

**Table 4. The primers for quantitative real time PCR**

| Target gene    | primer set 5'-3'                                         | Target gene    | primer set 5'-3'                                           |
|----------------|----------------------------------------------------------|----------------|------------------------------------------------------------|
| a <sub>1</sub> | F:TGTGTTGCATTCATCAGCTTGTG<br>R:ACCTTGACCTTGCTGTTGTTATTG  | g <sub>2</sub> | F:GCATCTATCTACCCTGTCTATCT<br>R:GGCCGCAACATGTCTAATAG        |
| a <sub>2</sub> | F:CTGTCTACCACTCATGTCATCTC<br>R:AAGCCATCAATGCCAGAAGG      | g <sub>3</sub> | F:CTGACCATACGACTGAACCGATG<br>R:CCAATAGAGGACGAGAGCAACAC     |
| c <sub>1</sub> | F:GGTGGTTCAGAGTTCTTATTGTTG<br>R: TGACAGGCAGGCAGAAGC      | i <sub>1</sub> | F:TCCTATGTTGGTGTGATGGTAG<br>R:GGTTGTTGAGAGTGATATAATAATAGAG |
| c <sub>2</sub> | F:GGTGGTTCAGAGTTCTTATTGTTG<br>R: GGCACGCGACCTGAGAG       | i <sub>2</sub> | F:TGCAGATGAAAGACTATTGTCGCAG<br>R:AGCAGCAGTGTCTTACTAGCCTT   |
| c <sub>3</sub> | F:GCCTGTCTCTTTCAGTGGT<br>R:AACCAAGAACATAATCACAGTCT       | j              | F:TGATCGTTATGCTGCCATCTGC<br>R:CACCTGGGAAGTCTTGTCTGC        |
| d              | F:AGCTGGTCTCTAAGTTGGTCAC<br>R:TTGGCACAGAACACCTTTGG       | k <sub>1</sub> | F:ATCCTCATCATTACAGCCTCAG<br>R:TGCAGCTTTGGCCACTTTCAT        |
| e              | F:GCTGGTCGGTTTGGCGGATTC<br>R:GGAGAAGAGGATGAGCGGTATGTC    | k <sub>2</sub> | F:CTGTGCTCCACACGCAGCACT<br>R:TCCTGATGCAGCTTTGGCCACTT       |
| f              | F:TGTCTTGATTGTGTCATTGTTCTC<br>R:TTGCCTCGGACCTCCTTG       | β-actin        | F:TGGCATCACACCTTCTACAAC<br>R:ACGACCAGAGGCATACAGG           |
| g <sub>1</sub> | F:GCCTCGTTTGCTTGTAAGATATTC<br>R:GTTGGTCATTATGGCAGTATAGTG |                |                                                            |

Note: the letters a-k represent the different clades of ORs in the phylogenetic tree, the primers were designed according to the conserved domains of ORs in each clade.

**Figure 7. The standard curves and efficiencies for each pair of primers**





