**Table S1** Primers for *Rhipicephalus haemaphysaloides* caspase genes

|  |  |
| --- | --- |
| Primer name | Primer sequence |
| RhCaspase-7-S | GTTTTCGTGGCAGGCTGTTCAAG |
| RhCaspase-7-A | GGATGGCTATGTGGCTAAGAGTAAG |
| RhCaspase-8-S | GGGGTTCTTGTTAAAGTTGCC |
| RhCaspase-8-A | TCCACTGAGGATATATGGATAAGAG |
| RhCaspase-9-S | TACCTATGTACACAGCAGCACTCC |
| RhCaspase-9-A | TGGCTGGTAGTCAGTAAAGAATCCC |

**a**S, forward primer; A, reverse primer

**Table S2** Primers used for quantitative real-time polymerase chain reactions (qPCRs) of *Rhipicephalus haemaphysaloides* caspase genes.

|  |  |
| --- | --- |
| Primer name | Primer sequence |
| ELF1A-S | CGTCTACAAGATTGGTGGCATT |
| ELF1A-A | CTCAGTGGTCAGGT TGGCAG |
| RhCaspase-7-S | CTCAGCGAGCGAAGGGGCACGGACA |
| RhCaspase-7-A | AGCAGACTGGGACAGACATCTCCGT |
| RhCaspase8-S | CGCCACAGTTTGGGACCACAGGA |
| RhCaspase8-A | CTTCGCCTTTCACCTGTGCCCCT |
| RhCaspase9-S | GCTGACAAGCCCACTGGCGAACAAC |
| RhCaspase9-A | CATTCAGAGCAGAGTCAGCAGTCCG |

**a**S, forward primer; A, reverse primer

\***Table S3** Primers for *Rhipicephalus haemaphysaloides* caspase ORF cloning

|  |  |
| --- | --- |
| Primer name | Primer sequence |
| *RhCaspase7*-pET-28a-S | GGCTGATATC*GGATCC*ATGGCCGGCATGAGTGGGGA |
| *RhCaspase7*-pET-28a-A | GTGCGGCCGC*AAGCTT*GAGAGTAAGCCGCTCCTG GTTTCG |
| *RhCaspase8*-pET-28a-S | CTTCCTTCCCAGGTACAGGGCAATGGCGGTCGCTTG CAGTCCT |
| *RhCaspase8*-pET-28a-A | GTGCGGCCGC*AAGCTT*CTTCCTTCCCAGGTACAGGG CA |
| *RhCaspase9*-pET-28a-S | GGCTGATATC*GGATCC*ATGCCTGCAGGTCGACGA TTTACC |
| *RhCaspase9*-pET-28a-A | GTGCGGCCGC*AAGCTT*G*GAGATTTGGCTGGTAGTCAGTAAAGAATC* |
| *RhCaspase7*-p3×Flag-CMV-14-S | TGAACCGTCAGAATTAAGCTTATGGCCGGCATGAGTGGGGA |
| *RhCaspase7*-p3×Flag-CMV-14-A | CTTTGTAGTCAGCCCGGGATCCAGAGTAAGCCGCTCCTGGTTTCG |
| *RhCaspase8*-p3×Flag-CMV-14-S | TGAACCGTCAGAATTAAGCTTATGGCGGTCGCTTGCAGTCCT |
| *RhCaspase8*-p3×Flag-CMV-14-A | CTTTGTAGTCAGCCCGGGATCCCTTCCTTCCCAGGTACAGGGCA |
| *RhCaspase9*-p3×Flag-CMV-14-S | TGAACCGTCAGAATTAAGCTTATGCCTGCAGGTCGACGATTTACC |
| *RhCaspase9*-p3×Flag-CMV-14-A | CTTTGTAGTCAGCCCGGGATCC*GAGATTTGGCTGGTAGTCAGTAAAGAATC* |

**a**S, forward primer; A, reverse primer

**Table S4** Primers for RNAi of *Rhipicephalus haemaphysaloides* caspase genes

|  |  |
| --- | --- |
| Primer name | Primer sequence |
| *RhCaspase7* dsRNA-S1 | GGATCCTAATACGACTCACTATAGGGGAGCATTTTTGGGGGAATCTTTGG |
| *RhCaspase7* dsRNA-A1 | GGTCTTGGAGCACCGAGCAGAGGGC |
| *RhCaspase7* dsRNA-S2 | GGAGCATTTTTGGGGGAATCTTTGG |
| *RhCaspase7* dsRNA-A2 | **GGATCCTAATACGACTCACTATAGG**GGTCTTGGAGCACCGAGCAGAGGGC |
| *RhCaspase8* dsRNA-S1 | **GGATCCTAATACGACTCACTATAGG**AGTTTGGAGCCTCGGTTGAC |
| *RhCaspase8* dsRNA-A1 | GGGATACCGTGGCACTGTTT |
| *RhCaspase8* dsRNA-S2 | AGTTTGGAGCCTCGGTTGAC |
| *RhCaspase8* dsRNA-A2 | **GGATCCTAATACGACTCACTATAGG**GGGATACCGTGGCACTGTTT |
| *RhCaspase9* dsRNA-S1 | **GGATCCTAATACGACTCACTATAGG**CGGCTCCCCCATTTAGTAGATT |
| *RhCaspase9* dsRNA-A1 | CTTCTTCCGCCAGCCTCGC |
| *RhCaspase9* dsRNA-S2 | CGGCTCCCCCATTTAGTAGATT |
| *RhCaspase9* dsRNA-A2 | **GGATCCTAATACGACTCACTATAGG**CTTCTTCCGCCAGCCTCGC |

**a**S, forward primer; A, reverse primer, the sequence in bold underlined indicates the sequence of the T7 promoter .

Supplementary Figure S1: Phylogenetic tree of *R. haemaphysaloides* caspases to the caspases of other *Drosophila melanogaster*. Bootstrap values of 500 simulations are shown at the branches.

