

## LincRNA-01317 inhibits human gastric cancer growth

**Supplementary Table 1.** Primer sequences for real time PCR (5'-3')

Primers for real time PCR		
<i>RP11-383M4.6</i>	forward	AGAGGCAGCAGAAGAGGAGGAAG
	reverse	TTGGCGATGGTCTTGACTGAATCC
<i>LINC01098</i>	forward	AGCAGCCGAGACAGAGCAGAG
	reverse	GGTGGATGAACGCCAGATAGCTTC
<i>RP11-434D2.7</i>	forward	AGAGGCAGCAGAAGAGGAGGAAG
	reverse	TTGGCGATGGTCTTGACTGAATCC
<i>LINC00969</i>	forward	GCACAGCCAGAGGACAACACATC
	reverse	ACGTAGGAGGCATTCTCGACACC
<i>LINC00886</i>	forward	CTAGGATTACAGGCACGCACCAC
	reverse	AGGCTGAGGCAGGTGGATCAC
<i>HCG17</i>	forward	GCCACACCGTAGTCATAGAGCAAG
	reverse	GGAGGAACAGCCGTGCATCAAG
<i>RP11-85G18.6</i>	forward	AGAGGCAGCAGAAGAGGAGGAAG
	reverse	TTGGCGATGGTCTTGACTGAATCC
<i>PGM5P2</i>	forward	CGAGATCGTGGTGCAGATGGC
	reverse	GGAGACCGCAGGTGTTGACAAG
<i>LINC00869</i>	forward	TTCGGTCTTGCCTTGAACACATCC
	reverse	CCTCCTCCTCCTCCTCCTCCTC
<i>FAM27L</i>	forward	GGCTCCGGCCTGACTTCTCC
	reverse	CTTGGCTGGAGTGTGGTCATCTTG
<i>ZNF883</i>	forward	ATCCCTGACCCAGCATCAGA
	reverse	TCCGGGTAAGGACTTACCACA
<i>LINC01317</i>	forward	AGGCGGAGTGTGCTCTGTC
	reverse	GAGGCAGGAGAATGGCGTGAAC
<i>CROCCP2</i>	forward	CTGGCGGACTCCTCTTCTCCTC
	reverse	GAGTAACTTGTGGCAGGCGTGAG
<i>RP1-274L7.1</i>	forward	CGAGGCGTGCGGTCTTCTG
	reverse	TCCTCCGTCCGTAGCGTACAG
<i>RP11-114H24.7</i>	forward	AGAGGCAGCAGAAGAGGAGGAAG
	reverse	TTGGCGATGGTCTTGACTGAATCC
<i>LINC00477</i>	forward	TCCACTTCTGCCACTCCTGAGAC
	reverse	GCTATGACCATATCGCTGCACTCC
<i>RP4-806M20.3</i>	forward	CGCACGCCTCTCAACTACATCC
	reverse	AGGACCACCAAGGACCACAGG
<i>CXADRP3</i>	forward	TGCTTGCTCTAGTGCTCATTGGTC
	reverse	GCTTCTGGCAGCGGACGTAC
<i>TSIX</i>	forward	TGGATGGCTTCAATGTCTGGCTTC
	reverse	CTGAGGCAGGAGAATGGTGTGAAC
<i>XIST</i>	forward	TCCAGTTCTGTCGAGTGTCAAG
	reverse	GCAAGACCTTCAGCCGCCATC
<i>TSPAN</i>	forward	CCTTGGAGTCGAGTCAGGGT
	reverse	CCCGAAGTAGGTAAGAGTCACC
<i>KCNQ10T1</i>	forward	GAGGCTTTCAAAGTACAGGGG
	reverse	CAAGGAGTCAATCTCAGCGTC
<i>YIPF</i>	forward	GTTCCATCAGAGATGCTCATGTC
	reverse	GCAAAGGAGGCTCTTCATCAA

## LincRNA-01317 inhibits human gastric cancer growth

<i>GABPB</i>	forward	TGGGAAAGAGGTTGCTAGAAGC
	reverse	GTGGAGGGGTGATGTTCCAAG
<i>LPP</i>	forward	CCCGTAGTTGCTCCAAAAC
	reverse	CCCTGACTTTGAAAGCCTCTTC
<i>PEX26</i>	forward	GTGCTCCCTGTGTGTTGTG
	reverse	GGGACCTGGTAATACTGAAGGAC
<i>TTL</i>	forward	AACGAGCTGTGCTACAAGGTC
	reverse	GCGTGGTCGATGAGGAAGA
<i>KCNJ6</i>	forward	GACAGAATCCATGACTAACGTCC
	reverse	CTGGCCTGCTTAGGCAACTTT
<i>SMGL</i>	forward	GGCCTCGAAACTGATAACATGA
	reverse	ACTTTTCCGTCGGCTACTTATG
<i>CNKSR</i>	forward	GACTGCCTGCAACAATATGTCC
	reverse	CTGGTGCCAATCCGTGTGAC
<i>GAPDH</i>	forward	GCCACCCAGAAGACTGTGGATGGC
	reverse	CATGTAGGCCATGAGGTCCACCAC

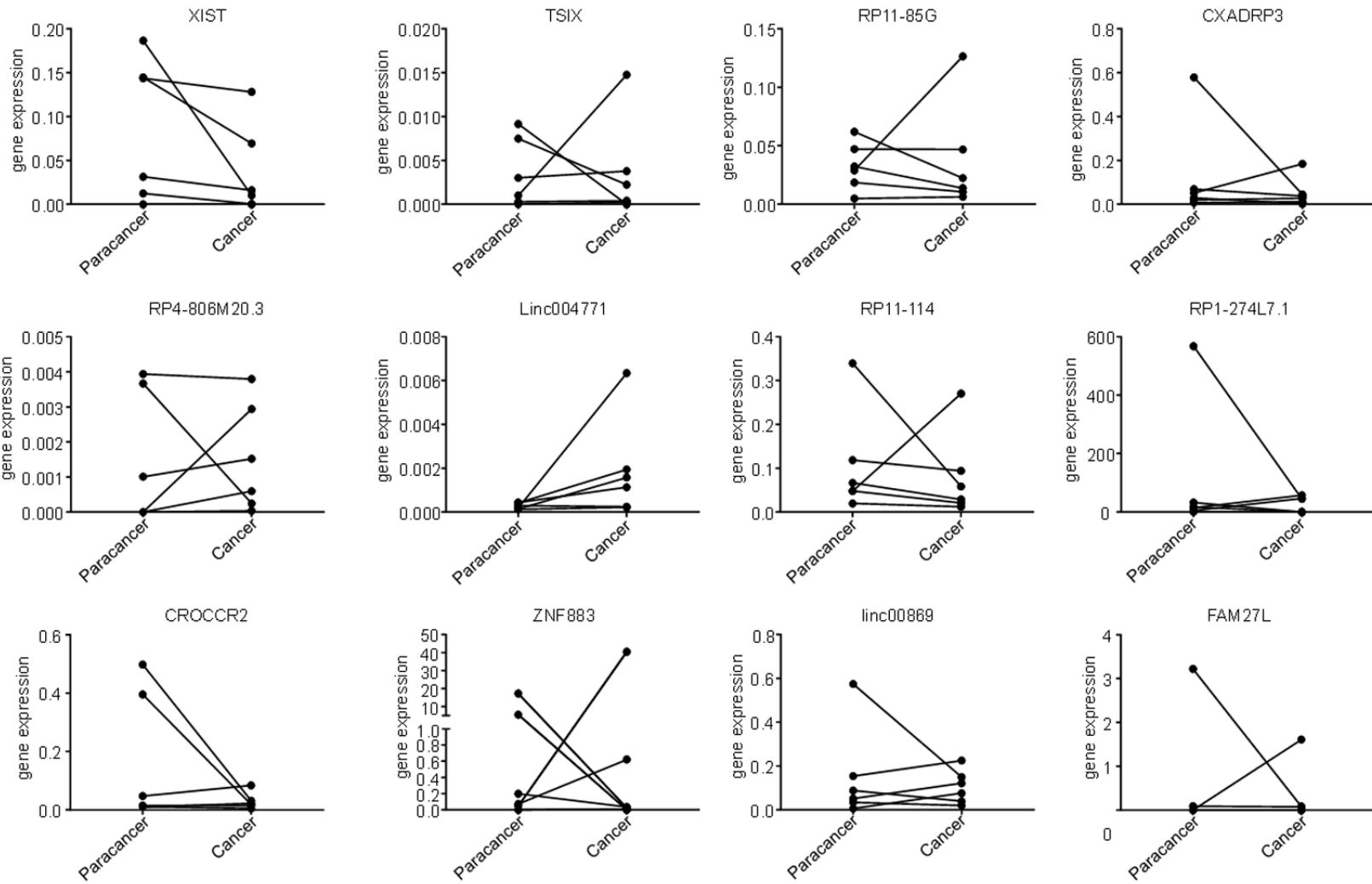
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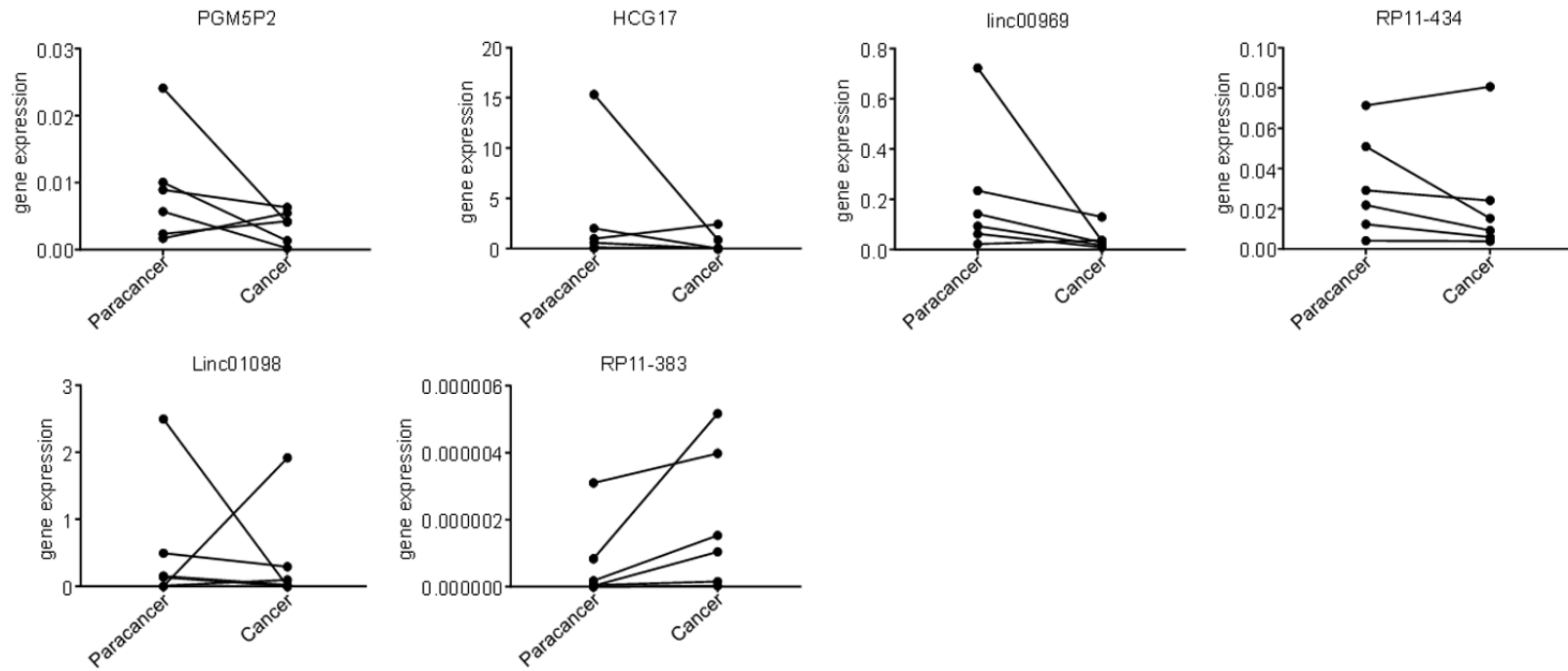
**Supplementary Table 2.** Most susceptible to mutation in TCGA

Symbol	Name	Cytoband	Type	# Affected	# Affected	# Mutations
				Cases in Cohort	Cases Across the GDC	
XIST	X inactive specific transcript (non-protein coding)	Xq13.2	lincRNA	43/206 (20.87%)	554/10202	54
TSIX	TSIX transcript, XIST antisense RNA	Xq13.2	lincRNA	25/206 (12.14%)	345/10202	32
RP11-85G18.6	RP11-85G18.6	10p12.1	lincRNA	21/206 (10.19%)	321/10202	30
CXADRP3	coxsackie virus and adenovirus receptor pseudogene 3	18p11.21	lincRNA	17/206 (8.25%)	191/10202	17
RP4-806M20.3	RP4-806M20.3	20q13.32	lincRNA	15/206 (7.28%)	127/10202	15
CTD-2139B15.2	CTD-2139B15.2	5p15.1	lincRNA	14/206 (6.80%)	117/10202	9
LINC00477	long intergenic non-protein coding RNA 477	12p12.1	lincRNA	13/206 (6.31%)	128/10202	11
RP11-114H24.7	RP11-114H24.7	15q24.3	lincRNA	12/206 (5.83%)	188/10202	12
RP1-274L7.1	RP1-274L7.1		lincRNA	11/206 (5.34%)	160/10202	12
CROCCP2	ciliary rootlet coiled-coil, rootletin pseudogene 2	1p36.13	lincRNA	11/206 (5.34%)	260/10202	11
AC015849.16	AC015849.16	17q12	lincRNA	10/206 (4.85%)	139/10202	10
CTD-2066L21.3	CTD-2066L21.3	5p13.3	lincRNA	10/206 (4.85%)	108/10202	10
LINC01317	long intergenic non-protein coding RNA 1317	2p22.3	lincRNA	9/206 (4.37%)	146/10202	9
CTD-2206N4.2	CTD-2206N4.2	17q12	lincRNA	9/206 (4.37%)	139/10202	11
ZNF883	zinc finger protein 883	9q32	lincRNA	9/206 (4.37%)	112/10202	9
FAM27L	family with sequence similarity 27-like	17p11.2	lincRNA	9/206 (4.37%)	114/10202	8
LINC00869	long intergenic non-protein coding RNA 869	1q21.2	lincRNA	9/206 (4.37%)	138/10202	9
PGM5P2	phosphoglucomutase 5 pseudogene 2	9p11.2	lincRNA	8/206 (3.88%)	149/10202	8
RP11-147L13.11	RP11-147L13.11	17q24.2	lincRNA	8/206 (3.88%)	105/10202	8
HCG17	HLA complex group 17 (non-protein coding)	6p22.1	lincRNA	8/206 (3.88%)	79/10202	7
RP11-313I2.11	RP11-313I2.11	11q14.3	lincRNA	7/206 (3.40%)	140/10202	6
LLNLR-249E10.1	LLNLR-249E10.1	19p13.12	lincRNA	7/206 (3.40%)	84/10202	7
LINC00886	long intergenic non-protein coding RNA 886	3q25.31	lincRNA	7/206 (3.40%)	75/10202	7
RP11-32B5.8	RP11-32B5.8	15q11.2	lincRNA	7/206 (3.40%)	102/10202	7
RP11-266K4.9	RP11-266K4.9	12p13.31	lincRNA	6/206 (2.91%)	38/10202	6
LINC00969	long intergenic non-protein coding RNA 969	3q29	lincRNA	6/206 (2.91%)	127/10202	6
RP11-651P23.5	RP11-651P23.5	3q25.1	lincRNA	6/206 (2.91%)	80/10202	6
RP11-434D2.7	RP11-434D2.7	17p11.2	lincRNA	6/206 (2.91%)	110/10202	6
XXbac-BPG308J9.3	XXbac-BPG308J9.3	6p22.1	lincRNA	6/206 (2.91%)	124/10202	6
LINC01098	long intergenic non-protein coding RNA 1098	4q34.3	lincRNA	6/206 (2.91%)	87/10202	6
RP11-383M4.6	RP11-383M4.6	9q21.32	lincRNA	6/206 (2.91%)	221/10202	6
AC022007.5	AC022007.5	3p25.3	lincRNA	6/206 (2.91%)	49/10202	5
RP11-306O13.1	RP11-306O13.1	6q25.2	lincRNA	6/206 (2.91%)	71/10202	6
RP11-219A15.2	RP11-219A15.2	17p11.2	lincRNA	5/206 (2.43%)	106/10202	5
RP11-699L21.1	RP11-699L21.1	3q29	lincRNA	5/206 (2.43%)	44/10202	5
AC016995.3	AC016995.3	2p22.1	lincRNA	5/206 (2.43%)	45/10202	5
AC005522.7	AC005522.7	7q11.23	lincRNA	5/206 (2.43%)	40/10202	6
MIR99AHG	mir-99a-let-7c cluster host gene	21q21.1	lincRNA	5/206 (2.43%)	51/10202	5
LINC00336	long intergenic non-protein coding RNA 336	6p21.31	lincRNA	5/206 (2.43%)	54/10202	5
RP11-813I20.2	RP11-813I20.2	14q22.3	lincRNA	5/206 (2.43%)	57/10202	5
RP11-147L13.13	RP11-147L13.13	17q24.2	lincRNA	5/206 (2.43%)	68/10202	6
SPACA6P-AS	SPACA6P antisense RNA	19q13.41	lincRNA	5/206 (2.43%)	53/10202	5
AC005863.1	AC005863.1	17p12	lincRNA	5/206 (2.43%)	42/10202	5
FLJ33360	FLJ33360 protein	5p15.31	lincRNA	5/206 (2.43%)	80/10202	5
AC004702.2	AC004702.2	17p11.2	lincRNA	5/206 (2.43%)	55/10202	5
KANTR	KDM5C adjacent non-coding transcript	Xp11.22	lincRNA	4/206 (1.94%)	47/10202	5

# LincRNA-01317 inhibits human gastric cancer growth

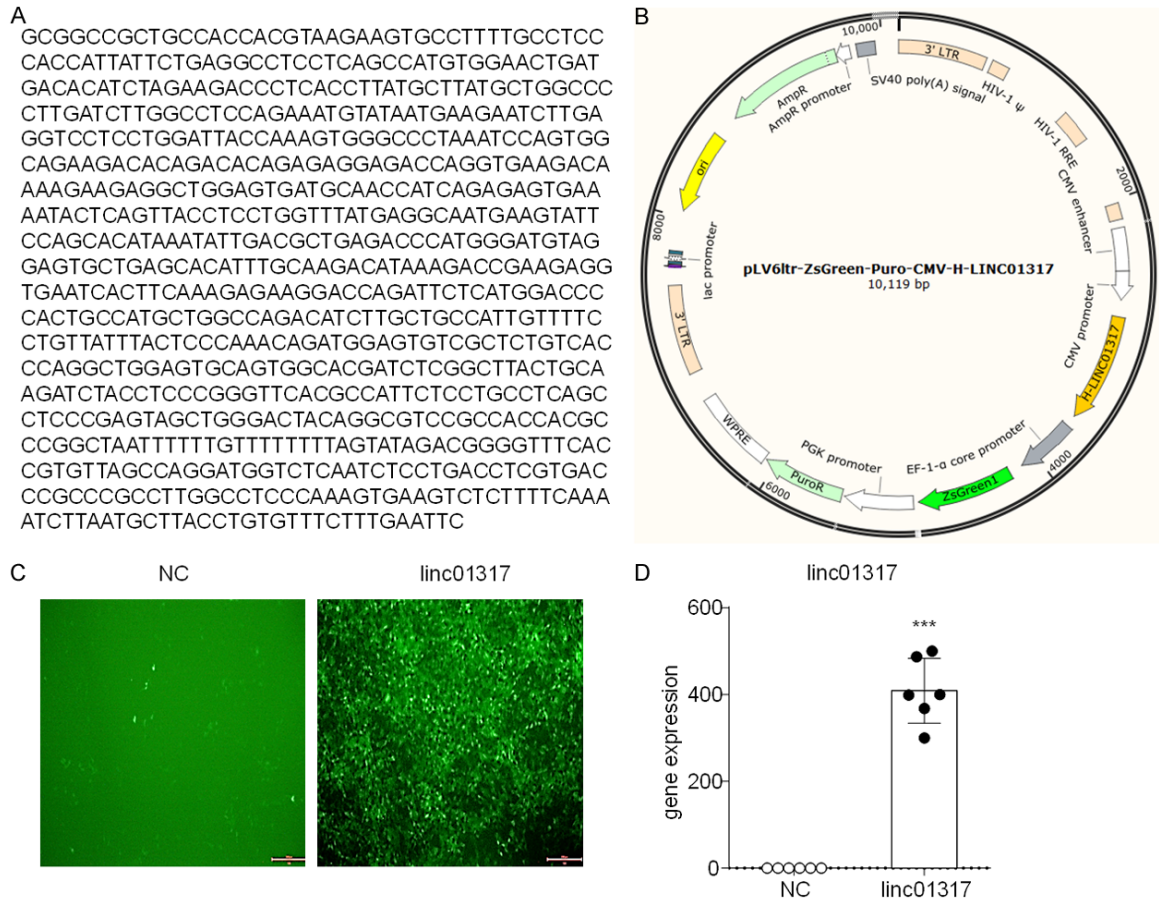


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**Supplementary Figure 1.** RT-qPCR results of lincRNA expression. The induction of lincRNA expression in paired samples was measured using RT-qPCR. Samples were collected and lysed, and RNA was extracted for the RT-qPCR assay. Data were pooled from six paired independent samples and expressed as mean  $\pm$  SEM with  $P < 0.05$ .

## LincRNA-01317 inhibits human gastric cancer growth



**Supplementary Figure 2.** Tumor cell line transfected with plasmid encoding lincRNA-01317. A. Nucleotide sequences of lincRNA-01317 from human samples. B. LincRNA-01317 plasmid was constructed. C. Tumor cell line successfully transfected with plasmid encoding lincRNA-01317. D. Levels of lincRNA-01317 in NC (control) and lincRNA-01317 cell lines.

## LincRNA-O1317 inhibits human gastric cancer growth

**Supplementary Table 3.** List of RNAs interacting with ENST00000366209 (AC009499.1)

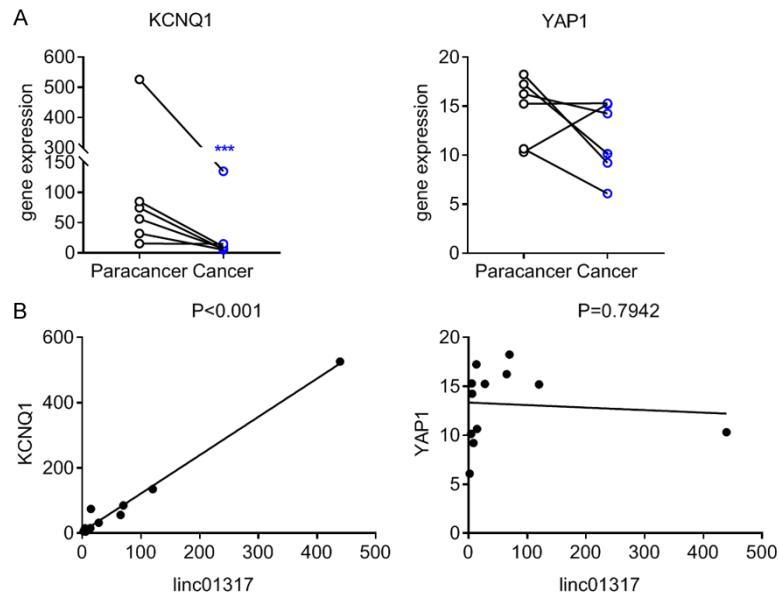
Rank	Ensemble ID	Name	Position (hg19)	MINENERGY				SumEnergy
				MinEnergy	Binding site (query)	Binding site (target)	location	
1	ENST00000597346	KCNQ10T1	chr11:2629559-2721224	-89.3	671-735	74164-74228	ncRNA	-13370.2
2	ENST00000589042	TTN	chr2:179390717-179672150	-26.3	10-61	21359-21410	CDS	-13110.4
3	ENST00000604411	TSIX	chrX:73012041-73049066	-76.9	549-604	5383-5438	ncRNA	-7658.9
4	ENST00000397910	MUC16	chr19:8959521-9092018	-41.7	194-260	27629-27695	CDS	-6419.4
5	ENST00000607772	CNKSR3	chr6:154708639-154831793	-96.9	569-625	11615-11671	UTR3	-4616.4
6	ENST00000609686	GRIN2B	chr12:13693166-14133053	-34.6	560-610	22345-22395	UTR3	-4529.7
7	ENST00000373191	AGO3	chr1:36396680-36538101	-80.8	544-604	12681-12741	UTR3	-4439.1
8	ENST00000501122	NEAT1	chr11:65190270-65213011	-71.7	671-745	17793-17867	ncRNA	-4280.0
9	ENST00000546474	BRF1	chr14:105675624-105781926	-81.2	557-614	8843-8900	UTR5	-3625.3
10	ENST00000329627	PEX26	chr22:18560690-18588162	-90.2	546-606	6496-6556	UTR3	-3562.8
11	ENST00000295851	ABI2	chr2:204192943-204312446	-82.7	541-607	18801-18867	UTR3	-3502.7
12	ENST00000397345	NEB	chr2:152341854-152591001	-23.1	1-46	9408-9459	CDS	-3496.6
13	ENST00000367255	SYNE1	chr6:152442820-152958534	-23.7	723-778	1184-1239	CDS	-3427.8
14	ENST00000264065	DNAJC10	chr2:183581000-183659191	-65.1	540-605	16339-16404	UTR3	-3401.0
15	ENST00000370754	DST	chr6:56322788-56819385	-28.4	437-486	21972-22021	CDS	-3302.6
16	ENST00000312675	LPP	chr3:187930722-188608460	-95.3	671-737	8490-8556	UTR3	-3287.1
17	ENST00000361354	NCKAP1	chr2:183773844-183903200	-82.0	516-623	6039-6146	UTR3	-3237.5
18	ENST00000564288	MACF1	chr1:39669919-39952849	-21.3	724-775	15819-15870	CDS	-3232.9
19	ENST00000368918	GABPB2	chr1:151043081-151098018	-122.4	532-625	7139-7232	UTR3	-3219.2
20	ENST00000609713	KCNJ6	chr21:38979679-39288749	-96.2	542-606	11628-11692	UTR3	-3179.3
21	ENST00000309955	CFLAR	chr2:201980828-202041410	-79.7	539-608	6109-6178	UTR3	-3125.7
22	ENST00000238831	YIPF4	chr2:32502980-32541663	-93.8	546-607	8229-8290	UTR3	-3091.0
23	ENST00000335251	INTU	chr4:128554088-128647892	-84.7	514-607	11686-11779	UTR3	-3024.2
24	ENST00000367701	ZBTB37	chr1:173838095-173872687	-67.6	574-625	13905-13956	UTR3	-2994.7
25	ENST00000406785	SLC8A1	chr2:40324411-40679209	-26.3	203-250	2800-2847	CDS	-2987.8
26	ENST00000343098	FSIP2	chr2:186603356-186698016	-27.0	559-618	187-246	CDS	-2955.8
27	ENST00000357395	SYNE2	chr14:64319684-64693165	-27.9	673-723	18007-18057	CDS	-2937.9
28	ENST00000429989	TSPAN14	chr10:82213923-82292879	-107.1	514-625	10454-10565	UTR3	-2902.3
29	ENST00000327381	XKR4	chr8:56014950-56454613	-90.5	671-735	10377-10441	UTR3	-2893.7
30	ENST00000355837	AC005154.6	chr7:30587974-30604233	-79.8	536-599	2923-2986	ncRNA	-2875.2
31	ENST00000418539	BCYRN1	chr2:47558200-47571656	-81.1	541-606	2841-2906	ncRNA	-2832.2
32	ENST00000371655	RAB3B	chr1:52373629-52456436	-96.6	546-608	1681-1743	UTR3	-2786.7
33	ENST00000333891	PCLO	chr7:82383330-82792246	-23.2	212-271	8276-8335	CDS	-2785.7
34	ENST00000526775	CACNA1E	chr1:181452717-181777219	-38.5	205-257	8997-9049	UTR3	-2761.3

LincRNA-01317 inhibits human gastric cancer growth

35	ENST00000261491	DGKH	chr13:42622890-42817032	-86.8	542-606	15361-15425	UTR3	-2754.6
36	ENST00000446231	SMG1	chr16:18816176-18937776	-139.4	533-625	13056-13148	UTR3	-2728.2
37	ENST00000381318	ITSN1	chr21:35014765-35272165	-79.7	543-608	10626-10691	UTR3	-2650.0
38	ENST00000367941	STX7	chr6:132767007-132834201	-62.5	671-728	10309-10366	UTR3	-2646.5
39	ENST00000473989	UBN2	chr7:138916232-138992982	-90.1	671-735	8649-8713	UTR3	-2645.7
40	ENST00000429829	XIST	chrX:73040492-73072588	-33.4	194-256	12309-12371	ncRNA	-2630.3
41	ENST00000366847	FGFR10P	chr6:167412671-167466201	-90.1	546-603	7075-7132	UTR3	-2600.7
42	ENST00000437048	VPS53	chr17:411909-618096	-70.3	671-735	5150-5214	UTR3	-2574.8
43	ENST00000361565	IPO9	chr1:201798270-201853422	-79.5	542-602	4953-5013	UTR3	-2555.8
44	ENST00000324306	ZKSCAN1	chr7:99613205-99639312	-82.8	547-606	5633-5692	UTR3	-2555.5
45	ENST00000233336	TTL	chr2:113239732-113299316	-101.2	542-607	6733-6798	UTR3	-2553.9
46	ENST00000430027	DLX6-AS1	chr7:96584454-96643377	-51.6	536-610	3577-3651	ncRNA	-2551.9
47	ENST00000443374	RP11-50E11.3	chr10:52384712-52401211	-89.1	536-604	12058-12126	ncRNA	-2525.5
48	ENST00000608999	PPP1R12B	chr1:202317828-202561834	-79.0	544-591	5326-5373	UTR3	-2512.5
49	ENST00000356387	ORAI2	chr7:102073997-102097268	-93.7	543-602	5037-5096	UTR3	-2480.3
50	ENST00000610020	RPAP2	chr1:92764523-92867613	-47.2	573-625	12192-12244	UTR3	-2467.3



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**Supplementary Figure 3.** KCNQ1 and YAP1 expression. A. Levels of KCNQ1 and YAP1 in 6 pairs of gastric cancer tissue and corresponding paracancer tissue were detected using RT-qPCR. The RT-qPCR results are shown as the mean  $\pm$  SEM. B. Relative expression of KCNQ1, YAP1, and lincRNA-01317 in gastric cancer tissue and corresponding paracancer tissue.