



Figure S1: Exogenous expression of kinase gene rescues the inhibition of proliferation.

Exogenous overexpression of coding region of *PTK2* and *KIT* gene in stable 3'UTR knockdown *PTK2*-shRNA3 LPS141 and *KIT*-shRNA3 MLS402 cells, respectively. Western blotting established the efficient knockdown and overexpression of *PTK2* in LPS141 (A) and *KIT* in MLS402 (B) cells. Cell viability measured by MTT assay at different time points for LPS141 (A) and MLS402 (B) cells showed rescue of cell proliferation. (α -tubulin, loading control)

	UDLPS	WDLPS				DDLPS				MLPS	PLPS
Drug Name	SW872	T449	T1000	T778	GOT-3	LPS141	FU-DDLS-1	LP6	SA-4	MLS402	LiSa-2
CEP-701	1000	1000	NA	1000	401	1000	NA	1000	1000	227	NA
CHIR-258	10000	7080	5410	10000	10000	10000	3342	10000	10000	760	9016
CHIR-265	10000	10000	6142	10000	10000	4899	6329	10000	92	1661	10000
CHIR-99021	10000	10000	7686	10000	10000	8129	10000	10000	10000	10000	10000
CI-1033	10000	10000	9095	10000	10000	10000	8763	10000	10000	10000	10000
CP-690550	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
CPI-267703	10000	5249	NA	10000	2819	5013	NA	1001	10000	4366	NA
Crenolanib_2	10000	10000	NA	9334	3091	10000	NA	4170	10000	4787	NA
Crenolanib_3	10000	9334	9954	4787	4678	8512	1987	10000	10000	2755	10000
Crenolanib	10000	10000	9485	10000	6608	10000	2045	10000	10000	5249	10000
CYC-202	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Cytopia	10000	10000	NA	1350	1661	4899	NA	10000	10000	6311	NA
Dasatinib_2	1000	1000	1000	146	280	65	1000	275	1000	89	1000
Dasatinib_3	1000	1000	1000	408	388	95	1000	747	1000	179	1000
Dasatinib	1000	1000	1000	57	79	90	1000	934	1000	55	1000
EKB-569	10000	10000	2676	10000	10000	10000	8925	10000	10000	5130	10000
Elesclomol	14	11	18	5	14	16	11	12	11	16	257
Erlotinib_2	10000	4787	10000	5496	4366	10000	10000	10000	10000	3163	10000
Erlotinib	6919	8319	10000	6167	10000	6027	9364	10000	10000	4899	10000
Flavopiridol	934	1699	116	390	3312	604	279	1779	2090	576	66
GDC-0449	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
GDC-0879	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
GDC-0941_2	3021	1821	440	1480	1381	1289	1067	2240	4170	892	3320
GDC-0941	2240	1203	609	1001	1260	1260	467	1123	3163	795	13
Gefitinib_2	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Gefitinib	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Go6976	10000	1951	NA	1863	348	8129	NA	3982	10000	956	NA
GS-548233	5000	5000	NA	5000	5000	5000	NA	5000	5000	5000	NA
GSK-1120212	10000	10000	794	10000	10000	10000	23	10000	18	10000	10000
GSK-1838705A	7763	2043	2544	3891	2819	4468	1606	10000	7080	3982	1128

	UDLPS	WDLPS				DDLPS				MLPS	PLPS
Drug Name	SW872	T449	T1000	T778	GOT-3	LPS141	FU-DDLS-1	LP6	SA-4	MLS402	LiSa-2
1904529A_2	10000	8711	NA	10000	10000	10000	NA	10000	10000	10000	NA
GSK-1904529A	10000	10000	2783	10000	10000	10000	10000	10000	10000	10000	10000
GSK-690693	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
GW-2580_2	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
GW-2580	10000	10000	10000	10000	10000	10000	412	10000	10000	10000	10000
GW-786034_2	10000	10000	NA	5371	9334	6311	NA	10000	10000	10000	NA
GW-786034	10000	10000	9566	10000	10000	10000	3966	10000	10000	10000	10000
H-89	10000	10000	10000	10000	10000	10000	6374	10000	10000	10000	5224
HKI-272	5013	5755	10000	4899	2456	2755	885	10000	3312	2400	813
Imatinib	10000	10000	10000	10000	1073	10000	10000	10000	10000	10000	10000
INCB018424_2	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
INCB018424	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
INK-128	42	81	12	14	34	14	8	40	27	38	181
JNJ-28312141	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
JNJ-38877605	10000	10000	10000	5249	10000	8711	10000	10000	10000	10000	8719
JNJ-7706621	10000	10000	6458	5249	10000	3716	5612	5496	10000	2189	5266
JNK II	50000	46104	0	26125	50000	6942	0	50000	50000	18380	0
KI-20227	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
KN92	10000	10000	NA	10000	10000	10000	NA	10000	10000	10000	NA
KN93	10000	10000	NA	10000	10000	10000	NA	10000	10000	10000	NA
KU-55933	10000	10000	10000	6458	10000	10000	7123	10000	10000	10000	10000
KW-2449	10000	10000	10000	10000	8914	10000	10000	10000	10000	9121	10000
Lapatinib_2	10000	10000	10000	10000	6608	10000	5497	10000	10000	10000	10000
Lapatinib	10000	10000	7764	10000	10000	10000	5207	10000	10000	10000	10000
LY294002	3169	14024	NA	2170	2484	3002	NA	2844	7528	991	NA
LY-333531	5130	10000	9788	5624	8129	4366	10000	9551	3312	4468	3902
MCGD-265	10000	10000	10000	10000	10000	5755	2863	10000	10000	10000	7619
MK-2206	10000	10000	10000	10000	10000	10000	339	10000	10000	10000	10000
MLN-120B	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
MLN-518	10000	10000	NA	10000	10000	10000	NA	10000	10000	10000	NA
MLN-8054	9334	3803	10000	10000	8914	3982	10000	10000	10000	1779	10000

	UDLPS	WDLPS				DDLPS				MLPS	PLPS
Drug Name	SW872	T449	T1000	T778	GOT-3	LPS141	FU-DDLS-1	LP6	SA-4	MLS402	LiSa-2
SKI-606	10000	10000	10000	10000	10000	4899	10000	10000	10000	1906	10000
Sorafenib_2	10000	10000	NA	10000	10000	10000	NA	10000	10000	10000	NA
Sorafenib_3	10000	10000	10000	10000	10000	10000	6628	10000	10000	6458	10000
Sorafenib	10000	10000	10000	10000	10000	10000	6545	10000	10000	10000	10000
Staurosporin	61	408	NA	6	28	13	NA	66	526	6	NA
STO609	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
SU11274	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Sunitinib_2	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Sunitinib_3	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Sunitinib	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
TG-100-115	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
TG-101348	10000	2631	NA	3021	1951	3021	NA	3163	10000	2189	NA
Vargetef	10000	10000	4269	10000	5889	10000	10000	10000	10000	10000	10000
Velcade	709	2090	62	956	618	777	137	2189	1001	408	200
VX-680	2693	1779	5302	1480	2952	1024	7288	8512	8129	84	5360
VX-745	7414	10000	10000	10000	10000	10000	9170	10000	10000	4075	10000
XAV-939	10000	10000	10000	10000	10000	10000	1144	10000	10000	8914	10000
XL184	10000	9121	5950	6027	9334	3468	10000	10000	10000	6458	1407
XL-880	2189	1381	1144	1779	978	956	4194	1951	4075	1951	1114
YM-155	23	445	62	415	257	61	6	45	164	21	71
ZD-6474	10000	10000	10000	10000	10000	10000	8563	10000	10000	10000	10000

Table S1B: Sequences of shRNA's oligos and CRISPR sgRNA's oligos

PTK2 shRNA1	CCGGTCGAATGATAAGGTGTACTCGAGTACACCTTATCATTGACCGGTTTTTG
PTK2 shRNA2	CCGGGCCAGGTTTACTGAACTTAACTCGAGTTAAGTTCAGTAAACCTGGGCTTTTTG
PTK2 shRNA3	CCGGCCCAGGAGAGAATGAAGCAAACCTCGAGTTTGCTTCATTCTCTCCTGGGTTTTTG
KIT shRNA1	CCGGCCTTTGTGTTTCTATTGACTTCTCGAGAAGTCAATAGAAACACAAAGGTTTTTG
KIT shRNA2	CCGGACCATTCTGTGCGGATCAATTCTCGAGAATTGATCCGCACAGAATGGTTTTTTG
KIT shRNA3	CCGGAGTAGATTAAGAGCCATATAACTCGAGTTATATGGCTCTTAATCTACTTTTTTG
PTK2 sgRNA1	TCTGATGATAAATGACTGCG
PTK2 sgRNA2	AATCAGTTACCTAACGGACA
KIT sgRNA1	GCCTAATCTCGTCGCCACG
KIT sgRNA2	TGACCAATTATTCCCTCAAG

Table S1C: List of antibodies

Antibody	Company
Phospho-ERK (E-4)	Santa Cruz
ERK 1/2 (MK1)	Santa Cruz
Phospho-Akt (Thr308) (L32A4)	Cell Signalling
Akt (pan) (C67E7)	Cell Signalling
GAPDH (14C10)	Cell Signalling
β -Actin	Sigma
Total cKIT	Cell Signalling
Phospho-cKIT Y719	Cell Signalling
Total STAT3	Cell Signalling
Phospho-STAT3	Cell Signalling
Total MTOR	Cell Signalling
Phospho-MTOR	Cell Signalling
Total P70S6K	Cell Signalling
Phospho-P70S6K	Cell Signalling
CyclinD	Cell Signalling
CDK4	Cell Signalling
Total RB	Cell Signalling
Phospho RB	Cell Signalling
Phospho BAD	Cell Signalling
BAX	Cell Signalling
BCL-XL	Cell Signalling
Total caspase 9	Cell Signalling
Cleaved caspase 9	Cell Signalling
MCL-1	Cell Signalling

Table S1D: Results of MTS proliferation assay using RNAi screening assay

siRNA Gene Target	Undifferentiated liposarcoma								Well-differentiated liposarcoma								Dedifferentiated liposarcoma								Myxoid liposarcoma				Pleomorphic liposarcoma															
	SW872				T449				T1000				T778				GOT-3				LP5141				FU-DDLS-1				LP6				SA4				MLS402				LSa-2			
	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error	Average viability	Standard Error												
ABL1	97	6	84	2	99	3	79	3	88	1	97	7	99	3	68	1	97	3	82	4	95	4	95	5	82	4	95	4	95	4	95	5												
ABL2	103	3	72	4	101	0	98	8	91	5	95	2	94	2	113	7	104	7	101	14	103	1	103	1	101	14	103	1	103	1	103	1												
TNK2	101	6	99	1	102	1	104	6	99	8	103	3	102	1	97	3	94	7	102	5	102	2	102	2	102	5	102	2	102	2	102	2												
ALK	95	4	108	6	98	2	114	5	104	2	109	5	101	2	78	3	98	1	100	5	97	1	100	5	97	1	100	5	97	1	100	5												
AXL	115	4	100	1	101	1	106	3	99	5	98	5	97	1	84	2	95	7	105	7	101	1	101	1	101	1	101	1	101	1	101	1												
BLK	100	4	116	3	102	1	93	4	101	0	106	4	99	1	122	2	90	2	99	7	96	3	96	3	96	3	96	3	96	3	96	3												
BMX	86	1	112	4	101	1	102	2	101	3	103	4	94	0	106	7	104	7	106	5	101	4	101	4	101	4	101	4	101	4	101	4												
BTk	88	6	94	3	102	2	93	3	112	2	101	2	102	0	98	6	97	11	84	5	104	2	104	2	104	2	104	2	104	2	104	2												
TP53RK	103	2	97	6	95	0	86	2	104	6	97	4	98	2	136	1	104	3	100	3	86	1	86	1	86	1	86	1	86	1	86	1												
CSF1R	99	3	143	12	98	1	119	5	125	12	105	3	104	1	93	2	114	2	136	11	115	1	115	1	115	1	115	1	115	1	115	1												
CSK	116	3	152	9	97	2	105	3	94	10	115	12	102	1	115	8	100	5	103	6	105	4	105	4	105	4	105	4	105	4	105	4												
DDR1	99	5	97	3	102	1	100	11	92	3	93	6	95	1	92	3	99	12	105	5	95	5	95	5	95	5	95	5	95	5	95	5												
DDR2	98	3	98	6	100	2	114	1	101	2	95	4	97	1	101	5	93	6	102	5	99	5	99	5	99	5	99	5	99	5	99	5												
STYK1	89	3	66	2	98	2	70	9	98	1	94	11	102	2	104	3	95	3	77	4	88	2	88	2	88	2	88	2	88	2	88	2												
EGFR	83	7	97	11	101	1	83	3	94	3	97	2	102	1	92	3	93	6	92	2	96	3	96	3	96	3	96	3	96	3	96	3												
EPHA1	91	2	121	9	101	2	95	8	101	2	104	7	102	2	81	2	98	3	98	2	100	1	100	1	100	1	100	1	100	1	100	1												
EPHA2	107	7	101	8	101	3	86	9	100	1	103	9	101	1	96	5	98	5	98	3	106	2	106	2	106	2	106	2	106	2	106	2												
EPHA3	108	4	79	6	102	1	82	10	97	5	115	12	110	2	88	1	101	2	95	4	87	2	87	2	87	2	87	2	87	2	87	2												
EPHA4	96	9	102	6	98	1	91	6	102	2	100	6	96	3	107	0	102	4	91	3	99	3	99	3	99	3	99	3	99	3	99	3												
EPHA7	98	8	108	9	98	2	111	11	102	6	88	8	87	2	107	4	117	8	105	4	103	1	103	1	103	1	103	1	103	1	103	1												
EPHA8	103	2	60	6	104	2	94	4	100	3	100	5	106	4	108	2	112	5	103	2	97	3	97	3	97	3	97	3	97	3	97	3												
EPHB1	104	4	101	16	105	0	112	9	104	2	109	11	112	2	79	4	97	8	94	4	98	2	98	2	98	2	98	2	98	2	98	2												
EPHB2	92	5	138	2	96	4	99	8	98	6	100	6	99	2	142	5	106	8	93	6	102	5	102	5	102	5	102	5	102	5	102	5												
EPHB3	103	4	113	11	98	4	88	10	97	4	112	4	90	1	110	5	109	4	104	7	93	5	93	5	93	5	93	5	93	5	93	5												
EPHB4	105	7	144	12	100	2	117	3	91	3	98	4	104	2	107	1	102	10	102	5	107	2	107	2	107	2	107	2	107	2	107	2												
EPHB6	103	7	80	8	105	1	99	5	98	8	104	4	97	1	106	7	92	5	109	4	106	3	106	3	106	3	106	3	106	3	106	3												
ERBB2	104	6	108	9	98	2	87	3	110	3	110	4	102	1	117	0	87	2	87	11	93	3	93	3	93	3	93	3	93	3	93	3												
ERBB3	92	4	99	12	96	1	84	6	101	7	96	5	102	2	107	5	106	4	94	6	105	3	105	3	105	3	105	3	105	3	105	3												
ERBB4	92	6	105	8	98	2	94	12	106	4	97	6	98	3	94	1	95	3	82	7	104	1	104	1	104	1	104	1	104	1	104	1												
FER	88	2	85	7	97	1	89	4	101	13	93	10	98	1	74	4	79	4	131	3	88	2	88	2	88	2	88	2	88	2	88	2												
FES	86	4	95	3	95	2	97	8	102	6	91	1	97	3	98	3	91	7	104	5	90	6	90	6	90	6	90	6	90	6	90	6												
FGFR1	99	6	97	6	94	1	88	8	108	3	102	11	92	1	89	3	91	2	109	4	100	3	100	3	100	3	100	3	100	3	100	3												
FGFR2	112	4	97	11	100	1	83	7	98	4	99	6	85	0	94	4	89	3	108	9	99	1	99	1	99	1	99	1	99	1	99	1												
FGFR3	104	4	97	10	101	3	96	4	88	8	93	2	100	2	102	4	95	6	86	1	103	4	103	4	103	4	103	4	103	4	103	4												
FGFR4	96	3	83	12	106	3	97	3	98	5	94	1	106	3	100	4	103	4	96	5	102	6	102	6	102	6	102	6	102	6	102	6												
FGR	103	9	72	4	95	5	74	10	108	5	87	6	89	1	76	6	101	3	93	5	93	6	93	6	93	6	93	6	93	6	93	6												
FLT1	114	3	98	6	104	4	108	3	104	3	99	8	108	2	103	6	106	4	107	8	111	2	111	2	111	2	111	2	111	2	111	2												
FLT3	105	8	128	5	92	7	99	9	88	11	102	7	89	2	124	5	109	4	91	9	98	7	98	7	98	7	98	7	98	7	98	7												
FLT4	96	3	103	1	101	1	93	9	94	10	104	5	97	3	85	7	109	4	101	8	99	2	99	2	99	2	99	2	99	2	99	2												
FRK	93	3	110	12	99	1	123	11	102	5	102	9	101	3	120	4	92	1	87	4	98	1	98	1	98	1	98	1	98	1	98	1												
FYN	104	8	92	2	100	4	118	6	101	2	92	2	111	0	100	7	107	7	119	5	97	10	97	10	97	10	97	10	97	10	97	10												
HCK	112	8	118	2	98	5	101	3	105	4	99	4	112	3	123	9	98	7	113	4	105	4	105	4	105	4	105	4	105	4	105	4												
IGF1R	104	9	109	7	103	4	103	4	102	6	95	8	96	0	95	5	112	7	119	8	116	5	116	5	116	5	116	5	116	5	116	5												
INSR	114	4	106	15	97	3	105	2	115	3	96	2	115	1	123	8	106	3	126	12	95	4	95	4	95	4	95	4	95	4	95	4												
ITK	119	4	136	16	94	6	114	6	105	9	118	8	113	1	143	0	98	6	109	8	102	5	102	5	102	5	102	5	102	5	102	5												
JAK1	94	3	114	1	103	4	94	11	95	2	119	12	80	2	88	3	104	2	94	7	95	4	95	4	95	4	95	4	95	4	95	4												
JAK2	92	3	109	10	86	7	106	5	108	7	101	3	101	1	99	4	103	6	98	6	101	5	101	5	101	5	101	5	101	5	101	5												
JAK3	90	4	102	6	106	3	106	4	103	9	90	12	95	0	116	7	94	7	96	3	110	6	110	6	110	6	110	6	110	6	110	6												
KDR	96	4	104	3	101	4	112	6	91	9	97	5	96	1	94	8	94	4	86	15	91	7	91	7	91	7	91	7	91	7	91	7												
KIT	91	2	49	5	100	3	81	7	74	7	101	5	98	1	69	3	95	4	29	7	85	4	85	4	85	4	85	4	85	4	85	4												
LMTK2	105	3	111	9	100	2	107	9	102	3	98	2	100	1	83	2	94	5	88	3	105	3	105	3	105	3	105	3	105	3	105	3												
LOK	97	4	113	7	104	2	90	13	84	4	95</																																	

TEK	110	3	86	0	99	1	108	6	101	11	100	3	111	2	90	6	97	6	104	7	107	2
TIE	122	3	96	8	104	1	91	9	98	10	114	9	102	4	145	4	108	6	128	9	106	4
TNK1	108	6	85	1	97	2	123	9	100	4	96	2	105	0	95	5	106	7	96	6	105	1
TXK	116	3	87	6	95	2	107	6	85	4	79	8	89	3	72	1	109	6	95	6	96	4
TYK2	84	3	115	2	100	2	107	9	105	4	110	5	112	3	113	5	104	2	91	1	90	1
TYRO3	89	5	102	5	104	1	92	5	98	6	107	3	96	2	92	7	102	9	93	3	94	4
YES1	110	2	88	1	104	1	89	7	111	3	104	11	100	3	89	8	105	5	107	8	98	1
ZAP70	104	0	87	2	99	2	86	3	95	5	111	4	98	1	104	7	87	4	100	5	105	3
NRAS	111	5	125	3	97	3	134	9	113	4	104	2	101	1	135	7	103	4	126	6	102	3
KRAS	101	3	88	2	101	1	118	7	106	7	95	4	101	3	99	2	98	3	111	3	100	2
EPHA5	106	2	147	4	104	1	123	10	98	3	119	5	121	2	115	5	105	7	120	0	106	4
EPHA6	90	6	63	9	101	2	42	12	96	4	88	3	86	2	67	7	93	4	81	3	101	1
SRMS	91	5	86	5	96	0	93	3	88	8	89	3	85	3	81	10	90	7	85	3	98	3
AATK	98	7	106	10	100	3	106	9	113	4	115	1	98	2	100	4	108	5	94	4	98	7
LMTK3	101	0	102	6	97	2	82	5	90	6	95	7	94	1	89	4	100	4	99	6	88	1
Survivin	102	4	102	3			92	4	94	2	98	8			123	7	103	4	81	10		
Non-specific control	91	3	152	5			86	7	103	7	96	4			143	4	86	3	116	15		