



เอกสารอ้างอิง

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ภาคผนวก

ภาคผนวก ก

รายละเอียดรหัสพันธุกรรมของไวรัสไข้หวัดใหญ่ สายพันธุ์ H7N1 จำนวน 1 ตัวอย่าง
(จำนวน 8 สายพันธุกรรม)

รหัสพันธุกรรมอยู่ในรูปแบบที่พร้อมจะส่งไปยังฐานข้อมูล GenBank

ยีน HA ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

LOCUS HA-J2882 1284 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 4 HA gene for hemagglutinin, partial cds.

ACCESSION

VERSION

KEYWORDS

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

Unclassified.

REFERENCE

1 (bases 1 to 1284)

AUTHORS Wongphatcharachai, M., Thanawongnuwech, R., Suradhat, S., Tantilertchareon, R., Lapkuntod, J. and Amonsin, A.

TITLE Surveillance of influenza A viruses from Quail in Thailand

JOURNAL

Unpublished

REFERENCE

2 (bases 1 to 1284)

AUTHORS Wongphatcharachai, M., Thanawongnuwech, R., Suradhat, S., Tantilertchareon, R., Lapkuntod, J. and Amonsin, A.

TITLE Direct Submission

JOURNAL

Submitted (02-OCT-2010) Department of Veterinary Public Health, Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330, Thailand

FEATURES

Location/Qualifiers

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ยีน NA ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

LOCUS NA-J2882 1355 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 6 NA
 gene for neuraminidase, partial cds.

ACCESSION

VERSION

KEYWORDS .

SOURCE

ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

Unclassified.

REFERENCE

1 (bases 1 to 1355)

AUTHORS

Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,

Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE

Surveillance of influenza A viruses from Quail in Thailand

JOURNAL

Unpublished

REFERENCE

2 (bases 1 to 1355)

AUTHORS

Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,

Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE

Direct Submission

JOURNAL

Submitted (02-OCT-2010) Department of Veterinary Public Health,

Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,

Thailand

FEATURES

source

Location/Qualifiers

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ยีน PB2 (incompleted) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

LOCUS PB2-J2882 647 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 1
 PB2 gene for polymerase PB2, partial cds.

ACCESSION
 VERSION
 KEYWORDS .

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 Unclassified.

REFERENCE 1 (bases 1 to 647)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Surveillance of influenza A viruses from Quail in Thailand
 JOURNAL Unpublished

REFERENCE 2 (bases 1 to 647)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Direct Submission
 JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health,
 Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,
 Thailand

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 /segment="PB2"
 /country="Thailand"
 /note="Ayutthaya province"

gene 1..647
 /gene="PB2"

CDS <1..>645
 /gene="PB2"
 /codon_start=1
 /product="polymerase PB2"
 /translation="YGPESVLVNTYQWII RNWETVKIQWSQDPTMLYNKMEFEPFQSL
 VPKAARGQYSGFVRTLFQQMRDVLGTFDVTQIIKLLPFAAAPPEQSRMQFSSLTVNVR
 GSGMRI LVRGNSPVFNYNKATKRLTVLGKDAGALTEPDEGTAGVESAVLRGFLILGK
 EDKRYGPALSINELSNLAKGEKANVLIGQGDVVLVMMKRKRDSILTDSSQTATKRI"

BASE COUNT 202 a 123 c 173 g 149 t

ORIGIN
 1 tacggctctg agtcagtgtg tgtaaacact tatcaatgga tcatcagaaa ttgggagact
 61 gtgaagattc aatgggtctca agaccctacg atgttgtata ataagatgga gtttgaaccg
 121 ttccaatcct tggtagctaa agctgctaga ggtcaataca gtggatttgt gagaacacta
 181 ttccaacaaa tgcgtgacgt actggggaca tttgatacag ttcagataat aaagctgcta
 241 ccatttgcag cagccccacc ggagcagagc aggatgcagt tttcttctct gactgtgaat
 301 gtgagaggct caggaatgag aatactcgta aggggcaact ccctgtatt caactacaat
 361 aaggcaacca aaaggcttac tgttcttggg aaggatgcag gtgcattaac ggaggatcca
 421 gatgagggaa cagccggagt ggaatctgca gtactgaggg gattcttaat tctaggcaag
 481 gaggacaaaa gatacggacc agcattgagc atcaatgaac tgagcaatct tgcgaaaggg
 541 gagaaagcta atgtgctgat agggcaagga gacgtggtgt tggatgtaa acggaacgg
 601 gactctagca tacttactga cagccagaca gcgacaaaa gaattcg

//

ยีน PB1 (incompleted) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1)

LOCUS PB1-J2882 753 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 2
 PB1 gene for polymerase PB1, partial cds.

ACCESSION

VERSION

KEYWORDS .

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

Unclassified.

REFERENCE 1 (bases 1 to 753)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Surveillance of influenza A viruses from Quail in Thailand

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 753)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Direct Submission

JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health,
Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,
Thailand

FEATURES

source Location/Qualifiers

1..753

/organism="Influenza A virus

(A/Quail/Ayutthaya/CU-J2882/2009(H7N1))"

/mol_type="mRNA"

/strain="A/Quail/Ayutthaya/CU-J2882/2009(H7N1)"

/serotype="H7N1"

/specific_host="quail"

/segment="PB1"

/country="Thailand"

/note="Ayutthaya province"

gene

1..753

/gene="PB1"

CDS

<3..>752

/gene="PB1"

/codon_start=1

/product="polymerase PB1"

/translation="NFSMELPSFGVSGINESADMSIGVTVIKNNMINNDLGPATAQMA

LQLFIKDYRYTYRCHRGDTQIQTRRSFELRKLWEQTRSKAGLLVSDGGPNLYNIRNLH

IPEVCLKWELMDEDYQGRLCNPLNPFVSHKEIESVNNNAVMPAHGPAKSMEYDAVATT

HSWIPKRNRSILNTSQRGILEDEQMQKCCNLFKFFPSSSYRRPVGISSMVEAMVSR

ARIDARIDFESGRKKEEFAEIMKICSTIEEL"

BASE COUNT 232 a 157 c 187 g 177 t

ORIGIN

```

1 ccaatttcag tatggagtta cccagcttg gagtgtctgg aatcaatgaa tcggctgaca
61 tgagcattgg agttacagtg ataaagaaca atatgataaa caacgacctt ggaccagcaa
121 cagctcagat ggctcttcag ctattcatca aggactatag gtacacatac cgatgccaca
181 ggggtgatac acaaattcaa acgaggagat cattcgagct gaggaagctg tgggagcaga
241 cccgttcaaa ggcagggctg ttggtatcag acggaggacc aaatctatac aacattcgga
301 atctccacat cccagaggtc tgcttgaat gggaactgat ggatgaagat tacciaaggca
361 ggctgtgtaa tcctctgaat cggtttgc gtcataagga aattgagtct gtaaacaatg
421 ctgtagtaat gccagccac ggcccagcca agagcatgga atatgatgct gttgcaacta
481 cacactcatg gatccctaag aggaaccgtt ctattctcaa taccagccaa aggggaattc
541 ttgaggatga gcaaatgtac cagaagtgtt gcaatctatt cgagaaattc ttcccagta
601 gttcatacag gaggccagtt ggaattcca gcatggtgga ggccatggtg tctagggccc
661 gaattgatgc acgcattgat ttcgaatctg gaaggattaa gaaagaagag ttcgctgaga
721 tcatgaagat ctgttccacc attgaagaac tca

```

//

ยีน PA (incompleted) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

LOCUS PA-J2882 471 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 3 PA
 gene for polymerase PA, partial cds.

ACCESSION

VERSION

KEYWORDS

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 Unclassified.

REFERENCE 1 (bases 1 to 471)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Surveillance of influenza A viruses from Quail in Thailand

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 471)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Direct Submission

JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health,
 Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,
 Thailand

FEATURES

source

Location/Qualifiers

1..471

/organism="Influenza A virus

(A/Quail/Ayutthaya/CU-J2882/2009(H7N1))"

/mol_type="mRNA"

/strain="A/Quail/Ayutthaya/CU-J2882/2009(H7N1)"

/serotype="H7N1"

/specific_host="quail"

/segment="PA"

/country="Thailand"

/note="Ayutthaya province"

gene

1..471

/gene="PA"

CDS

1..429

/gene="PA"

/codon_start=1

/product="polymerase PB1"

/translation="MKWGMEMRRCLLQSLQQIESMIEAESSVKEKDMTKEFFENKSET

WPIGESPKGVEEGSIGKVCRTLLAKSVFNLSYASPLQLEGFSAESRKLIVQALRDNL

EPGTFDLGGLYEAIIECLINDPWVLLNASWFNSFLTHALK"

.BASE COUNT 142 a 99 c 109 g 121 t

ORIGIN

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1 atgaaatggg gcatggaat gaggcgatgc cttcttcaat cccttcaaca aattgagagc
61 atgattgagg ccgagtcttc tgtcaagag aaagacatga ccaaagaatt cttgagAAC
121 aatcagaaa catggccaat tggagaatca cccaaaggag tggaggaagg ctccattggg
181 aaggtgtgcc gaacattact agcaaaatct gtattcaaca gcctatatgc atctccacaa
241 ctcgaggggt tttcagctga atcaagaaaa ttgcttctca ttgttcaggc acttagggac
301 aacctggaac ctgggacctt cgatcttggg gggctatatg aagcaattga ggagtgacctg
361 attaacgatc cctgggtttt gcttaatgcg tcttggttca actccttctc cacacatgca
421 ctgaaatagt tgtggcaatg ctactatttg ctatccatac tgtccaaaaa a

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ยีน NP (incompleted) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1)

LOCUS NP-J2882 873 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 5 NP gene for nucleocapsid protein, partial cds.

ACCESSION

VERSION

KEYWORDS

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))

ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
Unclassified.

REFERENCE 1 (bases 1 to 873)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Surveillance of influenza A viruses from Quail in Thailand

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 873)

AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.

TITLE Direct Submission

JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health,
Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,
Thailand

FEATURES

source

Location/Qualifiers

1..873

/organism="Influenza A virus

(A/Quail/Ayutthaya/CU-J2882/2009(H7N1))"

/mol_type="mRNA"

/strain="A/Quail/Ayutthaya/CU-J2882/2009(H7N1)"

/serotype="H7N1"

/specific_host="quail"

/segment="NP"

/country="Thailand"

/note="Ayutthaya province"

gene

1..873

/gene="NP"

CDS

<2..>871

/gene="NP"

/codon_start=1

/product="nucleocapsid protein"

/translation="FWRGENGRRTRIAYERMCNILKGFQTAQRAMMDQVRESRNP
 NAEIEDLIFLARSALILRGSVAHKSCLPACVYGLAVASGYDFEREGYSLVGDIPFRLL
 QNSQVFSILIRPNENPAHKSQLVWMACHSAFEDLRVSSFIRGTRVVPRLGQVQI
 ASNENMETMDSSTLELRSRYWAIIRTRSGGNTNQQRASAGQISVQPTFSVQRNLPFERA
 TIMAAFTGNTEGRTSDMRTEIIRMMESARPEVVSFQGRGVFELSDEKATNPVPSFDM
 SNEGSYFFGDNAEE"

BASE COUNT 277 a 186 c 225 g 185 t

ORIGIN

```

1 tttctggaga ggcgaaaatg gacgaaggac aaggattgca tatgagagaa tgtgcaacat
61 cctcaaaggg aaattccaaa cagcagcaca aagagcaatg atggaccagg tgcgagaaaag
121 caggaatcct ggaatgctg aaattgagga tctcatcttc ctggcaccgt ctgcactcat
181 cctgagagga tcagtgccc ataagtctct cttgcctgct tgtgtgtacg gacttgacgt
241 agccagtgga tacgactttg agagagaagg atactctcta gttggaatag atcctttccg
301 tttgcttcaa aacagcccagg tcttcagtct cattagacc aatgagaacc cagcacacaa
361 gagtcaattg gtgtggatgg catgccattc tgcagcattc gaagacctga gactctcaag
421 cttcatcaga ggaacaagag tggtcacaag aggacaacta tccaccagag gacttcaaat
481 tgcttcaaac gagaatatgg aaacaatgga ctctagcact cttgactga ggagcagata
541 ttggctata agaaccagaa gtggaggaaa caccaaccaa cagagagcat ctgcaggaca
601 aatcagtgtg cagcccactt tctcagtaca gagaaatctt cccttcgaaa gagcgaccat
661 tatggcagcg ttcacagga atactgaagg tagaacatca gacatgagga ctgaaatcat
721 aagaatgatg gaaagtgcc aaccagaaga tgtgtctttc cagggcgagg gagtcttcga
781 gctctcggac gaaaaggcaa cgaaccgat cgtgccttcc ttgacatga gtaatgaagg
841 atcttatttc ttcggagaca atgcagagga gta

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ยีน M (completed) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1)

LOCUS M-J2882 988 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 7 M
 gene for matrix protein 2 (M2), partial cds; and matrix protein 1
 (M1), partial cds.

ACCESSION
 VERSION
 KEYWORDS .

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 Unclassified.

REFERENCE 1 (bases 1 to 988)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Surveillance of influenza A viruses from Quail in Thailand
 JOURNAL Unpublished

REFERENCE 2 (bases 1 to 988)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S.,
 Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Direct Submission
 JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health,
 Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330,
 Thailand

FEATURES Location/Qualifiers
 source 1..988
 /organism="Influenza A virus
 (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))"
 /mol_type="mRNA"
 /strain="A/Quail/Ayutthaya/CU-J2882/2009(H7N1)"
 /serotype="H7N1"
 /specific_host="quail"
 /segment="M"
 /country="Thailand"
 /note="Ayutthaya province"
 gene 29..986
 /gene="M2"
 CDS join(29..51,740..>986)
 /gene="M2"
 /note="'[product=matrix protein2]'"
 /codon_start=1
 /translation="MSLLTEVDRPTRNGWECKCSDSSDPLVIAASIIGILHLILWILD
 RLFFKCIYRRLKYGLKRGPSSTEGVPESMREEYRQNSRVLWMLTMVI"
 gene 29..787
 /gene="M1"
 CDS 29..787
 /gene="M1"
 /note="'[product=matrix protein1]'"
 /codon_start=1
 /translation="MSLLTEVETYVLSIVPSGPLKAEIAQRLEDVFAGKNTDLEALME
 WLKTRPILSPLTKGILGFVFTLTVPSEGLQRRRFVQNALNGNDPNNMDRAVKLYRK
 LKREITFHGAKEVALSYSTGALASCMGLIYNRMGTVTTEVAFLVCATCEQIADSQHR
 SHRQMITTTNPLIRHENRMVLASTTAKAMEQMAGSSEQAAEAMEVASQARQMVQAMRT
 IGHPSASSAGLKDDLLLENLQAYQKRMGVQMQRFK"

BASE COUNT 272 a 214 c 273 g 229 t
 ORIGIN
 1 ggagcaaaaa acaggtagat gttgaaagat gagtcttcta accgaggtcg aaacgtacgt
 61 tctctctatc gtccccgcag gccccctcaa agccgagatc gcgcagagac ttgaagatgt
 121 ctttgcaggg aagaacaccg atcttgaggc tctcatggaa tggctaaaga caagaccaat
 181 cctgtcacct ctgactaagg ggattttagg gtttggttc acgctaccg tgcccagtga
 241 gcgaggactg cagcgtagac gctttgtcca aaatgcccta aatgggaatg gagacccaaa
 301 caacatggac agagcagtca aactgtacag gaagttgaaa agagagataa cattccatgg
 361 ggctaaggaa gttgactca gctactcaac cgggtgactt gccagttgta tgggtctcat
 421 atacaacagg atgggaacag tgaccacaga agtggctttt ggcctagtgt gtgccactg
 481 tgagcagatt gctgattcac agcatcggtc ccacaggcag atgataacta ccaccaaccc
 541 actaatcagg catgaaaaca ggatggtgct agccagcact acggctaagg ctatggagca
 601 gatggctygg tcgagtgagc aggcagcgga agccatggag gttgctagtc aggctaggca

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661 gatggtgcag gcgatgagga caattggaac tcaccctagc tccagtgccg gctgaaaga
721 tgatcttctt gaaaatttgc aggcctacca gaaacggatg ggagtgc aaa tgcagcgatt
781 caagtgatcc tctcgttatt gccgcaagta tcattgggat cttgcacttg atattgtgga
841 ttcttgatcg tcttttcttc aaatgtattt atcgtcgct taaatacgg tggaaaagag
901 ggccttctac ggaaggagtg cctgagtcta tgaggggaaga gtatcggcag aacagcagag
961 tgctgtggat gttgacgatg gtcatttt
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ยีน NS (completed) ของเชื้อไวรัส A/Quail/Ayutthaya/CU-J2882/2009(H7N1)

LOCUS NS-J2882 855 bp mRNA linear 02-OCT-2010
 DEFINITION Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1)) segment 8 nonstructural protein 2 (NS2) gene, partial cds; and nonstructural protein 1 (NS1) gene, partial cds.

ACCESSION
 VERSION
 KEYWORDS .

SOURCE Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 ORGANISM Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))
 Unclassified.

REFERENCE 1 (bases 1 to 855)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S., Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Surveillance of influenza A viruses from Quail in Thailand
 JOURNAL Unpublished

REFERENCE 2 (bases 1 to 855)
 AUTHORS Wongphatcharachai,M., Thanawongnuwech,R., Suradhat,S., Tantilertchareon,R., Lapkuntod,J. and Amonsin,A.
 TITLE Direct Submission
 JOURNAL Submitted (02-OCT-2010) Department of Veterinary Public Health, Chulalongkorn University, Rama 4 Rd. Pathumwan, Bangkok 10330, Thailand

FEATURES
 source Location/Qualifiers
 1..855
 /organism="Influenza A virus (A/Quail/Ayutthaya/CU-J2882/2009(H7N1))"
 /mol_type="mRNA"
 /strain="A/Quail/Ayutthaya/CU-J2882/2009(H7N1)"
 /serotype="H7N1"
 /specific_host="quail"
 /segment="NS"
 /country="Thailand"
 /note="Uthaithani province"

gene 27..855
 /gene="NS2"

CDS join(27..56,514..>855)
 /gene="NS2"
 /note="'[product=nonstructural protein 2]'"
 /codon_start=1
 /translation="MDSNTVSSFQYLLFQDILMRMSKMLGSSSEDLNGMITQFESLKLYRDSLGEAVMRMGDLHSLQSRNGKWREQLSQKFEEIRWLEIEVRHRLKITENSFEQITFMQALQLLEVEQEIRTFSPH"

gene 27..719
 /gene="NS1"

CDS 27..719
 /gene="NS1"
 /note="'[product=nonstructural protein 1]'"
 /codon_start=1
 /translation="MDSNTVSSFQVDCFVHVRKRFADQELGDAPFLDRLRRDQKSLRGRGSTLGLDIETATRAGKQIVERILEEESDEALKMTIASVPASRYLTDMTLEEMSRDWFMLMPKQKVAGSLCIRMDQAIMDKNIILKANFVIFDRLETLILLRAFTEEGAIVGEISPLPSLPGHTDEDVKNAIGVLIGGLEWNDNTVRVSETLQRFARSSNEDGRPPLPPKQKRKMARTIESEV"

BASE COUNT 273 a 175 c 211 g 196 t

ORIGIN
 1 gcgaaaggca gggtgacaaa aacataatgg actccaacac tgtgtcaagc ttcaggtg
 61 actgctttct ttggcatgtc cgaaaacgat ttgcagacca agaactgggt gatgccccat
 121 tccttgaccg gcttcgccga gatcagaagt ccctaagggg aagaggcagc actcttggtc
 181 tggacatcga gacggctacc cgtgcgggaa agcagatagt ggagcggatt ctagaagaag
 241 aatctgatga ggcacttaaa atgactattg cttcagtgcc ggcttcacgc tacctaactg
 301 acatgactct tgaagagatg tcaagggact ggttcatgct catgcctaaa cagaaagtag
 361 caggttcctt ttgcatcaga atggaccagg caataatgga taaaaacatc atattgaaag
 421 caaacttcag tgtgattttt gaccgactgg agaccctaat actactaga gctttcacag
 481 aagaaggagc aattgtggga gaaatctcac cgttaccttc tcttccagga catactgatg
 541 aggatgtcaa aaatgcaatt ggggtcctca tcggaggact tgaatggaat gataacacag

601 ttcgagtctc tgaaactcta cagagattcg cttggagaag cagtaatgag gatgggagac
661 ctccactccc tccaaagcag aaacggaaaa tggcgagaac aattgagtca gaagtttgaa
721 gaaataagat ggctgattga agaagtgcga catagattga aatcacaga aaacagcttc
781 gaacagataa cgtttatgca agccttataa ctattgcttg aagtggagca agagataaga
841 actttctcgt ttcac

//



