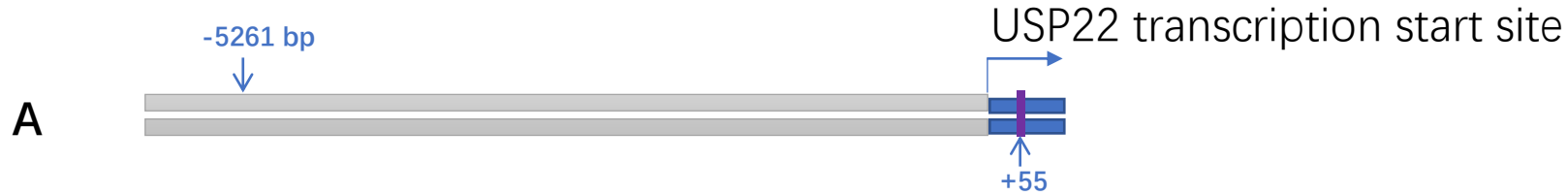


FigureS1



Transcriptional factors prediction

B

0	POU1F1a [T0069]	1	C/EBPbeta [T00581]	2	C/EBPalpha [T0013	3	NF-Y [T00150]	4	NF-1 [T00539]	5	GR-alpha [T0036	6	TFII-I [T007	7	NF-AT2 [T01945]
8	STAT4 [T01577]	9	NF-AT1 [T01948]	10	NF-AT1 [T01944]	11	c-Ets-1 [T00112]	12	YY1 [T00915]	13	STAT1beta [T0	14	c-Jun [T0015	15	c-Myb [T00137]
16	LEF-1 [T02905]	17	LXR-alpha:RXR-alpha [T0532	18	HNF-1A [T01211]	19	LyF-1 [T00479]	20	SRY [T00997]	21	TCF-4E [T02878	22	NFI/CTF [T	23	GR [T05076]
24	HNF-4alpha2 [T0	25	HNF-4alpha1 [T02429]	26	Crx [T03461]	27	AR [T00040]	28	XBP-1 [T00902]	29	c-Ets-1 68 [T00	30	NF-Y [T00631	31	C/EBPgamma [T02028]
32	ER-alpha [T00261	33	c-Ets-2 [T00113]	34	HOXD8 [T01426]	35	HOXD8 [T01754]	36	GR-beta [T0192	37	POU1F1b [T013	38	POU1F1c [T	39	HNF-3beta [T01049]
40	HNF-1A [T00368]	41	TFIID [T00820]	42	HNF-3alpha [T025	43	FOXP3 [T04280]	44	PR B [T00696]	45	PR A [T01661]	46	HNF-1C [T	47	HNF-1B [T01950]
48	HOXD9 [T01424]	49	HOXD10 [T01425]	50	HOXD9 [T01755]	51	HOXD9 [T01756]	52	HOXD10 [T0175	53	HOXD10 [T017	54	AP-2alpha [T	55	c-Jun [T00131]
56	IRF-1 [T00423]	57	NF-AT1 [T00550]	58	C/EBPalpha [T001	59	NF-1 [T00535]	60	HNF-4alpha1 [T	61	c-Jun [T00133]	62	AP-1 [T006	63	ENKTF-1 [T00255]
64	AhR [T01795]	65	AhR:Arnt [T05394]	66	Ik-1 [T02702]	67	HNF-4alpha [T038	68	USF-1 [T00875]	69	COUP-TF1 [T00	70	GR [T0033	71	PEA3 [T00685]
72	RXR-alpha [T013	73	RAR-beta [T00721]	74	PPAR-alpha:RXR-	75	VDR [T00885]	76	PXR-1:RXR-alf	77	GATA-3 [T0031	78	Elk-1 [T007	79	CAC-binding protein [T00076]
80	GATA-1 [T00305]	81	GATA-2 [T00308]	82	GATA-1 [T00306]	83	C/EBPbeta [T0045	84	E2F-1 [T01542]	85	POU2F2 (Oct-2	86	SREBP-1c [T	87	T3R-beta1 [T00851]
88	VDR [T01369]	89	IRF-2 [T00425]	90	IRF-2 [T01491]	91	STAT5A [T04683]	92	NF-kappaB1 [T	93	Egr-3 [T00243]	94	Egr-1 [T01	95	Egr-3 [T05889]
96	USF2 [T00878]	97	Pax-5 [T00070]	98	p53 [T00671]	99	NF-1/L [T00599]	100	Sp1 [T00759]	101	RAR-beta:RXR-	102	PU.1 [T007	103	ATF3 [T01313]
104	POU2F1 [T00641]	105	C/EBPbeta [T00017]	106	AP-1 [T00029]	107	CREB [T00163]	108	CREBbeta [T02	109	ATF-2 [T00167]	110	ATF [T000	111	RBP-Jkappa [T01616]
112	PU.1 [T02068]	113	MEF-2A [T01005]	114	MycD [T00526]	115	RelA [T00594]	116	AP-2 [T00034]	117	E2F [T00221]	118	c-Ets-1 [T0	119	WT1 [T00899]
120	GCF [T00320]	121	EBF [T05427]	122	AP-2beta [T02469]	123	ATF-1 [T00968]	124	CREB [T00164]	125	ETF [T00270]	126	Elk-1 [T05	127	HES-1 [T01649]
128	MAZ [T00490]	129	NF-kappaB [T00590]	130	IPF1 [T02057]	131	HNF-4alpha [T052	132	RAR-alpha1 [T0	133	CTF [T00174]	134	FOXF1 [T0	135	TBP [T00794]

Predicted by PROMO Nucleic Acids Res, 31, 13, 3651-3653,2003

FigureS1 Predicted transcriptional Factors.

Figure S2

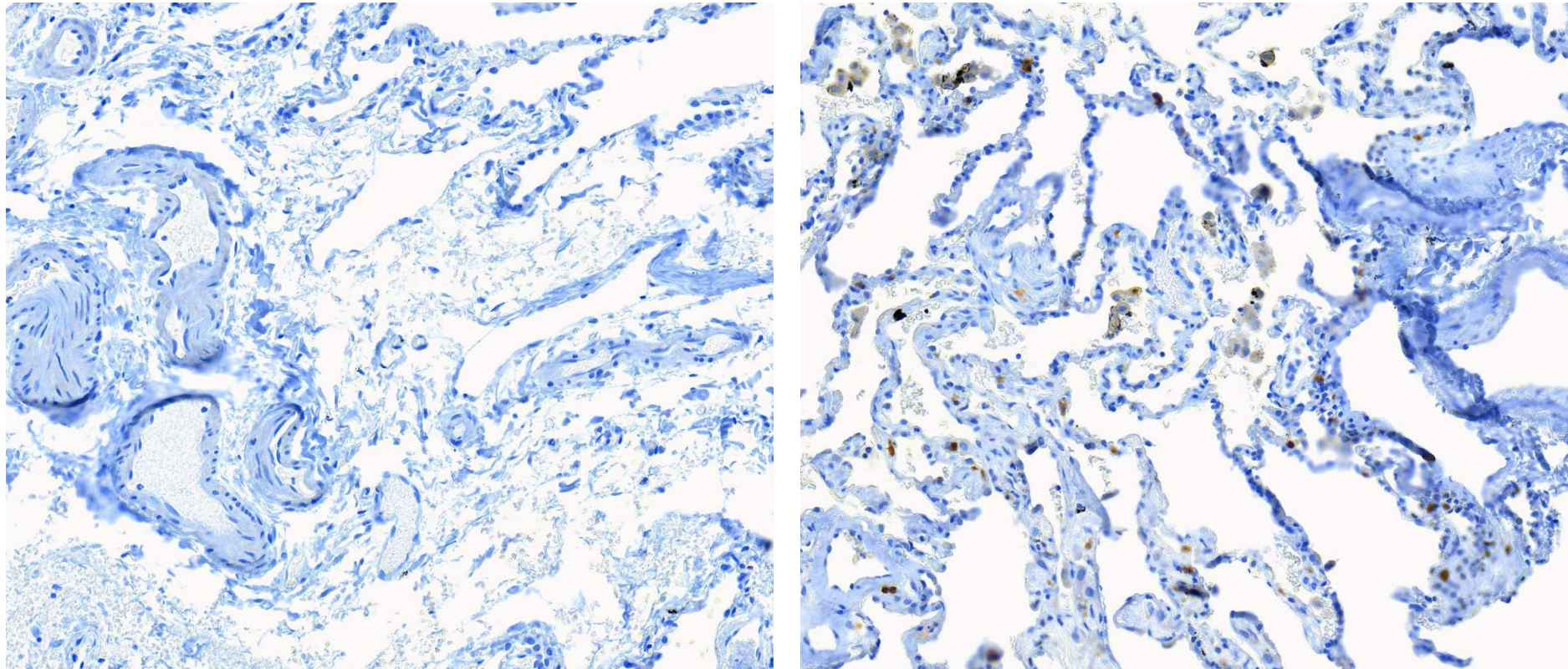


Figure S2 Representative IHC staining image for normal lung tissue. A,TFAP2A. B, TFAP2B.

Supplementary Table 1 Primers used in this study

Primers for qPCR		
Gene	F/R	sequence
USP22	F	CTGGAGCTGGACATGACCCCTT
	R	GTAGTGGCCACTCTCCAAGGTCC
TFAP2A	F	ACTCCTTACCTCACGCCATC
	R	TTGCTGTTGGACTTGGACAG
TFAP2B	F	CGTCCAGTCAGTTGATGC
	R	CCCAGGCCGTCTTTATT
PPAPA	F	CAGCTGCAAGATCCAGAAAA
	R	AGATCTTGGCATTTCGTCAA
cMyc	F	CCTGGTGCTCCATGAGGAGAC
	R	CAGACTCTGACCTTTTGCCAGG
NFYA	F	CCCAGCAGATCATCCA
	R	CAGTCTGTGCCACTTGCTGT
SP1	F	CAGGTGCACCCAATTCAA
	R	TCCACCTGCTGTGTCATCAT

Primers for clone USP22 promoter		
USP22PO	F1	CCGGGTACCCCTATTGGCCAGGTCCCTTTTTTC
	F2	CCGGGTACCACCTTCAGTGATCCACCCACCTTG
	F3	CCGGGTACCTTCTTTCTTCCAGGGCTTCCAT
	F4	CCGGGTACCGAAGTTCAAACCAGGCTGACG
	F5	CCGGGTACCCACGGAAAAGGAGGTGTGTGAT
	F6	CCGGGTACCTCTCAGTTTGGCTTGGGTGAGT
	F7	CCGGGTACC TGCAAACAGCTCCCGATTA
	R1	CCGCTCGAGACTCGCGCGCCCGTTAGGCTCT
	R0	CCGCTCGAGCGCGGAGGCCGGACAAAGATG
primers for clone overexpression plasmids		
FLAG-cMyc	F	CCGGGTACCACCATGGACTACAAGGATGACGATGACAAGGGACCCCTCAACGTTAGCTTCACCACA
	R	CCGCTCGAGCCTTACGCACAAGAGTTCGGTAGCTG
FLAG-TFAP2A	F	GGCAAGCTTCCACCATGGACTACAAGACGATGACGACAAGTCCATACTTGCCAAAATGGG
	R	GCCGAATTCTCACTTTCTGTGCTTCTCCT
FLAG-TFAP2B	F	GCCGGATCCACCATGGACTACAAGACGATGACGACAAGCACTCACCTCCTAGAGAC
	R	GCCGG GAATTC TCATTTCTGTGTTTCTCCTCC

Supplementary Table 2 siRNAs used in this study

Gene Symbol	Full Gene Name	Gene ID	Sense siRNA Sequence	Antisense siRNA Sequence
AHR	aryl hydrocarbon receptor	<u>196</u>	GGCUCUUUCAAGAUAGUAAtt	UUACUAUCUUGAAAGAGCCct
JUN	jun proto-oncogene	<u>3725</u>	GGCACAGCUUAAACAGAAAtt	UUUCUGUUUAAGCUGUGCCac
TFAP2A	binding protein 2 alpha)	<u>7020</u>	AGAGAAAAACUGGACAAAAtt	UUUUGUCCAGUUUUUCUCUta
TFAP2B	protein 2 beta)	<u>7021</u>	AGUUCAACUUCGAAGUACAtt	UGUACUUCGAAGUUGAACUga
KLF12	Kruppel-like factor 12	<u>11278</u>	CAACUAUCCCGAU AUGGAAtt	UUCCAU AUCGGGAUAGUUGtg
ZEB1	zinc finger E-box binding homeobox 1	<u>6935</u>	GGAAGAACGUGACAGCACAtt	UGUGCUGUCACGUUCUCCgc
ATF1	activating transcription factor 1	<u>466</u>	GAAUGUCGCAGAAAGAAGAtt	UCUUCUUUCUGCGACAUUCtc
ATF2	activating transcription factor 2	<u>1386</u>	GUGAUACUGUCAAGGUCAAtt	UGACCUUUGACAGUAUCACca
ATF3	activating transcription factor 3	<u>467</u>	GCAAAGUGCCGAAACAAGAtt	UCUUGUUUCGGCACUUUGCag
CEBPA	CCAAT/enhancer binding protein (C/EBP), alpha	<u>1050</u>	CCGCUCCAAUGCCUACUGAtt	UCAGUAGGCAUUGGAGCGGtg
CEBPB	CCAAT/enhancer binding protein (C/EBP), beta	<u>1051</u>	CCGCCUGCCUUUAAAUCCAAtt	UGGAUUUAAAGGCAGGCGGcg
CEBPG	CCAAT/enhancer binding protein (C/EBP), gamma	<u>1054</u>	CGGAUUUAGUGUUAUCCAAtt	AUGGAUAACACUAAUUCGtt
ETS1	(avian)	<u>2113</u>	GGACUCUUUUGAAAGCAUAtt	UAUGCUUUCAAAGAGUCctg
ETS2	(avian)	<u>2114</u>	GACAGAAGAUCAAUAUGAAtt	UUCAUAUUGAUUCUUCUGUctt
FOS	v-fos FBJ murine osteosarcoma viral oncogene homolog	<u>2353</u>	CACUCCAAGCGGAGACAGAtt	UCUGUCUCCGCUUGGAGUGta
MYB	v-myb avian myeloblastosis viral oncogene homolog	<u>4602</u>	GAAUUGCUCUCAAUGUCAAtt	UUGACAUUAGGAGCAAUUCta
MYC	v-myc myelocytomatosis viral oncogene homolog (avian)	<u>4609</u>	AGACCUUCAUCAAAAACAAtt	AUGUUUUUGAUGAAGGUCUcg
NR2F1	nuclear receptor subfamily 2, group F, member 1	<u>7025</u>	UCUCAUCCGCGAU AUGUUAtt	UAACAUAUCGCGGAUGAGAg
CREB1	cAMP responsive element binding protein 1	<u>1385</u>	CAUUAGCCCAGGUAUCUAAtt	AUAGAUACCGGGCUAAUGtg
E2F1	E2F transcription factor 1	<u>1869</u>	GUCACGCUAUGAGACCUCAAtt	UGAGGUCUCAUAGCGUGACTt
EGR1	early growth response 1	<u>1958</u>	CAACGACAGCAGUCCCAUAtt	AAUGGGACUGCUGUCGUUGga
ELK1	ELK1, member of ETS oncogene family	<u>2002</u>	GGCCUUGCGGUACUACUAAtt	AUAGUAGUACCGCAAGGCCcg
ESR1	estrogen receptor 1	<u>2099</u>	ACAUCAUCUCGGUUCCGCAAtt	UGCGGAACCGAGAUGAUGUag
TEAD2	TEA domain family member 2	<u>8463</u>	CCGUUCACCUUGUCACUGAtt	UCAGUGACAAGGUGAACGGtg
FOXA1	forkhead box A1	<u>3169</u>	GCAAUACUCUUAACCAUAAAtt	UUAUGGUUAAGAGUAUUGCca
FOXA2	forkhead box A2	<u>3170</u>	GGACCUCAAGGCCUACGAAtt	UUCGUAGGCCUUGAGGUCCat
FOXA3	forkhead box A3	<u>3171</u>	ACUCCUACAUGACCCUGAAAtt	UUCAGGGUCAUGUAGGAGUtg
FOXC1	forkhead box C1	<u>2296</u>	ACUCUCCAGUGAACGGGAAtt	UUCGGUUCACUGGAGAGUtg
FOXC2	forkhead box C2 (MFH-1, mesenchyme forkhead 1)	<u>2303</u>	AGAAGGACGUGUCCAAGGAtt	UCCUUGGACACGUCCUUCUtt
FOXD1	forkhead box D1	<u>2297</u>	GAAAAAUGGUUAACAUGUUAtt	AACAUGUUAACCAUUUUUCct
FOXD3	forkhead box D3	<u>27022</u>	GCCACUCUCCGGACAGUUAtt	AAACUGUCCGGAGAGUGGCac
FOXE1	forkhead box E1 (thyroid transcription factor 2)	<u>2304</u>	GCAAUUAUAUCAUAACUAtt	UAAGUUAUGAUUAUUUGCtg

<u>FOXE3</u>	forkhead box E3	<u>2301</u>	GGACACUUCUUGGAGAUUUt	AAAUCUCCAAGAAGUGUCctc
<u>FOXF2</u>	forkhead box F2	<u>2295</u>	GAAAAGAUUUCGUCCUCAAtt	UUGAGGACGAAAUCUUUUCtg
<u>FOXG1</u>	forkhead box G1	<u>2290</u>	GCAUCUACGAGUUCAUCAUtt	AUGAUGAACUCGUAGAUGCcg
<u>FOXJ1</u>	forkhead box J1	<u>2302</u>	CUAAUUAGAUGACAGCAAAtt	UUUGCUGUCAUCUAAUUAGca
<u>FOXJ2</u>	forkhead box J2	<u>55810</u>	GGAAGAAUUCAAUACGGCAtt	UGCCGUAAUUGAAUUCUCCaa
<u>FOXJ3</u>	forkhead box J3	<u>22887</u>	GGAUGGUAGUGAUAGCCCAtt	UGGGCUAUCACUACCAUCctg
<u>FOXK1</u>	forkhead box K1	<u>221937</u>	GUCGCUCUAUCACAAAGAAtt	UUCUUUGUGAUAGAGCGACgt
<u>FOXK2</u>	forkhead box K2	<u>3607</u>	CACCAGCUACCAAUAAAAAtt	UUUUUAUUGGUAGCUGGUGtt
<u>FOXL1</u>	forkhead box L1	<u>2300</u>	ACAUGUUUGAGAACGGCAAtt	UUGCCGUUCUCAAACAUGUcc
<u>FOXL2</u>	forkhead box L2	<u>668</u>	CGAAGUUCGGUUCUACGAtt	UCGUAGAACGGGAACUUCGcg
<u>FOXM1</u>	forkhead box M1	<u>2305</u>	GCUCAUACCGGUACCUAUtt	AUAGGUACCAGGUUAGAGCtg
<u>FOXN2</u>	forkhead box N2	<u>3344</u>	GCAUUGAUCCAAAAGAAGAtt	UCUUCUUUUGGAUCAAUUCtg
<u>FOXN3</u>	forkhead box N3	<u>1112</u>	CAUUUUCGGUAAUUUGCAAtt	UUGCAAAAUACGGAAAAUGtt
<u>FOXO1</u>	forkhead box O1	<u>2308</u>	GGUGGAUGCUCAAUCCAGAtt	UCUGGAUUGAGCAUCCACCaa
<u>FOXO3</u>	forkhead box O3	<u>2309</u>	CUCACUUCGGACUCACUAtt	UAAGUGAGUCCGAAGUGAGca
<u>FOXO4</u>	forkhead box O4	<u>4303</u>	CCGCGAUCAUAGACCUAGAtt	UCUAGGUCUAUGAUCGCGGca
<u>FOXO6</u>	forkhead box O6	<u>100132074</u>	ACGACUUCUAGGACAGCGAtt	UCGCUGUCCAUGAAGUCGUtg
<u>FOXP1</u>	forkhead box P1	<u>27086</u>	AGCUAACACUAAAUGAGAUtt	AUCUCAUUUAGUGUUAGCUgc
<u>FOXP4</u>	forkhead box P4	<u>116113</u>	GCCUAUUUCCGCAGAAACAtt	UGUUUCUGCGGAAAUAAGGCga
<u>FOXQ1</u>	forkhead box Q1	<u>94234</u>	CACUAUAAAUGAUUAGACUtt	AGUCAUAUCAUUUUAUAGUGtg
<u>FOXR2</u>	forkhead box R2	<u>139628</u>	GGAUGAAGAUAAUGCAAGAtt	UCUUGCAUUAUCUUAUCctt
<u>C2orf3</u>	chromosome 2 open reading frame 3	<u>6936</u>	GGAGUAUGAAAAUACGUAtt	UACGUUUUUUCAUACUCCct
<u>NR3C1</u>	(glucocorticoid receptor)	<u>2908</u>	GCAGGAUCAGAAGCCUAUUt	AAUAGGCUUCUGAUCCUGCtg
<u>HOXD9</u>	homeobox D9	<u>3235</u>	GCUGUUCGCUGAAGGAGGAtt	UCCUCCUUCAGCGAACAGCct
<u>IKZF1</u>	IKAROS family zinc finger 1 (Ikaros)	<u>10320</u>	UGUGCUCAUGGUUCACAAAtt	UUUGUGAACCAUGAGCACAtt
<u>IRF1</u>	interferon regulatory factor 1	<u>3659</u>	CCUCUGAAGCUACAACAGAtt	UCUGUUGUAGCUUCAGAGGtg
<u>IRF2</u>	interferon regulatory factor 2	<u>3660</u>	GAGGAAUUAUGAAGGCAAAtt	UUUGCCUCAAUAUUCUctt
<u>NFE2L1</u>	nuclear factor (erythroid-derived 2)-like 1	<u>4779</u>	GCUGCGAGAUGAGAACGGAtt	UCCGUUCUCAUCUCGCAGCcg
<u>LEF1</u>	lymphoid enhancer-binding factor 1	<u>51176</u>	GUUGCUGAGUGUACUCUAAtt	UUAGAGUACACUCAGCAACga
<u>MAZ</u>	transcription factor)	<u>4150</u>	CAAUCUCCGGAGGCACGAAtt	UUCGUGCCUCCGGAGAUUGta
<u>MEF2A</u>	myocyte enhancer factor 2A	<u>4205</u>	CCAACUCGGAUUAUUGUUGAtt	UCAACAUAUCCGAGUUGGtt
<u>NFIC</u>	nuclear factor I/C (CCAAT-binding transcription factor)	<u>4782</u>	AAUUUAGAGUGAACAAGAAtt	UUCUUGUUCACUCUAAUUUtc
<u>NFIX</u>	nuclear factor I/X (CCAAT-binding transcription factor)	<u>4784</u>	GAAUCCGGACAAUCAGAUAtt	UAUCUGAUUGUCCGGAUUCcg
<u>NFKB1</u>	B-cells 1	<u>4790</u>	GGCUCAUGUUUACAGCUUUtt	AAAGCUGUAAACAUGAGCCgc
<u>NFYA</u>	nuclear transcription factor Y, alpha	<u>4800</u>	CAAUACCACCGUAAUUCUAtt	UAAGAAUACGGUGGUUUUGtt
<u>TP53</u>	tumor protein p53	<u>7157</u>	GUAUCUACUGGGACGGAAAtt	UUCCGUCCCAGUAGAUUACca

<u>PAX5</u>	paired box 5	<u>5079</u>	GGCUCGUCGUACUCCAUCAtt	UGAUGGAGUACGACGAGCCgg
<u>POU2F1</u>	POU class 2 homeobox 1	<u>5451</u>	CGCAAAAUCUUCUAACGCAtt	UGCGUUAGAAGAUUUUGCGct
<u>PPARA</u>	peroxisome proliferator-activated receptor alpha	<u>5465</u>	GAUCAAGUGACAUUGCUAAtt	UUAGCAAUGUCACUUGAUCgt
<u>RARA</u>	retinoic acid receptor, alpha	<u>5914</u>	GAAGAUUACUGACCUGCGAtt	UCGCAGGUCAGUAAUCUUCat
<u>RARB</u>	retinoic acid receptor, beta	<u>5915</u>	GAACCGACAAAAGUAGAUAtt	UAUCUACUUUUGUCGGUUCct
<u>RBP1</u>	kappa J region	<u>3516</u>	GGAAGCUAUGCGAAAUUAtt	UAAUUUCGCAUAGCUUCCta
<u>RELA</u>	(avian)	<u>5970</u>	CCUUUACGUCAUCCUGAtt	UCAGGGAUGACGUAAGGGat
<u>RXRA</u>	retinoid X receptor, alpha	<u>6256</u>	UCGUCCUCUUUAACCCUGAtt	UCAGGGUUAAGAGGACGAtg
<u>SALL3</u>	sal-like 3 (Drosophila)	<u>27164</u>	CGCGGUUUAUCGAGGAUAAtt	UUAUCCUCGAUAAACCGCGtg
<u>SP1</u>	Sp1 transcription factor	<u>6667</u>	GCAACAUGGGAAUUAUGAAtt	UUCAUAAUCCCAUGUUGCtg
<u>SRY</u>	sex determining region Y	<u>6736</u>	CAACAGCGAUGAUUACAGUtt	ACUGUAAUCAUCGCGUUGGaa
<u>STAT1</u>	signal transducer and activator of transcription 1, 91kDa	<u>6772</u>	CCUACGAACAUGACCCUAUtt	AUAGGGUCAUGUUCGUAGGtg
<u>TAF1B</u>	polymerase I, B, 63kDa	<u>9014</u>	CAUUUGAUCCUAUAGCUAAtt	UUAGCUAUAGGAUCAAUGtc
<u>TCE3</u>	binding factors E12/E47)	<u>6929</u>	CCUGCAGAGUAAGAUAGAAtt	UUCUAUCUUACUCUGCAGGcc
<u>TCF4</u>	transcription factor 4	<u>6925</u>	GAAGGAUAUCAAAUCAAUtt	AAUUGAUUUGAUAUCCUUCtt
<u>USE1</u>	upstream transcription factor 1	<u>7391</u>	AGGUGGAAGAUCUUAAAAAtt	UUUUUAAGAUCUCCACCUgt
<u>USE2</u>	upstream transcription factor 2, c-fos interacting	<u>7392</u>	CCUUACUCUCCAAAAAUtt	AAUUUUUGGAGAGUAAGGGtg
<u>VDR</u>	vitamin D (1,25- dihydroxyvitamin D3) receptor	<u>7421</u>	AGUUCAUUCUGACAGAUGAtt	UCAUCUGUCAGAAUGAACUcc
<u>WT1</u>	Wilms tumor 1	<u>7490</u>	GGACUGUGAACGAAGGUUtt	AAACCUUCGUUCACAGUCCtt
<u>XBP1</u>	X-box binding protein 1	<u>7494</u>	CCUGCCUACUGGAUGCUUAtt	UAAGCAUCCAGUAGGCAGGaa
<u>YY1</u>	YY1 transcription factor	<u>7528</u>	AGCUUUUGUUGAGAGUUCAtt	UGAACUCUCAACAAAAGCUtt