

SEQUENCE LISTING

<110> MERCK SERONO S.A.
HELMAN, DANIEL
BAR-SHIMON, MEIRAV
TOISTER-ACHITUV, MIRA

<120> LOW FUCOSE CELL LINES AND USES THEREOF

<130> P 11/028PCT

<150> 211583
<151> 2011-03-06

<150> 217216
<151> 2011-12-27

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<170> PatentIn version 3.4

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<400> 2
ggatccgcgg ccgctacgcc gccctcagat ctttatca 38

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gcttgaattc aagcttctag tacgcgtgtt taaacc 36

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 <220>
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 <223> 3' BQ conjugated oligonucleotide

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<210> 8
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 <400> 12
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 <223> 3' BQ conjugated oligonucleotide

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 aagtgggaag cataatgagc aaa 23
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 <212> PRT

<213> Cricetulus griseus

<220>

<221> misc_feature

<223> GDP-mannose 4,6-dehydratase (GMD) - Splice variant 1

<400> 23

Met Ala His Ala Pro Ala Ser Cys Pro Ser Ser Arg Asn Ser Gly Asp
1 5 10 15

Gly Asp Lys Gly Lys Pro Arg Lys Val Ala Leu Ile Thr Gly Ile Thr
20 25 30

Gly Gln Asp Gly Ser Tyr Leu Ala Glu Phe Leu Leu Glu Lys Gly Tyr
35 40 45

Glu Val His Gly Ile Val Arg Arg Ser Ser Ser Phe Asn Thr Gly Arg
50 55 60

Ile Glu His Leu Tyr Lys Asn Pro Gln Ala His Ile Glu Gly Asn Met
65 70 75 80

Lys Leu His Tyr Gly Asp Leu Thr Asp Ser Thr Cys Leu Val Lys Ile
85 90 95

Ile Asn Glu Val Lys Pro Thr Glu Ile Tyr Asn Leu Gly Ala Gln Ser
100 105 110

His Val Lys Ile Ser Phe Asp Leu Ala Glu Tyr Thr Ala Asp Val Asp
115 120 125

Gly Val Gly Thr Leu Arg Leu Leu Asp Ala Ile Lys Thr Cys Gly Leu
130 135 140

Ile Asn Ser Val Lys Phe Tyr Gln Ala Ser Thr Ser Glu Leu Tyr Gly
145 150 155 160

Lys Val Gln Glu Ile Pro Gln Lys Glu Thr Thr Pro Phe Tyr Pro Arg
165 170 175

Ser Pro Tyr Gly Ala Ala Lys Leu Tyr Ala Tyr Trp Ile Val Val Asn
180 185 190

Phe Arg Glu Ala Tyr Asn Leu Phe Ala Val Asn Gly Ile Leu Phe Asn
195 200 205

His Glu Ser Pro Arg Arg Gly Ala Asn Phe Val Thr Arg Lys Ile Ser
210 215 220

Arg Ser Val Ala Lys Ile Tyr Leu Gly Gln Leu Glu Cys Phe Ser Leu
225 230 235 240

Gly Asn Leu Asp Ala Lys Arg Asp Trp Gly His Ala Lys Asp Tyr Val
245 250 255

Glu Asp Phe Leu Gln Gly Asp Cys Ser Lys Ala Gln Gln Lys Leu Asn
260 265 270

Trp Lys Pro Arg Val Ala Phe Asp Glu Leu Val Arg Glu Met Val Gln
275 280 285

Ala Asp Val Glu Leu Met Arg Thr Asn Pro Asn Ala
290 295 300

<210> 24
<211> 306
<212> PRT
<213> Cricetulus griseus

<220>
<221> misc_feature
<223> GDP-mannose 4,6-dehydratase (GMD) - Splice variant 2
<400> 24

Met Ala His Ala Pro Ala Ser Cys Pro Ser Ser Arg Asn Ser Gly Asp
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Gly Asp Lys Gly Lys Pro Arg Lys Val Ala Leu Ile Thr Gly Ile Thr
20 25 30

Gly Gln Asp Gly Ser Tyr Leu Ala Glu Phe Leu Leu Glu Lys Gly Tyr
35 40 45

Glu Ile Ser Phe Asp Leu Ala Glu Tyr Thr Ala Asp Val Asp Gly Val
50 55 60

Gly Thr Leu Arg Leu Leu Asp Ala Ile Lys Thr Cys Gly Leu Ile Asn

Asn Ala
305

<210> 25
<211> 372
<212> PRT
<213> *Cricetulus griseus*

<220>
<221> misc_feature
<223> GDP-mannose 4,6-dehydratase (GMD Full length)
<400> 25

Met Ala His Ala Pro Ala Ser Cys Pro Ser Ser Arg Asn Ser Gly Asp
1 5 10 15

Gly Asp Lys Gly Lys Pro Arg Lys Val Ala Leu Ile Thr Gly Ile Thr
20 25 30

Gly Gln Asp Gly Ser Tyr Leu Ala Glu Phe Leu Leu Glu Lys Gly Tyr
35 40 45

Glu Val His Gly Ile Val Arg Arg Ser Ser Ser Phe Asn Thr Gly Arg
50 55 60

Ile Glu His Leu Tyr Lys Asn Pro Gln Ala His Ile Glu Gly Asn Met
65 70 75 80

Lys Leu His Tyr Gly Asp Leu Thr Asp Ser Thr Cys Leu Val Lys Ile
85 90 95

Ile Asn Glu Val Lys Pro Thr Glu Ile Tyr Asn Leu Gly Ala Gln Ser
100 105 110

His Val Lys Ile Ser Phe Asp Leu Ala Glu Tyr Thr Ala Asp Val Asp
115 120 125

Gly Val Gly Thr Leu Arg Leu Leu Asp Ala Ile Lys Thr Cys Gly Leu
130 135 140

Ile Asn Ser Val Lys Phe Tyr Gln Ala Ser Thr Ser Glu Leu Tyr Gly
145 150 155 160

Lys Val Gln Glu Ile Pro Gln Lys Glu Thr Thr Pro Phe Tyr Pro Arg
 165 170 175

Ser Pro Tyr Gly Ala Ala Lys Leu Tyr Ala Tyr Trp Ile Val Val Asn
 180 185 190

Phe Arg Glu Ala Tyr Asn Leu Phe Ala Val Asn Gly Ile Leu Phe Asn
 195 200 205

His Glu Ser Pro Arg Arg Gly Ala Asn Phe Val Thr Arg Lys Ile Ser
 210 215 220

Arg Ser Val Ala Lys Ile Tyr Leu Gly Gln Leu Glu Cys Phe Ser Leu
 225 230 235 240

Gly Asn Leu Asp Ala Lys Arg Asp Trp Gly His Ala Lys Asp Tyr Val
 245 250 255

Glu Ala Met Trp Leu Met Leu Gln Asn Asp Glu Pro Glu Asp Phe Val
 260 265 270

Ile Ala Thr Gly Glu Val His Ser Val Arg Glu Phe Val Glu Lys Ser
 275 280 285

Phe Met His Ile Gly Lys Thr Ile Val Trp Glu Gly Lys Asn Glu Asn
 290 295 300

Glu Val Gly Arg Cys Lys Glu Thr Gly Lys Ile His Val Thr Val Asp
 305 310 315 320

Leu Lys Tyr Tyr Arg Pro Thr Glu Val Asp Phe Leu Gln Gly Asp Cys
 325 330 335

Ser Lys Ala Gln Gln Lys Leu Asn Trp Lys Pro Arg Val Ala Phe Asp
 340 345 350

Glu Leu Val Arg Glu Met Val Gln Ala Asp Val Glu Leu Met Arg Thr
 355 360 365

Asn Pro Asn Ala
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<210> 26
 <211> 903
 <212> DNA
 <213> *Cricetulus griseus*

<220>
 <221> misc_feature
 <223> GDP-mannose 4,6-dehydratase (GMD) - Splice variant 1

<400> 26
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 aagcccagga aggtggcgct catcacgggc atcacgggcc aggatggctc atacttggca 120
 gaattcctgc tggagaaagg atacgagggt catggaattg tacggcgatc cagttcattt 180
 aatacagggtc gaattgaaca tttatataag aatccacagg ctcatattga aggaaacatg 240
 aagttgcact atggtgacct caccgacagc acctgcctag taaaaatcat caatgaagtc 300
 aaacctacag agatctacaa tcttggtgcc cagagccatg tcaagatttc ctttgactta 360
 gcagagtaca ctgcagatgt tgatggagtt ggcaccttgc ggcttctgga tgcaattaag 420
 acttgtggcc ttataaattc tgtgaagttc taccaggcct caactagtga actgtatgga 480
 aaagtgcaag aaatacccca gaaagagacc acccctttct atccaaggtc gccctatgga 540
 gcagccaaac tttatgccta ttggattgta gtgaactttc gagaggctta taatctcttt 600
 gcggtgaacg gcattctctt caatcatgag agtcctagaa gaggagctaa ttttgttact 660
 cgaaaaatta gccggtcagt agctaagatt taccttggac aactggaatg tttcagtttg 720
 ggaaatctgg acgccaaacg agactggggc catgccaagg actatgtcga ggacttcttg 780
 caggagact gctccaaggc gcagcagaaa ctgaactgga agccccgcgt tgcctttgac 840
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 tga 903

<210> 27
 <211> 921
 <212> DNA
 <213> *Cricetulus griseus*

<220>
 <221> misc_feature
 <223> GDP-mannose 4,6-dehydratase (GMD) - Splice variant 2

<400> 27
 atggctcacg ctcccgctag ctgcccgagc tccaggaact ctggggacgg cgataagggc 60

aagcccagga aggtggcgct catcacgggc atcacgggcc aggatggctc atacttggca	120
gaattcctgc tggagaaagg atacgagatt tcctttgact tagcagagta cactgcagat	180
gttgatggag ttggcacctt gcggcttctg gatgcaatta agacttgtgg ccttataaat	240
tctgtgaagt tctaccaggc ctcaactagt gaactgtatg gaaaagtgca agaaataccc	300
cagaaagaga ccaccccttt ctatccaagg tcgccctatg gagcagccaa actttatgcc	360
tattggattg tagtgaactt tcgagaggct tataatctct ttgcggtgaa cggcattctc	420
ttcaatcatg agagtcctag aagaggagct aattttgtta ctcgaaaaat tagccggtca	480
gtagctaaga ttaccttgg acaactggaa tgtttcagtt tgggaaatct ggacgccaaa	540
cgagactggg gccatgccaa ggactatgtc gaggctatgt ggctgatgtt acaaaatgat	600
gaaccagagg actttgtcat agctactggg gaagttcata gtgtccgtga atttgttgag	660
aaatcattca tgcacattgg aaagaccatt gtgtgggaag gaaagaatga aaatgaagtg	720
ggcagatgta aagagaccgg caaaattcat gtgactgtgg atctgaaata ctaccgacca	780
actgaagtgg acttcctgca gggagactgc tccaaggcgc agcagaaact gaactggaag	840
ccccgcgttg cctttgacga gctggtgagg gagatggtgc aagccgatgt ggagctcatg	900
agaaccaacc ccaacgcctg a	921

<210> 28

<211> 1120

<212> DNA

<213> *Cricetulus griseus*

<220>

<221> misc_feature

<223> GDP-mannose 4,6-dehydratase (GMD Full length)

<400> 28

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aagcccagga aggtggcgct catcacgggc atcacgggcc aggatggctc atacttggca	120
gaattcctgc tggagaaagg atacgaggtt catggaattg tacggcgatc cagttcattt	180
aatacaggtc gaattgaaca ttatataag aatccacagg ctcatattga aggaaacatg	240
aagttgcact atggtgacct caccgacagc acctgcctag taaaaatcat caatgaagtc	300
aaacctacag agatctacaa tcttggtgcc cagagccatg tcaagatttc ctttgactta	360
gcagagtaca ctgcagatgt tgatggagtt ggcaccttgc ggcttctgga tgcaattaag	420
acttgtggcc ttataaattc tgtgaagttc taccaggcct caactagtga actgtatgga	480

aaagtgaag aaatacccca gaaagagacc acccctttct atccaaggtc gccctatgga 540
 gcagccaaac tttatgccta ttggattgta gtgaactttc gagaggctta taatctcttt 600
 gcggtgaacg gcattctctt caatcatgag agtcctagaa gaggagctaa ttttgttact 660
 cgaaaaatta gccggtcagt agctaagatt taccttggac aactggaatg tttcagtttg 720
 ggaaatctgg acgccaaacg agactggggc catgccaaagg actatgtcga ggctatgtgg 780
 ctgatgttac aaaatgatga accagaggac tttgtcatag ctactgggga agttcatagt 840
 gtccgtgaat ttgttgagaa atcattcatg cacattggaa agaccattgt gtgggaagga 900
 aagaatgaaa atgaagtggg cagatgtaaa gagaccggca aaattcatgt gactgtggat 960
 ctgaaatact accgaccaac tgaagtggac ttctgcagg gagactgctc caaggcgcag 1020
 cagaaactga actggaagcc ccgcgttgcc tttgacgagc tggtgaggga gatggtgcaa 1080
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<210> 29
 <211> 575
 <212> PRT
 <213> *Cricetulus griseus*

<400> 29

Met Arg Ala Trp Thr Gly Ser Trp Arg Trp Ile Met Leu Ile Leu Phe
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Ala Trp Gly Thr Leu Leu Phe Tyr Ile Gly Gly His Leu Val Arg Asp
 20 25 30

Asn Asp His Pro Asp His Ser Ser Arg Glu Leu Ser Lys Ile Leu Ala
 35 40 45

Lys Leu Glu Arg Leu Lys Gln Gln Asn Glu Asp Leu Arg Arg Met Ala
 50 55 60

Glu Ser Leu Arg Ile Pro Glu Gly Pro Ile Asp Gln Gly Thr Ala Thr
 65 70 75 80

Gly Arg Val Arg Val Leu Glu Glu Gln Leu Val Lys Ala Lys Glu Gln
 85 90 95

Ile Glu Asn Tyr Lys Lys Gln Ala Arg Asn Asp Leu Gly Lys Asp His
 100 105 110

Glu Ile Leu Arg Arg Arg Ile Glu Asn Gly Ala Lys Glu Leu Trp Phe
 115 120 125

Phe Leu Gln Ser Glu Leu Lys Lys Leu Lys Lys Leu Glu Gly Asn Glu
 130 135 140

Leu Gln Arg His Ala Asp Glu Ile Leu Leu Asp Leu Gly His His Glu
 145 150 155 160

Arg Ser Ile Met Thr Asp Leu Tyr Tyr Leu Ser Gln Thr Asp Gly Ala
 165 170 175

Gly Glu Trp Arg Glu Lys Glu Ala Lys Asp Leu Thr Glu Leu Val Gln
 180 185 190

Arg Arg Ile Thr Tyr Leu Gln Asn Pro Lys Asp Cys Ser Lys Ala Arg
 195 200 205

Lys Leu Val Cys Asn Ile Asn Lys Gly Cys Gly Tyr Gly Cys Gln Leu
 210 215 220

His His Val Val Tyr Cys Phe Met Ile Ala Tyr Gly Thr Gln Arg Thr
 225 230 235 240

Leu Ile Leu Glu Ser Gln Asn Trp Arg Tyr Ala Thr Gly Gly Trp Glu
 245 250 255

Thr Val Phe Arg Pro Val Ser Glu Thr Cys Thr Asp Arg Ser Gly Leu
 260 265 270

Ser Thr Gly His Trp Ser Gly Glu Val Lys Asp Lys Asn Val Gln Val
 275 280 285

Val Glu Leu Pro Ile Val Asp Ser Leu His Pro Arg Pro Pro Tyr Leu
 290 295 300

Pro Leu Ala Val Pro Glu Asp Leu Ala Asp Arg Leu Leu Arg Val His
 305 310 315 320

Gly Asp Pro Ala Val Trp Trp Val Ser Gln Phe Val Lys Tyr Leu Ile
 325 330 335

Arg Pro Gln Pro Trp Leu Glu Arg Glu Ile Glu Glu Thr Thr Lys Lys
 340 345 350

Leu Gly Phe Lys His Pro Val Ile Gly Val His Val Arg Arg Thr Asp
 355 360 365

Lys Val Gly Thr Glu Ala Ala Phe His Pro Ile Glu Glu Tyr Met Val
 370 375 380

His Val Glu Glu His Phe Gln Leu Leu Glu Arg Arg Met Lys Val Asp
 385 390 395 400

Lys Lys Arg Val Tyr Leu Ala Thr Asp Asp Pro Ser Leu Leu Lys Glu
 405 410 415

Ala Lys Thr Lys Tyr Ser Asn Tyr Glu Phe Ile Ser Asp Asn Ser Ile
 420 425 430

Ser Trp Ser Ala Gly Leu His Asn Arg Tyr Thr Glu Asn Ser Leu Arg
 435 440 445

Gly Val Ile Leu Asp Ile His Phe Leu Ser Gln Ala Asp Phe Leu Val
 450 455 460

Cys Thr Phe Ser Ser Gln Val Cys Arg Val Ala Tyr Glu Ile Met Gln
 465 470 475 480

Thr Leu His Pro Asp Ala Ser Ala Asn Phe His Ser Leu Asp Asp Ile
 485 490 495

Tyr Tyr Phe Gly Gly Gln Asn Ala His Asn Gln Ile Ala Val Tyr Pro
 500 505 510

His Gln Pro Arg Thr Lys Glu Glu Ile Pro Met Glu Pro Gly Asp Ile
 515 520 525

Ile Gly Val Ala Gly Asn His Trp Asn Gly Tyr Ser Lys Gly Val Asn
 530 535 540

Arg Lys Leu Gly Lys Thr Gly Leu Tyr Pro Ser Tyr Lys Val Arg Glu
 545 550 555 560

Lys Ile Glu Thr Val Lys Tyr Pro Thr Tyr Pro Glu Ala Glu Lys
565 570 575

<210> 30
<211> 321
<212> PRT
<213> Cricetulus griseus

<400> 30

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20 25 30

Leu Pro Gly Glu Glu Trp Val Phe Val Ser Ser Lys Asp Ala Asp Leu
35 40 45

Thr Asp Ala Ala Gln Thr Gln Ala Leu Phe Gln Lys Val Gln Pro Thr
50 55 60

His Val Ile His Leu Ala Ala Met Val Gly Gly Leu Phe Arg Asn Ile
65 70 75 80

Lys Tyr Asn Leu Asp Phe Trp Arg Lys Asn Val His Ile Asn Asp Asn
85 90 95

Val Leu His Ser Ala Phe Glu Val Gly Thr Arg Lys Val Val Ser Cys
100 105 110

Leu Ser Thr Cys Ile Phe Pro Asp Lys Thr Thr Tyr Pro Ile Asp Glu
115 120 125

Thr Met Ile His Asn Gly Pro Pro His Ser Ser Asn Phe Gly Tyr Ser
130 135 140

Tyr Ala Lys Arg Met Ile Asp Val Gln Asn Arg Ala Tyr Phe Gln Gln
145 150 155 160

His Gly Cys Thr Phe Thr Ala Val Ile Pro Thr Asn Val Phe Gly Pro
165 170 175

His Asp Asn Phe Asn Ile Glu Asp Gly His Val Leu Pro Gly Leu Ile
180 185 190

His Lys Val His Leu Ala Lys Ser Asn Gly Ser Ala Leu Thr Val Trp
 195 200 205

Gly Thr Gly Lys Pro Arg Arg Gln Phe Ile Tyr Ser Leu Asp Leu Ala
 210 215 220

Arg Leu Phe Ile Trp Val Leu Arg Glu Tyr Asn Glu Val Glu Pro Ile
 225 230 235 240

Ile Leu Ser Val Gly Glu Glu Asp Glu Val Ser Ile Lys Glu Ala Ala
 245 250 255

Glu Ala Val Val Glu Ala Met Asp Phe Cys Gly Glu Val Thr Phe Asp
 260 265 270

Ser Thr Lys Ser Asp Gly Gln Tyr Lys Lys Thr Ala Ser Asn Gly Lys
 275 280 285

Leu Arg Ala Tyr Leu Pro Asp Phe Arg Phe Thr Pro Phe Lys Gln Ala
 290 295 300

Val Lys Glu Thr Cys Ala Trp Phe Thr Asp Asn Tyr Glu Gln Ala Arg
 305 310 315 320

Lys

<210> 31
 <211> 1728
 <212> DNA
 <213> Cricetulus griseus

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 agagaactct ccaagattct tgcaaagctg gagcgcttaa aacaacaaaa tgaagacttg 180
 aggagaatgg ctgagtctct ccgaatacca gaaggcccta ttgatcaggg gacagctaca 240
 ggaagagtcc gtgtttttaga agaacagctt gttaaggcca aagaacagat tgaaaattac 300
 aagaaacaag ctaggaatga tctgggaaag gatcatgaaa tcttaaggag gaggattgaa 360
 aatggagcta aagagctctg gttttttcta caaagtgaat tgaagaaatt aaagaaatta 420

gaaggaaacg aactccaaag acatgcagat gaaattcttt tggatttagg acatcatgaa	480
aggtctatca tgacagatct atactacctc agtcaaacag atggagcagg tgagtggcgg	540
gaaaaagaag ccaaagatct gacagagctg gtccagcgga gaataacata tctgcagaat	600
ccaaggact gcagcaaagc cagaaagctg gtatgtaata tcaacaaagg ctgtggctat	660
ggatgtcaac tccatcatgt ggtttactgc ttcattgattg cttatggcac ccagcgaaca	720
ctcatcttgg aatctcagaa ttggcgctat gctactggag gatgggagac tgtgtttaga	780
cctgtaagtg agacatgcac agacaggtct ggcctctcca ctggacactg gtcaggtgaa	840
gtgaaggaca aaaatgttca agtggctgag ctccccattg tagacagcct ccattcctcg	900
cctccttact tacccttggc tgtaccagaa gaccttgcag atcgactcct gagagtccat	960
ggtgatcctg cagtgtggtg ggtatcccag tttgtcaaat acttgatccg tccacaacct	1020
tggctggaaa gggaaataga agaaaccacc aagaagcttg gcttcaaaca tccagttatt	1080
ggagtccatg tcagacgcac tgacaaagtg ggaacagaag cagccttcca tcccattgag	1140
gaatacatgg tacacgttga agaacatddd cagcttctcg aacgcagaat gaaagtggat	1200
aaaaaaagag tgtatctggc cactgatgac ccttctttgt taaaggaggc aaagacaaag	1260
tactccaatt atgaattdat tagtgataac tctattdctt ggtcagctgg actacacaac	1320
cgatacacag aaaatttact tcggggcgctg atcctggata tacacttdct ctcccaggct	1380
gacttccttg tgtgtacttd ttcattcccag gtctgtaggg ttgcttatga aatcatgcaa	1440
acactgcatt ctgatgcctc tgcaaaactc cattcttdtag atgacattta ctattdtggg	1500
ggccaaaatg cccacaacca gattgcagtt tatcctcacc aacctcgaac taaagaggaa	1560
atcccatgg aacctggaga tatcattggt gtggctggaa accattggaa tggttactct	1620
aaaggtgtca acagaaaact aggaaaaaca ggctgtacc cttcctacaa agtccgagag	1680
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<210> 32

<211> 966

<212> DNA

<213> *Cricetulus griseus*

<400> 32

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gtctcctcca aagatgcaga tctgacggat gcagcacaaa cccaagccct gttccagaag	180

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