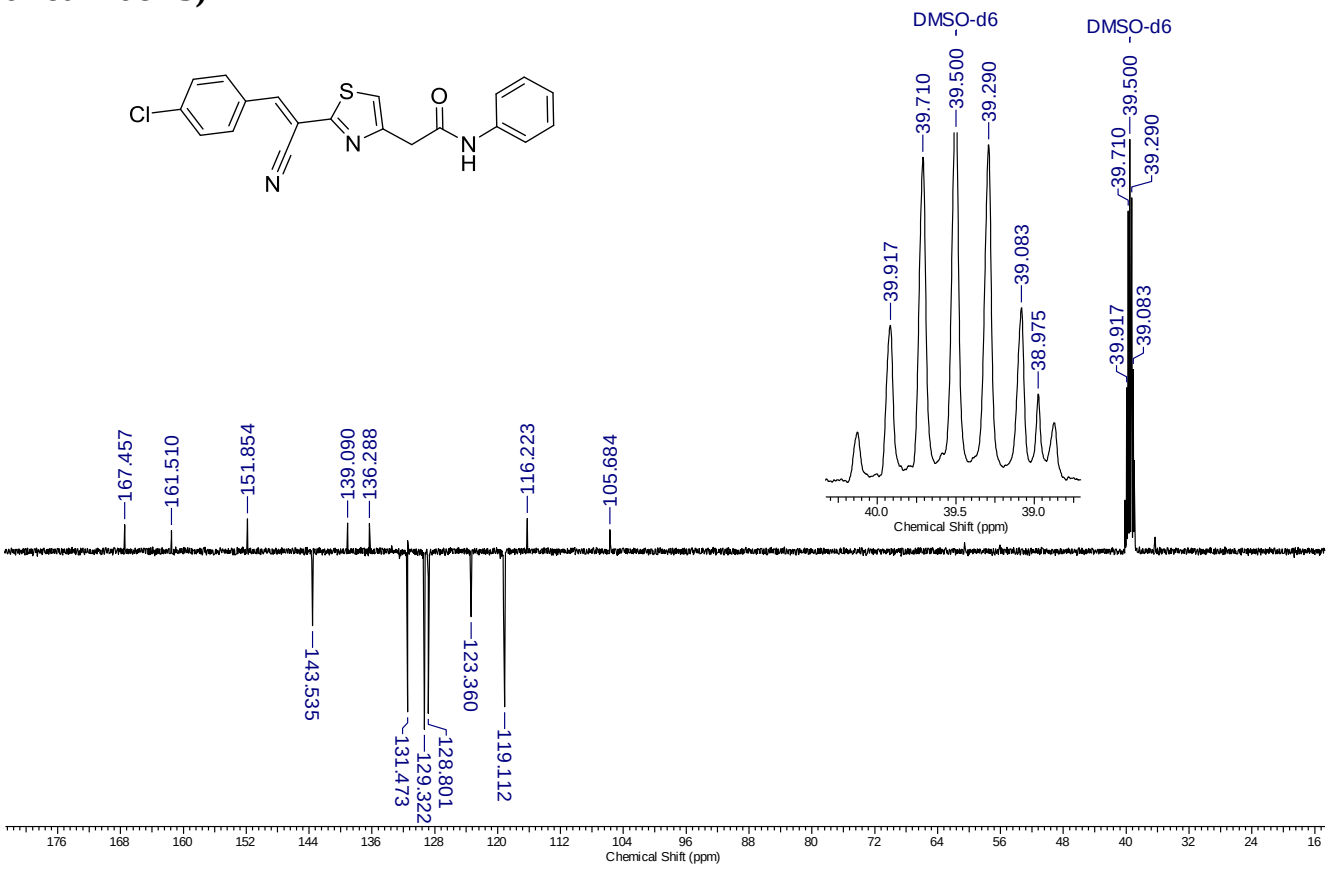
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of compound 14a



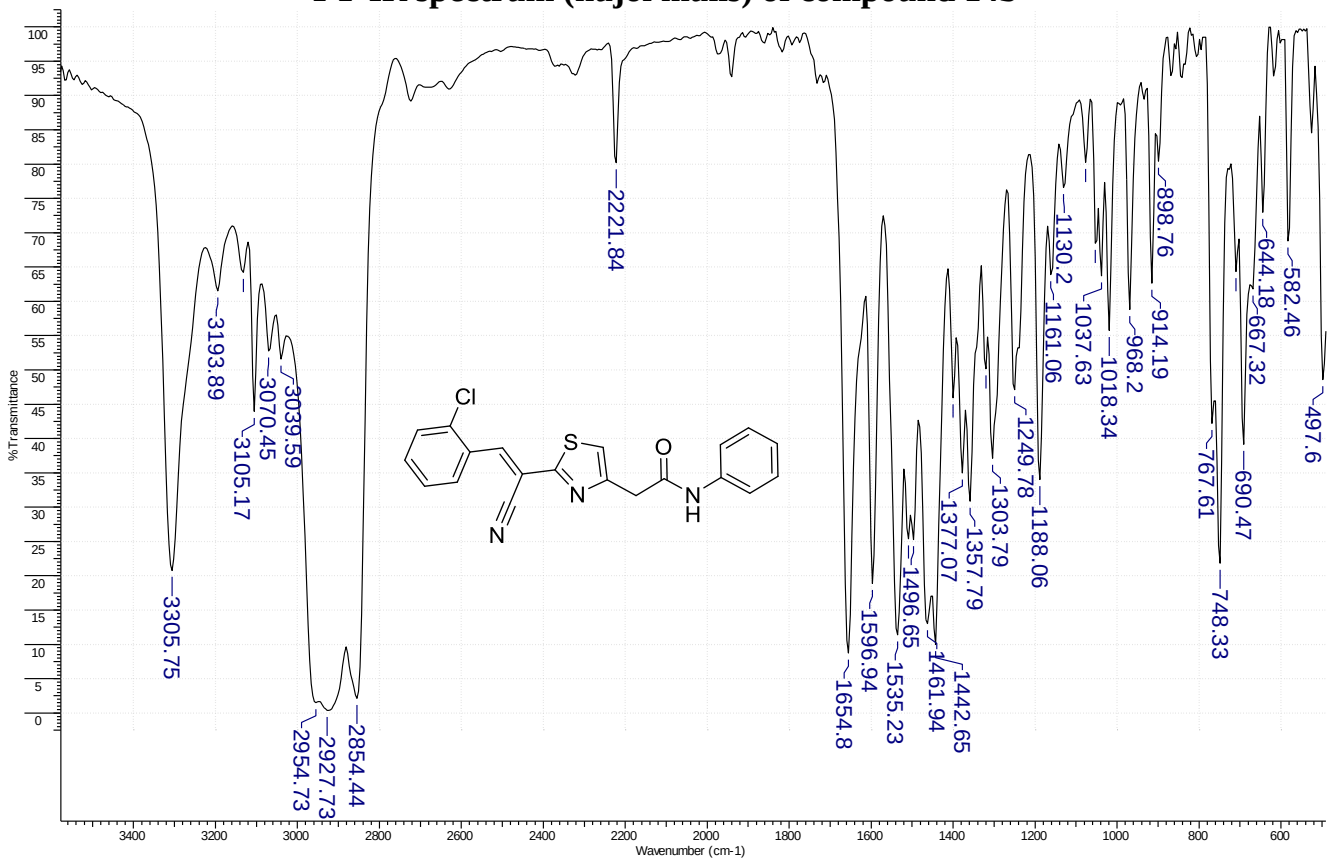
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14a (prepared from thioamide 13)



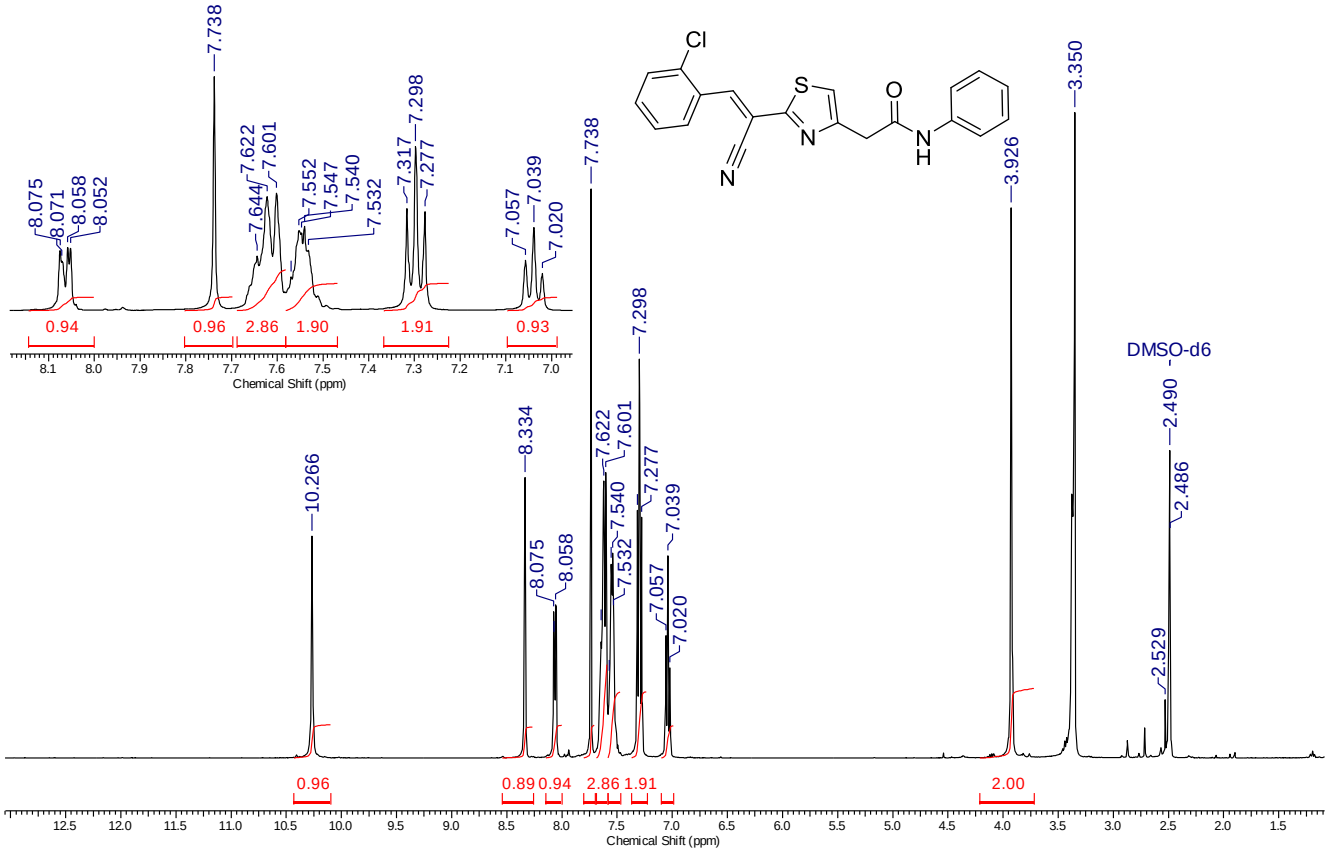
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of compound 14a (prepared from thioamide 13)



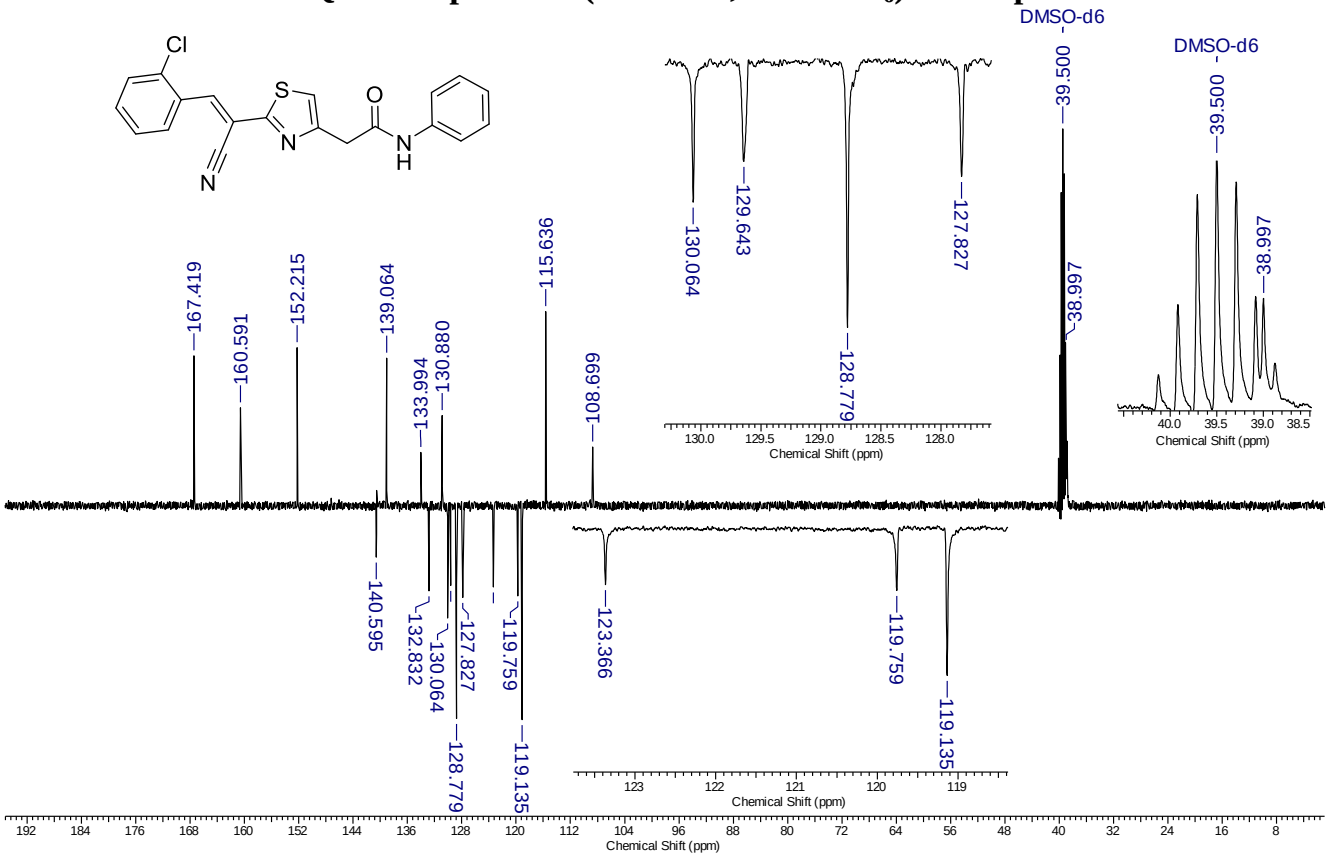
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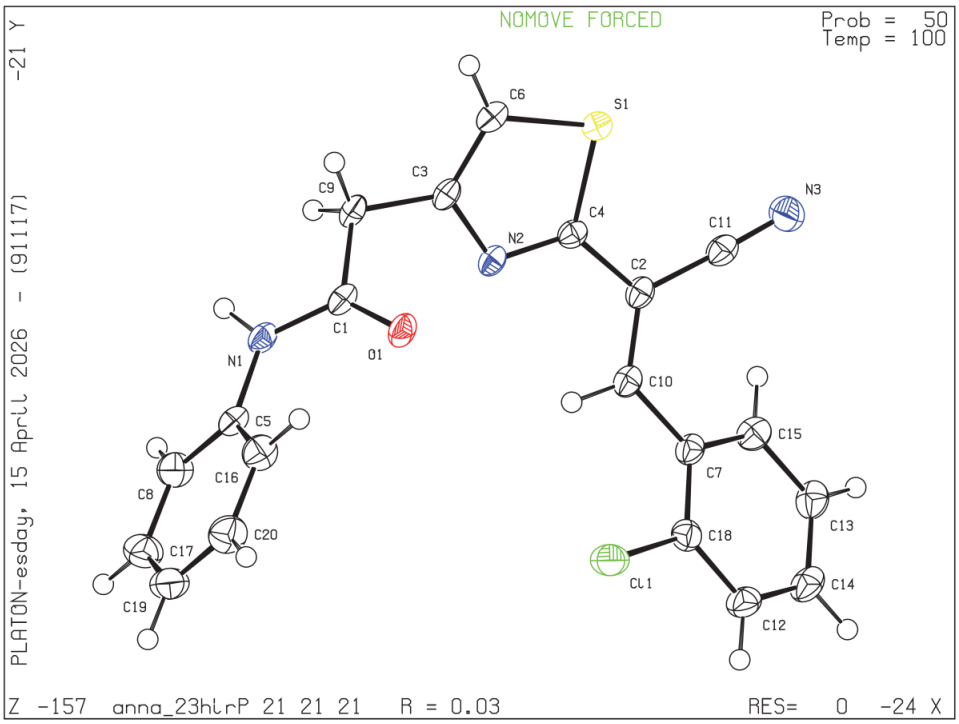
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14b



^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of compound 14b



X ray data for compound 14b



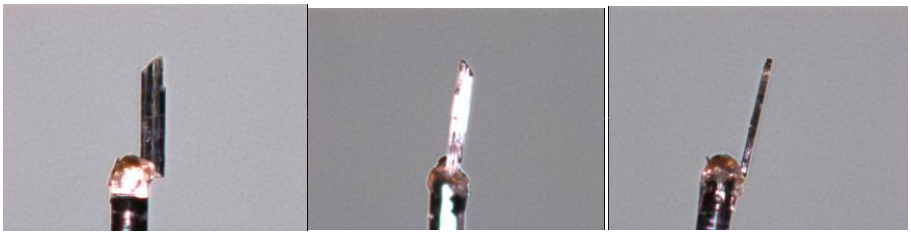


Table S1. Crystal data and structure refinement for compound 14b.

Identification code	(E)-2-{2-[2-(2-chlorophenyl)-1-cyanovinyl]thiazol-4-yl}-N-phenylacetamide (23 HTR)
Empirical formula	$C_{20}H_{14}ClN_3OS$
Formula weight	379.85
Temperature/K	100.00(10)
Crystal system	orthorhombic
Space group	$P2_12_12_1$
a/Å	4.80420(10)
b/Å	12.9103(2)
c/Å	28.4147(5)
α/°	90
β/°	90
γ/°	90
Volume/Å^3	1762.38(6)
Z	4
ρ_{calc}g/cm^3	1.432
μ/mm^{-1}	3.141
F(000)	784.0
Crystal size/mm^3	0.498 × 0.09 × 0.048
Radiation	Cu Kα (λ = 1.54184)

2Θ range for data collection/°	6.222 to 152.59
Index ranges	$-6 \le h \le 3$, $-16 \le k \le 16$, $-34 \le l \le 35$
Reflections collected	10990
Independent reflections	3572 [R_{int} = 0.0382, R_{sigma} = 0.0389]
Data/restraints/parameters	3572/0/235
Goodness-of-fit on F^2	1.039
Final R indexes [I>=2σ (I)]	R_1 = 0.0281, wR_2 = 0.0683
Final R indexes [all data]	R_1 = 0.0294, wR_2 = 0.0690
Largest diff. peak/hole / e $Å^{-3}$	0.35/-0.20
Flack parameter	0.000(9)

Table S2. Fractional Atomic Coordinates ($\times 10^4$) and Equivalent Isotropic Displacement Parameters ($Å^2 \times 10^3$) for 14b. U_{eq} is defined as 1/3 of of the trace of the orthogonalised U_{IJ} tensor.

Atom	*x*	*y*	*z*	U(eq)
S1	3941.3(10)	212.6(4)	4201.7(2)	22.78(12)
Cl1	-1469.4(14)	4213.6(4)	3129.6(2)	33.61(15)
O1	5191(3)	3871.7(13)	4524.8(6)	24.0(3)
N1	9520(3)	4473.5(15)	4347.7(7)	21.6(4)
N2	5380(4)	1994.4(15)	3877.1(7)	19.7(4)
N3	-937(5)	-535.8(17)	3314.8(8)	34.5(5)
C1	7666(4)	3722(2)	4440.8(8)	20.6(4)
C2	1669(4)	1201.9(17)	3414.7(8)	20.5(4)
C3	6888(4)	1827.7(17)	4282.0(8)	20.1(4)
C4	3732(4)	1210.2(16)	3794.8(7)	19.4(4)
C5	8987(4)	5554.5(17)	4310.0(8)	22.1(4)
C6	6400(4)	908.2(17)	4502.7(8)	22.9(4)
C7	-1083(4)	2221.1(17)	2814.3(8)	21.6(4)
C8	10584(5)	6107.0(19)	3990.8(10)	29.1(5)
C9	8905(4)	2637.7(17)	4445.3(8)	22.3(4)
C10	1034(4)	2076.3(16)	3178.5(8)	21.3(4)
C11	199(5)	242.2(19)	3349.3(8)	24.3(4)
C12	-4363(5)	3369(2)	2417.8(9)	27.5(5)
C13	-3940(5)	1596(2)	2169.6(8)	28.2(5)
C14	-5173(5)	2568(2)	2125.2(9)	29.1(5)
C15	-1910(5)	1431.2(19)	2507.8(8)	25.5(5)
C16	7008(5)	6060(2)	4583.8(9)	28.3(5)
C17	10198(6)	7167(2)	3940.3(10)	33.9(6)
C18	-2351(5)	3191.8(18)	2758.0(9)	23.9(4)
C19	8225(5)	7677.9(19)	4206.7(10)	32.4(5)
C20	6635(6)	7121(2)	4526.4(10)	33.2(5)

Table S3. Anisotropic Displacement Parameters ($Å^2 \times 10^3$) for 14b. The Anisotropic displacement factor exponent takes the form: $-2\pi^2[h^2a^{*2}U_{11}+2hka^*b^*U_{12}+\ldots]$.

Atom	U_{11}	U_{22}	U_{33}	U_{23}	U_{13}	U_{12}
S1	21.7(2)	22.9(2)	23.8(2)	2.9(2)	-3.0(2)	0.20(19)
Cl1	43.4(3)	23.9(2)	33.5(3)	0.7(2)	-13.3(3)	0.7(2)
O1	13.1(6)	28.6(8)	30.4(9)	-1.6(7)	0.6(6)	2.1(6)
N1	13.4(7)	27.6(9)	23.8(9)	1.4(8)	0.4(6)	3.1(6)
N2	13.9(7)	25.6(8)	19.6(9)	-0.8(7)	-0.1(6)	2.0(6)
N3	41.4(11)	29.8(10)	32.2(11)	3.0(9)	-12.0(10)	-7.8(9)
C1	15.7(9)	29.7(11)	16.5(10)	-1.2(9)	-2.6(8)	2.8(8)
C2	16.9(9)	26.2(10)	18.4(10)	-1.7(8)	0.3(8)	0.7(8)
C3	13.1(8)	26.2(9)	21.1(10)	-2.6(8)	-0.2(8)	3.6(7)
C4	16.9(9)	22.3(9)	19.0(10)	0.3(8)	1.2(8)	3.1(8)
C5	18.1(9)	26.4(10)	21.7(10)	0.9(8)	-4.3(8)	2.6(8)
C6	19.2(9)	28.6(10)	20.8(10)	0.0(9)	-3.4(8)	3.7(8)
C7	19.1(9)	28.3(10)	17.5(9)	2.7(9)	-1.0(8)	-1.6(8)
C8	26.0(11)	31.8(12)	29.4(12)	3.0(10)	5.6(9)	2.7(9)
C9	14.3(8)	27.2(10)	25.4(11)	-3.2(9)	-4.3(8)	2.2(8)
C10	17.4(9)	26.8(9)	19.6(10)	-0.2(9)	-0.1(8)	0.2(8)
C11	23.6(10)	29.0(11)	20.2(10)	1.0(9)	-4.9(8)	1.2(9)
C12	25.8(11)	32.8(11)	24.0(12)	7.9(10)	-1.9(9)	1.6(9)
C13	28.5(10)	37.2(11)	18.8(11)	-1.6(9)	-2.6(9)	-5.0(10)
C14	24.0(10)	43.6(13)	19.7(10)	6.1(10)	-3.6(9)	-0.8(10)
C15	26.1(10)	31.0(11)	19.5(10)	-0.3(9)	-0.2(9)	1.9(9)
C16	25.7(11)	31.0(12)	28.2(12)	-1.3(10)	3.3(9)	2.7(9)
C17	36.6(12)	32.4(12)	32.7(13)	9.1(11)	1.7(11)	0.0(10)
C18	24.4(10)	26.0(10)	21.3(11)	3.0(9)	-1.0(9)	-3.8(8)
C19	36.1(12)	27.3(11)	33.8(13)	2.9(11)	-5.9(12)	4.8(10)
C20	30.8(12)	32.0(12)	36.8(14)	-4.2(11)	2.1(11)	5.6(10)

Table S4. Bond Lengths for 14b.

Atom	Atom	Length/Å	Atom	Atom	Length/Å
S1	C4	1.734(2)	C3	C9	1.499(3)
S1	C6	1.713(2)	C5	C8	1.386(3)
Cl1	C18	1.742(2)	C5	C16	1.391(3)
O1	C1	1.228(3)	C7	C10	1.463(3)
N1	C1	1.344(3)	C7	C15	1.399(3)
N1	C5	1.423(3)	C7	C18	1.403(3)
N2	C3	1.377(3)	C8	C17	1.388(4)
N2	C4	1.306(3)	C12	C14	1.382(4)
N3	C11	1.147(3)	C12	C18	1.386(3)
C1	C9	1.521(3)	C13	C14	1.393(4)
C2	C4	1.466(3)	C13	C15	1.385(3)
C2	C10	1.348(3)	C16	C20	1.391(4)
C2	C11	1.438(3)	C17	C19	1.381(4)
C3	C6	1.363(3)	C19	C20	1.388(4)

Table S5. Bond Angles for 14b.

Atom	Atom	Atom	Angle/°	Atom	Atom	Atom	Angle/°
C6	S1	C4	89.05(11)	C15	C7	C10	123.0(2)
C1	N1	C5	127.14(18)	C15	C7	C18	117.2(2)
C4	N2	C3	110.34(19)	C18	C7	C10	119.8(2)
O1	C1	N1	124.5(2)	C5	C8	C17	120.1(2)
O1	C1	C9	121.5(2)	C3	C9	C1	112.73(17)
N1	C1	C9	114.00(18)	C2	C10	C7	128.0(2)
C10	C2	C4	120.9(2)	N3	C11	C2	177.2(3)
C10	C2	C11	123.1(2)	C14	C12	C18	119.5(2)
C11	C2	C4	115.68(19)	C15	C13	C14	120.0(2)
N2	C3	C9	119.3(2)	C12	C14	C13	119.9(2)
C6	C3	N2	115.5(2)	C13	C15	C7	121.3(2)
C6	C3	C9	125.2(2)	C5	C16	C20	119.0(2)
N2	C4	S1	114.91(16)	C19	C17	C8	120.4(2)
N2	C4	C2	123.19(19)	C7	C18	Cl1	120.12(18)
C2	C4	S1	121.67(16)	C12	C18	Cl1	117.88(19)
C8	C5	N1	117.0(2)	C12	C18	C7	122.0(2)
C8	C5	C16	120.2(2)	C17	C19	C20	119.3(2)
C16	C5	N1	122.7(2)	C19	C20	C16	121.1(2)
C3	C6	S1	110.22(16)				

Table S6. Torsion Angles for 14b.

A	**B**	**C**	**D**	Angle/°	**A**	**B**	**C**	**D**	Angle/°
O1	C1	C9	C3	33.3(3)	C8	C17	C19	C20	0.1(4)
N1	C1	C9	C3	-147.9(2)	C9	C3	C6	S1	179.82(17)
N1	C5	C8	C17	-179.2(2)	C10	C2	C4	S1	162.75(17)
N1	C5	C16	C20	179.5(2)	C10	C2	C4	N2	-11.4(3)
N2	C3	C6	S1	-0.5(2)	C10	C7	C15	C13	179.5(2)
N2	C3	C9	C1	47.2(3)	C10	C7	C18	Cl1	-1.6(3)
C1	N1	C5	C8	-146.7(2)	C10	C7	C18	C12	179.9(2)
C1	N1	C5	C16	34.7(4)	C11	C2	C4	S1	-10.9(3)
C3	N2	C4	S1	-0.7(2)	C11	C2	C4	N2	174.9(2)
C3	N2	C4	C2	173.89(19)	C11	C2	C10	C7	-2.4(4)
C4	S1	C6	C3	0.10(17)	C14	C12	C18	Cl1	-178.20(18)
C4	N2	C3	C6	0.8(3)	C14	C12	C18	C7	0.4(4)
C4	N2	C3	C9	-179.55(19)	C14	C13	C15	C7	1.0(4)
C4	C2	C10	C7	-175.6(2)	C15	C7	C10	C2	-30.0(4)
C5	N1	C1	O1	-2.7(4)	C15	C7	C18	Cl1	179.27(17)
C5	N1	C1	C9	178.6(2)	C15	C7	C18	C12	0.7(3)
C5	C8	C17	C19	0.0(4)	C15	C13	C14	C12	0.2(4)
C5	C16	C20	C19	-0.8(4)	C16	C5	C8	C17	-0.6(4)
C6	S1	C4	N2	0.34(17)	C17	C19	C20	C16	0.3(4)
C6	S1	C4	C2	-174.31(18)	C18	C7	C10	C2	150.9(2)
C6	C3	C9	C1	-133.1(2)	C18	C7	C15	C13	-1.4(3)
C8	C5	C16	C20	1.0(4)	C18	C12	C14	C13	-0.8(4)

Table S7. Hydrogen Atom Coordinates (Å×10^4) and Isotropic Displacement Parameters (Å^2×10^3) for 14b.

Atom	*x*	*y*	*z*	U(eq)
H1	11254.63	4275.52	4305.33	26
H6	7294.4	685.23	4783.13	27
H8	11944.99	5760.26	3806.35	35
H9A	10566.86	2624.65	4239.45	27
H9B	9516.83	2469.17	4769.11	27
H10	2093.46	2672.32	3258.44	26
H12	-5180.13	4035.08	2386.06	33
H13	-4491.38	1046.45	1967.95	34
H14	-6568.68	2680.82	1894	35
H15	-1062.58	768.48	2531.87	31
H16	5927.29	5686	4806.49	34
H17	11296.94	7542.49	3721.09	41
H19	7959.02	8402.91	4171.52	39
H20	5270.57	7469.71	4709.13	40

X ray Experimental details for 14b

Single crystals of $C_{20}H_{14}ClN_3OS$ **14b** were isolated from mother liquor. A suitable crystal was selected and mounted on the glass stick by acrylic glue on a **SuperNova, Dual, Cu at home/near, AtlasS2** diffractometer. The crystal was kept at 100.00(10) K during data collection. Using Olex2 [1], the structure was solved with the SHELXT [2] structure solution program using Intrinsic Phasing and refined with the SHELXL [3] refinement package using Least Squares minimisation.

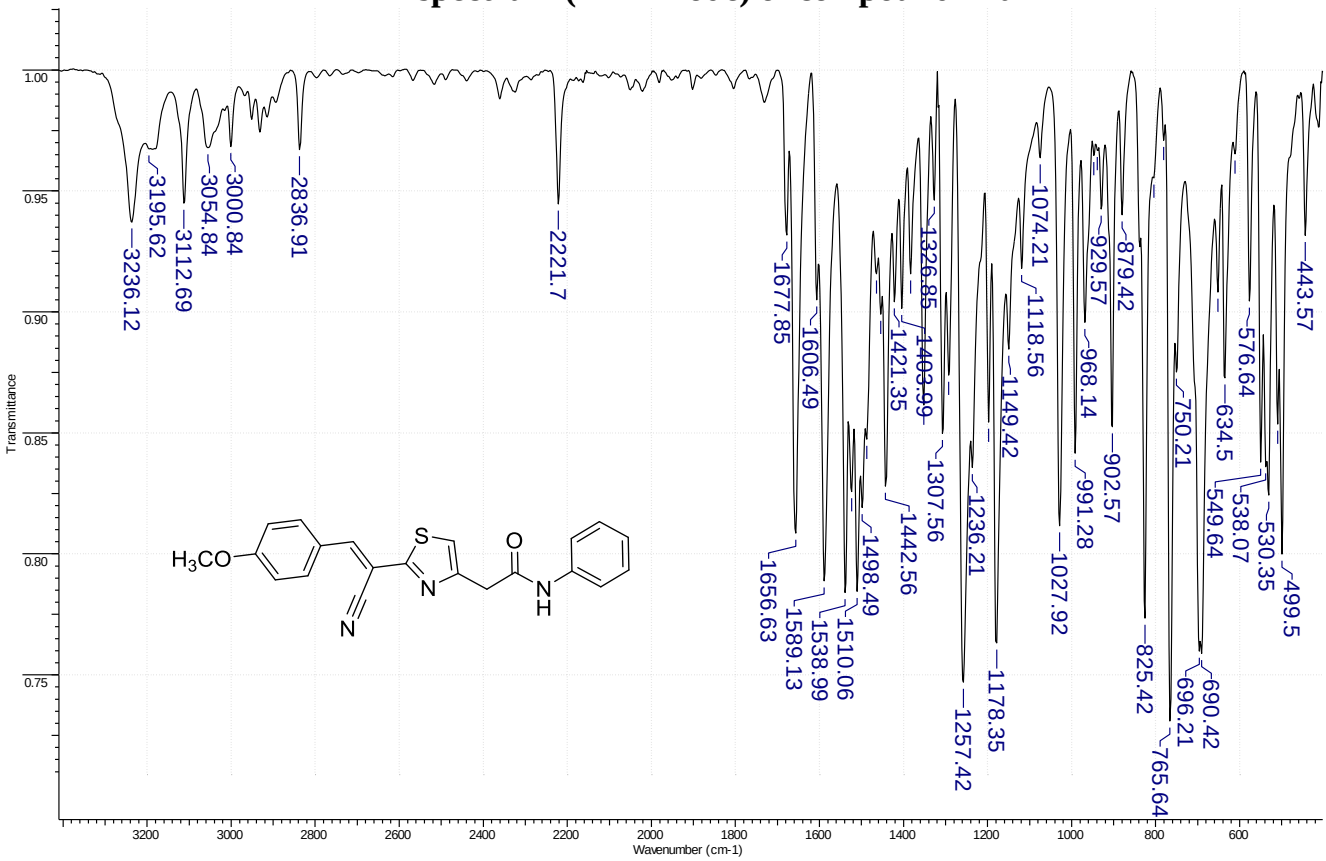
1. Dolomanov, O.V., Bourhis, L.J., Gildea, R.J, Howard, J.A.K. & Puschmann, H. (2009), J. Appl. Cryst. 42, 339-341.
2. Sheldrick, G.M. (2015). Acta Cryst. A71, 3-8.
3. Sheldrick, G.M. (2015). Acta Cryst. C71, 3-8.

Crystal structure determination of 14b

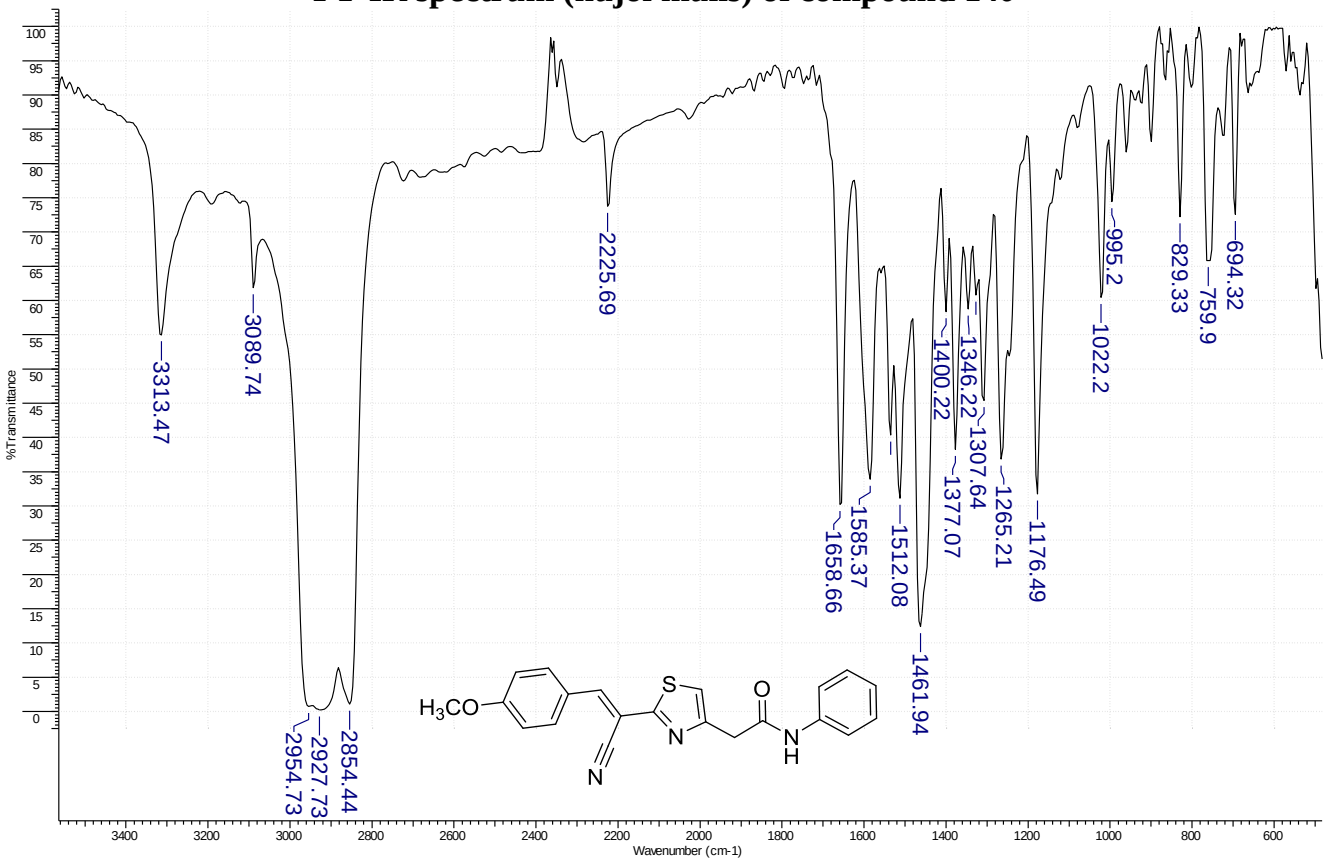
Crystal Data for $C_{20}H_{14}ClN_3OS$ (*M* =379.85 g/mol): orthorhombic, space group $P2_12_12_1$ (no. 19), *a* = 4.80420(10) Å, *b* = 12.9103(2) Å, *c* = 28.4147(5) Å, *V* = 1762.38(6) Å^3, *Z* = 4, *T* = 100.00(10) K, μ(Cu Kα) = 3.141 mm^{-1}, *Dcalc* = 1.432 g/cm^3, 10990 reflections measured (6.222° ≤ 2Θ ≤ 152.59°), 3572 unique (R_{int} = 0.0382, R_{sigma} = 0.0389) which were used in all calculations. The final R_1 was 0.0281 (I > 2σ(I)) and wR_2 was 0.0690 (all data).

CCDC Deposition Number – 2552211

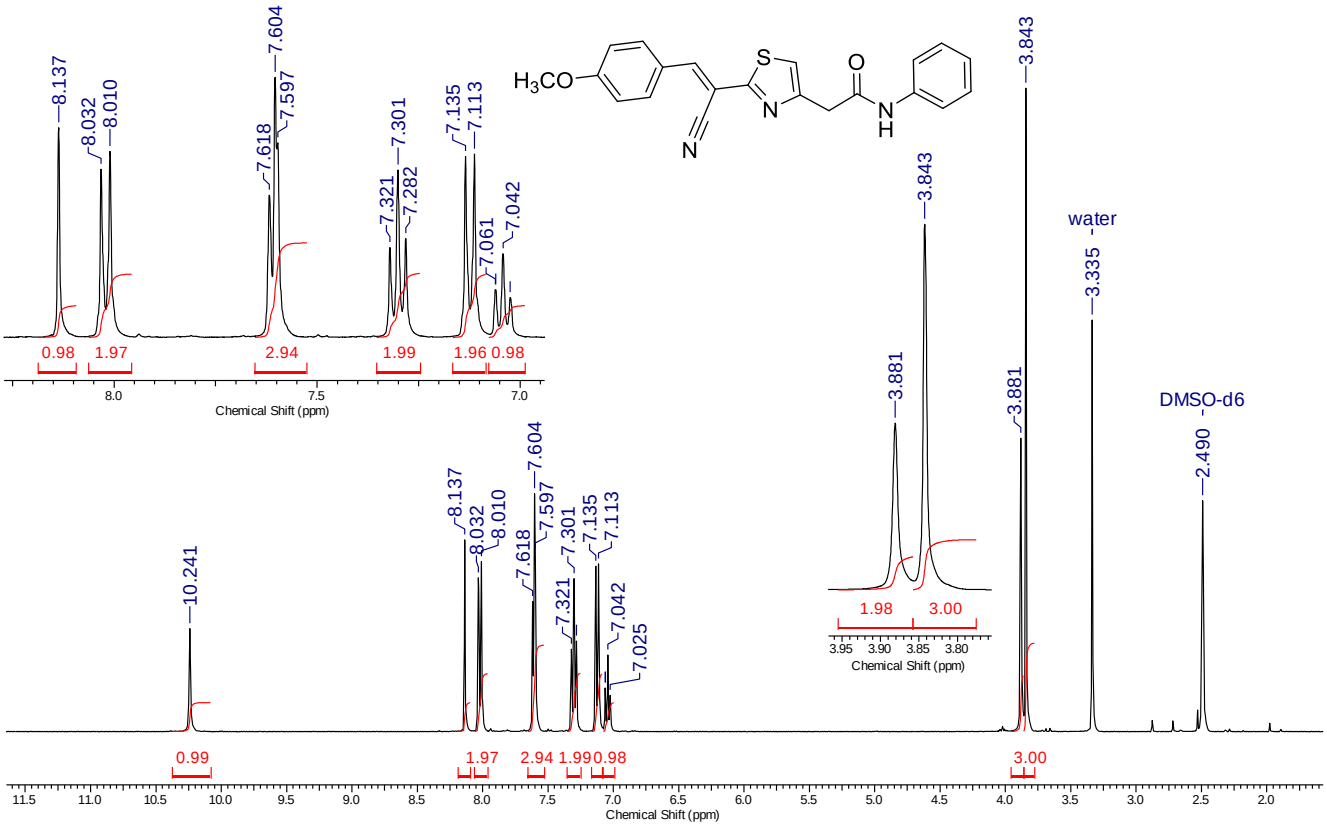
FT-IR spectrum (ATR mode) of compound 14c



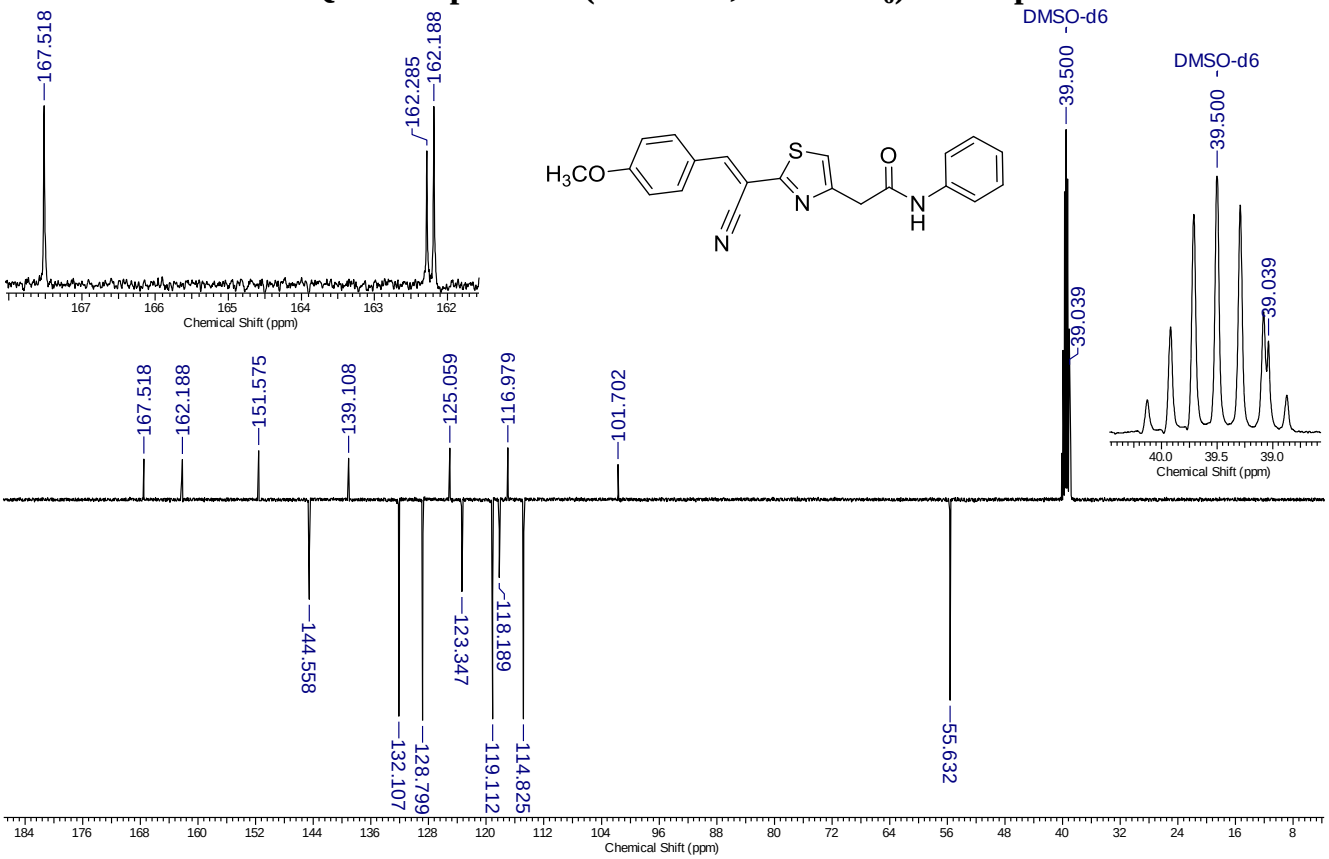
FT-IR spectrum (nujol mulls) of compound 14c



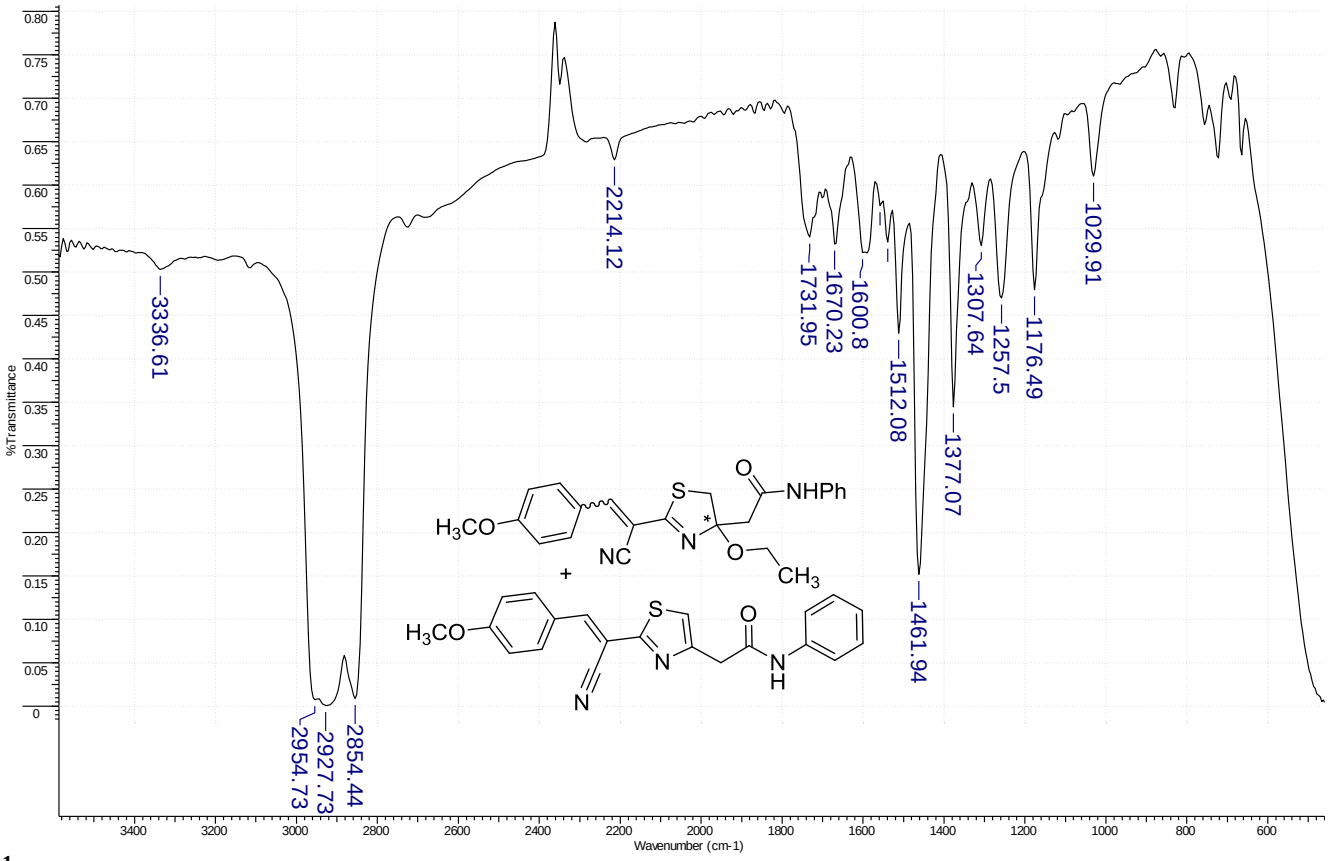
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14c



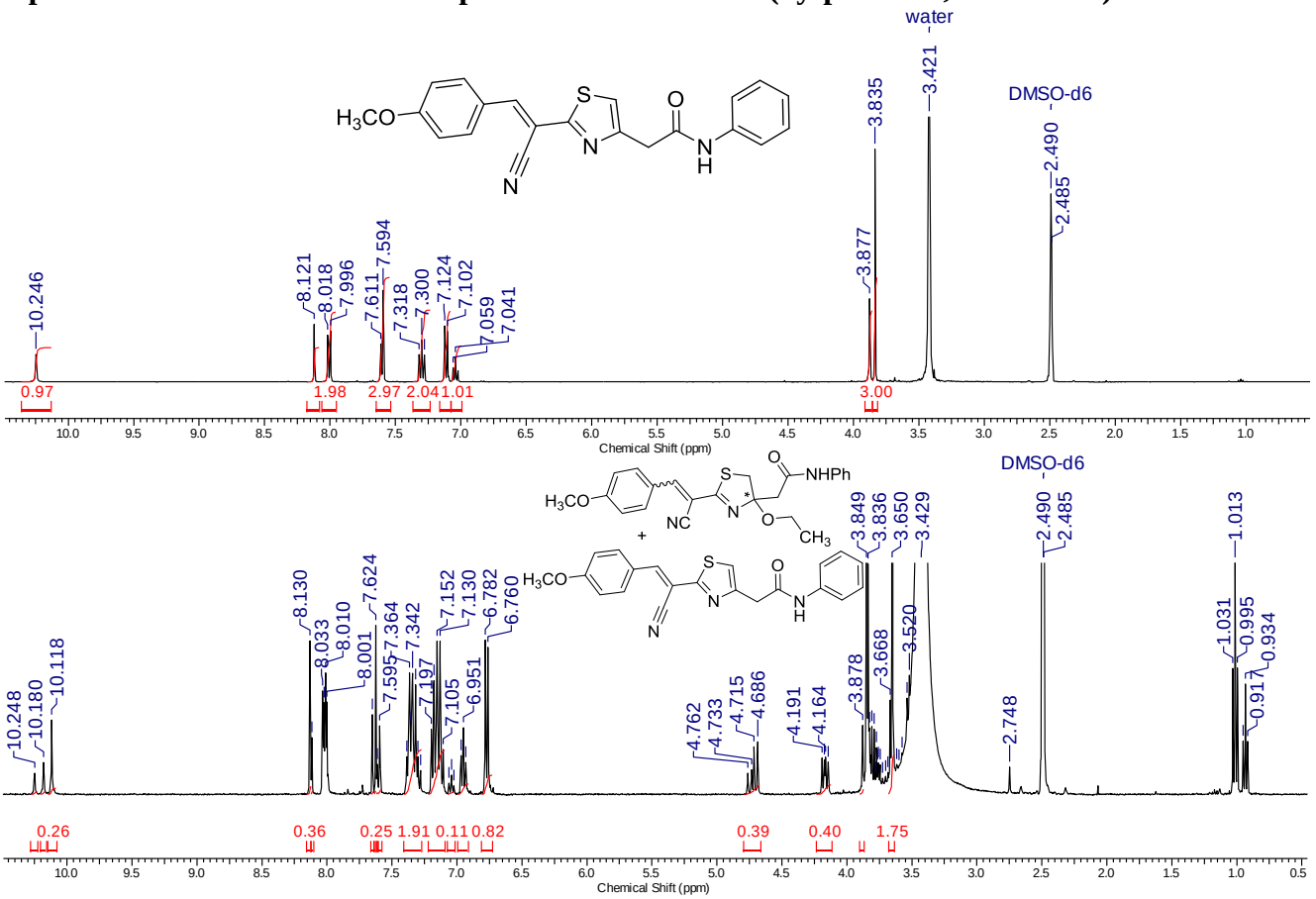
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of compound 14c



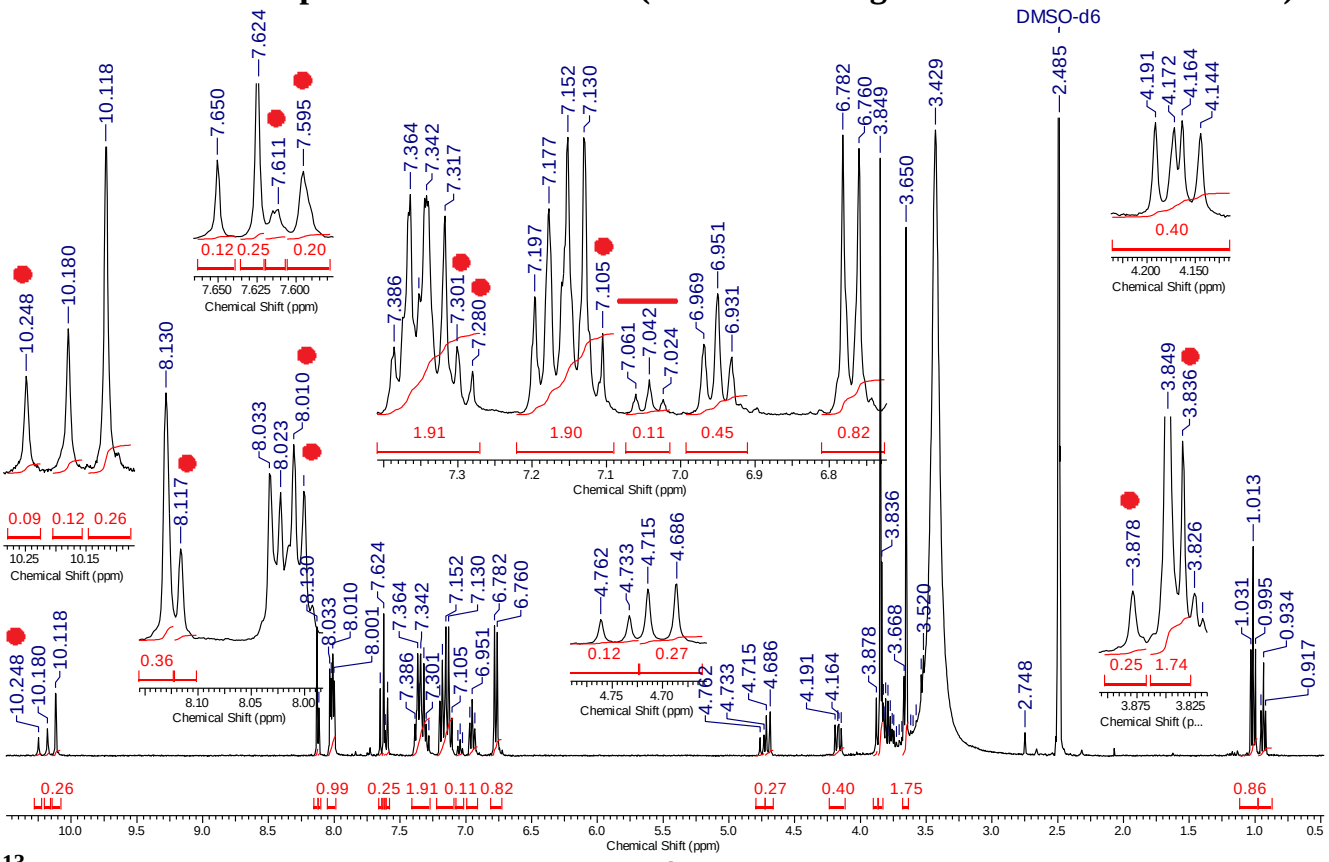
FT-IR spectrum (nujol mulls) of the residue obtained after separation of thiazole 14c and evaporation of the filtrate (by-products)



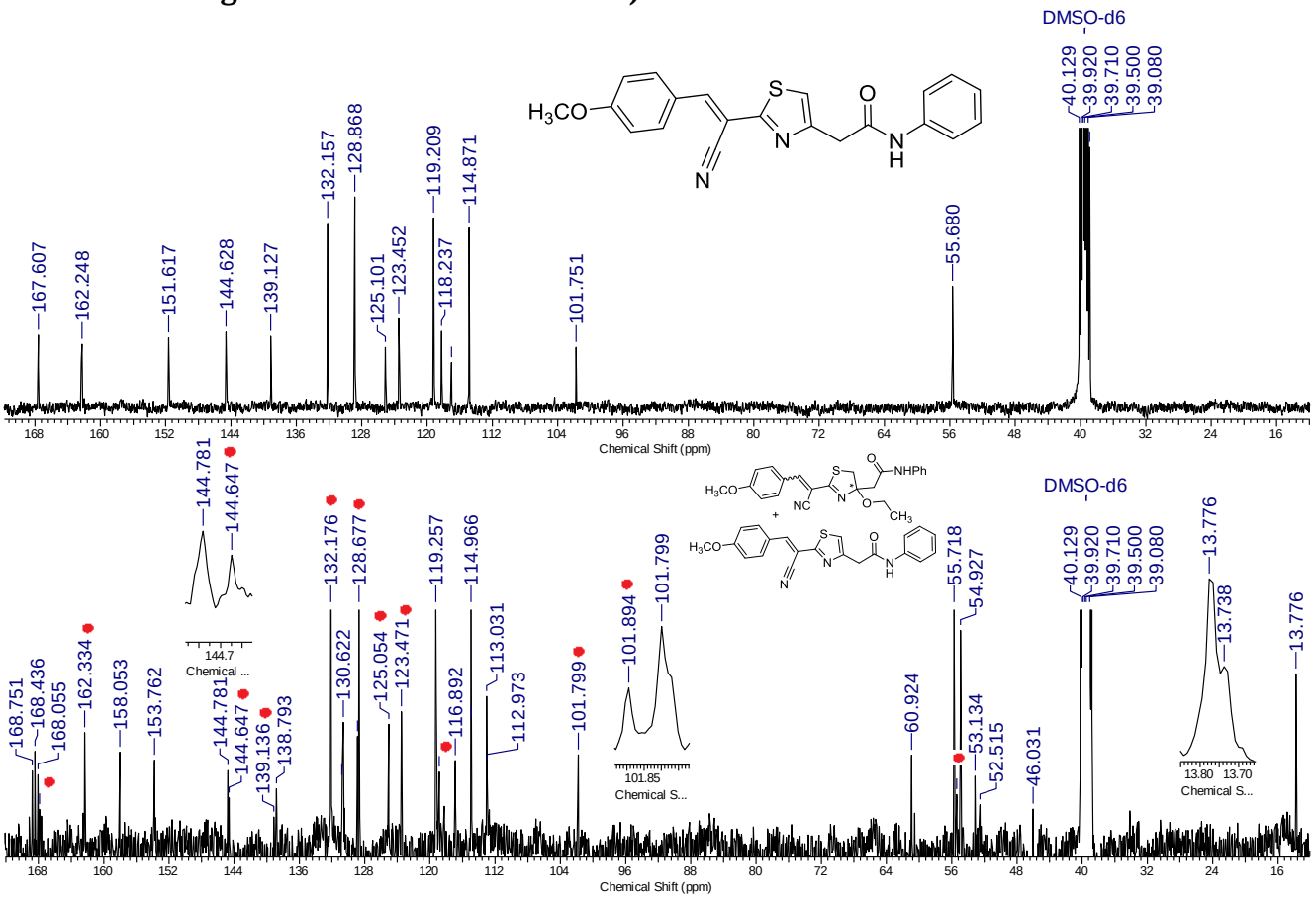
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14c (TOP) and the residue obtained after separation of thiazole 14c and evaporation of the filtrate (by-products, BOTTOM)



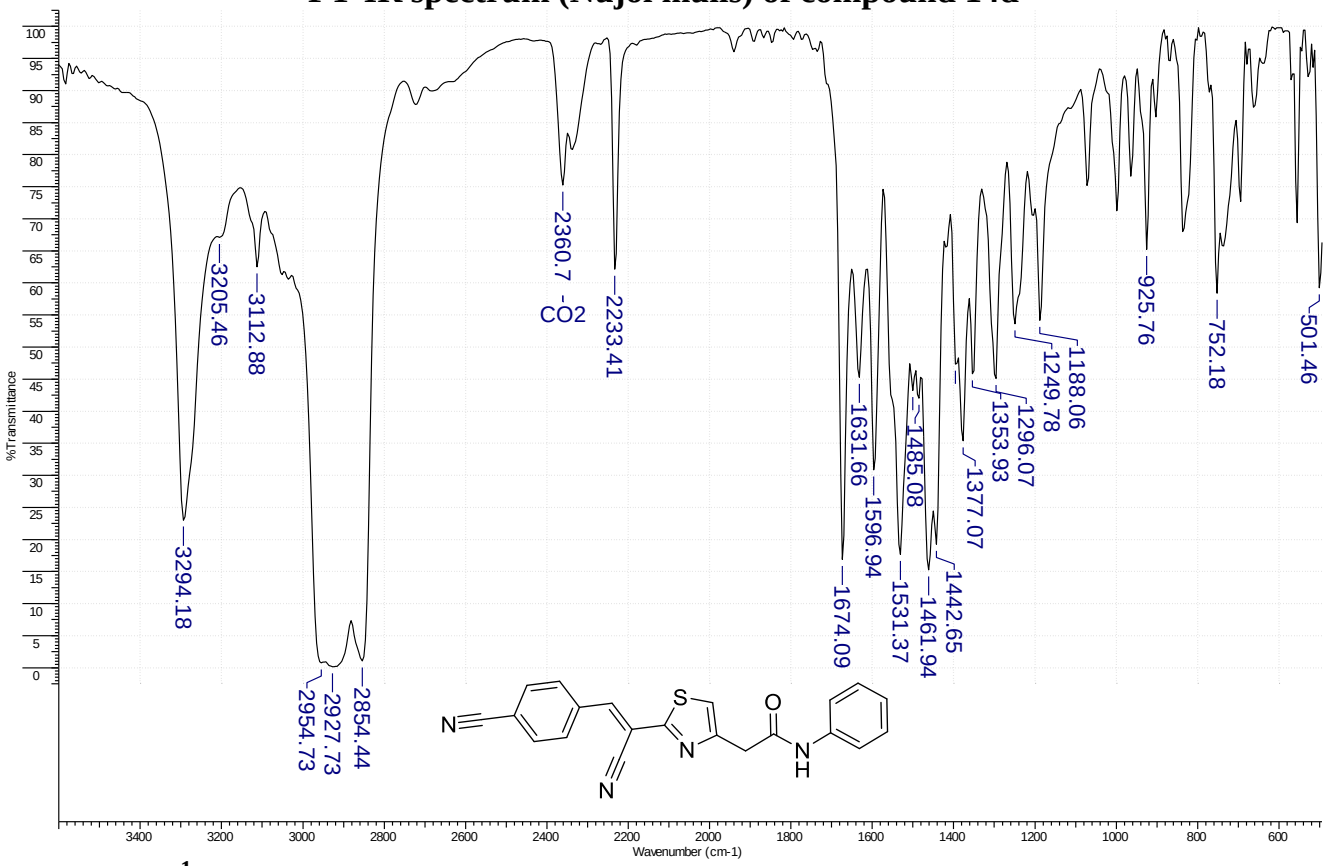
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of the residue obtained after separation of thiazole 14c and evaporation of the filtrate (the observed signals of 14c are marked red)



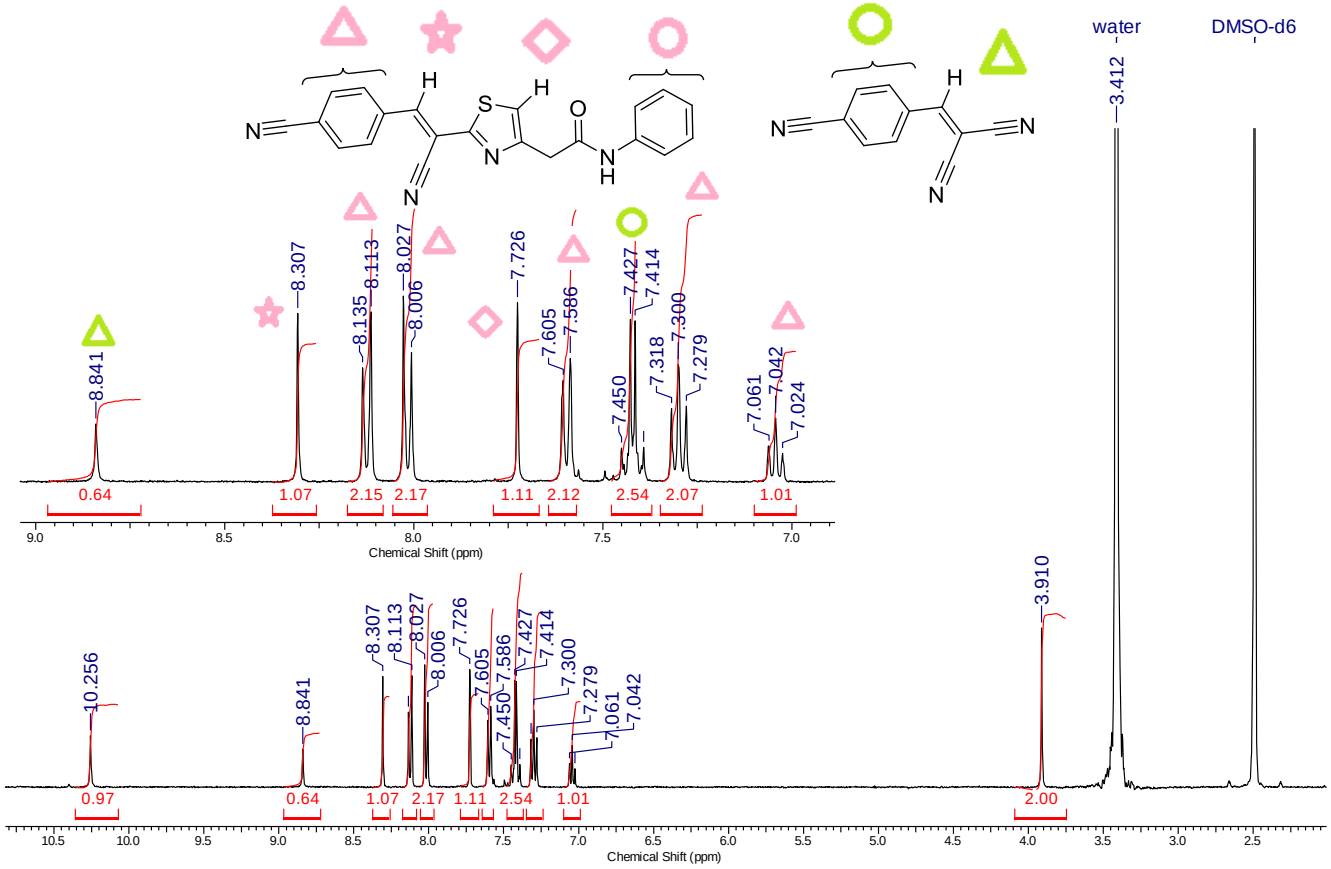
^{13}C NMR spectrum (101 MHz, DMSO-d_6) of compound 14c (TOP) the residue obtained after separation of thiazole 14c and evaporation of the filtrate (by-products, BOTTOM; the observed signals of 14c are marked red)



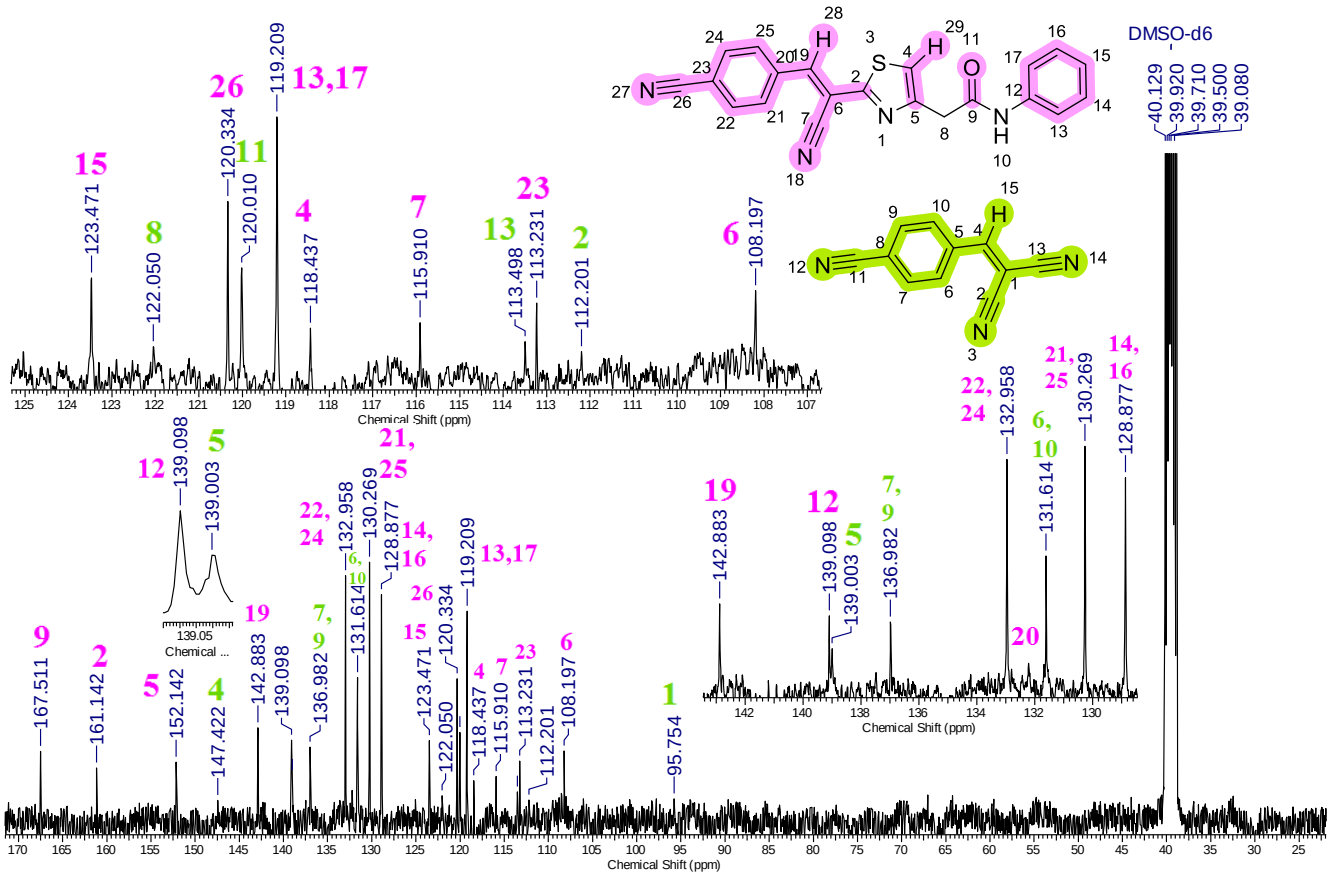
FT-IR spectrum (Nujol mulls) of compound 14d



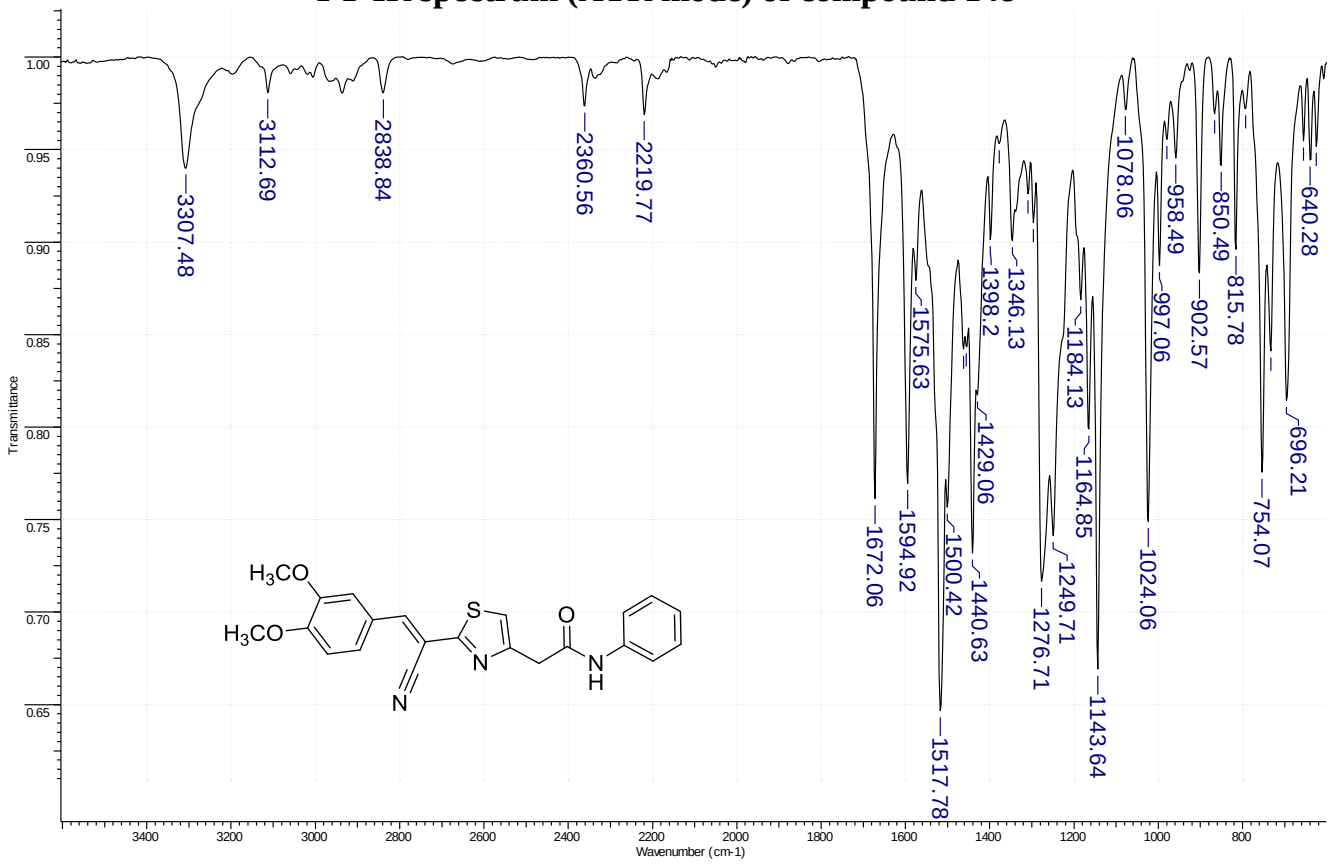
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of crude compound 14d



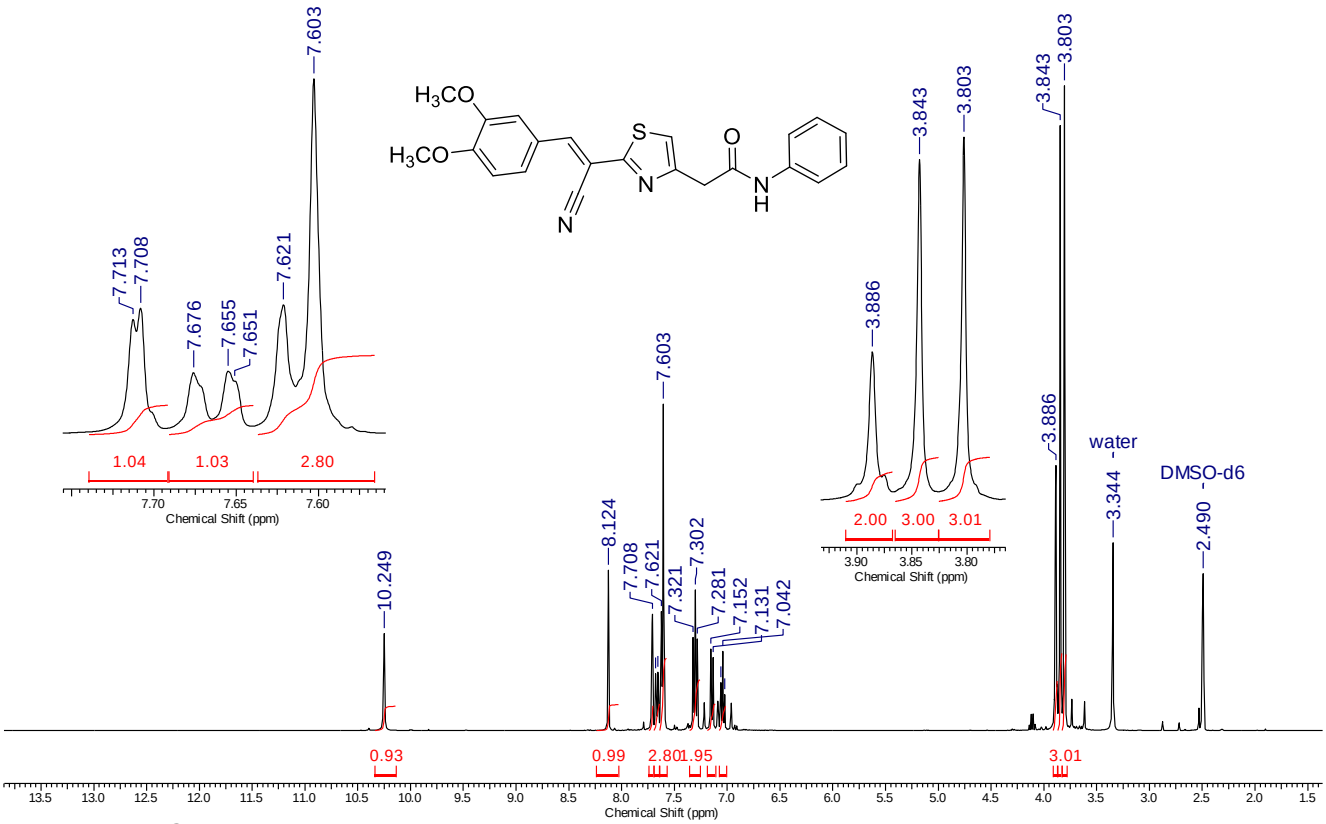
^{13}C NMR spectrum (400 MHz, DMSO-d_6) of crude compound 14d



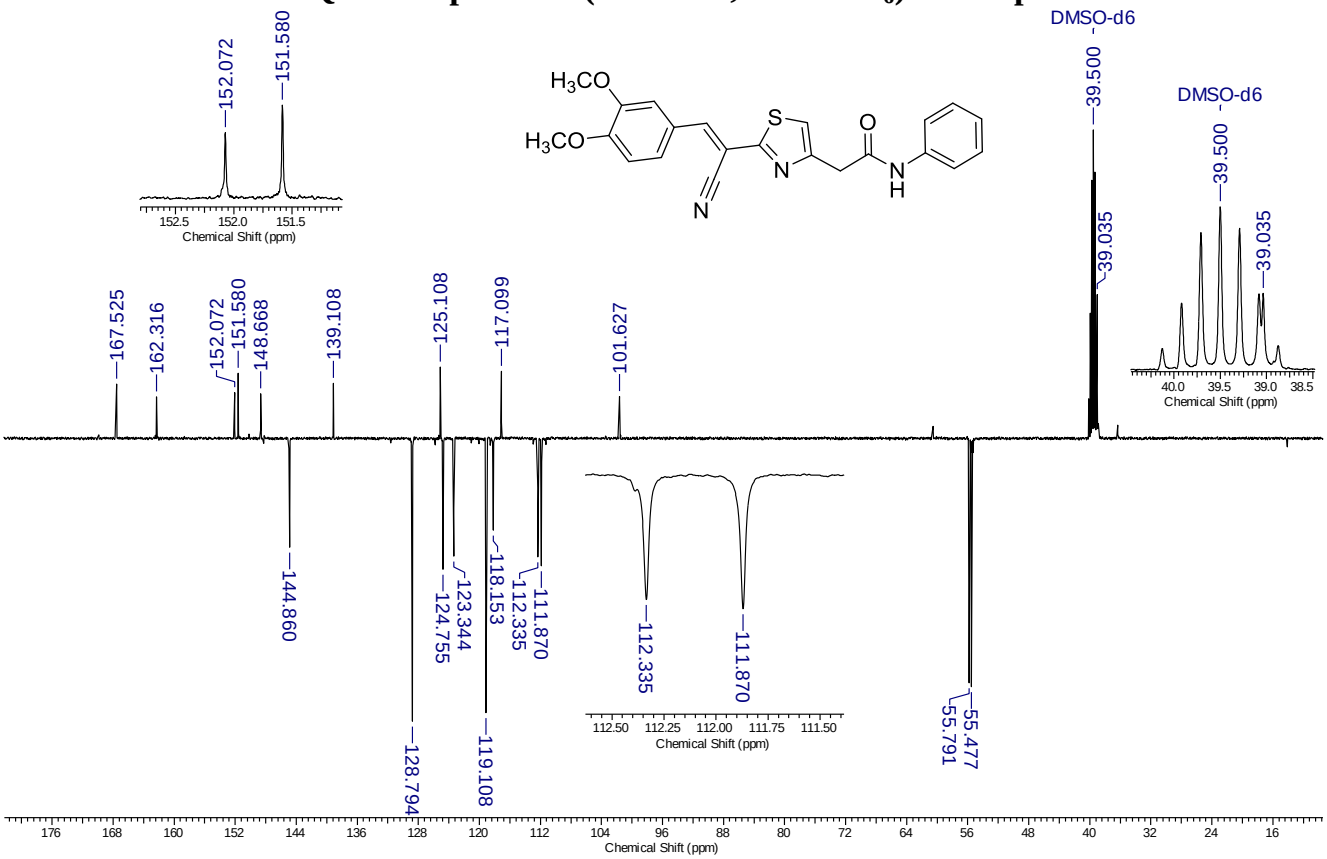
FT-IR spectrum (ATR mode) of compound 14e



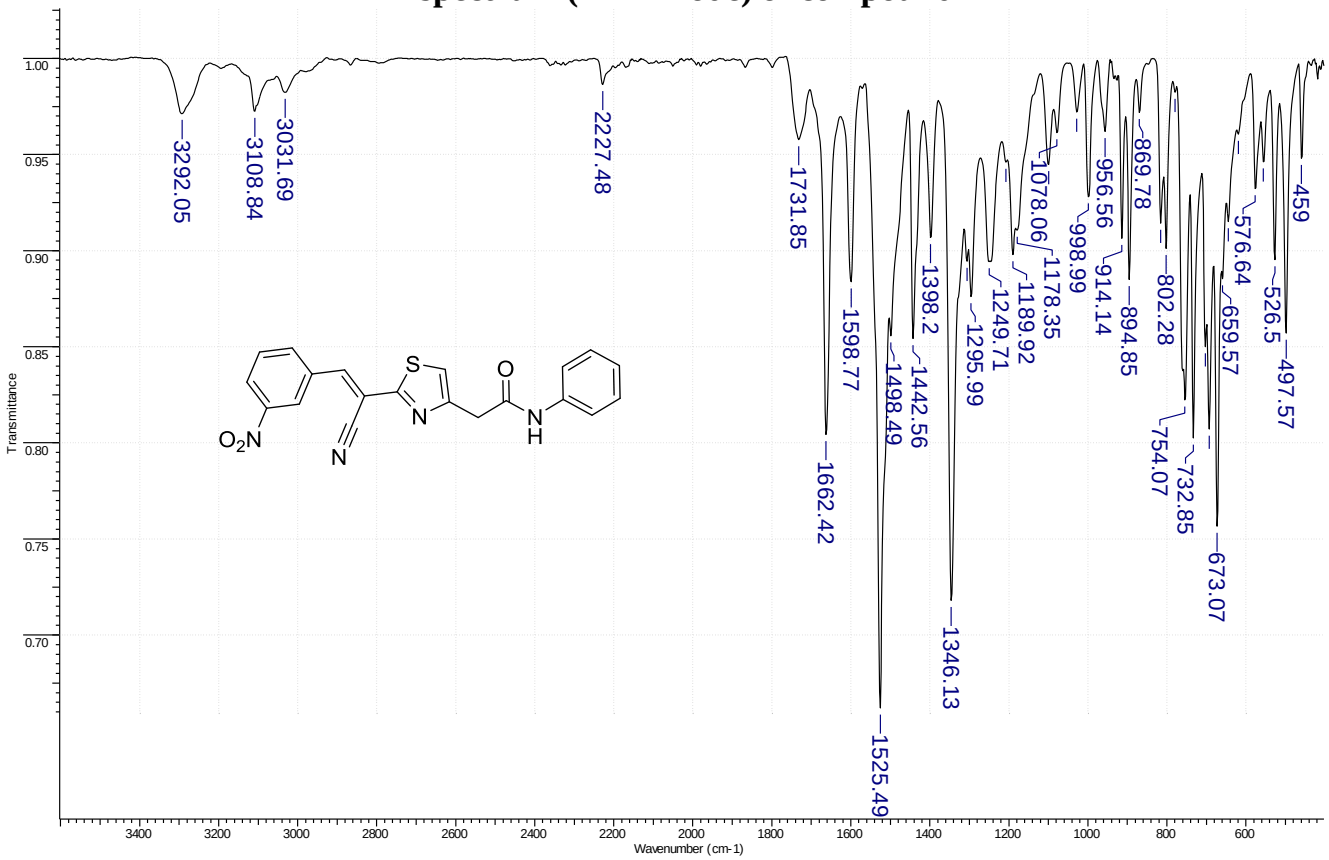
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14e



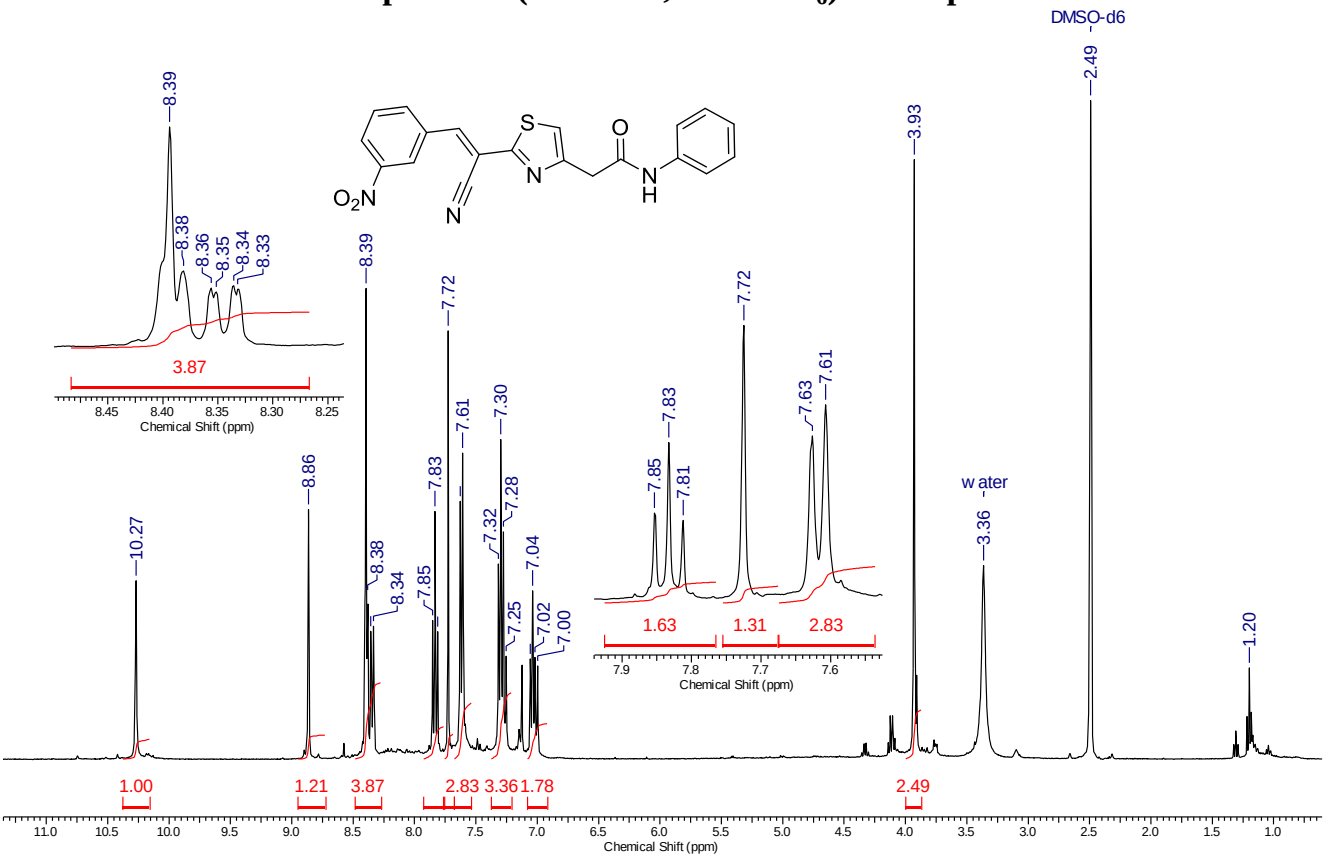
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of compound 14e



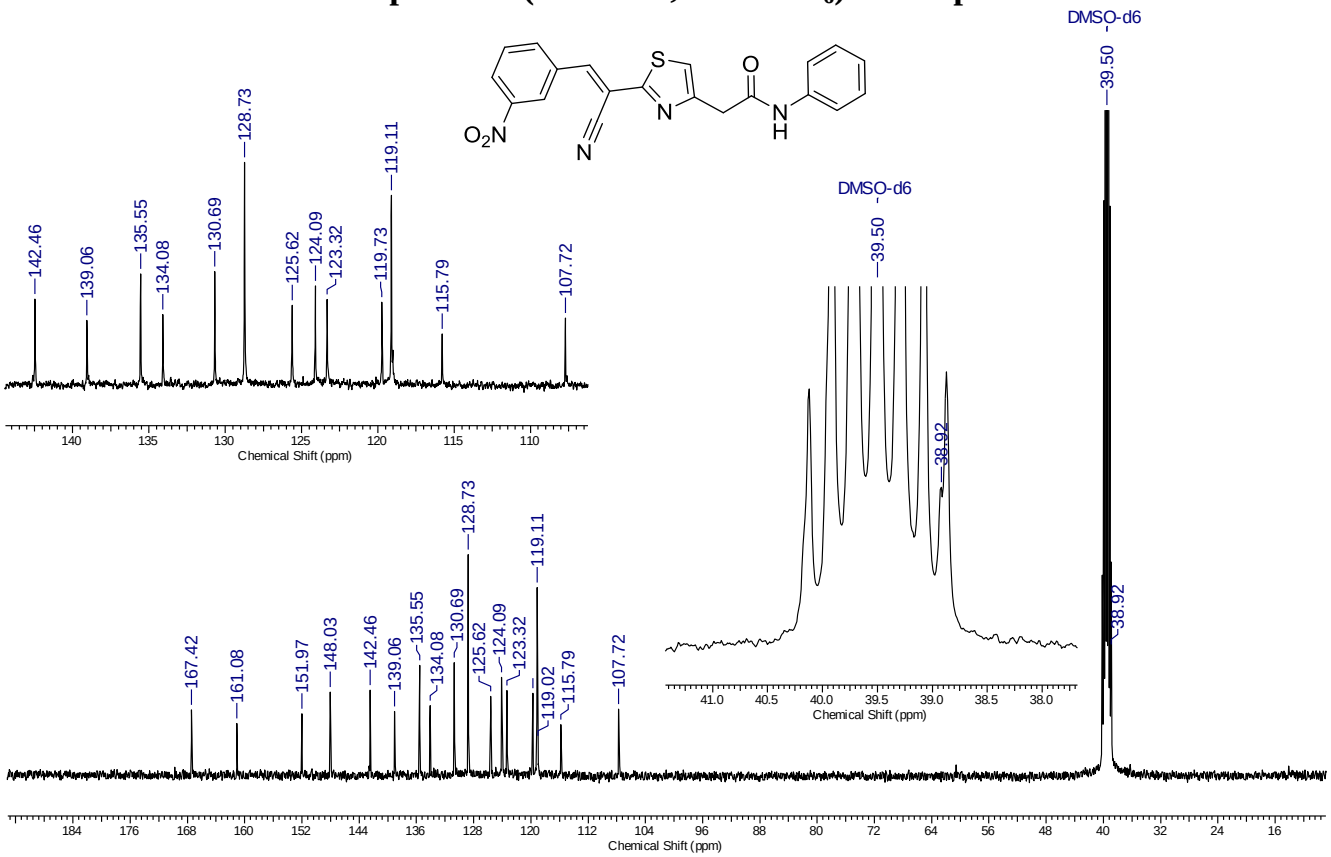
FT-IR spectrum (ATR mode) of compound 14f



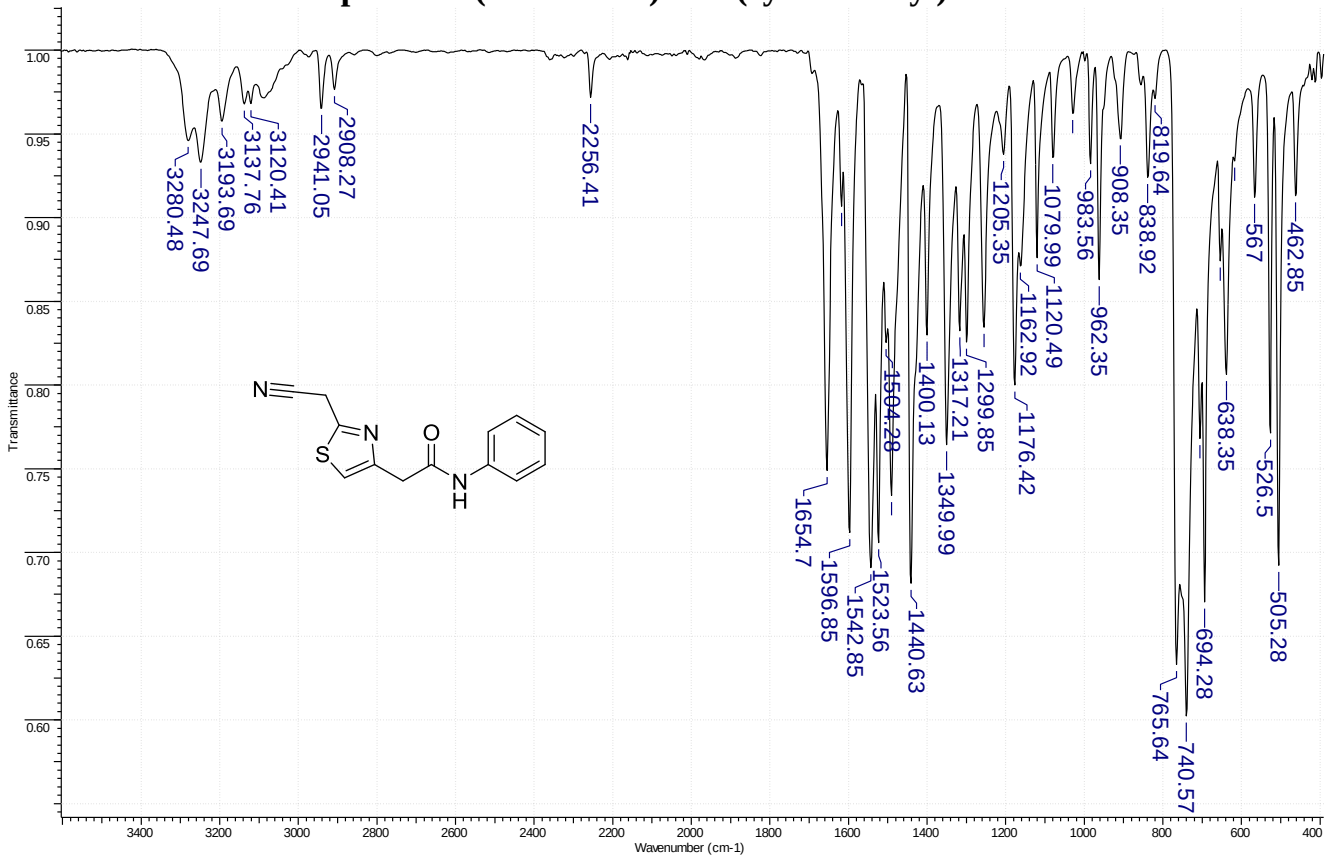
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of compound 14f



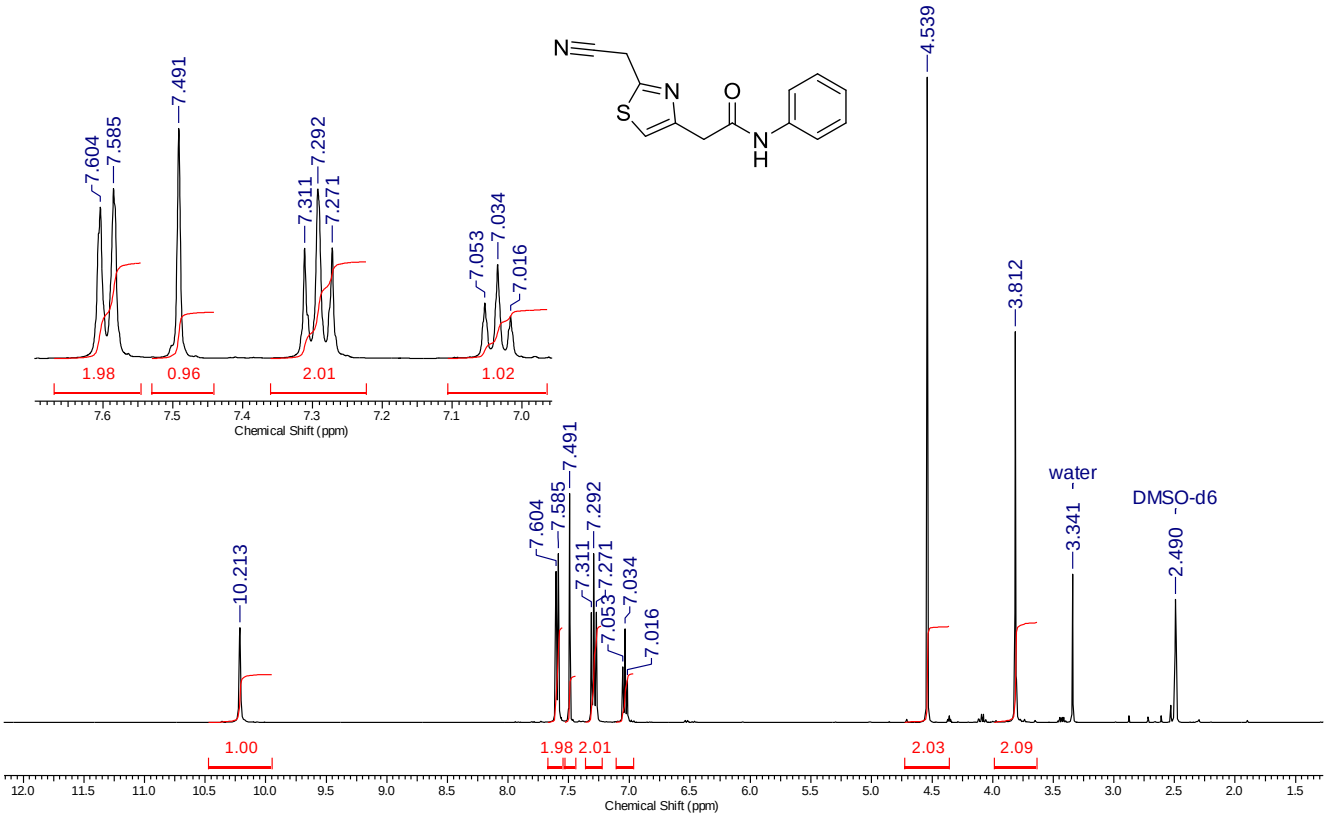
^{13}C NMR spectrum (101 MHz, DMSO-d_6) of compound 14f



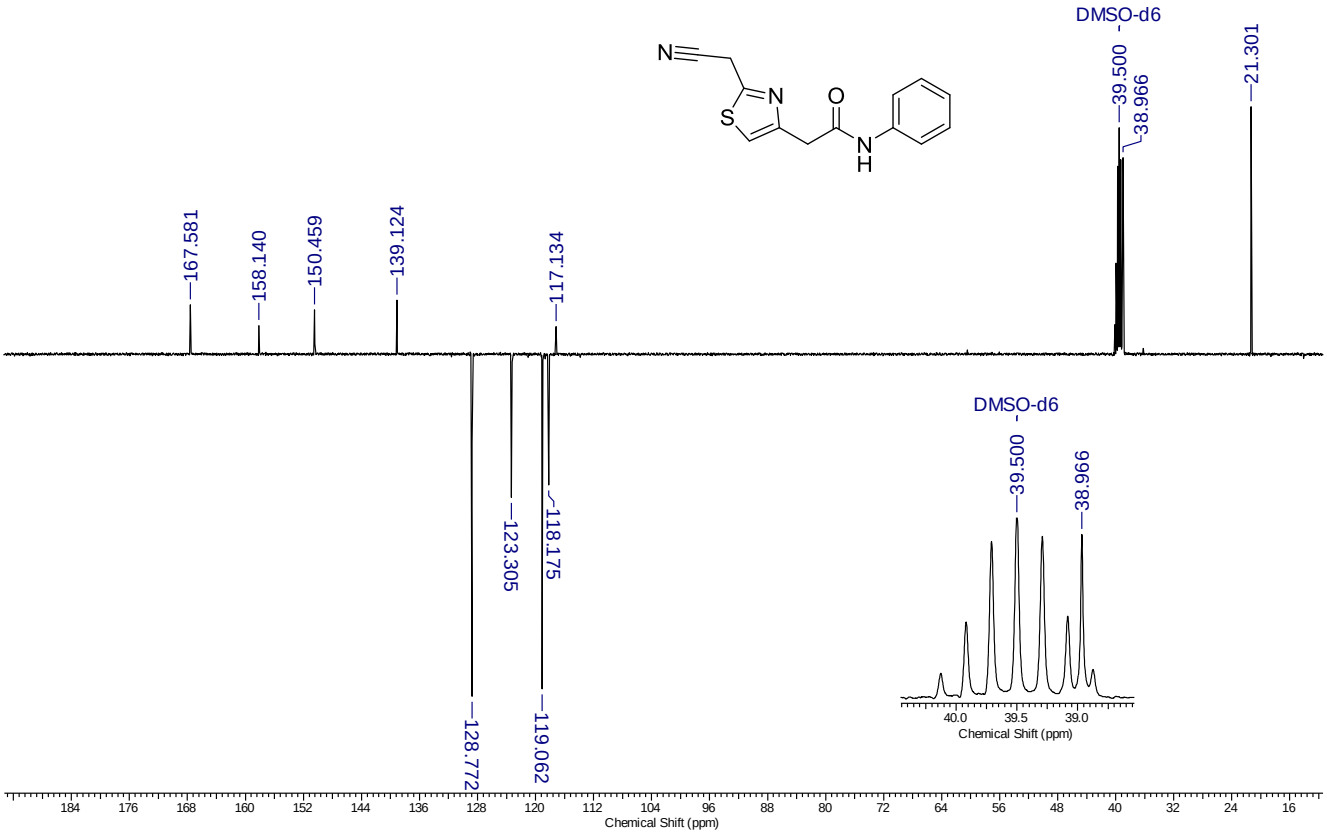
FT-IR spectrum (ATR mode) of 2-(cyanomethyl)thiazole 19



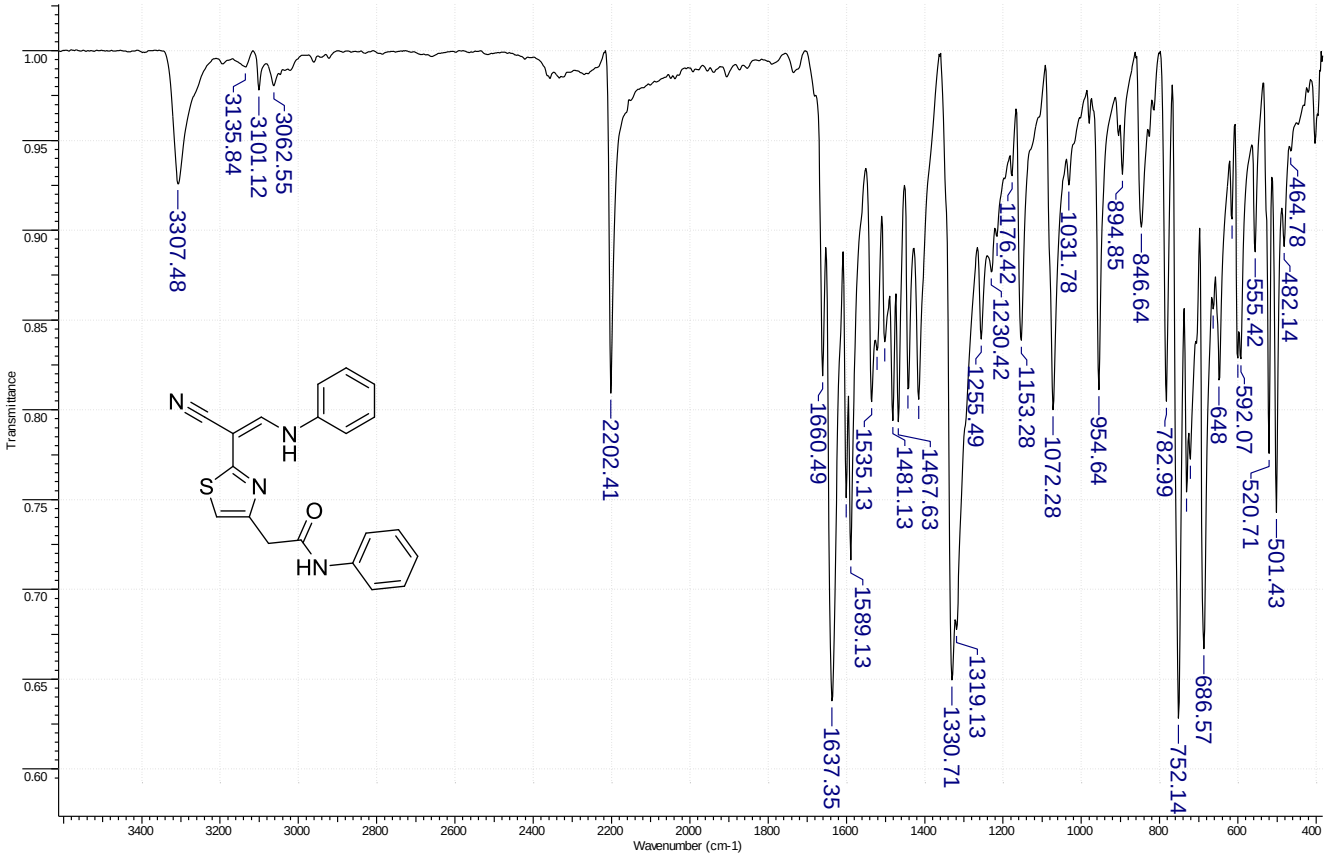
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of 2-(cyanomethyl)thiazole 19



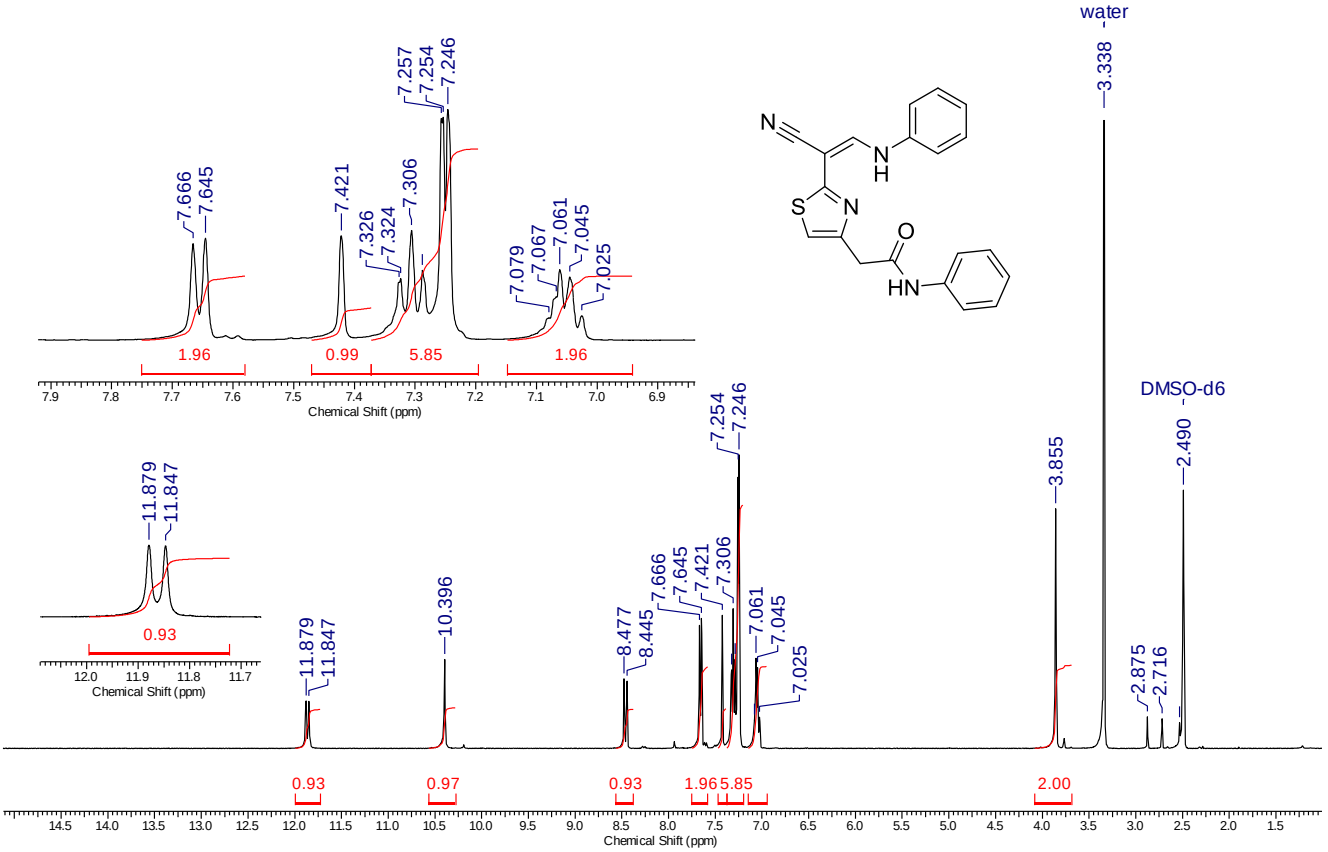
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of 2-(cyanomethyl)thiazole 19



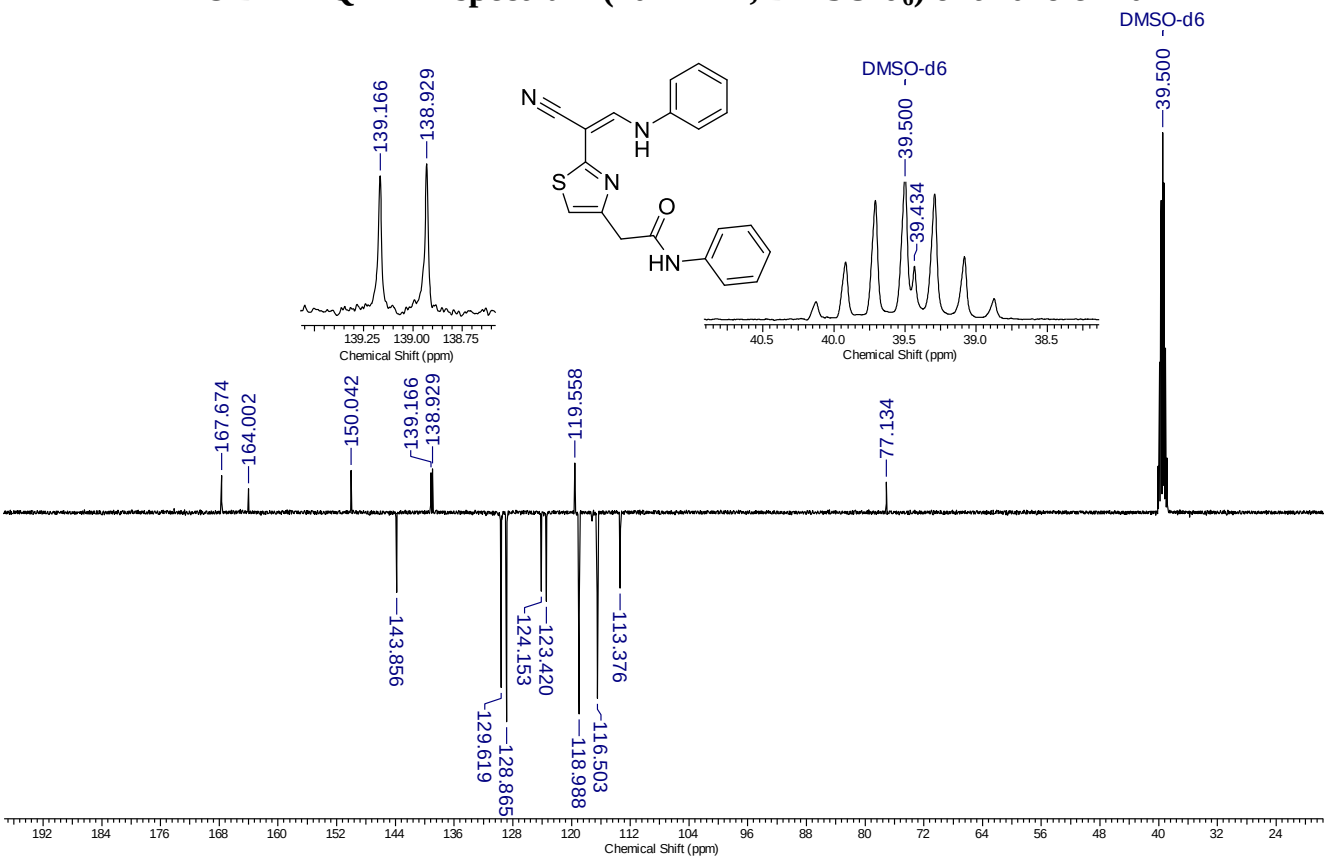
FT-IR spectrum (ATR mode) of thiazole 21a



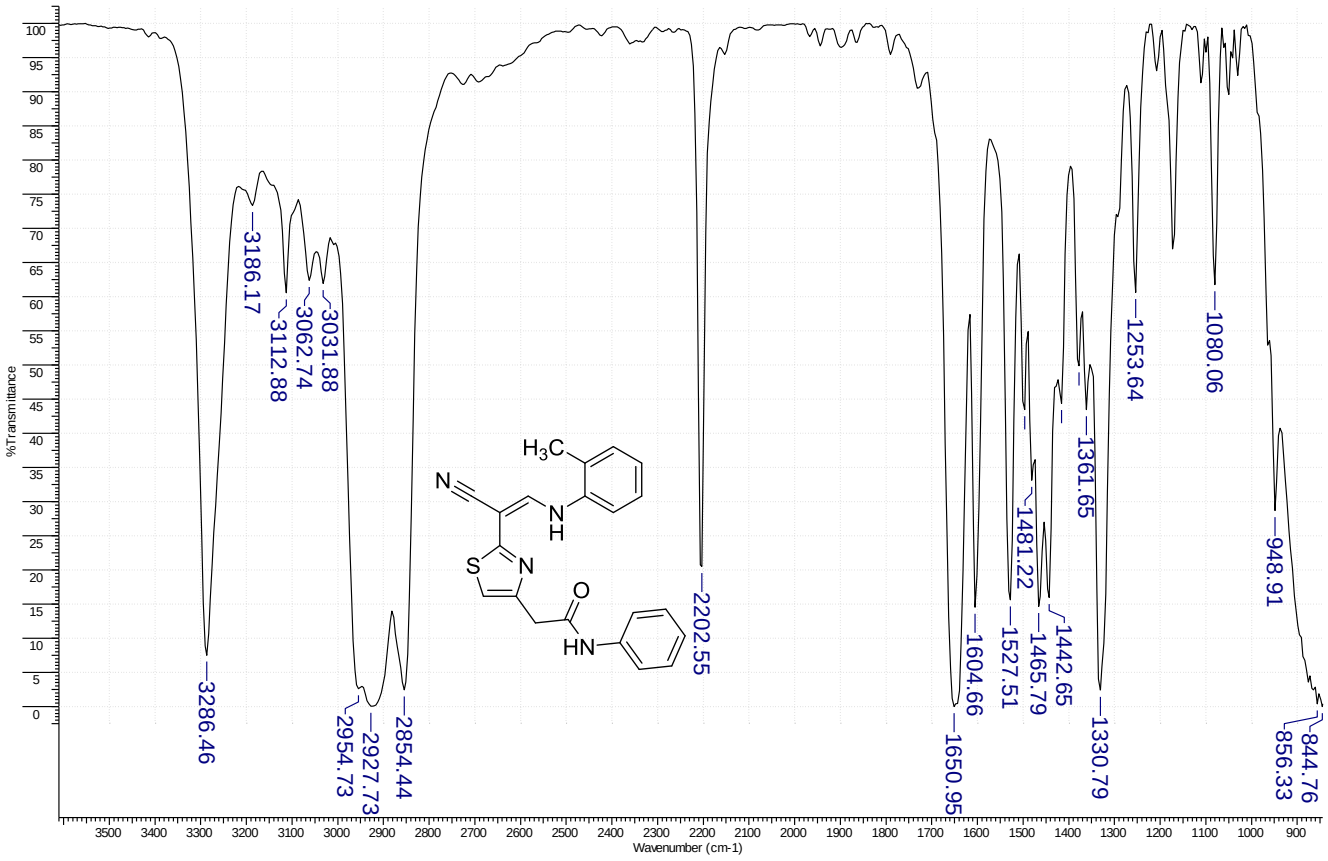
^{1}H NMR spectrum (400 MHz, DMSO-d_6) of thiazole 21a



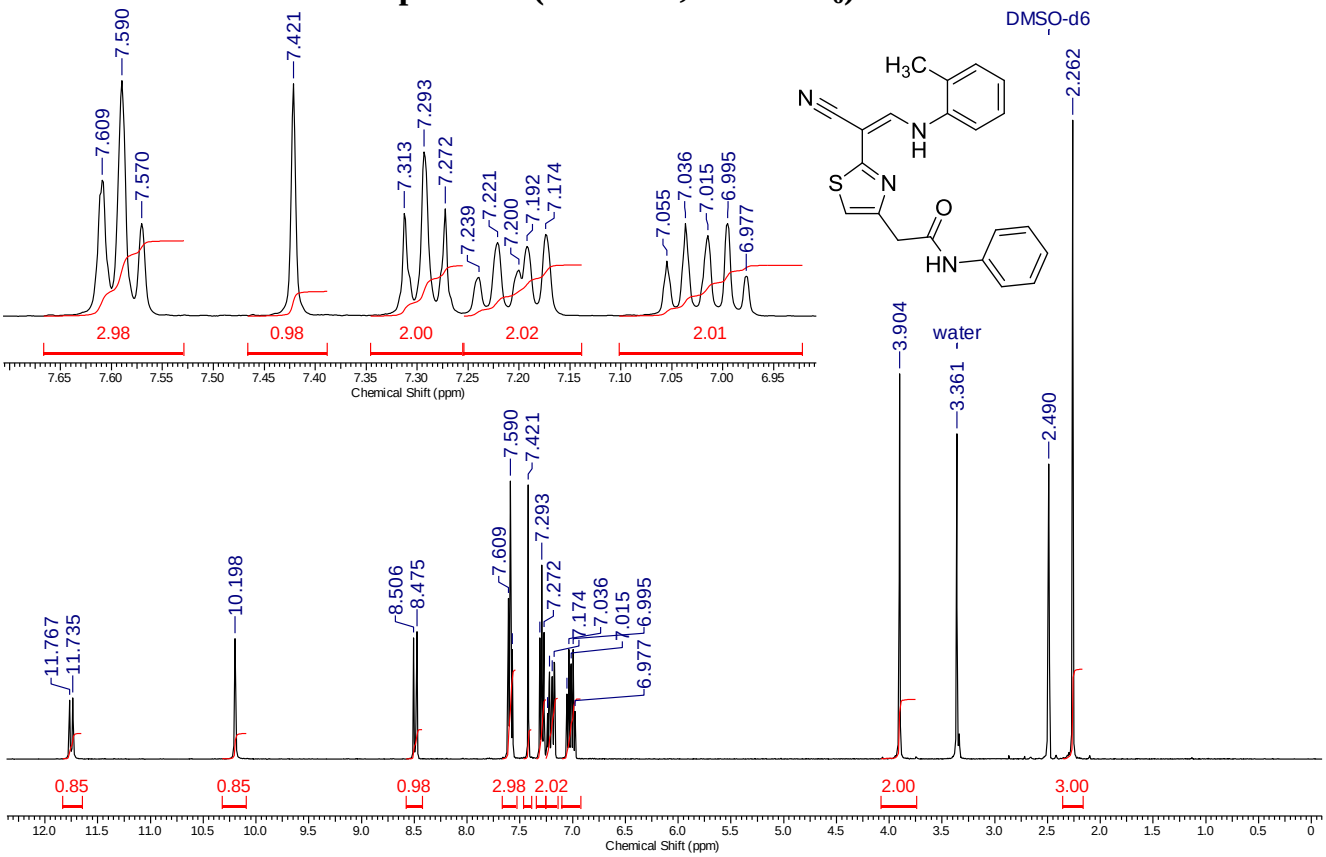
^{13}C DEPTQ NMR spectrum (101 MHz, DMSO-d_6) of thiazole 21a



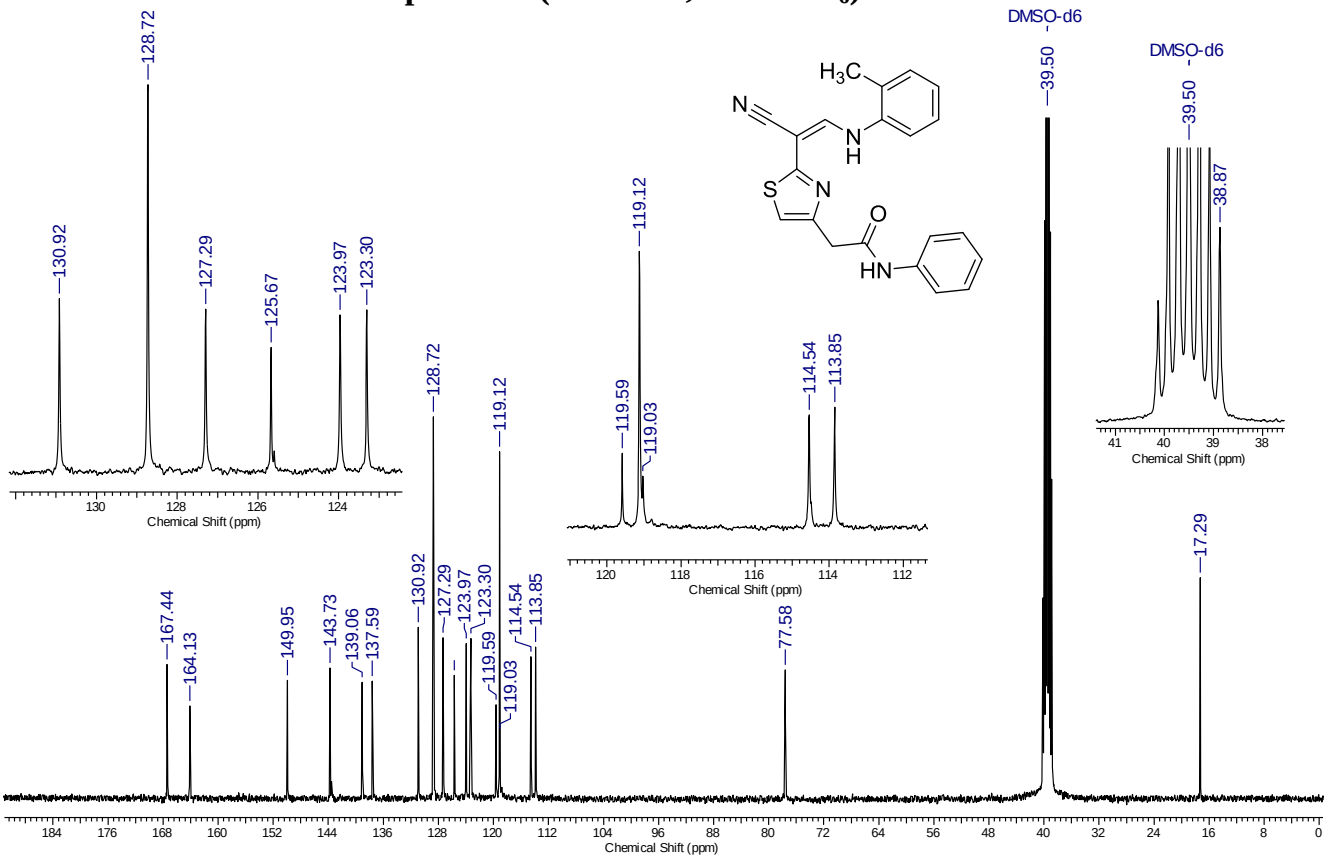
FT-IR spectrum (nujol mulls) of thiazole 21b



^{1}H NMR spectrum (400 MHz, DMSO-d_6) of thiazole 21b

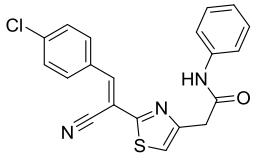


^{13}C NMR spectrum (101 MHz, DMSO-d_6) of thiazole 21b



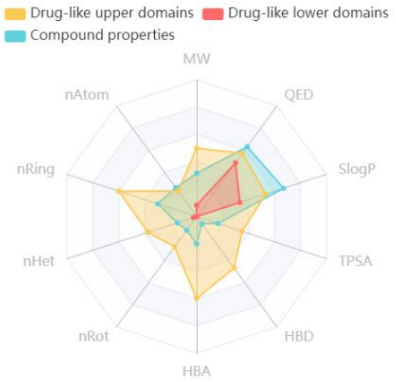
AdmetSAR report for structure 14a

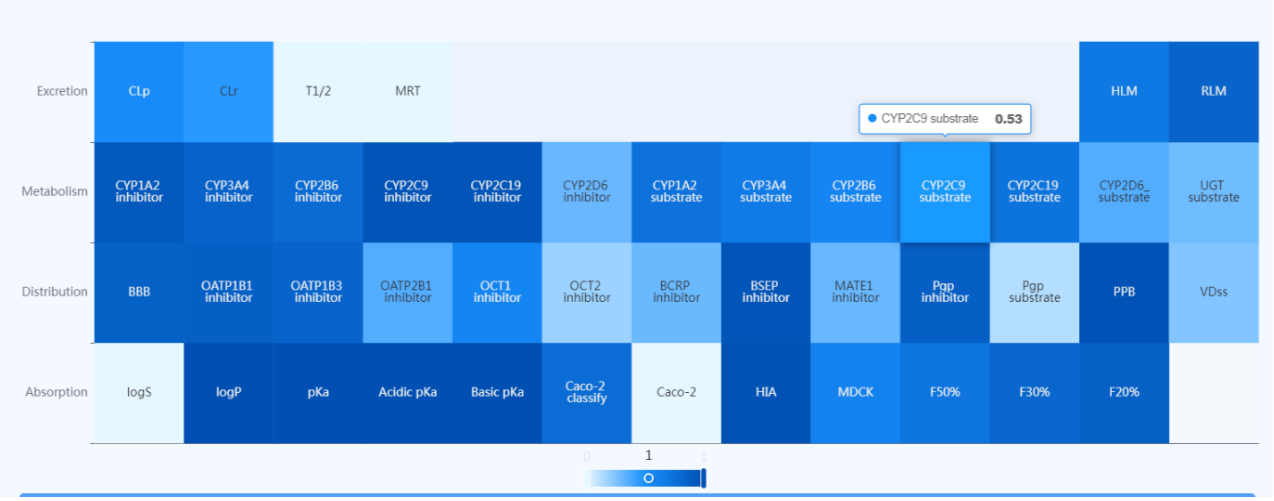
O=C(NC1=C C=CC=C1)CC2=CSC(/C(C#N)=C/C3=CC=C(Cl)C=C3)=N2



Basic Property Display

Physicochemical Property			
Molecular Weight	379.87	36.74%	
nAtom	26	35.71%	
nHet	6	27.77%	
nRing	3	42.85%	
nRot	5	23.8%	
HBA	4	25%	
HBD	1	11.11%	
TPSA	65.78	24.06%	
SlogP	5.04	70%	
Application Domain	In domain	100%	
Medicinal Chemistry			
QED	0.63	66.78%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Not accept	0%	
GSK Rule	Not accept	0%	





ADME Property Prediction

Absorption					Metabolism				
logS	-5.55	▲	31.6%		CYP1A2 inhibitor	1	●	93.1%	
logP	4.54	▲	70.54%		CYP3A4 inhibitor	1	●	85.1%	
pKa	7.33	▲	59.68%		CYP2B6 inhibitor	1	●	79%	
Acidic pKa	8.31	▲	57.47%		CYP2C9 inhibitor	1	●	96.8%	
Basic pKa	3.85	▲	43.22%		CYP2C19 inhibitor	1	●	97%	
Caco-2	1	●	78.2%		CYP2D6 inhibitor	0	●	30.4%	
Caco-2	-4.74	▲	80.7%		CYP1A2 substrate	1	●	73.4%	
HIA	1	●	98.7%		CYP3A4 substrate	1	●	66.1%	
MDCK	1	●	61%		CYP2B6 substrate	1	●	58.7%	
F50%	1	●	70.9%		CYP2C9 substrate	1	●	53%	
F30%	1	●	83%		CYP2C19 substrate	1	●	72.2%	
F20%	1	●	87.5%		CYP2D6 substrate	0	●	36%	

Distribution				
BBB	1	●	86.8%	ⓘ
OATP1B1 inhibitor	1	●	88.2%	ⓘ
OATP1B3 inhibitor	1	●	84.2%	ⓘ
OATP2B1 inhibitor	0	●	35.8%	ⓘ
OCT1 inhibitor	1	●	58%	ⓘ
OCT2 inhibitor	0	●	18%	ⓘ
BCRP inhibitor	0	●	30.3%	ⓘ
BSEP inhibitor	1	●	96.9%	ⓘ
MATE1 inhibitor	0	●	30.7%	ⓘ
Pgp inhibitor	1	●	88.3%	ⓘ
Pgp substrate	0	●	12.3%	ⓘ
PPB	1	●	98.2%	ⓘ
VDss	0.24	▲	48.84%	ⓘ
HLM	1	●	68.2%	ⓘ
RLM	1	●	84.1%	ⓘ
UGT substrate	0	●	28.8%	ⓘ

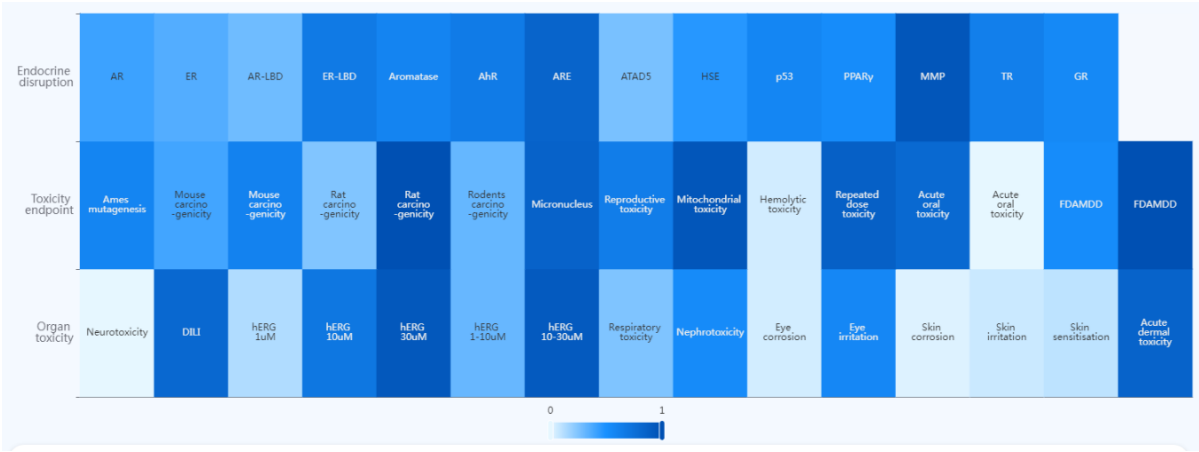
Excretion				
CLp	1	●	53.8%	ⓘ
CLr	0	●	45.7%	ⓘ
T1/2	-1.38	▲	28.91%	ⓘ
MRT	-1.28	▲	31.86%	ⓘ

Legend:

Classification
- ● Probability [0, 0.3]
- ● Probability (0.3, 0.7)
- ● Probability [0.7, 1]

Regression
- ▲ Low Value
- ▲ Medium Value
- ▲ High Value

Gradient bands visually represent the distribution/probability.



Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.59	▲	40.45%	ⓘ	Ames mutagenesis	1	●	58.6%	ⓘ
DILI	1	●	80.9%	ⓘ	Mouse carcinogenicity	0	●	39.8%	ⓘ
hERG 1uM	0	●	13%	ⓘ	Mouse carcinogenicity	0.61	▲	45.94%	ⓘ
hERG 10uM	1	●	69.79%	ⓘ	Rat carcinogenicity	0	●	24.5%	ⓘ
hERG 30uM	1	●	93.8%	ⓘ	Rat carcinogenicity	1.46	▲	45.87%	ⓘ
hERG 1-10uM	0	●	30.9%	ⓘ	Rodents carcinogenicity	0	●	31.3%	ⓘ
hERG 10-30uM	1	●	92%	ⓘ	Micronucleus	1	●	85.7%	ⓘ
Respiratory toxicity	0	●	25%	ⓘ	Reproductive toxicity	1	●	64.6%	ⓘ
Nephrotoxicity	1	●	54.2%	ⓘ	Mitochondrial toxicity	1	●	95.7%	ⓘ
Eye corrosion	0	●	4.8%	ⓘ	Hemolytic toxicity	0	●	5.2%	ⓘ
Eye irritation	1	●	56.79%	ⓘ	Repeated dose toxicity	1	●	87.6%	ⓘ
Skin corrosion	0	●	2.3%	ⓘ	Acute oral toxicity	1	●	80.5%	ⓘ
Skin irritation	0	●	6.8%	ⓘ	Acute oral toxicity	-2.61	▲	43.08%	ⓘ
Skin sensitisation	0	●	9.9%	ⓘ	FDAMDD	1	●	53.5%	ⓘ
Acute dermal toxicity	1	●	85%	ⓘ	FDAMDD	2.05	▲	39.18%	ⓘ

Endocrine disruption

AR	0		41.3%		ATAD5	0		26.4%	
ER	0		35.7%		HSE	0		46.5%	
AR-LBD	0		28.8%		p53	1		58%	
ER-LBD	1		67%		PPARγ	1		53.4%	
Aromatase	1		59%		MMP	1		95.5%	
AhR	1		66.1%		TR	1		63.4%	
ARE	1		84.2%		GR	1		55.8%	



Ecological Risk Assessment

Aquatic organism

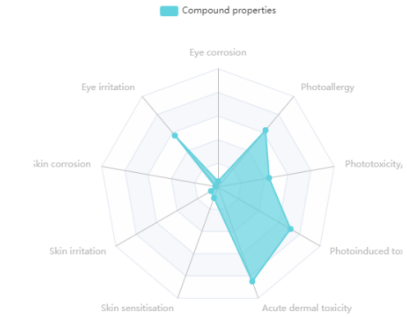
P. subcapitata toxicity	1		81.79%	
Crustaceans toxicity	1		95.6%	
D. magna toxicity	1		95.5%	
Fish toxicity	1		96.6%	
Fathead minnow toxicity	1		92.7%	
Bluegill sunfish toxicity	1		97.5%	
Rainbow trout toxicity	1		97.6%	
Sheepshead minnow toxicity	1		95.2%	
T. pyriformis toxicity	1		99.8%	
T. pyriformis toxicity	2.34	▲	94.26%	

Terrestrial organism

Honey bee toxicity	0		24.8%	
Colinus virginanus toxicity	0		18.5%	
Anas platyrhynchos toxicity	0		13.2%	

Other

BCF	0		19.5%	
BCF	2.04	▲	48.83%	
Biodegradability	0		2.6%	

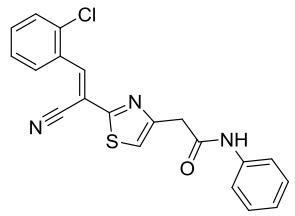


Cosmetic Risk Assessment

Eye corrosion	0		4.8%	
Eye irritation	1		56.79%	
Skin corrosion	0		2.3%	
Skin irritation	0		6.8%	
Skin sensitisation	0		9.9%	
Acute dermal toxicity	1		85%	
Photoinduced toxicity	1		71%	
Phototoxicity	0		44%	
Photoallergy	1		62.7%	

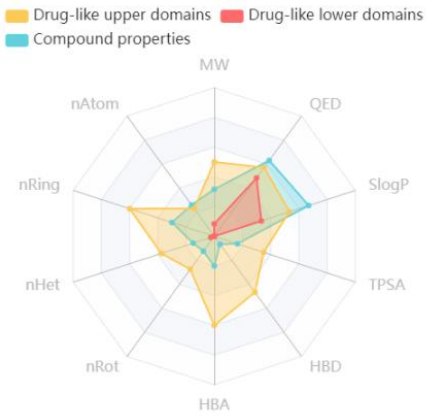
AdmetSAR report for structure 14b

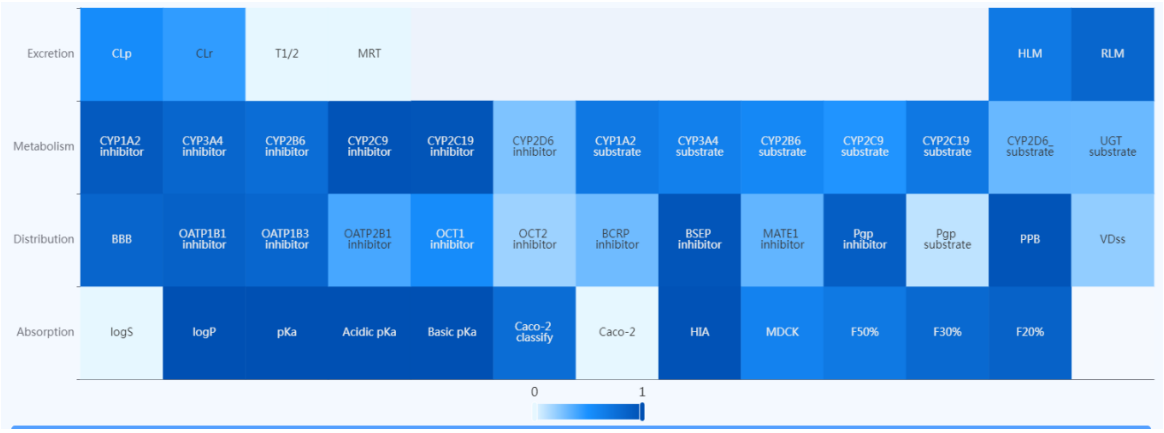
O=C(NC1=CC=CC=C1)CC2=CSC(/C(C#N)=C/C3=C(Cl)C=CC=C3)=N2



Basic Property Display

Physicochemical Property			
Molecular Weight	379.87	36.74%	
nAtom	26	35.71%	
nHet	6	27.77%	
nRing	3	42.85%	
nRot	5	23.8%	
HBA	4	25%	
HBD	1	11.11%	
TPSA	65.78	24.06%	
SlogP	5.04	70%	
Application Domain	In domain	100%	
Medicinal Chemistry			
QED	0.63	66.78%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Not accept	0%	
GSK Rule	Not accept	0%	





ADME Property Prediction

Absorption					Metabolism				
logS	-5.55	▲	31.62%		CYP1A2 inhibitor	1	●	92.4%	
logP	4.5	▲	70.18%		CYP3A4 inhibitor	1	●	82.8%	
pKa	6.8	▲	55.96%		CYP2B6 inhibitor	1	●	77%	
Acidic pKa	7.58	▲	52.18%		CYP2C9 inhibitor	1	●	97.4%	
Basic pKa	3.18	▲	38.53%		CYP2C19 inhibitor	1	●	96.4%	
Caco-2	1	●	77.6%		CYP2D6 inhibitor	0	●	25.3%	
Caco-2	-4.62	▲	84.36%		CYP1A2 substrate	1	●	68.4%	
HIA	1	●	98.3%		CYP3A4 substrate	1	●	62.3%	
MDCK	1	●	60.6%		CYP2B6 substrate	1	●	56.29%	
F50%	1	●	68.1%		CYP2C9 substrate	0	●	48%	
F30%	1	●	80.7%		CYP2C19 substrate	1	●	68.6%	
F20%	1	●	86.2%		CYP2D6 substrate	0	●	30.5%	

Distribution				
BBB	1	●	83.8%	ⓘ
OATP1B1 inhibitor	1	●	86.6%	ⓘ
OATP1B3 inhibitor	1	●	82.5%	ⓘ
OATP2B1 inhibitor	0	●	38.7%	ⓘ
OCT1 inhibitor	1	●	53.3%	ⓘ
OCT2 inhibitor	0	●	17.8%	ⓘ
BCRP inhibitor	0	●	29%	ⓘ
BSEP inhibitor	1	●	96.2%	ⓘ
MATE1 inhibitor	0	●	32.1%	ⓘ
Pgp inhibitor	1	●	89%	ⓘ
Pgp substrate	0	●	9.6%	ⓘ
PPB	1	●	96.9%	ⓘ
VDss	0.2	▲	47.4%	ⓘ
HLM	1	●	67.9%	ⓘ
RLM	1	●	82.9%	ⓘ
UGT substrate	0	●	30.1%	ⓘ

Excretion				
CLp	1	●	53.4%	ⓘ
CLr	0	●	44.2%	ⓘ
T1/2	-1.37	▲	29.19%	ⓘ
MRT	-1.25	▲	32.64%	ⓘ

Legend:

Classification
- ● Probability [0, 0.3]
- ● Probability (0.3, 0.7)
- ● Probability [0.7, 1]

Regression
- ▲ Low Value
- ▲ Medium Value
- ▲ High Value

Gradient bands visually represent the distribution/probability.



Human Health Toxicity

Organ toxicity				
Neurotoxicity	-2.58	▲	41.12%	ⓘ
DILI	1	●	82.6%	ⓘ
hERG 1uM	0	●	9.4%	ⓘ
hERG 10uM	1	●	57.9%	ⓘ
hERG 30uM	1	●	89.1%	ⓘ
hERG 1-10uM	0	●	19.5%	ⓘ
hERG 10-30uM	1	●	85.1%	ⓘ
Respiratory toxicity	0	●	24.5%	ⓘ
Nephrotoxicity	1	●	55.8%	ⓘ
Eye corrosion	0	●	5.7%	ⓘ
Eye irritation	1	●	58.2%	ⓘ
Skin corrosion	0	●	2.7%	ⓘ
Skin irritation	0	●	6.8%	ⓘ
Skin sensitisation	0	●	10.3%	ⓘ
Acute dermal toxicity	1	●	85.3%	ⓘ

Toxicity endpoint				
Ames mutagenesis	1	●	57.6%	ⓘ
Mouse carcinogenicity	0	●	39%	ⓘ
Mouse carcinogenicity	0.56	▲	45.12%	ⓘ
Rat carcinogenicity	0	●	24%	ⓘ
Rat carcinogenicity	1.3	▲	43.47%	ⓘ
Rodents carcinogenicity	0	●	30.1%	ⓘ
Micronucleus	1	●	85.8%	ⓘ
Reproductive toxicity	1	●	58.9%	ⓘ
Mitochondrial toxicity	1	●	95.2%	ⓘ
Hemolytic toxicity	0	●	5.2%	ⓘ
Repeated dose toxicity	1	●	86.8%	ⓘ
Acute oral toxicity	1	●	75%	ⓘ
Acute oral toxicity	-2.58	▲	43.9%	ⓘ
FDAMDD	0	●	45.7%	ⓘ
FDAMDD	1.83	▲	35.2%	ⓘ

Endocrine disruption

AR	0	●	41.6%	ⓘ	ATAD5	0	●	25.4%	ⓘ
ER	0	●	32.5%	ⓘ	HSE	0	●	47.9%	ⓘ
AR-LBD	0	●	24.2%	ⓘ	p53	1	●	56.99%	ⓘ
ER-LBD	1	●	61.8%	ⓘ	PPARγ	1	●	52.2%	ⓘ
Aromatase	1	●	53.6%	ⓘ	MMP	1	●	94.5%	ⓘ
AhR	1	●	62.4%	ⓘ	TR	1	●	60.8%	ⓘ
ARE	1	●	82.5%	ⓘ	GR	1	●	55.8%	ⓘ



Ecological Risk Assessment

Aquatic organism

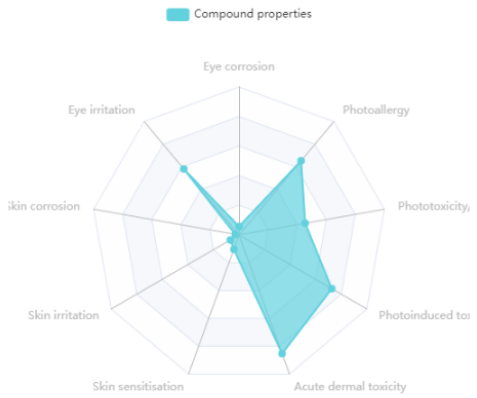
P. subcapitata toxicity	1	●	81.1%	ⓘ
Crustaceans toxicity	1	●	95%	ⓘ
D. magna toxicity	1	●	95%	ⓘ
Fish toxicity	1	●	96%	ⓘ
Fathead minnow toxicity	1	●	92.5%	ⓘ
Bluegill sunfish toxicity	1	●	97.1%	ⓘ
Rainbow trout toxicity	1	●	97.3%	ⓘ
Sheepshead minnow toxicity	1	●	94.5%	ⓘ
T. pyriformis toxicity	1	●	99.7%	ⓘ
T. pyriformis toxicity	2.37	▲	94.98%	ⓘ

Terrestrial organism

Honey bee toxicity	0	●	24.4%	ⓘ
Colinus virginanus toxicity	0	●	18%	ⓘ
Anas platyrhynchos toxicity	0	●	13.2%	ⓘ

Other

BCF	0	●	19.9%	ⓘ
BCF	1.86	▲	44.69%	ⓘ
Biodegradability	0	●	3.1%	ⓘ

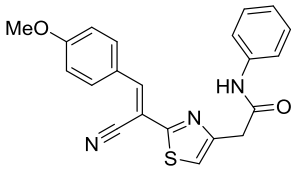


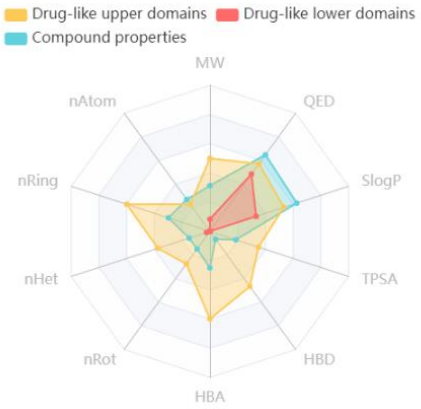
Cosmetic Risk Assessment

Eye corrosion	0	●	5.7%	ⓘ
Eye irritation	1	●	58.2%	ⓘ
Skin corrosion	0	●	2.7%	ⓘ
Skin irritation	0	●	6.8%	ⓘ
Skin sensitisation	0	●	10.3%	ⓘ
Acute dermal toxicity	1	●	85.3%	ⓘ
Photoinduced toxicity	1	●	72.6%	ⓘ
Phototoxicity	0	●	45.5%	ⓘ
Photoallergy	1	●	65.4%	ⓘ

AdmetSAR report for structure 14c

O=C(NC1=CC=CC=C1)CC2=CSC(/C(C#N)=C/C3=CC=C(OC)C=C3)=N2





Basic Property Display			
Physicochemical Property			
Molecular Weight	375.45	36.17%	
nAtom	27	37.5%	
nHet	6	27.77%	
nRing	3	42.85%	
nRot	6	28.57%	
HBA	5	31.25%	
HBD	1	11.11%	
TPSA	75.01	27.43%	
SlogP	4.4	63.94%	
Application Domain	In domain	100%	
Medicinal Chemistry			
QED	0.65	68.8%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Accept	100%	
GSK Rule	Not accept	0%	



ADME Property Prediction

Absorption

logS	-5.25	▲	34.76%
logP	4.14	▲	66.22%
pKa	8.53	▲	68.2%
Acidic pKa	8.59	▲	59.52%
Basic pKa	4.58	▲	48.39%
Caco-2	1	●	69.39%
Caco-2	-4.84	▲	77.81%
HIA	1	●	98.5%
MDCK	1	●	55.3%
F50%	1	●	63.4%
F30%	1	●	80.5%
F20%	1	●	86.3%

Metabolism

CYP1A2 inhibitor	1	●	83.7%
CYP3A4 inhibitor	1	●	86.7%
CYP2B6 inhibitor	1	●	71.4%
CYP2C9 inhibitor	1	●	94.9%
CYP2C19 inhibitor	1	●	95.5%
CYP2D6 inhibitor	0	●	24.6%
CYP1A2 substrate	1	●	60.2%
CYP3A4 substrate	1	●	56.49%
CYP2B6 substrate	0	●	44.4%
CYP2C9 substrate	0	●	46.3%
CYP2C19 substrate	1	●	60.8%
CYP2D6 substrate	0	●	30.2%

Distribution

BBB	1	●	79.8%
OATP1B1 inhibitor	1	●	87.3%
OATP1B3 inhibitor	1	●	83.1%
OATP2B1 inhibitor	0	●	34.2%
OCT1 inhibitor	0	●	50.2%
OCT2 inhibitor	0	●	15.6%
BCRP inhibitor	0	●	32%
BSEP inhibitor	1	●	96.5%
MATE1 inhibitor	0	●	29%
Pgp inhibitor	1	●	89.2%
Pgp substrate	0	●	19.8%
PPB	1	●	97.3%
VDss	0.12	▲	44.54%

HLM	1	●	70.4%
RLM	1	●	86.6%
UGT substrate	0	●	43.8%

Excretion

CLp	1	●	53.2%
CLr	0	●	50.2%
T1/2	-1.25	▲	33.17%
MRT	-1.14	▲	35.99%

Legend:

Classification
- ● Probability [0, 0.3]
- ● Probability (0.3, 0.7)
- ● Probability [0.7, 1]

Regression
- ▲ Low Value
- ▲ Medium Value
- ▲ High Value

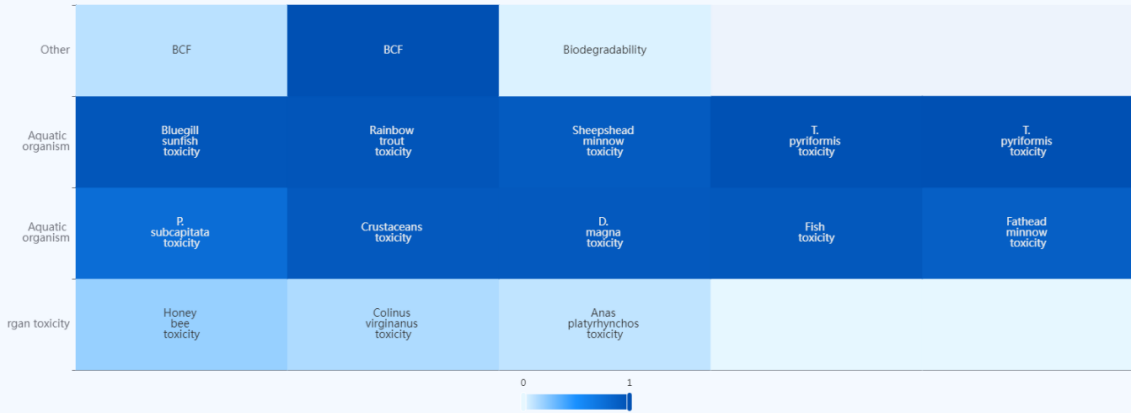
Gradient bands visually represent the distribution/probability.



Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.78	▲	32.11%	ⓘ	Ames mutagenesis	1	●	68%	ⓘ
DILI	1	●	78.8%	ⓘ	Mouse carcinogenicity	0	●	45.5%	ⓘ
hERG 1uM	0	●	9.8%	ⓘ	Mouse carcinogenicity	0.09	▲	36.61%	ⓘ
hERG 10uM	1	●	50.8%	ⓘ	Rat carcinogenicity	0	●	28.59%	ⓘ
hERG 30uM	1	●	89.1%	ⓘ	Rat carcinogenicity	1.16	▲	41.34%	ⓘ
hERG 1-10uM	0	●	17.29%	ⓘ	Rodents carcinogenicity	0	●	38%	ⓘ
hERG 10-30uM	1	●	82.3%	ⓘ	Micronucleus	1	●	85.2%	ⓘ
Respiratory toxicity	0	●	33.8%	ⓘ	Reproductive toxicity	1	●	68.1%	ⓘ
Nephrotoxicity	0	●	48.8%	ⓘ	Mitochondrial toxicity	1	●	93.8%	ⓘ
Eye corrosion	0	●	1.9%	ⓘ	Hemolytic toxicity	0	●	6.2%	ⓘ
Eye irritation	0	●	37.3%	ⓘ	Repeated dose toxicity	1	●	83.7%	ⓘ
Skin corrosion	0	●	1.3%	ⓘ	Acute oral toxicity	1	●	77.2%	ⓘ
Skin irritation	0	●	5.5%	ⓘ	Acute oral toxicity	-2.68	▲	41.25%	ⓘ
Skin sensitisation	0	●	8%	ⓘ	FDAMDD	1	●	53.1%	ⓘ
Acute dermal toxicity	1	●	82.5%	ⓘ	FDAMDD	1.97	▲	37.74%	ⓘ

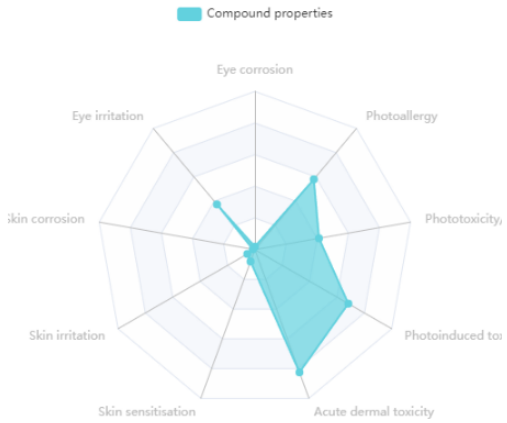
Endocrine disruption									
AR	0	●	36.9%	ⓘ	ATAD5	0	●	26.8%	ⓘ
ER	0	●	32.6%	ⓘ	HSE	0	●	38.6%	ⓘ
AR-LBD	0	●	27.4%	ⓘ	p53	1	●	52.2%	ⓘ
ER-LBD	1	●	61.6%	ⓘ	PPARγ	1	●	50.7%	ⓘ
Aromatase	1	●	52.6%	ⓘ	MMP	1	●	93.9%	ⓘ
AhR	1	●	65.5%	ⓘ	TR	1	●	55.3%	ⓘ
ARE	1	●	81.1%	ⓘ	GR	0	●	49.8%	ⓘ



Ecological Risk Assessment

Aquatic organism				
P. subcapitata toxicity	1	●	77.2%	ⓘ
Crustaceans toxicity	1	●	92.7%	ⓘ
D. magna toxicity	1	●	92.6%	ⓘ
Fish toxicity	1	●	94.1%	ⓘ
Fathead minnow toxicity	1	●	87.9%	ⓘ
Bluegill sunfish toxicity	1	●	95.6%	ⓘ
Rainbow trout toxicity	1	●	95.8%	ⓘ
Sheepshead minnow toxicity	1	●	91.7%	ⓘ
T. pyriformis toxicity	1	●	99.6%	ⓘ
T. pyriformis toxicity	2.1	▲	89.1%	ⓘ

Terrestrial organism				
Honey bee toxicity	0	●	19.1%	ⓘ
Colinus virginanus toxicity	0	●	13.6%	ⓘ
Anas platyrhynchos toxicity	0	●	9.3%	ⓘ
Other				
BCF	0	●	10.6%	ⓘ
BCF	1.74	▲	41.95%	ⓘ
Biodegradability	0	●	2.6%	ⓘ

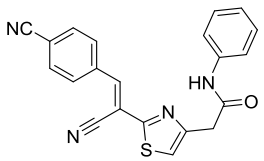


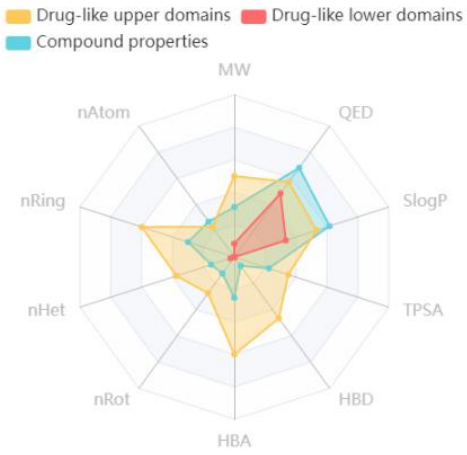
Cosmetic Risk Assessment

Eye corrosion	0	●	1.9%	ⓘ
Eye irritation	0	●	37.3%	ⓘ
Skin corrosion	0	●	1.3%	ⓘ
Skin irritation	0	●	5.5%	ⓘ
Skin sensitisation	0	●	8%	ⓘ
Acute dermal toxicity	1	●	82.5%	ⓘ
Photoinduced toxicity	1	●	68.3%	ⓘ
Phototoxicity	0	●	41.2%	ⓘ
Photoallergy	1	●	58%	ⓘ

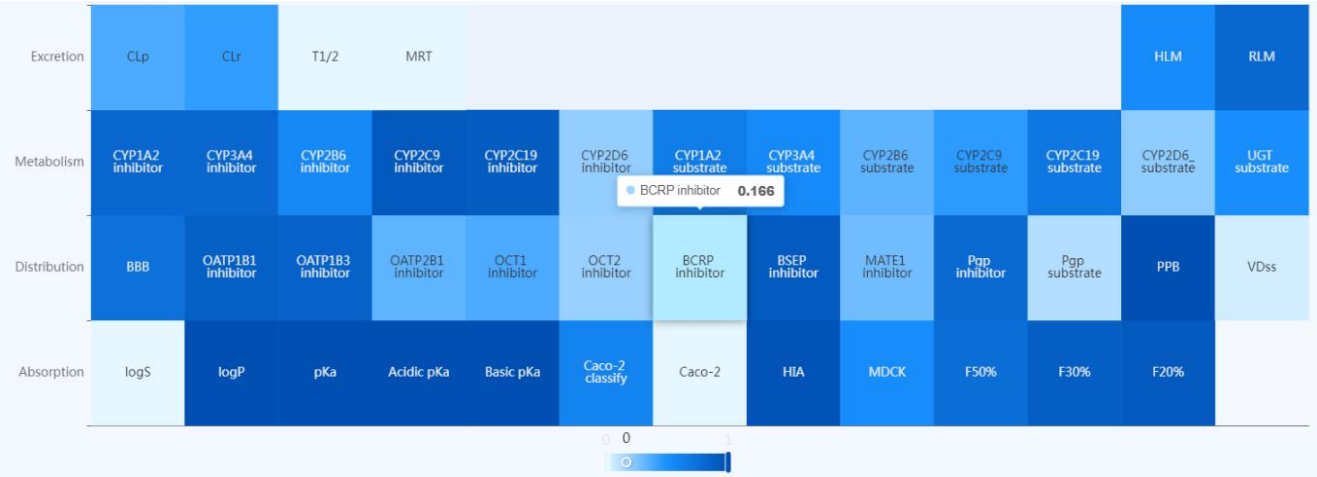
AdmetSAR report for structure 14d

O=C(NC1=CC=CC=C1)CC2=CSC(/C(C#N)=C/C3=CC=C(C#N)C=C3)=N2





Basic Property Display			
Physicochemical Property			
Molecular Weight	370.44	35.53%	
nAtom	27	37.5%	
nHet	6	27.77%	
nRing	3	42.85%	
nRot	5	23.8%	
HBA	5	31.25%	
HBD	1	11.11%	
TPSA	89.57	32.76%	
SlogP	4.26	62.65%	
Application Domain	In domain	100%	
Medicinal Chemistry			
QED	0.68	72.61%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Accept	100%	
GSK Rule	Not accept	0%	



ADME Property Prediction

Absorption

logS	-5.17	▲	35.53%
logP	3.75	▲	62.09%
pKa	6.65	▲	54.93%
Acidic pKa	7.13	▲	48.9%
Basic pKa	2	▲	30.17%
Caco-2	1	●	59.6%
Caco-2	-4.96	▲	74.45%
HIA	1	●	97.5%
MDCK	1	●	52.3%
F50%	1	●	76%
F30%	1	●	88.4%
F20%	1	●	92.2%

Distribution

BBB	1	●	73.5%
OATP1B1 inhibitor	1	●	86.7%
OATP1B3 inhibitor	1	●	85.7%
OATP2B1 inhibitor	0	●	32.7%
OCT1 inhibitor	0	●	37.3%
OCT2 inhibitor	0	●	18.9%
BCRP inhibitor	0	●	16.6%
BSEP inhibitor	1	●	91.1%
MATE1 inhibitor	0	●	28.39%
Pgp inhibitor	1	●	79.6%
Pgp substrate	0	●	12.2%
PPB	1	●	100%
VDss	0.05	▲	41.84%

Metabolism

CYP1A2 inhibitor	1	●	81.89%
CYP3A4 inhibitor	1	●	81.69%
CYP2B6 inhibitor	1	●	55.1%
CYP2C9 inhibitor	1	●	93.1%
CYP2C19 inhibitor	1	●	90.2%
CYP2D6 inhibitor	0	●	20%
CYP1A2 substrate	1	●	64.6%
CYP3A4 substrate	1	●	54.5%
CYP2B6 substrate	0	●	32.9%
CYP2C9 substrate	0	●	45%
CYP2C19 substrate	1	●	69.9%
CYP2D6 substrate	0	●	21.1%
HLM	1	●	54.2%
RLM	1	●	81.1%
UGT substrate	1	●	51.8%

Excretion

CLp	0	●	37.3%
CLr	0	●	43.9%
T1/2	-1.45	▲	26.73%
MRT	-1.38	▲	28.84%

Legend:

Classification
- ● Probability [0, 0.3]
- ● Probability (0.3, 0.7)
- ● Probability [0.7, 1]

Regression
- ▲ Low Value
- ▲ Medium Value
- ▲ High Value

Gradient bands visually represent the distribution/probability.



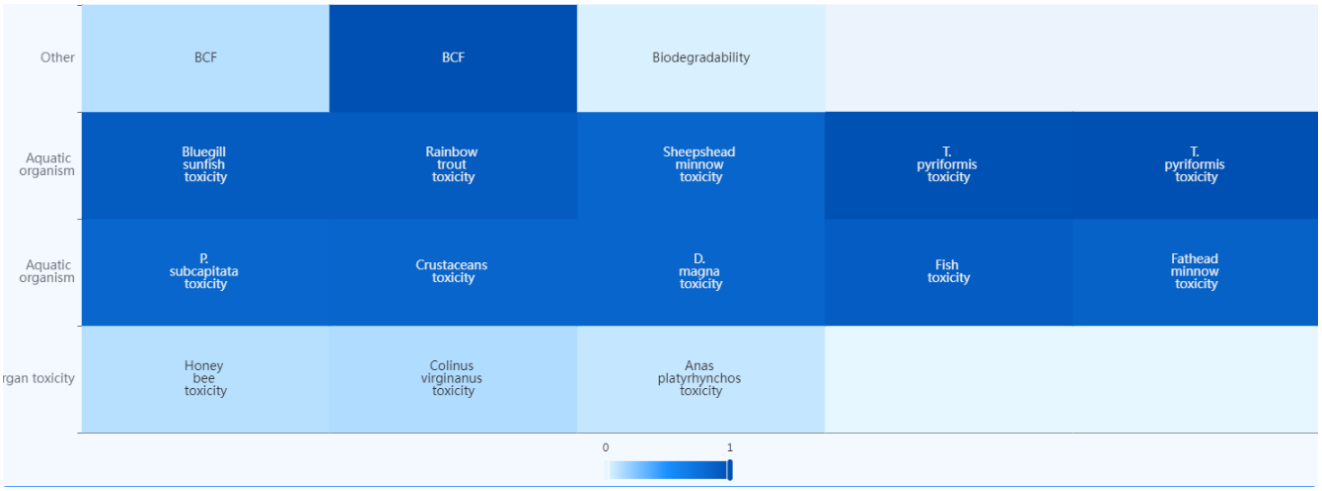
Human Health Toxicity

Organ toxicity

					Toxicity endpoint				
Neurotoxicity	-2.76	▲	33.06%	ⓘ	Ames mutagenesis	0	●	49.4%	ⓘ
DILI	1	●	82.1%	ⓘ	Mouse carcinogenicity	0	●	37%	ⓘ
hERG 1uM	0	●	3.4%	ⓘ	Mouse carcinogenicity	0.29	▲	40.1%	ⓘ
hERG 10uM	0	●	22.1%	ⓘ	Rat carcinogenicity	0	●	28.19%	ⓘ
hERG 30uM	1	●	62.6%	ⓘ	Rat carcinogenicity	1.05	▲	39.83%	ⓘ
hERG 1-10uM	0	●	4%	ⓘ	Rodents carcinogenicity	0	●	32%	ⓘ
hERG 10-30uM	0	●	42.5%	ⓘ	Micronucleus	1	●	90.2%	ⓘ
Respiratory toxicity	0	●	45.6%	ⓘ	Reproductive toxicity	1	●	62.2%	ⓘ
Nephrotoxicity	1	●	58.1%	ⓘ	Mitochondrial toxicity	1	●	84.6%	ⓘ
Eye corrosion	0	●	1.9%	ⓘ	Hemolytic toxicity	0	●	10.9%	ⓘ
Eye irritation	0	●	28.7%	ⓘ	Repeated dose toxicity	1	●	84.5%	ⓘ
Skin corrosion	0	●	1.4%	ⓘ	Acute oral toxicity	1	●	61.1%	ⓘ
Skin irritation	0	●	6.3%	ⓘ	Acute oral toxicity	-2.84	▲	37.16%	ⓘ
Skin sensitisation	0	●	8.2%	ⓘ	FDAMDD	0	●	27%	ⓘ
Acute dermal toxicity	1	●	79.4%	ⓘ	FDAMDD	1.65	▲	32.09%	ⓘ

Endocrine disruption

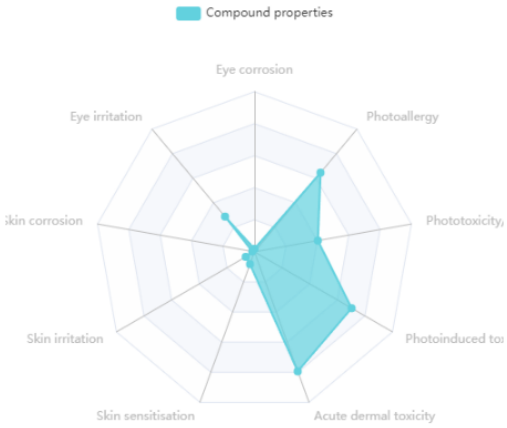
AR	0	●	37.4%	ⓘ	ATAD5	0	●	16.1%	ⓘ
ER	0	●	18.8%	ⓘ	HSE	0	●	21.8%	ⓘ
AR-LBD	0	●	20.3%	ⓘ	p53	0	●	35%	ⓘ
ER-LBD	0	●	48.9%	ⓘ	PPARγ	0	●	33.1%	ⓘ
Aromatase	0	●	41.3%	ⓘ	MMP	1	●	86.8%	ⓘ
AhR	1	●	56.59%	ⓘ	TR	0	●	35%	ⓘ
ARE	1	●	60.9%	ⓘ	GR	0	●	38.2%	ⓘ



Ecological Risk Assessment

Aquatic organism				
P. subcapitata toxicity	1	●	82.8%	ⓘ
Crustaceans toxicity	1	●	83.6%	ⓘ
D. magna toxicity	1	●	83.6%	ⓘ
Fish toxicity	1	●	89.5%	ⓘ
Fathead minnow toxicity	1	●	86.3%	ⓘ
Bluegill sunfish toxicity	1	●	91%	ⓘ
Rainbow trout toxicity	1	●	91.6%	ⓘ
Sheepshead minnow toxicity	1	●	83.9%	ⓘ
T. pyriformis toxicity	1	●	99.6%	ⓘ
T. pyriformis toxicity	1.96	▲	86.03%	ⓘ

Terrestrial organism				
Honey bee toxicity	0	●	11.4%	ⓘ
Colinus virginanus toxicity	0	●	13.1%	ⓘ
Anas platyrhynchos toxicity	0	●	8.3%	ⓘ
Other				
BCF	0	●	11.5%	ⓘ
BCF	1.27	▲	31.29%	ⓘ
Biodegradability	0	●	3.2%	ⓘ

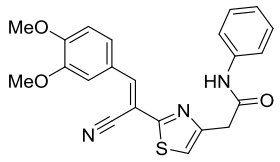


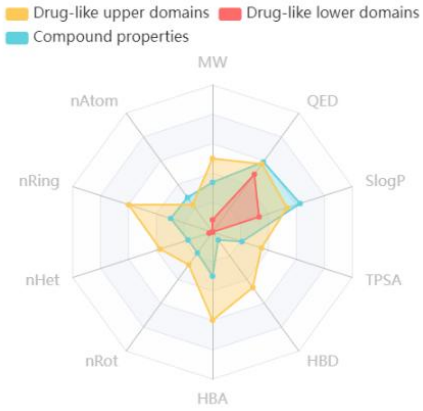
Cosmetic Risk Assessment

Eye corrosion	0	●	1.9%	ⓘ
Eye irritation	0	●	28.7%	ⓘ
Skin corrosion	0	●	1.4%	ⓘ
Skin irritation	0	●	6.3%	ⓘ
Skin sensitisation	0	●	8.2%	ⓘ
Acute dermal toxicity	1	●	79.4%	ⓘ
Photoinduced toxicity	1	●	70.4%	ⓘ
Phototoxicity	0	●	40.4%	ⓘ
Photoallergy	1	●	64.5%	ⓘ

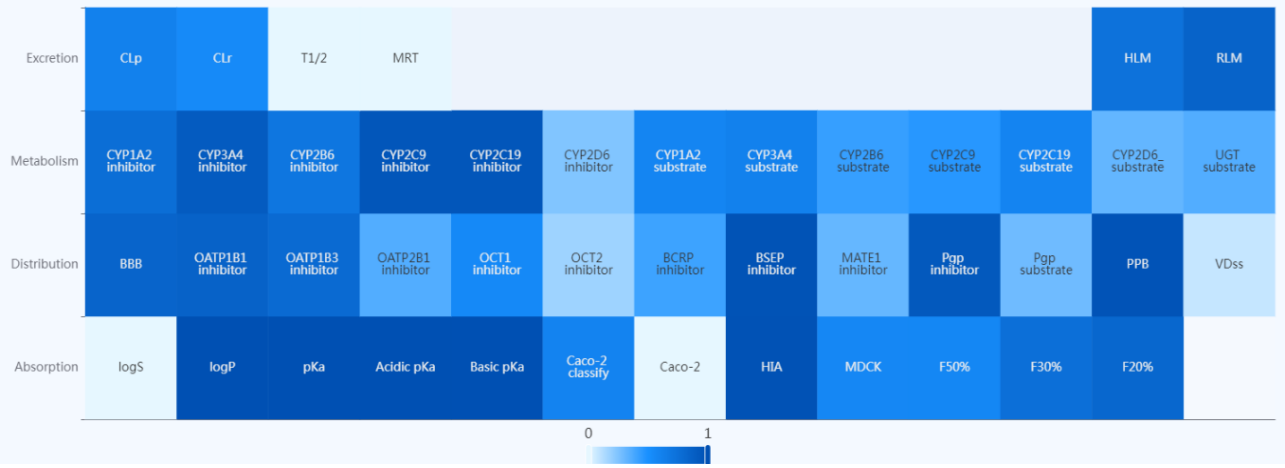
AdmetSAR report for structure 14e

O=C(NC1=CC=CC=C1)CC2=CSC(/C(C#N)=C/C3=CC=C(OC)C(OC)=C3)=N2





Basic Property Display			
Physicochemical Property			
Molecular Weight	405.48	39.99%	
nAtom	29	41.07%	
nHet	7	33.33%	
nRing	3	42.85%	
nRot	7	33.33%	
HBA	6	37.5%	
HBD	1	11.11%	
TPSA	84.24	30.81%	
SlogP	4.41	64.02%	
Application Domain	In domain	100%	
Medicinal Chemistry			
QED	0.59	61.78%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Accept	100%	
GSK Rule	Not accept	0%	



ADME Property Prediction

Absorption					Metabolism				
logS	-5.38	▲	33.43%	i	CYP1A2 inhibitor	1	●	76.7%	i
logP	4.14	▲	66.27%	i	CYP3A4 inhibitor	1	●	91.7%	i
pKa	8.57	▲	68.45%	i	CYP2B6 inhibitor	1	●	70.6%	i
Acidic pKa	8.7	▲	60.28%	i	CYP2C9 inhibitor	1	●	95.2%	i
Basic pKa	5.04	▲	51.65%	i	CYP2C19 inhibitor	1	●	95.2%	i
Caco-2	1	●	60%	i	CYP2D6 inhibitor	0	●	24.5%	i
Caco-2	-4.98	▲	73.8%	i	CYP1A2 substrate	1	●	58.3%	i
HIA	1	●	98.4%	i	CYP3A4 substrate	1	●	61.6%	i
MDCK	1	●	57.09%	i	CYP2B6 substrate	0	●	42.6%	i
F50%	1	●	57.29%	i	CYP2C9 substrate	0	●	46.4%	i
F30%	1	●	75.9%	i	CYP2C19 substrate	1	●	59.1%	i
F20%	1	●	82.3%	i	CYP2D6 substrate	0	●	31.7%	i

Distribution				
BBB	1	●	84.1%	i
OATP1B1 inhibitor	1	●	86.1%	i
OATP1B3 inhibitor	1	●	79.4%	i
OATP2B1 inhibitor	0	●	35.9%	i
OCT1 inhibitor	1	●	55.3%	i
OCT2 inhibitor	0	●	17.5%	i
BCRP inhibitor	0	●	40.89%	i
BSEP inhibitor	1	●	97.9%	i
MATE1 inhibitor	0	●	31.3%	i
Pgp inhibitor	1	●	93.2%	i
Pgp substrate	0	●	28.9%	i
PPB	1	●	97.3%	i
VDss	0.08	▲	42.99%	i

HLM	1	●	73.7%	i
RLM	1	●	85.5%	i
UGT substrate	0	●	35.9%	i

Excretion				
CLp	1	●	61.6%	i
CLr	1	●	54.7%	i
T1/2	-1	▲	40.96%	i
MRT	-0.87	▲	44%	i

Legend:

Classification	Regression
● Probability [0, 0.3]	▲ Low Value
● Probability (0.3, 0.7)	▲ Medium Value
● Probability [0.7, 1]	▲ High Value

Gradient bands visually represent the distribution/probability.



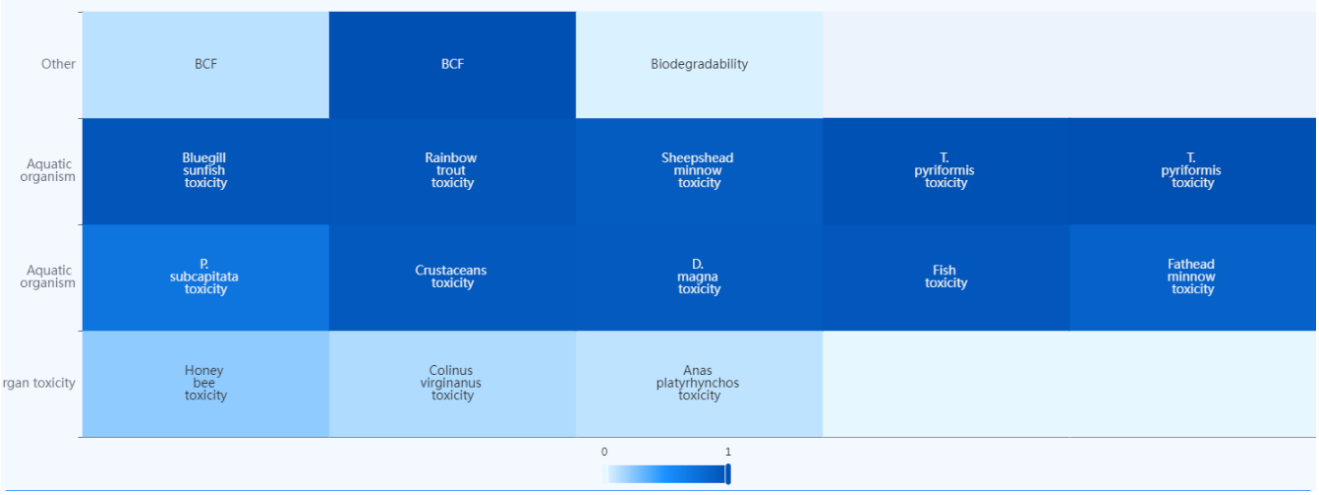
Human Health Toxicity

Organ toxicity

Neurotoxicity	-2.81	▲	30.54%	ⓘ	Ames mutagenesis	1	●	67.1%	ⓘ
DILI	1	●	77.4%	ⓘ	Mouse carcinogenicity	0	●	46.3%	ⓘ
hERG 1uM	0	●	16.7%	ⓘ	Mouse carcinogenicity	0.31	▲	40.54%	ⓘ
hERG 10uM	1	●	78.5%	ⓘ	Rat carcinogenicity	0	●	31.2%	ⓘ
hERG 30uM	1	●	96.4%	ⓘ	Rat carcinogenicity	1.48	▲	46.1%	ⓘ
hERG 1-10uM	0	●	41.8%	ⓘ	Rodents carcinogenicity	0	●	40.79%	ⓘ
hERG 10-30uM	1	●	95.3%	ⓘ	Micronucleus	1	●	85.5%	ⓘ
Respiratory toxicity	0	●	41.9%	ⓘ	Reproductive toxicity	1	●	83.8%	ⓘ
Nephrotoxicity	0	●	41.3%	ⓘ	Mitochondrial toxicity	1	●	92.4%	ⓘ
Eye corrosion	0	●	0.8%	ⓘ	Hemolytic toxicity	0	●	8.5%	ⓘ
Eye irritation	0	●	17.7%	ⓘ	Repeated dose toxicity	1	●	84.1%	ⓘ
Skin corrosion	0	●	0.8%	ⓘ	Acute oral toxicity	1	●	79.2%	ⓘ
Skin irritation	0	●	4.4%	ⓘ	Acute oral toxicity	-2.68	▲	41.3%	ⓘ
Skin sensitisation	0	●	4.7%	ⓘ	FDAMDD	1	●	73.7%	ⓘ
Acute dermal toxicity	1	●	83.1%	ⓘ	FDAMDD	2.37	▲	44.76%	ⓘ

Endocrine disruption

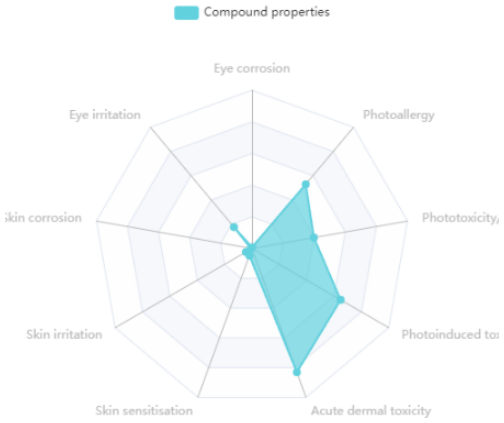
AR	0	●	44.9%	ⓘ	ATAD5	0	●	28.39%	ⓘ
ER	0	●	37.9%	ⓘ	HSE	0	●	41%	ⓘ
AR-LBD	0	●	36%	ⓘ	p53	1	●	56.1%	ⓘ
ER-LBD	1	●	63.8%	ⓘ	PPARγ	1	●	54.9%	ⓘ
Aromatase	1	●	59.9%	ⓘ	MMP	1	●	92.8%	ⓘ
AhR	1	●	62.1%	ⓘ	TR	1	●	61.3%	ⓘ
ARE	1	●	83.2%	ⓘ	GR	1	●	61.2%	ⓘ



Ecological Risk Assessment

Aquatic organism				
P. subcapitata toxicity	1	●	71%	ⓘ
Crustaceans toxicity	1	●	92.8%	ⓘ
D. magna toxicity	1	●	92.5%	ⓘ
Fish toxicity	1	●	94.2%	ⓘ
Fathead minnow toxicity	1	●	86.5%	ⓘ
Bluegill sunfish toxicity	1	●	95.6%	ⓘ
Rainbow trout toxicity	1	●	95.5%	ⓘ
Sheepshead minnow toxicity	1	●	91.4%	ⓘ
T. pyriformis toxicity	1	●	99.4%	ⓘ
T. pyriformis toxicity	2.02	▲	87.37%	ⓘ

Terrestrial organism				
Honey bee toxicity	0	●	21.2%	ⓘ
Colinus virginanus toxicity	0	●	13.6%	ⓘ
Anas platyrhynchos toxicity	0	●	9.7%	ⓘ
Other				
BCF	0	●	10.6%	ⓘ
BCF	1.85	▲	44.32%	ⓘ
Biodegradability	0	●	2.8%	ⓘ

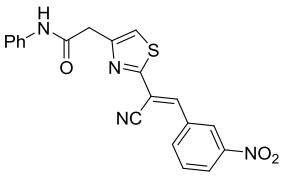


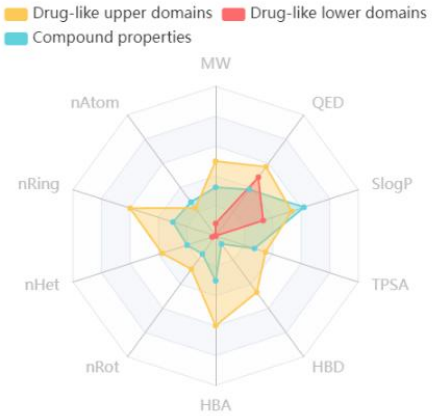
Cosmetic Risk Assessment

Eye corrosion	0	●	0.8%	ⓘ
Eye irritation	0	●	17.7%	ⓘ
Skin corrosion	0	●	0.8%	ⓘ
Skin irritation	0	●	4.4%	ⓘ
Skin sensitisation	0	●	4.7%	ⓘ
Acute dermal toxicity	1	●	83.1%	ⓘ
Photoinduced toxicity	1	●	64.8%	ⓘ
Phototoxicity	0	●	39.8%	ⓘ
Photoallergy	1	●	53%	ⓘ

AdmetSAR report for structure 14f

O=C(CC1=CSC(/C(C#N)=C/C2=CC=CC([N+]([O-])=O)=C2)=N1)NC3=CC=CC=C3





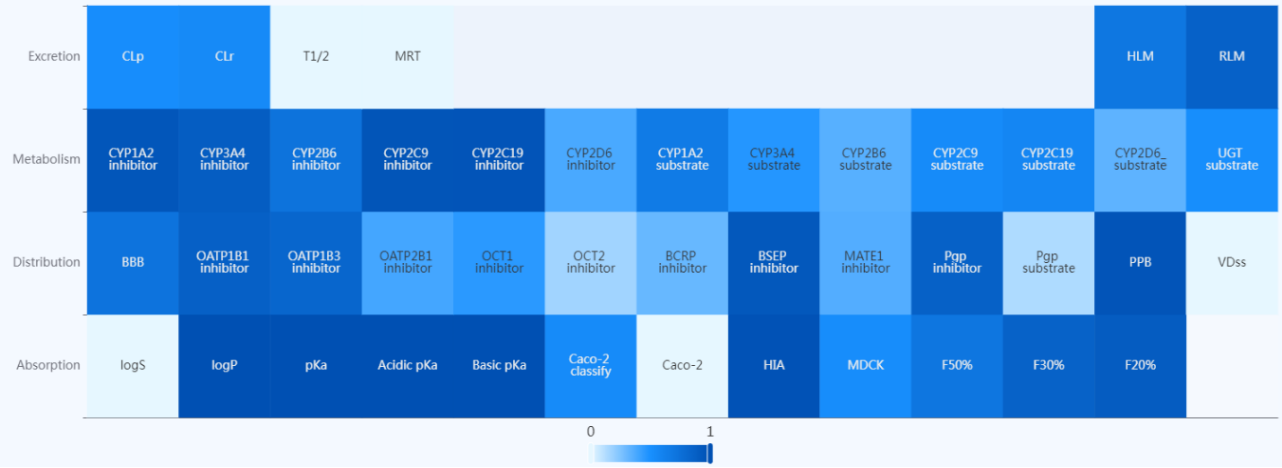
Basic Property Display

Physicochemical Property

Molecular Weight	390.42	38.08%	i
nAtom	28	39.28%	i
nHet	8	38.88%	i
nRing	3	42.85%	i
nRot	6	28.57%	i
HBA	6	37.5%	i
HBD	1	11.11%	i
TPSA	108.92	39.84%	i
SlogP	4.3	63%	i
Application Domain	In domain	100%	i

Medicinal Chemistry

QED	0.38	37.26%	i
Lipinski Rule	Accept	100%	i
Pfizer Rule	Accept	100%	i
GSK Rule	Not accept	0%	i



ADME Property Prediction

Absorption				
logS	-5.07	▲	36.6%	ⓘ
logP	3.65	▲	61.02%	ⓘ
pKa	7.02	▲	57.54%	ⓘ
Acidic pKa	7.42	▲	51.02%	ⓘ
Basic pKa	3.63	▲	41.64%	ⓘ
Caco-2	1	●	53.8%	ⓘ
Caco-2	-4.96	▲	74.27%	ⓘ
HIA	1	●	98.1%	ⓘ
MDCK	1	●	52.7%	ⓘ
F50%	1	●	70.7%	ⓘ
F30%	1	●	86%	ⓘ
F20%	1	●	90.6%	ⓘ

Metabolism				
CYP1A2 inhibitor	1	●	95.5%	ⓘ
CYP3A4 inhibitor	1	●	90%	ⓘ
CYP2B6 inhibitor	1	●	72.7%	ⓘ
CYP2C9 inhibitor	1	●	96.4%	ⓘ
CYP2C19 inhibitor	1	●	96.8%	ⓘ
CYP2D6 inhibitor	0	●	38%	ⓘ
CYP1A2 substrate	1	●	66.6%	ⓘ
CYP3A4 substrate	0	●	47.2%	ⓘ
CYP2B6 substrate	0	●	34.69%	ⓘ
CYP2C9 substrate	1	●	53.7%	ⓘ
CYP2C19 substrate	1	●	58.2%	ⓘ
CYP2D6 substrate	0	●	33.1%	ⓘ

Distribution				
BBB	1	●	72.5%	ⓘ
OATP1B1 inhibitor	1	●	87.4%	ⓘ
OATP1B3 inhibitor	1	●	83%	ⓘ
OATP2B1 inhibitor	0	●	39.3%	ⓘ
OCT1 inhibitor	0	●	45.7%	ⓘ
OCT2 inhibitor	0	●	16.8%	ⓘ
BCRP inhibitor	0	●	30.8%	ⓘ
BSEP inhibitor	1	●	94.1%	ⓘ
MATE1 inhibitor	0	●	35.8%	ⓘ
Pgp inhibitor	1	●	86.6%	ⓘ
Pgp substrate	0	●	13.7%	ⓘ
PPB	1	●	96.7%	ⓘ
VDss	-0.14	▲	35.01%	ⓘ

HLM	1	●	69.79%	ⓘ
RLM	1	●	86.5%	ⓘ
UGT substrate	1	●	51.7%	ⓘ

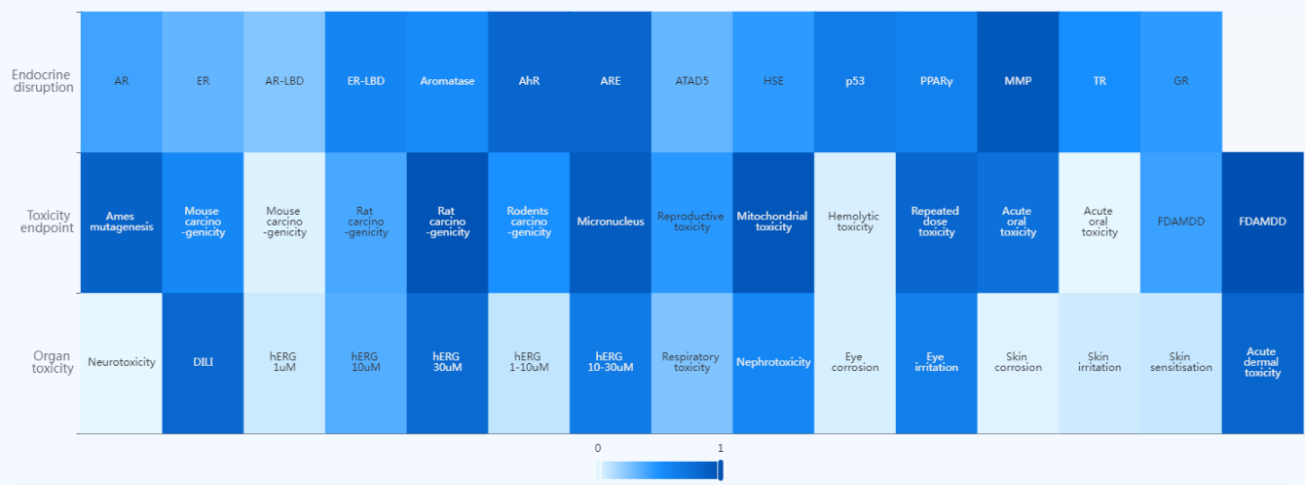
Excretion				
CLp	1	●	52.2%	ⓘ
CLr	1	●	55%	ⓘ
T1/2	-1.22	▲	34%	ⓘ
MRT	-1.11	▲	36.76%	ⓘ

Legend:

Classification
- Probability [0, 0.3]
- Probability (0.3, 0.7)
- Probability [0.7, 1]

Regression
- Low Value
- Medium Value
- High Value

Gradient bands visually represent the distribution/probability.



Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.58	▲	40.85%	ⓘ	Ames mutagenesis	1	●	86.3%	ⓘ
DILI	1	●	82.2%	ⓘ	Mouse carcinogenicity	1	●	56.1%	ⓘ
hERG 1uM	0	●	6.2%	ⓘ	Mouse carcinogenicity	0.02	▲	35.34%	ⓘ
hERG 10uM	0	●	35.4%	ⓘ	Rat carcinogenicity	0	●	38.3%	ⓘ
hERG 30uM	1	●	79.4%	ⓘ	Rat carcinogenicity	0.98	▲	38.75%	ⓘ
hERG 1-10uM	0	●	8.69%	ⓘ	Rodents carcinogenicity	0	●	49.8%	ⓘ
hERG 10-30uM	1	●	67.1%	ⓘ	Micronucleus	1	●	91%	ⓘ
Respiratory toxicity	0	●	25.1%	ⓘ	Reproductive toxicity	0	●	45.8%	ⓘ
Nephrotoxicity	1	●	56.79%	ⓘ	Mitochondrial toxicity	1	●	95.2%	ⓘ
Eye corrosion	0	●	3.6%	ⓘ	Hemolytic toxicity	0	●	3.7%	ⓘ
Eye irritation	1	●	63.7%	ⓘ	Repeated dose toxicity	1	●	82.5%	ⓘ
Skin corrosion	0	●	1.7%	ⓘ	Acute oral toxicity	1	●	74%	ⓘ
Skin irritation	0	●	6.1%	ⓘ	Acute oral toxicity	-2.68	▲	41.35%	ⓘ
Skin sensitisation	0	●	7.8%	ⓘ	FDAMDD	0	●	41.7%	ⓘ
Acute dermal toxicity	1	●	83.7%	ⓘ	FDAMDD	1.68	▲	32.64%	ⓘ

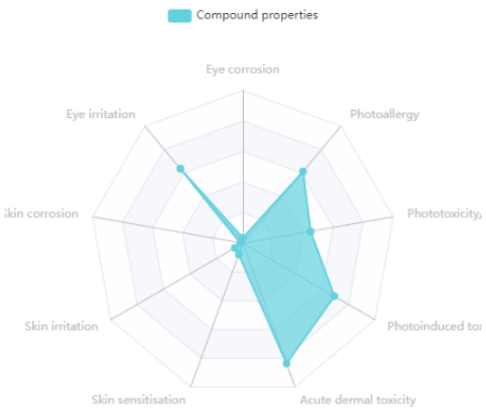
Endocrine disruption									
AR	0	●	40.2%	ⓘ	ATAD5	0	●	31.5%	ⓘ
ER	0	●	31.9%	ⓘ	HSE	0	●	45.2%	ⓘ
AR-LBD	0	●	23.9%	ⓘ	p53	1	●	65.5%	ⓘ
ER-LBD	1	●	57.7%	ⓘ	PPARγ	1	●	61.1%	ⓘ
Aromatase	1	●	53.7%	ⓘ	MMP	1	●	94.8%	ⓘ
AhR	1	●	82.5%	ⓘ	TR	1	●	51.6%	ⓘ
ARE	1	●	83.8%	ⓘ	GR	0	●	45.2%	ⓘ



Ecological Risk Assessment

Aquatic organism				
P. subcapitata toxicity	1	●	80.1%	ⓘ
Crustaceans toxicity	1	●	90.1%	ⓘ
D. magna toxicity	1	●	90.3%	ⓘ
Fish toxicity	1	●	92.9%	ⓘ
Fathead minnow toxicity	1	●	87.5%	ⓘ
Bluegill sunfish toxicity	1	●	95.1%	ⓘ
Rainbow trout toxicity	1	●	95.7%	ⓘ
Sheepshead minnow toxicity	1	●	91.4%	ⓘ
T. pyriformis toxicity	1	●	99.7%	ⓘ
T. pyriformis toxicity	1.96	▲	85.92%	ⓘ

Terrestrial organism				
Honey bee toxicity	0	●	13.9%	ⓘ
Colinus virginanus toxicity	0	●	15.7%	ⓘ
Anas platyrhynchos toxicity	0	●	10.3%	ⓘ
Other				
BCF	0	●	11%	ⓘ
BCF	1.45	▲	35.19%	ⓘ
Biodegradability	0	●	3.5%	ⓘ

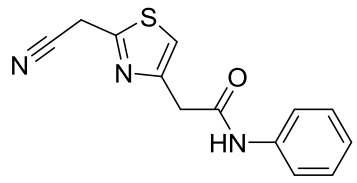


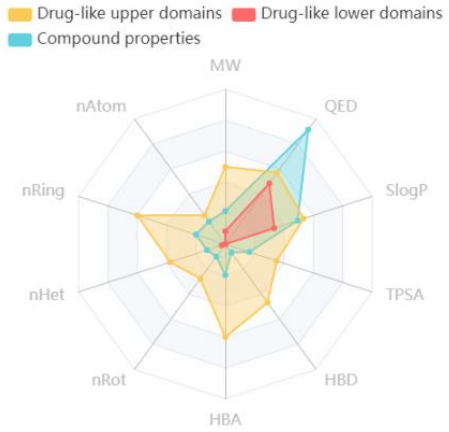
Cosmetic Risk Assessment

Eye corrosion	0	●	3.6%	ⓘ
Eye irritation	1	●	63.7%	ⓘ
Skin corrosion	0	●	1.7%	ⓘ
Skin irritation	0	●	6.1%	ⓘ
Skin sensitisation	0	●	7.8%	ⓘ
Acute dermal toxicity	1	●	83.7%	ⓘ
Photoinduced toxicity	1	●	69.19%	ⓘ
Phototoxicity	0	●	45.1%	ⓘ
Photoallergy	1	●	61.4%	ⓘ

AdmetSAR report for cyanomethylthiazole 19

O=C(NC1=CC=CC=C1)CC2=CSC(CC#N)=N2





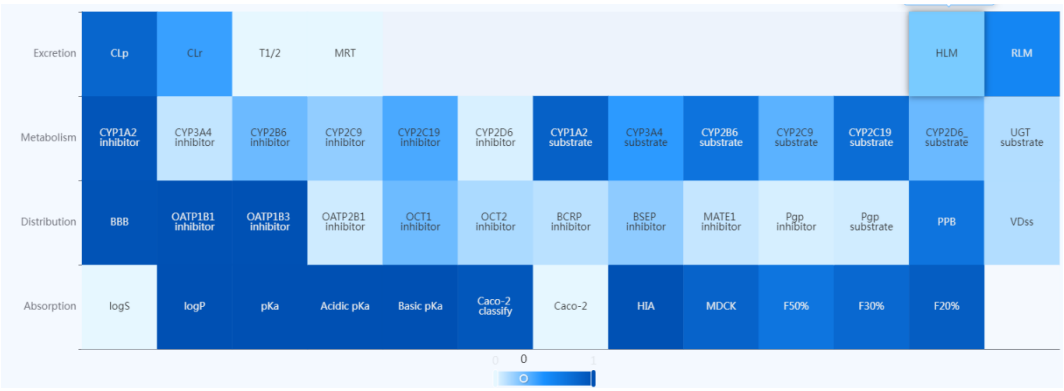
Basic Property Display

Physicochemical Property

Molecular Weight	257.32	21.14%	
nAtom	18	21.42%	
nHet	5	22.22%	
nRing	2	28.57%	
nRot	4	19.04%	
HBA	4	25%	
HBD	1	11.11%	
TPSA	65.78	24.06%	
SlogP	2.39	45.06%	
Application Domain	In domain	100%	

Medicinal Chemistry

QED	0.91	99.99%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Accept	100%	
GSK Rule	Accept	100%	



ADME Property Prediction

Absorption					Metabolism				
logS	-3.23	▲	55.67%		CYP1A2 inhibitor	1	●	95.9%	
logP	1.95	▲	42.71%		CYP3A4 inhibitor	0	●	8.69%	
pKa	4.2	▲	37.61%		CYP2B6 inhibitor	0	●	29.7%	
Acidic pKa	9.55	▲	66.45%		CYP2C9 inhibitor	0	●	20.39%	
Basic pKa	2.39	▲	32.91%		CYP2C19 inhibitor	0	●	37.8%	
Caco-2	1	●	94.9%		CYP2D6 inhibitor	0	●	3.5%	
Caco-2	-4.43	▲	90.08%		CYP1A2 substrate	1	●	87%	
HIA	1	●	99.1%		CYP3A4 substrate	0	●	45.1%	
MDCK	1	●	85%		CYP2B6 substrate	1	●	72.5%	
F50%	1	●	71.3%		CYP2C9 substrate	0	●	33.7%	
F30%	1	●	81.2%		CYP2C19 substrate	1	●	77.5%	
F20%	1	●	89.9%		CYP2D6 substrate	0	●	30.2%	

Distribution				
BBB	1	🔴	97.9%	ⓘ
OATP1B1 inhibitor	1	🔴	99.3%	ⓘ
OATP1B3 inhibitor	1	🔴	99.6%	ⓘ
OATP2B1 inhibitor	0	🟢	5.8%	ⓘ
OCT1 inhibitor	0	🟢	29.3%	ⓘ
OCT2 inhibitor	0	🟢	14.29%	ⓘ
BCRP inhibitor	0	🟢	10.7%	ⓘ
BSEP inhibitor	0	🟢	21.3%	ⓘ
MATE1 inhibitor	0	🟢	8.1%	ⓘ
Pgp inhibitor	0	🟢	3.8%	ⓘ
Pgp substrate	0	🟢	5.4%	ⓘ
PPB	1	🔴	71.8%	ⓘ
VDss	0.13	🔺	44.62%	ⓘ

HLM	0	🟢	28.9%	ⓘ
RLM	1	🟡	57.7%	ⓘ
UGT substrate	0	🟢	12.7%	ⓘ

Excretion				
CLp	1	🔴	82.6%	ⓘ
CLr	0	🟡	42.2%	ⓘ
T1/2	-0.25	🔺	65.09%	ⓘ
MRT	-0.14	🔺	65.51%	ⓘ

Legend:

Classification
- 🟢 Probability [0, 0.3]
- 🟡 Probability (0.3, 0.7)
- 🔴 Probability [0.7, 1]

Regression
- 🔺 Low Value
- 🔺 Medium Value
- 🔺 High Value

Gradient bands visually represent the distribution/probability.

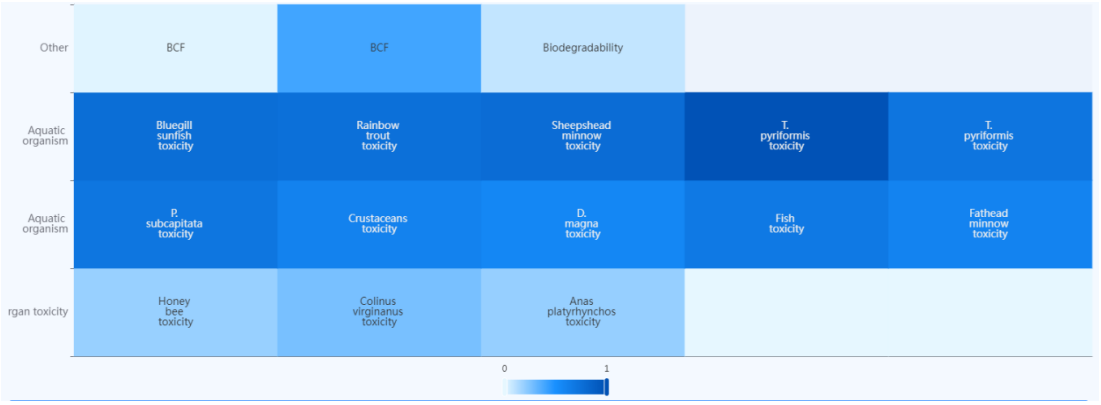


Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.82	🔺	30.31%	ⓘ	Ames mutagenesis	1	🟡	60.1%	ⓘ
DILI	1	🔴	77.7%	ⓘ	Mouse carcinogenicity	0	🟡	43.7%	ⓘ
hERG 1uM	0	🟢	0.4%	ⓘ	Mouse carcinogenicity	0.35	🔺	41.27%	ⓘ
hERG 10uM	0	🟢	10.6%	ⓘ	Rat carcinogenicity	1	🟡	52.7%	ⓘ
hERG 30uM	0	🟡	47%	ⓘ	Rat carcinogenicity	0.32	🔺	29%	ⓘ
hERG 1-10uM	0	🟢	0.8%	ⓘ	Rodents carcinogenicity	1	🟡	57.6%	ⓘ
hERG 10-30uM	0	🟢	21.3%	ⓘ	Micronucleus	1	🔴	95.8%	ⓘ
Respiratory toxicity	0	🟡	30.8%	ⓘ	Reproductive toxicity	1	🟡	55.8%	ⓘ
Nephrotoxicity	1	🔴	80.9%	ⓘ	Mitochondrial toxicity	1	🔴	72.6%	ⓘ
Eye corrosion	0	🟢	15.9%	ⓘ	Hemolytic toxicity	0	🟢	7.9%	ⓘ
Eye irritation	1	🔴	90.7%	ⓘ	Repeated dose toxicity	1	🔴	86.1%	ⓘ
Skin corrosion	0	🟢	3.8%	ⓘ	Acute oral toxicity	1	🔴	95.5%	ⓘ
Skin irritation	0	🟢	26.4%	ⓘ	Acute oral toxicity	-2.7	🔺	40.76%	ⓘ
Skin sensitisation	0	🟢	24.8%	ⓘ	FDAMDD	0	🟢	15.6%	ⓘ
Acute dermal toxicity	1	🟡	70.4%	ⓘ	FDAMDD	1.29	🔺	25.8%	ⓘ

Endocrine disruption

AR	0		5.9%		ATAD5	0		6%	
ER	0		1.1%		HSE	0		3.4%	
AR-LBD	0		5.8%		p53	0		5.4%	
ER-LBD	0		12.6%		PPARγ	0		2.6%	
Aromatase	0		27.2%		MMP	0		10.9%	
AhR	1		61.5%		TR	0		7.6%	
ARE	0		17.6%		GR	0		5%	



Ecological Risk Assessment

Aquatic organism

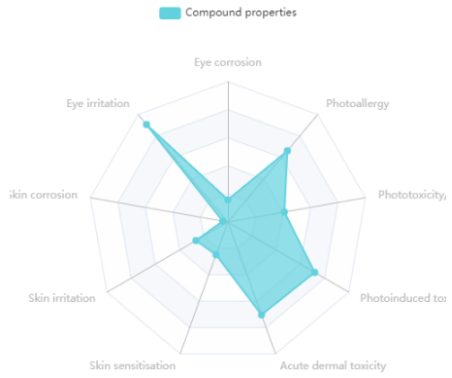
P. subcapitata toxicity	1		70.3%	
Crustaceans toxicity	1		61.1%	
D. magna toxicity	1		57.4%	
Fish toxicity	1		67.9%	
Fathead minnow toxicity	1		59.9%	
Bluegill sunfish toxicity	1		76.9%	
Rainbow trout toxicity	1		74.9%	
Sheepshead minnow toxicity	1		77.8%	
T. pyriformis toxicity	1		98.2%	
T. pyriformis toxicity	0.71		58.68%	

Terrestrial organism

Honey bee toxicity	0		18.9%	
Colinus virginanus toxicity	0		26.7%	
Anas platyrhynchos toxicity	0		19.3%	

Other

BCF	0		1.5%	
BCF	0.4		11.38%	
Biodegradability	0		8.8%	

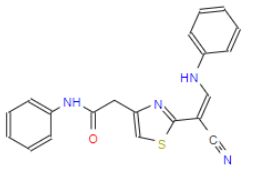


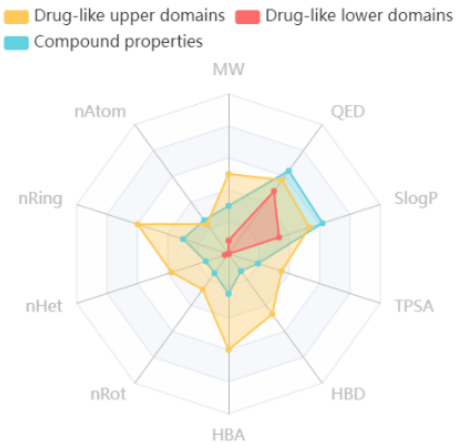
Cosmetic Risk Assessment

Eye corrosion	0		15.9%	
Eye irritation	1		90.7%	
Skin corrosion	0		3.8%	
Skin irritation	0		26.4%	
Skin sensitisation	0		24.8%	
Acute dermal toxicity	1		70.4%	
Photoinduced toxicity	1		71.8%	
Phototoxicity	0		41.1%	
Photoallergy	1		66.3%	

AdmetSAR report for thiazole 21a

N#C/C(C1=NC(CC(NC2=CC=CC=C2)=O)=CS1)=C/NC3=CC=CC=C3





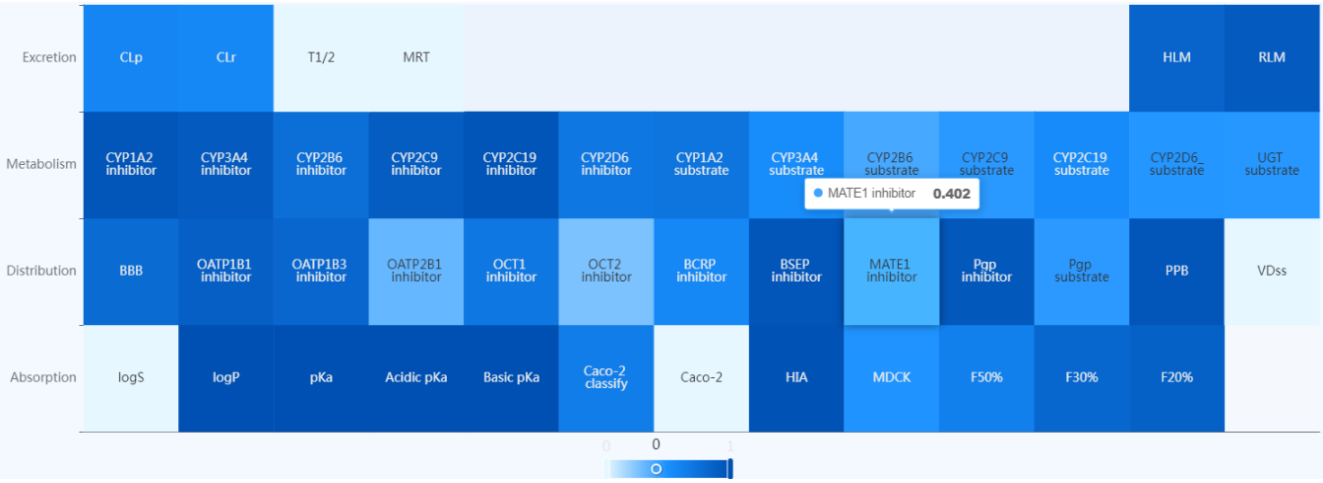
Basic Property Display

Physicochemical Property

Molecular Weight	360.44	34.26%	i
nAtom	26	35.71%	i
nHet	6	27.77%	i
nRing	3	42.85%	i
nRot	6	28.57%	i
HBA	5	31.25%	i
HBD	2	22.22%	i
TPSA	77.81	28.46%	i
SlogP	4.3	63.03%	i
Application Domain	In domain	100%	i

Medicinal Chemistry

QED	0.64	68.21%	i
Lipinski Rule	Accept	100%	i
Pfizer Rule	Accept	100%	i
GSK Rule	Not accept	0%	i



ADME Property Prediction

Absorption					Metabolism				
logS	-4.82	▲	39.23%	i	CYP1A2 inhibitor	1	●	96.1%	i
logP	3.57	▲	60.1%	i	CYP3A4 inhibitor	1	●	92.5%	i
pKa	7.36	▲	59.9%	i	CYP2B6 inhibitor	1	●	75.5%	i
Acidic pKa	8.27	▲	57.17%	i	CYP2C9 inhibitor	1	●	90.2%	i
Basic pKa	5.47	▲	54.66%	i	CYP2C19 inhibitor	1	●	96.9%	i
Caco-2	1	●	64.8%	i	CYP2D6 inhibitor	1	●	69.19%	i
Caco-2	-4.99	▲	73.36%	i	CYP1A2 substrate	1	●	71.3%	i
HIA	1	●	98.4%	i	CYP3A4 substrate	1	●	52.7%	i
MDCK	0	●	48.4%	i	CYP2B6 substrate	0	●	38.5%	i
F50%	1	●	62.3%	i	CYP2C9 substrate	0	●	45.6%	i
F30%	1	●	82.3%	i	CYP2C19 substrate	1	●	53.7%	i
F20%	1	●	86.8%	i	CYP2D6 substrate	0	●	47.2%	i

Distribution				
BBB	1	●	79.2%	i
OATP1B1 inhibitor	1	●	88.4%	i
OATP1B3 inhibitor	1	●	82.5%	i
OATP2B1 inhibitor	0	●	31.2%	i
OCT1 inhibitor	1	●	69.59%	i
OCT2 inhibitor	0	●	25.9%	i
BCRP inhibitor	1	●	56%	i
BSEP inhibitor	1	●	96.1%	i
MATE1 inhibitor	0	●	40.2%	i
Pgp inhibitor	1	●	94.1%	i
Pgp substrate	0	●	45.5%	i
PPB	1	●	96%	i
VDss	-0.09	▲	36.93%	i

HLM	1	●	84.2%	i
RLM	1	●	92.5%	i
UGT substrate	0	●	46.5%	i

Excretion				
CLp	1	●	58.3%	i
CLr	1	●	56.29%	i
T1/2	-0.93	▲	43.39%	i
MRT	-0.88	▲	43.62%	i

Legend:

Classification
- ● Probability [0, 0.3]
- ● Probability (0.3, 0.7)
- ● Probability [0.7, 1]

Regression
- ▲ Low Value
- ▲ Medium Value
- ▲ High Value

Gradient bands visually represent the distribution/probability.



Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.46	▲	46.48%	ⓘ	Ames mutagenesis	1	●	87.9%	ⓘ
DILI	1	●	77.2%	ⓘ	Mouse carcinogenicity	1	●	63.3%	ⓘ
hERG 1uM	0	●	32.1%	ⓘ	Mouse carcinogenicity	-0.26	▲	30.2%	ⓘ
hERG 10uM	1	●	85.7%	ⓘ	Rat carcinogenicity	0	●	45.4%	ⓘ
hERG 30uM	1	●	97.3%	ⓘ	Rat carcinogenicity	0.71	▲	34.68%	ⓘ
hERG 1-10uM	1	●	65.1%	ⓘ	Rodents carcinogenicity	1	●	62.2%	ⓘ
hERG 10-30uM	1	●	97%	ⓘ	Micronucleus	1	●	85.8%	ⓘ
Respiratory toxicity	0	●	32%	ⓘ	Reproductive toxicity	1	●	53.9%	ⓘ
Nephrotoxicity	1	●	53.6%	ⓘ	Mitochondrial toxicity	1	●	94.3%	ⓘ
Eye corrosion	0	●	1.4%	ⓘ	Hemolytic toxicity	0	●	6.1%	ⓘ
Eye irritation	0	●	50.4%	ⓘ	Repeated dose toxicity	1	●	77.5%	ⓘ
Skin corrosion	0	●	1.5%	ⓘ	Acute oral toxicity	1	●	67.6%	ⓘ
Skin irritation	0	●	8%	ⓘ	Acute oral toxicity	-3	▲	33.06%	ⓘ
Skin sensitisation	0	●	8.4%	ⓘ	FDAMDD	1	●	50.5%	ⓘ
Acute dermal toxicity	1	●	66.5%	ⓘ	FDAMDD	1.8	▲	34.67%	ⓘ

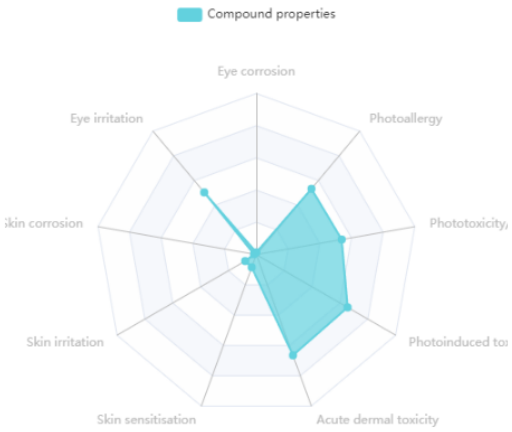
Endocrine disruption									
AR	0	●	45.7%	ⓘ	ATAD5	1	●	53.5%	ⓘ
ER	0	●	42.6%	ⓘ	HSE	0	●	49.9%	ⓘ
AR-LBD	0	●	45.1%	ⓘ	p53	1	●	71.8%	ⓘ
ER-LBD	1	●	74.4%	ⓘ	PPARγ	1	●	65.5%	ⓘ
Aromatase	1	●	70.2%	ⓘ	MMP	1	●	95.4%	ⓘ
AhR	1	●	90%	ⓘ	TR	1	●	68.3%	ⓘ
ARE	1	●	91.4%	ⓘ	GR	0	●	49.5%	ⓘ



Ecological Risk Assessment

Aquatic organism				
P. subcapitata toxicity	1	●	82.9%	ⓘ
Crustaceans toxicity	1	●	88.5%	ⓘ
D. magna toxicity	1	●	88.5%	ⓘ
Fish toxicity	1	●	89.4%	ⓘ
Fathead minnow toxicity	1	●	82.4%	ⓘ
Bluegill sunfish toxicity	1	●	93.6%	ⓘ
Rainbow trout toxicity	1	●	93.9%	ⓘ
Sheepshead minnow toxicity	1	●	91.7%	ⓘ
T. pyriformis toxicity	1	●	99.6%	ⓘ
T. pyriformis toxicity	1.78	▲	82.03%	ⓘ

Terrestrial organism				
Honey bee toxicity	0	●	8.69%	ⓘ
Colinus virginanus toxicity	0	●	8.69%	ⓘ
Anas platyrhynchos toxicity	0	●	4.9%	ⓘ
Other				
BCF	0	●	11.2%	ⓘ
BCF	1.83	▲	43.94%	ⓘ
Biodegradability	0	●	3.4%	ⓘ

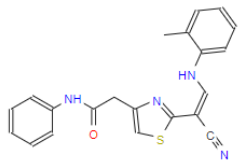


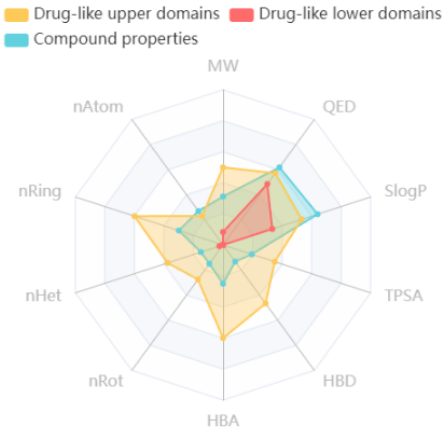
Cosmetic Risk Assessment

Eye corrosion	0	●	1.4%	ⓘ
Eye irritation	0	●	50.4%	ⓘ
Skin corrosion	0	●	1.5%	ⓘ
Skin irritation	0	●	8%	ⓘ
Skin sensitisation	0	●	8.4%	ⓘ
Acute dermal toxicity	1	●	66.5%	ⓘ
Photoinduced toxicity	1	●	65.5%	ⓘ
Phototoxicity	1	●	53.9%	ⓘ
Photoallergy	1	●	53.3%	ⓘ

AdmetSAR report for thiazole 21b

N#C/C(C1=NC(CC(NC2=CC=CC=C2)=O)=CS1)=C/NC3=CC=CC=C3C





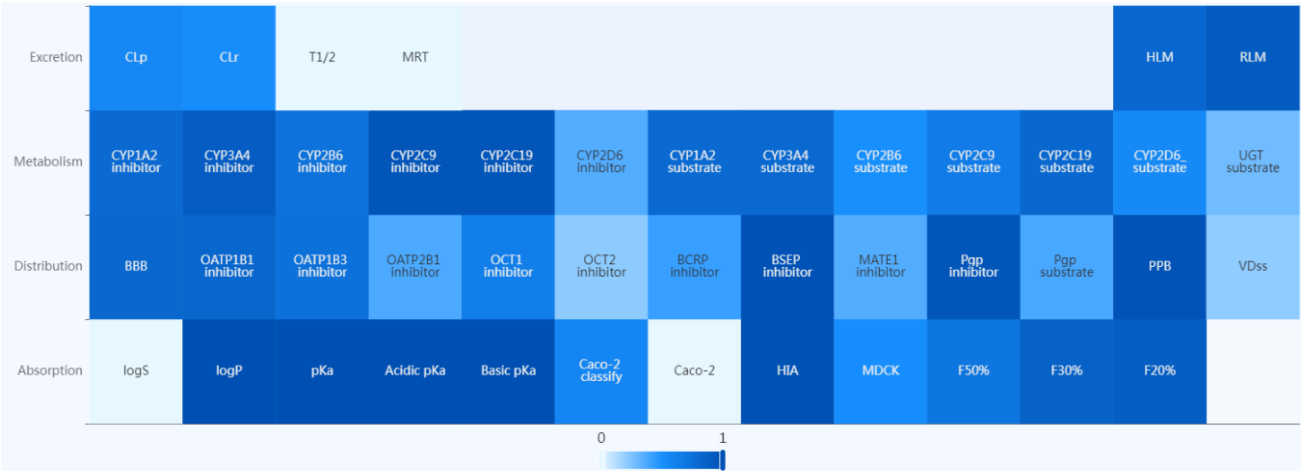
Basic Property Display

Physicochemical Property

Molecular Weight	374.47	36.05%	
nAtom	27	37.5%	
nHet	6	27.77%	
nRing	3	42.85%	
nRot	6	28.57%	
HBA	5	31.25%	
HBD	2	22.22%	
TPSA	77.81	28.46%	
SlogP	4.61	65.93%	
Application Domain	In domain	100%	

Medicinal Chemistry

QED	0.62	65.23%	
Lipinski Rule	Accept	100%	
Pfizer Rule	Accept	100%	
GSK Rule	Not accept	0%	



ADME Property Prediction

Absorption					Metabolism				
logS	-5.62	▲	30.92%	i	CYP1A2 inhibitor	1	●	80%	i
logP	4.26	▲	67.6%	i	CYP3A4 inhibitor	1	●	89.7%	i
pKa	6.89	▲	56.63%	i	CYP2B6 inhibitor	1	●	73.8%	i
Acidic pKa	8.01	▲	55.25%	i	CYP2C9 inhibitor	1	●	95.2%	i
Basic pKa	4.51	▲	47.84%	i	CYP2C19 inhibitor	1	●	95.9%	i
Caco-2	1	●	57.5%	i	CYP2D6 inhibitor	0	●	36%	i
Caco-2	-5.02	▲	72.59%	i	CYP1A2 substrate	1	●	80%	i
HIA	1	●	98.4%	i	CYP3A4 substrate	1	●	80.4%	i
MDCK	1	●	51.6%	i	CYP2B6 substrate	1	●	51.1%	i
F50%	1	●	70.1%	i	CYP2C9 substrate	1	●	65.5%	i
F30%	1	●	85.9%	i	CYP2C19 substrate	1	●	81.39%	i
F20%	1	●	89.3%	i	CYP2D6 substrate	1	●	55.8%	i

Distribution				
BBB	1	●	82.1%	i
OATP1B1 inhibitor	1	●	83%	i
OATP1B3 inhibitor	1	●	74%	i
OATP2B1 inhibitor	0	●	37.6%	i
OCT1 inhibitor	1	●	64.2%	i
OCT2 inhibitor	0	●	21.6%	i
BCRP inhibitor	0	●	42.8%	i
BSEP inhibitor	1	●	98.2%	i
MATE1 inhibitor	0	●	36%	i
Pgp inhibitor	1	●	96.2%	i
Pgp substrate	0	●	38.4%	i
PPB	1	●	97.3%	i
VDss	0.21	▲	47.61%	i

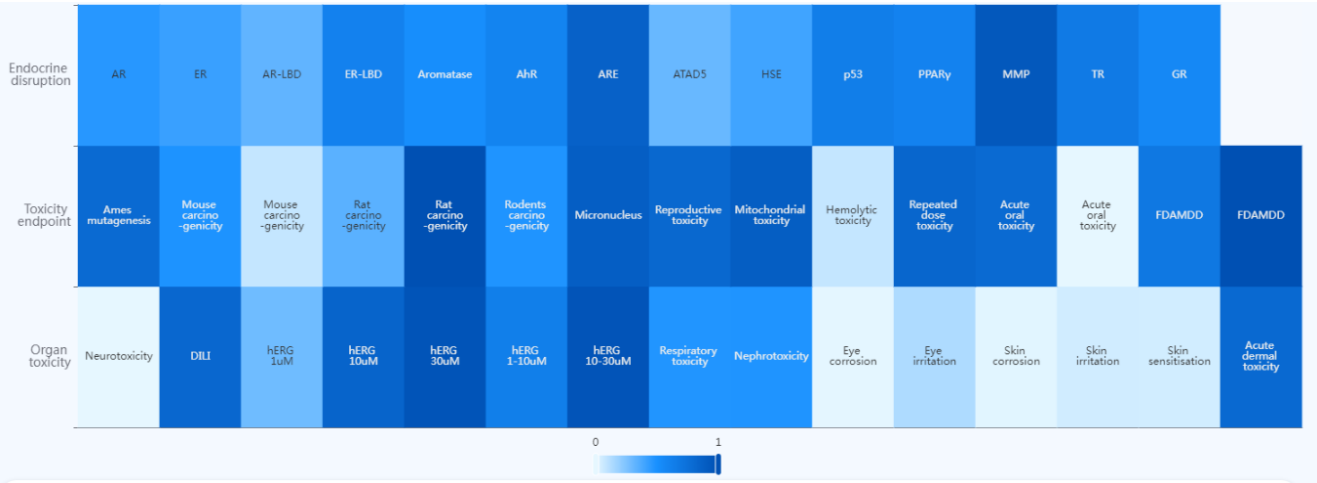
HLM	1	●	81.59%	i
RLM	1	●	91.2%	i
UGT substrate	0	●	28.39%	i

Excretion				
CLp	1	●	56.59%	i
CLr	1	●	52.8%	i
T1/2	-1.26	▲	32.72%	i
MRT	-1.18	▲	34.68%	i

Legend:

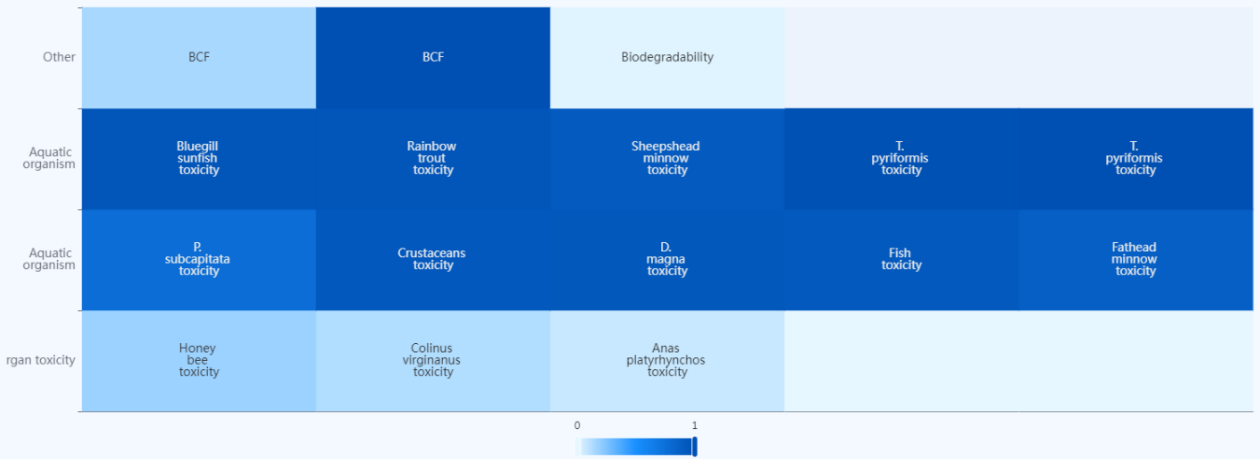
Classification	Regression
● Probability [0, 0.3]	▲ Low Value
● Probability (0.3, 0.7)	▲ Medium Value
● Probability [0.7, 1]	▲ High Value

Gradient bands visually represent the distribution/probability.



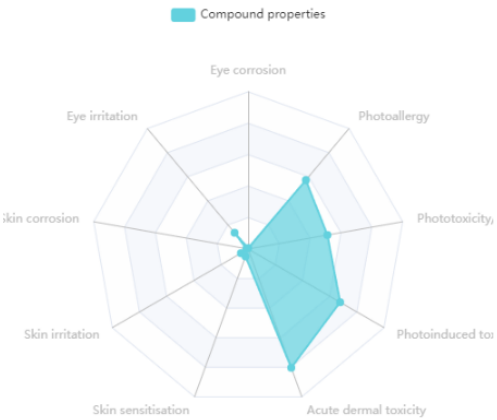
Human Health Toxicity

Organ toxicity					Toxicity endpoint				
Neurotoxicity	-2.77	▲	32.43%	ⓘ	Ames mutagenesis	1	●	79.9%	ⓘ
DILI	1	●	81.69%	ⓘ	Mouse carcinogenicity	0	●	48.7%	ⓘ
hERG 1uM	0	●	28.8%	ⓘ	Mouse carcinogenicity	0.08	▲	36.41%	ⓘ
hERG 10uM	1	●	84.4%	ⓘ	Rat carcinogenicity	0	●	33.9%	ⓘ
hERG 30uM	1	●	96.9%	ⓘ	Rat carcinogenicity	1.1	▲	40.47%	ⓘ
hERG 1-10uM	1	●	63.6%	ⓘ	Rodents carcinogenicity	0	●	48.3%	ⓘ
hERG 10-30uM	1	●	96.5%	ⓘ	Micronucleus	1	●	89%	ⓘ
Respiratory toxicity	0	●	47.7%	ⓘ	Reproductive toxicity	1	●	81.39%	ⓘ
Nephrotoxicity	0	●	48.3%	ⓘ	Mitochondrial toxicity	1	●	89.4%	ⓘ
Eye corrosion	0	●	0.6%	ⓘ	Hemolytic toxicity	0	●	8.2%	ⓘ
Eye irritation	0	●	13.5%	ⓘ	Repeated dose toxicity	1	●	82.6%	ⓘ
Skin corrosion	0	●	1.2%	ⓘ	Acute oral toxicity	1	●	79.5%	ⓘ
Skin irritation	0	●	5.3%	ⓘ	Acute oral toxicity	-2.86	▲	36.86%	ⓘ
Skin sensitisation	0	●	5%	ⓘ	FDAMDD	1	●	68.89%	ⓘ
Acute dermal toxicity	1	●	80.3%	ⓘ	FDAMDD	2.22	▲	42.2%	ⓘ



Ecological Risk Assessment

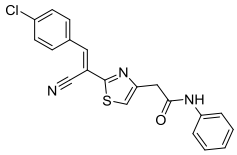
Aquatic organism					Terrestrial organism				
P. subcapitata toxicity	1	●	77.7%	ⓘ	Honey bee toxicity	0	●	18%	ⓘ
Crustaceans toxicity	1	●	93.7%	ⓘ	Colinus virginanus toxicity	0	●	12.8%	ⓘ
D. magna toxicity	1	●	93.9%	ⓘ	Anas platyrhynchos toxicity	0	●	7.5%	ⓘ
Fish toxicity	1	●	93.3%	ⓘ	**Other**				
Fathead minnow toxicity	1	●	88%	ⓘ	BCF	0	●	14.9%	ⓘ
Bluegill sunfish toxicity	1	●	95.2%	ⓘ	BCF	1.97	▲	47.24%	ⓘ
Rainbow trout toxicity	1	●	95.3%	ⓘ	Biodegradability	0	●	1.6%	ⓘ
Sheepshead minnow toxicity	1	●	92.2%	ⓘ					
T. pyriformis toxicity	1	●	99.5%	ⓘ					
T. pyriformis toxicity	2.03	▲	87.46%	ⓘ					



Cosmetic Risk Assessment				
Eye corrosion	0	●	0.6%	ⓘ
Eye irritation	0	●	13.5%	ⓘ
Skin corrosion	0	●	1.2%	ⓘ
Skin irritation	0	●	5.3%	ⓘ
Skin sensitisation	0	●	5%	ⓘ
Acute dermal toxicity	1	●	80.3%	ⓘ
Photoinduced toxicity	1	●	67.7%	ⓘ
Phototoxicity	1	●	51.3%	ⓘ
Photoallergy	1	●	57.19%	ⓘ

Rat acute toxicity predicted by GUSAR for compounds 14, 19, 21

IP - Intraperitoneal route of administration
IV - Intravenous route of administration
Oral - Oral route of administration
SC - Subcutaneous route of administration
in AD - compound falls in applicability domain of models
out of AD - compound is out of applicability domain of models



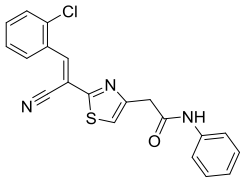
(*E*)-2-(2-(2-(4-chlorophenyl)-1-cyanovinyl)thiazol-4-yl)-N-phenylacetamide 14a

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,245 in AD	-0,317 in AD	0,867 in AD	0,687 out of AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
668,100 in AD	183,200 in AD	2799,000 in AD	1849,000 out of AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 5 in AD	Class 5 out of AD



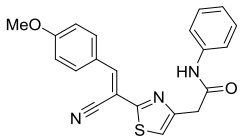
(*E*)-2-(2-(2-(2-chlorophenyl)-1-cyanovinyl)thiazol-4-yl)-N-phenylacetamide 14b

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,294 in AD	-0,465 in AD	0,899 in AD	0,766 in AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
747,200 in AD	130,100 in AD	3009,000 in AD	2218,000 in AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 5 in AD	Class 5 in AD



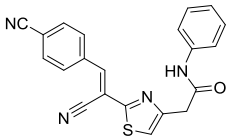
(*E*)-2-(2-(1-cyano-2-(4-methoxyphenyl)vinyl)thiazol-4-yl)-N-phenylacetamide 14c

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,312 in AD	-0,458 in AD	0,763 in AD	0,761 in AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
770,100 in AD	130,600 in AD	2174,000 in AD	2166,000 in AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 5 in AD	Class 5 in AD



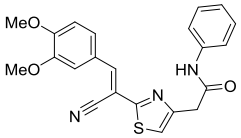
(*E*)-2-(2-(1-cyano-2-(4-cyanophenyl)vinyl)thiazol-4-yl)-N-phenylacetamide 14d

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,312 in AD	-0,410 in AD	0,029 out of AD	0,633 out of AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
759,700 in AD	144,200 in AD	396,300 out of AD	1592,000 out of AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 4 out of AD	Class 5 out of AD



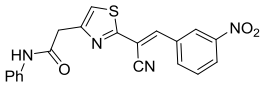
(*E*)-2-(2-(1-cyano-2-(3,4-dimethoxyphenyl)vinyl)thiazol-4-yl)-N-phenylacetamide 14e

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,365 in AD	-0,687 in AD	0,742 in AD	0,697 in AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
939,400 in AD	83,340 in AD	2240,000 in AD	2019,000 in AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 5 in AD	Class 5 in AD



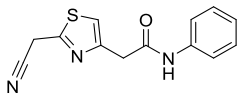
(*E*)-2-(2-(1-cyano-2-(3-nitrophenyl)vinyl)thiazol-4-yl)-N-phenylacetamide 14f

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,228 in AD	-0,557 in AD	0,548 in AD	0,562 in AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
659,400 in AD	108,200 in AD	1379,000 in AD	1426,000 in AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 4 in AD	Class 5 in AD



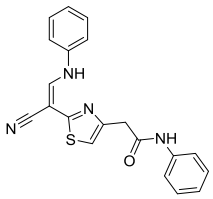
2-(2-(Cyanomethyl)thiazol-4-yl)-N-phenylacetamide 19

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,225 in AD	0,012 in AD	0,736 in AD	0,931 out of AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
432,100 in AD	264,200 in AD	1400,000 in AD	2194,000 out of AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 4 in AD	Class 4 in AD	Class 4 in AD	Class 5 out of AD



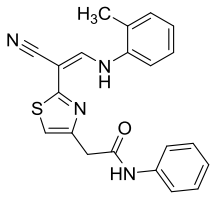
(*Z*)-2-(2-(1-cyano-2-(phenylamino)vinyl)thiazol-4-yl)-N-phenylacetamide 21a

Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,400 in AD	-0,359 in AD	0,928 in AD	0,824 out of AD

Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
905,200 in AD	157,600 in AD	3055,000 in AD	2405,000 out of AD

Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 5 in AD	Class 5 out of AD



(*Z*)-2-(2-(1-cyano-2-(o-tolylamino)vinyl)thiazol-4-yl)-N-phenylacetamide 21b

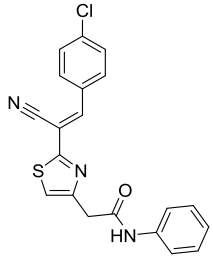
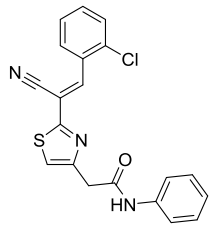
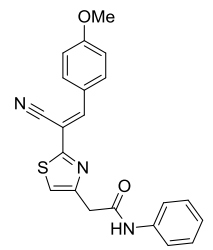
Rat IP LD50 Log10(mmol/kg)	Rat IV LD50 log10(mmol/kg)	Rat Oral LD50 log10(mmol/kg)	Rat SC LD50 log10(mmol/kg)
0,324 in AD	-0,480 in AD	0,501 in AD	0,674 in AD

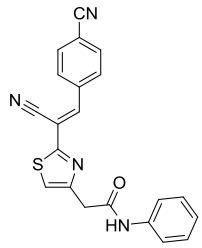
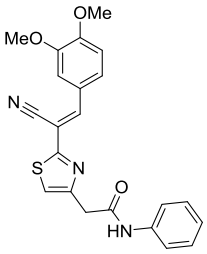
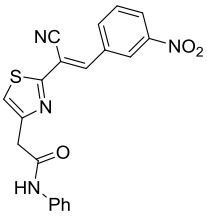
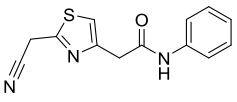
Rat IP LD50 (mg/kg)	Rat IV LD50 (mg/kg)	Rat Oral LD50 (mg/kg)	Rat SC LD50 (mg/kg)
790,300 in AD	124,100 in AD	1187,000 in AD	1766,000 in AD

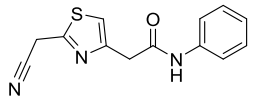
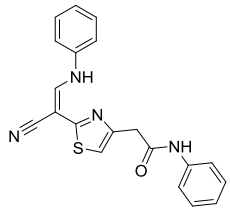
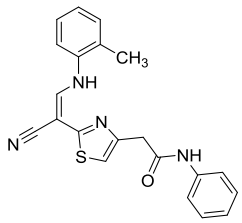
Acute Rodent Toxicity Classification of Chemicals by OECD Project

Rat IP LD50 Classification	Rat IV LD50 Classification	Rat Oral LD50 Classification	Rat SC LD50 Classification
Class 5 in AD	Class 4 in AD	Class 4 in AD	Class 5 in AD

Table S8. Protein-ligand interaction prediction results for compounds 14a-f, 19, 21a,b using the GalaxyWeb Sagittarius molecular docking protocol

Compound		Protein PDB ID	Protein UniProt ID	Predock score	Docking score, ΔG_{bind}, kcal\mol	Final score
14a 	1	2xir_A	P35968	0.197	-25.336	0.387
	2	4twp_A	P00519	0.218	-22.085	0.384
	3	4xv9_A	P15056	0.143	-26.272	0.340
	4	1w82_A	Q16539	0.166	-22.909	0.338
	5	4uj1_A	P17612	0.173	-20.958	0.330
	6	5nhh_A	P28482	0.171	-20.871	0.327
	7	6vre_A	Q99683	0.150	-21.679	0.312
	8	6fnh_C	P29317	0.161	-20.055	0.311
	9	Q15131_F1_d1	Q15131	0.162	-19.563	0.309
	10	4wb7_A	P25685	0.122	-24.882	0.309
	11	5grn_A	P16234	0.122	-23.806	0.300
	12	6mom_A	Q9NWZ3	0.134	-22.114	0.300
	13	2w5b_A	P51955	0.120	-23.714	0.298
	14	4gj3_A	P29597	0.139	-20.808	0.295
	15	6vng_A	O60674	0.133	-21.563	0.295
	16	2gdo_A	O14757	0.125	-22.704	0.295
	17	4tuh_E	Q07817	0.113	-24.221	0.295
	18	4rio_A	P52333	0.130	-21.607	0.292
	19	1s9i_A,B	P36507, P36507	0.060	-30.566	0.289
	20	4trz_B	P56817	0.105	-24.143	0.286
	21	7q7c_A	O94768	0.110	-23.160	0.283
	22	P42681_F1_d1	P42681	0.116	-21.966	0.281
	23	4zp5_B	O95819	0.126	-20.498	0.280
	24	6cz2_A	Q13882	0.126	-20.518	0.280
	25	5fbo_A	Q06187	0.115	-21.989	0.280
14b 	1	4twp_A	P00519	0.218	-21.894	0.382
	2	2xir_A	P35968	0.197	-24.448	0.380
	3	1w82_A	Q16539	0.166	-22.292	0.333
	4	5nhh_A	P28482	0.171	-21.097	0.329
	5	4uj1_A	P17612	0.173	-20.797	0.329
	6	4xv9_A	P15056	0.143	-23.630	0.321
	7	6vre_A	Q99683	0.150	-22.417	0.318
	8	Q15131_F1_d1	Q15131	0.162	-20.011	0.312
	9	6fnh_C	P29317	0.161	-19.906	0.310
	10	6mom_A	Q9NWZ3	0.134	-23.219	0.308
	11	4wb7_A	P25685	0.122	-24.338	0.305
	12	2w5b_A	P51955	0.120	-24.401	0.303
	13	5grn_A	P16234	0.122	-23.837	0.300
	14	4fl1_A	P43405	0.120	-23.846	0.299
	15	2gdo_A	O14757	0.125	-22.980	0.297
	16	4gj3_A	P29597	0.139	-20.990	0.297
	17	6vng_A	O60674	0.133	-21.455	0.294
	18	1s9i_A,B	P36507, P36507	0.060	-30.911	0.292
	19	4rio_A	P52333	0.130	-21.364	0.291
	20	4trz_B	P56817	0.105	-24.254	0.287
	21	4tuh_E	Q07817	0.113	-23.034	0.286
	22	P27361_F1_d1	P27361	0.131	-20.558	0.286
	23	7q7c_A	O94768	0.110	-23.440	0.285
	24	6cz2_A	Q13882	0.126	-21.256	0.285
	25	5fbo_A	Q06187	0.115	-22.623	0.284
14c 	1	4twp_A	P00519	0.246	-22.088	0.412
	2	2xir_A	P35968	0.214	-25.159	0.403
	3	6yqz_A	O60885	0.236	-20.192	0.387
	4	3zln_A	Q07817	0.190	-24.337	0.373
	5	3owp_A	P17612	0.208	-21.658	0.371
	6	1oz1_A	Q16539	0.196	-20.608	0.350
	7	4xv9_A	P15056	0.149	-25.881	0.343
	8	2wo8_A	P39900	0.144	-26.316	0.341
	9	7lau_A	U3KQA6	0.186	-20.682	0.341
	10	5s9o_A	P25440	0.194	-19.510	0.340
	11	4kcx_B	Q58F21	0.171	-21.395	0.331
	12	2x8d_A	O14757	0.170	-20.799	0.326
	13	2pjt_B	P45452	0.135	-25.092	0.323
	14	4wb7_A	P25685	0.153	-22.668	0.323
	15	6vre_A	Q99683	0.152	-22.725	0.323
	16	5bve_A	P28482	0.156	-21.912	0.321
	17	Q15131_F1_d1	Q15131	0.165	-20.581	0.319
	18	4kfp_A,B	P43490, P43490	0.144	-23.332	0.319
	19	6ege_D	Q9NWZ3	0.145	-22.960	0.317
	20	4rio_A	P52333	0.150	-21.929	0.315
	21	6jol_A	P16234	0.123	-25.103	0.312
	22	2w5b_A	P51955	0.135	-23.484	0.311
	23	7zii_A	P17752	0.083	-30.403	0.311
	24	5uch_B	P08238	0.131	-22.460	0.300
	25	3dv3_A	Q02750	0.114	-24.638	0.299

14d 	1	4twp	P00519	0.315	-22.512	0.484
	2	4ase	P35968	0.179	-25.345	0.369
	3	1uwj	P15056,P15056	0.166	-22.590	0.336
	4	4uja	P17612,P61925	0.157	-22.909	0.329
	5	1w82	Q16539	0.170	-21.108	0.328
	6	6mom	Q9NWZ3	0.156	-22.604	0.325
	7	5v24	Q99683	0.150	-22.579	0.319
	8	5grn	P16234	0.131	-25.033	0.319
	9	6db3	P52333	0.151	-20.942	0.308
	10	5ekn	O15264	0.140	-22.115	0.306
	11	4f08	O60674,O60674	0.138	-22.388	0.306
	12	4r7i	P07333	0.124	-24.064	0.305
	13	5zz4	Q06187	0.140	-21.896	0.304
	14	4ft7	O14757	0.158	-19.383	0.304
	15	1pme	P28482	0.144	-21.133	0.303
	16	2zoq	P27361,P27361	0.144	-20.666	0.299
	17	2bkz	P20248,P24941	0.140	-20.371	0.293
	18	2onl	P49137,Q16539	0.142	-20.091	0.293
	19	1unl	Q00535	0.120	-22.863	0.291
	20	4gu6	Q05397	0.133	-21.079	0.291
	21	5uy8	P31939,P31939	0.144	-19.595	0.291
	22	3tku	Q9Y5S2	0.131	-21.274	0.291
	23	4uxl	P08922	0.145	-19.458	0.291
	24	4pqn	Q08881	0.140	-20.049	0.291
	25	4u44	O95819,O95819	0.143	-19.585	0.290
14e 	1	5ula_A	O60885	0.284	-21.578	0.446
	2	5d2b_A	P39900	0.233	-25.392	0.424
	3	3kry_B	P45452	0.183	-26.712	0.383
	4	7usi_E	P25440	0.203	-20.749	0.358
	5	1jh1_A	P22894	0.165	-25.514	0.357
	6	4kcx_B	Q58F21	0.179	-22.358	0.347
	7	8ixs_A	Q14145	0.152	-25.162	0.341
	8	3u8w_A	Q16539	0.172	-22.427	0.340
	9	3vo3_A	P35968	0.144	-25.743	0.337
	10	6uvd_A	Q07817	0.184	-20.367	0.337
	11	7lau_A	U3KQA6	0.183	-20.246	0.335
	12	7xgj_C	P08253	0.143	-25.126	0.332
	13	3skc_A	P15056	0.127	-26.303	0.325
	14	3ue4_A	P00519	0.157	-21.987	0.322
	15	2srt_A	P08254	0.150	-22.798	0.321
	16	2cgu_A	O14757	0.153	-21.834	0.317
	17	3shi_G	P03956	0.148	-20.909	0.305
	18	Q9NPA2_F1_d2	Q9NPA2	0.114	-24.934	0.301
	19	3byu_A	P06239	0.107	-25.729	0.300
	20	3eqb_A	Q02750	0.101	-26.314	0.298
	21	5vil_C,D	Q99683, Q99683	0.118	-23.884	0.298
	22	7ce4_A,B	Q9H2K2, Q9H2K2	0.108	-24.730	0.294
	23	5upe_A,B	P43490, P43490	0.113	-23.689	0.291
	24	7ahu_E	P00742	0.116	-23.229	0.291
	25	5hvs_B,C	P14174, P14174	0.129	-21.439	0.290
14f 	1	4tqb_A	P06730	0.214	-20.760	0.369
	2	4twp_A	P00519	0.159	-22.125	0.325
	3	2xir_A	P35968	0.137	-24.898	0.324
	4	5hvs_A,B	P14174, P14174	0.139	-21.224	0.298
	5	3zln_A	Q07817	0.118	-23.582	0.295
	6	4g9r_B	P15056	0.101	-24.365	0.283
	7	4lu3_A	Q9ULX7	0.099	-23.338	0.274
	8	3lqp_A	P78536	0.069	-27.282	0.273
	9	2wmb_A	P24941	0.116	-20.863	0.273
	10	4pf4_A	P53355	0.071	-26.627	0.271
	11	3bys_A	P06239	0.085	-24.458	0.268
	12	1z95_A	P10275	0.077	-25.208	0.266
	13	1s9i_A	P36507	0.064	-26.933	0.266
	14	1wbs_A	Q16539	0.089	-23.430	0.265
	15	7jxp_A,B	P00533, P00533	0.072	-25.629	0.264
	16	6qav_B	Q8IYT8	0.101	-21.661	0.263
	17	6e2o_A,B	Q99683, Q99683	0.098	-21.903	0.262
	18	8gds_A	O75116	0.077	-24.610	0.261
	19	4gu6_A	Q05397	0.105	-20.777	0.261
	20	5hia_A	P00492	0.066	-25.940	0.261
	21	8g5c_A	P53396	0.073	-24.736	0.258
	22	7lv3_A	Q13976	0.071	-25.008	0.258
	23	4lmn_A	Q02750	0.077	-24.175	0.258
	24	Q9NYL2_F1_d1	Q9NYL2	0.092	-22.025	0.258
	25	1unl_B	Q00535	0.092	-22.124	0.257
19 	1	4idv_A	Q99558	0.181	-16.872	0.307
	2	1i9p_A	P00918	0.177	-14.487	0.286
	3	4l0v_B,D	Q9H2K2, Q9H2K2	0.132	-19.469	0.278
	4	O95455_F1_d1	O95455	0.137	-18.441	0.276
	5	7s9f_A	P07900	0.144	-17.341	0.274
	6	4ury_R,S	P01112, Q07889	0.148	-16.817	0.274
	7	3pu8_A	O75151	0.062	-27.442	0.268
	8	4us0_S	Q07889	0.177	-11.652	0.264
	9	6zjz_A,B	Q9NR97, Q9NR97	0.126	-17.180	0.255
	10	3mvj_A,J	P17612, P61925	0.128	-16.638	0.253
	11	5up3_A	Q99683	0.133	-15.691	0.250

19 	12	4yy4_A	Q9H8M2	0.133	-15.648	0.250
	13	5eq1_A	P55201	0.126	-16.102	0.247
	14	4pqn_A	Q08881	0.125	-15.686	0.243
	15	2ofw_E,F	O43252, O43252	0.058	-24.642	0.243
	16	4mbl_A	P11309	0.127	-15.291	0.242
	17	4pjt_D	P09874	0.119	-16.245	0.241
	18	5p9m_A	Q06187	0.111	-17.271	0.240
	19	1s9i_A	P36507	0.095	-18.941	0.237
	20	Q14568_F1_d1	Q14568	0.111	-16.679	0.237
	21	4rio_A	P52333	0.123	-14.998	0.236
	22	7w7y_B	P00519	0.113	-16.122	0.234
	23	2i47_C	P78536	0.095	-18.519	0.234
	24	3ppk_B	P15056	0.112	-16.209	0.233
	25	6bgv_A	P29375	0.089	-19.227	0.233
21a 	1	4twp	P00519	0.327	-22.577	0.496
	2	1uwj	P15056,P15056	0.184	-22.383	0.352
	3	5tts	P52333	0.181	-22.241	0.347
	4	4f08	O60674,O60674	0.181	-21.880	0.345
	5	4qyg	O14757	0.176	-22.349	0.343
	6	4uja	P17612,P61925	0.180	-21.610	0.343
	7	5up3	Q99683	0.181	-21.423	0.342
	8	3wze	P35968	0.185	-20.556	0.339
	9	6mom	Q9NWZ3	0.172	-22.208	0.339
	10	4gj3	P29597	0.158	-21.922	0.322
	11	6qav	Q8IYT8,Q8IYT8	0.157	-21.923	0.321
	12	5gjf	O43318	0.151	-22.527	0.320
	13	4aa0	Q16539	0.161	-20.932	0.318
	14	3bys	P06239	0.140	-23.518	0.317
	15	2xyn	P42684	0.147	-22.566	0.316
	16	4pqn	Q08881	0.152	-21.278	0.312
	17	3tku	Q9Y5S2	0.147	-21.569	0.309
	18	4cxa	Q9NYV4	0.154	-20.684	0.309
	19	6cqh	Q99986	0.130	-23.795	0.309
	20	2cci	P24941,Q99741	0.144	-21.927	0.308
	21	6h0u	P49841,P49841	0.153	-20.560	0.307
	22	5uz0	P31939,P31939	0.147	-21.304	0.307
	23	4r7i	P07333	0.125	-24.262	0.307
	24	5grn	P16234	0.144	-21.511	0.305
	25	2zoq	P27361,P27361	0.150	-20.654	0.305
21b 	1	4twp	P00519	0.370	-22.639	0.539
	2	4ase	P35968	0.197	-22.052	0.362
	3	4uja	P17612,P61925	0.188	-22.818	0.359
	4	5grn	P16234	0.163	-26.113	0.359
	5	1uwj	P15056,P15056	0.179	-23.295	0.354
	6	4iad	P61925	0.157	-25.453	0.347
	7	5tts	P52333	0.163	-24.532	0.347
	8	6mom	Q9NWZ3	0.171	-23.243	0.345
	9	5vil	Q99683,Q99683	0.170	-23.102	0.343
	10	4mf0	Q08881,Q08881	0.170	-22.792	0.341
	11	2p95	P00742	0.165	-22.847	0.336
	12	2xa4	O60674	0.178	-20.881	0.335
	13	2xyn	P42684	0.155	-23.512	0.331
	14	4wnp	O75385	0.152	-23.857	0.331
	15	4z3v	Q06187	0.157	-23.143	0.331
	16	3d7u	P41240	0.154	-23.207	0.328
	17	2brh	O14757	0.173	-20.438	0.327
	18	5h2u	Q13882	0.145	-23.750	0.323
	19	3zlw	Q02750	0.140	-24.349	0.323
	20	6qav	Q8IYT8,Q8IYT8	0.150	-23.023	0.323
	21	3tku	Q9Y5S2	0.160	-21.680	0.323
	22	4uxl	P08922	0.164	-21.056	0.322
	23	4idv	Q99558	0.123	-26.146	0.319
	24	4fue	P00749	0.147	-22.928	0.319
	25	4gj3	P29597	0.148	-22.754	0.319