Supplementary File; BAC insert sequence alignments

Local genomic instability of the SpTransformer gene family in the purple sea urchin inferred from BAC insert deletions

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Methods

The sequence reads for each BAC insert were assembled into contigs as described in the main paper. The consensus sequences were aligned by hand in Molecular Evolutionary Genetics Analysis X (MEGAX) against the original BAC insert sequences (GenBank Accession numbers KU668451 [BAC-51], KU668452 [BAC-52]) (1). The alignments shown below were generated in BioEdit (version 5.0.9), formatted and exported as rtf files, and imported into this document.

BAC insert sequence alignments **Page**

Alignment 1. BAC-51 and BAC-51-15

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                       18910     18920     18930     18940     18950     18960     18970     18980     18990     19000
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          TCATTCAACATACCGTAAAATAGCTTCATCATGTTCTTTCAGAAGATTTTAATTTAAAATATTTATTGTGGTTGGGGTATGTTTTCTCCAACTGCAAATG
BAC-51-15       TCATTCAACATACCGTAAAATAGCTTCATCATGTTCTTTCAGAAGATTTTAATTTAAAATATTTATTGTGGTTGGGGTATGTTTTCTCCAACTGCAAATG

                       19010     19020     19030     19040     19050     19060     19070     19080     19090     19100
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          ATGTGCATTATATTTTATAAGGTTCATTTTAAATAAGAAACTGTAATAACCTAGTATTTTTGATCAAATATGTTGCTCAGAAGTCTTGAACAGCATTAAT
BAC-51-15       ATGTGCATTATATTTTATAAGGTTCATTTTAAATAAGAAACTGTAATAACCTAGTATTTTTGATCAAATATGTTGCTCAGAAGTCTTGAACAGCATTAAT
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                 19110     19120     19130     19140     19150     19160     19170     19180     19190     19200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ACACGACTTAACTACAGACCCTGATTGAATTCCATTTTCAGTCAGCATTGTTGCATAAATTCATTTATTTATGACTTATTTGACTTCTGCATTAAAACAG
BAC-51-15 ACACGACTTAACTACAGACCCTGATTGAATTCCATTTTCAGTCAGCATTGTTGCATAAATTCATTTATTTATGACTTATTTGACTTCTGCATTAAAACAG

                 19210     19220     19230     19240     19250     19260     19270     19280     19290     19300
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CTTGACAACTTGTTCAGAGGCACCCCCATCGGAAGTGACTTTGTGGGACTAGAGATCACCAGCAGTCGCTTTGATACTAATAGTAACTACGTGATTGGCT
BAC-51-15 CTTGACAACTTGTTCAGAGGCACCCCCATCGGAAGTGACTTTGTGGGACTAGAGATCACCAGCAGTCGCTTTGATACTAATAGTAACTACGTGATTGGCT

                 19310     19320     19330     19340     19350     19360     19370     19380     19390     19400
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ACTCCATCTACCTGTGTGCTACCTCCCACTACAATGAGGAGAGCATCAAGGATACCTTCAATAGCGCCCTCACAGGGGCTAACATGGACACCTTTGCCGC
BAC-51-15 ACTCCATCTACCTGTGTGCTACCTCCCACTACAATGAGGAGAGCATCAAGGATACCTTCAATAGCGCCCTCACAGGGGCTAACATGGACACCTTTGCCGC

                 19410     19420     19430     19440     19450     19460     19470     19480     19490     19500
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TTCAAATGTCATTGTGACTGATTCACTTGACTTCAGTAAGTCACTCTACCGAGTTCCAGTTTTTTTAAGGGCAGCAAACATAGACTATCTGTCTAATATT
BAC-51-15 TTCAAATGTCATTGTGACTGATTCACTTGACTTCAGTAAGTCACTCTACCGAGTTCCAGTTTTTTTAAGGGCAGCAAACATAGACTATCTGTCTAATATT

                 19510     19520     19530     19540     19550     19560     19570     19580     19590     19600
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TTATTGTAATCACTCCATGGCAGTGTTTCGCAAAGACTAAGATCGACTTTATGTTGGACTTAACTATGGCAGGCCATTCATGCCACTGTTTGCTCTCACC
BAC-51-15 TTATTGTAATCACTCCATGGCAGTGTTTCGCAAAGACTAAGATCGACTTTATGTTGGACTTAACTATGGCAGGCCATTCATGCCACTGTTTGCTCTCACC

                 19610     19620     19630     19640     19650     19660     19670     19680     19690     19700
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATTTACTGGCATTGGTCTCTCAAGGGACGTACAAATCATGGTCACAAATCTACAGATTTTACATTTTTGGATAATTCATTATTGAAGGAAAAATATTATC
BAC-51-15 ATTTACTGGCATTGGTCTCTCAAGGGACGTACAAATCATGGTCACAAATCTACAGATTTTACATTTTTGGATAATTCATTATTGAAGGAAAAATATTATC

                 19710     19720     19730     19740     19750     19760     19770     19780     19790     19800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TAAAGATCATAATGGTGAGAGCAAATAGTGGCATGAACGGCCTGCCATAGTTAAGTCCAACTTAAAGTTGGACTTTCCTCTCTCTCACATGGTGCACTCG
BAC-51-15 TAAAGATCATAATGGTGAGAGCAAATAGTGGCATGAACGGCCTGCCATAGTTAAGTCCAACTTAAAGTTGGACTTTCCTCTCTCTCACATGGTGCACTCG

                 19810     19820     19830     19840     19850     19860     19870     19880     19890     19900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CAAGCCTACTGTATAAACTTAAAGTTTATCTTACTCTATGTGAAACACTGCCCATGTCATATTATAATTTGCCTTGTTTGTTGGTGTTCAAATAAACACA
BAC-51-15 CAAGCCTACTGTATAAACTTAAAGTTTATCTTACTCTATGTGAAACACTGCCCATGTCATATTATAATTTGCCTTGTTTGTTGGTGTTCAAATAAACACA

                 19910     19920     19930     19940     19950     19960     19970     19980     19990     20000
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATCAGGATGACACAAGTACATGAATTATATATTTCATGGAAACATCATCATTCTTCTTAGCTCAAAGGTAGATAAGGATGCATTCAATAGATCCAGCCAT
BAC-51-15 ATCAGGATGACACAAGTACATGAATTATATATTTCATGGAAACATCATCATTCTTCTTAGCTCAAAGGTAGATAAGGATGCATTCAATAGATCCAGCCAT

                 20010     20020     20030     20040     20050     20060     20070     20080     20090     20100
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATAATGAGATCCTCCCAGCACGGTGTTGGTTCATGTATTTGACAGCTATATAATTAACTCATGGTCTCTACTCTCTCTCTCTTTCTCTCTTTCTCTCT
BAC-51-15 ATAATGAGATCCTCCCAGCACGGTGTTGGTTCATGTATTTGACAGCTATATAATTAACTCATGGTCTCTACTCTCTCTCTCTTTCTCTCTTTCTCTCT
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                  20110     20120     20130     20140     20150     20160     20170     20180     20190     20200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CTCTCTTTCTCTCTCTCTCTCTCTCTCTGTCTCTTTCTCTCTCTCTCCCTTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCCTCTACCTCTCTA
BAC-51-15 CTCTCTTTCTCTCTCTCTCTCTCTCTCTGTCTCTTTCTCTCTCTCTCCCTTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT--------------
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Deletion 1, 5’ end

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                  20210     20220     20230     20240     20250     20260     20270     20280     20290     20300
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CTGTATGTGTCTGTTTATCTCTCTACAGATGTGGTAGAGTTTAGGGGTCAGTTTACACTGAAGAGCATTGAGAATCCTGGAACCGTTCCTGTCGAATACC
BAC-51-15 ----------------------------------------------------------------------------------------------------

                  20310     20320     20330     20340     20350     20360     20370     20380     20390     20400
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AATCATGCTGCTCAGATCCATCCAGCAGTACCTACCAAGCACTTCAGAACAGAATCTATGATCATGTAAGTATACCAAGATAGTTATATATAGTCAAATT
BAC-51-15 ----------------------------------------------------------------------------------------------------
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Sequences (96,854 bp) in BAC-51 that are deleted in BAC-51-15 are omitted

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                 116610    116620    116630    116640    116650    116660    116670    116680    116690    116700
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GAGAGAGAGAGAGAGATCCTGCTACTACTACTGTCGCTAGATTACTGCTATAAAAACTACTATTTCTTAAAAGGCAAGTACACTCCAAAAATACCTTACT
BAC-51-15 ----------------------------------------------------------------------------------------------------

                 116710    116720    116730    116740    116750    116760    116770    116780    116790    116800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TTCAATAGAAATCAGACAATATGTAATCAGACAATTATTTCCCTCACTTTCACTATTATATAAAATTTCTTTTGTCTATCTTCTTCTTCTCTCTCTCCCC
BAC-51-15 ----------------------------------------------------------------------------------------------------

                 116810    116820    116830    116840    116850    116860    116870    116880    116890    116900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CCCTCTCTCTCTCTCTCTCTCTCTCACACACACACACACAAACGTACACACTCACACACACACTCTCTCTCTCTCCCTCTCTCCATCTCACTCTCATCTC
BAC-51-15 ----------------------------------------------------------------------------------------------------

                 116910    116920    116930    116940    116950    116960    116970    116980    116990    117000
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TGTCTTTGTCTCTTTGTCTCTCCCTCCCCCCCCCTCTCTCTCTCTCTCTATATATAATCAGACAATATATAATACCTATATCCCTCACTCTCACTTTCTC
BAC-51-15 ----------------------------------------------------------------------------------------------------

                 117010    117020    117030    117040    117050    117060    117070    117080    117090    117100
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ACTCCCTCTCGTTTTTTTTCTTTCTCTCTCTCTCTCTCTCTCTCTATCTATCTCTATCTCTACCTATCTCTCTCTCTCTCTTTCTTTTTCTCTCTCTCTC
BAC-51-15 ----------------------------------------------ATCTATCTCTATCTCTACCTATCTCTCTCTCTCTCTTTCTTTTTCTCTCTCTCTC
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Deletion 1, 3’ end

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                 117110    117120    117130    117140    117150    117160    117170    117180    117190    117200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TCTCTATCAATCTCTATCTCTACCTATCTCTCTCTCTCTCTCTCTCTCTTTCTCTCTCTCTCTCTCTCTCTCTCTCTTATCTCAATCGATCAATATCGTGAT
BAC-51-15 TCTCTATCAATCTCTATCTCTACCTATCTCTCTCTCTCTCTCTCTCTCTTTCTCTCTCTCTCTCTCTCTCTCTCTCTTATCTCAATCGATCAATATCGTGAT
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                 117210    117220    117230    117240    117250    117260    117270    117280    117290    117300
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CAATCCAGCTGCATAAGGAAAACAATTATTAGGGGCTATAATATTGAACGCTTCACAAGTATTAGTATGAGTTCAGTTATATATTTTTATTTGACAAAGT
BAC-51-15 CAATCCAGCTGCATAAGGAAAACAATTATTAGGGGCTATAATATTGAACGCTTCACAAGTATTAGTATGAGTTCAGTTATATATTTTTATTTGACAAAGT

                 117310    117320    117330    117340    117350    117360    117370    117380    117390    117400
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CTTGACAAATTCAGTATCAATAAGAGTTTAACAATTCGTCAACATTTCATGCACCTTTCACTGGCTAAGAGTCTCCTGTATCTGAATTTTAGACACAATA
BAC-51-15 CTTGACAAATTCAGTATCAATAAGAGTTTAACAATTCGTCAACATTTCATGCACCTTTCACTGGCTAAGAGTCTCCTGTATCTGAATTTTAGACACAATA

                 117410    117420    117430    117440    117450    117460    117470    117480    117490    117500
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATGTTTTAGTCTCTGGTAAGATATGCATTCTGTCCAAGGAAAGACATTAGTGACTATTAGTATATTTACACAAGCAATCTTTTTTTATACAAATTGTACA
BAC-51-15 ATGTTTTAGTCTCTGGTAAGATATGCATTCTGTCCAAGGAAAGACATTAGTGACTATTAGTATATTTACACAAGCAATCTTTTTTTATACAAATTGTACA

                 117510    117520    117530    117540    117550    117560    117570    117580    117590    117600
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CCTCGGCGACCACATTGACGTCTTCTTCATTGACTGCGATCTCAACCACTTCAGGTGGTGAAGATGTCGTTACGCTTTCCGTCGTTGGATGCTCCTTCTC
BAC-51-15 CCTCGGCGACCACATTGACGTCTTCTTCATTGACTGCGATCTCAACCACTTCAGGTGGTGAAGATGTCGTTACGCTTTCCGTCGTTGGATGCTCCTTCTC

                 117610    117620    117630    117640    117650    117660    117670    117680    117690    117700
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CTCACTTTCATTCTCACCCCAACGTCCTCGGTTACCATAGGGATGACGGTGGCCATCACGCCTGGGAGATCCTTCTTCGGTTCTGTTGCGTCTGCCGAAG
BAC-51-15 CTCACTTTCATTCTCACCCCAACGTCCTCGGTTACCATAGGGATGACGGTGGCCATCACGCCTGGGAGATCCTTCTTCGGTTCTGTTGCGTCTGCCGAAG

                 117710    117720    117730    117740    117750    117760    117770    117780    117790    117800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GGACGGTCTCCGAAAGGCTTTCTACCGAAGGGGTTGACCCAGAAGGGCCTCATCTCAAACATTGGTCTGTCCTGATCTCCATCTCCGGTCTTGTTGTGAT
BAC-51-15 GGACGGTCTCCGAAAGGCTTTCTACCGAAGGGGTTGACCCAGAAGGGCCTCATCTCAAACATTGGTCTGTCCTGATCTCCATCTCCGGTCTTGTTGTGAT

                 117810    117820    117830    117840    117850    117860    117870    117880    117890    117900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GACGATGGGGGTGATCTCCCGTCTCATTATGACCCTGGTGACCTTCTGTGTGGTTGCGTCTGCCGAAGTGGTTGAACCGGAAGGGCCTCGTATCATTTGG
BAC-51-15 GACGATGGGG-TGATCTCCCGTCTCATTATGACCCTGGTGACCTTCTGTGTGGTTGCGTCTGCCGAAGTGGTTGAACCGGAAGGGCCTCGTATCATTTGG

                 117910    117920    117930    117940    117950    117960    117970    117980    117990    118000
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TTTGTCCTGATCTTGATCTCCCGTCTCATTATGTCCTTGGTGACCCTCTGTCTGGTTATGATGACGGTGGTGGTGGCCTTGGTGGCCATGGTGGCCATGA
BAC-51-15 TTTGTCCTGATCTTGATCTCCCGTCTCATTATGTCCTTGGTGACCCTCTGTCTGGTTATGATGACGGTGGTGGTGGCCTTGGTGGCCATGGTGGCCATGA

                 118010    118020    118030    118040    118050    118060    118070    118080    118090    118100
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TGGTGAGGGTGAGGACGGCCATCCTCCTCGTTGCGTTCATTGCGCTGACCGAACGGTTGTTCCTCTGGTCGGTCCTGAGGTGGACCTTGACGGTGACCAT
BAC-51-15 TGGTGAGGGTGAGGACGGCCATCCTCCTCGTTGCGTTCATTGCGCTGACCGAACGGTTGTTCCTCTGGTCGGTCCTGAGGTGGACCTTGACGGTGACCAT

                 118110    118120    118130    118140    118150    118160    118170    118180    118190    118200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GATGACGACGTCCATGACCATCAAACTGACCGCGCCCTCCTAGACCATCACCAATTTGTTGGGAAGCATCAGTTTCTTCTTCTCCATCACCACGTCTTCC
BAC-51-15 GATGACGACGTCCATGACCATCAAACTGACCGCGCCCTCCTAGACCATCACCAATTTGTTGGGAAGCATCAGTTTCTTCTTCTCCATCACCACGTCTTCC
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                    118210    118220    118230    118240    118250    118260    118270    118280    118290    118300
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      TCCTTGGCCGAAGAAAGGTCTTCCTCCAGCACCATCTGGTCTGGAGCCACCAAATCCAGGTCCGTCGAATCTCCTACCACCCATCGGACCGCCATTTTGT
BAC-51-15   TCCTTGGCCGAAGAAAGGTCTTCCTCCAGCACCATCTGGTCTGGAGCCACCAAATCCAGGTCCGTCGAATCTCCTACCACCCATCGGACCGCCATTTTGT

                    118310    118320    118330    118340    118350    118360    118370    118380    118390    118400
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CTGCGTCCATCCATATGTGGGGCACCAAATCCAGGTCCATCGAACCTCCTTCCACCCATTGGTCCACCATCTTGCCTAGATCCACCCATCTGCATTCCAC
BAC-51-15   CTGCGTCCATCCATATGTGGGGCACCAAATCCAGGTCCATCGAACCTCCTTCCACCCATTGGTCCACCATCTTGCCTAGATCCACCCATCTGCATTCCAC

                    118410    118420    118430    118440    118450    118460    118470    118480    118490    118500
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CAGGCCTTCCTCCAAAGCGACCTTGTCCTCTCTCTCTGCCATTCTCATTTCCTCGCCGTTCATTGAAATCTCTTCGTGCGTGAGCTGTAAGGGTTAATGA
BAC-51-15   CAGGCCTTCCTCCAAAGCGACCTTGTCCTCTCTCTCTGCCATTCTCATTTCCTCGCCGTTCATTGAAATCTCTTCGTGCGTGAGCTGTAAGGGTTAATGA

                    118510    118520    118530    118540    118550    118560    118570    118580    118590    118600
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      AATAATCGAATTAATTAAGTAATCACATTCTGCATTATTATATTTGGCTCTACATTGGTTTATAGCAGGTGACAAATAAGAATGGTAACTCGCCTTCTTA
BAC-51-15   AATAATCGAATTAATTAAGTAATCACATTCTGCATTATTATATTTGGCTCTACATTGGTTTATAGCAGGTGACAAATAAGAATGGTAACTCGCCTTCTTA

                    118610    118620    118630    118640    118650    118660    118670    118680    118690    118700
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      TATTTTT-TCCCTTTATGTTTAATCCTAATCCGTAAGTGCGGTTCGATATTCAAAACGCCTAATTCTGACTGAATTAAATTTGATTACCAGATTGAACGT
BAC-51-15   TATTTTTTTCCCTTTATGTTTAATCCTAATCCGTAAGTGCGGTTCGATATTCAAAACGCCTAATTCTGACTGAATTAAATTTGATTACCAGATTGAACGT

                    118710    118720    118730    118740    118750    118760    118770    118780    118790    118800
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      AAACATAATACACATCCTTTGTCATTCAGAAAACGGATTGGTGTAGGCTTAATAAATACAATTAATTATATTGTGTAACGAACAATTTAAAAATGCATAT
BAC-51-15   AAACATAATACACATCCTTTGTCATTCAGAAAACGGATTGGTGTAGGCTTAATAAATACAATTAATTATATTGTGTAACGAACAATTTAAAAATGCATAT

                    118810    118820    118830    118840    118850    118860    118870    118880    118890    118900
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      TACAAACTATGAAATAATCATATTTACTTCTGTGAGCCCTTCGTTGGCTTTATATTTAGCACTTATCAAGTAATACCGAGTAATAATTTGATTTCTTACC
BAC-51-15   TACAAACTATGAAATAATCATATTTACTTCTGTGAGCCCTTCGTTGGCTTTATATTTAGCACTTATCAAGTAATACCGAGTAATAATTTGATTTCTTACC

                    118910    118920    118930    118940    118950    118960    118970    118980    118990    119000
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CGAGATAGCAAGAGCAGCCACAATGGCAACGATCAATGTTGCTTTCACCTCCATGTTTGTAAGGTCTCTCCGATGCTACAAGCTTTCTCTAGATTCGTTG
BAC-51-15   CGAGATAGCAAGAGCAGCCACAATGGCAACGATCAATGTTGCTTTCACCTCCATGTTTGTAAGGTCTCTCCGATGCTACAAGCTTTCTCTAGATTCGTTG

                    119010    119020    119030    119040    119050    119060    119070    119080    119090    119100
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CCTTCCAAGAGAGAACTAGCTCCAAACTTAACAACTACCTGCTGGGCCACTGAATTTATAGGTTTTCTACCCTAGATTGATATCTCACACTAGTACCAGA
BAC-51-15   CCTTCCAAGAGAGAACTAGCTCCAAACTTAACAACTACCTGCTGGGCCACTGAATTTATAGGTTTTCTACCCTAGATTGATATCTCACACTAGTACCAGA
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Matched sequences (37,500 bp) between the BACs are omitted

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                    156610    156620    156630    156640    156650    156660    156670    156680    156690    156700
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      GGGCACTTATCAGAGAAGAAAAGGAGTAGTTATAAAAAGGAG---AAGGGGCACTCTGTTTTAATGAAAAGCGCATTTATTAGAAAGGTAAAGGGGCACT
BAC-51-15   GGGCACTTATCAGAGAAGAAAAGGAGTAGTTATAAAAAG-AGAAGAAGGGGCACTCTGTTTTAATGAAAAGCGCATTTATTAGAAAGGTAAAGGGGCACT
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                 156710    156720    156730    156740    156750    156760    156770    156780    156790    156800
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      TGTCAAAGTAAAACGAGCATCTCTCATATTTGAATAGGGGCAATTATCGGACGTGAAAGAAGCACTAGTCTTATCTGAAATGAAAAGGAGCAACTTCTTT
BAC-51-15   TGTCAAAGTAAAACGAGCATCTCTCATATTTGAATAGGGGCAATTATCGGACGTGAAAGAAGCACTAGTCTTATCTGAAATGAAAAGGAGCAACTTCTTT

                 156810    156820    156830    156840    156850    156860    156870    156880    156890    156900
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      TTACCTGAAAGGGGTCATTCACCAGAGCTGAAAAGAGGCATTTATGAAAAGGAGAAGGGGATCTTTGTTTTAATGGGG-AACTAACCATCAGGAAAAGGG
BAC-51-15   TTACCTGAAAGGGGTCATTCACCAGAGCTGAAAAGAGGC-TTTATGAAAAGGAGAAGGGGATCTTTGTTTTAATGGGGGAACTAACCATCAGGAAAAGGG

                 156910    156920    156930    156940    156950    156960    156970    156980    156990    157000
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      GCACCTCTCAAATGTTAATAAGGCAATTATCAGAGGTGAAGGGGGCACTTATTACAAGTGAAAAGGCGCACGTATCGTACCTGAAAAGAGGCACTTACTA
BAC-51-15   GCACCTCTCAAATGTTAATAAGGCAATTATCAGAGGTGAAGGGGGCACTTATTACAAGTGAAAAGGCGCACGTATCGTACCTGAAAAGAGGCACTTACTA

                 157010    157020    157030    157040    157050    157060    157070    157080    157090    157100
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      GACATTAAAAGAGGCACACAGCATGAGTAGTAAACACAGCCGTGGAAAAATGTAAGCAACACAAGTTCGTATATAGTCGTACGATGAGCGATTGAAACAA
BAC-51-15   GACATTAAAAGAGGCACACAGCATGAGTAGTAAACACAGCCGTG-AAAAATGTAAGCAACACAAGTTCGTATATAGTCGTACGATGAGCGATTGAAACAA

                 157110    157120    157130    157140    157150    157160    157170    157180    157190    157200
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CGAAGTCTGACGGATCTTTGGTCGAAGAGCACACCTGTCAGCACTGGCGTACTGGTAGGGGGCTAGGGG-AGGGGGGGGGG-CGCCATCCCCCAAATAAA
BAC-51-15   CGAAGTCTGACGGATCTTTGGTCGAAGAGCACACCTGTCAGCACTGGCGTACTGGTAGGGGGCTAGGGGGAGGGGGGGGGGGCGCCATCCCCCAAATAAA

                 157210    157220    157230    157240    157250    157260    157270    157280    157290    157300
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      ATTGAACCATGACATATTTTCAATTCCATATACAAGTGATGTATAAATGTTCGTGATATCACATGATTTTCAACAAAATGCGTTTTTCTCCATTTCTGTT
BAC-51-15   ATTGAACCATGACATATTTTCAATTCCATATACAAGTGATGTATAAATGTTCGTGATATCACATGATTTTCAACAAAATGCGTTTTTCTCCATTTCTGTT

                 157310    157320    157330    157340    157350    157360    157370    157380    157390    157400
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      GCAAACTGACACATTCCCGAAGCCAGGAAGAGCATATGTTTTTTTTATAATCACTAAGGGGCCTTATAGTGGCCACTAACAGTAACACTTGTATAAAAAA
BAC-51-15   GCAAACTGACACATTCCCGAAGCCAGGAAGAGCATATGTTTTTTTTATAATCACTAAGGGGCCTTATAGTGGCCACTAACAGTAACACTTGTATAAAAAA

                 157410    157420    157430    157440    157450    157460    157470    157480    157490    157500
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      ACACACTCATTCACAGTGTGAACACACAGTTCACACTGTGAACGGAGCCTTTTCACAGTGTGGACACTGTCACAATGTGGTAAA--CCACACAGTATTCA
BAC-51-15   ACACACTCATTCACAGTGTGAACACACAGTTCACACTGTGAACGGAGCCTTTTCACAGTGTGGACACTGTCACAATGTGGTAAAAACCACACAGTATTCA

                 157510    157520    157530    157540    157550    157560    157570    157580    157590    157600
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      CATTGTAAAATTCGATTTCACAGTGTGAATGTACCTGCTCACAGTGTGAAAATGATTTCACAGTGTGACCAAACTGTGATAAATAGATTTTCACAGTGTG
BAC-51-15   CATTGTAAAATTCGATTTCACAGTGTGAATGTACCTGCTCACAGTGTGAAAATGATTTCACAGTGTG---------------------------------
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Deletion 2, 5’ end, this is likely an assembly artifact

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                 157610    157620    157630    157640    157650    157660    157670    157680    157690    157700
            ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51      AATACCTTACGACATACATTTCACGGTGTGAACAGTAAATTTCTCAGTGTGGCCACTCTGTGAAAAATACTTCACATTGTGAAAAAATAGAATTCACAGT
BAC-51-15   ----------------------------------------------------------------------------------------------------
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                  157710    157720    157730    157740    157750    157760    157770    157780    157790    157800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATGGCCGCTGGAATACTAGTGTTTTGGATCGAGGCCAATCAAGTTTCCGTGATAACAGACGAATATGTACAACTACATGTTGACGGATGAGAACATAATT
BAC-51-15 --------------------------------------------------------------------------------------------------

                  157810    157820    157830    157840    157850    157860    157870    157880    157890    157900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GGAATGGCGGACATGGCCTGGTGAAGTTTCCCAACGGCTAGGATAGCTATCAGGCGAGGGTGTTGCCGGGCTGCTGCCGGGCTGTCATTGAATGGTGAGT
BAC-51-15 --------------------------------------------------------------------------------------------------
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Sequence (2,270 bp) in BAC-51 that deleted from BAC-51-15 is omitted, this is likely an assembly artifact

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                  159510    159520    159530    159540    159550    159560    159570    159580    159590    159600
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TCCTGGAGTATGCGTGCGTGCACAGTGCGGGATCCTCACACCCAGGACAACATACACAGGCTGGAAATGGTACAGCTCCGCAACGCCCAGTTTATCACTG
BAC-51-15 --------------------------------------------------------------------------------------------------

                  159610    159620    159630    159640    159650    159660    159670    159680    159690    159700
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GAGATCACCATCATACCAGCAGCATCGCACCAATGCTGCAACATCTCAAATGGCCATCTCTCCGAGAACGCAGGGCACGGTTTAAGATGGTGATAGTGTA
BAC-51-15 --------------------------------------------------------------------------------------------------

                  159710    159720    159730    159740    159750    159760    159770    159780    159790    159800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CGGAACTGTCAACCTGCACTCAGAGTTTCTCAAAATGTACCTTCTATCGGTGTTAACATCCTACCATGGTCATACCCAGTAATTCCAAATACAATTTACA
BAC-51-15 --------------------------------------------------------------------------------------------------

                  159810    159820    159830    159840    159850    159860    159870    159880    159890    159900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATGACTCTCGTATACCAGAAGTCATTCTTCCCCGATTCCATCATGCTTTGGAACTTGCTACCTGCTGGATTTGTCAACTGTACTTTCGCTAAAGCTTTTA
BAC-51-15 --------------------------------------CATCATGCTTTGGAACTTGCTACCTGCTGGATTTGTCAACTGTACTTTCGCTAAAGCTTTTA
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Deletion 2, 3’ end, this is likely an assembly artifact

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                  159910    159920    159930    159940    159950    159960    159970    159980    159990    160000
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AGCAAGAGGTACAAAATTTCCATCTCCGTTAGAAGGGGAAGAAGGATTTTTAACTGCTCATAGAATATTATAGAAAGTTTTAAATTCGCACTGTATATTC
BAC-51-15 AGCAAGAGGTACAAAATTTCCATCTCCGTTAGAAGGGGAAGAAGGATTTTTAACTGCTCATAGAATATTATAGAAAGTTTTAAATTCGCACTGTATATTC

                  160010    160020    160030    160040    160050    160060    160070    160080    160090    160100
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GCGACACCAGACCTGACGTACGTGATACACCATACGGTGGACTGGAGTGATATCTCAAGATCTGGGGGATGATAATTCGGGCTTTAACAAATTGTGTGAT
BAC-51-15 GCGACACCAGACCTGACGTACGTGATACACCATACGGTGGACTGGAGTGATATCTCAAGATCTGGGGGATGATAATTCGGGCTTTAACAAATTGTGTGAT

                  160110    160120    160130    160140    160150    160160    160170    160180    160190    160200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AGTGGAGGTATTATTTTTGACTGCACAGTCGGAAGTTCCATCTAGTTATAATATCCTAACATCAGTATATTATCGCTAGAACAAAAAATCATAAGTTACT
BAC-51-15 AGTGGAGGTATTATTTTTGACTGCACAGTCGGAAGTTCCATCTAGTTATAATATCCTAACATCAGTATATTATCGCTAGAACAAAAAATCATAAGTTACT
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                  160210    160220    160230    160240    160250    160260    160270    160280    160290    160300
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TATGTAGTTTAGGAAGTACATATATTTTTGTATGCCATTCTGCTTTTTTCTGTGCCACCGTATATAGAGTGTATGGTTATTTATTTGTAAAAAGATGAGC
BAC-51-15 TATGTAGTTTAGGAAGTACATATATTTTTGTATGCCATTCTGCTTTTTTCTGTGCCACCGTATATAGAGTGTATGGTTATTTATTTGTAAAAAGATGAGC

                  160310    160320    160330    160340    160350    160360    160370    160380    160390    160400
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AAAATCTGTTTTTTTTCTCATCTTCAGGTATTTATTAGTATTAGTTGTAGAAATTTATGTAGCCATAACAGTAAAACGTGTCTGCCTAAAATAGATTTGT
BAC-51-15 AAAATCTGTTTTTTTTCTCATCTTCAGGTATTTATTAGTATTAGTTGTAGAAATTTATGTAGCCATAACAGTAAAACGTGTCTGCCTAAAATAGATTTGT

                  160410    160420    160430    160440    160450    160460    160470    160480    160490    160500
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    TTTCAACTTTTTTTCAAGATGTATTGACAGAGATATTTTGAAACTTTTTATCATTTTAATAGGTTTATGAAGAACCTGTATGTGCCAAAGATTTTCTGAT
BAC-51-15 TTTCAACTTTTTTTCAAGATGTATTGACAGAGATATTTTGAAACTTTTTATCATTTTAATAGGTTTATGAAGAACCTGTATGTGCCAAAGATTTTCTGAT

                  160510    160520    160530    160540    160550    160560    160570    160580    160590    160600
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ACATTGCAATTGCCAAAGTTACATGTCATGTGTGGATATTCTATACTTGGAAAATGTGACTAGCCATACTAATGTATCTTCATAAATTTAATATACCTAC
BAC-51-15 ACATTGCAATTGCCAAAGTTACATGTCATGTGTGGATATTCTATACTTGGAAAATGTGACTAGCCATACTAATGTATCTTCATAAATTTAATATACCTAC

                  160610    160620    160630    160640    160650    160660    160670    160680    160690    160700
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AGAAATGTTTAAGAGATATTGCCAGAGATGCTCTAAAACTATTTT-ATTACTGACGTAACATGCTAATGTGCTTTTATTATGTTTTACGAGTGTCAGTAC
BAC-51-15 AGAAATGTTTAAGAGATATTGCCAGAGATGCTCTAAAACTATTTTTATTACTGACGTAACATGCTAATGTGCTTTTATTATGTTTTACGAGTGTCAGTAC

                  160710    160720    160730    160740    160750    160760    160770    160780    160790    160800
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GAGTTCAGGGAAATATTGATGATATGTGCAATTTTTGCCGTCACTGTAATTTATTCCTCGATGTTATACAGTGGAACCTCTATAACTCTATTTCACAAGT
BAC-51-15 GAGTTCAGGGAAATATTGATGATATGTGCAATTTTTGCCGTCACTGTAATTTATTCCTCGATGTTATACAGTGGAACCTCTATAACTCTATTTCACAAGT

                  160810    160820    160830    160840    160850    160860    160870    160880    160890    160900
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    CCACGTTTTTCTGTAATTCATTGTTTTAAACCCTTGTACAATAAGATATCTGATATAAAGAGGTCAATTTAGTGGACACCAATGTGCTCATTATAATGAG
BAC-51-15 CCACGTTTTTCTGTAATTCATTGTTTTAAACCCTTGTACAATAAGATATCTGATATAAAGAGGTCAATTTAGTGGACACCAATGTGCTCATTATAATGAG

                  160910    160920    160930    160940    160950    160960    160970    160980    160990    161000
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    GTTTCACTGTAGATAGCAAGTTCTGTTTTCAGAAGTATCTCTACTATCTAATTTAAACTGTTTGGATTCATTTGTCTTTGTTTTCATTCTGGTTCACATC
BAC-51-15 GTTTCACTGTAGATAGCAAGTTCTGTTTTCAGAAGTATCTCTACTATCTAATTTAAACTGTTTGGATTCATTTGTCTTTGTTTTCATTCTGGTTCACATC

                  161010    161020    161030    161040    161050    161060    161070    161080    161090    161100
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    ATGTTGGCATTCACAGAGTAAAATTTGTTTATCTGTAAGTATAGTATTACTGCAATCTTTGTATACCTAAGAGGTATATGTTCATAAGTCCTTTTAGCGA
BAC-51-15 ATGTTGGCATTCACAGAGTAAAATTTGTTTATCTGTAAGTATAGTATTACTGCAATCTTTGTATACCTAAGAGGTATATGTTCATAAGTCCTTTTAGCGA

                  161110    161120    161130    161140    161150    161160    161170    161180    161190    161200
          ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51    AAAGTACATCAATATAAGCTTTTGAAATACATTTTAAGTTACCTCATAAAGGCTATAACATGTATATGTTTAAGATTACTGTATTATTTTCAGATGTTTC
BAC-51-15 AAAGTACATCAATATAAGCTTTTGAAATACATTTTAAGTTACCTCATAAAGGCTATAACATGTATATGTTTAAGATTACTGTATTATTTTCAGATGTTTC
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                    161210    161220    161230    161240    161250    161260    161270    161280    161290    161300
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          GGGGGTATATTTCTATTTAAGTTGAGTTTATAAGTGAGACATTGATTATAAACCTTTTCTCCTTCGTATTTATACGTACTAAGCTCTACATGACTACATT
BAC-51-15       GGGGGTATATTTCTATTTAAGTTGAGTTTATAAGTGAGACATTGATTATAAACCTTTTCTCCTTCGTATTTATACGTACTAAGCTCTACATGACTACATT

                    161310    161320    161330    161340    161350    161360    161370    161380    161390    161400
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          TTCATAGTTTGAAATATTTCACACAGAATTCAAAAACTAAACTTGTATCACAGTGTGGTGGGCGTTTCACAGTGTGGTAATCTCATACAATATAATGTGT
BAC-51-15       TTCATAGTTTGAAATATTTCACACAGAATTCAAAAACTAAACTTGTATCACAGTGTGGTGGGCGTTTCACAGTGTGGTAATCTCATACAATATAATGTGT

                    161410    161420    161430    161440    161450    161460    161470    161480    161490    161500
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          CACAATGTAACGTAGTGGGCGTTTCACAGTGTGTTTGGTGTTTCACAGTGTGGTGGGCATTTCACTGTGTGAGTGTTCACAATATTAAATTGGGGCGTTT
BAC-51-15       CACAATGTAACGTAGTGGGCGTTTCACAGTGTGTTTGGTGTTTCACAGTGTGGTGGGCATTTCACTGTGTGAGTGTTCACAATATTAAATTGGGGCGTTT

                    161510    161520    161530    161540    161550    161560    161570    161580    161590    161600
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          TCACATTGTGGTTGCTTCGTTTTACAGTGTGGTTCACAGTGTGGATATCTACACTGAAACGACGCGACCACAATGTGAAAATACCCCAATGTAACATTGT
BAC-51-15       TCACATTGTGGTTGCTTCGTTTTACAGTGTGGTTCACAGTGTGGATATCTACACTGAAACGACGCGACCACAATGTGAAAATACCCCAATGTAACATTGT

                    161610    161620    161630    161640    161650    161660    161670    161680    161690    161700
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          GGGCGTTTCACAGTGTGTTTGCTGTTTCAAAGTGTGCTGGGCATTTCACTGTGTGAGTGTTTACAATGTTAAATTGGGGCGTTTCACATTGTGGTCGCTT
BAC-51-15       GGGCGTTTCACAGTGTGTTTGCTGTTTCAAAGTGTGCTGGGCATTTCACTGTGTGAGTGTTTACAATGTTAAATTGGGGCGTTTCACATTGTGGTCGCTT

                    161710    161720    161730    161740    161750    161760    161770    161780    161790    161800
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          CGTTTCACAGTTGGGTTCACAGTATGAAACGACGCGACCACAATGTGAAAACGCCCCAATTTAACATTGTGGGCGTTACACAGTGTGGTGGGCATTTCAC
BAC-51-15       CGTTTCACAGTTGGGTTCACAGTATGAAACGACGCGACCACAATGTGAAAACGCCCCAATTTAACATTGTGGGCGTTACACAGTGTGGTGGGCATTTCAC

                    161810    161820    161830    161840    161850    161860    161870    161880    161890    161900
                ....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|....|
BAC-51          TGTGTGAGTGTTCACAATGTTAAATTGGGGCGTTTTCACAGTGTGATTCACACTGTGTTTCACACTGTGAATGAGTGTTGTGGTCTGGTCTGGTCGCGAC
BAC-51-15       TGTGTGAGTGTTCACAATGTTAAATTGGGGCGTTTTCACAGTGTGATTCACACTGTGTTTCACACTGTGAATGAGTGTTGTGGTCTGGTCTGGTCGCGAC
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Alignment 2. BAC-52 and BAC-52-2b

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                 9910      9920      9930      9940      9950      9960      9970      9980      9990     10000
            ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52       CATACTGAAT ACTAAAAATT GTAAAATAAA -GATGTAGCT GAACTCATAC GAAGGTAATG TGCAATAATA AAGCCCCGAA TATTTTCCTG ACGCAGATGA
BAC52-2b    CATACTGAAT ACTAAAAAAT TGTAAAATAA AGATGTAGCT GAACTCATAC GAAGGTAATG TGCAATAATA AAGCCCCGAA TATTTTCCTG ACGCAGATGA

                10010     10020     10030     10040     10050     10060     10070     10080     10090     10100
            ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52       ATTGATCATT GTTATTGAAT CAATGAGGAA GACGAAATGA AGGGAAAAGG AATACAATGT ATATAGAGAT AGAGAGAGAG AGAGAGAGGG --ATAGAGAG
BAC52-2b    ATTGATCATT GTTATTGAAT CAATGAGGAA GACGAAATGA AGGGAAAAGG AATACAATGT ATATAGAGAT AGAGAGAGAG AGAGAGAGAG GGATAGAGAG
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                10110      10120      10130      10140      10150      10160      10170      10180      10190      10200
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     GGATATATAT ATATATATAT ATATATATAG AGAGAGAGAG AGAGAGAGAG AGA--GAATG AGATAGAGAG AAATAAAAGA GAGAGAGAGA GAA-GAAAGA
BAC52-2b  GGATATATAT ATATATATAT ATATATATAT AGAGAGAGAG AGAGAGAGAG AGA--GAATG AGATAGAGAG AAATAAAAGA GAGAGAGAGA GAAAGAAAGA

                10210      10220      10230      10240      10250      10260      10270      10280      10290      10300
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     GAGAGG-AGA GGTGAGATAG ATAGAAAGGG TAGAGAGAGA TGAAGAGACA AAAGAAATAG AGATATGTAG AGATAGAGAG AGCGAGAGGG AGAGACAAAG
BAC52-2b  GAGAGGGAGA GGTGAGATAG ATAGAAAGGG TAGAGAGAGA TGAAGAGACA AAAGAAATAG AGATATGTAG AGATAGAGAG AG--AGAGGG AGAGACAA-G

                10310      10320      10330      10340      10350      10360      10370      10380      10390      10400
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     AGACAGAGAG ACAAAGAGAA TATGAGAGTG AGATGGAGAG AGATATGAGT GTGAGAGAAA GAGG-AGAGA GAGAGAGAGA GAGAGAGAGA GAGAAGATAG
BAC52-2b  AGACAGAGAG ACAAAGAGAA TATGAGAGTG AGATGGAGAG AGATATGAGT GTGAGAGAAA GAGGGAGAGA GAGAGAGAGA GAGAGAGAGA GAGAAGATAG

                10410      10420      10430      10440      10450      10460      10470      10480      10490      10500
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     ATAAGATTAT TTATATATAC AATGCGTATA AAAAAAAGTG TGCCCAACTT TAGTAACCTC TACTTAAAAA TTTATAACAT ATAAACTGAT ATCCTGTCTA
BAC52-2b  ATAAGATTAT TTATATATAC AATGCGTATA AAAAAAAGTG TGCCCA-CTT TAGTAACCTC TACTTAAAAA TTTATAACAT ATAAACTGAT ATCCTGTCTA

                10510      10520      10530      10540      10550      10560      10570      10580      10590      10600
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     ATGATTTTAT ATTCATAATT GTACTGCCAT GGATGATTGA GCAGCAGGCT TTTTATAAAG TTTTTTCAAA ATCCTTTTTG AACCAAGTTT GGGCCGAAGC
BAC52-2b  ATGATTTTAT ATTCATAATT GTACTGCCAT GGATGATTGA GCAGCAGGCT TTTTATAAAG TTTTTTCAAA ATCCTTTTTG AACCAAGTTT GGGCCGAAGC

                10610      10620      10630      10640      10650      10660      10670      10680      10690      10700
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     AATGGATGCG GGTCAAAAGT CATTATGTGT GGGTTATCTC ATTCCATAAA CAATTGTTCT CTTATGAATA CTAACTATTA GGCTGTTGAA GATAAAAGGT
BAC52-2b  AATGGATGCG GGTCAAAAGT CATTATGTGT GGGTTATCTC ATTCCATAAA CAATTGTTCT CTTATGAATA CTAACTATTA GGCTGTTGAA GATAAAAGGT

                10710      10720      10730      10740      10750      10760      10770      10780      10790      10800
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     GTGAATATCA ACTCAAGCTA TAAAGGAAAT TTTATCACAA ACAAAATGTA TGATATTCTC TTTGTTATGA TGAATAAAAT CTTAAATTCA TTCGTATCCC
BAC52-2b  GTGAATATCA ACTCAAGCTA TAAAGGAAAT TTTATCACAA ACAAAATGTA TGATATTCTC TTTGTTATGA TGAATAAAAT CTTAAATTCA TTCGTATCCC

                10810      10820      10830      10840      10850      10860      10870      10880      10890      10900
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTGTTTAAGG AAACCTTTCT CAGTGATAAA AAACCGATCG GGACGTTATC TTCTTTATTA AAGTCTCATC GTAATAATAA TATGAAAAAT TTATATAGCG
BAC52-2b  TTGTTTAAGG AAACCTTTCT CAGTGATAAA AA--CGATCG GGACGTTATC TTCTTTATTA AAGTCTCATC GTAATAATAA TATGAAAAAT TTATATAGCG

                10910      10920      10930      10940      10950      10960      10970      10980      10990      11000
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CTTGTGACAA AAGTTTCAAA GCACTCGTGT GTTCGTTCCT GCATTTGGAT GTAGTAACCT TTGAGTTTTC ATTCGCTATT CAATATAAAC ACCATAATGT
BAC52-2b  CTTGTGACAA AAGTTTCAAA GCACTCGTGT GTTCGTTCCT GCATTTGGAT GTAGTAACCT TTGAGTTTTC ATTCGCTATT CAATATAAAC ACCATAATGT

                11010      11020      11030      11040      11050      11060      11070      11080      11090      11100
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     GCTCATTACG CGTGTGAAAT TGTGTAGAGG ACAAGTGAGC AGAGAGAAAT TAGATATAAT GAAACAAGAA GTTAGTTGGC TGTTCAAAAT AACTAAAAGT
BAC52-2b  GCTCATTACG CGTGTGAAAT TGTGTAGAGG ACAAGTGAGC AGAGAGAAAT TAGATATAAT GAAACAAGAA GTTAGTTGGC TGTTCAAAAT AACTAAAAGT
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                11110      11120      11130      11140      11150      11160      11170      11180      11190      11200
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTTCCCCGGG GTCGTAACAA GGTTCTGCGA AACAGGGGCG GATCTAGCCG GCGGCGAGGG TGGGGGGGGG GGGG----CA ATTTAAGAAA ATAGTTAGCG
BAC52-2b  TTTCCCCGGG GTCGTAACAA GGTTCTGCGA AACAGGGGCG GATCTAGCCG GCGGCGAGGG TGGGG-AGGG GGGGGGGGCA ATTTAAGAAA ATAGTTAGCG

                11210      11220      11230      11240      11250      11260      11270      11280      11290      11300
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CCGAATTAGC CGGCGAAAAA GCAATAGGGG GGG--TTAAT GAGCAATAAA TTGTTATTTC TTTTTTGCTC AACGGGGGGG GGGGTAGTGC ATGCGCGGAT
BAC52-2b  CCGAATTAGC CGGCGAAAAA GCAATAGGGG GGGGGTTAAT GAGCAATAAA TTGTTATTTC TTTTTTGCTC AACGGGGGGG GGGG------ ----------
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Deletion 1, 5' end

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                11310      11320      11330      11340      11350      11360      11370      11380      11390      11400
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CCAGGGGAGG CCCCCCGCCC CCCAAAAAAG TTTTTAATTT TTTGTTTTTT TAAATGGAGA CAGATAAAAA TTTAGTGCTC ACTACCACCC CCCCCCCCCC
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

                11410      11420      11430      11440      11450      11460      11470      11480      11490      11500
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CCCCCTACTG AGCAAAATTT ATCGGCCGGC ACGATTTTCG AATTTCACCA CGCTAAATTA AAAATTGATT TCAAATTTGG GTCTCCCCTA AGGAATCCTG
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

                11510      11520      11530      11540      11550      11560      11570      11580      11590      11600
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     GACCCGCGCC AGTAGTAAGC ACTATTTTTA TTTACTGAAC CCCCCCCCTT GAGCAAAAAC AAAAAGAAGG TAAGATTGTG GATACTATCT TTGTTTAAAT
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

                119410     119420     119430     119440     119450     119460     119470     119480     119490     119500
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TGCCTGAAAA AAAAATCACA GTAGAAATAT CCCCTGAAAA GGATTGATCA TCGTTTTCGA AATATTACCG GAGGTAGCTG GAAATTTGTT GATAAATATT
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

                119510     119520     119530     119540     119550     119560     119570     119580     119590     119600
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CCATGCCACA TGTGTAGTTT AATATTAGCC TACCCAATTT CGTTTATGTG TGCACTAAAA AGTCATTTGT CAGCATTTTC AGACATTCTG ATTAAATTTC
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- ----------

                119610     119620     119630     119640     119650     119660     119670     119680     119690     119700
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTGTAATTTT GATGAATTCA AACCTTACAC TTCTGTACTA AACAGGCGCG TACGCAGGAT TTTTTCAAGT GGGGGGGGGG GGGGGTTTAA CATTTTTAAA
BAC52-2b  ---------- ---------- ---------- ---------- ---------- ---------- ---------- ---------- --GGGTTTAA CATTTTTAAA
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Deletion 1, 3' end

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                119710     119720     119730     119740     119750     119760     119770     119780     119790     119800
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TCGGGCCGAA AATTTCGCAT CGACTCAGCC AGCCGCTGAA TAAGCGGGGG GGGGGGGGGG GG--AAGAGG ACACTTTTTC TTTTCTTTTT TTGGTCTCGA
BAC52-2b  TCGGGCCGAA AATTTCGCAT CGACTCAGCC AGCCGCTGAA TAAGCGGGGG GGGGGGGGGG GGGGAAGAGG ACACTTTTTC TTTTCTTTTT TTGGTCTCGA
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                 119810     119820     119830     119840     119850     119860     119870     119880     119890     119900
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     AATTTGAAAA TTTGACATTT TGCTCTGTTG GGGGGGGGGG GG-TAAGGTC GCCTTTTTTA GGTCAGCCAT GGGAATAGTT TTTTT-ATTA TTATTTTTTT
BAC52-2b  AATTTGAAAA TTTGACATTT TGCTCTGTTG GGGGGGGGGG GGGTAAGGTC GCCTTTTTTA GGTCAGCCAT GGGAATAGTT TTTTT-ATTA TTATTTTTTT

                 119910     119920     119930     119940     119950     119960     119970     119980     119990     120000
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTT-ATTATT CAAAAAAACA AAAAACAAAA CAAAACAAAG GGGGGGGGGG TTGTTTTTTT AGGGGGGTTT ATACACATAA AAATACCAAA GGGGGGGGG-
BAC52-2b  TT--ATTATT CAAAAAAACA AAAAACAAAA CAAAACAAAG GGGGGGGGGG TTGTTTTTTT AGGGGGGTTT ATACACATAA AAATACCAAA GGGGGGGGGG

                 120010     120020     120030     120040     120050     120060     120070     120080     120090     120100
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTAACCCCTA AACACCCCCC CCCCCCC--T GCGTACGCGC CTGGTACTAC ATACATATTA AACCTTTCTA TGTAAATTTT AGCCCATTTC TTTCAAAACG
BAC52-2b  TTAACCCCCT AAACACCCCC CCCCCCCCCT GCGTACGCGC CTGGTACTAC ATACATATTA AACCTTTCTA TGTAAATTTT AGCCCATTTC TTTCAAAACG

                 120110     120120     120130     120140     120150     120160     120170     120180     120190     120200
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TAATCACATG ACCAGTACTA GATTTATTTT GAAACATCCG TCTTGATGTT TATAATGATA GATGACGTTA TACGACCCTG TCTTATGGGG TACCTTGTCA
BAC52-2b  TAATCACATG ACCAGTACTA GATTTATTTT GAAACATCCG TCTTGATGTT TATAATGATA GATGACGTTA TACGACCCTG TCTTATGGGG TACCTTGTCA

                 120210     120220     120230     120240     120250     120260     120270     120280     120290     120300
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     TTCGTGCCAT TTTGGGGGGA GGGTGGAGAC CCGCAGACTT CCCCCTCTAG AACCACTACT GAATACCACT GAACGCAACT GAAGAATATG TTATCGTCAT
BAC52-2b  TTCGTGCCAT TTTGGGGGGA GGGTGGAGAC CCGCAGACTT CCCCCTCTAG AACCACTACT GAATACCACT GAACGCAACT GAAGAATATG TTATCGTCAT

                 120310     120320     120330     120340     120350     120360     120370     120380     120390     120400
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     AGAGGTCGGT TATACATTTT TTTCCATGCA GGTTTTCATT CACTGTGAGG TGCTCATTTG TAATGATAAT GACCCATCGT CTCGGTGTTC CCAGGGATGT
BAC52-2b  AGAGGTCGGT TATACATTTT TTTCCATGCA GGTTTTCATT CACTGTGAGG TGCTCATTTG TAATGATAAT GACCCATCGT CTCGGTGTTC CCAGGGATGT

                 120410     120420     120430     120440     120450     120460     120470     120480     120490     120500
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     AAGTCTAGAT TCAGACGTGG TAGCCGTCAC ACCCGTGGAG CAAGCTCCAC TCCTCATCTA ATCTCTAATG GACCTCTTTC AACTGCCCAC ACTATGCATG
BAC52-2b  AAGTCTAGAT TCAGACGTGG TAGCCGTCAC ACCCGTGGAG CAAGCTCCAC TCCTCATCTA ATCTCTAATG GACCTCTTTC AACTGCCCAC ACTATGCATG

                 120510     120520     120530     120540     120550     120560     120570     120580     120590     120600
          ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....| ....|....|
BAC52     CCGCAGAAGC ACACAACTCT GGTAATTACC TTTTTAAAGA ACACAACACT TAACTTTAAA GGTGTCGTGT TTGTCTAGTG AAAACGTCGT TGGACTGTGG
BAC52-2b  CCGCAGAAGC ACACAACTCT GGTAATTACC TTTTTAAAGA ACACAACACT TAACTTTAAA GGTGTCGTGT TTGTCTAGTG AAAACGTCGT TGGACTGTGG
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Reference

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