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. - 2013. - .1, .2 - . 213-215

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NP

NP

de novo.

NP

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1998 .

Avulavirus

Paramyxoviridae.

1 (-1).

avian parainfluenza virus type 1,

Newcastle disease virus (NDV),
avian paramyxovirus type 1 (APMV1).

F

I

II, III IV

(1920-1950).

VI V

- 1960-1970 . VIb

1980 . VII VIII

1980-1990 .

IX

2003, 2004, 2005 .

1998, 2000, 2001,
VIIb VIIId.

Genbank.

NP

China_VII_ABG561, Sweden_VIIb_ADM4,

Pakistan_VII_AEX, China_VII_AEY801, China_VII_AEY850, Netherlands_VIIa,
SA_VIId_AEZ00714, China_IX_ACK5749, China_IX_ACK5750,
China_VI_2376877 AlignX.

NP.

NP

MSSVFDEYEQLLAAQTRPNGTHGGGEEKGSTLKVEVPVFTLNSDDPEDR
WNFAVFCLRIAVSEDANKPLRQGALISLLCSHSQVMRNHVALAGKQNEATLA
VLEIDGFTNSVPQFNNRSGVSEERAQRFMVIAGSLPRACSNNGTPFVTAGVEDD
APEDITDTLERILSIQAQVWVTVAKAMTAYETADESETRRINKYMQQGRVQK
KYILHPVCRSAIQLTIRHSLAVRIFLVSELKRGRNTAGGSSTYYNLVGDVDSYI
RNTGLTAFFLTLYGINTKTSALALSSLTGDIQKMKQLMRLYRMKGENAPYM
TLLGDSQMSFAPAAYAQLYSFAMGMASVLDKGTGKYQFARDFMSTSFWR
GVEYAQAQGSINEDMAAELKLTPAARRGLAAAAQRVSEEIGSMDIPTQQAG
VLTGLSDEGPRAPQGGSNKSQGGQPDAGDGETQFLDLMRAVANSMREAPNPA
QSTTHPEPPPTPGPSQDNDTDWGY.

NP

de novo.

31 40

NP

NP
de novo
NP

NP

Phusion Hot Start DNA Polymerase

60-

(Promega).

pGEM-T.
pGEM-T Cloning Kit

Phusion,

3'-

Taq-

3'-

E. coli

DH5 .

Promega

13 Forward

13 Reverse.

LB

NP

NP

pET22b(+).

Hind

Nco .

NP

pET22_NP(NDV)

NP

pET22_NP(NDV)

7.

NP,
lacI,
NP

pET22_NP(NDV)

BL21(DE3) pLysS.

pET22_NP(NDV)

E.coli

NP