

SEQUENCE LISTING

<110> Centre Leon-Berard
 <120> HERV-K-derived antigens for cancer vaccine
 <130> BET18L1817
 <160> 16
 <170> PatentIn version 3.5
 <210> 1
 <211> 9
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> HERV epitope
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Phe Leu Gln Phe Lys Thr Trp Trp Ile
 1 5

<210> 2
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Arg Leu Ile Pro Tyr Asp Trp Glu Ile
 1 5

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Lys Leu Ile Asp Cys Tyr Thr Phe Leu
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Tyr Leu Ser Phe Ile Lys Ile Leu Leu
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Ala Met Ile Pro Lys Asp Trp Pro Leu
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<223> HERV epitope 6

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Tyr Ala Met Ser Asn Leu Phe Ser Ile
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Ser Met Asp Asp Gln Leu Asn Gln Leu
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<210> 8
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<223> peptide 8

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Lys Ser Lys Ile Lys Ser Lys Tyr Ala Ser Tyr Leu Ser Phe Ile Lys
1 5 10 15

Ile Leu Leu Lys Arg Gly Gly Val Lys Val Ser Thr Lys
20 25

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<400> 9

Thr Leu Leu Asp Ser Ile Ala His Gly His Arg Leu Ile Pro Tyr Asp
1 5 10 15

Trp Glu Ile Leu Ala Lys Ser Ser Leu Ser Pro Ser Gln
20 25

<210> 10
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<223> peptide 10

<400> 10

Leu Ala Lys Ser Ser Leu Ser Pro Ser Gln Phe Leu Gln Phe Lys Thr
1 5 10 15

Trp Trp Ile Asp Gly Val Gln Glu Gln Val Arg Arg Asn
20 25

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<220>
<223> peptide 11

<400> 11

Gly Pro Leu Gln Pro Gly Leu Pro Ser Pro Ala Met Ile Pro Lys Asp
1 5 10 15

Trp Pro Leu Leu Ile Ile Ile Asp Leu Lys Asp Cys Phe
20 25

<210> 12
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<220>
<223> peptide 12

<400> 12

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

Gly Leu Ala Ile Ala Ser Asp Lys Ile Gln Thr Ser Thr
20 25

<210> 13
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<212> PRT
<213> Artificial sequence

<220>
<223> peptide 13

<400> 13

Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr Ala Met Ser Asn Leu
1 5 10 15

Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn Ser Lys
20 25

<210> 14
<211> 29
<212> PRT
<213> Artificial sequence

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<223> peptide 14

<400> 14

Arg Asp Val Glu Thr Ala Leu Ile Lys Tyr Ser Met Asp Asp Gln Leu
1 5 10 15

Asn Gln Leu Phe Asn Leu Leu Gln Gln Thr Val Arg Lys
20 25

<210> 15
<211> 522
<212> PRT
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<220>
<223> polypeptide (gag)

<400> 15

Met Gly Gln Thr Lys Ser Lys Ile Lys Ser Lys Tyr Ala Ser Tyr Leu
1 5 10 15

Ser Phe Ile Lys Ile Leu Leu Lys Arg Gly Gly Val Lys Val Ser Thr
20 25 30

Lys Asn Leu Ile Lys Leu Phe Gln Ile Ile Glu Gln Phe Cys Pro Trp
35 40 45

Phe	Pro	Glu	Gln	Gly	Thr	Leu	Asp	Leu	Lys	Asp	Trp	Ser	Gln	Lys	Glu	50	55	60
Thr	Glu	Gly	Leu	His	Cys	Glu	Tyr	Val	Ala	Glu	Pro	Val	Met	Ala	Gln	65	70	75
Ser	Thr	Gln	Asn	Val	Asp	Tyr	Asn	Gln	Leu	Gln	Glu	Val	Ile	Tyr	Pro	85	90	95
Glu	Thr	Leu	Lys	Leu	Glu	Glu	Ser	Lys	Pro	Arg	Gly	Thr	Ser	Pro	Leu	100	105	110
Pro	Ala	Gly	Gln	Val	Pro	Val	Thr	Leu	Gln	Pro	Gln	Lys	Gln	Val	Lys	115	120	125
Glu	Asn	Lys	Thr	Gln	Pro	Pro	Val	Ala	Tyr	Gln	Tyr	Trp	Pro	Pro	Ala	130	135	140
Glu	Leu	Gln	Tyr	Arg	Pro	Pro	Pro	Glu	Ser	Gln	Tyr	Gly	Tyr	Pro	Gly	145	150	155
Met	Pro	Pro	Ala	Pro	Gln	Gly	Arg	Ala	Pro	Tyr	Pro	Gln	Pro	Pro	Thr	165	170	175
Arg	Arg	Leu	Asn	Pro	Thr	Ala	Pro	Pro	Ser	Arg	Gln	Gly	Ser	Lys	Leu	180	185	190
His	Glu	Ile	Ala	Gln	Glu	Gly	Glu	Pro	Pro	Thr	Val	Glu	Ala	Arg	Tyr	195	200	205
Lys	Ser	Phe	Ser	Ile	Lys	Lys	Leu	Lys	Asp	Met	Lys	Glu	Gly	Val	Lys	210	215	220
Gln	Tyr	Gly	Pro	Asn	Ser	Pro	Tyr	Met	Arg	Thr	Leu	Leu	Asp	Ser	Ile	225	230	235
Ala	His	Gly	His	Arg	Leu	Ile	Pro	Tyr	Asp	Trp	Glu	Ile	Leu	Ala	Lys	245	250	255
Ser	Ser	Leu	Ser	Pro	Ser	Gln	Phe	Leu	Gln	Phe	Lys	Thr	Trp	Trp	Ile	260	265	270
Asp	Gly	Val	Gln	Glu	Gln	Val	Arg	Arg	Asn	Arg	Ala	Ala	Asn	Pro	Pro	275	280	285
Val	Asn	Ile	Asp	Ala	Asp	Gln	Leu	Leu	Gly	Ile	Gly	Gln	Asn	Trp	Ser	290	295	300

Thr Ile Ser Gln Gln Ala Leu Met Gln Asn Glu Ala Ile Glu Gln Val
305 310 315 320

Arg Ala Ile Cys Leu Arg Ala Trp Glu Lys Ile Gln Asp Pro Ser Lys
325 330 335

Glu Pro Tyr Pro Asp Phe Val Ala Arg Leu Gln Asp Val Ala Gln Lys
340 345 350

Ser Ile Ala Asp Glu Lys Ala Arg Lys Val Ile Val Glu Leu Met Ala
355 360 365

Tyr Glu Asn Ala Asn Pro Glu Cys Gln Ser Ala Ile Lys Pro Leu Lys
370 375 380

Gly Lys Val Pro Ala Gly Ser Asp Val Ile Ser Glu Tyr Val Lys Ala
385 390 395 400

Cys Asp Gly Ile Gly Gly Ala Met His Lys Ala Met Leu Met Ala Gln
405 410 415

Ala Ile Thr Gly Val Val Leu Gly Gly Gln Val Arg Thr Phe Gly Arg
420 425 430

Lys Cys Tyr Asn Cys Gly Gln Ile Gly His Leu Lys Lys Asn Cys Pro
435 440 445

Val Leu Asn Lys Gln Asn Ile Thr Ile Gln Ala Thr Thr Thr Gly Arg
450 455 460

Glu Pro Pro Asp Leu Cys Asn Glu Gln Arg Gly Gln Pro Gln Ala Pro
465 470 475 480

Gln Gln Thr Gly Ala Phe Pro Ile Gln Pro Phe Val Pro Gln Gly Phe
485 490 495

Gln Gly Gln Gln Pro Pro Leu Ser Gln Val Phe Gln Gly Ile Ser Gln
500 505 510

Leu Pro Gln Tyr Asn Asn Cys Pro Pro Pro
515 520

<210> 16

<211> 831

<212> PRT

<213> Artificial sequence

<220>

<223> polypeptide (pol)

<400> 16

Asn Lys Ser Arg Lys Arg Arg Asn Arg Glu Ser Leu Leu Gly Ala Ala
1 5 10 15

Thr Val Glu Pro Pro Lys Pro Ile Pro Leu Thr Trp Lys Thr Glu Lys
20 25 30

Pro Val Trp Val Asn Gln Trp Pro Leu Pro Lys Gln Lys Leu Glu Ala
35 40 45

Leu His Leu Leu Ala Asn Glu Gln Leu Glu Lys Gly His Ile Glu Pro
50 55 60

Ser Phe Ser Pro Trp Asn Ser Pro Val Phe Val Ile Gln Lys Lys Ser
65 70 75 80

Gly Lys Trp Arg Met Leu Thr Asp Leu Arg Ala Val Asn Ala Val Ile
85 90 95

Gln Pro Met Gly Pro Leu Gln Pro Gly Leu Pro Ser Pro Ala Met Ile
100 105 110

Pro Lys Asp Trp Pro Leu Ile Ile Ile Asp Leu Lys Asp Cys Phe Phe
115 120 125

Thr Ile Pro Leu Ala Glu Gln Asp Cys Glu Lys Phe Ala Phe Thr Ile
130 135 140

Pro Ala Ile Asn Asn Lys Glu Pro Ala Thr Arg Phe Gln Trp Lys Val
145 150 155 160

Leu Pro Gln Gly Met Leu Asn Ser Pro Thr Ile Cys Gln Thr Phe Val
165 170 175

Gly Arg Ala Leu Gln Pro Val Arg Glu Lys Phe Ser Asp Cys Tyr Ile
180 185 190

Ile His Cys Ile Asp Asp Ile Leu Cys Ala Ala Glu Thr Lys Asp Lys
195 200 205

Leu Ile Asp Cys Tyr Thr Phe Leu Gln Ala Glu Val Ala Asn Ala Gly
210 215 220

Leu Ala Ile Ala Ser Asp Lys Ile Gln Thr Ser Thr Pro Phe His Tyr
225 230 235 240

Leu Gly Met Gln Ile Glu Asn Arg Lys Ile Lys Pro Gln Lys Ile Glu
 245 250 255

Ile Arg Lys Asp Thr Leu Lys Thr Leu Asn Asp Phe Gln Lys Leu Leu
 260 265 270

Gly Asp Ile Asn Trp Ile Arg Pro Thr Leu Gly Ile Pro Thr Tyr Ala
 275 280 285

Met Ser Asn Leu Phe Ser Ile Leu Arg Gly Asp Ser Asp Leu Asn Ser
 290 295 300

Lys Arg Met Leu Thr Pro Glu Ala Thr Lys Glu Ile Lys Leu Val Glu
 305 310 315 320

Glu Lys Ile Gln Ser Ala Gln Ile Asn Arg Ile Asp Pro Leu Ala Pro
 325 330 335

Leu Gln Leu Leu Ile Phe Ala Thr Ala His Ser Pro Thr Gly Ile Ile
 340 345 350

Ile Gln Asn Thr Asp Leu Val Glu Trp Ser Phe Leu Pro His Ser Thr
 355 360 365

Val Lys Thr Phe Thr Leu Tyr Leu Asp Gln Ile Ala Thr Leu Ile Gly
 370 375 380

Gln Thr Arg Leu Arg Ile Ile Lys Leu Cys Gly Asn Asp Pro Asp Lys
 385 390 395 400

Ile Val Val Leu Thr Lys Glu Gln Val Arg Gln Ala Phe Ile Asn Ser
 405 410 415

Gly Ala Trp Lys Ile Gly Leu Ala Asn Phe Val Gly Ile Ile Asp Asn
 420 425 430

His Tyr Pro Lys Thr Lys Ile Phe Gln Phe Leu Lys Leu Thr Thr Trp
 435 440 445

Ile Leu Pro Lys Ile Thr Arg Arg Glu Pro Leu Glu Asn Ala Leu Thr
 450 455 460

Val Phe Thr Asp Gly Ser Ser Asn Gly Lys Ala Ala Tyr Thr Gly Pro
 465 470 475 480

Lys Glu Arg Val Ile Lys Thr Pro Tyr Gln Ser Ala Gln Arg Ala Glu
 485 490 495

Leu Val Ala Val Ile Thr Val Leu Gln Asp Phe Asp Gln Pro Ile Asn
 500 505 510

Ile Ile Ser Asp Ser Ala Tyr Val Val Gln Ala Thr Arg Asp Val Glu
 515 520 525

Thr Ala Leu Ile Lys Tyr Ser Met Asp Asp Gln Leu Asn Gln Leu Phe
 530 535 540

Asn Leu Leu Gln Gln Thr Val Arg Lys Arg Asn Phe Pro Phe Tyr Ile
 545 550 555 560

Thr His Ile Arg Ala His Thr Asn Leu Pro Gly Pro Leu Thr Lys Ala
 565 570 575

Asn Glu Gln Ala Asp Leu Leu Val Ser Ser Ala Leu Ile Lys Ala Gln
 580 585 590

Glu Leu His Ala Leu Thr His Val Asn Ala Ala Gly Leu Lys Asn Lys
 595 600 605

Phe Asp Val Thr Trp Lys Gln Ala Lys Asp Ile Val Gln His Cys Thr
 610 615 620

Gln Cys Gln Val Leu His Leu Pro Thr Gln Glu Ala Gly Val Asn Pro
 625 630 635 640

Arg Gly Leu Cys Pro Asn Ala Leu Trp Gln Met Asp Val Thr His Val
 645 650 655

Pro Ser Phe Gly Arg Leu Ser Tyr Val His Val Thr Val Asp Thr Tyr
 660 665 670

Ser His Phe Ile Trp Ala Thr Cys Gln Ser Thr Ser His Val Lys Lys
 675 680 685

His Leu Leu Ser Cys Phe Ala Val Met Gly Val Pro Glu Lys Ile Lys
 690 695 700

Thr Asp Asn Gly Pro Gly Tyr Cys Ser Lys Ala Phe Gln Lys Phe Leu
 705 710 715 720

Ser Gln Trp Lys Ile Ser His Thr Thr Gly Ile Pro Tyr Asn Ser Gln
 725 730 735

Gly Gln Ala Ile Val Glu Arg Thr Asn Arg Thr Leu Lys Thr Gln Leu
 740 745 750

Val Lys Gln Lys Glu Gly Gly Asp Ser Lys Cys Thr Thr Pro Gln Met
755 760 765

Gln Leu Asn Leu Ala Leu Tyr Thr Leu Asn Phe Leu Asn Ile Tyr Arg
770 775 780

Asn Gln Thr Thr Thr Ser Ala Glu Gln His Leu Thr Gly Lys Lys Ser
785 790 795 800

Pro Gly Glu Asn Gln Leu Pro Val Trp Ile Pro Thr Arg His Leu Lys
805 810 815

Phe Tyr Asn Glu Pro Ile Arg Asp Ala Lys Lys Ser Thr Ser Ala
820 825 830