

PhoenixTemp28215.tmp.txt  
SEQUENCE LISTING

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<110>  ULB

<120>  HYPERPROLIFERATIVE RECOMBINANT CELL

<130>  ULBB 143

<160>  10

<170>  PatentIn version 3.3

<210>  1
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<212>  DNA
<213>  Escherichia coli

<220>
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<222>  (1)..(1446)
<223>  tldD

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Met Ser Leu Asn Leu Val Ser Glu Gln Leu Leu Ala Ala Asn Gly Leu
1          5          10          15

aaa cat cag gac ttg ttc gcg atc ctc ggt caa ctg gcc gaa cgt cgc      96
Lys His Gln Asp Leu Phe Ala Ile Leu Gly Gln Leu Ala Glu Arg Arg
          20          25          30

ctt gat tat ggc gat ctc tat ttt cag tcg agc tat cac gaa tcc tgg      144
Leu Asp Tyr Gly Asp Leu Tyr Phe Gln Ser Ser Tyr His Glu Ser Trp
          35          40          45

gtt tta gaa gac cgc att att aaa gat ggt tct tac aac atc gat cag      192
Val Leu Glu Asp Arg Ile Ile Lys Asp Gly Ser Tyr Asn Ile Asp Gln
          50          55          60

ggc gtt ggt gtg cgt gca atc agc ggt gaa aaa acc gga ttt gct tac      240
Gly Val Gly Val Arg Ala Ile Ser Gly Glu Lys Thr Gly Phe Ala Tyr
65          70          75          80

gct gac caa atc agc ctg ctg gcg ctg gaa cag agt gcg caa gcg gcg      288
Ala Asp Gln Ile Ser Leu Leu Ala Leu Glu Gln Ser Ala Gln Ala Ala
          85          90          95

cgc acc atc gtc cgt gat agt ggt gat ggt aaa gta cag acg ctg ggc      336
Arg Thr Ile Val Arg Asp Ser Gly Asp Gly Lys Val Gln Thr Leu Gly
          100          105          110

gcg gta gag cat agc ccg ttg tat acc tcg gta gat ccg ctg caa agc      384
Ala Val Glu His Ser Pro Leu Tyr Thr Ser Val Asp Pro Leu Gln Ser
          115          120          125

atg agc cgt gaa gag aag ctg gat atc ctg cgt cgc gtc gat aag gtt      432
Met Ser Arg Glu Glu Lys Leu Asp Ile Leu Arg Arg Val Asp Lys Val
          130          135          140

gcc cgc gaa gcg gac aag cgc gta cag gaa gtg act gcc agc ctc agt      480
Ala Arg Glu Ala Asp Lys Arg Val Gln Glu Val Thr Ala Ser Leu Ser
145          150          155          160

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## PhoenixTemp28215.tmp.txt

ggt gtc tat gaa tta att ttg gtt gcg gcc acc gac ggc acg cta gcg	528
Gly Val Tyr Glu Leu Ile Leu Val Ala Ala Thr Asp Gly Thr Leu Ala	
165 170 175	
gcg gat gtc cgt ccg ctg gtg cgt ctt tcc gtg agc gtt ctc gtc gaa	576
Ala Asp Val Arg Pro Leu Val Arg Leu Ser Val Ser Val Leu Val Glu	
180 185 190	
gaa gat ggc aaa cgc gaa cgc ggt gcc agt ggc ggc ggc ggt cgt ttt	624
Glu Asp Gly Lys Arg Glu Arg Gly Ala Ser Gly Gly Gly Gly Arg Phe	
195 200 205	
ggt tat gaa ttc ttc ctt gcc gat ctc gac ggc gaa gtc cgt gcg gat	672
Gly Tyr Glu Phe Phe Leu Ala Asp Leu Asp Gly Glu Val Arg Ala Asp	
210 215 220	
gca tgg gca aaa gaa gca gtg cgt atg gcg ctg gtc aat ctt tct gcc	720
Ala Trp Ala Lys Glu Ala Val Arg Met Ala Leu Val Asn Leu Ser Ala	
225 230 235 240	
gtt gct gca cca gcg ggc acc atg ccg gta gta ctt ggc gca ggt tgg	768
Val Ala Ala Pro Ala Gly Thr Met Pro Val Val Leu Gly Ala Gly Trp	
245 250 255	
ccg ggc gtg ctg ttg cat gaa gcg gtt ggt cac ggt ctg gaa ggc gac	816
Pro Gly Val Leu Leu His Glu Ala Val Gly His Gly Leu Glu Gly Asp	
260 265 270	
ttc aac cgc cgt ggc act tca gta ttt agt gga cag gtc ggg gag ctg	864
Phe Asn Arg Arg Gly Thr Ser Val Phe Ser Gly Gln Val Gly Glu Leu	
275 280 285	
gtg gct tca gaa ctg tgt acc gtg gtt gat gat ggc acg atg gtc gat	912
Val Ala Ser Glu Leu Cys Thr Val Val Asp Asp Gly Thr Met Val Asp	
290 295 300	
cgc cga ggt tcg gtg gcg att gat gac gaa ggt acg cca ggc cag tac	960
Arg Arg Gly Ser Val Ala Ile Asp Asp Glu Gly Thr Pro Gly Gln Tyr	
305 310 315 320	
aac gtg ctg att gag aac ggc att ctg aaa ggc tac atg cag gat aaa	1008
Asn Val Leu Ile Glu Asn Gly Ile Leu Lys Gly Tyr Met Gln Asp Lys	
325 330 335	
ctc aac gcg cgt ttg atg ggg atg acg ccg act ggc aac ggt cgc cgt	1056
Leu Asn Ala Arg Leu Met Gly Met Thr Pro Thr Gly Asn Gly Arg Arg	
340 345 350	
gaa tcc tac gcc cat ctg ccc atg ccg cgt atg acc aac acc tat atg	1104
Glu Ser Tyr Ala His Leu Pro Met Pro Arg Met Thr Asn Thr Tyr Met	
355 360 365	
ctg ccg ggt aaa tcg acc ccg cag gaa att att gaa tcc gtt gag tac	1152
Leu Pro Gly Lys Ser Thr Pro Gln Glu Ile Ile Glu Ser Val Glu Tyr	
370 375 380	
ggt atc tat gca ccg aac ttt ggt ggc ggt cag gtg gat atc acc tcc	1200
Gly Ile Tyr Ala Pro Asn Phe Gly Gly Gly Gln Val Asp Ile Thr Ser	
385 390 395 400	
ggc aaa ttc gtt ttc tcc act tca gaa gca tat ctg att gaa aac ggt	1248
Gly Lys Phe Val Phe Ser Thr Ser Glu Ala Tyr Leu Ile Glu Asn Gly	
405 410 415	

## PhoenixTemp28215.tmp.txt

aaa gta acg aag ccg gtg aaa ggc gca acg ttg att ggt tcc ggt atc 1296  
 Lys Val Thr Lys Pro Val Lys Gly Ala Thr Leu Ile Gly Ser Gly Ile  
                   420                  425                  430

gaa acc atg cag cag att tcg atg gtt ggc aac gac ctg aaa ctg gat 1344  
 Glu Thr Met Gln Gln Ile Ser Met Val Gly Asn Asp Leu Lys Leu Asp  
                   435                  440                  445

aac ggc gtg ggt gtc tgc ggt aaa gaa ggg caa agt ttg ccg gtt ggc 1392  
 Asn Gly Val Gly Val Cys Gly Lys Glu Gly Gln Ser Leu Pro Val Gly  
                   450                  455                  460

gtg ggc cag cca acg ttg aaa gtc gat aac ctg act gtt ggc ggt act 1440  
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<210> 2  
 <211> 481  
 <212> PRT  
 <213> Escherichia coli

<400> 2

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 1                  5                  10                  15

Lys His Gln Asp Leu Phe Ala Ile Leu Gly Gln Leu Ala Glu Arg Arg  
                   20                  25                  30

Leu Asp Tyr Gly Asp Leu Tyr Phe Gln Ser Ser Tyr His Glu Ser Trp  
                   35                  40                  45

Val Leu Glu Asp Arg Ile Ile Lys Asp Gly Ser Tyr Asn Ile Asp Gln  
                   50                  55                  60

Gly Val Gly Val Arg Ala Ile Ser Gly Glu Lys Thr Gly Phe Ala Tyr  
 65                  70                  75                  80

Ala Asp Gln Ile Ser Leu Leu Ala Leu Glu Gln Ser Ala Gln Ala Ala  
                   85                  90                  95

Arg Thr Ile Val Arg Asp Ser Gly Asp Gly Lys Val Gln Thr Leu Gly  
                   100                  105                  110

Ala Val Glu His Ser Pro Leu Tyr Thr Ser Val Asp Pro Leu Gln Ser  
                   115                  120                  125

Met Ser Arg Glu Glu Lys Leu Asp Ile Leu Arg Arg Val Asp Lys Val  
                   130                  135                  140

## PhoenixTemp28215.tmp.txt

Ala	Arg	Glu	Ala	Asp	Lys	Arg	Val	Gln	Glu	Val	Thr	Ala	Ser	Leu	Ser
145					150					155					160
Gly	Val	Tyr	Glu	Leu	Ile	Leu	Val	Ala	Ala	Thr	Asp	Gly	Thr	Leu	Ala
				165					170					175	
Ala	Asp	Val	Arg	Pro	Leu	Val	Arg	Leu	Ser	Val	Ser	Val	Leu	Val	Glu
			180					185					190		
Glu	Asp	Gly	Lys	Arg	Glu	Arg	Gly	Ala	Ser	Gly	Gly	Gly	Gly	Arg	Phe
		195					200					205			
Gly	Tyr	Glu	Phe	Phe	Leu	Ala	Asp	Leu	Asp	Gly	Glu	Val	Arg	Ala	Asp
	210					215					220				
Ala	Trp	Ala	Lys	Glu	Ala	Val	Arg	Met	Ala	Leu	Val	Asn	Leu	Ser	Ala
225					230					235					240
Val	Ala	Ala	Pro	Ala	Gly	Thr	Met	Pro	Val	Val	Leu	Gly	Ala	Gly	Trp
				245					250					255	
Pro	Gly	Val	Leu	Leu	His	Glu	Ala	Val	Gly	His	Gly	Leu	Glu	Gly	Asp
			260					265					270		
Phe	Asn	Arg	Arg	Gly	Thr	Ser	Val	Phe	Ser	Gly	Gln	Val	Gly	Glu	Leu
		275					280					285			
Val	Ala	Ser	Glu	Leu	Cys	Thr	Val	Val	Asp	Asp	Gly	Thr	Met	Val	Asp
		290				295					300				
Arg	Arg	Gly	Ser	Val	Ala	Ile	Asp	Asp	Glu	Gly	Thr	Pro	Gly	Gln	Tyr
305					310					315					320
Asn	Val	Leu	Ile	Glu	Asn	Gly	Ile	Leu	Lys	Gly	Tyr	Met	Gln	Asp	Lys
				325					330					335	
Leu	Asn	Ala	Arg	Leu	Met	Gly	Met	Thr	Pro	Thr	Gly	Asn	Gly	Arg	Arg
			340					345					350		
Glu	Ser	Tyr	Ala	His	Leu	Pro	Met	Pro	Arg	Met	Thr	Asn	Thr	Tyr	Met
		355					360					365			
Leu	Pro	Gly	Lys	Ser	Thr	Pro	Gln	Glu	Ile	Ile	Glu	Ser	Val	Glu	Tyr
	370					375					380				
Gly	Ile	Tyr	Ala	Pro	Asn	Phe	Gly	Gly	Gly	Gln	Val	Asp	Ile	Thr	Ser
385					390					395					400

## PhoenixTemp28215.tmp.txt

Gly Lys Phe Val Phe Ser Thr Ser Glu Ala Tyr Leu Ile Glu Asn Gly  
 405 410 415

Lys Val Thr Lys Pro Val Lys Gly Ala Thr Leu Ile Gly Ser Gly Ile  
 420 425 430

Glu Thr Met Gln Gln Ile Ser Met Val Gly Asn Asp Leu Lys Leu Asp  
 435 440 445

Asn Gly Val Gly Val Cys Gly Lys Glu Gly Gln Ser Leu Pro Val Gly  
 450 455 460

Val Gly Gln Pro Thr Leu Lys Val Asp Asn Leu Thr Val Gly Gly Thr  
 465 470 475 480

Ala

<210> 3  
 <211> 1353  
 <212> DNA  
 <213> Escherichia coli

<220>  
 <221> CDS  
 <222> (1)..(1353)  
 <223> t1DE

<400> 3  
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 Met Ala Leu Ala Met Lys Val Ile Ser Gln Val Glu Ala Gln Arg Lys  
 1 5 10 15  
 att ctg gaa gaa gca gtt tcc act gcg ctg gag ttg gcc tca ggc aaa 96  
 Ile Leu Glu Glu Ala Val Ser Thr Ala Leu Glu Leu Ala Ser Gly Lys  
 20 25 30  
 tcg gac ggt gcg gaa gtt gcc gtc agc aag acc acc ggc att agc gta 144  
 Ser Asp Gly Ala Glu Val Ala Val Ser Lys Thr Thr Gly Ile Ser Val  
 35 40 45  
 agc acg cgt tat ggt gaa gtg gag aat gtt gaa ttc aat agc gat ggc 192  
 Ser Thr Arg Tyr Gly Glu Val Glu Asn Val Glu Phe Asn Ser Asp Gly  
 50 55 60  
 gcg ctg ggg atc act gtt tat cac cag aac cgc aaa ggt agc gca tca 240  
 Ala Leu Gly Ile Thr Val Tyr His Gln Asn Arg Lys Gly Ser Ala Ser  
 65 70 75 80  
 tcc acc gat tta agc ccg cag gcc att gcc cgt act gta cag gcg gcg 288  
 Ser Thr Asp Leu Ser Pro Gln Ala Ile Ala Arg Thr Val Gln Ala Ala  
 85 90 95  
 ctg gat att gcc cgt tat acc tcg cca gat ccc tgt gcc ggc gtg gca 336  
 Leu Asp Ile Ala Arg Tyr Thr Ser Pro Asp Pro Cys Ala Gly Val Ala  
 100 105 110

## PhoenixTemp28215.tmp.txt

gac Asp	aaa Lys	gag Glu	ctg Leu	ctg Leu	gcc Ala	ttt Phe	gac Asp	gca Ala	cca Pro	gat Asp	ctc Leu	gac Asp	ttg Leu	ttc Phe	cac His	384
		115					120					125				
cct Pro	gcg Ala	gaa Glu	gtt Val	tcc Ser	ccg Pro	gat Asp	gaa Glu	gcc Ala	att Ile	gaa Glu	ctg Leu	gcg Ala	gcc Ala	cgc Arg	gca Ala	432
		130				135					140					
gaa Glu	cag Gln	gcg Ala	gca Ala	ttg Leu	cag Gln	gcg Ala	gac Asp	aaa Lys	cgc Arg	atc Ile	acc Thr	aat Asn	acc Thr	gaa Glu	ggc Gly	480
		145			150					155					160	
ggc Gly	agc Ser	ttt Phe	aac Asn	agc Ser	cac His	tac Tyr	ggc Gly	gtc Val	aaa Lys	gtt Val	ttt Phe	ggc Gly	aac Asn	agc Ser	cac His	528
				165					170					175		
ggc Gly	atg Met	ttg Leu	cag Gln	ggc Gly	tac Tyr	tgc Cys	tca Ser	acg Thr	cgt Arg	cat His	tcg Ser	ctc Leu	tcc Ser	agc Ser	tgt Cys	576
			180					185					190			
gta Val	att Ile	gcc Ala	gaa Glu	gaa Glu	aat Asn	ggc Gly	gat Asp	atg Met	gag Glu	cgt Arg	gat Asp	tac Tyr	gcc Ala	tac Tyr	acc Thr	624
		195					200					205				
att Ile	ggc Gly	cgt Arg	gcg Ala	atg Met	agc Ser	gat Asp	ctg Leu	caa Gln	acg Thr	cca Pro	gag Glu	tgg Trp	gtt Val	ggg Gly	gcc Ala	672
		210				215					220					
gac Asp	tgt Cys	gct Ala	cgc Arg	cgt Arg	act Thr	tta Leu	tcg Ser	cgt Arg	ctg Leu	tca Ser	ccg Pro	cgt Arg	aaa Lys	ctc Leu	tcc Ser	720
		225			230					235					240	
acc Thr	atg Met	aaa Lys	gcg Ala	cca Pro	gtc Val	att Ile	ttt Phe	gcc Ala	aat Asn	gaa Glu	gtg Val	gca Ala	acc Thr	ggg Gly	ctt Leu	768
				245					250					255		
ttt Phe	ggg Gly	cat His	ctg Leu	gtg Val	ggg Gly	gcg Ala	ata Ile	gcg Ala	ggc Gly	gga Gly	tcg Ser	gtt Val	tat Tyr	cgt Arg	aaa Lys	816
			260					265					270			
tct Ser	acc Thr	ttc Phe	ctg Leu	ctg Leu	gat Asp	tcg Ser	ctg Leu	ggc Gly	aaa Lys	caa Gln	att Ile	ctg Leu	ccg Pro	gac Asp	tgg Trp	864
		275					280					285				
ctg Leu	acc Thr	att Ile	gaa Glu	gag Glu	cat His	ccg Pro	cat His	ctg Leu	ctg Leu	aaa Lys	ggg Gly	ctg Leu	gcg Ala	tcg Ser	acg Thr	912
		290				295					300					
cca Pro	ttc Phe	gac Asp	agc Ser	gaa Glu	ggc Gly	gtg Val	cgc Arg	acc Thr	gag Glu	cgt Arg	cgc Arg	gat Asp	att Ile	att Ile	aaa Lys	960
		305			310					315					320	
gat Asp	ggc Gly	atc Ile	ctg Leu	act Thr	cag Gln	tgg Trp	ctg Leu	ctg Leu	acc Thr	agc Ser	tac Tyr	tcg Ser	gcg Ala	cgg Arg	aaa Lys	1008
				325					330					335		
ctg Leu	ggg Gly	ctg Leu	aaa Lys	agc Ser	acc Thr	gga Gly	cat His	gcg Ala	ggc Gly	ggc Gly	att Ile	cac His	aac Asn	tgg Trp	cgg Arg	1056
			340					345					350			
att Ile	gcc Ala	gga Gly	caa Gln	ggc Gly	cta Leu	agc Ser	ttc Phe	gag Glu	cag Gln	atg Met	ctc Leu	aaa Lys	gag Glu	atg Met	ggc Gly	1104
		355					360					365				

## PhoenixTemp28215.tmp.txt

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acc ggg ctg gtg gtg acg gaa ttg atg ggc cag ggc gtg agt gcc att      1152
Thr Gly Leu Val Val Thr Glu Leu Met Gly Gln Gly Val Ser Ala Ile
    370                      375                      380

acc ggt gat tat tcc cgt ggt gca gcg ggc ttc tgg gta gag aat ggc      1200
Thr Gly Asp Tyr Ser Arg Gly Ala Ala Gly Phe Trp Val Glu Asn Gly
    385                      390                      395                      400

gaa att cag tat ccg gtg agc gaa atc acc atc gca ggt aat tta aaa      1248
Glu Ile Gln Tyr Pro Val Ser Glu Ile Thr Ile Ala Gly Asn Leu Lys
    405                      410                      415

gat atg tgg cgc aat att gtc acc gtc ggt aac gat att gaa aca cgc      1296
Asp Met Trp Arg Asn Ile Val Thr Val Gly Asn Asp Ile Glu Thr Arg
    420                      425                      430

agt aat ata cag tgt ggt tct gtg ctg ttg ccg gag atg aaa atc gcc      1344
Ser Asn Ile Gln Cys Gly Ser Val Leu Leu Pro Glu Met Lys Ile Ala
    435                      440                      445

gga cag taa
Gly Gln
    450

<210> 4
<211> 450
<212> PRT
<213> Escherichia coli

<400> 4

Met Ala Leu Ala Met Lys Val Ile Ser Gln Val Glu Ala Gln Arg Lys
1                      5                      10                      15

Ile Leu Glu Glu Ala Val Ser Thr Ala Leu Glu Leu Ala Ser Gly Lys
    20                      25                      30

Ser Asp Gly Ala Glu Val Ala Val Ser Lys Thr Thr Gly Ile Ser Val
    35                      40                      45

Ser Thr Arg Tyr Gly Glu Val Glu Asn Val Glu Phe Asn Ser Asp Gly
    50                      55                      60

Ala Leu Gly Ile Thr Val Tyr His Gln Asn Arg Lys Gly Ser Ala Ser
65                      70                      75                      80

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

Leu Asp Ile Ala Arg Tyr Thr Ser Pro Asp Pro Cys Ala Gly Val Ala
    100                     105                     110

Asp Lys Glu Leu Leu Ala Phe Asp Ala Pro Asp Leu Asp Leu Phe His
    115                     120                     125

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## PhoenixTemp28215.tmp.txt

Pro Ala Glu Val Ser Pro Asp Glu Ala Ile Glu Leu Ala Ala Arg Ala  
 130 135 140

Glu Gln Ala Ala Leu Gln Ala Asp Lys Arg Ile Thr Asn Thr Glu Gly  
 145 150 155 160

Gly Ser Phe Asn Ser His Tyr Gly Val Lys Val Phe Gly Asn Ser His  
 165 170 175

Gly Met Leu Gln Gly Tyr Cys Ser Thr Arg His Ser Leu Ser Ser Cys  
 180 185 190

Val Ile Ala Glu Glu Asn Gly Asp Met Glu Arg Asp Tyr Ala Tyr Thr  
 195 200 205

Ile Gly Arg Ala Met Ser Asp Leu Gln Thr Pro Glu Trp Val Gly Ala  
 210 215 220

Asp Cys Ala Arg Arg Thr Leu Ser Arg Leu Ser Pro Arg Lys Leu Ser  
 225 230 235 240

Thr Met Lys Ala Pro Val Ile Phe Ala Asn Glu Val Ala Thr Gly Leu  
 245 250 255

Phe Gly His Leu Val Gly Ala Ile Ala Gly Gly Ser Val Tyr Arg Lys  
 260 265 270

Ser Thr Phe Leu Leu Asp Ser Leu Gly Lys Gln Ile Leu Pro Asp Trp  
 275 280 285

Leu Thr Ile Glu Glu His Pro His Leu Leu Lys Gly Leu Ala Ser Thr  
 290 295 300

Pro Phe Asp Ser Glu Gly Val Arg Thr Glu Arg Arg Asp Ile Ile Lys  
 305 310 315 320

Asp Gly Ile Leu Thr Gln Trp Leu Leu Thr Ser Tyr Ser Ala Arg Lys  
 325 330 335

Leu Gly Leu Lys Ser Thr Gly His Ala Gly Gly Ile His Asn Trp Arg  
 340 345 350

Ile Ala Gly Gln Gly Leu Ser Phe Glu Gln Met Leu Lys Glu Met Gly  
 355 360 365

Thr Gly Leu Val Val Thr Glu Leu Met Gly Gln Gly Val Ser Ala Ile  
 370 375 380



## PhoenixTemp28215.tmp.txt

Thr Gly Asp Tyr Ser Arg Gly Ala Ala Gly Phe Trp Val Glu Asn Gly  
 385 390 395 400

Glu Ile Gln Tyr Pro Val Ser Glu Ile Thr Ile Ala Gly Asn Leu Lys  
 405 410 415

Asp Met Trp Arg Asn Ile Val Thr Val Gly Asn Asp Ile Glu Thr Arg  
 420 425 430

Ser Asn Ile Gln Cys Gly Ser Val Leu Leu Pro Glu Met Lys Ile Ala  
 435 440 445

Gly Gln  
 450

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 <212> DNA  
 <213> Escherichia coli

<220>  
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 <222> (1)..(186)  
 <223> csrA

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 gag gtc acc gtg aca gtt tta ggg gta aag ggc aac cag gta cgt att 96  
 Glu Val Thr Val Thr Val Leu Gly Val Lys Gly Asn Gln Val Arg Ile  
 20 25 30  
 ggc gta aat gcc ccg aag gaa gtt tct gtt cac cgt gaa gag atc tac 144  
 Gly Val Asn Ala Pro Lys Glu Val Ser Val His Arg Glu Glu Ile Tyr  
 35 40 45  
 cag cgt atc cag gct gaa aaa tcc cag cag tcc agt tac taa 186  
 Gln Arg Ile Gln Ala Glu Lys Ser Gln Gln Ser Ser Tyr  
 50 55 60

<210> 6  
 <211> 61  
 <212> PRT  
 <213> Escherichia coli

<400> 6  
 Met Leu Ile Leu Thr Arg Arg Val Gly Glu Thr Leu Met Ile Gly Asp  
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 20 25 30

Gly Val Asn Ala Pro Lys Glu Val Ser Val His Arg Glu Glu Ile Tyr  
 35 40 45

Gln Arg Ile Gln Ala Glu Lys Ser Gln Gln Ser Ser Tyr  
 50 55 60

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 <212> DNA  
 <213> Escherichia coli

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 <221> CDS  
 <222> (1)..(153)  
 <223> csrA 1-50

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 1 5 10 15  
 gag gtc acc gtg aca gtt tta ggg gta aag ggc aac cag gta cgt att 96  
 Glu Val Thr Val Thr Val Leu Gly Val Lys Gly Asn Gln Val Arg Ile  
 20 25 30  
 ggc gta aat gcc ccg aag gaa gtt tct gtt cac cgt gaa gag atc tac 144  
 Gly Val Asn Ala Pro Lys Glu Val Ser Val His Arg Glu Glu Ile Tyr  
 35 40 45  
 cag cgt taa 153  
 Gln Arg  
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<210> 8  
 <211> 50  
 <212> PRT  
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 Met Leu Ile Leu Thr Arg Arg Val Gly Glu Thr Leu Met Ile Gly Asp  
 1 5 10 15  
 Glu Val Thr Val Thr Val Leu Gly Val Lys Gly Asn Gln Val Arg Ile  
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 Gly Val Asn Ala Pro Lys Glu Val Ser Val His Arg Glu Glu Ile Tyr  
 35 40 45

Gln Arg  
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 <212> DNA  
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cttc 64  
  
<210> 10  
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<213> Artificial sequence  
  
<220>  
<223> 3' csrA 1-50 primer  
  
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