

**Supplementary Table 3: List of target genes, sources and primers used for the generation of cysteine mutants for follow-up studies.**

| Source     | Cat#       | Gene          | Mutation   | Forward primer                                      | Reverse primer                                |
|------------|------------|---------------|------------|---|---|
| GeneScript | OHU00776 D | AFMID         | C28A       | GAATCAGTACGCTCC<br>CAGCCGATGGGTTG                   | TCCAGCTCC<br>TCTGCAGAC                        |
|            |            |               | C28W       | GAATCAGTACTGGC<br>CCAGCCGAT                         | TCCAGCTCC<br>TCTGCAGAC                        |
|            |            |               | S164A      | GTGTGGACACGCAG<br>CCGGGGCCC                         | AGGTAAATT<br>CCCTTGTTG<br>CTTGGATAC<br>CGCTTC |
| GeneScript | OMu04645 D | AFMID (mouse) | S26C       | GAAGCAATACTGTCC<br>CAGCAGATGG                       | TCCAGCTCC<br>TCCGAAGAC                        |
| GeneScript | OHu11261   | AK3           | K34R       | CTTCGAGCTGAGGC<br>ACCTCTCCA                         | TGTGTAGTG<br>ATGCGCGAC                        |
| GeneScript | OHu00342 D | C15orf5 7     | C111A      | CAAGAAGGAAGCCT<br>GGGATCGGTTCTC                     | GCTTGGGCC<br>AGAGTTCGA                        |
| GeneScript | OHu00776 D | LIMK1         | C349A      | GGGCAAGGGCGCCT<br>TCGGCCAGG                         | AGCACCTCC<br>CCGTGGATG                        |
| OriGene    | RC213222   | NFU1          | C210A      | CCAGGGTTCTGCTA<br>CCAGCTGCC                         | AGTTTCAGC<br>TGTACAATG                        |
|            |            |               | C213A      | TTGTACCAGCGCCC<br>CTAGTTCAATC                       | GAACCTGG<br>AGTTTCAGC                         |
| OriGene    | RC203780   | PLEK          | C250A      | CAAGCAGGGAGCTT<br>TACTGAAGCAGG                      | ATAATGACC<br>CCTCTGAATT<br>C                  |
| OriGene    | RC209475   | STAMB P       | C264A      | TGGGCGGCTGGCCC<br>CACAGTTTCTCC                      | GGCACCACC<br>ACATGGCGC                        |
| OriGene    | RC223981   | STK39         | C59A       | CTGGCCCATCGCCA<br>GGGACGCGTACGAG                    | CCGACAGCC<br>TGTGCCGCC                        |
|            |            |               | C334A      | ACTTTTAAAAGCCAA<br>ATTCTTCCAGAAAGC<br>CAAGAACAGAGAG | TCTGCTGCT<br>GTGGGCCTT                        |
| GeneScript | OHu17207 D | TMX1          | C56A       | TGCCCCGTGGGCGC<br>CTGCTTGTC                         | TAAAATTCTA<br>TCATCCAGT<br>CTCC               |
|            |            |               | C59A       | GTGCCCTGCTGCGC<br>AAAATCTTCAACC                     | CACGGGGCA<br>TAAAATTCTA<br>TC                 |
|            |            |               | C56A/C59 A | GCTGCGCAAATCTT<br>CAACCGGAATG                       | AGGCGCCCA<br>CGGGGCATA<br>AAATTC              |
|            |            |               | C205A      | TGTGGCAGATGCGC<br>TTTGTCTTCAAAA<br>G                | AATATCATAC<br>AGAGTCCTA<br>ATAAC              |
| OriGene    | RC200032   | TMX2          | N/A        | N/A   | N/A   |

|            |               |              |               |  |                                    |
|------------|---------------|--------------|---------------|--|------------------------------------|
| OriGene    | RC210841      | TMX3         | N/A           | N/A  | N/A                                |
| GeneScript | OHu70023<br>D | TMX4         | C64A          | CGCCCCATGGGCGC<br>CATCCTGCC                        | TAAAATTTCA<br>GCATCCACT<br>CG      |
|            |               |              | C67A          | GTGTCCATCCGCGC<br>AGCAGACTG                        | CATGGGGCG<br>TAAAATTTTC            |
|            |               |              | C64A/C67<br>A | TCCGCGCAGCAGAC<br>TGATTCAGAATG                     | TGGCGCCCA<br>TGGGGCGTA<br>AAATTTTC |
|            |               |              | C213A         | AATATCAGAAGCGTT<br>CTATGTGCCACTTCC<br>AAGGCATTTATC | ACCACCAAG<br>ACCAGACCC             |
| GeneScript | OHu20911<br>D | TYMS         | C195A         | GCTGCCTCCAGCCC<br>ATGCCCTCT                        | GCCATCAGA<br>GGAAGATCT<br>C        |
| GeneScript | OHu13064      | MAD2L1<br>BP | C186A         | CACAGCAGCTgcgTT<br>GCGCCGTCTCTTCC                  | CTCAGGCTC<br>TGGTCCACG             |