

B 8441 final DB.ST25
SEQUENCE LISTING

<110> BASF AG

<120> Method of reducing gene expression using modified codon usage

<130> B 8441 / DB

<150> EP 06122882.1

<151> 2006-10-24

<160> 22

<170> PatentIn version 3.3

<210> 1

<211> 2217

<212> DNA

<213> *Corynebacterium glutamicum*

<400> 1

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tcactcgctg gacgcattcct cgcccagttc ccagagcgcc tcaccgaaga tcagaaggta	180
ggcaacgcac tcgcagaact cggcgagctt gctaagactc ctgaagcaaa catcattaag	240
cttccaaaca tctccgcttc tgttccacag ctcaaggctg ctattaagga actgcaggac	300
cagggctacg acatcccaga actgcctgat aacgccacca ccgacgagga aaaagacatc	360
ctcgcacgct acaacgctgt taagggttcc gctgtgaacc cagtgtgctg tgaaggcaac	420
tctgaccgcc gcgcaccaat cgctgtcaag aactttgtta agaagttccc acaccgcatg	480
ggcgagtggc ctgcagattc caagaccaac gttgcaacca tggatgcaaa cgacttccgc	540
cacaacgaga agtccatcat cctcgacgct gctgatgaag ttcagatcaa gcacatcgca	600
gctgacggca ccgagaccat cctcaaggac agcctcaagc ttcttgaagg cgaagttcta	660
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gcaaaggcag aaggatcctt cttctccgca cacctgaagg ccaccatgat gaaggctctc	780
gacccaatca tcttcggcca cgctgtgctg gcttacttcg cagacgtttt cgcacagtac	840
ggtgagcagc tgctcgcagc tggcctcaac ggcgaaaacg gcctcgtctg aatcctctcc	900
ggcttgaggt ccctggacaa cggcgaagaa atcaaggctg cattcgagaa gggcttgga	960
gacggcccag acctggccat ggttaactcc gctcgcggca tcaccaacct gcatgtccct	1020
tccgatgtca tcgtggacgc ttccatgcca gcaatgattc gtacctccg ccacatgtgg	1080
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gtctaccaga ccgttatcga agactgccgc aagaacggcg cattcgatcc aaccaccatg	1200
ggtaccgtcc ctaacgttgg tctgatggct cagaaggctg aagagtacgg ctcccatgac	1260
aagaccttcc gcatcgaagc agacggtgtg gttcaggttg ttctctcaa cggcgacgtt	1320
ctcatcgagc acgacgttga ggcaaatgac atctggcgtg catgccaggt caaggatgcc	1380
ccaatccagg attgggtaaa gcttgctgtc acccgctccc gtctctccg aatgcctgca	1440

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gtgttctggt	tggatccaga	gcgcgcacac	gaccgcaacc	tggcttcctt	cgttgagaag	1500
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acccagctct	ccatcgaccg	catccgccgt	ggcgaggaca	ccatctctgt	caccggtaac	1620
gttctgcgtg	actacaacac	cgacctcttc	ccaatcctgg	agctgggcac	ctctgcaaag	1680
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aagttctggg	ctgacgagct	cgctgctcag	accgaggacg	cagatctggc	tgctaccttc	2040
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<210> 2
 <211> 2217
 <212> DNA
 <213> Artificial

<220>
 <223> Isocitrate Dehydrogenase, Corynebacterium glutamicum, ATG-GTG mutation in the first codon

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tcactcgctg	gacgcatcct cgcccagttc ccagagcgcc tcaccgaaga tcagaaggta 180
ggcaacgcac	tcgcagaact cggcgagctt gctaagactc ctgaagcaaa catcattaag 240
cttccaaaca	tctccgcttc tgttccacag ctcaaggctg ctattaagga actgcaggac 300
cagggctacg	acatcccaga actgcctgat aacgccacca ccgacgagga aaaagacatc 360
ctcgcacgct	acaacgctgt taagggttcc gctgtgaacc cagtgtgctg tgaaggcaac 420
tctgaccgcc	gcgcaccaat cgctgtcaag aactttgtta agaagttccc acaccgcatg 480
ggcgagtggg	ctgcagattc caagaccaac gttgcaacca tggatgcaaa cgacttccgc 540
cacaacgaga	agtccatcat cctcgacgct gctgatgaag ttcagatcaa gcacatcgca 600
gctgacggca	ccgagaccat cctcaaggac agcctcaagc ttcttgaagg cgaagttcta 660
gacggaaccg	ttctgtccgc aaaggcactg gacgcattcc ttctcgagca ggctcgctcg 720
gcaaaggcag	aaggatccct cttctccgca cacctgaagg ccaccatgat gaaggctctcc 780
gacccaatca	tcttcggcca cgttgtgctg gcttacttcg cagacgtttt cgcacagtac 840
ggtgagcagc	tgctcgcagc tggcctcaac ggcgaaaacg gcctcgctgc aatcctctcc 900

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ggcttggagt ccctggacaa cggcgaagaa atcaaggctg cattcgagaa gggcttggaa 960
gacggcccag acctggccat ggttaactcc gctcgcggca tcaccaacct gcatgtccct 1020
tccgatgtca tcgtggacgc ttccatgcca gcaatgattc gtacctccgg ccacatgtgg 1080
aacaaagacg accaggagca ggacaccctg gcaatcatcc cagactcctc ctacgctggc 1140
gtctaccaga ccgttatcga agactgccgc aagaacggcg cattcgatcc aaccaccatg 1200
ggtaccgtcc ctaacgttgg tctgatggct cagaaggctg aagagtacgg ctcccatgac 1260
aagaccttcc gcatcgaagc agacggtgtg gttcaggttg tttcctccaa cggcgacgtt 1320
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ccaatccagg attgggtaaa gcttgctgtc acccgctccc gtctctccgg aatgcctgca 1440
gtgttctggt tggatccaga gcgcgcacac gaccgcaacc tggcttccct cgttgagaag 1500
tacctggctg accacgacac cgagggcctg gacatccaga tcctctcccc tgttgaggca 1560
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aagtcttggg ctgacgagct cgctgctcag accgaggacg cagatctggc tgctaccttc 2040
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gttcaggggt gagcaactga ccttggtggc tactactccc ctaacgagga gaagctcacc 2160
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<210> 3
 <211> 1002
 <212> DNA
 <213> Artificial

<220>
 <223> Vectorinsert with Isocitrate Dehydrogenase, Corynebacterium glutamicum, ATG-GTG Mutation

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caacggccgc aagcacggtg aattgttgat ggaaaccctg gccctccacc atgaagaaac 180
agaagctgca gccacctccg aaggcgaact tgtgtgggag actcctgtgt tctccgccac 240
tggcgaacag atcacagaat ccaaccacg ttcaggcgac tactactgga ttgctggcga 300
aagtgggtgc gtgaccagca ttcgtcgatc tctagtgaag gagaaaggcc tcgaccgttc 360
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ccatagggcgc cagcaattag tagaactctg tattctaggt agctgaacaa aagagcccat	480
caaccaagga gactcgtggc taagatcatc tggacccgca cgcacgaagc accgctgctc	540
gcgacctact cgctgaagcc ggtcgtcgag gcatttgctg ctaccgcggg cattgaggtc	600
gagacccggg acatttcact cgctggacgc atcctcgccc agttcccaga gcgcctcacc	660
gaagatcaga aggtaggcaa cgcactcgca gaactcggcg agcttgctaa gactcctgaa	720
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gaggaaaaag acatcctcgc acgctacaac gctgttaagg gttccgctgt gaaccagtg	900
ctgcgtgaag gcaactctga ccgccgcgca ccaatcgctg tcaagaactt tgттаagaag	960
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<210> 4
 <211> 2217
 <212> DNA
 <213> Artificial

<220>
 <223> Isocitrate Dehydrogenase, Corynebacterium glutamicum, GGC
 ATT--->GGG ATA mutation in positions 32 and 33

<400> 4	
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tcactcgctg gacgcatcct cgcccagttc ccagagcgcc tcaccgaaga tcagaaggta	180
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cagggctacg acatcccaga actgcctgat aacgccacca ccgacgagga aaaagacatc	360
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cacaacgaga agtccatcat cctcgacgct gctgatgaag ttcatatcaa gcacatcgca	600
gctgacggca ccgagaccat cctcaaggac agcctcaagc ttcttgaagg cgaagttcta	660
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gacggcccag acctggccat ggttaactcc gctcgcggca tcaccaacct gcatgtccct	1020
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gtctaccaga ccgttatcga agactgccgc aagaacggcg cattcgatcc aaccaccatg	1200
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<210> 5
 <211> 1002
 <212> DNA
 <213> Artificial

<220>
 <223> Vectorinsert with Isocitrate Dehydrogenase, Corynebacterium glutamicum, GGC ATT--->GGG ATA mutation in positions 32 and 33

<400> 5	
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caacggccgc aagcacggtg aattgttgat ggaaaccctg gccctccacc atgaagaaac	180
agaagctgca gccacctccg aaggcgaact tgtgtgggag actcctgtgt tctccgccac	240
tggcgaacag atcacagaat ccaaccacg ttcaggcgac tactactgga ttgctggcga	300
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ccaagtggca ttcattgggt attggaaaca cggcgtttcc atgcggggct gaaactgcca	420
ccataggcgc cagcaattag tagaactctg tattctaggt agctgaacaa aagagcccat	480
caaccaagga gactcatggc taagatcatc tggacccgca cgcacgaagc accgctgctc	540
gcgacctact cgctgaagcc ggtcgtcgag gcatttgctg ctaccgcggg gatagaggtc	600

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gagacccggg acatttcact cgctggacgc atcctcgccc agttcccaga gcgcctcacc 660
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<210> 6
<211> 32
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide; Primer old 441

<400> 6
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<210> 7
<211> 32
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide; Primer old 442

<400> 7
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<210> 8
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide; Primer old 443

<400> 8
gagactcgtg gctaagatca tctg 24

<210> 9
<211> 24
<212> DNA
<213> Artificial

<220>
<223> oligonucleotide; Primer old 444

<400> 9
cagatgatct tagccacgag tctc 24

<210> 10
<211> 18
<212> DNA
<213> Artificial

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<220>
<223> oligonucleotide; Primer old 447

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<210> 11
<211> 18
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<220>
<223> oligonucleotide; Primer Old 448

<400> 11
cctctatccc cgcggtag 18

<210> 12
<211> 20
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<220>
<223> oligonucleotide; Primer BK1776

<400> 12
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<210> 13
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<220>
<223> oligonucleotide; Primer Old 450

<400> 13
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<210> 14
<211> 21
<212> DNA
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<220>
<223> oligonucleotide; Primer Old 471

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<212> DNA
<213> Artificial

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<223> plasmid pClik int sacB ICDH (ATG-GTG)

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