

POLA_005_01WO_SeqList_ST25
SEQUENCE LISTING

<110> Polaris Group
Showalter, Richard E.
Almassy, Robert
Thomson, James A.
Sisson, Wes
Shia, Wei-Jong
Chen, Li-Chang
Lee, Yang

<120> ARGININE DEIMINASE WITH REDUCED CROSS-REACTIVITY TOWARD ADI - PEG
20 ANTIBODIES FOR CANCER TREATMENT

<130> POLA-005/01WO

<150> US 62,051,182

<151> 2014-09-16

<160> 28

<170> PatentIn version 3.5

<210> 1

<211> 409

<212> PRT

<213> Mycoplasma hominis

<400> 1

Met Ser Val Phe Asp Ser Lys Phe Asn Gly Ile His Val Tyr Ser Glu
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Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu His Gln Ser Phe Val Lys Ile
50 55 60

Met Lys Asp Arg Gly Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Lys Ala Ala Lys Glu Glu Phe Ile Glu
85 90 95

Thr Phe Leu Glu Glu Thr Val Pro Val Leu Thr Glu Ala Asn Lys Lys
100 105 110

Ala Val Arg Ala Phe Leu Leu Ser Lys Pro Thr His Glu Met Val Glu
115 120 125

Phe Met Met Ser Gly Ile Thr Lys Tyr Glu Leu Gly Val Glu Ser Glu

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Asn Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp
 145 150 155 160

Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Phe Met Arg Tyr
 165 170 175

Ile Val Arg Arg Arg Glu Thr Leu Phe Ala Arg Phe Val Phe Arg Asn
 180 185 190

His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met Lys
 195 200 205

Met Pro Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Glu Thr Leu
 210 215 220

Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu Leu
 225 230 235 240

Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg Ile Val
 245 250 255

Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr Trp
 260 265 270

Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala Asn
 275 280 285

Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala Glu
 290 295 300

Pro Gln Pro Gln Leu Asn Gly Leu Pro Leu Asp Lys Leu Leu Ala Ser
 305 310 315 320

Ile Ile Asn Lys Glu Pro Val Leu Ile Pro Ile Gly Gly Ala Gly Ala
 325 330 335

Thr Glu Met Glu Ile Ala Arg Glu Thr Asn Phe Asp Gly Thr Asn Tyr
 340 345 350

Leu Ala Ile Lys Pro Gly Leu Val Ile Gly Tyr Asp Arg Asn Glu Lys
 355 360 365

Thr Asn Ala Ala Leu Lys Ala Ala Gly Ile Thr Val Leu Pro Phe His
 370 375 380

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Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser Met
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Pro Leu Ser Arg Lys Asp Val Lys Trp
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<210> 2
 <211> 410
 <212> PRT
 <213> Mycoplasma salivarium

<400> 2

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Ile Gly Glu Leu Glu Thr Val Leu Val His Glu Pro Gly Lys Glu Ile
 20 25 30

Asp Tyr Ile Thr Pro Ser Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
 35 40 45

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

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

Glu Thr Tyr Asp Leu Val Asp Gln Lys Thr Lys Asp Lys Leu Ile Asp
 85 90 95

Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Thr Ala Glu Leu Lys Ala
 100 105 110

Thr Val Lys Lys Phe Leu Lys Ser Phe Lys Glu Thr Arg Lys Leu Ile
 115 120 125

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

Asp Arg Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175

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

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Asn His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met
195 200 205

Lys Met Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu
225 230 235 240

Leu Ala Lys Asn Ile Lys Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile
245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
260 265 270

Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala
275 280 285

Asn Asp Ile Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala
290 295 300

Asn Pro Gln Pro Lys Asp Asn Gly Leu Pro Leu Asp Lys Leu Leu Lys
305 310 315 320

Ser Ile Ile Gly Lys Glu Pro Val Leu Ile Pro Ile Ala Gly His His
325 330 335

Ala Thr Glu Ile Glu Val Ala Arg Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ala Arg Asn Glu
355 360 365

Lys Thr Asn Glu Ala Leu Lys Asp Ala Gly Ile Thr Val Leu Pro Phe
370 375 380

Lys Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 3

<211> 411

<212> PRT

<213> Mycoplasma spumans

<400> 3

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 Ile Gly Glu Leu Glu Ser Val Leu Val His Glu Pro Gly Arg Glu Ile
 20 25 30
 Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
 35 40 45
 Leu Glu Ser His Asp Ala Arg Lys Glu His Lys Gly Phe Val Ala Glu
 50 55 60
 Leu Lys Lys Gln Asn Val Asn Val Ile Glu Leu Thr Asp Leu Val Ala
 65 70 75 80
 Glu Thr Tyr Glu Leu Ala Ser Lys Glu Ala Gln Ala Lys Leu Ile Glu
 85 90 95
 Asp Phe Ile Glu Asp Ser Glu Pro Val Leu Asn Ala Glu Glu Ala Gln
 100 105 110
 Ala Val Arg Lys Phe Leu Ser Glu Arg Lys Ser Thr Arg Glu Met Val
 115 120 125
 Glu Tyr Met Met Ser Gly Leu Thr Lys Tyr Glu Leu Gly Leu Glu Ser
 130 135 140
 Ala Asp Arg Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr
 145 150 155 160
 Arg Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met
 165 170 175
 Lys Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ala Lys Phe Val Phe
 180 185 190
 Ser Asn His Pro Lys Leu Val Asn Thr Pro Arg Tyr Tyr Asp Pro Ser
 195 200 205
 Met Lys Leu Pro Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Glu
 210 215 220
 Thr Leu Val Val Gly Cys Ser Glu Arg Thr Glu Leu Glu Thr Ile Thr
 225 230 235 240
 Leu Leu Ala Lys Asn Ile Lys Ala Asn Lys Glu Val Glu Phe Lys Arg
 245 250 255

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Ile Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp
260 265 270

Thr Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile
275 280 285

Ala Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly
290 295 300

Glu Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Glu Leu Leu
305 310 315 320

Ala Ser Ile Ile Asn Lys Lys Pro Thr Leu Ile Pro Ile Ala Gly Glu
325 330 335

Gly Ala Thr His Ile Asp Val Glu Arg Glu Thr His Phe Asp Gly Thr
340 345 350

Asn Tyr Leu Ala Ile Ala Pro Ala Leu Ile Ile Gly Tyr Ser Arg Asn
355 360 365

Glu Lys Thr Asn Ala Ala Leu Glu Lys Ala Gly Ile Thr Val Leu Pro
370 375 380

Phe His Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met
385 390 395 400

Ser Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 4
<211> 410
<212> PRT
<213> Mycoplasma auris

<400> 4

Met Ser Val Phe Asp Ser Lys Phe Lys Gly Ile His Val Tyr Ser Glu
1 5 10 15

Ile Gly Glu Leu Glu Thr Val Leu Val His Glu Pro Gly Arg Glu Ile
20 25 30

Asp Tyr Ile Thr Pro Lys Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
35 40 45

Leu Glu Ser His Glu Ala Arg Lys Glu His Lys Gln Phe Val Ala Glu
50 55 60

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Leu Lys Ala Asn Asp Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala
 65 70 75 80
 Glu Thr Tyr Asp Leu Val Ser Gln Glu Leu Lys Asp Lys Leu Ile Glu
 85 90 95
 Glu Phe Leu Asp Asp Ser Tyr Pro Val Leu Thr Glu Glu His Lys Lys
 100 105 110
 Ala Val Arg Ser Phe Leu Lys Ser Arg Ser Ser Thr Arg Glu Leu Ile
 115 120 125
 Glu Tyr Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Glu Ala
 130 135 140
 Glu Gly Asp Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160
 Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175
 Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Ile Phe Asp
 180 185 190
 Asn His Pro Lys Leu Val Asn Thr Pro Arg Tyr Tyr Asp Pro Ser Leu
 195 200 205
 Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
 210 215 220
 Leu Val Met Gly Val Ser Glu Arg Thr Asp Leu Glu Thr Val Thr Leu
 225 230 235 240
 Leu Ala Lys Asn Ile Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile
 245 250 255
 Val Ala Ile Asn Val Pro His Trp Thr Asn Leu Met His Leu Asp Thr
 260 265 270
 Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala
 275 280 285
 Asn Asp Tyr Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ala
 290 295 300
 Glu Pro Gln Pro Val Val Asn Glu Leu Pro Leu Asp Lys Leu Leu Glu
 305 310 315 320

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Ser Ile Ile His Lys Lys Pro Ile Leu Ile Pro Ile Ala Gly Glu Gly
325 330 335

Ala Ser Gln Ile Asp Leu Glu Arg Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Val Leu Arg Pro Gly Val Val Val Gly Tyr Ala Arg Asn Glu
355 360 365

Lys Thr Asn Ala Ala Leu Glu Ala Val Gly Ile Lys Val Leu Pro Phe
370 375 380

Tyr Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ser Arg Cys Met Ser
385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 5
<211> 410
<212> PRT
<213> Mycoplasma hyosynoviae

<400> 5

Met Ser Val Phe Asn Ser Lys Phe Lys Gly Ile His Val Tyr Ser Glu
1 5 10 15

Ile Gly Asp Leu Glu Ser Val Leu Val His Glu Pro Gly Lys Glu Ile
20 25 30

Asp Tyr Ile Thr Pro Ser Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
35 40 45

Leu Glu Ser Asn Asp Ala Arg Lys Glu His Lys Glu Phe Val Glu Ile
50 55 60

Leu Lys Lys Glu Gly Val Asn Val Val Glu Leu Val Asp Leu Ile Ala
65 70 75 80

Glu Thr Ile Asp Leu Val Asp Ala Lys Lys Lys Glu Ala Leu Ile Asp
85 90 95

Glu Tyr Ile Glu Asp Ser Glu Pro Val Val Asp Ala Lys Val Lys Pro
100 105 110

Leu Val Lys Lys Leu Leu Leu Gly Ile Lys Asp Thr Lys Glu Leu Val
115 120 125

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Lys Leu Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Glu Ile Glu Ser
 130 135 140
 Glu Lys Glu Leu Ile Ile Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160
 Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175
 Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Arg
 180 185 190
 Asn His Pro Lys Leu Thr Ser Thr Pro Trp Tyr Tyr Asp Pro Ala Met
 195 200 205
 Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
 210 215 220
 Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Asp Thr Ile Thr Leu
 225 230 235 240
 Leu Ala Lys Asn Ile Lys Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile
 245 250 255
 Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
 260 265 270
 Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala
 275 280 285
 Asn Asp Ile Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ser
 290 295 300
 Glu Pro Gln Pro Lys Asp Asn Gly Leu Pro Leu Glu Lys Leu Leu Glu
 305 310 315 320
 Ser Ile Ile Gly Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Cys Cys
 325 330 335
 Ala Ser Asp Ile Glu Ile Ala Arg Glu Thr His Phe Asp Gly Thr Asn
 340 345 350
 Tyr Leu Ala Ile Lys Pro Gly Val Val Ile Gly Tyr Ala Arg Asn Glu
 355 360 365
 Lys Thr Asn Lys Ala Leu Glu Lys Ala Gly Ile Lys Val Leu Pro Phe

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370

375

380

Lys Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
 385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys Trp
 405 410

<210> 6

<211> 409

<212> PRT

<213> Mycoplasma cloacale

<400> 6

Met Ser Val Phe Asp Lys Arg Phe Lys Gly Ile His Val Tyr Ser Glu
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Ile Gly Glu Leu Gln Thr Val Leu Val His Glu Pro Gly Arg Glu Ile
 20 25 30

Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
 35 40 45

Leu Glu Ser His Asp Ala Arg Lys Glu His Lys Glu Phe Val Lys Ile
 50 55 60

Leu Glu Ser Gln Gly Ile Asn Val Val Glu Leu Thr Asp Leu Ile Ala
 65 70 75 80

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

Glu Phe Leu Asp Glu Ser Glu Pro Val Leu Ser Glu Glu His Arg Ile
 100 105 110

Leu Val Arg Asn Phe Leu Lys Gly Ile Thr Lys Thr Lys Glu Leu Val
 115 120 125

Lys Met Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Glu Ala
 130 135 140

Asp Arg Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175

Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Ile Phe Glu

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180

185

190

Asn His Pro Lys Leu Val Ser Thr Pro Ile Tyr Tyr His Pro Ser Gln
195 200 205

Gly Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Gln Thr Ile Thr Leu
225 230 235 240

Leu Ala Lys Asn Ile Lys Ala Asn Glu Glu Cys Glu Phe Lys Arg Ile
245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
260 265 270

Trp Leu Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Ile Ala
275 280 285

Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Asp
290 295 300

Glu Pro Gln Pro Val Asp Asn Gly Leu Pro Leu Asn Glu Leu Leu Ala
305 310 315 320

Ser Ile Ile Gly Glu Glu Pro Val Leu Val Pro Ile Ala Gly Glu Gly
325 330 335

Ala Ser Lys Met Asp Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Ala Ile Ala Pro Gly Val Val Val Gly Tyr Ser Arg Asn Glu
355 360 365

Lys Thr Asn Ala Ala Leu Glu Lys Ala Gly Ile Lys Val Leu Pro Phe
370 375 380

Lys Gly His Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Tyr Arg Lys Asp Val Lys
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<210> 7

<211> 412

<212> PRT

<213> Mycoplasma alkalescens

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<400> 7

Met Ser Val Phe Asp Ser Lys Phe Lys Gly Ile His Val Tyr Ser Glu
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 Ile Gly Glu Leu Glu Ser Val Leu Val His Glu Pro Gly His Glu Ile
 20 25 30
 Asp Tyr Ile Thr Pro Ser Arg Leu Asp Glu Leu Leu Phe Ser Ala Met
 35 40 45
 Leu Glu Ser His Asp Ala Arg Lys Glu His Lys Gln Phe Val Ala Glu
 50 55 60
 Leu Lys Ala Asn Asn Val Asn Val Ile Glu Leu Thr Asp Leu Val Ala
 65 70 75 80
 Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Lys Leu Ile Glu
 85 90 95
 Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Glu Asn Lys Ile
 100 105 110
 Ala Val Arg Asp Phe Leu Lys Ser Arg Lys Thr Thr Arg Glu Leu Ile
 115 120 125
 Glu Val Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Lys Asn
 130 135 140
 Cys Lys Cys Gln Asp Leu Val Val Asp Pro Met Pro Asn Leu Tyr Phe
 145 150 155 160
 Thr Arg Asp Pro Phe Ala Ser Val Gly Asn Gly Ile Thr Ile His Tyr
 165 170 175
 Met Arg Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Ile
 180 185 190
 Phe Ala Asn His Pro Lys Leu Val Asn Thr Pro Ile Tyr Tyr His Pro
 195 200 205
 Ser Leu Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn
 210 215 220
 Asp Thr Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Glu Thr Ile
 225 230 235 240

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Thr Leu Leu Ala Lys Asn Ile Val Ala Asn Lys Glu Cys Glu Phe Lys
245 250 255

Arg Ile Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu
260 265 270

Asp Thr Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro
275 280 285

Ile Ala Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly
290 295 300

Gly Ala Glu Pro Lys Pro Val Glu Asn Gly Ser Ser Leu Glu Ala Ile
305 310 315 320

Leu Glu Ser Ile Ile His Lys Lys Pro Ile Leu Ile Pro Ile Gly Gly
325 330 335

Asp Ser Ala Ser Gln Ile Glu Val Glu Arg Glu Thr His Phe Asp Gly
340 345 350

Thr Asn Tyr Leu Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg
355 360 365

Asn Val Lys Thr Asn Ala Ala Leu Glu Ala Ala Gly Ile Lys Val Ile
370 375 380

Pro Phe His Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys
385 390 395 400

Met Ser Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 8

<211> 410

<212> PRT

<213> Mycoplasma orale

<400> 8

Met Ser Val Phe Ser Asp Lys Phe Asn Gly Ile His Val Tyr Ser Glu
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Ile Gly Asp Leu Glu Ser Val Leu Val His Glu Pro Gly Lys Glu Ile
20 25 30

Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
35 40 45

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

Leu Lys Lys Gln Gly Ile Asn Val Val Glu Leu Val Asp Leu Val Val
 65 70 75 80

Glu Thr Tyr Asn Leu Val Asp Lys Lys Thr Gln Glu Lys Leu Leu Lys
 85 90 95

Asp Phe Leu Asp Asp Ser Glu Pro Val Leu Ser Pro Glu His Arg Lys
 100 105 110

Ala Val Glu Lys Phe Leu Lys Ser Leu Lys Ser Thr Lys Glu Leu Ile
 115 120 125

Gln Tyr Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Lys Ala
 130 135 140

Asp Lys Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160

Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175

Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Lys Phe Ile Phe Thr
 180 185 190

Asn His Pro Lys Leu Val Lys Thr Pro Trp Tyr Tyr Asp Pro Ala Met
 195 200 205

Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
 210 215 220

Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Glu Thr Ile Thr Leu
 225 230 235 240

Leu Ala Lys Asn Ile Lys Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile
 245 250 255

Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
 260 265 270

Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala
 275 280 285

Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ser
 290 295 300

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Asn Pro Glu Pro Val Val Asn Gly Leu Pro Leu Asp Lys Leu Leu Glu
305 310 315 320

Ser Ile Ile Asn Lys Lys Pro Val Leu Ile Pro Ile Ala Gly Lys Gly
325 330 335

Ala Thr Glu Ile Glu Thr Ala Val Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Ala Ile Lys Pro Gly Val Val Val Gly Tyr Ser Arg Asn Val
355 360 365

Lys Thr Asn Ala Ala Leu Glu Ala Asn Gly Ile Lys Val Leu Pro Phe
370 375 380

Lys Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 9
<211> 401
<212> PRT
<213> Mycoplasma iners

<400> 9

Met Ser Lys Ile Asn Val Tyr Ser Glu Ile Gly Val Leu Lys Glu Val
1 5 10 15

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

Leu Asp Glu Leu Leu Phe Ser Ala Ile Leu Glu Pro Ser Ala Ala Ile
35 40 45

Gln Glu His Lys Ser Phe Leu Lys Ile Leu Gln Asp Arg Gly Ile Lys
50 55 60

Thr Ile Gln Leu Ser Asp Leu Val Ala Glu Thr Tyr Lys His Tyr Ala
65 70 75 80

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

Thr Pro Val Leu Ser Lys Asp Met Arg Ala Lys Val Lys Asn Tyr Ile
100 105 110

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Leu Ser Met Gln Gly Glu Pro Val Lys Met Val Arg Thr Met Met Ala
 115 120 125
 Gly Val Ser Lys Gln Glu Leu Asn Val Glu Ser Glu Val Glu Leu Ile
 130 135 140
 Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser
 145 150 155 160
 Ala Gly Asn Gly Ile Ser Leu Asn Asn Met Lys Tyr Val Val Arg Lys
 165 170 175
 Arg Glu Thr Ile Phe Ala Glu Phe Ile Phe Ser Ile His Pro Glu Tyr
 180 185 190
 Lys Lys Thr Pro His Trp Phe Asp Arg Leu Asp Asn Gly Ser Ile Glu
 195 200 205
 Gly Gly Asp Val Phe Ile Tyr Asn Lys Asp Thr Leu Val Ile Gly Val
 210 215 220
 Ser Glu Arg Thr Asn Lys Glu Ala Ile Ile Thr Ile Ala Lys His Ile
 225 230 235 240
 Gln Asp Asn Lys Glu Ala Gln Phe Lys Lys Ile Val Ala Ile Asn Val
 245 250 255
 Pro Pro Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr Met Val
 260 265 270
 Asp Lys Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val Leu Lys
 275 280 285
 Val Trp Glu Ile Asp Leu Ser Lys Pro Ile Glu Met Val Glu Thr Asn
 290 295 300
 Lys Pro Leu Ala Glu Val Leu Glu Ser Ile Ile Gly Glu Lys Pro Ile
 305 310 315 320
 Leu Ile Pro Ile Ala Gly Lys Asp Ala Thr Gln Leu Asp Ile Asp Ile
 325 330 335
 Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile Ala Pro Gly Val
 340 345 350
 Val Val Gly Tyr Ser Arg Asn Val Lys Thr Glu Ala Ala Leu Arg Ala
 355 360 365

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Ala Gly Val Thr Val Leu Ser Phe Glu Gly Asn Gln Leu Ser Leu Gly
370 375 380

Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Val Arg Glu Asp Val
385 390 395 400

Lys

<210> 10
<211> 401
<212> PRT
<213> Mycoplasma gallinarum

<400> 10

Met Ser Lys Ile Arg Val Tyr Ser Glu Ile Gly Asn Leu Lys Lys Val
1 5 10 15

Leu Val His Thr Pro Gly Asp Glu Ile Arg Arg Ile Ser Pro Ser Arg
20 25 30

Leu Glu Glu Leu Leu Phe Ser Ala Val Leu Glu Pro Asn Ala Ala Ile
35 40 45

Glu Glu His Lys Arg Phe Val Lys Leu Leu Glu Asp Arg Gly Ile Gln
50 55 60

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

Thr Ala Glu Gln Lys Ala Ala Phe Ile Glu Lys Tyr Leu Asp Glu Ala
85 90 95

Thr Pro Ala Leu Ser Ala Glu Asn Arg Glu Arg Ala Lys Lys Tyr Ile
100 105 110

Leu Ser Leu Glu Met Gln Pro Val Lys Met Ile Arg Thr Met Met Ala
115 120 125

Gly Leu Ser Lys Tyr Glu Leu Asn Val Glu Ser Asn Ile Glu Leu Ile
130 135 140

Ile Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser
145 150 155 160

Ala Gly Asn Gly Ile Ser Leu Asn Asn Met Lys Tyr Val Val Arg Lys
165 170 175

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Arg Glu Thr Ile Phe Ala Glu Phe Ile Phe Ala Ile His Pro Glu Tyr
180 185 190

Lys Glu Thr Pro His Trp Phe Asp Arg Leu Asp His Gly Ser Ile Glu
195 200 205

Gly Gly Asp Val Phe Val Tyr Asn Lys Asp Thr Leu Val Ile Gly Val
210 215 220

Ser Glu Arg Thr Asn Lys Glu Ala Ile Ile Thr Ile Ala Lys His Ile
225 230 235 240

Gln Asp Asn Lys Glu Ala Glu Phe Lys Lys Ile Val Ala Ile Asn Val
245 250 255

Pro Pro Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr Met Val
260 265 270

Asp Lys Asn Lys Phe Ile Tyr Ser Pro Asn Met Leu Ser Val Leu Lys
275 280 285

Ile Trp Glu Ile Asp Leu Ala Lys Pro Ile Glu Met Val Glu Ser Asn
290 295 300

Lys Ser Leu Thr Glu Val Leu Glu Ser Ile Ile Gly Glu Lys Pro Ile
305 310 315 320

Leu Ile Pro Ile Ala Gly Glu Gly Ala Ser Gln Leu Asp Ile Asp Ile
325 330 335

Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile Ala Pro Gly Val
340 345 350

Val Val Gly Tyr Ser Arg Asn Glu Lys Thr Glu Lys Ala Leu Lys Ala
355 360 365

Ala Gly Ile Thr Val Leu Ser Phe Glu Gly Asn Gln Leu Ser Leu Gly
370 375 380

Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Val Arg Glu Asp Val
385 390 395 400

Lys

<210> 11

POLA_005_01WO_SeqList_ST25

<211> 405

<212> PRT

<213> Mycoplasma pirum

<400> 11

Met Asn Ser Asn Gln Lys Gly Ile His Val Tyr Ser Glu Ile Gly Lys
 1 5 10 15

Leu Lys Glu Val Leu Val His Arg Pro Gly Arg Glu Leu Asp Phe Leu
 20 25 30

Asp Pro Thr Arg Leu Asp Glu Leu Leu Phe Ala Ala Thr Leu Glu Ala
 35 40 45

Glu Thr Ala Arg Leu Glu His Asp Asn Phe Thr Asn Ala Leu Lys Asn
 50 55 60

Gln Gly Val Thr Val Ile Glu Leu Ala Asp Leu Val Ala Gln Thr Tyr
 65 70 75 80

Ser Ser Ser Thr Pro Thr Ile Lys Ala Ala Phe Ile Asn Lys Tyr Leu
 85 90 95

Asp Glu Ala Thr Pro Ala Leu Thr Thr Lys Leu Arg Thr Leu Val Lys
 100 105 110

Asp Phe Leu Thr Lys Gln Lys Ser Val Arg Lys Met Val Asp Tyr Met
 115 120 125

Ile Gly Gly Ile Leu Ser Thr Asp Leu Asn Ile Lys Gly Lys Pro Glu
 130 135 140

Leu Ile Val Glu Pro Met Pro Asn Ala Tyr Phe Thr His Asp Pro Phe
 145 150 155 160

Ala Ser Val Gly Asn Gly Val Thr Leu His Tyr Met Lys His Asn Val
 165 170 175

Arg Arg Arg Glu Val Leu Phe Ser Glu Phe Ile Phe Asn Asn Asn Glu
 180 185 190

Arg Phe Gln Asn Thr Pro Arg Tyr Ile Val Pro Thr Lys Gly Leu Asp
 195 200 205

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

Gly Val Ser Glu Arg Thr Lys Met Val Thr Ile Lys Glu Leu Ala Lys

225 230 235 240

Asn Val Pro Lys Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr
260 265 270

Met Leu Asp His Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val
275 280 285

Leu Lys Ile Trp Glu Ile Asp Ile Ser Ser Gly Lys Ser Ile Ser Ser
290 295 300

Pro Lys Glu Leu Asn Met Asp Leu Ser Lys Ala Leu Ser Ile Ile Ile
305 310 315 320

Gly Lys Lys Pro Ile Leu Ile Pro Val Ala Gly Glu Asn Ala Ser Gln
325 330 335

Ile Asp Ile Asn Ile Glu Thr Asn Phe Asp Ala Thr Asn Tyr Leu Val
340 345 350

Thr Gln Pro Gly Val Val Val Gly Tyr Ser Arg Asn Lys Lys Thr Glu
355 360 365

Ala Ala Leu Ile Lys Ala Gly Ile Glu Val Ile Pro Phe Gln Gly Asn
370 375 380

Gln Leu Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu
385 390 395 400

Ile Arg Glu Asp Val
405

```
<210> 12
<211> 404
<212> PRT
<213> Mycoplasma primum
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<400> 12

Met Ser Lys Ser Lys Ile Asn Val Tyr Ser Glu Tyr Gly Asn Leu Lys
1 5 10 15

Glu Val Leu Val His Thr Pro Gly Asp Glu Ile Arg Arg Ile Thr Pro

Ser Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile Leu Glu Pro Lys Ser

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35

40

45

Ala Ile Ala Glu His Lys Ser Phe Cys Gln Ile Leu Lys Asp Asn Lys
50 55 60

Val Lys Ala Ile Gln Leu Asp Glu Leu Val Ala Ala Thr Tyr Lys Gly
65 70 75 80

Val Ser Glu Ser Val Gln Asn Ser Phe Val Glu Arg Trp Leu Asp Glu
85 90 95

Cys Glu Pro Lys Leu Glu Asn Asn Val Arg Pro Ile Val Lys Glu Tyr
100 105 110

Leu Leu Lys Ala Ala Glu Gln Ser Val Lys Lys Met Ile Arg Ile Met
115 120 125

Met Ala Gly Ile Asp Lys Arg Glu Ile Gly Val Glu Ser Glu Val Asp
130 135 140

Phe Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe
145 150 155 160

Ala Ser Val Gly Asn Gly Ile Thr Leu His His Met Lys Tyr Val Val
165 170 175

Arg Gln Arg Glu Thr Leu Phe Ser Glu Phe Ile Phe Asp Asn His Pro
180 185 190

Asp Tyr Lys Phe Val Pro Arg Tyr Phe Asp Arg Asp Asp Glu Gly Lys
195 200 205

Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Ser Lys Thr Leu Val Val
210 215 220

Gly Ile Ser Glu Arg Thr Asn Lys Asp Ala Ile Arg Ile Val Ala Lys
225 230 235 240

Lys Ile Gln Ala Asn Ala Asp Ala Lys Phe Glu Lys Ile Phe Ala Ile
245 250 255

Asn Val Pro Pro Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr
260 265 270

Met Leu Asp Ser Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val
275 280 285

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Leu Lys Val Trp Glu Ile Asn Leu Asp Asp Pro Ala Leu Glu Trp Lys
 290 295 300

Glu Ile Ser Gly Ser Leu Glu Glu Ile Leu Thr Tyr Ile Ile Gly Lys
 305 310 315 320

Lys Pro Ile Leu Ile Pro Ile Ala Gly Lys Gly Ala Ser Gln Phe Glu
 325 330 335

Ile Asp Ile Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Ala Ile Ala
 340 345 350

Pro Ser Val Val Ile Gly Tyr Ser Arg Asn Glu Leu Thr Glu Lys Ala
 355 360 365

Leu Lys Lys Ala Gly Val Lys Val Leu Ser Leu Asp Gly Asn Gln Leu
 370 375 380

Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Ile Arg
 385 390 395 400

Glu Asp Val Lys

<210> 13

<211> 401

<212> PRT

<213> Mycoplasma lipofaciens

<400> 13

Met Ser Lys Ile Asn Val Tyr Ser Glu Val Gly Val Leu Lys Glu Val
 1 5 10 15

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

Leu Asp Glu Leu Leu Phe Ser Ala Ile Leu Glu Pro Gln Asp Ala Ile
 35 40 45

Ala Glu His Lys Arg Phe Ile Lys Ile Leu Glu Asp Asn Asn Ile Lys
 50 55 60

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

Ala Glu Gln Arg Asp Ala Phe Ile Glu Lys Trp Leu Asp Glu Ala Glu
 85 90 95

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Pro Val Leu Asp Ala Lys Leu Arg Glu Thr Val Lys Lys Tyr Leu Leu
 100 105 110

Ser Leu Asn Pro Val Lys Lys Met Val Arg Thr Met Met Ala Gly Ile
 115 120 125

Asp Lys Lys Glu Leu Lys Ile Glu Leu Asp Arg Asp Leu Val Val Asp
 130 135 140

Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser Ala Gly
 145 150 155 160

Asn Gly Ile Ser Leu Asn Asn Met Lys Tyr Val Thr Arg Lys Arg Glu
 165 170 175

Thr Ile Phe Ala Glu Phe Ile Phe Asn Ile His Pro Asp Tyr Lys Thr
 180 185 190

Thr Pro His Trp Phe Asp Arg Leu Asp Lys Gly Asn Ile Glu Gly Gly
 195 200 205

Asp Val Phe Ile Tyr Asn Lys Asp Thr Leu Val Leu Gly Val Ser Glu
 210 215 220

Arg Thr Asn Lys Asp Ala Val Met Thr Ile Ala Lys His Ile Gln Ser
 225 230 235 240

Asn Glu Gln Ala Lys Phe Lys Lys Leu Val Ala Ile Asn Val Pro Pro
 245 250 255

Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr Met Val Asp His
 260 265 270

Asp Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val Leu Lys Ile Trp
 275 280 285

Glu Ile Asp Leu Thr Pro Gly Lys Glu Ile Glu Met Val Glu Ser Thr
 290 295 300

Lys Ser Leu Ser Asp Met Leu Glu Ser Ile Ile Gly Lys Lys Pro Val
 305 310 315 320

Leu Ile Pro Ile Ala Gly Lys Asp Ala Ser Gln Leu Asp Ile Asp Ile
 325 330 335

Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile Arg Pro Gly Val
 340 345 350

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Val Val Gly Tyr Ser Arg Asn Cys Leu Thr Glu Gln Ala Leu Lys Asp
355 360 365

Ala Gly Val Thr Val Leu Ser Phe Asp Gly Asn Gln Leu Ser Leu Gly
370 375 380

Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Val Arg Glu Asp Ile
385 390 395 400

Lys

<210> 14

<211> 405

<212> PRT

<213> Mycoplasma felifaucium

<400> 14

Met Asn Lys Ile Asn Val Tyr Ser Glu Ile Gly Lys Leu Lys Glu Val
1 5 10 15

Leu Val His Thr Pro Gly Asn Glu Ile Arg Arg Ile Ser Pro Ser Arg
20 25 30

Leu Asp Glu Leu Leu Phe Ser Ala Leu Leu Glu Pro Asn Phe Ala Ala
35 40 45

Lys Glu His Thr Ala Phe Cys Glu Ile Leu Lys Glu Asn Gly Ile Lys
50 55 60

Ala Ile Gln Leu Val Asp Leu Val Ser Asp Thr Trp Arg Ile Ala Ser
65 70 75 80

Glu Lys Ala Lys Thr Glu Phe Ile Glu Arg Trp Leu Asp Glu Cys Glu
85 90 95

Pro Lys Leu Asp Ser Asn Leu Arg Glu Ile Val Arg Lys His Ile Tyr
100 105 110

Ala Ile Glu Lys Arg Ser Val Lys Arg Met Val Lys Thr Met Met Ala
115 120 125

Gly Ile Glu Arg Arg Glu Leu Pro Val Thr Ser Lys Glu Val Ala Arg
130 135 140

Glu Leu Val Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro
145 150 155 160

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Phe Ala Ser Val Gly Asn Gly Ile Ser Leu His His Met Lys Tyr Val
 165 170 175
 Thr Arg Gln Arg Glu Thr Ile Phe Ala Glu Phe Val Phe Gly Asn His
 180 185 190
 Pro Asp Tyr Ile Asp Thr Pro Arg Trp Phe Asp Arg Ser Asp Asp Gly
 195 200 205
 Arg Ile Glu Gly Gly Asp Val Phe Ile Tyr Gly Ser Lys Thr Leu Val
 210 215 220
 Ile Gly Val Ser Glu Arg Thr Asn Lys Glu Ala Ile Lys Val Met Ala
 225 230 235 240
 Lys Lys Ile Gln Ala Asn Lys Glu Ala Thr Phe Glu Lys Ile Tyr Ala
 245 250 255
 Ile Asn Val Pro Pro Met Pro Asn Leu Met His Leu Asp Thr Trp Leu
 260 265 270
 Thr Met Leu Asp Lys Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ala
 275 280 285
 Val Leu Gln Val Trp Glu Ile Asp Leu Lys Asp Pro Glu Leu Thr Trp
 290 295 300
 His Glu Leu Ser Gly Ser Leu Glu Glu Ile Leu His Lys Ile Ile Gly
 305 310 315 320
 Arg Lys Pro Ile Leu Ile Pro Ile Ala Gly His Gly Ala Gln Gln Ile
 325 330 335
 Asp Ile Asp Ile Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Ala Ile
 340 345 350
 Ala Pro Gly Val Val Val Gly Tyr Asn Arg Asn Val Leu Thr Glu Arg
 355 360 365
 Ala Leu Lys Lys Ala Gly Ile Lys Val Leu Ser Phe Glu Gly Asn Gln
 370 375 380
 Leu Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Ile
 385 390 395 400
 Arg Glu Asn Leu Lys
 405

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<210> 15
 <211> 404
 <212> PRT
 <213> Mycoplasma imitans

<400> 15

Met Phe Asn Lys Ile Lys Val Tyr Ser Glu Ile Gly Arg Leu Arg Lys
 1 5 10 15

Val Leu Val His Thr Pro Gly Lys Glu Leu Glu Tyr Val Thr Pro Gln
 20 25 30

Arg Leu Asp Glu Leu Leu Phe Ser Ser Leu Leu Asn Pro Val Lys Ala
 35 40 45

Arg Gln Glu His Glu Ala Phe Ile Lys Ile Leu Gln Asp Gln Gly Val
 50 55 60

Glu Cys Val Gln Leu Thr Thr Leu Thr Ala Gln Thr Phe Gln Ser Ala
 65 70 75 80

Thr Ser Glu Val Lys Glu Lys Phe Ile Asn Arg Trp Leu Asp Glu Cys
 85 90 95

Leu Pro Lys Leu Ser Asp Asp Asn Arg Ile Lys Val Tyr Ala Tyr Leu
 100 105 110

Lys Asp Leu Ser Ser Asp Pro Glu Val Met Ile Arg Lys Met Met Ser
 115 120 125

Gly Ile Leu Ala Lys Glu Val Asn Val Gln Ser Asp Val Glu Leu Ile
 130 135 140

Ala Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser
 145 150 155 160

Ile Gly Lys Gly Val Thr Leu His Ser Met Phe His Pro Thr Arg Lys
 165 170 175

Arg Glu Thr Ile Phe Ala Asp Phe Val Phe Ser His His Pro Glu Tyr
 180 185 190

Lys Gln Thr Pro Lys Tyr Tyr Ser Arg Leu Asn Glu Tyr Ser Ile Glu
 195 200 205

Gly Gly Asp Leu Phe Val Tyr Asp Asp Lys Thr Leu Val Ile Gly Val
 210 215 220

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Ser Glu Arg Thr Glu Lys Lys Ala Ile Gln Phe Leu Ala Glu Lys Leu
225 230 235 240

Arg Glu Asn Tyr Glu Thr Thr Phe Glu Lys Ile Tyr Ala Ile Asn Val
245 250 255

Pro Lys Met Ser Asn Leu Met His Leu Asp Thr Trp Leu Thr Met Leu
260 265 270

Asp Tyr Asp Lys Phe Leu Tyr Ser Pro Asn Met Met Gly Val Leu Lys
275 280 285

Ile Trp Glu Ile Asp Leu Thr His Glu Gln Leu Ser Trp Arg Glu Leu
290 295 300

Asn Glu Ser Leu Glu Glu Phe Leu Ser Met Val Ile Gly Lys Lys Ala
305 310 315 320

Thr Thr Ile Pro Val Ala Gly Glu Asp Ser Thr Gln Ile Glu Ile Asp
325 330 335

Val Glu Thr Asn Phe Asp Ala Thr Asn Phe Leu Val Ile Gln Pro Gly
340 345 350

Val Val Val Gly Tyr Asp Arg Asn Tyr Lys Thr Asn Gln Ala Leu Val
355 360 365

Asn Ala Gly Ile Lys Val Leu Ser Trp Asn Gly Asp Gln Leu Ser Leu
370 375 380

Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Tyr Arg Asp Pro
385 390 395 400

Ile Lys Lys Gly

<210> 16

<211> 401

<212> PRT

<213> Mycoplasma opalescens

<400> 16

Met Ser Lys Ile Asn Val Tyr Ser Glu Ile Gly Thr Leu Lys Glu Val
1 5 10 15

Leu Val His Thr Pro Gly Asp Glu Ile Arg Arg Val Ala Pro Ala Arg
20 25 30

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

275 POLA_005_01WO_SeqList_ST25 280 285

Trp Glu Ile Asp Leu Lys Asp Ala Ser Leu Ala Trp Lys Glu Ile Glu
 290 295 300
 Gly Ser Leu Ser Gln Ile Leu Glu Lys Ile Ile Gly Glu Lys Pro Ile
 305 310 315 320
 Leu Ile Pro Ile Ala Gly Glu Asn Ala Ser Gln Leu Asp Ile Asp Ile
 325 330 335
 Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile Ala Pro Gly Val
 340 345 350
 Val Val Gly Tyr Ser Arg Asn Val Lys Thr Glu Gln Ala Leu Lys Ala
 355 360 365
 Ala Gly Val Lys Val Leu Ser Phe Glu Gly Asn Gln Leu Ser Leu Gly
 370 375 380
 Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Ile Arg Glu Asp Leu
 385 390 395 400

Lys

<210> 17
 <211> 431
 <212> PRT
 <213> Mycoplasma moatsii

<400> 17

Met Gly Ile Lys Lys Ile Met Lys Lys Asn Ala Ile Asn Val Tyr Ser
 1 5 10 15
 Glu Ile Gly Lys Leu Lys Lys Val Leu Val His Arg Pro Gly Asp Glu
 20 25 30
 Leu Lys Tyr Val Thr Pro Gln Arg Met Asp Glu Leu Leu Met Ser Ala
 35 40 45
 Ile Ile Glu Leu Glu Gln Ala Lys Glu Glu His Asp Ala Phe Thr Lys
 50 55 60
 Ile Leu Arg Asp Asn Gly Val Glu Val Ile Glu Leu Ala Asp Leu Thr
 65 70 75 80
 Ala Glu Met Tyr Asp Ser Leu Thr Pro Ser Glu Lys Asp Ala Phe Leu

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85

90

95

Asn Gln Trp Val Lys Glu Ala Ser Trp Gly Lys Lys Ser Ser Ile Asp
 100 105 110

Ala Leu Lys Ile Lys Lys Asn Leu Ser Lys Lys Val Phe Asp Tyr Val
 115 120 125

Lys Ser Ile Lys Pro Thr Arg Lys Met Ile Asp Lys Leu Met Ala Gly
 130 135 140

Val Leu Leu Ser Glu Ile Gly Glu Lys Ser Ile Ile Leu Asn Lys Asp
 145 150 155 160

Lys Lys Asn Glu Met Val Ile Asp Leu Val Val Asp Pro Met Pro Asn
 165 170 175

Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser Val Gly Asn Gly Ile Thr
 180 185 190

Leu His Asn Met Lys Tyr Pro Thr Arg Lys Arg Glu Thr Ile Phe Ala
 195 200 205

Gln Trp Ile Phe Asn Lys His Pro Glu Tyr Lys Asp Val Pro Gln Phe
 210 215 220

Ile Ser Lys Arg Asp Gly Lys Glu Thr Ile Glu Gly Gly Asp Val Phe
 225 230 235 240

Ile Tyr Thr Lys Asp Val Leu Ala Ile Gly Val Ser Glu Arg Thr Asn
 245 250 255

Met Glu Ala Ile Leu Arg Ile Ala Thr Asn Ile Lys Lys Asp Lys Asn
 260 265 270

Cys Glu Phe Lys Lys Ile Val Ala Ile Asn Val Pro Pro Met Gly Asn
 275 280 285

Leu Met His Leu Asp Thr Trp Leu Thr Met Leu Asp Lys Asp Leu Phe
 290 295 300

Leu Tyr Ser Gly Asn Ile Lys Ser Ala Leu Lys Val Trp Glu Ile Asp
 305 310 315 320

Leu Thr Lys Pro Ile Thr Pro Lys Ser Pro Lys Leu Ser Thr Ala Lys
 325 330 335

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Leu Ala Asp Ile Leu Ala Lys Ile Val Gly Lys Lys Val Arg Met Ile
340 345 350

Pro Ile Gly Gly Lys Asp Gly Asn Gln Met Asp Ile Asp Ile Glu Thr
355 360 365

His Phe Asp Gly Thr Asn Tyr Leu Ala Ile Ala Pro Gly Val Val Val
370 375 380

Gly Tyr His Arg Asn Arg Lys Thr Gln Lys Ala Leu Glu Glu Ala Gly
385 390 400

Val Lys Val Leu Ala Phe Gln Gly Asn Gln Leu Ser Leu Gly Met Gly
405 410 415

Ser Ala Arg Cys Met Ser Met Pro Leu Val Arg Glu Glu Val Lys
420 425 430

<210> 18

<211> 399

<212> PRT

<213> Mycoplasma elephantis

<400> 18

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

Leu Val His Thr Pro Gly Asp Glu Ile Arg Arg Ile Ser Pro Lys Arg
20 25 30

Tyr Asn Glu Leu Leu Phe Ser Ala Ile Leu Glu Ala Asp Val Ala Ile
35 40 45

Lys Glu His Lys Ser Phe Val Lys Ile Leu Glu Glu Asn Asn Val Lys
50 55 60

Val Ile Gln Leu Lys Asp Ile Leu Leu Glu Thr Trp Asn Ile Cys Ser
65 70 75 80

Lys Glu Ala Lys Asn Ile Phe Ile Asn Lys Trp Ile Glu Glu Ala Gln
85 90 95

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

Lys Ser Lys Thr Pro Leu Glu Ile Ile Asp Ile Met Met Lys Gly Ile
115 120 125

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Leu Lys Gln Glu Leu Gly Ile Glu Tyr Lys His Glu Leu Ile Ile Asp
 130 135 140
 Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Thr Ser Met Gly
 145 150 155 160
 Ser Gly Ile Thr Ile Asn Asn Met Lys Tyr Gln Thr Arg Lys Arg Glu
 165 170 175
 Thr Ile Phe Ser Glu Phe Ile Phe Asn Asn His Pro Lys Tyr Lys Asn
 180 185 190
 Thr Pro Arg Trp Phe Asp Arg Phe Asp Ser Gly Asn Ile Glu Gly Gly
 195 200 205
 Asp Leu Phe Val Tyr Thr Lys Glu Thr Ile Val Val Gly Val Ser Glu
 210 215 220
 Arg Thr Lys Lys Lys Ala Ile Leu Lys Ile Ala Lys Asn Ile Gln Glu
 225 230 235 240
 Asn Asn Asn Ser Phe Lys Lys Ile Val Val Ile Lys Val Pro Ile Met
 245 250 255
 Gln Asn Leu Met His Leu Asp Thr Trp Ile Val Met Val Asp Phe Asp
 260 265 270
 Lys Phe Ile Tyr Ser Pro Asn Val Thr Lys Ser Leu Lys Phe Trp Glu
 275 280 285
 Ile Asp Leu Thr Lys Lys Pro Lys Phe Ile Gln Leu Lys Asn Glu Thr
 290 295 300
 Leu Glu Asp Val Leu Tyr Arg Val Ile Gly Lys Lys Pro Ile Leu Ile
 305 310 315 320
 Pro Val Ala Gly Glu Asn Ala Asn Gln Ile Asp Ile Asp Val Glu Thr
 325 330 335
 His Phe Asp Ala Thr Asn Tyr Leu Thr Ile Arg Pro Gly Val Val Val
 340 345 350
 Gly Tyr Ser Arg Asn Lys Lys Thr Glu Glu Ala Leu Ile Asn Ala Gly
 355 360 365
 Val Lys Val Tyr Ala Phe Glu Gly Asn Gln Leu Ser Leu Gly Met Gly
 370 375 380

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Ser Ala Arg Cys Met Ser Met Pro Leu Ile Arg Glu Asp Ile Ile
385 390 395

<210> 19
<211> 399
<212> PRT
<213> Mycoplasma testudinis
<400> 19

Met Lys Asn Ile Asn Val Tyr Ser Glu Val Gly Lys Leu Lys Glu Val
1 5 10 15

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

Leu Gln Glu Leu Leu Thr Ser Ala Val Leu Glu Pro Glu Val Ala Arg
35 40 45

Lys Glu His Leu Lys Phe Ile Lys Ile Leu Asn Asp Tyr Gly Val Lys
50 55 60

Val Ile Gln Ile Val Asp Leu Ile Thr Glu Thr Tyr Glu Ala Val Asp
65 70 75 80

Ser Asn Lys Lys Glu Ala Phe Ile Asn Asn Trp Leu Asp Asn Ser Val
85 90 95

Pro Lys Leu Thr Asp Lys Asn Arg Met Ile Leu Arg Asn Tyr Leu Thr
100 105 110

Gln Phe Ser Thr Lys Ala Met Ile Arg Lys Met Ile Ser Gly Ile Arg
115 120 125

Ala Lys Glu Leu Asn Leu Lys Thr Pro Ser Ala Leu Leu Val Asp Pro
130 135 140

Met Pro Asn Leu Cys Phe Ala Arg Asp Thr Phe Ala Cys Val Gly Ser
145 150 155 160

Ala Ile Ser Leu Ser Thr Met Lys His Pro Thr Arg Arg Arg Glu Ala
165 170 175

Leu Leu Thr Glu Phe Ile Phe Gln Asn His Pro Lys Tyr Lys Asp Val
180 185 190

Ile Lys Tyr Phe Asp Ser Lys Asn Ser Lys Ala Thr Ile Glu Gly Gly
195 200 205

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Asp Ile Phe Val Tyr Asn Pro Lys Thr Leu Val Val Gly Asn Ser Glu
210 215 220

Arg Thr Asn Met Gln Ala Cys Leu Leu Leu Ala Lys Lys Ile Gln Ser
225 230 235 240

Asn Pro Asn Asn Lys Phe Glu Lys Ile Val Ile Val Asn Val Pro Pro
245 250 255

Leu Pro His Leu Met His Leu Asp Thr Trp Leu Thr Met Val Asp Tyr
260 265 270

Asp Lys Phe Ile Tyr Ser Pro Asn Ile Leu His Thr Leu Lys Phe Trp
275 280 285

Val Ile Asp Leu Lys Lys Arg Lys Leu Glu Ala Val Glu Lys His Asn
290 295 300

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

Ile Pro Val Gly Asp Val Gly Ala Asp Gln Leu Asp Ile Asp Leu Glu
325 330 335

Thr His Phe Asp Ala Thr Asn Tyr Leu Ala Leu Ala Pro Gly Val Val
340 345 350

Val Gly Tyr Asp Arg Asn Ile Lys Thr Gln Arg Ala Leu Glu Lys Ala
355 360 365

Gly Val Lys Val Leu Ser Phe Ser Gly Asn Gln Leu Ser Leu Ala Met
370 375 380

Gly Ser Ala Arg Cys Leu Ser Met Pro Leu Ile Arg Glu Glu Asn
385 390 395

<210> 20
<211> 410
<212> PRT
<213> Mycoplasma canadense

<400> 20

Met Ser Val Phe Asp Ser Lys Phe Lys Gly Ile His Val Tyr Ser Glu
1 5 10 15

Ile Gly Glu Leu Glu Ser Val Leu Val His Glu Pro Gly Arg Glu Ile
20 25 30

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Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
 35 40 45
 Leu Glu Ser His Asp Ala Arg Lys Glu His Lys Gln Phe Val Ser Glu
 50 55 60
 Leu Lys Ala Asn Asp Ile Asn Val Val Glu Leu Thr Asp Leu Val Ala
 65 70 75 80
 Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Lys Asp Lys Leu Ile Glu
 85 90 95
 Glu Phe Leu Glu Asp Ser Glu Pro Val Leu Ser Glu Glu His Lys Ala
 100 105 110
 Ile Val Arg Lys Tyr Leu Lys Gly Ile Gln Pro Thr Arg Lys Leu Ile
 115 120 125
 Glu Met Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Glu Ala
 130 135 140
 Asp His Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160
 Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175
 Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Val Phe Ser
 180 185 190
 Asn His Pro Lys Leu Val Asn Thr Pro Trp Tyr Tyr Asp Pro Ser Leu
 195 200 205
 Lys Leu Ser Ile Glu Gly Gly Asp Val Phe Val Tyr Asn Asn Asp Thr
 210 215 220
 Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Gln Thr Val Thr Leu
 225 230 235 240
 Leu Ala Lys Asn Ile Val Ala Asn Lys Glu Cys Glu Phe Lys Arg Ile
 245 250 255
 Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
 260 265 270
 Trp Leu Thr Met Leu Asp Lys Asp Lys Phe Leu Tyr Ser Pro Ile Ala
 275 280 285

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Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Ser
290 295 300

Glu Pro Gln Pro Val Glu Asn Gly Leu Pro Leu Glu Gly Leu Leu Glu
305 310 315 320

Ser Ile Ile Asn Lys Lys Pro Ile Leu Ile Pro Ile Ala Gly Glu Gly
325 330 335

Ala Ser Gln Met Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Ala Ile Arg Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu
355 360 365

Lys Thr Asn Ala Ala Leu Glu Ala Ala Gly Ile Lys Val Leu Pro Phe
370 375 380

His Gly Asn Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Ser Arg Lys Asp Val Lys Trp
405 410

<210> 21
<211> 409
<212> PRT
<213> Mycoplasma anseris
<400> 21

Met Ser Val Phe Asp Lys Arg Phe Lys Gly Ile His Val Tyr Ser Glu
1 5 10 15

Ile Gly Glu Leu Gln Thr Val Leu Val His Glu Pro Gly Arg Glu Ile
20 25 30

Asp Tyr Ile Thr Pro Ala Arg Leu Asp Glu Leu Leu Phe Ser Ala Ile
35 40 45

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

Leu Lys Glu Gln Gly Ile Asn Thr Val Glu Leu Thr Asp Leu Val Ala
65 70 75 80

Glu Thr Tyr Asp Leu Ala Ser Gln Glu Ala Arg Asp Asn Leu Leu Glu
85 90 95

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Glu Phe Leu Asp Asp Ser Ala Pro Val Leu Ser Glu Glu His Lys Glu
 100 105 110
 Ile Val Arg Thr Tyr Leu Lys Gly Ile Lys Gly Thr Arg Lys Leu Ile
 115 120 125
 Glu Thr Met Met Ala Gly Ile Thr Lys Tyr Asp Leu Gly Ile Glu Ala
 130 135 140
 Glu Gln Glu Leu Ile Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg
 145 150 155 160
 Asp Pro Phe Ala Ser Val Gly Asn Gly Val Thr Ile His Tyr Met Arg
 165 170 175
 Tyr Lys Val Arg Gln Arg Glu Thr Leu Phe Ser Arg Phe Ile Phe Ser
 180 185 190
 Asn His Pro Gln Leu Val Asn Thr Pro Trp Tyr Tyr Asn Pro Ala Glu
 195 200 205
 Gly Leu Ser Ile Glu Gly Gly Asp Val Phe Ile Tyr Asn Asn Asp Thr
 210 215 220
 Leu Val Val Gly Val Ser Glu Arg Thr Asp Leu Gln Thr Ile Thr Leu
 225 230 235 240
 Leu Ala Lys Asn Ile Lys Ala Asn Glu Glu Cys Glu Phe Lys Arg Ile
 245 250 255
 Val Ala Ile Asn Val Pro Lys Trp Thr Asn Leu Met His Leu Asp Thr
 260 265 270
 Trp Leu Thr Met Leu Asp Thr Asn Lys Phe Leu Tyr Ser Pro Ile Ala
 275 280 285
 Asn Asp Val Phe Lys Phe Trp Asp Tyr Asp Leu Val Asn Gly Gly Asp
 290 295 300
 Glu Pro Gln Pro Val Asp Asn Gly Leu Pro Leu Asn Glu Leu Leu Lys
 305 310 315 320
 Ser Ile Ile Gly Glu Glu Pro Ile Leu Ile Pro Ile Ala Gly Asp Gly
 325 330 335
 Ala Thr Gln Ile Glu Ile Glu Arg Glu Thr His Phe Asp Gly Thr Asn

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345 350

340

Tyr Leu Ala Ile Ala Pro Gly Val Val Ile Gly Tyr Ser Arg Asn Glu
355 360 365

Lys Thr Asn Ala Ala Leu Glu Ala Ala Gly Ile Lys Val Leu Pro Phe
370 375 380

Lys Gly His Gln Leu Ser Leu Gly Met Gly Asn Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Tyr Arg Lys Asp Val Lys
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<210> 22
<211> 401
<212> PRT
<213> Mycoplasma meleagridis
<400> 22

Met Ser Lys Ile Asn Val Tyr Ser Glu Ile Gly Val Leu Lys Glu Val
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Leu Val His Thr Pro Gly Asp Glu Ile Arg Arg Ile Ser Pro Ser Arg
20 25 30

Leu Asp Glu Leu Leu Phe Ser Ala Ile Leu Gln Pro Glu Gln Ala Ile
35 40 45

Lys Glu His Gln Ser Phe Val Lys Ile Leu Gln Asp Arg Gly Ile Lys
50 55 60

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

Thr Ser Lys Glu Lys Glu Ser Phe Ile Glu Lys Trp Leu Asp Glu Ala
85 90 95

Thr Pro Ala Leu Asn Ser Glu Asn Arg Ala Arg Val Lys Asn Tyr Ile
100 105 110

Thr Ala Met Gln Gly Gln Pro Val Lys Met Val Arg Ala Met Met Ala
115 120 125

Gly Val Ser Lys Gln Glu Leu Asn Ile Glu Ser Asp Val Glu Leu Ile
130 135 140

Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser
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145					150					155					160
Ala	Gly	Asn	Gly	Ile	Ser	Leu	Asn	Asn	Met	Lys	Tyr	Val	Val	Arg	Lys
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Arg	Glu	Thr	Ile	Phe	Ala	Glu	Phe	Ile	Phe	Ser	Ile	His	Pro	Glu	Tyr
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Lys	Gln	Thr	Pro	His	Trp	Phe	Asp	Arg	Leu	Asp	Lys	Gly	Asn	Ile	Glu
		195					200					205			
Gly	Gly	Asp	Val	Phe	Ile	Tyr	Asn	Lys	Asp	Thr	Leu	Val	Ile	Gly	Val
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Ser	Glu	Arg	Thr	Asn	Lys	Glu	Ala	Ile	Leu	Thr	Ile	Ala	Glu	His	Ile
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Asp	Lys	Asn	Lys	Phe	Leu	Tyr	Ser	Pro	Asn	Met	Leu	Ser	Val	Leu	Lys
		275					280					285			
Ile	Trp	Glu	Ile	Asp	Leu	Ser	Lys	Glu	Ile	Lys	Met	Val	Glu	Thr	Ser
	290					295					300				
Lys	Pro	Leu	Ala	Asp	Val	Leu	Glu	Ser	Ile	Ile	Gly	Glu	Lys	Pro	Ile
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Leu	Ile	Pro	Ile	Ala	Gly	Glu	Asn	Ala	Ser	Gln	Leu	Asp	Ile	Asp	Ile
				325					330					335	
Glu	Thr	His	Phe	Asp	Gly	Thr	Asn	Tyr	Leu	Thr	Ile	Ala	Pro	Gly	Val
			340					345					350		
Val	Val	Gly	Tyr	Ser	Arg	Asn	Val	Lys	Thr	Glu	Ala	Ala	Leu	Lys	Ala
		355					360					365			
Ala	Gly	Val	Thr	Val	Tyr	Ser	Phe	Asp	Gly	Asn	Gln	Leu	Ser	Leu	Gly
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Met	Gly	Ser	Gly	Arg	Cys	Met	Ser	Met	Pro	Leu	Val	Arg	Glu	Asp	Val
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Lys

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<211> 404

<212> PRT

<213> Mycoplasma alvi

<400> 23

Met Ser Ile Lys Glu Asn Gly Ile His Val Tyr Ser Glu Ile Gly Lys
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Leu Arg Asp Val Leu Val His Arg Pro Gly Arg Glu Leu Asn Phe Leu
 20 25 30

Asp Pro Ser Arg Leu Asp Glu Leu Leu Phe Ala Ala Thr Leu Glu Pro
 35 40 45

Glu Thr Ala Arg Leu Glu His Asp Asn Phe Thr Thr Val Leu Lys Asn
 50 55 60

Gln Gly Val Asn Val Ile Glu Leu Ala Asp Leu Val Ser Gln Thr Tyr
 65 70 75 80

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

Asn Glu Ala Thr Pro Lys Leu Thr Ser Glu Leu Ser Lys Lys Val Tyr
 100 105 110

Asp Phe Leu Thr Lys Gln Lys Ser Asn Arg Glu Met Val Asp Phe Met
 115 120 125

Met Gly Gly Ile Leu Ser Ser Asp Leu Asn Ile Lys Gly Gln Pro Tyr
 130 135 140

Leu Ile Val Glu Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe
 145 150 155 160

Ala Ser Val Gly Asn Gly Ala Thr Ile His Trp Met Lys His Asn Val
 165 170 175

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

Arg Phe Gln Asn Thr Pro Lys Tyr Ile Thr Pro Thr Lys Gly Leu Asp
 195 200 205

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Ile Glu Gly Gly Asp Val Phe Val Tyr Asn Lys Lys Thr Leu Val Val
 210 215 220
 Gly Val Ser Glu Arg Thr Lys Met Glu Thr Ile Lys Glu Leu Ala Lys
 225 230 235 240
 Asn Ile Ser Lys Asn Lys Glu Cys Thr Phe Thr Lys Ile Tyr Ala Ile
 245 250 255
 Asn Val Pro Lys Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr
 260 265 270
 Met Leu Asp Tyr Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val
 275 280 285
 Leu Lys Val Trp Glu Ile Asn Ile Ser Asn Asn Lys Val Ser Ala Pro
 290 295 300
 Lys Glu Leu Asn Val Asn Leu Glu Lys Ala Leu Ser Met Ile Ile Gly
 305 310 315 320
 Lys Lys Pro Ile Leu Ile Pro Val Ala Gly Ala Asn Ala Ser Gln Ile
 325 330 335
 Asp Ile Asn Ile Glu Thr Asn Phe Asp Ala Thr Asn Tyr Leu Val Ile
 340 345 350
 Glu Pro Gly Val Val Val Gly Tyr Ser Arg Asn Lys Lys Thr Glu Glu
 355 360 365
 Ala Leu Val Lys Ala Gly Ile Lys Val Leu Pro Phe His Gly Asn Gln
 370 375 380
 Leu Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Tyr
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Arg Glu Asp Val

<210> 24
 <211> 410
 <212> PRT
 <213> Mycoplasma penetrans

<400> 24

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Ser Glu Ile Gly Glu Leu Lys Glu Val Leu Val His Thr Pro Gly Asp
 20 25 30

Glu Ile Arg Tyr Thr Ala Pro Ser Arg Leu Glu Glu Leu Leu Phe Ser
 35 40 45

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

Lys Ile Leu Gln Asn Asn Gly Ile Lys Val Ile Gln Leu Cys Asp Leu
 65 70 75 80

Val Ala Glu Thr Tyr Glu Leu Cys Ser Lys Glu Val Arg Asn Ser Phe
 85 90 95

Ile Glu Gln Tyr Leu Asp Glu Ala Leu Pro Val Leu Lys Lys Glu Ile
 100 105 110

Arg Pro Val Val Lys Asp Tyr Leu Leu Ser Phe Pro Thr Val Gln Met
 115 120 125

Val Arg Lys Met Met Ser Gly Ile Leu Ala Asn Glu Leu Asn Ile Lys
 130 135 140

Gln Asp Asn Pro Leu Ile Ile Asp Gly Met Pro Asn Leu Tyr Phe Thr
 145 150 155 160

Arg Asp Pro Phe Ala Ser Met Gly Asn Gly Val Ser Ile Asn Cys Met
 165 170 175

Lys Tyr Pro Thr Arg Lys Arg Glu Val Ile Phe Ser Arg Phe Val Phe
 180 185 190

Thr Asn Asn Pro Lys Tyr Lys Asn Thr Pro Arg Tyr Phe Asp Ile Val
 195 200 205

Gly Asn Asn Gly Thr Ile Glu Gly Gly Asp Ile Phe Ile Tyr Asn Ser
 210 215 220

Lys Thr Leu Val Ile Gly Asn Ser Glu Arg Thr Asn Phe Ala Ala Ile
 225 230 235 240

Glu Ser Val Ala Lys Asn Ile Gln Ala Asn Lys Asp Cys Thr Phe Glu
 245 250 255

Arg Ile Val Val Ile Asn Val Pro Pro Met Pro Asn Leu Met His Leu
 260 265 270

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Asp Thr Trp Leu Thr Met Leu Asp Tyr Asp Lys Phe Leu Tyr Ser Pro
275 280 285

Asn Met Met Asn Val Leu Lys Ile Trp Glu Ile Asp Leu Asn Val Lys
290 295 300

Pro Val Lys Phe Val Glu Lys Lys Gly Thr Leu Glu Glu Val Leu Tyr
305 310 315 320

Ser Ile Ile Asp Lys Lys Pro Ile Leu Ile Pro Ile Ala Gly Lys Gly
325 330 335

Ala Asn Gln Leu Asp Ile Asp Ile Glu Thr His Phe Asp Gly Thr Asn
340 345 350

Tyr Leu Thr Ile Ala Pro Gly Val Val Val Gly Tyr Glu Arg Asn Glu
355 360 365

Lys Thr Gln Lys Ala Leu Val Glu Ala Gly Ile Lys Val Leu Ser Phe
370 375 380

Asn Gly Ser Gln Leu Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser
385 390 395 400

Met Pro Leu Ile Arg Glu Asn Leu Lys Lys
405 410

<210> 25
<211> 404
<212> PRT
<213> Mycoplasma fermentans

<400> 25

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

Leu Asp Glu Leu Leu Phe Ser Ala Ile Leu Glu Pro Asp Ser Ala Ile
35 40 45

Ala Glu His Lys Arg Phe Val Gln Leu Leu Lys Asp Asn Gly Ile Lys
50 55 60

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

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Glu Ser Val Lys Gln Ser Phe Ile Glu Arg Trp Leu Asp Glu Cys Glu
 85 90 95
 Pro Lys Leu Asp Ala Thr Leu Arg Ala Lys Val Lys Glu Tyr Ile Leu
 100 105 110
 Glu Leu Lys Ala Lys Ser Ser Lys Lys Met Val Arg Val Met Met Ala
 115 120 125
 Gly Ile Asp Lys Lys Glu Leu Gly Ile Glu Leu Asp Arg Asp Leu Val
 130 135 140
 Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro Phe Ala Ser
 145 150 155 160
 Val Gly Asn Gly Ile Ser Leu His His Met Lys Tyr Val Thr Arg Gln
 165 170 175
 Arg Glu Thr Ile Phe Ser Glu Phe Ile Phe Asp Asn Asn Leu Asp Tyr
 180 185 190
 Asn Thr Val Pro Arg Trp Phe Asp Arg Lys Asp Glu Gly Arg Ile Glu
 195 200 205
 Gly Gly Asp Val Phe Ile Tyr Ser Ala Asp Thr Leu Val Val Gly Val
 210 215 220
 Ser Glu Arg Thr Asn Lys Glu Ala Ile Asn Val Met Ala Arg Lys Ile
 225 230 235 240
 Ala Ala Asp Lys Glu Val Lys Phe Lys Arg Ile Tyr Ala Ile Asn Val
 245 250 255
 Pro Pro Met Pro Asn Leu Met His Leu Asp Thr Trp Leu Thr Met Leu
 260 265 270
 Asp Lys Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ser Val Leu Lys
 275 280 285
 Val Trp Arg Ile Asp Leu Asn Asp Pro Asp Phe Val Trp His Glu Ile
 290 295 300
 Glu Gly Ser Leu Glu Glu Ile Leu Glu Gln Ile Ile Gly Met Lys Pro
 305 310 315 320
 Ile Leu Ile Pro Ile Ala Gly Lys Gly Ala Ser Gln Leu Asp Ile Asp
 325 330 335

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Ile Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile Ala Pro Ser
 340 345 350

Val Val Val Gly Tyr Ser Arg Asn Glu Lys Thr Glu Lys Ala Leu Lys
 355 360 365

Ala Ala Lys Val Lys Val Leu Ser Phe Glu Gly Asn Gln Leu Ser Leu
 370 375 380

Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Ile Arg Glu Asp
 385 390 395 400

Ile Lys Lys Lys

<210> 26
 <211> 404
 <212> PRT
 <213> Mycoplasma pneumoniae
 <400> 26

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Val Leu Val His Thr Pro Gly Asn Glu Ile Arg Arg Ile Ser Pro Arg
 20 25 30

Arg Leu Asp Asp Leu Leu Phe Ser Ala Val Ile Glu Pro Asp Thr Ala
 35 40 45

Ile Gln Glu His Gln Thr Phe Cys Gln Leu Leu Gln Glu Gln Asn Ile
 50 55 60

Glu Val Val Gln Leu Thr Asp Leu Thr Ala Thr Thr Phe Asp Lys Ala
 65 70 75 80

Asn Ala Thr Ala Gln Asn Gln Phe Ile Glu Thr Trp Leu Asp Gln Ala
 85 90 95

Glu Pro Lys Leu Thr Pro Glu His Arg Lys Val Ala Lys Gln Tyr Leu
 100 105 110

Leu Glu Gln Lys Ala Lys Ser Thr Leu Ser Met Val Arg Ser Met Met
 115 120 125

Gly Gly Ile Asp Lys Arg Lys Val Ala Ala Ala Asn Thr Ile Asn Gly
 130 135 140

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Asp Phe Leu Val Asp Pro Met Pro Asn Leu Tyr Phe Thr Arg Asp Pro
 145 150 155 160
 Phe Ala Ser Ile Gly His Gly Ile Ser Ile Asn Arg Met Lys Tyr Leu
 165 170 175
 Thr Arg Arg Arg Glu Thr Leu Phe Ala Ser Phe Ile Phe Ala Asn His
 180 185 190
 Pro Ile Ile Ala Ala Arg Lys Phe Tyr Phe Lys Pro Ile Asp Met Gly
 195 200 205
 Thr Ile Glu Gly Gly Asp Ile Phe Val Tyr Asp Gln Gln Thr Val Val
 210 215 220
 Met Gly Leu Ser Glu Arg Thr Thr Glu Ala Ala Ile Asn Val Leu Ala
 225 230 235 240
 Lys Lys Ile Gln Gln Asp Ser Ser Thr Ser Phe Lys Arg Ile Phe Val
 245 250 255
 Ile Asn Val Pro Gln Leu Pro Asn Leu Met His Leu Asp Thr Trp Leu
 260 265 270
 Thr Met Leu Asp Arg Asn Lys Phe Leu Tyr Ser Pro Asn Met Leu Ala
 275 280 285
 Val Leu Lys Ala Trp Arg Ile Asp Phe Thr Asp Pro Ala Leu Lys Trp
 290 295 300
 Asn Glu Ile Ala Gly Asp Leu Ser Thr Ile Leu His Thr Ile Ile Gly
 305 310 315 320
 Gln Lys Pro Met Leu Ile Pro Ile Ala Gly Ala Asp Ala Asn Gln Thr
 325 330 335
 Glu Ile Asp Ile Glu Thr His Phe Asp Gly Thr Asn Tyr Leu Thr Ile
 340 345 350
 Ala Pro Ser Val Val Val Gly Tyr Ala Arg Asn Lys Leu Thr His Gln
 355 360 365
 Thr Leu Glu Ala Ala Gly Val Lys Val Ile Ala Phe Lys Gly Asn Gln
 370 375 380
 Leu Ser Leu Gly Met Gly Ser Ala Arg Cys Met Ser Met Pro Leu Val

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385 390 395 400

Arg Lys Pro Leu

<210> 27
 <211> 414
 <212> PRT
 <213> Mycoplasma sp.

<400> 27

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Leu Leu His Arg Pro Gly Asn Glu Leu Leu Asn Leu Thr Pro Asp Thr
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Leu Ser Arg Leu Leu Phe Asp Asp Ile Pro Tyr Leu Pro Asp Ala Ile
 35 40 45

Lys Glu His Asp Glu Phe Ala Asp Ala Leu Arg Ala Asn Gly Val Glu
 50 55 60

Val Val Tyr Leu Glu Asn Leu Met Ala Asp Val Leu Asp Leu Ser Asp
 65 70 75 80

Glu Ile Arg Asp Lys Phe Ile Lys Gln Phe Ile Tyr Glu Ala Gly Ile
 85 90 95

Arg Thr Pro Lys Tyr Lys Tyr Leu Val Phe Asp Tyr Leu Asp Gln Ile
 100 105 110

Thr Asn Ser Lys Lys Leu Val Leu Lys Thr Met Glu Gly Ile Gln Ile
 115 120 125

Ser Asp Ile Pro Arg Arg Lys Arg Glu Ile Glu Lys Ser Leu Val Asp
 130 135 140

Leu Ile Glu Thr Glu Asp Glu Phe Ile Ala Asp Pro Met Pro Asn Leu
 145 150 155 160

Tyr Phe Thr Arg Asp Pro Phe Ala Ser Val Gly Glu Gly Ile Ser Leu
 165 170 175

Asn Lys Met Tyr Ser Val Thr Arg Asn Arg Glu Thr Ile Tyr Ala Glu
 180 185 190

Tyr Ile Phe Lys Tyr His Pro Asp Tyr Lys Asp Gln Ala Arg Leu Tyr

195 POLA_005_01wo_SeqList_ST25
200 205

Tyr Asp Arg Tyr Asn Pro Tyr His Ile Glu Gly Gly Asp Val Leu Asn
210 215 220

Ile Asn Asp His Val Leu Ala Ile Gly Ile Ser Gln Arg Thr Thr Ala
225 230 235 240

Glu Ala Ile Asp Gln Ile Ala Lys Asn Leu Phe Lys Asp Pro Glu Cys
245 250 255

Lys Ile Asp Thr Ile Leu Ala Phe Asn Ile Pro Glu Ser Arg Ala Phe
260 265 270

Met His Leu Asp Thr Val Phe Thr Gln Val Asp Tyr Asp Lys Phe Thr
275 280 285

Tyr His Pro Gly Ile Met Gly Thr Leu Gln Val Phe Glu Ile Thr Glu
290 295 300

Gly Asp Asp Pro Asn Ser Asp Glu Asp Leu Thr Val Thr Glu Ile Asn
305 310 315 320

Ala Pro Leu Glu Glu Ile Leu Thr Lys Tyr Val Gly Arg Lys Val Thr
325 330 335

Leu Ile Pro Cys Ala Gly Gly Asp Lys Val Ser Ala Glu Arg Glu Gln
340 345 350

Trp Asn Asp Gly Ser Asn Thr Leu Cys Ile Ala Pro Gly Val Val Val
355 360 365

Val Tyr Asp Arg Asn Asn Leu Thr Asn Ala Val Leu Arg Ser Tyr Gly
370 375 380

Leu Lys Val Ile Glu Ile His Gly Ala Glu Leu Ser Arg Gly Arg Gly
385 390 395 400

Gly Pro Arg Cys Met Ser Met Pro Leu Val Arg Glu Asp Ile
405 410

<210> 28
<211> 408
<212> PRT
<213> Mycoplasma sp.

<400> 28

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

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Thr Ile Leu Ala Phe Lys Ile Pro Glu Cys Arg Ala Phe Met His Leu
 260 265 270

Asp Thr Val Phe Thr Gln Ile Asp Ile Asp Lys Phe Thr Tyr His Pro
 275 280 285

Gly Ile Met Asp Thr Leu Glu Val Phe Glu Ile Thr Lys Asn Glu Asp
 290 295 300

Asp Leu Asp Glu Val Arg Val Ile Lys Lys Glu Gly Ser Leu Glu Asn
 305 310 315 320

Ile Leu Glu Glu Tyr Leu Gly Ile Asp Ile Thr Leu Ile Pro Cys Ala
 325 330 335

Gly Gly Asp Lys Ile Ala Ser Glu Arg Glu Gln Trp Asn Asp Gly Thr
 340 345 350

Asn Thr Leu Cys Ile Ala Pro Gly Val Val Val Val Tyr Asn Arg Asn
 355 360 365

Asn Ile Thr Asn Glu Val Leu Arg Glu Lys Gly Ile Lys Val Ile Glu
 370 375 380

Met Asn Ser Ala Glu Leu Ser Arg Gly Arg Gly Gly Pro Arg Cys Met
 385 390 395 400

Ser Met Pro Leu Glu Arg Glu Asp
 405