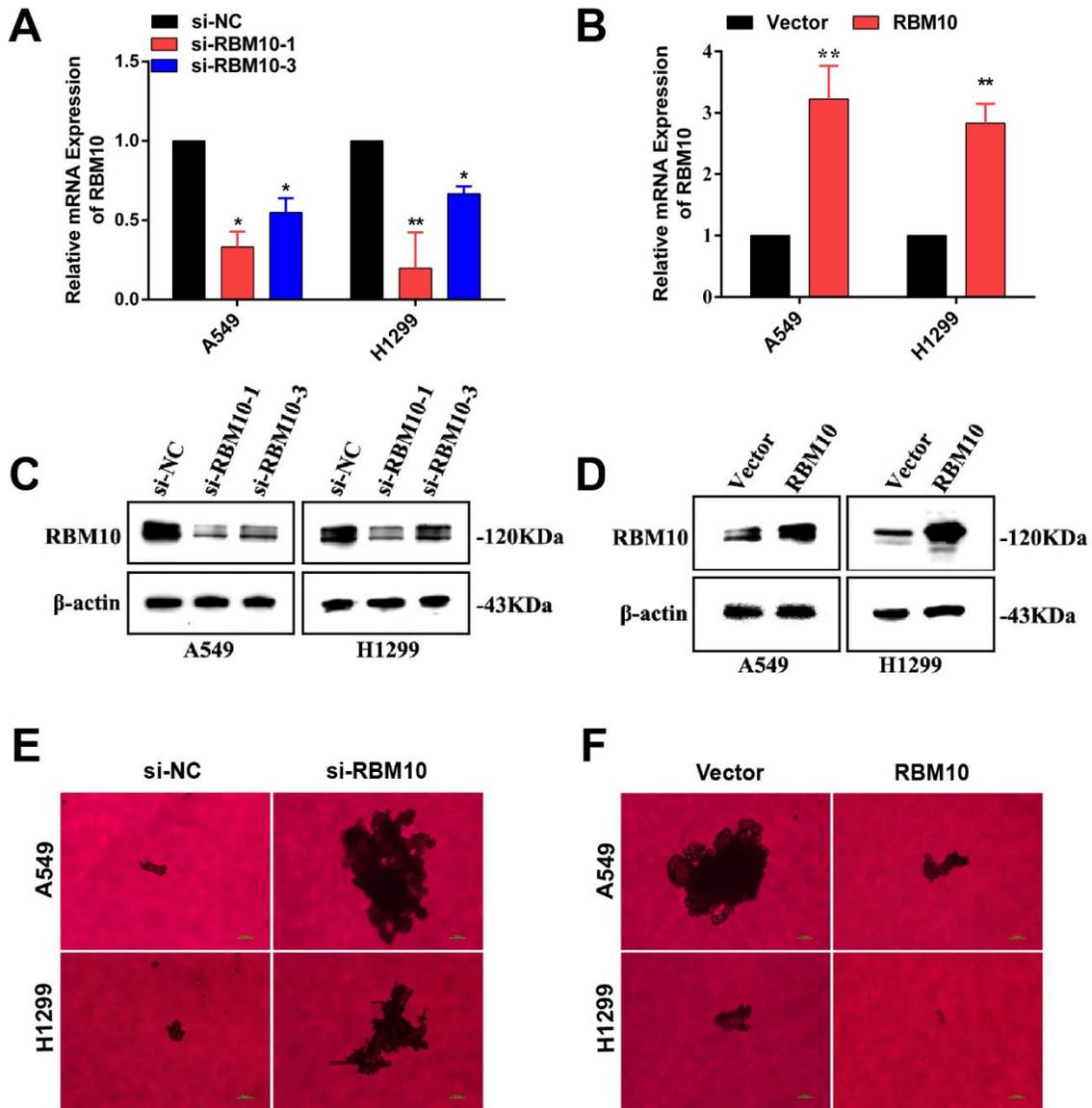


1 **Supplementary Figure Legends**



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3 **Figure S1 Transfection efficiency of RBM10 and Soft agar colony formation assays**

4 (A~D) Verification of transfection efficiency qRT-PCR and Western blot analysis of

5 RBM10 mRNA and protein expression in A549 or H1299 cell lines transfected with

6 RBM10 si-RNA-1/-3 and si-NC, and the same cell lines infected with RBM10

7 overexpression lentivirus (RBM10) and negative control (vector). GAPDH was applied

8 as the endogenous control for qRT-PCR, and β -actin was used as a loading control for

9 western blot assay. The results were represented as mean \pm SD. *P < 0.05, **P < 0.01. (E,
10 F) Soft agar colony formation assays using the transfected cells. The scale bar is 100 μ m.
11 Each experiment was repeated three times.

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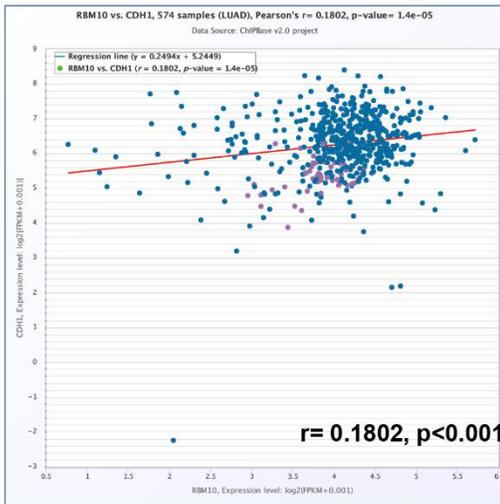
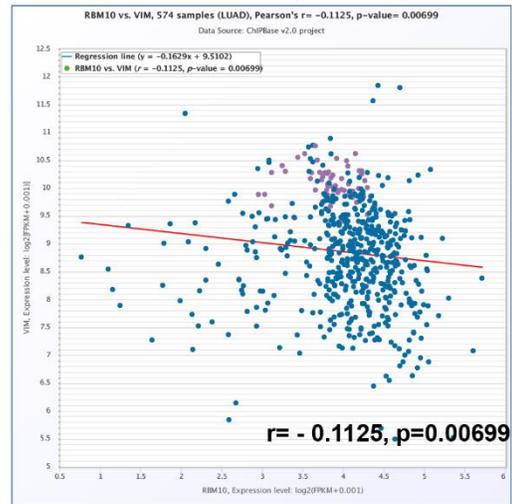
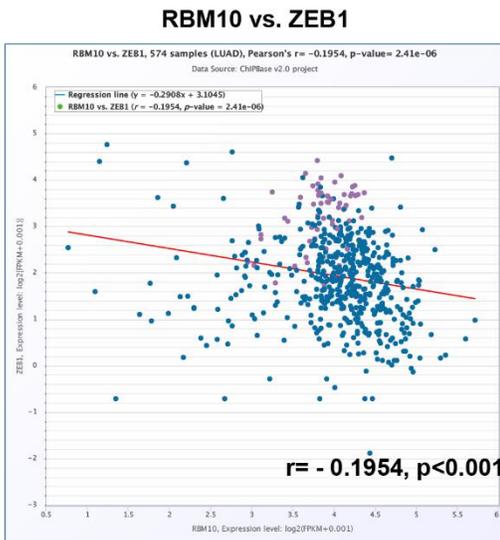
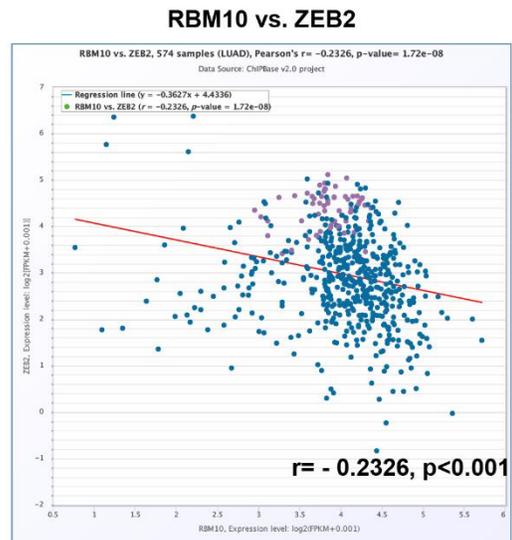
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A**B****C****D**

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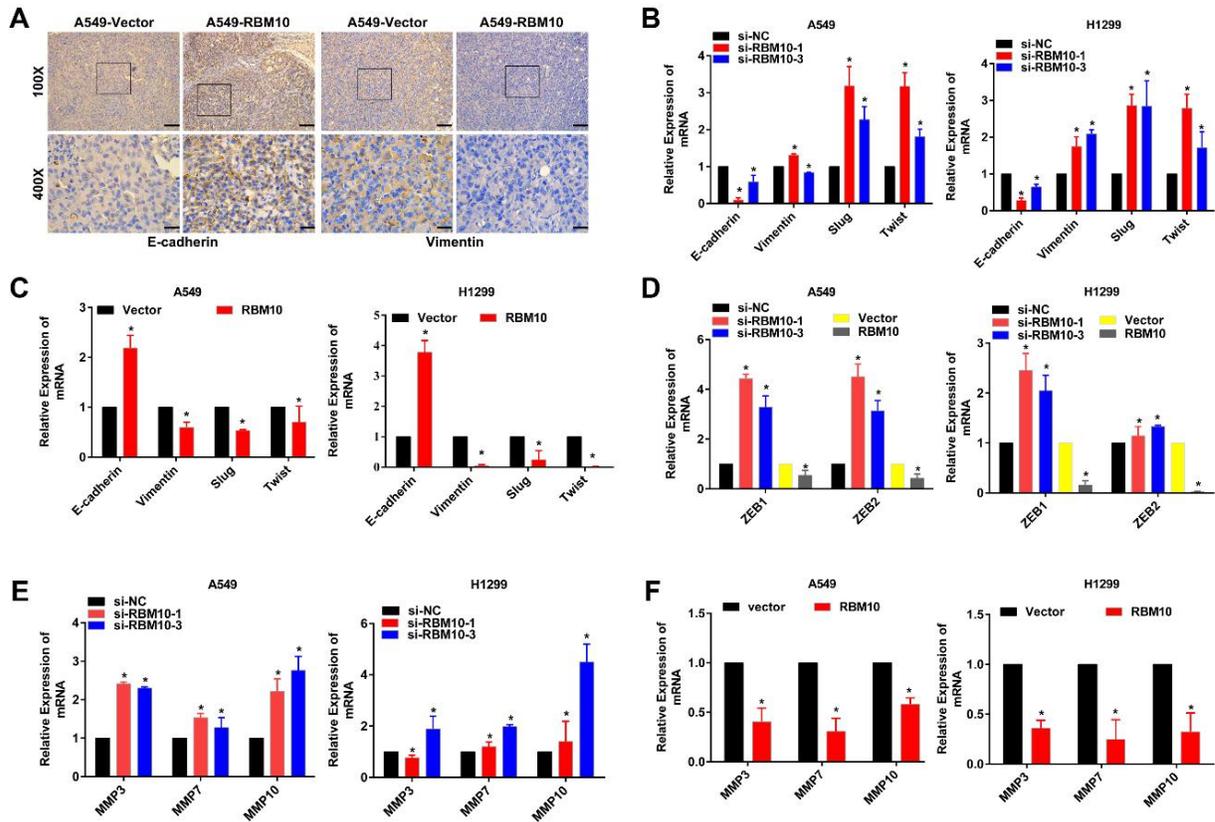
33 **Figure S2 The correlation between RBM10 and EMT markers was analyzed by**
34 **bioinformatics assays.**

35 The expression relationship between RBM10 and CDH1(E-cadherin), VIM (Vimentin),
36 ZEB1, ZEB2 in LUAD in published database from ChipBase
37 (<http://chipbase.sysu.edu.cn/chipbase/>).

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42 **Figure S3 Effect of RBM10 on the protein and mRNA expression of EMT markers**

43 (A) IHC staining of EMT markers (E-cadherin, Vimentin) in xenograft tumors. The scale

44 bar is 100 μ m. (B, C) qRT-PCR results of the EMT markers (E-cadherin, Vimentin, slug,

45 twist) in A549 or H1299 cells with knockdown or overexpressing RBM10. The results

46 were represented as mean \pm SD. *P<0.05. (D~F) The mRNA levels of ZEB1, ZEB2,

47 MMP3, MMP7 and MMP10 in LUAD cells by qRT-PCR. The results were represented

48 as mean \pm SD. *P<0.05, Each experiment was repeated three times.

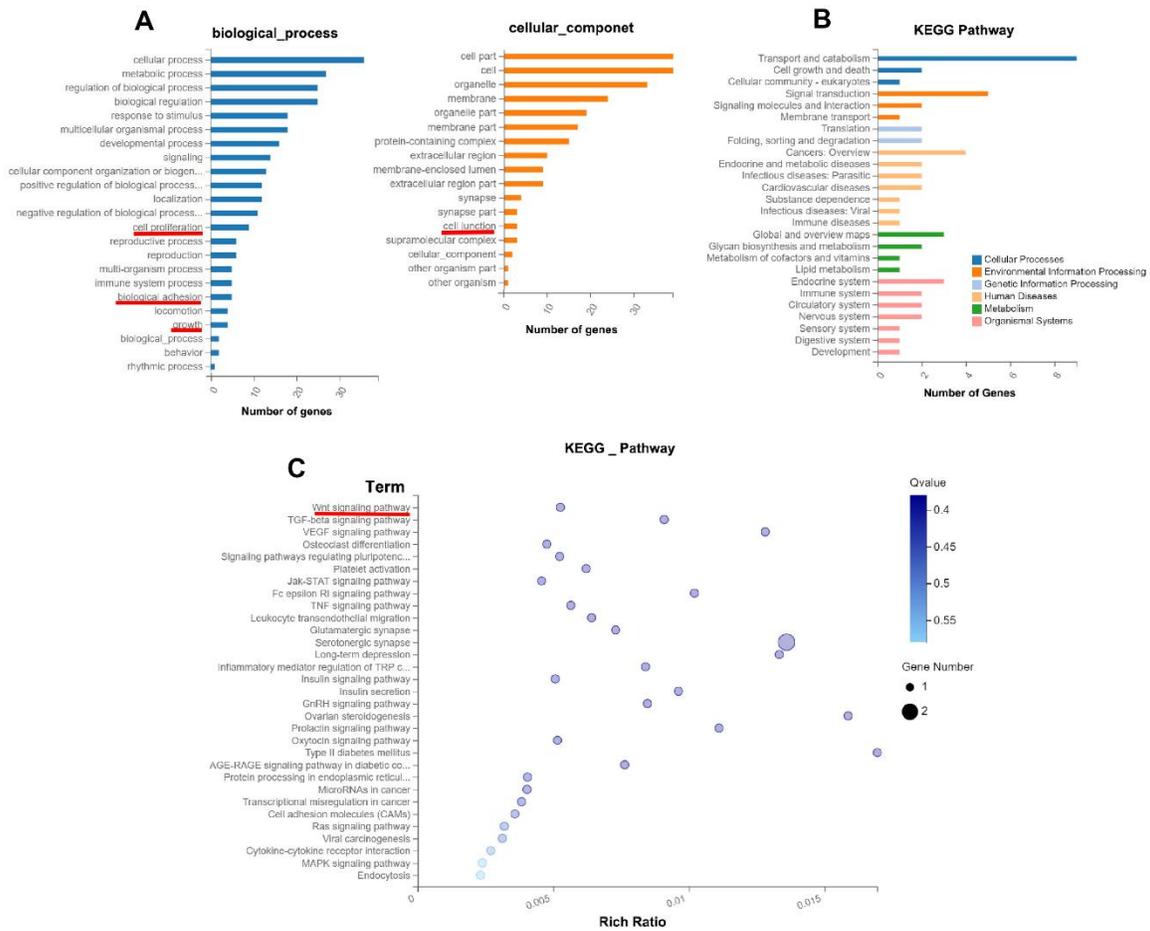
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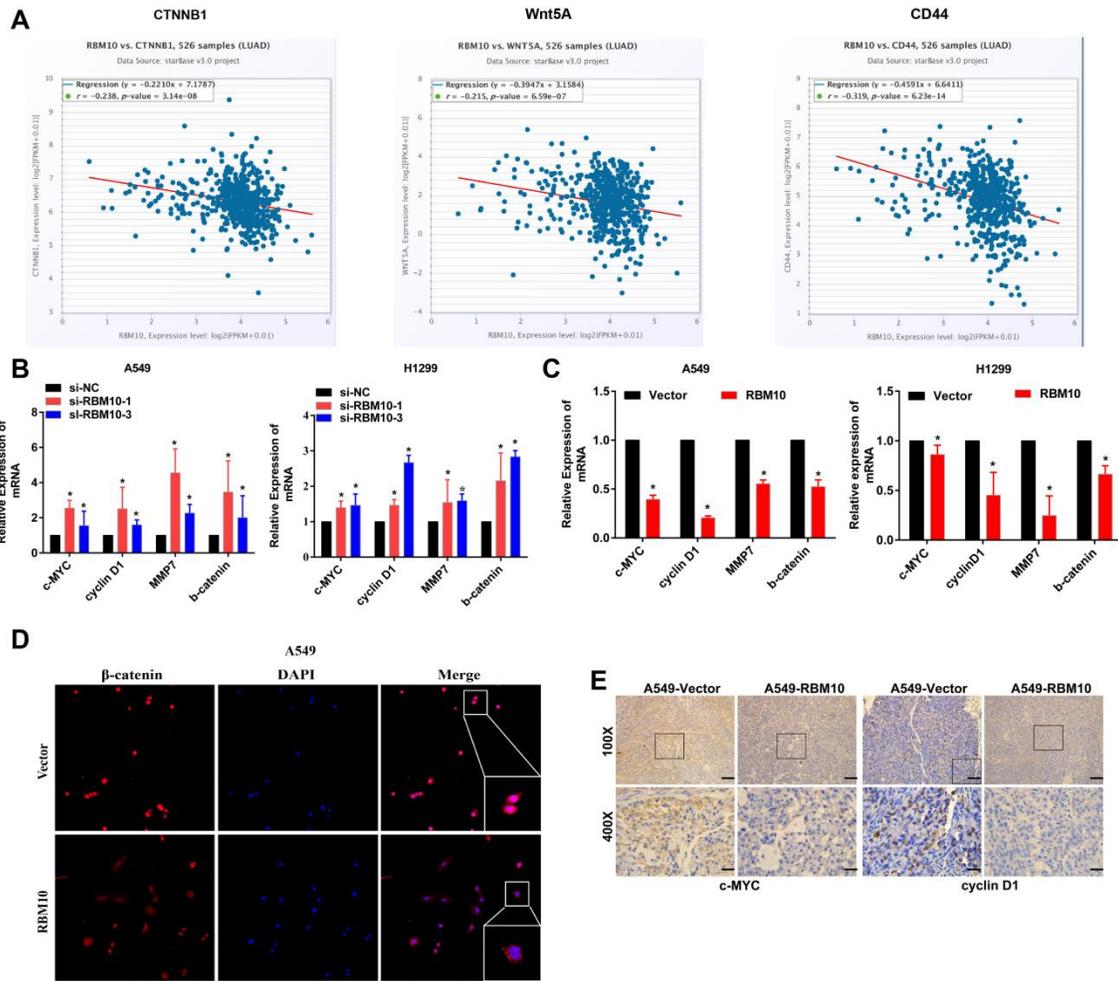
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55 **Figure S4 Gene ontology (GO) analysis and KEGG analysis of RBM10-dependent**
56 **genes.**

57 **(A)** Gene ontology (GO) analysis involved biological processes (left) such as biological
58 adhesion, cell proliferation and growth, and cellular component (right), including cell
59 junction. **(B)** KEGG analysis was significantly associated with cancer-related functions,
60 including cellular motility, growth and death and etc. **(C)** Pathway analysis of genes that
61 were significantly and differentially expressed in H1299-si-RBM10 cells and control
62 cells using KEGG database.

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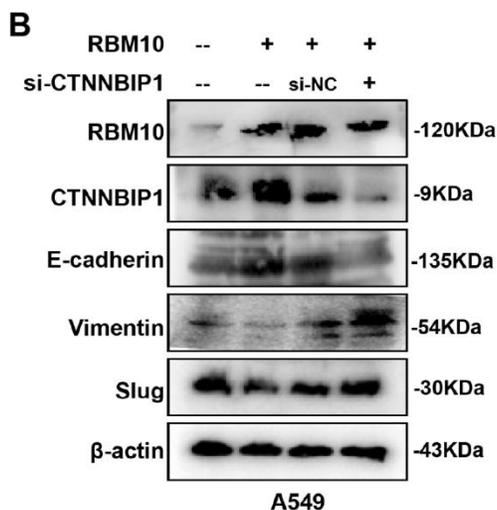
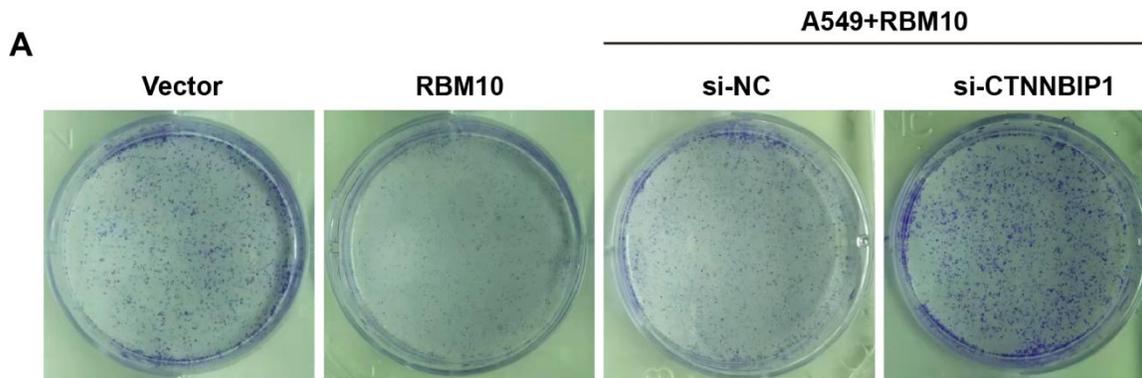


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66 **Figure S5 Effect of RBM10 on the Wnt/β-catenin pathway**

67 (A) Negative correlation between RBM10 and the four common of the Wnt/β-catenin
 68 pathway target genes (CTNNB1 (also called β-catenin), Wnt5a and CD44) in LUAD,
 69 analyzed at the StarBase website. (B, C) The effect of RBM10 knockdown (B) or
 70 overexpression (C) on the mRNA levels of β-catenin, cyclin-D1, c-MYC and MMP7 in
 71 LUAD cells assayed by qRT-PCR. The results were represented as mean ± SD. *P<0.05.
 72 (D) IF assay results of β-catenin (red) in RBM10-overexpressing A549 cells. Nuclei
 73 counter stained with DAPI (blue). (E) The expression of c-MYC and cyclinD1 were
 74 examined by IHC staining in the xenograft tumor tissues. The scale bar is 100μm.

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77 **Figure S6 Effect of CTNNBIP1 on cell proliferation and EMT markers (E-**
 78 **cadherin, Vimentin and Slug) in LUAD cells with stable RBM10 overexpression**

79 In A549 and H1299 cells with stable overexpression of RBM10, si-CTNNBIP1 was
 80 transiently transfected. (A) clone formation assays; (B) The results of Western blot
 81 results of EMT markers (E-cadherin, Vimentin and Slug) after transfection with si-
 82 CTNNBIP1 in stable RBM10 overexpression A549 cells. β -actin was used as loading
 83 controls. All experiments were repeated three times.

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88 **Supplementary Tables**89 **Table S1 Primers sequences for qRT-PCR**

GENE	Forward (5'to 3')	Reverse (5'to 3')
RBM10	GCACGACTATAGGCATGACAT	AGTCAAACCTGTCTGCTCCA
E-cadherin	GCTGGACCGAGAGAGTTTCC	CAAAATCCAAGCCCGTGGTG
Vimentin	CGGGAGAAATTGCAGGAGGA	AAGGTCAAGACGTGCCAGAG
Slug	TCCTGGTCAAGAAGCATTTC	TTGTGGTATGACAGGCATGGA
Twist	GCCAGGTACATCGACTTCCTCT	TCCATCCTCCAGACCGAGAAGG
c-MYC	AGCGACTCTGAGGAGGAAC	TGTGAGGAGGTTTGCTGTG
cyclinD1	GATCAAGTGTGACCCGGACT	CTTGGGGTCCATGTTCTGCT
β -catenin	AAAGCGGCTGTTAGTCACTGG	CGAGTCATTGCATACTGTCCAT
TCF3	CTCGAGAAGAACAGGCCAAG	GGGGCAGGTAAGTGAACACAT
TCF4	GATGCTCTGGGGAAAGCACT	GTGCCTGCTGAGAGAGATGG
LEF1	AGAACACCCGGATGACGGA	GGCATCATTATGTACCCGGAAT
MMP7	AAATGCCAACAGTTTAGAAGCC	ATTATTCTATGACGCGGGAGT
MMP3	GGTGTGGAGTTCCTGATGTTGGT	AGCCTGGAGAATGTGAGTGGAGT
	C	C
MMP10	CAGCGGACAAATACTGGAGAT	CTTAGGCTCAACTCCTGGAAAG
CTNNBIP1	GGAAGAGTCCGGAGGAGATG	CTCTGCACCCTGGTCGAT
GAPDH	GACTCATGACCACAGTCCATGC	AGAGGCAGGGATGATGTTCTG

90 qRT-PCR: Quantitative real-time PCR, RBM10 , RNA-binding motif protein 10, CTNNBIP1: β -

91 catenin interacting protein 1

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96 **Table S2 Primers antibody for Western blot**

Antibody	Manufacturer	Diluted
RBM10	Abcam, Ab72423	1:1000
E-cadherin	Proteintech, 20874-1-AP	1:1000
Vimentin	Proteintech, 10366-1-AP	1:1000
Slug	Cell signaling technology, #9585	1:1000
Twist	Cell signaling technology, #69366	1:1000
N-cadherin	Cell signaling technology, #13116	1:1000
β -catenin	Abcam, Ab32572	1:5000
c-MYC	Abways, CY5150	1:5000
cyclinD1	Abways, CY5404	1:1000
MMP7	Abways, CY1224	1:500
TCF3	Cell signaling technology, #2883	1:1000
TCF4	Cell signaling technology, #2569	1:1000
LEF1	Cell signaling technology, #2203	1:1000
CTNNBIP1	Abcam, Ab129011	1:1000
β -actin	Proteintech, 66009-1-Ig	1:10000

97 WB: Western blotting assay

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