Supplementary Table 1

Reference	Year	Vector	ORI
This paper	-	pGL4	pMB1 (pUC derivative)
Kwasnieski et al.	2012	pCAGGS	pMB1
Melnikov et al.	2012	pGL4	pMB1 (pUC derivative)
Patwardhan et al.	2012	pGL4	pMB1 (pUC derivative)
Kheradpour et al.	2013	pGL4	pMB1 (pUC derivative)
Mogno, Kwasnieski, and Cohen	2013	pCAGGS	pMB1
Smith et al.	2013	pGL4	pMB1 (pUC derivative)
White et al.	2016, 2013	pCAGGS	pMB1
Birnbaum et al.	2014	pGL4	pMB1 (pUC derivative)
Vanhille et al.	2015	pGL4	pMB1 (pUC derivative)
Vockley et al.	2015, 2016	pGL4	pMB1 (pUC derivative)
Ferreira et al.	2016	pGL4	pMB1 (pUC derivative)
Nguyen et al.	2016	pAAV-CAG	pMB1 (pUC derivative)
Tewhey et al.	2016	pGL4	pMB1 (pUC derivative)
Ulirsch et al.	2016	pGL4	pMB1 (pUC derivative)
Barakat et al.	2017	pGL4	pMB1 (pUC derivative)
Dao et al.	2017	pGL4	pMB1 (pUC derivative)
Grossman et al.	2017	pGL4	pMB1 (pUC derivative)
van Arensbergen et al.	2017	pSMART	pMB1 (pUC derivative)

Supplementary Table 3

cell_line	sequencing_method	sample_name	accession	database
HeLaS3	ChIP-seq	input	ENCSR000AOB	ENCODE
HeLaS3	ChIP-seq	H3K27ac	ENCSR000AOC	ENCODE
HeLaS23	ChIP-seq	H3K36me3	ENCSR000AOD	ENCODE
HeLaS25	ChIP-seq	H3K4me2	ENCSR000AOE	ENCODE
HeLaS27	ChIP-seq	H3K79me2	ENCSR000AOG	ENCODE
HeLaS28	ChIP-seq	H3K9ac	ENCSR000AOH	ENCODE
HeLaS30	ChIP-seq	H4K20me1	ENCSR000AOI	ENCODE
HeLaS22	ChIP-seq	H3K27me3	ENCSR000APB	ENCODE
HeLaS24	ChIP-seq	H3K4me1	ENCSR000APW	ENCODE
HeLaS20	ChIP-seq	H2AFZ	ENCSR000AQN	ENCODE
HeLaS29	ChIP-seq	H3K9me3	ENCSR000AQO	ENCODE
HeLaS50	ChIP-seq	POLR2A	ENCSR000BGO	ENCODE
HeLaS66	ChIP-seq	TAF1	ENCSR000BHT	ENCODE
HeLaS43	ChIP-seq	MYC	ENCSR000DLN	ENCODE
HeLaS47	ChIP-seq	NFYB	ENCSR000DNR	ENCODE
HeLaS46	ChIP-seq	NFYA	ENCSR000DNS	ENCODE
HeLaS76	ChIP-seq	ZZZ3	ENCSR000DNT	ENCODE
HeLaS52	ChIP-seq	POLR3A	ENCSR000DNU	ENCODE
HeLaS6	ChIP-seq	BRF2	ENCSR000DNV	ENCODE
HeLaS5	ChIP-seq	BRF1	ENCSR000DNW	ENCODE
HeLaS3	ChIP-seq	BDP1	ENCSR000DNX	ENCODE
HeLaS19	ChIP-seq	GTF3C2	ENCSR000DNY	ENCODE
HeLaS32	ChIP-seq	HCFC1	ENCSR000ECH	ENCODE
HeLaS14	ChIP-seq	ELK1	ENCSR000ECI	ENCODE
HeLaS73	ChIP-seq	ZKSCAN1	ENCSR000ECJ	ENCODE
HeLaS38	ChIP-seq	MAFK	ENCSR000ECK	ENCODE
HeLaS41	ChIP-seq	MAZ	ENCSR000ECL	ENCODE
HeLaS55	ChIP-seq	RCOR1	ENCSR000ECM	ENCODE
HeLaS39	ChIP-seq	MAX	ENCSR000ECN	ENCODE
HeLaS74	ChIP-seq	ZNF143	ENCSR000ECO	ENCODE
HeLaS9	ChIP-seq	CHD2	ENCSR000ECP	ENCODE
HeLaS65	ChIP-seq	SUPT20H	ENCSR000ECQ	ENCODE
HeLaS36	ChIP-seq	KAT2A	ENCSR000ECR	ENCODE
HeLaS61	ChIP-seq	SMC3	ENCSR000ECS	ENCODE
HeLaS51	ChIP-seq	POLR2Aphosp	ENCSR000ECT	ENCODE
HeLaS42	ChIP-seq	MXI1	ENCSR000ECU	ENCODE
HeLaS16	ChIP-seq	EP300	ENCSR000ECV	ENCODE
HeLaS71	ChIP-seq	USF2	ENCSR000ECW	ENCODE
HeLaS56	ChIP-seq	RFX5	ENCSR000ECX	ENCODE
HeLaS53	ChIP-seq	PRDM1	ENCSR000ECY	ENCODE
HeLaS18	ChIP-seq	GTF2F1	ENCSR000ECZ	ENCODE
HeLaS7	ChIP-seq	CEBPB	ENCSR000EDA	ENCODE
HeLaS4	ChIP-seq	BRCA1	ENCSR000EDB	ENCODE
HeLaS64	ChIP-seq	STAT3	ENCSR000EDC	ENCODE
HeLaS67	ChIP-seq	TBP	ENCSR000EDD	ENCODE
HeLaS54	ChIP-seq	RAD21	ENCSR000EDE	ENCODE
HeLaS33	ChIP-seq	IRF3	ENCSR000EDF	ENCODE
HeLaS35	ChIP-seq	JUN	ENCSR000EDG	ENCODE
HeLaS34	ChIP-seq	JUND	ENCSR000EDH	ENCODE
HeLaS49	ChIP-seq	NRF1	ENCSR000EDJ	ENCODE
HeLaS58	ChIP-seq	SMARCB1	ENCSR000EDK	ENCODE

HeLaS60	ChIP-seq	SMARCC2	ENCSR000EDL	ENCODE
HeLaS59	ChIP-seq	SMARCC1	ENCSR000EDM	ENCODE
HeLaS68	ChIP-seq	TCF7L2	ENCSR000EVE	ENCODE
HeLaS69	ChIP-seq	TCF7L2	ENCSR000EVF	ENCODE
HeLaS75	ChIP-seq	ZNF274	ENCSR000EVG	ENCODE
HeLaS15	ChIP-seq	ELK4	ENCSR000EVI	ENCODE
HeLaS11	ChIP-seq	E2F1	ENCSR000EVJ	ENCODE
HeLaS13	ChIP-seq	E2F6	ENCSR000EVK	ENCODE
HeLaS12	ChIP-seq	E2F4	ENCSR000EVL	ENCODE
HeLaS31	ChIP-seq	HA-E2F1	ENCSR000EVM	ENCODE
HeLaS48	ChIP-seq	NR2C2	ENCSR000EVN	ENCODE
HeLaS57	ChIP-seq	SMARCA4	ENCSR000EZC	ENCODE
HeLaS44	ChIP-seq	MYC	ENCSR000EZD	ENCODE
HeLaS17	ChIP-seq	FOS	ENCSR000EZE	ENCODE
HeLaS40	ChIP-seq	MAX	ENCSR000EZF	ENCODE
HeLaS63	ChIP-seq	STAT1	ENCSR000EZK	ENCODE
HeLaS37	ChIP-seq	MAFF	ENCSR140DSL	ENCODE
HeLaS10	ChIP-seq	DEK	ENCSR219MKK	ENCODE
HeLaS26	ChIP-seq	H3K4me3	ENCSR340WQU	ENCODE
HeLaS8	ChIP-seq	CHD1	ENCSR392EAA	ENCODE
HeLaS62	ChIP-seq	SREBF2	ENCSR611WZO	ENCODE
HeLaS70	ChIP-seq	UBTF	ENCSR634ZGP	ENCODE
HeLaS45	ChIP-seq	NFE2L2	ENCSR707IUN	ENCODE
HeLaS72	ChIP-seq	ZHX1	ENCSR887MXT	ENCODE
HeLaS3	ChIP-seq	DHS	ENCSR959ZXU	ENCODE
HCT116	DNase-seq	DHS	GSM1224668	GEO
HCT116	ChIP-seq	H3K72ac	GSM2175555	GEO
HCT116	ChiP-seq	input	GSM2175565, GSM2175566, GSM2175567,merged	GEO
HCFaa	DNase-seq	DHS	GSM736494,GSM736601	GEO
HBMEC	DNase-seq	DHS	GSM736509	GEO
HMVEC-dLy-Ad	DNase-seq	DHS	GSM736599,GSM736591	GEO
HNPCEpic	DNase-seq	DHS	GSM736621,GSM736550	GEO
HBMEC	ChiP-seq	input	GSM749746	GEO
HeLaS3	ChIP-seq	GTF3C2	GSM935342	GEO
HeLaS3	ChIP-seq	RPC155	GSM935489	GEO

Supplementary Table 5

Figure	Comparison	Test	Sided	P-value	Degrees of freedom	T-value
1D	HeLaS3: ORI vs SCP1	paired t-test	two sided	3.0E-03	38	3.2
1D	HCT116: ORI vs SCP1	paired t-test	two sided	4.0E-03	26	3.2
1E	AGAP1: ORI vs mCP	Fisher's LSD	two sided	2.0E-01	30	1.3
1E	AGAP1: ORI vs SCP1	Fisher's LSD	two sided	1.1E-03	30	3.6
1E	GTSE1: ORI vs mCP	Fisher's LSD	two sided	2.9E-02	30	2.3
1E	GTSE1: ORI vs SCP1	Fisher's LSD	two sided	1.3E-06	30	6.0
1E	IGF1R: ORI vs mCP	Fisher's LSD	two sided	2.0E-01	30	1.3
1E	IGF1R: ORI vs SCP1	Fisher's LSD	two sided	2.8E-01	30	1.1
1E	SV40: ORI vs mCP	Fisher's LSD	two sided	9.4E-04	30	3.7
1E	SV40: ORI vs SCP1	Fisher's LSD	two sided	7.9E-10	30	8.8
1E	CMV: ORI vs mCP	Fisher's LSD	two sided	5.9E-07	30	6.3
1E	CMV: ORI vs SCP1	Fisher's LSD	two sided	1.4E-11	30	10.5
2D	TUBB: -inh vs +inh	unpaired t-test	two sided	7.2E-01	28	0.4
2D	IFIT1: -inh vs +inh	unpaired t-test	two sided	1.4E-09	28	8.8
2D	ISG15: -inh vs +inh	unpaired t-test	two sided	1.7E-06	28	6.0
2D	IFI27: -inh vs +inh	unpaired t-test	two sided	4.4E-04	28	4.0
2D	IRF7: -inh vs +inh	unpaired t-test	two sided	2.1E-03	28	3.4
2D	MX1: -inh vs +inh	unpaired t-test	two sided	3.6E-03	28	3.2
2D	OAS3: -inh vs +inh	unpaired t-test	two sided	8.1E-03	28	2.9
4D	2 vs 1	Wilcoxon rank sum	greater	1.3E-62	na	na
4D	2 vs 3	Wilcoxon rank sum	greater	8.7E-03	na	na
4D	2 vs 4	Wilcoxon rank sum	greater	3.9E-07	na	na
4E	1 vs 2	Wilcoxon rank sum	greater	0.0E+00	na	na
4E	2 vs random	Wilcoxon rank sum	greater	6.4E-51	na	na
4F	3 vs 1	Wilcoxon rank sum	greater	9.1E-16	na	na
4F	3 vs 2	Wilcoxon rank sum	greater	1.1E-04	na	na
4F	3 vs random	Wilcoxon rank sum	greater	5.0E-26	na	na
5C	Active vs inactive with STAT	Wilcoxon rank sum	greater	6.2E-28	na	na
5C	Active vs inactive no STAT	Wilcoxon rank sum	greater	1.1E-01	na	na
5C	Inactive no STAT vs inactive with STAT	Wilcoxon rank sum	greater	7.7E-262	na	na
5D	-inh vs +inh	Wilcoxon rank sum	less	4.1E-138	na	na
S1F	SCP1 vs ORI	paired t-test	two sided	2.0E-02	3	4.6
S1H	SCP1 vs var1	Fisher's LSD (paired)	two sided	9.8E-01	152	0.0
S1H	SCP1 vs var2	Fisher's LSD (paired)	two sided	7.8E-01	152	0.3
S1H	SCP1 vs var3	Fisher's LSD (paired)	two sided	4.0E-02	152	2.1
S1H	SCP1 vs var4	Fisher's LSD (paired)	two sided	5.0E-02	152	2.0
S3F	ORI vs ORI+inh	paired t-test	two sided	4.0E-02	38	2.1
S3G	ORI vs ORI+inh	paired t-test	two sided	8.9E-01	26	0.1