SEQUENCE LISTING

<110> AMYRIS, INC.
SERBER, Zach
HORWITZ, Andrew

<120> METHODS FOR GENOMIC MODIFICATION

<130> AM-4800-US

<150> US 61/479,821
<151> 2011-04-27

<150> US 61/500,741
<151> 2011-06-24

<150> US 61/539,389
<151> 2011-09-26

<160> 66

<170> PatentIn version 3.5

<210> 1
<211> 741
<212> DNA
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<220>
<223> Synthetic: Wild-type Em.GFP coding sequence

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ggcaagctga ccctgaagtt catctgcacc accggcaagc tgcccgtgcc ctggcccacc 180

ctcgtgacca ccttgaccta cggcgtgcag tgcttcgccc gctaccccga ccacatgaag 240

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aagctggagt acaactacaa cagccacaag gtctatatca ccgccgacaa gcagaagaac 480

ggcatcaagg tgaacttcaa gacccgccac aacatcgagg acggcagcgt gcagctcgcc 540

gaccactacc agcagaacac ccccatcggc gacggccccg tgctgctgcc cgacaaccac 600

tacctgagca cccagtccgc cctgagcaaa gaccccaacg agaagcgcga tcacatggtc 660

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<210> 2
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: EmGFP linker encoding premature stop codon

<400> 2
cgtctaaatc atg 13

<210> 3
<211> 500
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: HO upstream integration sequence

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aaatgatcca cgaaaatcat gttattattt acatcaacat atcgcgaaaa ttcatgtcat 120

gtccacatta acatcattgc agagcaacaa ttcattttca tagagaaatt tgctactatc 180

acccactagt actaccattg gtacctacta ctttgaattg tactaccgct gggcgttatt 240

aggtgtgaaa ccacgaaaag ttcaccataa cttcgaataa agtcgcggaa aaaagtaaac 300

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acgcactatt catcattaaa tatttaaagc tcataaaatt gtattcaatt cctattctaa 420

atggctttta tttctattac aactattagc tctaaatcca tatcctcata agcagcaatc 480

aattctatct atactttaaa 500

<210> 4
<211> 200
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<223> Synthetic: HO downstream integration sequence

<400> 4
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aaaaaaacca tttttagact ttttcttaac tagaatgctg gagtagaaat acgccatctc 120

aagatacaaa aagcgttacc ggcactgatt tgtttcaacc agtatataga ttattattgg 180

gtcttgatca actttcctca 200

<210> 5
<211> 490
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: YGR250c upstream integration sequence

<400> 5

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caatttatgc ccttcccggg aatagttgac caaagggcaa aaaaattcag tcggagattc 120

cctattgggc ggaatttagt agatctcttt ccgtgcataa cgcctgcccg ttagtcgtta 180

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agcacaataa agaaacttcc cttaaatatt gaataagtaa ataatagttg aaaagtgcct 300

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tgaacaagta aagcatagca cacatcccaa attacaaggc accctgatta aaaatccaaa 420

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agtttcgagg 490

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<211> 185
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: YGR250c downstream integration sequence

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tttattttta tattttcatt tatcttattc atactttta ctccttttt cttcattctt 120

tacgatcttg gacattcaac tagcctatgg taacttttct tattactttg cccctccttg 180

aggtg 185

<210> 7
<211> 504
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: NDT80 upstream integration sequence

<400> 7
catcaagcgc tccaagctga cataaatcgc actttgtatc tacttttttt tattcgaaaa 60

caaggcacaa caatgaatct atcgccctgt gagattttca atctcaagtt tgtgtaatag 120

atagcgttat attatagaac tataaaggtc cttgaatata catagtgttt cattcctatt 180

actgtatatg tgactttaca ttgttacttc cgcggctatt tgacgttttc tgcttcaggt 240

gcggcttgga gggcaaagtg tcagaaaatc ggccaggccg tatgacacaa aagagtagaa 300

aacgagatct caaatatctc gaggcctgtc ctctatacaa ccgcccagct ctctgacaaa 360

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acaatattat aaaaagcgct taaa 504

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<211> 202
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: NDT80 downstream integration sequence

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cctccagata acttgaccga agtttttttct tcagtctggc gctctcccaa ctgagctaaa 120

tccgcttact atttgttatc agttcccttc atatctacat agaataggtt aagtatttta 180

ttagttgcca gaagaactac tg 202

<210> 9
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Recognition sequence for ZFN.gfp

<400> 9
acaactacaa cagccacaac gtctatatca tggccgacaa gca 43

<210> 10
<211> 31
<212> DNA
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<223> Synthetic: Forward primer specific to Em.GFP

<400> 10
caactacaac agccacaagg tctatatcac c 31

<210> 11
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Reverse primer for HO locus

<400> 11
ctctaacgct gttggtagat tg 22

<210> 12
<211> 39
<212> DNA
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<223> Synthetic: Reverse primer for NDT80 locus

<400> 12
accatgtgat aatacactac taatgtgact actagttga 39

<210> 13
<211> 30
<212> DNA
<213> Artificial Sequence

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<223> Synthetic: Reverse primer for YGR250c locus

<400> 13
tcagacgcgt tcggaggaga gtgcattcac 30

<210> 14
<211> 5251
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Integration construct i8

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<223> Synthetic: Primer 61-67-CPK066-G

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<210> 16
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<223> Synthetic: Primer 61-67-CPK067-G

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<210> 17
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<223> Synthetic: Integration construct i32

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<210> 46
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Primer HJ272

<400> 46
ataacaatat tataaaaagc gcttaa 26

<210> 47
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Primer ART45

<400> 47
tactgcttcg gtagtagttt caccccttca 29

<210> 48
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Primer HJ643

<400> 48
aaaatcctta tattattggc cc 22

<210> 49
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Primer HJ799

<400> 49
gtagcctaaa acaagcgcc 19

<210> 50
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Homing endonuclease family conserved motif

<400> 50

Leu Ala Gly Leu Ile Asp Ala Asp Gly
1 5

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

<220>
<223> Synthetic: Homing endonuclease family conserved motif

<400> 51

Gly Ile Tyr Tyr Ile Gly
1 5

<210> 52
<211> 18
<212> DNA
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<220>
<223> Synthetic: Recognition sequence for I-SceI

<400> 52
tagggataac agggtaat 18

<210> 53

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

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<223> Synthetic: Recognition sequence for VDE (PI-SceI)

<400> 53
tatgtcgggt gcggagaaag aggtaatgaa a 31

<210> 54
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Recognition sequence for F-CphI

<400> 54
gatgcacgag cgcaacgctc acaa 24

<210> 55
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Recognition sequence for PI-MgaI

<400> 55
gcgtagctgc ccagtatgag tcag 24

<210> 56
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: Recognition sequence for PI-MtuII

<400> 56
acgtgcacta cgtagagggt cgcaccgcac cgatctacaa 40

<210> 57
<211> 4300
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: ADE2_SFC1 donor cassette

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ggtatatcta ttccataacg actatgtttt gtatttgtta atttacataa aaccatatca 180

gtacatcaac gaactgtaaa aaagaaactt tagcataatt attgcggata tttaaactca 240

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aagaaatttt gacagcaccc tcggtttaat ggaaaagagg ggcgtttttc gatgaacccg 360

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gtaaaccgca aacggacctt aattgtgacg aagggcccaa atttgatggg tcggtgttaa 600

tgattagtcc tcattgtcat aataaagtgt gatgatggag gcaatgatga tatacggtag 660

tactactgct cgaggtgcta tcttttaacc aatcctttga gattcttgtc gccacggagt 720

tactaccttt tacaaaccgt aatgtcacat tttgcatata tcttatgtat aaatatatag 780

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aagagatatt aaatattagt gagaagccga gaattttgta acaccaacat aacactgaca 1140

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caaatcgaga tatcaccttg gattatgaga caagaattag 4300

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<211> 3586
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: GFP_SFC1 donor cassette

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gattaagaga aatggttgaa gcttaaactt ctttcattca ttttctcttg gctttcacta 120

ggtatatcta ttccataacg actatgtttt gtatttgtta atttacataa aaccatatca 180

gtacatcaac gaactgtaaa aaagaaactt tagcataatt attgcggata tttaaactca 240

cttgcaggta agagcaaaag gcgattgatt tccagtccgc ctcttgtcac gtgatttagt 300

aagaaatttt gacagcaccc tcggtttaat ggaaaagagg ggcgtttttc gatgaacccg 360

aggggagact agagaatcat ctcggttgaa tggagcatta ttttttttagt agcgcccgcc 420

cggagaaatg gacgttggcg aatgagccat gaattattaa ccgcccatgt ctaccagata 480

gacggcacgg ccacgcgttt aaaccgcccc acatcgtatg acagtaccag cctagtcccg 540

gtaaaccgca aacggacctt aattgtgacg aagggcccaa atttgatggg tcggtgttaa 600

tgattagtcc tcattgtcat aataaagtgt gatgatggag gcaatgatga tatacggtag 660

tactactgct cgaggtgcta tcttttaacc aatcctttga gattcttgtc gccacggagt 720

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<212> DNA
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atccataccg ttctattatt gatctttcta gtcgttccat taatataact gcagacctac 180

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aaggtctcgc ccatcaatgc ctcaatccct gtgacgaact aggtatgcaa gcattgcaag 300

cattagagaa cattctgtta tctcgagcaa gtcaactacg tacggaaaaa gttgcggtgg 360

ataacctact agagacagga ttattaccga tttttgagtt ggatgaaatc caagatgtca 420

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ataatgcgat atataagcaa tctcatttaa atatcgacgg tggcatttat accatcattt 780

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ctaacacttg cttggacgga aatagtatat gttgtgcaag tgtgttgatg tagtataata 3540

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<211> 40
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<210> 63
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<210> 66
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<223> Synthetic: Primer HJ788

<400> 66
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