

SEQUENCE LISTING

<110> BioNTech AG et al.
 <120> PREDICTING IMMUNOGENICITY OF T CELL EPITOPES
 <130> 674-99 PCT
 <150> PCT/EP2013/001400
 <151> 2013-05-10
 <160> 94
 <170> PatentIn version 3.5
 <210> 1
 <211> 15
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Linker sequence
 <220>
 <221> REPEAT
 <222> (1)..(3)
 <223> Portion of sequence repeated a times, wherein a is independently
 a number selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 14, 15, 16, 17, 18, 19, or 20
 <220>
 <221> MISC_FEATURE
 <222> (1)..(15)
 <223> a + b + c + d + e are different from 0 and preferably are 2 or
 more, 3 or more, 4 or more or 5 or more
 <220>
 <221> REPEAT
 <222> (4)..(6)
 <223> Portion of sequence repeated b times, wherein b is independently
 a number selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 14, 15, 16, 17, 18, 19, or 20
 <220>
 <221> REPEAT
 <222> (7)..(9)
 <223> Portion of sequence repeated c times, wherein c is independently
 a number selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 14, 15, 16, 17, 18, 19, or 20
 <220>
 <221> REPEAT
 <222> (10)..(12)
 <223> Portion of sequence repeated d times, wherein d is independently
 a number selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 14, 15, 16, 17, 18, 19, or 20
 <220>
 <221> REPEAT
 <222> (13)..(15)
 <223> Portion of sequence repeated e times, wherein e is independently
 a number selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 14, 15, 16, 17, 18, 19, or 20
 <400> 1
 Gly Gly Ser Gly Ser Ser Gly Gly Gly Ser Ser Gly Gly Ser Gly
 1 5 10 15

<210> 2
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<220>
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<400> 2

Gly Gly Ser Gly Gly Gly Gly Ser Gly
 1 5

<210> 3
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 3

Ala Ala Val Ile Leu Arg Asp Ala Leu His Met
 1 5 10

<210> 4
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Epitope

<400> 4

Ala Ala Val Ile Leu Arg Val Ala Leu His Met
 1 5 10

<210> 5
 <211> 9
 <212> PRT
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<220>
 <223> Epitope

<400> 5

Gly Gly Pro Gly Ser Glu Lys Ser Leu
 1 5

<210> 6
 <211> 9
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 <213> Artificial Sequence

<220>
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<400> 6

Gly Gly Pro Gly Ser Gly Lys Ser Leu
 1 5

<210> 7
 <211> 10
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<220>
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<400> 7

Leu Ala Leu Pro Asn Asn Tyr Cys Asp Val
 1 5 10

<210> 8
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<220>
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<400> 8

Leu Ala Leu Pro Asn Asn Tyr Cys Asp Phe
 1 5 10

<210> 9
 <211> 10
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<220>
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<400> 9

Ser His Leu Asn Asn Asp Val Trp Gln Ile
 1 5 10

<210> 10
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<400> 10

Ser His Leu Asn Asn Asp Phe Trp Gln Ile
 1 5 10

<210> 11
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<400> 11

Tyr Tyr Met Arg Asp Val Ile Ala Ile
 1 5

<210> 12
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<400> 12

Tyr Tyr Met Arg Asp Val Thr Ala Ile
 1 5

<210> 13
 <211> 10
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<400> 13

Thr Tyr Leu Gln Pro Ala Gln Ala Gln Met
 1 5 10

<210> 14
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<220>
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<400> 14

Ile Tyr Leu Gln Pro Ala Gln Ala Gln Met
 1 5 10

<210> 15
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<400> 15

Gln Ser Leu Gly Phe Thr Tyr Leu
 1 5

<210> 16
 <211> 8
 <212> PRT
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<220>
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<400> 16

Gln Arg Leu Gly Phe Thr Tyr Leu
 1 5

<210> 17

<211> 10

<212> PRT

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<220>

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<400> 17

Glu Tyr Trp Ala Ser Arg Ala Leu Asp Ser
 1 5 10

<210> 18

<211> 10

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<220>

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<400> 18

Glu Tyr Trp Ala Ser Arg Ala Leu Gly Ser
 1 5 10

<210> 19

<211> 10

<212> PRT

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<400> 19

Gly Tyr Leu Gln Phe Ala Tyr Glu Gly Cys
 1 5 10

<210> 20

<211> 10

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<400> 20

Gly Tyr Leu Gln Phe Ala Tyr Glu Gly Arg
 1 5 10

<210> 21

<211> 11

<212> PRT

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<400> 21

Val Thr Phe Gln Ala Phe Ile Asp Val Met Ser
1 5 10

<210> 22

<211> 11

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<400> 22

Val Thr Phe Gln Ala Phe Ile Asp Phe Met Ser
1 5 10

<210> 23

<211> 10

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<400> 23

Pro Tyr Leu Thr Ala Leu Asp Asp Leu Leu
1 5 10

<210> 24

<211> 10

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<223> Epitope

<400> 24

Pro Tyr Leu Thr Ala Leu Gly Asp Leu Leu
1 5 10

<210> 25

<211> 10

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<400> 25

Ala Gly Gly Leu Phe Val Ala Asp Ala Ile
1 5 10

<210> 26

<211> 10

<212> PRT

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<400> 26

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

<210> 27
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<220>
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<400> 27

Val Gly Ile Asn Phe Leu Gln Ser Tyr Gln
 1 5 10

<210> 28
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<400> 28

Val Gly Ile Asn Ser Leu Gln Ser Tyr Gln
 1 5 10

<210> 29
 <211> 9
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<220>
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<400> 29

Thr Arg Pro Ala Arg Asp Gly Thr Phe
 1 5

<210> 30
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<220>
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<400> 30

Thr Arg Pro Ala Gly Asp Gly Thr Phe
 1 5

<210> 31
 <211> 9

<212> PRT
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<220>
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<400> 31

Glu Pro Gln Ile Ala Met Asp Asp Met
 1 5

<210> 32
 <211> 9
 <212> PRT
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<220>
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<400> 32

Glu Pro Gln Ile Asp Met Asp Asp Met
 1 5

<210> 33
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Epitope

<400> 33

Ile Ala Met Gln Asn Thr Thr Gln Leu
 1 5

<210> 34
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 <213> Artificial Sequence

<220>
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<400> 34

Ile Ala Ile Gln Asn Thr Thr Gln Leu
 1 5

<210> 35
 <211> 10
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<220>
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<400> 35

Ala Ile Tyr His His Ala Ser Arg Ala Ile
 1 5 10

<210> 36
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<400> 36

Ala Ile Tyr Tyr His Ala Ser Arg Ala Ile
 1 5 10

<210> 37
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<220>
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<400> 37

Ser Tyr Ile Ala Leu Val Asp Lys Asn Ile
 1 5 10

<210> 38
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<220>
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<400> 38

Ser Tyr Leu Ala Leu Val Asp Lys Asn Ile
 1 5 10

<210> 39
 <211> 9
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<220>
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<400> 39

Val Ile Pro Ile Leu Glu Met Gln Phe
 1 5

<210> 40
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<220>
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<400> 40

Val Ile Pro Ile Leu Glu Val Gln Phe
 1 5

<210> 41
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<400> 41

Gly Tyr Leu Gln Phe Ala Tyr Asp Gly Arg
 1 5 10

<210> 42
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<220>
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<400> 42

Gly Tyr Leu Gln Phe Ala Tyr Glu Gly Arg
 1 5 10

<210> 43
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<220>
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<400> 43

Val Tyr Leu Asn Leu Leu Lys Phe Thr
 1 5 10

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<400> 44

Val Tyr Leu Asn Leu Phe Leu Lys Phe Thr
 1 5 10

<210> 45
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<400> 45

Lys Ile Phe Ser Glu Val Thr Leu Lys
 1 5

<210> 46
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<400> 46

Lys Ile Phe Ser Glu Val Thr Pro Lys
 1 5

<210> 47
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<220>
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<400> 47

Ser His Glu Thr Val Ile Ile Glu Leu
 1 5

<210> 48
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<400> 48

Ser His Glu Thr Val Thr Ile Glu Leu
 1 5

<210> 49
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<400> 49

Phe Leu Asp Glu Phe Met Glu Gly Val
 1 5

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<400> 50

Phe Leu Asp Glu Phe Met Glu Ala Val
1 5

<210> 51

<211> 9

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<400> 51

Arg Pro His Val Pro Glu Ser Ala Phe
1 5

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Gly Pro His Val Pro Glu Ser Ala Phe
1 5

<210> 53

<211> 10

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<400> 53

Leu Leu Leu Asp Asp Leu Leu Val Ser Ile
1 5 10

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<211> 10

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<223> Epitope

<400> 54

Leu Leu Leu Asp Asp Ser Leu Val Ser Ile
1 5 10

<210> 55

<211> 10

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<400> 55

Ile Leu Asp Thr Ala Gly Arg Glu Glu Tyr
1 5 10

<210> 56

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<400> 56

Ile Leu Asp Thr Ala Gly Gln Glu Glu Tyr
1 5 10

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<400> 57

Glu Thr Val Ser Glu Gln Ser Asn Val
1 5

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<400> 58

Glu Thr Val Ser Glu Glu Ser Asn Val
1 5

<210> 59

<211> 10

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<400> 59

Lys Ile Leu Asp Ala Val Val Ala Gln Lys
1 5 10

<210> 60

<211> 10

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 <400> 60
 Lys Ile Leu Asp Ala Val Val Ala Gln Glu
 1 5 10

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 <400> 61
 Lys Ile Asn Lys Asn Pro Lys Tyr Lys
 1 5

<210> 62
 <211> 9
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 <223> Epitope
 <400> 62
 Glu Ile Asn Lys Asn Pro Lys Tyr Lys
 1 5

<210> 63
 <211> 10
 <212> PRT
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 <400> 63
 Tyr Val Asp Phe Arg Glu Tyr Glu Tyr Tyr
 1 5 10

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 <400> 64
 Tyr Val Asp Phe Arg Glu Tyr Glu Tyr Asp
 1 5 10

<210> 65
 <211> 9

<212> PRT
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<400> 65

Ser Tyr Leu Asp Ser Gly Ile His Phe
 1 5

<210> 66
 <211> 9
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<220>
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<400> 66

Ser Tyr Leu Asp Ser Gly Ile His Ser
 1 5

<210> 67
 <211> 9
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<220>
 <223> Epitope

<400> 67

Lys Glu Leu Glu Gly Ile Leu Leu Leu
 1 5

<210> 68
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 <223> Epitope

<400> 68

Lys Glu Leu Glu Gly Ile Leu Leu Pro
 1 5

<210> 69
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<400> 69

Thr Leu Asp Trp Leu Leu Gln Thr Pro Lys
 1 5 10

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<400> 70

Thr Leu Gly Trp Leu Leu Gln Thr Pro Lys
 1 5 10

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<400> 71

Phe Ile Ala Ser Asn Gly Val Lys Leu Val
 1 5 10

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<400> 72

Phe Ile Ala Ser Lys Gly Val Lys Leu Val
 1 5 10

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<400> 73

Val Val Pro Cys Glu Pro Pro Glu Val
 1 5

<210> 74
 <211> 9
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<220>
 <223> Epitope

<400> 74

Val Val Pro Tyr Glu Pro Pro Glu Val
 1 5

<210> 75
 <211> 10
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<400> 75

Ala Cys Asp Pro His Ser Gly His Phe Val
 1 5 10

<210> 76
 <211> 10
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<400> 76

Ala Arg Asp Pro His Ser Gly His Phe Val
 1 5 10

<210> 77
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<400> 77

Val Val Val Gly Ala Val Gly Val Gly
 1 5

<210> 78
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<400> 78

Val Val Val Gly Ala Gly Gly Val Gly
 1 5

<210> 79
 <211> 9
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<220>
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<400> 79

Gly Leu Ala Gly Gly Leu Leu Ala Leu
1 5

<210> 80
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Epitope

<400> 80

Val Leu Phe Trp Gly Leu Leu Leu Leu
1 5

<210> 81
<211> 9
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<213> Artificial Sequence

<220>
<223> Epitope

<400> 81

Gly Ile Leu Gly Trp Val Leu Tyr Leu
1 5

<210> 82
<211> 9
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<213> Artificial Sequence

<220>
<223> Epitope

<400> 82

Val Leu Phe Trp Gly Leu Leu Phe Tyr
1 5

<210> 83
<211> 9
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<213> Artificial Sequence

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<223> Epitope

<400> 83

Gly Leu Ala Gly Gly Leu Leu Ala Tyr
1 5

<210> 84
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<400> 84

Val Ile Phe Trp Gly Leu Leu Val Leu
 1 5

<210> 85

<211> 10

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<213> Artificial Sequence

<220>

<223> Epitope

<400> 85

Lys Ile Leu Asp Ala Val Val Ala Gln Glu
 1 5 10

<210> 86

<211> 10

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<220>

<223> Epitope

<400> 86

Lys Ile Leu Asp Ala Val Val Ala Gln Lys
 1 5 10

<210> 87

<211> 9

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<223> Epitope

<400> 87

Gln His Ser Ala Ala Pro Gly Pro Pro
 1 5

<210> 88

<211> 9

<212> PRT

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<220>

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<400> 88

Gln His Ser Ala Ala Pro Gly Pro Leu
 1 5

<210> 89

<211> 9

<212> PRT

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<223> Epitope

<400> 89

Glu Ile Asn Lys Asn Pro Lys Tyr Lys
1 5

<210> 90

<211> 9

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<223> Epitope

<400> 90

Lys Ile Asn Lys Asn Pro Lys Tyr Lys
1 5

<210> 91

<211> 10

<212> PRT

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<220>

<223> Epitope

<400> 91

Tyr Val Asp Phe Arg Glu Tyr Glu Tyr Asp
1 5 10

<210> 92

<211> 10

<212> PRT

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<223> Epitope

<400> 92

Tyr Val Asp Phe Arg Glu Tyr Glu Tyr Tyr
1 5 10

<210> 93

<211> 9

<212> PRT

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<220>

<223> Epitope

<400> 93

Ser Tyr Leu Asp Ser Gly Ile His Ser
1 5

<210> 94

<211> 9

<212> PRT

<213> Artificial Sequence

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<220>

<223> Epitope

<400> 94

Ser Tyr Leu Asp Ser Gly Ile His Phe
1 5