FIG. 1

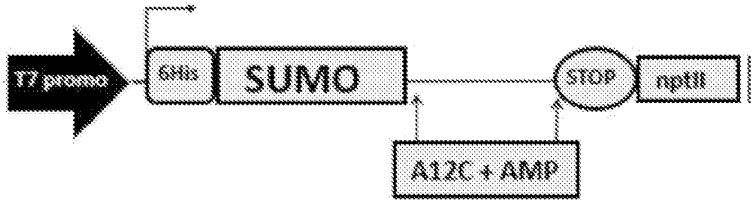

T7 promo
6His
SUMO
STOP
nptII
A12C + AMP

FIG. 2

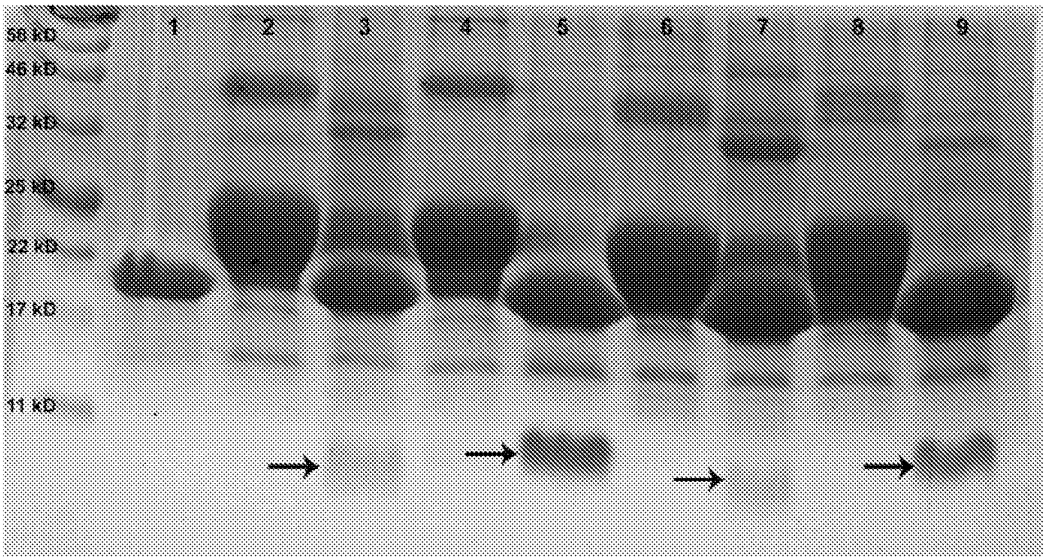
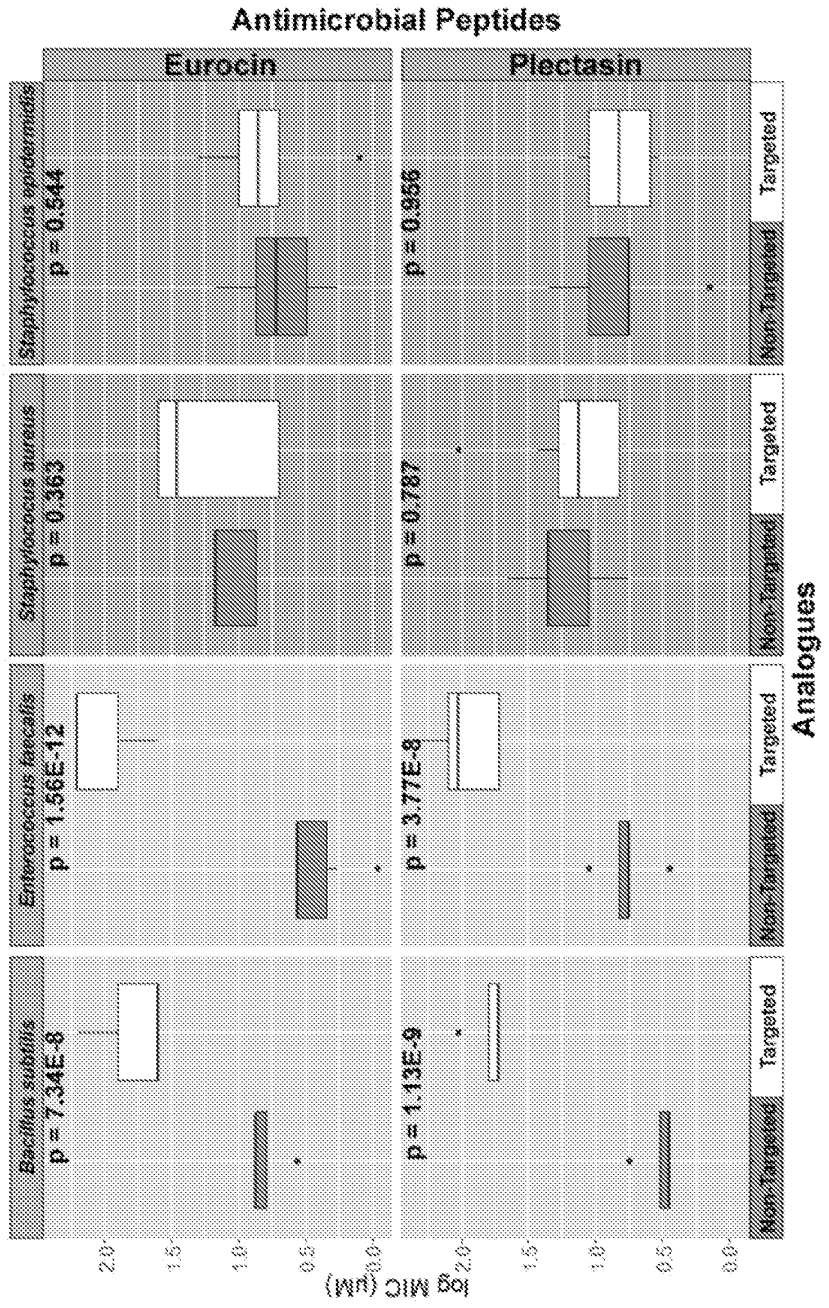
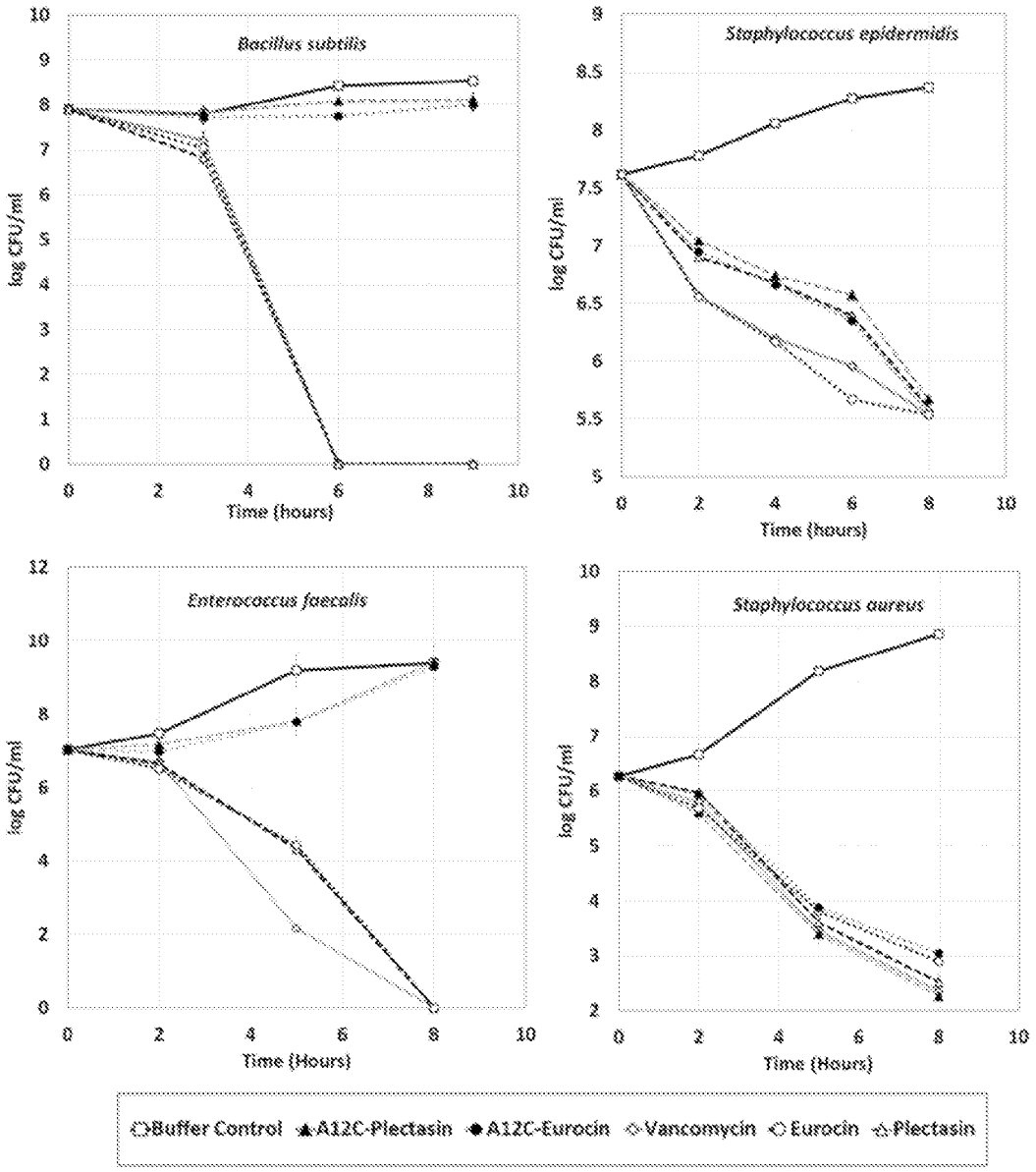

1
2
3
4
5
6
7
8
9
55 kD
46 kD
32 kD
25 kD
22 kD
17 kD
11 kD

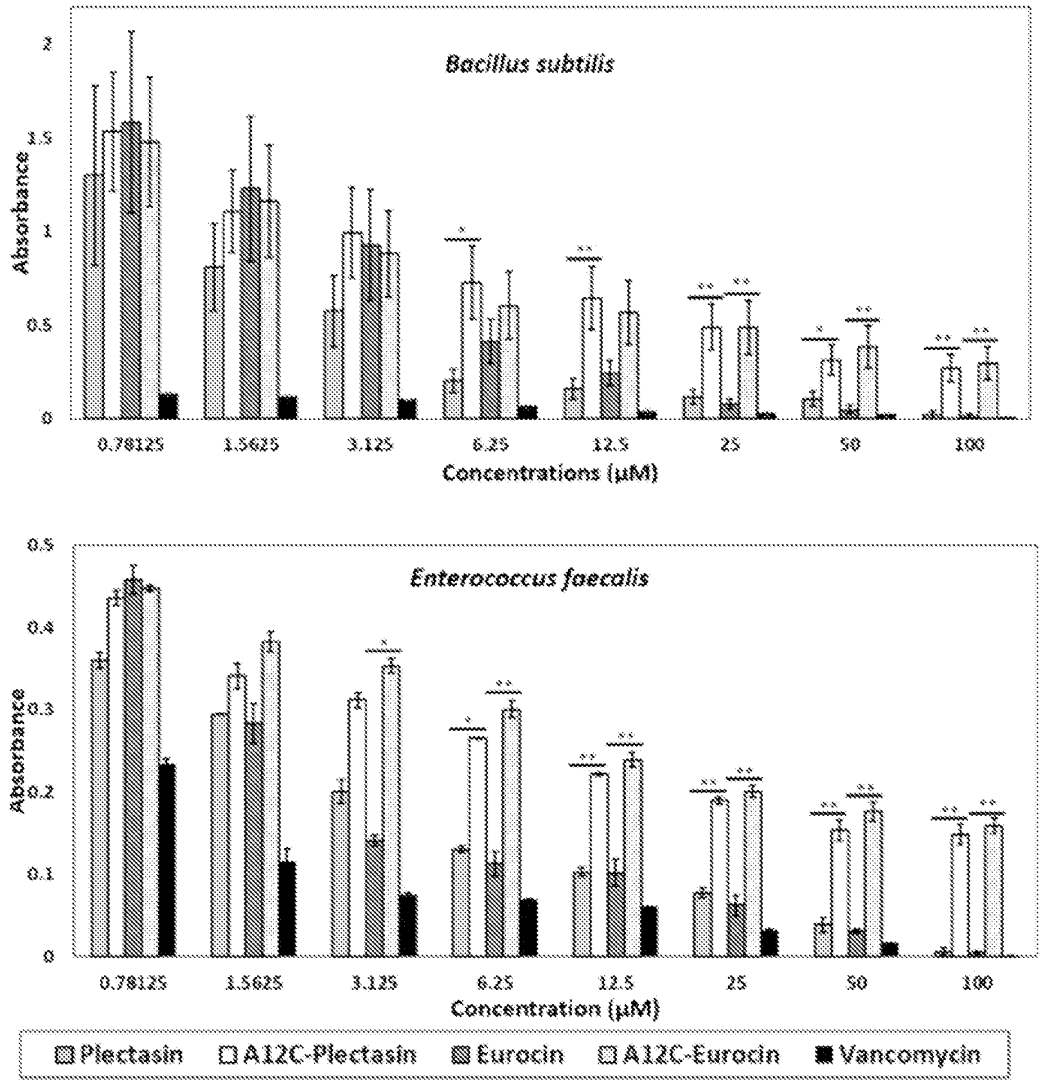
FIG. 3


Antimicrobial Peptides
Eurocin
Plectasin
Staphylococcus epidermidis
p = 0.544
p = 0.956
Staphylococcus aureus
p = 0.363
p = 0.787
Enterococcus faecalis
p = 1.56E-12
p = 3.77E-8
Bacillus subtilis
p = 7.34E-8
p = 1.13E-9
Non-Targeted
Targeted
Analogues
log MIC (μM)
2.0
1.5
1.0
0.5
0.0

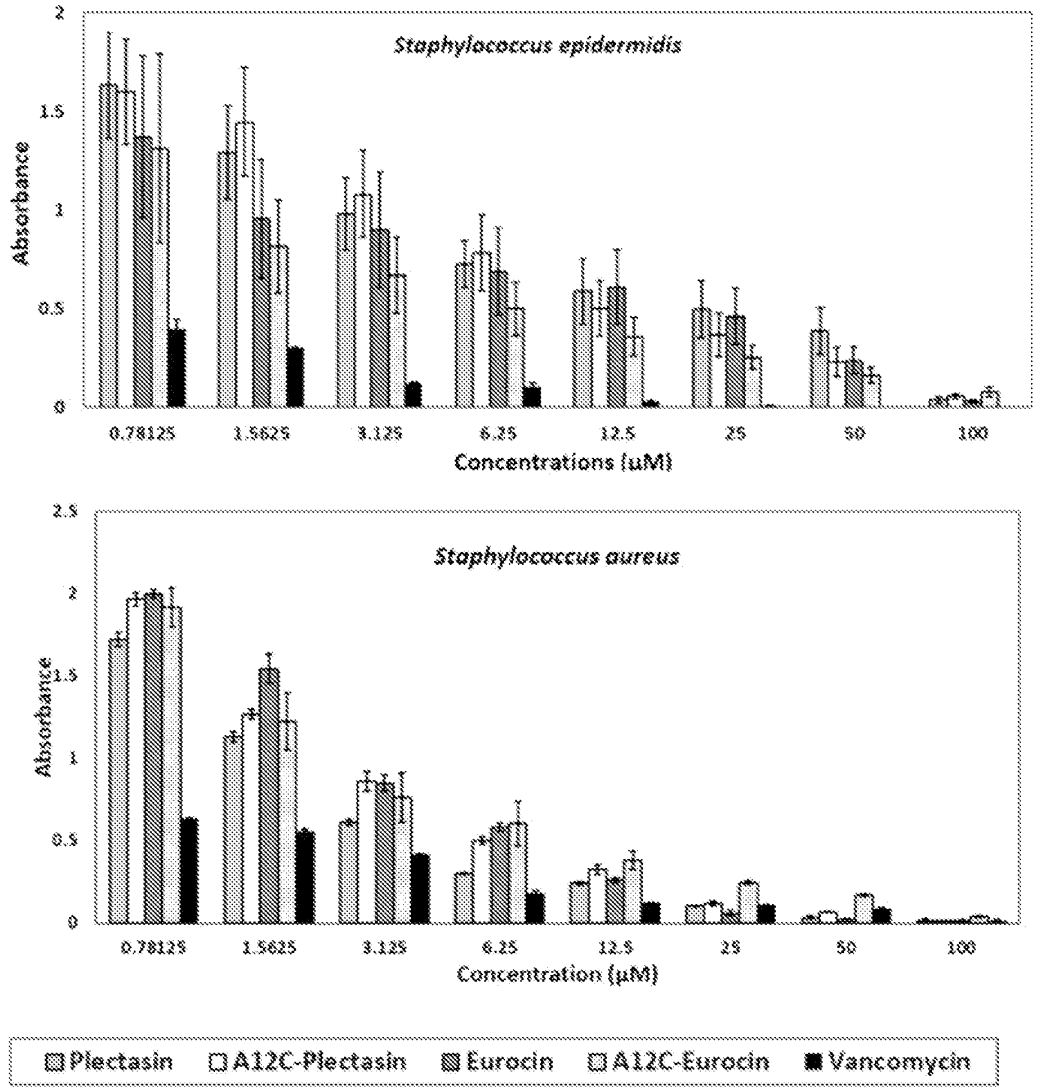
# FIG. 4


Bacillus subtilis
log CFU/ml
Time (hours)
Staphylococcus epidermidis
log CFU/ml
Time (hours)
Enterococcus faecalis
log CFU/ml
Time (Hours)
Staphylococcus aureus
log CFU/ml
Time (Hours)
Buffer Control
A12C-Plectasin
A12C-Eurocin
Vancomycin
Eurocin
Plectasin

# FIG. 5


Bacillus subtilis
Absorbance
0
0.5
1
1.5
2
0.78125
1.5625
3.125
6.25
12.5
25
50
100
Concentrations (μM)
Enterococcus faecalis
Absorbance
0
0.1
0.2
0.3
0.4
0.5
0.78125
1.5625
3.125
6.25
12.5
25
50
100
Concentration (μM)
Plectasin
A12C-Plectasin
Eurocin
A12C-Eurocin
Vancomycin

# FIG. 5 (continued)



# FIG. 6

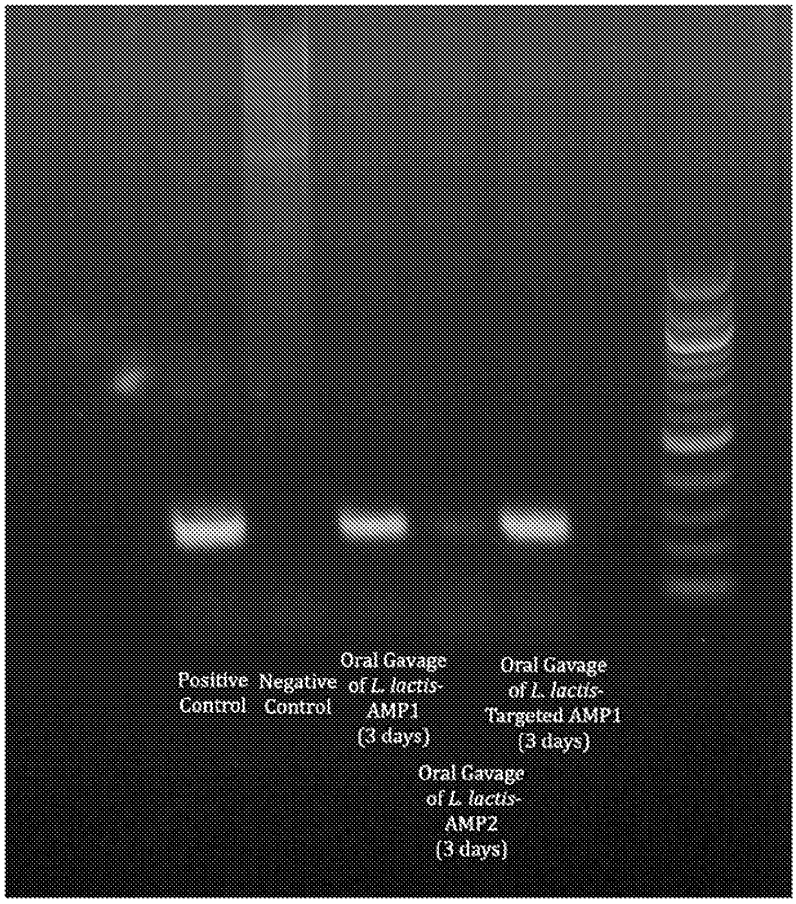
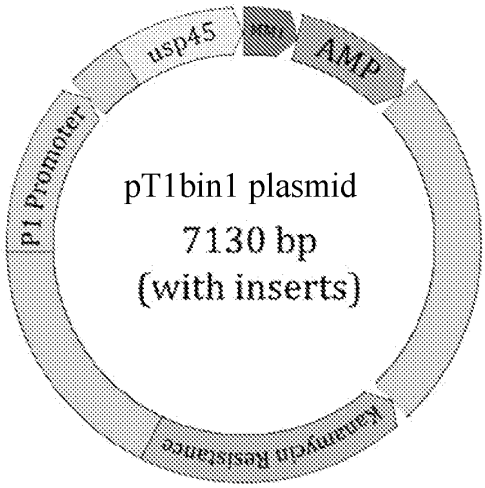

Positive Control
Negative Control
Oral Gavage of L. lactis-AMP1 (3 days)
Oral Gavage of L. lactis-Targeted AMP1 (3 days)
Oral Gavage of L. lactis-AMP2 (3 days)

**FIG. 7**


usp45
AMP
P1 Promoter
pT1bin1 plasmid
7130 bp
(with inserts)
Kanamycin Resistance

# FIG. 8

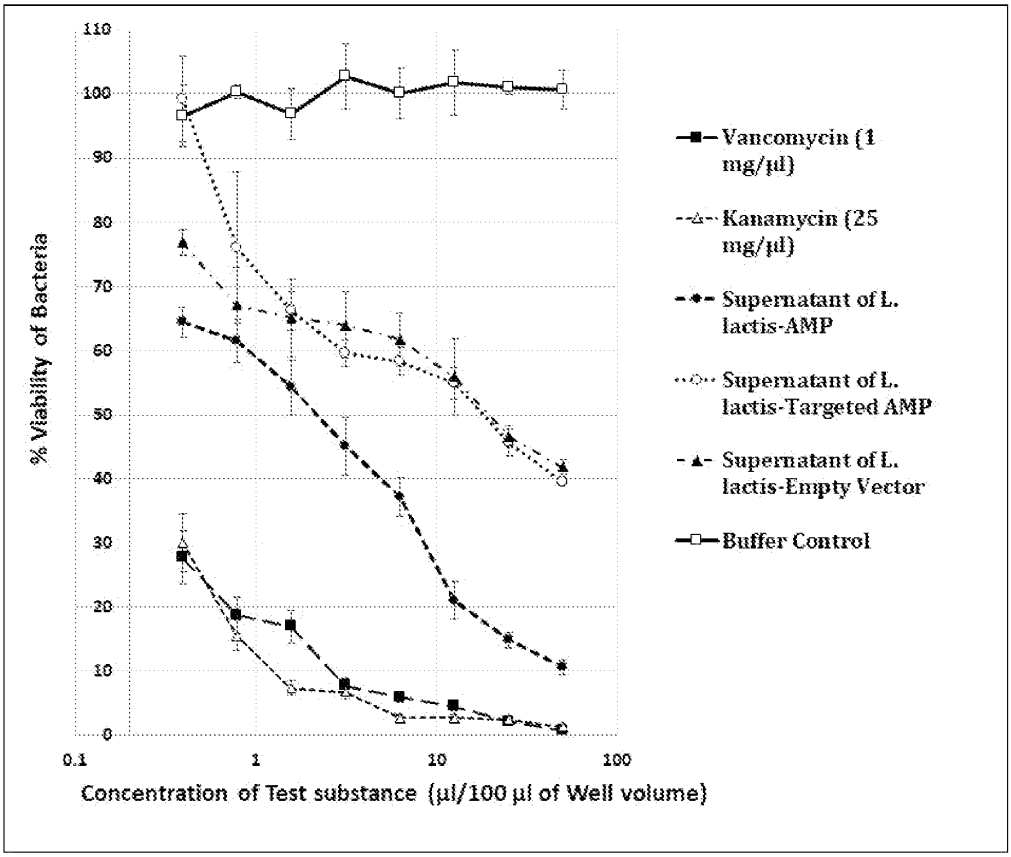
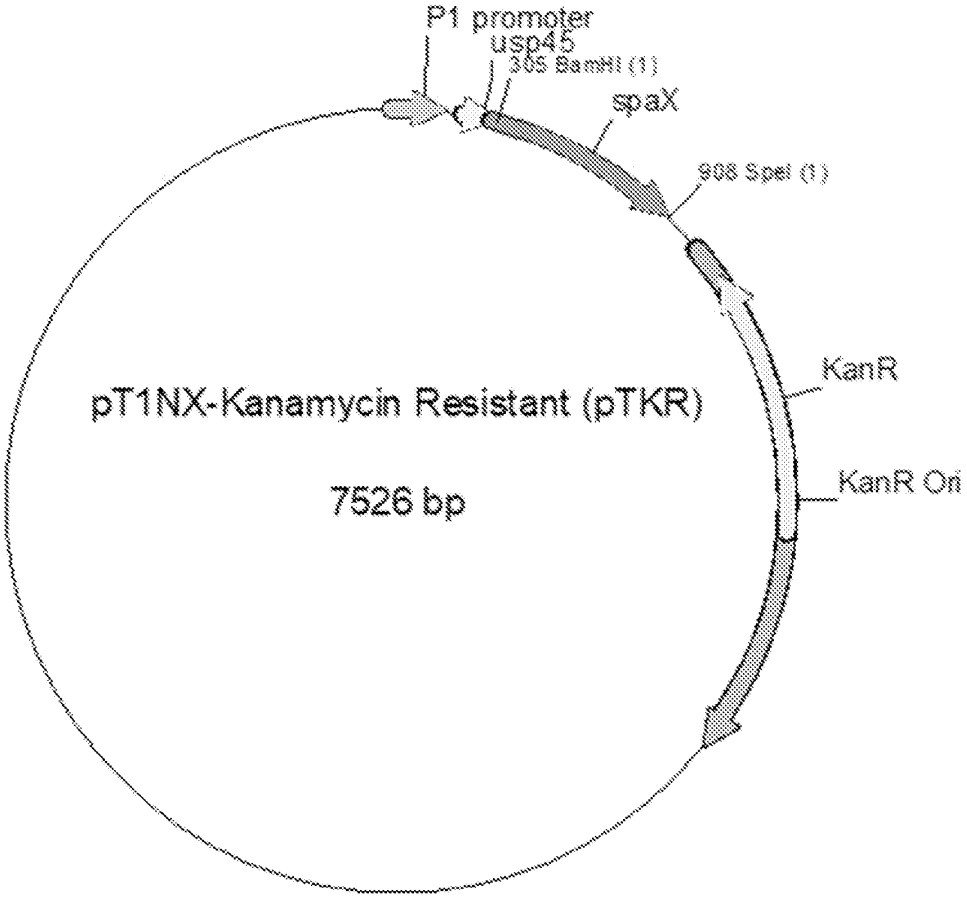

% Viability of Bacteria
110
100
90
80
70
60
50
40
30
20
10
0
0.1
1
10
100
Concentration of Test substance (µl/100 µl of Well volume)
Vancomycin (1 mg/µl)
Kanamycin (25 mg/µl)
Supernatant of L. lactis-AMP
Supernatant of L. lactis-Targeted AMP
Supernatant of L. lactis-Empty Vector
Buffer Control

**FIG. 9**


P1 promoter
usp45
305 BamHI (1)
spaX
908 SpeI (1)
KanR
KanR Ori
pT1NX-Kanamycin Resistant (pTKR)
7526 bp

# FIG. 10

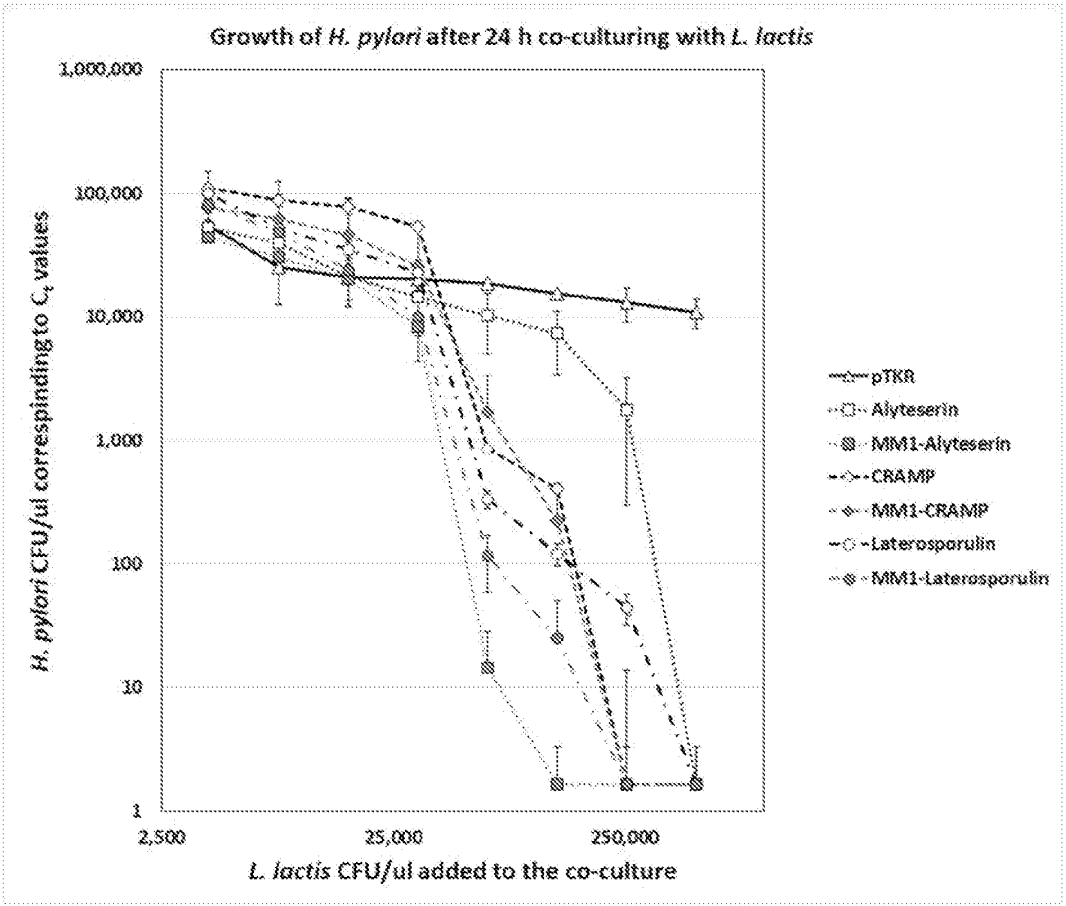
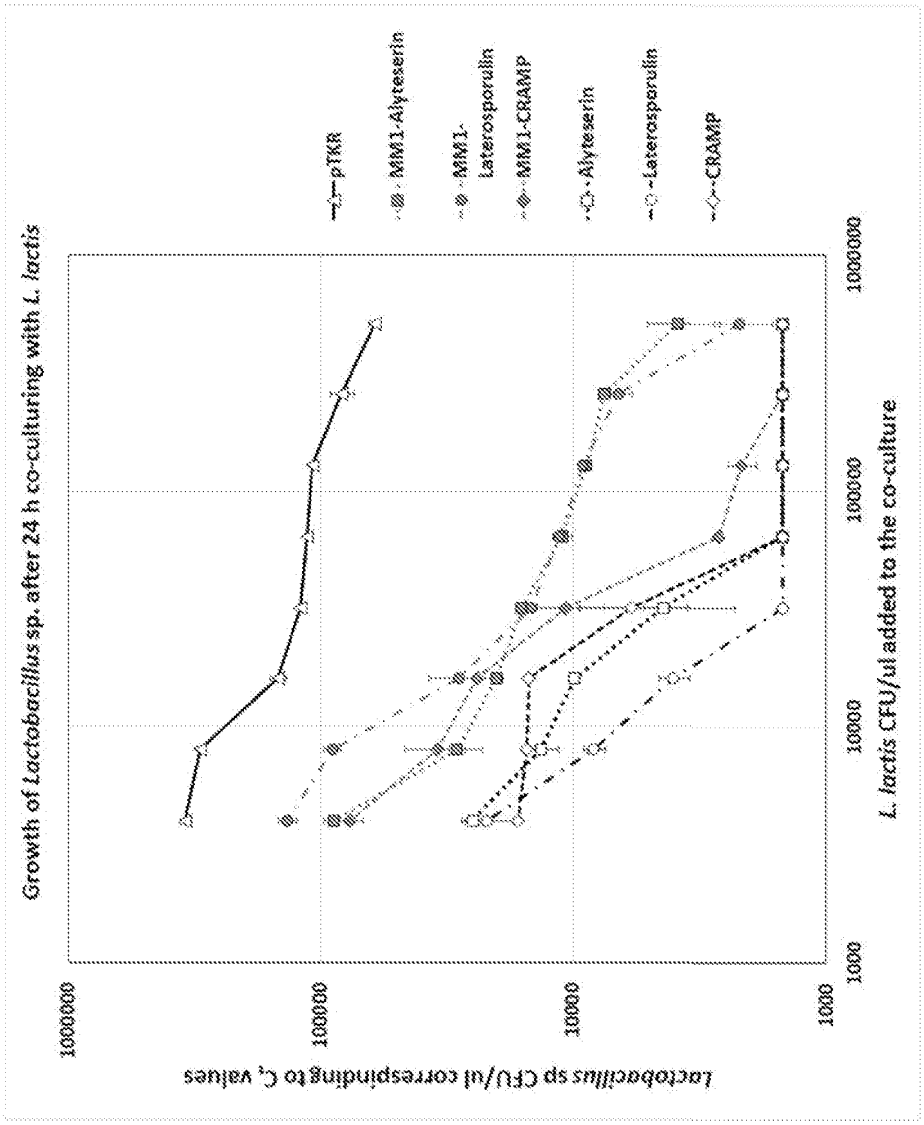
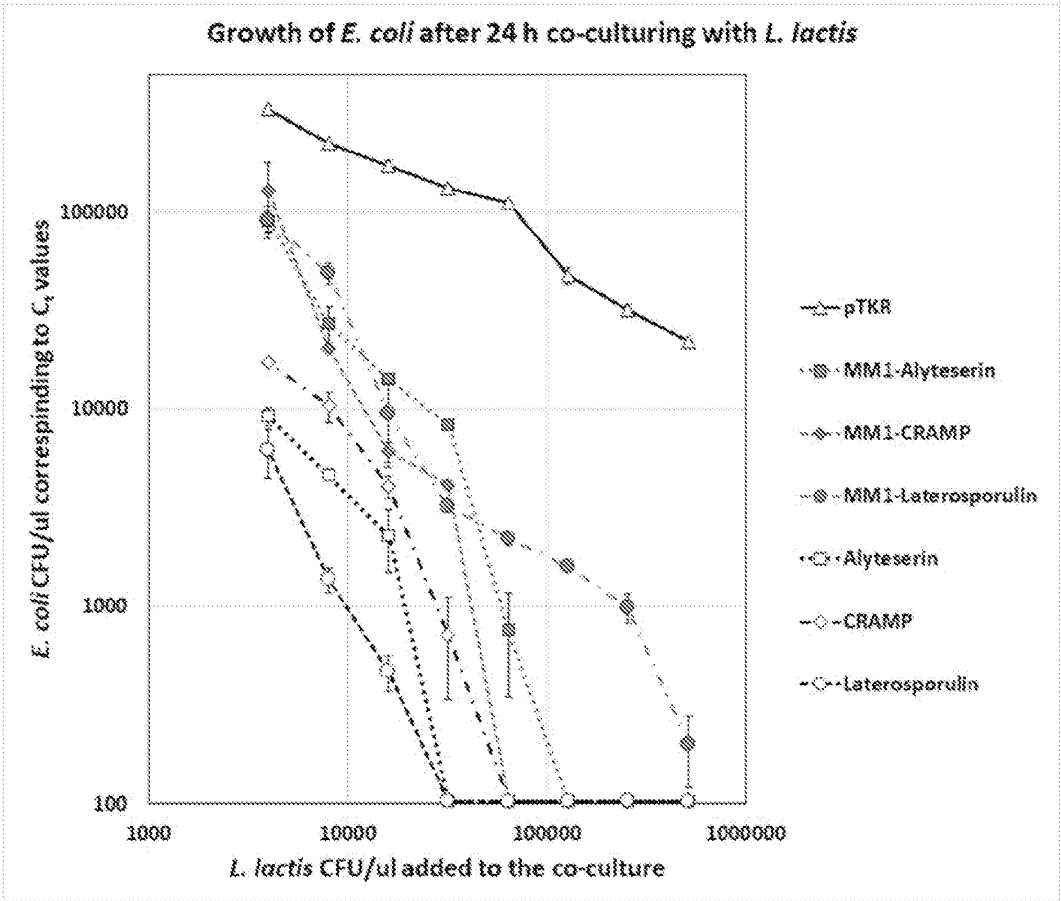

Growth of H. pylori after 24 h co-culturing with L. lactis
1,000,000
100,000
10,000
1,000
100
10
1
H. pylori CFU/ul correspinding to Ct values
2,500
25,000
250,000
L. lactis CFU/ul added to the co-culture
pTKR
Alyteserin
MM1-Alyteserin
CRAMP
MM1-CRAMP
Laterosporulin
MM1-Laterosporulin

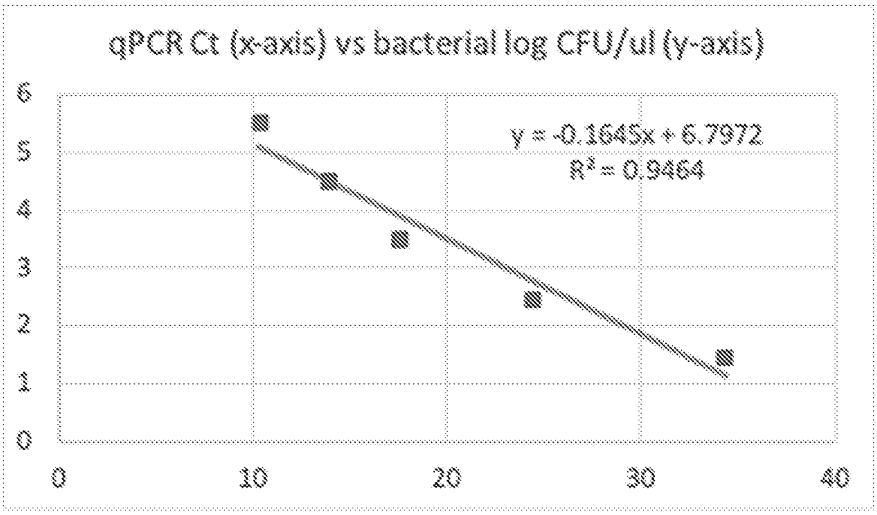
FIG. 11


Growth of Lactobacillus sp. after 24 h co-culturing with L. lactis
pTKR
MM1-Alyteserin
MM1-Laterosporulin
MM1-CRAMP
Alyteserin
Laterosporulin
CRAMP
Lactobacillus sp CFU/ul corresponding to $C_t$ values
1000000
100000
10000
1000
1000
10000
100000
1000000
L. lactis CFU/ul added to the co-culture

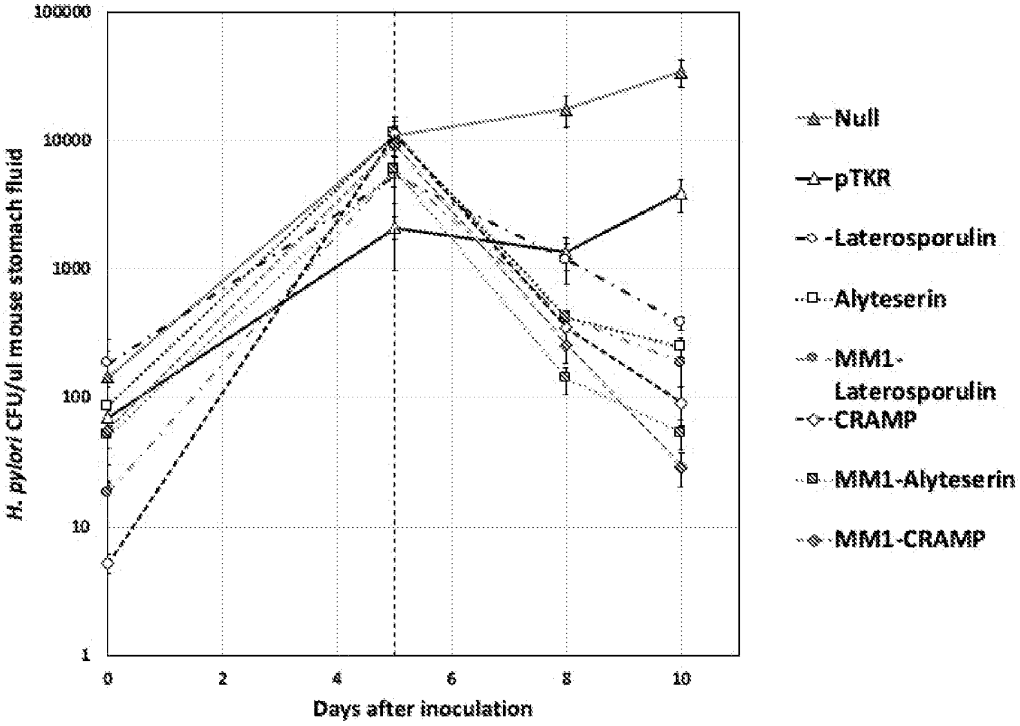
# FIG. 12


Growth of E. coli after 24 h co-culturing with L. lactis
E. coli CFU/ul correspinding to Ct values
100000
10000
1000
100
1000
10000
100000
1000000
L. lactis CFU/ul added to the co-culture
pTKR
MM1-Alyteserin
MM1-CRAMP
MM1-Laterosporulin
Alyteserin
CRAMP
Laterosporulin

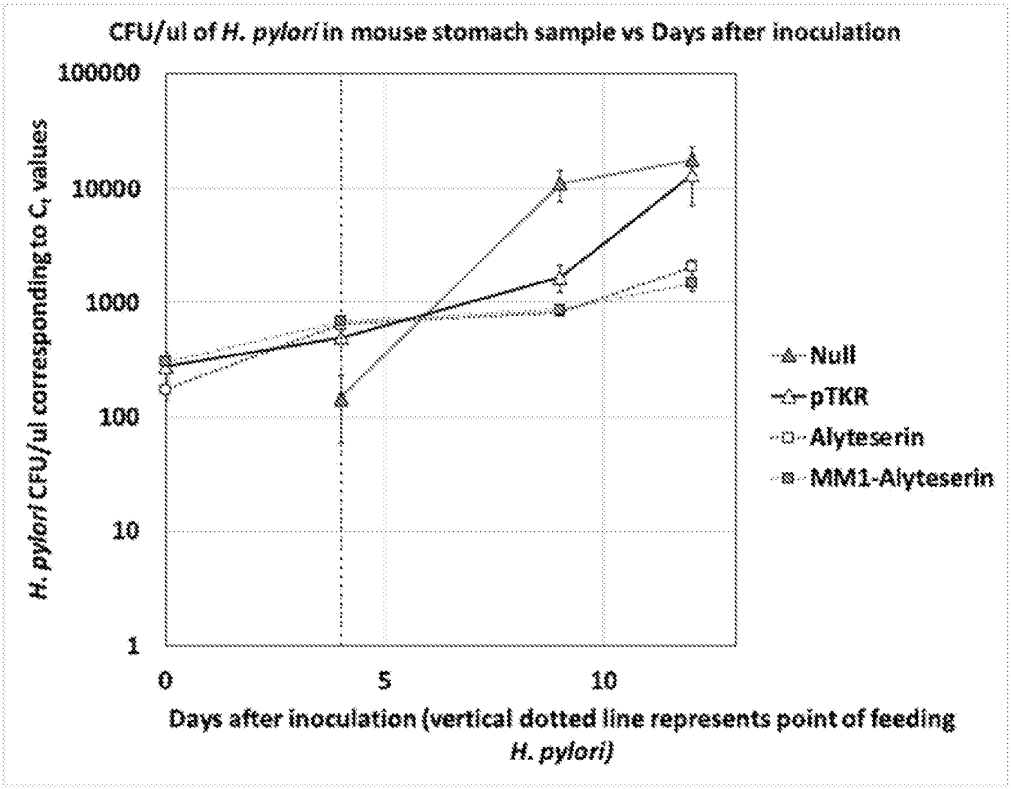
# FIG. 13


qPCR Ct (x-axis) vs bacterial log CFU/ul (y-axis)
y = -0.1645x + 6.7972
R² = 0.9464
6
5
4
3
2
1
0
0
10
20
30
40

# FIG. 14


100000
10000
1000
100
10
1
H. pylori CFU/ul mouse stomach fluid
0
2
4
6
8
10
Days after inoculation
Null
pTKR
-Laterosporulin
Alyteserin
MM1-Laterosporulin
CRAMP
MM1-Alyteserin
MM1-CRAMP

# FIG. 15


CFU/ul of H. pylori in mouse stomach sample vs Days after inoculation
H. pylori CFU/ul corresponding to Ct values
100000
10000
1000
100
10
1
0
5
10
Days after inoculation (vertical dotted line represents point of feeding H. pylori)
Null
pTKR
Alyteserin
MM1-Alyteserin

# FIG. 16

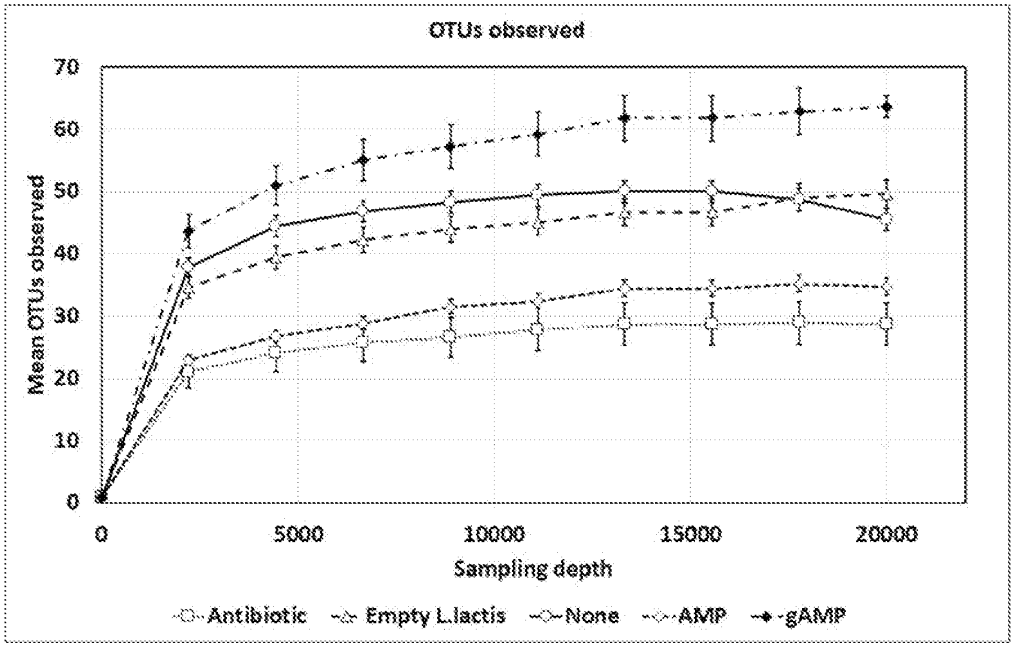
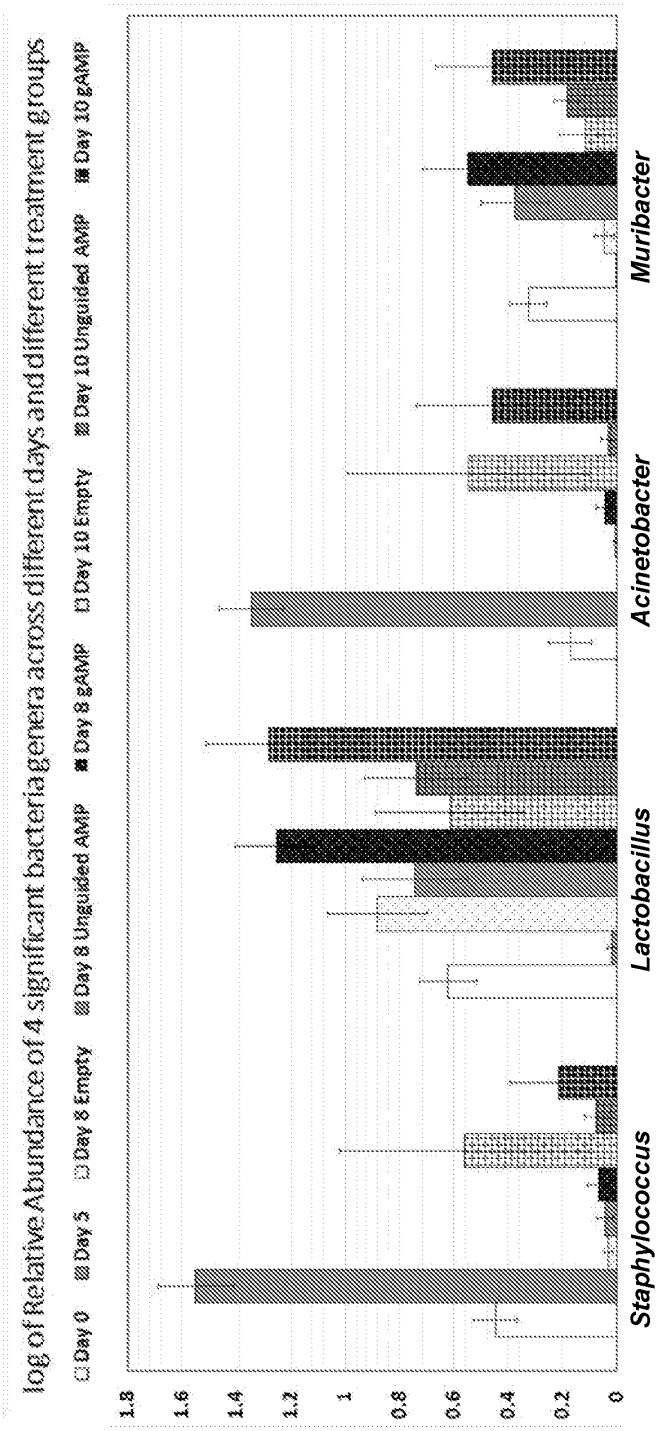
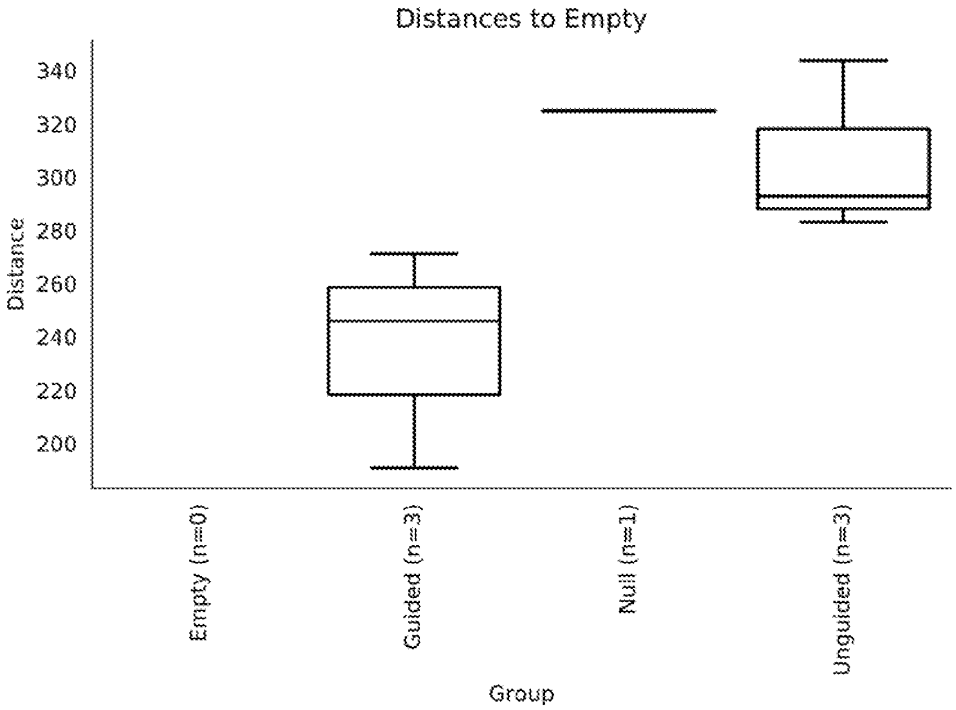

OTUs observed
Mean OTUs observed
70
60
50
40
30
20
10
0
0
5000
10000
15000
20000
Sampling depth
Antibiotic
Empty L.lactis
None
AMP
gAMP

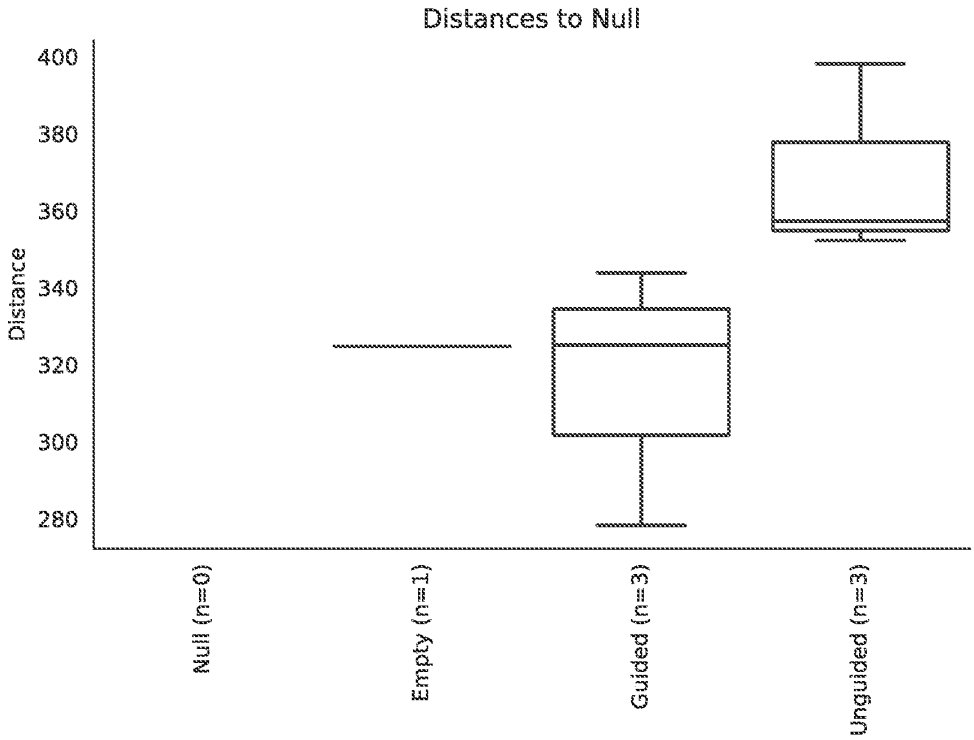
FIG. 17


log of Relative Abundance of 4 significant bacteria genera across different days and different treatment groups
Day 0
Day 5
Day 8 Empty
Day 8 Unguided AMP
Day 8 gAMP
Day 10 Empty
Day 10 Unguided AMP
Day 10 gAMP
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Staphylococcus
Lactobacillus
Acinetobacter
Muribacter

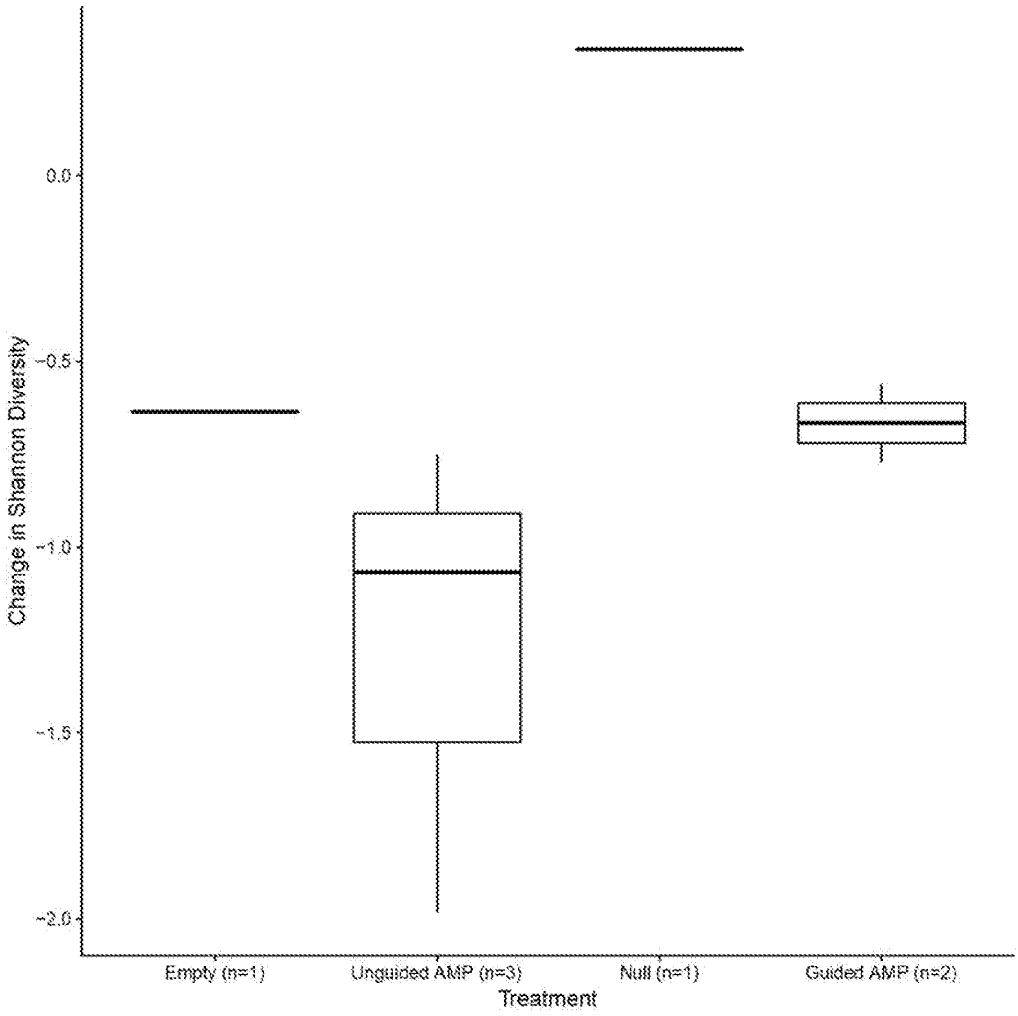
# FIG. 18


Distances to Empty
Distance
340
320
300
280
260
240
220
200
Empty (n=0)
Guided (n=3)
Null (n=1)
Unguided (n=3)
Group

# FIG. 19


Distances to Null
Distance
400
380
360
340
320
300
280
Null (n=0)
Empty (n=1)
Guided (n=3)
Unguided (n=3)

# FIG. 20


0.0
−0.5
−1.0
−1.5
−2.0
Change in Shannon Diversity
Empty (n=1)
Unguided AMP (n=3)
Null (n=1)
Guided AMP (n=2)
Treatment