Human-specific RDs - donor and acceptor within 5 kb of each other

chr6:14395452-14395652

Alignment

Human, chimp, rhesus, MER21C consensus, donor

```
TGGACAATACCAGTGTAAGTAATTTAATCCAAGCCCTCTGCATTCTTGCAACCTTTGTTTTAGCCACAAGGTGATTCTATTTGGTGATT
Tggacaataccagtgtaagtaatttaatccaagctctctgcattcttgcaacctttgttttagccacaaggtgattctatttggtgatt
Tggataataccagtgtaagtaatttaatccaagccctctgcattct-gcaaccttcgtttcagccacaaggtgattccatttggtggct

GCATTCCAACAGcaattctctgacaccaactgggtgtcctacaattcaattcaatacattttgacactaactatccctatttaacatca
gcattccaacagcaattctctgacaccaactgggtgtcctacaattcaattcaatacatttggacactaactacccctatgtaacatca
gcatttcaacagcaattct--gacaccaactgggtgtcctacaattcaattcaatacattttgacattaactaccccgatgtaacatca

Gaacccacaaggtaaagggcaaggtccctaataatactgcccttactcacataccagctacaaacagggtccccaggctaccctcactt
Gaacccacaaggtaaagggcaaggtccctaataatactgcccttactcacataccagctacaaacagggtccccaggc-accctcactt
gaacccacaagttaaagggcaggatccctaacaatactgcccttactcacattctagctacaaagagggtccccaggctaccctcactt

Cagtct-gacttggcaacaaatttaggggttcccacaa-ctccctctggctcaagaattcaatagaatggcttaggaaactcaagtaagca
Cagtct-gacttggcaacaaatttaggggttcccacaa-ctccctctggctcaagaattcaatagaatggcttaggaaactcaagtaagca
Cagtct-gacttggcaacaaatttgggggttcccacaa-ctccctctggcttaagaattcaatagaatggcttatgaaactcaagtaagca

Ctatacttactgttaccattttattataaaggatacagatgaatagcaagagaaagagatacacagggcaaggccttgggggtagaggt
ctatacttactgttaccattttattataaaggatacagatgaatagcaagagaaagagatacacagggcaaggccttgggggtagaggt
ctatgcttactgttaccctttattataaaggatacagatgaatagcaagagaaagagatacacagggcaaggccttgggggtagaggc

ggggtgcagagcttccatgGACTCCTTATGGAAGCCTTCCAAGCCTCTGGTGGACAGGAAGCTGATCTCTCAGGTCCAGTATGTGTCAG
ggg-tgcagagcttccatg-----------------------------------------------------------------------
ggggtgcagagcttccatg-----------------------------------------------------------------------
ggggtgcagagcttccatg-----------------------------------------------------------------------
                                                CAAGCCTCTGGTGGACAGGAAGCTGATCTCTCAGGTCCAGTATGTGTCAG

TCCAAAGGCAGTTGAAGATAGGTAAGATTTGATAAAACAGCACAACAAGACAATGAGAATATATTGTGGACAAACTGTGTGCCTAGGAT
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
TCCAAAGGCAGTTGAAGATAGGTAAGATTTGATAAAACAGCACAACAAGACAATGAGAATATATTGTGGACAAACTGTGTGCCTAGGAT

CCTAGGGATTAGAAAAGATGTGGAAAACATCCAACAACTTAATtccaggtatgttgccttcccagcacatggatgcgttcat
-------------------------------------------tccaggtatgttgccttcccagcacatggatgtgttcat
-------------------------------------------Tccaggtgtgttgccttcccagcacat-gatgtgttcac
-------------------------------------------Tccaggtatgttgccttccca
CCTAGGGATTAGAAAAGATGTGGAAAACATCCAACAACTTAATTCCA

aacccagGaacttcttggagcctctctgtttcagcgttttattaaggttccattatgcagacatgatttatttaaataccggtcttggt
aacccaggaacttcttggagcttccctgtttcagtgttttattaaggtttcattatgtagacatgatttatttaaataccggtcttggt
aaaccaggaaattctcggagcctccctgtttcagcattttattaaggtttcattatatacacatgattgatgtaaatacgggtcttggt

gactgaacccaacctctctagtccttctaccttccccagaggttcagagtggggctgaaa-ttctaactctttaatcatatggttggttt
gactgaacccaacctct--agtccttctaccttccccagaggttcagagtggggctgaaa-ttctaactcttcaatcatgtggttggttt
gactgaacccaaactct--agtccttctaccttccccagaggttcagagtggggttgaaa-ttctaactcttcagtcatgtggttggttt
```

chr13:106474058-106474295
Alignment
Human, chimp, rhesus, LTR9B consensus, donor

```
CTGCTTGACTATGCCCCATCTCCCTTTCTCCCCTCATCTTCTCATCTAACCTATGGATTATATGCATCACCAAAGCTGGTCTATTGGCT
ctgcttgactatgccccatctccctttctcccctcatcttctcatctaacctatggattatatgcatcaccaaagctggtctattggct

GACCCTGCTTCtgttataggagttattaagaaattattttaggcagataaagaggtaaaggggtccttgggaagtttttgtttatttt
gaccctgcttccattataggagttattaagaaattattttaggcagataaagaggtaaaggggtccttgggaagtttttgtttatttt
            TGTTGTAGGAGTTATTAAGAAATTATTTTAGGCAGATAGAGAGGAAAAGGGGTCCTTGGGAAGTTTTCGTTTCTTTT

aAagcagctccaggaacatttcttgtctaccaggaaagcccca-gctcttgctgggctggaaagctccagaaacatttcttgtctaccagg
aAagcagctccaggaacatttcttgtctaccaggaaagcccca-gctcttgctgggctggaaagctccagaaacatttcttgtctaccagg
                                                                    agctccagaaacatttcttgtctaccagg
AAAGCAGCTCCAGAAACATTTCTTGTCTAGCAGAAAAGCCCCGGCTCTT----------------------------------------

Aaagccccagctgttgctgggctggaaagctttgatatgcaaatgcaggccattagaaactgggtccacccaaacatggc---tcccttcat
Aaagccccagctgttgctgggctggaaagctttgatatgcaaatgcaggccattagaaactgggtccacccaaacatggc---tcccttcat
Aaagcccctgctcttgctgggccagaaagttttcatatgcaaatgcaggccattagaaactgggtccacccaaacatggc---tcccctcgt
AGAGCC------------AGGCCGGCAANCTTTGATATGCAAATGCAGGCCATTAGAAACTGGGTCCACCCAA-CATGGCGATTCCCACCGT

Cctcctcttgcccttgcccccacaggtgcctggcaacatggctgcccccacatatccctatgtgtgtagaacatcatggcgccctgcat
ccacctcttgcccttgcccccacaggtgcctggcaacatggctgcccccacatatccctatgtgtgtagaacatcatggcgccctgcat
cctcttcttgcctgtccc--cacatgtgcctggcaacatggctgcccccacatatccccatgtgtgtagaatatcatggcgccctgtat
CGTCTTCTTGCCCTTGCCCC-ACATGTGCCTGGCAACATGGCCGCCCCCACATATCCCCACGTGTGTAGAACATCATGGCGCCCTGCAT

Ttgcatattaaaaggatagggtgggagggccaggtttttccactggctacatgag-tgacatgcctggtcaaaccaatcccctgagccct
Ttgcatattaaaaggatagggtgggagggccaggtttttccactggctacatgaa-tgacatgcctggtcaaaccaatcccctgagccct
ttgcatattaaaaggctagggtgggagggccaggtttttcca-tgggctacatgaatgacgtgcttggtcaaaccaatcccctgagcctt
TTGCATATTAAAAGGCTAGGGTGGGAGGGCCAG-TTTTTTCGCGGGCTACGTGAA-TGACATGCCTGGTCAAACCAATCCCCTGAGCCCT

atgcaaatcagacaccacctcctccagcttcatcgtataaGCAGCCACTTATTATTTGTCAACAACATGCGAAAGGCTCTTTTCTTTAT
atgcaaatcagacaccacctcctccagcttcatcgtataagcagccac----------------------------------------
atgcaaatcagacaccacctcctcctgcttcctcatataagcagccac----------------------------------------
ATGCAAATCAGACACCGCCTCCTCCAGCCTCCTCATATAACTGGCTGN----------------------------------------
                                                TTATTATTTGTCAACAACATGCGAAAGGCTCTTTTCTTTAT

GACCCTGTGGGAGAGTTCAGAGGATCAGAGTATGGATATGTGGCCACAAGCATAAAAATCTAGTTCCCTGGATTGACCTTGAGCAATTA
----------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------
GACCCTGTGGGAGAGTTCAGAGGATCGGAGTATGGATATGTGGCCACAAGCATAAAAATCTAGTTCCCTGGATTGACCTTGAGCAATTA

GTCTAATATCATTTCTTTACATGACCTTAATGATTATTCAGTTACAAAATAATCTTTCCTTTGCTTAAGTTTGTAAGTTTGTAACTTTG
----------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------
----------------------------------------------------------------------------------------
                                                                          ATTGTTTGTAACTTTG
GTCTAATATCATTTCTTTACATGACCTTAATGATTATTCAGTTACAAAATAATCTTTCCTTTGCTTAAGTTTGTAA-------------

CTTAAGTTTGTAtttcctctcgcact-aggttttctcttt--gttt--gagtcacccctccctctgtctctatacaggggagctgttttcttc
------------tttcctctcgcact-aggttttctcttt--gttt--gagtcacccctccctctttctctatacaggggagctgttttcttc
------------tttgctcccgcact-aggattttctcttt--gttt--gaatcccccctccctctttctata--caggggagctgttttcttc
------------TWTCCGC-CGCACNCGGGGTTTCCTCTCTCGGCTTTGGAGCC-CCCCTCCCTCTGTCTCTGTACAGGGGAGCTTCTTCCTTC
CTTAAGTT

Ttccttg---ctgctctcttgcctgttaaacttgtcgctccgctccttaaaacccctccacatgtgtccatgt----taatccta-tcagtgcaag-
Ttccttg---ctgctctcttgcctgttaaacttgtcgctcc-----ttaaaacccctccacatgtgtccatgt----taatccta-tcagtgcaag-
Ttccttc---ctcctctcctgtccgttaaacttgtcgctcc-----ttaaaaccactccacctgtgtctgtgt-tgttaatccta-tcagtgcaag-
TTTCTTCTCCCTTCTTTCTTGCCTATTAAACT-----CTCCGCTCCTTAAAACCACTCCACGTGTGTCCGTGTCGTTTTATCTAAATCGGCGCGAGG

accaagaaccctggtgttcctccagccatcggagccgtaacaCTTCTACTTTTTCCTTATTTTCTATTAATTACCCTAAAATATGCATGA
accaagaaccctggtgttcctccagccatcggagccgtaacacttctacttttttccttattttctattaattaccctaaaatatgcacga
accaagaaccctggtgttcctccaaccatcggagccgtatcacttctacttgtgccttactttctattaattaccctaaaatatgcatga
ACCAAGGACCCTGGTGTTCCTCCASTCATCGGAGCCGTATCA
```

AAGAGAGCAGAGATCGTTAAACATGCCAATTCCTTTCCCTAATCTCAAGTAA
Aagagagcagagatcgttaaacatgccaattcctttccctaatctcaagtaa
aagagagcagagatcattaaacatgccaactcctttccttcatctcaagtaa

Chr18:26242863-26243040
Alignment
Human, Chimp, Rhesus, LTR76 consensus, donor

```
Tggcctggcactctcaagtaggtctccatgtagctggaagctgctctggcaatcagagttaggccttggtgtcttgttgaatataaaaa
tggcctggcactctcaagtaggtctccatgtagctggaagctgctctggcaatcagagttaggccttggtgtcttgttgaatataaaaa
tggccttgtactctcaagtaggtctccatgtagctggaaactgctctggcaatcagagctaggccttggtgtcttgttgaatgtaaaaa

Atcccacataaccccactacctagaaaggtcactcttggatgattatgataaggtgggaaattaaagaaagaaagaaaaaatttttaaa
atcccacataaccccactacctggaaaggtcactcttggatgattatgatgaggtgggaaattaaagaaagaaagaaaaaaatttttta
tatcccacaaacccc-ctacctggaaaggtcactct--gacgattataatgaggtgggaaattaaagaaagaaagaaaaaaaatttta

Aaaaa-gacagaaataagctttcctgtattaacctgactttttccagagacagcaacaggcacagcccagacccagggaaagtcttgat
aaaaaagagagaaataagctttcctgtattaggctgactttttccagagacagcaacaggcacagcccagacccagggaaagtcttgat
aaaaaaggt-gaaataagctttcctgtattaggctgacttgtcccagagatagcaacaggcacagcctagacccaggaaaagtcttgat
               taagctttcctgtattaggctgacttgtcccagaggcagcaacaggcacagcccagacccaggaaaagtcttgat

aA-actatctctgatatgccctgaagactctcccagcacttcctaaacatagggaggagaaaaactaa-ttttcctctctcttatggtatg
aa-actatctctgatatgccctgaagactctcccagcactccctaaacatagggaggagaaaaactaa-ttttcctttctcttatggtatg
aatactatct--gatttgccctgaagactctcccagcactccactaacacagggtggagaaaaactaa-ttttactttctcttatgacatg
aatattatct--aatgtgctctggagactctcccagcactccctcaacatagggagaagaaaaaacaaattttcctttgttttatggtatg

aGgttagagattcatgttctctctaactagtaacttcatgtattctgttttatctaagcagtggagtgaaggtcataagccatctgagc
aggttagagattcatgttctctctaactagtaacttcatgtattctgttttatctaagcagtggagtgaaggtcataagccatctgagc
agtttagagattcctattctctgtaactagtaacttcaagtattgtattttatgtaagcagtggagtgaaggtcataagccatctgagc
agtttatagattcctgttctctgtaactagtaacttcaagtattctgttttatctaagcagtacagtgaaggtcatgagaagcctgagc

aggcctgaactacagccacctgggggccatagtgaaggtcatggCCTTCAAATTACA--GTTACCTAAGGCTTCCAAGCTTTCATTGAACT
aggcctgagctacagccacctgggggccatagtgaaggtcatgg----------
atgcctgagctacagccacctgggcgccatagggaaggtcatgg----------
aggcctgaactacagccacctgggcaccatagtgaaggttatgr----------
                                              TTCAAATTACACAGTTACCTAAGGCTTCCAAGCTTTCATTGAACT

AATCTCTGTTTTACCTGCTACTATTTTCAATATTTTTAATCGTTATGCCTAGTTATTCTTCAAATCTTGAAGACATTAAGATGATATCT
----------
----------
----------
AATCTCTGTTTTACCTGCTACTATTTTCAATATTTTTAATCGTTATGCCTAGTTATTCTTCAAATCTTGAAGACATTAAGATGATATCT

TGTTGGGATGAATGATCTTTAAGTTTTCTGTGCAGCTTTTCGGAC-ataagc-tgtgcta--ggcactagggcaaacctagataacagccat
----------aataagc-catgcta--ggcactagggcaaacctagataacagccat
----------aataagc-catgctg--ggcactaaggcaaacgtagataatggtcat
----------Gataagcccgtgcaaaaggctctagagcaaacctagataacagacat
TGTTGGCATGAATGATCTTTAAGTTTTCTGTGCAGCTTTTCGGAC-ATAA

Ctgggctacatagcaacggtcatgtgtaatcctgagttatgcacctgtcacattttgattaactgtctttgttctgcctttgtatcc-tc
Ctgggctacatagcaacggtcatgtgtaatcctgagttatgcacctgtcacaatttgattaactgtctttgttctgcctttgtatcc-tc
Ctgggctacatagcaatggtcatgtgtaatcctgagttatgcacttgtcacaatttgattaactgtctttcttctgcctttgtatcc-tc
Ctgggttgcatagcaatggtcatgtgtaatcctgagttatgaacctgtcacaatttgattaactgtctttgttctgcctctgtatccct-

Actttcgtgccactgtaaacttgtttcaggctagcccaccccctttt-tgaagtgtgtataaaagtcaagtgctgtctttgttctgggcc
actttcatgccactgtaaacttgtttcaggctagcccaccccgtttt-tgaagtgtgtataaaaatcaagtgctgtctttgttctgggcc
actttcgtgccactgtaaactttttcaggctagcccactcccttt-tgaagtgtgtataaaagtcaagtgctgtctttgtcctgggcc
gctttcatgccactgtaagcttgcttcaagctagcccaccccctttgtgaagtgtgtataaaagtcaagtgctgtctttgttctgggcc

cagtctttggatgttaagtgtgctgggtctgagtgcactcaataaagctcctcctatatacaccccaaggtctctctggccctcctgat
cagtctttggatgttaagtgtgctgggtctgagtgcactcaataaagttcctactatatacaccccaaggtctctctggtcctcctgat
cagtctttgtatgttaagtgtgctggatctgagttcactcaataaagatcctcctgtatacaccccaaggtctctctggtcctcctgat
cagtctttggatgttaagtctgctgggtctgagtgcactcaataaaagatcctcctgtttcaccccgaggtctctctcgtcctcctgat

tcccacaacaATGACGGTAGATGAAAACAAAACTACTTCCTAATTTTGTcaaaacataaacaaaactgaagtcaccacataaagtgcac
tcccgcaacaatgacggtagataaaaacaaaactacttcctaattttgtcaaaacataaacaaaactgaagtcaccatataaagtgcac
tcccacaacaatgatagtagatgaaaacaaaactacttcccaatcttgccaaaacataaacaaaactgaagtcaccatatgaagtgcac
tccygcaaca

aaacccc-ttattctgactaacatgagtctc--acctttgccaatcacaaccattagtcttactctattctttttgccttttagacaagaat
aaacccc-ttattctgactaacatgagtctc--acctttgccaatcacaaccattagtcttactctattctttttgccttttagacaagaat
```

aaacccccttattctgactaacatgagtgtctcacctttgccaatcacaaccattagtgttactctattctttttgccttctagacaagaat

Chr2:235427735-235428072
Alignment
Human, Chimp, Rhesus, MER46C consensus, donor

```
ATTCCTTACTTTACAACAAAGTATTCCTTACTTTAGATGAGTATATTATTAAAGATTTATTATGggtccacagctccttatctgcaatg
Attccttactttacaacaaagtattccttactttagatgagtatattattaaagatttattatgggtccacagctccttatctgcaatg
                      tattccttcctttagatgagt-tattattaaagatgtattatgggcccacaactccttatgtgcaatg
                                                                ggtccacaatcccttatccgcaatt

Gcaaaatccaaatgctctggaaaacaaaaagtgttcttttctacatttgacgtaaatttgtttgtatgcaaatctgaccttaactaaca
gcaaaatccaaatgctctggaaaacaaaaagtgttcttttctacatttgacgtaaatttgtttgtatgcaaatctgaccttaactgaca
gcaaaattcaaatactctggaaaaaaa---gtgttcttttctacatttgacataaatttgtttgtatgtaaatctgaccttaactgaca
ccgaaatccaaaaagctctgaaaaccgaaagtttttcataagtttggcacgaactcatttggcggca-aaacctgacctgaactgata


tgaggttattcaaagtctatatttatcctgcatggtgtgaatattcataggtttcactgtagagatattaatgtatttaattaATATCC
tgaggttattcaaagtctatatttatcctgcatggtgtgaatattcatacgtttcactgtagagatattaatgtatttaatta------
tgaggttattcatagtctgtatttatcctgcatggtgtgaatattcataagtttcactgtagaaatattaatgtatttaatta------
tgaggctatttatagtctttatttatcccacttagtgtgaatattcatatatttcgctgcagaaatattaatgtgtttgatta------
                                                                                    ATATCC

CATGGTGAAGCCACCATCACCCCAATCAGGGCTGTCTTCATGATAACTTCTGAGTGACTGGGACCATTTCTCTACCCTGAAGGCCCCTT
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
CATGGTGAAGCCACCATCACCCCAATCAGGGCTGTCTTCATGATAACTTCTGAGTGACTGTGACCATTTCTCTACCCTGAAGGCCCCTT

CAGCTCCTCAAACTCAATGCATCTAATCCAAGAGTCTTTTACCCTGAAACCAGCTCCCCTTAGGGGTCTGACAACAGGACCTTCCTTCT
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
CAGCTCCTCAAACTCAATGCATCTAATCCAAGAGTCTTTTACCCTGAAACCACCTCCCCTTAGGGGTCTGACAACAGGACCTTCCCTCT

CACTGGCATGAGACCTCAGGGCCCATCTGCCCTTCCTCCCTCTCTCACCAAGCCCAGAGTCCCTGTGATGCCTCACTGCCTTGGCTCAC
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
--------------------------------------------------------------------------------------------
CACTGGCATGAGACCTCAGGGCCCATCTGCCCTTCCTTCCTCTCTCACCAAGCCCAGAGTCCCTGTGATGCCTCACTGCCTTGGCTCAC

CCTTCTTTCCCATGCCCACCACCACAACCACATGCCTCTCCTCACACCCTGATTCCTCAC-GGTCAG---------gcctcaga
-------------------------------------------------------------------caggctgtggcctcaga
-------------------------------------------------------------------caggctgtggcctcaga
-------------------------------------------------------------------Cggggtgctgccccaga
CCTTCTTTCCCATGCCCACGACCACAACCACATGCCTCTCCTCACACCCTGATTCCTCACAGGTCT----------GCCT

cctcactagggagttTtacataacatatgttttgtgcagtgtattgctttttaaaatctcaaaaattctgaaatct
cctcactagggagttttacataacatatgttgtgtgcagtgtattgctttttaaaatctcaaaaattctgaaatct
cctcactagggagttttatataacatatgttgtgtgcagtgtattgctttttaaaatctcaaaaattctggaatct
ccccgctgggggtgttatataatatacggtatatgcactatattacctttct-aaaatccgaaaaattctgaattct

gaaata--tctg-ccttaagatttttaactaagggctaatggac---TGGTACAAGTTTATTGCAATAAACTTTCAATAGTATTTTAAATATATC
gaaata--tctg-ccttaagatttttaactaagggctaatggac---tggtacaagtttattgcaataaactttcaatagtattttaaatatatc
gaaaca--tctg-ccttaagatttttaactaaggggtattggat---tggtataagtttattacaataaactttcaatagtattttaaataagtc
gaaacacatctggccccaagggtttcggataagggattgtggacctg

TTTTAAAATCTATAGGAACACCCTATGTAAAGTAATG
ttttaaaatctataggaacaccctatgtaaagtaatg
ttttaaaatctataggaacacactatgaaaagtaatg
```

Chr5:5754098-5754240
Alignment
Human, Chimp, Rhesus, L1ME2 consensus, donor

```
Tgggcacagtggctcactcctgtaatccctgcactttgggaggttgaggtgagaggatcacttgaggctgggagctcaagaaaatgttc
tgggcacagtggctcgctcctgtaatccctgcactttgggaggttgaggtgagaggatcacttgaggctgggagctcaagaaaatgttc
tgggcacagtggctcactcctgtaatcccagcactttgggaggttgaggtgagaggatcactcgaggctgggagttcaagaaaatgtgc

tggcagctttctgatgaaactaaacaatcttagctgttctgtaactaggcatttacccaaaagaaatgaagatgtatgttcaTTTCTTC
tggcagctttctgatgaaactaaacaatcttagctgttctgtaactaggcatttacccaaaagaaatgaagatgtatgttca-------
tggcagctttctgatgaaactaaaccatcttagctgttctgtagctaggcatttacccaaaagaaatgaagatgtatgttca-------
                                          ctaggtatttacccaagagaaatgaaaacatatgtcca-------
                                                                              TCA------C

TGACCTACCTCCAAGGATCT---TCTCCAACCAAATCCTGTTCTTCTTCCTCTCTGAACACTCCTGGGGCTTTAGCACTTCATCCGTCC
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------
TGACCTACCTCCAAGGATCTTCTTCTCCAGCCAAATCCTGTTCTTCTTCCTCTTTGAACACTCCTGGGGCTTTAGCACTTCATCCGTCC

TCATCTGCATGGATGTCCTCCTGGCTGGTCTGTCCTGTGAAAGCCTCTTGCact----------tgcacaagaatgctcataacagttatattcaaaat
-----------------------------------------------------caaaaacacttgcacaagaatgctcataacagttatattcaaaat
-----------------------------------------------------cagaaacacttgcacaagaatgctcataagagttatattcaaaac
-----------------------------------------------------caaaaagacttgtacawgaatgttcatagcagctttattcataat
TCATCCGCATGGATGTCCTCCTGGCTGGTCTGTCCTGTGAAAGCCTCTTCCACT

agaCaaaaactggaaatggtttaagtgatcatcaataaaagaagaagtgaacaaactgatacattcatacaatagaattttcctcagca
agacaaaaactggaaatggtttaagtgatcatcaataaaagaagaagtgaacaaattgatacattcatacaatagaattttcctcagca
agacaaaaactggaaatggcttaagtgatcatcaataaaagaa---gtgaacaaattgatacattcatacaatggaatttgactcagca
agccaaaaactggaaa

aaaAagaaacaaattattgatatatgcaagacatgtatgattggcaaataacattatgcagtgaaacataagtcttacatgaaagagta
aaaaagaaacaaattattgatatatgcaagacatgtatgattggcaaataacattatgcagtgaaacataagtcttacatgaaagagta
aaaaagaaa----ttattgatatatgcaaagcatgtacgattggcaaacaatgttatgcagtgaaaaataagtcttacactaaagagta

--catTttatatgaagtttctatagcaggcaaaactaatctatgatagaaaaa-tcagaatagtggttacatccttgggatgtaggtgaggg
--catttatatgaagtttctatagcaggcaaaactaatctatgatagaaaaa-tcagaatagtggttacatccttgggatgtaggtgaggg
--cattatagatgaagtttctatagcaggcaacactaatctatgatagaaaaa-tcagaatagtggttacacccttgggatgtaggtgaagg

ctgGctgagaagcaatatcaaggcctttctggggagatagtgacattctgtaccttgagagaggttgggtaacacaagttcatatattt
ctggctgagaagcaatatcaaggcctttctggggagatagtgacattctgtaccttgagagaggttgggtaacacaagttcatatattt
ctggctgagaagcagcatcaaggtctttctggggagatagtgacattctgtaccttgacagaggttgggtaacagaagttcatatattt

atcaaaactcattgaatgtatacttaagacttgcatgtttcattatatttaaattTATAGCAAGAGAAAAAA--TGTGTATATGAATATTA
atcaaatctcattgaatgtatacttaagacttgcatgtttcattatatttaaatttatagcaagagaaaaaa--tgtgtatatgaatatta
gtcaaatctcattgaatgtacacttaagacttgtgtgtttcattatatttaaatgtacggcaagagaaaaaaaatgtgtatatgaatatta

AACTTCAATTAATCCTATAAATACTGAAGTTTTTAGG
aacttcaattaatcctataaatactgaagtttttagg
aatttcagttaatcctataaatactgaagtttttagg
```

chr2:47268768-47268859
Alignment
Human, Chimp, Rhesus, AluJb consensus, donor

```
ATAGCAACTGCGGTAACCCCCATCTTCCACCCTTATCACCTCTTCGTGTGTGTTttattattttgttgttgttgttgtttcttgagac
             Taacccccatcttccacccttatcacctcttcgtgtgtgtttttattattttgttgttgttgttgtttcttgagac
                                       Tcttcatgggtgtttttattattttgttgttgttgttgtttcttgagac

Agggtcttactccagttgcccaggctggagtacaatggcataatcttggatcttggttcactgtatccttgacctcctgggctcagatg
agggtcttactccagttgcccaggctggagtgcaatggcataatcttggatcttggttcactgtatccttgacctcctgggctcagatg
agggtctcacttcagttgcccaggctagagtgcaatggcataatcttagatcttggttcactgtatccttgacctcctgggctcagatg
                                                                tcactgcagcctcgacctcccgggctcaagcg

Attctcccacctcagcctcctgagtagctgggactacaggagtgcaataccacatccggctaatttttgtatttgtagtagagacggg
attctcccacctcagcctcctgagtagctgggactacaggagtgcaataccacgtccggctgatttttgtatttgtagaagagacggg
attctcccacctcagcctcctgagtagctgggactacaggagtgcaataccacatctggctaatttttgtatttttagtagagatgat
atcctcctgcctcagcctcccgagtagctgggactacaggcgcgcgccaccacgcccggctaatttttgtatttttt-gtagagacggg

gtttcgccatgttgtacagactgatctcaaacttctggtctcTCTGCCAAAGGCAGTTATAATTGCATGCTGCTGGCTGAGGGTCCATG
gtttcgccatgttgtacagactgatctcaaacttc-------------------------------------------------------
gttttgccatgttgtacaggctgatctcaaacttctgggtc-------------------------------------------------
gtttcaccatgttgcccaggctggtctcgaactcctgggctc------------------------------------------------
                                     TGGTCTCTCTGCCAAAGGCAGTTATAATTGCATCCTGCTGGCTGAGGGTCCATG

CTTTTCTTTTGTCCGGGCCCTGACCATCTCAACCTTTCACCTGCCGctcaaacttctgggttcaagcgatctgcctctgcctcctaaaa
-------------------------------------------ctcaaacTtccgggttcaagcgatctgcctctgcctcctaaaa
-------------------------------------------------------------aagcaatctgcctctgcctcctaaaa
-------------------------------------------------------------Aagtgatcctcccgcctcggcctcccaaag
CTTTTCTTTTGTCCAGGCCCTGCCCATCTCAACCTTTCACCTGCCGCT

tgctgggattacaggcgtgagccaccatgcccagGCTGTGTGCATTTTTAATCACTTCTCATTATG
tgctgggattacaggcgtgagccaccgtgcccaggctgtgtgcatttttaatcacttctcattatg
tgctgggattacaggcataagccaccatgcccaggctatgtgcgtttttaatcacttctcattatg
tgctgggattacaggcgtgagccaccgcgcccggcc
```

chr5:103039643-103039927
Alignment
Human, Chimp, Rhesus, MER5A1 consensus, donor

```
TCAAAATTTTTTGTTATGTTTTGGCAAGGGAATGTAATGATATATAGCCT
TCAAAATTTTTTGTTATGTTTTGGCAAGGGAATGTAATGATATATAGCCT
TCAAAATTTTTTGTTATGTggTGGCAAGGGAATGTAATGATATAaAGCCT

GAGGTCTGAAGTGATATAACCTGTTATTGCAGATAATACAACATTTACAT
GAGGTCTGAAGTGATATAACCTGTTATTGCAGATAATACAACATTTACAT
GAGGTCTGAAGTG-TATAACaTGTTtTTGCAGATAATAtAACATTTACAT

TACACGGTATGTATAAAACATATGTATATTACTTAATTTAAATATTAGGC
TACACGGTATGTATAAAACATATGTATATTACTTAATTTAAATATTAGGC
TAtACcGTgTGTATAAAACATATGTATATTACTTAATTTAAATATTAGGC

CGTGATTTTAAAATATGACTGTTCTATATGTCAGGCTCCAGTTTAGGTTG
tGTGATTTTAAAATATGACTGTTCTATATGTCAGGCTCCAGTTcAGGTTG
aGTGATTTTAAAATATGACTGTTCTgTATGcCAGGCTCCAGTTTAGGTTG

TTTAGGGCCTCCTtactgaaattttggcctacaaaccagcatgcagcaag---------
TTTAGGGCCTCCTTACTGAAATTTTGGCCTACAAACCAGCATGCAGCAAG---------
TTTAGGaCCTCCTTACTGAAATTTTGGCCTgCAAACCAGCATGtAGCAtG---------
             tactcaaagtgtggtccacggaccagca-gcatca-gcatcacctg

ggtgcttgccagaagtgcagaatttcaggttcc--------TTTTTAGCTCTGTGTGC
GGTGCTTGCCAGAAGTGCAGAATTTCAGGTTCC--------tttt-agc---------
GGTGCTTGCCAGAAGTGCAGAATTTCAGGT-cc--------gtttagc---------
ggagcttgttagaaatgcagaatctcgggccccaccccaga----------------
                                                  GCACTGTGTGC
CATCTTTTTGTAATCTCAGGTTTTATAGTCTCCTTTATCAATTGTAAGAG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
CATCTTTTTGTAATCTCAGGTTTTATAGTCTCCTTTATCAATTGTAAGAG

GTGTGGGAGGCTAGTTTATATCTTTCAGAAGGGACACCTGGGTCAACAGG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
GTGTGGGAGGCTAGTTTATATCTTTCAGAAGGGACACCTGGGTCAACAGG

TTTAAAGAACTTTGAAAGTTATTTGTATCTTTGCCAGTAACTGCATTGTG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TTTAAAGAACTTTGAAAGTTATTTGTATCTTTGCCAGTAACTGCATTGTG

TGAGAATCGCTGTAGCTGGTGTGTAAACTACCTTTGAATAAGAGGCAGCA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TGAGAATCGCTGTAGCTGGTGTGTAAACTACCTTTGAATAAGAGGCAGCA

AATGGAATTTATCAGGGGACAATGCCCTTTGTTTAGAAGGAGCAACAAAA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
AATGGAATTTATCAGGGGACAATGCCCTTTGTTTAGAAGGAGCAACAAAA

GATGAATAAAAGGACACAGccagtctt----ctgaatcagaatcagcaatgtaa
---------------------------cctaCTGAATCAGAATCAGCAATGTAA
---------------------------cctaCTGAATtAGAATCAGCAATGTAA
---------------------------cctactgaatcagaatctgcgtttta-
```

GATGAATAAAAGGACACAGCCAGTCTT----***CTG***

tc-atgtctccaggggattcacaagcacactaaagtttgagacgcaTGGGC
TC-ATGTCTCCAGGGGATTCACAAGCAtACTAAAGTTTGAGAaGCATGGGC
TC-AgGTCTCCAGGGGATTCACAAGCAtACTAAAGTTTGAGAaGCATGGGC
acaagatccccaggtgattcatatgcacgttaaagtttgagaagca

TTGGATGACTCCTTTATAGTAA-GGTGAGTCGCCTCTTAAAAAGTCCTGTG
TTGGATGACTCCTTTATAGTAA-GGTGAGTCGCCTCTTAAAAAGTCCTGTG
TTGGATGACTCCTTTATAGTAAaGGTGAGTtGCCTCTTAAAAAGTCCTGTG

CATTTTTTACGGCCCAAGTCAGTAGTTTCTTGGCTAAATATGACGGTAAT
CATTTTTTACGGCCCAAGTCAGTAGTTTCTTGGCTAAATATGACaGTAAT
CATTgTTTgCGGCCCtAGTCAGTAGTTTCTTGaCTAAATATGAgGGTAAT

AACTGATTCTACAGAGGGCCTAAGAGTTAATGTGTCTTCTATAGCACCTG
AACTGATTCTACAGAGGGCgTAAGAGTTAATGTGTCTTCTATAGCACCTG
AACTGATTCTACAGAGGGtgTgAGAGTTAATGTGTCTTCTgTAGCACCTG

CCTTTCTATCATGCACAACTAAGGAAAATACTGAGAATGAAGACAGACTC
CCTTTCTATCATGCACAACTAAGGAAAATACTGAGAATGAAGACAGACTC
CCTTTCTATCATGCcCAACTAAGGAAAAcACTGAGAATGAAGACAGACTC

chr15:31987740-31988005
Alignment
Human, Chimp, Rhesus, L1MB3 consensus, donor

```
aaaagacaaatgacaatgcaggagaaatacttgcaacacatcagataaaa
AAAAGACAAATGACAATGCAGGAGAAATACTTGCAACACATCAGATAAAA
AAAAGACAAATGACAATGCAGGAGAAATAtTTGCAACACATCAGATAAAA

ggctatttttcaTTTACATTGTATATTTTACAAATCACTTATTAAAAAAT
GGCTATTTTTCATTTACATTGTATATTTTACAAATCACTTATTAAAAAAT
GGCTATTTTTCATTTACATTGTATAcTTTACAgcTCACTTATTtAAAAAT

TTGTattgtgataagatatacataaaatttacgattttagtcacttctaa
TTGTATTGTGATAAGATATACATAAAATTTACcATTTTAGTCACTTtTAA
TTGTATTGgGATAAaATATACATAAAAcTTACcATTTTAGTCcCTTtTAA
                    cataaaatttaccattttaaccatttttaa

gtatacagtccggtggcattaagtacattcacattattgtgtaactatca
GTATACAGTCCGGTGGCATTAAGTACATTCACATTATTGTGTAACTATCA
GTATACAGTCCaGTGGCATTAAGTACATTCACATTATTGTGTAAgcATCA
gtgtacagttcagtggcattaagtacattcacattgttgtgcaaccatca

ccactatctgtccctagaactcatttatcatcccaaactaaaactcctta
CCACTATCTGTCCCcAGAACTCATTTATCATCCCAAACTAAAACTCCTTA
CCACcATCTGTCCCcAGAACTCATTTATCATCCCAAACTAAAACTCCTTA
ccaccatccatctccagaacttttcatcttcccaaactgaaactctgta

cccattacacataacCAGGATTCTTTTACTTCGAAAGCTGAATTGCTAAT
CCCATTACAaATAAC-----------------------------------
CgCATTACACATAAC-----------------------------------
cccattaaacataac-----------------------------------
           TAACCAGGATTCTTTTACTTCGAAAGCTGAATTGCTAAT

TCCAAAGAACATTGTGTTGACAGTGCCTGCAATTAAGAAGCCATCACCTT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TCCAAAGAACATTGTGTTGACAGTGCCTGCAATTAAGAAGCCATCACCTT

TGTGTTATGACAGTTTTCTTCCTTACTACAAGCATTATTGTTACCTGGAA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TGTGTTATGACAGTTTTCTTCCTTACTACAAGCATTATTGTTACCTGGAA

TAAAAGATTCCTGCTTTTTTGTTCACATCTTGAGCTGGTTATGAGTATTA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TAAAAGATTCCTGCTTTTTTGTTCACATCTTGAGCTGGTTATGAGTATTA

ACCCATGTCACTGTTGGTACATTTATAGAGTATAAAATCACTCTATAATT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
ACCCATGTCACTGTTGGTACATTTATAGAGTATAAAATCACTCTATAATT

GCAAATGGGCAAATAGGTTATTCCCATGAGAA------------ctcaccccgaaccc-tggc
--------------------------------tccccattctctCTCACCCCGAACCC-TGGC
--------------------------------tccccattctctCTCACCCCGAACCC-TGGC
--------------------------------tccccattccccctcccccccagcccctggc
GCAAATGGGCAAATAGGTTATTCCCATGAGAA------------CTC

aactaccattctattttctgtctctgtgaatctgaccattctgggtgact
```

AACTACCATTCTATTTTCTGTCTCTGTGAATCTGACCATTCTGGGTGACT
AACTACCATTCTATTTTCTGTCTCTGTGAATCTGACCATTCTGGGTGACT
aaccaccattctactttctgtctctatgaatttgactactctaggtacct

catataagtagaatcatacagtatttttctttttttt-ctgactggcttat
CATATAAGTAGAATCATACAGTATTTTTCTTTTTTTTtCTGACTGGCTTAT
tATATAAGTcGAATCATACAGTATTTTTCTTTTTTT--CTGACTGGaTTAT
catataagtggaatcatacagtatttgtcctttt----gtgactggcttat

tt-----gtctcagcaaggttcatccttgttgtcgc-atgtttccgaatttccttt
tttatTTGTCTCAGCAAGGTTCATCCTTGTTGTCGC-ATGTTTCCGAATTTCCTTT
TT-----GaCTCAGCAAGGTTtATCCTTGTTGTCGCcATGTgTCtGAATTTCCTTT

ctgaagtctgagtaataatccactgtatcacatttattcatttatccatg
CTGAAGTCTGAaTAATAATCCACTGcATCACATTTATTCATTTATCCATc
CTtAAGTCTGAaTAATAATCCACTGcATCACATgTATTCATT-ATCCATc

aataaacacttaggttgtttttacttctttgctattgtgtataaATCAAT
AATAAACACTTAGaTTGaTTTTACTTCTTTGCTATTGTGTATAAATCAAT
AATAAACAtTTAGGTTGTTTcTACcTCTTTGCTAcTGTGTATgAATCAAT

ATTTTAAAAAGACAAATAATTCAGTTAATGGAGAAACTACAAGAGGGCTG
ATTTTAAAAAGACAAATAATTCAGTTAATGGAGAAACTACAAGAGGGCTG
ATTTTAAAAAGACAAATAATTCAGTTcATGGAGAAACTACAgcAGGGCTG

GGGCTTGATTCATACAGAAGTCTGCAGGAGAAAAGACAAACCAGCAA
GGGCTTGATTCATgCAGAAGTCTGCAGGAGAAAAGACAAACCAGCAA
GGGCcTGATTCATgCAGAAGTCTGCAGGgGAAAAGACAcACCAGCgA

chr10:96228347-96228586
Alignment
Human, Chimp, Rhesus, AluSc consensus, donor

```
ATCAGGCCTATTTGGTGGAAGCCAGTAGGTGGTTAGAAATCTTAAAGGCG
ATCAGGCCTATTTGGTGGAAGCCAGTAGGTGGTTAGAAATCTTAAAGGCG
ATCAGGCCTATTTGGTGGAAGCtAGcAGGTGGTTAGAAATCTTAAAGGCG

GGATTTGTAGTTAAACTGGAAATGTAggccaggcgtggtggctcagtcct
GGATTTGTAGTTAAACTGGAAATGTAGGCCAGGCGTGG---CTCAGgCCT
GGATTTGTAGTTAAACTGGAAATGTAGGCtgGatGTGGTGGCTCAcgCCT
                          ggccgggcgcggtggctcacgcct

gtaatcccagcactttgggaggcagaggcaggggcagaccatgaggtcaa
GTAATCCCAGCACTTTGGGAGGCAGAGGCgGGGGCAGACCATGAGGTCAA
GTAATCCCAGCACTTTGGGAGGCcGAGGCAGGGGCAGAtCATGAGtTCAA
gtaatcccagcactttgggaggccgaggc-ggg-cggatcacgaggtcaa

aagattgagaccatcctggccagcatgatgaaaccccatccctactaaaa
AAGATTGAGACCATCCTGGCCAaCATGATGAAACCCCATCCCTACTAAAA
AAGATcGAGACtATCCTGGCCAaCgTGgTGAAACCCCATCtCTACTAAAA
gagatcgagaccatcctggccaacatggtgaaaccccgtctctactaaaa

-tatgaaaattagctggccatggtggtgtgcacctgtagtccca gctgct A
-TATGAAAATTAGCTGGgCATGGTGGTGTGCACCTGTAGTCCCA GCTGCT -
-TAcaAAAATTAGCTGGgCATGGTGGcGTGCACCTGTAGTCCCA GCTa t T -
atacaaaaattagctgggcgtggtggcgcgcgcctgtagtccca gctact -
                                              GCTACT A

TTTGGGGAGTCTCTTATGTGTAGCTGAATGTAATTGCTTAATCATATACC
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TTTGGGGAGTCTCTTATGTGTAGCTGAATGTAATTGCTTAATCATATACC

AATAAATCAATGATGGTGCTCTAAAGGTCAAGAGCCATCACAAACTCCAA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
AATAAATCAATGATGGTGCTCTAAAGGTCAAGAGCCATCACAAACTCCAA

CCACATTTAAAATCCATGGAGTTTAGTCCTCACATCCAGATCCATTGAAT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
CCACATTTAAAATCCATGGAGTTTAGTCCTCACATCCAGATCCATTGAAT

CTTACAATTCCTAGTATTGCCTACACATACTAACTACCTTAAATCTTGCA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
CTTATAATTCCTAGTATTGCCTACACATACTAACTACCTTAAATCTTGCA

AATCGATTCTGTCCAAAGCTGCTTTCTACCTATGTCATAGcacctgctca
--------------------------------------------------CA
--------------------------------------------------CA
--------------------------------------------------cg
AATCGATTCTGTCCAAAGCTGCTTTCTACCTATGTCATAGCACC

ggaggctgaggcaggagaatcgcttgaacacggaaggtggaggttgcagt
GGAGGCTGAGGCAGGAGAATCGCTTGAAtgCGGAAGGTGGAGGTTGCAGT
GGAGGCaGAGGtAGGAGAATCGCTTGAACcCGagAGGTGGAtGTTGCAGT
ggaggctgaggcaggagaatcgcttgaacccgggaggcggaggttgcagt
```

gagcggagattgtg-cactgcactccagtctggtgacaaagcgagactctg
GAGCGGAGATTGTG-CACTGCACTCCAGcCTGGTGACAAAGCGAGACTCTG
GAGCaGAGATTGTGcCACTGCACTCCAGcCTGGTGACAgAGCGAGACTCTG
gagccgagatcgcgccactgcactccagcctggcgacagagcgagactccg

tctcaaaaaaaaaaa----------GTGGAAATGTGATTTCAATTAAGCTGTTTCTCCAA
TCTCAAAAAAAAAAAAa---------cTGGAAATGTGATTTCAATTAAGCTGTTTCTCCAA
TCTCAAAAAAAAAAAAaaaaaacaaaacTGGAAATGTGATTTaAATTAAGCTGTTTCTtgAA
tctca

TGATAAAATGAAAATTTCTAAAGGTAAATGAAATACAGC
TGATAAAATGAAAATTTCTAAAGGTAAATGAAATACAGC
TGgTAAAATGAAAgTTTCTAAAGGTAAATGAggTACAGC

chr15:31987740-31988005
Alignment
Human, Chimp, Rhesus, L1MB3 consensus, donor

```
aaaagacaaatgacaatgcaggagaaatacttgcaacacatcagataaaa
AAAAGACAAATGACAATGCAGGAGAAATACTTGCAACACATCAGATAAAA
AAAAGACAAATGACAATGCAGGAGAAATAtTTGCAACACATCAGATAAAA

ggctatttttcaTTTACATTGTATATTTTACAAATCACTTATTAAAAAAT
GGCTATTTTTCATTTACATTGTATATTTTACAAATCACTTATTAAAAAAT
GGCTATTTTTCATTTACATTGTATAcTTTACAgcTCACTTATTtAAAAAT

TTGTattgtgataagatatacataaaatttacgattttagtcacttctaa
TTGTATTGTGATAAGATATACATAAAATTTACcATTTTAGTCACTTtTAA
TTGTATTGgGATAAaATATACATAAAAcTTACcATTTTAGTCcCTTtTAA
                    cataaaatttaccattttaaccatttttaa

gtatacagtccggtggcattaagtacattcacattattgtgtaactatca
GTATACAGTCCGGTGGCATTAAGTACATTCACATTATTGTGTAACTATCA
GTATACAGTCCaGTGGCATTAAGTACATTCACATTATTGTGTAAgcATCA
gtgtacagttcagtggcattaagtacattcacattgttgtgcaaccatca

ccactatctgtccctagaactcatttatcatcccaaactaaaactcctta
CCACTATCTGTCCCcAGAACTCATTTATCATCCCAAACTAAAACTCCTTA
CCACcATCTGTCCCcAGAACTCATTTATCATCCCAAACTAAAACTCCTTA
ccaccatccatctccagaacttttcatcttcccaaactgaaactctgta

cccattacacataacCAGGATTCTTTTACTTCGAAAGCTGAATTGCTAAT
CCCATTACAaATAAC-----------------------------------
CgCATTACACATAAC-----------------------------------
cccattaaacataac-----------------------------------
           TAACCAGGATTCTTTTACTTCGAAAGCTGAATTGCTAAT

TCCAAAGAACATTGTGTTGACAGTGCCTGCAATTAAGAAGCCATCACCTT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TCCAAAGAACATTGTGTTGACAGTGCCTGCAATTAAGAAGCCATCACCTT

TGTGTTATGACAGTTTTCTTCCTTACTACAAGCATTATTGTTACCTGGAA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TGTGTTATGACAGTTTTCTTCCTTACTACAAGCATTATTGTTACCTGGAA

TAAAAGATTCCTGCTTTTTTGTTCACATCTTGAGCTGGTTATGAGTATTA
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TAAAAGATTCCTGCTTTTTTGTTCACATCTTGAGCTGGTTATGAGTATTA

ACCCATGTCACTGTTGGTACATTTATAGAGTATAAAATCACTCTATAATT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
ACCCATGTCACTGTTGGTACATTTATAGAGTATAAAATCACTCTATAATT

GCAAATGGGCAAATAGGTTATTCCCATGAGAA------------ctcaccccgaaccc-tggc
--------------------------------tccccattctctCTCACCCCGAACCC-TGGC
--------------------------------tccccattctctCTCACCCCGAACCC-TGGC
--------------------------------tccccattccccctcccccccagcccctggc
GCAAATGGGCAAATAGGTTATTCCCATGAGAA------------CTC

aactaccattctattttctgtctctgtgaatctgaccattctgggtgact
```

AACTACCATTCTATTTTCTGTCTCTGTGAATCTGACCATTCTGGGTGACT
AACTACCATTCTATTTTCTGTCTCTGTGAATCTGACCATTCTGGGTGACT
aaccaccattctactttctgtctctatgaatttgactactctaggtacct

catataagtagaatcatacagtatttttctttttttt-ctgactggcttat
CATATAAGTAGAATCATACAGTATTTTTCTTTTTTTTtCTGACTGGCTTAT
tATATAAGTcGAATCATACAGTATTTTTCTTTTTTT--CTGACTGGaTTAT
catataagtggaatcatacagtatttgtcctttt----gtgactggcttat

tt-----gtctcagcaaggttcatccttgttgtcgc-atgtttccgaatttccttt
tttatTTGTCTCAGCAAGGTTCATCCTTGTTGTCGC-ATGTTTCCGAATTTCCTTT
TT-----GaCTCAGCAAGGTTtATCCTTGTTGTCGCcATGTgTCtGAATTTCCTTT

ctgaagtctgagtaataatccactgtatcacatttattcatttatccatg
CTGAAGTCTGAaTAATAATCCACTGcATCACATTTATTCATTTATCCATc
CTtAAGTCTGAaTAATAATCCACTGcATCACATgTATTCATT-ATCCATc

aataaacacttaggttgtttttacttctttgctattgtgtataaATCAAT
AATAAACACTTAGaTTGaTTTTACTTCTTTGCTATTGTGTATAAATCAAT
AATAAACAtTTAGGTTGTTTcTACcTCTTTGCTAcTGTGTATgAATCAAT

ATTTTAAAAAGACAAATAATTCAGTTAATGGAGAAACTACAAGAGGGCTG
ATTTTAAAAAGACAAATAATTCAGTTAATGGAGAAACTACAAGAGGGCTG
ATTTTAAAAAGACAAATAATTCAGTTcATGGAGAAACTACAgcAGGGCTG

GGGCTTGATTCATACAGAAGTCTGCAGGAGAAAAGACAAACCAGCAA
GGGCTTGATTCATgCAGAAGTCTGCAGGAGAAAAGACAAACCAGCAA
GGGCcTGATTCATgCAGAAGTCTGCAGGgGAAAAGACAcACCAGCgA

chr1:224786689-224786777
Alignment
Human, Chimp, Rhesus, AluJo consensus, donor
CACGCCCTCCCCAACCATTCCCTCCTTCCTCCATAGTAATGAGCTTTAAA
cacgccctccccaaccattccctccttcctccatagtaatgagctttaaa
catgccctccctatccattctccccttcctccatagtaatGAGCTTTAAA

TATTTGATTTAGAtttttttcttt-gagacagaatctcgctctgtcaccca
tatttgatttagatttttttcttt-gagacagaatctcgctctgtcaccca
TACCTGATTTAGAtttttttctttgagagagggtctcactccgtcaccca
----------t-gagacagggtctcgctctgtcgccca

ggctggagtgtagttgtgcggtcttggctcactgcagccttaacctccag
ggctggagtgtagttgtgcggtctcggctcactgcagccttaacctccag
ggctggagtgtagttgtgcgatctcggctcactgcagccttaacctcccg
ggctggagtgcagtggcgcgatcatagctcactgcagcctcgaactcctg

gactcaagtgatccttctgcctcagcctcctgagtagctgagactacagc
gactcaagtgatccttctgcctcagcctcctgagtagctgagactacagc
ggctcaagtgatcctcctgcctcagcctcctgagtagctgagactacagc
ggctcaagcgatcctcctgcctcagcctcccgagtagctgggactacagg

tatgtgcc***acca***AGGACTCCTAGACTGTGCACTACTGAAACGTGGGCAGA
tatgtgcc***acca***----------
tatgtgcc***acca***----------
cgcgcgcc***acca***----------
ACCAAGGACTCCTAGACTGTGCACTACTGAAACGTGGGCAGA

ATTCTGAACCACACCTGGAAGCCGAGGGGACATGCCTGGCTAATGTTTTA
----------tgcctggctaatgtttta
----------tgcctggctaatgttgtg
----------cgcccggctaatttttgt
ATTCTGAACCACACCTGGAAGCCGAGGGGACA

ATtaatttatttatttattttg---tagaaacaggatctcattatgttgctca
atttatttatttatttattttg---tagaaacaggatctcattatgttgctca
actttttttttttttttttttttatagaaacaggatcttattatcttgctca
atttttt----------g---tagagacggggtctcgctatgttgccca

ggcaggtctagaattcctgggctcaagcaatcctcctgcctcaggctccc
ggcaggtctagaattcctgggctcaagcaatcctcctgcctcaggctccc
ggcaggtctagaattcctaggctcaagcaatcctcctgcctcaggctccc
ggctggtctcgaactcctgggctcaagcaatcctcccgcctcggcctccc

aaagtgTGATTTAGATCATTTATTTAACCTTTAATTTAGAGTAAAGTTTC
aaagtgtgatttagatcgtttatttaacctttaatttagagtaaagtttc
aaagtgTCATTTAGATTGTTTATTTAACTTTTAATTTAGAATAAAGTTTC
aaagtg

CTAGCCTCTTTTGTAGTTAGATGA
ctagcctcttttgtagttagatga
CTAGCCTCTTTTGTAGTTAGATGA

chr10:130986332-130986439
Alignment
Human, Chimp, Rhesus, Tigger2a consensus, donor

```
CTTTCCTATCTGTAGCACTTTCATATATATTCTGTATTTGCAGATAGTTC
CTTTCCTATCTGTAGCACTTTCATATATATTCTGTATTTGCAGATAGTTC
CTTTCCTATCTGTGGCACTTTCACATATATTCTATATTTGCAGATAGTTC

TAAATGACCAAGAGGTTGCTGTTTCTTTGAATGCAGGATAGAGTAcagtt
TAAATGACCAAGAAGTTGCTGTTTCTTTGAATGCAGGATAGAGTAcagtt
TAAATGACCAAGAGGTTGTTGTTTCTTTGAATGCAGAATAGAGTAcagtt
                                              CAGTT

gacacttgaacgatgcggaggctcgaggcgccgacaccca-cacagtcaaa
gacacttgaacgatgcggaggctcgaggcgccgacaccca-cacagtcaaa
gacacttgaacaatgtggaggctcgaggctccgacaccca-cacagtcaaa
GACCCTTGAACAACGCGGGGGTTAGGGGCGCTGACCCCCCGCGCAGTNAAA

a-tcc-cctgtagctttcgactttccaaaaacct-----------gtccactattgaccagaa
a-tcc-cctgtaactttcgactttccaaaaacct-----------gaccactattgaccagaa
a-tcc-cctgtagctttcgactttccaaaaacct-----------aaccacagttgaccagaa
AATCCACGTATAACTTTTGACTCCCCMAAAACTTAACTACTAATAGCCTACTGTTGACTGGAA

gccctgccaataacataaacagttgatt----------------ttatcctgtattgtatactgta
gccctgccaataacataaacagttgatt----------------ttatcctgtattgtatactgta
gccctgccaataatgtaaacagttgatt----------------atatcctgtattgtacactgta
GCCTTACCGATAACATAAACAGTCGATTAACACATATTTTGTATGTTATATGTATTATATACCGTA

gtcttacaataaagtaagctatagaaaagaaaatgttattaagaaaagca
gtcttacaataaagtaagctagagaaaagaaaatgttattaagaaaagca
ttcttacaataaagtaagctagagaaaagaaaatgttactaagaaaatca
TTCTTACAATAAAGTAAGCTAGAGAAAAGAAAATGTTATTAAGAAAATCA

taaggaagggaaaatatatttactattctttaagtggCTTACTTATACTG
taaggaagggaaaatatatttactattctttaagtggc------------
taaggaagagaaaatatatttactattctttaactggc------------
TAAGGAAGAGAAAATATATTTACTATTCATTAAGTGGA------------
                                                CTG

GCCGGGAGATGTAGGAGGAAGTTTCCTGCAGGGATGGGGAGGAGGCTCTG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
GCCGGGAGATGTAGGAGGAAGTTTCCTGCAGGGATGGGGAGGAGGCTCTG

AGAAAGATTTTGTTTTCCAATAAGAGCACCAGGTACATTGGTACAA---ggat
-----------------------------------------------agtggat
-----------------------------------------------agtggat
-----------------------------------------------AGTGGAT
AGAAAGATTTTGTTTTCCAATAAGAGCACCAGGTACATTGCT

---------tactataaaggccttcatcatcattgtcttcacattgaataggctgagga
---------tactataaaggccttcatcatcattgtcttcacattgaataggctgagga
---------tattataaaggccttgatcatcattgtcttcacattgaataggctgagga
CATCATAAAGGTCTTCATCCTCNTCGTCTTCANGTTGAGTAGGCTGAGGA

gggggaggaggaggaggataggtcttg-tgtctcagggacagcagagata
gggggaggaggaggaggggtaggtcttg-tgtctcagggacagcagagata
gggggaggaggaggaggggtaggtcttg-tgtctcagggacagcagagaca
---------GGAGGAGGGGTTGGTCTTGCTGTCTCAGGG-TGGCAGAGATG

gaaaaaaatccacatataataggacccacacagttcaaatccatgttgtt
gaaaaaaatccacatataataggacccacacagttcaaatccatgttgtt
gaaaacaattcacatataataggacccacacagttcaaatccatgttgtt
```

GAAGAAAATCCGCGTATAAGTGGAYCCACGCAGTTCAAACCCATGTTGTT

tacgggtaaactgTATATGAAAAGTGAGTATGGTAAAACCATCCATGTTT
tacgggtaaactgTATATGAAAAGTGAGTATGGTAAAACCATCCATGTTT
tatgggtaaactgTGTATGAAAAGTGAGTATGGTAAAACCATCCATGTTT
CAAGGGTCAACTG

TTAATATGCAAATATAAATAAGATGAGACAACAGGCTAAGAA
TTAATATGCAAATATAAATAAGATGAGACAACAGGCTAAGAA
TTAATATGCAAATATAAATAAGATAAGATAACAGGCTAAGAA

chr11:122113399-122113556
Alignment
Human, Chimp, Rhesus, L2 consensus, donor
TCGGGAAgccaggcgtggtggttcacacccgcaatctcagctacttggga
TCGGGAAgccaggcgtggtggttcacacctgcaatctcagctacttggga
TCAGGAAgccaggcgtggtggttcacacctgtaatcccagctacttggga

ggctgaggagagaggatcgcttgagcccaggagtttcagtccagcttggg
ggctgaggagagaggatcacttgagcccaggagtttcagtccagcttggg
ggctgaggaaagaggatcgcttgagcccaggagtttcagtccagcccagg

caacatagtgagaccctctctcAaaatgaaatgaaatggaatgaaatgaa
caacatagtgagaccctctctcaaaatgaaatgtaatggaatgaaatgaa
caacatagtgagaccctgcctcgaaatgaaatggaatggaatggaatgaa

gaaatgaaaggaaataaa----GGAtcaaggaaagcaacatagaagatttaagc
gaaatgaaaggaaataaa----GGAtcaaggaaagcaacatagaagatttaagc
atgaaatgaagaaatgaaatAAGTAtcaaggaaagcaacatagaagatttaagc

taiga-ttgagaggtgggcagagatattactgtagggaagggaaagaatgt
taiga-ttgagaggtgggcagagatattactgtagggaagggaaagaatgt
taagacatgagaggtgggcagagatattagtgtagggaaggagaagaatgt

tcctgaagaaagaatgcatgcccactgctcagctgtgagaaaatgtggca
tcctgaagaaagaatgcatgcccactgctcagctgtgagaaaatgtggca
tcctgaagaaagaatgcatgcccattgctcagctgtgagaaaatgtggca

cgttcaaggaactgaaagaaatctaatgttgccggaagagggtagcctaa
cgttcaaggaactgaaagaaatctaatgttgctggaagagggtagcctaa
cgttcgaggcactgaaagaaatctagtgttgctagaagaggttagcctaa

agtaaaccagggaagggccagaaaatagagcatacag----gcaaattagccat
agtaaaccagggaagggccagaaaatggagcatgcag----acaacttagccat
agtaaaccaggtaagggccagaaaatagagcatgcaggtaggtggcttagccat

gttaaggttctggaactttaccctagaggaaatagggagctactgggttg
gttaaggttctggaactttacgctagaggaaatagggagctactgggatg
gttaaggttctggaactttaccctagaggaaatagggagctactgagatg

(TE insertions in Rhesus)
tttttgtcacgcacatccgtgtgaagagaccaccaaacaggctttgtgtg
agcaacaaggcagtttatttcacctgggtgcaagcgggctgaatccaaaa
agagagtcagcaaagggtggtgggatcatcattggttcttataggttttg
ggataggcagtggagttaggagcaatgttgcgggcagggggtggatctca
caaagtatattctcaagggtggggagaattacaaagaaccttcttaaggg
tggggaagattacaaagtacattGATCAGcgcccgccttgtttttgtat
tttt tagtagagacggggtttcaccgtgttagccaggatggtttcgatc
tcctgacctcatgatccgcccgtctcggcctcccaaagtgctgggattac
aggcttgagccaccacgcccggcctattttcacttcttttgtggatcttc
agttgcttcaggccatctggatgtgcacatgcaggtcacaggggcttagc
ttgggctcagaggcctgacag

ttttaagaagaagagtgtatgattatcattgtatatttggagaataaatt
ttttaagaagaagagtgtatgattattattgtatatttggagaataaatt
ttttaagcagaagagtgtatgattattgttgtatatttggagaataaatt

ggaaagggcaaaaccggaagcaggagatttgttaaagctgccggagttgt
ggaaagggcaaaactggaagcaggagattt-taaaagctgctggagtagt
ggaaagggcaaaactggaagcaggagatttgttaaagctgctggagtact

caaagcgaggggtgat-ggggcttaacacagagagaaaacaagggataaaa
caaagcgaggggtgataggggcttaacacagagagaaaacaagggataaaa
caaagcaaggggtgataagggcttagcatagagagaaaacaagggatcaaa

```
aagaaccagtgtccaagaaatttaggaggcacacatggacaggacctaat
gagaaccagtgtccaagaaatttaggaggcacacatggacaggacttaat
gagaaccaatgcctaagaaatttaggaggcacacatggacaggacttaat
                                        ACAGGATTTGCT

gatgaattagataggagaggtgagagaaagagagaagtcaaggatggatc
gatgaattagataggagaggtgagagaaagagagaagtcaaggacagatc
gatgaattagataggagagttgagagaaagagagatgtcaaggacggatc
GATGGATTGGATGTGGGGTGTGAGAGAAAGAGAGGAGTCAAGGATGACTC

ttagGTggatcttagcctgTTGATCTCAGTGCTAAGTGTAGTACAGGCCG
ttagGT-------------------------------------------
ttagGT-------------------------------------------
CAAGGT---TTTTGGCCTG------------------------------
    GTGCGTGTTAGCCTGTTGATCTCAGTGCTAAGTGTAGTACAGGCCA

TGAGGTAGATGCTCAGTAAGAATGAGGAGCGTCGCTAAAGCCCCACCTTC
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TGAGGTAGATGCTCAGTAAGAATGAAGAGCGTCGCTAAAGCCCCACCTTC

TACATAAACTCCTGAATTCTCCCAGCATTCTCTCTGTGTTCCCCTAGCCC
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
TACATAAACTCCTGAATTCTCCCAGCATTCTCTCTGTGTTCCCCTAGCCC

TTTTTTTTTTCATTCTGCATGAATGAAA------cttgggaaattgcatgga--tgct
----------------------------ttctaacttgggaaattgcatgga--tgct
----------------------------ttctaacttgggaaattgcatgga--tgct
--------------------------------AGCAACTGGAA--GGATGGAGTTGCC
TTTTTTTT-CCATTCTGCATGAAT

ctgccctgagccaag--agactctggagagaagcaaaattggcggggaaaaa--
ctgccctgagccaag--agactctggagagaagcaaaattggcggggaaaaa--
gtgccctaagccaag--agactctggagagaagcgagattggaggggaaaaa--
ATTAACTGAGATGGGGAAGACTGTGG-GAGGAGC-AGGTTTGAGGGGGAAGATC

ggtgagttcactttttgaacacatgaggtttagtgcaagcaagatattca
ggtgagttcacctttgaacacatgaggtttagtgcaagcaagatattca
ggcgagttcatttttgaacacacgaggtttagtgcaagtaagatattca
-AGGAGTTCAGTTTT

agtggagatttctagtaaggaataggtcaggacgccagagggttgagcag
agtggagatttctagtaaggaataggtcacgatgccagagggttgagcag
agtggaggtttctagtaaggaataggtcaggaagccagagggtggagcag

gagaaactggagggacctggagactaagggcatccttagcatgtagaagc
gagaaactggagggacctggagactaagggcatccttagcatgtagaagc
gagaaactgcagggacctggagactaagggcatccttagcatgtaaaagc

tggaggtatggcccagggaagagctgggattacccggagagaatgagtag
cggaggtatggcccagggaagagctgagattacccggagagaatgagtag
cggaggtagagcccagggaatggctgagattacccagagagaatgagtag

aatgtatggagaaagactggacagattcctgaggaatactagcaattaaa
aatgtatggagaaagactggacagattcctgagaaatactagcagttaaa
aatgtatggagaaagattggacagattcccgaggaatactagcaattaaa

gtgcctgtagagaagtcagagtttacaaaggaaactgagaataagccact
gtgcctgtagagaagtcagagtttacaaaggaaactgagaataagccact
```

gtgcctgtagagaagtcagagtttacaaaggaaaccgagaataagccact

agagaaaagggcaaaagacaaaccaaaggggcataatcaggaaagtaaaa
agagaaaagggcaaaagacaaaccaaaggggcataatcaggaaagtaaaa
agagaagagggtaaaagacaaaccaaaggggcagaatcaggaaagtaaaa

gtagagaacaaagggagggctcctaatgggaaatgcc---------gttgagaggtcaa
gtagagaacaaagggagggctcctaataggaaatgcc---------gttgagaggtcaa
gtagagaacaaagggagggttcgtagtgggagacgcccccactactgttgagaggccaa

gagacaaaaaTCCCATTGAATAGAGTGTGGTgactcagattctcactg----tt
gagacaaaaaTCCCATTGAATAGAGTGTGGTgactcagattctcactg----tt
gagacaaaaaTCCCGTTGAATAGAGTGTGGTGACTCAGATTCTCACTGCTGCTT

acttactaagtgaccttagaccagttattta-----cactgagcctcaTCCATAA
acttactaagtgaccttagaccagttattaattttacactgagcctcaTCCATAA
ACT----CAGTGACCTGAGACCTGTTATTAATTTTACACTGAGCCTTATCCATAA

GTTGGAACGATTGCATTGTATTTAGATTGGTGTCTTAATACATGTG
GTTGGAACGATTGCATTGTATTTAGATTGGCGTCTTAATACATGTG
TTTGGAACGATTGCATTGTATTTAGATTGGCATCTTAATACATGTT

chr12:54320736-54320817
Alignment
Human, Chimp, Rhesus, MER49 consensus, donor

```
ggctagtttcgaactcctgagctcaagtgatccatccaccttggcctccc
ggctagtttcgaactcctgagctcaagtgatccatccaccttggcctccc
ggctagttttgaactcctgagttccagtgatctacccacctcagcctccc

aaagtgctaggattacaggcgtgagccaccgcccccagcaggaggcttta
aaagtgctaggattacaggcgtgagccaccgcccccagcaggaggcttta
aa-gtgctaggattataggcctgagccaccacccctggaaagtgtcttta
                                        aggagacttta

tttcttaaaaa-ctgttacagcatgtaaggtggccattctaacaggctggg
tttcttaaaaa-ctgttacagcatgtaaggtggccattctaacaggctggg
tttcttaaaaaactgttgcagcatgtaaggtggccattctaacaggctggg
tttcttataaa-gggttacagcctgcaaggtggccatcccg-caggctggg

aagcataggctccagccaaagcccaaaaggcaggcacttcgagggagagg
aagcataggctccagccaaagcccaaaaggcaggcacttcgagggagagg
aagcataggctccagtcaaagcccaaaaggtaggcacttcgagggagagg
aagcgtagcctctggccaagacc--agagacaggcacttcgaaggaggag

caggtggaacagggatttatgtgctaagcaggttggccaggtgtacacat
caggtggaacagggatttatgtgctaagcaggttggccaagtgtacacat
caggtggaacagggatttatgtgctaagcaggttggccaagtgtacacat
gggttggggcaggagctttatgctgaa-cgggttggctaagcatacatat

tcagtaggttacgggaggagctaggaatattcctgaaggtggtcctaaca
tcagtaggttatgggaggagctaggaatattcctgaaggtggtcctaaca
tcagtaggttatgggaggacctaggaatattcctgaaggtggtcctaaca
tcaacaggttacaggaggagctatgaatattcatgaaggtggtcctgacg

tgtaggtgctaaataaacatatatgtagcatatgacccatgttcaccttg
tgtaggtgctaaataaacatatatgtagcatatgacccatgttcaccttg
tgtatgtgctaaataaacatgtatgtagcatatgacccatgttcaccttg
catgcgtattgaacaaacatgcatgtaacatacgacccatgttcactttg

gggtgcaaacttaacatttacgtgcattacaatttagacccttacatcaa
gggtgcaaacttaacatttaaatgcattacaatttagacccttacctcaa
ggatgcaaacttaacatttaaatgcattacgattTAG-------------
gggtggagacttaacatttaaatgtattacaattaggccctatacgtcaa

aaggtgaagcagagacacaaaggcattcaagtgtgcagcctctgtaaact
aaggtgacgcagagacacaaaggcactcaagtgtgcagcctctgtaaact
--------------------------------------------------
aaggtttttcag-gacacgaaggcgtgcaagtgcacagcctctgtaaact

ggccagaagcagcccctgggcagtggtcttcttatcaggagaaagttact
ggccagaagcagtccctgggcagtggtcttcttatcaggagaaagttact
--------------------------------------------------
ggccagaaccagtccatggccggtggtct-cttatcaggagaaagttact

gaaatcaatcatttggccaatcaaagctgtagttatggcttgtggaacag
gaaatcaatcatttggccaatcaaagctgtagttatggcttgtggaacag
-------------GGGccaagcaaagctgtagctatggcttgtggaacag
gaaatcagtctcttgtccaatcaaagctgtagttatggctggtggaacag

gggagtcagccagtaagtgtctggtggtggaggagctacaactgttttgc
gggagtcagccagtaagtgtctggtggtggaggagctacaactgttttgc
gggagtcagtcagtaagtgtctggtggtggaggagctacgactgttttac
ggg-gtcagttagtcagcgtctggtg-tggatgagctgcaattgttttaa

tattgcttatctcgaagccagagcttgtttagctgctagagaaaaaggaa
```

tattgcttatcttgaggccagagcttgtttagctgctagagaaaaaggaa
tattgcttatctcgaggccagagttgtttagctgctaaagaaaaaggaaa
tattgcttatctcgaggccagtgcttgtttagctgttagagaaaaagaaa

aaccttgtggcagttagaacatagtttattctttaagtgtaggaatgtgt
aaccttgcggcagttagaacatagtttattctttaagtgtaggaatgtgt
aaccttgtagcagttagaacatagtttattctttaagtataggaatatgt
aaccttgtggcagttagaacatagtttattctttaagtgtaggggtgcgt

gacttaacctttgcctggcatggccttaagtcctgttcataatttgatat
gacttaacctttgcctggcatggcctgaagtcctgttcataatttggtat
gacttaacctttgcctggcatggccttaagtcctgttcacaatttggtat
gacttaacccttgcctggcatggccttaggtcctgtttataatttggtat

attattgccacaaagagtctattctgtcaatctcatgacctctattttaa
cttattgccacaaagagtctattctgtcaatctcatgatctctattttaa
cttattgccacaaagagtctattatgtcaatctcatgatctctattttaa
cttattgccacaaagagtccgttctgtcagtcttatgatctctattttaa

cattaatgctggtcaattgttgtgtctaaaccatagaagagaggaggtac
cattaatgctggtcaattgttgtgtctaaaccatagaagacaggaggtac
cattaatgctggtcaattgttgtgtctaaaccatagaagagaggaggtat
cattaatgctggtcagttgttgtgtctaaaccacaaaagggagggggtat

aataaagtgtgtctgaccttctattc***catc***TTCTAGATTGTTCTGGATCC
aataaagtgtgtctgaccttctattc***catc***----------
aataaagcgtgtctgaccttccattc***catc***----------
aatgaggcgtgtctgacctcccatcc***cgtc***----------
CATCTTCTAGATTGTTCTGGATCC

CTGAGCACAGTGATTGCCATGGCTGCACCGGTAGCCAGAGGTCCATGTCA

CTGAGCACAGTGATTGCCATGGCTGCACCGGTAGCCAGAGGTCCATGTCA

GTCATGAAAGCAG**ccatc**atggctgaggactccgtttttaaggtttctca
----------atggctgaggactctgtttttaaggtttctca
----------acggccgaggactcagtttttgaggtttctca
----------atggccgggaactcagtttttaaggtttctc-
GTCATGAAAGCAG

gtgggTGGGGGGCGTGGGATTTCATCTTTAGTTTACAatatgc
gtgggtgggggcgtaggatttcatctttagtttacaatatgc
gtgggtgggggacttaggatttcatctttagtttacaatatgc
tggggt

chr17:56774348-56774495
Alignment
Human, Chimp, Rhesus, AluSx consensus, donor

```
GGGATGATTTGGATAGCAATTTTTGGATGGAAATCATAGTTTTAAGAAAG
GGGATGATTTGGATAACAATTTTTGAATGGAAATCACAGTTTTAAGAAAG
GGGATGATTTACATAACAATTTTTGAGTGGGGATCATAGTTTTAAGAAAG

TTCCGAGGCCACAACTTTCTAGATATGATAGACAGAAAAGTGATTATGAG
TTCCGAGGCCACAACTTTCTAGATATGATAGACAGAAAAGTGATTATGAG
TTCCAAGACCACAGCTTTTTAGAAACTATTGACAGAAAAGTGACTATGAG

ACGTGGACAGGCAGTGGGGGCAATCATGAACTTCGGACAGTGGTTTAGGG
ACGTGGACAGGAAGTGGGGGCAATCATGAACTTAGGACAGTGGTTTAGGG
ATGTGGACAGACAATGGAGTAAATAATGAACTTAGGACAATGGTTTAGGG

CTTGGttcttttgagacagagtctcagtctttcgcc----caggctggagtaca
CTTGGttcttttgagacagagtctcagtctttcgcc----caggctggagtaca
C----ttcttttgaga----tggaatctctttagct----cgggctgga-----
           tgaga----cggagtctcgctctgtcgcccaggctggagtgca

gtggtgtg---atctc--ggctcactgcaacctccacccctcagggttcaagcaa
gtg--gtg---tgatctcggctcactgcaacctccaccccccagggttcaagcaa
gtgcagtggcaagatctcggctcactgcaacccctgccccctgggttcaagaga-
gtggcgcg---atctc--ggctcactgcaacctccgcctcccgggttcaagcga

ttctcctgcctcagcctcctgagtagctgggactacaggcatgcaccacc
ttctcctgcctcagcctcctgagtagctgggactacaggcatgcaccacc
ttcttctgcctcagcctcctgagtatctgggactacaggcatgcaccacc
ttctcctgcctcagcctcccgagtagctgggattacaggcgcgcgccacc

acacctggctaattttgtattttagtacagacgaggtttcacta-------AATC
acacctggctaattttgtattttagtacagacgaggtttcact
acacctgactaattttgtagttttagtagagatggggtttcactacgttggc----
acgcccggctaattttgtattttagtagagacggggtttcaccatgttggc----
                                           TA-------ATTC

--TCCATTCAGAAGCTACTCTGGCACCATACACAACGGTGCACAATTGAAGG
----------------------------------------------------
----------------------------------------------------
TCTCCATTCAGAAGCTACTCTGGCACCATACACAACGGTGCACAATTGAAGG

GCTTGTTCTGCTCCTCCACATGGCACCTTTAGAAACGTCACTTCCCCACC
---------------------------------------------------
---------------------------------------------------
GCTTGTTCTGCTCCTCCACATGGCACCTTTAGAAACGTCACTTCCCCACC

TTGTGTGGCAACAGCCTTGGCCAACGTGCTTATGAAGAGCCATGGcaggc
-----------------------------------------------caggc
-----------------------------------------------caggc
TTGTGTGGCAACAGCCTTGGCCAACGTGCTTATGAAGAGCCATGGCAG

tggtcttgaactcctgacctcaggtgatccacccacatcagcctcccaaa
tggtgtcaaactcctgacctcaggtgatccctccacatcagcctcccaaa
tggtctcgaactcctgacctcaggtgatccgcccgcctcggcctcccaaa

gtgctgggattacaggcatgagccaccgtgcccagcCTAGGGCCTGGTTC
gtgctgggattacaggcgtgagctgccgtgcccagccTAGGGCCTGGTTC
gtgctgggattacaggcgtgagccaccgcgcccggcc

TTAAGAACGCCATTCCCTTCTTGATCCTCAGGCCCAGTGAG
TTAAGCATGTCATTTCCTTCTTGATCCTCAGGCCCAGTGAG
```

Human-specific RDs - donor and acceptor greater than 5 kb from each other or on other chromosome

chr21:31838499-31838601
Alignment
Human, chimp, rhesus, AluSx consensus, donor

```
gagggagatggtctcaaaaaataaataa-----------taaataaataaa--taaaAATAGG
GAGGGAGAcGGTCTCAAAAAATAAATAA-----------TAAATAAATAAA--TAAAAATAGG
    GAGAcGGTCTCAAAAAATAAATAAatatatatataaaTAAATAAATAAAttTAAAAATAGG

CCACTTgtggtggctcacgcctgtaatcccagcactttgggaggcccagg
CCACgTGTGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCCCAGG
CCAggTGcGGTGGCTCACaCCTGTAATCCCAGCACTTTGGGAGGCCCAGG
      gcggtggctcacgcctgtaatcccagcactttgggaggccgagg

taggcagattacatgaggtcaggaTGAAAAGCCCATTTCTTTCTCAAAAG
TAGGCAGATTACATGAGGTC------------------------------
cAGGCAGATcACATGAGGTC------------------------------
cgggcggatcacctgaggtc------------------------------
                       ATGAAAAGCCCATTTCTTTCTCAAAAG

GGCCACGATCCCTCTTGCTGTCCCAGACCACCAGAGCTAACATTTGGTTC
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
GGCCACGATCCCTCTTGCTGTCCCAGACCACCAGAGCTAACATTTGGTTC

CGGTGAAATGGAAACCTCGAAATGACGAaggagttcaagagcagcctggc
----------------------------AGGAGTTCAAGAGCAGCCTGGC
----------------------------AGGAGTTCAAGAGCAGCCTGGC
----------------------------aggagttcgagaccagcctggc
CGGTGAAATGGAAACCTCGAAATGACGA

caacatggtgaaa------ccccaccccctac-aaaaatacaaaaattagccaggcac
CAACATGGTGAAA------CCCCACCCCTAC-AAAAATACAAAAATTAGCCgGGCAC
CAACATGGTGAAActgaaaCCCCAtCCCTAC-AcAAATACAAAAATTAGCCgGGCAC
caacatggtgaaa------ccccgtctctactaaaaatacaaaaattagccgggc--

gatggtgggcgcc---tgtaatcccagctactcaggaggctgaggcaggagaa
GATGGTGGGCGCC---TGTAATCCCAGCTACTCAGGAGGCTGAGGCAGGAGAA
aATGGTGGGCaCC---TGTAATCCCAGCTACTCAGGAGGCTGAGGCAGGAGAA
g-tggtggcgcgcgcctgtaatcccagctactcgggaggctgaggcaggagaa

tcacttgaaccccggtggcaaaggttgcagtcagctgagatcacgccatt
TCACTTGAACCCCGGTGGCAAAGGTTGCAGTCAGCTGAGATCgCGCCATT
TCACTTGAACtCaGGTGGCAAAGGTTGtAGTgAGCTGAGATtgCaCCAcT
tcgcttgaacccgggaggcggaggttgcagtgagccgagatcgcgccact

gcactccagcctgggtaacagagcaagactccgtctcaaaataaataaat
GCACTCCAGCCTGGGTAACAGAGCAAGACTCCGTCTCAAAATAAATAAAT
GCACTCCAGCCTGGGTAACAGAGCAAGACTCCGTCTCAAAATAAATAAAT
gcactccagcctgggcgacagagcgagactccgtctca

aaacaagcaaacaaaCAGGCAGTCTAACAGAGCAGCTGGGCATGgttatg
AAACAAGCAAACAAACAGGCAGTCTAACAGAGCAGCTGGGCATGGTTATG
AAAt----AAACAAACAGGCAGTCTAACAGAGCAGCTGGGCATGGTTATG
```

chr15:84200277-84200858
Alignment
Human, chimp, rhesus, MSTA consensus, donor

```
GATTTTATTATTTTAAAGTGATGAGATAATTG
GATTTTATTATTTTAAAGTGATGAGATAATTG
 ATTTTATTATTTTAAAGTGATGAGATAATTG

AAAATAAAAA-CATTTCTCCAGAAACAAGATTATTGAAATACAAAATTTTC
AAAATAAAAAaCATTTCTCCAGAAACAAGATTATTGAAATACAAAATTTTC
AAAATAAAAA-CATTTCTCCAGAAACAAGATTATTGAAATAtAAAATTTTC

CCAACAATTGTTGAAACCTGGCATCTCTAAAATTATATATAATGCTtgat
CCAACAATTGTTGAAACCTGGCATCTCTAAAAgTATATATAATGCTTGAT
CCcAaAATTGTTGAAACtTGGCATCTCTAAAAaTAcATAcAATGtTTGAT
                                                tgat

atggtttagatctgtgtccctgctgaaatctcatgtcggatagtaatcct
ATGGTTTAGATCTGTGTCCCTGCTcAAATCTCATGTCGGATAGTAATCCT
ATGGTTTAGATCTGTGTCCCTGCTcAAATCTCATGTCaGATAGTAATCCc
atggtttggatctgtgtccccacccaaatctcatgttgaattgtaatccc

cagtgttggaggtggggcctggtgggaggtgattggatcatgggggcaga
CAGTGTTGGAGGTGGGGCCTGGTGGGAGGTGATTGGATCATGGGGGCAGA
CAGTGTTGGAGGTGGGGCCTGGTGGGAGGTGATTGGATCATGGGG-CAGA
cagtgttggaggtggggcctggtgggaggtgattggatcatgggggtgga

tttctcatgaatggtttagcatcattcttcagatgctgttgtcatgataa
TTTCTCATGAATGGTTTAGCATCATTCTTCAGATGtTGTTGTCgTGATAA
TTTCTCATGAATGGTTTAGCAcCATcCTTttGATGCcGTTtTCATGATAg
tttctcatgaatggtttagcaccatccccttggtgctgtcctcgtgatag

tgagtgaattctcacgagatctggtcatttaaaagtatgtagcacctccc
TGAGTGAATTCTCACGAGATCTGGTCATTTAAAAGTgTGTAGCACCTCCC
TGAGTGAATTCTCACcAGATCTGGTCATTTAAAAGTgTGTAGCACCTCCC
tgagtgagttctcgtgagatctggttgtttaaaagtgtgtggcacctccc

tctttcctctc--ttgcttctgctcctaccatgtgagacaactcacgctctc
TCTTTCCTCTC--TTGCTTCTGCTCCTACCATGTGAGACAACTCACGCTCTC
TCTTTCCTCTC--TTGCTTCTGCTCCTACCATGTGAGACAACTCgCcCTCTC
ccctcgctctctcttgctcctgctctggccatgtgacgtgcctgctcccc--

tcctcctttgccttccgccatgattgaa-gtAAAAAAAAAAAAAAAAAGAA
TCCTCCTTTGCCTTCCGCCATGATTGAAAGT--------------------
TCCTCCTTTGCCTTCtGCCgTGATTGAAAGT--------------------
-----cttcgccttccgccatgattgtaagt--------------------
                                                GAA

AAGATGATGTGGTTCCTAGGAGATAGTTAAGTCTTAGCAGGGAACCAAAG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
AAGATGATGTGGTTCCTAGGAGATAGTTAAGTCTTAGCAGGGAACCAAAG

ATACTTTCAGTTCTAAATCCAATGTGTGCTGCTGACTCTTACCCTTCCTG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
ATACTTTCAGTTCTAAATCCAATGTGTGCTGCTGACTCTTACCCTTCCTG

TTATTCAGAAGAGAGAAGGAGGGAGAGTGCAAAGAAGTTCCGCTGTTGAT
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
```

TTATTCAGAAGAGAGAAGGAGGGAGAGTGCAAAGAAGTTCCGCTGTTGAT

ACCCGAGCATGACATAGCAGCTAGTGTTTTGCTGAATTGTGATGAAGGAA

ACCCGAGCATGACATAGCAGCTAGTGTTTTGCTGAATTGTGATGAAGGAA

TGTTGACAACCTTTTCAAAACTTACAAGGAAAGGGACTCTGTTGGAGGAA

TGTTGACAACCTTTTCAAAACTTACAAGGAAAGGGACTCTGTTGGAGGAA

CTCAAAGAAAAAAGTATCCATTGAAAGGATAAGTTAGTATTTATATTTTA

CTCAAAGAAAAAAGTATCCATTGAAAGGATAAGTTAGTATTTATATTTTA

GTGCAATTGTGTGGAATTGGTTTGGAAATTTACACACTGTCACTGAGGTG

GTGCAATTGTGTGGAATTGGTTTGGAAATTTACACACTGTCACTGAGGTG

ACAAAAAGAAATGTCTTAATTTTCTGTAATTGTTTTATTTCTCACAGTCT

ACAAAAAGAAATGTCTTAATTTTCTGTAATTGTTTTATTTCTCACAGTCT

TCTACTTGCTCAGTAGACCGAAGTTAGGTTGGAATGGAGAGGACATTGTT

TCTACTTGCTCAGTAGACCGAAGTTAGGTTGGAATGGAGAGGACGTTGTT

TAACCATTAACAATGTCTTTGTCTCCTTCAGTCTATATAGTGTATTTTCC

TAACCATTAACAATGTCTTTGTCTCCTTCAGTCTATATAGTGTATTTTCC

ATATTTAGATATCCTTTAAATAAATGCTAATTTTCACATTTA**AAAAAAAA**

ATATTTAGATATCCTTTAAATAAATGCTAATTTTCACATTTA

AAAAAAAGAAAGAaagttttctgaggcttccccagaagcaga--agctgcta------
----------TTTCTGAGGCTTCCCCAGAAGCAGA--AGCTGCTA------
----------TTTCTGAGGCTTCCCCAGAAGCAGA--AGCTGCTA------
----------ttcctgaggcctccccagaagccgagcagatgccagcacca

tgcttcctgtacagcctgcagcactgtgagccaatttaacctcttttctt
TGCTTCCTGTACAGCCTGCAGaACTGTGAGCCAATTTAACCTCTTTTCTT
TGCTTCCTGTACAGCgTGCAGaACTGTGAGaCAATTaAACCTCTTTTCTT
tgcttcctgtacagcctgcagaaccgtgagccaattaaacctcttttctt

tataaattacccagtctcaggtatttctttataccactgtgagaacggac
TATAAATTACCCAGTCTCAGGTATTTCTTTATACCACTGTGAGAACGGAC

TATAAATTACCCAGTCTCAGGTATTTCTTTATACCACTGTGAGAACGGAC
tataaattacccagtctcaggtatttctttatagcaatgcgagaacggac

taatacaATGTTGATGGTGTAATTTTTTTT---CAAATTCTTGATTCTGAAAA
TAATACAATGTTGATGGTGTAATgTTTTTT---CAAATTCTTGATTCTGAAAA
TAAcACAATGTTGATGaggtaatttTTTTTTTTCAAATTCcTGATTCTGAAAA
taataca

ATTAAGAAAAATAGAAACAAATAATT--TTGGCAAATTGCATGAATCTATCC
ATTAAGAAAAATAGAAACAAATAATT--TTGGCAAATTGCATGAATCTATCC
ATTAAGAAAAATAGAAACAAATAATTgtTTGGaAAATTGCATGAgTCTATCC

TGGGTCTTGCCTTTTTT-ACCCTTATACCTTACATTTCTTCCAGTTAGGAA
TGGGTCTTGCCTTTTTTtACCCTTATACCTTACATTTCTTCCAGTTAGGAA
TGGGTtTTGCCtTTTTTTACCCTTgTACCTTACATTTCTTtCAGTTAGaAA

GCTGGGAACCAAGAAAGACACCATCAACCCCACATGTAAGTGGCTATAAA
GtTGGGAACCAAGAAAGACACCATCAACCCCACATGTAAGTGGCTATAAA
GtTGGGAACCAAGAAAGACACCATCAACCCCACATaTAAGTGGCTATAAA

AGAAGTCATGAATGGCAGATGGACATGGGCACTTGTAATAATACATGATG
AGAAGTCATGAATGGCAGATGGACATGGGCACTTGTAATAATACATGATG
AGAAGTCATGAATGGCAGATGGACATGGGCACTTGTAATAAcACATGATG

TAAAAAATTCAAATTATGTTACTGCAGAACAGTTCACACATCAGTG
TAAAAAATTCAAATTATGTTACTGCAGAACAtTTCACACATCAGTG
TAAAAAATTCAAATTATGTTACTGCAGAACAtTTCACACATCAGTG

chr8:129173886-129174220
Alignment
Human, chimp, rhesus, MADE1 consensus, donor

```
GGGAAGCTGCAAAGAACCCTTAGGCTCAGAATTTCCTGCTGTCAGCCAGC
GGGAAGCTGCAAAGAACCCTTAGGCTCAGAATTTCCTGCTGTCAGCCAGC
GGGAAGCTGCAAAGAACCCTTAaGCTCAGAATTTCCaGCTGTCAGCaAGt

CCCCCTGCTGTTTCCCATTTATTTTTCTCTATCTCCTTTTCCATCTCCCC
CCCCCTGCTGTTTCCCATTTATcTTTCTCTATCTCCTTTTCCATCTCCCC
CCCCCTGCcGTgTCtCATTTATTTTTCTCTATgTCCTTTTCCATCTCCCC

TTCCAGCACCTTCTGAAACTCCCTAGTCCTGTACTACCAACACACCAACC
TTCCAGCACCTTCTGAAACTCCCTAGTCCTGTACTACCAACACACCAACC
TTCCAGCACCTTCTGAAACTCtCTAGTCtTGTACTACCAACACACCAACC

TTTGCTTAATTGTCACGTCAGACAGATGGCTCAGGTGTCCCCAGCTCCCT
TTTGCTTAATTGTCACGTCAGACAGATGGCTCAGGTGTCCCCAGCTCCCT
TTTGCTTAATTGTCACaTCAGACAGATGGCcCAGGTGTCtCCAGCTCCCT

GAAGCTCTTCCCTTCCCCTCCCCTGGGCAGGGGCCTCAGGCCTTCCTCTG
GAAGCTCTTCCCTTCCCCTCCCCTGGGCAGGGGCCTCAGGCCTTCCTCTG
GAAGCTCTTCCCTTCCCCTtCCCTGGGCAGGGGCCTCAGGCCTTCCTCTG

ACTGATCCAGCCCACCTCCCAGTGTCCATACTAttaggttg----gtgcaaaag
ACTGATCCAGCCCACCTCCCAGTGTCCATACTATTAGGTTG----GTGCAAAAG
ACTGATCCAGCCCACCTCCCAGTGTCCATACTATTAGGTTGcagatcGCA----
                                ttaggttg----gtgcaaaag

--taa--ttgcag----------tttttgccattacctttaatggca
--TAA--TTGCAG----------TTTTTGCCATTAaangtaatggta
ATTAcTTTTGCAgCAACCTAAtaACTTTTGC----------------

--------------------------------------------------
aaaantgtaattatttttgaattaaattaataatatggataatgggaggt
--------------------------------------------------

--------------------------------------------------
gggatggattagttagaggaaggtttgagagatatgattaggggagggga
--------------------------------------------------

------------------------GCCCCGGCACCCTGGCC
agggaagagattaagggagttgggg----------------
-----------------------------------------
                        GCCCCGGCACCCTGGCC

ATTGGCCCCTGGACAGCTGTTCACTCCCTTCTCAGGCTTGCTGGGGACAC
--------------------------------------------------
--------------------------------------------------
GTTGGCCCCTGGACAGCTGTTCACTCCCTTCTCAGGCTTGTTGGGGACAC

ATACGTCATGCCCTGAAGCGTTCCGGAACCGGTAGGGGCTGCCTGTCCTG
--------------------------------------------------
--------------------------------------------------
ACACGTCATGCCCTGAAGCGTTCCGGAACCGGTAGGGGCTGCCTGTCCTG

CCACTCACCCACTCCAGCTAGGAACTCCTCAGTGGGCAAGATAATTGAGC
--------------------------------------------------
--------------------------------------------------
CCACTCACCCACTCCAGCTAGGAACTCCTCAGTGGGCAAGATAATTGGGC

CCAGGTTGAATTATGACGTTCACAGGTAAGAAGCAGGGTTCAGATGAGGG
--------------------------------------------------
--------------------------------------------------
```

CCAGGTTGAGTTATGACGTTCACAGGTAAGAAGCAGGGTTCAGATGAGGG

CTGGGTCTACAGCCAAGTGTGGGAGAGCTGGTGAAAGCCTTGAGAGAGGC

CTGGGTCTACAGCCAAGTGTGGGAGAGCTGGTGAAAGCCTTGCGAGAGGC

AGAGACTGGCCAGCCTCACCCTGCATTCCCAATCCCCTCCTCTTTGTCAA

AGAGACTGGCCAGCCTCACCCTGCATTCCCAATCCCCTCCTCTTTGTCAA

AATCTTACTCTCAGCATGGtgc**cattacctttaatggca**aaaactgcaat
---AATGGCAAAAACTGCAAT

---aaaaccgcaat
AATCTTACTCTCAGCATGGTGC

tatttttgcaccaacctaaATACTTTTGCACCGCCAGGAGATCTCCTGCC
TAcTTTTGCACCAACCTAAtaACTTTTGCACCGCCAGGAGATCTCCTGCC
---ACaGCCAaGAGATCTtCTGCC
tacttttgcaccaacctaa

ATCTATTCAGTCTTCCATCCCGCTCTCTGGGGCTTTATTCTTTCTGTTCT
ATCTATTCAGTCTTCCATCCCGCTCTCTGGGGCTTTATTCTTTCTGTTCT
ATCTgcTCAGTCTTCCcTCCtGCTCTCTGGGGCTTTATTtTTTCTGTTCT

TTCTGCTTCTTGCTGCGCACGGTGCCCCCACCTCCTGTGGCTGAAATGCT
TTCTGCTTCTTGCTGCcCACGGTGCCCCCACCTCCTGTGGCTGAAATGCT
TTCTGtTTCTTGCTGtcCgtGGTGCCCCCACCTCCTGTGGCTGAAATtCT

GCCCTCTCCCATCCTGCCCAGATGCCTCTTCCACCAAGCTTTTCTGACTG
GCCCTCTCCCATCCTGCCCAGATGCCTCTTCCACCAAGCTTTTCTGACTG
GCCCTCTCCtATCCTGCCCAGATGCCTCTTCCACCAAGCTTTctcaACTG

CCGCATCTGGAATAATATATATATGCAACTTTAAGATCTGTCTTTCTTTT
tCGCATCTGGAATAATATATATATGCAACTTTAAGATCTGTCTTTCTTTT
CCaCATCTGGAATAATActTgTATGCAACTTTAAGATCTcTCTTTCTTTT

TTGATCTTTTC---ATATTTTTTTATTTCTATTTTGGTTATTTGCTGCCATGT
TTGATCTTTTC---ATATTTTTTTATTTCTATTTTGGTTATTTGCTGCCATGT
TTGgTCTTTTCttttcttttcTTTTTTTCTATTTTGGTTATTTGCTGCCATGT

chr13:81567317-81567414
Alignment
Human, chimp, rhesus, Tigger3b consensus, donor
aatactatgcagtcattaaaaagaatgaaagcatgtcctttgcagcaaca
AcTACTATGCAGTCATTAAAAAGAATGAAAGCATGTCCTTTGCAGCAACA
 ATACTATGtAGTCATTAAAAAGAATGAgAGCATGTCCTTTcCAGCAACA

tggatggagctata--gaccattatcctaagtgatctaagtcaaaaatgaaa
TGGATGGAGCTATA--GACCATTATCCTAAGTGATCTAAGgCAAAAATGAAA
TGGATGGAGCTATAtaGACtATTATCCTAAGcaATCTAAGgCAAAAATGAAA

aaccaaatttcatattttcttacttataaatggaagctaaacaatggaaa
AACCAAATTTCATATTTTCTTACTTATAAATGGAAGCTAAACAATGGAAA
AACCAAATTTCATATTTTCTTACTTATAAATGGAAGCTAAACAATGGAAA

cacatggatacaaagagaa---caacagacactggggcctacttcggggtaga
CACATGGATACAAAGAGAAgaaCAACAGACACTGGGGCCTACTTgGGGGTgGA
CACATGaATACcAAGagaAGAACAACAGACACTGGGGCCTACTTgaGGGTgGA

gaatgggaggagaaagaagg--------------------------
GAATGGGAGGAGAAAGAAGG--------------------------
GAATGGGAGGAGAAAGAAGgttttatttatttatttatttatttat

----
ttttttttttttgagacagagtctggctctgccgcccaggctggagtg

----
cagtggccggatctcagctcactgcaagctccgcctcccgggttcacgcc

----
attctcctgcctcagcctcccgagtagctgggactacaggcgcccgccac

----
cgcgcccggctagtttttgtatttttagcagagacggggtttcaccgt

----
gttagccaggatggtctcgatctcctgacctcgtgatccgcccgtctcgg

----
cctcccaaagtgctgggattacaggcttgagccaccgcgcccggccgaaagaagG

ttttaaaaaatacctattgagtactatgct
TTTTAAAAAATACCTATTGAGTACTATGCT
TTTTAAAA-ATACCTATTGgGTgCTATGCT

tattatcagggtgactaaaatatctatacaccaaatccccatgacacata
TATTATCAGGGTGACTAAAATATCTATACACCAAATCCCCATGACACATA
TgTTATCAGGGTGACTgAAATATCTATACACCAAATCCCCATGACACATA

ctttatctacataacaatcttgcacatgtgccctaaacctaaaataaaag
CTTTATtTACATAACAATCTTGCACATGTGCCCTAAACgTAAAAgAAAAG
CTTTATCTAtATAACAATCTTGCACATGTGCCCTAAACCTAAAATAAAAa

ttaaaaaacaaaaacatggtgcccttaaactacactagatttttaaaat
TTAAAAAACAAAAACATGGTGCCCTTAAACTACACTAGATTTTTaAAAAT
TTAAAAAAtAAAAACATtGTGCCCTTAAACTA-----gATTTTTAAAAaT

```
atttttcctttttcagtagtacattaatcttac---aactttttactctct
ATTTTTTCCTTTTTCAGTAGTACATTAATCTTAC---AACTTTTTTACTCTCT
ATTTTTTCtcTTTTCAGTAGTACATTAATCTTACtacAACTTTTTTACTCTCT

cgctaaattttttt--actattttattcctttgttataacacttagcttaa
CGCTAAATTTTTTTT--ACTATTTTATTCCTTTGTTATAACACTTAGCTTAA
CcctatattTTTTTTTTACTATTTTATTCCTTTGTaATAACACTTAGCTTAA
                         actcttttgtaataacacttagcttaa

aacacacaattgtggtgctgaacaaatatattttctttctttatattctt
AACACACAATTGTGGTGCTGAACAAATATATTTTCTTTCTTTATATTCTT
AgCACACA-TTGTGGTGCTGtattACAAATgTATTTTCTTTCTTTATATT
aacacaaacacattgtacagctgtacaaaaatattttctttctttatatc

---actgtattgactttttatattctttaattaattaatt----aacttattttac
-----TGTATTGACTTTTTTATATTCTttaaTTAATTAATTAATTAACTTATTTTAC
CTcACTGTATTGACTTTTTTcTATTCTTTAATTAATTAATTAA----CTTATTTTAC
ctta----------ttctataagctttttctatttttaaattattttttttttac

ttttta-aaattttt--------------------------------gttaaaaagtaagacagaaacacacatattagctta
TTTTTA-AAATTTTT--------------------------------GTTAAAAAGTAAGACAGAAACACACATATTAGCTTA
TTTTTA-cATTTTTtaaaaattttaatattttactttttaaaaatttgGTTAAAAAGTAAGACAGAAACACACAcATTAcgTTA
tttttaaactttttt--------------------------------gttaaaaactaagacacaaacacacacattagccta

ggcctacactgtgttagatcatcaatatccctgtcttcTGACGGATTTC
GGCCTACACaGTGTTAGGATCATCAATATCCCTGTCTTCc----------
GGCCTACACaGTGTTAGcgTCATCA-TATCCCTGTCTTCT----------
ggcctacacagggtcaggatcatcaatatcactgtcttcc----------
                                         GACGGATTTC

CACTCTATTGTGATGAAAAGATTTGAAAGATCTTTTTTTGAACTTCCAAG
--------------------------------------------------
--------------------------------------------------
--------------------------------------------------
CACTCTATTGTGATGAAAAGATTTGAAAGATCTTTTTTTGAACTTCCAAG

AAATTTCATTTACTATTTAAAAAAAACAAAAAAAAAAAtccctgtcttctacctctgcatctccagaggc---------------
--------------------------------------------------AgCTCTGCATCT-CAGAGGC---------------
--------------------------------------------------atctcaaCATCTCCAGAGGC---------------
--------------------------------------------------acctccacatct--------tgtcccactggaagg
AAATTTCATTTACTATTT

-----------aataccacgcatggagtagtcatctctatg----
-----------AATACCACGCATGGAGTAGTCATCTCTAcG----
-----------AATACCgCaCATGGAGTAGTCATCTCTATG----
tcttcaggggcaataacacgcatggagctgtcatctcctatgata

acaacaatgacttctggaatacctcttgaaggacatgcctggggaggttt------
ACAACAATGACTTCTGGAATACCTCTTGAAGGACATGCCTGGGGAGGTTT------
ACAACAAaGACTTCTGGAATACCTCTTGAAGGACATGCCTGaGGAtGTTT------
acaatgccttcttctggaatacctcctgaaggacctgcctgaggctgttttacagt

tatagttaacatc-----------t-ataagtagaaagagtacactc-aaaataacaataaaa
TATAGTTAACATC-----------T-ATAAGTAGAAAGAGTACACTC-AAAATAACAATAtAA
TATtGTTAACATC-----------T-ATAAGTAGAAgGAGTACACTC-AAAATAACAATAAAA
ta----------actttttttttaataagtagaaggagtacactctaaaataacgataaaa

tgtacagtataataaatacataaaccagtaacatagttgtt-at---cattatt
TGTACAGTATAATAAATACATAAACCAGTAACATAGTTGTT-AT---CATTATT
TGTACAGTATAATAAATACATAAACCAGTAACATAGTTGTT-AT---CgTTATT
agtatagtatagtaaatacataaaccagtaacatagtcgtttattatcattatc

aaatattacatactgcacataattgtatgtgctatacctttataagactg
```

AAATATTACATACTGCACATAATTGTATGTGCTATACCTTTATAAGACTG
AAATATTACATACTGCACATAATTGTATGTGCTATACCTTTATAAGACTG
aagtattatgtactgtacataattgtatgtgctatacttttatacgactg

gtggcacagtaggttcatttacatcattatcaccacaaacacaggagtaa
GTGGCACAGTAGGTTCATTTACATCATTATCACCACAAACACAGGAGTAA
GTGGCACAGTAGGTTCATTTACATCATTATCACCACAAACACAGGAGTAA
gcagcgcagtaggtttgtttacaccagcatcaccacaaacacgtgagtaa

tgtgttgcactatgac-ctaatgcagctacaatgtcaccaggcaatagaaa
TGTGTTGCACTATGAC-CTAATGCAGCTACAATGTCACCAGGCAATAGAAA
TGTGTTGCACTATaAC-aTAtgaCAGCcACAATGTCACCAGGCAATAGAAA
tgcgttgcgctacgacgttacgatggctacgacgtcactaggcgataggaa

tttttcagttccattataatcttatgggagcagagacttatatgtggtgc
TTTTTCAGTTCCATTATAATCTTATGGGAGCAGAGACTTATATGTGGTGC
TTTTTCAGTTCCATTATAATCTTATGGGAtCAGAGAtTTAcATGTGGTGC
tttttcagctccattataatcttatgggaccaccgtcgtatatgcggtcc

atcattgacaaaaacgtgggtatgtggtgcatgactgTACATATTAAAAT
ATCATTGACAAAAACGTGGGTATGTGGTGCATGACTGTACATATTAAAAT
ATCATcGAtAAAAACGTGGGTATGTGGTGCATGACTGTACATATTAAAAT
gtcgttgaccgaaacgtcgttatgcggcgcatgactg

TATTAGTTTTTCGGAAACTACAATTTAATAGCAAACTAATTCAAAATAGT
TATTAGTTTTTCaGAAACTACAATTTAATAGCAAACTAATTCAAAATAGT
TATTAGTcTTTTGGAAAtTACAATTTAATAGtAtAtTAATTCAAAATAGT

AACTAAACAAATCAATGATCTAAAACATATTTGTTTTTATGGTAATATTA
AACTAAACAAATCAATGATCTAAAACATATTTGTTTTTATGGTAATATTA
AACaAAACAAATCAATcATCTAAAACATATTTcTTTTTATGGTAATATTA

GTTAAACAAAGGAAG---AAAATGTTGGACCTATGTGACAATATGTTTGATTT
GTTAAACAAAGGAAG---AAAATGTTGGACCTATGTGACAATATGTTTGATTT
GTTAAACAAAGGAAGtacAAAATGTTGGgCCTATGTGAtAATATGTTTGATTT

GTCAAAACTGATGTTTCTTCTGGACATTATATTCGATGGTTGGAC
GTCAAAACTGATGTTTCTTCTGGACATTATATTCGATGGTTGGAC
GTCAAAACTGATGTTTCTTCTGGACATTATATTtGATGGcTGGAC

Hominoid-specific RDs - donor and acceptor within 5 kb of each other

chr14:87413740-87413941
Alignment
Human, chimp, rhesus, donor
TCTGTTTTTTAAAAAGCTTCAAATTagccaggcacggtggctcacacctg
TCTGTTTTTTAAAAAGCTTCAAATTAGCCAGGCACGGTGGCTCACACCTG
TCTGTTTcTTAAAAAGCTTCAAATTAGCCAGGCACGGTGGCTCACACCTG

taatcccagcactttgggaggccaaggcaagtggatcacttcagctcagg
TAATCCCAGCACTTTGGGAGGCCAAGGCAAGaGGATCACTTCAGCTCAGG
TAATCCCAGCACTTTGGGAGGCCAAGGCgAGTGGAcCACTTCAGCcCAGG

agtgaacaacatggtgggcaacatggtgaaaccctgtctctacaaaaaat
AGTGAACAACATGGTGGGCAACATGGTGAAACCCTGTCTCTACAAAAAAT
--------ACATGGTGGGCAACATGGTGAAACCCTGTgTCTACAAAAAAT

GCTTCCATCTTAAATGGAAGATGAGTGGCCATCAGATAGAAGCAGTAAGC
GCTTCCATCTTAAATGGAAGATGAGTaGCCATCAGATAGAAGCAGTAAGC

ATCTTAAAGGGAAGATGAGTGGCCATCAGATAGAAGCAGTAAGC

ATGGTGACACGT-AAAGAGAAGCAGCAGTAAGACTGGACAGGTCCCCTATG
ATGGTGACACGT-AAAGAGAAGCAGCAGTAAGACTGGACAGGTCCCCTATG

ATGGTGACATGTCAAAGAGAAGCAGCAGTAAGACTGGACAGGTCCCCTATG

TAAAATGCACTAGAAGATTCCAAAAAAATTTGTATTTGACTATCTCTCTG
TAAAATGCACTAGAAGATTCCAAAAAAATTTtTATTTGACTATCTCTCTG

TAAAATGCACTAGAGGATTTCAAAAAAATGTTTATTTGACTATCTCTCTG

ATGATAAAAAAGGGAGACCTCAAAACTACACATGAACAAAGTCATGTTTG
ATGATAAAAAAGGGAGACCTCAAAACTACACATGAACAAAGTCATGTTTG

ATGATAAAAAAGGGAGACCTCAAAACTACACATGAACAAAGTCATGTTTG

TGG--***aagaatt***agctgggcatggtggcacatgcctatagtctcagctactc
TGG--***AAGAATT***AGCTGGGCATGGTGGCACATGCCTATAGTCTCAGCTACTC
---gc***AAaAATT***AGCTGGGCATGGTGGCACATGCCTgTAGTCTCAGCTAtTC
TGG--***AGGAATT***

aggaggctgaggtgggaggatcacttgagccctggaagtcaagactgcag
AGGAGGCTGAGGTGGGAGGATCACTTGAGCCCTGGAAGTCAAGACTGCAG
AGGAaGCTGAGGTGGGAGGATCACTTtAGCCCTGGAAGTCAAGgtTGCAG

tgagtcaacatcacaccactgcactccagcctgggtgatagagtgcgact
TGAGTCAAgATCACACCACTGCACTCCAGCCTGGGTGATAGAGTGaGACT
TGAGTCAAggTCACACCACTGCACTCCAGtCTGGGTGAcAGAaTGaGACT

ctgtctcaaaaataaagaaataaaTAAGT----CTCCAAATAAATAGCATGTAA
CTGTCTCAAAAATAAAGAAATAAATAAGT----CTCCAAATAAATAGCATGTAA
CTGTCTCgAAAATAAAtAAATAAATAAaTaaacCTCCAAATAAATAGaATGTAA

CATAATCTTTGTAGGTGATTAAGCTCATCGCAATTTCAGCGTACCCATTC
CATAATCTTTGTAGGTGATTAAGCTCATCGCAATTTCAGCGTACCCATTC
CATAATCTcTGTAGGTGATTAAGtgCATCtCAATTTCAGCGTACCCATTC

chr16:57787578-57787730
Alignment
Human, chimp, rhesus, L1ME3 consensus, donor

```
aTTTGTACATCAAGTGGGATCAATAAAAATATTTGGCattagttttgcct
ATTTGTACATCAAGTGGGATCAATAAAAATATTTGGCATTAGTTTTGCCT
ATTTGTACATCAAGTGGGATCAgTgAAAATATTTGGCgTTAGTTTTGCCT
                                      attagttttgcct

gttcttggagttcaatataaatggaatc-t-caatatgtctattttATATGG
GTTCTTGGAGTTCAATATAAATGGAATC-T-CAATATGTCTATTTTATATGG
GTTCTTGGAGTTCAATATAAATGGAATC-T-CA-------------------
gttcttgaacttc-atataaatggaatcatacagtatg--tactctt-----
                                      GTCTATTTTATATGG

GACATATTAAACCCCCTTC-ATTCCCCCCCGCCACAATGTCTATTTCCTTT
GACATATTAAACCCCCTTC-ATTCCCCCCCGCCACAATGTCTATTTCCTTT
----------------------------------------------------
----------------------------------------------------
GACATATTAAACCCCTCTCCATTCCCCCCCCCCACAATGTCTATTTCCTTT

TTAGATTTGTCCTTATAAAATTTGAATAAATGAACTCCCTATTAAACAGG
TTAGATTTGTCCTTATAAAATTTGAATAAATGAACTCCCTATTAAACAGG
---------------------------------------------------
---------------------------------------------------
TTAGCTTTGTCCATATAAAATTTGAATAAATGAACTCCCTATTAAACAGG

TGGACATTATTACTTTTCACTCAGAAGATATATTTTAAAAGAGAAACA---ta
TGGACATTATTACTTTTCACTCAGAAGATATATTTTAAAAGAGAAACA---TA
-----------------------------------------------TAGTA
-----------------------------------------------------
TGGACATTATTACTTTTCACTCAGAAGATATATTTTAAAAGAGAAACA---T

tgtagttctttgtttctgacttctctgaaaacaaagtttttaagatttat
TGTAGTTCTTTGTTTCTGACTTCTCTGAAAACAAAGTTTTTgAGATTTAT
TGTAGTTCTTTGTTTCTGACTcaTCTGAAAAtAAAGTTTTTgAGATTTAT
ttgcg-tc-tggcttct---ttcgctcaacataatgtctntgagatt

ttgtgttgctgtgtgtatcaatagtttgctagtttttttttttttttttt
TTGTGTTGCTGTGTGTATCAATAGTTTGCTAGTTTTTTTTTTTTTTTTTT
aTGTGTTGCTGTGTGTATCAATAGTTTGCTAGaTTTT

tttttttccgagacagagtct
TTT-----CCGAGACgGAGTCT
```

chr16:27304337-27304412
Alignment
Human, chimp, rhesus, AluSq consensus, donor
taataatcatactagtctagtaaaCAGCAACAATTATAAGTACCtttatt
TAATAATCATACTAGTCTAGTAAACAGCAACAAcTATAAGTACCTTTATT
TAATAATCATACTAGTCTgGTAgCAGCAACAAcTgTAAGTAtCtcttttt

tttt-------agatggacttttgctcttatcacccaggctggagtgtagtggcacg
TTTT-------AGATGGACTTTTGCTCTTATCACCCAGGCTGGAGTGTAGTGGCACG
tTTTtTTTTTTtGAcGGAgTTTTGCTCTTgTCgCCCAGGtTGGAGTGcAGTGGtgCG
gacggagtttcgctcttgttgcccaggctggagtgcagtggcgcg

atttcagatcactgcaacctccacctcccgggttcaagcaattgtcctgc
ATTTCAGATCACTGCAACCTCCACCTCCCGGGTTCAAGCAATTcTCCTGC
ATTTCAGATCACTGCAACCTCCACCTCtgGGGTTCAAGCAATTcTCCTGC
atctcggctcactgcaacctccgcctcccgggttcaagcgattctcctgc

ctcagcctccccaggagctgggaatacaggcatgtgccaccacgcccggc
CTCAGCCTCCCCAGGAGCTGGGAATAtAGGCATGTGCCACCACGCCCGGC
CTCAGCCTCCtgAGtAaCTGtGAtTACAGGCgcccGCCACCACGCCCGGC
ctcagcctcccgagtagctgggattacaggcgcccgccaccacgcccggc

taatttttgtatttttagtacagatggggtttcaccatgttggccaggat
TAATTTTTGTATTTTTAGTACAGATGGGGTTTCACCATGTTGGCCAGGAT
TAATTTTTGTAgTTTTAGTAgAGATGGGGTTTCACCATGTTGGCCAGGAT
taatttttgtatttttagtagagacggggtttcaccatgttggccaggct

ggtctcaaattcctgatcttag**gtCTCGGCCT**AAGCAATCATTTGTCTCT
GGTCTCAAATTCCTtATCTTAGGTCTCGGCCTAAGCAATCATTTGTCTCT
GGTCTtgAAcTCCTGAcCTTAG----------
ggtctcgaactcctgacctcag----------
TCAGCAATCATTTGTCTCT

AGACTTCTCATTCCATAAGGGAATTAGCTCTTAAGTGTTTAAGA**GCTTAAG**
AGACTTCTCATTCCATAAGGGAATTAGCTCTTAAGTGTTTAAGAGCTTAAG

AGACTTCTCGTTCCATAAAGGAATTAGCTCTTAAGTGTTTAAG

----------gcctcggcct tccaaagtgctgggattacaggcgtgagccaccatgccc
----------GCCTtGGCCTTCCAAgGTGCTGGGATTACAGGCGTGAGCCACCATGCCC
ATgATcTGcCTGCCTCGaCCTcCCAAAGTGCTGGaATTACAGGCaTaAGCCACCATGCCt
gtgatccacccgcctcggcctcccaaagtgctgggattacaggcgtgagccaccgcgccc

ggcAGTACCTCTTATACTTAGTACA
GGCAGTACCTCTTATACTTAGTACA
GGCAGTACCTCTTATACTTAGTACA
ggc

chr18:46082474-46082986
Alignment
Human, chimp, rhesus, MER54A consensus, donor

```
CTACGCATCAGTGTATGAGCTGTGCTTACATTGAAAGTCAAAAATCCCTC
CTACGCATCAGTGTATGAGCTGTGCTTACATTGAAAGTCAAAAATCCCTC
CTACGCATCAGTGTATGAGCTGTtCTTACATTGAAAGTgAAAAcTCCCTC

TTGTGTGTCTAACACTGCTGCCTTGTATCGAGAAAGATGAAACCACTATC
TTGTGTGTCTAACACgGCTGCCTTGTATCGAGAAAGATGAAACagacAGa
TTGTGTGTCTAACACTGCTGCCTTGTATCGAGAAAGATGAAA-TACTATC

TCAttgtattcctctctaatttggtcttgaggtctgtctttggagaatgg
------------------------cagaGAGGTCTGTCTTTGGAGAATGG
TCATTGTATTCCTCTCTAATTTaGTCTTGAGGTCTcTCTTTGGAGAgTGG

ccataaaccataatactgccttagtgggggtccagggaattttttttttt
CCtTAAACCATAATACTGCCTTAGTGGGGGTCCAGGGAAttTTTTTTTTT
CCATAAACCcTAAcACTGCCTTAGTaGGGGTCCAGGGAATtgTTTTTTTT

--tagaggcagggtctccctatgttgcccaggctggtcttgagctcctgggc
TTTAGAGGCAGGGTCTCCCTATGTTGCCCAGGCTGGTCTTGAGCTCCTGGGC
TTTAGAGGCAaGGTCTCaCTATGTTGCCCAGGCTGGTCTTGAGCcCCTGGGt

tcaagcagtcctcccacctcggcctcccaaagtgctgagattacagacct
TCAAGCAGTCCTCCCACCTCGGCCTCCCAAAGTGCTGAGATTACAGACCT
TCAAGCAaTCCTCCCACCTCaGCCTCCCAAAcTtCTGAtATTACAGgCCT

gaggcactgcacctgtcgtctctggggaatttggtcatgtacgtttacag
GAGGCACTGCACCTGTCGTCTCTGGGGAATTTGGTCATGTACGTTTACAG
GAGcCACTGCACCTGTCcTgTCTGGGGAATTTGGTCATGgACGTTTgCAG
                                tggtcgtggatgtttacag

tgtgcctttcacatgctactttttatccaggtggatgatccaatgccta
TGTGCCTTTCACATGCTACTTTTTTATCCAGGTGGATGATCCAATGCCTA
TagGCCTTTCACATGCTACTTTTTTATCCAGGTGGATGgcCCAATGCCTA
tgtgcctttcacgggatacttctttatcctggcggacggcctaatgccta

agtgtctagccACTTCCTCTTGGCACTGAGAAGCTGAATCTGCGCGATCC
AGTGTCTAGCCACTTCCTCTTGGCACTGAGAAGCTGAATCTGtGCGATCC
AGTGaCTgaCC--------------------------------------
agtgtccgacc---------------------------------------
     CTAGCCACTTCCTCTTGGCACTGAGAAGCTGAATCTGCGCGATCC

TCAGATCAACCTCGGTCTCTCTGGCTGGATATTTATTGGGTTCTGCCTGA
TCAGATCAACCTCGGTCTCTCTGGCTGGATATTTATcGGGTTCTGCCTGA
--------------------------------------------------
--------------------------------------------------
TCACATCAACCTCGGTCTCTCTGGCTGGATATTTATCGGGTTCTGCCTGA

AAGGCCGTCTAACGCCTTTCCTCTTGGAAAAGTCGCAGGTCTTAA---TACAG
AAGGCCGTCTAACGCCTTTCCTCTTGGAAAAGTCGCAGGTCTTAA---TACAG
-----------------------------------------------------
-----------------------------------------------------
AAGGCCGTCTAACGCCTTTCCTCTTGGAAAAGTCGCAGGTCTTAATAATACAG

CTTCAGTTTATACGTTTCTTTGTGCCTTATAATAGTCATAAAGGTCTGGT
CTTCAGTTTATACGTTTCTTTGTGCCTTATAATAGTCATAAAGGTCTGGT
--------------------------------------------------
--------------------------------------------------
CTTCAGTTTATACGTTTCTTTGTGCCTTATAATAGTCATAAAGGTCTGGT

TAGATCTCCACTCCCTCCAGGAGCGCTCCAGGAGCTCACGGTTGGGCCTT
TAGATCTCCACTCCCTCCAGGAGCGCTCCAGGAGCTCACGGTTGGGCCTT
```

```
--------------------------------------------------
--------------------------------------------------
TAGCTCTCCACTCCGTCGAGGAGCGCTCCAGGAGCTCACAGTTGGGCCTT

TCATAGCACGTAGGGAAAGATCCTTGCTATTTTGCTATTTATTGTACTGG
TCATAGCACGTAGGGAAAGATCCTTGCTATTTTGCTATTTATTGTACTGG
--------------------------------------------------
--------------------------------------------------
TCGTAGCACTTAGGGAAAGATCCTTGCTATTTTGCTATTTATTGTACTGG

CTTAAAATGGGGGTGGGCAGGCAGGAGCGCCCTTTTCGGAGCGGGCGGGA
CTTAAAATGGGGGTGGGCAGGCAGGAtCGCCCTTTTCGGAGCGGGCGGGA
--------------------------------------------------
--------------------------------------------------
CTTAAAATGGGGGTGGGCAGGCAGGAGCGCCCTTTTCGGAGCGGGCGGGA

AAGGGCGGCGACCACGGTTGGCCCCCCGCAGACCCCGCAGCTCCTGCTGT
AAGGGCGGCGACCACGGTTGGCCCCCCaCAGACCCCGCAGCTCCTGCTGT
--------------------------------------------------
--------------------------------------------------
AAGGGCGGCGACCACGGTTGGCCCCCCGCAGACCCCGCAACTCCTGCTGT

GCCCCTCAGCTGCCATTAGAGTCCCCATGGGGTCCCTCCTGCCTGTGTCT
GCCCCTCAGCTGCCATTAGAGTCCCCATGGGGTCCCTCCTGCCTGTGTCT
--------------------------------------------------
--------------------------------------------------
GCCCCTCAGCTGCCATTAGAGTCCCCATGGGGTCCCTCCTGCCTGTGTCT

CCACAAGAGGGACCCCATGGGGACTCTAATGAGAGCCCTGCATCCTACCA
CCACAAGAGGGACCCCATGGGGACTCTAATGAGtGCCCTGCATCCTACCA
--------------------------------------------------
--------------------------------------------------
CCACAAGAGGGACCCCATGGGAACTCTACTGAGAGCCCTGCATCCTACCA

AGGAGCCCCCAGAAGTCGGGCCCTGcgtgtccaagtgtccatctcacagg
AGGAGCCCCCAGAAGTCGGGCCCTGCGTGTCCAAGTGTCCATCTCACAGG
-------------------------tgagaCCAAGTaTCCATCTCAtAGG
-------------------------cgtgaccaggtgtccctctcacagg
AGGAGCCCCCAGAAGTCGGGCCCTGCGTG

aaacttat----gttggcagatgctcttgtggctcttgtctgacctgtgtccag
AAACttgtTTATGTTGGCAGATGCTCTTGTGGCTCTTGTCTGACCTGTGTCCAG
AAACTTATttatGTTGGCAGgTGCTCTTGTGGtTCTTGTCTGACCTGTGTCCAG
aaacttgtttatactggcagacgcccttgtggctcttgtctgacctgtgtccag

tttatttctaccaagatagccaatc--taggagagctctgaccaagagaaaa
TTTATTTCTACCAAGATAGCCAATC--TAGGAGAGCTCTGACCAAGAGAAAA
TTTATTTCTACCAtGATAGCCAgTC--TAGGAGAGCTCTGACCAAGAGAAA-
tttattcctaccaagatagccactctctaggagagccctgaccgggaggaga

gtcaggttcaagtgtgccagtagaatggacagaggcaacaaaacccatga
GTCAGGTTCAAGTGTGCCAGTAGAATGGACAGAGGCAACAAAACCCATGA
CTtAGGTTCAAGTGTGCCAGTgGAATGGACAGAGGCAACAAAACCCATGA

aatagcagaagcattttcttacagcaccaaagatgagaagagtaaaaatg
AATAGCAGAAGCATTTTCTTACAaCACCAAAGATGAGAAGAGTAAAAATG
AATAGCAGAAGCATTTTCTTACAGCACCAAAGATGAGAgGAGTAAAAATG

agggccagtaggaaggttgcaggtacaatatgctcaacc--------gggggccagac
AGGGCCAGTAGGAAGGTTGCAGGTACAATATGCTCAACC--------GGGGGCCAGAC
AGGGCCAGTAGGAAGGTcGCAGGgACAATAcaCTCAACCaacaagttGGGGGCCAGAg

agaaagatgaacccatgggccaaggcctttgtttggggtccagggtgttc
```

AGAAAGATGAACCCATGGGCCAAGGCCTTTGTTTGGGGTCCAGGGTGTTC
AGAAAGATGAACCCATGGGCCAAGGCCTTTGTT-GGGGTCCAGGGTGTTg

ttacccaagcaggtctccttcagagagttctaagtggtgggtttagagca
TTACCCAAGCAGGTCTCCTTCAGAGAGTTCTAAGTGGTGGGTTTAGAGCA
TTACCCAAGCAGGTCTtCTTCAGAGAGTTCTAAGTGGTGGGTTTAGAGCA

agcaggcatgcatcccatggggtcatgctgtgactgagaag---tcactgtgg
AGCAGGCATGCATCCCATGGGGTCATGCTGTGACTGAGAAG---TCACTGTGG
AGCAGGCATGCATCCCAaGGGGTtATGCTGTGACTGAGAtgtGGTCACTGTGG

catatctgtgtagtctgtgtggcatgtggggtcagtggggccagttgggc
CATATCTGTGTAGTCTGTGTGGCATGTGGGGTCAGTGGGGCCAGTTGGGC
CATATCTGTGTAGTCTGTGTGGCATGTGGGGTCAGTGGGGCCAGcTGGGC

cagtttagtgggttgtatctagctgccttgtggagaggtggtaaccaaga
CAGTcTAGTGGGTTGTATCTAGCTGCCTTGTGGAGAGGTGGTAACCAAGA
CAGTcTAGTGGGTTGTATCTAGCTGCCccaTGGAGAcaTGGTcACCAgGA

gccagttgtataaggtagatatgtggattaagaacattgagaaactagga
GCCAGTTGTATAAGGTAGATATGTGGATTAAGAACATTGAGAAACTAGGA
GCCAGTTGTATAAaGcAGATATcTGGATTAAGAACATTcAGAAACTAGGA

ataggcagaaagctggaaactgtgtccagggtgactaagccagcttctgg
ATAGGCAGAAAGCTGGAAACTGTGTCCAGGGTGACTAAGCCAGCTTCTGG
gTAGGCAGAAAGCTaGAAACTGTaTCCAGGGTGACTAAGCCAGCTTCTGa

aatgagaaagttaaacctactttcaaaacagatgcagaagtgacatgata
AATGAGAAAGTTAAACCTACTTTCAAAACAGATGCAGAAGTGACATGATA
AATGAGAAAGTTAAACCTACTTTCAAAACgGATGCAGAAGTGACATGATA

ggaattcattacaTCCATGGTCAGAACTAAATGTATTTTATAGTTCATTT
GGAATTCATTACATCCATGGTCAGAACTAAATGTATTTTATAGTTCATTT
GGAATTCATTACATCCATtGTT-GAACTAAATGTATTTTATAGTTCATTT

ATTTTAGTTTACATGAAGTCTACTTATATTAGCATacaaatattcatagt
ATTTTAGTTTACATGAAaTCTACTTATATTAGCATACAAATATTCATAGT
ATTTTAGTTTACATGAAaTCTACTTATATTAGCATACgAATATTCATAGT

tatgtaacaaccaccccactcaagacacagaactct
TATGTAACAACCACCCCACTCAAGACACAGAAtTCT
TAcGTAACAACCACCaCACTCAAGACACAGAACTCT

chr1:234348661-234348870
Alignment
Human, chimp, rhesus, AluSq consensus, donor

```
AATCTTGTTTTCCAATCTCTCTTAGAAATTATCTCCTCCCCAGGTTTCCA
AATCTTGTTTTCCAATCTCTCTTAGAAATTATCTCCTCCCCAGGTTTCCA
aatcttgctttccaatctctctcagaaattatctcctccccaggtttcca

TAATACTCTCTGTCTTGAGTTTCCTACTACTAATTCTTGGGTGTTTTCTT
TAATACTCTCTGTCTTGAGTTTCCTACTACTAATTCTTGGGTGTTTTCTT
taacactctctctc--gagtttcctactactaattcttgggtgttttctt

GTCCTTTTCTTTTCATGTTTTTCTGTTTGAttg----ttttgtttctttttgtt
GTtCTTTTCTTTTCATGTTTTTCTGTTTGtttgATTGTTTTGTTTCTTTTTGTT
gttcttttcttttcatgtttttcTGTTTATTTGAttgttttgtttctttctgtt

gttttgagacggagtctcgctctgttt-cctaggctgga cagcagtt gctt
GTTTTGAGACGGAGTCTCGCTCTGTTT-CCTAGGCTGGAgAGCAGTTGCTT
tttttgagctggagtctcgctctgttt-cctaggctgga------------
    tgagacggagtttcgctcttgttgcccaggctgga------------
                                                GCTT

tatcctagAACTTATGATGTAGCTGCCTGTGTGCCCATCTGTCTCCACAA
TATCCTAGAACTTATGATGTAGtTGCCTGTGTGCCCATCTGTCTCCACAA
--------------------------------------------------
--------------------------------------------------
TATCCTAGAACATATGATGTAGTTGCCCGTGTGCCCATCTGTCTCCACAA

CAGAGCAAGGTCCTGGAAGCAGAGGTCGGGGGCGTGGGGGAGGTCTTGCT
CAGAGCAAGGTCCTGGAAGCAGgaGTCGGGG-CGTGGGGGAGGTCTTGCT
--------------------------------------------------
--------------------------------------------------
CAGAGCAAGGTCCTGGAAGCAGGGGTAGGGG-CGTCGGGGAGGTCTTGCT

TGTCCTCTTTATGTCTCAGTGCTTAGTGTACCTTATATTTGGACAATGAA
TGTCCTCTTTATGTCTCAGTGCTTAGTGTACCTTATATTTGGACAATGAA
--------------------------------------------------
--------------------------------------------------
TGTCCTCTTTATGTCTCAGTGCTTAGTGTACCTTATATTTGGACAATGAA

TAAATAAATGTGCGCTGCTCTAGAAAAGAGATCATTGTCTCAATGGAGTG
TAAATAAATGTGCGCTGCcCTAGAAAAGAGATCATTGTCTCgATGGAGTG
--------------------------------------------------
--------------------------------------------------
TAAATAAATGTGCGCTGCTCTAGAAAAGAGATCATTGTCTCGATGGAGTG

AAAATCAGTAAGGGGTAGG--------------tctcggctcactgcaacctccacctccctgg
AAAATCAGTAAGGGGTAGG--------------TCTCGGCTCACTGCAACCTCCAtCTCCCTGG
-------------------gtgcgatggtgggatctcggctcactgcaacctccacctccctgg
-------------------gtgcagtggcgcgatctcggctcactgcaacctccgcctcccggg
AAAATCAGTAAGGGG

ttcaagtaattctcctgcctcagtctcccgagtagctgggattacaagcg-
TTCAAGTgATTCTCCTGCCTCAGTCTCCCGAGTAGCTGGGATTACAAGCG-
ttcaagtgattctcccgcttcagtctcccgagtagctgggattacaagtgc
ttcaagcgattctcctgcctcagcctcccgagtagctgggattacaggcgc

ctcaccaacccgccaggctaaatttttgtatttttagtaagagatggggt
CcCACCAACCCGCCAGGCTAAATTTTTGTATTTTTAGTAAGAGATGGGGT
ccaccaacccgccagggtaactttttgtatttttagtaagagatgggtt
ccgccaccacgcccggctaa--tttttgtatttttagta-gagacggggt

ttcaccacattggccaggctggccttgaactcctgacctcagttgatctg
TTCACCACgTTGGCCAGGCTGGCCTcGAACTCCTGACCTCAGTTGATCTG
```

ttcgtcatgttggccaggctggcctcgaactcctgacctcaggtgatctg
ttcaccatgttggccaggctggtctcgaactcctgacctcaggtgatcca

cgggcctcggcctcccaaagtgctgggattacaggcgtaagccactgtgc
CGGGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTAAGCCACTGTGC
cgggcctcggcctcccaaagtgttgggattacaggtgtaagccactgtcc
cccgcctcggcctcccaaagtgctgggattacaggcgtgagccaccgcgc

ctggccCCttttcatgtttttatgttttgagacggagtctcgctctgtca
CTGGCCtCTTTTCATGTTTTTATGTTTTGAGACGGAGTCTCGCTCTGTCA
ctggccTC
ccggcc

chr1:5680589-5680737
Alignment
Human, chimp, rhesus, consensus, donor
attacctaAGATACACTAttttttttttttttttttttttgagacggagtt
ATTACCTAAGATAtACTATTTTTTTTTTTT---------GAGACGGAGTT
ATTACCTAAGATAtatatatataTTTTTTT-----------GAGAtGGAGTT

ttgctctttttgcccaggctggagtgcaatcacacgatcttggctcaccg
TTGCTCTTTTTGCCCAGGCTGGAGTGCAATCACACGATCTTGGCTCACCG
TTGCTtTTTTTGCCCAGGtTGGAGTGCAATgACAtcATCTTGGCTCACCa

caacctccacctcccgggttcaactgattctcctgcctcagcctcccgag
CAACCTCCACCTCCCGGGTTCAACTGATTCTCCTGCCTCAGCCTCCCGAG
CAACCTCCgCCTCCCGGGTTCAACTGATTCTCCTGCCTCgGCCTCCCGAG

tagctgagattacaggtatgcgccaccacacctggccaatt**CCATTCCAT**
TAGCTGAGATTACAGGTATGCGCCACCACACCTGGCCAATTCCATTCCAT
TAGCTGAGATTACAGccATGCaCCACCACACCcaGCCAATT---------

TCCTAAAGATCAGCGAAGCACTTTAATCTCCCAGGCCTCTGGCTCAGCTG
TCCTAAAGATCAGCGAAGCACTTaAATCTCCCAGGCCTCTGGCTCAGCTG

CAGCAAAGCACTTTAATCTCCCAGGCCTCTGGCTCAGCTG

TTTCTGAGCAGAGAACTCCACACATCCTGAGGAAGGCCAAGTCTGGGGAA
TTTCTGAGCAGAGAACTCCACAtATCCTGAGGAAGGCCAAGTCTGGGGAA

TTTCTGAGCAGAGAACTCCACACATCCTGAGGAAGGCCAAGTCCAGGGCA

GGAAGGAAGATCAGCAGATGGGGGGAAGCCCTGCAG**TCTCC**---------tagtagaga
GGAAGGAAGATCAGCAGATGGGGGGAAGCCCTGtAGTCTCC---------TAGTAGAGA
---ttgtatttcTAGTAGAGA
GGAAGGAAGATCAGCAGATGGGGGGAAGCCCTGCAG

cggggtttctccatgttgatcaggctgttctcgaactcccgacctcaggt
CGGGGTTTCTCCATGTTGATCAGGCcGTTCTCGAACTCCCGACCTCAGGT
tGGGGTTTCTCCATGTTGATCAGGCTGgTCTCGAACTCC-GACCTCAGGT

gatctgcctgcctcagcctcctaaagtgctgagatcacaggcatgagcca
GATCTGCCTGCCTCAGCCTCCTAAAGTGCTGAGATCACAGGCATGAGCCA
GATCcaCCgGCCTtgGCCTCtTAAAGTGCTGgGATCACAGGtgTGAGCCA

ccgcgcccggccACCTAAGATGTTTTATTATAGCAGCACAGGCAAACGAA
CCGCGCCCaGCCACCTAAGgTGTTTTATTATAGCAGCACAGGCAAACGAA
CCGtGCCtGGCCACCTAAGgTaTTTTATTATAGCAGCACAGGCAgACaAA

GGCAGTCTACAGGGCAGAATTCTGACAACTTCC
GGCAGTCTACAGGGCAGAATTCTGACAACTTCC
GGCAGTC

chr10:74929662-74929767
Alignment
Human, Chimp, Rhesus, MER20 consensus, donor

```
TGATCTCTGAGATCTAATGTGGAATGCCTTTTCTTATACATTTATtcaac
TGATCTCTGAGATCTAATGTGGAATGCCTTTTCTTATACATTTATTCAAC
                                              tcaac

tttggcactcttggtatcttgggct-gataattctttgttggggttgggga
TTTGGCACTgTTaaTATCTTGGGCT-GATAATTCTTTGTTGGGGTTGGGaA
cttggcactatcgacattttgggccggataattctttgttgtgg--ggg--

gagactgccctgtgcattgtgtgatTTATTAATGAAAAATACTTTGCAAA
GAGACTGCCCTGTGCATTGTGTGAc-------------------------
----ctgtcctgtgcattgtaggat-------------------------
                      GATTTATTAATGAAAAATACTTTACAAA

AACAGTATGTTTGGCCTAAAATAGTTCAGCTGACTCTGAGGGTTTACAAC
--------------------------------------------------
--------------------------------------------------
AACAGTATGTTTGGCCTAAAATAGTTCAGCTGACTCTGAGGGTTTACATT


AACAACTGAGCAAGTGACAATAATGGCTGTGCtgttgagga---------catccctgg
-----------------------------------------atttagcagCATCCCTGG
-----------------------------------------gtttagcagcatccctgg
GACGACTGAGCAAGTGGCAATAATGGCTGTGTTATTGAGGA---------CA

cctctacccactagataccggtggtacatcccctttatccattgagaacc
CCTCTACCCACTAGATACCGGTaGTACATCCCCTTTATCCgcTGAGAACC
cctctacccactagatgccagtagcatcccccccccagttgtgacaacc

aCTGCCTCAAGCTTGTACATCCAGTGCATGAGGGGAAAAAAGAGAACATC
ACTGCCTCAAGCTTGgACATCCAGcGCATGAGGGGAAAAAAGAGAACATC
a
```

chr11:59044173-59044241
Alignment
Human, chimp, rhesus, L1PA16 consensus, donor

```
CAAGAAGATAGGCCAAGAAGACAATCCTCATAGAAAGCAACTCTCACTTA
CAAGAAGgTtGGCCAAGAAGACAATCCTCATAGAAAGCAACTCTCACTTA
AAAGAAGATTGGCCAAGAAGACAATCGTCATAGAAGGCAACTCTCACTTA

TTCCCAAACTTTTCATGGGCTTGTtgtaaacaagttcgattaatgcagaa
TTCCCAAACTTTTCATGGGCTTGTTGTAAACAAGTTCGATTAATGCAGAA
TTCCCAAACTTTTCATGGGCTTGTTGTAAACAAGTTTTATTAATGCAGAA

gctcctttagcaatgaatgttctccaaaactaccatttgacgcagcaatc
GCTCCTTTAGCAATGAATGTTCTCCAAAACTACCATTTGACGtAGCAATC
GCTCCTTTAGCAATGAATGTTCTCcaaaactaccatttgacacagcaatc
                        cagaactaccatttgacccagcaatc

ccattgctgggtatatacccaaaagaaaataaattattctaccaaaaaga
CCATTGCTGGGTATATACCCAAAAGAAAATAAATTATTCTcCCAAAAAGA
ccattgctgggtatatacccaaaagaaaataaattattctaacaaaaaga
ccattactgggtatatacccaaaggaaaataaatcattctaccaaaaaga

cacatgcacctgtatgttca---cag-----------tagcaaagacaaggaatcagcctaggt
CACATGCAC-----------------------------------------------------
cacatgcacctgtatgttcg---cag-----------tagcaaagaccaggaatgagcctaggt
cacatgcactcgtatgttcattgcagcactattcacaatagcaaagacatggaatcaacctaggt

gcccatcaatggtggactagatgaagaaaatgtgatacattatacaccat
---------------------------------------------------
ggccatcaacggtggactggatgaagaaaatgtgatacattatataccat
gcccatcaatggtggactggataaagaaaatgtggtaca-tatacaccat

ggggtactatgcagacatttttaaaaatgaattcatgtgctttacagtaa
-------------------------------------------CAGcAA
ggagtactatgcagccatttttaaaaatgaatttttgtcctttacagcaa
ggaatactacgcagccataaaaaagaatgaaatcatgtcctttgcagcaa

catggatgcagctggaggccgtgatcctaagcaaattaatgcaggaacaa
CATGGATGCAGCTGGAGGCCaTGATCCTAAGCAAATTAATGCAGGAACAA
catggatgcagctggaggccatgatcctaagcaaattaatgcaggaacaa
catggatgcagctggaggccattatcctaagcgaattaacgcaggaacag

aaaatcgaa--taccacatgttctcacttatgggtgagagctaaccatcgat
AAAATCatAatTACCACATGTTCTCACTTATaGGTGAGAGCTAACCATtGAT
aaaatcaaa--taccacatgttctcacttatacgtgaaagctaaccattgat
aaaaccaaa--taccgcatgttctcacttataagtgggagctaaacattggg

ttacacatggacacaaagatgggaacaaaagacactgaggcctacttgag
TTACACATGGACACAAAGATGGGAACAAtAGACACTGAGGCCTACTTGAG
ttacacatggacacaaagatgggaacaatagacactggggcctacttgag
-tacacatggacataaagatgggaacaatagacactggggactactagag

gggaggagggtgggaagagtgtgagg-tcagaaaactacctattaggtact
GGGAGGAGGGTGGGAAGAGTGTGAGG-TCAaAAAACTACgTATTAGGTACT
gggaggagggtgggaagagtatgagggtcaaaaaactacctattaggtact
gggggaggga-gggaggagggcaagggttgaaaaactacctattgggtact

atgctcactaccaagatTGTCTTCTTGGCCAATCTTCTTTGGGCACTCTA
ATGCTCACTACCAcGATTGTCTTCTTGGCCAATCTTCTTTGGGCACTCTA
atgctcacta----------------------------------------
atgctcacta----------------------------------------
              GATTGTCTTCTTGGCCTATCTTCTTGGGGCACTCTA

CCCTAATGTTCTATCTCATGGAACCCTGCCCTTCTAGtcactacctgggt
```

CCCTAATGTTCTgTCTCATGGAACCCTGCCCTTCTAG***TC***ACTACCTGGGT
----------tctgggt
----------cctgggt
CCCTAATGTTCTATCTCATGGAACCCTGCCCTTCTAG***TC***

gacaaaatcatttgtacaccaaaccccagcaacacacaatttactcatgt
GACAAAATCATTTGTACACCAAACCCCAGCAACACACAATTTACTCATGT
gacaaaatcatttgtacaccaaaccccagcaacacacaatttactcatgt
gatgggatcattcgtaccccaaacctcagcatcacgcaatatacccatgt

aacaagcctacacatgcacccgttgaacctaaaataaaagttaaacaaaa
AACAAGCCTACACATGCACCCGcTGAACCTAAAATAAAAGTTAAACAAAA
aacaagcctacacatgtacccactgaacctaaaataaaagttaaacaaaa
aacaaacctgcacatgtacccccctgaatctaaaataaaagttgaaaaaaa

aTGAAATCAATGTTATCTTCTTTGCTGATTGACATTTCCTGTGTTCTATT
ATGAAATCAATGTTATCTTCTTTGCTGATTGACATTTCCTGTGTTCTATT
aTGAAACCAATGTTCTCTTCTTTGCTGATTGACATTCCCTGTGTTCTATT
a

chr12:59216664-59216740
Alignment
Human, chimp, rhesus, AluJb consensus, donor

```
ACATTCTTCATATTAGTGTAAATTAAAATCTTCCTCTTggcgtg-----gtggct
ACATTCTTCATATTAGTGTAAATTAAAATCTTCCTCTTggcgta-----gtggct
ACATTCTTCgTATTAGTGTAAATTAAAATCTTCCTCTTGGCttggtGTGGcGGCT
                                       ggccgggcgcggtggct

cacacctataatcccagcactttaggaggctgaggtgggcagaccactta
cacacctataatcccagcactttaggaggctgaggtgggcagaccactta
CACACCTATAATCCCAGCACTTTAGGAGGCTGAGGTGGGCAGAtCACTTA
cacgcctgtaatcccagcactttgggaggccgaggcgggaggatcacttg

agctctggagttccagatcagcctggacaacatggagaagccccacctct
agctctggagttccagatcagcctggacaacatggagaagccccacctct
AGCcCTGGAGTTCCAGATCAGCCTGGACAACATGGAGAAGCCCCAtCTCT
agcccaggagttcgagaccagcctgggcaacatggtgaaaccccgtctct

acaaaacatatacacacacacagaaaa-----gttagccggacatggcagcatgc
acaaaacatgtacacacacacagaaaa-----gttagccggacatggcagcatgc
ACAcAAaATACaaaaaAaAaAaAaAaAaAAAAaTTAGCCaGACATGGCAGCATGC
acaaaaaatacaaaaa----------------ttagccgggcgtggtggcgcgc

acctgtagttccagctactagagagactgaggTCTCTACCAAGAGACTGA
acctgtagttccagctactagagagactgaggTCTCTACCAAGAGACTGA
ACCTGTAGTTCCAGCTACTAGAGAGACTGAGGT----------------
gcctgtagtcccagctactcgggaggctgaggc----------------
                                                A

GTTCTACCAAGTAAAATAGAATTGCAGCGTCTCTATTTGGGTGGGATATG
GTTCTACCAAGTAAAATAGAATTGCAGCGTCTCTATTTGGGTGGGATATG
--------------------------------------------------
--------------------------------------------------
GTTCTACCAAGTAAAATAGAATTGCAGCTTCTCTATTTGGGTGGGATATG

ACTTACATTT----ggatcacttgagtctgggaggtcaaggatgaagtgagctg
ACTTACATTT----ggatcgcttgagtctgggaggtcaaggatgaagtgagctg
----------GAGAGGATCACTTGAGTCTGGGAGGTCAAGGcTGAAGTaAGCTG
----------aggaggatcgcttgagcccgggaggtcgaggctgcagtgagccg
ACTTACACTT----GGA

tgatcatgccactgcacacccacctgggtgacagagtgagaccctgtctc
tgatcatgccactgcacacccacctgggtgacagagtgagaacctgtctc
TGATCAcaCCACTGCACAtCCACCTGGGTGACAGAGTGAGACCCTGTCTC
tgatcgcgccactgcactccagcctgggcgacagagcgagaccctgtctc

aggaaaaaaaaaaaTCTTCCTCTTAAAATTATATGTGGCAGG
aggaaaaaaaaaa-TCTTCCTCTTAAAATTATATGTGGCAGG
AGGAAAgAAAAAA-TCTTCtTCTTAAAATTATATGTaGCAGG
a
```

chr13:100373056-100373198
Alignment
Human, chimp, rhesus, AluJo consensus, donor

```
CTGACATTCATCAACATTAACAAATATCACTGAAAACACCATTGCACACT
CTGACATTCATCAACATTAACAAATATCACTGAAAACACCATTGCACACT
AgGACAcgCATCAgCATTAACAAATgTCACTGAAAACACCAcTGCACACT

TGGCTTTCCACAGtttttttttttt--caaagaccagctctctc--tgttgccc
TGGCTTTCCACAGTTTTTTTTTTTTt-CAAAGACCAGCTCTCTC--TGTTGCCC
TGaCTTTCCACAaTTTTTTTTTTTTtcCAAAGACCcaGtCTtTCTCTGTTGCCC
                            tgagacagggtctcgctctgtcgccc

aagctggagtgcagttgtgtaatcatatctcactgcagcttTATACAAAT
AAGCTGGAGTGCAGTTGTGTAATCATATCTCACTGCAGCTTTATACAAAT
AgGCTGGAGTGCAGTgGTGTAATCgTATCTCAgTGCAGCcT--------
aggctggagtgcagtggcgcgatcatagctcactgcagcct---------
                                     GCTT--------T

GAATGACGTAACAACGAAATCACAAATGATAAATGGTTTTCAAAA-TCAAA
GAATGACGTAACAACtAAATCACAAATGATAAATGGTTTTCAAAA-TCAAA
---------------------------------------------------
---------------------------------------------------
GAATGACGTAACAACTAAATCACAAGTGATAAATGGTTTTTAACAATCAAA

AAA-TTTAACATCATACTATACATCTGGCATTCATGCTGGTGATTTGAAGG
AAA-TTTAACATCATACTATACATCTGGCATTCATGCTGGTGATTTGAAGG
---------------------------------------------------
---------------------------------------------------
AAAATTTAACATCATATTATACATCTGGCATTCATGCTAGTGATTTGAAGG

TGCATGACCCTTCTGAATTGTTTGTATAAAGCAG---Gctcctgggctcccac
TGCATGACCCTTCTGAATTGTTTGTATAAAGCAG---GCTCCTGGGCTCCCAC
-----------------------------------TGACCTCCTGGGCTCCCAC
-----------------------------------cgaactcctgggctcaagc
TGCATGACCCTTCTGAATTGTTTGTATAAAGTAG

aatcctccaatcgtcctgcctcagcttctt-agtagttgaaacta----catgtg
AATCCTCCAATCGTCCTGCCTCAGCTTCTT-AGTAGcTGAAACTA----CATGTG
AATCCTCCAgTCcTCCTGaCTCAGCcTCTcCAGcAGcTGAAACTAcaggCATGTG
gatcctcc

acaccatgcctggctaatgtttttagaattttttttttttttttttt
ACACCATGCCTGGCTAATGTgTTTTAGAATTTTTTTTTTTTTTTTTTT-
ACACCATGCCTGcCTAgTaTTTTTTAGA-TTTTTTgTTgTTgTTgTT---

tttgtagagacctagtttcactatgttgcccagactggtctcaaactcct
---GTAGAGACCTAGTTTCACTATGTTGCCCAGACTGGTCTtAAACTCCT
--TGTAGAGACCTAGTTTCACTATGTTGCCCAGACTGaTCTCAAACTCCT

ggactcaagcaaccctcctgccttggcctcccaaagtATCAATATTTTAA
GGgCTCAAGCAACCCCC-TGCCTTGGCCTCCCAAAcTATCAATATTTTAA
GGgaTCcAtCAACCCTCCTGCCTTGGCCTCCCAcAGTATCAATATTTTAA

ATAAAGACCAAACCAAAGGCTTTTGT
ATAAAGACCAAACCAAAGGCTTTTGT
ATAAAGACCAAACCAAAGGCTTTTGT
```

chr16:13932912-13933203
Alignment
Human, chimp, rhesus, Charlie1a consensus, donor

```
AGTGCCAAAGACTGAAGAGCAGAAGAGATTT-TAGGGAAATATACATATAC
AGTGCCAAAGACTGAAGAGCAGAAGAGATTTgTAGGGAAATATACATATAC
AGTGCCAAcGACTGAAGAGCAGAAGAGATTTgTAGGGgAATATACATATAC

AGCTGGCCACCATCTCGTTTGGCTACCACTGTTTTGGCCTCT-GTCACTGT
AGCTGGCCACCATCTtGTTTGGCTACCACTGTTTTGGCCTCTtGTCACTGT
AGCTGGaCACCATCTtGTTTtGCTAtCACTGcTTTGGCCTCT-GcCACTGT

TTGACCAGACcagcggttttcaaagtgtggtccgtgaacccctggggtca
TTGACCAGACCAGCGGTTTTCAAAGTGTGGTCCaTGAAgCCCTGGGGTCA
TTGACCAGACCAGCGGTTTcCAAAGTGTGGTCtGTGAA-CCCTGGGGTCA
                                        gggtcg

agatttaatacagttaataattctgatggttctttagggacattcttaag
AGATTTAATACAGTTAATAATTCTGATGcTTCTTTAGGGACATTCTTAAG
AGATTTAATACAGTTAATAATTtTGATGcTTCTTTAGGGACATTCTTAAG
agatttaataaaattaatatttttactgcttcatcaaggacattcttaag

tga---tg----------aactgc-agaagcatgacagtaaagaatgcactgaatgccagtaca
TGA---TG----------AACTGC-AGAAGCATGACAGTAAAGAATGCAtTGAATGCCAGTACA
TGA---TG----------AACTGC-AGAAGCATGACAGTAAAGAATGCAtTGAATGCCAGTACA
tgaaactggcatttttnactgcgag-cgcgtggcggtgaagaatacaatgactactagtaca

ctttcatggcactgccttggttcatgctacggcaccag***ca***TGTACAATTA
CTTTCATGGCACTGCCTTGGTTCATGCTACaGCACCAG***CA***TGTACAATTA
CTTTCATGGCACTGCCTTGGTTCgTGCTACGGCACCAG***CA***----------
gtttggtgccactgccttgatccgtgctaaggcgccag***ca***----------
                                        ***CA***TGTACAATTA

TGGAGCATTCTTATGTAAAACTCTTCTACCTGTAGATATCCAAATGTTGT
TGGAGCATTCTTATGTAAAACTCTTCTACCTGTAGATATCCAAATGTTGT
--------------------------------------------------
--------------------------------------------------
TGGAGCATTCTTATGTAAAACTCTTCTACCTGTAGACATCCAAGTGTTGT

CATTTCAAAGTAAAAAATGTTATTTATTTTCCTCTTGATTATAGTTAAAA
CATTTCAAAGTAAAAAATGTTATTTATTTTCCTCTTGATTATAGTTAAAA
--------------------------------------------------
--------------------------------------------------
CATTTCAAAGTAAAAAAAGTTATTTATTTTCTTCTTGATTATAGTTAAAA

TAAGAGATAACCACTTACTATATAACTGCAAAAGTCAGAGTGATGCTTAT
TAAGAGATAACCACTTACTATATAACTGCAAAAGTtAGTGATGCTTATAT
--------------------------------------------------
--------------------------------------------------
TAAGAGATAATCACTTAC--TATAACTGCAAAAGTCAGAGTGATGCTTAT

ATGCCAATCCACATATTTTCCTATAAATTATTACTTTCCAGTAAACCAAA
--GCCAATCCACATATTTTaCTATAAATTATTACTTTCCAGTAAACCAAA
--------------------------------------------------
--------------------------------------------------
ATGCCAATCCACATACTTTACTATAAATTATTACTTTCCAGTAAACCAAA

GAAGCTGTGTTTTAAA-TGACCTCCAATTTTATTCTTAAATAACAGCAAAT
GAAGCTaTGTTTTAAA-TGACCTCCAATTTTATTCTTAAATAACAGCAAAT
---------------------------------------------------
---------------------------------------------------
GAAGCTATGTTTTTAAGTGACCTCCAATTTTATTCTTAAATAACAGCAAAT

TCCTATTAACAACATTGCAAATATTAAAATAAC-------------***ttgc***ttttacgccatca
```

TCCTATTAACAACATTGCAAATATTAAAATAAC----------***TTGC***TTTTACaCCATCA
----------GTATTACCCAGCA***TTGC***TTTTACaCCATCA
----------gttttacccacca***ttgc***ttttgcaccatca
TCCTATTAACAACATTGCAAATATTAAAATAAC----------***TTGC***

ctggaaatgtcaacgcagtgaaaaaagtcaaataatgtcatggtattgtt
CTGGAAATGTCAACaCAGTGAAAAAAGTCAAATAATGTCATaGTATTGTT
CTGGAAATGTCAACaCAGTGAAAAAAGTCAAATAATGTCATaGTATTGTT
gtgcaaatgtcaacacagtgaaaaa-ggcaaataacgtcttagtattatt

acgagaaaagttctgacatcacatagccc-tgaaaatatcttgggggcccc
ACGAGAAAAGTTtTGACATCACATAGCCC-TGAAAAcATCTTGGGGaCCCC
AtGAGAAAAGTTtTGACATCACAcAGCCC-TGAgAAcATCTTGGGGaCCCC
atgaaaatagttttgacctcgcggacccccctgaaagggtctcggggaccct

tgggagttcacggaccacacccagaaaaccactgGTCCAGCTGAACAGCG
TGGGAGTTtAtGGACCACACCCAGAAAACCACTGGTCtAGCTGAACAGCG
cGGGAGTTCAtGGACCACACCCAGAAAACCACTGGTCtAGCcGAACAGtG
caggggtccgcggaccacactttgagaaccgctg

ACAGATCACAGTAGTGGGAGGCGGTGTGGTTGGTAGGAAGACAGGATGAC
ACAGATCACAGTAGTGGGAGGaGGTGTGGTTGGTAGGAAGACAGGATaAC
AgAGATCACAaTAGTGGGAGGaGGTaTGaTTGGTAGGAAaACAGGATGgt

AGCCAGTTACGTATGTAGGTCATGTGACCATCAGAGACTGTTTTAAATTA
AGCCAGTTACaTATGTAGGTCATGTGACCATCAGAGACTGTTTTAAATTA
AGCtgGTTACaTATGTAGGTCATGTGACCATCAGAGACTaTaTTAAATTA

ACCATAAATTGATGGCACTTTTT
ACCATAAATTGATGGCACTTTTT
ACCgTAAATTGATGGCACTTTTT

chr2:226988215-226988397
Alignment
Human, chimp, rhesus, MLT1A1 consensus, donor
TATTTTTCTTATt-actgtggtttaaatgt----gtctcctccaaaattcaggag
TATTTTTCTTATT-gCTGTGGTTTAAATGT----GTCTCCTCCAAA-TTCAGGAG
TAtTTTTTCTTATTgCTGTGGTTTAAATGT----GTCTCCTCCAAAATTtAGGAG
tatggtttgaatgtttttgtcccctccaaaattcatgtg

ttg----------ccaatgtgatatttttaagaagtgggacattt-aagaagtgattagat
TTG----------CCAATGTGATATTTTTAAGAAGTGGGACATTT-AAGAAGTGATTAGAT
TTG----------tCAATGTGAcAgTTTTAAGAAGTGGGACATTT-AAGAgGTGATTAGgc
ttgaaacttaatkgccaatgtracagtattaagaggtggggccttttargaggtgattaggt

tttgagggatcctcacttatgaatgtgattaaagcccttataaaagagac
TTTGAGGGATCCTCACTTATGAATGgGATTAAAGCCCTTATAAAAGAGgC
TTTGAGGGATCCTCACTTATGAATGgGATTAAAGCCCTTATAAAAGAGgC
catgagggctcctccctcatgaatgggattaatgcccttataaaaagggc

tttatgcagt---ttttggttaccttgcccttctgc-cttctgccatatgagga
TTTATGCAGT---aTTTGGTTACCTTGCCCTTCTGC-CTTCTGCCATATGAGGA
TTTATGCAcc---aTTTGGTTAgCTTGCCtTTCTGC-CTTCTGCCgTATGAGGA
ttgatggagtgggttctctctctctctctcttctgctcttctgccatgtgagga

ttcagcaataaggTG**GAACAGCAC**AAAGAAATACTAATCCCTGCACCCTT
TTCAGCAATAAGGTGGAACAGtACAAAGAAATACTAATCCCTGCAtCCTT
TgCAGCAATAAGGTG----------
cacag----------
----------AAAGAAATA-TTATCCCTGCATCCTT

GCACTGCATTCATCATTGCATGGATTCTGTTCCTAATAATGAATACTTTC
GCACTGCATTCATCATTGCATGGATTCTGTTCCTAATAATGAATACTTTC

GCACTGCATTCATCATTGCATGGATTCTGTTCCTAATAACGAATAATTTC

TTTTCTAATTTGGTTGACACAGACACCATGAGCTTGCTATTGATTTTCCG
TTTTCTAATTTGGTTGACACAGACACCATGAGCTTGCTATTGATTTTCCG

TTTTCTAATTTGGTTGACACAGACACCATGAGCTTACTATTGATTTTCCG

GAAGTGGACATTTTCTCCTTCCACCCACTGCTG***TTCATCTTG***TAAGTtca
GAAGTGGACATTTTCTCCTTCCACCCAgTGCTG***TTCATCTTG***TAAGTTCA
----------***cTgATCTTG***TAAGTTCA
----------tca
GAAGTGGATGTTTTCTCCTTCCACCCAGTGCTG***TTCAAATT***

ccagacaactgaactcgccagaacccagatcttggacttctcagcctcca
CCAGACAACTGAAtgtGCCAGAACCCgGATCTTGGACTTCTCAGCCTCCA
CCAGACAACTGAACTtGCCAGcACCCgGATCTTGGACTTCTCAGCCTCCA
ccagacaccaaacct-gctggnaccttgatcttggacttcccagcctcca

gaactgtgagaaaataaatttctggccaggtgcagtggctcacacctgta
GAACTGTGAGAAAATAAATTTCTGGCCAGtTGCAGTGGCTCACACCTGTA
GAACTGTaAGAAAATAAATTTCTGGCCAGGTGCAGTGGCTCACACCTGTA
gaactgtgagaaa-taaatttct

attccagcac
ATTCCAGCAC
ATTCCAGCAG

chr3:190518240-190518621
Alignment
Human, chimp, rhesus, MER20 consensus, donor

```
tagttccaacttaagaccc-ctctgcctgatcctaTACTTCCTTTAGTTca
TAGTTCCAACTTAAGACCAgCTCTGCCTtATCCTATACTTCCTTTAGTTCA
TcaTTCCAACTTAAGACCAgCTCgGCCTGATCCTATACTTCCTTTAGcTCA
                                                ca

gtggttctcaagagagggtgatttttccc-atgggggacatatgacaatgt
GTGGTTCTCAAGAGAGGGTGATTTTgCCC-gTGGGGGACATATGACAATGT
GTGGTTCTCAAGAcAGGGTGATTTTgCCC-ATGGGGGACATtTaACAATGT
gtggttctcaaccgggggtgattttgccccccaggggacatttggcaatgt

cccagtgtcccagtgagatattatcggttgtcataTCAAATGTATACTTA
CCCAGTGTCCCAaTGAGATATTATtGGTTGTCATATCAAATGTATACTTA
CCCAGTGTCCCAGTGAGATATTActGGTTGTCAcATC-------------
           ctggagacattttggttgtcacaac-------------
                                                TTA

CAAAGG--------------TATATAAAATGTTCTCTGATAAAGACTAATTCAGTTTAGCTAAG
CAAAGGcatacttacaaaggTATATAAAATGTTCTCcGATAAAGACTAATTCAGTTTAGCTAAG
------------------------------------------------------------------
------------------------------------------------------------------
CAAAGG--------------TATACAAAATGTTCTCCGATAAAGACTAATTCAGTTTAGCTAAG

TTTAAAGTGCACTTGTATGTGTGTGCATATATCTGCATGTGTTCAGAGAG
TTTAAAGTGCACTTGTGTGTGTG--CATATATCTGCgTGTGTTCAGAGAG
---------------------------------------------------
---------------------------------------------------
TTTAAAGTGCACTTGTGTGTGTGTGCACATATGTGCATATGTTCAGAGAG

GAGGGTTGAGGCATGGGATAGGATGAGGATGGAAATTACGATGGGTAGAA
GAGGGTTGgGGgATGGGATAGGATGAGGATGGAAATTgCtATGGGTAGAA
---------------------------------------------------
---------------------------------------------------
GAGGGTTGGGGGATGGGATAGGATGAGGATGGAAATTGCTATGGGTAGAA

ACCTCTCTTGTGCAAGGAAAAAGGAGCTACTGCCTCTTCTTATTTGTCTC
ACCTCTCTTGTGCAAGaAAAAAGGAGCTACTGCCTCTTCTTATTTGTCTC
---------------------------------------------------
---------------------------------------------------
ACCTCTCTTGTGCAAGAAAAAAGAAGCTACTGCCTCTTCTTATTTGTCTC

TACACACTTGAATTTATAGTCACAGGGTCTCTATGAGGATAATTCCAGGA
TACACACTTGAATTTATAGTCACcGGGTCTCTgTGAGGATAATTCCAGGA
---------------------------------------------------
---------------------------------------------------
TATGCACTTGAATTTATAGTCACAGGGGCTCTATGAGGATAATTCCAGGA

AAAAATATGCAAGGATGATATATACAGTCTGTCCAGCAGCGTGACTTCTC
AAAAcTATGCAAGGATGATATATACAGTCTGTCCAGCAGtGTGACTTCTC
---------------------------------------------------
---------------------------------------------------
AAAA-TGTGCAAAGATGATATATACAGTCTGTCCAGCAGTGTGACTTCTC

AAGTGATTTCAAGTACTGGGTATTGGACGGGCGTGCCCTCTATTACAGGA
AAGTGATTTCAAGTACTGGGTATTGGAtGGGCGTGCCCTCTgTgACAGGA
---------------------------------------------------
---------------------------------------------------
AAGTGATTTCAAGTACTGGGTATTGGATGGGCGTGCCCTCTATGACAGGA

GACTTCCTTCTATACACAgggaggtat------------ctg-t-ctggtatctggtgggagga
GACTTCCTTCcATACACAGGGAGGTAT------------CTG-T-CTGGTATCTGGTGGGtGGA
```

----------tggggtggaagcCTG-T-CTGGTATCTGGTGGGtGaA
----------tggggggggggratgctactggcatctagtgggtaga
GACTT

ggatagggaggctgcttaacatcctaacatgcagaagacattctctgcca
GGATAGGGAGGCTGCTTgACATCCTAACATGCAGAAGACATTCTCTGCCA
GGATAGGGAGGCTGaTTAACATCCTAACATGCAGgAGACcTTCTCTcCCA
ggccagggatgctgctaaacatcctacaatgcacaggacagcccccacaa

tagcaaaagattgtctggcctaaaatagcaatagtcccaaggtgaagaaa
TAGCAAAAGATTGTCTGGCCTAAAATAGCAATAGTCCCAAGGTGAAGAAA
TAGCAAAAaATTGTCTGGCCTAAAATAGCAATAGTCCCAAGGTGAAGAAA
---caaagaattatccggcccaaaatgtcgatagtgccaaggttgagaaa

ctttgGTTTAGCTGTACAGACAGCCACATTTGTGACTCTACTTCATAGAA
CTTTGGTTTAGCTGTACAGACAGCCACATTTGTGACTCTACTTCATAGAA
CgTTGtTTTAGCTGTACAGACAGCCACATTTGTGACTCTACTgCATAGAA
ccctg

AACCAGATGAAA
AACCAGATGAAA
AACCAGATGAgA

chr3:49720849-49721014
Alignment
Human, Chimp, Rhesus, L1MB2 consensus, donor

```
cccgggttcaagcagttctcctggattatagatgtgctaccgcgcccagc
CCtGGGTTCAAGCAcTTCTCCTGGATTATAGgcGTGCcACtGtGCCtAGC

tactttttgtatttttggtagagacagggtttcactttgttggcgtggc
TAaTTTTTGTATTTTTTaGTAGAGACAGGGTTTtgCTaTGTTGGCaTGGC

tggtctcaaactcctggcctcatgtgatcctgccacctcggcctcccaaa
TGGTCTCgAACTCCTGGCCTCgTGTGATCCTcCCACCTCGGCCTCCCAAA

gtgctggggttacaggcgtgcgccactgtgcccggtcacccatcatagcc
GTGCTaGGGTTACAGGCGTGCGtCACcGTGCCCGGcCACCCATgATAGCC

atttttaagtgttaagtctattcacattgtcgtgcagccaatctccacac
ATTTTTAAGTGTTAAGTCTgTTCACATTGTCGTaCAGCCAATCTCCAgAC
       agtgttaagtatattcacattgttgtgcaaccgatctccagaa

tcatttcatcttgcaaaactgatactccgtgcctgttgaacaaaacctcc---
TCATTTCATCTTGCAAAACTGATACTCtGTGCCcGTTaAACAgAACCTCC---
ctttttcatcttgcaaaactgaaactctatacccattaaacaacaactcccca

tgtcctcccttcccc*ag*cttccctgacagctcccaCCCATCCCCACCTGT
TGTtCTCCCcTCCCC*AG*----------------------------------
tttccccctcccccc*ag*----------------------------------
               *AG*CTTCCCTGACAGCCCCCACCCACCCCGACCTGT

CAGCAGATCCCTGGGTCTGGCAGCTGGGGGAGCAGTGGTTCTGGCATCAG
---------------------------------------------------
---------------------------------------------------
CAGCAGATCCCTGGGTCTGGCAGCTGGGGGAGCAGCGGTTCTGGCATCAG

GTCCCTGAGTGCTCTGGCCAGCGGCTCACAGACCCCCAGCTGGGCCTTAC
---------------------------------------------------
---------------------------------------------------
GTCCCTGGGTGCTCTGGCCAGCGGCTCACAGACCCCCAGCTGGGCCTCAC

TTCCATGTCATGAGGGGACCACCATGGCCCTGTTCTGAGGCTAGCTCAGG
---------------------------------------------------
---------------------------------------------------
TTCCATGTCATGAGGGGACCACCATGGCCTTGTTCTGAGGCTGGCTCAGG

TTgcccctggcaaccaccatcctactttctgtctct--gaatttgactatac
---CCCCTGGCAACCACCATCCTACTTTCTGTCTCT--GAATTTGACTATcC
---cccctggcaaccaccattctactttctgtctctatgaatttgactactc
GT

taagcacctcatctaggaagaatcatacactatttgttcttttgtgtatg
TAAGCACCTCATCTAGGgAGAATCATACACTATTcGTTtTTTTGTGTcTG
taggtacctcatataagtggaatcatacagtatttgtctttttgtgactg

gctttagcataatgtcctcaaggttcattcgtgttatagcatgtgtcaga
GCTTTAGCATAATGTCCTCAAGcTTCATTtGTGTTATAGCATGTGTCAGA
gctt

atttcttcattttccaggctgaataatattctgttgtacggacaccacat
ATTTCTTCgTTTTCCAGGCTGAATAATATTCcacTGTAtGGACACCACAT

ttcatatatccagtcctttgctgatggacactcgggttgcttctactttg
TTCgTgTATCCAGTCCTTTGtTGATGGACgCTtGaGTTGCTTCTACTTTG

ggctactgtgaataatgctgtaatgaacatgggtttgcaaagatctcttt
```

GGCTACTGTGAATAATGCTGTAATGAACATGGGTgTGCAAgGATCTCTTT

gagaccctaatttcaattcttttggttatatacccagaagtggaattact
aAGACCCTAATTTCAATTCTTTTGGTTATATACCCAGAAGTGGAATTgCT

gtatcatatggtaattctgtttttatttattttaattttaatttttt
aTATCATATGGTAATTCTGTTTTTTATTTTATTTT--aTTTTA--TTTTT

atttttttgagatggagtctcactctgtcacccagg
---------GAGATGGAGTCTCACTCTGTtgCCCAGG

chr4:161923972-161924184
Alignment
Human, chimp, rhesus, LTR10F consensus, donor

```
aaggcactaaagggaacccattaccacagctttgttgggctcagtccagg
AAGGCcCTAAAGGGAACCCATTACCACAGCTTTGTTGGGCTCAGTCCAGG
AAGGtcCTAAAGGGAACCaAcTcCCACAGCTTTGTTGGGCTCAGTCCAGG

tagcagcccccacatgttggagttgttataaataaaatttcggtgccaca
TAGCAGCCCCCACATGTTGGAGTTGTTATAAATAAAATTTtGGTGCCACA
TAGCAGCCCtCACATGTTGGAGTTGTTATAAATAAcAgTTtGGTGCtgCc
                        tgttatatataaagtttcggtgccgca

aaataaatagcacttgaatataaaatttctttttaattctcag-----caagtt
AAATAAATAGCACTcGAATATAAAATTTTCTTTTTAATTCTCAG-----CAAGTT
AAAgAAATAGCACTTGAATATAAAATTTTCTTTTTAATTCTCAt-----CAAGTT
aaagaaatagcactcgaatataaaatttctttttaattctcagcaaggcaaggt

acttctatagaagggtgcacccttacagatggagcaatggtaagtgcaca
ACTTCTATAGAAGGGTGCACCCTTACAGATGGAGCAATGGTAAGTGCACA
ACTTCTATAaAAaGGTGCgCCCTTACAGATGGAGCcATGGTgAGcaCACA
acttctatagaagggtgcaccctcacagatggagcaatggtgagcgcaca

cttggacaaggcaggggaaggggttcttatccctgacgcacgtggcccct
CTTGGACAAGGCAGGGGAAGGGGTTCTTATCCCTGACaCACGTGGCCCCT
CTTGGACAAGtgAGGGGAAGGGGTTCTTATCCCTGAtGCACGTGGCCCCT
cctggacaagggagggaaaggggttcttattcctgatgcacgtggtccct

gctgctgtgtctttcccctatgggctagggttagacctcacaggctaaac
GCTGCTGTGTCTTTCCCCTATcGGCTAGGGTTAGACCTCACAGGCTAAAC
GCTGCTGTGTCTTTCCCCTATtGGtTAGGGTTAGAtggCACAGGCTAAAC
actgctgtgtcattcccctattggctagggttagaccgcacaggctaaac

taattctgattggct-----aaagagagtgacagggtgaatagtttggccagaaa
TAATTCTGATTGcCT-----AAAGAGAGTGACAGGGTGAATAGTTTGGCCAGAAA
TAATTCTaATTGGCT-----AAAGAGAGcGAtgGGGTGAgTgGTTTGGtggcAAA
taattccgattgactaatttaaagagagtgacggggtgagtggtttggcgggaaa

aa----TTGTTACGACAGAGCATAACCATACCATAAATGGTATTTTATATTTTA
AA----TgGTTACGACAGAGCATAACCATACCATAAATGGTATTTTATATTTTA
AA----TgGTTAtGACAGAGCA--------------------------------
aaaaaatggttatg--------------------------------------
                                    TGGTATTTTGTATTTTA

CCAGGCCCAGTTAGGTTTATCCAAGCCAGAAGCTAGGCCTGTATCTATTT
CCAGGCCCAGTTAGGTTTATCCtAGCCAGAAGCTAGGCCTGTATCTATTT
--------------------------------------------------
--------------------------------------------------
CCAGGTCCAGTTAGGTTTATCCTAGCCAGAAGCTAGGTCTGTATCTATTT

GCTCTCAGCAGGTCAGTTACAATTTTGTATTCCTTTTTACATTATTCATG
GCTCTCAGCAGGTCAGTTACAATTTTGTATTCCTTTTTACATTATTCATG
--------------------------------------------------
--------------------------------------------------
GCTCTTAGCAGACCAGTTAAAATTTTGTATTCCTTTTTACATTATTCATG

ATCATCTTTATAATATCTCTTTTGCATGTAAATTTCACAATTTTTCTTTA
ATCATCTTTATAATATCTCTTTTGCATGTAAATTTCACAATTTTTCTTTA
--------------------------------------------------
--------------------------------------------------
ATCTTCTGTATAATATCTCTTTTGCATGTAAATTTCACAATTTTTCTTTA

CCATATGAA-------AATGAATcagggtggagcaggtaatctgaatgagtcagggt
CCATATGAA-------AATGAATCAGGGTGGAGCAGGTAATCTGAATGAGTCAGGGT
```

---------ggtaatcg***aat***gagtcagggtggagcaggtaATcAgAATGAgTCAGGGT
--------------------------------cagggtggagaatgaatgagtcagggt
CCATATGAA--------***AAT***

ggagcaggt-------aatctgaatgagtcagggtggagcaggtaatcagaacgagt
GGAaCAGGT-------AATCTGAATGAGTCAGGGTGGAGCAGGTAATCAGAAtGAGT
GGAGCAGGT-------AATCaGAATGAGTCAGGGTGGAGCAGGTAATCaGAATGAGT
ggagcaggtggtaggtaatcggaatgagtcagggtggagcaggtaatcggaatgagt

cagggt----------------------------gaagtaggtaatcataaaaggcttctttatgaggaagttaagtt
CAGGGT----------------------------GAAGTAGGTAATCATAAAAGGCTgCTTTATGAGGAAGTTAAGTT
CAGGGTGGAGCAGtTAATCAGcAtGAGTCAGGGTGgAGTAGGTAATCAaAAAAGGtTgCTTTATGAGGAAGTTAAGTT
cagggt----------------------------ggagcaggtaatcggaaaaggttgctttacgaggaagttaagtt

taaaagtagaaggcaaagaattgaacatactgacatattgattctttgaa
TAAAAGTAGAAGGCAAAGAATTGAACATACTGACATATTGATTCTTTGAA
TAAAAGTAGAAGGCAAAGAATTGAACAcACTGACATATTGATTCTTTGAA
taaaagtagaaggcaaagaattgaacatactgacatattaattctttgaa

aagaaaattagaactcatgtctaacaGAGTTTCATCTGTGTAGTTCTCCC
AAGAAAATTAGAACTCATGTCTAACAGAGTTTCATCTGTGTAGTTCTCCC
AAGAAAtTTAGAACTCATaTCTAACAGAGTcTCATCTGTGTAGTTaTCCt
gagaaatttagaattcatatttaaca

AGTTAGTGCTACAGTTCT
AGTTAGTGCTACAGTTCT
AGTTAGTGCTACAGTTCT

chr4:119252346-119252480
Alignment
Human, chimp, rhesus, AluY consensus, donor
ACACTTCAACTAATTTTTAATCATGAttttttttttttttttttt--gagat
ACACTTCAACTAATTTTTAATCATGATTTTTTTTTTTTTTTTTTTttGAGAT
ACACTTCAACTgcTTTTTAATCAaaaaaaaaATTTTTTTTTTTcc-gagac
tgagac

ggagtctcgctctgtcacccaggctggagtgtagcgacgccatcttagct
GGAGTCTCGCTCTGTCgCCCAGGCTGGAGTGTAGCGACGCCATCTTAGCT
aGAGTCTCGCTCTGTCgtCtAGGCTGGAGTGcAGtGgtGCCATaTcAGCT
ggagtctcgctctgtcgcccaggctggagtgcagtggcgcgatctcggct

cactgcaagctctgcctcccgggttaacgccattctcctgcctcagcctc
CACTGCAAGCTCTGCCTCCCGGGTTAACGCCATTCTCCTGCCTCAGCCTC
CACTGCAAGCTCcGCCTCCCaGGTTAAtGCCATTCTCCTGCCTCAGCCTC
cactgcaagctccgcctcccgggttcacgccattctcctgcctcagcctc

ctgagtagctgggactacaggtgcccgccaccatgcctggcaaaattttt
CTGAGTAGCTGGGACTACAGGTGCCCaCCACCAcGCCcGGCAAAATTTTT
CcccAGTgGCTGGGACTACAGGTGCCCaccccccacgactggctaattTTTT
ccgagtagctgggactacaggcgcccgccaccacgcccggctaatttttt

ttt-gtatttttagtagagatggatttcaccatC**CCATC**TGAACTGAGAT
TTT-GTATTTTTAGTAGAGATGGGATTTCACCATCCCATCTGAACTGAGAT
TTTTGTATTTTTAGTAGAGATGGGATTTCACCATg----------
gtatttttagtagagacggggtttcaccgtg----------
TGAACTGAGAT

AAATATGTCAGAAGGCAGATATCATTTGTCTAACTCTTGCATGATTCAAA
AAATATGTCAGAAGGCAGATATCATTTGTCTAACTCTTGCATGATTCAAA

AAATATGTCAGAAGGCAGATATCATTTGTCTAACTCTTGCATGATTCAAA

TATATGAATATTTTAGTCACAGATTTCACTATGATATTCAGGAAAGGACA
TATATGAATATTTTAGTCACAGATTTCACcATGATATTCAGGAAAGGACA

TATATGAATATTTTAGTCACAGATTTCACCATGATATTCAGGAAAGGACA

ACAAATGCCTG**A**GCTATCTtt***t***tagccagga**t**ggtcttgatctcctgacc
ACAAATGCCTGAGCTATCTTT***T***TAGCCAGGATGGTCTTGATCTCCTGACC
---***T***TAGCCAGGATGGTCTcGATCTtaaGACC
---***t***tagccaggatggtctcgatctcctgacc
ACAAATGCCTGAGCTATCTTT***T***

tcttgatctgcccgcctcagcctcccaaagtgctgggattacaggcatga
TCTTGATCTGCCCGCCTCAGCCTCCCAAAGTGCTGGGATTACAGGCATGA
TtgTGATCcaCCCGCCTCAGCCTCCCAAAGTGCTaGGATTACAGGCgTGA
tcgtgatccgcccgcctcggcctcccaaagtgctgggattacaggcgtga

gccaccatgcccggccCATAATTTTTAAAGTAATAAGCAACAGACATTTG
GCCACCATGCCCGGCCCATAATTTTTAAAGTAATAAGCAACAGACATTTG
GCCACCAaGCCCaGCCCATAATTaTgAAAGTAATAAGCAAgAGACATTTG
gccaccgcgcccggcc

TTTTCAATGTAATTCTAATGTAAAACATTCTCAAAGTAGGATTAAAAGAA
TTTTCAATGcAATTCTAATGTAAAACATTCTCAAAGTAGGATTAAAAGAA
TTTTCAATGTAATTCTAATGTAAAACATTCTCAAAGTAGGATTAAAAGAA

chr5:126417529-126417831
Alignment
Human, chimp, rhesus, L1PA6 consensus, donor

```
tctgttgagaatactatggatcgtcggcagattttatttattttATTTTA
TCTGTTGAGAATACTATGGAT-----------TTTATTTATTTTATTTTA
TCTGaTGAGAATACTATGGAT---CGGCAGATTTTATTT-TTT-------

TTTTTTTCCCACTTTCTCCtatattttgttattatacttttattatatat----
TTTTTTTCCCACTTTCTCCTATATTTTtTTATTATAC-----TTA-ATAT----
-------tCtACTTTCTCCTATATTTTTATTATACgTTTA--TTATATATaTTA

gttatatatatta-ta--CCtttttattatactttaagttctagggtacatgt
GTTATATATATTA-TA--CtTTTTTATTATACTTTAAGTTCTAGGGTACATGT
--TATATATgagacTATAttTTTTTATTATACTTTAAGTTCTAGGGcACATGT
                    tttttattatactttaagttctagggtacatgt

gcacaacgtgccgttttgttacacatgtatacatgtgccatgttggtttg
GCACAACGTGCCGTTTTGTTACAtATGTATACATGTGCCATGTTGGTTTG
GCcCAACGTGCaGTTTTGTTACAtATGTATACATGTGCCATGTTGGTTTG
gcacaacgtgcaggtttgttacataggtatacatgtgccatgttggtttg

ctgcacccatcaactagtcatttacattaggtatttctcctaatgctatc
CTGCACCCATCAACTAGTCATTTACATTAGGTATTTCTCCTAATGCTATC
CTGCACCCATtAACTtGTCATTTACATTAGGTATTTCTCCTAATGCTATC
ctgcacccatcaactcgtcatttacattaggtatttctcctaatgctatc

cctccctgctccccgcaccccacgacaggccccggtgtgtgatgttccac
CCTCCCTGCTCCCCGCACCCCACGACAGGCCCCGGTGTGTGATGTTCCAC
CCTCCCgcCTCCttcCACCCgACGACAGGCCCCaGTGTGTGATGTTCCcC
cctcccccagcccccccaccccacgacaggccccggtgtgtgatgttcccc

accctgtgtccaagtgttctcattgttcaattcccacctatgagtgagaa
ACCCTGTGTCCAAGTGTTCTCATTGTTCAATTCCCACCTATGAGTGAGAA
ACCCTGTGTtCAAGTGTTCTCATgGTTCAATTCCCACCTATGAGTGAGAA
gccctgtgtccangtgttctcattgttcaattcccacctatgagtgagaa

cacgctgtgtttggttttctgtccatgcgacagtttgctccaaatgatgg
CAtGCTGTGTTTGGTTTTCTGTCCATGCGACAGTTTGCTCCAAATctTGG
CAtGtgGTGTTTGGTTTTCTGTCCATGtGAtAGTTTGCTCagAATGATGG
catgcggtgtttggttttctgtccttgtgatagtttgctgagaatgatgg

tttccagcttcatccatgtacctacaaaggacatgaactcatccttttt
TTTCCAGCTTCATCCATGTctCTACAAAGGACATGAACTCATCCTTTTTT
TTTCCAGCTTCATCCAcGTcCCTACAAAGGACATGAACTCATCCTTTTT-
tttccagcttcatccatgtccctgcaaaggacatgaactcatccttttt

atggctgcatagtattccatggtgtatatgtgccatattttcttaatcca
ATGGCTGCATAGTATTCCATaGTGTATATGTGCCATATTTTCTTAATCCA
ATGGCTGtATAGTATTCCATGGTGTATATaTGCCATATTTTCTTAATCCA
atggctgcatagtattccatggtgtatatgtgccacattttcttaatcca

gtctatcactgatggacattggggttggttccaagtctttgctattgtga
GTCTATCAtTGATGGACATTGGGGTTGGTTCCAAGTCTTTGCTATTGTGA
GTCTATCACTGATGGACATTtGGGTTGGTTCCAAGTCTTTGCTATTGTGA
gtctatcattgatggacatttgggttggttccaagtctttgctattgtga

acagtgtcgcaataaacatacctgtg--catgtgtctttagagtagcatgat
ACAGTGTCGCAATAAACATACCTGTG--CATGTGTCTTTAGAGTAGCATGAT
AtAGTGcCaCAATAAACATACaTGTGtgCATGTGTCTTTAGAGTAGCATGAT
atagtgccgcaataaacatacgtgtg--catgtgtctttatagcagcatgat

ttataatcctttg**ATTTAT**AATTGGCTTATCATGTTATTATTAGCATTAG
TTATAATCCTTTGATTTATAATTGGCTTATCATGTTATTATTAGCATTAG
```

```
TTATAATCCTTTG-------------------------------------
ttataatcctttg-------------------------------------
                    AATTGGCTTATCATGTTATTATTAGCATTAG

CAATACATAGATTATGGGTAGTTTGTAATGTTTTAAGATAATCATCCTAA
CAATACAcAGATTATGGGTAGTTTGTAATGTTTTAAGATAATCATCCTAA
--------------------------------------------------
--------------------------------------------------
CAATACATAGATTATGGATAGTTTGTAATGTTTTAAGATAAACATCCTAA

AATTTTCAGAGAAGGTTTCAAAAAGTCAACACAGGATCTTAAAAGCAAAA
AATTTTCAGAGAAGGTTTCAAAAAGTCAACACAGGATCTTAAAAGCAAAA
--------------------------------------------------
--------------------------------------------------
AATTTTCAGAGAAAGTTTCAAAAACTCAACACAGGATCTTAAAAGCAAAA

AAACCCAAGAACATGCTAAATTACAGAAGTACCAAATGTGCTAAAATTTT
AAACCCAAGAACATGCTAAATTACAGAAGTACCAAATGTGCTAAAATTTT
--------------------------------------------------
--------------------------------------------------
AAAACCAAGAGCATGCTAAATTACAGAAGTACCAATTGTGCTAAAATTTT

GCTTTTATATTAAGAATTTTAGAAGAATCTAGATTGGGTTTTTTGTTTTG
GCTTTTATATTAAGAATTTTAGAAGAATCTAGATTGGGTTTTTTGTTTTG
--------------------------------------------------
--------------------------------------------------
GCTTTTATATTAAGAACTTTAGAAGAATCTAGATTGGGTTTTCTGTTTTG

TTTT-----TTAGACCTGGGGTCCACAGAAGTCTATGCAAATTATACCTGAAAAT
TTTTgttttTTAGAtCTGGGGTCCACAGAAGTCTATGCAAATTATACCTGAAAAT
-------------------------------------------------------
-------------------------------------------------------
TTTTGTTTTTTAGACCTGGGGTCCACAGAAGTCTATGCAAATTATACCTGAAAAT

ATGTGTATATATTTTTA--tatatacacagtaataggatcactgggtcaaat
ATGTGTATATATTTTTA--TATATACACAGTAATAGGATCACTGGGTCAAAT
-----------------GGTATATACcCAGTAATAGGATtgCTGGGTCAAAT
-----------------ggtatatacccagtaat-gggatgctgggtcaaat
ATGTGTATATATTTTTA

ggtatttctagttctagatccttgaggaatcgccacactgttttccacaa
GGTATTTCTAGTTCTAGATCCTTGAGGAATCGCCACACTGTTTTCCACAA
GGTATTTCTAGTTCTAGATCCTTGAGGAATtGCCACACTcTcTTCCACAA
ggtatttctagttctagatccttgaggaatcgccacactgtcttccacaa

tggttgaactagtttgcagtcccaccaacagcataaaagcgttcctgttt
TGGTTGAACTAGTTTGCAGTCCCACCAACAGCATAAAAGCGTTCCTGTTT
TGGTTGAcCTAGTTTaCAcTCCCACCAACAGtgTAAAAGCaTTCCTaTTT
tggttgaactagtttacactcccaccaacagtgtaaaagcgttcctattt

ctccacatcctctccagcacctgttgtttcctgccttttaatgatcgcc
CTtCACATCCTCTCCAGCACCTGTTGTTTCCTGCCTTTTTAATGATCGCC
CTCCACATCCTCTCCAGCACCTGTTGTTTCCTGaCTTTTTAATGATtGCC
ctccacatcctctccagcatctgttgtttcctgactttttaatgatcgcc

attctaactggtgtgagatggtatctcattgtggttttgatttgcatttc
ATTCTAACTGGTGTGAGATGGTATCTCATTGTGGTTTTGATTTGCATTTC
ATTCTAACTGGTGTGAGATGGTATCTCATTGTGGTTTTGATTTGCATTTC
attctaactggtgtgagatggtatctcattgtggttttgatttgcatttc

tctgatggccagtgatgatgagcatttttcatgtgtctgttggctgcat
TCTGATGGCCAGTGATGATGAGCATTTTTTCATGTGTCTGTTGGCTGCAT
TCTGATGaCCAGTGATGATGAGCATTTTTTCATGTGTCTGTTGGCTGCAT
```

tctgatgaccagtgatgatgagcatttttcatgtgtctgttggctgcat

aaatgtcttcttttgaaaagtgtctgtccatatcctttgcccactttttg
AAATGTCTT---TTGAAAAGTGTCTGTtCATATCCTTTGCCCACTTTTTG
AgATGTCTTCTTTTGAgAAGaGTaTGTtCATATCCTTTGCCCACTTTTTG
aaatgtcttcttttgagaagtgtctgttcatatcctttgcccactttttg

atgggattgtttgatttttcttgtaaatttgtttaagttctttgtagat
ATGGGATTGTTTGATTTTTTCTTGTAAATTTGTTTAAGTTCTTTGTAGAT
ATGGagTTGTT--ATTTT--CTTGTAAATTTGTTTAAGTTaTTTGTAGAT
atggggttgtttgtttttttcttgtaaatttgtttaagttctttgtagat

tctggatattagccctttgtcagctgggtagattgcaaaaattttctcca
TCTGGATATTAGCCCTTTGTCAGaTGGGTAGATTGtAAAAATTTTCTCCA
TCTGGgTATTAGCCCTTTGTCAGaTGaGTAGATTGCAAAAAcTTTCTCCc
tctggatattag

attcagtaggttgtctgttcactctgatggtagtttcttttgctgtgcag
ATTCAGTAGGTTGTCTGTTCACTCTGATGGTAGTTTCTTTTGCTGTGCAG
ATTCAGTAGGTTGgCTGTTCACTCTGATGGTAGTTTCTTTTGCTGTGCAG

aagctctttagtttaattagatccagttagcctattttggcttttgttgc
AAGCTCTTTAGTTTAATTAGATCCAGTTtGCCTATTTTGGCTTTTGTTGC
AAcCTCTTTAGTTTAATTAGATCCcaTTtGtCTATTTTGGCTTTTGTTGC

cattgcttttggtgttttagtcatgaagtccttgcccatgcctatgtcct
CATTGCTTTTGGTGTTTTAGTCATGAAGTCCTTGCCCATGCCTATGTCCT
CATTGCTTTTGGTGTTTTAGTCATGAAGTCCTTGCCCATGCCTATGTCCT

gaatggtattgcttaggttttcttctagggtttttatggttttaagtcta
GAATGGTATTGCTTAGGTTTTCTTCTAGGGTTTTTATGGTTTcAAGTCTA
GAATGGTATTGCcTAGGTTTTCTTCTAGGGTTTTTATGGTTTTAgGTCTA

acatttaagtctttaatccatcttgaattaatttttgtataaggtgtaag
ACATTTAAGTCTTTAATgCATCTTGAATTAATTTTTGTATAAGGTGTAAG
ACATTTAAGTCTTTAATCCATCTTGAATTAATTTTTaTATAAGGTaTAAG

gaagggatccagtttcagctttctacatatggctagccagttttcccagc
GAAGGGATCCAGTTTCAGCTTTCTACATATGGCTAGCCAGTTTTCCCAGC
GAAGGGATCCAaTTTCAGCTTTCTACATATGGCTAGCCAGTTTTCCCAGC

accatttattaaataggaaatcctttccccattgcttgtttttgtcaggt
ACCATTTATTAAATAGGAAATCCTTTCCCCATTGCTTGTTTTTGTCAGGT
ACCATTTATTAAATAGGgAATCCTTTCCCCATTtCTTGTTTTTGTCAGGT

ttgtcaaagatcagatggttgtagatgtgtagtattatttctgagggctc
TTGTCAAAGATCAGATGGTTGTAGATGTGTAGTATTATTTCTGAGGGCTC
TTGTCAAAGATGG-----TTGTAGATGTGTgGTgTTATTTCTGAGGGCTC

tgtt------------------ctgttccatttgtctatatctctgttttggtaccagtaccatgctg
TGTT------------------CTGTTCCATTTGTCTATATCTCTGTTTTGGTACCAGTACCATGCTG
TGTTatttctgagggctctgttCTGTTtCATTgGTCTATATCTCTGTTTTGGTACCAGTACCATGCTG

ttttggttactgtaggcttgGaagaagaatcaatatcatgaaaatggcca
TTTTGGTTACTGTAGGCTTGGAgGAAGAATCAATATCATGAAAATGGCCA
TTTTGGTTACTGTAGcCTTGGAgGAAGAATCAATgTCgTGAAAATGGCCA

tactgcccaaggtaatttatagattcagtgccatccccatcaagctacca
TACTGCCCAAGGTAATTTATAGATTCAGTGCCATCCCCATCAAGCTACCA
TACTGCCCAAGGTAATTTATAGATTCAaTGCCATttCCATCAAGCTACCA

atgactttcttcacagaattggaaaaaact
ATGACTTTCTTCACAGAATTGGAAAAAACT

ATGACTTTCTTCACAGAATTGGAAAAAACT

chr7:19724202-19724323
Alignment
Human, chimp, rhesus, AluSc consensus, donor

```
TTTTTAAATGTGAAATCTCTTAAAAAATTTCT-ACTTTATTATGGGTTGTT
TTTTTAAATGTGAAATCTCTaAAAAAATTTCT-ACTTTATTATGGGTTGTT
TTTTTAAATGTGAAATATCTAAAACAATTTTACACTTGATTATGGGTTGTG

CTACCACATTTGCTAATTATTACAAGTTTTGCTCAGTTTATGGAtttttt
CTACCACATTTGCTAATTtTTACAAGTTTTGCTCAGTTTATGGATTTTTT
----CACATTTGCTAATTTTTACAAGTTGTGCTCAGTTTATGGAtttctt

tttttttttttttttt------gagaaagagacttgctctgtcaccaggctggag
TTTTTTTTTTTTTTT--------GAGAAAGAGACTcGCTCTGTCACCAGGCTGGAG
tcttttctttttttttttttttaagacagaaactcactctgtcaccaggctggag
                      tgagacggagtctcgctctgtcgccaggctggag

tgcagtggtgctgtcttggctcactgcaacctccacttcccaggttcaag
TGCAGTGGTGCTGTCTTGGCTCACTGCAACCTCCACTTCCCAGGTTCAAG
tgcagtggtgcgatcttggctcactgcaacctccgcctcccgggttcaag
tgcagtggcgcgatctcggctcactgcaacctccgcctcccgggttcaag

tgattctcctgcctcagcctcccgagtagggggggactacaggcgcatgcc
TGATTCTCCTGCCTCAGCCTCCCaAGTAGGGGGGACTACAGatGCATGCC
tgattctcctgcctcagcctcccaagtagggggggctgcaggcgcgtgcc
cgattctcctgcctcagcctcccgagtagctgggactacaggcgcgcgcc

accacgcccagctaatttttgtatttttagtagagatggggtttcaccat
ACCACGCCCAGCTAATTTTTGTATTTTTAGTAGAGATGGGGTTTCACCAT
accgtgcccagctaatttttgtatttttagtagagacggggtttcaccat
accacgcccagctaatttttgtatttttagtagagacggggtttcaccat
                                                   T

TCTTTTTTACTCCCTTTGCCAGGAAAACAATTTATTGAATACAAGAGTCC
TCTTTTTTACTCCCTTTGCCAGGAAAACAATTTATTGAATACAAGAGTCC
--------------------------------------------------
--------------------------------------------------
TCTTTTTTACTCCCTTTGCCAGGAAAACAATTTATTGAATACAAGAGTCC

TTTATTAGGAATGCAAATGCATTTCACAAGTAATATATTGCTTAAAAACC
TTTAcTAGGAATGCAAcTGCATTTCACAAGTAATATATTGtTTAAAAACC
--------------------------------------------------
--------------------------------------------------
TTTACTAGGAACATAAATGCATTTCACAAGTAATATATTGCTTAAAAACC

AAGCTATAGCTTTAATAAAATTAtttcaccatgttggccaggatggtctc
AAGCTATAGCTTTAATAAAATTATTTCACCATGTTGGCCAGGATGGTCTC
--------------------------------gttggccaggatggtctc
--------------------------------gttggccaggatggtctc
AAGCTATAGCTTTAATAAAATTATTTCA

tatttcttgaccttgtgattcactcacctcagcctcccaaagtgctgaga
TATTTCTTGACCTTGTGATTCACTCACCTCAGCCTCCCAAAGTaCTGAGA
aatttcttgacctcgtgatccgctcgcctcggcctcccaaagtgctgaga
gatctcttgacctcgtgatccgcccgcctcggcctcccaaagtgctggga

ttacaggcgtaagctaccacgccctgccCAGTTCATGGATTTATAATTGG
TTAtAGGCGTAAGCTACtACGCCCTGCCCAGTTCATGGATTTATAATTGG
ttacaggcgtgaatcaccgcacccggccCAATTCATGGATTTATAATTGG
ttacaggcgtgagccaccgcgcccggcc

TGCATCACCTTTCAAATTCCATGGAGTATTTAC
TGCATCACCTTTCAAATTCCATGGAGTATTTAC
TGCATCACCTTTCAAATTCCATGGAGTATTTAC
```

chr11:94292975-94293144
Alignment
Human, chimp, rhesus, MER20 consensus, donor

```
ttagttattagtacccactgtggcccaagtacttggctaggcattgggaa
TTAGTTATTAGTACCCACTGTGGCCCAAGTACTTGGCTAGGCATTGGGAA
TTAGTTATTAGTACCCtCTaTGGCCCAAGTACTTtGCTAGGCATTGGGAA

taccaaagtaaatgaggtagtcatagctctgttgcagagAGgtggttctc
TACCAAAGTAAATGAGGTAGTCATAGCTCTGTTGCAGAGAGGTGGTTCTC
TACCAAAGTAAcTGAGGTAGTCATAGCTCTGTTGCAGAGAGGTGGTTCTC
                                          gtggttctc

aacatggagcggttttggctcccaagggccatttgccaatgtctggatac
AACATGGAGCaGTTTTGGCTCCCAAGGGCCATTTGCCAATGTCTGGATAC
AACATGGAGCaGTTTgGGCTCCCAAGGGCCATTTGgCAATGT-TGGAgAC
aaccgggggtgattttgcccccaggggacatttggcaatgtctggagac

atttttgatggtcttgacttgggatgagg-ttgcta----------------------cagggatgttgctga
ATTTTTGATGGTCTTGACTTGGGATGAGG-TTGCTA----------------------CAGGGATGTTGCTGA
ATTTTTGATtGTCaTGACTTGGGATGAGG-TTGCTA----------------------aAGGGATGTTGCTGA
atttttggttgtcacaactgggggggggratgctactggcatctagtgggtagaggccagggatgctgctaa

acatcctataacacatagaacagcccccacaataaagaactaCACAACAA
ACATCCTATAACACAcAGAACAGCCCCCACAATAAAGAACTACACAACAA
ACATCCTATAAtgCATAGgAgAGCCCCCAtgATAAAGGACTa--------
acatcctacaatgcacaggacagcccccacaacaaagaatta--------

AGAAGCCACAGAATCCGCTTGTCAGACTGTCTCTTCTGCACTCCCCCTTT
AGAAGCCACAGAATCCaCTTGTCAGACTGTCTCTTCTGCACTCCtCCTTT
--------------------------------------------------
--------------------------------------------------
AGGAACCACCGAATCCGCTTGTCAGACTGTCTCTTCTGCACTTCTCCTTT

CAAGAAGACACACCAAGTTCCCATGATCACATACTCCCTTCCCCCGACCA
CAAGAAGACACAtCAAGTTCCCATGATCACATACTCCCTTCCCCtGACCA
--------------------------------------------------
--------------------------------------------------
CAAGAAGACACACCAAGTTCCCATGATCACATACTCCCTTCCCCTGACCA

CACATGGCCTGGGCCCACTGAAGGCCCAGGAGGCTGGACATGAGGCAGTG
CACATGGCCTGGGCCCACTGAAGGCCCAGGAGGCTGGACATGAGGCAGTG
--------------------------------------------------
--------------------------------------------------
CACATGGCCCAGGCCCACTGAAGGCCCAGGAGGCTGGACGCAAGGCAGTG

AGGTGGAATACAA---ggccccaaatgtcaacagtgttgaggttgaga--TC---TTA
AGGTGGAATACAA---GGCCCCAAATGTCAACAGTGTTGAGGTTGAGaaAcC---TTA
-------------TCTGGCCCCAAATGTCAACAGTGTTGAGGTTGAGaaAcCcTATTA
-------------tccggcccaaaatgtcgatagtgccaaggttgagaaaccctg
AGGTGGAATACAa---g

TTATTGAGCATAAGGTCTATGACAATTAAACACATAGTTAAAAT
TTATTGAGCATAAGGTCTATGACAATTAAACACATAGTTAAAAT
---TTGAGCATAAGGTCTATGACAATTAAACACATAGTTAAAAT
```

chr14:35205139-35205342
Alignment
Human, chimp, rhesus, AluSx consensus, donor

```
ATGATATGAATGAAATCTAAAATAAGAATACAACGAGCAAGAATTGGACT
ATGATATGAATGAAATCTAAAATAAGAATACAAaGAGCAAGAATTGGACT
ATGATATGAATGAAATCTAAAATAAGAATACAAaGAGCAAGAATTGGACT

AGGTGTTTCCTCCttttttttttttctt--gagaaggagtttcactctgtc
AGGTGTTTCCTCCTTTTTTTTTTTTTCTT--GAGAAGGAGTTTCACTCTGTC
AGGTGTTTCCTCCttTTTTTTTTTTTTTtTTaAGAAGGAGTTTCACTCTGTC
                              tgagacggagtctcgctctgtc

gtgcaggctggagtacagtggcacaatctcagctcactgcaacctccacc
GTGCAGGCTGGAGTACAGTGGCACgATCTCAGCTCACTGCAACCTCCACC
aTGCAGGCTGGAGTAtAGTGGCACgATCTCgGCTCACTGCAACtTCCgCC
gcccaggctggagtgcagtggcgcgatctcggctcactgcaacctccgcc

tcccagggtcaaatgatcctcccatctctcccatctcagactcctgagta
TCCtAGGtTCAAAcGATCCTCCCATCTCTCCCATCTCAGACTCCTGAGTA
TCCCAGGtTCAAAcGATCCTCCCATCTCTCCCATCTCAGACTCCTGAGTA
tcccgggttcaagcgattctcctgc---------ctcagcctcccgagta

gctgggattacaggtgcgtgccacca*c*TACCAGAAAAAATTTTAAAGACT
GCTGGGATTACAGGTGCGTGCCACCA*C*TACCAGAAAAAATTTTAAAGACT
GCTGGGATTACAGGcGtGcaCCACCA*C*-----------------------
gctgggattacaggcgcgcgccacca*c*-----------------------
                          *C*TACCAGAAAACATTTTGAAGACT

TATAAACAACAAGGGTCATCTAGCATGTCTGCTCCTAACTGGACACAATT
TATAAACAACAAGGGTCATCTgGCATGTCTGCTCCTAACTGGACACAATT
--------------------------------------------------
--------------------------------------------------
TATAAACAACAAGGGTGATCTGGTATGTCTTCTCCTAACTGGACACAATT

ATCTTTTTTTTTTAAGGATTAATATCTGTGGTAGGTTCCACTGGCAACTG
ATCcTTTTTTTTTAAGGATTAATATCTGTGGTAGGTTCCACTGGCAACTG
--------------------------------------------------
--------------------------------------------------
GTCTTTTTTTT--AAGGATTAATATCTGTGGTAAGTTCCACTGGCAACTG

TATAGTCACATTTATTCTGCACCATCTACTGTTCAAGCCCCTTAATGTCT
TATAGTCACATTTATTCTGCACCATCTACTGTTCAAGCCCCTTAATGcCT
--------------------------------------------------
--------------------------------------------------
TATAGTCACATTTATTTTGCACCATCTACTGTTCAAGCCCCTAAATGCCT

CAGGTACATGGGATCTCTATCCCAACTTCATA-----*gtt*aatttttgtatttgt
CAGGTACATGGGATCTCTATCCCAACTTCATA-----*GTT*AATTTTTGTATTcGT
--------------------------------GCCCG*GcT*AATTTTTcTATTTGT
--------------------------------gcccg*gct*aatttttgtattttt
CTGGTACATGGGATCTCCATCCCAACTCCATA-----*GTT*

agtagagatggagtttcaccatgttggccaggctggtctcaaactcctga
AGTAGAGATGGAGTTTCACCATGTTGGCCAGGCTGGTCTCAAACTCCTGA
AGTAGAtATGGAGTTTCACCAcGTTGGCCAGGCTaGTCTCAAACTCCTGA
agtagagacggggtttcaccatgttggccaggctggtctcgaactcctga

cctcaagtgatctgcctgtgtcagtctc-ccaaagtgttgggattacaggt
CCTCAAGTGATCTGCCTGTGTCAGTCTC-CCAAAGTGTTGGGATTACAGGT
CCTCAAGTGATCcGCCTGTGTCAGcCTCtCCAAAGTGcTGGGATTACAGGT
cctcaggtgatccgcccgcctcggcctccc-aaagtgctgggattacaggc

gtgagccaccatgcccagccTGGACTGGGTATTTCCAACACCATCAGAGG
```

GTGAGCCACCAcGCCCAGCCTGGACTGGGTATTTCCAACACCATCgGAGG
GTaAGCCACCAcGCCCAGCCTGGACTGGGTATTTCCAACACCAcCctAGG
gtgagccaccgcgcccggcc

AAATGACTTGTTTTAACCTTATTGTGGAGATATGTTAGGCTTGATTCTTG
AAATGACTTGTTTTAACCTTATTGTGGAGATATGTTAGGCTTGATTCTTG
AAATGACTTGTTTTAACCTTATTaTGGAGATATGTTAtGCTTGATTCTTG

chr2:82389199-82389351
Alignment
Human, chimp, rhesus, L1MA9 consensus, donor

```
TTAAGGACATAAAGTGTTATTGAACATGTCCTTAGAGGCTAAAGTAACTC
TTAAGGACATAAAGTGTTATTGAACATGTCCTTAGAaGCTAAAGTAACTC
         TAAAGTaTTATTGAAtATaTCCTTAGAGGCTAAAGTAACTC

TAGGGGCATTGGACTTCCAGCAAATTAAGGAAGGTTGACACATACTGCAT
TAGGGGCATTGGACTTCCAGCAAATTAAGGAAGGTTGACACATACTGCAT
TAGGGa-ATTGGACTTCCAGCAAATTAAGGAgGGTTGACgCATAtTGCAT

GTCGAGAAACTACAAGGTGATTCTGAGTCACATCTGACAGAACAAATAAT
GTCGAGAAACTACAAGGTGATTCTGAGTCACATCTGACAGAAgAAATgAT
GTCGAGAAACTACtAGGTGcTTCTGAGTCACATCTGACAGAACAAtTAAT

GACAGCCCTCTtacagaccaatggaacaaaacagaaagtctagaaataaa
GACAGCCCTCTTACAGACCAATGGAACAAAACAGAAAGcCTAGAAATAAA
GACAGCCCTCTTACAGACCAATGGAACAAAACAGAAAGcCTAGAAATAgA

gtcatgcatatgtggtcaactgattaca--------ca-tgtgaggaaatatttttcaa
GTCgTGCATATGTGGTCAACTGATTACA--------CA-TGTGAGGAAATATTTTTCAA
GctATGCATATGTGGTaAACgGATTACAgTTTTTGACACAGTGgGGAAAaAgTTTTCAA

tattttatttttgacacagtgaggaaatatttttcaataaatggtgttgg
cATTTTATTTTTGACACAGTGAGGAAATATTTTTCAATAAATGGTGTTGG
-------------------------------------TAAAcGGTGTTGG

aaaaactgtgtatccacatgcaaagaaatgaaataagactcatctcacac
AAAAACTGTGTATCCACATGCAAAGAAATGAAATAAGACTCATCTCACAC
AAAAACTGTaTATCCACATGCAAAGgAATGAAATAAGACTCATCTCACAC

catttataaaagtcaactcaaaataaattaaaggcttaaatgtaagacct
CATTTATAAAAGTCAACTCAAAATAAATTAAAGGCTTAAATGTAAGACCT
CATTTATAAAAaTCAACTCAAAATAAATTAAAGGCTTAAATGTAAGAtCT

gaaatcgtaaagctactagaagaaatacagagaaaaaacttcttgatatt
GAAATtGTAAAGCTACTAGAAGAAATACAGAGAAAAAACTTCTTGATATT
GAAATtGTAAAGCTACTAGAAGAAACcGAGA---AAAACTTCTTGATATT

gatctggaaaatcgttttctggatataaccccaaaatcacaggtaacaga
GATCTGGAAAATCGTTTTCTGGATATAACCCCAAAATCACAGGTAACAGA
GATCTGGAcAATtGTTTTCTaGATATAACCCCAgAATCAtAGGTAACAGA

agcaaaaatagaaaacgtgatgatattaagctaaaaatggttttgcacag
AGCAAAAATAGAAAAtGTGATGATATTAAGCTAAAAATcGTTcTGCACAG
AGCAAAAATAGAAAAtGTGATGATATTAAGCTAAAAgTGGTTcTGtACAG

caaagaaaacacttgaaagagtgaagagacaacctatagaatATGTACCG
CAAA-----CACTTGAAAGAGTGAAGAGACAACCTATAGAATATGTACCa
CAAtGAAAgCACTTGAAAGAGTGAAGAGACAACCTATAGAAT--------
                                      agaaTATGTACCA

TATTACCATAGATACAGGGTGTGTAAAGCCTTTCTGCATAGAAATCAGCA
TATTACCATAGATACAGGGTGTGTAAAGCCTTTCTGCATAGAAATCAGCA
--------------------------------------------------
TATTACCATAGATACAGGGTGTGTAAAGCCTTTCTACATAGAAATCAGCA

AAGTTACAGGGCCACCAATTTTTGTGTGTGTCAATTTAAGGAGAAAAATA
AAGTTACAGGGCCACCAATTTTTGTGTGTGTCAATTTAAGGAGAAAAATA
--------------------------------------------------
AAGTTACAGAGCCACCAATTTTTGTGTGTGTCAATTTAAGGAGAAAAATA

AAGTTTCAATAGATAACATGAGCATTTTTCATAGAATGGGAGAAAC--gaga
```

AAGTTTCAATAGATAACATGAGCATTgTTCA**TAGAATGGGAGAAAC**------
----------GggAGA
AAGTTTCAATAGATAAC--GAGCATTGTTCA

aactattttcaacccatacatctgagaaggggttaatatccaaaatatat
---TATTTTCAACCCATACATCTGAGAAGGGGTTAATATCCAAAATATAT
AACTgTTTTCAgCCCATACATCTcAGAAGGaGTTAATATCCAAAATATAT

aaataactcaaacaattcagtagcaagaaaacagagaatcaaattaaaaa
AAATAACTCAAACAATTCAGTAGCAAGAAAACAGAGAATCAAATTAAAAA
AAATAAtTCAAACAATTCAGTAGCAAtAAAACAaAtAATCAAATTAAAAA

tgggcaaaggacctcagtagatattgatccaaaaagatgtacaaatgtcc
TGGGCAAAGGACCTCAGTAGATAcTGATCCAAAAAGATGTACAAATGTCC
TGGGCAAAGGAttTCAGTAGAaATTGATCCAAAAAGATGTAtAAATGgCC

aagaagaacagaaaaataggttcaacatcactgatcatcacgaaaatgca
AAGAAGtAtAGAAAAATAGGTTtAACATCACTGATCATCACGAAAATGCA
AAGAAGtAtAGAAAAATAtGTTCAAtATCACTGATCATCAgGAAAATGCA

aatacaaaccacaatgatgtatcacttcacacctgttaggatggctatca
AATcCAAACCACAATGATGTATCACTTCACACCTGTTAGGATGGCTATCA
AATcCAAACCACAATGATaTATCACTTCACACtTGTTAGGATGGCTATCg

tcaagaaaacaaaaggtaagtgttgggagaggatatggtgaaaaggaact
TCAAGAAAACAAAAGGTAAGTGTTGGGAGAGGATATGGTGAAAAGGAACT
TtAAGAAAAtgAAAGaTAAGTGaTGGGAGAGGATATGGTGAAAAGGAACT

ccttgttcactatgggagggaatgtaaattggtgcagccattatggaaaa
CCTTGTTCACTgTGGGAGGGAATGTAAATTGGTGCAGCCATTATaGAAAA
CCTTGTTCACcgTGGGAGGGAATGTAAATTGcTGCAGCCATTgTGGAAAA

gaatatggaggttccttaaaaaattaaaaagtagaactcccatatgatac
GAATATGGAGGTTCCTTAAAAAATTAAAAAGTAGAACTtCCATATGATAC
GAATATGGAGaTTCCTTAAAAcATTAAAAAGTAGAACTtCCATATGATAt

agcaatttgactaatgagtatatatcaaaagaaaatgaaatcaactcctc
AGCAATTTGACT---GAGTATATATCAAAAGAAAATGAAATCAACTCCTC
AGCAATTTGACTAATGAGTATATATCcAAA----------TCAAgTCCTC

agagagatatcttcactcacatgttaattccagcattattcacaaaagcc
AGAGAGATATCTTCACTCACATGTTAATTtCAGCATTATTCACAAAAGCC
AGAGAGATAgCTTCACTCcCATGTTAATTgCAGCATTATTCACAAAAGCC

aagacacagactcaacctgagtattcattgatggaagcatggataaagaa
AAGACACAGACTCAACCTGAGTATTCAcTGATGGAAGCATGGATAAAGAA
AAGACACAGAaTCAACCTGAaTATTCAcTGATGGAAGgATGGATAAAGAA

aatgtagtgtgtgtgtgtttgtgtgtgtgtgtgtgtg----------aatattattcacc
AATGTAGTGTGTGTGTGTTtgtgtgtttgTGTGTGTGTGTGTGTGTG-------AATATTATTCACC
AATGTAGTGTGTGTGTGTgTGTGTGTGTGTGTGTGTGtgtgtgtgtgtgtgtgtttgaaTATTCACC

ctgaaaaaaaa-tcctgtcatttt-caacaacattgataagcctggaggaca
CTGAAAAAAAA-TCCTGTCATTTT-CAAtAACATgGATAAGCCTGGAGGACA
CTGAAAcAAAAATCCTGTCATTTTtCAACAACATgGATAAGCtTGGAGGACA

ttatgctaagtgaaataaactaggcacaggaagacaaataaggtatgatc
TTATGCTAAGTGAAATAAACTAGGCACAGGAAGACAAATActGTATGATC
TTATGCTAAGTGAAATAAACcAGGCACAGGAAGACAAATActGTgTcATC

tcacttatatcttcaatctgaaagaatcagacttatagaagtagaaagta
TCACTTATATCTTCAATCTGAAAGAATCAGACTTATAGAAGTAGAAAGTA
TCACTTATAaCTTCAATCTaAAAaAATCAGACTTATAGAAGTAGAAAGTA

gaatggtggttgtcatgggccgaggg---------gagcaagaaatggggaaatattgc
GAATGGTGGTTGTCATGGGCCGATtctcggcccAtGAGCAAGAAATGGGGAAATATTGC
GAATGGTGGTTGTCATGGGCtGAGGG---------GAaCAAGAAATGGGGAAgTgTTGC

tcagagaatacaaggtttcctttatgcaggatgaatatgttctagatacc
TCAGAGAATACAAGGTTTCCTTTATGCAGGATGAATATGTTCTAGATACC
TCAGAGAATACAAGGTTTCCTTTATGCAGGATGAATATaTTCTAGATACC

taacgtacagcctggtgacaatcattaacaatactgtatttaacgcttga
TAAtGTACAGgCTGGTGACAATCATTAAtAATACTGTATTTAACGCTTGA
TAAtGcACAGaCTGGTGACAATtgTTAAtAATACTGTATTTAACaCTTGA

aatttgctaggagagtaggttaaatgctctccccacccacaccaacacac
AATTTGCTAGGAGAGTAGGTTAAATGCTCTCCCCACCCACACgAACACAC
AATTTGCTAaGAGAGTAGGTTAAATGtTCTCaCCACctacacCCACACAC

aaacacacacacagtggtaactatgtgagctgatggatatagtaattggc
AAACACACACACAaTGGTAACTATGTGAGCTGATGGATATAGTAATTGGC
AAACACAaaa----TGGTAACTAgGTGAGCTGATGGATATAGTAATTGGC

ttgattgtaaatatatatgtacataaaa--tcatgttttataccttaaatat
TTGATTGTAA-TATATATGTAtATAAAA--TCATGTTTTATACCTTAAATAT
TTGATTGTAA-TATAcATGTAtacaaatAATCATGTTTTATACCTTAAATAT

atat---ttttatttgtcaattatacctcaataaaactggagaaaATAAAGTG
ATAT---TTTTATTTGTCAATTATACCTCAATAAAACTGGAGAAAATAAAGTG
ATATaatTTTTATTTGTCAATTATACtTCAATAAAACTGGAaAAAATAAAGTG

GAAAAAATGAACTGGA-TAGCTTGCATAGAATTTGAGAATTTGGATGATTT
GAAgAAATaAACTGGA-TAGCTTGCATAGAATTTGAGAATTTGGATGATTT
GAtagtttgttctggattagcttagacAGAATTTGAGAATTTGGATATTTT

TTTTTACATATTCTTGACTTAATATAAGGTTTCTTATATTATGTACTATC
TTTTTACtTATTCTTGACTTAATATAAGGTTTCTTATATTATGTACTATC
Tggg----TATTCTTGACT-AATATAAGGTTTtTcAcATTATGTACTATC

TATTACATTATGCTATTTCCTTTCCAAATTCTTGGGCAGTCAACACCACT
TATTACATTATGCTcTTTCCTTTCCAAATTCTTGGGCAaTCAACACCACT
TATTACATTATGCTATTTCCTTTCatac-TCTTGGGCAaTCAACACCACT

GTATTTTTACCATGTCACCTATCAGGGTCAATTCTCAGA
GTATTTTTACCATGTCACCTATCAGaGTCAATTCTCAGA
GTATTTTTACCATGTCcCCTATCAGaGgCAATTCTCAGg

chr5:27200130-27200356
Alignment
Human, chimp, rhesus, Tigger3b consensus, donor

```
ACACTGTGCTCACAAGCTCCTTTTTATAATCCATTTATTGATAGGCTAAT
ACACTGTGCTCACAAGCTCCTTTTTATAATCCATTTATTGATAGGCTAAT
GCACTGTGCTCACAAGCTtCTTTTTATAATCtATgTATTGATAGGCTAAT

TAACACTATTTACAAGGCAATTTCTTTAAGTAAATtcatgcactgcataa
TAACACTATTTACAAGGCAATTTCTTTAAGTAAATtcatgcactgcataa
TAACAaTATTTACAAGGCAATTTCTgTAAGTAAATTCATGCACTGaATAA

caatgtttcagtcaacaaccttggtcccataagattataatggagctaaa
caatgtttcagtcaacaaccttggtcccataagattataatggagctaaa
CAATGTTTCAGTCAACAACCTTGGTCCCATAAGATTAaAATGGAGCTAAA
              acgacggtggtcccataagattataatggagctgaa

gaattcctgttacctagtgatcctatctgtagcagtggcaatgt---agcaca
aaattcctgttacctagtcatcctatctgtagcagtggcaatgt---agcaca
aAATTCCTGTTACCTAaTGATgCTATCTGTAGCcaTGGtAATGT---AaCACA
aaattcctatcgccta----gtgacgtcgtagccatcgtaacgtcgtagcgca

aggcattaatcatgtgtttgcaatgatga---tataaacaaacctactgtgct
aggcattaatcatgtgtttgcaatgatga---tataaacaaacctactgtgct
AGGCATTAATCgTGTGTTTGCAAcGAcgaTGATATAAACAAACCTACTGTGCT
acgcattactcacgtgtttgtggtgatgctggtgtaaacaaacctactgcgct

atcagttgtataaaagtataagaaatacaattatgtacagtacaagatag
atcagttgtataaaagtataagcaatacaattatatacagtacatgatag
ATCAGcTGTATAAAAGTATAAGtAATACAATTATGTACAaTACAtGATAG
gccagtcgtataaaagtatagcacatacaattatgtacagtacataatac

ttgataatgataataaatgactatattactggtttatttatttactatac
ttgataatgataataaatgactatattactggtttatttatttactatac
TTGATAAgGATAATAAATGACTgTATTACTGcTTTATTTATTTACT-TAC
ttgataatgataataaacgactatgttactggtttatgtatttactatac

tatcctttctgtcattattttagagtgtactcctagcaataaagaaaa------gc
tatcctttctgtcattattttagagtgtactcctagcaataaagaaaa------gc
TATgCTTTCTaTCATTATTTTAGAGTGTACTCCTAcCAATAAAGAAAA------GC
tatacttttatcgttattttagagtgtactccttctacttattaaaaaaaaaagt

tgactgt----------caggcaggtccctcaggaagtattccagaagaaggtgttgtta
tgactgt----------caggcaggtccctcaggaagtattccagaagaaggtgttgtta
TGACTGT----------CAGGCAGGTCCCTCAGGAgGTATTCCAGAAGAAGGcaTTGTTA
taactgtaaaacagcctcaggcaggtccttcaggaggtattccagaagaaggcattgtta

tcactggagatgacagctccatgcatgttactgtccctgaagaccttcct
tcactggagatgacagctccatgcatgttactgtccctgaagaccttccc
TCACTGGAGATGACAGCTCCATGCATGcTAtTGcCCCTGAAGACCTTCtT
tcataggagatgacagctccatgcgtgttattgcccctgaagaccttcca

gtgggccaaaaatgtggaagttgaagacagtgatattgatgattcaaacc
gtgggccaaaaatgtggaagttgaagacagtgatattgatgattcaaacc
GTGGGCCAAAAATGTGGAAGTTGAAGACAGTGATATTGATGATTtAAACC
gtgggacaaga-tgtggaggtggaagacagtgatattgatgatcctgacc

ctgtgaaggcttacggtaatgtgtgtgcatgtctgtgttttaacttttca
gtgtgaaggcttacggtaatgtgtgtgcatgtctgtgttttaacttttca
-TGTGAAGGCTTAgGGTAATGTGTG--TGTGTCTGTGTTTTAACTTTTCA
ctgtgtaggcctaggctaatgtgtgtgtttgtgtc----ttagtttttaa

caaaaaagtttaaatgtccaaaatt-taaacatagaaaaaagtttaaagag--------
caaaaaagtttaaatgttcaaaatt-taaacatagaaaaaagtttaaagac--------
```

```
CAAAAAcGTTTAAATGTtCAAAAaaGcTAAACATAGAAAAAGTTTAAAGAa--------
caaaaaagtttaaaaagtaaaaaaaaaataawtttaaaaatagaaaaaagcttatagaa

taaggatactaaaac-g----tatatttgtacagatgtacagtgtg-ttgtatttt
taaggatactaaaaa-g----tatatttgtacagatgtacagtgtgtttgtatttt
TAAGGATACTAAAAaTa----TATATTTGTACAGATGTACAGTGcGTTtGTgTaTT
taaggatataaagaaagaaaatatttttgtacagctgtacaatgtgtttgtgtttt

aagctatgtTTCTTGAACAGCTTGACTTCATTTAAGAGTGAAGCCATATT
aagctatgtTTCTTGAACAGCTTGACTTCATTTAAGAGTGAAGCCATATT
AAGCTATGCT----------------------------------------
aagctaagtg----------------------------------------
      TGTTTCTTGAACAGCTTGACTTCATTTAAGAGTGAAGCCATATC

TCTCTTTTGCTGTTTCCCACTTAAAACTTTTTAAGAACTGCCTAGTTATA
TCTCCTTTGCTGTTTCCCACTTAAAATTTTTTAAAAACTGCCTAGTTATA
--------------------------------------------------
--------------------------------------------------
TCTCCTTTGCTGTTTCCCACTTAAAATTTTTAAAAAACTGCCTAGTTATA

CATTAGTTTATTTTCTATTACACACTTTCTTTTCTAACTCTTACTGCATT
CATTAGTTTATTTTCTATTACACACTTTCTTTTCTAACTCTTACTGCGTT
--------------------------------------------------
--------------------------------------------------
CATTAGTTTATTTTCTATTACACACTTTCTTTTGCAACTCTTACTGCATT

CTAATGCTGTTTCTGACTTATAAAAATGAGATACATCTCAGGGCAAGTTT
CTAATGCTGTTTCTGACTTATAAAAATGAGATACATCTCAGGGCAAGTTT
--------------------------------------------------
--------------------------------------------------
TTAATGCTCTTTCTGACTTATAAGAATGAGATACATCTCAGGGCAAGTTT

GGGTTGGAGGTGTGGGGTGTCAGTTCACAAAAGTTAT---------aagagtcaaaatg
GGGTAGGAGGTGTGGGGTGTCAGTTCACAAAAGTTAT---------aagagtcaaaatg
---------------------------------------ATTACA--CGAGTCAAAATG
-------------------------------------ttattacaaaagagtcaaaaag
GGGTAGGAGGTGTGGGGTGTCAGTTCACAAAAG

ttaaaaaaaatgaaaaagtttatacagtaaaaaagttacagtaagctacg
ttaaaaaaaatgaaaaagtttatacagtaaaaaagttacagtaagctacg
TTAAAAAAA-TtAggAAGTTTATAaAGTAAAAAAGTTACAGTAAGCTACa
ttwaaaaaattwaaaa-gtttataaagtaaaaaagttacagtaagctaag

gataatgtatttttt-ggggaaagaaaaaaattaaaataaatttaatatag
gataatgtattttttggggaaagaaaaaaattaaaataaatataatatag
GATAATGcATTTTTGaGGAAgGAAAAAAA--TTAAAATAAATTTAgTATAG
gttaatttattattgaagaaagaaaaatattttwaa-taaatttagtgtag

ccta-gaatacagtgtttacaaagtctacagtaaagtacagtattgtctta
ccta-gaatacagtgtttacaaagtctacagtaaagtacagtattgtctta
CCTA-GAtTACAGTGTTTACAAAGTCTAtAGTAAAGTtCAGTgTTGTCTTA
cctaagtgtacagtgtttataaagtctacagtagtgtacagtaatgtccta

ggccttcacattcattcaccactcactcactgacttatccagatcaactt
ggccttcacattcattcaccactcactcactgacttatccagatcaactt
GGCCTTCACATTCATTCACCACTCACTCACTGACTTAcCCAGATCAACTT
ggccttcacattcactcaccactcactcactgactcacccagagcaactt

ccagtcctgcaagctggaagctccatttatagtcaatgtccaatacaggt
ccagtcctgcaagctggaagctccatttatagtcaatgtccaatacaggt
CCAGTCCTGCAAGCTGGAAcCTCCATTTATAGTaAATGTCCAATACAGGT
ccagtcctgcaagct
```

atatcattcttACGTTTTTCTTTCATGAAGTAAAGAGCTAAGCCAGGCAT
atatcattcttACGTTTTTCTTTCATGAAGTAAAGAGCTAAGCCAGGCAT
ATATtATTCTTAtGTTTTTCTTTtATaAAGTAAAGAGCTAAGCCAGaCAT

TACTTAGATTTATT------ATCTTCTCTGTATCCATAAAATGAAGGAACTA
TACTTAGATTTATT------ATCTTCTCTGTATCCATAAAATGAAGGAACTA
TACTTAGATTTATTgctattATCTTCTCTGTATCCAcAAAATGAAGGAAtTA

chr9:12757578-12757740
Alignment
Human, chimp, rhesus, Tigger3(Golem) consensus, donor
acgaaactccgtctgaaaaaaaatatatatatataatggaaggtgaaaaa
GCGAAACTCCGTCTGAAAAAAtATATATATATATAATGGAAGGTGAAAAA
ggaaggtgaaaaa

ttcttatc--ctagtaacattgtagctatcctaatgaagtggcacaatgcat
TTCcTATCacCTAGTgACATTGTAGCTATCCTAATGAAGTGGCACAATGCAT
ttcctataacctagtgacattgtagctatcccaatgaggtggcacaatgcat

tactttttctatatttagatatgtttagatacaaacata**TCTTTATGTTG**
TACTTTTTCTATATTTAGATATGTTTAGATACAAACATATCTTTATGTTG
tactttttctatatttagatatgtttagatacaaaaata-----
tacctttctatgtttagatatgtttagatacacaaata-----

TACGTATCTGTATGTTTTATGTTGTAATTGTATGCAGTGATGTAAAGTAG
TACGTATCTGTATGTTTTATGTTGTAATTGTATGCAGTGATGTAAAGTAG

GTAATCGTATGGAGTGATGTAAAGTAG

CCTGTCATTTTTAATACTTTTTTTGTGATTAAGTAAGTTTGTATTTATTC
CCTGTCATTTTTAcTACgTTTTTTGTGATTAAGTAAGTTTGTATTTATTC

CCTGTCGTTTTTAATACTTTTTTTGTGATTAAGTAAGTTTGCGTCTATTC

TTTGCAGTGACTTTAAGTGTTCTTGGCTG**TTCTTGGCTGTAAATATACAA**
TTTGCAGcGACTTTAAGTGTTCTTGGCTGTTCTTGGCTGTAAATATACAA

TTTGCAGTGACTTTAAGTGTTCTTGGCTG

ACAtatatttagatatgtttagata-----cattgttttacagttgctgacagta
ACATATATTTAGATATGTTTAGATA-----CATTGTTTTACAGTTGCcGACAGTA
----------cttaccattgttttacaattgctgacagta
----------cttaccattgtgttacaattgcctacagta

ttcagtataggaacttgatgtacagttttgtagcctaggagcaataggcc
TTCAGTATAGGAACaTGATGTACAGTTTTGTAGCCTAGGAGCAAcAGGCC
ctcagtataggaacatgctgtacaggtttgtagcctaggagcaataggcc
ttcagtacagtaacatgctgtacaggtttgtagcctaggagcaataggct

atctcacataccctaagtgtgcagtaggctatccaatctatgtatgcata
ATCTCACATACCCTAAGTGTGCAGTAGGCTATCCAATCTATGTATGCgTA
atctcatatgccctaagtgtgcagtaggctgtccaatctatatatgtgga
ataccatatagcctaggtgtgtagtaggctataccatctaggtttgtgta

agtacactctatgatgtttgcacagcaactaaatcacctgatgatgcatt
AGTACACTCTATGATGTTTGCACAGCAACTAAATCACCTGATGATGCATT
agtatactctatgatgtttgcatagcaactaaatcacctgatgatgcatt
agtacactctatgatgttcgcacaacgacgaaatcgcctaacgacgcatt

tgtcagaatatattcctgccgttaagcgaaatgtgactATCTATGTTCAG
TGTCAGAATATATTCCTGCCGTTAAGCGAAATGTGACTATCTATGTTCAG
tgtcagagtatattcctgtcattaagcgacatgtgactATCTATGTTCAG
tctcagaacgtatccccgtcgttaagcgacgcatgact

AAGTAGAACTCTTAATAGTTTTGAAAGAGGACTAATGCCGATTTGTGGGT
AAGTAGAACTCTTAATAGTTTTGAAAGAGGACTAATGCCGATTTGTGGGT
AAGTAGAACTCTTAATAGTTTTCAAAGAGGACTAATGCCCGTTTGTGGGT

AATAGAAAAAATGTGGGTTTACAAATAAAATATATTTAtttta
AATAGAAAAAAcGTGGGTTTgCAAATAAAATATATTTATTTTA
AATGGGAAAAACATGGGTTTGCCAATAAAATATAtttatttta

chr10:9325611-9325766
Alignment
Human, chimp, rhesus, AluSx consensus, donor

```
ACACTGGAGAAGTCCCTCAGCTGTTCAGACCACAGATTCTGTAAAAAAAG
ACACTAGAAAAGTCCTTCAGCTGTTCAGACCACGGATTCTGTAAAAAGAG

GATAGCAGATGTCCCCAGATCTCCCAGTCCCCTCCCAAGTTTCAAGAATT
                      TCCCAGTCCCCTCCCAAGTTTCAAGAATT
GATAGCAGATCTCCCCAGATCTCCCAGTCCCCTCTCAAGTTTCAAGAATT

CTAAGGCTATCCTGGGGATATCAGTAGTCAGCGTAggctgggcgcggtgg
CTAAGGCTATCCTGGGGATATCAGTAGTCAGTGTAggctgggcacggtgg
CTAAGGTTATCCTGGGGATATCAGTAGTCAGTGTAggccgggcacagtgg
                                   ggccgggcgcggtgg

ctcacgcctgtaatcccaacactttgggaggccgaggcaggcggatcact
ctcacgcctgtaatcccaacactttgggaggccgaggcaggcggatcact
ctcacacctgtaattccaacactttggaaggccatggcaggaggatcacc
ctcacgcctgtaatcccagcactttgggaggccgaggcgggcggatcacc

tgaggtcaggagttcaagaccagcctggccaacatggtgaaacccca tct
tgaggtcaggagttcaagaccagcctggccaacacggtgaaacccca tct
tgaggtcaggagttcaagaccagcctggccaacacagtgaaaccccg tct
tgaggtcaggagttcgagaccagcctggccaacatggtgaaaccccg tct
                                                TCT

ctacCCAGGGCTCAAATGTACCACTGCCAGGAGTGTTACAGGTTATTTGA
ctacCCAGGGCTCAAATGTACCATTGCCAGGAGTGTTACAGGTTATTTGA
ctac---------------------------------------------
ctac---------------------------------------------
ATACTCAGGGCTCAAATGTACCATTGCCAGGAGTGTTACAGGTTATTTGA

CATAAAACAGAGAAAAACCAGTAGCATCTTTTACAAAGCTCAGAAACTTA
CATAAAACAGAGAAAAACCAGTAGCATCTTTTACAAAGCTCAGAAACTTT
--------------------------------------------------
--------------------------------------------------
CATAAAACAGAGAAAAACCAGTAGCATCTTTTACAAAGCTCAGAAACTTT

TTCTCTCCTTTCCCCTTTTGATGTGGGGTCACTGGCCTCCTTAGCTCTGA
TTCTCTCCTTTCCTCTTTTGATGTGGGGTCACTGGCCTCCTTAGCTCTGA
--------------------------------------------------
--------------------------------------------------
TTCTCTCTTTTCCCCTTTTGATGTGGGGTCACTGGCCTCCTTAGCTCTGA

ACACCTTCAGA-------acaaaaattagccaggcgtggtgatgcacgcctgtaatc
ACACCTTCAGA-------acaaaaattagccaggcatggtgatgcacacctgtaatc
-----------taaaaattcaaaaattagccaggcgtggtgatgcacacctgtaatc
-----------taaaaatacaaaaattagccgggcgtggtggcgcgcgcctgtaatc
ACACCTTCAGA-------ACA


ccagctactcaggaggctgaggcacaagaattgcttgaacccaagaggca
ccagctactcaggaggctgaggcacaagaatcacttgaacccaagaggca
ccagctactcaggaggctgaggcacaagaatcgctcgaacccgagaggcg
ccagctactcgggaggctgaggcaggagaatcgcttgaacccgggaggcg


aagtttgcagtgagccaagatcccgccacagcactc-----------caggag----actgtgtc
aagtttgcagtgagccaagatcccaccacagcactc-----------caggag----actgtgtc
aaatttgcagtgagccaagatcccaccacagcactctagcctgggcgaaggag----actctgtc
gaggttgcagtgagccgagatcgcgccactgcactccagcctgggcgacagagcgagactccgtc
```

tcaaaaaaaaaaaa-TAGTAGTGAGTGTAAATGTCTATATCATAACAACGT
tcaaaaaaaaaaaaaTAGTAGTGAGTGTAAATGTCTATATCATAACAACAT
tcaaaaaaaaaaaa--GGTAGTGAGTGTAAATGTCTATATCATAACAATGT
tca

GTTCTAACAAAGATCTGTCAACCATGGATAATCCAGATTTTATTTGGCTA
GTTCTAACAAAGATCTGTCAACCATGGATAATCCAGATTTTATTTGGCTA
GTTCTAACAAAGATCTGTCAACCATGGATAATCCAGATTATATTTGGCTA

GTATAACGTTAGcat
GTATAACATTAGcat
GTATAACGTTAGCCt

chr12:213519-213618
Alignment
Human, chimp, rhesus, MER41B consensus, donor

```
AGGACACCCTTGAGTAAGGACTGTGAGTGACACTTATGGCCCTTGAGAGA
AGGACACCCTTGAGTAAGGACTGTGAGTGACACTTATGGCCCTTGAGAAA
AGGATACCC--GAGTAAGGACTGTGAGTGACACTTGCGGCCCTTGAGAAA

TATTACTAGAAATACTACCCTAGTGATATTTGCCTGGGTTCCCTGGCAGC
TATTACTAGAAATACTACCCTAGTGATATTTGCCTGGGTTCCCTGGCAGC
TATTACTAGAAATATTACCCTAGTAATATTTGCCTGGGTTCCCCGGCAGC

TGTGAACCCAAGAAGGGACAGTGTCAGACACCTTATGACCACAAACAGCT
TGTGAACCCAAGAAGGGACAGTGTCAGACACCTTATGACCACAAACAGCT
TGTGAACCCAAGAAGGGACAGTGTCCGACACCTTTTGACCACAAACAGCT

GCTAACAtgtcagaggcatttgaaccacagcggctccagcttgaataggg
GCTAACAtgtcagaggcatttgaaccacagcggctccagcttgaataggg
GCTAACACgtcagaggcatttgaaccagagcgactccagcttgaacaggg
       tgtcagaggcgtttgaaccagagcaactccatcttgaataggc

gctgggtaaaataaagctgagacccactggggctgcattcccaggaggta
gctgggtaaaataaagctgagacccactggggctgcattcccaggaggta
g-tgggtgaaataaggctgagacctactggg-ctgcgttcccaggaggtg
gctgggtaaaatraggctgaracctactggg-ctgcattcccagacggtt

a-ggcattctaagtcacaggatgagacaggaggtcgtcacctcacaagata
a-ggcattctaagtcacaggatgagacaggaggttgtcacctcacaagata
a-ggcattctcagtcacgggatgagacaggaggtcgtcacgtccccagaca
aaggcattctaagtcacaggatgagataggaggtcggcac-----aagata

ccagtcataaagaccttgctgataaaacaggtttcagtaaagaagctggc
ccggtcataaagaccttgctgataaaacaggtttcagtaaagaagccggc
caggtcataaagaccttgctgataaaacaggtttcagtaaaggagacagc
caggtcataaagaccttgctgataaaacaggttgcagtaaagaagccggc

caaaacccgtcaaaaccaagatggcaacagaagtgaactctggtcCTAGA
caaaacccgccaaaaccaagatggcaacagaagtgacttctggtcctaga
caaaacccgcgaaaaccaagatggcgacagaagtgacctctggtc-----
yaaaacccaccaaaaccaagatggccacgagagtgacctctggtc-----
                                              CAAGA

GGAGGAGCTCTAGGTTGCACGCTCACTCCCCCGGCAGGATGGTCTCTGCG
ggaggagctctaggttgcacactcactcccccggcaggatggtctctgtg
---------------------------------------------------
GGAGGAGCTCTAGGTTGCACACTCACTCCCCCGGCAGGGTGGTCTCTGCA

CCCAGGAGGCAGAGGCAGGGCATAACCGGGTAACCACACTTCAGGG--cctc
cccaggaggcagaggcagggcataaccgggtaacaacacttcaggg--cctc
----------------------------------------------tt cctc
----------------------------------------------gt cctc
CCCAGGAGGCAGAGGCAGGGCATAACCGGGTAACAACACTTCAGGG--CCTC

accaccaattatatgtaaattattatgcattagcatgc-tgaaagacactc
accaccgattatatgtaaattattatgcattagcatgc-tgaaagacactc
accattctttacatgcaaattagtatgcgttagcatgcctgaaagaccctc
```

actgctcattatatgytaattataatgcattagcatgc-taaaagacactc

ccaccagctccatgacagtttacaaatgccatggcaacgtcaggaagtta
ccaccagctccatgacagtttacaaatgccatggcaacgtcaggaagtta
ccaccagtgccatgacagtttacaaatgcgaagg----------gagtta
ccaccagcaccatgacagtttacaaatgccatggcaacgtcaggaagtta

acctctatggtctaaaatgggagg-gaaccctcagttatgggaattgccca
acctctatggtctaaaatgggggg-gaaccctcagttatgggaattgccca
acctctatggtctgaaatcgggggagaaccttcagttttgggaattgccca
ccctatatggtctaaaaaggggag-gaaccctcagttccgggaattgcccg

cacctttcc-aggaaactaatgaataatccgccccttatttagcatataat
cacctttcc-aggaaactaatgaataatccgccccttatttagcatataat
cacctttcc-ggaaaactgatgaataacccaccccttgtttagcatataat
ccccttttcctkgaaaaytcatgaataatccaccccttgtttagcatataat

caagaaataaccataaaaatgggcaaccagtagccctggggctgccctgc
caagaaataaccataaaaatgggcaaccagtagccctggggctaccctgc
cgagaaataaccataaaaacgggcaaccagtagccctggggc-atcctac
caagaaataaccataaaaatrggcaaccagcagccctcggg

ctatggagtagccattcttcattccttt--atttcattttattttattttat
ctatggagtagccattctttattccttttttatttcattttattttattttat
ctatggagcagccattctttattccttt--attttattttattttattttat

ttcattttattttattttatttcattttattttattttagagacagagtc
ttcattttattttatttt--------------------agagacagagtc
tttattttattttatttt----------------------aGAGAgagtc

tcactctgttgcccaggctagagtgcagtggcgcgatctca
tcactctgttgcccaggctagagtgcagtggcgcgatctca
tcactctgttggccaggctggagtgcagtggcaccatctca

Hominoid-specific RDs - donor and acceptor greater than 5 kb from each other or on other chromosome

chr3:151723788-151724097
Alignment
Human, chimp, rhesus, consensus, donor

```
aaatctttaacacatgttcattttatatctgtatagagtcataattttac
AAATCTTTAACACATGTTCATTTTATATCTGTATAGAGTCATAATTTTAC
AAATCTTTAACACATTCATTTTATATCTGTATAGAG--TCATAATTTTAC

ccctctgtgaaaatcatccttagccaggcacagtgactcgtgcctataat
CCCTCTGTGAAAATCATCCTTgGCCAGGCACAGTGACTCGTGCCTATAAT
CtCTtTtTGAAAATCATCCTTgGCCAaGCACAGTGACTCaTGCCTATAAT

tccagcactttgggaggccaaggcgggaggatcacttgagcccaggagtt
TCCAGCACTTTGGGAGGCCAAGGCGGGAGGATCACTTGAGCCCAGGAGTT
TCCAGCACTTTGGaAGGCCAAGGCGGGAGGATCACTTaAGCCCAGGAGTT

tgagaccagcctggacaacatagtgaaTTCTCTGTGTTAATTTCACTTTT
TGAGACCAGCCTGGACAACATAGTGAATTCcCTGTGTTAATTTCACTTTA
TGAGACCACCTGGACAACATAGTGAAA-----------------------
                                  GTGTTAATTTCACTTTT

TAAAAAAAAAATTTTTCCCCTCGTACAAACTCTCAGTCTCCCTGTGACTG
AAAAAAAAAttTTTTTCCCCTCGTACAAACTCTCtGTCTCCCTGTGACTG
--------------------------------------------------
TAAAAAAA-CATTTTCCCCCTCATACAAACTCTCAGTCTCCCTGTGACTG

AACATCACCAATGATGTTCTGAAAGACTCAGGTGAAAAGTGAAGGATTGA
AACATCACCAATGATGTTCTGAAtGACTCAGGTGAAAAGTGAAGGATTGA
--------------------------------------------------
AACATCGCCAATGATGTTCTGAATGACTCAGGTGAAAAGTGAAGGATTGA

GGTAGAATTTGTTGTCTGAGAACAGATCTAACAGCCAGAACAAATAAGTC
GGTAGAATTTGTTGTCTGAGAACAGATCTAACAGCCAGAACAAATAAGTC
--------------------------------------------------
GGTGGAATTTGTTGTTTGAGAACAGATCTAACAGCCGGAACAAATAACTC

CTGCATAGGAAGCCAAGTTGGGAGCCAGCGAGGAAGGATAAGGGGGCAGG
CTGCATAGGAAGCCAAGTTGGGAGCCAGCGAGGAAGGATAAGGGGGCAGG
--------------------------------------------------
TTGCATAGGAAGCCAAGTTGGGAGCCAGAGAGGAAGGATAAGGGGGCAGG

GACTCAAAGTAGGTGGTCCACTTTCCCTTTGGGGGTAATTTCATCCTTTG
GACTCAAAGTAaGTGGTCCACTTTCCCTTTGGGGGTAATTTCATCCTTTG
--------------------------------------------------
GACTCAAAGTAGGCGGTCCACTTTCCCTTTGGGGGTAATTTCA

GGGGTAATTTCA-----TCTCTACAAAAAATAAAAATAGAAATaaaaataaaaaa
GGGGTAATTTCA-----TCTCTACAAAAAATAAAAATAGAAATAAAAATAAAAAA
------------ccccatgtctacaaaaaataAAAATAAAAAA------------

ttagccagatgtgatggcacatgcctgtagtcccagctactcaagaggct
TTAGCCAGATGTGATGGCACATGCCTGTAGTCCCAGCTACTCAAGAGGCT
TTAGCCAGATGTGATGGtacac----GTAGTCCCAGCTACTtgAGAGGCT

gaagggggagaattgcttg-------gaggtcagggctgcagtgagccgtgattgtg
GAAGGGGGAGAATTGCTTG-------GAGGTCAGGGCTGCAGTGAGCCGTGATTGTG
GAAGGGGGAGAATTGCTTGaggccagGAGGTCAGGGCTGCAGTGAGCtGTGATTGTG

ccactgcattcctgcctgagtgacagagcAGTGCCACTGTGACAGAGTGT
CCACTGCATTCCTGCCTGAaTGACAGAGCAGTGCCACTGTGACAGAGTGT
```

CCACTGCATTCCTGCCTGAGTGACAGAG

chr3:153769536-153769606
Alignment
Human, chimp, rhesus, consensus, donor
ATATTAACCTGTACCTGAAGG---TCTTAGAAGTAGATGAAGgactgggcaca
ATATTAACCTGTACCTGAAGa---TCTTAGAAGTAGATGAAGGACTGGGCACA
ATATTAACTGTACCTGAAaGccatTCTTAGAAGTAGATGAAGGACgGGGCACA

gtcgctcacacctgtaatcccatcactttgggaggccaaagtgagaggat
GTtGCTCACACCTGTAATCCCATCACTTTGGGAGGCCgAAGTGAGAGGAT
GTCGCTCACgCCTGTAATCCCATCACTTTGGaAGGCCAAAGTGAGAaGAT

cccttgagcctgggagtttgagaccagcctggcaacatagggagacctca
CCCTTGAGCCTGGGAGTTTGAGACCAGCCTGGCAACATAGGGAGACCTCA
CCCTTGAGCCTGGGAGTTTGAGACCAGCCTGGCAgCATAGGGAGACCTCA

tctctatttaaaagaaaaaaattacctagatctgtggcacgtgcctgtgg
TCTCTATTTAAAAGAAAAAAATTACCTAGATCTGTGGCAtGTGCCTGTGG
TCTCTATTTcaaAAAAGAAAATTACCTgGAagTGTtGCACaTGCCTGTGG

tcccagctactcaggagactgaagcgagataattgcttgagcctgggagg
TCCCAGCTACTCAGGAGgCTGAAGCGAGATAATTGCTTGAGCCTGGGAGG
TCCCAGCTACTCAGGAGgCTGcAGtGAGATgATcGCTTGAGCCTGcGAGG

tcgaggctgcagtgagctataattgttccactTCGGAGAGGAGGACAAGA
TCGAGGCTGCAGTGAGCTATAATTGTTCCACTTCGGAGAGGAGGACAAGA
TCGAGGCTGCAGTGAGCTATAATTGTgCCACTgC----------
GGAGAGGAGGACAAGA

ACAGAGCCTGAAGAAGTGAAATAAATATGGGTGTGGCTACATGAA**AAAAA**
ACAGAGCCTGAAGAAGTGAAATAAATATGaGTGTGGCTACATGAAAAAAA

ACAGAGCTTGAAGAAGTGAAATAAATATGGGTGTGGCTACATGAA

AAAAa--ttgttccacttcactccagcctgggtgaaagaacaagaccctgtc
AAAAAaaTTGTTCCACTTCACTCCAGCCTGGGTGAAAGAACAAGACCCTGTC
----------ACTCCgGCCTGGGTGAcAGAACAAGACCCTGTC

tcaaaaaagaaaagaaaagaaaaTAGATGAAGGGACA
TCAAAAAAGAAAAGAAAA-----TAGATGAAGGGACA
TCAAAAAgGAAAAGAAAAGAAAATAGATGAAGGGACA

chr8:14556636-14556714
Alignment
Human, chimp, rhesus, consensus, donor

```
cactcaataaatatGAGCTTtactactactgctaccactgcttctgctac
CACTCAATAAATATGAGCTTTACTACTgCTGCTACCACTGCTTCTGCTAC
CACTCAATAAATATGAGCTTTACTACTACTaCTACCACTGCTTCTGCTAC

catcattacttcttttgttgttgttttgttttgagacagagtctcgctct
CATCATTACTTCTTTTGTTGTTGTTTTGTTTTGAGACAGAGTCTCGCTCT
CATCATTACTTtTTTTtttttTTTTtTTTTc-GAGACAGAGTCTCaCTCT

gtcgcccaggctggaatgcaatggcgtgatctcggctcactgaaactact
GTCGCCCAGGCTGGAATGCAATGGCGTGATCTCGGCTCACTGAAACTACT
cTtGCCCAGGCTGGAgTGCAATGatGcaATCTtGGCTCACTGcAACcAtc

gcttcccgagttcaagcgattctcctgcctcagcctcccaagtagctggg
GCTTCCCGAGTTCAAGCGATTCTCCTGCCTCAGCCTCCCAAGTAGCTGGG
GCcTCCtGgGTTCAAGCGATTCTCCTGCCTCAGCCTCCCAAGTAGCTGGG

attataggcacgcaccgccatgcccagctaattttttttttttgtaTT
ATTATAGGCgCGCACCaCCATGCCCgGCTAATTTTTTTTTTTTTTTGTATT
ATTAcAGGCgCGCACCaCCAcGCCtgGCTAATT----------------
                                                tgTAT-

TTGAAATAACTTTAGGTGTTTTATTTCCACACATGTAAAGGTCTCATAAT
TTGAAATAACTTTAcGTGTTTTATTTCCACAaATGTAAAGGTCTCATAAT
--------------------------------------------------
TTGAAATAACTTTACGTGTTTTATTTCCACAAATGTAAAGGTCTCATAAT

TTTGTCATAAATCATGCACAAAGAACAAtttctatttttagtagagatgt
TTTGTCATAAATCATGCACAAAGAACAATTTCTATTTTTAGTAGAGATGT
----------------------------TTTgTATTTTTAGTAGAGATGg
TTTGTCATAAATCACGCACAAAGAACAC

ggtttcactatattggtcaggctggtttcgaactcctgaccttgtgatct
GGTTTCACTAcATTGGTCAGGCTGGTTTCGAACTCCTGACtTTGTGATCT
GGTTTCACT--gTTGGcCAGGCTGGTTTCaAACTCCTGtgatccaccca-

atttttctcagcctcccaaagtgctgggactacaggcaggaagccactgc
ATTTTTCTCAGCCTCCCAAAGTGCTGGGACTACAGGCAGGAGC-CACTGC
-----cctcgGCCTCCCAAAGTGCTGGGACTACAGGCgtgatC-CACcGC

acTGGCCCCATCATTACTTTTAATGC
ACTGGCCCCATCATTACTTTTAATGC
ACTcGCCCCATCATTACTTTTAATGC
```

chr2:70183106-70183725
Alignment
Human, chimp, rhesus, consensus, donor
acctcaggtgatccacccacctcaacctcccaaagtgctaggattacagg
ACCTCAGGTGATCCACCCACCTCAACCTCCCAAAGTGCTgGGATTACAGG
ACCTCAGGTGATCCACCCACCTCAACCTCCCAAAGTGCTAGGATTAC-GG

cgtgagccaccacacccagccacatcttagtattattat**aaaaatagttC**
tGTGAGCCACCACACCCAGCCACATCTTAGTATTATTATgAAAATAGTTC
CGTGAGCCACCACACCtAaCCACATCTTAGTgTTATTATGAAAATAGTT-

CGCCGCCATCTTTCTTCCTGGCAGGGGCCGACGCAGGGACCGGCGCGGGG
CGCCGCCATCTTTCTTCCTGGCAGGGGCCGACGCAGGGACCGGCGCGGGG

GTGAGAGCGCGCGGCCGGATTCACCACAACATGGCAACTCTTTTTATAAG
GTGAGAGCGCGCGGCCGGATTCACCACAACATGGCAAaTCTTTTTATAAG

GATTCACCACAACATGGCAAATCTTTTTATAAG

GAAAATGGTGAACCCTATGCTATATCTCAGTCGTCACACAGTGAAGCCTC
GAAAATGGTGAACCCTATGCTATATCTCAGTCGTCACACAGTGAAGCCTC

GAAAATGGTGAACCCTCTGCTCTATCTCAGTCGTCACACGGTGAAGCCTC

GAGCCCTCTCCACATTTCTATTTGGATCCCTTCGAGGTGCAGCCCCCGTG
GAGCCCTCTCCACATTTCTATTTGGATCCCTTCGAGGTGCAGCCCCCGTG

GAGCCCTCTCCACATTTCTATTTGGATCCATTCGAGGTGCAGCCCCCGTG

GCTGTGGAACCCGGGGCAGAAGTGCGCTCACTTCTCTCACCCGGCCTCCT
GCTGTGGAACCCGGGGCAGAAGTGCGCTCACTTCTCTCACCCGGCCTCCT

GCTGTGGAACCCGGGGCAGCAGTGCGCTCACTTCTCTCACCCGGCCTCCT

GCCCCACCTGCTGCCCGCGCTGGGGTTCAAAAACAAGACTGTCCTTAAGA
GCCCCACCTGCTGCCCGCGCTGGGGTTCAAAAACAAGACTGTCCTTAAGA

GCCCCATCTGCTGCCTGCGCTGGGGTTCAAAAACAAGACTGTCCTTAAGA

AGCGCTGCAAGGACTGTTACCTGGTGAAGAGGCGGGGTCAGTGGTACGTC
AGaGCTGCAAGGACTGTTACCTGGTGAAGAGGCGGGGTCAGTGGTACGTC

AGCGCTGCAAGGACTGTTACCTGGTGAAGAGGCGGGGTCGGTGGTACGTC

TACTGTAAAACCCATCCGAGGCACAAGCAGAGACAGATGTAGACCCTTTC
TAtTGTAAAAtCCATCCGAGGCACAAGCAGAGACAGATGTAGACCCTTTC

TACTGTAAAACCCATCCGAGGCACAAGCAGAGACAGATGTAGACCCTTTC

CCTCCAGAGTCACGCACATACTCGTCATCGCGTCTCTTGGGAGAATGGTT
CCTCCAGAGTCACGCACATACTCGTCATCGCGTCTCTTGGGAGAATGGTT

CCTCCAGAGTCACGCACATACTCGTCATCGCATCACTTGGGAGAATGGTT

GTATCTTATGGAAGGAATTATCACATCAAGGAGTCAGGGGAAAGTGACTG
GTATCTTATGGAAGGAATTATCACATCAAGGAGTCAGGGGAAAGTGACTG

GTATCTTATGGAAGGAATTATCACATCAAGGAGTCAGGGGAAAGTGACTG

GAAGCAAACGCCCTAAAAGTTACCCATCACGTTTCAGTGTAAATGAGTAA
GAAGCAAACGCCCTAAAAGTTACCCATCACGTTTCAGTGTAAATGAGTAA

GAAGCAAACGCCCTAAAAGTTACCCATCACGTTTCAGTGTAAATGAGTAA

CTATAGAAGACATTGCATTATCTTATTTCCAAAATGTTCCAATTAAAAAA
CTATAGAAGACATTGCATTATCTTATTTCCAAAATGTTCCAATTAAAAAA

CTATAGAAGACATTGCGTTATCTTATTTCCAAAACGTTCCAACTAAAAAA

CATTTTCCTATTAAAA**AAAA**gaaaatagttttgacctctcagacccctga
CATTTTCCTATTtAAAAAAAGAAAATAGTTTTGACCTCTCAGACCCCTGA
---TTaACCTCTCAGACCCCTGA
CATTTTCCTATTAAAA

aaggatctgagggcgccctagggcccccccaccactctttgagaaatgctA
AAGGATCTGAGGGCGCCCTAGGGCCCCCCACCACTCTTTGAGAAATGCTA
AAaGATCTcAGGaaGCCCTAGGGgCCCCCACCACTCTTTGAGAAAcGCTA

CTCTAcagaaagattttac
CTCTACAGAAAGATTTTAC
CTgTgCAGAAAGATTTTAC

chr13:58663684-58663759
Alignment
Human, chimp, rhesus, L1MA8 consensus, donor

```
gactttgtctcaaaaaaaaaataa-------ttaattaatcaaaaaaatacaataca
GACTTTGTCTCAAAAAAAA---------TAATTAATTAATCAAAAAAATACAgTACA
GACTcTGTCTCAAAAAAATAataatgATTAATTAATaAAAAAataaAATACAATACA
                                            aaaaatacaata--

ttgttaactgtagtcaccatattgcagagtagatctctTTTTTTTAAGC
TTGTTAACTGTAGTCACCATATTGCAGAGTAGATCTCTTTTTTTTAAGC
TTGTTAACTGTAGTCACCATATTGCAcAGTtGATCTCT------------
ttattaactatagtcaccatgctgtacaaatagatctc------------
                                                TAAGC

TACCTTTCTTTATTGAAATCAATTAGAATTGATAGACATTTGAATGCATA
TACCTTTCTTTATTGAAATCtATTAGAATTGATAGACATTTGAATGCATA
--------------------------------------------------
TACCTTTCTTTATTGAAATAAATTACAATTGATGGACATTTGTGTGCATA

TTTTACATACCTTT----------GTtcccatctaactgaaattttgtatccttttttcca
TTTTACATACCTTT----------GTTCCCATCTAACTGAAATTTTGTATCCTTTTTCCA
--------------tgaatttatggTTCCCATCTAACTGAAATTTTGTATCCTTTTTCCA
--------------tgaacttattcctcctatccaactgtaattatgtattctttgacag
TTTTACAGACTTTT----------GT

gtatctctccaa---ctcccaaaccatggcccctggtagccagcactctactc
GTATCTCTCCAA---CTCCCAAACCATGGCCCCTGGTAGCCAGCACTCTACTC
aTATCTCTCCAA---CTCCCAAACCATGGCCCCTGGTAGCCAGCACTCTACTC
acatctctccaaatcctcccactccccagcccctggtaaccaccattctactc


tctgcttctataagccaaacatttttagatttcacctataagtgagatca
TCTGCTTCTATAAGCCAAACATTTTTAGATTTCACCTATAAGTGAGATCA
TCTGCTTCTATgAGCCAAACATTTTTAGAcTTCACCTATAAGTGAGATCA
tctgcttctatgagttcaactttttagattccacatataagtgagatca

tgcagtatttgtctct--gtgcccagcttctttgacttaacatgatatcctc
TGCAGTATTTGTgtCTCTGTGCCCAGCTTCTTTGACTTAACATGATATCCTC
TGCAGTATTTGTgtCTCTGTGCCCAGCTTCTTTGACTTAACgTGATATCCTC
tgcggtatttgtctttctgtgcctggcttatttcacttaacataatgtcctc

caggctcatccatactgttgcaactgaaaacaaattttcactttttaag
CAGGCTCATCCATACTGTTGCAACTGAAAACAAATTTTCACTTTTTTAAG
CAGGtTCATCCATACTGTTGCAACTGAAAACAAATTTTCACTTTTTTAAG
caggttcatccatgttgtcgcaaatgacaggatttccttctttttaagg

ttgaatagtattccattatgaacatataccacattttctttcttcattca
TTGAATgGTATTCCATTATGAACATATACCACATTTTCTTTaTTCATTCA
TTGAATAGTATTCtgTTATGAACATATACCACATTTTCTTTaTTCATTCA
ctgaatagtattccattgtgtatatgtaccacattttctttatccattca

tccgttgatggacacttagg---ttgattttgtatcttggctattggcaaata
TCCGTTGATGGACACTTAGG---TTGATTTTGTATCTTGGCTATTGGCAAATA
TCCGTTGATGGACACTTAGGaggTTGATTTcaTATCTTGGCTATTGGCgAATA
tccgttgatggacacttagg---ttgattccatatcttggctattgt-gaata

gtgctgcaataaacatgagagtacagatatctcttcaaaata---attttatt
GTGCTGCAATAAACATGAcAGTACAGATATCTCTTCAAAATA---ATTTTATT
tTGCTGCAATAAACATGAGAGTgCAGATATCTCTTCAAAATA---ATTTTATT
atgctgcaatgaacatgggagtgcagatatctctttgacatactgatttcatt

tcctttggatatataaccagtagtgggattgctggatcatatggtaattc
TCCTTTGGATATATAACCAGTAGTGGGATTGCTGGATCATATGGTAATTC
```

TCCTTTGGATATATAACCAGTAGTGGGATTGCTGGAgCATATGtTAATTC
tcctttggatatatacccag-agtgggattgctggatcatatggtagttc

tatttttagctttctaaggaacttccatactgtattccatgatggctatg
TATTTTTAGCTTTCTAAGGAACTTCCATACTGTATTCCATGATGGCTATG
TATTTTTAGCTTTCTAAGGAACTTCCATACTGTATTCCATGATGGCTATG
tatttttaattttttgaggaacctccatactgttttccataatggctgta

ctaacttgcattcccaagcaaaggtt-taaagtttccctttctccacatc
CTAACTTGCATTCCCAAGCAAAGGTT-TAAAGTTTCCCTTTTCTCCACATC
CTAACTTGtATTCtCAAGCAgAGGTT-cAAgGTTTCCCTTTTCTCCACtTC
ctaatttacattcccaccaacagtgtgcaagggttccctttctccacatc

ctcgccaaaacttgttctctcatctcttttgataaaagccattgtaaca
CTCGCCAAAACTTGTTCTCTCATCTCTTTTTGATAAAAGCCATTGTAACA
CTtGCCAAAAtTTGTTCTCcCATCTCTTTTTGATAAAAtCCATTGTAACA
ctcccaacacttgttatctttcg-tctttttgataatagccattctaaca

agtatgaggtgatatctcattacggttttgacttgcatttctctgatgat
AGTATGAGGTGATATCTCATTAtGGTTTTGACTTGCATTTCTCTGATGAT
AGTATGAGGTGAcATCTCATTAtGGTTTTGAtTTtCATTTCTCTGATGAT
ggtgtgaggtgatatctcattgtggttttgatttgcatttccctgatgat

tagtgatgttgagtatttatacctgttggcatttatatatcttcctttga
TAGTGATGTTGAGTATTTATACCTGTTGGCATTTATATATCTTCCTTTGA
TAGTGATGTTGAGTATTTATACCTGTTGGCATTTATATATCTTCCTTTGA
tagtgatgttgagcattt

gaatgtctgttcaggcactttgcccatttttaattgggttatttgtttt
GAATGTCTGTTCAGGCACTTTGCCCATTTTTTAATTGGGTTATTTGTTTT
GAATGTCTGTTCAGGaACTTTGCCCATTTTTTAATTGGGTTATTTGTTTT

ctagccactgaattgttggagttcctataatattttggatattaactcct
CTAGCCACTGAATTGTTGGAGTTCCTATAATATTTTGGATATTAACTCCT
CTAGCCACTGgATTGTTGGAGTTCCTATAATATTTTGGATATTAACTCCT

tgtatcagatgtttggttttgcaaatatttctcccatttcaccagttgtc
TGTATCAGATGTTTGGTTTTGCAAATATTTCTCCCATTTCACCAGTTGTC
TGTATCAGATGTTTGGTTTTGCAAATATTTCTCCCATTTCACCAGTTGTC

tcttcactccattaactgtttgctttgctatgcagaaactgattaatttT
TCTTCACTCCATTAACTGTTTGCTTTGCTATGCAGAAACTGATTAATTTT
TCTTCAtTCCATctACTGTTTcCTTTGtTATGCAGAAACTGATTAATTTT

GAGtcaagcttcagccagtcatagatagccaactagcccactggttaaat
GAaTCAAGCTTCAGCCAGTCATAGATAGCCAACTAGCCCACTGGTTAAAT
GAaTCAAGCTTCAGCCAGTCATAGATAGCCAACTAGCCCAaTGGTTAAAT

aatttggggcctttcatcagattatacccatatagggcaagggctcagct
AATTTGGGGCCTTTCATCAGATTATACCCATATAGGGCAAGGGCTCAGCT
AATTTGGGG

chr10:38169932-38170382
Alignment
Human, chimp, rhesus, L1MC3 consensus, donor

```
ggcacacacctgtaatcccagctactcgggaggctgaggaaggagaatca
GGCACACACCTGTAATCCCAGCTACTCGGGAGGCTGAGGAAGGAGAATCA
GGCACACACCaGTAATCCCAGCTACTCGGGAGGCTGAGGAAGaAGAATtg

cccaaaccggaaggcagaggttgcagtgagccgagattatgccactgcac
CCCAAACCGGAAG-CAGAGGTTGCAGTGAGCCGAGATTATGCCACTGCAC
CCCAAACCGGAAGGCAGAGGTTGCAGTGAGCtGAGATcATGCCACTGCAC

tccagcctggacaa--gagtgagactatgtctc---------aaaaaaagaaaaaagaaaa
TCCAGCCTGGACAA--GAGTGAGACTATGTCTCaaaaaaaaaAAAAAAAGAAAAAAGAAAA
TCCAGCCTGGACAAcaGAGTGAGACTccGTCTc--------CAAAAAAAGAAAAAAGAAAg

aaagaaaaccagtgctcctttgaaaaccagctgcttctaggtctggc-------agg
AAAGAAAACCAGTGCTCCTTTGAAAACCAGCTGCTTCTAGGgCTGGC-------AcG
AAAGAAAACCAGTGCTCCTTTGAAAACCAGCTGCTTCTAGGgCTGGggcagacCAcG

tatataatgagcctgaaatcacttctggtaccagaaaatgagaaagtact
TATATAATGAGCCTGAAATCACTTCTGGTACCAGAAAATGAGAAAGTACT
TATATAATGAGCCTGAAATCACTTCTGGTACCAGAAAATGAGAAAGTACT

caaatgaaaacacaatagtgggctatgtcaaagggacacaggaaccaatt
CAAATGAAAACACAATAGTGGGCTATGTCAAAGGGACACAGGAACCAAcT
CAAAcGAAAACACgATAaTGGGCTATGTCAAAGGGACACAGGAACCAAcT
                   ggggtatgtcaaagggacacagragccaact

gaaaacacagcctcatggccaa-gctgaagcagttggaacaacaaaat-aaC-------
GAAAACACAGCCTCATGGCCAA-GCTGAAGCAGTTGGAACAACAAAAT-AAC-------
GAAAACACAGCCTCATGGCCAA-GCTGAAGCAGTTGGAgCAACAAAATgAAC-------
gaaagagctccca-atggccaaagctggaacaatttgagcaacaaaataaattatrgta

AAGGTATATGGTTAAACCAAAGGAAGATTCAGATGAAAATC---CTTCTTTAA
AAGGTATATGGTTAAACCAAAGGAAGATTCAGATGAAAATCcttCTTCTTTAA
AAGGTA----------------------------------------------
-----------------------------------------------------
    TATATGGCTAAACCAAAGGAAGATTCAGATGAAAATCCTTCTTCTTTAA

GACTGTCTTCTCAGCTTCTCTGTTTTCTAGCATCTTGTGTCATAGATGAA
GACTGTCTTCTCAGCTTCTCTGTTTTCTAGCATCTTGTGTCATAGATGAA
--------------------------------------------------
--------------------------------------------------
GACTGTCTTCTCCGCTTCTCTGTTTTCTAGCATCTTGTGTCATAGATGAG

AAGGCATATGTTCACATGATTTTT-TATAGCTATAAATAATCCCTCTCTAG
AAGGCATATGTTCACATGATTTTT-TATAGCTATAAATAATCCCTCTCTAG
---------------------------------------------------
---------------------------------------------------
AAGGCATATGTTCACATGATTTGTTTATAGCTATATATAATCCCTCTCTAG

AAGCTAGTAAAATTTTATCTGTGGATTTTTAAAATTTTTACCTGAATGTG
AAGCTAGTAAAATTTTATCTGTGGATTTTTAAAATTTTTACCTGAATGTG
--------------------------------------------------
--------------------------------------------------
AAGCTAGTAAAATTTTATCTGTGGATTTTTAAAATTTTTACCTGAATGTG

TCTAAATGTGCACATTTCTAAAGATGTGTATTTAATTTCCAAGAATGTTT
TCTAAATGTGCACATTTCTAAAGATGTGTATTTAATTTCCAAGAATGTTT
---------------------------------------------------
---------------------------------------------------
TCTAAATGTGCACATTTCTAAAGATGTGTATTTAATTTCCAAGAATGTTT
```

TGATGCTTATTTGTTTTTCAGTAATAGCCTGCTCTTGTTTTATGTGATGA
TGATGCTTATTTGTTTTTCAaTAATAGCCTGCTCTTGTTTTATGTGATGA

TGATGCTTATTTGTTTTTCAATAATAGCCTGCTCTTGTTTTATGTGATGA

TGATCTACTGAAACTTTCTGAGGCAATGACTAAAAGTATTTATTTTAAAG
---TCTACTGAAACTTTCTGAGGCAATGACTAAAAGTATTTATTTTAAAG

---TCTACTGAAATTTTCTGAGGCAATGACTAAAAGTATTTATTTTAAAG

TTATGTTCTATTTCCTAACTTAACTCTACTTCCTTTGGAGTAAATTTCTC
TTATGTTCTATTTCCTAACTTAACTCTACTTCCTTTGGAGTAAATTTCTC

TTCTGTTCTATTTCCTAACTTAACTCTACTTCCTTTGGAGTAAATTTCTC

TGACCACTTTGTTGTCCTTCTTTCATGCATTAAAAACAAAATTGTCTACC
TGACCACTTTGTTGTCCTTCTTTCATGCATTAAAAACAAAATgGTCTACC

TGACCACTTTGTTGTCCTTCTTTCATGCATTAAAAACAAAATTGTCTACC

---**Aaaaaaaaaaaaa**aaggtagtgttggattataac-caaagtataaaataac
aaaAAAAAAAAAAAAAAAGGTAGTGTTGGATTATAAC-CAAAGTATAAAATAAC
----------GTGTTGGATTATAAC-CAAAGTATAAgATAAC
----------gtattggattataacycaaagtataaaataaa

tagcaatgagttcatactaatataaataaatgcttaaataagtaaacaca
TAGCAATGAGTTCATACTAATATAAATAAATGCTTAAATAAGTAAACACA
TAGCAATGAGTTCATACTAATATAAATAAATGaTTAAAT----AAACACA
tatccatgagtccatactgatataaatgaatgattaaataaataaataaa

aaagaacagacaaatctcctgcacagaattcctaataatttatatggata
AAAGAACAGACAAATCTCCTGCACAGAATTCCTAATAATTTATATGGATA
AgAGAACAGACAAATCTCCTGCACAGAATTCCTAATAATTTATATGGATc

ctctgccatcaaggaggtgtagcgt-aactctccacttcattccaaagagt
CTCTGCCATCAAGGAGGTGTAGCGT-AACTCTCCACTTCATTCCAAAGAGT
CTCTcCCATCAAGGAGGTGTAGCGTtAAtTCTCCAgTTCATTCCAAAGAGT

acagttgaaaacggaggacaaaggagtaactttacagtggagaaacatga
ACAGTTGAAAACGGAGGACAAAGGAGTAACTTTACAGTGGAGAAACATGA
ACAGcTGAAAACaGAGGACAAAGGAGTAAaTTTACAGTGGAGAAACATGA

ccacactacctccaccaggta----------atcaacagtgataaatcatgctcatagca
CCACACTACCTCCACCAGGTA----------ATCAACAGTGATAAATCATGCTCATAGCA
CCACACTACCTCCACCAGGTAatcaacagtgatacATCAACAGTGATAAATCATGCTCATAGCA

ttttcccttgataggatgtgactgaatgacactacctctgtagtcttcct
TTTTCCCTTGATAGGATGTGACTGAATGACACTACtTCTGTAGTCTTCCT
TTTTCCtTTGATAtGAcaTGACTGAATGACACTACCTCTGTgGTCTTCCT

ctaagaaaccctaacctcagtctaataatgaggaagacagtagacaaata
CTAAGAAACCCTAAtCTCAGTCTAATAATGAGGAAGACAGTAGACAAATA
CTAAGAAACCCTAACCTCAGTCTAATcATGAGGAAGACAGTAGACAAATA

tcaactgagggacattctacaaaacacctgacttgaacccctcaaaactg
TCAACTGAGGGACATTCTACAAAACACCTGACTTGAACCCCTCAAAAtTG
TCAACTGAGGGACATTCTACAAAACACCTGACTTGAACCCCTCAAAAtTG

tcagggttatcaaaaacaaggaaagtctgagaaactgtcacagctaagaa

TCAGGGTTATCAAAAACAAGGAAAGTCTGAGAAACTGTCACAGCTAAGAA
TCAaGGTTATCAAAAACAAGGAAAGTCTGAGAAACTGTCACAGCcAAGAA

gagcctaaggagacatgatgactaagtagaatgtgggcatcctggaacag
GAGCCTAAGGAGACATGATGACTAAGTAGAATGTGGGCATCCTGGAACAG
GAGtCTAAGGAGACATGATGACTAAGTAGAATGTaGGCATCCTGGAACAG

aaaaattacattagggaaaaattaagaaaatcccaataaagtggtcatca
AAAAATTACATTAGGGAAAAATTAAGAAAATCCCAATAAAGTGGTaATCA
AAAAATTACATTAGGGAAAAATTAAGAAAATCCCAATAAAGTGGTCATtA

cttaataatatatcagtattgtttcattaattgtgacaaatgtactacat
CcTAATAATATATCAGTATTGTTTCATTAATTGTGACAAATGTACTACAT
CTTAATAATATATCAaTATTGTTTCATTAATTGTGACAAATGTACTACAT

taatatgttaat-------gaaactgtgtctatgggaggtatatggaaactctttgt
TAATATGTTAAT-------GAAACTGTGTCTAcGGGAGGTATATGGAAACTCTTTGT
TAATATGTTAATgatagggGAAACTGTGTtTATGGGAtGTATATGGAAACcgtttgT

actactgtcttcacaacttttccataaatctaaaactctcctaaagcaga
ACTACTGTCTTCACAACTTTTCCATAAATCTAAAACTCTCCTAAAGCAGA
ACT---GTCTTCACAACTTTTCCATAAATCTAAAACTCTtCTAAAGCAaA

aagtttatATAATAAGAAAGAAACATACAAGAGGACAAGATTAATGAAGT
AAGTTTATATAATAAGAAAGAAACATACAAGAGGACAAGATTAATGAAGT
AAGTTTAcATAATAAGAAAaAAACATgtAAGAGtACAAaATTAATGAAGT

GGaatgatgtcagcaaaatggagaggtaggtggcaccaagctcaggtccc
GGAATGATGTCAGCAAAATGGAGAGGTAGGTGGCACCAAGCTCAGGTCCC
GGAATtATGTCAGCAtAATGGAGAaGTAGGcGGCACCAAGCTCAGGTCCC

chr4:47986403-47986658
Alignment
Human, chimp, rhesus, consensus, donor

```
cccttgtccttgctcctgctttctccacataaaatgcctgctcccacttt
CCCTTGTCCTTGCTCCTGCTTTCTCCACATAAAATGCCTGCTCCCACTTT
CCCTTGcCCTTGCTCCTGCTTTCaCCACATAAAATGCCTGCTCCCACTTT

gccttgagccatgaGactaatacattgctggtgggaatataaaatggtat
GCCTTGAGCCATGAGACTAATACATTGCTGGTGGGAATATAAAATGGTAT
GCCTTGAGCCATGAGACTAATACATTGCTGGTGGGAATATAAAATGGTAc

tgctactcaggaaaacagttggacaatttctttaaacattaaacatacaa
TGCTACTCAGGAAAACgGTTGGACAATTTCTTTAAACATTAAACATACAA
TGCTACTCAGGAAAACAGTTGGACAATTTCTTTAAACATTAAACATgCAA

ctaccttacaacctagcaattgaacccataggcatttctcccagagaaat
CTACCTTACAACCTAGCAATTGAACCCATAGGCATTTCTCCCAGAGAAAT
CTACCaTACAACCTAGCAATTGAACCCATAGGCATTTgTCtCAGAGAAAT

gaaaacttatgctcacacacataaaagctgtacacaaatgtttatagaag
GAAAACTTATGCTCACACACATAAAAGCTGTACACAAATGTTTATAGAAG
GAAAACTTATGCTCACACACAaAAAAaCTGTACACAAATGTTTAcAGAAG

gcttcttcctaatagccaaagtctgggaaaacctatgtgcccttctaaag
GCTTCTTCCTAATAGCCAAAGTtTGGGAAAACCTATGTGCCCTTCTAAAG
aCTTCTTCCTAATAGCCAAAGTtTGGGccAACCTATGTGCCCTTCTAAAG

gtgaatggttaaacaaaatgtgtgctgtgtatcatactaaggaatatcaa
GTGAATGGTTAAACAAAATGTGTGCTGTGTATCATACTAAGGAATATCA-
GTGAATGGTTAAACAAAATGTGTGCTGTGTATCATACTAAGGAgTATCA-

cccagcaataaaaagtaacaaactattgatccacacaacaacttagataa
CCCAGCAATAAAAAGTAACAAACTATTGATCCACACAACAACTTAGATAA
CtCAGCAAgAAAAAGTAACAAACTATTGATCCACACAACAgCTTAtATAA

atcttcagaggattatgctTTTATGCATGTAACTTCACAGTATAAAGGAA
ATCTTCAGAGGATTATGCTTTTATGCATGTAACTTCACAGTATAAAGGAA
ATCTTtcaAGGATTATGCT--------------------------------
                  CTTTTATGCATGTAACTTCACAGTATAAAGGAA

ATACAAACAATGTCTCCCTTCTCTAGTTTATTCCACTTACCCCAGTCCTC
ATcCAAACAATGTtTCCCTTCTCTAGTTTATTCCgCTTACCCCAGTCCTC
---------------------------------------------------
ATCCAAACAATGTCTCCCTTCTCTAGTTTATTCCGCTTACCCCAGTCCTC

CTAGGCTTCTGTGAATTTCAGAAAGCAAAAACAAAAAAAAAAAAA-CTTTT
CTAGGCTTCTGTGAATTTCAGAAAGCAAAAACAAAcAAAAAAAAA-CTTTT
----------------------------------------------------
CTAGGCTTCTGTGAATTTCAGAAAGCAAAAACAAACAAAAAAAAAACTTTT

TGTTCAAGGCGATTTAAAAAAACAACTTCACAAGATAGGGAGAATTGTGG
TGTTCAAGGCGATTTAAAAAAACAACTTCACAAGATAGGGAGAATTGTGG
---------------------------------------------------
TGTTCAAGGCGATTTAAAAAAACAACTTCACAAGATAGGGAGAATTGTGG

TGTGCTTGTCACATGTTACCAGTGGTAACAATTTTAATGACAAAAAAATC
TGTGCTTGTCACATGTTACCAGTGGTAACAATTTTAATGACAAAAAAATC
---------------------------------------------------
TGTGCTTGTCACATGTTACCAGTGGTAACAATTTTAATGACAAAAAAATC

CACTAATTCCAAATGTATAAACA---TTTaaaaaagccaataaagaaa-ggtta
CACTAATTCCAAATGTATAAACA---TTTtAAAAAGCCAATAAAAAA--GGTTA
-----------------------tagttt-AAAAAGCCAAccaaaaAAAGGTTA
```

CACTAATTCCAAATGCATAAACA

catactatatgattccatctacataacattcttgaaatgacaaaactgta
CATACTATATGATTCCATCTACATAACATTCTTGAAATGACAAAACTGTA
CATAtTATATGATTaCAcCTACATAAtATgCTTGtAATGACAAAACTGTA

gaagtggagaacagattcgtggttgctaggttttcctgaaggggtggggc
GAAGTGGAGAACAGATTCGTGGTTGCTAGGTTTTCCTGAAGGGGTaGGGC
GAtGTGGAcAACAGATTCGTGGTTGCTAGGTTTTCCTGAAGGGGTGGGGC

aagatggaagtggctatggctataaaagggtaacatgagtgacctttatg
AAGATGGAAGTGGCTATGGCTATAAAAGGGTAACATGAGTGACCTTTATG
AAGATGGAAGTGGCTATGGCTATAAAAGGcTAACATGAGTGACCTTTATG

gagatggaaatgtccttttt-gactgtatcaatattgacctcctggctgt
GAGATGGAAATGTCCTTTTTT-GACTGTATCAATATTGACCTCCTGGCTGT
GAGATGGAAATGTtCTTTTTTtGACTaTATCAATATTGACaTCCTGGCTGT

gatgttgtactatagttttgcaaaggaaaactgggaaatgtgaactctct
GATGTaGTACTATAGTTTTGCAAAGGAAAACTGGGAAATGTGAACTCTCT
GATaTTGTACTAcAGTTTTGCAgAGGAAAACTGGtAAATGTGAActCTCT

--gattatttcttacaacccagatgtgaatctataattatctcaaaattaaa
--GATTATTTCTTACAACCCAGATGTGAATCTATAATTATCTCAAAATTAAA
CTGATTATTTCTTACAACCCAcATGTGAATCTATAATTATaTCAAAATTAAA

agtttaattAGATTTTTT-AATTAATAGCTAATAATGacaatagccaacat
AGTTTAATTAGATTTTTT-AATTAATAGCTAATAATGACAATAGCCAACAT
caTTTAATTAGATTTTTTaAATTAATAGCTAATAATGACAATAGCCAACAT

ttattgagtgtttaatgctaagtgtgatcctatgcagttgatcca
TTATTGAGTGTTTAATGCTAAGTGTGATCCTATGCAcTTGATCCA
TTATTGAGTGcTTAATGCTAAGTaTGATCCTATGCAcTTGATCCA

chr2:177997430-177997556
Alignment
Human, chimp, rhesus, consensus, donor

```
CCAATTCTAGAGATTTTTTTTTT-CCTTCAGCttttaagttctggggtaca
CCAATTCTAGAGATTTTTTTTTTtCCTTCAGCTTTTAAGTTCTGGGGTACA
CCAATTCTAtAGATTTTTTTTT--CCTTCAaCTTTTAAGTTCTGGGGTACA

tgtgcaggatgtgcaggtttgttacatagctaaacgtgtgacatggtggt
TGTGCAGGATGTGCgGGTTTGTTACATAGCTAAACGTGTGACATGGTGGT
TGTGCAGGATGTGCAGGTTTGTTACtTAGCTAAACGTGTGcCATGGTGGT

ttgctgcacagatcaacccatccccttggttattaggttattaagcccac
TTGCTGCACAGATCAACCCATCCCCTTGGTTATTAGGTTATTAAGCCCAC
TTGCTaCACAGATCAACCCATCaCCTTGGTTATTAGGTTATTAAGCCCAC

tatccattagctgtttttcctgatgctctccctccttctactgctcccct
TATCCATTAGCTGTTTTTCCTGATGCTCTCCtTCCTTCTACTGCTCCCCT
TATCCATTAGCTaTTTTTCCTGATGCTCTCCCTCtTTCcACcGCTCCCCc

tgatgggccccagtgtatgttgttcccctccttgtgttcatgtgttctca
TGATGGGCCCCAGTGTATGTTGTTCCCCTCCcTGTGTTCATGTGTTCTCA
TGATGtGCCCCgGTGTATGTTGTTCCCCTCCcTGTGTTCATGTGTTCTCA

ttgttcagctcccacttataagtgagaacatgcggtgtttggttttctgt
TTGTTCAGCTCCCACTTATAAGTGAGAACATGCGGTGTTTGGTTTTCTGT
TTGTTCAGCTCCCACTTATAAGTGAGAACATGCGGTaTTTGGTTTTCTGT

tcctgtgttagtttgctgaggataatggcttccagctctatccatgtccc
TCCTGTGTTAGTTTGCTGAGGATAATGGCTTCCAGCTCTATCCATGTCCC
TCCTGTGTgcaTTTGCTGAGGATAATGGCTTCtAGCTCTATCCcTGTCCC

tgcaaaggacatgattgtgttcctttctatggctgcatagtattccatgg
TGCAAAGGACATGATTGTGTTCCTTTCTgTGGCTGCATAGTATTCCATGG
TGCAAAGGACATGATTGTGTTCCTTTCTATGGCTGCATAGTATTCCATGG

tgtatatgtaccatattttctttatccagtcaatcattgatggacatttg
TGTATATGTACCATATTTTCTTTATCCAGTCAATCATTGATGGACATTTG
TGTATATGTACCATATTTTCTTT-TCCAGTCAATCATTGATGGgCATTTG

ggttgattccatgtgtttgctattgtgaattgtgctgcaatgaacatatg
GGTTGATTCCATGTGTTTGCTATTGTGAATTGTGCTGCAATGAACATATG
GGTTGATTCCATGTcTgTGCTATTGTGAATgGTGCTGCAATGAACATATG

catgcatatatctttataatagaatgattTTTTTTTTTGCCTGTACAACT
CATGCATgTATCTTTATAATAGAATGATTTTTTTTTT-GCCcGTACAACT
CATGCATgTATCTTTATAATAGAATGATT----------
                                    TTGCCCGTACAACT

ATTTAATGTCTGTATGCCTCTGAATAGTAATTAGGAGAAAACATATGGAA
ATTTAATGTCTGTATGCCTCTGAATAGTAATTAGGAGAAAACATATGGAA
--------------------------------------------------
ATTTAATGTCTGTATGCCTCTGAATAGTAATTAGGAGAAAACATATGGAA

ATGAAAATTATTTCAAATTTTAAAATCTTGAAACAGAAAGCAATATTTAT
ATGAAAAgTATTTCAAATTTTAAAATCTTGAAACAGAAAGCAATATTTAT
--------------------------------------------------
GCGAAAATTATTTCAAATTTTAAAATCTTGAAACAGAAAGCAATATTTAT

AATGTATCtattcctttgtgtatttacccagtaaggggactgctgggtca
AATGTATCTATTCCTTTGTGTATTTACCCAGTAAGGGGAtTGCTGGGTCA
------TaTATTCCTTTGTGTATaTACCCAGTAAGGGaAtTGCTGGGTCA
GATGTATCTA
```

aatggtatttctgcctctagatctttgaggaatcaccacactgtcttcca
AATGGTATTTCTGCCTCTAGATCTTTGAGGAATCACCACACTGTCTTCCA
AATGGTATTTCTGCCTCTAGATCTTTGAGGAATCACCACACTGTCTTCtA

caatggttgaactaatttacagtccac---cagtgtaaaagcattcctttatc
CAATGGTTGAACTAATTTACAGTCCAC---CAGTGTAAAAGCATTCCTTTATt
CAATGGTTGAACTAATTTAtactcccaccaCAGTGTAAAAGCATTCCTTTATC

tctgcaacctcactggcatctgttgtttctggactttttaataatcgcca
TCTGCAACCTCgCcGGCATCTGTTGTTTCTGGACTTTTTAATAATtGCCA
TCTGCAAtCTtgCcaGCATCTGTTGTTTCTGtACTTTTaAATAATCGCCA

ttctgacgtgaggtggtatctcattgtggttttgatgtgcgtttctctaa
TTCTGACaTGAGGTGGTATCTCATTGTGGTTTTGATGTGCGTTTCTCTAA
TTCTaactggc-----------------TTTTGATtTGCaTTTCTCTAA

tgatgagtgatgctgagctttttttcatgtttgttggctgcatgaatgtc
TGATGAGTGATGCTGAGCTTTTTTTCATGTTTGTTGGCTGCATGAATGTC
TGATGAGTGATGCTGAGCTTTTTTTCATGTTTGTTGGCTGCATGAATGTC

ttcttttgagaagtgtctgttcatgtcctttgcccactttttaatggggt
TTCTTTTGAGAAGTGTCTGTTCATGTCCTTTGCCCACTTTTTAATGGGGT
TTCTTTTGAGAAGTGTCTGTTCATGTCCTTTGCCCACTTTTTAATGGGGT

tggtttttcttgtaaatttgtttaagttccttgtagactctggatatta
TGGTTTTTTCTTGTAAATTTGTTTAAGTTCCTTGTAGACTCTGGATATTA
TGGTTTTTTCTTGTAAATTTGTTTAAGTTCCTTGTAGACTCTGGATATTA

gacctttgtcagatgctccgattgcaaaaattttctcccgttctgtaggt
GACCTTTGTCAGATGCTCCGATTGCAAAAATTTTCTCCCaTTCTGTAGGT
GACCTTTGTCAGAgGCTCaGATTGCAAAAATTTTCTCCCacTCTaTAGGT

tgtctgttcactctgatgatagtttcttttgctgtgcagaagctctttag
TGTCTGTTCACTCTGATGATAGTTTCTTTTGCTGTGCAGAAGCTCTTTAG
TGTCTaTTaACTCTGATGATAGTTTCTTTTGCTGTGCAGAAGtTCTTTAG

tttaattagatctcatttgtcaattttggcttttgctgcaattgcttttg
TTTAATTAGATCTCgTTTGTCAATTTTGGCTTTTGtTGCgATTGCTTTTG
TTTAATTAGATCcCATTTGTCAATTTTGGCTTTTGtTGCAATTGCTTTTG

gcgtttttgtcgtgaaatctttgcccatgcctatgttctgaatggtattg
GCaTTTTTGTCGTGAAATCTTTGCCCATGCCTATGTTCTGAATGGTATTG
GCGTTTTcGTCaTGAAATCTTTGCCCATGCCTgTGTTCTGAATGtTATTG

cctagatttttttctggggtttttatagttttgggttttacatttaagtc
CCTAGATTTTTTTCTGGGGTTTTTATAGTTTTGGGTTTTACATTTAAGTC
CCTAGATTTTTTTCTGGGGTTTTTATAGTTTTGGaTTTTACATTTAAGTC

tttaatccatcttgagttaatttttgtgtaagatgtaaggaagggatata
TTTAATCCATCTTGAGTTAATTTTTGTGTAAGATGTAAGGAAGGGATATA
TTTAATCCATCTTGAGTTAATTTTTGTGTAAGATGTAAaGAAGGGgTATA

gtttcaattttctgcatatgcctacccagttctcccagcaccatttatta
GTTTCAATTTTCTGCgTATGCCTACCCAGTTCTCCCAGCACCATTTATTA
GTTTCAATTTTCTGCATATGgCTAgCCAGTTCTCCCAGCACCATTTATTA

aatagggaatcctggccgggcgcagtggctcacacccgtaatcccagcac
AATAGGGAATCCTGGCCGGGCGCAGTGGCTCACACCCGTAATCCCAGCAC
AATAGGGAATCCTGtCCGGGCGCAGTGcCTCACgcctaTAATCCCAGCAC

tttgggaggctgaggcgggtggatcacctgaggtcagga
TTTGGGAGGCTGAGGCGGGTGGATCACCTGAGGTCAGGA
TTTGGGtggccgaggtGGGTGGATCACCTGAGGTtggga

chr5:162752527-1627528300
Alignment
Human, chimp, rhesus, consensus, donor
ggtttctttttcagctaattcattaccagtgtgcagacatgctaccgatc
GGTTTCTTTTTCAGCTAATTCATTgtCAGTGTGCAGACATGCTACCGATC
GGTTTCTTTTTCAGCTAATTCATTAtCgaTGcatAGACATGgTACtGATC

atttctatataccaataacattgaaggtgaaagccaaatcaagaacacaa
ATTTCTATATACCAATAACATTGAAGGTGAAAGCCAAATCAAGAACACAA
ATTTCTATATACCAATAACATTGcAGGTGAAAGCCAAATCAAGAACACtA

tcccatttacaatagccacagacacacatgaaaaaagtacctagaaaata
TCCCATTTACAATAGCCACAGACACACATGAAAAAAGTACCTAGAAAATA
TCCCATTTACAATAGCCACAGACACACATGAAAAAAGTtCCTAGgAAAgA

catctaatcaaagaaatgaaagatctctacaaggagaactacaaagcact
CATCTAATCAAAGAAATGAAAGATCTCTACAAGGAGAACTACAAAGCACT
CATCTAAcCAAAGAgATGAAAGATCTCTACAAGGAGAgtTACAAAaCACT

gctaaaagaaatcagacatgacccaatcaaatcgaaaaatattccaggct
GCTAAAAtAAATCAGAtATGACCCAATCAAATCGAAAAATATTCCAGGCT
GCTAAAAGAAATCAGACATGACaCAATCAAATgGAAAcATATTCCAtGCT

catggattagaagaattaatattgtaaaaatggccatcctgcccaaagaa
CATGGATTAGAAGAATTgATATTGTAAAAATGGCCATCCTGCCCAAAGcA
CATGGATTAGAAGAATTAATATTGTAAAAATGaCCATCCTGCCCAAAccA

atctatagattcagtgctattcctatcaaactgccaacatcatttttaac
ATCTATAGATTCAGTGCTATTCCTATCAAACTGCCAACATCATTTTTAAC
ATCTATAGATTCAGTGCTATTCCTATCAAACTGCCAACATCATcTTTTAC

agaattagaaaaaagtcttctagaaAAAAATTAAATATTTCACAATTGTG
AGAATTAGAAAAAAGTCTTCTAGAAAAAAATTAAATATTTCACAATTGTG
AGAATTAGAAAAAAGTCTTCT----------
AGAAAAAAATTAACTATTTCACAATTGTG

AAATTATAATTTAATGTAAGGTAAATTCAGGTAGAACCCATCATCTCCCA
AAATTATAATTTAATGTAAGGTAAATTCAGaTgGAACCCAcCATCTCCCA

AAATTATAATTTAATATTAGGTAAATTCAGGTGGAACCCATCATCTCCCA

ACCCACTTCCCTACAACACTCTATGCCAAGAAGAGATCTTCCTAAGATAT
ACCCACTTCCCTACAACACgCcATGCCAAGAAGAGATCTTCCTAAGATAT

ACCCCGTTCCCTACAACACTCCATGCCAAGAAGAGACCTTCCCAAGATAT

TTTCCTTTTCCCAAGGAGAGGTTGGGGTGGAACCCCCGTGTGAAGGATTT
TTTCCTTTTCCCAAGGAGAGGTTGGGGTGGAcCCCCtGTGTGAAGGATTT

TTTCCTTTTCCCAAGGAGAGTTTGGGGTAGACCACCCGTGTGAAGGATTT

TAAAGAGGAAGTTTCAGGAAAGAGATGACATAGGGGAGATCAAGGCAGAG
TAAAGAGGAAGTTTCAGGAAAGAGATGACAcAGGGGAGATCAAGGCAGAG

TAAAGAGGAAGTTTCAGGAAAGAGACGACATAGGGGAGATCAAGGCAGAG

AATGAGAGAGCTGCCATGAGGGACTAGAAATAGGGACACCTTTGTTTGGT
AATGAGAGAGCTGCCATGAGGGACTAGAAATAGGGACACCTTTGTTTGGT

AATGAGAGAGCTGCCATGAGGGACTAGAAATAGGGGCACCTTTGTTTGGT

GTGGGGGAACAGGTTAGGAAAA**AAAAAAAA**agaaaaaagtcttgtaaaat
GTGGGGGAACAGGTTAGGAAAAAAAAAAAA-GAAAAA-GTCTTcTAAAAT

----------AAAAT
GTAGGGGAACAGGTTAGGAAAA

tcatatggaaccaaaaatgggcctgaatagccaaagcaatcctaaacaaa
TCATATGGAtCCAAAAATGGGCCTGAATAGCCAAAGCAATCCTAAACAAA
TCATATGGAACCAAAAATGGGCCTGAgTAGCCAAAGCAATCaTAAACAAA

acacacacacacacaaacacacaca
ACACACACACACACAcACACACACA
ACACACACACACACAcACACACAaA

chr18:31908135-31908312
Alignment
Human, chimp, rhesus, consensus, donor

```
TGCAGGTTGACTTGAGCTATGTCAAAAGGGAGTACTGAGAAAGTAAGAAG
TGCAGGTTGACTTGAGCTAcGTCAAAAGGGAGTACTGAGAAAGTAAGAAG
TGCAGGTTGACTTcAaCTAcaTCAAAAtGGgGTACTGAGAAAGTAgGAAG

ATAACTctggttactgacagctaaactgcaatcttgccaatgaaacataa
ATAACTCTGGTTACTGACAGCTAgACTGCAATCTTGCCAATGAAACATAA
ATAACTgTGGTTACTGACAaCTAgACTGCAgTCTTGCCAgTGAAACATAA

actgttctcacaggatataaacaataattaggcaagtccattctatgact
ACTGTTCTCACAGGATATAAACAATAATTAGGCAAGTCCATTCTATGACT
ACTGTTCTCACAGGATATAAACAATAATTAGGCAAGTCCATTCTATGACT

gttgtggagcaagacagagccaaggccaccctgcagccatgaaaattgct
GTTGTGGAGCAAGACAGAGCCAAGGCCACCCTGCAGCCATGAAAATTGCT
GTaGTaGAGCAAaACAGAGCCAAGGCtACCtTGCAGCCATGAAAATTGCT

agtatctccttctgataactaacatgaataattacagcttctttgccagt
AGTATCTCCTTCTGATAACTAACATGAATAATTACAGCTTCTTTGCCAGT
gGTATtgCCTTCTGATAACTAACATGAATAATTACAcCTTCTTaGCCAGT

gacatctctatccccatcttaaccctctgacctcctacataaaaa-tgatc
GACATCTCTATCCCCATCTTAACCCTCTGACCTCCTACATAAAAA-TGATC
GACATCTCTAgCCCCATCTcAACCCTCTGACCTCCTACATAAAAAaTGATC

aaagatctacccaatcaccaaattgctcctgctcctcacagcacccaatc
AAAGATCTACCCAATCACCAAATTGCTCCTGCTCCTCACAGCACCCAATC
AAAaATCTACCCAAcCACCtAgTTGCTCCTGCTCCTCACAGCACCtAATC

cagaactgactctgcacctctaaagtctctttagaatcacgcaacacaag
CAGAACTGACTCTGCACCTCTAAAGTCTCTTTAGAATCACGCAACACAAG
CAGAACTGACTtTGCACCTCTAAAGTaTCcTTAGAATCACG-----CAAG
TAAATACAATAAGATTTTAA

cttaaatcttTTTTTTTTGATCAGAATAAATTTATTGGACATTTTTTAAAA-
CTTAAATCTTTTTTTTTttATCAGAATAAATTTATTGGACATTTTTaAAA-
CTcAAATCTT----------
              TTTTGATCAGAATAAATTTATCAGACATTTAAAAAAAG

-AATTTCAAAACCTAAAATAAAATAATATCCAAGTATAAATGCAATTTTCC
AAATTTCAAAACCTAAAATAAAATAATATCCAAGTATAAATGCAATTTTCC
----------
AAATTTCAAAACCTAAAATATAATAATATCCAAGTATAAATGCAATTTTCC

TTTTAAAATATATACGATGCAACAATTACATTTATGAACTAATTCTTAAT
TTTTAAAgTgTATACGATGCAACAATTACATTTATGAACTAATTCTTAAT
----------
TTTTAAAGTATATACGATACAACAATTACATTTATGAACTAATTCTTAAT

ACATAGGTATAAAAATGTGAATTTATTTGAAGTGACCTCcaagcttaaat
ACATAGGTATAAAAATGTGAATTTATTTGAAGTGACCTCCAAGCTTAAAT
----------
ATGTAGATATAAAAATATGAATTTATTTGAAGTG

cttaaaataagcccttcccaattccttcttaataacacaccccatagttg
CTTAAAATAAGCCCTTCCCAATTCCTTCTTAATAACACACCCCATAGTTt
---AAAATAAGCC-TTCCCAATTCCTTC-TAATAACAtACCCCATAGTTt

ctgtggtgtgttctcattcttgtttgctgcagcaaactaaataaactttg
CTGTGGTGTGTTCTCATTCTTGTTTGCTGCAGCAAACTAAATAAACTTTG
CTGTGGTGTGTTCTCATTCTTGTTTGCTGCAGCAAACTAAATAAACTTTG
```

tttaacattatatggttcttatggtctttggttggtgggTTTGGTTTTTG
TTTAACgTTATATGGTTCTTATGGTCTTTGGTTGGTGGGTTTGGTTTTTG
TTTAAagTTATATGGTTCTTATGGTCTTTGGcTGGTGGGTTTGGTTTTTG

TTTGTTTGGTTGGTAtttttaagatagggtcttgctatgtcaccctggc
TTTGTTTGGTTGGTATTTTTAAGATAGGGTCTTGCTATGTCACCCTGGC
TTTGTTTGtTTGGTATTTTTAAGATAGGGTCTTGCT

chr8:8994997-8995187
Alignment
Human, chimp, rhesus, consensus, donor
CGATGAAGACCAAGATGGTAAAGATGAAAAATTGTagctaacatttactg
CGATGAAGACCAAGATGGTAAAGAaGAAAAATTGTAGCTAgCATTTACTG
CaATGAAGACCAAGATGGTAAAGAaGAAAAATTGTAGCTAACATTTACTG

cacatttactacaagccaagcattgcactatgaagtttaagtgcattatt
CACATTTACTACAAGCCAAGCATTGCAtTATGAAGTTTAAGTGCATTATT
CACATTTACTACAAGtCAAGCATTGCgCTATGAAcTTTAAGTGCgTTtTT

cattaacccttcaataaAATTTGTAATTTTCATTTCAGAAGCAAATATT
CATTAACCCCTTCAATAAAATTTGTAATTTTCATTTCAGAAGCAAATATT
CATTAACCCCTTCAATAA--------------------------------
AATTTGTAATTTTCGTTTCAGAAGCAAATATT

CGTGTTGTACAAATTTCTGATTGCCCTAAATGTAGAGAGACTGATGGGGA
CGTGTTGTACAAATTTCTGATTGCCCTAAATGTAGAGAGACTGATGGGGA

CGTGTTGTACAAATTTCTGATTGCCCTAAATGTAGAGAGACTGATGGGGA

AAGTATGATGGGTTTGATTTTTATATCAAATCATCAGGCATGGAGAAATA
AAGTATGATGGGTTTGATTTTTATATCAAATCATCAGGCATGGAGAAATA

AAGTATGATGGGTTTGATTTTTATATCAAATCATCAGGCATGGAGAAATA

TCTTTTAGAAGTGTTAAAATAAATGTTCCTACTGTATATTTAAAATACAA
TCTTTTAGAAGTGTTAAAATAAATGTTCCTACTGTATATcTAAAATACAA

TCTTTTAGAAGTGTTAAAATAAATGTTCCTACTGTATATTTAAAATACCA

AAAATGATAAtaataataataacaattcctctgaaatagttaccgtgaat
AAAATGATAATAATAATAATAAttATTCCTCTGAAATAGgTACCGTGAAT
----------TTCCTCTGAAATAGgTACCGTGAAT

accctcatttaaaatgaggaagctaagccttttcaaagttaagtaacttg
AaCCTCATTTAAAATGAGGAAGCTAAGCCTTTTCAAAGTTAAGTAACTTG
AtCCTCATTTAAAATGAGGAAGCTAAGgCTTTTCAAAGTTAAGTAACTTG

cctaaggtctcttaacaactagcgaaaaggatagaactcaaacctaggtc
CCTAAGGTCTCTTAACAACTAGCGAAAAGGATAGAACTCAAACCTAGGTC
CCTAAGGTCTCTTAACAACTAGCGAAAAGGATAGAACTCAAACCT--GTC

tttctgaccctgcagtttgtgtttctatccacGGTGTAAGTGAATGAGTC
TTTCTGACCCTGCAGTTTGTGTTTCTATCCAtGGTGTAAGTGAATGAGTC
TTTCTGACCtTaCAGcTTGTGTTTCTATCCAtGGTaTAAaTGAATGAGTC

AATGTATGCTAAAGTCAAGACTCTTATC
AATGTATGCTAAAGTCAAGACTCTTATC
AATGTATGCTAAAGTCAAGACgCTTATC

chr8:138184846-138184991
Alignment
Human, chimp, rhesus, consensus, donor
agctaactttaacctatcgcaAGGAGCAAACCCACAGTGAAAAGCtgcat
AGCTAACTTTAACCTATCaCAAGGAGCAAACCCACAGTGAAAAGCTGCAT
AGCTAtCTTTAACCTATtGCAAGGAGCAAACCCACAGTGAAAAGCaGCAT

tactctacttggtctgccataagaaaataccatagactgggtggctgaaa
TACTCTACTTGGgCTGCCATAAGAAAATACCATAGACTGGGTGGCTGAAA
TACcCTACTTGGgCTGCCATAAGAAAATACCATAGgCTGGGTGGCTaAAA

caacaggaatttattttcttacagttctggaggctggaagtcgagagatc
CAACAGGAATTTATTTTCTTACAGTTCTGGAGGCTGGAAGTCGAGAGATC
CAACAGGAATTTATTTTCTTACAGTTCTGGAGGCTGGAAGTCGAGAGATC

agggtgtcagcagggtgctgttctgacgaagacgctcttactggcttaca---
AGGGTGTCAGCAGGGTGCTGTTCTGAtGAAGACGCTCTTACTGGCTTACA---
AGGGTGTCAGCAGGGTcCTGTTCTGgtGAAGgCaCTCTTtCTGGCcTACA---

ggcttctgactgtgtcctcatgtggccttcctctgtgaaagctcactctt
GGCTTCTGACTGTGTCCTCATGTGGtctt--------tAAGCTCACTCTT
GGCTTCTGACTGTGTCCTCAcGTGGCCTTCCTtTGTGAAAGCTCAtTCTT

tcttcttgtaaggataccaatcCTGTCG**ATATC**CTTAGGAGTCCTCAAAT
TCTTCTTGTAAGGATACCAATCCTGTCGATATCCTTAGGAGTCCTCAAAT
TCTTa---TAAGGcTACCAATCctatca----------
CTTAGGAGTCCTCAAAT

GCATCATGCTCTTCCACACATATTTCTCCCTTCTCTGCTTTTTGTGTGTG
GCATCATGCTCTTCCACACATATTTCTCCCTTCTCTGCTTTTTcTGTGTG

GCATCATGCTCTTCCACACATATTTCTCCCTTCTCTGCTTTTTCTGTGTG

CCTTTCTTTTAGCCTGGTTAACTTAATCTAAATTAAGTCTCCTTAATTCT
CCTTTCTTTTAGCCTGGTTgACTTAATCTAAATTAAGTCTCCTTAATTCT

CCTTTCTTTTAGCCTGGTTAACTTAATCTAAATTAAGTCTCCTTAATTCT

CTAAACTTC**TCAGGTCCTAagtcctgtcg**gattaggaccacatccttatg
CTAAACTTCTCAGGTCCTAAGTCCTGTCGGATTAGGACCAtATCCTTATG
----------GATTAGGACCACATCCTTATG
CTAAACTTC

atctcatttaaccatcttaaaagccctttctccaaagatggtcacattgg
ATCTCATTTAACCATCTTAAAAGCCCTTTCTCCAAAGATGGTCACATTGG
ATCTaATTTAACCATCTTAAAAGCCCTTTCTCCAAAaATGGTCACATTGG

gggtttgggcttcaacatctgaattttcagtgggcacagtgcagtcaata
GGGTTTGGGCTTCAACATCTGAATcTTCAGTGGGCACAGTGCAGTCAATA
GGGTTTGGGCTTCAACATCTGAATTTTCAGTGGGCACAaTGCAaTCAAcg

gcaACATCAGAGAAATGAACAAGATACACataacatccctt
GCAACATCAGAGAAATGAACAAGATACACATAACATCCCTT
GCAACATCAGAGAAATGAACAAGATACACgTAACATttctt

chr5:23057186-23057475
Alignment
Human, chimp, rhesus, consensus, donor

```
ttggggatggtgcaaatatattttgcctgtggaatggacataaactt-------------GGT
TTGGGGATGGTGCAAATATATTTTGCaTGTGGAATGGACATAAACTT-------------GGT
           GCAAATATgTTTTGCaTGTGGAATGGAtATAAACTTgggggaactagatGGT

AGACTCTTATGGATTGAATAATGTTCCCCCAAATTCATCTATCCAAAA-TG
AGACTCTTAgGGATTGAATAATGTTCCCCCAAATTCATCTATCCAAAA-TG
AGACTCgTATGGgTTGAATAATGTTCCCtCAAATTCATCTATCCAAAAaTt

TGaaaatgcgacttcatttagaaatatggtatttcccgatgtaattagta
TGAAAATGCGACTTCATTTAGAAA---TGTATTTCCCGATGTAATTAGTA
TGAAAATGtGACTTCATTTAGAAA-cATGaTATTTCCtGATGTAATAGTA

ttagggtagaggacacagagagggacacagagaggaatggcatattaaga
TTAGGGTAGAGGACACAGAGAGGGACACAGAGAaGAATGGCATATgAAGA
TTAGGGTAGAGaACACAGAGAaGGACACAGAGAGGAATGGCATATgAAGA

aagaagtggaattatgttgccacaagccaagaaatatcaggagctaccag
AAGAAGTGGAATTATGTTGCCACAAGCCAAGAAATATCAGGAGCTACCAG
AAGAgGTGGAgTTATGTaGCCACAAGCCAAGAAATATCAGGAaCTACCAG

aagctagaagaggcaaggaaggattttcccttctagtcttgggaagggag
AAGCTAGAAGAGGCAAGGAAGGATTTTCCCTTCTAGTCTTGGGAAGGGAG
AAGCTAGAAGAGGCcAaGAAGGATTTTCCCTTCaAGTCTTGGGAAGGGAG

tatggccctgctgccactttgattttggacttctggcttttagaattgtg
TATGGCCCTGCcGtCACTTTGATTTTGGACTTCTGGCTTTTAGAATTGTG
gATGGCCCTGCTGCCACTTaGATTTTaGACaTCTGGCTTTcAGAATTGTG

aaagaatacattttctttctttTTTTTTTTTTTT--GCAATCTTGTTTTTG
AAAGAATAaATTTcCTTTCTTTTTTTTTTTTTTTttGCAATtTTGTTTTTG
AAAGAATAaATTTcCTTTCTTtt-----------------------------
                                    GCAATTTTGTTTTTG

AAATTAATTTTTATTTTCTTCACATTGTGTTGGATGATCAGAGGATTATA
AAATTAATTTTTATTaTCTTCACATTGTGTTGGATGATCAGAGGATTATA
--------------------------------------------------
AAATTAATTTTTATTATCTTCACATTGTGTTGGATGATCAGAGGATTATA

ATTATTCCCTGCCCCAGGGGAGAGTATTGCAAAGGTACATAGGGCATGAA
ATTATTCCCTGCCCCAGGGGAGAaTATTGCAAAGGTACATAGGGCATGAA
--------------------------------------------------
ATTATTCCCTGCCCCAGGGGAGAGTATTGCAAAGGTACATAGGGCATGAA

CGTGGGGAGGGCAAGAAGCGTGCCCAAAGCGTGCTATAGCACAGTGTGTG
CGTGGGGAGGGCAAGAAGCGTGCCCAAAGCGTGCTATAGCACAGTGTGTG
--------------------------------------------------
CGTGGGGAGGGCAAGAAGTGTGCCCAAAGCGTGCTATAGCACAGTGTGTG

TTCCACTCCTCATACAGCAATGAACTGGTGAAGGAGTTAAAATCTTAATG
TTCCACTCCTCATACAGCAATGAACTGGTGAAGGAGTTAAAATCTTAATG
--------------------------------------------------
TTCCACTCCTCATACAGCAATGAACTGGTGAAGGAGTTAAAATCTTAATG

ATTTCTAAATGATCAACAGTTTTAAAAAACATAAATATGCAGCATGAGAG
ATTTCTgAATGATCAACAGTTTTtAAAAACATAAATATGCAGCATGAGAG
--------------------------------------------------
ATTTCCAAATGATCAACAGTTTTTAAAAACATAAATATGCAGCATGAGAG

CCTACATTTGTA----------Ttttctggtactttgctacagcagctctaggaaactga
CCTACATTTGTA----------TTTTCTGGTACTTTGCTACAGCAGCTCTAGGAAACTGA
```

----------aagaaaccaaTTTTCTGGTACTTTGCTACAGCAtCTCTAGGAAACTGA
CCTACATTTGTA

tGTAACATATGATAACCAACACAACATGTAAATT
TGTAACATATGATAAtCAACACAACATGTAAATT
TGTAAtATATGATAACtAAtACAACATGTAAATT

chr6:148274962-148275037
Alignment
Human, chimp, rhesus, consensus, donor
AGATCTGCACAGAGTTACCTTCAAGACAGTGCCAAGCCTTTGCtgtacca
AGATCTGCACAGAGTTACCTTCAAGACAGTGCCAtGCCTTTGCTGTACCA
AGATCTGgACAGAGTTACCTTCAcGACAaTGCCAtGCCTTTGCTGTACCA

gttatctattgctgttttagaaactacccaaaaacttagtgtcctaatat
GTTATCTATTGCTGTTTTAGAAACTACCCAAAAACTTAGTGTCCTAATAT
GTTATCTATTGCTGTTTaAGAAACTACCCAAAAACTTAGTGTCtTAATAT

tatgaccatgtgttattatttatgaatctgtgggtcagctgagtagctgg
TATGACCATGTGTTATTATTTATGAATCTGTGGGTCAGCTGAGTAGCTGG
TAcGACCATGTGTTATTATTTtTGAATCTGTGGGTCAaCTGAGTAGCTGG

tctgggccagatgcagctgatcccagacagactagccatgcatcagctct
TCTGGGCCAGATGCAGCTGATCCCAGACAGACTAGCCATGCATCAGCTCT
TCTGGGCCAGATGCAGCTGATCgCAGACAGACTAGCCATGCAcCAaCTCT

cagctgttgggttggttggggcctgccagatctagaagggcctcactcac
CAGCTGTTGGGTTGGTTGGGGCCTGCCAGATCTAGAAGGGCCTCACTCAC
CAGCTGcTaGGTcaacTGGGGCCTGgCAGATCTAGAAGGGCCTCACTCAC

ctgtctggtgattgcctggctaagagtgatggctgtaactagaccatatg
CTGTCTGGTGATTGCCTGGCTAAGAGTGATGGCTGTAACTAGACCATATG
CTGTCcGGTGATTGCCTGGCTAAGAGTGATGGCTGTAACTAGACCATATG

tctctagccattcatcatgctacgacagatttttctttcacaaaacaagg
TCTCTAGCCATTCATtATGCTACGACAGATTTTTCTTTCACAAAACAAGG
TCTCTAGCCATTCATCATGCTAgGACAGcTTTTTCTTTCACAAAACAAGG

acagactctcaaaagagtgtgtgcaagcatgcaaggcccatgaggcctag
ACAGACTCTCAAAAGAGTGTGTGCAAGCATGCAAGGCCCATGAGGCCTAG
ACAGAaTCTCAAAAGAGTGTGTGgAAGCATGCAAGGCCCATGAGGCCcAG

actcagacctgatgcaccgttacttctcatagattctgttggtcaaagcc
ACTCAGACCTGATGCACCGTTACTTCTCATAGATTCTGTTGGTCAAAGCC
ACTCgaACCTGATGCACCaTTACTTCTCcTAGATTCTGTTGGTCAAAGCC

agtccaagacaaagggtgggggaaaagattctatttcttTTTTTTTTTAT
AGTCCAAtACAAAGGGTGGGGGAAAAGATTCTAcTTCTTTTTTTTTT-AT
AGTtCAAtACAAAGGGTGGGGtaaatattcc-ACTTCTT----------
T

GCTGAATGTTTATAATTAAGTAAGCTTACTCTAAGAAGCACAAATTTAGA
GCTGAATGTTTATAATTAAGTAAGCTTACTCTAAGAAGCACAAATTTAGA

GCTGAATGTTTATAATTAAGTAAGCTTACTCTAAGAAGCATGAATTTAGA

ACACAAGAAACTAAAAacttcttagtgggaaaaactgcaaagtgtgatta
ACACAAGAAACTAAAAACTTCTTAGTGGGAAAAACTGCAAAGTGTGAgTA
----------AGTGaGAAAAACTGtAAAGTGTGAgTA
ACACAAGAAACTAAAA

gaggaaggagtggagaattggagctatttcttgcaatcagtttaTGTAGA
GAGGAAGGAGTGGAGAATTGGAGCTATTTCTTGCAATCAGTTTATGTAGA
GAGGAAGGAGTGGAGAATTGGAGCTATTTCTTGCAgTCAGTTTATGTAGA

TGTGA
TGTGA
Tacga

chr4:140781323-140781711
Alignment
Human, chimp, rhesus, consensus, donor

```
cctctgaaagtagtcacatggttatacctggtatttatttatttttatt
CCTCTGAAAGTAGTCACATGGTTATACCTGGTATTTATTTATTT---ATT
 CTCTGAAAGcgGTCACATGGTTATACCTGGTATTTATTTATT----ATT

attattattattatttgagacagggtctcaccctgtcacacaggctggag
ATTATTAaTATTATTTGAGACAGGGTCTCACCCTGTCgCACAGGCTGcca
ATTgTTATTATTATT-GAGACAGGGTCTCACCtTGTtgCACAGGCTGGAG

tgcagtggtgcaattatggctcactgctacctctgccacctgggctcaag
TGCAGTGGTGCAATTATGGCTCACTGCTACCTCTGCCACCTGGGCTCAAG
TGCAGTGGTGCAATcATGGCTCACTGCaACgTCTGCCACCTGGGCTCAAG

ccatcctctcaccttagccttctgaacagctgggatacatgtgcacTAAT
CCATCCTCT--CCTcAGCCTcCTGAACAGCTGGGATACATGTGCACTAAT
CCATCCTCTCACCTcAGCCTcCTGAAtAGCTGGGATACgTGTGCAttatT

TTTTTTTTTTTTGAAACAAAAATATTTGTGTAGAAGGCACAAAAGCTACA
TTTTTTTTTTTTGAAACAAAAATATTTGTGTAGAAGtCgCAAAAGCTACA
TTTT-----------------------------------------------
            TGAAACAAAAATATTTGTGTAGAAGGCATAAAAGTTATC

ATCACAGACTCCACTGTGCAAAGGCGCAACCTGCCTCATTGATCTCTAGT
ATCACAGAccCCACTGTGCAAAGGtGCAtttTGCCcCATTtATCTCTAGT
---------------------------------------------------
ATCACAGACTCCACTGTGTAAAGGCATAACTTGCTTTATTTATCTCTAGT

GTACACCAACCCAGCTTCCCTTTCCATTCAGCCTGTGAAAGGAGATAGTG
GTACACCAACCCAGCcTCCCTTTCCATTCAaCCTGTGAAAGGAGATAGTG
---------------------------------------------------
GTATATGAACTTAGCCTCCCTTTCCATTCAGCCTGTGAAAGGAGATAGTG

CTTGGGCCATTTGGTAAAAGAAGGGGATGGGAGATGATCAAAACCCCAAG
CTTGGGCCATTTGGTA---GAAGGGGATGGGAGATGATCAAAACCCCAAG
---------------------------------------------------
CTTGGGCCATTTGGTAGAAGAAGGGGATGGGAGATGATCAAAACCCCAAG

TAAGGTTCATCCA--ATATGGTGTCTAAGCAGCAAATGACTAATTGCTGAAG
TAAGGTTCATatcc-ATATGGTGTCTAAGCAGCAAATGACTAATgGCTGAAG
----------------------------------------------------
TAAGGTTCATATCCAATATAGTGTCTAAGCAGCAAATGACTAATGGCCGAAG

AAGGAGACTAGACAGAGGATTAGAGGCAGCCATGGGGCCAGTGCAGCTGT
AAGGAGACTAGACAGAGGATTAGAGGCAGCCATGGGGCCgGTGCAGCTGT
---------------------------------------------------
AAGGAGACTAGACAGAGGATTAGAGGCAGCCATGGGGCTGGTGCAGCTGT

GGAGAGCTCTGAGCAAAGAAACAAGGTTGGCAGGTGAGGAGGCCTAGGAT
GGAGAGCTCTGAGCAAAGAAACAAGGTTGGCAGGTGAGGAGGCCTAGGAT
---------------------------------------------------
GGAGAGCTCTGAGCAAAGAAACAAGGTTGGCAGGTGAGGAGGCCTAGGAT

AGAGGCCAGAAGGCCAAGCCTGGGGCTGCGTGTGCActaattttgtatt
AGAGGCCAGAAGGCCAAGCCTGGaGCTGCaTGTaCACTAATTTTTGTATT
-----------------------------------------------GTATT
AGAGGCCAGAAGGCCAAACCTGGGGCTG

tttttgctttttgatagagatgagatttcatcatgttgcacaggtgggt
TTTTTGtTTTTTTGgTAGAGATGAGATTTCATCcTGTTGCACAGGTGGGT
TTTTTGtTTTTTTGgTAGAcATGAGATTTCATCATGTTGCACAGactGGT
```

cttgaagtcctgggctcaagtggtctgcctgtctcggcctctcaaagtgc
CTcGAAcTCCcGGGCTCAAGTGaTCTGCCTGTtTCaGCCTCTCAAAGTGC
CTcGAAcTCCTGGGCTCAAGTGaTCTGCCTGTCcCGGCCTCTCAAAGTGC

tgggattataggtgtgagccactgcacccggctcatagctggtatttata
TGGGATTATAGaTGTaAGCCACTGCACCCaGCTCATAGCTGGTATTTATA
TGGGATTATAGGcaTaAGCCACTGCACCCGGCTCATAGCTGGTATTTATA

actacattctcccattatttattccatagttc
ACTACATTCTCCCATTATTTATTCCATAGTTC
ACTACATTCTCCCATTATTTATTCCATAGTTC

chr8:62616228-62616312
Alignment
Human, chimp, rhesus, consensus, donor

```
AATTGAAAAAAAAATTAAGAAAGGGAAATGAGAggccgggcacggtggct
AATTGAAAAAAAAATTAAGAAAGGGAAATGAGAGGCCaGGCgCGGTGGCT
     AAAAAAAAATTAAGAAAGGGAAATGtGAGGCtGGGCgCaGTGcCT

cacacctgtaatcccagcactttggaaggccgaggtgggcggatcacgag
CACACCTGTAATCCCAGCAaTTTGGAAGGCCGAGGTGGGCGGATCACGAG
CACACCTGTAATCCCAGCACTTTGGgAGGCCGAGGcGGGCaGATtAtGAG

gtcaggagatcgagaccatcctggttaacaaggggaaaccccgtctctac
GTCAGGAGATCGAGACCATCCTGGTTAACAAGGtGAAACCCCGTCTCTAC
GTCAGGAGATCGAGACCATCCTGGTTAACAAGGtGAAACtCtGTCTCTAC

taaaaaatacaaaaaa--ttagAGTTAAGGCAATATAATGGTTTTGTATTTT
TAAAAAATACAAAAAA--TTAGAGTTAAGGCAATATAATGGTTTTGTATTTT
TgAAAA-TAcAAAAAAAATTAG-----------------------------
                        TTAAGGCATTATAATGATTTTGTATTTT

--AAAAGATAGAATTTATTTATTCAACATGACTTTTATAAGAGTAAAGATAT
--AAAAGATgGAATTTATTTATTCAACATGACTTTTATAAGAGTAAAGATAT
----------------------------------------------------
TTAAAAGATGGAATTTATTTATTCAACATGACTTTTACAAGAGTAAAGATAG

AATTCAtattaaaaaaaaattagccgggcatggtggtgggcacctgtag
AATTCATcTTAAAAAAAAA-TTAGCCGGGCATGGTGGTGGGCACCTGTAG
------------------------CCaGGggTGGTGGTGGGCgCCTGTAG
AATTCATCTAAA

tcccagctacttgggaggctaaggcaggagaatagcgtgaacccgcgagg
TCCtAGCTACTTGGGAGGCTAAGGCAGGAGAATAGCGTGAACCCGCGAGa
TCCCAGCTACTcGGGAGGCTgAGGCAGaAGAATgGCGTGAACCtGCGAGG

cggagcttgcagcgagctgagattgcgccactgcactccagcctgggcaa
CGGAGCTTGCAGtGAGCTGAGATTGCaCCACTGCACTCtAGCCTGGGCAA
CaGAGCTTGCAGtGAGCcGAGATcataCCAgTGCACTCCAGCCTGGGtAA

cagagtgagactccgtctaaa-----------------aaaaaaGGGAAATGCCCTATTCATGGTAG
CAGAGTGAGACTCtGTCTAAA-----------------AAAAAAGGGAAATGCCCTATTCATGGTAG
CAGAGcaAGACTCtGTCTAAAaaaaaaaaaaaagaaaagAAAAAAGGGAAATGCCCTATTCATGaTAG

TTAAAAGTCACTCAAGGGCCA
TTAAcAGTCACTCAAGGGCCA
TTAAGTCACTCAAGGGCCAgA
```

chr12:97618896-97619143
Alignment
Human, chimp, rhesus, L1MB4 consensus, donor

```
AGTTTGTACCCCTTTAGCAGGAAACTAAGAGGAAAAATACCTCCCTTTAA
AGTTTGTACCCCTTTAGCAGGAAACTAAGAGGAAAAATACCTCCCTTTAA
AGTTTGTACCCCTTTAGCAGGAAACTAAGAGGAAAAATAtCTCCCTTTAA

GTTTGTTAAAATCTATAAGAACAGAAAAGAAACCACTGCATAAGCAAGAC
GTTTGTTAAAATCTATAAGAACAGAAAAGAAACCACTGCATAAGCAAGAC
GTT----AAAATCTATAAGAACAaAAAAGgAACCAtTGCATttGCAgaAC

TTGAAGATTAAAACttttt-tattgtgataaaatgcatataatgtaaaagt
TTGAAGATTAAAACTTTT--TATTGTGATAAAATGCATATAATGTAAAAGT
TTGAAGAgTAAAACtTTTTTTATTGTGATAAAATGCATATAATGgAAAAtT
               tttttattgtggtaaaatatacataacataaaatt

tgccattttaaccatctaaaaatgtgcatttcaatggcatta----cattcaca
TGCCATTTTAACCATCTAAAAATGTGCATTTCAATGGCATTA----CATTCACA
TGCCATTTTAACCATCTgAAAATGTaCATTTCAgTGGCATTA----CATTCACA
taccattttaaccatttttaagtgtacaattcagtggcattaagtacattcaca

atgctgtgtagccattactactatatatttccaaaactttttcatcaccc
ATGCTGTGTAaCCATTACTACTATATATTTCCAAAACTTTTTCATCACCC
ATGCTGTGTAaCCATTACcgCTtcATATTTCCAAAACTTTTTCATCACCC
tgttgtgcaaccatcaccactatcc-atttccagaacttttcatcatcc

taaacagaaactttgtaaccatgaagtaataactcctctttcccctctct
TAAACAGAAACTTTGTAACCATGAAGTAATAACTCCTCTTTCCCCTCTCT
TAAACAGAAACTTTGTAACCATGAAGTAATAACTCCTCTTTCCCCTtTCT
caaacagaaactctgtacccattaaacagtaactccccattttcccctcc

tgctagacctttgtaatctctaatgtaa-tctgcgaatttgcctaggtatt
TGCTAGACCTTTGTAATCTCTAATGTAA-TCTGCGAATTTGCCTAGGTATT
TGtTAGACCTTTGTAAcCTCTAATGTAA-TCTGtGAATTTGCCTAGGTATT
ccccagcccctggtaaccctattctactttctgtctctatgaatttgctat

----------tcatataaatggaatcatataatatcggtccttttgtgtctgactcattt
----------TCATgTAAATGGAATCATATAATATtGGTCCTTTTGTGcCTGACTCATTT
----------TCATATAAgTGGAATCATATAATATCaGTCCTTTTGTGTCTGACTCATTT
tctaggtacctcatataagtggaatcatacaatatttgtccttttgtg-ctggcttattt

cattgagcat---gttttcaaggttcattcatgttgtagcatgtatcagaact
CATTGAGCAT---GTTTTCAAGGTTCATTCATGTTGTAGCATGTATCAGAACT
CATTGAGCAT---GTTT-CAAGGTTCATTCATGTTGTAGCATGTATCAGAACa
cacttagcataatgttttcaaggttcatccatgttgtagcatgtatcagaatt

gtatttcttcttatggctgaataatattccattgtatgtatatatcacat
GTATTTCTTCTTATGGCTGAATAATATTCCATTGTATGTATATATCACAT
GTATTTCcTCTaATGGCTGAATAATAcTCCATTGTATGTATATATCACAT
tccttcctttttaaggctgaataatattccattgtatgtatataccacaT

tttTTCTTTGTTTTTTTTTTTCTTACAAACCAGTGTTTATTTTCACATAC
TTTTTCTTTGTTTTTTTTTTCTT-ACAAACCAGTGTTTATTTTCACATAC
TTT-----------------------------------------------
TTT-----------------------------------------------
                  TTTCTTACAAACCAGTGTTTATTTTCACATAC

AGCCTTGTTGTAACCAATGTACAGATCAAAACTCAAAATATTCCTCTTCA
AGCCTTGTTGTAACCAATGTACAGATCAAAACTCAAAATATTCCTCTTCA
--------------------------------------------------
--------------------------------------------------
AGCCTCGTTTTAACCAATGTACAGATCAAAACTCAAAATATTCCTCTGCA
```

GAAAACTTTGAACCTTATCCCCTAGCCGACCTATAATGGTTGAATTTCTG
GAAAACTTTGAACCTTATtCCCTAGCCGACCTATAATGGTTGAATTTCTG

GAAAACTTTGGACTTTATTCCCTAGCTGACCTATAATGGTTGAATTTCTG

TCAAGTATATATTTATGTATATAATGGGCTTAATTATTTAAGAGAATAAC
TCAAGTATATATTTATGTATATAATGGGCTTAATTATTTAAGAGAATAAC

TCAAGTATAAATTTATGTATATAATGGGCTTAATTATTTAAGAGAATAAC

TGAGTGATTTGTGTGATCTGTGAAAAGGAATTGGACTATCATACTTGGGT
TGAGTGATTTGTGTGATCTGTGAAAAGGAATTGGACTATCATACTTGGGT

TGAGGGATTTGTGTGATCTTTGAAAAGGAATTGGACTGTCATACTTGGGT

TGtatatcacattttttcatccattcatctgttgatggacacttggttt
TGTATATCACgTTTTTTTCATCCATTCATCTGTTGATGGACACTTGGTTT
---------------ggTCATCCATTCATCTGTTGATGGACACTTGGTTT
---------------gtttatccattcatccgttgatggacacttgggtt
TG

gtttccaccttttggctactgtgaataatgctgc----agcattggtgtacaag
GTTTCCACCTTTTGGCTACTGTGAATAATGCTGC----AGCATTGGTGTACAAG
GTTTCCACCTTTTGGCTACTcTGAATAATGCTGC----AaCATTGGTGTACAAa
gtttccaccttttggctattgtgaataatgctgctatgaacattggtgtacaag

tatctatttgagccttgtgtgtttacctaggagtggaattactgggtcat
TATCTATTTGAaCCTTGTGTGTTTACCTAGGAGTGGAATTACTGGGTCAT
TATCTATTTGAGCCTTGTGTGTaTgCCTAGGAGTGGAATTACTGGGTCAT
tatctgttcgag

atggtaattctttatttatttagttttctgaggaaccactagatttttcc
ATGGTAATTCTTTATTTATTTAGTTTTCTGAGGAACCACTAGATTTTTCC
ATGGTAATTCTTTATTTA----GTTTTCTGAGaAACCACTAGATTTTTCC

acagcagctgcaccgttttacattccactagcaatgtacaagggttccaa
ACAGCAGCTGCACCGTTTTACATTCCACTAGCAATGTACAAGGGTTCCAA
ACAGCAGCTGCACCaTTTTACATTCCACTAGCAATGTtCgAGGGTTtCAA

tttctccacatccttgataaaacttgttattgttcatttttaaaattata
TTTCTCCACATCCTTGATAAAACTTGTTATTGTTCATTTTTAAAATTATA
TTTCTCCACATCCTTGATAAAACTTGaTATTGTTCATTTTTAAAATTATA

gccatcctagtaggtgtgaagtggtttctccttgtggtttgatttgtgtt
GCCATCCTAGTAGGTGTGAAGTGGTTTCTCCTTGTGGTTTGATTTGTGTT
GCCATCCTAGTAGGTGTGAAGTGGTTTCTCCTTGTGGTTTGATTTGTGTT

ttcccaattaccaatgatgttgaacaAAAGATAATTTTTGAAAAGATTTT
TTCCCAATTACCAATGATGTTGAACAAAAGATAATTTTTGAAAAGtTTTT
TTCCCAATTACCAgTGcTGTTGAgCAAAAGATAAcTTTTtAAAAGATTTT

AAGAGACCTGTTCTAGTGAGAGGAAGATAATTTTATATTGCATGAAATGC
AAGAGACCTGTTCTAGTGAGAGGAAGATAATTTTATATTGCATGAAATGC
AAGAGACCTGTTCTAGTGAGAGGAAaATAATTTTATATTaCATGAAATGC

CTTGTTTTAAAAATCTGTACAGCAGTTCCCTGTTTTACCATGCTAAAAGA
CTTGTTTTAAAAATCTGTACAGCAGTTCCCTGTTTTACCATGCTAAAAGA
CTTGTTTTAAAAATCTGTACAGCAGTTCCCTGTTTTACCATGCTAAAAGA

AAGC

AAGC
AAGC

chr1:103811763-103811902
Alignment
Human, chimp, rhesus, L1PA15 consensus, donor

```
atcgcttgaacccaggaggcagatgttgcagtgagccgagatcgcaccat
ATCGCTTGAACCCgGGAGGtAGATGTTGCAGTGAGCCGAGATCGCACCAT

tgcactccagcctgggcaacaagagcaaaacttcgtcttaaaaaaaaaa
TGCACTCCAaCCTGGGCAACAAGAGCAAAACTTCGTCTTAAAAAAAAAA

aaaaattctaaaactgaaaaaaaccctggaaggtaatctaggaaatacca
AAA--TTCTAAAACTGAAAAAAACCCTGGAAGGTAATCTAGGAAATACCA
                                                  CA

ttctggacacaggccctagcaaggatttcatgataaagatgccaaaagca
TTCcGGACACAGGCCCTAGCAAGGATTTCATGATAAAGATGCCAAAAGCA
TTCTGGACACAGGCCCTAGCAAaGATTTCATGAcAAAGATGCCAAAAGCA

atttcaacaaaaacaaaaattgacaaatgggactgaattaatctagagag
ATTTCAACAAAAACAAAAATTGACAAATGGGACTtAATTAATCTAGAGAG
ATTTCAACAAAAA------TTGACAAATGGGAtTtAATTAAaCcAGAGAG

cttctgcacagtaaaataaactatcaacagagtaaacagtctactctgtg
CTTCTGCACAGTAAAAgAAACTATCAACAGAGTAAACAGTCTACTCTGTG
CTTCTGCACAGTAAAAgAAACTATCAACAGAGTAAACAGTCcACTCTGTG

agaatgagaggaaatatttgcaaactatgcatgtgacaaaggtttaatat
AGAATGAGAGGgAATATTTGCAAACTATGCATGTGACAAAGGTcTAATAT
AGAATGAGAGtAAATATTTGCAAACTAcGtATGTGACAAAGGTcTAATAT
                                              taatat

ccagaatctttaagaaacttaaacaaattaacaggcaaaaagcaaacaac
CCAGAATCTTTAAGgAACTTAAACAAATTAACAGGCAAAAAGCAAACAAC
CCAGtATCTTTAAGgAACTTAAACAAATTAACAGGCAAAAAGCAAACAAC
ccagaatctataaggaacttaaacaaattaacaagcaaaaaacaaacaac

ctcattaaaaagtgagca------atgacatgaacagacacttttcaaaaaaagac
CTCATTAAAAAGTGAGCA------ATGACATGAACAGACACTTTTCAAAAAAAGAC
CTCATTAAAAAGTGgGCA------ATGA-----ACAGA-ACTTTTCAAAAgAAGAC
cccattaaaaagtgggcaaaggacatga-----acagacacttctcaaaagaagac

atatgcctggccaacaagcatatgaaaaaatgcttaacatcatgaatcat
ATATGCCTGGCCAACAAGCATATGAAAAAATGCTcAACATCATGAATCAT
ATATtCCTGGCCAAtgAGCATATGAAAAAATaCTcAACAcCATGAATCAT
atacacgtggccaacaagcatatgaaaaaatgctcaacatcactaatcat

tagaaaaatggaaatcaaaaccacaaggaagtatcattttacaccagtaa
TAGAAAAATGGAAATCAAAACCACAAtGAAGTATCATTTTACACCAGTAA
TAGAAAAATGGAAATCAAAACCACAAtGAgaTActATTTTACACCAGTAA
tagagaaatgcaaatcaaaaccacaatgagataccatctcacaccagtca

gaatgactattactaaaaagtcaaaaaataacagatgctgccaaggttgt
GAATGACTATTACTAAAAAGTCAAAAAATAACAGATGCTGCCAtGGTTGT
GAATGACTATTACTAAAAAGTCAAAAAATAgCAGATGCTGCCAAGGTTGT
gaatggctattattaaaaagtcaaaaaataacagatgctggcgaggttgc

ggagaaaagggaactcttTTTTTTTTTTTTTATAGCTTAAATTTCTGAAA
GGAGAAAAGGGAACTCTTTTTTTTTT---TATAGtTTAAATTTCTGAAA
aGAGAAAAGG-AACTCT----------------------------------
ggagaaaagggaacgct----------------------------------
                                  ATAGCTTAAATTTCTGAAA

ACTTTATTTTCAAAAATAAGCAAGCGTGAGAATGGAACAAAGAACACTAT
ACTTTATTTTCgAAAATAAGCAAGCaTGAGAATGtAACAAAGAACACTAT
```

```
--------------------------------------------------
ATTTAATTTTCGAAAACAAGCAAGCATGAGAATGGAACAAAGAACACTAT

GTTGTTCCATTAAATCTGCAGGACACAAATTCATCTACTGTTGACATTTT
GTTGTTCCATTAAATCTGCAGGACACAAATTCATCTACTGTTGAtATTTT
--------------------------------------------------
GTTGTTCCATTAAATCTGCAGGACACAAATTCATCTATTGTTGACATTTT

ATGGCATTTactctatacactgctgttaggaatgtaaattaattcagcc
ATGGCATTTACTCTTATACACTGCTGTTAGGAATGTAAATTAATTCAGCC
--------------TATAC-CTGCTGTTAGGAATGTAAATTAgTTCAGCC
--------------tatacactgctggtgggaatgtaaattagttcagcc
ATGGCATTTACT

attctggaaagc-ctgtggtgatttctcgaagaactcaaaacagaattacc
gTTCTGGAAAGC-CTGTGGTGATTTCTCGAAGAACTCAAAACAGAATTACC
ATTCTGGAAAGCagTGTGGcGATTTCTCaAAGAACTCAAAACAGAATTAtC
attgtggaaagcagtttggcgatttctcaaagaacttaaaacagaactacc

attcaacccagcaatcccattactgagtacatacccaaagggatataatc
ATTCAACCCAGCAATCCCATTACTGAGTACATACCCAAAGGGATATAATC
ATTCAACtgAGCAATtCCATTACTGAGTACATACCCAAAGGGATATAATC
attcgacccagcaatcccattattgggtatatacccaaaggaatataaat

aac-ttgtcataaagacacatgcatgcatatgtccatcacagcactattca
AAC-cTGTCATAAAGACACATGCATGCATATGTCCATCACAGCACTATTCA
AAC-cTaTCATAAAGACACATGCATGCATATGTCCATCAtAGCACTgTTtA
cattctaccataaagacacatgcacgcgtatgttcatcgcagcactattca

taatagcaaagacacggaattaacctaaatgtccatcagtgctagaccgg
TAATAGCAAAGACAtGGAATTAACCTAAATGTCCATCAGTGCTAGACtGG
TAATAGCAAgGACAtGGAATcAACCTAAATGcCCATtAGTGgTgGACtGG
caatagcaaagacatggaatcaacctaaatgcccatcaacggtagactgg

ataaagaaaatgtggtacatatactccatggaatattatgcagacataaa
ATaAAAGAAAATGTGGTA
ATAAAGAAAATGTGGTACATATACTCCATGGgAaATTATGCAGACATAAA
ataaagaaaatgtggtacatatacaccatggaatactacgcagccataaa

aaggaatgagatcgtttcctttgcagcaacatggatgaacttggaggcca
AAGGAATGAGAcCaTTTCCTTTGCAGCAACATGGAaGAACTTGGAGGCCA
aaagaacgagatcatgtcctttgcagcaacatggatggagctggaggcca

ttatcctaagttaactaatccaagaacagaaaatgagatatcatatgttc
TTATCCTAAGTTAACTAATCCAAGAAtAGAAAATGAaATATCATATGTTC
ttatcctaagcgaactaacgcaggaacagaaaaccaaataccgcatgttc

ccatttataggtgggagctaaacattgag----------cacaaagaagggaagaacaga
tCATTTATAGGTGaGAGCTAAACATTGAG----------CACAAAGAAGGGAAGAACAGA
tcacttataagtgggagctaaacattgagtacacatggacacaaagaagggaacaacaga

cattggggcctacttgagagtggagggtaggaggagagga----------tcaaaaaact
CAcTGGGGCCTACTTGAGAGTGGAcGGTAGGAGGAGgGagagggagaaGATCAAAAAACT
caccggggcctacttgagggtggagggtgggaggagggtgagg------atcgaaaaact

acctttgaggtactattcttattacctgtgtgataaaacaatccatatac
AtCTTTGAGGTACTATTCTTATTACCTGTaTGATAAAACgATCCAcATAC
acctatcgggtactatgcttattacctgggtgacgaaataatctgtacac

caaacccctgtgacacacaatttacctatataacaaacctgcacatgtac
CAAACCCCTGTGACACACAATTACCg-ATATAACAAACCTGCACATGTAC
caaacccccgtgacacgcaatttacctatataacaaacctgcacatgtac
```

ccatgaacctaaaataaacgttaaaaa-TAACTATGATAAAAA-GCAAATGA
CtgTGAACCTAAAATAAACtTTAAAAAgtaataatgttaAAAAAGCAAATGA
ccctgaacctaaaataaaagttaaaaa

AAATATGAGTAACTTTTGACTTACAATTATACTTTTGGCAAATTATCCTC
AAcTATGAGTAACTTTTaACTTAaAgTTATACTTTTGGCAAATTATCCTC

AGGAAAACCACAGCATTTTTTAAAAT
AGGAAAACCAtAGCATTTTTTAAAAT

chr9:6027850-6028096
Alignment
Human, chimp, rhesus, consensus, donor

```
ACTTTTTTCAAAATATATGTAttttttatttcaataactcttccagtaca
ACTTTTTTCAAAATATATaTATTTTTTATTTCAATAACTCTTCCAGTACA
  TTTTTTCcAAAatataTATATaTTTTTTTCAATAgCTtTTCCAGTACA

agtggtttttggttacatggatgaattgtacagtggtgaagtccaagatt
AGTGGTTTTTGGTTACATGGATGAATTGTACAGTGGTGAAGTCCAAGATT
AGTGGTTTTTGGTTACATGGATGAATTGTgtAGTGGTGAAGTCCAAGATT

ttagtgcacctgtcaccccaatagtttacattgtaccaaatatgtagttt
TTAGTGCACCTGTCACCCCAATAGTTTACATTGTACCAAATATGTAGTTT
TTAGTGCACtTGTCACCCCAATAGTTTACATTGTACtcAATATGTAGTTT

ttttattccccacctcctacat---------tcttctgagtctccaatgtTTCTTTGTT
TTTTATTCCCCACCTCCTACAT---------TCTTCTGAGTCTCCAATGTTTttttTTTG
TTTTAcTCCCCACCTCCcttccattttacccTCTTCTaAGTCTCCAATGTT--------

TT--------TTTTTTACTCAAATGGTTTTTATTTTCCTATCTGACATTTCTAACAAA
TTTgTTTgtttgtTTTACTCAAATGGTTTTTATTTTCCTATCTGACATTTCTAACAAA
------------------------------------------------------------
          TTTTTTACTCAAATGGTTTTTATTTTCCTATCTGACATTTCTAACAAA

ACGCCAGGTAGACGGAGTTAAAAAGAATCCACCGCACGAAAGGTAAACAA
ACGCCAGGTAGACGGAGTTAAAAAGAATCCACCGCACGAAAGGTAAACAA
--------------------------------------------------
ACGCCAGGTAGACGGAGTTAAAAAGAATCCACCGCACGAAAGGTAAACAA

AACAGACCCTCAGAAACTCCCTGGCAAGGATGTTCCCCTCCCCAGATTGG
AACAGACCCTCAGAAACTCCCTGGCAAGGATGTTCCCCTCCtCAGATTGG
--------------------------------------------------
AGCAGACCCTCAGAAACTCCCTGGCAAGGATGTTCCCCTCCCCAGATTGG

CCCAGTTTCACCAGCAACTGGTCTCAGCTCAGCCTTATGCCTTTCCACTG
CCCAGTTTCACCAGCAACTGGTCTCAGCTCAGCCTTATGCCTTTCCACTG
--------------------------------------------------
CCCAGTTTCACCAGCAACTGGTCTCAGCTCAGCCTTATGCCTTTCCACTG

ACAACCCCCACCCCTCCACATTCTCGTGATTCAGACCAGctaagtctcca
ACAcCCCCCACCCCTCCACATTCTCGTGATTCAGACCAGCTgAGTCTCCA
--------------------------------------------------
ACACCCCCCACCCCTCCACATTCTCGTGATTCAGACCAG

atgtttgttataccactctgtatgcctttatgtactcataacttagcttc
ATGTTTGTTATACCACTCTGTATGCCTTTATGTACTCATAACTTAGCTTC
---------ATACCACTCTGTATGCaTTTATGTACTCATAACTTAGCTTC

cacttacaagtgagaa--tacggtatttggtttttcattcctgagttacttc
CACTTAtAAGTGAGAA--TACaGTATTTGGTTTTTCATTCCTGAGTTACTTC
CACTTAtAAGTGAGAacATACaGTATTTGGTTTTTCATTCCTGAGTTACTTt

acttagaataatggcctccagctccaaccaagctgcttcataagacatta
ACTTAGAATAATGGCCTCCAGCTCCAACCAAGtTGCTTCAaAAGACATTA
ACTTAGAATAATGGC-TtCAGCTCCAACCAAGtTGCTTCAaAAGACATTc

ttttgtttttttaacggctgagtagtattccacaagtgtatatatacaac
TTTTaTTTTTTTAAtGGCTGAGTAGTATTCCACAgGTGTATATATACcAC
TTTTaTTTcTTTTAAtGGCTGAGTAGTATTCCACAGcATATATACAccAC

attttctttactcactcatcagtttatgggcacgtaggttggtcccatat
ATTTTCTTTACTCACTCATCAGTTgATGGGCACGTAGGTTGGTCCCATAT
ATTTTCTTTAtTCACTCATCAGTTgATGGGCACaTAGGTTGGTtCCATAT
```

```
ctttgcaattgtgaattgaactgtgataaacacatgcatacaaatgtctt
CTTTGCAgTTGTGAATTGAACTGTGATAAAaACATGCATACAAATGTCTT
CTTTGCAAcTGTGAATTGAACTGTGATAAACACATGCATACAAATGTCTT

ttgatataatgactgacttattttcctttgggtagatacccagtagtggc
TTGATATAATGACTGACTTATTTTCCTTTGGGTAGATACCCAGTAGTGGC
TTGATATAATGcCTGACTTATaTTCCTTTGGGTAGATgCCCAGTAGTGGt

attgctgggttaaatggtagatctacttttagttctttgagaaatctcca
ATTGCTGGGTTAAATGGTAGATCTACTTTTAGTTCTTTGAGAAATCTCCA
ATTGCTGGGTTAAATGGTAGATCTACTTTTAGTTCTTTGAGAAAcCTCCA

ttctgttttcaatagaggttgtaataatttacattttcaccagccactgc
TTCTGTTTTCAATAGAGGTTGTAATAATTTACATTTTCACCAGCCACTGC
TTCcGTTTTCcATAGAGGTTGTAATgttcc--------------------

tgatgagtgtttacttttcaccacatccacgccaacatctattttttttt-------------------
TGATGAGTGTTTACTTTTCACCACATCCACGCCAACATCTATTTTTTTTT-------------------
-------------CTTTcCACCACATCCACGCCAACATCTtTTTTTTTTTTTTttttttttttttccc

tttgacttttcaataatggccattctggctctggcaaggtggtatctcat
T--GACTTTTCAATAATGGCCATTCTGGCTCTGGCAAGGTGGTATCTCAT
----------CAATAATGGCCATTCTGGtTCaGGCAAGGTGGTAgCTCAc

tatggtttttatttgcatttccctgatgattagtgatgttgagcattttt
TATGGTTTTTATTTGCATTTCCCTGATGATTAGTGATGTTGAGCATTTTT
TgTGGTTTTTATTTGCATTTCCCTGATGATTAGTGATGTTGAGtATTTT-

tcatatctttgttggccatctgtatatcttcttttgagaagtatctattc
TCATATCTTTGTTGGCCATCTGTATATCTTCTTTTGAGAAGTATCTATTC
TCATATCTTTGTTGGCCATCTGTATATCTTCTTTTGAGAAGTATCcacga

atggcatttgccaactttttgatgggattatttgtttttttctt-gctga
ATGGCATTTGCCAACTTTTTTGATGGGATTATTTGTTTTTTTCTT-GCTGA
----CATTTGCCtACTTTTTTGATGGGATTATTTGtTTTTTTTCTTGCTGA

tttgtttgagttccttgtagattctggatattagtcctctgtcagatgca
TTTGTTTGAGTTCCTTGTAGATTCTGGATATTAGTCCTCTGTCAGATGCA
TTTGTTTGAGTTCCTTGTAGATTtTGGATATTAGTCCTCTGTCAGATGCA

tagtttgcaaatattttatcccattc--tgggttgtctgcttacactgataa
TAGTTTGCAAATATTTTATCCCATTC--TGGGTTGTCTGCTTACACTGATcA
TAGTTTGCAAATATTTTATaCCATTCtgTGGGTTGTCTGCTTAtgCTGATgA

ttatttcctttgctgtgcagaagctttttaagtttaatttggttctattt
TTATTTCtTTTGCTGTGCAGAAGCTTTTTAAGTTTAATTTGGTTCTATTT
TTATTTCtTTTGCTGTGCAGAAGCTTTTaAAaTTTAATTTGGTTCTATTT

acgtgtttttgtctttgttgcattcacattgggggtcttggtcataaatt
ACaTGTTTTTGTCTTTGTTGCATTCACATTGGGGGTCTTGGTCATAAATT
ACaTGTTTTTGTaTTTGTTGCATTCACATTGGGGGTCTTGGTCATAAATT

cttttcttaggccaatgtccagaagaatttttcctagattttcttttaga
CTTTTCTTAGGCCAATGTCCAGAAGAATTTTTCCTAGATTTTCTTTTAGA
CTTTTCTTAGGCCAATGTCCAGAAGAgTTTTTCCTAGgTTTTCTTcTAGA

atttctttggtttcaggtcttaaagtctttaattcatctttagttgattt
ATTTCTTTGaTTTCAGGTCTTAAAGTCTTTAATTCATCTTTAGTTGATTT
ATgTCTTTGGTTTCAGGTCTTAAAGTCTTTAATTCATCTTTAGTTGATTT

ttgtgtatggtaagaaacaggggtccagtgtcattcttctacatgtggct
TTGTaTATGGTAAGAAACAGGGGTCCAGTGTCATTCTTCTACATGTGGCT
```

TTGTaTATGcTgAGAAACAGGGGTCCAGTtTCATTCTTCTACATGTGGCT

tgccagttatcccagcaccatttattgaatagggtgtgctttcctcaatt
TGCCAGTTATCCCAGCACCATTTATTGAATAGGGTGTGCTTTCCTCAATT
TGCCAGTTATCCCAGCACCAcTTATTGAATAGGGcaTGCTTTCCTCAATT

cttatttttgtacattttgtcaaagatcagttggttgtaagtatttggct
CTTATTTTTGTACgTTTTGTCAAAGATCAGTTGGTTGTAAGTATTTGGCT
taTATTTTTGTAtgTTTTGTCAAAGATCcaTTGGTTGTAAGTATTTGGCT

ttatttctgggttctctattctgttcaattggtccatgtatccactttta
TTATTTCTGGGTTCTCTATTCTGTTCAATTGGTCCATGTATCCACTTTTA
TTATTTCTGGGTTCTCTATTCTGTTCAgTTGGTCCATGTATCCACTTTTA

taccagtaccatgctgttttggttaccatagcctcgtagtataattataa
TACCAGTACCATGCTGTTTTGGTTACCATAGCCTCGTAGTATAATTATAA
cACCAacACCATGCTGTTTTGGTTACtgTAGCCTCGTAGTATAATTATgA

tttgaaattaggtaatgtgatgcctccagatttgttctttttgcttaggg
TTTGAAATTAGGTAATaTGATGCCTCCAGATTTGTTCTTTTTGCTTAGGG
TTTGAAATTAGGTAATGTGATGCCTttgGAcTTGTTCTTTTTGCTTAGGa

ttgctttggttactcaagctttttttttttatt----------ccatatgaattttagg
TTGCTTTGGTTACTCAAGCTTTTTTTTTTT-ATT----------CCATATGAATTTTAGG
ttgttttggtaactcaggctctttttttttttttTTTTTTTTTTTTATTCCATATGAATTTTAGG

atttttttctaatttt-at--gaaaaatgatgtgagtattttctttcttactt
ATTTTTTTtCTAATTTTAT--GAAAAATGATGTATTTTCTTTCTT----ACTT
ATTTTTTTtCTAATTTTATtaGAAAAATGATGTGAGTATTTTCTT----cCTT

tttttttttttttctatttttgagatggagtttcactcttgtcgcccag
TTTTTTTTTTTT-CTATTTTTTGAGATGGAGTTTCACTCTTGTCGCCCAG
TTTCTttccccctcTTTTTa--GAGAcGGAGTTcCACTgTTGTtGCCCAG

gctggagtgcaatggcgtgatctcagctcac
GCTGGAGTGCAATGGCGTGATCTCgGCTCAC
GCTGGAGTaCAATGGCGTGATCTCAGCTCAC

chr4:57321413-57322533
Human
Alignment
Human, chimp, rhesus, consensus, donor

```
TCTTCTTTTGTTTCTTTATGCCTGGTGGGAAGGAAGTCCTCCTCCCGGTA
TCTTCTTTTGTTTCTTTATGCCTGGTGGGAAGGAAGTtCTCCTCCCGGTA
TtTTCTTTTGTTTCTTTATGCCTGGTGGGAAGGAAGTCCTCCTgCCGGTA

Gaactgcctttgcaaaaattataacagtgagacaattatggcagtgaagg
GAACTGCCTTTGCAAAcATTATAACAGTGAGACAATTATGGCAGTGAAGG
GAACTGCCTTTGCAAAAATTtTAACAGTGAGACAATTATGGCAGTGAAGG

acagctgatctggccaacctccatcttacctttggacttcaggctgccct
ACAGCTGATCTGGCCAACCTCCATCTTgCCTTTGGgCTTCAGGCTGCCCT
AgAGCTGATCTGGCCAACCTCCgTCTTgCCTTTGGgCTTCAaGCTGCCCc

taattaatcctaggcttaggccaagctaacttgggagacatctagtttC
TAATTAtTCCTAGGCTTAGGCCAAGCTAACTTTGGGAGACATCTAGTTTC
TAATTAtTCCTAGGCTTAGGCCAAGCTAACTTTGGGAGACAcCTAGTTTC

TTTTTTTTTTTTTTCTTT-GCAAGAGTCTGCTTTTAATTTTTATTTTATC
tTTTTTTTTTTTTTTTCTTTGCAAGAGTCTGCTTTTAATTTTTATTTTATC
--------------------------------------------------
---------------CTTT-GCAAGAGTCTGCTTTTAATTTTTATTTTATC

AAAGAGAATCACTTAAGTCAGTATTCATTTGAGTAATCTGGCTTAAATTA
AAAGAGAATCACTTAAGTCAGTATcCATTTGAGTAATCTGGCTTAAATTA
--------------------------------------------------
AAAGAGAATCACTTAAGTCAGAATTCATTTGAGCAATCTGGCTTAAATTG

GGGAACAGTCAACACTGGATTGCCATTTTAAGTTTCCAGATTAATACAAA
GGGAACAGTCAACACTGGATTGCCATTTTAAGTTTCCAGATTAATACAAA
--------------------------------------------------
GGGAATAGTCAACACTGGATTGCCATTTTAAGTTTCCAGATTAATACAAA

ATTAGTGTCAATAGTATAGGTTAAGCTGAAAACTTTTATAGTCAGAAGTA
ATTAGTGTCAATAGTATAGGTTAAGCTGAAAACTTTTATAGTCAGgAGTA
--------------------------------------------------
ATTAGTGTCAATAGTATACGTTAAGCTGAAAACTTTTATAGTCAGGAGTA

CGGTGAGACTCAGTTTTACCTATTAAATCAGTTTTATCTATAAATCTGAT
tGGTGAGACTCAGTTTTACCTATTAAATCAGTTTTATCTATgAATCTGAT
--------------------------------------------------
CGGTGAGACTCAGTTTTACCTATTAAATCAGTTTAATCTGTAAATCTGAT

TTTGCTGTAAAATCACGCTAATATTACACGCTTCAAAAAA-CATGCTTTTC
TTTGCTGTAAAATCACGCTAATATTACACGCTTCAAAAAA-CATGCTTTTC
--------------------------------------------------
TTTGCCGTAAAATCACGCTAATATTACACACTTCAAAAAAACATGCTTTTC

CTTTGAGAAACTTTCTACATCTCAGCCGAAATGCCTTAATTTCATAAAAT
CTTTGAGAAACTTTCTACATCTCAGCCGAAATGCCTTAATTTCATAAAAT
--------------------------------------------------
CTTTGAGAAACTTTCCACATCTCAGCCAAAATGCCTTAATTTCATAAAAT

AAATGTTACAATACAAAAATCTTTTGTAAAAATATCAACTATATATGAAT
AAATGTTACAATACAAAAATCTTTTGTAAAAATATCAACTATATATGAAT
--------------------------------------------------
AAATGTTACAATACAAAAATCTTTTGTAAAAATATCAACTATATATGAAT

TAAAATCAATCTCTTCTTTTGTTAAAAGTTACCTGTAATTAAGAATGTCA
TAAAATCAATCTCTTCTTTTGTTAAAAGTTACCTGTAATTAAGAATGTCA
--------------------------------------------------
```

TAAAATCAATCTCTTCTTTTGTTAAAAGTTACCTGTAATTAAGAATGTCA

GAACAACTGAGCCCCCATTCTAAAGTTTCTGTGGTGAAGTCATCTGTATT
GAACAACTGAGCCCCCATTCTAAAGTTTCTGTGGTGAAGTCATCTGTATT

GAAGAACCGAGCCTCCATTCTAAAGTTTCTGTGGTGAAGTCATCTGTATT

TCCTAGGTCAGTAAACCCAACAACATAATCTTGTGTTTTCCCATCTTTTA
TCCTAGGTCAGTAAACCCAACAACATAATCTTGTGcTTTCCCATCTTTTA

TCCTAGGTCAGTAAACCCAACAACATAATCTTGTGTTTTCCCATCTTTTA

CCAGTGCTAGTATGGGAATGACTTTGATATGCAGTCTCTCACAAAGGAAA
CCAGTGCTAGTgTGGGAATGACTTTGATATGCAGTCTCTCACAAAGGAAA

GCAGTGCTAGTGTGGGAATGACTTTGATATGCAGTCTCTCACAAAGGAAA

GGTGCTTTTTCCACATTCAGCTTCAAAAATTTGGTCTCGAGGTGTTTCTC
GGTGCTTTTTCCACATTCAGCTTCAAAAATTTGGTCTCGAGGTGTTTCTC

GGTGCTTTTTCCACATTCAGCTTCAAAAATTTGGTCTCGAGGTGTTTCTT

GGACAATATCGCCAGAAATCTGTCTAGTATTTTACACCTGAATGTGGAGT
GGACAATATCGCCAGAAATCTGTCTAGTATTTTACACCTGAATGTGGAGT

GGACAATATTGCCAGATGTCTGTCTAGTATTTTACACCTGTAAGTG
aatgtgGAGT

CTCTGTAGAAATGGCAAACCACTTTTTTACTCTCCTTGACTTCTTGAAAA
CTCTGTAGAAATGGCAAACCACTTTTTTACTCTCCTTGACTTCTTGAAAA

CTCTGTAGAAATGGCAAACCACaTTTTcACTCTCCTTGACTTCTTGAAAA

AAGTCTCTTTCACTAGGGATTTCTCTGTATTCCCCATGTCCTTTGGAAAG
AAGTCTCTTTCACTAGGGATTTCTCTGTATTCCCCATGTCCTTTaGAAAG

AAGTCTCTTTCACTAGGGATTTCTCTGTATTCCCCATGTCCTTTaGAAAG

CCATTCTTGTTTCTGCTGTTGAGCTTTCCTTAGTGCCTCGAGTCTCTTTT
CCATTCTTGTTTCTGCTGTTGAGCTTTCCTTAGTGCCTCGAGTCTCTTTT

CCATTCTTGTTTCTGCTGTTGAGCTTTCCTTAGTGCCTgGAGTCTCTTTT

CTTTAATGTGTTCCAATTCATCCTCATCCATCTGATCCAGTTTTTGAATT
CTTTAATGTGTTCCAgTTCATCCTCATCCATCTGATCCAGTTTTTGAATT

CTTTAAgGcGTTCCAATTCATCCTCATCCATCTGATCCAGTTTTTGAATT

TCAGAATCCAAATGTTCTTCCACCAGTTTGGTAGTCTGAAGCAGCTGATT
TCAGAATCCAAATGTTCTTCCACCAGTTTGGTAGTCTGAAGCAGCTGATT

TCAGAATCCAAATGTTCTTCCACCAGTTTGGTAGTCTGAAGCAGCTGATg

CTCCAGGACTTTGGAAAACATGTCAACAGATGCATCAGCTTCCATTCTTC
CTCCAGGACTTTGGAAAACATGTCAACAGATGCATCAGCTTCCATTCTTC

CTCCAGGACTTTGGAAAACATGTCAACAGATGCATCAGCTTCCATTCTTC

TGAATGGTACAGAGTTCAGCCTGGGTGCTGAGCTCTCGGTGATGCCTGAG
TGAATGGTACAGAGTTCAGCCTGGGTGCTGAGCTCTCGGTGATGCCTGAG
---
caAATGGTACAGAGTTCAGCCTGGGTGCTGAGCTCTCGGTGAcGCCTGAG

AAGTGAAAGAGCAGCAGTTTCAAAAAACAGGTCCACTCCGGCTTTAACCT
AAGTGAAAGAGCAGCAGTTTCAAAAAACAGGTCCACTCtGGCTTTAACCT

AAGTGAAAGAGCAGCAGTTTCAAAAgACAcGTCCACTCCGGCTTTtgCCT

TGCAGTAGCTGCCAGCGGCTAgggagacatctagtttctagtttaattga
TGCAGTAGCTGCCAGtGGCTAGGGAGACATCTAGTTTCTAGTTTAATTGA
---TAGTTTAAcTGA
TGCAGTAGCTGCCgGCGGCTg

tagcaacccttcccaaaaattcaaccgcctttgtaaagctaatgagagac
TAGCAACCCTTCCCAAAAATTCAACCGCCTTTGTAAAGCTAATGAGAGAC
TAGtA--CCTTCCCAAAAATTCAACCGCCTTTGTAAAGCTAATGAcAGAC

cacaagactaggatgatagagaagcctgaattctgctaaggtgtagacat
CACAAGACTAGGATGATAGAGAAGCCTGAATTCTGCTAAGGTGTAGACAT
-ACAAGACTAGGATGATAGAGAAGCCTGAATTCTGCTAAaGTGTAGACAT

aaatgattgccagccattattctggggatcacaagatatccaacttcccc
AAATGATTGCCAGCCATTATTCTGGGGATCACAAGATATCCAACTTCCCC
AAATGATTGCCAGCCATTATTCTGGGGATCACAAGATATCCAACTTCCCC

aattactcctccagataccatcactattgtataacctatgattggccttt
AATTACTCCTCCAGATACCATCACTATTGTATAACCTATGATTGGCCTTT
AATTACTCCTCCgGATAaCATCACTATTGTATAACCTAcGATTGGCCTTT

ggagatatcttttcaggtttttgcatgtcacaaccgatggctccacctg
GGAGATgTCTTTTCAGGTTTTTTGCATGTCACAACCGATGGCTCCACCTG
GGAGATATCTTTTCAGGTTTTTTGCATGTCACAgCCGATGGCTCCACCTG

gacttggtcacggttcctgtggccccagccagaaggggctcagtgaggat
GACTTGGTCACaGTTCCTGTGGCCCCAGCCAGAAGGGGCTCAGTGAGGAT
GACTTGGcCACaGTTCCTGTGGCCgCAGCCAGAAGGGGCTCAGcGAGGAT

gaagaccatttgccacacccctatgattgcgcccccaaccaatcagcagc
GAAGACCATTTGCCACACCCCTATGATTGCGCCCCCAACCAATCAGCAGC
GAAGACCATTTGCCACACCCCTgTGATTGCGCCCCCAACCAATCAGCAGC

aagcacgattgcctagctacccttcccctaaactatctttgagaaaccc
AAGCACGATTGCCTAGCTACCCCTTCCCCTAAACTATCTTTGAGAAACCC
AAGCACaATTGCCTAGCTACCgCTTCCCCTAAACTATCTTTGAGAAACCC

tagcctttgaatttccagagagatcgatttgagtaataactctgtctccc
TAaCCTTTGAATTTCCgGAGAGATCGATTTGAGTAATAACTCTGTCTCCC
TAGCCTTTGAATctcttt-------GATTTGAGTAATAACTCTGTCTgCC

aagtgacatgatcagcctcgtgtctattaaactctttctttattgcaatg
AAGTGACATGATCAGCCTCGTGTCTATTAAACTCTTTCTTTATTGCAATG
AcGTGACATGgcCAGCCTtGTGTCTATTAAACTCTTTCTTTATTGCAATG

ccgtcatctcagtgaattggtttttgtctgcgcagggggcaggaagaacc
CCGTCATCTCAGTGAATTGGTTTTTGTCTGtGCAGGGGGCAGGAAGAACC
CtGTCATCTC-GTGAATTGGTTTTTGTCTGtGCAGcaGGCgGGAAGAACC

cactgggtggttacaCCTGGGCAGGTGCTGCTTCCCTGAAGGACCAACTA
CACTGGGTGGTTACACCTGGGCAGGTGCTGCTTCCCTGAAGGACCAACTA
CACTGGGTtGTTACACCTGGGCAGGcGCTGCTTtCCTGAAGGACCAACTA

CGCCATGATGAGGAAAAGGGTAGtgtgtgggtacttttcgttctgtccca
tGCCATGATGAGGAAAAGGGTAGTGTGTGGGTACTTTTCGTTCTGTCCCA
gGCCgTGATGAGGAAA-GGGTAGTGTGTGaGTACTTTTCGTTCTGTCCCA

ccagatccactttgctccct

CCAGATCCACTTTGCTCCCT
CCAGATCCACTTTGCTCCCT

chr12:37804289-37804455
Alignment
Human, chimp, rhesus, MER41B consensus, donor

```
tcaaggtatctgcTTGCAGCAGATGGTTTGAA--------------------TCATGGAAAATGcagagg
TCAAGGTATCTGCTTGCAGCAGATGGTTTGAA--------------------TCATGGAAAATGCAGAGG
TCAAGGTATCTGCTTGCAGCAGATGGTTTGAAccattgattttcaatgcattt----------TGCAGAGG
                                                                  cagagg

catttgaaccagagcaactccatcttgaatagagactgggtaaaataagg
CATTTGAACCAGAGCAACTCCATCTTGAATAGAGACTGGGTAAAATAAGG
tATTTGAACCAGAGCAACTCCATCTTGAATAGAGgCTGGGTAAAATAAGG
cgtttgaaccagagcaactccatcttgaataggcgctgggtaaaatragg

ctgagacctgctgggctgcattcccaggaagttag-gcattcttactcaca
CTGAGACCTGCTGGGCTGCATTCCCAGGAAGTTAG-GCATTCTTACTCACA
CTGAaACCTGCTGGGCTaCATTCCCAGGAAGTTAa-GCATTCTTACTCACA
ctgaracctactgggctgcattcccagacggttaaggcattctaagtcaca

ggatgagataggagatcagcaaaagatacaggtcaggaagac--tgctgata
GGATGAGATAGGAGATCAGCAcAAGATACAGGTCAcGAAGAC--TGCTGATA
GGATGAGATAGGAGATCAGCAcAAGATACAGGTCAcaAAGAC--TGCTGATA
ggatgagataggaggtcggcacaagatacaggtcataaagaccttgctgata

aaacaggatgaggtaaagaaggcatctgaaaccactgaaggc-aagatggc
AAACAGGATGcGGTAAAGAAGGCATCTGAAACCACTGAAGGC-AAGATGGt
AAACAGGATGcGGTgAAGAAGaCATCTGAAACtACTGAAGGC-AAGATGGt
aaacaggttgcagtaaagaagccggcyaaaacccaccaaaaccaagatggc

gataaaaagtgttttctagtcatcctcactgctcattatatgttaattat
GATAAAAAGTGTTTTCTAGTCATCCTCACTGCTCATTATATGcTAATTAT
GATAAAAAGTGTTTTCTgGTtgTCCTCACTGtTCATTATATGTTAATTAT
cacgagagtgacc-tctggtcgtcctcactgctcattatatgytaattat

aatgcattagcatgctaaaagtcactcccaccagcaccatgacagtttac
AATGCATTAGCATGCTAAAAGTCACTCCCACCAGCACCATGACAGTTTAC
AATGCATTAGCATatTAAAAGTCACTCCCACCAGCACCATGACAGTTTAC
aatgcattagcatgctaaaagacactcccaccagcaccatgacagtttac

aaatgccatggcaatgttagaaagttaccctatatggtctaaaaagagga
AAATGCCATGGCAATGTTAGAAAGTTACCCTATAcGGTCTAAAAAGAGGA
AAATGCCATGGCAATGTTAGAAAGTTACCCTATATGtTCTAAAAAGAGGA
aaatgccatggcaacgtcaggaagttaccctatatggtctaaaaagggga

gaaactctcactttcaggaaatctccaccccttttcctggaaaactcatgc
GgAACTCTCACTTTCAGGAAATCTCCACCCCTTTCCTGGAAAACTCATGC
GgAACcCTCACTTTCAGGAAATCcCCACtCCTTTCCTGGAAAACTCATGg
ggaaccctcagttccgggaattgcccgcccctttcctkgaaaaytcatga

ataatccatgccttgtttagcacataatcaagaaataactgtaagtattc
ATAATCCATGCCTTGTTTAGCAtATAATCAAGAAATAACTGTAAGTATTC
ATAATCCATGCCTTGTTTAGCACATAATCAAGAAATAACTaTAAGTATTC
ataatccaccccttgtttagcatataatcaagaaataaccataaaaatrg

ctagtcgtgcagcccatgctgctgctctgtctatggaataatcattcttt
tTAGTCGTGCAGCCCATGCTGCTGCTCTGTCTATGGAATAATCATTCTTT
tTAGTCGaGaAGCCCATaCTGCTGCTCTGTCTATGGAATAATCATTCTTT
gcaacca-gcagccctcggggctgctctgtctatggagtagccattCttt

tttttttttttttcAAATTTTGACTCATTTATTGAATTAAAATTATACT
TTTTTTTTTT----CAAATTTTGACTCATTTATTGAATTAAAATTATACT
T-------------------------------------------------
t-------------------------------------------------
               CAAATTTTGACTCATTTATTGAATTAAAATTATACT
```

ACGTATAAAACAGCAATCTATATGCAG--TGATTTAATGCATCATAATATAT
AtGTATAAAACAGCAATCTATATGCAG--TGATTTAATGCATCATAATATAT

ATGTATAAAACAGCAATCTATATGCAGAGTGATTTAATGCA---TAATATAT

ACATTTATCTTTACAAAGTCAGGATGCAAGTTCCAATGATTATGACTATA
ACATTTATCTTTACAAAGTCAGGATGCAAGTTCCAATGATTATGACTATA

ACATTTATATTTACAA-TACAGGATGCAAGTTCCAATGACTATGACTATA

AAATTTATATTAAACATTTCCATAAGTGACTTCggaataatcatcctttt
AAATTTATATTAAACATTTCCATAAGTGACTTCGGAATAATCATtCTTTT

AAATTTATATTAAACATTTCCATAAGTGA

attgctttactttctt--taaacttgctttcactttactctgtggacttgac
ATTGCTTTACTTTCTT--TAAACTTGCTTTCACTTTACTCTGTGGACTTGAC
ATTGCTTTACTTTCTT--TAAACTTGCTTTCACTTTACTCTaTGGAgcTGAC
attcctttactttcttaataaacttgctttcactttactctrtggactcgcc

ccaaattctttcttgtgcaaggtccaagaatgctttcgtgaggtgtggat
CCAAATTCTTTCTTGTGCAAGGTCCAAGAATGCTTTCGTGgGGTGTGGAT
CCAAATTCcTTCTTGTGCAAGGTCCAAGAAcGCTTTCtTGtGGTGTGGAT
ctgaattctttcttgcacragatccaagaaccctctcttggggtctggat

tgcgtcccgtttctggtaacaTcttgactagaaaaggctctgcctcta
TGCGTCCCcTTTCTGGTAACATCTTGACTAGAAAAGGCTCTGCCTCTA
TGtGTCCCcTTTCTGGTAACATCTTGACTAGAAAAGGtTCTGCC
cgggacccctttcttgtaaca

chr14:28665689-28665837
Alignment
Human, chimp, rhesus, MER45B consensus, donor

```
GTAGCACATCAAAAGTCTTGCTCAATATCCACACATGGGTTACCTGAAGG
GTAGCACATCAAAAGTCTTGCTCAATATCCACACATGGGTTACCTGAAGG
GTAGCACATCAAAAGTCTTGtTCAATATCCACACATGGGTTACCTGAAGG

AGAAAGCACAGAGTATGGTGAGTAGTAAAACTAAGGAGGGTGCTGTGAAA
AGAAAGCACAGAGTATGGTGAGTAGTAAAACTAAGGAGGGTGCTGTGAAt
AGAAAGCACAGAGTATGGTGAGTAGTAAAACTAAGGAGGGTGctgtgaaa

---------------------------------------------
---------------------------------------------
agcacagagcatggtgagtatcaaaaccaaggagggtcCTGTGAAA

AGCCATTTGGTTtcagaaaggccttgcacttggtttaacgctttgttgtt-
AGCCATTTGGTTTCAGAAAGGCCTTGCACTTGGTTTAACGCTTTGTTGTT-
AGCtATTTGGTTTCAGAAAGGCCTTGCAtTTGGccTAAtGCTTTGTTGTTg

ccatcttgaaga-ccataattattttatcttggaatttgtaattcgtaggt
CCATCTTGAAGAaCCATAATTATTTTATCTTGGAATTTGTAATTCGTAGGT
CCATCTTGAAGA-tCtTAATTATTTTgTCTTtGAgTTTGTAAcTtGTAGGT

gaagttcagtgagacaatataatacatgagtgagcagtagcggtatgtgc
GAAGTTCAGTGAGACAATATAATACATGAGTGAGCAGTAGCGGTATGTGC
GAAGTTCAGTGAGACA--------------TGAGCAGTAGtGGTATGTGC

catatgtgtgttcattgccattccttgctgcatggtcacacatagcattt
CATATGTGTGTTCATTGCCATTCCTTGCTGCATGGTCACACATAGCATTT
CAcATGTGTGTTCATTGCCATTaCTTGCTGCATGGTCACAtAcAGCATTT

ccagtgtctcatgaactatatacagaattccagtggtcccatatcacatg
CCAGTGTCTCATGAACTATATACAGAATTCCAGTGGTCCCATATCACATG
CCAGTGTCcCATGAACTATATACAGAATTCtAGTGGTCCCATATCACATG

agagtttagcaagactcaaagttagtacaaagtgttttgcatctatgact
AGAGTTTAGCAAGACTCAAAGTTAGTACAAAGTGTTTTGCATCTATGACT
AGAGTTTAGCAAGACTCAAAGTTAGTAaAAAGTGTTTTGCAcCTATGACT

gagtgagggcactggcagctctgagaagctgagctttccctcagaaacgg
GAGTGAGGGCACTGGCAGCTCTGAGAAGCTGAGCTTTCCCTCAGAAgCGG
GAGTGAGGGCACTGGCAGCTCTGAGAAGCTGAGCTTTCCaTtgGAAAtGG

aatttgggtcaaatgaaagaaggcagtg---ttttaagaaGTAGCTCTTGACT
AATTTGGGTCAAATGAAAGAAGGCAGTG---TTTTAAGAAGTAGCTCcTGACT
AATTTGGGTCAAATGAAAGAAGGCAGTGgagTTTTAAGAA-------------
     tcgaacgcagaaagaaggcaatggcattctaagaa-------------
                                         GTAGCTCCTGACT

CTTAGGGATGGATTTTGAGGAAAAAACAAGACTAAACAAAAACATGTAGC
CTTAGGGATGGATTTTGAGGAAAAAACAAGACTAAACAAAAACgTGTAGC
--------------------------------------------------
CTTAGGGATGGATTTTGAGGAAAAAACAAGACTAAACAAAAACATGTAGC

TCCCTATGTTTTCTCTCTAGGTTGTTGGACTGAAATATGCATTTTAGCTT
TCCCTATGTTTTCTCTCTAGGTTGTTGGACTGAAATATGCATTTTAGCTc
--------------------------------------------------
TCCCTATTTCTTCTCTCTAGGTTGTTGGACTGAAATATGCATTTTAGCTT

TGTGTGTTTCTAAAATAAACATTTCTAAAATTTACAGtaaaaaaaa--gcat----
TGTGTGTTTCTAAAATAAACATTTCTAAAATTTACAGTAAAAAAAAaaGCAT----
-----------------------------------------------gcataaac
-----------------------------------------------acacgaac
```

TGTGTGTTTCTAAAATAAACATTTCTAAAATTTACAGTAA

aatcaaagaatcctatcattttctttcttacttatgtaacttgtctgtat
AATCAAAGAATCCTATCATTTTCTTTCTTACTTATGTAACTTGTCTGTAT
AATCAAAGAAcCCTATCATTTTCTTTCTTACTTATGTAACTTGTCTGTAT
gaccaaggaaccctatcatatcctttcttactcgtgttacttccctgtat

taaccaaccacttttaatgaaaatgatggcatagaa----agggaaagacagga
TAACCAACCACTTTTAATGAAAATGATGGCATAGAA----AGGGAAAGACAGGA
TAACCAACCACTTTTAtTGAAAATGATGtCATAGAA----AGGGAAAGAtAGGA
tagccaaccacttacgctgaaaatgatgacatagaaggaaagggaaagataggg

taacccatatctccttttcctttcagcccaccttta----tgagtaagccaaag
TAACCCATATCTCCTTTTCCTTTCAGCCCACCTTTA----TGAGTAAGCCAAAG
TAtCCCATATaTCCTTTTCCTTTCAGCCCACCTTTA----TGAGTAAGCCAAAG
caacccatagttccttttcctttcagtccttccttactcatcagtaagccgaag

atagagaatgtcggtggaatgcaagcacagcaaaacgtaaaataaaaaca
ATAGAGAATGTCGGTGGAATGCAAGCACAaCAAAACGTAAAATAAAAACA
ATAGAGAATGTCaGTGGAATGCAAGCAtAGCAAAAtGTAAAATAAAAACA
gtagagagtgttggtagaatgtgcgcgtatcaagaagtgaaataaaaaca

tttgagttggttttatgcagg-ttttgactgtaatggtaagaatgaaacat
TTTGAcTTGGTTTTATGCAGG-TTTTGACTGTAATGGTAAGAATGAAACAT
aTTGAGTTGGTTTTATGCAGa-TTTcGACTGTAATGGTAAGAAcGAAACAc
gttgagttagttttgtgcagcgtttccactgttctggtaagaacgaaatac

acatacaagtactagctatgaactgtgcagtttcagtaatgttgcactag
ACATACAAGTACTAGCTATGAACTGTGCAGTTTCAGTAATGTTGCACTAG
ACAcgCAAGTACTAGCTATGAACTGTGCAGTTTCAGTAATGTTGCACTAG
atatgcatgtacgagctacgaa

ttaagtgtgcttgtatttgtatttaaagctggcattcattgcacaatatg
TTAAGTGTGCTTGTATTTGTATTTAAAGCTGGCATTaCACAATATgaatG
TTAAGTGTGCTTaTATTTGTATTTAAAaCTGGCATTaCACAATATG----

aacatgaatggtaaacacttgttaccaatttaatttttaaatttttgtt
AACATGAATGGTAAACACTTGTTACCAATTTAATTTTTTAAATTTTTGTT
AAgATGAATGGTAAACACTaGTTACCA-------TTTTTTtatttgtaTT

tgcttagaatggcattaaatagtaaatctaaagcaaaaaggcttttcatt
TGCTTAGAATGaCATTAAATAGTAAATCTgAAGCAAAAAGGCTTTTCATT
TGCTTAGAAgGagATTAAATAGTAAATCTgAAaCAAAAAGGCTTTTCATT

ttcattttgcatttagccctacaaattacatatctagccttAGATGGCGG
TTCATTTTGCATTTAGCCCTACAAATTACATATCTAGCCTTAGATGGCGG
TTCATTTTGCATTTAGCCCTACAAATTAaATATCTAGtCTTAGATGGtGG

ACCATGTAATCTGATTTGGGACAGTAAGATTGATGATAATGTTTGCTACG
ACCATGTAATCTGATTTGGGACAGTAAGATTGATGATAATGTTTGCTACG
ACCATGTAATCcGATTTGGGACAGTAAGATTGATGATAATGTTTGCTACG

AGCCACAAGGAAAAATGGTCCTTTG
AGCCACAAGGAAAAATGtTCCTTTG
AGCCACAAGGAAAAATGtTCCTTTG

chr1:100451345-100452114
Alignment
Human, chimp, rhesus, MIRb consensus, donor

```
cctgaaggtaatgaaagggaaccactgaaaagaatcagagaatattacag
CCTGAAGGTAATGAAAGGGAACCACTGAAAAGAATCAGAGAATATTACAa
CCTaAAGGcAATGAAAGGGAACCACTGAAAAGAATCAGAGAATATTACAa

taatttgatttacggaagaccagtcttggtgcagtgtagagaaaggactg
TAATTTGATTTACaGAAGgCCAGTCTTGGTGCAGTGTAGAGAAAGGACTG
TAATTTGATTTACaGAAGACCAGTCTTGGTGCAGTGTAGAGAAAGGACTG

gaCATGTTGGCATTACAGACATCagtatgtccttctgagtaaaacagacc
aACATGcTGGCATTACAGACATCAGTATGTCCTTCTGAGTAAAACAGACC
aACATGcTcGCATTAgAGACATCAGgATGTCCTTCaGAGTAgAACAGACC

agaacctgaaagagcttctccacctgttagctgtaagtccttaacaagtt
AGAACCTGAAAGAGCTTCTCCACCTGTTAGCTGTAAGTCCTTAACAAGTT
AGAAtCTGAAAGAGCTTCTCCACCTGTTAGCTaTAAGTCCTTAACAAGTT
                                                caagtc

tctcaacctctctgagccccaatttccttaaatggaaagtggagacagta
TCTCAACCTCTCTGAGCCCCAATTTCCTTAAATGGAAAGTGGAGACAGTA
TCTCAACCTCTCTGAGCCCCAATTTCCTTAAATGGAAAGTGGgGACAGTA
acttaacctctctgagcctcagtttcctcatctgtaaaatggggataata

atatttacatgtcagggttactctgagaattaa--gagataatgGGCCCTGC
ATATTTACATGTCAGGGTTACTCTGAGAATTAA--GAGATAATGGGCCCTGC
ATATTTACATGTCAGGGTTACT-TGAGAATTAA--GAGATAATG--------
atacctacctcgcagggttgttgtgaggattaaatgagataatg--------
                                                GCCCcGC

CCCGCGTCTGCCTCAGAGGGGCCCGAGCCACCCGGGGCGTGCGCCGCGTC
CCCGCGTCTGCCTCAGAGGGGCCCGAGCCACCCGGtGCGTGCGCCGCGTC
--------------------------------------------------
CCCGCGTCTGCCTCAGAGGGGCCCGAGCCACCCGGTcCG----CCGCGTC...

CCCGCCGGGGCCGACAGAGCCGA---GCCGGGCCGCCATGGACCACAAGACTC
CCCGCCGGGGCCGACAGAGCCaA---GCCGGGCCGCCATGGACCACAAGACTC
-----------------------------------------------------
CCCGCCGGGGCCGACcGAGCCGA...GCCGGGCCGCCATGGACCACAAGcCgC

TGCTGCAGGAGCGGCCGCCCGCCTACAACCTGGAGGCCGGCCAGGGCGAC
TGCTGCAGGAGCGGCCGCCCGCCTACAACCTGGAGGCCGGCCAGGGCGAC
--------------------------------------------------
TGCTGCAGGAGCGGCCGCCCGCCTACAACCTGGAGGCCGGCCAGGGCGAC

TACGCGTGAGGCCCGCACGGCTACGGCGCCATCCCCGCCGCGCCCCCGCA
TACGCGTGcGGCCCGCACGGCTACGGCGCCATCCCCGCCGCGCCCCgGCA
--------------------------------------------------
TACGCGTGcGGCCCGCACGGCTACGGCGCCATCCCCGCCGCGCCCCCGCc

GCCGCCCTACTCCTACCTCGTCACACGGACACCCACCCACCATCCCAGGG
GCCGCCCTACTCCTACCTCGTCACACGGACACCCACCCACCATCCCAGGG
--------------------------------------------------
GCCGCCCTACcCCTACCTCGTCACA...--ACCCACCCACCATCCCAGGG

TCTACAACATCCACAGCTGGACCGTCATCCGCTATCCTACCAACTCTATC
TCTACAACATCCACAGCcaGACCGTCAcCCGCTATCCTACCAACTCTgTC
--------------------------------------------------
TCTACAACATCCACAGCcGGACCGTCAcCCGCTATCCTgCCAACTCTATC

GTGGTCGTGGGAGGCTGTCCCGTCTGCAGGGTCGGGGGGCTGCAGGACTG
GTGGTgGTGGGAGGCTGTCCCGTCTGCAGGGTCGGGGGGCTGCAGGACTG
```

```
--------------------------------------------------
GTGGTCGTaGGAGGCTGTCCtGT***CTGCAGG***
                        ***CTGCAGG***GTTGGGGTGCTGGAGGACTG

CTTCACCTTCCTGGGCATCTTCCTGGCCATCATCCTGTTCCCCTTTGGGT
CTTCACCTTCCTGGGCATCTTCCTGGCCATCATCCTGTTCCCCTTTGGGT
--------------------------------------------------
CTTCACCTTCCTGGGCATCTTCCTGGCCATCATCCTCTTCCCCTTTGGGT

TCATTTGCTGTTTTGCCTTGAGGGAGCGAAGATGCCCCAACTGTGGAGCC
TCATcTGCTGTTTTGCCTTGAGGaAGCGAAGATGCCCCAACTGTGGAGCC
--------------------------------------------------
TCATTTGCTGTTTTGCCTTGAGGAAGCGACGATGCCCCAACTGTGGAGCC

ACCTTCGCTTAAAGGGAACACCAGGCTCGGCCTTTCCTACACCCAGCTCT
ACCTTCGCTTAAAGGGAACACCAGGaTCGGC-TTTCCTACACCCAGCTCT
--------------------------------------------------
ACCTTCGCTTAAAGGGAACACCAGGCCCGGC-TTTCCTACACCCAGCTCT

CTTTTTCTAATGTAAATGTTGTGTTCAATAGTTTTATTTGATTAAGCTTC
CTTTTTCTAATGT------TGTGTTCAATAGTTTTATTTGATTAAGCTTC
--------------------------------------------------
CTTTTTCTAATGTAAATGTTGTGTACAATAATTTTATTTGATTAAGCTTC

AGGACTGTTTTGTAAAGCGAGGTGGGACCGATGTGGCACACGCCAGCTGC
AGGACTGTTTTGTAAAGCGAGGTGGGACCGATGTGGCACACGCCAGCTGC
--------------------------------------------------
AGGACTGTTTTGTAAAGCGAGGTGGGACCGATGTGGCACACGCCAGCTGC

GGTTTCCCGGAGCGTGGAGAGGCAGCGCTGCTGCTCCTGCCCCAGGCTCA
GGTTTCCCGGAGCGTGGAGAGGCAGCGCTGCTGCTCCTGCCCCAGGCTCA
--------------------------------------------------
GGTTTCCCGGAGCGTGGAGAGGCAGTGCTGCTGCTCCCGCCCGAGGCTCA

TGACAACTCAATGAAGCACTGCTTTTATTTTTTGCAGTCTTCAATTTGAG
TGACAACTCAATGAAGCACTGCTTTTATTTTTTGCAGTCTTCAATTTGAG
--------------------------------------------------
TGACAACTCAATAAAGCACTGCTTTTATTTTTTGCAGTCTTCAATTTGAG

AAAGGTGAGAAATAATCTTTTCAATAAATGAGATTCATACCA**AAAAAAAA**
AAAGGTGAGAAATAATCTTTTCAATAAATGAGATTCATACCAAAAAAAAA
--------------------------------------------------
AAAGGTGAGAAATAATGTTTTCAATAAATGAGATTCATACCA

**AAAAAAAAAGAGA**gagataatgtatacagcat-------gcttactatggaggctgg
-----AAAAGAGAGAGATAATGTATACAGCAT-------GCTTACTATGGAGGCTGG
----------------------TATACAGCAT-------GCTTAgTATGGAGcCgGG
-----------------------------catgtaaagcgcttagcacagtgcctgg

cacatggtagctgctGCACAGTCACTAATGTGAGctagactgtatgctgc
CACATGGTAGCTGCTGCACAGTCACTAATGTGAGCTAGACTGTATGCTGC
CACATGGTAGCTGCTGCACAGTCACTAATGTGAGCTAGACTGTAaGCTGC
cacacagtaagcgct

tcaaggttagctgatggtcttactccattttatactggtcccaaggctta
TCAAGGTcAGCTGATGGTCTTACTCCATTTTATACTGGTCCCAAGGCTTA
TCAAGGTcAGCTGATGaTCTTACTCCATTTTATACTGGTCCCAAGGCTTA

gcactagaaatgattcccaggatcctcaatataagttggttgagtaaatg
GCACTAGAAATGATTCCCAGGATCCTCAATATAAGTTGGTTGAGTAAATG
GCACTAGAAATGATTCCCAGGAgCCTCAATATAAGTTtGTTGAaTAAATG

aaAA
```

AAAA
AAAA