

Retro-EGT

based on Schnütgen F, et al., Nucleic Acids Res. 2008 Nov;36(20):e133.

vector backbone: pQCXIX (Clontech)

PLS note: ES clones contain one of two types of retroviral LTRs which differ at a few positions as indicated in orange.



```

    < JZ_flowcel_2
ACTTTCTGGG GGC-AGCACC CATCAGTTAG TGAGT
    < JZ_flowcell_1
ACTTTCTGGG GGCGACTGCC CATCAGTTAG TGAG
1 .....-cgt.. .....g.t .....a.. .a.....c.....g
1 tgaagagacc ccgctgacgg gtagtcaatc actcagagga gaccctccca agaacacagc agaccacaag tcggatgc-aa ctgcaagagg gtttattgga
>>.....LTR.....>>

101 a.t..... g.....t.... .a..... .g.....
101 tacacgggta cccggggcgcac tcagtcaatc ggaggactgg cgccccgagt gagggggtgt gctagcttgc caaacctaca ggtgggggtct ttcattcccc
>>.....LTR.....>>

                                barcodePCR-R >
                                CAAGTT CCTTCTGGTT CTGGCTCTGC T
                                < RV-INT-fwd
                                CAGTTCAA GGAAGACCAA GACCG
                                < DS
                                CAGTTCAA GGAAGACCAA GACCGAG
201 cctttttctg gagactaaat aaaatctttt attttatcga tggtaagtt ccttctggtt ctggctctgc tcatcgtcct gcaggaccgg acgtgactgg
                                SbfI
                                -----+-
                                US
                                GTGACTGG

                                < barcodePCR-F
                                TGGCA ACTACTCATC GAGTCTAGTT GG

                                US >
                                AGTTCAGACG TGTGCTCTTC
                                NlaIII MseI
                                ---+---+---
301 agttcagacg tgtgctcttc cgatct---- --BARCODE----- -----ca tgttaaaccgt tgatgagtag ctcatatcaa cccaattggt
401 cgaagttcct attccgaagt tcctattctc tagaaagtat aggaacttca gcagatcctg cactgacctt tcagctttgt ataatgtaag ttaaaatcac
    >>.....'frt.....>>
    >>.....Oct4 enh.....>>
501 atttgaaatg caaatggaaa agcagatcct gcactgacct ttcagctttg tataatgtaa gttaaaatca catttgaat gcaaatggaa aagcagatcc
    >>.....Oct4 enh.....>>
    >>.....Oct4 enh.....>>
601 tgcactgacc tttcagcttt gtataatgta agttaaaatc acatttgaaa tgcaaatgga aaagcagatc ctgcactgac ctttcagctt tgtataatgt
    >>.....Oct4 enh.....>>
    >>.....Oct4 enh.....>>
701 aagttaaaat cacatttgaa atgcaaatgg aaaagcagat cctgcactga cttttcagct ttgtataatg taagttaaaa tcacatttga aatgcaaatg
    >>.....Oct4 enh.....>>
    >>.....Oct4 enh.....>>

```

801 gaaaagcaga tcctgcaactg acctttcagc tttgtataat gtaagttaaa atcacatttg aaatgcaaat ggaaaagcag atctgctgaa gttcctattc
>.....>> >>.....Oct4 enh.....>> >>....F3.....>

901 cgaagttcct attcttcaaa tagtatagga acttcggtgc tagaagcggg tttcgggaga atacgactca ctatagggcg aattgataac ttcgtatagc
>.....F3.....>> >>....loxP.....>

1001 atacattata cgaagttatc caagcttcac catcgaccgc aattgccaaag catcaccatc gaccataac ttcgtatagt acacattata cgaagttatc
>.....loxP.....>> >>.....lox5171.....>>

1101 gaattcctac tcgaggctag aactagtgga tccccgggc tgcagatctg tagggcgag tagtccaggg tttccttgat gatgtcatac ttatcctgtc

1201 cctttttttt ccacagctcg cggtgaggac aaactcttcg cggcttttc agtggggatc gacggtatcg ataagcttga tgatctgtga catggcggat
fr0 < >>.....beta-Geo.....>

1301 cccgtcgttt tacaacgtcg tgactgggaa aaccctggcg ttaccaact taatcgctt gcagcacatc cccctttcgc cagctggcgt aatagcgaag
>.....beta-Geo.....>

1401 aggcccgcac cgatcgccct tccaacagt tgcgcagcct gaatggcgaa tggcgctttg cctggtttcc ggcaccagaa gcggtgccgg aaagctggct
>.....beta-Geo.....>

1501 ggagtgcgat cttcctgagg ccgatactgt cgtcgtccc tcaaactggc agatgcacgg ttacgatgcg cccatctaca ccaacgtgac ctatcccatt
>.....beta-Geo.....>

1601 acgggtcaatc cgccgtttgt tcccacggag aatccgacgg gttgttactc gctcacattt aatgttgatg aaagctggct acaggaaggc cagacgcgaa
>.....beta-Geo.....>

1701 ttatttttga tggcgttaac tcggcgtttc atctgtggtg caacgggcgc tgggtcgggt acggccagga cagtcgttg ccgtctgaat ttgacctgag
>.....beta-Geo.....>

1801 cgcattttta cgcgccggag aaaaccgcct cgcgggtgatg gtgctgcgct ggagtgcgag cagttatctg gaagatcagg atatgtggcg gatgagcggc
>.....beta-Geo.....>

1901 attttccgtg acgtctcggt gctgcataaa ccgactacac aaatcagcga tttccatggt gccactcgtc ttaatgatga tttcagccgc gctgtactgg
>.....beta-Geo.....>

2001 aggctgaagt tcagatgtgc ggcgagttgc gtgactacct acgggtaaca gtttctttat ggcaggggta aacgcaggtc gccagcggca ccgcgcttt
>.....beta-Geo.....>

2101 cggcggtgaa attatcgatg agcgtggtgg ttatgccgat cgcgtcacac tacgtctgaa cgtcgaaaac ccgaaactgt ggagcgccga aatcccgaat
>.....beta-Geo.....>

2201 ctctatcgtg cggtggttga actgcacacc gccgacggca cgctgattga agcagaagcc tgcgatgtcg gtttccgcga ggtgcggatt gaaaatggtc
>.....beta-Geo.....>

2301 tgctgctgct gaacggcaag ccggttctga ttcgagcgt taaccgtcac gagcatcatc ctctgcatgg tcaggatcatg gatgagcaga cgatggtgca
>.....beta-Geo.....>

2401 ggatatcctg ctgatgaagc agaacaactt taacgccgtg cgctgttcgc attatccgaa ccatccgctg tggtagacgc tgtgacgacc ctacggcctg
>.....beta-Geo.....>

2501 tatgtggtgg atgaagccaa tattgaaacc cacggcatgg tgccaatgaa tcgtctgacc gatgatccgc gctggctacc ggcgatgagc gaacgcgtaa
>.....beta-Geo.....>

2601 cgcgaatggt gcagcgcgat cgtaatcacc cgagtgtgat catctggctg ctggggaatg aatcaggcca cggcgctaat cacgacgcgc tgtatcgctg
>.....beta-Geo.....>

2701 gatcaaatct gtcgatcctt cccgcccggt gcagtatgaa ggcggcggag ccgacaccac ggccaccgat attatttgcc cgatgtacgc gcgctggat
>.....beta-Geo.....>

2801 gaagaccagc ccttcccggc tgtgccgaaa tgggccatca aaaaatggct ttcgctacct ggagagacgc gcccgctgat cctttgcgaa tacgccacg
>.....beta-Geo.....>

2901 cgatgggtaa cagtcttggc ggtttcgcta aatactggca ggcgtttcgt cagtatcccc gtttacaggg cggcttcgtc tgggactggg tggatcagtc
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3001 gctgattaaa tatgatgaaa acggcaaccc gtggtcggct tacggcgggtg attttggcga tacgccgaac gatcgccagt tctgtatgaa cggctctggc
>.....beta-Geo.....>

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>.....beta-Geo.....>

3201 aatacctggt ccgatcatagc gataacgagc tcctgcactg gatggtggcg ctggatggta agccgctggc aagcggtgaa gtgcctctgg atgtcgctcc
>.....beta-Geo.....>

3301 acaaggtaaa cagttgattg aactgcctga actaccgcag ccggagagcg ccgggcaact ctggctcaca gtacgcgtag tgcaaccgaa cgcgaccgca
>.....beta-Geo.....>

3401 tggtcagaag ccgggcacat cagcgcctgg cagcagtggc gtctggcgga aaacctcagt gtgacgctcc ccgccgcgtc ccacgccatc ccgatctga
>.....beta-Geo.....>

3501 ccaccagcga aatggatttt tgcatcgagc tgggtaataa gcgttggcaa ttttaaccgcc agtcaggctt tctttcacag atgtggattg gcgataaaaa
>.....beta-Geo.....>

3601 acaactgctg acgccgctgc gcgatcagtt caccctgca ccgctggata acgacattgg cgtaagtgaa gcgaccgca ttgaccctaa cgctgggtc
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3701 gaacgctgga aggcggcggg ccattaccag gccgaagcag cgttgttgca gtgcacggca gatacacttg ctgatgcggt gctgattacg accgctcacg
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3801 cgtggcagca tcaggggaaa acctatttta tcagccggaa aacctaccgg attgatggta gtgggtcaaat ggcgattacc gttgatgttg aagtggcgag
>.....beta-Geo.....>

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4001 gaccgcctta ctgccgctg ttttgaccgc tgggatctgc cattgtcaga catgtatacc ccgtacgtct tcccgagcga aaacggctctg cgctgcggga
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4101 cgcgcgaatt gaattatggc ccacaccagt ggcgcggcga cttccagttc aacatcagcc gctacagtca acagcaactg atggaaacca gccatcgcca
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4201 tctgctgcac gcggaagaag gcacatggct gaatatcgac ggtttccata tggggattgg tggcgacgac tcctggagcc cgtcagtatc ggcggaattc
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4301 cagctgagcg ccggtcgcta ccattaccag ttggtctggt gtcaggggat cccccgggct gcagccaata tgggatcggc cattgaaca gatggattgc
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<.....lox5171.....<< <<.....frt.....<

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5701 gaacttcgga ataggaactt cgттаacgaa gttcctatac татттгаага ataggaactt cggaatagga acttcagcaa cggatccggc cggcgcctag
<.....frt.....<< <<.....F3.....<< <<Psi+..<
5801 agaaggagtg agggctggat aaagggagga tcgaggcggg gtcgaacgag gaggttcaag ggggagagac ggggcggatg gaggaagagg aggcggaggc
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5901 ttaggggtgta caaagggtt gaccagga ggggggtcaa aagccaaggc ttcccaggtc acgatgtagg ggacctggtc tgggtgtcca tgcgggccag
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6601 gccagcttac ctcccggтgг tgggtcggтg gтccctgggc aggggtctcc ааatcccgga cgagccccca аatgaaagac ccccgctgac gggtagtcaa
<< Psi+
>>.....LTR.....>
6701 .....g .t..... .a..... .c..... .ga.t..... .g.....t.
6701 tcactcagag gagaccctcc caaggaacag cgagaccaca агtcggatgc -aactgcaaga gggттtattg gatacaggg тaccggggcg actcagtcaa
>.....LTR.....>
6801 .....a..... .g.....
6801 tcggaggact ggcgccccga gtgaggggtt gtgctagctt gccaaaccta caggtggggт cттtca
>.....LTR.....>>

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1 ..... -cgt. .... .g.t .....a.. .a..... c.....g
1 tgaagaccc ccgctgacgg gtagtcaatc actcagagga gaccctccca aggaacagcg agaccacaag tcggatgc-aa ctgcaagagg gtttattgga
101 a.t..... g.....t.... .a..... .g.....
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