

BI07P006EP_ST25
SEQUENCE LISTING

<110> Biocompatibles UK Limited

<120> Treatment of eye diseases using encapsulated cells encoding and secreting an anti-angiogenic and/or a neuroprotective factor

<130> BI07P006WO

<160> 48

<170> PatentIn version 3.5

<210> 1

<211> 31

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: synthetic peptide corresponding to GLP-1(7-37)

<400> 1

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> 2

<211> 15

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: full-length IP-2 sequence having all 15 amino acids of the naturally occurring IP-2 sequence, human;

<400> 2

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly
1 5 10 15

<210> 3

<211> 15

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: full-length IP-2 sequence having all 15 amino acids of the naturally occurring IP-2 sequence, murine;

<400> 3

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly
1 5 10 15

<210> 4

<211> 35

<212> PRT

<213> Artificial

<220>

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<223> Description of sequence: murine isoform of GLP-2

<400> 4

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

Leu Ala Ala Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr
20 25 30

Asp Arg Lys
35

<210> 5

<211> 35

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: human isoform of GLP-2

<400> 5

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

Leu Ala Thr Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr
20 25 30

Asp Lys Lys
35

<210> 6

<211> 79

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: SEQ ID No: 6 (ID6syn, CM1) corresponds to GLP-1(7-37)-IP2-RR-GLP1(7-37), 79 aa, 8,7 kD

<400> 6

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 Arg
20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly Arg Arg
35 40 45

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
50 55 60

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
65 70 75

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<210> 7
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: SEQ ID No: 7 (ID7rec, CM2) corresponds to GLP-1(7-37)-IP2-RR-GLP2, 83 aa, 9,4 kD

<400> 7

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 Arg
 20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly Arg Arg
 35 40 45

His Ala Asp Gly Ser Phe Ser Asp Glu Met Ser Thr Ile Leu Asp Asn
 50 55 60

Leu Ala Thr Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr
 65 70 75 80

Asp Lys Lys

<210> 8
 <211> 46
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: SEQ ID No:8 (ID8 syn, CM3) corresponds to GLP-1(7-37)-IP2, 46 aa, 5,1 kD;

<400> 8

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 Arg
 20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly
 35 40 45

<210> 9
 <211> 97
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: artificial

<400> 9

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Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Arg Ala Leu Leu
 1 5 10 15
 Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu Leu Ala Arg
 20 25 30
 Ala Leu Pro Pro Asp Val His His Leu His Ala Glu Arg Arg Gly Pro
 35 40 45
 Gln Pro Trp His Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala
 50 55 60
 Thr Gln Glu Ala Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys
 65 70 75 80
 Gly Val Pro Asp Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys
 85 90 95

Arg

<210> 10
 <211> 79
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: SEQ ID No: 10
 (N-GLP-1(7-37)-IP2(human)-RR-GLP-1(7-37)-C, also designated human
 CM1)

<400> 10

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 Arg
 20 25 30
 Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg
 35 40 45
 His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
 50 55 60
 Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
 65 70 75

<210> 11
 <211> 83
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: SEQ ID No: 11

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(N-GLP-1(7-37)-IP2(human)-RR-GLP-2-C), also designated human CM2
herein)

<400> 11

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 Arg
20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg
35 40 45

His Ala Asp Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp Asn
50 55 60

Leu Ala Ala Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr
65 70 75 80

Asp Arg Lys

<210> 12

<211> 46

<212> PRT

<213> Artificial

<220>

<223> Description of sequence: SEQ ID No: 12, GLP-1(7-37) linked
without any linker sequence via its C-terminus to human IP2

<400> 12

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 Arg
20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly
35 40 45

<210> 13

<211> 815

<212> DNA

<213> Artificial

<220>

<223> Description of sequence: (SEQ ID No:13) represents the translated
peptide sequence of the construct according to Fig. 1k (SEQ ID
No: 14)

<220>

<221> CDS

<222> (11)..(118)

<220>

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<221> CDS
<222> (387)..(809)

<400> 13

gatatccacc atg gcc ccc gcc gcc tgg ctg agg agc gcc gcc gcc agg 49
Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Ala Arg
1 5 10

gcc ctg ctg cca ccc atg ctg ctg ctg ctg ctg cag ccc cca cct ctg 97
Ala Leu Leu Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu
15 20 25

ctg gcc cgg gcc ctg ccc ccg gtgagtgccc gccactcgcc gtccgctcct 148
Leu Ala Arg Ala Leu Pro Pro
30 35

cgctgagggg gcgccgggca cgcgggctgg gccagcggc gtatccggac gccagaagaaac 208

cagagagcca gccagatgcc aaagggccct gccatgtgcc ggtgcccttt ccctctccat 268

ttgccctgcc acacagtggg ctgggggttg acgtgtgttt gctgacaggc cacatctcta 328

actgtggggc atgtggacct taggcctgac cagaccctca tgtcttcctc cttcccag 386

gac gtg cac cac ctg cac gcc gag agg cgc ggc cct cag ccc tgg cac 434
Asp Val His His Leu His Ala Glu Arg Arg Gly Pro Gln Pro Trp His
40 45 50

gcc gcc ctg cca agc agc cct gcc cct gcc cca gcc acc cag gag gcc 482
Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala Thr Gln Glu Ala
55 60 65

ccc agg cct gcc agc agc ctg agg cca ccc agg tgc ggc gtg cct gat 530
Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys Gly Val Pro Asp
70 75 80

ccc tcc gat ggc ctg agc gct cgg aat cgg cag aag agg cac gcc gag 578
Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys Arg His Ala Glu
85 90 95 100

ggc acc ttc acc tcc gac gtg agc agc tac ctg gag ggc cag gcc gcc 626
Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala
105 110 115

aag gag ttc atc gcc tgg ctg gtg aag ggc agg ggc cgc agg gac ttc 674
Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Arg Arg Asp Phe
120 125 130

cct gag gag gtg gcc atc gtg gag gag ctg ggc cgg cga cac gcc gag 722
Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg His Ala Glu
135 140 145

ggc acc ttc acc tcc gac gtg agc agc tac ctg gag ggc cag gcc gcc 770
Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala
150 155 160

aag gag ttc atc gcc tgg ctg gtg aag ggc agg ggc tga gcgcgc 815
Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
165 170 175

<210> 14

<211> 815

<212> DNA

<213> Artificial

<220>

<223> Description of sequence: DNA sequence of the construct according

to Fig. 1k

```
<400> 14
gatatccacc atggcccccg ccgcctggct gaggagcgcc gccgccaggg ccctgctgcc      60
acccatgctg ctgctgctgc tgcagccccc acctctgctg gcccgggccc tgcccccggt      120
gagtgtccgc cactcgccgt ccgctcctcg ctgagggggc gccgggcacg cgggctgggc      180
ccagcggcgt atccggacgc caagaaacca gagagccagc cagatgcca aaggccctgc      240
catgtgccgg tgccctttcc ctctccattt gccctgccac acagtgggct ggggttgac      300
gtgtgtttgc tgacaggcca catctctaac tgtggggccat gtggacctta ggcctgacca      360
gacctcatg tcttcctcct tcccaggacg tgcaccacct gcacgccgag aggcgcggcc      420
ctcagccctg gcacgccgcc ctgccaagca gccctgcccc tgccccagcc acccaggagg      480
ccccaggcc tgccagcagc ctgaggccac ccagggtgcg cgtgcctgat ccctccgatg      540
gcctgagcgc tcggaatcgg cagaagaggc acgccgaggg caccttcacc tccgacgtga      600
gcagctacct ggagggccag gccgccaagg agttcatcgc ctggctggtg aagggcaggg      660
gccgcaggga cttccctgag gaggtggcca tcgtggagga gctgggccgg cgacacgccg      720
agggcacctt cacctccgac gtgagcagct acctggaggg ccaggccgcc aaggagtcca      780
tcgcctggct ggtgaagggc aggggctgag cgcgc      815
```

```
<210> 15
<211> 834
<212> DNA
<213> Artificial
```

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<220>
<223> Description of sequence: DNA sequence and sequence of the
translated peptide according to the construct Fig. 1h
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```
<220>
<221> CDS
<222> (11)..(118)

<220>
<221> CDS
<222> (387)..(821)
```

```
<400> 15
gatatccacc atg gcc ccc gcc gcc tgg ctg agg agc gcc gcc gcc agg      49
             Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Ala Arg
             1             5             10

gcc ctg ctg cca ccc atg ctg ctg ctg ctg ctg cag ccc cca cct ctg      97
Ala Leu Leu Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu
    15             20             25

ctg gcc cgg gcc ctg ccc ccg gtgagtgccc gccactcgcc gtccgctcct      148
Leu Ala Arg Ala Leu Pro Pro
    30             35

cgctgagggg gcgccgggca cgcgggctgg gccagcggc gtatccggac gccaagaaac      208
cagagagcca gccagatgcc aaagggccct gccatgtgcc ggtgcccttt ccctctccat      268
ttgccctgcc acacagtggg ctgggggttg acgtgtgttt gctgacaggc cacatctcta      328
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actgtgggcc atgtggacct taggcctgac cagaccctca tgtcttcctc cttcccag																386
gac gtg cac cac ctg cac gcc gag agg cgc ggc cct cag ccc tgg cac Asp Val His His Leu His Ala Glu Arg Arg Gly Pro Gln Pro Trp His																434
gcc gcc ctg cca agc agc cct gcc cct gcc cca gcc acc cag gag gcc Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala Thr Gln Glu Ala																482
ccc agg cct gcc agc agc ctg agg cca ccc agg tgc ggc gtg cct gat Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys Gly Val Pro Asp																530
ccc tcc gat ggc ctg agc gct cgg aat cgg cag aag agg cac gcc gag Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys Arg His Ala Glu																578
ggc acc ttc acc tcc gac gtg agc agc tac ctg gag ggc cag gcc gcc Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala																626
aag gag ttc atc gcc tgg ctg gtg aag ggc agg ggc cgc agg gac ttc Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Arg Arg Asp Phe																674
cct gag gag gtg gcc atc gtg gag gag ctg ggc cgg cga cac gcc gac Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg His Ala Asp																722
ggc agc ttc agc gac gag atg aac acc atc ctg gac aac ctg gcc gcg Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp Asn Leu Ala Ala																770
cgc gag ttc atc aac tgg ctg atc cag acc aag atc acc gat cgg aag Arg Asp Phe Ile Asn Trp Leu Ile Gln Thr Lys Ile Thr Asp Arg Lys																818
tga gcgcgctgat atc																834

<210>	16
<211>	834
<212>	DNA
<213>	Artificial

<220>
<223> Description of sequence: DNA sequence of the construct according to Fig. 1h

<400>	16						
gatatccacc	atggcccccg	ccgcctggct	gaggagcgcc	gccgccaggg	ccctgtgtcc		60
acccatgtctg	ctgtgtgtgc	tgcagcccc	acctctgtctg	gcccggggccc	tgcccccggt		120
gagtgtcccg	cactcgccgt	ccgttcctcg	ctgagggggc	gccgggcacg	cgggctgggc		180
ccagcggcgt	atccggacgc	caagaaacca	gagagccagc	cagatgccaa	agggccctgc		240
catgtgccgg	tgccctttcc	ctctccattt	gccctgccac	acagtgggct	ggggttgcac		300
gttgtgtttg	tgacaggcca	catctctaac	tgtggggccat	gtggacctta	ggcctgacca		360
gaccctcatg	tcttcctcct	tcccaggacg	tgcaccacct	gcacgccgag	aggcgcggcc		420
ctcacgccctg	qcacgccqcc	ctgccaaqca	qccctqcccc	tgccccagcc	acccaggagg		480

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ccccaggcc tgccagcagc ctgaggccac ccagggtgcgg cgtgcctgat ccctccgatg 540
gcctgagcgc tcggaatcgg cagaagaggc acgccgaggg caccttcacc tccgacgtga 600
gcagctacct ggagggccag gccgccaagg agttcatcgc ctggctggtg aagggcaggg 660
gccgcagggg cttccctgag gaggtggcca tcgtggagga gctgggcccgg cgacacgccg 720
acggcagctt cagcgacgag atgaacacca tcctggacaa cctggccgcg cgcgacttca 780
tcaactggct gatccagacc aagatcaccc atcggaagtg agcgcgctga tatc 834

<210> 17
<211> 780
<212> DNA
<213> Artificial

<220>
<223> Description of sequence: DNA sequence sequence and translated peptide sequence of the construct according to Fig. 11,

<220>
<221> CDS
<222> (11)..(118)

<220>
<221> CDS
<222> (387)..(776)

<400> 17
gatatccacc atg gcc ccc gcc gcc tgg ctg agg agc gcc gcc gcc agg 49
Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Ala Arg
1 5 10
gcc ctg ctg cca ccc atg ctg ctg ctg ctg ctg cag ccc cca cct ctg 97
Ala Leu Leu Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu
15 20 25
ctg gcc cgg gcc ctg ccc ccg gtgagtgcc gccactcgcc gtccgctcct 148
Leu Ala Arg Ala Leu Pro Pro
30 35
cgctgagggg gcgccgggca cgcgggctgg gcccagcggc gtatccggac gccaagaaac 208
cagagagcca gccagatgcc aaagggccct gccatgtgcc ggtgcccttt ccctctccat 268
ttgccctgcc acacagtggg ctgggggttg acgtgtgttt gctgacaggc cacatctcta 328
actgtggggc atgtggacct taggcctgac cagaccctca tgtcttcctc cttcccag 386
gac gtg cac cac ctg cac gcc gag agg cgc ggc cct cag ccc tgg cac 434
Asp Val His His Leu His Ala Glu Arg Arg Gly Pro Gln Pro Trp His
40 45 50
gcc gcc ctg cca agc agc cct gcc cct gcc cca gcc acc cag gag gcc 482
Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala Thr Gln Glu Ala
55 60 65
ccc agg cct gcc agc agc ctg agg cca ccc agg tgc ggc gtg cct gat 530
Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys Gly Val Pro Asp
70 75 80
ccc tcc gat ggc ctg agc gct cgg aat cgg cag aag agg cac gcc gag 578
Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys Arg His Ala Glu
85 90 95 100

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ggc acc ttc acc tcc gac gtg agc agc tac ctg gag ggc cag gcc gcc	626
Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala	
105 110 115	
aag gag ttc atc gcc tgg ctg gtg aag ggc agg ggc cgc agg gac ttc	674
Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Arg Arg Asp Phe	
120 125 130	
cct gag gag gtg gcc atc gtg gag gag ctg ggc cgc cga cac gcc gac	722
Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg His Ala Asp	
135 140 145	
ggc agc ttc agc gac gag atg aac acc atc ctg gac aac ctg gcc gcg	770
Gly Ser Phe Ser Asp Glu Met Asn Thr Ile Leu Asp Asn Leu Ala Ala	
150 155 160	
cgc tga tatc	780
Arg	
165	

<210> 18
 <211> 720
 <212> DNA
 <213> Artificial

<220>
 <223> Description of sequence: DNA sequence of the construct according to Fig. 1l

<400> 18	
gatatccacc atggcccccg ccgcctggct gaggagcgcc gccgccaggg ccctgctgcc	60
acccatgctg ctgctgctgc tgcagcccc acctctgctg gcccgggccc tgccccgggt	120
gagtggccgc cactcgccgt ccgctcctcg ctgagggggc gccgggcacg cgggctgggc	180
ccagcggcgt atccggacgc caagaaacca gagagccagc cagatgcca agggccctgc	240
catgtgccgg tgccctttcc ctctccattt gccctgccac acagtgggct ggggttgac	300
gtgtgtttgc tgacaggcca catctctaac tgtgggcat gtggacctta ggcctgacca	360
gaccctcatg tcttctctct tcccaggacg tgcaccacct gcacgccgag aggcgcggcc	420
ctcagccctg gcacgccgcc ctgccaagca gccctgcccc tgccccagcc acccaggagg	480
ccccaggcc tgccagcagc ctgaggccac ccagggtgcg cgtgcctgat ccctccgatg	540
gcctgagcgc tcggaatcgg cagaagaggc acgccgaggg caccttcacc tccgacgtga	600
gcagctacct ggagggccag gccgccaagg agttcatcgc ctggctggtg aagggcaggg	660
acggcagctt cagcgacgag atgaacacca tcctggacaa cctggccgcg cgctgatatc	720

<210> 19
 <211> 716
 <212> DNA
 <213> Artificial

<220>
 <223> Description of sequence: DNA sequence and sequence of the translated peptide according to Fig. 1m

<220>
 <221> CDS

<222> (11)..(118)

<220>

<221> CDS

<222> (387)..(710)

<400> 19

gatatccacc atg gcc ccc gcc gcc tgg ctg agg agc gcc gcc gcc agg 49
 Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Ala Arg
 1 5 10

gcc ctg ctg cca ccc atg ctg ctg ctg ctg ctg cag ccc cca cct ctg 97
 Ala Leu Leu Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu
 15 20 25

ctg gcc cgg gcc ctg ccc ccg gtgagtgtccc gccactcggc gtccgctcct 148
 Leu Ala Arg Ala Leu Pro Pro
 30 35

cgctgagggg gcgccgggca cgcgggctgg gcccagcggc gtatccggac gccaaagaac 208

cagagagcca gccagatgcc aaagggccct gccatgtgcc ggtgcccttt ccctctccat 268

ttgccctgcc acacagtggg ctgggggttg acgtgtgttt gctgacaggc cacatctcta 328

actgtggggc atgtggacct taggcctgac cagaccctca tgtcttcctc cttcccag 386

gac gtg cac cac ctg cac gcc gag agg cgc ggc cct cag ccc tgg cac 434
 Asp Val His His Leu His Ala Glu Arg Arg Gly Pro Gln Pro Trp His
 40 45 50

gcc gcc ctg cca agc agc cct gcc cct gcc cca gcc acc cag gag gcc 482
 Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala Thr Gln Glu Ala
 55 60 65

ccc agg cct gcc agc agc ctg agg cca ccc agg tgc ggc gtg cct gat 530
 Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys Gly Val Pro Asp
 70 75 80

ccc tcc gat ggc ctg agc gct cgg aat cgg cag aag agg cac gcc gag 578
 Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys Arg His Ala Glu
 85 90 95 100

ggc acc ttc acc tcc gac gtg agc agc tac ctg gag ggc cag gcc gcc 626
 Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln Ala Ala
 105 110 115

aag gag ttc atc gcc tgg ctg gtg aag ggc agg ggc cgc agg gac ttc 674
 Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly Arg Arg Asp Phe
 120 125 130

cct gag gag gtg gcc atc gtg gag gag ctg ggc tga gcgcgc 716
 Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly
 135 140

<210> 20

<211> 716

<212> DNA

<213> Artificial

<220>

<223> Description of sequence: DNA sequence of the construct according to Fig. 1m

<400> 20

gatatccacc atggcccccg ccgcctggct gaggagcgcc gccgccaggg ccctgctgcc 60

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acccatgctg ctgctgctgc tgcagcccc acctctgctg gcccgggccc tgcccccggt 120
 gagtgcccg cactcgccgt ccgctcctcg ctgagggggc gccgggcacg cgggctgggc 180
 ccagcggcgt atccggacgc caagaaacca gagagccagc cagatgccaaggccctgc 240
 catgtgccgg tgccctttcc ctctccattt gccctgccac acagtgggct ggggttgac 300
 gtgtgtttgc tgacaggcca catctctaac tgtggggccat gtggacctta ggcctgacca 360
 gaccctcatg tcttcctcct tcccaggacg tgcaccacct gcacgccgag aggcgcggcc 420
 ctcagccctg gcacgccgcc ctgccaagca gccctgcccc tgccccagcc acccaggagg 480
 cccccaggcc tgccagcagc ctgaggccac ccagggtgcgg cgtgcctgat ccctccgatg 540
 gcctgagcgc tcggaatcgg cagaagaggc acgccgaggg caccttcacc tccgacgtga 600
 gcagctacct ggagggccag gccgccaagg agttcatcgc ctggctggtg aagggcaggg 660
 gccgcaggga cttccctgag gaggtggcca tcgtggagga gctgggctga gcgcgc 716

<210> 21
 <211> 31
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: artificial

<400> 21

His Gly 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> 22
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 22

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile
 1 5 10

<210> 23
 <211> 14
 <212> PRT
 <213> Artificial

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 23

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu

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1

5

10

<210> 24
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 24

Arg Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu
1 5 10

<210> 25
<211> 31
<212> PRT
<213> Artificial

<220>
<223> Description of sequence: sequence according to formula (I)

<220>
<221> misc_feature
<222> (31)..(31)
<223> Xaa = NH₂, when sequence is GLP-1(7-36) amide, or Xaa = Gly-OH, when sequence is GLP-1(7-37) amide,

<400> 25

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 Xaa
20 25 30

<210> 26
<211> 584
<212> DNA
<213> Artificial

<220>
<223> Description of sequence: GLP-1 fusion peptide corresponding to Figure 1 e #217

<220>
<221> CDS
<222> (31)..(561)

<400> 26
aattcagata attcgatagc cccgggcacc atg gct ccc gct gca tgg ctg aga 54
Met Ala Pro Ala Ala Trp Leu Arg
1 5

tct gcg gcc gcg cgc gcc ctc ctg ccc ccg atg ctg ctg ctg ctg ctc 102
Ser Ala Ala Ala Arg Ala Leu Leu Pro Pro Met Leu Leu Leu Leu
10 15 20

cag ccg ccg ccg ctg ctg gcc cgg gct ctg ccg ccg gac gtc cac cac 150
Gln Pro Pro Pro Leu Leu Ala Arg Ala Leu Pro Pro Asp Val His His

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25	30					35					40					
ctc	cat	gcc	gag	agg	agg	ggg	cca	cag	ccc	tgg	cat	gca	gcc	ctg	ccc	198
Leu	His	Ala	Glu	Arg	Arg	Gly	Pro	Gln	Pro	Trp	His	Ala	Ala	Leu	Pro	
				45					50					55		
agt	agc	ccg	gca	cct	gcc	cct	gcc	acg	cag	gaa	gcc	ccc	cgg	cct	gcc	246
Ser	Ser	Pro	Ala	Pro	Ala	Pro	Ala	Thr	Gln	Glu	Ala	Pro	Arg	Pro	Ala	
			60					65					70			
agc	agc	ctc	agg	cct	ccc	cgc	tgt	ggc	gtg	ccc	gac	cca	tct	gat	ggg	294
Ser	Ser	Leu	Arg	Pro	Pro	Arg	Cys	Gly	Val	Pro	Asp	Pro	Ser	Asp	Gly	
		75					80					85				
ctg	agt	gcc	cgc	aac	cga	cag	aag	agg	cat	gcc	gaa	ggg	acc	ttt	acc	342
Leu	Ser	Ala	Arg	Asn	Arg	Gln	Lys	Arg	His	Ala	Glu	Gly	Thr	Phe	Thr	
	90					95					100					
agc	gat	gtg	agc	tct	tat	ctg	gaa	ggc	cag	gct	gcc	aag	gag	ttc	att	390
Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly	Gln	Ala	Ala	Lys	Glu	Phe	Ile	
105					110					115					120	
gct	tgg	ctg	gtg	aaa	ggc	cgg	gga	agg	cgg	gat	ttc	cca	gag	gag	gtg	438
Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly	Arg	Arg	Asp	Phe	Pro	Glu	Glu	Val	
				125					130					135		
gcc	atc	gtg	gag	gag	ctg	ggc	cgg	cga	cat	gcc	gaa	ggg	acc	ttt	acc	486
Ala	Ile	Val	Glu	Glu	Leu	Gly	Arg	Arg	His	Ala	Glu	Gly	Thr	Phe	Thr	
			140					145					150			
agc	gat	gtg	agc	tct	tat	ctg	gaa	ggc	cag	gct	gcc	aag	gag	ttc	att	534
Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly	Gln	Ala	Ala	Lys	Glu	Phe	Ile	
		155					160					165				
gct	tgg	ctg	gtg	aaa	ggc	cgg	gga	tga	attgccaagg	gcgaattatc	agg					584
Ala	Trp	Leu	Val	Lys	Gly	Arg	Gly									
	170					175										

<210> 27
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 27

Asp Phe Pro Glu Glu Val Ala Ile
1 5

<210> 28
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 28

Arg Asp Phe Pro Glu Glu Val Ala
1 5

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<210> 29
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 29

Arg Arg Asp Phe Pro Glu Glu Val
 1 5

<210> 30
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 30

Ala Ala Asp Phe Pro Glu Glu Val Ala Ile
 1 5 10

<210> 31
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 31

Ala Asp Phe Pro Glu Glu Val Ala
 1 5

<210> 32
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 32

Ala Ala Asp Phe Pro Glu Glu Val
 1 5

<210> 33
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of sequence: sequence contained in component (II) of
 Seite 15

a GLP-1 fusion peptide

<400> 33

Ala Ala Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu
1 5 10

<210> 34

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 34

Ala Ala Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu
1 5 10

<210> 35

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 35

Ala Ala Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly
1 5 10 15

<210> 36

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of sequence: sequence contained in component (II) of a GLP-1 fusion peptide

<400> 36

Ala Ala Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly
1 5 10 15

<210> 37

<211> 46

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 37

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 Ala
Seite 16

Ala Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly
35 40 45

<210> 38
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 38

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 Ala
20 25 30

Ala Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly
35 40 45

<210> 39
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 39

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 Arg
20 25 30

Arg Asp Phe Ala Glu Glu Val Ala Ile Ala Glu Glu Leu Gly
35 40 45

<210> 40
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 40

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 Arg
20 25 30

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Arg Asp Ala Ala Ala Ala Val Ala Ile Ala Glu Glu Leu Gly
35 40 45

<210> 41
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 41

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 Ala
20 25 30

Ala Asp Ala Ala Ala Ala Val Ala Ile Ala Ala Ala Leu Gly
35 40 45

<210> 42
<211> 36
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 42

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 Arg
20 25 30

Arg Asp Phe Pro
35

<210> 43
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 43

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 Arg
20 25 30

Arg Asp Phe Pro Glu Glu Val Ala

35

40

<210> 44
<211> 51
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide
<400> 44

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 Arg
20 25 30

Arg Asp Phe Pro Glu Glu Val Ala Ile Ala Glu Glu Leu Gly Arg Arg
35 40 45

His Ala Cys
50

<210> 45
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide
<400> 45

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 Arg
20 25 30

Arg Asp Phe Ala Glu Glu Val Ala Ile Val Glu Glu Leu Gly
35 40 45

<210> 46
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of sequence: sequence of a GLP-1 fusion peptide
<400> 46

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 Arg
20 25 30

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Arg Asp Ala Ala Ala Ala Val Ala Ile Val Glu Glu Leu Gly
 35 40 45

<210> 47
 <211> 46
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Description of sequence: sequence of a GLP-1 fusion peptide

<400> 47

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 Ala
 20 25 30

Ala Asp Ala Ala Ala Ala Val Ala Ile Val Ala Ala Leu Gly
 35 40 45

<210> 48
 <211> 51
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Description of sequence: sequence of a GLP-1 fusion peptide

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

Arg Asp Phe Pro Glu Glu Val Ala Ile Val Glu Glu Leu Gly Arg Arg
 35 40 45

His Ala Cys
 50