

Table S1 The siRNA sequences for the cell transfection experiments

| Gene/miRNA name | Sequences (5'-3') |
|--|--|
| <i>ZEB1</i> -siRNA | 5'-UGUAACACUUUCUUCUCCAC-3' (antisense) 5'-GGAAGAAGAAAGUGUUACAGA-3' (sense) |
| <i>STAT3</i> -siRNA | 5'-UGUUGUUGUUCUAGACAA-3' (sense) 5'-UUGUCUAAGAACAACAACA-3' (antisense) |
| <i>SNAI1</i> -siRNA | 5'-GCUUUGAGCUACAGGACAA-3' (sense) 5'-UUGUCCUGUAGCUCAAAGC-3' (antisense) |
| <i>TWIST1</i> -siRNA | 5'-GCGACGAGCUGGACUCCAA-3' (sense) 5'-UUGGAGUCCAGCUCGUCGC-3' (antisense) |
| Negative control (NC) | 5'-UUCUCCGAACGUGUCACGUUU-3' (sense) 5'-ACGUGACACGUUCGGAGAAUU-3' (antisense) |
| pAdTrack-CMV- <i>ZEB1</i> - <i>AS1</i> | 5'-CTCTCGCTTGTGTCTAATGC-3' (sense) 5'-TTCATGTTTAAAGCAGTAATTTATTC-3' (antisense) |
| Cloning of <i>ZEB1</i> - <i>AS1</i> | 5'RACE primer: catggcctgtggataccttagctctg 3'RACE primer: ggacaagtacctttcagtaact |
| miR-519 mimic | 5'-CAAAGUGCCUCCUUUAGAGUG-3' |
| Mimic NC | 5'-UUGUACUACACAAAAGUACUG-3' |

siRNA, small interfering RNA.

Table S2 The sequences in the dual-luciferase experiments

| Gene/miRNA name | Sequences (5'-3') |
|-----------------------------------|--|
| hsa-miR-519d-3p | CAAAGUGCCUCCUUUAGAGUG |
| <i>ZEB1</i> - <i>AS1</i> -muF | TCTTGTGCCTGCTGAGAAGTAAATGCG |
| <i>ZEB1</i> - <i>AS1</i> -muR | CTTCTCAGCAGGCACAAGAAAATGTGGGAG |
| <i>ZEB1</i> - <i>AS1</i> -mir519F | CACCTAGCACAATGACACATAGTAG |
| <i>ZEB1</i> - <i>AS1</i> -mir519R | GGAGGAAGAACTCACACTTAACC |
| <i>ZEB1</i> - <i>AS1</i> -Sac1F | TCTAGTTGTTTAAACGAGCTCCACCTAGCACAATGACACATAGTAG |
| <i>ZEB1</i> - <i>AS1</i> -Sal1R | CTTGCATGCCTGCAGGTCGACGGAGGAAGAACTCACAC |
| <i>STAT3</i> -mir519F1 | CTGAGAACGGAAGCTGCAG |
| <i>STAT3</i> -mir519R1 | AATGCCAGGAGTATGTAGCT |
| <i>STAT3</i> -mu1F | TCTGGACCCTCTTAAAAATAGAGAAATG |
| <i>STAT3</i> -mu1R | TTTAAGAGGGTCCAGATTGCTCAAAGATAG |
| <i>STAT3</i> -mir519F2 | GAGAAATGAGTGAATGTGGGTGATC |
| <i>STAT3</i> -mir519R2 | TGTTAGCCAGGATGGTCTTGAT |
| <i>STAT3</i> -mu2F | GCATTTCAATCTTTAACCTTGCTGAC |
| <i>STAT3</i> -mu2R | GTTAAAGATTGAAATGCCAGGAGTATG |
| <i>STAT3</i> -Sac1F1 | TCTAGTTGTTTAAACGAGCTCCTGAGAACGGAAGCTGC |
| <i>STAT3</i> -Sal1R1 | CTTGCATGCCTGCAGGTCGACAATGCCAGGAGTATGTAGCT |
| <i>STAT3</i> -Sac1F2 | TCTAGTTGTTTAAACGAGCTCGAGAAATGAGTGAATGTGGGTGATC |
| <i>STAT3</i> -Sal1R2 | CTTGCATGCCTGCAGGTCGACTGTTAGCCAGGATGGTCTTG |

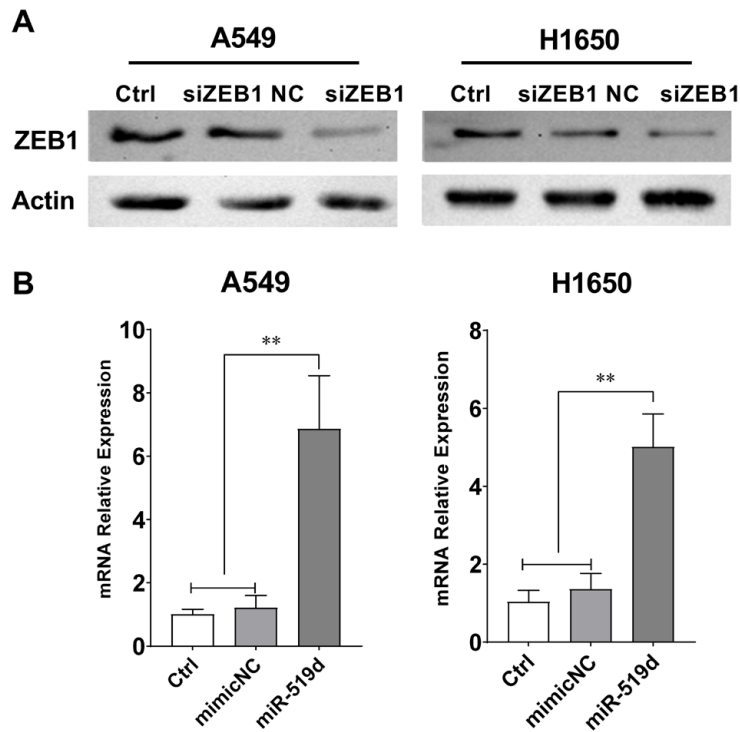


Figure S1 Evidence of successful transfection. (A) Transfection with siZEB1 successfully knocked down ZEB1 expression; (B) transfection with miR-519d mimics successfully increased miR-519d expression. **, $P < 0.01$.

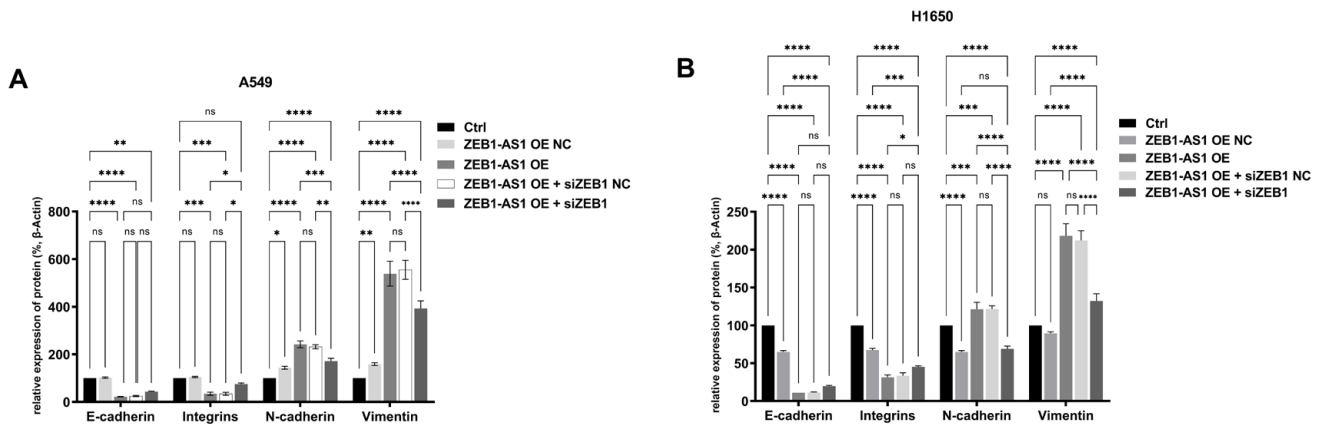


Figure S2 The quantitative analysis of the band of Western blot in *Figure 3A*. (A) Expression levels of the EMT marker proteins in the ZEB1-AS1 overexpressed cell lines (A549) after the knockdown of ZEB1. (B) Expression levels of the EMT marker proteins in the ZEB1-AS1 overexpressed cell lines (H1650) after the knockdown of ZEB1. *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$; ****, $P < 0.0001$. ns, no statistically significant difference; EMT, epithelial-mesenchymal transition; OE, over expression, NC, negative control; Ctrl, control.

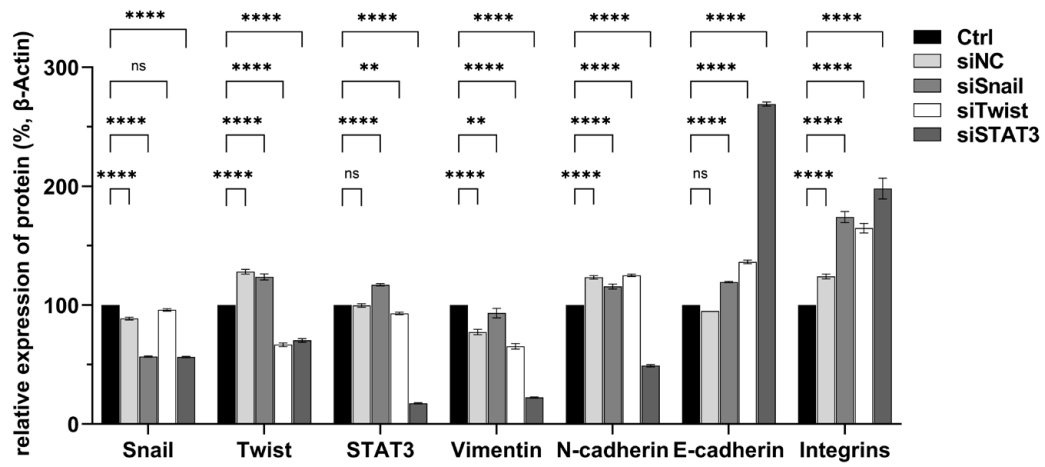


Figure S3 The quantitative analysis of the band of Western blot in *Figure 3D*. **, $P < 0.01$; ****, $P < 0.0001$. ns, no statistically significant difference; NC, negative control; Ctrl, control.