**Table S1 Oligonucleotide sequences for RT-qPCR.**

| **AMP gene expression in KC167 cells** | | |
|---|---|---|
| **Oligonucleotide name** | **Oligonucleotide sequence** | **NCBI accession number** |
| dmAttachin_F | GGCCCATGCCAATTTATTCA | NM_001169681.2 |
| dmAttacin_R | CATTGCGCTGGAACTCGAA | NM_001169681.2 |
| dmCecropin_F | TCTTCGTTTTCGTCGCTCTC | NM_079849.4 |
| dmCecropin_R | CTTGTTGAGCGATTCCCAGT | NM_079849.4 |
| dmDefensin_F | GCCAGAAGCGAGCCACAT | NM_078948.3 |
| dmDefensin_R | CGGTGTGGTTCCAGTTCCA | NM_078948.3 |
| dmDiptericin_F | AGGTGTGGACCAGCGACAA | NM_057460.4 |
| dmDiptericin_R | TGCTGTCCATATCCTCCATTCA | NM_057460.4 |
| dmDrosocin_F | GCACAATGAAGTTCACCATCGT | NM_079020.5 |
| dmDrosocin_R | CCACACCCATGGCAAAAAC | NM_079020.5 |
| dmDrosomycin_F | CTCCGTGAGAACCTTTTCCA | NM_079177.4 |
| dmDrosomycin_R | GTATCTTCCGGACAGGCAGT | NM_079177.4 |
| dmMetchnikowin_F | GCTACATCAGTGCTGGCAGA | NM_079177.4 |
| dmMetchnikowin_R | AATAAATTGGACCCGGTCT | NM_079177.4 |
| dmActin_F | GCGTCGGTCAATTCAATCTT | NM_078901.3 |
| dmActin_R | AAGCTGCAACCTCTTCGTCA | NM_078901.3 |
| dmRpl32_F | ATGCTAAGCTGTCGCACAAATG | NM_079843.4 |
| dmRpl32_R | GTTCGATCCGTAACCGATGT | NM_079843.4 |
| ***R. typhi*** **expression** | | |
| **Oligonucleotide name** | **Oligonucleotide sequence** | **Reference** |
| adr1_F | CCACACCAGCACCAGCAAAA | (1) |
| adr1_R | GCACGGACAGTAGTTCAACC | (1) |
| ompB_F | TGGTATTACTGCTCAACAAGCT | (1) |
| ompB_R | CAGTAAAGTCTATTGATCCTACACC | (1) |
| ***C. felis*** **expression** | | |
| **Oligonucleotide name** | **Oligonucleotide sequence** | **NCBI accession number or Reference** |
| CfRel1_F | CCTCAATGGAATCTACTTCG | GAYP02012752 |
| CfRel1_R | ACTTGTCTGTTGGTTGTTCC | GAYP02012752 |
| CfRel2_F | ATCTAGCTGTGGCTGGAGGA | GAYP02012752 |
| CfRel2_R | CTAAATGCAGGGGCGTATGT | GAYP02012752 |
| CfImd_F | AAGCTCTCATGTCGTCTGAT | GAYP02008970 |
| CfIMd_R | TTGTTTTGGGTCCAATCTAC | GAYP02008970 |
| CfActin_F | CGGAGCCACACATTCTACAATGAACTC | GR302008.1 |
| CfActin_R | CATGGTTAGCCTTTGGGTTCAA | GR302008.1 |
| CfEf_F | TCGTACTGGCAAATCCACAG | (2) |
| CfEf_R | CATGTCACGGACAACGAAAC | (2) |

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2. McIntosh CH, Baird J, Zinsen E, Woods DJ, Campbell EM, Bowman AS. 2016. Reference gene selection and RNA preservation protocol in the cat flea, *Ctenocephalides felis*, for gene expression studies. Parasitology 143:1532–1542.

**Table S2 siRNA sequences for knockdown in *C. felis*.**

| siRNA name | siRNA sequence | NCBI accession number used to design siRNA |
|---|---|---|
| CfNeg siRNA 1 | sic001-10nmol mission siRNA universal negative control #1 (Sigma) | |
| CfNeg siRNA 2 | sic002-10nmol mission siRNA universal negative control #2 (Sigma) | |
| CfRelish siRNA 206_sense | GCA GAU AUG UAA UGG CUG A | GAYP02012752 |
| CfRelish siRNA 206_antisense | UCA GCC AUU ACA UAU CUG C | GAYP02012752 |
| CfRelish siRNA 676_sense | CCA UUG AGA CAA AGU GAA A | GAYP02012752 |
| CfRelish siRNA 676_antisense | UUU CAC UUU GUC UCA AUG G | GAYP02012752 |
| CfRelish siRNA 1277_sense | CAC CAG AAU UCA UCA GUA A | GAYP02012752 |
| CfRelish siRNA 1277_antisense | UUA CUG AUG AAU UCU GGU G | GAYP02012752 |
| CfImd siRNA 158_sense | CAG UUA GGC CAG CAA GAA A | GAYP02008970 |
| CfImd siRNA 158_antisense | UUU CUU GCU GGC CUA ACU G | GAYP02008970 |
| CfImd siRNA 208_sense | GAA CAG AAC AUU GGA GAA A | GAYP02008970 |
| CfImd siRNA 208_antisense | UUU CUC CAA UGU UCU GUU C | GAYP02008970 |
| CfImd siRNA 383_sense | CCU CAA UAC AGG AAG AUG A | GAYP02008970 |
| CfImd siRNA 383_antisense | UCA UCU UCC UGU AUU GAG G | GAYP02008970 |

**Table S3 Raw data used for analysis of the PCR array conducted in uninfected (Vero 1-5) and *R. typhi* infected (RT 1-5) KC167 cells**

| Well | Gene Symbol | Vero 1 | Vero 2 | Vero 3 | Vero 4 | Vero 5 | Rt 1 | Rt 2 | Rt 3 | Rt 4 | Rt 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | arr | 25.52 | 25.52 | 24.79 | 26.47 | 26.07 | 27.34 | 25.19 | 26.22 | 26.29 | 25.47 |
| A2 | ato | 34.83 | 34.83 | 32.16 | 32.77 | 37.47 | 35.2 | 33.63 | 39.14 | 35.39 | 30.98 |
| A3 | AttA | 29.44 | 29.44 | 29.41 | 30.61 | 29.61 | 27.52 | 25.52 | 27.64 | 27.48 | 26.71 |
| A4 | AttB | 30.26 | 30.26 | 28.68 | 30.46 | 29.56 | 27.67 | 25.91 | 28.44 | 27.46 | 26.41 |
| A5 | AttC | No Ct | No Ct | No Ct | 37.96 | 38.14 | 33.71 | 33.57 | 34.5 | No Ct | 34.75 |
| A6 | AttD | 34.06 | 34.06 | 31.97 | 30.68 | 31.1 | 31.5 | 29.06 | 30.89 | 30.18 | 28.56 |
| A7 | Axn | 25.28 | 25.28 | 23.72 | 25.77 | 25.53 | 26.42 | 25.19 | 26.3 | 25.35 | 24.19 |
| A8 | bnl | 23.49 | 23.49 | 23.4 | 23.95 | 23.93 | 25.02 | 23.26 | 24.05 | 23.94 | 23.12 |
| A9 | brk | 26.01 | 26.01 | 25.4 | 26.96 | 26.83 | 27.42 | 25.75 | 27.05 | 26.54 | 25.99 |
| A10 | byn | No Ct | No Ct | No Ct | No Ct | No Ct | No Ct | 38.98 | 33.43 | 37.82 | 30.33 |
| A11 | cact | 22.25 | 22.25 | 21.47 | 22.9 | 22.95 | 23.53 | 21.62 | 22.73 | 22.69 | 22.12 |
| A12 | cathD | 20.99 | 20.99 | 20.37 | 21.68 | 21.35 | 22.45 | 20.57 | 21.89 | 21.47 | 20.91 |
| B1 | CG10899 | 32.53 | 32.53 | 32.81 | 32.95 | 32.22 | 32.45 | 31.54 | 31.93 | 33.94 | 31.04 |
| B2 | CG10924 | 22.98 | 22.98 | 22.07 | 24.69 | 24.54 | 24.33 | 22.59 | 23.5 | 24.34 | 24.03 |
| B3 | CG2107 | 24.67 | 24.67 | 23.66 | 24.83 | 24.75 | 25.84 | 24.01 | 25.54 | 24.95 | 24.41 |
| B4 | CG3961 | 23.77 | 23.77 | 22.78 | 24.99 | 24.89 | 24.85 | 22.99 | 24.29 | 24.95 | 24.34 |
| B5 | CG8630 | 32.39 | 32.39 | No Ct | No Ct | No Ct | 34.94 | No Ct | 34.1 | No Ct | 33.42 |
| B6 | Csp | 23.21 | 23.21 | 22.24 | 24.1 | 24.23 | 24.38 | 22.63 | 24.12 | 24.08 | 23.34 |
| B7 | CycD | 25.26 | 25.26 | 24.03 | 25.45 | 24.95 | 26.32 | 24.43 | 25.83 | 25.32 | 24.1 |
| B8 | CycE | 26.21 | 26.21 | 24.81 | 26.65 | 26.68 | 27.32 | 25.4 | 26.34 | 26.48 | 25.86 |
| B9 | CycG | 20.82 | 20.82 | 20.55 | 21.76 | 21.63 | 22.6 | 20.64 | 21.83 | 21.73 | 20.88 |
| B10 | Cyp4e1 | 25.24 | 25.24 | 24.44 | 27.28 | 27.11 | 26.34 | 25.05 | 25.76 | 26.93 | 26.67 |
| B11 | dally | 26.25 | 26.25 | 25.91 | 26.81 | 26.32 | 27.6 | 26.12 | 27.3 | 26.54 | 26.17 |
| B12 | Def | 30.85 | 30.85 | 29.61 | 32.25 | 34.81 | 32.84 | 30.05 | 32.48 | 31.95 | 32.59 |
| C1 | Dl_Delta | 30.34 | 30.34 | 29.25 | 30.36 | 30.51 | 30.8 | 31.04 | 32.47 | 30.69 | 29.71 |
| C2 | dm | 23.39 | 23.39 | 22.62 | 23.78 | 23.76 | 25.27 | 22.91 | 23.96 | 23.57 | 22.54 |
| C3 | dpp | 26.74 | 26.74 | 26.04 | 28.84 | 28.42 | 28.51 | 26.84 | 27.39 | 28.49 | 28.3 |
| C4 | Drs | 27.42 | 27.42 | 26.73 | 29.05 | 28.34 | 28.78 | 27.06 | 27.93 | 29.19 | 27.95 |
| C5 | Ef1alpha48D | 17.63 | 17.63 | 17.34 | 18.14 | 18.12 | 18.97 | 17.62 | 18.61 | 18.07 | 17.61 |
| C6 | ex | 24.67 | 24.67 | 23.73 | 25.05 | 24.97 | 25.94 | 24.4 | 25.38 | 24.95 | 24.43 |
| C7 | Fatp | 24.77 | 24.77 | 23.38 | 24.77 | 24.52 | 25.84 | 24.34 | 25.69 | 24.82 | 24.21 |
| C8 | fj | No Ct | No Ct | No Ct | No Ct | 39.71 | 39.8 | No Ct | No Ct | No Ct | 32.64 |
| C9 | fkh | 33.7 | 33.7 | 31.83 | 34.99 | 34.64 | 34.7 | No Ct | 34.91 | 35.8 | 33.77 |
| C10 | fng | 28.98 | 28.98 | 27.18 | 28.78 | 29.34 | 30.03 | 28.49 | 29.61 | 28.98 | 28.62 |
| C11 | Fs | 25.4 | 25.4 | 24.35 | 25.79 | 25.57 | 26.48 | 25.07 | 25.81 | 26.04 | 25.39 |
| C12 | fz | 25.78 | 25.78 | 24.57 | 28.76 | 28.89 | 27.22 | 25.73 | 26.25 | 28.94 | 28.23 |
| D1 | Galphaf | 26.47 | 26.47 | 25.39 | 29.52 | 29.48 | 27.19 | 25.63 | 26.49 | 30.29 | 27.48 |
| D2 | Gclm | 24.46 | 24.46 | 23.54 | 24.51 | 24.3 | 25.39 | 23.62 | 24.98 | 24.55 | 23.89 |
| D3 | Glut1 | 24.56 | 24.56 | 23.77 | 25.52 | 25.38 | 25.81 | 24.45 | 25.24 | 25.29 | 24.78 |
| D4 | grn | 34.33 | 34.33 | No Ct | 35.19 | No Ct | 35.23 | 35.42 | 33.58 | 34.99 | 32.21 |
| D5 | GstD1 | 18.04 | 18.04 | 17.75 | 18.86 | 18.57 | 19.28 | 17.79 | 18.77 | 18.77 | 18.41 |
| D6 | h | 22.12 | 22.12 | 21.57 | 22.95 | 23.21 | 23.85 | 21.94 | 23.09 | 22.85 | 22.43 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D7 | hb | No Ct | No Ct | 34.4 | No Ct | 35.4 | 36.66 | 39.95 | 34.14 | No Ct | 38.5 |
| D8 | Hey | No Ct | No Ct | 37.18 | No Ct | No Ct | No Ct | No Ct | No Ct | No Ct | 35.86 |
| D9 | hkb | 30.65 | 30.65 | 30.67 | 33.87 | No Ct | 32.85 | 31.06 | 30.84 | No Ct | 30.94 |
| D10 | Hsc70-1 | 33.55 | 33.55 | No Ct | 33.35 | No Ct | 34.35 | No Ct | No Ct | 32.99 | 35.59 |
| D11 | Hsp27 | 20.47 | 20.47 | 19.77 | 21.79 | 21.6 | 21.65 | 20.07 | 21.19 | 21.97 | 21.24 |
| D12 | iHog | 25.74 | 25.74 | 25.41 | 26.13 | 26.1 | 27.68 | 25.48 | 26.66 | 26.27 | 25.77 |
| E1 | ImpL3 | 25.04 | 25.04 | 25.29 | 25.08 | 25.19 | 27.08 | 24.44 | 25.94 | 24.61 | 25.39 |
| E2 | Ir76a | 25.12 | 25.12 | 24.59 | 25.69 | 25.3 | 26.57 | 24.29 | 25.9 | 25.56 | 24.85 |
| E3 | Keap1 | 23.38 | 23.38 | 22.53 | 24.22 | 24.13 | 24.77 | 22.9 | 23.96 | 23.97 | 23.6 |
| E4 | kibra | 24.41 | 24.41 | 24.08 | 25.06 | 24.46 | 26.19 | 23.96 | 25.18 | 24.54 | 24.05 |
| E5 | mdy | 21.21 | 21.21 | 20.53 | 22.47 | 22.13 | 22.59 | 20.76 | 21.9 | 22.23 | 21.69 |
| E6 | mirr | 26.3 | 26.3 | 25.83 | 27.28 | 27.23 | 28.25 | 26.65 | 27.3 | 27.01 | 26.26 |
| E7 | Mtk | 29.3 | 29.3 | 28.91 | 31.56 | 31.18 | 30.21 | 28.31 | 30.65 | 29.72 | 28.7 |
| E8 | PCNA | 20.53 | 20.53 | 19.63 | 20.47 | 20.46 | 21.52 | 19.85 | 21 | 20.36 | 19.9 |
| E9 | N | 26.13 | 26.13 | 25.11 | 26.43 | 26.24 | 27.55 | 26.17 | 26.7 | 26.13 | 25.4 |
| E10 | net | 26.59 | 26.59 | 25.67 | 28.45 | 28.07 | 27.86 | 26.01 | 27.32 | 28.12 | 27.08 |
| E11 | nmo | 28.72 | 28.72 | 28.14 | 29.96 | 29.82 | 30.79 | 28.28 | 28.63 | 28.97 | 28.61 |
| E12 | Odc1 | No Ct | No Ct | No Ct | 35.72 | No Ct | No Ct | No Ct | 35.61 | No Ct | 36.05 |
| F1 | Odc2 | 32.68 | 32.68 | 37.28 | No Ct | No Ct | No Ct | 33.15 | No Ct | No Ct | 34.93 |
| F2 | os | No Ct | No Ct | No Ct | 34.64 | 33.6 | No Ct | No Ct | 34.31 | 32.57 | 37.86 |
| F3 | p53 | 21.4 | 21.4 | 20.72 | 21.29 | 21.16 | 22.43 | 20.65 | 21.92 | 21.51 | 20.81 |
| F4 | pan | 23.55 | 23.55 | 22.9 | 24.91 | 25.02 | 25.02 | 23.12 | 24.22 | 24.77 | 24.02 |
| F5 | Pdk1 | 23.92 | 23.92 | 23.53 | 24.82 | 24.46 | 25.33 | 23.45 | 24.17 | 24.6 | 23.98 |
| F6 | ptc | 27.4 | 27.4 | 27.08 | 28.91 | 28.92 | 29.58 | 27.3 | 27.62 | 28.47 | 28.13 |
| F7 | ref(2)P | 22.25 | 22.25 | 21.54 | 22.87 | 22.77 | 23.65 | 22.13 | 22.7 | 22.64 | 22.47 |
| F8 | rept | 24.61 | 24.61 | 23.44 | 24.56 | 24.6 | 25.89 | 24.12 | 24.97 | 24.14 | 23.79 |
| F9 | slmb | 23.43 | 23.43 | 22.77 | 23.95 | 23.76 | 24.67 | 23.42 | 24.44 | 23.96 | 23.31 |
| F10 | smo | 23.97 | 23.97 | 23.31 | 24.66 | 24.73 | 25.25 | 23.3 | 24.43 | 24.63 | 23.96 |
| F11 | Socs36E | 24.24 | 24.24 | 23.74 | 24.55 | 24.15 | 25.8 | 24.07 | 25.12 | 24.28 | 24.05 |
| F12 | spi | 20.73 | 20.73 | 19.95 | 21.56 | 21.34 | 22.09 | 19.98 | 21.3 | 21.73 | 20.98 |
| G1 | tgo | 23.06 | 23.06 | 22.52 | 23.91 | 23.8 | 24.58 | 22.57 | 23.66 | 23.53 | 23.09 |
| G2 | th | 21.9 | 21.9 | 21.59 | 23.03 | 22.76 | 23.54 | 21.77 | 22.94 | 23.03 | 22.21 |
| G3 | tll | No Ct | No Ct | No Ct | No Ct | 33.54 | 35.05 | 34.06 | 34.64 | No Ct | 35.78 |
| G4 | Trx-2 | 21.26 | 21.26 | 20.12 | 21.49 | 21.34 | 22.25 | 20.59 | 21.81 | 21.93 | 21.29 |
| G5 | Tsp66E | 28.84 | 28.84 | 27.36 | 28.54 | 29.16 | 29.4 | 28.09 | 29.03 | 28.61 | 27.91 |
| G6 | Ubx | No Ct | No Ct | No Ct | No Ct | 32.42 | 34 | 32.18 | 38.86 | No Ct | 33.3 |
| G7 | upd2 | 29 | 29 | 27.97 | 27.85 | 27.43 | 30.08 | 29.3 | 29.63 | 27.67 | 26.66 |
| G8 | upd3 | 26.86 | 26.86 | 26.03 | 25.83 | 25.61 | 28.15 | 26.44 | 27.59 | 25.74 | 25.07 |
| G9 | vn | 25.88 | 25.88 | 25.09 | 26.41 | 26.34 | 27.19 | 25.7 | 26.4 | 26.34 | 25.63 |
| G10 | wg | 34.91 | 34.91 | 34.71 | 36.09 | 35.23 | 36.01 | 33.19 | 35.29 | 35.29 | 28.17 |
| G11 | Wnt4 | 33.06 | 33.06 | 36.66 | 38.76 | 34.7 | 35.05 | No Ct | 33.13 | No Ct | 30.59 |
| G12 | Wnt5 | 24.46 | 24.46 | 23.52 | 24.4 | 24.31 | 26 | 23.99 | 25.12 | 24.42 | 23.65 |
| H1 | Act42A | 20.91 | 20.91 | 19.98 | 21.01 | 20.95 | 21.82 | 20.35 | 21.48 | 20.45 | 19.4 |
| H2 | Gapdh1 | 21.01 | 21.01 | 20.2 | 21.33 | 21.27 | 22.09 | 20.14 | 21.63 | 21.28 | 20.28 |
| H3 | RpL32 | 17.4 | 17.4 | 16.69 | 17.81 | 17.73 | 17.99 | 16.91 | 17.98 | 17.93 | 17.6 |
| H4 | SdhA | 23.06 | 23.06 | 22.34 | 23.37 | 23.27 | 24.58 | 22.47 | 23.74 | 23.07 | 22.77 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H5 | Tbp | 23.86 | 23.86 | 23.61 | 24.74 | 24.26 | 25.31 | 23.31 | 24.66 | 24.39 | 23.94 |
| H6 | DGDC | 34.1 | 34.1 | No Ct | No Ct | No Ct | No Ct | No Ct | No Ct | No Ct | 34.83 |
| H7 | RTC | 20.64 | 20.64 | 19.52 | 20.59 | 20.15 | 21.42 | 20.45 | 20.99 | 20.27 | 20.16 |
| H8 | RTC | 20.74 | 20.74 | 19.63 | 20.7 | 20.2 | 21.46 | 20.42 | 21.08 | 20.28 | 20.21 |
| H9 | RTC | 20.63 | 20.63 | 19.47 | 20.46 | 20.14 | 21.42 | 20.38 | 21.07 | 20.25 | 20.14 |
| H10 | PPC | 17.66 | 17.66 | 16.87 | 18.36 | 18.04 | 18.42 | 17.87 | 18.26 | 18.05 | 17.82 |
| H11 | PPC | 17.81 | 17.81 | 16.92 | 18.36 | 18.03 | 18.56 | 17.92 | 18.2 | 17.97 | 17.82 |
| H12 | PPC | 17.82 | 17.82 | 16.82 | 18.4 | 18.08 | 18.56 | 18.01 | 18.09 | 18.11 | 17.79 |