SEQUENCE LISTING

<110> The University of North Carolina at Chapel Hill
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<120> UBE3A Genes and Expression Cassettes and Their Use

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gataacaatg ccgccgcaat caaggcgctt gaactgtata agatcaacgc caagctgtgc 240

gatccccacc cttccaagaa gggagccagc tcagcctacc tggaaaactc caagggcgcc 300

cctaacaact catgctccga gatcaagatg aataagaagg gcgcccggat tgacttcaag 360

gatgtgacct acctgaccga ggagaaggtg tacgagatcc tggaactctg ccgagaacgg 420

gaggactact cccctctgat ccgcgtgatc ggaagagtgt tcagctccgc tgaagcgctc 480

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<210> 11
<211> 254
<212> DNA
<213> Artificial

<220>

<223> growth hormone polyadenylation signal

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ggaaagaacc agct 254

<210> 12
<211> 48
<212> DNA
<213> Artificial

<220>
<223> synthetic polyadenylation signal

<400> 12
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<210> 13
<211> 143
<212> DNA
<213> Artificial

<220>
<223> Simian virus 40

<400> 13
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taaacaagtt aacaacaaca att 143

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<211> 3396
<212> DNA
<213> Artificial

<220>
<223> human UBE3A expression cassette

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<213> Homo sapiens

<400> 15

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Ser Cys

<210> 16
<211> 57
<212> PRT
<213> Homo sapiens

<400> 16

Met Glu Lys Leu His Gln Cys Tyr Trp Lys Ser Gly Glu Pro Gln Ser
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Asp Asp Ile Glu Ala Ser Arg Met Lys Arg Ala Ala Ala Lys His Leu
20 25 30

Ile Glu Arg Tyr Tyr His Gln Leu Thr Glu Gly Cys Gly Asn Glu Ala
35 40 45

Cys Thr Asn Glu Phe Cys Ala Ser Cys
50 55

<210> 17
<211> 54
<212> PRT
<213> Homo sapiens

<400> 17

Met Ala Thr Ala Cys Lys Arg Ser Gly Glu Pro Gln Ser Asp Asp Ile
1 5 10 15

Glu Ala Ser Arg Met Lys Arg Ala Ala Ala Lys His Leu Ile Glu Arg
20 25 30

Tyr Tyr His Gln Leu Thr Glu Gly Cys Gly Asn Glu Ala Cys Thr Asn
35 40 45

Glu Phe Cys Ala Ser Cys
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<210> 18
<211> 55
<212> PRT
<213> Mus musculus

<400> 18

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Ile Glu Ala Ser Arg Met Lys Arg Ala Ala Ala Lys His Leu Ile Glu
20 25 30

Arg Tyr Tyr His Gln Leu Thr Glu Gly Cys Gly Asn Glu Ala Cys Thr
35 40 45

Asn Glu Phe Cys Ala Ser Cys
50 55

<210> 19
<211> 34
<212> PRT
<213> Mus musculus

<400> 19

Met Lys Arg Ala Ala Ala Lys His Leu Ile Glu Arg Tyr Tyr His Gln
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Leu Thr Glu Gly Cys Gly Asn Glu Ala Cys Thr Asn Glu Phe Cys Ala
            20   25   30

Ser Cys

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cattgaagct agcaggatga ag   82

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<400> 21

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            20   25   30

Tyr Tyr His Gln Leu Thr Glu Gly Cys Gly Asn Glu Ala Cys Thr Asn
        35   40   45

Glu Phe Cys Ala Ser Cys Pro Thr Phe Leu Arg Met Asp Asn Asn Ala
    50   55   60

Ala Ala Ile Lys Ala Leu Glu Leu Tyr Lys Ile Asn Ala Lys Leu Cys
65   70   75   80

Asp Pro His Pro Ser Lys Lys Gly Ala Ser Ser Ala Tyr Leu Glu Asn

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                85                  90                  95

Ser Lys Gly Ala Pro Asn Asn Ser Cys Ser Glu Ile Lys Met Asn Lys
            100                 105                 110

Lys Gly Ala Arg Ile Asp Phe Lys Asp Val Thr Tyr Leu Thr Glu Glu
        115                 120                 125

Lys Val Tyr Glu Ile Leu Glu Leu Cys Arg Glu Arg Glu Asp Tyr Ser
    130                 135                 140

Pro Leu Ile Arg Val Ile Gly Arg Val Phe Ser Ser Ala Glu Ala Leu
145                 150                 155                 160

Val Gln Ser Phe Arg Lys Val Lys Gln His Thr Lys Glu Glu Leu Lys
                165                 170                 175

Ser Leu Gln Ala Lys Asp Glu Asp Lys Asp Glu Asp Glu Lys Glu Lys
            180                 185                 190

Ala Ala Cys Ser Ala Ala Ala Met Glu Glu Asp Ser Glu Ala Ser Ser
        195                 200                 205

Ser Arg Ile Gly Asp Ser Ser Gln Gly Asp Asn Asn Leu Gln Lys Leu
    210                 215                 220

Gly Pro Asp Asp Val Ser Val Asp Ile Asp Ala Ile Arg Arg Val Tyr
225                 230                 235                 240

Thr Arg Leu Leu Ser Asn Glu Lys Ile Glu Thr Ala Phe Leu Asn Ala
                245                 250                 255

Leu Val Tyr Leu Ser Pro Asn Val Glu Cys Asp Leu Thr Tyr His Asn
            260                 265                 270

Val Tyr Ser Arg Asp Pro Asn Tyr Leu Asn Leu Phe Ile Ile Val Met
        275                 280                 285

Glu Asn Arg Asn Leu His Ser Pro Glu Tyr Leu Glu Met Ala Leu Pro
    290                 295                 300
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Leu Phe Cys Lys Ala Met Ser Lys Leu Pro Leu Ala Ala Gln Gly Lys
305                 310                 315                 320

Leu Ile Arg Leu Trp Ser Lys Tyr Asn Ala Asp Gln Ile Arg Arg Met
                325                 330                 335

Met Glu Thr Phe Gln Gln Leu Ile Thr Tyr Lys Val Ile Ser Asn Glu
            340                 345                 350

Phe Asn Ser Arg Asn Leu Val Asn Asp Asp Asp Ala Ile Val Ala Ala
        355                 360                 365

Ser Lys Cys Leu Lys Met Val Tyr Tyr Ala Asn Val Val Gly Gly Glu
    370                 375                 380

Val Asp Thr Asn His Asn Glu Glu Asp Asp Glu Glu Pro Ile Pro Glu
385                 390                 395                 400

Ser Ser Glu Leu Thr Leu Gln Glu Leu Leu Gly Glu Glu Arg Arg Asn
                405                 410                 415

Lys Lys Gly Pro Arg Val Asp Pro Leu Glu Thr Glu Leu Gly Val Lys
            420                 425                 430

Thr Leu Asp Cys Arg Lys Pro Leu Ile Pro Phe Glu Glu Phe Ile Asn
        435                 440                 445

Glu Pro Leu Asn Glu Val Leu Glu Met Asp Lys Asp Tyr Thr Phe Phe
    450                 455                 460

Lys Val Glu Thr Glu Asn Lys Phe Ser Phe Met Thr Cys Pro Phe Ile
465                 470                 475                 480

Leu Asn Ala Val Thr Lys Asn Leu Gly Leu Tyr Tyr Asp Asn Arg Ile
                485                 490                 495

Arg Met Tyr Ser Glu Arg Arg Ile Thr Val Leu Tyr Ser Leu Val Gln
            500                 505                 510
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Gly Gln Gln Leu Asn Pro Tyr Leu Arg Leu Lys Val Arg Arg Asp His
        515                 520                 525

Ile Ile Asp Asp Ala Leu Val Arg Leu Glu Met Ile Ala Met Glu Asn
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Pro Ala Asp Leu Lys Lys Gln Leu Tyr Val Glu Phe Glu Gly Glu Gln
545                 550                 555                 560

Gly Val Asp Glu Gly Gly Val Ser Lys Glu Phe Phe Gln Leu Val Val
                565                 570                 575

Glu Glu Ile Phe Asn Pro Asp Ile Gly Met Phe Thr Tyr Asp Glu Ser
            580                 585                 590

Thr Lys Leu Phe Trp Phe Asn Pro Ser Ser Phe Glu Thr Glu Gly Gln
        595                 600                 605

Phe Thr Leu Ile Gly Ile Val Leu Gly Leu Ala Ile Tyr Asn Asn Cys
    610                 615                 620

Ile Leu Asp Val His Phe Pro Met Val Val Tyr Arg Lys Leu Met Gly
625                 630                 635                 640

Lys Lys Gly Thr Phe Arg Asp Leu Gly Asp Ser His Pro Val Leu Tyr
                645                 650                 655

Gln Ser Leu Lys Asp Leu Leu Glu Tyr Glu Gly Asn Val Glu Asp Asp
            660                 665                 670

Met Met Ile Thr Phe Gln Ile Ser Gln Thr Asp Leu Phe Gly Asn Pro
        675                 680                 685

Met Met Tyr Asp Leu Lys Glu Asn Gly Asp Lys Ile Pro Ile Thr Asn
    690                 695                 700

Glu Asn Arg Lys Glu Phe Val Asn Leu Tyr Ser Asp Tyr Ile Leu Asn
705                 710                 715                 720
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Lys Ser Val Glu Lys Gln Phe Lys Ala Phe Arg Arg Gly Phe His Met
725 730 735

Val Thr Asn Glu Ser Pro Leu Lys Tyr Leu Phe Arg Pro Glu Glu Ile
740 745 750

Glu Leu Leu Ile Cys Gly Ser Arg Asn Leu Asp Phe Gln Ala Leu Glu
755 760 765

Glu Thr Thr Glu Tyr Asp Gly Gly Tyr Thr Arg Asp Ser Val Leu Ile
770 775 780

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805 810 815

Leu Gly Lys Leu Lys Met Ile Ile Ala Lys Asn Gly Pro Asp Thr Glu
820 825 830

Arg Leu Pro Thr Ser His Thr Cys Phe Asn Val Leu Leu Leu Pro Glu
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