

SEQUENCE LISTING

<110> Evonik Degussa GmbH

<120> Mikrobiologische Herstellung von 3-Hydroxyisobuttersäure

<130> DR82387

<160> 22

<170> PatentIn version 3.4

<210> 1

<211> 2214

<212> DNA

<213> *Corynebacterium glutamicum* ATCC 13032

<400> 1

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<211> 737

<212> PRT

<213> Corynebacterium glutamicum ATCC 13032

<400> 2

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35 40 45

Glu Ala Gln Ala Ala Gly His Pro Val Asp Ser Leu Pro Gly Gln Lys

50 55 60

Pro Phe Met Arg Gly Pro Tyr Pro Thr Met Tyr Thr Asn Gln Pro Trp
65 70 75 80

Thr Ile Arg Gln Tyr Ala Gly Phe Ser Thr Ala Ala Glu Ser Asn Ala
 85 90 95

Phe Tyr Arg Arg Asn Leu Ala Ala Gly Gln Lys Gly Leu Ser Val Ala
 100 105 110

Phe Asp Leu Ala Thr His Arg Gly Tyr Asp Ser Asp Asn Glu Arg Val
 115 120 125

Val Gly Asp Val Gly Met Ala Gly Val Ala Ile Asp Ser Ile Leu Asp
 130 135 140

Met Arg Gln Leu Phe Asp Gly Ile Asp Leu Ser Ser Val Ser Val Ser
145 150 155 160

Met Thr Met Asn Gly Ala Val Leu Pro Ile Leu Ala Phe Tyr Ile Val
 165 170 175

Ala Ala Glu Glu Gln Gly Val Gly Pro Glu Gln Leu Ala Gly Thr Ile
 180 185 190

Gln Asn Asp Ile Leu Lys Glu Phe Met Val Arg Asn Thr Tyr Ile Tyr
 195 200 205

Pro Pro Lys Pro Ser Met Arg Ile Ile Ser Asn Ile Phe Glu Tyr Thr
 210 215 220

Ser Leu Lys Met Pro Arg Phe Asn Ser Ile Ser Ile Ser Gly Tyr His
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Ile Gln Glu Ala Gly Ala Thr Ala Asp Leu Glu Leu Ala Tyr Thr Leu
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Ala Asp Gly Ile Glu Tyr Ile Arg Ala Gly Lys Glu Val Gly Leu Asp
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Val Asp Lys Phe Ala Pro Arg Leu Ser Phe Phe Trp Gly Ile Ser Met
275 280 285

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

Ala Leu Pro Thr Asp Phe Ser Ala Arg Ile Ala Arg Asn Thr Gln Leu
370 375 380

Leu Leu Gln Gln Glu Ser Gly Thr Val Arg Pro Val Asp Pro Trp Ala
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Gly Ser Tyr Tyr Val Glu Trp Leu Thr Asn Glu Leu Ala Asn Arg Ala
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Arg Lys His Ile Asp Glu Val Glu Glu Ala Gly Gly Met Ala Gln Ala
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Thr Ala Gln Gly Ile Pro Lys Leu Arg Ile Glu Glu Ser Ala Ala Arg
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Arg Tyr Val Ala Glu Glu Asp Glu Glu Ile Glu Val Leu Lys Val Asp
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Asn Thr Lys Val Arg Ala Glu Gln Leu Ala Lys Leu Ala Gln Leu Lys
485 490 495

Ala Glu Arg Asn Asp Ala Glu Val Lys Ala Ala Leu Asp Ala Leu Thr
500 505 510

Ala Ala Ala Arg Asn Glu His Lys Glu Pro Gly Asp Leu Asp Gln Asn
515 520 525

Leu Leu Lys Leu Ala Val Asp Ala Ala Arg Ala Lys Ala Thr Ile Gly
530 535 540

Glu Ile Ser Asp Ala Leu Glu Val Val Phe Gly Arg His Glu Ala Glu
545 550 555 560

Ile Arg Thr Leu Ser Gly Val Tyr Lys Asp Glu Val Gly Lys Glu Gly
565 570 575

Thr Val Ser Asn Val Glu Arg Ala Ile Ala Leu Ala Asp Ala Phe Glu
580 585 590

Ala Glu Glu Gly Arg Arg Pro Arg Ile Phe Ile Ala Lys Met Gly Gln
595 600 605

Asp Gly His Asp Arg Gly Gln Lys Val Val Ala Ser Ala Tyr Ala Asp
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Leu Gly Met Asp Val Asp Val Gly Pro Leu Phe Gln Thr Pro Ala Glu
625 630 635 640

Ala Ala Arg Ala Ala Val Asp Ala Asp Val His Val Val Gly Met Ser
645 650 655

Ser Leu Ala Ala Gly His Leu Thr Leu Leu Pro Glu Leu Lys Lys Glu
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675

680

685

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690 695 700

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<210> 3

<211> 1071

<212> DNA

<213> Sulfolobus tokodaii

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<210> 4

<211> 356

<212> PRT

<213> Sulfolobus tokodaii

<400> 4

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Ala Tyr Leu Ala Gly Lys Gly Ser Val Gly Lys Pro Tyr Gly Glu Val
35 40 45

Val Arg Trp Gln Thr Val Gly Gln Val Pro Lys Glu Ile Ala Asp Met
50 55 60

Glu Ile Lys Pro Thr Asp Pro Lys Leu Met Asp Asp Val Asp Ile Ile
65 70 75 80

Phe Ser Pro Leu Pro Gln Gly Ala Ala Gly Pro Val Glu Glu Gln Phe
85 90 95

Ala Lys Glu Gly Phe Pro Val Ile Ser Asn Ser Pro Asp His Arg Phe
100 105 110

Asp Pro Asp Val Pro Leu Leu Val Pro Glu Leu Asn Pro His Thr Ile
115 120 125

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

Val Thr Thr Pro Leu Cys Thr Ala Gln Gly Ala Ala Ile Pro Leu Gly
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Ala Ile Phe Lys Asp Tyr Lys Met Asp Gly Ala Phe Ile Thr Thr Ile
165 170 175

Gln Ser Leu Ser Gly Ala Gly Tyr Pro Gly Ile Pro Ser Leu Asp Val
180 185 190

Val Asp Asn Ile Leu Pro Leu Gly Asp Gly Tyr Asp Ala Lys Thr Ile
195 200 205

Lys Glu Ile Phe Arg Ile Leu Ser Glu Val Lys Arg Asn Val Asp Glu
210 215 220

Pro Lys Leu Glu Asp Val Ser Leu Ala Ala Thr Thr His Arg Ile Ala
225 230 235 240

Thr Ile His Gly His Tyr Glu Val Leu Tyr Val Ser Phe Lys Glu Glu
245 250 255

Thr Ala Ala Glu Lys Val Lys Glu Thr Leu Glu Asn Phe Arg Gly Glu
260 265 270

Pro Gln Asp Leu Lys Leu Pro Thr Ala Pro Ser Lys Pro Ile Ile Val
275 280 285

Met Asn Glu Asp Thr Arg Pro Gln Val Tyr Phe Asp Arg Trp Ala Gly
290 295 300

Asp Ile Pro Gly Met Ser Val Val Val Gly Arg Leu Lys Gln Val Asn
305 310 315 320

Lys Arg Met Ile Arg Leu Val Ser Leu Ile His Asn Thr Val Arg Gly
325 330 335

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Tyr Ile Glu Lys
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<211> 1293

<212> DNA

<213> Rhodobacter sphaeroides

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<212> PRT

<213> Rhodobacter sphaeroides

<400> 6

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20 25 30

Lys Glu Met Tyr Ala Trp Ala Ile Arg Arg Glu Arg His Gly Glu Pro
35 40 45

Asp Gln Ala Met Gln Ile Glu Val Val Glu Thr Pro Ser Ile Asp Ser
50 55 60

His Glu Val Leu Val Leu Val Met Ala Ala Gly Val Asn Tyr Asn Gly
65 70 75 80

Ile Trp Ala Gly Leu Gly Val Pro Val Ser Pro Phe Asp Gly His Lys
85 90 95

Gln Pro Tyr His Ile Ala Gly Ser Asp Ala Ser Gly Ile Val Trp Ala
100 105 110

Val Gly Asp Lys Val Lys Arg Trp Lys Val Gly Asp Glu Val Val Ile
115 120 125

His Cys Asn Gln Asp Asp Gly Asp Asp Glu Glu Cys Asn Gly Gly Asp
130 135 140

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

Gly Ser Phe Ala Gln Phe Thr Arg Val Gln Ala Gln Gln Leu Met Lys
165 170 175

Arg Pro Lys His Leu Thr Trp Glu Glu Ala Ala Cys Tyr Thr Leu Thr
180 185 190

Leu Ala Thr Ala Tyr Arg Met Leu Phe Gly His Lys Pro His Asp Leu
195 200 205

Lys Pro Gly Gln Asn Val Leu Val Trp Gly Ala Ser Gly Gly Leu Gly
210 215 220

Ser Tyr Ala Ile Gln Leu Ile Asn Thr Ala Gly Ala Asn Ala Ile Gly
225 230 235 240

Val Ile Ser Glu Glu Asp Lys Arg Asp Phe Val Met Gly Leu Gly Ala
245 250 255

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

Lys Val Asn Ser Pro Glu Tyr Asn Glu Trp Leu Lys Glu Ala Arg Lys
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Phe Gly Lys Ala Ile Trp Asp Ile Thr Gly Lys Gly Ile Asn Val Asp
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Met Val Phe Glu His Pro Gly Glu Ala Thr Phe Pro Val Ser Ser Leu
305 310 315 320

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Phe Asn Cys Thr Phe Asp Val Arg Tyr Met Trp Met His Gln Lys Arg
340 345 350

Leu Gln Gly Ser His Phe Ala Asn Leu Lys Gln Ala Ser Ala Ala Asn
355 360 365

Gln Leu Met Ile Glu Arg Arg Leu Asp Pro Cys Met Ser Glu Val Phe
370 375 380

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

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410

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Leu Arg Thr Phe Ala Asp Val Leu Glu Ala Gly Arg Lys Ala
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<211> 1233

<212> DNA

<213> *Pseudomonas aeruginosa*

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<212> DNA

<213> *Pseudomonas aeruginosa*

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<210> 9

<211> 924

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 9

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<210> 10
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 <212> DNA
 <213> *Acinetobacter calcoaceticus*

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