Supplementary Table 1: list of antibodies used in this study

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| Antibodies | Manufacturer and Catalog number | Species raised, monoclonal or polyclonal | Applications and Dilution used |
| Anti-β catenin | Abcam, ab32572  Abcam, ab6302 | Rabbit, monoclonal  Rabbit, polyclonal | WB, 1: 5000  IHC, 1:1000 |
| Anti- c-Myc | Cell Signaling technology, #5605  Abcam, ab32072 | Rabbit, monoclonal  Rabbit, monoclonal | WB, 1:1000  IHC: 100  IF: 1:100 |
| Anti-cyclinD1 | Cell Signaling technology, # 2978  Abcam, ab134175 | Rabbit, monoclonal  Rabbit, monoclonal | WB, 1:750  IHC: 200  IF: 1:50 |
| Anti-caspase 3 | Cell Signaling technology, #9665 | Rabbit, monoclonal | WB, 1:1000 |
| Anti-cleaved caspase 3 | Cell Signaling technology, #9664 | Rabbit, monoclonal | WB, 1:1000 |
| Anti-poly(ADP-ribose) polymerase (PARP) | Santa Cruz Biotechnology, sc-7150 | Rabbit, polyclonal | WB, 1:1000 |
| Anti-Bcl2 | Abcam, ab194583 | Rabbit, polyclonal | WB, 1:1000 |
| Anti-p27 | Santa Cruz Biotechnology, sc-527 | Rabbit, polyclonal | WB, 1:150 |
| Anti-RhoGDI | Thermo Fisher Scientific, PA5-17475 | Rabbit, polyclonal | WB, 1:1000 |
| Anti-Androgen receptor | Santa Cruz Biotechnology, sc-816 | Rabbit, polyclonal | WB, 1:300 |
| Anti-p21 | Santa Cruz Biotechnology, sc-397 | Rabbit, polyclonal | IF, 1:300 |
| Anti- HDAC1 | Cell Signaling technology, # 34589 | Rabbit, polyclonal | WB, 1:1000 |
| Anti- HDAC2 | Cell Signaling technology, # 57156 | Rabbit, monoclonal | WB, 1:1000 |
| Anti- HDAC3 | Cell Signaling technology, # 85057 | Rabbit, monoclonal | WB, 1:1000 |
| Anti- HDAC8 | Abcam, ab187139 | Rabbit, monoclonal | WB, 1:10000 |
| Anti- beta actin | Sigma Biochemicals, A5316 | Mouse, monoclonal | WB, 1:5000 |

IF: Immunofluorescence, WB: Western blot, IHC: Immunohistochemistry.

Supplementary Table 2: Human forward and reverse primers sequences for qRT-PCR

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| Gene | Name | Forward Primer sequence | Reverse Primer sequence |
| *CTNNB1* | β catenin | GAGGACAAGCCACAAGATTACA | CCAAGATCAGCAGTCTCATTCC |
| *CCND1* | Cyclin D1 | CTTCAAATGTGTGCAGAAGG | CTCGCACTTCTGTTCCTC |
| *c-Myc* | c-Myc | GCTGCTTAGACGCTGGATTT | CTCCTCCTCGTCGCAGTAGA |
| *AR* | Androgen receptor | CTTGTCGTCTTCGGAAATGTTATG | CCTCTCCTTCCTCCTGTAGTT |
| *HAS2* | Hyaluronan Synthase 2 | GAGGACGACTTTATGACCAA | GAGAGACTCCAAAGAGTGTG |
| *HAS3* | Hyaluronan Synthase 3 | ATGCTTCGAGTCCTGGAGGAG | AGGAAGGAAATCCATGAGTCG |
| *OPCML* | Opioid Binding Protein/Cell Adhesion Molecule Like | GGGTCTGTGGGTACCTGTTC | TATGGACCACTTGTCATTCC |
| *PITX2* | pituitary homeobox 2 | CGCGAAGAAATCGCTGTGT | CGACGATTCTTGAACCAAACC |
| *MED12L* | Mediator Complex Subunit 12 Like | GAAGCCCATAGACTCTCTTGTTTA | GCTACGCATTGATCTCCTCTAC |
| *ISL1* | Insulin gene enhancer protein | GTCCTCTCAACTTCCAGATACAC | TTCCCACTTTCTCCAACAGG |
| *ANGPT2* | Angiopoietin 2 | GGACCAAAGCAAGACCCTAAA | TGACAGCAGCGTCTGTAAAC |
| *ER* | Estrogen receptor-alpha | GGGAAGTATGGCTATGGAATC | ATAATGGTAGCCTGAAGCATAG |
| *CDK1* | Cyclin dependent  kinase 1 | GTCAGCTCGTTACTCAACTC | GCTAGGCTTCCTGGTTTC |
| *P21* | cyclin-dependent  kinase inhibitor 1A | CCCTTGTCCTTTCCCTTCAGTAC | GTGGGACAGGCACCTCAGA |
| *P27* | cyclin-dependent  kinase inhibitor 1B | GGACTGCGGGACGATCCT | TGACAAGCCACGCAGTAGATTT |
| *PR* | Progesterone receptor | CCCGGGACTGGATAAATG | CAGCGTTTCTATCAACTTACAA |
| *18S rRNA* | 18s Ribosomal RNA | CGAACGTCTGCCCTATCAACTT | ACCCGTGGTCACCATGGTA |