Appendix Table. Nucleotide changes and amino acid substitutions in structural regions of 30 W est Nile virus isolates collected from 2002-2005 epidemics in the United States compared with isolate W N-

| Isolate | Gene |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Core |  |  |  |  |  | prM | Env |  |  |
|  | Nucleotide (amino acid) no. |  |  |  |  |  |  |  |  |  |
|  | 128 (11) | $\begin{aligned} & 158 \\ & (22) \end{aligned}$ | 196 (33) | 251 (52) | 326 (77) | 332 (79) | 660 | 977 (294) | 989 (298) | 1121 (342) |
| WN-NY99 | G (S) | T (M) | A (M) | C (A) | C (A) | A (K) | C | T (L) | A (N) | A (N) |
| FDA/HU-02 |  | C (T) |  | T (V) |  |  |  |  |  |  |
| ARC10-02 |  |  |  |  |  |  |  |  |  |  |
| ARC12-02 |  |  |  |  |  |  |  |  |  |  |
| ARC13-02 |  |  |  |  |  |  |  |  |  |  |
| ARC15-02 |  |  |  |  |  |  | T |  |  |  |
| ARC16-02 |  |  |  |  | T (V) |  | T |  |  |  |
| ARC17-02 |  |  |  |  |  |  | T |  |  |  |
| BSL5-03 |  |  |  |  |  |  | T |  |  |  |
| BSL9-03 |  |  |  |  |  |  | T |  |  |  |
| BSL56-03 |  |  |  |  |  |  |  |  |  |  |
| BSL62-03 |  |  |  |  |  |  |  |  |  |  |
| BSL114-03 |  |  |  |  |  |  | T |  |  |  |
| RMS1-03 |  |  |  |  |  |  | T |  |  |  |
| RMS2-03 |  |  |  |  |  |  | T |  |  |  |
| RMS3-03 |  |  |  |  |  |  |  |  |  |  |
| RMS4-03 |  |  |  |  |  |  | T |  |  |  |
| BSL1-04 |  |  |  |  |  |  | T |  |  |  |
| BSL2-04 |  |  |  |  |  |  | T |  |  |  |
| BSL4-04 |  |  |  |  |  |  | T |  |  |  |
| BSL5-04 |  |  |  |  |  |  | T |  |  |  |
| BSL6-04 |  |  | G (V) |  |  |  | T |  |  |  |
| BSL7-04 |  |  |  |  |  |  | T |  |  |  |
| BSL8-04 |  |  |  |  |  |  | T |  |  |  |
| BSL2-05 |  |  |  |  |  |  | T |  | G (S) | G (S) |
| BSL6-05 |  |  |  |  |  |  | T |  |  |  |
| BSL9-05 |  |  |  |  |  |  |  |  |  |  |
| BSL10-05 |  |  |  |  |  | G (R) |  |  |  |  |
| BSL13-05 | A (N) |  |  |  |  |  | T | C (P) |  |  |
| GCTX1-05 |  |  |  |  |  |  | T |  | G(S) |  |
| GCTX2-05 |  |  |  |  |  |  | T |  |  |  |
|  | Env |  |  |  |  |  |  |  |  |  |
| Isolate | 1320 | $\begin{aligned} & 1442 \\ & (449) \end{aligned}$ | $\begin{aligned} & 1511 \\ & (472) \end{aligned}$ | $\begin{aligned} & 1652 \\ & (519) \end{aligned}$ | $\begin{aligned} & 1729 \\ & (544) \end{aligned}$ | $\begin{aligned} & 1900 \\ & (602) \end{aligned}$ | 1974 | $\begin{aligned} & \hline 2083 \\ & (662) \end{aligned}$ | $\begin{aligned} & \hline 2147 \\ & (684) \end{aligned}$ | 2466 (790) |
| WN-NY99 FDA/HU-02 | A | $\begin{aligned} & \mathrm{T}(\mathrm{~V}) \\ & \mathrm{C}(\mathrm{~A}) \end{aligned}$ | A (E) | G (G) | T (L) | C (L) | c | A (I) | $\begin{aligned} & A(N) \\ & G(S) \end{aligned}$ | $\begin{aligned} & \mathrm{C} \\ & \mathrm{~T} \end{aligned}$ |
| ARC10-02 |  | C (A) |  |  |  |  |  |  |  | T |
| ARC $12-02$ |  |  |  |  |  |  |  |  |  |  |
| ARC13-02 |  | C (A) |  |  |  |  |  |  |  | T |
| ARC15-02 |  | C (A) |  |  |  |  |  |  |  | T |
| ARC16-02 |  | C (A) |  |  |  |  |  |  |  | T |
| ARC17-02 |  | C (A) |  |  |  |  |  |  |  | T |
| BSL5-03 |  | C (A) |  |  |  |  |  | G (V) |  | T |
| BSL9-03 |  | C (A) |  |  | C (S) |  |  |  |  | T |
| BSL56-03 |  | C (A) |  |  |  |  |  |  |  | T |
| BSL62-03 |  | C (A) |  |  |  |  |  |  |  | T |
| BSL114-03 |  | C (A) |  |  |  |  |  |  |  | T |
| RMS1-03 |  | C (A) |  |  |  |  |  |  |  | T |
| RMS2-03 |  | C (A) |  |  |  |  |  |  |  | T |
| RMS3-03 |  | C (A) |  |  |  |  |  |  |  | T |
| RMS4-03 |  | C (A) |  |  |  |  |  |  |  | T |
| BSL1-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL2-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL4-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL5-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL6-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL7-04 | G | C (A) |  |  |  |  | T |  |  | T |
| BSL8-04 | G | C (A) |  |  |  |  |  |  |  | T |
| BSL2-05 |  | C (A) | G (G) |  |  | A (I) |  |  |  | T |
| BSL6-05 |  | C (A) |  | A (E) |  |  | T |  |  | T |
| BSL9-05 |  | C (A) |  |  |  |  | T |  |  | T |
| BSL10-05 |  | C (A) |  |  |  |  |  |  |  | T |
| BSL13-05 | G | C (A) |  |  |  |  | T |  |  | T |
| GCTX1-05 | G | C (A) |  |  |  |  | T |  |  | T |
| GCTX2-05 |  | $C$ ( $A$ ) |  |  |  |  |  |  |  | T |

*prM, premembrane; ENV, envelope. Unique silent mutations are not shown.

