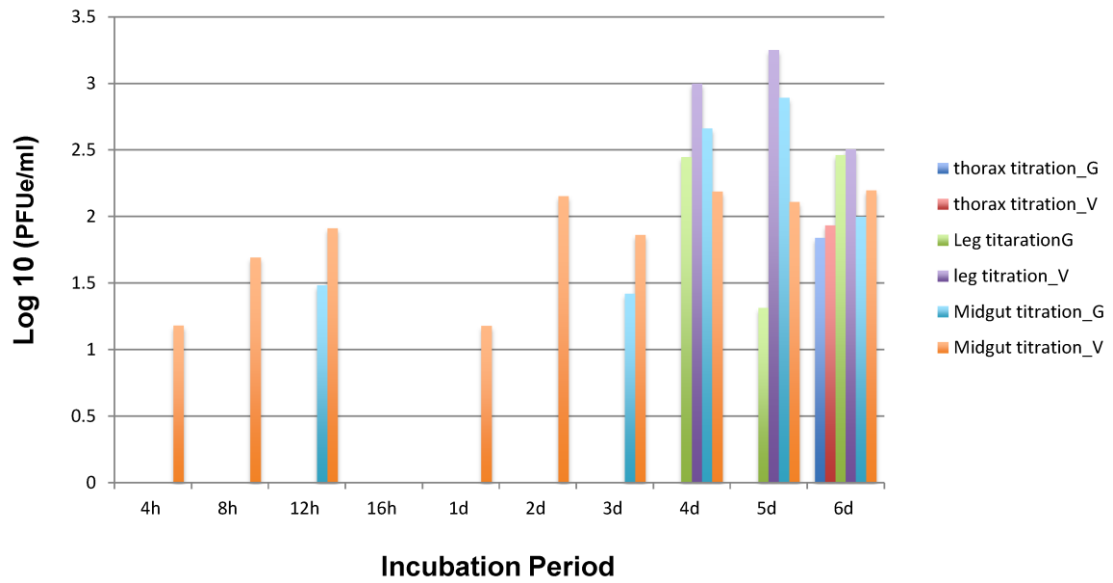


# Supplementary Materials: The Effect of West Nile Virus Infection on the Midgut Gene Expression of *Culex pipiens quinquefasciatus* Say (Diptera: Culicidae)

Chelsea T. Smartt, Dongyoung Shin and Sheri L. Anderson

CQ G1A1 partial protein	..... <u>L NHRDNSFVEDGVL YLKP</u> 18
CQ GNBP	VDRKAFCPGELLFEDNFDL DLDRTG- ..... S ..... 105
BM b1,3 glucan rec P-4	AP- VTVCSGQLI FADDFVDFDLEKQWHEHTLAGGGNWEFQYYN. N. T. . . . TNN. L. . I. R. 88
Ae GNBP	VYRKTFCSGDLI FEDNFDKLNLEKWEHEHTLGGGGNWEFQYY. . N. K. . Y. . N. I. . I. R. 104
An GNBP-B	VKRSAFCPGDLI FEDNFDRLDLERWQHEVTLAGGGNWEFQYY. . S. R. . . . K. . I FFI R. 87
CQ G1A1 partial protein	<u>TFI GLEPGGEEYLKTGKLDI NGGDPGNFCTNPAWDGCVRTGTPESI LNPVKSARI RTAHS</u> 78
CQ GNBP	..... 165
BM b1,3 glucan rec P-4	SLTSDQF. - SAF. HS. R. N. E. . A. ADR. . . . Q. Y. . E. V. . . . TN. . . . I. . . . . VN. 147
Ae GNBP	. LLAD. T. . . . F. TS. T. NL. . . . S. YDS. . . . . E. . . . . NP. . . . I. . . . L. . LK. 163
An GNBP-B	. LLAD. T. . . . F. SS. N. NVH. . T. YD. . . . . SNY. . E. Q. S. TNY. . . I. . . . V. . VN. 146
CQ G1A1 partial protein	<u>FNFKYGKLEI RAKLPTGDWMPALWLMPRTNQYGTWPASGEI DLMEARCNVDYRDEEGTH</u> 138
CQ GNBP	..... 225
BM b1,3 glucan rec P-4	. S. Q. . . V. V. . . M. S. . . L. . . I. . . . AY. K. . . . . V. S. G. KNMF- LN. L. 206
Ae GNBP	..... L. . . . . KL. . . . . T. . . . . S. G. L. . . VAD. . . 223
An GNBP-B	. . . R. . . V. . . . . I. . . . . L. . . . . KI. . . . . S. . . . . S. G. L. . S- VN. NQ 205
CQ G1A1 partial protein	<u>LGVEQVLSTLHFGNPAWTNAYDTSTAPKNSASGQGFNKDFHRYQLEWTPPEFMKFSVDGEH</u> 198
CQ GNBP	..... 285
BM b1,3 glucan rec P-4	I. TQEAG. . . . Y. . FPGLSGWERAHWRRNSA. - - YDTN. . . . . D. I S. RI. DSE 264
Ae GNBP	I. . . . . G. . . . . PSL. GFE. . . . A. . . . P. E. . . N. . . . . Y. . . . . D. E 283
An GNBP-B	. . . . H. GT. . . . . QWDL. G. EMA. . V. . . PK. . . . . G. . . . . R. . . . D. Q 265
CQ G1A1 partial protein	<u>ILQVD- - GNFWRQGNFDERAPGTRNPWWSGTKMAPFDQEFFI I LNLAI GGTNGYFPDEK</u> 255
CQ GNBP	..... 342
BM b1,3 glucan rec P-4	. GR. APGN. G. . EY. G. NN. . . . I H. . . RY. S. . . . . K. YL. I. . . V. . . . F. . . G- 322
Ae GNBP	T. V. . . . . Q. . . . . P. . . I. . G. . . . . E. . HV. M. . . V. . . . . PP 340
An GNBP-B	VM. . E- . . . . EL. R. . . . R. . VQ. . . . T. G. . . . . Y. . M. . V. . . . F. . . VP 322
CQ G1A1 partial protein	<u>- VVN- TKPKPWSNQSVPVGPAMTSFWEKRDDWLPTWLDI NDGKDAAFQI DYVRI WAL.</u> 311
CQ GNBP	..... 397
BM b1,3 glucan rec P-4	. . K. - PI. . . . W. N. . T- - A. D. . NGQGG. . . . . NV. . . Q. . SL. V. . . V. . . 375
Ae GNBP	- AT. KDN. . . . T. G. . T- - RGG. . SAKE. . . . . K. EE. . S. E. SL. V. . . V. . . 394
An GNBP-B	PA. . ANGN. . . . N. . T- - LRD. . LG. S. . . . . K. QE. . SAE. S. . V. . . V. . . 377

**Figure S1.** Multiple protein sequence alignment of a fragment of the *Culex pipiens quinquefasciatus* putative Gram-negative bacteria binding protein (CQ G1A1) with Gram-negative bacteria binding proteins (GNBPs) from other insects. Aligned protein sequences include the G1A1 putative translation product (311 amino acids; CQ G1A1 partial protein) GNBP from *Cx. p. quinquefasciatus*; (CQ GNBP, accession no. XP\_001845967.1),  $\beta$ -1,3 glucan recognition Protein-4 from *Bombyx mori* (BM b1,3 glucan rec P-4, accession no. NP\_001159614.1), GNBP from *Ae. aegypti* (Ae GNBP, accession no. XP\_001659797.1), and GNBP subgroup B from *Anopheles gambiae* (An GNBP-B, accession no. XM\_312118.3). The  $\beta$ -1,3-glucan binding domain is underlined. The dots represent amino acids that are the same as in the CQ G1A1 partial protein sequence, the numbering represents the amino acid number, the dashes are included to maximize spacing.



**Figure S2.** Titration of WNV in thorax, leg, and midgut tissues dissected from two populations of *Cx. quinquefasciatus* (CPQG and CPQV) at different incubation periods after infection. Gainesville = G; Vero Beach = V; h = hours post infection, d = days post infection.