Figure 1

A

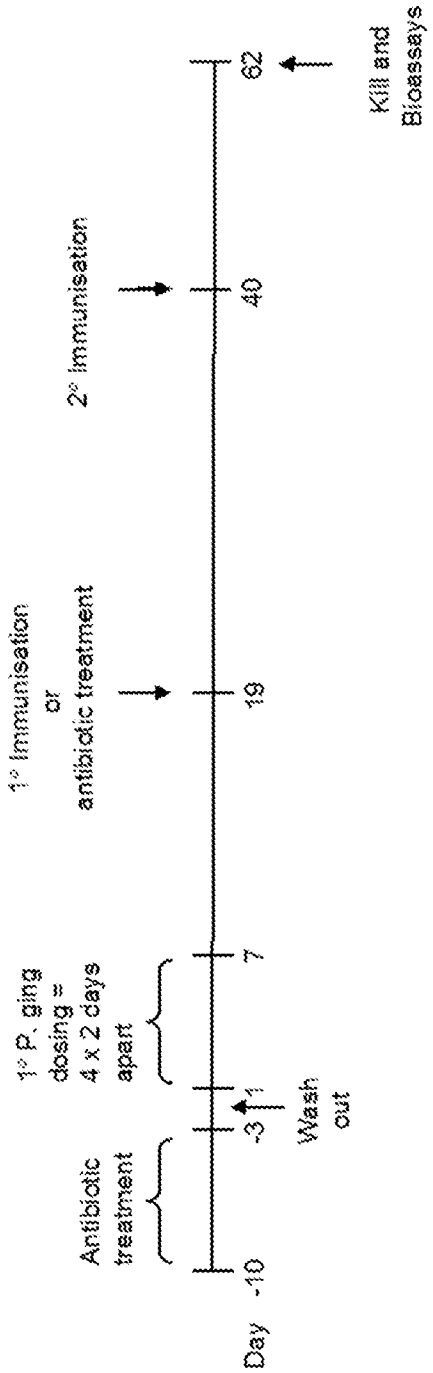

Day -10
-3
1
7
19
40
62
Antibiotic treatment
1° P. ging dosing = 4 x 2 days apart
Wash out
1° Immunisation or antibiotic treatment
2° Immunisation
Kill and Bioassays

Figure 1 continued

B

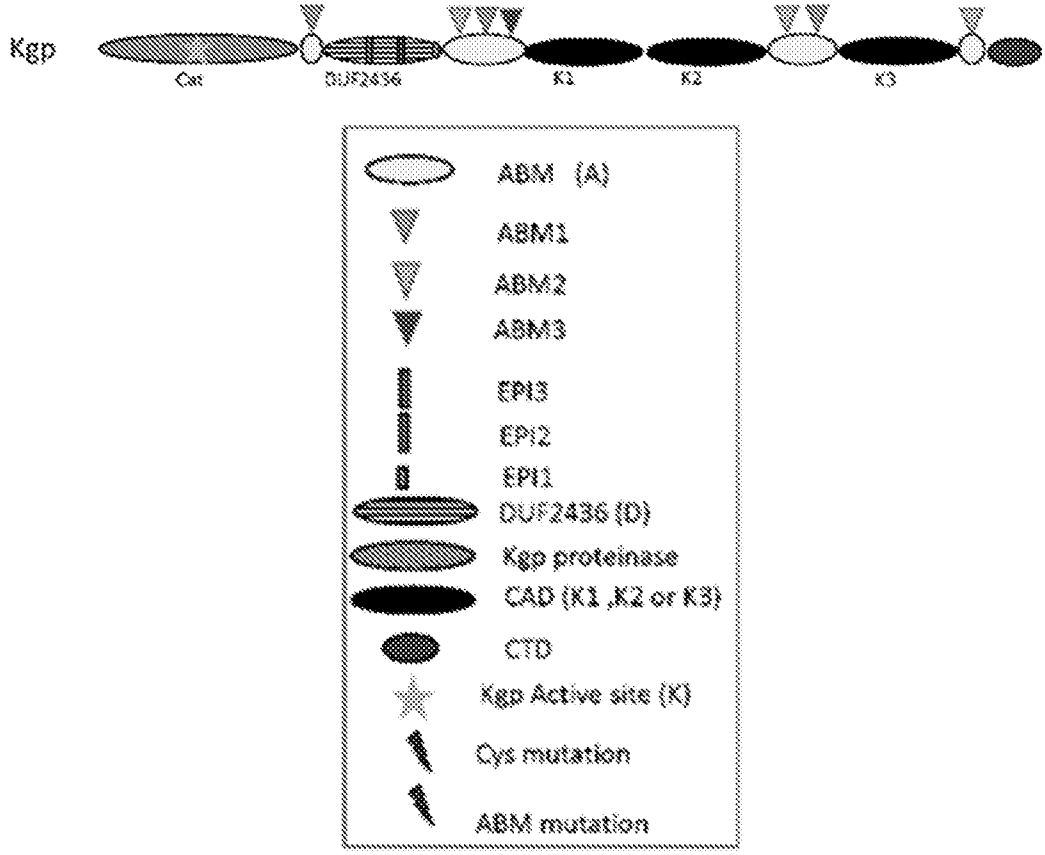
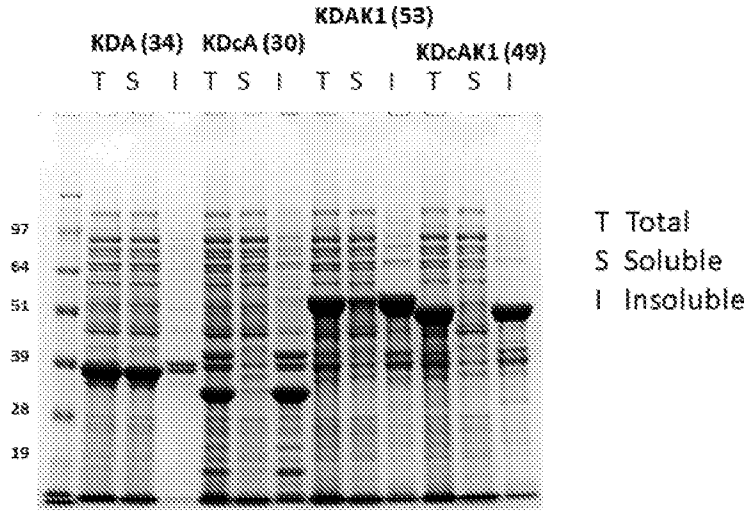


Figure 2

A.


KDA (34)
KDcA (30)
KDAK1 (53)
KDcAK1 (49)
T S I T S I T S I T S I
97
64
51
39
28
19
T Total
S Soluble
I Insoluble

B,

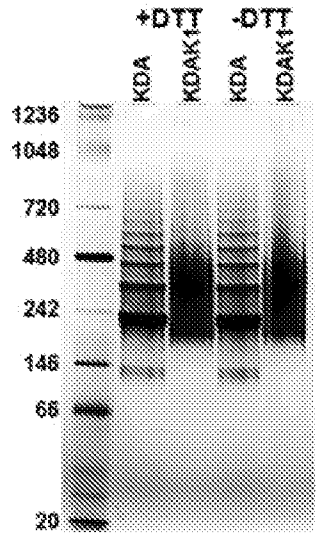
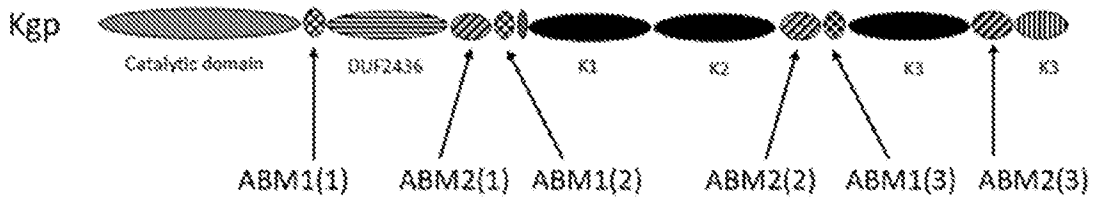
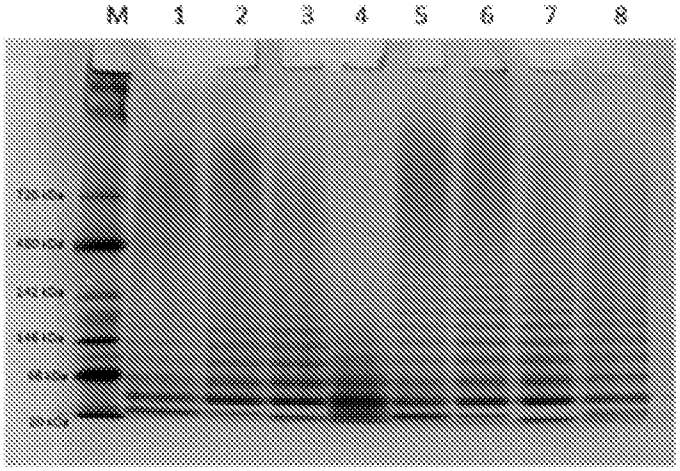

+DTT
-DTT
KDA
KDAK1
KDA
KDAK1
1236
1048
720
480
242
146
66
20

Figure 3

A



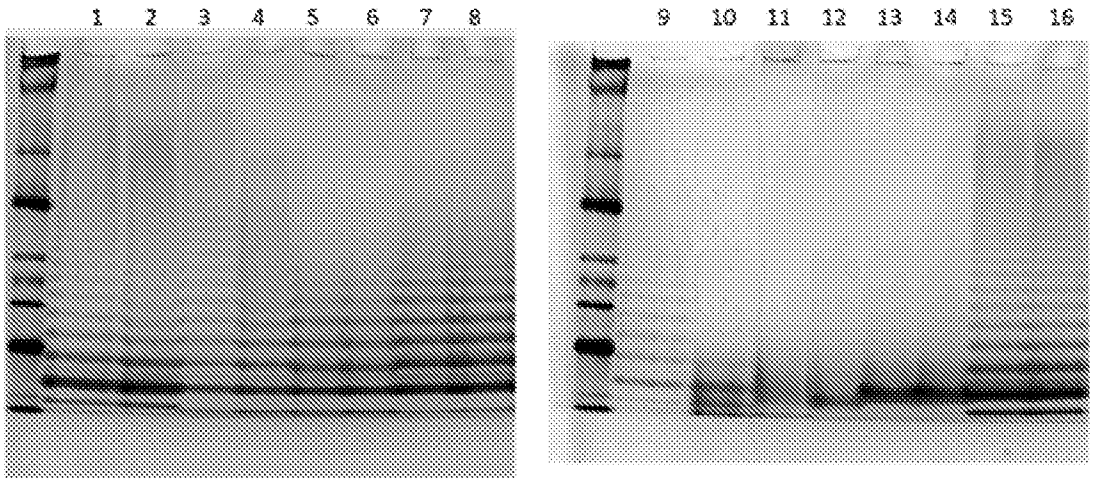
B



M Native Marker
1 rABM21 (+ DTT)
2 rABM21-AVQN (+ DTT)
3 rABM21-AVQA (+ DTT)
4 rABM21-AVQP (+ DTT)
5 rABM21 (- DTT)
6 rABM21-AVQN (- DTT)
7 rABM21-AVQA (- DTT)
8 rABM21-AVQP (- DTT)

Figure 3 continued

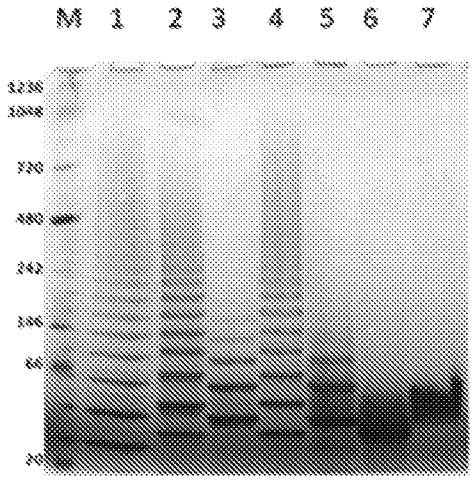
C



1: rABM12 (– DTT)
2: rABM12 (+ DTT)
3: rABM21-AVQA (– DTT)
4: rABM21-AVQA (+ DTT)
5: rABM21-AVQA-Cys>Ser (– DTT)
6: rABM21-AVQA-Cys>Ser (+ DTT)
7: rABM21-AVQA-2X Cys>Ser (– DTT)
8: rABM21-AVQA-2X Cys>Ser (+ DTT)

9: rABM21-AVQP (– DTT)
10: rABM21-AVQP (+ DTT)
11: rABM21-AVQP-Cys>Ser (– DTT)
12: rABM21-AVQP-Cys>Ser (+ DTT)
13: rABM21-AVQP-2X Cys>Ser (– DTT)
14: rABM21-AVQP-2X Cys>Ser (+ DTT)
15: rABM21-2X Cys>Ser (– DTT)
16: rABM21-2X Cys>Ser (+ DTT)

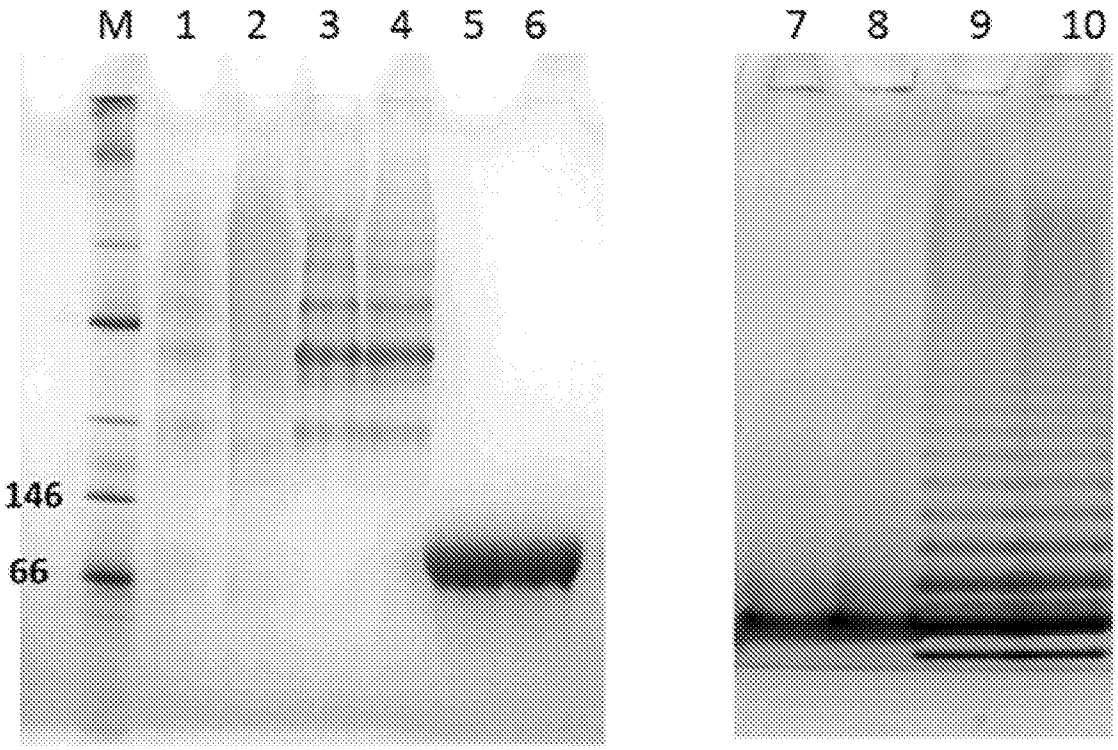
D



1. rABM21
2. rABM21-PNPFA
3. rABM21-SSEYQ
4. rABM21-PSPY
5. rABM21-Y>A
6. rABM21-Y>A/W>A
7. rABM21-AVQP-2X Cys>Ser

Figure 3 continued

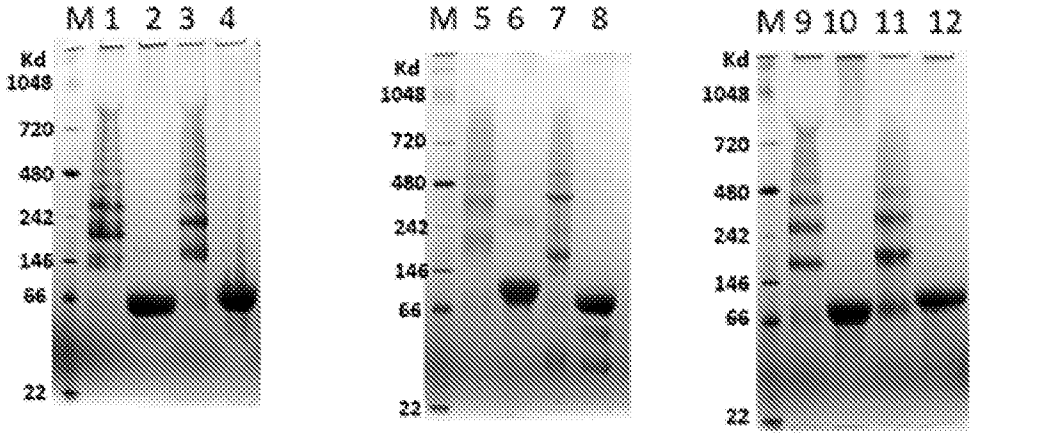
E



1- KDcAK1n + DTT
2- KDcAK1n - DTT
3- KDcAK1n 4XCys>Ser + DTT
4- KDcAK1n 4XCys>Ser - DTT
5- KDcAK1n 4XCys>Ser/PVQN>AVQP + DTT
6- KDcAK1n 4XCys>Ser/PVQN>AVQP - DTT
7- ABM21 2XCys>Ser/PVQN>AVQP - DTT
8- ABM21- 2XCys>Ser/PVQN>AVQP + DTT
9- ABM21 2X Cys>Ser - DTT
10-ABM21 2XCys>Ser + DTT

Figure 3 Continued

F



1: rKDA
2: rKDA-3S-AVQP
3: rKDAK
4: rKDAK-3S-AVQP

5: rKDcAK1n
6: rKDcAK1n-3S-AVQP
7: rKDcAK1nK
8: rKDcAK1nK-3S-AVQP

9: rKDAK1n
10: rKDAK1n-3S-AVQP
11: rKDAK1nK
12: rKDAK1nK-3S-AVQP

G

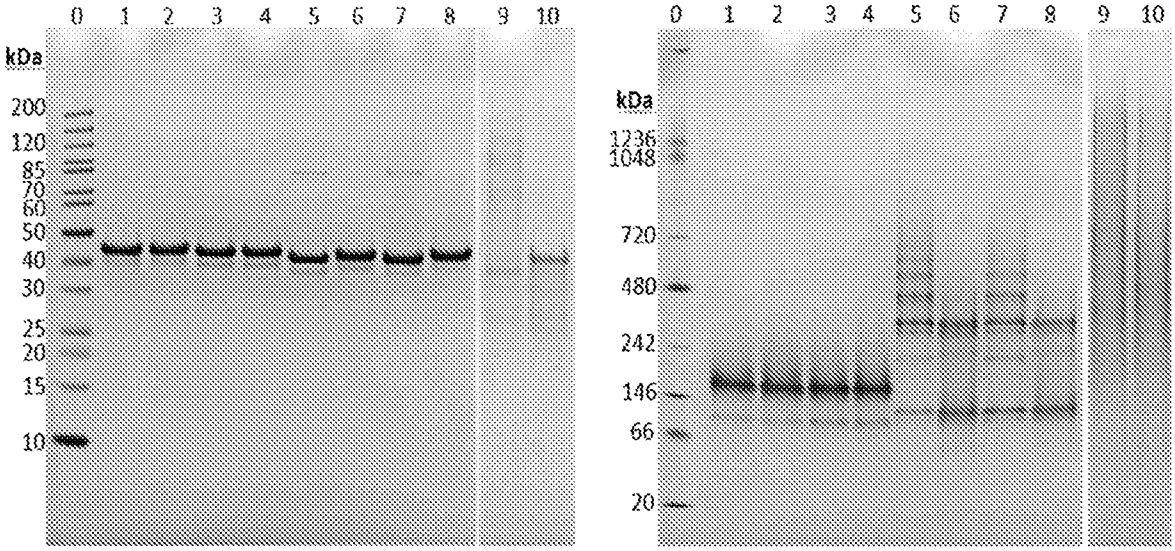


Figure 4

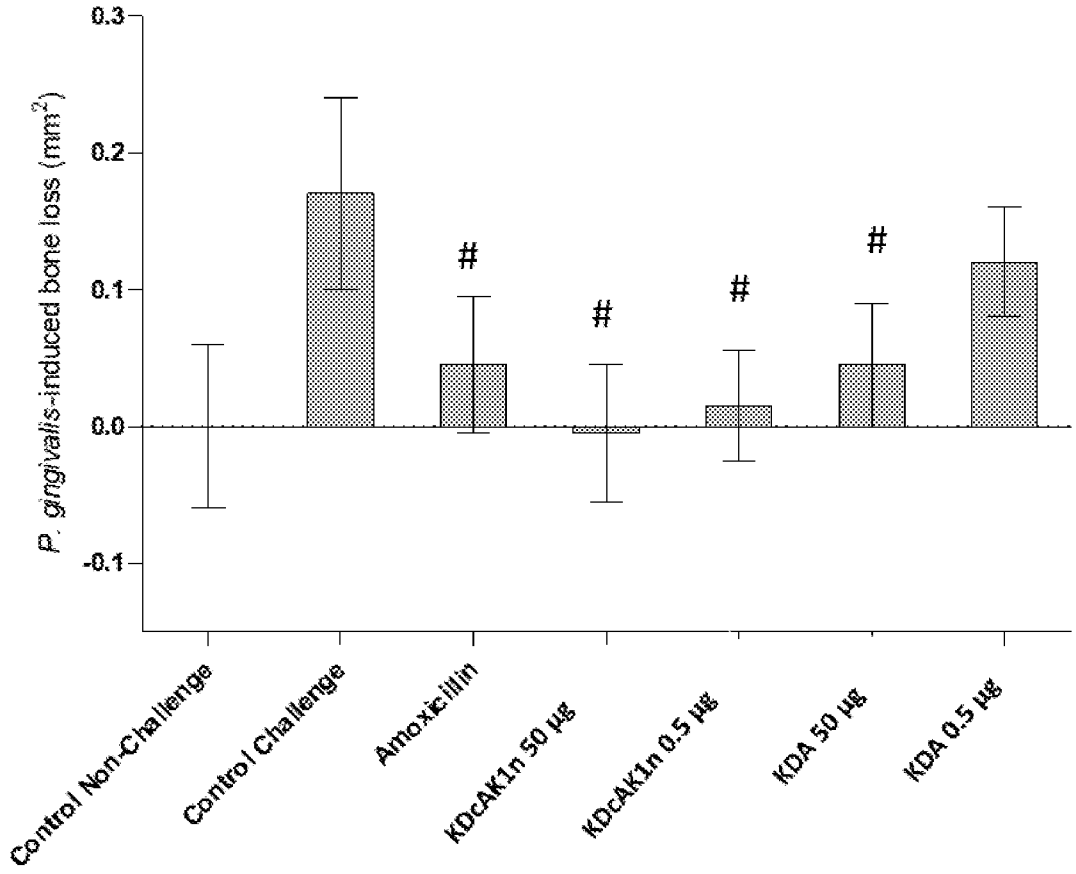

0.3
0.2
0.1
0.0
-0.1
P. gingivalis-induced bone loss (mm²)
#
#
#
#
Control Non-Challenge
Control Challenge
Amoxicillin
KDcAK1n 50 µg
KDcAK1n 0.5 µg
KDA 50 µg
KDA 0.5 µg

Figure 5

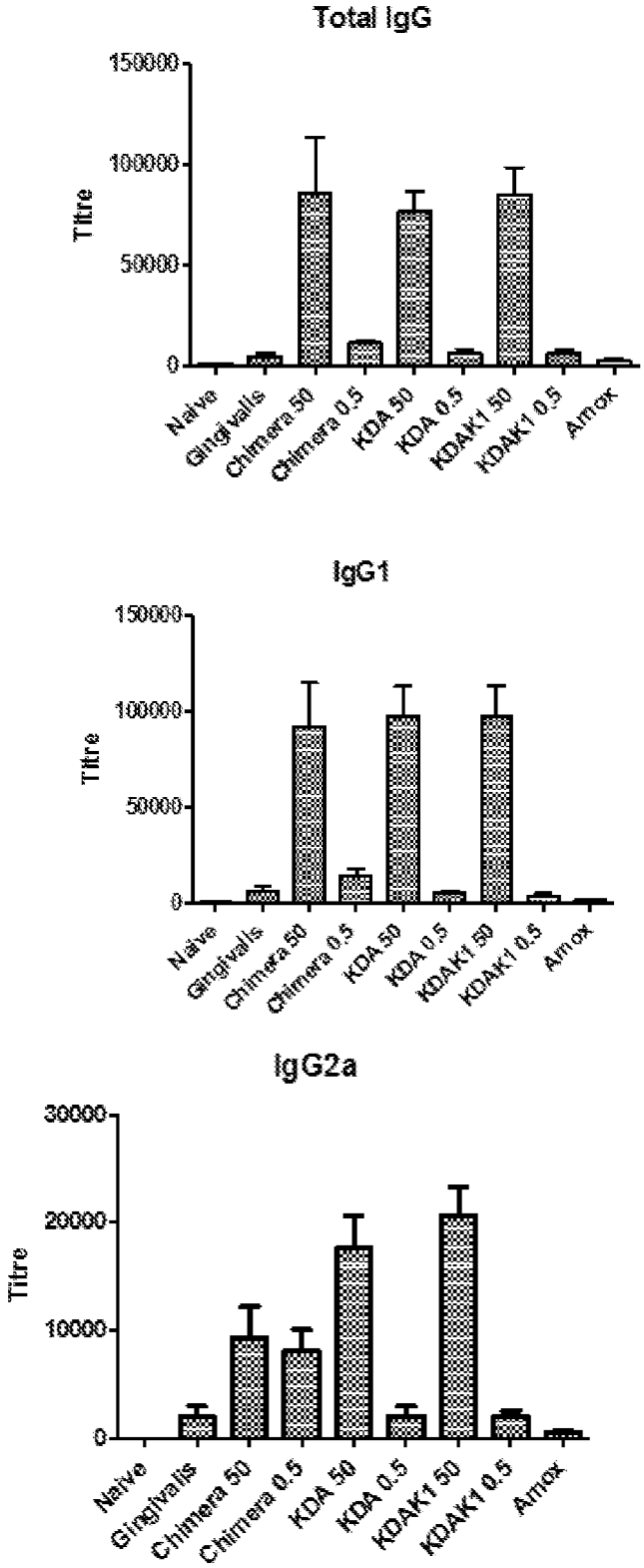

Total IgG
Titre
150000
100000
50000
0
Naive
Gingivalis
Chimera 50
Chimera 0.5
KDA 50
KDA 0.5
KDAK1 50
KDAK1 0.5
Arnox
IgG1
Titre
150000
100000
50000
0
Naive
Gingivalis
Chimera 50
Chimera 0.5
KDA 50
KDA 0.5
KDAK1 50
KDAK1 0.5
Arnox
IgG2a
Titre
30000
20000
10000
0
Naive
Gingivalis
Chimera 50
Chimera 0.5
KDA 50
KDA 0.5
KDAK1 50
KDAK1 0.5
Arnox

Figure 6

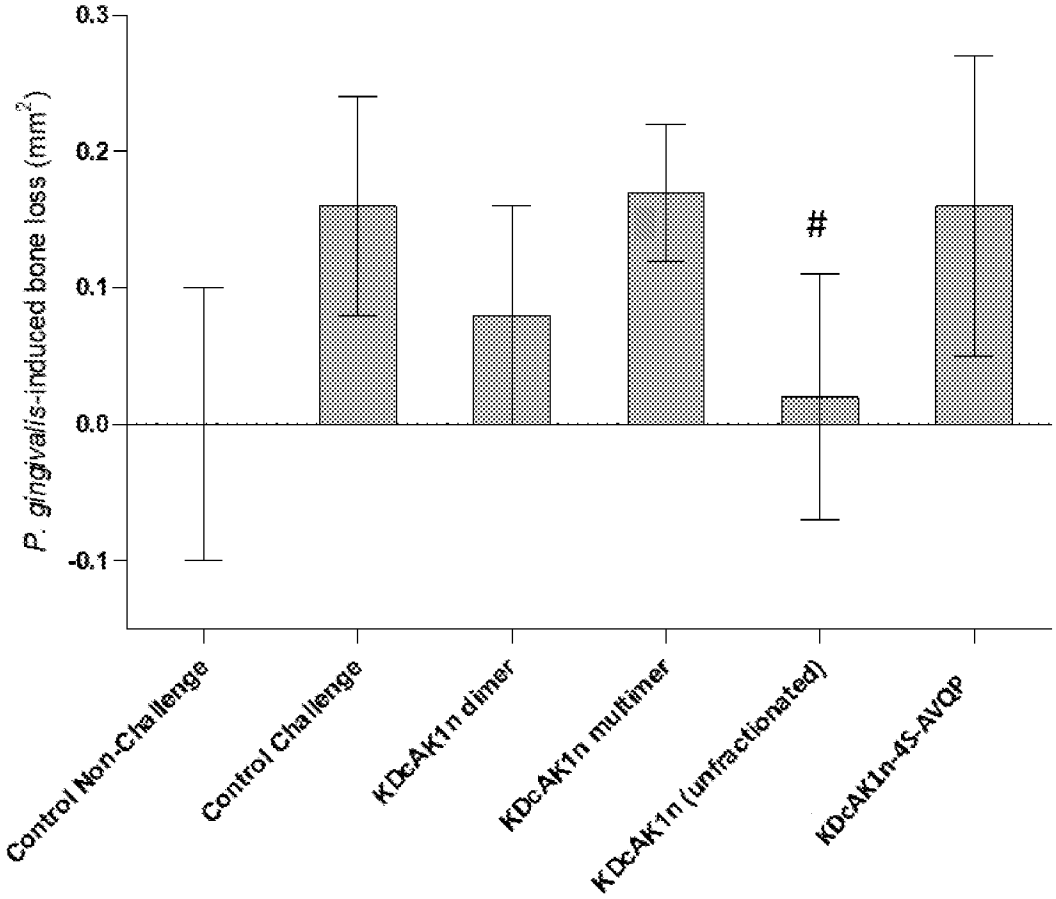

0.3
0.2
0.1
0.0
-0.1
P. gingivalis-induced bone loss (mm²)
#
Control Non-Challenge
Control Challenge
KDcAK1n dimer
KDcAK1n multimer
KDcAK1n (unfractionated)
KDcAK1n-4S-AVQP

Figure 7

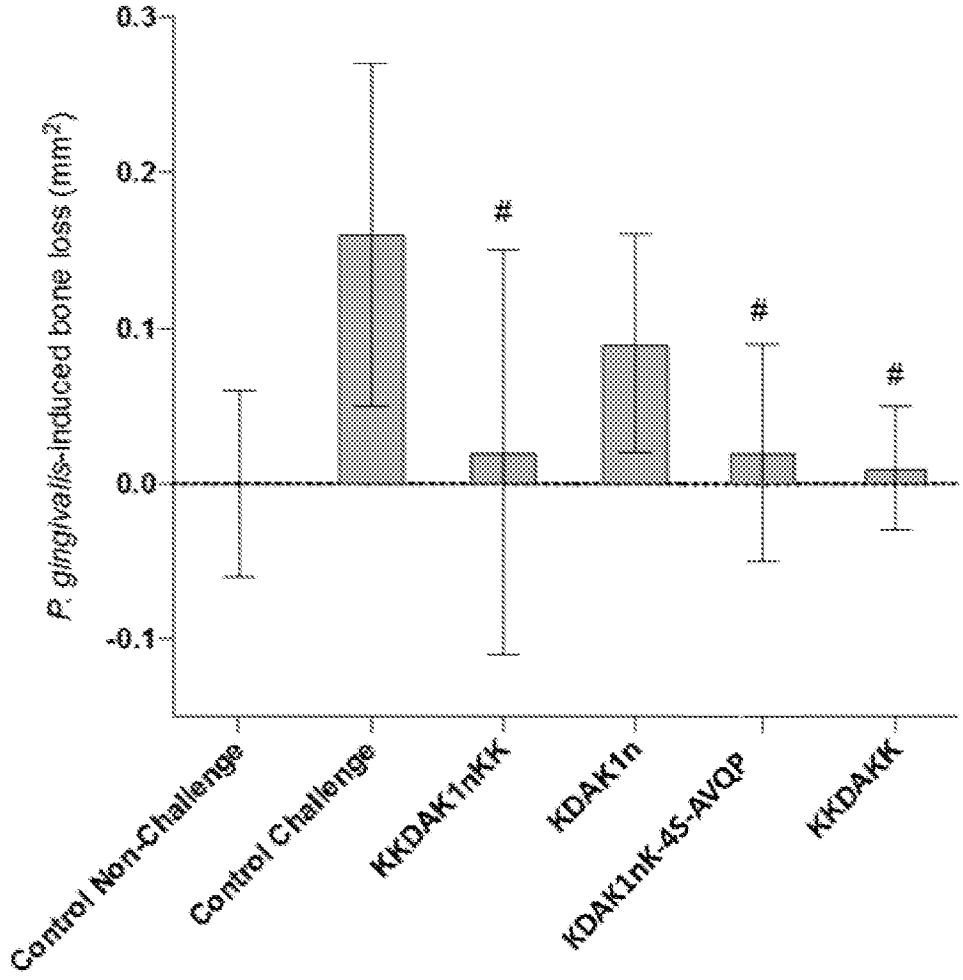

0.3
0.2
0.1
0.0
-0.1
P. gingivalis-induced bone loss (mm²)
#
#
#
Control Non-Challenge
Control Challenge
KKDAK1nKK
KDAK1n
KDAK1nK-4S-AVQP
KKDAKK

Figure 8

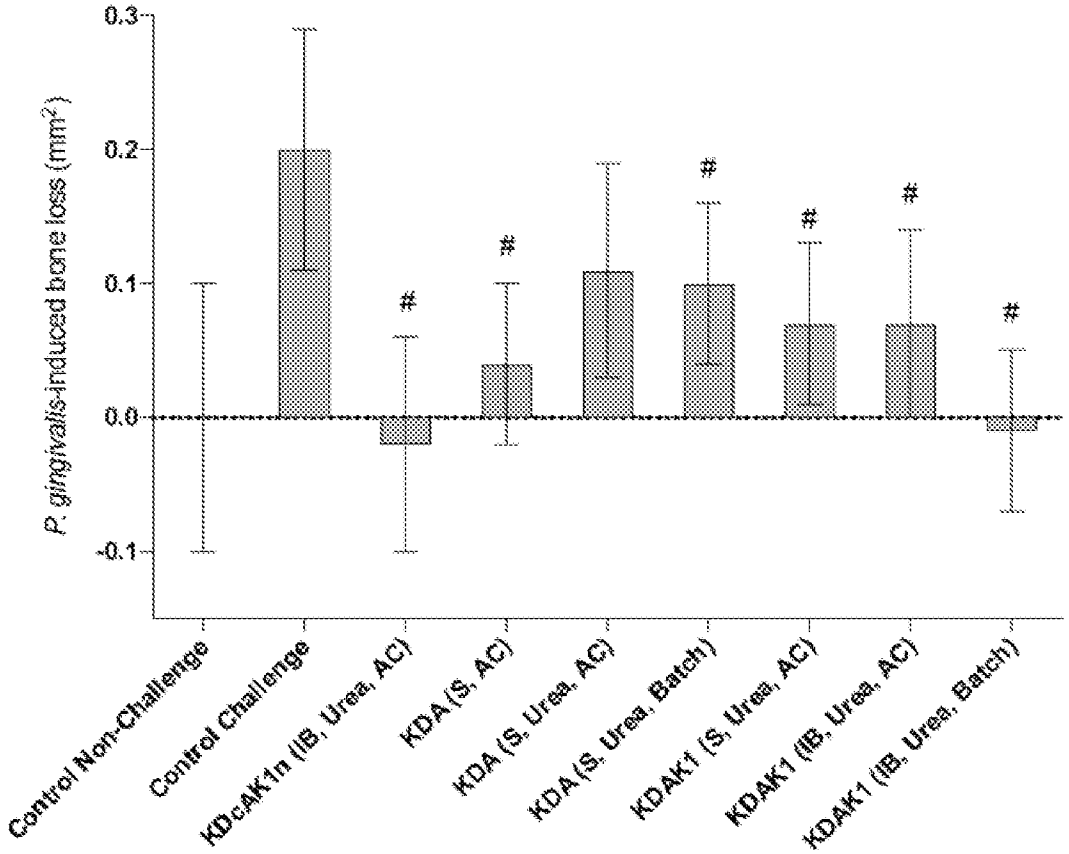

P. gingivalis-induced bone loss (mm²)
0.3
0.2
0.1
0.0
-0.1
#
Control Non-Challenge
Control Challenge
KDcAK1n (IB, Urea, AC)
KDA (S, AC)
KDA (S, Urea, AC)
KDA (S, Urea, Batch)
KDAK1 (S, Urea, AC)
KDAK1 (IB, Urea, AC)
KDAK1 (IB, Urea, Batch)

Figure 9

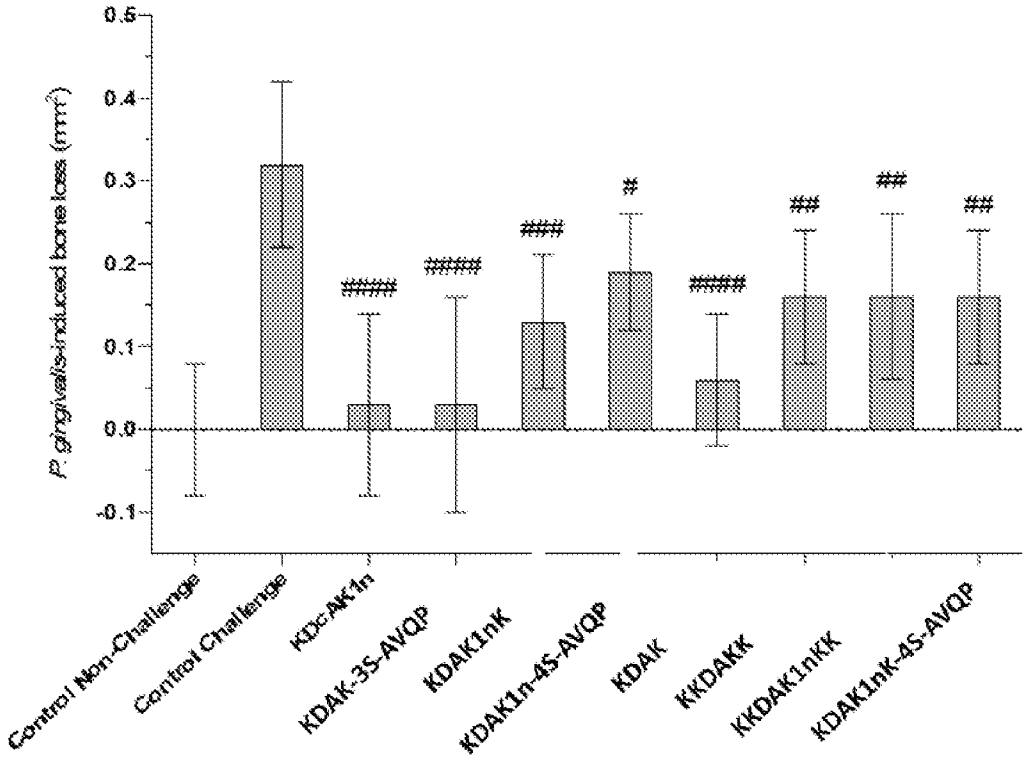

P. gingivalis-induced bone loss (mm²)
0.5
0.4
0.3
0.2
0.1
0.0
-0.1
####
####
###
#
####
##
##
##
Control Non-Challenge
Control Challenge
KDcAK1n
KDAK-3S-AVQP
KDAK1nK
KDAK1n-4S-AVQP
KDAK
KKDAKK
KKDAK1nKK
KDAK1nK-4S-AVQP

Figure 10

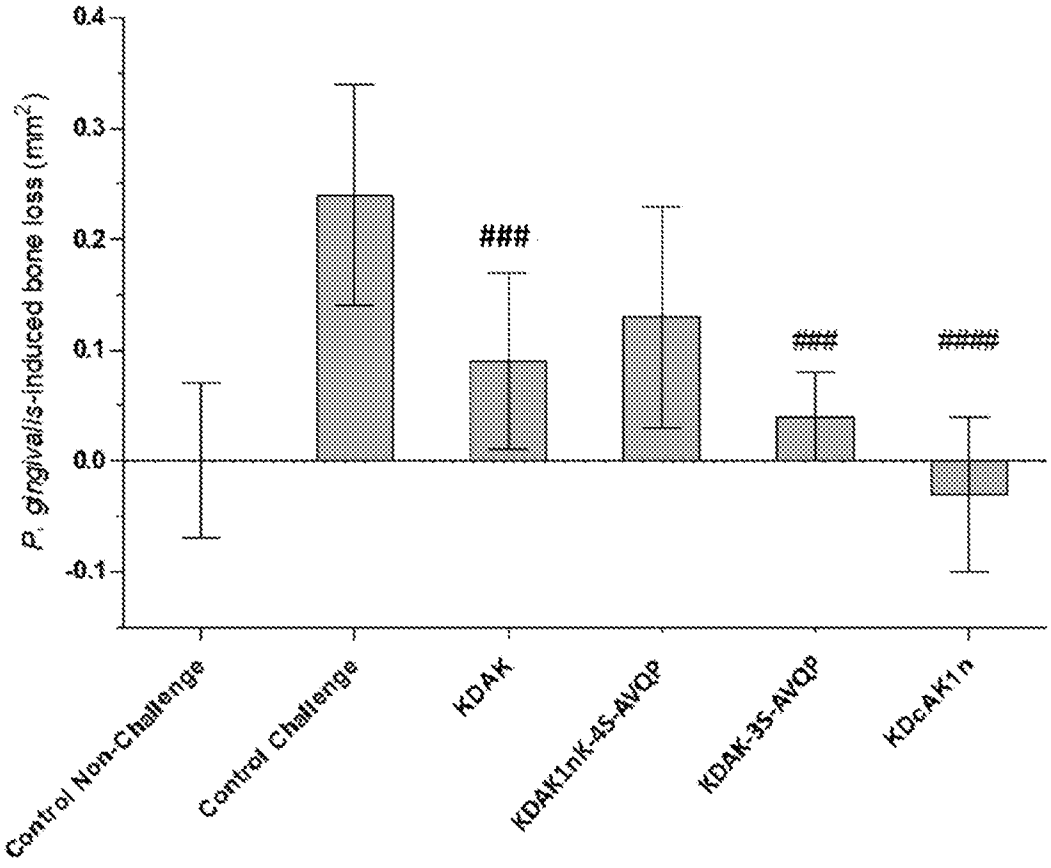

P. gingivalis-induced bone loss (mm²)
0.4
0.3
0.2
0.1
0.0
-0.1
###
###
####
Control Non-Challenge
Control Challenge
KDAK
KDAK1nK-45-AVQP
KDAK-35-AVQP
KDcAK1n

Figure 11

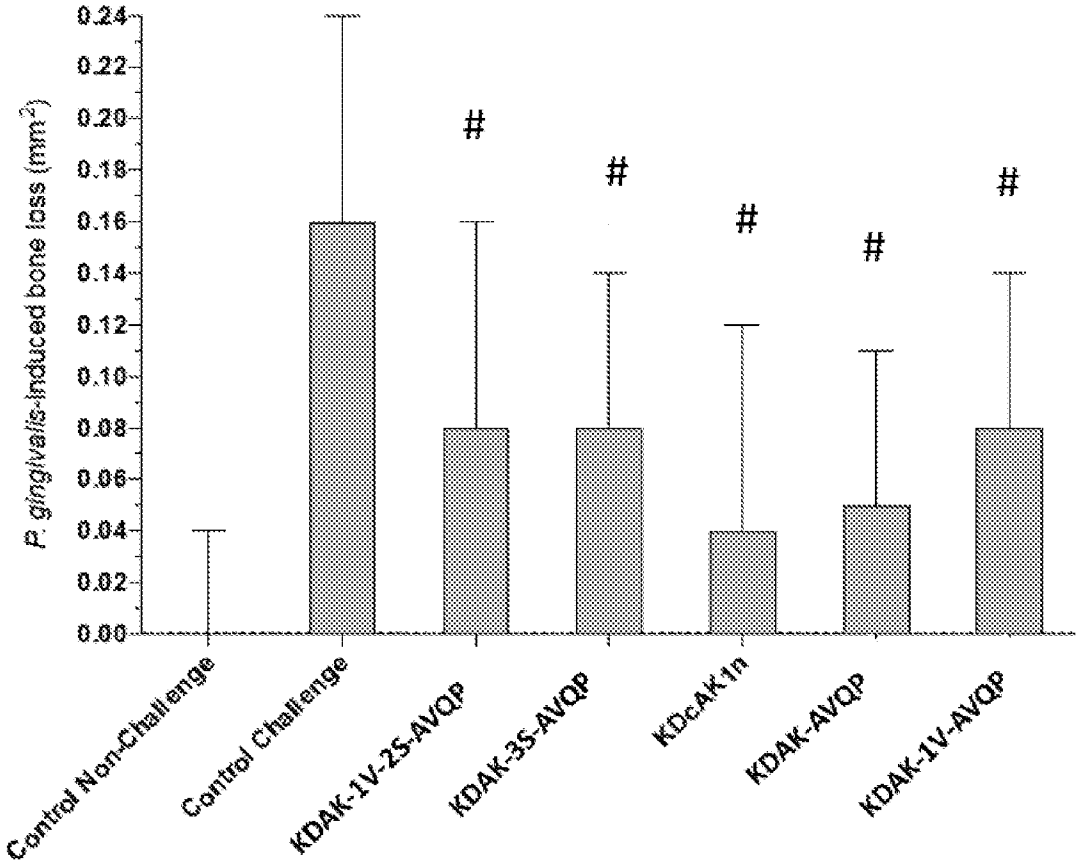

P. gingivalis-induced bone loss (mm²)
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
#
#
#
#
#
Control Non-Challenge
Control Challenge
KDAK-1V-2S-AVQP
KDAK-3S-AVQP
KDcAK-1n
KDAK-AVQP
KDAK-1V-AVQP

Figure 12

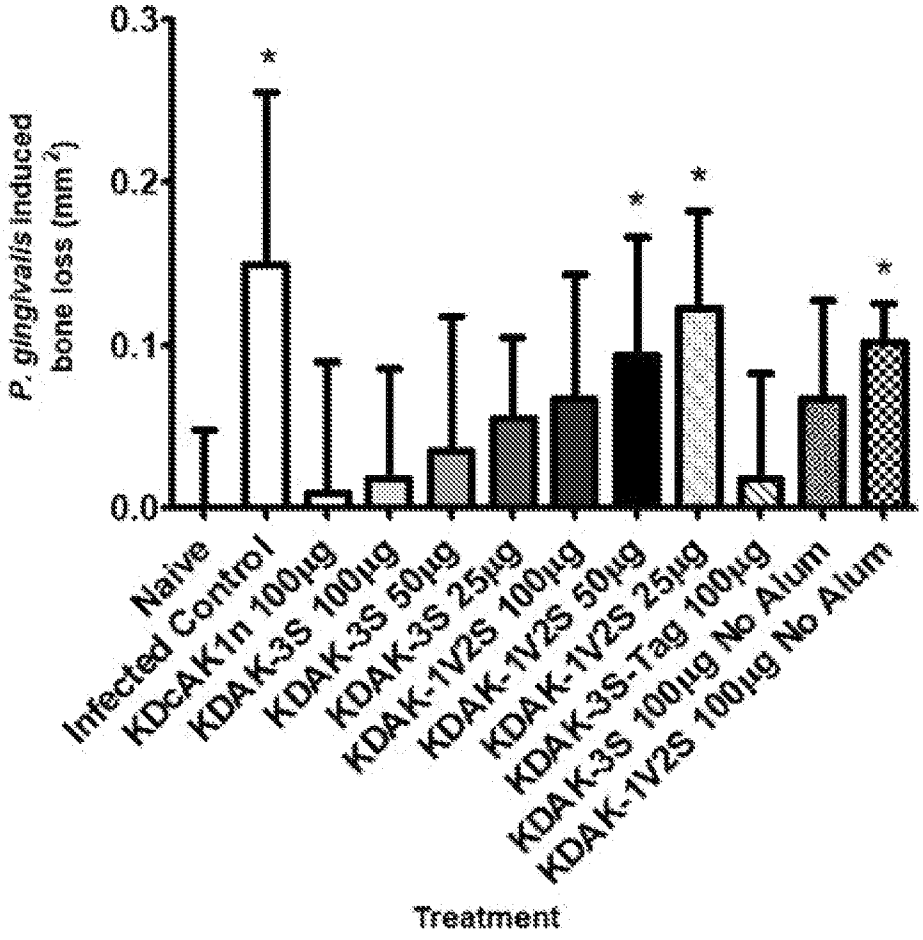
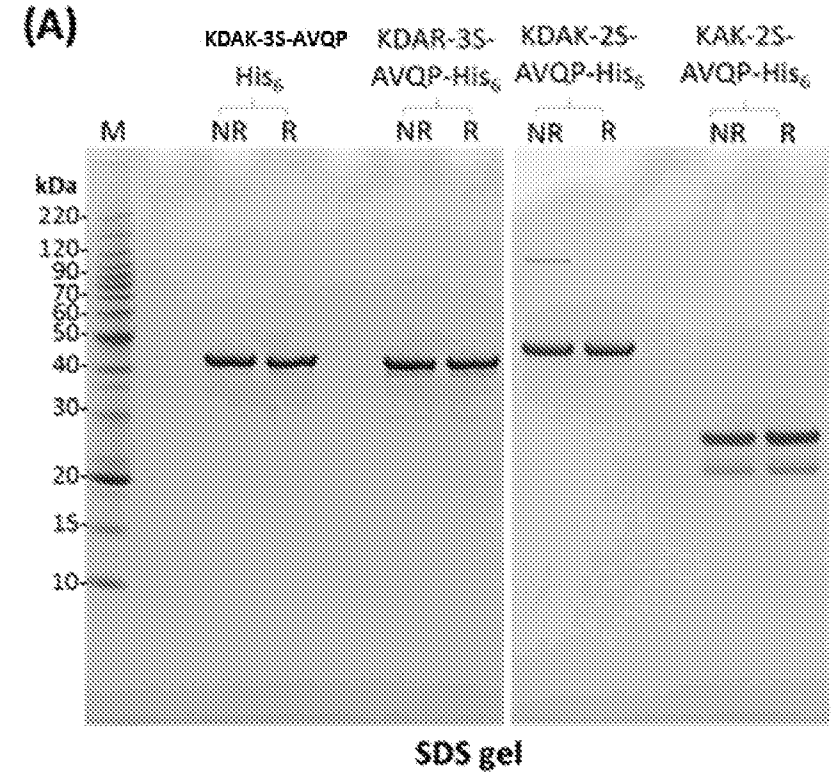

P. gingivalis induced bone loss (mm²)
0.3
0.2
0.1
0.0
*
*
*
*
Naive
Infected Control
KDcAK1n 100µg
KDAK-3S 100µg
KDAK-3S 50µg
KDAK-3S 25µg
KDAK-1V2S 100µg
KDAK-1V2S 50µg
KDAK-1V2S 25µg
KDAK-3S-Tag 100µg
KDAK-3S 100µg No Alum
KDAK-1V2S 100µg No Alum
Treatment

Figure 13


(A)
KDAK-3S-AVQP-His6
KDAR-3S-AVQP-His6
KDAK-2S-AVQP-His6
KAK-2S-AVQP-His6
M
NR R
NR R
NR R
NR R
kDa
220
120
90
70
50
40
30
20
15
10
SDS gel

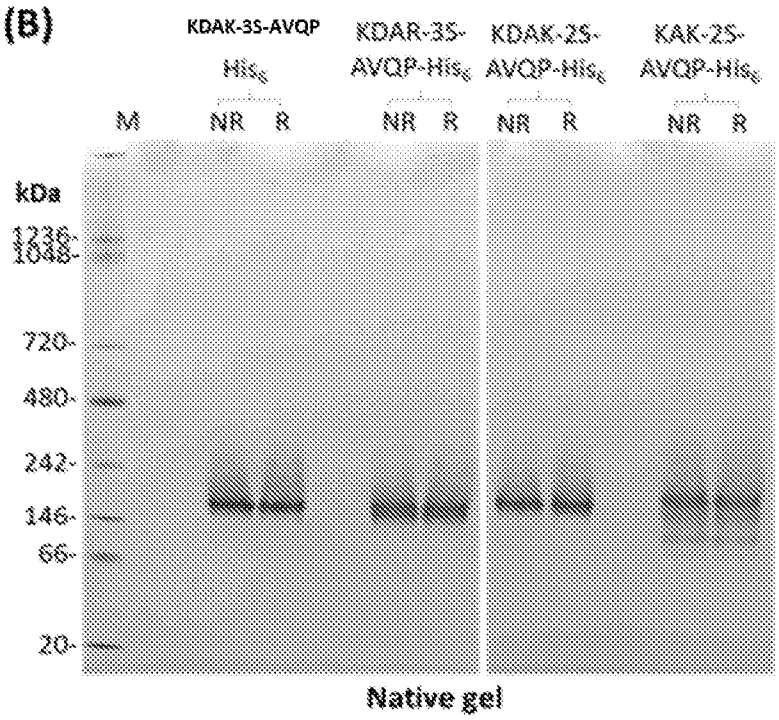

(B)
KDAK-3S-AVQP-His6
KDAR-3S-AVQP-His6
KDAK-2S-AVQP-His6
KAK-2S-AVQP-His6
M
NR R
NR R
NR R
NR R
kDa
1236
1048
720
480
242
146
66
20
Native gel

Figure 13 continued

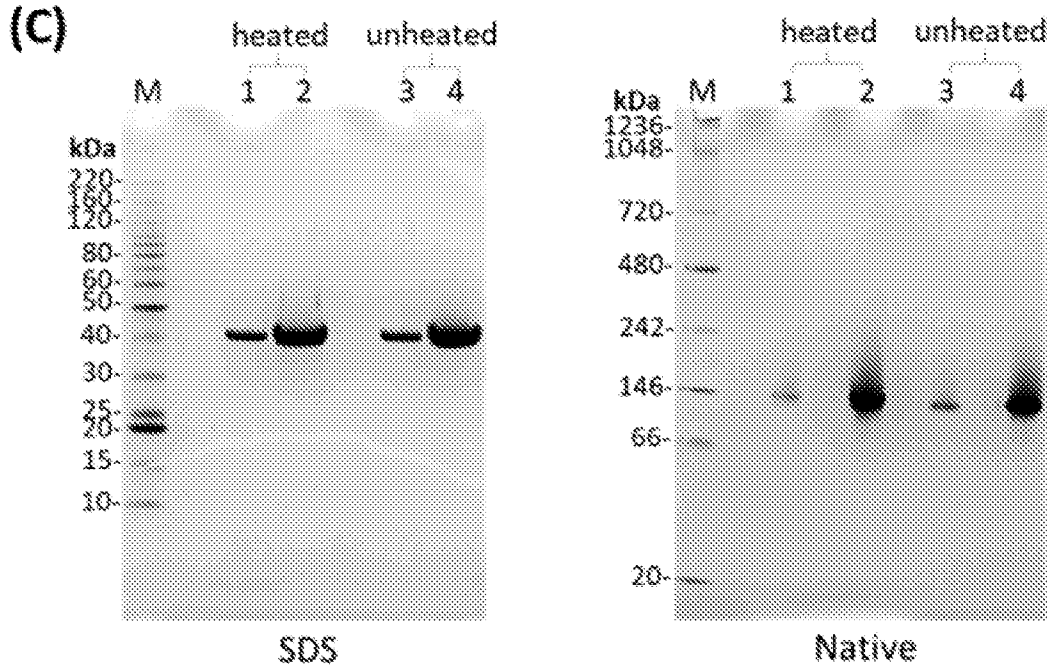


Figure 14

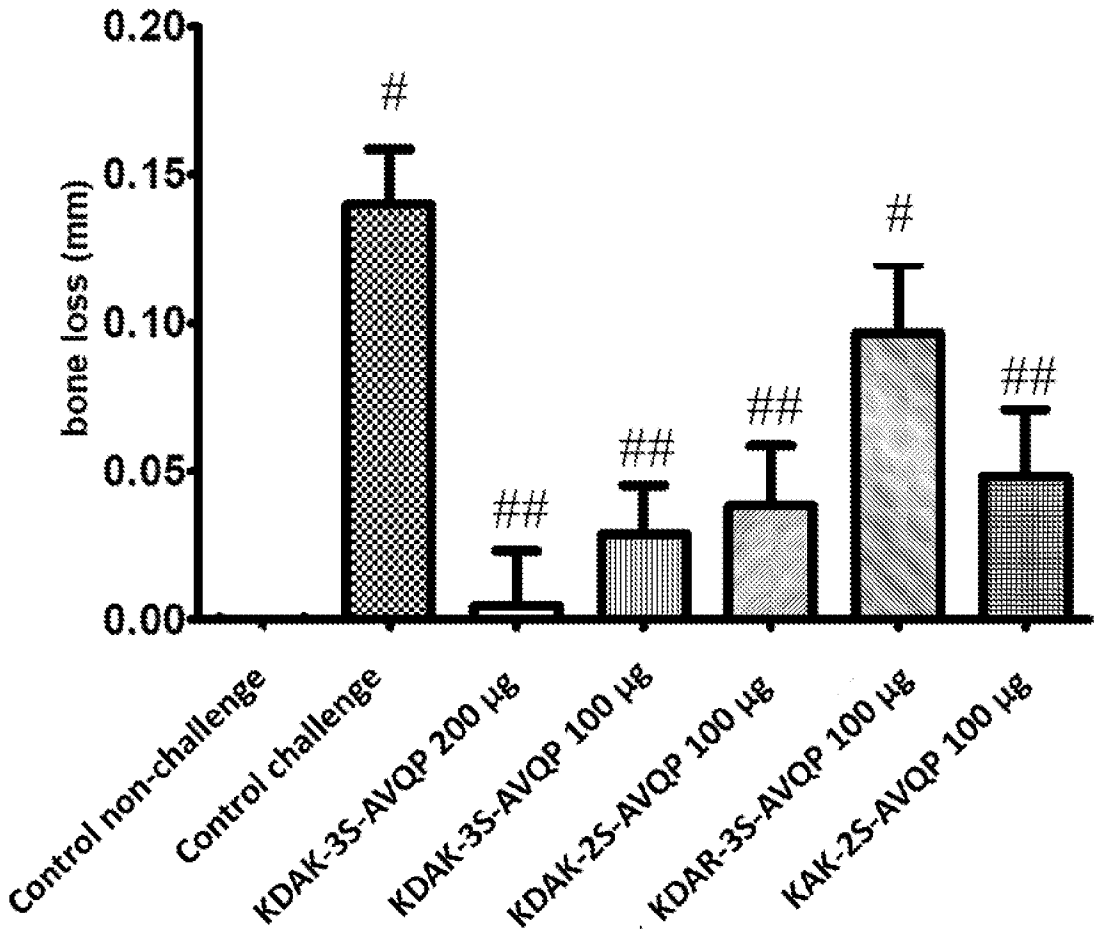

0.20
0.15
0.10
0.05
0.00
bone loss (mm)
#
##
##
##
#
##
Control non-challenge
Control challenge
KDAK-3S-AVQP 200 μg
KDAK-3S-AVQP 100 μg
KDAK-2S-AVQP 100 μg
KDAR-3S-AVQP 100 μg
KAK-2S-AVQP 100 μg

Figure 15

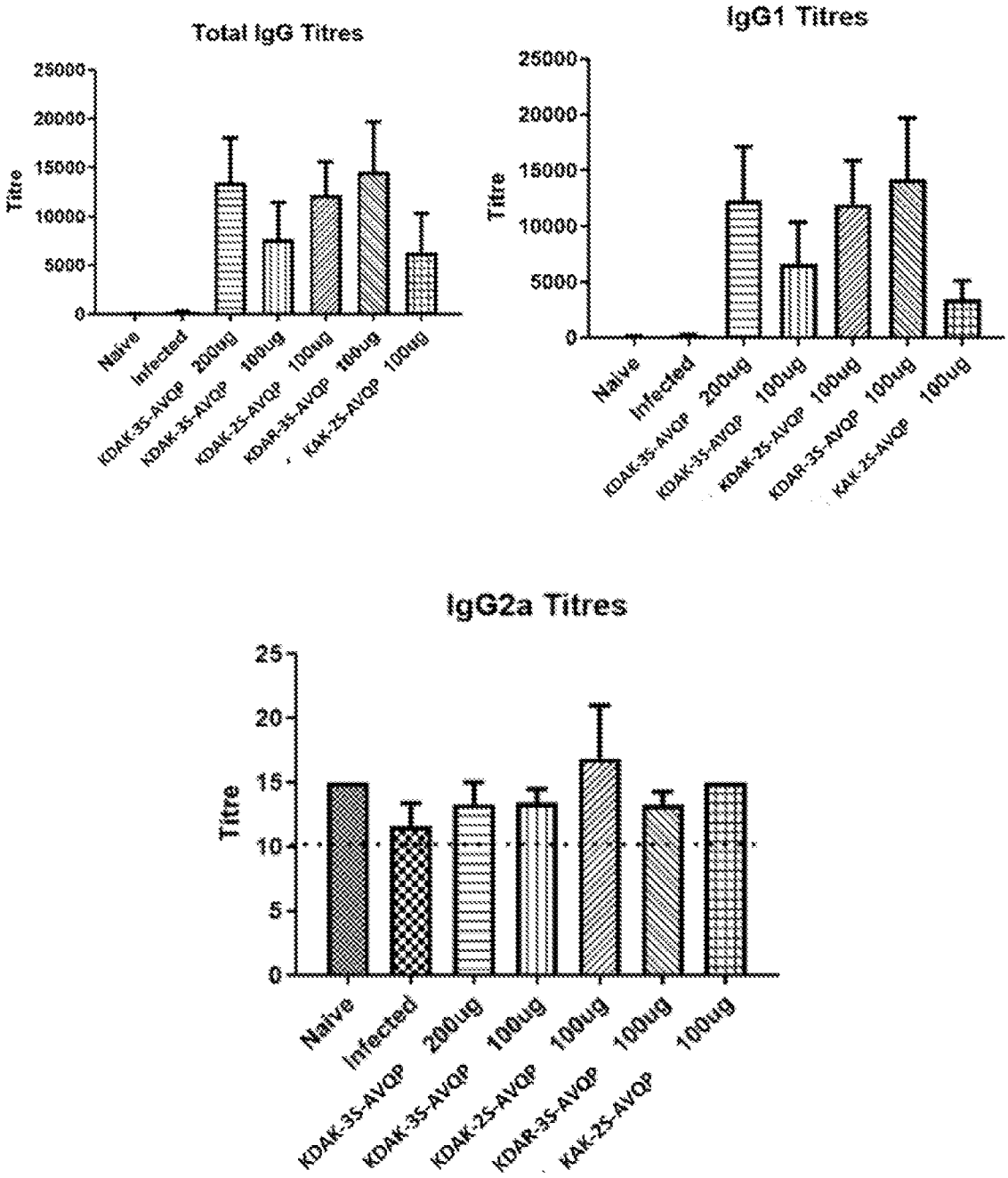
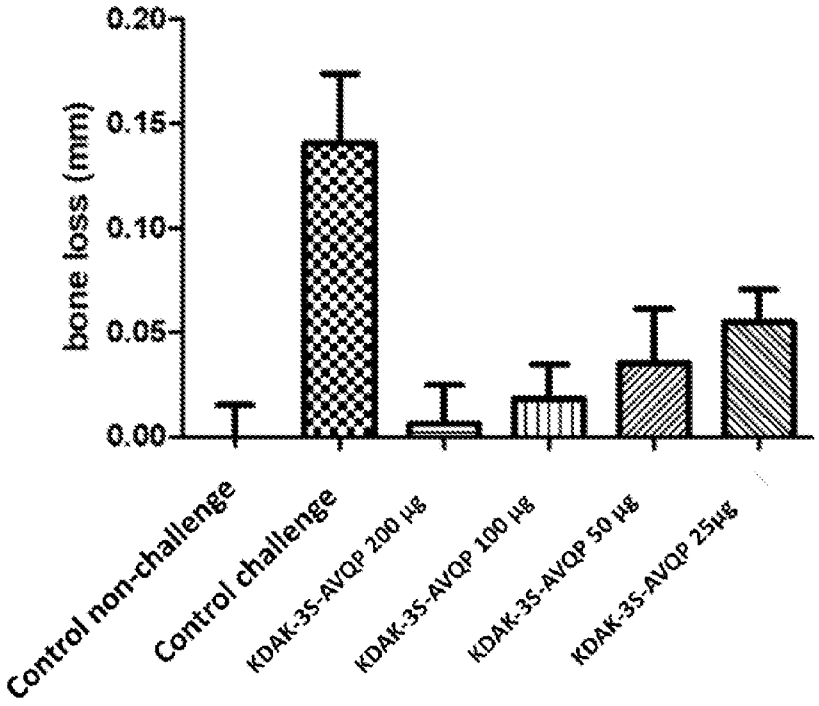
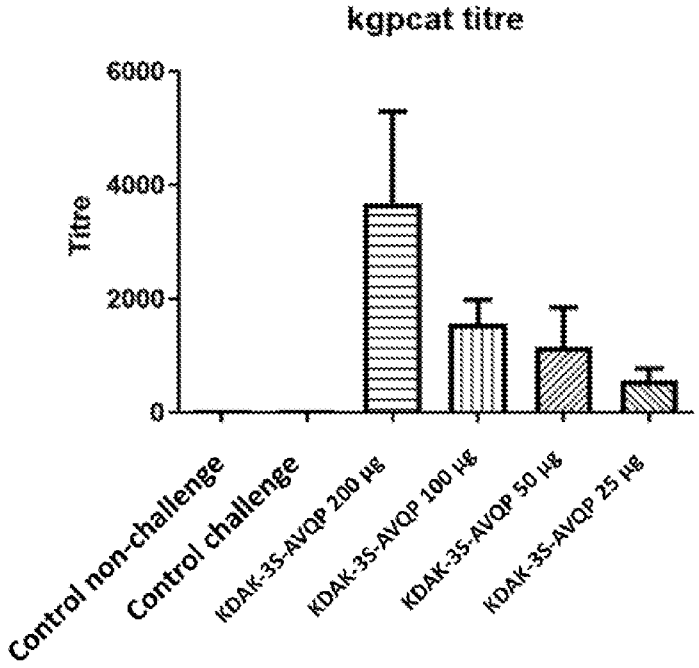

Total IgG Titres
Titre
25000
20000
15000
10000
5000
0
Naive
Infected
200ug
100ug
100ug
100ug
100ug
KDAK-35-AVQP
KDAK-35-AVQP
KDAK-25-AVQP
KDAR-35-AVQP
KAK-25-AVQP
IgG1 Titres
Titre
25000
20000
15000
10000
5000
0
Naive
Infected
200ug
100ug
100ug
100ug
100ug
KDAK-35-AVQP
KDAK-35-AVQP
KDAK-25-AVQP
KDAR-35-AVQP
KAK-25-AVQP
IgG2a Titres
Titre
25
20
15
10
5
0
Naive
Infected
200ug
100ug
100ug
100ug
100ug
KDAK-35-AVQP
KDAK-35-AVQP
KDAK-25-AVQP
KDAR-35-AVQP
KAK-25-AVQP

Figure 16


bone loss (mm)
0.20
0.15
0.10
0.05
0.00
Control non-challenge
Control challenge
KDAK-3S-AVQP 200 µg
KDAK-3S-AVQP 100 µg
KDAK-3S-AVQP 50 µg
KDAK-3S-AVQP 25µg


kgpcat titre
Titre
6000
4000
2000
0
Control non-challenge
Control challenge
KDAK-3S-AVQP 200 µg
KDAK-3S-AVQP 100 µg
KDAK-3S-AVQP 50 µg
KDAK-3S-AVQP 25 µg