

Figure. S1. Rapid induction of *mx_Ae.ae* in response to CuniNPV infection.

In *Aedes aegypti* larvae exposed to CuniNPV, significant induction of *mx_Ae.ae* could be detected as early as 45 min p.i. The level of *mx_Ae.ae* was first normalized against that of GAPDH. Folder induction was then calculated as the ratio between the level of *mx_Ae.ae* in larvae samples treated with CuniNPV vs. that of parallel processed controls samples. Value presented as Mean \pm St.Dev.

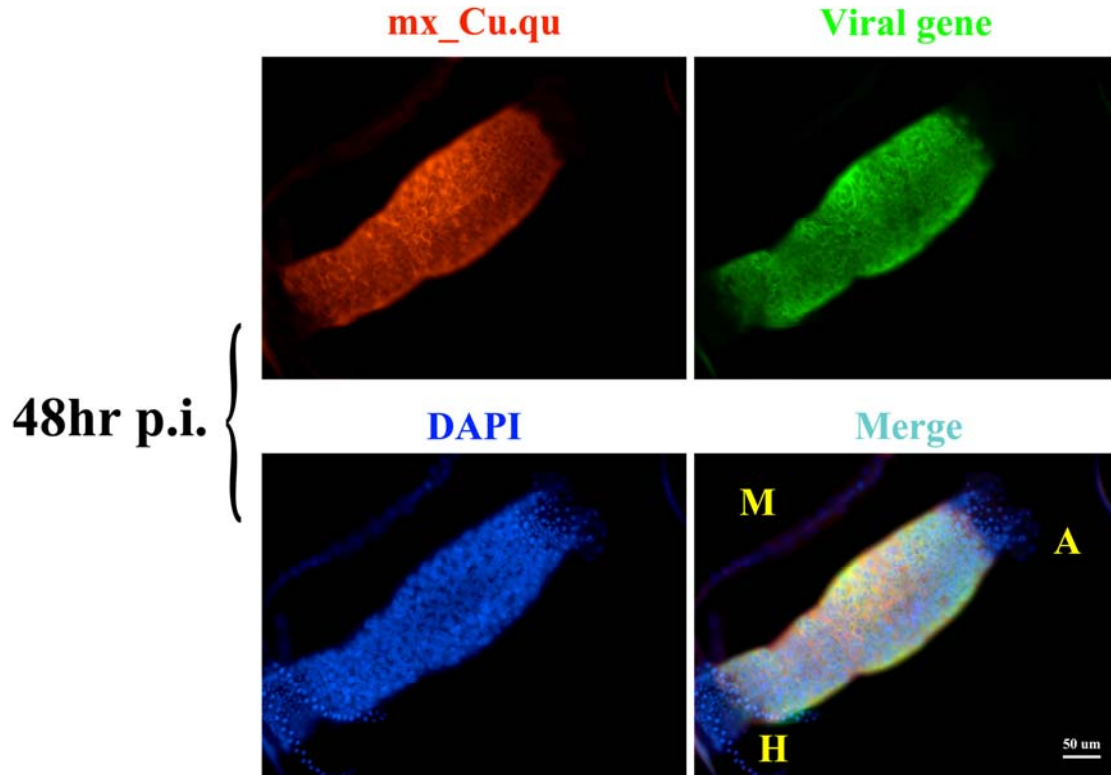


Figure. S2. The expressions of *mx* and viral genes in the posterior part of the midgut of *Culex quinquefasciatus*.

Midguts were dissected out at 48hr post infection from *Cu.quin* larvae and were subjected to FISH with a pool of FITC labeled probes against *cun24*, *cun75* and *cun85* and DIG labeled probe against *mx_cu.qu*. Despite heavy load of viral gene expression in the posterior part of the midgut, cells in the anterior midgut (A), hindgut (H) and malpighian tubules (M) are not infected. The expression of *mx_cu.qu* can only be observed in cells that have viral genes expression.

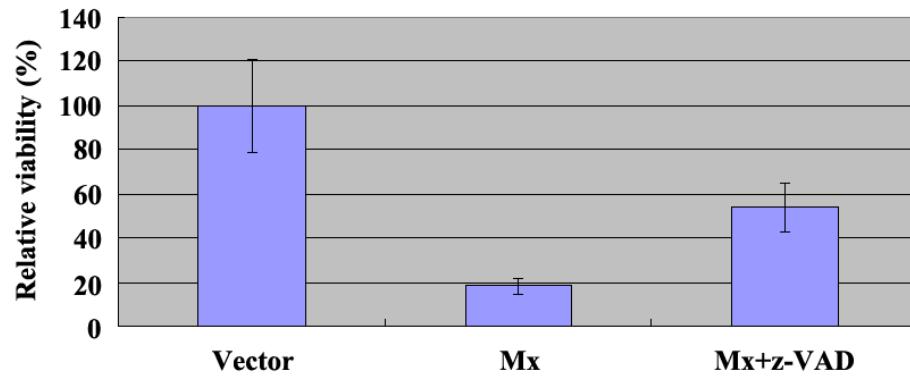


Figure. S3. Mx_Ae.ae induced cell death could be partially rescued by caspase inhibitor z-VAD-fmk.

Cultured C6/36 cell was transfected with Vector or Mx in the absence or presence of z-VAD. 100uM z-VAD partially suppressed Mx-induced cell death.

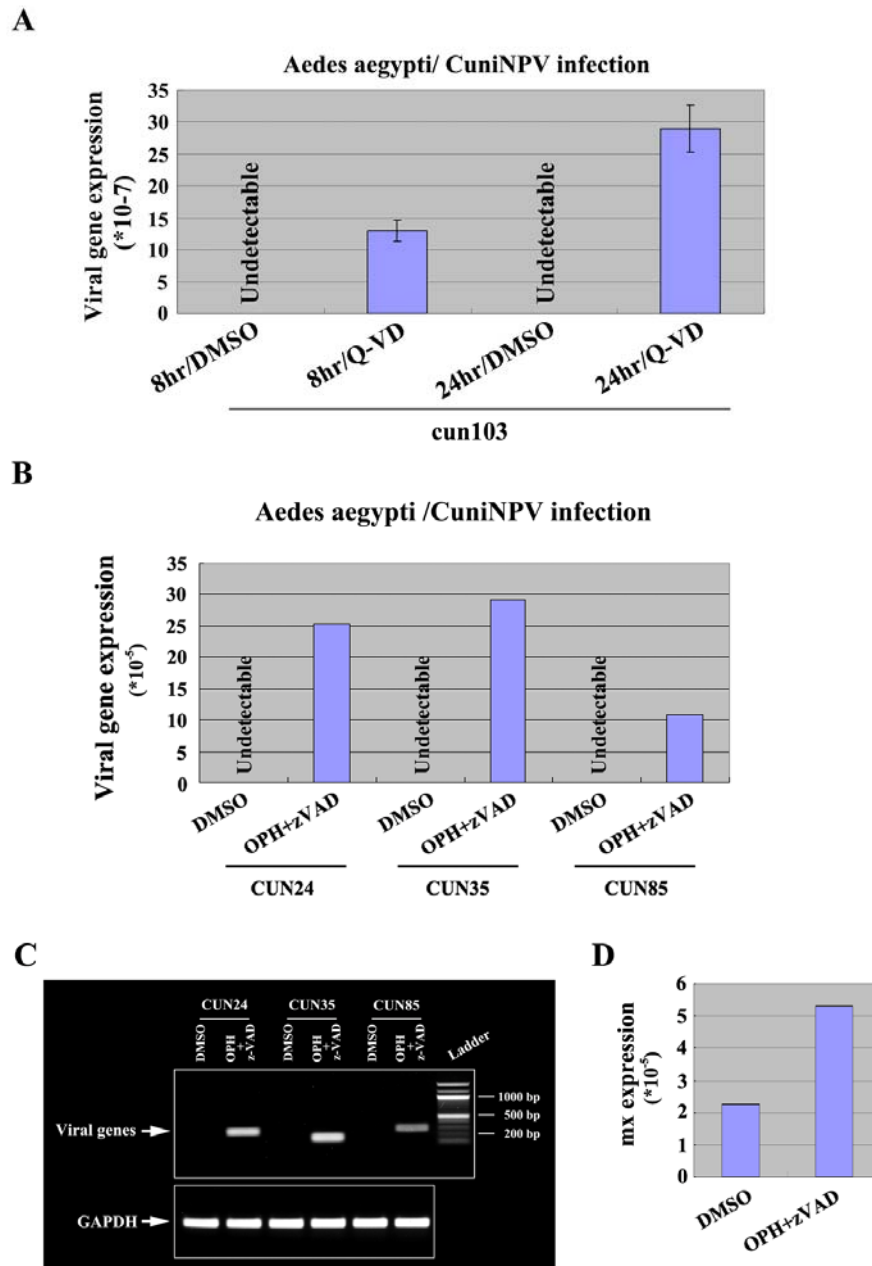


Figure. S4. Suppressing apoptosis with caspase inhibitor Q-VD and combination of z-VAD and Q-VD allowed expression of viral genes in the refractory *Ae.aegy* larvae. (A.) Detection of *cun103* in virus exposed *Ae.aegy* larvae treated with 50uM Q-VD but not in the larvae samples treated only with DMSO. (B - D.) At one of the trials, a combined treatment of Q-VD and z-VAD

led to the detection of capsid genes *cun24*, *cun35* and occluded body gene *cun85* at 48 hr p.i. The specificity of QPCR analysis (B) was verified by gel electrophoresis (C) and sequencing of the DNA fragments. Interestingly, in this trial, the level of *mx_Ae.ae* at 48hr p.i. is significantly higher than that of the DMSO-treated larvae (D). This could be either due to more cells were infected through secondary infection at this late time point, or, similar to what we observed in *Culex quinquefasciatus*, due to the accumulation of *mx_Ae.ae* message in infected cells that failed to undergo apoptosis.

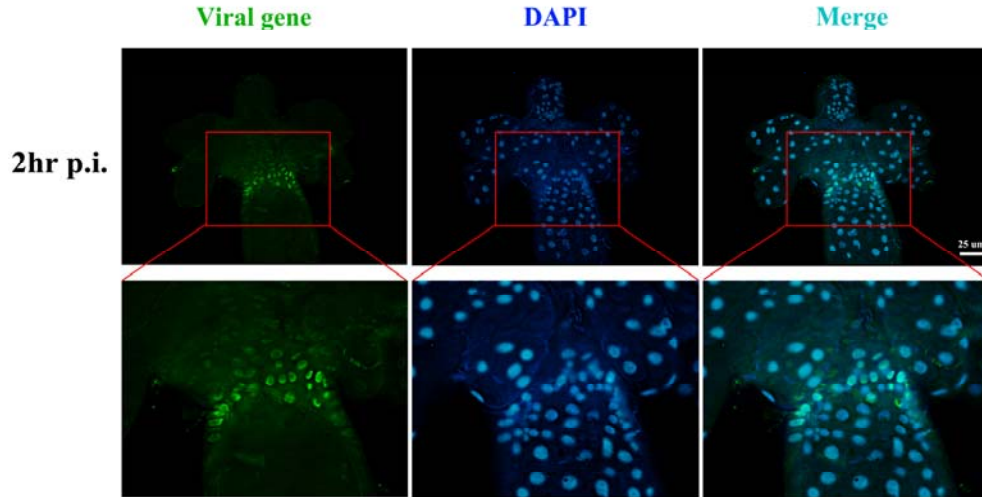


Figure. S5. Viral gene expression was confined to the nuclei of a few cells at early stage of CuniNPV infection in *Culex quinquefasciatus*.

FISH was performed with a pool of cRNA probes against viral genes *cun16*, *cun86* and *cun103* in the midgut of the susceptible *Cu. quin* larvae at 2-4 hr post infection. Bottom panel, higher magnification of insets in top panels.