

SEQUENCE LISTING

<110> The Children's Hospital of Philadelphia

<120> ADENO-ASSOCIATED VIRAL VECTOR VARIANTS

<130> CHOP.P0038W0

<140> not yet known

<141> 2020-11-20

<150> 63/084,709

<151> 2020-09-29

<150> 62/939,315

<151> 2019-11-22

<160> 144

<170> PatentIn version 3.5

<210> 1

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 1

Arg Pro Gly Arg Glu Gln Ala
1 5

<210> 2

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 2

Arg Gly Val Leu Val Thr Thr
1 5

<210> 3

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 3

Arg Pro Gly Arg Glu Ser Ala
1 5

<210> 4
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 4

Asn Glu Ser Leu Lys Lys Lys
1 5

<210> 5
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 5

Asp Lys Thr Arg Ala Gly Ser
1 5

<210> 6
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 6

Thr Ala Lys Ser Lys Gln Ala
1 5

<210> 7
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 7

Pro Val Lys Lys Lys Asp Ala
1 5

<210> 8

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 8

Gly Arg Glu Thr Leu Lys Gly
1 5

<210> 9

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 9

Pro Ile Pro Ala Gly Lys Lys
1 5

<210> 10

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 10

Asn Val Val Arg Ala Gly Thr
1 5

<210> 11

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 11

Lys Ala Thr Ala Asn Thr Arg
1 5

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 12

Arg Asp Ala Thr Arg Ser Ser
1 5

<210> 13
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 13

Val Pro Thr Lys Ser Pro Lys
1 5

<210> 14
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 14

Ala Gly Val Ala Arg Ser Lys
1 5

<210> 15
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 15

Arg Ser Arg Ser Glu Val Leu
1 5

<210> 16
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 16

Glu Val Lys Gly Lys Gly Lys
1 5

<210> 17
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 17

Ala Lys Leu Asn Lys Ser Ser
1 5

<210> 18
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 18

Asn Ser Val His Asn Thr Ala

1

5

<210> 19
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 19

Asn Val Val Arg Gly Gly Ala
1 5

<210> 20
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 20

Asn Arg Leu Val Ala Gly Gly
1 5

<210> 21
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 21

Glu Arg Asp Arg Thr Arg Gly
1 5

<210> 22
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 22

Val Gln Gly Ser Lys Met Lys
1 5

<210> 23
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 23

Asn Ser Val Arg Pro Leu Thr
1 5

<210> 24
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 24

Asn Lys Ile His Ala Asn Pro
1 5

<210> 25
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 25

Thr Ala Pro Lys Ser Leu Lys
1 5

<210> 26
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 26

Arg Asp Ser Thr Arg Gln Leu
1 5

<210> 27

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 27

Asn Ser Val Lys Ser Val Leu
1 5

<210> 28

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 28

Asn Val Thr Ile Lys Ser Lys
1 5

<210> 29

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 29

Val Ser Leu Lys Glu Arg Val
1 5

<210> 30

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 30

Asp Glu Thr Ser Arg Leu Val
1 5

<210> 31
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 31

Asp Arg Leu Lys Gly Ile Val
1 5

<210> 32
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 32

Ser Gly Val Leu Val Gln Arg
1 5

<210> 33
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 33

Ser Gly Thr Phe Val Lys Ala
1 5

<210> 34
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 34

Asn Ser Ile Ala Arg Pro Val
1 5

<210> 35

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 35

Asn Arg Ala Arg Ala Gly Glu
1 5

<210> 36

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 36

Ala Arg His Ala Leu Gly Gly
1 5

<210> 37

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 37

His Ser Ser Arg Pro Val Ala
1 5

<210> 38

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 38

Lys Thr Gly Thr Ala Arg Leu
1 5

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 39

Val Lys Ala Leu Gly Arg Pro
1 5

<210> 40
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 40

Asn Asp Val Arg Ala Lys Gly
1 5

<210> 41
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 41

Gln Gly Val Leu Val Val Arg
1 5

<210> 42
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 42

Lys Gln Tyr Ala Gly Ser Gln
1 5

<210> 43
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 43

Thr Asn Arg Met Ala Leu Ser
1 5

<210> 44
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 44

Gly Ile Thr Leu Gly Arg Leu
1 5

<210> 45
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 45

Ala Gly Ile Met Val Arg Val

1

5

<210> 46

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 46

Lys Ala Ala Gly Arg Thr Val
1 5

<210> 47

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 47

His Val Ile Arg Leu Pro Ser
1 5

<210> 48

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 48

Ser Val Ala Ser Ala Lys Lys
1 5

<210> 49

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 49

Thr Ala Thr Pro Arg Lys Gly
1 5

<210> 50
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 50

Thr Lys Thr Gly Leu Lys Leu
1 5

<210> 51
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 51

Lys Gly Leu Arg Thr Pro Thr
1 5

<210> 52
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 52

Leu Thr Ser Arg Thr Ser Pro
1 5

<210> 53
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 53

Asp Asp Pro Ser Ala Arg Arg
1 5

<210> 54

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 54

Gly Glu Gln Asp Leu Arg Arg
1 5

<210> 55

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 55

Val Ser Thr Ala Leu Pro Arg
1 5

<210> 56

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 56

Arg Asp Asp Val Pro Leu Arg
1 5

<210> 57

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 57

Thr Arg Val Gly Thr Ala Gly
1 5

<210> 58
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 58

Ser Ser Ser Lys Thr Gly Ser
1 5

<210> 59
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 59

Ser Leu Ser Thr Gly Pro Lys
1 5

<210> 60
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 60

Val Gln Gly Arg Gln Gly Gly
1 5

<210> 61
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 61

Arg Gly Ala Ser Gly Ala Val
1 5

<210> 62

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 62

Asn Ala Arg Ala Gln Gly Val
1 5

<210> 63

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 63

Thr Ser Asn Arg Gly Gln Val
1 5

<210> 64

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 64

Ala Val Arg Gly Gly Met Ala
1 5

<210> 65

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 65

Arg Gly Leu Asp Lys Gly Thr
1 5

<210> 66
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 66

Lys Gly Val Asp Leu Lys Pro
1 5

<210> 67
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 67

Thr Ala Val Arg Glu Glu Arg
1 5

<210> 68
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 68

Gly Asn Ala Gly Ile Thr Lys
1 5

<210> 69
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 69

Ser Ala Arg Ala Gly Ala Pro
1 5

<210> 70
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 70

Ser Gly Glu Phe Val Gly Arg
1 5

<210> 71
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 71

Ser Gly Arg Lys Leu Glu Val
1 5

<210> 72
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 72

Ser Ala Arg Ser Gly Ser Val

1

5

<210> 73
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 73

Glu Ser Thr Gly Arg Glu Arg
1 5

<210> 74
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 74

Val Thr Gln Ser Lys Gly Ala
1 5

<210> 75
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 75

Arg Gly Ser Gly Ser Ala Val
1 5

<210> 76
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 76

Asn Ala Arg Pro Val Ser Ala
1 5

<210> 77
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 77

Thr Ala Arg Gly Gly Gly Gly
1 5

<210> 78
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 78

Gly Arg Ser Ala Ser Gly Ser
1 5

<210> 79
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 79

Lys Ala Gln Gly Val Gly Gly
1 5

<210> 80
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 80

Gly Arg Gly Ala Pro Gly Gly
1 5

<210> 81

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 81

Val Pro Gly Arg Thr Ala Gly
1 5

<210> 82

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 82

Ala Arg Gly Ser Gly Val Asn
1 5

<210> 83

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 83

Ser Val Arg Val Gly Gly Gln
1 5

<210> 84

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 84

Arg Ala Val Pro Ala Gly Gly
1 5

<210> 85
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 85

Val Met Ser Ser Gly Lys Pro
1 5

<210> 86
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 86

Ser Thr Pro Ala Pro Lys Ser
1 5

<210> 87
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 87

Arg Gly Gly Ala Gln Val Val
1 5

<210> 88
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 88

Lys Ala Ser Gly Ala Gly Gly
1 5

<210> 89

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 89

Thr Gly Thr Ala Gly Leu Lys
1 5

<210> 90

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 90

Arg Ser Asn Ala Pro Gln Thr
1 5

<210> 91

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 91

Glu Ala Gln Ser His Pro Arg
1 5

<210> 92

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 92

Thr Lys Ser Leu Ser Ser Gly
1 5

<210> 93
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 93

Ala Ala Gly Ala Lys Val Met
1 5

<210> 94
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 94

Arg Gly Ser Thr Gln Val Gly
1 5

<210> 95
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 95

Gly Arg Ser Thr Gly Met Thr
1 5

<210> 96
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 96

Arg Ala Thr Ser Gln Ser Thr
1 5

<210> 97
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 97

Val Gly Arg Ser Val Gly Ala
1 5

<210> 98
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 98

Gly Glu Gly Gly Gly Gly Arg
1 5

<210> 99
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 99

Thr Ala Ala Gly Gly Gln Arg

1

5

<210> 100
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 100

Gly Arg Gly Gly Ala Ala Leu
1 5

<210> 101
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 101

Val Ala Pro Ile Ser Lys Ser
1 5

<210> 102
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 102

Ala Pro Pro Val Lys Leu Ser
1 5

<210> 103
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 103

His Asp Gly Gly Ala Ser Arg
1 5

<210> 104
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 104

Arg Ser Gly Gly Ala Ala Val
1 5

<210> 105
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 105

Gly Ser Arg Ala Gly Val Gly
1 5

<210> 106
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 106

Lys Leu Ser Ile Ser Gly Asn
1 5

<210> 107
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 107

Gly Ala Val Gly Gly Val Lys
1 5

<210> 108

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 108

Lys Asn Glu Ser Gly Lys Val
1 5

<210> 109

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 109

Ala Gly Gln Leu Ala Gly Arg
1 5

<210> 110

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 110

Lys Gly Gly Gly Phe His Gly
1 5

<210> 111

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 111

Arg Ala Lys Pro Gly Met Glu
1 5

<210> 112
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 112

Gly Arg Asp Val Thr Arg Ser
1 5

<210> 113
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 113

Arg Gly Asp Leu Gln Trp Val
1 5

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 114

Gly Gly Asp Arg Thr Arg Gly
1 5

<210> 115
<211> 7
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 115

Arg Gly Asp Leu Ala Ser Val
1 5

<210> 116

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 116

Arg Asp Thr Thr Arg Asn Leu
1 5

<210> 117

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 117

Lys Gly Gly Gly Val His Gly
1 5

<210> 118

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 118

Arg Gly Asp Met Tyr Arg Val
1 5

<210> 119

<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 119

Arg Gly Asp Arg Pro Val Ser
1 5

<210> 120
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 120

Arg Ser Asp Val Gly Ser Leu
1 5

<210> 121
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 121

Ala Gly Val Lys Pro Gly Arg
1 5

<210> 122
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 122

Arg Gly Asp Trp Pro Arg Gly
1 5

<210> 123
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 123

Gly Gly Arg Pro Gly Ser Trp
1 5

<210> 124
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 124

Arg Gly Asp Tyr Pro Arg Ser
1 5

<210> 125
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 125

Arg Gly Asp Leu Arg Phe Ile
1 5

<210> 126
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 126

Arg Gly Gly Gly Val Tyr Gly

1

5

<210> 127
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 127

Gly Ala Asp Arg Thr Arg Gly
1 5

<210> 128
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 128

Arg Gly Asp Phe Met Gly Leu
1 5

<210> 129
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 129

Arg Arg Asp Glu Thr Arg Thr
1 5

<210> 130
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 130

Ala Glu Ser Pro Trp Glu Arg
1 5

<210> 131
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 131

Ala Trp Asp Gly Thr Arg Val
1 5

<210> 132
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 132

Ala Arg Gly Asp Gly Trp Arg
1 5

<210> 133
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 133

Gly Arg Asp Tyr Thr Arg Leu
1 5

<210> 134
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 134

Arg Arg Gly Asp Ala Trp Ser
1 5

<210> 135

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 135

Met Asp Leu Thr Lys Ala Val
1 5

<210> 136

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 136

Met Met Gly Arg Pro Gly Arg
1 5

<210> 137

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 137

Thr Gly Arg Pro Gly Val Trp
1 5

<210> 138

<211> 736

<212> PRT

<213> adeno-associated virus 1

<400> 138

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Asp Leu Lys Pro Gly Ala Pro Lys Pro
20 25 30

Lys Ala Asn Gln Gln Lys Gln Asp Asp Gly Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala Gly Asp Asn Pro Tyr Leu Arg Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Gln Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ser Gly Ile Gly
145 150 155 160

Lys Thr Gly Gln Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Ser Glu Ser Val Pro Asp Pro Gln Pro Leu Gly Glu Pro Pro
180 185 190

Ala Thr Pro Ala Ala Val Gly Pro Thr Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ala
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Thr Trp Leu Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Ser Ala Ser Thr Gly Ala Ser Asn Asp Asn His
260 265 270

Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe
275 280 285

His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn
290 295 300

Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln
305 310 315 320

Val Lys Glu Val Thr Thr Asn Asp Gly Val Thr Thr Ile Ala Asn Asn
325 330 335

Leu Thr Ser Thr Val Gln Val Phe Ser Asp Ser Glu Tyr Gln Leu Pro
340 345 350

Tyr Val Leu Gly Ser Ala His Gln Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asn Gly
370 375 380

Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro
385 390 395 400

Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Thr Phe Ser Tyr Thr Phe
405 410 415

Glu Glu Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp
420 425 430

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Asn Arg
435 440 445

Thr Gln Asn Gln Ser Gly Ser Ala Gln Asn Lys Asp Leu Leu Phe Ser
450 455 460

Arg Gly Ser Pro Ala Gly Met Ser Val Gln Pro Lys Asn Trp Leu Pro
465 470 475 480

Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys Thr Lys Thr Asp Asn
485 490 495

Asn Asn Ser Asn Phe Thr Trp Thr Gly Ala Ser Lys Tyr Asn Leu Asn
500 505 510

Gly Arg Glu Ser Ile Ile Asn Pro Gly Thr Ala Met Ala Ser His Lys
515 520 525

Asp Asp Glu Asp Lys Phe Phe Pro Met Ser Gly Val Met Ile Phe Gly
530 535 540

Lys Glu Ser Ala Gly Ala Ser Asn Thr Ala Leu Asp Asn Val Met Ile
545 550 555 560

Thr Asp Glu Glu Glu Ile Lys Ala Thr Asn Pro Val Ala Thr Glu Arg
565 570 575

Phe Gly Thr Val Ala Val Asn Phe Gln Ser Ser Ser Thr Asp Pro Ala
580 585 590

Thr Gly Asp Val His Ala Met Gly Ala Leu Pro Gly Met Val Trp Gln
595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
610 615 620

Thr Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu
625 630 635 640

Lys Asn Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
645 650 655

Asn Pro Pro Ala Glu Phe Ser Ala Thr Lys Phe Ala Ser Phe Ile Thr
660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Val Gln Tyr Thr Ser Asn
690 695 700

Tyr Ala Lys Ser Ala Asn Val Asp Phe Thr Val Asp Asn Asn Gly Leu
705 710 715 720

Tyr Thr Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Pro Leu
725 730 735

<210> 139
<211> 735
<212> PRT
<213> adeno-associated virus 2

<400> 139

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Thr Leu Ser
1 5 10 15

Glu Gly Ile Arg Gln Trp Trp Lys Leu Lys Pro Gly Pro Pro Pro Pro
20 25 30

Lys Pro Ala Glu Arg His Lys Asp Asp Ser Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Glu Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Arg Gln Leu Asp Ser Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Pro Val Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu His Ser Pro Val Glu Pro Asp Ser Ser Ser Gly Thr Gly
145 150 155 160

Lys Ala Gly Gln Gln Pro Ala Arg Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Ala Asp Ser Val Pro Asp Pro Gln Pro Leu Gly Gln Pro Pro
180 185 190

Ala Ala Pro Ser Gly Leu Gly Thr Asn Thr Met Ala Thr Gly Ser Gly
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Thr Trp Met Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Ser Gln Ser Gly Ala Ser Asn Asp Asn His Tyr
260 265 270

Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe His
275 280 285

Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn Trp
290 295 300

Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln Val

305		310		315		320									
Lys	Glu	Val	Thr	Gln	Asn	Asp	Gly	Thr	Thr	Thr	Ile	Ala	Asn	Asn	Leu
				325					330					335	
Thr	Ser	Thr	Val	Gln	Val	Phe	Thr	Asp	Ser	Glu	Tyr	Gln	Leu	Pro	Tyr
			340					345					350		
Val	Leu	Gly	Ser	Ala	His	Gln	Gly	Cys	Leu	Pro	Pro	Phe	Pro	Ala	Asp
		355					360					365			
Val	Phe	Met	Val	Pro	Gln	Tyr	Gly	Tyr	Leu	Thr	Leu	Asn	Asn	Gly	Ser
	370					375					380				
Gln	Ala	Val	Gly	Arg	Ser	Ser	Phe	Tyr	Cys	Leu	Glu	Tyr	Phe	Pro	Ser
385					390					395					400
Gln	Met	Leu	Arg	Thr	Gly	Asn	Asn	Phe	Thr	Phe	Ser	Tyr	Thr	Phe	Glu
				405					410					415	
Asp	Val	Pro	Phe	His	Ser	Ser	Tyr	Ala	His	Ser	Gln	Ser	Leu	Asp	Arg
			420					425					430		
Leu	Met	Asn	Pro	Leu	Ile	Asp	Gln	Tyr	Leu	Tyr	Tyr	Leu	Ser	Arg	Thr
		435					440					445			
Asn	Thr	Pro	Ser	Gly	Thr	Thr	Thr	Gln	Ser	Arg	Leu	Gln	Phe	Ser	Gln
	450					455					460				
Ala	Gly	Ala	Ser	Asp	Ile	Arg	Asp	Gln	Ser	Arg	Asn	Trp	Leu	Pro	Gly
465					470					475					480
Pro	Cys	Tyr	Arg	Gln	Gln	Arg	Val	Ser	Lys	Thr	Ser	Ala	Asp	Asn	Asn
				485					490					495	
Asn	Ser	Glu	Tyr	Ser	Trp	Thr	Gly	Ala	Thr	Lys	Tyr	His	Leu	Asn	Gly
		500						505					510		
Arg	Asp	Ser	Leu	Val	Asn	Pro	Gly	Pro	Ala	Met	Ala	Ser	His	Lys	Asp
		515					520					525			

Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly Val Leu Ile Phe Gly Lys
530 535 540

Gln Gly Ser Glu Lys Thr Asn Val Asp Ile Glu Lys Val Met Ile Thr
545 550 555 560

Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro Val Ala Thr Glu Gln Tyr
565 570 575

Gly Ser Val Ser Thr Asn Leu Gln Arg Gly Asn Arg Gln Ala Ala Thr
580 585 590

Ala Asp Val Asn Thr Gln Gly Val Leu Pro Gly Met Val Trp Gln Asp
595 600 605

Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr
610 615 620

Asp Gly His Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys
625 630 635 640

His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asn
645 650 655

Pro Ser Thr Thr Phe Ser Ala Ala Lys Phe Ala Ser Phe Ile Thr Gln
660 665 670

Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys
675 680 685

Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr
690 695 700

Asn Lys Ser Val Asn Val Asp Phe Thr Val Asp Thr Asn Gly Val Tyr
705 710 715 720

Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 140

<211> 736
<212> PRT
<213> adeno-associated virus 9

<400> 140

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
580 585 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
595 600 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
610 615 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625 630 635 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
645 650 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
660 665 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735

<210> 141
<211> 748
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (594)..(600)
<223> X is any amino acid

<400> 141

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Asp Leu Lys Pro Gly Ala Pro Lys Pro
20 25 30

Lys Ala Asn Gln Gln Lys Gln Asp Asp Gly Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala Gly Asp Asn Pro Tyr Leu Arg Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Gln Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Gly Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ser Gly Ile Gly
145 150 155 160

Lys Thr Gly Gln Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Ser Glu Ser Val Pro Asp Pro Gln Pro Leu Gly Glu Pro Pro
180 185 190

Ala Thr Pro Ala Ala Val Gly Pro Thr Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ala
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Thr Trp Leu Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Ser Ala Ser Thr Gly Ala Ser Asn Asp Asn His
260 265 270

Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe
275 280 285

His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn
290 295 300

Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln
305 310 315 320

Val Lys Glu Val Thr Thr Asn Asp Gly Val Thr Thr Ile Ala Asn Asn
325 330 335

Leu Thr Ser Thr Val Gln Val Phe Ser Asp Ser Glu Tyr Gln Leu Pro
340 345 350

Tyr Val Leu Gly Ser Ala His Gln Gly Cys Leu Pro Pro Phe Pro Ala
355 360 365

Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asn Gly
370 375 380

Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro
385 390 395 400

Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Thr Phe Ser Tyr Thr Phe
405 410 415

Glu Glu Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp
420 425 430

Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Asn Arg
435 440 445

Thr Gln Asn Gln Ser Gly Ser Ala Gln Asn Lys Asp Leu Leu Phe Ser
450 455 460

Arg Gly Ser Pro Ala Gly Met Ser Val Gln Pro Lys Asn Trp Leu Pro
465 470 475 480

Gly Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys Thr Lys Thr Asp Asn
485 490 495

Asn Asn Ser Asn Phe Thr Trp Thr Gly Ala Ser Lys Tyr Asn Leu Asn
500 505 510

Gly Arg Glu Ser Ile Ile Asn Pro Gly Thr Ala Met Ala Ser His Lys
515 520 525

Asp Asp Glu Asp Lys Phe Phe Pro Met Ser Gly Val Met Ile Phe Gly
530 535 540

Lys Glu Ser Ala Gly Ala Ser Asn Thr Ala Leu Asp Asn Val Met Ile
545 550 555 560

Thr Asp Glu Glu Glu Ile Lys Ala Thr Asn Pro Val Ala Thr Glu Arg
565 570 575

Phe Gly Thr Val Ala Val Asn Phe Gln Ser Ser Ser Thr Asp Ser Ser
580 585 590

Ala Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ala Ser Pro Ala Thr Gly Asp Val
595 600 605

His Ala Met Gly Ala Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val
610 615 620

Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly His
625 630 635 640

Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys Asn Pro Pro
645 650 655

Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asn Pro Pro Ala
660 665 670

Glu Phe Ser Ala Thr Lys Phe Ala Ser Phe Ile Thr Gln Tyr Ser Thr
675 680 685

Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser
690 695 700

Lys Arg Trp Asn Pro Glu Val Gln Tyr Thr Ser Asn Tyr Ala Lys Ser
705 710 715 720

Ala Asn Val Asp Phe Thr Val Asp Asn Asn Gly Leu Tyr Thr Glu Pro
725 730 735

Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Pro Leu
740 745

<210> 142
<211> 747
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (591)..(597)
<223> X is any amino acid

<400> 142

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Thr Leu Ser
1 5 10 15

Glu Gly Ile Arg Gln Trp Trp Lys Leu Lys Pro Gly Pro Pro Pro Pro
20 25 30

Lys Pro Ala Glu Arg His Lys Asp Asp Ser Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Phe Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Glu Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Arg Gln Leu Asp Ser Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Val Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Pro Val Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu His Ser Pro Val Glu Pro Asp Ser Ser Ser Gly Thr Gly
145 150 155 160

Lys Ala Gly Gln Gln Pro Ala Arg Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Ala Asp Ser Val Pro Asp Pro Gln Pro Leu Gly Gln Pro Pro
180 185 190

Ala Ala Pro Ser Gly Leu Gly Thr Asn Thr Met Ala Thr Gly Ser Gly
195 200 205

Ala Pro Met Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Asn Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Thr Trp Met Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Ser Gln Ser Gly Ala Ser Asn Asp Asn His Tyr
260 265 270

Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg Phe His
275 280 285

Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn Asn Trp
290 295 300

Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile Gln Val
305 310 315 320

Lys Glu Val Thr Gln Asn Asp Gly Thr Thr Thr Ile Ala Asn Asn Leu
325 330 335

Thr Ser Thr Val Gln Val Phe Thr Asp Ser Glu Tyr Gln Leu Pro Tyr
340 345 350

Val Leu Gly Ser Ala His Gln Gly Cys Leu Pro Pro Phe Pro Ala Asp
355 360 365

Val Phe Met Val Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asn Gly Ser
370 375 380

Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe Pro Ser
385 390 395 400

Gln Met Leu Arg Thr Gly Asn Asn Phe Thr Phe Ser Tyr Thr Phe Glu
405 410 415

Asp Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu Asp Arg
420 425 430

Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser Arg Thr
435 440 445

Asn Thr Pro Ser Gly Thr Thr Thr Gln Ser Arg Leu Gln Phe Ser Gln
450 455 460

Ala Gly Ala Ser Asp Ile Arg Asp Gln Ser Arg Asn Trp Leu Pro Gly
465 470 475 480

Pro Cys Tyr Arg Gln Gln Arg Val Ser Lys Thr Ser Ala Asp Asn Asn
485 490 495

Asn Ser Glu Tyr Ser Trp Thr Gly Ala Thr Lys Tyr His Leu Asn Gly
500 505 510

Arg Asp Ser Leu Val Asn Pro Gly Pro Ala Met Ala Ser His Lys Asp
515 520 525

Asp Glu Glu Lys Phe Phe Pro Gln Ser Gly Val Leu Ile Phe Gly Lys
530 535 540

Gln Gly Ser Glu Lys Thr Asn Val Asp Ile Glu Lys Val Met Ile Thr
545 550 555 560

Asp Glu Glu Glu Ile Arg Thr Thr Asn Pro Val Ala Thr Glu Gln Tyr
565 570 575

Gly Ser Val Ser Thr Asn Leu Gln Arg Gly Asn Ala Ala Ala Xaa Xaa
580 585 590

Xaa Xaa Xaa Xaa Xaa Ala Ala Arg Gln Ala Ala Thr Ala Asp Val Asn
595 600 605

Thr Gln Gly Val Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val Tyr
610 615 620

Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly His Phe
625 630 635 640

His Pro Ser Pro Leu Met Gly Gly Phe Gly Leu Lys His Pro Pro Pro
645 650 655

Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asn Pro Ser Thr Thr
660 665 670

Phe Ser Ala Ala Lys Phe Ala Ser Phe Ile Thr Gln Tyr Ser Thr Gly
675 680 685

Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser Lys
690 695 700

Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Asn Lys Ser Val
705 710 715 720

Asn Val Asp Phe Thr Val Asp Thr Asn Gly Val Tyr Ser Glu Pro Arg
725 730 735

Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
740 745

<210> 143
<211> 748
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (592)..(598)
<223> X is any amino acid

<400> 143

Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

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

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly
100 105 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Leu Leu Glu Pro
115 120 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
130 135 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145 150 155 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
165 170 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
180 185 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
195 200 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
210 215 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile
225 230 235 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
245 250 255

Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
260 265 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
275 280 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
290 295 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305 310 315 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
325 330 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
340 345 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
355 360 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
370 375 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385 390 395 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
405 410 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
420 425 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
435 440 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
450 455 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465 470 475 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
485 490 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
500 505 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
515 520 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
530 535 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545 550 555 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
565 570 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Ala Ala Xaa
580 585 590

Xaa Xaa Xaa Xaa Xaa Xaa Ala Ser Ala Gln Ala Gln Thr Gly Trp Val
595 600 605

Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln Asp Arg Asp Val
610 615 620

Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His Thr Asp Gly Asn
625 630 635 640

Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met Lys His Pro Pro
645 650 655

Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala Asp Pro Pro Thr
660 665 670

Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr Gln Tyr Ser Thr
675 680 685

Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln Lys Glu Asn Ser
690 695 700

Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn Tyr Tyr Lys Ser
705 710 715 720

Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val Tyr Ser Glu Pro
725 730 735

Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
740 745

<210> 144
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 144

Arg Pro Gly Arg Glu Ala Ser
1 5