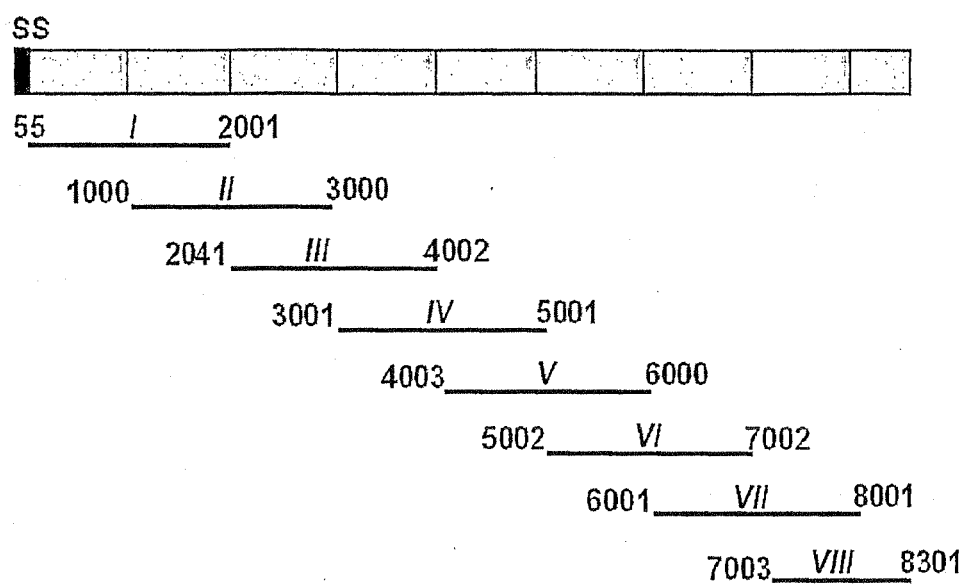


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FIGURE 1



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FIGURE 2

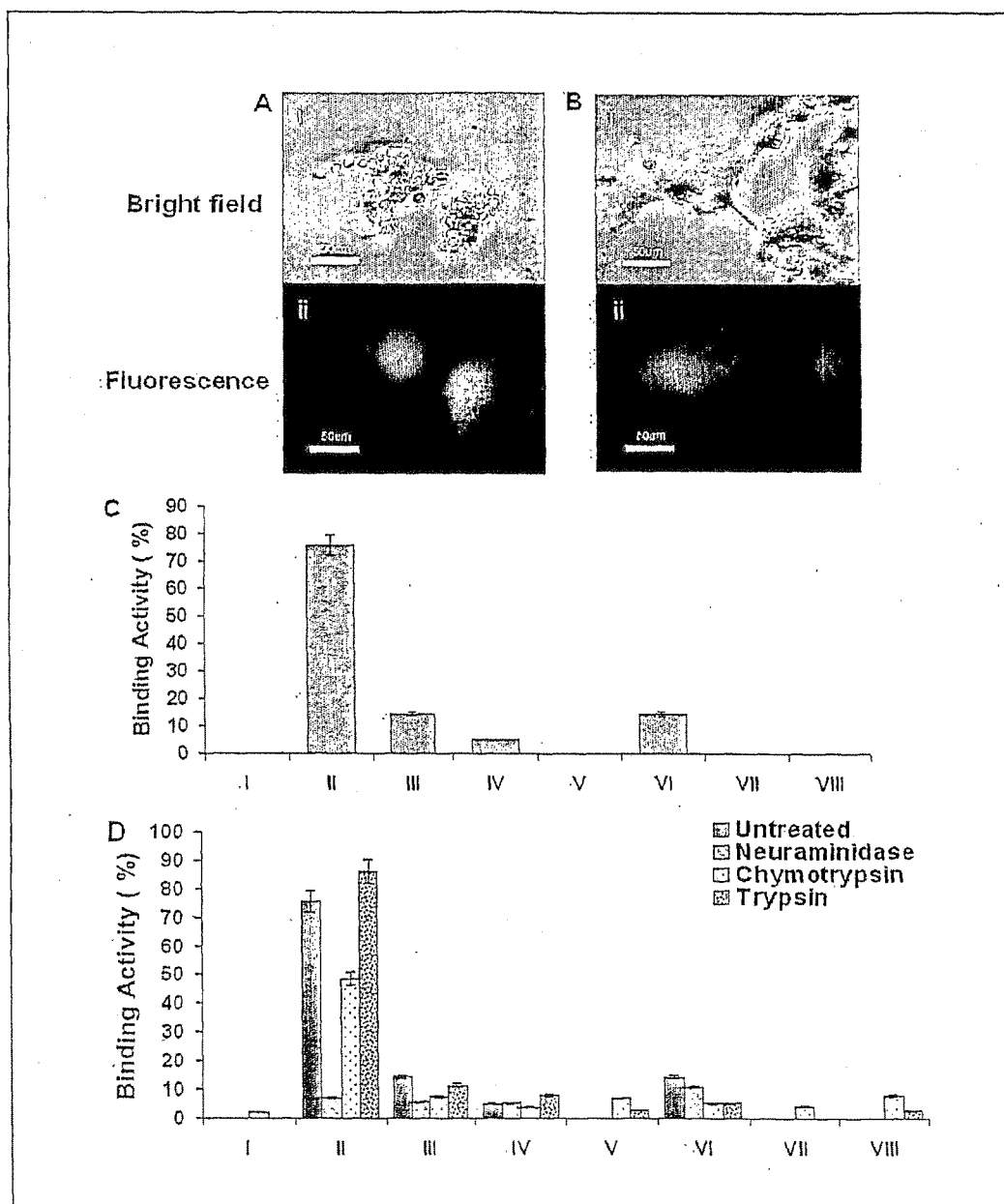
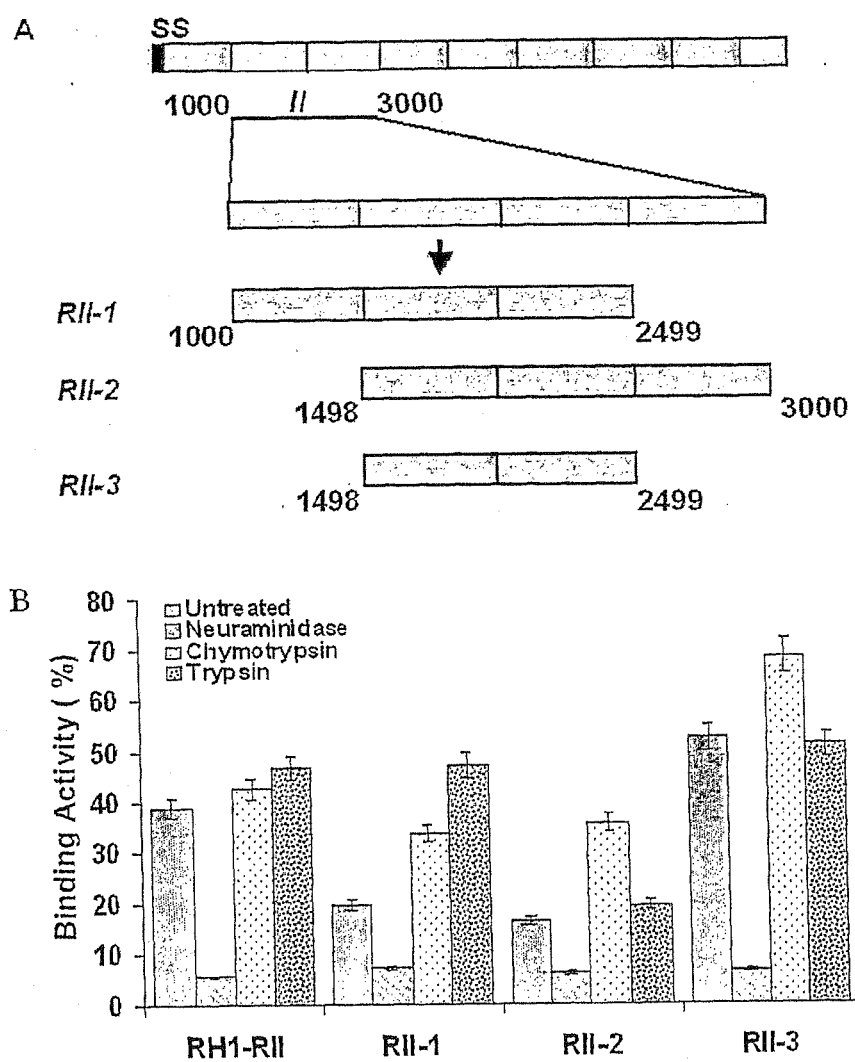
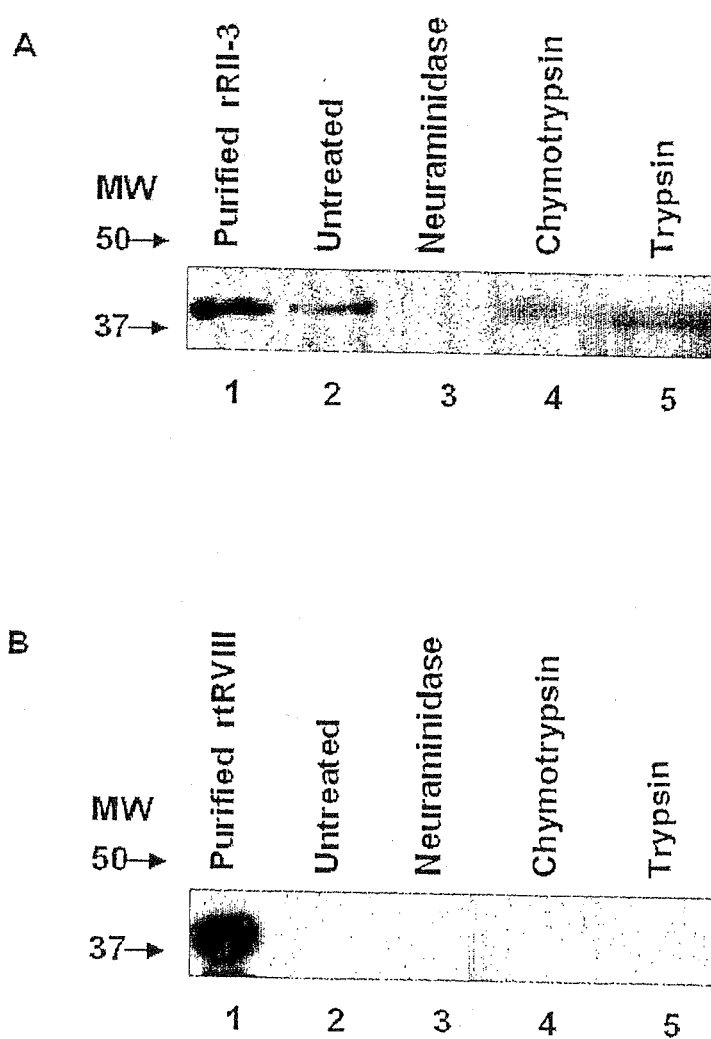


FIGURE 3



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FIGURE 4



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FIGURE 5

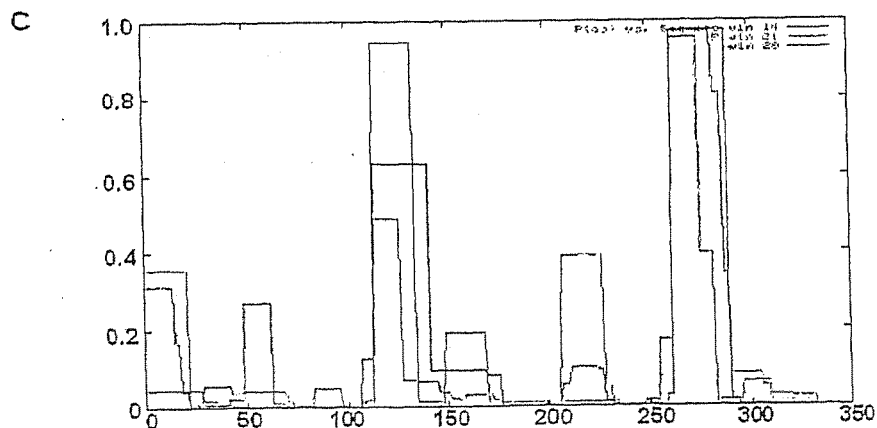
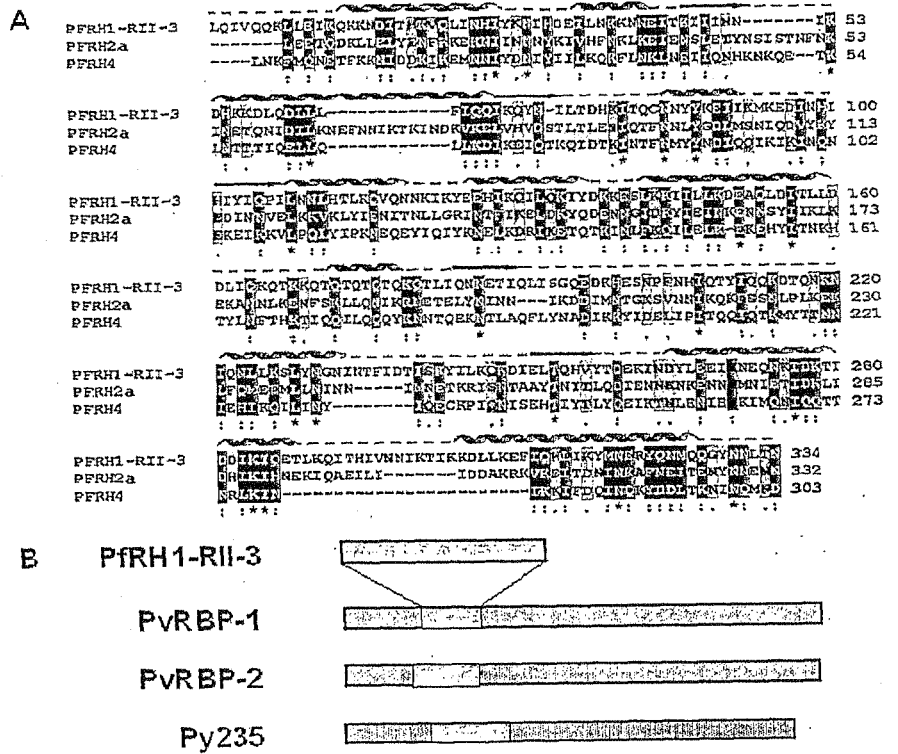


FIGURE 6

Plasmodium falciparum binding regions

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 IQQIKQYNILTDHKITQCNNYKEIIMKREDINHTIYIQFILNNLHTLKQVQNNKKIYEEHKKQ
 TLQKIYDKKESLKKIILKDEAQLDITLLDDLIQKQTKKQTQTQTQKQTLQNNETIQILISGQ
 EDKHESNPFNHIQTYIQKQDTONKNIQNLKSLYNGNINTFIDTILSKYLLKQKDIELTOHVYTDE
 KINDYLEEIKNEQNKIDKTIDDIKIQETLKQITHIVNNIKTKKDLKKEFIQHLIKYMNERYQNM
 QQGYNNTLN

>PFRH2A (2251-2635aa) (6750-7905bp) (9393bp)
 LEEETQDKLLELYENFKKEKNIINNMYKIVHFNKLEIENSLETYSISTNFKINETQNDILKN
 EFNKLTAKINDKVKELVHVDSTLTLESIQTFNNLYGDLMSNIQDVVKYEDINNVELKVKLYIEN
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 NNNNNNN

>PFRH2B (151-485aa) (453-1455bp) (3348bp)
 LEEETQDKLLELYENFKKEKNIINNMYKIVHFNKLEIENSLETYSISTNFKINETQNDILKN
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>PFRH4 (451-792aa) (1353-2374bp) (5094bp)
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 ADIKKYIDELIPITQQIQTQKMYTNNLEHKKQILLINYIQECKPIQNTSEHTIYTYLYQBKTKNLEN
 IEQKIMQNIQQTNNRLKINIKKIFDQINQKYDDLTKNNQMD

>PFRH3 (601-1135aa) (1803-3405bp) (8379bp)
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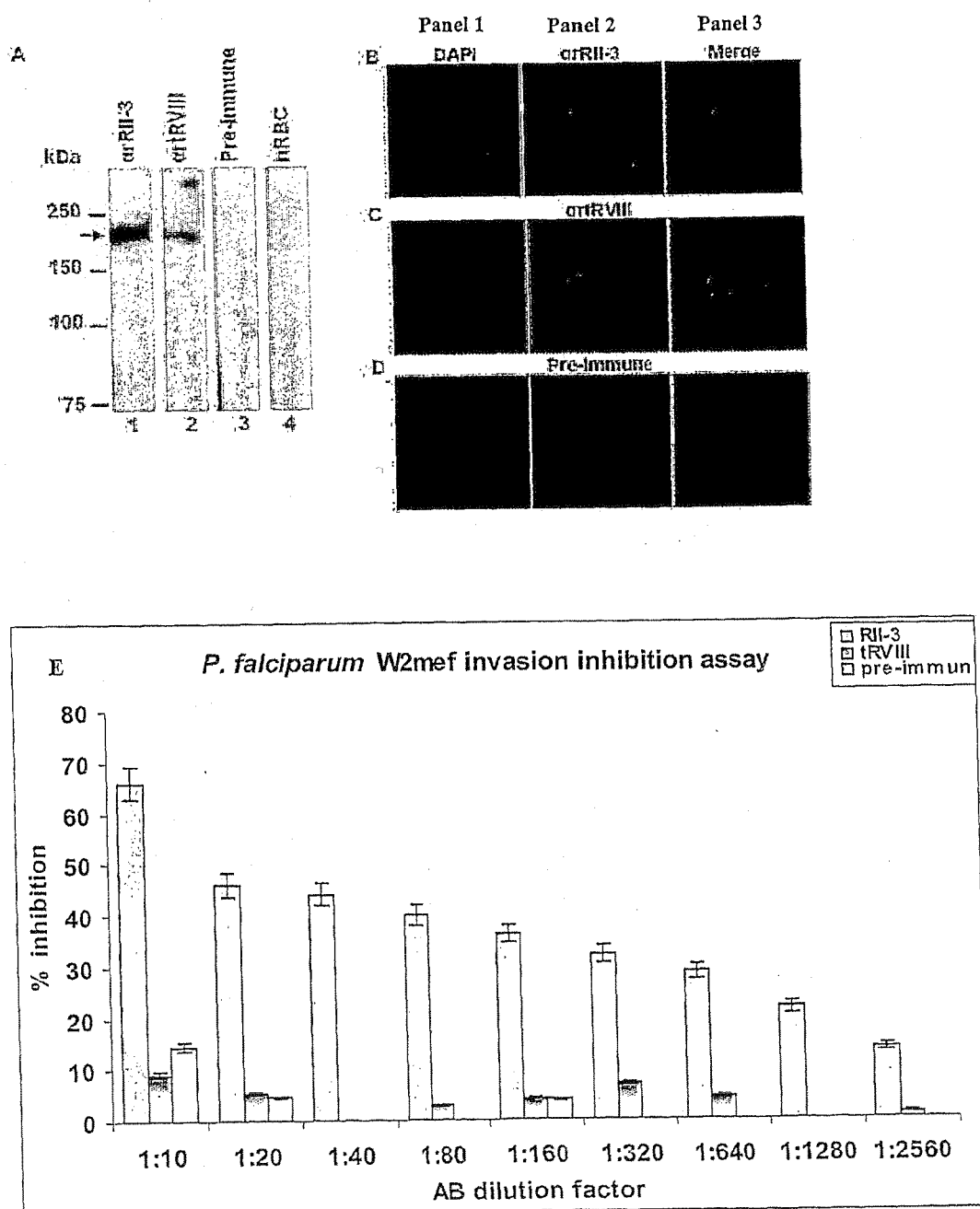
Plasmodium vivax binding regions

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 DPMACKVHYKELLSLKGKSSVYFTENNELNTASYDMMEGFSAKKEKADNDINALYNSVYREDI
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>PVRBF-2 (401-829aa) (1203-2487bp) (8604bp)
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 LMGSEQSTSDLTSTIADSEKIYKSAESLINSSEETAKVALDSNEKINEIKKNYDQNLKVREFI
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FIGURE 7



SEQUENCE LISTING

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Leu Lys Gln Ile Thr His Ile Val Asn Asn Ile Lys Thr Ile Lys Lys
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Asp Leu Leu Lys Glu Phe Ile Gln His Leu Ile Lys Tyr Met Asn Glu
 305 310 315 320

Arg Tyr Gln Asn Met Gln Gln Gly Tyr Asn Asn Leu Thr Asn Tyr Ile
 325 330 335

Asn Gln Tyr Glu Glu Glu Asn Asn Asn Met Lys Gln Tyr Ile Thr Thr
 340 345 350

Ile Arg Asn Ile Gln Lys Ile Tyr Tyr Asp Asn Ile Tyr Ala Lys Glu
 355 360 365

Lys Glu Ile Arg Ser Gly Gln Tyr Tyr Lys Asp Phe Ile Thr Ser Arg
 370 375 380

Lys Asn Ile Tyr Asn Ile Arg Glu Asn Ile Ser Lys Asn Val Asp Met
 385 390 395 400

Ile Lys Asn Glu Glu Lys Lys Lys Ile Gln Asn Cys Val Asp Lys Tyr
 405 410 415

Asn Ser Ile Lys Gln Tyr Val Lys Met Leu Lys Asn Gly Asp Thr Gln
 420 425 430

Asp Glu Asn Asn Asn Asn Asn Asp Ile Tyr Asp Lys Leu Ile Val
 435 440 445

Pro Leu Asp Ser Ile Lys Gln Asn Ile Asp Lys Tyr Asn Thr Glu His
 450 455 460

Asn Phe Ile Thr Phe Thr Asn Lys Ile Asn Thr His Asn Lys Lys Asn
 465 470 475 480

Gln Glu Met Met Glu Glu Phe Ile Tyr Ala Tyr Lys Arg Leu Lys Ile
 485 490 495

Leu Lys Ile Leu Asn
500

<210> 7
<211> 1002
<212> DNA
<213> Plasmodium falciparum

<400> 7
ttacaaatag tacaacaaaa acttttagaa atcaaacaaa aaaaaaatga tattacacac 60
aaagtacaac ttataaatca tatatataaa aatatacatg atgaaatatt aaacaaaaaa 120
aataatgaaa taacaaagat tattataaat aatataaaaag atcataaaaa agattttacaa 180
gatctcttac tttttatata acaaatcaaa caatataata tattaacaga tcataaaaatt 240
acacaatgta ataattatta taaggaaatc ataaaaatga aagaagatat aaatcatatt 300
catatatata tacaaccaat tctaaataat ttacacacat taaaacaagt acaaaataat 360
aaaatcaaat atgaagagca catcaaacaa atattacaaa aaattttatga taaaaaggaa 420
tcttttaaaaa aaattattct cttaaaagat gaagcacaat tagacattac cctcctcgat 480
gacttaatac aaaagcaaac aaaaaacaa acacaaacac aaacacaaac acaaaaacaa 540
acactaatac aaaataatga gacgattcaa cttattttctg gacaagaaga taaacatgaa 600
tccaatccat ttaatcatat acaaacctat attcaacaaa aagatacaca aaataaaaaac 660
atccaaaatc ttotttaaato cttgtataat ggaaatatta acacattcat agacacaatt 720
tctaaatata tattaaaaaa aaaagatata gaattaacac aacacgttta tacagacgaa 780
aaaattaatg attatottga agaaataaaa aatgaacaaa acaaaataga taagaccatc 840
gacgatataa aaatacaaga aacattaaaa caaataactc atattgttaa caatataaaa 900
accatcaaaa aggatttgct caaagaattht attcaacatt taataaaata tatgaacgaa 960
agatatcaga atatgcaaca gggttataat aatttaacaa at 1002

<210> 8
<211> 334
<212> PRT
<213> Plasmodium falciparum

<400> 8

Leu Gln Ile Val Gln Gln Lys Leu Leu Glu Ile Lys Gln Lys Lys Asn
1 5 10 15

Asp Ile Thr His Lys Val Gln Leu Ile Asn His Ile Tyr Lys Asn Ile
20 25 30

His Asp Glu Ile Leu Asn Lys Lys Asn Asn Glu Ile Thr Lys Ile Ile
 35 40 45
 Ile Asn Asn Ile Lys Asp His Lys Lys Asp Leu Gln Asp Leu Leu Leu
 50 55 60
 Phe Ile Gln Gln Ile Lys Gln Tyr Asn Ile Leu Thr Asp His Lys Ile
 65 70 75 80
 Thr Gln Cys Asn Asn Tyr Tyr Lys Glu Ile Ile Lys Met Lys Glu Asp
 85 90 95
 Ile Asn His Ile His Ile Tyr Ile Gln Pro Ile Leu Asn Asn Leu His
 100 105 110
 Thr Leu Lys Gln Val Gln Asn Asn Lys Ile Lys Tyr Glu Glu His Ile
 115 120 125
 Lys Gln Ile Leu Gln Lys Ile Tyr Asp Lys Lys Glu Ser Leu Lys Lys
 130 135 140
 Ile Ile Leu Leu Lys Asp Glu Ala Gln Leu Asp Ile Thr Leu Leu Asp
 145 150 155 160
 Asp Leu Ile Gln Lys Gln Thr Lys Lys Gln Thr Gln Thr Gln Thr Gln
 165 170 175
 Thr Gln Lys Gln Thr Leu Ile Gln Asn Asn Glu Thr Ile Gln Leu Ile
 180 185 190
 Ser Gly Gln Glu Asp Lys His Glu Ser Asn Pro Phe Asn His Ile Gln
 195 200 205
 Thr Tyr Ile Gln Gln Lys Asp Thr Gln Asn Lys Asn Ile Gln Asn Leu
 210 215 220
 Leu Lys Ser Leu Tyr Asn Gly Asn Ile Asn Thr Phe Ile Asp Thr Ile
 225 230 235 240
 Ser Lys Tyr Ile Leu Lys Gln Lys Asp Ile Glu Leu Thr Gln His Val
 245 250 255
 Tyr Thr Asp Glu Lys Ile Asn Asp Tyr Leu Glu Glu Ile Lys Asn Glu
 260 265 270

14

Gln Asn Lys Ile Asp Lys Thr Ile Asp Asp Ile Lys Ile Gln Glu Thr
 275 280 285

Leu Lys Gln Ile Thr His Ile Val Asn Asn Ile Lys Thr Ile Lys Lys
 290 295 300

Asp Leu Leu Lys Glu Phe Ile Gln His Leu Ile Lys Tyr Met Asn Glu
 305 310 315 320

Arg Tyr Gln Asn Met Gln Gln Gly Tyr Asn Asn Leu Thr Asn
 325 330

<210> 9
 <211> 30
 <212> DNA
 <213> artificial

<220>
 <223> Forward primer PFRH1-R-I

<400> 9
 gaccagctgg aatttagcca tgaacaggaa

30

<210> 10
 <211> 30
 <212> DNA
 <213> artificial

<220>
 <223> Reverse primer PFRH1-R-I

<400> 10
 aacgggccct tttgtttgct tttgtattaa

30

<210> 11
 <211> 30
 <212> DNA
 <213> artificial

<220>
 <223> Forward primer PFRH1-RII

<400> 11
 gaccagctga aagatgtaat aaataataag

30

<210> 12
 <211> 30
 <212> DNA
 <213> artificial

<220>

15

<223> Reverse primer PfrH1-R-II

<400> 12

aacgggccca tttaatatatt ttaaaatttt

30

<210> 13

<211> 33

<212> DNA

<213> artificial

<220>

<223> Forward primer PfrH1-R-III

<400> 13

tctcgtcagc tgctaataca aaataatgag acg

33

<210> 14

<211> 33

<212> DNA

<213> artificial

<220>

<223> Reverse primer PfrH1-R-III

<400> 14

acgatggggc cctatatcgt caaaatgttt tgt

33

<210> 15

<211> 30

<212> DNA

<213> artificial

<220>

<223> Forward primer PfrH1-R-IV

<400> 15

gaccagctga tacccttaaa agcttgtgaa

30

<210> 16

<211> 30

<212> DNA

<213> artificial

<220>

<223> Reverse primer PfrH1-R-IV

<400> 16

aacgggcocct ttagatttgt ttacatctat

30

<210> 17

<211> 30

<212> DNA

<213> artificial

16

<220>
<223> Forward primer PFRH1-R-V

<400> 17
gaccagctgt accatgctga tgatacacgt

30

<210> 18
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PFRH1-R-V
<400> 18
aacgggccct ataaaaacat tatatatatttc

30

<210> 19
<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PFRH1-R-VI

<400> 19
gaccagctga ataattgctca actatatatttt

30

<210> 20
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PFRH1-R-VI

<400> 20
aacgggccca ttcatttggt ctaatttggt

30

<210> 21
<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PFRH1-R-VII

<400> 21
gaccagctgc aatcatataa tttaatacaa

30

<210> 22
<211> 29
<212> DNA

17

<213> artificial

<220>

<223> Reverse primer PfrH1-R-VII

<400> 22

aacgggcccg atgttggtta tatttcttg

29

<210> 23

<211> 30

<212> DNA

<213> artificial

<220>

<223> Forward primer PfrH1-R-VIII

<400> 23

gaccagctga caataattaa tcaaagtata

30

<210> 24

<211> 30

<212> DNA

<213> artificial

<220>

<223> Reverse primer PfrH1-R-VIII

<400> 24

aacgggccca tttttttttt tgttcaattc

30

<210> 25

<211> 33

<212> DNA

<213> artificial

<220>

<223> Forward primer PfrH1-R-II-1

<400> 25

tctcgtcagc tgaaagatgt aataaataat aag

33

<210> 26

<211> 30

<212> DNA

<213> artificial

<220>

<223> Reverse primer PfrH1-R-II-1

<400> 26

aacgggccca tttgttaaata tattataacc

30

<210> 27

18

<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PfrH1-R-II-2

<400> 27
gaccagctgt tacaaatagt acaacaaaaa

30

<210> 28
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PfrH1-R-II-2
<400> 28
aacgggccca tttaatatatt ttaaaatttt

30

<210> 29
<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PfrH1-R-II-3

<400> 29
gaccagctgt tacaaatagt acaacaaaaa

30

<210> 30
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PfrH1-R-II-3

<400> 30
aacgggccca tttgttaaatt tattataacc

30

<210> 31
<211> 30
<212> DNA
<213> artificial

<220>
<223> Universal forward primer PfrH1-RI to RVIII

<400> 31
cgtataactcg agatgggggg gactgccgcc

30

<210> 32
<211> 29
<212> DNA
<213> artificial

<220>
<223> Universal reverse primer PfrH1-RI to RVIII

<400> 32
cgtataggat ccaagtaaaa caagggctg 29

<210> 33
<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PfrH1-R-II-3 for pET24a+
<400> 33
gaccatatgt tacaaatagt acaacaaaaa 30

<210> 34
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PfrH1-R-II-3 for pET24a+
<400> 34
aacctcgaga ttgtttaaat tattataacc 30

<210> 35
<211> 30
<212> DNA
<213> artificial

<220>
<223> Forward primer PfrH1-R-VIII for pET24a+
<400> 35
gacgaattca taaatgaaga agctctacaa 30

<210> 36
<211> 30
<212> DNA
<213> artificial

<220>
<223> Reverse primer PfrH1-R-VIII for pET24a+
<400> 36
aacctcgaga tttttttttt tgttcaattc 30

<210> 37
 <211> 1002
 <212> DNA
 <213> Plasmodium falciparum

<400> 37
 ataatgaag aagctctaca atttcacagg ctctatggac acaatcttat aagtgaagat 60
 gacaaaaata atttggtaca tattataaaa gaacaaaaga atatataac acaaaaggaa 120
 atagatattt ctaaaataat taaacatggt aaaaaaggat tatattcatt gaatgaacat 180
 gatatgaatc atgatacaca tatgaatata ataatgaac atataaataa taatatttta 240
 caaccataca cacaattaat aaacatgata aaagatatgt ataatgtttt tataaaaata 300
 caaaataata aattcgaaca aatacaaaaa tatatagaaa ttattaaatc tttagaacaa 360
 ttaaataaaa atataaacac agataattta aataaattaa aagatacaca aaacaaatta 420
 ataatatag aaacagaaat gaaacataaa caaaaacaat taataaaca aatgaatgat 480
 atagaaaagg ataattattac agatcaatat atgcatgatg ttcagcaaaa tatatttgaa 540
 cctataacat taaaaatgaa tgaatataat acattattaa atgataatca taataataat 600
 ataaataatg aacatcaatt taatcattta aatagtcttc atacaaaaat atttagtcat 660
 aattataata aagaacaaca acaagaatat ataaccaaca tcatgcaaag aattgatgta 720
 ttcataaatg atttagatac ttaccaatat gaatattatt tttatgaatg gaatcaagaa 780
 tataaacaata tagacaaaaa taaaataaat caacatataa acaatattaa aaataatcta 840
 attcatgtta agaaacaatt tgaacacacc ttagaaaata taaaaataa tgaaaatatt 900
 ttogacaaca tacaattgaa aaaaaaagat attgacgata ttattataaa cattaataat 960
 acaaaagaaa catatctaaa agaattgaac aaaaaaaaaa at 1002

<210> 38
 <211> 332
 <212> PRT
 <213> Plasmodium falciparum

<400> 38

Leu Glu Glu Thr Gln Asp Lys Leu Leu Glu Leu Tyr Glu Asn Phe Lys
 1 5 10 15

Lys Glu Lys Asn Ile Ile Asn Asn Asn Tyr Lys Ile Val His Phe Asn
 20 25 30

Lys Leu Lys Glu Ile Glu Asn Ser Leu Glu Thr Tyr Asn Ser Ile Ser
 35 40 45

21

Thr Asn Phe Asn Lys Ile Asn Glu Thr Gln Asn Ile Asp Ile Leu Lys
 50 55 60

Asn Glu Phe Asn Asn Ile Lys Thr Lys Ile Asn Asp Lys Val Lys Glu
 65 70 75 80

Leu Val His Val Asp Ser Thr Leu Thr Leu Glu Ser Ile Gln Thr Phe
 85 90 95

Asn Asn Leu Tyr Gly Asp Leu Met Ser Asn Ile Gln Asp Val Tyr Lys
 100 105 110

Tyr Glu Asp Ile Asn Asn Val Glu Leu Lys Lys Val Lys Leu Tyr Ile
 115 120 125

Glu Asn Ile Thr Asn Leu Leu Gly Arg Ile Asn Thr Phe Ile Lys Glu
 130 135 140

Leu Asp Lys Tyr Gln Asp Glu Asn Asn Gly Ile Asp Lys Tyr Ile Glu
 145 150 155 160

Ile Asn Lys Glu Asn Asn Ser Tyr Ile Ile Lys Leu Lys Glu Lys Ala
 165 170 175

Asn Asn Leu Lys Glu Asn Phe Ser Lys Leu Leu Gln Asn Ile Lys Arg
 180 185 190

Asn Glu Thr Glu Leu Tyr Asn Ile Asn Asn Ile Lys Asp Asp Ile Met
 195 200 205

Asn Thr Gly Lys Ser Val Asn Asn Ile Lys Gln Lys Phe Ser Ser Asn
 210 215 220

Leu Pro Leu Lys Glu Lys Leu Phe Gln Met Glu Glu Met Leu Leu Asn
 225 230 235 240

Ile Asn Asn Ile Met Asn Glu Thr Lys Arg Ile Ser Asn Thr Ala Ala
 245 250 255

Tyr Thr Asn Ile Thr Leu Gln Asp Ile Glu Asn Asn Lys Asn Lys Glu
 260 265 270

Asn Asn Asn Met Asn Ile Glu Thr Ile Asp Lys Leu Ile Asp His Ile
 275 280 285

22

Lys Ile His Asn Glu Lys Ile Gln Ala Glu Ile Leu Ile Ile Asp Asp
 290 295 300

Ala Lys Arg Lys Val Lys Glu Ile Thr Asp Asn Ile Asn Lys Ala Phe
 305 310 315 320

Asn Glu Ile Thr Glu Asn Tyr Asn Asn Glu Asn Asn
 325 330

<210> 39
 <211> 332
 <212> PRT
 <213> Plasmodium falciparum

<400> 39

Leu Glu Glu Thr Gln Asp Lys Leu Leu Glu Leu Tyr Glu Asn Phe Lys
 1 5 10 15

Lys Glu Lys Asn Ile Ile Asn Asn Asn Tyr Lys Ile Val His Phe Asn
 20 25 30

Lys Leu Lys Glu Ile Glu Asn Ser Leu Glu Thr Tyr Asn Ser Ile Ser
 35 40 45

Thr Asn Phe Asn Lys Ile Asn Glu Thr Gln Asn Ile Asp Ile Leu Lys
 50 55 60

Asn Glu Phe Asn Asn Ile Lys Thr Lys Ile Asn Asp Lys Val Lys Glu
 65 70 75 80

Leu Val His Val Asp Ser Thr Leu Thr Leu Glu Ser Ile Gln Thr Phe
 85 90 95

Asn Asn Leu Tyr Gly Asp Leu Met Ser Asn Ile Gln Asp Val Tyr Lys
 100 105 110

Tyr Glu Asp Ile Asn Asn Val Glu Leu Lys Lys Val Lys Leu Tyr Ile
 115 120 125

Glu Asn Ile Thr Asn Leu Leu Gly Arg Ile Asn Thr Phe Ile Lys Glu
 130 135 140

Leu Asp Lys Tyr Gln Asp Glu Asn Asn Gly Ile Asp Lys Tyr Ile Glu
 145 150 155 160

23

Ile Asn Lys Glu Asn Asn Ser Tyr Ile Ile Lys Leu Lys Glu Lys Ala
 165 170 175

Asn Asn Leu Lys Glu Asn Phe Ser Lys Leu Leu Gln Asn Ile Lys Arg
 180 185 190

Asn Glu Thr Glu Leu Tyr Asn Ile Asn Asn Ile Lys Asp Asp Ile Met
 195 200 205

Asn Thr Gly Lys Ser Val Asn Asn Ile Lys Gln Lys Phe Ser Ser Asn
 210 215 220

Leu Pro Leu Lys Glu Lys Leu Phe Gln Met Glu Glu Met Leu Leu Asn
 225 230 235 240

Ile Asn Asn Ile Met Asn Glu Thr Lys Arg Ile Ser Asn Thr Asp Ala
 245 250 255

Tyr Thr Asn Ile Thr Leu Gln Asp Ile Glu Asn Asn Lys Asn Lys Glu
 260 265 270

Asn Asn Asn Met Asn Ile Glu Thr Ile Asp Lys Leu Ile Asp His Ile
 275 280 285

Lys Ile His Asn Glu Lys Ile Gln Ala Glu Ile Leu Ile Ile Asp Asp
 290 295 300

Ala Lys Arg Lys Val Lys Glu Ile Thr Asp Asn Ile Asn Lys Ala Phe
 305 310 315 320

Asn Glu Ile Thr Glu Asn Tyr Asn Asn Glu Asn Asn
 325 330

<210> 40
 <211> 303
 <212> PRT
 <213> Plasmodium falciparum

<400> 40

Leu Asn Lys Phe Met Gln Asn Glu Thr Phe Lys Lys Asn Ile Asp Asp
 1 5 10 15

Lys Ile Lys Glu Met Asn Asn Ile Tyr Asp Asn Ile Tyr Ile Ile Leu
 20 25 30

24

Lys Gln Lys Phe Leu Asn Lys Leu Asn Glu Ile Ile Gln Asn His Lys
 35 40 45

Asn Lys Gln Glu Thr Lys Leu Asn Thr Thr Thr Ile Gln Glu Leu Leu
 50 55 60

Gln Leu Leu Lys Asp Ile Lys Glu Ile Gln Thr Lys Gln Ile Asp Thr
 65 70 75 80

Lys Ile Asn Thr Phe Asn Met Tyr Tyr Asn Asp Ile Gln Gln Ile Lys
 85 90 95

Ile Lys Ile Asn Gln Asn Glu Lys Glu Ile Lys Lys Val Leu Pro Gln
 100 105 110

Leu Tyr Ile Pro Lys Asn Glu Gln Glu Tyr Ile Gln Ile Tyr Lys Asn
 115 120 125

Glu Leu Lys Asp Arg Ile Lys Glu Thr Gln Thr Lys Ile Asn Leu Phe
 130 135 140

Lys Gln Ile Leu Glu Leu Lys Glu Lys Glu His Tyr Ile Thr Asn Lys
 145 150 155 160

His Thr Tyr Leu Asn Phe Thr His Lys Thr Ile Gln Gln Ile Leu Gln
 165 170 175

Gln Gln Tyr Lys Asn Asn Thr Gln Glu Lys Asn Thr Leu Ala Gln Phe
 180 185 190

Leu Tyr Asn Ala Asp Ile Lys Lys Tyr Ile Asp Glu Leu Ile Pro Ile
 195 200 205

Thr Gln Gln Ile Gln Thr Lys Met Tyr Thr Thr Asn Asn Ile Glu His
 210 215 220

Ile Lys Gln Ile Leu Ile Asn Tyr Ile Gln Glu Cys Lys Pro Ile Gln
 225 230 235 240

Asn Ile Ser Glu His Thr Ile Tyr Thr Leu Tyr Gln Glu Ile Lys Thr
 245 250 255

25

Asn Leu Glu Asn Ile Glu Gln Lys Ile Met Gln Asn Ile Gln Gln Thr
 260 265 270

Thr Asn Arg Leu Lys Ile Asn Ile Lys Lys Ile Phe Asp Gln Ile Asn
 275 280 285

Gln Lys Tyr Asp Asp Leu Thr Lys Asn Ile Asn Gln Met Asn Asp
 290 295 300

<210> 41
 <211> 483
 <212> PRT
 <213> Plasmodium falciparum

<400> 41

Ile Asn Glu Ile Lys Ser Lys Met Asp Asn Ile Asn Glu Lys Leu Lys
 1 5 10 15

His Ile Thr Asp Phe Ile Asp Lys Asn Val Asn Tyr Ile Tyr Glu Asn
 20 25 30

His Ser Thr Gln Asp Ile Asn Ile Met Leu Asn Asn Thr Ile Ser Glu
 35 40 45

Tyr Asn Lys Leu Glu Phe Ile Asn Ser Asp Ile Phe Asp Asn Ile Ser
 50 55 60

Lys Lys Leu Lys Lys Glu Leu Gln Asp Leu Val Thr Leu Lys Glu Ser
 65 70 75 80

Leu Met Lys Met Asn His Asn Val Leu Lys Met Asp Pro Leu Lys Ser
 85 90 95

Leu Asn Gln Val Leu Glu Lys Tyr Glu Glu Leu Lys Lys Asn Ile Asn
 100 105 110

Glu Tyr Ser Lys Glu Glu Asn Lys Leu Tyr Asp Phe Lys Lys Gln Met
 115 120 125

Glu Ser Arg Leu Asn Ala Phe Ile Thr Asn Leu Asn Asn Asn Asp Glu
 130 135 140

Thr Leu Val Asp Gly Lys Asn Ile Tyr Asp Gln Phe Val Glu Tyr Lys
 145 150 155 160

Glu Gln Leu Leu Ile Lys Lys Arg Ile Ile Ile Asn Asn Glu Ile Val
 165 170 175
 Ile Ile Asn Asp Glu Val Lys Lys Ile Lys Asp Glu Leu Lys Ser Tyr
 180 185 190
 Asn Ile Leu Ser Tyr Lys Leu Glu Asn Asp Thr Ser His Asp Val Val
 195 200 205
 Asn Ser Val Glu Asn Thr Pro Ser Ser Asp Val Ala Thr Ala Val Ser
 210 215 220
 Asn Ser Ser Ser Ile Leu Ser Thr Tyr Asn Ser Thr Glu Leu Asn Lys
 225 230 235 240
 Leu Arg Asn Phe Phe Ser Glu Lys Asp Asp Glu Leu Asn Val Glu Ser
 245 250 255
 Lys Val Lys Gln Asp Glu Asn Ile Phe Ile Glu Lys Asn Lys Ile Phe
 260 265 270
 Asp Asp Ile Ile Lys Asp Ile Glu Leu Tyr Asn Lys Lys Thr Asn Ala
 275 280 285
 Ile Lys Asn Leu Asn Asn Ala Ile Asn Gly Ser Met Asn Asn Leu Ser
 290 295 300
 Leu Ile Asp Ser Val Met Lys Asn Lys Gly Asp Ile Ile Asn Arg Leu
 305 310 315 320
 Ser Gln Arg Ser Tyr Leu Ile Gln Thr Asp Asn Phe Ile Asp Ile Tyr
 325 330 335
 Glu Lys Ile Phe Leu Lys Asp Asn Leu Asn Lys Gly Leu Glu Glu Ile
 340 345 350
 Glu Asn Arg Leu Ser Asn Thr Tyr Met Asn Glu Leu Lys Ile Glu Ala
 355 360 365
 Glu Lys Gln Asn Glu Lys Tyr Lys Lys Leu Lys Glu Asn Ile Asn Thr
 370 375 380
 Tyr Asp Asp Thr Phe Leu Glu Lys Leu Ile Gly Asp Asn Tyr Glu Trp
 385 390 395 400

27

Glu Val Leu Lys Ile Glu Leu Asn Gly Leu Asn Val Asn Tyr Asn Ile
 405 410 415

Leu Gln Ala Asn Ile Asp Thr Leu Ile Ile Lys Pro Tyr Ile Asp His
 420 425 430

Ile Asp His Ile Ile Ser Leu Ile Glu Ser Leu Lys His Asn Ile Glu
 435 440 445

Asn Lys Ile Lys Lys Val Ile Pro Asn Leu Glu Arg Leu Lys Asp Phe
 450 455 460

Ile Gln Thr Lys Phe Asn Thr Asn Asp Ile Lys Leu Asp His Asn Asn
 465 470 475 480

Leu Ile Thr

<210> 42
 <211> 303
 <212> PRT
 <213> Plasmodium vivax

<400> 42

Ile Asn Asp Leu Gln Asp Leu Ile Asp Gln Met Lys Glu Tyr Lys Asp
 1 5 10 15

Glu Ile Val Asn Asn Ser Glu Phe Ile Ser Asn Arg Tyr Lys Asn Ile
 20 25 30

Tyr Glu Asn Leu Lys Glu Thr Tyr Glu Thr Glu Leu Asn Asp Ile Gly
 35 40 45

Lys Leu Glu Asn Asp Thr Ser Lys Val Asn Phe Tyr Leu Met Gln Ile
 50 55 60

Arg Lys Ile Asn Thr Glu Lys Thr Lys Ile Asp Glu Ser Leu Gln Thr
 65 70 75 80

Val Glu Lys Phe Tyr Lys Glu Ile Leu Asp Ser Lys Glu Lys Ile Tyr
 85 90 95

Glu Leu Lys Ile Glu Phe Glu Lys Ser Val Thr Glu Ile Asn Arg Leu
 100 105 110

Gln Asp Gly Glu Ser Ala Arg Asp Leu His Glu Glu Gln Ile Lys Glu
115 120 125

Ile Leu Asp Lys Met Ala Lys Lys Val His Tyr Leu Lys Glu Leu Leu
130 135 140

Ser Leu Lys Gly Lys Ser Ser Val Tyr Phe Thr Glu Met Asn Glu Leu
145 150 155 160

Leu Asn Thr Ala Ser Tyr Asp Asn Met Glu Gly Phe Ser Ala Lys Lys
165 170 175

Glu Lys Ala Asp Asn Asp Ile Asn Ala Leu Tyr Asn Ser Val Tyr Arg
180 185 190

Glu Asp Ile Asn Ala Leu Ile Glu Glu Val Glu Lys Phe Val Thr Glu
195 200 205

Asn Lys Glu Ser Thr Leu Glu Met Leu Lys Asp Glu Glu Met Glu Glu
210 215 220

Lys Leu Gln Asp Ala Lys Glu Thr Phe Ala Lys Leu Asn Phe Val Ser
225 230 235 240

Asp Asp Lys Leu Thr Asp Val Tyr Thr Lys Met Ser Ala Glu Val Thr
245 250 255

Asn Ala Glu Gly Ile Lys Lys Glu Ile Ala Gln Lys Gln Phe Glu Asn
260 265 270

Val His Lys Lys Met Lys Glu Phe Ser Asp Ala Phe Ser Thr Lys Phe
275 280 285

Glu Ala Leu Gln Asn Ser Met Gln Gln Tyr Asn Gln Glu Gly Asp
290 295 300

<210> 43

<211> 408

<212> PRT

<213> Plasmodium vivax

<400> 43

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

Phe Tyr Val Ala Ala Lys His Tyr Ala Asp Phe Lys Phe Ser Leu Glu
 20 25 30

His Leu Lys Met Phe Glu Asn Leu Ser Lys Ser Lys Glu Lys Met Leu
 35 40 45

Tyr Ser Thr Phe Glu Lys Leu Glu Gly Asp Leu Leu Asn Lys Ile Asn
 50 55 60

Thr Leu Met Gly Ser Glu Gln Ser Thr Ser Asp Leu Thr Ser Ile Ile
 65 70 75 80

Ala Asp Ser Glu Lys Ile Ile Lys Ser Ala Glu Ser Leu Ile Asn Ser
 85 90 95

Ser Ser Glu Glu Ile Ala Lys Tyr Ala Leu Asp Ser Asn Glu Lys Ile
 100 105 110

Asn Glu Ile Lys Lys Asn Tyr Asp Gln Asn Ile Leu Lys Val Arg Glu
 115 120 125

Phe Ile Asn Lys Ser Asn Gly Leu Ile Thr Ser Val Lys Gly Thr Ser
 130 135 140

Gln Leu Ser Glu Ser Asp Lys Gln Gln Ile Glu Thr Lys Ile Glu Glu
 145 150 155 160

Ile Lys Lys Lys Lys Lys Asp Ile Leu Glu Arg Gly Lys Glu Phe Ile
 165 170 175

Asn Ile Met Asn Glu Ile Lys Lys Lys Lys Lys Ser Asn Ser Ser Asn
 180 185 190

Ser Ser Thr Asn Ser Lys Glu Phe Thr Asp Lys Leu Lys Glu Leu Glu
 195 200 205

Thr Glu Phe Glu Gly Leu Asn Lys Thr Val Lys Gly Tyr Leu Gln Glu
 210 215 220

Ile Glu Asp Ile Lys Val Lys Glu Asn Glu Asp Arg Ser Leu Lys Asn
 225 230 235 240

30

Gln Ile Glu Gln His Leu Lys Tyr Thr Ser Asp Asn Arg Asp Asn Val
245 250 255

Lys Thr Leu Ile Ser Lys Asn Asp Glu Ile Gln Lys Tyr Ile Glu Lys
260 265 270

Ile Glu Lys Leu Ile Asn Asp Ala Pro Ser Gly Lys Asp Lys Phe Thr
275 280 285

Thr Glu Lys Thr Asn Leu Gln Asn Lys Val Lys Lys Ile Ile Asp Glu
290 295 300

Phe His Lys Glu Asp Leu Gln Leu Leu Leu Asn Ser Leu Ser Lys Phe
305 310 315 320

Tyr Glu Glu His Gln Lys Leu Tyr Asn Glu Ala Ser Thr Ile Glu Lys
325 330 335

Ile Lys Asp Leu His Gln Lys Thr Lys Glu Glu Tyr Glu Lys Leu Glu
340 345 350

Lys Met Lys Phe Ser Asn Phe Gly Gln Ile Leu Asp Lys Leu Asn Thr
355 360 365

Glu Leu Asp Asn Leu Lys Thr Leu Glu Lys Asn Ile Val Glu Glu Gln
370 375 380

Thr Asn Tyr Ile Asn Lys Val Met Ser Asp Ser Leu Thr Asn Leu Thr
385 390 395 400

Ala Glu Val Asp Asn Leu Arg Ser
405