

SEQUENCE LISTING

<110> LILLEHOJ, Erik  
VERCELES, Avelino  
GOLDBLUM, Simeon

<120> MUC1 DECOY PEPTIDES FOR TREATMENT AND PREVENTION OF BACTERIAL  
INFECTIONS

<130> 2015-1549A

<150> US 62/096,166

<151> 2014-12-23

<150> US 62/197,299

<151> 2015-07-27

<160> 7

<170> PatentIn version 3.5

<210> 1

<211> 20

<212> PRT

<213> Homo sapiens

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Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
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Arg Pro Ala Pro  
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<210> 2

<211> 298

<212> PRT

<213> Artificial Sequence

<220>

<223> ectodomain MUC1 decoy peptide

<220>

<221> MISC FEATURE

<222> (129)..(129)

<223> X corresponds to one or more repeat sequences

<400> 2

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr  
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Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly  
 20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser  
 35 40 45

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His  
 50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu  
 65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln  
 85 90 95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr  
 100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro  
 115 120 125

Xaa Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp  
 130 135 140

Asn Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr  
 145 150 155 160

Ser Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn  
 165 170 175

Gly Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro  
 180 185 190

Phe Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser  
 195 200 205

His Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser Thr Val Pro  
 210 215 220

Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr Gly  
225 230 235 240

Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu Gln Phe Asn  
245 250 255

Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg  
260 265 270

Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu  
275 280 285

Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly  
290 295

<210> 3  
<211> 597  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> ectodomain MUC1 decoy peptide

<400> 3

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr  
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly  
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser  
35 40 45

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His  
50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu  
65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln  
85 90 95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr  
100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro  
115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
145 150 155 160

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
165 170 175

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
180 185 190

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
195 200 205

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
210 215 220

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
225 230 235 240

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
245 250 255

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
260 265 270

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
275 280 285

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
290 295 300

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
305 310 315 320

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
325 330 335

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
340 345 350

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
355 360 365

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
370 375 380

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
385 390 395 400

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
405 410 415

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
420 425 430

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn Arg Pro Ala Leu  
435 440 445

Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser Ala Ser Gly Ser  
450 455 460

Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly Thr Ser Ala Arg  
465 470 475 480

Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe Ser Ile Pro Ser  
485 490 495

His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His Ser Thr Lys Thr  
500 505 510

Asp Ala Ser Ser Thr His His Ser Thr Val Pro Pro Leu Thr Ser Ser  
515 520 525

Asn His Ser Thr Ser Pro Gln Leu Ser Thr Gly Val Ser Phe Phe Phe  
530 535 540

Leu Ser Phe His Ile Ser Asn Leu Gln Phe Asn Ser Ser Leu Glu Asp  
545 550 555 560

Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg Asp Ile Ser Glu Met  
565 570 575

Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly Leu Ser Asn Ile  
580 585 590

Lys Phe Arg Pro Gly  
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<210> 4  
<211> 1255  
<212> PRT  
<213> Homo sapiens

<400> 4

Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr  
1 5 10 15

Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly  
20 25 30

Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser  
35 40 45

Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His  
50 55 60

Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu  
65 70 75 80

Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln  
85 90 95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr  
100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro  
115 120 125

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
130 135 140

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
145 150 155 160

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
165 170 175

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
180 185 190

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
195 200 205

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
210 215 220

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
225 230 235 240

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
245 250 255

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
260 265 270

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
275 280 285

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
290 295 300

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
305 310 315 320

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His

325

330

335

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
340 345 350

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
355 360 365

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
370 375 380

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
385 390 395 400

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
405 410 415

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
420 425 430

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
435 440 445

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
450 455 460

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
465 470 475 480

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
485 490 495

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
500 505 510

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
515 520 525

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
530 535 540



Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
545 550 555 560

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
565 570 575

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
580 585 590

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
595 600 605

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
610 615 620

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
625 630 635 640

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
645 650 655

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
660 665 670

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
675 680 685

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
690 695 700

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
705 710 715 720

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
725 730 735

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
740 745 750

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro

755

760

765

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
770 775 780

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
785 790 795 800

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
805 810 815

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
820 825 830

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
835 840 845

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr  
850 855 860

Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser  
865 870 875 880

Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala Pro Pro Ala His  
885 890 895

Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro Gly Ser Thr Ala  
900 905 910

Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Thr Arg Pro Ala Pro  
915 920 925

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn  
930 935 940

Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser  
945 950 955 960

Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly  
965 970 975

Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe  
980 985 990

Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His  
995 1000 1005

Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser Ser Val Pro  
1010 1015 1020

Pro Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr  
1025 1030 1035

Gly Val Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu Gln  
1040 1045 1050

Phe Asn Ser Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu  
1055 1060 1065

Leu Gln Arg Asp Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln  
1070 1075 1080

Gly Gly Phe Leu Gly Leu Ser Asn Ile Lys Phe Arg Pro Gly Ser  
1085 1090 1095

Val Val Val Gln Leu Thr Leu Ala Phe Arg Glu Gly Thr Ile Asn  
1100 1105 1110

Val His Asp Val Glu Thr Gln Phe Asn Gln Tyr Lys Thr Glu Ala  
1115 1120 1125

Ala Ser Arg Tyr Asn Leu Thr Ile Ser Asp Val Ser Val Ser Asp  
1130 1135 1140

Val Pro Phe Pro Phe Ser Ala Gln Ser Gly Ala Gly Val Pro Gly  
1145 1150 1155

Trp Gly Ile Ala Leu Leu Val Leu Val Cys Val Leu Val Ala Leu  
1160 1165 1170

Ala Ile Val Tyr Leu Ile Ala Leu Ala Val Cys Gln Cys Arg Arg

1175                                    1180                                    1185  
Lys Asn Tyr Gly Gln Leu Asp Ile Phe Pro Ala Arg Asp Thr Tyr  
1190                                    1195                                    1200  
His Pro Met Ser Glu Tyr Pro Thr Tyr His Thr His Gly Arg Tyr  
1205                                    1210                                    1215  
Val Pro Pro Ser Ser Thr Asp Arg Ser Pro Tyr Glu Lys Val Ser  
1220                                    1225                                    1230  
Ala Gly Asn Gly Gly Ser Ser Leu Ser Tyr Thr Asn Pro Ala Val  
1235                                    1240                                    1245  
Ala Ala Thr Ser Ala Asn Leu  
1250                                    1255  
  
<210> 5  
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<213> Homo sapiens  
  
<400> 5  
Met Thr Pro Gly Thr Gln Ser Pro Phe Phe Leu Leu Leu Leu Leu Thr  
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Val Leu Thr Val Val Thr Gly Ser Gly His Ala Ser Ser Thr Pro Gly  
20                                    25                                    30  
Gly Glu Lys Glu Thr Ser Ala Thr Gln Arg Ser Ser Val Pro Ser Ser  
35                                    40                                    45  
Thr Glu Lys Asn Ala Val Ser Met Thr Ser Ser Val Leu Ser Ser His  
50                                    55                                    60  
Ser Pro Gly Ser Gly Ser Ser Thr Thr Gln Gly Gln Asp Val Thr Leu  
65                                    70                                    75                                    80  
Ala Pro Ala Thr Glu Pro Ala Ser Gly Ser Ala Ala Thr Trp Gly Gln  
85                                    90                                    95

Asp Val Thr Ser Val Pro Val Thr Arg Pro Ala Leu Gly Ser Thr Thr  
100 105 110

Pro Pro Ala His Asp Val Thr Ser Ala Pro Asp Asn Lys Pro Ala Pro  
115 120 125

<210> 6  
<211> 169  
<212> PRT  
<213> Homo sapiens

<400> 6

Gly Ser Thr Ala Pro Pro Ala His Gly Val Thr Ser Ala Pro Asp Asn  
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Arg Pro Ala Leu Gly Ser Thr Ala Pro Pro Val His Asn Val Thr Ser  
20 25 30

Ala Ser Gly Ser Ala Ser Gly Ser Ala Ser Thr Leu Val His Asn Gly  
35 40 45

Thr Ser Ala Arg Ala Thr Thr Thr Pro Ala Ser Lys Ser Thr Pro Phe  
50 55 60

Ser Ile Pro Ser His His Ser Asp Thr Pro Thr Thr Leu Ala Ser His  
65 70 75 80

Ser Thr Lys Thr Asp Ala Ser Ser Thr His His Ser Thr Val Pro Pro  
85 90 95

Leu Thr Ser Ser Asn His Ser Thr Ser Pro Gln Leu Ser Thr Gly Val  
100 105 110

Ser Phe Phe Phe Leu Ser Phe His Ile Ser Asn Leu Gln Phe Asn Ser  
115 120 125

Ser Leu Glu Asp Pro Ser Thr Asp Tyr Tyr Gln Glu Leu Gln Arg Asp  
130 135 140

Ile Ser Glu Met Phe Leu Gln Ile Tyr Lys Gln Gly Gly Phe Leu Gly  
145 150 155 160

Leu Ser Asn Ile Lys Phe Arg Pro Gly  
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<210> 7  
<211> 1791  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> ectodomain MUC1 decoy peptide

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120  
  
tctaccccag gtggagaaaa ggagaccagc agcgtactct ccagccacag ccccggttca  
180  
  
actgagaaga atgctgtgag tatggatgtc actctggccc cggccacgga accagcttca  
240  
  
ggctcctcca ccaactcagg acaggatgtc acctcggctc cagtcaccag gccagccctg  
300  
  
ggttcagctg ccacctgggg acaggatgtc acctcagccc cggacaacaa gccagccccg  
360  
  
ggctccacca ccccgccagc ccacggctcc accgcccccc cagcccacgg tgtcacctcg  
420  
  
gccccggaca ccaggccggc cccgggctcc accgcccccc cagcccacgg tgtcacctcg  
480  
  
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1080

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gccccggaca ccaggccggc cccgggctcc accgcccccc cagcccacgg tgtcacctcg  
1320

gccccggaca acaggccggc cttgggctcc accgcccctc cagtccacaa tgtcacctcg  
1380

gcctcaggct ctgcatcagg ctgagcttct actctggtgc acaacggcac ctctgccagg  
1440

gctaccacaa ccccagccag caagagcact ccattctcaa ttcccagcca cactctgat  
1500

actcctacca cccttgccag ccatagcacc aagactgatg ccagtagcac tcacatagc  
1560

acggtacctc ctctcacctc ctccaatcac agcacttctc cccagttgtc tactggggtc  
1620

tctttctttt tctgtctttt tcacatttca aacctccagt ttaattcctc tctggaagat  
1680

cccagcaccg actactacca agagctgcag agagacattt ctgaaatggt tttgcagatt  
1740

tataaacaag ggggttttct gggcctctcc aatattaagt tcaggccagg a  
1791