

OSP88236(EN_sequence).txt
SEQUENCE LISTING

<110> Japan Science and Technology Agency
<120> PC-25879
<130> DNA PRODUCTION METHOD AND DNA FRAGMENT-JOINING KIT
<160> 67

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gtactgcctg	gaaagatgat	ccgcgcgaag	tgcatttcct	gtatgccaac	agctatgagc	540
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<223> DCW5

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<400> 6

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ggggaagata tgtcctaaaa tgccgctcgc gtcgcaaact gacactttat atttgctgtg      180
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cgttatcggg aacagctgct tgagaacgct gccggtcaaa tggtttgcac cattgacatt      540
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<213> Artificial Sequence

<220>

<223> DCW7

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ttaggtcatg ccagcgaatg tcagatggat ggcgaggtc gattgttaat cgcgccagta      180
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gagctgtggg atgaaacaac ctggcatcaa caggtcaagg aagatatcga cgagagcag      300
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<213> Artificial Sequence

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<223> DCW8

<400> 8

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tcttggcgtc tcttcaccgc aacttgatga tgctgaacgt ggcttttctt ttatgcgcga      180
tggtccgctg gacatgcgta tggaccaaac ccgtgggcag tcagccgctg aatggctaca      240
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caaacgcatt gcccgcgcca ttgtcgagcg taaccgcgaa cagccgatga cccgcaccaa      360
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ggcgtaaaaa agctcgctca acgtgctggc cccgggtggg cggttttcga tcatcagctt      540
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cagcgcgaac	aactgggtgct	ggagcgagat	gcttttagaca	ttgaatggcg	caacctgatc	480
cttgaagaga	atgcgctcgg	cgaccatagc	cgggtggaaa	ggatcgccac	ggaaaagctg	540
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<212> DNA

<213> Artificial Sequence

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<223> DCW10

<400> 10

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catgccaaact	ttatcagttg	gcgttttgcg	ttgttatgcg	gctgtattct	cctggcgctg	180
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<223> DCW12

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cgtatcgcca	ttaaaaccgg	taccgcgaaa	aaggtcgggc	cggacggtcg	ctacatcaat	540
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<223> DCW13b

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<210> 14

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<212> DNA

<213> Artificial Sequence

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<223> DCW14

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<210> 15

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 taccgcgtgc tgggtgggtggg cgatatggcg gaactgggcg ctgaaagcga agcctgccat 180
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 ccggcaatat gaactttgcc agctacttgc atataccgta tctgcgacac g 591

<210> 20
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW20
 <400> 20
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 ccggggaact ggttattgtc tgtaccgca tagtcggggc aggactgggc ttcctgtggt 120
 ttaacaccta tccggcgag gtctttatgg gcgatgtagg ttcgctggcg ttaggtgggtg 180
 cgtaggcat tatcgccgta ctgctacgtc aggaattcct gctgggtgatt atggggggcg 240
 tgttcgtggt agaaacgctt tctgtcatcc tgcaggtcgg ctcttttaa ctgcgcggac 300
 aacgtatttt ccgcatggca ccgattcatc accactatga actgaaaggc tggccggaac 360
 cgcgctcat tgtgcgtttc tggattattt cgctgatgct ggttctgatt ggtctggcaa 420
 cgctgaagggt acgttaatca tggctgatta tcagggtaaa aatgtcgtca ttatcggcct 480

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gggcctcacc gggctttcct gcgtggactt tttcctcgct cgcggtgtga cgccgcgcgt      540
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<210> 21

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW21

<400> 21

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cagtcgccgtt attgcactgg cgcatccatc cttaagcgct gccgctgatg ccggaatcga      180
aatcgttggc gatatcgagc tgttctgtcg cgaagcacia gcaccgattg tggcgattac      240
cggttctaac ggcaaaagca cggtcaccac gctagtgggt gaaatggcga aagcggcggg      300
ggttaacgtt ggtgtgggtg gcaatattgg cctgcctgcg ttgatgtctac tggatgatga      360
gtgtgaactg tacgtgctgg aactgtcgag cttccagctg gaaaccacct ccagcttaca      420
ggcggtagca gcgaccattc tgaacgtgac tgaagatcat atggatcgct atccgtttgg      480
tttacaacag tatcgtgcag caaaactgcg catttacgaa aacgcgaaag tttgcgtggt      540
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<210> 22

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW22

<400> 22

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gctgcgggtt aaaggcgaga aagtgtgaa tgtgaaagag atgaaacttt ccgggcagca      180
taactacacc aatgcgctgg cggcgtggc gctggcagat gctgcagggt taccgctgc      240
cagcagcctg aaagcgctaa ccacattcac tggctgccg catcgctttg aagttgtgct      300
ggagcataac ggctacgtt ggattaacga ttcgaaagcg accaacgtcg gcagtacgga      360
agcggcgctg aatggcctgc acgtagacgg cacactgcat ttgttgctgg gtggcgatgg      420
taaactggcg gactttagcc cactggcgcg ttacctgaat ggcgataacg tacgtctgta      480
ttgtttcggg cgtgacggcg cgcagctggc ggcgctacgc ccggaagtgg cagaacaaac      540
cgaaactatg gaacaggcga tgcgcttgct ggctccgcgt gttcagccgg g                  591

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<210> 23

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW23

<400> 23

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acgaggcaat gagtttgccc gtctggcgaa ggagttagggt tgatgcgttt atctctccct      180
cgctgaaaa tgccgcgcct gccaggattc agtatcctgg tctggatctc cacggcgcta      240
aagggtggg tgatgggctc gcgggaaaaa gataccgaca gcctgatcat gtacgatcgc      300
accttactgt ggctgacctt cggcctcgcg gcgattggct ttatcatggt gacctcggcg      360

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tggcaacgct	acagtgccac	gatgctgctc	ggatctatca	tcctgctgat	gatcgtcctg	540
gtagtgggta	gctcgggtaa	aggggcatcg	cggttgatcg	atctcggttt	g	591

<210> 24

<211> 589

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW24b

<400> 24

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ctgggtgcgta	aaggcgacga	agtacgtaat	aacctgcgcg	gcttcctgaa	accgatgggc	180
gtgattctgg	tggtggcagt	gttactgctg	gcacagccag	accttggtac	ggtgggtggtg	240
ttgtttgtga	ctacgctggc	gatgttggtc	ctggcgggag	cgaaattgtg	gcagttcatt	300
gccattatcg	gtatgggcat	ttcagcgggt	gtgttgctga	tactcgccga	accgtaccgt	360
atccgccgtg	ttaccgcatt	ctggaacccg	tgggaagatc	cctttggcag	cggctatcag	420
ttaacgcaat	cgctgatggc	gtttggctgc	ggcgaacttt	gggggcaagg	tttaggtaac	480
tcggtacaaa	aactggagta	tctgccggaa	gcgcacactg	actttatttt	cgccattatc	540
ggcgaagaac	tggggtatgt	cggtgtggtg	ctggcacttt	taatggtat		589

<210> 25

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW25

<400> 25

gccattatcg	gcgaagaact	ggggtatgtc	ggtgtggtgc	tggcactttt	aatggtattc	60
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tccggttttc	tcgcctgttc	tattggcatc	tggttttagct	tccaggcgct	ggttaacgta	180
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gattaatggt	gatggcaggc	ggaaccgggt	gacatgtatt	cccgggactg	gcggttcgcg	420
accatcta	ggctcagggt	tggcaagttc	gctggctggg	gactgccgac	cgatggaag	480
cggacttagt	gcaaaaacat	ggcatcgaaa	ttgatttc	tcgtatctct	ggtctgcgtg	540
gaaaagggtat	aaaagcactg	atagctgccc	cgctgcgtat	cttcaacgcc	t	591

<210> 26

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW26

<400> 26

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gctacgtgtc	aggtccaggt	ggtctggccg	cgtggctggt	aggcattccg	gttggtacttc	180
atgaacaaaa	cggtattgcg	ggcttaacca	ataaatggct	ggcgaagatt	gccaccaaag	240

OSP88236(EN_sequence).txt

tgatgcaggc	gtttccaggt	gctttcccta	atgcggaagt	agtgggtaac	ccggtgcgta	300
ccgatgtgtt	ggcgctgccg	ttgccgcagc	aacgtttggc	tggacgtgaa	gggccgggttc	360
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aatccgttga	acaggcgat	gccgaagcgg	ggcaaccgca	gcataaagt	acggaattta	540
ttgatgatat	ggcggcgggc	tatgcgtggg	cggatgtcgt	cgtttgccgc	t	591

<210> 27

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW27

<400> 27

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ggtcgcgaga	aaccttatta	accatggcag	aacgcgccc	cgctgcatcc	attccggatg	300
ccaccgagcg	agtggcaaat	gaagtgagcc	gggttgccc	ggcgtaattg	tagcgatgcc	360
ttttgcatcg	tatgaattta	agaagttaat	ggcgtaaaga	atgaatacac	aacaattggc	420
aaaactgcgt	tccatcgtgc	ccgaaatgcg	tcgcgttcgg	cacatacatt	ttgtcggcat	480
tgggtgggtcc	ggtatggg	gtattgccga	agttctggcc	aatgaagggt	atcagatcag	540
tggttccgat	ttagcgccaa	atccggtcac	gcagcagtta	atgaatctgg	g	591

<210> 28

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW28

<400> 28

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ttccagcgcg	atttctgccg	ataaccgga	aattgtcgcc	gctcatgaag	cgcgatttcc	180
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tgccggaacg	cacggcaaaa	cgacaaccac	cgcatgggtt	tccagcatct	acgcagaagc	300
ggggctcgac	ccaaccttcg	ttaacggcgg	gctggtaaaa	gcggcggggg	ttcatgcgcg	360
tttggggcat	ggtcgggtacc	tgattgccga	agcagatgag	agtgatgcat	cgttcctgca	420
tctgcaaccg	atggtggcga	ttgtcaccaa	tatcgaagcc	gaccacatgg	atacctacca	480
gggcgacttt	gagaatttaa	aacagacttt	tattaatttt	ctgcacaacc	tgccgtttta	540
cggtcgtgcg	gtgatgtgtg	ttgatgatcc	ggtgatccgc	gaattgttac	c	591

<210> 29

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW29

<400> 29

gccgttttac	ggtcgtgcgg	tgatgtgtgt	tgatgatccg	gtgatccgcg	aattgttacc	60
gcgagtgggg	cgtcagacca	cgacttacgg	cttcagcgaa	gatgccgacg	tgcgtgtaga	120

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agattatcag	cagattggcc	cgcaggggca	ctttacgctg	ctgcgccagg	acaaagagcc	180
gatgcgcgtc	accctgaatg	cgccaggtcg	tcataacgcg	ctgaacgccg	cagctgcggt	240
tgcggttgct	acggaagagg	gcattgacga	cgaggctatt	ttgcgggcg	ttgaaagctt	300
ccaggggact	ggtcgccgtt	ttgatttcct	cggtgaattc	ccgctggagc	cagtgaatgg	360
taaaagcggg	acggcaatgc	tggtcgatga	ctacggccac	cacccgacgg	aagtggacgc	420
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gcaccgtttt	acccgtacgc	gcgacctgta	tgatgatttc	gccaatgtgc	tgacgcaggt	540
tgataccctg	ttgatgctgg	aagtgtatcc	ggctggcgaa	gcgccaattc	c	591

<210> 30

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW30

<400> 30

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gggagcggac	agccgttcgc	tgtgtcgcac	aattcgtgga	cgtgggaaaa	ttgatcccat	120
tctggtgccg	gatccggcgc	gggtagccga	gatgctggca	ccggtattaa	ccggtaacga	180
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caactgaag	ccgcaaatc	cggaggaaga	acaacatgac	tgataaaatc	gcggtcctgt	300
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atggtacgct	gcaggggatg	ctcgagctga	tgggcttgcc	ttataccgga	agcggagtga	540
tggcatctgc	gctttcaatg	gataaactac	gcagcaaact	tctatggcaa	g	591

<210> 31

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW31

<400> 31

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gtgccggttt	accggtcgcg	ccgtgggtag	cgtaaacccg	cgagagttt	gaaaaaggcc	120
tgagcgataa	gcagtttagca	gaaatttctg	ctctgggttt	gccggttatc	gttaagccga	180
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cattaagatt	ggcatttcag	cacgatgaag	aagtattgat	tgaaaaatgg	ctaagtgggc	300
cggagttcac	ggttgcgata	ctcgggtgaag	aaattttacc	gtcaatacgt	attcaaccgt	360
ccggaacctt	ctatgattat	gaggcgaagt	atctctctga	tgagacacag	tatttctgcc	420
ccgcaggtct	ggaagcgtca	caagaggcca	atttgcaggc	attagtgtg	aaagcatgga	480
cgacgttagg	ttgcaaagga	tggggacgta	ttgacgttat	gctggacagc	gatggacagt	540
tttatctgct	ggaagccaat	acctcaccgg	gtatgaccag	ccacagcctg	g	591

<210> 32

<211> 579

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW32b

<400> 32

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aactggcgga	ctaatatgtc	gcaggctgct	ctgaacacgc	gaaacagcga	agaagaggtt	180
tcttctcgcc	gcaataatgg	aacgcgtctg	gcggggatcc	ttttcctgct	gaccgtttta	240
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ccgctctcaa	agctggtggt	gaccggtgaa	cgccattaca	cacgtaatga	cgatatccgg	360
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cagacgcaaa	tagaacaacg	cctgccgtgg	attaagcagg	tgagcgtcag	aaagcagtgg	480
cctgatgaat	tgaagattca	tctggttgaa	tatgtgccga	ttgcgcggtg	gaatgatcaa	540
catatggtag	acgcggaagg	aaataccttc	agcgtgccg			579

<210> 33

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW33

<400> 33

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agcaagcagg	tgcttccaat	gctgtatggc	ccggaaggca	gcgccaatga	agtgttgcag	120
ggctatcgcg	aaatggggca	gatgctggca	aaggacagat	ttactctgaa	ggaagcggcg	180
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caggcgcaaa	ccgatggcaa	acggattagc	tacgttgatt	tgcgttatga	ctctggagcg	360
gcagtaggct	gggcgccctt	gccgccagag	gaatctactc	agcaacaaaa	tcaggcacag	420
gcagaacaac	aatgatcaag	gcgacggaca	gaaaactggt	agtaggactg	gagattggta	480
ccgcgaaggt	tgccgcctta	gtaggggaag	ttctgcccga	cggtatggtc	aatatcattg	540
gcgtggggcag	ctgcccgtcg	cgtgggtatgg	ataaaggcgg	ggtgaacgac	c	591

<210> 34

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW34

<400> 34

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gtcagatctc	ttcggtatat	ctggcgcttt	ctggtaagca	catcagctgc	cagaatgaaa	180
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ataccgcgaa	atcggtgcgt	gtgcgcgatg	agcatcgtgt	gctgcatgtg	atcccgcgaag	300
agtatgcgat	tgactatcag	gaagggatca	agaatccggt	aggactttcg	ggcgtgcgga	360
tgagggcaaa	agtgcacctg	atcacatgtc	acaacgatat	ggcgaaaaac	atcgtcaaag	420
cggttgaacg	ttgtgggctg	aaagttgacc	aactgatatt	tgccggactg	gcatcaagtt	480
attcggtatt	gacggaagat	gaacgtgaac	tggtgtctctg	cgctcgtcgat	atcggtgggtg	540
gtacaatgga	tatcgccgtt	tataccgggtg	gggcattgcg	ccacactaag	g	591

<210> 35

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

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<223> DCW35

<400> 35

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caagcgacgc	cgaagcgatt	aaagttcgcc	acggttgtgc	gctgggttcc	atcgttggaa	180
aagatgagag	cgtggaagtg	ccgagcgtag	gtggtcgtcc	gccacggagt	ctgcaacgtc	240
agacactggc	agaggtgac	gagccgcgct	ataccgagct	gctcaacctg	gtcaacgaag	300
agatattgca	gttgcaggaa	aagcttcgcc	aacaaggggt	taaacatcac	ctggcggcag	360
gcattgtatt	aaccggtggc	gcagcgcaga	tcgaaggtct	tgacgcctgt	gctcagcgcg	420
tgtttcatat	gcaagtgcgt	atcggcgcgc	cgctgaacat	taccggttta	acggattatg	480
ctcaggagcc	gtattattcg	acggcgggtg	gattgcttca	ctatgggaaa	gagtcacatc	540
ttaacggtga	agctgaagta	gaaaaacgtg	ttacagcatc	agttggctcg	t	591

<210> 36

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW36

<400> 36

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ggatcaagcg	actcaatagt	tggctgcgaa	aagagtttta	atTTTTatga	ggccgacgat	120
gattacggcc	tcaggcgaca	ggcaciaaat	ggagagaaac	tatgtttgaa	ccaatggaac	180
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cattgcgtgc	ggcgctggaa	ggtgcagaca	tggcttttat	tgctgcgggt	atgggtgggtg	480
gtaccggtac	aggtgcagca	ccagtcgtcg	ctgaagtggc	aaaagatttg	ggtatcctga	540
ccgttgctgt	cgtcactaag	cctttcaact	ttgaaggcaa	gaagcgtatg	g	591

<210> 37

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW37

<400> 37

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cattcgcgga	gcaggggatc	actgaactgt	ccaagcatgt	ggactctctg	atcactatcc	120
cgaacgacaa	actgctgaaa	gttctggggc	gcggtatctc	cctgctggat	gcgtttggcg	180
cagcgaacga	tgtactgaaa	ggcgctgtgc	aaggtatcgc	tgaactgatt	actcgtccgg	240
gtttgatgaa	cgtggacttt	gcagacgtac	gcaccgtaat	gtctgagatg	ggctacgcaa	300
tgatgggttc	tggcgtggcg	agcgggtgaag	accgtgcgga	agaagctgct	gaaatggcta	360
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tcacggcggg	cttcgacctg	cgtctggatg	agttcgaaac	ggtaggtaac	accatccgtg	480
catttgcttc	cgacaacgcg	actgtgggta	tcgggtacttc	tcttgaccgc	gatatgaatg	540
acgagctgcg	cgtaaccgtt	gttgcgacag	gtatcggcat	ggacaaacgt	c	591

<210> 38

<211> 591

<212> DNA

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<213> Artificial Sequence

<220>

<223> DCW38

<400> 38

atatgaatga	cgagctgcgc	gtaaccgttg	ttgcgacagg	tatcggcatg	gacaaacgtc	60
ctgaaatcac	tctggtgacc	aataagcagg	ttcagcagcc	agtgatggat	cgctaccagc	120
agcatgggat	ggctccgctg	acccaggagc	agaagccggt	tgctaaagtc	gtgaatgaca	180
atgcgccgca	aactgcgaaa	gagccggatt	atctggatat	cccagcattc	ctgcgtaagc	240
aagctgatta	agaattgact	ggaatttggg	tttcgaggct	ctttgtgcta	aactggcccc	300
ccgaatgtat	agtacacttc	ggttgatag	gtaatttggc	gagataatac	gatgatcaaa	360
caaaggacac	ttaaactgat	cgttcaggcg	acgggtgtcg	gtttacatac	cggcaagaaa	420
gtcacctga	cgttacgccc	tgcgccggcc	aacaccgggg	tcattctatcg	tcgcaccgac	480
ttgaatccac	cggtagattt	cccggccgat	gccaaatctg	tgcgtgatac	catgctctgt	540
acgtgtctgg	tcaacgagca	tgatgtacgg	atttcaaccg	tagagcacct	c	591

<210> 39

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW39

<400> 39

atgctctgta	cgtgtctggt	caacgagcat	gatgtacgga	tttcaaccgt	agagcacctc	60
aatgctgctc	tcgcgggctt	gggcatcgat	aacattgtta	tcgaagttaa	cgcgccggaa	120
atcccgatca	tggacggcag	cgccgctccg	tttgtatacc	tgctgcttga	cgccgggtatc	180
gacgagttga	actgcgccaa	aaaatttgtt	cgcatcaaag	agactgttcg	tgctgaagat	240
ggcgataagt	gggctgaatt	taagccgtac	aatggttttt	cgctggattt	caccatcgat	300
tttaaccatc	cggctattga	ttccagcaac	cagcgctatg	cgatgaactt	ctccgctgat	360
gcgtttatgc	gccagatcag	ccgtgcgcgt	acgttcggtt	tcattgcgtga	tatcgaatat	420
ctgcagtccc	gtggtttgtg	cctgggcggc	agcttcgatt	gtgccatcgt	tgttgacgat	480
tatcgcgta	tgaacgaaga	cggcctgcgt	tttgaagacg	aatttgtgcg	tcacaaaatg	540
ctcgatgcga	tcggtgactt	gttcatgtgt	ggtcacaata	ttattggtgc	a	591

<210> 40

<211> 591

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW40

<400> 40

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tttaccgctt	ataaatccgg	tcatgcactg	aataacaaac	tgctgcaggc	tgctcctggcg	120
aaacaggaag	cctgggaata	tgtgaccttc	caggacgacg	cagaactgcc	gttggccttc	180
aaagcgctt	cagctgtact	ggcataacga	catttatact	gtcgtataaa	attcgactgg	240
caaatctggc	actctctccg	gccaggtgaa	ccagtcgttt	ttttttgaat	tttataagag	300
ctataaaaaa	cggatgcgaac	gctgttttct	taagcacttt	tccgcacaac	ttatcttcat	360
tcgtgctgtg	gactgcaggc	tttaatgata	agatttgtgc	gctaaatacg	tttgaatatg	420
atcgggatgg	caataacgtg	agtgggaatac	tgacgcgctg	gcgacagttt	ggtaaaccgt	480
acttctggcc	gcatctctta	ttagggatgg	ttgcggcgag	tttaggtttg	cctgcgctca	540
gcaacgccgc	cgaaccaaac	gcgcccgcga	aagcgacaac	ccgcaaccac	g	591

<210> 41

OSP88236(EN_sequence).txt

<211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW41
 <400> 41
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 agccttcagc caaagttaac tttggtcaat tggccttgct ggaagcgaac acacgccgcc 120
 cgaattcgaa ctattccgtt gattactggc atcaacatgc cattcgacg gtaatccgtc 180
 atctttcttt cgcaatggca ccgcaaacac tgcccgttgc tgaagaatct ttgcctcttc 240
 aggcgcaaca tcttgcatca ctggatacgc tcagcgcgct gctgaccag gaaggcacgc 300
 cgtctgaaaa ggggtatcgc attgattatg cgcattttac ccacaagca aaattcagca 360
 cgcccgcttg gataagccag gcgcaaggca tccgtgctgg ccctcaacgc ctcacctaac 420
 aacaataaac ctttacttca ttttattaac tccgcaacgc ggggcgtttg agattttatt 480
 atgctaatac aattgttaac taaagttttc ggtagtcgta acgatcgac cctgcgccgg 540
 atgcgcaaag tggatcaat catcaatgcc atggaaccgg agatggaaaa a 591

<210> 42
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW42
 <400> 42
 ctgcgccgga tgcgcaaagt ggtcaacatc atcaatgcc tggaaaccgga gatggaaaaa 60
 ctctccgacg aagaactgaa agggaaaacc gcagagtttc gtgcacgtct ggaaaaaggc 120
 gaagtgtgga aaaatctgat ccggaagct ttcgccgtgg tacgtgaggc aagtaagcgc 180
 gtctttggta tgcgtcactt cgacgttcag ttactcggcg gtatggttct taacgaacgc 240
 tgcacgccc aaatgcgtac cggatgaagga aaaaccctga ccgcaacgct gcctgcttac 300
 ctgaacgcac taaccggtaa aggcgtgcac gtagttaccg tcaacgacta cctggcgcaa 360
 cgtgacgccg aaaacaaccg tccgctgttt gaattccttg gcctgactgt cggatatcaac 420
 ctgccgggca tgccagcacc ggcaaagcgc gaagcttacg cagctgacat cacttacggt 480
 acgaacaacg aatacggctt tgactacctg cgcgacaaca tggcgttcag ccctgaagaa 540
 cgtgtacagc gtaaaactgca ctatgcgctg gtggacgaag tggactccat c 591

<210> 43
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW43
 <400> 43
 cctgaagaac gtgtacagcg taaactgcac tatgcgctgg tggacgaagt ggactccatc 60
 ctgatcgatg aagcgcgtac accgctgatc atttccggcc cggcagaaga cagctcggaa 120
 atgtataaac gcgtgaataa aattattccg cacctgatcc gtcaggaaaa agaagactcc 180
 gaaaccttcc agggcgaagg ccacttctcg gtggacgaaa aatctcgcca ggtgaacctg 240
 accgaacgtg gtctgggtgt gattgaagaa ctgctggtga aagagggcac catggatgaa 300
 ggggagtctc tgtactctcc ggccaacatc atgctgatgc accacgtaac ggcggcgctg 360
 cgcgtcatg cgctgtttac ccgtgacgtc gactacatcg ttaaagatgg tgaagttatc 420
 atcgttgacg aacacaccgg tcgtaccatg cagggccgtc gctgggtccga tggctctgcac 480
 caggctgtgg aagcgaagaa aggtgtgcag atccagaacg aaaaccaaac gctggcttcg 540
 atcaccttcc agaactactt ccgtctgtat gaaaaactgg cggggatgac c 591

OSP88236(EN_sequence).txt

<210> 44
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW44
 <400> 44
 ctggccttcga tcaccttcca gaactacttc cgtctgtatg aaaaactggc ggggatgacc 60
 ggtactgctg ataccgaagc tttcgaatth agctcaatct acaagctgga taccgtcgtt 120
 gttccgacca accgtccaat gattcgtaaa gatctgccgg acctggtcta catgactgaa 180
 gcggaaaaaa ttcaggcgat cattgaagat atcaaagaac gtactgcgaa aggccagccg 240
 gtgctgggtg gtactatctc catcgaaaaa tcggagctgg tgtcaaacga actgacaaaa 300
 gccggattta agcacaacgt cctgaacgcc aaattccacg ccaacgaagc ggcgattggt 360
 gctcaggcag gttatccggc tgcgggtgact atcgcgacca atatggcggg tcgtggtaca 420
 gatattgtgc tcgggtgtag ctggcaggca gaagttgccg cgctggaaaa tccgaccgca 480
 gagcaaattg aaaaaattaa agccgactgg caggtacgtc acgatgcggt actggaagca 540
 ggtggcctgc atatcatcgg taccgagcgt cacgaatccc gtcgtatcga t 591

<210> 45
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW45
 <400> 45
 ctggaagcag gtggcctgca tatcatcggg accgagcgtc acgaatcccg tcgtatcgat 60
 aaccagttgc gcggtcgttc tggctcgtcag ggggatgctg gttcttcccg tttctacctg 120
 tcgatggaag atgcgctgat gcgtatthtt gcttccgacc gagtatccgg catgatgcgt 180
 aaactgggta tgaagccagg cgaagccatt gaacaccctg ggggtgactaa agcgattgcc 240
 aacgcccagc gtaaagttag aagccgtaac ttcgacattc gtaagcaact gctggaatat 300
 gatgacgtgg ctaacgatca gcgtcgcgcc atttactccc agcgtaacga actgttggat 360
 gtcagcgtat tgagcgaaac cattaacagc attcgtgaag atgtgttcaa agcgaccatt 420
 gatgcctaca ttccaccaca gtcgctggaa gaaatgtggg atattccggg gctgcaggaa 480
 cgtctgaaga acgatttcga cctcgatttg ccaattgccg agtggctgga taaagaacca 540
 gaactgcatg aagagacgct gcgtgagcgc attctggcgc agtccatcga a 591

<210> 46
 <211> 591
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> DCW46
 <400> 46
 aaagaaccag aactgcatga agagacgctg cgtgagcgca ttctggcgca gtccatcgaa 60
 gtgtatcagc gtaaagaaga agtggttggg gctgagatga tgcgtcactt cgagaaaggc 120
 gtcattgctg aaacgcttga ctccctgtgg aaagagcacc tggcagcgat ggactatctg 180
 cgtcagggtg tccacctgca tggctacgca cagaaagatc cgaagcagga atacaaacgt 240
 gaatcgttct ccatgtttgc agcgatgctg gagtcgttga aatatgaagt tatcagtagc 300
 ctgagcaaaag ttcaggtacg tatgcctgaa gaggttgagg agctggaaca acagcgtcgt 360
 atggaagccg agcgtttagc gcaaattgag cagcttagcc atcaggatga cgactctgca 420
 gccgcagctg cactggcggc gcaaaccgga gagcgcaaag taggacgtaa cgatccttgc 480

OSP88236(EN_sequence).txt

ccgtgcggtt	ctggtaaaaa	atacaagcag	tgccatggcc	gcctgcaata	aaagctaact	540
gttgaagtaa	aaggtgcagg	attctgcgcc	ttttttatag	gtttaagaca	a	591

<210> 47

<211> 575

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW47b

<400> 47

gctaaactgtt	gaagtaaaag	gtgcaggatt	ctgcgccttt	tttatagggtt	taagacaatg	60
aaaaagctgc	aaattgcggt	aggtattatt	cgcaacgaga	acaatgaaat	ctttataacg	120
cgtcgcgcag	cagatgcgca	catggcgaat	aaactggagt	ttcccggcgg	taaaattgaa	180
atgggtgaaa	cgccggaaca	ggcgggtggtg	cgtgaacttc	aggaagaagt	cgggattacc	240
ccccaacatt	tttcgctatt	tgaaaaactg	gaatatgaat	tcccggacag	gcatataaca	300
ctgtggtttt	ggctggtcga	acgctgggaa	ggggagccgt	ggggtaaaga	agggaaccc	360
ggtgagtgga	tgtcgtggt	cggctttaat	gccgatgatt	ttccgccagc	caatgaaccg	420
gtaattgcga	agcttaaacg	tctgtaggtc	agataaggcg	ttttcgccgc	atccgacatt	480
cgcacacgat	gcctgatgcg	acgctggcgc	gtcttatcag	gcctaaaggg	atctctaact	540
cattgataaa	tttgtttttg	taggtcggat	aaggc			575

<210> 48

<211> 559

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW48b

<400> 48

tttgtttttg	taggtcggat	aaggcgttca	cgccgcatcc	gacatttgca	caagatgcct	60
gatgcgacgc	tgtccgcgtc	ttatcaggcc	tacgtgcggc	atcagacaaa	tgtcactgct	120
ttggttcttc	gctccagtca	tcgctttcgg	aaagatcgcc	actgctgggg	attcgttttt	180
cttcagcagc	ccattctccg	aggtcgatca	gctgacaacg	tttgagcaa	aatggccgaa	240
acgggctgat	ttcaccacac	accaccgttt	tcccgcagg	tgggcaattc	accgtaatag	300
tttctgacat	ttttactcct	tagcaacagg	ccagttcgaa	atccagacgt	tccggtacct	360
gtccgttttc	agtgtccagc	ggcataaaac	gaatggcaaa	acggctctta	tgtccggaaa	420
tttgcgata	aagctgtgaa	tcgagcgaca	gattcaggcg	cagcaagtcg	gcatcgccac	480
cgttatcctg	ataaaaacca	ttcaggctgg	tttgttttacg	gaagggggcc	gactggcgaa	540
ttaaatccag	caccatggt					559

<210> 49

<211> 558

<212> DNA

<213> Artificial Sequence

<220>

<223> DCW49

<400> 49

tttgttttacg	gaagggggcc	gactggcgaa	ttaaatccag	caccatggta	agtgccctggg	60
tgagcgggtt	caggctggca	atccagggtt	ctacctggct	gtcgcgctgc	gcctggggta	120
gatgcagcca	aatgtgcaat	gtaggtaaat	caaagctgca	acagccgcct	gggatgctca	180
gtcgtgacg	caccagagca	atcaaacgat	cttcacgcag	aaattgcccg	atacgcgcg	240
cggaaattaa	tacgctcccc	gccgctttta	actgctgaat	taatgcttca	atacggtctt	300
ggccacgcc	aggcacgcca	atccaggctt	ggagttttacg	ttgctgccgg	tcaagttctt	360

OSP88236(EN_sequence).txt

tcaacagctc	agtgcggact	tcgccgcgct	cgaaaacatc	cagtaattca	ctgacattac	420
ggaagaaatg	cagcgcgccca	gcgtgggtcaa	cgatgggttaa	attaacgggtg	agttgctgaa	480
tcaaaaaactc	aatgcgcagc	catgtacgca	ttttttcatt	tagtggatgt	tcaaaaagga	540
cctgggtctg	cattacgg					558

<210> 50

<211> 1298

<212> DNA

<213> Artificial Sequence

<220>

<223> Cm-oriC (DCW20)

<400> 50

gccgcgcgtt	atggatacgc	gtatgacacc	gcctggcctg	gataaattac	ccgaagccgt	60
gtcggcctga	gaaagacctg	agtatgttgt	aactaaaggt	gcgcataatg	tatattatgt	120
taaatggatc	ctgggtatta	aaaagaagat	ctattttattt	agagatctgt	tctattgtga	180
tctcttatta	ggatcgcact	gccctgtgga	taacaaggat	ccggctttta	agatcaacaa	240
cctggaaagg	atcattaact	gtgaatgac	ggtgacctg	gaccgtataa	gctgggatca	300
gaatgagggg	ttatacacaa	ctcaaaaact	gaacaacagt	tggtcttttg	ataactaccg	360
gttgatccaa	gcttcctgac	agagttatcc	acagtagatc	gcacgatctg	tataacttcg	420
tatagcatac	attatacgaa	gttatcttta	gttacaacat	actccattct	tctgccggat	480
cttcttacgc	cccgccctgc	cactcatcgc	agtactgttg	taattcatta	agcattctgc	540
cgacatggaa	gccatcacag	acggcatgat	gaacctgaat	cgccagcggc	atcagcacct	600
tgtcgccctg	cgtataatat	ttgcccatgg	tgaaaacggg	ggcgaagaag	ttgtccatat	660
tggccacgtt	taaatcaaaa	ctggtgaaac	tcaccagggg	attggctgag	acgaaaaaca	720
tatttctaat	aaacccttta	gggaaatagg	ccagggttttc	accgtaacac	gccacatctt	780
gcgaatatat	gtgtagaaac	tgccggaaat	cgctcgtggta	ttcactccag	agcgatgaaa	840
acgtttcagt	ttgctcatgg	aaaacgggtgt	aacaagggtg	aacactatcc	catatcacca	900
gctcaccgtc	tttcattgcc	atacgaatt	ccggatgagc	attcatcagg	cgggcaagaa	960
tgtgaataaa	ggccggataa	aacttgctgct	tatttttctt	tacggctctt	aaaaaggccg	1020
taatattccag	ctgaacggct	tggttatagg	tacattgagc	aactgactga	aatgcctcaa	1080
aatgttcttt	acgatgccat	tgggatatat	caacgggtgt	atatccagtg	atttttttct	1140
ccatttttagc	ttccttagct	cctgaaaatc	tcgataactc	aaaaaatacg	cccggtagtg	1200
atcttattttc	attatggatga	aagttggaac	ctcttacgtt	ctaaaaccgt	gactgcggat	1260
atcccgattg	tgggggatgc	tcgccaggct	ctcgaaca			1298

<210> 51

<211> 1298

<212> DNA

<213> Artificial Sequence

<220>

<223> Cm-oriC (DCW25)

<400> 51

gtctgcgtgg	aaaaggtata	aaagcactga	tagctgcccc	gctgcgtatc	ttcaacgcct	60
gtcggcctga	gaaagacctg	agtatgttgt	aactaaaggt	gcgcataatg	tatattatgt	120
taaatggatc	ctgggtatta	aaaagaagat	ctattttattt	agagatctgt	tctattgtga	180
tctcttatta	ggatcgcact	gccctgtgga	taacaaggat	ccggctttta	agatcaacaa	240
cctggaaagg	atcattaact	gtgaatgac	ggtgacctg	gaccgtataa	gctgggatca	300
gaatgagggg	ttatacacaa	ctcaaaaact	gaacaacagt	tggtcttttg	ataactaccg	360
gttgatccaa	gcttcctgac	agagttatcc	acagtagatc	gcacgatctg	tataacttcg	420
tatagcatac	attatacgaa	gttatcttta	gttacaacat	actccattct	tctgccggat	480
cttcttacgc	cccgccctgc	cactcatcgc	agtactgttg	taattcatta	agcattctgc	540
cgacatggaa	gccatcacag	acggcatgat	gaacctgaat	cgccagcggc	atcagcacct	600

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tgctgccttg	cgtataatat	ttgcccattg	tgaaaacggg	ggcgaagaag	ttgtccatat	660
tggccacgtt	taaatcaaaa	ctggtgaaac	tcaccaggg	attggctgag	acgaaaaaca	720
tattctcaat	aaacccttta	gggaaatagg	ccaggttttc	accgtaacac	gccacatctt	780
gcgaatatat	gtgtagaaac	tgccggaaat	cgctcgtggt	ttcactccag	agcgatgaaa	840
acgtttcagt	ttgctcatgg	aaaacgggtg	aacaagggtg	aacactatcc	catatcacca	900
gctcaccgtc	tttcattgcc	atacgaatt	ccggatgagc	attcatcagg	cgggcaagaa	960
tgtgaataaa	ggccggataa	aacttgtgct	tatttttctt	tacggctctt	aaaaaggccg	1020
taatatccag	ctgaacggtc	tggttatagg	tacattgagc	aactgactga	aatgcctcaa	1080
aatgttcttt	acgatgccat	tgggatatat	caacgggtgt	atatccagt	atTTTTTct	1140
ccatttttagc	ttccttagct	cctgaaaatc	tcgataactc	aaaaaatacg	cccggtagtg	1200
atcttatttc	attatggtga	aagttggaac	ctcttacgtt	ctaaaaccgt	gactgcggat	1260
atccccgattg	tgggggatgc	tcgccagggtc	ctcgaaca			1298

<210> 52

<211> 1509

<212> DNA

<213> Artificial Sequence

<220>

<223> Km-oriC (DCW25)

<400> 52

gtctgcgtgg	aaaagggtata	aaagcactga	tagctgcccc	gctgcgtatc	ttcaacgcct	60
gtcggcttga	gaaagacctg	agtatgttgt	aactaaaggt	gcgcataatg	tatattatgt	120
taaatggatc	ctgggtatta	aaaagaagat	ctattttatt	agagatctgt	tctattgtga	180
tctcttatta	ggatcgcact	gccctgtgga	taacaaggat	ccggctttta	agatcaacaa	240
cctggaaagg	atcattaact	gtgaatgatc	ggtgatcctg	gaccgtataa	gctgggatca	300
gaatgagggg	ttatacacia	ctcaaaaact	gaacaacagt	tgttcttttg	ataactaccg	360
gttgatccaa	gcttcctgac	agagttatcc	acagtagatc	gcacgatctg	tataacttcg	420
tatagcatac	attatacga	gttatcttta	gttacaacat	actccattct	tctgccggat	480
cttcgggaaa	gccacgttgt	gtctcaaaat	ctctgatgtt	acattgcaca	agataaaaat	540
atatcatcat	gaacaataaa	actgtctgct	tacataaaca	gtaatacaag	gggtgttatg	600
agccatattc	aacgggaaac	gtcttgctcg	aggccgcgat	taaattccaa	catggatgct	660
gatttatatg	ggtataaatg	ggctcgcgat	aatgtcgggc	aatcaggtgc	gacaatctat	720
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gccaatgatg	ttacagatga	gatggtcaga	ctaaactggc	tgacggaatt	tatgcctctt	840
ccgaccatca	agcattttat	ccgtactcct	gatgatgcac	ggttactcac	cactgcgatc	900
cccgggaaaa	cagcattcca	ggtattagaa	gaatatcctg	attcaggtga	aaatattgtt	960
gatgcgctgg	cagtgttcct	gcgccggttg	cattcgattc	ctgtttgtaa	ttgtcctttt	1020
aacagcgatc	gcgtatttcg	tctcgtcag	gcgcaatcac	gaatgaataa	cggtttggtt	1080
gatgcgagtg	atTTTgatga	cgagcgtaat	ggctggcctg	ttgaacaagt	ctggaaagaa	1140
atgcataagc	TTTTGCCatt	ctcaccggat	tcagtcgtca	ctcatggtga	tttctcactt	1200
gataacctta	TTTTtgacga	ggggaaatta	ataggttgta	ttgatgttgg	acgagtcgga	1260
atgcagacc	gataccagga	tcttgccatc	ctatggaact	gcctcgggtga	gttttctcct	1320
tcattacaga	aacggctttt	tcaaaaaatat	ggtattgata	atcctgatat	gaataaattg	1380
cagtttcatt	tgatgctcga	tgagtttttc	taatcagaat	tggttaattg	gttgtaacac	1440
tggcagagct	tctaaaaccg	tgactgcgga	tatccccgatt	gtgggggatg	ctcgccagggt	1500
cctcgaaca						1509

<210> 53

<211> 1509

<212> DNA

<213> Artificial Sequence

<220>

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<223> Km-oriC (DCW35)

<400> 53

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<223> Lter1

<400> 54

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<220>

<223> Lter2

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<213> Artificial Sequence

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<223> Cm-oriC/325k fragment

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Ile Tyr Gly Pro Glu Ser Ser Gly Lys Thr Thr Leu Thr Leu Gln Val
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