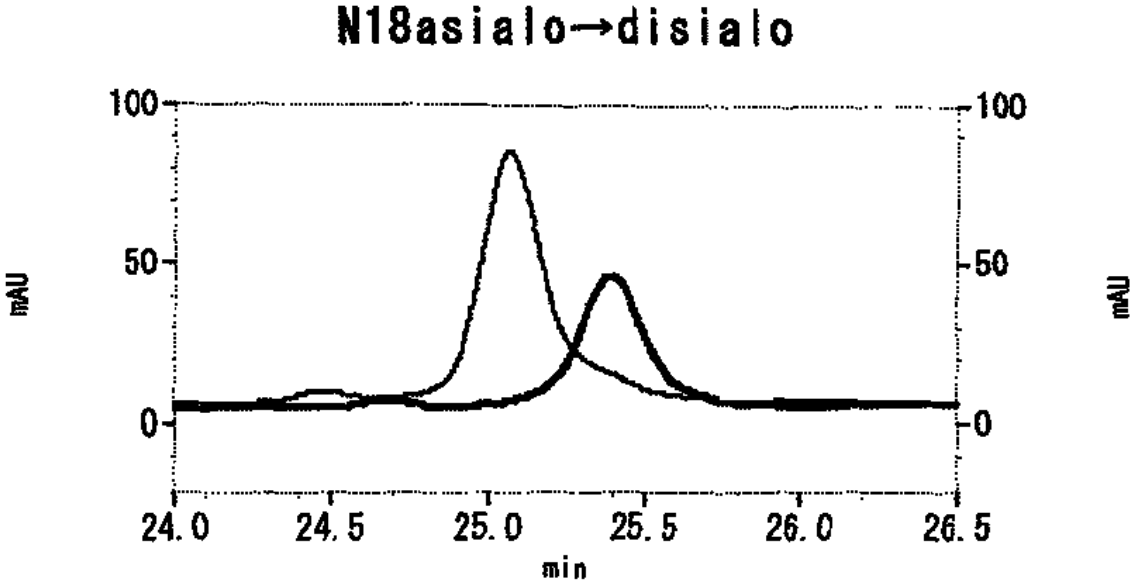
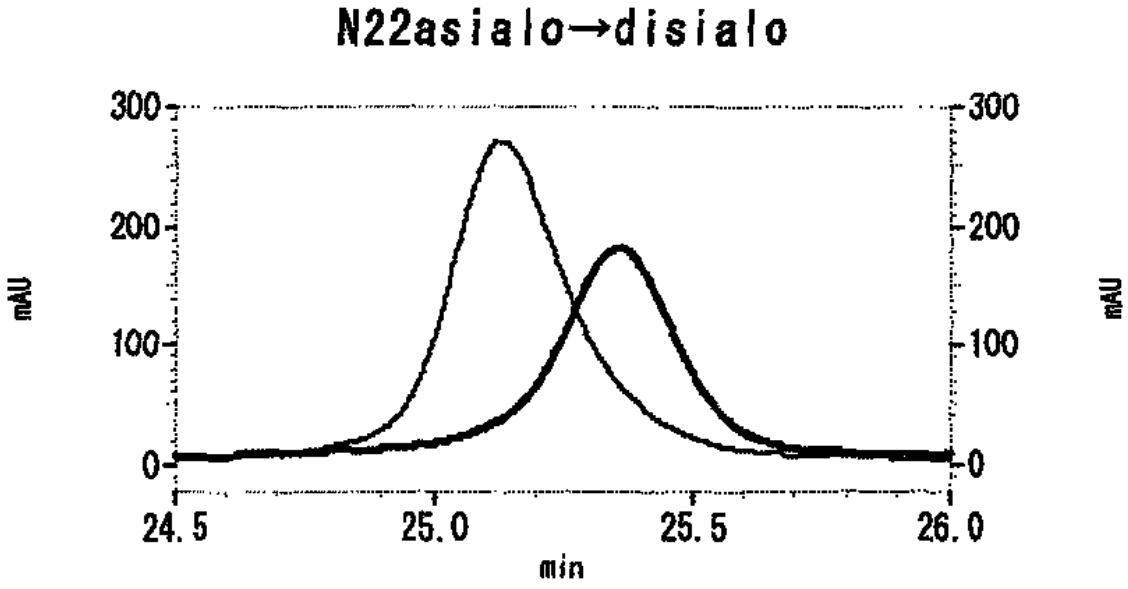
FIGURES

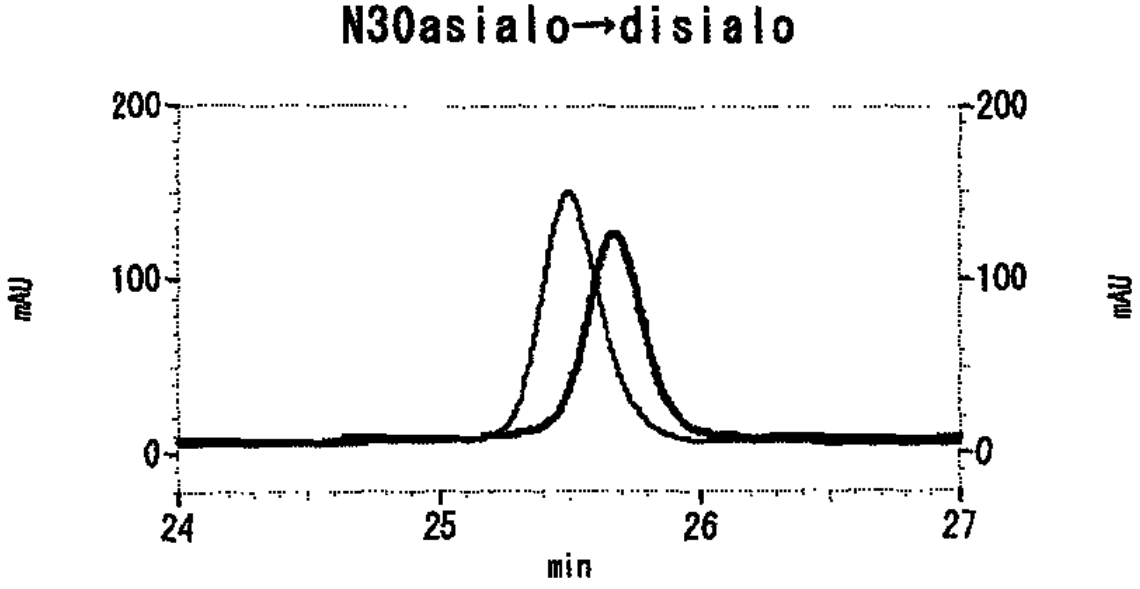
[FIG. 1]



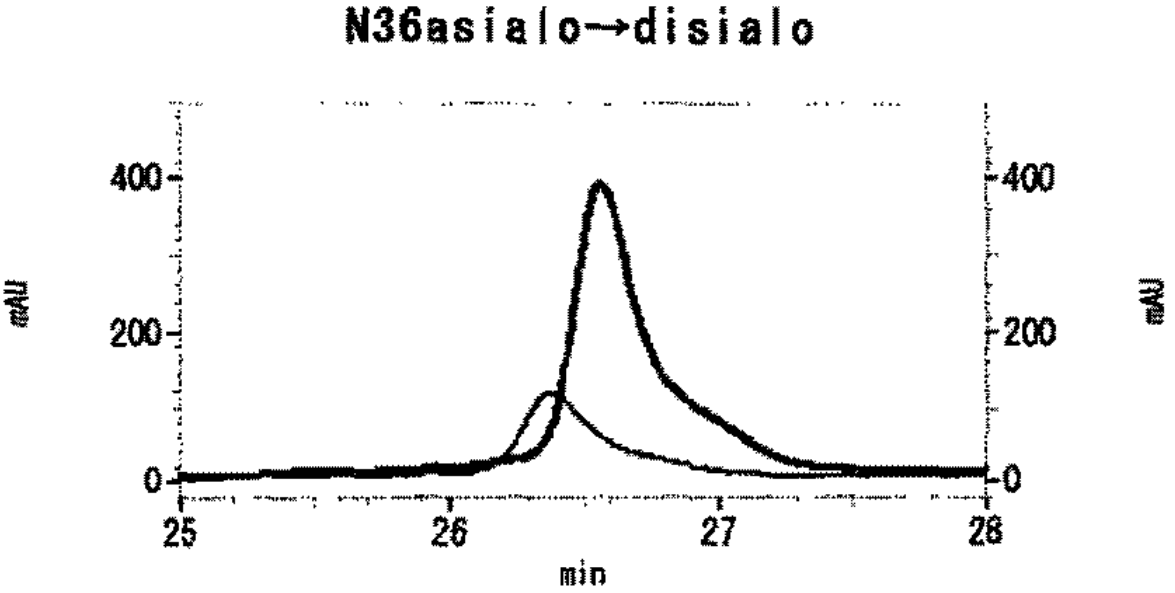
[FIG. 2]



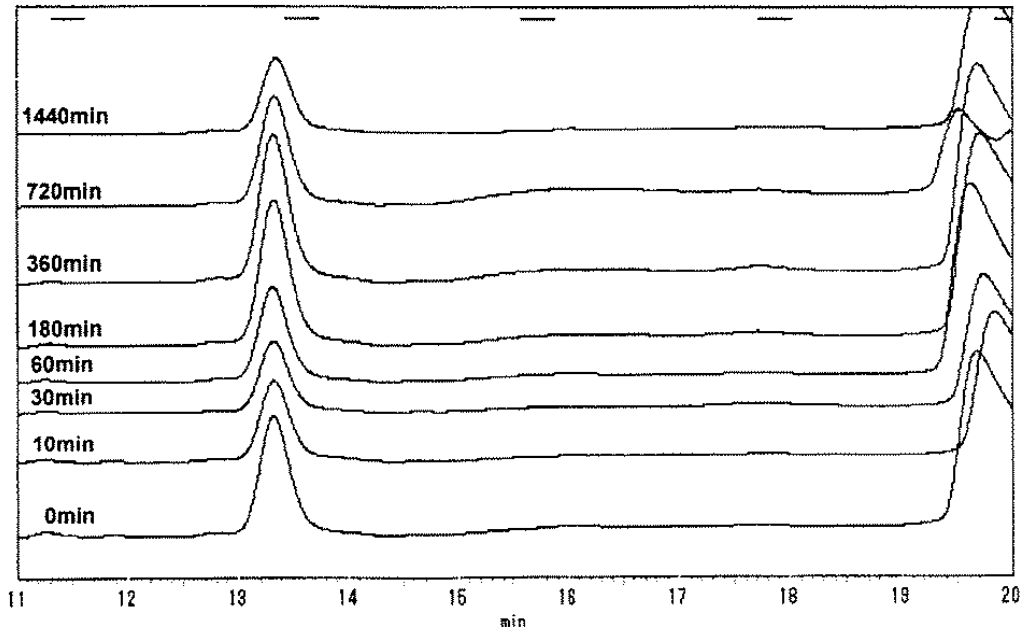
[FIG. 3]


N30asialo→disialo
200
100
0
mAU
24
25
26
27
min

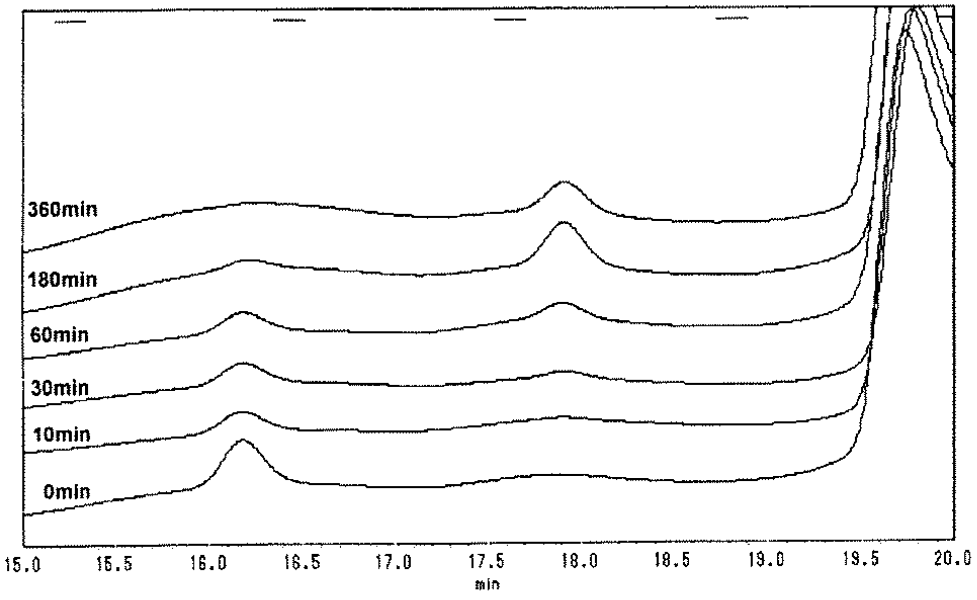
[FIG. 4]


N36asialo→disialo
400
200
0
mAU
25
26
27
28
min

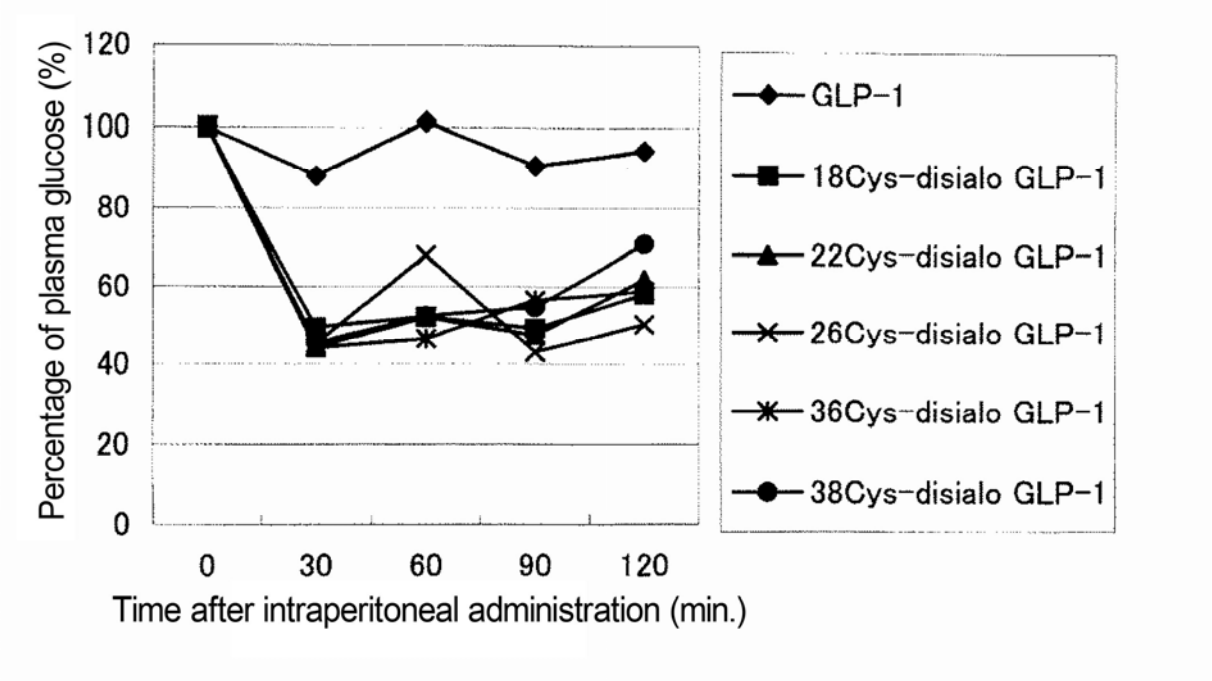
[FIG. 5]


1440min
720min
360min
180min
60min
30min
10min
0min
11
12
13
14
15
16
17
18
19
20
min

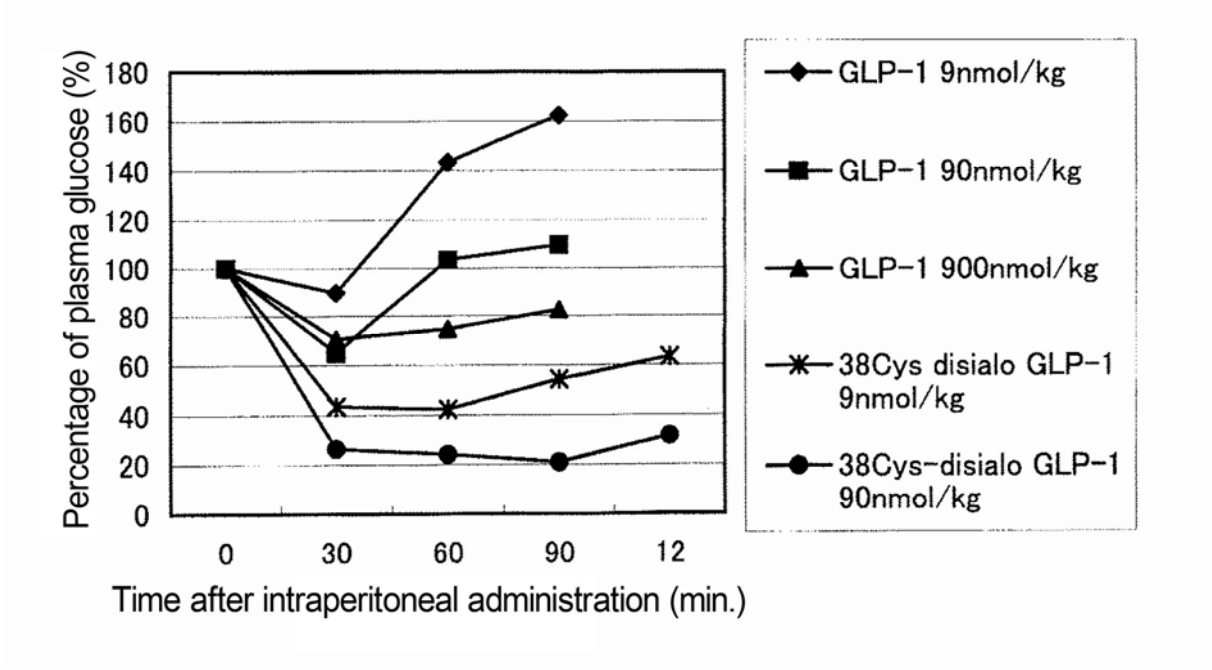
[FIG. 6]


360min
180min
60min
30min
10min
0min
15.0
15.5
16.0
16.5
17.0
17.5
18.0
18.5
19.0
19.5
20.0
min

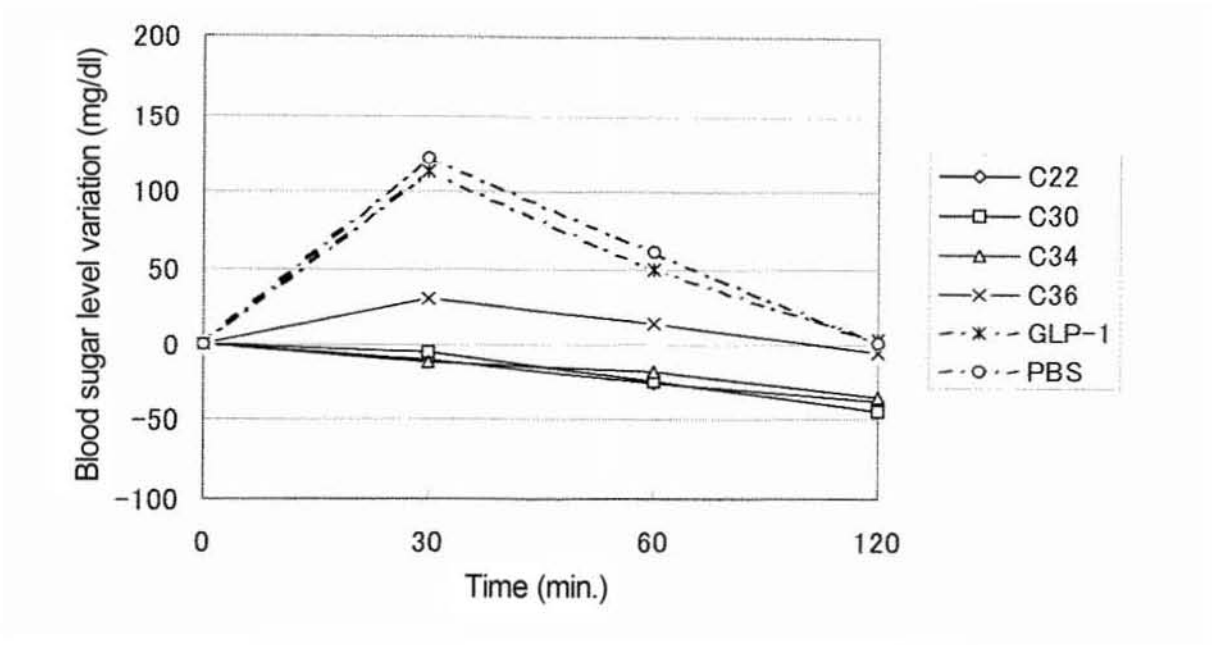
[FIG. 7]


Percentage of plasma glucose (%)
120
100
80
60
40
20
0
0
30
60
90
120
Time after intraperitoneal administration (min.)
GLP-1
18Cys-disialo GLP-1
22Cys-disialo GLP-1
26Cys-disialo GLP-1
36Cys-disialo GLP-1
38Cys-disialo GLP-1

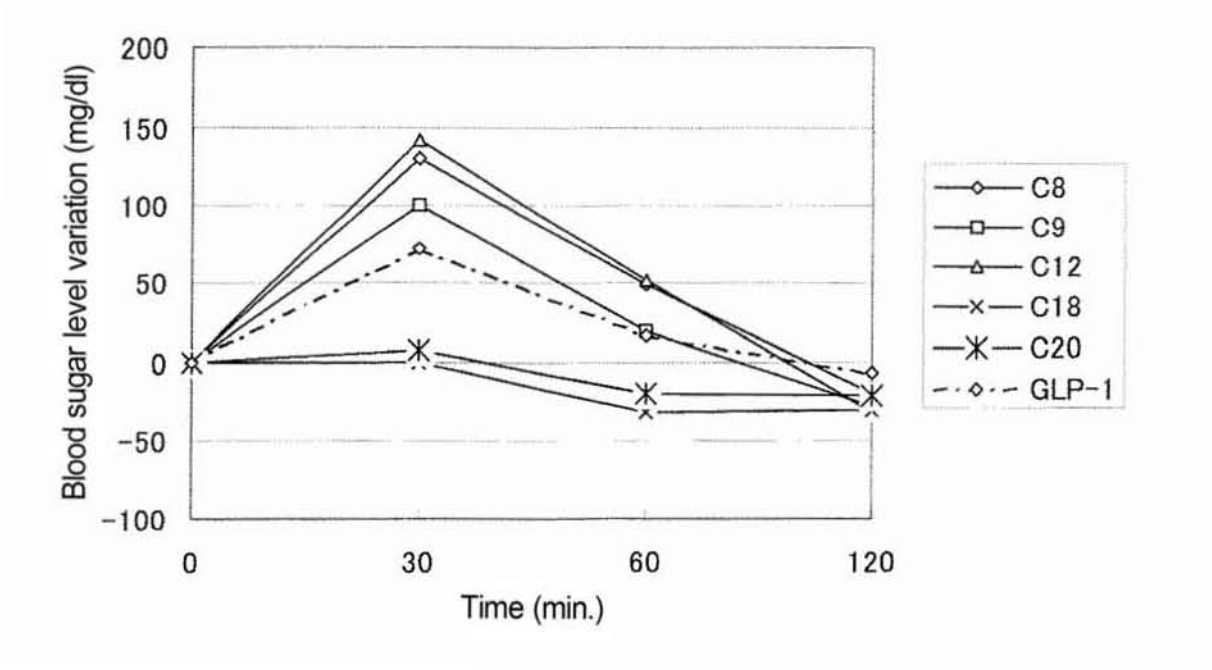
[FIG. 8]


Percentage of plasma glucose (%)
180
160
140
120
100
80
60
40
20
0
0
30
60
90
12
Time after intraperitoneal administration (min.)
GLP-1 9nmol/kg
GLP-1 90nmol/kg
GLP-1 900nmol/kg
38Cys disialo GLP-1 9nmol/kg
38Cys-disialo GLP-1 90nmol/kg

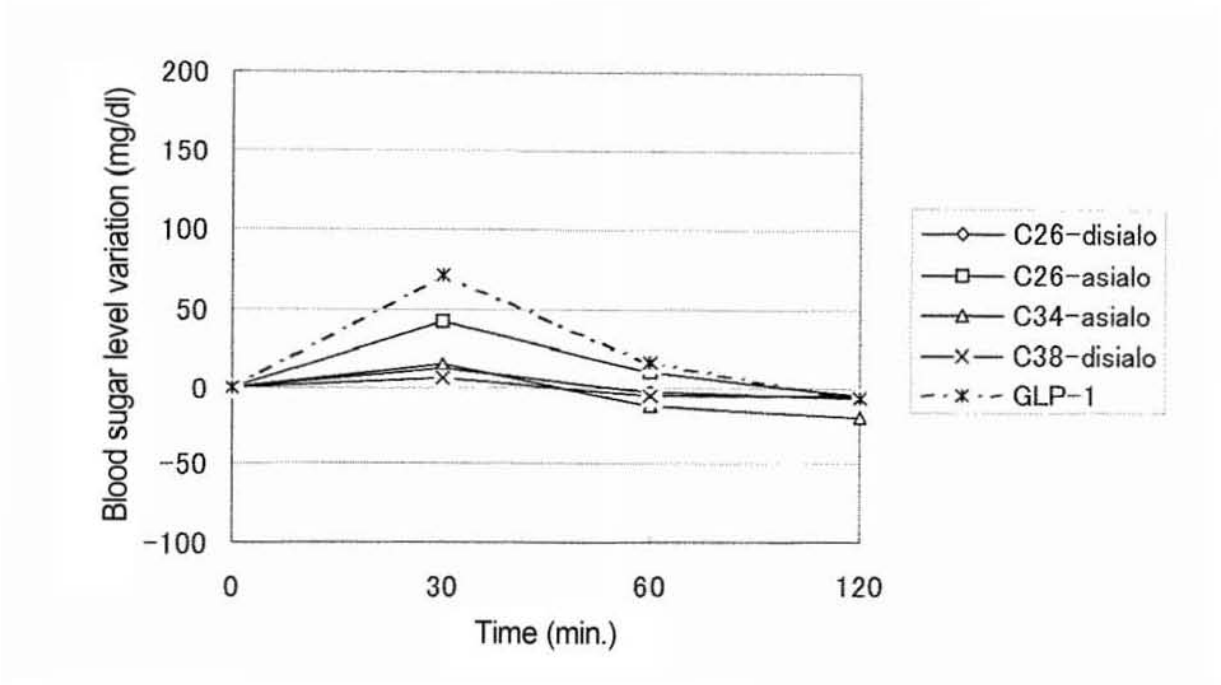
[FIG. 9]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C22
C30
C34
C36
GLP-1
PBS

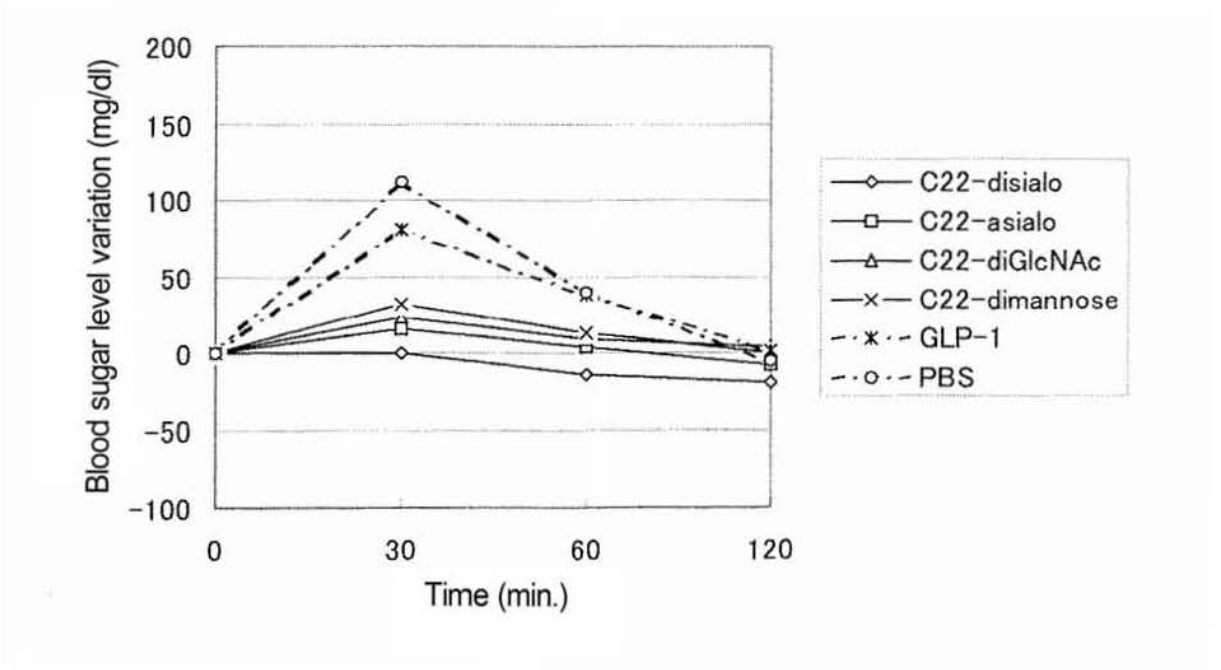
[FIG. 10]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C8
C9
C12
C18
C20
GLP-1

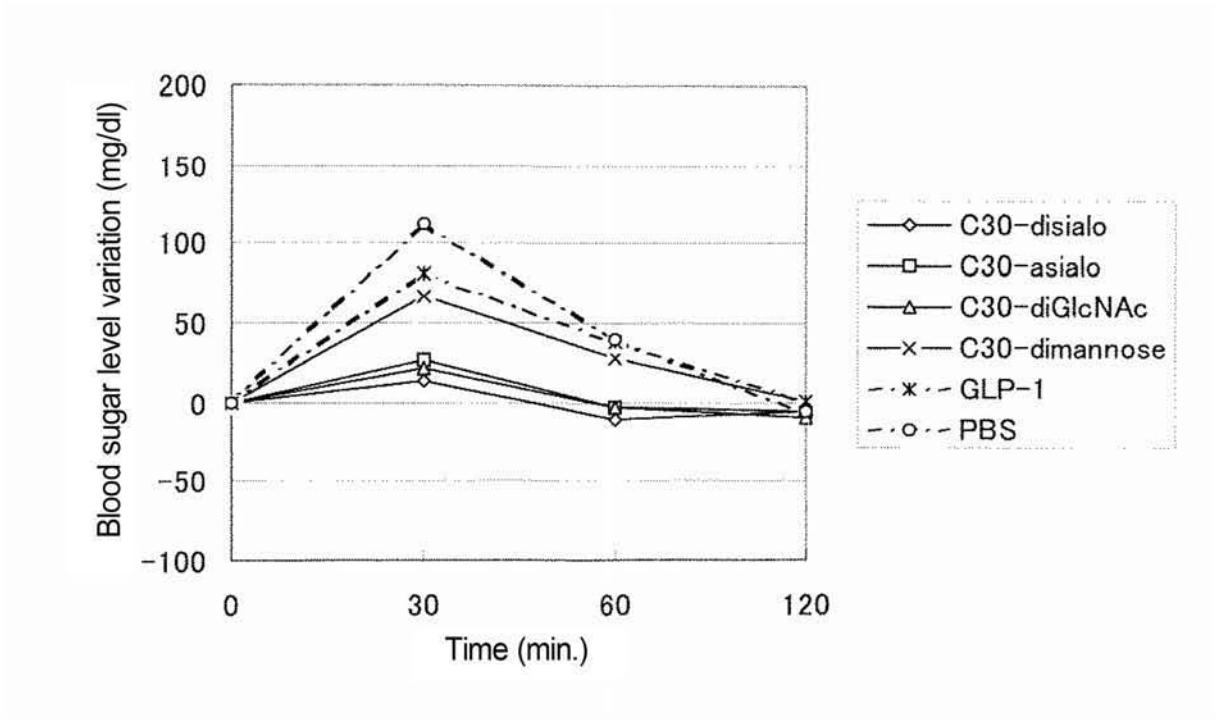
[FIG. 11]


200
150
100
50
0
-50
-100
Blood sugar level variation (mg/dl)
0
30
60
120
Time (min.)
C26-disialo
C26-asialo
C34-asialo
C38-disialo
GLP-1

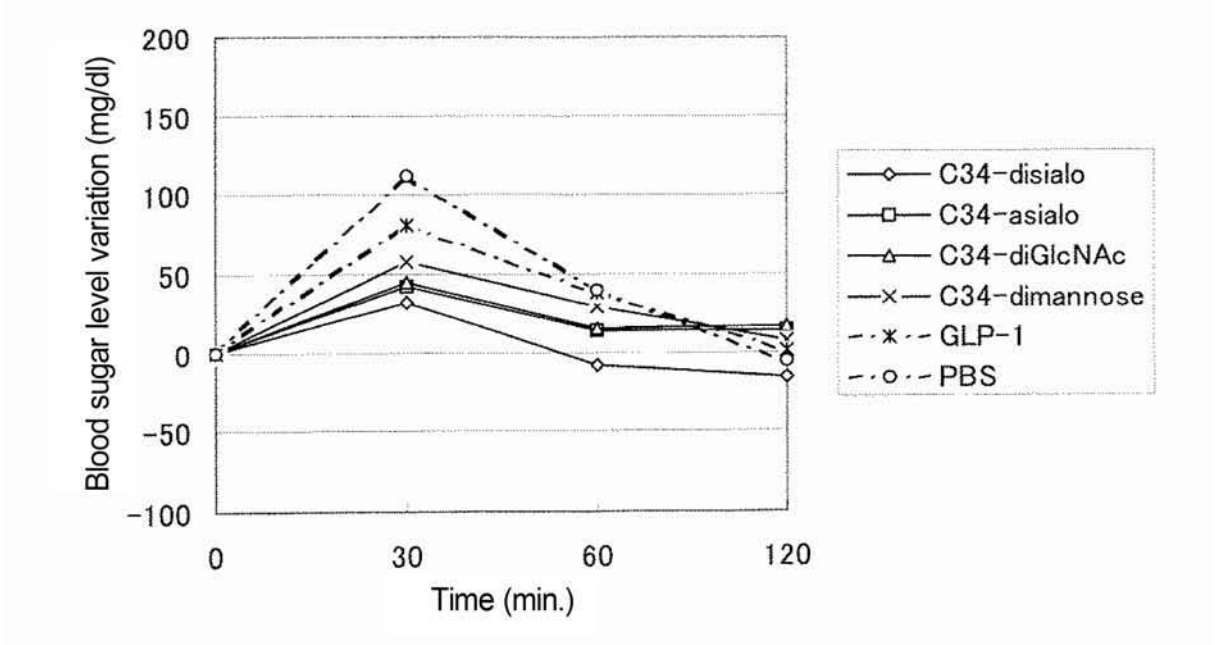
[FIG. 12]


200
150
100
50
0
-50
-100
Blood sugar level variation (mg/dl)
0
30
60
120
Time (min.)
C22-disialo
C22-asialo
C22-diGlcNAc
C22-dimannose
GLP-1
PBS

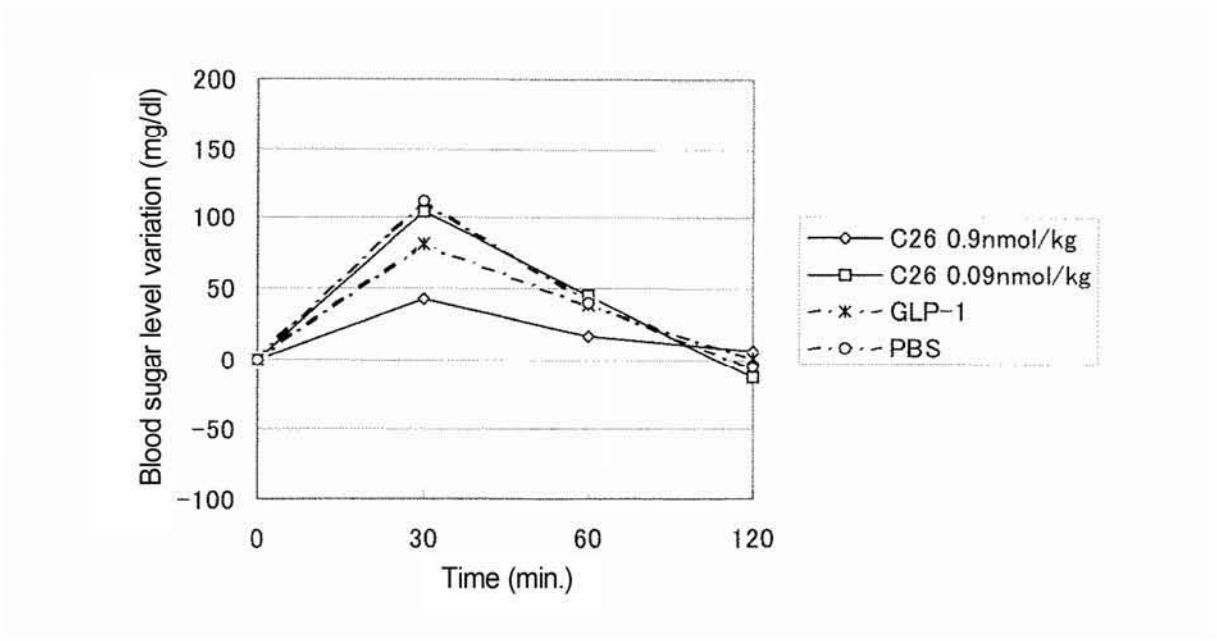
[FIG. 13]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C30-disialo
C30-asialo
C30-diGlcNAc
C30-dimannose
GLP-1
PBS

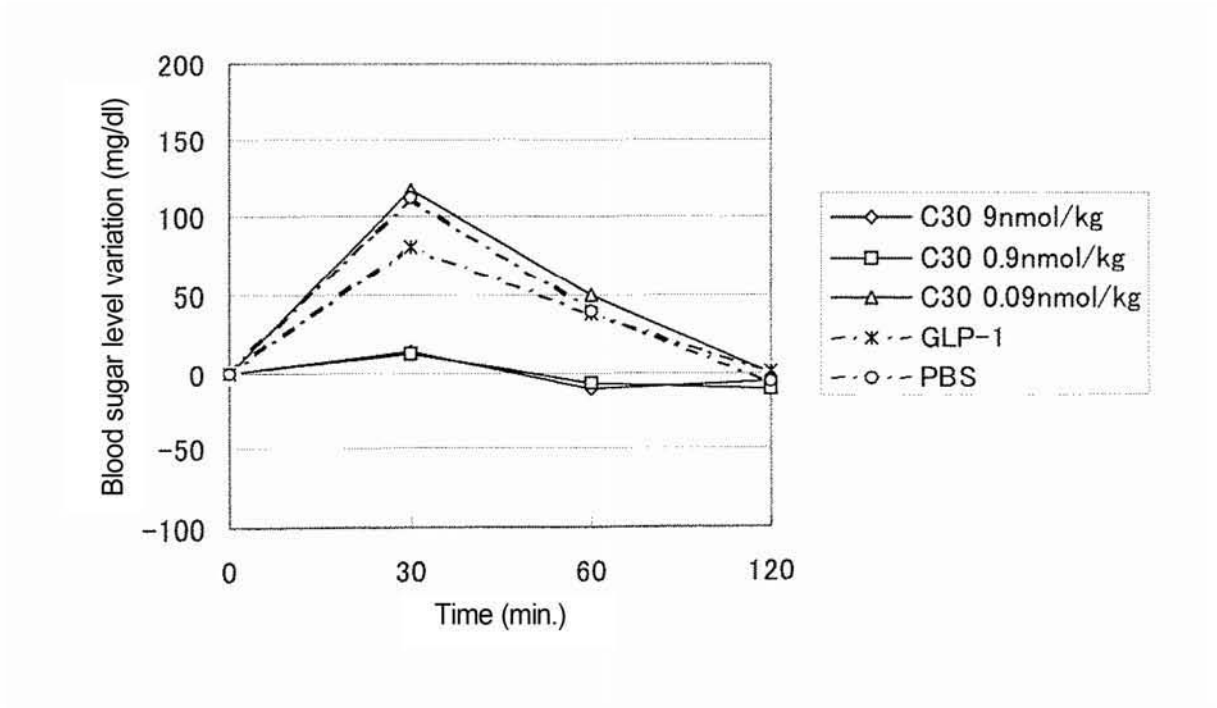
[FIG. 14]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C34-disialo
C34-asialo
C34-diGlcNAc
C34-dimannose
GLP-1
PBS

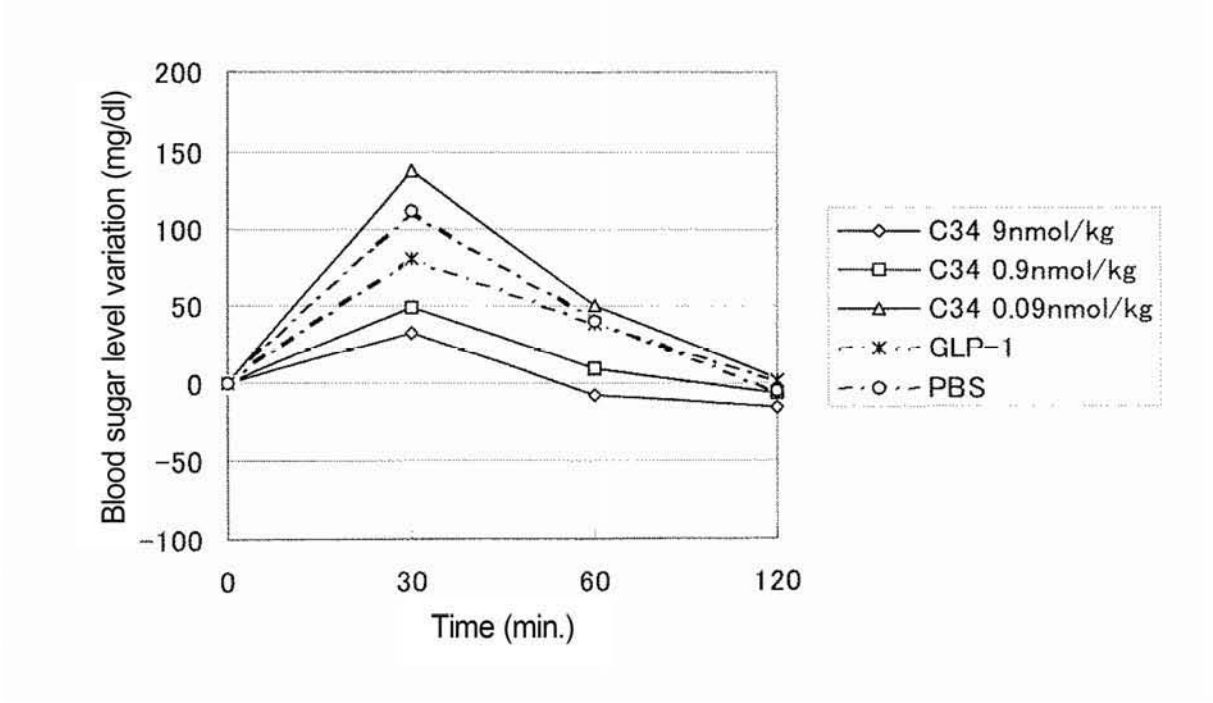
[FIG. 15]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C26 0.9nmol/kg
C26 0.09nmol/kg
GLP-1
PBS

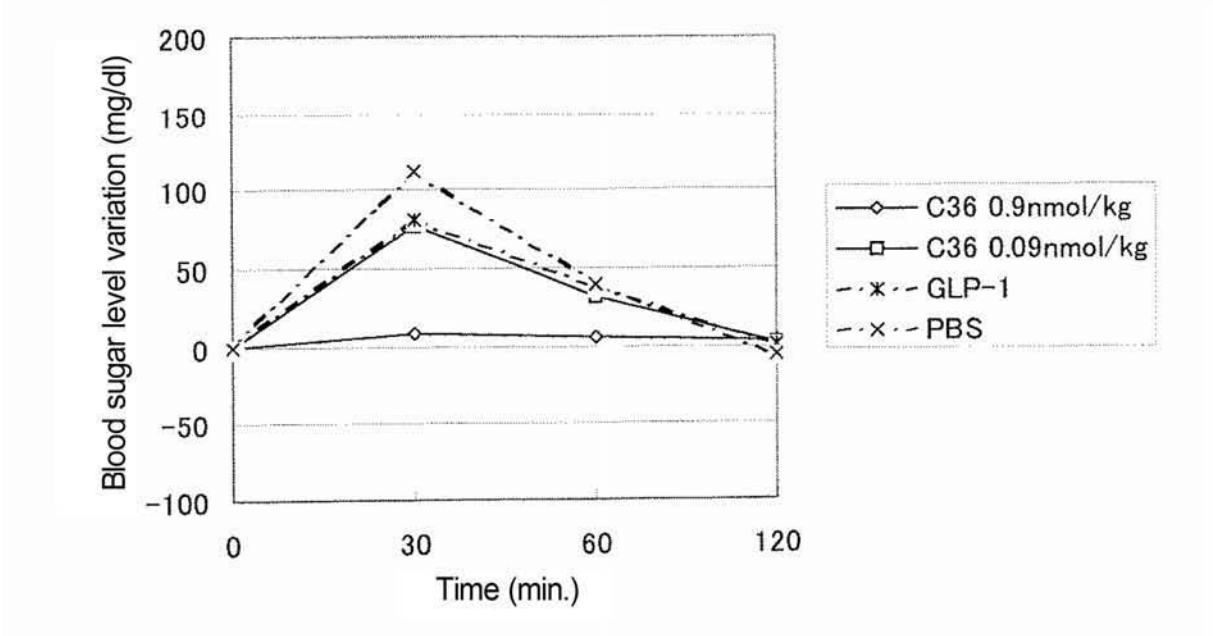
[FIG. 16]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C30 9nmol/kg
C30 0.9nmol/kg
C30 0.09nmol/kg
GLP-1
PBS

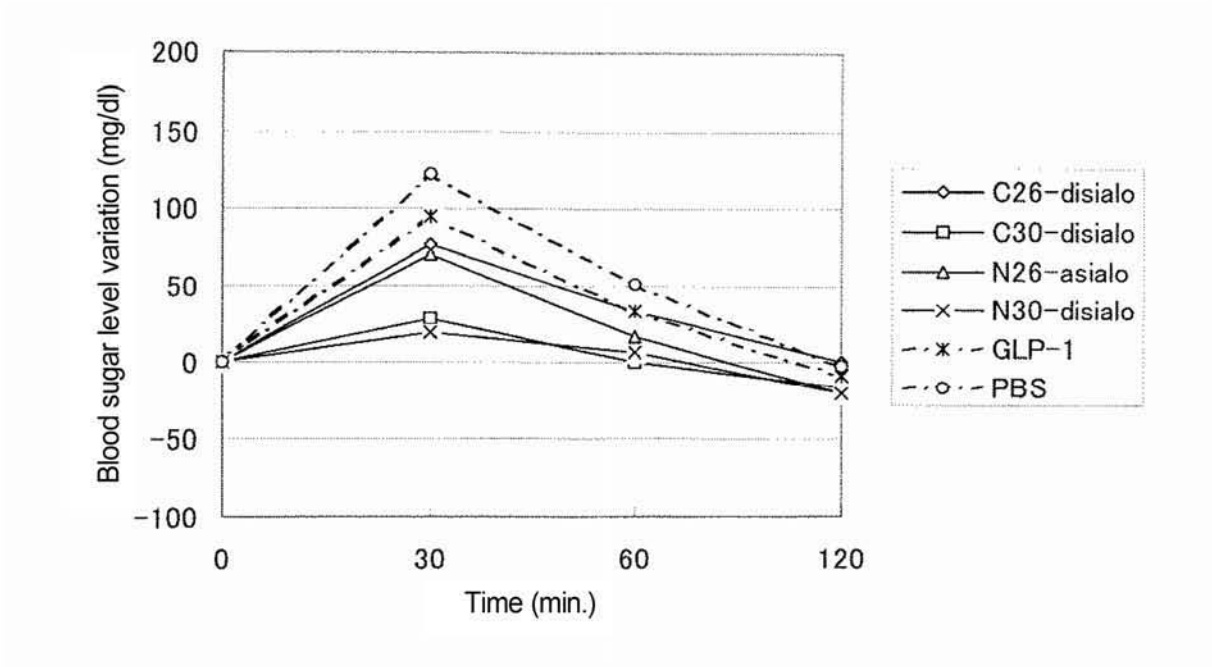
[FIG. 17]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C34 9nmol/kg
C34 0.9nmol/kg
C34 0.09nmol/kg
GLP-1
PBS

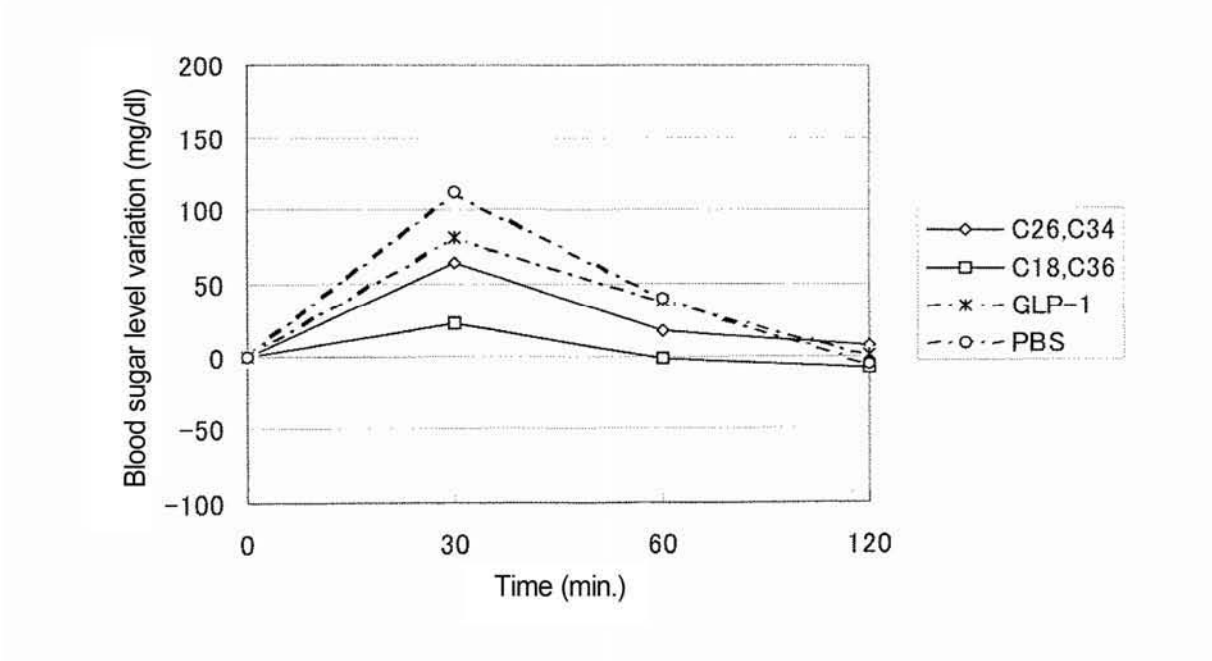
[FIG. 18]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C36 0.9nmol/kg
C36 0.09nmol/kg
GLP-1
PBS

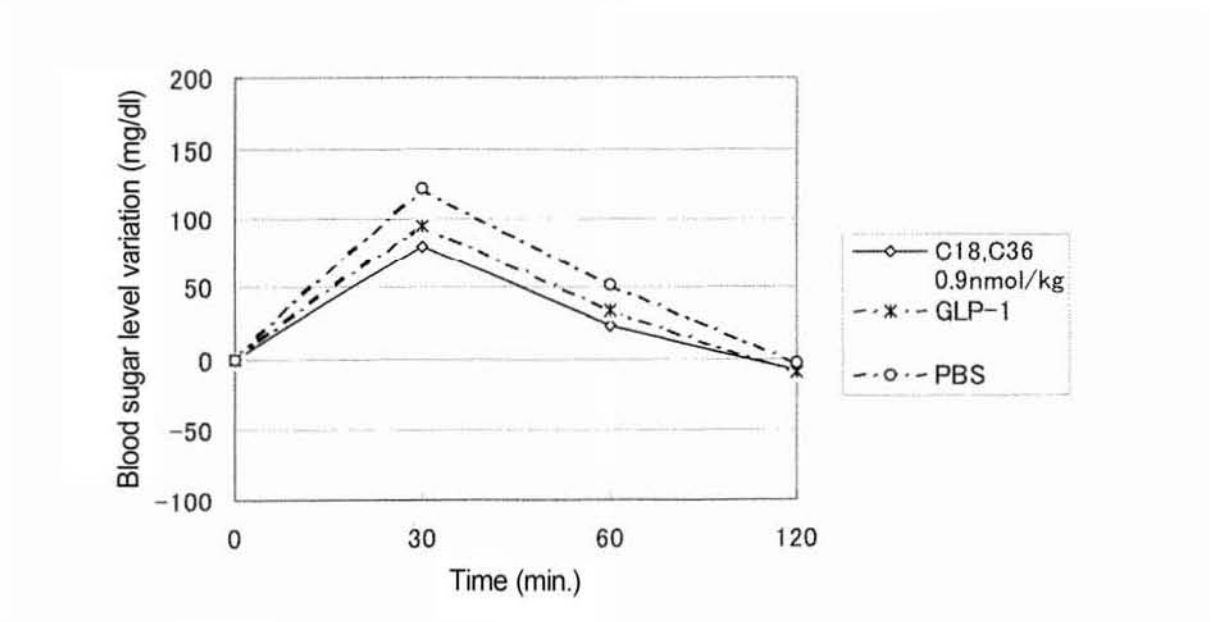
[FIG. 19]


200
150
100
50
0
-50
-100
Blood sugar level variation (mg/dl)
0
30
60
120
Time (min.)
C26-disialo
C30-disialo
N26-asialo
N30-disialo
GLP-1
PBS

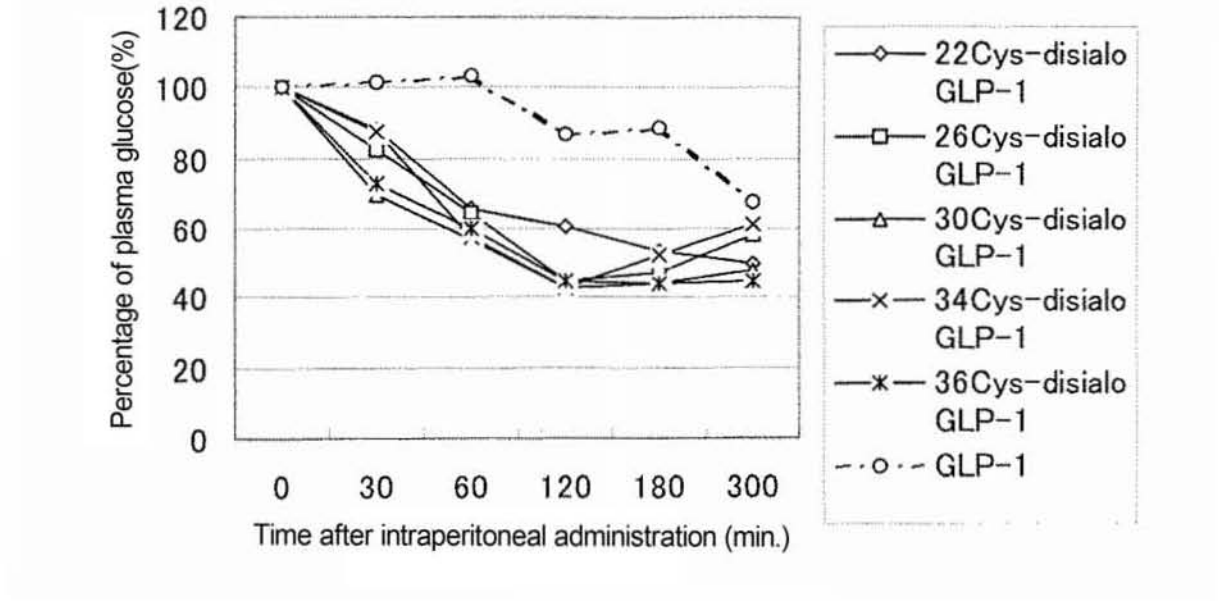
[FIG. 20]


200
150
100
50
0
-50
-100
Blood sugar level variation (mg/dl)
0
30
60
120
Time (min.)
C26,C34
C18,C36
GLP-1
PBS

[FIG. 21]


Blood sugar level variation (mg/dl)
200
150
100
50
0
-50
-100
0
30
60
120
Time (min.)
C18,C36
0.9nmol/kg
GLP-1
PBS

[FIG. 22]


Percentage of plasma glucose(%)
120
100
80
60
40
20
0
0
30
60
120
180
300
Time after intraperitoneal administration (min.)
22Cys-disialo GLP-1
26Cys-disialo GLP-1
30Cys-disialo GLP-1
34Cys-disialo GLP-1
36Cys-disialo GLP-1
GLP-1

SEQUENCE LISTING

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<120> oligosaccharide chain added GLP-1 peptide

<130> SG1507A

<150> JP 2007-160951
<151> 2007-06-19

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1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Xaa Xaa
20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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1 5 10 15

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20 25 30

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<220>
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1 5 10 15

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20 25 30

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1 5 10 15

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20 25 30

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<220>
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<222> (20)..(20)
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1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<220>
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<222> (30)..(30)
<223>

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1 5 10 15

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20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Cys
20 25 30

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<220>
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<222> (13)..(13)
<223>

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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1 5 10 15

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20 25 30

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<222> (20)..(20)
<223>

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1 5 10 15

Gln Ala Ala Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<400> 13

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1 5 10 15

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20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Asn
20 25 30

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<220>
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<220>
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<222> (13)..(13)
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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Asn Leu Glu Gly
1 5 10 15

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20 25 30

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<222> (12)..(12)
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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 17
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<400> 17

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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<400> 18

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys
20 25 30

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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Cys Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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<223> AMIDATION

<400> 21

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Asn Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 22
<211> 30
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a19)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223>

<220>
<221> MOD_RES
<222> (30)..(30)
<223> AMIDATION

<400> 22

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Asn
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 23
<211> 30
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a20)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223>

<220>
<221> MOD_RES
<222> (30)..(30)
<223> AMIDATION

<400> 23

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 24
<211> 30
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a21)

<220>
<221> CARBOHYD
<222> (30)..(30)
<223>

<220>
<221> MOD_RES
<222> (30)..(30)

<223> AMIDATION

<400> 24

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Asn
20 25 30

<210> 25
<211> 30
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a22)

<220>
<221> CARBOHYD
<222> (13)..(13)
<223>

<220>
<221> MOD_RES
<222> (30)..(30)
<223> AMIDATION

<400> 25

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Asn Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 26
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a23)

<220>

<221> CARBOHYD
<222> (12)..(12)
<223>

<220>
<221> CARBOHYD
<222> (16)..(16)
<223>

<220>
<221> CARBOHYD
<222> (32)..(32)
<223>

<400> 26

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Cys
20 25 30

<210> 27
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a24)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223>

<220>
<221> CARBOHYD
<222> (16)..(16)
<223>

<220>
<221> CARBOHYD
<222> (20)..(20)
<223>

<400> 27

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 28
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (a25)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223>

<220>
<221> CARBOHYD
<222> (30)..(30)
<223>

<220>
<221> CARBOHYD
<222> (32)..(32)
<223>

<400> 28

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Asn Gly Asn
20 25 30

<210> 29
<211> 30
<212> PRT
<213> artificial sequence

<220>

<223> amino acid sequence of (a26)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223>

<220>
<221> CARBOHYD
<222> (16)..(16)
<223>

<220>
<221> CARBOHYD
<222> (20)..(20)
<223>

<220>
<221> MOD_RES
<222> (30)..(30)
<223> AMIDATION

<400> 29

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Asn Tyr Leu Glu Asn
1 5 10 15

Gln Ala Ala Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 30
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 1)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>

<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE

<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 30

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 31
<211> 31
<212> PRT

<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Comparative Example 1)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having a blocking group Pbf

<400> 31

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 32
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 6)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)

<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having a blocking group Pbf

<400> 32

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 33
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Exapmle 6)

<220>
<221> MISC_FEATURE

<222> (1)..(1)
<223> His having blocking groups Trt and Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)

<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having a blocking group Pbf

<400> 33

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 34
<211> 18
<212> PRT
<213> artificial sequence

<220>

<223> amino acid sequence having blocking groups (Example 7)

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Arg having a blocking group Pbf

<400> 34

Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly
1 5 10 15

Arg Gly

<210> 35
<211> 19
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 7)

<220>
<221> CARBOHYD
<222> (1)..(1)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Arg having a blocking group Pbf

<400> 35

Asn Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys
1 5 10 15

Gly Arg Gly

<210> 36
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having a blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having a blocking group tBu

<220>
<221> CARBOHYD
<222> (13)..(13)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having a blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having a blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having a blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having a blocking group Boc

<220>

<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having a blocking group Pbf

<400> 36

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Asn Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 37
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 8)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Thr having blocking group tBu

<220>

<221> MISC_FEATURE
<222> (9)..(9)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (26)..(26)

<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (29)..(29)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (31)..(31)
<223> Arg having blocking group Pbf

<400> 37

Cys His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu
1 5 10 15

Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 38
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 9)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)

<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 38

His Cys Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 39
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 10)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE

<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 39

His Ala Cys Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 40
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 11)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>

<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (5)..(5)
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<400> 40

His Ala Glu Cys Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 41
<211> 31
<212> PRT
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<223> Arg having blocking group Pbf

<400> 41

His Ala Glu Gly Cys Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 42
<211> 31

<212> PRT
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<223> Arg having blocking group Pbf

<400> 42

His Ala Glu Gly Thr Cys Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly

1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 43
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<223> Arg having blocking group Pbf

<400> 43

His Ala Glu Gly Thr Phe Thr Cys Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 44
<211> 31
<212> PRT
<213> artificial sequence

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<223> Arg having blocking group Pbf

<400> 44

His Ala Glu Gly Thr Phe Thr Ser Asp Cys Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 45
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<400> 45

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Cys Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 46
<211> 31
<212> PRT
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<220>
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<400> 46

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Cys Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 47
<211> 31
<212> PRT
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<220>
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<400> 47

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Cys Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 48
<211> 31
<212> PRT
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<220>
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<400> 48

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Cys Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 49

<211> 31
<212> PRT
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<400> 49

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Cys Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 50
<211> 31
<212> PRT
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<220>
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<400> 50

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 51
<211> 31
<212> PRT
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<220>
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<223> Lys having blocking group Boc

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<223> Arg having blocking group Pbf

<400> 51

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Cys Val Lys Gly Arg Gly
20 25 30

<210> 52
<211> 31
<212> PRT
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<220>
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<223> Arg having blocking group Pbf

<400> 52

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 53
<211> 31
<212> PRT
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<220>
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<223> Glu having blocking group OtBu

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<223> Trp having blocking group Boc

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<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 53

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 54
<211> 31
<212> PRT
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<220>
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<223> Glu having blocking group OtBu

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<223> Ser having blocking group tBu

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<223> Tyr having blocking group tBu

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<223> Glu having blocking group OtBu

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<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
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<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 54

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 55
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 26)

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<223> Glu having blocking group OtBu

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<223> Thr having blocking group tBu

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<223> Ser having blocking group tBu

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<223> Lys having blocking group Boc

<220>
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<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 55

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 56
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<223> Arg having blocking group Pbf

<400> 56

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 57
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<223> Glu having blocking group OtBu

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<223> Glu having blocking group OtBu

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<223> Trp having blocking group Boc

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<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
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<222> (30)..(30)
<223> Cys having blocking group Trt

<400> 57

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys Gly
20 25 30

<210> 58
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<222> (28)..(28)
<223> Lys having blocking group Boc

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<223> Arg having blocking group Pbf

<400> 58

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 59
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<223> Trp having blocking group Boc

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<223> Lys having blocking group Boc

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<400> 59

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 60
<211> 31
<212> PRT
<213> artificial sequence

<220>
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<223> Glu having blocking group OtBu

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<223> Cys having blocking group Trt

<220>
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<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 60

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 61
<211> 31
<212> PRT
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<220>
<223> amino acid sequence having blocking groups (Example 32)

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<223> Glu having blocking group OtBu

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<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
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<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 61

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 62
<211> 31
<212> PRT
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<220>
<223> amino acid sequence having blocking groups (Example 33)

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<223> Glu having blocking group OtBu

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<223> Lys having blocking group Boc

<220>
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<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 62

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 63
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 34)

<220>
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<220>
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<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
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<223> Ser having blocking group tBu

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<223> Ser having blocking group tBu

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<223> Tyr having blocking group tBu

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<223> Glu having blocking group OtBu

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<223> Gln having blocking group Trt

<220>
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<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
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<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
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<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
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<222> (28)..(28)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 63

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 64
<211> 12
<212> PRT
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<220>
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<220>
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<223> Ser having blocking group tBu

<220>
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<222> (3)..(3)
<223> Asp having blocking group OtBu

<220>
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<222> (5)..(5)
<223> Ser having blocking group tBu

<220>
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<222> (6)..(6)
<223> Ser having blocking group tBu

<220>
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<222> (7)..(7)
<223> Tyr having blocking group tBu

<220>
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<222> (9)..(9)
<223> Glu having blocking group OtBu

<220>
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<222> (11)..(11)
<223> Gln having blocking group Trt

<400> 64

Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala
1 5 10

<210> 65
<211> 13
<212> PRT
<213> artificial sequence

<220>
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<220>
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<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (2)..(2)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Ser having blocking group tBu

<220>
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<222> (4)..(4)
<223> Asp having blocking group OtBu

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<222> (6)..(6)
<223> Ser having blocking group tBu

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<222> (8)..(8)
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<222> (10)..(10)
<223> Glu having blocking group OtBu

<220>
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<222> (12)..(12)
<223> Gln having blocking group Trt

<400> 65

Asn Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala
1 5 10

<210> 66
<211> 18
<212> PRT
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<220>
<223> amino acid sequence having blocking groups (Example 35)

<220>
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<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
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<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> CARBOHYD
<222> (6)..(6)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
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<223> Ser having blocking group tBu

<220>
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<222> (9)..(9)
<223> Asp having blocking group OtBu

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<222> (11)..(11)
<223> Ser having blocking group tBu

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<222> (13)..(13)
<223> Tyr having blocking group tBu

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<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 66

His Ala Glu Gly Thr Asn Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 67
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 35)

<220>
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<222> (1)..(1)
<223> His having blocking group Trt and Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
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<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
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<222> (6)..(6)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (7)..(7)
<223> Thr having blocking group tBu

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<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
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<222> (9)..(9)
<223> Asp having blocking group OtBu

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<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
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<222> (12)..(12)
<223> Ser having blocking group tBu

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<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
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<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 67

His Ala Glu Gly Thr Asn Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 68
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having leaving groups (Example 35)

<220>
<221> CARBOHYD
<222> (6)..(6)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>

<221> MISC_FEATURE
<222> (18)..(18)
<223> Ala having leaving group PhS

<400> 68

His Ala Glu Gly Thr Asn Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 69
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 35)

<220>
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<223> Cys having blocking group Trt

<220>
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<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Lys having blocking group Boc

<220>

<221> MISC_FEATURE
<222> (12)..(12)
<223> Arg having blocking group Pbf

<400> 69
Cys Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 70
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence (Example 35)

<400> 70
Cys Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 71
<211> 19
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 36)

<220>
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<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (8)..(8)

<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Arg having blocking group Pbf

<400> 71
Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys
1 5 10 15

Gly Arg Gly

<210> 72
<211> 20
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 36)

<220>
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<222> (1)..(1)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<223> Tyr having blocking group tBu

<220>
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<222> (4)..(4)
<223> Glu having blocking group OtBu

<220>
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<222> (6)..(6)
<223> Gln having blocking group Trt

<220>
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<222> (9)..(9)
<223> Lys having blocking group Boc

<220>
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<223> Glu having blocking group OtBu

<220>
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<222> (14)..(14)
<223> Trp having blocking group Boc

<220>
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<222> (17)..(17)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (19)..(19)
<223> Arg having blocking group Pbf

<400> 72
Asn Tyr Leu Glu Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val
1 5 10 15

Lys Gly Arg Gly

<210> 73
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 36)

<220>
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<222> (1)..(1)
<223> His having blocking group Trt

<220>
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<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
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<220>
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<223> Thr having blocking group tBu

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<223> Ser having blocking group tBu

<220>
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<223> Asp having blocking group OtBu

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<222> (11)..(11)
<223> Ser having blocking group tBu

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<222> (12)..(12)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (13)..(13)

<223> Tyr having blocking group tBu

<220>
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<223> Glu having blocking group OtBu

<220>
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<223> Gln having blocking group Trt

<220>
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<223> Glu having blocking group OtBu

<220>
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<223> Trp having blocking group Boc

<220>
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<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 73

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Asn Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 74

<211> 15
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 37)

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<223> Lys having blocking group Boc

<220>
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<222> (9)..(9)
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<223> Lys having blocking group Boc

<220>
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<223> Arg having blocking group Pbf

<400> 74

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10 15

<210> 75
<211> 16
<212> PRT

<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 37)

<220>
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<222> (1)..(1)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (2)..(2)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Trp having blocking group Boc

<220>
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<222> (13)..(13)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Arg having blocking group Pbf

<400> 75

Asn Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10 15

<210> 76

<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 37)

<220>
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<223> His having blocking group Trt

<220>
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<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
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<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
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<222> (7)..(7)
<223> Thr having blocking group tBu

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<222> (8)..(8)
<223> Ser having blocking group tBu

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<222> (9)..(9)
<223> Asp having blocking group OtBu

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<223> Ser having blocking group tBu

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<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
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<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
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<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
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<223> Asn glycosylated by asialo oligosaccharide chain

<220>
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<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
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<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
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<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 76

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Asn
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 77
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 38)

<220>
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<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
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<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
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<222> (11)..(11)
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<220>
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<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
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<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 77

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 78
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 38)

<220>
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<222> (1)..(1)
<223> His having blocking group Trt and Boc

<220>
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<222> (3)..(3)

<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
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<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
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<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
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<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
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<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
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<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 78

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 79
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having leaving groups (Example 38)

<220>
<221> MISC_FEATURE
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<223> Ala having leaving group PhS

<400> 79

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 80
<211> 11
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 38)

<220>
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<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Arg having blocking group Pbf

<400> 80
Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 81
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 38)

<220>
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<223> Cys having blocking group Trt

<220>
<221> CARBOHYD
<222> (2)..(2)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (10)..(10)

<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Arg having blocking group Pbf

<400> 81

Cys Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 82
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 39)

<220>
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<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

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<221> MISC_FEATURE
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<223> Asp having blocking group OtBu

<220>
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<223> Ser having blocking group tBu

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<220>
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<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 82

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 83
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 39)

<220>

<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt and Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
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<222> (15)..(15)

<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 83

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 84
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having leaving groups (Example 39)

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Ala having leaving group PhS

<400> 84

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 85
<211> 10
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 39)

<220>
<221> MISC_FEATURE
<222> (4)..(4)

<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Arg having blocking group Pbf

<400> 85
Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 86
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 39)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Lys having blocking group Boc

<220>
<221> CARBOHYD
<222> (3)..(3)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE

<222> (10)..(10)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Arg having blocking group Pbf

<400> 86
Cys Lys Asn Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 87
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 40)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>

<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 87

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 88
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 40)

<220>

<221> MISC_FEATURE
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<223> His having blocking group Trt and Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)

<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 88

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 89
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having leaving groups (Example 40)

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Ala having leaving group PhS

<400> 89

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 90
<211> 9
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 40)

<220>
<221> MISC_FEATURE
<222> (3)..(3)

<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Arg having blocking group Pbf

<400> 90
Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5

<210> 91
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 40)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> CARBOHYD
<222> (4)..(4)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE

<222> (7)..(7)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Arg having blocking group Pbf

<400> 91
Cys Lys Glu Asn Ile Ala Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 92
<211> 7
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 41)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Arg having blocking group Pbf

<400> 92
Trp Leu Val Lys Gly Arg Gly
1 5

<210> 93

<211> 8
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 41)

<220>
<221> CARBOHYD
<222> (1)..(1)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Arg having blocking group Pbf

<400> 93
Asn Trp Leu Val Lys Gly Arg Gly
1 5

<210> 94
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 41)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>

<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)

<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> Asn glycosylated by asialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 94

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Asn Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 95
<211> 31
<212> PRT
<213> artificial sequence

<220>

<223> amino acid sequence having blocking groups (Example 42)

<220>
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<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 95

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Asn Gly
20 25 30

<210> 96
<211> 18
<212> PRT

<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 46)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE

<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 96

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 97
<211> 18
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 46)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt and Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)

<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<400> 97

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 98
<211> 18

<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having leaving groups (Example 46)

<220>
<221> MISC_FEATURE
<222> (18)..(18)
<223> Ala having leaving group PhS

<400> 98

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala

<210> 99
<211> 7
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 46)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Arg having blocking group Pbf

<400> 99
Trp Leu Val Lys Gly Arg Gly
1 5

<210> 100
<211> 13
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 46)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> CARBOHYD
<222> (6)..(6)
<223> Asn glycosylated by dibenzyl disialo oligosaccharide chain

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Arg having blocking group Pbf

<400> 100
Cys Lys Glu Phe Ile Asn Trp Leu Val Lys Gly Arg Gly
1 5 10

<210> 101
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 48)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE

<222> (12)..(12)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Arg having blocking group Pbf

<400> 101

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 102
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence having blocking groups (Example 49)

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> His having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Thr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Asp having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Ser having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Cys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (13)..(13)
<223> Tyr having blocking group tBu

<220>
<221> MISC_FEATURE
<222> (15)..(15)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Gln having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Lys having blocking group Trt

<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Glu having blocking group OtBu

<220>
<221> MISC_FEATURE
<222> (25)..(25)
<223> Trp having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (28)..(28)
<223> Lys having blocking group Boc

<220>
<221> MISC_FEATURE
<222> (30)..(30)
<223> Cys having blocking group Trt

<400> 102

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys Gly
20 25 30

<210> 103
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b1) (Example 1)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 103

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 104
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b2) (Example 2)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 104

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 105
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b3) (Example 3)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 105

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 106
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b4) (Example 4)

<220>
<221> CARBOHYD
<222> (30)..(30)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 106

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys Gly
20 25 30

<210> 107
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b5) (Example 5)

<220>
<221> CARBOHYD
<222> (32)..(32)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 107

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Cys
20 25 30

<210> 108
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b6) (Example 6)

<220>
<221> CARBOHYD
<222> (32)..(32)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 108

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Asn
20 25 30

<210> 109

<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b7) (Example 7)

<220>
<221> CARBOHYD
<222> (13)..(13)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 109

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Asn Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 110
<211> 32
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b8) (Example 8)

<220>
<221> CARBOHYD
<222> (1)..(1)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 110

Cys His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu
1 5 10 15

Gly Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 111
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b9) (Example 9)

<220>
<221> CARBOHYD
<222> (2)..(2)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 111

His Cys Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 112
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b10) (Example 10)

<220>
<221> CARBOHYD
<222> (3)..(3)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 112

His Ala Cys Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 113
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b11) (Example 11)

<220>
<221> CARBOHYD
<222> (4)..(4)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 113

His Ala Glu Cys Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 114
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b12) (Example 12)

<220>
<221> CARBOHYD
<222> (5)..(5)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 114

His Ala Glu Gly Cys Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 115
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b13) (Example 13)

<220>
<221> CARBOHYD

<222> (6)..(6)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 115

His Ala Glu Gly Thr Cys Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 116
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b14) (Example 14)

<220>
<221> CARBOHYD
<222> (8)..(8)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 116

His Ala Glu Gly Thr Phe Thr Cys Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 117
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b15) (Example 15)

<220>
<221> CARBOHYD
<222> (10)..(10)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 117

His Ala Glu Gly Thr Phe Thr Ser Asp Cys Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 118
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b16) (Example 16)

<220>
<221> CARBOHYD
<222> (14)..(14)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 118

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Cys Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 119
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b17) (Example 17)

<220>
<221> CARBOHYD
<222> (18)..(18)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 119

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly

1 5 10 15

Gln Cys Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 120
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b18) (Example 18)

<220>
<221> CARBOHYD
<222> (19)..(19)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 120

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Cys Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 121
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b19) (Example 19)

<220>
<221> CARBOHYD
<222> (21)..(21)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 121

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Cys Phe Ile Ala Trp Leu Val Lys Gly Arg Gly

20 25 30

<210> 122
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b20) (Example 20)

<220>
<221> CARBOHYD
<222> (22)..(22)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 122

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Cys Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 123
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b21) (Example 21)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 123

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 124
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b22) (Example 22)

<220>
<221> CARBOHYD
<222> (26)..(26)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 124

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Cys Val Lys Gly Arg Gly
20 25 30

<210> 125
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b23) (Example 23)

<220> 125
<221> CARBOHYD
<222> (28)..(28)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 125

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 126
<211> 31
<212> PRT

<213> artificial sequence

<220>
<223> amino acid sequence of (b24) (Example 24)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Cys glycosylated by asialo oligosaccharide chain

<400> 126

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 127
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b25) (Example 25)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223> Cys glycosylated by asialo oligosaccharide chain

<400> 127

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 128
<211> 31
<212> PRT
<213> artificial sequence

<220>

<223> amino acid sequence of (b26) (Example 26)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Cys glycosylated by asialo oligosaccharide chain

<400> 128

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 129
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b27) (Example 27)

<220>
<221> CARBOHYD
<222> (28)..(28)
<223> Cys glycosylated by asialo oligosaccharide chain

<400> 129

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 130
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b28) (Example 28)

<220>

<221> CARBOHYD
<222> (30)..(30)
<223> Cys glycosylated by asialo oligosaccharide chain

<400> 130

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys Gly
20 25 30

<210> 131
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b29) (Example 29)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Cys glycosylated by diGlcNAc oligosaccharide chain

<400> 131

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 132
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b30) (Example 30)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Cys glycosylated by diGlcNAc oligosaccharide chain

<400> 132

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 133
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b31) (Example 31)

<220>
<221> CARBOHYD
<222> (28)..(28)
<223> Cys glycosyalated by diGlcNAc oligosaccharide chain

<400> 133

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 134
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b32) (Example 32)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Cys glycosylated by dimannose oligosaccharide chain

<400> 134

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Cys
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 135
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b33) (Example 33)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Cys glycosylated by dimannose oligosaccharide chain

<400> 135

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 136
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b34) (Example 34)

<220>
<221> CARBOHYD
<222> (28)..(28)
<223> Cys glycosylated by dimannose oligosaccharide chain

<400> 136

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 137
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b35) (Example 35)

<220>
<221> CARBOHYD
<222> (6)..(6)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 137

His Ala Glu Gly Thr Asn Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 138
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b36) (Example 36)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 138

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Asn Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 139
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b37) (Example 37)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 139

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Asn
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 140
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b38) (Example 38)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 140

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Asn Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 141
<211> 31

<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b39) (Example 39)

<220>
<221> CARBOHYD
<222> (21)..(21)
<223> Asn glycosylatedby asialo oligosaccharide chain

<400> 141

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Asn Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 142
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b40) (Example 40)

<220>
<221> CARBOHYD
<222> (22)..(22)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 142

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Asn Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 143
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b41) (Example 41)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 143

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Asn Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 144
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b42) (Example 42)

<220>
<221> CARBOHYD
<222> (30)..(30)
<223> Asn glycosylated by asialo oligosaccharide chain

<400> 144

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Asn Gly
20 25 30

<210> 145
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b43) (Example 43)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223> Asn glycosylated by disialo oligosaccharide chain

<400> 145

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Asn Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 146
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b44) (Example 44)

<220>
<221> CARBOHYD
<222> (16)..(16)
<223> Asn glycosylated by disialo oligosaccharide chain

<400> 146

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Asn
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 147
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b45) (Example 45)

<220>
<221> CARBOHYD
<222> (24)..(24)

<223> Asn glycosylated by disialo oligosaccharide chain

<400> 147

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Asn Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 148
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b46) (Example 46)

<220>
<221> CARBOHYD
<222> (24)..(24)
<223> Asn glycosylated by disialo oligosaccharide chain

<400> 148

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Asn Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 149
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b47 (Example 47)

<220>
<221> CARBOHYD
<222> (30)..(30)
<223> Asn glycosylated by disialo oligosaccharide chain

<400> 149

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Asn Gly
20 25 30

<210> 150
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b48) (Example 48)

<220>
<221> CARBOHYD
<222> (20)..(20)
<223> Cys glycosylated by disialo oligosaccharide chain

<220>
<221> CARBOHYD
<222> (28)..(28)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 150

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Cys Glu Phe Ile Ala Trp Leu Val Cys Gly Arg Gly
20 25 30

<210> 151
<211> 31
<212> PRT
<213> artificial sequence

<220>
<223> amino acid sequence of (b49) (Example 49)

<220>
<221> CARBOHYD
<222> (12)..(12)
<223> Cys glycosylated by disialo oligosaccharide chain

<220>
<221> CARBOHYD
<222> (30)..(30)
<223> Cys glycosylated by disialo oligosaccharide chain

<400> 151

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Cys Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Cys Gly
20 25 30

<210> 152
<211> 45
<212> DNA
<213> artificial sequence

<220>
<223> sense primer for mouse GLP-1 receptor

<400> 152

GTTGCTAGCG CCACCATGGC CAGCACCCCA AGCCT 45

<210> 153
<211> 41
<212> DNA
<213> artificial sequence

<220>
<223> antisense primer for mouse GLP-1 receptor

<400> 153

CCTGAATTCT CAGCTGTAGG AACTCTGGCA G 41