01456570
SEQUENCE LISTING

<110> THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK
UNIVERSITY OF MASSACHUSETTS MEDICAL CENTER

<120> RECOMBINANT GLUT1 ADENO-ASSOCIATED VIRAL VECTOR CONSTRUCTS AND RELATED METHODS FOR RESTORING GLUT1 EXPRESSION

<130> 01001/003887-WO0

<140>
<141>

<150> 62/130,899
<151> 2015-03-10

<160> 97

<170> PatentIn version 3.5

<210> 1
<211> 7109
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> pAAV CB6 PI EGFP-2A-hGlut1

<400> 1
gccttaatta ggctgcgcgc tcgctcgctc actgaggccg cccgggcaaa gcccgggcgt 60

cgggcgacct ttggtcgccc ggcctcagtg agcgagcgag cgcgcagaga gggagtggcc 120

aactccatca ctaggggttc cttgtagtta atgattaacc cgccatgcta cttatctacc 180

agggtaatgg ggatcctcta gaactatagc tagtcgacat tgattattga ctagttatta 240

atagtaatca attacggggt cattagttca tagcccatat atggagttcc gcgttacata 300

acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat 360

aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 420

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc 480

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 540

atgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccatgtcgag 600

gccacgttct gcttcactct ccccatctcc ccccccctccc cacccccaat tttgtattta 660

tttatttttt aattattttg tgcagcgatg ggggcggggg ggggggggcgc gcgccaggcg 720

gggcggggcg gggcgagggg cggggcgggg cgaggcggag aggtgcggcg gcagccaatc 780

agagcggcgc gctccgaaag tttcctttta tggcgaggcg gcggcggcgg cggccctata 840

aaaagcgaag cgcgcggcgg gcgggagcaa gctttattgc ggtagtttat cacagttaaa 900

ttgctaacgc agtcagtgct tctgacacaa cagtctcgaa cttaagctgc agaagttggt 960

cgtgaggcac tgggcaggta agtatcaagg ttacaagaca ggtttaagga gaccaataga 1020

aactgggctt gtcgagacag agaagactct tgcgtttctg ataggcacct attggtctta 1080

ctgacatcca ctttgccttt ctctccacag gtgtccactc ccagttcaat tacagctctt 1140

aaggctagag tacttaatac gactcactat aggctagtaa tacgactcac tatagatggt 1200

gagcaagggc gaggagctgt tcaccggggt ggtgcccatc ctggtcgagc tggacggcga 1260

cgtaaacggc cacaagttca gcgtgtccgg cgagggcgag ggcgatgcca cctacggcaa 1320

gctgaccctg aagttcatct gcaccaccgg caagctgccc gtgccctggc ccaccctcgt 1380

gaccaccctg acctacggcg tgcagtgctt cagccgctac cccgaccaca tgaagcagca 1440

cgacttcttc aagtccgcca tgcccgaagg ctacgtccag gagcgcacca tcttcttcaa 1500

ggacgacggc aactacaaga cccgcgccga ggtgaagttc gagggcgaca ccctggtgaa 1560

ccgcatcgag ctgaagggca tcgacttcaa ggaggacggc aacatcctgg ggcacaagct 1620

ggagtacaac tacaacagcc acaacgtcta tatcatggcc gacaagcaga agaacggcat 1680

caaggtgaac ttcaagatcc gccacaacat cgaggacggc agcgtgcagc tcgccgacca 1740

ctaccagcag aacacccccа tcggcgacgg ccccgtgctg ctgcccgaca accactacct 1800

gagcacccag tccgccctga gcaaagaccc caacgagaag cgcgatcaca tggtcctgct 1860

ggagttcgtg accgccgccg ggatcactct cggcatggac gagctgtaca agaattttga 1920

ccttcttaag cttgcgggag acgtcgagtc caaccctggg cccatggagc ccagcagcaa 1980

gaagctgacg ggtcgcctca tgctggccgt gggaggagca gtgcttggct ccctgcagtt 2040

tggctacaac actggagtca tcaatgcccc ccagaaggtg atcgaggagt tctacaacca 2100

gacatgggtc caccgctatg gggagagcat cctgcccacc acgctcacca cgctctggtc 2160

cctctcagtg gccatctttt ctgttggggg catgattggc tccttctctg tgggcctttt 2220

cgttaaccgc tttggccggc ggaattcaat gctgatgatg aacctgctgg ccttcgtgtc 2280

cgccgtgctc atgggcttct cgaaactggg caagtccttt gagatgctga tcctgggccg 2340

cttcatcatc ggtgtgtact gtggcctgac cacaggcttc gtgcccatgt atgtgggtga 2400

agtgtcaccc acagcccttc gtggggccct gggcaccctg caccagctgg gcatcgtcgt 2460

cggcatcctc atcgcccagg tgttcggcct ggactccatc atgggcaaca aggacctgtg 2520

gcccctgctg ctgagcatca tcttcatccc ggccctgctg cagtgcatcg tgctgccctt 2580

ctgccccgag agtccccgct tcctgctcat caaccgcaac gaggagaacc gggccaagag 2640

tgtgctaaag aagctgcgcg ggacagctga cgtgacccat gacctgcagg agatgaagga 2700

agagagtcgg cagatgatgc gggagaagaa ggtcaccatc ctggagctgt tccgctcccc 2760

cgcctaccgc cagcccatcc tcatcgctgt ggtgctgcag ctgtcccagc agctgtctgg 2820

catcaacgct gtcttctatt actccacgag catcttcgag aaggcggggg tgcagcagcc 2880

tgtgtatgcc accattggct ccggtatcgt caacacggcc ttcactgtcg tgtcgctgtt 2940

tgtggtggag cgagcaggcc ggcggaccct gcacctcata ggcctcgctg gcatggcggg 3000

ttgtgccata ctcatgacca tcgcgctagc actgctggag cagctacccc ggatgtccta 3060

tctgagcatc gtggccatct ttggctttgt ggccttcttt gaagtgggtc ctggccccat 3120

cccatggttc atcgtggctg aactcttcag ccagggtcca cgtccagctg ccattgccgt 3180

tgcaggcttc tccaactgga cctcaaattt cattgtgggc atgtgcttcc agtatgtgga 3240

gcaactgtgt ggtccctacg tcttcatcat cttcactgtg ctcctggttc tgttcttcat 3300

cttcacctac ttcaaagttc ctgagactaa aggccggacc ttcgatgaga tcgcttccgg 3360

cttccggcag gggggagcca gccaaagtga caagacaccc gaggagctgt tccatcccct 3420

gggggctgat tcccaagtgt gagtcgcccc agatcaccag cccggcctgc tcccagcagc 3480

cctaaggatc tctcaggagc acaggcagct ggatgagact tccaaacctg acagatgtca 3540

gccgagccgg gcctggggct cctttctcca gccagcaatg atgtccagaa gaatattcag 3600

gacttaacgg ctccaggatt ttaacaaaag caagactgtt gctcaaatct attcagacaa 3660

gcaacaggtt ttataatttt tttattactg attttgttat ttttatatca gcctgagtct 3720

cctgtgccca catcccaggc ttcaccctga atggttccat gcctgagggt ggagactaag 3780

ccctgtcgag acacttgcct tcttcaccca gctaatctgt agggctggac ctatgtccta 3840

aggacacact aatcgaacta tgaactacaa agcttctatc ccaggaggtg gctatggcca 3900

cccgttctgc tggcctggat ctctcgagga cggggtgaac tacgcctgag gatccgatct 3960

ttttccctct gccaaaaatt atggggacat catgaagccc cttgagcatc tgacttctgg 4020

ctaataaagg aaatttattt tcattgcaat agtgtgttgg aatttttgt gtctctcact 4080

cggaagcaat tcgttgatct gaatttcgac cacccataat acccattacc ctggtagata 4140

agtagcatgg cgggttaatc attaactaca aggaacccct agtgatggag ttggccactc 4200

cctctctgcg cgctcgctcg ctcactgagg ccgggcgacc aaaggtcgcc cgacgcccgg 4260

gctttgcccg ggcggcctca gtgagcgagc gagcgcgcag ccttaattaa cctaattcac 4320

tggccgtcgt tttacaacgt cgtgactggg aaaaccctgg cgttacccaa cttaatcgcc 4380

ttgcagcaca tccccctttc gccagctggc gtaatagcga agaggcccgc accgatcgcc 4440

cttcccaaca gttgcgcagc ctgaatggcg aatgggacgc gccctgtagc ggcgcattaa 4500

gcgcggcggg tgtggtggtt acgcgcagcg tgaccgctac acttgccagc gccctagcgc 4560

ccgctccttt cgctttcttc ccttcctttc tcgccacgtt cgccggcttt ccccgtcaag 4620

ctctaaatcg ggggctccct ttagggttcc gatttagtgc tttacggcac ctcgacccca 4680

aaaaacttga ttagggtgat ggttcacgta gtgggccatc gccctgatag acggtttttc 4740

gccctttgac gttggagtcc acgttcttta atagtggact cttgttccaa actggaacaa 4800

cactcaaccc tatctcggtc tattcttttg atttataagg gattttgccg atttcggcct 4860

attggttaaa aaatgagctg atttaacaaa aatttaacgc gaattttaac aaaatattaa 4920

cgcttacaat ttaggtggca cttttcgggg aaatgtgcgc ggaaccccta tttgtttatt 4980

tttctaaata cattcaaata tgtatccgct catgagacaa taaccctgat aaatgcttca 5040

ataatattga aaaaggaaga gtatgagtat tcaacatttc cgtgtcgccc ttattccctt 5100

ttttgcggca ttttgccttc ctgtttttgc tcacccagaa acgctggtga aagtaaaaga 5160

tgctgaagat cagttgggtg cacgagtggg ttacatcgaa ctggatctca acagcggtaa 5220

gatccttgag agttttcgcc ccgaagaacg ttttccaatg atgagcactt ttaaagttct 5280

gctatgtggc gcggtattat cccgtattga cgccgggcaa gagcaactcg gtcgccgcat 5340

acactattct cagaatgact tggttgagta ctcaccagtc acagaaaagc atcttacgga 5400

tggcatgaca gtaagagaat tatgcagtgc tgccataacc atgagtgata acactgcggc 5460

caacttactt ctgacaacga tcggaggacc gaaggagcta accgcttttt tgcacaacat 5520

gggggatcat gtaactcgcc ttgatcgttg ggaaccggag ctgaatgaag ccataccaaa 5580

cgacgagcgt gacaccacga tgcctgtagc aatggcaaca acgttgcgca aactattaac 5640

tggcgaacta cttactctag cttcccggca acaattaata gactggatgg aggcggataa 5700

agttgcagga ccacttctgc gctcggccct tccggctggc tggtttattg ctgataaatc 5760

tggagccggt gagcgtgggt ctcgcggtat cattgcagca ctggggccag atggtaagcc 5820

ctcccgtatc gtagttatct acacgacggg gagtcaggca actatggatg aacgaaatag 5880

acagatcgct gagataggtg cctcactgat taagcattgg taactgtcag accaagttta 5940

ctcatatata ctttagattg atttaaaact tcatttttaa tttaaaagga tctaggtgaa 6000

gatccttttt gataatctca tgaccaaaat cccttaacgt gagttttcgt tccactgagc 6060

gtcagacccc gtagaaaaga tcaaaggatc ttcttgagat cctttttttc tgcgcgtaat 6120

ctgctgcttg caaacaaaaa aaccaccgct accagcggtg gtttgtttgc cggatcaaga 6180

gctaccaact ctttttccga aggtaactgg cttcagcaga gcgcagatac caaatactgt 6240

tcttctagtg tagccgtagt taggccacca cttcaagaac tctgtagcac cgcctacata 6300

cctcgctctg ctaatcctgt taccagtggc tgctgccagt ggcgataagt cgtgtcttac 6360

cgggttggac tcaagacgat agttaccgga taaggcgcag cggtcgggct gaacgggggg 6420

ttcgtgcaca cagcccagct tggagcgaac gacctacacc gaactgagat acctacagcg 6480

tgagctatga gaaagcgcca cgcttcccga agggagaaag gcggacaggt atccggtaag 6540

cggcagggtc ggaacaggag agcgcacgag ggagcttcca gggggaaacg cctggtatct 6600

ttatagtcct gtcgggtttc gccacctctg acttgagcgt cgatttttgt gatgctcgtc 6660

aggggggcgg agcctatgga aaaacgccag caacgcggcc tttttacggt tcctggcctt 6720

ttgctggcct tttgctcaca tgttctttcc tgcgttatcc cctgattctg tggataaccg 6780

tattaccgcc tttgagtgag ctgataccgc tcgccgcagc cgaacgaccg agcgcagcga 6840

gtcagtgagc gaggaagcgg aagagcgccc aatacgcaaa ccgcctctcc ccgcgcgttg 6900

gccgattcat taatgcagct ggcacgacag gtttcccgac tggaaagcgg gcagtgagcg 6960

caacgcaatt aatgtgagtt agctcactca ttaggcaccc caggctttac actttatgct 7020

tccggctcgt atgttgtgtg gaattgtgag cggataacaa tttcacacag gaaacagcta 7080

tgaccatgat tacgccagat ttaattaag 7109

<210> 2
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 2
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 3
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 3
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 4
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 4
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 5
<211> 717
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> eGFP

<400> 5
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccctgaccta cggcgtgcag tgcttcagcc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

ctgctggagt tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaag 717

<210> 6
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> 2A-linker

<400> 6
aattttgacc ttcttaagct tgcgggagac gtcgagtcca accctgggcc c 51

<210> 7
<211> 1959
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA and 3'UTR

<400> 7
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtgag tcgccccaga tcaccagccc 1500

ggcctgctcc cagcagccct aaggatctct caggagcaca ggcagctgga tgagacttcc 1560

aaacctgaca gatgtcagcc gagccgggcc tggggctcct ttctccagcc agcaatgatg 1620

tccagaagaa tattcaggac ttaacggctc caggatttta acaaaagcaa gactgttgct 1680

caaatctatt cagacaagca acaggtttta taatttttt attactgatt ttgttatttt 1740

tatatcagcc tgagtctcct gtgcccacat cccaggcttc accctgaatg gttccatgcc 1800

tgagggtgga gactaagccc tgtcgagaca cttgccttct tcacccagct aatctgtagg 1860

gctggaccta tgtcctaagg acacactaat cgaactatga actacaaagc ttctatccca 1920

ggaggtggct atggccaccc gttctgctgg cctggatct 1959

<210> 8
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 8
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 9
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 9
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 10
<211> 7503
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI EGFP-2A-mGlut1

<400> 10
gccttaatta ggctgcgcgc tcgctcgctc actgaggccg cccgggcaaa gcccgggcgt 60

cgggcgacct ttggtcgccc ggcctcagtg agcgagcgag cgcgcagaga gggagtggcc 120

aactccatca ctaggggttc cttgtagtta atgattaacc cgccatgcta cttatctacc 180

agggtaatgg ggatcctcta gaactatagc tagtcgacat tgattattga ctagttatta 240

atagtaatca attacggggt cattagttca tagcccatat atggagttcc gcgttacata 300

acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat 360

aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 420

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc 480

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 540

atgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccatgtcgag 600

gccacgttct gcttcactct ccccatctcc ccccccctccc cacccccaat tttgtattta 660

tttatttttt aattattttg tgcagcgatg ggggcggggg ggggggggcgc gcgccaggcg 720

gggcggggcg gggcgagggg cggggcgggg cgaggcggag aggtgcggcg gcagccaatc 780

agagcggcgc gctccgaaag tttcctttta tggcgaggcg gcggcggcgg cggccctata 840

aaaagcgaag cgcgcggcgg gcgggagcaa gctttattgc ggtagtttat cacagttaaa 900

ttgctaacgc agtcagtgct tctgacacaa cagtctcgaa cttaagctgc agaagttggt 960

cgtgaggcac tgggcaggta agtatcaagg ttacaagaca ggtttaagga gaccaataga 1020

aactgggctt gtcgagacag agaagactct tgcgtttctg ataggcacct attggtctta 1080

ctgacatcca ctttgccttt ctctccacag gtgtccactc ccagttcaat tacagctctt 1140

aaggctagag tacttaatac gactcactat aggctagtaa tacgactcac tatagatggt 1200

gagcaagggc gaggagctgt tcaccggggt ggtgcccatc ctggtcgagc tggacggcga 1260

cgtaaacggc cacaagttca gcgtgtccgg cgagggcgag ggcgatgcca cctacggcaa 1320

gctgaccctg aagttcatct gcaccaccgg caagctgccc gtgccctggc ccaccctcgt 1380

gaccaccctg acctacggcg tgcagtgctt cagccgctac cccgaccaca tgaagcagca 1440

cgacttcttc aagtccgcca tgcccgaagg ctacgtccag gagcgcacca tcttcttcaa 1500

ggacgacggc aactacaaga cccgcgccga ggtgaagttc gagggcgaca ccctggtgaa 1560

ccgcatcgag ctgaagggca tcgacttcaa ggaggacggc aacatcctgg ggcacaagct 1620

ggagtacaac tacaacagcc acaacgtcta tatcatggcc gacaagcaga agaacggcat 1680

caaggtgaac ttcaagatcc gccacaacat cgaggacggc agcgtgcagc tcgccgacca 1740

ctaccagcag aacaccccca tcggcgacgg ccccgtgctg ctgcccgaca accactacct 1800

gagcacccag tccgccctga gcaaagaccc caacgagaag cgcgatcaca tggtcctgct 1860

ggagttcgtg accgccgccg ggatcactct cggcatggac gagctgtaca agaattttga 1920

ccttcttaag cttgcgggag acgtcgagtc caaccctggg cccatggatc ccagcagcaa 1980

gaaggtgacg ggccgcctca tgttggctgt gggaggagca gtgctcggat cactgcagtt 2040

cggctataac actggtgtca tcaacgcccc ccagaaggtt attgaggagt tctacaatca 2100

aacatggaac caccgctacg gagagcccat cccatccacc acactcacca cgctttggtc 2160

tctctccgtg gccatcttct ctgtcggggg catgattggt tccttctctg tcggcctctt 2220

tgttaatcgc tttggcaggc ggaactccat gctgatgatg aacctgttgg cctttgtggc 2280

tgctgtgctt atgggcttct ccaaactggg caagtccttt gagatgctga tcctgggccg 2340

cttcatcatc ggtgtgtact gcggcctgac tactggcttt gtgcccatgt atgtgggaga 2400

ggtgtcacct acagctctac gtggagccct aggcacactg caccagctgg gaatcgtcgt 2460

tggcatcctt attgcccagg tgtttggctt agactccatc atgggcaatg cagacttgtg 2520

gcctctgctg ctcagtgtca tcttcatccc agccctgcta cagtgtatcc tgttgccctt 2580

ctgccccgag agcccccgct tcctgctcat caatcgtaac gaggagaacc gggccaagag 2640

tgtgctgaag aagcttcgag ggacagccga tgtgacccga gacctgcagg agatgaaaga 2700

agagggtcgg cagatgatgc gggagaagaa ggtcaccatc ttggagctgt tccgctcacc 2760

cgcctaccgc cagcccatcc tcatcgctgt ggtgctgcag ctgtcccagc agctgtcggg 2820

tatcaatgct gtgttctact actcaacgag catcttcgag aaggcaggtg tgcagcagcc 2880

tgtgtacgcc accatcggct ccggtatcgt caacacggcc ttcactgtgg tgtcgctgtt 2940

tgttgtagag cgagctggac gacggaccct gcacctcatt ggcctggctg gcatggcagg 3000

ctgtgctgtg ctcatgacca tcgccctggc cttgctggaa cggctgcctt ggatgtccta 3060

tctgagcatc gtggccatct ttggctttgt ggccttcttt gaagtaggcc ctggtcctat 3120

tccatggttc attgtggccg agctgttcag ccaggggccc cgtcctgctg ctattgctgt 3180

ggctggcttc tccaactgga cctcaaactt cattgtgggc atgtgcttcc agtatgtgga 3240

gcaactgtgc ggcccctacg tcttcatcat cttcacggtg ctcctcgtgc tcttcttcat 3300

cttcacctac ttcaaagtcc ctgagaccaa aggccgaacc ttcgatgaga tcgcttccgg 3360

cttccggcag gggggtgcca gccaaagtga caagacaccc gaggagctct tccaccctct 3420

gggggcggac tcccaagtgt gaggagcccc acacccagcc cggcctgctc cctgcagccc 3480

aaggatctct ctggagcaca ggcagctaga tgagacctct tccgaaccga cagatctcgg 3540

gcaagccggg cctgggcgcc tttcctcagc cagcagtgaa gtccaggagg atattcagga 3600

ctttgatggc tccagaattt ttaatgaaag caagactgct gctcagatct attcagataa 3660

gcagcaggtt ttataatttt tttattactg attttgttat ttttttttt tatcagccac 3720

tctcctatct ccacactgta gtcttcacct tgattggccc agtgcctgag ggtggggacc 3780

acgccctgtc cagacacttg ccttctttgc caagctaatc tgtagggctg gacctatggc 3840

caaggacaca ctaataccga actctgagct aggaggcttt accgctggag gcggtagctg 3900

ccacccactt ccgcaggcct ggacctcggc accatagggg tccggactcc attttaggat 3960

tcgcccattc ctgtctcttc ctacccaacc actcaattaa tctttccttg cctgagacca 4020

gttggaagca ctggagtgca gggaggagag ggaagggcca ggctgggctg ccaggttcta 4080

gtctcctgtg cactgagggc cacacaaaca ccatgagaag gacctcggag gctgagaact 4140

taactgctga agacacggac actcctgccc tgctgtgtat agatggaaga tatttatata 4200

ttttttggtt gtcaatatta aatacagaca ctaagttata gtatatctgg acaaacccac 4260

ttgtaaatac accaacaaac tcctgtaact ttacctaagc agatataaat ggctggctcg 4320

aggacggggt gaactacgcc tgaggatccg atctttttcc ctctgccaaa aattatgggg 4380

acatcatgaa gccccttgag catctgactt ctggctaata aaggaaattt attttcattg 4440

caatagtgtg ttggaatttt ttgtgtctct cactcggaag caattcgttg atctgaattt 4500

cgaccaccca taatacccat taccctggta gataagtagc atggcgggtt aatcattaac 4560

tacaaggaac ccctagtgat ggagttggcc actccctctc tgcgcgctcg ctcgctcact 4620

gaggccgggc gaccaaaggt cgcccgacgc ccgggctttg cccgggcggc ctcagtgagc 4680

gagcgagcgc gcagccttaa ttaacctaat tcactggccg tcgttttaca acgtcgtgac 4740

tgggaaaacc ctggcgttac ccaacttaat cgccttgcag cacatccccc tttcgccagc 4800

tggcgtaata gcgaagaggc ccgcaccgat cgcccttccc aacagttgcg cagcctgaat 4860

ggcgaatggg acgcgccctg tagcggcgca ttaagcgcgg cgggtgtggt ggttacgcgc 4920

agcgtgaccg ctacacttgc cagcgcccta gcgcccgctc ctttcgcttt cttcccttcc 4980

tttctcgcca cgttcgccgg ctttccccgt caagctctaa atcgggggct ccctttaggg 5040

ttccgattta gtgctttacg gcacctcgac cccaaaaaac ttgattaggg tgatggttca 5100

cgtagtgggc catcgccctg atagacggtt tttcgccctt tgacgttgga gtccacgttc 5160

tttaatagtg gactcttgtt ccaaactgga acaacactca accctatctc ggtctattct 5220

tttgatttat aagggatttt gccgatttcg gcctattggt taaaaaatga gctgatttaa 5280

caaaaattta acgcgaattt taacaaaata ttaacgctta caatttaggt ggcacttttc 5340

ggggaaatgt gcgcggaacc cctatttgtt tatttttcta aatacattca aatatgtatc 5400

cgctcatgag acaataaccc tgataaatgc ttcaataata ttgaaaaagg aagagtatga 5460

gtattcaaca tttccgtgtc gcccttattc cctttttttgc ggcattttgc cttcctgttt 5520

ttgctcaccc agaaacgctg gtgaaagtaa aagatgctga agatcagttg ggtgcacgag 5580

tgggttacat cgaactggat ctcaacagcg gtaagatcct tgagagtttt cgccccgaag 5640

aacgttttcc aatgatgagc acttttaaag ttctgctatg tggcgcggta ttatcccgta 5700

ttgacgccgg gcaagagcaa ctcggtcgcc gcatacacta ttctcagaat gacttggttg 5760

agtactcacc agtcacagaa aagcatctta cggatggcat gacagtaaga gaattatgca 5820

gtgctgccat aaccatgagt gataacactg cggccaactt acttctgaca acgatcggag 5880

gaccgaagga gctaaccgct tttttgcaca acatggggga tcatgtaact cgccttgatc 5940

gttgggaacc ggagctgaat gaagccatac caaacgacga gcgtgacacc acgatgcctg 6000

tagcaatggc aacaacgttg cgcaaactat taactggcga actacttact ctagcttccc 6060

ggcaacaatt aatagactgg atggaggcgg ataaagttgc aggaccactt ctgcgctcgg 6120

cccttccggc tggctggttt attgctgata aatctggagc cggtgagcgt gggtctcgcg 6180

gtatcattgc agcactgggg ccagatggta agccctcccg tatcgtagtt atctacacga 6240

cggggagtca ggcaactatg gatgaacgaa atagacagat cgctgagata ggtgcctcac 6300

tgattaagca ttggtaactg tcagaccaag tttactcata tatactttag attgatttaa 6360

aacttcattt ttaatttaaa aggatctagg tgaagatcct ttttgataat ctcatgacca 6420

aaatccctta acgtgagttt tcgttccact gagcgtcaga ccccgtagaa aagatcaaag 6480

gatcttcttg agatcctttt tttctgcgcg taatctgctg cttgcaaaca aaaaaaccac 6540

cgctaccagc ggtggtttgt ttgccggatc aagagctacc aactcttttt ccgaaggtaa 6600

ctggcttcag cagagcgcag ataccaaata ctgttcttct agtgtagccg tagttaggcc 6660

accacttcaa gaactctgta gcaccgccta catacctcgc tctgctaatc ctgttaccag 6720

tggctgctgc cagtggcgat aagtcgtgtc ttaccgggtt ggactcaaga cgatagttac 6780

cggataaggc gcagcggtcg ggctgaacgg ggggttcgtg cacacagccc agcttggagc 6840

gaacgaccta caccgaactg agatacctac agcgtgagct atgagaaagc gccacgcttc 6900

ccgaagggag aaaggcggac aggtatccgg taagcggcag ggtcggaaca ggagagcgca 6960

cgagggagct tccaggggga aacgcctggt atctttatag tcctgtcggg tttcgccacc 7020

tctgacttga gcgtcgattt ttgtgatgct cgtcaggggg gcggagccta tggaaaaacg 7080

ccagcaacgc ggccttttta cggttcctgg ccttttgctg gccttttgct cacatgttct 7140

ttcctgcgtt atcccctgat tctgtggata accgtattac cgcctttgag tgagctgata 7200

ccgctcgccg cagccgaacg accgagcgca gcgagtcagt gagcgaggaa gcggaagagc 7260

gcccaatacg caaaccgcct ctccccgcgc gttggccgat tcattaatgc agctggcacg 7320

acaggtttcc cgactggaaa gcgggcagtg agcgcaacgc aattaatgtg agttagctca 7380

ctcattaggc accccaggct ttacacttta tgcttccggc tcgtatgttg tgtggaattg 7440

tgagcggata acaatttcac acaggaaaca gctatgacca tgattacgcc agatttaatt 7500

aag 7503

<210> 11
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 11
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 12
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 12
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 13
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 13
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 14
<211> 717
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> eGFP

<400> 14
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccctgaccta cggcgtgcag tgcttcagcc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

ctgctggagt tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaag 717

<210> 15
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>

<223> 2A-linker

<400> 15
aattttgacc ttcttaagct tgcgggagac gtcgagtcca accctgggcc c 51

<210> 16
<211> 2353
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>
<223> mGlut1 cDNA and 3'UTR

<400> 16
atggatccca gcagcaagaa ggtgacgggc cgcctcatgt tggctgtggg aggagcagtg 60

ctcggatcac tgcagttcgg ctataacact ggtgtcatca acgcccccca gaaggttatt 120

gaggagttct acaatcaaac atggaaccac cgctacggag agcccatccc atccaccaca 180

ctcaccacgc tttggtctct ctccgtggcc atcttctctg tcgggggcat gattggttcc 240

ttctctgtcg gcctctttgt taatcgcttt ggcaggcgga actccatgct gatgatgaac 300

ctgttggcct ttgtggctgc tgtgcttatg ggcttctcca aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgcg gcctgactac tggctttgtg 420

cccatgtatg tgggagaggt gtcacctaca gctctacgtg gagccctagg cacactgcac 480

cagctgggaa tcgtcgttgg catccttatt gcccaggtgt ttggcttaga ctccatcatg 540

ggcaatgcag acttgtggcc tctgctgctc agtgtcatct tcatcccagc cctgctacag 600

tgtatcctgt tgcccttctg ccccgagagc ccccgcttcc tgctcatcaa tcgtaacgag 660

gagaaccggg ccaagagtgt gctgaagaag cttcgaggga cagccgatgt gacccgagac 720

ctgcaggaga tgaaagaaga gggtcggcag atgatgcggg agaagaaggt caccatcttg 780

gagctgttcc gctcacccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtcgggtat caatgctgtg ttctactact caacgagcat cttcgagaag 900

gcaggtgtgc agcagcctgt gtacgccacc atcggctccg gtatcgtcaa cacggccttc 960

actgtggtgt cgctgtttgt tgtagagcga gctggacgac ggaccctgca cctcattggc 1020

ctggctggca tggcaggctg tgctgtgctc atgaccatcg ccctggcctt gctggaacgg 1080

ctgccttgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtaggccctg gtcctattcc atggttcatt gtggccgagc tgttcagcca ggggccccgt 1200

cctgctgcta ttgctgtggc tggcttctcc aactggacct caaacttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgcggc ccctacgtct tcatcatctt cacggtgctc 1320

ctcgtgctct tcttcatctt cacctacttc aaagtccctg agaccaaagg ccgaaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggtgccagcc aaagtgacaa gacacccgag 1440

gagctcttcc accctctggg ggcggactcc caagtgtgag gagccccaca cccagcccgg 1500

cctgctccct gcagcccaag gatctctctg gagcacaggc agctagatga gacctcttcc 1560

gaaccgacag atctcgggca agccgggcct gggcgccttt cctcagccag cagtgaagtc 1620

caggaggata ttcaggactt tgatggctcc agaattttta atgaaagcaa gactgctgct 1680

cagatctatt cagataagca gcaggtttta taatttttt attactgatt ttgttatttt 1740

ttttttttat cagccactct cctatctcca cactgtagtc ttcaccttga ttggcccagt 1800

gcctgagggt ggggaccacg ccctgtccag acacttgcct tctttgccaa gctaatctgt 1860

agggctggac ctatggccaa ggacacacta ataccgaact ctgagctagg aggctttacc 1920

gctggaggcg gtagctgcca cccacttccg caggcctgga cctcggcacc ataggggtcc 1980

ggactccatt ttaggattcg cccattcctg tctcttccta cccaaccact caattaatct 2040

ttccttgcct gagaccagtt ggaagcactg gagtgcaggg aggagaggga agggccaggc 2100

tgggctgcca ggttctagtc tcctgtgcac tgagggccac acaaacacca tgagaaggac 2160

ctcggaggct gagaacttaa ctgctgaaga cacggacact cctgccctgc tgtgtataga 2220

tggaagatat ttatatattt tttggttgtc aatattaaat acagacacta agttatagta 2280

tatctggaca aacccacttg taaatacacc aacaaactcc tgtaacttta cctaagcaga 2340

tataaatggc tgg 2353

<210> 17
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 17
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 18
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 18
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 19
<211> 6844
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI hGlut1-2A-EGFP

<400> 19
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattgatc cactagtaac 1200

ggccgccagt gtgctggaag caggagacca aacgacgggg gtcggagtca gagtcgcagt 1260

gggagtcccc ggaccggagc acgagcctga gcgggagagc gccgctcgca cgcccgtcgc 1320

cacccgcgta cccggcgcag ccagagccac cagcgcagcg ctgccatgga gcccagcagc 1380

aagaagctga cgggtcgcct catgctggcc gtgggaggag cagtgcttgg ctccctgcag 1440

tttggctaca acactggagt catcaatgcc ccccagaagg tgatcgagga gttctacaac 1500

cagacatggg tccaccgcta tggggagagc atcctgccca ccacgctcac cacgctctgg 1560

tccctctcag tggccatctt ttctgttggg ggcatgattg gctccttctc tgtgggcctt 1620

ttcgttaacc gctttggccg gcggaattca atgctgatga tgaacctgct ggccttcgtg 1680

tccgccgtgc tcatgggctt ctcgaaactg ggcaagtcct ttgagatgct gatcctgggc 1740

cgcttcatca tcggtgtgta ctgtggcctg accacaggct tcgtgcccat gtatgtgggt 1800

gaagtgtcac ccacagccct tcgtggggcc ctgggcaccc tgcaccagct gggcatcgtc 1860

gtcggcatcc tcatcgccca ggtgttcggc ctggactcca tcatgggcaa caaggacctg 1920

tggcccctgc tgctgagcat catcttcatc ccggccctgc tgcagtgcat cgtgctgccc 1980

ttctgccccg agagtccccg cttcctgctc atcaaccgca acgaggagaa ccgggccaag 2040

agtgtgctaa agaagctgcg cgggacagct gacgtgaccc atgacctgca ggagatgaag 2100

gaagagagtc ggcagatgat gcgggagaag aaggtcacca tcctggagct gttccgctcc 2160

cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca gcagctgtct 2220

ggcatcaacg ctgtcttcta ttactccacg agcatcttcg agaaggcggg ggtgcagcag 2280

cctgtgtatg ccaccattgg ctccggtatc gtcaacacgg ccttcactgt cgtgtcgctg 2340

tttgtggtgg agcgagcagg ccggcggacc ctgcacctca taggcctcgc tggcatggcg 2400

ggttgtgcca tactcatgac catcgcgcta gcactgctgg agcagctacc ccggatgtcc 2460

tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtggg tcctggcccc 2520

atcccatggt tcatcgtggc tgaactcttc agccagggtc cacgtccagc tgccattgcc 2580

gttgcaggct tctccaactg gacctcaaat ttcattgtgg gcatgtgctt ccagtatgtg 2640

gagcaactgt gtggtcccta cgtcttcatc atcttcactg tgctcctggt tctgttcttc 2700

atcttcacct acttcaaagt tcctgagact aaaggccgga ccttcgatga gatcgcttcc 2760

ggcttccggc agggggggagc cagccaaagt gacaagacac ccgaggagct gttccatccc 2820

ctgggggctg attcccaagt gaccggtaat tttgaccttc ttaagcttgc gggagacgtc 2880

gagtccaacc ctgggcccgc catggtgagc aagggcgagg agctgttcac cggggtggtg 2940

cccatcctgg tcgagctgga cggcgacgta aacggccaca agttcagcgt gtccggcgag 3000

ggcgagggcg atgccaccta cggcaagctg accctgaagt tcatctgcac caccggcaag 3060

ctgcccgtgc cctggcccac cctcgtgacc accctgacct acggcgtgca gtgcttcagc 3120

cgctaccccg accacatgaa gcagcacgac ttcttcaagt ccgccatgcc cgaaggctac 3180

gtccaggagc gcaccatctt cttcaaggac gacggcaact acaagacccg cgccgaggtg 3240

aagttcgagg gcgacaccct ggtgaaccgc atcgagctga agggcatcga cttcaaggag 3300

gacggcaaca tcctggggca caagctggag tacaactaca acagccacaa cgtctatatc 3360

atggccgaca agcagaagaa cggcatcaag gtgaacttca agatccgcca caacatcgag 3420

gacggcagcg tgcagctcgc cgaccactac cagcagaaca cccccatcgg cgacggcccc 3480

gtgctgctgc ccgacaacca ctacctgagc acccagtccg ccctgagcaa agaccccaac 3540

gagaagcgcg atcacatggt cctgctggag ttcgtgaccg ccgccgggat cactctcggc 3600

atggacgagc tgtacaagta aagcggccat caagcttatc ggccgttact agtggatcga 3660

ggacggggtg aactacgcct gaggatccga tctttttccc tctgccaaaa attatgggga 3720

catcatgaag ccccttgagc atctgacttc tggctaataa aggaaattta ttttcattgc 3780

aatagtgtgt tggaattttt tgtgtctctc actcggaagc aattcgttga tctgaatttc 3840

gaccacccat aatacccatt accctggtag ataagtagca tggcgggtta atcattaact 3900

acaaggaacc cctagtgatg gagttggcca ctccctctct gcgcgctcgc tcgctcactg 3960

aggccgggcg accaaaggtc gcccgacgcc cgggctttgc ccgggcggcc tcagtgagcg 4020

agcgagcgcg cagccttaat taacctaatt cactggccgt cgttttacaa cgtcgtgact 4080

gggaaaaccc tggcgttacc caacttaatc gccttgcagc acatccccct ttcgccagct 4140

ggcgtaatag cgaagaggcc cgcaccgatc gcccttccca acagttgcgc agcctgaatg 4200

gcgaatggga cgcgccctgt agcggcgcat taagcgcggc gggtgtggtg gttacgcgca 4260

gcgtgaccgc tacacttgcc agcgccctag cgcccgctcc tttcgctttc ttcccttcct 4320

ttctcgccac gttcgccggc tttccccgtc aagctctaaa tcgggggctc cctttagggt 4380

tccgatttag tgctttacgg cacctcgacc ccaaaaaact tgattagggt gatggttcac 4440

gtagtgggcc atcgccctga tagacggttt ttcgcccttt gacgttggag tccacgttct 4500

ttaatagtgg actcttgttc caaactggaa caacactcaa ccctatctcg gtctattctt 4560

ttgatttata agggattttg ccgatttcgg cctattggtt aaaaaatgag ctgatttaac 4620

aaaaatttaa cgcgaatttt aacaaaatat taacgcttac aatttaggtg gcacttttcg 4680

gggaaatgtg cgcggaaccc ctatttgttt atttttctaa atacattcaa atatgtatcc 4740

gctcatgaga caataaccct gataaatgct tcaataatat tgaaaaagga agagtatgag 4800

tattcaacat ttccgtgtcg cccttattcc ctttttttgcg gcattttgcc ttcctgtttt 4860

tgctcaccca gaaacgctgg tgaaagtaaa agatgctgaa gatcagttgg gtgcacgagt 4920

gggttacatc gaactggatc tcaacagcgg taagatcctt gagagttttc gccccgaaga 4980

acgttttcca atgatgagca cttttaaagt tctgctatgt ggcgcggtat tatcccgtat 5040

tgacgccggg caagagcaac tcggtcgccg catacactat tctcagaatg acttggttga 5100

gtactcacca gtcacagaaa agcatcttac ggatggcatg acagtaagag aattatgcag 5160

tgctgccata accatgagtg ataacactgc ggccaactta cttctgacaa cgatcggagg 5220

accgaaggag ctaaccgctt ttttgcacaa catgggggat catgtaactc gccttgatcg 5280

ttgggaaccg gagctgaatg aagccatacc aaacgacgag cgtgacacca cgatgcctgt 5340

agcaatggca acaacgttgc gcaaactatt aactggcgaa ctacttactc tagcttcccg 5400

gcaacaatta atagactgga tggaggcgga taaagttgca ggaccacttc tgcgctcggc 5460

ccttccggct ggctggttta ttgctgataa atctggagcc ggtgagcgtg ggtctcgcgg 5520

tatcattgca gcactggggc cagatggtaa gccctcccgt atcgtagtta tctacacgac 5580

ggggagtcag gcaactatgg atgaacgaaa tagacagatc gctgagatag gtgcctcact 5640

gattaagcat tggtaactgt cagaccaagt ttactcatat atactttaga ttgatttaaa 5700

acttcatttt taatttaaaa ggatctaggt gaagatcctt tttgataatc tcatgaccaa 5760

aatcccttaa cgtgagtttt cgttccactg agcgtcagac cccgtagaaa agatcaaagg 5820

atcttcttga gatccttttt ttctgcgcgt aatctgctgc ttgcaaacaa aaaaaccacc 5880

gctaccagcg gtggtttgtt tgccggatca agagctacca actcttttc cgaaggtaac 5940

tggcttcagc agagcgcaga taccaaatac tgttcttcta gtgtagccgt agttaggcca 6000

ccacttcaag aactctgtag caccgcctac atacctcgct ctgctaatcc tgttaccagt 6060

ggctgctgcc agtggcgata agtcgtgtct taccgggttg gactcaagac gatagttacc 6120

ggataaggcg cagcggtcgg gctgaacggg gggttcgtgc acacagccca gcttggagcg 6180

aacgacctac accgaactga gatacctaca gcgtgagcta tgagaaagcg ccacgcttcc 6240

cgaagggaga aaggcggaca ggtatccggt aagcggcagg gtcggaacag gagagcgcac 6300

gagggagctt ccagggggaa acgcctggta tctttatagt cctgtcgggt ttcgccacct 6360

ctgacttgag cgtcgatttt tgtgatgctc gtcaggggggg cggagcctat ggaaaaacgc 6420

cagcaacgcg gccttttac ggttcctggc cttttgctgg ccttttgctc acatgttctt 6480

tcctgcgtta tcccctgatt ctgtggataa ccgtattacc gcctttgagt gagctgatac 6540

cgctcgccgc agccgaacga ccgagcgcag cgagtcagtg agcgaggaag cggaagagcg 6600

cccaatacgc aaaccgcctc tccccgcgcg ttggccgatt cattaatgca gctggcacga 6660

caggtttccc gactggaaag cgggcagtga gcgcaacgca attaatgtga gttagctcac 6720

tcattaggca ccccaggctt tacactttat gcttccggct cgtatgttgt gtggaattgt 6780

gagcggataa caatttcaca caggaaacag ctatgaccat gattacgcca gatttaatta 6840

aggc 6844

<210> 20
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 20
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 21
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 21
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 22
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 22
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 23
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA

<400> 23
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgcccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtga 1479

<210> 24
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> 2A-linker

<400> 24
aattttgacc ttcttaagct tgcgggagac gtcgagtcca accctgggcc c 51

<210> 25
<211> 717
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> eGFP

<400> 25
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccctgaccta cggcgtgcag tgcttcagcc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

ctgctggagt tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaag 717

<210> 26
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 26
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 27
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 27
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 28
<211> 6568
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI hGlut1

<400> 28
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattggcc gccagtgtga 1200

tggatatctg cagaattcgc ccttagcagg agaccaaacg acgggggtcg gagtcagagt 1260

cgcagtggga gtccccggac cggagcacga gcctgagcgg gagagcgccg ctcgcacgcc 1320

cgtcgccacc cgcgtacccg gcgcagccag agccaccagc gcagcgctgc catggagccc 1380

agcagcaaga agctgacggg tcgcctcatg ctggccgtgg gaggagcagt gcttggctcc 1440

ctgcagtttg gctacaacac tggagtcatc aatgcccccc agaaggtgat cgaggagttc 1500

tacaaccaga catgggtcca ccgctatggg gagagcatcc tgcccaccac gctcaccacg 1560

ctctggtccc tctcagtggc catcttttct gttgggggca tgattggctc cttctctgtg 1620

ggccttttcg ttaaccgctt tggccggcgg aattcaatgc tgatgatgaa cctgctggcc 1680

ttcgtgtccg ccgtgctcat gggcttctcg aaactgggca agtcctttga gatgctgatc 1740

ctgggccgct tcatcatcgg tgtgtactgt ggcctgacca caggcttcgt gcccatgtat 1800

gtgggtgaag tgtcacccac agcccttcgt ggggccctgg gcaccctgca ccagctgggc 1860

atcgtcgtcg gcatcctcat cgcccaggtg ttcggcctgg actccatcat gggcaacaag 1920

gacctgtggc ccctgctgct gagcatcatc ttcatcccgg ccctgctgca gtgcatcgtg 1980

ctgcccttct gccccgagag tccccgcttc ctgctcatca accgcaacga ggagaaccgg 2040

gccaagagtg tgctaaagaa gctgcgcggg acagctgacg tgacccatga cctgcaggag 2100

atgaaggaag agagtcggca gatgatgcgg gagaagaagg tcaccatcct ggagctgttc 2160

cgctcccccg cctaccgcca gcccatcctc atcgctgtgg tgctgcagct gtcccagcag 2220

ctgtctggca tcaacgctgt cttctattac tccacgagca tcttcgagaa ggcgggggtg 2280

cagcagcctg tgtatgccac cattggctcc ggtatcgtca acacggcctt cactgtcgtg 2340

tcgctgtttg tggtggagcg agcaggccgg cggaccctgc acctcatagg cctcgctggc 2400

atggcgggtt gtgccatact catgaccatc gcgctagcac tgctggagca gctaccccgg 2460

atgtcctatc tgagcatcgt ggccatcttt ggctttgtgg ccttctttga agtgggtcct 2520

ggccccatcc catggttcat cgtggctgaa ctcttcagcc agggtccacg tccagctgcc 2580

attgccgttg caggcttctc caactggacc tcaaatttca ttgtgggcat gtgcttccag 2640

tatgtggagc aactgtgtgg tccctacgtc ttcatcatct tcactgtgct cctggttctg 2700

ttcttcatct tcacctactt caaagttcct gagactaaag gccggacctt cgatgagatc 2760

gcttccggct tccggcaggg gggagccagc caaagtgaca agacacccga ggagctgttc 2820

catcccctgg gggctgattc ccaagtgtga gtcgccccag atcaccagcc cggcctgctc 2880

ccagcagccc taaggatctc tcaggagcac aggcagctgg atgagacttc caaacctgac 2940

agatgtcagc cgagccgggc ctggggctcc tttctccagc cagcaatgat gtccagaaga 3000

atattcagga cttaacggct ccaggatttt aacaaaagca agactgttgc tcaaatctat 3060

tcagacaagc aacaggtttt ataatttttt tattactgat tttgttattt ttatatcagc 3120

ctgagtctcc tgtgcccaca tcccaggctt caccctgaat ggttccatgc ctgagggtgg 3180

agactaagcc ctgtcgagac acttgccttc ttcacccagc taatctgtag ggctggacct 3240

atgtcctaag gacacactaa tcgaactatg aactacaaag cttctatccc aggaggtggc 3300

tatggccacc cgttctgctg gcctggatct ccaagaaaca aagggcgaat tccagcacac 3360

tggcggccgt tactagtgga tcgaggacgg ggtgaactac gcctgaggat ccgatctttt 3420

tccctctgcc aaaaattatg gggacatcat gaagcccctt gagcatctga cttctggcta 3480

ataaaggaaa tttattttca ttgcaatagt gtgttggaat tttttgtgtc tctcactcgg 3540

aagcaattcg ttgatctgaa tttcgaccac ccataatacc cattaccctg gtagataagt 3600

agcatggcgg gttaatcatt aactacaagg aacccctagt gatggagttg gccactccct 3660

ctctgcgcgc tcgctcgctc actgaggccg ggcgaccaaa ggtcgcccga cgcccgggct 3720

ttgcccgggc ggcctcagtg agcgagcgag cgcgcagcct taattaacct aattcactgg 3780

ccgtcgtttt acaacgtcgt gactgggaaa accctggcgt tacccaactt aatcgccttg 3840

cagcacatcc cccttcgcc agctggcgta atagcgaaga ggcccgcacc gatcgccctt 3900

cccaacagtt gcgcagcctg aatggcgaat gggacgcgcc ctgtagcggc gcattaagcg 3960

cggcgggtgt ggtggttacg cgcagcgtga ccgctacact tgccagcgcc ctagcgcccg 4020

ctcctttcgc tttcttccct tcctttctcg ccacgttcgc cggctttccc cgtcaagctc 4080

taaatcgggg gctcccttta gggttccgat ttagtgcttt acggcacctc gaccccaaaa 4140

aacttgatta gggtgatggt tcacgtagtg ggccatcgcc ctgatagacg gtttttcgcc 4200

ctttgacgtt ggagtccacg ttctttaata gtggactctt gttccaaact ggaacaacac 4260

tcaaccctat ctcggtctat tcttttgatt tataagggat tttgccgatt tcggcctatt 4320

ggttaaaaaa tgagctgatt taacaaaaat ttaacgcgaa ttttaacaaa atattaacgc 4380

ttacaattta ggtggcactt ttcggggaaa tgtgcgcgga acccctattt gtttattttt 4440

ctaaatacat tcaaatatgt atccgctcat gagacaataa ccctgataaa tgcttcaata 4500

atattgaaaa aggaagagta tgagtattca acatttccgt gtcgccctta ttccctttt 4560

tgcggcattt tgccttcctg tttttgctca cccagaaacg ctggtgaaag taaaagatgc 4620

tgaagatcag ttgggtgcac gagtgggtta catcgaactg gatctcaaca gcggtaagat 4680

ccttgagagt tttcgccccg aagaacgttt tccaatgatg agcactttta aagttctgct 4740

atgtggcgcg gtattatccc gtattgacgc cgggcaagag caactcggtc gccgcataca 4800

ctattctcag aatgacttgg ttgagtactc accagtcaca gaaaagcatc ttacggatgg 4860

catgacagta agagaattat gcagtgctgc cataaccatg agtgataaca ctgcggccaa 4920

cttacttctg acaacgatcg gaggaccgaa ggagctaacc gctttttttgc acaacatggg 4980

ggatcatgta actcgccttg atcgttggga accggagctg aatgaagcca taccaaacga 5040

cgagcgtgac accacgatgc ctgtagcaat ggcaacaacg ttgcgcaaac tattaactgg 5100

cgaactactt actctagctt cccggcaaca attaatagac tggatggagg cggataaagt 5160

tgcaggacca cttctgcgct cggcccttcc ggctggctgg tttattgctg ataaatctgg 5220

agccggtgag cgtgggtctc gcggtatcat tgcagcactg gggccagatg gtaagccctc 5280

ccgtatcgta gttatctaca cgacggggag tcaggcaact atggatgaac gaaatagaca 5340

gatcgctgag ataggtgcct cactgattaa gcattggtaa ctgtcagacc aagtttactc 5400

atatatactt tagattgatt taaaacttca tttttaattt aaaaggatct aggtgaagat 5460

ccttttgat aatctcatga ccaaaatccc ttaacgtgag ttttcgttcc actgagcgtc 5520

agaccccgta gaaaagatca aaggatcttc ttgagatcct ttttttctgc gcgtaatctg 5580

ctgcttgcaa acaaaaaaac caccgctacc agcggtggtt tgtttgccgg atcaagagct 5640

accaactctt tttccgaagg taactggctt cagcagagcg cagataccaa atactgttct 5700

tctagtgtag ccgtagttag gccaccactt caagaactct gtagcaccgc ctacatacct 5760

cgctctgcta atcctgttac cagtggctgc tgccagtggc gataagtcgt gtcttaccgg 5820

gttggactca agacgatagt taccggataa ggcgcagcgg tcgggctgaa cgggggttc 5880

gtgcacacag cccagcttgg agcgaacgac ctacaccgaa ctgagatacc tacagcgtga 5940

gctatgagaa agcgccacgc ttcccgaagg gagaaaggcg gacaggtatc cggtaagcgg 6000

cagggtcgga acaggagagc gcacgaggga gcttccaggg ggaaacgcct ggtatcttta 6060

tagtcctgtc gggtttcgcc acctctgact tgagcgtcga tttttgtgat gctcgtcagg 6120

ggggcggagc ctatggaaaa acgccagcaa cgcggccttt ttacggttcc tggccttttg 6180

ctggcctttt gctcacatgt tctttcctgc gttatcccct gattctgtgg ataaccgtat 6240

taccgccttt gagtgagctg ataccgctcg ccgcagccga acgaccgagc gcagcgagtc 6300

agtgagcgag gaagcggaag agcgcccaat acgcaaaccg cctctccccg cgcgttggcc 6360

gattcattaa tgcagctggc acgacaggtt tcccgactgg aaagcgggca gtgagcgcaa 6420

cgcaattaat gtgagttagc tcactcatta ggcaccccag gctttacact ttatgcttcc 6480

ggctcgtatg ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga 6540

ccatgattac gccagattta attaaggc 6568

<210> 29
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 29
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 30
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 30
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 31
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 31
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 32
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA

<400> 32
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgcccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtga 1479

<210> 33
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 33
gatcttttc cctctgccaa aaattatggg gacatcatga agcccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 34
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 34
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 35
<211> 7057
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI mGlut1

<400> 35
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

tcccagcagc aagaaggtga cgggccgcct catgttggct gtgggaggag cagtgctcgg 1440

atcactgcag ttcggctata acactggtgt catcaacgcc ccccagaagg ttattgagga 1500

gttctacaat caaacatgga accaccgcta cggagagccc atcccatcca ccacactcac 1560

cacgctttgg tctctctccg tggccatctt ctctgtcggg ggcatgattg gttccttctc 1620

tgtcggcctc tttgttaatc gctttggcag gcggaactcc atgctgatga tgaacctgtt 1680

ggcctttgtg gctgctgtgc ttatgggctt ctccaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgcggcctg actactggct ttgtgcccat 1800

gtatgtggga gaggtgtcac ctacagctct acgtggagcc ctaggcacac tgcaccagct 1860

gggaatcgtc gttggcatcc ttattgccca ggtgtttggc ttagactcca tcatgggcaa 1920

tgcagacttg tggcctctgc tgctcagtgt catcttcatc ccagccctgc tacagtgtat 1980

cctgttgccc ttctgccccg agagcccccg cttcctgctc atcaatcgta acgaggagaa 2040

ccgggccaag agtgtgctga agaagcttcg agggacagcc gatgtgaccc gagacctgca 2100

ggagatgaaa gaagagggtc ggcagatgat gcgggagaag aaggtcacca tcttggagct 2160

gttccgctca cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtcg ggtatcaatg ctgtgttcta ctactcaacg agcatcttcg agaaggcagg 2280

tgtgcagcag cctgtgtacg ccaccatcgg ctccggtatc gtcaacacgg ccttcactgt 2340

ggtgtcgctg tttgttgtag agcgagctgg acgacggacc ctgcacctca ttggcctggc 2400

tggcatggca ggctgtgctg tgctcatgac catcgccctg gccttgctgg aacggctgcc 2460

ttggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtagg 2520

ccctggtcct attccatggt tcattgtggc cgagctgttc agccaggggc cccgtcctgc 2580

tgctattgct gtggctggct tctccaactg gacctcaaac ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gcggccccta cgtcttcatc atcttcacgg tgctcctcgt 2700

gctcttcttc atcttcacct acttcaaagt ccctgagacc aaaggccgaa ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggtgc cagccaaagt gacaagacac ccgaggagct 2820

cttccaccct ctgggggcgg actcccaagt gtgaggagcc ccacacccag cccggcctgc 2880

tccctgcagc ccaaggatct ctctggagca caggcagcta gatgagacct cttccgaacc 2940

gacagatctc gggcaagccg ggcctgggcg cctttcctca gccagcagtg aagtccagga 3000

ggatattcag gactttgatg gctccagaat ttttaatgaa agcaagactg ctgctcagat 3060

ctattcagat aagcagcagg ttttataatt tttttattac tgattttgtt atttttttt 3120

tttatcagcc actctcctat ctccacactg tagtcttcac cttgattggc ccagtgcctg 3180

agggtgggga ccacgccctg tccagacact tgccttcttt gccaagctaa tctgtagggc 3240

tggacctatg gccaaggaca cactaatacc gaactctgag ctaggaggct ttaccgctgg 3300

aggcggtagc tgccacccac ttccgcaggc ctggacctcg gcaccatagg ggtccggact 3360

ccattttagg attcgcccat tcctgtctct tcctacccaa ccactcaatt aatctttcct 3420

tgcctgagac cagttggaag cactggagtg cagggaggag agggaagggc caggctgggc 3480

tgccaggttc tagtctcctg tgcactgagg gccacacaaa caccatgaga aggacctcgg 3540

aggctgagaa cttaactgct gaagacacgg acactcctgc cctgctgtgt atagatggaa 3600

gatatttata tatttttgg ttgtcaatat taaatacaga cactaagtta tagtatatct 3660

ggacaaaccc acttgtaaat acaccaacaa actcctgtaa ctttacctaa gcagatataa 3720

atggctggtt tttagaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3780

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa actgtctcgc tgcggccgct ctagagtatc 3840

cctcgactct agagtcgacc cgggcggcct cgaggacggg gtgaactacg cctgaggatc 3900

cgatcttttt ccctctgcca aaaattatgg ggacatcatg aagccccttg agcatctgac 3960

ttctggctaa taaaggaaat ttattttcat tgcaatagtg tgttggaatt ttttgtgtct 4020

ctcactcgga agcaattcgt tgatctgaat ttcgaccacc cataataccc attaccctgg 4080

tagataagta gcatggcggg ttaatcatta actacaagga acccctagtg atggagttgg 4140

ccactccctc tctgcgcgct cgctcgctca ctgaggccgg gcgaccaaag gtcgcccgac 4200

gcccgggctt tgcccgggcg gcctcagtga gcgagcgagc gcgcagcctt aattaaccta 4260

attcactggc cgtcgtttta caacgtcgtg actgggaaaa ccctggcgtt acccaactta 4320

atcgccttgc agcacatccc cctttcgcca gctggcgtaa tagcgaagag gcccgcaccg 4380

atcgcccttc ccaacagttg cgcagcctga atggcgaatg ggacgcgccc tgtagcggcg 4440

cattaagcgc ggcgggtgtg gtggttacgc gcagcgtgac cgctacactt gccagcgccc 4500

tagcgcccgc tcctttcgct ttcttccctt cctttctcgc cacgttcgcc ggctttcccc 4560

gtcaagctct aaatcggggg ctccctttag ggttccgatt tagtgcttta cggcacctcg 4620

accccaaaaa acttgattag ggtgatggtt cacgtagtgg gccatcgccc tgatagacgg 4680

tttttcgccc tttgacgttg gagtccacgt tctttaatag tggactcttg ttccaaactg 4740

gaacaacact caaccctatc tcggtctatt cttttgattt ataagggatt ttgccgattt 4800

cggcctattg gttaaaaaat gagctgattt aacaaaaatt taacgcgaat tttaacaaaa 4860

tattaacgct tacaatttag gtggcacttt tcggggaaat gtgcgcggaa cccctatttg 4920

tttatttttc taaatacatt caaatatgta tccgctcatg agacaataac cctgataaat 4980

gcttcaataa tattgaaaaa ggaagagtat gagtattcaa catttccgtg tcgcccttat 5040

tccctttttt gcggcatttt gccttcctgt ttttgctcac ccagaaacgc tggtgaaagt 5100

aaaagatgct gaagatcagt tgggtgcacg agtgggttac atcgaactgg atctcaacag 5160

cggtaagatc cttgagagtt ttcgccccga agaacgtttt ccaatgatga gcacttttaa 5220

agttctgcta tgtggcgcgg tattatcccg tattgacgcc gggcaagagc aactcggtcg 5280

ccgcatacac tattctcaga atgacttggt tgagtactca ccagtcacag aaaagcatct 5340

tacggatggc atgacagtaa gagaattatg cagtgctgcc ataaccatga gtgataacac 5400

tgcggccaac ttacttctga caacgatcgg aggaccgaag gagctaaccg ctttttgca 5460

caacatgggg gatcatgtaa ctcgccttga tcgttgggaa ccggagctga atgaagccat 5520

accaaacgac gagcgtgaca ccacgatgcc tgtagcaatg gcaacaacgt tgcgcaaact 5580

attaactggc gaactactta ctctagcttc ccggcaacaa ttaatagact ggatggaggc 5640

ggataaagtt gcaggaccac ttctgcgctc ggcccttccg gctggctggt ttattgctga 5700

taaatctgga gccggtgagc gtgggtctcg cggtatcatt gcagcactgg ggccagatgg 5760

taagccctcc cgtatcgtag ttatctacac gacggggagt caggcaacta tggatgaacg 5820

aaatagacag atcgctgaga taggtgcctc actgattaag cattggtaac tgtcagacca 5880

agtttactca tatatacttt agattgattt aaaacttcat ttttaattta aaaggatcta 5940

ggtgaagatc ctttttgata atctcatgac caaaatccct taacgtgagt tttcgttcca 6000

ctgagcgtca gaccccgtag aaaagatcaa aggatcttct tgagatcctt tttttctgcg 6060

cgtaatctgc tgcttgcaaa caaaaaaacc accgctacca gcggtggttt gtttgccgga 6120

tcaagagcta ccaactcttt ttccgaaggt aactggcttc agcagagcgc agataccaaa 6180

tactgttctt ctagtgtagc cgtagttagg ccaccacttc aagaactctg tagcaccgcc 6240

tacatacctc gctctgctaa tcctgttacc agtggctgct gccagtggcg ataagtcgtg 6300

tcttaccggg ttggactcaa gacgatagtt accggataag gcgcagcggt cgggctgaac 6360

gggggttcg tgcacacagc ccagcttgga gcgaacgacc tacaccgaac tgagatacct 6420

acagcgtgag ctatgagaaa gcgccacgct tcccgaaggg agaaaggcgg acaggtatcc 6480

ggtaagcggc agggtcggaa caggagagcg cacgagggag cttccagggg gaaacgcctg 6540

gtatctttat agtcctgtcg ggtttcgcca cctctgactt gagcgtcgat ttttgtgatg 6600

ctcgtcaggg gggcggagcc tatggaaaaa cgccagcaac gcggcctttt tacggttcct 6660

ggccttttgc tggccttttg ctcacatgtt ctttcctgcg ttatcccctg attctgtgga 6720

taaccgtatt accgcctttg agtgagctga taccgctcgc cgcagccgaa cgaccgagcg 6780

cagcgagtca gtgagcgagg aagcggaaga gcgcccaata cgcaaaccgc ctctccccgc 6840

gcgttggccg attcattaat gcagctggca cgacaggttt cccgactgga aagcgggcag 6900

tgagcgcaac gcaattaatg tgagttagct cactcattag gcaccccagg ctttacactt 6960

tatgcttccg gctcgtatgt tgtgtggaat tgtgagcgga taacaatttc acacaggaaa 7020

cagctatgac catgattacg ccagatttaa ttaaggc 7057

<210> 36
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 36

ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgacctttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 37
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 37
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 38
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 38

ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 39
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> mGlut1 cDNA

<400> 39
atggatccca gcagcaagaa ggtgacgggc cgcctcatgt tggctgtggg aggagcagtg 60

ctcggatcac tgcagttcgg ctataacact ggtgtcatca acgcccccca gaaggttatt 120

gaggagttct acaatcaaac atggaaccac cgctacggag agcccatccc atccaccaca 180

ctcaccacgc tttggtctct ctccgtggcc atcttctctg tcgggggcat gattggttcc 240

ttctctgtcg gcctctttgt taatcgcttt ggcaggcgga actccatgct gatgatgaac 300

ctgttggcct ttgtggctgc tgtgcttatg ggcttctcca aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgcg gcctgactac tggctttgtg 420

cccatgtatg tgggagaggt gtcacctaca gctctacgtg gagccctagg cacactgcac 480

cagctgggaa tcgtcgttgg catccttatt gcccaggtgt ttggcttaga ctccatcatg 540

ggcaatgcag acttgtggcc tctgctgctc agtgtcatct tcatcccagc cctgctacag 600

tgtatcctgt tgcccttctg ccccgagagc ccccgcttcc tgctcatcaa tcgtaacgag 660

gagaaccggg ccaagagtgt gctgaagaag cttcgaggga cagccgatgt gacccgagac 720

ctgcaggaga tgaaagaaga gggtcggcag atgatgcggg agaagaaggt caccatcttg 780

gagctgttcc gctcacccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtcgggtat caatgctgtg ttctactact caacgagcat cttcgagaag 900

gcaggtgtgc agcagcctgt gtacgccacc atcggctccg gtatcgtcaa cacggccttc 960

actgtggtgt cgctgtttgt tgtagagcga gctggacgac ggaccctgca cctcattggc 1020

ctggctggca tggcaggctg tgctgtgctc atgaccatcg ccctggcctt gctggaacgg 1080

ctgccttgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtaggccctg gtcctattcc atggttcatt gtggccgagc tgttcagcca ggggccccgt 1200

cctgctgcta ttgctgtggc tggcttctcc aactggacct caaacttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgcggc ccctacgtct tcatcatctt cacggtgctc 1320

ctcgtgctct tcttcatctt cacctacttc aaagtccctg agaccaaagg ccgaaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggtgccagcc aaagtgacaa gacacccgag 1440

gagctcttcc accctctggg ggcggactcc caagtgtga 1479

<210> 40
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 40
gatcttttc cctctgccaa aaattatggg gacatcatga agcccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 41
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 41
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 42
<211> 6641
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI hGlut1-out3xmiR-122 BS

<400> 42
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcagctc ttaaggctag 1140

agtacttaat acgactcact ataggctagc gcgccgaatt ggccgccagt gtgatggata 1200

tctgcagaat tcgcccttag caggagacca aacgacgggg gtcggagtca gagtcgcagt 1260

gggagtcccc ggaccggagc acgagcctga gcgggagagc gccgctcgca cgcccgtcgc 1320

cacccgcgta cccggcgcag ccagagccac cagcgcagcg ctgccatgga gcccagcagc 1380

aagaagctga cgggtcgcct catgctggcc gtgggaggag cagtgcttgg ctccctgcag 1440

tttggctaca acactggagt catcaatgcc ccccagaagg tgatcgagga gttctacaac 1500

cagacatggg tccaccgcta tggggagagc atcctgccca ccacgctcac cacgctctgg 1560

tccctctcag tggccatctt ttctgttggg ggcatgattg gctccttctc tgtgggcctt 1620

ttcgttaacc gctttggccg gcggaattca atgctgatga tgaacctgct ggccttcgtg 1680

tccgccgtgc tcatgggctt ctcgaaactg ggcaagtcct ttgagatgct gatcctgggc 1740

cgcttcatca tcggtgtgta ctgtggcctg accacaggct tcgtgcccat gtatgtgggt 1800

gaagtgtcac ccacagccct tcgtggggcc ctgggcaccc tgcaccagct gggcatcgtc 1860

gtcggcatcc tcatcgccca ggtgttcggc ctggactcca tcatgggcaa caaggacctg 1920

tggcccctgc tgctgagcat catcttcatc ccggccctgc tgcagtgcat cgtgctgccc 1980

ttctgccccg agagtccccg cttcctgctc atcaaccgca acgaggagaa ccgggccaag 2040

agtgtgctaa agaagctgcg cgggacagct gacgtgaccc atgacctgca ggagatgaag 2100

gaagagagtc ggcagatgat gcgggagaag aaggtcacca tcctggagct gttccgctcc 2160

cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca gcagctgtct 2220

ggcatcaacg ctgtcttcta ttactccacg agcatcttcg agaaggcggg ggtgcagcag 2280

cctgtgtatg ccaccattgg ctccggtatc gtcaacacgg ccttcactgt cgtgtcgctg 2340

tttgtggtgg agcgagcagg ccggcggacc ctgcacctca taggcctcgc tggcatggcg 2400

ggttgtgcca tactcatgac catcgcgcta gcactgctgg agcagctacc ccggatgtcc 2460

tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtggg tcctggcccc 2520

atcccatggt tcatcgtggc tgaactcttc agccagggtc cacgtccagc tgccattgcc 2580

gttgcaggct tctccaactg gacctcaaat ttcattgtgg gcatgtgctt ccagtatgtg 2640

gagcaactgt gtggtcccta cgtcttcatc atcttcactg tgctcctggt tctgttcttc 2700

atcttcacct acttcaaagt tcctgagact aaaggccgga ccttcgatga gatcgcttcc 2760

ggcttccggc agggggggagc cagccaaagt gacaagacac ccgaggagct gttccatccc 2820

ctgggggctg attcccaagt gtgagtcgcc ccagatcacc agcccggcct gctcccagca 2880

gccctaagga tctctcagga gcacaggcag ctggatgaga cttccaaacc tgacagatgt 2940

cagccgagcc gggcctgggg ctcctttctc cagccagcaa tgatgtccag aagaatattc 3000

aggacttaac ggctccagga ttttaacaaa agcaagactg ttgctcaaat ctattcagac 3060

aagcaacagg ttttataatt tttttattac tgattttgtt atttttatat cagcctgagt 3120

ctcctgtgcc cacatcccag gcttcaccct gaatggttcc atgcctgagg gtggagacta 3180

agccctgtcg agacacttgc cttcttcacc cagctaatct gtagggctgg acctatgtcc 3240

taaggacaca ctaatcgaac tatgaactac aaagcttcta tcccaggagg tggctatggc 3300

cacccgttct gctggcctgg atctcccaag aaacaaaggg cgaattccag cacactggcg 3360

gcccgaaaca aacaccattg tcacactcca acaaacacca ttgtcacact ccaacaaaca 3420

ccattgtcac actccattcg ggttactagt ggatcgagga cggggtgaac tacgcctgag 3480

gatccgatct ttttccctct gccaaaaatt atggggacat catgaagccc cttgagcatc 3540

tgacttctgg ctaataaagg aaatttattt tcattgcaat agtgtgttgg aatttttgt 3600

gtctctcact cggaagcaat tcgttgatct gaatttcgac cacccataat acccattacc 3660

ctggtagata agtagcatgg cgggttaatc attaactaca aggaacccct agtgatggag 3720

ttggccactc cctctctgcg cgctcgctcg ctcactgagg ccgggcgacc aaaggtcgcc 3780

cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc gagcgcgcag ccttaattaa 3840

cctaattcac tggccgtcgt tttacaacgt cgtgactggg aaaaccctgg cgttacccaa 3900

cttaatcgcc ttgcagcaca tccccctttc gccagctggc gtaatagcga agaggcccgc 3960

accgatcgcc cttcccaaca gttgcgcagc ctgaatggcg aatgggacgc gccctgtagc 4020

ggcgcattaa gcgcggcggg tgtggtggtt acgcgcagcg tgaccgctac acttgccagc 4080

gccctagcgc ccgctccttt cgctttcttc ccttcctttc tcgccacgtt cgccggcttt 4140

ccccgtcaag ctctaaatcg ggggctccct ttagggttcc gatttagtgc tttacggcac 4200

ctcgacccca aaaaacttga ttagggtgat ggttcacgta gtgggccatc gccctgatag 4260

acggtttttc gccctttgac gttggagtcc acgttcttta atagtggact cttgttccaa 4320

actggaacaa cactcaaccc tatctcggtc tattcttttg atttataagg gattttgccg 4380

atttcggcct attggttaaa aaatgagctg atttaacaaa aatttaacgc gaattttaac 4440

aaaatattaa cgcttacaat ttaggtggca cttttcgggg aaatgtgcgc ggaacccta 4500

tttgtttatt tttctaaata cattcaaata tgtatccgct catgagacaa taaccctgat 4560

aaatgcttca ataatattga aaaaggaaga gtatgagtat tcaacatttc cgtgtcgccc 4620

ttattccctt ttttgcggca ttttgccttc ctgtttttgc tcacccagaa acgctggtga 4680

aagtaaaaga tgctgaagat cagttgggtg cacgagtggg ttacatcgaa ctggatctca 4740

acagcggtaa gatccttgag agttttcgcc ccgaagaacg ttttccaatg atgagcactt 4800

ttaaagttct gctatgtggc gcggtattat cccgtattga cgccgggcaa gagcaactcg 4860

gtcgccgcat acactattct cagaatgact tggttgagta ctcaccagtc acagaaaagc 4920

atcttacgga tggcatgaca gtaagagaat tatgcagtgc tgccataacc atgagtgata 4980

acactgcggc caacttactt ctgacaacga tcggaggacc gaaggagcta accgcttttt 5040

tgcacaacat gggggatcat gtaactcgcc ttgatcgttg ggaaccggag ctgaatgaag 5100

ccataccaaa cgacgagcgt gacaccacga tgcctgtagc aatggcaaca acgttgcgca 5160

aactattaac tggcgaacta cttactctag cttcccggca acaattaata gactggatgg 5220

aggcggataa agttgcagga ccacttctgc gctcggccct tccggctggc tggtttattg 5280

ctgataaatc tggagccggt gagcgtgggt ctcgcggtat cattgcagca ctggggccag 5340

atggtaagcc ctcccgtatc gtagttatct acacgacggg gagtcaggca actatggatg 5400

aacgaaatag acagatcgct gagataggtg cctcactgat taagcattgg taactgtcag 5460

accaagttta ctcatatata ctttagattg atttaaaact tcatttttaa tttaaaagga 5520

tctaggtgaa gatccttttt gataatctca tgaccaaaat cccttaacgt gagttttcgt 5580

tccactgagc gtcagacccc gtagaaaaga tcaaaggatc ttcttgagat cctttttttc 5640

tgcgcgtaat ctgctgcttg caaacaaaaa aaccaccgct accagcggtg gtttgtttgc 5700

cggatcaaga gctaccaact ctttttccga aggtaactgg cttcagcaga gcgcagatac 5760

caaatactgt tcttctagtg tagccgtagt taggccacca cttcaagaac tctgtagcac 5820

cgcctacata cctcgctctg ctaatcctgt taccagtggc tgctgccagt ggcgataagt 5880

cgtgtcttac cgggttggac tcaagacgat agttaccgga taaggcgcag cggtcgggct 5940

gaacgggggg ttcgtgcaca cagcccagct tggagcgaac gacctacacc gaactgagat 6000

acctacagcg tgagctatga gaaagcgcca cgcttcccga agggagaaag gcggacaggt 6060

atccggtaag cggcagggtc ggaacaggag agcgcacgag ggagcttcca gggggaaacg 6120

cctggtatct ttatagtcct gtcgggtttc gccacctctg acttgagcgt cgatttttgt 6180

gatgctcgtc agggggggcgg agcctatgga aaaacgccag caacgcggcc tttttacggt 6240

tcctggcctt ttgctggcct tttgctcaca tgttctttcc tgcgttatcc cctgattctg 6300

tggataaccg tattaccgcc tttgagtgag ctgataccgc tcgccgcagc cgaacgaccg 6360

agcgcagcga gtcagtgagc gaggaagcgg aagagcgccc aatacgcaaa ccgcctctcc 6420

ccgcgcgttg gccgattcat taatgcagct ggcacgacag gtttcccgac tggaaagcgg 6480

gcagtgagcg caacgcaatt aatgtgagtt agctcactca ttaggcaccc caggctttac 6540

actttatgct tccggctcgt atgttgtgtg gaattgtgag cggataacaa tttcacacag 6600

gaaacagcta tgaccatgat tacgccagat ttaattaagg c 6641

<210> 43
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 43
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 44
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 44
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 45
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 45
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 46

<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA

<400> 46
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgcccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtga 1479

<210> 47
<211> 482
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3'UTR

<400> 47
gtcgccccag atcaccagcc cggcctgctc ccagcagccc taaggatctc tcaggagcac 60

aggcagctgg atgagacttc caaacctgac agatgtcagc cgagccgggc ctggggctcc 120

tttctccagc cagcaatgat gtccagaaga atattcagga cttaacggct ccaggatttt 180

aacaaaagca agactgttgc tcaaatctat tcagacaagc aacaggtttt ataatttttt 240

tattactgat tttgttattt ttatatcagc ctgagtctcc tgtgcccaca tcccaggctt 300

caccctgaat ggttccatgc ctgagggtgg agactaagcc ctgtcgagac acttgccttc 360

ttcacccagc taatctgtag ggctggacct atgtcctaag gacacactaa tcgaactatg 420

aactacaaag cttctatccc aggaggtggc tatggccacc cgttctgctg gcctggatct 480

cc 482

<210> 48

<211> 77
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> 3xmiR-122 BS

<400> 48
cgaaacaaac accattgtca cactccaaca aacaccattg tcacactcca acaaacacca 60

ttgtcacact ccattcg 77

<210> 49
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 49
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 50
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 50
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 51
<211> 7137
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI hGlut1-in3xmiR-122 BS

<400> 51
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

gcccagcagc aagaagctga cgggtcgcct catgctggcc gtgggaggag cagtgcttgg 1440

ctccctgcag tttggctaca acactggagt catcaatgcc ccccagaagg tgatcgagga 1500

gttctacaac cagacatggg tccaccgcta tggggagagc atcctgccca ccacgctcac 1560

cacgctctgg tccctctcag tggccatctt ttctgttggg ggcatgattg gctccttctc 1620

tgtgggcctt ttcgttaacc gctttggccg gcggaattca atgctgatga tgaacctgct 1680

ggccttcgtg tccgccgtgc tcatgggctt ctcgaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgtggcctg accacaggct tcgtgcccat 1800

gtatgtgggt gaagtgtcac ccacagccct tcgtggggcc ctgggcaccc tgcaccagct 1860

gggcatcgtc gtcggcatcc tcatcgccca ggtgttcggc ctggactcca tcatgggcaa 1920

caaggacctg tggcccctgc tgctgagcat catcttcatc ccggccctgc tgcagtgcat 1980

cgtgctgccc ttctgccccg agagtccccg cttcctgctc atcaaccgca acgaggagaa 2040

ccgggccaag agtgtgctaa agaagctgcg cgggacagct gacgtgaccc atgacctgca 2100

ggagatgaag gaagagagtc ggcagatgat gcgggagaag aaggtcacca tcctggagct 2160

gttccgctcc cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtct ggcatcaacg ctgtcttcta ttactccacg agcatcttcg agaaggcggg 2280

ggtgcagcag cctgtgtatg ccaccattgg ctccggtatc gtcaacacgg ccttcactgt 2340

cgtgtcgctg tttgtggtgg agcgagcagg ccggcggacc ctgcacctca taggcctcgc 2400

tggcatggcg ggttgtgcca tactcatgac catcgcgcta gcactgctgg agcagctacc 2460

ccggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtggg 2520

tcctggcccc atcccatggt tcatcgtggc tgaactcttc agccagggtc cacgtccagc 2580

tgccattgcc gttgcaggct tctccaactg gacctcaaat ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gtggtcccta cgtcttcatc atcttcactg tgctcctggt 2700

tctgttcttc atcttcacct acttcaaagt tcctgagact aaaggccgga ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggagc cagccaaagt gacaagacac ccgaggagct 2820

gttccatccc ctgggggctg attcccaagt gtgaggagcc ccacacccag cccggcctgc 2880

tccctgcagc ccaaggatct ctctggagca caggcagcta gatgagacct cttccgaacc 2940

gacagatctc gggcaagccg ggcctgggcg cctttcctca gccagcagtg aagtccagga 3000

ggatattcag gactttgatg gctccagaat ttttaatgaa agcaagactg ctgctcagat 3060

ctattcagat aagcagcagg ttttataatt tttttattac tgattttgtt atttttttt 3120

tttatcagcc actctcctat ctccacactg tagtcttcac cttgattggc ccagtgcctg 3180

agggtgggga ccacgccctg tccagacact tgccttcttt gccaagctaa tctgtagggc 3240

tggacctatg gccaaggaca cactaatacc gaactctgag ctaggaggct ttaccgctgg 3300

aggcggtagc tgccacccac ttccgcaggc ctggacctcg gcaccatagg ggtccggact 3360

ccattttagg attcgcccat tcctgtctct tcctacccaa ccactcaatt aatctttcct 3420

tgcctgagac cagttggaag cactggagtg cagggaggag agggaagggc caggctgggc 3480

tgccaggttc tagtctcctg tgcactgagg gccacacaaa caccatgaga aggaccgaaa 3540

caaacaccat tgtcacactc caacaaacac cattgtcaca ctccaacaaa caccattgtc 3600

acactccatt cggacctcgg aggctgagaa cttaactgct gaagacacgg acactcctgc 3660

cctgctgtgt atagatggaa gatatttata tatttttgg ttgtcaatat taaatacaga 3720

cactaagtta tagtatatct ggacaaaccc acttgtaaat acaccaacaa actcctgtaa 3780

ctttacctaa gcagatataa atggctggtt tttagaaaaa aaaaaaaaaa aaaaaaaaaa 3840

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa actgtctcgc 3900

tgcggccgct ctagagtatc cctcgactct agagtcgacc cgggcggcct cgaggacggg 3960

gtgaactacg cctgaggatc cgatcttttt ccctctgcca aaaattatgg ggacatcatg 4020

aagccccttg agcatctgac ttctggctaa taaaggaaat ttattttcat tgcaatagtg 4080

tgttggaatt ttttgtgtct ctcactcgga agcaattcgt tgatctgaat ttcgaccacc 4140

cataataccc attaccctgg tagataagta gcatggcggg ttaatcatta actacaagga 4200

acccctagtg atggagttgg ccactccctc tctgcgcgct cgctcgctca ctgaggccgg 4260

gcgaccaaag gtcgcccgac gcccgggctt tgcccgggcg gcctcagtga gcgagcgagc 4320

gcgcagcctt aattaaccta attcactggc cgtcgtttta caacgtcgtg actgggaaaa 4380

ccctggcgtt acccaactta atcgccttgc agcacatccc cctttcgcca gctggcgtaa 4440

tagcgaagag gcccgcaccg atcgcccttc ccaacagttg cgcagcctga atggcgaatg 4500

ggacgcgccc tgtagcggcg cattaagcgc ggcgggtgtg gtggttacgc gcagcgtgac 4560

cgctacactt gccagcgccc tagcgcccgc tcctttcgct ttcttccctt cctttctcgc 4620

cacgttcgcc ggctttcccc gtcaagctct aaatcggggg ctccctttag ggttccgatt 4680

tagtgcttta cggcacctcg accccaaaaa acttgattag ggtgatggtt cacgtagtgg 4740

gccatcgccc tgatagacgg tttttcgccc tttgacgttg gagtccacgt tctttaatag 4800

tggactcttg ttccaaactg gaacaacact caaccctatc tcggtctatt cttttgattt 4860

ataagggatt ttgccgattt cggcctattg gttaaaaaat gagctgattt aacaaaaatt 4920

taacgcgaat tttaacaaaa tattaacgct tacaatttag gtggcacttt tcggggaaat 4980

gtgcgcggaa cccctatttg tttatttttc taaatacatt caaatatgta tccgctcatg 5040

agacaataac cctgataaat gcttcaataa tattgaaaaa ggaagagtat gagtattcaa 5100

catttccgtg tcgcccttat tccctttttt gcggcatttt gccttcctgt ttttgctcac 5160

ccagaaacgc tggtgaaagt aaaagatgct gaagatcagt tgggtgcacg agtgggttac 5220

atcgaactgg atctcaacag cggtaagatc cttgagagtt ttcgccccga agaacgtttt 5280

ccaatgatga gcacttttaa agttctgcta tgtggcgcgg tattatcccg tattgacgcc 5340

gggcaagagc aactcggtcg ccgcatacac tattctcaga atgacttggt tgagtactca 5400

ccagtcacag aaaagcatct tacggatggc atgacagtaa gagaattatg cagtgctgcc 5460

ataaccatga gtgataacac tgcggccaac ttacttctga caacgatcgg aggaccgaag 5520

gagctaaccg ctttttgca caacatgggg gatcatgtaa ctcgccttga tcgttgggaa 5580

ccggagctga atgaagccat accaaacgac gagcgtgaca ccacgatgcc tgtagcaatg 5640

gcaacaacgt tgcgcaaact attaactggc gaactactta ctctagcttc ccggcaacaa 5700

ttaatagact ggatggaggc ggataaagtt gcaggaccac ttctgcgctc ggcccttccg 5760

gctggctggt ttattgctga taaatctgga gccggtgagc gtgggtctcg cggtatcatt 5820

gcagcactgg ggccagatgg taagccctcc cgtatcgtag ttatctacac gacggggagt 5880

caggcaacta tggatgaacg aaatagacag atcgctgaga taggtgcctc actgattaag 5940

cattggtaac tgtcagacca agtttactca tatatacttt agattgattt aaaacttcat 6000

ttttaattta aaaggatcta ggtgaagatc ctttttgata atctcatgac caaaatccct 6060

taacgtgagt tttcgttcca ctgagcgtca gaccccgtag aaaagatcaa aggatcttct 6120

tgagatcctt tttttctgcg cgtaatctgc tgcttgcaaa caaaaaaacc accgctacca 6180

gcggtggttt gtttgccgga tcaagagcta ccaactcttt ttccgaaggt aactggcttc 6240

agcagagcgc agataccaaa tactgttctt ctagtgtagc cgtagttagg ccaccacttc 6300

aagaactctg tagcaccgcc tacatacctc gctctgctaa tcctgttacc agtggctgct 6360

gccagtggcg ataagtcgtg tcttaccggg ttggactcaa gacgatagtt accggataag 6420

gcgcagcggt cgggctgaac gggggggttcg tgcacacagc ccagcttgga gcgaacgacc 6480

tacaccgaac tgagatacct acagcgtgag ctatgagaaa gcgccacgct tcccgaaggg 6540

agaaaggcgg acaggtatcc ggtaagcggc agggtcggaa caggagagcg cacgagggag 6600

cttccagggg gaaacgcctg gtatctttat agtcctgtcg ggtttcgcca cctctgactt 6660

gagcgtcgat ttttgtgatg ctcgtcaggg gggcggagcc tatggaaaaa cgccagcaac 6720

gcggcctttt tacggttcct ggccttttgc tggccttttg ctcacatgtt ctttcctgcg 6780

ttatcccctg attctgtgga taaccgtatt accgcctttg agtgagctga taccgctcgc 6840

cgcagccgaa cgaccgagcg cagcgagtca gtgagcgagg aagcggaaga gcgcccaata 6900

cgcaaaccgc ctctccccgc gcgttggccg attcattaat gcagctggca cgacaggttt 6960

cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagttagct cactcattag 7020

gcaccccagg ctttacactt tatgcttccg gctcgtatgt tgtgtggaat tgtgagcgga 7080

taacaatttc acacaggaaa cagctatgac catgattacg ccagatttaa ttaaggc 7137

<210> 52
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 52
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 53
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

polynucleotide

<220>
<223> CMV IE enhancer

<400> 53
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 54
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 54
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 55
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA

<400> 55
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgcccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtga 1479

<210> 56
<211> 1035
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' UTR and 3xmiR-122

<400> 56
ggagccccac acccagcccg gcctgctccc tgcagcccaa ggatctctct ggagcacagg 60

cagctagatg agacctcttc cgaaccgaca gatctcgggc aagccgggcc tgggcgcctt 120

tcctcagcca gcagtgaagt ccaggaggat attcaggact ttgatggctc cagaattttt 180

aatgaaagca agactgctgc tcagatctat tcagataagc agcaggtttt ataatttttt 240

tattactgat tttgttattt ttttttttta tcagccactc tcctatctcc acactgtagt 300

cttcaccttg attggcccag tgcctgaggg tggggaccac gccctgtcca gacacttgcc 360

ttctttgcca agctaatctg tagggctgga cctatggcca aggacacact aataccgaac 420

tctgagctag gaggctttac cgctggaggc ggtagctgcc acccacttcc gcaggcctgg 480

acctcggcac cataggggtc cggactccat tttaggattc gcccattcct gtctcttcct 540

acccaaccac tcaattaatc tttccttgcc tgagaccagt tggaagcact ggagtgcagg 600

gaggagaggg aagggccagg ctgggctgcc aggttctagt ctcctgtgca ctgagggcca 660

cacaaacacc atgagaagga ccgaaacaaa caccattgtc acactccaac aaacaccatt 720

gtcacactcc aacaaacacc attgtcacac tccattcgga cctcggaggc tgagaactta 780

actgctgaag acacggacac tcctgccctg ctgtgtatag atggaagata tttatatatt 840

ttttggttgt caatattaaa tacagacact aagttatagt atatctggac aaacccactt 900

gtaaatacac caacaaactc ctgtaacttt acctaagcag atataaatgg ctggttttta 960

gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020

aaaaaaaaaa aaaaa 1035

<210> 57
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 57
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 58
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 58
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 59
<211> 7137
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI mGlut1-in3xmiR-122 BS

<400> 59
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

tcccagcagc aagaaggtga cgggccgcct catgttggct gtgggaggag cagtgctcgg 1440

atcactgcag ttcggctata acactggtgt catcaacgcc ccccagaagg ttattgagga 1500

gttctacaat caaacatgga accaccgcta cggagagccc atcccatcca ccacactcac 1560

cacgctttgg tctctctccg tggccatctt ctctgtcggg ggcatgattg gttccttctc 1620

tgtcggcctc tttgttaatc gctttggcag gcggaactcc atgctgatga tgaacctgtt 1680

ggcctttgtg gctgctgtgc ttatgggctt ctccaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgcggcctg actactggct ttgtgcccat 1800

gtatgtggga gaggtgtcac ctacagctct acgtggagcc ctaggcacac tgcaccagct 1860

gggaatcgtc gttggcatcc ttattgccca ggtgtttggc ttagactcca tcatgggcaa 1920

tgcagacttg tggcctctgc tgctcagtgt catcttcatc ccagccctgc tacagtgtat 1980

cctgttgccc ttctgccccg agagcccccg cttcctgctc atcaatcgta acgaggagaa 2040

ccgggccaag agtgtgctga agaagcttcg agggacagcc gatgtgaccc gagacctgca 2100

ggagatgaaa gaagagggtc ggcagatgat gcgggagaag aaggtcacca tcttggagct 2160

gttccgctca cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtcg ggtatcaatg ctgtgttcta ctactcaacg agcatcttcg agaaggcagg 2280

tgtgcagcag cctgtgtacg ccaccatcgg ctccggtatc gtcaacacgg ccttcactgt 2340

ggtgtcgctg tttgttgtag agcgagctgg acgacggacc ctgcacctca ttggcctggc 2400

tggcatggca ggctgtgctg tgctcatgac catcgccctg gccttgctgg aacggctgcc 2460

ttggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtagg 2520

ccctggtcct attccatggt tcattgtggc cgagctgttc agccaggggc cccgtcctgc 2580

tgctattgct gtggctggct tctccaactg gacctcaaac ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gcggccccta cgtcttcatc atcttcacgg tgctcctcgt 2700

gctcttcttc atcttcacct acttcaaagt ccctgagacc aaaggccgaa ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggtgc cagccaaagt gacaagacac ccgaggagct 2820

cttccaccct ctgggggcgg actcccaagt gtgaggagcc ccacacccag cccggcctgc 2880

tccctgcagc ccaaggatct ctctggagca caggcagcta gatgagacct cttccgaacc 2940

gacagatctc gggcaagccg ggcctgggcg cctttcctca gccagcagtg aagtccagga 3000

ggatattcag gactttgatg gctccagaat ttttaatgaa agcaagactg ctgctcagat 3060

ctattcagat aagcagcagg ttttataatt tttttattac tgattttgtt atttttttt 3120

tttatcagcc actctcctat ctccacactg tagtcttcac cttgattggc ccagtgcctg 3180

agggtgggga ccacgccctg tccagacact tgccttcttt gccaagctaa tctgtagggc 3240

tggacctatg gccaaggaca cactaatacc gaactctgag ctaggaggct ttaccgctgg 3300

aggcggtagc tgccacccac ttccgcaggc ctggacctcg gcaccatagg ggtccggact 3360

ccattttagg attcgcccat tcctgtctct tcctacccaa ccactcaatt aatctttcct 3420

tgcctgagac cagttggaag cactggagtg cagggaggag agggaagggc caggctgggc 3480

tgccaggttc tagtctcctg tgcactgagg gccacacaaa caccatgaga aggaccgaaa 3540

caaacaccat tgtcacactc caacaaacac cattgtcaca ctccaacaaa caccattgtc 3600

acactccatt cggacctcgg aggctgagaa cttaactgct gaagacacgg acactcctgc 3660

cctgctgtgt atagatggaa gatatttata tatttttgg ttgtcaatat taaatacaga 3720

cactaagtta tagtatatct ggacaaaccc acttgtaaat acaccaacaa actcctgtaa 3780

ctttacctaa gcagatataa atggctggtt tttagaaaaa aaaaaaaaaa aaaaaaaaaa 3840

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa actgtctcgc 3900

tgcggccgct ctagagtatc cctcgactct agagtcgacc cgggcggcct cgaggacggg 3960

gtgaactacg cctgaggatc cgatcttttt ccctctgcca aaaattatgg ggacatcatg 4020

aagccccttg agcatctgac ttctggctaa taaaggaaat ttattttcat tgcaatagtg 4080

tgttggaatt ttttgtgtct ctcactcgga agcaattcgt tgatctgaat ttcgaccacc 4140

cataataccc attaccctgg tagataagta gcatggcggg ttaatcatta actacaagga 4200

acccctagtg atggagttgg ccactccctc tctgcgcgct cgctcgctca ctgaggccgg 4260

gcgaccaaag gtcgcccgac gcccgggctt tgcccgggcg gcctcagtga gcgagcgagc 4320

gcgcagcctt aattaaccta attcactggc cgtcgtttta caacgtcgtg actgggaaaa 4380

ccctggcgtt acccaactta atcgccttgc agcacatccc cctttcgcca gctggcgtaa 4440

tagcgaagag gcccgcaccg atcgcccttc ccaacagttg cgcagcctga atggcgaatg 4500

ggacgcgccc tgtagcggcg cattaagcgc ggcgggtgtg gtggttacgc gcagcgtgac 4560

cgctacactt gccagcgccc tagcgcccgc tcctttcgct ttcttccctt cctttctcgc 4620

cacgttcgcc ggctttcccc gtcaagctct aaatcggggg ctccctttag ggttccgatt 4680

tagtgcttta cggcacctcg accccaaaaa acttgattag ggtgatggtt cacgtagtgg 4740

gccatcgccc tgatagacgg tttttcgccc tttgacgttg gagtccacgt tctttaatag 4800

tggactcttg ttccaaactg gaacaacact caaccctatc tcggtctatt cttttgattt 4860

ataagggatt ttgccgattt cggcctattg gttaaaaaat gagctgattt aacaaaaatt 4920

taacgcgaat tttaacaaaa tattaacgct tacaatttag gtggcacttt tcggggaaat 4980

gtgcgcggaa cccctatttg tttatttttc taaatacatt caaatatgta tccgctcatg 5040

agacaataac cctgataaat gcttcaataa tattgaaaaa ggaagagtat gagtattcaa 5100

catttccgtg tcgcccttat tccctttttt gcggcatttt gccttcctgt ttttgctcac 5160

ccagaaacgc tggtgaaagt aaaagatgct gaagatcagt tgggtgcacg agtgggttac 5220

atcgaactgg atctcaacag cggtaagatc cttgagagtt ttcgccccga agaacgtttt 5280

ccaatgatga gcacttttaa agttctgcta tgtggcgcgg tattatcccg tattgacgcc 5340

gggcaagagc aactcggtcg ccgcatacac tattctcaga atgacttggt tgagtactca 5400

ccagtcacag aaaagcatct tacggatggc atgacagtaa gagaattatg cagtgctgcc 5460

ataaccatga gtgataacac tgcggccaac ttacttctga caacgatcgg aggaccgaag 5520

gagctaaccg ctttttttgca caacatgggg gatcatgtaa ctcgccttga tcgttgggaa 5580

ccggagctga atgaagccat accaaacgac gagcgtgaca ccacgatgcc tgtagcaatg 5640

gcaacaacgt tgcgcaaact attaactggc gaactactta ctctagcttc ccggcaacaa 5700

ttaatagact ggatggaggc ggataaagtt gcaggaccac ttctgcgctc ggcccttccg 5760

gctggctggt ttattgctga taaatctgga gccggtgagc gtgggtctcg cggtatcatt 5820

gcagcactgg ggccagatgg taagccctcc cgtatcgtag ttatctacac gacggggagt 5880

caggcaacta tggatgaacg aaatagacag atcgctgaga taggtgcctc actgattaag 5940

cattggtaac tgtcagacca agtttactca tatatacttt agattgattt aaaacttcat 6000

ttttaattta aaaggatcta ggtgaagatc ctttttgata atctcatgac caaaatccct 6060

taacgtgagt tttcgttcca ctgagcgtca gaccccgtag aaaagatcaa aggatcttct 6120

tgagatcctt tttttctgcg cgtaatctgc tgcttgcaaa caaaaaaacc accgctacca 6180

gcggtggttt gtttgccgga tcaagagcta ccaactcttt ttccgaaggt aactggcttc 6240

agcagagcgc agataccaaa tactgttctt ctagtgtagc cgtagttagg ccaccacttc 6300

aagaactctg tagcaccgcc tacatacctc gctctgctaa tcctgttacc agtggctgct 6360

gccagtggcg ataagtcgtg tcttaccggg ttggactcaa gacgatagtt accggataag 6420

gcgcagcggt cgggctgaac gggggggttcg tgcacacagc ccagcttgga gcgaacgacc 6480

tacaccgaac tgagatacct acagcgtgag ctatgagaaa gcgccacgct tcccgaaggg 6540

agaaaggcgg acaggtatcc ggtaagcggc agggtcggaa caggagagcg cacgagggag 6600

cttccagggg gaaacgcctg gtatctttat agtcctgtcg ggtttcgcca cctctgactt 6660

gagcgtcgat ttttgtgatg ctcgtcaggg gggcggagcc tatggaaaaa cgccagcaac 6720

gcggcctttt tacggttcct ggccttttgc tggccttttg ctcacatgtt ctttcctgcg 6780

ttatcccctg attctgtgga taaccgtatt accgcctttg agtgagctga taccgctcgc 6840

cgcagccgaa cgaccgagcg cagcgagtca gtgagcgagg aagcggaaga gcgcccaata 6900

cgcaaaccgc ctctccccgc gcgttggccg attcattaat gcagctggca cgacaggttt 6960

cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagttagct cactcattag 7020

gcaccccagg ctttacactt tatgcttccg gctcgtatgt tgtgtggaat tgtgagcgga 7080

taacaatttc acacaggaaa cagctatgac catgattacg ccagatttaa ttaaggc 7137

<210> 60
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 60
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 61
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 61
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 62
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 62
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 63
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> mGlut1 cDNA

<400> 63
atggatccca gcagcaagaa ggtgacgggc cgcctcatgt tggctgtggg aggagcagtg 60

ctcggatcac tgcagttcgg ctataacact ggtgtcatca acgcccccca gaaggttatt 120

gaggagttct acaatcaaac atggaaccac cgctacggag agcccatccc atccaccaca 180

ctcaccacgc tttggtctct ctccgtggcc atcttctctg tcgggggcat gattggttcc 240

ttctctgtcg gcctctttgt taatcgcttt ggcaggcgga actccatgct gatgatgaac 300

ctgttggcct ttgtggctgc tgtgcttatg ggcttctcca aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgcg gcctgactac tggctttgtg 420

cccatgtatg tgggagaggt gtcacctaca gctctacgtg gagccctagg cacactgcac 480

cagctgggaa tcgtcgttgg catccttatt gcccaggtgt ttggcttaga ctccatcatg 540

ggcaatgcag acttgtggcc tctgctgctc agtgtcatct tcatcccagc cctgctacag 600

tgtatcctgt tgcccttctg ccccgagagc ccccgcttcc tgctcatcaa tcgtaacgag 660

gagaaccggg ccaagagtgt gctgaagaag cttcgaggga cagccgatgt gacccgagac 720

ctgcaggaga tgaaagaaga gggtcggcag atgatgcggg agaagaaggt caccatcttg 780

gagctgttcc gctcacccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtcgggtat caatgctgtg ttctactact caacgagcat cttcgagaag 900

gcaggtgtgc agcagcctgt gtacgccacc atcggctccg gtatcgtcaa cacggccttc 960

actgtggtgt cgctgtttgt tgtagagcga gctggacgac ggaccctgca cctcattggc 1020

ctggctggca tggcaggctg tgctgtgctc atgaccatcg ccctggcctt gctggaacgg 1080

ctgccttgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtaggccctg gtcctattcc atggttcatt gtggccgagc tgttcagcca ggggccccgt 1200

cctgctgcta ttgctgtggc tggcttctcc aactggacct caaacttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgcggc ccctacgtct tcatcatctt cacggtgctc 1320

ctcgtgctct tcttcatctt cacctacttc aaagtccctg agaccaaagg ccgaaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggtgccagcc aaagtgacaa gacacccgag 1440

gagctcttcc accctctggg ggcggactcc caagtgtga 1479

<210> 64
<211> 1035
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3'UTR and 3x-miR122BS

<400> 64
ggagccccac acccagcccg gcctgctccc tgcagcccaa ggatctctct ggagcacagg 60

cagctagatg agacctcttc cgaaccgaca gatctcgggc aagccgggcc tgggcgcctt 120

tcctcagcca gcagtgaagt ccaggaggat attcaggact ttgatggctc cagaattttt 180

aatgaaagca agactgctgc tcagatctat tcagataagc agcaggtttt ataatttttt 240

tattactgat tttgttattt ttttttttta tcagccactc tcctatctcc acactgtagt 300

cttcaccttg attggcccag tgcctgaggg tggggaccac gccctgtcca gacacttgcc 360

ttctttgcca agctaatctg tagggctgga cctatggcca aggacacact aataccgaac 420

tctgagctag gaggctttac cgctggaggc ggtagctgcc acccacttcc gcaggcctgg 480

acctcggcac cataggggtc cggactccat tttaggattc gcccattcct gtctcttcct 540

acccaaccac tcaattaatc tttccttgcc tgagaccagt tggaagcact ggagtgcagg 600

gaggagaggg aagggccagg ctgggctgcc aggttctagt ctcctgtgca ctgagggcca 660

cacaaacacc atgagaagga ccgaaacaaa caccattgtc acactccaac aaacaccatt 720

gtcacactcc aacaaacacc attgtcacac tccattcgga cctcggaggc tgagaactta 780

actgctgaag acacggacac tcctgccctg ctgtgtatag atggaagata tttatatatt 840

ttttggttgt caatattaaa tacagacact aagttatagt atatctggac aaacccactt 900

gtaaatacac caacaaactc ctgtaacttt acctaagcag atataaatgg ctggttttta 960

gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1020

aaaaaaaaaa aaaaa 1035

<210> 65
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 65
gatctttttc cctctgccaa aaattatggg gacatcatga agcccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 66
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

polynucleotide

<220>
<223> 3'ITR

<400> 66
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 67
<211> 7138
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI mGlut1-out3xmiR-122 BS

<400> 67
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

tcccagcagc aagaaggtga cgggccgcct catgttggct gtgggaggag cagtgctcgg 1440

atcactgcag ttcggctata acactggtgt catcaacgcc ccccagaagg ttattgagga 1500

gttctacaat caaacatgga accaccgcta cggagagccc atcccatcca ccacactcac 1560

cacgctttgg tctctctccg tggccatctt ctctgtcggg ggcatgattg gttccttctc 1620

tgtcggcctc tttgttaatc gctttggcag gcggaactcc atgctgatga tgaacctgtt 1680

ggcctttgtg gctgctgtgc ttatgggctt ctccaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgcggcctg actactggct ttgtgcccat 1800

gtatgtggga gaggtgtcac ctacagctct acgtggagcc ctaggcacac tgcaccagct 1860

gggaatcgtc gttggcatcc ttattgccca ggtgtttggc ttagactcca tcatgggcaa 1920

tgcagacttg tggcctctgc tgctcagtgt catcttcatc ccagccctgc tacagtgtat 1980

cctgttgccc ttctgccccg agagcccccg cttcctgctc atcaatcgta acgaggagaa 2040

ccgggccaag agtgtgctga agaagcttcg agggacagcc gatgtgaccc gagacctgca 2100

ggagatgaaa gaagagggtc ggcagatgat gcgggagaag aaggtcacca tcttggagct 2160

gttccgctca cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtcg ggtatcaatg ctgtgttcta ctactcaacg agcatcttcg agaaggcagg 2280

tgtgcagcag cctgtgtacg ccaccatcgg ctccggtatc gtcaacacgg ccttcactgt 2340

ggtgtcgctg tttgttgtag agcgagctgg acgacggacc ctgcacctca ttggcctggc 2400

tggcatggca ggctgtgctg tgctcatgac catcgccctg gccttgctgg aacggctgcc 2460

ttggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtagg 2520

ccctggtcct attccatggt tcattgtggc cgagctgttc agccaggggc cccgtcctgc 2580

tgctattgct gtggctggct tctccaactg gacctcaaac ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gcggccccta cgtcttcatc atcttcacgg tgctcctcgt 2700

gctcttcttc atcttcacct acttcaaagt ccctgagacc aaaggccgaa ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggtgc cagccaaagt gacaagacac ccgaggagct 2820

cttccaccct ctgggggcgg actcccaagt gtgaggagcc ccacacccag cccggcctgc 2880

tccctgcagc ccaaggatct ctctggagca caggcagcta gatgagacct cttccgaacc 2940

gacagatctc gggcaagccg ggcctgggcg cctttcctca gccagcagtg aagtccagga 3000

ggatattcag gactttgatg gctccagaat ttttaatgaa agcaagactg ctgctcagat 3060

ctattcagat aagcagcagg ttttataatt tttttattac tgattttgtt atttttttt 3120

tttatcagcc actctcctat ctccacactg tagtcttcac cttgattggc ccagtgcctg 3180

agggtgggga ccacgccctg tccagacact tgccttcttt gccaagctaa tctgtagggc 3240

tggacctatg gccaaggaca cactaatacc gaactctgag ctaggaggct ttaccgctgg 3300

aggcggtagc tgccacccac ttccgcaggc ctggacctcg gcaccatagg ggtccggact 3360

ccattttagg attcgcccat tcctgtctct tcctacccaa ccactcaatt aatctttcct 3420

tgcctgagac cagttggaag cactggagtg cagggaggag agggaagggc caggctgggc 3480

tgccaggttc tagtctcctg tgcactgagg gccacacaaa caccatgaga aggacctcgg 3540

aggctgagaa cttaactgct gaagacacgg acactcctgc cctgctgtgt atagatggaa 3600

gatatttata tatttttgg ttgtcaatat taaatacaga cactaagtta tagtatatct 3660

ggacaaaccc acttgtaaat acaccaacaa actcctgtaa ctttacctaa gcagatataa 3720

atggctggtt tttagaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3780

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa actgtctcgc tgcggcccga aacaaacacc 3840

attgtcacac tccaacaaac accattgtca cactccaaca aacaccattg tcacactcca 3900

ttcgggccgc tctagagtat ccctcgactc tagagtcgac ccgggcggcc tcgaggacgg 3960

ggtgaactac gcctgaggat ccgatctttt tccctctgcc aaaaattatg gggacatcat 4020

gaagcccctt gagcatctga cttctggcta ataaaggaaa tttattttca ttgcaatagt 4080

gtgttggaat tttttgtgtc tctcactcgg aagcaattcg ttgatctgaa tttcgaccac 4140

ccataatacc cattaccctg gtagataagt agcatggcgg gttaatcatt aactacaagg 4200

aacccctagt gatggagttg gccactccct ctctgcgcgc tcgctcgctc actgaggccg 4260

ggcgaccaaa ggtcgcccga cgcccgggct ttgcccgggc ggcctcagtg agcgagcgag 4320

cgcgcagcct taattaacct aattcactgg ccgtcgtttt acaacgtcgt gactgggaaa 4380

accctggcgt tacccaactt aatcgccttg cagcacatcc ccctttcgcc agctggcgta 4440

atagcgaaga ggcccgcacc gatcgccctt cccaacagtt gcgcagcctg aatggcgaat 4500

gggacgcgcc ctgtagcggc gcattaagcg cggcgggtgt ggtggttacg cgcagcgtga 4560

ccgctacact tgccagcgcc ctagcgcccg ctcctttcgc tttcttccct tcctttctcg 4620

ccacgttcgc cggctttccc cgtcaagctc taaatcgggg gctcccttta gggttccgat 4680

ttagtgcttt acggcacctc gaccccaaaa aacttgatta gggtgatggt tcacgtagtg 4740

ggccatcgcc ctgatagacg gtttttcgcc ctttgacgtt ggagtccacg ttctttaata 4800

gtggactctt gttccaaact ggaacaacac tcaaccctat ctcggtctat tcttttgatt 4860

tataagggat tttgccgatt tcggcctatt ggttaaaaaa tgagctgatt taacaaaaat 4920

ttaacgcgaa ttttaacaaa atattaacgc ttacaattta ggtggcactt ttcggggaaa 4980

tgtgcgcgga acccctattt gtttattttt ctaaatacat tcaaatatgt atccgctcat 5040

gagacaataa ccctgataaa tgcttcaata atattgaaaa aggaagagta tgagtattca 5100

acatttccgt gtcgccctta ttccctttt tgcggcattt tgccttcctg tttttgctca 5160

cccagaaacg ctggtgaaag taaaagatgc tgaagatcag ttgggtgcac gagtgggtta 5220

catcgaactg gatctcaaca gcggtaagat ccttgagagt tttcgccccg aagaacgttt 5280

tccaatgatg agcactttta aagttctgct atgtggcgcg gtattatccc gtattgacgc 5340

cgggcaagag caactcggtc gccgcataca ctattctcag aatgacttgg ttgagtactc 5400

accagtcaca gaaaagcatc ttacggatgg catgacagta agagaattat gcagtgctgc 5460

cataaccatg agtgataaca ctgcggccaa cttacttctg acaacgatcg gaggaccgaa 5520

ggagctaacc gcttttttgc acaacatggg ggatcatgta actcgccttg atcgttggga 5580

accggagctg aatgaagcca taccaaacga cgagcgtgac accacgatgc ctgtagcaat 5640

ggcaacaacg ttgcgcaaac tattaactgg cgaactactt actctagctt cccggcaaca 5700

attaatagac tggatggagg cggataaagt tgcaggacca cttctgcgct cggcccttcc 5760

ggctggctgg tttattgctg ataaatctgg agccggtgag cgtgggtctc gcggtatcat 5820

tgcagcactg gggccagatg gtaagccctc ccgtatcgta gttatctaca cgacggggag 5880

tcaggcaact atggatgaac gaaatagaca gatcgctgag ataggtgcct cactgattaa 5940

gcattggtaa ctgtcagacc aagtttactc atatatactt tagattgatt taaaacttca 6000

tttttaattt aaaaggatct aggtgaagat ccttttttgat aatctcatga ccaaaatccc 6060

ttaacgtgag ttttcgttcc actgagcgtc agaccccgta gaaaagatca aaggatcttc 6120

ttgagatcct ttttttctgc gcgtaatctg ctgcttgcaa acaaaaaaac caccgctacc 6180

agcggtggtt tgtttgccgg atcaagagct accaactctt tttccgaagg taactggctt 6240

cagcagagcg cagataccaa atactgttct tctagtgtag ccgtagttag gccaccactt 6300

caagaactct gtagcaccgc ctacatacct cgctctgcta atcctgttac cagtggctgc 6360

tgccagtggc gataagtcgt gtcttaccgg gttggactca agacgatagt taccggataa 6420

ggcgcagcgg tcgggctgaa cgggggttc gtgcacacag cccagcttgg agcgaacgac 6480

ctacaccgaa ctgagatacc tacagcgtga gctatgagaa agcgccacgc ttcccgaagg 6540

gagaaaggcg gacaggtatc cggtaagcgg cagggtcgga acaggagagc gcacgaggga 6600

gcttccaggg ggaaacgcct ggtatcttta tagtcctgtc gggtttcgcc acctctgact 6660

tgagcgtcga tttttgtgat gctcgtcagg ggggcggagc ctatggaaaa acgccagcaa 6720

cgcggccttt ttacggttcc tggccttttg ctggcctttt gctcacatgt tctttcctgc 6780

gttatcccct gattctgtgg ataaccgtat taccgccttt gagtgagctg ataccgctcg 6840

ccgcagccga acgaccgagc gcagcgagtc agtgagcgag gaagcggaag agcgcccaat 6900

acgcaaaccg cctctccccg cgcgttggcc gattcattaa tgcagctggc acgacaggtt 6960

tcccgactgg aaagcgggca gtgagcgcaa cgcaattaat gtgagttagc tcactcatta 7020

ggcaccccag gctttacact ttatgcttcc ggctcgtatg ttgtgtggaa ttgtgagcgg 7080

ataacaattt cacacaggaa acagctatga ccatgattac gccagattta attaaggc 7138

<210> 68
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 68
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 69
<211> 382
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 69
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 70
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 70
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 71
<211> 1479
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> mGlut1 cDNA

<400> 71
atggatccca gcagcaagaa ggtgacgggc cgcctcatgt tggctgtggg aggagcagtg 60

ctcggatcac tgcagttcgg ctataacact ggtgtcatca acgcccccca gaaggttatt 120

gaggagttct acaatcaaac atggaaccac cgctacggag agcccatccc atccaccaca 180

ctcaccacgc tttggtctct ctccgtggcc atcttctctg tcgggggcat gattggttcc 240

ttctctgtcg gcctctttgt taatcgcttt ggcaggcgga actccatgct gatgatgaac 300

ctgttggcct ttgtggctgc tgtgcttatg ggcttctcca aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgcg gcctgactac tggctttgtg 420

cccatgtatg tgggagaggt gtcacctaca gctctacgtg gagccctagg cacactgcac 480

cagctgggaa tcgtcgttgg catccttatt gcccaggtgt ttggcttaga ctccatcatg 540

ggcaatgcag acttgtggcc tctgctgctc agtgtcatct tcatcccagc cctgctacag 600

tgtatcctgt tgcccttctg ccccgagagc ccccgcttcc tgctcatcaa tcgtaacgag 660

gagaaccggg ccaagagtgt gctgaagaag cttcgaggga cagccgatgt gacccgagac 720

ctgcaggaga tgaaagaaga gggtcggcag atgatgcggg agaagaaggt caccatcttg 780

gagctgttcc gctcacccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtcgggtat caatgctgtg ttctactact caacgagcat cttcgagaag 900

gcaggtgtgc agcagcctgt gtacgccacc atcggctccg gtatcgtcaa cacggccttc 960

actgtggtgt cgctgtttgt tgtagagcga gctggacgac ggaccctgca cctcattggc 1020

ctggctggca tggcaggctg tgctgtgctc atgaccatcg ccctggcctt gctggaacgg 1080

ctgccttgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtaggccctg gtcctattcc atggttcatt gtggccgagc tgttcagcca ggggccccgt 1200

cctgctgcta ttgctgtggc tggcttctcc aactggacct caaacttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgcggc ccctacgtct tcatcatctt cacggtgctc 1320

ctcgtgctct tcttcatctt cacctacttc aaagtccctg agaccaaagg ccgaaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggtgccagcc aaagtgacaa gacacccgag 1440

gagctcttcc accctctggg ggcggactcc caagtgtga 1479

<210> 72
<211> 955
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3'UTR

<400> 72
ggagccccac acccagcccg gcctgctccc tgcagcccaa ggatctctct ggagcacagg 60

cagctagatg agacctcttc cgaaccgaca gatctcgggc aagccgggcc tgggcgcctt 120

tcctcagcca gcagtgaagt ccaggaggat attcaggact ttgatggctc cagaattttt 180

aatgaaagca agactgctgc tcagatctat tcagataagc agcaggtttt ataatttttt 240

tattactgat tttgttattt ttttttttta tcagccactc tcctatctcc acactgtagt 300

cttcaccttg attggcccag tgcctgaggg tggggaccac gccctgtcca gacacttgcc 360

ttctttgcca agctaatctg tagggctgga cctatggcca aggacacact aataccgaac 420

tctgagctag gaggctttac cgctggaggc ggtagctgcc acccacttcc gcaggcctgg 480

acctcggcac cataggggtc cggactccat tttaggattc gcccattcct gtctcttcct 540

acccaaccac tcaattaatc tttccttgcc tgagaccagt tggaagcact ggagtgcagg 600

gaggagaggg aaggggccagg ctgggctgcc aggttctagt ctcctgtgca ctgagggcca 660

cacaaacacc atgagaagga cctcggaggc tgagaactta actgctgaag acacggacac 720

tcctgccctg ctgtgtatag atggaagata tttatatatt ttttggttgt caatattaaa 780

tacagacact aagttatagt atatctggac aaacccactt gtaaatacac caacaaactc 840

ctgtaacttt acctaagcag atataaatgg ctggttttta gaaaaaaaaa aaaaaaaaaa 900

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 955

<210> 73
<211> 77
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<220>
<223> 3xmiR-122BS

<400> 73
cgaaacaaac accattgtca cactccaaca aacaccattg tcacactcca acaaacacca 60

ttgtcacact ccattcg 77

<210> 74
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 74
gatctttttc cctctgccaa aaattatggg gacatcatga agccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 75
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3'ITR

<400> 75
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 76
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<220>
<223> Glut1QPCR F1

<400> 76
cttgcttgta gagtgacgat c 21

<210> 77
<211> 20
<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<220>
<223> Glut1QPCR R1

<400> 77
cagtgatccg agcactgctc 20

<210> 78
<211> 492
<212> PRT
<213> Mus musculus

<220>
<223> mGlut1 amino acid sequence; solute carrier family 2, facilitated glucose transporter member 1

<400> 78
Met Asp Pro Ser Ser Lys Lys Val Thr Gly Arg Leu Met Leu Ala Val
1 5 10 15

Gly Gly Ala Val Leu Gly Ser Leu Gln Phe Gly Tyr Asn Thr Gly Val
20 25 30

Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln Thr Trp
35 40 45

Asn His Arg Tyr Gly Glu Pro Ile Pro Ser Thr Thr Leu Thr Thr Leu
50 55 60

Trp Ser Leu Ser Val Ala Ile Phe Ser Val Gly Gly Met Ile Gly Ser
65 70 75 80

Phe Ser Val Gly Leu Phe Val Asn Arg Phe Gly Arg Arg Asn Ser Met
85 90 95

Leu Met Met Asn Leu Leu Ala Phe Val Ala Ala Val Leu Met Gly Phe

100 105 110

Ser Lys Leu Gly Lys Ser Phe Glu Met Leu Ile Leu Gly Arg Phe Ile
115 120 125

Ile Gly Val Tyr Cys Gly Leu Thr Thr Gly Phe Val Pro Met Tyr Val
130 135 140

Gly Glu Val Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr Leu His
145 150 155 160

Gln Leu Gly Ile Val Val Gly Ile Leu Ile Ala Gln Val Phe Gly Leu
165 170 175

Asp Ser Ile Met Gly Asn Ala Asp Leu Trp Pro Leu Leu Leu Ser Val
180 185 190

Ile Phe Ile Pro Ala Leu Leu Gln Cys Ile Leu Leu Pro Phe Cys Pro
195 200 205

Glu Ser Pro Arg Phe Leu Leu Ile Asn Arg Asn Glu Glu Asn Arg Ala
210 215 220

Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr Arg Asp
225 230 235 240

Leu Gln Glu Met Lys Glu Glu Gly Arg Gln Met Met Arg Glu Lys Lys
245 250 255

Val Thr Ile Leu Glu Leu Phe Arg Ser Pro Ala Tyr Arg Gln Pro Ile
260 265 270

Leu Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly Ile Asn
275 280 285

Ala Val Phe Tyr Tyr Ser Thr Ser Ile Phe Glu Lys Ala Gly Val Gln

01456570

```
    290                 295                 300

Gln Pro Val Tyr Ala Thr Ile Gly Ser Gly Ile Val Asn Thr Ala Phe
305                 310                 315                 320

Thr Val Val Ser Leu Phe Val Val Glu Arg Ala Gly Arg Arg Thr Leu
                325                 330                 335

His Leu Ile Gly Leu Ala Gly Met Ala Gly Cys Ala Val Leu Met Thr
            340                 345                 350

Ile Ala Leu Ala Leu Leu Glu Arg Leu Pro Trp Met Ser Tyr Leu Ser
        355                 360                 365

Ile Val Ala Ile Phe Gly Phe Val Ala Phe Phe Glu Val Gly Pro Gly
    370                 375                 380

Pro Ile Pro Trp Phe Ile Val Ala Glu Leu Phe Ser Gln Gly Pro Arg
385                 390                 395                 400

Pro Ala Ala Ile Ala Val Ala Gly Phe Ser Asn Trp Thr Ser Asn Phe
                405                 410                 415

Ile Val Gly Met Cys Phe Gln Tyr Val Glu Gln Leu Cys Gly Pro Tyr
            420                 425                 430

Val Phe Ile Ile Phe Thr Val Leu Leu Val Leu Phe Phe Ile Phe Thr
        435                 440                 445

Tyr Phe Lys Val Pro Glu Thr Lys Gly Arg Thr Phe Asp Glu Ile Ala
    450                 455                 460

Ser Gly Phe Arg Gln Gly Gly Ala Ser Gln Ser Asp Lys Thr Pro Glu
465                 470                 475                 480

Glu Leu Phe His Pro Leu Gly Ala Asp Ser Gln Val
```

01456570
485 490

<210> 79
<211> 492
<212> PRT
<213> Homo sapiens

<220>
<223> hGlut1 amino acid sequence; solute carrier family 2,
facilitated glucose transporter member 1

<400> 79
Met Glu Pro Ser Ser Lys Lys Leu Thr Gly Arg Leu Met Leu Ala Val
1 5 10 15

Gly Gly Ala Val Leu Gly Ser Leu Gln Phe Gly Tyr Asn Thr Gly Val
20 25 30

Ile Asn Ala Pro Gln Lys Val Ile Glu Glu Phe Tyr Asn Gln Thr Trp
35 40 45

Val His Arg Tyr Gly Glu Ser Ile Leu Pro Thr Thr Leu Thr Thr Leu
50 55 60

Trp Ser Leu Ser Val Ala Ile Phe Ser Val Gly Gly Met Ile Gly Ser
65 70 75 80

Phe Ser Val Gly Leu Phe Val Asn Arg Phe Gly Arg Arg Asn Ser Met
85 90 95

Leu Met Met Asn Leu Leu Ala Phe Val Ser Ala Val Leu Met Gly Phe
100 105 110

Ser Lys Leu Gly Lys Ser Phe Glu Met Leu Ile Leu Gly Arg Phe Ile
115 120 125

Ile Gly Val Tyr Cys Gly Leu Thr Thr Gly Phe Val Pro Met Tyr Val
130 135 140

```
Gly Glu Val Ser Pro Thr Ala Leu Arg Gly Ala Leu Gly Thr Leu His
145                 150                 155                 160

Gln Leu Gly Ile Val Val Gly Ile Leu Ile Ala Gln Val Phe Gly Leu
                165                 170                 175

Asp Ser Ile Met Gly Asn Lys Asp Leu Trp Pro Leu Leu Leu Ser Ile
            180                 185                 190

Ile Phe Ile Pro Ala Leu Leu Gln Cys Ile Val Leu Pro Phe Cys Pro
        195                 200                 205

Glu Ser Pro Arg Phe Leu Leu Ile Asn Arg Asn Glu Glu Asn Arg Ala
    210                 215                 220

Lys Ser Val Leu Lys Lys Leu Arg Gly Thr Ala Asp Val Thr His Asp
225                 230                 235                 240

Leu Gln Glu Met Lys Glu Glu Ser Arg Gln Met Met Arg Glu Lys Lys
                245                 250                 255

Val Thr Ile Leu Glu Leu Phe Arg Ser Pro Ala Tyr Arg Gln Pro Ile
            260                 265                 270

Leu Ile Ala Val Val Leu Gln Leu Ser Gln Gln Leu Ser Gly Ile Asn
        275                 280                 285

Ala Val Phe Tyr Tyr Ser Thr Ser Ile Phe Glu Lys Ala Gly Val Gln
    290                 295                 300

Gln Pro Val Tyr Ala Thr Ile Gly Ser Gly Ile Val Asn Thr Ala Phe
305                 310                 315                 320

Thr Val Val Ser Leu Phe Val Val Glu Arg Ala Gly Arg Arg Thr Leu
                325                 330                 335
```

```
His Leu Ile Gly Leu Ala Gly Met Ala Gly Cys Ala Ile Leu Met Thr
            340                 345                 350

Ile Ala Leu Ala Leu Leu Glu Gln Leu Pro Trp Met Ser Tyr Leu Ser
        355                 360                 365

Ile Val Ala Ile Phe Gly Phe Val Ala Phe Phe Glu Val Gly Pro Gly
    370                 375                 380

Pro Ile Pro Trp Phe Ile Val Ala Glu Leu Phe Ser Gln Gly Pro Arg
385                 390                 395                 400

Pro Ala Ala Ile Ala Val Ala Gly Phe Ser Asn Trp Thr Ser Asn Phe
                405                 410                 415

Ile Val Gly Met Cys Phe Gln Tyr Val Glu Gln Leu Cys Gly Pro Tyr
            420                 425                 430

Val Phe Ile Ile Phe Thr Val Leu Leu Val Leu Phe Phe Ile Phe Thr
        435                 440                 445

Tyr Phe Lys Val Pro Glu Thr Lys Gly Arg Thr Phe Asp Glu Ile Ala
    450                 455                 460

Ser Gly Phe Arg Gln Gly Gly Ala Ser Gln Ser Asp Lys Thr Pro Glu
465                 470                 475                 480

Glu Leu Phe His Pro Leu Gly Ala Asp Ser Gln Val
                485                 490
```

<210> 80
<211> 6834
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

polynucleotide

<220>
<223> pAAV CB6 PI hGlut1- EGFP

<400> 80
cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

tcccagcagc aagaaggtga cgggccgcct catgttggct gtgggaggag cagtgctcgg 1440

atcactgcag ttcggctata acactggtgt catcaacgcc ccccagaagg ttattgagga 1500

gttctacaat caaacatgga accaccgcta cggagagccc atcccatcca ccacactcac 1560

cacgctttgg tctctctccg tggccatctt ctctgtcggg ggcatgattg gttccttctc 1620

tgtcggcctc tttgttaatc gctttggcag gcggaactcc atgctgatga tgaacctgtt 1680

ggcctttgtg gctgctgtgc ttatgggctt ctccaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgcggcctg actactggct ttgtgcccat 1800

gtatgtggga gaggtgtcac ctacagctct acgtggagcc ctaggcacac tgcaccagct 1860

gggaatcgtc gttggcatcc ttattgccca ggtgtttggc ttagactcca tcatgggcaa 1920

tgcagacttg tggcctctgc tgctcagtgt catcttcatc ccagccctgc tacagtgtat 1980

cctgttgccc ttctgccccg agagcccccg cttcctgctc atcaatcgta acgaggagaa 2040

ccgggccaag agtgtgctga agaagcttcg agggacagcc gatgtgaccc gagacctgca 2100

ggagatgaaa gaagagggtc ggcagatgat gcgggagaag aaggtcacca tcttggagct 2160

gttccgctca cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtcg ggtatcaatg ctgtgttcta ctactcaacg agcatcttcg agaaggcagg 2280

tgtgcagcag cctgtgtacg ccaccatcgg ctccggtatc gtcaacacgg ccttcactgt 2340

ggtgtcgctg tttgttgtag agcgagctgg acgacggacc ctgcacctca ttggcctggc 2400

tggcatggca ggctgtgctg tgctcatgac catcgccctg gccttgctgg aacggctgcc 2460

ttggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtagg 2520

ccctggtcct attccatggt tcattgtggc cgagctgttc agccaggggc cccgtcctgc 2580

tgctattgct gtggctggct tctccaactg gacctcaaac ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gcggccccta cgtcttcatc atcttcacgg tgctcctcgt 2700

gctcttcttc atcttcacct acttcaaagt ccctgagacc aaaggccgaa ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggtgc cagccaaagt gacaagacac ccgaggagct 2820

cttccaccct ctgggggcgg actcccaagt gaccggtgcc atggtgagca agggcgagga 2880

gctgttcacc ggggtggtgc ccatcctggt cgagctggac ggcgacgtaa acggccacaa 2940

gttcagcgtg tccggcgagg gcgagggcga tgccacctac ggcaagctga ccctgaagtt 3000

catctgcacc accggcaagc tgcccgtgcc ctggcccacc ctcgtgacca ccctgaccta 3060

cggcgtgcag tgcttcagcc gctaccccga ccacatgaag cagcacgact tcttcaagtc 3120

cgccatgccc gaaggctacg tccaggagcg caccatcttc ttcaaggacg acggcaacta 3180

caagacccgc gccgaggtga agttcgaggg cgacaccctg gtgaaccgca tcgagctgaa 3240

gggcatcgac ttcaaggagg acggcaacat cctggggcac aagctggagt acaactacaa 3300

cagccacaac gtctatatca tggccgacaa gcagaagaac ggcatcaagg tgaacttcaa 3360

gatccgccac aacatcgagg acggcagcgt gcagctcgcc gaccactacc agcagaacac 3420

ccccatcggc gacggccccg tgctgctgcc cgacaaccac tacctgagca cccagtccgc 3480

cctgagcaaa gaccccaacg agaagcgcga tcacatggtc ctgctggagt tcgtgaccgc 3540

cgccgggatc actctcggca tggacgagct gtacaagtaa agcggccatc aagcttatcg 3600

ggccgctcta gagtatccct cgactctaga gtcgacccgg gcggcctcga ggacggggtg 3660

aactacgcct gaggatccga tctttttccc tctgccaaaa attatgggga catcatgaag 3720

ccccttgagc atctgacttc tggctaataa aggaaattta ttttcattgc aatagtgtgt 3780

tggaattttt tgtgtctctc actcggaagc aattcgttga tctgaatttc gaccacccat 3840

aatacccatt accctggtag ataagtagca tggcgggtta atcattaact acaaggaacc 3900

cctagtgatg gagttggcca ctccctctct gcgcgctcgc tcgctcactg aggccgggcg 3960

accaaaggtc gcccgacgcc cgggctttgc ccgggcggcc tcagtgagcg agcgagcgcg 4020

cagccttaat taacctaatt cactggccgt cgttttacaa cgtcgtgact gggaaaaccc 4080

tggcgttacc caacttaatc gccttgcagc acatcccccc ttcgccagct ggcgtaatag 4140

cgaagaggcc cgcaccgatc gcccttccca acagttgcgc agcctgaatg gcgaatggga 4200

cgcgccctgt agcggcgcat taagcgcggc gggtgtggtg gttacgcgca gcgtgaccgc 4260

tacacttgcc agcgccctag cgcccgctcc tttcgctttc ttcccttcct ttctcgccac 4320

gttcgccggc tttccccgtc aagctctaaa tcgggggctc cctttagggt tccgatttag 4380

tgctttacgg cacctcgacc ccaaaaaact tgattagggt gatggttcac gtagtgggcc 4440

atcgccctga tagacggttt ttcgcccttt gacgttggag tccacgttct ttaatagtgg 4500

actcttgttc caaactggaa caacactcaa ccctatctcg gtctattctt ttgatttata 4560

agggattttg ccgatttcgg cctattggtt aaaaaatgag ctgatttaac aaaaatttaa 4620

cgcgaatttt aacaaaatat taacgcttac aatttaggtg gcacttttcg gggaaatgtg 4680

cgcggaaccc ctatttgttt atttttctaa atacattcaa atatgtatcc gctcatgaga 4740

caataaccct gataaatgct tcaataatat tgaaaaagga agagtatgag tattcaacat 4800

ttccgtgtcg cccttattcc ctttttgcg gcattttgcc ttcctgtttt tgctcaccca 4860

gaaacgctgg tgaaagtaaa agatgctgaa gatcagttgg gtgcacgagt gggttacatc 4920

gaactggatc tcaacagcgg taagatcctt gagagtttc gccccgaaga acgttttcca 4980

atgatgagca cttttaaagt tctgctatgt ggcgcggtat tatcccgtat tgacgccggg 5040

caagagcaac tcggtcgccg catacactat tctcagaatg acttggttga gtactcacca 5100

gtcacagaaa agcatcttac ggatggcatg acagtaagag aattatgcag tgctgccata 5160

accatgagtg ataacactgc ggccaactta cttctgacaa cgatcggagg accgaaggag 5220

ctaaccgctt ttttgcacaa catgggggat catgtaactc gccttgatcg ttgggaaccg 5280

gagctgaatg aagccatacc aaacgacgag cgtgacacca cgatgcctgt agcaatggca 5340

acaacgttgc gcaaactatt aactggcgaa ctacttactc tagcttcccg gcaacaatta 5400

atagactgga tggaggcgga taaagttgca ggaccacttc tgcgctcggc ccttccggct 5460

ggctggttta ttgctgataa atctggagcc ggtgagcgtg ggtctcgcgg tatcattgca 5520

gcactggggc cagatggtaa gccctcccgt atcgtagtta tctacacgac ggggagtcag 5580

gcaactatgg atgaacgaaa tagacagatc gctgagatag gtgcctcact gattaagcat 5640

tggtaactgt cagaccaagt ttactcatat atactttaga ttgatttaaa acttcatttt 5700

taatttaaaa ggatctaggt gaagatcctt tttgataatc tcatgaccaa aatcccttaa 5760

cgtgagtttt cgttccactg agcgtcagac cccgtagaaa agatcaaagg atcttcttga 5820

gatccttttt ttctgcgcgt aatctgctgc ttgcaaacaa aaaaaccacc gctaccagcg 5880

gtggtttgtt tgccggatca agagctacca actcttttc cgaaggtaac tggcttcagc 5940

agagcgcaga taccaaatac tgttcttcta gtgtagccgt agttaggcca ccacttcaag 6000

aactctgtag caccgcctac atacctcgct ctgctaatcc tgttaccagt ggctgctgcc 6060

agtggcgata agtcgtgtct taccgggttg gactcaagac gatagttacc ggataaggcg 6120

cagcggtcgg gctgaacggg gggttcgtgc acacagccca gcttggagcg aacgacctac 6180

accgaactga gatacctaca gcgtgagcta tgagaaagcg ccacgcttcc cgaagggaga 6240

aaggcggaca ggtatccggt aagcggcagg gtcggaacag gagagcgcac gagggagctt 6300

ccagggggaa acgcctggta tctttatagt cctgtcgggt ttcgccacct ctgacttgag 6360

cgtcgatttt tgtgatgctc gtcaggggggg cggagcctat ggaaaaacgc cagcaacgcg 6420

gccttttttac ggttcctggc cttttgctgg ccttttgctc acatgttctt tcctgcgtta 6480

tcccctgatt ctgtggataa ccgtattacc gcctttgagt gagctgatac cgctcgccgc 6540

agccgaacga ccgagcgcag cgagtcagtg agcgaggaag cggaagagcg cccaatacgc 6600

aaaccgcctc tccccgcgcg ttggccgatt cattaatgca gctggcacga caggtttccc 6660

gactggaaag cgggcagtga gcgcaacgca attaatgtga gttagctcac tcattaggca 6720

ccccaggctt tacactttat gcttccggct cgtatgttgt gtggaattgt gagcggataa 6780

caatttcaca caggaaacag ctatgaccat gattacgcca gatttaatta aggc 6834

<210> 81
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<220>
<223> 5'ITR

<400> 81
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 82
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 82
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 83
<211> 382
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 83
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 84
<211> 717
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> eGFP

<400> 84
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccctgaccta cggcgtgcag tgcttcagcc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

ctgctggagt tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaag 717

<210> 85
<211> 1959
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> hGlut1 cDNA and 3'UTR

<400> 85
atggagccca gcagcaagaa gctgacgggt cgcctcatgc tggccgtggg aggagcagtg 60

cttggctccc tgcagtttgg ctacaacact ggagtcatca atgcccccca gaaggtgatc 120

gaggagttct acaaccagac atgggtccac cgctatgggg agagcatcct gcccaccacg 180

ctcaccacgc tctggtccct ctcagtggcc atcttttctg ttgggggcat gattggctcc 240

ttctctgtgg gccttttcgt taaccgcttt ggccggcgga attcaatgct gatgatgaac 300

ctgctggcct tcgtgtccgc cgtgctcatg ggcttctcga aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgtg gcctgaccac aggcttcgtg 420

cccatgtatg tgggtgaagt gtcacccaca gcccttcgtg gggccctggg caccctgcac 480

cagctgggca tcgtcgtcgg catcctcatc gcccaggtgt tcggcctgga ctccatcatg 540

ggcaacaagg acctgtggcc cctgctgctg agcatcatct tcatcccggc cctgctgcag 600

tgcatcgtgc tgcccttctg ccccgagagt ccccgcttcc tgctcatcaa ccgcaacgag 660

gagaaccggg ccaagagtgt gctaaagaag ctgcgcggga cagctgacgt gacccatgac 720

ctgcaggaga tgaaggaaga gagtcggcag atgatgcggg agaagaaggt caccatcctg 780

gagctgttcc gctcccccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtctggcat caacgctgtc ttctattact ccacgagcat cttcgagaag 900

gcgggggtgc agcagcctgt gtatgccacc attggctccg gtatcgtcaa cacggccttc 960

actgtcgtgt cgctgtttgt ggtggagcga gcaggccggc ggaccctgca cctcataggc 1020

ctcgctggca tggcgggttg tgccatactc atgaccatcg cgctagcact gctggagcag 1080

ctaccccgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtgggtcctg gccccatccc atggttcatc gtggctgaac tcttcagcca gggtccacgt 1200

ccagctgcca ttgccgttgc aggcttctcc aactggacct caaatttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgtggt ccctacgtct tcatcatctt cactgtgctc 1320

ctggttctgt tcttcatctt cacctacttc aaagttcctg agactaaagg ccggaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggagccagcc aaagtgacaa gacacccgag 1440

gagctgttcc atcccctggg ggctgattcc caagtgtgag tcgccccaga tcaccagccc 1500

ggcctgctcc cagcagccct aaggatctct caggagcaca ggcagctgga tgagacttcc 1560

aaacctgaca gatgtcagcc gagccgggcc tggggctcct ttctccagcc agcaatgatg 1620

tccagaagaa tattcaggac ttaacggctc caggatttta acaaaagcaa gactgttgct 1680

caaatctatt cagacaagca acaggtttta taatttttt attactgatt ttgttatttt 1740

tatatcagcc tgagtctcct gtgcccacat cccaggcttc accctgaatg gttccatgcc 1800

tgagggtgga gactaagccc tgtcgagaca cttgccttct tcacccagct aatctgtagg 1860

gctggaccta tgtcctaagg acacactaat cgaactatga actacaaagc ttctatccca 1920

ggaggtggct atggccaccc gttctgctgg cctggatct 1959

<210> 86
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 86
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 87
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 87
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 88
<211> 6885
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> pAAV CB6 PI mGlut1-2A- EGFP

<400> 88

cttaattagg ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg 60

ggcgaccttt ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa 120

ctccatcact aggggttcct tgtagttaat gattaacccg ccatgctact tatctaccag 180

ggtaatgggg atcctctaga actatagcta gtcgacattg attattgact agttattaat 240

agtaatcaat tacggggtca ttagttcata gcccatatat ggagttccgc gttacataac 300

ttacggtaaa tggcccgcct ggctgaccgc ccaacgaccc ccgcccattg acgtcaataa 360

tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt 420

atttacggta aactgcccac ttggcagtac atcaagtgta tcatatgcca agtacgcccc 480

ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac atgaccttat 540

gggactttcc tacttggcag tacatctacg tattagtcat cgctattacc atgtcgaggc 600

cacgttctgc ttcactctcc ccatctcccc cccctcccca cccccaattt tgtatttatt 660

tatttttaa ttattttgtg cagcgatggg ggcgggggggg gggggcgcgc gccaggcggg 720

gcggggcggg gcgaggggcg gggcggggcg aggcggagag gtgcggcggc agccaatcag 780

agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc ggcggcggcg gccctataaa 840

aagcgaagcg cgcggcgggc gggagcaagc tttattgcgg tagtttatca cagttaaatt 900

gctaacgcag tcagtgcttc tgacacaaca gtctcgaact taagctgcag aagttggtcg 960

tgaggcactg ggcaggtaag tatcaaggtt acaagacagg tttaaggaga ccaatagaaa 1020

ctgggcttgt cgagacagag aagactcttg cgtttctgat aggcacctat tggtcttact 1080

gacatccact ttgcctttct ctccacaggt gtccactccc agttcaatta cagctcttaa 1140

ggctagagta cttaatacga ctcactatag gctagcgcgc cgaattcggc acgaggaaaa 1200

aggcagctcc gcgcgctctc ccccaagagc agaggcttgc ttgtagagtg acgatctgag 1260

ctacggggtc ttaagtgcgt cagggcgtgg aggtctggcg ggagacgcat agttacagcg 1320

cgtccgttct ccgtctcgca gccggcacag ctagagcttc gagcgcagcg cggccatgga 1380

tcccagcagc aagaaggtga cgggccgcct catgttggct gtgggaggag cagtgctcgg 1440

atcactgcag ttcggctata acactggtgt catcaacgcc ccccagaagg ttattgagga 1500

gttctacaat caaacatgga accaccgcta cggagagccc atcccatcca ccacactcac 1560

cacgctttgg tctctctccg tggccatctt ctctgtcggg ggcatgattg gttccttctc 1620

tgtcggcctc tttgttaatc gctttggcag gcggaactcc atgctgatga tgaacctgtt 1680

ggcctttgtg gctgctgtgc ttatgggctt ctccaaactg ggcaagtcct ttgagatgct 1740

gatcctgggc cgcttcatca tcggtgtgta ctgcggcctg actactggct ttgtgcccat 1800

gtatgtggga gaggtgtcac ctacagctct acgtggagcc ctaggcacac tgcaccagct 1860

gggaatcgtc gttggcatcc ttattgccca ggtgtttggc ttagactcca tcatgggcaa 1920

tgcagacttg tggcctctgc tgctcagtgt catcttcatc ccagccctgc tacagtgtat 1980

cctgttgccc ttctgccccg agagcccccg cttcctgctc atcaatcgta acgaggagaa 2040

ccgggccaag agtgtgctga agaagcttcg agggacagcc gatgtgaccc gagacctgca 2100

ggagatgaaa gaagagggtc ggcagatgat gcgggagaag aaggtcacca tcttggagct 2160

gttccgctca cccgcctacc gccagcccat cctcatcgct gtggtgctgc agctgtccca 2220

gcagctgtcg ggtatcaatg ctgtgttcta ctactcaacg agcatcttcg agaaggcagg 2280

tgtgcagcag cctgtgtacg ccaccatcgg ctccggtatc gtcaacacgg ccttcactgt 2340

ggtgtcgctg tttgttgtag agcgagctgg acgacggacc ctgcacctca ttggcctggc 2400

tggcatggca ggctgtgctg tgctcatgac catcgccctg gccttgctgg aacggctgcc 2460

ttggatgtcc tatctgagca tcgtggccat ctttggcttt gtggccttct ttgaagtagg 2520

ccctggtcct attccatggt tcattgtggc cgagctgttc agccaggggc cccgtcctgc 2580

tgctattgct gtggctggct tctccaactg gacctcaaac ttcattgtgg gcatgtgctt 2640

ccagtatgtg gagcaactgt gcggccccta cgtcttcatc atcttcacgg tgctcctcgt 2700

gctcttcttc atcttcacct acttcaaagt ccctgagacc aaaggccgaa ccttcgatga 2760

gatcgcttcc ggcttccggc agggggggtgc cagccaaagt gacaagacac ccgaggagct 2820

cttccaccct ctgggggcgg actcccaagt gaccggtaat tttgaccttc ttaagcttgc 2880

gggagacgtc gagtccaacc ctgggcccgc catggtgagc aagggcgagg agctgttcac 2940

cggggtggtg cccatcctgg tcgagctgga cggcgacgta aacggccaca agttcagcgt 3000

gtccggcgag ggcgagggcg atgccaccta cggcaagctg accctgaagt tcatctgcac 3060

caccggcaag ctgcccgtgc cctggcccac cctcgtgacc accctgacct acggcgtgca 3120

gtgcttcagc cgctaccccg accacatgaa gcagcacgac ttcttcaagt ccgccatgcc 3180

cgaaggctac gtccaggagc gcaccatctt cttcaaggac gacggcaact acaagacccg 3240

cgccgaggtg aagttcgagg gcgacaccct ggtgaaccgc atcgagctga agggcatcga 3300

cttcaaggag gacggcaaca tcctggggca caagctggag tacaactaca acagccacaa 3360

cgtctatatc atggccgaca agcagaagaa cggcatcaag gtgaacttca agatccgcca 3420

caacatcgag gacggcagcg tgcagctcgc cgaccactac cagcagaaca cccccatcgg 3480

cgacggcccc gtgctgctgc ccgacaacca ctacctgagc acccagtccg ccctgagcaa 3540

agaccccaac gagaagcgcg atcacatggt cctgctggag ttcgtgaccg ccgccgggat 3600

cactctcggc atggacgagc tgtacaagta aagcggccat caagcttatc gggccgctct 3660

agagtatccc tcgactctag agtcgacccg ggcggcctcg aggacggggt gaactacgcc 3720

tgaggatccg atctttttcc ctctgccaaa aattatgggg acatcatgaa gccccttgag 3780

catctgactt ctggctaata aaggaaattt attttcattg caatagtgtg ttggaatttt 3840

ttgtgtctct cactcggaag caattcgttg atctgaattt cgaccaccca taatacccat 3900

taccctggta gataagtagc atggcgggtt aatcattaac tacaaggaac ccctagtgat 3960

ggagttggcc actccctctc tgcgcgctcg ctcgctcact gaggccgggc gaccaaaggt 4020

cgcccgacgc ccgggctttg cccgggcggc ctcagtgagc gagcgagcgc gcagccttaa 4080

ttaacctaat tcactggccg tcgttttaca acgtcgtgac tgggaaaacc ctggcgttac 4140

ccaacttaat cgccttgcag cacatccccc tttcgccagc tggcgtaata gcgaagaggc 4200

ccgcaccgat cgcccttccc aacagttgcg cagcctgaat ggcgaatggg acgcgccctg 4260

tagcggcgca ttaagcgcgg cgggtgtggt ggttacgcgc agcgtgaccg ctacacttgc 4320

cagcgcccta gcgcccgctc ctttcgcttt cttcccttcc tttctcgcca cgttcgccgg 4380

ctttccccgt caagctctaa atcgggggct ccctttaggg ttccgattta gtgctttacg 4440

gcacctcgac cccaaaaaac ttgattaggg tgatggttca cgtagtgggc catcgccctg 4500

atagacggtt tttcgccctt tgacgttgga gtccacgttc tttaatagtg gactcttgtt 4560

ccaaactgga acaacactca accctatctc ggtctattct tttgatttat aagggatttt 4620

gccgatttcg gcctattggt taaaaaatga gctgatttaa caaaaattta acgcgaattt 4680

taacaaaata ttaacgctta caatttaggt ggcacttttc ggggaaatgt gcgcggaacc 4740

cctatttgtt tatttttcta aatacattca aatatgtatc cgctcatgag acaataaccc 4800

tgataaatgc ttcaataata ttgaaaaagg aagagtatga gtattcaaca tttccgtgtc 4860

gcccttattc ccttttttgc ggcattttgc cttcctgttt ttgctcaccc agaaacgctg 4920

gtgaaagtaa aagatgctga agatcagttg ggtgcacgag tgggttacat cgaactggat 4980

ctcaacagcg gtaagatcct tgagagtttt cgccccgaag aacgttttcc aatgatgagc 5040

acttttaaag ttctgctatg tggcgcggta ttatcccgta ttgacgccgg gcaagagcaa 5100

ctcggtcgcc gcatacacta ttctcagaat gacttggttg agtactcacc agtcacagaa 5160

aagcatctta cggatggcat gacagtaaga gaattatgca gtgctgccat aaccatgagt 5220

gataacactg cggccaactt acttctgaca acgatcggag gaccgaagga gctaaccgct 5280

tttttgcaca acatgggggga tcatgtaact cgccttgatc gttgggaacc ggagctgaat 5340

gaagccatac caaacgacga gcgtgacacc acgatgcctg tagcaatggc aacaacgttg 5400

cgcaaactat taactggcga actacttact ctagcttccc ggcaacaatt aatagactgg 5460

atggaggcgg ataaagttgc aggaccactt ctgcgctcgg cccttccggc tggctggttt 5520

attgctgata aatctggagc cggtgagcgt gggtctcgcg gtatcattgc agcactgggg 5580

ccagatggta agccctcccg tatcgtagtt atctacacga cggggagtca ggcaactatg 5640

gatgaacgaa atagacagat cgctgagata ggtgcctcac tgattaagca ttggtaactg 5700

tcagaccaag tttactcata tatactttag attgatttaa aacttcattt ttaatttaaa 5760

aggatctagg tgaagatcct ttttgataat ctcatgacca aaatccctta acgtgagttt 5820

tcgttccact gagcgtcaga ccccgtagaa aagatcaaag gatcttcttg agatcctttt 5880

tttctgcgcg taatctgctg cttgcaaaca aaaaaaccac cgctaccagc ggtggtttgt 5940

ttgccggatc aagagctacc aactcttttt ccgaaggtaa ctggcttcag cagagcgcag 6000

ataccaaata ctgttcttct agtgtagccg tagttaggcc accacttcaa gaactctgta 6060

gcaccgccta catacctcgc tctgctaatc ctgttaccag tggctgctgc cagtggcgat 6120

aagtcgtgtc ttaccgggtt ggactcaaga cgatagttac cggataaggc gcagcggtcg 6180

ggctgaacgg ggggttcgtg cacacagccc agcttggagc gaacgaccta caccgaactg 6240

agatacctac agcgtgagct atgagaaagc gccacgcttc ccgaagggag aaaggcggac 6300

aggtatccgg taagcggcag ggtcggaaca ggagagcgca cgagggagct tccagggga 6360

aacgcctggt atctttatag tcctgtcggg tttcgccacc tctgacttga gcgtcgattt 6420

ttgtgatgct cgtcaggggg gcggagccta tggaaaaacg ccagcaacgc ggcctttta 6480

cggttcctgg ccttttgctg gccttttgct cacatgttct ttcctgcgtt atcccctgat 6540

tctgtggata accgtattac cgcctttgag tgagctgata ccgctcgccg cagccgaacg 6600

accgagcgca gcgagtcagt gagcgaggaa gcggaagagc gcccaatacg caaaccgcct 6660

ctccccgcgc gttggccgat tcattaatgc agctggcacg acaggtttcc cgactggaaa 6720

gcgggcagtg agcgcaacgc aattaatgtg agttagctca ctcattaggc accccaggct 6780

ttacacttta tgcttccggc tcgtatgttg tgtggaattg tgagcggata acaatttcac 6840

acaggaaaca gctatgacca tgattacgcc agatttaatt aaggc 6885

<210> 89
<211> 130
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 5'ITR

<400> 89
ctgcgcgctc gctcgctcac tgaggccgcc cgggcaaagc ccgggcgtcg ggcgaccttt 60

ggtcgcccgg cctcagtgag cgagcgagcg cgcagagagg gagtggccaa ctccatcact 120

aggggttcct 130

<210> 90
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CMV IE enhancer

<400> 90
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 91
<211> 382
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> CB promoter

<400> 91
ctagtcgaca ttgattattg actagttatt aatagtaatc aattacgggg tcattagttc 60

atagcccata tatggagttc cgcgttacat aacttacggt aaatggcccg cctggctgac 120

cgcccaacga cccccgccca ttgacgtcaa taatgacgta tgttcccata gtaacgccaa 180

tagggacttt ccattgacgt caatgggtgg agtatttacg gtaaactgcc cacttggcag 240

tacatcaagt gtatcatatg ccaagtacgc cccctattga cgtcaatgac ggtaaatggc 300

ccgcctggca ttatgcccag tacatgacct tatgggactt tcctacttgg cagtacatct 360

acgtattagt catcgctatt ac 382

<210> 92
<211> 717
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> eGFP

<400> 92
atggtgagca agggcgagga gctgttcacc ggggtggtgc ccatcctggt cgagctggac 60

ggcgacgtaa acggccacaa gttcagcgtg tccggcgagg gcgagggcga tgccacctac 120

ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccctgaccta cggcgtgcag tgcttcagcc gctaccccga ccacatgaag 240

cagcacgact tcttcaagtc cgccatgccc gaaggctacg tccaggagcg caccatcttc 300

ttcaaggacg acggcaacta caagacccgc gccgaggtga agttcgaggg cgacaccctg 360

gtgaaccgca tcgagctgaa gggcatcgac ttcaaggagg acggcaacat cctggggcac 420

aagctggagt acaactacaa cagccacaac gtctatatca tggccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gatccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

ctgctggagt tcgtgaccgc cgccgggatc actctcggca tggacgagct gtacaag 717

<210> 93
<211> 1476
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> mGlut1 cDNA and 3'UTR

<400> 93
atggatccca gcagcaagaa ggtgacgggc cgcctcatgt tggctgtggg aggagcagtg 60

ctcggatcac tgcagttcgg ctataacact ggtgtcatca acgcccccca gaaggttatt 120

gaggagttct acaatcaaac atggaaccac cgctacggag agcccatccc atccaccaca 180

ctcaccacgc tttggtctct ctccgtggcc atcttctctg tcgggggcat gattggttcc 240

ttctctgtcg gcctctttgt taatcgcttt ggcaggcgga actccatgct gatgatgaac 300

ctgttggcct ttgtggctgc tgtgcttatg ggcttctcca aactgggcaa gtcctttgag 360

atgctgatcc tgggccgctt catcatcggt gtgtactgcg gcctgactac tggctttgtg 420

cccatgtatg tgggagaggt gtcacctaca gctctacgtg gagccctagg cacactgcac 480

cagctgggaa tcgtcgttgg catccttatt gcccaggtgt ttggcttaga ctccatcatg 540

ggcaatgcag acttgtggcc tctgctgctc agtgtcatct tcatcccagc cctgctacag 600

tgtatcctgt tgcccttctg ccccgagagc ccccgcttcc tgctcatcaa tcgtaacgag 660

gagaaccggg ccaagagtgt gctgaagaag cttcgaggga cagccgatgt gacccgagac 720

ctgcaggaga tgaaagaaga gggtcggcag atgatgcggg agaagaaggt caccatcttg 780

gagctgttcc gctcacccgc ctaccgccag cccatcctca tcgctgtggt gctgcagctg 840

tcccagcagc tgtcgggtat caatgctgtg ttctactact caacgagcat cttcgagaag 900

gcaggtgtgc agcagcctgt gtacgccacc atcggctccg gtatcgtcaa cacggccttc 960

actgtggtgt cgctgtttgt tgtagagcga gctggacgac ggaccctgca cctcattggc 1020

ctggctggca tggcaggctg tgctgtgctc atgaccatcg ccctggcctt gctggaacgg 1080

ctgccttgga tgtcctatct gagcatcgtg gccatctttg gctttgtggc cttctttgaa 1140

gtaggccctg gtcctattcc atggttcatt gtggccgagc tgttcagcca ggggccccgt 1200

cctgctgcta ttgctgtggc tggcttctcc aactggacct caaacttcat tgtgggcatg 1260

tgcttccagt atgtggagca actgtgcggc ccctacgtct tcatcatctt cacggtgctc 1320

ctcgtgctct tcttcatctt cacctacttc aaagtccctg agaccaaagg ccgaaccttc 1380

gatgagatcg cttccggctt ccggcagggg ggtgccagcc aaagtgacaa gacacccgag 1440

gagctcttcc accctctggg ggcggactcc caagtg 1476

<210> 94
<211> 127
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> Poly A signal

<400> 94
gatctttttc cctctgccaa aaattatggg gacatcatga agcccccttga gcatctgact 60

tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcg 127

<210> 95
<211> 130

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> 3' ITR

<400> 95
aggaacccct agtgatggag ttggccactc cctctctgcg cgctcgctcg ctcactgagg 60

ccgggcgacc aaaggtcgcc cgacgcccgg gctttgcccg ggcggcctca gtgagcgagc 120

gagcgcgcag 130

<210> 96
<211> 2208
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

<220>
<223> AAV9 DNA

<400> 96
atggctgccg atggttatct tccagattgg ctcgaggaca accttagtga aggaattcgc 60

gagtggtggg ctttgaaacc tggagcccct caacccaagg caaatcaaca acatcaagac 120

aacgctcgag gtcttgtgct tccgggttac aaataccttg gacccggcaa cggactcgac 180

aaggggagc cggtcaacgc agcagacgcg gcggccctcg agcacgacaa ggcctacgac 240

cagcagctca aggccggaga caacccgtac ctcaagtaca accacgccga cgccgagttc 300

caggagcggc tcaaagaaga tacgtctttt gggggcaacc tcgggcgagc agtcttccag 360

gccaaaaaga ggcttcttga acctcttggt ctggttgagg aagcggctaa gacggctcct 420

ggaaagaaga ggcctgtaga gcagtctcct caggaaccgg actcctccgc gggtattggc 480

aaatcgggtg cacagcccgc taaaaagaga ctcaatttcg gtcagactgg cgacacagag 540

tcagtcccag accctcaacc aatcggagaa cctcccgcag ccccctcagg tgtgggatct 600

cttacaatgg cttcaggtgg tggcgcacca gtggcagaca ataacgaagg tgccgatgga 660

gtgggtagtt cctcgggaaa ttggcattgc gattcccaat ggctgggggа cagagtcatc 720

accaccagca cccgaacctg ggccctgccc acctacaaca atcacctcta caagcaaatc 780

tccaacagca catctggagg atcttcaaat gacaacgcct acttcggcta cagcaccccc 840

tgggggtatt ttgacttcaa cagattccac tgccacttct caccacgtga ctggcagcga 900

ctcatcaaca acaactgggg attccggcct aagcgactca acttcaagct cttcaacatt 960

caggtcaaag aggttacgga caacaatgga gtcaagacca tcgccaataa ccttaccagc 1020

acggtccagg tcttcacgga ctcagactat cagctcccgt acgtgctcgg gtcggctcac 1080

gagggctgcc tcccgccgtt cccagcggac gttttcatga ttcctcagta cgggtatctg 1140

acgcttaatg atggaagcca ggccgtgggt cgttcgtcct tttactgcct ggaatatttc 1200

ccgtcgcaaa tgctaagaac gggtaacaac ttccagttca gctacgagtt tgagaacgta 1260

cctttccata gcagctacgc tcacagccaa agcctggacc gactaatgaa tccactcatc 1320

gaccaatact tgtactatct ctcaaagact attaacggtt ctggacagaa tcaacaaacg 1380

ctaaaattca gtgtggccgg acccagcaac atggctgtcc agggaagaaa ctacatacct 1440

ggacccagct accgacaaca acgtgtctca accactgtga ctcaaaacaa caacagcgaa 1500

tttgcttggc ctggagcttc ttcttgggct ctcaatggac gtaatagctt gatgaatcct 1560

ggacctgcta tggccagcca caaagaagga gaggaccgtt tctttccttt gtctggatct 1620

ttaatttttg gcaaacaagg aactggaaga gacaacgtgg atgcggacaa agtcatgata 1680

accaacgaag aagaaattaa aactactaac ccggtagcaa cggagtccta tggacaagtg 1740

gccacaaacc accagagtgc ccaagcacag gcgcagaccg gctgggttca aaaccaagga 1800

atacttccgg gtatggtttg gcaggacaga gatgtgtacc tgcaaggacc catttgggcc 1860

aaaattcctc acacggacgg caactttcac ccttctccgc tgatgggagg gtttggaatg 1920

aagcacccgc ctcctcagat cctcatcaaa aacacacctg tacctgcgga tcctccaacg 1980

gccttcaaca aggacaagct gaactctttc atcacccagt attctactgg ccaagtcagc 2040

gtggagatcg agtgggagct gcagaaggaa aacagcaagc gctggaaccc ggagatccag 2100

tacacttcca actattacaa gtctaataat gttgaatttg ctgttaatac tgaaggtgta 2160

tatagtgaac cccgccccat tggcaccaga tacctgactc gtaatctg 2208

<210> 97
<211> 736
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<220>
<223> AAV9 protein

<400> 97
Met Ala Ala Asp Gly Tyr Leu Pro Asp Trp Leu Glu Asp Asn Leu Ser
1 5 10 15

Glu Gly Ile Arg Glu Trp Trp Ala Leu Lys Pro Gly Ala Pro Gln Pro
20 25 30

Lys Ala Asn Gln Gln His Gln Asp Asn Ala Arg Gly Leu Val Leu Pro
35 40 45

Gly Tyr Lys Tyr Leu Gly Pro Gly Asn Gly Leu Asp Lys Gly Glu Pro
50 55 60

Val Asn Ala Ala Asp Ala Ala Ala Leu Glu His Asp Lys Ala Tyr Asp
65 70 75 80

Gln Gln Leu Lys Ala Gly Asp Asn Pro Tyr Leu Lys Tyr Asn His Ala
85 90 95

Asp Ala Glu Phe Gln Glu Arg Leu Lys Glu Asp Thr Ser Phe Gly Gly

01456570

```
            100                 105                 110

Asn Leu Gly Arg Ala Val Phe Gln Ala Lys Lys Arg Leu Leu Glu Pro
        115                 120                 125

Leu Gly Leu Val Glu Glu Ala Ala Lys Thr Ala Pro Gly Lys Lys Arg
    130                 135                 140

Pro Val Glu Gln Ser Pro Gln Glu Pro Asp Ser Ser Ala Gly Ile Gly
145                 150                 155                 160

Lys Ser Gly Ala Gln Pro Ala Lys Lys Arg Leu Asn Phe Gly Gln Thr
                165                 170                 175

Gly Asp Thr Glu Ser Val Pro Asp Pro Gln Pro Ile Gly Glu Pro Pro
            180                 185                 190

Ala Ala Pro Ser Gly Val Gly Ser Leu Thr Met Ala Ser Gly Gly Gly
        195                 200                 205

Ala Pro Val Ala Asp Asn Asn Glu Gly Ala Asp Gly Val Gly Ser Ser
    210                 215                 220

Ser Gly Asn Trp His Cys Asp Ser Gln Trp Leu Gly Asp Arg Val Ile
225                 230                 235                 240

Thr Thr Ser Thr Arg Thr Trp Ala Leu Pro Thr Tyr Asn Asn His Leu
                245                 250                 255

Tyr Lys Gln Ile Ser Asn Ser Thr Ser Gly Gly Ser Ser Asn Asp Asn
            260                 265                 270

Ala Tyr Phe Gly Tyr Ser Thr Pro Trp Gly Tyr Phe Asp Phe Asn Arg
        275                 280                 285

Phe His Cys His Phe Ser Pro Arg Asp Trp Gln Arg Leu Ile Asn Asn
```

01456570

```
    290                 295                 300

Asn Trp Gly Phe Arg Pro Lys Arg Leu Asn Phe Lys Leu Phe Asn Ile
305                 310                 315                 320

Gln Val Lys Glu Val Thr Asp Asn Asn Gly Val Lys Thr Ile Ala Asn
                325                 330                 335

Asn Leu Thr Ser Thr Val Gln Val Phe Thr Asp Ser Asp Tyr Gln Leu
            340                 345                 350

Pro Tyr Val Leu Gly Ser Ala His Glu Gly Cys Leu Pro Pro Phe Pro
        355                 360                 365

Ala Asp Val Phe Met Ile Pro Gln Tyr Gly Tyr Leu Thr Leu Asn Asp
    370                 375                 380

Gly Ser Gln Ala Val Gly Arg Ser Ser Phe Tyr Cys Leu Glu Tyr Phe
385                 390                 395                 400

Pro Ser Gln Met Leu Arg Thr Gly Asn Asn Phe Gln Phe Ser Tyr Glu
                405                 410                 415

Phe Glu Asn Val Pro Phe His Ser Ser Tyr Ala His Ser Gln Ser Leu
            420                 425                 430

Asp Arg Leu Met Asn Pro Leu Ile Asp Gln Tyr Leu Tyr Tyr Leu Ser
        435                 440                 445

Lys Thr Ile Asn Gly Ser Gly Gln Asn Gln Gln Thr Leu Lys Phe Ser
    450                 455                 460

Val Ala Gly Pro Ser Asn Met Ala Val Gln Gly Arg Asn Tyr Ile Pro
465                 470                 475                 480

Gly Pro Ser Tyr Arg Gln Gln Arg Val Ser Thr Thr Val Thr Gln Asn
```

01456570

```
                485                 490                 495

Asn Asn Ser Glu Phe Ala Trp Pro Gly Ala Ser Ser Trp Ala Leu Asn
            500                 505                 510

Gly Arg Asn Ser Leu Met Asn Pro Gly Pro Ala Met Ala Ser His Lys
        515                 520                 525

Glu Gly Glu Asp Arg Phe Phe Pro Leu Ser Gly Ser Leu Ile Phe Gly
    530                 535                 540

Lys Gln Gly Thr Gly Arg Asp Asn Val Asp Ala Asp Lys Val Met Ile
545                 550                 555                 560

Thr Asn Glu Glu Glu Ile Lys Thr Thr Asn Pro Val Ala Thr Glu Ser
                565                 570                 575

Tyr Gly Gln Val Ala Thr Asn His Gln Ser Ala Gln Ala Gln Ala Gln
            580                 585                 590

Thr Gly Trp Val Gln Asn Gln Gly Ile Leu Pro Gly Met Val Trp Gln
        595                 600                 605

Asp Arg Asp Val Tyr Leu Gln Gly Pro Ile Trp Ala Lys Ile Pro His
    610                 615                 620

Thr Asp Gly Asn Phe His Pro Ser Pro Leu Met Gly Gly Phe Gly Met
625                 630                 635                 640

Lys His Pro Pro Pro Gln Ile Leu Ile Lys Asn Thr Pro Val Pro Ala
                645                 650                 655

Asp Pro Pro Thr Ala Phe Asn Lys Asp Lys Leu Asn Ser Phe Ile Thr
            660                 665                 670

Gln Tyr Ser Thr Gly Gln Val Ser Val Glu Ile Glu Trp Glu Leu Gln
```

01456570

675 680 685

Lys Glu Asn Ser Lys Arg Trp Asn Pro Glu Ile Gln Tyr Thr Ser Asn
690 695 700

Tyr Tyr Lys Ser Asn Asn Val Glu Phe Ala Val Asn Thr Glu Gly Val
705 710 715 720

Tyr Ser Glu Pro Arg Pro Ile Gly Thr Arg Tyr Leu Thr Arg Asn Leu
725 730 735