

SEQUENCE LISTING

<110> Biontech AG;
 TRON -Translationale Onkologie an der Universitätsmedizin
 der Johannes Gutenberg-Universität Mainz gemeinnützige GmbH

<120> INDIVIDUALIZED VACCINES FOR CANCER

<130> SG4096A

<150> PCT/EP2011/002576
 <151> 2011-05-24

<150> PCT/EP2012/000006
 <151> 2012-01-02

<160> 39

<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> 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

<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

<400> 1

Gly Gly Ser Gly Ser Ser Gly Gly Gly Ser Ser Gly Gly Ser Gly
1 5 10 15

<210> 2

<211> 9

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<220>

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Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5

<210> 3

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Ser Ile Ile Asn Phe Glu Lys Leu
1 5

<210> 4

<211> 30

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<213> Artificial Sequence

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<223> Mutated peptide sequence

<400> 4

Ser Pro Ser Lys Pro Ser Phe Gln Glu Phe Val Asp Trp Glu Asn Val
1 5 10 15

Ser Pro Glu Leu Asn Ser Thr Asp Gln Pro Phe Leu Pro Ser
20 25 30

<210> 5

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> wildtype peptide sequence

<400> 5

Ser Pro Ser Lys Pro Ser Phe Gln Glu Phe Val Asp Trp Glu Lys Val
1 5 10 15

Ser Pro Glu Leu Asn Ser Thr Asp Gln Pro Phe Leu Pro Ser
20 25 30

<210> 6
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Mutated peptide sequence

<400> 6

Thr Pro Pro Pro Glu Glu Ala Met Pro Phe Glu Phe Asn Gly Pro Ala
1 5 10 15

Gln Gly Asp His Ser Gln Pro Pro Leu Gln Val
20 25

<210> 7
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<220>
<223> wildtype peptide sequence

<400> 7

Thr Pro Pro Pro Glu Glu Ala Met Pro Phe Glu Phe Asn Gly Pro Ala
1 5 10 15

Gln Gly Asp His Ser Gln Pro Pro Leu Gln Val
20 25

<210> 8
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<220>
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<400> 8

Arg Val Thr Cys Asn Arg Ala Gly Glu Lys His Cys Phe Ser Ser Asn
1 5 10 15

Glu Ala Ala Arg Asp Phe Gly Gly Ala Ile Gln
20 25

<210> 9
<211> 27
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<213> wildtype peptide sequence

<400> 9

Arg Val Thr Cys Asn Arg Ala Gly Glu Lys His Cys Phe Thr Ser Asn
1 5 10 15

Glu Ala Ala Arg Asp Phe Gly Gly Ala Ile Gln
20 25

<210> 10
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<400> 10

Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly Glu Ala Met Asp
1 5 10 15

Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met
20 25

<210> 11
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Phe Arg Arg Lys Ala Phe Leu His Trp Tyr Thr Gly Glu Gly Met Asp
1 5 10 15

Glu Met Glu Phe Thr Glu Ala Glu Ser Asn Met
20 25

<210> 12
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<220>
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<400> 12

Pro Ser Lys Pro Ser Phe Gln Glu Phe Val Asp Trp Glu Asn Val Ser
1 5 10 15

Pro Glu Leu Asn Ser Thr Asp Gln Pro Phe Leu
20 25

<210> 13
<211> 27
<212> PRT
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<220>
<223> wildtype peptide sequence

<400> 13

Pro Ser Lys Pro Ser Phe Gln Glu Phe Val Asp Trp Glu Lys Val Ser
1 5 10 15

Pro Glu Leu Asn Ser Thr Asp Gln Pro Phe Leu
20 25

<210> 14

<211> 27

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<400> 14

His Leu Thr Gln Gln Leu Asp Thr Tyr Ile Leu Lys Asn Val Val Ala
1 5 10 15

Phe Ser Arg Thr Asp Lys Tyr Arg Gln Leu Pro
20 25

<210> 15

<211> 27

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<223> wildtype peptide sequence

<400> 15

His Leu Thr Gln Gln Leu Asp Thr Tyr Ile Leu Lys Asn Phe Val Ala
1 5 10 15

Phe Ser Arg Thr Asp Lys Tyr Arg Gln Leu Pro
20 25

<210> 16

<211> 27

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<400> 16

Cys Gly Thr Ala Phe Phe Ile Asn Phe Ile Ala Ile Tyr His His Ala
1 5 10 15

Ser Arg Ala Ile Pro Phe Gly Thr Met Val Ala
20 25

<210> 17

<211> 27

<212> PRT

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<220>
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<400> 17

Cys Gly Thr Ala Phe Phe Ile Asn Phe Ile Ala Ile Tyr Tyr His Ala
1 5 10 15

Ser Arg Ala Ile Pro Phe Gly Thr Met Val Ala
20 25

<210> 18
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<400> 18

Gly Gly Ser Gly Gly Gly Gly
1 5

<210> 19
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<400> 19

Thr Ser Leu Asn Ala Leu Leu Asn Ala His
1 5 10

<210> 20
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<400> 20

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
1 5 10

<210> 21
<211> 10
<212> PRT
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<220>
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<400> 21

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5 10

<210> 22
<211> 10
<212> PRT
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<400> 22

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
1 5 10

<210> 23
<211> 10
<212> PRT
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<400> 23

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
1 5 10

<210> 24
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<400> 24

Thr Ser Leu Asn Ala Leu Leu Asn Ala
1 5

<210> 25
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Ser Ser Ser Ser Ser Ser Ser Ser Ser
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<210> 26
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<400> 26

Gly Gly Gly Gly Gly Gly Gly Gly Gly
1 5

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Gly Gly Ser Gly Gly Gly Ser Gly Gly
1 5

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<400> 28

Gly Gly Ser Gly Gly
1 5

<210> 29
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Gly Gly Ser Gly Gly Gly
1 5

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<400> 30

Gly Gly Ser Gly Gly Gly Gly
1 5

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Gly Gly Ser Gly Gly Gly Gly Ser
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<400> 32

Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser
1 5 10

<210> 33

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<212> DNA

<213> Artificial Sequence

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<223> Oligonucleotide

<400> 33

ggaaactttt tccc

14

<210> 34

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 34

ccgggggaaac tttttcccag t

21

<210> 35

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 35

ccgggggaaac gttttcccag t

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<210> 36

<211> 60

<212> PRT

<213> Artificial Sequence

<220>

<223> Artificial construct

<400> 36

Asn Thr Thr Phe Asn Val Ser Glu Glu Ser Pro Ser Lys Pro Ser Phe
1 5 10 15

Gln Glu Phe Val Asp Trp Glu Asn Val Ser Pro Glu Leu Asn Ser Thr
20 25 30

Asp Gln Pro Phe Leu Pro Ser Ala Pro Val Phe Ile Phe Thr Lys Gly
35 40 45

Arg Lys Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
50 55 60

<210> 37
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial construct

<400> 37

Tyr Phe Val Leu Tyr Lys Pro Pro Pro Lys Asp Asn Ile Pro Ala Leu
1 5 10 15

Val Glu Glu Tyr Leu Glu Arg Gly Asn Phe Val Ala Asn Asp Leu Asp
20 25 30

Trp Leu Leu Ala Leu Pro His Asp Lys Phe Trp Cys Gln Val Ile Phe
35 40 45

Asp Glu Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser
50 55 60

<210> 38
<211> 60
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial construct

<400> 38

Phe Glu Gln Leu Ser Glu Ser Ala Lys Glu Glu Leu Ile Asn Phe Lys
1 5 10 15

Arg Lys Arg Val Ala Ala Phe Gln Lys Asn Leu Ile Glu Met Ser Glu
20 25 30

Leu Glu Ile Lys His Ala Arg Asn Asn Val Ser Leu Leu Gln Ser Cys
35 40 45

Ile Asp Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
50 55 60

<210> 39
<211> 60

<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial construct

<400> 39

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

Ala Met Pro Phe Glu Phe Asn Gly Pro Ala Gln Gly Asp His Ser Gln
20 25 30

Pro Pro Leu Gln Val Pro Asp Leu Ala Pro Gly Gly Pro Glu Ala Leu
35 40 45

Val Pro Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser
50 55 60