

SEQUENCE LISTING

<110> GE HEALTHCARE BIO-SCIENCES AB

<120> METHODS FOR TARGETED INTEGRATION

<130> 600572-GB-1

<160> 13

<170> PatentIn version 3.5

<210> 1

<211> 47

<212> DNA

<213> Artificial sequence

<220>

<223> Partly modified native attP sequence

<400> 1

gtgccccaac tggggtaacc tttgagttct ctcagttggg ggcgtag

47

<210> 2

<211> 70

<212> DNA

<213> Artificial sequence

<220>

<223> Partly modified native attB sequence

<400> 2

ctcgaagccg cgggtgcgggt gccagggcgt gcccttgggc tccccgggcg cgtactccac

60

ctcaccatc

70

<210> 3

<211> 47

<212> DNA

<213> Artificial sequence

<220>

<223> Partly modified native attP sequence

<400> 3

gtgccccaac tggggtaacc taagagttct ctcagttggg ggcgtag

47

<210> 4
<211> 70
<212> DNA
<213> Artificial sequence

<220>
<223> Partly modified native attB sequence

<400> 4
ctcgaagccg cgggtgcgggt gccagggcgt gcccaagggc tccccgggcg cgtactccac 60
ctcaccatc 70

<210> 5
<211> 1941
<212> DNA
<213> Artificial sequence

<220>
<223> Partly modified native PhiC31 gene

<400> 5
atgaccatga ttaccccatc tgcccagctg accctgacaa agggcaataa gagctgggtct 60
agcctgggtga cagctgcttc tgtgctggag ttgcccacca tgatccaagg ggtcgctggg 120
gaagtgactt atgccggggc gtacgaccgt cagtctcggg agcgcgagaa ctctagcgcg 180
gCGTctccgg ccactcagcg tagcgctaac gaggccaaag ccgccgtctt ccagcgcgag 240
atcgagcgcg ccggggggccg gtttcgtttc gtcgggtcact tcagcgaggc ccccggcaca 300
tctgccttcg gtacagccga gcgccctgag ttcgaacgca ttctgaacga atgccgcgcc 360
ggtcggctga acatgattat cgtgtatgac gtgtctcgct tctctcgctt gaaggttatg 420
gacgccatcc ctatcgtgtc agaattactg gccctgggcg tgacaatcgt ctctacgcag 480
gaaggcgtgt tcagacaagg gaacgttatg gacctgatcc acctgatcat gcggctggac 540
gcctctcaca aagaaagctc tctgaagtct gccaagatcc tggacacaaa gaacctccag 600
cgCGaacttg gcgggttacgt gggcggggaag gccccctacg gcttcgagct tGtcagcgag 660
acaaaaggaga ttacacgcaa cggacgtatg gtcaatgtgg ttatcaacaa gctcgccccac 720
tctaccacgc ctctcaccgg acctttcgag ttcgagccag acgtaattcg gtgggtgggtgg 780
cgtgagatca agacacacaa acacctccct ttcaagcctg gcagtcaagc cgccatccac 840

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ctcagagacc ctcgtatcgc cgggttcgct gcggaggtga tttacaagaa gaagccagac	1020
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cctgtggagc ttgattgcgg tcctattatc gagcctgcgg agtggatatga gcttcaggcc	1140
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ctgcgccagc aagggtgccga agagagactc gccgaactcg aagccgccga agccccaag	1680
ctccctctcg accaatggtt cccagaagac gccgacgcgg accctaccgg ccccaagtct	1740
tggtgggggtc gcgcctcggc agacgacaag cgcgtgttcg tgggtctgtt cgtagacaag	1800
attgtcgta caaagtctac gacaggccgt gggcagggga cacctatcga gaagcgcgcg	1860
tctattactt gggccaagcc tcctaccgac gacgacgaag acgacgcca ggacggcaca	1920
gaagacgtag ctgcttgata a	1941

<210> 6

<211> 34

<212> DNA

<213> Artificial sequence

<220>

<223> Partly modified native lox gene

<400> 6

ataacttcgt ataggatact ttatacgaag ttat

34

<210> 7
<211> 1031
<212> DNA
<213> Artificial sequence

<220>
<223> Partly modified native Cre gene

<400> 7
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gacgagggtca gaaaaaacct catggacatg ttccgggacc gccaggcctt ttccgaacac 120
acttgaaaaa tgcttctcag cgtttgccgt agttgggccg cttggtgtaa actcaacaac 180
cgcaagtgggt tccccgccga acccgaggac gtccgcgatt accttctgta ttgcaagcg 240
cgaggactgg ccgtgaaaac catccagcaa catctgggtc agcttaacat gttgcaccgg 300
aggagcggcc tgccacggcc tagcgactcc aacgcggtgt ccctcgtgat gaggagaatc 360
cgcaaggaga atgtggacgc cggagaaaaga gcaaagcagg ccctggcctt cgagaggact 420
gacttcgacc aagtccggtc gctgatggag aactcggacc gatgtcagga catcaggaac 480
ctcgcattct cggcattgcc tacaacaccc tgctgagaat tgcagagatc gcccgcattc 540
gcgtcaagga catttcgaga accgacggag ggcggtatgct gattcacatc ggcaggacta 600
agaccctcgt gtcaaccgcc ggagtggaaa aggccctcag cctgggagtg acaaagctcg 660
tggagcgctg gatctccgtg tcgggggtgg ccgacgatcc gaacaattac ctgttctgcc 720
gggtccgcaa aaatgggggtg gccgccccgt ctgctacaag ccagttgtcc actcgcgccc 780
tggaagggaat cttcgaggcc acgcaccgcc tgatctatgg ggcaaaggac gattccggcc 840
agaggatatct cgcgtgggtcc ggtcactccg cgcgcgtggg cgcgggcccg gacatggccc 900
gggctggagt gtccatccct gaaatcatgc aggccggtgg atggaccaac gtgaacatcg 960
tgatgaacta cattcggaac ctggacagcg aaactgggtc tatggtccgc ctgctggagg 1020
acggagattg a 1031

<210> 8
<211> 1428

<212> DNA

<213> Artificial sequence

<220>

<223> Enhanced Green Fluorescent Protein fused to an FC from IgG1
(FC-eGFP gene)

<400> 8

gacaaaactc acacatgccc accgtgcccc gcacctgaac tcctgggggg accgtcagtc	60
ttcctcttcc ccccaaaacc caaggacacc ctcatgatct cccggacccc tgaggtcaca	120
tgcgtggtgg tggacgtgag ccacgaagac cctgagggtca agttcaactg gtacgtggac	180
ggcgtggagg tgcataatgc caagacaaaag ccacgggagg agcagtacaa cagcacgtac	240
cgtgtggtca gcgtcctcac cgtcctgcac caggactggc tgaatggcaa ggagtacaag	300
tgcaaggctc ccaacaaagc cctcccagcc cccatcgaga aaaccatctc caaagccaaa	360
gggcagcccc gagaaccaca ggtctacacc ctgcccccat cccgggagga gatgaccaag	420
aaccagggtca gcctgacctg cctgggtcaaa ggcttctatc ccagcgacat cgccgtggag	480
tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc	540
gacggctcct tcttcctcta cagcaagctc accgtggaca agagcagggtg gcagcagggg	600
aacgtcttct catgctccgt gatgcacgag gctctgcaca accactacac gcagaagagc	660
ctctccctgt ctccgggtaa aggttcctcc agttccggca gctccagttc cggtatgagt	720
aaaggagagg aactcttcac cggagtcgtc ccgatactcg tcgagctaga cggagacgtc	780
aacggccaca aattctccgt ctccggcgag ggggaggggg acgccaccta cggaaaactc	840
acccttaagt ttatttgcac taccggaaaa ctccccgtcc cttggccaac cctagtcacc	900
acgctgacat acggagtcca atgtttctcg cggtatcccg accacatgaa gcagcatgac	960
tttttcaa at cgcgatgcc tgagggtctac gtgcaggaac gcaccatctt cttcaaggac	1020
gacgggaatt acaagactag agccgagggtc aagtttgaag gagacaccct cgtgaatcgc	1080
atcgagctta agggcattga cttcaaggag gacggcaaca tcctgggtca caagctggag	1140
tacaactaca actcgcataa cgtctacatc atggccgaca agcaaaaagaa cggtatcaag	1200
gtcaacttca agattaggca caacattgag gatgggtccg tccaactggc cgaccactac	1260

cagcagaaca ccccatcgg cgacggacct gtgctcctgc ctgataacca ctatctcagc	1320
actcagagcg cactgtccaa ggaccctaac gaaaaacggg accacatggt cttgctggag	1380
ttcgtgacag ccgctgggtat taccctgggc atggatgaac tgtataag	1428

<210> 9
 <211> 1431
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Blue Fluorescent Protein variant fused to an FC from IgG1
 (FC-TagBFP2 gene)

<400> 9	
gacaaaaactc acacatgccc accgtgcccc gcacctgaac tcctggggggg accgtcagtc	60
ttcctcttcc ccccaaaacc caaggacacc ctcatgatct cccggacccc tgaggtcaca	120
tgcgtgggtgg tggacgtgag ccacgaagac cctgagggtca agttcaactg gtacgtggac	180
ggcgtggagg tgcataatgc caagacaaaag ccacgggagg agcagtacaa cagcacgtac	240
cgtgtgggtca gcgtcctcac cgtcctgcac caggactggc tgaatggcaa ggagtacaag	300
tgcaagggtct ccaacaaagc cctcccagcc cccatcgaga aaaccatctc caaagccaaa	360
gggcagcccc gagaaccaca ggtctacacc ctgcccccat cccgggagga gatgaccaag	420
aaccagggtca gcctgacctg cctgggtcaaa ggcttctatc ccagcgacat cgccgtggag	480
tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc	540
gacggctcct tcttctctta cagcaagctc accgtggaca agagcagggtg gcagcagggg	600
aacgtcttct catgctccgt gatgcacgag gctctgcaca accactacac gcagaagagc	660
ctctccctgt ctccgggtaa aggttcctcc agttccggca gctccagttc cggtatgggtg	720
tcgaaggggag aggagctgat taaggagaac atgcacatga agctgtatat ggaaggggacg	780
gtggacaacc accacttcaa gtgcaccagc gaaggagaag gaaagcctta cgaaggcact	840
caaactatgc ggatcaaagt ggtggaaggc ggtcctcttc cgttcgctt cgacatcttg	900
gccacctcct tcctctacgg ctccaagacc tttatcaacc acaccaggga aatcccggac	960
ttctttaagc agagcttccc tgagggttc acctgggaaa gagtgacaac ctacgaggac	1020

ggtggcgtcc tgaccgcgac ccaggacacc tccctgcaag acggctgcct gatctacaac	1080
gtcaagattc gcggcgtgaa cttcacctcc aatgggtccag tgatgcagaa gaaaactctg	1140
ggatgggagg ccttcactga aactctgtac cccgccgatg gaggactgga ggggaggaac	1200
gatatggctt tgaagctcgt ggggggatcg cacctgattg cgaatgcca gaccacctac	1260
agatccaaga aacccgcca gaacctcaag atgcccggag tctactacgt ggactataga	1320
ctggaacgga tcaaggaagc caacaacgag acttacgtgg aacagcacga ggtcgctgtg	1380
gcacgctact gtgatctgcc gtcaaagctc gggcataagc tcaactgata a	1431

<210> 10

<211> 738

<212> DNA

<213> Artificial sequence

<220>

<223> Red Fluorescent Protein Variant (TagRFP-T gene)

<400> 10

atgggtgtcaa agggagagga actgattaag gagaatatgc acatgaaact ctacatggag	60
gggaccgtga acaaccacca cttcaagtgc acctccgagg gcgaaggga gccgtacgag	120
ggaactcaga ccatgcggat taaggctgctc gaagggggctc ctctgccatt cgccttcgac	180
atcctcgcca catcctttat gtacggatcg cggaccttca tcaaccacac tcagggtatc	240
cccgacttct tcaagcaatc gttcccggaa ggctttactt gggagcgcgt gaccacctac	300
gaggatggag ggggtgctgac ggccactcag gacaccagcc tgcaagacgg ctgtcttatc	360
tacaacgtga agattcgcg cgtgaacttc cctagcaacg gtccgggtcat gcagaaaaag	420
accctggggtt gggagggctaa caccgaaatg ctctatcctg cggacggagg attggaaggc	480
cggactgaca tggccctgaa acttgtgggc ggcggacatc tgatctgcaa tttcaagacc	540
acttaccgct ccaagaagcc cgccaagaac ctgaagatgc ctggagtgtg ctacgtggac	600
cacagactcg aaaggatcaa ggaggcggat aaggaaacct acgtggaaca gcatgaagtg	660
gcagtggcca gatactgcga tctgccgtcc aagctcggcc acaagctgaa cggaatggac	720
gagctgtata agtgataa	738

<210> 11
<211> 714
<212> DNA
<213> Artificial sequence

<220>
<223> Enhanced Green Fluorescent Protein (eGFP gene)

<400> 11
atgagtaaag gagaggaact cttcaccgga gtcgtcccga tactcgtcga gctagacgga 60
gacgtcaacg gccacaaatt ctccgtctcc ggcgagggggg aggggggacgc cacctacgga 120
aaactcaccc ttaagtttat ttgcactacc ggaaaaactcc ccgtccccttg gccaaccccta 180
gtcaccacgc tgacatacgg agtccaatgt ttctcgcggt atcccgaacca catgaagcag 240
catgactttt tcaaatccgc gatgcctgag ggctacgtgc aggaacgcac catcttcttc 300
aaggacgacg ggaattacaa gactagagcc gaggtcaagt ttgaaggaga caccctcgtg 360
aatcgcacgc agcttaaggg cattgacttc aaggaggacg gcaacatcct gggtcacaag 420
ctggagtaca actacaactc gcataacgtc tacatcatgg ccgacaagca aaagaacggt 480
atcaagggtca acttcaagat taggcacaac attgaggatg ggtccgtcca actggccgac 540
cactaccagc agaacacccc catcggcgac ggacctgtgc tcctgcctga taaccactat 600
ctcagcactc agagcgcact gtccaaggac cctaacgaaa aacgggacca catgggtcttg 660
ctggagttcg tgacagccgc tgggtattacc ctgggcatgg atgaactgta taag 714

<210> 12
<211> 717
<212> DNA
<213> Artificial sequence

<220>
<223> Blue Fluorescent Protein variant (TagBFP2 gene)

<400> 12
atgggtgtcga agggagagga gctgattaag gagaacatgc acatgaagct gtatatggaa 60
gggacggtgg acaaccacca cttcaagtgc accagcgaag gagaaggaaa gccttacgaa 120
ggcactcaaa ctatgcggat caaagtgggtg gaaggcggtc ctcttccgtt cgccttcgac 180

atcttggcca cctccttcct ctacggctcc aagaccttta tcaaccacac ccagggaatc	240
ccggacttct ttaagcagag cttccctgag ggcttcacct gggaaagagt gacaacctac	300
gaggacggtg gcgtcctgac cgcgacccag gacacctccc tgcaagacgg ctgcctgac	360
tacaacgtca agattcgcgg cgtgaacttc acctccaatg gtccagtgat gcagaagaaa	420
actctgggat gggaggcctt cactgaaact ctgtaccccg ccgatggagg actggagggg	480
aggaacgata tggctttgaa gctcgtgggg ggatcgcacc tgattgcgaa tgccaagacc	540
acctacagat ccaagaaacc cgccaagaac ctcaagatgc ccggagtcta ctacgtggac	600
tatagactgg aacggatcaa ggaagccaac aacgagactt acgtggaaca gcacgaggtc	660
gctgtggcac gctactgtga tctgccgtca aagctcgggc ataagctcaa ctgataa	717

<210> 13
 <211> 792
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Neomycin resistance gene (NeoR gene)

<400> 13	
atgattgaac aagatggatt gcacgcagg tctccggccg cttgggtgga gaggctattc	60
ggctatgact gggcacaaca gacaatcggc tgctctgatg ccgccgtgtt ccggctgtca	120
gcgcaggggc gcccggttct ttttgtcaag accgacctgt ccggtgccct gaatgaactg	180
caggacgagg cagcgcggct atcgtggctg gccacgacgg gcgttccttg cgcagctgtg	240
ctcgacgttg tcaactgaagc gggaagggac tggctgctat tgggcgaagt gccggggcag	300
gatctcctgt catctcacct tgctcctgcc gagaaaagtat ccatcatggc tgatgcaatg	360
cggcggctgc atacgcttga tccggctacc tgcccattcg accaccaagc gaaacatcgc	420
atcgagcgag cacgtactcg gatggaagcc ggtcttgtcg atcaggatga tctggacgaa	480
gagcatcagg ggctcgcgcc agccgaactg ttcgccaggc tcaaggcgcg catgcccgcac	540
ggcgaggatc tcgtcgtgac ccatggcgat gcctgcttgc cgaatatcat ggtggaaaat	600
ggccgctttt ctggattcat cgactgtggc cggctgggtg tggcggaccg ctatcaggac	660

atagcgttgg ctacccgtga tattgctgaa gagcttggcg gcgaatgggc tgaccgcttc	720
ctcgtgcttt acggtatcgc cgctcccgat tcgcagcgca tcgccttcta tcgccttctt	780
gacgagttct tc	792