

SEQUENCE LISTING

<110> Forschungszentrum Juelich GmbH

<120> Herstellung von 3,4-Dihydroxybenzoat aus D-Xylose mit corynformen Bakterien

<130> PT1.2915

<160> 83

<170> PatentIn version 3.5

<210> 1

<211> 475

<212> PRT

<213> Corynebacterium glutamicum

<400> 1

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

Lys Trp Val Arg Glu Ala Ala Glu Lys Thr Gly Arg Ala Val Gly Ile
50 55 60

Leu Ala Asp Leu Gln Gly Pro Lys Ile Arg Leu Gly Arg Phe Thr Asp
65 70 75 80

Gly Ala Thr Val Trp Glu Asn Gly Glu Thr Ile Arg Ile Thr Val Asp
85 90 95

Asp Val Glu Gly Thr His Asp Arg Val Ser Thr Thr Tyr Lys Asn Leu
100 105 110

Ala Lys Asp Ala Lys Pro Gly Asp Arg Leu Leu Val Asp Asp Gly Lys
115 120 125

Val Gly Leu Val Cys Val Ser Val Glu Gly Asn Asp Val Ile Cys Glu
130 135 140

Val Val Glu Gly Gly Pro Val Ser Asn Asn Lys Gly Val Ser Leu Pro
145 150 155 160

Gly Met Asp Ile Ser Val Pro Ala Leu Ser Glu Lys Asp Ile Arg Asp
165 170 175

Leu Arg Phe Ala Leu Lys Leu Gly Val Asp Phe Ile Ala Leu Ser Phe
180 185 190

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

Glu Gly Arg Arg Val Pro Val Ile Ala Lys Leu Glu Lys Pro Glu Ala
210 215 220

Val Thr Ser Leu Glu Pro Ile Val Leu Ala Phe Asp Ala Val Met Val
225 230 235 240

Ala Arg Gly Asp Leu Gly Val Glu Val Pro Leu Glu Glu Val Pro Leu
245 250 255

Val Gln Lys Arg Ala Ile Gln Ile Ala Arg Glu Asn Ala Lys Pro Val
260 265 270

Ile Val Ala Thr Gln Met Leu Asp Ser Met Ile Glu Asn Ser Arg Pro
275 280 285

Thr Arg Ala Glu Ala Ser Asp Val Ala Asn Ala Val Leu Asp Gly Ala
290 295 300

Asp Ala Val Met Leu Ser Gly Glu Thr Ser Val Gly Lys Asp Pro His
305 310 315 320

Asn Val Val Arg Thr Met Ser Arg Ile Val Arg Phe Ala Glu Thr Asp
325 330 335

Gly Arg Val Pro Asp Leu Thr His Ile Pro Arg Thr Lys Arg Gly Val
340 345 350

Ile Ser Tyr Ser Ala Arg Asp Ile Ala Glu Arg Leu Asn Ala Arg Ala
355 360 365

Leu Val Ala Phe Thr Thr Ser Gly Asp Thr Ala Lys Arg Val Ala Arg
370 375 380

Leu His Ser His Leu Pro Leu Leu Val Phe Thr Pro Asn Glu Ala Val
385 390 395 400

Arg Ser Glu Leu Ala Leu Thr Trp Gly Ala Thr Thr Phe Leu Cys Pro
405 410 415

Pro Val Ser Asp Thr Asp Asp Met Met Arg Glu Val Asp Arg Ala Leu
420 425 430

Leu Ala Met Pro Glu Tyr Asn Lys Gly Asp Met Met Val Val Val Ala
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465 470 475

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<211> 446

<212> PRT

<213> Xanthomonas campestris

<400> 2

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Lys Val Tyr Asp Ala Asn Lys Gln Val Ala Gly Lys Thr Met Ala Glu
35 40 45

His Leu Arg Phe Ala Val Ala Tyr Trp His Ser Phe Cys Gly Asn Gly
50 55 60

Ala Asp Pro Phe Gly Pro Gly Thr Arg Ala Tyr Pro Trp Asp Val Gly
65 70 75 80

Asn Thr Ala Leu Ala Arg Ala Glu Ala Lys Ser Asp Ala Ala Phe Glu
85 90 95

Phe Phe Thr Lys Leu Gly Val Pro Tyr Tyr Cys Phe His Asp Ile Asp
100 105 110

Leu Ala Pro Asp Ala Asp Asp Ile Gly Glu Tyr Glu Asn Asn Leu Lys
115 120 125

His Met Val Gly Ile Ala Lys Gln Arg Gln Ala Asp Thr Gly Val Lys
130 135 140

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

Gly Ala Ser Thr Asn Pro Asp Phe Asn Val Val Ala Arg Ala Ala Val
165 170 175

Gln Val Lys Ala Ala Ile Asp Ala Thr Val Glu Leu Gly Gly Glu Asn
180 185 190

Tyr Val Phe Trp Gly Gly Arg Glu Gly Tyr Ala Cys Leu His Asn Thr
195 200 205

Gln Met Lys Arg Glu Gln Asp Asn Met Ala Arg Phe Leu Thr Leu Ala
210 215 220

Arg Asp Tyr Gly Arg Ala Ile Gly Phe Thr Gly Asn Phe Leu Ile Glu
225 230 235 240

Pro Lys Pro Met Glu Pro Met Lys His Gln Tyr Asp Phe Asp Ser Ala
245 250 255

Thr Val Ile Gly Phe Leu Arg Gln His Gly Leu Asp Gln Asp Phe Lys
260 265 270

Leu Asn Ile Glu Ala Asn His Ala Thr Leu Ser Gly His Ser Phe Glu

275

280

285

His Asp Leu Gln Val Ala Ser Asp Ala Gly Leu Leu Gly Ser Ile Asp
290 295 300

Ala Asn Arg Gly Asn Pro Gln Asn Gly Trp Asp Thr Asp Gln Phe Pro
305 310 315 320

Thr Asp Leu Tyr Asp Thr Val Gly Ala Met Leu Val Val Leu Arg Gln
325 330 335

Gly Gly Leu Ala Pro Gly Gly Leu Asn Phe Asp Ala Lys Val Arg Arg
340 345 350

Glu Ser Ser Asp Pro Gln Asp Leu Phe Leu Ala His Ile Gly Gly Met
355 360 365

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

Ser Pro Leu Glu Thr Trp Arg Ala Gln Arg Tyr Ala Ser Phe Asp Ser
385 390 395 400

Gly Ala Gly Ala Asp Phe Ala Asn Gly Thr Ser Thr Leu Ala Asp Leu
405 410 415

Ala Lys Tyr Ala Ala Gly Lys Gly Glu Pro Thr Gln Val Ser Gly Arg
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Gln Glu Ala Tyr Glu Asn Leu Ile Asn Gln Tyr Leu Thr Arg
435 440 445

<210> 3

<211> 460

<212> PRT

<213> Corynebacterium glutamicum

<400> 3

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20 25 30

Ser His Pro Ser Gly Ser Glu Val Asp Pro Arg Ala Trp Ile Ala Ala
35 40 45

Leu Asp Gln Ala Thr Glu Gly Leu Leu Glu Arg Ala Asp Ala Val Ser
50 55 60

Ile Ala Gly Gln Gln His Gly Met Val Ala Leu Asp Glu Asn Asp Glu
65 70 75 80

Ile Val Arg Pro Ala Leu Leu Trp Asn Asp Thr Arg Ser Ala Gln Ala
85 90 95

Ala Leu Asp Leu Asn Glu Glu Ile Gly Gly Asp Gln Ala Ala Val Asp
100 105 110

Ala Thr Gly Ser Val Tyr Val Ala Ser Leu Thr Ala Thr Lys Met Arg
115 120 125

Trp Met Arg Asp His Glu Pro Glu Asn Ala Ala Arg Thr Ala Ser Val
130 135 140

Met Leu Pro His Asp Phe Leu Thr Trp His Leu Met Gly Arg Gly Arg
145 150 155 160

Lys Val Thr Asp His Gly Asp Ala Ser Gly Thr Gly Tyr Tyr Ser Thr
165 170 175

Arg Asp Arg Ala Trp Arg Thr Asp Leu Ala Ala Leu Ala Leu Gly His
180 185 190

Glu Val Glu Leu Pro Glu Leu Leu Ala Pro Asn Ala Ile Ala Gly Thr
195 200 205

Thr Pro Gly Gly Val Lys Val Ala Ala Gly Thr Gly Asp Asn Ala Ala
210 215 220

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

Gly Thr Ser Gly Val Ala Gly Met Thr Val Gln His Ser Val His Asp
245 250 255

Pro Ser Gly Leu Val Thr Gly Phe Ala Asp Ala Thr Gly Ala Tyr Phe
260 265 270

Pro Leu Ala Cys Thr Leu Asn Gly Ala Pro Val Leu Glu Phe Gly Arg
275 280 285

Arg Ile Leu Gly Val Glu Trp Glu Glu Phe Asp Ala Leu Ala Leu Ala
290 295 300

Ala Gln Pro Gly Ser Gly Gly Val Thr Leu Gln Pro Tyr Leu Glu Gly
305 310 315 320

Glu Arg Thr Pro Asn Arg Pro Ala Ala Arg Gly Val Leu Ala Gly Leu
325 330 335

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

Leu Leu Leu Ala Leu Asp Asp Ala Val Thr Ala Leu Val Glu Ala Thr
355 360 365

Gly Val Pro Val Gln Arg Ile Gln Leu Ile Gly Gly Gly Ala Arg Ser
370 375 380

Gln Ala Val Arg Glu Ile Ala Pro Glu Ile Phe Gly His Glu Ile Val
385 390 395 400

Val Pro Glu Pro Ala Glu Tyr Val Ala Leu Gly Ala Ala Arg Gln Ala
405 410 415

Ala Trp Ala Leu Ser Gly Glu Ala Thr Pro Pro Gln Trp Pro Thr Pro
420 425 430

Gly Ser Asp Pro His Arg Ala Pro Lys Asn Thr Glu Leu Ser Thr Arg
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Tyr Ala Lys Leu Arg Ala Ala Thr Gln Gly Trp Tyr
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ggtgacatga tggttgttgt tgcaggttcc cctcctggtg ttaccggtaa caccaacatg 1380
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<212> DNA

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<213> Corynebacterium glutamicum

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cgtgagattg cccctgagat ttdggccat gagatttdtg ttdcagaacc cgctgaatat	1260
gtggcgtdtg gtgcagctcg tcaggcggca tgggcgtgt cgggtgaggc caccgcccg	1320

cagtggccaa ctcccgttc cgatccgcac cgcgcaccta aaaacactga gctgagcacg 1380

cgttatgcga agctgcgtgc tgcaacgcag ggttggtact ag 1422

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<223> Primer

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<210> 8

<211> 23

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<210> 9

<211> 33

<212> DNA

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58

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<400> 37

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<223> Primer

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