

eolf-seql  
SEQUENCE LISTING

<110> Sanofi  
<120> Exendin-4 Derivatives as Selective Glucagon Receptor Agonists  
<130> DE2014/055  
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<170> PatentIn version 3.5  
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<213> Heloderma suspectum

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<223> Amidated C-terminus

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| His | Gly | Glu | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Met | Glu | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ala | Val | Arg | Leu | Phe | Ile | Glu | Trp | Leu | Lys | Asn | Gly | Gly | Pro | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     | 35  |     |     |     |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Tyr | Ser | Lys | Tyr | Leu | Asp | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Val | Gln | Trp | Leu | Met | Asn | Thr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     | 35  |     |     |     |

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<223> Xaa is L-4-Thiazolylalanine (Tza)

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Gly | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Tyr | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Gly | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

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Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

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Xaa Ser Gln Gly Thr Phe Thr Ser Asp Val Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

eolf-seql

Ser Gly Ala Pro Pro Pro Ser  
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Ile | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

Ser Gly Ala Pro Pro Pro Ser  
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Xaa Ser Gln Gly Thr Phe Thr Ser Asp Val Ser Lys Gln Leu Glu Ser  
1 5 10 15

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

Ser Gly Ala Pro Pro Pro Ser  
35

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<223> Xaa is L-Phenylglycine (Phg)

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Xaa Ser Gln Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Leu | Glu | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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|   |   |    |    |
|---|---|----|----|
| 1 | 5 | 10 | 15 |
|---|---|----|----|

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu

|    |    |    |  |
|----|----|----|--|
| 20 | 25 | 30 |  |
|----|----|----|--|

Ser Gly Ala Pro Pro Pro Ser

35

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|                                                                                                                                                                                                                                                                           |   |    |    |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|----|----|
| Xaa Ser Gln Gly Thr Phe Thr Ser Asp Phe Ser Lys Gln Xaa Glu Ser                                                                                                                                                                                                           |   |    |    |    |
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| 1                                                                                                                                                                                                                                                                         | 5 | 10 | 15 |    |

Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu

|    |    |    |  |
|----|----|----|--|
| 20 | 25 | 30 |  |
|----|----|----|--|

Ser Gly Ala Pro Pro Pro Ser

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Ile | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

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<400> 15

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

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Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
 20 25 30

Ser Gly Ala Pro Pro Pro Ser  
 35

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Xaa Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Ser  
 1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
 20 25 30

Ser Gly Ala Pro Pro Pro Ser  
 35

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Tyr | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
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| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     | 35  |     |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

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25

30

Ser Gly Ala Pro Pro Pro Ser  
35

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Xaa Ser Gln Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Xaa Glu Ser  
1 5 10 15

Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

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<223> Xaa is L-4-Thiazolylalanine (Tza)

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<223> Xaa is L-2-Fluorophenylglycine (2FPhg)

<400> 21

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     | 35  |     |     |     |     |

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<221> MOD\_RES

<222> (10)..(10)

<223> Xaa is L-1-Naphthylalanine (1Nal)

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<400> 22

Xaa Ser Gln Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

<210> 23

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial polypeptide

<220>

<221> MOD\_RES

<222> (1)..(1)

<223> Xaa is L-4-Thiazolylalanine (Tza)

<220>

<221> MOD\_RES

<222> (10)..(10)

<223> Xaa is L-Cyclohexylglycine (Chg)

<400> 23

Xaa Ser Gln Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

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<210> 24  
<211> 39  
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<220>  
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<220>  
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<223> Xaa is L-4-Thiazolylalanine (Tza)

<220>  
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<223> Xaa is L-Cyclohexylglycine (Chg)

<220>  
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<222> (14)..(14)  
<223> Xaa is L-Norleucine (Nle)

<400> 24

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

<210> 25  
<211> 39  
<212> PRT  
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<220>  
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<220>

eolf-seql

<221> MOD\_RES  
 <222> (1)..(1)  
 <223> Xaa is L-4-Thiazolylalanine (Tza)

<220>  
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 <222> (10)..(10)  
 <223> Xaa is L-tert-Leucine (Tle)

<220>  
 <221> MOD\_RES  
 <222> (14)..(14)  
 <223> Xaa is L-Norleucine (Nle)

<400> 25

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Xaa | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     | 35  |     |     |     |

<210> 26  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<220>  
 <221> MOD\_RES  
 <222> (14)..(14)  
 <223> Xaa is L-Norleucine (Nle)

<400> 26

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Xaa | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Asp | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

<210> 27  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<400> 27

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Gly | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     |     |     |     | 35  |

<210> 28  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<400> 28

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Tyr | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Gly | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

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Ser Gly Ala Pro Pro Pro Ser  
35

<210> 29  
<211> 39  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial polypeptide

<400> 29

His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

<210> 30  
<211> 39  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial polypeptide

<400> 30

His Ser Gln Gly Thr Phe Thr Ser Asp Val Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

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<210> 31  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<400> 31

His Ser Gln Gly Thr Phe Thr Ser Asp Ile Ser Lys Gln Leu Glu Ser  
 1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
 20 25 30

Ser Gly Ala Pro Pro Pro Ser  
 35

<210> 32  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<220>  
 <221> MOD\_RES  
 <222> (10)..(10)  
 <223> Xaa is L-Phenylglycine (Phg)

<400> 32

His Ser Gln Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Ser  
 1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
 20 25 30

Ser Gly Ala Pro Pro Pro Ser  
 35

eolf-seql

<210> 33  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<220>  
 <221> MOD\_RES  
 <222> (10)..(10)  
 <223> Xaa is L-1-Naphthylalanine (1NaI)

<400> 33

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Xaa | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ala | Pro | Pro | Pro | Ser |
|     |     |     | 35  |     |     |     |

<210> 34  
 <211> 39  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Artificial polypeptide

<400> 34

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | Gln | Gly | Thr | Phe | Thr | Ser | Asp | Leu | Ser | Lys | Gln | Leu | Glu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     | 15  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Ala | Gln | Glu | Phe | Ile | Glu | Trp | Leu | Leu | Ala | Thr | Gly | Pro | Glu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

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Ser Gly Ala Pro Pro Pro Ser  
35

<210> 35  
<211> 39  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial polypeptide

<400> 35

His Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Ser  
1 5 10 15

Arg Arg Ala Gln Asp Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

Ser Gly Ala Pro Pro Pro Ser  
35

<210> 36  
<211> 39  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Artificial polypeptide

<220>  
<221> MOD\_RES  
<222> (14)..(14)  
<223> Xaa is L-Norleucine (Nle)

<400> 36

His Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Ser  
1 5 10 15

Arg Arg Ala Gln Glu Phe Ile Glu Trp Leu Leu Ala Thr Gly Pro Glu  
20 25 30

eolf-seql

Ser Gly Ala Pro Pro Pro Ser  
35