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LT90PCT-2014-09-24.txt

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 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic primer

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<210> 5
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 <212> DNA
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<220>
 <223> Synthetic primer

<400> 5
ttcgtttaca aaacggcaaa tgtga 25

<210> 6
<211> 37
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic primer

<400> 6
ccgaattcgt cgacaacaga gtttgatcct ggctcag 37

<210> 7
<211> 37
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic primer

<400> 7
cccgggatcc aagcttacgg ctaccttggt acgactt 37

<210> 8
<211> 1207
<212> DNA
<213> Artificial sequence

<220>
<223> 16s rRNA nucleic acid sequence of LZ-pMTL83155-1 obtained using primer RP2 (PCR product of plasmid)

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gtttcagcct gcaatccgaa ctgggggagcgt tttttgaggt ttgctccacc ttgcggctctt 180
gcttctctct gtactgccca ttgtagcacg tgtgttgccc tggacataag gggcatgatg 240
atgtgacgtc atccccacct tcctccgcgt taaccgcggc agtcttgcta gagtgctcaa 300
ctaaatgtta gcaactaaca acagggggtg sgctcggtgc aggacttaac ctaacatctc 360
acgacacgag ctgacgacaa ccatgcacca cctgtatccc tgccccgaag ggcttctctt 420
atctctaara tattcagggk atgtcaagtc caggwaaggt ttttcgcgtt gcttcsaatt 480
aaacmacatg ctccgctgct tgtgsgggcc sccstcaatt cttttgagtt ttaatcwtgc 540
gatcgtactt cccaggcgga gtactwattg tgtttactgc ggcacagaar aggkcgatam 600
ctcctacacc tartactcat cgtttacggc gtggastacc aggrtakcta atcctgtttg 660
ctaccacgc tttcgtgcct sakcrtcagt tacgggccas araatcgctt tcgccactgg 720
tggtsttyct aatstctacg cayytywycg ckacactarr aattmmattc tcctctcccg 780
crtcctagat atccagttwg aaatgmastg mcccgrgttaa gsssggsyat ttcacatctc 840
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LT90PCT-2014-09-24.txt

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taccsktcca	gwccgckryc	caaygtgcct	gtaggcgtac	trcacgwgtc	atgcccgrga	1140
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rtacmgg						1207

<210> 9
 <211> 1179
 <212> DNA
 <213> Artificial sequence

<220>
 <223> 16s rRNA nucleic acid sequence of LZ-pMTL83155-2 obtained using primer RP2 (PCR product of plasmid)

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attcgcgatt	actagcaact	ccaacttcat
gtaggcgagt	ttcagcctgc	aatccgaact
		120
gggggcagtt	tttgaggttt	gctccacctt
gcggtcttgc	ttctctctgt	actgcccatt
		180
gtagcacgtg	tgttgccctg	gacataaggg
gcatgatgat	ttgacgtcat	ccccaccttc
		240
ctccgcgtta	accgcggcag	tcttgctaga
gtgctcaact	aaatgttagc	aactaacaac
		300
aggggttgsg	ctcgttgcag	gacttaacct
aacatctcac	gacacgagct	gacgacaacc
		360
atgcaccacc	tgtatccctg	ccccgaaggg
sttctcttat	ctctaarata	ttcagggtat
		420
gtcaagtcca	ggwaaggfts	ttcgcgttgc
ttckaattaa	acmacatgct	ccgctgcttg
		480
tgsgggcsc	cgtaattcc	tttgagtttt
aatcwtgsga	tcgtacttcc	yasgsggagt
		540
amttattgw	tttactgcgg	cacagaargr
gkcgatacct	cctacamcwa	stactcrtcg
		600
twtacggcgt	ggaskaccag	grtakmwaat
cmtgtttgct	accacgctt	tcktgccksa
		660
kcrtcartta	cggtccasar	satcgcctwc
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cayatctcam	ttaaataatst	gmctacscac
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mgccycsyac	gtattaywww	agmtgmwrgc
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mcgymgktag	cgwgwrkrc	mtcckyktgg
tascktsaty	atcgtyccw	mgammarrsw
		960
kwryawwstt	aacmtmstma	mtccsyawcg
ttgstgrtca	gtgcttwsy	atstgcacaa
		1020
twcwrmmwgm	tgcyccgtas	agtytggamr
trttgaawca	tywrcctats	rcgckycagt
		1080
cggkcacacg	tgcttgawkg	cgtrrctkac
rcmgtcaacg	mctgagcakc	acgrgcctga
		1140
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mggtatccg		
		1179

<210> 10
 <211> 1159
 <212> DNA
 <213> Artificial sequence

LT90PCT-2014-09-24.txt

<220>

<223> 16s rRNA nucleic acid sequence of LZ-pMTL83155-hs-tk-1 obtained using primer RP2 (PCR product of plasmid)

<400> 10

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ttctctctgt actgcccatt gtagcacgtg tgttgccctg gacataaggg gcatgatgat      240
ttgacgtcat cccacacctt ctccgcgtta accgcggcag tcttgctaga gtgctcaact      300
aatgtttagc aactaacaac aggggttgcg ctcggtgcag gacttaacct aacatctcac      360
gacacgagct gacgacaacc atgcaccacc tgtatccctg cccgaaggg yttctcttat      420
ctctaagata ttcagggtat gtcaagtcca ggtaaggttc ttcgcgttgc ttcgaattaa      480
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cctacaccta gtactcatcg tttacggcgt ggastaccag ggtatctaata cmtgtttgct      660
accacgctt tcgtgcctca gcgtcagttt cgggtccasag aatcgccctt gccactgggtg      720
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ggatayccgt kaawcgctg                               1159

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<210> 11

<211> 1188

<212> DNA

<213> Artificial sequence

<220>

<223> 16s rRNA nucleic acid sequence of LZ-pMTL83155-hs-tk-2 obtained using primer RP2 (PCR product of plasmid)

<400> 11

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agcctgcaat ccgaactggg ggcagttttt gaggtttgct ccaccttgcg gtcttgcttc     180
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acgtcatccc caccttcctc cgcgttaacc gcggcagctt tgctagagtg ctcaactaaa     300
tgttagcaac taacaacagg gggtgcgctc gttgcaggac ttaacctaac atctcacgac     360

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LT90PCT-2014-09-24.txt

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gcwmecatcg tsctgtagcg tacctacacw gctatggccg gtcmycycag cgawtccgta	1140
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<210> 12
 <211> 1032
 <212> DNA
 <213> Clostridium autoethanogenum

<400> 12	
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LT90PCT-2014-09-24.txt

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aatcaatttt aa 1032

<210> 13
<211> 984
<212> DNA
<213> *Eschericia coli*

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<210> 14
<211> 1040
<212> DNA
<213> *Clostridium autoethanogenum*

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LT90PCT-2014-09-24.txt

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<220>
 <223> Synthetic primer

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<210> 16
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 <223> Synthetic primer

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<210> 17
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 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic promoter Pphes*

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ggaggatgta tag	73

<210> 18
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<220>
 <223> Plasmid pMTL85151-phes*

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LT90PCT-2014-09-24.txt

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LT90PCT-2014-09-24.txt

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Glu Gln Val Gln Gln Ala Leu Asn Ala Arg Lys Ala Glu Leu Glu Ser
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Ala Ala Leu Asn Ala Arg Leu Ala Ala Glu Thr Ile Asp Val Ser Leu
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Pro Gly Arg Arg Ile Glu Asn Gly Gly Leu His Pro Val Thr Arg Thr
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115 120 125

Thr Gly Pro Glu Ile Glu Asp Asp Tyr His Asn Phe Asp Ala Leu Asn
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145 150 155 160

Asp Thr Thr Arg Leu Leu Arg Thr Gln Thr Ser Gly Val Gln Ile Arg
165 170 175

Thr Met Lys Ala Gln Gln Pro Pro Ile Arg Ile Ile Ala Pro Gly Arg
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Val Tyr Arg Asn Asp Tyr Asp Gln Thr His Thr Pro Met Phe His Gln
195 200 205

Met Glu Gly Leu Ile Val Asp Thr Asn Ile Ser Phe Thr Asn Leu Lys
210 215 220

Gly Thr Leu His Asp Phe Leu Arg Asn Phe Phe Glu Glu Asp Leu Gln
Page 18

225 230 235 240

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

Val Tyr Ser Gly Phe Ala Phe Gly Met Gly Met Glu Arg Leu Thr Met
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LT90PCT-2014-09-24.txt

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