supplementary materials：

**Supplemental Table1：mRNA primer sequences**

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| **Name** | **Sequence(5’-3’)** |
| COL1A1FOXF2α-SMACOL5A2GAPDHsi-FOXF2 1415si-FOXF2 1305si-FOXF2 650si-NCsi-SNHG5 343si-SNHG5 309si-SNHG5 201β-cateninSNHG5SNHG5-T7 U1  | Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Forward primer:Reverse primer:Sense Forward primer:Antisense Forward primer:Forward primer:Reverse primer: | 5'-GAGGGCCAAGACGAAGACATC-3'5'-CAGATCACGTCATCGCACAAC-3'5'-TCGCTGGAGCAGAGCTACTT-3'5'-CCCATTGAAGTTGAGGACGA-3'5'-GGCTCTGGGCTCTGTAAGG-3'5'-CTCTTGCTCTGGGCTTCATC-3'5'-TCTTGCTCCTGTGGATGTTG-3'5'-TTGATGGTGGTGCTCATTGT-3'5'-CGGAGTCAACGGATTTGGTCGTAT-3'5'-AGCCTTCTCCATGGTGGTGAAGAC-3'5'-GCGUCUGUCAGGAUAUUAATT-3'5'-UUAAUAUCCUGACAGACGCTT-3' 5'-GCAUCACUCUACUCCAGUGTT-3'5'-CACUGGAGUAGAGUGAUGCTT-3'5'-CCAGCGAGUUAUGUUCGATT-3'5'-UCGAACAUGAACUCGCUGGTT-3' 5'-UUCUUCGAACGUGUCACGUTT-3' 5'-ACGUGACACGUUCGGAGAATT-3' 5'-CUUGACUGUUGUGUGAAAATT-3'5'-UUUUCACACAACAGUCAAGTT-3'5'-GCAACGAUUUCUGGCUAGUTT-3'5'-ACUAGCCAGAAAUCGUUGCTT-3'5'-CAGUGAAGAUAAUGAAUGUTT-3'5'-ACAUUCAUUAUCUUCACUGTT-3'5’-ATGGCTTGGAATGAGACTGC-3’5’-CTGGCCATATCCACCAGAGT-3’5'- GGGTGGTAGGAACAATGGCG-3'5'- CTCGTCCACACTCAGAACGC-3'5'-GTAATACGACTCACTATAGGGCTTTTACGTCGGCCTTCGC-3'5'-GTAATACGACTCACTATAGGGAGTGGATTTTCCATTTAATGCTCC-3'5'-GGGAGATACCATGATCACGAAGGT-3'5'-CCACAAATTATGCAGTCGAGTTTCCC-3  |

**Supplemental Table2：The antibodies used in WB,ICC,IFand IP**

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| **Name** | **Sequence(5’-3’)** |
| anti-COLIA1 antibodyanti-α-SMA antibodyanti-COL5A2 antibodyanti-FOXF2 antibodyanti-cytokeratin 18 antibodyanti-vimentin antibody anti-GAPDH antibodyanti-CDK4 antibodyanti-β-catenin antibodyanti-GSK3 antibodyanti-p-GSK3 antibodyanti-cyclinD2 antibodyanti-Lamin B1 antibodyanti-α/β-Tubulin antibodysecondary antibody  | WB: CST#84336,1:1 000;IF: Santa Cruz Biotechnology 28657,1:50WB: CST #19245,1:1 000;IF: CST #19245,1:200WB: Abcam ab7046,1:1 000WB: Abcam ab194427,1:500;IF: Abcam ab194427,1:100;IHC: Abcam ab194427,1:50,IP: Abcam ab23306 1.2µg/ml;ICC: Santa Cruz Biotechnology,1:100ICC: Santa Cruz Biotechnology,1:100WB: CST,1:3 000WB: CST #12790,1:1 000WB: CST #8480,1:1 000;IF: CST #8480,1:100WB: CST #12456,1:1000WB: CST #5558,1:1000WB: CST #3741,1:1000WB: CST #12586,1:1000WB: CST #3741,1:1000WB: House Anti Mouse,CST 1:3000;Goat Anti Rabbit,CST 1:3000;Mouse Anti Goat, Millipore 1:10 000IF:(ALexa Fluor™ 488) Goat Anti Rabbit IgG、Goat Anti Mouse IgG、Rabbit Anti Goat IgG, invitrogen,1:200;(ALexa Fluor™ 633) Goat Anti Mouse IgG, Thermo Fisher A-21050,1:200 |

**Supplemental Table3. The treatment of each group HESCs with si-FOXF2**

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| --- | --- |
| **Group** | **Treatment** |
| NC： TGF-β1 treatment：si-NC preventive treatment：si-NC therapeutic treatment：si-FOXF2-1 preventive treatment：si-FOXF2-2 preventive treatment：si-FOXF2-1 therapeutic treatment：si-FOXF2-2 therapeutic treatment： | The HESCs were incubated without TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-NC 12h and then stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-NC transfected 12h and then stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-FOXF2-112h and then stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-FOXF2-212 h and then stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-FOXF2-1transfected 12h and then were continuously stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-FOXF2-2 transfected 12h and then were continuously stimulated with 10ng/ml TGF-β1. |

**Supplemental Table4. The treatment of each group HESCs with si-SNHG5**

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| **Group** | **Treatment** |
| NC： TGF-β1 treatment：si-NC preventive treatment：si-NC therapeutic treatment：si-SNHG5-1 preventive treatment：si-SNHG5-2 preventive treatment：si-SNHG5-1 therapeutic treatment：si-SNHG5-2 therapeutic treatment： | The HESCs were incubated without TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-NC 12h and then stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-NC transfected 12h and then stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-SNHG5-112h and then stimulated with 10ng/ml TGF-β1.The HESCs were transfected with 100nmol/ml si-SNHG5-212 h and then stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-SNHG5-1transfected 12h and then were continuously stimulated with 10ng/ml TGF-β1.The HESCs were stimulated with 10ng/ml TGF-β1 48h ahead of 100nmol /ml si-SNHG5-2 transfected 12h and then were continuously stimulated with 10ng/ml TGF-β1. |