

6906065
SEQUENCE LISTING

<110> SERVIZIO GALEGO DE SAÚDE (SERGAS)
FUNDACIÓN PROFESOR NOVOA SANTOS

<120> LIVE ATTENUATED VACCINES

<130> 176949

<140> PCT/EP2014/071926
<141> 2014-10-13

<150> P201331504
<151> 2013-10-11

<150> 14382153.6
<151> 2014-04-25

<160> 50

<170> PatentIn version 3.5

<210> 1
<211> 288
<212> PRT
<213> Acinetobacter baumannii

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20 25 30

Met Ser Val Ala Ala Glu Ile Ala Lys Tyr Leu Pro Asn Glu Arg Ile
35 40 45

Val Tyr Tyr Ala Asp Thr Ala Tyr Val Pro Tyr Gly Pro Arg Ser Asp
50 55 60

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

Gln Gly Cys Lys Ile Ala Val Val Ala Cys Asn Thr Ala Ser Ala Phe
85 90 95

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

Gly Leu Val Pro Ala Leu Lys Pro Ala Val Leu Gln Thr Arg Ser Lys
115 120 125

Val Val Ala Val Leu Ala Thr Pro Ala Thr Phe Arg Gly Gln Leu Ile
130 135 140

Lys Asp Val Val Glu Lys Phe Ala Val Pro Ala Gly Val Lys Val Met
145 150 155 160

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Thr Leu Thr Ser Leu Glu Leu Val Pro Cys Val Glu Ala Gly Gln Gln
165 170 175

Met Ser Pro Val Cys Leu Asn Ala Leu Arg Glu Val Leu Gln Pro Ala
180 185 190

Val Glu Gln Gly Ala Asp Tyr Leu Val Leu Gly Cys Thr His Tyr Pro
195 200 205

Phe Leu Asn Glu Ala Ile His His Leu Phe Asp Asn Gln Phe Thr Leu
210 215 220

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

Lys Asn Glu Leu Leu Cys Asp Gln Ile Arg Gln Asn Val Ala Arg Ile
245 250 255

Glu Cys Tyr Val Ser Gly Asn Asn Ala Asp Ala Leu Gln Pro Val Leu
260 265 270

Gln Asn Met Ile Pro Gln Glu Leu Thr Trp Thr Leu His Asn Leu Ser
275 280 285

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<213> Acinetobacter baumannii
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Gly Leu Ser Leu Phe Lys Tyr Ile Arg Gln Ala Leu Pro Asn Glu Asp
20 25 30

Ile Ile Tyr Phe Ala Asp Ser Lys Tyr Val Pro Tyr Gly Asp Arg Glu
35 40 45

Ser Asp Trp Ile Val Ser Arg Thr Thr His Leu Ile Ser Asn Leu Val
50 55 60

Thr His Gly Lys Cys Lys Ala Ile Val Ile Ala Cys Asn Thr Met Thr
65 70 75 80

Ala Val Ala Val Glu Thr Ile Arg Ala Gln Ile Asn Val Pro Leu Ile
85 90 95

Ala Ile Glu Pro Ala Val Lys Pro Ala Val Ala Met Thr Leu Ser Lys
100 105 110

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His Ile Ala Val Leu Ala Thr Ala Thr Thr Val Lys Gly Lys Asn Leu
115 120 125

Lys Ser Leu Ile Glu Thr Tyr Ala Gln Asp Ile Lys Val Ser Leu Val
130 135 140

Pro Cys Ile Gly Leu Ala Glu Lys Ile Glu Thr Gly Lys Ala His Thr
145 150 155 160

Ala Glu Val Lys Asp Tyr Leu Lys Asn Ile Leu Ala Pro Leu Val Glu
165 170 175

Gln Lys Val Asp Thr Ile Ile Leu Gly Cys Thr His Tyr Pro Phe Val
180 185 190

Ser Asp Thr Ile Gln Glu Ile Val Gly Arg Asp Ile Gln Ile Ile Glu
195 200 205

Pro Ser Glu Ala Val Thr Ala Gln Leu Ile Arg Gln Leu Asn Gln Tyr
210 215 220

His Leu Ser Ser Glu Ser Pro Asn Glu Gly Asn His Ile Ile Trp Thr
225 230 235 240

Ser Ser Asp Pro Leu Glu Val Ala Asp Val Thr Phe Ser Leu Leu Gly
245 250 255

Thr Arg Leu Pro Val Glu Thr Thr Asp Phe
260 265

<210> 3
<211> 285
<212> PRT
<213> Escherichia coli
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Met Ala Thr Lys Leu Gln Asp Gly Asn Thr Pro Cys Leu Ala Ala Thr
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Pro Ser Glu Pro Arg Pro Thr Val Leu Val Phe Asp Ser Gly Val Gly
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Gly Leu Ser Val Tyr Asp Glu Ile Arg His Leu Leu Pro Asp Leu His
35 40 45

Tyr Ile Tyr Ala Phe Asp Asn Val Ala Phe Pro Tyr Gly Glu Lys Ser
50 55 60

Glu Ala Phe Ile Val Glu Arg Val Val Ala Ile Val Thr Ala Val Gln
65 70 75 80

Glu Arg Tyr Pro Leu Ala Leu Ala Val Val Ala Cys Asn Thr Ala Ser

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90

85

95

Thr Val Ser Leu₁₀₀ Pro Ala Leu Arg Glu₁₀₅ Lys Phe Asp Phe Pro₁₁₀ Val Val
Gly Val Val₁₁₅ Pro Ala Ile Lys Pro₁₂₀ Ala Ala Arg Leu Thr₁₂₅ Ala Asn Gly
Ile Val₁₃₀ Gly Leu Leu Ala Thr₁₃₅ Arg Gly Thr Val Lys₁₄₀ Arg Ser Tyr Thr
His Glu Leu Ile Ala Arg₁₅₀ Phe Ala Asn Glu Cys₁₅₅ Gln Ile Glu Met Leu₁₆₀
Gly Ser Ala Glu Met₁₆₅ Val Glu Leu Ala Glu₁₇₀ Ala Lys Leu His Gly₁₇₅ Glu
Asp Val Ser Leu₁₈₀ Asp Ala Leu Lys Arg₁₈₅ Ile Leu Arg Pro Trp₁₉₀ Leu Arg
Met Lys Glu₁₉₅ Pro Pro Asp Thr Val₂₀₀ Val Leu Gly Cys Thr₂₀₅ His Phe Pro
Leu Leu₂₁₀ Gln Glu Glu Leu Leu₂₁₅ Gln Val Leu Pro Glu₂₂₀ Gly Thr Arg Leu
Val₂₂₅ Asp Ser Gly Ala Ala₂₃₀ Ile Ala Arg Arg Thr₂₃₅ Ala Trp Leu Leu Glu₂₄₀
His Glu Ala Pro Asp₂₄₅ Ala Lys Ser Ala Asp₂₅₀ Ala Asn Ile Ala Phe₂₅₅ Cys
Met Ala Met Thr₂₆₀ Pro Gly Ala Glu Gln₂₆₅ Leu Leu Pro Val Leu₂₇₀ Gln Arg
Tyr Gly Phe₂₇₅ Glu Thr Leu Glu Lys₂₈₀ Leu Ala Val Leu Gly₂₈₅

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<212> PRT
<213> Pseudomonas aeruginosa

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Gly Leu Ser Val₂₀ Leu Arg Glu Ile Arg₂₅ Ala Arg Leu Pro Ser₃₀ Glu Ser
Leu Leu Tyr₃₅ Val Ala Asp Asn Ala₄₀ His Val Pro Tyr Gly₄₅ Glu Lys Ser

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Ala Glu Tyr Ile Arg Glu Arg Cys Glu Arg Ile Gly Asp Phe Leu Leu
50 55 60

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

Ala Ala Ala Ala Glu Leu Arg Glu Arg Tyr Pro Gln Val Pro Leu Val
85 90 95

Ala Met Glu Pro Ala Val Lys Pro Ala Ala Ala Ala Thr Arg Asn Gly
100 105 110

Arg Val Gly Val Leu Ala Thr Thr Gly Thr Leu Lys Ser Ala Arg Phe
115 120 125

Ala Ala Leu Leu Asp Arg Phe Ala Ser Asp Val Gln Val Phe Thr Gln
130 135 140

Pro Cys Pro Gly Leu Val Glu Arg Ile Glu Ala Gly Asp Leu Tyr Gly
145 150 155 160

Pro Gln Thr Arg Ala Leu Leu Glu Arg Leu Leu Ala Pro Ile Leu Glu
165 170 175

Gln Gly Cys Asp Thr Leu Ile Leu Gly Cys Thr His Tyr Pro Phe Val
180 185 190

Lys Pro Leu Leu Ala Glu Leu Ile Pro Ala Glu Met Ala Val Ile Asp
195 200 205

Thr Gly Ala Ala Val Ala Arg Gln Leu Glu Arg Val Leu Ser Ala Arg
210 215 220

Ala Leu Leu Ala Ser Gly Gln Ala Ala Thr Pro Arg Phe Trp Thr Ser
225 230 235 240

Ala Leu Pro Glu Glu Met Glu Arg Ile Leu Pro Ile Leu Trp Gly Ser
245 250 255

Pro Glu Ser Val Gly Lys Leu Val Val
260 265

<210> 5

<211> 266

<212> PRT

<213> Staphylococcus aureus

<400> 5

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

Leu Gly Asp Ile Gly Arg Cys Pro Tyr Gly Pro Arg Pro Gly Glu Gln
35 40 45

Val Lys Gln Tyr Thr Val Glu Ile Ala Arg Lys Leu Met Glu Phe Asp
50 55 60

Ile Lys Met Leu Val Ile Ala Cys Asn Thr Ala Thr Ala Val Ala Leu
65 70 75 80

Glu Tyr Leu Gln Lys Thr Leu Ser Ile Pro Val Ile Gly Val Ile Glu
85 90 95

Pro Gly Ala Arg Thr Ala Ile Met Thr Thr Arg Asn Gln Asn Val Leu
100 105 110

Val Leu Gly Thr Glu Gly Thr Ile Lys Ser Glu Ala Tyr Arg Thr His
115 120 125

Ile Lys Arg Ile Asn Pro His Val Glu Val His Gly Val Ala Cys Pro
130 135 140

Gly Phe Val Pro Leu Val Glu Gln Met Arg Tyr Ser Asp Pro Thr Ile
145 150 155 160

Thr Ser Ile Val Ile His Gln Thr Leu Lys Arg Trp Arg Asn Ser Glu
165 170 175

Ser Asp Thr Val Ile Leu Gly Cys Thr His Tyr Pro Leu Leu Tyr Lys
180 185 190

Pro Ile Tyr Asp Tyr Phe Gly Gly Lys Lys Thr Val Ile Ser Ser Gly
195 200 205

Leu Glu Thr Ala Arg Glu Val Ser Ala Leu Leu Thr Phe Ser Asn Glu
210 215 220

His Ala Ser Tyr Thr Glu His Pro Asp His Arg Phe Phe Ala Thr Gly
225 230 235 240

Asp Pro Thr His Ile Thr Asn Ile Ile Lys Glu Trp Leu Asn Leu Ser
245 250 255

Val Asn Val Glu Arg Ile Ser Val Asn Asp
260 265

<210> 6
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<213> Staphylococcus aureus

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

Val Asn Asp Gly Lys Val Gly Pro Ile Thr Arg Gln Leu Gln Glu Gly
 260 265 270

Phe Glu Lys Tyr Ile Glu Ser His Ser Ile
 275 280

<210> 7
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<220>
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<210> 8
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<210> 9
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<210> 10
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<210> 14
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<210> 17
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<210> 19
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<210> 31
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<223> murIUP(NotI)R

<400> 32
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<223> murIDOWN(BglII)R

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<220>
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 <212> DNA
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 <223> datUP(NotI)R
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<210> 43
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<210> 44
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 <400> 44
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<210> 45
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 <400> 45
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<210> 46
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<220>
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agttgacgtg taattgggcc 20

<210> 47
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gtcatgggtg acgtgacaac 20

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