Supplementary Table S1 (**A**). List of 60 AML dependencies identified in the CRISPR (Avana) 20Q3 public Ceres data on 789 cell lines. Data analysis was performed based on the Empirical Bayes Statistics for differential dependency of the 21 AML cell lines vs. all other 768 cell lines. Significance cut-offs: effect size ≤ -0.3, adjusted p-value ≤ 0.10.

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
1	MYB (4602)	-0.89	8.7E-60	1.6E-55
2	CBFB (865)	-0.77	6.4E-21	1.7E-17
3	SPI1 (6688)	-0.63	1.2E-48	1.1E-44
4	LMO2 (4005)	-0.57	2.3E-44	1.4E-40
5	RUNX1 (861)	-0.56	2.6E-20	5.8E-17
6	ZEB2 (9839)	-0.56	1.5E-19	2.5E-16
7	CDK6 (1021)	-0.54	1.1E-08	3.5E-06
8	MED1 (5469)	-0.52	1.6E-07	3.5E-05
9	NAMPT (10135)	-0.51	1.5E-10	7.8E-08
10	MARCH5 (54708)	-0.51	1.8E-09	6.8E-07
11	IRF2BP2 (359948)	-0.49	1.5E-16	1.8E-13
12	LDB1 (8861)	-0.48	1.1E-15	1.1E-12
13	DNM2 (1785)	-0.47	5.7E-09	2.1E-06
14	TSC2 (7249)	-0.45	7.5E-05	4.4E-03
15	SLC5A3 (6526)	-0.44	3.0E-26	1.1E-22
16	TAZ (6901)	-0.44	3.7E-12	2.5E-09
17	CCND3 (896)	-0.43	5.0E-13	3.6E-10
18	RRM2 (6241)	-0.41	4.0E-11	2.1E-08
19	MED24 (9862)	-0.41	3.3E-08	9.2E-06
20	ATP1B3 (483)	-0.41	2.7E-11	1.5E-08
21	AP2S1 (1175)	-0.39	4.2E-08	1.1E-05
22	MYC (4609)	-0.39	1.0E-05	1.0E-03
23	GFI1 (2672)	-0.39	4.5E-28	2.0E-24
24	ADSL (158)	-0.38	1.1E-05	1.2E-03
25	FAM50A (9130)	-0.38	7.1E-05	4.3E-03
26	WNK1 (65125)	-0.38	2.8E-07	5.7E-05
27	CFL1 (1072)	-0.37	1.8E-07	3.8E-05
28	IPPK (64768)	-0.37	1.5E-08	4.5E-06
29	YRDC (79693)	-0.36	1.0E-03	2.5E-02
30	RAF1 (5894)	-0.36	1.9E-08	5.5E-06
31	CDAN1 (146059)	-0.36	5.3E-05	3.6E-03
32	FLI1 (2313)	-0.36	7.9E-15	7.2E-12
33	TRPM7 (54822)	-0.36	1.7E-05	1.5E-03
34	SS18L2 (51188)	-0.36	1.1E-09	4.5E-07
35	TFRC (7037)	-0.35	2.8E-05	2.2E-03
36	GSE1 (23199)	-0.35	5.5E-20	1.1E-16
37	MICU1 (10367)	-0.35	6.4E-25	1.9E-21

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
38	UMPS (7372)	-0.34	4.3E-06	5.3E-04
39	CEBPA (1050)	-0.34	1.9E-15	1.9E-12
40	RHOA (387)	-0.34	1.5E-05	1.4E-03
41	SEPHS2 (22928)	-0.33	8.2E-04	2.2E-02
42	FBXO7 (25793)	-0.33	2.6E-11	1.5E-08
43	SDHB (6390)	-0.33	2.7E-05	2.1E-03
44	CDS2 (8760)	-0.33	7.3E-09	2.4E-06
45	ZFP36L2 (678)	-0.33	2.0E-12	1.4E-09
46	TSC1 (7248)	-0.33	8.7E-04	2.3E-02
47	GFPT1 (2673)	-0.32	9.8E-07	1.6E-04
48	CMIP (80790)	-0.32	3.3E-07	6.5E-05
49	EMC3 (55831)	-0.32	4.4E-06	5.4E-04
50	MINOS1 (440574)	-0.32	1.1E-06	1.7E-04
51	BCL2 (596)	-0.32	4.6E-13	3.5E-10
52	EP300 (2033)	-0.32	2.1E-03	3.9E-02
53	IRF8 (3394)	-0.31	1.8E-18	2.7E-15
54	SLC7A1 (6541)	-0.31	4.3E-06	5.3E-04
55	PPCDC (60490)	-0.31	2.7E-07	5.6E-05
56	STAG2 (10735)	-0.31	1.0E-03	2.5E-02
57	SMC1A (8243)	-0.31	2.3E-11	1.4E-08
58	STK11 (6794)	-0.30	4.1E-05	2.9E-03
59	DTYMK (1841)	-0.30	1.6E-04	7.6E-03
60	MCL1 (4170)	-0.30	2.2E-04	9.6E-03

Supplementary Table S1 (**B**). List of 54 AML dependencies identified in the Combined RNAi (Broad, Novartis, Marcotte) 20Q3 public Demeter2 data on 712 cell lines. Data analysis was performed based on the Empirical Bayes Statistics for differential dependency of the 23 AML cell lines vs. all other 689 cell lines. Significance cut-offs: effect size ≤ -0.3, adjusted p-value ≤ 0.10.

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
1	CBFB (865)	-0.82	1.1E-64	2.0E-60
2	MYB (4602)	-0.76	6.6E-56	5.7E-52
3	MED1 (5469)	-0.54	8.0E-12	5.3E-09
4	FLI1 (2313)	-0.51	1.5E-30	8.7E-27
5	COQ10B (80219)	-0.48	1.5E-04	3.5E-03
6	RUNX1 (861)	-0.47	2.6E-26	7.6E-23
7	CDC26 (246184)	-0.47	5.9E-03	4.6E-02
8	MYBL2 (4605)	-0.47	1.5E-08	3.3E-06
9	MED19 (219541)	-0.46	1.4E-16	2.1E-13
10	RCOR1 (23186)	-0.44	3.0E-15	3.7E-12
11	KDM1A (23028)	-0.43	5.2E-16	6.9E-13
12	CFL1 (1072)	-0.43	1.4E-09	4.6E-07
13	ORMDL3 (94103)	-0.43	9.5E-04	1.3E-02
14	RTN2 (6253)	-0.42	4.0E-03	3.5E-02
15	ERLIN2 (11160)	-0.41	6.6E-04	9.9E-03
16	MGAT4D (152586)	-0.41	2.6E-03	2.7E-02
17	SDCCAG8 (10806)	-0.41	3.8E-03	3.4E-02
18	REG3G (130120)	-0.40	1.0E-02	6.8E-02
19	A2ML1 (144568)	-0.40	1.9E-13	1.8E-10
20	PTPN11 (5781)	-0.40	9.3E-12	5.9E-09
21	BPIFB6 (128859)	-0.39	3.1E-03	3.0E-02
22	EDRF1 (26098)	-0.39	9.3E-03	6.3E-02
23	SPI1 (6688)	-0.39	6.9E-28	3.0E-24
24	DNAJC5G (285126)	-0.38	1.6E-02	9.1E-02
25	IGFL4 (444882)	-0.38	1.3E-03	1.7E-02
26	C10orf111 (221060)	-0.38	1.7E-03	1.9E-02
27	OGDH (4967)	-0.37	1.5E-09	4.8E-07
28	SLC9B2 (133308)	-0.37	6.9E-03	5.2E-02
29	C10orf71 (118461)	-0.37	5.2E-03	4.3E-02
30	SENP1 (29843)	-0.36	6.0E-12	4.3E-09
31	FAM217B (63939)	-0.36	3.9E-03	3.5E-02
32	UPK3BL2 (10798399:	-0.36	2.2E-06	1.5E-04
33	CERCAM (51148)	-0.34	1.3E-02	7.8E-02
34	ERRFI1 (54206)	-0.34	6.4E-03	4.9E-02
35	SPACA6 (147650)	-0.34	4.9E-03	4.1E-02
36	FAM45BP (55855)	-0.33	9.2E-03	6.2E-02
37	FAM117A (81558)	-0.33	9.8E-03	6.5E-02
38	ESPNL (339768)	-0.32	1.5E-10	7.9E-08

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
39	HYDIN2 (100288805)	-0.32	1.4E-02	8.4E-02
40	EFCAB5 (374786)	-0.32	7.0E-03	5.2E-02
41	FER1L6-AS2 (157376	-0.32	3.4E-03	3.2E-02
42	MMGT1 (93380)	-0.32	3.0E-03	2.9E-02
43	AURKB (9212)	-0.32	9.3E-09	2.2E-06
44	MED9 (55090)	-0.31	3.3E-10	1.5E-07
45	ATP1A1 (476)	-0.31	5.4E-07	5.3E-05
46	AMER1 (139285)	-0.31	6.6E-05	2.0E-03
47	PHEX (5251)	-0.31	2.5E-10	1.2E-07
48	RCCD1 (91433)	-0.31	5.0E-06	2.8E-04
49	CHMP4C (92421)	-0.30	6.4E-06	3.3E-04
50	C1orf116 (79098)	-0.30	2.1E-07	2.6E-05
51	LMO2 (4005)	-0.30	2.1E-20	5.1E-17
52	IRF2BP2 (359948)	-0.30	2.9E-13	2.5E-10
53	DNAJC30 (84277)	-0.30	4.9E-03	4.1E-02
54	PSIP1 (11168)	-0.30	6.3E-12	4.4E-09

Supplementary Table S1 (C). List of 83 AML dependencies identified in the CRISPR (Sanger) 20Q3 public data on 318 cell lines. Data analysis was performed based on the Empirical Bayes Statistics for differential dependency of the 2 AML cell lines vs. all other 316 cell lines. Significance cut-offs: effect size ≤ -0.3, adjusted p-value ≤ 0.10.

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
1	CCND3 (896)	-1.32	1.3E-12	2.6E-09
2	CEBPA (1050)	-1.12	2.8E-31	4.9E-27
3	MYB (4602)	-1.11	7.7E-19	3.4E-15
4	SPI1 (6688)	-1.06	2.8E-26	1.7E-22
5	CBFB (865)	-1.06	2.7E-10	4.4E-07
6	STK11 (6794)	-1.03	1.2E-06	7.0E-04
7	IRF8 (3394)	-1.00	4.0E-29	3.5E-25
8	MED16 (10025)	-0.90	3.1E-07	2.1E-04
9	ZEB2 (9839)	-0.88	2.7E-15	7.0E-12
10	ZMYND8 (23613)	-0.86	7.8E-08	7.7E-05
11	MED23 (9439)	-0.81	6.8E-05	2.0E-02
12	RPS6KA1 (6195)	-0.77	2.2E-17	7.8E-14
13	ATP1B3 (483)	-0.76	7.2E-07	4.6E-04
14	MEN1 (4221)	-0.76	8.6E-08	8.1E-05
15	IRF2BP2 (359948)	-0.75	6.9E-06	3.0E-03
16	PSIP1 (11168)	-0.74	1.7E-12	2.9E-09
17	MEF2D (4209)	-0.74	2.3E-13	5.1E-10
18	MBNL1 (4154)	-0.72	4.3E-08	4.8E-05
19	COQ10B (80219)	-0.71	1.8E-08	2.2E-05
20	PTPN7 (5778)	-0.71	3.5E-17	1.1E-13
21	FPGS (2356)	-0.71	4.9E-04	9.4E-02
22	COX6B1 (1340)	-0.68	4.3E-06	2.0E-03
23	CS (1431)	-0.67	1.3E-07	1.1E-04
24	NDUFC2 (4718)	-0.66	1.8E-04	4.2E-02
25	CITED2 (10370)	-0.65	4.0E-09	5.4E-06
26	NDUFA13 (51079)	-0.65	9.1E-05	2.5E-02
27	SLC5A3 (6526)	-0.65	2.5E-06	1.3E-03
28	SLC38A2 (54407)	-0.65	1.4E-06	7.6E-04
29	SETDB1 (9869)	-0.62	1.2E-06	7.0E-04
30	MLLT1 (4298)	-0.62	2.3E-08	2.7E-05
31	FBXO7 (25793)	-0.60	4.6E-06	2.1E-03
32	KDM5C (8242)	-0.58	2.2E-05	8.9E-03
33	KIAA0391 (9692)	-0.57	7.2E-05	2.1E-02
34	NDUFA1 (4694)	-0.56	4.1E-05	1.4E-02
35	BRD9 (65980)	-0.56	3.0E-06	1.5E-03
36	RUNX2 (860)	-0.54	9.4E-06	3.8E-03
37	COX18 (285521)	-0.54	1.1E-07	9.5E-05
38	HSD17B10 (3028)	-0.54	2.1E-04	4.8E-02

Rank	Gene (Entrez ID)	Effect size	p-value	adj. p-value
39	CHD1 (1105)	-0.53	8.1E-05	2.3E-02
40	LMO2 (4005)	-0.53	2.8E-07	1.9E-04
41	MEF2C (4208)	-0.53	2.1E-06	1.1E-03
42	DAXX (1616)	-0.53	2.1E-04	4.8E-02
43	MRPS18B (28973)	-0.52	1.2E-04	3.2E-02
44	NDUFB8 (4714)	-0.51	1.0E-04	2.7E-02
45	HDAC8 (55869)	-0.51	2.9E-06	1.5E-03
46	COX4I1 (1327)	-0.51	2.1E-04	4.8E-02
47	NDUFA10 (4705)	-0.51	3.9E-04	7.8E-02
48	NDUFA9 (4704)	-0.51	2.6E-04	5.7E-02
49	BCL2 (596)	-0.51	1.7E-04	4.2E-02
50	ALAS1 (211)	-0.50	4.3E-06	2.0E-03
51	PDHA1 (5160)	-0.50	5.3E-05	1.6E-02
52	FASTKD5 (60493)	-0.49	9.2E-06	3.8E-03
53	COX15 (1355)	-0.49	4.6E-05	1.5E-02
54	DOT1L (84444)	-0.48	4.5E-05	1.5E-02
55	DCAF15 (90379)	-0.48	2.9E-04	6.1E-02
56	MPC2 (25874)	-0.48	1.9E-07	1.4E-04
57	COX5A (9377)	-0.48	2.6E-04	5.7E-02
58	PDSS1 (23590)	-0.48	6.4E-05	2.0E-02
59	MRPL54 (116541)	-0.47	2.8E-04	5.8E-02
60	MRPL14 (64928)	-0.45	3.1E-05	1.1E-02
61	SS18 (6760)	-0.45	1.4E-06	7.6E-04
62	COX11 (1353)	-0.44	1.7E-04	4.2E-02
63	SIK3 (23387)	-0.44	2.5E-07	1.8E-04
64	GTPBP8 (29083)	-0.43	4.4E-04	8.9E-02
65	ETS2 (2114)	-0.43	2.4E-05	9.2E-03
66	LYL1 (4066)	-0.43	3.8E-05	1.4E-02
67	EEF1E1 (9521)	-0.42	1.8E-04	4.2E-02
68	PET117 (100303755)	-0.42	5.3E-06	2.3E-03
69	GFI1 (2672)	-0.41	3.2E-09	4.7E-06
70	PDSS2 (57107)	-0.41	2.4E-04	5.3E-02
71	PRKAA1 (5562)	-0.40	9.2E-05	2.5E-02
72	PIK3R5 (23533)	-0.40	1.9E-07	1.4E-04
73	ZFP64 (55734)	-0.40	6.2E-08	6.5E-05
74	SMARCD2 (6603)	-0.40	2.5E-05	9.6E-03
75	HOXA13 (3209)	-0.40	1.6E-07	1.3E-04
76	SLC25A36 (55186)	-0.37	7.1E-06	3.0E-03
77	DPP9 (91039)	-0.37	9.0E-05	2.5E-02
78	PIK3CG (5294)	-0.36	4.3E-05	1.5E-02
79	NCKAP1L (3071)	-0.36	8.0E-05	2.3E-02
80	AFF1 (4299)	-0.36	1.0E-04	2.7E-02
81	FOXP1 (27086)	-0.34	1.1E-04	2.8E-02
82	MAP2K2 (5605)	-0.33	4.8E-05	1.5E-02
83	SLC1A3 (6507)	-0.30	4.6E-05	1.5E-02