**Supplementary Table 1:** Primer sequences and reaction conditions used in genotyping

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gene  | Primer sequence | Taq polymerase | Buffer  | PCR cycle |
| *Apc* | Forward primer (5’-3’)GTTCTGTATCATGGAAAGATAGGTGGTCReverse primer (5’-3’)CACTCAAAACGCTTTTGAGGGTTGATTC | Dream Taq® (ThermoFisher Scientific) | Green |  Initial denaturation at 95ºC for 3 minutes followed by 30 cycles (95ºC for 30 seconds, 60ºC for 30 seconds and 72ºC for 1 minute) and a final extension at 72ºC for 5 minutes. |
| *Apc2* | Forward primer (5’-3’)Wild type primer:CTCCAAACACAAGATGATCGKnockout primer:AGGTCTGAAGAGGAGTTTACReverse primer (5’-3’)AGCTGTGTCTGATGAGGTG | Go Taq® (Promega) | Clear | Initial denaturation at 95ºC for 3 minutes followed by 30 cycles (95ºC for 30 seconds, 60ºC for 30 seconds and 72ºC for 1 minute) and a final extension at 72ºC for 5 minutes. |

**Supplementary Table 2:** Primary antibodies for immunohistochemistry

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Primary antibody** | **IgG source**  | **Dilution used** | **Blocking serum** | **Secondary antibody and dilution used** |
| Β-cateninPharmingen 562505 | Mouse | 1/200 | 10% rabbit serum | EnVision+ System- HRP Labelled Polymer Anti-mouse |
| Ki67AbcamAb1667 | Rabbit polyclonal  | 1/100 | 10% goat serum | Biotinylated goat anti-rabbit immunoglobulins (1/200) |
| Active caspase-3Cell signalling9661 | Rabbit polyclonal  | 1/200 | 10% goat serum | Biotinylated Goat Anti-Rabbit Immunoglobulins (1/200) |
| CD34AbcamAb81289 | Rabbit polyclonal | 1/100 | 10% goat serum | Biotinylated Goat Anti-Rabbit Immunoglobulins (1/200) |
| E-cadherinBD Transduction610182 | Mouse monoclonal  | 1/200 | MOM blocking reagent | EnVision+ System- HRP Labelled Polymer Anti-mouse |
| Cytokeratin 18 (CK18) multiepitope cocktailProgen biotechnik651134 | Mouse monoclonal  | 1/5 | MOM blocking reagent | MOM biotinylated anti-mouse Ig reagent (1/250) |
| PTENCell signalling 9559 | Rabbit monoclonal | 1/200 | 10% goat serum | Biotinylated Goat Anti-Rabbit Immunoglobulin (1/200) |
| p-AKT (Ser 473 D9E)Cell signalling4060S | Rabbit Monoclonal | 1/75 | 10% goat serum | Biotinylated Goat Anti-Rabbit Immunoglobulin (1/200) |
| p-FOXO1/3/4Cell signalling2599 | Rabbit monoclonal | 1/50 | 10% goat serum | Biotinylated Goat Anti-Rabbit Immunoglobulin (1/200) |
| FOXL2AbcamAb5096 | Goat polyclonal | 1/750 | 10% rabbit serum | Biotinylated rabbit anti-goat immunoglobulin (1/200) |
| ERα | Mouse | 1/500 | MOM blocking reagent | MOM biotinylated anti-mouse Ig reagent (1/250) |
| FOXO1Cell signalling14952 | Mouse | 1/500 | 10% goat serum | EnVision+ System- HRP Labelled anti-mouse |
| Inhibin α (T-17)Santa cruz22048 | Goat polyclonal | 1/20 | 10% rabbit serum | Biotinylated rabbit anti-goat immunoglobulin (1/200) |

**Supplementary Table 3:** Taqman® assays used for relative gene expression analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Taqman Gene Expression Assay  | Assay ID | Taqman Gene Expression Assay  | Assay ID |
| *Actb* | Mm00607939\_s1 | *Esr1* | Mm00433149\_m1 |
| *Apc* | Mm00545877\_m1 | *Esr2* | Mm00599819\_m1 |
| *Ar* | Mm00442688\_m1 | *Fasl*  | Mm00438864\_m1 |
| *Areg* | Mm00437583\_m1 | *Fgf1* | Mm00438906\_m1 |
| *Axin2* | Mm00443610\_m1   | *Foxl2* | Mm00843544\_s1 |
| *Bcl2l11* | Mm00437796\_m1 | *Foxo1* | Mm00490671\_m1 |
| *Bcl6* | Mm00477633\_m1 | *Foxo3* | Mm01185722\_m1 |
| *Cd44* | Mm01277163\_m1 | *Fshr* | Mm00442819\_m1 |
| *Cdkn1b* | Mm00438168\_m1 | *Lef1* | Mm00550265\_m1  |
| *Ctnnb1* | Mm00483039\_m1 | *Lgr5* | Mm00438890\_m1 |
| *Cyp11a1* | Mm00490735\_m1 | *Lhcgr* | Mm00442931\_m1 |
| *Cyp17a1* | Mm00484040\_m1 | *Pgr* | Mm00435625\_m1 |
| *Cyp19a1* | Mm00484049\_m1 | *Tnfsf10* | Mm01283606\_m1 |
| *Egf* | Mm00438696\_m1 | *Vegfa* | Mm01281448\_g1 |
| *Egfr* | Mm00433023\_m1 | *Wif1* | Mm00442355\_m1 |
| *Ereg* | Mm00514794\_m1 |