Electronic Supplementary Material (ESI) for Medicinal Chemistry Communications. This journal is © The Royal Society of Chemistry 2014

(Supplementary Information)

Novel 3,5-bis(arylidiene)-4-piperidone based monocarbonyl analogues of curcumin: Anticancer activity evaluation and mode of action study

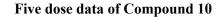
Anuj Thakur,^a Sunny Manohar,^aChristian E. VélezGerena,^b Beatriz Zayas,^b Vineet Kumar,^c Sanjay V. Malhotra*^cand Diwan S. Rawat*^a

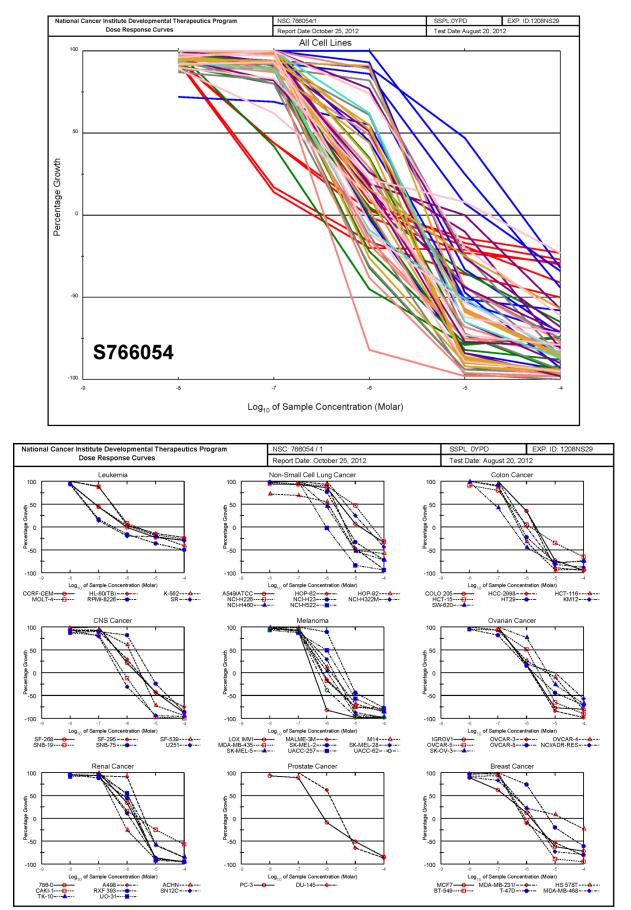
Contents

1.	NCI-60 one dose data of compound 10	Page no.2
2.	NCI-60 five dose data of compound 10	Page no. 3-5
3.	NCI-60 one dose data of compound 14	Page no. 6
4.	NCI-60 one dose data of compound 22	Page no. 7
5.	NCI-60 five dose data of compound 22	Page no. 8-10
6.	NCI-60 one dose data of compound 23	Page no. 11
7.	NMR spectra (¹ H, ¹³ C) of compounds (8-25)	Page no. 12-25

One	dose	data	of	Compound	10
-----	------	------	----	----------	----

One Dose Mea	an Graph	Experiment ID: 120	70.512	Report Date: Dec 27, 20		
Leukemia			Experiment ID: 1207OS12			
	Growth Percent	Mean Growth	Percent - Growth Per	cent		
	-9.43					
HL-60(TB)	10.85					
K-562 MOLT-4	2.14					
MOLT-4 RPMI-8226	-5.52 -15.14					
SR	3.56					
Non-Small Cell Lung Cancer A549/ATCC						
A549/ATCC	27.61					
HOP-62 NCI-H23	-60.03 -21.57					
NCI-H322M	26.99					
NCI-H460	5.73					
Colon Cancer						
COLO 205 HCC-2998	1.42 -82.58					
HCT-116	-93.92					
HCT-15	-31.64					
HT29	-48.72					
KM12 SW-620	-30.59 -47.01					
CNS Cancer	-47.01					
SF-268	-40.59					
SF-539	-39.58					
SNB-19 SNB-75	-61.67 -41.62					
U251	-97.91			-		
Melanoma						
LOX IMVI MALME-3M	-94.49 -62.90					
M14	-50.14					
MDA-MB-435	-76.63					
SK-MEL-2	-25.86					
SK-MEL-28 SK-MEL-5	-80.08 -59.63					
UACC-62	-91.10					
Ovarian Cancer						
IGROV1 OVCAR-3	-58.56 -82.91					
OVCAR-4	-31.42					
OVCAR-5	-30.56					
OVCAR-8	-29.05					
NCI/ADR-RES SK-OV-3	7.23 14.86					
Renal Cancer						
786-0	-85.58					
A498 ACHN	-25.73 -91.36					
CAKI-1	-7.75					
SN12C	-73.86					
TK-10 UO-31	8.08 -90.53					
Prostate Cancer	-90.00					
PC-3	-60.26					
DU-145	-61.34					
Breast Cancer MCF7	-75.38					
MDA-MB-231/ATCC	-29.71					
HS 578T	11.32					
BT-549 T-47D	-16.91 -0.24					
T-47D MDA-MB-468	-0.24 -43.30		I			
Mean	38 55					
Delta	-38.55 59.36			■		
Range	125.52			■		
	150	100 50	0 -50	-100 -150		





		Natio	onal (Cano	er Ir			evelop Testir				peuti	cs Prograr	n	
NSC : 766054	4/1				Exp	erimer	nt ID : 1	208NS29				Test	Type : 08	Units : N	Nolar
Report Date : October 25, 2012					Tes	t Date	: Augu	st 20, 201	2			QNS		MC :	
COMI : ATH {	57 (1191	43)			Stai	n Rea	gent : S	RB Dual-	Pass F	Related	Ę	SSPI	: 0YPD		
	Time			Mear	Optica			ncentration	P	ercent G	irowth				
Panel/Cell Line Leukemia	Zero	Ctrl	-8.0	-7.0	-6.0	-5.0	-4.0	-8.0	-7.0	-6.0	-5.0	-4.0	GI50	TGI	LC50
CCRF-CEM HL-60(TB) K-562 MOLT-4 RPMI-8226 SR	0.413 0.726 0.223 0.825 0.766 0.315	2.207 2.271 1.728 2.840 2.582 1.508	2.114 2.524 1.636 2.837 2.464 1.426	1.194 2.102 0.892 2.600 1.080 0.477	0.409 0.794 0.268 0.986 0.644 0.252	0.320 0.627 0.181 0.687 0.488 0.250	0.295 0.562 0.132 0.601 0.380 0.220	95 116 94 100 94 93	44 89 44 88 17 14	-1 4 3 -16 -20	-23 -14 -19 -17 -36 -21	-29 -23 -41 -27 -50 -30	7.48E-8 2.89E-7 7.72E-8 2.99E-7 3.72E-8 3.48E-8	9.51E-7 1.74E-6 1.37E-6 2.11E-6 3.31E-7 2.52E-7	 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 9.38E-5 > 1.00E-4
Non-Small Cell Lun A549/ATCC HOP-62 HOP-92 NCI-H226 NCI-H220 NCI-H322M NCI-H322M NCI-H460 NCI-H522	g Cancer 0.517 0.438 1.492 0.689 1.221 0.826 0.303 1.093	2.285 1.069 1.799 1.312 3.157 1.763 2.702 2.526	2.184 1.055 1.712 1.292 3.127 1.780 2.776 2.533	2.170 1.131 1.704 1.276 3.155 1.789 2.796 2.548	2.046 1.026 1.661 1.252 2.709 1.776 1.387 1.074	0.635 0.234 0.731 0.983 0.816 1.059 0.141 0.174	0.343 0.032 0.621 0.470 0.337 0.459 0.085 0.063	94 98 72 97 98 102 103 100	93 110 69 94 100 103 104 102	86 93 55 90 77 101 45 -2	7 -47 -51 47 -33 25 -53 -84	-34 -93 -58 -32 -72 -44 -72 -94	2.86E-6 2.04E-6 1.11E-6 8.62E-6 1.75E-6 4.70E-6 8.28E-7 3.16E-7	1.46E-5 4.64E-6 3.30E-6 3.96E-5 4.99E-6 2.28E-5 2.87E-6 9.62E-7	 > 1.00E-4 1.19E-5 9.78E-6 > 1.00E-4 2.68E-5 > 1.00E-4 9.22E-6 3.85E-6
Colon Cancer COLO 205 HCC-2998 HCT-116 HCT-15 HT29 KM12 SW-620	0.406 1.066 0.234 0.272 0.239 0.471 0.321	1.738 2.964 2.531 2.386 1.435 2.370 2.331	1.835 2.997 2.700 2.204 1.494 2.488 2.309	1.820 3.053 2.273 1.964 1.323 2.424 1.164	0.869 1.721 0.159 0.369 0.187 0.473 0.178	0.111 0.120 0.013 0.176 0.054 0.083 0.069	0.022 0.048 0.018 0.095 0.060 0.058 0.084	107 102 107 91 105 106 99	106 105 89 80 91 103 42	35 35 -32 5 -22	-73 -89 -94 -35 -78 -82 -79	-95 -95 -92 -65 -75 -88 -74	6.12E-7 6.02E-7 2.09E-7 2.50E-7 2.29E-7 3.27E-7 7.21E-8	2.11E-6 1.91E-6 5.43E-7 1.30E-6 6.38E-7 1.00E-6 3.05E-7	6.14E-6 4.85E-6 1.94E-6 3.07E-5 3.19E-6 4.04E-6 1.45E-6
CNS Cancer SF-268 SF-295 SF-539 SNB-19 SNB-75 U251	0.646 0.932 0.922 0.341 0.740 0.540	1.992 2.800 2.384 1.418 1.612 2.190	1.963 2.658 2.302 1.280 1.505 2.095	1.990 2.652 2.287 1.226 1.522 1.867	0.933 1.476 1.816 0.302 1.452 0.375	0.369 0.523 0.256 0.011 0.560 0.032	0.077 0.234 0.057 0.002 0.106 0.022	98 92 94 87 88 94	100 92 93 82 90 80	21 29 61 -12 82 -31	-43 -44 -72 -97 -24 -94	-88 -75 -94 -100 -86 -96	4.31E-7 4.66E-7 1.21E-6 2.20E-7 1.99E-6 1.88E-7	2.15E-6 2.50E-6 2.87E-6 7.52E-7 5.90E-6 5.30E-7	1.44E-5 1.57E-5 6.81E-6 2.82E-6 2.62E-5 2.02E-6
Melanoma LOX IMVI MALME-3M M14 MDA-MB-435 SK-MEL-2 SK-MEL-2 SK-MEL-28 SK-MEL-5 UACC-62	0.507 0.498 0.381 0.645 1.130 0.529 0.512 0.859 0.738	2.744 0.755 1.831 2.605 2.292 1.516 2.232 1.861 2.891	2.667 0.748 1.876 2.529 2.354 1.521 2.203 1.792 2.771	2.573 0.757 1.801 2.452 2.426 1.448 2.050 1.728 2.730	0.092 0.424 0.549 0.528 2.170 0.817 0.566 1.350 0.460	0.010 0.123 0.121 0.629 0.070 0.039 0.370 0.028	0.012 0.111 0.052 0.112 0.256 0.012 0.014 0.140 0.018	97 97 103 96 105 100 98 93 94	92 101 98 92 112 93 89 87 93	-82 -15 12 -18 89 29 3 49 -38	-98 -75 -68 -75 -44 -87 -92 -57 -96	-98 -78 -86 -83 -77 -98 -97 -84 -98	1.75E-7 2.74E-7 3.59E-7 2.41E-7 1.97E-6 4.73E-7 2.86E-7 9.39E-7 2.12E-7	3.39E-7 7.42E-7 1.40E-6 6.85E-7 4.66E-6 1.79E-6 1.08E-6 2.90E-6 5.14E-7	6.56E-7 3.81E-6 5.91E-6 3.63E-6 1.48E-5 4.82E-6 3.60E-6 8.60E-6 1.62E-6
Ovarian Cancer IGROV1 OVCAR-3 OVCAR-4 OVCAR-5 OVCAR-8 NCI/ADR-RES SK-OV-3	0.626 0.673 0.743 0.703 0.418 0.709 0.609	1.786 1.781 1.523 1.651 1.883 2.413 1.479	1.857 1.889 1.520 1.602 1.814 2.478 1.506	1.857 1.911 1.468 1.585 1.626 2.521 1.529	0.839 0.849 0.948 1.187 0.634 1.026 1.282	0.141 0.107 0.667 0.245 0.232 0.715 0.452	0.128 0.016 0.140 0.073 0.123 0.308 0.194	106 110 95 95 104 103	106 112 93 93 82 106 106	18 16 26 51 15 19 77	-77 -84 -10 -65 -44	-80 -98 -81 -90 -71 -57 -68	4.36E-7 4.41E-7 4.41E-7 1.02E-6 3.01E-7 4.39E-7 1.84E-6	1.55E-6 1.44E-6 5.23E-6 2.75E-6 1.77E-6 1.01E-5 5.62E-6	5.17E-6 4.56E-6 3.63E-5 7.40E-6 1.63E-5 7.67E-5 3.72E-5
Renal Cancer 786-0 A498 ACHN CAKI-1 RXF 393 SN12C TK-10 UO-31	0.666 1.472 0.359 0.844 0.639 1.067 0.758 0.836	2.484 2.379 1.766 2.716 1.083 3.214 1.534 2.268	2.558 2.347 1.782 2.597 1.063 3.101 1.557 2.144	2.555 2.320 1.745 2.605 1.030 3.087 1.583 2.183	1.281 2.296 0.267 1.140 0.833 1.314 1.158 1.628	0.088 0.610 0.036 0.633 0.075 0.147 0.319 0.064	0.033 0.209 0.021 0.367 0.033 0.040 0.111 0.040	104 96 101 94 96 95 103 91	104 93 99 94 88 94 106 94	34 91 -26 16 44 11 52 55	-87 -59 -90 -25 -88 -86 -58 -92	-95 -86 -94 -57 -95 -96 -85 -95	5.87E-7 1.88E-6 2.46E-7 3.65E-7 7.23E-7 3.42E-7 1.03E-6 1.09E-6	1.91E-6 4.05E-6 6.22E-7 2.43E-6 2.14E-6 1.31E-6 2.96E-6 2.37E-6	4.95E-6 8.76E-6 6.19E-5 5.13E-6 4.26E-6 8.46E-6 5.17E-6
Prostate Cancer PC-3 DU-145	0.658 0.565	1.733 1.789	1.656 1.867	1.610 1.929	0.597 1.324	0.320 0.198	0.106 0.073	93 106	89 111	-9 62	-51 -65	-84 -87	2.48E-7 1.24E-6	8.03E-7 3.08E-6	9.28E-6 7.62E-6
Breast Cancer MCF7 MDA-MB-231/ATC HS 578T BT-549 T-47D MDA-MB-468	0.433 C 0.640 0.925 0.802 0.716 0.705	2.433 1.460 2.014 1.731 1.693 1.561	2.208 1.447 1.926 1.748 1.657 1.476	1.679 1.432 1.936 1.831 1.707 1.418	0.671 0.567 1.160 0.774 1.438 0.893	0.165 0.301 1.017 0.092 0.571 0.193	0.123 0.115 0.714 0.039 0.281 0.147	89 98 92 102 96 90	62 97 93 111 101 83	12 -11 22 -4 74 22	-62 -53 8 -89 -20 -73	-72 -82 -23 -95 -61 -79	1.75E-7 2.70E-7 3.99E-7 3.40E-7 1.79E-6 3.49E-7	1.45E-6 7.84E-7 1.86E-5 9.31E-7 6.09E-6 1.71E-6	6.88E-6 8.48E-6 > 1.00E-4 3.52E-6 5.43E-5 5.77E-6

National Cancer Institute D	evelopmental Therapeutics Pr	ogram	NSC :766054/1	Units :Molar	SSPL :0YPD	EXP. ID :1208NS29
	Mean Graphs		Report Date :October 25,	2012	Test Date : August 20, 20	012
Pane//Cell Line	Log ₁₀ GI50	G150	Log ₁₀ TGI	ſĠĬ	Log ₁₀ LC50 LC5	50
Laukemia CCRF-CEM CCRF-CEM K-662 MOLT-4 RPMI-822 RPMI-822 AGB/ATC-4 HOP-62 HOP-	-7, 13 -6, 54 -7, 11 -6, 52 -7, 43 -7, 43 -7, 43 -5, 69 -6, 59 -6, 59 -6, 59 -6, 59 -6, 50 -6, 50 -6, 50		-6 02 -5.76 -5.86 -6.40 -6.40 -6.33 -5.40 -6.33 -5.40 -6.33 -5.40 -6.30 -6.40 -6.54 -6.64 -6.64	<u> </u>		
NCH-H522 Colon Cancer COLO 205 HCC-2998 HCT-116 HC7-15 HC7-9 KM12 SW-620 CNS Cancer	-6.21 -6.22 -6.68 -6.60 -6.64 -6.49 -7.14	E_	-5.68 -5.72 -6.27 -5.89 -6.20 -6.00 -6.52	Ē	-5.21 -5.31 -6.71 -4.51 -5.50 -5.39 -5.84	<u>.</u>
SF-268 SF-295 SF-539 SNB-19 SNB-75 U251 Velanoma	-6.37 -6.33 -5.92 -6.66 -5.70 -6.73		-5.67 -5.60 -5.54 -6.12 -5.23 -6.28	_	4.84 -4.80 -5.17 -5.55 -4.58 -5.69	<u> </u>
LOX IMM MALME-3M MIA MDA-ME-435 SK-MEL-2 SK-MEL-28 SK-MEL-28 SK-MEL-5 UACC-257 UACC-62 VACC-62 VACC-62	-6.76 -6.56 -6.44 -6.62 -5.70 -6.33 -6.53 -6.53 -6.03 -6.67		-6.47 -6.13 -6.85 -6.36 -6.37 -6.97 -6.97 -6.97 -6.29		-6.18 -5.42 -5.42 -6.443 -6.443 -6.44 -6.44 -6.47 -6.79	
varian Cancer IGROV1 OVCAR-3 OVCAR-4 OVCAR-5 OVCAR-5 OVCAR-8 NCI/ADR-RES SK-OV-3 enal Cancer 786-0	-6.36 -6.36 -6.36 -5.99 -6.59 -6.59 -6.36 -5.74	_	-5.81 -5.81 -5.28 -5.28 -5.75 -5.75 -4.99 -5.25		5.29 -5.34 -5.13 -5.13 -4.12 -4.43	
A498 ACHN CAKI-1 RXF 393 SN12C TK-10 U-0.31	-6.23 -5.73 -6.61 -6.44 -6.14 -6.14 -5.99 -5.96		-5.72 -5.39 -6.21 -5.61 -5.67 -5.88 -5.53 -5.63	-	-5.31 -5.06 -5.62 -4.21 -5.29 -5.37 -5.07 -5.29	
PC-3 DU-145 reast_Cancer	-6.61 -5.91		-6.10 -5.51	-	-5.03 -5.12	
veas Cancer MCF7 MDA-MB-231/ATCC HS 578T HS 578T BT-549 T-47D MDA-MB-468	-6.76 -6.57 -6.40 -6.40 -6.47 -5.75 -6.46	-	-5.84 -6.11 -4.73 -6.03 -6.02 -5.22 -5.77	-	-5.16 -5.07 > -4.00 -5.45 -4.27 -5.24	
MID Deta Range	-6.33 1.13 2.4		-5.72 0.88 22 +3 +2 +1		-495 123 2.18 	

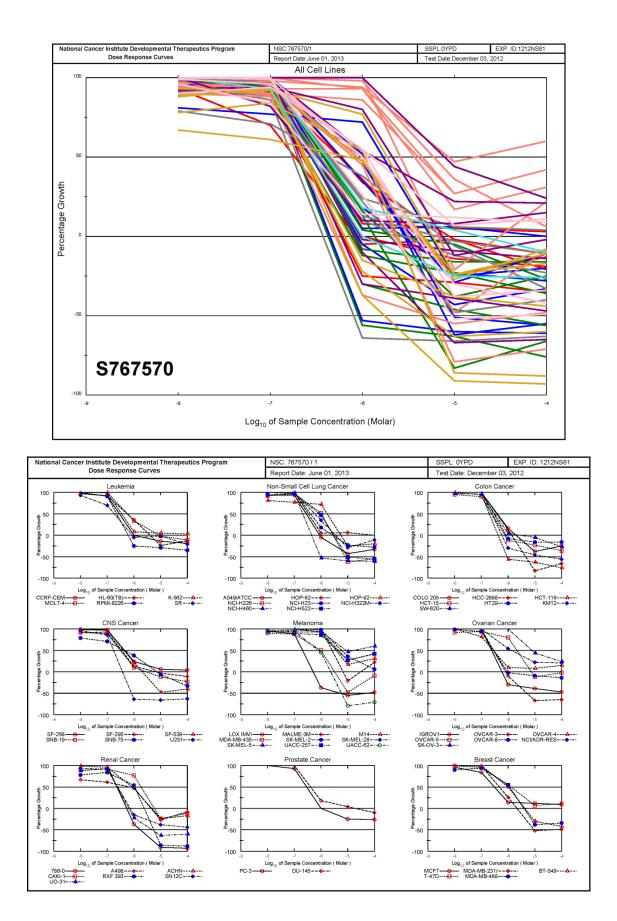
Developmental Ther	apeutics Program	NSC: 767569/1	Conc: 1.00E-5 Molar	Test Date: Sep 24, 2012
One Dose Me	an Graph	Experiment ID: 1209	00549	Report Date: Jun 01, 2013
Panel/Cell Line	Growth Percent	Mean Growth	Percent - Growth Perc	cent
_eukemia CCRF-CEM	72.74			
HL-60(TB)	94.54			
K-562	81.61		– 1	
MOLT-4	68.74			
RPMI-8226	82.86 71.13			
SR Non-Small Cell Lung Cancer	71.13			
A549/ATCC	77.10			
HOP-62	94.47			
HOP-92	73.50			
NCI-H226	98.11			
NCI-H23	97.71 93.49			
NCI-H322M NCI-H460	83.33		- 1	
NCI-H522	88.60		E I	
Colon Cancer				
COLO 205	109.84			
HCC-2998	113.87			
HCT-116	74.23			
HCT-15 HT29	80.65 83.68			
KM12	88.71		l l	
SW-620	100.85			
NS Cancer				
SF-268	83.61			
SF-539 SNB-19	106.00			
SNB-19 SNB-75	95.68 65.17			
Aelanoma	05.17			
LOX IMVI	79.38			
MALME-3M	88.99		4 1	
M14	79.08			
MDA-MB-435	93.53			
SK-MEL-28 SK-MEL-5	100.84 85.05			
UACC-62	69.45			
Dvarian Cancer	00.10			
IGROV1	103.74			
OVCAR-3	83.98			
OVCAR-4	85.35			
OVCAR-5 OVCAR-8	102.52 79.63			
NCI/ADR-RES	90.86			
SK-OV-3	93.71		– 1	
Renal Cancer				
786-0	93.28			
A498	108.60			
ACHN CAKI-1	84.22 61.64			
RXF 393	100.97			
SN12C	85.60		• •	
TK-10	115.29			
UO-31	72.52			
Prostate Cancer PC-3	67.28			
DU-145	96.83			
reast Cancer	00.00			
MCF7	64.52			
MDA-MB-231/ATCC	64.34			
HS 578T BT-549	100.97			
BT-549 T-47D	100.62 94.05			
MDA-MB-468	90.42			
Mean	87.59			
Delta Range	25.95 53.65			
Range	55.55			
	150	100 50	0 -50	-100 -150

One dose data of Compound 14

One dose data of Compound 22

Developmental The	apeaties Flogram	NSC: 767570/1	Test Date: Sep 24, 2012		
One Dose Me	an Graph	Experiment ID: 1209	9OS49	Report Date: Oct 25, 20	
Panel/Cell Line	Growth Percent	Mean Growth	Percent - Growth Per	cent	
eukemia	10.10				
CCRF-CEM	-13.19 10.99				
HL-60(TB) K-562	0.79				
MOLT-4	3.37				
RPMI-8226	-21.93				
SR	-11.58		•		
Ion-Small Cell Lung Cancer					
lon-Small Cell Lung Cancer A549/ATCC	3.06				
HOP-62	-2.25				
HOP-92	-3.29				
NCI-H226	58.27				
NCI-H23	-37.59				
NCI-H322M	-0.80				
NCI-H460 NCI-H522	-24.07 -34.10				
colon Cancer	-04.10				
COLO 205	-15.85				
HCC-2998	-15.32				
HCT-116	-84.03				
HCT-15	-14.74				
HT29	-27.48				
KM12	-57.25				
SW-620	-15.15				
NS Cancer SF-268	4.96				
SF-268 SF-539	-54.13				
SNB-19	39.07				
SNB-75	27.76				
lelanoma					
LOX IMVI	-58.68				
MALME-3M	36.76				
M14	20.51				
MDA-MB-435	3.98				
SK-MEL-28 SK-MEL-5	34.38 47.53				
UACC-62	2.57				
OACC-02 Ovarian Cancer	2.07				
IGROV1	-24.32				
OVCAR-3	-36.37				
OVCAR-4	22.60				
OVCAR-5	-3.20				
OVCAR-8	13.62				
NCI/ADR-RES SK-OV-3	20.47 44.73				
enal Cancer	44.70				
786-0	-81.20				
A498	76.42				
ACHN	2.01				
CAKI-1	-66.07			• <u> </u>	
RXF 393	-87.01				
SN12C	-47.50				
TK-10 UO-31	-22.21 -61.40				
rostate Cancer	-01.40				
PC-3	6.14				
DU-145	9.52				
reast Cancer					
	13.89				
MDA-MB-231/ATCC	-23.18				
HS 578T BT-549	37.95 -72.78				
T-47D	23.70				
MDA-MB-468	-24.55				
b d					
Mean Delta	-8.66 78.35				
Range	163.43				
Range	100.40				
	150	 100 50	0 -50	-100 -150	

Five dose data of Compound 22



NSC : 767570 / 1						In-Vitro Testing Results Experiment ID : 1212NS81							Гуре : 08	Units : N	Iolar
Report Date :	June 01	, 2013			Test Date : December 03, 2012							QNS:		MC :	
COMI : ATH-7	8 (1205	63)			Stai	Stain Reagent : SRB Dual-Pass Related						SSPL	: 0YPD		
						Lo	og10 Con	centration							
Panel/Cell Line Leukemia	Time Zero	Ctrl	-8.0	Mear -7.0	Optical -6.0	l Densiti -5.0	es -4.0	-8.0	P -7.0	ercent G -6.0	rowth -5.0	-4.0	GI50	TGI	LC50
CCRF-CEM HL-60(TB) K-562 MOLT-4 RPMI-8226 SR	0.596 0.628 0.230 0.620 1.538 0.256	2.110 2.726 1.978 2.092 3.079 0.727	2.079 2.666 2.006 2.148 3.140 0.694	1.991 2.560 1.969 2.176 2.939 0.586	0.595 1.382 0.364 1.116 1.147 0.244	0.514 0.477 0.311 0.611 1.095 0.251	0.485 0.544 0.282 0.552 1.002 0.202	98 97 102 104 104 93	92 92 99 106 91 70	36 8 34 -25 -5	-14 -24 5 -2 -29 -2	-19 -13 3 -11 -35 -21	2.86E-7 5.62E-7 3.46E-7 5.94E-7 2.25E-7 1.85E-7	9.94E-7 3.97E-6 > 1.00E-4 9.05E-6 6.05E-7 8.65E-7	 > 1.00E-4
Non-Small Cell Lung A549/ATCC HOP-62 HOP-92 NCI-H226 NCI-H23 NCI-H322M NCI-H322M NCI-H460 NCI-H522	Cancer 0.477 0.508 1.407 0.992 0.899 0.925 0.366 0.807	1.955 1.146 1.960 2.441 2.730 1.672 2.833 1.501	1.846 1.167 1.853 2.326 2.789 1.726 2.910 1.467	1.863 1.231 1.836 2.402 2.804 1.840 2.783 1.482	0.453 0.541 1.807 1.747 1.224 1.190 0.173 1.130	0.270 0.544 1.057 0.382 0.690 0.659 0.146 0.394	0.320 0.511 1.126 0.443 0.648 0.819 0.143 0.352	93 103 81 92 103 107 103 95	94 113 77 97 104 123 98 97	-5 5 72 52 18 35 -53 47	-43 6 -25 -62 -23 -29 -60 -51	-33 -20 -55 -28 -11 -61 -56	2.77E-7 3.85E-7 1.70E-6 1.04E-6 4.23E-7 6.80E-7 2.08E-7 8.54E-7	8.87E-7 > 1.00E-4 5.55E-6 2.87E-6 3.56E-6 4.47E-7 2.99E-6	 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 9.59E-7 9.73E-6
Colon Cancer COLO 205 HCC-2998 HCT-116 HCT-15 HT29 KM12 SW-620	0.405 0.837 0.189 0.314 0.229 0.284 0.320	1.613 2.315 1.785 2.285 1.309 1.558 2.186	1.689 2.345 1.770 2.181 1.330 1.555 2.126	1.692 2.345 1.704 2.094 1.318 1.624 2.116	0.603 1.026 0.083 0.276 0.211 0.200 0.395	0.253 0.144 0.070 0.242 0.192 0.154 0.304	0.305 0.288 0.045 0.203 0.193 0.126 0.233	106 102 99 95 102 100 97	107 102 95 90 101 105 96	16 13 -56 -12 -8 -30 4	-38 -83 -63 -23 -16 -46 -5	-25 -66 -76 -36 -16 -56 -27	4.24E-7 3.83E-7 1.98E-7 2.47E-7 2.93E-7 2.56E-7 3.17E-7	2.01E-6 1.36E-6 4.24E-7 7.59E-7 8.43E-7 6.02E-7 2.79E-6	 > 1.00E-4 4.54E-6 9.08E-7 > 1.00E-4 2.57E-5 > 1.00E-4
CNS Cancer SF-268 SF-295 SF-539 SNB-19 SNB-75 U251	0.667 0.886 0.911 0.681 0.893 0.482	1.855 3.186 2.512 2.041 1.705 2.040	1.844 2.981 2.486 1.931 1.531 1.974	1.826 3.036 2.467 1.898 1.473 1.818	0.958 1.178 1.263 0.814 1.199 0.173	0.744 0.862 0.478 0.603 0.840 0.166	0.710 0.785 0.545 0.525 0.598 0.180	99 91 98 92 79 96	98 93 97 89 71 86	24 13 22 10 38 -64	6 -3 -48 -12 -6 -66	4 -11 -40 -23 -33 -63	4.47E-7 3.45E-7 4.24E-7 3.13E-7 4.32E-7 1.73E-7	> 1.00E-4 6.67E-6 2.07E-6 2.88E-6 7.29E-6 3.73E-7	> 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 8.05E-7
Melanoma LOX IMVI MALME-3M M14 MDA-MB-435 SK-MEL-2 SK-MEL-28 SK-MEL-28 SK-MEL-5 UACC-257 UACC-62	0.291 0.757 0.505 0.532 1.121 0.662 0.876 0.834 0.734	1.451 1.437 1.919 2.382 2.018 1.707 3.307 1.637 2.554	1.394 1.560 1.953 2.193 2.029 1.676 3.168 1.588 2.453	1.319 1.634 1.982 2.154 2.118 1.629 3.257 1.560 2.470	0.184 1.591 1.818 1.453 1.997 1.632 3.165 1.523 1.558	0.132 0.601 0.744 1.448 0.941 2.025 1.053 0.151	0.150 0.907 0.942 0.482 1.174 1.099 2.337 1.169 0.214	95 118 102 90 101 97 94 94 94	89 129 104 88 111 93 98 90 95	-37 123 93 50 98 93 94 86 45	-55 -21 17 -48 36 27 47 27 27 -79	-48 22 31 -9 6 42 60 42 -71	2.03E-7 3.21E-6 3.66E-6 9.85E-7 6.01E-6 4.44E-6 4.08E-6 8.04E-7	5.08E-7 > 1.00E-4 3.21E-6 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 2.31E-6	> 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 5.81E-6
Ovarian Cancer IGROV1 OVCAR-3 OVCAR-4 OVCAR-5 OVCAR-8 NCI/ADR-RES SK-OV-3	0.670 0.600 0.621 0.624 0.590 0.815 0.634	1.605 1.700 1.024 1.668 1.972 2.576 1.386	1.759 1.828 1.032 1.585 1.956 2.656 1.456	1.890 1.792 0.951 1.605 1.883 2.736 1.400	0.468 0.538 0.663 1.462 0.580 1.775 1.450	0.407 0.198 0.652 0.550 0.539 1.199 0.962	0.352 0.209 0.680 0.615 0.505 1.187 0.814	116 112 102 92 99 105 109	130 108 82 94 94 109 102	-30 -10 10 80 -2 54 108	-39 -67 8 -12 -9 22 44	-47 -65 15 -2 -14 21 24	3.17E-7 3.10E-7 2.79E-7 2.13E-6 2.86E-7 1.37E-6 7.95E-6	6.49E-7 8.18E-7 > 1.00E-4 7.43E-6 9.58E-7 > 1.00E-4 > 1.00E-4	 > 1.00E-4
Renal Cancer 786-0 A498 ACHN CAKI-1 RXF 393 SN12C UO-31	0.833 1.722 0.338 1.171 0.960 0.730 0.865	2.589 2.227 1.640 3.069 1.882 2.680 1.974	1.626 2.862 1.676 2.549	2.660 2.032 1.583 2.917 1.738 2.519 1.896	1.966 0.952 2.626 1.454	1.261 0.256 0.888 0.138 0.455	0.057 1.585 0.281 1.043 0.116 0.407 0.348	101 67 99 89 78 93 88	104 61 96 92 84 92 93	-37 48 47 77 54 -15 -22	-91 -27 -24 -24 -38 -38 -63	-93 -8 -17 -11 -88 -44 -60	2.41E-7 7.27E-7 8.74E-7 1.84E-6 1.06E-6 2.45E-7 2.36E-7	5.44E-7 4.39E-6 4.56E-6 5.75E-6 2.42E-6 7.18E-7 6.39E-7	1.71E-6 > 1.00E-4 > 1.00E-4 > 1.00E-4 5.54E-6 > 1.00E-4 4.75E-6
Prostate Cancer PC-3 DU-145	0.664 0.407	1.708 1.418		1.634 1.520			0.494 0.366	100 106	93 110	18	-25 4	-26 -10	2.91E-7 4.46E-7	1.03E-6 1.88E-5	> 1.00E-4 > 1.00E-4
Breast Cancer MCF7 MDA-MB-231/ATC0 BT-549 T-47D MDA-MB-468	0.614 0.680 1.169 0.598 1.003	2.578 1.506 2.183 1.662 2.440	1.522 2.240 1.647	2.266 1.494 2.287 1.616 2.349		0.329 0.820 0.676	0.782 0.345 0.673 0.710	96 102 106 99 90	84 99 110 96 94	14 26 50 55 55	12 -52 -30 7 -38	9 -49 -42 11 -34	3.05E-7 4.66E-7 9.87E-7 1.27E-6 1.13E-6	 > 1.00E-4 2.16E-6 4.21E-6 > 1.00E-4 3.89E-6 	> 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4 > 1.00E-4

National Cancer Institute Dev	elopmental Therapeutics Program	NSC :767570/1 Units :Molar	SSPL :0YPD EXP. ID :1212NS81
	Mean Graphs	Report Date :June 01, 2013	Test Date :December 03, 2012
Panel/Cell Line	Log ₁₀ GI50 GI50	Log ₁₀ TGI TGI	Log 10LC50 LC50
Leukemia CCRR-CEM HL-80/T6) K-502-4 RPMI-8228 SR Mor-Smail Cell Lung Cancer HOP-42 HOP-42 HOP-42 NCH-4228 NCH-4228 NCH-4228 NCH-422 Cacouc 205 HC-2398 HC-118 HC-1322M NCH-422 Cacouc 205 HC-2398 HC-116 HC-2398 HC-116 HC-2398 HC-116 HC-2398 HC-2398 HC-116 HC-2398	$\begin{array}{c} -6.54 \\ -6.526 \\ -6.256 \\ -6.73 \\ -6.65 \\ -6.77 \\ -6.66 \\ -6.77 \\ -6.68 \\ -6.77 \\ -6.68 \\ -6.77 \\ -6.68 \\ -6.77 \\ -6.68 \\ -6.77 \\ -6.68 \\ -6.77 \\ -6.68 \\ -6.67 \\ -6.68 \\ -6.60 \\ -6.50$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
_MID Delta Range		-533 11 243 +3 +2 +1 0 -1 -2 -3	-4.31 178 2.09 +3 +2 +1 0 -1 -2 -3

One	dose	data	of	Compound	23
-----	------	------	----	----------	----

One Dose Mean G Panel/Cell Line Gr Leukemia CCRF-CEM HL-60(TB) K-562 MOLT-4 RPMI-8226 SR Non-Small Cell Lung Cancer A549/ATCC HOP-92 NCI-H226 NCI-H226 NCI-H322M NCI-H322M NCI-H322M NCI-H322 Colon Cancer COLO 205 HCT-116 HCT-15 HT29 KM12 SW-620 CNS Cancer SF-268 SF-539 SNB-19 SNB-19	Araph 42.44 81.02 77.77 52.81 63.26 52.68 67.29 100.00 54.47 109.73 85.04 73.96 72.52 92.42 103.20 61.69 61.96	Experiment ID: 1205	Percent - Growth Perc	Report Date: Jun 01, 201:
Leukemia CCRF-CEM HL-60(TB) K-562 MOLT-4 RPMI-8226 SR Non-Small Cell Lung Cancer A549/ATCC HOP-62 HOP-92 NCI-H226 NCI-H226 NCI-H23 NCI-H322M NCI-H522 Colon Cancer COLO 205 HCC-2998 HCT-116 HCT-15 HT29 KM12 SW-620 CNS Cancer SF-268 SF-539	42.44 81.02 77.77 52.81 63.26 52.68 67.29 100.00 54.47 109.73 82.61 85.04 73.96 72.52 92.42 103.20 61.69	Mean Growth	Percent - Growth Perc	cent
CCRF-CEM HL-60(TB) K-562 MOLT-4 RPMI-8226 SR Non-Small Cell Lung Cancer A549/ATCC HOP-62 HOP-92 NCI-H226 NCI-H226 NCI-H227 NCI-H220 NCI-H322M NCI-H460 NCI-H322M NCI-H460 NCI-H522 Colon Cancer COLO 205 HCC-2998 HCT-116 HCT-15 HT29 KM12 SW-620 CNS Cancer SF-268 SF-539	81.02 77.77 52.81 63.26 52.68 67.29 100.00 54.47 109.73 82.61 85.04 73.96 72.52 92.42 103.20 61.69			
SINB-75 Melanoma LOX IMVI MALME-3M M14 MDA-MB-435 SK-MEL-28 SK-MEL-28 SK-MEL-28 Ovarian Cancer IGROV1 OVCAR-3 OVCAR-4 OVCAR-3 OVCAR-4 OVCAR-5 OVCAR-8 NCI/ADR-RES SK-OV-3 Renal Cancer 786-0 A498 ACHN CAKI-1 RXF 393 SIN12C TK-10 UO-31 Prostate Cancer PC-3 DU-145 Breast Cancer MCF7 MDA-MB-231/ATCC HS 578T BT-549 T-47D	01.30 74.80 89.37 78.59 99.88 92.65 66.15 77.96 90.00 66.31 72.73 88.11 85.31 60.50 100.37 73.86 84.57 102.86 77.30 81.62 91.89 93.05 91.57 76.30 135.71 95.34 86.33 101.00 73.69 57.49 85.75 48.46 71.19 93.01 89.31 88.85		aller - H H H	
Mean Delta Range	80.52 38.08 93.27			

