

SEQUENCE LISTING

<110> Universiteit Gent

<120> Mutant microorganisms resistant to lactose killing

<130> P2013/049PCT

<150> EP14193151.9

<151> 2014-11-14

<160> 58

<170> PatentIn version 3.5

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<211> 2660

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 7

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<210> 8

<211> 2554

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 8

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<210> 9

<211> 4141

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 9

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<210> 10

<211> 1187

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 10

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tcggtatgat aggaagagcc gacatcgaag aatcaaaaag caatgtcgct atgaacgctt	540
gactgccaca agccagttat ccctgtggta acttttctgg cacctctagc ctcaaattcc	600
gagggactaa aggatcgata ggccacactt tcatggtttg tattcacact gaaaatcaaa	660
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ttccagctcc gtttcattga ataagtaaag aaactataaa ggtagtggtta tttcactggc	900
gccgaagctc ccacttattc tacaccctct atgtctcttc acaatgtcaa actagagtca	960

agctcaacag ggtcttcttt ccccgtgat tctgccaagc ccgttcctt ggctgtggtt	1020
tcgctagata gtagataggg acagtgggaa tctcgttaat ccattcatgc gcgtcactaa	1080
ttagatgacg aggcatTTGG ctaccttaag agagtcatag ttactcccgc cgttttacccg	1140
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<210> 11
 <211> 2010
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 11	
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ttttgccgac ttcccttatac tacattattc tatcaactag aggctgttca ccttgagac	180
ctgctgcggt tatcagtacg acctggcatg aaaactattc cttcctgttg attttcacgg	240
gccgtcacia gcgcaccgga gccagcaaag gtgctggcct cttccagcca taagacccca	300
tctccggata aaccaattcc ggggtgataa gctgttaaga agaaaagata actcctccca	360
gggctcgcgc cgacgtctcc acattcagtt acgttaccgt gaagaatcca tatccaggtt	420
ccggaatctt aaccggattc cttttcgatg gtggcctgca taaaatcagg cttttgaaac	480
ggagcttccc catctcttag gatcgactaa cccacgtcca actgctgttg acgtggaacc	540
tttccccact tcagtcttca aagttctcat ttgaatattt gctactacca ccaagatctg	600
cactagaggc cgttcgacc gaccttacgg tctaggcttc gtcactgacc tccacgcctg	660
cctactcgtc agggcatcat atcaaccctg acggtagagt ataggtaaca cgcttgagcg	720
ccatccattt tcagggctag ttcatcggc cggtgagttg ttacacactc cttagcggat	780
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cttacaaaa atggcccact aaaagctctt cattcaaag tccacgttca attagtaac	960
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tctaatcatt cgctttacct cataaaactg atacgagctt ctgctatcct gagggaaact	1080
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cgtgtttcaa gacgggcggc atataaccat tatgccagca tccttgactt acgtcgcagt	1440
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gctgcattcc caaacaactc gactcttcga aggcacttta caaagaaccg cactcctcgc	1800
cacacgggat tctcacctc tatgacgtcc tgttccaagg aacatagaca aggaacggcc	1860
ccaaagtgc cctctccaaa ttacaactcg ggcaccgaag gtaccagatt tcaaatttga	1920
gcttttgccg cttcactcgc cgttactaag gcaatcccgg ttggtttctt ttcctccgct	1980
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<210> 12

<211> 1558

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 12

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caacaatgaa agcttactgt cgggaattcg cgttggccaa ttcattaatg gtataagggt	180
cttgacatct tacaatcaat atggtataat aatttagtta gggcccaagt tcacttaaaa	240
aggagatcaa caatgaaagc aattttcgta ctgaaacatc ttaatcatgc gtaggatttt	300
ttctatgtac tatttaaaaa acacaaactt ttggatgttc gggtttattct ttttctttta	360
cttttttatc atgggagcct acttcccgtt tttcccgtt ttggtacatg acatcaacca	420

tatcagcaaa agtgatacgg gtattatattt tgccgctatt tctctgttct cgctattatt	480
ccaaccgctg tttggctctgc tttctgacaa actcgggctg cgcaaatacc tgctgtggat	540
tattaccggc atgttagtga tgtttgcgcc gttcttttatt tttatcttcg ggccactggt	600
acaatacaac attttagtag gatcgattgt tgggtggtatt tatctaggct tttgttttaa	660
cgccggtgcg ccagcagtag aggcatttat tgagaaagtc agccgtcgca gtaatttcga	720
at ttggctgc gcgcggatgt ttggctgtgt tggctgggctg ctgtgtgcct cgattgtcgg	780
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gggcgcttat ctggtgctgg gtctgggtggc gctgggcttc accttaattt ccgtgttcac	1500
gcttagcggc cccggcccg tttccctgct gcgtcgtcag gtgaatgaag tcgcttaa	1558

<210> 13

<211> 1551

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 13

cccgtcttac tgtcgggaat tcgcgttggc cgattcatta atggtataag gttcttgaca	60
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacacttac tgtcgggaat tcgcgttggc caattaatta atggtataag gttcttgaca	180
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	240

caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	300
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	360
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	420
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	480
ctgtttggtc tgctttctga caaactcggg ctgcgcaa atacctgctgtg gattattacc	540
ggcatgttag tgatgtttgc gccgttcttt atttttatct tcgggccact gttacaatac	600
aacattttag taggatcgat tgttggtggt atttatctag gcttttgttt taacgccggt	660
gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	720
cgcgcgcgga tgtttggtg tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg	780
ttcaccatca ataatcagtt tgttttctgg ctgggctctg gctgtgcact catcctcgcc	840
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cgtattattg gctcatcggt cgccacctca gcgctggaag tggttattct gaaaacgctg	1260
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gaagtgcgtt tttcagcgac gatttatctg gtctgtttct gcttctttaa gcaactggcg	1380
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tatctggtgc tgggtctggt ggcgctgggc ttcaccttaa tttccgtgtt cagccttagc	1500
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<210> 14

<211> 1398

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 14

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tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacaatgaa agcaattttc gtacatgtac tattttaaaaa acacaaaactt ttggatgttc	180
ggtttattct ttttctttta cttttttatc atgggagcct acttcccgtt tttcccgatt	240
tggctacatg acatcaacca tatcagcaaa agtgatacgg gtattatttt tgccgctatt	300
tctctgttct cgctattatt ccaaccgctg tttggtctgc tttctgacaa actcgggctg	360
cgcaaatacc tgctgtggat tattaccggc atgttagtga tgtttgcgcc gttctttatt	420
tttatcttcg ggccactgtt acaatacaac attttagtag gatcgattgt tgggtgtatt	480
tatctaggct tttgttttaa cgccggtgcg ccagcagtag aggcatttat tgagaaagtc	540
agccgtcgca gtaatttcga atttggtcgc gcgcggatgt ttggctgtgt tggctgggcg	600
ctgtgtgcct cgattgtcgg catcatgttc accatcaata atcagtttgt tttctggctg	660
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tcttctgcca cggttgccaa tgcggtaggt gccaaaccatt cggcatttag ccttaagctg	780
gcactggaac tgttcagaca gccaaaactg tggtttttgt cactgtatgt tattggcggt	840
tcctgcacct acgatgtttt tgaccaacag tttgctaatt tctttacttc gttctttgct	900
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gcctcgatta tgttctttgc gccactgatc attaatcgca tcggtgggaa aaacgccctg	1020
ctgctggctg gcactattat gtctgtacgt attattggct catcgttcgc cacctcagcg	1080
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accttaattt ccgtgttcac gcttagcggc cccggcccgc tttccctgct gcgtcgtcag	1380
gtgaatgaag tcgcttaa	1398

<210> 15
 <211> 1558
 <212> DNA
 <213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 15

cccgtcttac tgtcgggaat tcgcgttggc caattaatta atggtataag gttcttgaca	60
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacaatgaa agcttactgt cgggaattcg cgttggccga ttcattaatg gtataagggt	180
cttgacatct tacaatcaat atggtataat aatttagtta gggcccaagt tcacttaaaa	240
aggagatcaa caatgaaagc aattttcgtc ctgaaacatc ttaatcatgc gtaggatttt	300
ttctatgtac tatttaaaaa acacaaactt ttggatgttc ggttttattct ttttctttta	360
cttttttatc atgggagcct acttcccgtt tttcccgatt tggctacatg acatcaacca	420
tatcagcaaa agtgatacgg gtattatttt tgccgctatt tctctgttct cgctattatt	480
ccaaccgctg tttggtctgc tttctgacaa actcgggctg cgcaaatacc tgctgtggat	540
tattaccggc atgttagtga tgtttgcgcc gttctttatt tttatcttcg ggccactggt	600
acaatacaac attttagtag gatcgattgt tgggtggtatt tatctaggct tttgttttaa	660
cgccggtgcg ccagcagtag aggcatttat tgagaaagtc agccgtcgca gtaatttcga	720
atttggtcgc gcgcggatgt ttggctgtgt tggctgggcg ctgtgtgcct cgattgtcgg	780
catcatgttc accatcaata atcagtttgt tttctggctg ggctctggct gtgcactcat	840
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tgcggtaggt gcccaaccatt cggcatttag ccttaagctg gcactggaac tgttcagaca	960
gccaaaactg tggtttttgt cactgtatgt tattggcggt tcctgcacct acgatgtttt	1020
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gtctgtacgt attattggct catcgttcgc cacctcagcg ctggaagtgg ttattctgaa	1260
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gcttagcggc cccggcccg tttccctgct gcgtcgtcag gtgaatgaag tcgcttaa	1558

<210> 16
 <211> 1558
 <212> DNA
 <213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 16

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tcttacaatc aatatggtat aataatntag ttagggccca agttcactta aaaaggagat	120
caacaatgaa agcttactgt cgggaattcg cgttggccga ttcttataaa tcattatctt	180
cttgacattt tagaaacaat atggtataat ataacgataa gggcccaagt tcacttaaaa	240
aggagatcaa caatgaaagc aattttcgta ctgaaacatc ttaatcatgc gtaggatttt	300
ttctatgtac tatttaaaaa acacaaactt ttggatgttc ggttttattct ttttctttta	360
cttttttatc atgggagcct acttcccgtt tttcccgtt ttggctacatg acatcaacca	420
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ccaaccgctg tttggtctgc tttctgacaa actcgggctg cgcaaatacc tgctgtggat	540
tattaccggc atgttagtga tgtttgcgcc gttctttatt tttatcttcg ggccactgtt	600
acaatacaac attttagtag gatcgattgt tgggtggtatt tatctaggct tttgttttaa	660
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tgcggtaggt gccaaaccatt cggcatttag ccttaagctg gcactggaac tgttcagaca	960
gccaaaactg tggtttttgt cactgtatgt tattggcggt tcctgcacct acgatgtttt	1020
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ccagtttgaa gtgcgttttt cagcgacgat ttatctggct tgtttctgct tctttaagca	1380

actggcgatg atttttatgt ctgtactggc gggcaatatg tatgaaagca tcggtttcca	1440
gggcgcttat ctggtgctgg gtctggtggc gctgggcttc accttaattt ccgtgttcac	1500
gcttagcggc cccggcccg tttccctgct gcgtcgtcag gtgaatgaag tcgcttaa	1558

<210> 17
 <211> 1471
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 17	
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tcgcgttggc cgattcttat taacaatatc cttcttgaca ttttgcaggg atttgtatat	120
aatcaataag tatgggcccc agttcactta aaaaggagat caacaatgaa agcaattttc	180
gtactgaaac atcttaatca tgcgtaggat tttttctatg tactatttaa aaaacacaaa	240
cttttgatg ttcggtttat tctttttctt ttactttttt atcatgggag cctacttccc	300
gtttttcccg atttggctac atgacatcaa ccatatcagc aaaagtgata cgggtattat	360
ttttgccgct atttctctgt tctcgtatt attccaaccg ctgtttggtc tgctttctga	420
caaaactcggg ctgcgcaaat acctgctgtg gattattacc ggcatgttag tgatgtttgc	480
gccgttcttt atttttatct tcgggccact gttacaatac aacatttttag taggatcgat	540
tgttgggtgg atttatctag gcttttggtt taacgccggt gcgccagcag tagaggcatt	600
tattgagaaa gtcagccgtc gcagtaattt cgaatttggt cgcgcgcgga tgtttggtctg	660
tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg ttcaccatca ataacagtt	720
tgttttctgg ctgggctctg gctgtgcact catcctcgcc gttttactct ttttcgcaa	780
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gaaaaacgcc ctgctgctgg ctggcactat tatgtctgta cgtattattg gctcatcggt	1140

cgccacctca gcgctggaag tggttattct gaaaacgctg catatgtttg aagtaccgtt	1200
cctgctggtg ggctgcttta aatatattac cagccagttt gaagtgcgtt tttcagcgac	1260
gatttatctg gtctgtttct gtttctttaa gcaactggcg atgattttta tgtctgtact	1320
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ggcgtgggc ttcaccttaa tttccgtgtt cacgcttagc ggccccggcc cgctttccct	1440
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<210> 18

<211> 1632

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 18

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tcgcgttggc cgattcgaat tcgcgttggc cgattcgaat tcgcgttggc caattaatta	120
atggtataag gttcttgaca tcttacaatc aatatggtat aataatttag ttagggccca	180
agttcactta aaaaggagat caacacttac tgtcggaat tcgcgttggc caattaatta	240
atggtataag gttcttgaca tcttacaatc aatatggtat aaataattta gtagggccc	300
aagttcactt aaaaaggaga tcaacaatga aagcaatttt cgtactgaaa catcttaatc	360
atgcgtagga ttttttctat gtactattta aaaaacacaa acttttggat gttcggttta	420
ttctttttct tttacttttt tatcatggga gcctacttcc cgtttttccc gatttggcta	480
catgacatca accatatcag caaaagtgat acgggtatta tttttgccgc tatttctctg	540
ttctcgctat tattccaacc gctgtttggt ctgctttctg aaaaactcgg gctgcgcaaa	600
tacctgctgt ggattattac cggcatgtta gtgatgtttg cgccgttctt tatttttatc	660
ttcgggccac tgttacaata caacatttta gtaggatcga ttgttggtgg tatttatcta	720
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cgcagtaatt tcgaatttgg tcgcgcgcgg atgtttggct gtgttggtg ggcgctgtgt	840
gcctcgattg tcggcatcat gttcaccatc aataatcagt ttgttttctg gctgggctct	900
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gccacggttg ccaatgcggt aggtgccaac cattcggcat ttagccttaa gctggcactg	1020

gaactgttca gacagccaaa actgtggttt ttgtcactgt atgttattgg cgtttcctgc	1080
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gaagtcgctt aa	1632

<210> 19

<211> 1558

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 19

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tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacaatgaa agcttactgt cgggaattcg cgttggccga ttcattaatg gtataagggt	180
cttgacatct tacaatcaat atggtataat aatttagtta gggcccaagt tcacttaaaa	240
aggagatcaa caatgaaagc aattttcgta ctgaaacatc ttaatcatgc gtaggatttt	300
ttctatgtac tatttaaaaa acacaaactt ttggatgttc ggtttattct ttttctttta	360
cttttttatc atgggagcct acttcccgtt tttcccgatt tggctacatg acatcaacca	420
tatcagcaaa agtgatacgg gtattatttt tgccgctatt tctctgttct cgctattatt	480
ccaaccgctg tttggctctgc tttctgacaa actcgggctg cgcaaatacc tgctgtggat	540
tattaccggc atgttagtga tgtttgccg gttctttatt tttatcttcg ggccactggt	600
acaatacaac attttagtag gatcgattgt tggtgggtatt tatctaggct tttgttttaa	660

cgccggtgcg ccagcagtag aggcatttat tgagaaagtc agccgtcgca gtaatttcga	720
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tgcggtagggt gccaacatt cggcatttag ccttaagctg gcactggaac tgttcagaca	960
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<210> 20

<211> 1571

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 20

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caacaatgaa agcaggctta cccgtcttac tgtcggaat tcgcgttggc cgattcatta	180
atggtataag gttcttgaca tcttacaatc aatatggtat aataatttag ttagggccca	240
agttcactta aaaaggagat caacaatgaa agcaattttc gtactgaaac atcttaatca	300
tgcgtaggat tttttctatg tactatttaa aaaacacaaa cttttggatg ttcggtttat	360
tctttttctt ttactttttt atcatgggag cctacttccc gtttttcccg atttggtac	420
atgacatcaa ccatatcagc aaaagtata cggttattat ttttgccgct atttctctgt	480

tctcgcctatt attccaaccg ctgttttggtc tgctttctga caaactcggg ctgcgcaa	540
acctgctgtg gattattacc ggcatgttag tgatgtttgc gccgttcttt atttttatct	600
tcggggccact gttacaatac aacatttttag taggatcgat tgttggtggt atttatctag	660
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cctcgattgt cggcatcatg ttcaccatca ataatcagtt tgttttctgg ctgggctctg	840
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gcatcggttt ccaggcgct tatctggtgc tgggtctggt ggcgctgggc ttcaccttaa	1500
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aagtcgctta a	1571

<210> 21

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 21

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tgtttagggg gttatgatat aatcacccaa ttagggccca agttcactta aaaaggagat	120
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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
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tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	300
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	360
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gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	600
cgcgcgcgga tgtttggctg tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg	660
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tatctgggtgc tgggtctggg ggcgctgggc ttcaccttaa tttccgtgtt cagccttagc	1380
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<210> 22

<211> 1951

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 22

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tgaatggggg taaatggcac tacaggcgcc ttttatggat tcatgcaagg aaactaccca	120
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taataacaaga aaagcccgtc acgggcttct cagggcgttt tatggcgggt ctgctatgtg	180
gtgctatctg actttttgct gttcagcagt tcctgccctc tgattttcca gtctgaccac	240
ttcggattat cccgtgacag gtcattcaga ctggctaata caccagtaa ggcagcggta	300
tcatcaacag gcttaccgtt cttactgtcg ggaattcgcg ttggccgatt aaaggagatc	360
aacaatgaaa gcactgtcgg gaattcgcg tggccgattc attaatggta taaggttctt	420
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agatcaacaa tgaaagcaag cggtatcatc aacaggctta cccgtcttac tgtcgggaat	540
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aataatttag ttagggccca agttcactta aaaaggagat caacaatgaa agcaattttc	660
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cttttggatg ttcggtttat tctttttctt ttactttttt atcatgggag cctacttccc	780
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cgccacctca gcgctggaag tggttattct gaaaacgctg catatgtttg aagtaccgtt	1680
cctgctgggtg ggctgcttta aatatattac cagccagttt gaagtgcgtt tttcagcgac	1740

gatttatctg gtctgtttct gcttctttaa gcaactggcg atgattttta tgtctgtact	1800
ggcgggcaat atgtatgaaa gcatcggttt ccagggcgct tatctggtgc tgggtctggt	1860
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gctgcgtcgt caggtgaatg aagtcgctta a	1951

<210> 23
 <211> 1749
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 23	
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tcgcgttggc cgattcgaat tcgcgttggc cgattaaagg agatcaacaa tgaaagctta	180
ctgtcgggaa ttcgcgttgg ccgattcgaa ttcgcgttgg ccgattcatt aatggtataa	240
ggttcttgac atcttacaat caatatggtta taataattta gttaggggccc aagttcactt	300
aaaaaggaga tcaacaatga aagcttactg tcgggaattc gcgttggccg attcattaat	360
ggtataaggt tcttgacatc ttacaatcaa tatggtataa taatttagtt agggcccaag	420
ttcacttaaa aaggagatca acaatgaaag caattttcgt actgaaacat cttaatcatg	480
cgtaggattt tttctatgta ctatttaaaa aacacaaact tttggatgtt cggttttattc	540
tttttctttt acttttttat catgggagcc tacttcccgt ttttcccgat ttggctacat	600
gacatcaacc atatcagcaa aagtatacgc ggtattatgt ttgccgctat ttctctgttc	660
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atgttctttg cgccactgat cattaatcgc atcgggtggga aaaacgccct gctgctggct	1380
ggcactatta tgtctgtacg tattatttggc tcatcgttcg ccacctcagc gctggaagtg	1440
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atcggtttcc agggcgctta tctgggtgctg ggtctgggtg cgctgggctt caccttaatt	1680
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gtcgcttaa	1749

<210> 24
 <211> 1556
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 24	
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caacaatgaa agcactgtcg ggaattcgcg ttggccaatt aattaatggt ataaggttct	180
tgacatctta caatcaatat ggtataataa tttagttagg gcccaagttc acttaaaaag	240
gagatcaaca atgaaagcaa ttttctgact gaaacatctt aatcatgcgt aggatttttt	300
ctatgtacta tttaaaaaac aaaaactttt ggatgttcgg tttattcttt ttcttttact	360
tttttatcat gggagcctac ttcccgtttt tcccgatttg gctacatgac atcaaccata	420
tcagcaaaaag tgatacgggt attatTTTTg ccgctatttc tctgttctcg ctattattcc	480
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ccggtgcgcc agcagtagag gcatttattg agaaagtcag ccgtcgcagt aatttcgaat	720
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ctgtacgtat tattggctca tcgttcgcca cctcagcgct ggaagtgggt attctgaaaa	1260
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<210> 25
 <211> 1802
 <212> DNA
 <213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 25

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ctgtcgggaa ttcgcgttgg ccgattcatt aatggtataa gggtcttgac atcttacaat	180
caatatggta taataattta gttaggggccc aagttcactt aaaaaggaga tcaacactta	240
ctgtcgggaa ttcgcgttgg ccaattaatt aatggtataa gggtcttgac atcttacaat	300
caatatggta taataattta gttaggggccc aagttcactt aaaaaggaga tcaacaatga	360
aagcaggctt acccgtctta ctgtcgggaa ttcgcgttgg ccgattcatt aatggtataa	420
gggtcttgac atcttacaat caatatggta taataattta gttaggggccc aagttcactt	480

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tttttgacca acagtttgct aatttcttta cttcgttctt tgctaccggg gaacagggtg	1320
cgcgggtatt tggctacgta acgacaatgg gcgaattact taacgcctcg attatgttct	1380
ttgcgccact gatcattaat cgcacgcgtg ggaaaaacgc cctgctgctg gctggcacta	1440
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tccagggcgc ttatctgggt ctgggtctgg tggcgctggg cttcacctta atttccgtgt	1740
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aa	1802

<210> 26

<211> 1947

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 26

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cgtcgtcagg tgaatgaagt cgcttaa	1947

<210> 27

<211> 1511

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 27

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aagtcgctta a	1511

<210> 28
 <211> 1950
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 28	
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tatctgactt tttgctgttc agcagttcct gccctctgat tttccagtct gaccacttcg	240
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gcgctgggct tcacctaat ttccgtgttc acgcttagcg gccccggccc gctttccctg	1920
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<210> 29

<211> 1551

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 29

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tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
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caacacttac tgtcgggaat tcgcgttggc caattaatta atggtataag gttcttgaca	180
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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtatgat tttttctatg	300
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<210> 30

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 30

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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg      180
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt      240
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<210> 31

<211> 1551

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 31

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caacacttac tgtcgggaat tcgcgttggc caattaatta atggtataag gttcttgaca	180
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<210> 32

<211> 1558

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 32

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caacaatgaa agcttactgt cgggaattcg cgttggccga ttcttataaa tcattatctt	180
cttgacattt tagaaacaat atggtataat ataacgataa gggcccaagt tcacttaaaa	240
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<210> 33
 <211> 1542
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 33	
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aatttcttta cttcgttctt tgctaccggt gaacagggtta cgcgggtatt tggctacgta	1080

acgacaatgg gcgaattact taacgcctcg attatgttct ttgcgccact gatcattaat	1140
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ggctcatcgt tcgccacctc agcgcctggaa gtggttattc tgaaaacgct gcatatgttt	1260
gaagtaccgt tcctgctggg gggctgcttt aaatatatta ccagccagtt tgaagtgcgt	1320
ttttcagcga cgatttatct ggtctgtttc tgcttcttta agcaactggc gatgattttt	1380
atgtctgtac tggcgggcaa tatgtatgaa agcatcgggt tccagggcgc ttatctggtg	1440
ctgggtctgg tggcgctggg cttcacctta atttccgtgt tcacgcttag cggccccggc	1500
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<210> 34

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 34

cccgtcttac tgtcgggaat tcgcgttggc cgattcatac tacccataat gttcttgaca	60
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	300
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	360
ctgtttggtc tgctttctga caaactcggg ctgcgcaaat acctgctgtg gattattacc	420
ggcatgttag tgatgtttgc gccgttcttt atttttatct tcgggccact gttacaatac	480
aacatttttag taggatcgat tgttgggtgg atttatctag gcttttggtt taacgccggt	540
gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	600
cgcgcgcgga tgtttggtg tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg	660
ttcaccatca ataatacagtt tgttttctgg ctgggctctg gctgtgcact catcctcgcc	720
gttttactct ttttcgcaa aacggatgcg ccctcttctg ccacggttgc caatgcggta	780
ggtgcccaacc attcggcatt tagccttaag ctggcactgg aactgttcag acagccaaaa	840

ctgtgggtttt tgtcactgta tgttattggc gtttcctgca cctacgatgt ttttgaccaa	900
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cgtattattg gctcatcggt cgccacctca gcgctggaag tggttattct gaaaacgctg	1140
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gaagtgcggt tttcagcgac gatttatctg gtctgtttct gcttctttaa gcaactggcg	1260
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tatctgggtg tgggtctggt ggcgctgggc ttcaccttaa tttccgtgtt cacgcttagc	1380
ggccccggcc cgctttccct gctgcgtcgt caggtgaatg aagtcgctta a	1431

<210> 35

<211> 1551

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 35

ccgtcttac tgtcgggaat tcgcgttggc cgattcatta atggataag gttcttgaca	60
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
caacacttac tgtcgggaat tcgcgttggc caattaatta atggataag gttcttgaca	180
tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	240
caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	300
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	360
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	420
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgtatt attccaaccg	480
ctgtttggtc tgctttctga caaactcggg ctgcgcaaat acctgctgtg gattattacc	540
ggcatgttag tgatgtttgc gccgttcttt atttttatct tcgggccact gttacaatac	600
aacatttttag taggatcgat tgttgggtgg atttatctag gcttttggtt taacgccggt	660
gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	720
cgcgcgcgga tgtttggctg tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg	780

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ggctacgtaa cgacaatggg cgaattactt aacgcctcga ttatgttctt tgcgccactg	1140
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cgtattattg gctcatcggt cgccacctca gcgctggaag tggttattct gaaaacgctg	1260
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gaagtgcggt tttcagcgac gatttatctg gtctgtttct gcttctttaa gcaactggcg	1380
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ggccccggcc cgctttccct gctgcgtcgt caggtgaatg aagtcgctta a	1551

<210> 36

<211> 1491

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 36

cccgtcttac tgcggaat tcgcgttggc cgattcgaat tcgcgatggc cgattcgaat	60
tcgcgttggc cgattcgaat tcgcgttggc cgattcttac acgatata cttcttgaca	120
ttttgcggga attatggtat aatcacaagg ttagggccca agttcactta aaaaggagat	180
caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat ttttctatg	240
tactatttaa aaaacacaaa cttttggatg ttcggtttat tcttttctt ttactttttt	300
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	360
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgtatt attccaaccg	420
ctgtttggtc tgctttctga caaactcggg ctgcgcaaat acctgctgtg gattattacc	480
ggcatgttag tgatgtttgc gccgttcttt atttttatct tcgggccact gttacaatac	540

aacatttttag taggatcgat tgttggtggt atttatctag gcttttggtt taacgccggt	600
gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	660
cgcgcgcgga tgtttggctg tgttggtggt gcgctgtgtg cctcgattgt cggcatcatg	720
ttcaccatca ataatcagtt tgttttctgg ctgggctctg gctgtgcact catcctcgcc	780
gttttactct ttttcgcaa aacggatgcg ccctcttctg ccacggttgc caatgcggta	840
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ctgtgggtttt tgtcactgta tgttattggc gtttcctgca cctacgatgt ttttgaccaa	960
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atcattaatc gcatcggtgg gaaaaacgcc ctgctgctgg ctggcactat tatgtctgta	1140
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<210> 37
 <211> 1405
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 37	
cccgtcttac tgtcggaat tcggttggc caattaatta atggtataag gttcttgaca	60
tcttacaggg cccaagttca cttaaaaagg agatcaacaa tgaaagcaat tttcgtagt	120
aaacatctta atcatgcgtg ggattttttc tatgtactat ttaaaaaaca caaacttttg	180
gatgttcggt ttattctttt tcttttactt ttttatcatg ggagcctact tcccgttttt	240
cccgatttgg ctacatgaca tcaaccatat cagcaaaagt gatacgggta ttatttttgc	300
cgctatttct ctgttctcgc tattattcca accgctgttt ggtctgcttt ctgacaaact	360
cgggctgcgc aaatacctgc tgtggattat taccggcatg ttagtgatgt ttgcgccgtt	420

ctttatTTTT atcttcgggc cactgttaca atacaacatt ttagtaggat cgattgttgg	480
tggtatTTTat ctaggctTTTt gttttaacgc cggtgcgcca gcagtagagg catttattga	540
gaaagtcagc cgtcgcagta atttcgaatt tggtcgcgcg cggatgtttg gctgtgttgg	600
ctgggcgctg tgtgcctcga ttgtcggcat catgttcacc atcaataatc agtttgTTTT	660
ctggctgggc tctggctgtg cactcatcct cgccgtTTTta ctctTTTTcg ccaaaacgga	720
tgcgccctct tctgccacgg ttgccaatgc ggtaggtgcc aaccattcgg catttagcct	780
taagctggca ctggaactgt tcagacagcc aaaactgtgg tttttgtcac tgtatgttat	840
tggcgTTTcc tgcacctacg atgtTTTTga ccaacagttt gctaatttct ttacttcgtt	900
ctttgctacc ggtgaacagg gtacgcgggt atttggttac gtaacgacaa tgggcgaatt	960
acttaacgcc tcgattatgt tctttgcgcc actgatcatt aatcgcacgc gtgggaaaaa	1020
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tctggtctgt ttctgcttct ttaagcaact ggcgatgatt tttatgtctg tactggcggg	1260
caatatgtat gaaagcatcg gtttccaggc cgcttatctg gtgctgggtc tgggtggcgt	1320
gggcttcacc ttaatttccg tgttcacgct tagcggcccc ggcccgcttt ccctgctgcg	1380
tcgtcaggtg aatgaagtcg cttaa	1405

<210> 38

<211> 1491

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 38

cccgtcttac tgcgggaat tcgcgttggc cgattcgaat tcgcgttggc cgattcgaat	60
tcgcgttggc cgattcgaat tcgcgttggc cgattcttac acgatataata cttcttgaca	120
ttttgcggga attatggtat aatcacaagg ttagggccca agttcactta aaaaggagat	180
caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	240
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	300

atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	360
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	420
ctgtttggtc tgctttctga caaactcggg ctgcgcaa at acctgctgtg gattattacc	480
ggcatgttag tgatgtttgc gccgttcttt atttttatct tcggggccact gttacaatac	540
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gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	660
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cgtattattg gctcatcgtt cgccacctca gcgctggaag tggttattct gaaaacgctg	1200
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gaagtgcgtt tttcagcgac gatttatctg gtctgtttct gtttctttaa gcaactggcg	1320
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ggccccggcc cgctttccct gctgcgtcgt caggtgaatg aagtcgctta a	1491

<210> 39

<211> 2116

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 39

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tgggggtaaa tggcactaca ggccgctttt atggattcat gcaaggaaac taccataat	120
--	-----

acaagaaaag cccgtcacgg gcttctcagg gcgttttatg gcgggtctgc tatgtggtgc	180
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tatctgactt tttgctgttc agcagttcct gccctctgat tttccagtct gaccacttcg	240
gattatcccc tgacaggcca ttcagactgg ctaatgcacc cagtaaggca gcggtatcat	300
caacaggctt acccgtctta ctgtcgggaa ttcgcgttgg ccgattcatt aatgggtataa	360
ggttcttgac atcttacaat caatatggta taataattta gttagggccg aagttcactt	420
aaaaaggaga tcaacaatga aagcttactg tcgggaattc gcgttggccg attcattaat	480
ggtataaggt tcttgacatc ttacaatcaa tatgggtataa taatttagtt agggcccaag	540
ttcacttaaa aaggagatca acaatgaaag cttactgtcg ggaattcgcg ttggccgatt	600
cattaatggg ataaggttct tgacatctta caatcaatat ggtataataa tttagttagg	660
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gccaagttc acttaaaaag gagatcaaca atgaaagcaa ttttcgtact gaaacatctt	840
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tgaaagcatc ggtttccagg gcgcttatct ggtgctgggt ctggtggcgc tgggcttcac	2040
cttaatttcc gtgttcacgc ttagcggccc cggcccgtt tccctgctgc gtcgtcaggt	2100
gaatgaagtc gcttaa	2116

<210> 40

<211> 2122

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 40

tgtctttttc gtgacattca gttcgctgcg ctcacggctc tggcagtga tgggggtaaa	60
tggcactaca ggcgctttt atggattcat gcaaggaaac taccataat acaagaaaag	120
cccgtcacgg gcttctcagg gcgttttatg gcgggtctgc tatgtggtgc tatctgactt	180
tttgctgttc agcagttcct gccctctgat tttccagtct gaccacttcg gattatcccg	240
tgacaggcca ttgagactgg ctaatgcacc cagtaaggca gcggtatcat caacaggctt	300
acccgtctta ctgtcgggaa ttcgcgttgg ccgattcatt aatggtataa ggttcttgac	360
atcttacaat caatatggta taataattta gttaggggccc aagttcactt aaaaaggaga	420
tcaacaatga aagcttactg tcgggaattc gcgttggccg attcattaat ggtataaggt	480
tcttgacatc ttacaatcaa tatggtataa taatttagtt agggcccaag ttcacttaaa	540
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agttcactta aaaaggagat caacacttta ctgtcgggga attcgccgtt gggccaattt	840
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taacgcctcg attatgttct ttgcgccact gatcattaat cgcacgggtg ggaaaaacgc	1740
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tatgtatgaa agcatcggtt tccagggcgc ttatctggtg ctgggtctgg tggcgctggg	2040
cttcacctta atttccgtgt tcacgcttag cggccccggc ccgctttccc tgctgcgtcg	2100
tcaggtgaat gaagtcgctt aa	2122

<210> 41

<211> 2130

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 41

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taaatggcac tacaggcgcc ttttatggat tcatgcaagg aaactacca taatacaaga	120
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aaagcccgtc acgggcttct cagggcgttt tatggcgggt ctgctatgtg gtgctatctg	180
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actttttgct gttcagcagt tcctgccctc tgatttttcca gtctgaccac ttcggattat	240
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gcttaccctgt cttactgtcg ggaattcgcg ttggccgatt cattaatggt ataaggttct	360
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<210> 42
 <211> 1865
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 42	
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gtttccaggg cgcttatctg gtgctgggtc tgggtggcgt gggcttcacc ttaatttccg	1800
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cttaa	1865

<210> 43

<211> 1802

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 43

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cgtcttactg tcgggaattc gcgttggccg attcattaat ggtataaggt tcttgacatc	180
ttacaatcaa tatggtataa taatttagtt agggcccaag ttcacttaaa aaggagatca	240
acaatgaaag cttactgtcg ggaattcgcg ttggccgatt cattaatggt ataaggttct	300
tgacatctta caatcaatat ggggtataata atttagttag ggcccaagtt cacttaaaaa	360
ggagatcaac aatgaaagca ctgtcgggaa ttcgcgttgg ccgattcatt aatggtataa	420
ggttcttgac atcttacaat caatatggtg taataattta gttagggcc aagttcactt	480

aaaaaggaga tcaacaatga aagcaatttt cgtactgaaa catcttaatc atgcgtagga	540
ttttttctat gtactattta aaaaacacaa acttttggat gttcggttta ttctttttct	600
tttacttttt tatcatggga gcctacttcc cgtttttccc gatttggcta catgacatca	660
accatatcag caaaagtgat acgggtatta tttttgccgc tatttctctg ttctcgctat	720
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ccagccagtt tgaagtgcgt ttttcagcga cgatttatct ggtctgtttc tgcttcttta	1620
agcaactggc gatgattttt atgtctgtac tggcgggcaa tatgtatgaa agcatcggtt	1680
tccagggcgc ttatctgggt ctgggtctgg tggcgctggg cttcacctta atttccgtgt	1740
tcacgcttag cggccccggc ccgctttccc tgctgcgtcg tcaggtgaat gaagtcgctt	1800
aa	1802

<210> 44

<211> 2245

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 44

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tgaatggggg taaatggcac tacaggcgcc ttttatggat tcatgcaagg aaactaccca	120
taatacaaga aaagcccgtc acgggcttct cagggcgttt tatggcgggt ctgctatgtg	180
gtgctatctg actttttgct gttcagcagt tcctgccctc tgattttcca gtctgaccac	240
ttcggattat cccgtgacag gtcattcaga ctggctaata caccagtaa ggcagcggta	300
tcatcaacag gcttaccgt cttactgtcg ggaattcgcg ttggccgatt cattaatggt	360
ataaggttct tgacatctta caatcaatat ggtataataa tttagttagg gcccaagttc	420
acttaaaaag gagatcaaca atgaaagctt actgtcggga attcgcgttg gccgattcat	480
taatgggata aggttcttga catcttaca tcaatatggt ataataattt agttagggcc	540
caagttcact taaaaaggag atcaacaatg aaagcactgt cgggaattcg cgttggccga	600
ttcattaatg gtataagggt cttgacatct tacaatcaat atggtataat aatttagtta	660
gggcccagt tcacttaaaa aggagatcaa caatgaaagc ttactgtcgg gaattcgcgt	720
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tcgtcaggtg aatgaagtcg cttaa	2245

<210> 45

<211> 2029

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 45

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gcgggtctgc tatgtggtgc tatctgactt tttgctgttc agcagttcct gccctctgat	120
tttccagtct gaccacttcg gattatcccg tgacaggcca ttcagactgg ctaatgcacc	180
cagtaaggca gcggtatcat caacaggctt acccgtctta ctgtcgggaa ttcgcgttgg	240
ccgattaatt aatggtataa ggttcttgac atcttacaat caatatggta taataattta	300
gtagggccc aagttcactt aaaaaggaga tcaacaatga aagcttactg tcgggaattc	360
gcgttggccg attcattaat ggtataaggt tcttgacatc ttacaatcaa tatggtataa	420
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cgtcttactg tcgggaattc gcgttggccg attcattaat ggtataaggt tcttgacatc	540
ttacaatcaa tatggtataa taatttagtt agggcccaag ttcacttaaa aaggagatca	600
acacttactg tcgggaattc gcgttggcca attaattaat ggtataaggt tcttgacatc	660

ttacaatcaa tatggtataa taatttagtt agggcccaag ttcacttaaa aaggagatca	720
acaatgaaag caattttcgt actgaaacat cttaatcatg cgtaggattt tttctatgta	780
ctatttaaaa aacacaaact tttggatggt cggtttattc tttttctttt acttttttat	840
catgggagcc tacttcccgt ttttcccgat ttggctacat gacatcaacc atatcagcaa	900
aagtgatacg ggtattatgt ttgccgctat ttctctgttc tcgctattat tccaaccgct	960
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tctgggtgctg ggtctggtgg cgctgggctt caccttaatt tccgtgttca cgcttagcgg	1980
ccccggcccc ctttccctgc tgcgtcgtca ggtgaatgaa gtcgcttaa	2029

<210> 46

<211> 2088

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 46

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cagggcgttt tatggcgggt ctgctatgtg gtgctatctg actttttgct gttcagcagt	180
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tacaatcaat atgggtataat aatttagtta gggcccaagt tcacttaaaa aggagatcaa	660
cacttactgt cgggaattcg cgttggccaa ttaattaatg gtataagggt cttgacatct	720
tacaatcaat atgggtataat aatttagtta gggcccaagt tcacttaaaa aggagatcaa	780
caatgaaagc aattttcgta ctgaaacatc ttaatcatgc gtaggatttt ttctatgtac	840
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cccggcccgc tttccctgct gcgtcgtcag gtgaatgaag tcgcttaa	2088

<210> 47

<211> 2102

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 47

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tctgattttc cagtctgacc acttcggatt atcccgtgac aggtcattca gactggctaa	240
tgcacccagt aaggcagcgg tatcatcaac aggcttacc gtcttactgt cgggaattcg	300
cgttggccga ttcgaattcg cgttggccga ttcgaattcg cgttggccga ttcgaattcg	360
cgttggccga ttcgaattcg cgttggccga ttcgaattcg cgttggccga ttcgaattcg	420
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agatcaacaa tgaaagctta ctgtcgggaa ttcgcgttgg ccgattcatt aatggtataa	720
ggttcttgac atcttacaat caatatggta taataattta gttaggggccc aagttcactt	780
aaaaaggaga tcaacaatga aagcaatttt cgtactgaaa catcttaatc atgcgtagga	840
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aa	2102

<210> 48

<211> 2056

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<220>

<221> misc_feature

<222> (616)..(616)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (656)..(656)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (674)..(674)
<223> n is a, c, g, or t

<400> 48
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cgtcttactg tcgggaattc gcgttggccg attaattaat ggtataaggt tcttgacatc 180
ttacaatcaa tatggtataa taatttagtt agggcccaag ttcacttaaa aaggagatca 240
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cattaatggt ataaggttct tgacatctta caatcaatat ggtataataa tttagttagg 480
gcccaagttc acttaaaaag gagatcaaca cttactgtcg ggaattcgcg ttggccaatt 540
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<210> 49

<211> 1558

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 49

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caacaatgaa agcttactgt cgggaattcg cgttggccga ttcttataaa tcattatctt	180
cttgacattt tagaaacaat atggtataat ataacgataa gggcccaagt tcacttaaaa	240
aggagatcaa caatgaaagc aattttcgta ctgaaacatc ttaatcatgc gtaggatttt	300
ttctatgtac tatttaaaaa acacaaactt ttggatgttc ggtttattct ttttctttta	360
cttttttatc atgggagcct acttcccgtt tttcccgtt ttggctacatg acatcaacca	420
tatcagcaaa agtgatacgg gtattatatt tgccgctatt tctctgttct cgctattatt	480

ccaaccgctg tttggtctgc tttctgacaa actcgggctg cgcaaatacc tgctgtggat	540
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acaatacaac attttagtag gatcgattgt tgggtggtatt tatctaggct tttgttttaa	660
cgccggtgcg ccagcagtag aggcatttat tgagaaagtc agccgtcgca gtaatttcga	720
atttggtcgc gcgcggatgt ttggctgtgt tggctgggcg ctgtgtgcct cgattgtcgg	780
catcatgttc accatcaata atcagtttgt tttctggctg ggctctggct gtgcactcat	840
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<210> 50
 <211> 1431
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Heterologous sequences in front of a lactose transporter gene

<400> 50	
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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	300

aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	360
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ggcatgttag tgatgtttgc gccgttcttt atttttatct tcggggccact gttacaatac	480
aacatttttag taggatcgat tgttggtggt atttatctag gcttttgttt taacgccggt	540
gcgccagcag tagaggcatt tattgagaaa gtcagccgtc gcagtaattt cgaatttggt	600
cgcgcgcgga tgtttggtg tgttggctgg gcgctgtgtg cctcgattgt cggcatcatg	660
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<210> 51

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 51

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tcttacaatc aatatggtat aataatttag ttagggccca agttcactta aaaaggagat	120
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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
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tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	300
aaaagtgata cgggtattat ttttgccgct atttctctgt tctcgctatt attccaaccg	360
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<210> 52

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 52

cccgctttac tgcggaat tcgcttggc cgattcttaa attcaataac tttcttgaca	60
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tggtattaga tttatggtat aatgaccga tatgggcca agttcactta aaaaggagat	120
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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
atcatgggag cctacttccc gtttttcccg atttggctac atgacatcaa ccatatcagc	300
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<210> 53

<211> 1571

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 53

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caacaatgaa agcaggctta ccgctcttac tgtcgggaat tcgcgttggc caattaatta	180
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agttcactta aaaaggagat caacaatgaa agcaattttc gtactgaaac atcttaatca	300
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tctcgtatt attccaaccg ctgtttggtc tgctttctga caaactcggg ctgcgcaaat	540
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<210> 54
 <211> 1431
 <212> DNA
 <213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 54

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caacaatgaa agcaattttc gtactgaaac atcttaatca tgcgtaggat tttttctatg	180
tactatttaa aaaacacaaa cttttggatg ttcggtttat tctttttctt ttactttttt	240
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aacatttttag taggatcgat tgttggtggt atttatctag gcttttggtt taacgccggt	540
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<210> 55

<211> 1968

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 55

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<210> 56

<211> 1431

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 56

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<210> 57

<211> 2296

<212> DNA

<213> Artificial sequence

<220>

<223> Heterologous sequences in front of a lactose transporter gene

<400> 57

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taatacaaga aaagcccgtc acgggcttct cagggcgttt tatggcgggt ctgctatgtg	180
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<220>
 <223> Terminator construct

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