

SEQUENCE LISTING

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NATIONAL UNIVERSITY CORPORATION ASAHIKAWA MEDICAL
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<120> TUMOR ANTIGEN PEPTIDE

<130> 674674

<150> JP 2018-024972

<151> 2018-02-15

<160> 35

<170> PatentIn version 3.5

<210> 1

<211> 236

<212> PRT

<213> Homo sapiens

<400> 1

Met Val Ser Ser Gly Lys Lys Tyr Ser Arg Lys Ser Gly Lys Pro Ser
1 5 10 15

Val Glu Asp Gln Phe Thr Arg Ala Tyr Asp Phe Glu Thr Glu Asp Lys
20 25 30

Lys Asp Leu Ser Gly Ser Glu Glu Asp Val Ile Glu Gly Lys Thr Ala
35 40 45

Val Ile Glu Lys Arg Arg Lys Lys Arg Ser Ser Ala Gly Val Val Glu
50 55 60

Asp Met Gly Gly Glu Val Gln Asn Met Leu Glu Gly Val Gly Val Asp
65 70 75 80

Ile Asn Lys Ala Leu Leu Ala Lys Arg Lys Arg Leu Glu Met Tyr Thr
85 90 95

Lys Ala Ser Leu Lys Thr Ser Asn Gln Lys Ile Glu His Val Trp Lys
100 105 110

Thr Gln Gln Asp Gln Arg Gln Lys Leu Asn Gln Glu Tyr Ser Gln Gln
115 120 125

Phe Leu Thr Leu Phe Gln Gln Trp Asp Leu Asp Met Gln Lys Ala Glu
130 135 140

Glu Gln Glu Glu Lys Ile Leu Asn Met Phe Arg Gln Gln Gln Lys Ile
145 150 155 160

Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg Leu Lys Thr Ile Lys
165 170 175

Gln Leu Tyr Glu Gln Phe Ile Lys Ser Met Glu Glu Leu Glu Lys Asn
180 185 190

His Asp Asn Leu Leu Thr Gly Ala Gln Asn Glu Phe Lys Lys Glu Met
195 200 205

Ala Met Leu Gln Lys Lys Ile Met Met Glu Thr Gln Gln Gln Glu Ile
210 215 220

Ala Ser Val Arg Lys Ser Leu Gln Ser Met Leu Phe
225 230 235

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<213> Homo sapiens

<400> 2

Tyr Pro Ser Ile Thr Val Thr Pro Asp Glu Glu Gln Asn Leu Asn His
1 5 10 15

Tyr Ile Gln Val Leu Glu Asn Leu Val Arg Ser Val Pro Ser Gly Glu
20 25 30

Pro Gly Arg Glu Lys Lys Ser Asn Ser Pro Lys His Val Tyr Ser Ile
35 40 45

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

Ser Thr Glu Asn Asp Val Leu Thr Asn Pro Ile Ser Glu Glu Thr Thr

65				70				75				80			
Thr	Phe	Pro	Thr	Gly 85	Gly	Phe	Thr	Pro	Glu 90	Ile	Gly	Lys	Lys	Lys 95	His
Thr	Glu	Ser	Thr 100	Pro	Phe	Trp	Ser	Ile 105	Lys	Pro	Asn	Asn	Val 110	Ser	Ile
Val	Leu	His 115	Ala	Glu	Glu	Pro	Tyr 120	Ile	Glu	Asn	Glu	Glu 125	Pro	Glu	Pro
Glu	Pro 130	Glu	Pro	Ala	Ala	Lys 135	Gln	Thr	Glu	Ala	Pro 140	Arg	Met	Leu	Pro
Val 145	Val	Thr	Glu	Ser	Ser 150	Thr	Ser	Pro	Tyr	Val 155	Thr	Ser	Tyr	Lys	Ser 160
Pro	Val	Thr	Thr	Leu 165	Asp	Lys	Ser	Thr	Gly 170	Ile	Gly	Ile	Ser	Thr 175	Glu
Ser	Glu	Asp	Val 180	Pro	Gln	Leu	Ser	Gly 185	Glu	Thr	Ala	Ile	Glu 190	Lys	Pro
Glu	Glu	Phe 195	Gly	Lys	His	Pro	Glu 200	Ser	Trp	Asn	Asn	Asp 205	Asp	Ile	Leu
Lys	Lys 210	Ile	Leu	Asp	Ile	Asn 215	Ser	Gln	Val	Gln	Gln 220	Ala	Leu	Leu	Ser
Asp 225	Thr	Ser	Asn	Pro	Ala 230	Tyr	Arg	Glu	Asp	Ile 235	Glu	Ala	Ser	Lys	Asp 240
His	Leu	Lys	Arg	Ser 245	Leu	Ala	Leu	Ala	Ala 250	Ala	Ala	Glu	His	Lys 255	Leu
Lys	Thr	Met	Tyr 260	Lys	Ser	Gln	Leu	Leu 265	Pro	Val	Gly	Arg	Thr 270	Ser	Asn
Lys	Ile	Asp 275	Asp	Ile	Glu	Thr	Val 280	Ile	Asn	Met	Leu	Cys 285	Asn	Ser	Arg

Ser Lys Leu Tyr Glu Tyr Leu Asp Ile Lys Cys Val Pro Pro Glu Met
290 295 300

Arg Glu Lys Ala Ala Thr Val Phe Asn Thr Leu Lys Asn Met Cys Arg
305 310 315 320

Ser Arg Arg Val Thr Ala Leu Leu Lys Val Tyr
325 330

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<400> 3

Lys Ile Leu Gln Gln Ser Arg Ile Val Gln
1 5 10

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Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser
1 5 10

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Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln
1 5 10

<210> 6
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Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser

1 5 10

<210> 7
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Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln
1 5 10

<210> 8
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<400> 8

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr

<210> 9
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<213> Homo sapiens

<400> 9

Gln Asn Leu Asn His Tyr Ile Gln Val Leu Glu Asn Leu Val Arg Ser
1 5 10 15

Val Pro Ser

<210> 10
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<400> 10

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val
1 5 10

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Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg
1 5 10

<210> 12
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Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg Leu
1 5 10

<210> 13
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<400> 13

Gln Gln Ser Arg Ile Val Gln Ser Gln Arg Leu Lys
1 5 10

<210> 14
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<400> 14

Gln Ser Arg Ile Val Gln Ser Gln Arg Leu Lys Thr
1 5 10

<210> 15
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<213> Homo sapiens

<400> 15

Met Ser Thr Ala Asn Pro Glu Thr Pro Asn Ser Thr Ile Ser Arg Glu
1 5 10 15

Ala Ser Thr Gln Ser Ser Ser Ala Ala Thr Ser Gln Gly Tyr Ile Leu
 20 25 30

Pro Glu Gly Lys Ile Met Pro Asn Thr Val Phe Val Gly Gly Ile Asp
 35 40 45

Val Arg Met Asp Glu Thr Glu Ile Arg Ser Phe Phe Ala Arg Tyr Gly
 50 55 60

Ser Val Lys Glu Val Lys Ile Ile Thr Asp Arg Thr Gly Val Ser Lys
 65 70 75 80

Gly Tyr Gly Phe Val Ser Phe Phe Asn Asp Val Asp Val Gln Lys Ile
 85 90 95

Val Glu Ser Gln Ile Asn Phe His Gly Lys Lys Leu Lys Leu Gly Pro
 100 105 110

Ala Ile Arg Lys Gln Asn Leu Cys Ala Tyr His Val Gln Pro Arg Pro
 115 120 125

Leu Val Phe Asn His Pro Pro Pro Pro Gln Phe Gln Asn Val Trp Thr
 130 135 140

Asn Pro Asn Thr Glu Thr Tyr Met Gln Pro Thr Thr Thr Met Asn Pro
 145 150 155 160

Ile Thr Gln Tyr Val Gln Ala Tyr Pro Thr Tyr Pro Asn Ser Pro Val
 165 170 175

Gln Val Ile Thr Gly Tyr Gln Leu Pro Val Tyr Asn Tyr Gln Met Pro
 180 185 190

Pro Gln Trp Pro Val Gly Glu Gln Arg Ser Tyr Val Val Pro Pro Ala
 195 200 205

Tyr Ser Ala Val Asn Tyr His Cys Asn Glu Val Asp Pro Gly Ala Glu
 210 215 220

Val Val Pro Asn Glu Cys Ser Val His Glu Ala Thr Pro Pro Ser Gly
225 230 235 240

Asn Gly Pro Gln Lys Lys Ser Val Asp Arg Ser Ile Gln Thr Val Val
245 250 255

Ser Cys Leu Phe Asn Pro Glu Asn Arg Leu Arg Asn Ser Val Val Thr
260 265 270

Gln Asp Asp Tyr Phe Lys Asp Lys Arg Val His His Phe Arg Arg Ser
275 280 285

Arg Ala Met Leu Lys Ser Val
290 295

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<400> 16

Asp Val Gln Lys Ile Val Glu Ser Gln Ile Asn Phe His Gly Lys Lys
1 5 10 15

Leu Lys Leu Gly Pro Ala Ile Arg Lys Gln Asn Leu Cys Ala Tyr His
20 25 30

Val Gln Pro Arg Pro Leu
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<210> 17
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<400> 17

Asp Val Gln Lys Ile Val Glu Ser Gln Ile Asn Phe His Gly Lys Lys
1 5 10 15

Leu Lys Leu Gly
20

<210> 18
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<400> 18

Ile Asn Phe His Gly Lys Lys Leu Lys Leu Gly Pro Ala Ile Arg Lys
1 5 10 15

Gln Asn Leu Cys
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<210> 19
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<400> 19

Leu Gly Pro Ala Ile Arg Lys Gln Asn Leu Cys Ala Tyr His Val Gln
1 5 10 15

Pro Arg Pro Leu
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<210> 20
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<213> Homo sapiens

<400> 20

Asp Val Gln Lys Ile Val Glu Ser Gln Ile Asn Phe His Gly Lys Lys
1 5 10 15

Leu Lys Leu Gly Pro Ala Ile Arg Lys Gln Asn Leu Cys
20 25

<210> 21
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<213> Homo sapiens

<400> 21

Ile Asn Phe His Gly Lys Lys Leu Lys Leu Gly Pro Ala Ile Arg Lys
1 5 10 15

Gln Asn Leu Cys Ala Tyr His Val Gln Pro Arg Pro Leu
20 25

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<213> Homo sapiens

<400> 22

Arg Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln
1 5 10 15

Arg Leu Lys Thr
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<210> 23
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<212> PRT
<213> Homo sapiens

<400> 23

Leu Asn Met Phe Arg Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile
1 5 10 15

Val Gln Ser Gln Arg Leu Lys Thr
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<210> 24
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<212> PRT
<213> Homo sapiens

<400> 24

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr Ile
20

<210> 25
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<212> PRT

<213> Homo sapiens

<400> 25

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Ile Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr Ile Lys Gln Leu Tyr
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<400> 26

Lys Ile Leu Gln Gln Ser Arg Val Val Gln
1 5 10

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<213> Homo sapiens

<400> 27

Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser
1 5 10

<210> 28

<211> 12

<212> PRT

<213> Homo sapiens

<400> 28

Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser Gln
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<400> 29

Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser
1 5 10

<210> 30
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<400> 30

Gln Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln
1 5 10

<210> 31
<211> 19
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<400> 31

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr

<210> 32
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<400> 32

Arg Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser Gln
1 5 10 15

Arg Leu Lys Thr
20

<210> 33
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<213> Homo sapiens

<400> 33

Leu Asn Met Phe Arg Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Val
1 5 10 15

Val Gln Ser Gln Arg Leu Lys Thr
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<210> 34
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<212> PRT
<213> Homo sapiens

<400> 34

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr Ile
20

<210> 35
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<213> Homo sapiens

<400> 35

Gln Gln Gln Lys Ile Leu Gln Gln Ser Arg Val Val Gln Ser Gln Arg
1 5 10 15

Leu Lys Thr Ile Lys Gln Leu Tyr
20