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Supplemental information

**LINC01189-miR-586-ZEB1 feedback loop
regulates breast cancer progression
through Wnt/ β -catenin signaling pathway**

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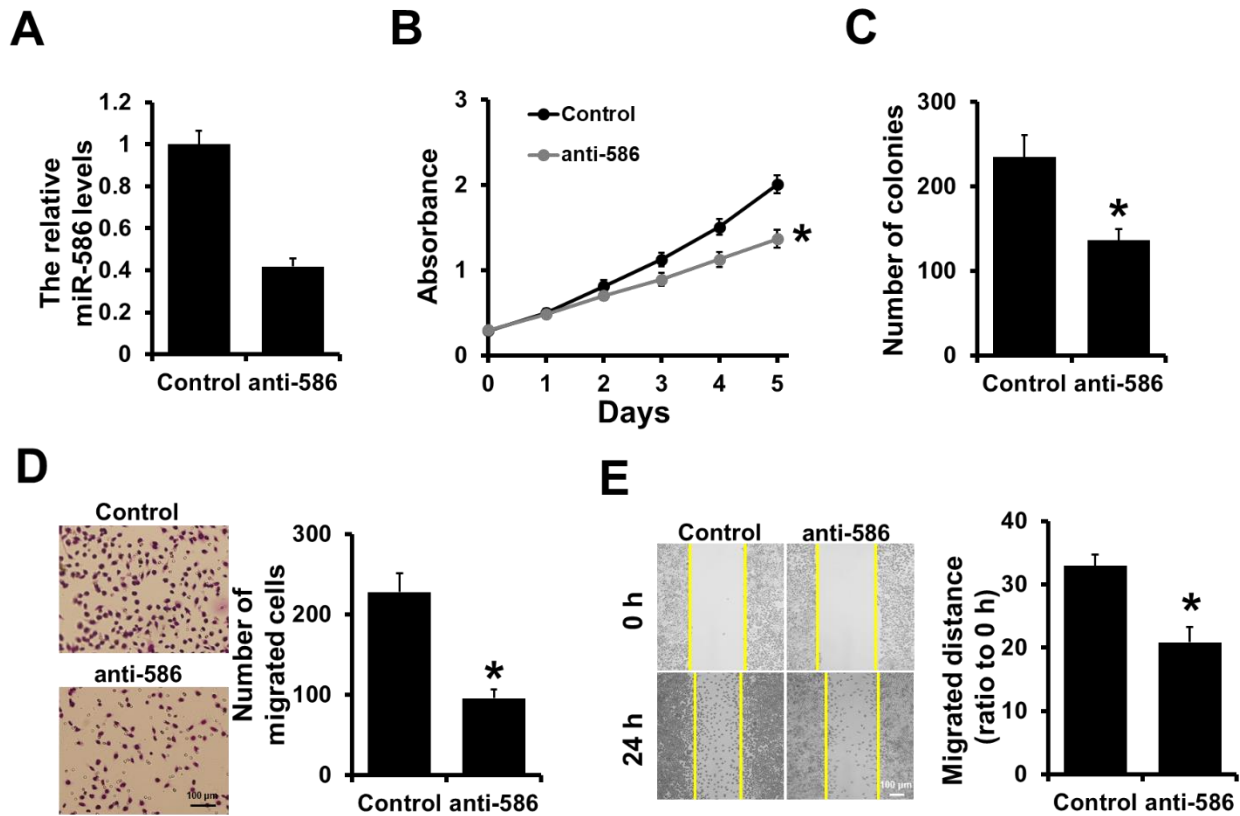


Figure S1. miR-586 functions as an oncogene in breast cancer. **A**, Expression of miR-586 in miR-586-depleted BT549 cells, as well as the control cells by RT-qPCR. **B-C**, MTT (**B**) and colony formation (**C**) analyses of the proliferation of cells described in (**A**). **D**, Transwell analysis of the invasion of cells described in (**A**). **E**, wound-healing analysis of the migration of cells described in (**A**). The data shown in **A-E** are the mean \pm s. d. for three independent replicates. Student's t-test for **A-E**. * $P < 0.05$.

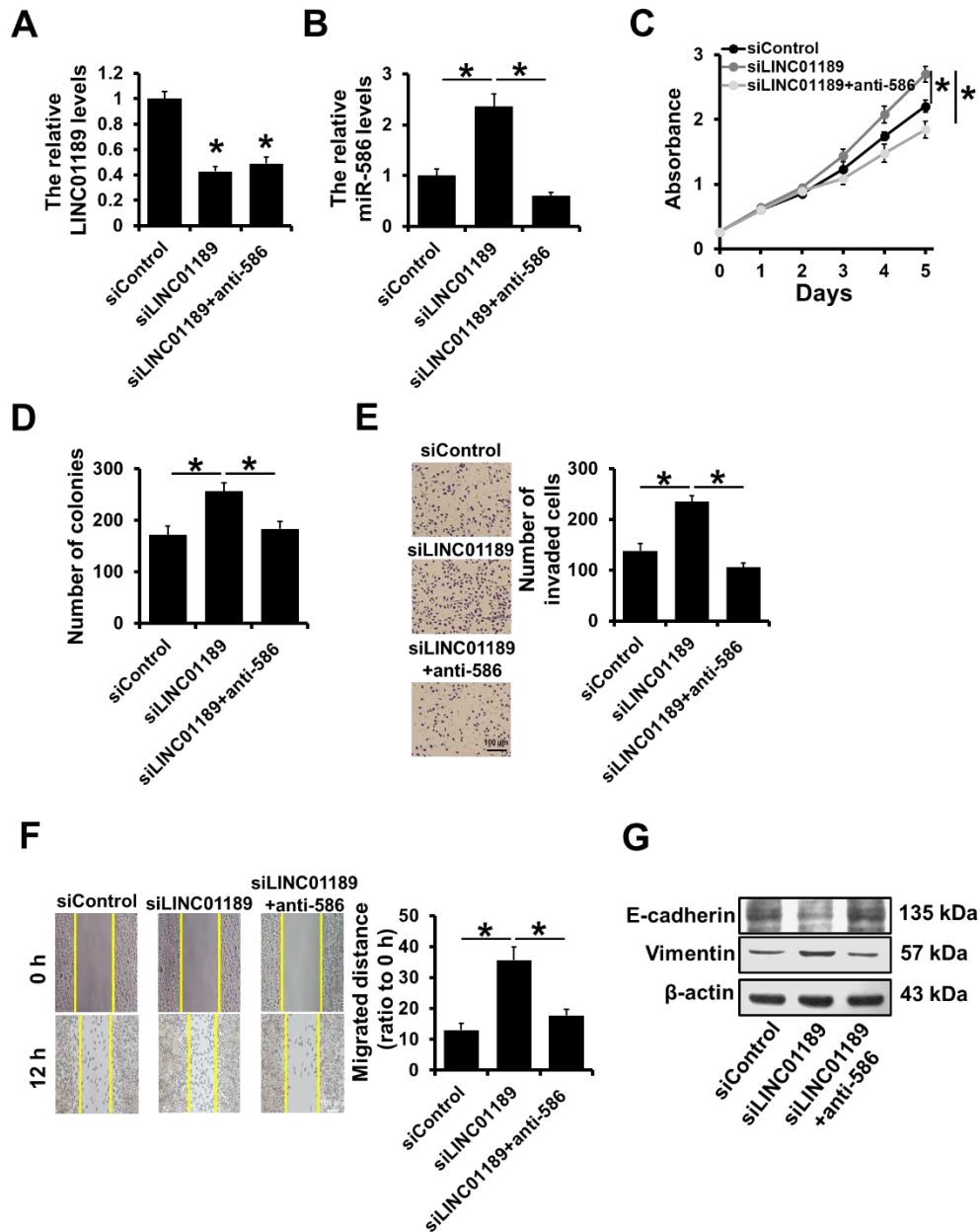


Figure S2. LIN01189 suppressed breast cancer progression by sponging miR-586. A and B, Relative expression of LINC01189 (A) or miR-586 (B) in LINC01189 siRNAs-transfected SKBR3 cells with or without miR-586 inhibitor determined by RT-qPCR. **C-D,** MTT (C) and colony formation (D) analyses of the proliferation of cells described in (A). **E,** Transwell analysis of the invasion of cells described in (A). **F,** wound-healing analysis of the migration of cells described in (A). **G,** Western blot was used to detect the expression of epithelial marker E-cadherin and mesenchymal marker Vimentin in the cells described in (A). * $p < 0.05$.

Table S1. Oligonucleotides of miRNAs and siRNAs

miR-586 mimics	UAUGCAUUGUAUUUUUAGGUCC
miR-586 inhibitor	AUACGUAACAUA AAAAUCCAGG
mimic control	UGUACCAAUUUCCAGUGGAGAU
inhibitor control	AUGGUGUUAUCAAGUGUAACAG
siTwist1	GGUACAUCGACUCCUCUATT
siSnail	GGACUUUGAUGAAGACCAUTT
siZEB1	GCUGUUGUUCUGCCAACAGTT
siTCF4	CGGCACACA UUGUCUCAATT
si β -catenin	CACUUGCAAUAAUACAAATT

Table S2. Oligonucleotides used for RT-qPCR

Name	Sequence (5' to 3')
LINC01189 up	GTCTGCCCAGCTACTCCAAG
LINC01189 low	CTCCTACCGCTCCTGTTGAG
miR-586 up	AGTACTGGTCTCAGCAGATTGA
miR-586 low	GTGTCATCTCAGCAGCTCCA
U6 up	CTCGCTTCGGCAGCACA
U6 low	AACGCTTCACG AATTTGCGT
SFRP1 up	ACTGGCCCGAGATGCTTAAGTG
SFRP1 low	GAGATGTTCAATGATGGCCTCAGA
DKK2 up	GTACCAAGGACTGGCATTCTG
DKK2 low	ATCTCGGTGGCAGCGCTTCT
WIF1 up	CGAGGTACGCAATAGGAGTG
WIF1 low	CACGTGCAGTTGTACTTGCAGT
DKK3 up	TGAGATGTTCCGCGAGGTTG
DKK3 low	CAGGTTCACTTCTGATGATGCT
RPRD1A up	GCTCTGTATGGTGATAAG
RPRD1A low	TCTTGTAATGCTCTAACG
APC up	CCTCATCCAGCTTTTACATGGC
APC low	GCCCGAGCCTCTTTACTGC
ZEB1 up	TCAAAAGGAAGTCAATGGACAA
ZEB1 low	GTGCAGGAGGGACCTCTTTA
GAPDH up	CAAGGTCATCCATGACA ACTTTG
GAPDH low	GTCCACCACCCTGTTGCTGTAG

Table S3. Oligonucleotides used for ChIP and FISH

Name	Sequence (5' to 3')
LINC01189 up	GCTGATGAACATAGATGCAA
LINC01189 low	TTACAGGTGTGAGCCACCAC
ZEB1 up	CGCTGAAGCCGGATAATGGG
ZEB1 low	ACATGTTTCAGGTCTCGATCC
FISH probe	TGCCACCTGCGACTGTCTCACGAGTT

Table S4. Antibodies used for study

Name	Source	Catalog
β -Catenin (D10A8) Rabbit mAb	Cell Signaling	8480
β -Actin (8H10D10) Mouse mAb	Cell Signaling	3700
Histone H3 (D1H2) Rabbit mAb	Cell Signaling	4499
Anti-TCF-4 antibody	Abcam	ab130014
Anti-DKK2 antibody	Abcam	ab38594
Anti-DKK3 antibody	Abcam	ab126080
Anti-SFRP1 antibody	Abcam	ab126613
E-cadherin antibody (1.B.54)	SantaCruz Biotech	sc-71009
Vimentin antibody (V9)	SantaCruz Biotech	sc-6260
Anti-ZEB1 antibody	Abcam	ab180905