Figure 1

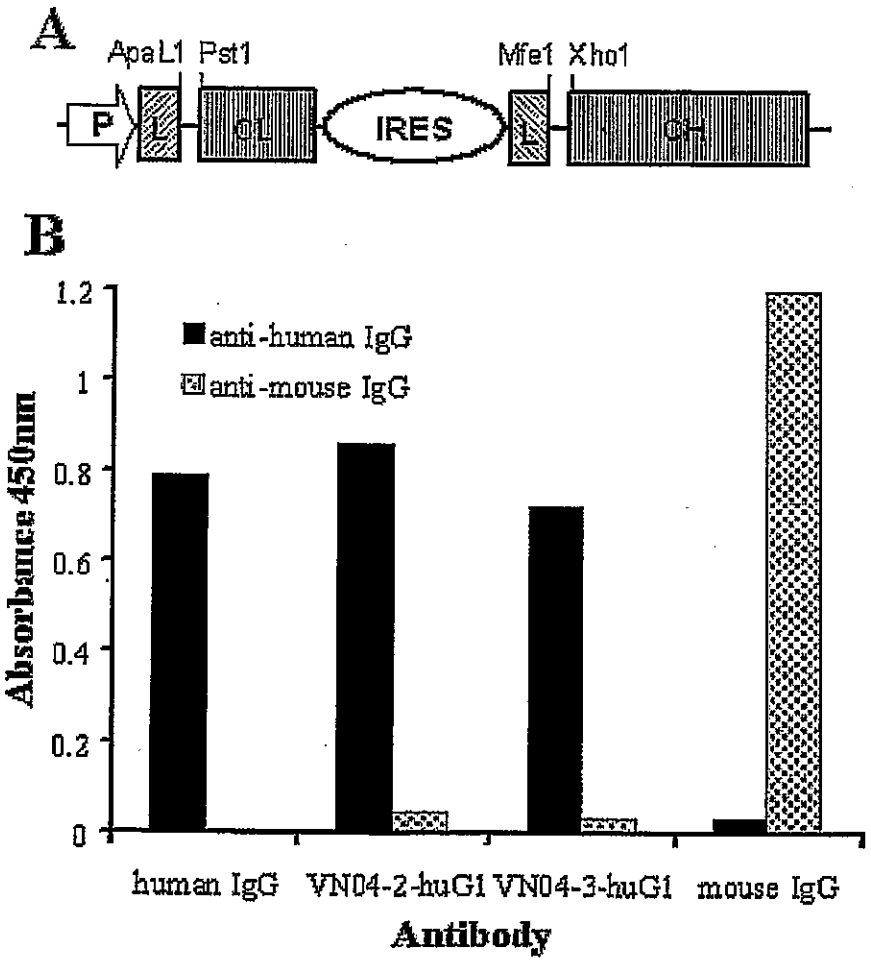

A
ApaL1
Pst1
Mfe1
Xho1
P
L
CL
IRES
L
CH
B
1.2
1
0.8
0.6
0.4
0.2
0
anti-human IgG
anti-mouse IgG
Absorbance 450nm
human IgG
VN04-2-huG1
VN04-3-huG1
mouse IgG
Antibody

Figure 2

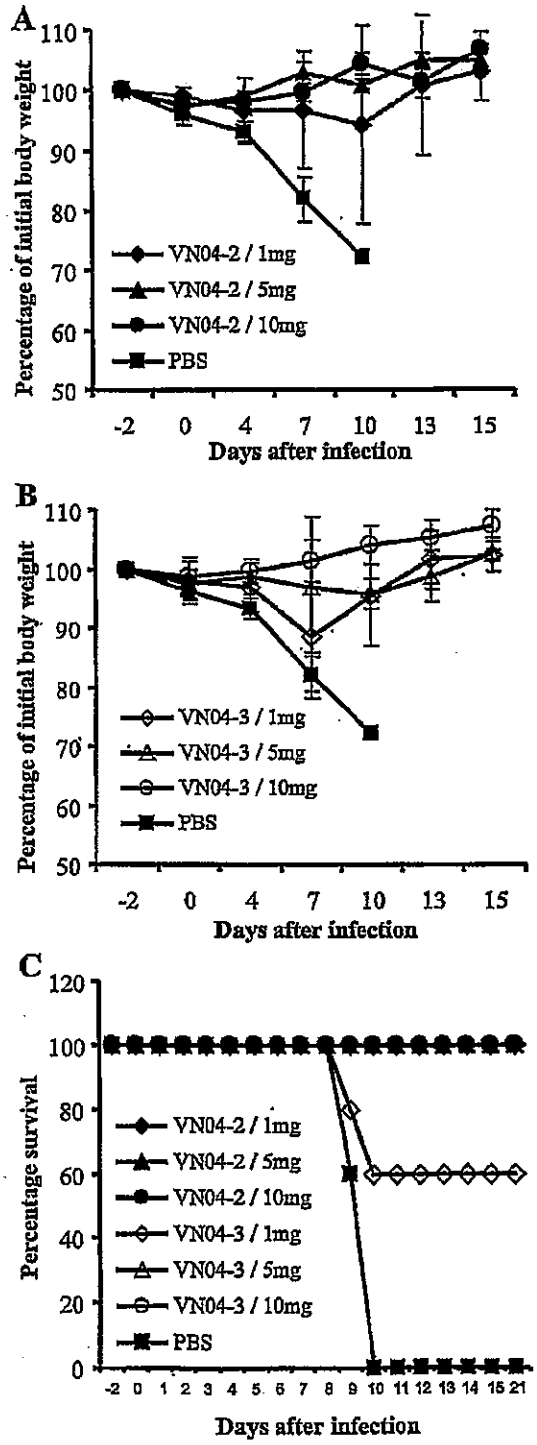

A
Percentage of initial body weight
110
100
90
80
70
60
50
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
PBS
-2 0 4 7 10 13 15
Days after infection
B
Percentage of initial body weight
110
100
90
80
70
60
50
VN04-3 / 1mg
VN04-3 / 5mg
VN04-3 / 10mg
PBS
-2 0 4 7 10 13 15
Days after infection
C
Percentage survival
120
100
80
60
40
20
0
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
VN04-3 / 1mg
VN04-3 / 5mg
VN04-3 / 10mg
PBS
-2 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 21
Days after infection

Figure 3

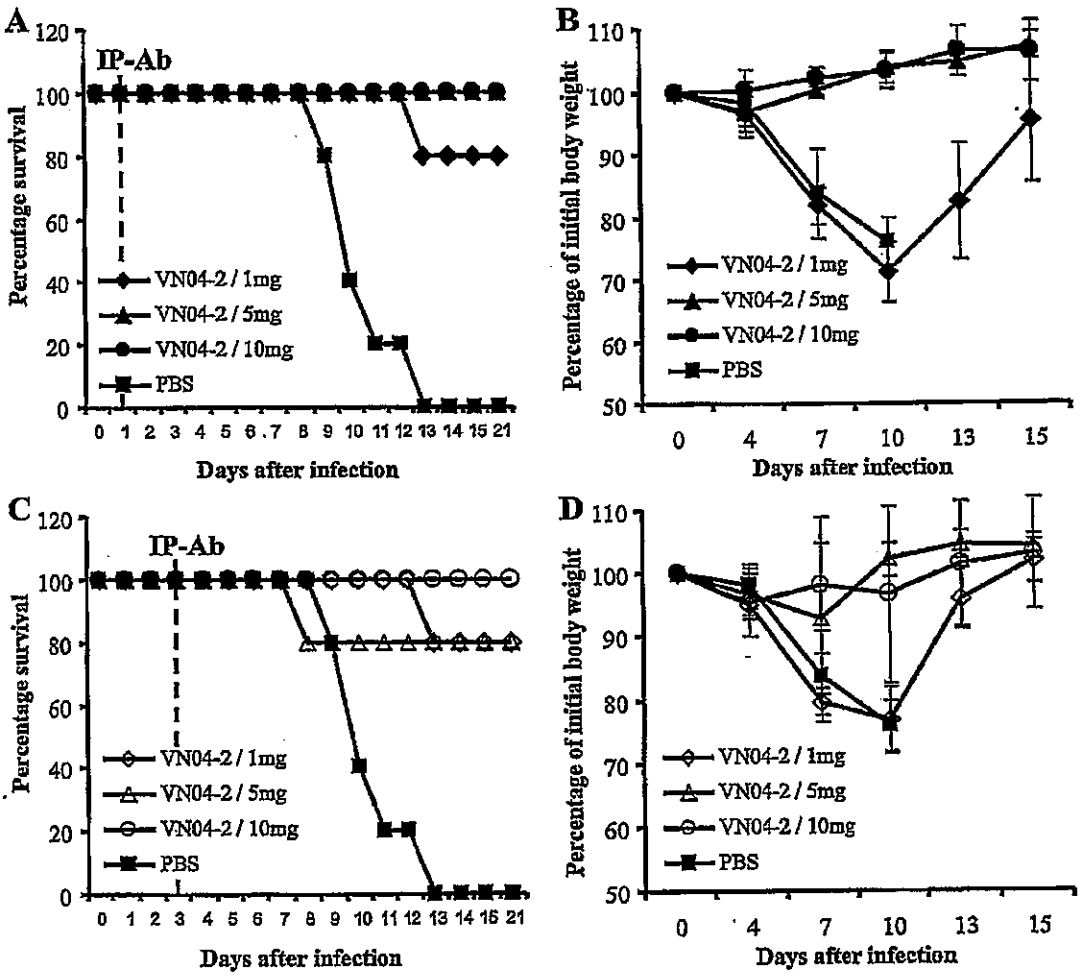

A
IP-Ab
Percentage survival
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
PBS
Days after infection
B
Percentage of initial body weight
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
PBS
Days after infection
C
IP-Ab
Percentage survival
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
PBS
Days after infection
D
Percentage of initial body weight
VN04-2 / 1mg
VN04-2 / 5mg
VN04-2 / 10mg
PBS
Days after infection

Figure 4

Sequence of the variable regions for mAb VN04-2

Fig 4 (A) VN04-2-VH

```
CAGGTGCAGCTGCAGGAGTCAGGACCTGACCTGGTGAAGCCTGGGGCTTCAGTGAAGATGTCCTGCAAG
 Q  V  Q  L  Q  E  S  G  P  D  L  V  K  P  G  A  S  V  K  M  S  C  K

GCTTCTGGTTACTCATTCACTTACTACCACATGCACTGGGTAAAGCAGACCCATGGAAAGAGCCTTGAG
 A  S  G  Y  S  F  T  Y  Y  H  M  H  W  V  K  Q  T  H  G  K  S  L  E

TGGATTGGACGTATTTATCCTTACAATGGTGGCACTAACTACAGCCAGAGGTTCAAGGGCAAGGCCGTA
 W  I  G  R  I  Y  P  Y  N  G  G  T  N  Y  S  Q  R  F  K  G  K  A  V

TTTACTGTGGACATGTCATCCAGCACAGCCTACATGGAGCTCCGCAGCCTGACATCTGAGGACTCTGCG
 F  T  V  D  M  S  S  S  T  A  Y  M  E  L  R  S  L  T  S  E  D  S  A

GTCTATTACTGTGCCAGAGATGCTAACTACGAGGGGGACTGGTACTTCGATGTCTGGGGCCAAGGGACC
 V  Y  Y  C  A  R  D  A  N  Y  E  G  D  W  Y  F  D  V  W  G  Q  G  T

ACGGTCACCGTCTCCTCA
 T  V  T  V  S  S
```

HCDR1 HCDR2 HCDR3

Fig 4 (B) VN04-2-VL

```
GACATCCAGATGACGCAGTCTCCATCCTCCTTTTCTGTATCTCTAGGAGACAGAGTCACCATTACTTGC
 D  I  Q  M  T  Q  S  P  S  S  F  S  V  S  L  G  D  R  V  T  I  T  C

AAGGCAAGTGAGGACATATATAATCGGTTAGCCTGGTATCAGCAGAAACCAGGAAATGCTCCTAGGCTC
 K  A  S  E  D  I  Y  N  R  L  A  W  Y  Q  Q  K  P  G  N  A  P  R  L

TTAATATCTGATACAACCAATTTGTGGATTGGGGTTCCTTCAAGATTCAGTGGCAGTGGATCTGGAAAG
 L  I  S  D  T  T  N  L  W  I  G  V  P  S  R  F  S  G  S  G  S  G  K

GATTACACTCTCAGCATTACCAGTCTTCAGAGTGAAGATGTTGCTACTTATTACTGTCAACAGTATTGG
 D  Y  T  L  S  I  T  S  L  Q  S  E  D  V  A  T  Y  Y  C  Q  Q  Y  W

AGTTCTCCGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAACGG
 S  S  R  T  F  G  G  G  T  K  L  E  I  K  R
```

LCDR1 LCDR2 LCDR3

Sequence of the variable regions for mAb VN04-3

Fig 4 (C) VN04-3-VH

```
CAGGTGCAGCTGCAGGAGTCTGGACCTGACCTGGTGAAGCCTGGGGCTTCAGTGATGATATCCTGCAAG
 Q  V  Q  L  Q  E  S  G  P  D  L  V  K  P  G  A  S  V  M  I  S  C  K

GCTTCTGGTTACTCATTCACTTACTACTACATGCACTGGGTGAAGCAGAGCCATGGAAAGACCCTTGAG
 A  S  G  Y  S  F  T  Y  Y  Y  M  H  W  V  K  Q  S  H  G  K  T  L  E

TGGATTGGACGTATTTATCCTTACAATGGTGATACTAACTACAACCGGAGGTTCAAGGACAAGGCCATA
 W  I  G  R  I  Y  P  Y  N  G  D  T  N  Y  N  R  R  F  K  D  K  A  I

TTAACTGTAGACGAGTCATCCAGCACAGCCTACATGGAGCTCCGCAGCCTGACATCTGAGGACTCTGCG
 L  T  V  D  E  S  S  S  T  A  Y  M  E  L  R  S  L  T  S  E  D  S  A

GTCTATTTCTGTGCAAGAGATGCTAACTACGAGGGGGACTGGTACTTCGATGTCTGGGGCCAAGGGACC
 V  Y  F  C  A  R  D  A  N  Y  E  G  D  W  Y  F  D  V  W  G  Q  G  T

ACGGTCACCGTCTCCTCA
 T  V  T  V  S  S
```

HCDR1 HCDR2 HCDR3

Fig 4 (D) VN04-3-VL

```
GACATCCAGATGACTCAGTCTCCATCCTCCTTTTCTGTATCTCTGGGAGACAGAGTCACCATTACTTGT
 D  I  Q  M  T  Q  S  P  S  S  F  S  V  S  L  G  D  R  V  T  I  T  C

AAGGCAAGTGAGGACATATATAATCGGGTAGCCTGGTATCAGCAGAAACCAGGAAATGCTCCTAGGCTC
 K  A  S  E  D  I  Y  N  R  V  A  W  Y  Q  Q  K  P  G  N  A  P  R  L

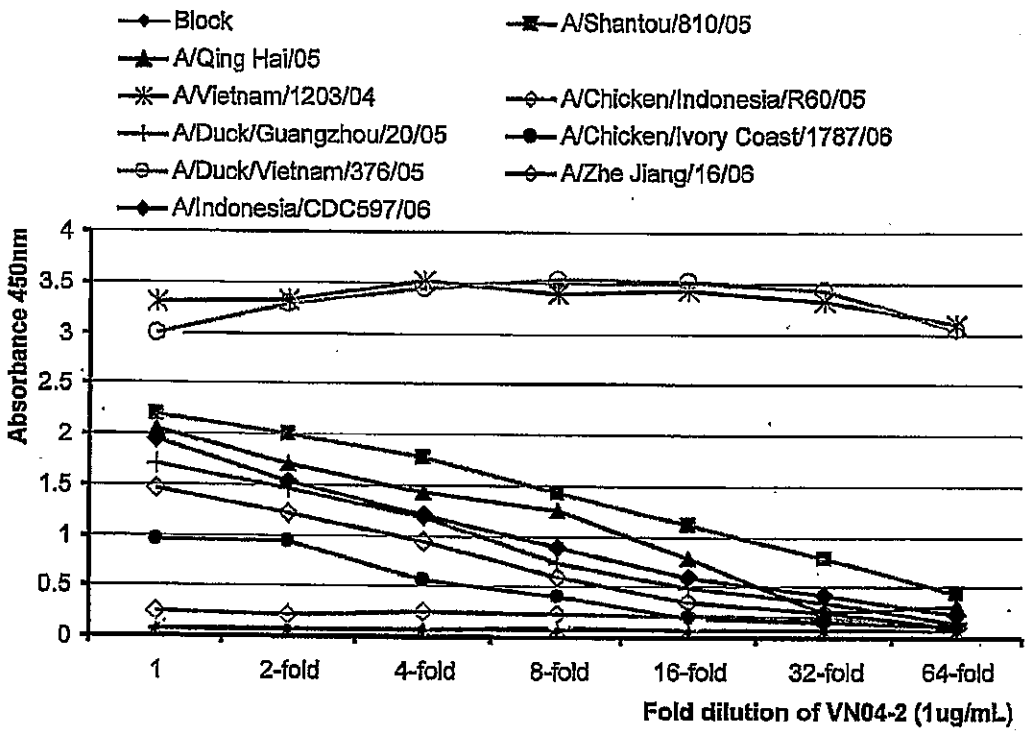
TTAATGTCTGATGCAAGCACTTTGGAGACTGGGGTTCCTTCAAGATTCAGTGGCAGTGGATCTGGAAAG
 L  M  S  D  A  S  L  E  T  G  V  P  S  R  F  S  G  S  G  S  G  K

GATCACACTCTCAGCATTACCAGTCTTCAGACTGAAGATGTTGCTACTTATTACTGTCAACAATATTGG
 D  H  T  L  S  I  T  S  L  Q  T  E  D  V  A  T  Y  Y  C  Q  Q  Y  W

AATACTCGGACGTTCGGTGGAGGCACCAAGCTGGAAATCAAACGG
 N  T  R  T  F  G  G  G  T  K  L  E  I  K  R
```

LCDR1 LCDR2 LCDR3

Figure 5


Block
A/Shantou/810/05
A/Qing Hai/05
A/Vietnam/1203/04
A/Chicken/Indonesia/R60/05
A/Duck/Guangzhou/20/05
A/Chicken/Ivory Coast/1787/06
A/Duck/Vietnam/376/05
A/Zhe Jiang/16/06
A/Indonesia/CDC597/06
Absorbance 450nm
4
3.5
3
2.5
2
1.5
1
0.5
0
1
2-fold
4-fold
8-fold
16-fold
32-fold
64-fold
Fold dilution of VN04-2 (1ug/mL)