FIGURE 1

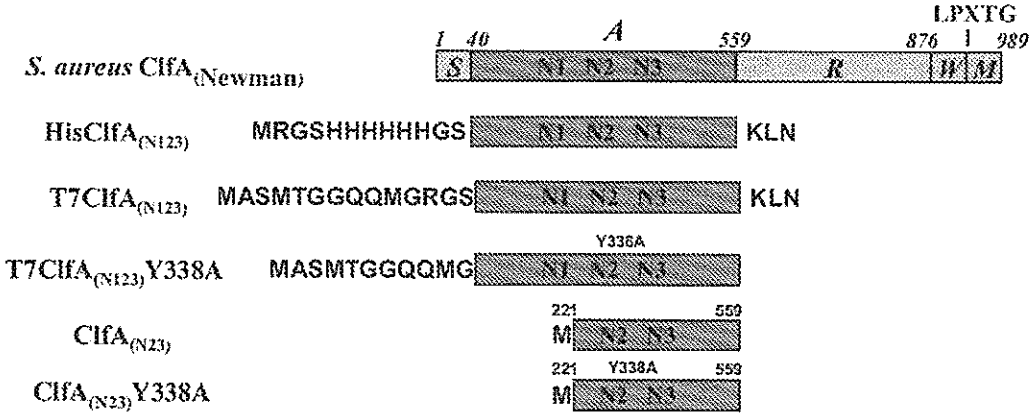

LPXTG
1 40 A 559 876 989
S. aureus ClfA(Newman)
S N1 N2 N3 R W M
HisClfA(N123)
MRGSHHHHHHGS
N1 N2 N3
KLN
T7ClfA(N123)
MASMTGGQQMGRGS
N1 N2 N3
KLN
Y338A
T7ClfA(N123)Y338A
MASMTGGQQMG
N1 N2 N3
221 559
ClfA(N23)
M N2 N3
221 Y338A 559
ClfA(N23)Y338A
M N2 N3

FIGURE 2

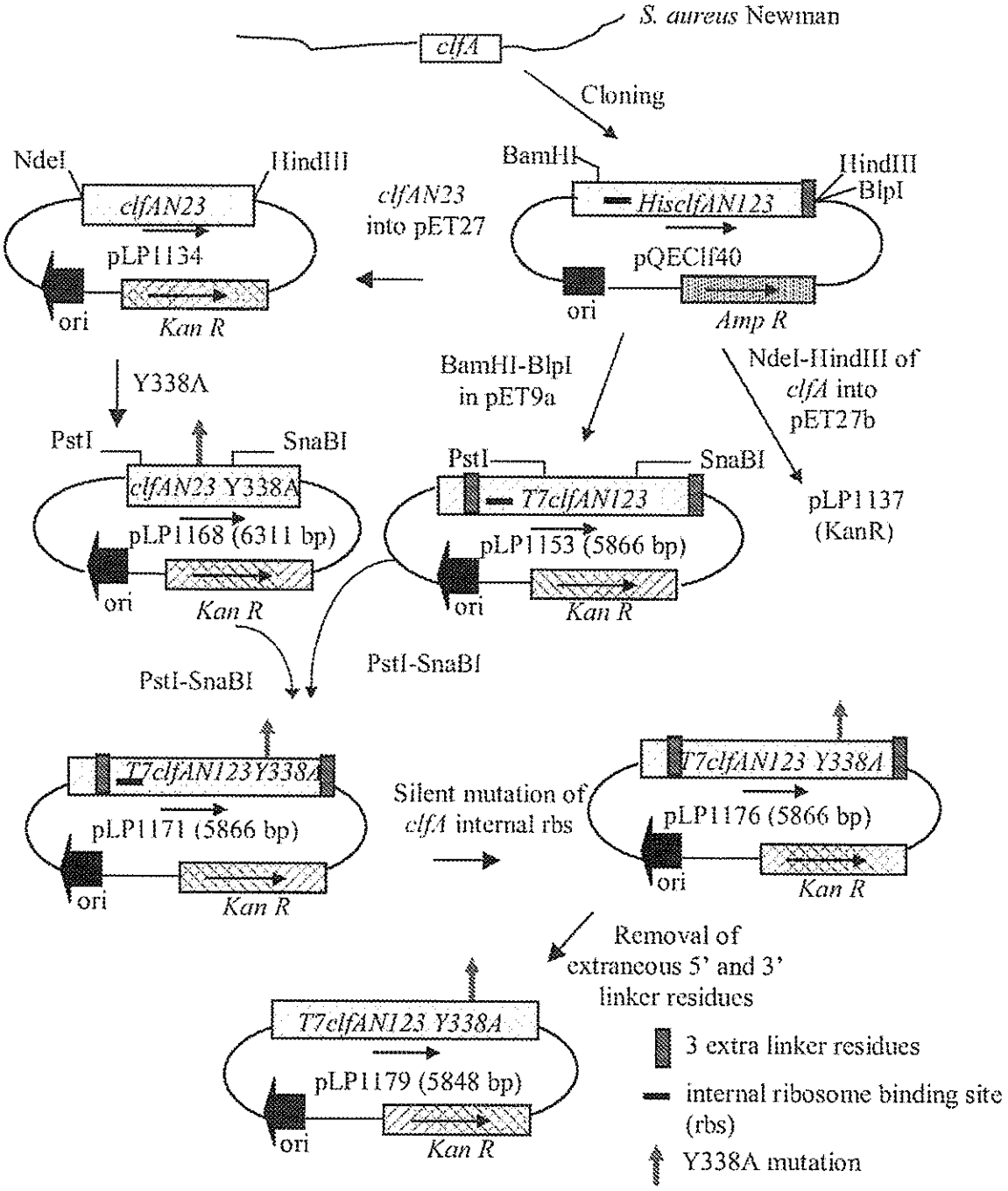

S. aureus Newman
clfA
Cloning
NdeI
HindIII
clfAN23
pLP1134
ori
Kan R
clfAN23 into pET27
BamHI
HindIII
BlpI
HisclfAN123
pQECl40
ori
Amp R
Y338A
BamHI-BlpI in pET9a
NdeI-HindIII of clfA into pET27b
pLP1137 (KanR)
PstI
SnaBI
clfAN23 Y338A
pLP1168 (6311 bp)
ori
Kan R
PstI
SnaBI
T7clfAN123
pLP1153 (5866 bp)
ori
Kan R
PstI-SnaBI
PstI-SnaBI
T7clfAN123Y338A
pLP1171 (5866 bp)
ori
Kan R
Silent mutation of clfA internal rbs
T7clfAN123 Y338A
pLP1176 (5866 bp)
ori
Kan R
Removal of extraneous 5' and 3' linker residues
T7clfAN123 Y338A
pLP1179 (5848 bp)
ori
Kan R
3 extra linker residues
internal ribosome binding site (rbs)
Y338A mutation

FIGURE 3

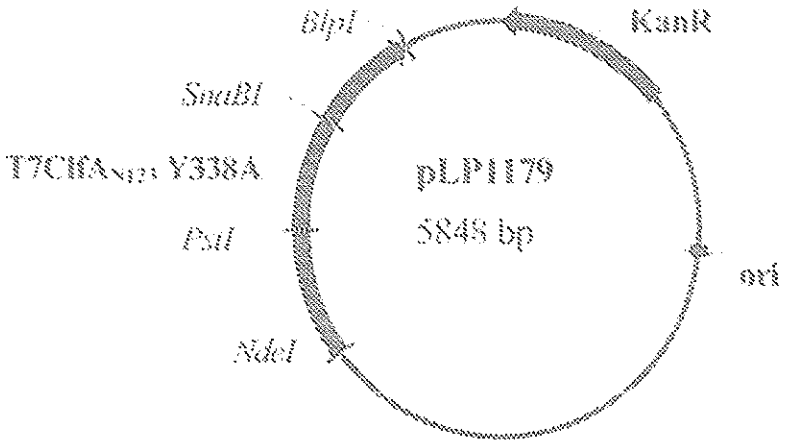
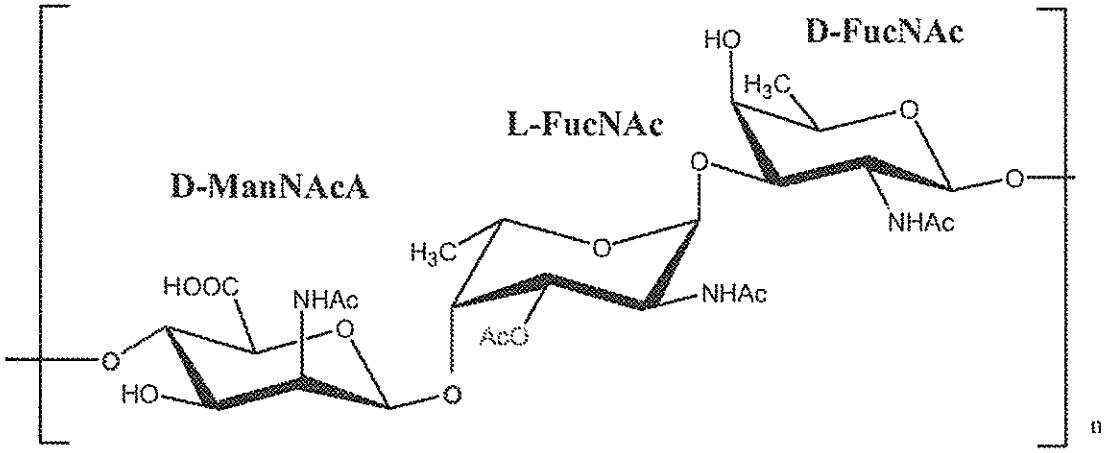
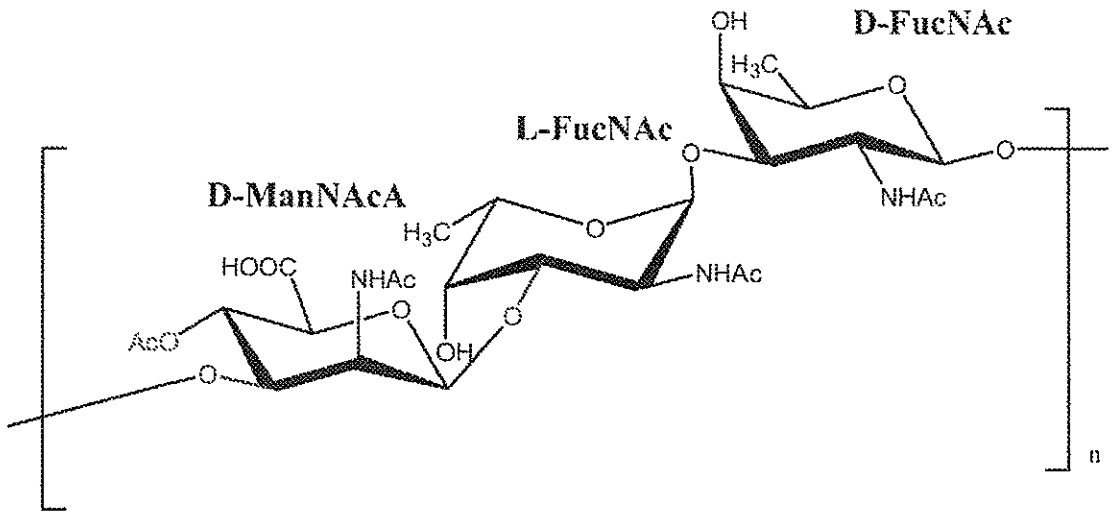


FIGURE 4



Type 5 CP

[-4)-β-D-ManNAcA-(1-4)-α-L-FucNAc(3-O-Ac)-(1-3)-β-D-FucNAc-(1-]$_n$

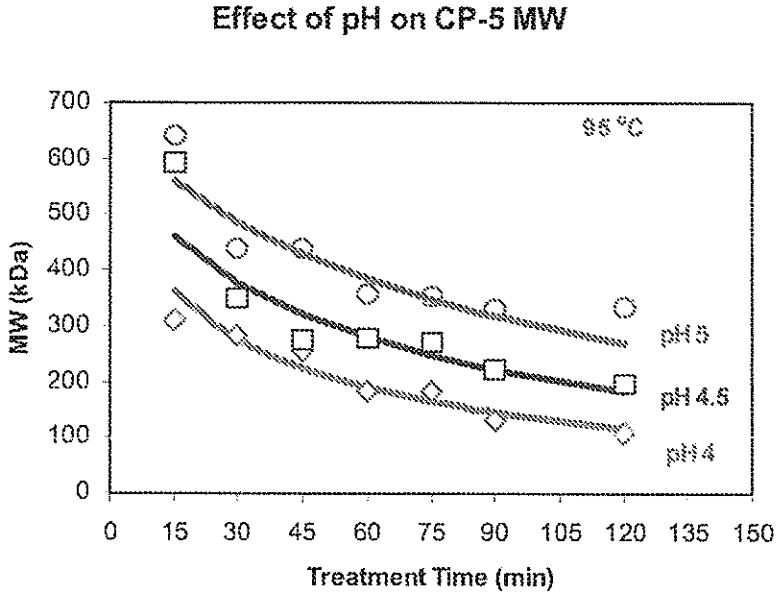


Type 8 CP

[-3)-β-D-ManNAcA(4-O-Ac)-(1-3)-α-L-FucNAc-(1-3)-α-D-FucNAc-(1-]$_n$

FIGURE 5

A.


Effect of pH on CP-5 MW
95 °C
MW (kDa)
700
600
500
400
300
200
100
0
0 15 30 45 60 75 90 105 120 135 150
Treatment Time (min)
pH 5
pH 4.5
pH 4

B.

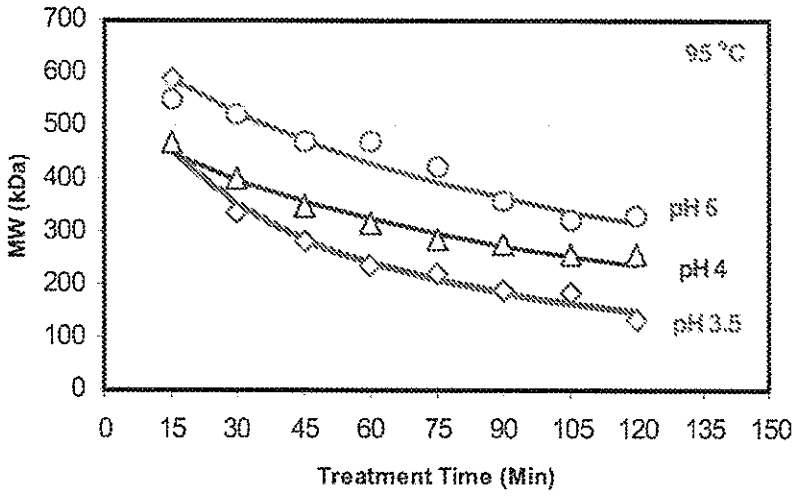
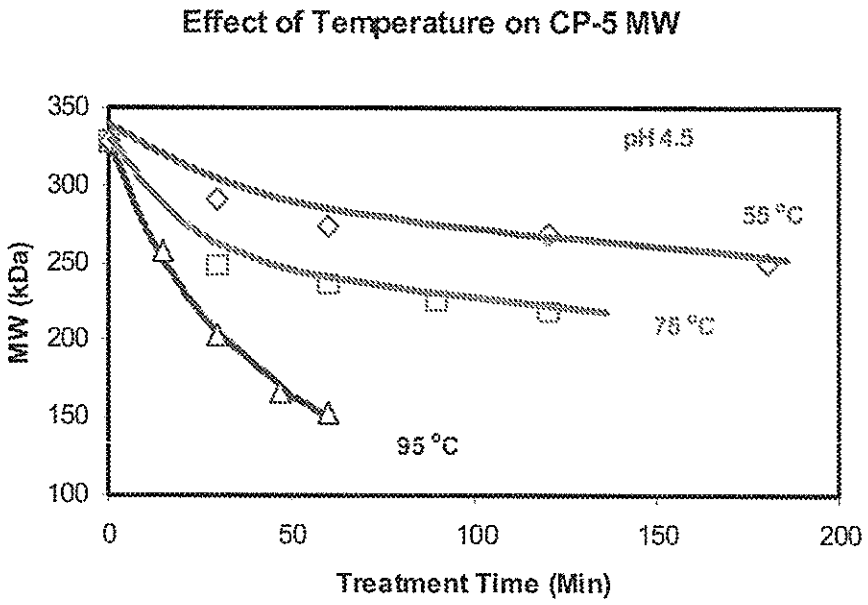

Effect of pH on CP-8 MW
95 °C
MW (kDa)
700
600
500
400
300
200
100
0
0 15 30 45 60 75 90 105 120 135 150
Treatment Time (Min)
pH 5
pH 4
pH 3.5

FIGURE 6

A.


Effect of Temperature on CP-5 MW
MW (kDa)
350
300
250
200
150
100
0
50
100
150
200
Treatment Time (Min)
pH 4.5
55 °C
75 °C
95 °C

B.

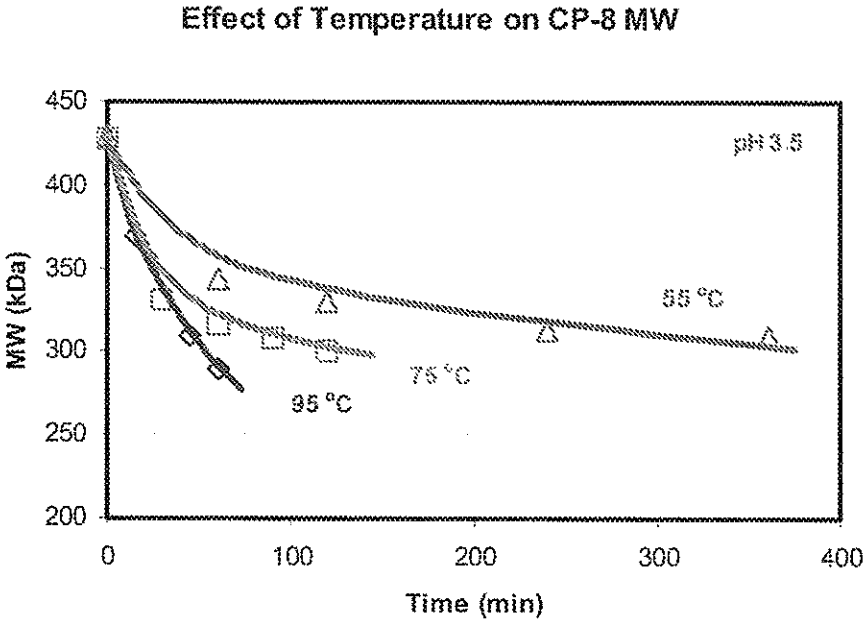

Effect of Temperature on CP-8 MW
MW (kDa)
450
400
350
300
250
200
0
100
200
300
400
Time (min)
pH 3.5
55 °C
75 °C
95 °C

FIGURE 7

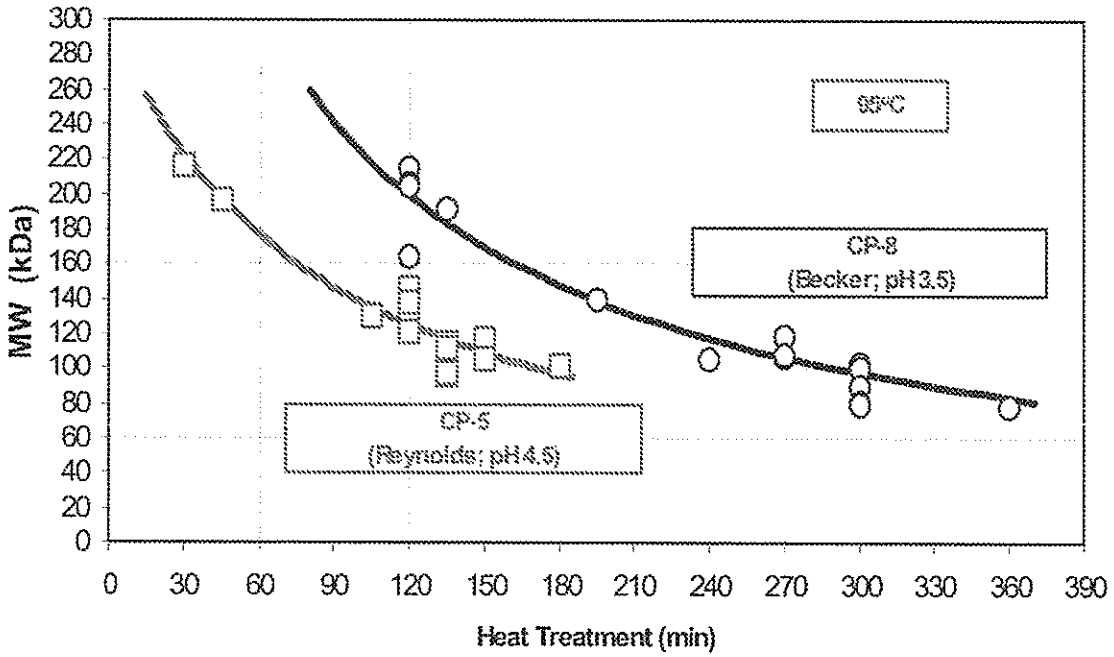

MW (kDa)
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
0
30
60
90
120
150
180
210
240
270
300
330
360
390
Heat Treatment (min)
95°C
CP-8
(Becker; pH 3.5)
CP-5
(Reynolds; pH 4.5)

FIGURE 8A ClfA align 1/5

```
                    10        20        30        40        50        60
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22]  MNMKKKEKHAIRKKSIGVASVLVGTLIGFGLLSSKEADASENSVTQSDSASNESKSNDSS
clfA_002[19]  ..........................................................
clfA_004[15]  .....Q.....................................M..TENT.....P.
clfA_012[10]  ..........................................................
clfA_005[5]   ..........................................................
clfA_022[5]   ..........................................................
clfA_003[4]   ..........................................................
clfA_009[4]   .....Q.....................................TENT.....
clfA_013[3]   ..........................................................
clfA_014[3]   ..........................................................
clfA_015[3]   ..........................................................
clfA_006[2]   ..........................................................
clfA_007[2]   ..........................................................
clfA_008[2]   ..........................................................
clfA_010[2]   ..........................................................
clfA_017[2]   ..........................................................P.
clfA_011[1]   ..........................................................
clfA_016[1]   ..........................................................
clfA_018[1]   ..........................................................
clfA_019[1]   ..........................................................
clfA_020[1]   ..........................................................
clfA_021[1]   ..........................................................
clfA_023[1]   ..........................................................NP.
clfA_024[1]   .....Q.....................................M..TENT.....P.

                    70        80        90        100       110       120
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22]  SVSAAPKTDDTNVSDTKTSSNTNNGETSVAQNPAQQETTQSSSTNATTEETPVTGEATTT
clfA_002[19]  ..........................................................
clfA_004[15]  ..N......N.....SN.TT...SD..N.............A.............V...
clfA_012[10]  ..........................................AL..............-
clfA_005[5]   .IN......N.......PT.....................A...............
clfA_022[5]   ........V.........T....S.................A..........A.....
clfA_003[4]   ..........................................................
clfA_009[4]   ..N......N.....SN.TT...SD..N.............A.............V...
clfA_013[3]   ..........................................AL.........L......A
clfA_014[3]   ..N......N........T............YL.......V..............-
clfA_015[3]   ..........................................AL..............A
clfA_006[2]   ..........................................................
clfA_007[2]   .IN......N........T.....................A.............T...
clfA_008[2]   ..N......N........T...................I..A..............
clfA_010[2]   ..........................................................
clfA_017[2]   ..N......N................................L..............-
clfA_011[1]   ..........................................................
clfA_016[1]   ..........................................L..............-
clfA_018[1]   ..................................L.......................
clfA_019[1]   ..........................................AL.........L......A
clfA_020[1]   ..........................................AL..............A
clfA_021[1]   ..........................................................
clfA_023[1]   ..N......N........T.....S.................A.............G...
clfA_024[1]   ..N......N.....SN.TT...SD..N.............A.............V...
```

FIGURE 8B ClfA align 2/5

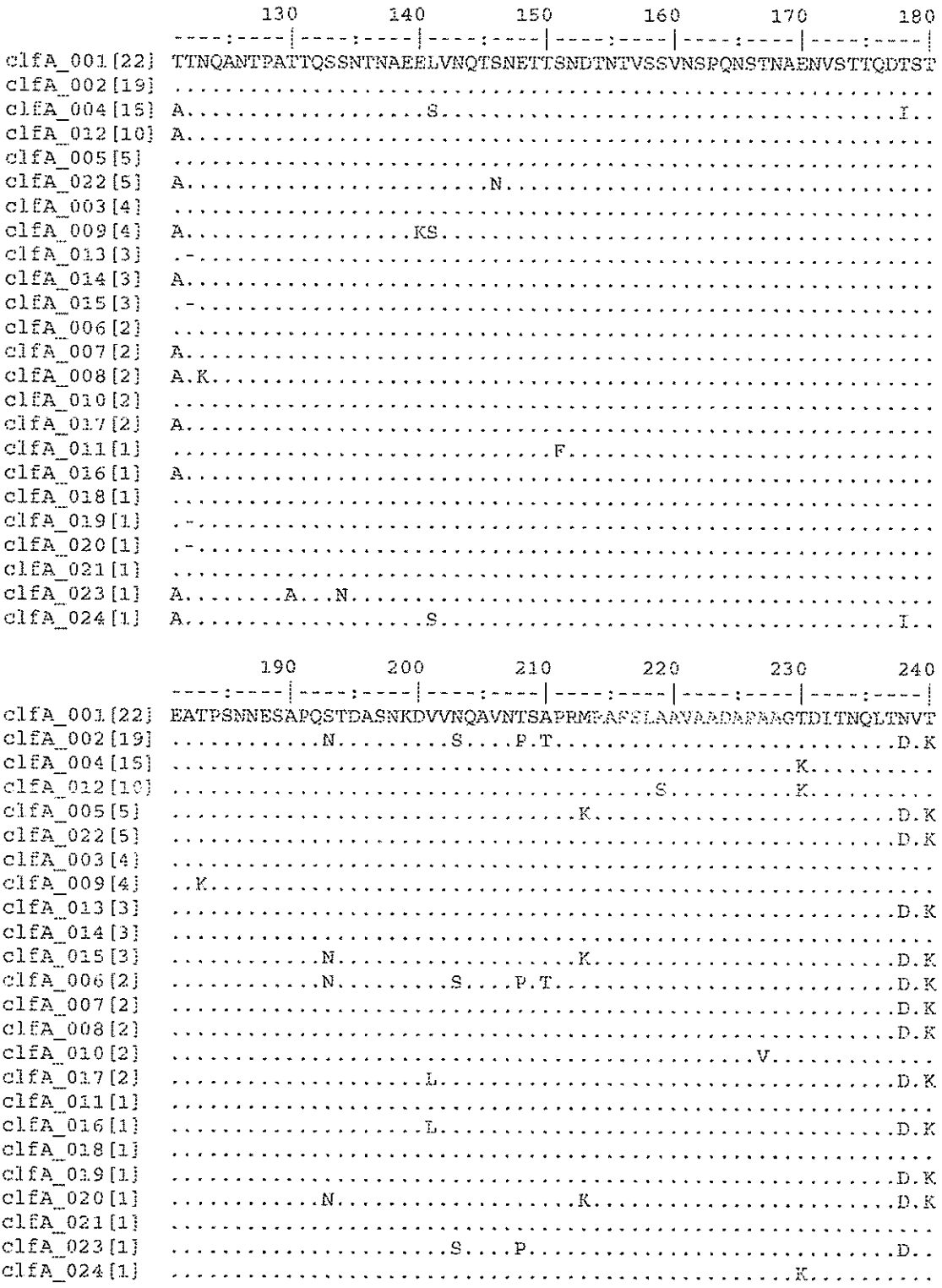


FIGURE 8C ClfA align 3/5

```
                      250       260       270       280       290       300
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22]  VGIDSGTTVYPHQAGYVKLNYGFSVPNSAVKGDTFKITVPKELNLNGVTSTAKVPPIMAG
clfA_002[19]  .T.....................................................
clfA_004[15]  ......D.....................E..Q.....................
clfA_012[10]  ......D.....................................................
clfA_005[5]   .T.....................................................
clfA_022[5]   .T.....................................................
clfA_003[4]   .....................................................
clfA_009[4]   ......D.....................Q.....................
clfA_013[3]   .T.....................................................
clfA_014[3]   .....................................................
clfA_015[3]   .T.....................................................
clfA_006[2]   .T.....................P.....................
clfA_007[2]   .T.....................................................
clfA_008[2]   .T.....................................................
clfA_010[2]   .....................................................
clfA_017[2]   .T.....................................................
clfA_011[1]   .....................................................
clfA_016[1]   .T.....................................................
clfA_018[1]   .....................................................
clfA_019[1]   .T.....................................................
clfA_020[1]   .T.....................................................A.....
clfA_021[1]   ......D.....................................................
clfA_023[1]   ...E..D.....................................................
clfA_024[1]   ......D.....................E..Q.....................

                      310       320       330       340       350       360
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22]  DQVLANGVIDSDGNVIYTFTDYVNTKDDVKATLTMPAYIDPENVKKTGNVTLATGIGSTT
clfA_002[19]  .....................DN.EN.T.NI..........T.......T....TN.
clfA_004[15]  ..........................................T.....................
clfA_012[10]  .....................D..EN.T.NI..........T.......T.......
clfA_005[5]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_022[5]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_003[4]   ..................................N.....................
clfA_009[4]   ................................V.......Y.TH..........N..
clfA_013[3]   .....................D..N.......V.........T.......K....TN.
clfA_014[3]   ..........N.....................................T.....................
clfA_015[3]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_006[2]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_007[2]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_008[2]   ..........................................T.....................
clfA_010[2]   .....................................................
clfA_017[2]   .....................D..EN.T.NI..........T.......T.......
clfA_011[1]   .....................................................
clfA_016[1]   .....................DN.N.................T.......T.......
clfA_018[1]   ..........................................T............N..
clfA_019[1]   .....................DN.N.......V.........T.......T....TN.
clfA_020[1]   .....................DN.EN.T.NI..........T.......T....TN.
clfA_021[1]   ..........................................T............N..
clfA_023[1]   ................................V.......Y.TH..........N..
clfA_024[1]   ..........................................T.....................
```

FIGURE 8D ClfA align 4/5

```
                370        380        390        400        410        420
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22] ANKTVLVDNEKYGKPYNLSIKGTIDQIDKTNNTYRQTIYVNPSGDNVIAPVLTGNLKPNT
clfA_002[19] .S....I......Q.H.............................VL.A.....I...
clfA_004[15] ..............................................................
clfA_012[10] ..............................................................
clfA_005[5]  .S....I......Q.H.............................VL.A.....I...
clfA_022[5]  .S....I......Q.H.............................VL.A.....I...
clfA_003[4]  ..............................................................
clfA_009[4]  ..............................................................
clfA_013[3]  DS....I......Q.H.............................VL.A.....I...
clfA_014[3]  ..............................................................
clfA_015[3]  .S....I......Q.H.............................VL.A.....I...
clfA_006[2]  .S....I......Q.H.............................VL.A.....I...
clfA_007[2]  .S....I......Q.H.............................VL.A.....I...
clfA_008[2]  ..............................................................
clfA_010[2]  ..............................................................
clfA_017[2]  ..............................................................
clfA_011[1]  ..............................................................
clfA_016[1]  ..............................................................
clfA_018[1]  ..............................................................
clfA_019[1]  .S....I......Q.H.............................VL.......I.KS
clfA_020[1]  .S....I......Q.H.............................VL.A.....I...
clfA_021[1]  ..............................................................
clfA_023[1]  ..........................V.....................................
clfA_024[1]  ..............................................................

                430        440        450        460        470        480
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22] DSNALIDQQNTSIKVYKVDNAADLSESYFVNPENFEDVTNSVNITFPNPNQYKVEFNTPD
clfA_002[19] K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_004[15] .......A............S......Y...D......D.....................
clfA_012[10] ..............................................................
clfA_005[5]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_022[5]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_003[4]  ..............................................................
clfA_009[4]  E.............................................................
clfA_013[3]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_014[3]  ..............................................................P.D.
clfA_015[3]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_006[2]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_007[2]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_008[2]  ..............................................................
clfA_010[2]  ..............................................................
clfA_017[2]  ..............................................................
clfA_011[1]  ..............................................................
clfA_016[1]  ..............................................................
clfA_018[1]  ..............................................................
clfA_019[1]  N......AN..N.........N......Y...SD......Q.R.S...A.......P.D.
clfA_020[1]  K......AK..D....R....N......Y...SD......Q.R.S...A.......P.D.
clfA_021[1]  ..............................................................
clfA_023[1]  ..............................................................
clfA_024[1]  .......A............S......Y...D......D.....................
```

FIGURE 8E ClfA align 5/5

```
                    490       500       510       520       530       540
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22] DQITTPYIVVVNGHIDPNSKGDLALRSTLYGYNSNIIWRSMSWDNEVAPNNGSGSGDGID
clfA_002[19] ................A.T.....F...D..F.....................
clfA_004[15] ................................................................
clfA_012[10] ..............................D.RFV.....................
clfA_005[5]  ................A.T.....F...D..F.....................
clfA_022[5]  ................A.T.....F...D..F.....................
clfA_003[4]  ................................................................
clfA_009[4]  ................................................................
clfA_013[3]  ................A.T.....F...D..F.....................
clfA_014[3]  ................................................................
clfA_015[3]  ................A.T.....F...D..F.....................
clfA_006[2]  ................A.T.....F...D..F.....................
clfA_007[2]  ................A.T.....F...D..F.....................
clfA_008[2]  ..............................D.RFV.....................
clfA_010[2]  ................................................................
clfA_017[2]  ................................................................
clfA_011[1]  ................................................................
clfA_016[1]  ................................................................
clfA_018[1]  ................................................................
clfA_019[1]  ................A.T.....F...D..F.....................
clfA_020[1]  ................A.T.....F...D..F.....................
clfA_021[1]  ..............................D.RFV.....................
clfA_023[1]  ................................................................
clfA_024[1]  ............................................................F.....

                    550       560       570       580       590       600
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfA_001[22] KPVVPEQPDEPGEIEPIPE
clfA_002[19] ...................
clfA_004[15] ...................
clfA_012[10] ...................
clfA_005[5]  ...................
clfA_022[5]  ...................
clfA_003[4]  ...................
clfA_009[4]  ...................
clfA_013[3]  ...................
clfA_014[3]  ...................
clfA_015[3]  ...................
clfA_006[2]  ...................
clfA_007[2]  ...................
clfA_008[2]  ...................
clfA_010[2]  ...................
clfA_017[2]  ...................
clfA_011[1]  ...................
clfA_016[1]  ...................
clfA_018[1]  ...................
clfA_019[1]  ...................
clfA_020[1]  ...................
clfA_021[1]  ...................
clfA_023[1]  ...................
clfA_024[1]  ...................
```

FIGURE 9
ClfA Phylogenetic Tree

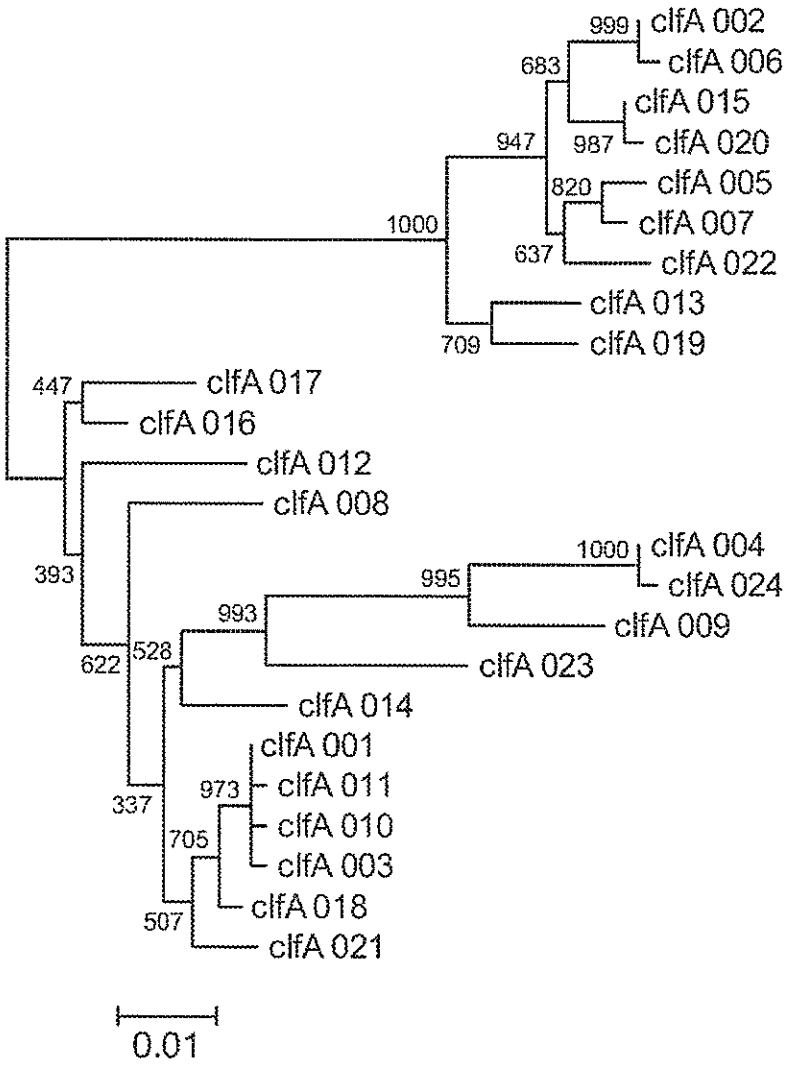


FIGURE 10A ClfB Align 1/5

```
                    10        20        30        40        50        60
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29]  LKKRIDYLSNKQNKYSIRRFTVGTTSVIVGATILFGIGNHQAQASEQSNDTTQSSKNNAS
clfB_007[12]  ..............................................................
clfB_009[12]  ..............................................................
clfB_002[11]  ..............................................................
clfB_021[4]   ..............................................................
clfB_010[3]   ..............................................................
clfB_011[3]   ..............................................................
clfB_008[2]   ..............................................................
clfB_001[1]   ..............................................................
clfB_003[1]   ..............................................................
clfB_004[1]   ..............................................................
clfB_005[1]   ..............................................................
clfB_013[1]   ..............................................................
clfB_014[1]   ..............................................................
clfB_015[1]   ..........R...................................................
clfB_016[1]   ..............................................................
clfB_017[1]   ..............................................................
clfB_018[1]   ..............................................................
clfB_019[1]   ..............................................................
clfB_020[1]   ..............................................................
clfB_022[1]   ..............................................................
clfB_023[1]   ..............................................................
clfB_024[1]   ..............................................................

                    70        80        90        100       110       120
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29]  ADSEKNNMIETPQLNTTANDTSDISANTNSANVDSTTKPMSTQTSNTTTTEPASTNETPQ
clfB_007[12]  ..............................................................
clfB_009[12]  ..................................A...........................
clfB_002[11]  .......T..........................A.T.........................
clfB_021[4]   ..................................A...........................
clfB_010[3]   ..................................A...........................
clfB_011[3]   ..................................A...........................
clfB_008[2]   ..................................A...........................
clfB_001[1]   .......T..........................A...........................H
clfB_003[1]   .......T..........................A...........................
clfB_004[1]   .......T..........................A...........................
clfB_005[1]   .......T.........--...............A...........................
clfB_013[1]   ..............................................................
clfB_014[1]   ..................................A...........................
clfB_015[1]   ..............................................................
clfB_016[1]   ..............................................................
clfB_017[1]   ..................................A...........................
clfB_018[1]   .......T..........................A...........................
clfB_019[1]   ..................................A...........................
clfB_020[1]   ..................................A...........................
clfB_022[1]   ..................................A...........................
clfB_023[1]   .......T..........................A.T.........................
clfB_024[1]   ..............................................................
```

FIGURE 10B ClfB Align 2/5

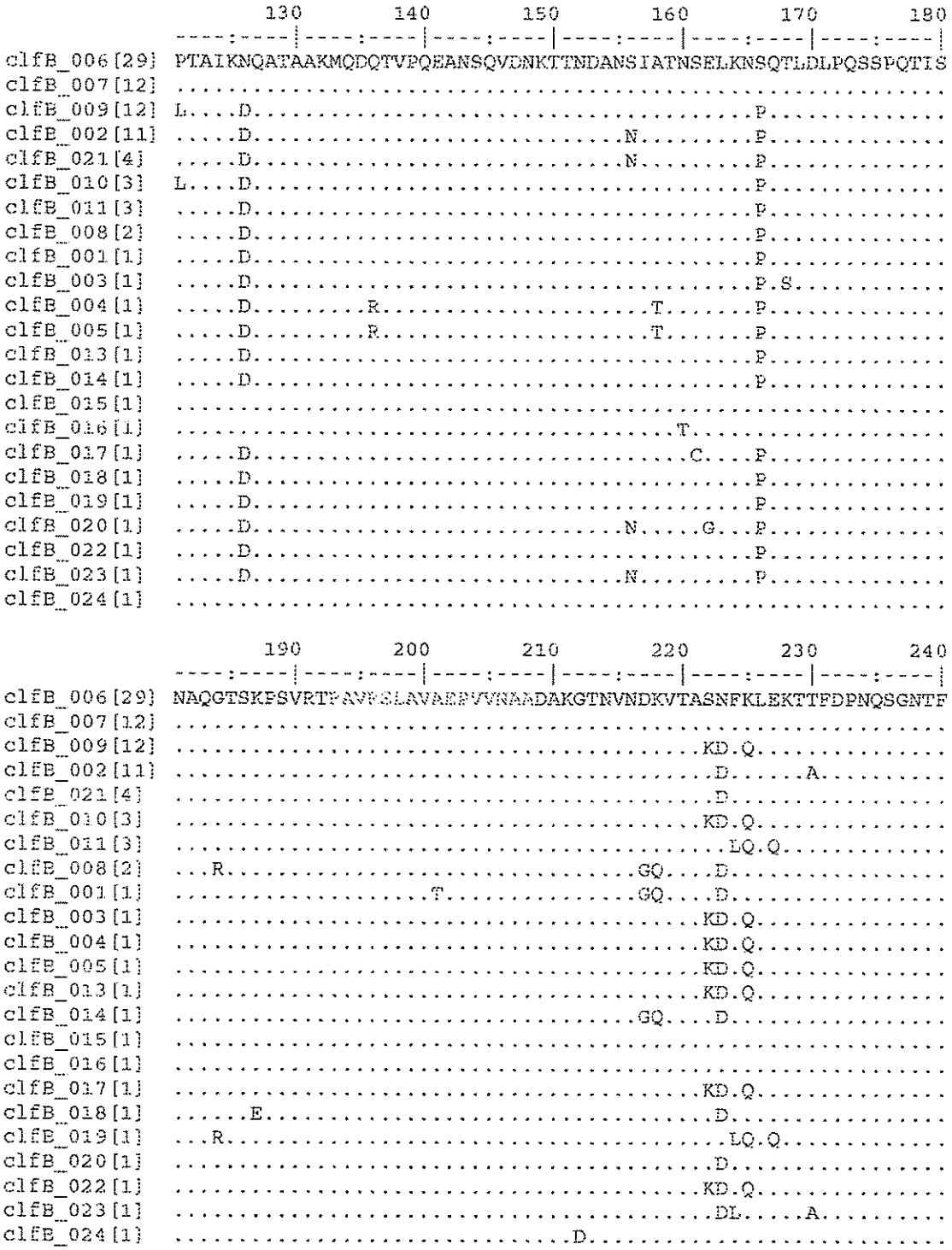


FIGURE 10C ClfB Align 3/5

```
                    250        260        270        280        290        300
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29] MAANFTVTDKVKSGDYFTAKLPDSLTGNGDVDYSNSNNTMPIADIKSTNGDVVAKATYDI
clfB_007[12] ..............................................................
clfB_009[12] ........GQ..............V.....................VNDKNE.........
clfB_002[11] .....K..GQ..............V.....................................
clfB_021[4]  ..............................................................T...N.
clfB_010[3]  ........GQ..............V.....................................
clfB_011[3]  ..............................................................
clfB_008[2]  ..V..K.AG.......Y.............................................
clfB_001[1]  .....K.AG..............V.....................................
clfB_003[1]  ........GQ..............V.....................VNDKNE.........
clfB_004[1]  ........GQ............E.............................N.........
clfB_005[1]  ........GQ............E.............................N.........
clfB_013[1]  ........GQ..............V.....................................
clfB_014[1]  ...K....GQ..A...........VN....................................
clfB_015[1]  ..............................................................
clfB_016[1]  ..............................................................
clfB_017[1]  ........GQ..............V.....................................
clfB_018[1]  .....K.AG..............V.....................VNDKKE.........
clfB_019[1]  ..............................................................
clfB_020[1]  ..............................................................T...N.
clfB_022[1]  ........GQ..............V.....................................
clfB_023[1]  .....K..GQ..............V.....................................
clfB_024[1]  ..............................................................

                    310        320        330        340        350        360
                    ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29] LTKTYTFVFTDYVNNKENINGQFSLPLFTDRAKAFKSGTYDANINIADEMFNNKITYNYS
clfB_007[12] ..............................................................
clfB_009[12] ..............D.Q....K.....................................
clfB_002[11] ..............D.....................................D.........
clfB_021[4]  ..............D.....................................
clfB_010[3]  ..............E.....................................D.........
clfB_011[3]  ..............D.....................................
clfB_008[2]  ..............D.....................................
clfB_001[1]  ..............D.....................................
clfB_003[1]  ..............D.Q....K.............I.....................
clfB_004[1]  ..............D.....................................
clfB_005[1]  ..............D.....................................
clfB_013[1]  ..............E.....................................D.........
clfB_014[1]  ..............................................................
clfB_015[1]  ..............................................................
clfB_016[1]  ..............................................................
clfB_017[1]  ..............................................................
clfB_018[1]  ..............D.....................................Q.......
clfB_019[1]  ..............D.....................................
clfB_020[1]  ..............D.....................................
clfB_022[1]  ..............................................................
clfB_023[1]  ..............D.....................................D.........
clfB_024[1]  ..............................................................
```

FIGURE 10D ClfB Align 4/5

```
                370       380       390       400       410       420
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29] SPIAGIDKPNGANISSQIIGVDTASGQNTYKQTVFVNPKQRVLGNTWVYIKGYQDKIEES
clfB_007[12] ..............................................................
clfB_009[12] ..............................................................
clfB_002[11] ..............................................................
clfB_021[4]  ..............................................................
clfB_010[3]  ..............................................................
clfB_011[3]  ..............................................................
clfB_008[2]  ..............................................................
clfB_001[1]  ..............................................................
clfB_003[1]  ..............................................................
clfB_004[1]  ..............................................................
clfB_005[1]  ..............................................................
clfB_013[1]  ..............................................................
clfB_014[1]  ................................Y.............................
clfB_015[1]  ..............................................................
clfB_016[1]  ..............................................................
clfB_017[1]  ..............................................................
clfB_018[1]  ..............................................................
clfB_019[1]  ..............................................................
clfB_020[1]  ..............................................................
clfB_022[1]  ..............................................................
clfB_023[1]  ..............................................................
clfB_024[1]  ..............................................................

                430       440       450       460       470       480
                ----:----|----:----|----:----|----:----|----:----|----:----|
clfB_006[29] SGKVSATDTKLRIFEVNDTSKLSDSYYADPNDSNLKEVTDQFKNRIYYEHPNVASIKFGD
clfB_007[12] ................I.............................................
clfB_009[12] ..........................................DK.T.KYQ.....N...
clfB_002[11] ......................................GE..DK.S.KYD.....N...
clfB_021[4]  ......................................NE..DK.T.KYQ.....N...
clfB_010[3]  ......................................NE..DK.T.KYQ.....N...
clfB_011[3]  ..........................................DK.T.KYQ.....N...
clfB_008[2]  ......................................NE..DK.T.KYQ.....N...
clfB_001[1]  ..........................................DK.S.KYD.....N...
clfB_003[1]  ......................................GE.N...F.........N...
clfB_004[1]  ..........................................DK.T.KYQ.....N...
clfB_005[1]  ..........................................DK.T.KYQ.....N...
clfB_013[1]  ......................................NE..DK.T.KYQ.....N...
clfB_014[1]  ......................................NE..DK.T.KYQ.....N...
clfB_015[1]  ..............................................................
clfB_016[1]  ..............................................................
clfB_017[1]  ......................................NE..DK.T.KYQ.....N...
clfB_018[1]  ......................................NE..DK.T.KYQ.....N...
clfB_019[1]  ......K.......................................................N...
clfB_020[1]  ......................................NE..DK.T.KYQ.....N...
clfB_022[1]  ......................................NE..DK.T.KYQ.....N...
clfB_023[1]  ......................................GE..DK.S.KYD.....N...
clfB_024[1]  ..............................................................
```

FIGURE 10E ClfB Align 5/5

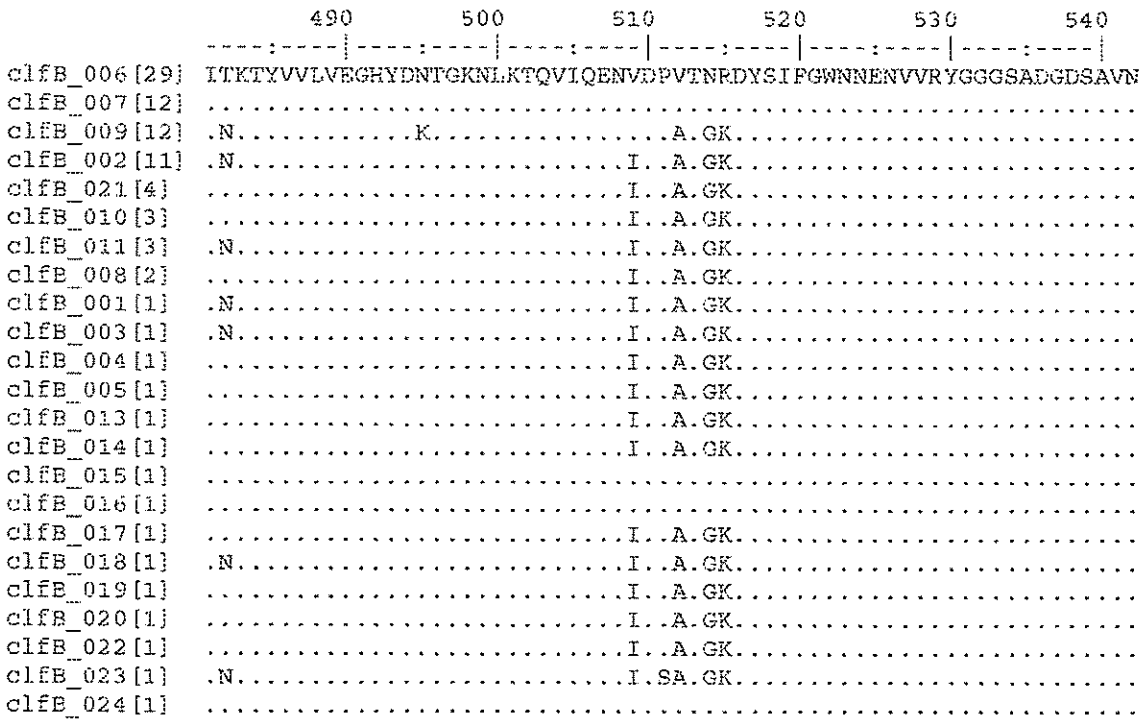


FIGURE 11

ClfB PhylogeneticTree

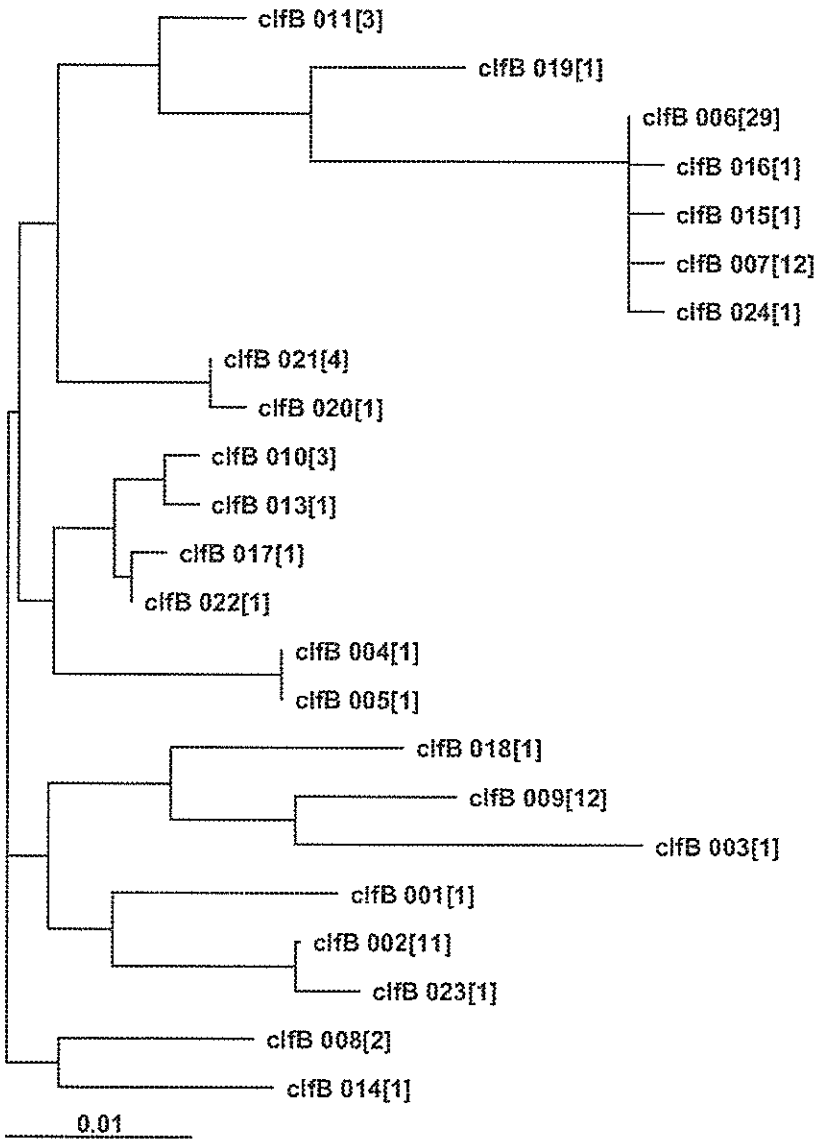


FIGURE 12 MntC Alignment

```
                10        20        30        40        50        60
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] MKKLVPLLLALLLLVAACGTGGKQSSDKSNGKLKVVTTNSILYDMAKNVGGDNVDIHSIV
305_006[3]  ............................................................
305_007[3]  ..................D.........................................
305_002[2]  ............................................................
305_003[2]  ............................................................
305_009[1]  ............................................................
305_008[1]  ............................................................

                70        80        90        100       110       120
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] PVGQDPHEYEVKPKDIKKLTDADVILYNGLNLETGNGWFEKALEQAGKSLKDKKVIAVSK
305_006[3]  ............................................................
305_007[3]  ............................................................
305_002[2]  ........................I...................................
305_003[2]  ............................................................
305_009[1]  ............................................................
305_008[1]  ............................................................

                130       140       150       160       170       180
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] DVKPIYLNGEEGNKDKQDPHAWLSLDNGIKYVKTIQQTFIDNDKKHKADYEKQGNKYIAQ
305_006[3]  ............................................................
305_007[3]  ............................................................
305_002[2]  ............................................................
305_003[2]  ............................................................
305_009[1]  ............................................................
305_008[1]  ...........................................................Y....

                190       200       210       220       230       240
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] LEKLNNDSKD---KFNDIPKEQRAMITSEGAFKYFSKQYGITPGYIWEINTEKQGTPEQM
305_006[3]  ..........---....................................................
305_007[3]  ..........---....................................................
305_002[2]  ..........---....................................................
305_003[2]  ..........SKD....................................................
305_009[1]  ..........---.X..................................................
305_008[1]  ..........---....................................................

                250       260       270       280       290       300
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] RQAIEFVKKHKLKHLLVETSVDKKAMESLSEETKKDIFGEVYTDSIGKEGTKGDSYYKMM
305_006[3]  ............................................................
305_007[3]  ............................................................
305_002[2]  ............................................................
305_003[2]  ............................................................
305_009[1]  ............................................................
305_008[1]  ............................................................

        310       320       330       340       350       360
          ----:----|----:----|----:----|----:----|----:----|----:----|
305_001[94] KSNIETVHGSMK
305_006[3]  ....D.......
305_007[3]  ............
305_002[2]  ............
305_003[2]  ............
305_009[1]  ....D.......
305_008[1]  ....D.......
```

FIGURE 13

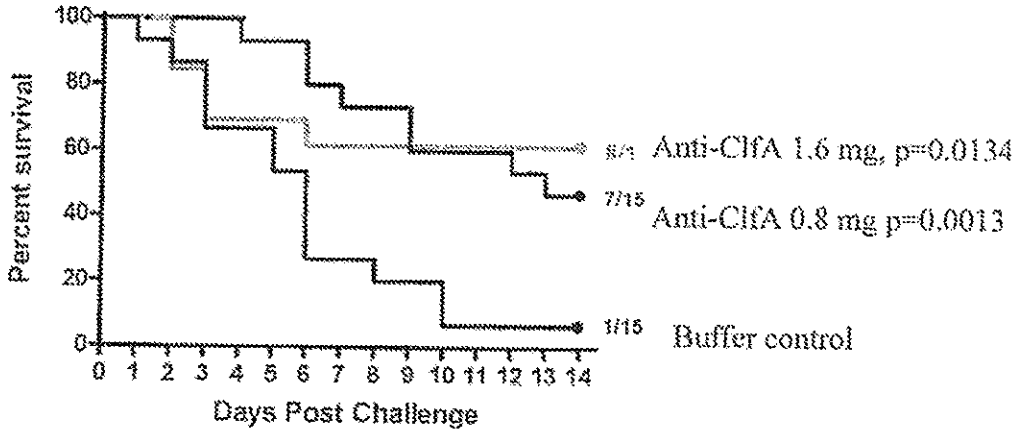

Percent survival
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Days Post Challenge
8/15
Anti-ClfA 1.6 mg, p=0.0134
7/15
Anti-ClfA 0.8 mg p=0.0013
1/15
Buffer control

FIGURE 14

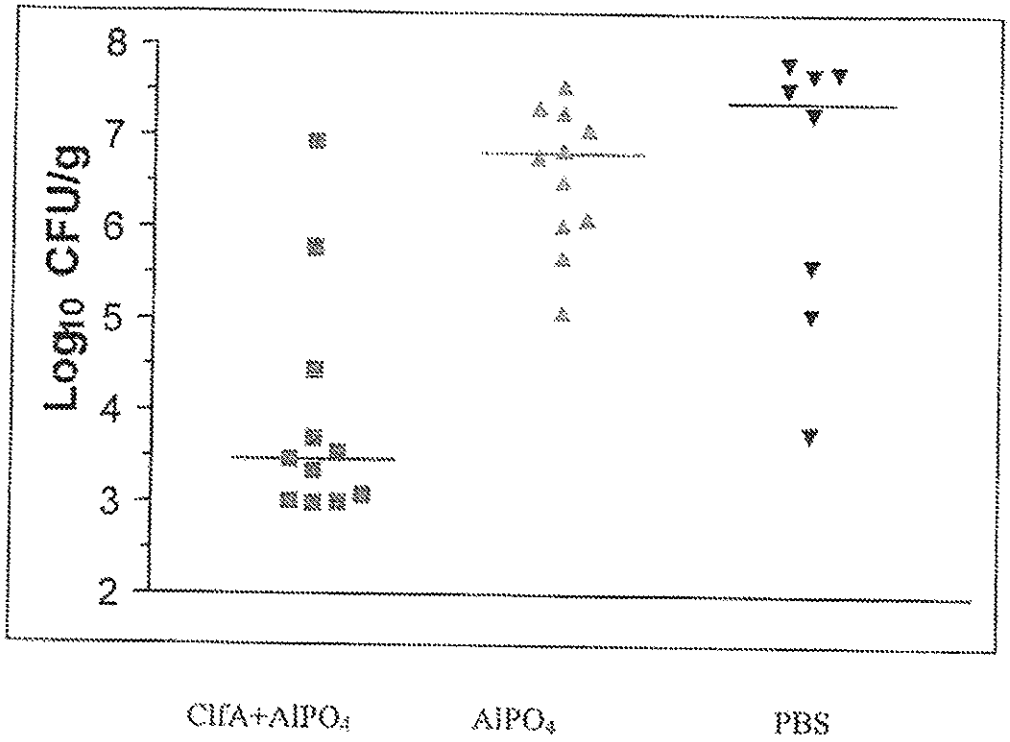
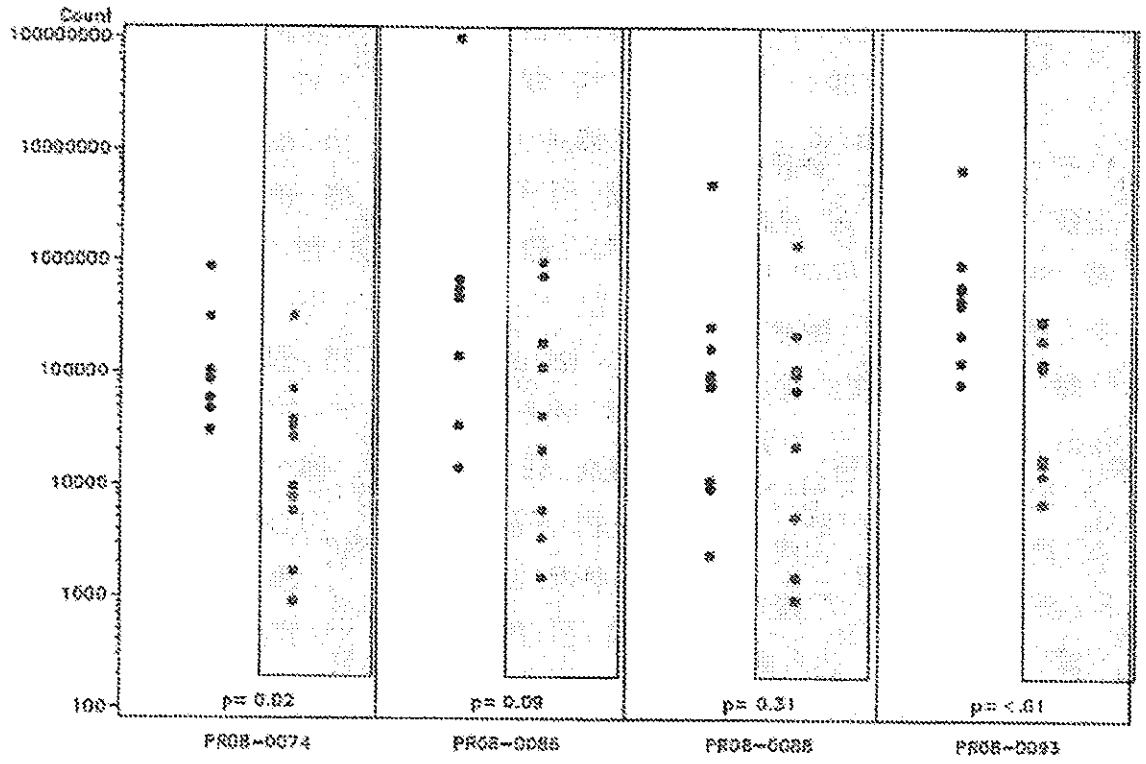


FIGURE 15A

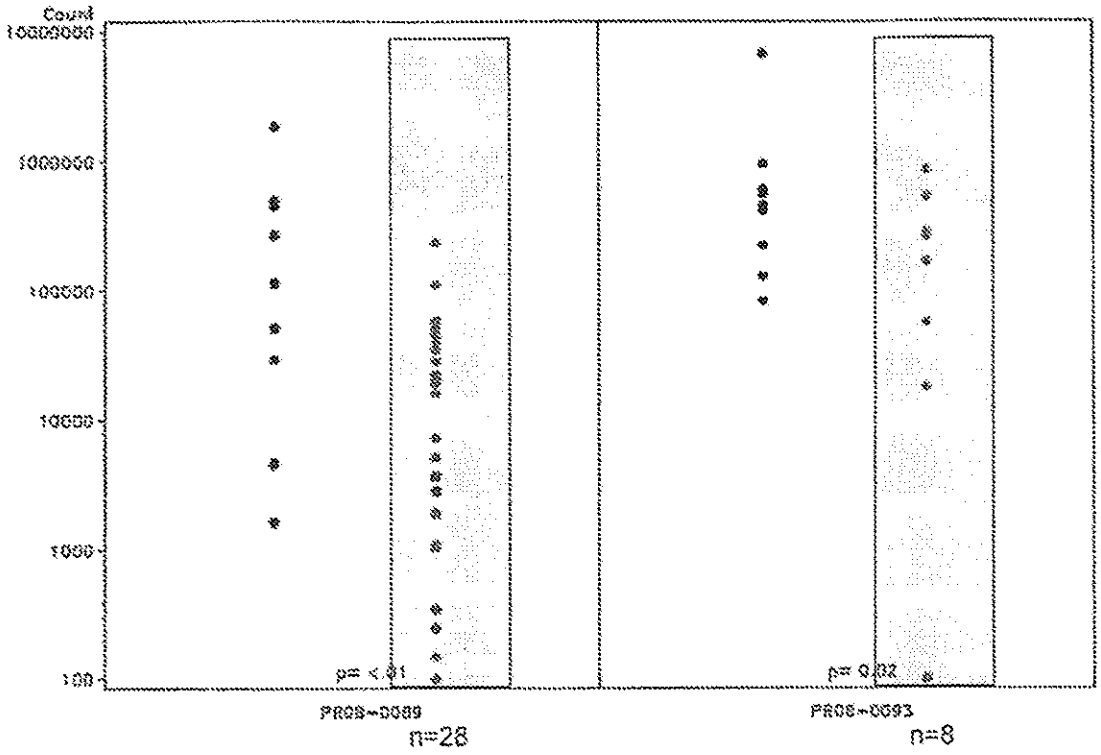


n=10 n=9 n=9 n=8

Meta analysis p= 0.0001

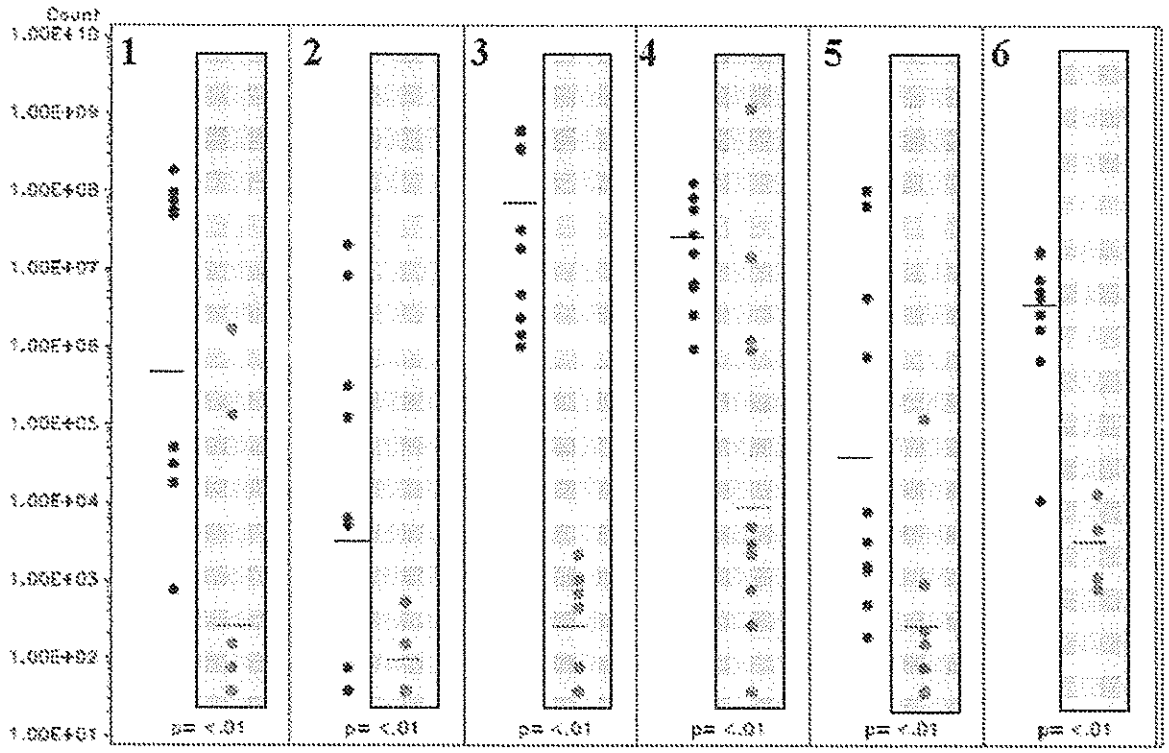
Shaded area is the MntC immunized group.

FIGURE 15B



Meta analysis p= < 0.0001
Shaded area is MntC immunized group

FIGURE 16



n=10 n=10 n=10 n=10 n=10 n=4

Meta analysis p= < 0.0001
Shaded area is serotype 5 polysaccharide conjugate-immunized group

FIGURE 17

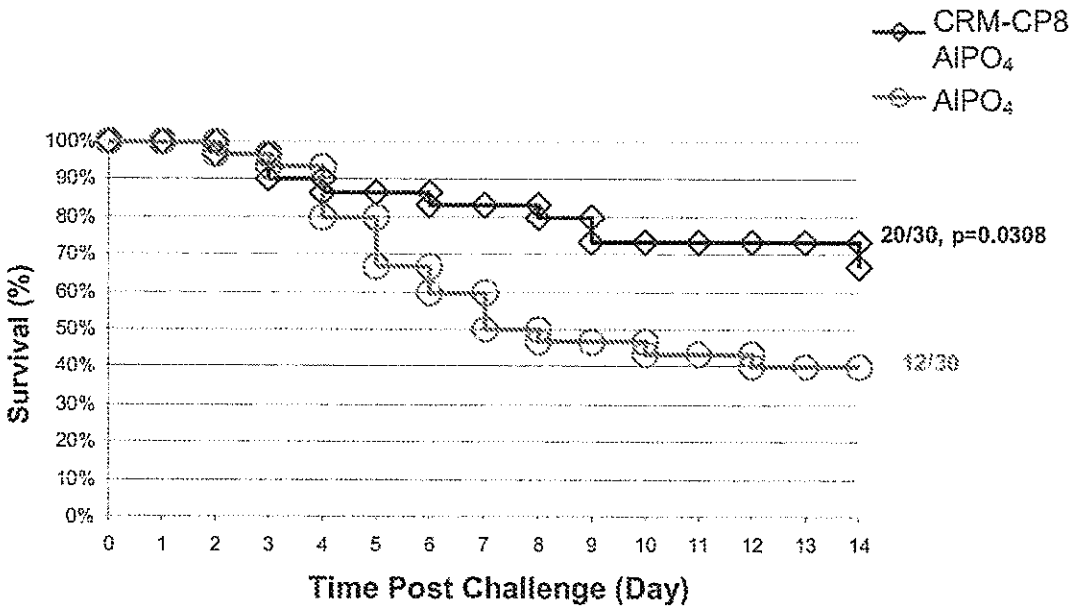

CRM-CP8 AlPO4
AlPO4
20/30, p=0.0308
12/30
Survival (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Time Post Challenge (Day)

FIGURE 18

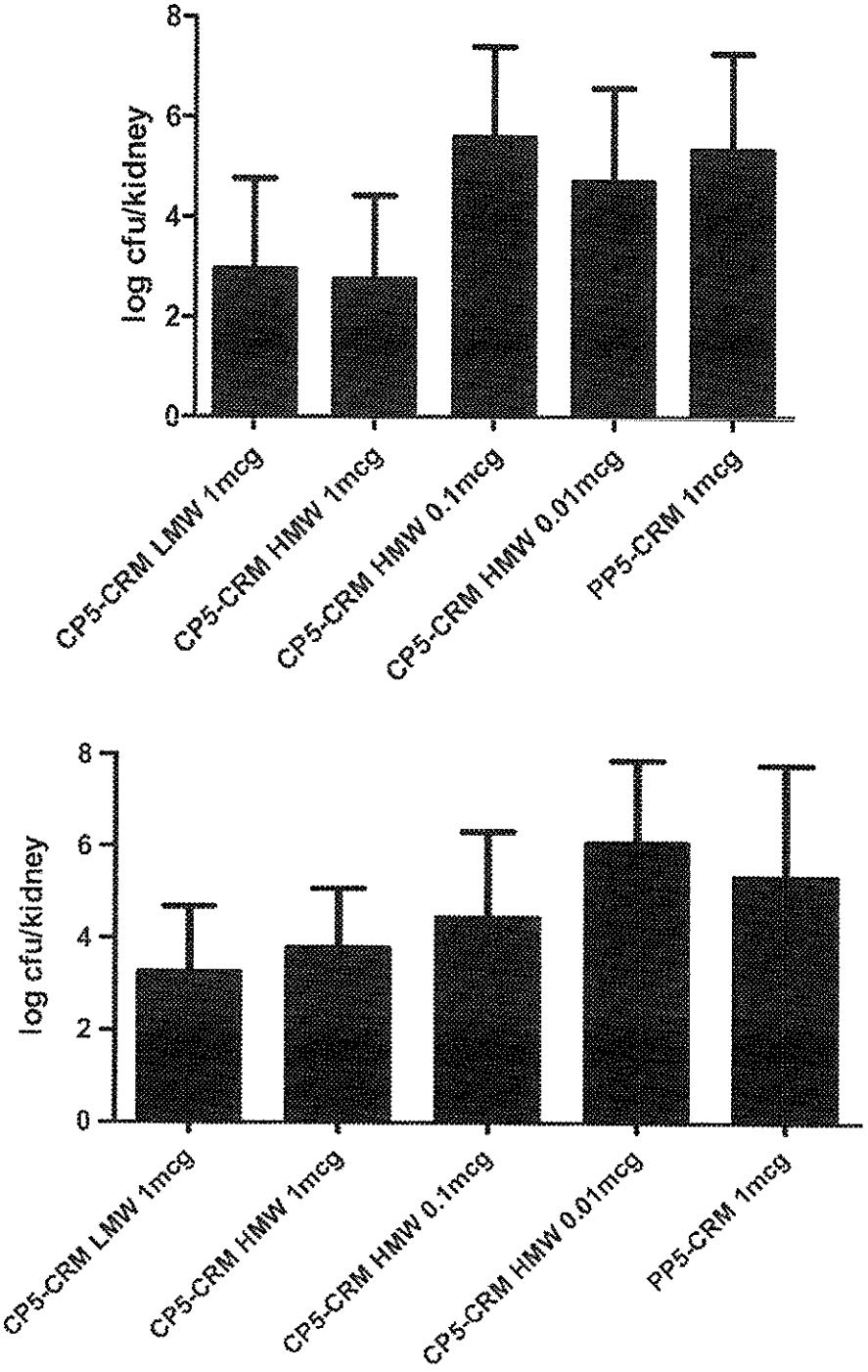

log cfu/kidney
0
2
4
6
8
CP5-CRM LMW 1mcg
CP5-CRM HMW 1mcg
CP5-CRM HMW 0.1mcg
CP5-CRM HMW 0.01mcg
PP5-CRM 1mcg
log cfu/kidney
0
2
4
6
8
CP5-CRM LMW 1mcg
CP5-CRM HMW 1mcg
CP5-CRM HMW 0.1mcg
CP5-CRM HMW 0.01mcg
PP5-CRM 1mcg

FIGURE 19

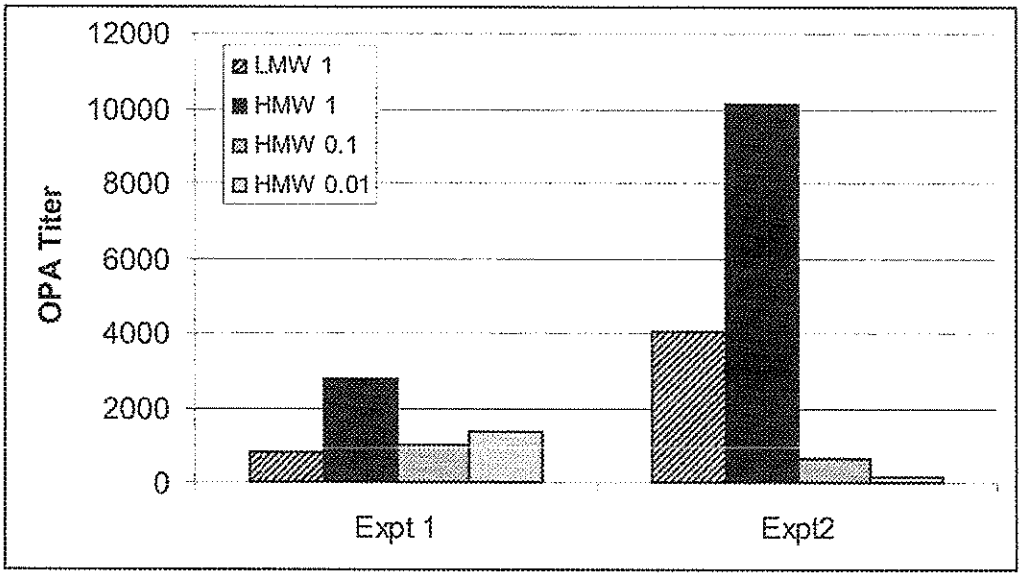

12000
10000
8000
6000
4000
2000
0
OPA Titer
LMW 1
HMW 1
HMW 0.1
HMW 0.01
Expt 1
Expt2

FIGURE 20

