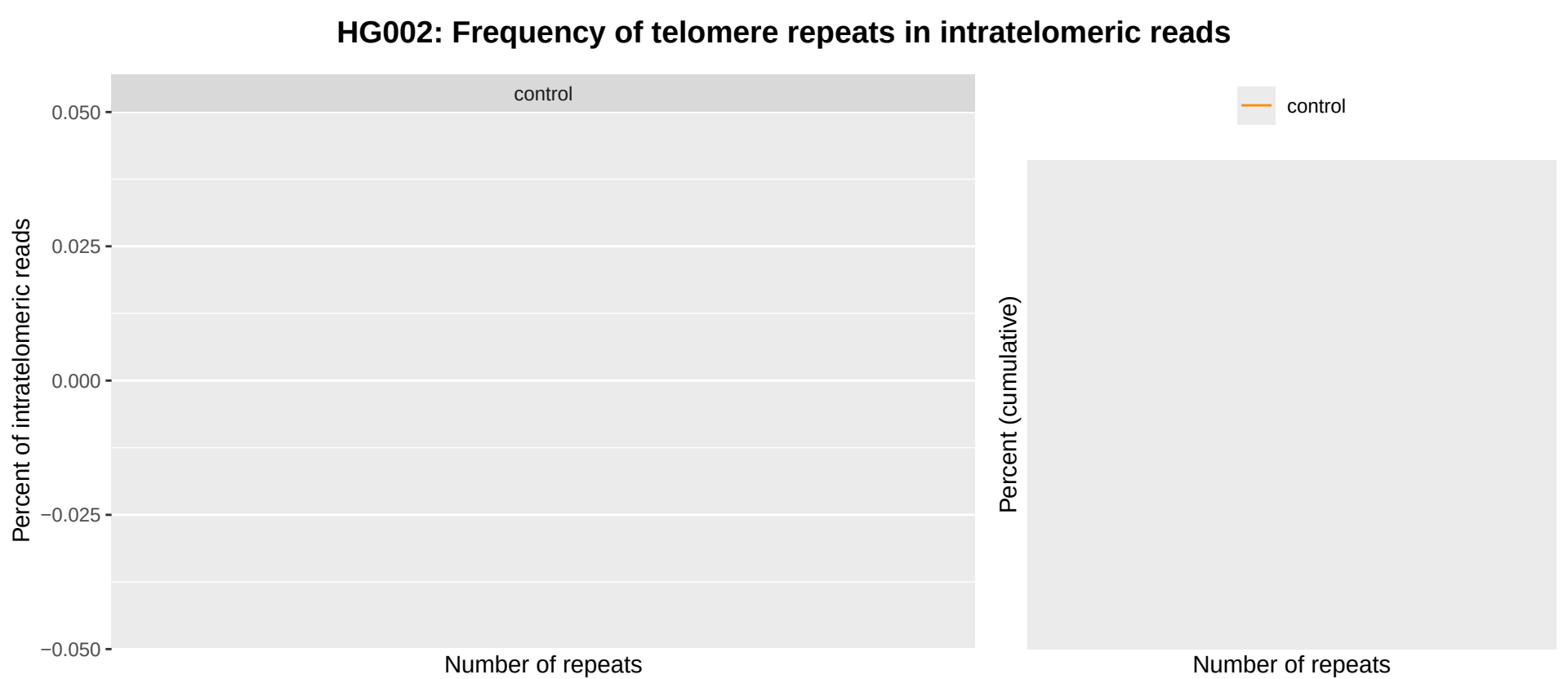
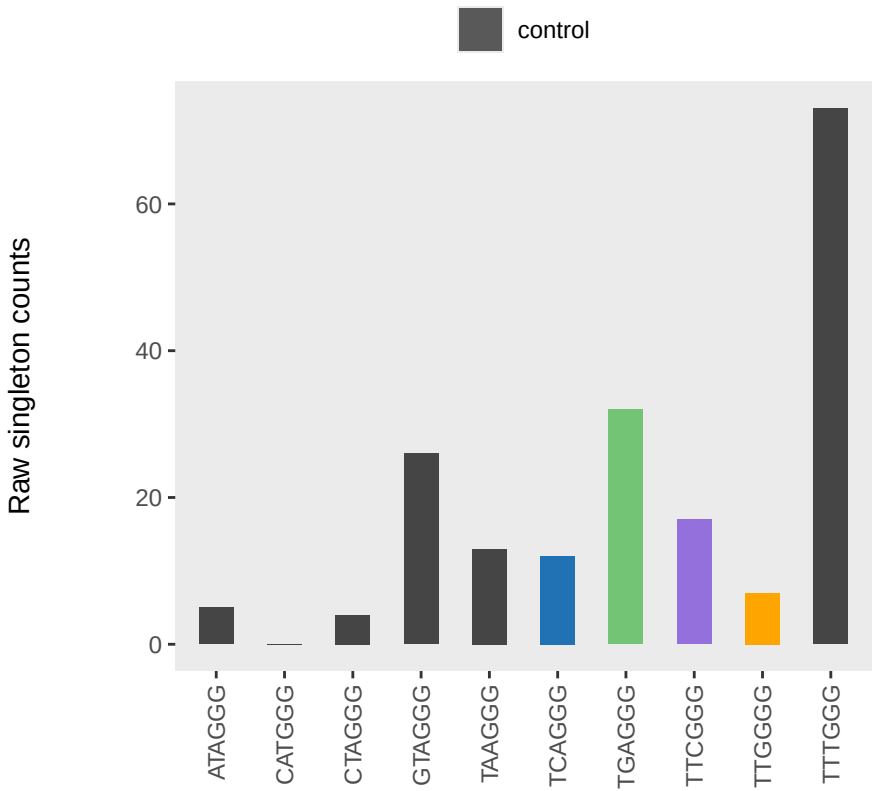
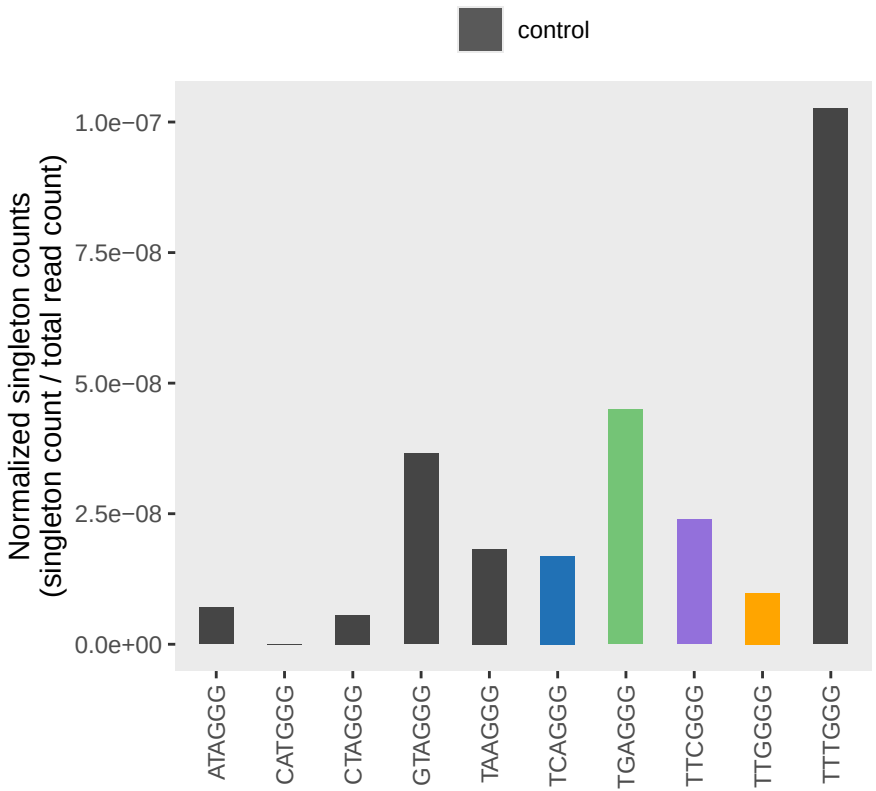
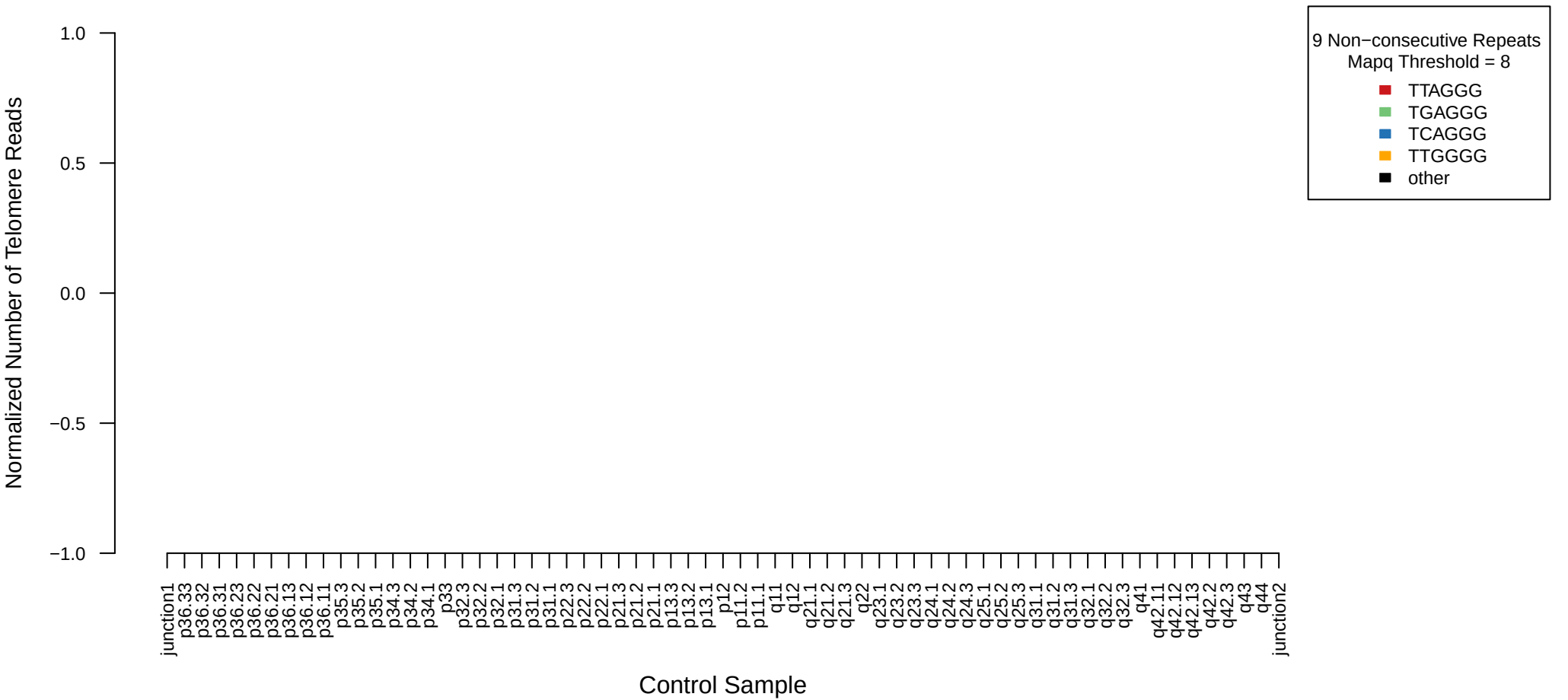
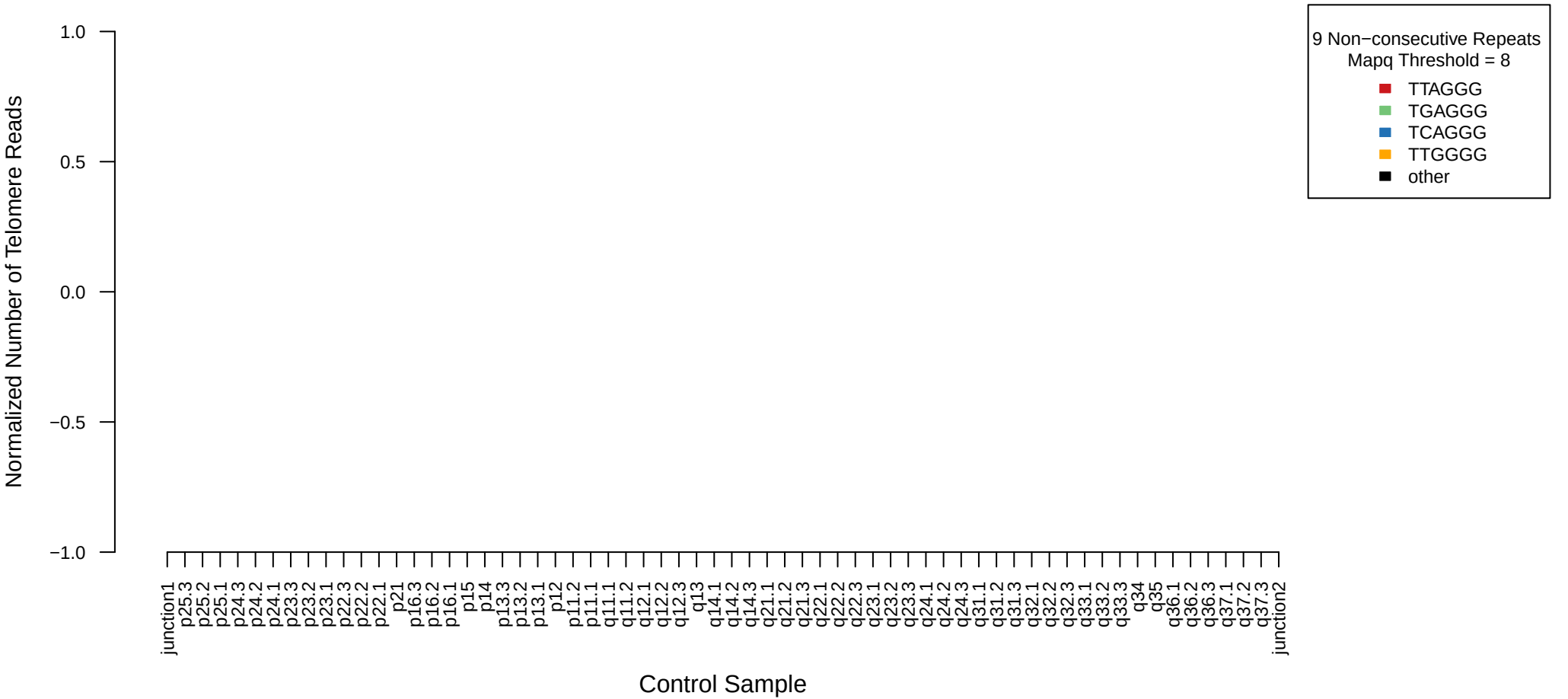

HG002: Frequency of telomere repeats in intratelomeric reads
control
0.050
0.025
0.000
−0.025
−0.050
Percent of intratelomeric reads
Number of repeats
control
Percent (cumulative)
Number of repeats
Filtering criteria: 9 non−consecutive repeats, mapq threshold = 8
repeat types = TTAGGG,TGAGGG,TCAGGG,TTGGGG

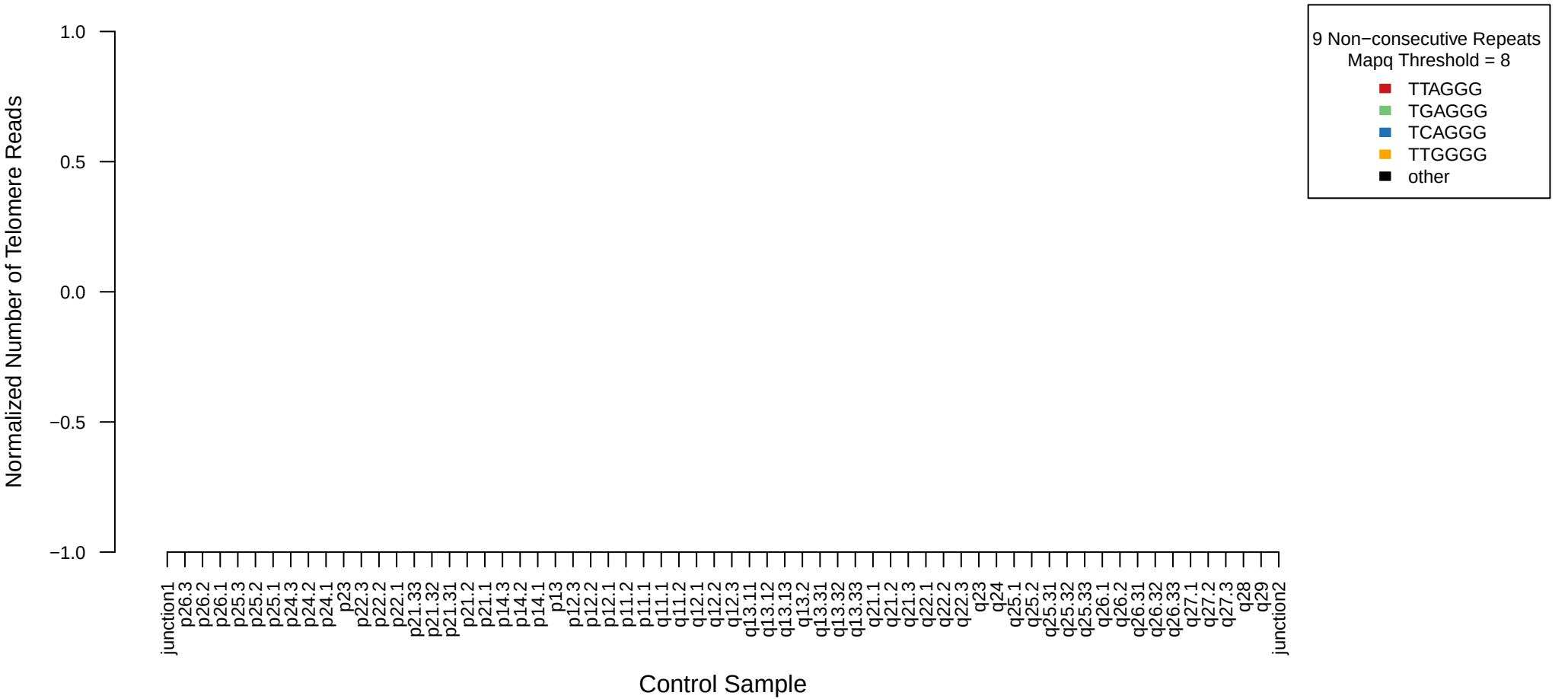
HG002
Singletons (TTAGGG)3−NNNGGG−(TTAGGG)3 in intratelomeric reads

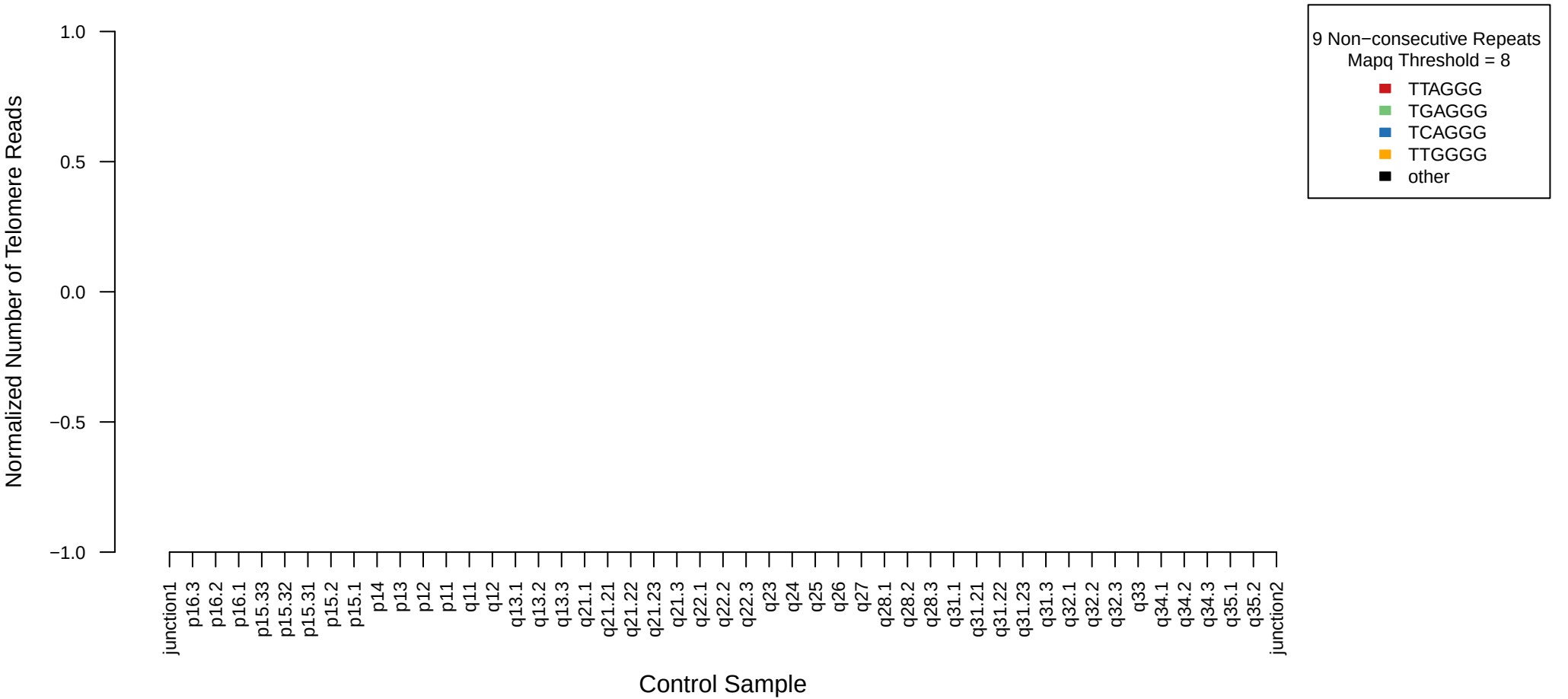


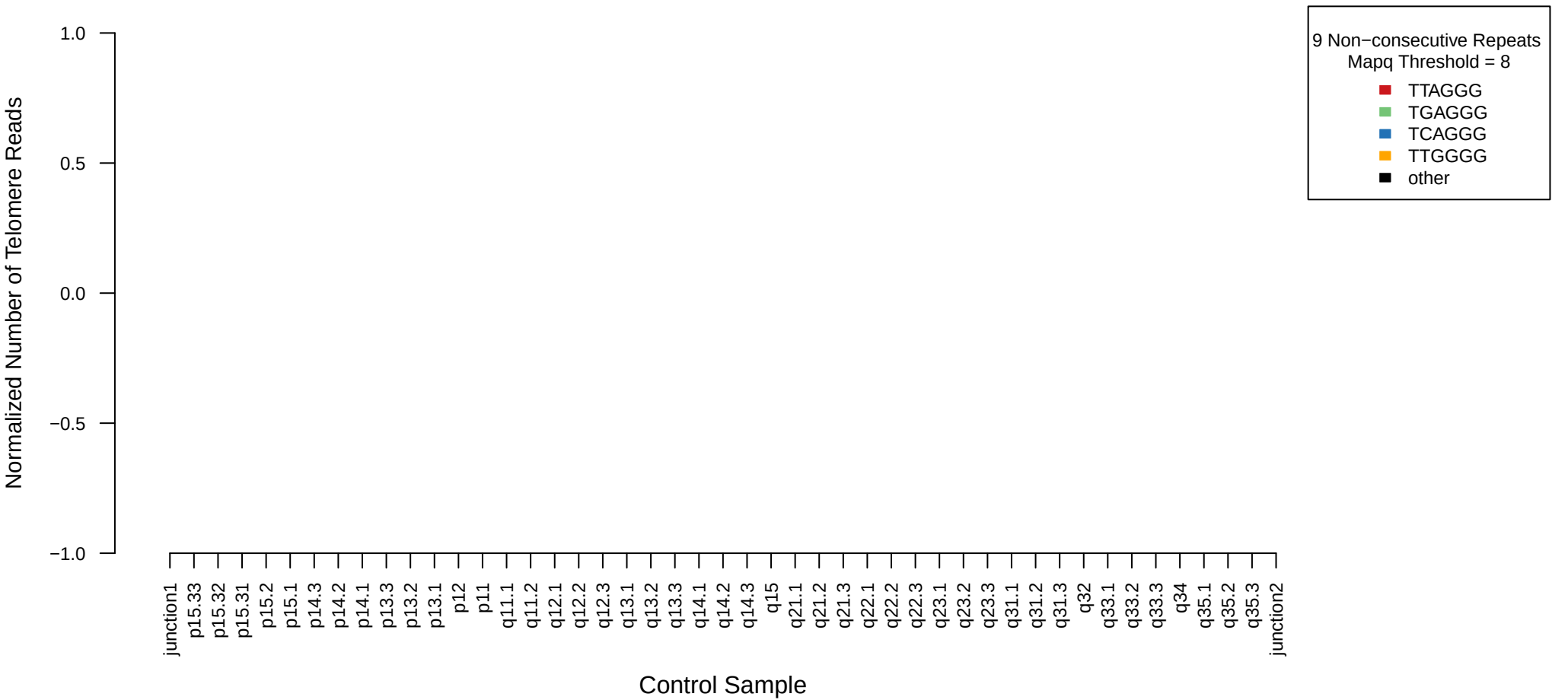


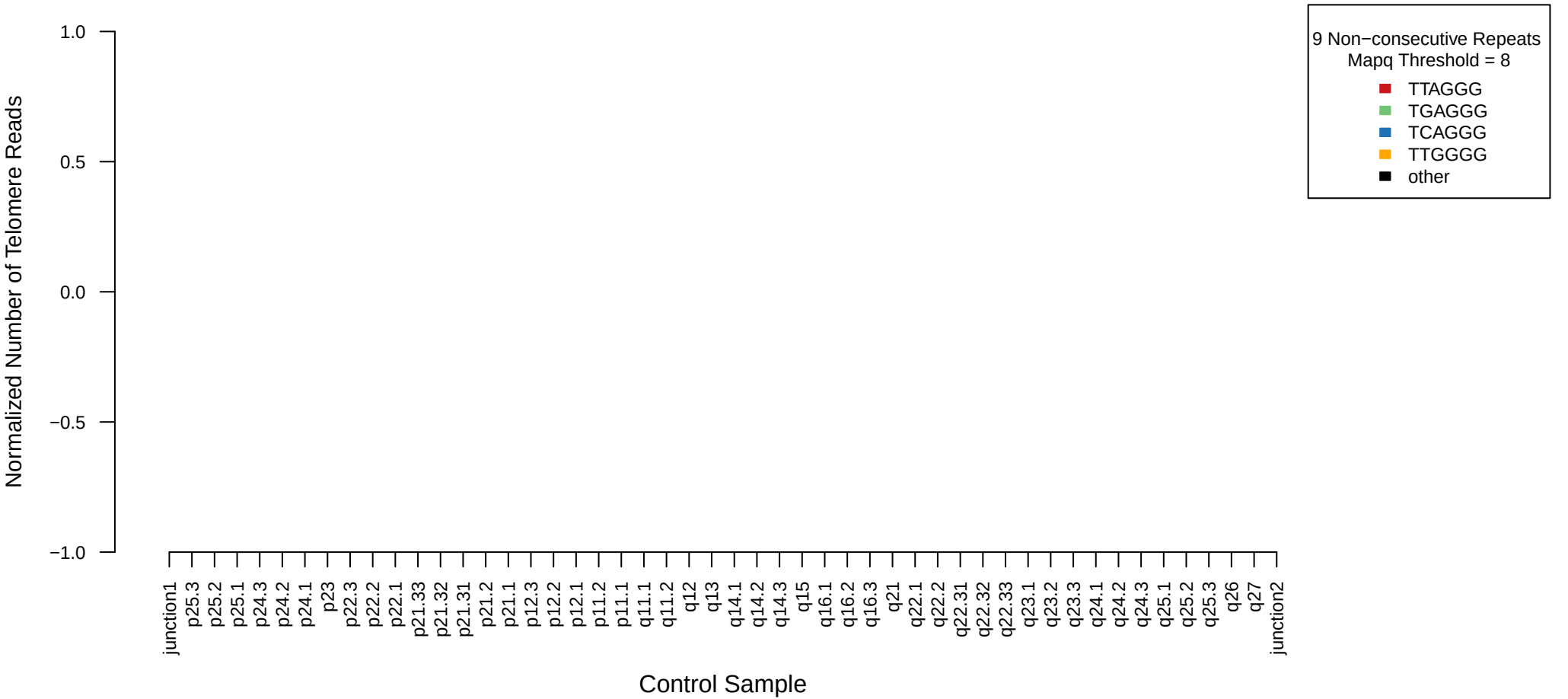

HG002: Telomere Repeat Types in Chr1
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p36.33
p36.32
p36.31
p36.23
p36.22
p36.21
p36.13
p36.12
p36.11
p35.3
p35.2
p35.1
p34.3
p34.2
p34.1
p33
p32.3
p32.2
p32.1
p31.3
p31.2
p31.1
p22.3
p22.2
p22.1
p21.3
p21.2
p21.1
p13.3
p13.2
p13.1
p12
p11.2
p11.1
q11
q12
q21.1
q21.2
q21.3
q22
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q25.1
q25.2
q25.3
q31.1
q31.2
q31.3
q32.1
q32.2
q32.3
q41
q42.11
q42.12
q42.13
q42.2
q42.3
q43
q44
junction2
Control Sample

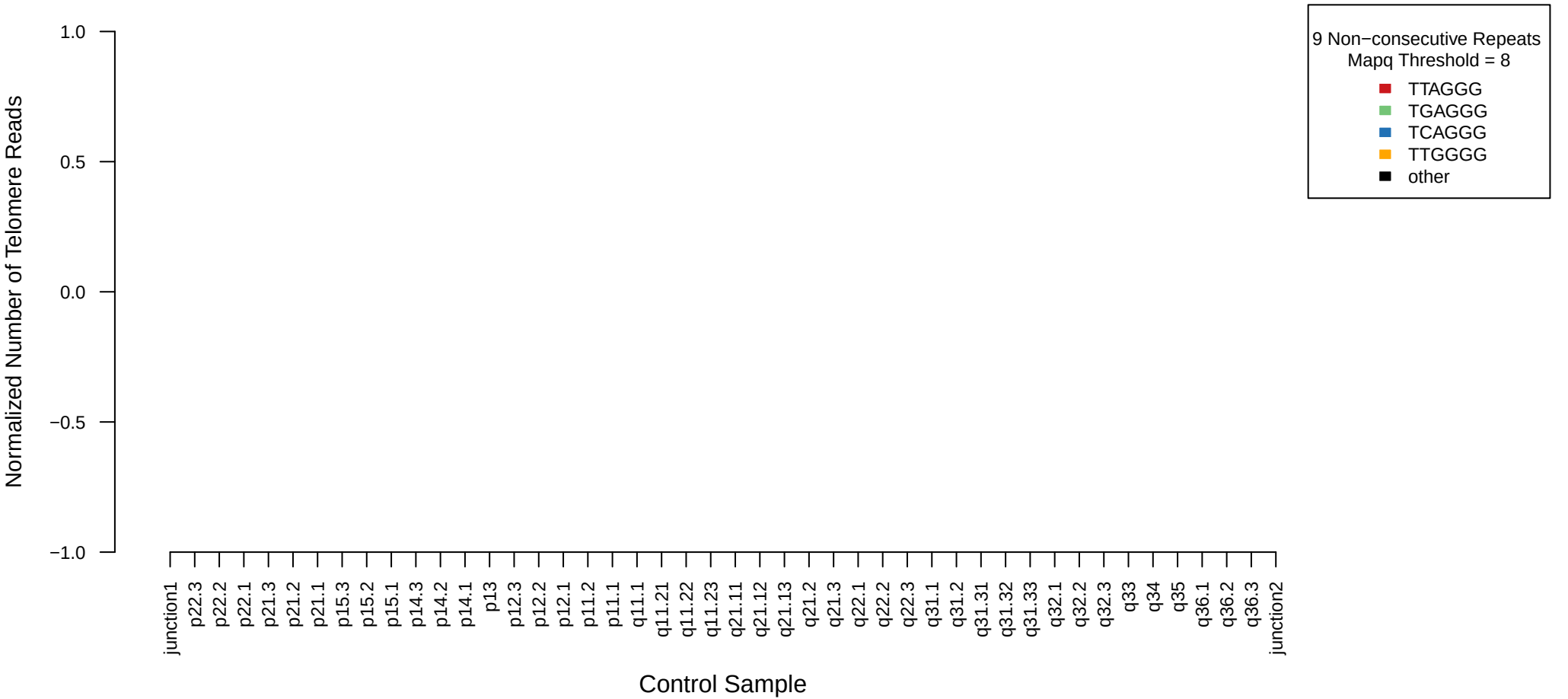

HG002: Telomere Repeat Types in Chr2
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p25.3
p25.2
p25.1
p24.3
p24.2
p24.1
p23.3
p23.2
p23.1
p22.3
p22.2
p22.1
p21
p16.3
p16.2
p16.1
p15
p14
p13.3
p13.2
p13.1
p12
p11.2
p11.1
q11.1
q11.2
q12.1
q12.2
q12.3
q13
q14.1
q14.2
q14.3
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q31.1
q31.2
q31.3
q32.1
q32.2
q32.3
q33.1
q33.2
q33.3
q34
q35
q36.1
q36.2
q36.3
q37.1
q37.2
q37.3
junction2
Control Sample

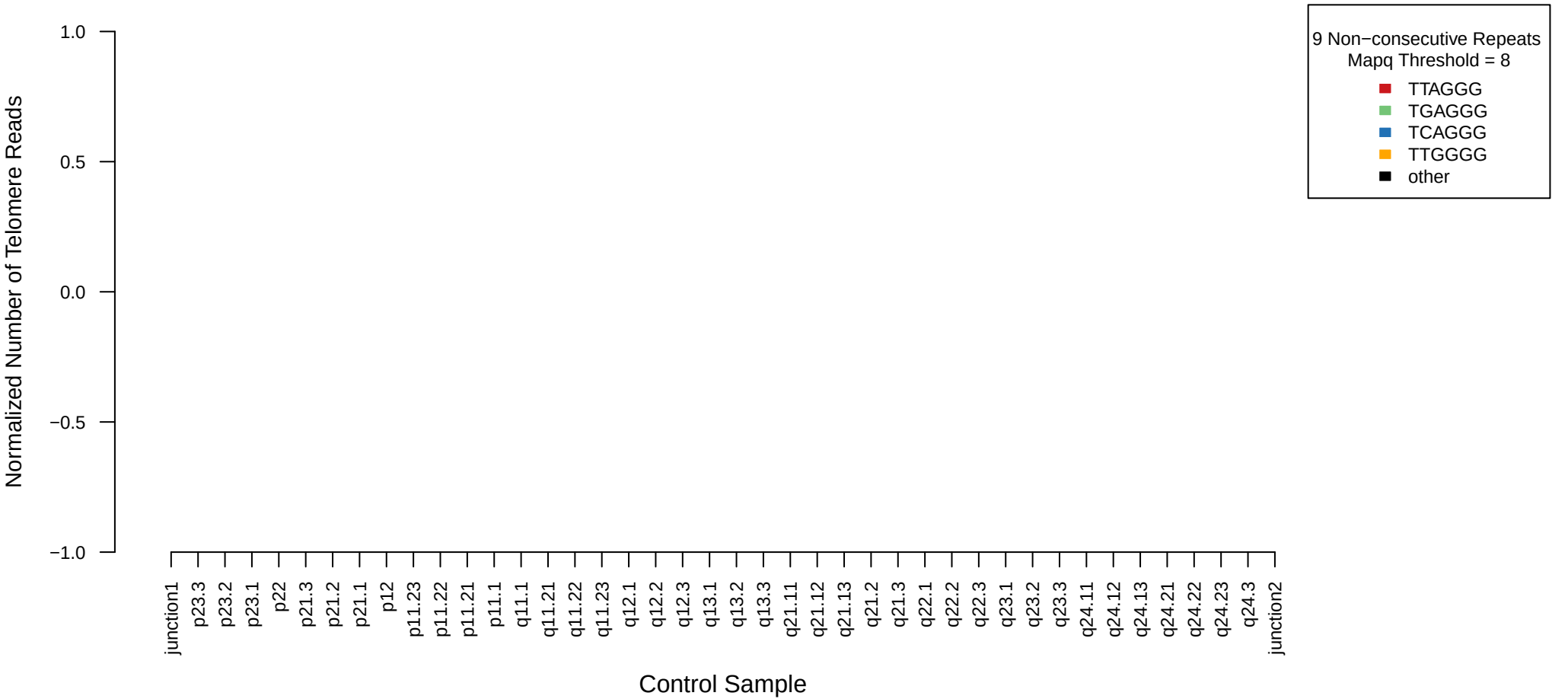

HG002: Telomere Repeat Types in Chr3
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p26.3
p26.2
p26.1
p25.3
p25.2
p25.1
p24.3
p24.2
p24.1
p23
p22.3
p22.2
p22.1
p21.33
p21.32
p21.31
p21.2
p21.1
p14.3
p14.2
p14.1
p13
p12.3
p12.2
p12.1
p11.2
p11.1
q11.1
q11.2
q12.1
q12.2
q12.3
q13.11
q13.12
q13.13
q13.2
q13.31
q13.32
q13.33
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23
q24
q25.1
q25.2
q25.31
q25.32
q25.33
q26.1
q26.2
q26.31
q26.32
q26.33
q27.1
q27.2
q27.3
q28
q29
junction2
Control Sample

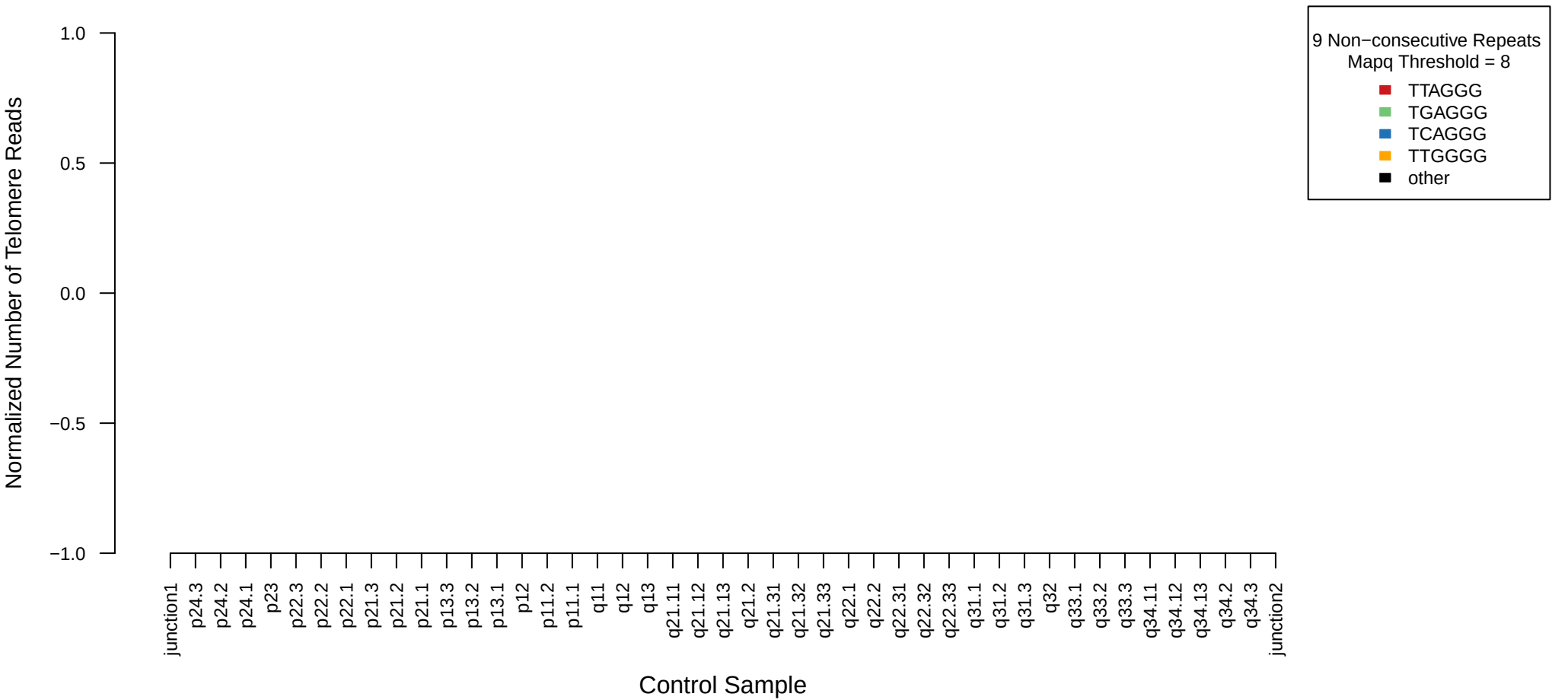

HG002: Telomere Repeat Types in Chr4
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p16.3
p16.2
p16.1
p15.33
p15.32
p15.31
p15.2
p15.1
p14
p13
p12
p11
q11
q12
q13.1
q13.2
q13.3
q21.1
q21.21
q21.22
q21.23
q21.3
q22.1
q22.2
q22.3
q23
q24
q25
q26
q27
q28.1
q28.2
q28.3
q31.1
q31.21
q31.22
q31.23
q31.3
q32.1
q32.2
q32.3
q33
q34.1
q34.2
q34.3
q35.1
q35.2
junction2
Control Sample

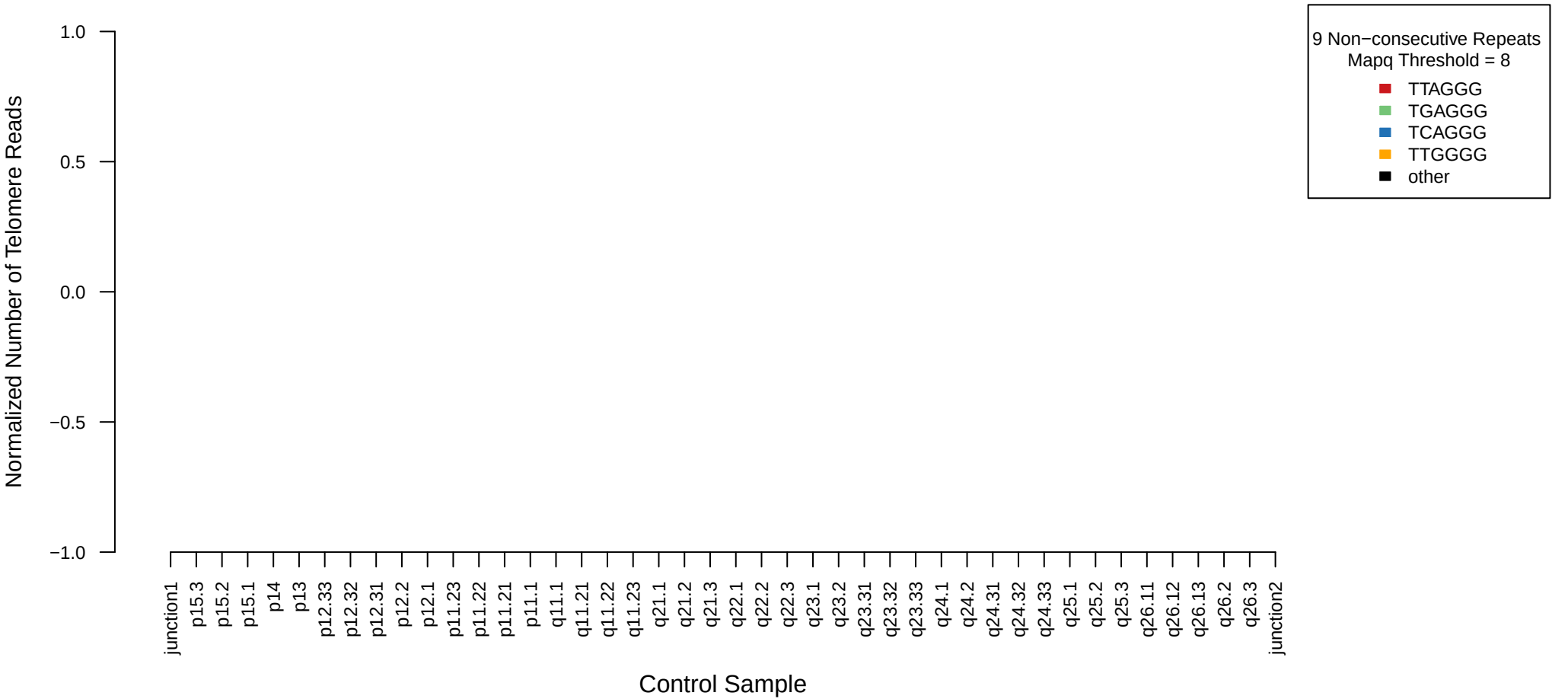

HG002: Telomere Repeat Types in Chr5
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p15.33
p15.32
p15.31
p15.2
p15.1
p14.3
p14.2
p14.1
p13.3
p13.2
p13.1
p12
p11
q11.1
q11.2
q12.1
q12.2
q12.3
q13.1
q13.2
q13.3
q14.1
q14.2
q14.3
q15
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q31.1
q31.2
q31.3
q32
q33.1
q33.2
q33.3
q34
q35.1
q35.2
q35.3
junction2
Control Sample

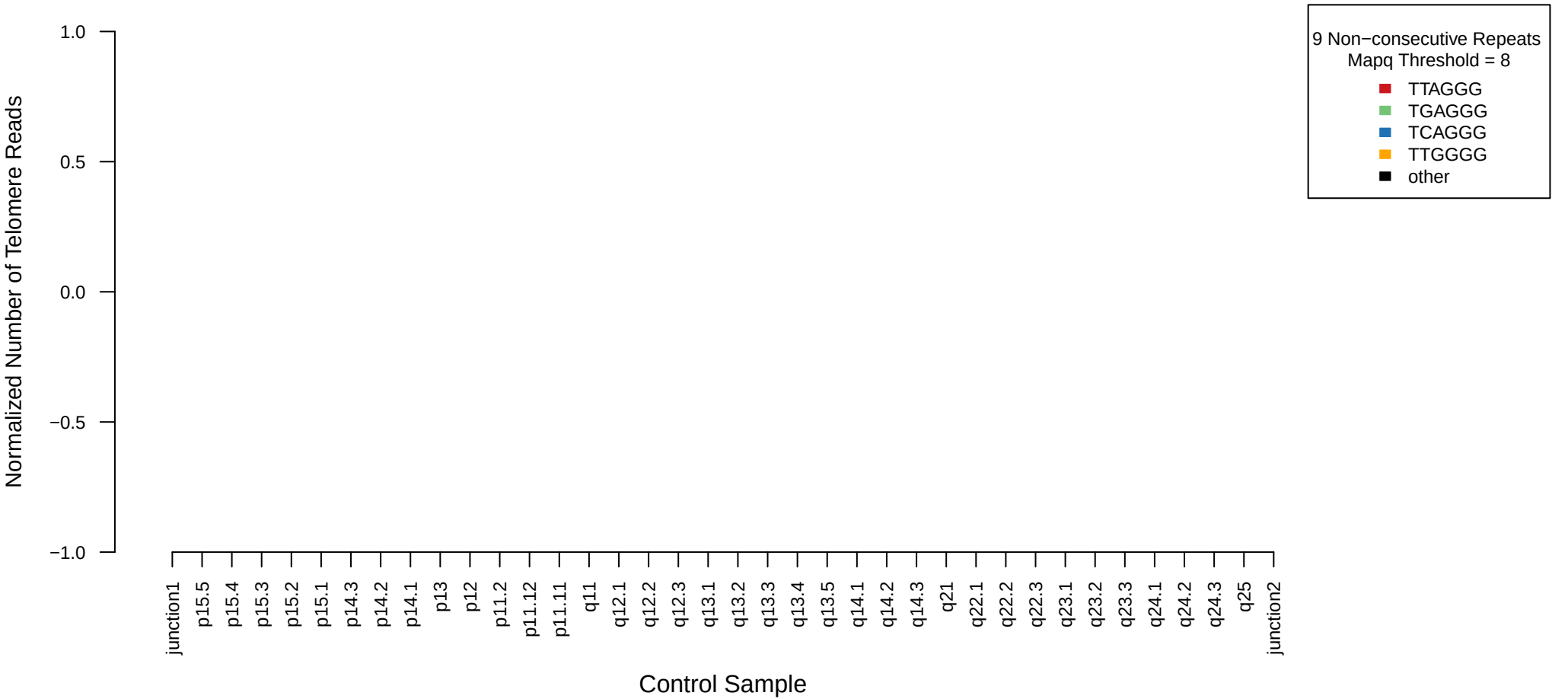

HG002: Telomere Repeat Types in Chr6
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p25.3
p25.2
p25.1
p24.3
p24.2
p24.1
p23
p22.3
p22.2
p22.1
p21.33
p21.32
p21.31
p21.2
p21.1
p12.3
p12.2
p12.1
p11.2
p11.1
q11.1
q11.2
q12
q13
q14.1
q14.2
q14.3
q15
q16.1
q16.2
q16.3
q21
q22.1
q22.2
q22.31
q22.32
q22.33
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q25.1
q25.2
q25.3
q26
q27
junction2
Control Sample

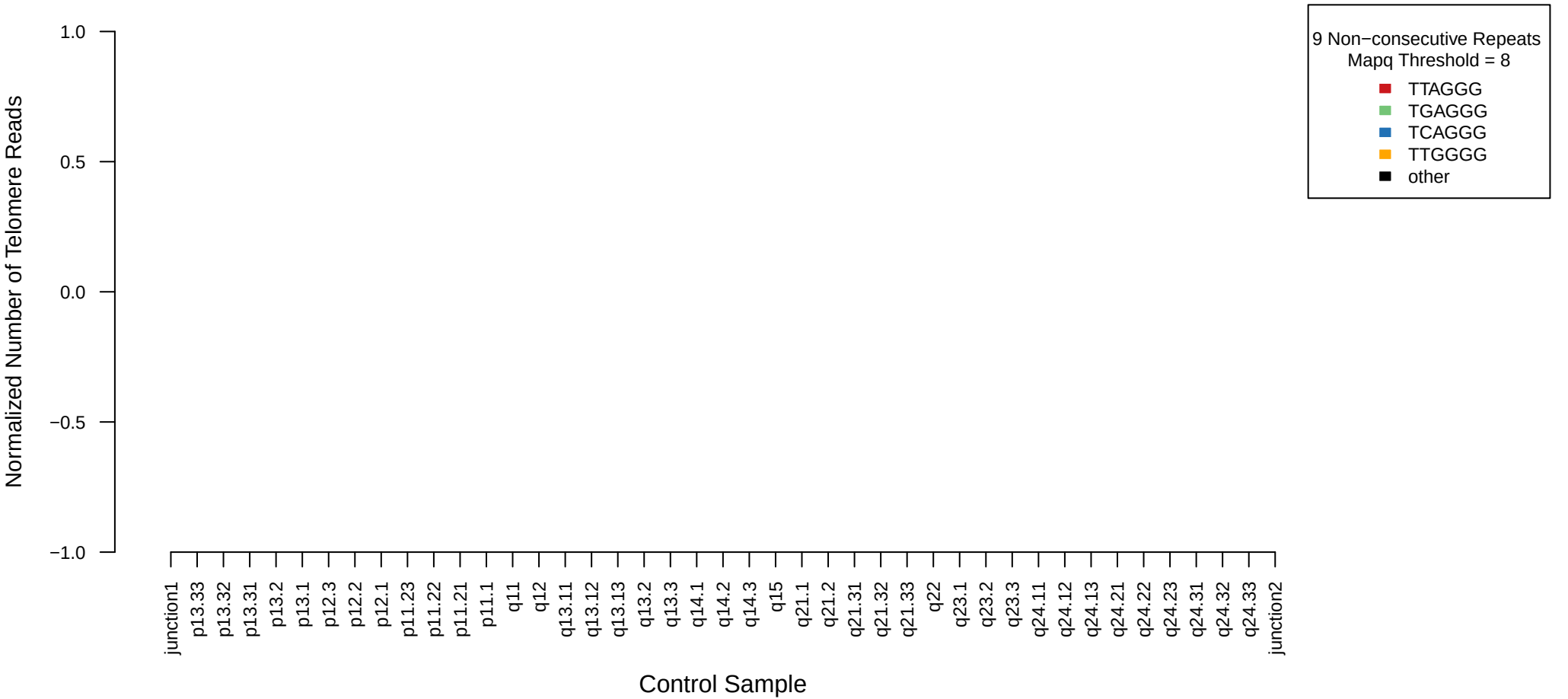

HG002: Telomere Repeat Types in Chr7
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p22.3
p22.2
p22.1
p21.3
p21.2
p21.1
p15.3
p15.2
p15.1
p14.3
p14.2
p14.1
p13
p12.3
p12.2
p12.1
p11.2
p11.1
q11.1
q11.21
q11.22
q11.23
q21.11
q21.12
q21.13
q21.2
q21.3
q22.1
q22.2
q22.3
q31.1
q31.2
q31.31
q31.32
q31.33
q32.1
q32.2
q32.3
q33
q34
q35
q36.1
q36.2
q36.3
junction2
Control Sample

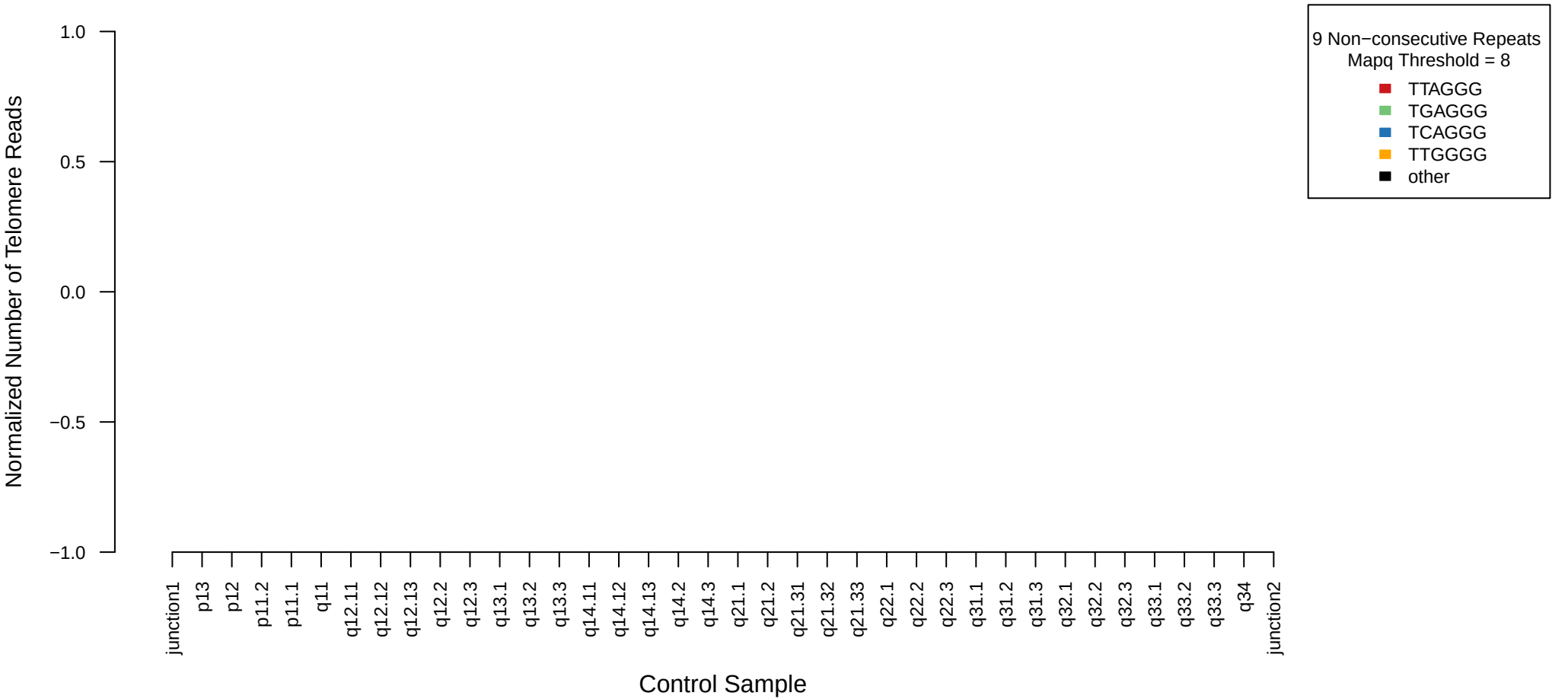

HG002: Telomere Repeat Types in Chr8
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p23.3
p23.2
p23.1
p22
p21.3
p21.2
p21.1
p12
p11.23
p11.22
p11.21
p11.1
q11.1
q11.21
q11.22
q11.23
q12.1
q12.2
q12.3
q13.1
q13.2
q13.3
q21.11
q21.12
q21.13
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.11
q24.12
q24.13
q24.21
q24.22
q24.23
q24.3
junction2
Control Sample

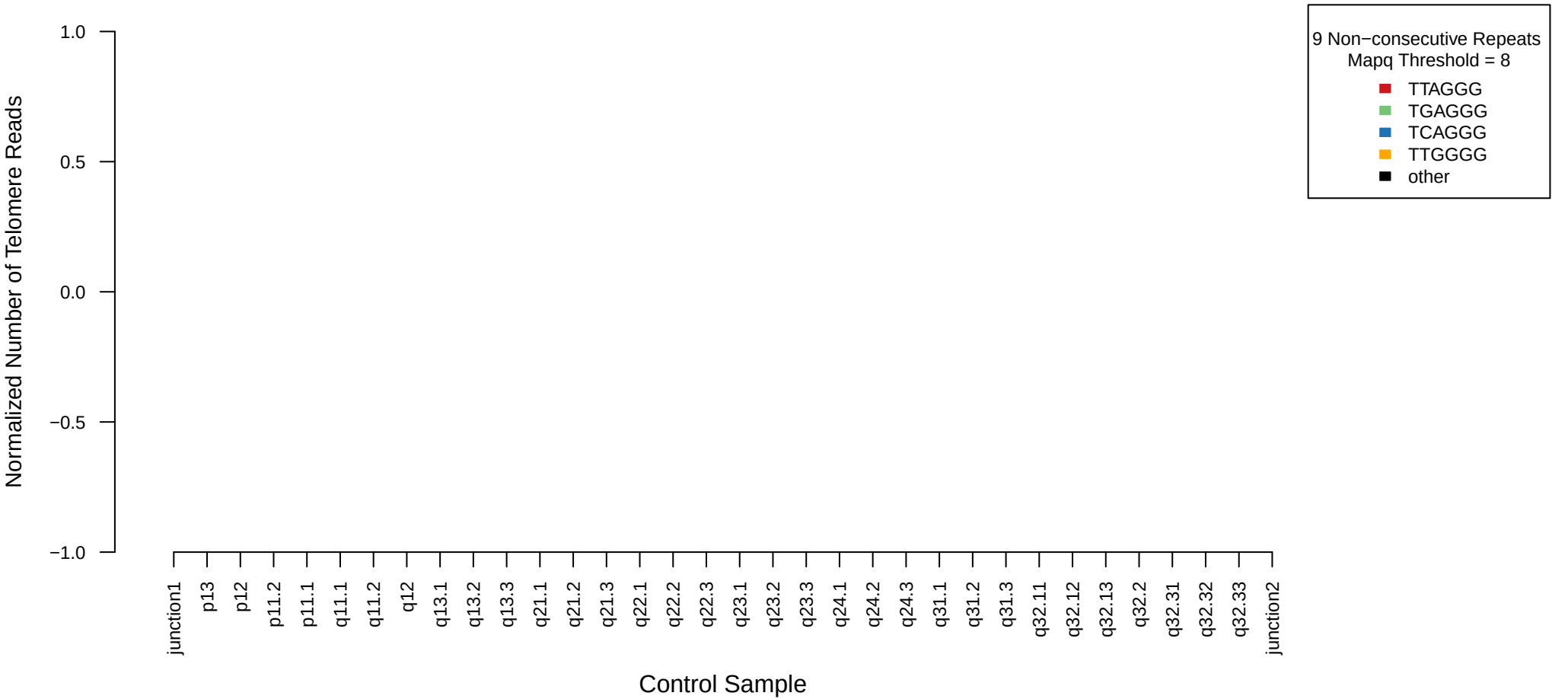

HG002: Telomere Repeat Types in Chr9
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p24.3
p24.2
p24.1
p23
p22.3
p22.2
p22.1
p21.3
p21.2
p21.1
p13.3
p13.2
p13.1
p12
p11.2
p11.1
q11
q12
q13
q21.11
q21.12
q21.13
q21.2
q21.31
q21.32
q21.33
q22.1
q22.2
q22.31
q22.32
q22.33
q31.1
q31.2
q31.3
q32
q33.1
q33.2
q33.3
q34.11
q34.12
q34.13
q34.2
q34.3
junction2
Control Sample

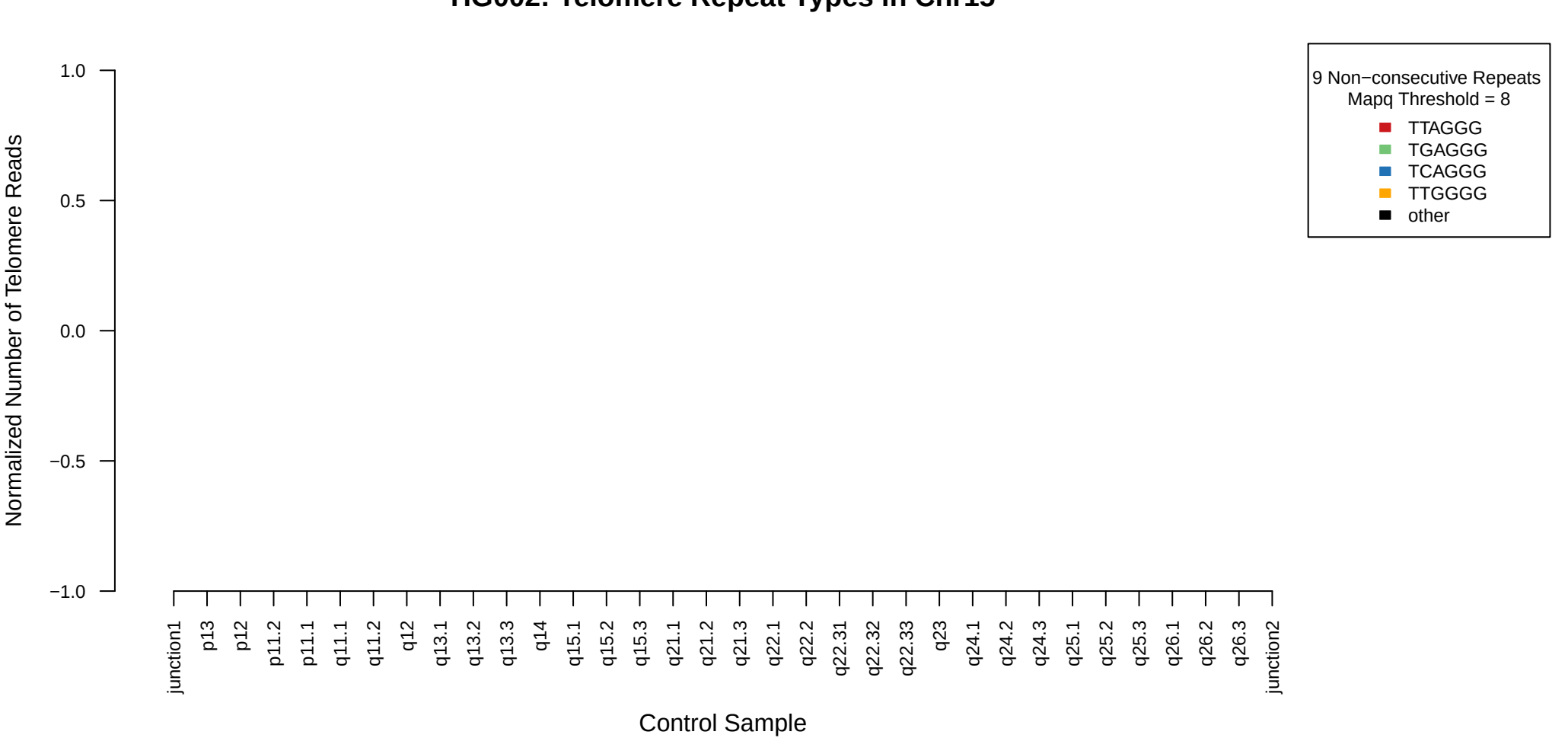

HG002: Telomere Repeat Types in Chr10
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p15.3
p15.2
p15.1
p14
p13
p12.33
p12.32
p12.31
p12.2
p12.1
p11.23
p11.22
p11.21
p11.1
q11.1
q11.21
q11.22
q11.23
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.31
q23.32
q23.33
q24.1
q24.2
q24.31
q24.32
q24.33
q25.1
q25.2
q25.3
q26.11
q26.12
q26.13
q26.2
q26.3
junction2
Control Sample

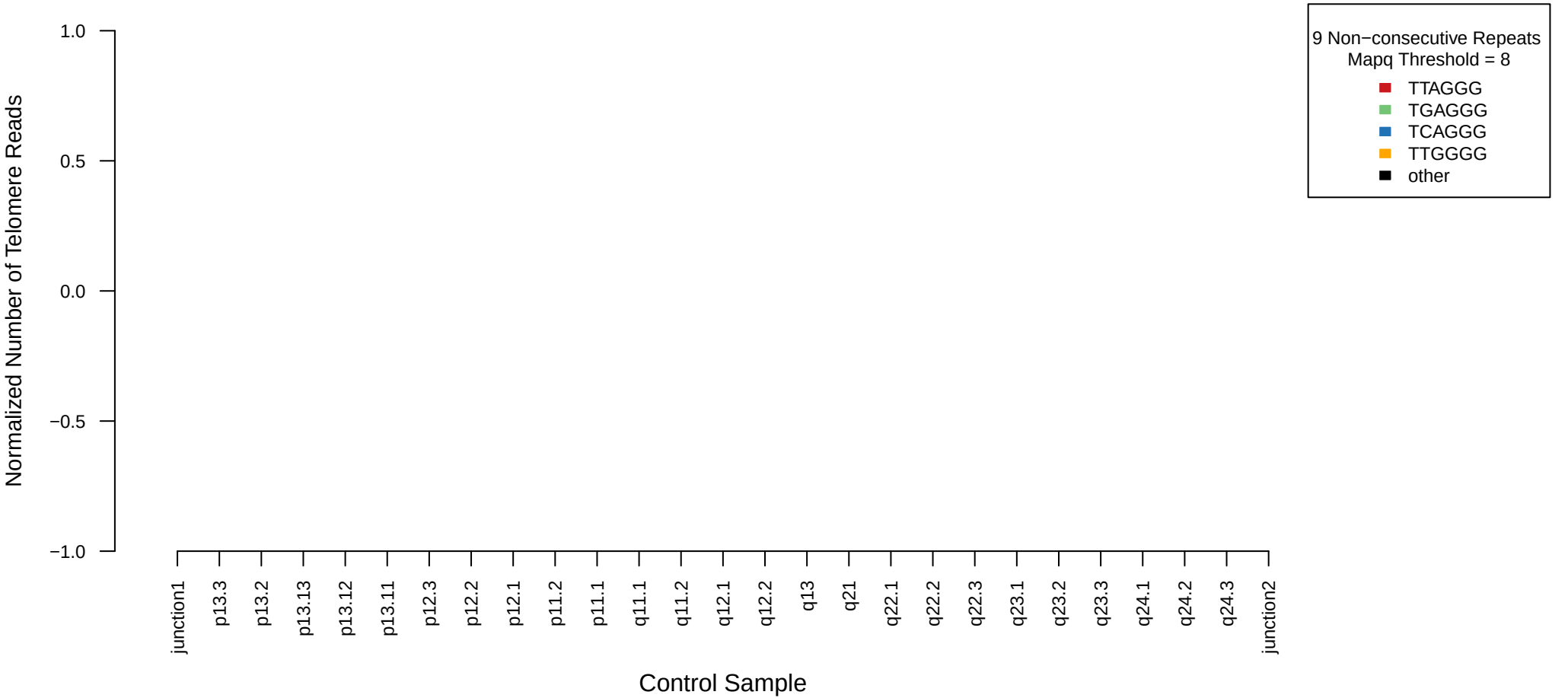

HG002: Telomere Repeat Types in Chr11
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p15.5
p15.4
p15.3
p15.2
p15.1
p14.3
p14.2
p14.1
p13
p12
p11.2
p11.12
p11.11
q11
q12.1
q12.2
q12.3
q13.1
q13.2
q13.3
q13.4
q13.5
q14.1
q14.2
q14.3
q21
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q25
junction2
Control Sample

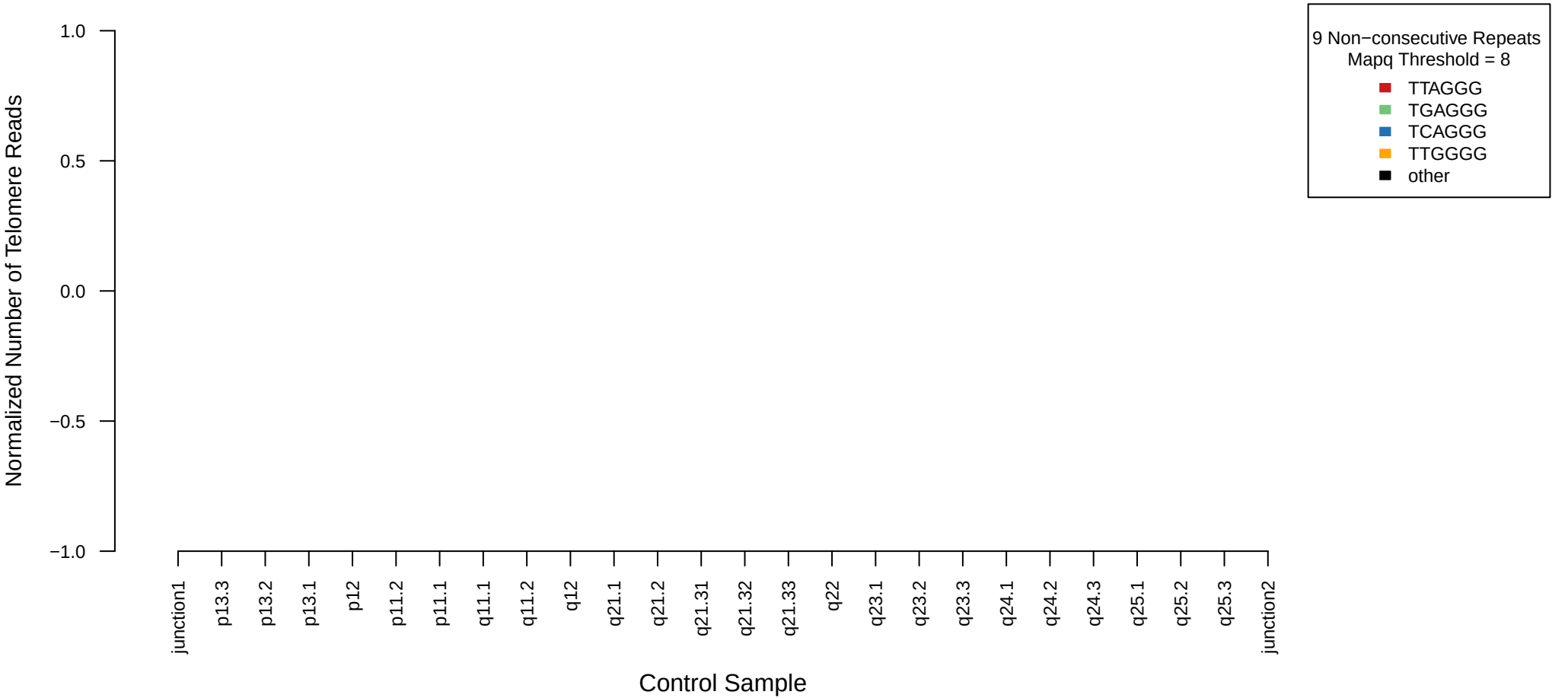

HG002: Telomere Repeat Types in Chr12
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13.33
p13.32
p13.31
p13.2
p13.1
p12.3
p12.2
p12.1
p11.23
p11.22
p11.21
p11.1
q11
q12
q13.11
q13.12
q13.13
q13.2
q13.3
q14.1
q14.2
q14.3
q15
q21.1
q21.2
q21.31
q21.32
q21.33
q22
q23.1
q23.2
q23.3
q24.11
q24.12
q24.13
q24.21
q24.22
q24.23
q24.31
q24.32
q24.33
junction2
Control Sample

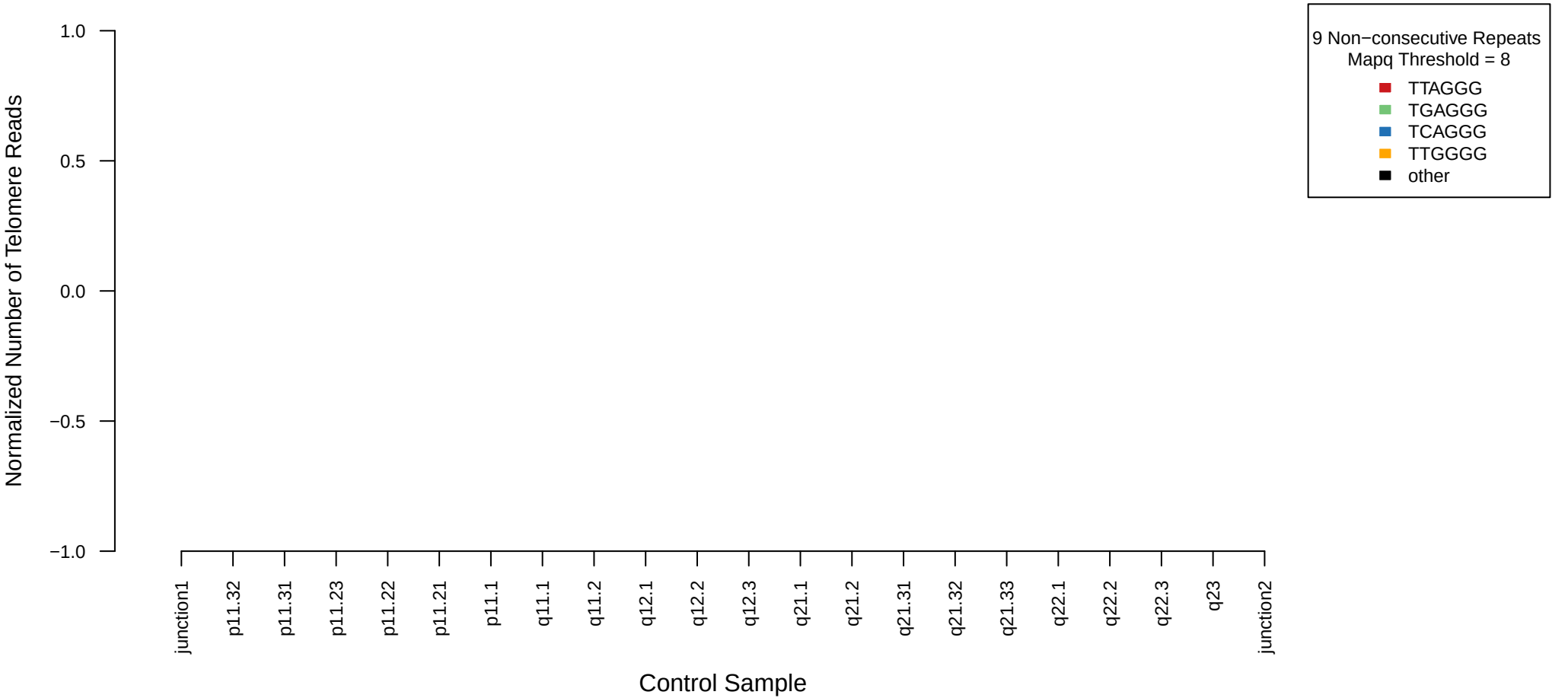

HG002: Telomere Repeat Types in Chr13
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12
p11.2
p11.1
q11
q12.11
q12.12
q12.13
q12.2
q12.3
q13.1
q13.2
q13.3
q14.11
q14.12
q14.13
q14.2
q14.3
q21.1
q21.2
q21.31
q21.32
q21.33
q22.1
q22.2
q22.3
q31.1
q31.2
q31.3
q32.1
q32.2
q32.3
q33.1
q33.2
q33.3
q34
junction2
Control Sample

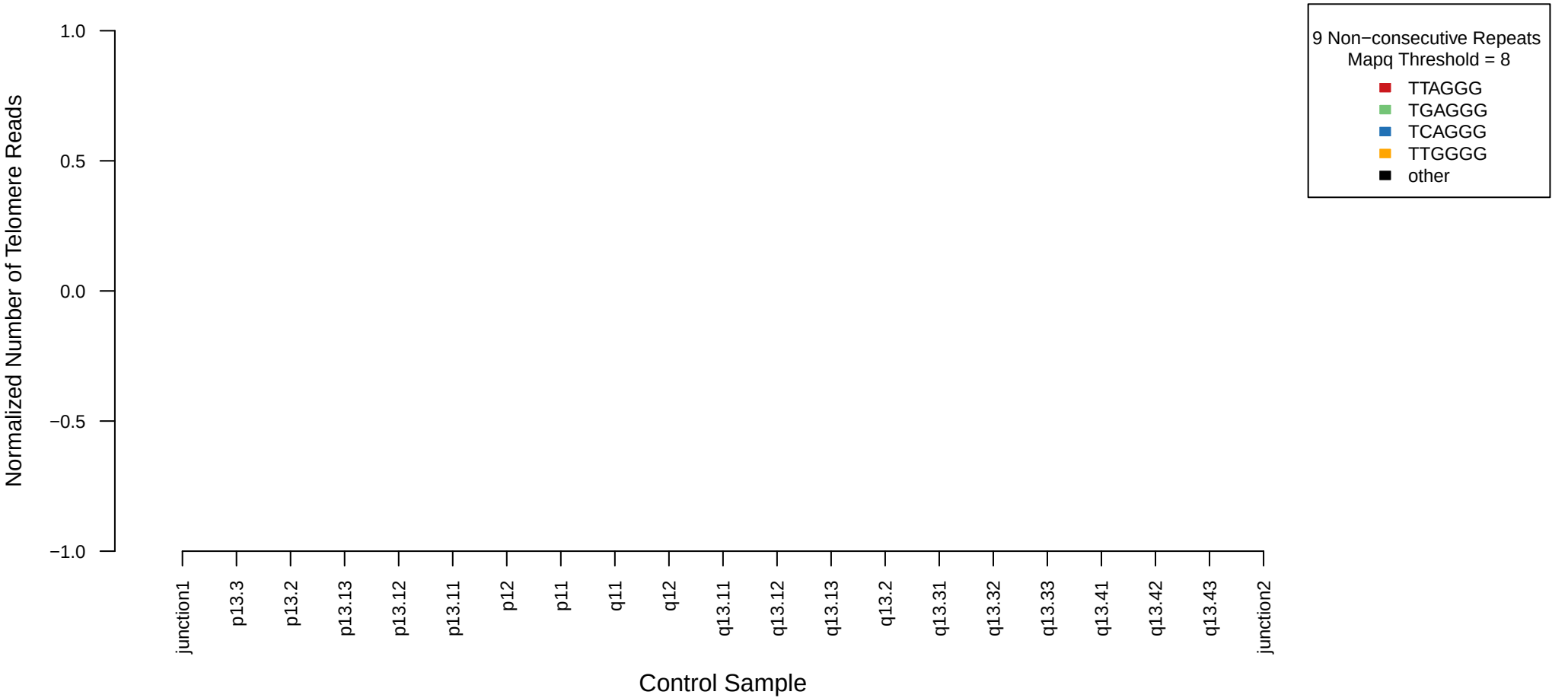

HG002: Telomere Repeat Types in Chr14
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12
p11.2
p11.1
q11.1
q11.2
q12
q13.1
q13.2
q13.3
q21.1
q21.2
q21.3
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q31.1
q31.2
q31.3
q32.11
q32.12
q32.13
q32.2
q32.31
q32.32
q32.33
junction2
Control Sample

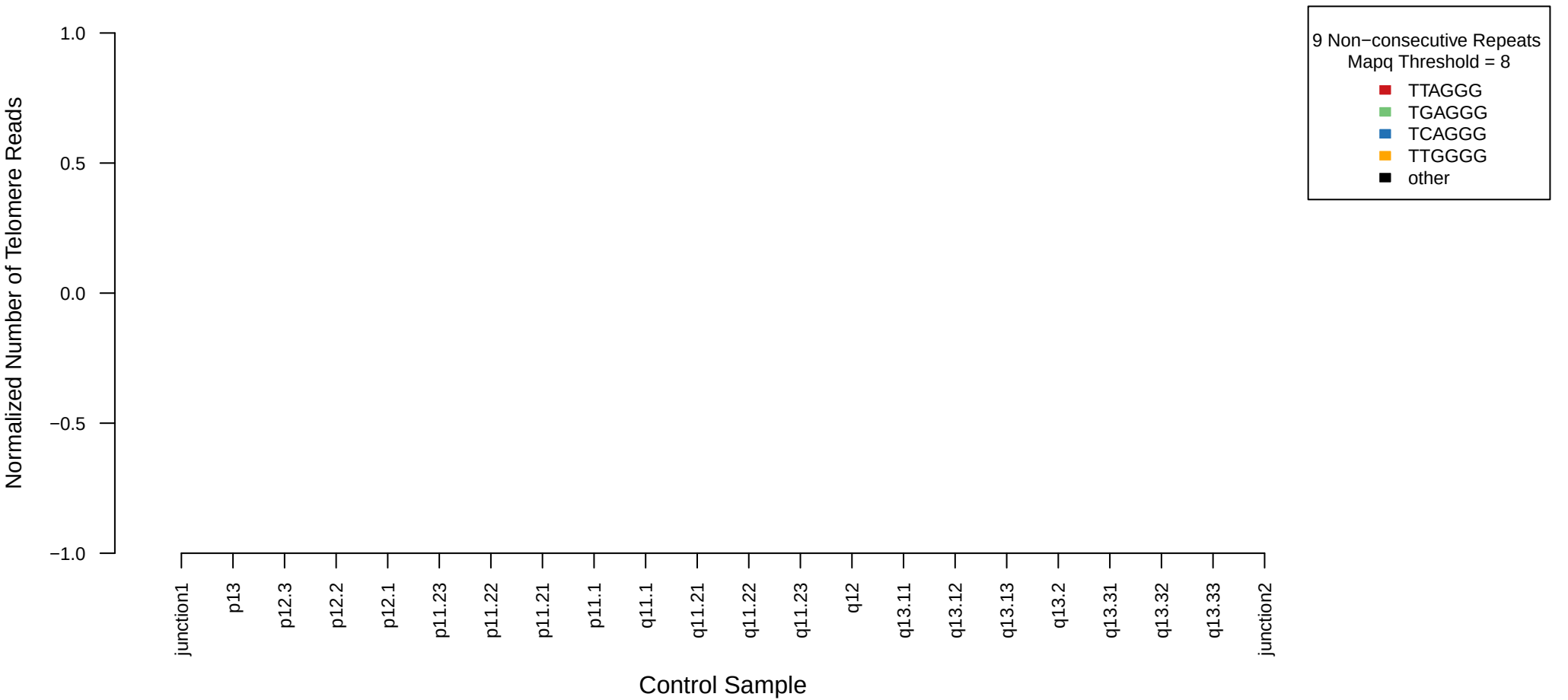

HG002: Telomere Repeat Types in Chr15
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12
p11.2
p11.1
q11.1
q11.2
q12
q13.1
q13.2
q13.3
q14
q15.1
q15.2
q15.3
q21.1
q21.2
q21.3
q22.1
q22.2
q22.31
q22.32
q22.33
q23
q24.1
q24.2
q24.3
q25.1
q25.2
q25.3
q26.1
q26.2
q26.3
junction2
Control Sample

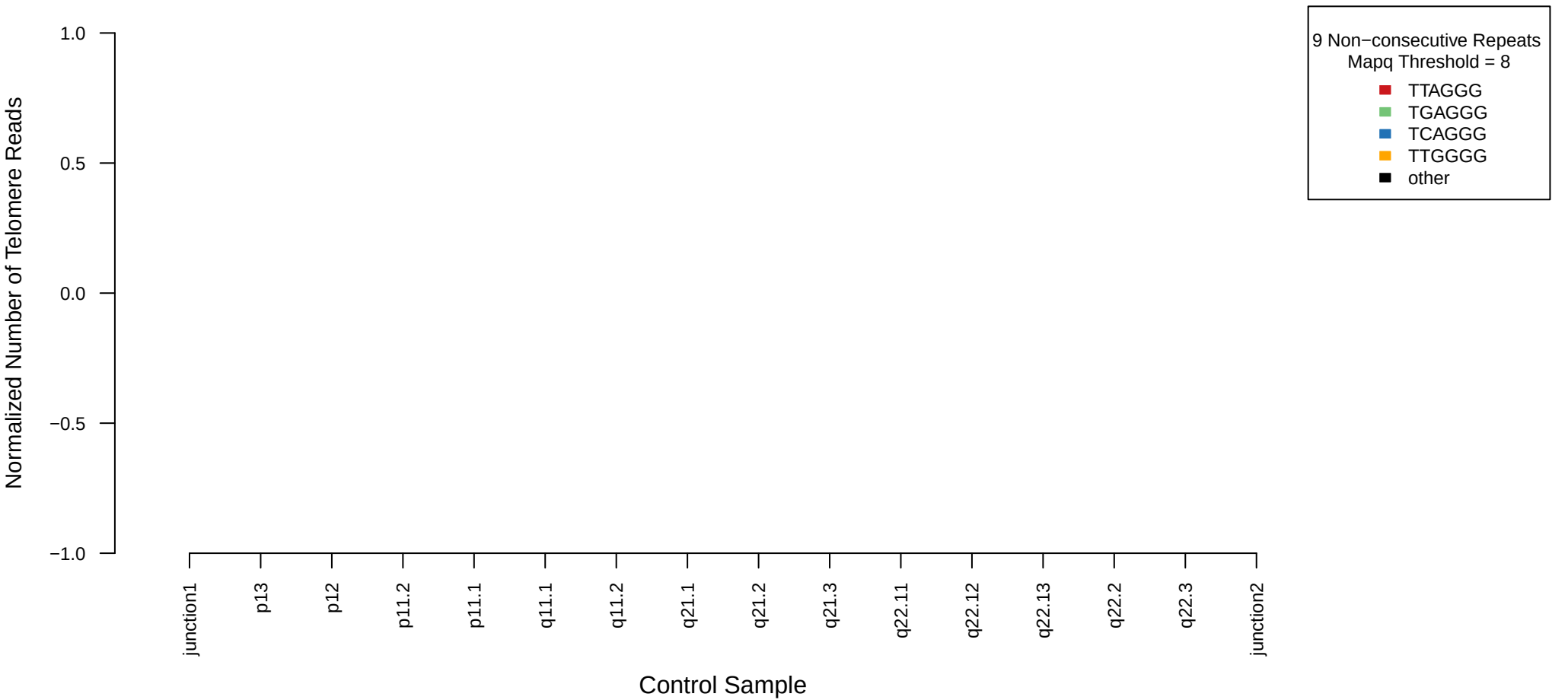

HG002: Telomere Repeat Types in Chr16
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13.3
p13.2
p13.13
p13.12
p13.11
p12.3
p12.2
p12.1
p11.2
p11.1
q11.1
q11.2
q12.1
q12.2
q13
q21
q22.1
q22.2
q22.3
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
junction2
Control Sample

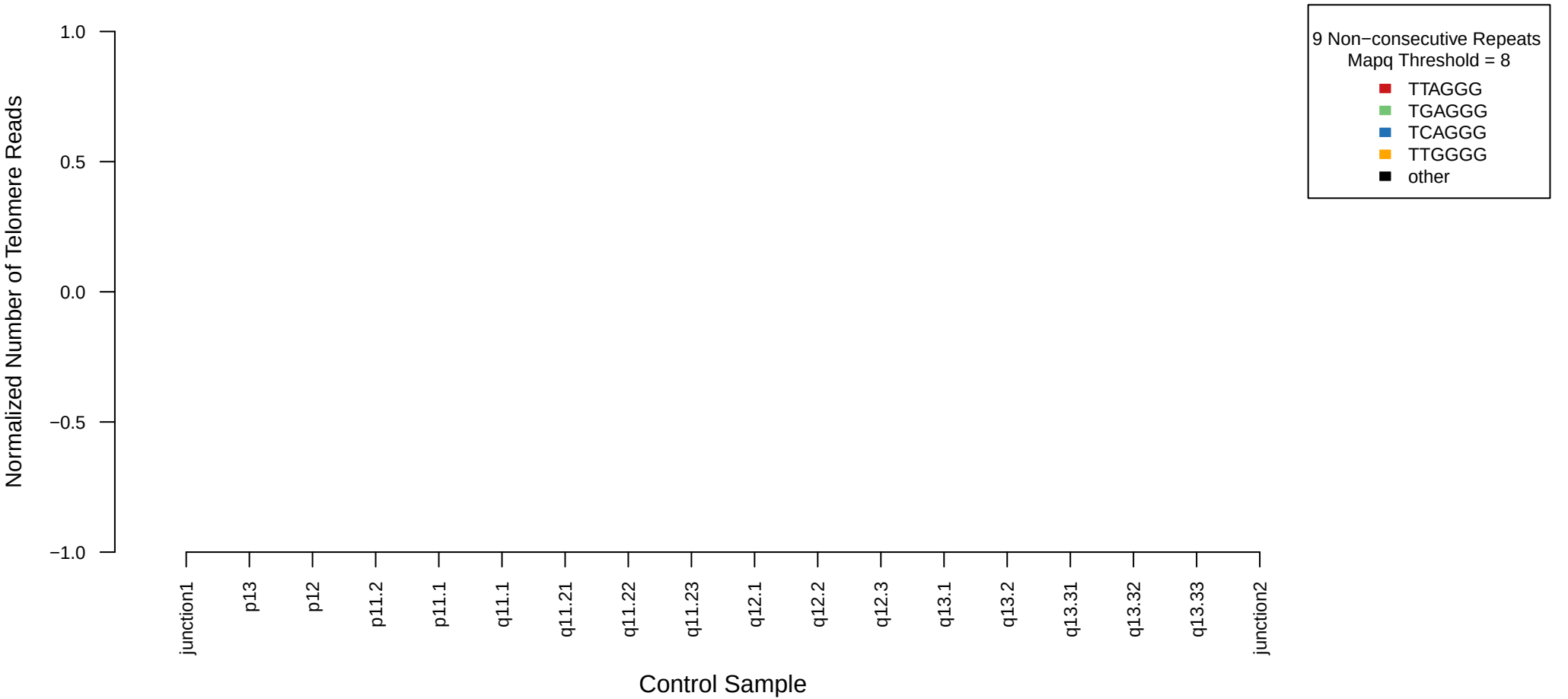

HG002: Telomere Repeat Types in Chr17
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13.3
p13.2
p13.1
p12
p11.2
p11.1
q11.1
q11.2
q12
q21.1
q21.2
q21.31
q21.32
q21.33
q22
q23.1
q23.2
q23.3
q24.1
q24.2
q24.3
q25.1
q25.2
q25.3
junction2
Control Sample

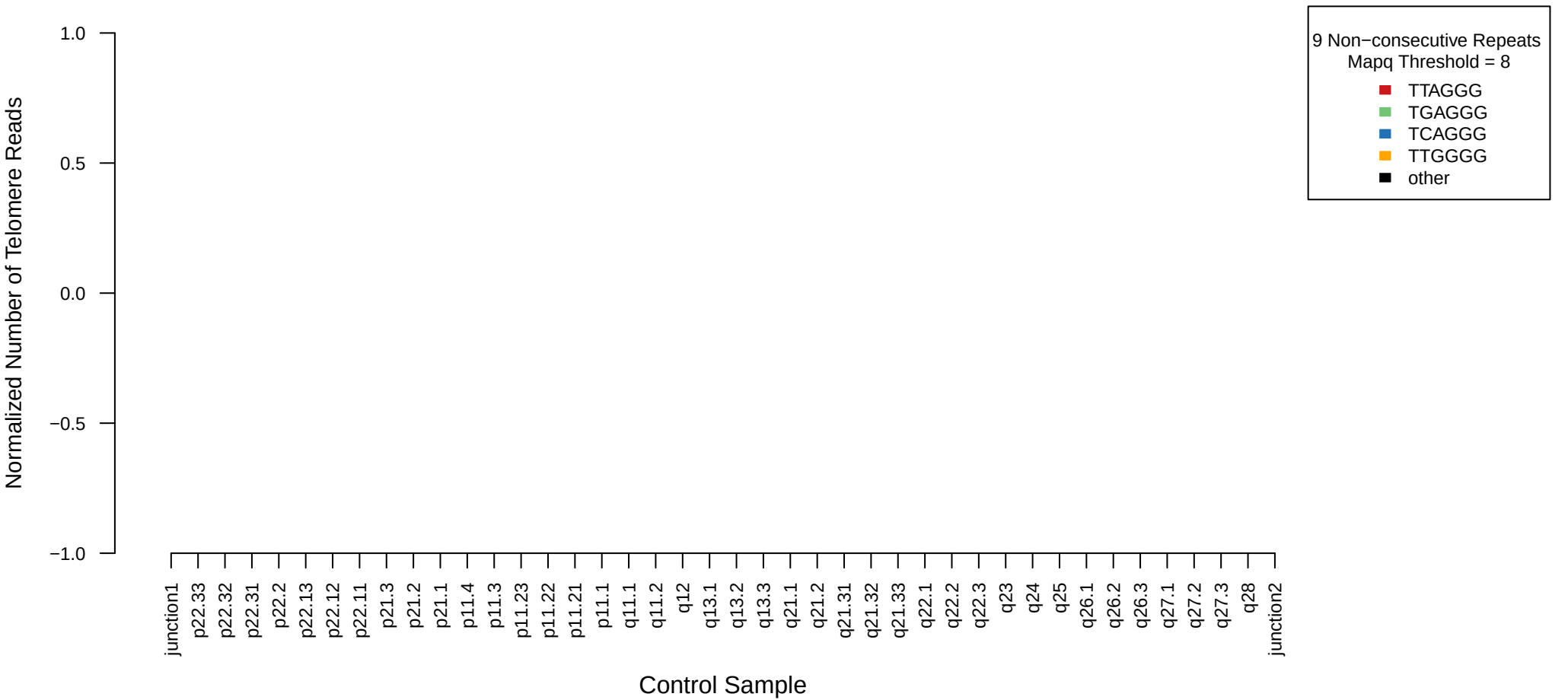

HG002: Telomere Repeat Types in Chr18
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p11.32
p11.31
p11.23
p11.22
p11.21
p11.1
q11.1
q11.2
q12.1
q12.2
q12.3
q21.1
q21.2
q21.31
q21.32
q21.33
q22.1
q22.2
q22.3
q23
junction2
Control Sample

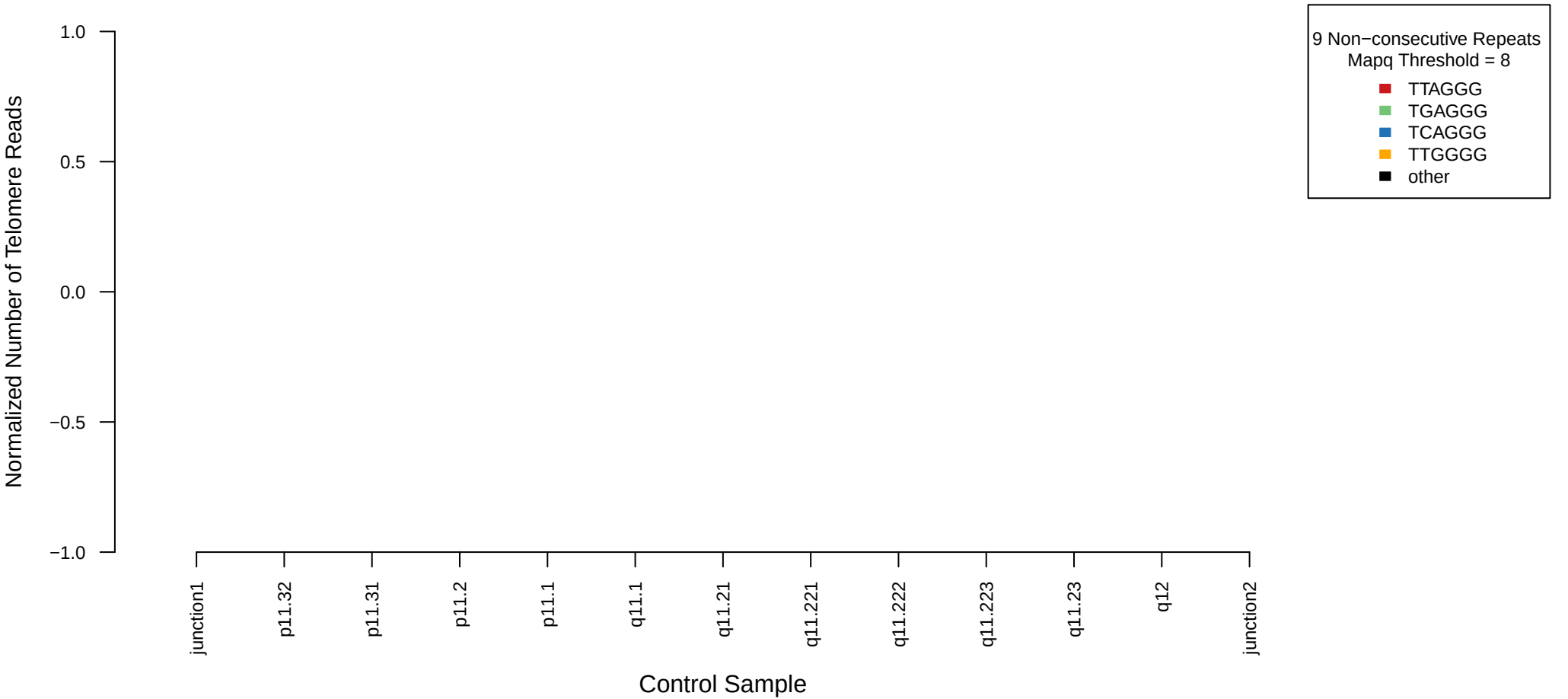

HG002: Telomere Repeat Types in Chr19
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13.3
p13.2
p13.13
p13.12
p13.11
p12
p11
q11
q12
q13.11
q13.12
q13.13
q13.2
q13.31
q13.32
q13.33
q13.41
q13.42
q13.43
junction2
Control Sample


HG002: Telomere Repeat Types in Chr20
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12.3
p12.2
p12.1
p11.23
p11.22
p11.21
p11.1
q11.1
q11.21
q11.22
q11.23
q12
q13.11
q13.12
q13.13
q13.2
q13.31
q13.32
q13.33
junction2
Control Sample


HG002: Telomere Repeat Types in Chr21
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12
p11.2
p11.1
q11.1
q11.2
q21.1
q21.2
q21.3
q22.11
q22.12
q22.13
q22.2
q22.3
junction2
Control Sample


HG002: Telomere Repeat Types in Chr22
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p13
p12
p11.2
p11.1
q11.1
q11.21
q11.22
q11.23
q12.1
q12.2
q12.3
q13.1
q13.2
q13.31
q13.32
q13.33
junction2
Control Sample


HG002: Telomere Repeat Types in ChrX
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p22.33
p22.32
p22.31
p22.2
p22.13
p22.12
p22.11
p21.3
p21.2
p21.1
p11.4
p11.3
p11.23
p11.22
p11.21
p11.1
q11.1
q11.2
q12
q13.1
q13.2
q13.3
q21.1
q21.2
q21.31
q21.32
q21.33
q22.1
q22.2
q22.3
q23
q24
q25
q26.1
q26.2
q26.3
q27.1
q27.2
q27.3
q28
junction2
Control Sample


HG002: Telomere Repeat Types in ChrY
9 Non−consecutive Repeats
Mapq Threshold = 8
TTAGGG
TGAGGG
TCAGGG
TTGGGG
other
Normalized Number of Telomere Reads
1.0
0.5
0.0
−0.5
−1.0
junction1
p11.32
p11.31
p11.2
p11.1
q11.1
q11.21
q11.221
q11.222
q11.223
q11.23
q12
junction2
Control Sample