

Rapid communications

CLUSTER ANALYSIS OF THE ORIGINS OF THE NEW INFLUENZA A(H1N1) VIRUS

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In March and April 2009, a new strain of influenza A(H1N1) virus has been isolated in Mexico and the United States. Since the initial reports more than 10,000 cases have been reported to the World Health Organization, all around the world. Several hundred isolates have already been sequenced and deposited in public databases. We have studied the genetics of the new strain and identified its closest relatives through a cluster analysis approach. We show that the new virus combines genetic information related to different swine influenza viruses. Segments PB2, PB1, PA, HA, NP and NS are related to swine H1N2 and H3N2 influenza viruses isolated in North America. Segments NA and M are related to swine influenza viruses isolated in Eurasia.

Introduction

Influenza A virus is a single stranded RNA virus with a segmented genome. When different influenza viruses co-infect the same cell, progeny viruses can be released that contain a novel mix of segments from both parental viruses. Since the first reported pandemic in 1918, there have been two other pandemics in the 20th century. In both cases, the pandemic strains presented a novel reassortment of genome segments derived from human and avian viruses [1-3]. The origins of the 1918 strain are so not clear, although different analyses suggest that this virus had an avian origin [4,5].

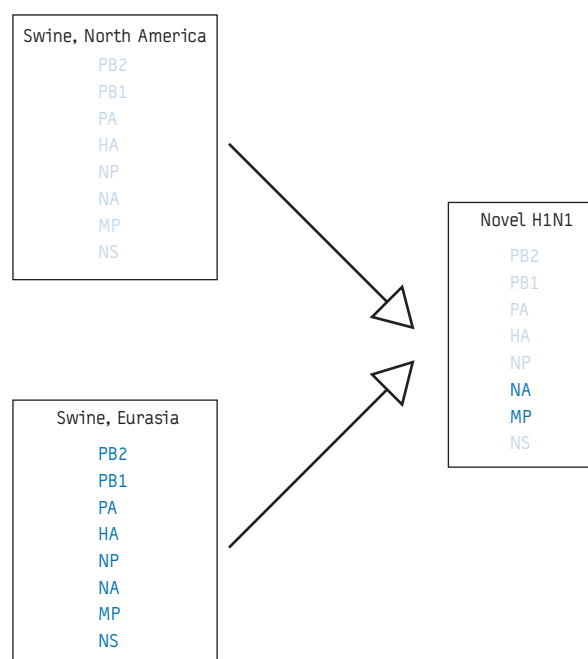
When and where pandemic reassortments happen remains a mystery. Avian viruses often undergo reassortment events among different subtypes. Several reports suggest that reassortments are also frequent between human viruses [6,7]. Swine have been found frequently with co-infections and reassortment of swine, human, and avian viruses has been reported [8-10,3]. In addition, cell surface oligosaccharide receptors of the swine trachea present both, a *N*-acetylneuraminic acid- α 2,3-galactose (NeuA α 2,3Gal) linkage, preferred by most avian influenza viruses, and a NeuA α 2,6Gal linkage, preferred by human viruses [11]. Co-infection combined with co-habitation of swine and poultry on small family farms all over Asia, and the presence of avian as well as human receptor types in pigs have led to the "mixing vessel" conjecture [12,13] that suggests that most of the inter-host reassortments are produced in pigs.

Recently, a new A(H1N1) subtype strain has been identified initially in Mexico, then rapidly reported in all continents. As

of 27 May, 12,954 cases of the new influenza A(H1N1) virus infection, including 92 deaths have been reported to the World Health Organization [14,15]. Several approaches have been used to understand the origins of this strain. Searches in public databases containing influenza A genomes using sequence alignment tools indicated that the closest relatives for each of the eight genomic segments are from viruses circulating in swine for the past decade [16-19]. These include genome segments derived from "triple reassortant" swine viruses that combined in the late 1990s genome

FIGURE 1

Origins of the new influenza A(H1N1) virus



Schematic representation of the main results of the cluster analysis. The analysis shows that the recent A(H1N1) virus is a reassortment of at least two swine influenza viruses from North America (in light blue) and Eurasia (in dark blue).

segments from viruses previously identified in humans, birds, and swine [20]. Similar conclusions were drawn by the application of phylogenetic techniques [16,21].

Here we present a cluster analysis using Principal Component Analysis and unsupervised clustering. Clustering methods are particularly robust under changes in the underlying evolutionary models. Our results substantiate previous reports [16,21], and demonstrate that for each of the genome segments of the new influenza A(H1N1) virus the closest relative was most recently identified in a swine, compatible with a reassortment of Eurasian and North American swine viruses (Figure 1).

Materials and methods

Influenza sequences were obtained from the National Center for Biotechnology Information (NCBI) [22] in the United States. We performed a search using Basic Local Alignment Search Tool (BLAST) for each of the eight A/California/04/2009(H1N1) segments separately, recording the 50 best matches. Then we constructed the union of all these matches, taking the sequences for all their segments available in the database. We aligned these sequences using the stretcher algorithm as implemented in the EMBOSS package.

After the alignment we translate the sequences into the binary data, comparing them to the reference sequence site by site. A mutation maps to 1, while a nucleotide identical to that in a reference sequence maps to 0. Whenever there are masks, they map to the corresponding fractional numbers. Gaps are not counted as polymorphisms. Therefore, if there are the S sequences restricted to the P polymorphic sites, these data translate to the SxP matrix. Each row of this matrix can be thought of as a vector in a P-dimensional space, and it represents one of the sequences.

We perform the Principal Component Analysis (PCA) in order to determine the most significant coordinates in this P-dimensional space. After this we leave the principal components which capture 85% of the total variance, discard the remaining ones and project the data onto this relevant coordinate subset.

This procedure is followed by the consensus *K*-means clustering. Namely, if one targets for *K* clusters, one repeats the *K*-means clustering procedure *N* times, and forms the matrix *n* whose elements *n_{ij}* (*i, j = 1, ..., S*) represent the number of times out of the *N* trials when the *i*-th and *j*-th sequences were clustered together. In our analysis we set *N* ≥ 100. The matrix of the distances between the samples is:

$$D_{ij} = 1 - \frac{n_{ij}}{N}.$$

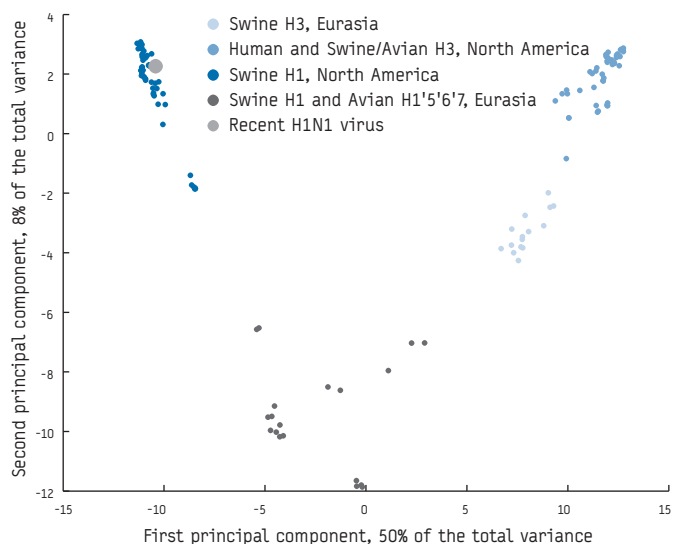
One then performs the standard hierarchical clustering with this matrix, targeting for the *K* clusters. This procedure does not depend on any assumptions made by the phylogenetic models. Note that these techniques can be used for inferring phylogenies as well [23], though this is beyond the scope of the present note.

Results

Sequence comparison of available sequences of the new A(H1N1) virus (as of 27 May 2009) did not identify significant sequence variation, except for a few point mutations. Hence *A*/

FIGURE 2 A

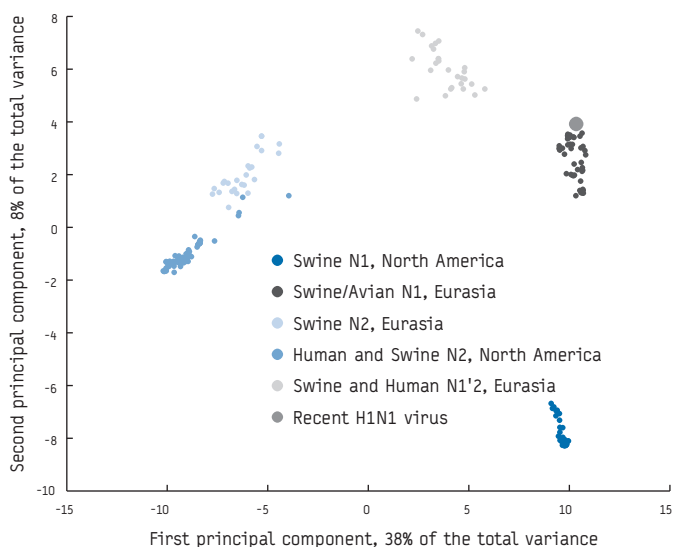
Cluster analysis of the new influenza A(H1N1) virus. HA segment; data projected onto the first two principal components



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 B

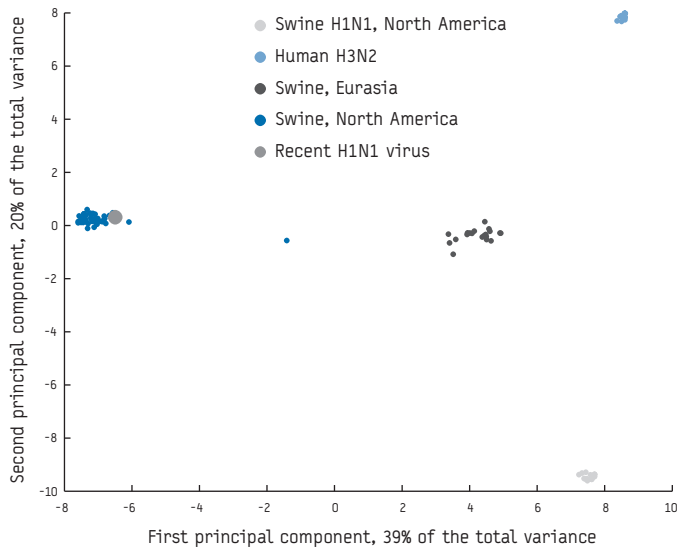
Cluster analysis of the new influenza A(H1N1) virus. NA segment; data projected onto the first two principal components



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 C

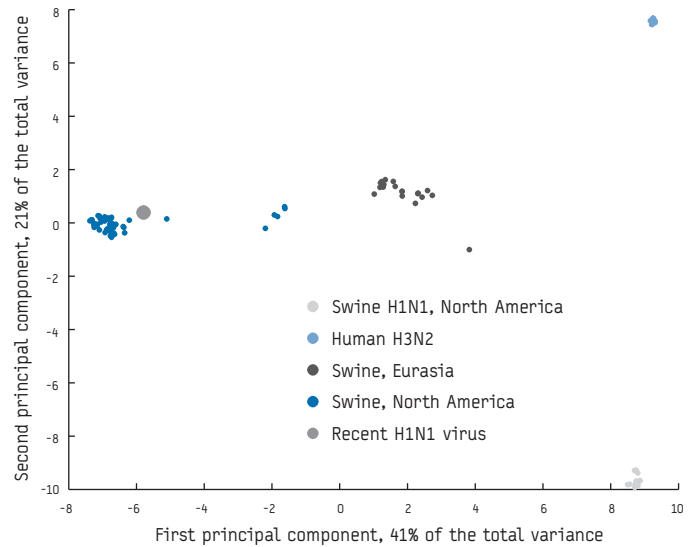
**Cluster analysis of the new influenza A(H1N1) virus.
PB2 segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 E

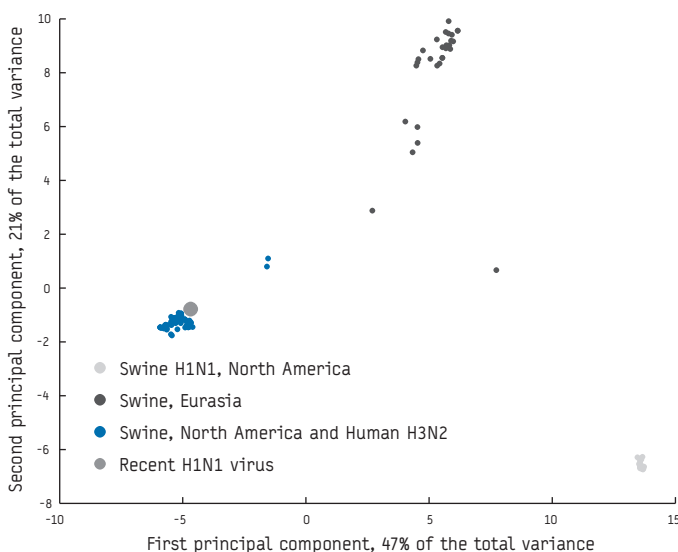
**Cluster analysis of the new influenza A(H1N1) virus.
PA segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 D

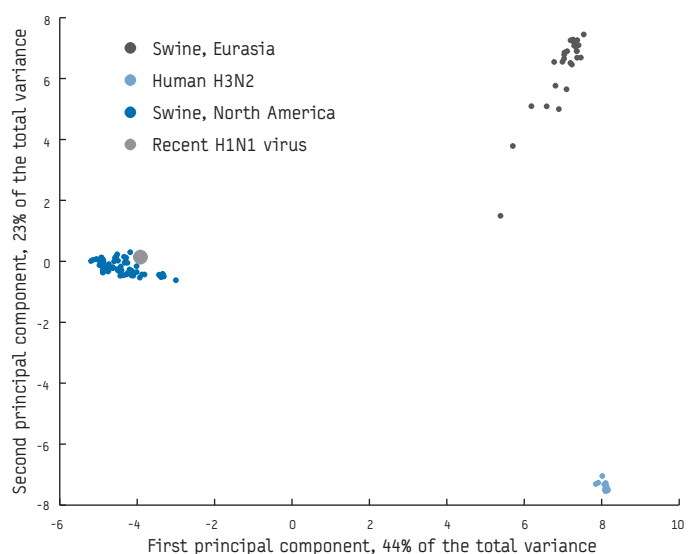
**Cluster analysis of the new influenza A(H1N1) virus.
PB1 segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 F

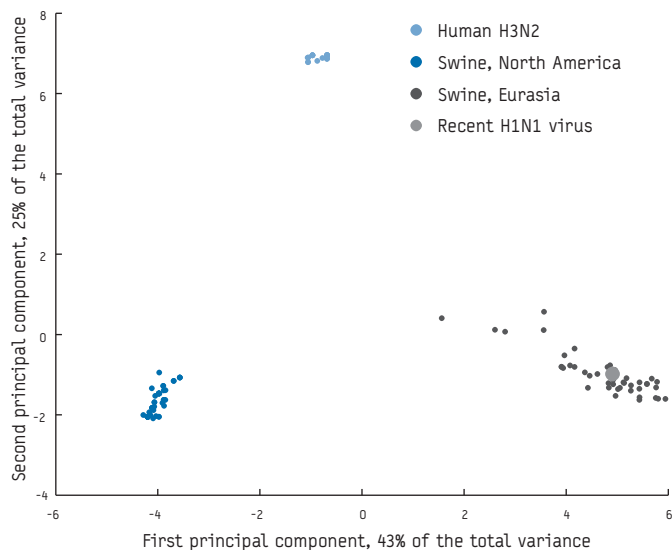
**Cluster analysis of the new influenza A(H1N1) virus.
NP segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 G

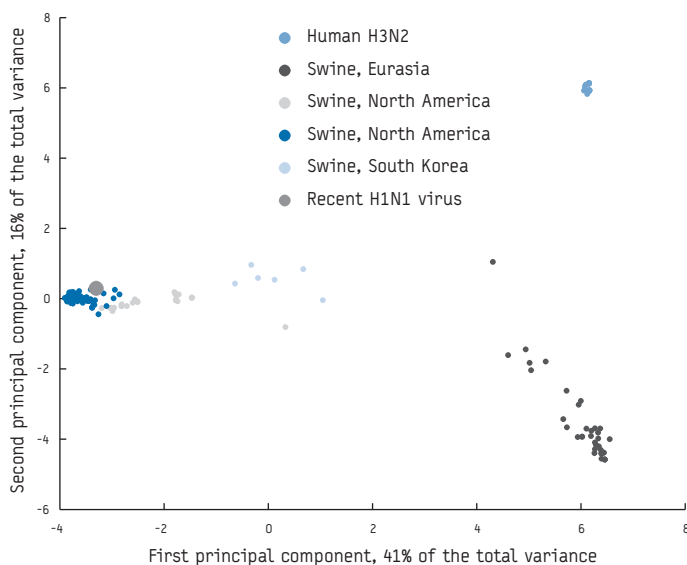
**Cluster analysis of the new influenza A(H1N1) virus.
MP segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

FIGURE 2 H

**Cluster analysis of the new influenza A(H1N1) virus.
NS segment; data projected onto the first two principal components**



Representation of the segment by segment analysis of the closest relatives to the 2009 H1N1 influenza viruses. Data is projected in the two axes of maximal variation. Clusters in different colors represent a distinct host and geographic location. Segments PB2, PB1, PA, HA, NP and NS are related to viruses isolated in swine in North America and NA and MP to swine viruses in Eurasia

California/04/2009(H1N1) was chosen as the representative for further analyses. There are many different phylogenetic techniques, each of them with their own assumptions about evolutionary models that vary in the way of computing genetic distances, probabilities, etc. As opposed to phylogenetic techniques, cluster methods do not have a need for evaluation of a tree, which is a more complicated structure than a set of clusters. Clustering techniques do not provide a detailed phylogenetic structure because they analyse group features of the sequence data. That is why the clustering analysis is more robust to the assumptions we make, for instance, the choice of genetic distance. Unsupervised methods provide a way of identifying clusters without relying on previous information about the origins, host and time isolation.

Figures 2a-2h show the data projected onto the first two principal components with the corresponding percentage of variation. The figures clearly show that in all cases the new virus sequences clustered with those of swine viruses. The closest matches for each of the segments are summarised in the Table.

Our analyses support the hypotheses whereby the 2009 pandemic influenza A(H1N1) virus derives from one or multiple reassortment(s) between influenza A viruses circulating in swine in Eurasia and in North America. It is schematically illustrated in the Figure 1.

Supplementary Tables 1 to 8 show the results of the clustering for each of the eight segments (PB2, PB1, PA, HA, NP, NA, M NS):

- http://www.eurosurveillance.org/public/public_pdf/Table_1_Cluster_analysis_HA.pdf
- http://www.eurosurveillance.org/public/public_pdf/Table_2_Cluster_analysis_NA.pdf
- http://www.eurosurveillance.org/public/public_pdf/Table_3_Cluster_analysis_PB2.pdf
- http://www.eurosurveillance.org/public/public_pdf/Table_4_Cluster_analysis_PB1.pdf
- http://www.eurosurveillance.org/public/public_pdf/Table_5_Cluster_analysis_PA.pdf
- http://www.eurosurveillance.org/public/public_pdf/Table_6_Cluster_analysis_NP.pdf

TABLE

Closer clusters to the new influenza A(H1N1) virus.

Segment	Closest match	Years
PB2	Swine, North America	1998-2007
PB1	Swine, North America	1998-2007
PA	Swine, North America	1998-2007
HA	Swine H1, North America	1985-2007
NP	Swine, North America	1985-2007
NA	Avian/Swine N1, Eurasia	1982-2007
M	Swine, Eurasia	1980-2005
NS	Swine, North America	1998-2007

Closer clusters to each of the segments of the new influenza A(H1N1) virus. The analysis reveals two clusters of related viruses: North American swine viruses (in light blue) and Eurasian swine viruses (in dark blue).

http://www.eurosurveillance.org/public/public_pdf/Table_7_Cluster_analysis_MP.pdf

http://www.eurosurveillance.org/public/public_pdf/Table_8_Cluster_analysis_NS.pdf

Acknowledgements

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Supplementary materials for

CLUSTER ANALYSIS OF THE ORIGINS OF THE NEW INFLUENZA A(H1N1) VIRUS

Swine H3, EA, 15 sequences

gi|125490284|gb|AB292402| /Avian/4 (HA)/H3N1/Hong Kong/1980/// Influenza A virus (A/duck/Hong Kong/836/1980(H3N1)) HA gene for haemagglutinin, complete cds.
gi|14275703|gb|AJ293926| /Human/4 (HA)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) partial ha gene for haemagglutinin, genomic RNA
gi|164511468|gb|AM746616| /Swine/4 (HA)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) H3 gene for hemagglutinin, genomic RNA
gi|38154813|gb|AY363520| /Swine/4 (HA)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong Kong/5200/99(H3N2)) hemagglutinin (HA) gene, partial cds.
gi|38154823|gb|AY363525| /Swine/4 (HA)/H3N2/Hong Kong/2002/// Influenza A virus (A/swine/Hong Kong/1144/02(H3N2)) hemagglutinin (HA) gene, partial cds.
gi|89148252|gb|CY009372| /Swine/4 (HA)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 4, complete sequence
gi|89148095|gb|CY009380| /Swine/4 (HA)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 4, complete sequence
gi|91177906|gb|CY010564| /Swine/4 (HA)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 4, complete sequence
gi|133981346|gb|CY020501| /Swine/4 (HA)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 4, complete sequence
gi|148628607|gb|EF409247| /Swine/4 (HA)/H3N2/Germany/1992/// Influenza A virus (A/swine/Leipzig/145/92(H3N2)) hemagglutinin (HA) gene, complete cds
gi|148628609|gb|EF409248| /Swine/4 (HA)/H3N2/Germany/1996/// Influenza A virus (A/swine/Jena/5/96(H3N2)) hemagglutinin (HA) gene, complete cds
gi|148628611|gb|EF409249| /Swine/4 (HA)/H3N2/Germany/1997/// Influenza A virus (A/swine/Lohne/1/97(H3N2)) hemagglutinin (HA) gene, complete cds
gi|148628613|gb|EF409250| /Swine/4 (HA)/H3N2/Germany/1999/// Influenza A virus (A/swine/Bakum/8602/99(H3N2)) hemagglutinin (HA) gene, complete cds
gi|152207622|gb|EU037014| /Swine/4 (HA)/H3N1/Italy/2006/// Influenza A virus (A/swine/Italy/66945/2006(H3N1)) segment 4 hemagglutinin (HA) gene, complete cds.
gi|192382739|gb|EU826543| /Swine/4 (HA)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds

Human and Swine/Avian H3, NA, 54 sequences

gi|9887129|gb|AF251403| /Swine/4 (HA)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) hemagglutinin (HA) gene, complete cds.
gi|9887146|gb|AF251411| /Swine/4 (HA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) hemagglutinin (HA) gene, complete cds.
gi|9887163|gb|AF251419| /Swine/4 (HA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) hemagglutinin (HA) gene, complete cds.
gi|110632007|gb|AF251427| /Swine/4 (HA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) hemagglutinin (HA) gene, complete cds.
gi|18073259|gb|AJ252132| /Swine/4 (HA)/H3N2/Germany/1982/// Influenza A virus ha gene for hemagglutinin, strain A/swine/Potsdam/35/82 (H3N2)
gi|56159970|gb|AY779253| /Avian/4 (HA)/H3N2/USA/2003/// Influenza A virus (A/turkey/North Carolina/12344/03(H3N2)) hemagglutinin (HA) gene, complete cds
gi|56159972|gb|AY779254| /Avian/4 (HA)/H3N2/USA/2003/// Influenza A virus (A/turkey/Minnesota/764-2/03(H3N2)) hemagglutinin (HA) gene, complete cds
gi|91127726|gb|CY010652| /Human/4 (HA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 4, complete sequence

gi|91127747|gb|CY010660| /Human/4 (HA)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 4, complete sequence

gi|91128161|gb|CY010668| /Human/4 (HA)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 4, complete sequence

gi|91128535|gb|CY010676| /Human/4 (HA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 4, complete sequence

gi|91129935|gb|CY010708| /Human/4 (HA)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 4, complete sequence

gi|91130710|gb|CY010724| /Human/4 (HA)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 4, complete sequence

gi|94959627|gb|CY010812| /Human/4 (HA)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 4, complete sequence

gi|109675455|gb|CY011432| /Human/4 (HA)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 4, complete sequence

gi|109675493|gb|CY011448| /Human/4 (HA)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 4, complete sequence

gi|109675531|gb|CY011464| /Human/4 (HA)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 4, complete sequence

gi|109914686|gb|CY011888| /Human/4 (HA)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 4, complete sequence

gi|110333418|gb|CY012216| /Human/4 (HA)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 4, complete sequence

gi|110629728|gb|CY012744| /Human/4 (HA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 4, complete sequence

gi|110629766|gb|CY012760| /Human/4 (HA)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 4, complete sequence

gi|110733706|gb|CY012968| /Human/4 (HA)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 4, complete sequence

gi|112789107|gb|CY013677| /Human/4 (HA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 4, complete sequence

gi|112789164|gb|CY013701| /Human/4 (HA)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 4, complete sequence

gi|112789316|gb|CY013765| /Human/4 (HA)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 4, complete sequence

gi|115521540|gb|CY016483| /Human/4 (HA)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 4, complete sequence

gi|76574373|gb|DQ145537| /Swine/4 (HA)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) hemagglutinin gene, complete cds

gi|75756549|gb|DQ150425| /Swine/4 (HA)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) hemagglutinin (HA) gene, complete cds.

gi|75756565|gb|DQ150433| /Swine/4 (HA)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) hemagglutinin (HA) gene, complete cds.

gi|84626335|gb|DQ335771| /Avian/4 (HA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404583|gb|DQ469962| /Human/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404585|gb|DQ469970| /Swine/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404587|gb|DQ469978| /Swine/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404589|gb|DQ469986| /Swine/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404591|gb|DQ469994| /Swine/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) hemagglutinin (HA) gene, complete cds

gi|94404593|gb|DQ470002| /Avian/4 (HA)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) hemagglutinin (HA) gene, complete cds
 gi|114215296|gb|DQ923506| /Swine/4 (HA)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) hemagglutinin (HA) gene, complete cds
 gi|114215298|gb|DQ923507| /Swine/4 (HA)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) hemagglutinin (HA) gene, complete cds
 gi|146454447|gb|EF551045| /Avian/4 (HA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds.
 gi|146454465|gb|EF551053| /Swine/4 (HA)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds.
 gi|166080176|gb|EU301209| /Swine/4 (HA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) hemagglutinin (HA) gene, complete cds.
 gi|187763979|gb|EU697204| /Avian/4 (HA)/H3N2/USA/2005/// Influenza A virus (A/turkey/Minnesota/366767/2005(H3N2)) hemagglutinin (HA) gene, complete cds
 gi|189313119|gb|EU735818| /Avian/4 (HA)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) hemagglutinin (HA) gene, complete cds
 gi|189313100|gb|EU735826| /Avian/4 (HA)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) hemagglutinin (HA) gene, complete cds
 gi|193877755|gb|EU743210| /Avian/4 (HA)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds.
 gi|190403720|gb|EU798789| /Swine/4 (HA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403722|gb|EU798790| /Swine/4 (HA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403724|gb|EU798791| /Swine/4 (HA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403726|gb|EU798792| /Swine/4 (HA)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403728|gb|EU798793| /Swine/4 (HA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403730|gb|EU798794| /Swine/4 (HA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403732|gb|EU798795| /Swine/4 (HA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403734|gb|EU798796| /Swine/4 (HA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|190403736|gb|EU798797| /Swine/4 (HA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 4 hemagglutinin (HA) gene, complete cds

Swine H1, NA, 67 sequences

 gi|216409285|gb|AB434320| /Swine/4 (HA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) HA gene for hemagglutinin, complete cds
 gi|216409303|gb|AB434328| /Swine/4 (HA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) HA gene for hemagglutinin, complete cds
 gi|8515423|gb|AF250124| /Swine/4 (HA)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) segment 4 hemagglutinin (HA) gene, complete cds.
 gi|19422076|gb|AF455675| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) hemagglutinin (HA) gene, complete cds.
 gi|19422078|gb|AF455676| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) hemagglutinin (HA) gene, complete cds.
 gi|19422080|gb|AF455677| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) hemagglutinin (HA) gene, complete cds.

gi|19422082|gb|AF455678| /Swine/4 (HA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) hemagglutinin (HA) gene, complete cds

gi|19422084|gb|AF455679| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|19422086|gb|AF455680| /Swine/4 (HA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) hemagglutinin (HA) gene, complete cds.

gi|19422088|gb|AF455681| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) hemagglutinin (HA) gene, complete cds.

gi|19422090|gb|AF455682| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) hemagglutinin (HA) gene, complete cds.

gi|19848287|gb|AY038014| /Avian/4 (HA)/H1N2/USA/1999/// Influenza A virus (A/Turkey/MO/24093/99(H1N2)) hemagglutinin (H1) gene, complete cds.

gi|17223878|gb|AY060047| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/23124-T/01(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|17223880|gb|AY060048| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/23124-S/01(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|17223884|gb|AY060050| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/16419/01(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|24286062|gb|AY129156| /Swine/4 (HA)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) hemagglutinin (HA) mRNA, complete cds

gi|30522967|gb|AY233393| /Avian/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) hemagglutinin (HA) gene, complete cds

gi|149785303|gb|CY022317| /Swine/4 (HA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1)) segment 4, complete sequence

gi|149785253|gb|CY022325| /Swine/4 (HA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1)) segment 4, complete sequence

gi|149785158|gb|CY022333| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) segment 4, complete sequence

gi|149785123|gb|CY022429| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 4, complete sequence

gi|149785050|gb|CY022469| /Swine/4 (HA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1)) segment 4, complete sequence

gi|149784960|gb|CY022477| /Swine/4 (HA)/H1N1/USA/1991/// Influenza A virus (A/swine/Maryland/23239/1991(H1N1)) segment 4, complete sequence

gi|152963528|gb|CY022970| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1)) segment 4, complete sequence

gi|156536558|gb|CY024925| /Human/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1)) segment 4, complete sequence

gi|156536594|gb|CY025010| /Swine/4 (HA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1)) segment 4, complete sequence

gi|158525295|gb|CY027155| /Swine/4 (HA)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1)) segment 4, complete sequence

gi|158958057|gb|CY027507| /Swine/4 (HA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1)) segment 4, complete sequence

gi|166203488|gb|CY028780| /Swine/4 (HA)/H1N1/USA/1991/// Influenza A virus (A/swine/California/T9001707/1991(H1N1)) segment 4, complete sequence

gi|208400878|gb|CY035070| /Swine/4 (HA)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1)) segment 4, complete sequence

gi|229807652|gb|CY039917| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A Virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 4, complete sequence

gi|229809512|gb|CY039925| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A Virus (A/swine/Indiana/1726/1988(H1N1)) segment 4, complete sequence

gi|109501337|gb|DQ666933| /Swine/4 (HA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/S11/2005(H1N2)) segment 4 hemagglutinin gene, complete cds.

gi|112456301|gb|DQ889689| /Human/4 (HA)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) hemagglutinin (HA) gene, complete cds

gi|117935788|gb|EF101741| /Human/4 (HA)/H1N2/Philippines/2004/02/27/ Influenza A virus (A/Philippines/344/2004(H1N2)) hemagglutinin gene, complete cds

gi|117935790|gb|EF101749| /Human/4 (HA)/H1N1/Thailand/2005/07/14/ Influenza A virus (A/Thailand/271/2005(H1N1)) hemagglutinin gene, complete cds

gi|146706468|gb|EF556199| /Swine/4 (HA)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|146706487|gb|EF556201| /Swine/4 (HA)/H1N2/China/2005/// Influenza A virus (A/swine/Guangxi/17/2005(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|146706513|gb|EF556203| /Swine/4 (HA)/H1N2/China/2005/// Influenza A virus (A/swine/Hainan/1/2005(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|157168447|gb|EU139827| /Swine/4 (HA)/H1N1/USA/1999/// Influenza A virus (A/swine/Minnesota/37866/1999(H1N1)) hemagglutinin (HA) gene, complete cds.

gi|157168449|gb|EU139828| /Swine/4 (HA)/H1N2/USA/2001/// Influenza A virus (A/swine/Minnesota/1192/2001(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|157168453|gb|EU139830| /Swine/4 (HA)/H1N2/USA/2003/// Influenza A virus (A/swine/Minnesota/00194/2003(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|157168455|gb|EU139831| /Swine/4 (HA)/H1N2/USA/2004/// Influenza A virus (A/swine/Kansas/00246/2004(H1N2)) hemagglutinin (HA) gene, complete cds.

gi|163676469|gb|EU296599| /Swine/4 (HA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) hemagglutinin (HA) gene, complete cds

gi|163676471|gb|EU296601| /Swine/4 (HA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) hemagglutinin (HA) gene, complete cds

gi|163676473|gb|EU296603| /Swine/4 (HA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/05CB1/2005(H1N1)) hemagglutinin (HA) gene, complete cds

gi|163676475|gb|EU296605| /Swine/4 (HA)/H1N1/Thailand/2006/// Influenza A virus (A/swine/Chonburi/06CB2/2006(H1N1)) hemagglutinin (HA) gene, complete cds

gi|189313195|gb|EU735786| /Avian/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1)) hemagglutinin (HA) gene, complete cds.

gi|193877846|gb|EU743159| /Avian/4 (HA)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds.

gi|190403698|gb|EU798778| /Swine/4 (HA)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403700|gb|EU798779| /Swine/4 (HA)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403702|gb|EU798780| /Swine/4 (HA)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403704|gb|EU798781| /Swine/4 (HA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403706|gb|EU798782| /Swine/4 (HA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403708|gb|EU798783| /Swine/4 (HA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403710|gb|EU798784| /Swine/4 (HA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403712|gb|EU798785| /Swine/4 (HA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403714|gb|EU798786| /Swine/4 (HA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403716|gb|EU798787| /Swine/4 (HA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|190403718|gb|EU798788| /Swine/4 (HA)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds

gi|209164817|gb|FJ357104| /Avian/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|209486604|gb|FJ374511| /Swine/4 (HA)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|438591|gb|L24362| /Human/4 (HA)/H1N1/USA/1991/// Influenza A virus (A/MD/12/1991(H1N1)) hemagglutinin (HA) gene, complete cds.
 gi|325055|gb|M81707| /Swine/4 (HA)/H1N1/USA/1988/// Influenza A virus (A/Swine/Indiana/1726/1988(H1N1)) haemagglutinin gene, complete cds.
 gi|1399602|gb|U53162| /Human/4 (HA)/H1N1/USA/1994/// Influenza A virus (A/WI/4754/1994(H1N1)) hemagglutinin (HA) mRNA, complete cds
 gi|1399604|gb|U53163| /Human/4 (HA)/H1N1/USA/1994/// Influenza A virus (A/WI/4755/1994(H1N1)) hemagglutinin (HA) mRNA, complete cds
 gi|227809829|gb|FJ966082| /Human/4 (HA)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds

Swine H1 and Avian H1'5'6'7, EA, 19 sequences

 gi|113531184|gb|AB271113| /Avian/4 (HA)/H1N1/Japan/1977/// Influenza A virus (A/duck/Miyagi/66/77(H1N1)) HA gene for haemagglutinin, complete cds
 gi|113531188|gb|AB271115| /Avian/4 (HA)/H1N1/Japan/1996/// Influenza A virus (A/duck/Hokkaido/55/96(H1N1)) HA gene for haemagglutinin, complete cds
 gi|113531192|gb|AB271117| /Avian/4 (HA)/H10N1/Hong Kong/1980/// Influenza A virus (A/duck/Hong Kong/938/80(H10N1)) HA gene for haemagglutinin, complete cds.
 gi|126149244|gb|AB294215| /Avian/4 (HA)/H6N1/Hong Kong/1979/// Influenza A virus (A/duck/Hong Kong/716/1979(H6N1)) HA gene for haemagglutinin, complete cds.
 gi|195183823|gb|AB450451| /Avian/4 (HA)/H11N1/Japan/1977/// Influenza A virus (A/duck/Miyagi/47/1977(H11N1)) HA gene for haemagglutinin, complete cds.
 gi|4585174|gb|AF091316| /Swine/4 (HA)/H1N1/Belgium/1983/// Influenza A virus (A/swine/Belgium/1/83(H1N1)) segment 4 hemagglutinin precursor (HA) mRNA, complete cds.
 gi|18074896|gb|AJ410542| /Avian/4 (HA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for haemagglutinin (ha gene) strain A/duck/Hong Kong/175/77 (H6N1)
 gi|18074900|gb|AJ410544| /Avian/4 (HA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for haemagglutinin (ha gene) strain A/duck/Hong Kong/202/77 (H6N1)
 gi|159149089|gb|AY296064| /Avian/4 (HA)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) segment 4 hemagglutinin (HA) gene, complete cds
 gi|78097593|gb|CY005605| /Avian/4 (HA)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 4, complete sequence
 gi|89789278|gb|CY009892| /Swine/4 (HA)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 4, complete sequence
 gi|91125694|gb|CY010572| /Swine/4 (HA)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 4, complete sequence
 gi|91177887|gb|CY010580| /Swine/4 (HA)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 4, complete sequence
 gi|115278134|gb|CY014612| /Avian/4 (HA)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 4, complete sequence
 gi|85062566|gb|DQ343151| /Avian/4 (HA)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) hemagglutinin (HA) gene, complete cds.
 gi|153957928|gb|EU053133| /Swine/4 (HA)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 4 hemagglutinin gene, complete cds.
 gi|153958033|gb|EU053141| /Swine/4 (HA)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 4 hemagglutinin gene, complete cds.
 gi|210076636|gb|FJ415610| /Swine/4 (HA)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds

gi|211996952|gb|FJ432778| /Avian/4 (HA)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 4 hemagglutinin (HA) gene, complete cds

Swine N1, NA, 32 sequences

gi|29539577|gb|AF342820| /Human/6 (NA)/H1N1/USA/1998/// Influenza A virus (A/Wisconsin/10/98 (H1N1)) neuraminidase gene, complete cds
gi|149785308|gb|CY022319| /Swine/6 (NA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1)) segment 6, complete sequence
gi|149785259|gb|CY022327| /Swine/6 (NA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1)) segment 6, complete sequence
gi|149785187|gb|CY022335| /Swine/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) segment 6, complete sequence
gi|149785128|gb|CY022431| /Swine/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 6, complete sequence
gi|149785055|gb|CY022471| /Swine/6 (NA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1)) segment 6, complete sequence
gi|149784975|gb|CY022479| /Swine/6 (NA)/H1N1/USA/1991/// Influenza A virus (A/swine/Maryland/23239/1991(H1N1)) segment 6, complete sequence
gi|152963533|gb|CY022972| /Swine/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1)) segment 6, complete sequence
gi|156536563|gb|CY024927| /Human/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1)) segment 6, complete sequence
gi|156536599|gb|CY025012| /Swine/6 (NA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1)) segment 6, complete sequence
gi|158525300|gb|CY027157| /Swine/6 (NA)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1)) segment 6, complete sequence
gi|158958062|gb|CY027509| /Swine/6 (NA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1)) segment 6, complete sequence
gi|166203493|gb|CY028782| /Swine/6 (NA)/H1N1/USA/1991/// Influenza A virus (A/swine/California/T9001707/1991(H1N1)) segment 6, complete sequence
gi|208400883|gb|CY035072| /Swine/6 (NA)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1)) segment 6, complete sequence
gi|229807657|gb|CY039919| /Swine/6 (NA)/H1N1/USA/1988/// Influenza A Virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 6, complete sequence
gi|229809517|gb|CY039927| /Swine/6 (NA)/H1N1/USA/1988/// Influenza A Virus (A/swine/Indiana/1726/1988(H1N1)) segment 6, complete sequence
gi|76574375|gb|DQ145538| /Swine/6 (NA)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) neuraminidase gene, complete cds
gi|75756553|gb|DQ150427| /Swine/6 (NA)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) neuraminidase (NA) gene, complete cds.
gi|75756569|gb|DQ150435| /Swine/6 (NA)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) neuraminidase (NA) gene, complete cds.
gi|112456255|gb|DQ889687| /Human/6 (NA)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) neuraminidase (NA) gene, complete cds
gi|114215300|gb|DQ923508| /Swine/6 (NA)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) neuraminidase (NA) gene, complete cds
gi|157168467|gb|EU139837| /Swine/6 (NA)/H1N1/USA/1999/// Influenza A virus (A/swine/Minnesota/37866/1999(H1N1)) neuraminidase (NA) gene, complete cds
gi|188572591|gb|EU409949| /Swine/6 (NA)/H1N1/USA/2007/// Influenza A virus (A/swine/Ohio/24366/07(H1N1)) neuraminidase (NA) gene, complete cds
gi|188572593|gb|EU409956| /Swine/6 (NA)/H1N1/USA/2004/// Influenza A virus (A/swine/Ohio/75004/04(H1N1)) neuraminidase (NA) gene, complete cds
gi|188572595|gb|EU409961| /Swine/6 (NA)/H1N1/USA/2006/// Influenza A virus (A/swine/Ohio/C62006/06(H1N1)) neuraminidase (NA) gene, complete cds

gi|189313200|gb|EU735788| /Avian/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1)) neuraminidase (NA) gene, complete cds.
gi|193877859|gb|EU743153| /Avian/6 (NA)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1)) segment 6 neuraminidase (NA) gene, complete cds.
gi|193877841|gb|EU743161| /Avian/6 (NA)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1)) segment 6 neuraminidase (NA) gene, complete cds.
gi|190403799|gb|EU798818| /Swine/6 (NA)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 6 neuraminidase (NA) gene, complete cds
gi|190403801|gb|EU798819| /Swine/6 (NA)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 6 neuraminidase (NA) gene, complete cds
gi|209164822|gb|FJ357106| /Avian/6 (NA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1)) segment 6 neuraminidase (NA) gene, complete cds
gi|1399610|gb|U53166| /Human/6 (NA)/H1N1/USA/1994/// Influenza A virus (A/WI/4754/1994(H1N1)) neuraminidase (NA) mRNA, complete cds

Swine/Avian N1, EA, 47 sequences

gi|113531186|gb|AB271114| /Avian/6 (NA)/H1N1/Japan/1977/// Influenza A virus (A/duck/Miyagi/66/77(H1N1)) NA gene for neuraminidase, complete cds
gi|113531190|gb|AB271116| /Avian/6 (NA)/H1N1/Japan/1996/// Influenza A virus (A/duck/Hokkaido/55/96(H1N1)) NA gene for neuraminidase, complete cds
gi|113531194|gb|AB271118| /Avian/6 (NA)/H10N1/Hong Kong/1980/// Influenza A virus (A/duck/Hong Kong/938/80(H10N1)) NA gene for neuraminidase, complete cds.
gi|125490286|gb|AB292403| /Avian/6 (NA)/H3N1/Hong Kong/1980/// Influenza A virus (A/duck/Hong Kong/836/1980(H3N1)) NA gene for neuraminidase, complete cds.
gi|126149246|gb|AB294216| /Avian/6 (NA)/H6N1/Hong Kong/1979/// Influenza A virus (A/duck/Hong Kong/716/1979(H6N1)) NA gene for neuraminidase, complete cds.
gi|216409289|gb|AB434322| /Swine/6 (NA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) NA gene for neuraminidase, complete cds
gi|216409307|gb|AB434330| /Swine/6 (NA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) NA gene for neuraminidase, complete cds
gi|195183825|gb|AB450452| /Avian/6 (NA)/H1N1/Japan/1977/// Influenza A virus (A/duck/Miyagi/47/1977(H1N1)) NA gene for neuraminidase, complete cds.
gi|13260593|gb|AF250366| /Swine/6 (NA)/H1N1/United Kingdom/1992/// Influenza A virus (A/Swine/England/195852/92 (H1N1)) neuraminidase (NA) gene, complete cds
gi|18074944|gb|AJ410566| /Avian/6 (NA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for neuraminidase (na gene) strain A/duck/Hong Kong/175/77 (H6N1)
gi|18074946|gb|AJ410567| /Avian/6 (NA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for neuraminidase (na gene) strain A/duck/Hong Kong/202/77 (H6N1)
gi|20068202|gb|AJ410876| /Swine/6 (NA)/H1N1/Italy/1995/// Influenza A virus (swine/Italy/1424-4/95 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068208|gb|AJ410879| /Swine/6 (NA)/H1N1/Italy/1997/// Influenza A virus (swine/Italy/1492/97 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068210|gb|AJ410880| /Swine/6 (NA)/H1N1/Italy/1997/// Influenza A virus (swine/Italy/1509-6/97 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068212|gb|AJ410881| /Swine/6 (NA)/H1N1/France/1999/// Influenza A virus (swine/Cotes d'Armor/1488/99 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068214|gb|AJ410882| /Swine/6 (NA)/H1N1/France/1999/// Influenza A virus (swine/Ille et Vilaine/1455/99 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068218|gb|AJ410884| /Swine/6 (NA)/H1N1/France/1999/// Influenza A virus (swine/Cotes d'Armor/1515/99 (H1N1)) partial N1NA gene for Neuraminidase, genomic RNA
gi|20068220|gb|AJ412689| /Swine/6 (NA)/H1N1/France/1984/// Influenza A virus (A/swine/Finistere/3616/84(H1N1)) NAN1 gene for neuraminidase, genomic RNA

gi|20068222|gb|AJ412690| /Swine/6 (NA)/H1N1/Belgium/1983/// Influenza A virus (A/swine/Belgium/1/83(H1N1)) NAN1 gene for neuraminidase, genomic RNA

gi|20068224|gb|AJ412691| /Swine/6 (NA)/H1N1/Belgium/1985/// Influenza A virus (A/swine/Belgium/74/85(H1N1)) partial NAN1 gene for neuraminidase, genomic RNA

gi|20068226|gb|AJ412692| /Swine/6 (NA)/H1N1/France/1982/// Influenza A virus (A/swine/Lot/2979/82(H1N1)) NAN1 gene for neuraminidase, genomic RNA

gi|39840719|gb|AJ416626| /Avian/6 (NA)/H1N1/France/1987/// Influenza A virus (A/turkey/France/87075/87(H1N1)) N1 gene for neuraminidase, genomic RNA

gi|39840725|gb|AJ416629| /Avian/6 (NA)/H7N1/United Kingdom/1979/// Influenza A virus (A/African starling/England/983/79(H7N1)) N1 gene for neuraminidase, genomic RNA

gi|37955282|gb|AY207527| /Avian/6 (NA)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1944/92(H7N1)) neuraminidase (NA) gene, complete cds

gi|37955296|gb|AY207534| /Avian/6 (NA)/H1N1/Japan/1977/// Influenza A virus (A/duck/Miyagil/9/77(H1N1)) neuraminidase (NA) gene, complete cds

gi|37955304|gb|AY207538| /Avian/6 (NA)/H7N1/South Africa/1992/// Influenza A virus (A/softbill/South Africa/142/92(H7N1)) neuraminidase (NA) gene, complete cds

gi|37955308|gb|AY207540| /Avian/6 (NA)/H2N1/Germany/1981/// Influenza A virus (A/mallard/Stralsund/41-6/81(H2N1)) neuraminidase (NA) gene, complete cds

gi|78097310|gb|CY005495| /Avian/6 (NA)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 6, complete sequence

gi|78097598|gb|CY005607| /Avian/6 (NA)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 6, complete sequence

gi|89789283|gb|CY009894| /Swine/6 (NA)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 6, complete sequence

gi|91125699|gb|CY010574| /Swine/6 (NA)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 6, complete sequence

gi|91177892|gb|CY010582| /Swine/6 (NA)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 6, complete sequence

gi|85681812|gb|DQ349117| /Avian/6 (NA)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) neuraminidase (NA) gene, complete cds.

gi|117935804|gb|EF101756| /Human/6 (NA)/H1N1/Thailand/2005/07/14/ Influenza A virus (A/Thailand/271/2005(H1N1)) neuraminidase gene, complete cds

gi|149212747|gb|EF443160| /Avian/6 (NA)/H3N1/India/1980/// Influenza A virus (A/duck/India/836/1980(H3N1)) neuraminidase (NA) gene, partial cds.

gi|152207624|gb|EU037015| /Swine/6 (NA)/H3N1/Italy/2006/// Influenza A virus (A/swine/Italy/66945/2006(H3N1)) segment 6 neuroaminidase (NA) gene, complete cds.

gi|195933628|gb|EU045388| /Swine/6 (NA)/H1N1/Italy/2004/// Influenza A virus (A/swine/Italy/53949/2004(H1N1)) neuraminidase (NA) gene, complete cds.

gi|195933630|gb|EU045389| /Swine/6 (NA)/H1N1/Italy/2004/// Influenza A virus (A/swine/Italy/65296/2004(H1N1)) neuraminidase (NA) gene, complete cds.

gi|195933632|gb|EU045393| /Swine/6 (NA)/H1N1/Italy/2004/// Influenza A virus (A/swine/Italy/247578/2004(H1N1)) neuraminidase (NA) gene, complete cds.

gi|163676445|gb|EU296600| /Swine/6 (NA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) neuraminidase (NA) gene, complete cds

gi|163676447|gb|EU296602| /Swine/6 (NA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) neuraminidase (NA) gene, complete cds

gi|163676449|gb|EU296604| /Swine/6 (NA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/05CB1/2005(H1N1)) neuraminidase (NA) gene, complete cds

gi|163676451|gb|EU296606| /Swine/6 (NA)/H1N1/Thailand/2006/// Influenza A virus (A/swine/Chonburi/06CB2/2006(H1N1)) neuraminidase (NA) gene, complete cds

gi|210076638|gb|FJ415611| /Swine/6 (NA)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 6 neuraminidase (NA) gene, complete cds

gi|211996957|gb|FJ432780| /Avian/6 (NA)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 6 neuraminidase (NA) gene, complete cds

gi|324441|gb|K02252| /Avian/6 (NA)/H7N1/Ireland/1973/// Influenza A virus (A/parrot/Ulster/1973(H7N1))
neuraminidase gene, complete cds
gi|227809833|gb|FJ966084| /Human/6 (NA)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1))
segment 6 neuraminidase (NA) gene, complete cds

Swine N2, EA, 25 sequences

gi|14275696|gb|AJ293923| /Human/6 (NA)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong
Kong/1774/99(H3N2)) na gene for neuraminidase, genomic RNA
gi|13661033|gb|AJ311455| /Swine/6 (NA)/H3N2/Belgium/1992/// Influenza A virus NA gene for Neuraminidase,
genomic RNA, strain A/Swine/Belgium/220/92
gi|20068244|gb|AJ412701| /Swine/6 (NA)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) partial
NAN2 gene for neuraminidase, genomic RNA
gi|20068246|gb|AJ412702| /Swine/6 (NA)/H1N2/France/1999/// Influenza A virus (A/swine/Cotes
d'Armor/604/99(H1N2)) NAN2 gene for neuraminidase, genomic RNA
gi|20068252|gb|AJ412705| /Swine/6 (NA)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes
d'Armor/790/97(H1N2)) NAN2 gene for neuraminidase, genomic RNA
gi|164511470|gb|AM746617| /Swine/6 (NA)/H3N2/Germany/2006/// Influenza A virus (A/wild
boar/Germany/WS169/2006(H3N2)) N2 gene for neuraminidase, genomic RNA
gi|38154883|gb|AY363555| /Swine/6 (NA)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong
Kong/5190/99(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154887|gb|AY363557| /Swine/6 (NA)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong
Kong/5212/99(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154889|gb|AY363558| /Swine/6 (NA)/H3N2/Hong Kong/2000/// Influenza A virus (A/swine/Hong
Kong/7982/00(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154891|gb|AY363559| /Swine/6 (NA)/H3N2/Hong Kong/2001/// Influenza A virus (A/swine/Hong
Kong/9296/01(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154893|gb|AY363560| /Swine/6 (NA)/H3N2/Hong Kong/2001/// Influenza A virus (A/swine/Hong
Kong/9745/01(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154895|gb|AY363561| /Swine/6 (NA)/H3N2/Hong Kong/2002/// Influenza A virus (A/swine/Hong
Kong/1144/02(H3N2)) neuraminidase (NA) gene, partial cds.
gi|38154897|gb|AY363562| /Swine/6 (NA)/H3N2/Hong Kong/2002/// Influenza A virus (A/swine/Hong
Kong/1197/02(H3N2)) neuraminidase (NA) gene, partial cds.
gi|89148257|gb|CY009374| /Swine/6 (NA)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2))
segment 6, complete sequence
gi|89148100|gb|CY009382| /Swine/6 (NA)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2))
segment 6, complete sequence
gi|91177911|gb|CY010566| /Swine/6 (NA)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2))
segment 6, complete sequence
gi|133981513|gb|CY020503| /Swine/6 (NA)/H3N2/Spain/2002/// Influenza A virus
(A/swine/Spain/42386/2002(H3N2)) segment 6, complete sequence
gi|117935802|gb|EF101743| /Human/6 (NA)/H1N2/Philippines/2004/02/24/ Influenza A virus
(A/Philippines/344/2004(H1N2)) neuraminidase gene, partial cds
gi|148628617|gb|EF409252| /Swine/6 (NA)/H3N2/Germany/1982/// Influenza A virus (A/swine/Potsdam/35/82(H3N2))
neuraminidase (NA) gene, complete cds
gi|148628642|gb|EF409254| /Swine/6 (NA)/H3N2/Germany/1992/// Influenza A virus
(A/swine/Leipzig/145/92(H3N2)) neuraminidase (NA) gene, complete cds
gi|148628679|gb|EF409256| /Swine/6 (NA)/H3N2/Germany/1996/// Influenza A virus (A/swine/Jena/5/96(H3N2))
neuraminidase (NA) gene, complete cds
gi|148628681|gb|EF409257| /Swine/6 (NA)/H3N2/Germany/1997/// Influenza A virus (A/swine/Lohne/1/97(H3N2))
neuraminidase (NA) gene, complete cds
gi|148628683|gb|EF409258| /Swine/6 (NA)/H3N2/Germany/1999/// Influenza A virus
(A/swine/Bakum/8602/99(H3N2)) neuraminidase (NA) gene, complete cds

gi|153957955|gb|EU053135| /Swine/6 (NA)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 6 neuraminidase gene, complete cds.
gi|153958061|gb|EU053143| /Swine/6 (NA)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 6 neuraminidase gene, complete cds.

Human and Swine N2, NA, 81 sequences

gi|3722174|gb|AF038262| /Human/6 (NA)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 neuraminidase (NA) gene, complete cds.
gi|5764326|gb|AF153237| /Swine/6 (NA)/H3N2/USA/1998/// Influenza A virus (A/Swine/Texas/4199-2/98 (H3N2)) neuraminidase gene, partial cds.
gi|5764328|gb|AF153238| /Swine/6 (NA)/H3N2/USA/1998/// Influenza A virus (A/Swine/Minnesota/9088-2/98 (H3N2)) neuraminidase gene, partial cds.
gi|8515427|gb|AF250126| /Swine/6 (NA)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) neuraminidase (NA) gene, complete cds.
gi|9887131|gb|AF251404| /Swine/6 (NA)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) neuraminidase (NA) gene, complete cds.
gi|110734303|gb|AF251412| /Swine/6 (NA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) neuraminidase (NA) gene, complete cds.
gi|9887165|gb|AF251420| /Swine/6 (NA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) neuraminidase (NA) gene, complete cds.
gi|110734304|gb|AF251428| /Swine/6 (NA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) neuraminidase (NA) gene, complete cds.
gi|19422108|gb|AF455691| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422110|gb|AF455692| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422112|gb|AF455693| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422114|gb|AF455694| /Swine/6 (NA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) neuraminidase (NA) gene, complete cds
gi|19422116|gb|AF455695| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422118|gb|AF455696| /Swine/6 (NA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422120|gb|AF455697| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) neuraminidase (NA) gene, complete cds.
gi|19422122|gb|AF455698| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) neuraminidase (NA) gene, complete cds.
gi|19848289|gb|AY038015| /Avian/6 (NA)/H1N2/USA/1999/// Influenza A virus (A/Turkey/MO/24093/99(H1N2)) neuraminidase (N2) gene, complete cds.
gi|24286064|gb|AY129157| /Swine/6 (NA)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) neuraminidase (NA) mRNA, complete cds
gi|30522963|gb|AY233391| /Avian/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) neuraminidase (NA) gene, complete cds
gi|91127731|gb|CY010654| /Human/6 (NA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 6, complete sequence
gi|91127765|gb|CY010662| /Human/6 (NA)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 6, complete sequence
gi|106896314|gb|CY010670| /Human/6 (NA)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 6, complete sequence
gi|109675452|gb|CY010678| /Human/6 (NA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 6, complete sequence

gi|91129959|gb|CY010710| /Human/6 (NA)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 6, complete sequence

gi|131052319|gb|CY010726| /Human/6 (NA)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 6, complete sequence

gi|94959632|gb|CY010814| /Human/6 (NA)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 6, complete sequence

gi|109675460|gb|CY011434| /Human/6 (NA)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 6, complete sequence

gi|109675498|gb|CY011450| /Human/6 (NA)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 6, complete sequence

gi|109675536|gb|CY011466| /Human/6 (NA)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 6, complete sequence

gi|109914691|gb|CY011890| /Human/6 (NA)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 6, complete sequence

gi|110333423|gb|CY012218| /Human/6 (NA)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 6, complete sequence

gi|110629733|gb|CY012746| /Human/6 (NA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 6, complete sequence

gi|110629771|gb|CY012762| /Human/6 (NA)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 6, complete sequence

gi|110733711|gb|CY012970| /Human/6 (NA)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 6, complete sequence

gi|112789112|gb|CY013679| /Human/6 (NA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 6, complete sequence

gi|112789169|gb|CY013703| /Human/6 (NA)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 6, complete sequence

gi|112789321|gb|CY013767| /Human/6 (NA)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 6, complete sequence

gi|115521545|gb|CY016485| /Human/6 (NA)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 6, complete sequence

gi|84626339|gb|DQ335773| /Avian/6 (NA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404613|gb|DQ469960| /Human/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404615|gb|DQ469968| /Swine/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404617|gb|DQ469976| /Swine/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404619|gb|DQ469984| /Swine/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404621|gb|DQ469992| /Swine/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|94404623|gb|DQ470000| /Avian/6 (NA)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|109501339|gb|DQ666935| /Swine/6 (NA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/S11/2005(H1N2)) segment 6 neuraminidase gene, complete cds.

gi|146454451|gb|EF551047| /Avian/6 (NA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) segment 6 neuraminidase (NA) gene, complete cds.

gi|146454469|gb|EF551055| /Swine/6 (NA)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 6 neuraminidase (NA) gene, complete cds.

gi|146706474|gb|EF556200| /Swine/6 (NA)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) neuraminidase (NA) gene, complete cds.

gi|146706501|gb|EF556202| /Swine/6 (NA)/H1N2/China/2005/// Influenza A virus (A/swine/Guangxi/17/2005(H1N2)) neuraminidase (NA) gene, complete cds.

gi|146706526|gb|EF556204| /Swine/6 (NA)/H1N2/China/2005/// Influenza A virus (A/swine/Hainan/1/2005(H1N2)) neuraminidase (NA) gene, complete cds.

gi|157168469|gb|EU139838| /Swine/6 (NA)/H1N2/USA/2001/// Influenza A virus (A/swine/Minnesota/1192/2001(H1N2)) neuraminidase (NA) gene, partial cds

gi|157168473|gb|EU139840| /Swine/6 (NA)/H1N2/USA/2003/// Influenza A virus (A/swine/Minnesota/00194/2003(H1N2)) neuraminidase (NA) gene, partial cds

gi|157168475|gb|EU139841| /Swine/6 (NA)/H1N2/USA/2004/// Influenza A virus (A/swine/Kansas/00246/2004(H1N2)) neuraminidase (NA) gene, partial cds

gi|167996848|gb|EU301273| /Swine/6 (NA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|187763983|gb|EU697206| /Avian/6 (NA)/H3N2/USA/2005/// Influenza A virus (A/turkey/Minnesota/366767/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|189313124|gb|EU735820| /Avian/6 (NA)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) neuraminidase (NA) gene, complete cds

gi|189313105|gb|EU735828| /Avian/6 (NA)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) neuraminidase (NA) gene, complete cds

gi|193877760|gb|EU743212| /Avian/6 (NA)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 6 neuraminidase (NA) gene, complete cds.

gi|190403803|gb|EU798820| /Swine/6 (NA)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403805|gb|EU798821| /Swine/6 (NA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403807|gb|EU798822| /Swine/6 (NA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403809|gb|EU798823| /Swine/6 (NA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403811|gb|EU798824| /Swine/6 (NA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403813|gb|EU798825| /Swine/6 (NA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403815|gb|EU798826| /Swine/6 (NA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403817|gb|EU798827| /Swine/6 (NA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403819|gb|EU798828| /Swine/6 (NA)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403821|gb|EU798829| /Swine/6 (NA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403823|gb|EU798830| /Swine/6 (NA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403825|gb|EU798831| /Swine/6 (NA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403827|gb|EU798832| /Swine/6 (NA)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403829|gb|EU798833| /Swine/6 (NA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403831|gb|EU798834| /Swine/6 (NA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403833|gb|EU798835| /Swine/6 (NA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403835|gb|EU798836| /Swine/6 (NA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|190403837|gb|EU798837| /Swine/6 (NA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 6 neuraminidase (NA) gene, complete cds

gi|192382741|gb|EU826544| /Swine/6 (NA)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 6 neuraminidase (NA) gene, complete cds
gi|209486611|gb|FJ374514| /Swine/6 (NA)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 6 neuraminidase (NA) gene, complete cds
gi|3721971|gb|U71142| /Human/6 (NA)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Shiga/20/95 neuraminidase (NA) gene, complete cds.
gi|3721973|gb|U71143| /Human/6 (NA)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Miyagi/29/95 neuraminidase (NA) gene, complete cds.

Swine and Human N1'2, EA, 27 sequences

gi|4585174|gb|AF091316| /Swine/4 (HA)/H1N1/Belgium/1983/// Influenza A virus (A/swine/Belgium/1/83(H1N1)) segment 4 hemagglutinin precursor (HA) mRNA, complete cds.
gi|14275690|gb|AJ293920| /Human/1 (PB2)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) pb2 gene for polymerase subunit 2, genomic RNA
gi|14275694|gb|AJ293922| /Human/3 (PA)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) pa gene for polymerase A, genomic RNA
gi|14275698|gb|AJ293924| /Human/5 (NP)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) np gene for nucleoprotein, genomic RNA
gi|14275703|gb|AJ293926| /Human/4 (HA)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) partial ha gene for haemagglutinin, genomic RNA
gi|20068042|gb|AJ307065| /Swine/5 (NP)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|20068046|gb|AJ307067| /Swine/5 (NP)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|20068060|gb|AJ307074| /Swine/5 (NP)/H1N2/France/1999/// Influenza A virus (A/swine/Cotes d'Armor/604/99(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|20068068|gb|AJ311206| /Swine/3 (PA)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) partial PA gene for polymerase subunit, genomic RNA
gi|20068070|gb|AJ311207| /Swine/3 (PA)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) partial PA gene for polymerase subunit, genomic RNA
gi|13661047|gb|AJ311462| /Swine/2 (PB1)/H1N1/France/1982/// Influenza A virus PB1 gene for Polymerase 1 protein, genomic RNA, strain A/Swine/Finistere/2899/82
gi|13661049|gb|AJ311463| /Swine/3 (PA)/H1N1/France/1982/// Influenza A virus PA gene for Polymerase A protein, genomic RNA, strain A/Swine/Finistere/2899/82
gi|20068083|gb|AJ312836| /Swine/3 (PA)/H1N1/France/1999/// Influenza A virus (A/swine/Ile et Vilaine/1455/99(H1N1)) PA gene for polymerase subunit, genomic RNA
gi|20068087|gb|AJ312838| /Swine/3 (PA)/H1N2/France/1999/// Influenza A virus (A/swine/Cotes d'Armor/604/99(H1N2)) PA gene for polymerase subunit, genomic RNA
gi|18074896|gb|AJ410542| /Avian/4 (HA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for haemagglutinin (ha gene) strain A/duck/Hong Kong/175/77 (H6N1)
gi|18074900|gb|AJ410544| /Avian/4 (HA)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for haemagglutinin (ha gene) strain A/duck/Hong Kong/202/77 (H6N1)
gi|164511468|gb|AM746616| /Swine/4 (HA)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) H3 gene for hemagglutinin, genomic RNA
gi|164511474|gb|AM746619| /Swine/5 (NP)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) NP gene for nucleoprotein, genomic RNA
gi|24286062|gb|AY129156| /Swine/4 (HA)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) hemagglutinin (HA) mRNA, complete cds
gi|24286069|gb|AY129159| /Swine/5 (NP)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) nucleoprotein (NP) mRNA, complete cds
gi|24286087|gb|AY129161| /Swine/3 (PA)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase acidic protein 2 (PA) mRNA, complete cds

gi|24286096|gb|AY129162| /Swine/2 (PB1)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase subunit 1 (PB1) mRNA, complete cds
gi|24286100|gb|AY129163| /Swine/1 (PB2)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase subunit 2 (PB2) mRNA, complete cds
gi|325088|gb|M76608| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) nucleoprotein mRNA, complete cds.
gi|1912380|gb|U49091| /Swine/5 (NP)/H1N1/China/1991/// Influenza A virus (A/swine/Beijing/94/1991(H1N1)) nucleoprotein (NP) mRNA, complete cds.
gi|1399602|gb|U53162| /Human/4 (HA)/H1N1/USA/1994/// Influenza A virus (A/WI/4754/1994(H1N1)) hemagglutinin (HA) mRNA, complete cds
gi|1399604|gb|U53163| /Human/4 (HA)/H1N1/USA/1994/// Influenza A virus (A/WI/4755/1994(H1N1)) hemagglutinin (HA) mRNA, complete cds

Swine H1N1, NA, 19 sequences

gi|149785321|gb|CY022324| /Swine/1 (PB2)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1))
segment 1, complete sequence
gi|149785272|gb|CY022332| /Swine/1 (PB2)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1))
segment 1, complete sequence
gi|149785199|gb|CY022340| /Swine/1 (PB2)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1))
segment 1, complete sequence
gi|149785141|gb|CY022436| /Swine/1 (PB2)/H1N1/USA/1988/// Influenza A virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 1, complete sequence
gi|149785068|gb|CY022476| /Swine/1 (PB2)/H1N1/USA/1987/// Influenza A virus
(A/swine/Kansas/3228/1987(H1N1)) segment 1, complete sequence
gi|149784988|gb|CY022484| /Swine/1 (PB2)/H1N1/USA/1991/// Influenza A virus
(A/swine/Maryland/23239/1991(H1N1)) segment 1, complete sequence
gi|152963544|gb|CY022977| /Swine/1 (PB2)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1))
segment 1, complete sequence
gi|156536574|gb|CY024932| /Human/1 (PB2)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1))
segment 1, complete sequence
gi|156536610|gb|CY025017| /Swine/1 (PB2)/H1N1/USA/1987/// Influenza A virus
(A/swine/Kansas/3024/1987(H1N1)) segment 1, complete sequence
gi|158525311|gb|CY027162| /Swine/1 (PB2)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1))
segment 1, complete sequence
gi|158958073|gb|CY027514| /Swine/1 (PB2)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1))
segment 1, complete sequence
gi|166203504|gb|CY028787| /Swine/1 (PB2)/H1N1/USA/1991/// Influenza A virus
(A/swine/California/T9001707/1991(H1N1)) segment 1, complete sequence
gi|208400894|gb|CY035077| /Swine/1 (PB2)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1))
segment 1, complete sequence
gi|229807668|gb|CY039924| /Swine/1 (PB2)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 1, complete sequence
gi|229809528|gb|CY039932| /Swine/1 (PB2)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Indiana/1726/1988(H1N1)) segment 1, complete sequence
gi|189313211|gb|EU735793| /Avian/1 (PB2)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1))
polymerase PB2 (PB2) gene, complete cds.
gi|193877866|gb|EU743158| /Avian/1 (PB2)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1))
segment 1 polymerase PB2 (PB2) gene, complete cds.
gi|193877848|gb|EU743166| /Avian/1 (PB2)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1))
segment 1 polymerase PB2 (PB2) gene, complete cds.
gi|209164833|gb|FJ357111| /Avian/1 (PB2)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1))
segment 1 polymerase PB2 (PB2) gene, complete cds

Human H3N2, 22 sequences

gi|3722112|gb|AF037415| /Human/1 (PB2)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 PB2
polymerase subunit (PB2) gene, complete cds.
gi|91127743|gb|CY010659| /Human/1 (PB2)/H3N2/USA/1995/12/28/ Influenza A virus (A/New
York/611/1995(H3N2)) segment 1, complete sequence
gi|91127809|gb|CY010667| /Human/1 (PB2)/H3N2/USA/1995/12/19/ Influenza A virus (A/New
York/612/1995(H3N2)) segment 1, complete sequence
gi|91128216|gb|CY010675| /Human/1 (PB2)/H3N2/USA/1996/01/10/ Influenza A virus (A/New
York/613/1996(H3N2)) segment 1, complete sequence

gi|91128597|gb|CY010683| /Human/1 (PB2)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 1, complete sequence
 gi|91130009|gb|CY010715| /Human/1 (PB2)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 1, complete sequence
 gi|91130772|gb|CY010731| /Human/1 (PB2)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 1, complete sequence
 gi|94959644|gb|CY010819| /Human/1 (PB2)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 1, complete sequence
 gi|109675472|gb|CY011439| /Human/1 (PB2)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 1, complete sequence
 gi|109675510|gb|CY011455| /Human/1 (PB2)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 1, complete sequence
 gi|109675548|gb|CY011471| /Human/1 (PB2)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 1, complete sequence
 gi|109914703|gb|CY011895| /Human/1 (PB2)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 1, complete sequence
 gi|110333435|gb|CY012223| /Human/1 (PB2)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 1, complete sequence
 gi|110629745|gb|CY012751| /Human/1 (PB2)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 1, complete sequence
 gi|110629783|gb|CY012767| /Human/1 (PB2)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 1, complete sequence
 gi|110733723|gb|CY012975| /Human/1 (PB2)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 1, complete sequence
 gi|112789124|gb|CY013684| /Human/1 (PB2)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 1, complete sequence
 gi|112789181|gb|CY013708| /Human/1 (PB2)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 1, complete sequence
 gi|112789333|gb|CY013772| /Human/1 (PB2)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 1, complete sequence
 gi|115521557|gb|CY016490| /Human/1 (PB2)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 1, complete sequence
 gi|3721955|gb|U71134| /Human/1 (PB2)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Shiga/20/95 PB2 polymerase subunit (PB2) gene, complete cds.
 gi|3721957|gb|U71135| /Human/1 (PB2)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Miyagi/29/95 PB2 polymerase subunit (PB2) gene, complete cds.

Swine, EA, 20 sequences

gi|216409279|gb|AB434317| /Swine/1 (PB2)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) PB2 gene for polymerase PB2, complete cds
 gi|216409297|gb|AB434325| /Swine/1 (PB2)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) PB2 gene for polymerase PB2, complete cds
 gi|14275690|gb|AJ293920| /Human/1 (PB2)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) pb2 gene for polymerase subunit 2, genomic RNA
 gi|78097322|gb|CY005500| /Avian/1 (PB2)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 1, complete sequence
 gi|78097610|gb|CY005612| /Avian/1 (PB2)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 1, complete sequence
 gi|89148268|gb|CY009379| /Swine/1 (PB2)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 1, complete sequence
 gi|89148111|gb|CY009387| /Swine/1 (PB2)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 1, complete sequence

gi|89789297|gb|CY009899| /Swine/1 (PB2)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 1, complete sequence
 gi|91177923|gb|CY010571| /Swine/1 (PB2)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 1, complete sequence
 gi|91125711|gb|CY010579| /Swine/1 (PB2)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 1, complete sequence
 gi|91177904|gb|CY010587| /Swine/1 (PB2)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 1, complete sequence
 gi|133981572|gb|CY020508| /Swine/1 (PB2)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 1, complete sequence
 gi|85692708|gb|DQ351870| /Avian/1 (PB2)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 1 polymerase basic protein 2 (PB2) gene, complete cds.
 gi|118136498|gb|EF101754| /Human/1 (PB2)/H1N1/Thailand/2005/07/14/ Influenza A virus (A/Thailand/271/2005(H1N1)) polymerase PB2 gene, partial cds
 gi|153957895|gb|EU053130| /Swine/1 (PB2)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 1 polymerase subunit PB2 gene, complete cds.
 gi|153957995|gb|EU053138| /Swine/1 (PB2)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 1 polymerase subunit PB2 gene, complete cds.
 gi|192382755|gb|EU826550| /Swine/1 (PB2)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
 gi|210076648|gb|FJ415615| /Swine/1 (PB2)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 1 polymerase PB2 (PB2) gene, complete cds
 gi|211996969|gb|FJ432785| /Avian/1 (PB2)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 1 polymerase PB2 (PB2) gene, complete cds
 gi|324989|gb|M55471| /Swine/1 (PB2)/H1N1/Germany/1981/// Influenza A virus (A/swine/Germany/2/1981(H1N1)) polymerase gene, complete cds.

Swine, NA, 59 sequences

gi|8515438|gb|AF250131| /Swine/1 (PB2)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) polymerase subunit PB2 (PB2) gene, complete cds.
 gi|9887144|gb|AF251410| /Swine/1 (PB2)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) PB2 polymerase subunit (PB2) gene, complete cds.
 gi|9887161|gb|AF251418| /Swine/1 (PB2)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) PB2 polymerase subunit (PB2) gene, complete cds.
 gi|9887178|gb|AF251426| /Swine/1 (PB2)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) PB2 polymerase subunit (PB2) gene, complete cds.
 gi|9887195|gb|AF251434| /Swine/1 (PB2)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) PB2 polymerase subunit (PB2) gene, complete cds.
 gi|19422196|gb|AF455731| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) polymerase subunit (PB2) gene, complete cds.
 gi|19422198|gb|AF455732| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) polymerase subunit (PB2) gene, complete cds.
 gi|19422200|gb|AF455733| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) polymerase subunit (PB2) gene, complete cds.
 gi|19422202|gb|AF455734| /Swine/1 (PB2)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) polymerase subunit (PB2) gene, complete cds
 gi|19422204|gb|AF455735| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) polymerase subunit (PB2) gene, complete cds.
 gi|19422206|gb|AF455736| /Swine/1 (PB2)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) polymerase subunit (PB2) gene, complete cds.
 gi|19422208|gb|AF455737| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) polymerase subunit (PB2) gene, complete cds.

gi|19422210|gb|AF455738| /Swine/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) polymerase subunit (PB2) gene, complete cds.

gi|24286100|gb|AY129163| /Swine/1 (PB2)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase subunit 2 (PB2) mRNA, complete cds

gi|30522954|gb|AY233387| /Avian/1 (PB2)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|76574379|gb|DQ145540| /Swine/1 (PB2)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) PB2 gene, complete cds

gi|75756543|gb|DQ150422| /Swine/1 (PB2)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) polymerase (PB2) gene, complete cds.

gi|75756559|gb|DQ150430| /Swine/1 (PB2)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) polymerase (PB2) gene, complete cds.

gi|84626349|gb|DQ335778| /Avian/1 (PB2)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) polymerase PB2 (PB2) gene, complete cds

gi|94404667|gb|DQ469955| /Human/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|94404669|gb|DQ469963| /Swine/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|94404671|gb|DQ469971| /Swine/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|94404673|gb|DQ469979| /Swine/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|94404675|gb|DQ469987| /Swine/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|94404677|gb|DQ469995| /Avian/1 (PB2)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) polymerase subunit PB2 (PB2) gene, complete cds

gi|112456162|gb|DQ889682| /Human/1 (PB2)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) polymerase PB2 (PB2) gene, complete cds

gi|114215324|gb|DQ923520| /Swine/1 (PB2)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) polymerase basic protein 2 (PB2) gene, complete cds

gi|114215326|gb|DQ923521| /Swine/1 (PB2)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) polymerase basic protein 2 (PB2) gene, complete cds

gi|146454441|gb|EF551042| /Avian/1 (PB2)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds.

gi|146454459|gb|EF551050| /Swine/1 (PB2)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds.

gi|151175886|gb|EU015993| /Swine/1 (PB2)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) polymerase basic protein 2 (PB2) gene, complete cds.

gi|156254991|gb|EU084946| /Avian/1 (PB2)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)), complete sequence

gi|198387443|gb|EU301177| /Swine/1 (PB2)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) polymerase PB2 (PB2) gene, complete cds

gi|188572603|gb|EU409953| /Swine/1 (PB2)/H1N1/USA/2004/// Influenza A virus (A/swine/Ohio/75004/04(H1N1)) polymerase PB2 (PB2) gene, complete cds

gi|189313136|gb|EU735825| /Avian/1 (PB2)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) polymerase PB2 (PB2) gene, complete cds

gi|189313117|gb|EU735833| /Avian/1 (PB2)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) polymerase PB2 (PB2) gene, complete cds

gi|193877748|gb|EU743217| /Avian/1 (PB2)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds.

gi|190404038|gb|EU798918| /Swine/1 (PB2)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 1 polymerase PB2 (PB2) gene, complete cds

gi|190404040|gb|EU798919| /Swine/1 (PB2)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 1 polymerase PB2 (PB2) gene, complete cds

gi|190404042|gb|EU798920| /Swine/1 (PB2)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404044|gb|EU798921| /Swine/1 (PB2)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404046|gb|EU798922| /Swine/1 (PB2)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404048|gb|EU798923| /Swine/1 (PB2)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404050|gb|EU798924| /Swine/1 (PB2)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404052|gb|EU798925| /Swine/1 (PB2)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404054|gb|EU798926| /Swine/1 (PB2)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404056|gb|EU798927| /Swine/1 (PB2)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404058|gb|EU798928| /Swine/1 (PB2)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404060|gb|EU798929| /Swine/1 (PB2)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404062|gb|EU798930| /Swine/1 (PB2)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404064|gb|EU798931| /Swine/1 (PB2)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404066|gb|EU798932| /Swine/1 (PB2)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404068|gb|EU798933| /Swine/1 (PB2)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404070|gb|EU798934| /Swine/1 (PB2)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404072|gb|EU798935| /Swine/1 (PB2)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404074|gb|EU798936| /Swine/1 (PB2)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|190404076|gb|EU798937| /Swine/1 (PB2)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|209486606|gb|FJ374512| /Swine/1 (PB2)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 1 polymerase PB2 (PB2) gene, complete cds
gi|227809823|gb|FJ966079| /Human/1 (PB2)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 1 polymerase PB2 (PB2) gene, complete cds

Swine H1N1, NA, 20 sequences

gi|149785318|gb|CY022323| /Swine/2 (PB1)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1))
segment 2, complete sequence
gi|149785269|gb|CY022331| /Swine/2 (PB1)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1))
segment 2, complete sequence
gi|149785197|gb|CY022339| /Swine/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1))
segment 2, complete sequence
gi|149785138|gb|CY022435| /Swine/2 (PB1)/H1N1/USA/1988/// Influenza A virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 2, complete sequence
gi|149785066|gb|CY022475| /Swine/2 (PB1)/H1N1/USA/1987/// Influenza A virus
(A/swine/Kansas/3228/1987(H1N1)) segment 2, complete sequence
gi|149784985|gb|CY022483| /Swine/2 (PB1)/H1N1/USA/1991/// Influenza A virus
(A/swine/Maryland/23239/1991(H1N1)) segment 2, complete sequence
gi|152963542|gb|CY022976| /Swine/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1))
segment 2, complete sequence
gi|156536572|gb|CY024931| /Human/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1))
segment 2, complete sequence
gi|156536608|gb|CY025016| /Swine/2 (PB1)/H1N1/USA/1987/// Influenza A virus
(A/swine/Kansas/3024/1987(H1N1)) segment 2, complete sequence
gi|158525309|gb|CY027161| /Swine/2 (PB1)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1))
segment 2, complete sequence
gi|158958071|gb|CY027513| /Swine/2 (PB1)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1))
segment 2, complete sequence
gi|166203502|gb|CY028786| /Swine/2 (PB1)/H1N1/USA/1991/// Influenza A virus
(A/swine/California/T9001707/1991(H1N1)) segment 2, complete sequence
gi|208400892|gb|CY035076| /Swine/2 (PB1)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1))
segment 2, complete sequence
gi|229807666|gb|CY039923| /Swine/2 (PB1)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 2, complete sequence
gi|229809526|gb|CY039931| /Swine/2 (PB1)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Indiana/1726/1988(H1N1)) segment 2, complete sequence
gi|189313209|gb|EU735792| /Avian/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1))
polymerase PB1 gene, complete cds.
gi|193877868|gb|EU743157| /Avian/2 (PB1)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1))
segment 2 polymerase PB1 (PB1) gene, complete cds.
gi|193877850|gb|EU743165| /Avian/2 (PB1)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1))
segment 2 polymerase PB1 (PB1) gene, complete cds.
gi|209164831|gb|FJ357110| /Avian/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1))
segment 2 polymerase PB1 (PB1) gene, complete cds
gi|324963|gb|M25934| /Human/2 (PB1)/H1N1/USA/1988/// Influenza A virus (A/Wisconsin/3523/1988(H1N1)) PB1
polymerase subunit gene, complete cds.

Swine, EA, 29 sequences

gi|216409281|gb|AB434318| /Swine/2 (PB1)/H1N1/Thailand/2005/// Influenza A virus
(A/swine/Chonburi/NIAH589/2005(H1N1)) PB1 gene for polymerase PB1, complete cds
gi|216409299|gb|AB434326| /Swine/2 (PB1)/H1N1/Thailand/2005/// Influenza A virus
(A/swine/Chachoengsao/NIAH587/2005(H1N1)) PB1 gene for polymerase PB1, complete cds
gi|13661047|gb|AJ311462| /Swine/2 (PB1)/H1N1/France/1982/// Influenza A virus PB1 gene for Polymerase 1 protein,
genomic RNA, strain A/Swine/Finistere/2899/82

gi|78097319|gb|CY005499| /Avian/2 (PB1)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 2, complete sequence

gi|78097607|gb|CY005611| /Avian/2 (PB1)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 2, complete sequence

gi|89148266|gb|CY009378| /Swine/2 (PB1)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 2, complete sequence

gi|89148109|gb|CY009386| /Swine/2 (PB1)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 2, complete sequence

gi|89789292|gb|CY009898| /Swine/2 (PB1)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 2, complete sequence

gi|91177920|gb|CY010570| /Swine/2 (PB1)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 2, complete sequence

gi|91125708|gb|CY010578| /Swine/2 (PB1)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 2, complete sequence

gi|91177901|gb|CY010586| /Swine/2 (PB1)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 2, complete sequence

gi|133981555|gb|CY020507| /Swine/2 (PB1)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 2, complete sequence

gi|85692716|gb|DQ351874| /Avian/2 (PB1)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 2 polymerase basic protein 1 (PB1) gene, complete cds.

gi|110333748|gb|DQ836168| /Swine/2 (PB1)/H3N2/Germany/1996/// Influenza A virus (A/swine/Jena/5/96(H3N2)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333754|gb|DQ836170| /Swine/2 (PB1)/H3N2/Germany/1999/// Influenza A virus (A/swine/Bakum/8602/99(H3N2)) polymerase subunit PB1 gene, complete cds

gi|110333756|gb|DQ836171| /Swine/2 (PB1)/H3N2/Germany/1982/// Influenza A virus (A/swine/Potsdam/35/82(H3N2)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333759|gb|DQ836172| /Swine/2 (PB1)/H3N2/Germany/1997/// Influenza A virus (A/swine/Lohne/1/97(H3N2)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333765|gb|DQ836174| /Swine/2 (PB1)/H1N1/Germany/1981/// Influenza A virus (A/swine/Potsdam/15/81(H1N1)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333768|gb|DQ836175| /Swine/2 (PB1)/H1N1/Germany/1989/// Influenza A virus (A/swine/Schwerin/103/89(H1N1)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333771|gb|DQ836176| /Swine/2 (PB1)/H1N1/Germany/1995/// Influenza A virus (A/swine/Bakum/5/95(H1N1)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333774|gb|DQ836177| /Swine/2 (PB1)/H1N1/Germany/2001/// Influenza A virus (A/swine/Belzig/2/2001(H1N1)) polymerase subunit PB1 gene, complete cds

gi|110333776|gb|DQ836178| /Swine/2 (PB1)/H1N2/Germany/2000/// Influenza A virus (A/swine/Bakum/1832/00(H1N2)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|110333779|gb|DQ836179| /Swine/2 (PB1)/H1N2/Germany/2000/// Influenza A virus (A/swine/Bakum/1833/00(H1N2)) polymerase subunit PB1 and PB1-F2 genes, complete cds

gi|153957904|gb|EU053131| /Swine/2 (PB1)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 2 polymerase subunit PB1 gene, complete cds.

gi|153958008|gb|EU053139| /Swine/2 (PB1)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 2 polymerase subunit PB1 gene, complete cds.

gi|159156196|gb|EU182314| /Avian/2 (PB1)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|192382753|gb|EU826549| /Swine/2 (PB1)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 2 polymerase PB1 (PB1) gene, complete cds

gi|210076645|gb|FJ415614| /Swine/2 (PB1)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 2 polymerase PB1 (PB1) and putative PB1-F2 protein (PB1-F2) genes, complete cds

gi|211996966|gb|FJ432784| /Avian/2 (PB1)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

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gi|3722122|gb|AF037420| /Human/2 (PB1)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 PB1 polymerase subunit (PB1) gene, complete cds.

gi|8515436|gb|AF250130| /Swine/2 (PB1)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) polymerase subunit PB1 (PB1) gene, complete cds.

gi|9887133|gb|AF251405| /Swine/2 (PB1)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) PB1 polymerase subunit (PB1) gene, complete cds.

gi|9887150|gb|AF251413| /Swine/2 (PB1)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) PB1 polymerase subunit (PB1) gene, complete cds.

gi|9887167|gb|AF251421| /Swine/2 (PB1)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) PB1 polymerase subunit (PB1) gene, complete cds.

gi|9887184|gb|AF251429| /Swine/2 (PB1)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) PB1 polymerase subunit (PB1) gene, complete cds.

gi|29539583|gb|AF342823| /Human/2 (PB1)/H1N1/USA/1998/// Influenza A virus (A/Wisconsin/10/98 (H1N1)) PB1 gene, complete cds

gi|19422180|gb|AF455723| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422182|gb|AF455724| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422184|gb|AF455725| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422186|gb|AF455726| /Swine/2 (PB1)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) polymerase subunit (PB1) gene, complete cds

gi|19422188|gb|AF455727| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422190|gb|AF455728| /Swine/2 (PB1)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422192|gb|AF455729| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|19422194|gb|AF455730| /Swine/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) polymerase subunit (PB1) gene, complete cds.

gi|24286096|gb|AY129162| /Swine/2 (PB1)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase subunit 1 (PB1) mRNA, complete cds

gi|30522956|gb|AY233388| /Avian/2 (PB1)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) polymerase subunit PB1 (PB1) gene, complete cds

gi|91127740|gb|CY010658| /Human/2 (PB1)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 2, complete sequence

gi|91127801|gb|CY010666| /Human/2 (PB1)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 2, complete sequence

gi|91128208|gb|CY010674| /Human/2 (PB1)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 2, complete sequence

gi|91128587|gb|CY010682| /Human/2 (PB1)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 2, complete sequence

gi|91129999|gb|CY010714| /Human/2 (PB1)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 2, complete sequence

gi|91130762|gb|CY010730| /Human/2 (PB1)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 2, complete sequence

gi|94959641|gb|CY010818| /Human/2 (PB1)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 2, complete sequence

gi|109675469|gb|CY011438| /Human/2 (PB1)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 2, complete sequence

gi|109675507|gb|CY011454| /Human/2 (PB1)/H3N2/USA/1996/01/18/ Influenza A virus (A/New

York/635/1996(H3N2)) segment 2, complete sequence
 gi|109675545|gb|CY011470| /Human/2 (PB1)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 2, complete sequence
 gi|109914700|gb|CY011894| /Human/2 (PB1)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 2, complete sequence
 gi|110333432|gb|CY012222| /Human/2 (PB1)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 2, complete sequence
 gi|110629742|gb|CY012750| /Human/2 (PB1)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 2, complete sequence
 gi|110629780|gb|CY012766| /Human/2 (PB1)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 2, complete sequence
 gi|110733720|gb|CY012974| /Human/2 (PB1)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 2, complete sequence
 gi|112789121|gb|CY013683| /Human/2 (PB1)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 2, complete sequence
 gi|112789178|gb|CY013707| /Human/2 (PB1)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 2, complete sequence
 gi|112789330|gb|CY013771| /Human/2 (PB1)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 2, complete sequence
 gi|115521554|gb|CY016489| /Human/2 (PB1)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 2, complete sequence
 gi|76574387|gb|DQ145544| /Swine/2 (PB1)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) PB1 gene, complete cds
 gi|75756545|gb|DQ150423| /Swine/2 (PB1)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) polymerase (PB1) gene, complete cds.
 gi|75756561|gb|DQ150431| /Swine/2 (PB1)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) polymerase (PB1) gene, complete cds.
 gi|84626347|gb|DQ335777| /Avian/2 (PB1)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) polymerase PB1 (PB1) gene, complete cds
 gi|94404679|gb|DQ469956| /Human/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|94404681|gb|DQ469964| /Swine/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|94404683|gb|DQ469972| /Swine/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|94404685|gb|DQ469980| /Swine/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|94404687|gb|DQ469988| /Swine/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|94404689|gb|DQ469996| /Avian/2 (PB1)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) polymerase subunit PB1 (PB1) gene, complete cds
 gi|112456182|gb|DQ889683| /Human/2 (PB1)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) polymerase PB1 (PB1) gene, complete cds
 gi|114215320|gb|DQ923518| /Swine/2 (PB1)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) polymerase basic protein 1 (PB1) gene, complete cds
 gi|114215322|gb|DQ923519| /Swine/2 (PB1)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) polymerase basic protein 1 (PB1) gene, complete cds
 gi|146454443|gb|EF551043| /Avian/2 (PB1)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) segment 2 polymerase PB1 (PB1) gene, complete cds.
 gi|146454461|gb|EF551051| /Swine/2 (PB1)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 2 polymerase PB1 (PB1) gene, complete cds.
 gi|151175884|gb|EU015992| /Swine/2 (PB1)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) polymerase basic protein 1 (PB1) gene, complete cds.
 gi|198387449|gb|EU301400| /Swine/2 (PB1)/H3N2/South Korea/2004/// Influenza A virus

(A/swine/Korea/JNS06/2004(H3N2)) polymerase PB1 (PB1) gene, complete cds
gi|188572616|gb|EU409945| /Swine/2 (PB1)/H1N1/USA/2007/// Influenza A virus (A/swine/Ohio/24366/07(H1N1))
polymerase PB1 (PB1) gene, complete cds
gi|188572618|gb|EU409954| /Swine/2 (PB1)/H1N1/USA/2004/// Influenza A virus (A/swine/Ohio/75004/04(H1N1))
polymerase PB1 (PB1) gene, complete cds
gi|188572620|gb|EU409959| /Swine/2 (PB1)/H1N1/USA/2006/// Influenza A virus (A/swine/Ohio/C62006/06(H1N1))
polymerase PB1 (PB1) gene, complete cds
gi|189313133|gb|EU735824| /Avian/2 (PB1)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2))
polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds
gi|189313114|gb|EU735832| /Avian/2 (PB1)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2))
polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds
gi|193877750|gb|EU743216| /Avian/2 (PB1)/H3N2/USA/2005/// Influenza A virus
(A/turkey/MN/366767/2005(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds.
gi|190403979|gb|EU798898| /Swine/2 (PB1)/H1N1/South Korea/2004/// Influenza A virus
(A/swine/Korea/CAN01/2004(H1N1)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190403982|gb|EU798899| /Swine/2 (PB1)/H1N1/South Korea/2005/// Influenza A virus
(A/swine/Korea/CAS08/2005(H1N1)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190403985|gb|EU798900| /Swine/2 (PB1)/H1N2/South Korea/2004/// Influenza A virus
(A/swine/Korea/Hongsong2/2004(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190403988|gb|EU798901| /Swine/2 (PB1)/H1N2/South Korea/2005/// Influenza A virus
(A/swine/Korea/JL01/2005(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190403991|gb|EU798902| /Swine/2 (PB1)/H1N2/South Korea/2005/// Influenza A virus
(A/swine/Korea/JL02/2005(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190403994|gb|EU798903| /Swine/2 (PB1)/H1N2/South Korea/2005/// Influenza A virus
(A/swine/Korea/JL04/2005(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190403997|gb|EU798904| /Swine/2 (PB1)/H1N2/South Korea/2006/// Influenza A virus
(A/swine/Korea/Asan04/2006(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190404000|gb|EU798905| /Swine/2 (PB1)/H1N2/South Korea/2006/// Influenza A virus
(A/swine/Korea/PZ4/2006(H1N2)) segment 2 polymerase PB1 (PB1) gene, complete cds
gi|190404002|gb|EU798906| /Swine/2 (PB1)/H1N2/South Korea/2006/// Influenza A virus
(A/swine/Korea/PZ7/2006(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190404005|gb|EU798907| /Swine/2 (PB1)/H1N2/South Korea/2006/// Influenza A virus
(A/swine/Korea/PZ14/2006(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190404008|gb|EU798908| /Swine/2 (PB1)/H1N2/South Korea/2007/// Influenza A virus
(A/swine/Korea/CY08/2007(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete
cds
gi|190404011|gb|EU798909| /Swine/2 (PB1)/H3N2/South Korea/2004/// Influenza A virus
(A/swine/Korea/CAS05/2004(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190404014|gb|EU798910| /Swine/2 (PB1)/H3N2/South Korea/2005/// Influenza A virus
(A/swine/Korea/CAN04/2005(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,
complete cds
gi|190404017|gb|EU798911| /Swine/2 (PB1)/H3N2/South Korea/2005/// Influenza A virus
(A/swine/Korea/CAS07/2005(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes,

complete cds

gi|190404020|gb|EU798912| /Swine/2 (PB1)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|190404023|gb|EU798913| /Swine/2 (PB1)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|190404026|gb|EU798914| /Swine/2 (PB1)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|190404029|gb|EU798915| /Swine/2 (PB1)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|190404032|gb|EU798916| /Swine/2 (PB1)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|190404035|gb|EU798917| /Swine/2 (PB1)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|209486608|gb|FJ374513| /Swine/2 (PB1)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 2 polymerase PB1 (PB1) and PB1-F2 protein (PB1-F2) genes, complete cds

gi|3721947|gb|U71130| /Human/2 (PB1)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Shiga/20/95 PB1 polymerase subunit (PB1) gene, complete cds.

gi|3721949|gb|U71131| /Human/2 (PB1)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Miyagi/29/95 PB1 polymerase subunit (PB1) gene, complete cds.

gi|227809825|gb|FJ966080| /Human/2 (PB1)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 2 polymerase PB1 (PB1) gene, complete cds

Swine H1N1, NA, 19 sequences

gi|149785316|gb|CY022322| /Swine/3 (PA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1))
segment 3, complete sequence
gi|149785267|gb|CY022330| /Swine/3 (PA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1))
segment 3, complete sequence
gi|149785194|gb|CY022338| /Swine/3 (PA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1))
segment 3, complete sequence
gi|149785136|gb|CY022434| /Swine/3 (PA)/H1N1/USA/1988/// Influenza A virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 3, complete sequence
gi|149785063|gb|CY022474| /Swine/3 (PA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1))
segment 3, complete sequence
gi|149784983|gb|CY022482| /Swine/3 (PA)/H1N1/USA/1991/// Influenza A virus
(A/swine/Maryland/23239/1991(H1N1)) segment 3, complete sequence
gi|152963540|gb|CY022975| /Swine/3 (PA)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1))
segment 3, complete sequence
gi|156536570|gb|CY024930| /Human/3 (PA)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1))
segment 3, complete sequence
gi|156536606|gb|CY025015| /Swine/3 (PA)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1))
segment 3, complete sequence
gi|158525307|gb|CY027160| /Swine/3 (PA)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1))
segment 3, complete sequence
gi|158958069|gb|CY027512| /Swine/3 (PA)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1))
segment 3, complete sequence
gi|166203500|gb|CY028785| /Swine/3 (PA)/H1N1/USA/1991/// Influenza A virus
(A/swine/California/T9001707/1991(H1N1)) segment 3, complete sequence
gi|208400890|gb|CY035075| /Swine/3 (PA)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1))
segment 3, complete sequence
gi|229807664|gb|CY039922| /Swine/3 (PA)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Wisconsin/1915/1988(H1N1)) segment 3, complete sequence
gi|229809524|gb|CY039930| /Swine/3 (PA)/H1N1/USA/1988/// Influenza A Virus
(A/swine/Indiana/1726/1988(H1N1)) segment 3, complete sequence
gi|189313207|gb|EU735791| /Avian/3 (PA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1))
polymerase PA (PA) gene, complete cds.
gi|193877870|gb|EU743156| /Avian/3 (PA)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1))
segment 3 polymerase PA (PA) gene, complete cds.
gi|193877852|gb|EU743164| /Avian/3 (PA)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1))
segment 3 polymerase PA (PA) gene, complete cds.
gi|209164829|gb|FJ357109| /Avian/3 (PA)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1))
segment 3 polymerase PA (PA) gene, complete cds

Human H3N2, 22 sequences

gi|3722134|gb|AF037426| /Human/3 (PA)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 PA
polymerase subunit (PA) gene, complete cds.
gi|91127738|gb|CY010657| /Human/3 (PA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2))
segment 3, complete sequence
gi|91127792|gb|CY010665| /Human/3 (PA)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2))
segment 3, complete sequence
gi|91128202|gb|CY010673| /Human/3 (PA)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2))
segment 3, complete sequence

gi|91128578|gb|CY010681| /Human/3 (PA)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 3, complete sequence
 gi|91129987|gb|CY010713| /Human/3 (PA)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 3, complete sequence
 gi|91130750|gb|CY010729| /Human/3 (PA)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 3, complete sequence
 gi|94959639|gb|CY010817| /Human/3 (PA)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 3, complete sequence
 gi|109675467|gb|CY011437| /Human/3 (PA)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 3, complete sequence
 gi|109675505|gb|CY011453| /Human/3 (PA)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 3, complete sequence
 gi|109675543|gb|CY011469| /Human/3 (PA)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 3, complete sequence
 gi|109914698|gb|CY011893| /Human/3 (PA)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 3, complete sequence
 gi|110333430|gb|CY012221| /Human/3 (PA)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 3, complete sequence
 gi|110629740|gb|CY012749| /Human/3 (PA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 3, complete sequence
 gi|110629778|gb|CY012765| /Human/3 (PA)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 3, complete sequence
 gi|110733718|gb|CY012973| /Human/3 (PA)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 3, complete sequence
 gi|112789119|gb|CY013682| /Human/3 (PA)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 3, complete sequence
 gi|112789176|gb|CY013706| /Human/3 (PA)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 3, complete sequence
 gi|112789328|gb|CY013770| /Human/3 (PA)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 3, complete sequence
 gi|115521552|gb|CY016488| /Human/3 (PA)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 3, complete sequence
 gi|3721963|gb|U71138| /Human/3 (PA)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Shiga/20/95 PA polymerase subunit (PA) gene, complete cds.
 gi|3721965|gb|U71139| /Human/3 (PA)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Miyagi/29/95 PA polymerase subunit (PA) gene, complete cds.

Swine, EA, 19 sequences

gi|216409283|gb|AB434319| /Swine/3 (PA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) PA gene for polymerase PA, complete cds
 gi|216409301|gb|AB434327| /Swine/3 (PA)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) PA gene for polymerase PA, complete cds
 gi|14275694|gb|AJ293922| /Human/3 (PA)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) pa gene for polymerase A, genomic RNA
 gi|20068068|gb|AJ311206| /Swine/3 (PA)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) partial PA gene for polymerase subunit, genomic RNA
 gi|20068070|gb|AJ311207| /Swine/3 (PA)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) partial PA gene for polymerase subunit, genomic RNA
 gi|13661049|gb|AJ311463| /Swine/3 (PA)/H1N1/France/1982/// Influenza A virus PA gene for Polymerase A protein, genomic RNA, strain A/Swine/Finistere/2899/82
 gi|20068083|gb|AJ312836| /Swine/3 (PA)/H1N1/France/1999/// Influenza A virus (A/swine/Ile et Vilaine/1455/99(H1N1)) PA gene for polymerase subunit, genomic RNA

gi|20068087|gb|AJ312838| /Swine/3 (PA)/H1N2/France/1999/// Influenza A virus (A/swine/Cotes d'Armor/604/99(H1N2)) PA gene for polymerase subunit, genomic RNA
 gi|89148264|gb|CY009377| /Swine/3 (PA)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 3, complete sequence
 gi|89148107|gb|CY009385| /Swine/3 (PA)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 3, complete sequence
 gi|89789290|gb|CY009897| /Swine/3 (PA)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 3, complete sequence
 gi|91177918|gb|CY010569| /Swine/3 (PA)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 3, complete sequence
 gi|91125706|gb|CY010577| /Swine/3 (PA)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 3, complete sequence
 gi|91177899|gb|CY010585| /Swine/3 (PA)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 3, complete sequence
 gi|133981544|gb|CY020506| /Swine/3 (PA)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 3, complete sequence
 gi|153957916|gb|EU053132| /Swine/3 (PA)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 3 polymerase subunit PA gene, complete cds.
 gi|153958022|gb|EU053140| /Swine/3 (PA)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 3 polymerase subunit PA gene, complete cds.
 gi|192382751|gb|EU826548| /Swine/3 (PA)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
 gi|210076650|gb|FJ415616| /Swine/3 (PA)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 3 polymerase PA (PA) gene, complete cds

Swine, NA, 63 sequences

gi|8515434|gb|AF250129| /Swine/3 (PA)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|9887142|gb|AF251409| /Swine/3 (PA)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|9887159|gb|AF251417| /Swine/3 (PA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|9887176|gb|AF251425| /Swine/3 (PA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|9887193|gb|AF251433| /Swine/3 (PA)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422164|gb|AF455715| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422166|gb|AF455716| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422168|gb|AF455717| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422170|gb|AF455718| /Swine/3 (PA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds
 gi|19422172|gb|AF455719| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422174|gb|AF455720| /Swine/3 (PA)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422176|gb|AF455721| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.
 gi|19422178|gb|AF455722| /Swine/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.

gi|24286087|gb|AY129161| /Swine/3 (PA)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) polymerase acidic protein 2 (PA) mRNA, complete cds

gi|30522958|gb|AY233389| /Avian/3 (PA)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) acidic protein 2 (PA) gene, complete cds

gi|78097317|gb|CY005498| /Avian/3 (PA)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 3, complete sequence

gi|78097605|gb|CY005610| /Avian/3 (PA)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 3, complete sequence

gi|194323036|gb|CY033792| /Avian/3 (PA)/H3N2/USA/2007/09/19/ Influenza A virus (A/pintail duck/South Dakota/Sg-00126/2007(H3N2)) segment 3 sequence

gi|76574377|gb|DQ145539| /Swine/3 (PA)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) PA gene, complete cds

gi|75756547|gb|DQ150424| /Swine/3 (PA)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) polymerase (PA) gene, complete cds.

gi|75756563|gb|DQ150432| /Swine/3 (PA)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) polymerase (PA) gene, complete cds.

gi|84626345|gb|DQ335776| /Avian/3 (PA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) polymerase (PA) gene, complete cds

gi|85692706|gb|DQ351869| /Avian/3 (PA)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 3 polymerase protein A (PA) gene, complete cds.

gi|94404655|gb|DQ469957| /Human/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|94404657|gb|DQ469965| /Swine/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|94404659|gb|DQ469973| /Swine/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|94404661|gb|DQ469981| /Swine/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|94404663|gb|DQ469989| /Swine/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|94404665|gb|DQ469997| /Avian/3 (PA)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) polymerase acidic protein 2 (PA) gene, complete cds

gi|112456198|gb|DQ889684| /Human/3 (PA)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) polymerase PA (PA) gene, complete cds

gi|114215316|gb|DQ923516| /Swine/3 (PA)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) polymerase acidic protein (PA) gene, complete cds

gi|114215318|gb|DQ923517| /Swine/3 (PA)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) polymerase acidic protein (PA) gene, complete cds

gi|146454445|gb|EF551044| /Avian/3 (PA)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) segment 3 polymerase PA (PA) gene, complete cds.

gi|146454463|gb|EF551052| /Swine/3 (PA)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 3 polymerase PA (PA) gene, complete cds.

gi|151175882|gb|EU015991| /Swine/3 (PA)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) polymerase acidic protein 2 (PA) gene, complete cds.

gi|156255055|gb|EU084947| /Avian/3 (PA)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) segment 3, complete sequence

gi|198387447|gb|EU301368| /Swine/3 (PA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) polymerase PA (PA) gene, complete cds.

gi|189313131|gb|EU735823| /Avian/3 (PA)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) polymerase PA (PA) gene, complete cds

gi|189313112|gb|EU735831| /Avian/3 (PA)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) polymerase PA (PA) gene, complete cds

gi|193877753|gb|EU743215| /Avian/3 (PA)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 3 polymerase PA (PA) gene, complete cds.

gi|190403939|gb|EU798878| /Swine/3 (PA)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403941|gb|EU798879| /Swine/3 (PA)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403943|gb|EU798880| /Swine/3 (PA)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403945|gb|EU798881| /Swine/3 (PA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403947|gb|EU798882| /Swine/3 (PA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403949|gb|EU798883| /Swine/3 (PA)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403951|gb|EU798884| /Swine/3 (PA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403953|gb|EU798885| /Swine/3 (PA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403955|gb|EU798886| /Swine/3 (PA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403957|gb|EU798887| /Swine/3 (PA)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403959|gb|EU798888| /Swine/3 (PA)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403961|gb|EU798889| /Swine/3 (PA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403963|gb|EU798890| /Swine/3 (PA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403965|gb|EU798891| /Swine/3 (PA)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403967|gb|EU798892| /Swine/3 (PA)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403969|gb|EU798893| /Swine/3 (PA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403971|gb|EU798894| /Swine/3 (PA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403973|gb|EU798895| /Swine/3 (PA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403975|gb|EU798896| /Swine/3 (PA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|190403977|gb|EU798897| /Swine/3 (PA)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|209486618|gb|FJ374517| /Swine/3 (PA)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 3 polymerase PA (PA) gene, complete cds
gi|211996964|gb|FJ432783| /Avian/3 (PA)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 3 polymerase PA (PA) gene, complete cds
gi|227809827|gb|FJ966081| /Human/3 (PA)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 3 polymerase PA (PA) gene, complete cds

Swine, EA, 28 sequences

gi|216409287|gb|AB434321| /Swine/5 (NP)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) NP gene for nucleoprotein, complete cds
gi|216409305|gb|AB434329| /Swine/5 (NP)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) NP gene for nucleoprotein, complete cds
gi|14275698|gb|AJ293924| /Human/5 (NP)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) np gene for nucleoprotein, genomic RNA
gi|20068042|gb|AJ307065| /Swine/5 (NP)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|20068046|gb|AJ307067| /Swine/5 (NP)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|20068060|gb|AJ307074| /Swine/5 (NP)/H1N2/France/1999/// Influenza A virus (A/swine/Cotes d'Armor/604/99(H1N2)) NP gene for nucleoprotein, genomic RNA
gi|164511474|gb|AM746619| /Swine/5 (NP)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) NP gene for nucleoprotein, genomic RNA
gi|78097312|gb|CY005496| /Avian/5 (NP)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 5, complete sequence
gi|78097600|gb|CY005608| /Avian/5 (NP)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 5, complete sequence
gi|89148259|gb|CY009375| /Swine/5 (NP)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 5, complete sequence
gi|89148102|gb|CY009383| /Swine/5 (NP)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 5, complete sequence
gi|89789285|gb|CY009895| /Swine/5 (NP)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 5, complete sequence
gi|91177913|gb|CY010567| /Swine/5 (NP)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 5, complete sequence
gi|91125701|gb|CY010575| /Swine/5 (NP)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 5, complete sequence
gi|91177894|gb|CY010583| /Swine/5 (NP)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 5, complete sequence
gi|133981520|gb|CY020504| /Swine/5 (NP)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 5, complete sequence
gi|85692696|gb|DQ351864| /Avian/5 (NP)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 5 nucleoprotein (NP) gene, complete cds.
gi|117935812|gb|EF101752| /Human/5 (NP)/H1N1/Thailand/2005/07/14/ Influenza A virus (A/Thailand/271/2005(H1N1)) nucleocapsid protein gene, partial cds
gi|153957941|gb|EU053134| /Swine/5 (NP)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 5 nucleoprotein gene, complete cds.
gi|153958046|gb|EU053142| /Swine/5 (NP)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 5 nucleoprotein gene, complete cds.
gi|156255083|gb|EU084948| /Avian/5 (NP)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) segment 5, complete sequence
gi|192382743|gb|EU826545| /Swine/5 (NP)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds
gi|210076652|gb|FJ415617| /Swine/5 (NP)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds
gi|211996959|gb|FJ432781| /Avian/5 (NP)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds
gi|325011|gb|M22344| /Avian/5 (NP)/H7N1/Ireland/1973/// Influenza A virus (A/parrot/Ulster/1973(H7N1)) segment 5 nucleoprotein gene, complete cds

gi|325056|gb|M22579| /Swine/5 (NP)/H1N1/Germany/1981/// Influenza A virus (A/swine/Germany/2/1981(H1N1)) segment 5 nucleoprotein gene, complete cds.
gi|438087|gb|Z26856| /Swine/5 (NP)/H1N1/Germany/1991/// Influenza A virus(A/swine/Germany/8533/91(H1N1)) NP gene for nucleoprotein
gi|438089|gb|Z26857| /Avian/5 (NP)/H1N1/Germany/1991/// Influenza A virus(A/turkey/Germany/3/91(H1N1)) NP gene for nucleoprotein

Human H3N2, 22 sequences

gi|3722162|gb|AF038256| /Human/5 (NP)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 nucleoprotein (NP) gene, complete cds.
gi|91127733|gb|CY010655| /Human/5 (NP)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 5, complete sequence
gi|91127774|gb|CY010663| /Human/5 (NP)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 5, complete sequence
gi|106896315|gb|CY010671| /Human/5 (NP)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 5, complete sequence
gi|109675454|gb|CY010679| /Human/5 (NP)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 5, complete sequence
gi|91129967|gb|CY010711| /Human/5 (NP)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 5, complete sequence
gi|91130733|gb|CY010727| /Human/5 (NP)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 5, complete sequence
gi|94959634|gb|CY010815| /Human/5 (NP)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 5, complete sequence
gi|109675462|gb|CY011435| /Human/5 (NP)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 5, complete sequence
gi|109675500|gb|CY011451| /Human/5 (NP)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 5, complete sequence
gi|109675538|gb|CY011467| /Human/5 (NP)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 5, complete sequence
gi|109914693|gb|CY011891| /Human/5 (NP)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 5, complete sequence
gi|110333425|gb|CY012219| /Human/5 (NP)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 5, complete sequence
gi|110629735|gb|CY012747| /Human/5 (NP)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 5, complete sequence
gi|110629773|gb|CY012763| /Human/5 (NP)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 5, complete sequence
gi|110733713|gb|CY012971| /Human/5 (NP)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 5, complete sequence
gi|112789114|gb|CY013680| /Human/5 (NP)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 5, complete sequence
gi|112789171|gb|CY013704| /Human/5 (NP)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 5, complete sequence
gi|112789323|gb|CY013768| /Human/5 (NP)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 5, complete sequence
gi|115521547|gb|CY016486| /Human/5 (NP)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 5, complete sequence
gi|3721979|gb|U71146| /Human/5 (NP)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Shiga/20/95 nucleoprotein (NP) gene, complete cds.
gi|3721981|gb|U71147| /Human/5 (NP)/H3N2/Japan/1995/// Influenza A virus H3N2 A/Miyagi/29/95 nucleoprotein (NP) gene, complete cds.

Swine, NA, 84 sequences

gi|8515429|gb|AF250127| /Swine/5 (NP)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) nucleoprotein (NP) gene, complete cds.
gi|10335487|gb|AF251407| /Swine/5 (NP)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) nucleoprotein (NP) gene, complete cds.
gi|10335490|gb|AF251415| /Swine/5 (NP)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) nucleoprotein (NP) gene, complete cds.
gi|10335493|gb|AF251423| /Swine/5 (NP)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) nucleoprotein (NP) gene, complete cds.
gi|10335496|gb|AF251431| /Swine/5 (NP)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) nucleoprotein (NP) gene, complete cds.
gi|29539575|gb|AF342819| /Human/5 (NP)/H1N1/USA/1998/// Influenza A virus (A/Wisconsin/10/98 (H1N1)) nucleoprotein gene, complete cds
gi|19422124|gb|AF455699| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422126|gb|AF455700| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422128|gb|AF455701| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422130|gb|AF455702| /Swine/5 (NP)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) nucleoprotein (NP) gene, complete cds
gi|19422132|gb|AF455703| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422134|gb|AF455704| /Swine/5 (NP)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422136|gb|AF455705| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) nucleoprotein (NP) gene, complete cds.
gi|19422138|gb|AF455706| /Swine/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) nucleoprotein (NP) gene, complete cds.
gi|24286069|gb|AY129159| /Swine/5 (NP)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) nucleoprotein (NP) mRNA, complete cds
gi|30522969|gb|AY233394| /Avian/5 (NP)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) nucleoprotein (NP) gene, complete cds
gi|149785310|gb|CY022320| /Swine/5 (NP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1)) segment 5, complete sequence
gi|149785261|gb|CY022328| /Swine/5 (NP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1)) segment 5, complete sequence
gi|149785189|gb|CY022336| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) segment 5, complete sequence
gi|149785131|gb|CY022432| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 5, complete sequence
gi|149785058|gb|CY022472| /Swine/5 (NP)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1)) segment 5, complete sequence
gi|149784977|gb|CY022480| /Swine/5 (NP)/H1N1/USA/1991/// Influenza A virus (A/swine/Maryland/23239/1991(H1N1)) segment 5, complete sequence
gi|152963535|gb|CY022973| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1)) segment 5, complete sequence
gi|156536565|gb|CY024928| /Human/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1)) segment 5, complete sequence
gi|156536601|gb|CY025013| /Swine/5 (NP)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1)) segment 5, complete sequence

gi|158525302|gb|CY027158| /Swine/5 (NP)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1)) segment 5, complete sequence

gi|158958064|gb|CY027510| /Swine/5 (NP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1)) segment 5, complete sequence

gi|166203495|gb|CY028783| /Swine/5 (NP)/H1N1/USA/1991/// Influenza A virus (A/swine/California/T9001707/1991(H1N1)) segment 5, complete sequence

gi|208400885|gb|CY035073| /Swine/5 (NP)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1)) segment 5, complete sequence

gi|229807659|gb|CY039920| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A Virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 5, complete sequence

gi|229809519|gb|CY039928| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A Virus (A/swine/Indiana/1726/1988(H1N1)) segment 5, complete sequence

gi|75756551|gb|DQ150426| /Swine/5 (NP)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) nucleoprotein (NP) gene, complete cds.

gi|75756567|gb|DQ150434| /Swine/5 (NP)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) nucleoprotein (NP) gene, complete cds.

gi|84626341|gb|DQ335774| /Avian/5 (NP)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404625|gb|DQ469959| /Human/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404627|gb|DQ469967| /Swine/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404629|gb|DQ469975| /Swine/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404631|gb|DQ469983| /Swine/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404633|gb|DQ469991| /Swine/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|94404635|gb|DQ469999| /Avian/5 (NP)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) nucleoprotein (NP) gene, complete cds

gi|109501341|gb|DQ666936| /Swine/5 (NP)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/S11/2005(H1N2)) segment 5 nucleoprotein gene, complete cds.

gi|112456236|gb|DQ889686| /Human/5 (NP)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) nucleoprotein (NP) gene, complete cds

gi|114215308|gb|DQ923512| /Swine/5 (NP)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) nucleoprotein (NP) gene, complete cds

gi|114215310|gb|DQ923513| /Swine/5 (NP)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) nucleoprotein (NP) gene, complete cds

gi|146454467|gb|EF551054| /Swine/5 (NP)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) segment 5 nucleoprotein (NP) gene, complete cds.

gi|151175880|gb|EU015990| /Swine/5 (NP)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) nucleoprotein (NP) gene, complete cds.

gi|198387445|gb|EU301304| /Swine/5 (NP)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) nucleoprotein (NP) gene, complete cds.

gi|187763981|gb|EU697205| /Avian/5 (NP)/H3N2/USA/2005/// Influenza A virus (A/turkey/Minnesota/366767/2005(H3N2)) nucleocapsid protein (NP) gene, complete cds

gi|189313202|gb|EU735789| /Avian/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1)) nucleocapsid protein (NP) gene, complete cds.

gi|189313126|gb|EU735821| /Avian/5 (NP)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) nucleocapsid protein (NP) gene, complete cds

gi|189313107|gb|EU735829| /Avian/5 (NP)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) nucleocapsid protein (NP) gene, complete cds

gi|193877872|gb|EU743154| /Avian/5 (NP)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds.

gi|193877854|gb|EU743162| /Avian/5 (NP)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds.

gi|193877762|gb|EU743213| /Avian/5 (NP)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds.

gi|190403839|gb|EU798838| /Swine/5 (NP)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403841|gb|EU798839| /Swine/5 (NP)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403843|gb|EU798840| /Swine/5 (NP)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403845|gb|EU798841| /Swine/5 (NP)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403847|gb|EU798842| /Swine/5 (NP)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403849|gb|EU798843| /Swine/5 (NP)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403851|gb|EU798844| /Swine/5 (NP)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403853|gb|EU798845| /Swine/5 (NP)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403855|gb|EU798846| /Swine/5 (NP)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403857|gb|EU798847| /Swine/5 (NP)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403859|gb|EU798848| /Swine/5 (NP)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403861|gb|EU798849| /Swine/5 (NP)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403863|gb|EU798850| /Swine/5 (NP)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403865|gb|EU798851| /Swine/5 (NP)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403867|gb|EU798852| /Swine/5 (NP)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403869|gb|EU798853| /Swine/5 (NP)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403871|gb|EU798854| /Swine/5 (NP)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403873|gb|EU798855| /Swine/5 (NP)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403875|gb|EU798856| /Swine/5 (NP)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|190403877|gb|EU798857| /Swine/5 (NP)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|193245816|gb|EU850621| /Swine/5 (NP)/H1N2/China/2005/// Influenza A virus (A/swine/Guangxi/17/2005(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds.

gi|193245824|gb|EU850624| /Swine/5 (NP)/H1N2/China/2005/// Influenza A virus (A/swine/Hainan/1/2005(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds.

gi|209164824|gb|FJ357107| /Avian/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|209486613|gb|FJ374515| /Swine/5 (NP)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 5 nucleocapsid protein (NP) gene, complete cds

gi|438593|gb|L24394| /Human/5 (NP)/H1N1/USA/1991/// Influenza A virus (A/MD/12/1991(H1N1)) nucleoprotein (NP) gene, complete cds.

gi|324639|gb|M63755| /Human/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/Wisconsin/3523/1988(H1N1))
nucleoprotein (NP) gene, complete cds.
gi|324666|gb|M63768| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1))
nucleoprotein (NP) gene, complete cds.
gi|325088|gb|M76608| /Swine/5 (NP)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1))
nucleoprotein mRNA, complete cds.
gi|1912380|gb|U49091| /Swine/5 (NP)/H1N1/China/1991/// Influenza A virus (A/swine/Beijing/94/1991(H1N1))
nucleoprotein (NP) mRNA, complete cds.
gi|227809831|gb|FJ966083| /Human/5 (NP)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1))
segment 5 nucleocapsid protein (NP) gene, complete cds

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gi|3722192|gb|AF038271| /Human/7 (MP)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 matrix protein M1 and transmembrane ion channel M2 protein (M) gene, complete cds.
gi|91127728|gb|CY010653| /Human/7 (MP)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 7, complete sequence
gi|106896312|gb|CY010661| /Human/7 (MP)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 7, complete sequence
gi|106896313|gb|CY010669| /Human/7 (MP)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 7, complete sequence
gi|91129948|gb|CY010709| /Human/7 (MP)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 7, complete sequence
gi|131052303|gb|CY010725| /Human/7 (MP)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 7, complete sequence
gi|94959629|gb|CY010813| /Human/7 (MP)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 7, complete sequence
gi|109675495|gb|CY011449| /Human/7 (MP)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 7, complete sequence
gi|109675533|gb|CY011465| /Human/7 (MP)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 7, complete sequence
gi|110629730|gb|CY012745| /Human/7 (MP)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 7, complete sequence
gi|110629768|gb|CY012761| /Human/7 (MP)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 7, complete sequence
gi|110733708|gb|CY012969| /Human/7 (MP)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 7, complete sequence
gi|112789109|gb|CY013678| /Human/7 (MP)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 7, complete sequence
gi|112789166|gb|CY013702| /Human/7 (MP)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 7, complete sequence
gi|112789318|gb|CY013766| /Human/7 (MP)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 7, complete sequence
gi|115521542|gb|CY016484| /Human/7 (MP)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 7, complete sequence
gi|3929605|gb|U65573| /Human/7 (MP)/H3N2/Japan/1995/// Influenza A virus H3N2 strain A/Shiga/20/95 M1 protein and M2 protein genes, complete cds.
gi|3929611|gb|U65577| /Human/7 (MP)/H3N2/Japan/1995/// Influenza A virus H3N2 strain A/Miyagi/29/95 M1 protein and M2 protein genes, complete cds.

Swine, NA, 48 sequences

gi|9887135|gb|AF251406| /Swine/7 (MP)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) matrix protein 1 (M1) gene, complete cds.
gi|9887152|gb|AF251414| /Swine/7 (MP)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) matrix protein 1 (M1) gene, complete cds.
gi|9887186|gb|AF251430| /Swine/7 (MP)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) matrix protein 1 (M1) gene, complete cds.
gi|29539572|gb|AF342818| /Human/7 (MP)/H1N1/USA/1998/// Influenza A virus (A/Wisconsin/10/98 (H1N1)) membrane protein M1 and membrane protein M2 genes, complete cds
gi|30522965|gb|AY233392| /Avian/7 (MP)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) matrix protein 1 (M1) gene, complete cds

gi|149785305|gb|CY022318| /Swine/7 (MP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1)) segment 7, complete sequence

gi|149785255|gb|CY022326| /Swine/7 (MP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1)) segment 7, complete sequence

gi|149785183|gb|CY022334| /Swine/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) segment 7, complete sequence

gi|149785125|gb|CY022430| /Swine/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 7, complete sequence

gi|149785052|gb|CY022470| /Swine/7 (MP)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1)) segment 7, complete sequence

gi|149784972|gb|CY022478| /Swine/7 (MP)/H1N1/USA/1991/// Influenza A virus (A/swine/Maryland/23239/1991(H1N1)) segment 7, complete sequence

gi|152963530|gb|CY022971| /Swine/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1)) segment 7, complete sequence

gi|156536560|gb|CY024926| /Human/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1)) segment 7, complete sequence

gi|156536596|gb|CY025011| /Swine/7 (MP)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1)) segment 7, complete sequence

gi|158525297|gb|CY027156| /Swine/7 (MP)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1)) segment 7, complete sequence

gi|158958059|gb|CY027508| /Swine/7 (MP)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1)) segment 7, complete sequence

gi|166203490|gb|CY028781| /Swine/7 (MP)/H1N1/USA/1991/// Influenza A virus (A/swine/California/T9001707/1991(H1N1)) segment 7, complete sequence

gi|208400880|gb|CY035071| /Swine/7 (MP)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1)) segment 7, complete sequence

gi|229807654|gb|CY039918| /Swine/7 (MP)/H1N1/USA/1988/// Influenza A Virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 7, complete sequence

gi|229809514|gb|CY039926| /Swine/7 (MP)/H1N1/USA/1988/// Influenza A Virus (A/swine/Indiana/1726/1988(H1N1)) segment 7, complete sequence

gi|75756555|gb|DQ150428| /Swine/7 (MP)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) matrix (M1) gene, complete cds.

gi|75756571|gb|DQ150436| /Swine/7 (MP)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) matrix (M1) gene, complete cds.

gi|84626337|gb|DQ335772| /Avian/7 (MP)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) membrane protein (M) gene, complete cds

gi|94404595|gb|DQ469961| /Human/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|94404598|gb|DQ469969| /Swine/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|94404601|gb|DQ469977| /Swine/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|94404604|gb|DQ469985| /Swine/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|94404607|gb|DQ469993| /Swine/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|94404610|gb|DQ470001| /Avian/7 (MP)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds

gi|109156216|gb|DQ666934| /Swine/7 (MP)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/S11/2005(H1N2)) matrix protein 2 and matrix protein 1 genes, complete cds.

gi|112456284|gb|DQ889688| /Human/7 (MP)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|146454453|gb|EF551048| /Avian/7 (MP)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds.

gi|146454471|gb|EF551056| /Swine/7 (MP)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) matrix protein 2 (MP2) and matrix protein 1 (MP1) genes, complete cds.

gi|151175877|gb|EU015989| /Swine/7 (MP)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|187763985|gb|EU697207| /Avian/7 (MP)/H3N2/USA/2005/// Influenza A virus (A/turkey/Minnesota/366767/2005(H3N2)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|189313197|gb|EU735787| /Avian/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|189313121|gb|EU735819| /Avian/7 (MP)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|189313102|gb|EU735827| /Avian/7 (MP)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|193877861|gb|EU743152| /Avian/7 (MP)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|193877843|gb|EU743160| /Avian/7 (MP)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|193877757|gb|EU743211| /Avian/7 (MP)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|192382745|gb|EU826546| /Swine/7 (MP)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|193245818|gb|EU850622| /Swine/7 (MP)/H1N2/China/2005/// Influenza A virus (A/swine/Guangxi/17/2005(H1N2)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|193245826|gb|EU850625| /Swine/7 (MP)/H1N2/China/2005/// Influenza A virus (A/swine/Hainan/1/2005(H1N2)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds.

gi|209164819|gb|FJ357105| /Avian/7 (MP)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|209486620|gb|FJ374518| /Swine/7 (MP)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|1399614|gb|U53168| /Human/7 (MP)/H1N1/USA/1994/// Influenza A virus (A/WI/4754/1994(H1N1)) M (M) mRNA, complete cds

gi|1399616|gb|U53169| /Human/7 (MP)/H1N1/USA/1994/// Influenza A virus (A/WI/4755/1994(H1N1)) M (M) mRNA, complete cds

Swine, EA, 44 sequences

gi|216409291|gb|AB434323| /Swine/7 (MP)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) M1, M2 genes for matrix protein 1, matrix protein 2, complete cds

gi|216409309|gb|AB434331| /Swine/7 (MP)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chachoengsao/NIAH587/2005(H1N1)) M1, M2 genes for matrix protein 1, matrix protein 2, complete cds

gi|14275700|gb|AJ293925| /Human/7 (MP)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) m1 gene for matrix protein 1 and m2 gene for matrix protein 2, genomic RNA

gi|14275727|gb|AJ293938| /Swine/7 (MP)/H3N2/Italy/1998/// Influenza A virus (A/swine/Italy/1553-2/98(H3N2)) m1 gene for matrix protein 1 and m2 gene for matrix protein 2, genomic RNA

gi|20068098|gb|AJ316049| /Swine/7 (MP)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) M1 gene for matrix protein and M2 gene for matrix protein 2, genomic RNA

gi|20068107|gb|AJ316052| /Swine/7 (MP)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) M1 gene for matrix protein 1 and M2 gene for matrix protein 2, genomic RNA

gi|20068128|gb|AJ316059| /Swine/7 (MP)/H1N1/France/1982/// Influenza A virus (A/swine/Finistere/2899/82(H1N1)) M1 gene for matrix protein 1 and M2 gene for matrix protein 2, genomic RNA

gi|212290249|gb|AM157374| /Avian/7 (MP)/H1N1/France/1987/// Influenza A virus (A/turkey/France/87075/87(H1N1)) M1 gene for matrix protein 1 and M2 gene for matrix protein 2, genomic RNA

gi|164511472|gb|AM746618| /Swine/7 (MP)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) M1 gene for matrix protein 1, genomic RNA

gi|31747408|gb|AY300952| /Avian/7 (MP)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) membrane protein (M) gene, complete cds

gi|78097307|gb|CY005494| /Avian/7 (MP)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 7, complete sequence

gi|78097595|gb|CY005606| /Avian/7 (MP)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 7, complete sequence

gi|89148254|gb|CY009373| /Swine/7 (MP)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 7, complete sequence

gi|89148097|gb|CY009381| /Swine/7 (MP)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 7, complete sequence

gi|89789280|gb|CY009893| /Swine/7 (MP)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 7, complete sequence

gi|91177908|gb|CY010565| /Swine/7 (MP)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 7, complete sequence

gi|91125696|gb|CY010573| /Swine/7 (MP)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 7, complete sequence

gi|91177889|gb|CY010581| /Swine/7 (MP)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 7, complete sequence

gi|133981500|gb|CY020502| /Swine/7 (MP)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 7, complete sequence

gi|77632737|gb|DQ186973| /Swine/7 (MP)/H1N1/Germany/1981/// Influenza A virus (A/swine/Potsdam/15/81(H1N1)) M2 protein and M1 protein genes, complete cds.

gi|77632740|gb|DQ186974| /Swine/7 (MP)/H1N1/Germany/1989/// Influenza A virus (A/swine/Schwerin/103/89(H1N1)) M2 protein and M1 protein genes, complete cds.

gi|77632743|gb|DQ186975| /Swine/7 (MP)/H1N1/Germany/1995/// Influenza A virus (A/swine/Bakum/5/95(H1N1)) M2 protein and M1 protein genes, complete cds.

gi|77632746|gb|DQ186976| /Swine/7 (MP)/H1N1/Germany/2001/// Influenza A virus (A/swine/Belzig/2/2001(H1N1)) M2 protein and M1 protein genes, complete cds.

gi|77632749|gb|DQ186977| /Swine/7 (MP)/H1N2/Germany/2000/// Influenza A virus (A/swine/Bakum/1832/00(H1N2)) M2 protein and M1 protein genes, complete cds.

gi|77632752|gb|DQ186978| /Swine/7 (MP)/H1N2/Germany/2000/// Influenza A virus (A/swine/Bakum/1833/00(H1N2)) M2 protein and M1 protein genes, complete cds.

gi|77632755|gb|DQ186979| /Swine/7 (MP)/H3N2/Germany/1982/// Influenza A virus (A/swine/Potsdam/35/82(H3N2)) M2 protein and M1 protein genes, complete cds.

gi|77632761|gb|DQ186981| /Swine/7 (MP)/H3N2/Germany/1992/// Influenza A virus (A/swine/Leipzig/145/92(H3N2)) M2 protein and M1 protein genes, complete cds.

gi|77632764|gb|DQ186982| /Swine/7 (MP)/H3N2/Germany/1996/// Influenza A virus (A/swine/Jena/5/96(H3N2)) M2 protein and M1 protein genes, complete cds

gi|77632767|gb|DQ186983| /Swine/7 (MP)/H3N2/Germany/1997/// Influenza A virus (A/swine/Lohne/1/97(H3N2)) M2 protein and M1 protein genes, complete cds.

gi|77632770|gb|DQ186984| /Swine/7 (MP)/H3N2/Germany/1999/// Influenza A virus (A/swine/Bakum/8602/99(H3N2)) M2 protein and M1 protein genes, complete cds.

gi|85692677|gb|DQ351858| /Avian/7 (MP)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 7 membrane ion channel 2 (M) and matrix protein 1 (M) genes, complete cds

gi|117935798|gb|EF101742| /Human/7 (MP)/H1N2/Philippines/2004/02/27/ Influenza A virus (A/Philippines/344/2004(H1N2)) matrix protein gene, complete cds

gi|117935800|gb|EF101750| /Human/7 (MP)/H1N1/Thailand/2005/07/14/ Influenza A virus (A/Thailand/271/2005(H1N1)) matrix protein gene, complete cds

gi|153957968|gb|EU053136| /Swine/7 (MP)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 7 M2 membrane protein and M1 matrix protein genes, complete cds.

gi|153958075|gb|EU053144| /Swine/7 (MP)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 7 M2 membrane protein and M1 matrix protein genes, complete cds.

gi|157366776|gb|EU152199| /Swine/7 (MP)/H3N2/Thailand/2004/// Influenza A virus (A/swine/Thailand/KU7-2/2004(H3N2)) M2 protein gene, partial cds; and M1 protein gene, complete cds

gi|210076640|gb|FJ415612| /Swine/7 (MP)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

gi|211996954|gb|FJ432779| /Avian/7 (MP)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 7 matrix protein 2 (M2) gene, partial cds; and matrix protein 1 (M1) gene, complete cds

gi|324279|gb|M55478| /Swine/7 (MP)/H1N1/Germany/1981/// Influenza A virus (A/swine/Germany/2/1981(H1N1)) M2 matrix protein and M1 matrix protein genes, complete cds

gi|324381|gb|M63525| /Swine/7 (MP)/H1N1/Netherlands/1985/// Influenza virus type A (strain A/swine/Netherlands/12/85 (H1N1)) membrane protein M1 and membrane protein M2 genes, complete cds.

gi|438073|gb|Z26859| /Avian/7 (MP)/H1N1/Germany/1991/// Influenza A virus(A/turkey/Germany/3/91(H1N1)) M and M2 genes for matrix proteins

gi|438079|gb|Z26861| /Swine/7 (MP)/H1N1/Germany/1991/// Influenza A virus(A/swine/Germany/8533/91(H1N1)) M and M2 genes for matrix proteins

gi|438082|gb|Z26862| /Swine/7 (MP)/H1N1/Netherlands/1980/// Influenza A virus(A/swine/Netherlands/25/80(H1N1)) M and M2 genes for matrix proteins

gi|227977107|gb|FJ969513| /Human/7 (MP)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 7 matrix protein 2 (M2) and matrix protein 1 (M1) genes, complete cds

Human H3N2, 21 sequences

gi|3722207|gb|AF038276| /Human/8 (NS)/H3N2/Japan/1996/// Influenza A virus H3N2 A/Niigata/137/96 nonstructural proteins NS1 and NS2 (NS) gene, complete cds
gi|91127735|gb|CY010656| /Human/8 (NS)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/611/1995(H3N2)) segment 8, complete sequence
gi|91127783|gb|CY010664| /Human/8 (NS)/H3N2/USA/1995/12/19/ Influenza A virus (A/New York/612/1995(H3N2)) segment 8, complete sequence
gi|91128192|gb|CY010672| /Human/8 (NS)/H3N2/USA/1996/01/10/ Influenza A virus (A/New York/613/1996(H3N2)) segment 8, complete sequence
gi|91128568|gb|CY010680| /Human/8 (NS)/H3N2/USA/1995/12/28/ Influenza A virus (A/New York/618/1995(H3N2)) segment 8, complete sequence
gi|91129977|gb|CY010712| /Human/8 (NS)/H3N2/USA/1995/12/12/ Influenza A virus (A/New York/628/1995(H3N2)) segment 8, complete sequence
gi|91130740|gb|CY010728| /Human/8 (NS)/H3N2/USA/1995/12/08/ Influenza A virus (A/New York/634/1995(H3N2)) segment 8, complete sequence
gi|94959636|gb|CY010816| /Human/8 (NS)/H3N2/USA/1995/12/29/ Influenza A virus (A/New York/623/1995(H3N2)) segment 8, complete sequence
gi|109675464|gb|CY011436| /Human/8 (NS)/H3N2/USA/1996/02/16/ Influenza A virus (A/New York/624/1996(H3N2)) segment 8, complete sequence
gi|109675502|gb|CY011452| /Human/8 (NS)/H3N2/USA/1996/01/18/ Influenza A virus (A/New York/635/1996(H3N2)) segment 8, complete sequence
gi|109675540|gb|CY011468| /Human/8 (NS)/H3N2/USA/1996/01/03/ Influenza A virus (A/New York/641/1996(H3N2)) segment 8, complete sequence
gi|109914695|gb|CY011892| /Human/8 (NS)/H3N2/USA/1994/01/17/ Influenza A virus (A/New York/716/1994(H3N2)) segment 8, complete sequence
gi|110333427|gb|CY012220| /Human/8 (NS)/H3N2/USA/1995/12/18/ Influenza A virus (A/New York/639/1995(H3N2)) segment 8, complete sequence
gi|110629737|gb|CY012748| /Human/8 (NS)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/771/1993(H3N2)) segment 8, complete sequence
gi|110629775|gb|CY012764| /Human/8 (NS)/H3N2/USA/1993/03/20/ Influenza A virus (A/New York/777/1993(H3N2)) segment 8, complete sequence
gi|110733715|gb|CY012972| /Human/8 (NS)/H3N2/USA/1994/01/14/ Influenza A virus (A/New York/735/1994(H3N2)) segment 8, complete sequence
gi|112789116|gb|CY013681| /Human/8 (NS)/H3N2/USA/1993/04/19/ Influenza A virus (A/New York/784/1993(H3N2)) segment 8, complete sequence
gi|112789173|gb|CY013705| /Human/8 (NS)/H3N2/USA/1993/04/05/ Influenza A virus (A/New York/789/1993(H3N2)) segment 8, complete sequence
gi|112789325|gb|CY013769| /Human/8 (NS)/H3N2/USA/1993/03/10/ Influenza A virus (A/New York/799/1993(H3N2)) segment 8, complete sequence
gi|115521549|gb|CY016487| /Human/8 (NS)/H3N2/USA/1993/03/11/ Influenza A virus (A/New York/800/1993(H3N2)) segment 8, complete sequence
gi|3929411|gb|U65673| /Human/8 (NS)/H3N2/Japan/1995/// Influenza A virus H3N2 strain A/Shiga/20/95 nonstructural protein 1 and nonstructural protein 2 mRNAs, complete cds.

Swine, EA, 36 sequences

gi|216409294|gb|AB434324| /Swine/8 (NS)/H1N1/Thailand/2005/// Influenza A virus (A/swine/Chonburi/NIAH589/2005(H1N1)) NS1, NS2 genes for nonstructural protein 1, nonstructural protein 2, complete cds
gi|216409312|gb|AB434332| /Swine/8 (NS)/H1N1/Thailand/2005/// Influenza A virus

(A/swine/Chachoengsao/NIAH587/2005(H1N1)) NS1, NS2 genes for nonstructural protein 1, nonstructural protein 2, complete cds
gi|14275736|gb|AJ293941| /Human/8 (NS)/H3N2/Hong Kong/1999/// Influenza A virus (A/Hong Kong/1774/99(H3N2)) ns1 gene for nonstructural protein 1 and ns2 gene for nonstructural protein 2, genomic RNA
gi|20068152|gb|AJ344026| /Swine/8 (NS)/H1N2/France/1997/// Influenza A virus (A/swine/Cotes d'Armor/790/97(H1N2)) NS1 gene for non structural protein 1 and NS2 gene for non structural protein 2, genomic RNA
gi|20068158|gb|AJ344028| /Swine/8 (NS)/H1N2/Italy/1998/// Influenza A virus (A/swine/Italy/1521/98(H1N2)) NS1 gene for non structural protein 1 and NS2 gene for non structural protein 2, genomic RNA
gi|20068185|gb|AJ344037| /Swine/8 (NS)/H1N1/France/1982/// Influenza A virus (A/swine/Finistere/2899/82(H1N1)) NS1 gene for non structural protein 1 and NS2 gene for non structural protein 2, genomic RNA
gi|20068188|gb|AJ344038| /Swine/8 (NS)/H1N1/France/1999/// Influenza A virus (A/swine/Cotes d'Armor/1482/99(H1N1)) NS1 gene for non structural protein 1 and NS2 gene for non structural protein 2, genomic RNA
gi|18075004|gb|AJ410596| /Avian/8 (NS)/H6N1/Hong Kong/1977/// Influenza A virus genomic RNA for nonstructural protein 1 (ns gene) strain A/duck/Hong Kong/175/77 (H6N1)
gi|164511476|gb|AM746620| /Swine/8 (NS)/H3N2/Germany/2006/// Influenza A virus (A/wild boar/Germany/WS169/2006(H3N2)) NS1 gene for nonstructural protein 1, genomic RNA
gi|159149081|gb|AY300976| /Avian/8 (NS)/H5N2/USA/1998/// Influenza A virus (A/chukar/MN/14591-7/1998(H5N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds
gi|38154983|gb|AY363591| /Swine/8 (NS)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong Kong/5190/99(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38154986|gb|AY363592| /Swine/8 (NS)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong Kong/5200/99(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38154989|gb|AY363593| /Swine/8 (NS)/H3N2/Hong Kong/1999/// Influenza A virus (A/swine/Hong Kong/5212/99(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38154992|gb|AY363594| /Swine/8 (NS)/H3N2/Hong Kong/2000/// Influenza A virus (A/swine/Hong Kong/7982/00(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38154995|gb|AY363595| /Swine/8 (NS)/H3N2/Hong Kong/2001/// Influenza A virus (A/swine/Hong Kong/9296/01(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38154998|gb|AY363596| /Swine/8 (NS)/H3N2/Hong Kong/2001/// Influenza A virus (A/swine/Hong Kong/9745/01(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38155001|gb|AY363597| /Swine/8 (NS)/H3N2/Hong Kong/2002/// Influenza A virus (A/swine/Hong Kong/1144/02(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|38155004|gb|AY363598| /Swine/8 (NS)/H3N2/Hong Kong/2002/// Influenza A virus (A/swine/Hong Kong/1197/02(H3N2)) non-structural protein NS2 and non-structural protein NS1 (NS) gene, complete cds.
gi|78097314|gb|CY005497| /Avian/8 (NS)/H7N1/China/1992/// Influenza A virus (A/duck/Nanchang/1904/1992(H7N1)) segment 8, complete sequence
gi|78097602|gb|CY005609| /Avian/8 (NS)/H6N1/Hong Kong/1977/// Influenza A virus (A/chicken/Hong Kong/17/1977(H6N1)) segment 8, complete sequence
gi|89148261|gb|CY009376| /Swine/8 (NS)/H3N2/Spain/2001/// Influenza A virus (A/swine/Spain/33601/2001(H3N2)) segment 8, complete sequence
gi|89148104|gb|CY009384| /Swine/8 (NS)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/39139/2002(H3N2)) segment 8, complete sequence
gi|89789287|gb|CY009896| /Swine/8 (NS)/H1N1/Spain/2003/// Influenza A virus (A/Swine/Spain/50047/2003(H1N1)) segment 8, complete sequence
gi|91177915|gb|CY010568| /Swine/8 (NS)/H3N2/Spain/2004/// Influenza A virus (A/swine/Spain/54008/2004(H3N2)) segment 8, complete sequence
gi|91125703|gb|CY010576| /Swine/8 (NS)/H1N1/Spain/2003/// Influenza A virus (A/swine/Spain/51915/2003(H1N1)) segment 8, complete sequence
gi|91177896|gb|CY010584| /Swine/8 (NS)/H1N1/Spain/2004/// Influenza A virus (A/swine/Spain/53207/2004(H1N1)) segment 8, complete sequence
gi|133981531|gb|CY020505| /Swine/8 (NS)/H3N2/Spain/2002/// Influenza A virus (A/swine/Spain/42386/2002(H3N2)) segment 8, complete sequence

gi|85692692|gb|DQ351863| /Avian/8 (NS)/H5N1/China/2001/// Influenza A virus (A/chicken/Hebei/718/2001(H5N1)) segment 8 nonstructural protein 2 (NS) and nonstructural protein 1 (NS) genes, complete cds.
 gi|153957981|gb|EU053137| /Swine/8 (NS)/H1N2/Germany/2005/12/07/ Influenza A virus (A/swine/Doetlingen/IDT4735/2005(H1N2)) segment 8 NS2/NEP and NS1 genes, complete cds.
 gi|153958095|gb|EU053145| /Swine/8 (NS)/H1N2/Germany/2005/12/13/ Influenza A virus (A/swine/Cloppenburg/IDT4777/2005(H1N2)) segment 8 NS2/NEP and NS1 genes, complete cds.
 gi|210076643|gb|FJ415613| /Swine/8 (NS)/H1N1/China/2007/11/15/ Influenza A virus (A/swine/Zhejiang/1/2007(H1N1)) segment 8 nuclear export protein (NEP) gene, complete cds; and nonfunctional nonstructural protein 1 (NS1) gene, complete sequence
 gi|211996961|gb|FJ432782| /Avian/8 (NS)/H1N1/Italy/2003/// Influenza A virus (A/goose/Italy/296426/2003(H1N1)) segment 8 nuclear export protein (NEP) and nonstructural protein 1 (NS1) genes, complete cds
 gi|324765|gb|M55484| /Swine/8 (NS)/H1N1/Germany/1981/// Influenza A virus (A/swine/Germany/2/1981(H1N1)) nonstructural protein 2 and nonstructural protein 1, complete cds
 gi|438091|gb|Z26863| /Avian/8 (NS)/H1N1/Germany/1991/// Influenza A virus(A/turkey/Germany/3/91(H1N1)) NS1 and NS2 genes for nonstructural proteins
 gi|438097|gb|Z26865| /Swine/8 (NS)/H1N1/Germany/1991/// Influenza A virus(A/swine/Germany/8533/91(H1N1)) NS1 and NS2 genes for nonstructural proteins
 gi|438100|gb|Z26866| /Swine/8 (NS)/H1N1/Netherlands/1980/// Influenza A virus(A/swine/Netherlands/25/80(H1N1)) NS1 and NS2 genes for nonstructural proteins

Swine, NA, 28 sequences

 gi|149785313|gb|CY022321| /Swine/8 (NS)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/1/1985(H1N1)) segment 8, complete sequence
 gi|149785264|gb|CY022329| /Swine/8 (NS)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/3/1985(H1N1)) segment 8, complete sequence
 gi|149785191|gb|CY022337| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) segment 8, complete sequence
 gi|149785133|gb|CY022433| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 8, complete sequence
 gi|149785060|gb|CY022473| /Swine/8 (NS)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3228/1987(H1N1)) segment 8, complete sequence
 gi|149784980|gb|CY022481| /Swine/8 (NS)/H1N1/USA/1991/// Influenza A virus (A/swine/Maryland/23239/1991(H1N1)) segment 8, complete sequence
 gi|152963537|gb|CY022974| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/31483/1988(H1N1)) segment 8, complete sequence
 gi|156536567|gb|CY024929| /Human/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/Ohio/3559/1988(H1N1)) segment 8, complete sequence
 gi|156536603|gb|CY025014| /Swine/8 (NS)/H1N1/USA/1987/// Influenza A virus (A/swine/Kansas/3024/1987(H1N1)) segment 8, complete sequence
 gi|158525304|gb|CY027159| /Swine/8 (NS)/H1N1/USA/1991/// Influenza A virus (A/swine/Iowa/24297/1991(H1N1)) segment 8, complete sequence
 gi|158958066|gb|CY027511| /Swine/8 (NS)/H1N1/USA/1985/// Influenza A virus (A/swine/Iowa/2/1985(H1N1)) segment 8, complete sequence
 gi|166203497|gb|CY028784| /Swine/8 (NS)/H1N1/USA/1991/// Influenza A virus (A/swine/California/T9001707/1991(H1N1)) segment 8, complete sequence
 gi|208400887|gb|CY035074| /Swine/8 (NS)/H1N1/USA/1990/// Influenza A virus (A/swine/Memphis/1/1990(H1N1)) segment 8, complete sequence
 gi|229807661|gb|CY039921| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A Virus (A/swine/Wisconsin/1915/1988(H1N1)) segment 8, complete sequence
 gi|229809521|gb|CY039929| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A Virus (A/swine/Indiana/1726/1988(H1N1)) segment 8, complete sequence
 gi|117935808|gb|EF101751| /Human/8 (NS)/H1N1/Thailand/2005/07/14/ Influenza A virus

(A/Thailand/271/2005(H1N1)) nonstructural protein 1 gene, complete cds
gi|162414474|gb|EU143269| /Swine/8 (NS)/H3N2/Thailand/2004/// Influenza A virus (A/swine/Thailand/KU7-2/2004(H3N2)) NS1 gene, complete cds
gi|189313204|gb|EU735790| /Avian/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/19762/1988(H1N1)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.
gi|193877856|gb|EU743155| /Avian/8 (NS)/H1N1/USA/1990/// Influenza A virus (A/turkey/IA/10271-3/1990(H1N1)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.
gi|193877838|gb|EU743163| /Avian/8 (NS)/H1N1/USA/1992/// Influenza A virus (A/turkey/IA/21089-3/1992(H1N1)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.
gi|190403924|gb|EU798873| /Swine/8 (NS)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY04/2007(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds
gi|190403927|gb|EU798874| /Swine/8 (NS)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY05/2007(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds
gi|190403933|gb|EU798876| /Swine/8 (NS)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY09/2007(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds
gi|209164826|gb|FJ357108| /Avian/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/turkey/NC/17026/1988(H1N1)) segment 8 nuclear export protein (NEP) and nonstructural protein 1 (NS1) genes, complete cds
gi|348810|gb|M80964| /Swine/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/swine/Iowa/17672/1988(H1N1)) nonstructural protein gene, complete cds
gi|348830|gb|M80974| /Human/8 (NS)/H1N1/USA/1988/// Influenza A virus (A/Wisconsin/3523/1988(H1N1)) nonstructural protein gene, complete cds
gi|1399618|gb|U53170| /Human/8 (NS)/H1N1/USA/1994/// Influenza A virus (A/WI/4754/1994(H1N1)) NS (NS) mRNA, complete cds
gi|1399620|gb|U53171| /Human/8 (NS)/H1N1/USA/1994/// Influenza A virus (A/WI/4755/1994(H1N1)) NS (NS) mRNA, complete cds

Swine, NA, 79 sequences

gi|5764379|gb|AF153261| /Swine/8 (NS)/H3N2/USA/1998/// Influenza A virus (A/Swine/Texas/4199-2/98 (H3N2)) segment 8 NS1 and NS2 genes, complete cds.
gi|5764382|gb|AF153262| /Swine/8 (NS)/H3N2/USA/1998/// Influenza A virus (A/Swine/Minnesota/9088-2/98 (H3N2)) segment 8 NS1 and NS2 genes, complete cds.
gi|5764385|gb|AF153263| /Swine/8 (NS)/H3N2/USA/1998/// Influenza A virus (A/Swine/Iowa/8548-1/98) segment 8 NS1 and NS2 genes, complete cds.
gi|8515431|gb|AF250128| /Swine/8 (NS)/H1N2/USA/1999/// Influenza A virus (A/Swine/Indiana/9K035/99 (H1N2)) NS1 and NS2 genes, complete cds.
gi|9887139|gb|AF251408| /Swine/8 (NS)/H3N2/USA/1998/// Influenza A virus (A/Swine/Nebraska/209/98 (H3N2)) nonstructural protein (NS) gene, complete cds, alternatively spliced.
gi|9887156|gb|AF251416| /Swine/8 (NS)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/533/99 (H3N2)) nonstructural protein (NS) gene, complete cds, alternatively spliced.
gi|9887173|gb|AF251424| /Swine/8 (NS)/H3N2/USA/1999/// Influenza A virus (A/Swine/Iowa/569/99 (H3N2)) nonstructural protein (NS) gene, complete cds, alternatively spliced.
gi|9887190|gb|AF251432| /Swine/8 (NS)/H3N2/USA/1999/// Influenza A virus (A/Swine/Minnesota/593/99 (H3N2)) nonstructural protein (NS) gene, complete cds, alternatively spliced.
gi|29539569|gb|AF342817| /Human/8 (NS)/H1N1/USA/1998/// Influenza A virus (A/Wisconsin/10/98 (H1N1)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds
gi|19422140|gb|AF455707| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/Ohio/891/01(H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.
gi|19422143|gb|AF455708| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/98225/01(H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19422146|gb|AF455709| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/North Carolina/93523/01 (H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19422149|gb|AF455710| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/Swine/Minnesota/55551/00 (H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds

gi|19422152|gb|AF455711| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/Iowa/930/01(H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19422155|gb|AF455712| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/Swine/Indiana/P12439/00 (H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19422158|gb|AF455713| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100085A/01 (H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19422161|gb|AF455714| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/Swine/Illinois/100084/01 (H1N2)) nonstructural protein 1 and nonstructural protein 2 genes, complete cds.

gi|19848301|gb|AY038021| /Avian/8 (NS)/H1N2/USA/1999/// Influenza A virus (A/Turkey/MO/24093/99(H1N2)) nonstructural protein (NS) gene, complete cds, alternatively spliced

gi|17224042|gb|AY060129| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/SW/MN/3327/00(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224044|gb|AY060130| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/22860-T/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224046|gb|AY060131| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/22860-S/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224050|gb|AY060133| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/SW/KS/13481-T/00(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224052|gb|AY060134| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/SW/KS/13481-S/00(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224054|gb|AY060135| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/IN/14810-T/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224056|gb|AY060136| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/IN/14810-S/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224060|gb|AY060138| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/16419/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224068|gb|AY060142| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/23124-T/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224070|gb|AY060143| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/MN/23124-S/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224076|gb|AY060146| /Swine/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/SW/NE/18339/01(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224078|gb|AY060147| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/SW/MN/13130/00(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224080|gb|AY060148| /Swine/8 (NS)/H1N2/USA/2000/// Influenza A virus (A/SW/OH/7802/00(H1N2)) nonstructural protein (NS) gene, complete cds

gi|17224082|gb|AY060149| /Swine/8 (NS)/H1N2/USA/1999/// Influenza A virus (A/SW/NC/45319/99(H1N2)) nonstructural protein (NS) gene, complete cds

gi|24286081|gb|AY129160| /Swine/8 (NS)/H1N2/South Korea/2002/// Influenza A virus (A/Swine/Korea/CY02/02(H1N2)) nonstructural protein (NS) mRNA, complete cds

gi|30522960|gb|AY233390| /Avian/8 (NS)/H1N2/USA/2001/// Influenza A virus (A/duck/NC/91347/01(H1N2)) nonstructural protein 1 (NS1) and nonstructural protein 2 (NS2) genes, complete cds

gi|56159984|gb|AY779259| /Avian/8 (NS)/H3N2/USA/2003/// Influenza A virus (A/turkey/North Carolina/12344/03(H3N2)) nonstructural protein 2 and nonstructural protein 1 (NS) gene, complete cds

gi|56159987|gb|AY779260| /Avian/8 (NS)/H3N2/USA/2003/// Influenza A virus (A/turkey/Minnesota/764-2/03(H3N2)) nonstructural protein 2 and nonstructural protein 1 (NS) gene, complete cds

gi|76574385|gb|DQ145543| /Swine/8 (NS)/H3N1/USA/2004/// Influenza A virus (A/swine/Minnesota/00395/2004(H3N1)) NS1 gene, complete cds

gi|75756557|gb|DQ150429| /Swine/8 (NS)/H3N1/USA/2004/// Influenza A virus (A/swine/MI/PU243/04 (H3N1)) nonstructural protein (NS1) gene, complete cds.

gi|75756573|gb|DQ150437| /Swine/8 (NS)/H3N1/USA/2004/// Influenza A virus (A/swine/IN/PU542/04 (H3N1)) nonstructural protein (NS1) gene, complete cds.

gi|84626343|gb|DQ335775| /Avian/8 (NS)/H3N2/USA/2004/// Influenza A virus (A/turkey/Ohio/313053/04(H3N2)) nonstructural protein (NS) gene, complete cds

gi|94404637|gb|DQ469958| /Human/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/Ontario/RV1273/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|94404640|gb|DQ469966| /Swine/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/swine/Alberta/14722/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|94404643|gb|DQ469974| /Swine/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/swine/British Columbia/28103/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|94404646|gb|DQ469982| /Swine/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/swine/Manitoba/12707/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|94404649|gb|DQ469990| /Swine/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/swine/Ontario/33853/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|94404652|gb|DQ469998| /Avian/8 (NS)/H3N2/Canada/2005/// Influenza A virus (A/turkey/Ontario/31232/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|109501343|gb|DQ666937| /Swine/8 (NS)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/S11/2005(H1N2)) segment 8 nonstructural protein 1 gene, complete cds.

gi|112456217|gb|DQ889685| /Human/8 (NS)/H1N1/USA/2005/// Influenza A virus (A/Iowa/CEID23/2005(H1N1)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|114215312|gb|DQ923514| /Swine/8 (NS)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ72-1/2006(H3N1)) nonstructural protein (NS) gene, complete cds

gi|114215314|gb|DQ923515| /Swine/8 (NS)/H3N1/South Korea/2006/// Influenza A virus (A/swine/Korea/CN22/2006(H3N1)) nonstructural protein (NS) gene, complete cds

gi|146454456|gb|EF551049| /Avian/8 (NS)/H3N2/USA/2004/// Influenza A virus (A/turkey/Illinois/2004(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|146454474|gb|EF551057| /Swine/8 (NS)/H3N2/USA/2003/// Influenza A virus (A/swine/North Carolina/2003(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|151175874|gb|EU015988| /Swine/8 (NS)/H1N2/China/2006/// Influenza A virus (A/swine/Guangxi/13/2006(H1N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|187763988|gb|EU697208| /Avian/8 (NS)/H3N2/USA/2005/// Influenza A virus (A/turkey/Minnesota/366767/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|189313128|gb|EU735822| /Avian/8 (NS)/H3N2/USA/2004/// Influenza A virus (A/turkey/OH/313053/2004(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|189313109|gb|EU735830| /Avian/8 (NS)/H3N2/USA/2005/// Influenza A virus (A/turkey/NC/353568/2005(H3N2)) nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|193877745|gb|EU743214| /Avian/8 (NS)/H3N2/USA/2005/// Influenza A virus (A/turkey/MN/366767/2005(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|190403879|gb|EU798858| /Swine/8 (NS)/H1N1/South Korea/2004/// Influenza A virus (A/swine/Korea/CAN01/2004(H1N1)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403882|gb|EU798859| /Swine/8 (NS)/H1N1/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS08/2005(H1N1)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403885|gb|EU798860| /Swine/8 (NS)/H1N2/South Korea/2004/// Influenza A virus (A/swine/Korea/Hongsong2/2004(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403888|gb|EU798861| /Swine/8 (NS)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL01/2005(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes,

complete cds

gi|190403891|gb|EU798862| /Swine/8 (NS)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL02/2005(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403894|gb|EU798863| /Swine/8 (NS)/H1N2/South Korea/2005/// Influenza A virus (A/swine/Korea/JL04/2005(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403897|gb|EU798864| /Swine/8 (NS)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/Asan04/2006(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403900|gb|EU798865| /Swine/8 (NS)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ4/2006(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403903|gb|EU798866| /Swine/8 (NS)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ7/2006(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403906|gb|EU798867| /Swine/8 (NS)/H1N2/South Korea/2006/// Influenza A virus (A/swine/Korea/PZ14/2006(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403909|gb|EU798868| /Swine/8 (NS)/H1N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY08/2007(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403912|gb|EU798869| /Swine/8 (NS)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/CAS05/2004(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403915|gb|EU798870| /Swine/8 (NS)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAN04/2005(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403918|gb|EU798871| /Swine/8 (NS)/H3N2/South Korea/2005/// Influenza A virus (A/swine/Korea/CAS07/2005(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403921|gb|EU798872| /Swine/8 (NS)/H3N2/South Korea/2006/// Influenza A virus (A/swine/Korea/CAS09/2006(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403930|gb|EU798875| /Swine/8 (NS)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY07/2007(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|190403936|gb|EU798877| /Swine/8 (NS)/H3N2/South Korea/2007/// Influenza A virus (A/swine/Korea/CY10/2007(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|192382748|gb|EU826547| /Swine/8 (NS)/H3N2/Canada/2005/07/12/ Influenza A virus (A/swine/Quebec/4001/2005(H3N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds

gi|193245821|gb|EU850623| /Swine/8 (NS)/H1N2/China/2005/// Influenza A virus (A/swine/Guangxi/17/2005(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|193245829|gb|EU850626| /Swine/8 (NS)/H1N2/China/2005/// Influenza A virus (A/swine/Hainan/1/2005(H1N2)) segment 8 nonstructural protein 2 (NS2) and nonstructural protein 1 (NS1) genes, complete cds.

gi|209486615|gb|FJ374516| /Swine/8 (NS)/H1N2/China/2007/03/24/ Influenza A virus (A/swine/Shanghai/1/2007(H1N2)) segment 8 nuclear export protein (NEP) and nonstructural protein 1 (NS1) genes, complete cds

gi|227977110|gb|FJ969514| /Human/8 (NS)/H1N1/USA/2009/04/01/ Influenza A virus (A/California/04/2009(H1N1)) segment 8 nuclear export protein (NEP) and nonstructural protein 1 (NS1) genes, complete cds

Swine, South Korea, 6 sequences

gi|198387443|gb|EU301177| /Swine/1 (PB2)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) polymerase PB2 (PB2) gene, complete cds
gi|166080176|gb|EU301209| /Swine/4 (HA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) hemagglutinin (HA) gene, complete cds.
gi|167996848|gb|EU301273| /Swine/6 (NA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) segment 6 neuraminidase (NA) gene, complete cds
gi|198387445|gb|EU301304| /Swine/5 (NP)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) nucleoprotein (NP) gene, complete cds.
gi|198387447|gb|EU301368| /Swine/3 (PA)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) polymerase PA (PA) gene, complete cds.
gi|198387449|gb|EU301400| /Swine/2 (PB1)/H3N2/South Korea/2004/// Influenza A virus (A/swine/Korea/JNS06/2004(H3N2)) polymerase PB1 (PB1) gene, complete cds