

## SEQUENCE LISTING

<110> Deutsches Krebsforschungszentrum, Ruprecht-Karls-Universität  
Heidelberg

<120> Topical application for an anti-HSV antibody

<130> X1447 PCT S3

<150> EP 14 17 4174.4

<151> 2014-06-26

<160> 16

<170> BiSSAP 1.2

<210> 1

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> 2cvH CDR1

<400> 1

Thr Ser Gly Met Ser Val Gly  
1 5

<210> 2

<211> 16

<212> PRT

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<400> 2

His Ile Trp Trp Asn Asn Asp Lys Tyr Tyr Lys Pro Ala Leu Lys Ser  
1 5 10 15

<210> 3

<211> 12

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<400> 3

Ile Tyr Tyr Gly Tyr Arg Pro Tyr Ala Met Asp Tyr  
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<220>

<223> 2cvL CDR1

<400> 4

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

eo1f-seq1

<210> 5  
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 <223> 2cVL CDR2

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 Lys Val Ser Asn Arg Phe Ser  
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<210> 6  
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<220>  
 <223> 2cVL CDR3

<400> 6  
 Phe Gln Gly Ser His Val Pro Trp Ser  
 1 5

<210> 7  
 <211> 122  
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<220>  
 <223> human germline VH framework

<220>  
 <221> VARIANT  
 <222> 100..107  
 <223> Xaa can be any naturally occurring amino acid

<400> 7  
 Gln Val Thr Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln  
 1 5 10 15  
 Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser  
 20 25 30  
 Gly Met Arg Val Ser Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu  
 35 40 45  
 Trp Leu Ala Arg Ile Asp Trp Asp Asp Lys Phe Tyr Ser Thr Ser  
 50 55 60  
 Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val  
 65 70 75 80  
 Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
 85 90 95  
 Cys Ala Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Phe Asp Tyr Trp  
 100 105 110  
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120

<210> 8  
 <211> 114  
 <212> PRT  
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<220>  
 <223> human germline VL framework

<400> 8  
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly  
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 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser  
 20 25 30

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Asp Asp Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln
   35   40   45
Ser Pro Gln Leu Leu Ile Tyr Thr Leu Ser Tyr Arg Ala Ser Gly Val
   50   55   60
Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys
   65   70   75   80
Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln
   85   90   95
Arg Ile Glu Phe Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
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Lys Arg

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<210> 9  
 <211> 122  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> VH of the humanized mAb hu2c antibody

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<400> 9
Gln Val Thr Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
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Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
  20      25      30
Gly Met Ser Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
  35      40      45
Trp Leu Ala His Ile Trp Trp Asn Asn Asp Lys Tyr Tyr Lys Pro Ala
  50      55      60
Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
  65      70      75      80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
  85      90      95
Cys Ala Arg Ile Tyr Tyr Gly Tyr Arg Pro Tyr Ala Met Asp Tyr Trp
  100  105  110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser
  115      120

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<210> 10  
 <211> 113  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> VL of the humanized mAb hu2c antibody

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<400> 10
Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Pro Gly
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Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
  20      25      30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
  35      40      45
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
  50      55      60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
  65      70      75      80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
  85      90      95
Ser His Val Pro Trp Ser Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
  100  105  110
Arg

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<210> 11  
 <211> 903  
 <212> PRT

eof-seq1

<213> HSV1 strain F

<400> 11

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gln | Gly | Ala | Ala | Arg | Gly | Cys | Arg | Trp | Phe | Val | Val | Trp | Ala |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |
| Leu | Leu | Gly | Leu | Thr | Leu | Gly | Val | Leu | Val | Ala | Ser | Ala | Ala | Pro | Ser |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Pro | Gly | Thr | Pro | Gly | Val | Ala | Ala | Ala | Thr | Gln | Ala | Ala | Asn | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Pro | Ala | Thr | Pro | Ala | Pro | Pro | Ala | Pro | Gly | Pro | Ala | Pro | Thr | Gly |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Asp | Thr | Lys | Pro | Lys | Lys | Asn | Lys | Lys | Pro | Lys | Asn | Pro | Pro | Pro | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Arg | Pro | Ala | Gly | Asp | Asn | Ala | Thr | Val | Ala | Ala | Gly | His | Ala | Thr | Leu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg | Glu | His | Leu | Arg | Asp | Ile | Lys | Ala | Glu | Asn | Thr | Asp | Ala | Asn | Phe |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Tyr | Val | Cys | Pro | Pro | Pro | Thr | Gly | Ala | Thr | Val | Val | Gln | Phe | Glu | Gln |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Arg | Arg | Cys | Pro | Thr | Arg | Pro | Glu | Gly | Gln | Asn | Tyr | Thr | Glu | Gly |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ile | Ala | Val | Val | Phe | Lys | Glu | Asn | Ile | Ala | Pro | Tyr | Lys | Phe | Lys | Ala |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Thr | Met | Tyr | Tyr | Lys | Asp | Val | Thr | Val | Ser | Gln | Val | Trp | Phe | Gly | His |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Arg | Tyr | Ser | Gln | Phe | Met | Gly | Ile | Phe | Glu | Asp | Arg | Ala | Pro | Val | Pro |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Phe | Glu | Glu | Val | Ile | Asp | Lys | Ile | Asn | Ala | Lys | Gly | Val | Cys | Arg | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Thr | Ala | Lys | Tyr | Val | Arg | Asn | Asn | Leu | Glu | Thr | Thr | Ala | Phe | His | Arg |
|     | 210 |     |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Asp | Asp | His | Glu | Thr | Asp | Met | Glu | Leu | Lys | Pro | Ala | Asn | Ala | Ala | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Arg | Thr | Ser | Arg | Gly | Trp | His | Thr | Thr | Asp | Leu | Lys | Tyr | Asn | Pro | Ser |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Arg | Val | Glu | Ala | Phe | His | Arg | Tyr | Gly | Thr | Thr | Val | Asn | Cys | Ile | Val |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Glu | Glu | Val | Asp | Ala | Arg | Ser | Val | Tyr | Pro | Tyr | Asp | Glu | Phe | Val | Leu |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ala | Thr | Gly | Asp | Phe | Val | Tyr | Met | Ser | Pro | Phe | Tyr | Gly | Tyr | Arg | Glu |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Gly | Ser | His | Thr | Glu | His | Thr | Ser | Tyr | Ala | Ala | Asp | Arg | Phe | Lys | Gln |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Val | Asp | Gly | Phe | Tyr | Ala | Arg | Asp | Leu | Thr | Thr | Lys | Ala | Arg | Ala | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Pro | Thr | Thr | Arg | Asn | Leu | Leu | Thr | Thr | Pro | Lys | Phe | Thr | Val | Ala |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Trp | Asp | Trp | Val | Pro | Lys | Arg | Pro | Ser | Val | Cys | Thr | Met | Thr | Lys | Trp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Gln | Glu | Val | Asp | Glu | Met | Leu | Arg | Ser | Glu | Tyr | Gly | Gly | Ser | Phe | Arg |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Phe | Ser | Ser | Asp | Ala | Ile | Ser | Thr | Thr | Phe | Thr | Thr | Asn | Leu | Thr | Glu |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Tyr | Pro | Leu | Ser | Arg | Val | Asp | Leu | Gly | Asp | Cys | Ile | Gly | Lys | Asp | Ala |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Arg | Asp | Ala | Met | Asp | Arg | Ile | Phe | Ala | Arg | Arg | Tyr | Asn | Ala | Thr | His |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Ile | Lys | Val | Gly | Gln | Pro | Gln | Tyr | Tyr | Leu | Ala | Asn | Gly | Gly | Phe | Leu |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ile | Ala | Tyr | Gln | Pro | Leu | Leu | Ser | Asn | Thr | Leu | Ala | Glu | Leu | Tyr | Val |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Arg | Glu | His | Leu | Arg | Glu | Gln | Ser | Arg | Lys | Pro | Pro | Asn | Pro | Thr | Pro |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Pro | Pro | Pro | Gly | Ala | Ser | Ala | Asn | Ala | Ser | Val | Glu | Arg | Ile | Lys | Thr |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Ser | Ser | Ile | Glu | Phe | Ala | Arg | Leu | Gln | Phe | Thr | Tyr | Asn | His | Ile |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | His | Val | Asn | Asp | Met | Leu | Gly | Arg | Val | Ala | Ile | Ala | Trp | Cys |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Glu | Leu | Gln | Asn | His | Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys | Leu |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asn | Pro | Asn | Ala | Ile | Ala | Ser | Ala | Thr | Val | Gly | Arg | Arg | Val | Ser | Ala |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Arg | Met | Leu | Gly | Asp | Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val | Ala |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Ala | Asp | Asn | Val | Ile | Val | Gln | Asn | Ser | Met | Arg | Ile | Ser | Ser | Arg | Pro |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Gly | Ala | Cys | Tyr | Ser | Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp | Gln |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gly | Pro | Leu | Val | Glu | Gly | Gln | Leu | Gly | Glu | Asn | Asn | Glu | Leu | Arg | Leu |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Thr | Arg | Asp | Ala | Ile | Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr | Phe |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Thr | Phe | Gly | Gly | Gly | Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser | His |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Gln | Leu | Ser | Arg | Ala | Asp | Ile | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp | Leu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Asn | Ile | Thr | Met | Leu | Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Glu | Val | Tyr |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Thr | Arg | His | Glu | Ile | Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu | Val |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Gln | Arg | Arg | Asn | Gln | Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp | Thr |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Val | Ile | His | Ala | Asp | Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Gly | Ala |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Phe | Phe | Glu | Gly | Met | Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val | Val |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Met | Gly | Ile | Val | Gly | Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser | Ser |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Phe | Met | Ser | Asn | Pro | Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val | Leu |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Ala | Gly | Leu | Ala | Ala | Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Met | Arg | Leu |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Gln | Ser | Asn | Pro | Met | Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Thr | Lys | Glu | Leu |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Lys | Asn | Pro | Thr | Asn | Pro | Asp | Ala | Ser | Gly | Glu | Gly | Glu | Glu | Gly | Gly |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Asp | Phe | Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg | Tyr |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Met | Ala | Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Lys | Lys |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Lys | Gly | Thr | Ser | Ala | Leu | Leu | Ser | Ala | Lys | Val | Thr | Asp | Met | Val | Met |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Arg | Lys | Arg | Arg | Asn | Thr | Asn | Tyr | Thr | Gln | Val | Pro | Asn | Lys | Asp | Gly |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |
| Asp | Ala | Asp | Glu | Asp | Asp | Leu |     |     |     |     |     |     |     |     |     |
|     |     |     | 900 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 12  
 <211> 904  
 <212> PRT  
 <213> HSV1 strain KOS

<400> 12  
 Met His Gln Gly Ala Pro Ser Trp Gly Arg Arg Trp Phe Val Val Trp  
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 Ala Leu Leu Gly Leu Thr Leu Gly Val Leu Val Ala Ser Ala Pro  
 20 25 30  
 Thr Ser Pro Gly Thr Pro Gly Val Ala Ala Ala Thr Gln Ala Ala Asn  
 35 40 45  
 Gly Gly Pro Ala Thr Pro Ala Pro Pro Pro Leu Gly Ala Ala Pro Thr  
 50 55 60  
 Gly Asp Pro Lys Pro Lys Lys Asn Lys Lys Pro Lys Asn Pro Thr Pro  
 65 70 75 80

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Pro | Ala | Gly | Asp | Asn | Ala | Thr | Val | Ala | Ala | Gly | His | Ala | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Leu | Arg | Glu | His | Leu | Arg | Asp | Ile | Lys | Ala | Glu | Asn | Thr | Asp | Ala | Asn |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Phe | Tyr | Val | Cys | Pro | Pro | Pro | Thr | Gly | Ala | Thr | Val | Val | Gln | Phe | Glu |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gln | Pro | Arg | Arg | Cys | Pro | Thr | Arg | Pro | Glu | Gly | Gln | Asn | Tyr | Thr | Glu |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Ile | Ala | Val | Val | Phe | Lys | Glu | Asn | Ile | Ala | Pro | Tyr | Lys | Phe | Lys |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ala | Thr | Met | Tyr | Tyr | Lys | Asp | Val | Thr | Val | Ser | Gln | Val | Trp | Phe | Gly |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| His | Arg | Tyr | Ser | Gln | Phe | Met | Gly | Ile | Phe | Glu | Asp | Arg | Ala | Pro | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Pro | Phe | Glu | Glu | Val | Ile | Asp | Lys | Ile | Asn | Ala | Lys | Gly | Val | Cys | Arg |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Thr | Ala | Lys | Tyr | Val | Arg | Asn | Asn | Leu | Glu | Thr | Thr | Ala | Phe | His |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Arg | Asp | Asp | His | Glu | Thr | Asp | Met | Glu | Leu | Lys | Pro | Ala | Asn | Ala | Ala |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Thr | Arg | Thr | Ser | Arg | Gly | Trp | His | Thr | Thr | Asp | Leu | Lys | Tyr | Asn | Pro |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ser | Arg | Val | Glu | Ala | Phe | His | Arg | Tyr | Gly | Thr | Thr | Val | Asn | Cys | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Glu | Glu | Val | Asp | Ala | Arg | Ser | Val | Tyr | Pro | Tyr | Asp | Glu | Phe | Val |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Leu | Ala | Thr | Gly | Asp | Phe | Val | Tyr | Met | Ser | Pro | Phe | Tyr | Gly | Tyr | Arg |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Glu | Gly | Ser | His | Thr | Glu | His | Thr | Thr | Tyr | Ala | Ala | Asp | Arg | Phe | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Gln | Val | Asp | Gly | Phe | Tyr | Ala | Arg | Asp | Leu | Thr | Thr | Lys | Ala | Arg | Ala |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Ala | Pro | Thr | Thr | Arg | Asn | Leu | Leu | Thr | Thr | Pro | Lys | Phe | Thr | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Trp | Asp | Trp | Val | Pro | Lys | Arg | Pro | Ser | Val | Cys | Thr | Met | Thr | Lys |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Trp | Gln | Glu | Val | Asp | Glu | Met | Leu | Arg | Ser | Glu | Tyr | Gly | Gly | Ser | Phe |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Arg | Phe | Ser | Ser | Asp | Ala | Ile | Ser | Thr | Thr | Phe | Thr | Thr | Asn | Leu | Thr |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Glu | Tyr | Pro | Leu | Ser | Arg | Val | Asp | Leu | Gly | Asp | Cys | Ile | Gly | Lys | Asp |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ala | Arg | Asp | Ala | Met | Asp | Arg | Ile | Phe | Ala | Arg | Arg | Tyr | Asn | Ala | Thr |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| His | Ile | Lys | Val | Gly | Gln | Pro | Gln | Tyr | Tyr | Gln | Ala | Asn | Gly | Gly | Phe |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Leu | Ile | Ala | Tyr | Gln | Pro | Leu | Leu | Ser | Asn | Thr | Leu | Ala | Glu | Leu | Tyr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Val | Arg | Glu | His | Leu | Arg | Glu | Gln | Ser | Arg | Lys | Pro | Pro | Asn | Pro | Thr |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Pro | Pro | Pro | Pro | Gly | Ala | Ser | Ala | Asn | Ala | Ser | Val | Glu | Arg | Ile | Lys |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Thr | Ser | Ser | Ile | Glu | Phe | Ala | Arg | Leu | Gln | Phe | Thr | Tyr | Asn | His |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ile | Gln | Arg | His | Val | Asn | Asp | Met | Leu | Gly | Arg | Val | Ala | Ile | Ala | Trp |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Cys | Glu | Leu | Gln | Asn | His | Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Asn | Pro | Asn | Ala | Ile | Ala | Ser | Val | Thr | Val | Gly | Arg | Arg | Val | Ser |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ala | Arg | Met | Leu | Gly | Asp | Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Ala | Ala | Asp | Asn | Val | Ile | Val | Gln | Asn | Ser | Met | Arg | Ile | Ser | Ser | Arg |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Pro | Gly | Ala | Cys | Tyr | Ser | Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gln | Gly | Pro | Leu | Val | Glu | Gly | Gln | Leu | Gly | Glu | Asn | Glu | Leu | Arg |     |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Arg | Asp | Ala | Ile | Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Phe | Thr | Phe | Gly | Gly | Gly | Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| His | Gln | Leu | Ser | Arg | Ala | Asp | Ile | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Leu | Asn | Ile | Thr | Met | Leu | Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Glu | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Tyr | Thr | Arg | His | Glu | Ile | Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Val | Gln | Arg | Arg | Asn | Gln | Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Thr | Val | Ile | His | Ala | Asp | Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Gly |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Ala | Phe | Phe | Glu | Gly | Met | Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Val | Met | Gly | Ile | Val | Gly | Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ser | Phe | Met | Ser | Asn | Pro | Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Leu | Ala | Gly | Leu | Ala | Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Met | Arg |     |
| 785 |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |     |
| Leu | Gln | Ser | Asn | Pro | Met | Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Thr | Lys | Glu |
|     |     |     | 805 |     |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Leu | Lys | Asn | Pro | Thr | Asn | Pro | Asp | Ala | Ser | Gly | Glu | Gly | Glu | Glu | Gly |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Gly | Asp | Phe | Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Tyr | Met | Ala | Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Lys |
|     | 850 |     |     |     | 855 |     |     |     |     |     | 860 |     |     |     |     |
| Lys | Lys | Gly | Thr | Ser | Ala | Leu | Leu | Ser | Ala | Lys | Val | Thr | Asp | Met | Val |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Met | Arg | Lys | Arg | Arg | Asn | Thr | Asn | Tyr | Thr | Gln | Val | Pro | Asn | Lys | Asp |
|     |     |     | 885 |     |     |     |     | 890 |     |     |     |     |     | 895 |     |
| Gly | Asp | Ala | Asp | Glu | Asp | Asp | Leu |     |     |     |     |     |     |     |     |
|     |     |     | 900 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 13  
 <211> 904  
 <212> PRT  
 <213> HSV1 strain gC-39-R6

<400> 13

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Gln | Gly | Ala | Pro | Ser | Trp | Gly | Arg | Arg | Trp | Phe | Val | Val | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Leu | Leu | Gly | Leu | Thr | Leu | Gly | Val | Leu | Val | Ala | Ser | Ala | Ala | Pro |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Ser | Pro | Gly | Thr | Pro | Gly | Val | Ala | Ala | Ala | Thr | Gln | Ala | Ala | Asn |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly | Gly | Pro | Ala | Thr | Pro | Ala | Pro | Pro | Ala | Leu | Gly | Ala | Ala | Pro | Thr |
|     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gly | Asp | Pro | Lys | Pro | Lys | Lys | Asn | Lys | Lys | Pro | Lys | Asn | Pro | Thr | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Pro | Arg | Pro | Ala | Gly | Asp | Asn | Ala | Thr | Val | Ala | Ala | Gly | His | Ala | Thr |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Leu | Arg | Glu | His | Leu | Arg | Asp | Ile | Lys | Ala | Glu | Asn | Thr | Asp | Ala | Asn |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Phe | Tyr | Val | Cys | Pro | Pro | Pro | Thr | Gly | Ala | Thr | Val | Val | Gln | Phe | Glu |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gln | Pro | Arg | Arg | Cys | Pro | Thr | Arg | Pro | Glu | Gly | Gln | Asn | Tyr | Thr | Glu |
|     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Gly | Ile | Ala | Val | Val | Phe | Lys | Glu | Asn | Ile | Ala | Pro | Tyr | Lys | Phe | Lys |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ala | Thr | Met | Tyr | Tyr | Lys | Asp | Val | Thr | Val | Ser | Gln | Val | Trp | Phe | Gly |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| His | Arg | Tyr | Ser | Gln | Phe | Met | Gly | Ile | Phe | Glu | Asp | Arg | Ala | Pro | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Phe | Glu | Glu | Val | Ile | Asp | Lys | Ile | Asn | Ala | Lys | Gly | Val | Cys | Arg |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ser | Thr | Ala | Lys | Tyr | Val | Arg | Asn | Asn | Leu | Glu | Thr | Thr | Ala | Phe | His |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Arg | Asp | Asp | His | Glu | Thr | Asp | Met | Glu | Leu | Lys | Pro | Ala | Asn | Ala | Ala |
|     | 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Thr | Arg | Thr | Ser | Arg | Gly | Trp | His | Thr | Thr | Asp | Leu | Lys | Tyr | Asn | Pro |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Ser | Arg | Val | Glu | Ala | Phe | His | Arg | Tyr | Gly | Thr | Thr | Val | Asn | Cys | Ile |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Glu | Glu | Val | Asp | Ala | Arg | Ser | Val | Tyr | Pro | Tyr | Asp | Glu | Phe | Val |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Leu | Ala | Thr | Gly | Asp | Phe | Val | Tyr | Met | Ser | Pro | Phe | Tyr | Gly | Tyr | Arg |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Glu | Gly | Ser | His | Thr | Glu | His | Thr | Ser | Tyr | Ala | Ala | Asp | Arg | Phe | Lys |
|     | 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Gln | Val | Asp | Gly | Phe | Tyr | Ala | Arg | Asp | Leu | Thr | Thr | Lys | Ala | Arg | Ala |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Thr | Ala | Pro | Thr | Thr | Arg | Asn | Leu | Leu | Thr | Thr | Pro | Lys | Phe | Thr | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Ala | Trp | Asp | Trp | Val | Pro | Lys | Arg | Pro | Ser | Val | Cys | Thr | Met | Thr | Lys |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Trp | Gln | Glu | Val | Asp | Glu | Met | Leu | Arg | Ser | Glu | Tyr | Gly | Gly | Ser | Phe |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Arg | Phe | Ser | Ser | Asp | Ala | Ile | Ser | Thr | Thr | Phe | Thr | Thr | Asn | Leu | Thr |
|     | 385 |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Glu | Tyr | Pro | Leu | Ser | Arg | Val | Asp | Leu | Gly | Asp | Cys | Ile | Gly | Lys | Asp |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ala | Arg | Asp | Ala | Met | Asp | Arg | Ile | Phe | Ala | Arg | Arg | Tyr | Asn | Ala | Thr |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| His | Ile | Lys | Val | Gly | Gln | Pro | Gln | Tyr | Tyr | Leu | Ala | Asn | Gly | Gly | Phe |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     |     | 445 |     |     |
| Leu | Ile | Ala | Tyr | Gln | Pro | Leu | Leu | Ser | Asn | Thr | Leu | Ala | Glu | Leu | Tyr |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Val | Arg | Glu | His | Leu | Arg | Glu | Gln | Ser | Arg | Lys | Pro | Pro | Asn | Pro | Thr |
|     | 465 |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Pro | Pro | Pro | Pro | Gly | Ala | Ser | Ala | Asn | Ala | Ser | Val | Glu | Arg | Ile | Lys |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Thr | Ser | Ser | Ile | Glu | Phe | Ala | Arg | Leu | Gln | Phe | Thr | Tyr | Asn | His |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ile | Gln | His | His | Val | Asn | Asp | Met | Leu | Gly | Arg | Val | Ala | Ile | Ala | Trp |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Cys | Glu | Leu | Gln | Asn | His | Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Leu | Asn | Pro | Asn | Ala | Ile | Ala | Ser | Val | Thr | Val | Gly | Arg | Arg | Val | Ser |
|     | 545 |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ala | Arg | Met | Leu | Gly | Asp | Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Ala | Ala | Asp | Asn | Val | Ile | Val | Gln | Asn | Ser | Met | Arg | Ile | Ser | Ser | Arg |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Pro | Gly | Ala | Cys | Tyr | Ser | Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gln | Gly | Pro | Leu | Val | Glu | Gly | Gln | Leu | Gly | Glu | Asn | Asn | Glu | Leu | Arg |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Leu | Thr | Arg | Asp | Ala | Ile | Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr |
|     | 625 |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Phe | Thr | Phe | Gly | Gly | Gly | Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| His | Gln | Leu | Ser | Arg | Ala | Asp | Ile | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Leu | Asn | Ile | Thr | Met | Leu | Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Glu | Val |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Tyr | Thr | Arg | His | Glu | Ile | Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Val | Gln | Arg | Arg | Asn | Gln | Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp |
|     | 705 |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Thr | Val | Ile | His | Ala | Asp | Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Gly |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Phe | Glu | Gly | Met | Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val |
| Val | Met | Gly | Ile | Val | Gly | Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser |
| Ser | Phe | Met | Ser | Asn | Pro | Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val |
| Leu | Ala | Gly | Leu | Ala | Ala | Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Met | Arg |
| Leu | Gln | Ser | Asn | Pro | Met | Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Thr | Lys | Glu |
| Leu | Lys | Asn | Pro | Thr | Asn | Pro | Asp | Ala | Ser | Gly | Glu | Gly | Glu | Glu | Gly |
| Gly | Asp | Phe | Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg |
| Tyr | Met | Ala | Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Lys |
| Lys | Lys | Gly | Thr | Ser | Ala | Leu | Leu | Ser | Ala | Lys | Val | Thr | Asp | Met | Val |
| Met | Arg | Lys | Arg | Arg | Asn | Thr | Asn | Tyr | Thr | Gln | Val | Pro | Asn | Lys | Asp |
| Gly | Asp | Ala | Asp | Glu | Asp | Asp | Leu |     |     |     |     |     |     |     |     |

<210> 14  
 <211> 904  
 <212> PRT  
 <213> HSV2 strain HG52

<400> 14

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Gly | Gly | Leu | Ile | Cys | Ala | Leu | Val | Val | Gly | Ala | Leu | Val |
| Ala | Ala | Val | Ala | Ser | Ala | Ala | Pro | Ala | Ala | Pro | Ala | Ala | Pro | Arg | Ala |
| Ser | Gly | Gly | Val | Ala | Ala | Thr | Val | Ala | Ala | Asn | Gly | Gly | Pro | Ala | Ser |
| Arg | Pro | Pro | Pro | Val | Pro | Ser | Pro | Ala | Thr | Thr | Lys | Ala | Arg | Lys | Arg |
| Lys | Thr | Lys | Lys | Pro | Pro | Lys | Arg | Pro | Glu | Ala | Thr | Pro | Pro | Pro | Asp |
| Ala | Asn | Ala | Thr | Val | Ala | Ala | Gly | His | Ala | Thr | Leu | Arg | Ala | His | Leu |
| Arg | Glu | Ile | Lys | Val | Glu | Asn | Ala | Asp | Ala | Gln | Phe | Tyr | Val | Cys | Pro |
| Pro | Pro | Thr | Gly | Ala | Thr | Val | Val | Gln | Phe | Glu | Gln | Pro | Arg | Arg | Cys |
| Pro | Thr | Arg | Pro | Glu | Gly | Gln | Asn | Tyr | Thr | Glu | Gly | Ile | Ala | Val | Val |
| Phe | Lys | Glu | Asn | Ile | Ala | Pro | Tyr | Lys | Phe | Lys | Ala | Thr | Met | Tyr | Tyr |
| Lys | Asp | Val | Thr | Val | Ser | Gln | Val | Trp | Phe | Gly | His | Arg | Tyr | Ser | Gln |
| Phe | Met | Gly | Ile | Phe | Glu | Asp | Arg | Ala | Pro | Val | Pro | Phe | Glu | Glu | Val |
| Ile | Asp | Lys | Ile | Asn | Thr | Lys | Gly | Val | Cys | Arg | Ser | Thr | Ala | Lys | Tyr |
| Val | Arg | Asn | Asn | Met | Glu | Thr | Thr | Ala | Phe | His | Arg | Asp | Asp | His | Glu |
| Thr | Asp | Met | Glu | Leu | Lys | Pro | Ala | Lys | Val | Ala | Thr | Arg | Thr | Ser | Arg |
| Gly | Trp | His | Thr | Thr | Asp | Leu | Lys | Tyr | Asn | Pro | Ser | Arg | Val | Glu | Ala |
| Phe | His | Arg | Tyr | Gly | Thr | Thr | Val | Asn | Cys | Ile | Val | Glu | Glu | Val | Asp |
| Ala | Arg | Ser | Val | Tyr | Pro | Tyr | Asp | Glu | Phe | Val | Leu | Ala | Thr | Gly | Asp |
| Phe | Val | Tyr | Met | Ser | Pro | Phe | Tyr | Gly | Tyr | Arg | Glu | Gly | Ser | His | Thr |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | His | Thr | Ser | Tyr | Ala | Ala | Asp | Arg | Phe | Lys | Gln | Val | Asp | Gly | Phe |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Tyr | Ala | Arg | Asp | Leu | Thr | Thr | Lys | Ala | Arg | Ala | Thr | Ser | Pro | Thr | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Arg | Asn | Leu | Leu | Thr | Thr | Pro | Lys | Phe | Thr | Val | Ala | Trp | Asp | Trp | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Pro | Lys | Arg | Pro | Ala | Val | Cys | Thr | Met | Thr | Lys | Trp | Gln | Glu | Val | Asp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Glu | Met | Leu | Arg | Ala | Glu | Tyr | Gly | Gly | Ser | Phe | Arg | Phe | Ser | Ser | Asp |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ala | Ile | Ser | Thr | Thr | Phe | Thr | Thr | Asn | Leu | Thr | Glu | Tyr | Ser | Leu | Ser |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Arg | Val | Asp | Leu | Gly | Asp | Cys | Ile | Gly | Arg | Asp | Ala | Arg | Glu | Ala | Ile |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Arg | Met | Phe | Ala | Arg | Lys | Tyr | Asn | Ala | Thr | His | Ile | Lys | Val | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gln | Pro | Gln | Tyr | Tyr | Leu | Ala | Thr | Gly | Gly | Phe | Leu | Ile | Ala | Tyr | Gln |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Pro | Leu | Leu | Ser | Asn | Thr | Leu | Ala | Glu | Leu | Tyr | Val | Arg | Glu | Tyr | Met |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Arg | Glu | Gln | Asp | Arg | Lys | Pro | Arg | Asn | Ala | Thr | Pro | Ala | Pro | Leu | Arg |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Glu | Ala | Pro | Ser | Ala | Asn | Ala | Ser | Val | Glu | Arg | Ile | Lys | Thr | Thr | Ser |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Ser | Ile | Glu | Phe | Ala | Arg | Leu | Gln | Phe | Thr | Tyr | Asn | His | Ile | Gln | Arg |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| His | Val | Asn | Asp | Met | Leu | Gly | Arg | Ile | Ala | Val | Ala | Trp | Cys | Glu | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Gln | Asn | His | Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys | Leu | Asn | Pro |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Asn | Ala | Ile | Ala | Ser | Ala | Thr | Val | Gly | Arg | Arg | Val | Ser | Ala | Arg | Met |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Leu | Gly | Asp | Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val | Ala | Pro | Asp |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Asn | Val | Ile | Val | Gln | Asn | Ser | Met | Arg | Val | Ser | Ser | Arg | Pro | Gly | Thr |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Cys | Tyr | Ser | Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp | Gln | Gly | Pro |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Leu | Ile | Glu | Gly | Gln | Leu | Gly | Glu | Asn | Asn | Glu | Leu | Arg | Leu | Thr | Arg |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Asp | Ala | Leu | Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr | Phe | Ile | Phe |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Gly | Gly | Gly | Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser | His | Gln | Leu |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Ser | Arg | Ala | Asp | Val | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp | Leu | Asn | Ile |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Thr | Met | Leu | Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Glu | Val | Tyr | Thr | Arg |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| His | Glu | Ile | Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu | Val | Gln | Arg |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Arg | Asn | Gln | Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp | Thr | Val | Ile |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Arg | Ala | Asp | Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Cys | Ala | Phe | Phe |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Glu | Gly | Met | Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val | Val | Met | Gly |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Val | Val | Gly | Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser | Ser | Phe | Met |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ser | Asn | Pro | Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val | Leu | Ala | Gly |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Leu | Val | Ala | Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Leu | Gln | Leu | Gln | Arg |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Asn | Pro | Met | Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Thr | Lys | Glu | Leu | Lys | Thr |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Ser | Asp | Pro | Gly | Gly | Val | Gly | Gly | Glu | Gly | Glu | Glu | Gly | Ala | Glu | Gly |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Gly | Gly | Phe | Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Met | Ala | Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Arg |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Lys | Lys | Gly | Thr | Ser | Ala | Leu | Leu | Ser | Ser | Lys | Val | Thr | Asn | Met | Val |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Leu | Arg | Lys | Arg | Asn | Lys | Ala | Arg | Tyr | Ser | Pro | Leu | His | Asn | Glu | Asp |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |
| Glu | Ala | Gly | Asp | Glu | Asp | Glu | Leu |     |     |     |     |     |     |     |     |
|     |     |     | 900 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 15  
 <211> 904  
 <212> PRT  
 <213> HSV2 strain 333

<400> 15

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Gly | Gly | Leu | Ile | Cys | Ala | Leu | Val | Val | Gly | Ala | Leu | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ala | Ala | Val | Ala | Ser | Ala | Ala | Pro | Ala | Ala | Pro | Ala | Ala | Pro | Arg | Ala |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Ser | Gly | Gly | Val | Ala | Ala | Thr | Val | Ala | Ala | Asn | Gly | Gly | Pro | Ala | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Arg | Pro | Pro | Pro | Val | Pro | Ser | Pro | Ala | Thr | Thr | Lys | Ala | Arg | Lys | Arg |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Lys | Thr | Lys | Lys | Pro | Pro | Lys | Arg | Pro | Glu | Ala | Thr | Pro | Pro | Pro | Asp |
| 65  |     |     |     | 70  |     |     |     |     |     | 75  |     |     |     |     | 80  |
| Ala | Asn | Ala | Thr | Val | Ala | Ala | Gly | His | Ala | Thr | Leu | Arg | Ala | His | Leu |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Arg | Glu | Ile | Lys | Val | Glu | Asn | Ala | Asp | Ala | Gln | Phe | Tyr | Val | Cys | Pro |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Pro | Pro | Thr | Gly | Ala | Thr | Val | Val | Gln | Phe | Glu | Gln | Pro | Arg | Arg | Cys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Pro | Thr | Arg | Pro | Glu | Gly | Gln | Asn | Tyr | Thr | Glu | Gly | Ile | Ala | Val | Val |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Phe | Lys | Glu | Asn | Ile | Ala | Pro | Tyr | Lys | Phe | Lys | Ala | Thr | Met | Tyr | Tyr |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Lys | Asp | Val | Thr | Val | Ser | Gln | Val | Trp | Phe | Gly | His | Arg | Tyr | Ser | Gln |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Phe | Met | Gly | Ile | Phe | Glu | Asp | Arg | Ala | Pro | Val | Pro | Phe | Glu | Glu | Val |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ile | Asp | Lys | Ile | Asn | Ala | Lys | Gly | Val | Cys | Arg | Ser | Thr | Ala | Lys | Tyr |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Val | Arg | Asn | Asn | Met | Glu | Thr | Thr | Ala | Phe | His | Arg | Asp | Asp | His | Glu |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Asp | Met | Glu | Leu | Lys | Pro | Ala | Lys | Val | Ala | Thr | Arg | Thr | Ser | Arg |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |     | 240 |
| Gly | Trp | His | Thr | Thr | Asp | Leu | Lys | Tyr | Asn | Pro | Ser | Arg | Val | Glu | Ala |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Phe | His | Arg | Tyr | Gly | Thr | Thr | Val | Thr | Cys | Ile | Val | Glu | Glu | Val | Asp |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ala | Arg | Ser | Val | Tyr | Pro | Tyr | Asp | Glu | Phe | Val | Leu | Ala | Thr | Gly | Asp |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Phe | Val | Tyr | Met | Ser | Pro | Phe | Tyr | Gly | Tyr | Arg | Glu | Gly | Ser | His | Thr |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Glu | His | Thr | Ser | Tyr | Ala | Ala | Asp | Arg | Phe | Lys | Gln | Val | Asp | Gly | Phe |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Tyr | Ala | Arg | Asp | Leu | Thr | Thr | Lys | Ala | Arg | Ala | Thr | Ser | Pro | Thr | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Arg | Asn | Leu | Leu | Thr | Thr | Pro | Lys | Phe | Thr | Val | Ala | Trp | Asp | Trp | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Pro | Lys | Arg | Pro | Ala | Val | Cys | Thr | Met | Thr | Lys | Trp | Gln | Glu | Val | Asp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Glu | Met | Leu | Arg | Ala | Glu | Tyr | Gly | Gly | Ser | Phe | Arg | Phe | Ser | Ser | Asp |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Ala | Ile | Ser | Thr | Thr | Phe | Thr | Thr | Asn | Leu | Thr | Gln | Tyr | Ser | Leu | Ser |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Arg | Val | Asp | Leu | Gly | Asp | Cys | Ile | Gly | Arg | Asp | Ala | Arg | Glu | Ala | Ile |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |

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|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Met | Phe | Ala | Arg | Lys | Tyr | Asn | Ala | Thr | His | Ile | Lys | Val | Gly |
| Gln | Pro | Gln | Tyr | Tyr | Leu | Ala | Thr | Gly | Gly | Phe | Leu | Ile | Ala | Tyr | Gln |
| Pro | Leu | Leu | Ser | Asn | Thr | Leu | Ala | Glu | Leu | Tyr | Val | Arg | Glu | Tyr | Met |
| Arg | Glu | Gln | Asp | Arg | Lys | Pro | Arg | Asn | Ala | Thr | Pro | Ala | Pro | Leu | Arg |
| Glu | Ala | Pro | Ser | Ala | Asn | Ala | Ser | Val | Glu | Arg | Ile | Lys | Thr | Thr | Ser |
| Ser | Ile | Glu | Phe | Ala | Arg | Leu | Gln | Phe | Thr | Tyr | Asn | His | Ile | Gln | Arg |
| His | Val | Asn | Asp | Met | Leu | Gly | Arg | Ile | Ala | Val | Ala | Trp | Cys | Glu | Leu |
| Gln | Asn | His | Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys | Leu | Asn | Pro |
| Asn | Ala | Ile | Ala | Ser | Ala | Thr | Val | Gly | Arg | Arg | Val | Ser | Ala | Arg | Met |
| Leu | Gly | Asp | Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val | Ala | Pro | Asp |
| Asn | Val | Ile | Val | Gln | Asn | Ser | Met | Arg | Val | Ser | Ser | Arg | Pro | Gly | Thr |
| Cys | Tyr | Ser | Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp | Gln | Gly | Pro |
| Leu | Ile | Glu | Gly | Gln | Leu | Gly | Glu | Asn | Asn | Glu | Leu | Arg | Leu | Thr | Arg |
| Asp | Ala | Leu | Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr | Phe | Ile | Phe |
| Gly | Gly | Gly | Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser | His | Gln | Leu |
| Ser | Arg | Ala | Asp | Val | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp | Leu | Asn | Ile |
| Thr | Met | Leu | Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Gly | Val | Tyr | Thr | Arg |
| His | Glu | Ile | Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu | Val | Gln | Arg |
| Arg | Asn | Gln | Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp | Thr | Val | Ile |
| Arg | Ala | Asp | Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Cys | Ala | Phe | Phe |
| Glu | Gly | Met | Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val | Val | Met | Gly |
| Val | Val | Gly | Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser | Ser | Phe | Met |
| Ser | Asn | Pro | Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val | Leu | Ala | Gly |
| Leu | Val | Ala | Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Leu | Gln | Leu | Gln | Arg |
| Asn | Pro | Met | Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Lys | Glu | Leu | Lys | Thr |     |
| Ser | Asp | Pro | Gly | Gly | Val | Gly | Gly | Glu | Gly | Glu | Glu | Gly | Ala | Glu | Gly |
| Gly | Gly | Phe | Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg |
| Tyr | Met | Ala | Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Arg |
| Lys | Lys | Gly | Thr | Ser | Ala | Leu | Leu | Ser | Ser | Lys | Val | Thr | Asn | Met | Val |
| Leu | Arg | Lys | Arg | Asn | Lys | Ala | Arg | Tyr | Ser | Pro | Leu | His | Asn | Glu | Asp |
| Glu | Ala | Gly | Asp | Glu | Asp | Glu | Leu |     |     |     |     |     |     |     |     |

<210> 16  
 <211> 901  
 <212> PRT  
 <213> HSV2 strain MMA

eo1f-seq1

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<400> 16
Met Arg Gly Gly Gly Leu Ile Cys Ala Leu Val Val Gly Ala Leu Val
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Ala Ala Val Ala Ser Ala Ala Pro Ala Ala Pro Arg Ala Ser Gly Gly
20      25      30
Val Ala Ala Thr Val Ala Ala Asn Gly Gly Pro Ala Ser Arg Pro Pro
35      40
Pro Val Pro Ser Pro Ala Thr Thr Arg Ala Arg Lys Arg Lys Thr Lys
50      55      60
Lys Pro Pro Glu Arg Pro Glu Ala Thr Pro Pro Pro Asp Ala Asn Ala
65      70      75      80
Thr Val Ala Ala Gly His Ala Thr Leu Arg Ala His Leu Arg Glu Ile
85      90      95
Lys Val Glu Asn Ala Asp Ala Gln Phe Tyr Val Cys Pro Pro Thr
100     105     110
Gly Ala Thr Val Val Gln Phe Glu Gln Pro Arg Arg Cys Pro Thr Arg
115     120     125
Pro Glu Gly Gln Asn Tyr Thr Glu Gly Ile Ala Val Val Phe Lys Glu
130     135     140
Asn Ile Ala Pro Tyr Lys Phe Lys Ala Thr Met Tyr Tyr Lys Asp Val
145     150     155     160
Thr Val Ser Gln Val Trp Phe Gly His Arg Tyr Ser Gln Phe Met Gly
165     170     175
Ile Phe Glu Asp Arg Ala Pro Val Pro Phe Glu Glu Val Ile Asp Lys
180     185     190
Ile Asn Ala Lys Gly Val Cys Arg Ser Thr Ala Lys Tyr Val Arg Asn
195     200     205
Asn Met Glu Thr Thr Ala Phe His Arg Asp Asp His Glu Thr Asp Met
210     215     220
Glu Leu Lys Pro Ala Lys Val Ala Thr Arg Thr Ser Arg Gly Trp His
225     230     235     240
Thr Thr Asp Leu Lys Tyr Asn Pro Ser Arg Val Glu Ala Phe His Arg
245     250     255
Tyr Gly Thr Thr Val Asn Cys Ile Val Glu Glu Val Asp Ala Arg Ser
260     265     270
Val Tyr Pro Tyr Asp Glu Phe Val Leu Ala Thr Gly Asp Phe Val Tyr
275     280     285
Met Ser Pro Phe Tyr Gly Tyr Arg Glu Gly Ser His Thr Glu His Thr
290     295     300
Ser Tyr Ala Ala Asp Arg Phe Lys Gln Val Asp Gly Phe Tyr Ala Arg
305     310     315     320
Asp Leu Thr Thr Lys Ala Gln Ala Thr Ser Pro Thr Thr Arg Asn Leu
325     330     335
Leu Thr Thr Pro Lys Phe Thr Val Ala Trp Asp Trp Val Pro Lys Arg
340     345     350
Pro Ala Val Cys Thr Met Thr Lys Trp Gln Glu Val Asp Glu Met Leu
355     360     365
Arg Ala Glu Tyr Gly Gly Ser Phe Arg Phe Ser Ser Asp Ala Ile Ser
370     375     380
Thr Thr Phe Thr Thr Asn Leu Thr Glu Tyr Ser Leu Ser Arg Val Asp
385     390     395     400
Leu Gly Asp Cys Ile Gly Arg Asp Ala Arg Glu Ala Ile Asp Arg Met
405     410     415
Phe Ala Arg Lys Tyr Asn Ala Thr His Ile Lys Val Gly Gln Pro Gln
420     425     430
Tyr Tyr Leu Ala Thr Gly Gly Phe Leu Ile Ala Tyr Gln Pro Leu Leu
435     440     445
Ser Asn Thr Leu Ala Glu Leu Tyr Val Arg Glu Tyr Met Arg Glu Gln
450     455     460
Asp Arg Lys Pro Arg Asn Ala Thr Pro Ala Pro Leu Arg Glu Ala Pro
465     470     475     480
Ser Ala Asn Ala Ser Val Glu Arg Ile Lys Thr Thr Ser Ser Ile Glu
485     490     495
Phe Ala Arg Leu Gln Phe Thr Tyr Asn His Ile Gln Arg His Val Asn
500     505     510
Asp Met Leu Gly Arg Ile Ala Val Ala Trp Cys Glu Leu Gln Asn His
515     520     525

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eol f-seq1

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Leu | Thr | Leu | Trp | Asn | Glu | Ala | Arg | Lys | Leu | Asn | Pro | Asn | Ala | Ile |
| 530 |     |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Ala | Ser | Ala | Thr | Val | Gly | Arg | Arg | Val | Ser | Ala | Arg | Met | Leu | Gly | Asp |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Val | Met | Ala | Val | Ser | Thr | Cys | Val | Pro | Val | Ala | Pro | Asp | Asn | Val | Ile |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Val | Gln | Asn | Ser | Met | Arg | Val | Ser | Ser | Arg | Pro | Gly | Thr | Cys | Tyr | Ser |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Arg | Pro | Leu | Val | Ser | Phe | Arg | Tyr | Glu | Asp | Gln | Gly | Pro | Leu | Ile | Glu |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Gly | Gln | Leu | Gly | Glu | Asn | Asn | Glu | Leu | Arg | Leu | Thr | Arg | Asp | Ala | Leu |
|     | 610 |     |     |     | 615 |     |     |     |     |     | 620 |     |     |     |     |
| Glu | Pro | Cys | Thr | Val | Gly | His | Arg | Arg | Tyr | Phe | Ile | Phe | Gly | Gly | Gly |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Tyr | Val | Tyr | Phe | Glu | Glu | Tyr | Ala | Tyr | Ser | His | Gln | Leu | Ser | Arg | Ala |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Asp | Val | Thr | Thr | Val | Ser | Thr | Phe | Ile | Asp | Leu | Asn | Ile | Thr | Met | Leu |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Glu | Asp | His | Glu | Phe | Val | Pro | Leu | Glu | Val | Tyr | Thr | Arg | His | Glu | Ile |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Lys | Asp | Ser | Gly | Leu | Leu | Asp | Tyr | Thr | Glu | Val | Gln | Arg | Arg | Asn | Gln |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Leu | His | Asp | Leu | Arg | Phe | Ala | Asp | Ile | Asp | Thr | Val | Ile | Arg | Ala | Asp |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Ala | Asn | Ala | Ala | Met | Phe | Ala | Gly | Leu | Cys | Ala | Phe | Phe | Glu | Gly | Met |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Gly | Asp | Leu | Gly | Arg | Ala | Val | Gly | Lys | Val | Val | Met | Gly | Val | Val | Gly |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| Gly | Val | Val | Ser | Ala | Val | Ser | Gly | Val | Ser | Ser | Phe | Met | Ser | Asn | Pro |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Phe | Gly | Ala | Leu | Ala | Val | Gly | Leu | Leu | Val | Leu | Ala | Gly | Leu | Val | Ala |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Ala | Phe | Phe | Ala | Phe | Arg | Tyr | Val | Leu | Gln | Leu | Gln | Arg | Asn | Pro | Met |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |
| Lys | Ala | Leu | Tyr | Pro | Leu | Thr | Thr | Lys | Glu | Leu | Lys | Thr | Ser | Asp | Pro |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Gly | Gly | Val | Gly | Gly | Glu | Gly | Glu | Glu | Gly | Ala | Glu | Gly | Gly | Gly | Phe |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Asp | Glu | Ala | Lys | Leu | Ala | Glu | Ala | Arg | Glu | Met | Ile | Arg | Tyr | Met | Ala |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Leu | Val | Ser | Ala | Met | Glu | Arg | Thr | Glu | His | Lys | Ala | Arg | Lys | Lys | Gly |
|     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Thr | Ser | Ala | Leu | Leu | Ser | Ser | Lys | Val | Thr | Asn | Met | Val | Leu | Arg | Lys |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Arg | Asn | Lys | Ala | Arg | Tyr | Ser | Pro | Leu | His | Asn | Glu | Asp | Glu | Ala | Gly |
|     |     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |
| Asp | Glu | Asp | Glu | Leu |     |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 900 |     |     |     |     |     |     |     |     |     |     |     |     |