

## SNP FISH Probes

Guide probe: NA\_Cali2009

atcttttggtttggattcat	NA_Cali2009_1
tacagaccgaaccaatgggt	NA_Cali2009_2
aagttagccattccaattgt	NA_Cali2009_3
gtggctaatacatattgaga	NA_Cali2009_4
tctgattttgattccaagt	NA_Cali2009_5
tgacgctttgattgcatgtt	NA_Cali2009_6
taccaagtgtgttttcat	NA_Cali2009_7
gctgatgtaacatatgtct	NA_Cali2009_8
actgtccagcagcaaagttg	NA_Cali2009_9
gctaatttcacggaaaccac	NA_Cali2009_10
agggcagagagaggaattgc	NA_Cali2009_11
tgtatatagcccatccacta	NA_Cali2009_12
cttatgacaaacacatcccc	NA_Cali2009_13
ggggagcatgatatgaatgg	NA_Cali2009_14
gaagaaggttctgcattcca	NA_Cali2009_15
tgtttgcatttagcaaggc	NA_Cali2009_16
gtctttaatggttccattgg	NA_Cali2009_17
ttagggttcgatatgggctc	NA_Cali2009_18
actcaccaataggacagct	NA_Cali2009_19
tcttgagttgtatggagagg	NA_Cali2009_20
acaagcacttgctgaccaag	NA_Cali2009_21
tactttaacacagccactgc	NA_Cali2009_22
agtgtctgttattatgccgt	NA_Cali2009_23
tattgtttctccaactcttg	NA_Cali2009_24
tcagactcttgtgttctcaa	NA_Cali2009_25
tccatcggtcattacagtaa	NA_Cali2009_26
tatgaggcctgtccattact	NA_Cali2009_27
cccttttctattctgaagat	NA_Cali2009_28
caggataacaggagcattcc	NA_Cali2009_31
ttctggttgaaagacacca	NA_Cali2009_32
gtatcctatctgatattcca	NA_Cali2009_33
tggattgtctccgaaaatcc	NA_Cali2009_34
actgcctgtcttatcattag	NA_Cali2009_35
ccattagacgatactggacc	NA_Cali2009_36
tagttctcctatccaaca	NA_Cali2009_37
ccgtttcttgaactaatgct	NA_Cali2009_38
cggatcccaaatcatctcaa	NA_Cali2009_39
gagaagttattgtctgtccc	NA_Cali2009_40
tcctacgatatcttgcttta	NA_Cali2009_41

tatatacctgaccactcattt	NA_Cali2009_42
ggatgctgaacaaaactccc	NA_Cali2009_43
gcaaggctttatacaatcca	NA_Cali2009_44
cagattgtgttctctttggg	NA_Cali2009_45
caaaaggatatgctgctccc	NA_Cali2009_46
cacagtgtcactgtttacac	NA_Cali2009_47
taaattggcaactcagcaccg	NA_Cali2009_48

Wild-type probe:

tagtgataaattaggggcattcatttcgact NA\_823C->T\_WT\_bindsC

Mutant probe:

tagtaataaattaggggcattcatttcgac NA\_823C->T\_Mut\_bindsT

Mask probe:

agtcgaaatgaatgcccta Mask20bp\_NA\_823C->T

**Rhinovirus A**

cggggaaacagaagtgtcttg	RhinovirusA_cluster2_clustal_1
ttactaggcttgcgtaggc	RhinovirusA_cluster2_clustal_2
acgcaggctagaacactgtc	RhinovirusA_cluster2_clustal_3
tacgactagatacacactgg	RhinovirusA_cluster2_clustal_4
caaagtagttggtccatcc	RhinovirusA_cluster2_clustal_5
atatattgtcaccataagca	RhinovirusA_cluster2_clustal_6
atgtcttcaggtgaacatt	RhinovirusA_cluster2_clustal_7
tttgtgcggtatatgactaa	RhinovirusA_cluster2_clustal_8
aatgcaacatgaccctcacc	RhinovirusA_cluster2_clustal_9
attcctattatactacctat	RhinovirusA_cluster2_clustal_10
ggggaaacagaagtgtcttg	RhinovirusA_cluster3_clustal_1
ttgccttgggtaaagcatat	RhinovirusA_cluster3_clustal_2
agtggtagtaggctctgtgt	RhinovirusA_cluster3_clustal_3
tcatctgccaggctactat	RhinovirusA_cluster3_clustal_4
cacgcaggctagaacactgt	RhinovirusA_cluster3_clustal_5
aattagcacacggggctctt	RhinovirusA_cluster3_clustal_6
aaggttagccacattcaggg	RhinovirusA_cluster3_clustal_7
aaccattggattatgggca	RhinovirusA_cluster3_clustal_8
ccgcaattgctcattacgac	RhinovirusA_cluster3_clustal_9
acacggacacccaaagtagt	RhinovirusA_cluster3_clustal_10
cttgtgcacccatgatgaca	RhinovirusA_cluster3_clustal_12
gtaccaacatttgtctaga	RhinovirusA_cluster3_clustal_13
ttgctcactgaatttgtgt	RhinovirusA_cluster3_clustal_14
ccattgatgctgcatcttt	RhinovirusA_cluster3_clustal_15

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gcattacacatctctgtaa  
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RhinovirusA\_cluster3\_clustal\_57

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gagaagggttgccttatc  
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ttgcatggttttaatgcaca  
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tggaaaattgcctgtagtga  
tcagttatagctggagggtg  
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RhinovirusA\_cluster4\_clustal\_3

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acatctgtgatgttattgt  
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ccagaaaattcagcacacat  
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RhinovirusA\_cluster4\_clustal\_4  
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RhinovirusA\_cluster4\_clustal\_53  
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## Rhinovirus B

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gcctcatcgaccaaactagt  
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RhinovirusB\_cluster1\_clustal\_1  
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tgtgaaccactctttgtgt  
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aatttttcatcctatccaa  
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RhinovirusB\_cluster1\_clustal\_42  
RhinovirusB\_cluster1\_clustal\_43  
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### Rhinovirus C

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RhinovirusC\_cluster2\_clustal\_40

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### Adenovirus probes

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### Influenza A/California/7/2009

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A\_California07\_2009\_HA\_1

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ccaatttccttggcattggt	A_California07_2009_HA_39
ggtaaaattcaaagcagccg	A_California07_2009_HA_40
tttgacactttcatgcac	A_California07_2009_HA_41
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tgttgattccagctttacc	A_California07_2009_HA_43

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A\_California07\_2009\_HA\_44  
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A\_California07\_2009\_HA\_48

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A\_California07\_2009\_HA\_REVCOMPLEMENT\_48

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### **Influenza A/Texas/50/2012**

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NP\_ATexas\_JMM50\_2012\_REVCOMPLEMENT\_16

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A\_Texas50\_2012\_HA\_11  
A\_Texas50\_2012\_HA\_12

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gactatcattgctttgagct

A\_Texas50\_2012\_HA\_REVCOMPLEMENT\_48

**Influenza B/Brisbane/60/2008**

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gaatggcttcagccactaag	B_Brisbane60_2008_NP_23
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B\_Brisbane60\_2008\_NP\_48

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B\_Brisbane60\_2008\_NP\_REVCOMPLEMENT\_47  
B\_Brisbane60\_2008\_NP\_REVCOMPLEMENT\_48

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B\_Brisbane60\_2008\_HA\_30

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B\_Brisbane60\_2008\_HA\_31  
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B\_Brisbane60\_2008\_HA\_48

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B\_Brisbane60\_2008\_HA\_REVCOMPLEMENT\_1  
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tgctttctataatgcacga  
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cctcggcaagagtttcaata  
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### Influenza PR8 HA

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HA\_cds\_1  
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HA\_cds\_3  
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HA\_cds\_15



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ctatttccgggtaaatctc	HA_cds_20
cttgatcttactttgggt	HA_cds_21
tccagtaatagttcatcctc	HA_cds_22
attagatttccattgcctc	HA_cds_23
tctactcagtcgaaagcat	HA_cds_24
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tcatgcattgatgcgttga	HA_cds_26
gtgtttgacacttcgtgta	HA_cds_27
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tgacgtatttgggcactct	HA_cds_30
taaccatcctcaatttgca	HA_cds_31
aatggacggagtgttcctta	HA_cds_32
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cagaatctgatagatcccca	HA_cds_44
tggcgacagttgagtagatc	HA_cds_45
gagacaaaagcaccagtga	HA_cds_46
acatccagaaactgattgcc	HA_cds_47
atgcatattctgcactgcaa	HA_cds_48

### **Influenza PR8 M2/M1**

tacgtttcgacctcggttag	M2_M1_cds_1
cctgacgggatgatagagag	M2_M1_cds_2
cctgcaaagacatcttcaag	M2_M1_cds_3
aacctcaagatcagtgttct	M2_M1_cds_4
ttgtctttagccattccatg	M2_M1_cds_5
gtcagaggtgacaggattgg	M2_M1_cds_6
cacaaatcctaaaatcccct	M2_M1_cds_7

gcttctatacagtttaact	M2_M1_cds_8
ctgagtgagatttcttggc	M2_M1_cds_9
catacaactggcaagtgcac	M2_M1_cds_10
ccatcctgtgtatatgagg	M2_M1_cds_11
caaatgccacttcagtggc	M2_M1_cds_12
tcacaggtgcacataccag	M2_M1_cds_13
atgctgggagtcagcaatct	M2_M1_cds_14
tcaccatttgctatgagac	M2_M1_cds_15
ctgattagtggattggtgt	M2_M1_cds_16
agctgtagtgtgctaaaa	M2_M1_cds_17
tcactcgatccagccattg	M2_M1_cds_18
ctgactagcaacctccatgg	M2_M1_cds_19
ctcatcgcttgaccatttg	M2_M1_cds_20
agctaggatgagtccaatg	M2_M1_cds_21
gatcattttcagaccagca	M2_M1_cds_22
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gatccaatgatatttcgg	M2_M1_cds_24
gaatccacaatgtcaagtc	M2_M1_cds_25
tcctttcagtcctgatttaa	M2_M1_cds_26
atagactttggcactccttc	M2_M1_cds_27
ctgttcctttcgatattctt	M2_M1_cds_28
aatgaccatcgtcagcatc	M2_M1_cds_29
gtttttactccagctctat	M2_M1_cds_30

### **Influenza PR8 NA**

actaccagacagattgatcc	NA_cds_1
ccctatttgcaatattaggc	NA_cds_2
ggctaaccatattgagatt	NA_cds_3
atggttttgacttccagttt	NA_cds_4
atgttttggtgcatattcc	NA_cds_5
cccaggtgctattttatag	NA_cds_6
tactactgaagttgtgtcct	NA_cds_7
ccacggatgggacaaagaga	NA_cds_8
gctattgtctttgctgtata	NA_cds_9
ctcctttggaaccaattctt	NA_cds_10
aagggtctcttatgacaaa	NA_cds_11
ggtcagaaaaaggctctgc	NA_cds_12
cttgcattcagtaaggcac	NA_cds_13
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ggacctgaaattccgattgt	NA_cds_17

tacagccactgctccattat	NA_cds_18
ttattatgccgttgatattt	NA_cds_19
agactcttgtgtcctcaata	NA_cds_20
gaaccatttacacaggcaca	NA_cds_21
ggccatcagtcattatagta	NA_cds_22
aaattttgtacgaggccagc	NA_cds_23
tttagtaaccttcccctttt	NA_cds_24
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gaacattcctcatagtgaga	NA_cds_26
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cacggcctcatcagcttag	NA_cds_40
gccaagaccaatctacagta	NA_cds_41
aatggcaactcagcaccgtc	NA_cds_42
aacagactactgtcaatgc	NA_cds_43

### **Influenza PR8 NEP/NS1**

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tagttcttggctgcaactc	NEP_NS1_cds_3
gatcaaggaatggggcatca	NEP_NS1_cds_4
gatttctgatctcggcgaag	NEP_NS1_cds_5
cactatctgctttccagcac	NEP_NS1_cds_6
attcttcttcagaatccgc	NEP_NS1_cds_7
gtcattttaagtgccctatc	NEP_NS1_cds_8
tgtcagttaggtaacgcgac	NEP_NS1_cds_9
ccttgacatttctcaagag	NEP_NS1_cds_10
attctgatacaaagaggcc	NEP_NS1_cds_11
gccggtcaaaaatcacactg	NEP_NS1_cds_12
gcccttagcaatattagagt	NEP_NS1_cds_13
aatttcgccaacaattgctc	NEP_NS1_cds_14

ctggaagagaaggcaatggt	NEP_NS1_cds_15
ttgacatcctcagcagtatg	NEP_NS1_cds_16
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tccaagcgaatctctgtaga	NEP_NS1_cds_19
gtctcccattctcattactg	NEP_NS1_cds_20
gtttctgttttgagtgagt	NEP_NS1_cds_21
gcaatagatgtaaggcttgc	NEP_NS1_cds_22
aagttcttatctcttgctcc	NEP_NS1_cds_23

**Influenza PR8 NP**

cactcagtgagtgattatct	NP_cds_1
tgggacgccatgattttgat	NP_cds_2
atctgttcgtaagaccgttt	NP_cds_3
tgatttcagtggcattctgg	NP_cds_4
atcattttccgacggatgc	NP_cds_5
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ctctctattgttaagctgtt	NP_cds_9
gtcaaaagcagagagcacca	NP_cds_10
ccagttttcttaggatcttt	NP_cds_11
tactctcctgtatataggtc	NP_cds_12
tcgtcaccattattagcttg	NP_cds_13
atgccagatcatcatgtgag	NP_cds_14
tcctctgataagttgcatca	NP_cds_15
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agacacatcttctggtcttg	NP_cds_46
tttctccgagagctcgaag	NP_cds_47
caaaggaaggcacgatcggg	NP_cds_48

#### **Influenza PR8 PA**

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tcttccctcgattatttcaa	PA_cds_5
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gccttttccagatagtatat	PA_cds_9
ttcccagtgaaacgagaaaa	PA_cds_10
tgctttcttcatcgagagtg	PA_cds_11
tagtctggttttgatcctag	PA_cds_12
ccatttctgtcttatggtg	PA_cds_13
tgttcctgtgatttcaaacc	PA_cds_14
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atttgaccgctgagaacag	PA_cds_19
attttaaggcatccatcagc	PA_cds_20
gttctcatgcatttgattgc	PA_cds_21
ttggatttattcccttttcg	PA_cds_22
cttgcttccatgacagaaga	PA_cds_23

ggaatcttctcctcattctc	PA_cds_24
gtcgtcaaagtctacctttt	PA_cds_25
gcttcaaatacctacatct	PA_cds_26
ctcaattctggttcatcact	PA_cds_27
tctgaatccaacttgctagc	PA_cds_28
ttcgcatagccttgtaaact	PA_cds_29
ctctatccagcttgaatctg	PA_cds_30
cttctcatgcttgaatgtg	PA_cds_31
aggcagattgatgtacacc	PA_cds_32
cattgctgcacaagatgcat	PA_cds_33
ccatacaagttggtctttcg	PA_cds_34
tgtcattccttaagtgggat	PA_cds_35
gcctatggcacttctataa	PA_cds_36
acatacaagaacatgggcct	PA_cds_37
aagtgactggaggaggcaac	PA_cds_38
agaggactcagcttcaatca	PA_cds_39
tggatcatgtctttctcttg	PA_cds_40
ccatgtttctgattgttct	PA_cds_41
ataaagtctgcagaccttc	PA_cds_42
ctgttgaataccgactttgc	PA_cds_43
atccttctagttgtggagat	PA_cds_44
agcagtttcttgattcagc	PA_cds_45
aatcaggcactcctcaattg	PA_cds_46
gcattaagcaaaaccaggg	PA_cds_47
caaatagtagcactgccaca	PA_cds_48

### **Influenza PR8 PB1**

taaggtcggattgacatcca	PB1_cds_1
atcttgctggcactttta	PB1_cds_2
aaggagggtctccagtataa	PB1_cds_3
tactgatgtgtcctgtgac	PB1_cds_4
catcaatcggggtgagttgc	PB1_cds_5
acttggttcattgtcttctg	PB1_cds_6
ctactcgtgttgctgaaca	PB1_cds_7
tttagagtccagtcataaggt	PB1_cds_8
ttctattgtgtggccaatg	PB1_cds_9
tgaggccatttgatctgaac	PB1_cds_10
aaggaagtctatgagccttc	PB1_cds_11
tcattgactccattacatcc	PB1_cds_12
tcattgtgttcagggtcaat	PB1_cds_13
gccagtgctcaaaaagta	PB1_cds_14
caaccctgattgtcaagtt	PB1_cds_15

ggatcatcatcttccttaciaa	PB1_cds_16
agaaagttcgggtgtcctgag	PB1_cds_17
atttgggttatctccagt	PB1_cds_18
tccgaggattctgattttcg	PB1_cds_19
catatatgtgatcatggcca	PB1_cds_20
acatttctgaaccattcggg	PB1_cds_21
ctcgccattttgtttgagaa	PB1_cds_22
tgctctcaaacatataccct	PB1_cds_23
agcatttctgcaggattttg	PB1_cds_24
agcggtcggatttttcaat	PB1_cds_25
catattgaacatgcccatca	PB1_cds_26
tggagacgcctaatacagt	PB1_cds_27
tctctttgtccaagattca	PB1_cds_28
accagtaagtagtcttgggtg	PB1_cds_29
cgctcagaggattgaagacca	PB1_cds_30
gggtgcattcacaatcagag	PB1_cds_31
ataaaacctgtcgactccgg	PB1_cds_32
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aactccaatactcatgtccg	PB1_cds_34
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acaactgaagggccatttga	PB1_cds_36
gtacgtgtacctgtaatctt	PB1_cds_37
ttgtataaatttgggcctcc	PB1_cds_38
aggcagacttcaggaatgtg	PB1_cds_39
ggtaatcctcatccatcaat	PB1_cds_40
caaatgggttcagtggttg	PB1_cds_41
agcatcactccatgtttt	PB1_cds_42
tcaagtactcctctttgact	PB1_cds_43
acctttggtacattgttca	PB1_cds_44
tggtcttctgtatgaactgc	PB1_cds_45
tcaatccgtgcatcaattcg	PB1_cds_46
gctcttcaatggtggaacag	PB1_cds_47
attcactattttgccgtct	PB1_cds_48

### **Influenza PR8 PB2**

gcgagactgacacattagat	PB2_cds_1
cggtggttttgtgagtatc	PB2_cds_2
ctctgtctgctgtaattgg	PB2_cds_3
ttgctcatttctctcaggaa	PB2_cds_4
gatcctgcatcattcattt	PB2_cds_5
aaatggacaggccaaaggt	PB2_cds_6
tccgacgtattttgacttg	PB2_cds_7

tctgcatgaccaggatttat	PB2_cds_8
ttccatgattacatcctgtg	PB2_cds_9
cccacttcgtaggaaaac	PB2_cds_10
ttatcgtagttgcgattcc	PB2_cds_11
ccaacatgtatgcaaccatc	PB2_cds_12
ctgggaggaatctcgtttg	PB2_cds_13
tggtccttgagtcaaagca	PB2_cds_14
ctggagtatacatctgttcc	PB2_cds_15
ctagtggatctgctgatact	PB2_cds_16
ctaattccaccaatctgtgt	PB2_cds_17
ttctgcctaaggatgtctac	PB2_cds_18
gatgagctaattctcagtcc	PB2_cds_19
gatccgcttgttctcttaa	PB2_cds_20
gtttgaagattgccgtaag	PB2_cds_21
ctcatgcactcttatcttca	PB2_cds_22
ccaaccattgtgaactcttc	PB2_cds_23
atcagctgaatcaatctcct	PB2_cds_24
atggccacaattattgcttc	PB2_cds_25
attcagatcacctctgactg	PB2_cds_26
gcataggattcaatcgctga	PB2_cds_27
acttctgcatccttctgaaa	PB2_cds_28
aatcattcccatcacattgt	PB2_cds_29
ggagtcatgtctggcaatat	PB2_cds_30
tctcattgacatctcgatgc	PB2_cds_31
tactcatctacaccatttt	PB2_cds_32
tggtcccggattctcaaaaa	PB2_cds_33
ctcgggagacagtagtacat	PB2_cds_34
ccacatcattgacgatgagt	PB2_cds_35
ccattgataggtattgacca	PB2_cds_36
tctaattggccttaggtacta	PB2_cds_37
agttcttacaaccactgt	PB2_cds_38
tcaaatgtccaagcacatc	PB2_cds_39
gctgcgaagggaagaagttt	PB2_cds_40
actgcattctactttgcttt	PB2_cds_41
gtggccttgttatagttgaa	PB2_cds_42
aatgaggaatcccctcagaa	PB2_cds_43
ccatatctctgtcttcttt	PB2_cds_44
caaggttgctcagttcattg	PB2_cds_45
ttgcccaattagcacattag	PB2_cds_46
ttccgttccattaccaacac	PB2_cds_47
aattgatggccatccgaatt	PB2_cds_48