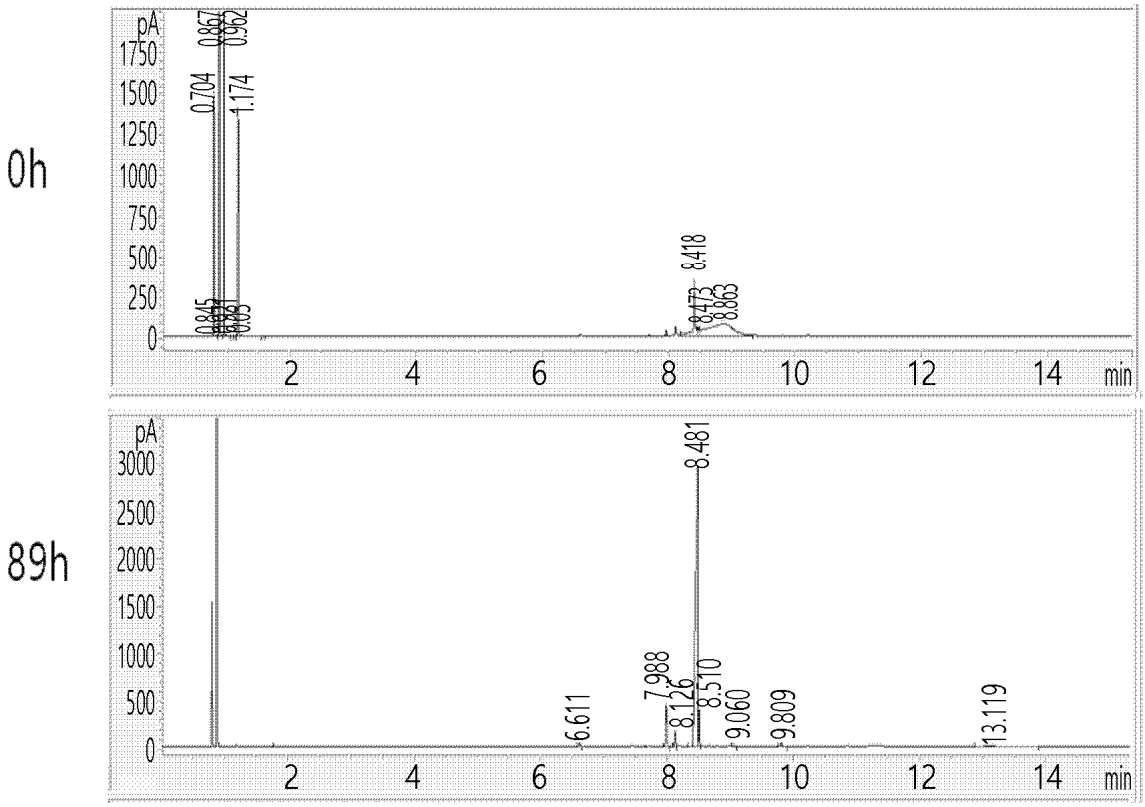
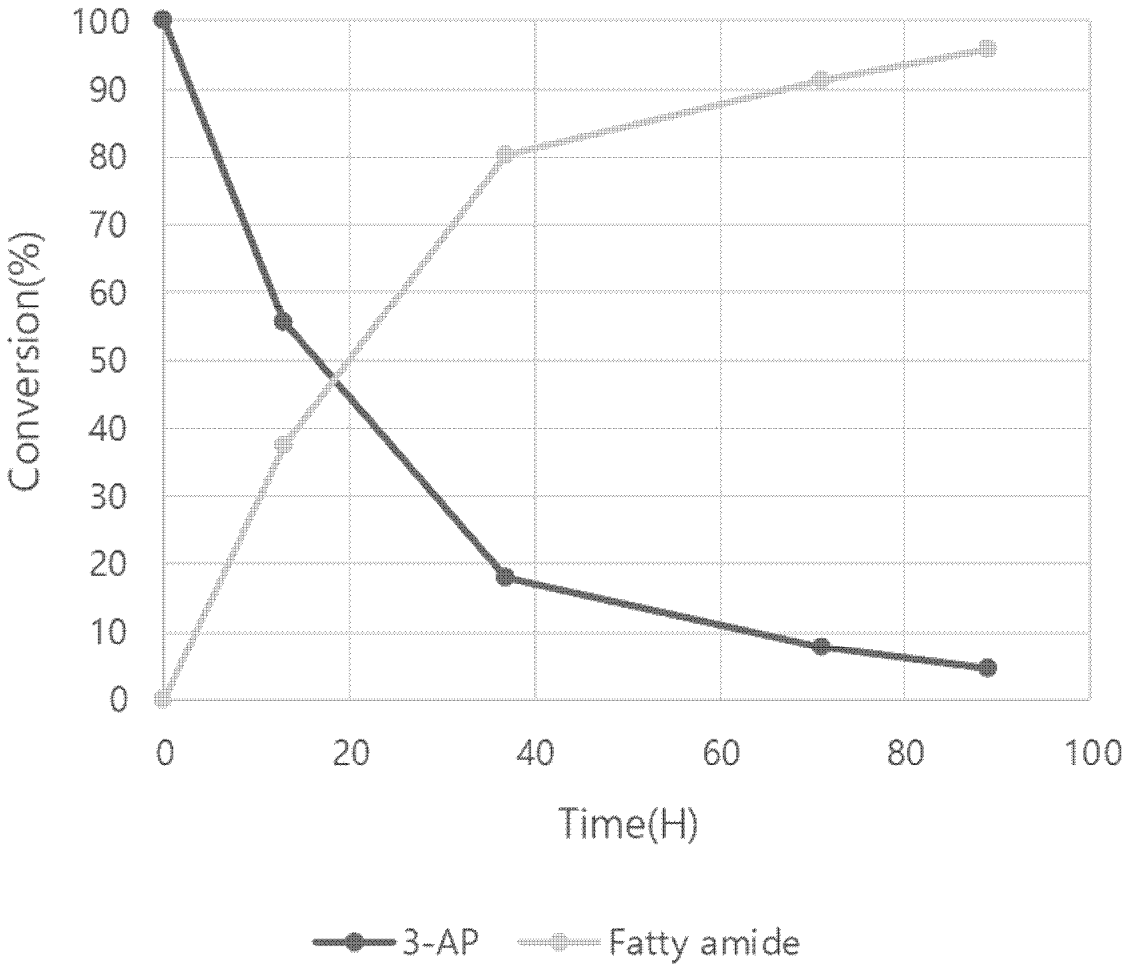
[Drawings]

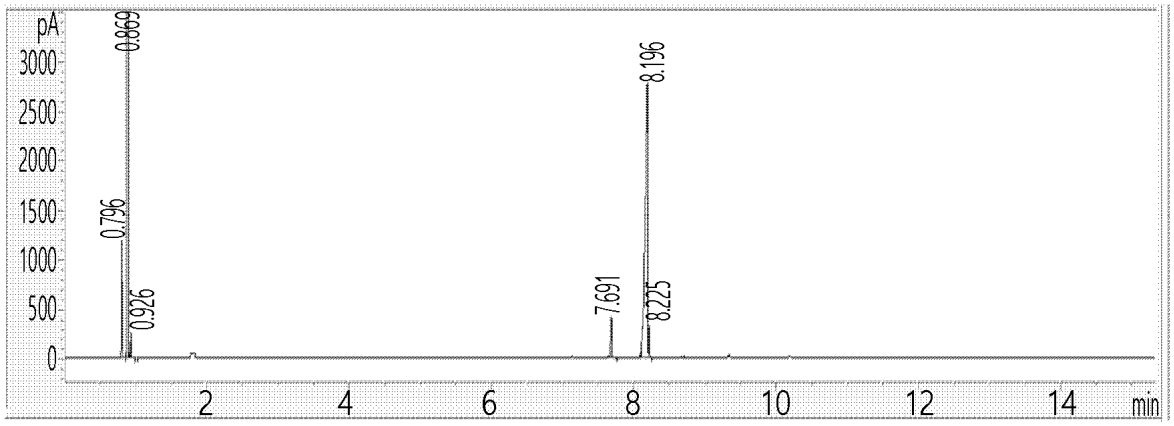
[FIG. 1]



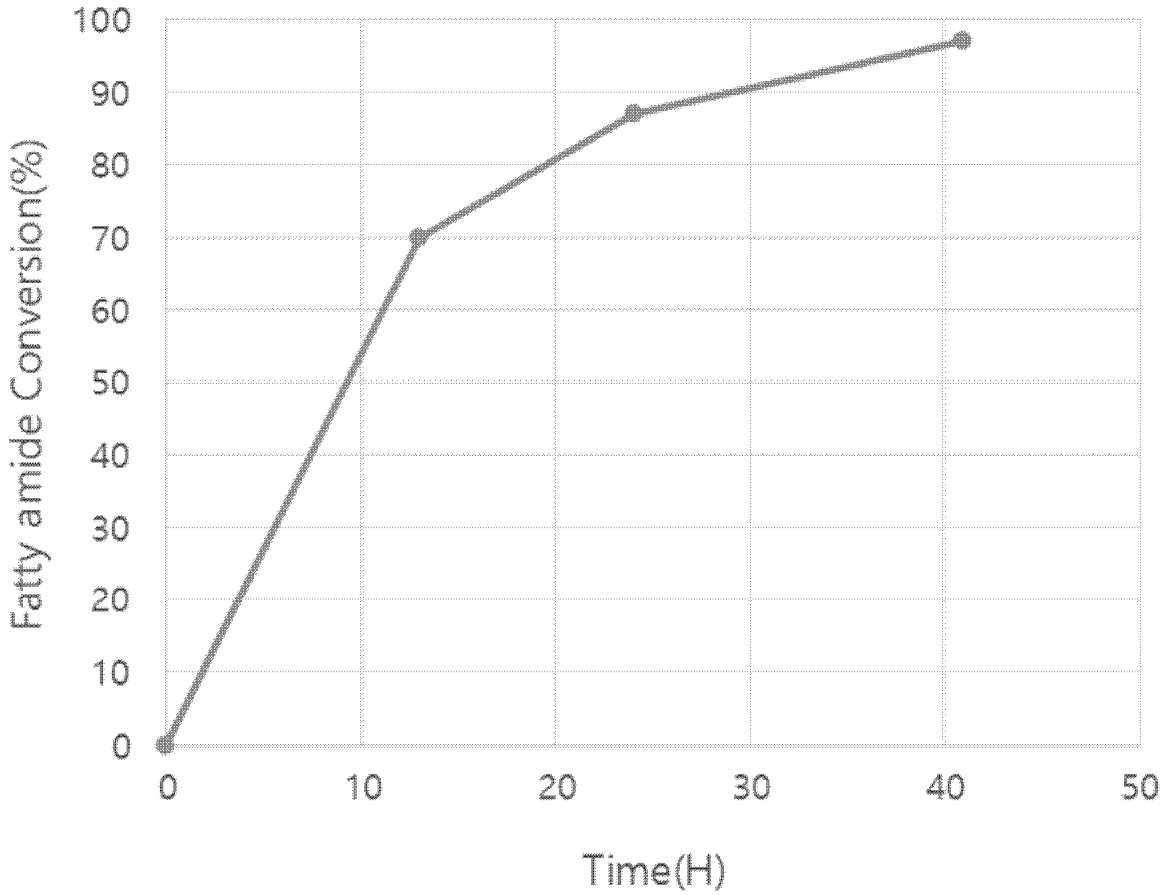
[FIG. 2]


100
90
80
70
60
50
40
30
20
10
0
Conversion(%)
0
20
40
60
80
100
Time(H)
3-AP
Fatty amide

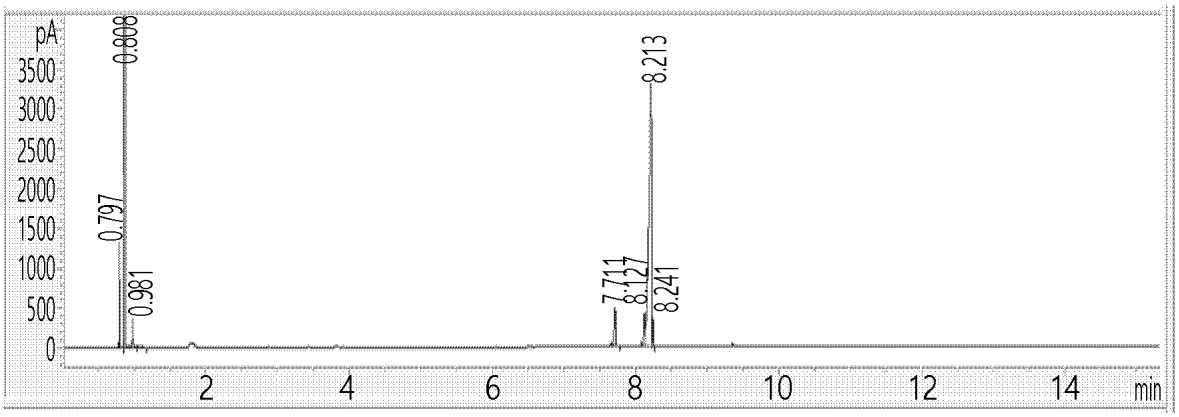
[FIG. 3]


pA
3000
2500
2000
1500
1000
500
0
0.869
0.796
0.926
7.691
8.196
8.225
2
4
6
8
10
12
14
min

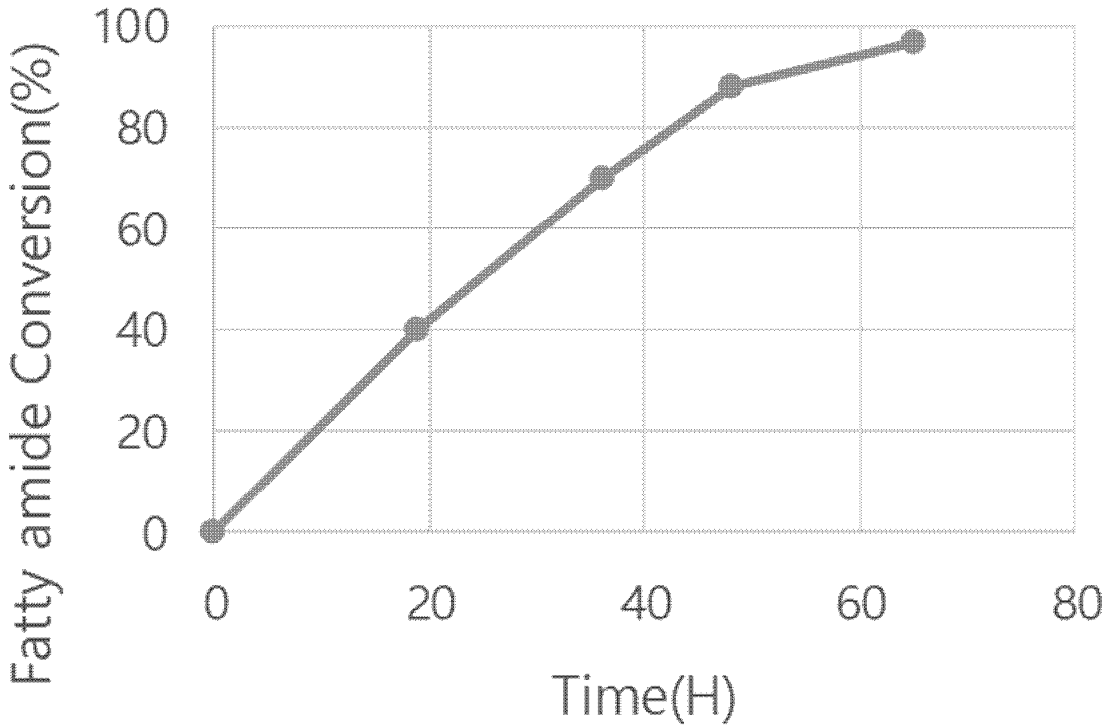
[FIG. 4]


Fatty amide Conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
Time(H)

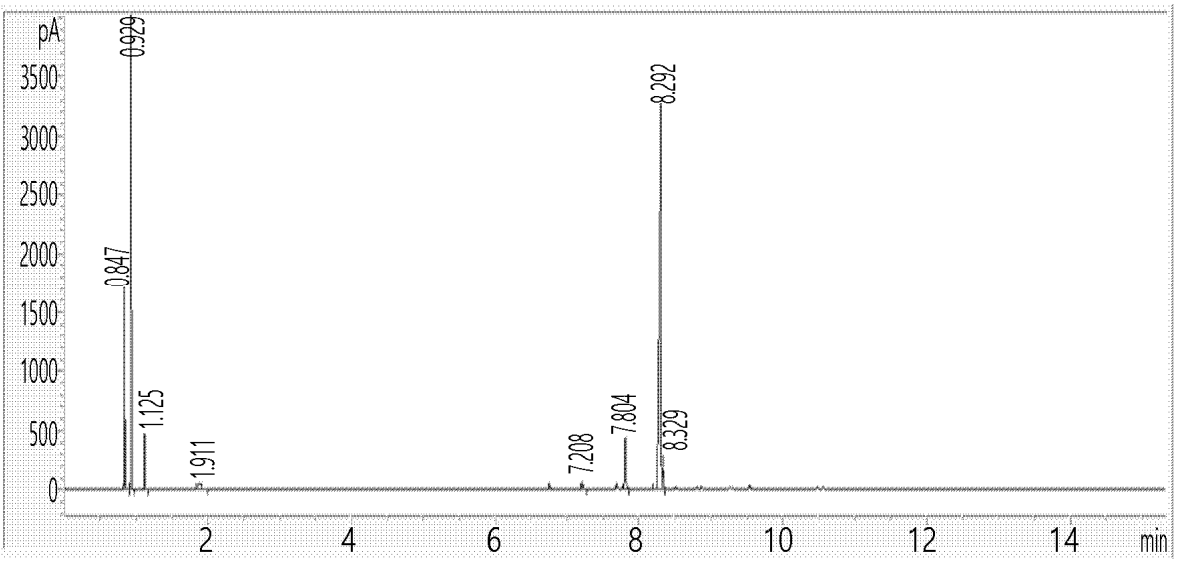
[FIG. 5]


pA
3500
3000
2500
2000
1500
1000
500
0
0.808
0.797
0.981
7.711
8.127
8.213
8.241
2
4
6
8
10
12
14
min

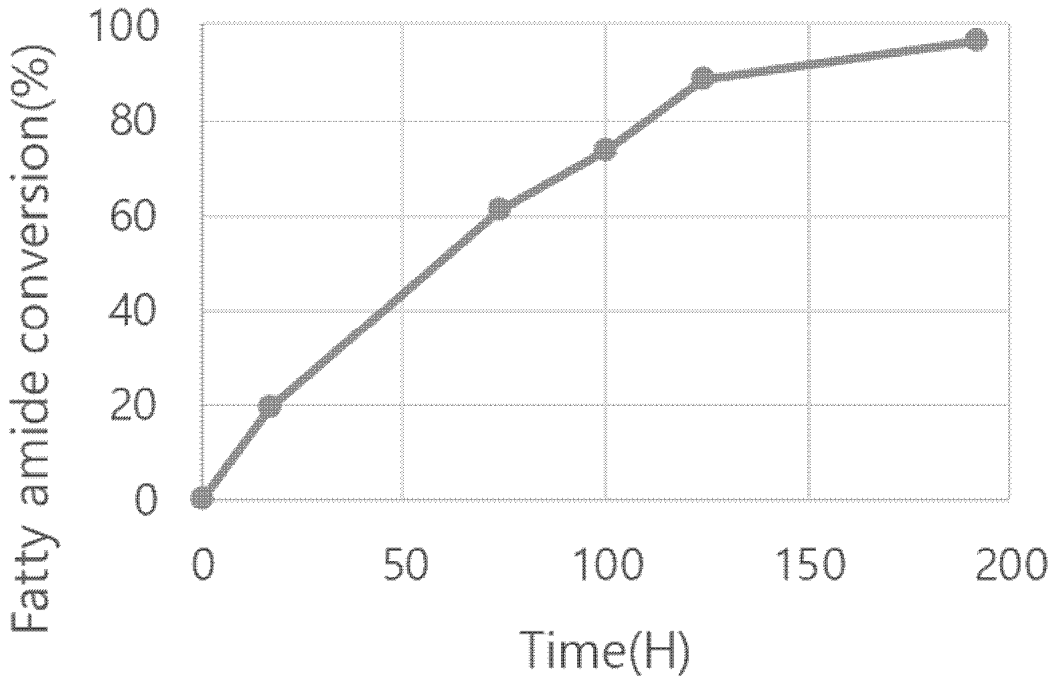
[FIG. 6]


Fatty amide Conversion(%)
100
80
60
40
20
0
0
20
40
60
80
Time(H)

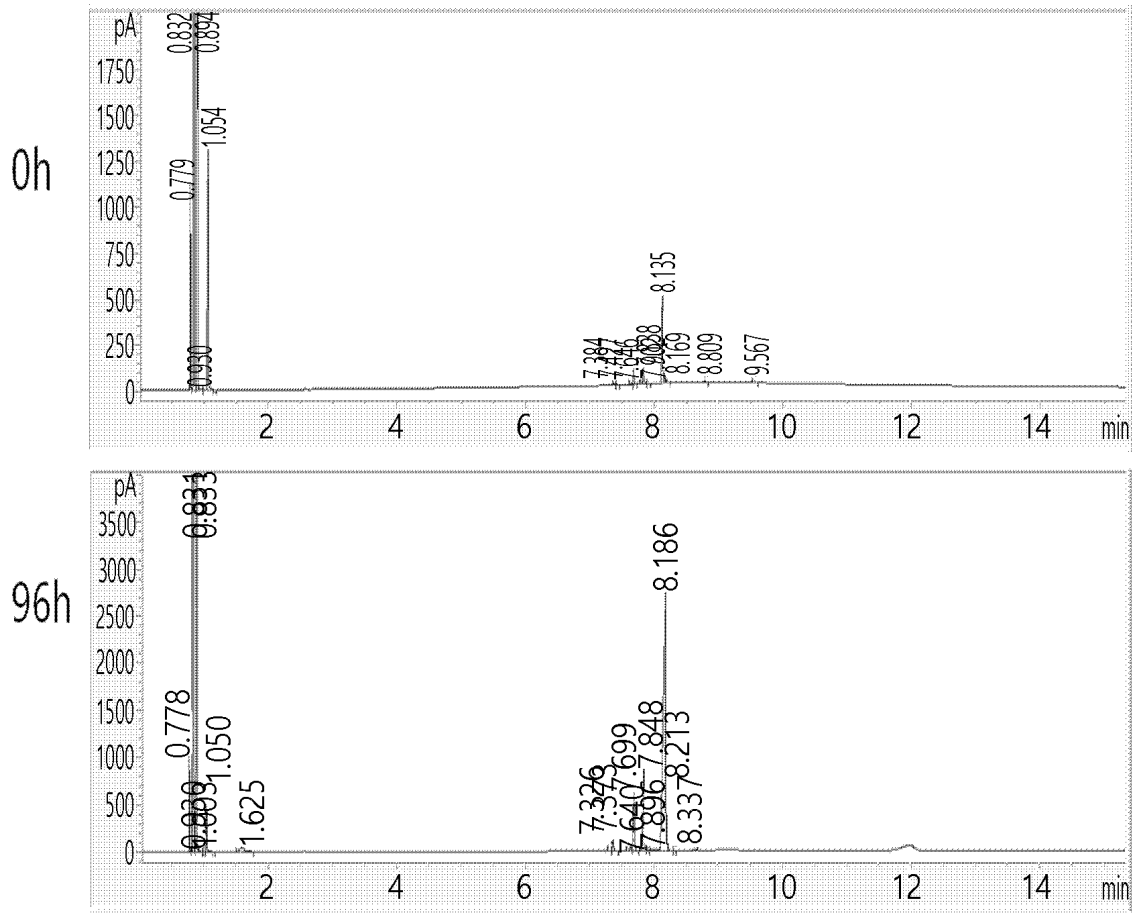
[FIG. 7]


pA
3500
3000
2500
2000
1500
1000
500
0
0.929
8.292
0.847
1.125
1.911
7.208
7.804
8.329
2
4
6
8
10
12
14
min

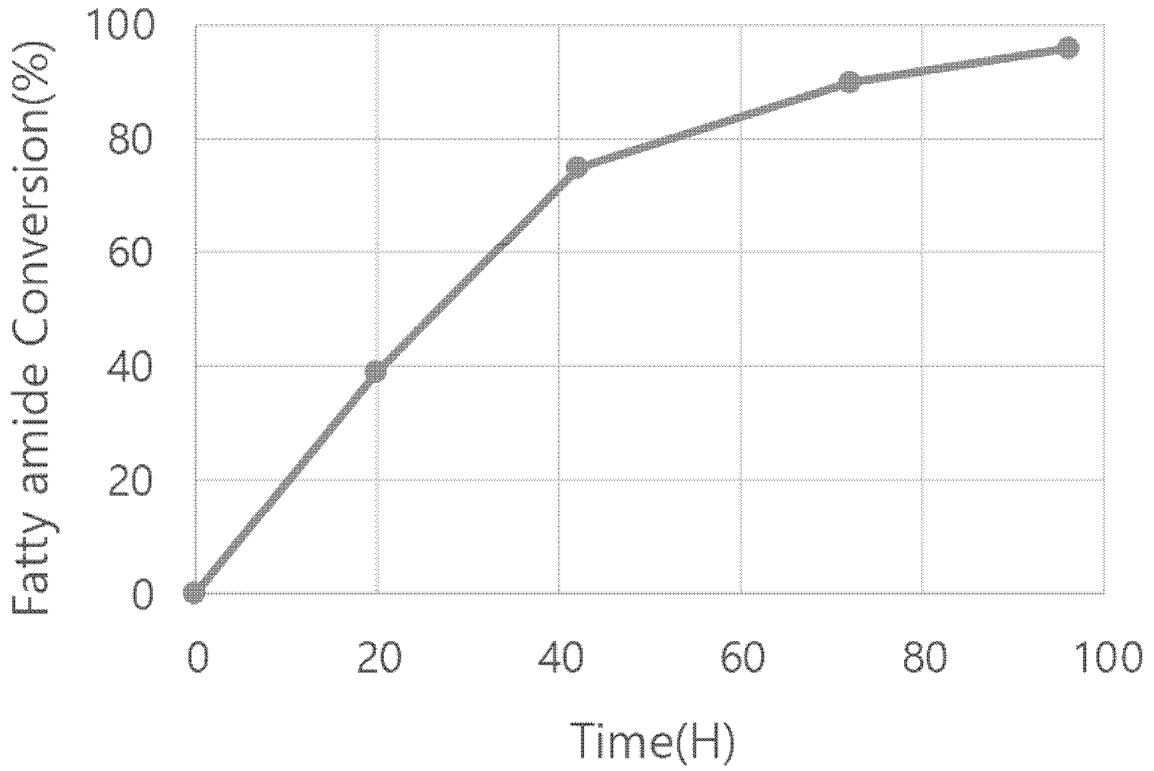
[FIG. 8]


Fatty amide conversion(%)
100
80
60
40
20
0
0
50
100
150
200
Time(H)

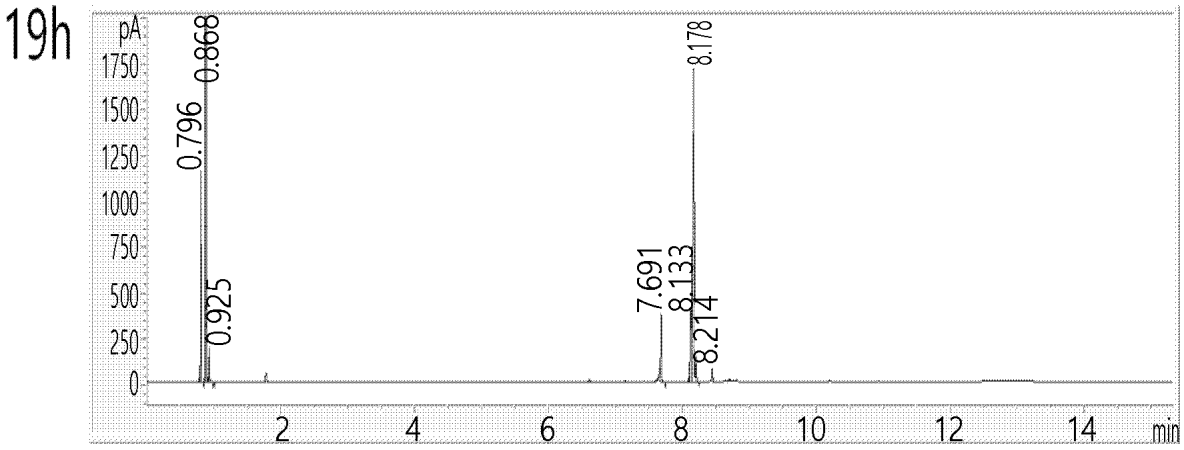
[FIG. 9]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.832
0.894
1.054
0.779
8.135
8.169
8.809
9.567
2
4
6
8
10
12
14
min
96h
pA
3500
3000
2500
2000
1500
1000
500
0
0.778
1.050
1.625
8.186
8.213
8.337
2
4
6
8
10
12
14
min

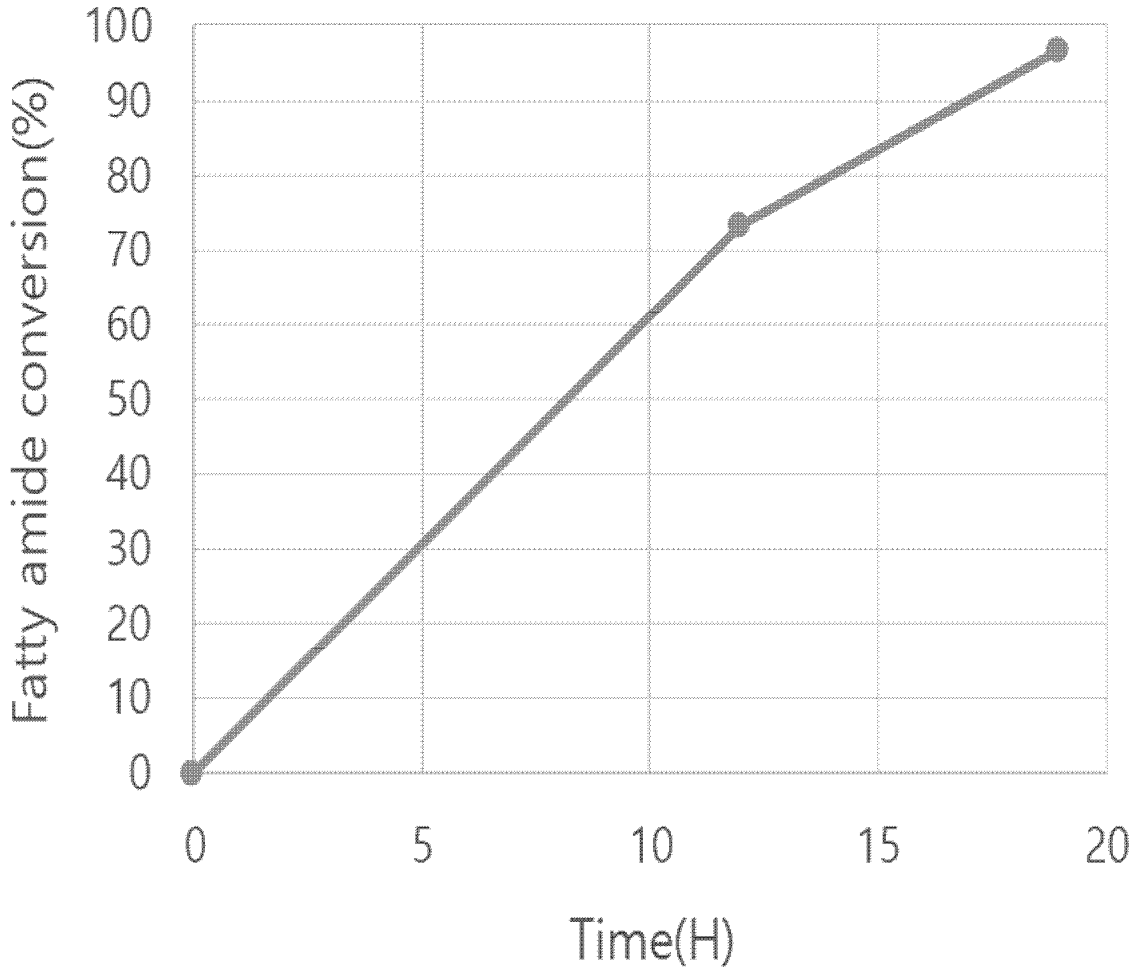
[FIG. 10]


Fatty amide Conversion(%)
100
80
60
40
20
0
0
20
40
60
80
100
Time(H)

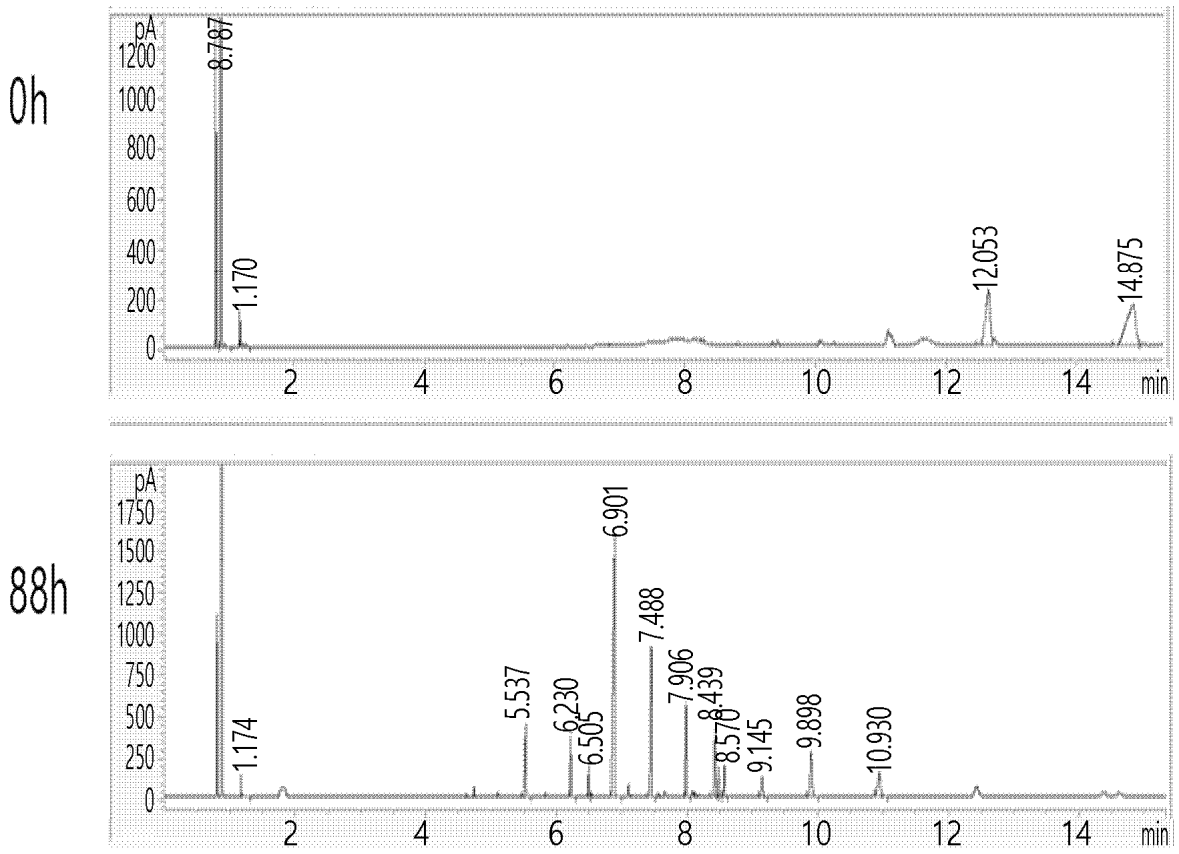
[FIG. 11]


19h
pA
1750
1500
1250
1000
750
500
250
0
0.868
0.796
0.925
7.691
8.133
8.214
8.178
2
4
6
8
10
12
14
min

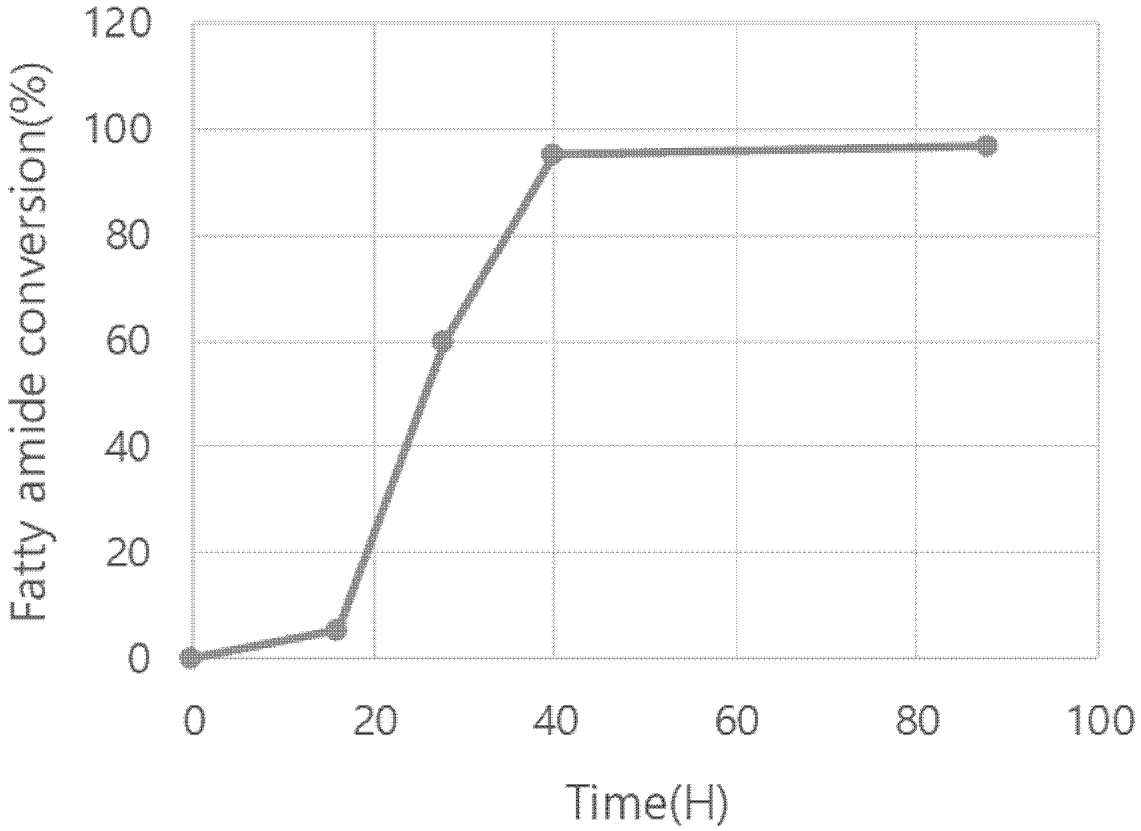
[FIG. 12]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
Time(H)

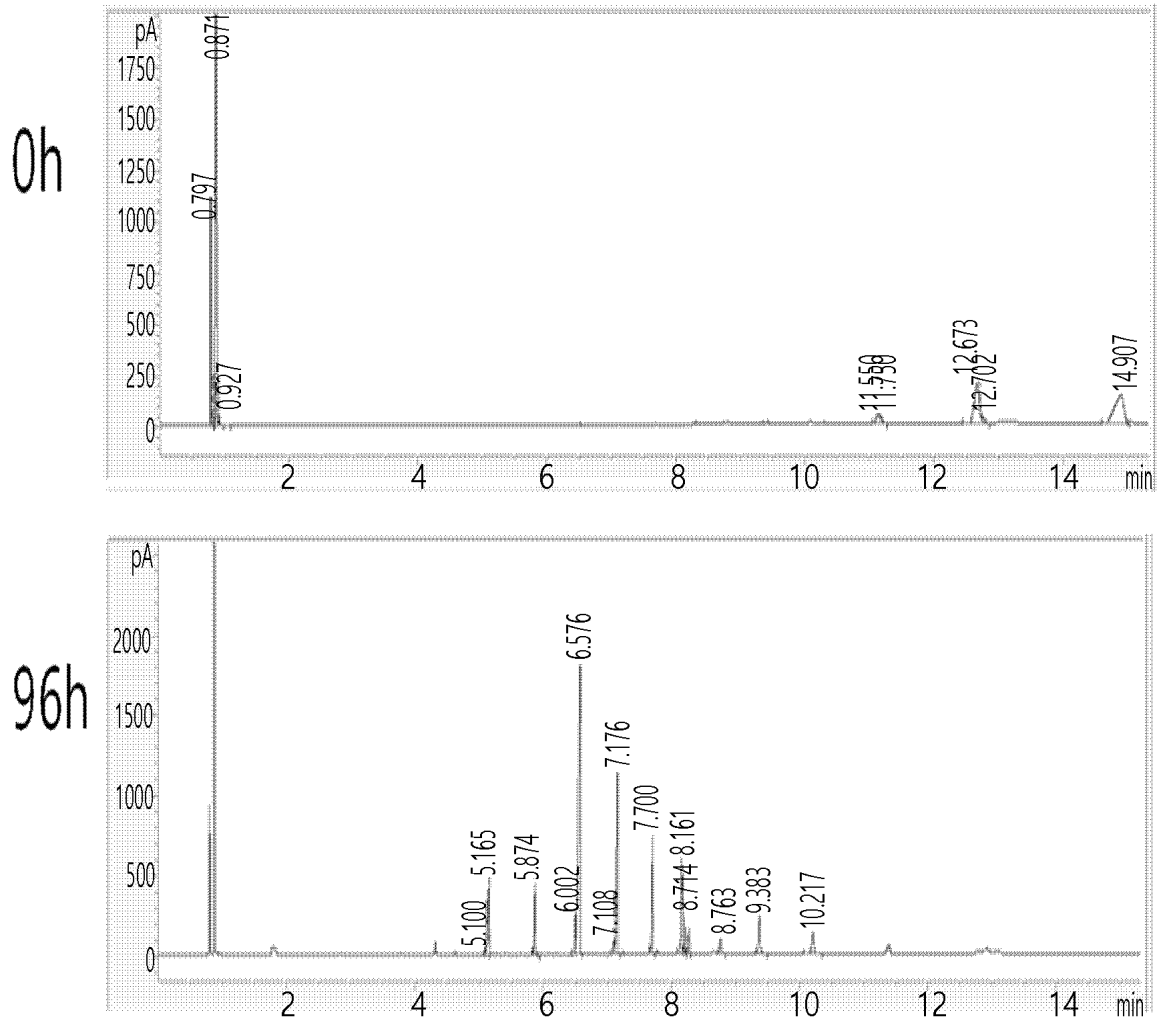
[FIG. 13]


0h
pA
1200
1000
800
600
400
200
0
8.787
1.170
12.053
14.875
2
4
6
8
10
12
14
min
88h
pA
1750
1500
1250
1000
750
500
250
0
1.174
5.537
6.230
6.505
6.901
7.488
7.906
8.439
8.570
9.145
9.898
10.930
2
4
6
8
10
12
14
min

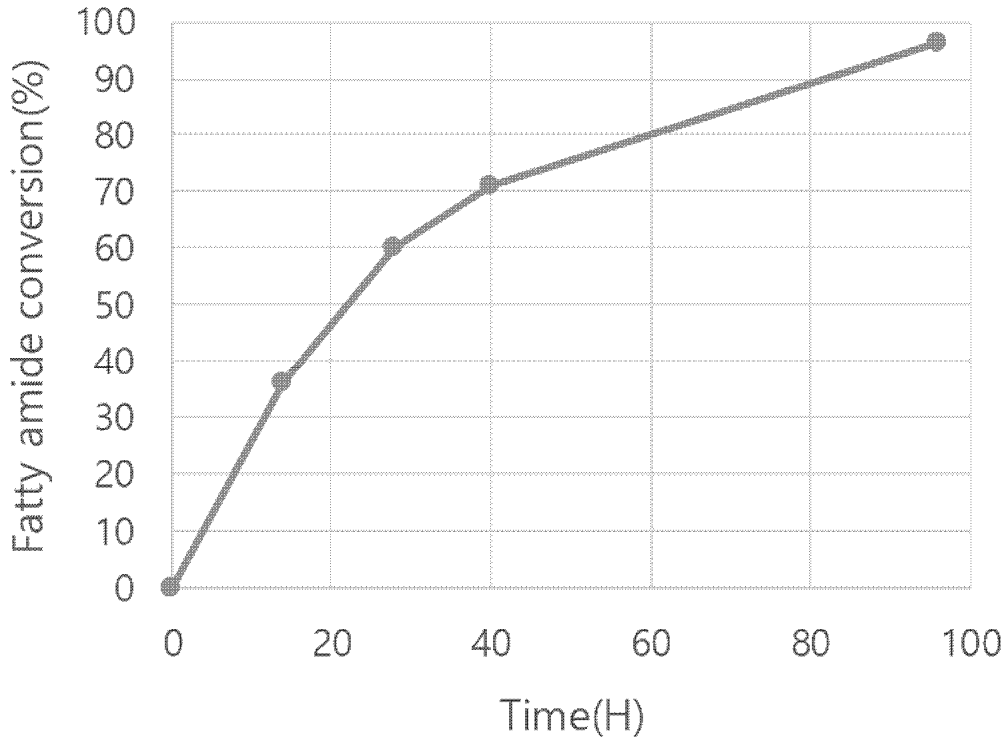
[FIG. 14]


120
100
80
60
40
20
0
Fatty amide conversion(%)
0
20
40
60
80
100
Time(H)

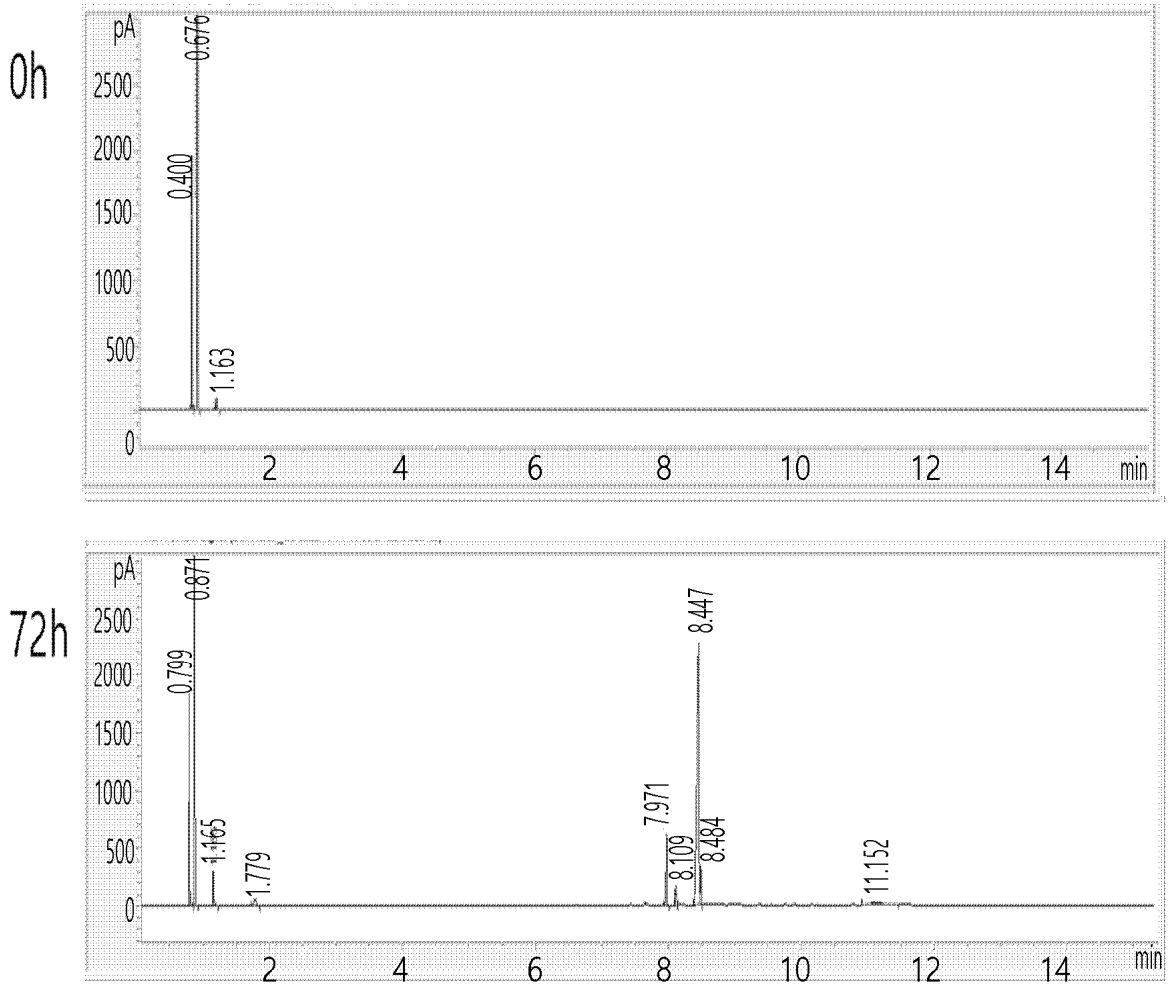
[FIG. 15]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.871
0.797
0.927
11.550
11.798
12.673
12.702
14.907
2
4
6
8
10
12
14
min
96h
pA
2000
1500
1000
500
0
6.576
7.176
7.700
5.165
5.874
8.161
6.002
5.100
7.108
8.714
8.763
9.383
10.217
2
4
6
8
10
12
14
min

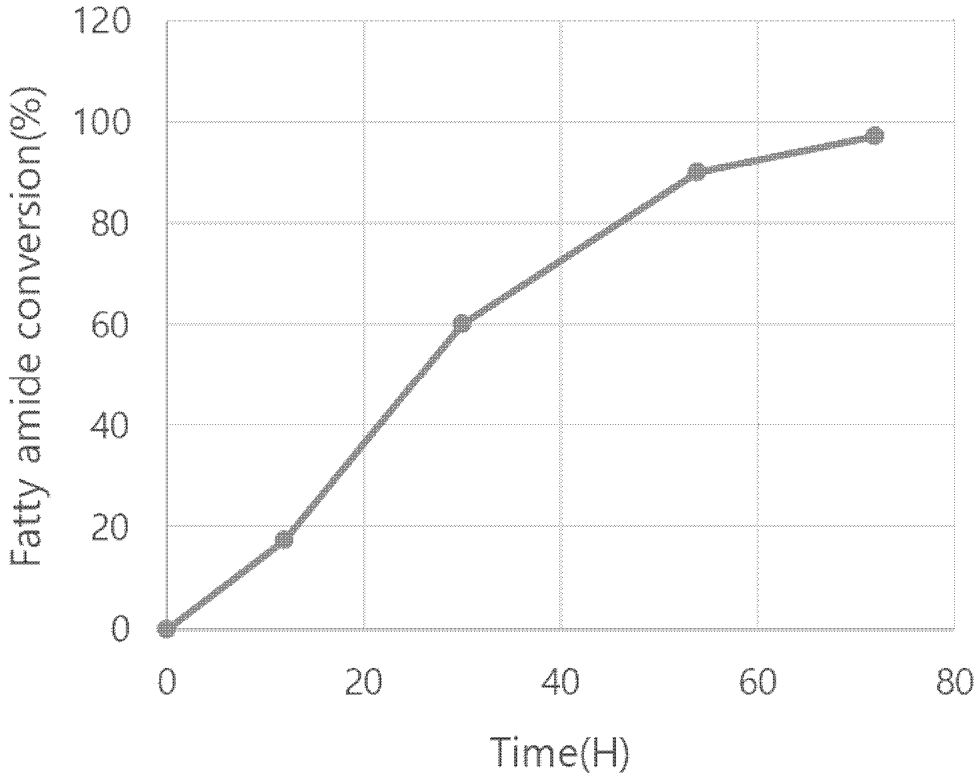
[FIG. 16]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Time(H)

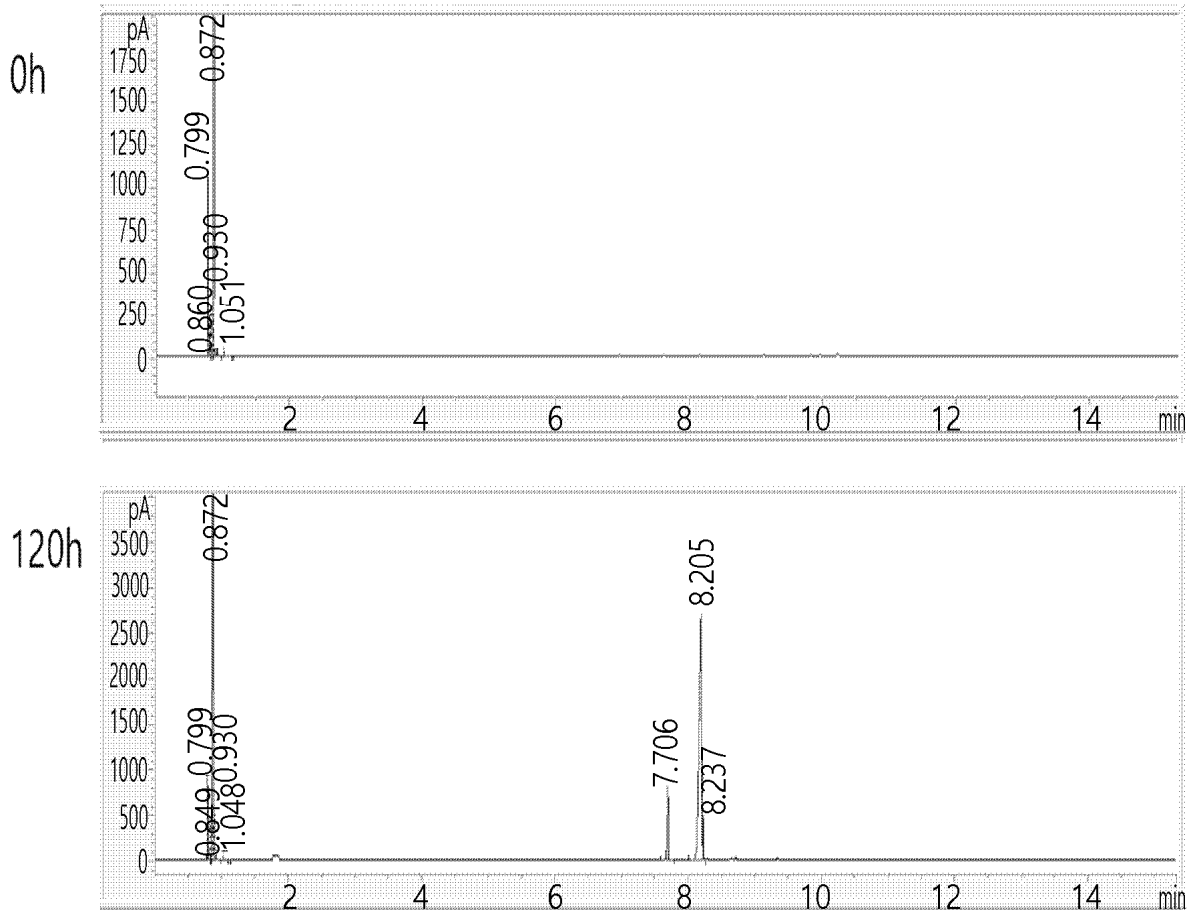
[FIG. 17]


0h
pA
2500
2000
1500
1000
500
0
0.676
0.400
1.163
2
4
6
8
10
12
14
min
72h
pA
2500
2000
1500
1000
500
0
0.871
0.799
1.165
1.779
8.447
7.971
8.109
8.484
11.152
2
4
6
8
10
12
14
min

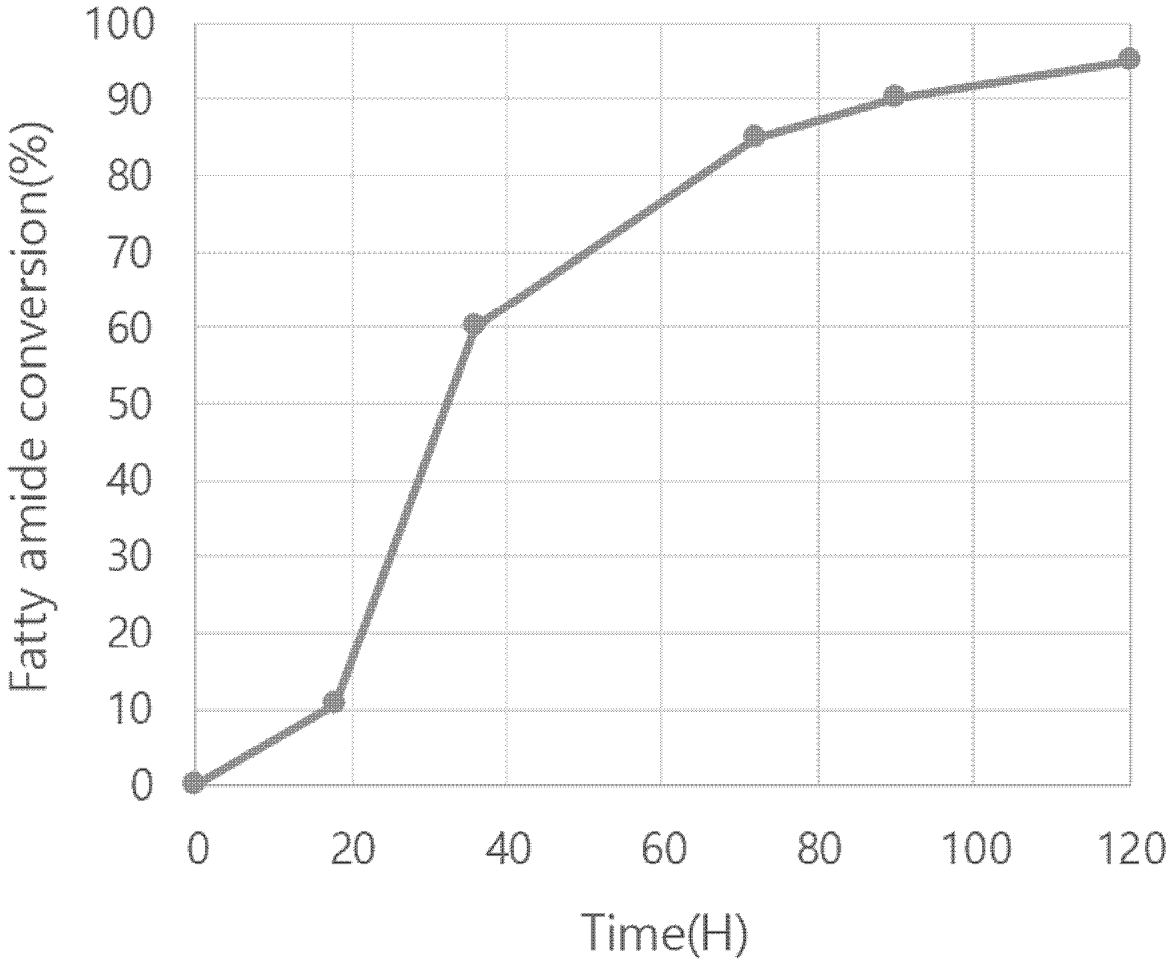
[FIG. 18]



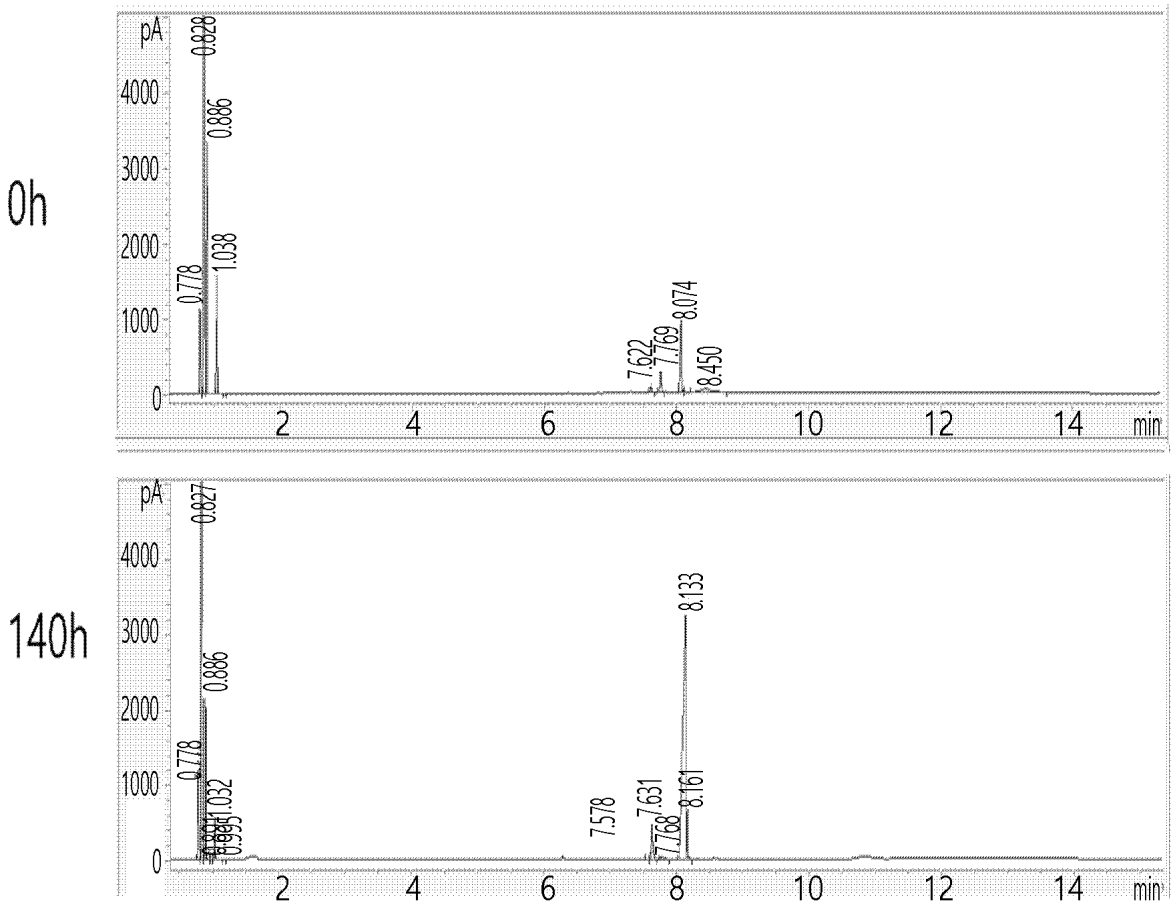
[FIG. 19]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.872
0.799
0.930
0.860
1.051
2
4
6
8
10
12
14
min
120h
pA
3500
3000
2500
2000
1500
1000
500
0
0.872
8.205
0.799
0.930
7.706
0.849
1.048
8.237
2
4
6
8
10
12
14
min

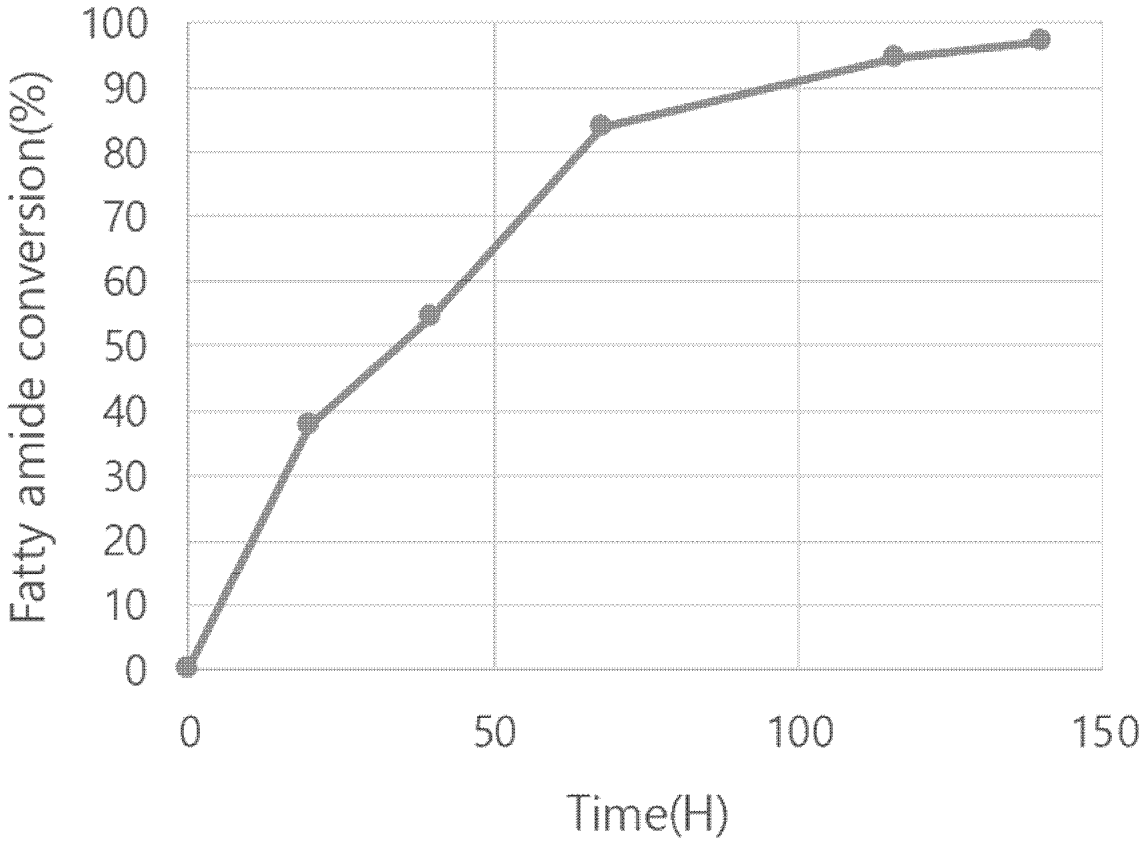
[FIG. 20]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Time(H)

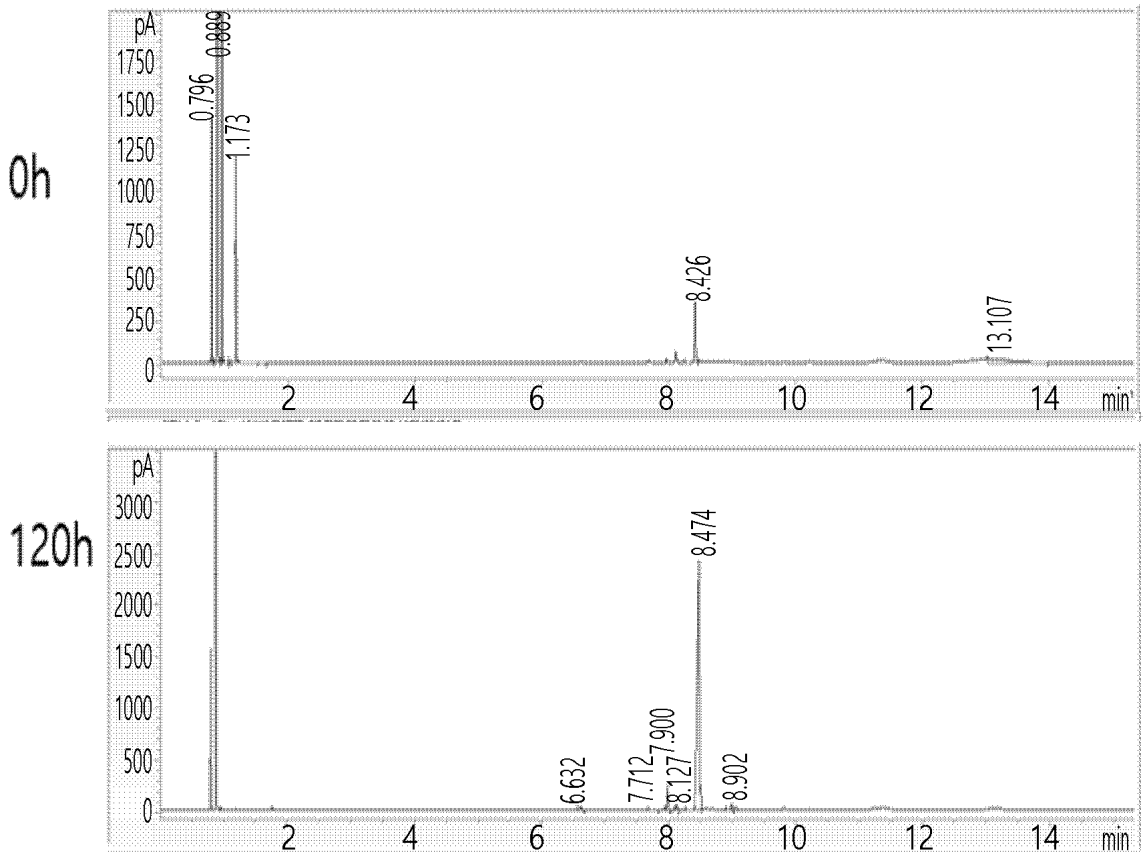
[FIG. 21]


0h
pA
4000
3000
2000
1000
0
0.828
0.886
1.038
0.778
7.622
7.769
8.074
8.450
2
4
6
8
10
12
14
min
140h
pA
4000
3000
2000
1000
0
0.827
0.886
0.778
1.032
7.578
7.631
7.768
8.133
8.161
2
4
6
8
10
12
14
min

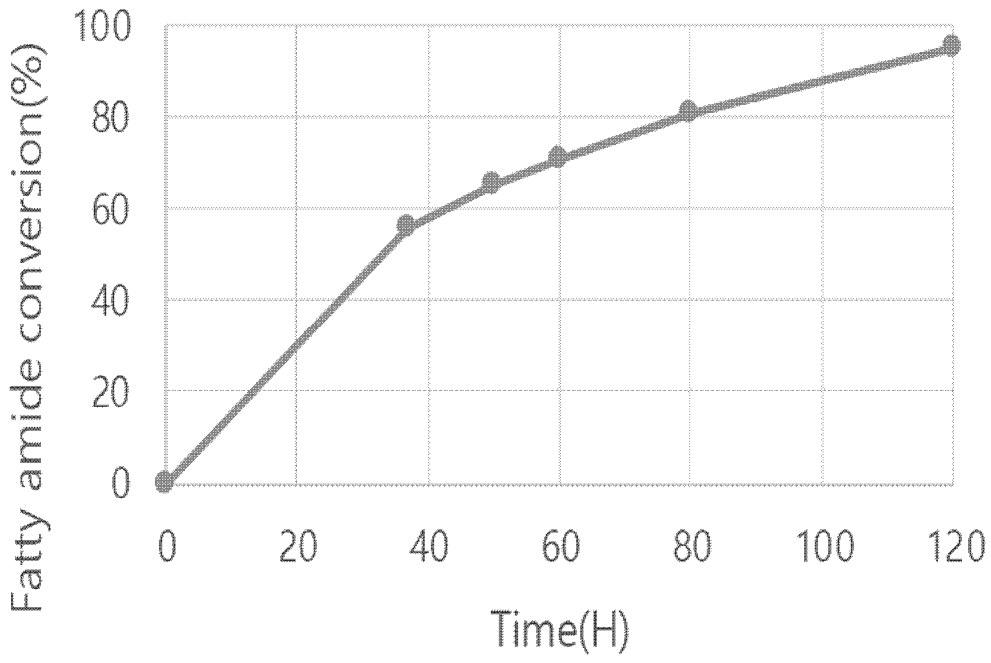
[FIG. 22]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
50
100
150
Time(H)

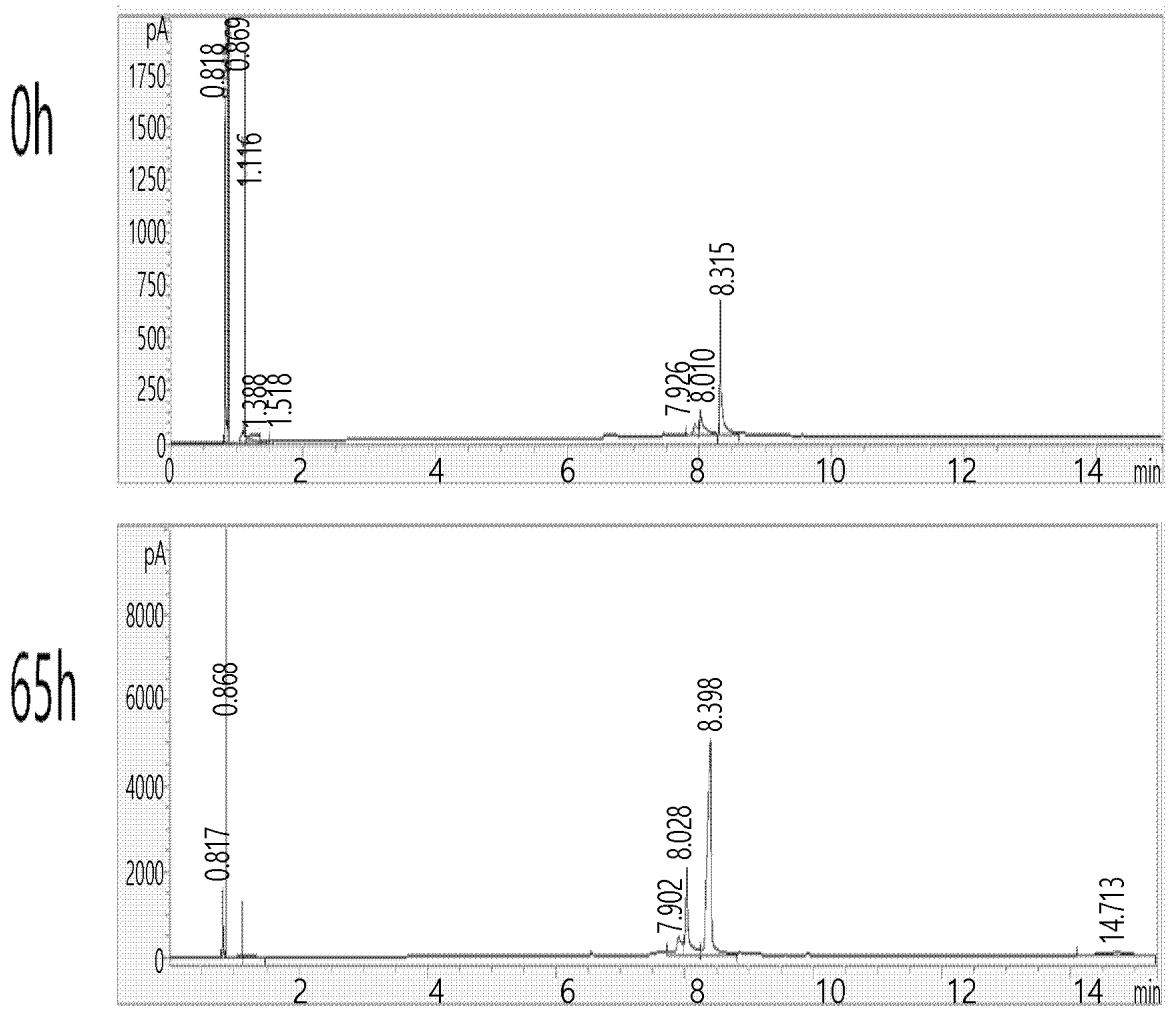
[FIG. 23]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.796
0.889
1.173
8.426
13.107
2
4
6
8
10
12
14
min
120h
pA
3000
2500
2000
1500
1000
500
0
6.632
7.712
7.900
8.127
8.474
8.902
2
4
6
8
10
12
14
min

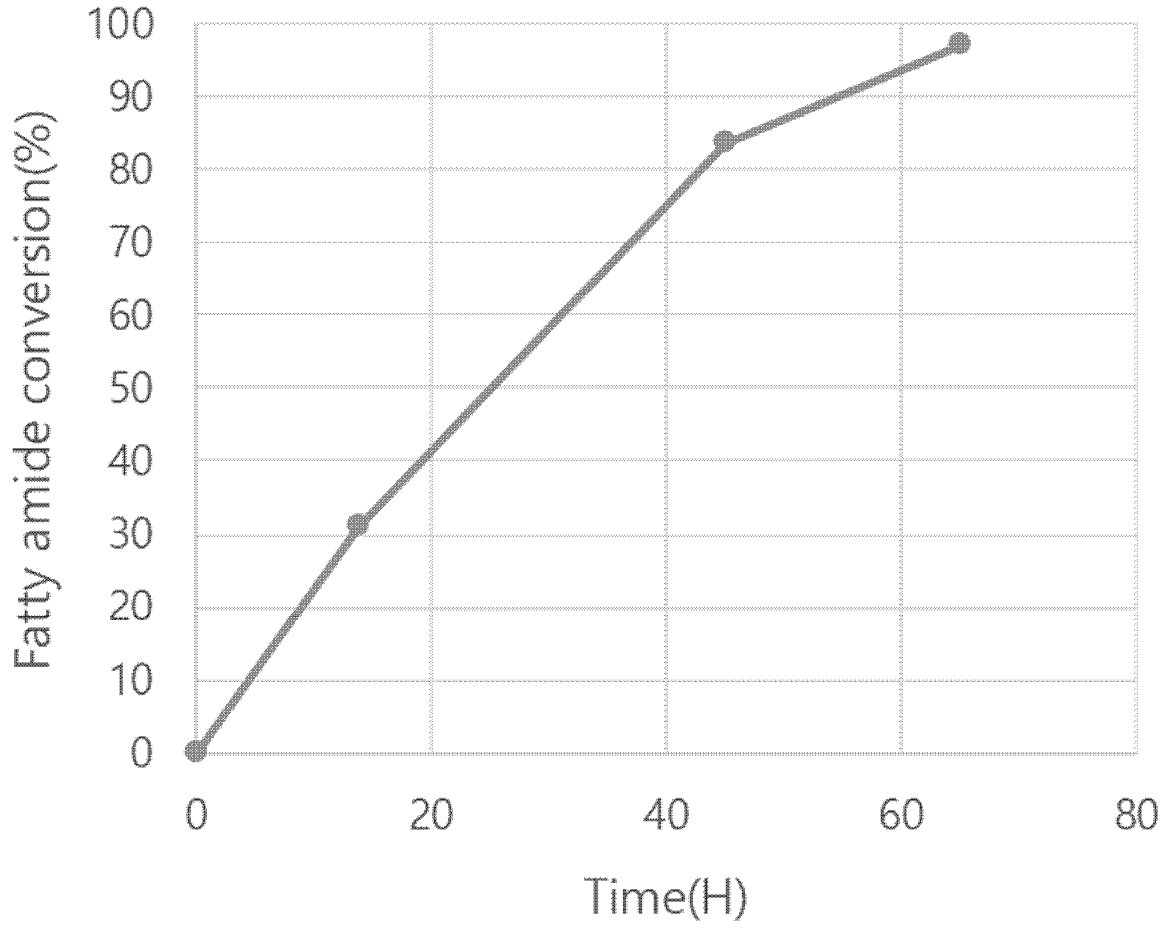
[FIG. 24]


Fatty amide conversion(%)
100
80
60
40
20
0
0
20
40
60
80
100
120
Time(H)

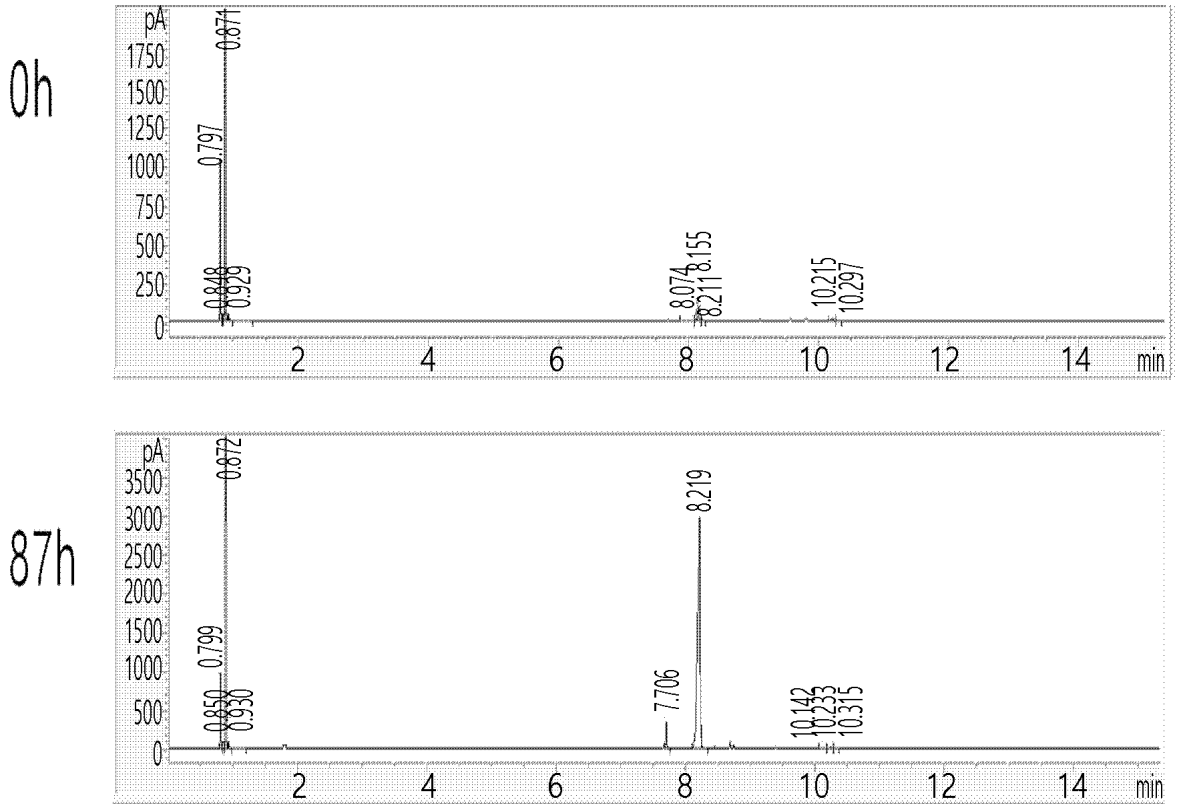
[FIG. 25]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.818
0.869
1.116
1.388
1.518
7.926
8.010
8.315
0
2
4
6
8
10
12
14
min
65h
pA
8000
6000
4000
2000
0
0.817
0.868
7.902
8.028
8.398
14.713
0
2
4
6
8
10
12
14
min

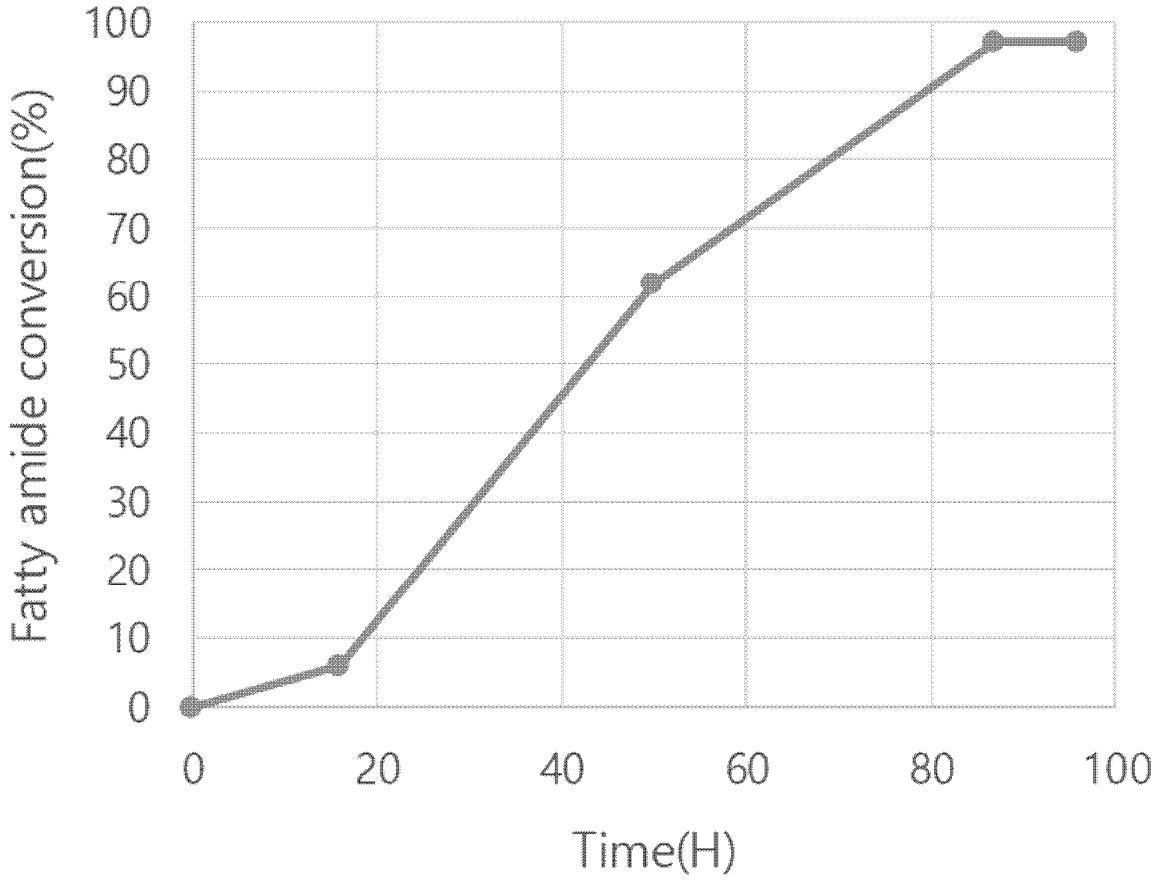
[FIG. 26]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
Time(H)

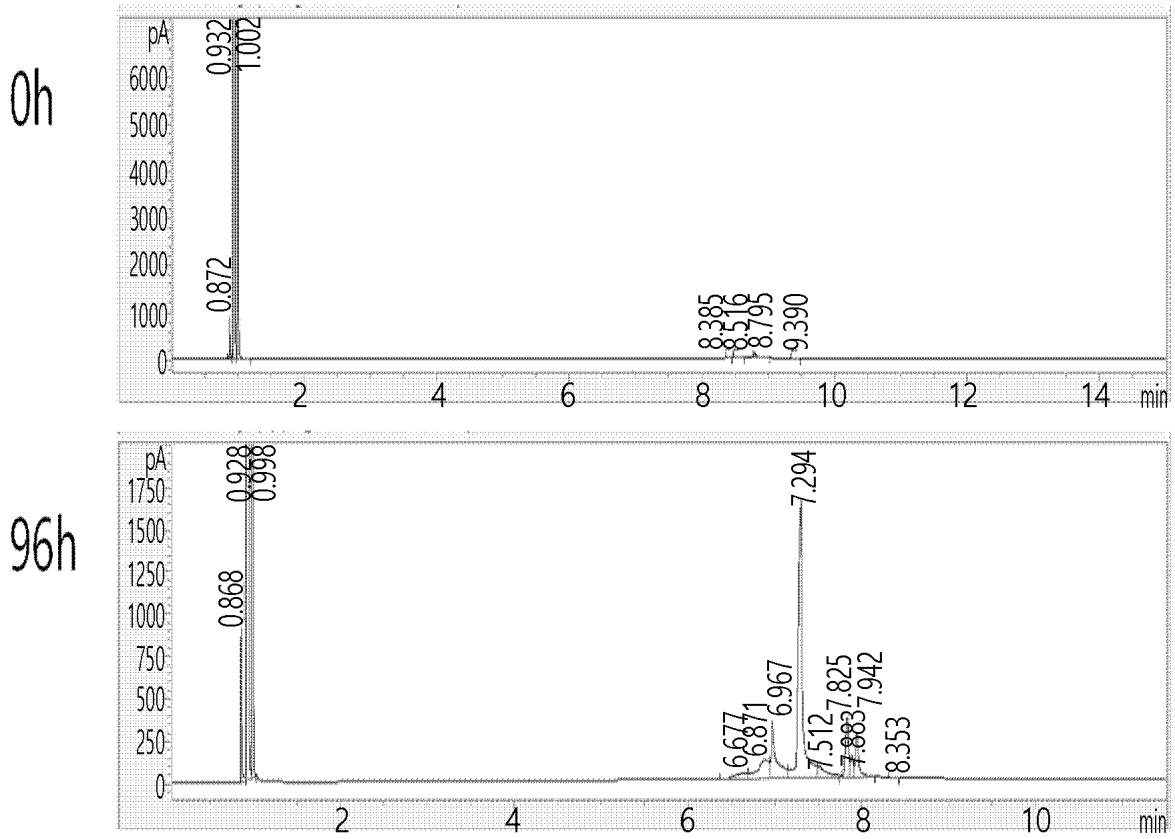
[FIG. 27]


0h
pA
1750
1500
1250
1000
750
500
250
0
0.871
0.797
0.848
0.929
8.074
8.211
8.155
10.215
10.297
2
4
6
8
10
12
14
min
87h
pA
3500
3000
2500
2000
1500
1000
500
0
0.872
0.799
0.650
0.930
8.219
7.706
10.142
10.233
10.315
2
4
6
8
10
12
14
min

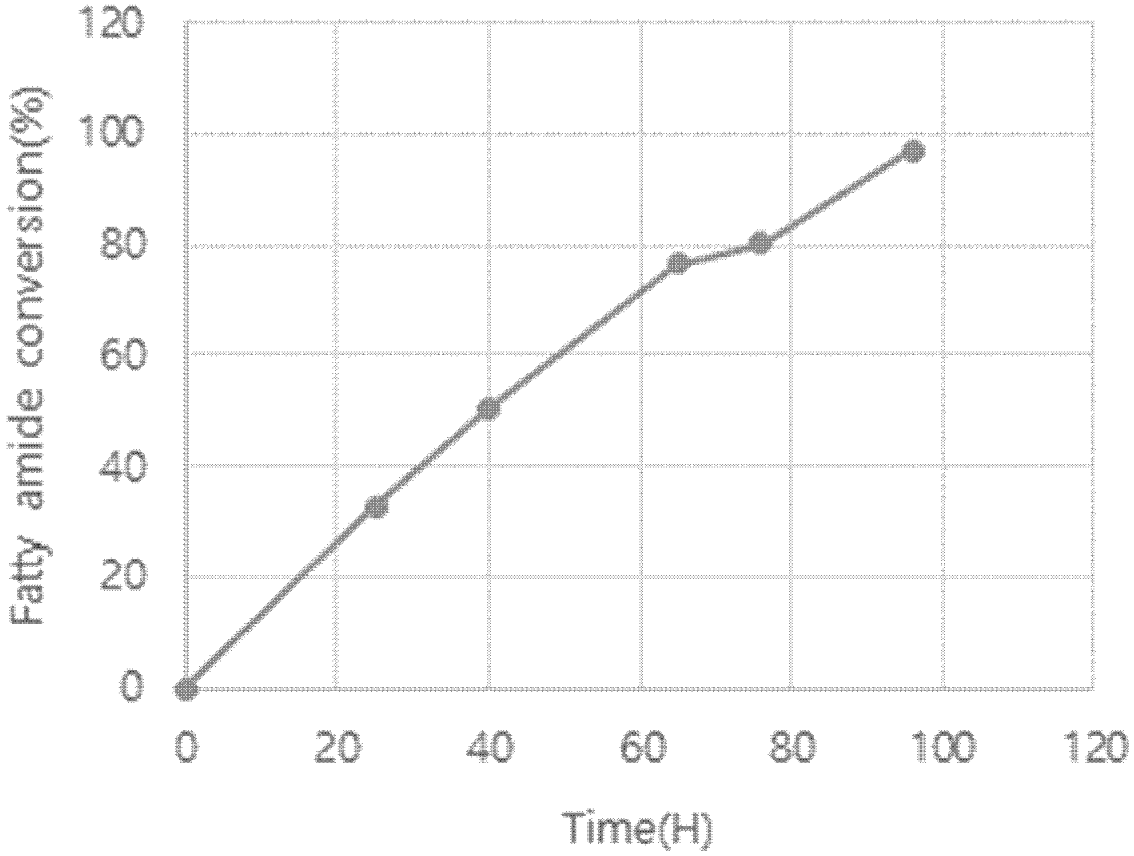
[FIG. 28]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Time(H)

[FIG. 29]

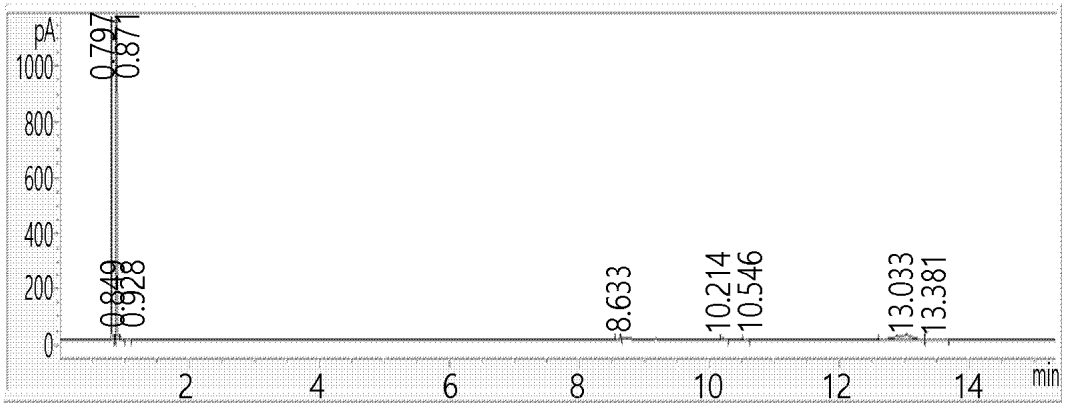

0h
pA
6000
5000
4000
3000
2000
1000
0
0.872
0.932
1.002
8.385
8.516
8.795
9.390
2
4
6
8
10
12
14
min
96h
pA
1750
1500
1250
1000
750
500
250
0
0.868
0.928
0.998
6.677
6.871
6.967
7.294
7.512
7.825
7.942
8.353
2
4
6
8
10
min

[FIG. 30]

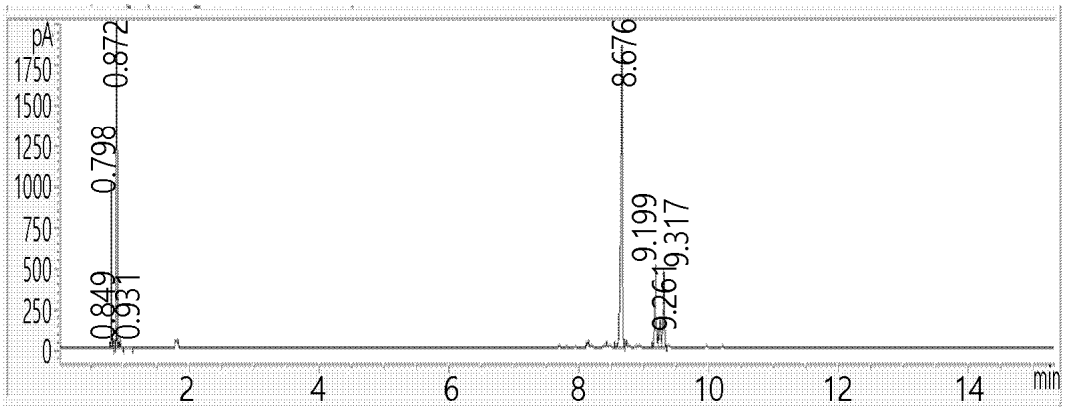

Fatty amide conversion(%)
120
100
80
60
40
20
0
0
20
40
60
80
100
120
Time(H)

[FIG. 31]

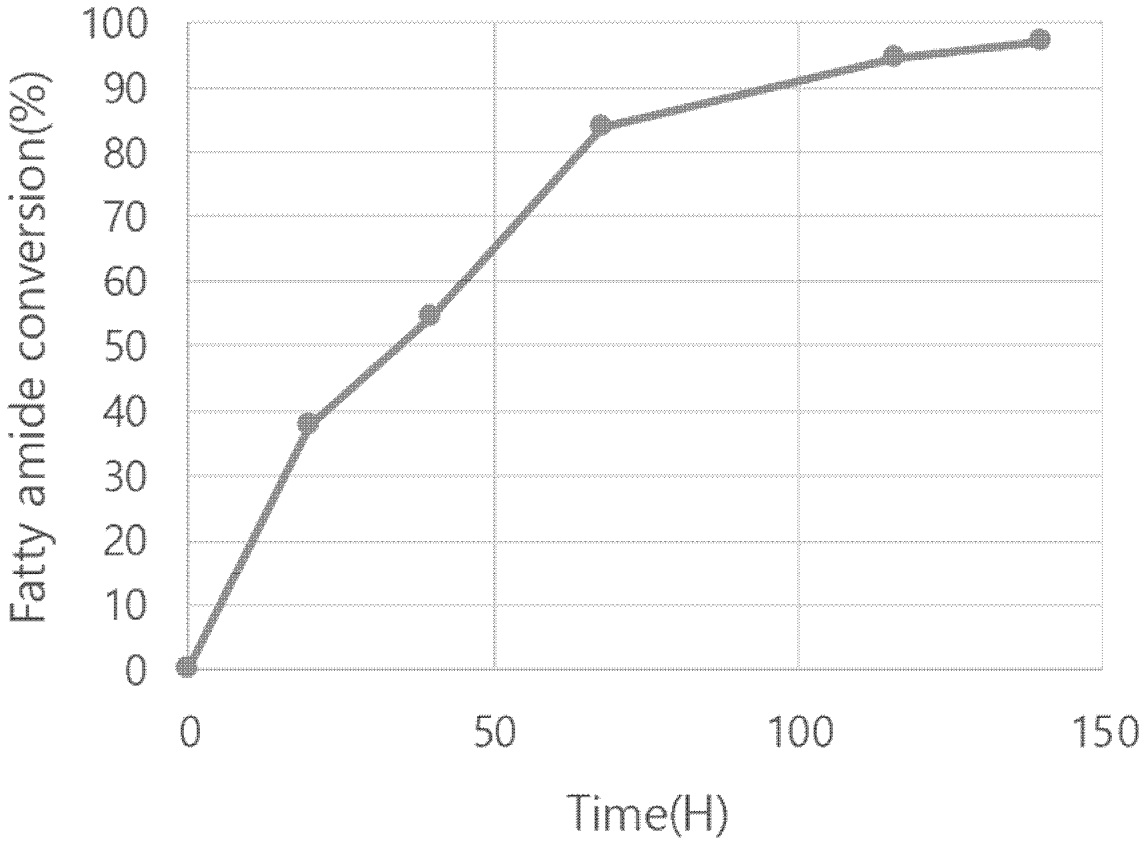
0h


pA
1000
800
600
400
200
0
0.797
0.871
0.849
0.928
8.633
10.214
10.546
13.033
13.381
2
4
6
8
10
12
14
min

84h

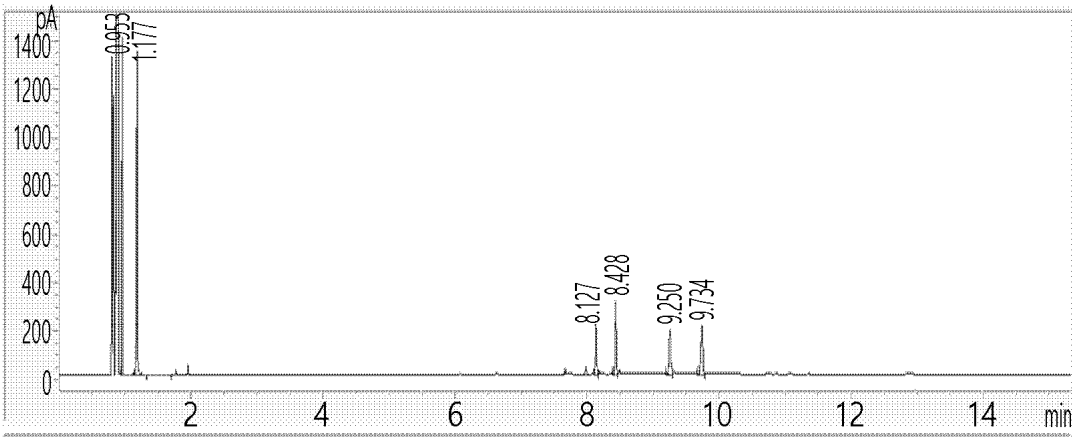

pA
1750
1500
1250
1000
750
500
250
0
0.872
0.798
0.849
0.931
8.676
9.199
9.317
9.261
2
4
6
8
10
12
14
min

[FIG. 32]

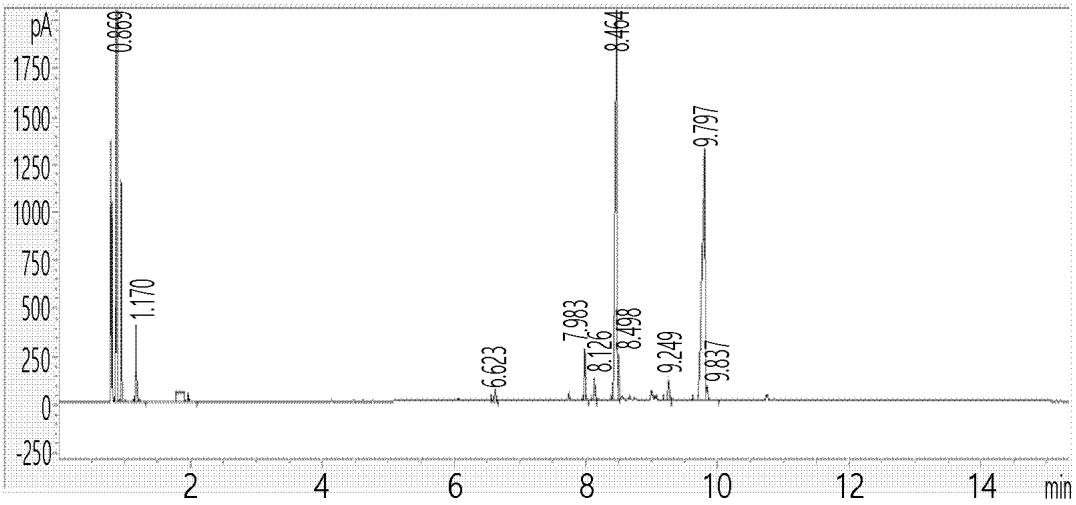

Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
50
100
150
Time(H)

[FIG. 33]

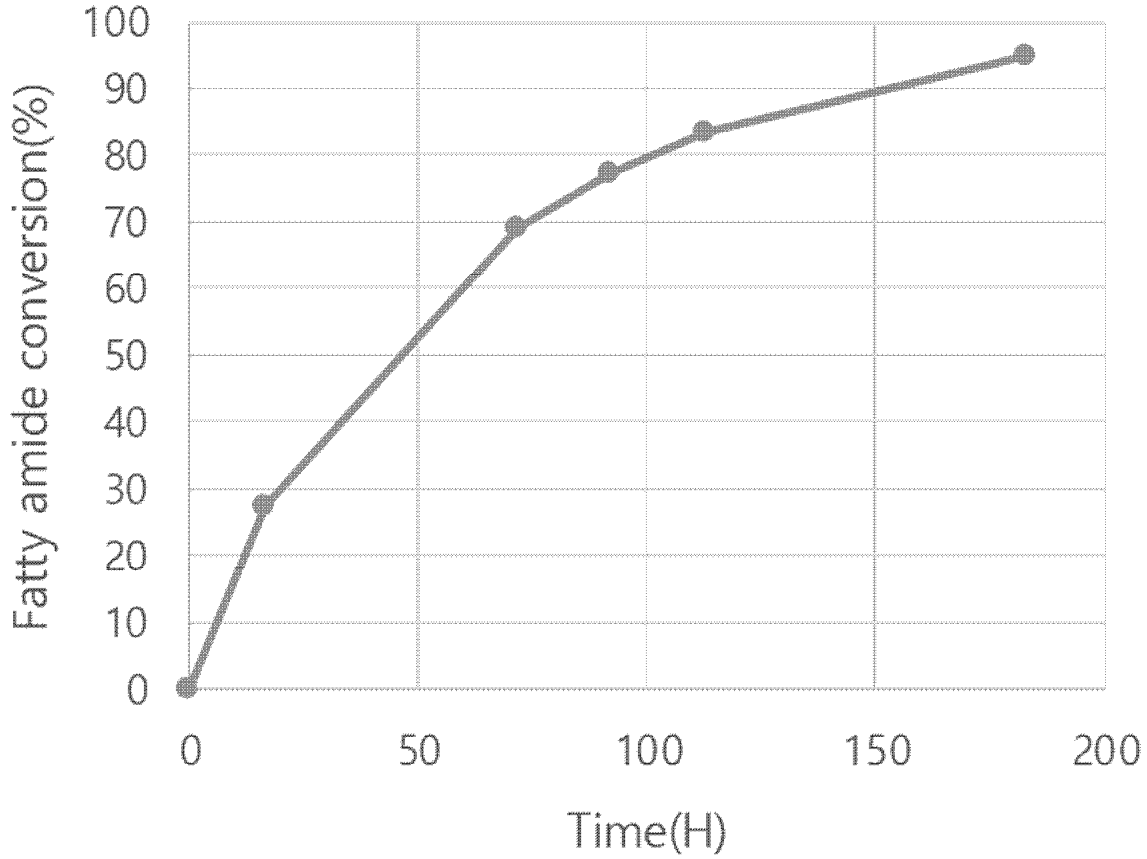
0h



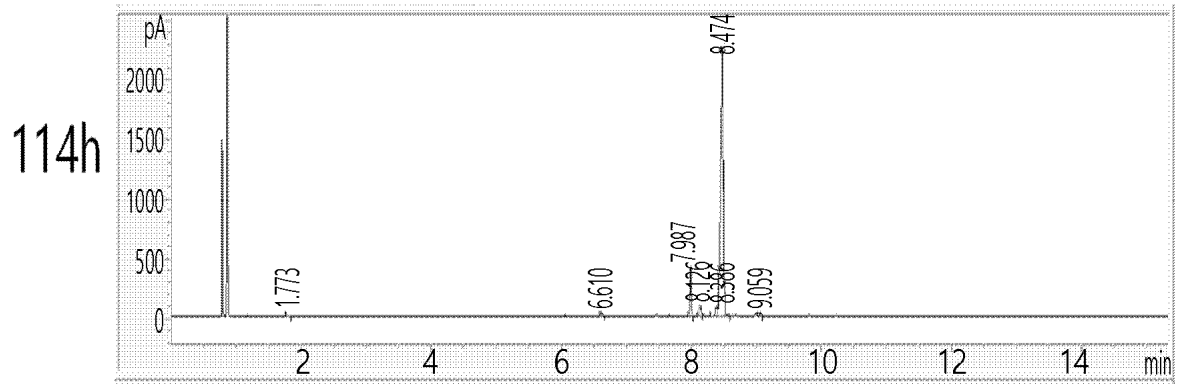
183h



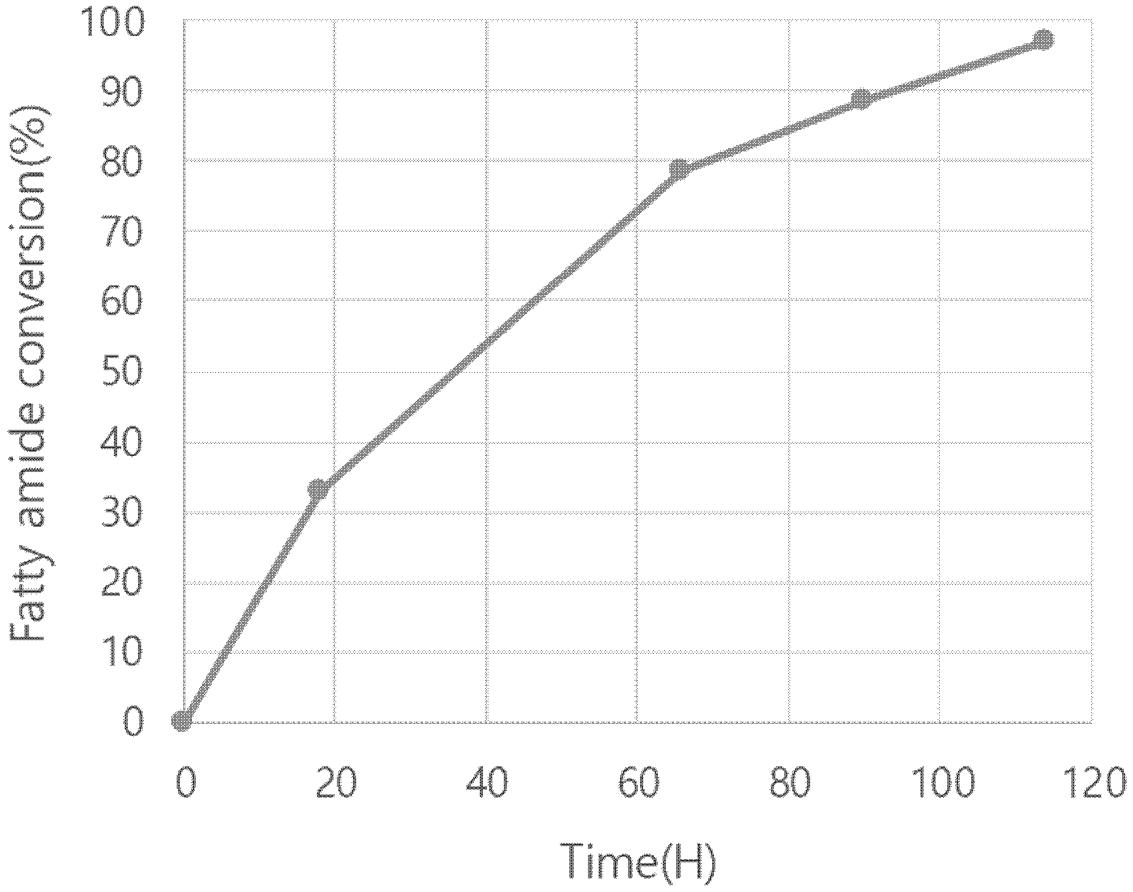
[FIG. 34]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
50
100
150
200
Time(H)

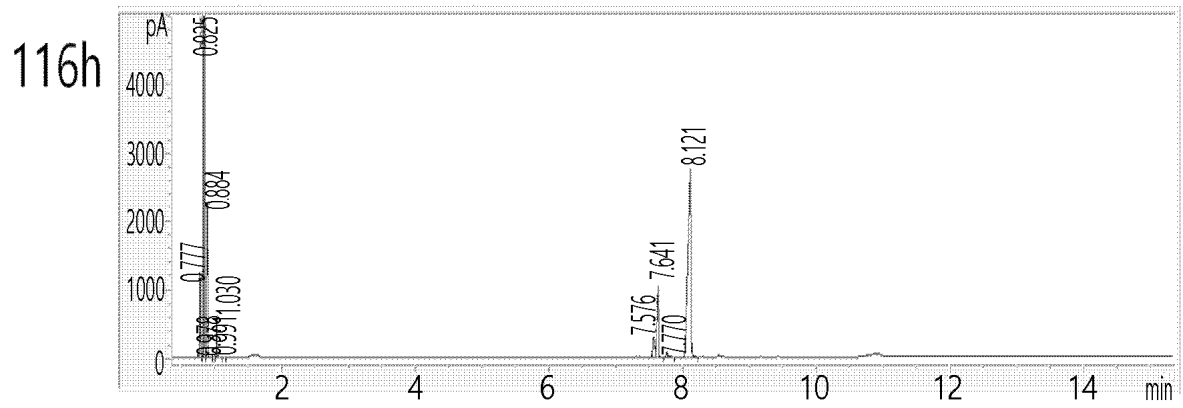
[FIG. 35]


114h
pA
2000
1500
1000
500
0
1.773
6.610
7.987
8.126
8.366
8.474
9.059
2
4
6
8
10
12
14
min

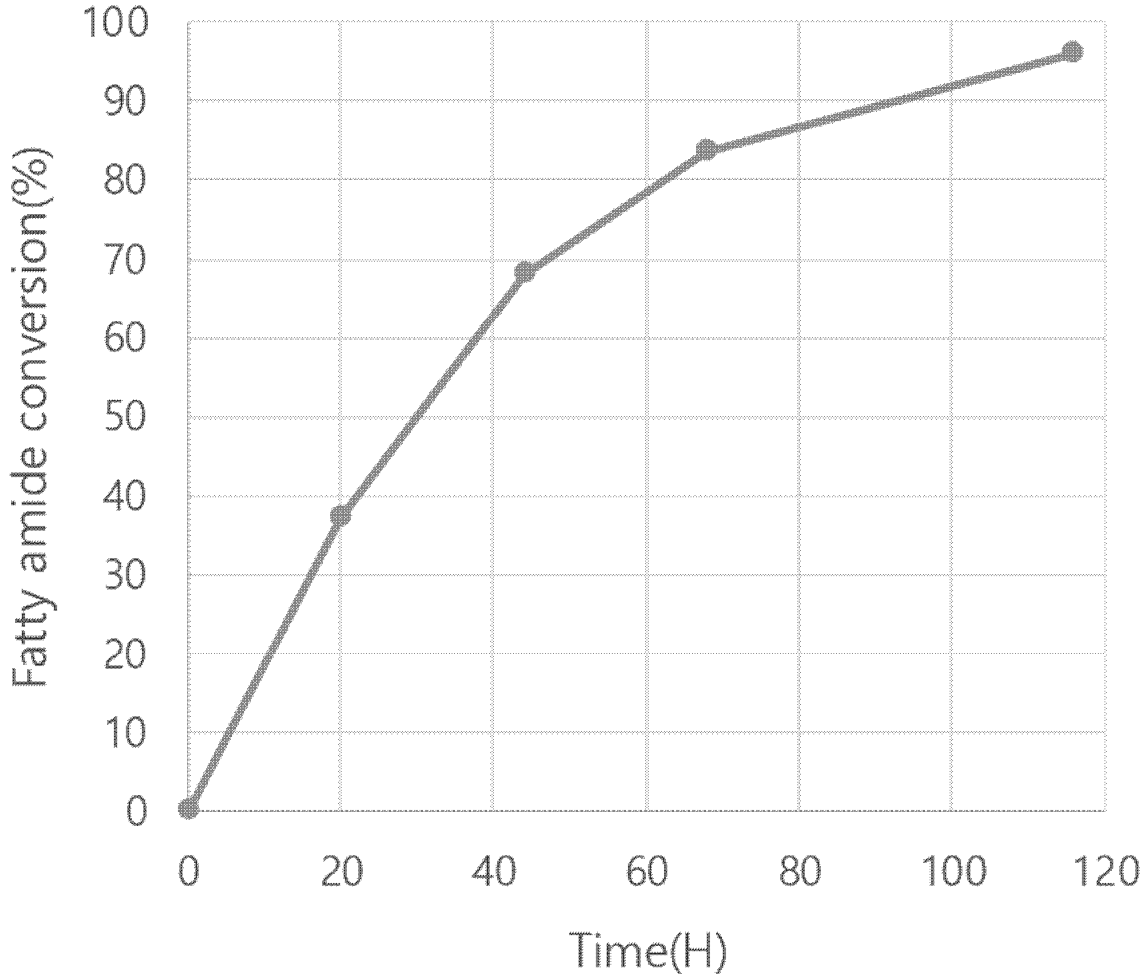
[FIG. 36]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Time(H)

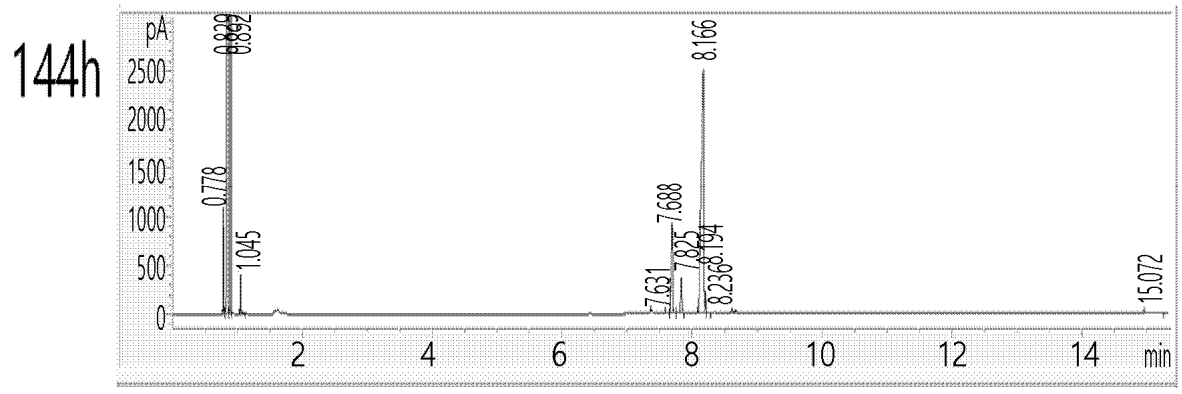
[FIG. 37]


116h
pA
4000
3000
2000
1000
0
0.825
0.884
0.777
1.030
7.576
7.641
7.770
8.121
2
4
6
8
10
12
14
min

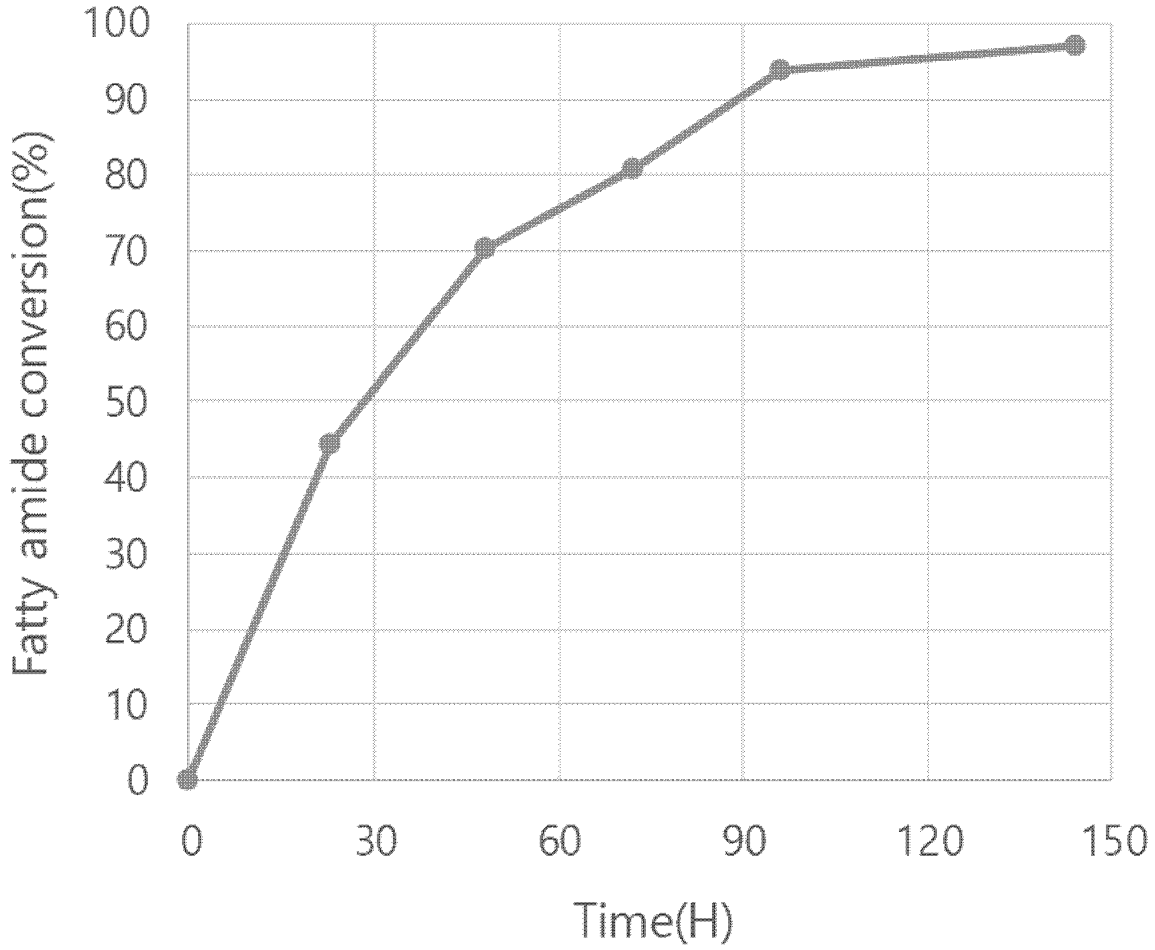
[FIG. 38]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Time(H)

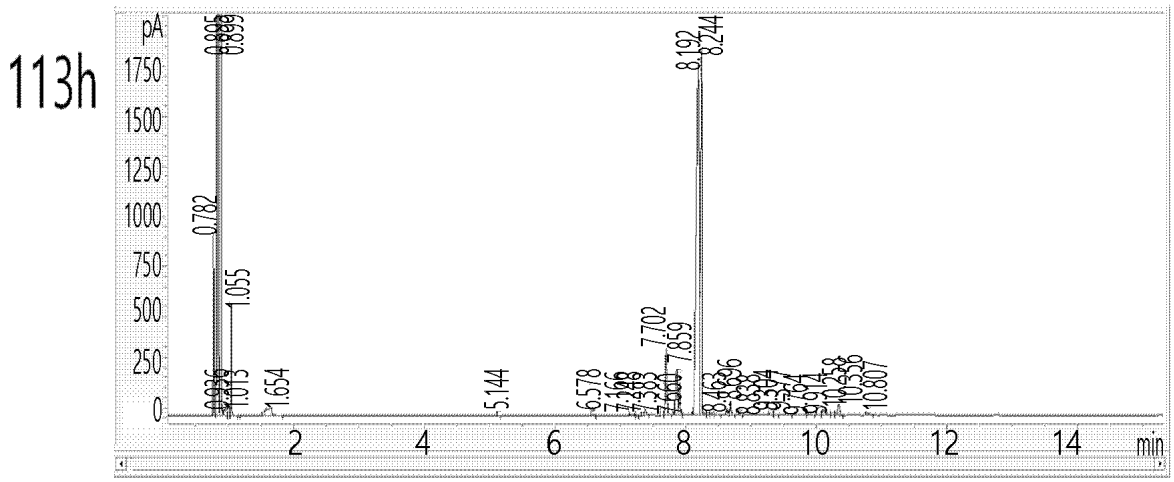
[FIG. 39]


144h
pA
2500
2000
1500
1000
500
0
0.778
0.829
0.892
1.045
7.631
7.688
7.825
8.166
8.194
8.236
15.072
2
4
6
8
10
12
14
min

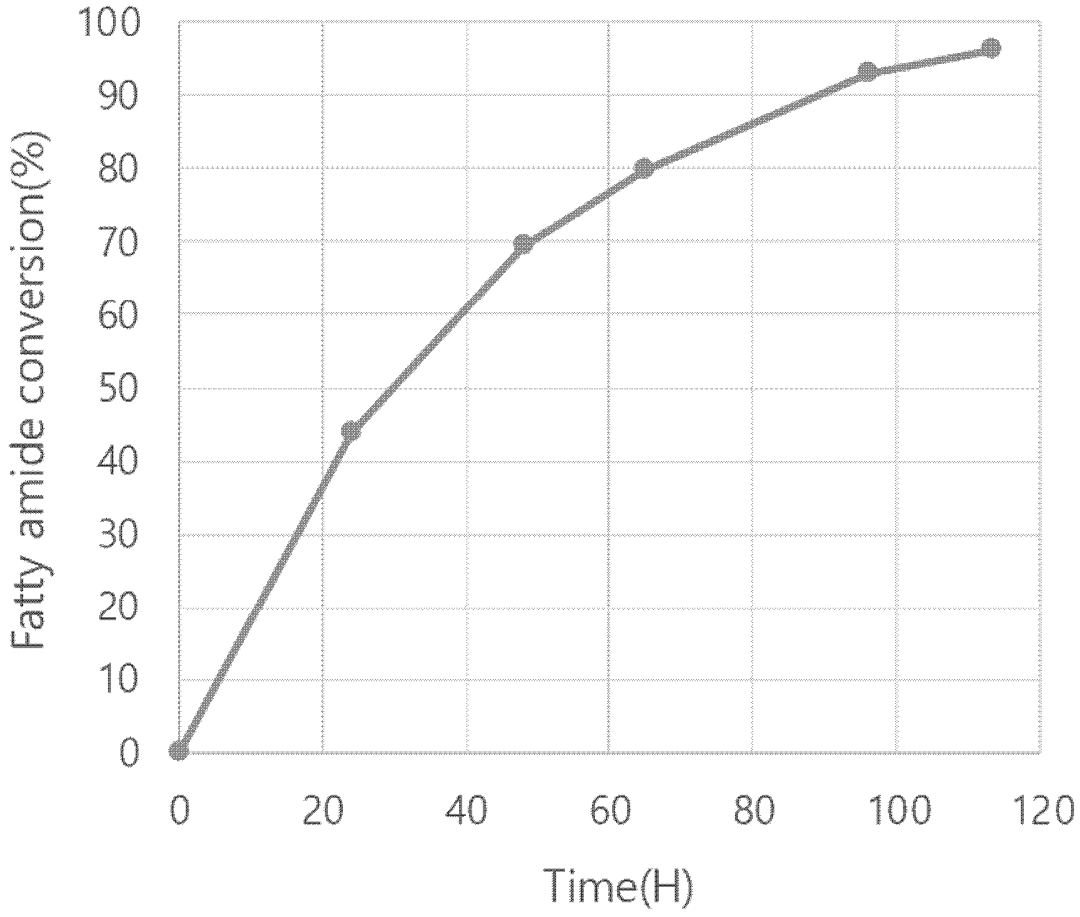
[FIG. 40]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
30
60
90
120
150
Time(H)

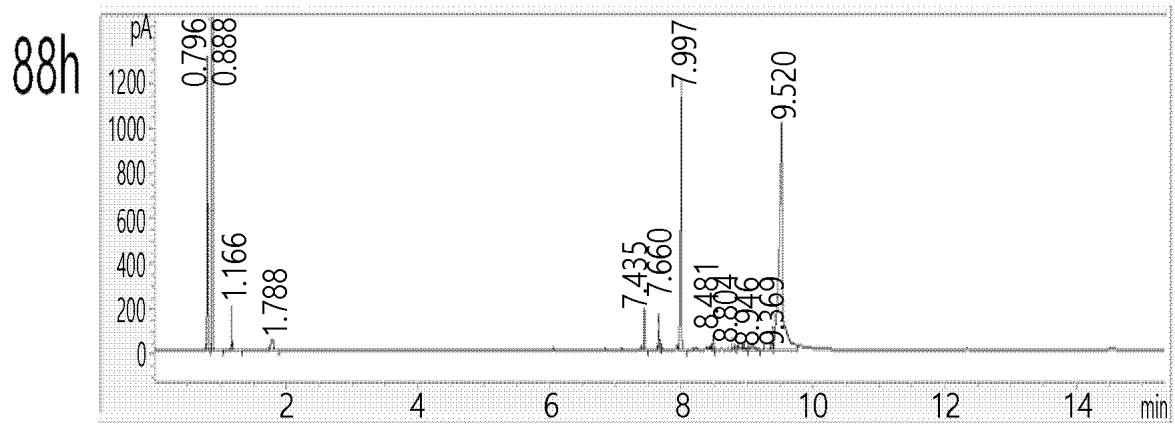
[FIG. 41]


113h
pA
1750
1500
1250
1000
750
500
250
0
0.782
1.055
1.654
5.144
6.578
7.702
7.859
8.192
8.244
10.807
2
4
6
8
10
12
14
min

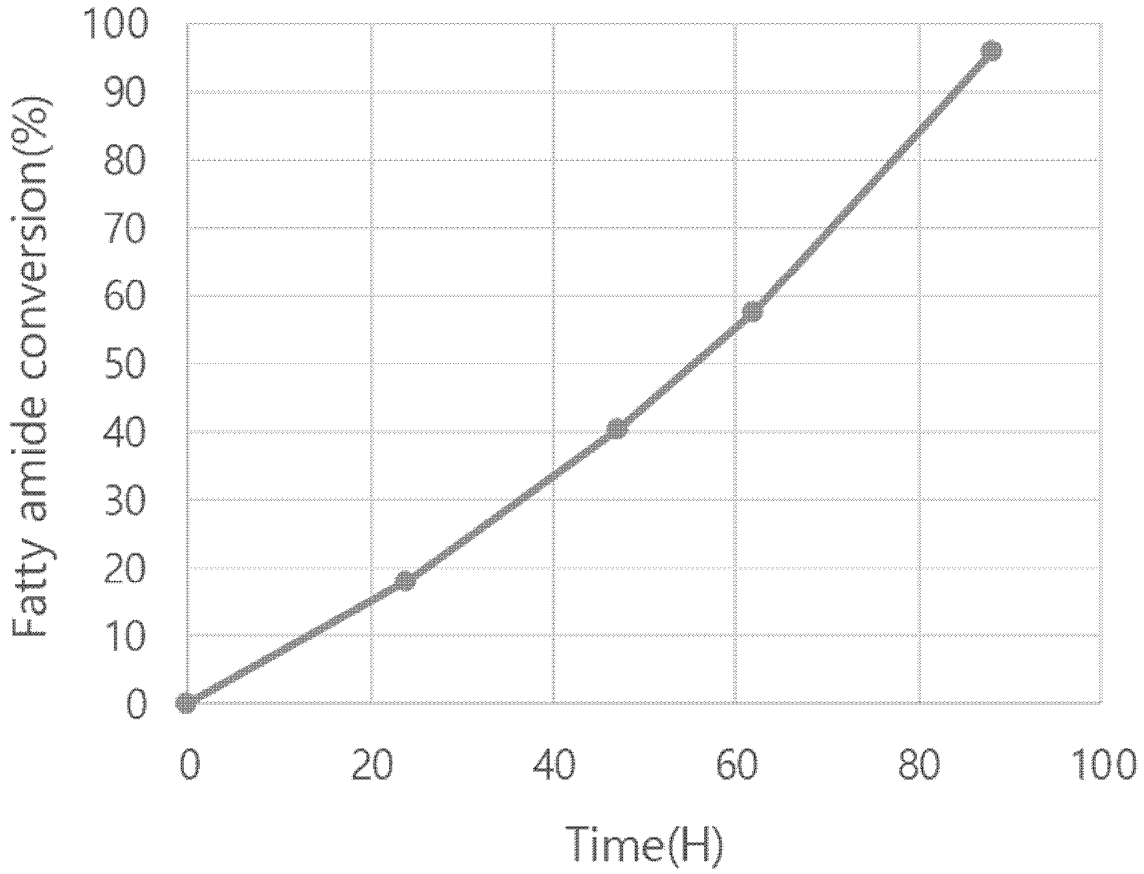
[FIG. 42]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
Time(H)

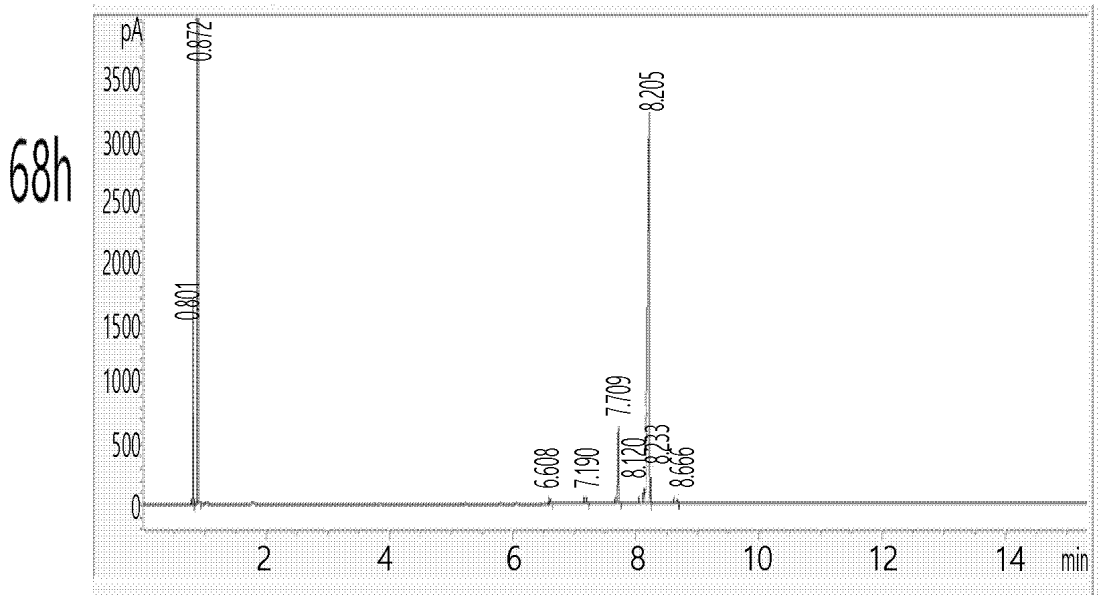
[FIG. 43]


88h
pA
1200
1000
800
600
400
200
0
0.796
0.888
1.166
1.788
7.435
7.660
7.997
8.481
8.804
8.946
9.369
9.520
2
4
6
8
10
12
14
min

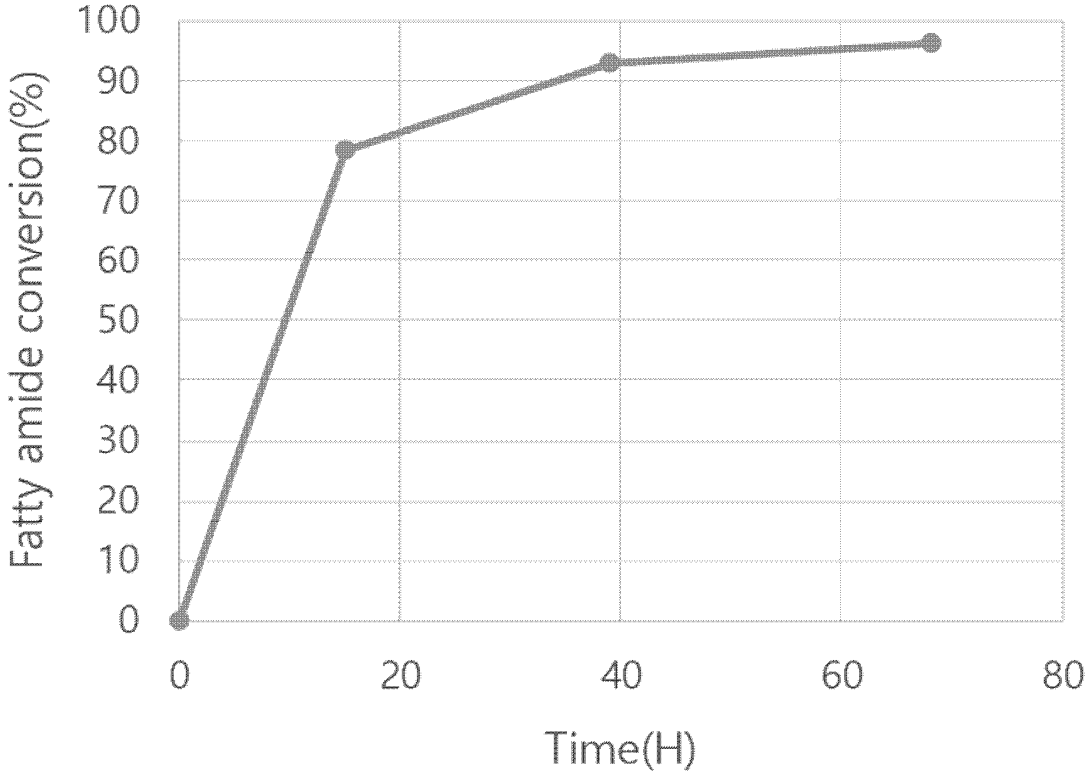
[FIG. 44]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
Time(H)

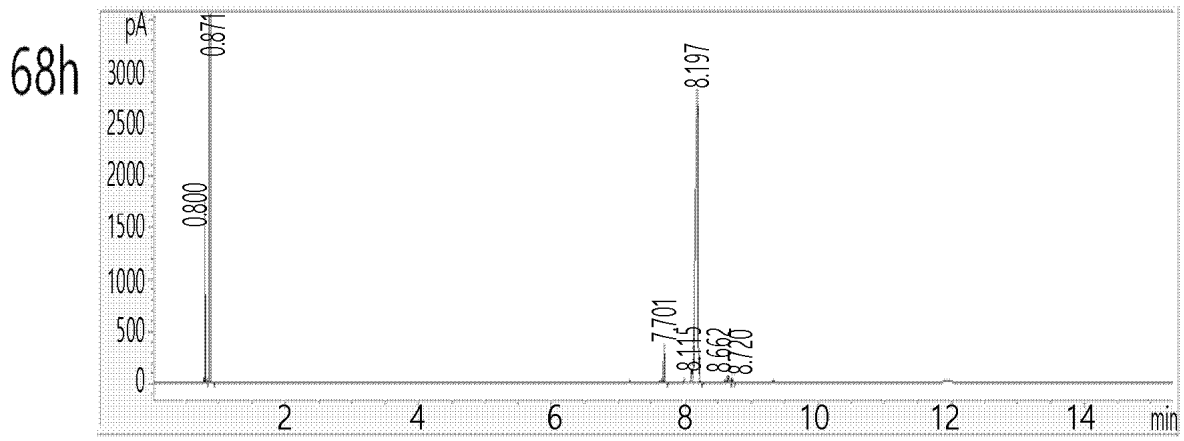
[FIG. 45]


68h
pA
3500
3000
2500
2000
1500
1000
500
0
0.872
0.801
8.205
7.709
6.608
7.190
8.120
8.233
8.666
2
4
6
8
10
12
14
min

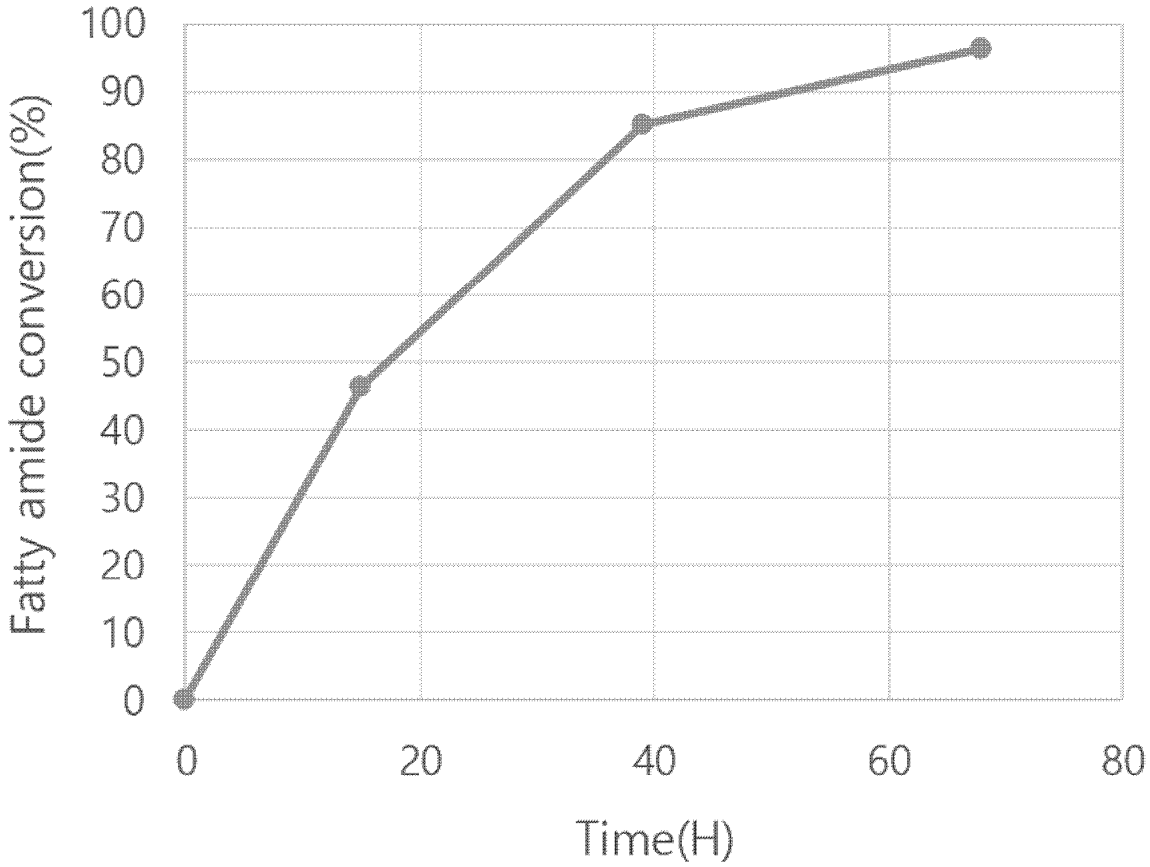
[FIG. 46]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
Time(H)

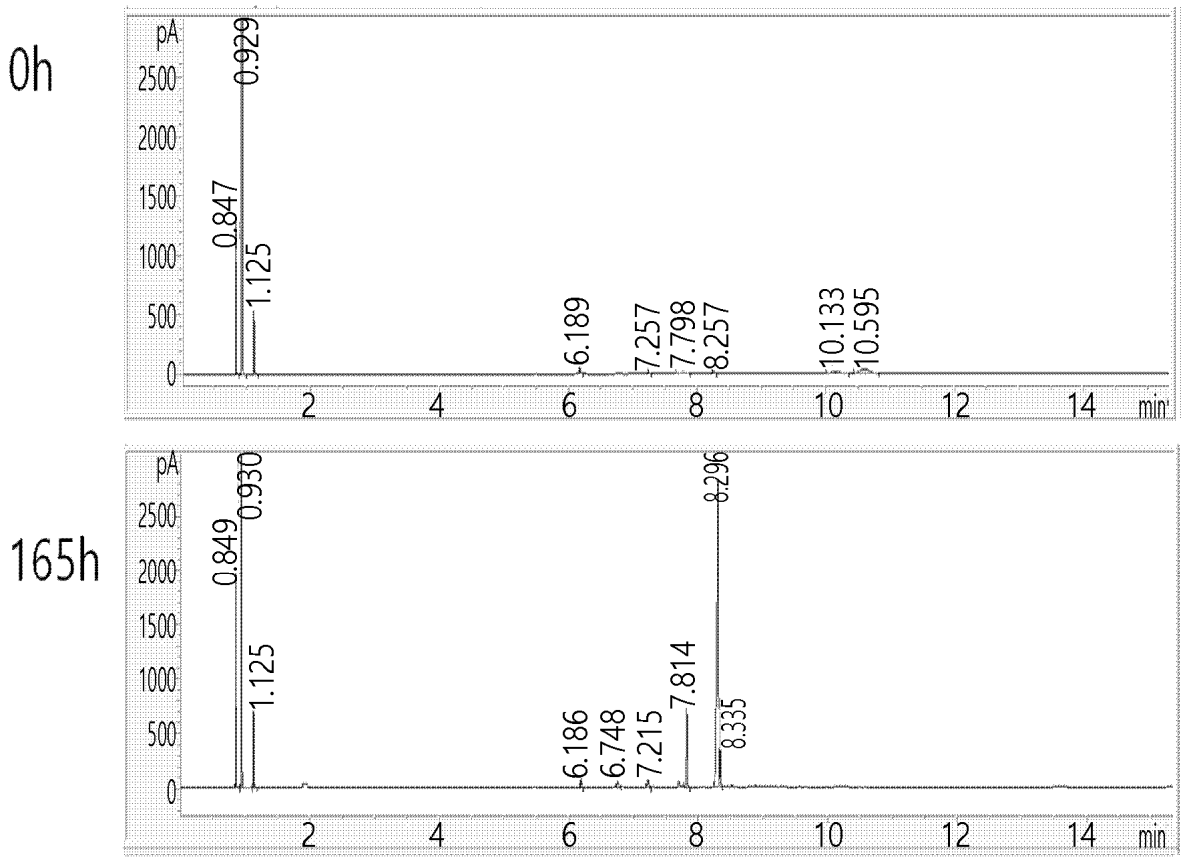
[FIG. 47]


68h
pA
3000
2500
2000
1500
1000
500
0
0.871
0.800
8.197
7.701
8.115
8.662
8.726
2
4
6
8
10
12
14
min

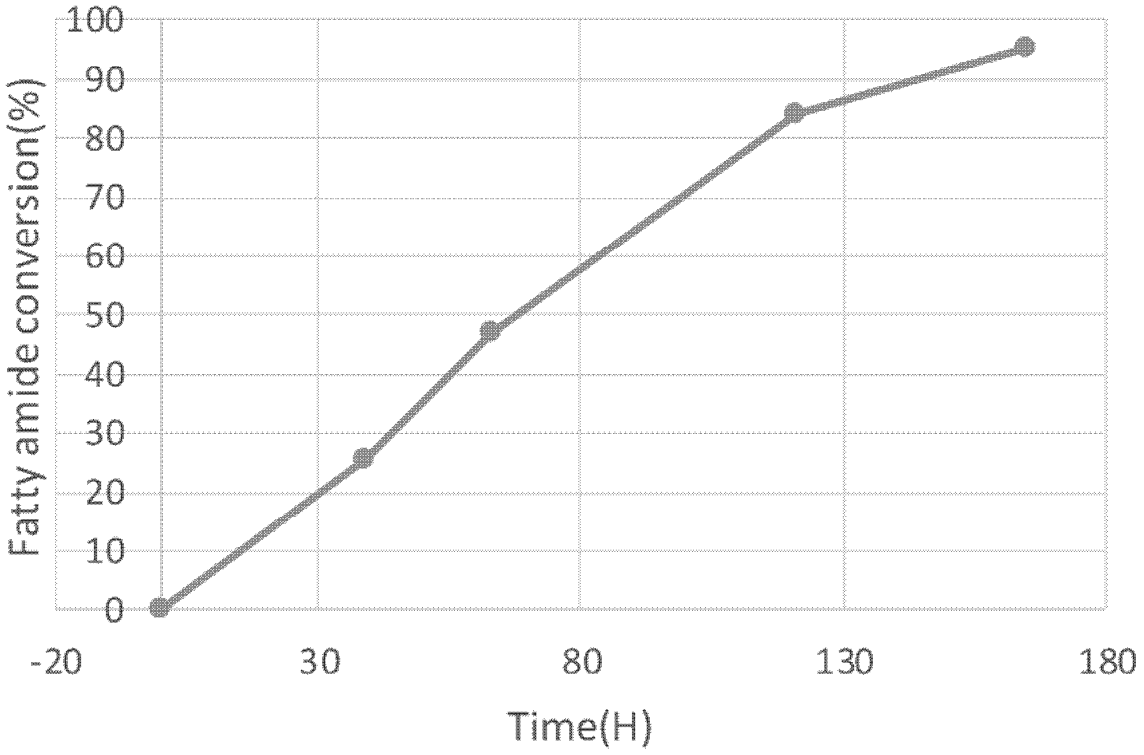
[FIG. 48]


Fatty amide conversion(%)
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
Time(H)

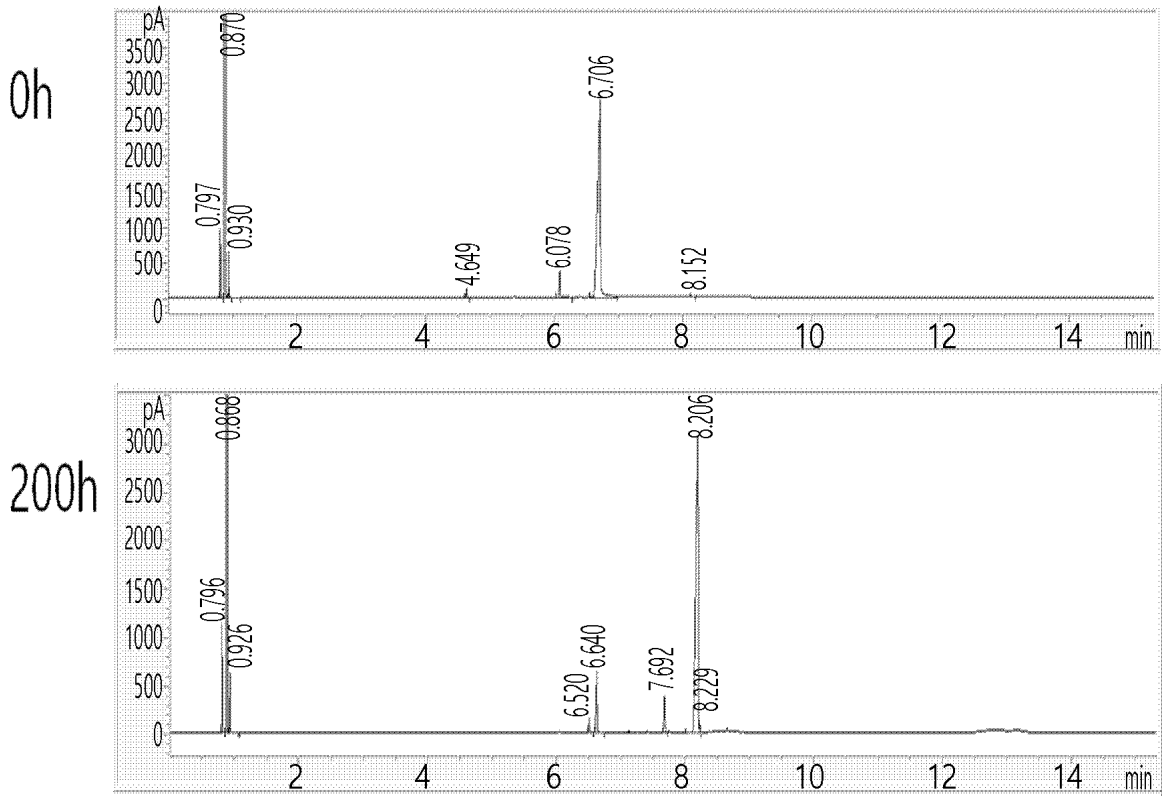
[FIG. 49]


0h
pA
2500
2000
1500
1000
500
0
0.929
0.847
1.125
6.189
7.257
7.798
8.257
10.133
10.595
2
4
6
8
10
12
14
min
165h
pA
2500
2000
1500
1000
500
0
0.849
0.930
1.125
6.186
6.748
7.215
7.814
8.296
8.335
2
4
6
8
10
12
14
min

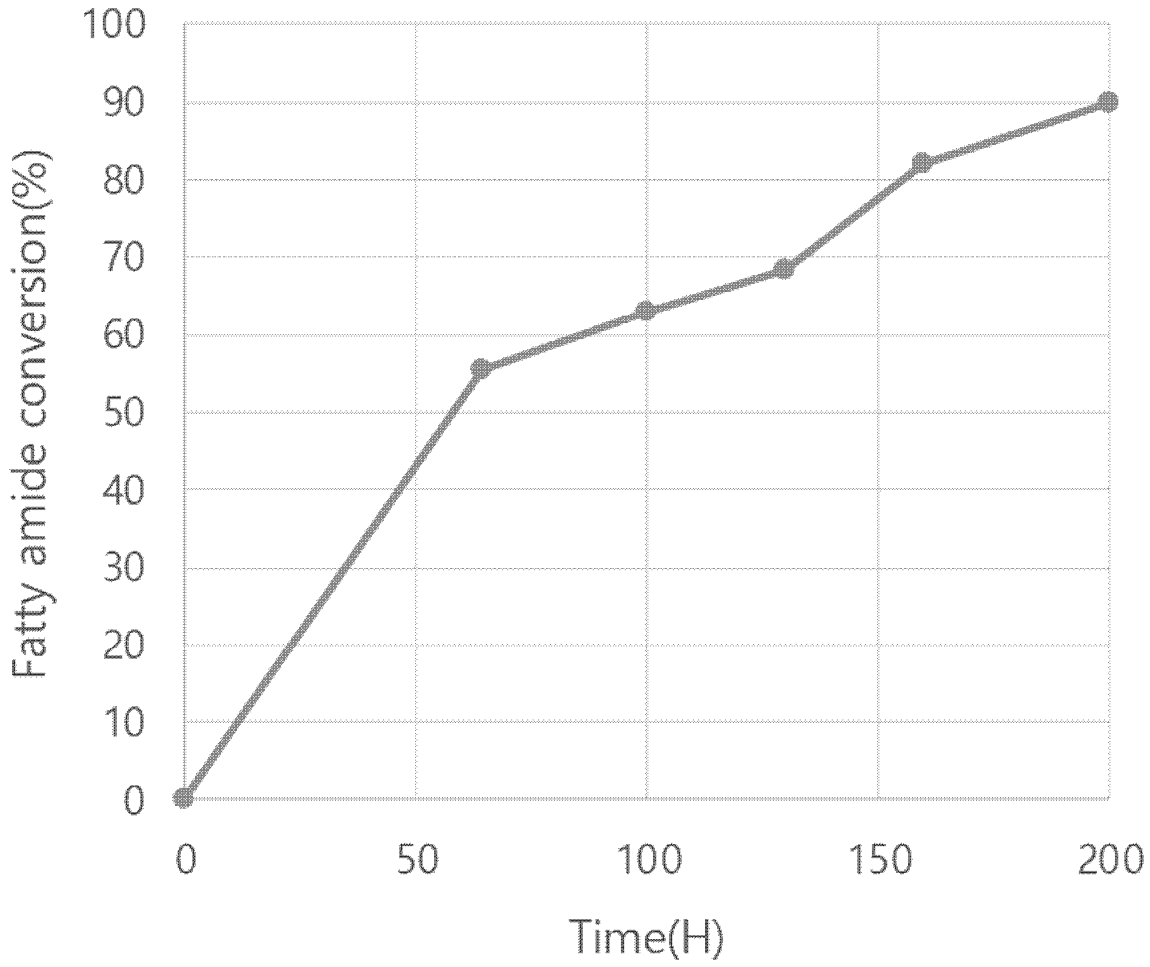
[FIG. 50]


100
90
80
70
60
50
40
30
20
10
0
Fatty amide conversion(%)
-20
30
80
130
180
Time(H)

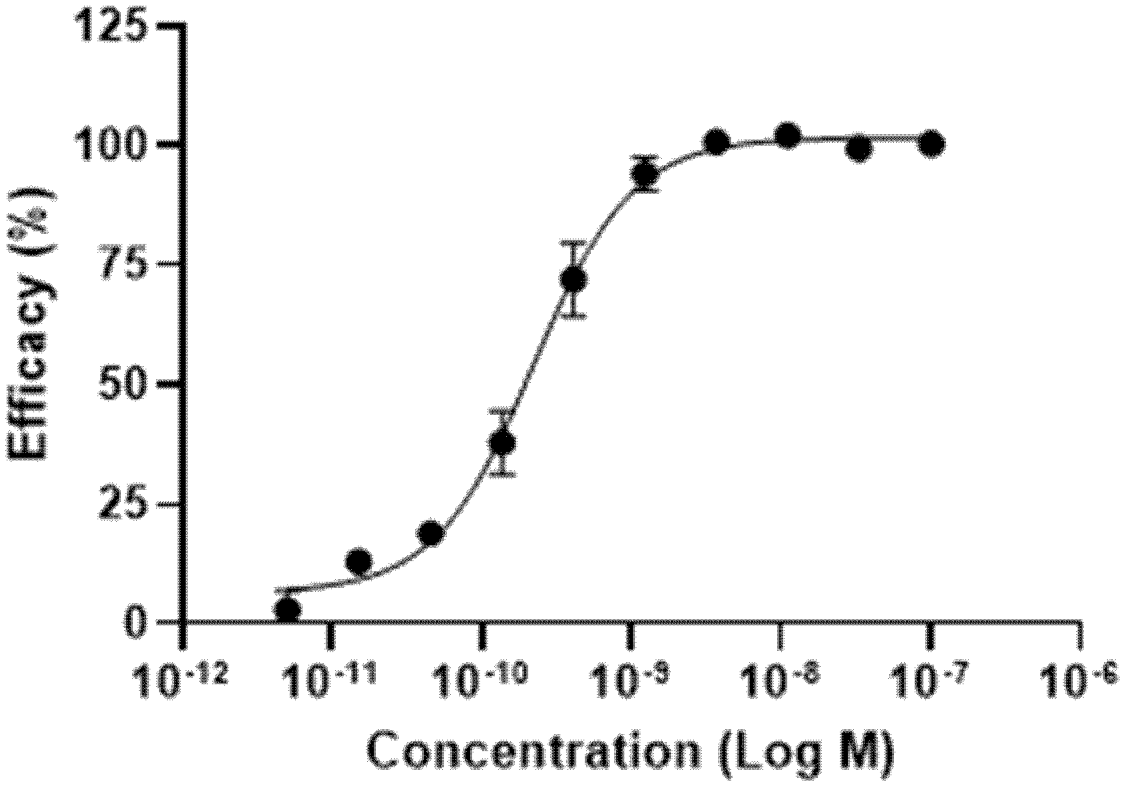
[FIG. 51]


0h
pA
3500
3000
2500
2000
1500
1000
500
0
0.870
6.706
0.797
0.930
4.649
6.078
8.152
2
4
6
8
10
12
14
min
200h
pA
3000
2500
2000
1500
1000
500
0
0.868
8.206
0.796
0.926
6.520
6.640
7.692
8.229
2
4
6
8
10
12
14
min

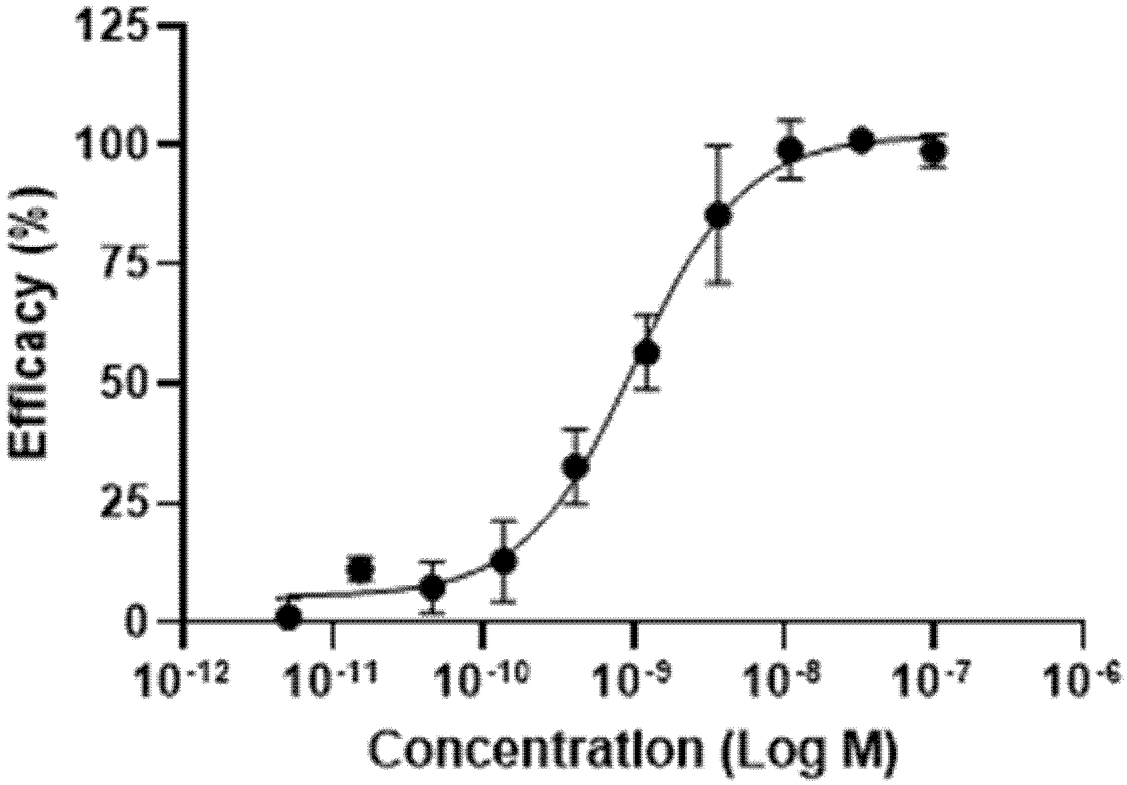
[FIG. 52]


100
90
80
70
60
50
40
30
20
10
0
Fatty amide conversion(%)
0
50
100
150
200
Time(H)

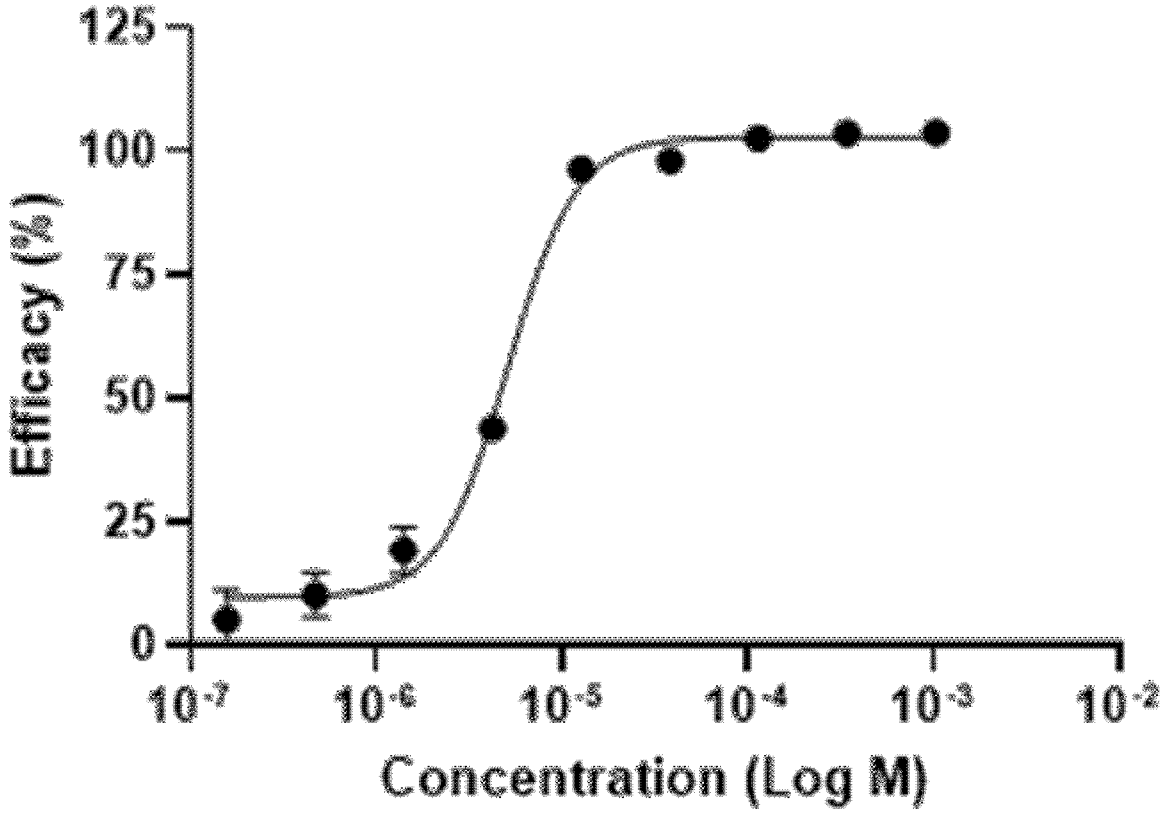
[FIG. 53]


125
100
75
50
25
0
Efficacy (%)
10-12
10-11
10-10
10-9
10-8
10-7
10-6
Concentration (Log M)

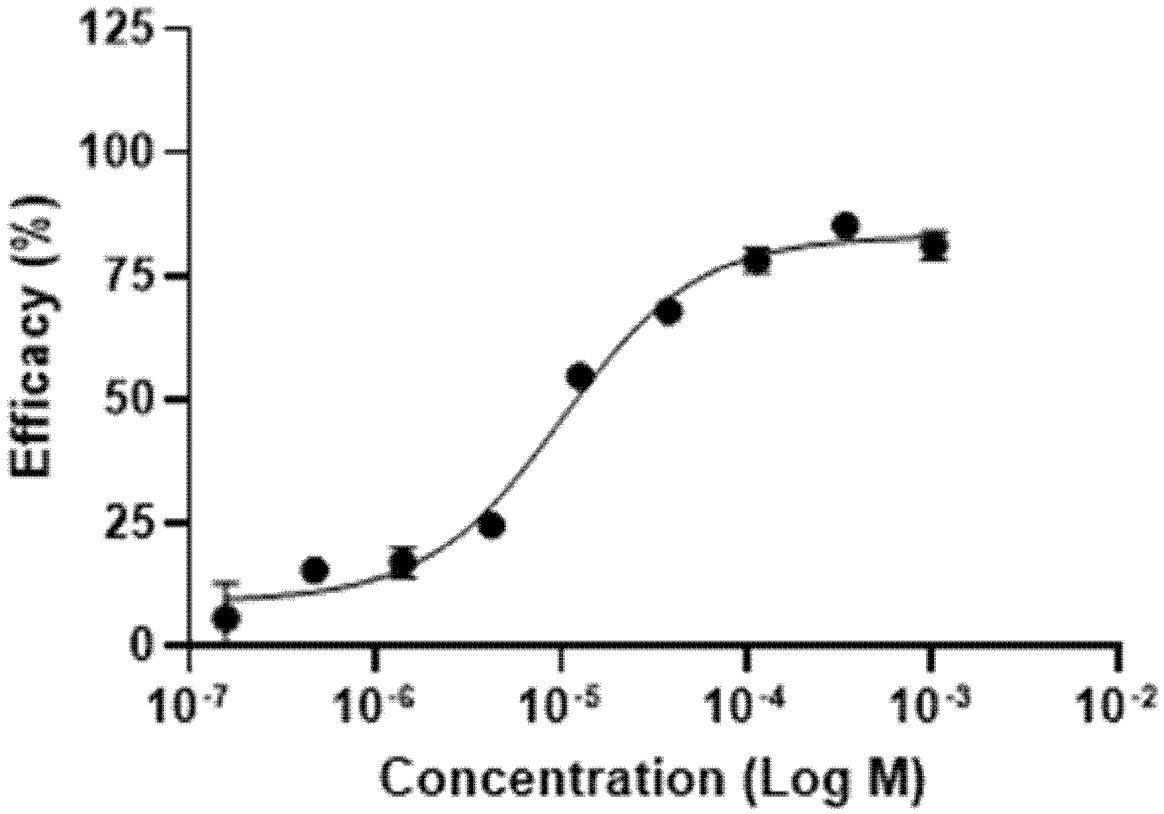
[FIG. 54]


125
100
75
50
25
0
Efficacy (%)
10-12
10-11
10-10
10-9
10-8
10-7
10-6
Concentration (Log M)

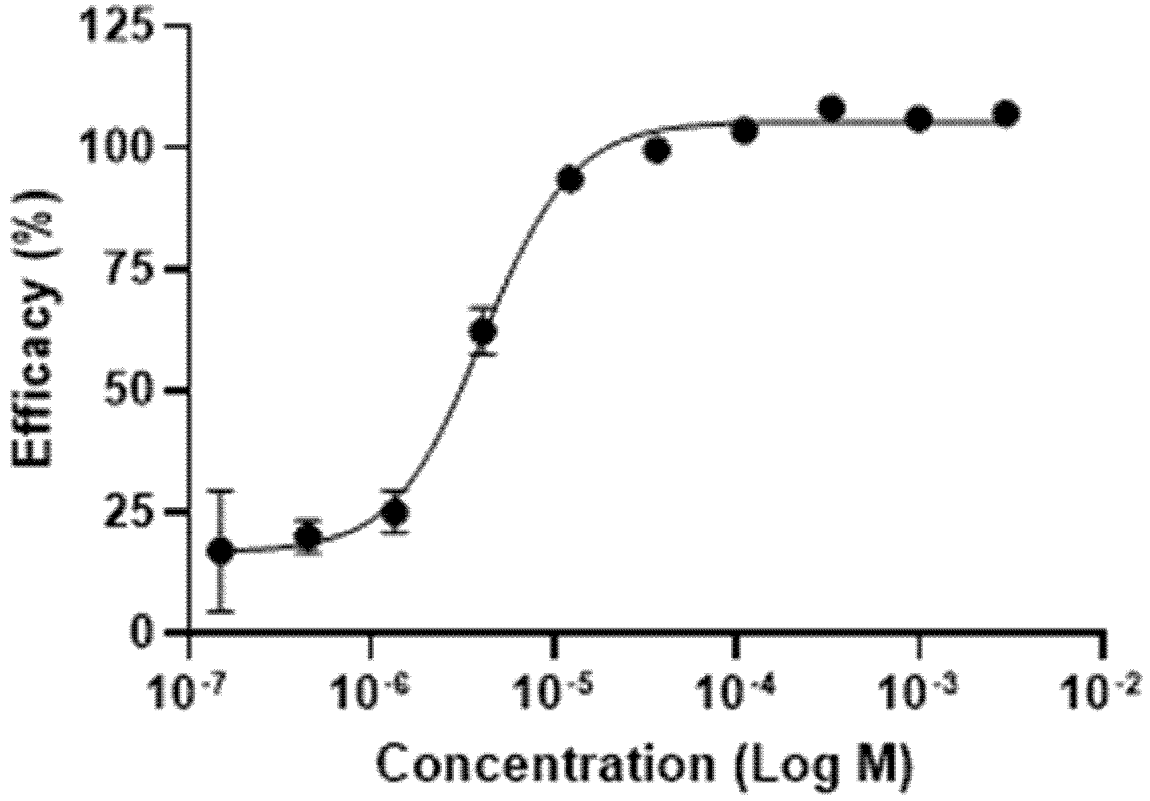
[FIG. 55]


125
100
75
50
25
0
Efficacy (%)
10-7
10-6
10-5
10-4
10-3
10-2
Concentration (Log M)

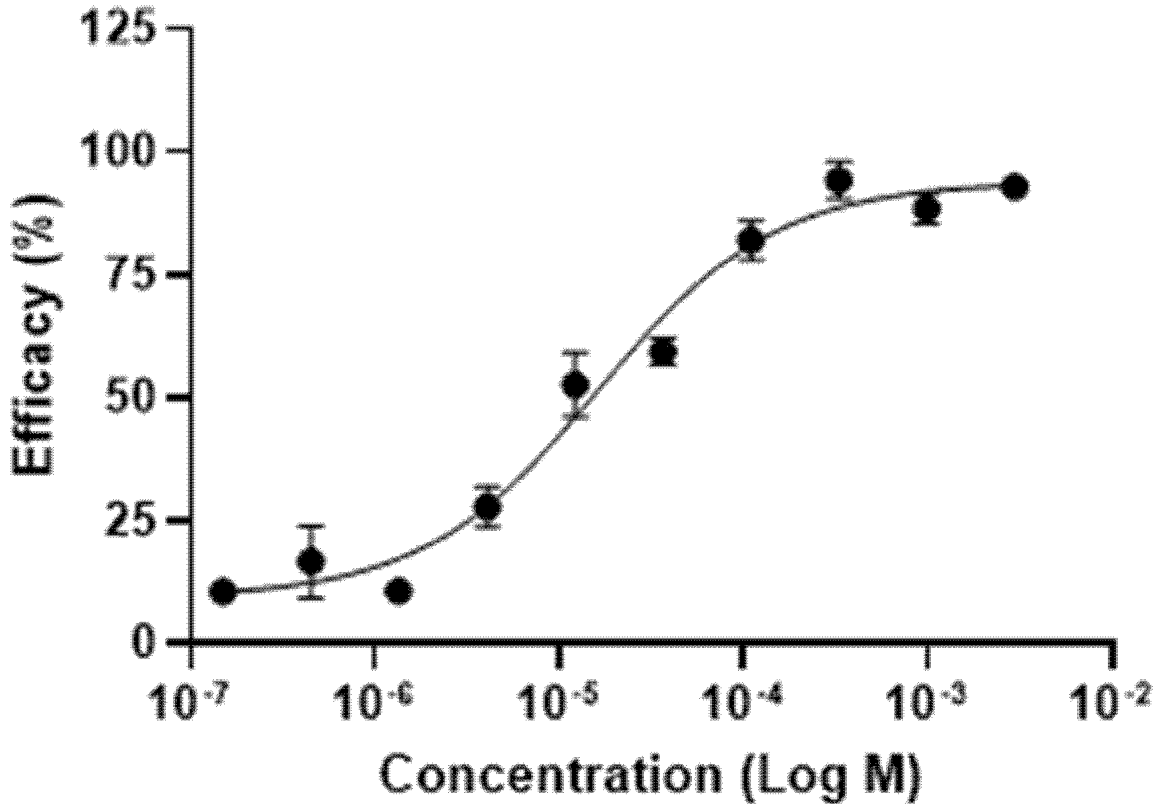
[FIG. 56]


125
100
75
50
25
0
Efficacy (%)
10-7
10-6
10-5
10-4
10-3
10-2
Concentration (Log M)

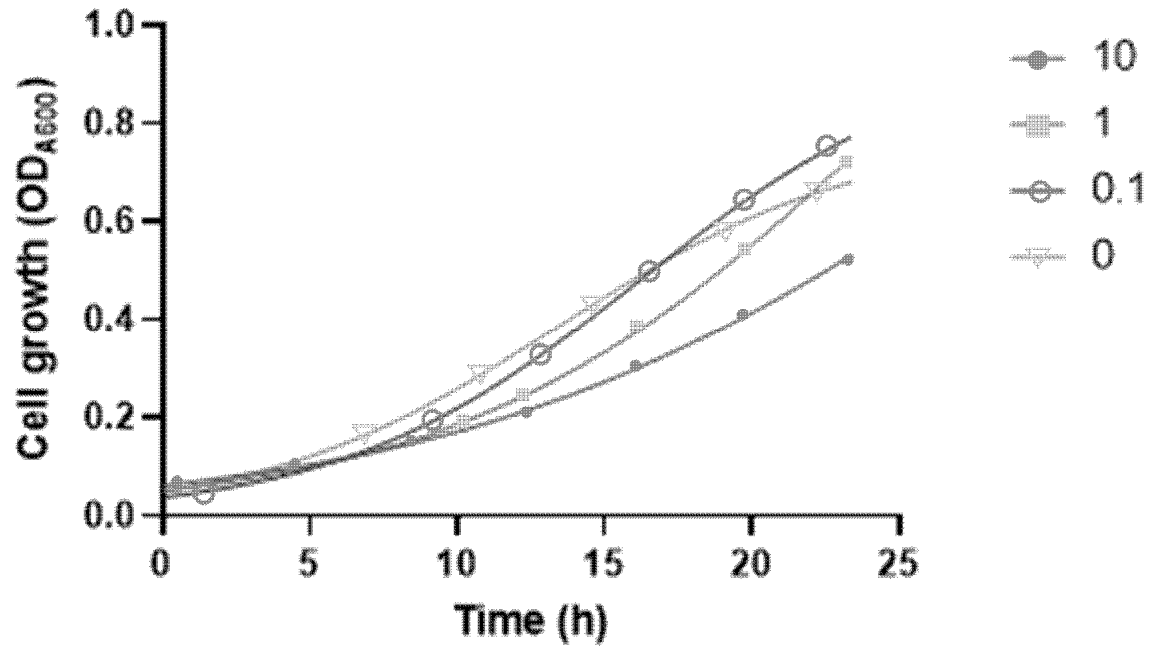
[FIG. 57]


125
100
75
50
25
0
Efficacy (%)
10-7
10-6
10-5
10-4
10-3
10-2
Concentration (Log M)

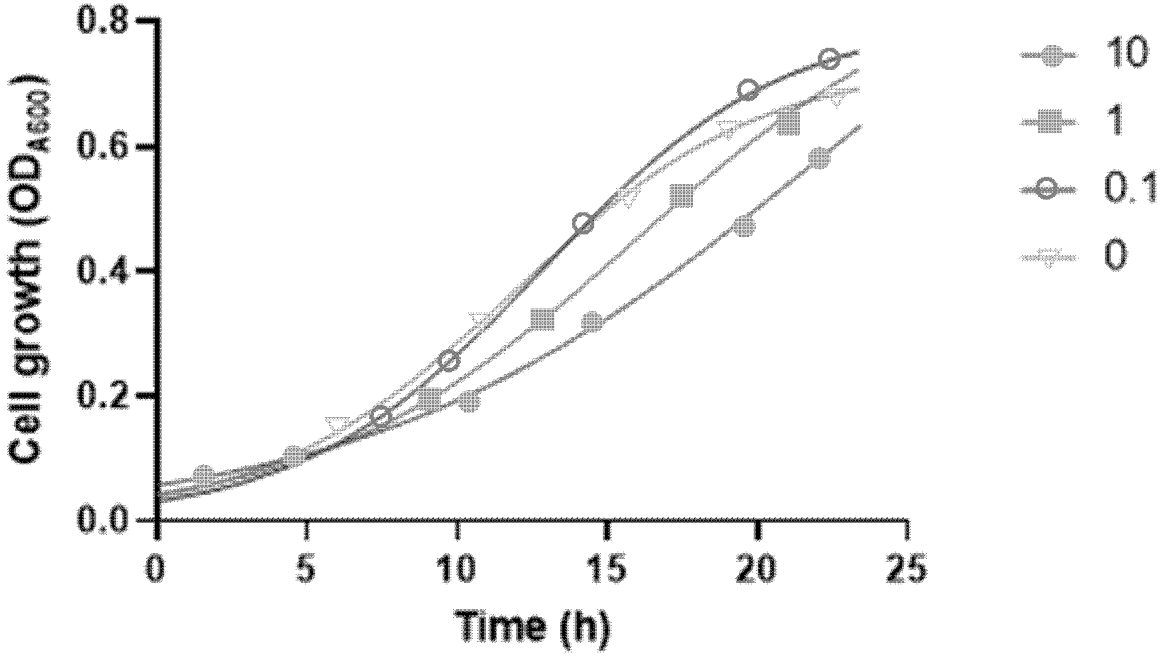
[FIG. 58]


125
100
75
50
25
0
Efficacy (%)
10-7
10-6
10-5
10-4
10-3
10-2
Concentration (Log M)

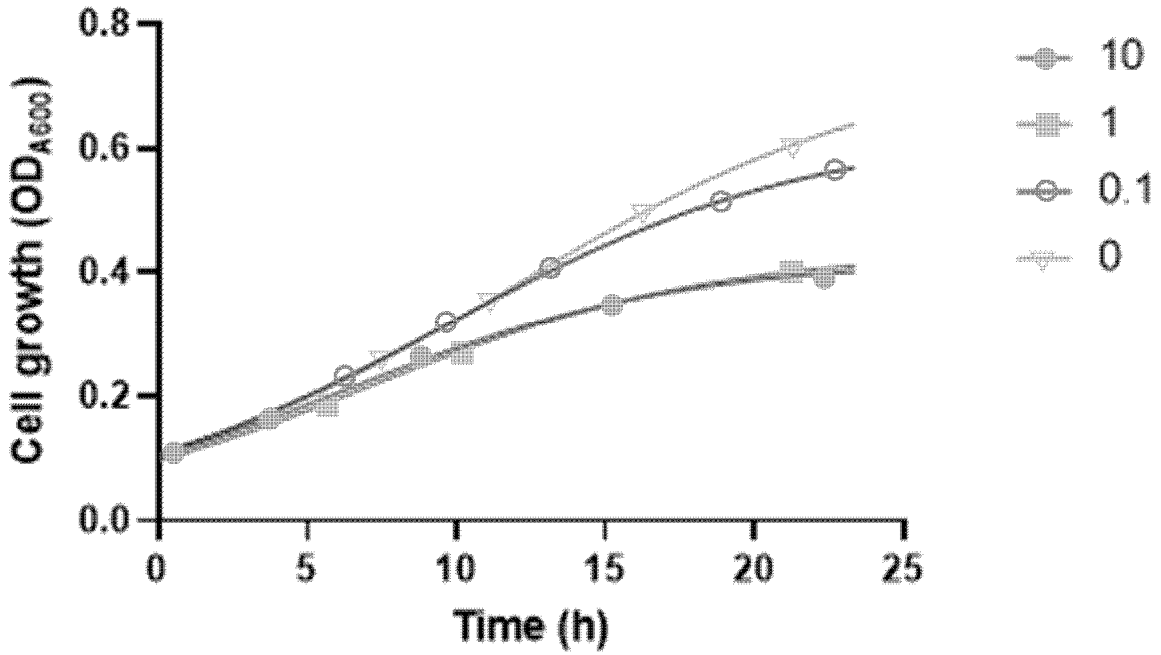
[FIG. 59]


1.0
0.8
0.6
0.4
0.2
0.0
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

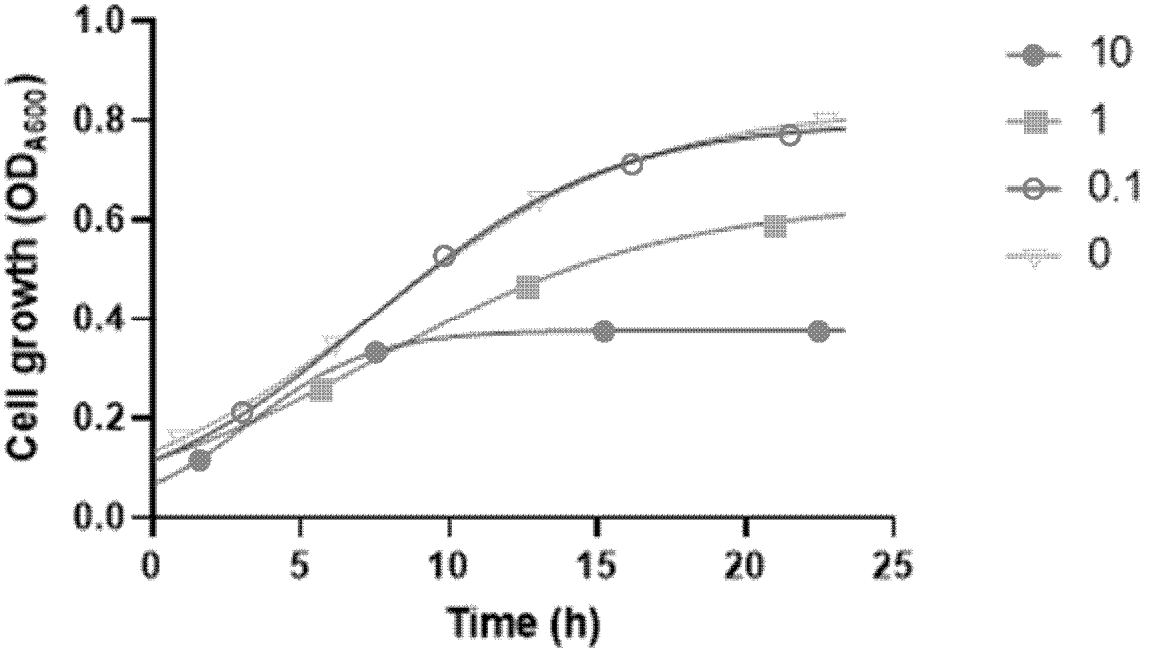
[FIG. 60]


0.8
0.6
0.4
0.2
0.0
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

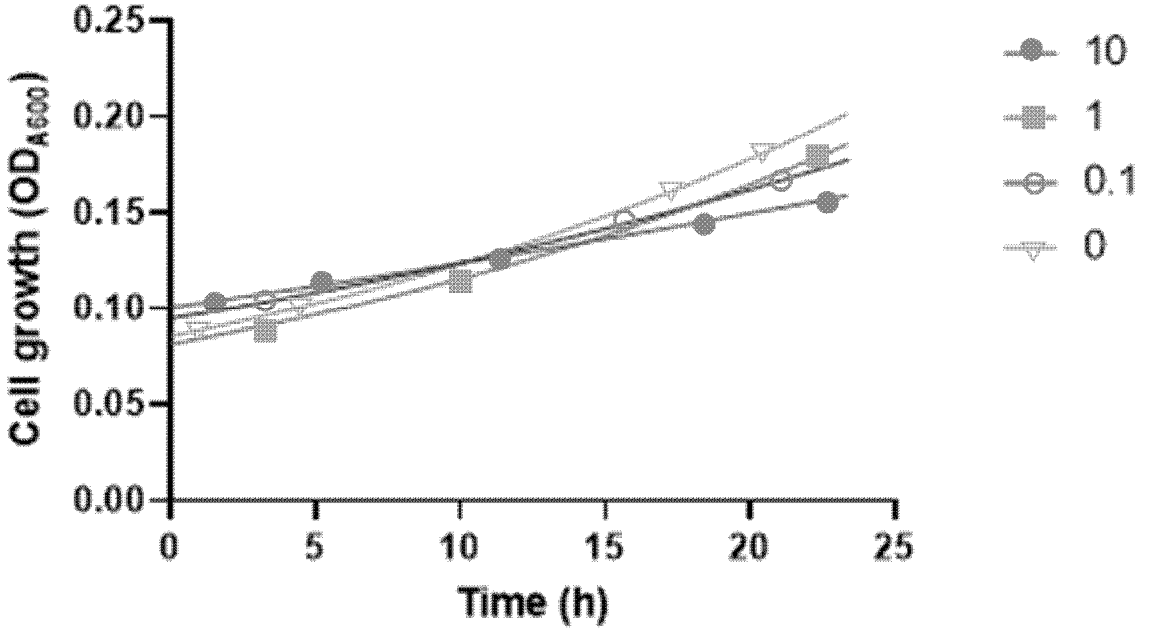
[FIG. 61]


Cell growth (OD_{A600})
0.0
0.2
0.4
0.6
0.8
0
5
10
15
20
25
Time (h)
10
1
0.1
0

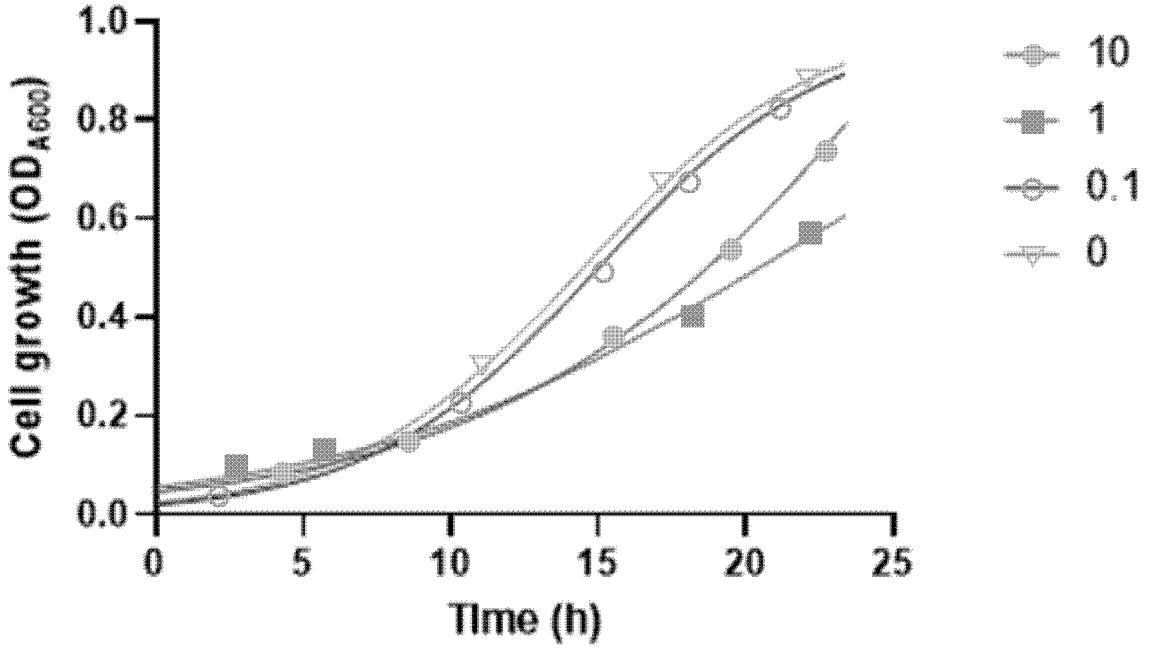
[FIG. 62]


Cell growth (OD_{A600})
0.0
0.2
0.4
0.6
0.8
1.0
0
5
10
15
20
25
Time (h)
10
1
0.1
0

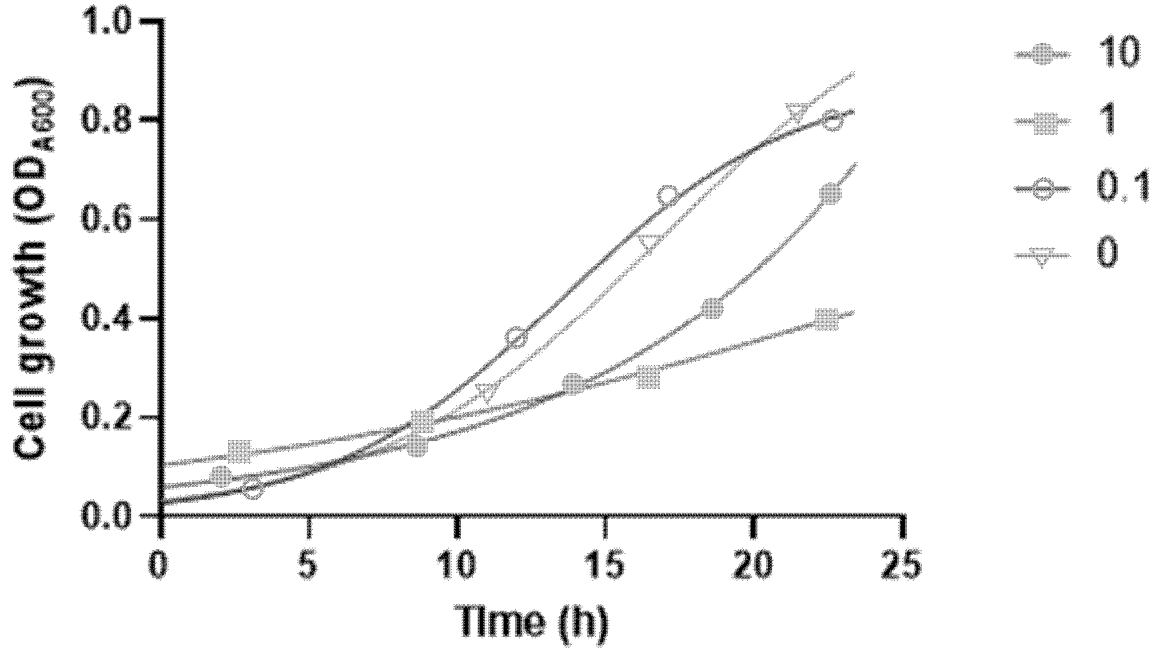
[FIG. 63]


0.25
0.20
0.15
0.10
0.05
0.00
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

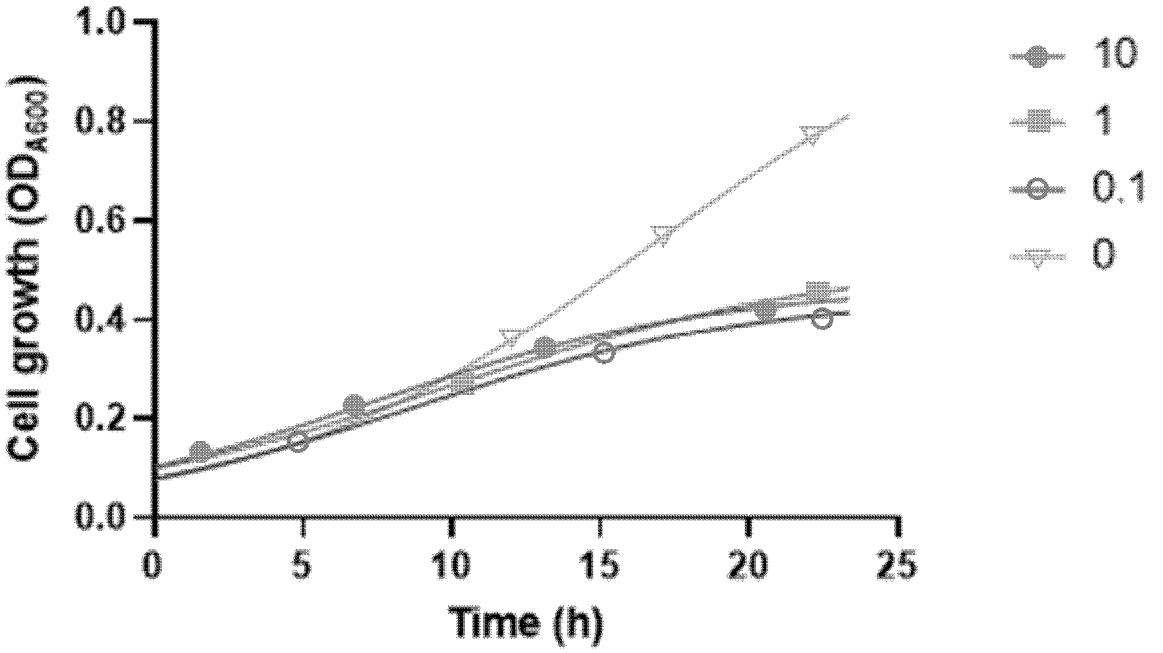
[FIG. 64]


1.0
0.8
0.6
0.4
0.2
0.0
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

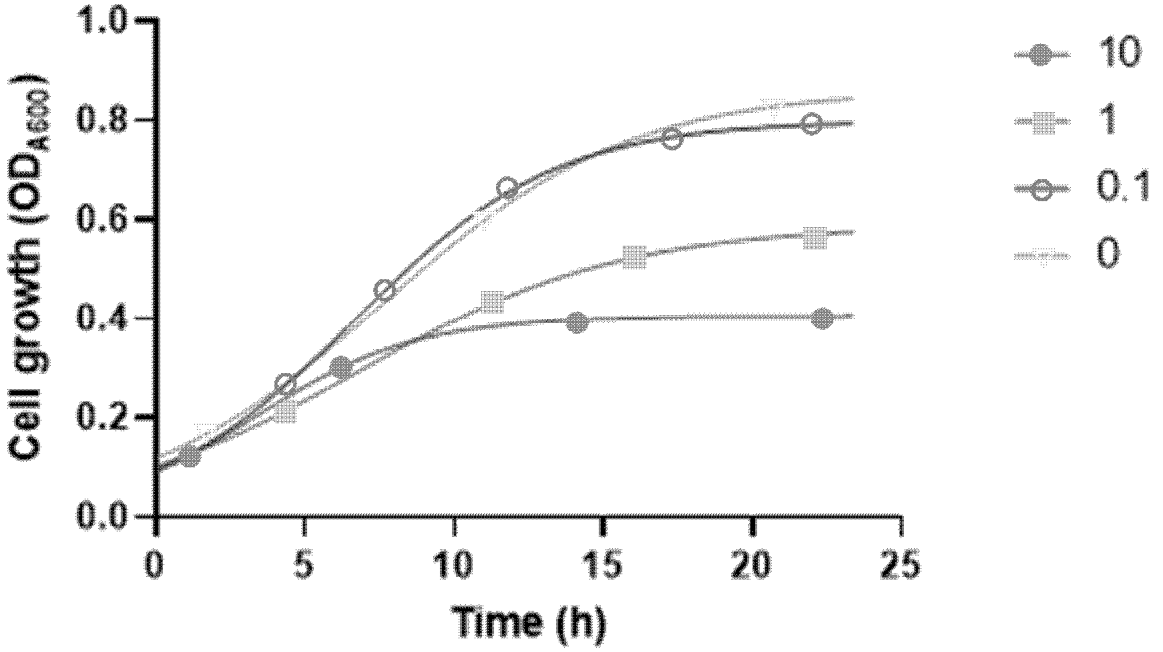
[FIG. 65]


Cell growth (OD_{A600})
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
20
25
Time (h)
10
1
0.1
0

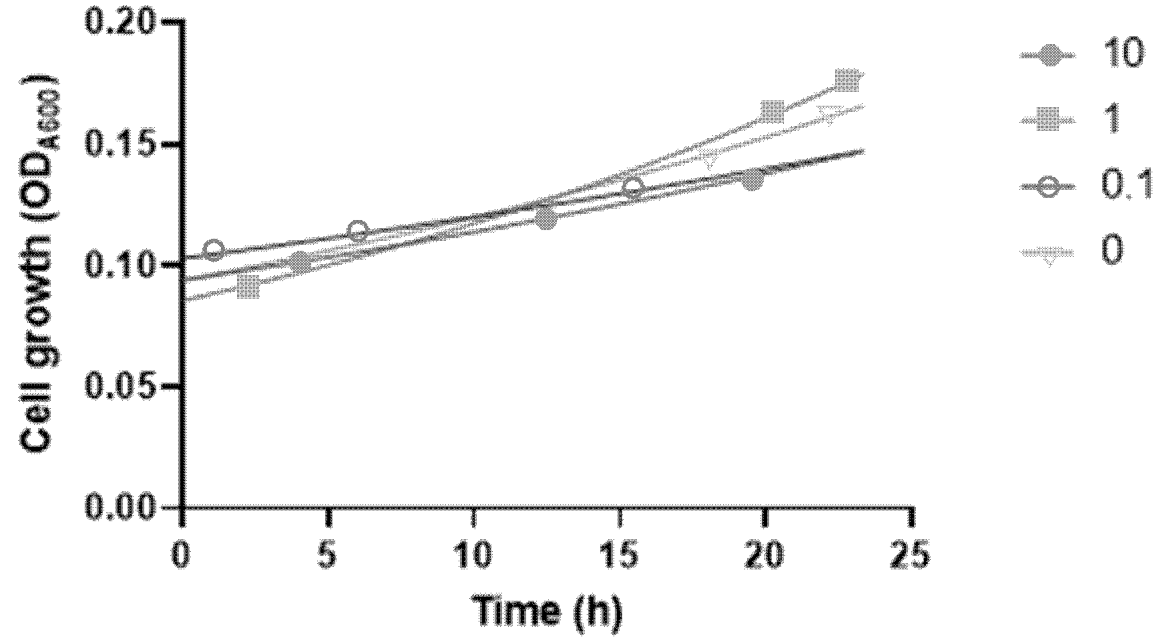
[FIG. 66]


Cell growth (OD_{A600})
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
20
25
Time (h)
10
1
0.1
0

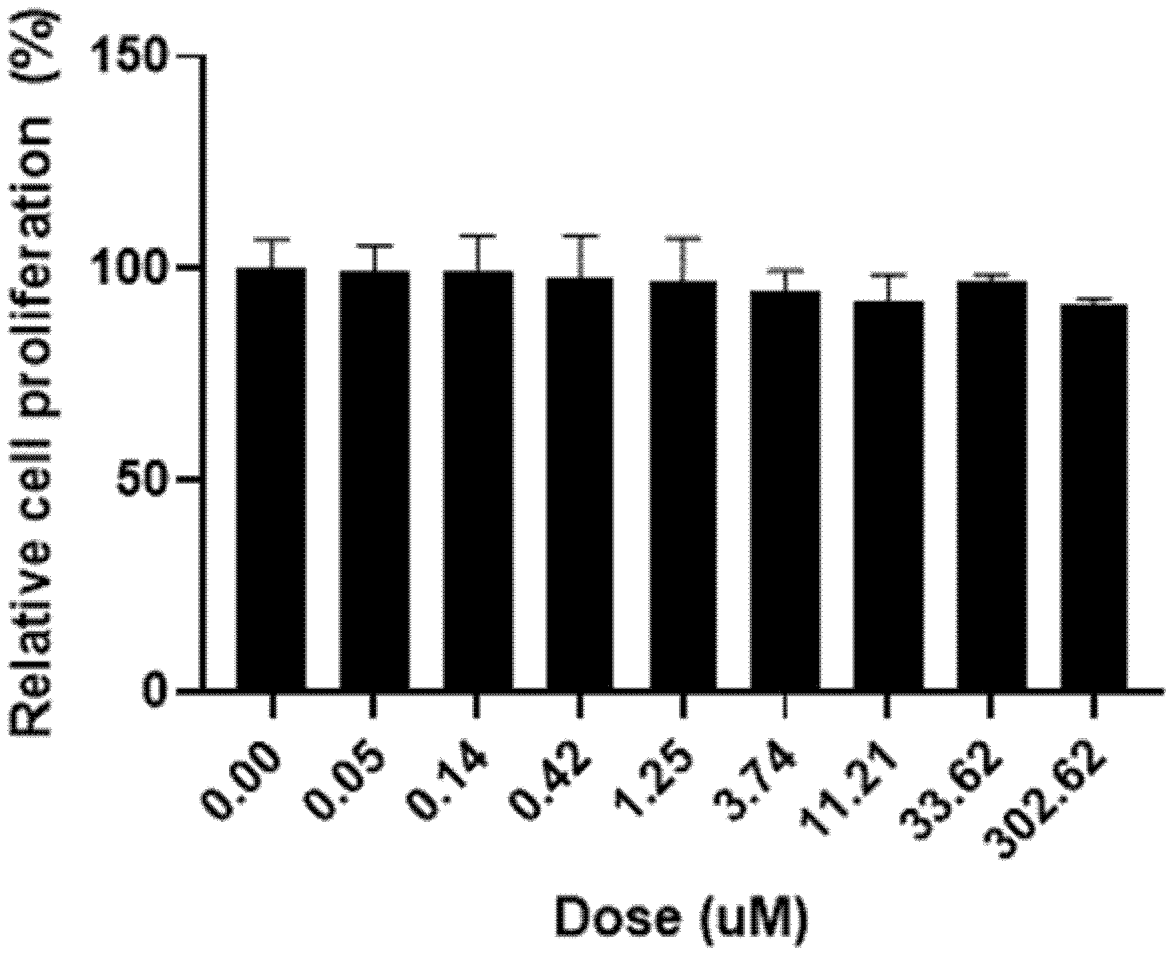
[FIG. 67]


1.0
0.8
0.6
0.4
0.2
0.0
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

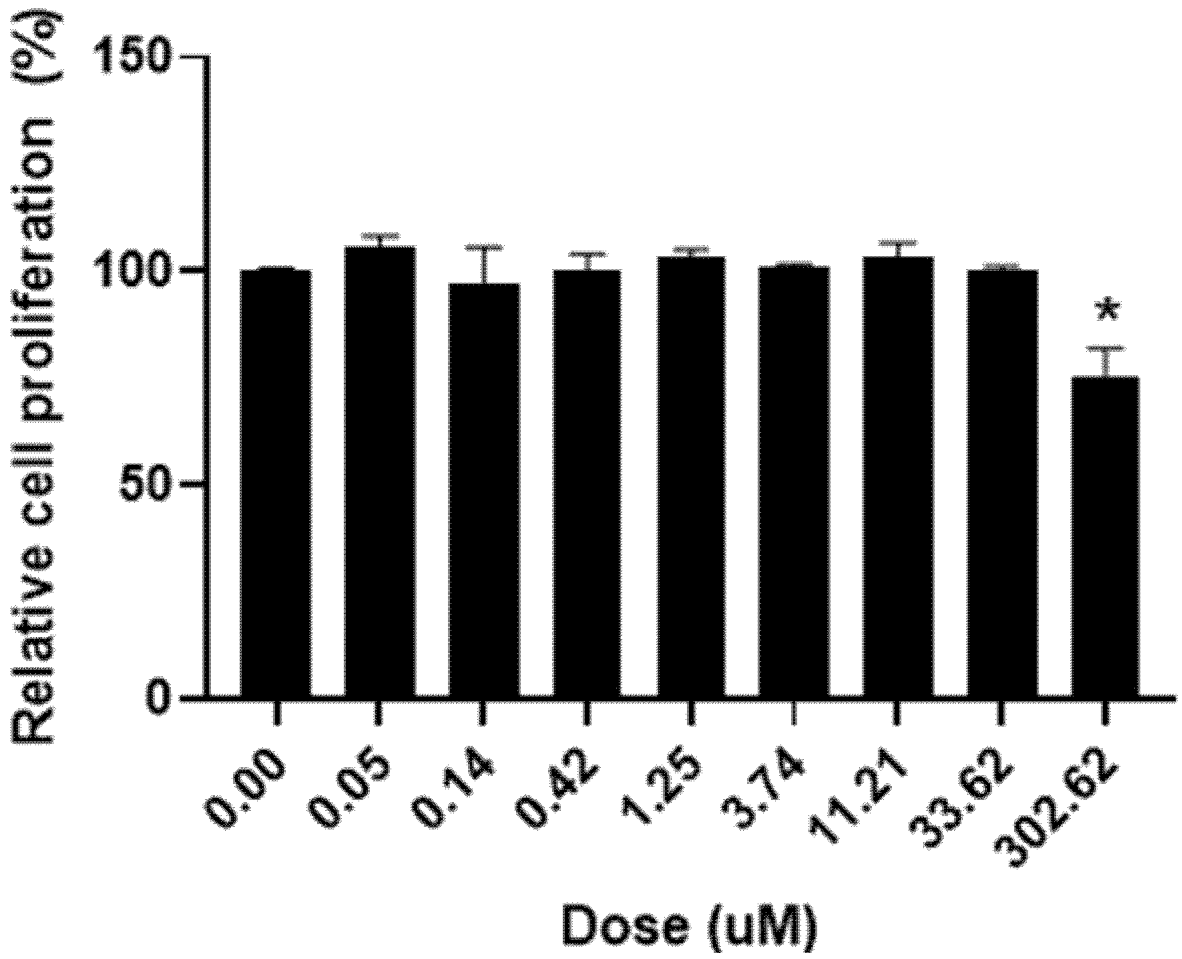
[FIG. 68]


0.20
0.15
0.10
0.05
0.00
Cell growth (OD_{A600})
0
5
10
15
20
25
Time (h)
10
1
0.1
0

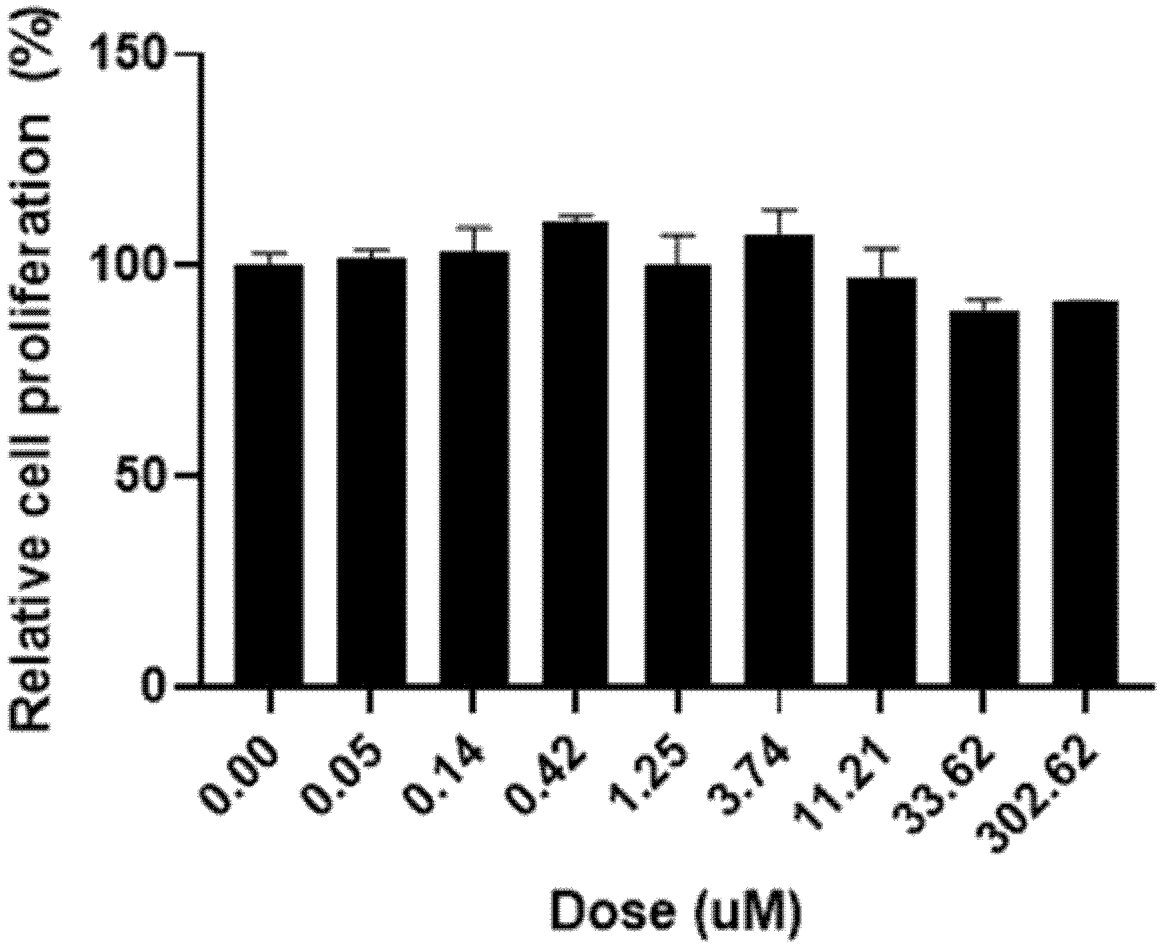
[FIG. 69]


Relative cell proliferation (%)
150
100
50
0
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

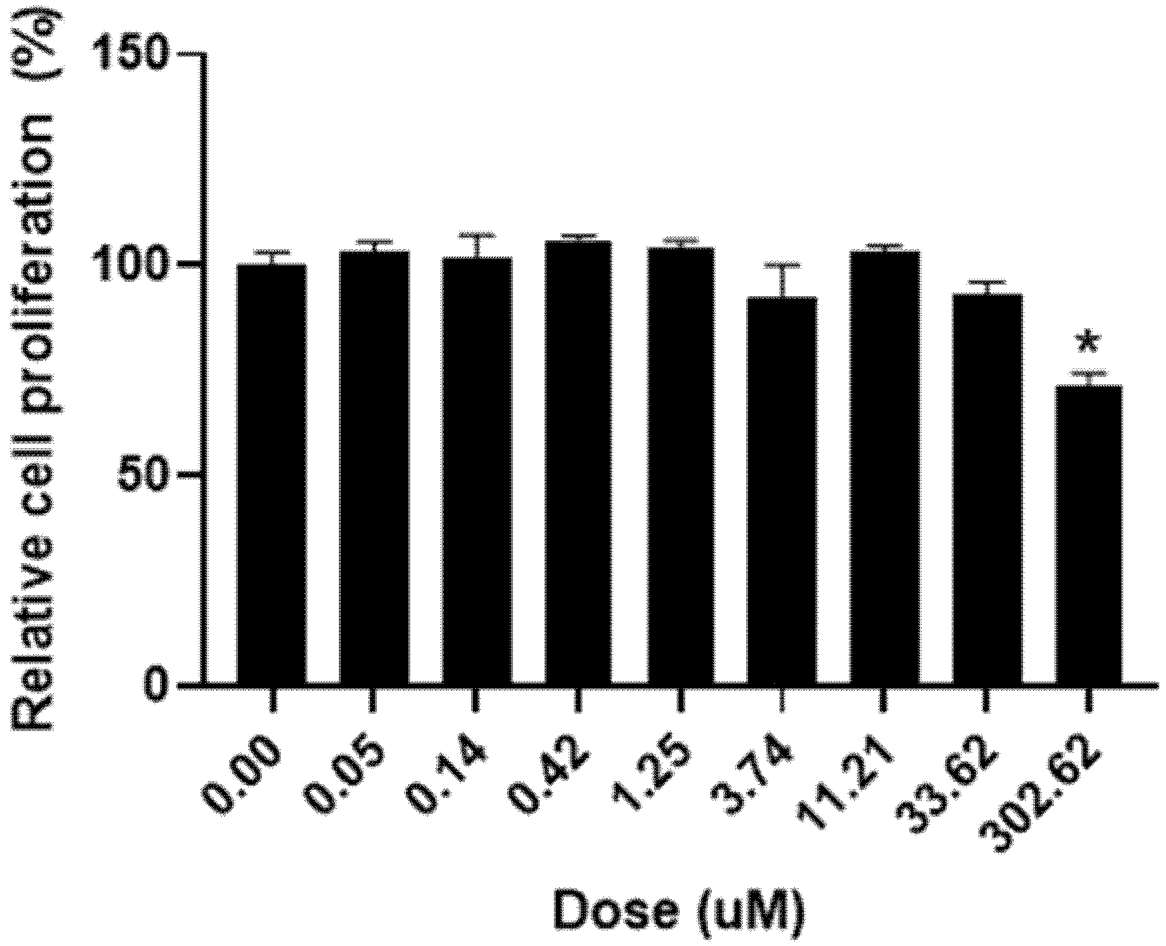
[FIG. 70]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

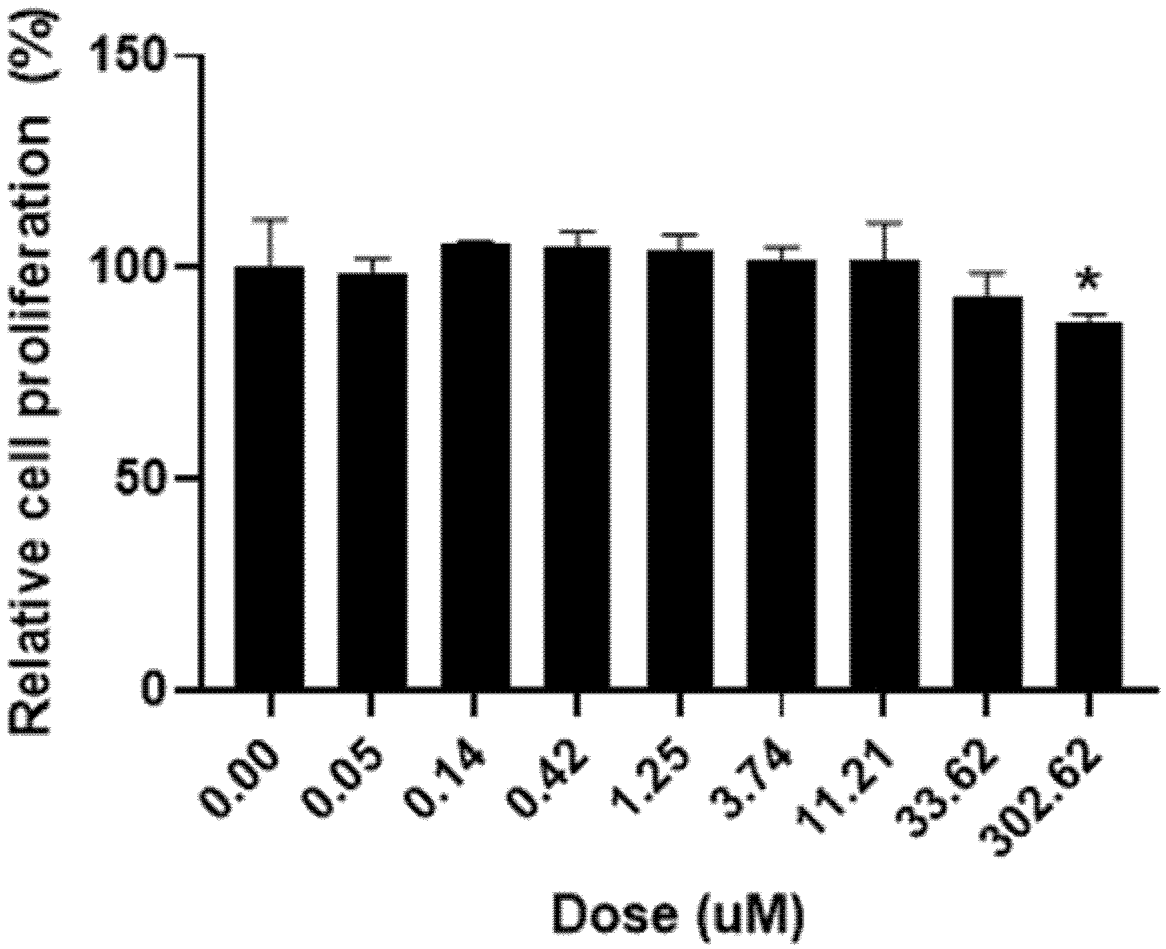
[FIG. 71]


Relative cell proliferation (%)
150
100
50
0
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

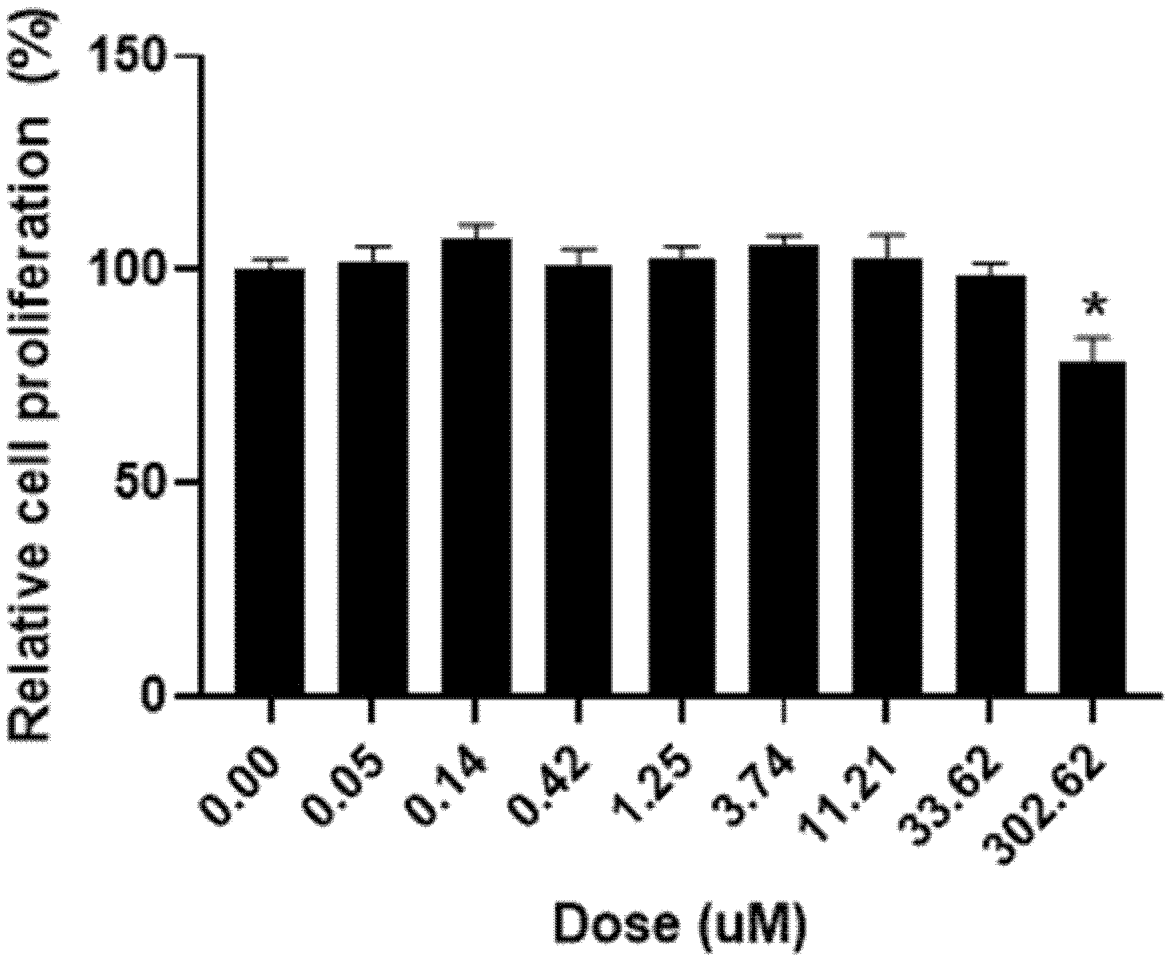
[FIG. 72]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

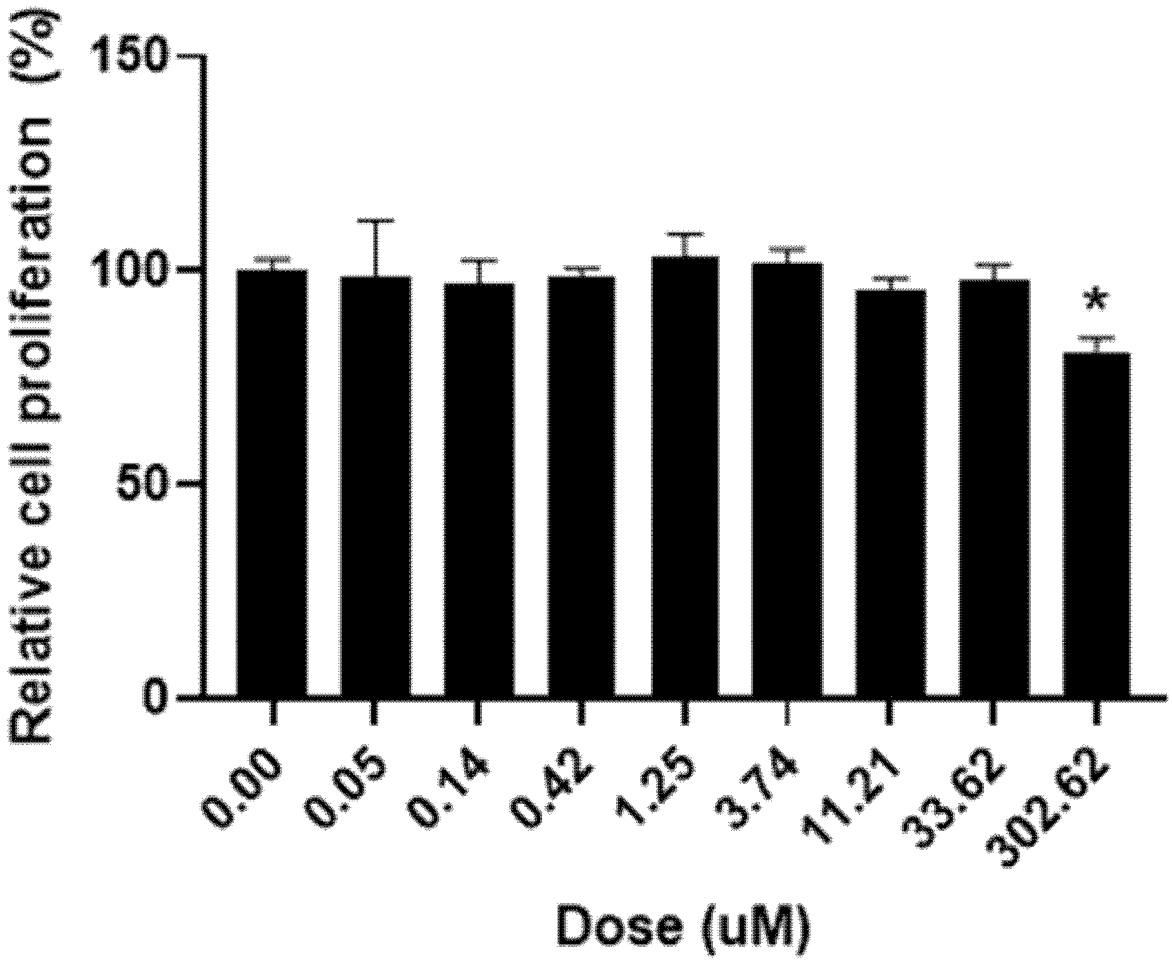
[FIG. 73]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

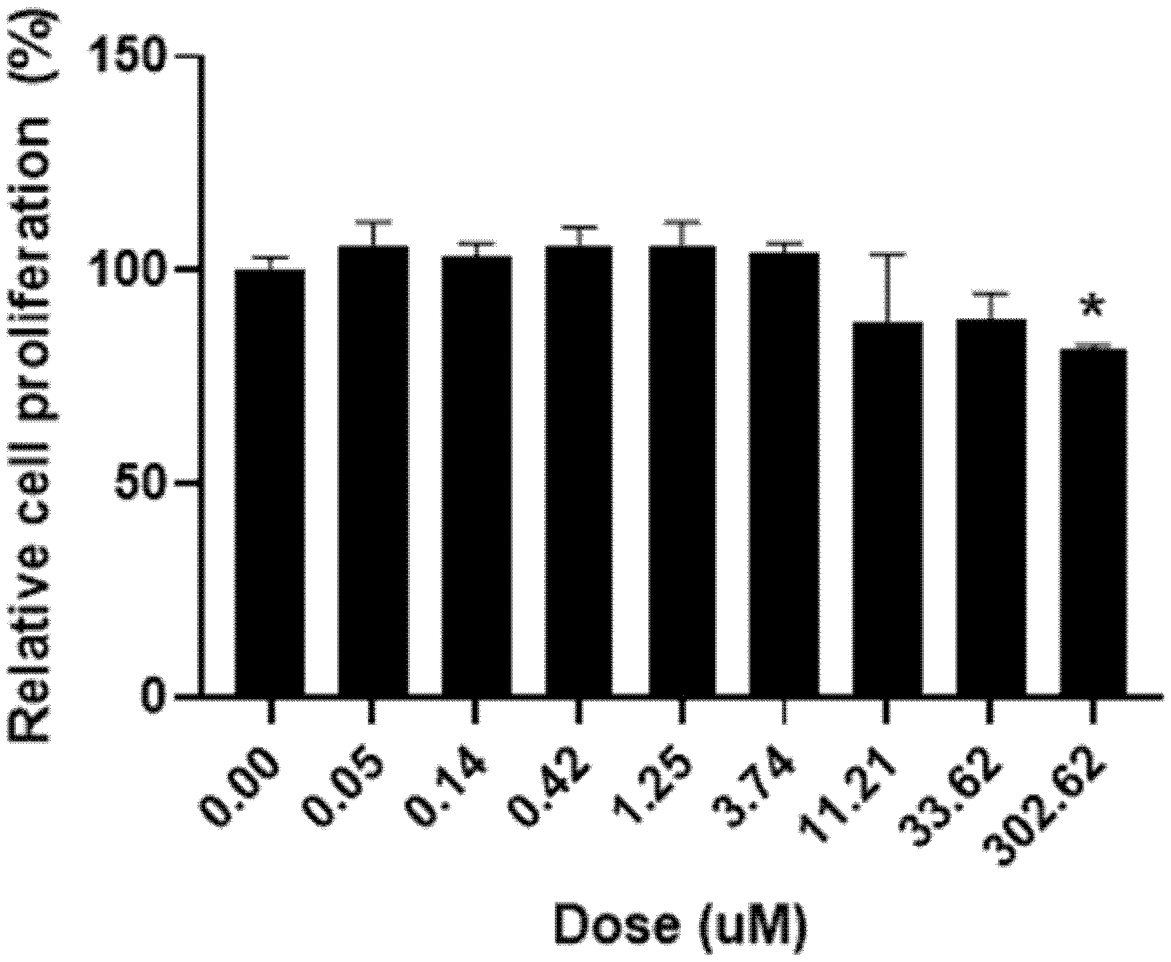
[FIG. 74]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

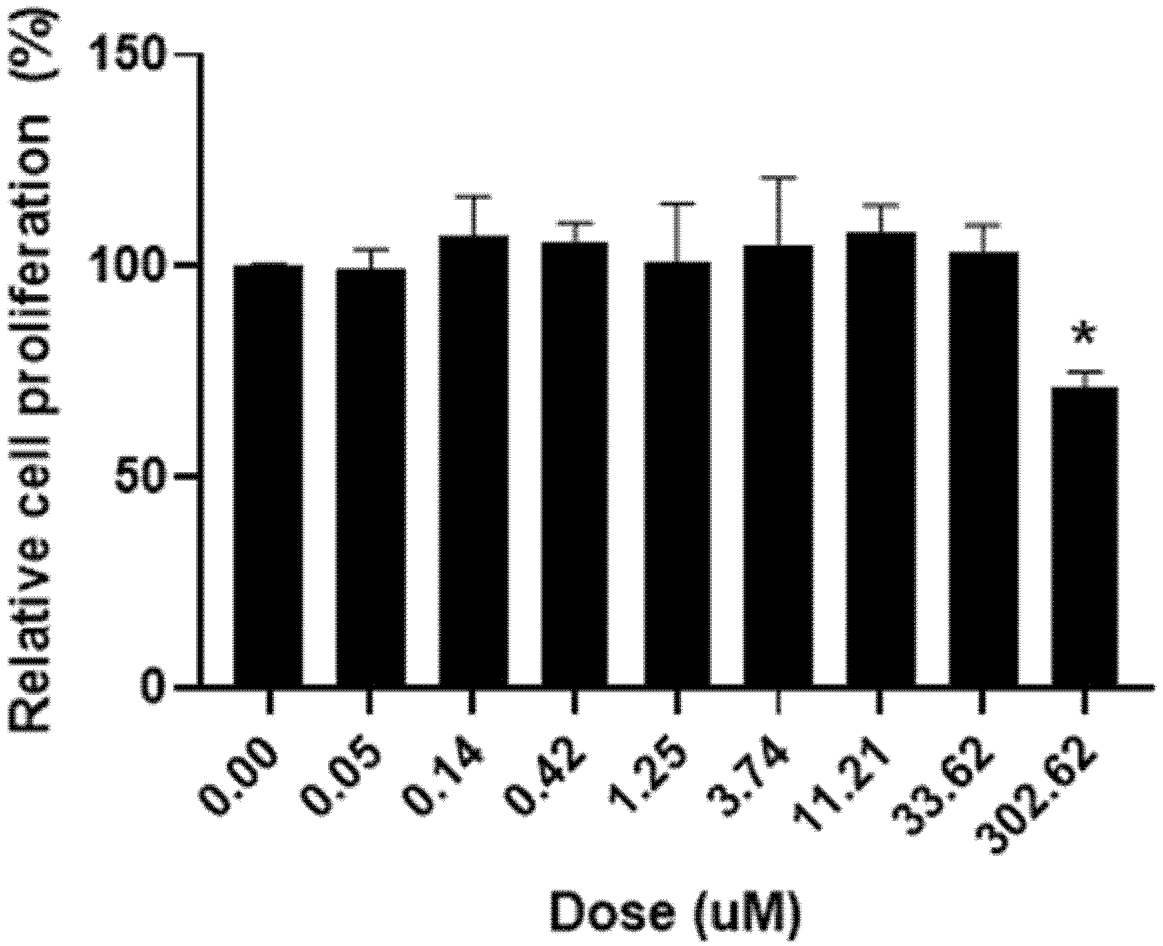
[FIG. 75]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

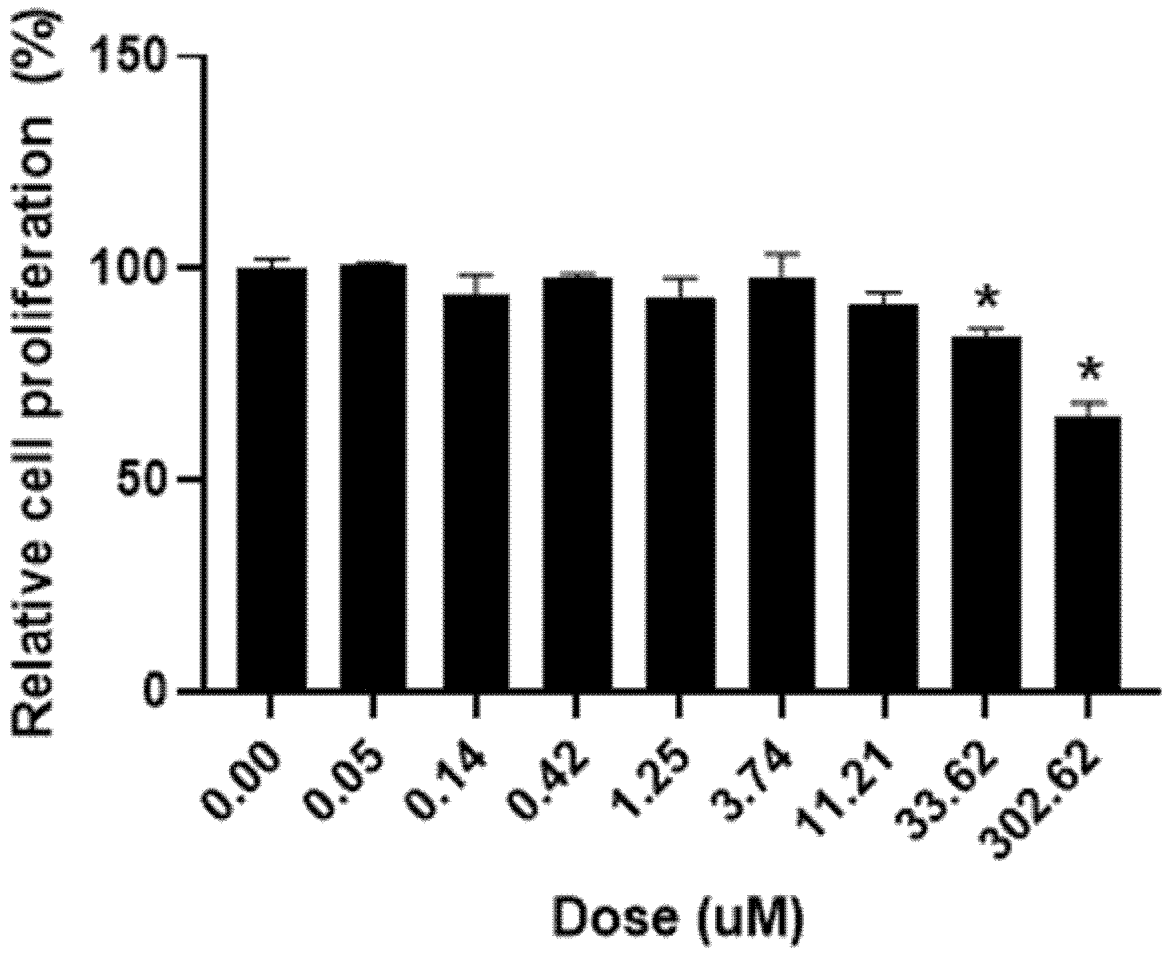
[FIG. 76]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

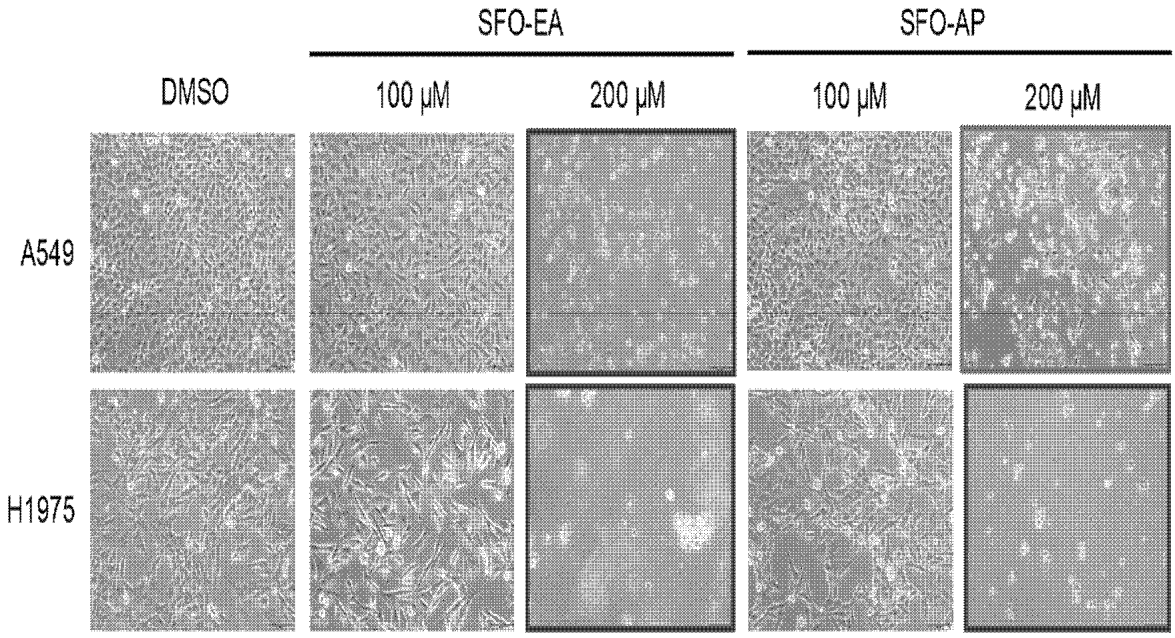
[FIG. 77]


Relative cell proliferation (%)
150
100
50
0
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

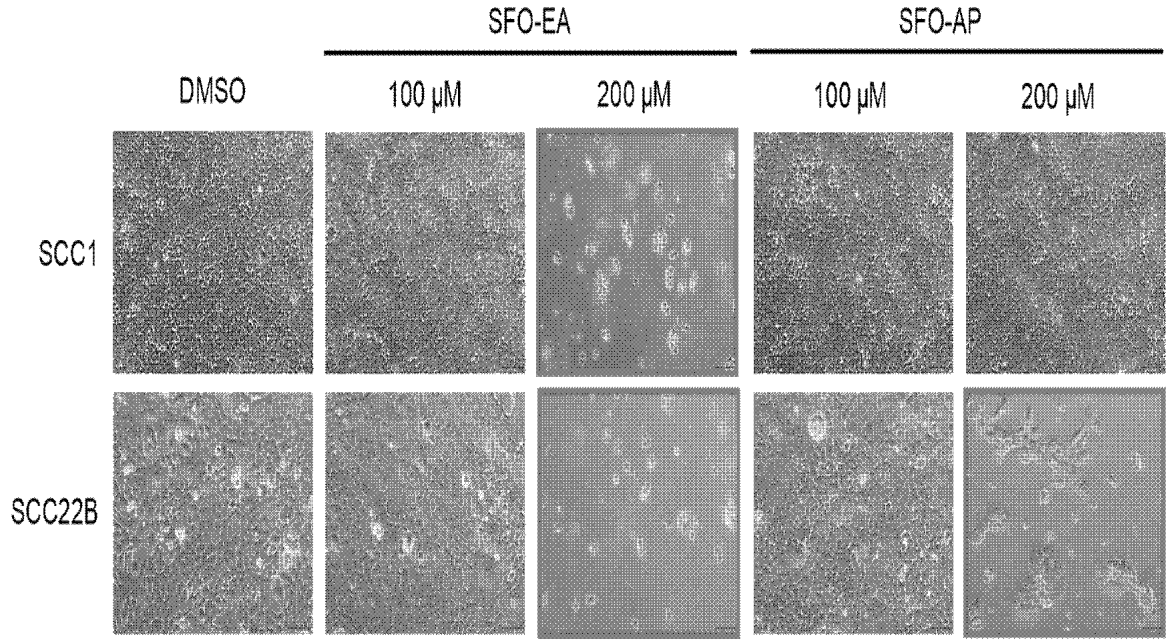
[FIG. 78]


Relative cell proliferation (%)
150
100
50
0
*
*
0.00
0.05
0.14
0.42
1.25
3.74
11.21
33.62
302.62
Dose (uM)

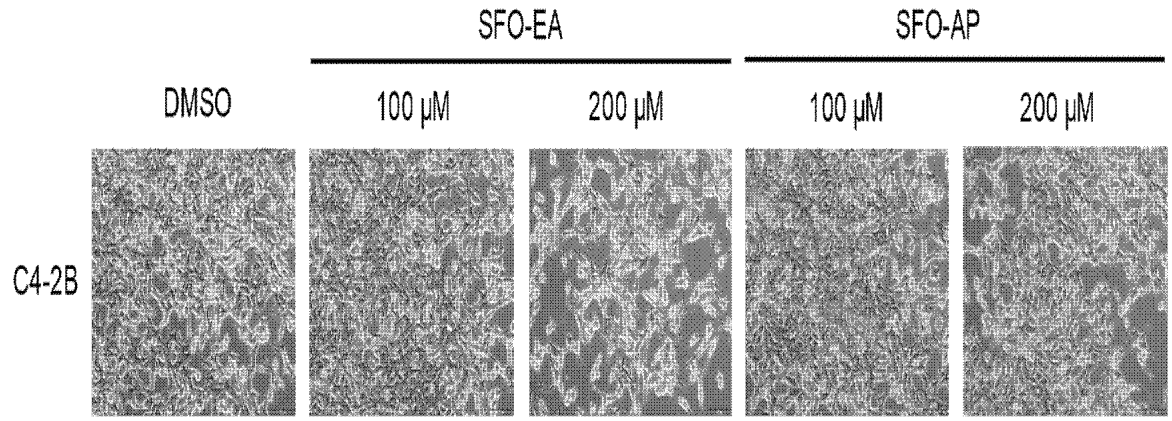
[FIG. 79]


SFO-EA
SFO-AP
DMSO
100 μM
200 μM
100 μM
200 μM
A549
H1975

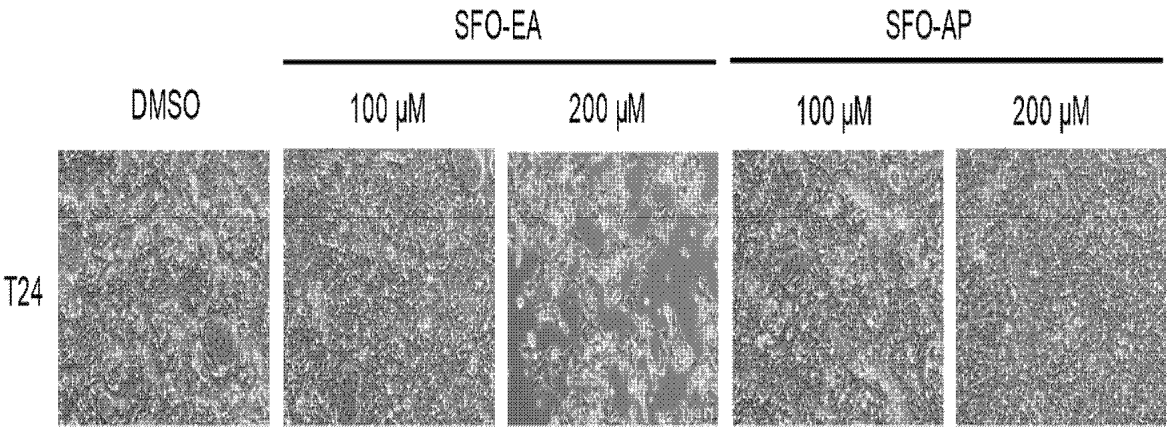
[FIG. 80]


SFO-EA
SFO-AP
DMSO
100 μM
200 μM
100 μM
200 μM
SCC1
SCC22B

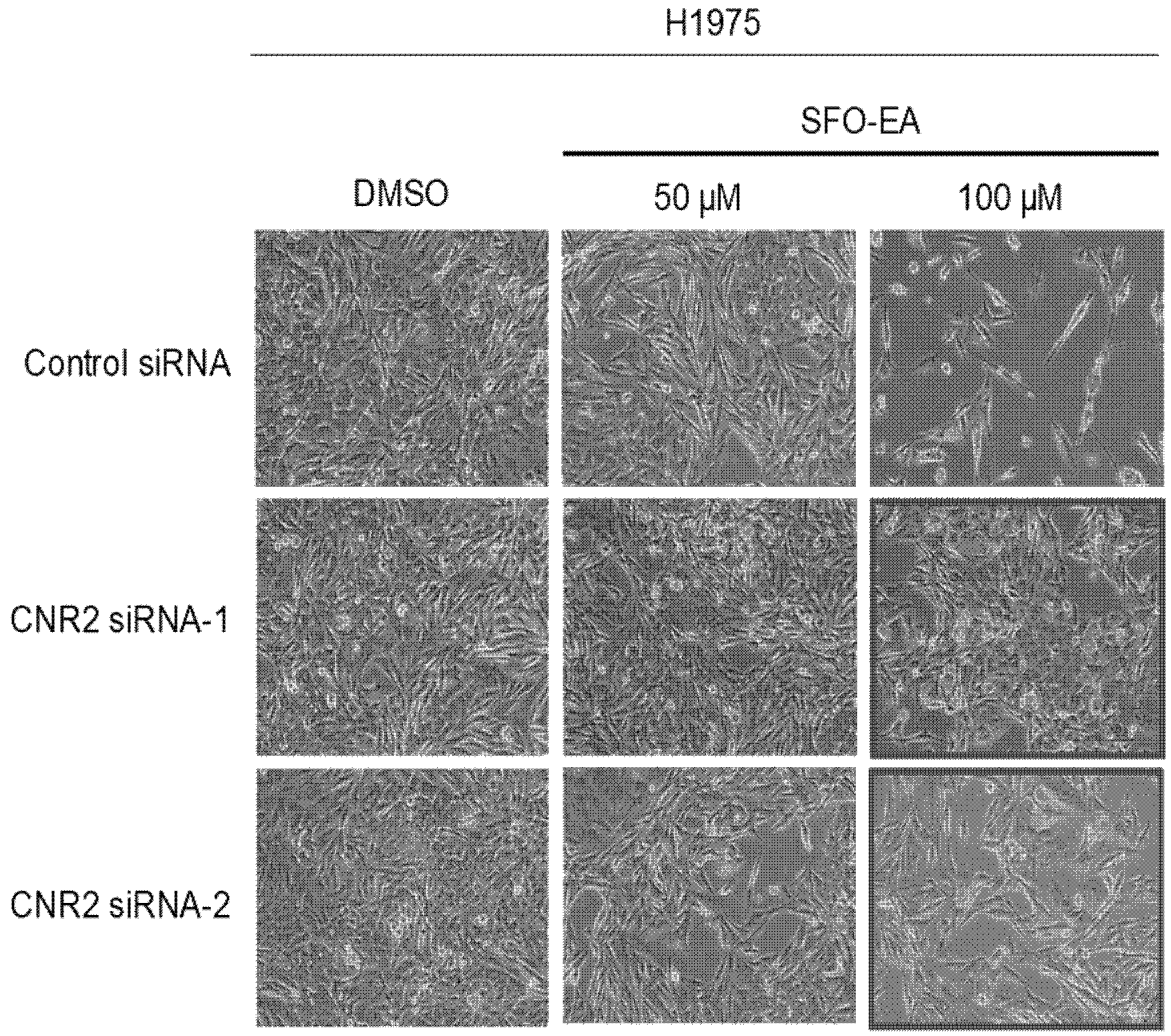
[FIG. 81]


SFO-EA
SFO-AP
DMSO
100 μM
200 μM
100 μM
200 μM
C4-2B

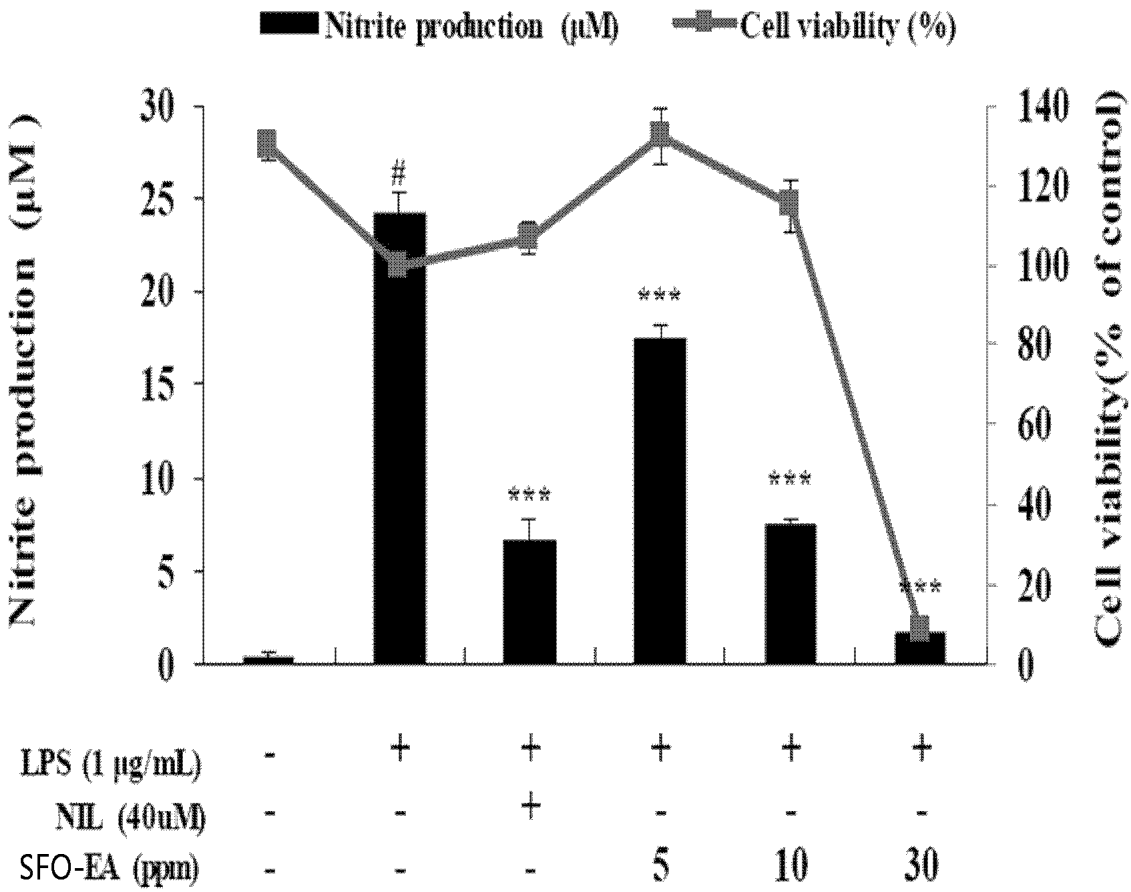
[FIG. 82]


SFO-EA
SFO-AP
DMSO
100 μM
200 μM
100 μM
200 μM
T24

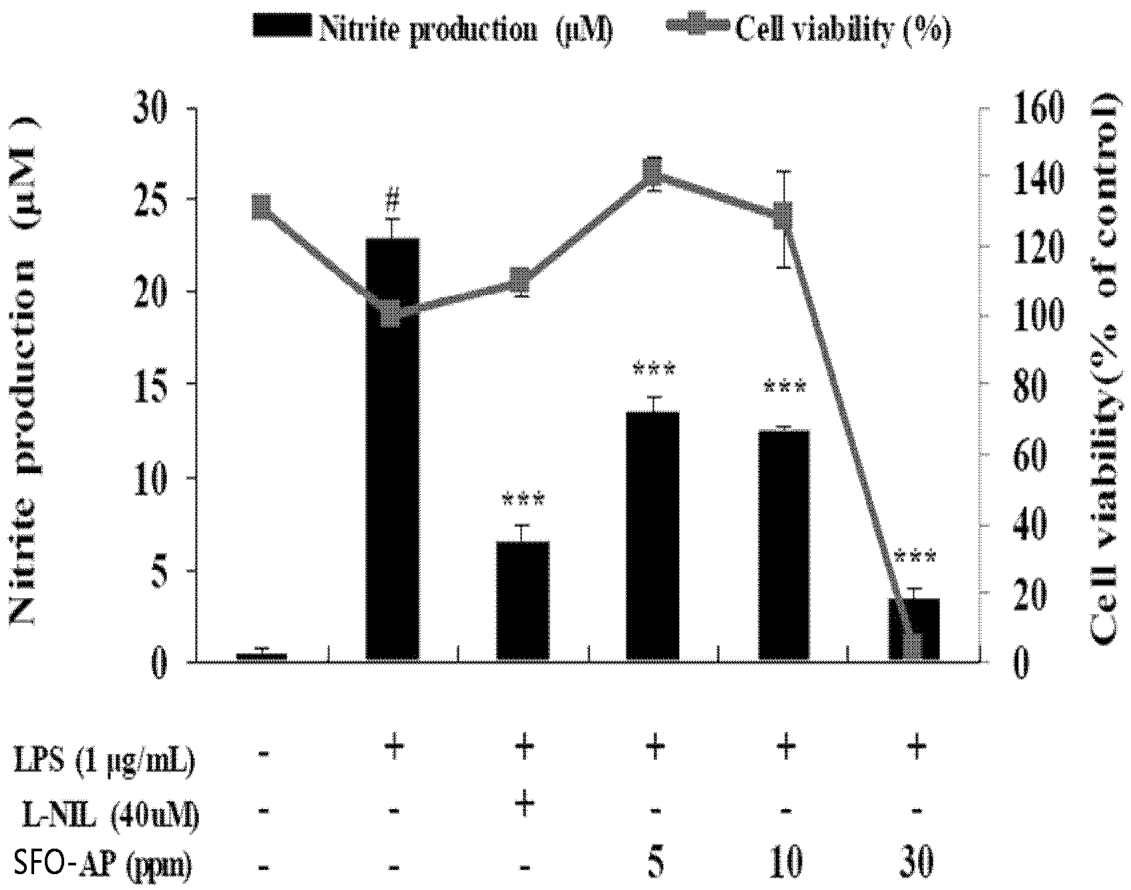
[FIG. 83]


H1975
SFO-EA
DMSO
50 μM
100 μM
Control siRNA
CNR2 siRNA-1
CNR2 siRNA-2

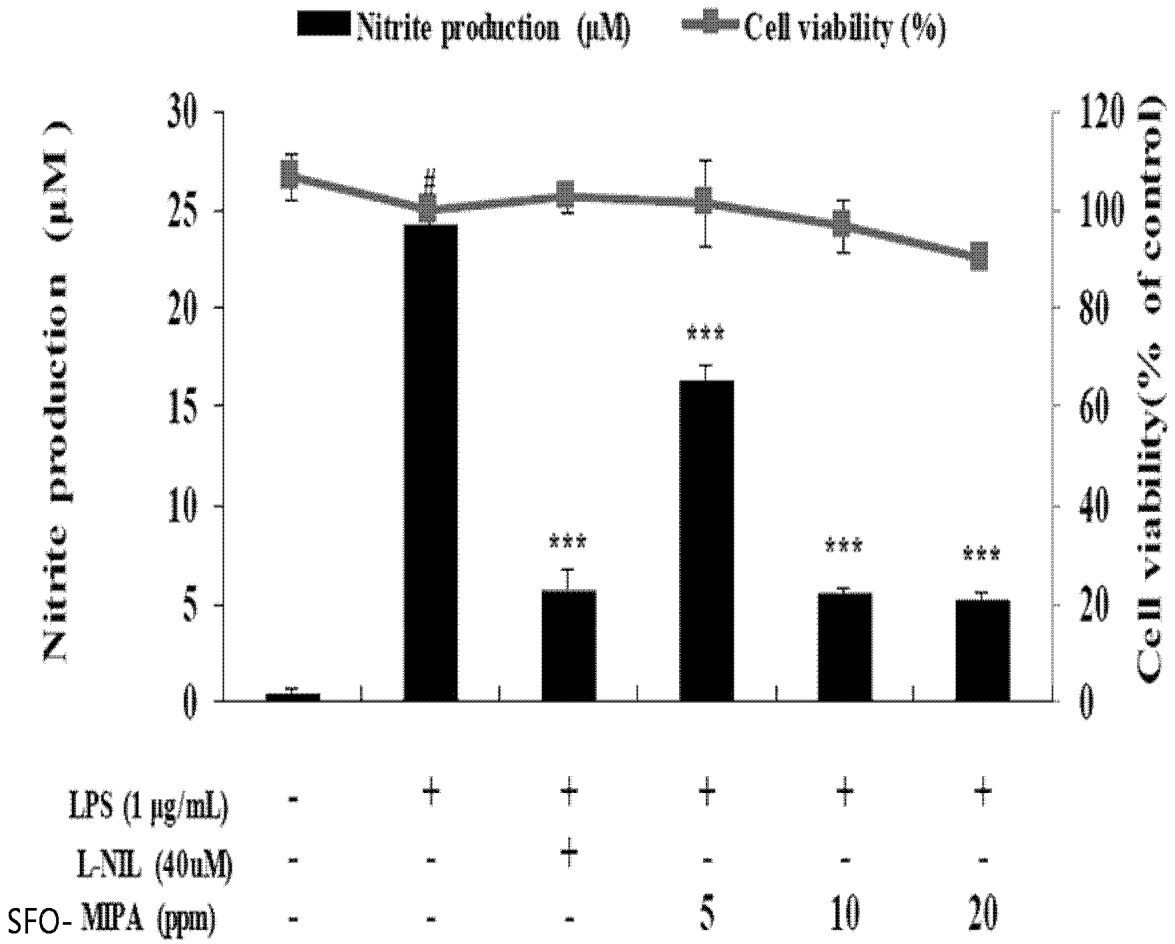
[FIG. 84]


Nitrite production (μM)
Cell viability (%)
Nitrite production (μM)
Cell viability(% of control)
30
25
20
15
10
5
0
140
120
100
80
60
40
20
0
#
***
***
***
***
LPS (1 μg/mL) - + + + + +
NIL (40uM) - - + - - -
SFO-EA (ppm) - - - 5 10 30

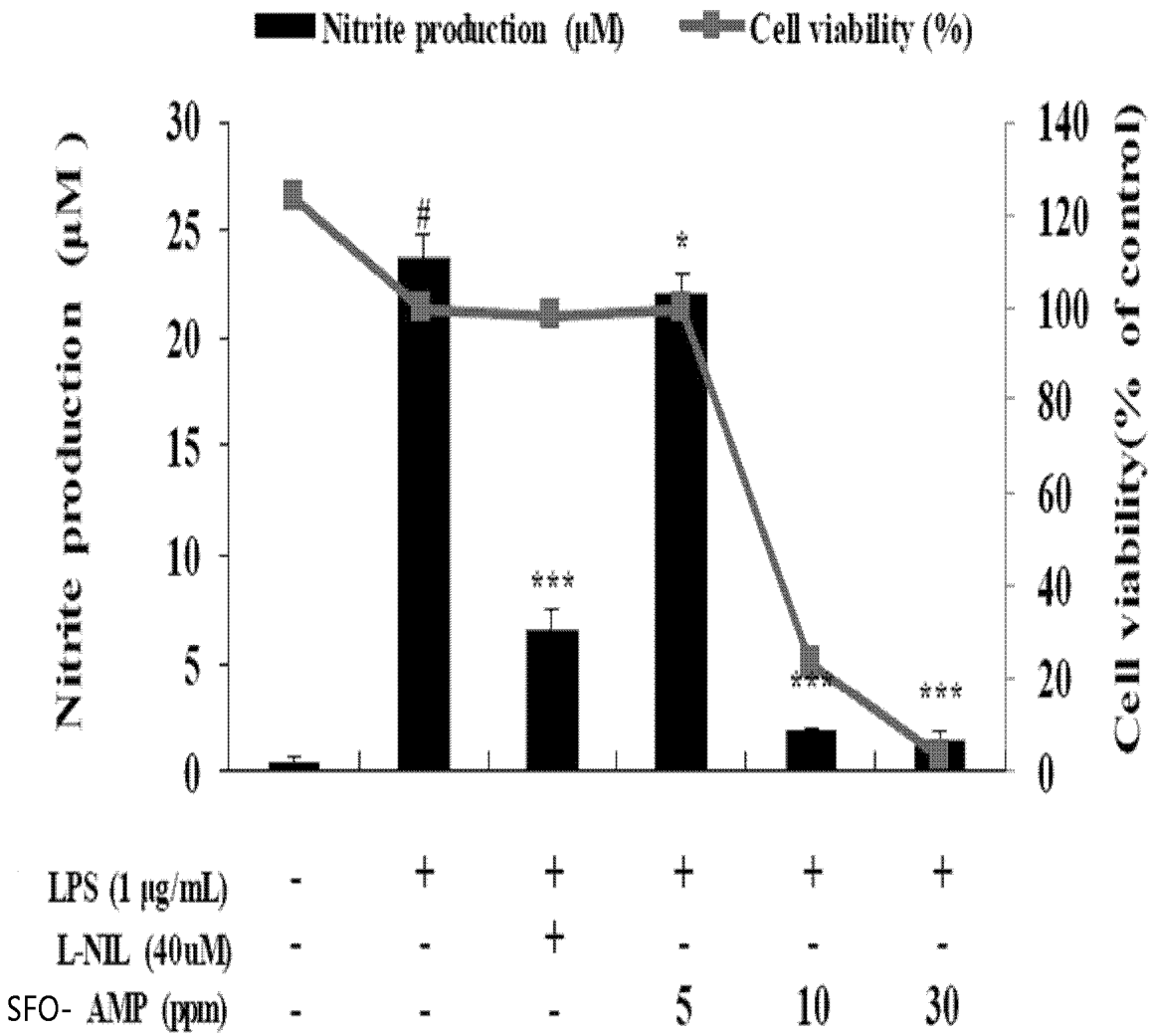
[FIG. 85]


Nitrite production (μM)
Cell viability (%)
Nitrite production (μM)
Cell viability(% of control)
30
25
20
15
10
5
0
160
140
120
100
80
60
40
20
0
#
***
***
***
LPS (1 μg/mL) - + + + + +
L-NIL (40uM) - - + - - -
SFO-AP (ppm) - - - 5 10 30

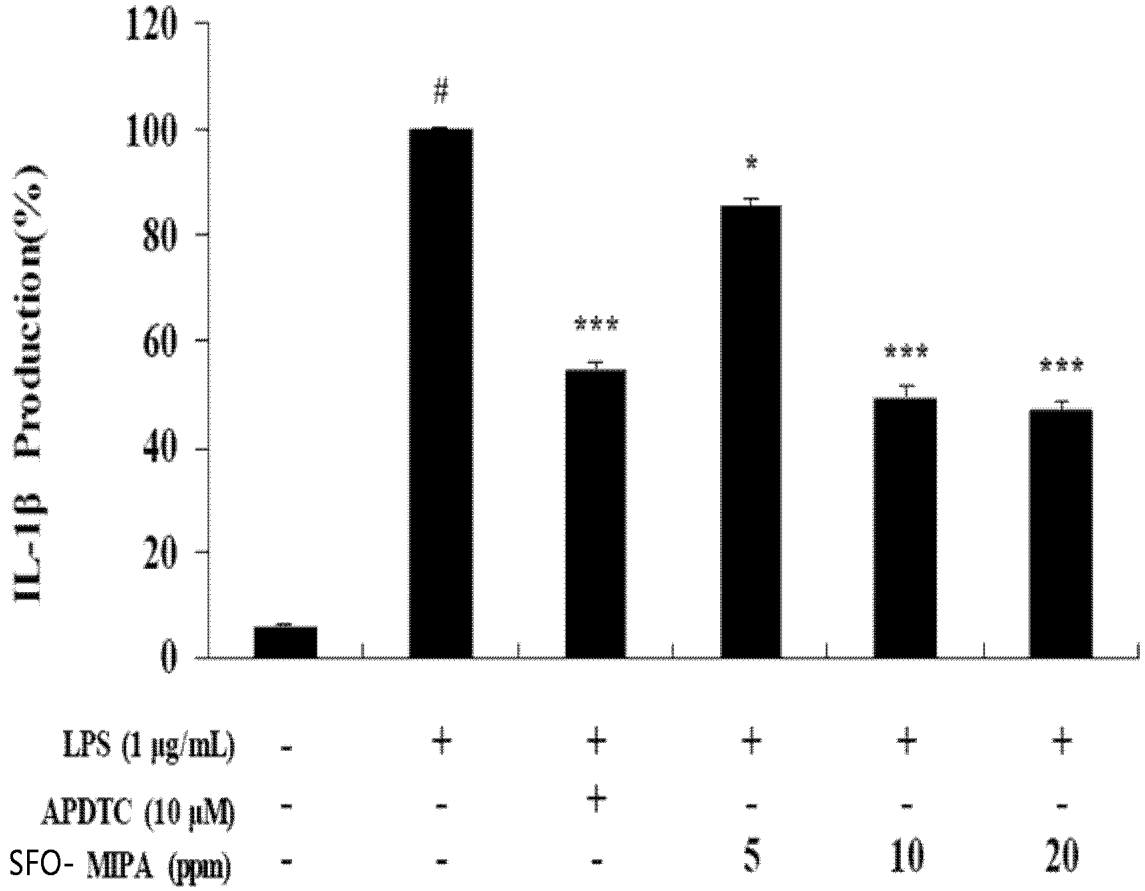
[FIG. 86]


Nitrite production (μM)
Cell viability (%)
Nitrite production (μM)
Cell viability(% of control)
30
25
20
15
10
5
0
120
100
80
60
40
20
0
#
***
***
***
***
LPS (1 μg/mL) - + + + + +
L-NIL (40uM) - - + - - -
SFO- MIPA (ppm) - - - 5 10 20

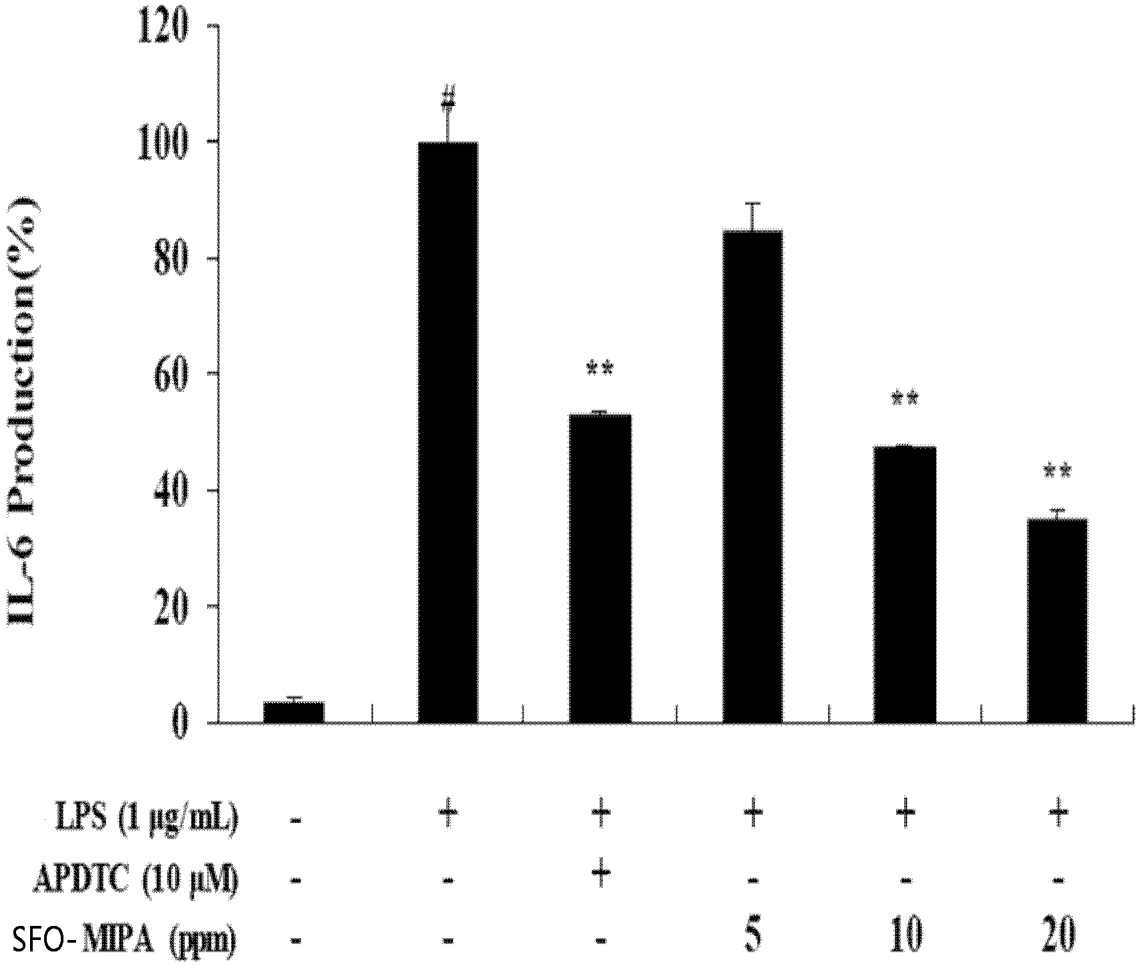
[FIG. 87]


Nitrite production (μM)
Cell viability (%)
Nitrite production (μM)
Cell viability(% of control)
30
25
20
15
10
5
0
140
120
100
80
60
40
20
0
#
*
***
***
***
LPS (1 μg/mL) - + + + + +
L-NIL (40uM) - - + - - -
SFO- AMP (ppm) - - - 5 10 30

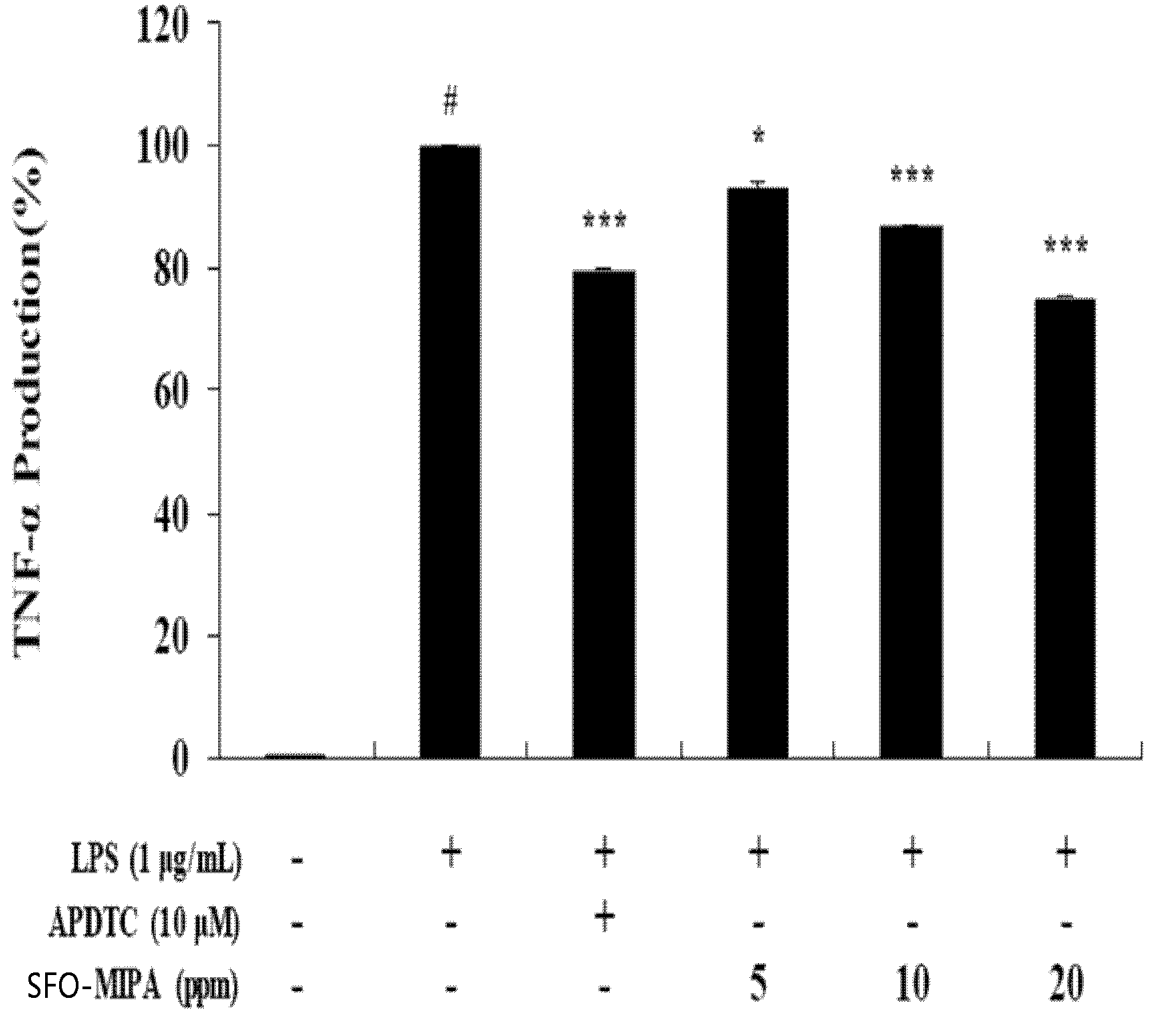
[FIG. 88]


IL-1β Production(%)
120
100
80
60
40
20
0
#
*
***
***
***
LPS (1 μg/mL) - + + + + +
APDTC (10 μM) - - + - - -
SFO- MIPA (ppm) - - - 5 10 20

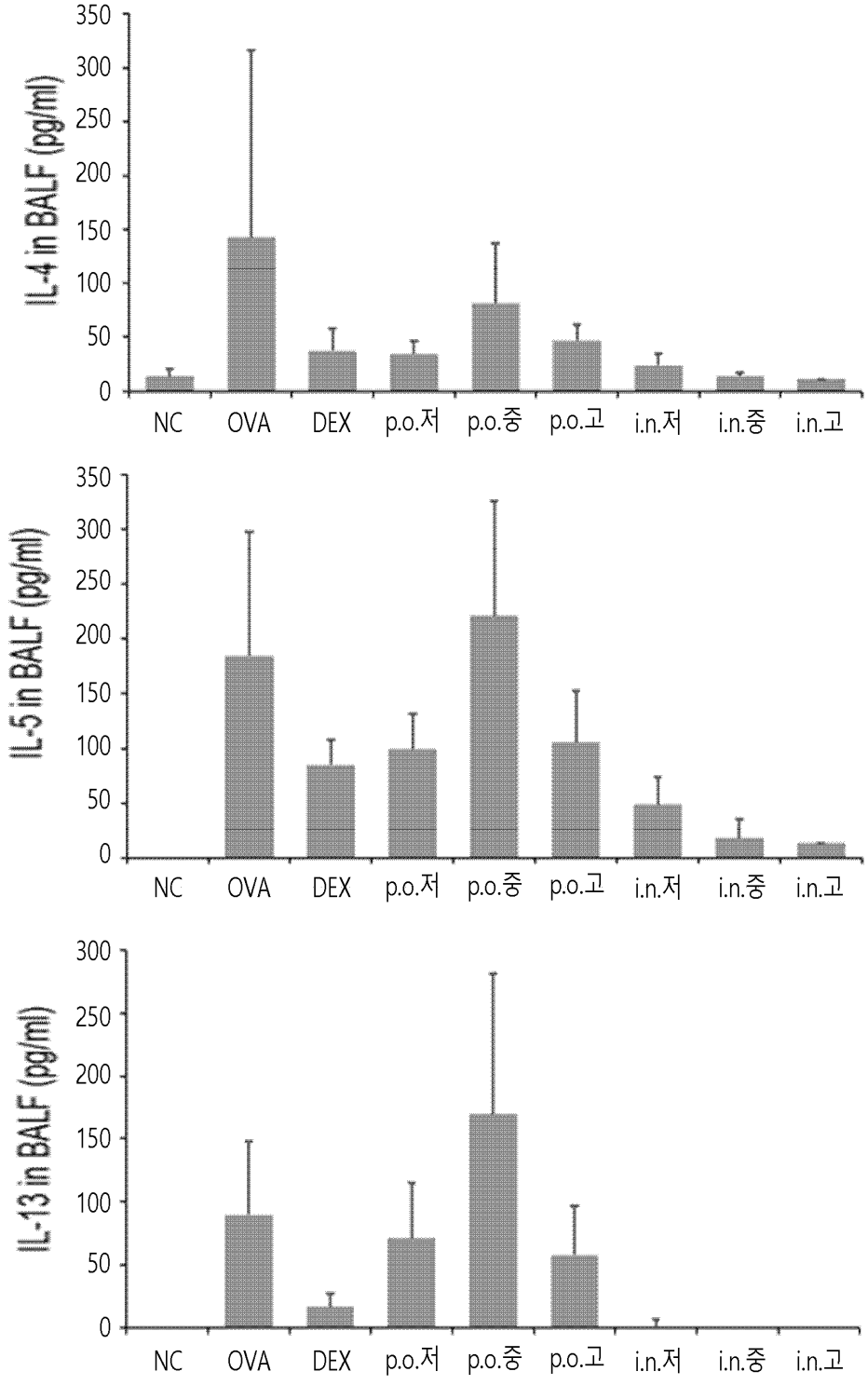
[FIG. 89]


IL-6 Production(%)
120
100
80
60
40
20
0
#
**
**
**
LPS (1 μg/mL) - + + + + +
APDTC (10 μM) - - + - - -
SFO-MIPA (ppm) - - - 5 10 20

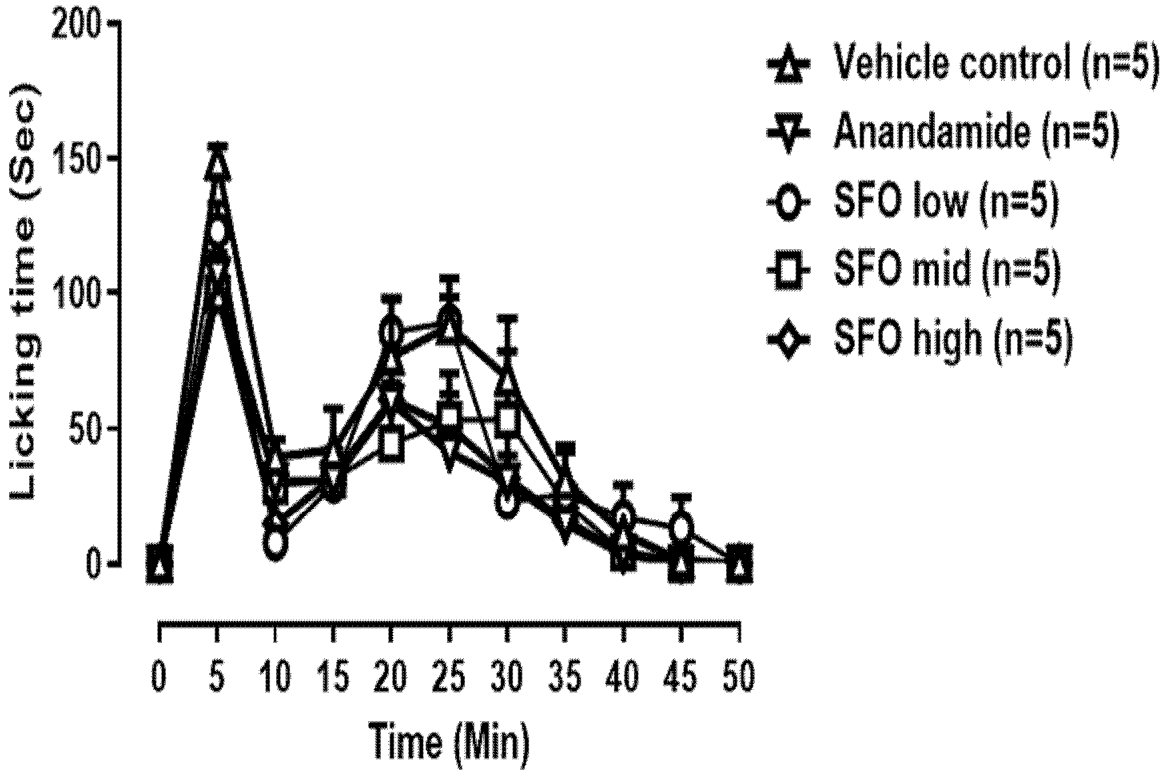
[FIG. 90]


TNF-α Production(%)
120
100
80
60
40
20
0
#
***
*
***
***
LPS (1 μg/mL) - + + + + +
APDTC (10 μM) - - + - - -
SFO-MIPA (ppm) - - - 5 10 20

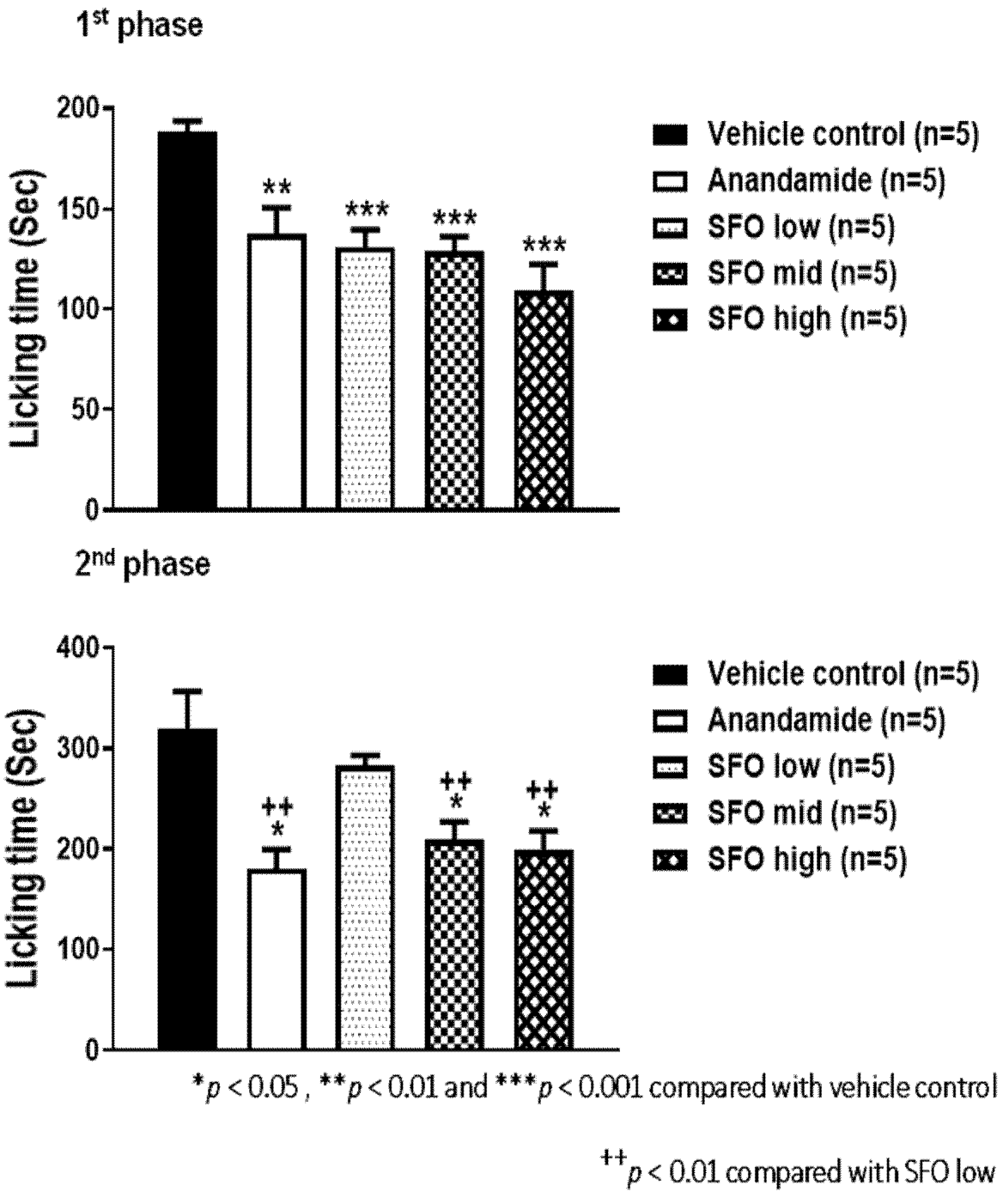
[FIG. 91]


IL-4 in BALF (pg/ml)
350
300
250
200
150
100
50
0
NC
OVA
DEX
p.o.저
p.o.중
p.o.고
i.n.저
i.n.중
i.n.고
IL-5 in BALF (pg/ml)
350
300
250
200
150
100
50
0
NC
OVA
DEX
p.o.저
p.o.중
p.o.고
i.n.저
i.n.중
i.n.고
IL-13 in BALF (pg/ml)
300
250
200
150
100
50
0
NC
OVA
DEX
p.o.저
p.o.중
p.o.고
i.n.저
i.n.중
i.n.고

[FIG. 92]


Licking time (Sec)
200
150
100
50
0
0 5 10 15 20 25 30 35 40 45 50
Time (Min)
Vehicle control (n=5)
Anandamide (n=5)
SFO low (n=5)
SFO mid (n=5)
SFO high (n=5)

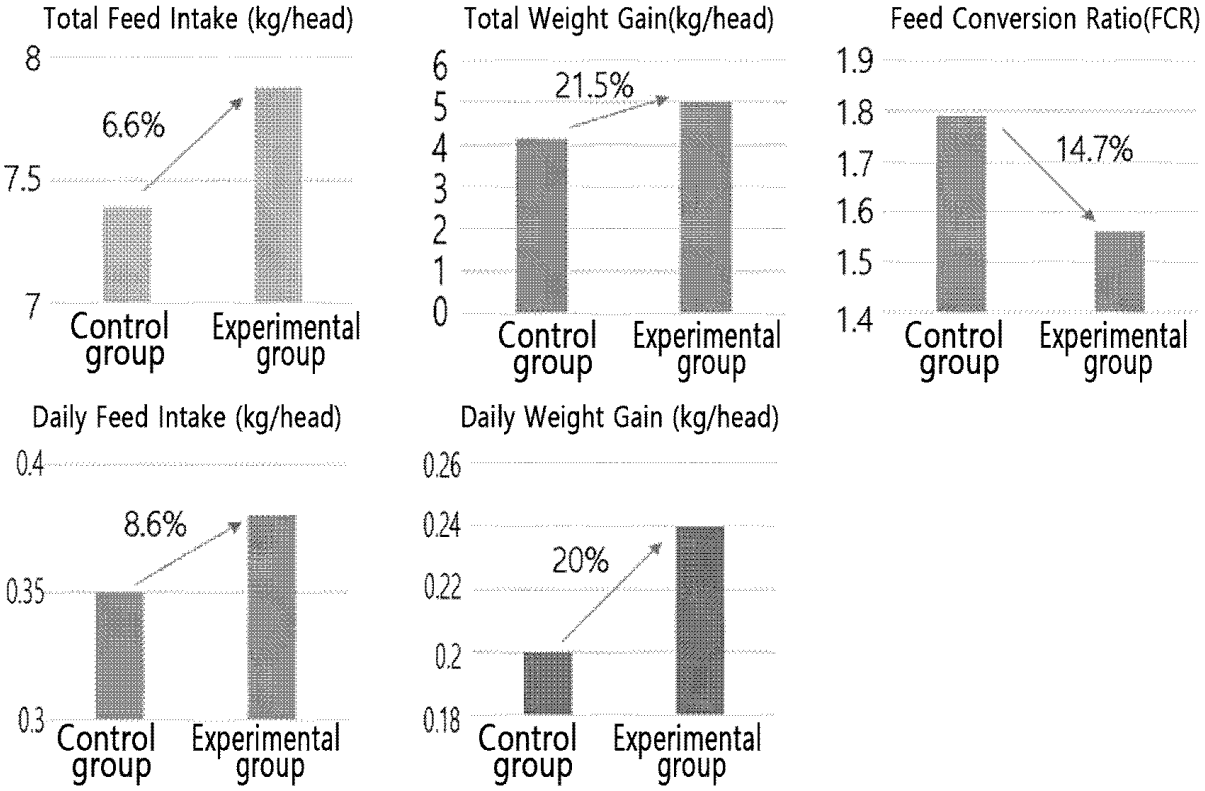
[FIG. 93]



$^{*}p < 0.05$, $^{**}p < 0.01$ and $^{***}p < 0.001$ compared with vehicle control

$^{++}p < 0.01$ compared with SFO low

[FIG. 94]


Total Feed Intake (kg/head)
8
7.5
7
6.6%
Control group
Experimental group
Total Weight Gain(kg/head)
6
5
4
3
2
1
0
21.5%
Control group
Experimental group
Feed Conversion Ratio(FCR)
1.9
1.8
1.7
1.6
1.5
1.4
14.7%
Control group
Experimental group
Daily Feed Intake (kg/head)
0.4
0.35
0.3
8.6%
Control group
Experimental group
Daily Weight Gain (kg/head)
0.26
0.24
0.22
0.2
0.18
20%
Control group
Experimental group