**Supplemental file 1:**

**Table S1. PCR primers information of *SERPINA1* gene**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Primer** | **Location** | **Primer sequences (5’-3’)** | **Product size (bp)** | **Annealing Temp (℃)** |
| *SERPINA1*-1 | 5’ flanking region | F-TCCTTCTGCCACAAGAACCT | 514 | 59 |
| R-GGTCTAAGGATGAGGGGAGC |
| *SERPINA1*-2 | 5’ flanking region | F-ACTCAGTAAGGGAAGCCTGG | 567 | 59 |
| R-AGGGTGGTAGTGTGGGATTG |
| *SERPINA1*-3 | 5’ flanking region | F-AACCCACTGAAAAGCCCAAG | **512\*\*** | 59 |
| R-ACCTAAGGCTGATACGGGTG |
| *SERPINA1*-4 | 5’ flanking region | F-GTTTCAGAGAGATGGACCAGC | 437 | 58 |
| R-GGCAACTAACCCCATACAGC |
| *SERPINA1*-5 | 5’ flanking region | F-GTCACAGTCTCTAGGGCACA | 546 | 59 |
| R-CCCTGTCCTTCCCCGTATTT |
| *SERPINA1*-6 | Exon-1 | F-AAATACGGGGAAGGACAGGG | 483 | 59 |
| R-AACCTGGGCTACTCACTGTC |
| *SERPINA1*-7 | Exon-2 | F-TCCCTGCCATTGTTCTGAGT | **540\*\*** | 59 |
| R-GGTTCAGGGTGTGGAGAAGA |
| *SERPINA1*-8 | Exon-2 | F-TCATCAGTCCAACACCAGCA | **550\*\*** | 59 |
| R-TATCCCATTCTGTGCTGCCA |
| *SERPINA1*-9 | Exon-3 | F-GAGCCTGGTGAGCTACAGTC | 568 | 59 |
| R-ATGCATTCTGGCCTCTGTTG |
| *SERPINA1*-10 | Exon-4 | F-TCTGCAGGACAAGAGGATGG | **514\*\*** | 59 |
| R-CACAACTTCCAAGCACGTGA |
| *SERPINA1*-11 | Exon-5 | F-GTGGATCAGACAGAGGCCTT | 518 | 59 |
| R-ATGCAAGAGGACGAAGGGTT |

Note: \*\*SNPs are detected.