



**Supplemental Figure 1: Targeting construct for engineering PR<sup>S191A</sup> mice.**

A targeting vector containing exon 1 with nucleotide substitutions to create the S191A and the Nhe1 site was electroporated into mouse ES cells. Selection with G418 enriched recovery of the recombinants containing the Neo cassette and FIAU selection ensured homologous recombination eliminating the tk sequences. Correct insertion was verified by Southern blotting using the probes shown.

# Supplemental Table 1

## List of Primers for qPCR

| GENE NAME    | FORWARD PRIMER (5' TO 3') | REVERSE PRIMER (5' TO 3') |
|--------------|---------------------------|---------------------------|
| PR           | TGCACCTGATCTAATCCTAAATGA  | GGTAAGGCACAGCGAGTAGAA     |
| Ampheregulin | GCGAATGCAGATACATCGAG      | CCACACCGTTCACCAAAGTA      |
| Ihh          | TGCATTGCTCTGTCAAGTCTG     | GCTCCCCGTTCTCTAGGC        |
| Muc1         | CTGTTCACCACCACCATGAC      | CTTGGAAGGGCAAGAAAACC      |
| Calcitonin   | AGCAGGAGGAAGAGCAGGA       | CAGATTCCCACACCGCTTAG      |
| Wnt4         | CTGGACTCCCTCCCTGTCTT      | ATGCCCTTGTCACTGCAAA       |
| Defb1        | GGCTGCCACCACTATGAAA       | TGTGAGAATGCCAACACCTG      |
| AP2 $\beta$  | CTGCATTCCGCACATCAC        | TGGCATCTTCAACTGACTGC      |
| GAPDH        | GATGCCCCCATGTTTGTGAT      | GGTCATGAGCCCTTCCACAAT     |

## Probe/Primer mixes from Applied Biosystems

| GENE NAME | CATALOGUE NUMBER |
|-----------|------------------|
| Fkbp5     | Mm00487401_m1    |
| Bmp2      | Mm01962382_s1    |
| Cox2      | Mm00509546_m1    |
| Wnt4      | Mm00437341_m1    |
| RANKL     | Mm00441908_m1    |
| GAPDH     | 4352339E         |

## List of Primers for ChIP

| GENE       | FORWARD PRIMER (5' TO 3') | REVERSE PRIMER (5' TO 3') |
|------------|---------------------------|---------------------------|
| RANKL D1   | CATCTTACCATGACTGTGGCTA    | ACAACCTGTGTCAAGAAGGTCCT   |
| RANKL D2   | CCCACCTCCTTGCTTCAAAT      | CACAAACGCACTGCAAACATG     |
| RANKL D3   | TTGACATGAACTCGGAAAGG      | CTGCCCTCAGCAAGAGACAT      |
| RANKL D4   | CCAAGGCAAATGATACATGG      | ATGGGCCTCAGAAGTAACGA      |
| RANKL D5   | TTCTCTGTGGGTGAACTCAGG     | CTGGGGCTGCACTCATT         |
| RANKL D6   | TCCCGGTTTCCTACATCATT      | AATCTCCACTGCCCATGAAA      |
| Calcitonin | TGCTTGTCATGGGACAGCTA      | GGAGAGGGTTGGGAGACTCT      |