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Primers used in this study

Mouse RT-qPCR primers (written 5' to 3')

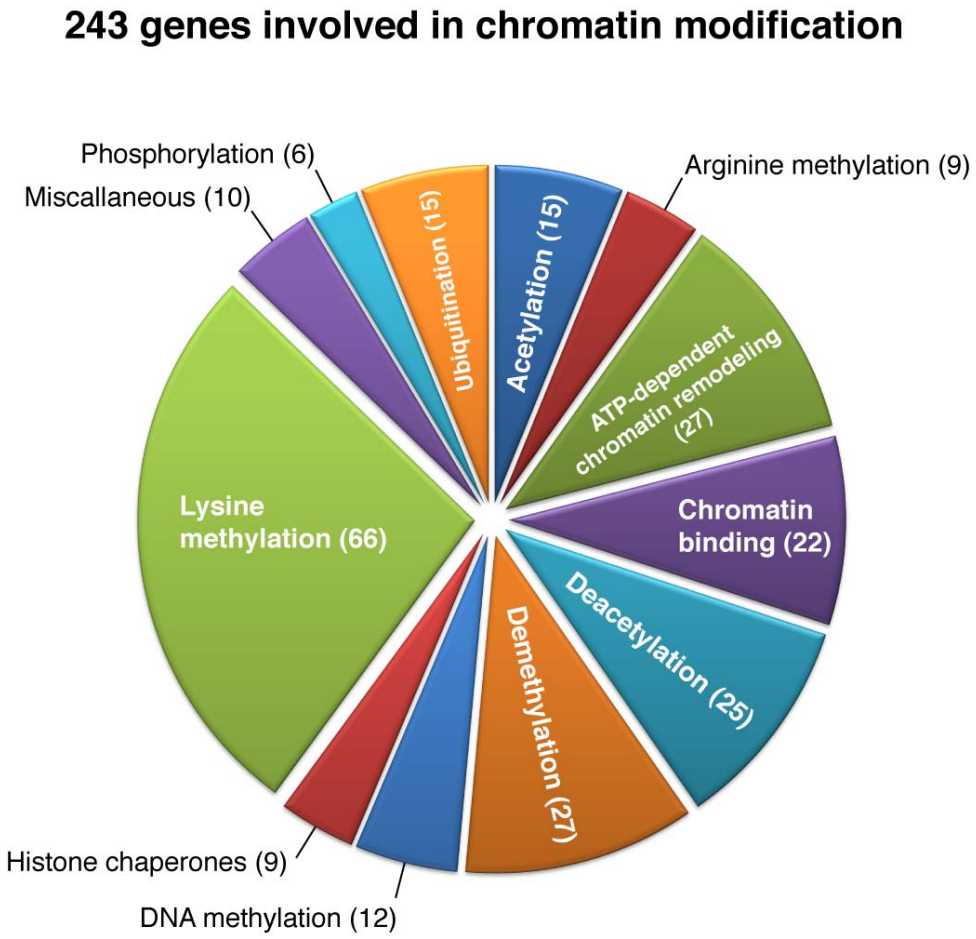
Brd4: CCATGGACATGAGCACAATC and TGGAGAACATCAATCGGACA
Ccl4: CCCGAGCAACACCATGAAG and CCACGAGCAAGAGGAGAGAGA
Cd74: CCAACGCGACCTCATCTCTAA and AGGGCGGTTGCCCAGTA
Gapdh: TTCACCACCATGGAGAAGGC and CCCTTTTGGCTCCACCCT
Itgax: CCAGGTTGCCCAGTGAGAA and CTCAGATGGGCGGGTTCA
Mmp9: CATTCGCGTGGATAAGGAGT and TCACACGCCAGAAGAATTTG
Myc: GCCGATCAGCTGGAGATGA and GTCGTCAGGATCGCAGATGAAG

Human RT-qPCR primers (written 5' to 3')

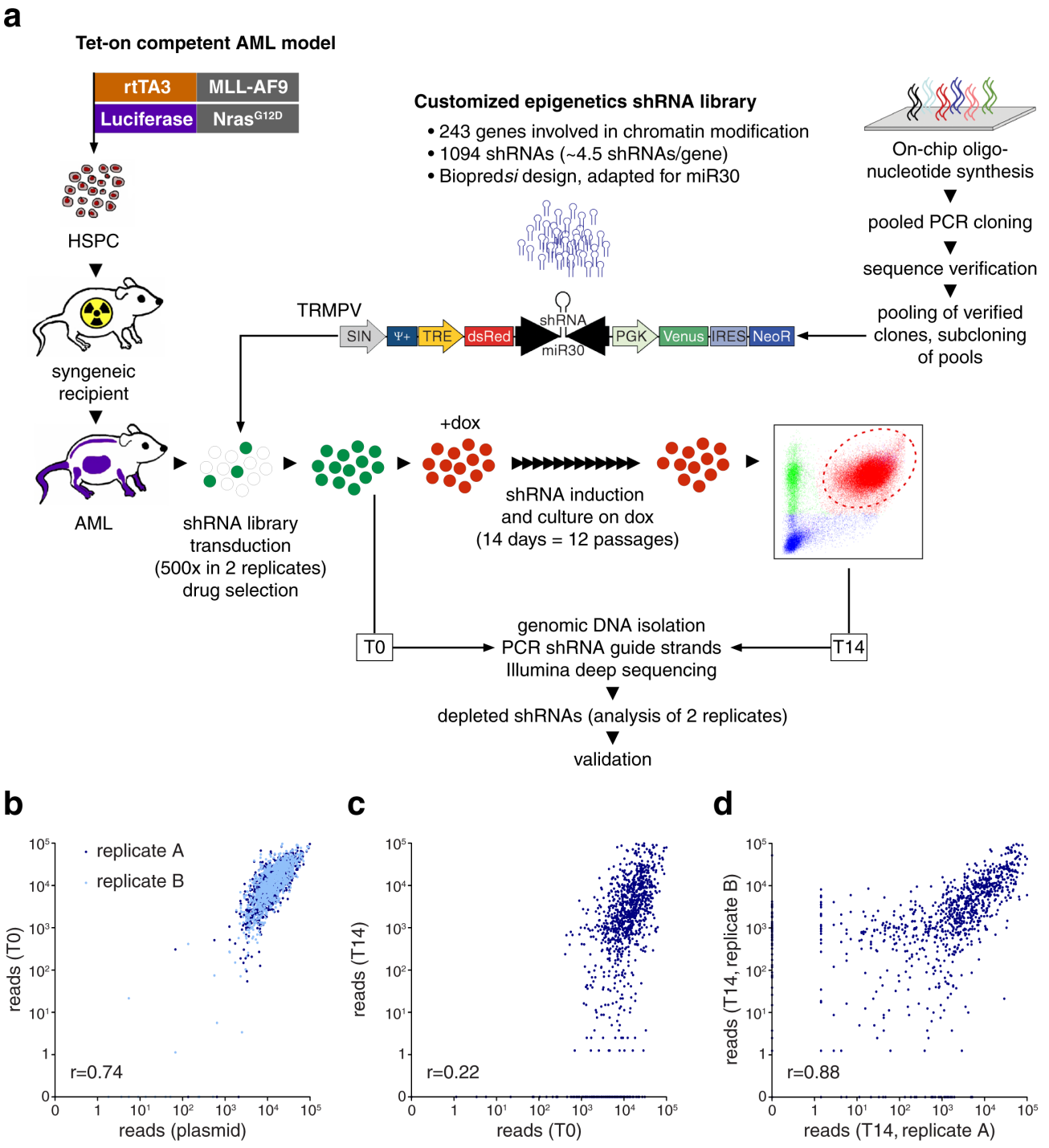
BRD4: CCCCTCGTGGTGGTGAAG and GCTCGCTGCGGATGATG
GAPDH: CCTGACCTGCCGTCTAGAAA and CTCCGACGCCTGCTTCAC
MYC: AGGGATCGCGCTGAGTATAA and TGCCTCTCGCTGGAATTACT

Mouse Myc ChIP primers (written 5' to 3')

Myc -3.8kb: TGTGGCTTTCCTGTCCTTTT and AGGGGACATCCCCATTTTAC
Myc -2.2kb: ATTCATTTTCCCCATCCACA and TTGCAAAGAGGGGGAGTAGA
Myc -1.9kb: ACAAATCCGAGAGCCACAAC and AACACCAAGAGCCACCAATC
Myc -1.8kb: GGTGGCTCTTGGTGTTTGAG and TCGAGCTCATTGCACAATTC
Myc -1.7kb: CAACTTTGAACAATGAGCACCT and CTCTCACTGCTACCCGGTTT
Myc -1.5kb: CGAGGAGTCCGGAATAAGAA and TCTTTTGCTCTGTGCATTGG
Myc -1kb: GCCTCTTGTGAAAACCGACT and CCGGTCTACACCCCATACAC
Myc +1kb: TGGAATCCTGAGGTCTTTGG and CAGAAATGCACCAAGCTGAA
Myc +1.5kb: CCCTCCCCTTTTATTTCGAG and GCTTTTCTTTCCGATTGCTG
Myc +3.7kb: TGCTTTGGGTGTGTCTGAAG and CTCCCAGAAAGGCAGAACAG

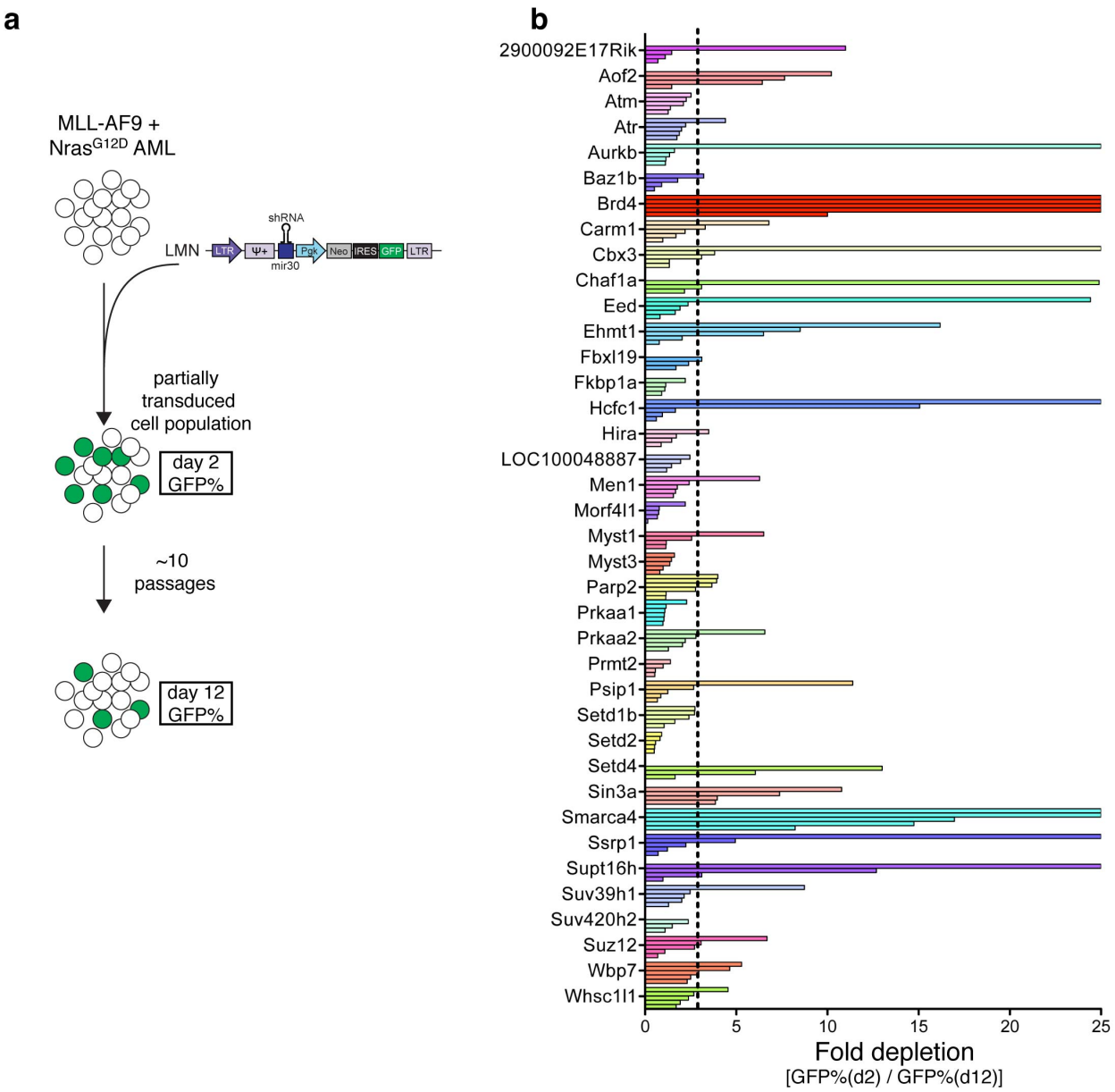


Supplementary Figure 1. Categories of chromatin regulators evaluated in the RNAi screen. Numbers indicate the number of genes in each category. For each gene, 6 shRNAs were designed using the BIOPREDsi algorithm[1], and adapted for the miR30-context. The library was constructed using large-scale on-chip oligonucleotide synthesis, followed by pooled PCR cloning and sequence verification of individual clones, which yielded a total of 1094 shRNAs (3-6 per gene). All shRNA sequences are provided in Supplementary Table 1.

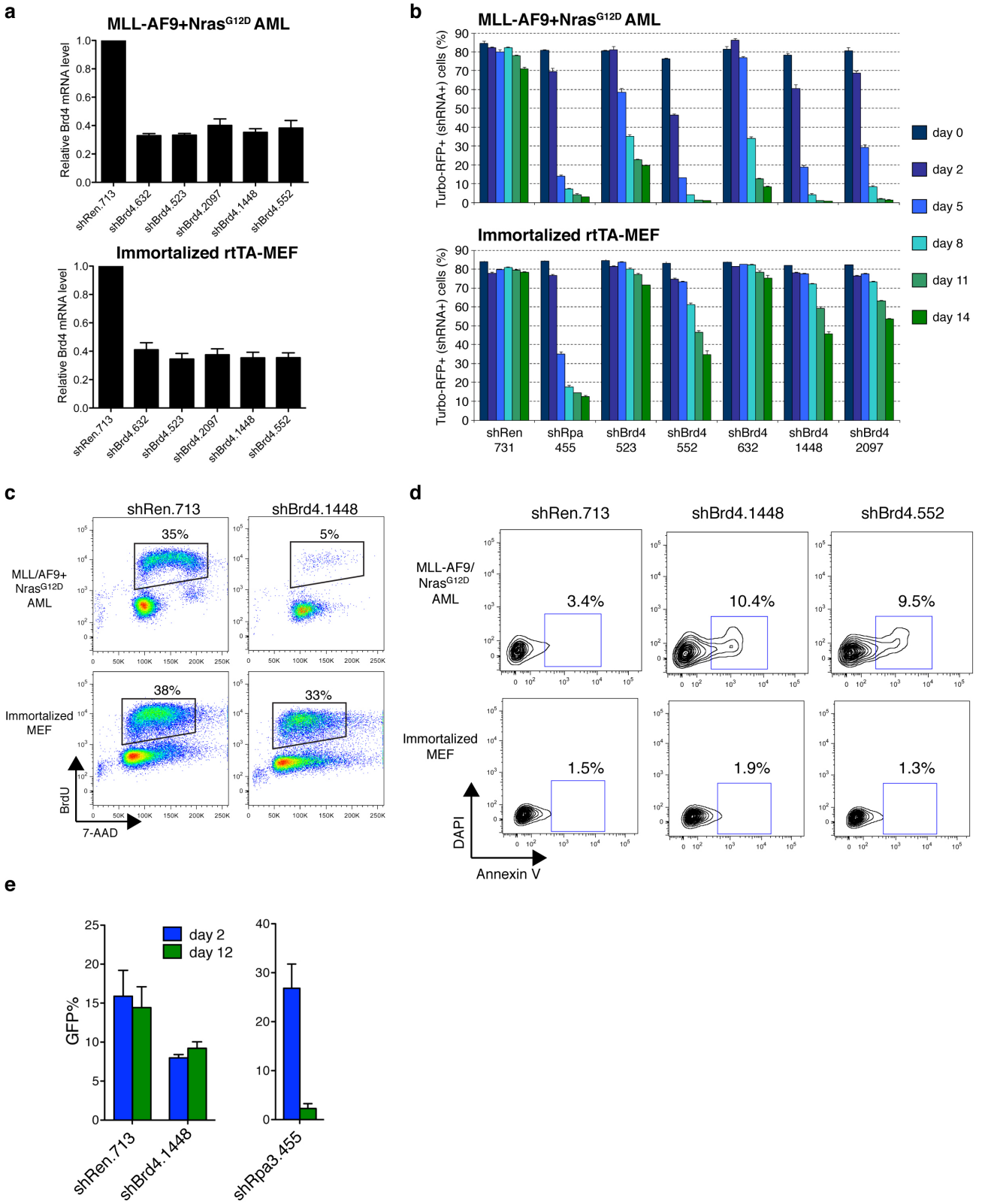


Supplementary Figure 2. RNAi screening strategy. a) The screen was performed in a Tet-on competent AML model generated by retroviral cotransduction of vectors encoding rtTA3-IRES-MLL-AF9 and Luciferase-IRES-Nras^{G12D} into hematopoietic stem and progenitor cells (HSPC). Leukemic cells retrieved from terminally ill mice were placed in culture and utilized for the screen. A customized shRNA library targeting chromatin regulating genes was synthesized using On-chip oligonucleotide synthesis, and cloned in a pooled format. A library pool of 1094 sequence verified shRNAs was subcloned into TRMPV-Neo[2] and transduced into leukemia cells, followed by G418 selection. The selected cell population (T0) was then treated with doxycycline for 14 days (equivalent to 12 cell passages), followed by FACS isolation of Venus+/dsRed+ (shRNA-expressing) cells (T14). Genomic DNA isolated from T0 and T14 populations was used as a template for PCR amplification of shRNA guide

strands, which were subjected to deep-sequencing to quantify the relative abundance of each shRNA in the library. Top hits were defined in the screen as genes for which at least two shRNA showed >20fold depletion in 2 independent replicates. 38 genes satisfied these criteria and were subjected to 1-by-1 validation using a different MLL-AF9/Nras^{G12D} induced AML cell line and a constitutive shRNA expression vector (LMN). **b)** Scatter plot illustrating the correlation of normalized reads per shRNA between the plasmid pool and two replicates of library transduced leukemia cells following drug selection (T0). The correlation verifies that the library representation is largely unaffected by retroviral transduction and drug selection. **c)** Scatter plot of normalized reads per shRNA in T0 compared to T14 in one replicate. The low correlation suggests substantial changes in shRNA representation. **d)** Scatter plot illustrating the correlation of normalized reads per shRNA at T14 in 2 independent replicates. The high correlation indicates that changes in shRNA abundance are due to specific effects. r, Pearson correlation coefficient.

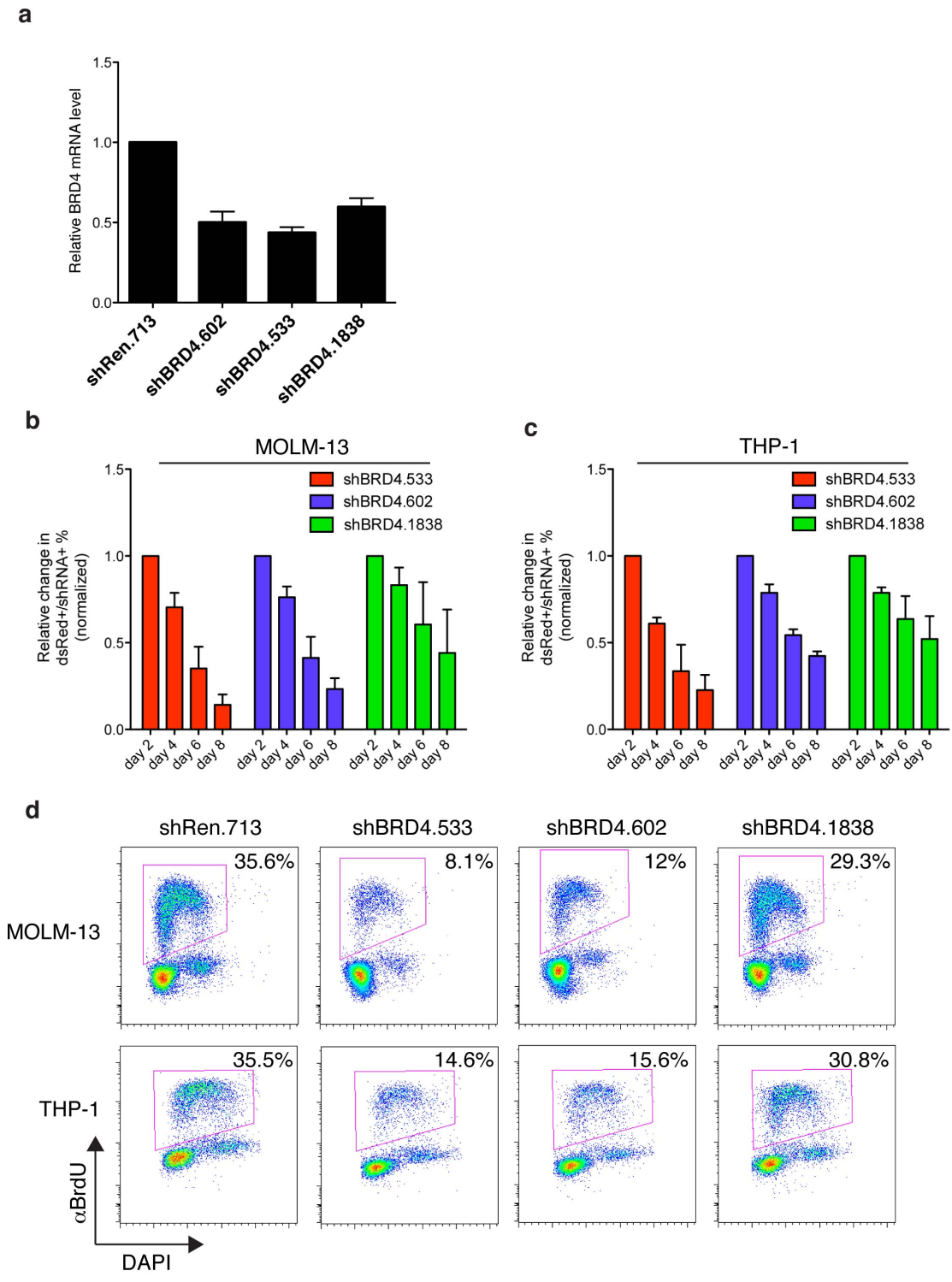


Supplementary Figure 3. Screen validation strategy. a) For all genes scoring in the primary pooled screen (criteria: at least 2 shRNAs depleted >20fold in 2 independent replicates), all shRNAs designed to target that gene were validated in an independently derived MLL-AF9/Nras^{G12D} leukemia cell line using the LMN vector, which expresses miR30-shRNAs under control of the constitutive LTR promoter and features GFP and NeoR reporters. LMN-shRNAs were transduced into leukemia cells with an average infection efficiency of 20%. The relative change in GFP% was monitored over 10 days by flow cytometry and used as a readout of cell growth inhibition, plotted as fold depletion [GFP%(d2) / GFP%(d12)]. **b)** The fold depletion of all LMN-shRNAs targeting the 38 identified hits in the primary screen. The dotted line represents a three-fold depletion cutoff. Several genes failed to validate, which might be due to (i) true false-positives in the primary screen, (ii) variable effects in the independent leukemia line, (iii) differences in the shRNA expression system. Based on the total number of identified shRNAs displaying maximum depletion (25-fold), Brd4 (shown in red) was identified as the top hit in the screen.



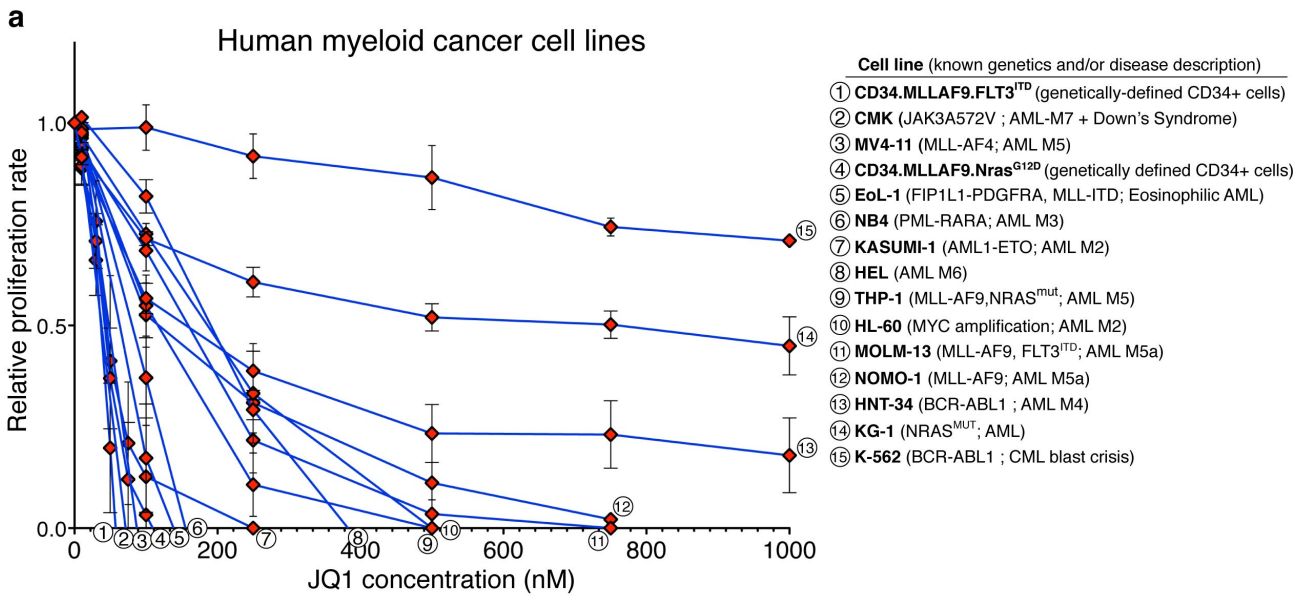
Supplementary Figure 4. Comparison of Brd4-shRNA effects in leukemia, MEF, and G1E cells. Dox inducible shRNAs in the TtTMPV vector were transduced into Tet-On competent leukemia and MEF cultures, followed by G418 selection. Leukemia cells were treated with 1 μg/ml dox, while MEFs were treated with 2 ug/ml to ensure that knockdown would be equivalent or greater in MEF. **a)** RT-qPCR of Brd4 mRNA levels following 48

hours of dox treatment. (n=4). Error bars represent s.e.m. **b)** Competitive proliferation assays. Selected cells were mixed with untransduced cells at an 8:1 ratio, and subsequently cultured in the presence of dox. The relative percentage of Venus+/TurboRFP+ (shRNA expressing) cells was determined at indicated time points and changes used to readout growth inhibitory effects. (n=3). Error bars represent s.e.m. **c)** Representative flow cytometry plots showing cell cycle analysis (BrdU/7-AAD double staining) of cells in b) after 5 days of dox treatment. Events are gated on Venus+/TurboRFP+ (shRNA+) cells. The experiment was performed three times with similar results; a representative experiment is shown. **d)** Apoptosis measurement using Annexin V/DAPI double staining of cells in b) after 5 days of dox treatment. To specifically analyze shRNA-mediated apoptosis induction, the primary gating was applied to viable shRNA-expressing cells (FSC/SSC; Venus+/TurboRFP+), which accounts for the lack of accumulated dead (Annexin V+/DAPI+) cells. The experiment was performed twice and one representative experiment is shown. **e)** GFP depletion of LMN-shRNAs performed in G1E as depicted in Supplementary Fig. 3a. (n = 3). Error bars represent s.e.m.



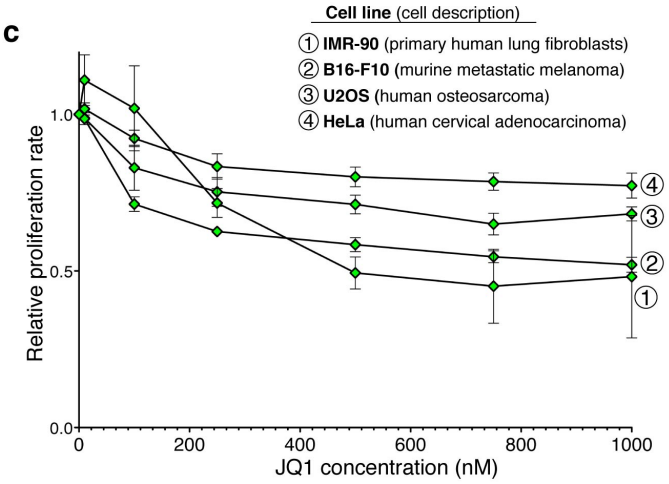
Supplementary Figure 5. shRNA knockdown of BRD4 is sufficient to inhibit growth of human AML cell lines THP-1 and MOLM-13. shRNAs targeting human BRD4 were cloned into the TRMPV-Neo vector, followed by retroviral transduction of Eco-receptor+/Tet-ON competent human AML cell lines THP-1 and MOLM-13. Cells were selected with G418 for 1 week. **a)** Knockdown efficiency of BRD4 upon conditional RNAi suppression. RT-qPCR was performed on TRMPV-MOLM-13 lines following 48 hours of dox treatment (n=3). Error bars represent s.e.m. **b & c)** Competitive proliferation assays of MOLM-13 and THP-1. Selected cells were mixed

with untransduced cells and subsequently cultured in the presence of dox. The relative percentage of dsRed+/shRNA+ cells was determined at indicated time points and changes were used to measure growth inhibitory effects. Results are the average of two independent experiments. All results are normalized to a control shRNA (shRen.713). Error bars represent s.e.m. **d)** Representative flow cytometry plots showing cell cycle analysis (BrdU/DAPI double staining) in cells in (b and (c) after 5 days of dox treatment. Events are gated on dsRed+/shRNA+ cells.



b

Number	Cell line	Proliferation IC50 (nM)
1	CD34.MLLAF9.FLT3	38
2	CMK	43
3	MV4-11	58
4	CD34.MLLAF9.NRAS	42
5	EoL-1	69
6	NB4	84
7	KASUMI-1	45
8	HEL	187
9	THP-1	111
10	HL-60	183
11	MOLM-13	164
12	NOMO-1	108
13	HNT-34	146
14	KG-1	763
15	K-562	>1000

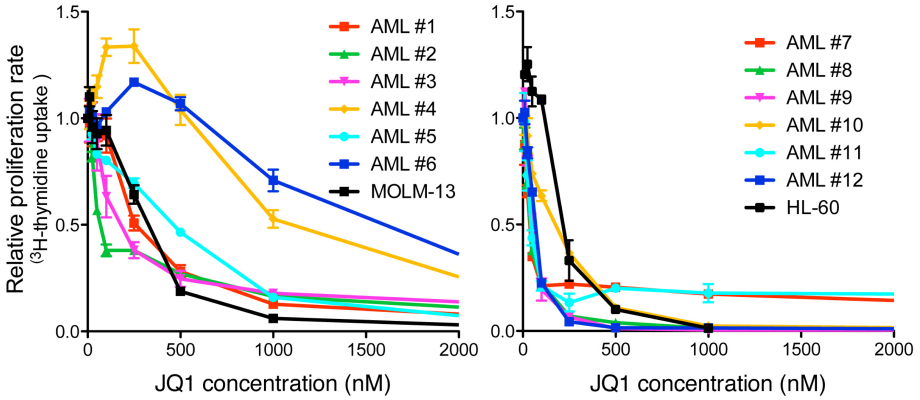


Supplementary Figure 6. JQ1 displays a broad anti-leukemia activity in diverse human AML cell lines. a) Proliferation rates of JQ1 treated human leukemia cell lines. Disease classification and genetic information about leukemia cell lines was obtained from the "Guide to Leukemia-Lymphoma Cell Lines" eBook[3], a gift from H.G. Drexler. Proliferation rates were calculated by measuring the increase in viable cell number after 3 days in culture and fitting data to an exponential growth curve. Results are normalized to the proliferation rate of control (DMSO treated) cells, set to 1. (n = 3). Error bars represent s.e.m. **b)** Table summarizing the JQ1 IC50 using the data shown in (a). A majority of human myeloid leukemia cell lines display an IC50 < 500 nM. **c)** Proliferation rates of JQ1 treated adherent cell lines. Calculated as in (a).

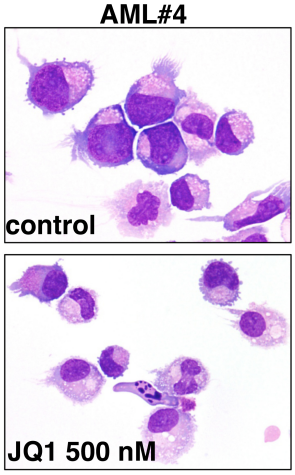
a

AML:	F/M	Age	FAB	WHO	WBC 10^9/L	% Blast cells PB	% Blast cells BM	Karyotype	Mutations
1*	F	32	M1	AML with t(9;11)	0.4*	80%	73%	46,XX, t(9;11)	MLL1-AF9
2	M	61	M5	AML monoblastic	35.1	33%	72%	46,XY, t(11;17)	MLL1-MSF
3	M	65	M5	AML with t(9;11)/NPM1m	94.8	6%	90%	47,XY, t(9;11),+8	MLL1-AF9, FLT3-D835, NPM1m
4	M	80	M4	AML with NPM1m	198.5	25%	52%	46,XY	FLT3 ITD, KIT D816V, NPM1m
5	M	54	M1	AML with NPM1m	361.5	95%	92%	46,XY	FLT3 ITD, NPM1m
6	F	49	M4	AML myelomonocytic	15.4	16%	63%	46,XX	FLT3 ITD
7	M	67	M1	AML with myelodysplasia	74.6	95%	84%	complex	-
8*	F	61	M5	AML with myelodysplasia	82.1*	77%	74%	46,XX,del12p,del20q	-
9	F	39	M5	AML monoblastic	37.7	65%	94%	47,XX,t(3;11),+8	-
10	F	49	M4	AML with inv16	94.2	47%	57%	46,XX,inv16	FLT3 ITD
11	M	58	M2	AML with t(8;21)	100	60%	58%	46,XY,t(8;21)	-
12	M	23	M2	AML with t(8;21)	13.7	52%	59%	45,X,-Y, t(8;21)	-

b



c



d

AML:	source	3H-thymidine-uptake +cytokines* IC50 (nM)	3H-thymidine-uptake -cytokines IC50 (nM)	Induction of Apoptosis** % Apoptotic Cells (Giemsa) 500 nM JQ1	1,000 nM JQ1	Maturation
1	PB	280	n.t.	n.t.	n.t.	n.t.
2	BM	90	70	14	22	+ (macrophage)
3	BM	160	240	n.t.	n.t.	n.t.
4	PB	1030	420	14	18	++ (macrophage)
5	BM	420	n.t.	30	50	+ (myeloid)
6	BM	1420	140	14	37	++ (myeloid)
7	BM	40	n.t.	23	28	+ (myeloid)
8	PB	40	50	33	27	-
9	BM	50	50	n.t.	n.t.	n.t.
10	BM	150	60	36	55	++ (macrophage)
11	BM	40	n.t.	n.t.	n.t.	n.t.
12	BM	60	n.t.	n.t.	n.t.	n.t.
HL60	+ ctl		200			
MOLM13	+ ctl		135			

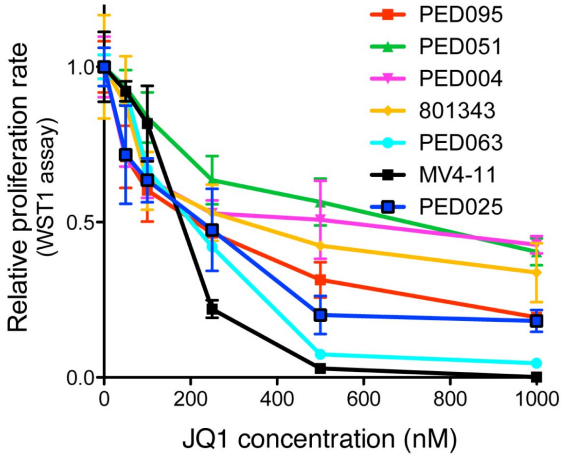
Supplementary Figure 7. JQ1 sensitivity of patient-derived adult AML samples. a) Table of clinical and pathological information of AML specimens analyzed. * patients analyzed at relapse. WBC, white blood count; F, female; M, male; FAB, French-American-British cooperative study group; WHO, World Health Organization; PB, peripheral blood; BM, bone marrow; NPM1m, mutated NPM1. **b)** Proliferation curves of JQ1-treated AML specimens, in the presence of cytokines. (n = 3). Error bars represent s.e.m. Relative proliferation rate was determined by measuring 3H-thymidine-uptake and comparing to DMSO treated control. Since this proliferation assay is different from what was employed in Fig. 1 and Supplementary Fig. 6, HL-60 and MOLM-13 lines were

included to ensure that IC50 measurements using thymidine uptake are consistent with measurements obtained from direct counts of viable cells. **c)** Wright-Giemsa cytospin of AML sample #4, demonstrating morphologic features of macrophage differentiation. **d)** Summary of impact of JQ1 on proliferation (3H-thymidine-uptake), apoptosis (Giemsa stain), and cell maturation (Wright-Giemsa staining). *Cells were incubated with JQ1 in the presence of G-CSF (100 ng/ml), SCF (100 ng/ml), and IL-3 (100 ng/ml). **The percentage of apoptotic cells was determined on cytospin slides by Wright-Giemsa staining; percentages of apoptotic cells measured in control medium (usually <10% of cells) was subtracted in each case.

a

Sample ID	Age Group	Phenotype	Molecular/Cytogenetic
PED025	Infant	MPAL (B/myeloid)	MLL-ENL
PED095	Infant	MPAL (B/myeloid)	MLL-AF4
PED051	Child	AML	FLT3/ITD
PED004	Child	AML	monosomy 7, BCR-ABL
801343	Infant	pre-B ALL	MLL-ENL
PED063	Child	AML	CBFB-MYH11
MV4-11	+ ctl	AML	MLL-AF4, FLT3/ITD

b



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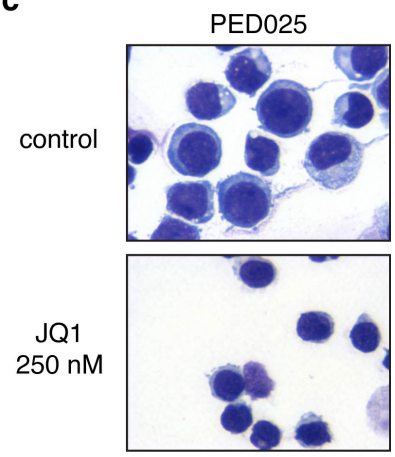
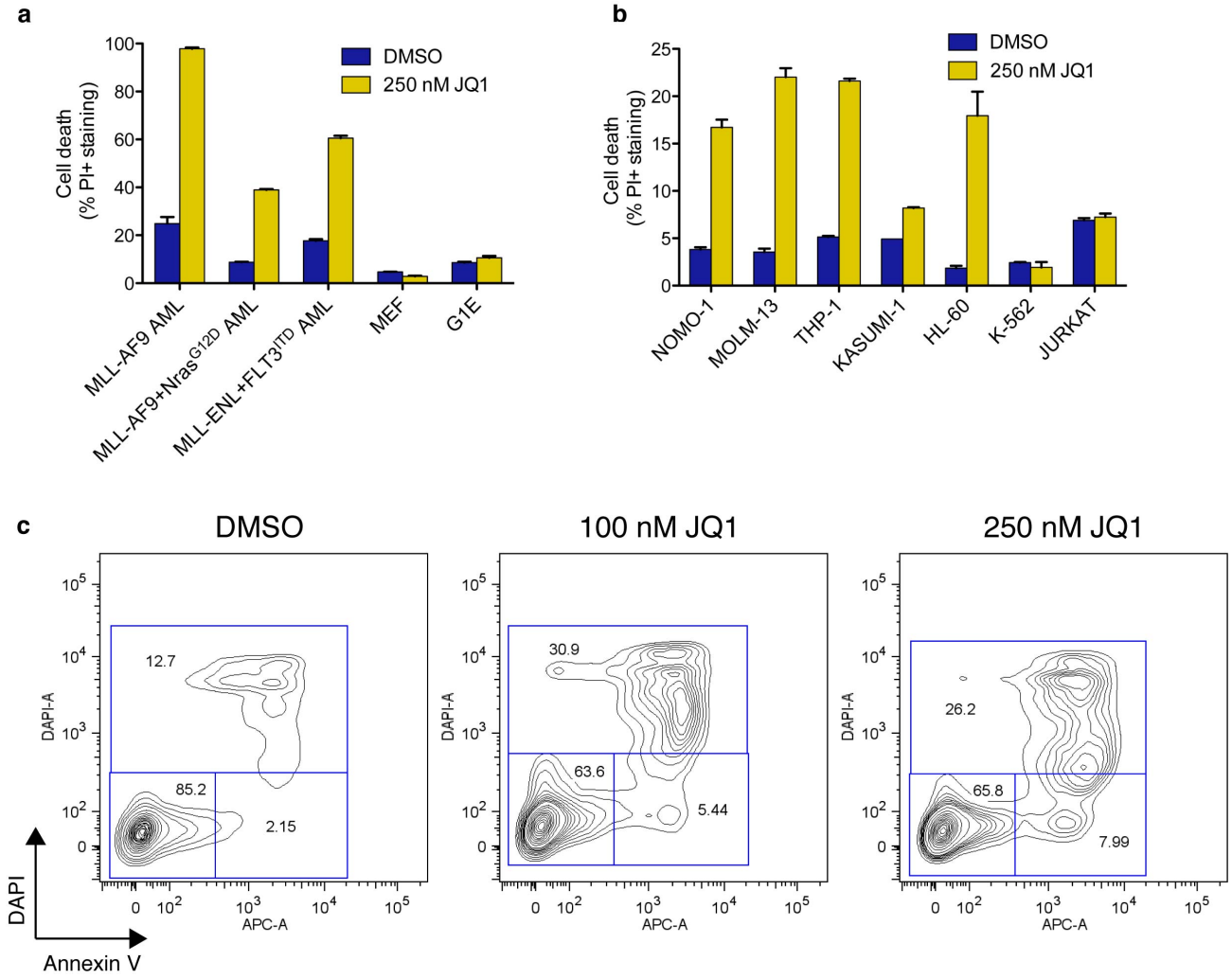


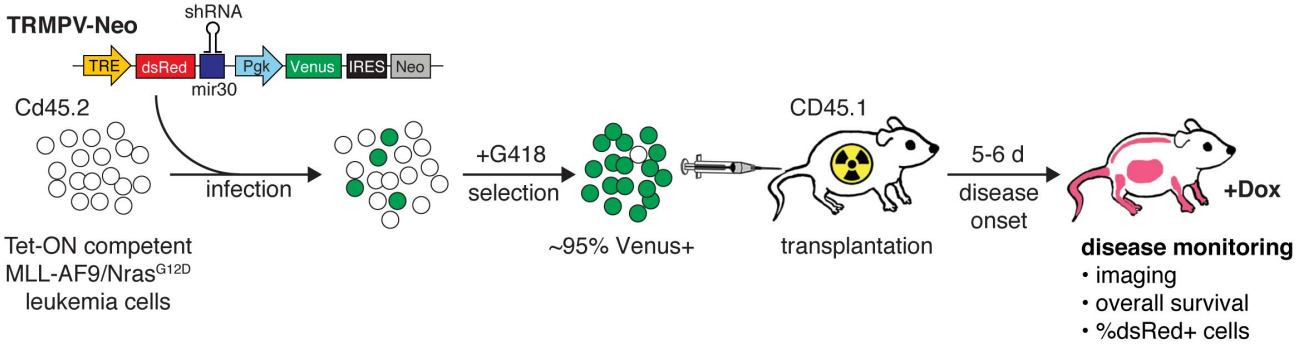
d

Sample ID	WST1 IC50 (nM)	Induction of Apoptosis** % Apoptotic Cells (AVB) 500 nM JQ1	1,000 nM JQ1	Maturation
PED025	163	32	33	++ (Lymphoid)
PED095	174	32	18	++ (Myeloid)
PED051	596	21	24	-
PED004	451	19	34	+ (Myeloid)
801343	345	13	20	++ (Lymphoid)
PED063	136	21	24	-
MV4-11	165	80	86	n.t.

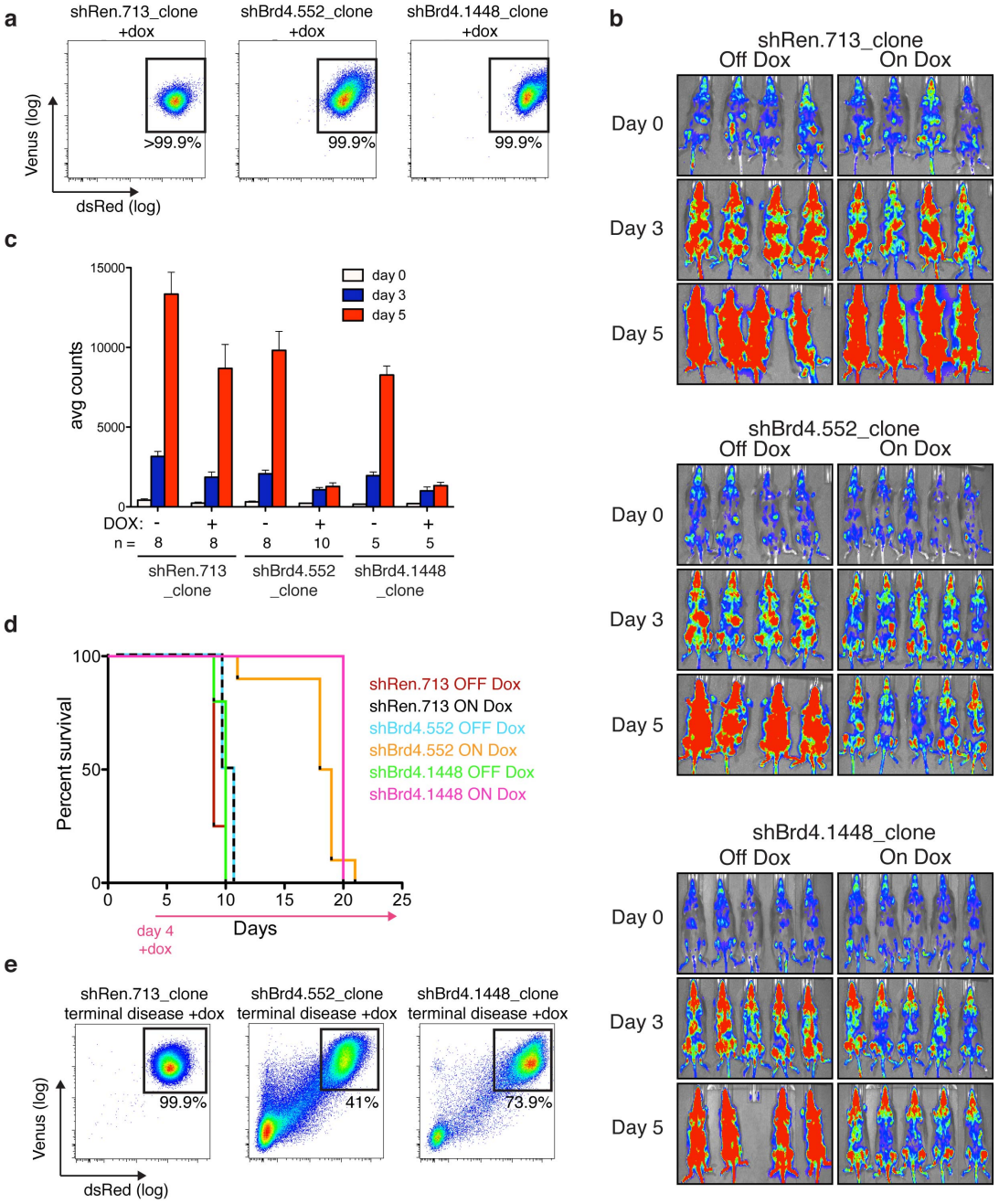
Supplementary Figure 8. JQ1 sensitivity of patient-derived pediatric leukemia samples. a) Table summarizing patient leukemia sample information. MPAL, Mixed Phenotype Acute Leukemia. **b)** Proliferation curves of JQ1-treated leukemia specimens (n = 3). Error bars represent s.e.m. Relative proliferation rate was determined using the WST1 assay and comparing JQ1 treated cells to DMSO treated controls. Since this proliferation assay is different from what was used in Fig. 1 and Supplementary Fig. 6, MV4-11 cell line was included to ensure that IC50 measurements are consistent with other findings in this study. **c)** Wright-Giemsa cytospin of sample PED025, demonstrating features of lymphoid differentiation. Wright-Giemsa staining of cytospins was performed on specimens treated with 250 nM JQ1 for 48 hours. **d)** Summary of effects of JQ1 on pediatric leukemia samples. Percentages of apoptotic cells measured in control medium was subtracted in each case.



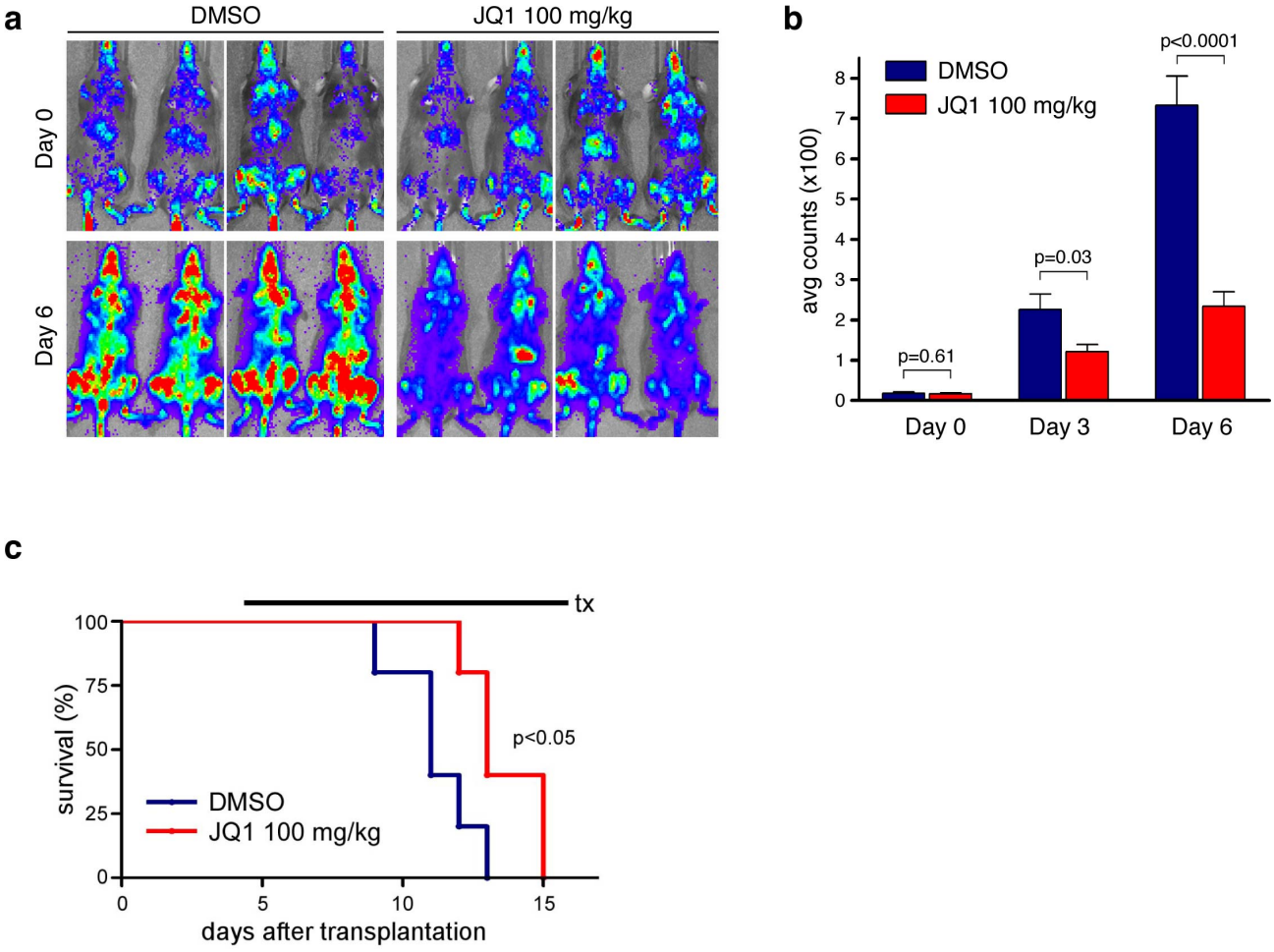
Supplementary Figure 9. JQ1 treatment leads to apoptosis of leukemic cells. a, b) Cell death quantitation. Cells were treated with 250 nM JQ1 for 48 hours, followed staining with PI. PI + cells were quantified by flow cytometry. (n=3). Error bars represent s.e.m. **c)** Apoptosis measurement of MLL-AF9/Nras^{G12D} leukemia cells treated with JQ1 for 48 hours. (n=3). A representative experiment is shown.



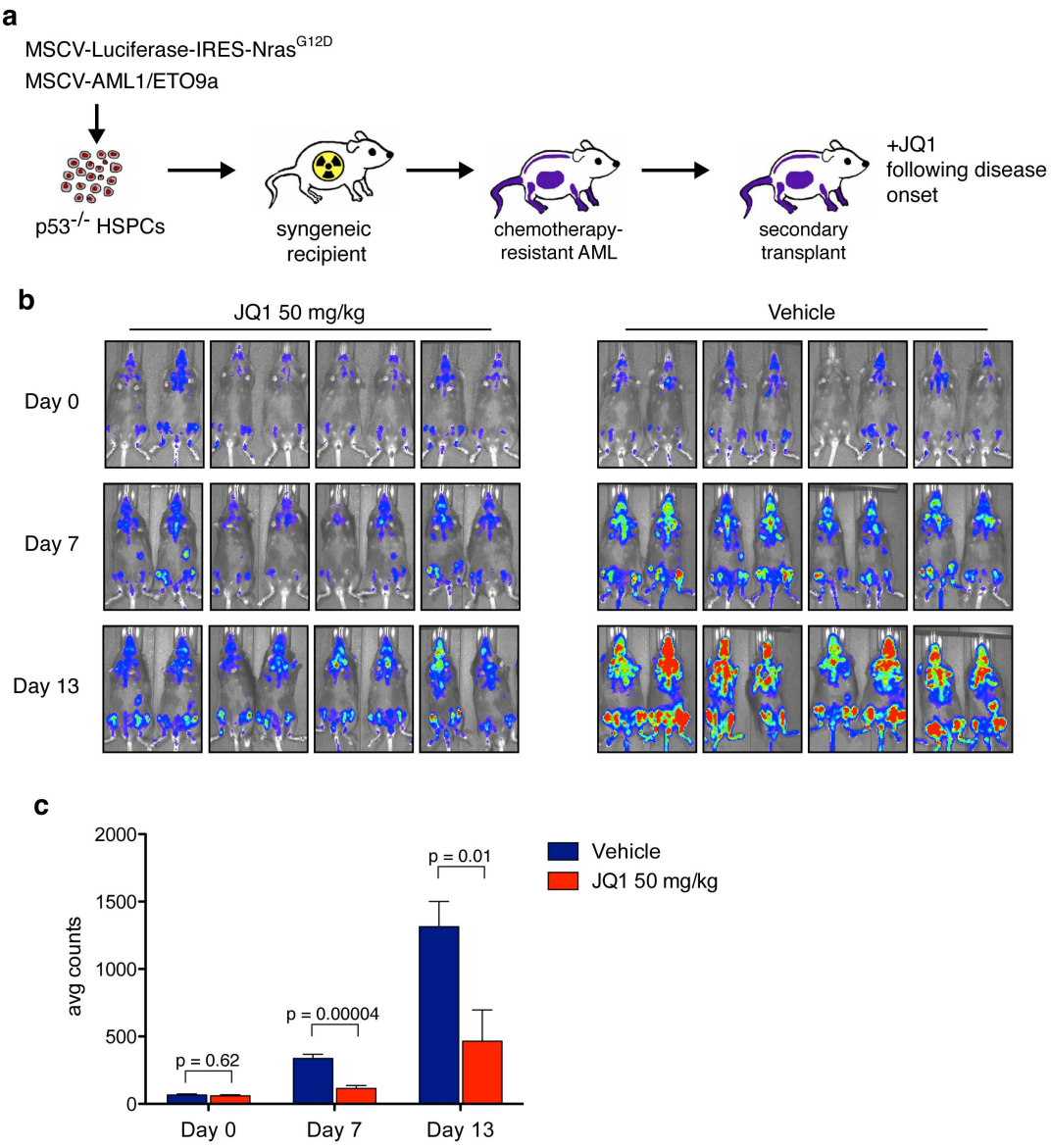
Supplementary Figure 10. Schematic of conditional RNAi experiments. Tet-ON competent leukemia cells were transduced with TRMPV-Neo-shRNAs, followed by G418 selection, and subsequently transplanted into sublethally irradiated recipient mice. Upon disease onset (determined using bioluminescent imaging, typically after 5-6 days), shRNA expression was induced by dox supplementation in drinking water and chow. Mice were then evaluated using bioluminescent imaging, overall survival, and contribution of dsRed+ (shRNA expressing) leukemia cells to the final disease burden (for details see also[2]).



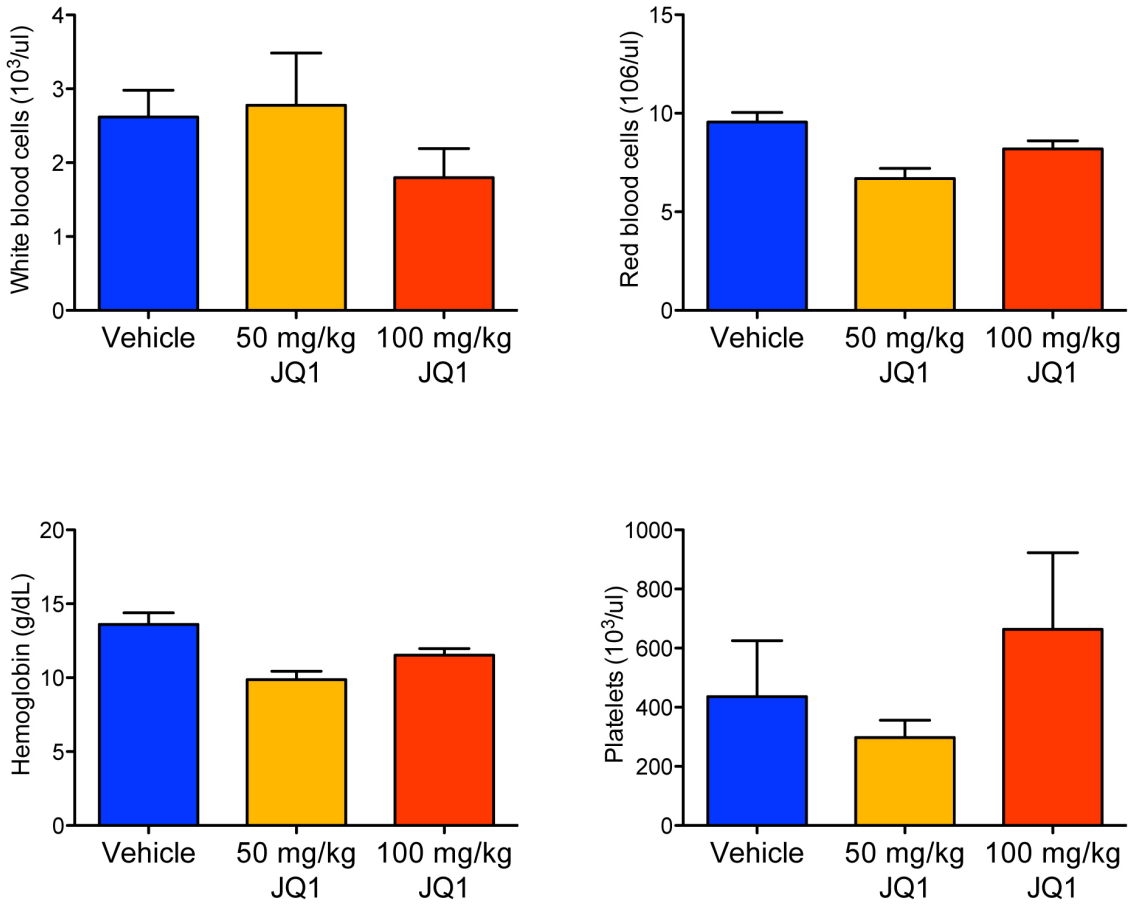
Supplementary Figure 11. Clonal TRMPV-Neo leukemia lines display robust disease inhibition upon dox induction of shRNA expression. TRMPV-Neo clones were generated by performing limiting serial dilutions. **a)** FACS evaluation of shRNA expression after 2 days of dox induction. While TRMPV-Neo pools typically are ~85% Venus+/dsRed+ (Fig. 2), identified clones are >99.9% positive. Representative plots are shown. **b)** Bioluminescent imaging of leukemia burden. Dox was administered following disease onset (day 5-6 post transplant). **c)** Quantitation of bioluminescent imaging responses following dox treatment. Number of mice in each treatment arm is indicated; error bars represent s.e.m. **d)** Kaplan-Meier survival curves of recipient mice transplanted with the indicated TRMPV-shRNA leukemia clones. Interval of dox treatment is indicated by arrow. Overall survival benefit of clonal shBrd4 disease is 9-10 days, whereas with non-clonal pools median survival is 4 days. **e)** Representative flow cytometry plots of donor-derived (CD45.2+) bone marrow cells in terminally diseased dox-treated mice. An outgrowth of shRNA-negative cells emerges in all moribund mice on dox, suggesting that leukemia cells evade Brd4-shRNA expression despite the use of clonal lines.



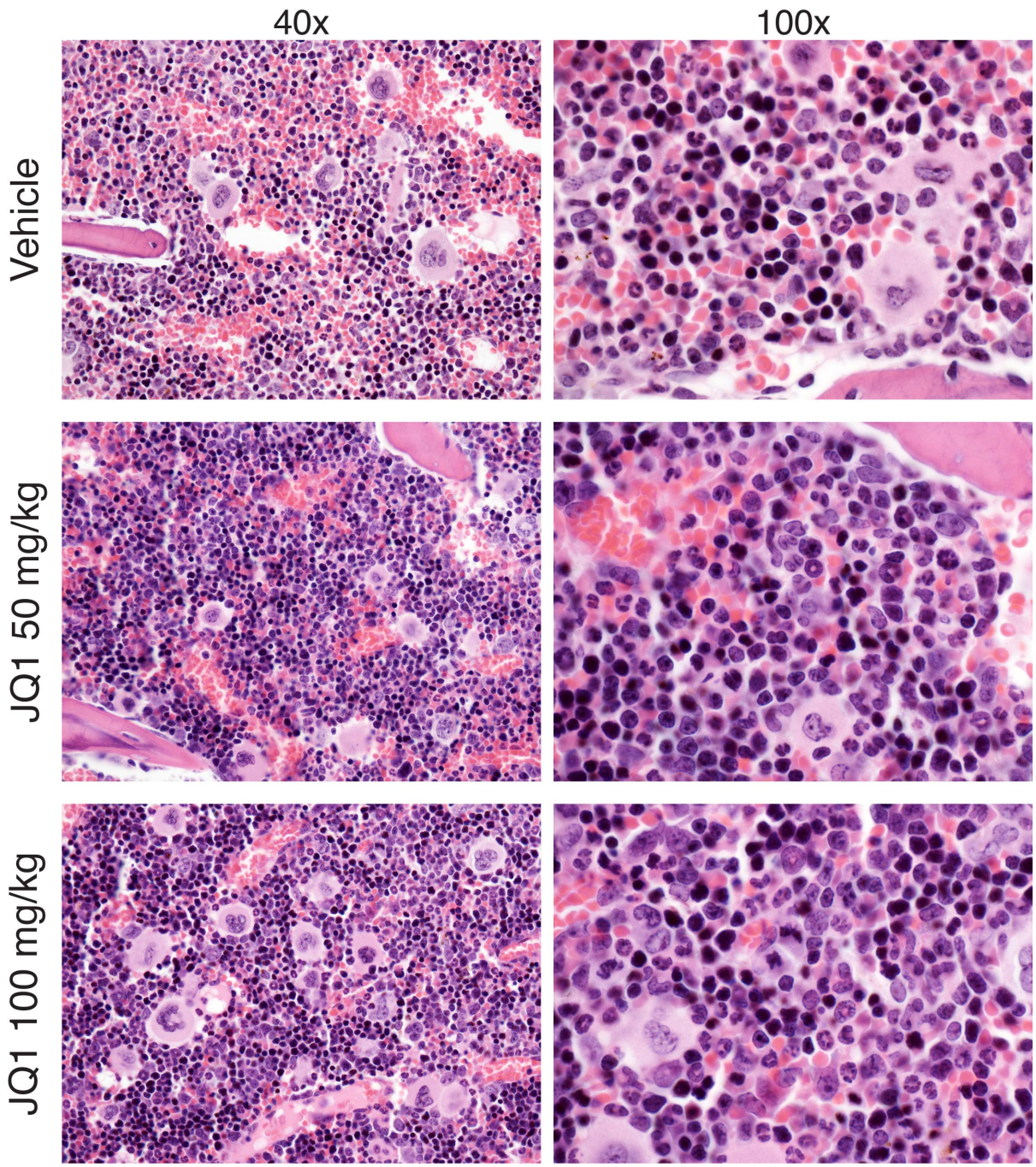
Supplementary Figure 12. 100 mg/kg/d JQ1 treatment displays single agent activity in established MLL-AF9/Nras^{G12D} leukemia. a) Bioluminescent imaging of leukemic mice treated with 100 mg/kg/d JQ1. Mice were transplanted with 1 million leukemia cells, followed by treatment initiation on day 4 (when disease becomes visible by imaging). **b)** Quantitation of bioluminescent imaging. (n=8 in each group). Error bars represent s.e.m. **c)** Kaplan-Meier survival curves of control and JQ1-treated mice. Treatment was initiated on day 4 post transplant (indicated by horizontal line). Statistical significance was calculated using a Log-rank test.



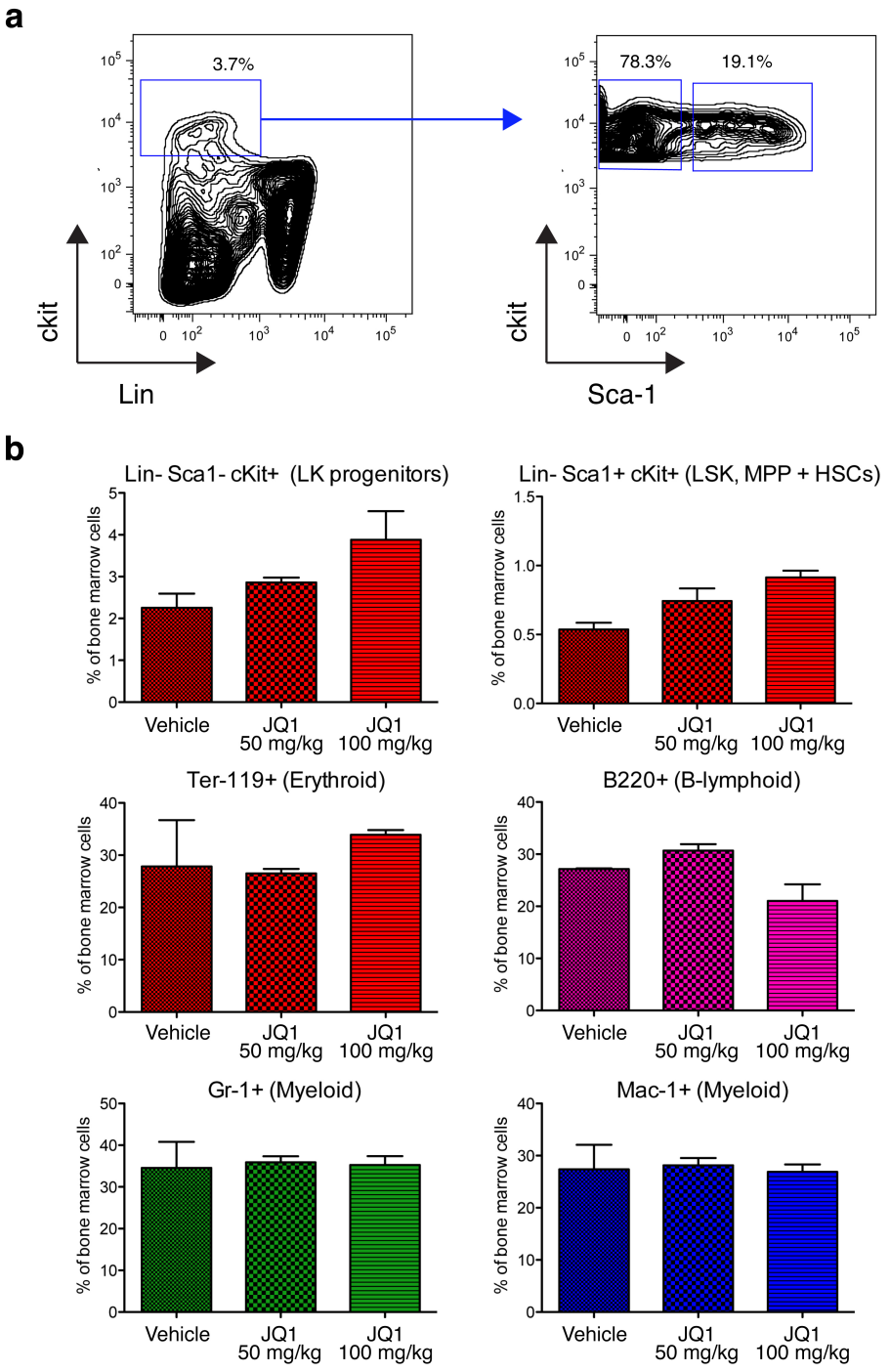
Supplementary Figure 13. JQ1 has single-agent activity in the AML1-ETO9a/Nras^{G12D}/p53 $^{-/-}$ AML mouse model. a) Experimental strategy. p53$^{-/-}$ HSPCs were cotransduced with AML1-ETO9a and Luciferase-IRES-Nras^{G12D} constructs, followed by transplantation of cells into a sublethally irradiated recipient mouse. With a high-penetrance, mice succumb to AML as has been described previously[4]. Splenic leukemia material derived from moribund mice was transplanted into secondary recipient animals. 50 mg/kg/d JQ1 treatment was initiated following 5 days of disease onset, confirmed by bioluminescent imaging. **b)** Bioluminescent imaging of leukemic mice at indicated timepoints. **c)** Quantitation of bioluminescent imaging responses to JQ1 treatment. Shown are mean values of 8 mice in each treatment group, error bars represent s.e.m, p-values were calculated using a two-tailed Student's paired t-test.



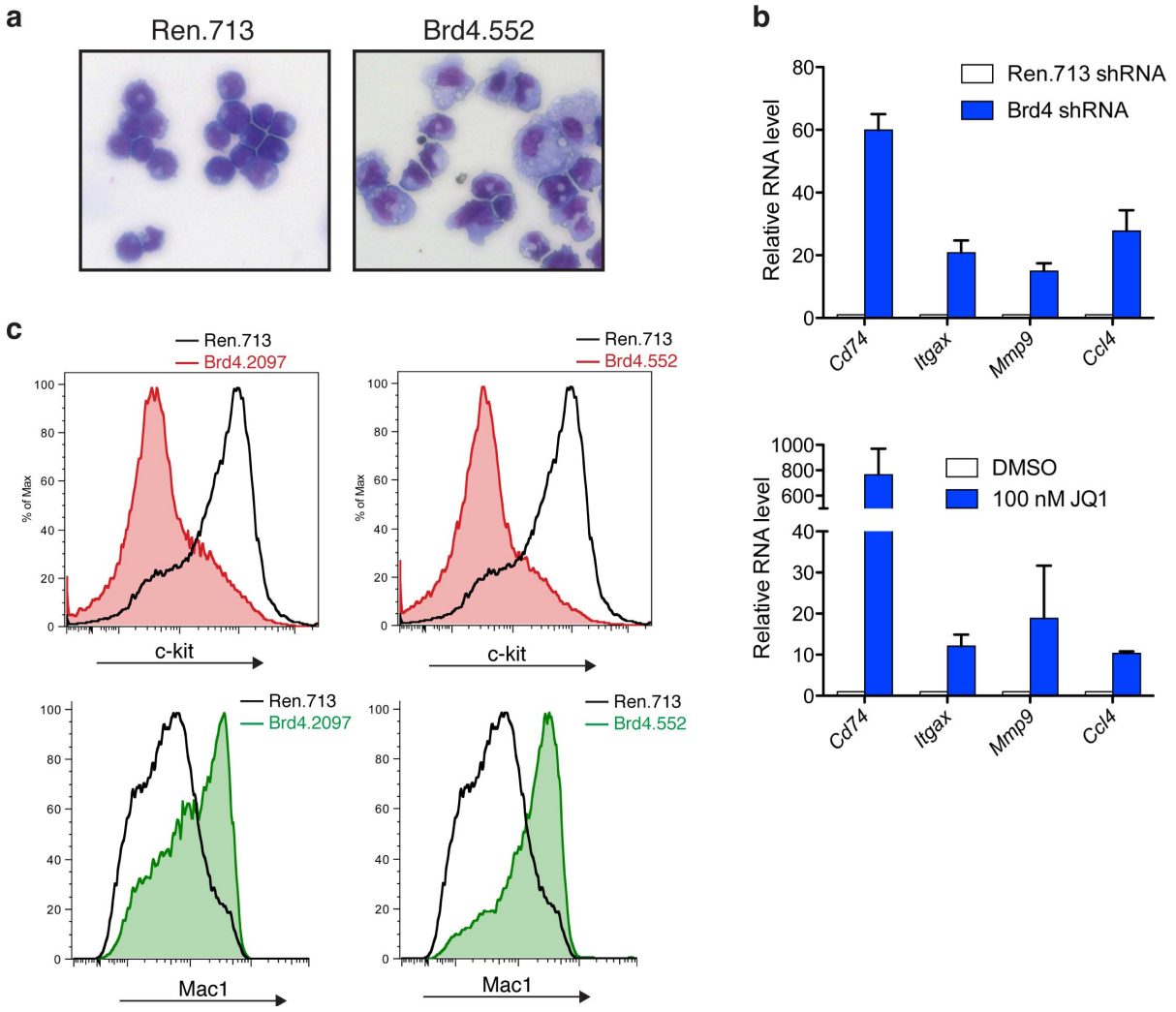
Supplementary Figure 14. Evaluation of effects of JQ1 treatment on peripheral hematopoietic cell counts. Healthy C57Bl/6 mice were treated with either JQ1 (50 or 100 mg/kg/d) or DMSO-carrier (400 ul/d), both administered by intraperitoneal injection for twenty days. Peripheral blood was collected by submandibular bleeding and analyzed using a Hemavet 950 analyzer (Drew Scientific). Values represent average values of 3 replicate mice; error bars indicate s.e.m.



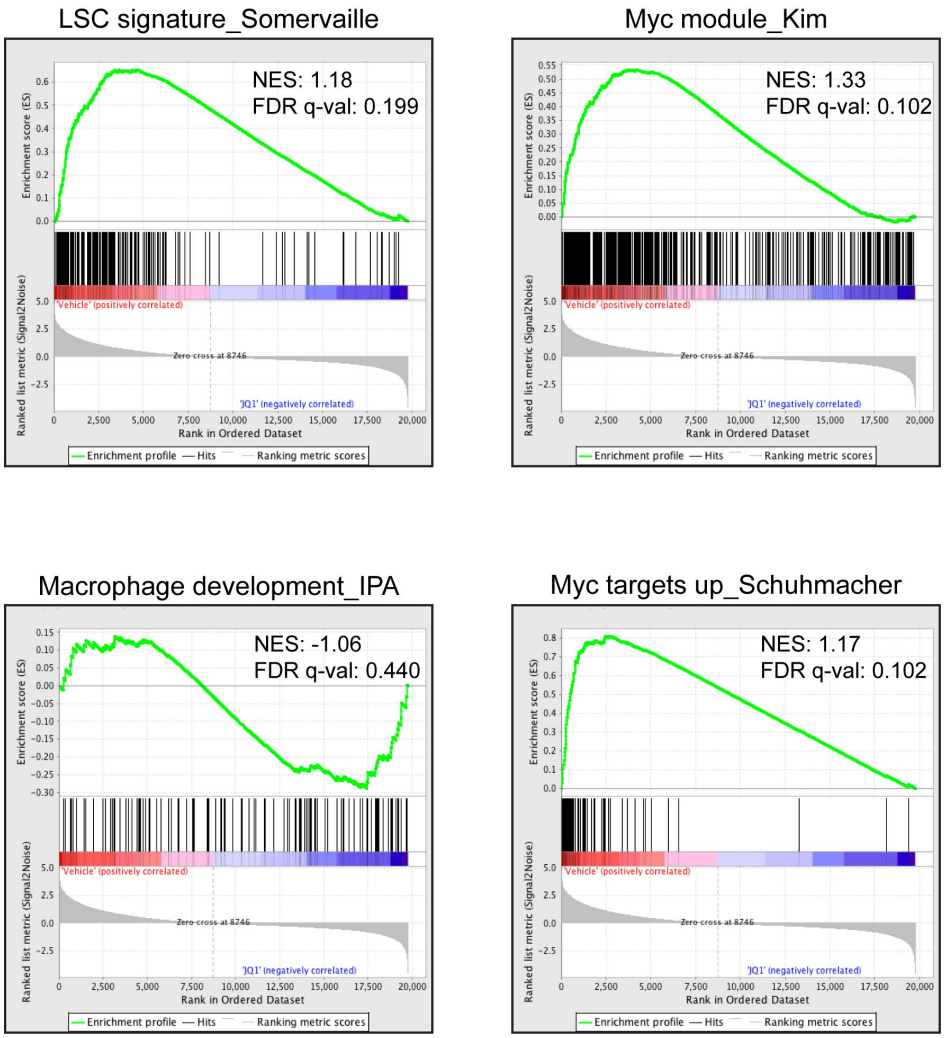
Supplementary Figure 15. JQ1 administration for twenty days has a minimal impact on normal hematopoiesis. Healthy C57BL/6 mice were treated with daily intraperitoneal injections of 50 mg/kg or 100 mg/kg JQ1 for 20 days prior to bone marrow analysis. H&E stained histopathology of sternal bone marrows from mice treated with vehicle or with JQ1 showed a normal cellularity and normal mixed hematopoiesis. n=3-5 mice for each treatment group. Representative images are shown.



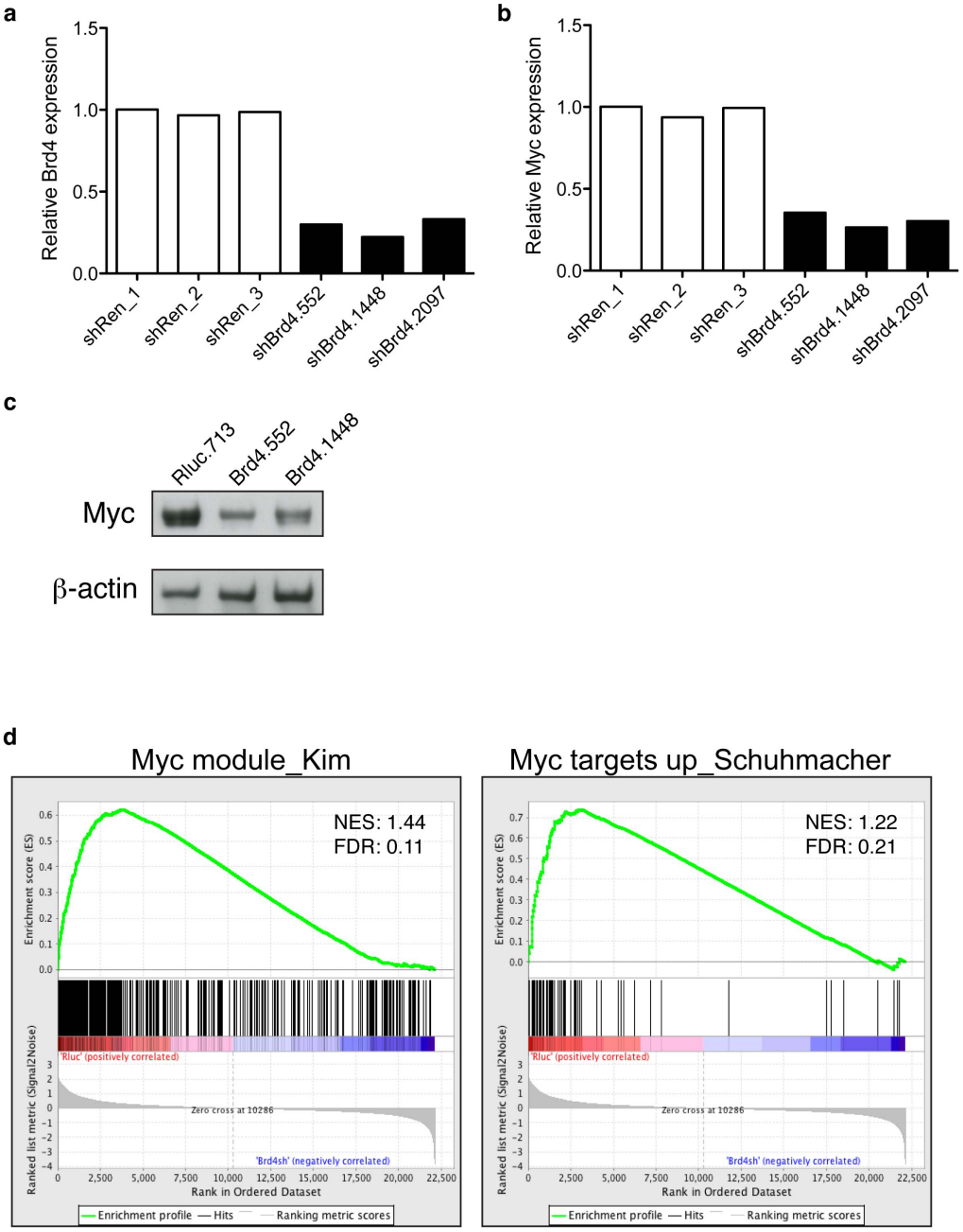
Supplementary Figure 16. Daily JQ1 administration has a minimal impact on normal hematopoiesis. Healthy C57BL/6 mice were treated with daily injections of 50 mg/kg or 100 mg/kg JQ1 for 20 days prior to bone marrow FACS analysis. **a)** Representative FACS plots of bone marrow cells demonstrating gating used to discriminate and quantify percentages Lin-, ckit+ cells (LK progenitors) and Lin-Sca1+ckit+ (LSK MPP+HSC). **b)** Percentage of total bone marrow cells staining for the indicated antibodies. (n=3). Error bars indicate s.e.m.



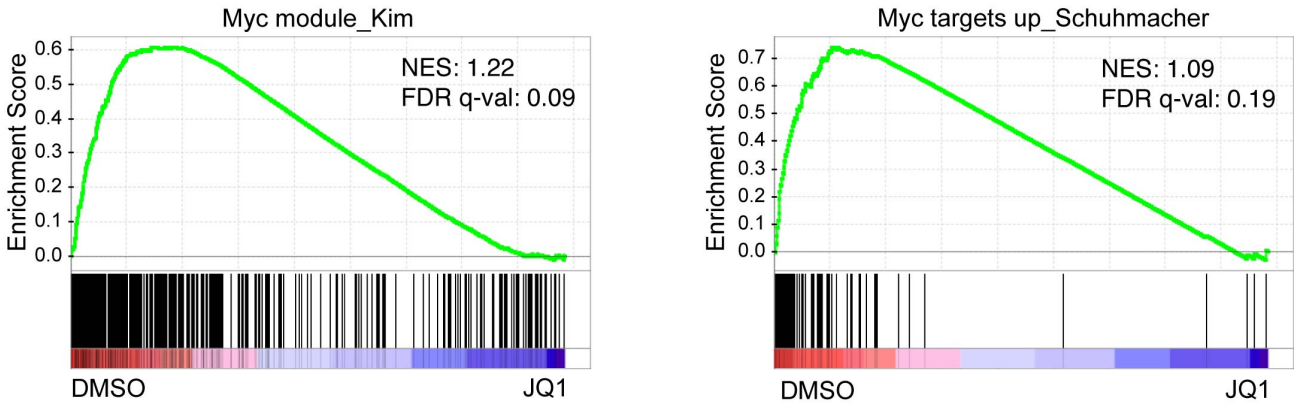
Supplementary Figure 17. Brd4 knockdown leads to myeloid differentiation. a) Light microscopy of May-Grunwald/Giemsa-stained MLL-AF9/Nras^{G12D} leukemia cells following 2 days of dox-induced TRMPV-shRNA expression. **b)** RT-qPCR analysis of genes involved in macrophage functions following 2 days of dox-induced TRMPV-shRNA expression or 2 days of 100 nM JQ1 treatment. For shRNA experiments, dsRed+/shRNA+ cells were FACS-sorted to prepare RNA. Brd4 shRNA data shown are an average of Brd4.552, 1448, and 2097 shRNA samples. Signals were normalized to Gapdh, with control samples set to 1. (n = 3). Error bars indicate s.e.m. Genes were identified from expression microarray / GSEA analysis performed in Fig 3e and f. **c)** FACS analysis of c-kit and Mac-1 surface expression after 4 days of dox-induced shRNA expression. shRNA expression was induced from TtTMPV-tranduced leukemia cells. Events are gated on TurboRFP+ (shRNA+) cells.



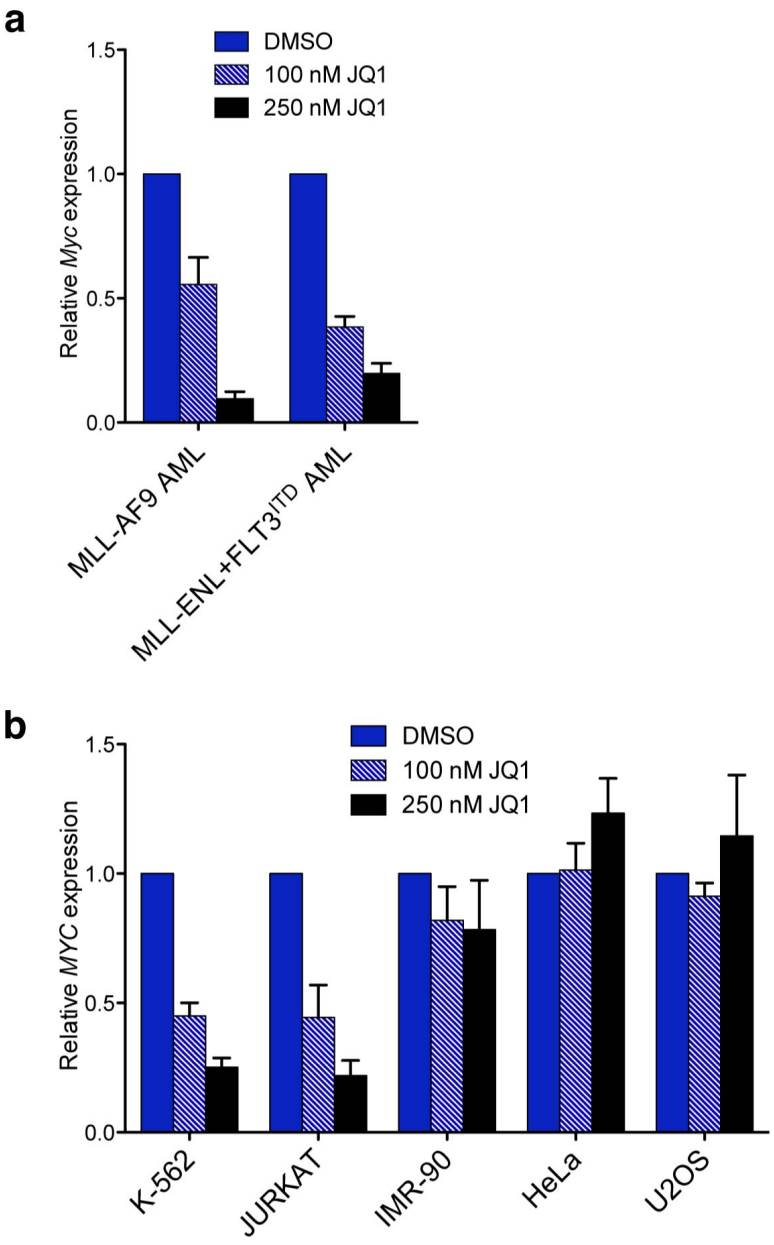
Supplementary Figure 18. JQ1 triggers a similar pattern of gene expression changes in THP-1 human AML cells as seen in murine MLL-AF9/Nras^{G12D} AML model. THP-1 cells were treated with 250 nM JQ1 for 48 hours prior to RNA collection. Expression arrays were performed using Affymetrix human gene ST 1.0 arrays. GSEA plots evaluating changes in macrophage, LSC, and Myc gene signatures upon Brd4 inhibition. Note: Macrophage development_IPA fails to meet significant FDR q-value of 0.25. Human gene sets are included in Supplementary Table 2.



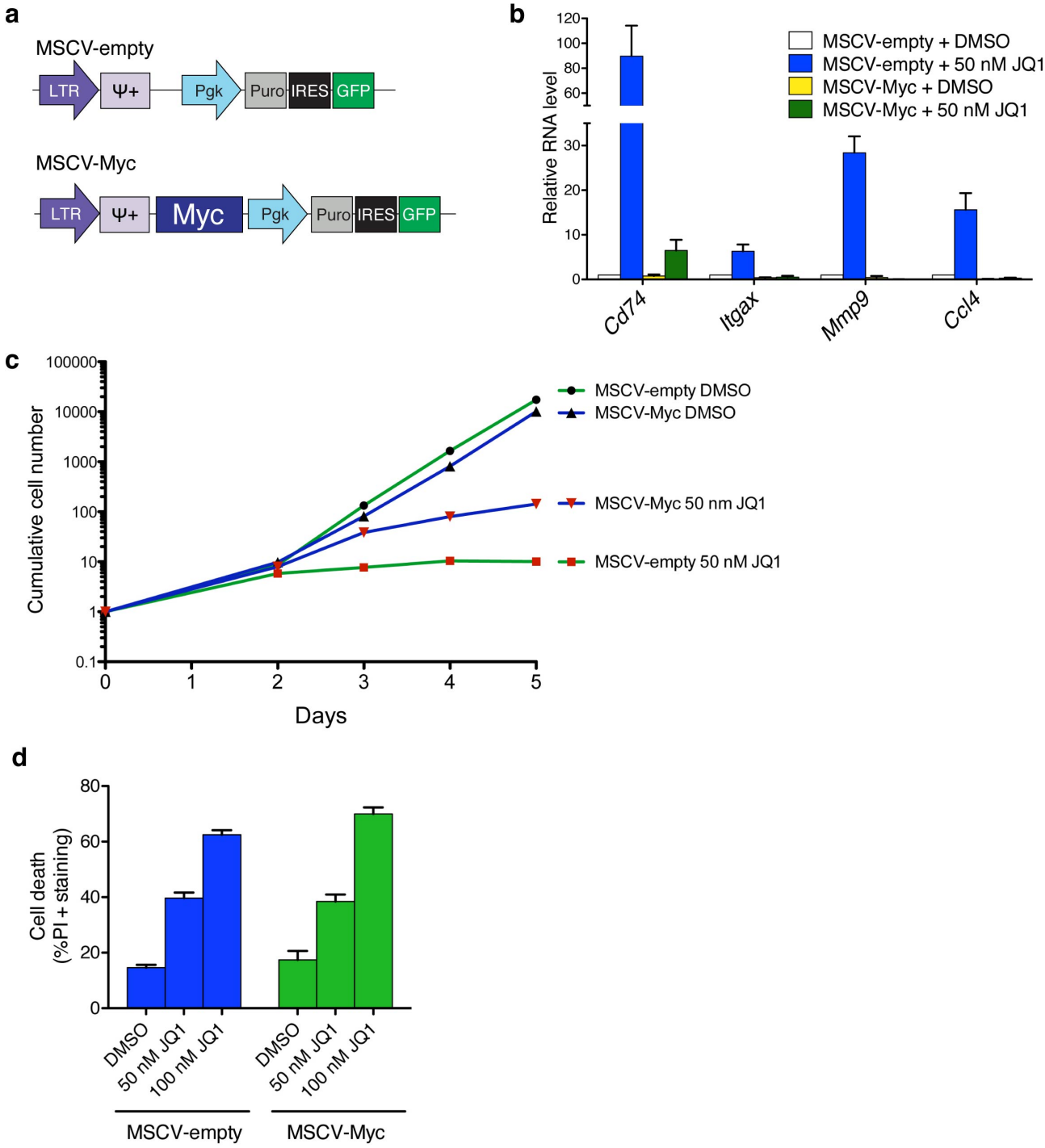
Supplementary Figure 19. Brd4 knockdown via shRNA leads to downregulation of Myc levels and downregulation of Myc target gene expression. a and b) RT-qPCR analysis of Brd4 (a) and Myc (b) mRNA levels prepared from sorted TurboRFP+ (shRNA expressing) leukemia cells transduced with indicated TtTMPV-shRNA constructs. Cells were treated with dox for 3 days. Results were normalized to Gapdh. **c)** Western blotting performed using extracts prepared from Brd4-shRNA expressing cells. TRMPV-transduced MLL-AF9/Nras leukemia clones were used. Cells were treated with dox for 3 days. **d)** Gene set enrichment analysis evaluating changes in Myc downstream target gene expression. Microarray data was obtained from RNA samples described in a). Myc target gene sets have been described previously[5,6].



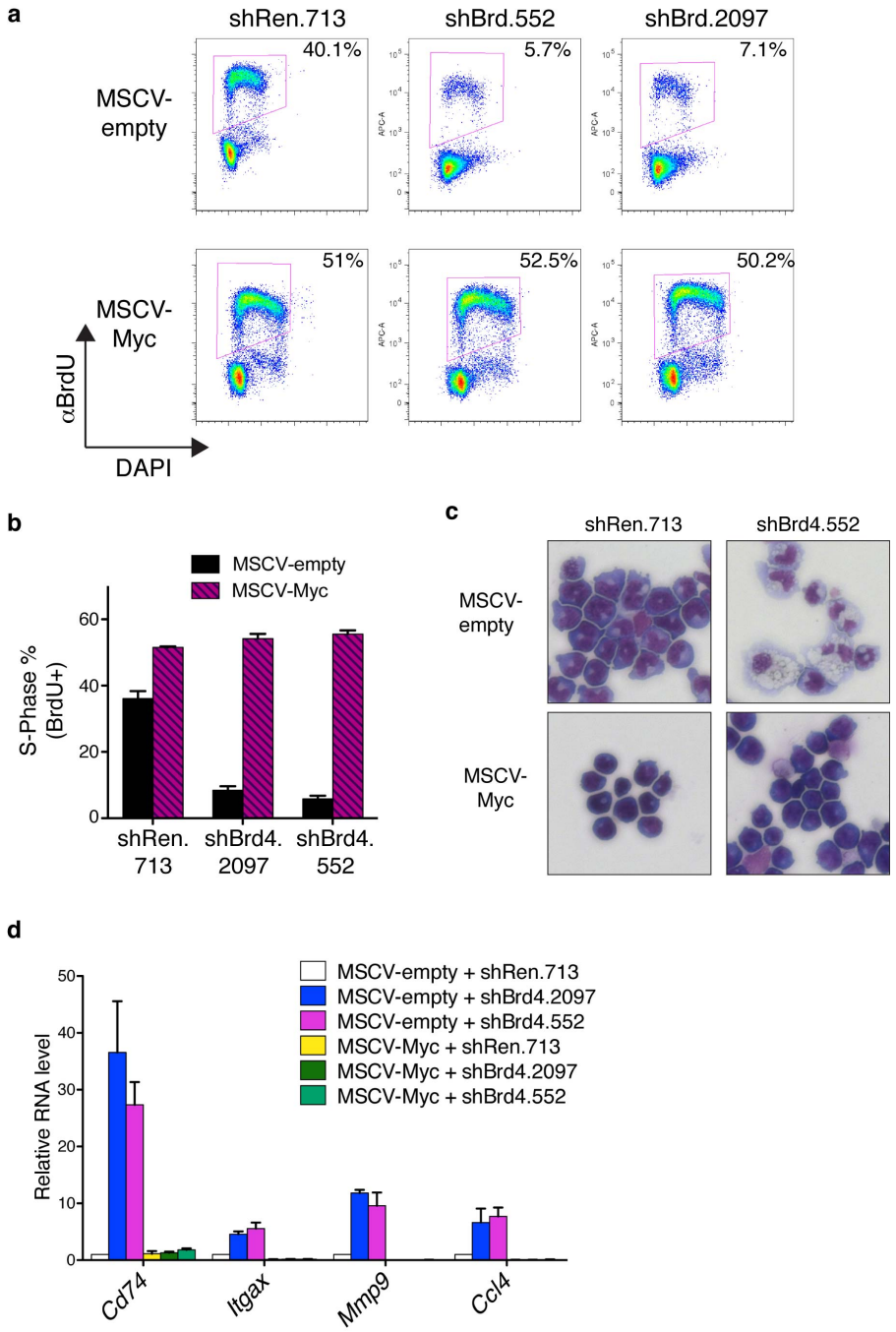
Supplementary Figure 20. JQ1 triggers downregulation of Myc target gene expression. GSEA plots evaluating JQ1-induced alteration in gene signatures downstream of Myc[5,6]. Microarray data was obtained from MLL-AF9/Nras^{G12D} leukemia cells treated for 48 hours with DMSO or 100 nM JQ1.



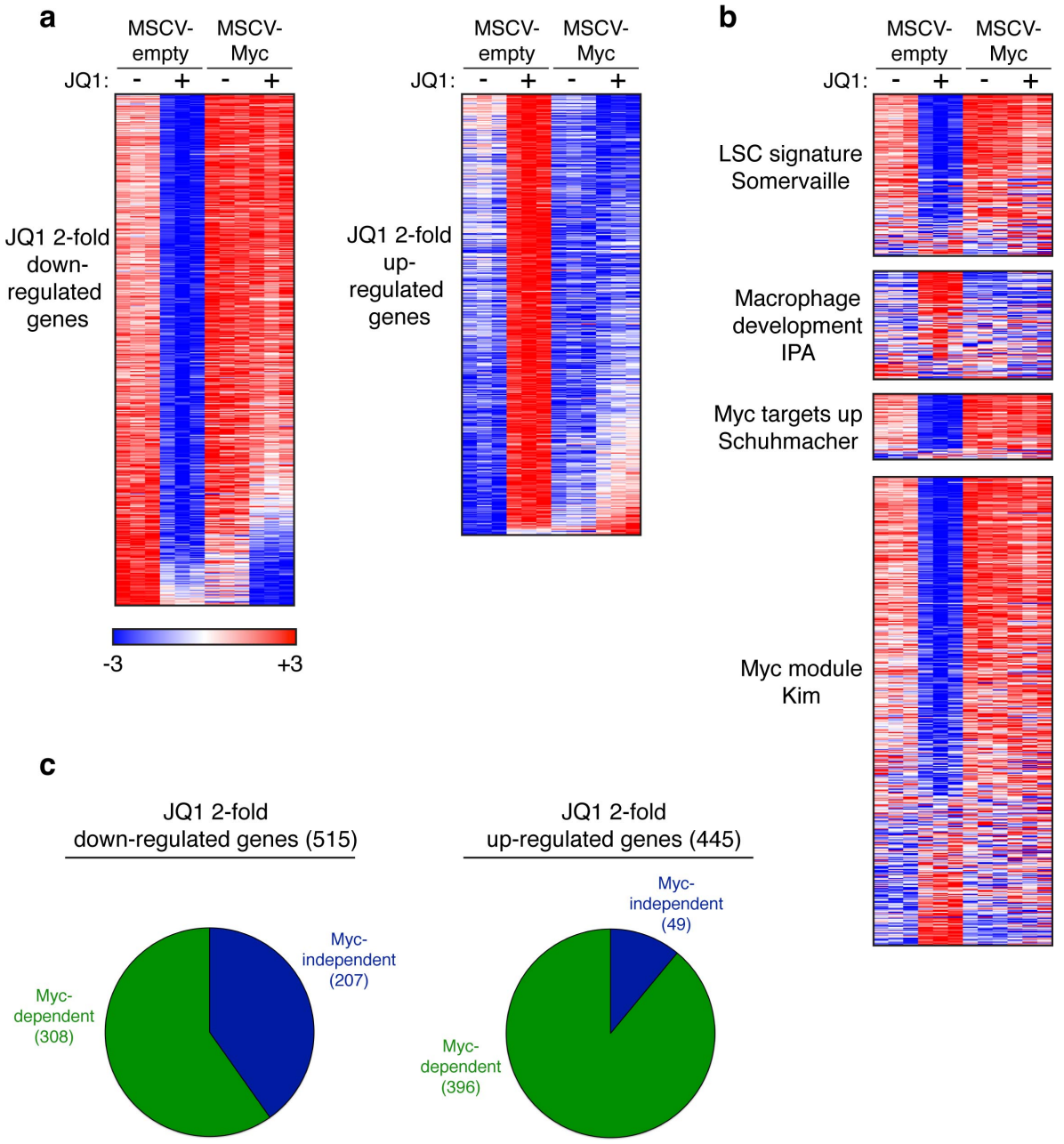
Supplementary Figure 21. 48 hours of JQ1 treatment suppresses Myc expression selectively in leukemia cells. RT-qPCR analysis of Myc RNA levels in mouse (a) or human (b) cell lines. Results are normalized to Gapdh, with RNA levels in untreated cells set at 1 (n = 3). Note: JQ1 triggers downregulation of MYC transcript levels even in K-562 and JURKAT cells, which are insensitive to submicromolar JQ1 doses. This suggests that (i) JQ1 can suppress MYC even in non-AML leukemias and (ii) K-562 and JURKAT appear to less sensitive to MYC suppression than AML cell lines describe elsewhere in the manuscript. n = 3. Error bars indicate s.e.m.



Supplementary Figure 22. Impact of retroviral Myc overexpression on sensitivity of leukemia cells to JQ1. a) Retroviral vectors used for Myc overexpression. **b)** RT-qPCR evaluation of macrophage-related genes upon 5 day JQ1 treatment of leukemia cells overexpressing Myc or empty vector control. n=3. Error bars represent s.e.m. **c)** Cumulative cell number in control and Myc-transduced MLL-AF9/Nras^{G12D} leukemia cells in the presence of 50 nM JQ1 or DMSO carrier control. **d)** Cell death quantitation of JQ1-treated cells on day 4. PI+ cells were quantified by FACS (n=3). Error bars represent s.e.m.

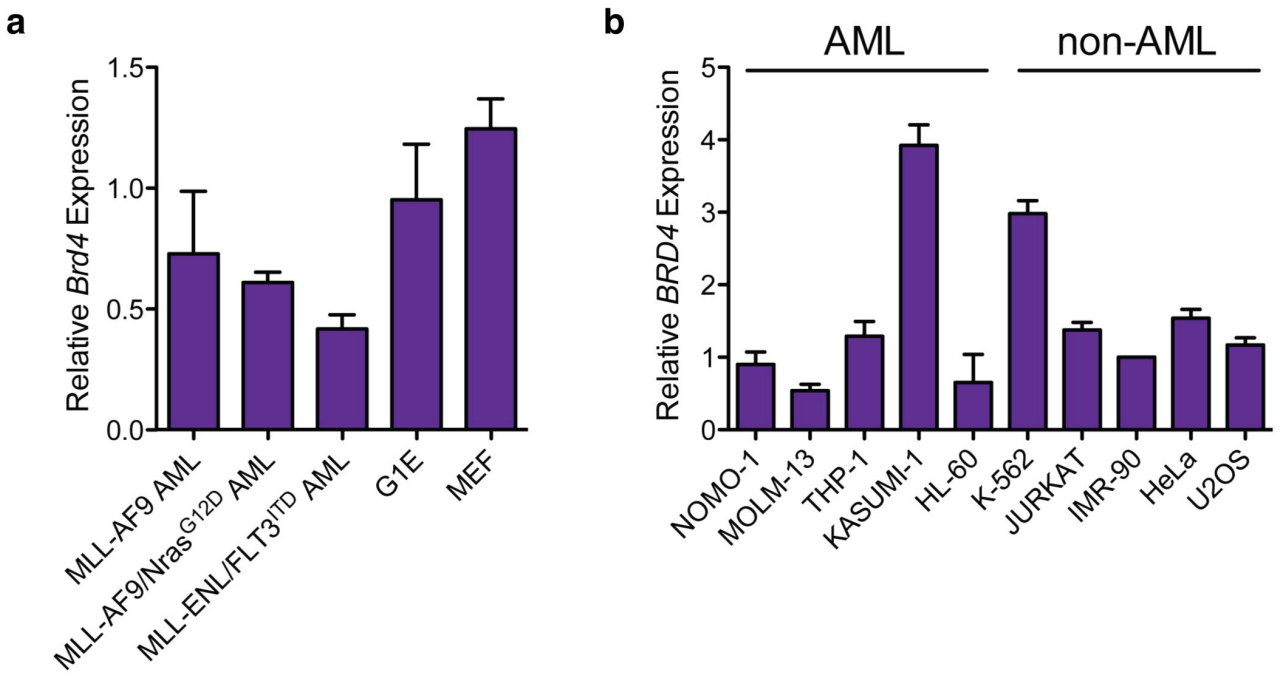


Supplementary Figure 23. Myc overexpression prevents Brd4 shRNA-induced cell-cycle arrest and macrophage differentiation. a) Representative flow cytometry plots showing cell cycle analysis (BrdU/DAPI double staining) of MLL-AF9/Nras^{G12D} leukemia cultures cotransduced with MSCV-Myc or empty vector together with TtTMPV-shRNAs, and subsequently selected with puromycin and G418. Cells were treated with dox for 3 days to induce shRNA expression. Events are gated on dsRed+/shRNA+ cells. **b)** Quantitation of BrdU incorporation in shRNA+/dsRed+ population. n=3. Error bars represent s.em. **c)** Light microscopy of May-Grunwald/Giemsa stained MLL-AF9/Nras^{G12D} leukemia cells. Dox treatment was administered for 2 days. 40X objective. **d)** RT-qPCR evaluation of macrophage-related genes after 2.5 days of dox-induced Brd4-shRNA expression in Tet-ON competent leukemia cells transduced with MSCV-Myc or empty MSCV vector. shRNAs were expressed using the TtTMPV vector. n=3. Error bars represent s.e.m.



Supplementary Figure 24. The majority of JQ1-induced gene expression changes are secondary effects of Myc inhibition. MLL-AF9/Nras^{G12D} leukemia cells transduced with MSCV-Myc or empty vector control were treated with 100 nM JQ1 for 48 hours, followed by collection of RNA for expression microarray analysis. **a)** Row-normalized heatmap of relative expression levels of genes found to be 2-fold downregulated (left) or upregulated (right) following JQ1 treatment in empty vector control leukemia cells. Note: The modest level of Myc overexpression utilized here influences gene expression prior to JQ1-treatment. **b)** Influence of Myc overexpression on gene expression changes of indicated gene sets. Color scale in a) and b) indicates row-normalized expression values. **c)** Categorization of JQ1-induced gene expression changes based on the relationship to Myc expression. Genes that change 2-fold in expression following JQ1 treatment of control cells, were classified as Myc-independent if they are still able to change 2-fold in expression in leukemia cells

transduced with MSCV-Myc. Genes were classified as Myc-dependent if they failed to change 2-fold in expression in JQ1-treated MSCV-Myc cells.



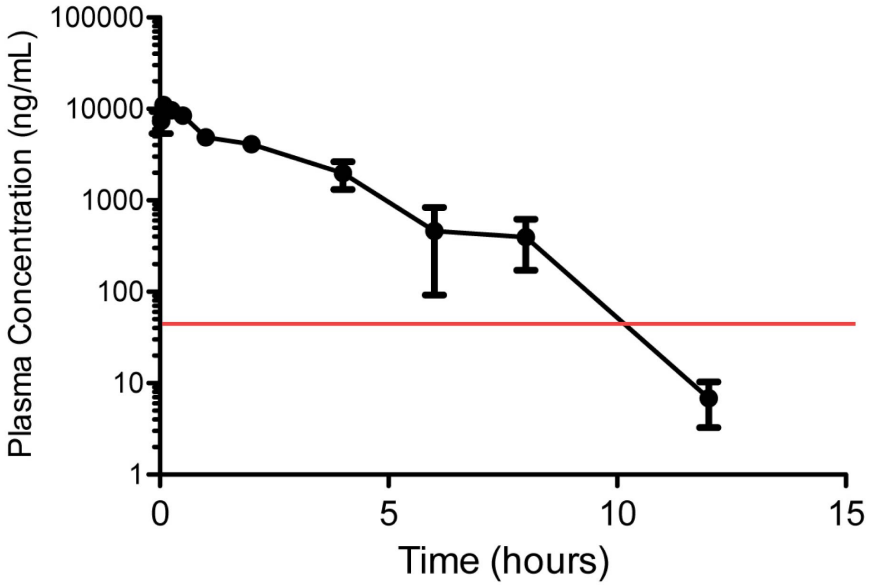
Supplementary Figure 25. Brd4 is not consistently overexpressed in AML relative to other cell types. RT-qPCR of indicated mouse (a) or human (b) cell lines. Results are normalized to Gapdh. n = 3. Error bars represent s.e.m.

a

Individual and mean plasma concentration-time data of (S)-JQ1 after an IP dose of 50 mg/kg in male CD1 mice								
Dose (mg/kg)	Dose route	Sampling time (hr)	Concentration (ng/mL) Individual			Mean (ng/mL)	SD	CV(%)
50	IP	0	BQL	BQL	BQL	BQL	NA	NA
		0.033	7270	9480	5470	7407	2008	27.1
		0.083	11000	12600	9510	11037	1545	14.0
		0.25	8660	8930	11400	9663	1510	15.6
		0.5	8540	6950	9920	8470	1486	17.5
		1	5690	4270	4680	4880	731	15.0
		2	3590	4370	4450	4137	475	11.5
		4	2620	1280	2060	1987	673	33.9
		6	65.7	523	801	463	371	80.1
		8	151	595	446	397	226	56.9
		12	4.54	5.02	10.9	6.82	3.54	51.9
		24	BQL	BQL	BQL	BQL	NA	NA

PK parameters	Unit	Estimate
T_{max}	hr	0.0830
C_{max}	ng/mL	11000
Terminal $t_{1/2}$	hr	1.24
AUC_{last}	hr*ng/mL	22700
AUC_{INF}	hr*ng/mL	22700

b



Supplementary Figure 26. Pharmacokinetic study of (+)-JQ1 in mice. a) Table of pharmacokinetic data and measured parameters. Plasma drug concentrations were measured by triple quadrupole LCMS-MS (API-2000) following a single intraperitoneal injection of (+)-JQ1 (50 mg/kg) into adult C1 male mice, at prespecified time points, as presented. Administration of (+)-JQ1 at this dose yields an excellent peak plasma concentration (Cmax > 20 uM) and total drug exposure (AUC > 20,000 h*ng/mL). BQL indicates samples where (+)-JQ1 was beyond the quantifiable limit of the pharmacokinetic detection assay (1.00 ng/mL). **b)** Plasma concentration-time profile for (+)-JQ1 using data listed in (a). Data represent mean measurements and error bars indicate the standard deviation, both from triplicate independent measurements. Plasma concentrations of drug above the biologically active concentration observed in vitro (100 nM; horizontal red line), are observed for more than 10 hours by extrapolation.

Supplementary References

1. Huesken, D. et al. Design of a genome-wide siRNA library using an artificial neural network. *Nature Biotechnology* 23, 995-1001 (2005).
2. Zuber, J. et al. Toolkit for evaluating genes required for proliferation and survival using tetracycline-regulated RNAi. *Nat Biotechnol* 29, 79-83 (2011).
3. Drexler, H.G. Guide to Leukemia-Lymphoma Cell Lines. 2nd edition edn (ebook on CD, 2010).
4. Zuber, J. et al. Mouse models of human AML accurately predict chemotherapy response. *Genes Dev* 23, 877-89 (2009).
5. Kim, J. et al. A Myc network accounts for similarities between embryonic stem and cancer cell transcription programs. *Cell* 143, 313-24 (2010).
6. Schuhmacher, M. et al. The transcriptional program of a human B cell line in response to Myc. *Nucleic Acids Res* 29, 397-406 (2001).

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Chd8.434	Chd8	67772	LIB	434
Chd8.3265	Chd8	67772	LIB	3265
Chd8.4169	Chd8	67772	LIB	4169
Chd8.5352	Chd8	67772	LIB	5352
Chd8.6946	Chd8	67772	LIB	6946
Chd9.1402	Chd9	109151	LIB	1402
Chd9.3919	Chd9	109151	LIB	3919
Chd9.9352	Chd9	109151	LIB	9352
Chd9.10928	Chd9	109151	LIB	10928
Clock.693	Clock	12753	LIB	693
Clock.1387	Clock	12753	LIB	1387
Clock.4461	Clock	12753	LIB	4461
Clock.4611	Clock	12753	LIB	4611
Clock.5863	Clock	12753	LIB	5863
Crebbp.704	Crebbp	12914	LIB	704
Crebbp.2064	Crebbp	12914	LIB	2064
Crebbp.2118	Crebbp	12914	LIB	2118
Crebbp.3582	Crebbp	12914	LIB	3582
Crebbp.4463	Crebbp	12914	LIB	4463
Ctsl.940	Ctsl	13039	LIB	940
Ctsl.1445	Ctsl	13039	LIB	1445
Ctsl.1941	Ctsl	13039	LIB	1941
Ctsl.1942	Ctsl	13039	LIB	1942
Ctsl.1947	Ctsl	13039	LIB	1947
Cxxc1.68	Cxxc1	74322	LIB	68
Cxxc1.359	Cxxc1	74322	LIB	359

Cxxc1.1889	Cxxc1	74322	LIB	1889
Cxxc1.2034	Cxxc1	74322	LIB	2034
Cxxc1.2133	Cxxc1	74322	LIB	2133
Dmap1.439	Dmap1	66233	LIB	439
Dmap1.518	Dmap1	66233	LIB	518
Dmap1.1354	Dmap1	66233	LIB	1354
Dmap1.1355	Dmap1	66233	LIB	1355
Dmap1.1487	Dmap1	66233	LIB	1487
Dnmt1.437	Dnmt1	13433	LIB	437
Dnmt1.828	Dnmt1	13433	LIB	828
Dnmt1.1137	Dnmt1	13433	LIB	1137
Dnmt1.4462	Dnmt1	13433	LIB	4462
Dnmt1.4848	Dnmt1	13433	LIB	4848
Dnmt3a.16	Dnmt3a	13435	LIB	16
Dnmt3a.1669	Dnmt3a	13435	LIB	1669
Dnmt3a.2338	Dnmt3a	13435	LIB	2338
Dnmt3a.4173	Dnmt3a	13435	LIB	4173
Dnmt3b.275	Dnmt3b	13436	LIB	275
Dnmt3b.579	Dnmt3b	13436	LIB	579
Dnmt3b.958	Dnmt3b	13436	LIB	958
Dnmt3b.2218	Dnmt3b	13436	LIB	2218
Dnmt3l.306	Dnmt3l	54427	LIB	306
Dnmt3l.760	Dnmt3l	54427	LIB	760
Dnmt3l.1049	Dnmt3l	54427	LIB	1049
Dnmt3l.1333	Dnmt3l	54427	LIB	1333
Dnmt3l.1350	Dnmt3l	54427	LIB	1350
Dot1l.602	Dot1l	208266	LIB	602
Dot1l.941	Dot1l	208266	LIB	941
Dot1l.3626	Dot1l	208266	LIB	3626
Dub2a.769	Dub2a	384701	LIB	769
Dub2a.1334	Dub2a	384701	LIB	1334
Dub2a.1391	Dub2a	384701	LIB	1391
Dub2a.1397	Dub2a	384701	LIB	1397

Dub2a.1444	Dub2a	384701	LIB	1444
Dub2a.1445	Dub2a	384701	LIB	1445
Edf1.486	Edf1	59022	LIB	486
Edf1.628	Edf1	59022	LIB	628
Edf1.631	Edf1	59022	LIB	631
Edf1.652	Edf1	59022	LIB	652
Eed.710	Eed	13626	LIB	710
Eed.949	Eed	13626	LIB	949
Eed.1083	Eed	13626	LIB	1083
Eed.1397	Eed	13626	LIB	1397
Eed.1820	Eed	13626	LIB	1820
EG330129.869	EG330129	330129	LIB	869
EG330129.2118	EG330129	330129	LIB	2118
EG330129.2262	EG330129	330129	LIB	2262
EG330129.2329	EG330129	330129	LIB	2329
EG546387.1344	EG546387	546387	LIB	1344
EG546387.2159	EG546387	546387	LIB	2159
EG546387.2272	EG546387	546387	LIB	2272
Ehmt1.66	Ehmt1	77683	LIB	66
Ehmt1.386	Ehmt1	77683	LIB	386
Ehmt1.859	Ehmt1	77683	LIB	859
Ehmt1.920	Ehmt1	77683	LIB	920
Ehmt1.3003	Ehmt1	77683	LIB	3003
Ehmt2.724	Ehmt2	110147	LIB	724
Ehmt2.1880	Ehmt2	110147	LIB	1880
Ehmt2.2014	Ehmt2	110147	LIB	2014
Ehmt2.3146	Ehmt2	110147	LIB	3146
Ehmt2.3202	Ehmt2	110147	LIB	3202
Elp3.117	Elp3	74195	LIB	117
Elp3.215	Elp3	74195	LIB	215
Elp3.219	Elp3	74195	LIB	219
Elp3.592	Elp3	74195	LIB	592
Ep300.754	Ep300	328572	LIB	754

Ep300.3850	Ep300	328572	LIB	3850
Ep300.5490	Ep300	328572	LIB	5490
Ep300.7826	Ep300	328572	LIB	7826
Ep300.8647	Ep300	328572	LIB	8647
Evi1.649	Evi1	14013	LIB	649
Evi1.652	Evi1	14013	LIB	652
Evi1.1371	Evi1	14013	LIB	1371
Evi1.1978	Evi1	14013	LIB	1978
Evi1.2720	Evi1	14013	LIB	2720
Ezh1.68	Ezh1	14055	LIB	68
Ezh1.73	Ezh1	14055	LIB	73
Ezh1.4104	Ezh1	14055	LIB	4104
Ezh1.4105	Ezh1	14055	LIB	4105
Ezh2.556	Ezh2	14056	LIB	556
Ezh2.1370	Ezh2	14056	LIB	1370
Ezh2.1678	Ezh2	14056	LIB	1678
Ezh2.2124	Ezh2	14056	LIB	2124
Ezh2.2253	Ezh2	14056	LIB	2253
Fbxl10.356	Fbxl10	30841	LIB	356
Fbxl10.443	Fbxl10	30841	LIB	443
Fbxl10.3131	Fbxl10	30841	LIB	3131
Fbxl10.3145	Fbxl10	30841	LIB	3145
Fbxl11.663	Fbxl11	225876	LIB	663
Fbxl11.1840	Fbxl11	225876	LIB	1840
Fbxl11.7144	Fbxl11	225876	LIB	7144
Fbxl11.7145	Fbxl11	225876	LIB	7145
Fbxl19.1945	Fbxl19	233902	LIB	1945
Fbxl19.2841	Fbxl19	233902	LIB	2841
Fbxl19.3203	Fbxl19	233902	LIB	3203
Fkbp1a.646	Fkbp1a	14225	LIB	646
Fkbp1a.827	Fkbp1a	14225	LIB	827
Fkbp1a.851	Fkbp1a	14225	LIB	851
Fkbp1a.854	Fkbp1a	14225	LIB	854

Fkbp2.195	Fkbp2	14227	LIB	195
Fkbp2.213	Fkbp2	14227	LIB	213
Fkbp2.532	Fkbp2	14227	LIB	532
Fkbp2.581	Fkbp2	14227	LIB	581
Fkbp5.595	Fkbp5	14229	LIB	595
Fkbp5.628	Fkbp5	14229	LIB	628
Fkbp5.1219	Fkbp5	14229	LIB	1219
Fkbp5.2613	Fkbp5	14229	LIB	2613
Fkbp5.2813	Fkbp5	14229	LIB	2813
Fkbp5.3272	Fkbp5	14229	LIB	3272
Gtf3c4.2358	Gtf3c4	269252	LIB	2358
Gtf3c4.2444	Gtf3c4	269252	LIB	2444
Gtf3c4.2605	Gtf3c4	269252	LIB	2605
Gtf3c4.3160	Gtf3c4	269252	LIB	3160
Gtf3c4.3163	Gtf3c4	269252	LIB	3163
H2afz.508	H2afz	51788	LIB	508
H2afz.692	H2afz	51788	LIB	692
H2afz.823	H2afz	51788	LIB	823
H2afz.909	H2afz	51788	LIB	909
H2afz.937	H2afz	51788	LIB	937
Hat1.290	Hat1	107435	LIB	290
Hat1.638	Hat1	107435	LIB	638
Hat1.866	Hat1	107435	LIB	866
Hat1.1528	Hat1	107435	LIB	1528
Hcfc1.812	Hcfc1	15161	LIB	812
Hcfc1.4648	Hcfc1	15161	LIB	4648
Hcfc1.7430	Hcfc1	15161	LIB	7430
Hcfc1.7506	Hcfc1	15161	LIB	7506
Hcfc1.8014	Hcfc1	15161	LIB	8014
Hdac1.245	Hdac1	433759	LIB	245
Hdac1.1053	Hdac1	433759	LIB	1053
Hdac1.1065	Hdac1	433759	LIB	1065
Hdac1.1830	Hdac1	433759	LIB	1830

Hdac10.1645	Hdac10	170787	LIB	1645
Hdac10.2041	Hdac10	170787	LIB	2041
Hdac10.2307	Hdac10	170787	LIB	2307
Hdac11.2025	Hdac11	232232	LIB	2025
Hdac11.2058	Hdac11	232232	LIB	2058
Hdac11.2182	Hdac11	232232	LIB	2182
Hdac11.2460	Hdac11	232232	LIB	2460
Hdac11.2461	Hdac11	232232	LIB	2461
Hdac2.439	Hdac2	15182	LIB	439
Hdac2.440	Hdac2	15182	LIB	440
Hdac2.1184	Hdac2	15182	LIB	1184
Hdac2.1611	Hdac2	15182	LIB	1611
Hdac2.1919	Hdac2	15182	LIB	1919
Hdac3.161	Hdac3	15183	LIB	161
Hdac3.854	Hdac3	15183	LIB	854
Hdac3.987	Hdac3	15183	LIB	987
Hdac3.1037	Hdac3	15183	LIB	1037
Hdac3.1491	Hdac3	15183	LIB	1491
Hdac4.331	Hdac4	208727	LIB	331
Hdac4.431	Hdac4	208727	LIB	431
Hdac4.1903	Hdac4	208727	LIB	1903
Hdac4.3273	Hdac4	208727	LIB	3273
Hdac5.1115	Hdac5	15184	LIB	1115
Hdac5.1936	Hdac5	15184	LIB	1936
Hdac5.2060	Hdac5	15184	LIB	2060
Hdac5.2412	Hdac5	15184	LIB	2412
Hdac5.2886	Hdac5	15184	LIB	2886
Hdac6.530	Hdac6	15185	LIB	530
Hdac6.2249	Hdac6	15185	LIB	2249
Hdac6.3838	Hdac6	15185	LIB	3838
Hdac6.4026	Hdac6	15185	LIB	4026
Hdac7.560	Hdac7	56233	LIB	560
Hdac7.836	Hdac7	56233	LIB	836

Hdac7.1293	Hdac7	56233	LIB	1293
Hdac7.2255	Hdac7	56233	LIB	2255
Hdac7.3429	Hdac7	56233	LIB	3429
Hdac8.296	Hdac8	70315	LIB	296
Hdac8.397	Hdac8	70315	LIB	397
Hdac8.900	Hdac8	70315	LIB	900
Hdac8.1692	Hdac8	70315	LIB	1692
Hdac9.1236	Hdac9	79221	LIB	1236
Hdac9.1449	Hdac9	79221	LIB	1449
Hdac9.2031	Hdac9	79221	LIB	2031
Hdac9.2070	Hdac9	79221	LIB	2070
Hdac9.4083	Hdac9	79221	LIB	4083
Hells.977	Hells	15201	LIB	977
Hells.1094	Hells	15201	LIB	1094
Hells.1145	Hells	15201	LIB	1145
Hells.1703	Hells	15201	LIB	1703
Hells.2323	Hells	15201	LIB	2323
Hira.223	Hira	15260	LIB	223
Hira.2318	Hira	15260	LIB	2318
Hira.2835	Hira	15260	LIB	2835
Hira.4298	Hira	15260	LIB	4298
Hltf.252	Hltf	20585	LIB	252
Hltf.455	Hltf	20585	LIB	455
Hltf.497	Hltf	20585	LIB	497
Hltf.1198	Hltf	20585	LIB	1198
Ing2.649	Ing2	69260	LIB	649
Ing2.1400	Ing2	69260	LIB	1400
Ing2.1788	Ing2	69260	LIB	1788
Ing2.1824	Ing2	69260	LIB	1824
Ing2.2176	Ing2	69260	LIB	2176
Ino80.458	Ino80	68142	LIB	458
Ino80.1194	Ino80	68142	LIB	1194
Ino80.2062	Ino80	68142	LIB	2062

Ino80.4069	Ino80	68142	LIB	4069
Jarid1a.2826	Jarid1a	214899	LIB	2826
Jarid1a.6729	Jarid1a	214899	LIB	6729
Jarid1a.10299	Jarid1a	214899	LIB	10299
Jarid1a.10802	Jarid1a	214899	LIB	10802
Jarid1a.11640	Jarid1a	214899	LIB	11640
Jarid1b.382	Jarid1b	75605	LIB	382
Jarid1b.1671	Jarid1b	75605	LIB	1671
Jarid1b.2176	Jarid1b	75605	LIB	2176
Jarid1b.4339	Jarid1b	75605	LIB	4339
Jarid1b.4527	Jarid1b	75605	LIB	4527
Jarid1c.1882	Jarid1c	20591	LIB	1882
Jarid1c.1886	Jarid1c	20591	LIB	1886
Jarid1c.2010	Jarid1c	20591	LIB	2010
Jarid1c.5632	Jarid1c	20591	LIB	5632
Jarid1d.2138	Jarid1d	20592	LIB	2138
Jarid1d.2800	Jarid1d	20592	LIB	2800
Jarid1d.3002	Jarid1d	20592	LIB	3002
Jarid1d.4830	Jarid1d	20592	LIB	4830
Jarid2.1699	Jarid2	16468	LIB	1699
Jarid2.2191	Jarid2	16468	LIB	2191
Jarid2.3219	Jarid2	16468	LIB	3219
Jhdm1d.2087	Jhdm1d	338523	LIB	2087
Jhdm1d.2209	Jhdm1d	338523	LIB	2209
Jhdm1d.3273	Jhdm1d	338523	LIB	3273
Jhdm1d.6787	Jhdm1d	338523	LIB	6787
Jhdm1d.8524	Jhdm1d	338523	LIB	8524
Jmjd1a.371	Jmjd1a	104263	LIB	371
Jmjd1a.753	Jmjd1a	104263	LIB	753
Jmjd1a.1070	Jmjd1a	104263	LIB	1070
Jmjd1a.3518	Jmjd1a	104263	LIB	3518
Jmjd1b.1014	Jmjd1b	277250	LIB	1014
Jmjd1b.3708	Jmjd1b	277250	LIB	3708

Jmjd1b.5309	Jmjd1b	277250	LIB	5309
Jmjd1b.6406	Jmjd1b	277250	LIB	6406
Jmjd1b.6504	Jmjd1b	277250	LIB	6504
Jmjd1c.649	Jmjd1c	108829	LIB	649
Jmjd1c.3196	Jmjd1c	108829	LIB	3196
Jmjd1c.4221	Jmjd1c	108829	LIB	4221
Jmjd1c.6050	Jmjd1c	108829	LIB	6050
Jmjd1c.6346	Jmjd1c	108829	LIB	6346
Jmjd2a.424	Jmjd2a	230674	LIB	424
Jmjd2a.663	Jmjd2a	230674	LIB	663
Jmjd2a.1474	Jmjd2a	230674	LIB	1474
Jmjd2a.1498	Jmjd2a	230674	LIB	1498
Jmjd2a.3033	Jmjd2a	230674	LIB	3033
Jmjd2b.1151	Jmjd2b	193796	LIB	1151
Jmjd2b.2905	Jmjd2b	193796	LIB	2905
Jmjd2b.4018	Jmjd2b	193796	LIB	4018
Jmjd2b.4170	Jmjd2b	193796	LIB	4170
Jmjd2c.738	Jmjd2c	76804	LIB	738
Jmjd2c.1217	Jmjd2c	76804	LIB	1217
Jmjd2c.3112	Jmjd2c	76804	LIB	3112
Jmjd2c.3541	Jmjd2c	76804	LIB	3541
Jmjd2d.301	Jmjd2d	244694	LIB	301
Jmjd2d.450	Jmjd2d	244694	LIB	450
Jmjd2d.1143	Jmjd2d	244694	LIB	1143
Jmjd2d.2310	Jmjd2d	244694	LIB	2310
Jmjd2d.2358	Jmjd2d	244694	LIB	2358
Jmjd4.1722	Jmjd4	194952	LIB	1722
Jmjd4.1796	Jmjd4	194952	LIB	1796
Jmjd4.2677	Jmjd4	194952	LIB	2677
Jmjd4.2749	Jmjd4	194952	LIB	2749
Jmjd4.3327	Jmjd4	194952	LIB	3327
Jmjd5.18	Jmjd5	77035	LIB	18
Jmjd5.1123	Jmjd5	77035	LIB	1123

Jmjd5.1291	Jmjd5	77035	LIB	1291
Jmjd5.1564	Jmjd5	77035	LIB	1564
Jmjd5.2041	Jmjd5	77035	LIB	2041
Jmjd6.254	Jmjd6	107817	LIB	254
Jmjd6.530	Jmjd6	107817	LIB	530
Jmjd6.956	Jmjd6	107817	LIB	956
Jmjd6.1633	Jmjd6	107817	LIB	1633
Kat2a.542	Kat2a	14534	LIB	542
Kat2a.1771	Kat2a	14534	LIB	1771
Kat2a.2053	Kat2a	14534	LIB	2053
Kat2a.2201	Kat2a	14534	LIB	2201
Kat2b.1306	Kat2b	18519	LIB	1306
Kat2b.2624	Kat2b	18519	LIB	2624
Kat2b.3228	Kat2b	18519	LIB	3228
Kat2b.3494	Kat2b	18519	LIB	3494
Kat2b.3766	Kat2b	18519	LIB	3766
Kat5.679	Kat5	81601	LIB	679
Kat5.1193	Kat5	81601	LIB	1193
Kat5.1242	Kat5	81601	LIB	1242
Kat5.1387	Kat5	81601	LIB	1387
L3mbtl.263	L3mbtl	241764	LIB	263
L3mbtl.373	L3mbtl	241764	LIB	373
L3mbtl.725	L3mbtl	241764	LIB	725
L3mbtl.1906	L3mbtl	241764	LIB	1906
L3mbtl.2689	L3mbtl	241764	LIB	2689
LOC100040412.49	LOC100040412	100040412	LIB	49
LOC100040412.495	LOC100040412	100040412	LIB	495
LOC100040412.655	LOC100040412	100040412	LIB	655
LOC100040412.1128	LOC100040412	100040412	LIB	1128
LOC100044324.736	LOC100044324	100044324	LIB	736
LOC100044324.927	LOC100044324	100044324	LIB	927
LOC100044324.1075	LOC100044324	100044324	LIB	1075
LOC100044324.1240	LOC100044324	100044324	LIB	1240

LOC100044324.1314	LOC100044324	100044324	LIB	1314
LOC100048887.186	LOC100048887	100048887	LIB	186
LOC100048887.194	LOC100048887	100048887	LIB	194
LOC100048887.732	LOC100048887	100048887	LIB	732
LOC100048887.787	LOC100048887	100048887	LIB	787
LOC100048887.803	LOC100048887	100048887	LIB	803
LOC664892.1494	LOC664892	664892	LIB	1494
LOC664892.1500	LOC664892	664892	LIB	1500
LOC664892.1697	LOC664892	664892	LIB	1697
LOC664892.1892	LOC664892	664892	LIB	1892
LOC664892.2169	LOC664892	664892	LIB	2169
Mbd1.746	Mbd1	17190	LIB	746
Mbd1.1387	Mbd1	17190	LIB	1387
Mbd1.1856	Mbd1	17190	LIB	1856
Mbd1.2237	Mbd1	17190	LIB	2237
Mbd2.938	Mbd2	17191	LIB	938
Mbd2.1117	Mbd2	17191	LIB	1117
Mbd2.1545	Mbd2	17191	LIB	1545
Mbd2.1763	Mbd2	17191	LIB	1763
Mbd2.1823	Mbd2	17191	LIB	1823
Mbd3.579	Mbd3	17192	LIB	579
Mbd3.1147	Mbd3	17192	LIB	1147
Mbd3.1354	Mbd3	17192	LIB	1354
Mbd3.1452	Mbd3	17192	LIB	1452
Mbd3.1551	Mbd3	17192	LIB	1551
Mbd4.434	Mbd4	17193	LIB	434
Mbd4.1027	Mbd4	17193	LIB	1027
Mbd4.3297	Mbd4	17193	LIB	3297
Mbd4.3541	Mbd4	17193	LIB	3541
Mds1.87	Mds1	17251	LIB	87
Mds1.651	Mds1	17251	LIB	651
Mds1.764	Mds1	17251	LIB	764
Mds1.874	Mds1	17251	LIB	874

Mecp2.1627	Mecp2	17257	LIB	1627
Mecp2.2287	Mecp2	17257	LIB	2287
Mecp2.5438	Mecp2	17257	LIB	5438
Mecp2.7745	Mecp2	17257	LIB	7745
Men1.219	Men1	17283	LIB	219
Men1.228	Men1	17283	LIB	228
Men1.1457	Men1	17283	LIB	1457
Men1.2310	Men1	17283	LIB	2310
Men1.2707	Men1	17283	LIB	2707
Mettl8.846	Mettl8	228019	LIB	846
Mettl8.1184	Mettl8	228019	LIB	1184
Mettl8.1353	Mettl8	228019	LIB	1353
Mettl8.1914	Mettl8	228019	LIB	1914
Mettl8.1990	Mettl8	228019	LIB	1990
Mgmt.384	Mgmt	17314	LIB	384
Mgmt.412	Mgmt	17314	LIB	412
Mgmt.433	Mgmt	17314	LIB	433
Mgmt.672	Mgmt	17314	LIB	672
Mgmt.730	Mgmt	17314	LIB	730
Mll1.4195	Mll1	214162	LIB	4195
Mll1.11050	Mll1	214162	LIB	11050
Mll1.13303	Mll1	214162	LIB	13303
Mll1.16168	Mll1	214162	LIB	16168
Mll2.4285	Mll2	381022	LIB	4285
Mll2.5430	Mll2	381022	LIB	5430
Mll2.6153	Mll2	381022	LIB	6153
Mll2.11374	Mll2	381022	LIB	11374
Mll2.12943	Mll2	381022	LIB	12943
Mll3.1099	Mll3	231051	LIB	1099
Mll3.2993	Mll3	231051	LIB	2993
Mll3.5304	Mll3	231051	LIB	5304
Mll3.6232	Mll3	231051	LIB	6232
Mll3.15396	Mll3	231051	LIB	15396

Morf4l1.281	Morf4l1	21761	LIB	281
Morf4l1.603	Morf4l1	21761	LIB	603
Morf4l1.639	Morf4l1	21761	LIB	639
Morf4l1.1034	Morf4l1	21761	LIB	1034
Morf4l1.1245	Morf4l1	21761	LIB	1245
Mta1.213	Mta1	116870	LIB	213
Mta1.1003	Mta1	116870	LIB	1003
Mta1.1053	Mta1	116870	LIB	1053
Mta1.1147	Mta1	116870	LIB	1147
Mta1.1363	Mta1	116870	LIB	1363
Mta2.511	Mta2	23942	LIB	511
Mta2.924	Mta2	23942	LIB	924
Mta2.1284	Mta2	23942	LIB	1284
Mta2.2013	Mta2	23942	LIB	2013
Mta3.222	Mta3	116871	LIB	222
Mta3.553	Mta3	116871	LIB	553
Mta3.1523	Mta3	116871	LIB	1523
Mta3.1663	Mta3	116871	LIB	1663
Myst1.643	Myst1	67773	LIB	643
Myst1.724	Myst1	67773	LIB	724
Myst1.1250	Myst1	67773	LIB	1250
Myst1.1302	Myst1	67773	LIB	1302
Myst2.176	Myst2	217127	LIB	176
Myst2.507	Myst2	217127	LIB	507
Myst2.1183	Myst2	217127	LIB	1183
Myst2.3099	Myst2	217127	LIB	3099
Myst3.2590	Myst3	244349	LIB	2590
Myst3.3127	Myst3	244349	LIB	3127
Myst3.3485	Myst3	244349	LIB	3485
Myst3.4554	Myst3	244349	LIB	4554
Myst3.6844	Myst3	244349	LIB	6844
Myst4.3568	Myst4	54169	LIB	3568
Myst4.5452	Myst4	54169	LIB	5452

Myst4.6527	Myst4	54169	LIB	6527
Myst4.6644	Myst4	54169	LIB	6644
Nap1l1.2360	Nap1l1	53605	LIB	2360
Nap1l1.2470	Nap1l1	53605	LIB	2470
Nap1l1.3414	Nap1l1	53605	LIB	3414
Nap1l1.3554	Nap1l1	53605	LIB	3554
Nap1l2.819	Nap1l2	17954	LIB	819
Nap1l2.1093	Nap1l2	17954	LIB	1093
Nap1l2.1180	Nap1l2	17954	LIB	1180
Nap1l2.1695	Nap1l2	17954	LIB	1695
Nap1l2.1750	Nap1l2	17954	LIB	1750
Nap1l3.743	Nap1l3	54561	LIB	743
Nap1l3.779	Nap1l3	54561	LIB	779
Nap1l3.1969	Nap1l3	54561	LIB	1969
Nap1l3.2063	Nap1l3	54561	LIB	2063
Nap1l3.2498	Nap1l3	54561	LIB	2498
Ncoa3.1032	Ncoa3	17979	LIB	1032
Ncoa3.3669	Ncoa3	17979	LIB	3669
Ncoa3.3815	Ncoa3	17979	LIB	3815
Ncoa3.3885	Ncoa3	17979	LIB	3885
Ncoa3.7494	Ncoa3	17979	LIB	7494
Nr0b2.381	Nr0b2	23957	LIB	381
Nr0b2.534	Nr0b2	23957	LIB	534
Nr0b2.558	Nr0b2	23957	LIB	558
Nr0b2.1023	Nr0b2	23957	LIB	1023
Nr0b2.1068	Nr0b2	23957	LIB	1068
Nsd1.2795	Nsd1	18193	LIB	2795
Nsd1.5598	Nsd1	18193	LIB	5598
Nsd1.5640	Nsd1	18193	LIB	5640
Nsd1.11634	Nsd1	18193	LIB	11634
Padi4.295	Padi4	18602	LIB	295
Padi4.1042	Padi4	18602	LIB	1042
Padi4.1058	Padi4	18602	LIB	1058

Padi4.1914	Padi4	18602	LIB	1914
Padi4.2336	Padi4	18602	LIB	2336
Parp1.1124	Parp1	11545	LIB	1124
Parp1.1623	Parp1	11545	LIB	1623
Parp1.2887	Parp1	11545	LIB	2887
Parp1.3789	Parp1	11545	LIB	3789
Parp1.3790	Parp1	11545	LIB	3790
Parp2.574	Parp2	11546	LIB	574
Parp2.905	Parp2	11546	LIB	905
Parp2.946	Parp2	11546	LIB	946
Parp2.1006	Parp2	11546	LIB	1006
Parp2.1429	Parp2	11546	LIB	1429
Parp2.1677	Parp2	11546	LIB	1677
Pax5.154	Pax5	18507	LIB	154
Pax5.328	Pax5	18507	LIB	328
Pax5.601	Pax5	18507	LIB	601
Pax5.852	Pax5	18507	LIB	852
Pax5.914	Pax5	18507	LIB	914
Paxip1.3203	Paxip1	55982	LIB	3203
Paxip1.3451	Paxip1	55982	LIB	3451
Paxip1.3562	Paxip1	55982	LIB	3562
Paxip1.3670	Paxip1	55982	LIB	3670
Pcgf2.507	Pcgf2	22658	LIB	507
Pcgf2.690	Pcgf2	22658	LIB	690
Pcgf2.801	Pcgf2	22658	LIB	801
Pcgf2.982	Pcgf2	22658	LIB	982
Pcgf2.1013	Pcgf2	22658	LIB	1013
Pcmt1.619	Pcmt1	18537	LIB	619
Pcmt1.620	Pcmt1	18537	LIB	620
Pcmt1.840	Pcmt1	18537	LIB	840
Pcmt1.946	Pcmt1	18537	LIB	946
Pcmt1.1259	Pcmt1	18537	LIB	1259
Pcna.566	Pcna	18538	PC	566

Pcna.1186	Pcna	18538	PC	1186
Phf1.561	Phf1	21652	LIB	561
Phf1.637	Phf1	21652	LIB	637
Phf1.1098	Phf1	21652	LIB	1098
Phf1.2400	Phf1	21652	LIB	2400
Phf2.1851	Phf2	18676	LIB	1851
Phf2.3668	Phf2	18676	LIB	3668
Phf2.5132	Phf2	18676	LIB	5132
Phf2.5166	Phf2	18676	LIB	5166
Phf8.1420	Phf8	320595	LIB	1420
Phf8.1984	Phf8	320595	LIB	1984
Phf8.2131	Phf8	320595	LIB	2131
Polr2b.489	Polr2b	231329	PC	489
Polr2b.2176	Polr2b	231329	PC	2176
Ppargc1a.669	Ppargc1a	19017	LIB	669
Ppargc1a.831	Ppargc1a	19017	LIB	831
Ppargc1a.1269	Ppargc1a	19017	LIB	1269
Ppargc1a.1500	Ppargc1a	19017	LIB	1500
Prdm1.711	Prdm1	12142	LIB	711
Prdm1.862	Prdm1	12142	LIB	862
Prdm1.919	Prdm1	12142	LIB	919
Prdm1.2964	Prdm1	12142	LIB	2964
Prdm1.3709	Prdm1	12142	LIB	3709
Prdm10.318	Prdm10	382066	LIB	318
Prdm10.1130	Prdm10	382066	LIB	1130
Prdm10.1348	Prdm10	382066	LIB	1348
Prdm10.2613	Prdm10	382066	LIB	2613
Prdm11.1844	Prdm11	100042784	LIB	1844
Prdm11.2306	Prdm11	100042784	LIB	2306
Prdm11.3215	Prdm11	100042784	LIB	3215
Prdm11.3216	Prdm11	100042784	LIB	3216
Prdm12.481	Prdm12	381359	LIB	481
Prdm12.603	Prdm12	381359	LIB	603

Prdm12.1421	Prdm12	381359	LIB	1421
Prdm12.2351	Prdm12	381359	LIB	2351
Prdm13.554	Prdm13	230025	LIB	554
Prdm13.2613	Prdm13	230025	LIB	2613
Prdm13.2702	Prdm13	230025	LIB	2702
Prdm13.2828	Prdm13	230025	LIB	2828
Prdm13.2936	Prdm13	230025	LIB	2936
Prdm14.530	Prdm14	383491	LIB	530
Prdm14.1756	Prdm14	383491	LIB	1756
Prdm14.1934	Prdm14	383491	LIB	1934
Prdm14.2271	Prdm14	383491	LIB	2271
Prdm14.2348	Prdm14	383491	LIB	2348
Prdm15.958	Prdm15	114604	LIB	958
Prdm15.1034	Prdm15	114604	LIB	1034
Prdm15.1690	Prdm15	114604	LIB	1690
Prdm15.1796	Prdm15	114604	LIB	1796
Prdm15.2734	Prdm15	114604	LIB	2734
Prdm16.680	Prdm16	70673	LIB	680
Prdm16.5683	Prdm16	70673	LIB	5683
Prdm16.8212	Prdm16	70673	LIB	8212
Prdm16.8363	Prdm16	70673	LIB	8363
Prdm16.8571	Prdm16	70673	LIB	8571
Prdm2.1020	Prdm2	110593	LIB	1020
Prdm2.4191	Prdm2	110593	LIB	4191
Prdm2.4655	Prdm2	110593	LIB	4655
Prdm2.4956	Prdm2	110593	LIB	4956
Prdm2.5781	Prdm2	110593	LIB	5781
Prdm4.1943	Prdm4	72843	LIB	1943
Prdm4.2535	Prdm4	72843	LIB	2535
Prdm4.3139	Prdm4	72843	LIB	3139
Prdm4.3391	Prdm4	72843	LIB	3391
Prdm4.3667	Prdm4	72843	LIB	3667
Prdm5.908	Prdm5	70779	LIB	908

Prdm5.984	Prdm5	70779	LIB	984
Prdm5.1353	Prdm5	70779	LIB	1353
Prdm5.2148	Prdm5	70779	LIB	2148
Prdm6.1018	Prdm6	225518	LIB	1018
Prdm6.1790	Prdm6	225518	LIB	1790
Prdm6.1823	Prdm6	225518	LIB	1823
Prdm6.1839	Prdm6	225518	LIB	1839
Prdm8.2290	Prdm8	77630	LIB	2290
Prdm8.3042	Prdm8	77630	LIB	3042
Prdm8.3048	Prdm8	77630	LIB	3048
Prdm8.3062	Prdm8	77630	LIB	3062
Prdm9.77	Prdm9	213389	LIB	77
Prdm9.496	Prdm9	213389	LIB	496
Prdm9.1838	Prdm9	213389	LIB	1838
Prkaa1.145	Prkaa1	105787	LIB	145
Prkaa1.1981	Prkaa1	105787	LIB	1981
Prkaa1.3080	Prkaa1	105787	LIB	3080
Prkaa1.3635	Prkaa1	105787	LIB	3635
Prkaa1.3954	Prkaa1	105787	LIB	3954
Prkaa1.4596	Prkaa1	105787	LIB	4596
Prkaa2.2299	Prkaa2	108079	LIB	2299
Prkaa2.2748	Prkaa2	108079	LIB	2748
Prkaa2.4825	Prkaa2	108079	LIB	4825
Prkaa2.6172	Prkaa2	108079	LIB	6172
Prkaa2.6849	Prkaa2	108079	LIB	6849
Prkcd.161	Prkcd	18753	LIB	161
Prkcd.441	Prkcd	18753	LIB	441
Prkcd.707	Prkcd	18753	LIB	707
Prkcd.1389	Prkcd	18753	LIB	1389
Prmt1.243	Prmt1	15469	LIB	243
Prmt1.264	Prmt1	15469	LIB	264
Prmt1.630	Prmt1	15469	LIB	630
Prmt1.1014	Prmt1	15469	LIB	1014

Prmt2.151	Prmt2	15468	LIB	151
Prmt2.154	Prmt2	15468	LIB	154
Prmt2.1066	Prmt2	15468	LIB	1066
Prmt2.1067	Prmt2	15468	LIB	1067
Prmt3.502	Prmt3	71974	LIB	502
Prmt3.814	Prmt3	71974	LIB	814
Prmt3.838	Prmt3	71974	LIB	838
Prmt3.985	Prmt3	71974	LIB	985
Prmt3.1839	Prmt3	71974	LIB	1839
Prmt5.56	Prmt5	27374	LIB	56
Prmt5.266	Prmt5	27374	LIB	266
Prmt5.2152	Prmt5	27374	LIB	2152
Prmt5.2293	Prmt5	27374	LIB	2293
Prmt6.247	Prmt6	99890	LIB	247
Prmt6.1493	Prmt6	99890	LIB	1493
Prmt6.1983	Prmt6	99890	LIB	1983
Prmt6.2355	Prmt6	99890	LIB	2355
Prmt7.23	Prmt7	214572	LIB	23
Prmt7.45	Prmt7	214572	LIB	45
Prmt7.88	Prmt7	214572	LIB	88
Prmt7.1284	Prmt7	214572	LIB	1284
Prmt7.2135	Prmt7	214572	LIB	2135
Prmt8.302	Prmt8	381813	LIB	302
Prmt8.455	Prmt8	381813	LIB	455
Prmt8.667	Prmt8	381813	LIB	667
Prmt8.1854	Prmt8	381813	LIB	1854
Psip1.763	Psip1	101739	LIB	763
Psip1.1311	Psip1	101739	LIB	1311
Psip1.1596	Psip1	101739	LIB	1596
Psip1.2474	Psip1	101739	LIB	2474
Psip1.2652	Psip1	101739	LIB	2652
Rbbp4.2088	Rbbp4	19646	LIB	2088
Rbbp4.2174	Rbbp4	19646	LIB	2174

Rbbp4.2511	Rbbp4	19646	LIB	2511
Rbbp4.3753	Rbbp4	19646	LIB	3753
Rbbp5.1634	Rbbp5	213464	LIB	1634
Rbbp5.2248	Rbbp5	213464	LIB	2248
Rbbp5.2655	Rbbp5	213464	LIB	2655
Rbbp5.2974	Rbbp5	213464	LIB	2974
Renilla.713	Renilla Luciferase		NC	713
Ring1.260	Ring1	19763	LIB	260
Ring1.669	Ring1	19763	LIB	669
Ring1.1034	Ring1	19763	LIB	1034
Rnf2.1856	Rnf2	19821	LIB	1856
Rnf2.2203	Rnf2	19821	LIB	2203
Rnf2.2538	Rnf2	19821	LIB	2538
Rnf2.2809	Rnf2	19821	LIB	2809
Rnf2.2875	Rnf2	19821	LIB	2875
Rnf20.420	Rnf20	109331	LIB	420
Rnf20.948	Rnf20	109331	LIB	948
Rnf20.1295	Rnf20	109331	LIB	1295
Rnf20.3244	Rnf20	109331	LIB	3244
Rnf20.3277	Rnf20	109331	LIB	3277
Rnf20.3718	Rnf20	109331	LIB	3718
Rpa1.1620	Rpa1	68275	PC	1620
Rpa3.276	Rpa3	68240	PC	278
Rpa3.455	Rpa3	68240	PC	457
Rpa3.561	Rpa3	68240	PC	561
Satb1.710	Satb1	20230	LIB	710
Satb1.1401	Satb1	20230	LIB	1401
Satb1.1478	Satb1	20230	LIB	1478
Satb1.1709	Satb1	20230	LIB	1709
Satb1.2566	Satb1	20230	LIB	2566
Setd1a.119	Setd1a	233904	LIB	119
Setd1a.388	Setd1a	233904	LIB	388
Setd1a.643	Setd1a	233904	LIB	643

Setd1a.5859	Setd1a	233904	LIB	5859
Setd1b.3553	Setd1b	208043	LIB	3553
Setd1b.3557	Setd1b	208043	LIB	3557
Setd1b.4520	Setd1b	208043	LIB	4520
Setd1b.4522	Setd1b	208043	LIB	4522
Setd1b.4699	Setd1b	208043	LIB	4699
Setd2.182	Setd2	235626	LIB	182
Setd2.1467	Setd2	235626	LIB	1467
Setd2.1785	Setd2	235626	LIB	1785
Setd2.3632	Setd2	235626	LIB	3632
Setd2.4051	Setd2	235626	LIB	4051
Setd3.795	Setd3	52690	LIB	795
Setd3.1496	Setd3	52690	LIB	1496
Setd3.2395	Setd3	52690	LIB	2395
Setd4.506	Setd4	224440	LIB	506
Setd4.1308	Setd4	224440	LIB	1308
Setd4.1517	Setd4	224440	LIB	1517
Setd7.4328	Setd7	73251	LIB	4328
Setd7.5317	Setd7	73251	LIB	5317
Setd7.5342	Setd7	73251	LIB	5342
Setd7.5940	Setd7	73251	LIB	5940
Setd7.7009	Setd7	73251	LIB	7009
Setd8.2578	Setd8	67956	LIB	2578
Setd8.2622	Setd8	67956	LIB	2622
Setd8.2632	Setd8	67956	LIB	2632
Setdb1.1145	Setdb1	84505	LIB	1145
Setdb1.1925	Setdb1	84505	LIB	1925
Setdb1.2174	Setdb1	84505	LIB	2174
Setdb1.3684	Setdb1	84505	LIB	3684
Setdb2.809	Setdb2	239122	LIB	809
Setdb2.810	Setdb2	239122	LIB	810
Setdb2.990	Setdb2	239122	LIB	990
Setdb2.1417	Setdb2	239122	LIB	1417

Setmar.1193	Setmar	74729	LIB	1193
Setmar.1195	Setmar	74729	LIB	1195
Setmar.1589	Setmar	74729	LIB	1589
Sfmbt1.868	Sfmbt1	54650	LIB	868
Sfmbt1.1345	Sfmbt1	54650	LIB	1345
Sfmbt1.1802	Sfmbt1	54650	LIB	1802
Sfmbt1.2018	Sfmbt1	54650	LIB	2018
Sfmbt1.2421	Sfmbt1	54650	LIB	2421
Sfmbt2.602	Sfmbt2	353282	LIB	602
Sfmbt2.3592	Sfmbt2	353282	LIB	3592
Sfmbt2.5673	Sfmbt2	353282	LIB	5673
Sin3a.531	Sin3a	20466	LIB	531
Sin3a.3537	Sin3a	20466	LIB	3537
Sin3a.3559	Sin3a	20466	LIB	3559
Sin3a.4729	Sin3a	20466	LIB	4729
Sin3b.188	Sin3b	20467	LIB	188
Sin3b.326	Sin3b	20467	LIB	326
Sin3b.338	Sin3b	20467	LIB	338
Sin3b.381	Sin3b	20467	LIB	381
Sin3b.475	Sin3b	20467	LIB	475
Sirt1.688	Sirt1	93759	LIB	688
Sirt1.1708	Sirt1	93759	LIB	1708
Sirt1.1779	Sirt1	93759	LIB	1779
Sirt1.2191	Sirt1	93759	LIB	2191
Sirt2.735	Sirt2	64383	LIB	735
Sirt2.1418	Sirt2	64383	LIB	1418
Sirt2.1460	Sirt2	64383	LIB	1460
Sirt2.1600	Sirt2	64383	LIB	1600
Sirt3.462	Sirt3	64384	LIB	462
Sirt3.869	Sirt3	64384	LIB	869
Sirt3.993	Sirt3	64384	LIB	993
Sirt3.1002	Sirt3	64384	LIB	1002
Sirt3.1236	Sirt3	64384	LIB	1236

Sirt4.105	Sirt4	75387	LIB	105
Sirt4.633	Sirt4	75387	LIB	633
Sirt4.1490	Sirt4	75387	LIB	1490
Sirt4.1806	Sirt4	75387	LIB	1806
Sirt5.586	Sirt5	68346	LIB	586
Sirt5.1032	Sirt5	68346	LIB	1032
Sirt5.1219	Sirt5	68346	LIB	1219
Sirt5.1290	Sirt5	68346	LIB	1290
Sirt6.83	Sirt6	50721	LIB	83
Sirt6.421	Sirt6	50721	LIB	421
Sirt6.937	Sirt6	50721	LIB	937
Sirt6.1609	Sirt6	50721	LIB	1609
Sirt7.841	Sirt7	209011	LIB	841
Sirt7.844	Sirt7	209011	LIB	844
Sirt7.1238	Sirt7	209011	LIB	1238
Sirt7.1604	Sirt7	209011	LIB	1604
Sirt7.1677	Sirt7	209011	LIB	1677
Smarca1.1401	Smarca1	93761	LIB	1401
Smarca1.1430	Smarca1	93761	LIB	1430
Smarca1.1613	Smarca1	93761	LIB	1613
Smarca1.1893	Smarca1	93761	LIB	1893
Smarca1.3418	Smarca1	93761	LIB	3418
Smarca2.263	Smarca2	67155	LIB	263
Smarca2.274	Smarca2	67155	LIB	274
Smarca2.712	Smarca2	67155	LIB	712
Smarca2.1061	Smarca2	67155	LIB	1061
Smarca4.3232	Smarca4	20586	LIB	3232
Smarca4.3364	Smarca4	20586	LIB	3364
Smarca4.3633	Smarca4	20586	LIB	3633
Smarca4.4935	Smarca4	20586	LIB	4935
Smarca4.5466	Smarca4	20586	LIB	5466
Smarca5.1139	Smarca5	93762	LIB	1139
Smarca5.1264	Smarca5	93762	LIB	1264

Smarca5.3886	Smarca5	93762	LIB	3886
Smarca5.4421	Smarca5	93762	LIB	4421
Smarca5.4522	Smarca5	93762	LIB	4522
Smarcc2.1398	Smarcc2	68094	LIB	1398
Smarcc2.1941	Smarcc2	68094	LIB	1941
Smarcc2.2235	Smarcc2	68094	LIB	2235
Smarcc2.2541	Smarcc2	68094	LIB	2541
Smarcd1.690	Smarcd1	83797	LIB	690
Smarcd1.986	Smarcd1	83797	LIB	986
Smarcd1.1738	Smarcd1	83797	LIB	1738
Smarcd1.1858	Smarcd1	83797	LIB	1858
Smarcd3.518	Smarcd3	66993	LIB	518
Smarcd3.847	Smarcd3	66993	LIB	847
Smarcd3.1323	Smarcd3	66993	LIB	1323
Smarcd3.1591	Smarcd3	66993	LIB	1591
Smarcd3.1708	Smarcd3	66993	LIB	1708
Smarce1.2096	Smarce1	57376	LIB	2096
Smarce1.2121	Smarce1	57376	LIB	2121
Smarce1.2154	Smarce1	57376	LIB	2154
Smarce1.2337	Smarce1	57376	LIB	2337
Smarce1.2593	Smarce1	57376	LIB	2593
Smyd1.1302	Smyd1	12180	LIB	1302
Smyd1.1635	Smyd1	12180	LIB	1635
Smyd1.1658	Smyd1	12180	LIB	1658
Smyd2.334	Smyd2	226830	LIB	334
Smyd2.640	Smyd2	226830	LIB	640
Smyd2.1421	Smyd2	226830	LIB	1421
Smyd2.1476	Smyd2	226830	LIB	1476
Smyd3.306	Smyd3	69726	LIB	306
Smyd3.438	Smyd3	69726	LIB	438
Smyd3.980	Smyd3	69726	LIB	980
Smyd3.1506	Smyd3	69726	LIB	1506
Smyd3.2607	Smyd3	69726	LIB	2607

Smyd4.693	Smyd4	319822	LIB	693
Smyd4.2959	Smyd4	319822	LIB	2959
Smyd4.3333	Smyd4	319822	LIB	3333
Smyd4.3414	Smyd4	319822	LIB	3414
Smyd4.3439	Smyd4	319822	LIB	3439
Smyd5.1548	Smyd5	232187	LIB	1548
Smyd5.1643	Smyd5	232187	LIB	1643
Smyd5.2044	Smyd5	232187	LIB	2044
Smyd5.2048	Smyd5	232187	LIB	2048
Srcap.2697	Srcap	100043597	LIB	2697
Srcap.3130	Srcap	100043597	LIB	3130
Srcap.5342	Srcap	100043597	LIB	5342
Srcap.7360	Srcap	100043597	LIB	7360
Srcap.11381	Srcap	100043597	LIB	11381
Ssrp1.306	Ssrp1	20833	LIB	306
Ssrp1.577	Ssrp1	20833	LIB	577
Ssrp1.897	Ssrp1	20833	LIB	897
Ssrp1.975	Ssrp1	20833	LIB	975
Ssrp1.2237	Ssrp1	20833	LIB	2237
Supt16h.1672	Supt16h	114741	LIB	1672
Supt16h.2037	Supt16h	114741	LIB	2037
Supt16h.2827	Supt16h	114741	LIB	2827
Supt16h.2999	Supt16h	114741	LIB	2999
Suv39h1.496	Suv39h1	20937	LIB	496
Suv39h1.1016	Suv39h1	20937	LIB	1016
Suv39h1.1202	Suv39h1	20937	LIB	1202
Suv39h1.1471	Suv39h1	20937	LIB	1471
Suv39h1.1827	Suv39h1	20937	LIB	1827
Suv39h2.1395	Suv39h2	64707	LIB	1395
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Suv39h2.2981	Suv39h2	64707	LIB	2981
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Suv420h1.1112	Suv420h1	225888	LIB	1112

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Suv420h1.3357	Suv420h1	225888	LIB	3357
Suv420h2.287	Suv420h2	232811	LIB	287
Suv420h2.686	Suv420h2	232811	LIB	686
Suv420h2.825	Suv420h2	232811	LIB	825
Suz12.909	Suz12	52615	LIB	909
Suz12.1676	Suz12	52615	LIB	1676
Suz12.1842	Suz12	52615	LIB	1842
Suz12.3979	Suz12	52615	LIB	3979
Suz12.4300	Suz12	52615	LIB	4300
Taf1.928	Taf1	270627	LIB	928
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Taf1.5030	Taf1	270627	LIB	5030
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Taf3.1009	Taf3	209361	LIB	1009
Taf3.1315	Taf3	209361	LIB	1315
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Taf3.2951	Taf3	209361	LIB	2951
Taf3.3182	Taf3	209361	LIB	3182
Ube2a.142	Ube2a	22209	LIB	142
Ube2a.786	Ube2a	22209	LIB	786
Ube2a.1206	Ube2a	22209	LIB	1206
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Ube2b.776	Ube2b	22210	LIB	776
Ube2b.1626	Ube2b	22210	LIB	1626
Ube2b.1661	Ube2b	22210	LIB	1661
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Ube2b.2079	Ube2b	22210	LIB	2079
Ube2e1.228	Ube2e1	22194	LIB	228
Ube2e1.858	Ube2e1	22194	LIB	858
Ube2e1.1041	Ube2e1	22194	LIB	1041
Ube2e1.1126	Ube2e1	22194	LIB	1126

Ube2e1.1207	Ube2e1	22194	LIB	1207
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Usp22.1429	Usp22	216825	LIB	1429
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Usp22.2760	Usp22	216825	LIB	2760
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Usp27x.1408	Usp27x	54651	LIB	1408
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Usp51.737	Usp51	635253	LIB	737
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Usp51.2109	Usp51	635253	LIB	2109
Usp51.2114	Usp51	635253	LIB	2114
Usp51.2194	Usp51	635253	LIB	2194
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Utx.888	Utx	22289	LIB	888
Utx.1445	Utx	22289	LIB	1445
Utx.4317	Utx	22289	LIB	4317
Utx.4510	Utx	22289	LIB	4510
Wbp7.2972	Wbp7	75410	LIB	2972
Wbp7.3029	Wbp7	75410	LIB	3029
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Wbp7.6965	Wbp7	75410	LIB	6965
Wdr5.501	Wdr5	140858	LIB	501
Wdr5.502	Wdr5	140858	LIB	502
Wdr5.1321	Wdr5	140858	LIB	1321
Wdr5.1765	Wdr5	140858	LIB	1765

Wdr5.2837	Wdr5	140858	LIB	2837
Wdr82.1889	Wdr82	77305	LIB	1889
Wdr82.3590	Wdr82	77305	LIB	3590
Wdr82.3705	Wdr82	77305	LIB	3705
Wdr82.4023	Wdr82	77305	LIB	4023
Whsc1.812	Whsc1	107823	LIB	812
Whsc1.818	Whsc1	107823	LIB	818
Whsc1.3055	Whsc1	107823	LIB	3055
Whsc1.3056	Whsc1	107823	LIB	3056
Whsc1l1.276	Whsc1l1	234135	LIB	276
Whsc1l1.373	Whsc1l1	234135	LIB	373
Whsc1l1.524	Whsc1l1	234135	LIB	524
Whsc1l1.1307	Whsc1l1	234135	LIB	1307
Whsc1l1.1653	Whsc1l1	234135	LIB	1653
Wnt5a.2013	Wnt5a	22418	LIB	2013
Wnt5a.2659	Wnt5a	22418	LIB	2659
Wnt5a.2764	Wnt5a	22418	LIB	2764
Wnt5a.4154	Wnt5a	22418	LIB	4154

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Mean T14/T0	T14/T0_A	T14/T0_B	Reads_A_T0	Reads_A_T14
0.200312349	0.268684264	0.131940433	34133	9171
0.665480322	0.000178923	1.330781721	5589	1
0.053604401	0.0019678	0.105241002	5590	11
0.410099904	0.199787845	0.620411962	38651	7722
0.002146138	0.00204099	0.002251286	11759	24
0.004655918	0.008377548	0.000934288	3581	30
0.273324357	0.165854931	0.380793783	11498	1907
0.2489911	0.201788909	0.29619329	5590	1128
0.449690571	0.432060881	0.467320261	8147	3520
0.557452935	0.742589485	0.372316384	7152	5311
0.001775631	0.000845309	0.002705953	3549	3
0.234356062	0.322320709	0.146391415	9928	3200
0.056185902	0.070641078	0.041730727	2449	173
0.221138799	0	0.442277597	8219	0
0.564841845	0.680914972	0.448768717	17312	11788
NA	NA	NA	908	0
0.274406089	0.334058432	0.214753745	29881	9982
0.625663102	1.012713108	0.238613096	30677	31067
0.035169734	0.012261229	0.058078239	7748	95
0.095823083	0.006448957	0.185197208	7288	47
0.499065664	0.927424983	0.070706346	11464	10632
0.705258812	0.517585507	0.892932117	235478	121880
0.001459856	0.000206825	0.002712886	4835	1
0.088104342	0.008071553	0.168137131	9168	74
0.195980329	0.234741368	0.15721929	22561	5296
0	0	0	12275	0
0.31947451	0.313544189	0.32540483	40881	12818
0.167683133	0.220091783	0.115274483	15907	3501
NA	NA	NA	0	0
0.401332534	0.200805702	0.601859367	16135	3240
0.139184254	0.254215372	0.024153137	19334	4915
0.46112578	0.22570026	0.696551301	17315	3908

0.573261557	0.767245885	0.37927723	15308	11745
0.235730162	0.418269791	0.053190532	17154	7175
0.035165394	0.002115526	0.068215262	10872	23
1.241609259	1.460589922	1.022628597	48820	71306
0.059766771	0.009568839	0.109964703	8883	85
0.10962211	0.118078719	0.101165501	1499	177
0.418395785	0.701615799	0.135175771	13925	9770
0.292975143	0.202313712	0.383636573	14695	2973
NA	NA	NA	207	21
0.42809245	0.550629344	0.305555556	5323	2931
0.069299389	0.09512504	0.043473739	12636	1202
1.831446558	1.40504451	2.257848606	6740	9470
0.590189219	1.1171875	0.063190938	7040	7865
0.366813082	0.684577114	0.049049049	1005	688
0.117667517	0	0.235335034	2848	0
0.375913898	0.327116212	0.424711584	27880	9120
NA	NA	NA	0	0
0.296002749	0.122132318	0.469873181	10505	1283
0.026435101	0.00690583	0.045964372	11150	77
0.049530555	0.063099738	0.035961372	6878	434
0.027907605	0.003065917	0.052749293	19570	60
6.47165E-05	0.000129433	0	7726	1
2.922281386	4.477807971	1.366754801	17664	79096
0	0	0	5448	0
0.443498086	0.657270086	0.229726085	26499	17417
0.260352231	0.308840206	0.211864257	121694	37584
0.60032482	0.359381765	0.841267876	23098	8301
0.005067342	0	0.010134685	7318	0
0	0	0	4630	0
0.149038652	0.070833921	0.227243383	7087	502
0.128457676	0.106936416	0.149978936	14186	1517
0.147861249	0.264325323	0.031397174	2705	715
0.396582444	0.600036694	0.193128195	21802	13082

0.356515297	0.533129237	0.179901356	9146	4876
4.974521294	2.266989851	7.682052736	22072	50037
0.05387472	0.096820809	0.01092863	20760	2010
0.837321391	1.529071015	0.145571768	4661	7127
0.008388288	0.015122511	0.001654064	10448	158
0.824053234	1.06458435	0.583522118	12294	13088
0.024491203	0.008743956	0.04023845	9721	85
0.010416667	0	0.020833333	3823	0
0	0	0	2783	0
0.125188349	0.175752051	0.074624647	5485	964
0.507940486	0.356679709	0.659201262	17890	6381
2.159026811	3.284734348	1.033319275	8018	26337
0.64349492	0.507178218	0.779811623	4040	2049
0.080389068	0.05529467	0.105483466	8518	471
0.000639494	0.000888362	0.000390625	3377	3
0.360095959	0.069445862	0.650746056	19598	1361
0.016297649	0.018375115	0.014220183	7619	140
0.14306644	0	0.286132879	20503	0
0.092709454	0.069620729	0.11579818	13315	927
0.035594283	0.071188567	0	22321	1589
NA	NA	NA	148	0
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0	0	0	2012	0
0.454904159	0.631757214	0.278051103	7381	4663
0.672354814	0.445185419	0.899524209	22193	9880
0.142000285	0.127547666	0.156452904	9126	1164
0	0	0	1267	0
0.077104921	0.08259276	0.071617083	19917	1645
0.057370498	0.065993919	0.048747077	29927	1975
0.024626408	0.021392709	0.027860107	9162	196
0.410946348	0.179452295	0.6424404	22786	4089
0.412381245	0.44332883	0.38143366	251680	111577
0.129826198	0.1681838	0.091468596	36692	6171

2.34833908	2.720656406	1.976021753	21572	58690
0.094299073	0.000374953	0.188223194	2667	1
0.480557434	0.680387664	0.280727205	47567	32364
0.041243445	0.031141199	0.051345691	15510	483
0.013231982	0.026463964	0	1776	47
22.77961486	42.66701779	2.892211933	8544	364547
0.144143286	0.249835634	0.038450937	7605	1900
0.028355134	0.029962547	0.02674772	1335	40
NA	NA	NA	447	431
3.10945E-05	0	6.21891E-05	20291	0
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0.756328621	1.503010235	0.009647007	3322	4993
0.633054482	0.738127854	0.52798111	4380	3233
0.010380898	0.004175644	0.016586151	59871	250
0	0	0	4366	0
0	0	0	6519	0
0.135273343	0.118396988	0.152149699	18590	2201
0	0	0	15250	0
0.079435576	0.000380084	0.158491069	7893	3
0.075280112	0	0.150560224	6127	0
0	0	0	6356	0
0.243856333	0	0.487712665	2578	0
0.001731885	0.002492331	0.00097144	10432	26
0.057581903	0.083058046	0.03210576	2119	176
1.091733912	0.589759684	1.593708139	55760	32885
0.57419689	0.919432666	0.228961114	6839	6288
0.458716872	0.142857143	0.774576601	16450	2350
0.245937138	0.37322759	0.118646686	4161	1553
0.134848542	0.001576873	0.268120212	3805	6
0	0	0	1236	0
0.710820484	1.275496689	0.146144279	1510	1926
0.134612189	0.008686441	0.260537937	4720	41
1.147329284	1.49221144	0.802447127	15664	23374

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0.142134201	0.070435009	0.213833393	19195	1352
0	0	0	4977	0
0.115344034	0.011380552	0.219307515	20825	237
1.364806716	0.371060327	2.358553106	9233	3426
0.700301215	1.223163842	0.177438588	2832	3464
0.817611719	0.890839629	0.744383809	69888	62259
0.215720626	0	0.431441252	3806	0
0.497429027	0.398906637	0.595951417	11707	4670
0.986138423	0.975527017	0.996749828	20635	20130
0	0	0	907	0
0.18203172	0.15420805	0.20985539	9565	1475
0.693812292	0.764903255	0.622721329	26823	20517
0.232529345	0.127116437	0.337942253	3839	488
0.176272377	0.350797267	0.001747488	2634	924
1.317433547	0.026128266	2.608738828	1684	44
0.628106622	1.114166972	0.142046271	32724	36460
1.362208923	0.193768257	2.530649588	1027	199
0.591043966	0.80244028	0.379647652	25243	20256
0.218502726	0.203358299	0.233647153	41390	8417
0.040584859	0	0.081169719	9110	0
0.075718892	0.000117758	0.151320026	8492	1
0.100164464	0.124590164	0.075738763	3050	380
0.080469517	0	0.160939034	12881	0
0.038731085	0.004728435	0.072733736	15650	74
0.110253195	0.038949338	0.181557052	14429	562
0.226325463	0.218088273	0.234562653	23518	5129
1.082538396	1.289585162	0.87549163	91120	117507
0	0	0	7650	0
0	0	0	1166	0
0.397909545	0.698496344	0.097322746	36245	25317
0	0	0	1271	0

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0.287092522	0.574185043	0	8344	4791
0.20895781	0.141891892	0.276023728	11840	1680
0.040480317	0	0.080960634	3527	0
0.109569072	0.112458184	0.10667996	42149	4740
0.03061677	0.03155467	0.029678869	9539	301
0.119970268	0.110483782	0.129456754	9033	998
0.204016851	0.209087277	0.198946425	17519	3663
0.579893278	1.122087605	0.037698952	16095	18060
0.171659277	0.161353286	0.181965268	13833	2232
0.064918568	0.001997004	0.127840131	2003	4
0.320682295	0.225751283	0.415613308	8186	1848
0.138050187	0.180178767	0.095921607	12754	2298
0.397415785	0.434250439	0.360581131	18791	8160
0.134215951	0.080257186	0.188174716	39660	3183
0.189600975	0.263537572	0.115664379	21625	5699
0.073920542	0.106108526	0.041732558	44266	4697
0.08107178	0.014856739	0.147286822	5654	84
0.071321859	0.011487304	0.131156413	18194	209
0.289503582	0.42626498	0.152742183	12016	5122
0.044090494	0.030532487	0.057648502	8188	250
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0.156093321	0.116246872	0.19593977	18779	2183
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NA	NA	NA	0	0
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0.446854315	0.107456979	0.786251651	18305	1967
0.890171552	1.716215543	0.064127562	20061	34429
2.179569236	1.422986617	2.936151855	8518	12121
0.031951327	0.008029979	0.055872675	16812	135
1.431979693	1.532967033	1.330992354	27664	42408
0.034464804	0.005788154	0.063141455	5183	30
0.079293047	0.058312236	0.100273857	11850	691

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0.621464656	0.915195867	0.327733445	4646	4252
4.781464099	6.785229842	2.777698356	5308	36016
0.778617907	1.132855191	0.424380624	17568	19902
1.176684021	1.753802163	0.599565878	24131	42321
0.554422725	0.923791103	0.185054348	2585	2388
1.1593543	0.786077021	1.532631579	4726	3715
0.240881821	0.481763642	0	10501	5059
2.777624937	3.217093529	2.338156344	14017	45094
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0.082319013	0.141659648	0.022978377	24933	3532
2.015703082	1.209699299	2.821706865	8846	10701
0.232392142	0.178955954	0.285828331	30650	5485
0.063600987	0.001541511	0.125660464	4541	7
0.281642373	0.071780078	0.491504669	11786	846
4.165656967	6.332554466	1.998759467	30386	192421
0.154177662	0.004555809	0.303799515	3512	16
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0.053391885	0.024676711	0.082107059	16858	416
3.655607969	4.58780241	2.723413529	10871	49874
16.37310333	22.75705636	9.989150297	10735	244297
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0.066051589	0.007621849	0.124481328	14957	114
0.096645722	0.171270718	0.022020725	3801	651
0.615592343	0.666345784	0.564838903	83104	55376
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0.345104593	0.226497717	0.463711468	10733	2431
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0.703875338	0.77262223	0.635128445	22069	17051
NA	NA	NA	270	6
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1.398029255	2.142666181	0.65339233	16458	35264
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0.275136367	0.291147084	0.25912565	12911	3759
0.729534649	0.550112191	0.908957107	10696	5884
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0.313809229	0.308336591	0.319281867	17909	5522
0.584392451	0.593347689	0.575437213	21827	12951
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0.330597641	0.293600259	0.367595023	18532	5441
0.382783292	0.430418838	0.335147745	5181	2230
0.211522228	0.16763608	0.255408376	23038	3862
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0.23467894	0.240075706	0.229282175	20606	4947
0.038002797	0.076005593	0	12157	924
0.373058626	0.121392815	0.624724436	13584	1649
0.047358662	0.093162219	0.001555105	14727	1372
0.054251126	0.007308659	0.101193592	17103	125
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0.268474952	0.379490888	0.157459016	34570	13119
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NA	NA	NA	0	0
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0.161312023	0.013273543	0.309350504	5575	74
0.171634666	0	0.343269333	10809	0
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0.123390861	7.6365E-05	0.246705356	13095	1
0.929056053	0.842508957	1.015603148	39634	33392
0.31242234	0.550174697	0.074669984	24614	13542
0.01894361	0.035966931	0.001920288	23466	844
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0.334422325	0.322283458	0.346561192	12157	3918
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0.055910099	0.056709087	0.055111111	4479	254
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0.429356479	0.627018076	0.231694881	14494	9088
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0	0	0	4416	0
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0.211577111	0.019757689	0.403396534	5365	106
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0.218403794	0.156206756	0.280600831	12285	1919
0.706197905	0.944937527	0.467458283	23210	21932
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2.570129526	3.94702491	1.193234141	27579	108855
0.262185545	0.243682034	0.280689056	6529	1591
0.242612885	0.28585051	0.19937526	40899	11691
1.347345343	1.429206206	1.265484481	278838	398517
0.629381934	0.736795839	0.521968029	13651	10058
0.415532045	0.51072454	0.320339551	5921	3024
0.162841158	0.15639547	0.169286845	28786	4502
0.063853471	0	0.127706942	8357	0
0.024043164	0.037148827	0.0109375	4307	160
0.133648563	0.20077669	0.066520435	43003	8634
0.001865461	0.003730921	0	8845	33
0.23785439	0.369592346	0.106116433	4808	1777
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0.179395578	0.071746032	0.287045124	3150	226
0.106169791	0.145963878	0.066375705	5426	792
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0	0	0	1162	0
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0.194075242	0.388150484	0	4439	1723
0.078428253	0	0.156856507	7985	0
0.249392869	0.421878803	0.076906935	16436	6934
12.91595763	23.42054693	2.41136833	6765	158440
0.656722465	0.484156227	0.829288703	1357	657
0.086063916	0.063287745	0.108840087	14916	944
0.146091516	0.292183031	0	2098	613
0.311596614	0.41754442	0.205648809	18798	7849
0.050833282	0.001168224	0.100498339	2568	3
0.153710614	7.29288E-05	0.307348299	13712	1
0.023975817	0.024090462	0.023861171	8136	196
NA	NA	NA	0	0
0.395188053	0.790376106	0	1808	1429
0.463447784	0.373127484	0.553768085	6542	2441
0.673906334	0.58012685	0.767685818	21285	12348
0.05	0.1	0	6870	687
1.003143594	0.60732691	1.398960277	8926	5421

0.232796973	0.260955434	0.204638512	34937	9117
0.180458299	0.321948649	0.038967948	20876	6721
0.108629839	0.07593243	0.141327247	5979	454
0	0	0	1838	0
0.346191954	0.376371183	0.316012725	13492	5078
0.06905	0.066867307	0.071232693	25917	1733
0.716122809	0.945390961	0.486854657	22304	21086
0.061659427	0.057717972	0.065600882	8992	519
0.043527072	0.053540314	0.03351383	12626	676
0.20955986	0.268333519	0.1507862	17918	4808
0.237782658	0.104923474	0.370641842	59653	6259
0.385634864	0.501316194	0.269953535	45586	22853
0.412970986	0.000769823	0.82517215	1299	1
NA	NA	NA	0	0
0.069970575	0.086036762	0.053904388	31010	2668
1.268695155	1.091805094	1.445585216	9030	9859
0.098153695	0.146551233	0.049756158	35114	5146
0.038783499	0.047608174	0.029958824	8759	417
0	0	0	7426	0
1.729519941	2.66571554	0.793324343	4556	12145
0.054981253	0.011631924	0.098330582	8683	101
0.405465225	0.538874518	0.272055932	20489	11041
0.441636316	0.589916076	0.293356556	76855	45338
3.701953893	1.507171929	5.896735857	25307	38142
0.200363394	0.039606523	0.361120264	3863	153
0.026442538	0.001332149	0.051552926	4504	6
0.441872864	0.485687809	0.398057919	38848	18868
0.00514048	0.009192066	0.001088893	6201	57
0.230878224	0.327220173	0.134536275	10033	3283
0.110401249	0.03625	0.184552498	29600	1073
1.017141522	0.572352773	1.461930271	10511	6016
0.864776346	0.582272727	1.147279965	11000	6405
3.479477858	2.83947293	4.119482786	52365	148689

4.925644667	4.280960907	5.570328426	6702	28691
0.248654315	0.35031185	0.14699678	18278	6403
1.363948366	0.535007243	2.192889488	10355	5540
0.263122123	0.241511541	0.284732705	26860	6487
0.106583794	0	0.213167587	3533	0
0.311471985	0.488261591	0.134682379	35567	17366
0.18904701	0.27594244	0.10215158	9868	2723
NA	NA	NA	0	0
NA	NA	NA	0	0
0.192060819	0.068007096	0.316114542	5073	345
0.071297514	0.00530504	0.137289989	9425	50
0.140338666	0.006669282	0.274008051	2549	17
0.69700856	0.5224761	0.871541021	14749	7706
0.918964146	1.082710075	0.755218216	2273	2461
1.124564108	1.80619245	0.442935765	27259	49235
0.012383228	0.024766457	0	9206	228
0.587157188	0.988469407	0.185844969	10754	10630
0.080944165	0.06776283	0.094125501	2007	136
0.383022948	0.353332365	0.412713531	34435	12167
0.157375244	0.267980636	0.046769852	2892	775
2.421585425	4.080815103	0.762355747	83425	340442
0	0	0	2395	0
0.258961381	0.414341695	0.103581067	29857	12371
0.617600335	0.548194175	0.687006494	25750	14116
0.225125817	0.192359317	0.257892316	119204	22930
0.134739676	0.083890257	0.185589094	5686	477
0.28018788	0.280165234	0.280210526	30018	8410
0	0	0	15143	0
0.02953012	0.007313698	0.051746541	10118	74
0.084311633	0	0.168623266	5348	0
0.495965201	0.000211595	0.991718808	4726	1
0.872781647	0.739329604	1.006233691	22703	16785
0.000261472	0	0.000522944	4995	0

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1.329007355	0.941659685	1.716355024	42972	40465
0.554591185	0.173112518	0.936069851	10265	1777
0.300678085	0.162322666	0.439033504	9093	1476
0.000842912	0.001685824	0	6525	11
0.103679501	0.106351828	0.101007173	26638	2833
0.726982674	0.553239773	0.900725575	16745	9264
0.230741091	0.167158309	0.294323873	19323	3230
0.207264965	0.120808561	0.293721369	4205	508
0.113322058	0.075793595	0.15085052	14302	1084
0.08913639	0.002784366	0.175488414	9697	27
0.043079662	0.069152399	0.017006925	66057	4568
0.000831282	0.001034029	0.000628536	10638	11
0.933461944	1.175144551	0.691779336	13663	16056
1.786480339	2.379093311	1.193867366	112806	268376
1.348195558	1.050841453	1.645549663	5645	5932
0.895988133	0.355499082	1.436477183	28332	10072
0.187741857	0.120085677	0.255398037	14473	1738
1.318076072	0.96347543	1.672676713	9829	9470
0.412965767	0.468026197	0.357905337	18781	8790
0.480747339	0.556819876	0.404674802	40250	22412
0.129064364	0.000328623	0.257800106	3043	1
1.353922306	0.000965251	2.706879362	1036	1
0.490140075	0.956008305	0.024271845	7706	7367
0.164979808	0.256726348	0.073233268	102210	26240
0.059442746	0.07510305	0.043782442	12130	911
0.741528975	0.765657556	0.717400394	8159	6247
0.200102959	0.163622609	0.23658331	9253	1514
0.676849819	0.820704579	0.532995059	31423	25789
0.15829753	0.038494735	0.278100325	5793	223
0.553203122	0.185103308	0.921302937	23522	4354
2.587739528	3.744000541	1.431478516	14793	55385
0.148414474	0.037384899	0.259444048	5430	203

0.401904979	0.407221471	0.396588486	5179	2109
0.186949478	0.022460197	0.351438759	10552	237
0.008618272	0.016029948	0.001206596	10418	167
0.12362466	0.184941628	0.062307692	13534	2503
0.147628799	0.026531729	0.268725869	3656	97
0.132745115	0.260845889	0.004644341	11018	2874
0.240665022	0.253816286	0.227513757	37602	9544
0.618565777	0.940924658	0.296206897	3504	3297
0.120971403	0	0.241942805	1161	0
0.538437996	0.10757034	0.969305652	12866	1384
0.142403868	0.257946389	0.026861346	6827	1761
0.040373807	0.071984908	0.008762706	37105	2671
0.079970208	0.073811384	0.086129032	16637	1228
0.069588311	0.063063063	0.076113558	6549	413
0.369201025	0.457417016	0.280985033	138189	63210
0.111142996	0.145979608	0.076306385	16379	2391
0.117228687	0.230010953	0.004446421	2739	630
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NA	NA	NA	54	7231
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0.199214313	0.000694806	0.39773382	5757	4
0.290562147	0.414519609	0.166604686	7879	3266
0.389300951	0.33340748	0.445194422	125876	41968
0.01201515	0.024030299	0	7657	184
0.068187318	0.136374637	0	8264	1127
0.235139043	0.216814556	0.253463531	44628	9676
NA	NA	NA	518	0
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0.321175793	0.350280264	0.292071322	20338	7124
0.541107405	0.527171897	0.555042912	53916	28423
0.174749605	0.349499209	0	3794	1326
4.38507001	5.72404439	3.046095631	4055	23211
0.248179872	0	0.496359743	3549	0

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4.761125427	3.672516129	5.849734725	11625	42693
0	0	0	1209	0
0.074897582	0.110762101	0.039033064	19420	2151
0	0	0	5608	0
0.116716316	0.079717133	0.153715499	15555	1240
0.568467589	0.647703684	0.489231493	15416	9985
0.82744825	1.141203528	0.513692971	39567	45154
0.363859691	0.15822698	0.569492403	21861	3459
0.09125886	0.026162019	0.156355701	7530	197
0.011900813	0.022360704	0.001440922	2728	61
0.194643294	0.000376081	0.388910506	18613	7
0.200901765	0.042339934	0.359463595	16462	697
0.078750031	0.010875476	0.146624585	16551	180
0.145222056	0.013529275	0.276914837	4287	58
0.033554608	0	0.067109216	18282	0
0.276620876	0.447187977	0.106053776	57023	25500
0.103798129	0.202524797	0.005071462	5545	1123
0.028187951	0.001406376	0.054969526	14932	21
0.414679837	0.282276488	0.547083186	168962	47694
0.039006515	0.011331445	0.066681584	2471	28
0.132003104	0.132045515	0.131960693	7558	998
0.036617996	0.036774807	0.036461185	9463	348
0.87003635	1.544545602	0.195527097	12302	19001
0.141265139	0.281803323	0.000726956	14684	4138
0.717498316	0.023598072	1.411398561	7882	186
0.150955677	0.221333433	0.080577921	26878	5949
0.653742815	0.838148831	0.469336798	63441	53173
0.419652469	0.667150846	0.172154092	13769	9186
0.048096175	0.003971464	0.092220886	13597	54
0.319940409	0.13257804	0.507302777	24891	3300
0.033157893	0.001919102	0.064396684	6774	13
0.793188133	1.077433351	0.508942915	55777	60096

0.158179087	0.277250113	0.039108062	2211	613
0.784008604	0.547153313	1.020863896	30878	16895
0.36095926	0.389780357	0.332138162	17574	6850
0.037865771	0.010600201	0.065131342	6981	74
0.122260163	0.184664749	0.059855578	36152	6676
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0	0	0	1903	0
0.081531892	0	0.163063784	3891	0
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0.530893217	0.727875059	0.333911375	31695	23070
0.232238461	0.281751288	0.182725634	13590	3829
0.286619482	0.004971898	0.568267067	4626	23
0.061709694	0.006313275	0.117106114	17582	111
0.090639202	0.001580492	0.179697912	8858	14
5.939776926	4.372746171	7.506807681	47142	206140
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0.019081112	0.035102041	0.003060184	1225	43
0.209668367	0.252318376	0.167018358	22753	5741
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0.091881752	0.041176728	0.142586776	22877	942
NA	NA	NA	305	0
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2.378116941	2.670245399	2.085988484	5216	13928
0.42815757	0.457258743	0.399056397	13067	5975
4.914842828	4.14081359	5.688872067	2237	9263
15.43389955	22.53070605	8.337093044	33723	759803
7.90198211	4.957801222	10.846163	46826	232154
2.088422368	3.689806678	0.487038058	1138	4199
0.681144071	0.610359065	0.751929076	19133	11678
0	0	0	3633	0
1.804491278	2.920727522	0.688255034	5828	17022
5.053664383	7.673024929	2.434303837	40315	309338

0.139995763	0.248305961	0.031685564	17414	4324
0.031392948	0.042246873	0.020539024	25422	1074
0.11593131	0.140696498	0.091166122	20761	2921
0.008070115	0.005876667	0.010263563	25865	152
0.355326987	0.511142363	0.199511612	18488	9450
0	0	0	1640	0
0.371959696	0.15191828	0.592001111	8419	1279
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0.884542293	0.609151329	1.159933256	23472	14298
NA	NA	NA	94	0
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0.015603346	0.021342134	0.009864558	9090	194
0.263205121	0.432928311	0.093481932	16460	7126
NA	NA	NA	126	0
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0	0	0	5525	0
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0.93839873	1.308311364	0.568486097	7207	9429
0.192553734	0.281569343	0.103538124	21920	6172
0	0	0	690	0
0	0	0	3786	0
0.006118881	0.012237762	0	1716	21
0.999844656	0.815379706	1.184309605	15670	12777
0.756310595	0.374601925	1.138019266	27947	10469
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2.672057204	0.893748358	4.45036605	15228	13610
0.391905722	0.627474398	0.156337047	33493	21016
0.112275278	0.113553114	0.110997442	19656	2232
2.125995207	0.800219962	3.451770452	18185	14552
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6.47585E-05	0.000129517	0	7721	1
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0.099698624	0.171510367	0.027886881	11527	1977
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30.3934439	42.83344355	17.95344425	10585	453392
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0.055599264	0.110335466	0.000863061	5157	569
0.006560346	0.00966944	0.003451251	4447	43
0.541947489	0.372010693	0.711884285	13841	5149
0.686557747	0.328572238	1.044543256	17643	5797
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0.119249564	0.004346476	0.234152652	3221	14
0.040594882	0.000521558	0.080668205	11504	6
0.29750152	0.120015301	0.474987739	10457	1255
0.120666479	0.118932039	0.122400919	19364	2303
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0.35901654	0.04608508	0.671947999	6488	299
0.140719956	0.258960573	0.022479339	15624	4046
0.902821311	0.530879713	1.274762908	11140	5914
0.458948236	0.358981494	0.558914978	7187	2580

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0.210888138	0.367549038	0.054227238	10502	3860
0.104470818	0.188126755	0.02081488	4986	938
0.892550544	0.316455696	1.468645392	4108	1300
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0.362609031	0.342329793	0.382888269	22972	7864
0.006105603	0.012211205	0	20473	250
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0.053243848	0.106487696	0	8940	952
1.662743561	1.577856302	1.74763082	12735	20094
0.168234787	0.308182513	0.028287061	3923	1209
0.030777532	0.017032993	0.04452207	21429	365
0.16139052	0.235338822	0.087442219	7895	1858
0.39397106	0.498357756	0.289584364	7916	3945
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9.678858441	7.766500178	11.5912167	5606	43539
0.152719984	0.030076142	0.275363825	7880	237
0.187420804	0.303786616	0.071054993	41990	12756
3.865093664	3.578045861	4.152141468	21718	77708
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0.35115	0.32717803	0.375121969	23232	7601
0.084288102	0.160556564	0.00801964	8265	1327
0.09993849	0.068596738	0.131280242	18514	1270
0.444925531	0.384459989	0.505391072	33166	12751
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0.678912333	0.407078398	0.950746269	7092	2887
0.610136449	0.807828401	0.412444497	36457	29451
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0.118527608	0.184246062	0.052809154	6665	1228
0.178047503	0.204710012	0.151384993	13673	2799
0.281793921	0.46524031	0.098347533	16125	7502
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1.021354121	0.675807289	1.366900952	46204	31225
1.690348646	0.566009654	2.814687638	49720	28142
0.539886389	0.513086274	0.566686504	44092	22623
0.090594691	0.06110417	0.120085213	25612	1565
0.020983494	0.041486603	0.000480384	11570	480
0	0	0	4441	0
3.52833E-05	7.05667E-05	0	14171	1
0.538610763	0.908737392	0.168484134	8229	7478
NA	NA	NA	221	0
0.408904844	0.436043305	0.381766382	34453	15023
0.229797051	0.203566341	0.256027762	20357	4144
0.050370956	0.017908875	0.082833036	7594	136
0.127106083	0.093023256	0.161188911	13674	1272
0.064288331	0.02643779	0.102138872	7981	211
0.090658195	0.169964956	0.011351434	9702	1649
0.964704579	0.430668605	1.498740554	6880	2963
0.06919639	0.042373324	0.096019455	38326	1624
0.161461455	0.167124645	0.155798265	22199	3710
0.121409823	0.178588808	0.064230838	14385	2569
0.275005354	0.550010709	0	9338	5136
0.049836641	0.003384095	0.096289187	7683	26
0.106674086	0.187523208	0.025824964	2693	505
0.248260853	0.357676324	0.138845382	34411	12308
0.162689304	0.102281495	0.223097113	9073	928
0.121026312	9.02527E-05	0.241962372	11080	1
0.11654652	0.146549398	0.086543642	18533	2716

0.036882594	0.001164353	0.072600834	11165	13
0.862186131	0.987938749	0.736433513	35983	35549
0.060698903	0.02212727	0.099270536	6553	145
5.270386453	3.099350703	7.441422202	24026	74465
0.521784232	0	1.043568465	1483	0
0.075151234	0.112102387	0.038200081	21409	2400
0.269317079	0.20276676	0.335867398	20674	4192
0.405412499	0.39411959	0.416705408	6054	2386
0.005945122	0	0.011890244	2872	0
0.293485392	0.527073733	0.059897052	1736	915
0.111037316	0.097569355	0.124505277	23286	2272
0.492448295	0.042176871	0.94271972	4410	186
0.98252896	1.932489451	0.032568468	948	1832
0.004062756	0.003733333	0.004392179	7500	28
0.524906994	0.429446747	0.620367241	11098	4766
0.174355348	0.183572542	0.165138154	18603	3415
0.038957255	0.003943577	0.073970934	6593	26
0.533914395	0.660762545	0.407066246	27382	18093
0.096716361	0.180946552	0.01248617	9804	1774
NA	NA	NA	510	0
0.430720448	0.248793956	0.61264694	32959	8200
2.329170058	2.550566982	2.107773134	41183	105040
0.153596644	0.259297344	0.047895945	5835	1513
0.559676498	0.502441293	0.616911704	17204	8644
NA	NA	NA	0	0
0.090352843	0.160106435	0.020599251	30817	4934
0.2845147	0.353298153	0.215731247	7580	2678
0.115287664	0.047414054	0.183161274	32986	1564
0.085408022	0.000193199	0.170622844	5176	1
0.001128668	0	0.002257336	3980	0
0.069371374	0.05967095	0.079071797	12217	729
NA	NA	NA	189	0
0.149313429	0.128342246	0.170284612	17017	2184

0.413409055	0.622305737	0.204512373	9047	5630
1.643969827	2.094062103	1.193877551	5507	11532
0.648213784	0.715798492	0.580629076	29180	20887
0.009633756	0.011159403	0.008108108	8513	95
0.123211194	0.098809823	0.147612565	27811	2748
0.328175562	0.377128018	0.279223106	10397	3921
0.201249487	0.337440758	0.065058216	8440	2848
0.000542104	0.00048216	0.000602047	2074	1
3.233747051	5.976620158	0.490873944	18563	110944
0.640755782	1.166720727	0.114790837	9249	10791
0.361793005	0.256726293	0.466859717	34157	8769
0.401141561	0.283516221	0.518766901	8384	2377
0.222497616	0.078468537	0.366526695	2638	207
0.302877526	0.400302009	0.205453043	28476	11399
0.14165733	0.1690104	0.114304261	15289	2584
0.019533353	0.019407151	0.019659554	7523	146
NA	NA	NA	1662	0
3.189719542	4.278249106	2.101189977	51745	221378
0.013169577	0	0.026339154	3718	0
0.034088344	0.058964593	0.009212095	14178	836
0.004331754	0.000484027	0.008179481	2066	1
0.340786503	0.362280234	0.319292772	1877	680
NA	NA	NA	0	0
0.020265668	0	0.040531335	2701	0
0.135065674	0.072316173	0.197815176	21406	1548
0.179448269	0.099882029	0.259014509	5086	508
0.327507015	0.001459854	0.653554175	685	1
0.664294206	1.071999112	0.2565893	9014	9663
1.255652224	0.641311475	1.869992973	1525	978
0.110664823	0.120254845	0.101074802	15068	1812
0.272777523	0.382384883	0.163170163	46040	17605
1.328852347	1.764027294	0.8936774	20371	35935
0.484140888	0.638219895	0.330061882	26740	17066

0.031631618	0.037750897	0.025512338	7523	284
0.973162231	1.211030345	0.735294118	8667	10496
9.18442E-05	0.000183688	0	5444	1
0.815640774	0.654386731	0.976894818	11455	7496
0.157500935	0.315001871	0	2673	842
4.89333E-05	0	9.78665E-05	7852	0
3.559311442	4.211350585	2.907272299	26818	112940
0.274535697	0.423260006	0.125811388	43276	18317
0.113816928	0.148898678	0.078735178	2270	338
0.778904793	0.453405018	1.104404568	1674	759
0.201764199	0.173979378	0.22954902	40637	7070
0.126875652	0.076575692	0.177175612	5093	390
2.188455879	0.469499821	3.907411937	8377	3933
0.033732942	0.000853242	0.066612642	16408	14
0.134310673	0.232186732	0.036434613	4884	1134
0.154846836	0.167501928	0.142191745	10376	1738
0.50072786	0.541981695	0.459474025	7539	4086
0.009433344	0.004819277	0.01404741	1245	6
0.543933929	0.518786922	0.569080936	41811	21691
0.080612502	0.04869904	0.112525964	21561	1050
0.06501016	0.126209284	0.003811036	11267	1422
0.23497578	0.386599091	0.083352468	13417	5187
0.244600451	0.198269736	0.290931167	32365	6417
0.59669119	0.802821189	0.390561191	29562	23733
0.045662786	0.087305569	0.004020002	9965	870
0.108178455	0.06973876	0.146618151	35676	2488
0.008304892	0	0.016609784	4282	0
0	0	0	2929	0
0.059717843	0.087169563	0.032266123	24286	2117
0.006237689	0.012475378	0	10661	133
0.06194056	0.10699453	0.016886591	54657	5848
0.193789327	0.126048165	0.261530489	14907	1879
0.005813953	0	0.011627907	2162	0

0.928220759	1.004589667	0.851851852	23749	23858
0.073360623	0.135745027	0.010976218	8597	1167
1.015990856	1.156510409	0.875471303	33001	38166
0.000789875	0.00145743	0.00012232	29504	43
0.121958567	0.170557717	0.073359417	6168	1052
1.399302063	1.445902998	1.352701127	7237	10464
1.666788004	1.533762916	1.799813091	367178	563164
0.286061741	0.026611473	0.54551201	1691	45
0.165118469	0.170742026	0.159494912	11819	2018
0.180669238	0.016304348	0.345034127	4600	75
0.673388184	0.833867094	0.512909274	7494	6249
0.954595303	0.850564925	1.05862568	30535	25972
0.837959761	0.541602515	1.134317006	46115	24976
0.187347204	0.081992104	0.292702304	9879	810
0.546987675	0.692397599	0.401577752	37646	26066
0.063920224	0.054351697	0.073488751	36503	1984
0.278768206	0.423430663	0.134105749	33597	14226
0.000109004	0	0.000218007	4427	0
NA	NA	NA	0	0
0.459938908	0.803347787	0.11653003	41281	33163
1.136821022	1.414336918	0.859305126	12555	17757
0.007210873	0.000351973	0.014069774	45458	16
7.31913E-05	0.000111564	3.48189E-05	35854	4
0.018174308	0.02069689	0.015651726	66725	1381
0.00476048	0.002574918	0.006946042	208162	536
0.161960667	0.323389702	0.000531632	5263	1702
0.392569667	0.3563288	0.428810533	36326	12944
0.24003152	0.473695747	0.006367292	4562	2161
0.193635318	0.075057818	0.312212817	14269	1071
0.193845463	0.035309973	0.352380952	3710	131
0.107452217	0.170620438	0.044283995	4384	748
0.608381477	0.653331355	0.5634316	33695	22014
1.521441453	1.691804708	1.351078197	38998	65977

0.797831182	0.900645478	0.695016886	12239	11023
8.23E-05	0	0.0001646	11381	0
0.18069148	0.180119102	0.181263858	10915	1966
0.199934074	0.05129672	0.348571429	20976	1076
0.003342509	0	0.006685018	5428	0
0.137405083	0.097939189	0.176870978	29600	2899
0.040179039	0.047492416	0.032865662	50766	2411
0.00017313	0	0.00034626	7627	0
0.038294803	0.027488932	0.049100673	19426	534
0.377349359	0.44562685	0.309071868	15881	7077
0	0	0	8105	0
0.126767545	0.027322404	0.226212687	3477	95
NA	NA	NA	424	0
0.012222377	0	0.024444755	5170	0
0.001721296	0.001794728	0.001647864	8915	16
2.55102E-05	5.10204E-05	0	19600	1
0	0	0	2249	0
0.79628381	1.371309831	0.22125779	27912	38276
0.441117913	0.586184524	0.296051303	23119	13552
0.143929674	0.043706114	0.244153234	29195	1276
NA	NA	NA	0	0
0.066151971	0.049381188	0.082922753	40400	1995
0.189731658	0.000972526	0.37849079	4113	4
0.411566348	0.623313229	0.199819467	42611	26560
1.643161397	2.493088617	0.793234176	86958	216794
0.517510269	0.470614035	0.564406503	22800	10730
0.086579742	0	0.173159485	19087	0
0.146093257	0.000108015	0.292078499	9258	1
0.010401671	8.65726E-05	0.02071677	11551	1
1.391206827	2.779885057	0.002528597	10440	29022
1.190095337	0.963319847	1.416870827	37568	36190
0.079364105	0.021533706	0.137194504	28467	613
0.34737866	0.393661661	0.30109566	9056	3565

0.292843192	0.358163209	0.227523174	18271	6544
0.162091025	0.135760257	0.188421792	9944	1350
64.11298219	52.14726514	76.07869924	23950	1248927
1.013294698	1.206846418	0.819742977	7566	9131
0.008587566	0.010476801	0.006698332	9354	98
1.004772904	0.72139738	1.288148429	3435	2478
0.26726547	0.475359343	0.059171598	2922	1389
0.075539295	0.001624805	0.149453785	14771	24
0.281181984	0.520202721	0.042161246	14404	7493
0.082878502	0.005644644	0.16011236	7795	44
0.134401376	0.019676674	0.249126078	10825	213
0	0	0	634	0
0.024340683	0	0.048681366	22343	0
1.728939777	2.831898734	0.62598082	3950	11186
0	0	0	2903	0
0.042293799	0.084587598	0	6644	562
1.438726271	2.275190706	0.602261836	40114	91267
0.105590062	0	0.211180124	6940	0
0.134926536	0.248162305	0.021690768	3401	844
0.639579924	1.118636662	0.160523187	4577	5120
1.451209242	1.979805805	0.922612678	19362	38333
0.631165203	0.733237638	0.529092768	197153	144560
0.436869096	0.336818563	0.536919629	17885	6024
1.729713563	2.528467711	0.930959415	7851	19851
0.147707432	0.003062938	0.292351926	10121	31
0.131476192	0.093366665	0.169585719	51603	4818
0.276894538	0.290329505	0.26345957	9317	2705
0.023729675	0.026015228	0.021444122	28368	738
0.43015768	0.70883566	0.1514797	12608	8937
0.087373128	0.032567568	0.142178688	7400	241
1.118453529	1.035942224	1.200964834	8931	9252
0.316055067	0.208823529	0.423286604	2040	426
0.23257166	0.248811512	0.216331808	15566	3873

0.787448713	0.84617509	0.728722336	28968	24512
0.413766331	0.018150999	0.809381663	14159	257
0.271724181	0.467032967	0.076415394	7280	3400
0.211146978	0.364117918	0.058176038	21710	7905
0.04315097	0.061098763	0.025203178	41392	2529
NA	NA	NA	981	0
1.159282043	1.459821841	0.858742245	43332	63257
0.148949431	0.165555092	0.132343769	14394	2383
0.036022476	0.05303979	0.019005162	24755	1313
0.000122991	0	0.000245982	14293	0
0.232027633	0.160600291	0.303454974	17858	2868
0.364602844	0.086260111	0.642945578	18792	1621
0	0	0	2362	0
0.221531023	0.111507818	0.331554227	30249	3373
0.21552915	0.207286174	0.223772125	14603	3027
0.118405846	0.003893381	0.232918312	3339	13
0.451595828	0.535251456	0.367940199	8411	4502
1.153548695	1.688711584	0.618385807	33840	57146
0.46036335	0.786028584	0.134698116	29317	23044
0.11066776	0.061904944	0.159430577	26153	1619
0.213806299	0.218937644	0.208674954	15155	3318
0.607874304	1.091527057	0.124221551	18683	20393
0.172543567	0.178539893	0.166547241	28313	5055
0	0	0	799	0
0.035563959	0.003878282	0.067249636	3352	13
0.08050899	0.120002107	0.041015873	18983	2278
0	0	0	1287	0
0.185891845	0	0.371783689	12192	0
0.101871507	0.169502565	0.03424045	12283	2082
0.464028994	0.638482699	0.28957529	20721	13230
0	0	0	2050	0
39.02044459	29.48150462	48.55938456	38415	1132532
0.051361802	0.102723605	0	11896	1222

2.889445252	4.275900073	1.502990431	10888	46556
0.027038126	0.047147846	0.006928406	1718	81
1.659875833	1.301821998	2.017929668	10483	13647
5.667513887	8.025575273	3.309452502	29247	234724
0.671956498	0.125396825	1.21851617	4410	553
0.277627685	0.414749573	0.140505797	15214	6310
0.369172133	0.397641112	0.340703153	15431	6136
0.029841397	0.009797964	0.049884831	13166	129
0.145361327	0.246381645	0.044341009	14993	3694
0.763237236	1.299479167	0.226995305	8832	11477
0.19664493	0.30078986	0.0925	10888	3275
0.109320414	0.188431483	0.030209345	12413	2339
0.27744907	0.176790744	0.378107396	26274	4645
0.345474467	0.457416001	0.233532934	28661	13110
0.117582645	0.231035335	0.004129956	4047	935
0	0	0	2642	0
0.225624714	0.208014266	0.243235162	9533	1983
5.976009675	3.943683037	8.008336314	36774	145025
0.166161562	0.03823709	0.294086035	29474	1127
0.574918385	0.45703001	0.692806761	28357	12960
0.101831674	0.067653641	0.136009708	11618	786
0.113264066	0.14391266	0.082615473	18136	2610
0.847881262	0.759523917	0.936238607	22181	16847
0.487657271	0.079701835	0.895612708	1744	139
0.333287943	0.426382841	0.240193045	6201	2644
0	0	0	4778	0
0.033647219	0.007321641	0.059972796	5873	43
0.133552973	0.166871585	0.100234361	29280	4886
0.984033005	1.765638646	0.202427363	36640	64693
0.268051697	0.342375668	0.193727726	7299	2499
6.230065777	7.131274131	5.328857422	7252	51716
0	0	0	11477	0
0.407196317	0.531783938	0.282608696	20309	10800

0.034680679	0	0.069361358	7240	0
0.124362265	0.177337952	0.071386579	10105	1792
0.281233349	0.168597717	0.393868982	23476	3958
0.036082039	0.064381611	0.007782466	9832	633
0.102705754	0.118006231	0.087405278	24075	2841
0.555290132	1.105784101	0.004796163	3233	3575
0.201223576	0.237695287	0.164751865	22979	5462
0.100536441	0	0.201072882	4110	0
4.496682919	5.749585661	3.243780178	32582	187333
0.349388033	0	0.698776065	2734	0
0.212521996	0.244648899	0.180395093	26303	6435
0.052050563	0.074190594	0.029910532	25111	1863
0.000185048	0.000370096	0	2702	1
0.306910194	0.366298636	0.247521752	33874	12408
0.130932283	0	0.261864566	9024	0
0	0	0	11830	0
0	0	0	1979	0
0.173798872	0	0.347597744	9139	0
0.516140607	0.49304499	0.539236223	18404	9074
0	0	0	19141	0
0	0	0	3987	0
0.254409407	0	0.508818813	2799	0
1.544048922	1.927461878	1.160635965	7017	13525
0.00769067	0.00522541	0.010155929	9760	51
0.16138236	0.206581683	0.116183036	11061	2285
0.443170347	0.001824633	0.884516062	9865	18
0.813201059	0.763236816	0.863165302	37679	28758
0.001449922	0	0.002899844	8924	0
1.277126142	1.595355855	0.958896428	11929	19031
1.121534494	0.83378821	1.409280778	14656	12220
0.431886028	0.596321373	0.267450683	45343	27039
0.175666404	0.146602132	0.204730676	35743	5240
0.524975639	0.491653823	0.558297455	38281	18821

0.116790353	0	0.233580705	3903	0
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6738	958
7877	9460
2568	1087
20108	4350

24897	18143
11725	9490
12576	961
25165	1464
43804	1104
444	671
35460	30451
24051	3183
21310	405
12196	3
28828	8748
18577	11944
2342	0
28104	9318
8531	1909
3293	767
6020	2215
25759	15929
26964	3632
25359	4043
11343	2367
21196	2633
19538	3254
685	0
4803	323
7875	323
1543	0
9172	3410
7827	268
19425	5625
1324	0
46081	2237665
13262	0

5016	7539
4763	33
10095	20371
29717	98347
7885	9608
16647	2339
13795	4700
15195	758
16328	724
8520	1934
9600	888
11321	342
19349	7316
28557	6669
3632	15
8094	0
6689	1627
36347	291079
40937	12039
30056	20823
9889	1345
24378	2014
24576	23009
1322	1184
8081	1941
8728	0
8087	485
27735	2780
27190	5504
7015	1359
12288	65481
9246	0
20516	5798

6185	429
11907	850
24531	9662
10665	83
30616	2676
2919	14
25329	4173
5406	1087
27131	88007
4412	3083
28044	5059
34202	1023
2989	0
23101	5718
5331	1396
10214	0
1920	0
5141	1787
12412	6693
16741	0
5301	0
3742	1904
9120	10585
9748	99
8960	1041
9681	8563
31264	26986
8966	26
17833	17100
13167	18556
52720	14100
31412	6431
28569	15950

5390	1259
15676	3830
10166	6097
1766	68
12522	1533
4272	15
22747	876
42913	5210
26947	0
37312	26473
105525	82284
30431	7446
4811	10913
11553	1419722
17078	15382
56864	22863
11094	5798
4563	2535
3001	0
7877	4886
10490	0
31512	3188
13264	2325
15872	551
15283	991
4749	460
15579	1101
35981	12669
22274	73852
7343	0
47668	36510
25570	21613
9319	711

15690	7099
77653	28390
2600	1494
58362	90071
7252	0
51072	80735
17290	9139
32459	3697
5822	541
273	0
4275	997
24751	8224
3453	578
5536	2973
11248	384504
562	802
51654	9694
8900	1269
13434	917
1318	2196
19451	96391
23825	9547
23244	29207
27815	12107
12155	17742
36070	20515
11414	806
2933	0
1208	0
12091	5193
6238	144
29142	6825
11812	0

8922	76
6926	133595
100194	42465
22211	5706
35961	10951
8384	1919
18333	11013
16818	4080
17067	3063
15356	86
18394	19
20530	18722
43502	5067
2619	0
14921	8784
30296	21463
4188	0
25258	11415