

Supplemental Information

Supplementary Table S1. Primers for NA pyrosequencing analysis

Primer name	Sequence	Target position(s)
N2-F333-biot N2-R914 N2-R377-seq	5'-biotin-TGGGGACATCTGGGTGACA-3' 5'-ATATCTACGATGGGCCTATTGGA-3' 5'-GGATCGCATGACACATA-3'	119
N2-F289 N2-R503-biot N2-F391-seq	5'-TTTGCACCTTTYTCTAAGGACAAT-3' 5'-biotin-TGAAAAGGAACACCCAACTCAT-3' 5'-CAATTTGCCCTTGGA-3'	136
N2-F566 N2-R868-biot N2-F645-seq	5'-GGCTGCATGTTTGTGTAACG-3' 5'-biotin-5CACATCTGACACCAGGATATCG-3' 5'-TGTTTCATGGTCCAAAG-3'	222
N2-F333-biot N2-R914 N2-292/294- R905-seq	5'-biotin-5TGGGGACATCTGGGTGACA-3' 5'-ATATCTACGATGGGCCKATTGGA-3' 5'-ATGGGCCTATTGGAKCC-3'	292 and 294
N2-F516 N2-R842-biot N2-deletions- F715-seq	5'-GCAAGTGTGCATAGCATGGTC-3' 5'-biotin-ATCTGACACCAGGATATCGAGGAT- 3' 5'-GTAGTMATGACTGATGG-3'	245-248 and 247-250

Supplementary Table S2. Primers used for NA RT-PCR and Sanger sequence analysis

Primer name	Sequence
N2NA-F2	5'-GCAAAAGCAGGAGTRAARATGAATC-3'
N2NA-F634 ^a	5'-CATTTACRATGGGAGGCTTGTAGATAG-3'
N2NA-R1110	5'-CTTCCCATCCACACGTCATTTCCA-3'
N2NA-R1425 ^a	5'-ATAGGCATGAGATTGATRCCGC-3'
N2NA-F330 ^b	5'-ATTCRATTMGGCTTCCGCTGGTG-3'
N2NA-R651 ^b	5'-CTATCTACAAGCCTCCCATYGTAAATG-3'

^aPrimers used for RT-PCR and Sanger sequencing reactions.

^bPrimers used only for Sanger sequencing reaction.

Supplementary Figure S1. Pyrograms of influenza A(H3N2) viruses with and without a 12-nucleotide (4-amino acid) deletion in the neuraminidase. The customized order of the nucleotide dispensation creates a gap (dispensations 14-20) in the pyrogram, unless there is the 12-nucleotide deletion in the neuraminidase gene at this site. A) The wildtype (no deletion) sequence was detected in clone 1 of A/Massachusetts/07/2013; B) The 12-nucleotide deletion (amino acid residues 245 to 258) was detected in clone 2 of A/Massachusetts/07/2013; C) The 4-amino-acid deletion from 247 to 250 was detected in the clinical specimen.

