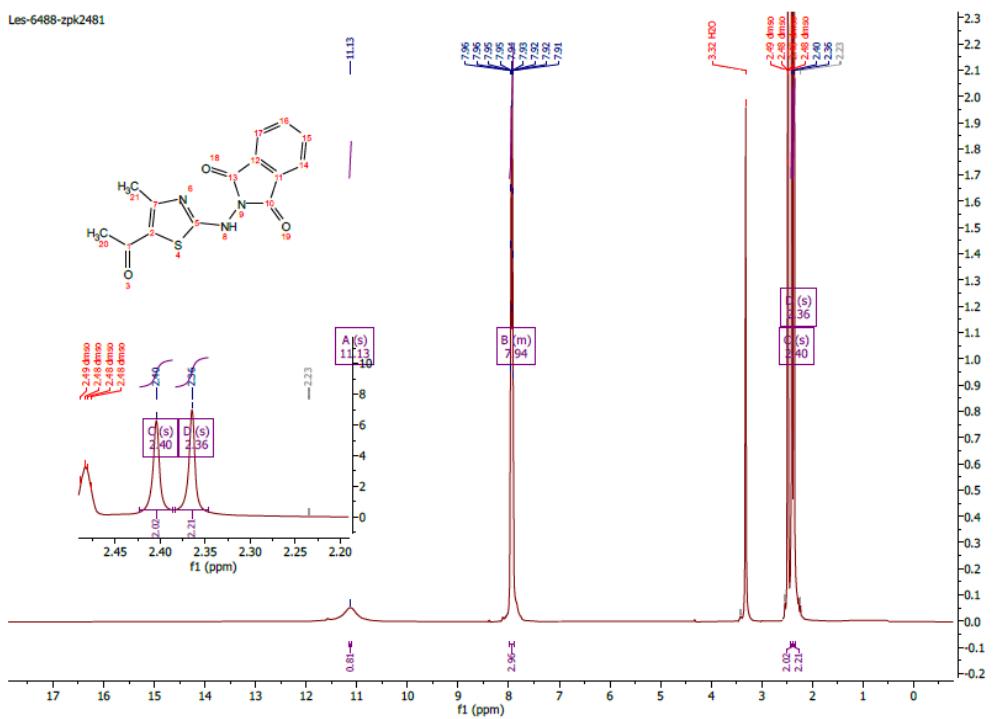
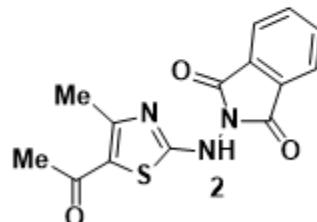
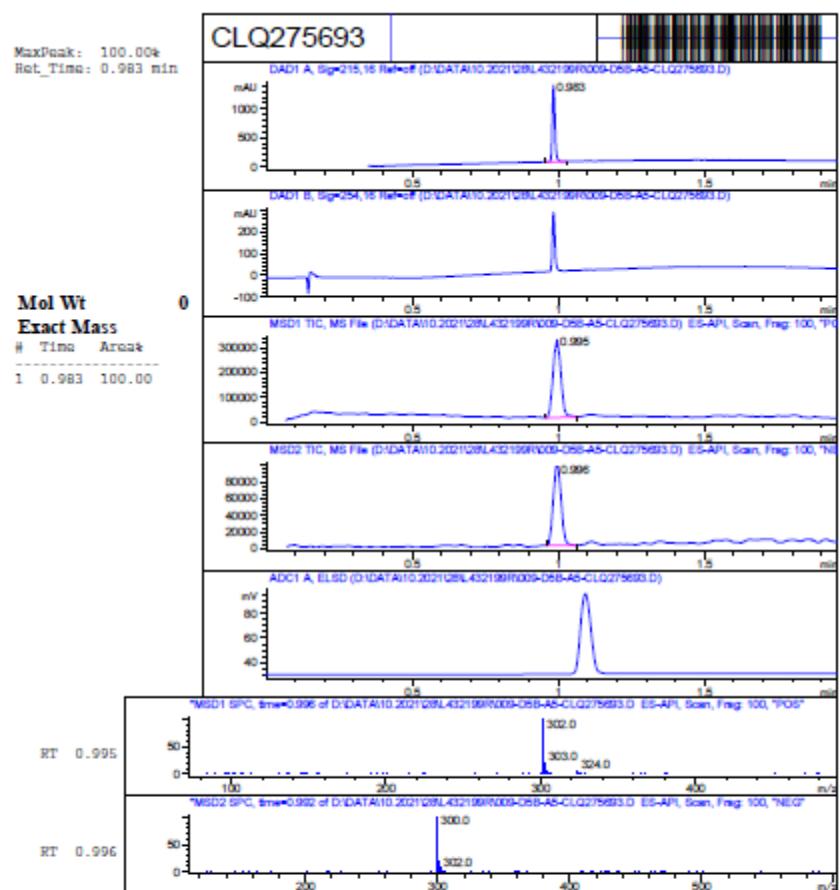


## **Supplementary information**

### **Table of Contents**

Copies of  $^1\text{H}$ ,  $^{13}\text{C}$  NMR and LC-MS of isoindole-thiazole derivatives Fig. S1-S6  
NCI protocols for compound 3 Fig.S7-S8, Table S1





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Figure S3. LCMS spectrum of compound **2**.

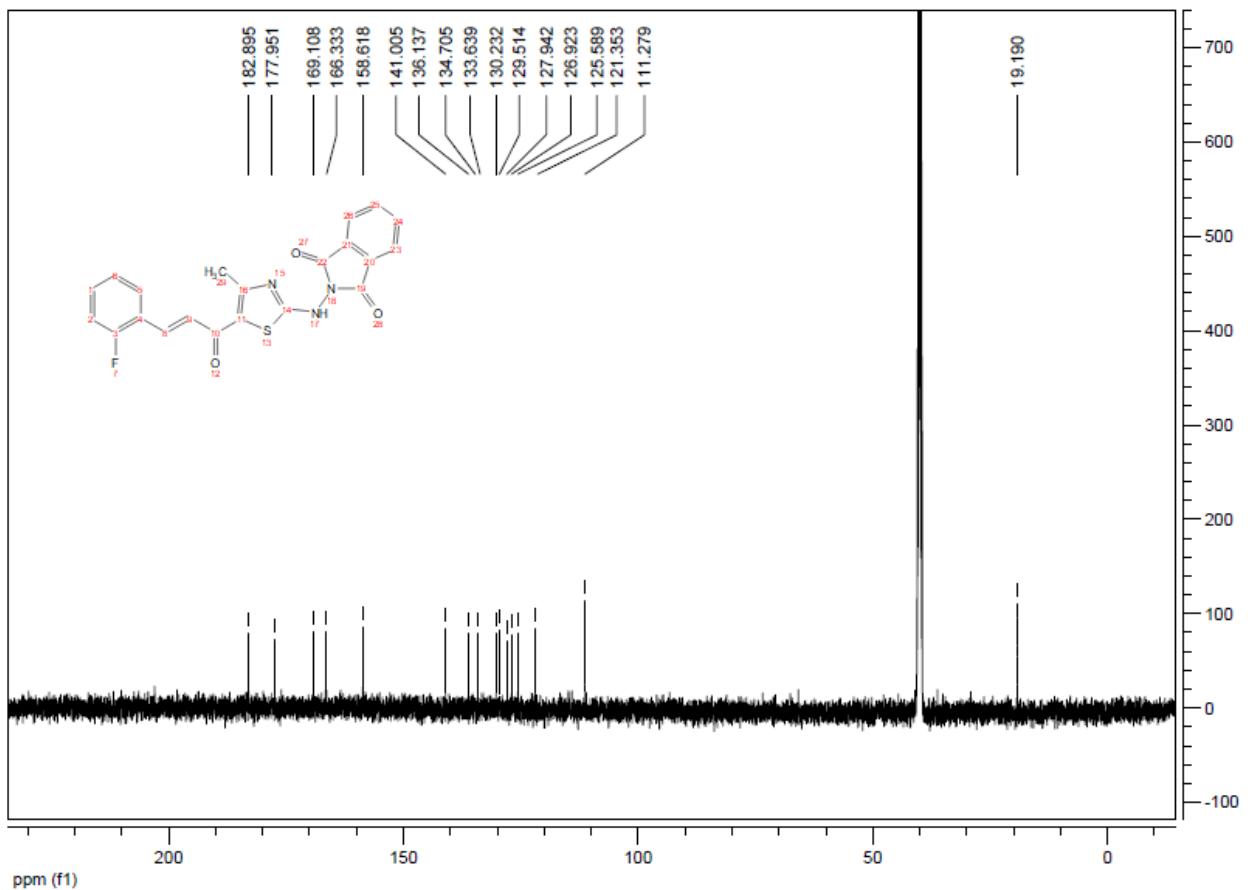
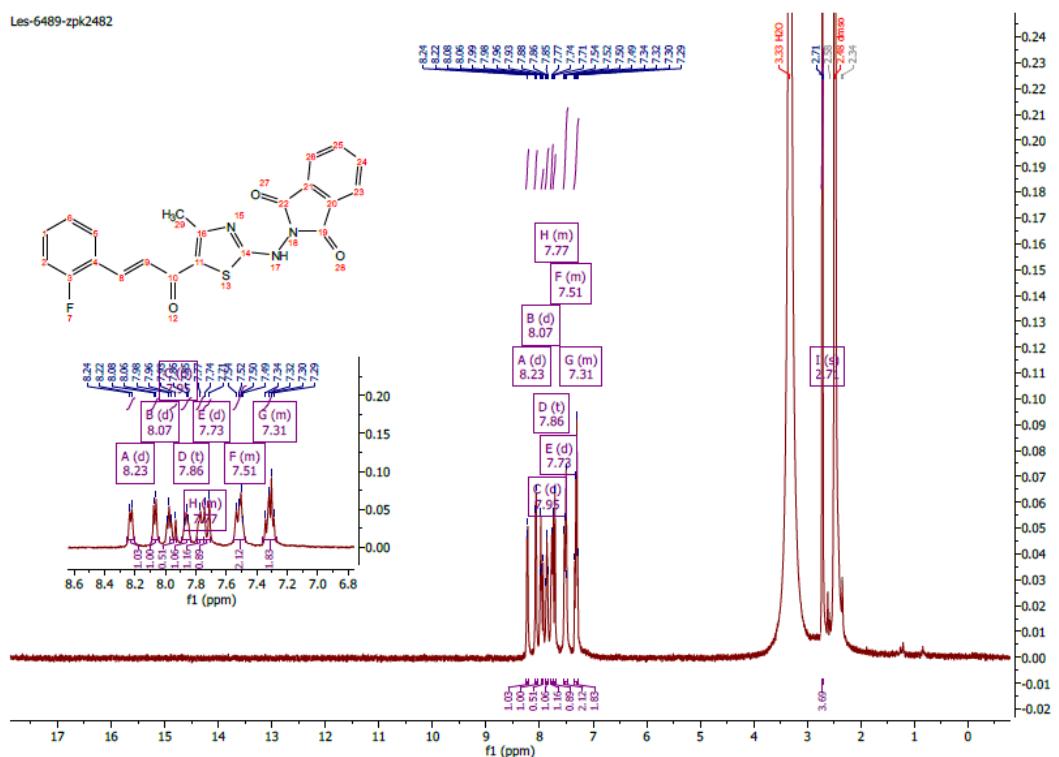
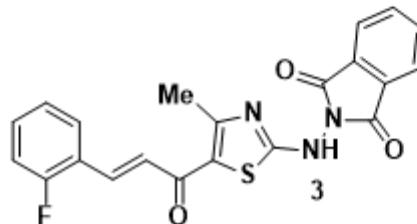
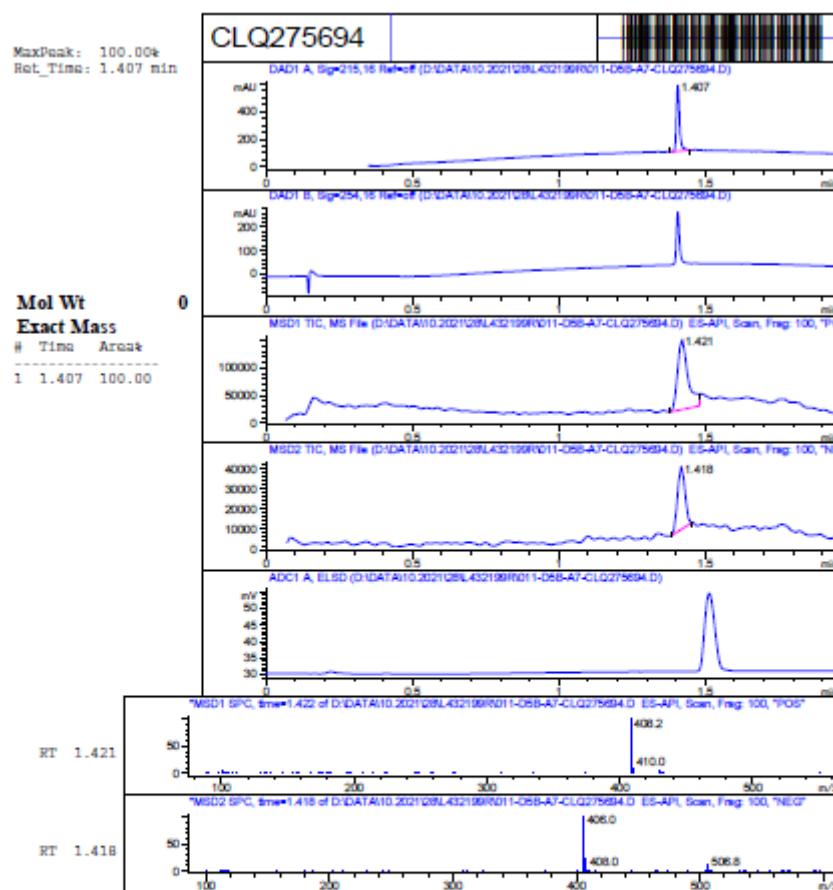


Figure S5.  $^{13}\text{C}$  NMR spectrum of compound 3 (DMSO- $d_6$ ).



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Figure S6. LCMS spectrum of compound 3.

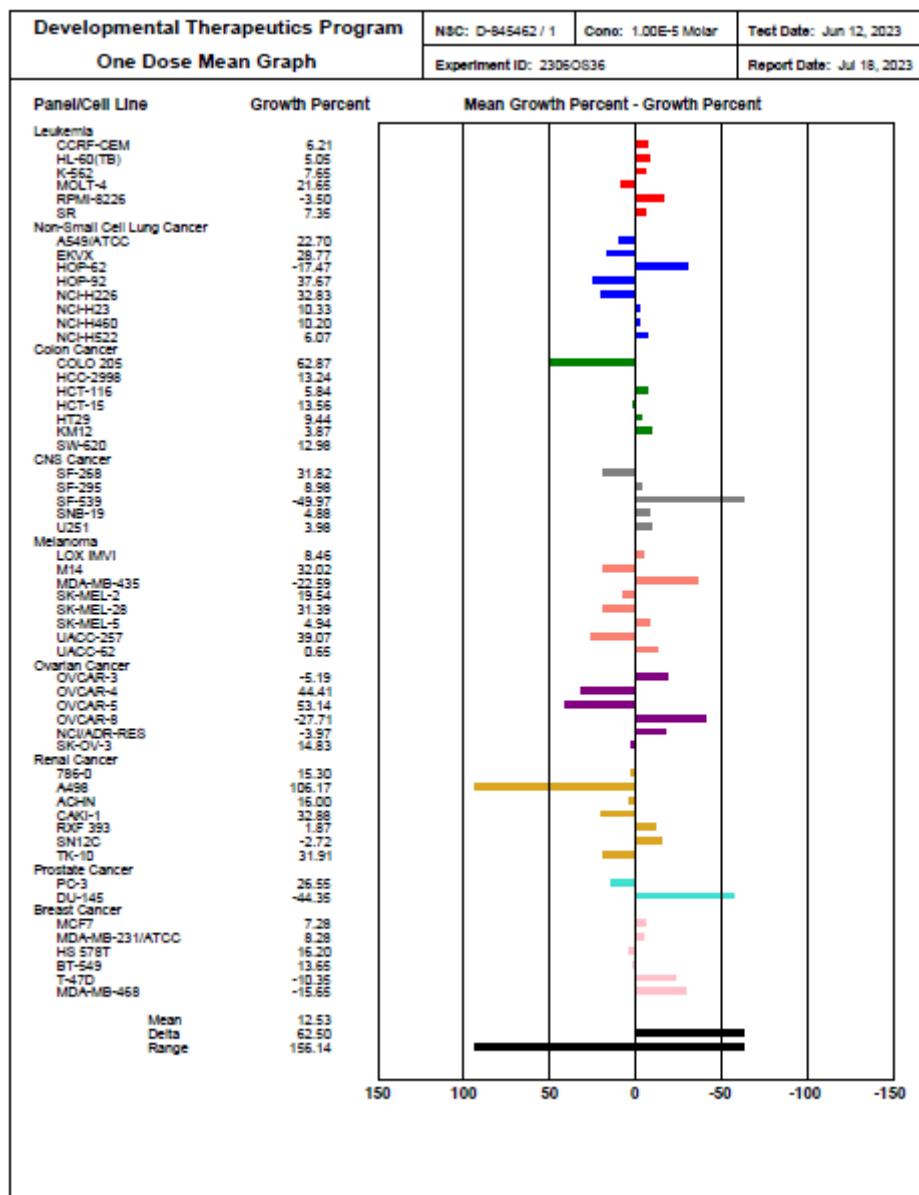


Figure S7. NCI-60 cell lines screening protocol in concentration 10  $\mu\text{M}$  for compound 3.

National Cancer Institute Developmental Therapeutics Program In-Vitro Testing Results																		
NSC : D - 845462 / 1				Experiment ID : 2310N890					Test Type : 08			Units : Molar						
Report Date : November 22, 2023				Test Date : October 10, 2023					QNS :			MC :						
COMI : Les-6489				Stain Reagent : SRB Dual-Pass Related					SS/PL : 0PZ0									
Log10 Concentration																		
Panel/Cell Line	Time	Zero	Ctrl	Mean Optical Densities				Percent Growth				G50	TGI	LC50				
				-8.0	-7.0	-6.0	-5.0	-4.0	-3.0	-2.0	-1.0							
Leukemia																		
CCRF-CEM	0.316	1.697	1.727	1.645	1.684	1.122	0.279	102	96	99	58	-12	1.32E-5	6.78E-5	> 1.00E-4			
HL-60(TB)	0.474	2.093	1.988	1.970	1.688	1.684	0.431	94	92	96	75	-4	1.27E-5	7.77E-5	> 1.00E-4			
K-562	0.135	1.101	1.125	1.042	0.921	0.141	101	103	94	81	1	2.44E-5	> 1.00E-4	1.00E-4				
MOLT-4	0.532	2.529	2.525	2.525	2.386	2.028	0.512	100	100	93	75	-4	2.07E-5	8.98E-5	> 1.00E-4			
RPMI-3225	0.601	2.586	2.650	2.631	2.524	2.023	0.785	104	103	96	68	-5	1.79E-5	8.69E-5	> 1.00E-4			
SR	0.510	2.141	2.096	2.082	2.039	1.875	0.490	97	96	93	84	-4	2.42E-5	9.00E-5	> 1.00E-4			
Non-Small Cell Lung Cancer																		
A549(ATCC)	0.316	1.710	1.625	1.709	1.689	1.328	0.205	94	100	98	73	-28	1.57E-5	5.21E-5	> 1.00E-4			
EKVX	0.746	2.078	1.934	2.050	1.980	1.601	0.310	89	96	93	81	-59	1.88E-5	3.62E-5	0.69E-5			
HOP-92	0.472	1.744	1.583	1.645	1.621	0.599	0.643	87	92	90	10	13	3.18E-5	> 1.00E-4	1.00E-4			
HOP-92	1.030	1.851	1.745	1.787	1.749	1.675	0.613	87	82	86	79	-21	1.93E-5	6.14E-5	> 1.00E-4			
NCI-H226	1.191	2.479	2.436	2.485	2.412	2.162	1.324	97	98	98	75	10	2.48E-5	> 1.00E-4	1.00E-4			
NCI-H227	0.671	2.302	2.242	2.330	2.237	1.877	0.458	98	102	96	74	-32	1.68E-5	5.00E-5	> 1.00E-4			
NCI-H322M	0.638	2.287	2.090	2.147	2.133	1.715	0.160	88	90	89	61	-41	1.19E-5	2.69E-5	0.64E-5			
NCI-H446	0.323	1.803	1.877	1.871	1.709	0.698	0.169	105	105	94	39	-48	6.25E-5	2.81E-5	> 1.00E-4			
NCI-H522	0.964	2.607	2.405	2.495	2.383	2.241	0.425	88	93	98	78	-56	1.61E-5	3.62E-5	0.94E-5			
Colon Cancer																		
COLO 205	0.530	2.311	2.341	2.285	2.150	0.075	0.616	102	97	91	56	5	1.70E-5	3.38E-5	6.39E-5			
HCC-2988	1.164	3.310	3.273	3.319	3.330	3.196	0.176	98	100	101	95	-46	1.77E-5	3.38E-5	> 1.00E-4			
HCT-115	0.194	2.282	2.035	2.057	2.157	1.533	0.166	88	93	94	54	4	1.61E-5	8.70E-5	> 1.00E-4			
HT-29	0.361	2.444	2.318	2.381	2.251	1.483	0.188	94	97	91	54	-48	1.09E-5	3.38E-5	> 1.00E-4			
HT29	0.203	1.124	1.048	1.181	1.090	0.934	0.107	92	106	98	79	-47	1.70E-5	4.23E-5	> 1.00E-4			
KM12	0.682	2.374	1.901	2.384	2.084	1.786	0.225	72	101	92	68	-56	1.31E-5	3.15E-5	7.55E-5			
SW-620	0.309	1.388	1.409	1.409	1.268	1.195	0.160	101	101	98	81	-48	1.74E-5	4.24E-5	> 1.00E-4			
CNS Cancer																		
SF-295	0.932	2.410	2.304	2.253	2.132	1.697	0.601	93	88	81	52	-36	1.05E-5	3.91E-5	> 1.00E-4			
SF-295	1.028	2.965	2.574	2.869	2.821	2.781	0.505	85	95	93	90	-48	1.96E-5	4.50E-5	> 1.00E-4			
SF-295	0.944	2.578	2.415	2.580	2.571	2.325	0.527	90	100	100	54	-44	1.88E-5	4.53E-5	> 1.00E-4			
SN8-19	0.787	2.179	2.038	2.145	2.031	1.883	0.333	90	98	98	79	-58	1.62E-5	3.78E-5	8.78E-5			
SN8-75	1.093	1.928	1.812	1.835	1.810	1.598	0.486	87	89	88	82	-54	1.26E-5	3.41E-5	9.19E-5			
U251	0.232	1.288	1.196	1.242	1.179	0.844	0.130	94	98	92	60	-44	1.24E-5	3.75E-5	> 1.00E-4			
Melanoma																		
LOX IMVI	0.426	2.219	2.173	2.211	2.102	1.627	0.315	97	100	94	57	-26	1.52E-5	5.28E-5	> 1.00E-4			
MALME-3M	0.690	1.375	1.338	1.388	1.305	1.119	0.471	94	98	90	65	-33	1.41E-5	4.61E-5	> 1.00E-4			
M14	0.408	1.684	1.686	1.664	1.592	1.246	0.417	100	98	93	65	1	1.74E-5	> 1.00E-4	1.00E-4			
MDA-MB-468	0.636	2.372	2.286	2.387	2.185	1.921	0.487	94	98	99	75	-23	1.78E-5	5.77E-5	> 1.00E-4			
SK-MEL-2	1.172	2.341	2.294	2.342	2.235	1.902	0.543	95	100	91	62	-45	1.30E-5	3.80E-5	> 1.00E-4			
SK-MEL-28	0.693	2.038	1.934	2.034	1.982	1.819	0.408	92	100	94	54	-41	1.06E-5	4.69E-5	> 1.00E-4			
SK-MEL-5	1.062	3.126	2.882	2.911	3.000	2.249	0.441	88	90	94	57	-59	1.15E-5	3.13E-5	8.44E-5			
UACC-257	1.151	2.723	2.619	2.652	2.530	2.300	0.697	93	95	91	73	-22	1.75E-5	5.88E-5	> 1.00E-4			
UACC-257	0.704	2.301	2.184	2.121	2.090	1.970	0.347	93	89	87	79	-51	1.68E-5	4.07E-5	9.87E-5			
Ovarian Cancer																		
IGROV1	0.591	1.980	1.949	2.054	1.983	1.620	0.257	99	107	100	75	-57	1.58E-5	3.72E-5	8.91E-5			
OV-3	0.586	2.124	2.047	2.191	2.048	1.891	0.316	94	105	98	65	-53	1.54E-5	3.22E-5	7.01E-5			
OVCA-4	0.794	2.116	2.059	2.101	1.126	1.940	0.571	94	98	94	81	-49	1.91E-5	5.91E-5	> 1.00E-4			
OVCA-5	0.643	1.426	1.390	1.393	1.380	1.457	0.207	96	98	94	74	-20	2.07E-5	4.04E-5	7.88E-5			
OVCA-5	0.495	2.208	2.183	2.185	2.110	1.796	0.444	99	99	94	76	-10	2.00E-5	7.50E-5	> 1.00E-4			
NCI-AADR-RES	0.372	1.288	1.257	1.287	1.230	0.977	0.363	97	97	94	68	-2	1.73E-5	9.22E-5	> 1.00E-4			
SK-OV-3	0.624	1.653	1.615	1.675	1.580	0.724	0.030	95	102	93	10	20	3.28E-5	> 1.00E-4	1.00E-4			
Renal Cell Carcinoma																		
786-O	0.440	2.297	2.224	2.247	2.220	1.857	0.598	98	97	98	60	8	1.57E-5	> 1.00E-4	1.00E-4			
A498	1.307	2.086	2.010	2.041	2.048	2.094	0.651	90	94	98	101	-50	2.17E-5	4.68E-5	9.97E-5			
ACHN	0.425	1.779	1.721	1.780	1.796	1.493	0.105	98	100	101	79	-75	1.54E-5	3.28E-5	6.86E-5			
CAK-1	0.492	1.808	1.688	1.734	1.685	1.205	0.280	92	95	99	55	-39	1.13E-5	3.63E-5	> 1.00E-4			
RK-172	1.023	2.303	2.180	2.085	2.084	1.440	0.284	97	95	95	60	-45	1.26E-5	3.77E-5	1.02E-4			
SN-120	0.552	1.981	1.872	1.907	2.167	1.730	1.045	94	96	98	65	-15	1.58E-5	6.42E-5	> 1.00E-4			
TK-10	0.990	2.211	2.043	2.075	2.082	2.166	0.066	88	98	98	93	-23	1.75E-5	3.22E-5	5.91E-5			
UD-31	0.704	2.042	1.941	1.889	1.867	1.801	0.346	92	98	97	69	-51	1.45E-5	3.77E-5	9.84E-5			
Prostate Cancer																		
PC-3	0.414	1.701	1.699	1.688	1.685	1.329	0.398	100	99	97	71	-4	1.91E-5	8.88E-5	> 1.00E-4			
DU-145	0.339	1.213	1.205	1.218	1.205	0.970	0.054	99	101	99	72	-54	1.39E-5	2.89E-5</				

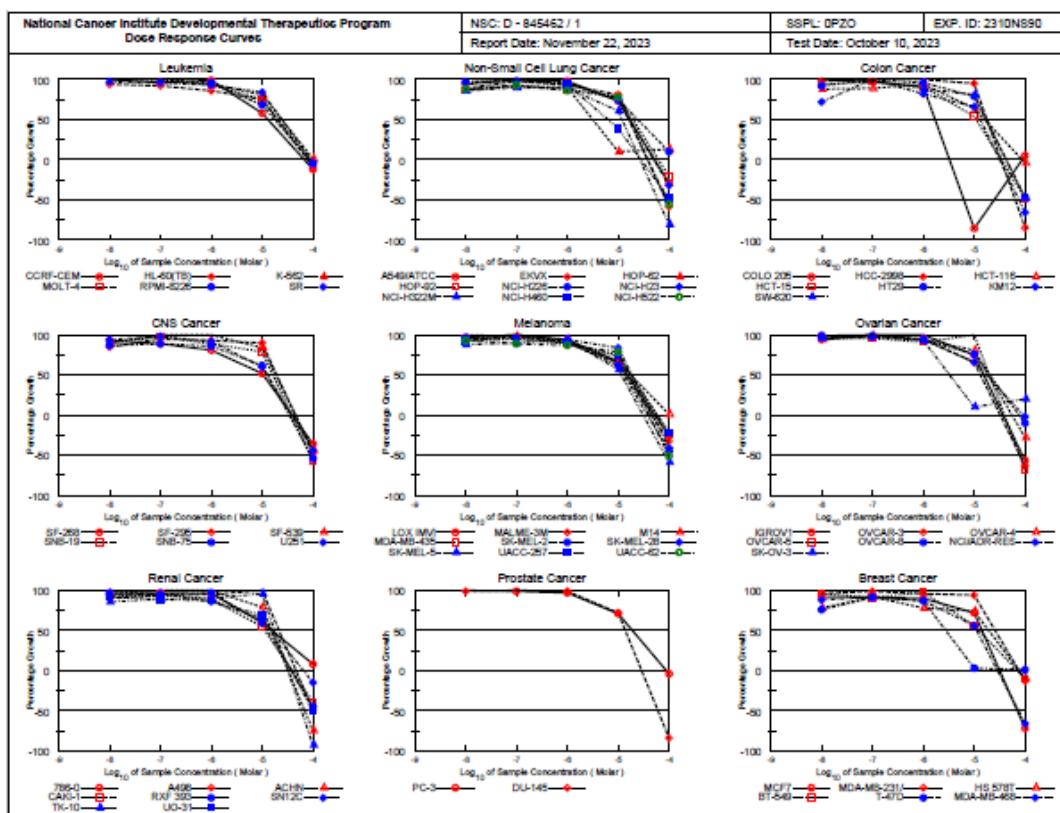


Figure S8b. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

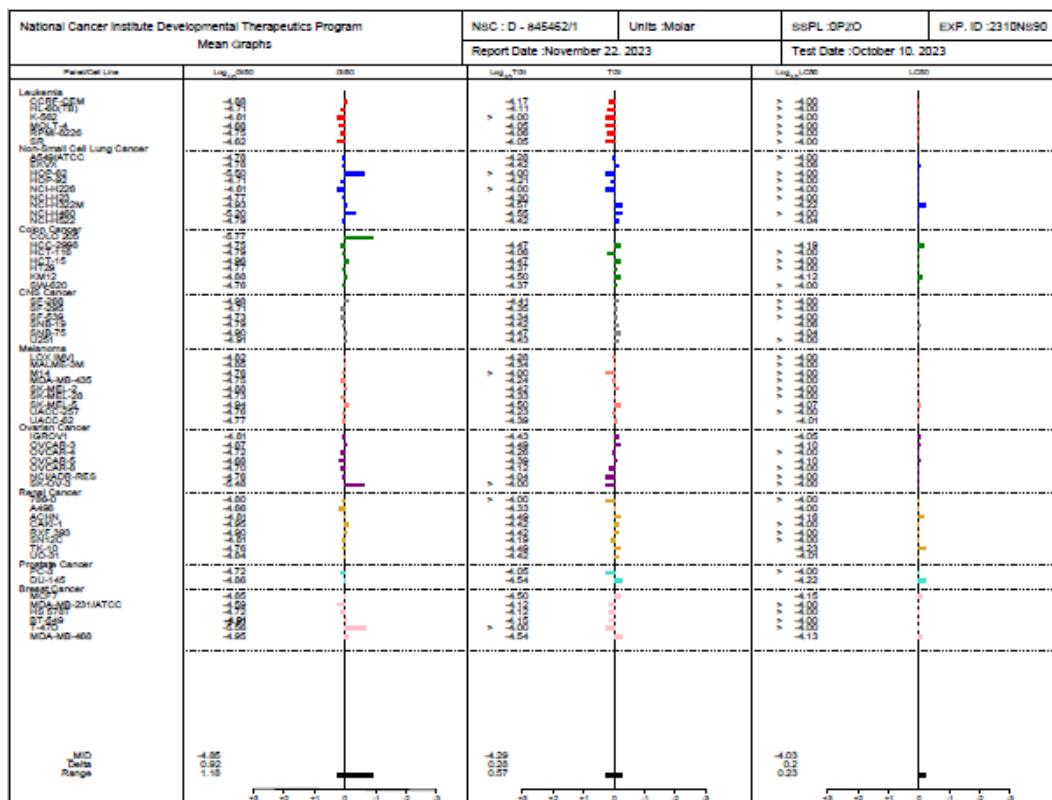


Figure S8c. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

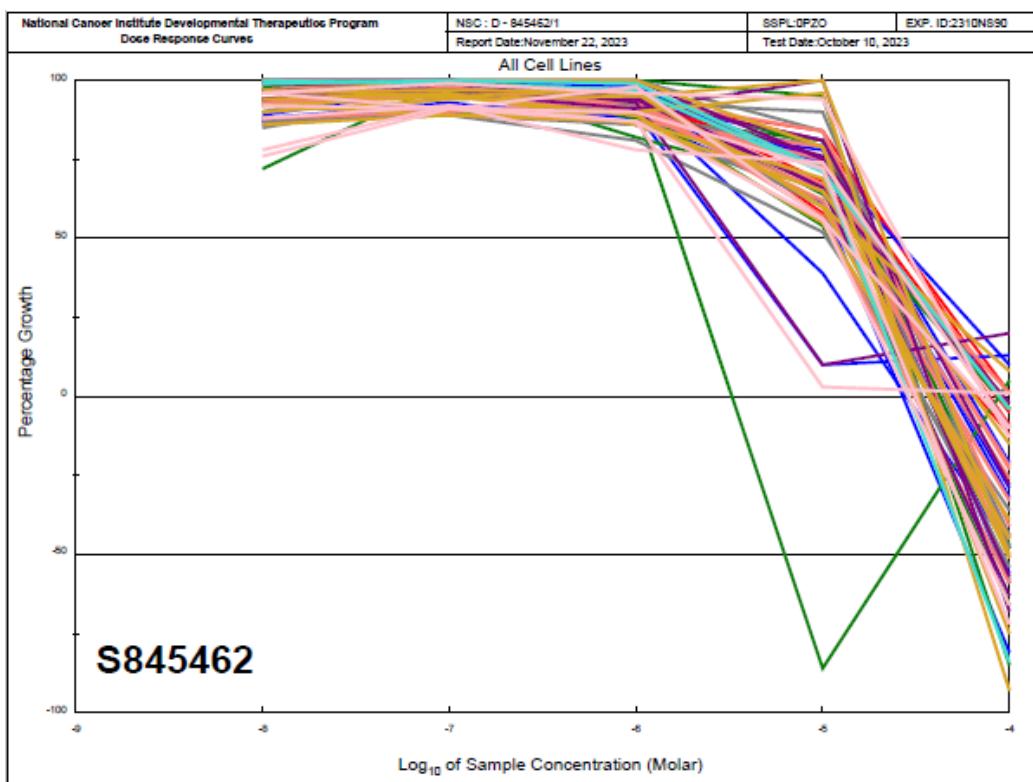


Figure S8d. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

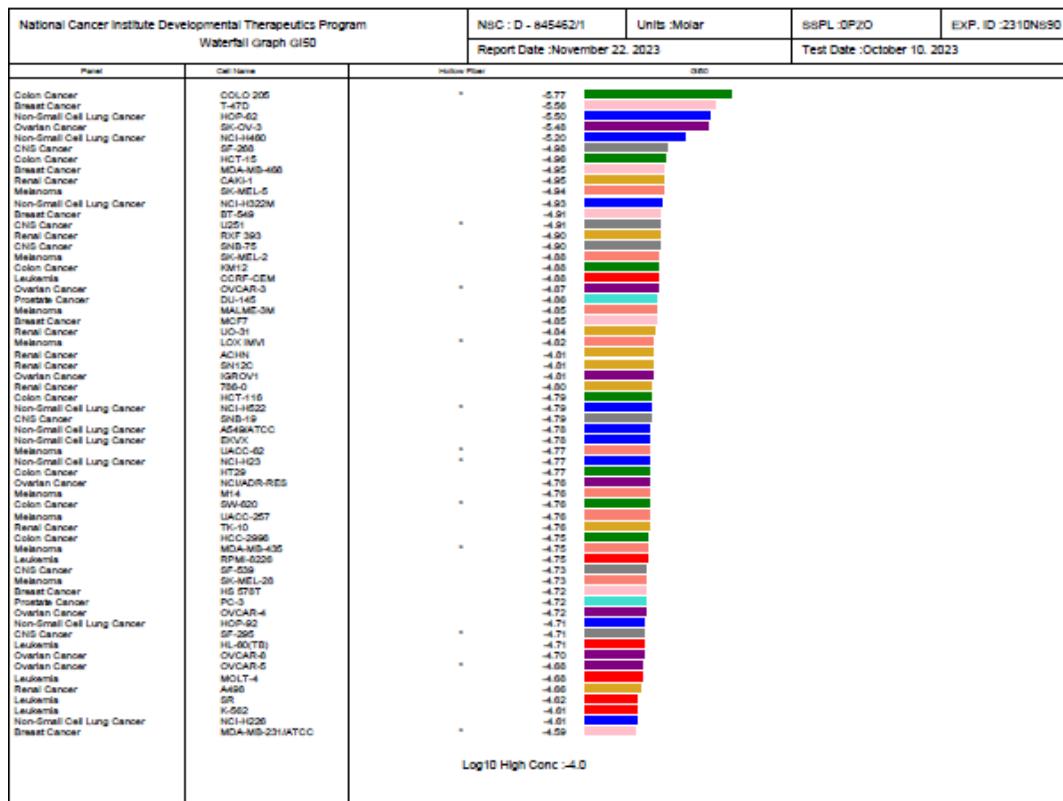


Figure S8e. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

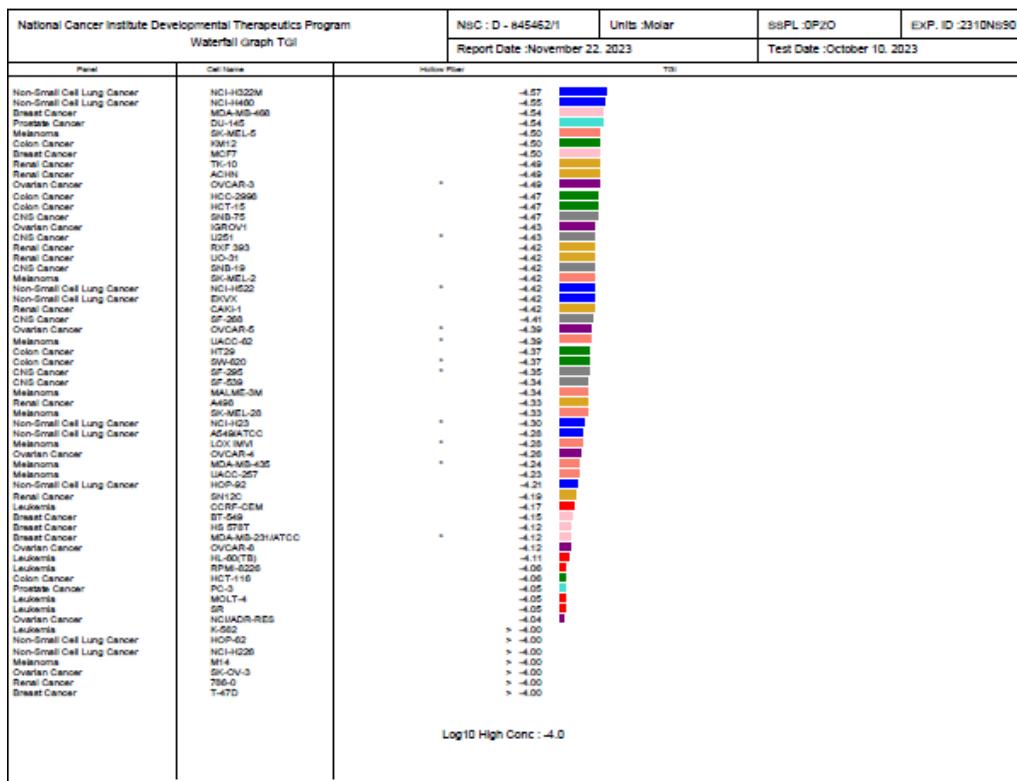


Figure S8f. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

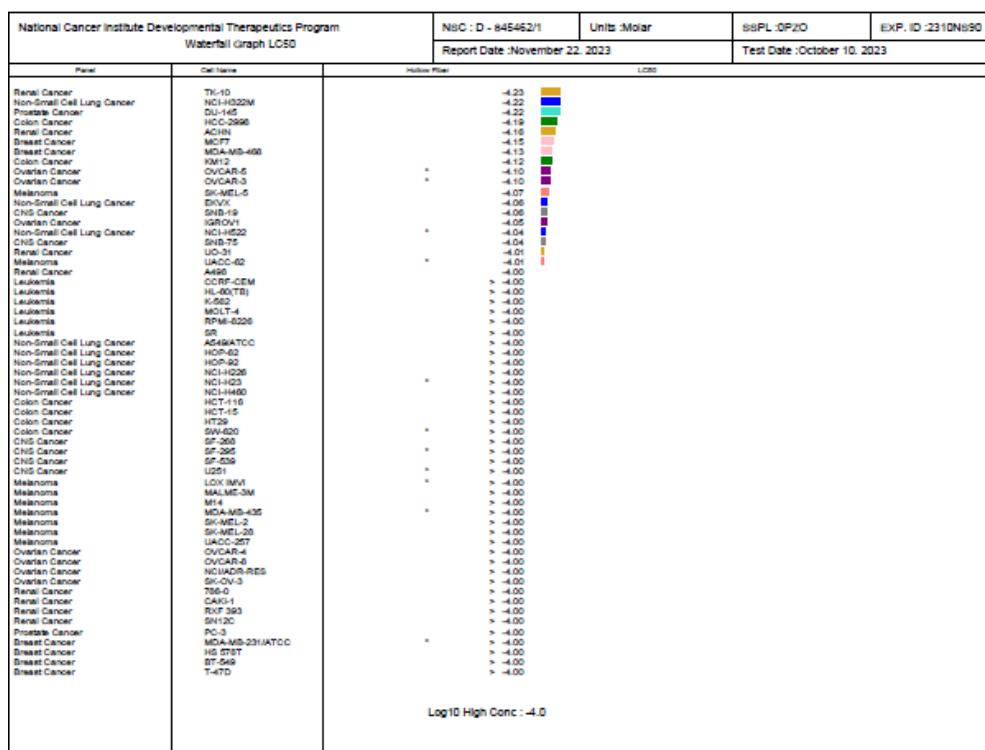


Figure S8g. NCI-60 cell lines screening protocol concentrations ranging from  $10^{-4}$  to  $10^{-8}$  M for compound **3**.

**Table S1.** Influence of compound **3** on the growth of individual tumor cell lines.

Disease	Cell line	GI <sub>50</sub> , μM	SI (GI <sub>50</sub> )	TGI, μM	SI (TGI)	LC <sub>50</sub> , μM
Leukemia	CCRF-CEM	13.2	1.19	67.8	0.74	>100.0
	HL-60(TB)	19.7	0.79	77.7	0.65	>100.0
	K-562	24.4	0.64	>100.0	-	>100.0
	MOLT-4	20.7	0.75	89.6	0.56	>100.0
	RPMI-8226	17.9	0.87	86.6	0.58	>100.0
	SR	24.2	0.64	90.0	0.56	>100.0
	MG_MID	20.01	0.78	85.28	0.59	>100.0
NSC lung cancer	A549/ATCC	16.7	0.94	52.1	0.97	>100.0
	EKVVX	16.8	0.93	38.2	1.32	86.9
	HOP-62	3.18	4.94	>100.0	-	>100.0
	HOP-92	19.3	0.81	61.4	0.82	>100.0
	NCI-H226	24.6	0.63	>100.0	-	>100.0
	NCI-H23	16.8	0.93	50.0	1.01	>100.0
	NCI-H322M	11.9	1.32	26.8	1.89	60.4
	NCI-H460	6.25	2.51	28.1	1.80	>100.0
	NCI-H522	16.1	0.97	38.2	1.32	90.4
	MG_MID	14.62	1.07	51.64	0.98	93.07
Colon Cancer	COLO 205	1.70	9.24	No data	No data	No data
	HCC-2998	17.7	0.88	33.6	1.50	63.9
	HCT-116	16.1	0.97	87.0	0.58	>100.0
	HCT-15	10.9	1.44	33.8	1.49	>100.0
	HT29	17.0	0.92	42.3	1.19	>100.0
	KM12	13.1	1.2	31.5	1.60	75.5
	SW-620	17.4	0.90	42.4	1.19	>100.0
	MG_MID	13.41	1.17	45.1	1.12	89.9
	SF-268	10.5	1.49	39.1	1.29	>100.0
CNS Cancer	SF-295	19.6	0.80	45.0	1.12	>100.0
	SF-539	18.5	0.84	45.3	1.16	>100.0
	SNB-19	16.2	0.97	37.8	1.34	87.8
	SNB-75	12.6	1.24	34.1	1.48	91.9
	U251	12.4	1.26	37.5	1.35	>100.0
	MG_MID	14.96	1.05	39.8	1.27	96.61
	LOX IMVI	15.2	1.03	52.6	0.96	>100.0
Melanoma	MALME-3M	14.1	1.11	46.1	1.09	>100.0
	M14	17.4	0.90	>100.0	-	>100.0
	MDA-MB-435	17.8	0.88	57.7	0.87	>100.0
	SK-MEL-2	13.0	1.20	38.0	1.33	>100.0
	SK-MEL-28	18.6	0.84	46.8	1.08	>100.0
	SK-MEL-5	11.6	1.35	31.3	1.61	84.4
	UACC-257	17.5	0.89	58.6	0.86	>100.0
	UACC-62	16.8	0.93	40.7	1.24	98.7
	MG_MID	15.77	0.99	52.42	0.96	98.12
	IGROV1	15.5	1.01	37.2	1.36	89.1
Ovarian Cancer	OVCAR-3	13.4	1.17	32.5	1.55	79.1
	OVCAR-4	19.1	0.82	55.1	0.91	>100.0
	OVCAR-5	20.7	0.75	40.4	1.25	78.8
	OVCAR-8	20.0	0.78	75.8	0.66	>100.0
	NCI/ADR-RES	17.3	0.90	92.2	0.54	>100.0
	SK-OV-3	3.28	4.79	>100.0	-	>100.0
	MG_MID	15.61	1.00	55.53	0.91	92.42

	786-0	15.7	1.00	>100.0	-	>100.0
	A498	21.7	0.72	46.5	1.08	99.7
	ACHN	15.4	1.02	32.5	1.55	68.6
	CAKI-1	11.3	1.39	38.3	1.32	>100.0
Renal cancer	RXF 393	12.6	1.24	37.7	1.34	>100.0
	SN12C	15.5	1.01	65.2	0.77	>100.0
	TK-10	17.5	0.89	32.2	1.57	59.1
	UO-31	14.5	1.08	37.7	1.34	98.4
	MG_MID	15.52	1.01	48.76	1.03	90.72
	PC-3	19.1	0.82	88.8	0.57	>100.0
	DU-145	13.9	1.13	28.9	1.75	60.4
	MG_MID	16.5	0.95	58.85	0.86	80.2
Breast Cancer	MCF7	14.2	1.10	31.7	1.59	70.6
	MDA-MB-231/ATCC	25.7	0.61	75.7	0.66	>100.0
	HS 578T	19.1	0.82	75.2	0.67	>100.0
	BT-549	12.3	1.27	71.5	0.70	>100.0
	T-47D	2.78	5.65	>100.0	-	>100.0
	MDA-MB-468	11.3	1.39	28.8	1.75	73.7
	MG_MID	14.23	1.10	63.81	0.79	90.71
	MG_MID	15.72		50.68		91.85