

# **Long Noncoding RNA miR503HG, a Prognostic Indicator,**

## **Inhibits Tumor Metastasis by Regulating The**

### **HNRNPA2B1/NF- $\kappa$ B Pathway in Hepatocellular Carcinoma**

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## Supplementary Materials and Methods

### 5' and 3' Rapid Amplification of cDNA Ends (RACE) analysis

5'RACE and 3'RACE analyses were performed with 5µg of total RNA. The SMARTer™ RACE cDNA kit (Clontech) was used according to the manufacturer's instructions. The gene-specific primers used for PCR are presented in Supplementary Table S5.

### Lentivirus production and infection

The miR503HG sequence was amplified and cloned into the pWPXL lentiviral vector (a gift from Dr. Didier Trono) to generate pWPXL-miR503HG. The primer sequences are shown in Supplementary Table S5. Lentiviral particles were harvested 48 h after HEK 293T cells were transfected with pWPXL-miR503HG, the packaging plasmid psPAX2 and the VSV-G envelope plasmid pMD2.G (a gift from Dr. Didier Trono) using Lipofectamine 2000 (Invitrogen, Carlsbad, CA). SMMC-7721 and Huh-7 cells were infected with recombinant lentiviral transducing units plus 6 µg/mL polybrene (Sigma, MA, USA).

### *In vitro* migration assays

For the transwell migration assays,  $5 \times 10^4$  cells were plated in the top chamber of each insert (BD Biosciences, MA, USA) with a non-coated membrane. For the invasion assays,  $1 \times 10^5$  cells were placed into the upper chamber with a Matrigel-coated membrane (BD Biosciences, MA, USA). After several hours of incubation at 37 °C, cells that migrated or invaded were fixed and stained in dye solution containing 0.1% crystal violet and 20% methanol. The number of cells that had migrated or invaded was counted and imaged using an IX71 inverted microscope (Olympus Corp, Tokyo,

Japan).

### ***In vivo* assays for metastasis**

For the metastasis assays,  $2 \times 10^6$  Huh7 cells were infected with the Lenti-miR503HG or the mock vector, suspended in 200 $\mu$ L of serum-free DMEM, and injected into nude mice through the tail vein (male BALB/c-nu/nu mice, 10 per group). After six weeks, the mice were sacrificed, and their lungs were dissected, fixed with phosphate-buffered neutral formalin, and prepared for standard histological examination. For the *in situ* exnograft assays,  $5 \times 10^6$  SMMC-7721 cells stably expressing miR503HG, together with stably expressing vector control, were suspended in 40 $\mu$ L of DMEM/Matrigel (1:1) for each mouse. Through an 8-mm transverse incision in the upper abdomen, each nude mouse was inoculated orthotopically in the left hepatic lobe with a microsyringe. After 8 weeks, mice were sacrificed, livers were dissected, fixed with phosphate-buffered neutral formalin, paraffin-embedded and prepared for standard histological examination. Mice were handled and housed according to protocols approved by the Shanghai Medical Experimental Animal Care Commission.

### **Luciferase reporter assay**

For the luciferase analysis of signaling pathway reporter vectors, HEK 293T knockdown of HNRNPA2B1 were seeded in 96-well plates at a density of 5,000 cells per well. After 24h, the cells were transiently transfected with 5ng of pRL-CMV Renilla luciferase reporter, 30ng of the pLUC vectors containing  $\beta$ -catenin, ERK, p53, NFAT, HSF, AP-1, IRF, CEBPA, MYC, NF- $\kappa$ B, and STAT3 consensus binding sequence, respectively. After 48 h, luciferase activities were measured using the dual-luciferase reporter assay system (Promega, Madison, WI, USA).

### **Oligonucleotide transfection**

Small interfering (si) RNA duplexes and miR503 mimics were designed and synthesized by Ribobio (Guangzhou, China). siRNAs, miRNA mimics, [inhibitors](#) and corresponding negative control (NC) were synthesized by the sequences used are shown in Supplementary Table S5. Cells were transfected using Lipofectamine 2000 according to the manufacturer's instructions.

### **Real-time PCR (qPCR)**

Total RNA was extracted from cells using Trizol reagent (Invitrogen) according to the manufacturer's instruction. A total of 1 $\mu$ g of RNA was subjected to reverse transcription using HiScript II Q RT SuperMix for qPCR (+gDNA wiper) (Vazyme Biotech, Nanjing, China) and real-time PCR was carried out using AceQ qPCR SYBR Green Master Mix (Vazyme Biotech, Nanjing, China). The PCR reaction conditions were as follows: 95  $^{\circ}$ C for 15s followed by 40 cycles of 95  $^{\circ}$ C for 5s and 60  $^{\circ}$ C for 30s. The expression levels were normalized against those of the internal reference gene  $\beta$ -actin, the relative expression levels were determined by the following equation:  $2^{-\Delta\Delta Ct}$  ( $\Delta Ct = \Delta Ct_{\text{target}} - \Delta Ct_{\beta\text{-actin}}$ ). A list of primers used for real-time PCR experiments were in Supplementary Table S5.

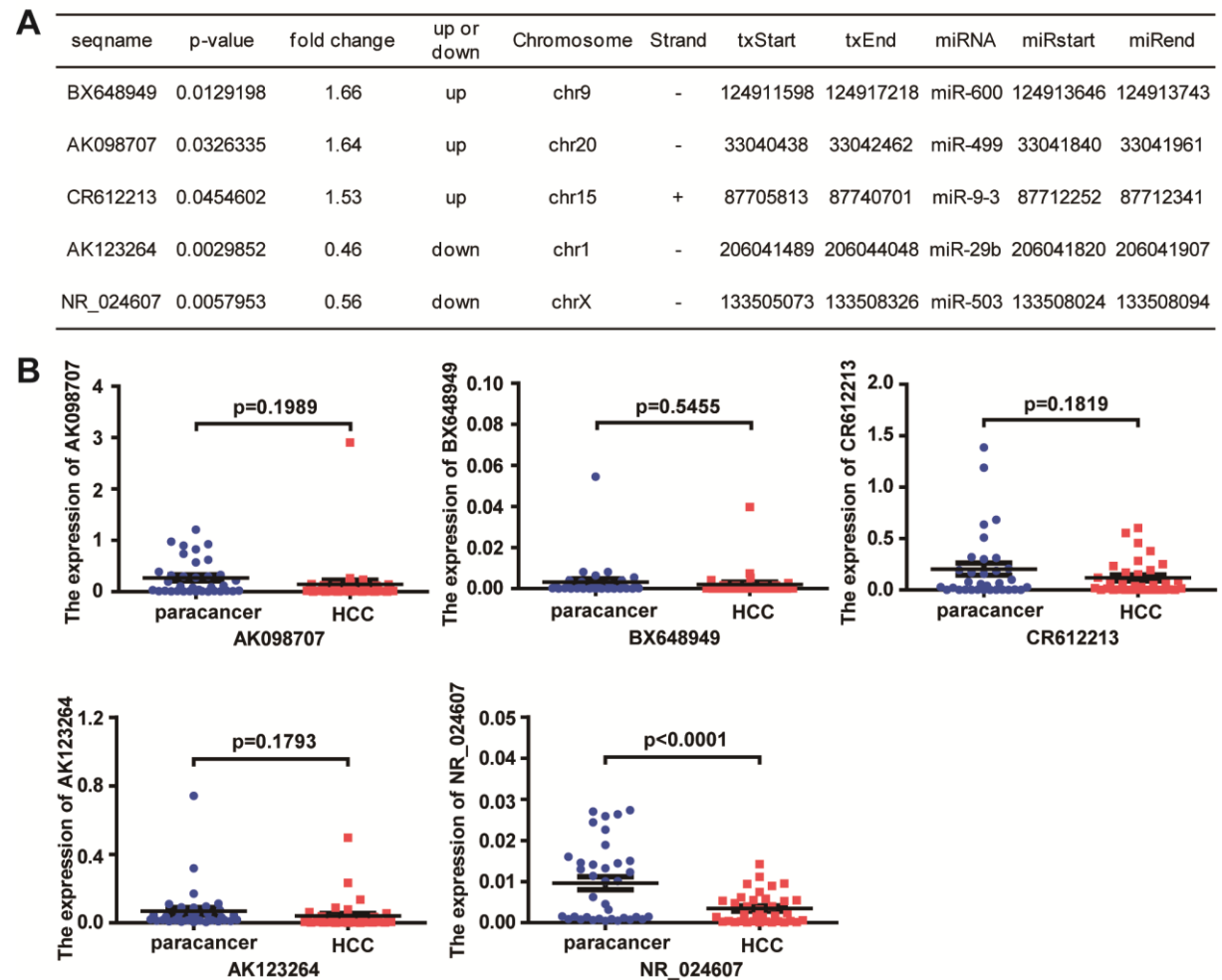
### **Western blot analysis**

Proteins from the cell lysates were prepared in 1 $\times$ sodium dodecyl sulfate buffer, separated by sodium dodecyl sulfate–polyacrylamide gel electrophoresis (SDS-PAGE) and transferred to a nitrocellulose membrane (Bio-Rad, Hercules, CA, USA). The membranes were blocked with 5% non-fat milk and incubated with the appropriate antibody. The antigen-antibody complex was detected with enhanced chemiluminescence reagents (Pierce, Rockford, IL). The antibodies used in this study

are shown in Supplementary Table S6.

## Supplementary Figures

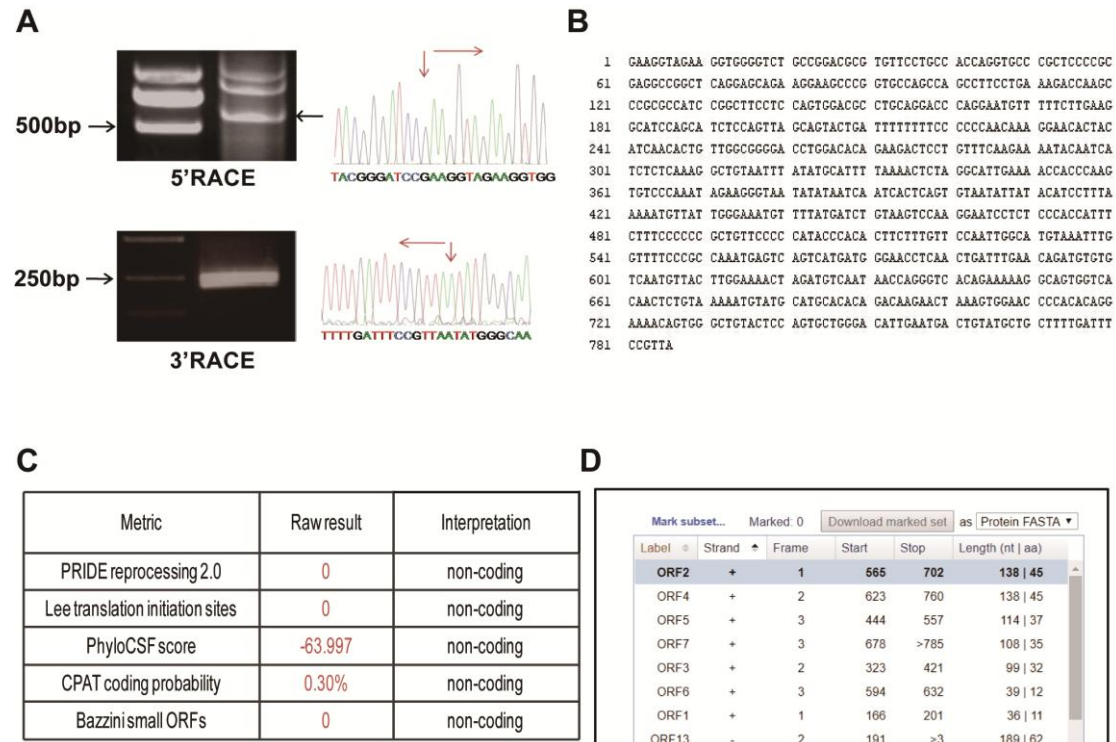
### Supplementary Fig. S1



### Supplementary Fig. S1. Screening for lncRNAs as the host gene of miRNAs among the differentially expressed lncRNAs

(A) Five lncRNAs and miRNAs in the chromosomal locus. (B) The expression levels of five lncRNAs in 36 pairs of HCC tissues and corresponding noncancerous liver tissues.

## Supplementary Fig. S2

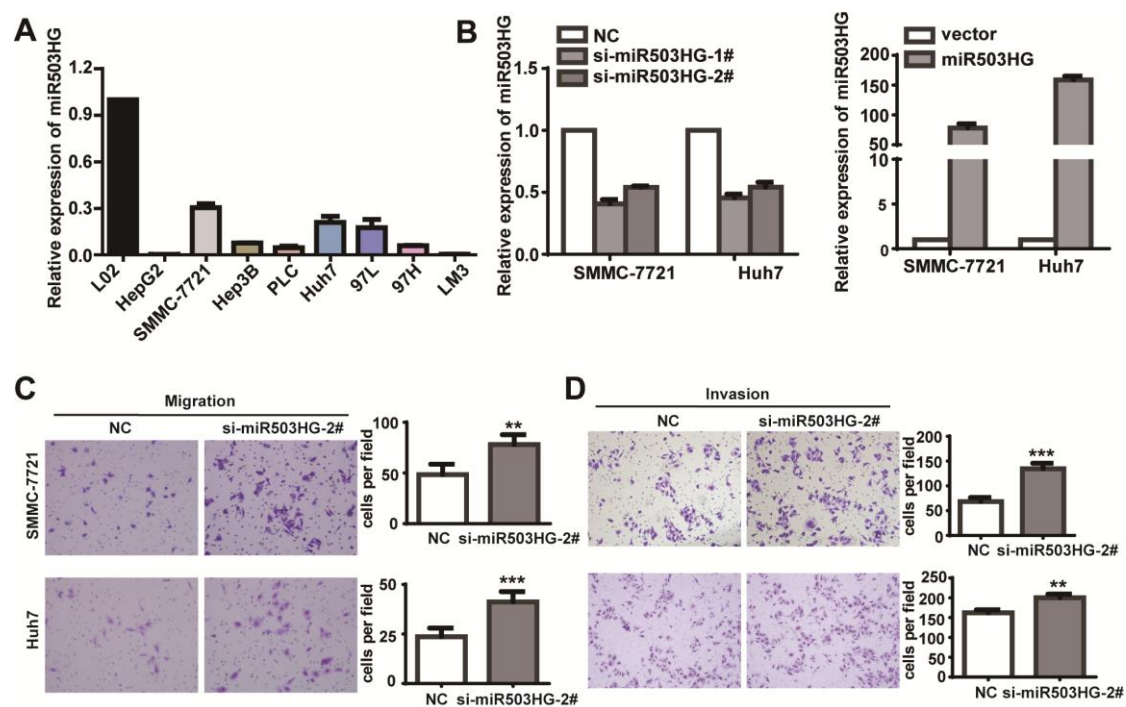


## Supplementary Fig. S2. Characterization of miR503HG as long non-coding RNA.

(A) Agarose gel electrophoresis of PCR products from the 5'-RACE and 3'-RACE procedure (left). The sequencing of PCR products reveals the boundary between the universal anchor primer and the miR503HG sequences (right). The red arrow indicates a putative transcriptional start and end site. (B) The nucleotide sequence of the full-length miR503HG. (C) The coding potential of miR503HG in several prediction software, and results showed that miR503HG didn't have any coding potential. (D) ORF Finder software prediction (the ORF finder, <https://www.ncbi.nlm.nih.gov/orffinder/>) for the protein-coding potential of miR503HG.



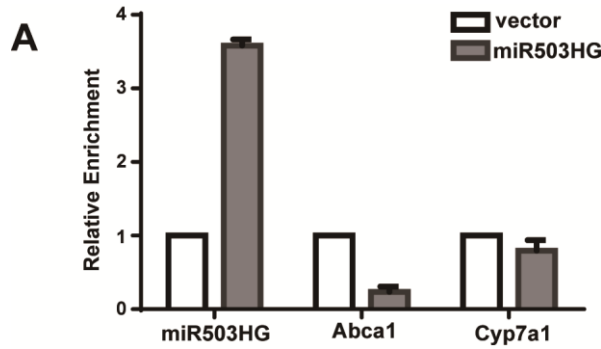
## Supplementary Fig. S3



## Supplementary Fig. S3. The expression level of miR503HG in HCC cells

(A) Real-time PCR analysis of miR503HG expression in 8 HCC cell lines and normal liver cell L02. (B) Real-time PCR analysis of miR503HG expression in SMMC-7721 and Huh7 cells after transfection with two siRNAs against miR503HG (left). The expression levels of miR503HG in SMMC-7721 and Huh7 cells that had been stably transfected with lentivirus encoding miR503HG (right). (C) Migration assays of SMMC-7721 and Huh7 cells with miR503HG knockdown by using siRNA-2#. (D) Invasion assays of SMMC-7721 and Huh7 cells with miR503HG knockdown by using siRNA-2#. Error bars represent  $\pm$ SD. \*\* $P < 0.01$  and \*\*\* $P < 0.001$ .

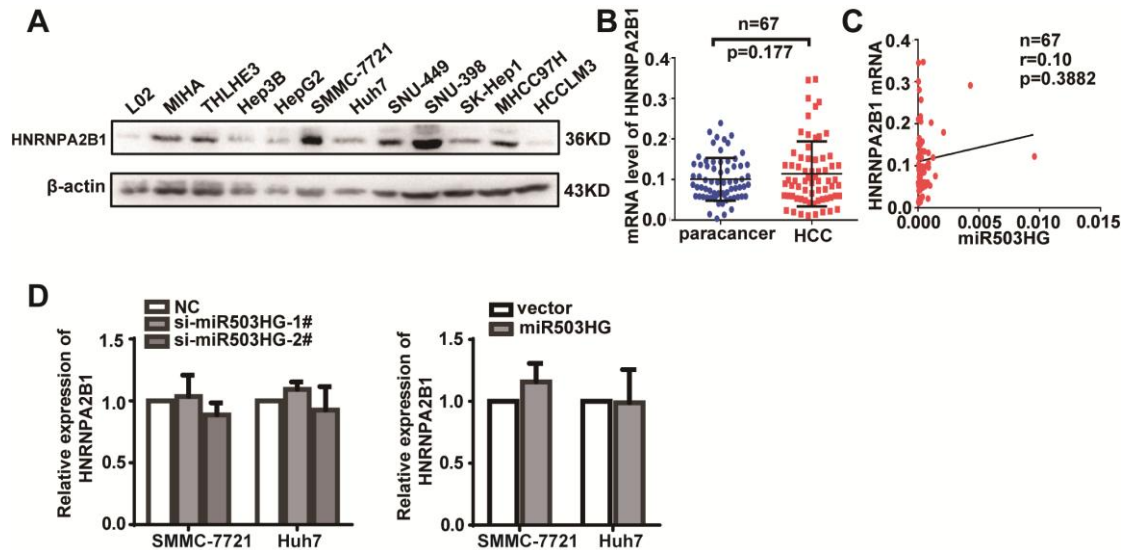
**Supplementary Fig. S4**



**Supplementary Fig.S4. The enrichment of Abca1 and Cyp7a1 mRNAs on HNRNPA2B1.**

(A) RIP assays analyzed the enrichment of Abca1 and Cyp7a1 mRNAs on HNRNPA2B1 with overexpression of miR503HG in SMMC-7721 cells.

**Supplementary Fig.S5**

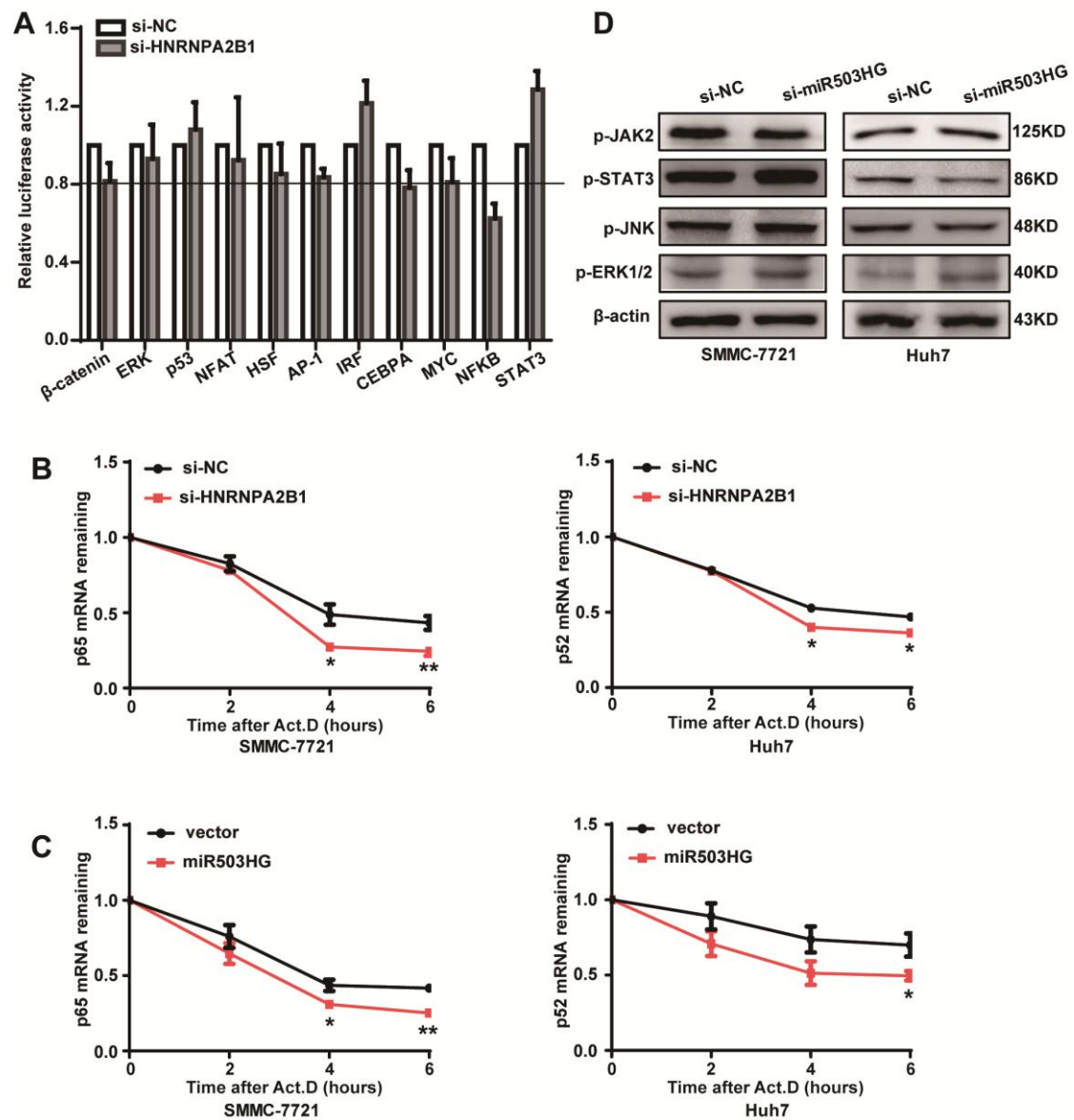


**Supplementary Fig.S5. miR503HG mediates ubiquitination and degradation of HNRNPA2B1 in HCC cells**

(A) Protein levels of HNRNPA2B1 in 11 HCC cell lines and normal liver cell L02. (B) mRNA levels of HNRNPA2B1 in 67 pairs of HCC samples. (C) Correlation analysis

showed the relationship between miR503HG (x) and HNRNPA2B1 (y) in 67 HCC tissues. (D) HNRNPA2B1 mRNA expression level in HCC cells with overexpression and knockdown of miR503HG.

### Supplementary Fig. S6

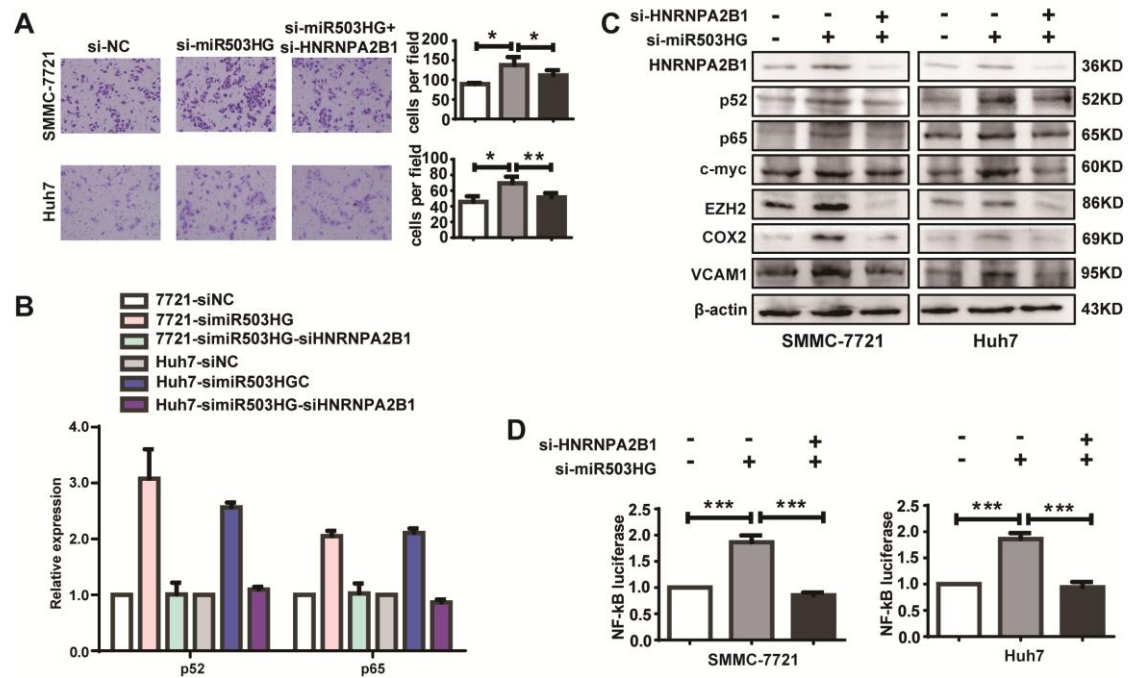


### Supplementary Fig.S6. miR503HG inhibits the NF-κB signaling pathway in HCC cells

(A) The luciferase activity of different signaling pathways in HNRNPA2B1 silenced

HCC cells. (B) mRNA decay of p52 and p65 were affected by knockdown of HNRNPA2B1. The remaining transcript of p52 and p65 was measured in SMMC-7721 and Huh7 cells after treatment of actinomycin D (Act.D). (C) mRNA decay of p52 and p65 were affected by overexpression of miR503HG in HCC cells. (D) The phosphorylation levels of JAK2, STAT3, JNK, ERK1/2 after miR503HG knockdown. Data in C and D are the means  $\pm$ SD. \*P<0.05 and \*\*P<0.01.

### Supplementary Fig.S7

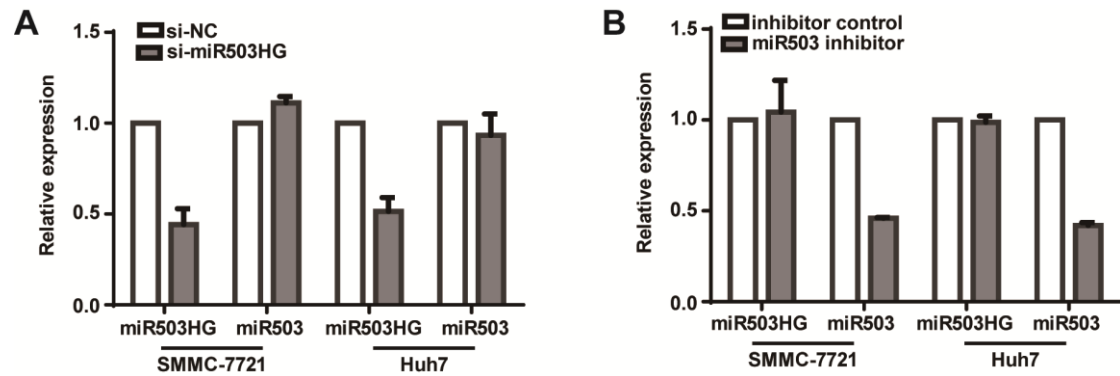


### Supplementary Fig.S7. HNRNPA2B1 is required for miR503HG regulation of HCC cell migration and the NF-κB signaling pathway

(A) Migration assay of SMMC-7721 and Huh7 cells with knockdown of miR503HG and HNRNPA2B1. (B) The mRNA levels of p52 and p65 in SMMC-7721 and Huh7 cells that concomitantly knockdown of miR503HG and HNRNPA2B1. (C) Western blot analysis shows the expression changes of p52, p65 and the NF-κB downstream

genes in HNRNPA2B1 silenced HCC cells. **(D)** Relative luciferase activity of NF- $\kappa$ B in SMMC-7721 and Huh7 cells with knockdown of miR503HG and HNRNPA2B1.

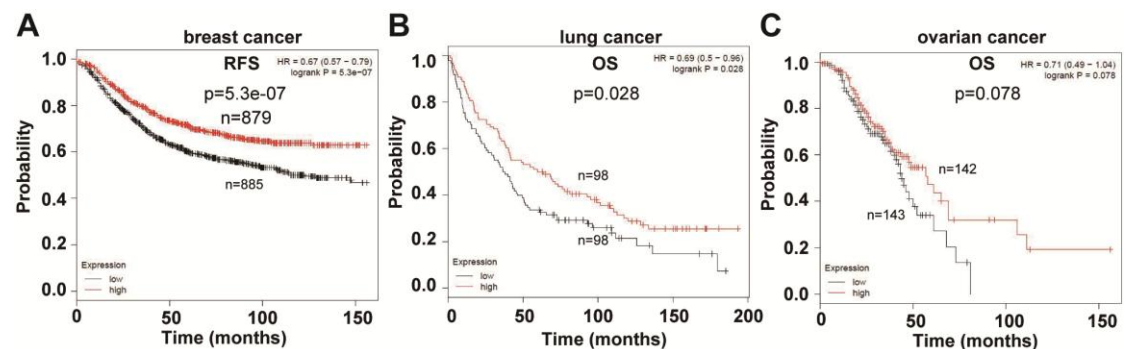
### Supplementary Fig.S8



**Supplementary Fig.S8. miR503HG functions synergistically with miR503 to suppress HCC cell migration and invasion**

**(A)** Expression of miR503 and miR503HG following knockdown of miR503HG in SMMC-7721 and Huh7 cells. **(B)** Expression of miR503 and miR503HG following inhibition of miR503 in HCC cells.

### Supplementary Fig.S9



**Supplementary Fig. S9. The prognostic significance of miR503HG in public database.**

Online survival analysis software to assess the prognostic using microarray data of

miR503HG in breast cancer (**A**), lung cancer (**B**) and ovarian cancer (**C**).

**Supplementary Table S1. Clinicopathological characteristics of 93 HCC patients in miR503HG expression analysis**

<b>Characteristics</b>	<b>Case number</b>	<b>%</b>
Sex		
Female	16	17.2
Male	77	82.8
Age (years)		
≤50	38	40.9
>50	55	59.1
HBsAg		
Negative	13	16.7
Positive	65	83.3
Cirrhosis		
No	15	16.1
Yes	78	83.9
ALT(U/L)		
≤75	76	89.4
>75	9	10.6
AFP(ng/mL)		
≤20	46	54.1
>20	39	45.9
Tumor size (cm)		
≤5	50	53.8
>5	43	46.2
Tumor number		
Single	71	76.3
Multiple	22	23.7
Tumor capsule		
None	36	39.6
Complete	55	60.4
Vascular invasion		
No	71	76.3
Yes	22	23.7
Lymphatic and distant metastasis		
No	73	78.5
Yes	20	21.5
Tumor differentiation		
I-II	71	78.0
III-IV	20	22.0
BCLC stage		
0 and A	15	16.1
B and C	78	83.9
TNM stage		
I-II	66	71.0
III-IV	27	29.0

Supplementary Table S2. Clinicopathological characteristics of 73 HCC patients in tissue microarray

Characteristics	Case number	%
Sex		
Female	11	15.1
Male	62	84.9
Age (years)		
≤50	36	49.3
>50	37	50.7
HBsAg		
Negative	19	26.0
Positive	54	74.0
Tumor size (cm)		
≤5	27	36.9
>5	46	63.1
Tumor number		
Single	56	76.7
Multiple	17	23.3
Vascular invasion		
No	22	30.1
Yes	51	69.9
Tumor differentiation		
I-II	56	76.7
III-IV	17	23.3
TNM stage		
I-II	54	73.9
III-IV	19	26.7



**Supplementary Table S3. Differentially expressed lncRNAs in 12 pairs of HCC tissues and corresponding noncancerous liver tissues**

SEQ_ID	Parametric p-value	FDR	Geometric mean of intensities	up or down	Chromosome	Start	End	length	seqname
ASLNC03712	0.0000002	0.0000395	4.88	up	chr1	148097375	148099328	1953	uc001esz
ASLNC06741	0.0000008	0.0000816	4.91	up	chr6	26389261	26393741	4480	uc003nhl
ASLNC04019	0.0000045	0.000254	2.32	up	chr1	113300593	113313119	12526	uc001edd
ASLNC22124	0.0000005	0.000276	2.73	up	chr17	45813597	45829849	16252	BC002350
ASLNC20083	0.0000073	0.000346	3.71	up	chr6	26237200	26240339	3139	AK125133
AK025108	0.0000087	0.000386	4.02	up	chr1	223749141	223750974	1833	HMLincRNA128
ASLNC00740	0.0000107	0.000443	3.63	up	chr2	234438826	234441794	2968	NR_024322
ASLNC17803	0.0000129	0.000499	2.65	up	chr1	153467686	153470052	2366	AK056250
ASLNC01922	0.0000133	0.000509	3.68	up	chr17	73721915	73732378	10463	NR_002219
ASLNC00686	0.0000197	0.00066	2.73	up	chr2	111903360	111969163	65803	NR_024373
ASLNC15421	0.0000215	0.000701	2.99	up	chr1	149822205	149822675	470	AF086205
ASLNC06583	0.0000242	0.000758	2.39	up	chr6	34320941	34321986	1045	uc003oje
ASLNC00525	0.000029	0.000844	2.43	up	chr1	211096569	211098103	1534	NR_027285
AF519769	0.0000304	0.000861	3.72	up	chr1	223749802	223907284	157482	HMLincRNA128
AB384549	0.0000318	0.000874	2.18	up	chr5	5476026	5542440	66414	chr5:5408092-5514014
ASLNC03898	0.0000357	0.000938	2.13	up	chr1	149936942	149937474	532	uc001eyq
ASLNC18287	0.0000435	0.00106	2.53	up	chr6	52637181	52641910	4729	AK091117
ASLNC04687	0.0000436	0.00106	2.56	up	chr2	111681829	111969134	287305	uc002the
ASLNC16894	0.0000553	0.00123	2.03	up	chr2	111708775	111710938	2163	AK023908
ASLNC11688	0.0000574	0.00126	2.19	up	chr17	75520737	75526872	6135	uc002jxg
ASLNC02773	0.0000622	0.00133	2.27	up	chr1	172100017	172102809	2792	HIV1915
ASLNC24399	0.0000644	0.00135	2.48	up	chr1	32426154	32434145	7991	L15344
ASLNC13494	0.0000662	0.00138	2.52	up	chr1	222683621	222688175	4554	AF130049

ASLNC24512	0.0000774	0.00153	3.33	up	chr16	22980588	22981054	466	U52050
ASLNC24250	0.0000846	0.00161	1.96	up	chr1	148082688	148087215	4527	BX648801
ASLNC12314	0.0000854	0.00163	2.99	up	chr19	63431881	63462971	31090	uc010eun
ASLNC22486	0.0000884	0.00167	2.11	up	chr20	13643623	13662388	18765	BC027981
ASLNC10384	0.0001068	0.00193	2.67	up	chr14	64475624	64479284	3660	uc001xhy
ASLNC07321	0.000108	0.00194	2.48	up	chr7	156124883	156126018	1135	uc003wmn
ASLNC01155	0.000113	0.002	2.1	up	chr7	156123822	156126109	2287	NR_026865
ASLNC19572	0.0001408	0.0023	2.33	up	chr3	12423345	12425917	2572	AK123253
ASLNC09418	0.0001465	0.00236	2.96	up	chr12	97432821	97434079	1258	uc001tfg
ASLNC21055	0.0001559	0.00246	2.33	up	chr17	77844880	77846073	1193	AK129602
ASLNC20628	0.0001586	0.00249	2.14	up	chr2	227382893	227386726	3833	AK127274
ASLNC11736	0.0001922	0.00279	2.37	up	chr17	71110505	71125597	15092	uc010dgi
ASLNC03876	0.0002002	0.00287	3.04	up	chr1	148097375	148099338	1963	uc001eta
ASLNC12203	0.0002247	0.0031	2.56	up	chr19	53310514	53365372	54858	uc002pib
ASLNC06832	0.00024	0.00322	2.37	up	chr7	148025339	148026789	1450	uc003wex
ASLNC19106	0.0002803	0.00357	2.2	up	chr3	44508267	44511231	2964	AK096537
ASLNC02384	0.0002859	0.00363	2.13	up	chr8	141602279	141604998	2719	ASO2058
ASLNC22143	0.0002941	0.00371	1.82	up	chr17	36058299	36060354	2055	BC005066
ASLNC02955	0.000302	0.00377	2.81	up	chr5	138637718	138671116	33398	LIT1318
ASLNC19042	0.0003183	0.00391	1.91	up	chr1	19409475	19412794	3319	AK096098
X65230	0.0003214	0.00392	2.61	up	chr19	2847957	2887556	39599	HMLincRNA189
ASLNC18240	0.000329	0.00398	2.64	up	chr1	62685089	62686631	1542	AK090749
ASLNC01054	0.0003369	0.00404	2.35	up	chr6	52637157	52641910	4753	NR_024403
ASLNC19168	0.0003526	0.00417	2.16	up	chr22	40557164	40560615	3451	AK096917
ASLNC06771	0.0003618	0.00424	1.9	up	chr6	33770034	33774412	4378	uc003oez
ASLNC22443	0.0003653	0.00426	1.88	up	chr16	24985758	24987747	1989	BC023651

ASLNC03725	0.0003857	0.00445	2.32	up	chr1	141960583	142005271	44688	uc001ejf
ASLNC12787	0.0003917	0.00448	2.13	up	chr22	29695633	29699587	3954	uc003ajf
ASLNC01516	0.0003984	0.00453	2.65	up	chr12	119892023	119894478	2455	NR_024345
ASLNC12455	0.0004066	0.0046	2.08	up	chr20	25552680	25606706	54026	uc002wuz
ASLNC14032	0.0004096	0.00463	1.99	up	chr19	50544967	50546412	1445	CR613691
ASLNC17913	0.0004348	0.00483	2.06	up	chr13	112390083	112392130	2047	AK057085
ASLNC15607	0.0004397	0.00487	2.21	up	chr7	33020670	33027489	6819	AF090932
ASLNC04867	0.0004454	0.00492	2.21	up	chr2	170314742	170316619	1877	uc002ufj
ASLNC19439	0.0004495	0.00495	2.56	up	chr17	76839271	76840890	1619	AK098424
ASLNC20394	0.0004597	0.00504	1.83	up	chr2	42411888	42414128	2240	AK126362
ASLNC09376	0.0004696	0.00512	1.87	up	chr12	119413205	119418111	4906	uc001tyk
ASLNC20446	0.0004704	0.00512	2.01	up	chr19	4399806	4401833	2027	AK126579
ASLNC00172	0.0004831	0.00522	2.85	up	chr5	138671552	138671812	260	uc.174-
ASLNC15410	0.0004849	0.00523	1.98	up	chr17	42371519	42372225	706	AF086179
EC579926	0.0004892	0.00525	2.1	up	chr5	114876225	114876280	55	HMLincRNA764
ASLNC12559	0.0005077	0.00537	2.56	up	chr20	3815914	3817231	1317	uc002wjz
ASLNC14901	0.0005136	0.00541	2.58	up	chr17	59176346	59204638	28292	AX810724
ASLNC14700	0.0005208	0.00546	2.04	up	chr2	95554584	95556177	1593	BC018776
ASLNC15705	0.0005347	0.00557	1.97	up	chr8	126438653	126448544	9891	AF147336
ASLNC10710	0.0005517	0.00568	2.17	up	chr15	41219610	41220757	1147	uc001zqs
BI549227	0.0005774	0.00586	2.15	up	chr7	7646921	8066323	419402	chr7:7895500-7963275
ASLNC11492	0.0005862	0.00592	2.22	up	chr17	24248975	24249914	939	uc002hdf
ASLNC07076	0.0006457	0.00628	1.77	up	chr7	65633737	65657259	23522	uc010lad
BF856985	0.0006545	0.00632	1.95	up	chr2	224425385	224425606	221	chr2:224419425-224431400
ASLNC07921	0.0006692	0.00641	3.01	up	chr9	96357243	96370230	12987	uc004aut
T35622	0.0006776	0.00646	2.06	up	chrX	62434977	62435244	267	chrX:62428575-62446375

ASLNC24021	0.0006834	0.00648	2.76	up	chr17	26884318	26885064	746	BC131530
ASLNC20619	0.0006907	0.00653	1.84	up	chr8	146003055	146023229	20174	AK127225
ASLNC05695	0.0006951	0.00656	1.93	up	chr4	55924896	55944320	19424	uc003hav
ASLNC14537	0.0007558	0.00695	2.34	up	chrX	70385038	70388330	3292	AY927569
ASLNC18342	0.0007564	0.00695	2.3	up	chr10	96353371	96356258	2887	AK091544
H72664	0.0007912	0.00718	2.56	up	chrX	45796347	45803116	6769	chrX:45782500-45808725
DB042414	0.0007928	0.00718	2.2	up	chr1	172133219	172133782	563	HMLincRNA111
L13616	0.0008088	0.0073	2.08	up	chr8	141738349	142080514	342165	HMLincRNA565
ASLNC01797	0.0008248	0.00742	2.25	up	chr16	30838140	30842091	3951	NR_024348
ASLNC11574	0.0008447	0.00756	2.02	up	chr17	77478995	77481667	2672	uc002kco
ASLNC16733	0.0008554	0.00764	2.07	up	chr22	48668094	48671071	2977	AK022892
ASLNC04395	0.0008674	0.00771	2.29	up	chr2	111903365	111904956	1591	uc010fkf
ASLNC21870	0.0008683	0.00771	2.55	up	chr7	137830937	137919226	88289	AL365456
ASLNC13606	0.0008737	0.00775	1.78	up	chr5	32472507	32472838	331	BC063380
AI700920	0.0008838	0.0078	1.94	up	chr12	28593261	28624143	30882	chr12:28607450-28619725
ASLNC01821	0.0008871	0.00781	1.98	up	chr17	26082849	26109477	26628	NR_024187
ASLNC21970	0.0008972	0.00788	2.66	up	chr9	138626301	138631454	5153	AY129027
ASLNC01554	0.0009123	0.00798	2	up	chr12	6863405	6864027	622	NR_002803
AK127561	0.0009139	0.00798	2.68	up	chr1	223749804	223769722	19918	HMLincRNA128
ASLNC09859	0.0009412	0.00816	1.76	up	chr13	43872387	43878021	5634	uc001uzl
ASLNC14380	0.0009711	0.00831	1.95	up	chr17	78154153	78155343	1190	AL136830
ASLNC24004	0.0010305	0.0087	1.67	up	chr17	23724829	23725144	315	BC128525
ASLNC13500	0.0011274	0.00927	2.07	up	chr17	55117194	55118452	1258	AF130062
ASLNC24076	0.0011373	0.00934	2	up	chr13	97849540	97857747	8207	BX537667
ASLNC18105	0.001145	0.00938	1.85	up	chr18	53484764	53486784	2020	AK058035
ASLNC19929	0.0011755	0.00955	2.3	up	chr22	40553522	40558112	4590	AK124515

ASLNC04817	0.0011765	0.00955	2.75	up	chr2	242263829	242274900	11071	uc002wca
ASLNC22072	0.0011789	0.00957	2.08	up	chr1	35973178	35973419	241	AY605064
ASLNC22169	0.0011898	0.00964	1.81	up	chr5	37322294	37323307	1013	BC007784
ASLNC14481	0.0012162	0.00973	2.07	up	chr15	65119965	65127637	7672	AY203937
ASLNC22820	0.0012224	0.00977	2.12	up	chr8	145991278	145992960	1682	BC036118
ASLNC12530	0.0012273	0.00978	2.03	up	chr20	42279535	42285744	6209	uc002xlo
ASLNC08043	0.001241	0.00985	2.3	up	chr9	35648873	35665863	16990	uc003zxl
ASLNC21947	0.0012601	0.00994	2.26	up	chr2	95554443	95556197	1754	AY010112
ASLNC23093	0.0012795	0.0101	1.79	up	chr3	144202439	144202999	560	BC040051
ASLNC09933	0.0013097	0.0102	1.77	up	chr13	97851670	97857747	6077	uc001vnl
ASLNC13454	0.0013534	0.0105	1.85	up	chr19	43801713	43819431	17718	AF119846
ASLNC14438	0.0013636	0.0106	2.21	up	chr8	103907771	103945539	37768	AL832582
ASLNC16027	0.0014001	0.0108	1.78	up	chr12	97467684	97468084	400	AJ293393
ASLNC18301	0.0014205	0.0109	1.97	up	chr17	35337508	35340056	2548	AK091224
ASLNC01989	0.0014756	0.0112	2.13	up	chr19	38485602	38487802	2200	NR_026887
ASLNC02328	0.0014993	0.0113	1.94	up	chr16	3289661	3291406	1745	ASO1713
ASLNC07945	0.001503	0.0113	1.98	up	chr9	135880409	135883044	2635	uc004ceu
AA810459	0.0016359	0.0121	2.09	up	chr1	27399100	27399320	220	HMlincRNA1153
ASLNC11489	0.0016496	0.0121	2.52	up	chr17	67578778	67623752	44974	uc002jiu
ASLNC03708	0.0016616	0.0122	2.23	up	chr1	153371887	153372755	868	uc009wpd
H79841	0.0016799	0.0123	2.56	up	chrX	45796351	45803154	6803	chrX:45782500-45808725
ASLNC23059	0.001728	0.0126	1.82	up	chr1	158261373	158263208	1835	BC039426
CR456823	0.0017297	0.0126	5.01	up	chrX	49481769	49485199	3430	HMlincRNA1588
ASLNC17828	0.0018406	0.0132	2.11	up	chr8	43101049	43105062	4013	AK056481
ASLNC10535	0.001891	0.0134	2.56	up	chr15	61987486	62125574	138088	uc002ams
ASLNC00528	0.0018941	0.0135	2.1	up	chr1	218506143	218507680	1537	NR_001587

ASLNC05852	0.0019897	0.014	1.85	up	chr5	153809720	153812118	2398	uc0031vl
ASLNC20579	0.0020646	0.0144	2.06	up	chr7	99649215	99653093	3878	AK127069
ASLNC02120	0.0020694	0.0145	2.07	up	chr21	46473585	46496032	22447	NR_002776
ASLNC00996	0.0021084	0.0146	2	up	chr6	58354117	58395683	41566	NR_003660
CB163005	0.0021174	0.0147	1.92	up	chr1	172138110	172138620	510	HMlincRNA111
ASLNC13166	0.0021574	0.0149	2.16	up	chrX	79813827	79816373	2546	uc004edn
ASLNC03647	0.0021668	0.0149	1.81	up	chr1	116744749	116762726	17977	uc009whc
ASLNC20144	0.0021986	0.015	2.29	up	chr2	216790012	216793158	3146	AK125369
AL579364	0.002201	0.015	1.76	up	chr13	40855880	40856778	898	HMlincRNA506
ASLNC04982	0.0022041	0.0151	2.1	up	chr3	195791087	195792276	1189	uc003fug
ASLNC08806	0.0022577	0.0153	1.87	up	chr10	34438814	34439996	1182	uc001ixf
ASLNC01145	0.0024405	0.0162	2.12	up	chr7	45729914	45775142	45228	NR_024271
ASLNC04704	0.0025169	0.0166	2.48	up	chr2	242263831	242266202	2371	uc002wcb
BU682041	0.0025971	0.0169	2	up	chrX	62434270	62434507	237	chrX:62428575-62446375
BT009824	0.0026024	0.0169	1.79	up	chr6	26653413	26653684	271	HMlincRNA372
ASLNC02364	0.0027171	0.0175	1.97	up	chr17	24248981	24249914	933	ASO1973
ASLNC03746	0.0028005	0.0179	2.21	up	chr1	141746421	141832193	85772	uc001ejd
ASLNC13459	0.002837	0.018	2.05	up	chr12	111429974	111430837	863	AF119855
ASLNC18153	0.0030276	0.0189	1.75	up	chr8	96068284	96070570	2286	AK074467
ASLNC04593	0.0031694	0.0195	1.83	up	chr2	3584012	3587197	3185	uc002qXu
ASLNC20127	0.0031833	0.0196	1.77	up	chr7	5432441	5435084	2643	AK125308
ASLNC16715	0.0034323	0.0208	1.81	up	chr1	10439963	10442209	2246	AK022602
DW407854	0.0035336	0.0213	2.47	up	chr5	180610475	180610914	439	HMlincRNA239
ASLNC08553	0.0036066	0.0217	1.85	up	chr10	81957445	81969392	11947	uc001kbv
ASLNC06183	0.0036279	0.0217	1.94	up	chr5	157115457	157120295	4838	uc003lxf
ASLNC12125	0.0036482	0.0218	2.38	up	chr19	41495808	41514450	18642	uc002odt

BF327102	0.0036494	0.0218	1.91	up	chr1	191493784	191494007	223	chr1:191490425-191504575
ASLNC21946	0.0036497	0.0218	1.94	up	chr8	11697706	11733819	36113	AY007159
ASLNC04509	0.0036777	0.0219	1.76	up	chr2	110578524	110627280	48756	uc002tft
ASLNC11193	0.0036782	0.0219	2.05	up	chr16	88696195	88731900	35705	uc002fqr
exon3717	0.0037519	0.0223	2.02	up	chr7	25954785	25955047	262	chr7:25945000-25956500
ASLNC18707	0.0037717	0.0223	1.84	up	chr20	56994136	56995891	1755	AK094347
ASLNC01245	0.003795	0.0224	2.11	up	chr8	135679495	135682114	2619	NR_002438
ASLNC12337	0.0039348	0.023	1.86	up	chr20	48342663	48364863	22200	uc002xvk
ASLNC11977	0.004027	0.0234	1.75	up	chr19	53995049	54005985	10936	uc010emj
ASLNC15627	0.0040591	0.0235	1.83	up	chr2	96624476	96624897	421	AF117338
ASLNC01726	0.0040729	0.0236	1.84	up	chr15	66883213	66886494	3281	NR_026808
ASLNC20139	0.0040997	0.0237	1.74	up	chr11	62098221	62101634	3413	AK125351
ASLNC23502	0.0041532	0.0239	1.7	up	chr19	63206069	63209588	3519	BC044949
ASLNC03093	0.0044559	0.0252	1.83	up	chr12	6863439	6864025	586	LIT2101
ASLNC02135	0.0046717	0.026	1.83	up	chr21	45532394	45541696	9302	NR_026943
ASLNC16210	0.0047112	0.0261	2.04	up	chr2	111682070	111686182	4112	AK001796
DB308427	0.0048027	0.0265	2.61	up	chr19	35220541	35221068	527	chr19:35205200-35223675
CD671102	0.0049663	0.0273	1.85	up	chr19	35220020	35220481	461	chr19:35205200-35223675
ASLNC10490	0.0049906	0.0274	1.67	up	chr15	80938884	80979983	41099	uc002bii
ASLNC10890	0.0050903	0.0278	2.04	up	chr16	21382377	21439266	56889	uc002dja
CD514437	0.0053894	0.0289	1.7	up	chr2	224425408	224426120	712	chr2:224419425-224431400
L43964	0.0053899	0.0289	1.85	up	chr1	225125582	225150420	24838	HMLincRNA124
ASLNC03240	0.0055111	0.0293	2.06	up	chr1	6720	9622	2902	uc001aai
ASLNC13627	0.0056568	0.0298	1.72	up	chr12	119049455	119060589	11134	BC080184
ASLNC14854	0.0057664	0.0302	2.12	up	chr8	81562019	81574632	12613	AX721121
ASLNC21307	0.0058075	0.0303	1.83	up	chr7	72661527	72663768	2241	AK130335

ASLNC20031	0.0062708	0.0321	1.79	up	chr20	39457481	39467547	10066	AK124874
BM012363	0.0063788	0.0325	1.63	up	chrX	62435948	62436164	216	chrX:62428575-62446375
ASLNC00597	0.0064153	0.0325	1.7	up	chr1	116748858	116762728	13870	NR_024125
BE891694	0.0064172	0.0325	1.7	up	chr5	180606185	180606718	533	HMLincRNA239
AK127627	0.0064863	0.0328	2.16	up	chr18	10721473	10763583	42110	HMLincRNA783
ASLNC01405	0.0065041	0.0329	1.91	up	chr10	27574787	27581241	6454	NR_003525
ASLNC19038	0.0067495	0.0337	1.86	up	chr1	176960063	176962043	1980	AK096082
ASLNC07038	0.0070307	0.0349	1.72	up	chr7	100647704	100654191	6487	uc003uyf
AI016153	0.0070737	0.035	2.24	up	chr8	57124793	57125003	210	HMLincRNA1074
ASLNC04882	0.0071739	0.0355	1.9	up	chr2	114067712	114070625	2913	uc002tke
ASLNC03682	0.0072045	0.0356	1.69	up	chr1	151882577	151885399	2822	uc001fcp
ASLNC10703	0.0075039	0.0367	1.78	up	chr15	27754485	27758659	4174	uc001zcp
ASLNC01531	0.0075425	0.0367	1.87	up	chr12	99081164	99091466	10302	NR_024261
ASLNC10972	0.0075591	0.0368	1.84	up	chr16	23393725	23429309	35584	uc010bxo
BG222385	0.0075792	0.0369	1.72	up	chr1	159375599	159375980	381	HMLincRNA121
ASLNC17882	0.0076188	0.037	2.76	up	chr9	84784324	84787171	2847	AK056882
W20127	0.0076378	0.0371	1.9	up	chr2	127031469	127032121	652	chr2:127007450-127034900
U90549	0.0077254	0.0374	1.95	up	chr6	26652732	26654703	1971	HMLincRNA372
ASLNC15880	0.0078535	0.0378	1.75	up	chr13	97905675	97914040	8365	AF339785
ASLNC20130	0.0079215	0.0381	1.79	up	chr6	3176635	3216068	39433	AK125314
ASLNC20415	0.0079273	0.0381	1.86	up	chr9	134553682	134556009	2327	AK126436
ASLNC24207	0.0079349	0.0381	1.78	up	chr19	45553588	45558327	4739	BX648310
ASLNC15595	0.0079402	0.0381	1.86	up	chr15	48786797	48828242	41445	AF090911
ASLNC16402	0.0081631	0.039	1.66	up	chr17	56818956	56820626	1670	AK021817
ASLNC21792	0.0081646	0.039	1.7	up	chr2	152051036	152062973	11937	AL137363
ASLNC05554	0.0081992	0.039	1.8	up	chr4	689572	718816	29244	uc003gbc



ASLNC06007	0.0084449	0.04	1.97	up	chr5	126408949	126437071	28122	uc003kug
ASLNC23199	0.0086115	0.0405	1.83	up	chr17	37258298	37260848	2550	BC040976
CR736777	0.0086191	0.0406	2.08	up	chr2	127031291	127031786	495	chr2:127007450-127034900
ASLNC14843	0.0086337	0.0406	1.8	up	chr6	43105778	43106773	995	BC039515
ASLNC15956	0.0087566	0.0411	1.84	up	chr16	23490680	23491100	420	AJ001827
ASLNC08375	0.0087985	0.0412	1.77	up	chr10	133631176	133633859	2683	uc001lku
ASLNC20159	0.0088909	0.0415	2.1	up	chr3	33407598	33409958	2360	AK125415
ASLNC07067	0.0090677	0.0421	1.72	up	chr7	104541702	104542701	999	uc003vcr
BG334695	0.0091727	0.0425	1.86	up	chrX	62435948	62436157	209	chrX:62428575-62446375
ASLNC18219	0.0091754	0.0425	1.77	up	chr8	37835624	37837865	2241	AK090578
ASLNC13431	0.0093261	0.043	1.75	up	chr8	124095373	124096405	1032	AF116708
ASLNC06258	0.0094729	0.0436	1.69	up	chr5	43157398	43212103	54705	uc003jnl
BG431977	0.0095193	0.0437	1.96	up	chr5	180608194	180608936	742	HMLincRNA239
ASLNC23476	0.0095692	0.0438	1.8	up	chr2	37355557	37358871	3314	BC043642
ASLNC00653	0.0097633	0.0445	1.82	up	chr2	110013297	110083422	70125	NR_027145
ASLNC13065	0.0099224	0.045	2.07	up	chrX	151646635	151653828	7193	uc004fgb
ASLNC24492	0.0099683	0.0451	1.89	up	chr7	154386313	154391474	5161	U23862
ASLNC02087	0.0099837	0.0451	1.57	up	chr20	28225539	28247668	22129	NR_003579
CB854497	0.0100156	0.0453	1.74	up	chr2	224420706	224421381	675	chr2:224419425-224431400
ASLNC16942	0.0103166	0.0462	1.85	up	chr8	22553828	22555620	1792	AK024169
CV312899	0.0104058	0.0465	2.21	up	chr12	9170879	9171225	346	chr12:9168650-9183575
ASLNC14889	0.0104475	0.0466	2.03	up	chr17	24248927	24249283	356	AX795353
ASLNC19304	0.0105237	0.0469	1.7	up	chr1	16660029	16667563	7534	AK097742
ASLNC04233	0.010581	0.0471	1.56	up	chr2	110051207	110099956	48749	uc010fjr
AK225978	0.0107212	0.0476	1.8	up	chr5	150612877	150985719	372842	chr5:150980275-150993600
ASLNC08290	0.0108497	0.048	1.73	up	chr9	67925645	67944120	18475	uc004aey

ASLNC02665	0.0108514	0.048	2.38	up	chr1	28705159	28708732	3573	HIV1447
ASLNC01731	0.0109512	0.0482	2.05	up	chr15	87722276	87742722	20446	NR_015411
ASLNC07073	0.0110315	0.0485	1.79	up	chr7	30567606	30583900	16294	uc003tbi
ASLNC09658	0.0112151	0.049	1.61	up	chr12	56611573	56616114	4541	uc001sqo
ASLNC03650	0.0112725	0.0491	1.55	up	chr1	149519123	149521029	1906	uc001exo
ASLNC20473	0.011305	0.0492	1.72	up	chr10	75199027	75202626	3599	AK126671
BF373573	0.0114363	0.0497	1.77	up	chr2	224425451	224425652	201	chr2:224419425-224431400
DB445318	0.0114675	0.0498	1.95	up	chr7	7646918	8010214	363296	chr7:7895500-7963275
ASLNC21672	0.011509	0.05	1.55	up	chr10	32135224	32136649	1425	AL050183
ASLNC19402	0.0115371	0.05	1.69	up	chr17	39535270	39538229	2959	AK098202
ASLNC04751	0.0115695	0.0501	1.69	up	chr2	128317596	128319641	2045	uc010fmc
ASLNC19006	0.0116169	0.0503	1.6	up	chr9	139597061	139599296	2235	AK095845
ASLNC12170	0.0116684	0.0504	1.85	up	chr19	53433402	53450962	17560	uc002pij
ASLNC11994	0.0117534	0.0506	2.08	up	chr19	5845685	5855025	9340	uc002mdr
ASLNC10528	0.0118073	0.0508	1.75	up	chr15	82659729	82689892	30163	uc002bkc
ASLNC17209	0.0123829	0.0526	1.7	up	chr19	39570013	39571838	1825	AK025210
AA090784	0.0124122	0.0527	1.98	up	chr5	114876309	114876607	298	HMLincRNA764
ASLNC02679	0.0127406	0.0538	1.71	up	chr20	39185449	39186522	1073	HIV1528
ASLNC24264	0.0129198	0.0543	1.66	up	chr9	124911598	124917218	5620	BX648949
BG290174	0.0129668	0.0545	1.72	up	chr5	44863295	44863977	682	chr5:44862425-44872625
ASLNC17535	0.0131418	0.0551	1.76	up	chr17	50389119	50390786	1667	AK054819
ASLNC04489	0.0131567	0.0551	1.71	up	chr2	110595034	110647639	52605	uc002tfv
ASLNC10573	0.0131754	0.0551	1.5	up	chr15	82736015	82738221	2206	uc002bke
ASLNC09118	0.0131822	0.0551	1.63	up	chr11	62285590	62290757	5167	uc009yoe
ASLNC21447	0.0132521	0.0553	1.86	up	chr3	125141000	125142875	1875	AK130630
ASLNC05947	0.0134212	0.0558	1.64	up	chr5	67124796	67132641	7845	uc003juz

ASLNC01541	0.0135086	0.0561	1.67	up	chr12	110761955	110765089	3134	NR_015404
AA723978	0.0136436	0.0565	1.69	up	chr10	75056040	75056328	288	HMlincRNA460
AA584732	0.0137848	0.0569	1.62	up	chr1	142369409	142369832	423	chr1:142366925-142378900
DA642269	0.0138847	0.0572	1.9	up	chr1	172137815	172138397	582	HMlincRNA111
ASLNC01500	0.0139262	0.0573	1.88	up	chr11	33054271	33057575	3304	NR_015451
ASLNC01233	0.0141126	0.0578	1.69	up	chr8	94821514	94822223	709	NR_027259
ASLNC01941	0.0142227	0.0581	1.65	up	chr18	5226723	5228028	1305	NR_026849
ASLNC11682	0.0145016	0.0589	1.71	up	chr17	63640936	63643663	2727	uc002jgq
ASLNC01384	0.0145932	0.059	1.75	up	chr10	1058576	1080141	21565	NR_024628
ASLNC18310	0.0146171	0.0591	1.72	up	chr1	11971064	11974240	3176	AK091277
ASLNC08674	0.0146978	0.0592	1.85	up	chr10	120890414	120915194	24780	uc001lea
AK294833	0.0147557	0.0594	1.66	up	chr18	30812261	30974615	162354	chr18:30822250-30849925
ASLNC14433	0.0147722	0.0594	1.71	up	chr9	138737483	138738984	1501	AL832531
ASLNC03813	0.0148435	0.0596	1.75	up	chr1	153863170	153884959	21789	uc001flf
BX448694	0.0152824	0.0609	1.98	up	chr1	27399152	27399424	272	HMlincRNA1153
AF289584	0.0154234	0.0613	2.72	up	chr16	48926548	49225628	299080	chr16:49113275-49131950
ASLNC05169	0.0155165	0.0615	1.59	up	chr3	130589506	130592127	2621	uc003emc
ASLNC13672	0.0156263	0.0618	1.64	up	chr6	91280020	91284180	4160	BX648277
ASLNC15760	0.0156365	0.0618	1.85	up	chr2	24152164	24152683	519	AF147425
ASLNC07346	0.015864	0.0624	1.83	up	chr7	44005125	44025294	20169	uc003tje
ASLNC14879	0.0162409	0.0635	1.65	up	chr10	34689054	34706966	17912	AX765710
ASLNC15179	0.0168733	0.0652	1.71	up	chr11	76171270	76171896	626	AF074986
BQ226790	0.016896	0.0652	1.74	up	chr11	74014197	74057829	43632	HMlincRNA1402
ASLNC00615	0.0169588	0.0653	2.02	up	chr1	47670392	47672900	2508	NR_026878
EG328602	0.0175178	0.0667	1.92	up	chr12	9170930	9171457	527	chr12:9168650-9183575
CN346112	0.0178917	0.0679	1.66	up	chr15	46804626	46805301	675	chr15:46800350-46810550

R09394	0.0179095	0.0679	2.35	up	chrX	62434803	62435106	303	chrX:62428575-62446375
AI863265	0.0180805	0.0682	1.83	up	chr1	47684457	47684947	490	HMlincRNA1126
ASLNC03697	0.0182146	0.0685	1.96	up	chr1	153284316	153290265	5949	uc001fgo
ASLNC22112	0.0182492	0.0686	1.94	up	chr10	101938113	101979284	41171	AY952888
ASLNC00630	0.0184278	0.0691	2.05	up	chr1	28705082	28708733	3651	NR_002909
ASLNC18074	0.0185002	0.0693	1.77	up	chr5	133765672	133775471	9799	AK057925
BQ333288	0.0196663	0.0726	1.95	up	chr13	40856529	40856755	226	HMlincRNA506
ASLNC02676	0.020296	0.0746	1.52	up	chr5_h2_hap1	633471	633839	368	HIV1505
ASLNC18862	0.0203094	0.0746	1.62	up	chr3	53868059	53870643	2584	AK095091
ASLNC11484	0.0206416	0.0753	1.66	up	chr17	43331150	43350937	19787	uc002imm
ASLNC03460	0.0207064	0.0753	1.74	up	chr1	245005937	245022308	16371	uc001ibs
DA418630	0.0208999	0.0758	1.72	up	chr1	89871286	90171397	300111	HMlincRNA1212
AW140084	0.0209287	0.0758	1.82	up	chr4	185634988	185635452	464	HMlincRNA1448
ASLNC19501	0.0209968	0.076	1.98	up	chr7	138381187	138382614	1427	AK098800
ASLNC14036	0.0212657	0.0766	1.6	up	chr1	24737878	24755102	17224	CR613961
ASLNC19906	0.0215376	0.0774	1.62	up	chr3	12600273	12602296	2023	AK124449
DB280069	0.0226468	0.0804	1.6	up	chr20	1540216	1626427	86211	chr20:1594825-1615675
ASLNC15182	0.0227767	0.0808	1.48	up	chr3	50600969	50601480	511	AF074992
CB047103	0.0228804	0.0811	1.85	up	chr1	172138039	172138668	629	HMlincRNA111
ASLNC19589	0.0229089	0.0812	1.61	up	chr10	42331620	42334041	2421	AK123297
ASLNC09081	0.0230442	0.0815	1.62	up	chr11	46359878	46361951	2073	uc001ncr
ASLNC12996	0.023362	0.0821	1.98	up	chr22	23157818	23158694	876	uc010gun
BF434328	0.0234471	0.0822	1.8	up	chr10	123677865	123701060	23195	HMlincRNA1420
ASLNC18698	0.0239772	0.0834	1.71	up	chr4	990075	992136	2061	AK094314
ASLNC00968	0.0239962	0.0834	1.61	up	chr6	2933199	2936403	3204	NR_026855
ASLNC14903	0.0242507	0.0841	1.58	up	chr5	115194157	115194950	793	AB002439

ASLNC08309	0.0243177	0.0843	1.79	up	chr9	68659885	68664815	4930	uc010mnv
ASLNC19055	0.0243366	0.0843	1.81	up	chr8	141599437	141601721	2284	AK096164
ASLNC07271	0.0244352	0.0845	1.51	up	chr7	44588548	44589795	1247	uc003tll
ASLNC05081	0.0246785	0.0853	1.89	up	chr3	14959297	14960929	1632	uc003bze
ASLNC16522	0.024731	0.0853	1.56	up	chr6	88149335	88152306	2971	AK022079
ASLNC15986	0.0247889	0.0854	1.64	up	chr11	227040	242981	15941	AJ012504
ASLNC01678	0.0247934	0.0854	1.68	up	chr15	39363492	39379086	15594	NR_026757
ASLNC15663	0.0252547	0.0864	1.82	up	chr6	7485688	7486557	869	AF143325
ASLNC07308	0.0259395	0.0882	1.77	up	chr7	55808365	55808868	503	uc003tqy
ASLNC19257	0.0259836	0.0884	1.54	up	chr7	128382385	128384345	1960	AK097374
ASLNC16735	0.0263266	0.0892	1.57	up	chr20	340551	342561	2010	AK022947
ASLNC16798	0.0263398	0.0892	1.61	up	chr12	123829632	123832395	2763	AK023485
ASLNC21995	0.0263422	0.0892	1.7	up	chr6	144212978	144220604	7626	AY326463
AA376978	0.0270018	0.0908	1.7	up	chr1	172138117	172138390	273	HMLincRNA111
ASLNC23971	0.027054	0.0909	1.54	up	chr19	45429454	45429820	366	BC127856
ASLNC02367	0.0271896	0.0913	1.73	up	chr17	24249078	24249797	719	ASO1977
ASLNC11943	0.0272719	0.0915	1.52	up	chr19	42364321	42366760	2439	uc002ofp
ASLNC16414	0.0272927	0.0915	1.72	up	chr6	90598864	90600520	1656	AK021848
ASLNC11197	0.0273741	0.0916	1.84	up	chr16	88746682	88754873	8191	uc010cji
ASLNC13527	0.027431	0.0917	1.96	up	chr14	88692289	88694766	2477	AF138861
CF126280	0.0275041	0.0919	1.85	up	chr5	180606146	180616851	10705	HMLincRNA239
DB447077	0.0276603	0.0922	1.62	up	chr7	7646939	8028666	381727	chr7:7895500-7963275
ASLNC00510	0.0276984	0.0923	1.62	up	chr1	22224293	22230302	6009	NR_023918
CD358392	0.0278104	0.0925	1.66	up	chr2	127031468	127032311	843	chr2:127007450-127034900
ASLNC07902	0.0278745	0.0926	1.57	up	chr9	68116304	68138190	21886	uc004aez
ASLNC19477	0.0279034	0.0927	1.53	up	chr2	96844694	96846030	1336	AK098629

AF015042	0.0279792	0.0929	1.53	up	chr7	99709511	100000593	291082	chr7:99948500-99966925
ASLNC04983	0.0281836	0.0934	1.52	up	chr3	198855914	198857282	1368	uc010iaq
ASLNC14534	0.0287229	0.0948	1.69	up	chrX	106106500	106123233	16733	AY927564
ASLNC17699	0.0288318	0.095	1.62	up	chr4	763994	765636	1642	AK055583
ASLNC17218	0.0300799	0.0978	1.62	up	chr1	90096389	90098903	2514	AK025238
ASLNC22208	0.0301056	0.0979	1.57	up	chr7	137923421	137924644	1223	BC009590
ASLNC06232	0.0308361	0.0996	1.71	up	chr5	80569139	80633134	63995	uc003khf
ASLNC18765	0.031427	0.101	2.01	up	chr10	79468319	79470465	2146	AK094613
ASLNC07342	0.0316537	0.102	1.5	up	chr7	43614621	43735608	120987	uc003tii
ASLNC04795	0.0317355	0.102	1.63	up	chr2	169336709	169351182	14473	uc002ued
ASLNC18734	0.0320842	0.102	1.75	up	chr22	49396855	49399268	2413	AK094442
ASLNC13132	0.032087	0.102	1.62	up	chrX	118417050	118470134	53084	uc004erc
ASLNC19485	0.0326335	0.104	1.64	up	chr20	33040438	33042462	2024	AK098707
ASLNC12737	0.0345987	0.108	1.5	up	chr21	46480565	46496171	15606	uc002zis
ASLNC07420	0.0358935	0.111	1.65	up	chr7	27622117	27633634	11517	uc003szj
ASLNC24309	0.0366223	0.112	1.59	up	chr21	33865926	33866181	255	DQ102771
ASLNC13866	0.037132	0.113	1.59	up	chr3	130061248	130062059	811	CR602639
H09878	0.0374259	0.114	1.56	up	chr14	34968948	34969309	361	HMLincRNA320
ASLNC05889	0.0395321	0.118	1.59	up	chr5	179166929	179173204	6275	uc003mkt
ASLNC11541	0.0398787	0.119	1.51	up	chr17	76554633	76559608	4975	uc002jyv
ASLNC01364	0.0401622	0.12	1.51	up	chr10	64894994	64896326	1332	NR_027182
ASLNC03300	0.0407837	0.121	1.55	up	chr1	3806830	3823649	16819	uc001alg
ASLNC14276	0.0424285	0.124	1.62	up	chr19	51914607	51941503	26896	CR749727
ASLNC17589	0.0447187	0.128	1.54	up	chr1	184672627	184674945	2318	AK055021
ASLNC16320	0.0447865	0.128	1.54	up	chr20	31669416	31670899	1483	AK021595
ASLNC10599	0.0454602	0.13	1.53	up	chr15	87705813	87740701	34888	uc002bnt

ASLNC20311	0.0469317	0.133	1.58	up	chr4	7083181	7098859	15678	AK126065
ASLNC02348	0.0469779	0.133	1.5	up	chr2	27411912	27414172	2260	ASO1856
ASLNC07069	0.0474091	0.134	1.57	up	chr7	66295181	66404841	109660	uc003tvo
ASLNC12248	0.0483849	0.136	1.48	up	chr19	50909484	50912479	2995	uc002pda
ASLNC15310	< 1e-07	< 1e-07	7.56	up	chrX	132859135	132859615	480	AF085935
ASLNC02657	0.0000002	0.0000395	0.19	down	chr2	88941511	89315056	373545	HIV1411
ASLNC04430	0.0000005	0.00006	0.18	down	chr2	87419379	87419662	283	uc010fgx
ASLNC18858	0.0000007	0.0000763	0.23	down	chr21	34813585	34815693	2108	AK095069
ASLNC13402	0.0000013	0.000112	0.2	down	chr4	69732804	69733878	1074	AF116651
ASLNC24229	0.0000019	0.000143	0.24	down	chr16	80685430	80689639	4209	BX648557
ASLNC15897	0.0000024	0.000174	0.24	down	chr13	96730804	96732305	1501	AF339810
ASLNC16322	0.0000024	0.000174	0.28	down	chr4	174695040	174697195	2155	AK021601
ASLNC06865	0.000005	0.000276	0.34	down	chr7	142204178	142210546	6368	uc003wbf
ASLNC19504	0.0000055	0.000296	0.38	down	chr2	144935148	144938115	2967	AK098835
ASLNC01768	0.0000057	0.000304	0.37	down	chr16	55267149	55269154	2005	NR_003669
ASLNC07195	0.0000071	0.000342	0.25	down	chr7	100557104	100557915	811	uc003uxs
ASLNC07210	0.0000095	0.00041	0.28	down	chr7	78921243	78930237	8994	uc010lea
ASLNC21940	0.0000098	0.000415	0.27	down	chr21	34810661	34815695	5034	AY007090
ASLNC05485	0.0000104	0.000435	0.3	down	chr4	185523334	185528018	4684	uc003iwe
ASLNC09254	0.0000123	0.000482	0.36	down	chr11	1712635	1728386	15751	uc001lub
ASLNC04893	0.0000124	0.000484	0.27	down	chr2	88937790	88941389	3599	uc002sti
ASLNC24588	0.0000133	0.000509	0.37	down	chr7	33938954	33940654	1700	U85992
ASLNC02800	0.0000135	0.00051	0.44	down	chr7	142015814	142199560	183746	HIV2426
AY168789	0.0000196	0.00066	0.25	down	chr5	95213947	95221590	7643	HMLincRNA417
ASLNC22454	0.0000205	0.000674	0.36	down	chr11	43921167	43921924	757	BC024745
ASLNC06958	0.0000206	0.000674	0.41	down	chr7	142194808	142210546	15738	uc010loq

ASLNC16333	0.0000219	0.000709	0.34	down	chr5	38526474	38527954	1480	AK021628
ASLNC11164	0.0000227	0.000725	0.27	down	chr16	55235099	55236224	1125	uc010cci
ASLNC21985	0.0000235	0.000743	0.36	down	chr21	39101903	39104979	3076	AY216265
ASLNC02719	0.0000246	0.000763	0.26	down	chr15	19974283	19974577	294	HIV1707
Y00062	0.000026	0.000793	0.44	down	chr1	196551575	196992953	441378	chr1:196813275-196869300
ASLNC19342	0.0000267	0.000807	0.5	down	chr19	4865682	4867832	2150	AK097879
ASLNC19643	0.0000287	0.00084	0.49	down	chr2	191533493	191535668	2175	AK123493
ASLNC07731	0.0000299	0.00086	0.45	down	chr8	26778933	26780677	1744	uc010lun
ASLNC10044	0.0000301	0.00086	0.27	down	chr14	105205502	105210208	4706	uc001ysb
ASLNC02086	0.0000311	0.000863	0.41	down	chr20	22489193	22507280	18087	NR_001558
CD109474	0.0000436	0.00106	0.23	down	chr20	50260588	50696687	436099	HMLincRNA938
ASLNC09954	0.0000462	0.00111	0.46	down	chr13	29812417	29846036	33619	uc001usu
ASLNC01482	0.0000463	0.00111	0.21	down	chr11	1661075	1663435	2360	NR_026642
ASLNC07363	0.0000567	0.00126	0.41	down	chr7	142204373	142209229	4856	uc003wbg
ASLNC08526	0.0000569	0.00126	0.44	down	chr10	11335759	11338633	2874	uc001ikr
ASLNC11297	0.0000627	0.00134	0.46	down	chr17	181935	183234	1299	uc002frg
ASLNC19208	0.0000666	0.00138	0.44	down	chr2	143802262	143804133	1871	AK097114
ASLNC15327	0.0000667	0.00138	0.44	down	chr22	35081351	35081844	493	AF085963
ASLNC11181	0.00007	0.00142	0.3	down	chr16	55273895	55275609	1714	uc002ejz
ASLNC10063	0.0000738	0.00147	0.45	down	chr14	105121113	105121750	637	uc010axn
ASLNC02724	0.0000785	0.00154	0.2	down	chr15	19974282	19974577	295	HIV1713
ASLNC07196	0.0000805	0.00157	0.44	down	chr7	142204822	142209229	4407	uc003wbk
ASLNC06824	0.0000807	0.00157	0.4	down	chr7	142199505	142201153	1648	uc003wba
ASLNC09272	0.000083	0.0016	0.21	down	chr11	1643402	1645661	2259	uc009ycz
ASLNC08338	0.0000837	0.00161	0.32	down	chr9	19119734	19139253	19519	uc003znp
ASLNC09261	0.0001002	0.00183	0.43	down	chr11	43921912	43925332	3420	uc001mxv



ASLNC07042	0.0001006	0.00184	0.48	down	chr7	141943612	142209229	265617	uc003vzg
ASLNC24329	0.0001114	0.00199	0.27	down	chr16	31984886	31985175	289	DQ535378
CV403656	0.0001223	0.0021	0.38	down	chr9	32935921	32936418	497	chr9:32926300-32939200
ASLNC23779	0.0001293	0.00218	0.37	down	chr2	46411922	46412916	994	BC070392
ASLNC17466	0.0001328	0.00221	0.47	down	chr8	119151166	119153346	2180	AK027368
ASLNC02187	0.0001333	0.00222	0.32	down	chr22	20982462	21007324	24862	NR_027293
ASLNC16555	0.0001422	0.00231	0.39	down	chr18	57704226	57705928	1702	AK022150
ASLNC05648	0.0001469	0.00236	0.33	down	chr4	187444245	187659145	214900	uc003izb
ASLNC23659	0.000168	0.00258	0.33	down	chr4	155703618	155705362	1744	BC060040
ASLNC23537	0.0001687	0.00258	0.49	down	chr19	56347992	56377034	29042	BC045766
ASLNC11676	0.0001913	0.00278	0.49	down	chr17	55271008	55273490	2482	uc002ixv
ASLNC02723	0.0001958	0.00282	0.31	down	chr14	105400454	106166467	766013	HIV1712
CN413145	0.0002012	0.00288	0.29	down	chr7	11203458	11328476	125018	HMLincRNA1254
ASLNC15668	0.000205	0.00292	0.44	down	chr11	120566690	120567405	715	AF143331
BE765125	0.0002057	0.00292	0.49	down	chr9	32935726	32936242	516	chr9:32926300-32939200
ASLNC07117	0.0002144	0.003	0.4	down	chr7	142194808	142201153	6345	uc003was
ASLNC16767	0.0002224	0.00308	0.45	down	chr3	115965803	115967651	1848	AK023302
ASLNC13238	0.0002329	0.00316	0.47	down	chrX	133506122	133508319	2197	uc004exm
AA382174	0.0002396	0.00322	0.41	down	chr1	148811560	148811880	320	HMLincRNA1030
ASLNC06839	0.0002589	0.00342	0.41	down	chr7	142204811	142209229	4418	uc003wbj
AI962686	0.0002648	0.00347	0.43	down	chr17	10612214	10612999	785	chr17:10598925-10629325
ASLNC16259	0.0002727	0.00354	0.33	down	chr15	59164337	59165867	1530	AK021439
AA307003	0.000279	0.00357	0.22	down	chr4	104396764	104594264	197500	chr4:104483350-104521000
ASLNC01548	0.0002814	0.00358	0.24	down	chr12	9109039	9111918	2879	NR_026971
ASLNC24551	0.0002966	0.00374	0.54	down	chr17	7418787	7420209	1422	U79273
ASLNC02722	0.0002978	0.00375	0.3	down	chr14	105401469	105862329	460860	HIV1711

ASLNC21888	0.0003002	0.00377	0.36	down	chr5	35914174	35915458	1284	AL713738
ASLNC02728	0.0003112	0.00386	0.38	down	chr14	105401469	105876550	475081	HIV1718
ASLNC17908	0.0003136	0.00388	0.41	down	chr17	14171376	14173516	2140	AK057070
ASLNC15759	0.0003154	0.00389	0.5	down	chr5	142306317	142306854	537	AF147424
CR736960	0.0003184	0.00391	0.44	down	chr17	10612035	10612503	468	chr17:10598925-10629325
ASLNC17636	0.0003221	0.00392	0.37	down	chr1	162836509	162838570	2061	AK055280
DW417964	0.0003481	0.00413	0.33	down	chr1	148808703	148808991	288	HMlincRNA1030
ASLNC17565	0.0003522	0.00417	0.41	down	chr12	112012639	112014514	1875	AK054946
ASLNC21516	0.000353	0.00417	0.48	down	chr6	42107548	42108910	1362	AK130763
ASLNC24104	0.0003561	0.00419	0.46	down	chr19	13806330	13808103	1773	BX640708
ASLNC02727	0.0003607	0.00423	0.29	down	chr14	105401841	105948960	547119	HIV1717
ASLNC07050	0.0003636	0.00425	0.44	down	chr7	142196804	142201153	4349	uc003waz
ASLNC10081	0.0003675	0.00428	0.48	down	chr14	105241346	105241984	638	uc001ysc
ASLNC22002	0.0003833	0.00443	0.54	down	chr9	68198838	68201492	2654	AY343893
ASLNC24125	0.0004187	0.0047	0.34	down	chr2	88203624	88206504	2880	BX641099
AK297526	0.0004284	0.00477	0.23	down	chr12	50702882	50739100	36218	HMlincRNA602
ASLNC21195	0.0004763	0.00517	0.54	down	chr1	56768385	56769997	1612	AK129996
ASLNC17065	0.0004828	0.00522	0.32	down	chr2	23202163	23203092	929	AK024624
ASLNC20094	0.0004919	0.00527	0.55	down	chr13	47977202	47980894	3692	AK125170
DA905574	0.0005081	0.00537	0.28	down	chr7	11199517	11233981	34464	HMlincRNA1254
ASLNC01997	0.0005985	0.00599	0.37	down	chr19	46122009	46148405	26396	NR_001278
ASLNC03068	0.0006138	0.00608	0.47	down	chr2	218632123	218634258	2135	LIT2061
ASLNC07364	0.0006151	0.00608	0.5	down	chr7	142127671	142201153	73482	uc003waj
ASLNC24140	0.0006463	0.00628	0.44	down	chr9	111046567	111048934	2367	BX647103
ASLNC10468	0.0006534	0.00632	0.51	down	chr15	94613004	94671581	58577	uc010bol
ASLNC10032	0.0006719	0.00642	0.36	down	chr14	105280158	105285359	5201	uc001ysg

ASLNC18865	0.0007192	0.00674	0.38	down	chr4	23489922	23492694	2772	AK095100
ASLNC10248	0.0007209	0.00675	0.47	down	chr14	21528480	22086559	558079	uc001wco
BI832838	0.0007487	0.00691	0.36	down	chr1	148803932	148804517	585	HMLincRNA1030
ASLNC16821	0.0007941	0.00719	0.44	down	chr2	46454078	46455821	1743	AK023572
ASLNC19405	0.0008094	0.0073	0.57	down	chr16	70616440	70619063	2623	AK098239
BM043959	0.0008126	0.00731	0.4	down	chr1	148808483	148809211	728	HMLincRNA1030
ASLNC18819	0.0008634	0.00768	0.53	down	chr19	1336157	1340650	4493	AK094875
ASLNC15871	0.0008753	0.00775	0.37	down	chr13	96802238	96804294	2056	AF339768
ASLNC12031	0.0008784	0.00777	0.44	down	chr19	54707697	54721366	13669	uc002pod
ASLNC18277	0.0008797	0.00777	0.54	down	chr9	76952426	76954167	1741	AK091034
AK096140	0.0008927	0.00785	0.23	down	chr5	95213694	95221590	7896	HMLincRNA417
AA829056	0.0009419	0.00816	0.37	down	chr1	148808383	148808828	445	HMLincRNA1030
ASLNC02729	0.0009594	0.00824	0.5	down	chr14	101091638	101094924	3286	HIV1721
BM678241	0.001066	0.00892	0.33	down	chr17	66286339	66512229	225890	chr17:66488275-66507650
ASLNC23708	0.0011028	0.00914	0.54	down	chr2	160508574	160509899	1325	BC065212
ASLNC17185	0.0011574	0.00945	0.42	down	chr8	119158339	119160615	2276	AK025143
ASLNC08303	0.0011688	0.00952	0.51	down	chr9	37495586	37500377	4791	uc004aaa
AW024518	0.0012086	0.0097	0.35	down	chr1	67767900	67770600	2700	HMLincRNA1286
ASLNC01388	0.001212	0.00972	0.33	down	chr10	4903860	4948465	44605	NR_026743
CA426679	0.0012722	0.01	0.46	down	chr17	10612478	10613113	635	chr17:10598925-10629325
ASLNC24245	0.0012897	0.0101	0.42	down	chr4	57617945	57626722	8777	BX648756
ASLNC19171	0.0013912	0.0107	0.52	down	chr1	842817	846259	3442	AK096928
ASLNC07087	0.0014131	0.0109	0.46	down	chr7	142205050	142210546	5496	uc003wbn
AA572879	0.0014415	0.011	0.4	down	chr1	148808391	148808818	427	HMLincRNA1030
ASLNC21627	0.0014529	0.0111	0.57	down	chr1	115678002	115680438	2436	AK172772
AA332648	0.0014882	0.0112	0.41	down	chr9	32935966	32936232	266	chr9:32926300-32939200

ASLNC18398	0.0015555	0.0116	0.61	down	chr16	56366121	56368514	2393	AK092013
ASLNC23793	0.0015892	0.0118	0.42	down	chr18	57626282	57627933	1651	BC071787
ASLNC06822	0.0016397	0.0121	0.45	down	chr7	142203516	142209229	5713	uc003wbd
ASLNC10783	0.0016444	0.0121	0.4	down	chr15	19974282	19974717	435	uc001yuj
ASLNC06934	0.0017099	0.0125	0.4	down	chr7	142194692	142201153	6461	uc003war
AI525925	0.0017298	0.0126	0.54	down	chr20	57182560	57182955	395	chr20:57146000-57188600
DA860017	0.0017529	0.0127	0.41	down	chr14	52754179	53223726	469547	chr14:52757725-52912850
ASLNC18414	0.0017801	0.0129	0.45	down	chr2	220127043	220128810	1767	AK092118
ASLNC04653	0.0017832	0.0129	0.37	down	chr2	241542710	241555541	12831	uc002waf
ASLNC12692	0.0018359	0.0132	0.52	down	chr21	45165393	45174016	8623	uc002zgh
ASLNC02721	0.0018438	0.0132	0.33	down	chr14	105948664	105948956	292	HIV1710
ASLNC03000	0.0019127	0.0135	0.55	down	chr9	35647750	35648014	264	LIT1758
ASLNC07188	0.0020229	0.0142	0.5	down	chr7	27102267	27106109	3842	uc003syg
ASLNC19115	0.0020993	0.0146	0.49	down	chr15	22828112	22830969	2857	AK096584
ASLNC24694	0.0021082	0.0146	0.52	down	chr6	26022288	26022815	527	Z83946
ASLNC15588	0.002152	0.0148	0.39	down	chr8	105460828	105463912	3084	AF090901
ASLNC01769	0.0021526	0.0148	0.48	down	chr16	54784029	54785938	1909	NR_026889
ASLNC06184	0.0021679	0.0149	0.42	down	chr5	177310865	177317533	6668	uc003mie
ASLNC17085	0.0021934	0.015	0.57	down	chr19	36519777	36521670	1893	AK024852
ASLNC09474	0.002197	0.015	0.57	down	chr12	123964079	123964618	539	uc009zyf
ASLNC11235	0.0022104	0.0151	0.45	down	chr16	33659897	33660388	491	uc002eds
BF895497	0.002245	0.0153	0.37	down	chr19	7339554	7339788	234	chr19:7320850-7339925
ASLNC16667	0.0023846	0.0159	0.5	down	chr6	42040803	42042487	1684	AK022376
ASLNC01754	0.002418	0.016	0.45	down	chr16	29210041	29293098	83057	NR_002939
AW979087	0.0024412	0.0162	0.43	down	chr1	148808376	148808867	491	HMLincRNA1030
ASLNC07931	0.0024675	0.0163	0.44	down	chr9	42847906	42883134	35228	uc004acq

ASLNC01026	0.0025608	0.0168	0.56	down	chr6_qb1_hap2	4266694	4283007	16313	NR_001435
ASLNC23764	0.0025721	0.0168	0.55	down	chr9	37903051	37905658	2607	BC069218
W05807	0.0026479	0.0171	0.29	down	chr2	37570138	37686025	115887	chr2:37629600-37715550
ASLNC15172	0.0027167	0.0175	0.27	down	chr1	112114817	112116714	1897	AF070632
ASLNC18461	0.0027623	0.0177	0.44	down	chr21	41790654	41792863	2209	AK092554
DB558098	0.0028122	0.0179	0.28	down	chr21	16925160	16925599	439	chr21:16915600-16968019
ASLNC20698	0.0028498	0.018	0.47	down	chr20	61461783	61472973	11190	AK127527
ASLNC08161	0.0028781	0.0181	0.51	down	chr9	42855491	42883134	27643	uc010mmy
ASLNC11243	0.0029469	0.0185	0.45	down	chr16	31880823	31881055	232	uc002ect
ASLNC14902	0.0029528	0.0185	0.49	down	chr5	115832558	115834005	1447	AB002438
ASLNC19575	0.0029852	0.0186	0.46	down	chr1	206041489	206044048	2559	AK123264
AA633838	0.0030204	0.0188	0.37	down	chr1	148811427	148811845	418	HMLincRNA1030
ASLNC05891	0.0031128	0.0193	0.58	down	chr5	148766633	148788430	21797	uc003lqq
DB077273	0.0031228	0.0193	0.43	down	chr2	107737032	107795236	58204	chr2:107594300-107750025
ASLNC18149	0.0032266	0.0198	0.55	down	chr4	90422783	90424991	2208	AK074440
DB324401	0.0032534	0.0199	0.49	down	chr2	19100957	19101523	566	chr2:19091050-19143450
ASLNC17732	0.0032843	0.0201	0.51	down	chr20	42418735	42421098	2363	AK055783
ASLNC21099	0.0033724	0.0205	0.53	down	chr7	130265507	130267505	1998	AK129699
ASLNC15891	0.0034542	0.0209	0.6	down	chr13	97727727	97728409	682	AF339801
BP872601	0.0034571	0.0209	0.46	down	chr7	79713672	79779708	66036	chr7:79757325-79769550
ASLNC17999	0.0034801	0.021	0.61	down	chr4	8261190	8263373	2183	AK057561
ASLNC24656	0.0034866	0.0211	0.43	down	chr6	25907020	25919928	12908	Y10513
ASLNC07232	0.0035955	0.0216	0.57	down	chr7	142103175	142209229	106054	uc003wad
ASLNC02726	0.0036531	0.0218	0.43	down	chr14	105900639	105948945	48306	HIV1716
ASLNC07618	0.0037317	0.0222	0.51	down	chr8	80738880	80740951	2071	uc003ybk
CA433797	0.0038717	0.0228	0.49	down	chr14	65749284	66032796	283512	chr14:65797475-66001975

ASLNC17446	0.0039145	0.0229	0.51	down	chr16	20773749	20775847	2098	AK027199
ASLNC01637	0.0039407	0.023	0.58	down	chr14	101088312	101091766	3454	NR_002770
ASLNC23407	0.0040609	0.0235	0.51	down	chr12	69204342	69207642	3300	BC043182
ASLNC03131	0.0041221	0.0238	0.46	down	chr19	15800756	15807226	6470	LIT3336
ASLNC08469	0.0041232	0.0238	0.45	down	chr10	99368551	99372506	3955	uc001kof
ASLNC16850	0.0042262	0.0242	0.56	down	chr5	167701272	167703399	2127	AK023753
ASLNC19507	0.0042944	0.0245	0.52	down	chr7	130359933	130362130	2197	AK122774
ASLNC10340	0.0042947	0.0245	0.49	down	chr14	22062413	22086559	24146	uc001wft
ASLNC23700	0.0044937	0.0253	0.53	down	chr1	85390767	85392474	1707	BC064139
ASLNC10358	0.0045049	0.0254	0.52	down	chr14	22074347	22086559	12212	uc001wgf
ASLNC23689	0.0045775	0.0257	0.58	down	chr21	34401692	34403975	2283	BC063139
AA936595	0.0045982	0.0258	0.55	down	chr2	43178387	43182844	4457	chr2:43167775-43268825
ASLNC19125	0.0046423	0.0259	0.63	down	chr16	66272177	66275119	2942	AK096635
ASLNC03153	0.0046618	0.026	0.54	down	chr7	155285494	155294527	9033	LIT3481
ASLNC10141	0.0046919	0.0261	0.49	down	chr14	101093399	101096493	3094	uc001ykh
ASLNC08074	0.0047171	0.0262	0.46	down	chr9	66944086	66979312	35226	uc004aen
ASLNC18679	0.0047177	0.0262	0.4	down	chr15	59134331	59136802	2471	AK094258
ASLNC21218	0.0048088	0.0265	0.55	down	chr12	56517142	56523811	6669	AK130110
ASLNC01469	0.004852	0.0268	0.53	down	chr11	66841885	66915734	73849	NR_024469
ASLNC19173	0.0050023	0.0274	0.54	down	chr2	241274423	241277212	2789	AK096937
ASLNC07761	0.0051404	0.0279	0.62	down	chr8	12438958	12567502	128544	uc003wvy
ASLNC12290	0.0052113	0.0282	0.58	down	chr19	46651913	46698399	46486	uc002orb
BF759844	0.0053105	0.0287	0.55	down	chr7	155980128	155980460	332	chr7:155933475-155996100
ASLNC16271	0.0053356	0.0288	0.5	down	chr1	162921158	162923422	2264	AK021467
ASLNC18091	0.0053815	0.0289	0.56	down	chr4	160046637	160048644	2007	AK057981
ASLNC13025	0.0054915	0.0292	0.52	down	chr22	19798896	19805980	7084	uc002zuj

ASLNC20049	0.0055253	0.0293	0.55	down	chr8	102133457	102157655	24198	AK124959
ASLNC11308	0.0056105	0.0296	0.5	down	chr17	37036104	37045191	9087	uc010cxq
ASLNC15675	0.0057618	0.0302	0.58	down	chr3	112949354	112952671	3317	AF143877
ASLNC21231	0.005779	0.0303	0.5	down	chr18	44798040	44800145	2105	AK130189
ASLNC21098	0.0057832	0.0303	0.61	down	chr14	54317478	54319625	2147	AK129698
ASLNC02233	0.0057953	0.0303	0.56	down	chrX	133505073	133508326	3253	NR_024607
ASLNC22463	0.005803	0.0303	0.54	down	chr3	143215856	143224505	8649	BC025982
ASLNC14962	0.0058225	0.0304	0.55	down	chr8	11002131	11004128	1997	AB073660
ASLNC23150	0.005839	0.0304	0.51	down	chr8	107351656	107354179	2523	BC040619
ASLNC24352	0.0058825	0.0306	0.49	down	chr10	46555052	46556469	1417	DQ786233
AI364598	0.0059538	0.0308	0.47	down	chr1	148811556	148811942	386	HMLincRNA1030
ASLNC16527	0.0062498	0.032	0.54	down	chr4	74336117	74337789	1672	AK022086
AA858138	0.0063413	0.0323	0.55	down	chr2	177771644	177772046	402	HMLincRNA870
ASLNC15942	0.0063581	0.0324	0.51	down	chr3	46909290	46911554	2264	AF495723
BF767775	0.0063875	0.0325	0.52	down	chr4	152457498	152457800	302	HMLincRNA1014
DB074989	0.0066627	0.0335	0.37	down	chr2	37465164	37692871	227707	chr2:37629600-37715550
ASLNC04837	0.0066812	0.0335	0.6	down	chr2	114014104	114016712	2608	uc002tjx
ASLNC12871	0.0067192	0.0336	0.59	down	chr22	41281290	41307961	26671	uc003bcs
ASLNC21223	0.0067577	0.0338	0.58	down	chr12	23670891	23673346	2455	AK130118
BG477047	0.0068575	0.0342	0.44	down	chr11	127638146	127680648	42502	chr11:127666200-127694325
ASLNC16295	0.0068613	0.0342	0.6	down	chr10	13729754	13731675	1921	AK021524
ASLNC14379	0.006918	0.0345	0.58	down	chr1	89994815	89997411	2596	AL133652
ASLNC04531	0.0070657	0.035	0.34	down	chr2	34756150	34801365	45215	uc002rpe
ASLNC04435	0.0070774	0.035	0.53	down	chr2	130440634	130454515	13881	uc002tpw
ASLNC17321	0.007122	0.0352	0.62	down	chr6	109054040	109055355	1315	AK026286
ASLNC09842	0.007402	0.0363	0.47	down	chr13	21513113	21748657	235544	uc001uoi

ASLNC02824	0.0074902	0.0366	0.59	down	chr11	1972983	1974511	1528	HIV2496
AI914372	0.0076054	0.037	0.56	down	chr2	114317329	114355962	38633	chr2:114283350-114336075
ASLNC20331	0.0077477	0.0375	0.55	down	chr4	8294511	8296504	1993	AK126123
ASLNC21523	0.0077765	0.0376	0.59	down	chr7	36544156	36546022	1866	AK130782
ASLNC15104	0.007787	0.0376	0.52	down	chr16	83956534	83957845	1311	AF052103
ASLNC15055	0.0078253	0.0377	0.58	down	chr5	9210256	9210593	337	AF009279
BG323747	0.0079999	0.0383	0.56	down	chr12	1510304	1619404	109100	chr12:1511350-1531175
ASLNC15598	0.0080437	0.0384	0.6	down	chr10	88833213	88835085	1872	AF090918
ASLNC22790	0.0082487	0.0392	0.61	down	chr21	44592077	44592606	529	BC035333
ASLNC16053	0.0084116	0.0399	0.57	down	chr6	107272019	107281693	9674	AJ420564
ASLNC12152	0.0084859	0.0401	0.59	down	chr19	7759263	7761065	1802	uc002mim
ASLNC01762	0.0085082	0.0402	0.46	down	chr16	55208873	55210231	1358	NR_001447
exon4582	0.0087078	0.0409	0.5	down	chr9	125146233	125146501	268	chr9:125140075-125157500
BC036122	0.0087839	0.0411	0.54	down	chr1	89871218	90002649	131431	chr1:89972700-89985275
AW856643	0.0090637	0.0421	0.52	down	chr1	148809244	148809633	389	HMLincRNA1030
BM992765	0.0090779	0.0421	0.5	down	chr1	148804911	148805524	613	HMLincRNA1030
ASLNC25050	0.0092915	0.0429	0.49	down	chr13	96806820	96807071	251	uc.356+
AI376835	0.0094475	0.0435	0.43	down	chr2	16131738	16138690	6952	HMLincRNA296
ASLNC02827	0.0094902	0.0436	0.35	down	chr11	1973038	1974440	1402	HIV2503
BG779924	0.0095271	0.0437	0.52	down	chr8	57125554	57126329	775	HMLincRNA1074
ASLNC16276	0.0095321	0.0437	0.45	down	chr11	66206827	66209310	2483	AK021479
BI001709	0.0096205	0.044	0.61	down	chr2	177771658	177772015	357	HMLincRNA870
ASLNC11520	0.009699	0.0442	0.55	down	chr17	37036104	37049977	13873	uc002hxi
ASLNC08321	0.0099486	0.0451	0.59	down	chr9	115893738	115901328	7590	uc004big
BQ707656	0.0100257	0.0453	0.53	down	chr1	171011667	171299750	288083	chr1:171117525-171191468
ASLNC23542	0.0100901	0.0455	0.55	down	chr7	130270151	130271367	1216	BC046210



AK091430	0.0100924	0.0455	0.61	down	chrX	109326293	109570114	243821	chrX:109471950-109537553
ASLNC18449	0.0101735	0.0457	0.6	down	chr17	16258562	16260728	2166	AK092443
ASLNC07696	0.0103102	0.0462	0.43	down	chr8	9219970	9230000	10030	uc003wsq
ASLNC11311	0.0103526	0.0463	0.52	down	chr17	13620873	13636592	15719	uc002goc
ASLNC16530	0.010797	0.0478	0.6	down	chr1	162970649	162972408	1759	AK022093
ASLNC17897	0.0108007	0.0478	0.62	down	chr11	113436236	113437471	1235	AK056988
AI431896	0.0108366	0.0479	0.56	down	chr2	150152574	150412993	260419	HMLincRNA854
ASLNC14222	0.0110579	0.0485	0.58	down	chr20	23109580	23110378	798	CR626211
ASLNC16121	0.011088	0.0486	0.58	down	chr4	152311825	152313971	2146	AK000802
ASLNC23197	0.0111012	0.0486	0.54	down	chr15	58658577	58660864	2287	BC040965
ASLNC15046	0.0111062	0.0486	0.56	down	chr5	11293478	11294508	1030	AF009270
N54862	0.0116475	0.0504	0.53	down	chrX	63987315	63987654	339	chrX:63958875-64010675
AA164731	0.0116845	0.0504	0.57	down	chr17	44078944	44079384	440	HMLincRNA268
ASLNC00596	0.0117297	0.0505	0.42	down	chr1	113267494	113268818	1324	NR_002796
CV403658	0.0117302	0.0505	0.47	down	chr9	32935850	32936456	606	chr9:32926300-32939200
ASLNC21865	0.0118773	0.051	0.36	down	chr16	57298537	57299029	492	AL360255
ASLNC23559	0.0119309	0.0512	0.59	down	chr16	965761	971591	5830	BC047239
ASLNC17304	0.0119698	0.0512	0.56	down	chr4	111186454	111187927	1473	AK026192
ASLNC08027	0.0122371	0.0521	0.59	down	chr9	130287600	130289885	2285	uc004bvg
ASLNC21152	0.0124058	0.0527	0.48	down	chr4	23481679	23483485	1806	AK129851
ASLNC07204	0.0124738	0.0529	0.5	down	chr7	100395448	100397831	2383	uc010lhn
DA636405	0.0124928	0.0529	0.6	down	chr2	16044742	16045313	571	HMLincRNA297
AW969510	0.0125862	0.0533	0.62	down	chr19	12751245	12751673	428	HMLincRNA1474
ASLNC10132	0.0125895	0.0533	0.49	down	chr14	60839501	60859289	19788	uc001xfm
ASLNC15785	0.0127933	0.054	0.62	down	chr1	158146507	158146968	461	AF161344
ASLNC08728	0.0128114	0.054	0.62	down	chr10	72245721	72250246	4525	uc001jrl

ASLNC23977	0.013145	0.0551	0.59	down	chr17	40338605	40338848	243	BC127920
ASLNC01684	0.0132237	0.0552	0.64	down	chr15	82848741	82861082	12341	NR_003246
BG777151	0.0133417	0.0556	0.37	down	chr8	6533147	6553096	19949	chr8:6541450-6552025
ASLNC07538	0.0133661	0.0556	0.63	down	chr8	12040340	12075059	34719	uc003wvd
ASLNC18906	0.0134475	0.0559	0.47	down	chr13	110064242	110066701	2459	AK095260
ASLNC17952	0.0135115	0.0561	0.56	down	chr7	5380849	5382846	1997	AK057263
T12556	0.0136403	0.0565	0.54	down	chr9	136584404	136585564	1160	chr9:136571925-136590625
ASLNC15461	0.0136841	0.0566	0.64	down	chr15	99428054	99428535	481	AF086335
ASLNC22214	0.014007	0.0575	0.56	down	chr1	202647155	202648167	1012	BC009873
ASLNC01984	0.0141259	0.0579	0.58	down	chr19	15800756	15807231	6475	NR_015379
exon4143	0.0143344	0.0584	0.56	down	chr8	37396846	37397140	294	chr8:37377750-37470000
AI700526	0.0143594	0.0585	0.56	down	chr3	71786327	71786738	411	chr3:71738000-71797250
ASLNC06133	0.0143731	0.0585	0.56	down	chr5	1226255	1231720	5465	uc003jbv
T94317	0.0144104	0.0586	0.6	down	chr14	30804475	30804740	265	HMLincRNA313
ASLNC08349	0.0146189	0.0591	0.4	down	chr9	66944086	66971724	27638	uc004aem
BG898852	0.0146274	0.0591	0.52	down	chr12	68760515	68761020	505	chr12:68755950-68789750
ASLNC14831	0.0148397	0.0596	0.67	down	chr14	101093394	101096497	3103	BC037351
ASLNC24398	0.0148578	0.0596	0.63	down	chr3	52010774	52011373	599	L13433
ASLNC00771	0.0149553	0.0599	0.58	down	chr3	38139204	38153737	14533	NR_024024
ASLNC07635	0.01501	0.0601	0.5	down	chr8	119166914	119169679	2765	uc003yol
ASLNC24634	0.0151811	0.0606	0.58	down	chr19	9232729	9233201	472	X89673
ASLNC16098	0.0152943	0.0609	0.62	down	chr13	27433055	27433833	778	AK000205
ASLNC20459	0.0153278	0.061	0.63	down	chr17	3728868	3730768	1900	AK126617
BI011154	0.0155466	0.0616	0.47	down	chr1	148805281	148805790	509	HMLincRNA1030
ASLNC02188	0.0157676	0.0621	0.47	down	chr22	40866157	40870519	4362	NR_002570
BX109833	0.0158026	0.0622	0.6	down	chr17	10600246	10600952	706	chr17:10598925-10629325

ASLNC14618	0.0158602	0.0624	0.6	down	chr21	45728458	45729236	778	BC013148
ASLNC24350	0.0161534	0.0632	0.62	down	chr4	9408497	9409203	706	DQ786220
ASLNC08766	0.0163382	0.0637	0.61	down	chr10	4917673	4924167	6494	uc001ihn
DA035282	0.0164212	0.064	0.59	down	chr17	10573845	10612072	38227	chr17:10598925-10629325
ASLNC22487	0.0164688	0.0641	0.56	down	chr12	103447796	103449373	1577	BC027983
ASLNC18117	0.0164946	0.0641	0.56	down	chr8	42128446	42129438	992	AK058085
BG204263	0.016591	0.0644	0.5	down	chr7	92322158	92384426	62268	chr7:92340780-92489825
ASLNC19615	0.0169636	0.0653	0.6	down	chr11	8785056	8787982	2926	AK123380
ASLNC01454	0.0170687	0.0656	0.58	down	chr11	65021808	65030513	8705	NR_002819
BG758151	0.0173371	0.0663	0.49	down	chr12	19544329	19597645	53316	chr12:19574525-19658050
ASLNC02832	0.0173501	0.0663	0.59	down	chr11	1953680	1956250	2570	HIV2514
ASLNC16653	0.0173877	0.0663	0.58	down	chr13	40068095	40069344	1249	AK022351
ASLNC19542	0.0174939	0.0666	0.64	down	chr10	14610203	14612303	2100	AK123138
ASLNC17128	0.0179509	0.068	0.64	down	chr4	16485201	16488328	3127	AK024979
ASLNC02144	0.0179845	0.068	0.63	down	chr21	43706401	43722531	16130	NR_026863
ASLNC22607	0.0181265	0.0683	0.59	down	chr11	110790177	110794121	3944	BC031959
ASLNC24385	0.0181616	0.0684	0.55	down	chr5	41195112	41196000	888	J05063
ASLNC14344	0.0181662	0.0684	0.62	down	chr16	258726	272085	13359	DQ656001
ASLNC14724	0.0182967	0.0687	0.63	down	chr4	22007921	22010046	2125	BC020926
ASLNC18330	0.0184277	0.0691	0.55	down	chr8	30539986	30543393	3407	AK091440
ASLNC07642	0.0187978	0.0702	0.6	down	chr8	128289292	128300515	11223	uc003ysa
ASLNC11101	0.019467	0.0721	0.61	down	chr16	46947777	47039810	92033	uc002efl
ASLNC24625	0.0196133	0.0725	0.58	down	chrX	152798458	152798753	295	X78938
ASLNC03084	0.0196133	0.0725	0.6	down	chr8	7091654	7092140	486	LIT2085
ASLNC23881	0.0196988	0.0727	0.63	down	chr20	10148059	10148402	343	BC107086
ASLNC24287	0.0202978	0.0746	0.64	down	chr3	172558052	172561331	3279	BX649038

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ASLNC12516	0.0203547	0.0747	0.59	down	chr20	773766	786105	12339	uc010fzz
ASLNC06579	0.0204085	0.0748	0.63	down	chr6	32228557	32230120	1563	uc003n zv
ASLNC15878	0.0207082	0.0753	0.53	down	chr13	101167198	101168050	852	AF339779
ASLNC11303	0.0207809	0.0755	0.61	down	chr17	4331072	4336496	5424	uc002fxw
ASLNC20833	0.0209855	0.0759	0.58	down	chr11	47333461	47339247	5786	AK128134
T02980	0.0215853	0.0775	0.57	down	chr22	25826979	25827503	524	HMlincRNA1218
ASLNC22001	0.0220849	0.0789	0.63	down	chr12	18217	19669	1452	AY341951
ASLNC16193	0.0222837	0.0795	0.59	down	chr4	57666847	57668938	2091	AK001150
ASLNC15455	0.0231599	0.0816	0.59	down	chr11	57135161	57135619	458	AF086318
ASLNC16173	0.0249836	0.0859	0.57	down	chr1	56803695	56809094	5399	AK001092
ASLNC17037	0.0280361	0.093	0.62	down	chr19	8545978	8547054	1076	AK024563
ASLNC17464	0.0292888	0.0962	0.63	down	chr6	154821136	154823043	1907	AK027364
ASLNC11173	< 1e-07	< 1e-07	0.16	down	chr16	55227175	55228499	1324	uc002ejp
ASLNC10036	< 1e-07	< 1e-07	0.17	down	chr14	105124270	105401515	277245	uc001yrs

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**Supplementary Table S4. List of possible miR503HG-interacting proteins identified by mass spectrometry**

<b>Protein name</b>	<b>Gene name</b>	<b>Molecular weight</b>	<b>PepCount</b>	<b>UniquePepCount</b>
Poly(rC)-binding protein 2	<i>PCBP2</i>	39	17	6
ADP/ATP translocase 2	<i>SLC25A5</i>	33	11	4
ADP/ATP translocase 1	<i>SLC25A4</i>	33	10	4
Fructose-bisphosphate aldolase B	<i>ALDOB</i>	35	6	3
Heterogeneous nuclear ribonucleoprotein A/B	<i>HNRNPAB</i>	36	6	2
L-lactate dehydrogenase B chain	<i>LDHB</i>	36	6	1
Malate dehydrogenase	<i>MDH2</i>	36	5	3
Heterogeneous nuclear ribonucleoproteins A2/B1	<i>HNRNPA2B1</i>	37	4	1
Electron transfer flavoprotein subunit alpha	<i>ETF A</i>	30	4	1
Adenylate kinase 2	<i>AK2</i>	26	4	1
3-hydroxyacyl-CoA dehydrogenase type-2	<i>HSD17B10</i>	26	4	1
Glutathione S-transferase A1	<i>GSTA1</i>	26	4	1
Ezrin	<i>EZR</i>	70	3	2
Aspartate aminotransferase	<i>GOT2</i>	43	3	2
Alcohol dehydrogenase [NADP(+)]	<i>AKR1A1</i>	37	3	1
Fumarate hydratase	<i>FH</i>	55	3	1
40S ribosomal protein S3a	<i>RPS3A</i>	35	3	1
Serine-threonine kinase receptor-associated protein	<i>STRAP</i>	38	3	1
Selenium-binding protein 1	<i>SELENBP1</i>	45	2	1
Phosphoenolpyruvate carboxykinase	<i>PCK1</i>	69	2	1
T-complex protein 1 subunit	<i>CCT7</i>	59	2	1
Alpha-aminoacidic semialdehyde dehydrogenase	<i>ALDH7A1</i>	55	2	1
Glutathione synthetase	<i>GSS</i>	52	1	1
Methylcrotonoyl-CoA carboxylase subunit alpha	<i>MCCC1</i>	76	1	1
Malate dehydrogenase	<i>MDH1</i>	36	1	1

**Supplementary Table S5. Oligonucleotide sequences in this study**

<b>Gene</b>	<b>Sequence</b>
3'-RACE GSP1	5' CTGTAAGTCCAAGGAATCCTCTCCC 3'
3'-RACE GSP2	5' CCAAATGAGTCAGTCATGATGGGA 3'
5'-RACE GSP1	5' ACATTGACACACATCTGTTCA 3'
5'-RACE GSP2	5' TTCCCATCATGACTGACTCAT 3'
miR503HG full length	F: 5' GAAGGTAGAAGGTGGGGTCTG 3' R: 5' TAACGGAAATCAAAAGCAGCA 3'
miR503HG qPCR	F: 5'CTTGAAGGCATCCAGCATCTC 3' R: 5'TTGGGACACTTGGGTGGTTTT 3'
miR503HG fragment1	F: 5'GCCGGACGCGTGTTCCTGCCA 3' R: 5'GCCGGATGGCGCGGGCTTGGT 3'
miR503HG fragment2	F:5'GCCTGCAGGACCCAGGAATGT 3' R:5'GCCTTTGAGAGATGATTGTAT 3'
miR503HG fragment3	F:5'TTTATATGCATTTTAAAACTC 3' R: 5'ACATTTTAAAGGATGTATAA 3'
miR503HG fragment4	F: 5' TGTTCCCCCATACCACACTT 3' R: 5' CTGTGACCCTGGTTATTGACA 3'
miR503HG fragment5	F: 5' AAAGGCAGTGGTCACA ACTCT 3' R: 5' AAAAGCAGCATA CAGTCATTC 3'
U1 snRNA	F: 5' GGGAGATACCATGATCACGAAGGT 3' R: 5' CCACAAATTATGCAGTCGAGTTTCCC 3'
$\beta$ -actin	F: 5' AGTTGCGTTACACCCTTCTTG 3' R: 5' GCTGTCACCTTCACCGTTCC 3'
HNRNPA2B1 full-length	F: 5' ATGGAGAGAGAAAAGGAAC 3' R: 5' TCAGTATCGGCTCCTCCC 3'
HNRNPA2B1 qPCR	F: 5' GGAGTGGAAGAGGAGGCAAC 3' R: 5' CAGGTCCTCCTCCATACCCA 3'

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HNRNPA2B1 fragment1	F: 5' ATGGAGAGAGAAAAGGAACAG 3' R: 5' TCAAGATCCTCCTCTAAAGTT 3'
HNRNPA2B1 fragment2	F: 5' GATGGATATGGCAGTGGACGT 3' R: 5' TCAGTATCGGCTCCTCCCACC 3'
JAK2	F: 5' TGGGGTTTTCTGGTGCCTTT 3' R: 5' TAGAGGGTCATACCGGCACA 3'
STAT3	F: 5' AGCAGCACCTTCAGGATGTC 3' R: 5' GCATCTTCTGCCTGGTCACT 3'
JNK	F: 5' GTTGGGTGCATCATGGGAGA 3' R: 5' CGGGTGTTGGAGAGCTTCAT 3'
ERK1/2	F: 5' AACAGGCCCATCTTTCCAGG 3' R: 5' CCAGAGCTTTGGAGTCAGCA 3'
$\beta$ -catenin	F: 5' ATGACTCGAGCTCAGAGGGT 3' R: 5' ATTGCACGTGTGGCAAGTTC 3'
p52	F: 5' CTACTIONGACTACGGCGTCAC 3' R: 5' GAGTCTCCATGCCGATCCAG 3'
p65	F: 5' ATAGAAGAGCAGCGTGGGGA 3' R: 5' GCCTGGTCCCGTGAAATACA 3'
Abca1	F: 5' GGAGGGAGAGCACAGGCTTT 3' R: 5' GCTCGCAATTACGGGGTTTT 3'
Cyp7a1	F: 5' TTACAAGGCGGGACACACAG 3' R: 5' GGAATGGTGTGTTGCTTGCGA 3'
miR503 probe	5' UAGCAGCGGGAACAGUUCUGCAG3'
miR503HG siRNA-1#	5' GGACAUUGAAUGACUGUAUTT 3'
miR503HG siRNA-2#	5' GCAGUGGUCACAACUCUGUTT 3'
HNRNPA2B1 siRNA	5' GAAAUACCAUACCAUCAAUTT 3' 5' AUUGAUGGUAUGGUAUUUCTT 3'
siRNA control (NC)	5' UUCUCCGAACGUGUCACGUTT 3'

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	5' ACGUGACACGUUCGGAGAATT 3'
miR503 mimics	5' UAGCAGCGGGAACAGUUCUGCAG 3'
miR503 inhibitor	5' CUGCAGAACUGUCCCCGCUGCUA 3'

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**Supplementary Table S6. Antibodies used in this study**

<b>Protein</b>	<b>Cat no.</b>	<b>Company</b>	<b>source</b>	<b>KD</b>
HNRNPA2B1	SC-374052	Santa cruz	Mouse	34-40
HA	3724	CST	Rabbit	/
p52	4882	CST	Rabbit	52
p65	sc-372	Santa cruz	Rabbit	65
p-p65(S536)	3033s	Santa cruz	Rabbit	65
JAK2	17670-1-AP	Proteintech	Rabbit	125
p-JAK2 (Tyr1007)	4406	CST	Rabbit	125
STAT3	10253-2-AP	Proteintech	Rabbit	86
p-STAT3(S727)	9134P	CST	Rabbit	86
JNK	51151-1-AP	Proteintech	Rabbit	48
p-JNK(Thr183/Tyr185)	4668	CST	Rabbit	48
ERK1/2	16443-1-AP	Proteintech	Rabbit	38-44
p-ERK1/2(Thr202/Tyr204)	4377	CST	Rabbit	44
$\beta$ -catenin	17561-1-AP	Proteintech	Rabbit	92
c-Myc	5605	CST	Rabbit	57-65
EZH2	21800-1-AP	Proteintech	Rabbit	86
COX2	ab52237	abcam	Rabbit	69
VCAM1	sc-13160	Santa cruz	Mouse	95
Lamin B1	13435	CST	Rabbit	68
GAPDH	5174	CST	Rabbit	37

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ARHGEF19	sc-137301	Santa cruz	Goat	89
$\beta$ -actin	A5441	Sigma	Mouse	43

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