

Table S3. Genes that are antiviral against WNV were tested against a panel of arboviruses.

| gene | CG ID | Human Homolog | Mosquito Ortholog | Primary Avg z-score inf | WNV secondary Avg z-score inf | KUN Avg z-score inf | DEN Avg z-score inf | SIN Avg z-score inf | RVFV Avg z-score inf | VSV Avg z-score inf |
|-----------------|----------------|---------------|---------------------------|-------------------------|-------------------------------|---------------------|---------------------|---------------------|----------------------|---------------------|
| Aats-arg | CG9020 | RARS | AgaP_AGAP004708-PA | -6.09 | -1.60 | | | 4.54 | -2.23 | -0.83 |
| Aats-tyr | CG4561 | YARS | AgaP_AGAP003003 | 2.72 | 1.88 | 1.85 | 2.19 | 1.33 | 1.78 | 1.85 |
| alpha-Est9 | CG1128 | | AgaP_AGAP006227 | -4.30 | -5.34 | | | 1.41 | -0.26 | |
| AP-50 | CG7057 | AP2M1 | AgaP_AGAP007131 | -5.58 | -3.64 | | | -3.09 | -2.80 | 2.25 |
| Arp14D | CG9901 | ACTR2 | AgaP_AGAP000985 | -4.76 | -5.48 | 0.68 | -3.62 | 0.38 | -2.21 | |
| Axn | CG7926 | AXIN2 | AgaP_AGAP002123 | 2.24 | 3.12 | 1.20 | -1.23 | 1.40 | -0.06 | -0.69 |
| Bap | CG12532 | AP1B1 | | -5.34 | -3.55 | | | -1.97 | -2.68 | 1.96 |
| br | CG11491 | | ENSANGG00000016940 | -2.33 | -2.59 | -0.25 | -0.16 | 1.26 | -0.55 | 0.53 |
| Bsg | CG31605 | | AgaP_AGAP008408 | -2.80 | -2.94 | 1.94 | 1.51 | 0.60 | -0.21 | 1.60 |
| CG10158 | CG10158 | FGFR10P2 | AgaP_AGAP012118 | 2.40 | 2.81 | 2.11 | 1.50 | 0.62 | 1.51 | |
| CG10646 | CG10646 | TSSC1 | AgaP_AGAP004339 | 2.32 | 2.09 | 0.10 | 1.44 | 2.07 | -0.08 | 0.90 |
| CG11134 | CG11134 | PTPN23 | AgaP_AGAP011586 | -3.86 | -2.79 | -0.69 | 0.02 | -2.38 | 0.36 | -0.36 |
| CG11455 | CG11455 | | AgaP_AGAP009824 | -2.37 | -3.24 | 0.68 | 0.71 | 0.02 | 0.69 | 1.99 |
| CG11526 | CG11526 | FAM40A | AgaP_AGAP007902 | 2.32 | 4.07 | 4.13 | 2.42 | 0.74 | 0.35 | -1.15 |
| CG11820 | CG11820 | | AgaP_AGAP011757 | -3.38 | -4.14 | 0.64 | 1.23 | 0.58 | -0.03 | -1.16 |
| CG11837 | CG11837 | DIMT1L | AgaP_AGAP004465 | 2.14 | 1.58 | -0.08 | -0.01 | -0.36 | -0.33 | 0.38 |
| CG11920 | CG11920 | IMP4 | AgaP_AGAP003890 | 2.15 | 3.23 | 2.34 | 0.39 | 2.00 | 0.95 | 0.52 |
| CG11963 | CG11963 | SUCLA2 | AgaP_AGAP004744 | -5.16 | -3.66 | 0.64 | 0.49 | -2.54 | 0.04 | 0.54 |
| CG14516 | CG14516 | | AgaP_ENSANGG00000018759 | 2.60 | 2.49 | 0.51 | 0.15 | 1.70 | 0.01 | -0.57 |
| CG17119 | CG17119 | CTNS | AgaP_AGAP004115 | 2.50 | 2.86 | 2.87 | 2.99 | 1.38 | 1.96 | 3.84 |
| CG17328 | CG17328 | | AgaP_AGAP009130 | -4.45 | -1.62 | -0.05 | 0.36 | 0.78 | -0.28 | -0.51 |
| CG17737 | CG17737 | EIF1 | AgaP_AGAP006459 | 3.15 | 4.57 | 3.46 | 2.93 | 2.46 | 1.79 | 2.27 |
| CG17766 | CG17766 | WDR7 | AgaP_AGAP008003 | -3.27 | -2.65 | | | -2.97 | -2.42 | -0.36 |
| CG1789 | CG1789 | UTP11L | AgaP_AGAP004336 | 2.71 | 3.11 | 1.59 | 0.11 | 3.07 | 0.73 | -1.58 |
| CG1868 | CG1868 | | AgaP_AGAP008973 | -5.63 | -3.37 | 0.93 | -1.82 | -0.77 | -0.33 | -0.48 |
| CG2145 | CG2145 | P11 | AgaP_AGAP002925 | -2.96 | -2.11 | 0.36 | 0.50 | 1.52 | 0.02 | -0.11 |
| CG2926 | CG2926 | | AgaP_AGAP010697 | -8.48 | -2.19 | | | -8.06 | 0.51 | 2.64 |
| CG3036 | CG3036 | | AgaP_AGAP009498 | -3.36 | -4.19 | 0.57 | -2.01 | 1.78 | 0.13 | -0.01 |
| CG3149 | CG3149 | RFT1 | AgaP_AGAP004419 | -5.04 | -2.85 | 0.11 | 1.50 | -0.80 | -0.43 | -0.18 |
| CG31523 | CG31523 | ELOVL7 | AgaP_AGAP004372 | -3.18 | -1.48 | -0.07 | 0.81 | -1.21 | -0.27 | 0.38 |
| CG32113 | CG32113 | VPS13D | AgaP_AGAP009780 | 2.98 | 2.34 | 2.05 | -0.75 | 1.33 | -0.09 | 0.53 |
| CG3224 | CG3224 | ZNF593 | AgaP_AGAP003698 | 2.52 | 1.76 | 2.03 | -0.02 | 2.36 | 2.19 | 2.55 |
| CG32276 | CG32276 | SERP2 | AgaP_AGAP001548 | -3.38 | -2.05 | -0.98 | 0.43 | 0.94 | -0.54 | 0.19 |
| CG33123 | CG33123 | LARS | AgaP_AGAP008297 | 2.73 | 2.77 | 2.34 | -0.44 | 1.73 | -0.48 | 0.71 |
| CG3335 | CG3335 | RBM19 | AgaP_AGAP005249 | 2.34 | 3.13 | 2.15 | 0.70 | 2.47 | 1.29 | 0.30 |
| CG3876 | CG3876 | FRAG1 | AgaP_AGAP007869 | 2.45 | 1.67 | -0.62 | 1.39 | -0.49 | 0.09 | 0.09 |
| CG40127 | CG40127 | | AgaP_AGAP006389 | -7.27 | -7.84 | -1.01 | -4.40 | -2.28 | -2.89 | |
| CG4484 | CG4484 | | AgaP_AGAP010854 | -10.26 | -2.50 | 0.80 | -2.08 | 1.23 | -0.16 | 0.35 |
| CG4557 | CG4557 | TMF1 | AgaP_AGAP000660 | -5.30 | -2.19 | | | -2.19 | -1.15 | 0.77 |
| CG4645 | CG4645 | YIPF1 | AgaP_AGAP006951 | -5.68 | -3.17 | -0.68 | -0.73 | 0.69 | 0.01 | 0.74 |
| CG5021 | CG5021 | FAM18A | AgaP_AGAP012432 | -3.41 | -7.26 | 0.01 | -1.07 | -0.32 | -0.12 | -0.47 |
| CG5284 | CG5284 | CLCN3 | AgaP_AGAP005777 | -3.06 | -2.87 | | | -9.84 | -4.97 | -2.82 |
| CG5326 | CG5326 | | AgaP_AGAP011812 | 2.31 | 3.56 | 1.70 | 0.69 | 0.12 | 0.23 | -1.02 |
| CG5745 | CG5745 | TBC1D22B | AgaP_AGAP004522 | -3.81 | -1.64 | 0.06 | 0.87 | 0.83 | 0.17 | -0.12 |
| CG6051 | CG6051 | | AgaP_AGAP003678 | -2.22 | -1.51 | 0.47 | 0.57 | -0.01 | -0.21 | |
| CG6094 | CG6094 | ICT1 | AgaP_AGAP008425 | 2.29 | 2.76 | 2.87 | 1.89 | 1.33 | 2.06 | 2.56 |
| CG6488 | CG6488 | COG8 | AgaP_AGAP011488 | -3.51 | -2.82 | -0.63 | 1.20 | -0.98 | 0.55 | 0.54 |
| CG6495 | CG6495 | | AgaP_AGAP007887 | 2.37 | 1.97 | -0.02 | -0.73 | 0.88 | 0.58 | -0.26 |
| CG6995 | CG6995 | SLTM | AgaP_AGAP001298 | -3.50 | -2.62 | | | -5.82 | 2.66 | 3.00 |
| CG7115 | CG7115 | PPM1L | ENSANGG00000018281 | 2.08 | 3.23 | 2.37 | 1.40 | 1.88 | 1.63 | 2.30 |
| CG7219 | Spn28D | | SRPN4/5/6/16 | -2.64 | -2.82 | 0.25 | -0.63 | -0.77 | -1.14 | 0.48 |
| CG7394 | CG7394 | DNAJC19 | AgaP_AGAP003533 | 2.51 | 2.14 | 2.99 | -0.92 | 1.75 | 1.65 | |
| CG7456 | CG7456 | COG4 | AgaP_AGAP008875 | -4.11 | -5.35 | 0.09 | -0.30 | -2.23 | 2.23 | 0.34 |
| CG7816 | CG7816 | SLC39A13 | AgaP_AGAP003300 | -3.84 | -1.75 | 0.45 | 0.62 | 1.38 | 0.35 | 0.52 |
| CG8029 | CG8029 | | AgaP_AGAP003879 | -5.48 | -5.15 | -1.55 | -5.41 | -2.22 | -2.78 | -4.67 |
| CG8176 | CG8176 | FCHO2 | AgaP_AGAP002024 | -4.42 | -1.72 | -0.24 | -2.32 | -0.64 | -0.70 | -0.60 |
| CG8237 | CG8237 | FAM8A1 | AgaP_AGAP011364 | -2.37 | -3.75 | -0.34 | 0.42 | 0.14 | -0.46 | -0.53 |
| VhaM8.9 | CG8444 | ATP6AP2 | AgaP_AGAP003430 | -2.69 | -1.45 | | | -2.83 | -2.07 | 1.11 |
| CG9053 | CG9053 | TMED5 | AgaP_AGAP001505 | 2.49 | 3.02 | 2.43 | 2.32 | 2.33 | 0.94 | 1.40 |
| CG9175 | CG9175 | PREB | AgaP_AGAP009942 | -2.52 | -3.59 | 0.24 | 0.77 | 0.40 | 1.19 | -0.98 |
| CG9311 | CG9311 | PTPN23 | AgaP_AGAP011586 | -2.67 | -2.00 | | | -1.40 | -0.83 | 1.01 |
| CG9773 | CG9773 | UNC50 | AgaP_AGAP002901 | -4.78 | -7.25 | -0.81 | -0.14 | -3.54 | 0.98 | 1.13 |
| CG9911 | CG9911 | TXNDC4 | AgaP_AGAP000909 | -3.08 | -2.52 | -0.53 | -1.83 | -0.28 | -0.12 | -2.48 |
| Chc | CG9012 | CLTC | AgaP_AGAP003021 | -4.01 | -2.63 | | | -5.32 | -1.72 | 1.80 |
| chic | CG9553 | | AgaP_AGAP009861 | -2.41 | -1.90 | 0.13 | -0.84 | 1.00 | -0.26 | 0.64 |
| Cht9 | CG10531 | | AgaP_AGAP004876 | -2.34 | -2.14 | -0.79 | 0.98 | -2.12 | -0.01 | 0.14 |
| cn | CG1555 | KMO | KMO_ANOGA | 2.35 | 1.71 | | | 4.21 | -1.17 | 1.17 |
| cnk | CG6556 | | AgaP_AGAP009167 | 2.12 | 2.25 | 2.13 | 1.40 | 0.41 | -1.17 | -2.77 |

| | | | | | | | | | | |
|---------------------|----------------|---------------|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| cos | CG1708 | KIF7 | AgaP_ENSANGG00000016509 | -2.92 | -1.47 | 0.46 | -1.72 | 1.19 | -0.72 | |
| CrebA | CG7450 | | AgaP_AGAP011038 | 2.84 | 1.37 | 0.12 | -0.97 | -0.17 | -0.49 | -0.09 |
| eIF-4E | CG4035 | | AgaP_AGAP007172 | -9.63 | -4.32 | | | -1.52 | -2.68 | -2.18 |
| eIF2B-gamma | CG8190 | EIF2B3 | AgaP_AGAP005210 | 2.06 | 2.03 | | | 5.31 | 3.10 | 2.44 |
| emb | CG13387 | XPO1 | AgaP_AGAP009929 | 2.17 | 2.90 | 3.14 | 3.16 | 2.68 | 2.39 | 3.73 |
| Gtp-bp | CG2522 | SRPR | AgaP_AGAP010894 | -9.87 | -4.01 | -0.75 | -5.97 | -1.53 | 0.51 | -2.17 |
| HdacX | CG31119 | HDAC11 | AgaP_AGAP001736 | -2.30 | -4.47 | -0.54 | 0.42 | 0.19 | -0.42 | -1.88 |
| Herp | CG14536 | HERPUD2 | | -3.21 | -4.24 | -0.03 | -1.69 | 1.53 | -0.01 | -0.41 |
| IntS12 | CG5491 | INTS12 | AgaP_AGAP004359 | -2.18 | -3.94 | 0.06 | -0.75 | -0.70 | -0.29 | 0.10 |
| Kap-alpha3 | CG9423 | KPNA4 | AgaP_AGAP001273 | -2.87 | -2.89 | 0.02 | -2.21 | -0.59 | 0.21 | |
| l(1)G0155 | CG1515 | YKT6 | AgaP_AGAP000392 | -3.20 | -3.08 | -0.68 | -0.58 | -0.64 | -0.73 | 0.67 |
| l(2)k07824 | CG7989 | UTP18 | AgaP_AGAP009046 | 2.14 | 3.73 | 1.86 | 1.43 | 2.63 | 1.34 | 0.51 |
| lace | CG4162 | SPTLC2 | AgaP_AGAP007941 | -4.40 | -4.36 | | | -7.23 | -0.78 | 1.47 |
| lwr | CG3018 | UBE2I | AgaP_AGAP011076 | -4.76 | -3.58 | 0.20 | -0.42 | 0.84 | 0.56 | |
| maf-S | CG9954 | MAFK | AgaP_AGAP010405 | -2.17 | -1.41 | -0.90 | -0.38 | -0.32 | -0.69 | -0.70 |
| MED8 | CG13867 | MED8 | AgaP_AGAP005909 | 2.49 | 2.23 | 1.70 | 1.74 | 3.25 | 1.46 | 0.66 |
| mr | CG3060 | ANAPC2 | AgaP_AGAP005048 | -9.64 | -8.28 | 0.08 | 1.45 | 0.31 | 0.83 | 0.79 |
| NP15.6 | CG6008 | | ENSANGG00000015418 | -2.63 | -3.27 | 0.81 | 0.07 | 0.68 | 1.29 | 2.00 |
| Or94a | CG17241 | | GPROR34 | -3.50 | -7.74 | -0.77 | 0.29 | -0.44 | 0.01 | -0.01 |
| PGRP-SC1a/b | CG14746 | PGLYRP1 | PGRPS3 | -2.32 | -1.79 | 0.26 | -0.16 | 0.98 | -0.43 | 0.20 |
| phl | CG2845 | BRAF | AgaP_AGAP004699 | 2.38 | 2.27 | 1.77 | 1.41 | -0.53 | 0.62 | 1.29 |
| PICK1 | CG6167 | PICK1 | AgaP_AGAP007832 | -2.83 | -3.21 | 1.23 | 0.49 | 1.35 | -0.88 | -0.01 |
| pont | CG4003 | RUVBL1 | ENSANGG00000022263 | 2.62 | 2.53 | 2.55 | 3.21 | 2.91 | 2.21 | 2.96 |
| PPP4R2r | CG2890 | PPP4R2 | ENSANGG00000019508 | 2.55 | 2.41 | 2.53 | 2.77 | 1.55 | 1.61 | 1.25 |
| Rab-RP3 | CG7062 | RAB43 | AgaP_AGAP007096 | 2.35 | 2.83 | 0.16 | 0.46 | 0.10 | 0.22 | -0.43 |
| Rab5 | CG3664 | RAB5C | AgaP_AGAP007901 | -3.54 | -4.75 | | | -9.26 | -3.67 | 0.12 |
| Rab7 | CG5915 | RAB7A | AgaP_AGAP001617 | -2.22 | -1.36 | | | -3.60 | -2.16 | 0.93 |
| Rack1 | CG7111 | GNB2L1 | AgaP_AGAP010173 | -4.16 | -3.66 | -0.14 | -0.86 | 1.10 | -0.42 | 0.18 |
| sec23 | CG1250 | SEC23A | AgaP_AGAP001759 | -5.82 | -2.20 | | | -3.68 | 1.12 | 2.56 |
| shi | CG18102 | DNM1 | AgaP_AGAP003018 | -6.26 | -2.50 | | | -2.57 | -1.49 | 0.97 |
| skd | CG9936 | MED13L | AgaP_AGAP006436 | 2.86 | 3.07 | 3.16 | 0.55 | 1.50 | 0.59 | |
| skpA | CG16983 | LOC100506333 | AgaP_AGAP008719 | 2.74 | 1.44 | | | -0.24 | -0.12 | -0.13 |
| Slh | CG3539 | SCFD1 | AgaP_AGAP011358 | -5.47 | -1.56 | | | -6.95 | 2.46 | 1.37 |
| SNF1A | CG3051 | PRKAA2 | AgaP_AGAP002686 | -4.42 | -5.43 | | | -8.04 | -0.50 | -2.62 |
| Spase25 | CG1751 | SPCS2 | AgaP_AGAP011842 | -5.82 | -3.97 | -0.26 | -6.63 | 1.11 | -0.26 | 0.95 |
| spen | CG18497 | SPEN | | -2.68 | -4.44 | -0.76 | 0.50 | 0.54 | -0.57 | 0.31 |
| Spt20 | CG17689 | | AgaP_AGAP012403 | 2.23 | 2.64 | 2.80 | 0.03 | 0.84 | 0.24 | 0.23 |
| Srp72 | CG5434 | SRP72 | AgaP_AGAP001939 | -8.75 | -5.21 | -2.59 | -5.64 | -2.39 | 0.66 | -1.93 |
| SrpRbeta | CG33162 | SRPRB | AgaP_AGAP006688 | -6.19 | -5.33 | -1.42 | -4.02 | 0.24 | 1.00 | -1.17 |
| Syx5 | CG4214 | STX5 | AgaP_AGAP008756 | -5.60 | -2.40 | | | -4.95 | 0.81 | 0.81 |
| Syx7 | CG5081 | STX7 | AgaP_AGAP005543 | -7.27 | -4.02 | -0.77 | -1.86 | -5.03 | -4.64 | -0.67 |
| Taf5 | CG7704 | TAF5 | AgaP_AGAP011678 | 2.30 | 3.38 | 3.08 | 2.52 | 2.55 | 1.04 | 0.97 |
| Taf6 | CG32211 | TAF6 | AgaP_AGAP004254 | 3.08 | 2.94 | 2.63 | 2.04 | 2.41 | 0.63 | 0.76 |
| Tango5 | CG32675 | TMEM49 | AgaP_AGAP010304 | -3.21 | -3.01 | -0.26 | -6.41 | -2.28 | 0.69 | 0.69 |
| Trn-SR | CG2848 | TNPO3 | AgaP_AGAP003576 | -2.19 | -2.08 | -0.48 | 0.35 | 0.98 | -0.01 | 0.57 |
| U26 | CG13401 | AASDH | AgaP_AGAP010071 | -2.16 | -1.66 | -0.49 | -0.22 | -0.32 | 0.06 | -4.18 |
| Ugt35a | CG6644 | UGT1A4 | | -2.44 | -3.75 | -0.02 | -1.36 | 1.28 | -0.69 | -0.34 |
| Vha26 | CG1088 | ATP6V1E1 | AgaP_AGAP002401 | -6.91 | -2.25 | | | -1.56 | -0.09 | -0.17 |
| VhaSFD | CG17332 | ATP6V1H | AgaP_AGAP009486 | -4.22 | -3.41 | | | -4.27 | -1.93 | -0.36 |
| vib | CG5269 | PITPNA | AgaP_AGAP001957 | -4.08 | -2.47 | | | -4.98 | -1.76 | -0.81 |
| Vps16A | CG8454 | VPS16 | AgaP_AGAP000529 | -4.10 | -3.35 | -2.10 | -2.49 | -2.17 | -1.78 | -0.65 |
| wmd | CG3957 | STRAP | AgaP_AGAP005029 | -4.56 | -3.40 | -1.60 | -0.09 | -0.10 | -0.21 | -0.06 |
| yellow-c l(2)35Bg | CG4182 | | AgaP_AGAP010280 | 2.85 | 2.18 | 2.21 | 0.86 | 1.01 | 0.43 | -0.24 |