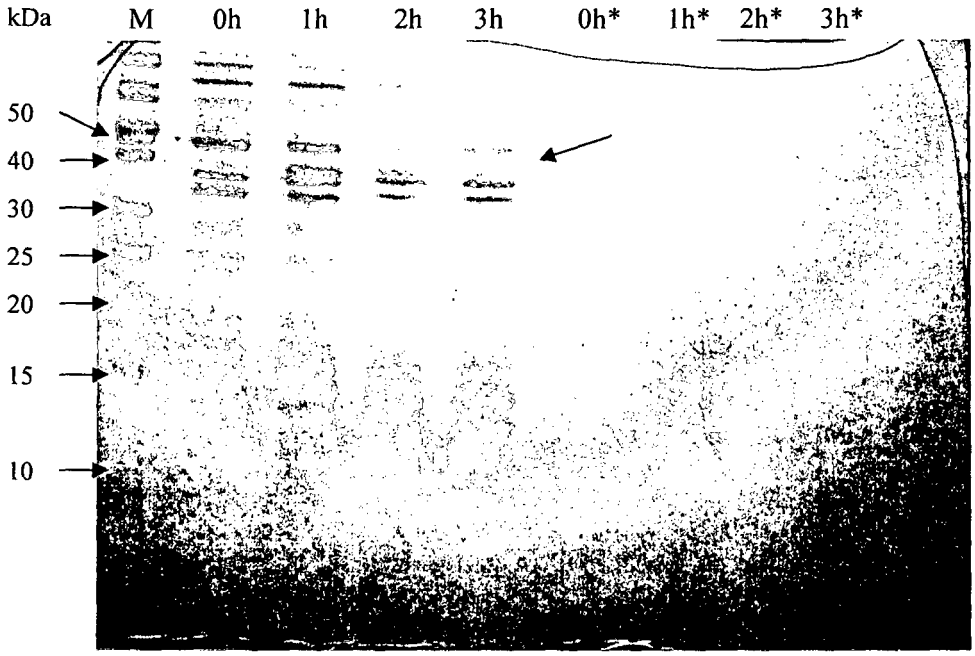
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   1 ATGAAATACCTGCTGCCGACCGCTGCTGCTGGTCTGCTGCTCCTCGCTGCCCAGCCGGCG
   1  M  K  Y  L  L  P  T  A  A  A  G  L  L  L  L  A  A  Q  P  A
  61 ATGGCCATGGGGCGTATTTGCCGTTGCATTTGCGGCCGTGGCATTTGCCGCTGCATCTGT
  21  M  A  M  G  R  I  C  R  C  I  C  G  R  G  I  C  R  C  I  C
 121 GGCGTGCCGGGTGTTGGTGTTCCGGGTGTGGGTGGTGCGACCGGATCCGATGTGAACTTT
  41  G  V  P  G  V  G  V  P  G  V  G  G  A  T  G  S  D  V  N  F
 181 GATCTGAGCACCGCGACCGCGAAAACCTATACCAAATTCATCGAAGATTTTCGTGCGACC
  61  D  L  S  T  A  T  A  K  T  Y  T  K  F  I  E  D  F  R  A  T
 241 CTGCCGTTTAGCCATAAAGTGTATGATATCCCGCTGCTGTATAGCACCATTAGCGATAGC
  81  L  P  F  S  H  K  V  Y  D  I  P  L  L  Y  S  T  I  S  D  S
 301 CGTCGTTTTATTCTGCTGGATCTGACCAGCTATGCGTATGAAACCATTAGCGTGGCGATT
 101  R  R  F  I  L  L  D  L  T  S  Y  A  Y  E  T  I  S  V  A  I
 361 GATGTGACCAACGTGTATGTGGTGGCGTATCGTACCCGTGATGTGAGCTACTTTTTCAAA
 121  D  V  T  N  V  Y  V  V  A  Y  R  T  R  D  V  S  Y  F  F  K
 421 GAAAGCCCGCCGGAAGCGTACAACATTCTGTTTAAAGGCACCCGTAAAATTACCCTGCCG
 141  E  S  P  P  E  A  Y  N  I  L  F  K  G  T  R  K  I  T  L  P
 481 TATACCGGCAACTATGAAAACCTGCAGACCGCGGCGCATAAAATTCGTGAAAACATCGAT
 161  Y  T  G  N  Y  E  N  L  Q  T  A  A  H  K  I  R  E  N  I  D
 541 CTGGGCCTGCCGGCCCTGAGCAGCGCGATTACCACCCTGTTTTATTATAACGCGCAGAGC
 181  L  G  L  P  A  L  S  S  A  I  T  T  L  F  Y  Y  N  A  Q  S
 601 GCGCCGAGCGCGCTGCTGGTGCTGATTCAGACCACCGCGGAAGCGGCGCGTTTTAAATAT
 201  A  P  S  A  L  L  V  L  I  Q  T  T  A  E  A  A  R  F  K  Y
 661 ATTGAACGCCACGTGGCGAAATATGTGGCGACCAACTTTAAACCGAACCTGGCCATTATT
 221  I  E  R  H  V  A  K  Y  V  A  T  N  F  K  P  N  L  A  I  I
 721 AGCCTGGAAAACCAGTGGAGCGCCCTGAGCAAACAAATTTTTCTGGCCCAGAACCAGGGC
 241  S  L  E  N  Q  W  S  A  L  S  K  Q  I  F  L  A  Q  N  Q  G
 781 GGCAAATTTCGTAATCCGGTGGATCTGATTAAACCGACCGGCGAACGTTTTCAGGTGACC
 261  G  K  F  R  N  P  V  D  L  I  K  P  T  G  E  R  F  Q  V  T
 841 AATGTGGATAGCGATGTGGTGAAAGGCAACATTAAACTGCTGCTGAACAGCCGTGCGAGC
 281  N  V  D  S  D  V  V  K  G  N  I  K  L  L  L  N  S  R  A  S
 901 ACCGCGGATGAAAACTTTATTACCACCATGACCCTGCTGGGCGAAAGCGTGGTGGAATTC
 301  T  A  D  E  N  F  I  T  T  M  T  L  L  G  E  S  V  V  E  F
 961 CCGTGGGCGCTGTGGAAAACCATGCTGAAAGAACTGGGCACGATGGCGCTGCATGCGGGT
 321  P  W  A  L  W  K  T  M  L  K  E  L  G  T  M  A  L  H  A  G
1021 AAAGCGGCGCTGGGTGCGGCAGCGGATACCATTAGCCAGGGCACCCAGGTTCCGGGCGTG
 341  K  A  A  L  G  A  A  A  D  T  I  S  Q  G  T  Q  V  P  G  V
1081 GGCGTTCCGGGCGTTGGTAAGCTTGCGGCCGCACTCGAGCACCACCACCACCACCACTGA
 361  G  V  P  G  V  G  K  L  A  A  A  L  E  H  H  H  H  H  H  *
```

FIGURE 1

(A)


kDa
M
0h
1h
2h
3h
0h*
1h*
2h*
3h*
50
40
30
25
20
15
10

(B)

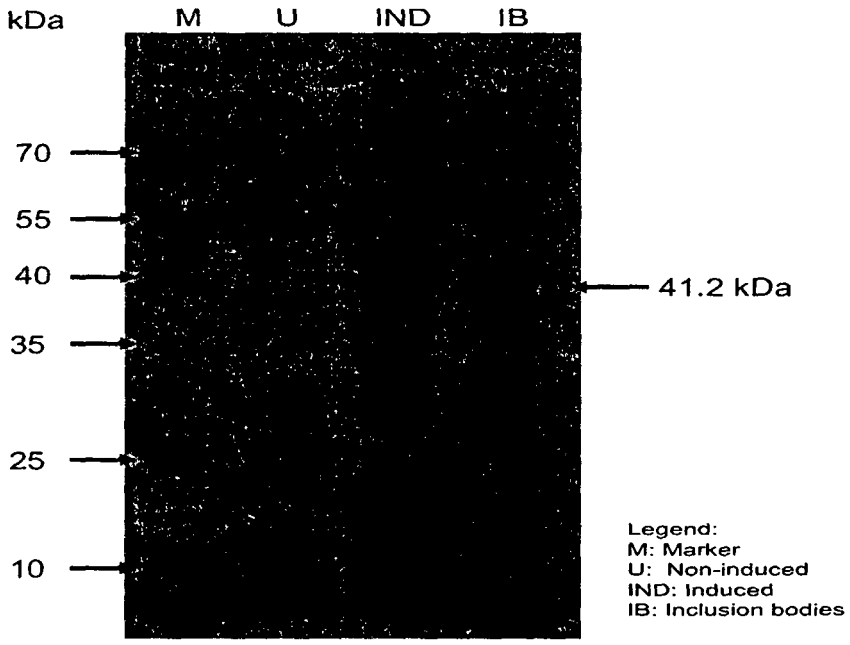
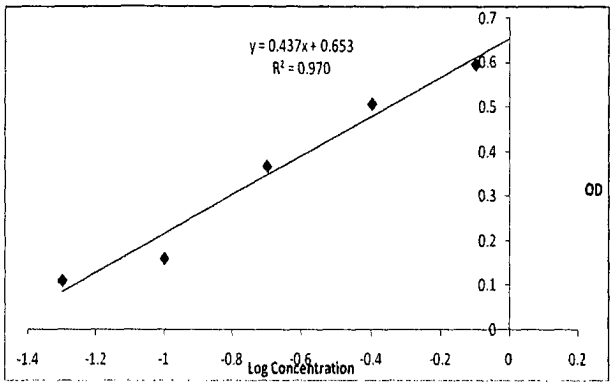

kDa
M
U
IND
IB
70
55
40
35
25
10
41.2 kDa
Legend:
M: Marker
U: Non-induced
IND: Induced
IB: Inclusion bodies

FIGURE 2

A



B

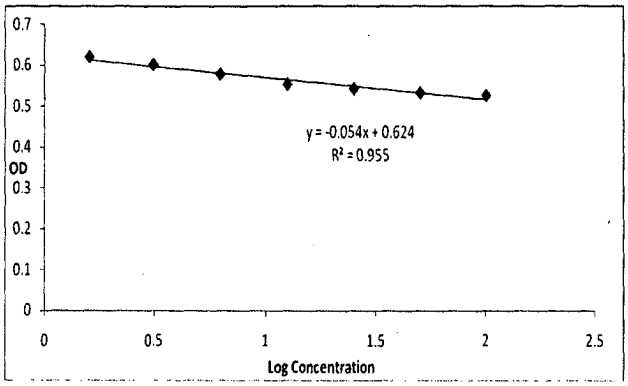
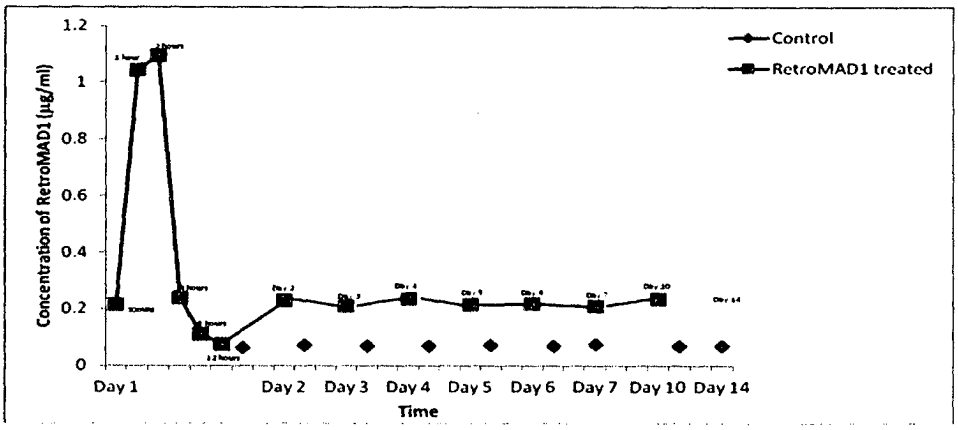


FIGURE 3

A



B

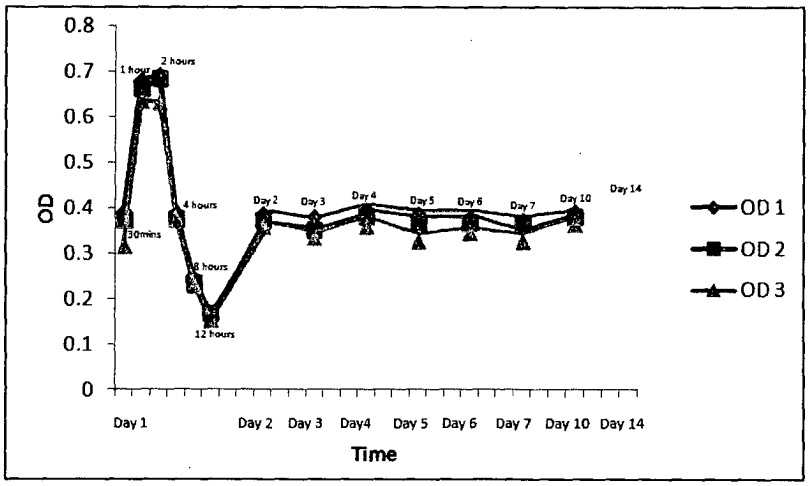
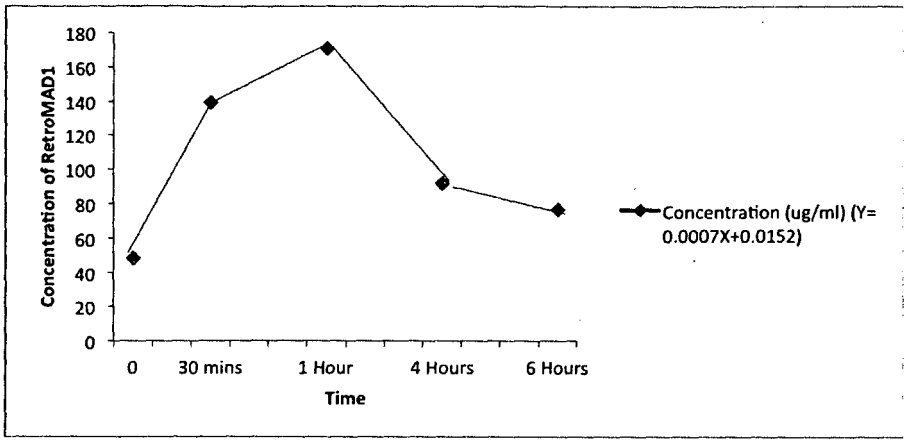
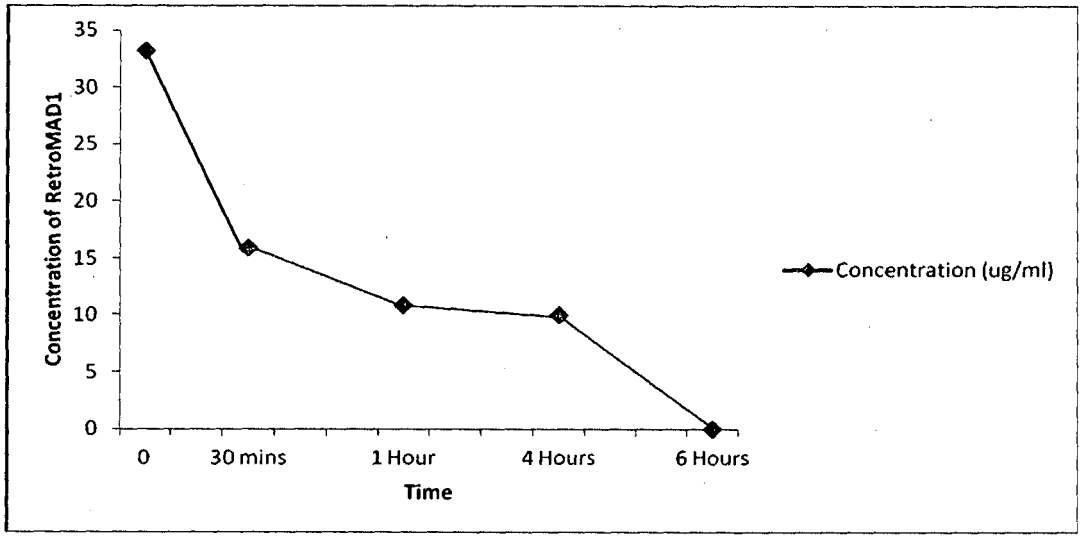


FIGURE 4

A


Concentration of RetroMAD1
180
160
140
120
100
80
60
40
20
0
0
30 mins
1 Hour
4 Hours
6 Hours
Time
Concentration (ug/ml) (Y= 0.0007X+0.0152)

B


Concentration of RetroMAD1
35
30
25
20
15
10
5
0
0
30 mins
1 Hour
4 Hours
6 Hours
Time
Concentration (ug/ml)

C

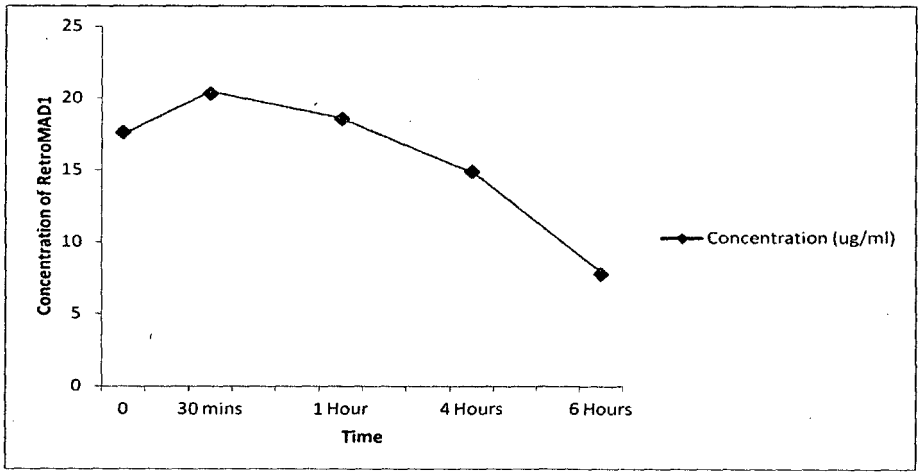

Concentration of RetroMAD1
25
20
15
10
5
0
0
30 mins
1 Hour
4 Hours
6 Hours
Time
Concentration (ug/ml)

FIGURE 5

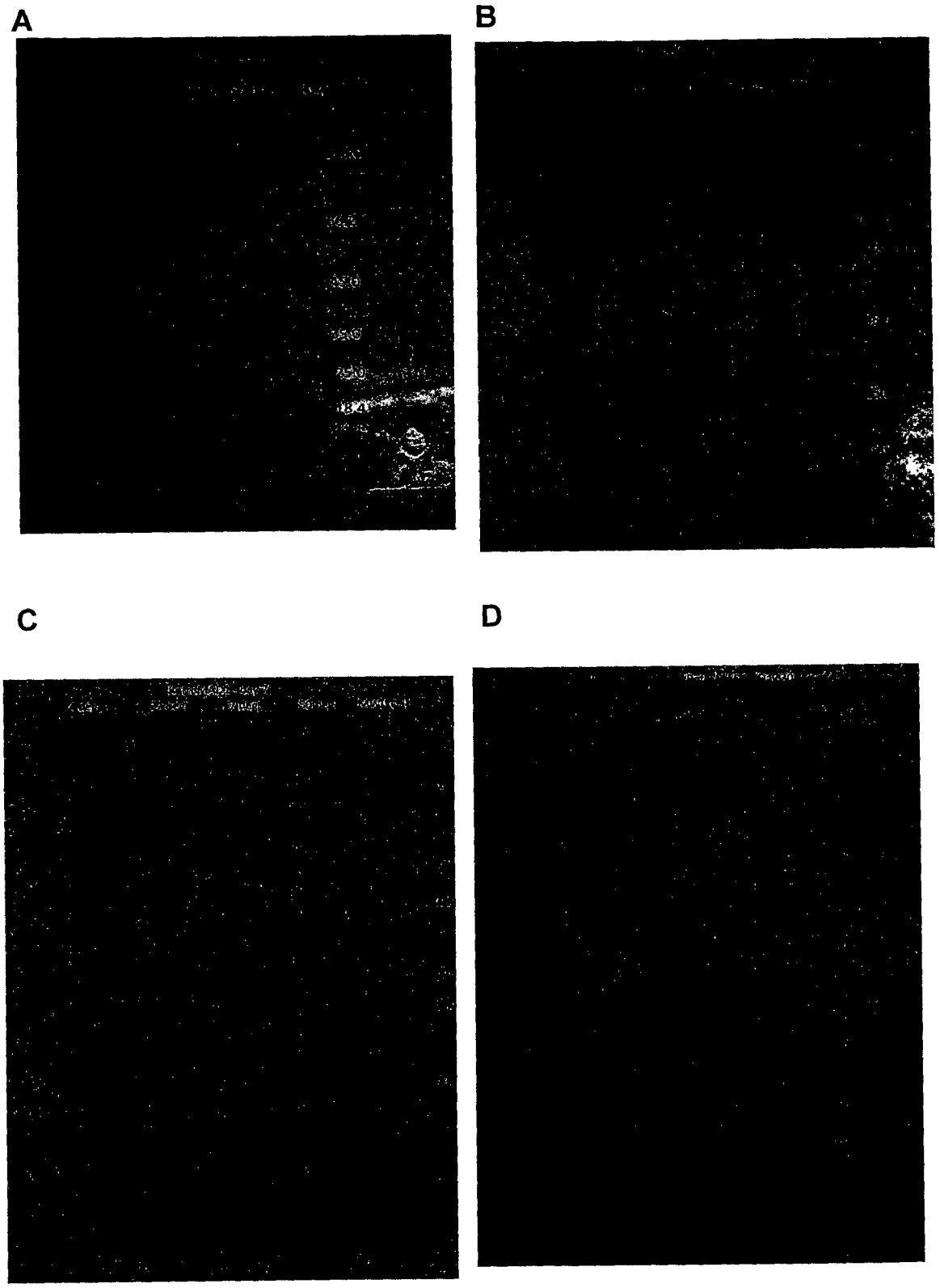
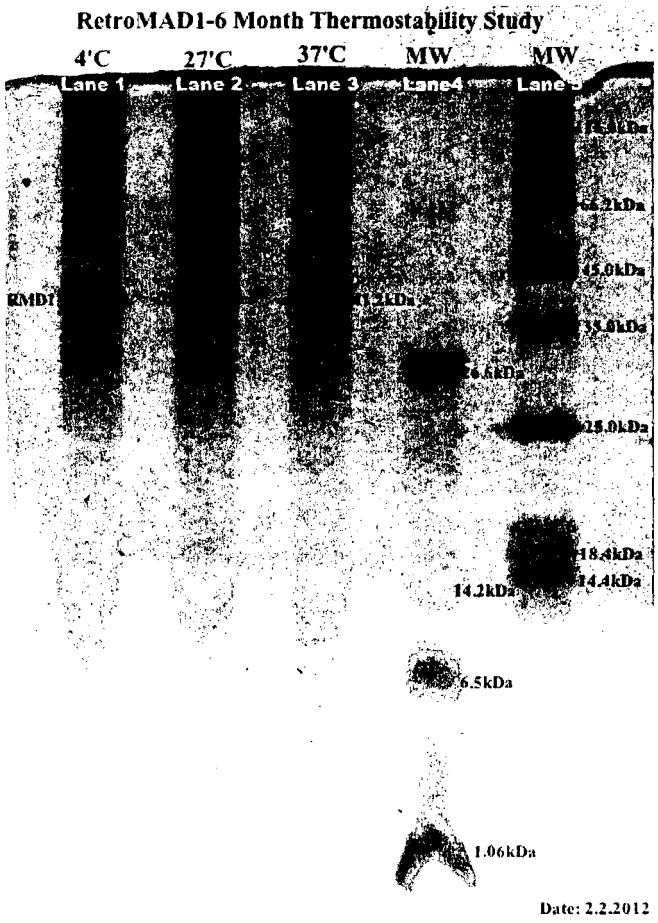


FIGURE 6

A


RetroMAD1-6 Month Thermostability Study
4'C
27'C
37'C
MW
MW
Lane 1
Lane 2
Lane 3
Lane4
Lane 5
RMD1
66.2kDa
45.0kDa
35.0kDa
25.0kDa
18.4kDa
14.4kDa
14.2kDa
6.5kDa
1.06kDa
Date: 2.2.2012

B

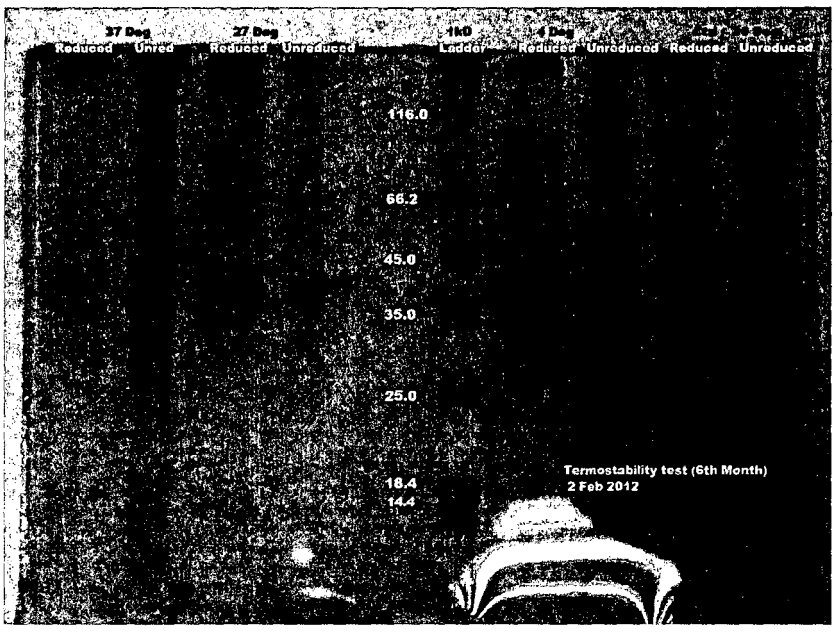

37 Deg
Reduced
Unred
27 Deg
Reduced
Unreduced
1kD
Ladder
4 Deg
Reduced
Unreduced
Reduced
Unreduced
116.0
66.2
45.0
35.0
25.0
18.4
14.4
Termostability test (6th Month)
2 Feb 2012

FIGURE 7

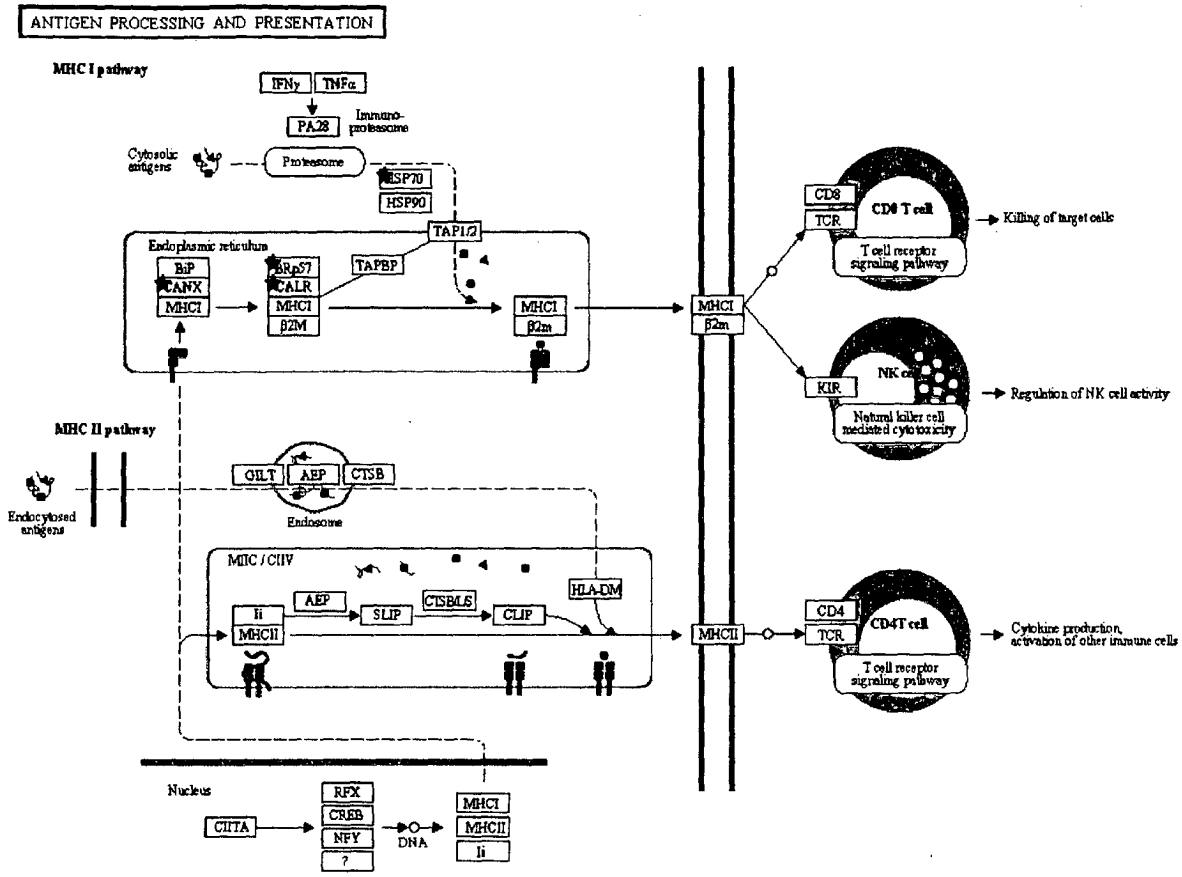
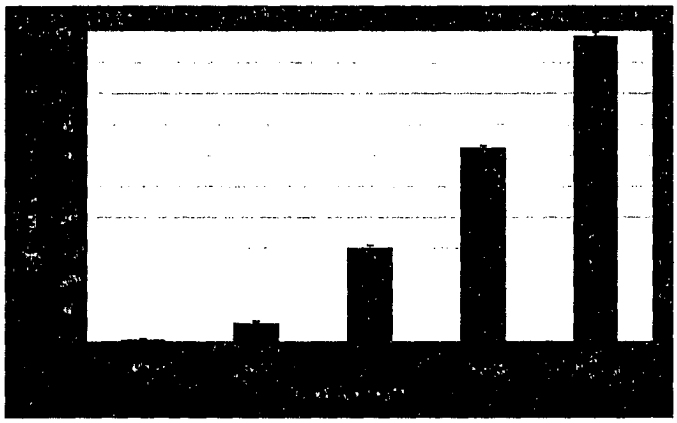


FIGURE 8

A



B

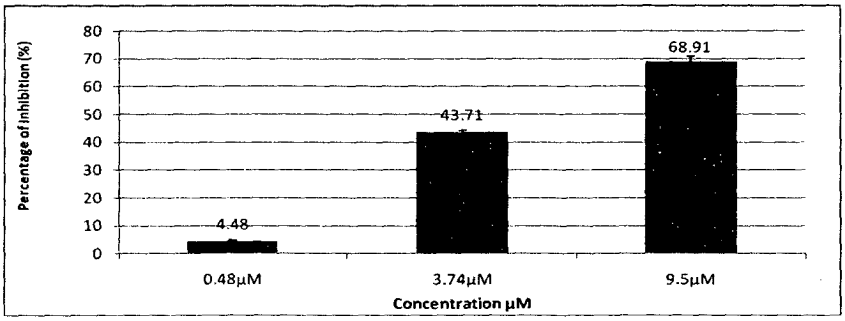


FIGURE 9

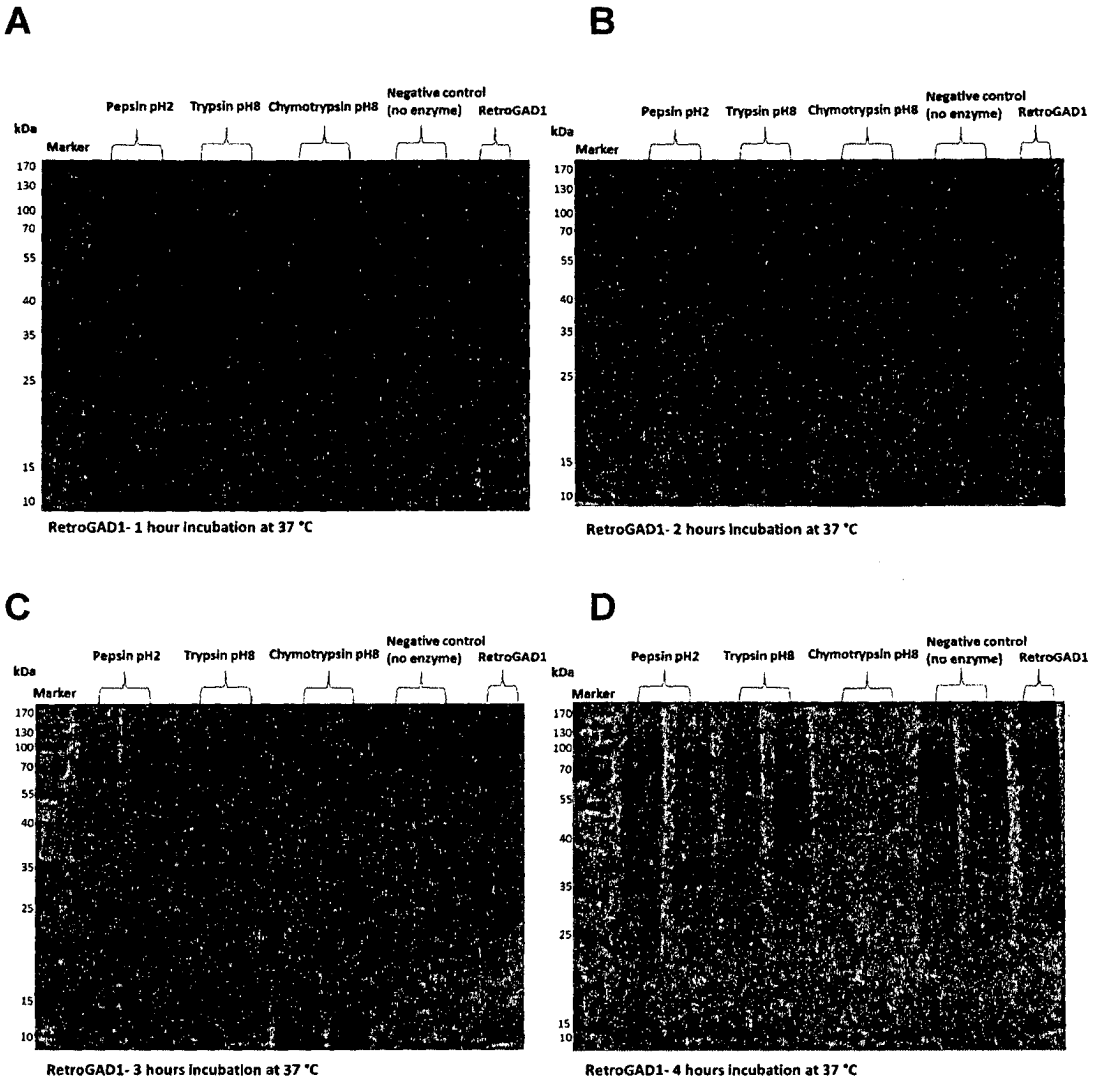

A
B
C
D
Pepsin pH2
Trypsin pH8
Chymotrypsin pH8
Negative control (no enzyme)
RetroGAD1
kDa
Marker
170
130
100
70
55
40
35
25
15
10
RetroGAD1- 1 hour incubation at 37 °C
RetroGAD1- 2 hours incubation at 37 °C
RetroGAD1- 3 hours incubation at 37 °C
RetroGAD1- 4 hours incubation at 37 °C

FIGURE 10

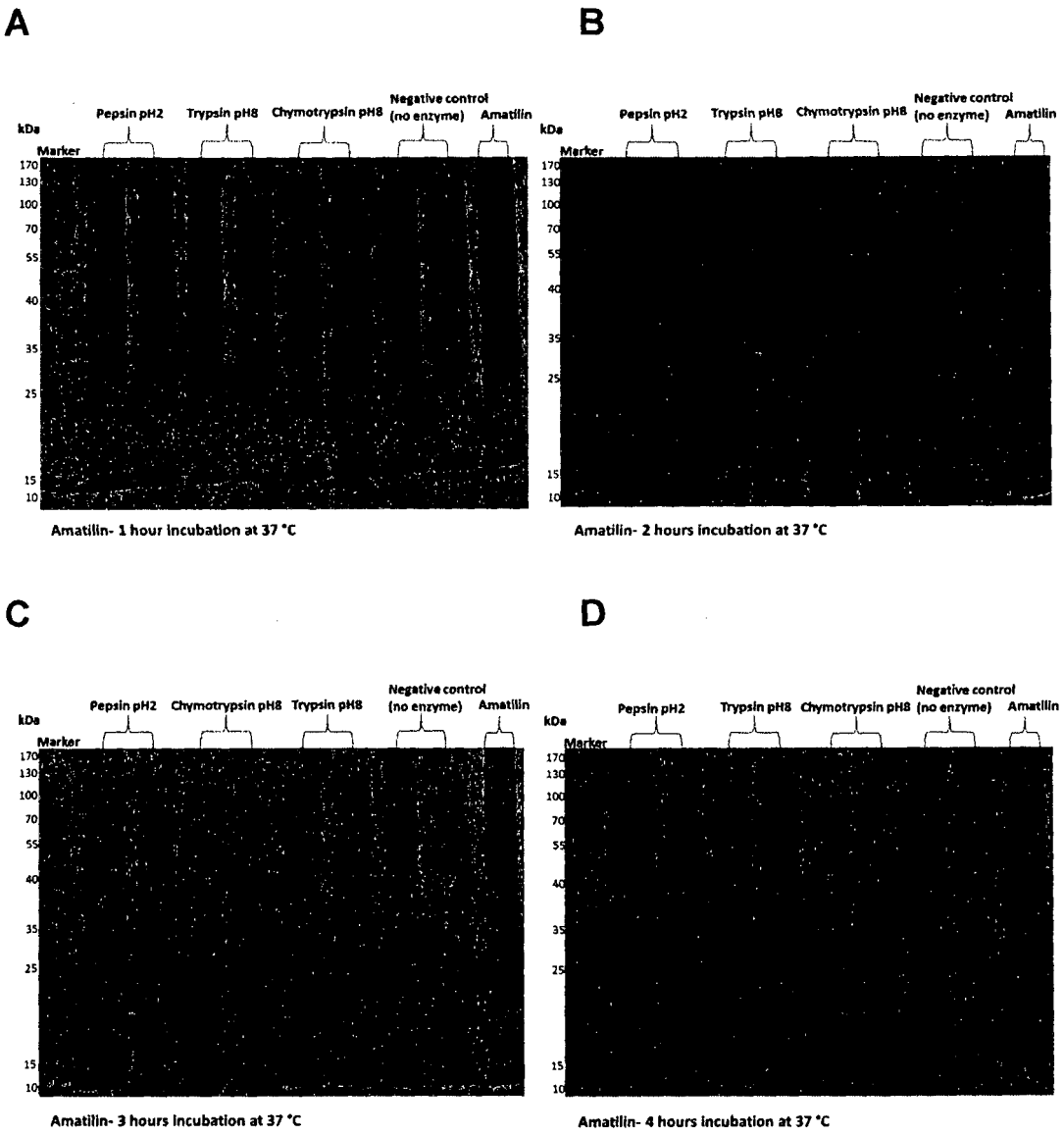

A
B
C
D
Pepsin pH2
Trypsin pH8
Chymotrypsin pH8
Negative control (no enzyme)
Amatilin
kDa
Marker
170
130
100
70
55
40
35
25
15
10
Amatilin- 1 hour incubation at 37 °C
Amatilin- 2 hours incubation at 37 °C
Amatilin- 3 hours incubation at 37 °C
Amatilin- 4 hours incubation at 37 °C

FIGURE 11

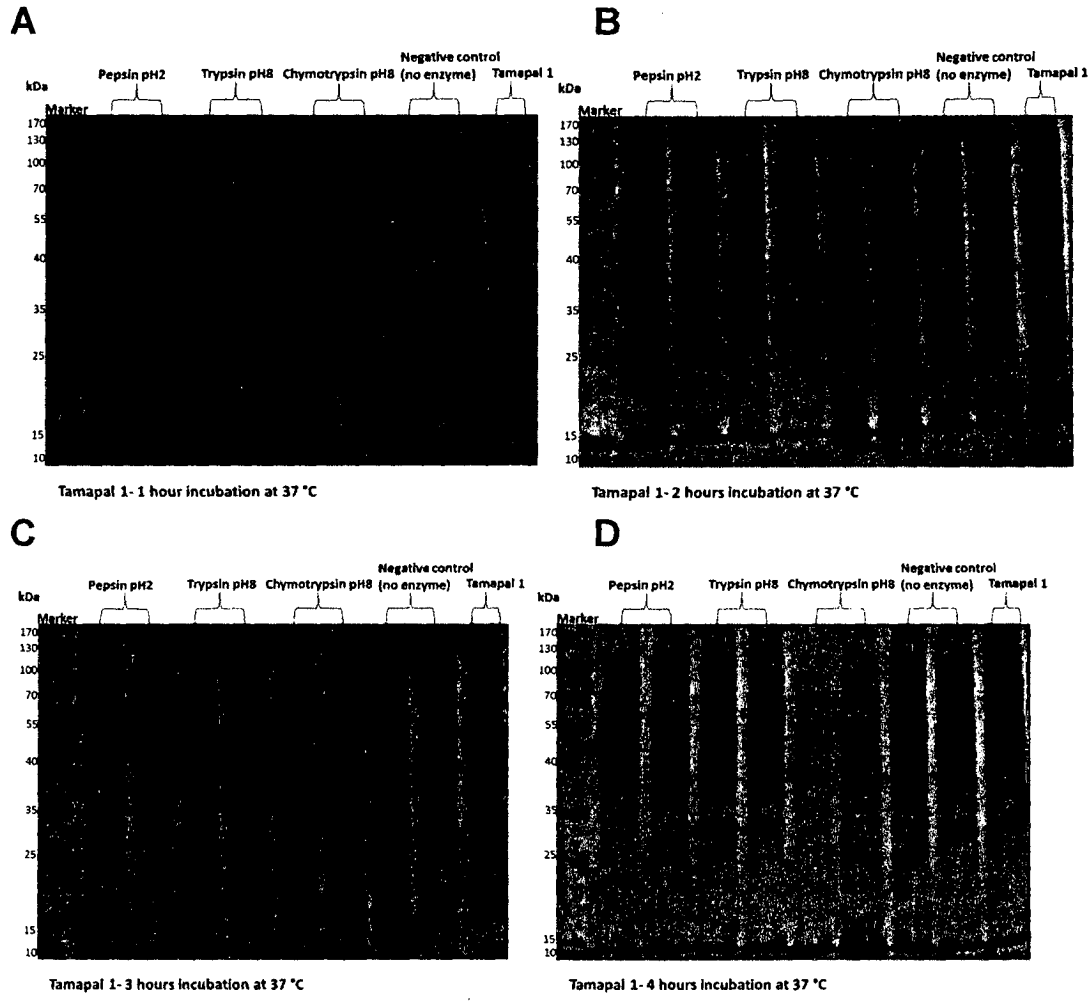


FIGURE 12

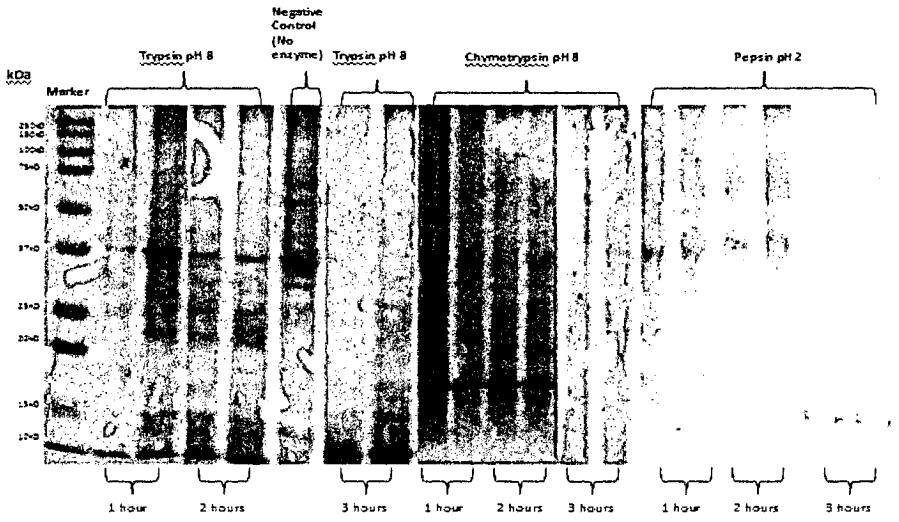
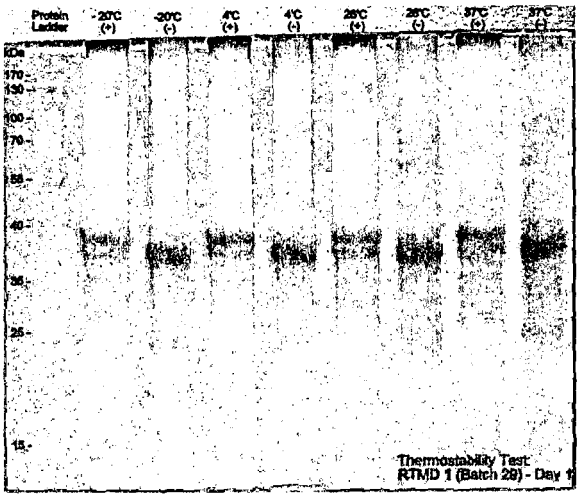


FIGURE 13

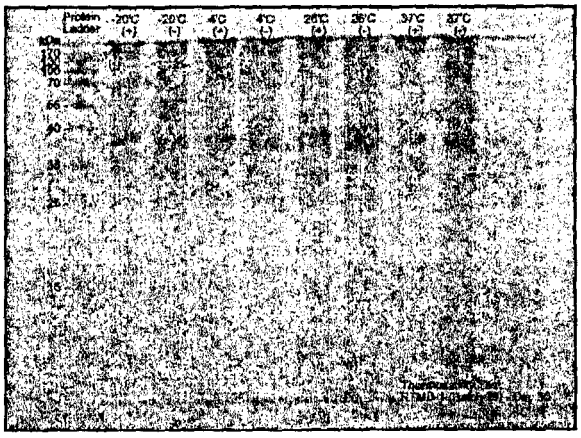
A



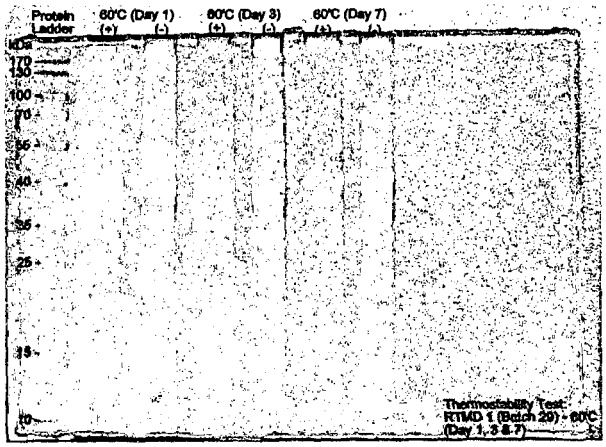
B



C



D



E

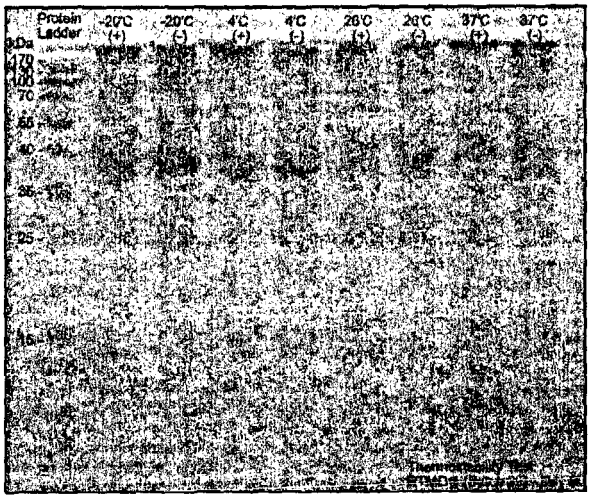


FIGURE 14

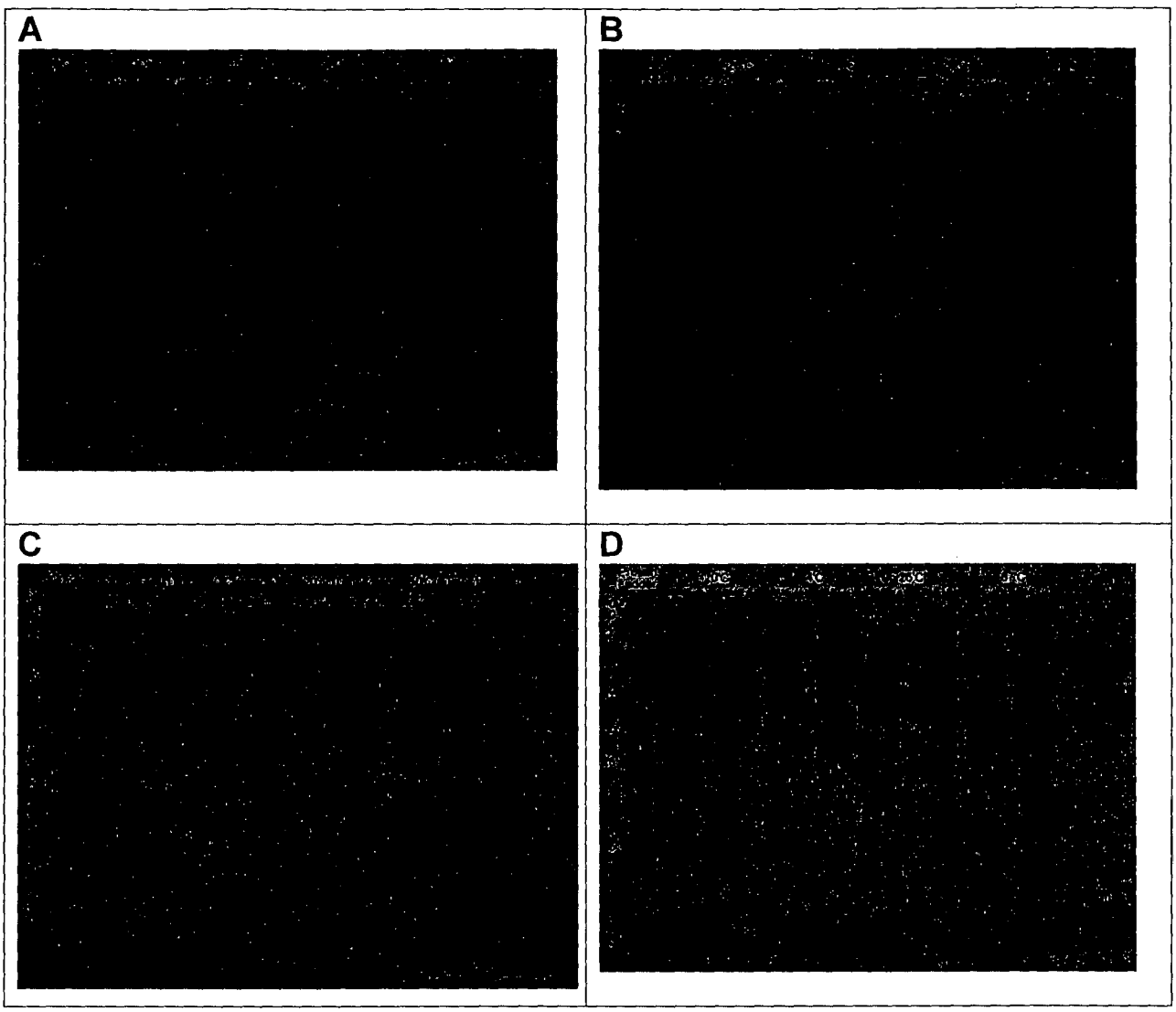


FIGURE 15

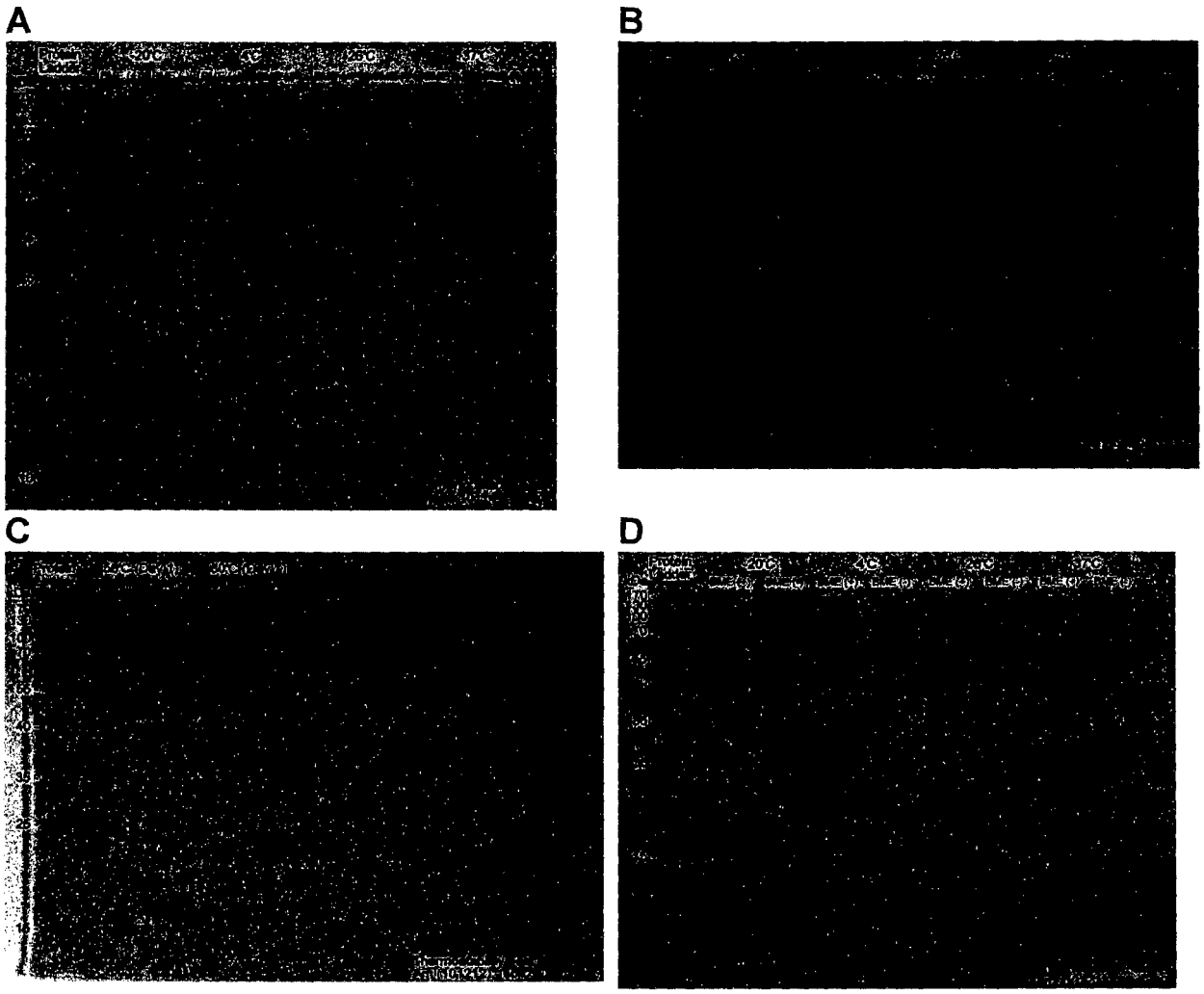


FIGURE 16

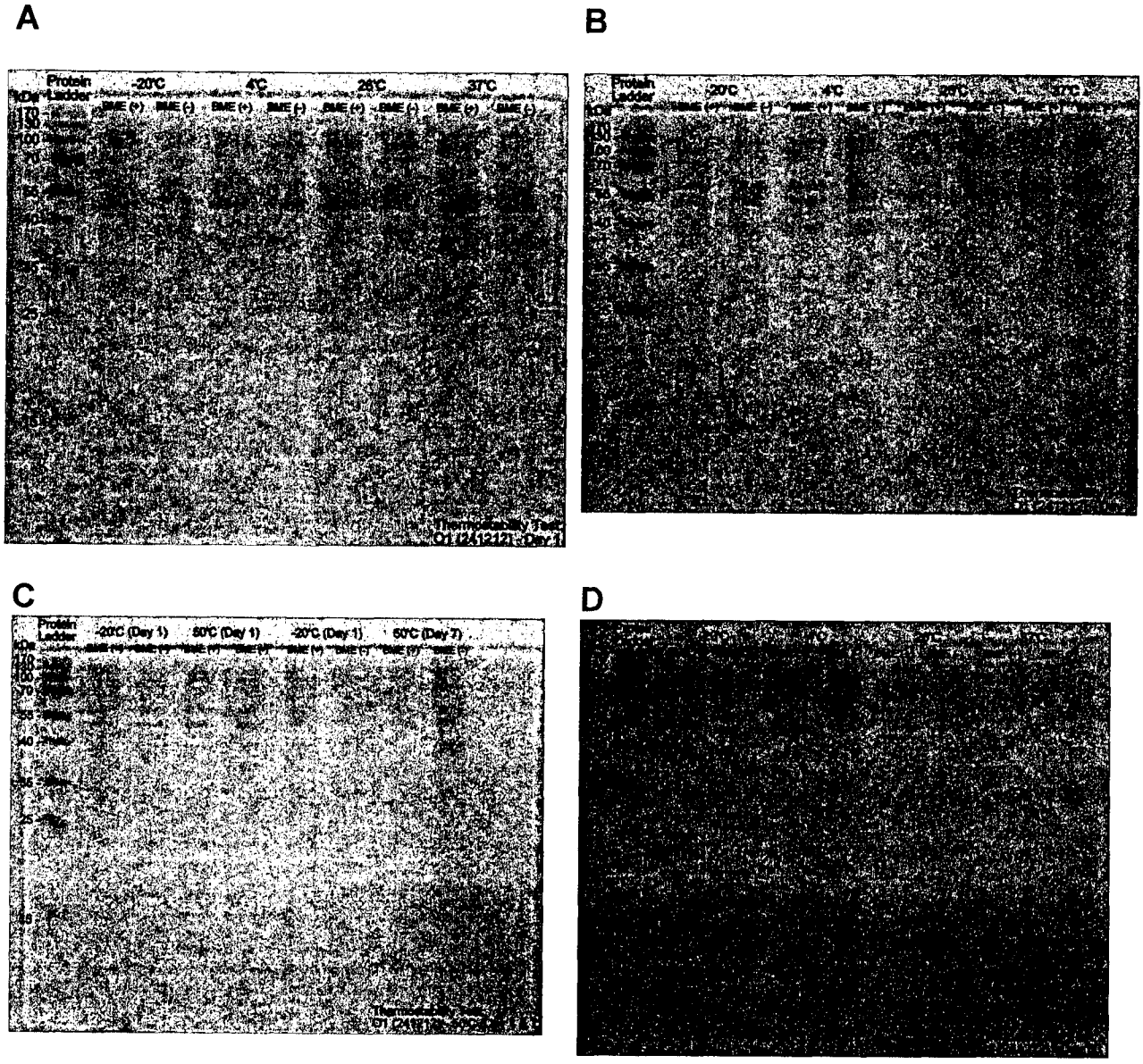


FIGURE 17

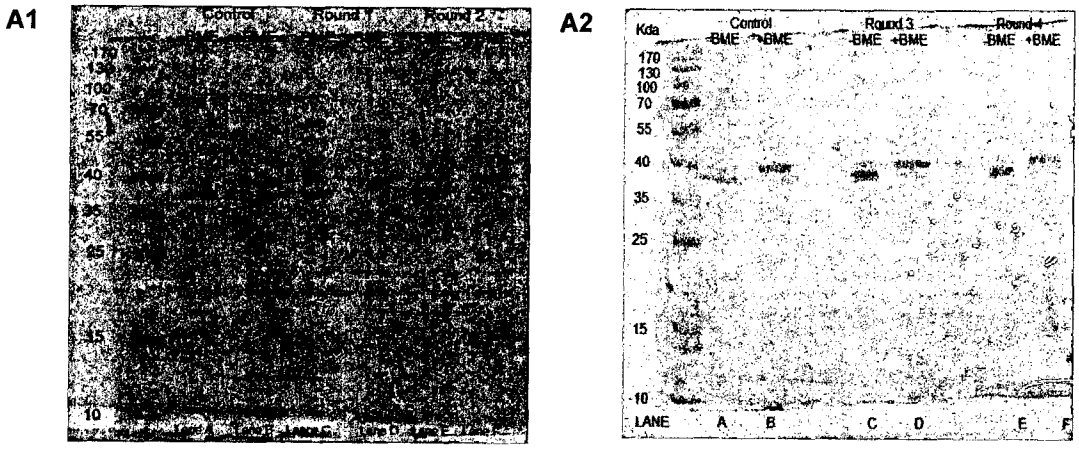


FIGURE 18 (CONTINUED)

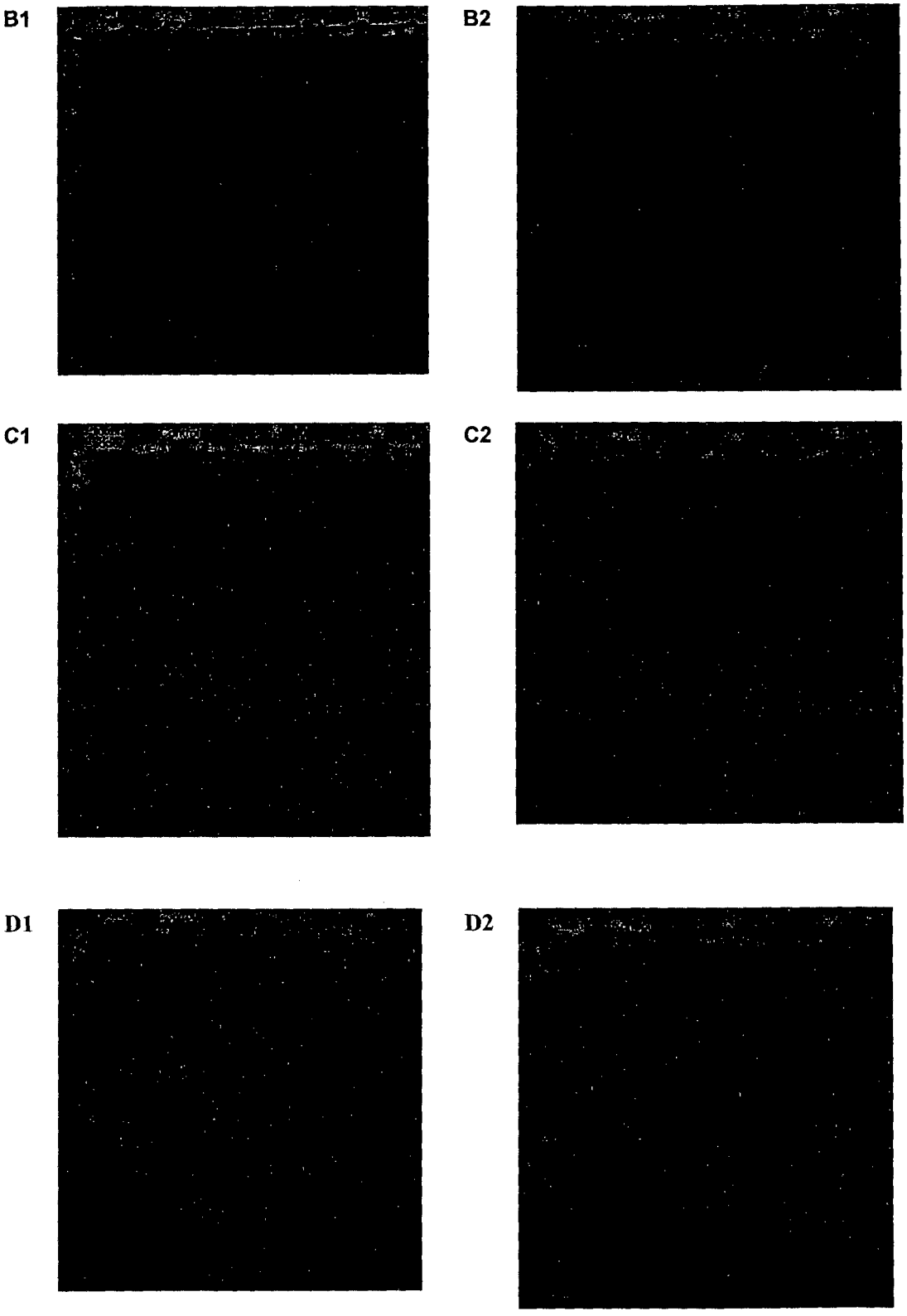
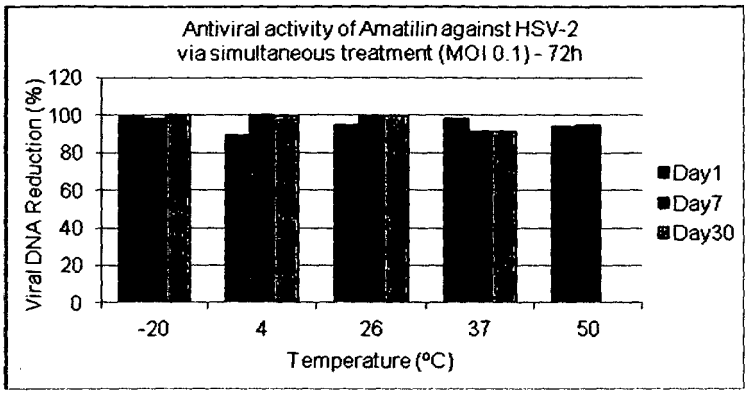
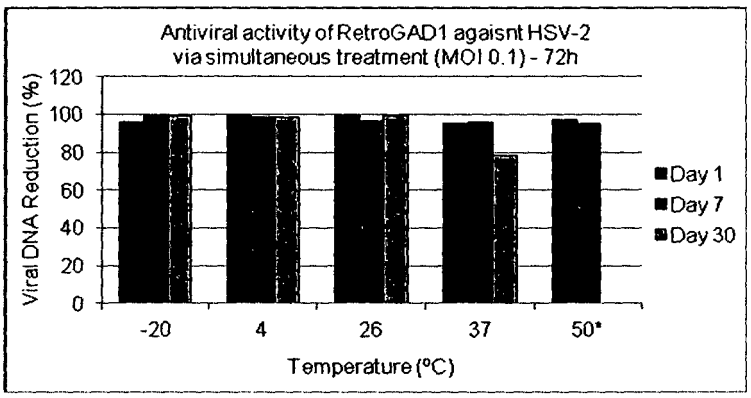


FIGURE 18 (CONTINUED)

A



B



C

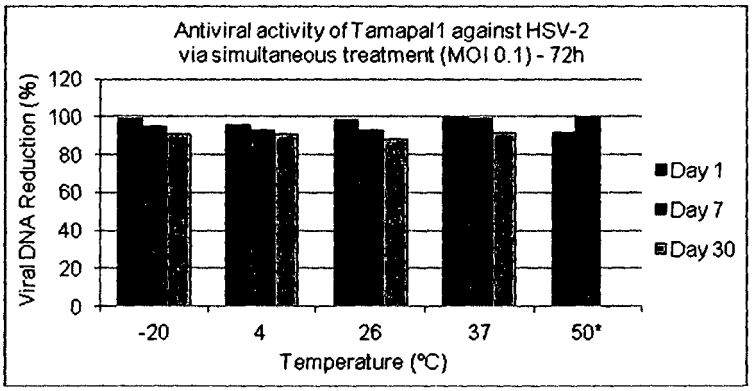


FIGURE 19

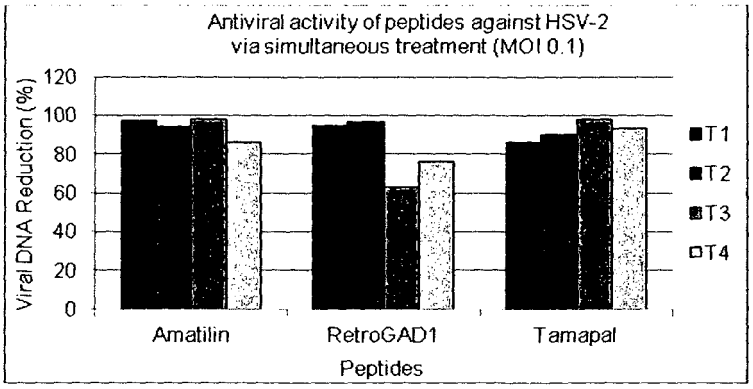
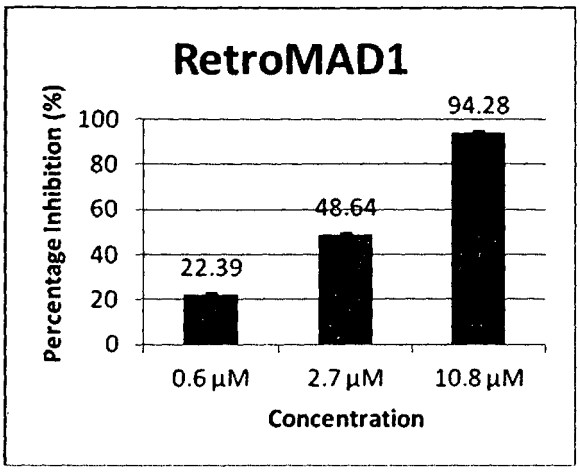
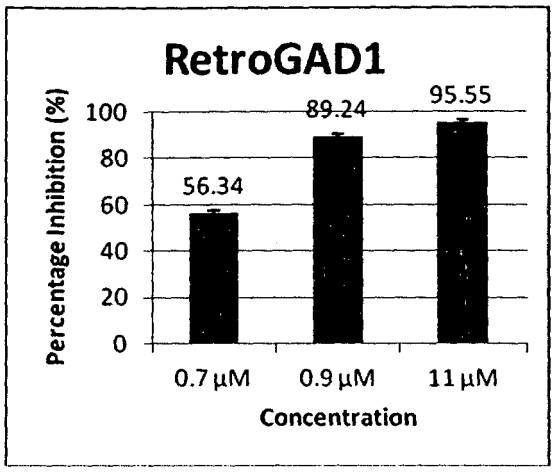


FIGURE 20

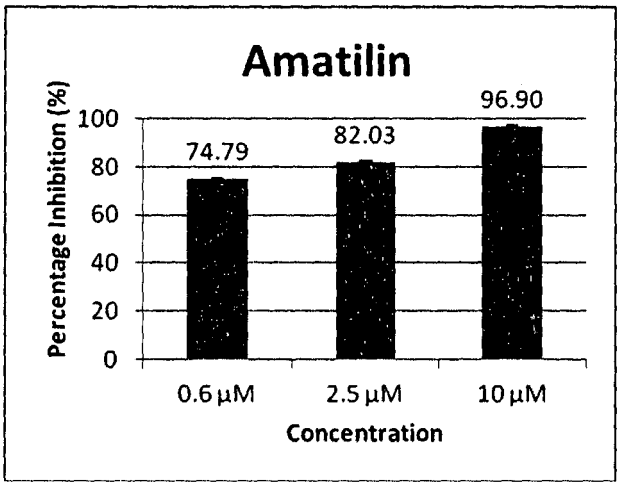
A



B



C



D

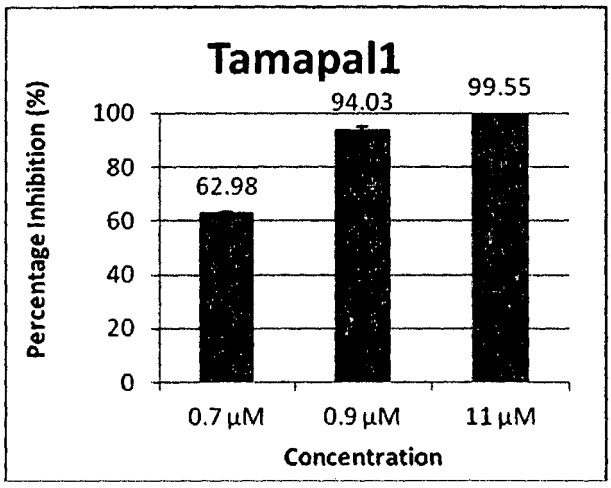


FIGURE 21

A

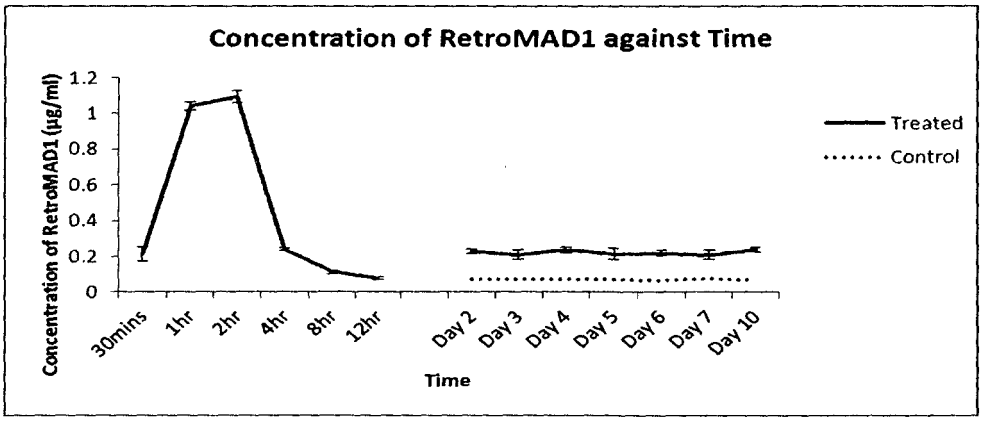
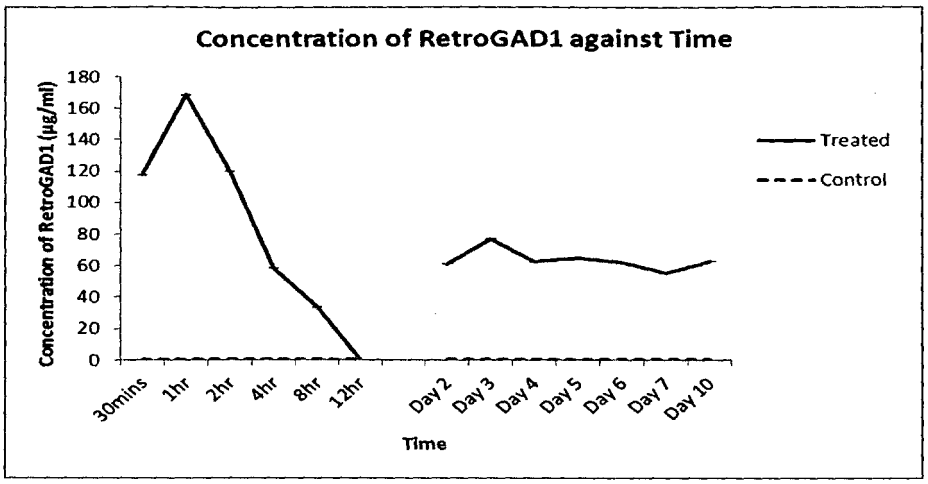
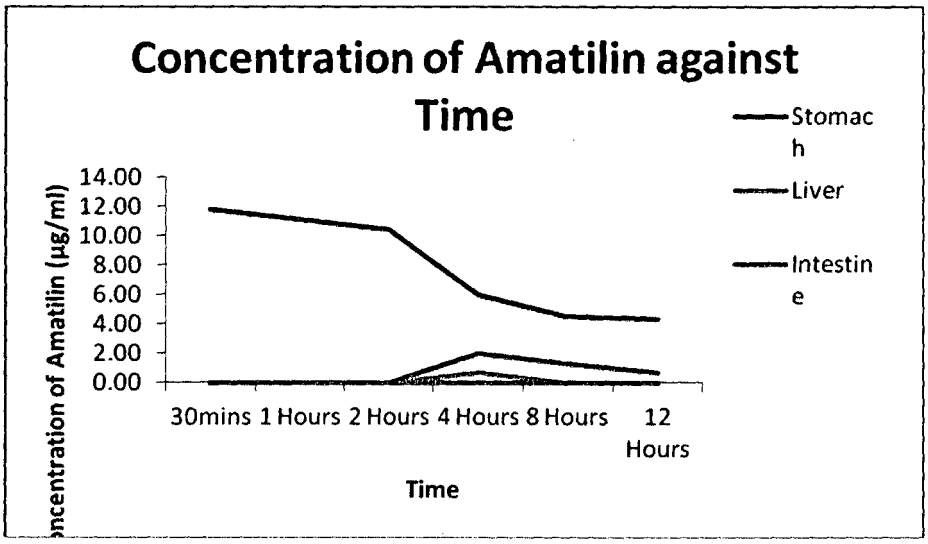


FIGURE 22 (CONTINUED)

B



C



D

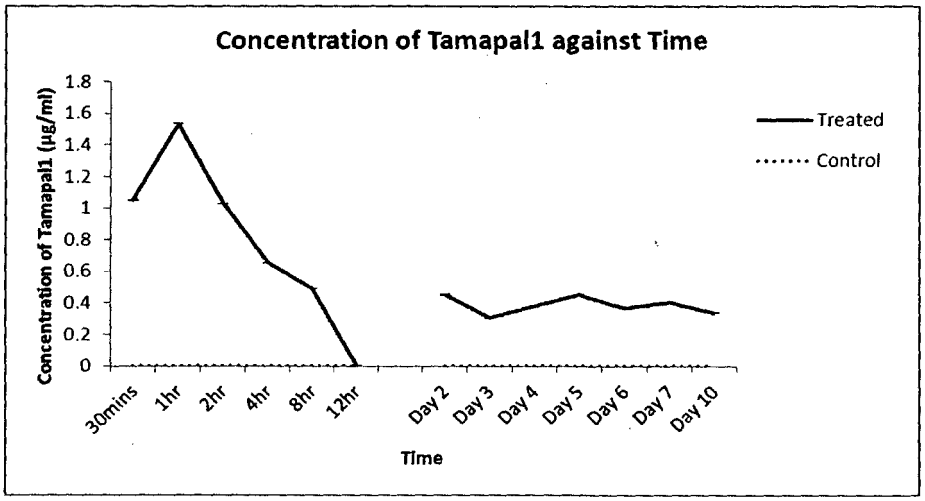
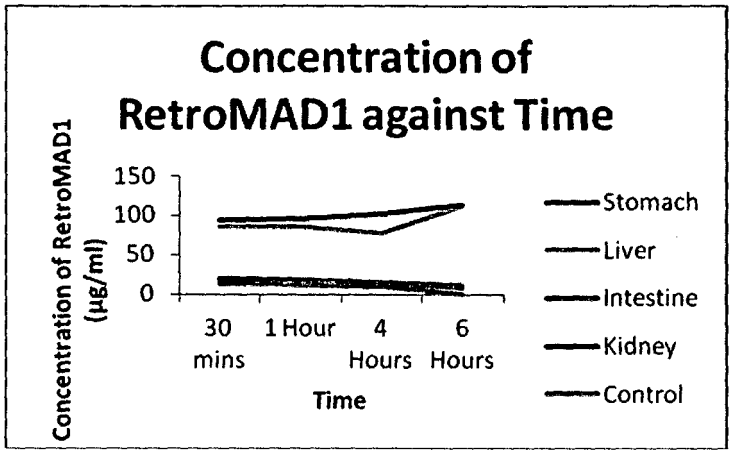
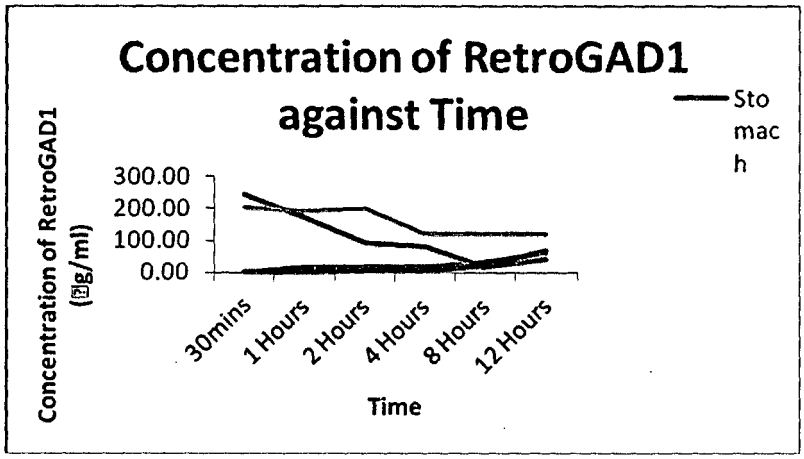


FIGURE 22 (CONTINUED)

A



B



C

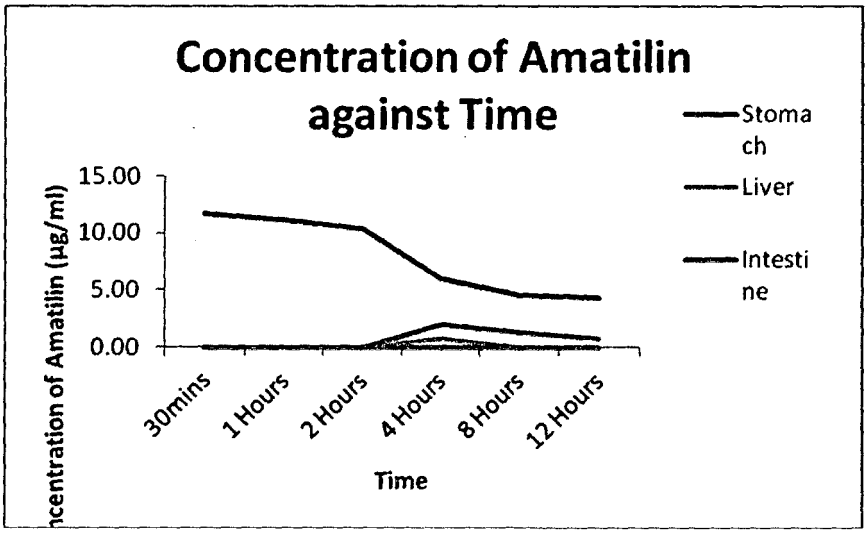


FIGURE 23 (CONTINUED)

D

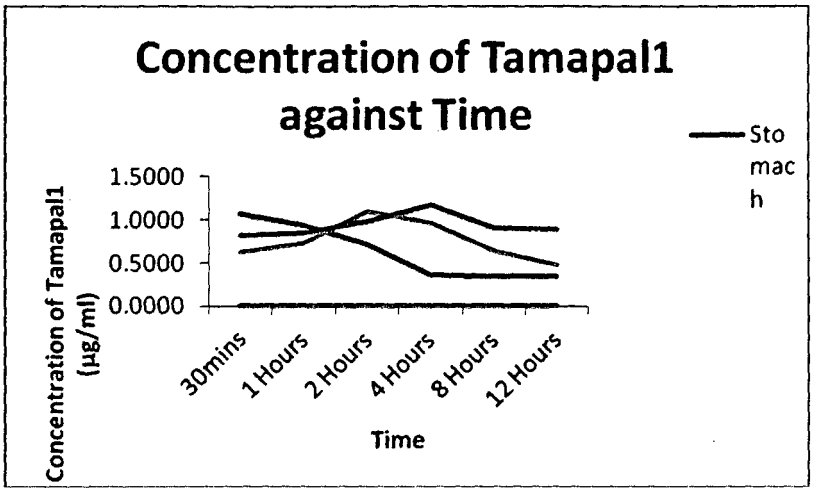
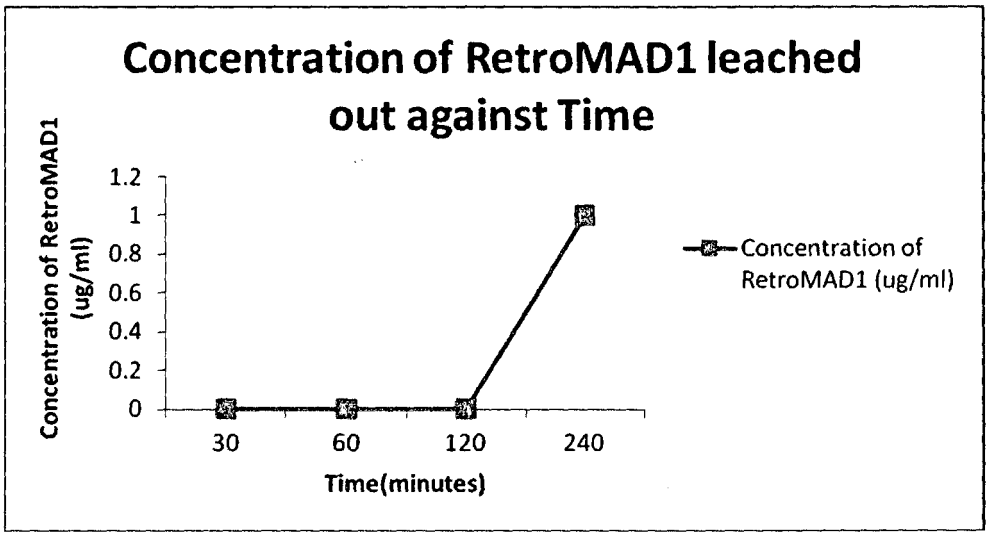


FIGURE 23 (CONTINUED)

A



B

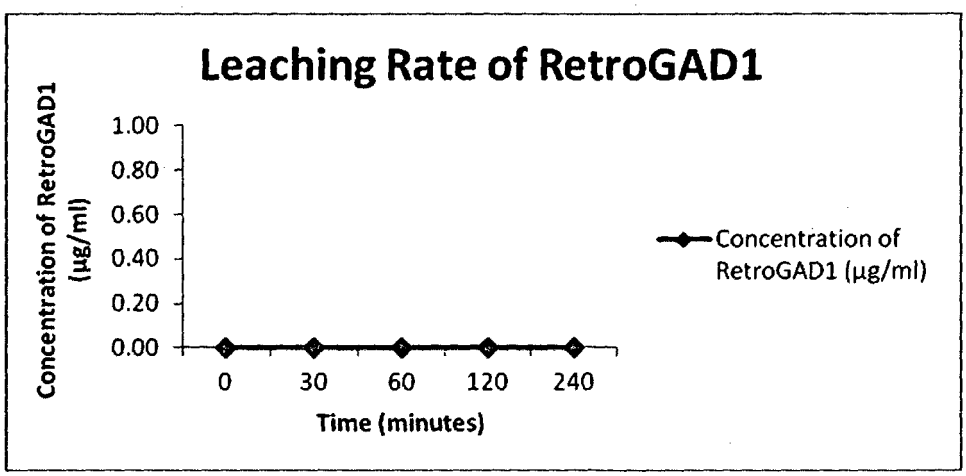
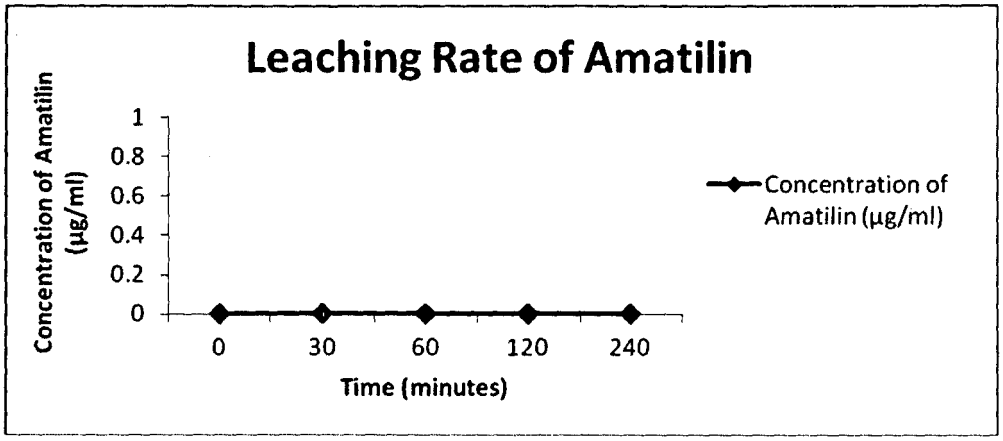


FIGURE 24 (CONTINUED)

C



D

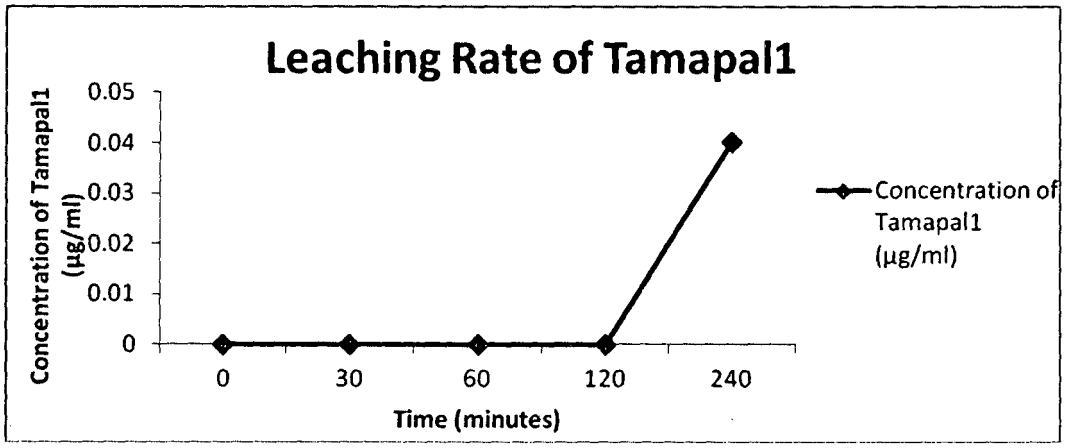


FIGURE 24 (CONTINUED)

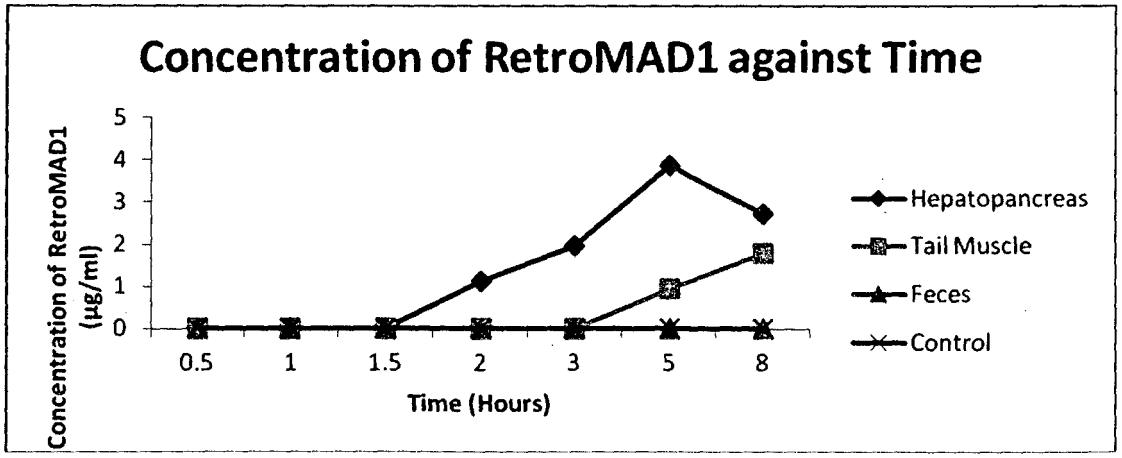


FIGURE 25

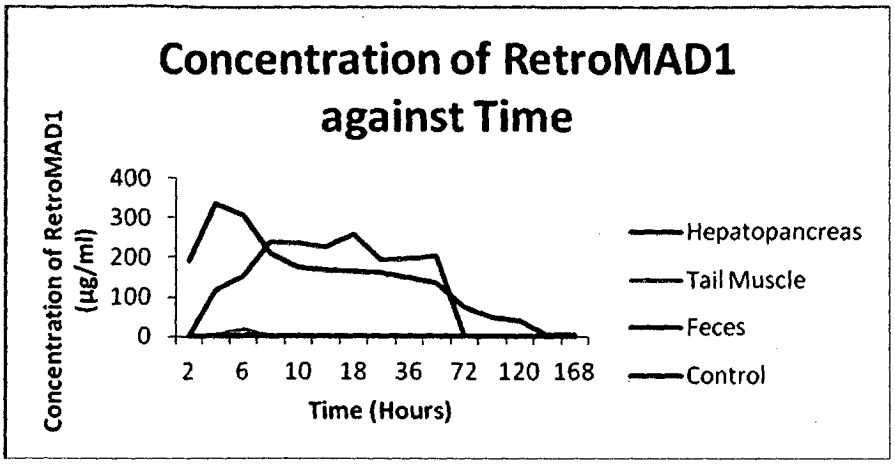


FIGURE 26

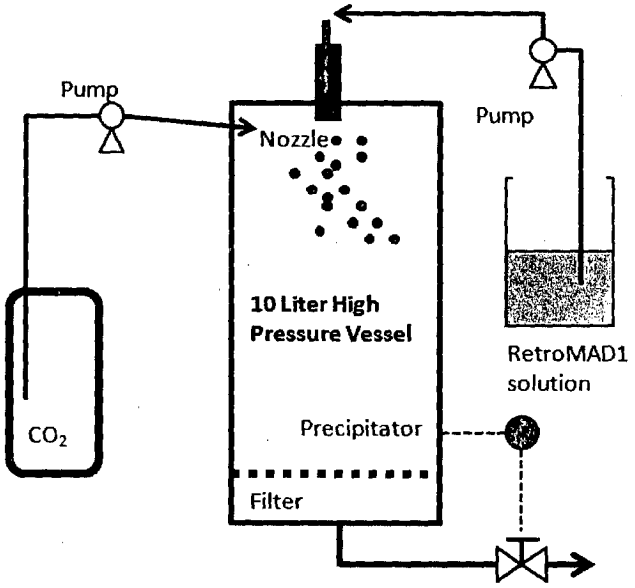


FIGURE 27

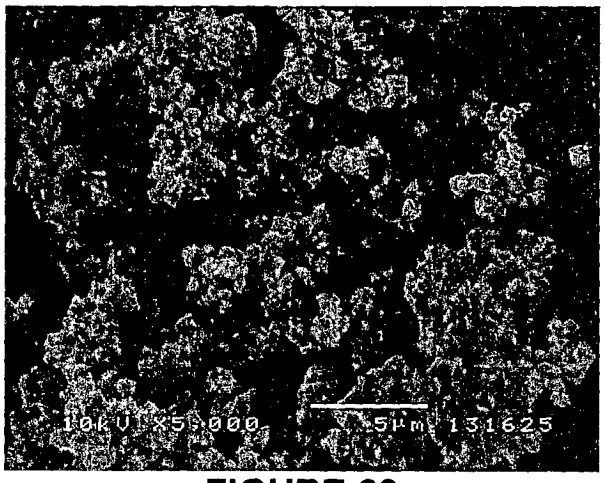


FIGURE 28

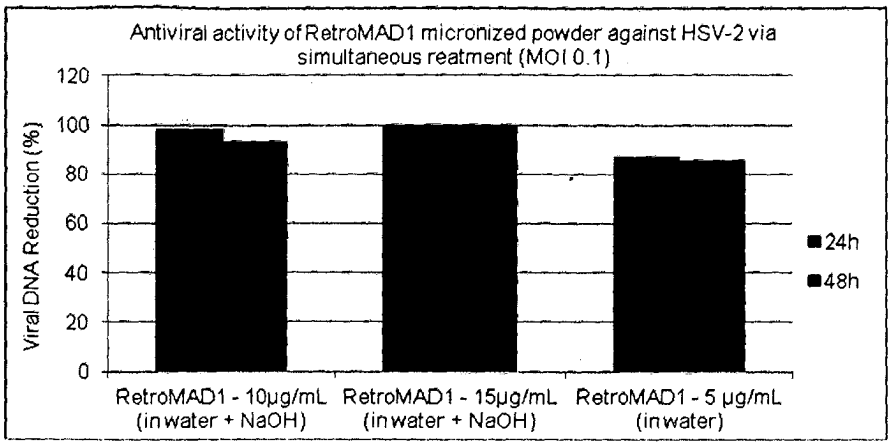


FIGURE 29

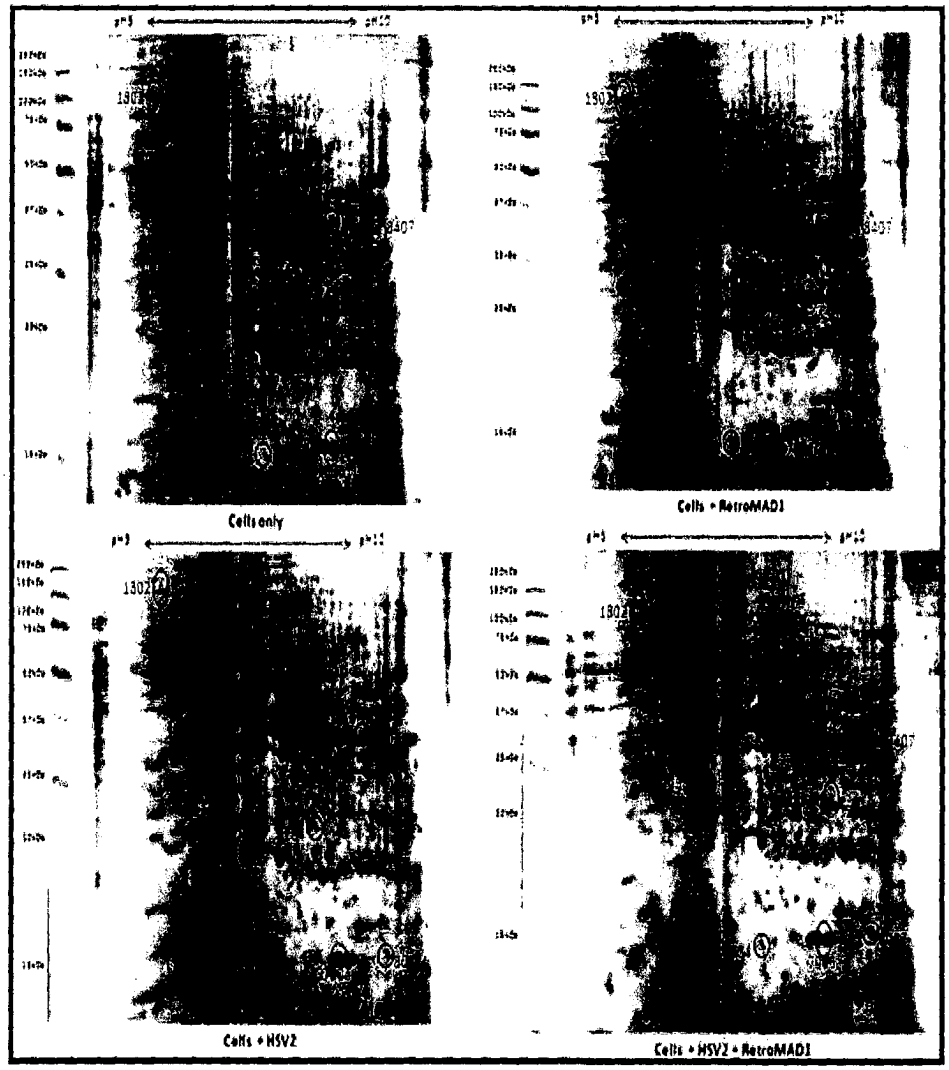


FIGURE 30

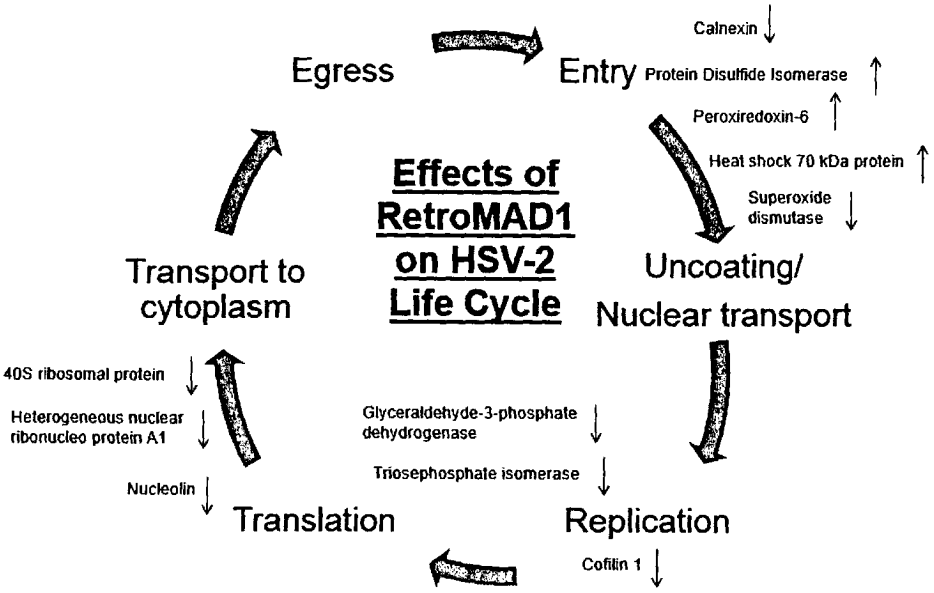


FIGURE 31

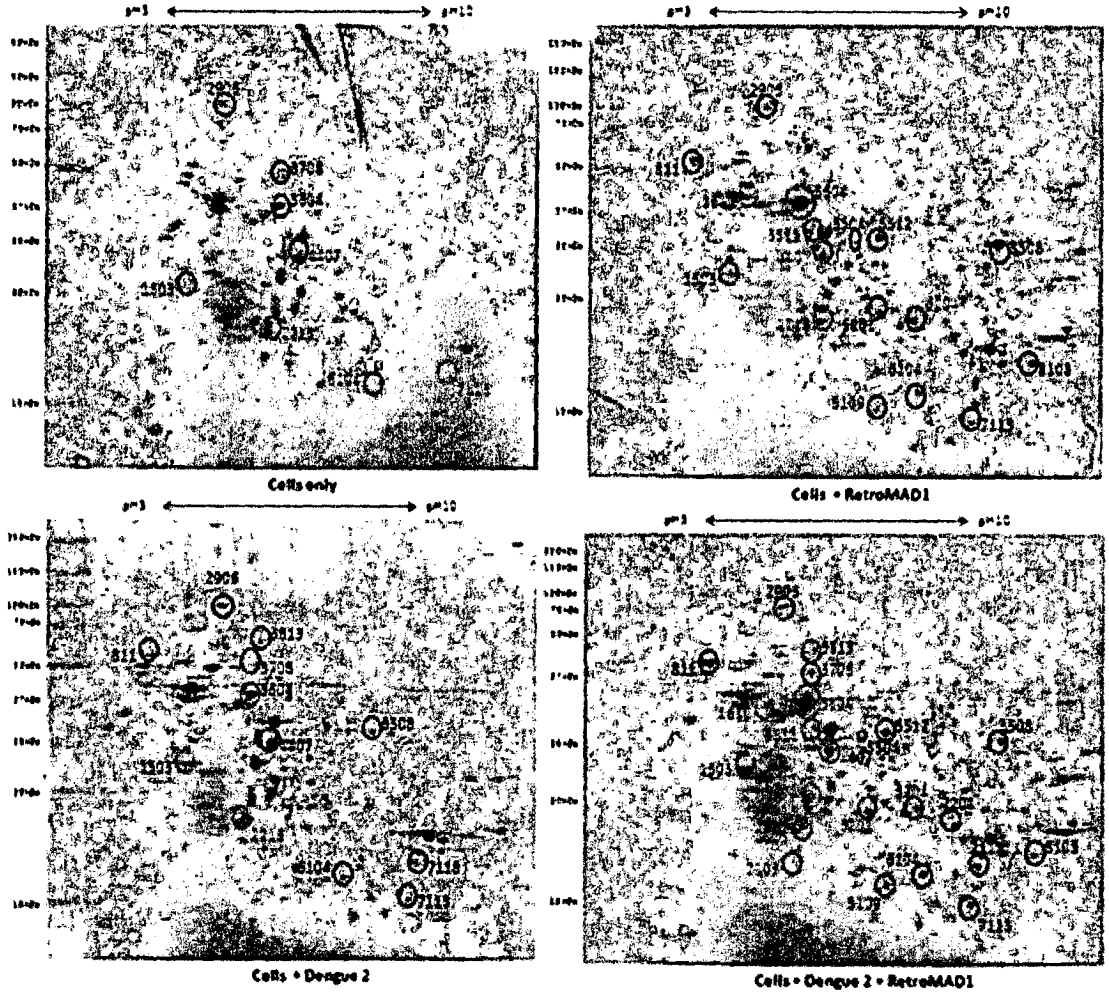


FIGURE 32

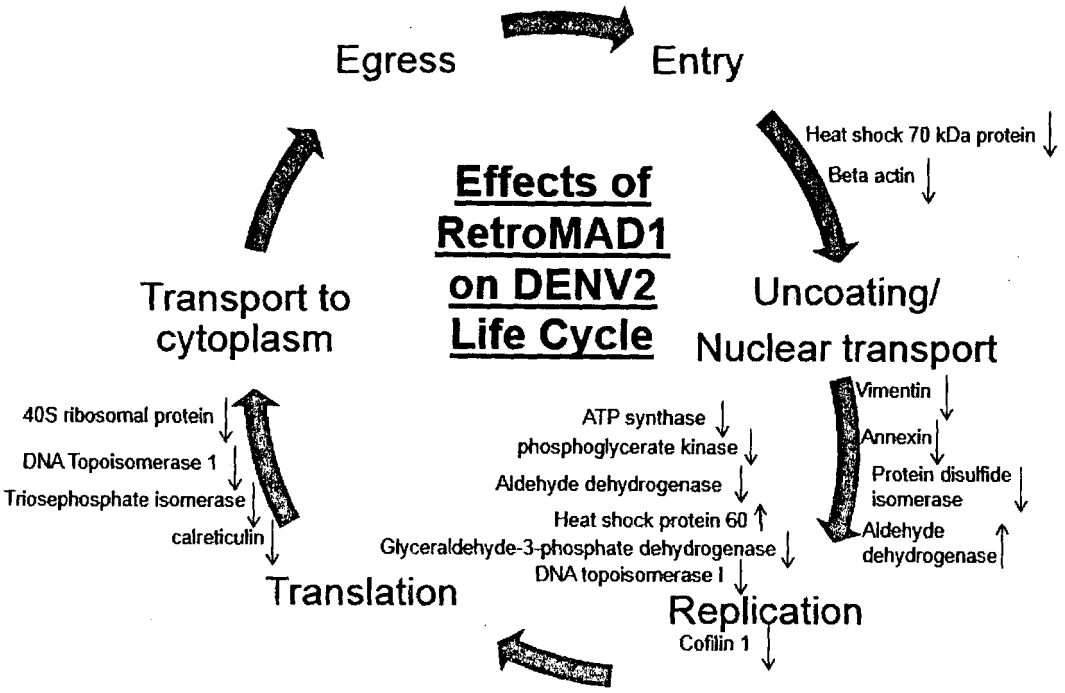

Egress
Entry
Effects of RetroMAD1 on DENV2 Life Cycle
Heat shock 70 kDa protein
Beta actin
Uncoating/ Nuclear transport
Vimentin
Annexin
Protein disulfide isomerase
Aldehyde dehydrogenase
ATP synthase
phosphoglycerate kinase
Aldehyde dehydrogenase
Heat shock protein 60
Glyceraldehyde-3-phosphate dehydrogenase
DNA topoisomerase I
Replication
Cofilin 1
Translation
40S ribosomal protein
DNA Topoisomerase 1
Triosephosphate isomerase
calreticulin
Transport to cytoplasm

FIGURE 33