

LT109W01-2016-05-26-SequenceListing
SEQUENCE LISTING

<110> LanzaTech New Zealand Limited
<120> GENETICALLY ENGINEERED MICROORGANISMS FOR THE PRODUCTION OF
CHORISMATE-DERIVED PRODUCTS
<130> LT109W01
<150> US 62/167,101
<151> 2015-05-27
<160> 11
<170> PatentIn version 3.5
<210> 1
<211> 165
<212> PRT
<213> Escherichia coli
<400> 1

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Asp Ser Met Thr Lys Arg Phe Glu Gln Gln Gly Lys Thr Val Ser Val
35 40 45

Thr Met Ile Arg Glu Gly Phe Val Glu Gln Asn Glu Ile Pro Glu Glu
50 55 60

Leu Pro Leu Leu Pro Lys Glu Ser Arg Tyr Trp Leu Arg Glu Ile Leu
65 70 75 80

Leu Cys Ala Asp Gly Glu Pro Trp Leu Ala Gly Arg Thr Val Val Pro
85 90 95

Val Ser Thr Leu Ser Gly Pro Glu Leu Ala Leu Gln Lys Leu Gly Lys
100 105 110

Thr Pro Leu Gly Arg Tyr Leu Phe Thr Ser Ser Thr Leu Thr Arg Asp
115 120 125

Phe Ile Glu Ile Gly Arg Asp Ala Gly Leu Trp Gly Arg Arg Ser Arg
130 135 140

Leu Arg Leu Ser Gly Lys Pro Leu Leu Leu Thr Glu Leu Phe Leu Pro
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Ala Ser Pro Leu Tyr
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<211> 273
<212> DNA
<213> Escherichia coli

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<211> 476
<212> PRT
<213> Pseudomonas aeruginosa

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35 40 45
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50 55 60
Pro Glu Leu Ala Phe Phe Ala Trp Gly Cys Ala Leu Glu Leu Gln Gly
65 70 75 80
His Gly Glu Gln Arg Phe Ala Arg Ile Glu Glu Asn Trp Gln Leu Leu
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Cys Ala Asp Ala Val Val Glu Gly Pro Leu Ala Pro Arg Leu Cys Gly
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Gly Phe Arg Phe Asp Pro Arg Gly Pro Arg Glu Glu His Trp Gln Ala
115 120 125
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Gly Glu Arg Tyr Arg Val Leu Cys Gln His Leu Ala Lys Pro Gly Glu
145 150 155 160
Asp Ala Leu Ala Leu Ala Ala Tyr His Cys Ser Ala Leu Leu Arg Leu
165 170 175
Arg Gln Pro Ala Arg Arg Arg Pro Ser Gly Pro Thr Ala Gly Ala Gln

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Gly Asp Ala Ser Ala Gln Glu Arg Arg Gln Trp Glu Ala Lys Val Ser
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Asp Ala Val Ser Ser Val Arg Gln Gly Arg Phe Gly Lys Val Val Leu
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Ala Arg Thr Gln Ala Arg Pro Leu Gly Asp Ile Glu Pro Trp Gln Val
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Arg Arg Gly Asn Ala Cys Phe Leu Gly Ala Ser Pro Glu Arg Leu Val
260 265 270

Arg Ile Arg Ala Gly Glu Ala Leu Thr His Ala Leu Ala Gly Thr Ile
275 280 285

Ala Arg Gly Gly Asp Ala Gln Glu Asp Ala Arg Leu Gly Gln Ala Leu
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Leu Asp Ser Ala Lys Asp Arg His Glu His Gln Leu Val Val Glu Ala
305 310 315 320

Ile Arg Thr Ala Leu Glu Pro Phe Ser Glu Val Leu Glu Ile Pro Asp
325 330 335

Ala Pro Gly Leu Lys Arg Leu Ala Arg Val Gln His Leu Asn Thr Pro
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Ala Leu His Pro Thr Pro Ala Val Gly Gly Tyr Pro Arg Ser Ala Ala
370 375 380

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

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<213> Pseudomonas aeruginosa

<400> 5

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Met Asp Tyr Val Lys Ala Ala Ser Arg Phe Lys Ala Ser Glu Ala Ala
35 40 45

Ile Pro Ala Pro Glu Arg Val Ala Ala Met Leu Pro Glu Arg Ala Arg
50 55 60

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

Gly Asn Asp Asp Arg Leu Leu Val Val Ile Gly Pro Cys Ser Ile His
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50

55

60

Asp Pro Val Ala Ala Lys Glu Tyr Ala Thr Arg Leu Leu Ala Leu Arg
65 70 75 80

Glu Glu Leu Lys Asp Glu Leu Glu Ile Val Met Arg Val Tyr Phe Glu
85 90 95

Lys Pro Arg Thr Thr Val Gly Trp Lys Gly Leu Ile Asn Asp Pro His
100 105 110

Met Asp Asn Ser Phe Gln Ile Asn Asp Gly Leu Arg Ile Ala Arg Lys
115 120 125

Leu Leu Leu Asp Ile Asn Asp Ser Gly Leu Pro Ala Ala Gly Glu Phe
130 135 140

Leu Asp Met Ile Thr Pro Gln Tyr Leu Ala Asp Leu Met Ser Trp Gly
145 150 155 160

Ala Ile Gly Ala Arg Thr Thr Glu Ser Gln Val His Arg Glu Asp Ala
165 170 175

Ser Gly Leu Ser Cys Pro Val Gly Phe Lys Asn Gly Thr Asp Gly Thr
180 185 190

Ile Lys Val Ala Ile Asp Ala Ile Asn Ala Ala Gly Ala Pro His Cys
195 200 205

Phe Leu Ser Val Thr Lys Trp Gly His Ser Ala Ile Val Asn Thr Ser
210 215 220

Gly Asn Gly Asp Cys His Ile Ile Leu Arg Gly Gly Lys Glu Pro Asn
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Tyr Ser Ala Lys His Val Ala Glu Val Lys Glu Gly Leu Asn Lys Ala
245 250 255

Gly Leu Pro Ala Gln Val Met Ile Asp Phe Ser His Ala Asn Ser Ser
260 265 270

Lys Gln Phe Lys Lys Gln Met Asp Val Cys Ala Asp Val Cys Gln Gln
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Ile Ala Gly Gly Glu Lys Ala Ile Ile Gly Val Met Val Glu Ser His
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Leu Val Glu Gly Asn Gln Ser Leu Glu Ser Gly Glu Pro Leu Ala Tyr
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<213> Escherichia coli

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<212> DNA
<213> Artificial sequence

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

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Leu Asn Met Thr Lys Ile Glu Ser Arg Pro Ile Ile Asn Lys Ser Trp
 325 330 335

Gln Tyr Phe Phe Tyr Ile Asp Phe Asn Gly Asn Ile Met Asp Lys Asp
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Thr Arg Tyr Ala Leu Asn Gly Ile Glu Glu Glu Ser Ala Tyr Phe Lys
 355 360 365

Leu Leu Gly Asn Tyr Lys Gly Asp Cys Phe
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