**Supplementary Table 1: Primers used for qRT-PCR**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gene Name** | **Gene ID** | **Primer Name** | **Sequence (5’-3’)** | **Size (bp)** | **Efficiency** |
| *hsp90* | AGAP006959 | qhsp90\_AGAP006959-F  qhsp90\_AGAP006959-R | AAGCAGATCGTGAACAAGCA  GCCTTCATGATGCGCTCC | 227 | 0.898 |
| *hsp90\_beta* | AGAP001424 | qhsp90\_AGAP001424-F  qhsp90\_AGAP001424-R | GCTGTGTGCGGTGGTAATTA  CTTGATGGCTTCCTCTTCGC | 213 | 0.946 |
| *hsp83* | AGAP006958 | qhsp83-F  qhsp83-R | CCTTCGCATTTCAGGCTGAG  GACTCCAGCTTCGAGGGATC | 160 | 0.987 |
| *hsp70 1/8* | AGAP004944 | qhsp70 1/8-F  qhsp70 1/8-R | GAGATGCTGCCAAGAACCAG  GGCCGTTTCCTTCATCTTGG | 239 | 0.898 |
| *hsp90 ATPase* | AGAP010514 | qhsp\_AGAP010514-F  qhsp\_AGAP010514-R | GGACATGGTGACCGCATTC  CCGGAATCATCGTTTGGGTC | 239 | 0.892 |
| *hsp70* | AGAP004581 | qhsp70-F  qhsp70-R | CGCAAGTTCAAGAAGGACGT  TCGAGCGGAACAGATCAGAG | 199 | 0.974 |
| *TPS 1/2* | AGAP008227 | qTPS1/2-F  qTPS1/2-R | CAGGAGGCACAAACCAAGAG  AGTTGGTGTGTTGTCCGTTG | 237 | 0.932 |
| *IR21a* | AGAP008511 | qIR21a-F  qIR21a-R | GTTGGAGATGCGGCTGTTG  AGAATCACCGCTACCCAGAC | 300 | 0.971 |
| *IR25a* | AGAP010272 | qIR25a-F  qIR25a-R | GCAATTATAGCGATCATGGGAC  AAGTGTGGCGGTCGATTTTC | 245 | 0.817 |
| *Elongation factor Tu* | AGAP005128 | EF-F  EF-R | GGCAAGAGGCATAACGATCAATGCG  GTCCATCTGCGACGCTCCGG | 130 | 0.979 |
| *RPS7* | AGAP010592 | RPS7-F  RPS7-R | CCACCATCGAACACAAAGTTGA  TGCTGCAAACTTCGGCTATTC | 98 | 0.897 |

**Supplementary Table 2: Summary of the 2La inversion composition of larvae and adult *Anopheles* mosquitoes**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Site / Phenotype** | **Karyotype** | | | **Total** | |
| ***Heat stress assay (44 oC for 30 min)*** | | | | |
| Auyo | | | | | |
|  | 2La/a | 2La/+a | 2L+a/+a |  | |
| Alive | 2 | 2 | 9 | 13 | |
| Dead | 2 | 3 | 4 | 9 | |
| BUK | | | | | |
| Alive | 1 | 8\* | 5\* | 14 | |
| Dead | 2 | 2\* | 9\* | 13 | |
|  | | | | | |
| Gamjin Bappa 44 oC | | | | | |
| Alive | 1 | 4 | 7 | 12 | |
| Dead | 3 | 4 | 0 | 7 | |
| Pantami | | | | | |
| Alive | 2 | 9 | 5 | 16 | |
| Dead | 3 | 4 | 7 | 14 | |
|  | | | | | |
| ***Larval bioassay (100 mg/mL Permethrin)*** | | | | | |
| Auyo | | | | | |
| Alive | 2 | 4 | 5 | 11 | |
| Dead | 0 | 3 | 3 | 6 | |
|  |  |  |  |  | |
| BUK | | | | | |
| Alive | 3 | 2 | 4 | 9 | |
| Dead | 1 | 4 | 6 | 11 | |
| Gamjin Bappa | | | | | |
| Alive | 1 | 2 | 3 | 6 | |
| Dead | 1 | 5 | 5 | 11 | |
| Pantami | | | | | |
| Alive | 4 | 5 | 6 | 15 | |
| Dead | 3 | 8 | 5 | 16 | |
|  | | | | | |
| ***Adult bioassay (0.75 % Permethrin)*** | | | | | |
| Auyo | | | | | |
| Alive | 3† | 9 | 3† | 15 | |
| Dead | 1† | 5 | 6† | 12 | |
| BUK | | | | | |
| Alive | 4† | 9 | 9† | 22 | |
| Dead | 0† | 2 | 8† | 10 | |
| Gamjin Bappa | | | | | |
| Alive | 5† | 5 | 9† | 19 | |
| Dead | 0† | 4 | 5† | 9 | |
| Pantami | | | | | |
| Alive | 9† | 4 | 2† | 15 | |
| Dead | 3† | 4 | 3† | 10 | |

\* statistically significant between alive and dead for 2La/+a vs 2L+a/+a for BUK, OR = 7.2 (1.08 - 4.79), χ2 = 4.68, p = 0.03.

† statistically significant between alive and dead for 2La/a vs 2L+a/+a for all sites, OR = 5.02 (1.48 - 6.93), χ2 = 7.45, p = 0.01.