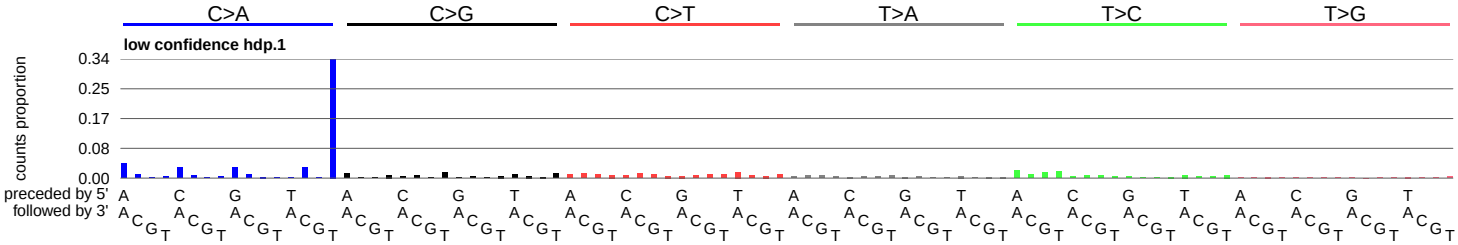
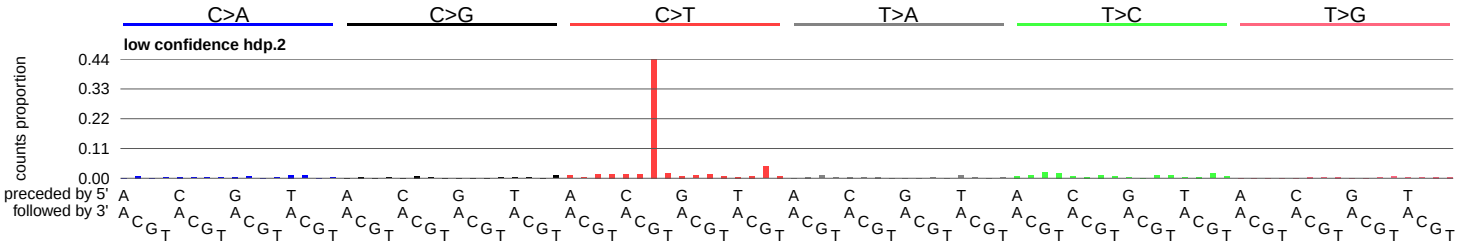
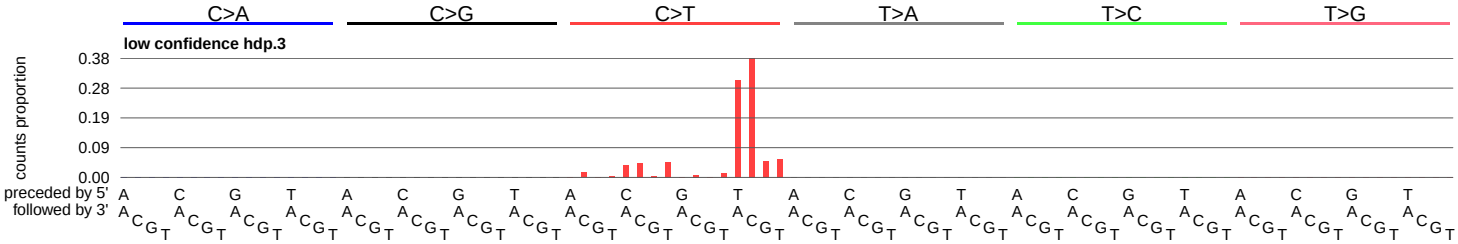
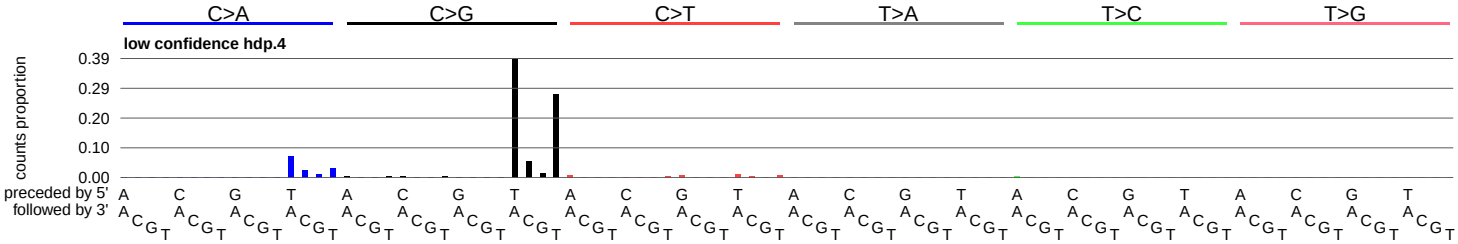
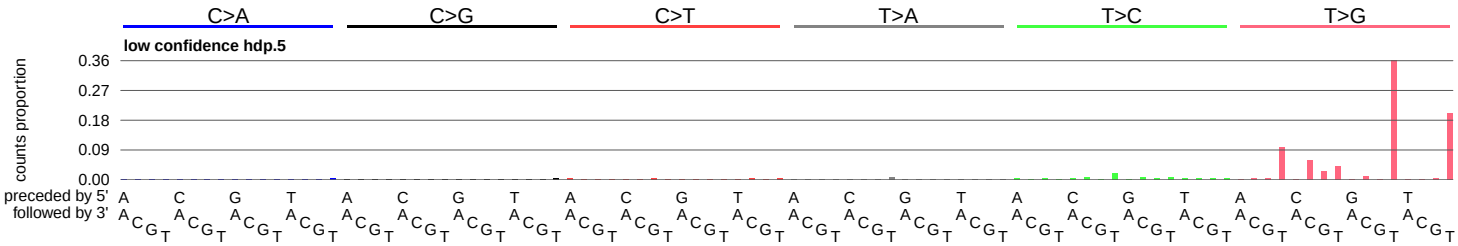
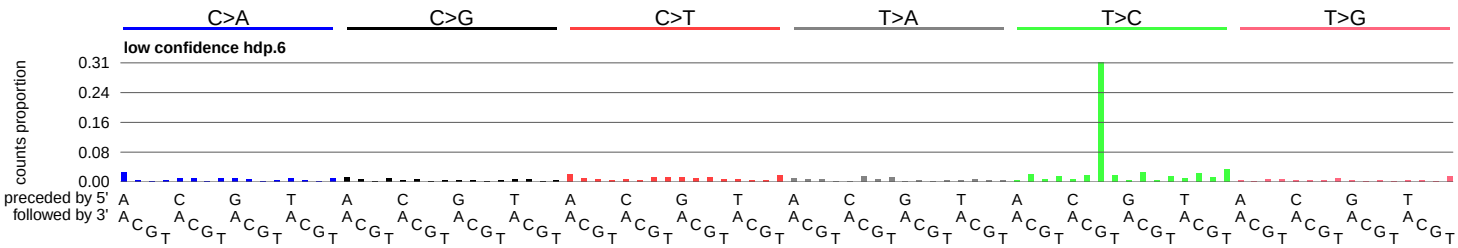

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.1
counts proportion
0.34
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

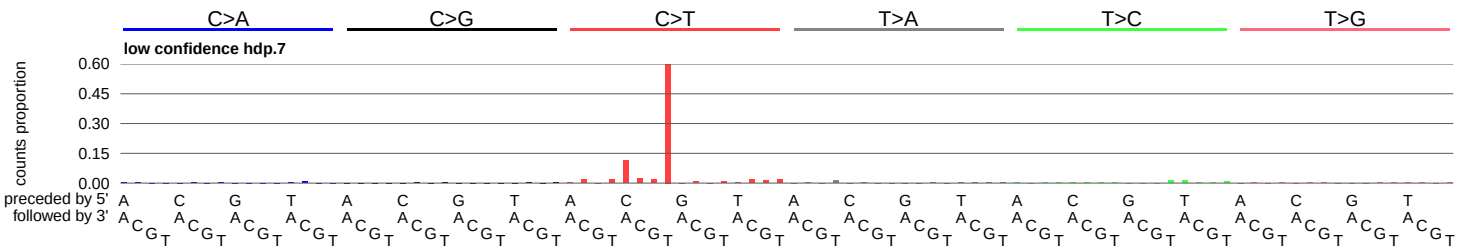

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.2
counts proportion
0.44
0.33
0.22
0.11
0.00
preceded by 5'
followed by 3'

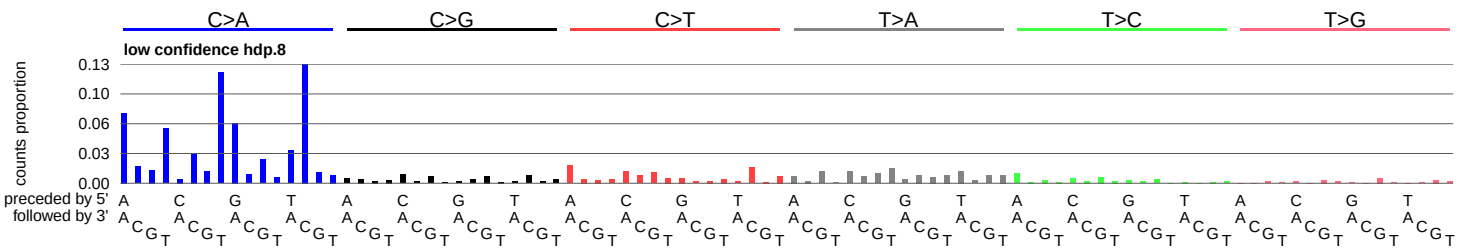

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.3
counts proportion
0.38
0.28
0.19
0.09
0.00
preceded by 5'
followed by 3'

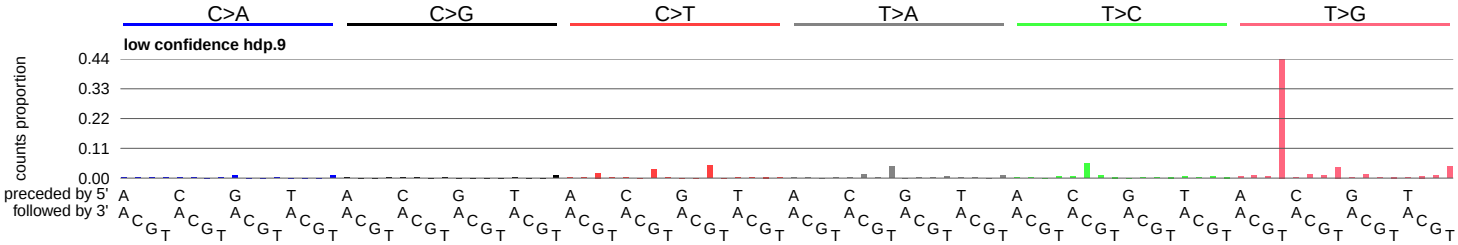

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.4
counts proportion
0.39
0.29
0.20
0.10
0.00
preceded by 5'
followed by 3'

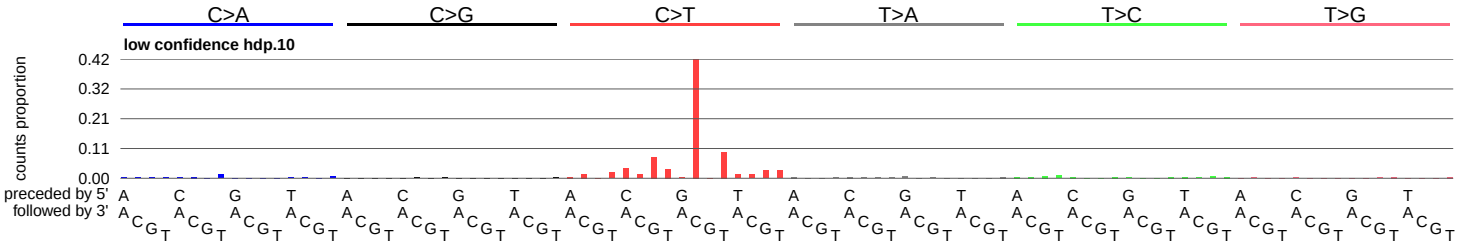

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.5
counts proportion
0.36
0.27
0.18
0.09
0.00
preceded by 5'
followed by 3'

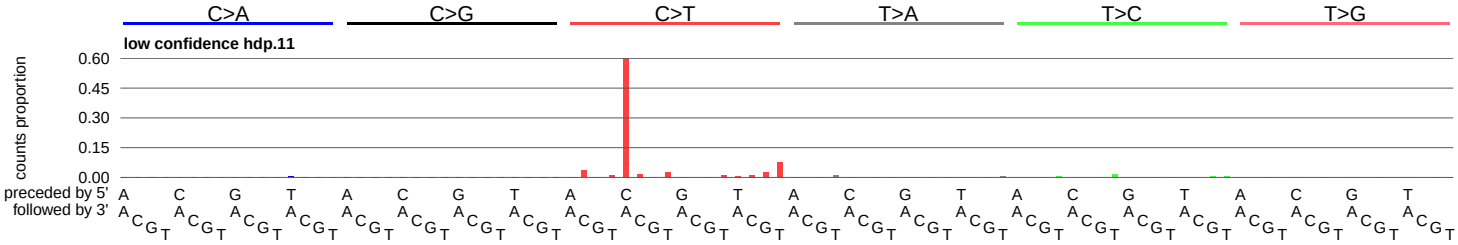

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.6
counts proportion
0.31
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

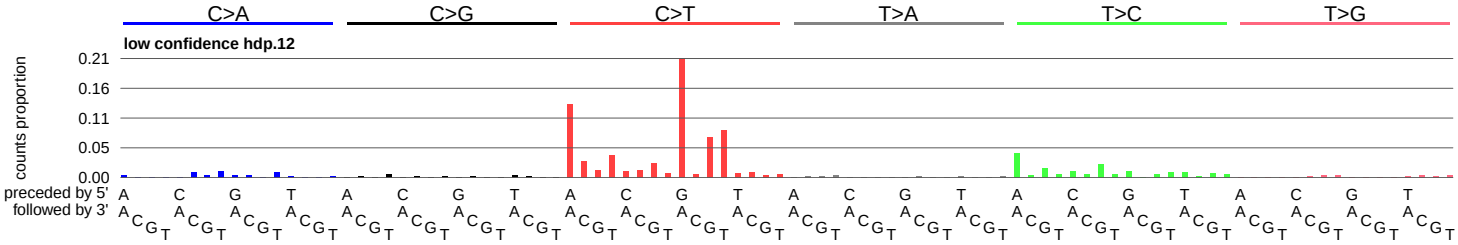

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.7
counts proportion
0.60
0.45
0.30
0.15
0.00
preceded by 5'
followed by 3'

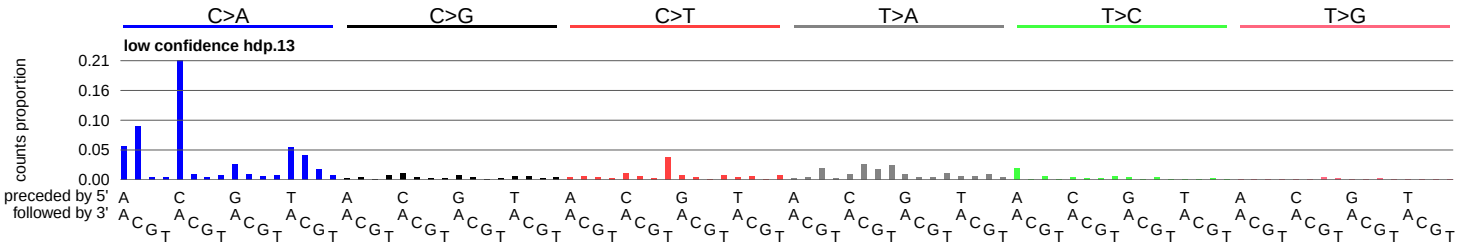

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.8
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

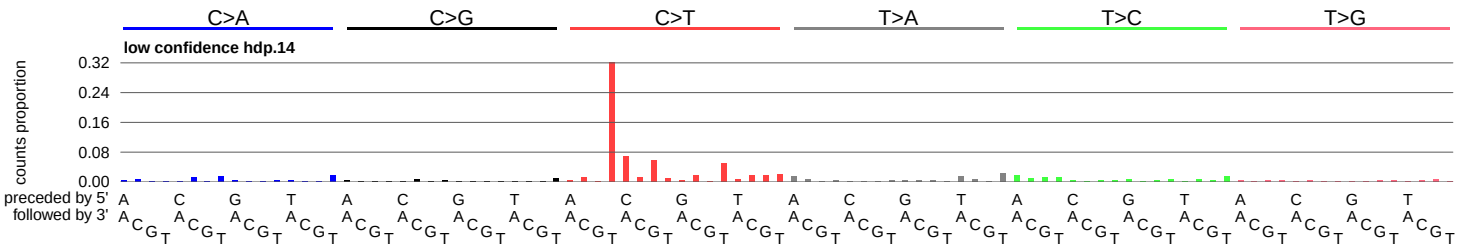

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.9
counts proportion
0.44
0.33
0.22
0.11
0.00
preceded by 5'
followed by 3'

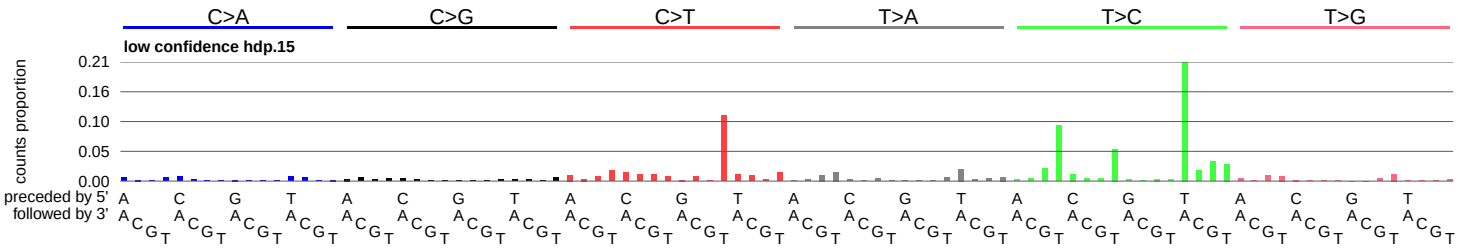

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.10
counts proportion
0.42
0.32
0.21
0.11
0.00
preceded by 5'
followed by 3'

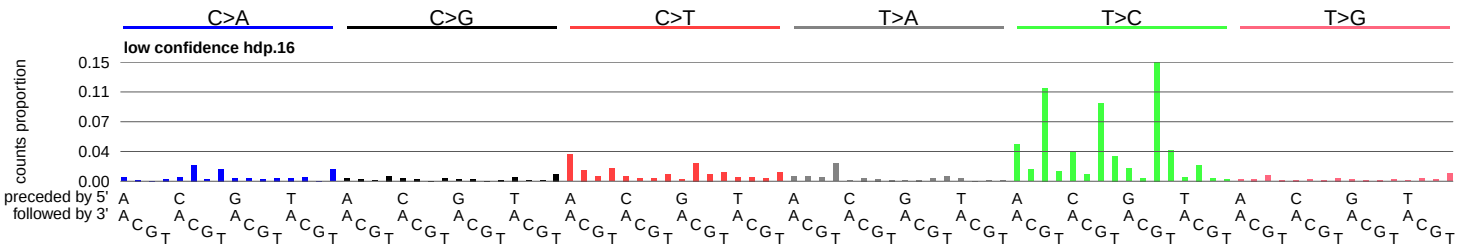

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.11
counts proportion
0.60
0.45
0.30
0.15
0.00
preceded by 5'
followed by 3'

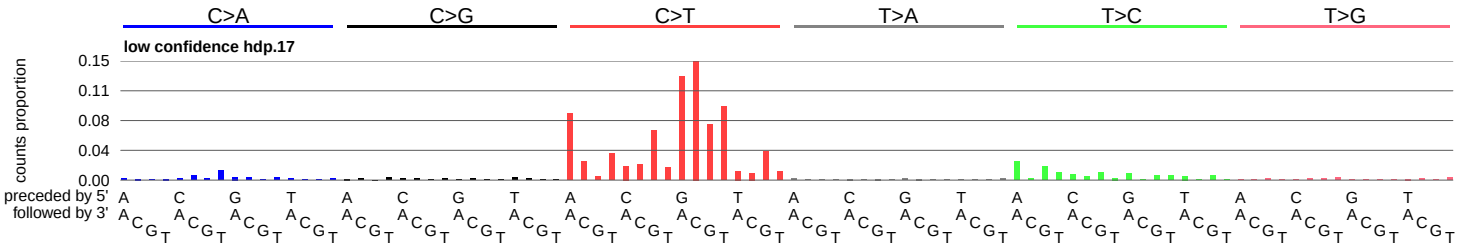

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.12
counts proportion
0.21
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

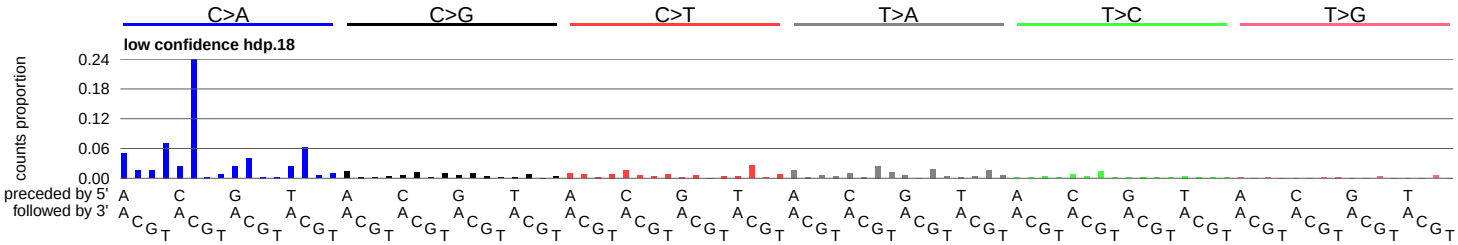

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.13
counts proportion
0.21
0.16
0.10
0.05
0.00
preceded by 5'
followed by 3'

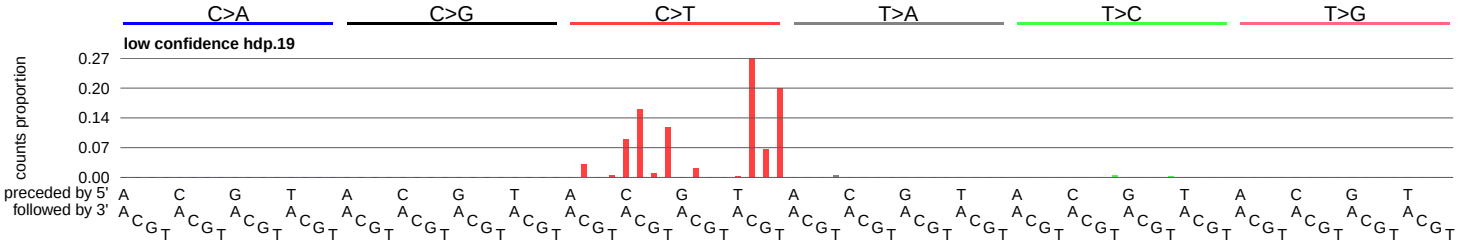

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.14
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

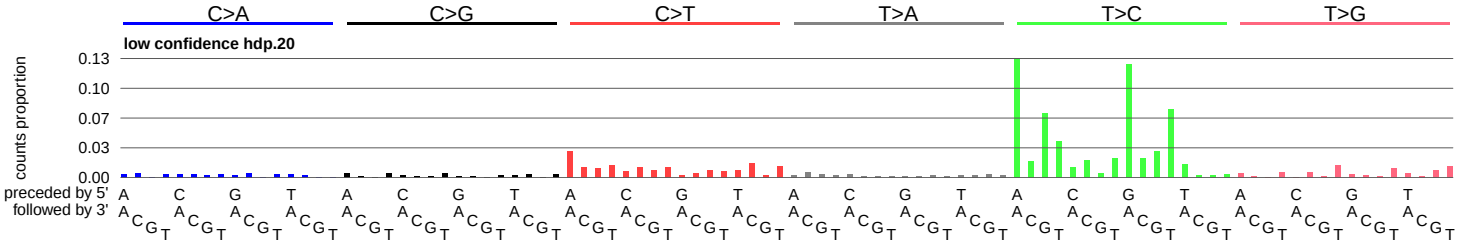

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.15
counts proportion
0.21
0.16
0.10
0.05
0.00
preceded by 5'
followed by 3'

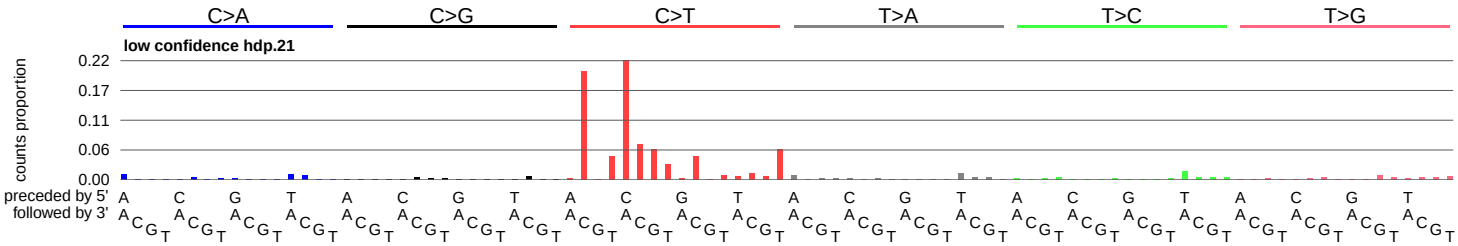

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.16
counts proportion
0.15
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

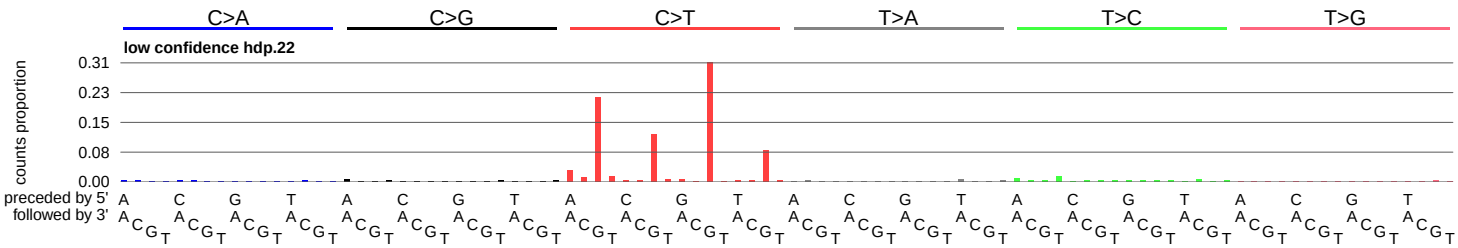

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.17
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

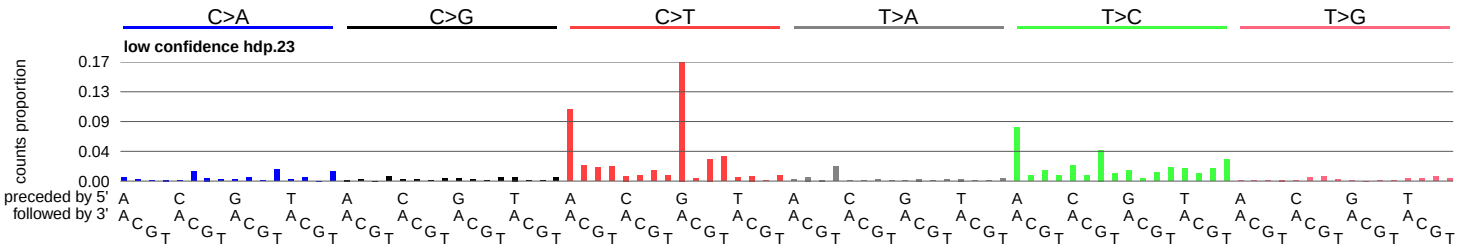

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.18
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

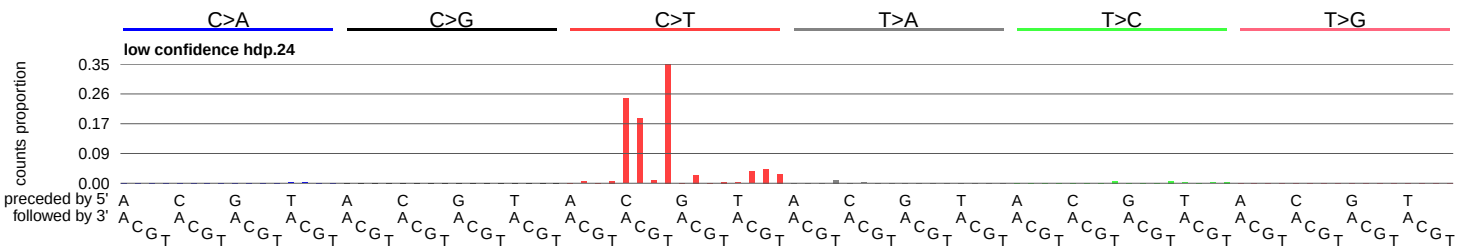

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.19
counts proportion
0.27
0.20
0.14
0.07
0.00
preceded by 5'
followed by 3'

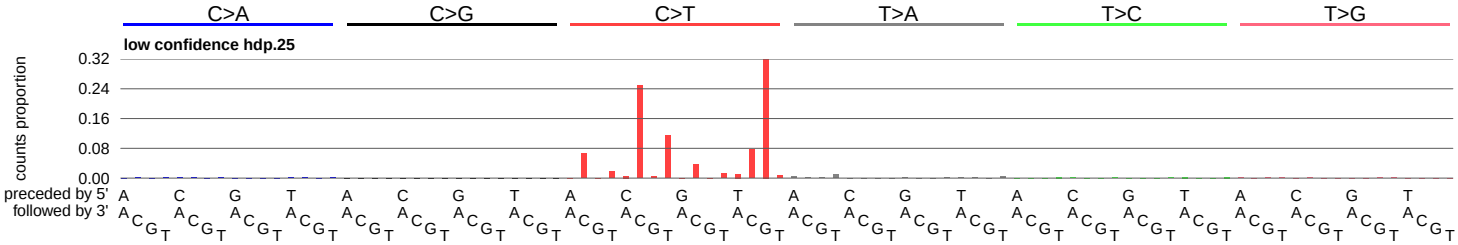

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.20
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

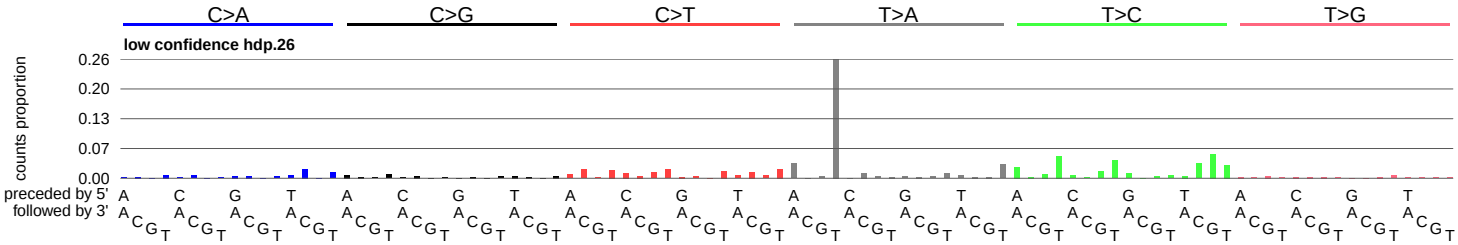

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.21
counts proportion
0.22
0.17
0.11
0.06
0.00
preceded by 5'
followed by 3'

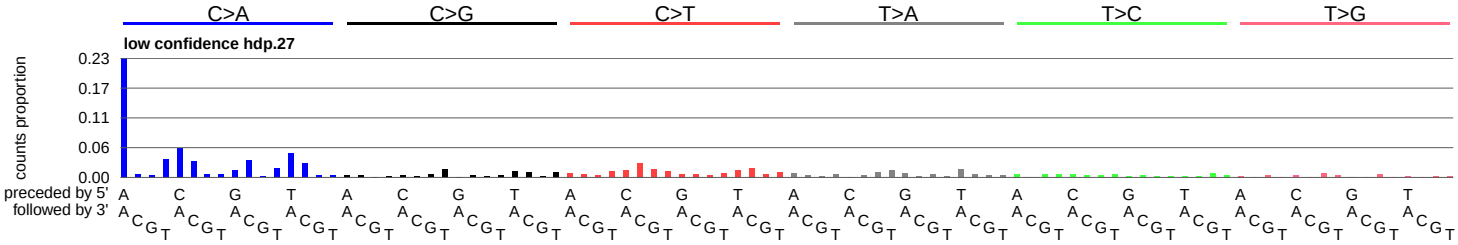

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.22
counts proportion
0.31
0.23
0.15
0.08
0.00
preceded by 5'
followed by 3'

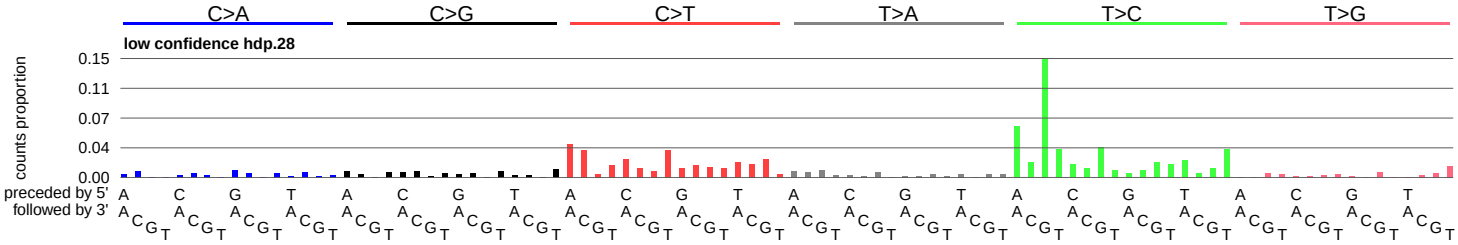

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.23
counts proportion
0.17
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

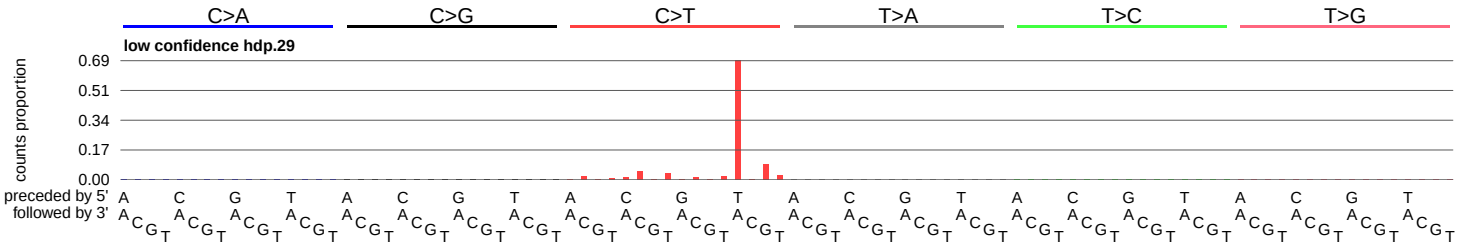

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.24
counts proportion
0.35
0.26
0.17
0.09
0.00
preceded by 5'
followed by 3'

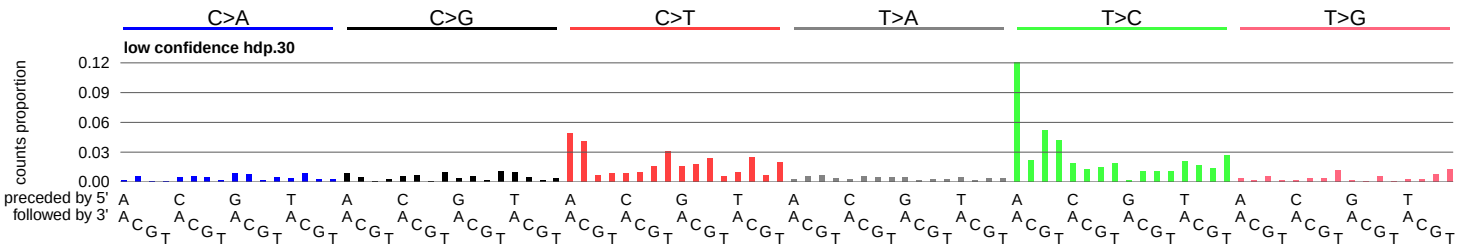

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.25
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

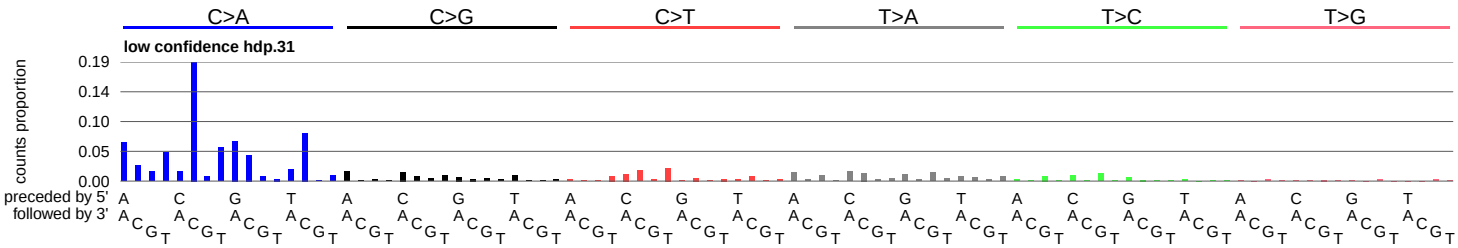

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.26
counts proportion
0.26
0.20
0.13
0.07
0.00
preceded by 5'
followed by 3'

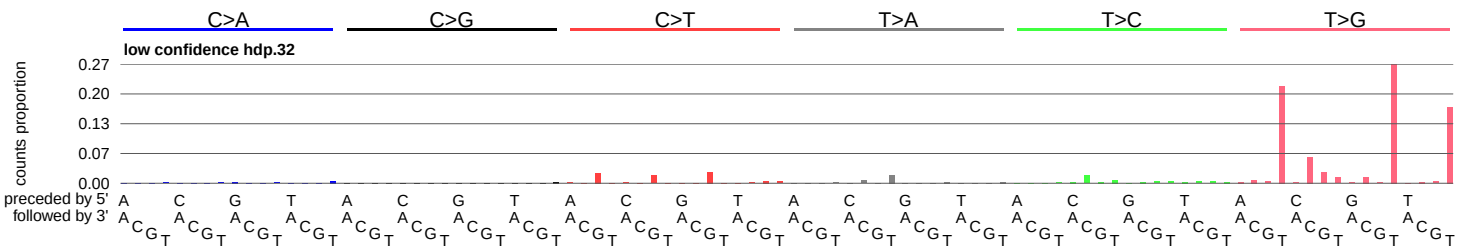

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.27
counts proportion
0.23
0.17
0.11
0.06
0.00
preceded by 5'
followed by 3'

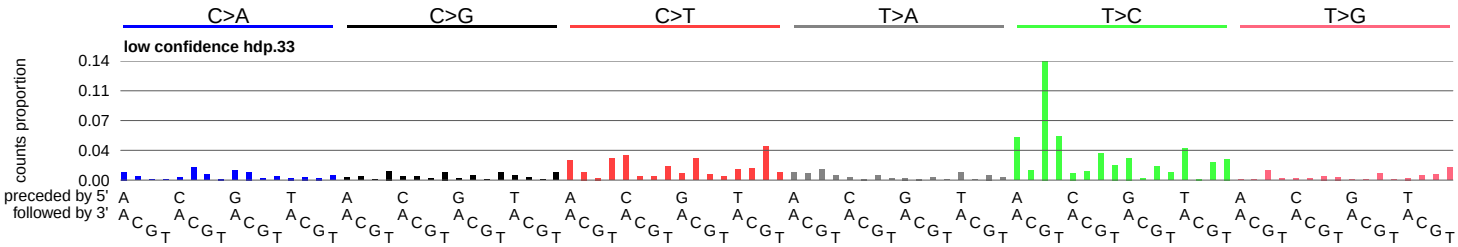

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.28
counts proportion
0.15
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

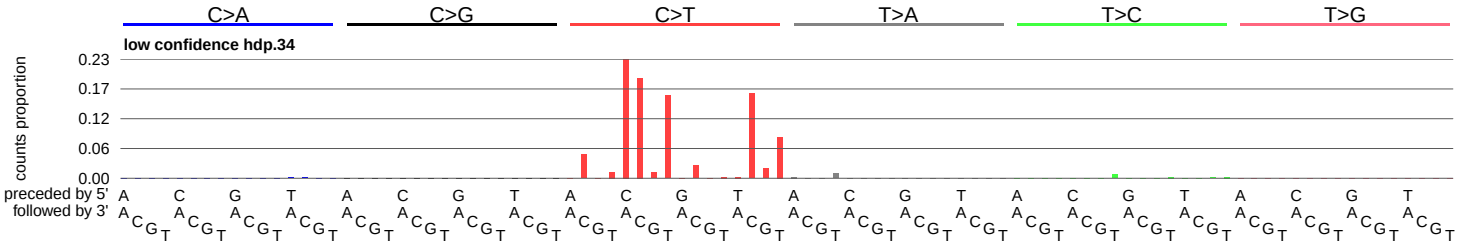

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.29
counts proportion
0.69
0.51
0.34
0.17
0.00
preceded by 5'
followed by 3'

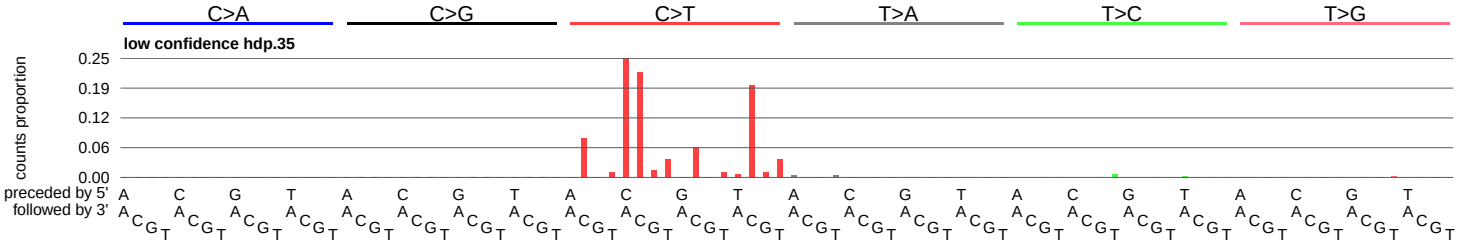

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.30
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

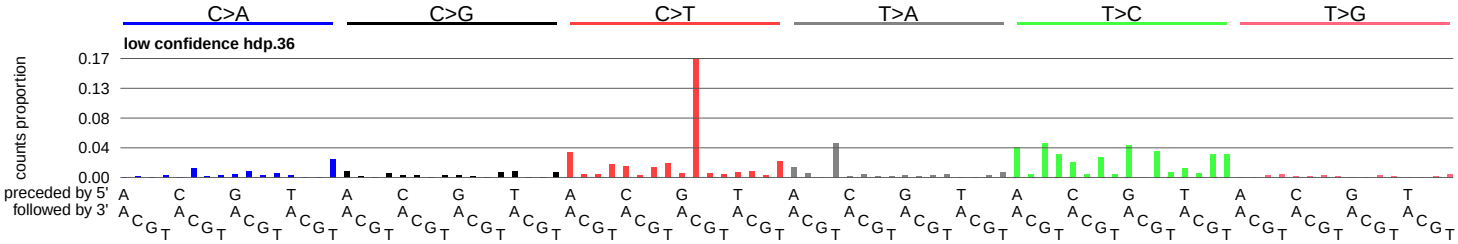

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.31
counts proportion
0.19
0.14
0.10
0.05
0.00
preceded by 5'
followed by 3'

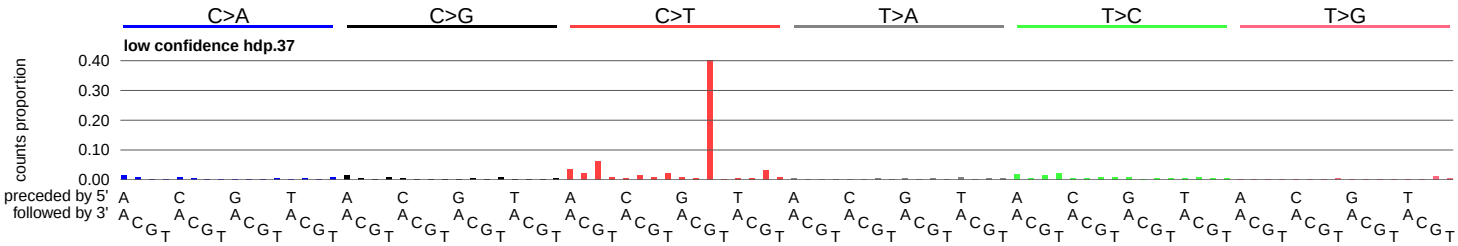

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.32
counts proportion
0.27
0.20
0.13
0.07
0.00
preceded by 5'
followed by 3'

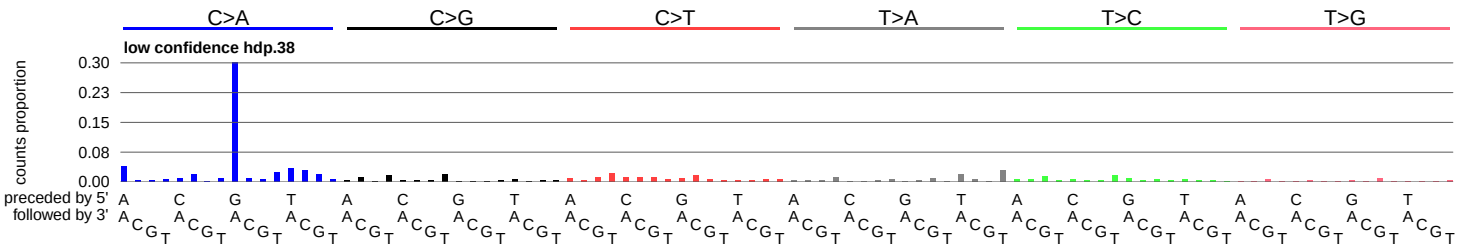

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.33
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

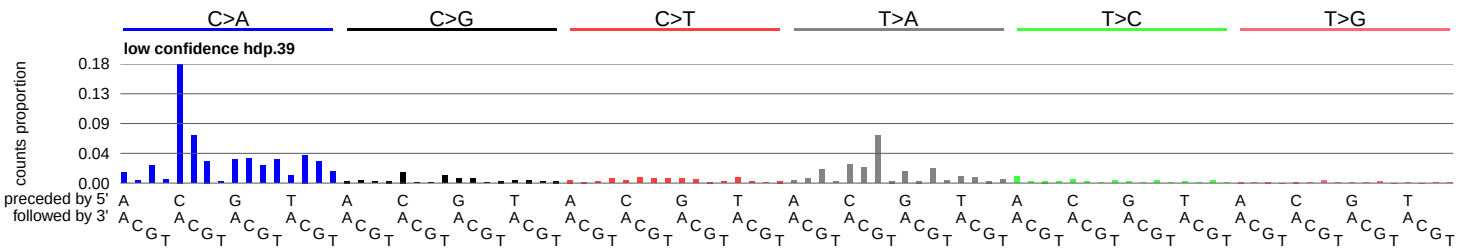

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.34
counts proportion
0.23
0.17
0.12
0.06
0.00
preceded by 5'
followed by 3'

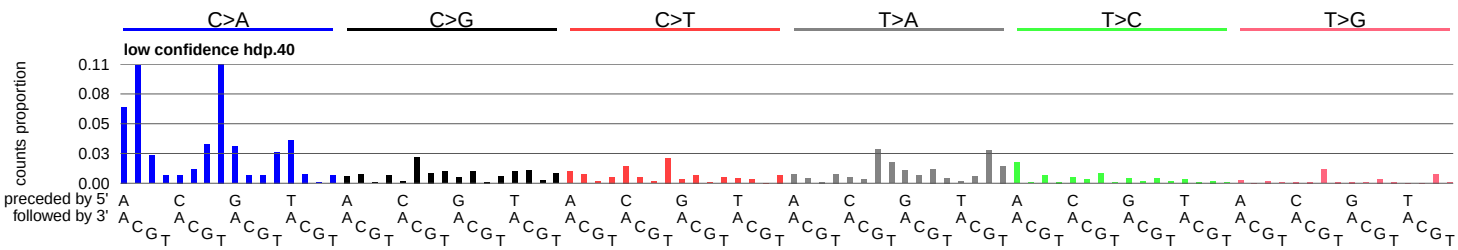

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.35
counts proportion
0.25
0.19
0.12
0.06
0.00
preceded by 5'
followed by 3'

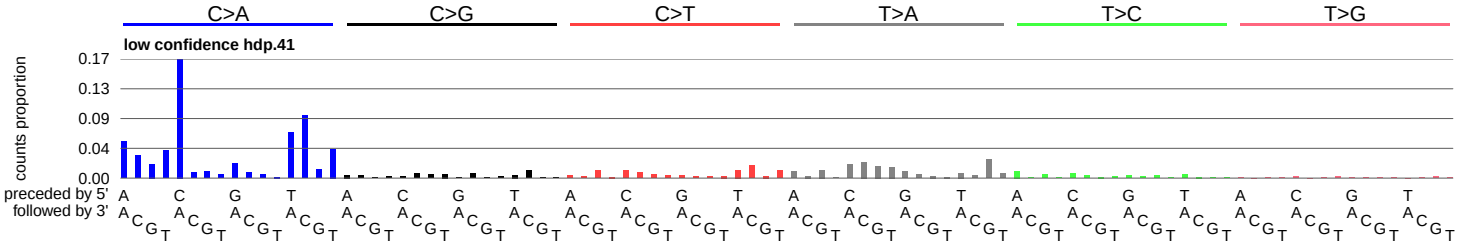

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.36
counts proportion
0.17
0.13
0.08
0.04
0.00
preceded by 5'
followed by 3'

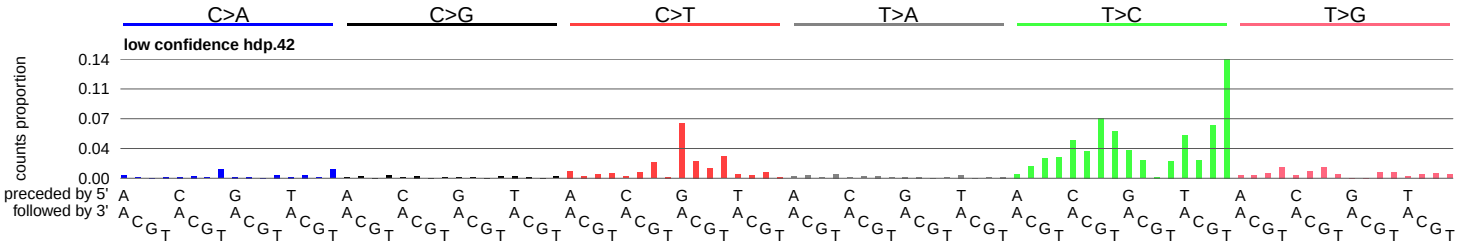

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.37
counts proportion
0.40
0.30
0.20
0.10
0.00
preceded by 5'
followed by 3'

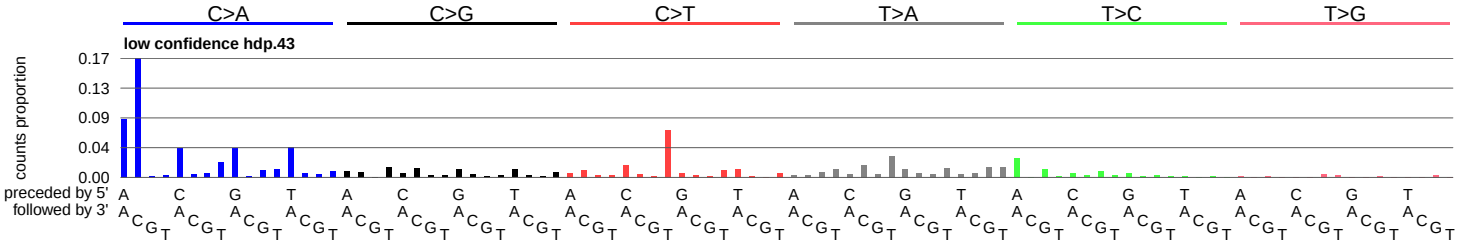

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.38
counts proportion
0.30
0.23
0.15
0.08
0.00
preceded by 5'
followed by 3'

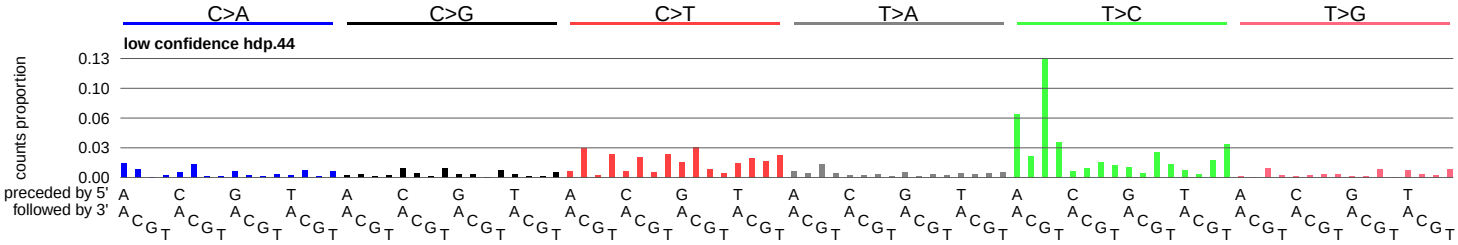

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.39
counts proportion
0.18
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

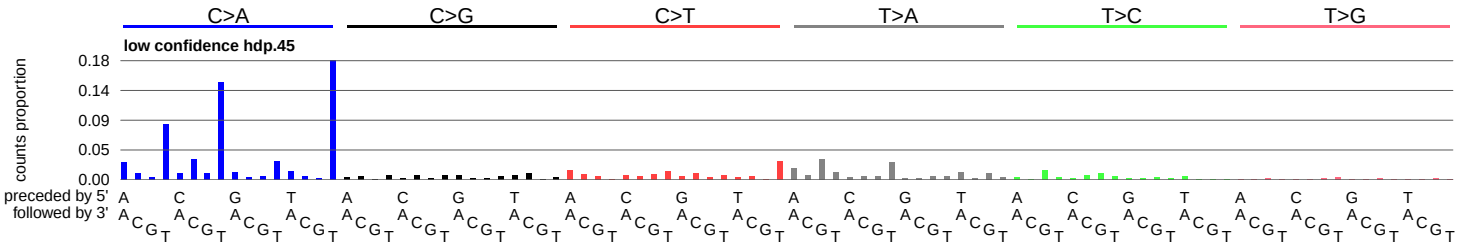

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.40
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

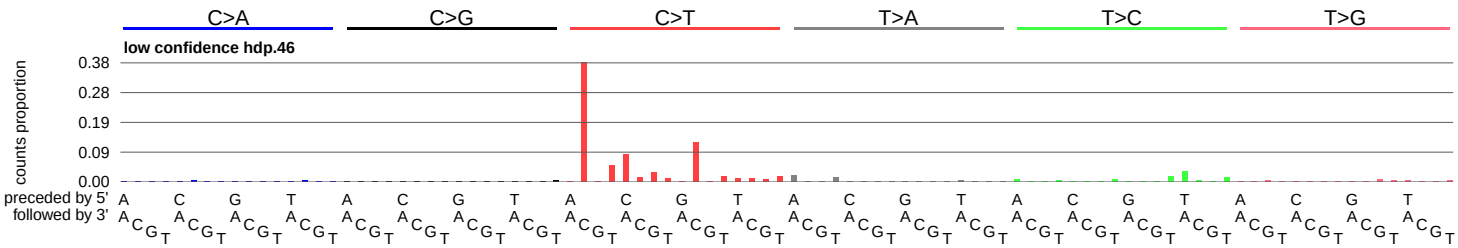

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.41
counts proportion
0.17
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

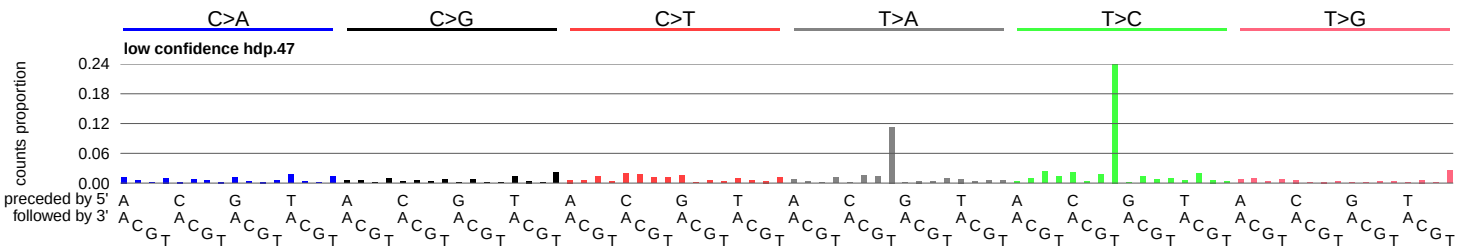

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.42
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

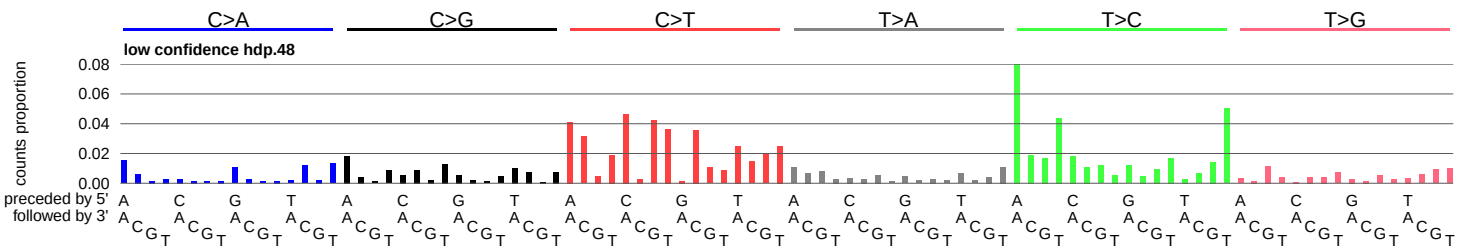

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.43
counts proportion
0.17
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

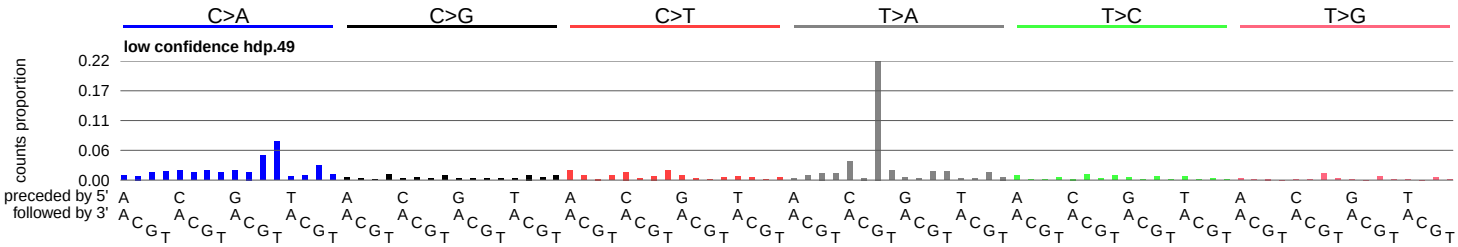

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.44
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

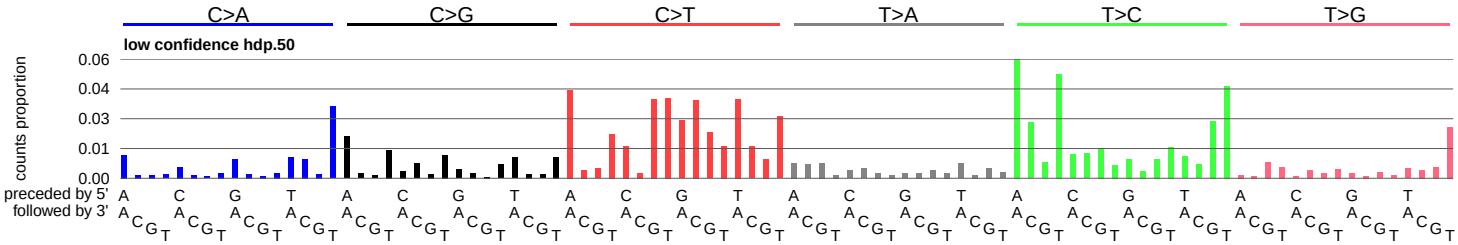

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.45
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

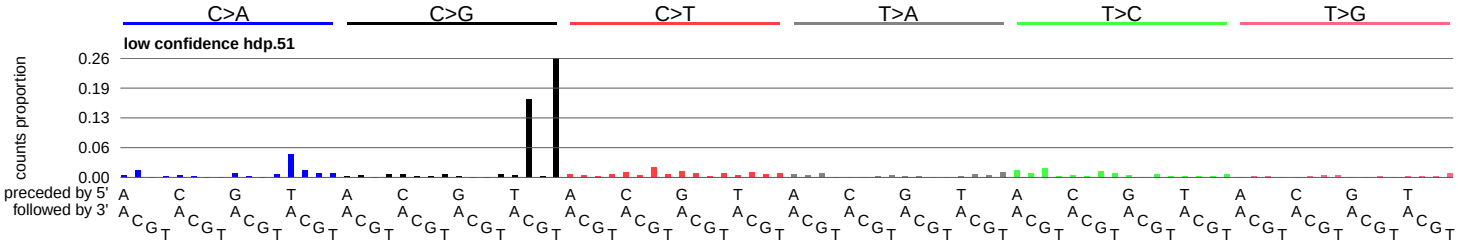

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.46
counts proportion
0.38
0.28
0.19
0.09
0.00
preceded by 5'
followed by 3'

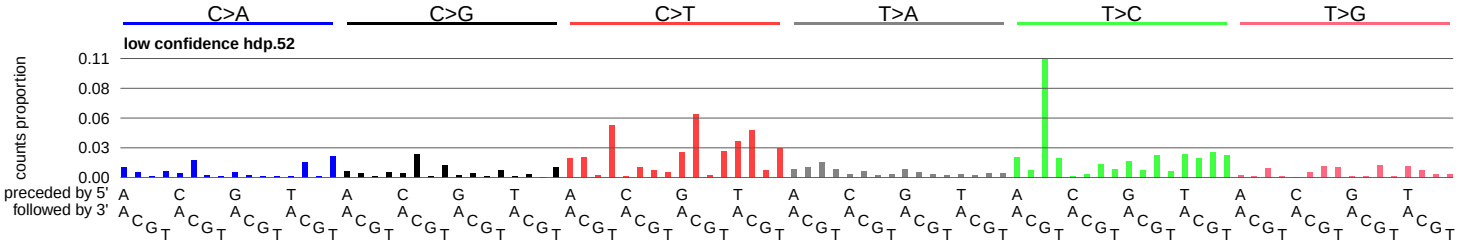

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.47
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

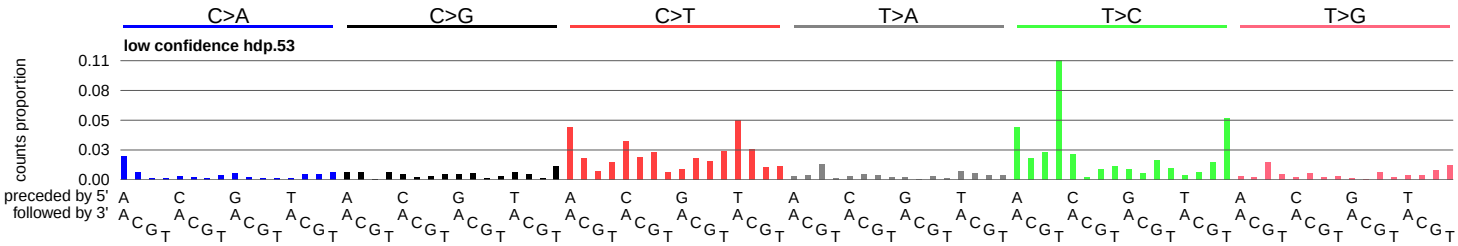

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.48
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

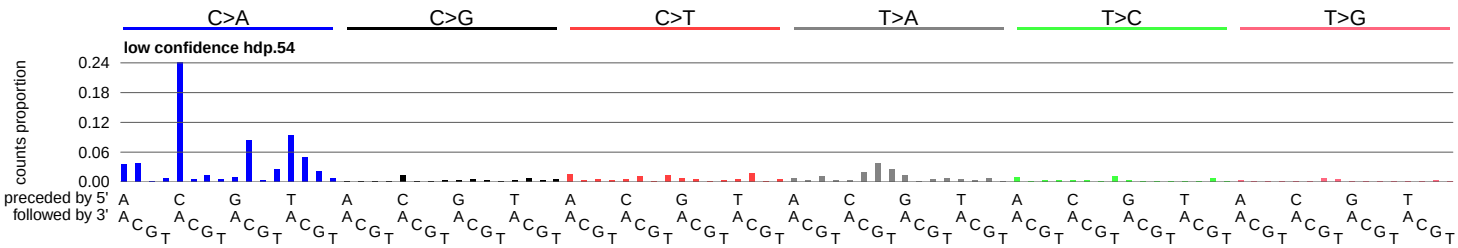

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.49
counts proportion
0.22
0.17
0.11
0.06
0.00
preceded by 5'
followed by 3'

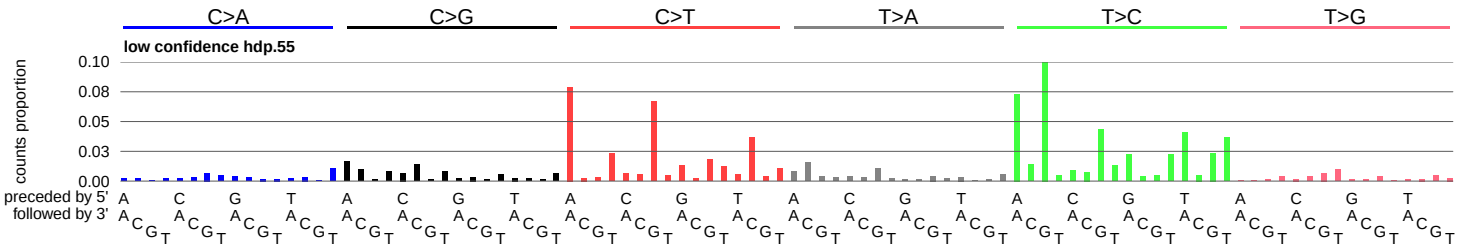

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.50
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

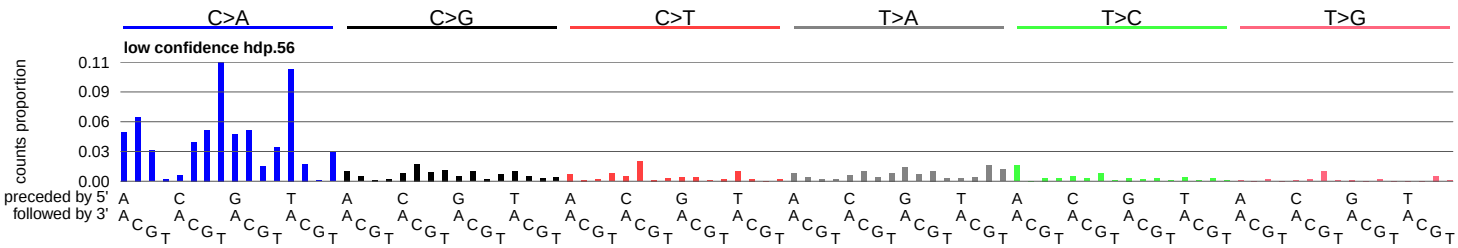

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.51
counts proportion
0.26
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

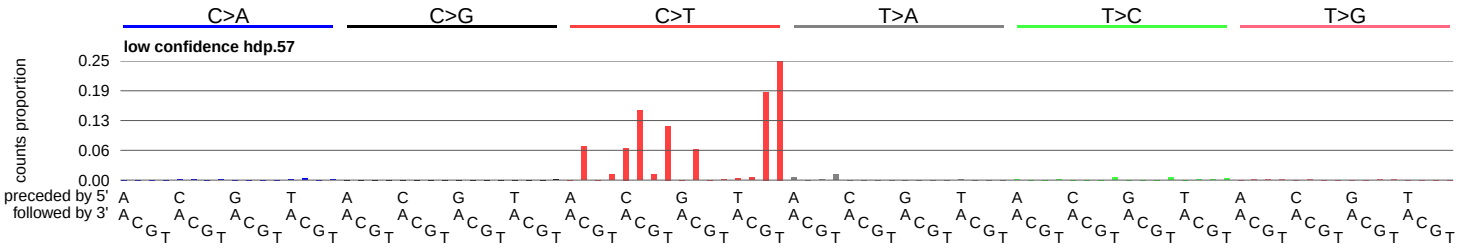

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.52
counts proportion
0.11
0.08
0.06
0.03
0.00
preceded by 5'
followed by 3'

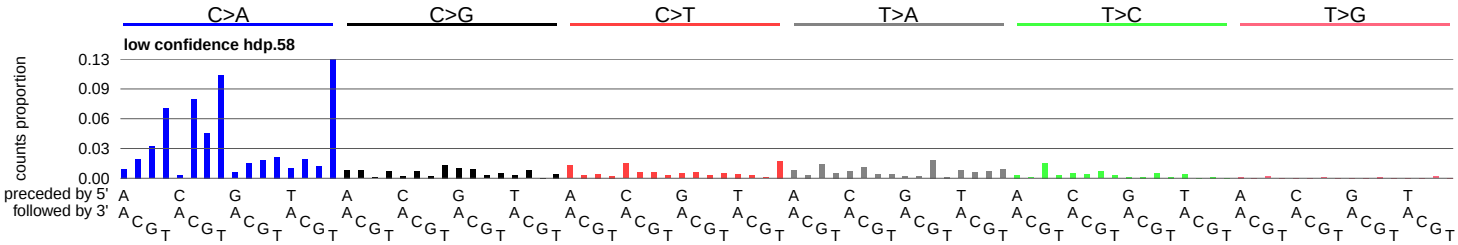

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.53
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

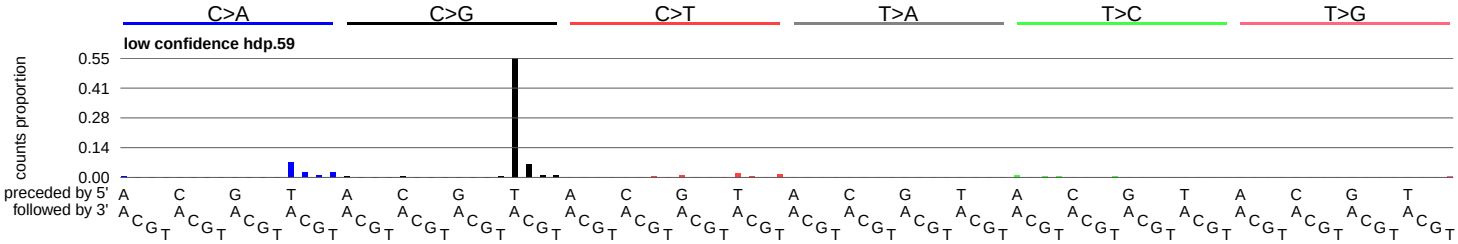

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.54
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

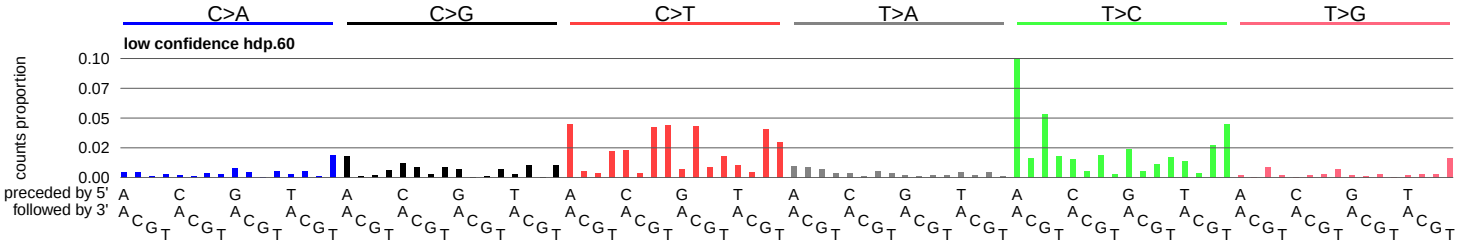

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.55
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

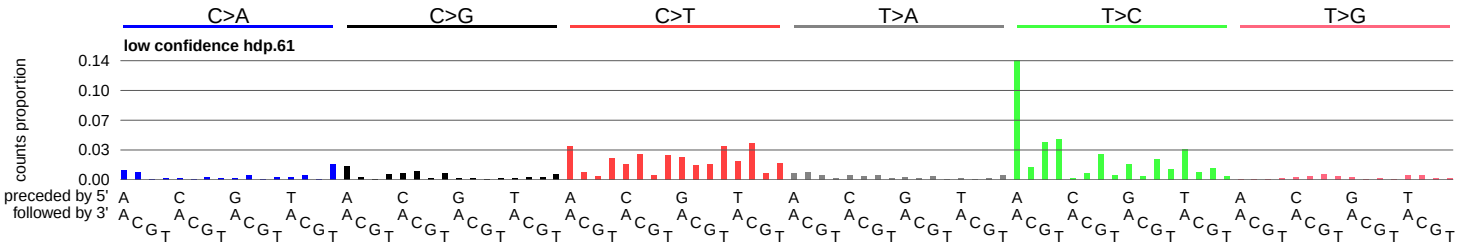

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.56
counts proportion
0.11
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

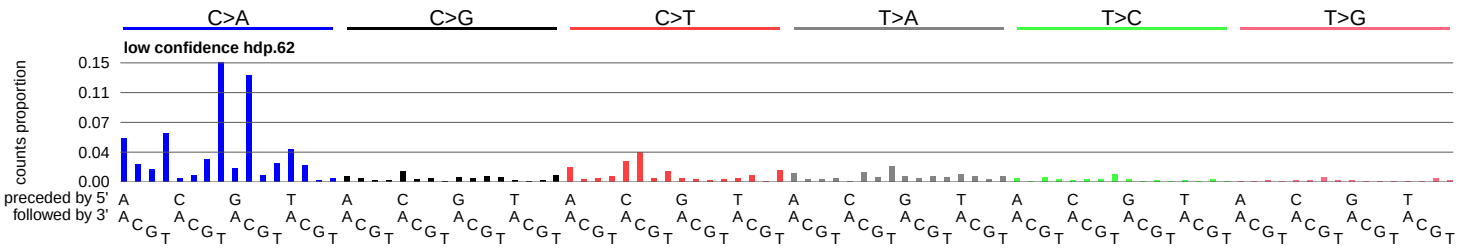

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.57
counts proportion
0.25
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

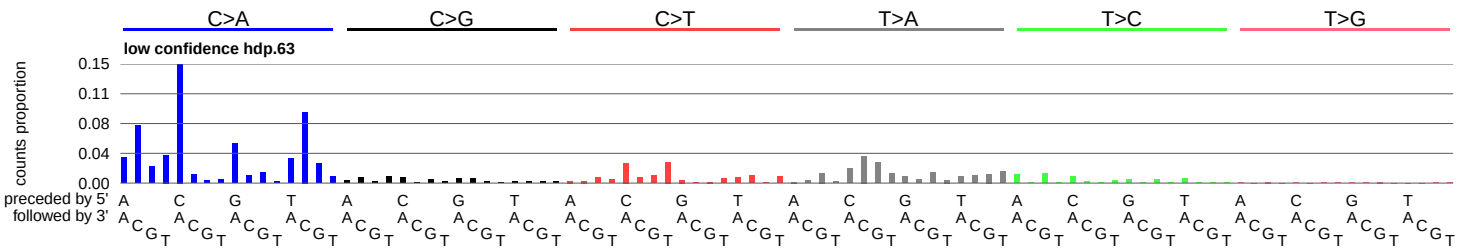

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.58
counts proportion
0.13
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

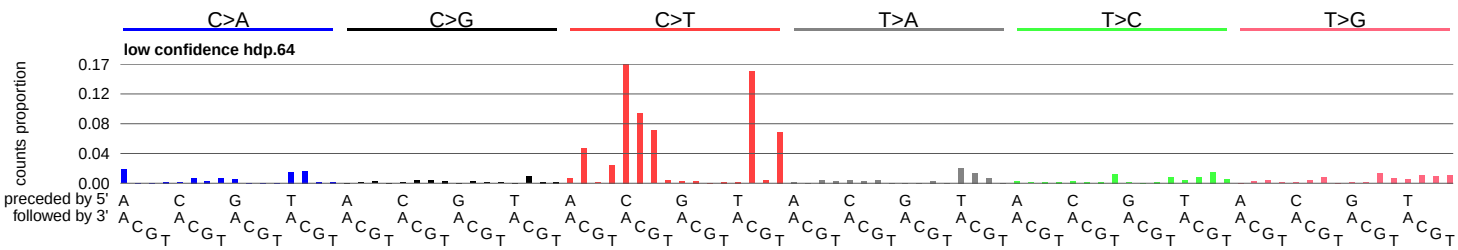

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.59
counts proportion
0.55
0.41
0.28
0.14
0.00
preceded by 5'
followed by 3'

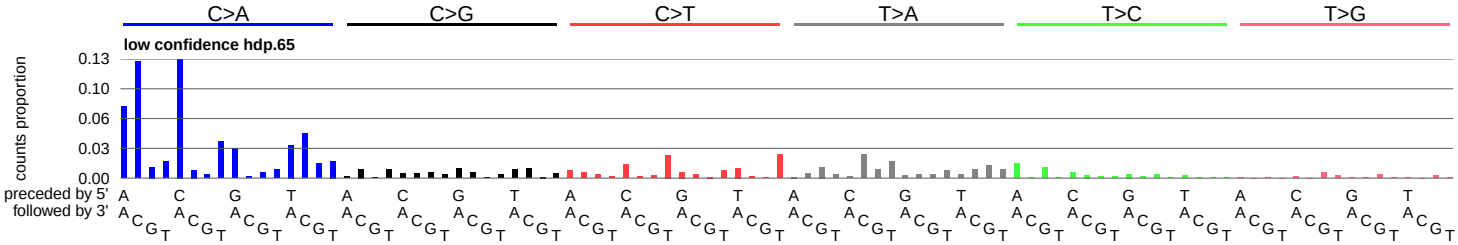

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.60
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

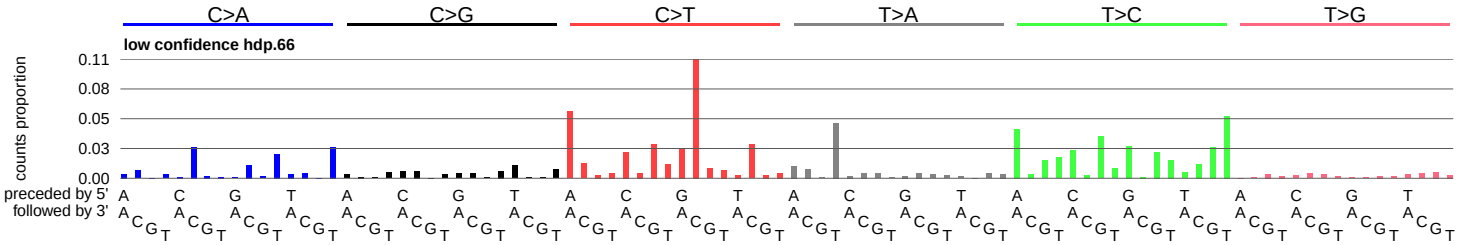

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.61
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

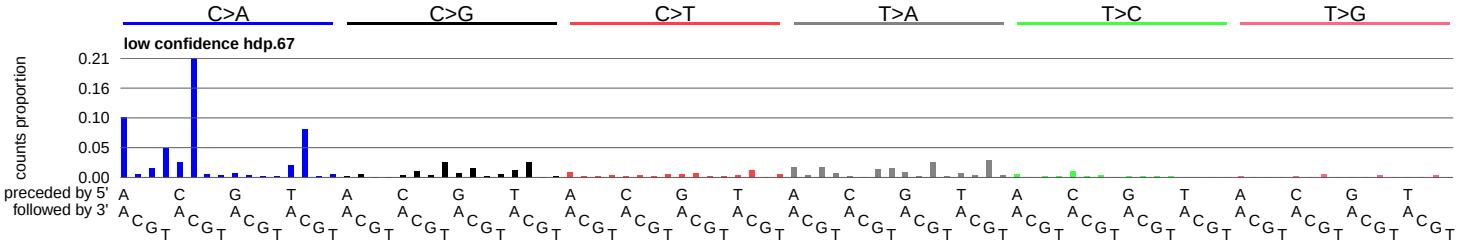

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.62
counts proportion
0.15
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

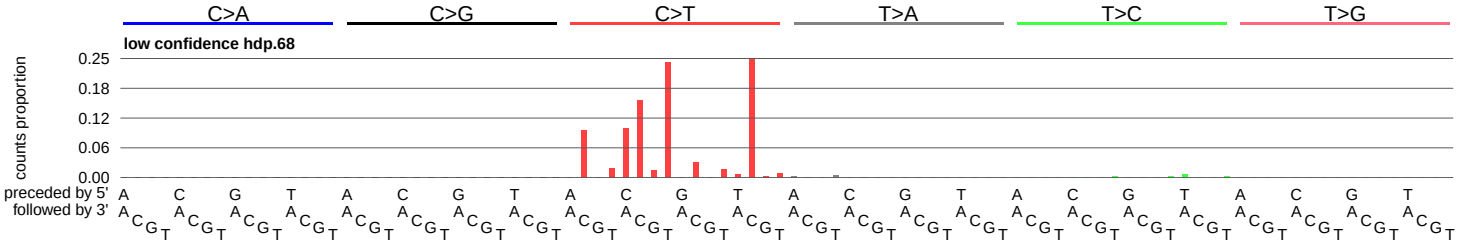

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.63
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

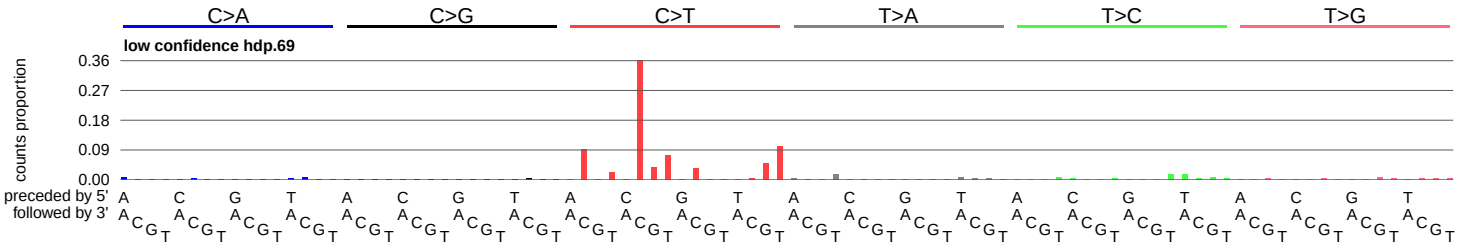

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.64
counts proportion
0.17
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

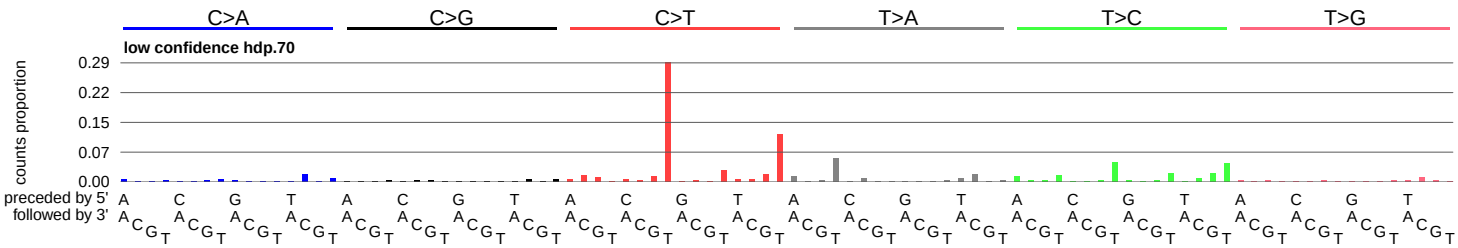

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.65
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

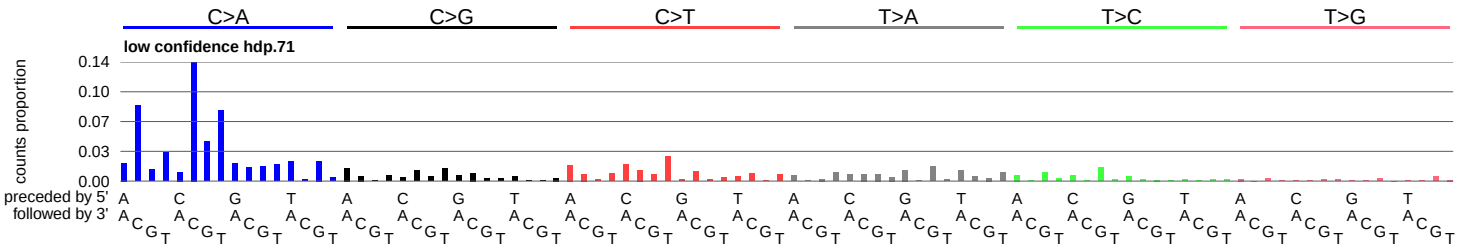

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.66
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

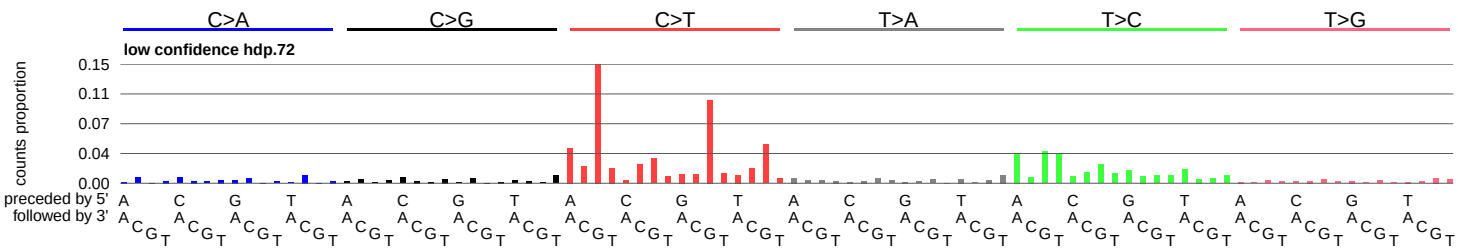

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.67
counts proportion
0.21
0.16
0.10
0.05
0.00
preceded by 5'
followed by 3'

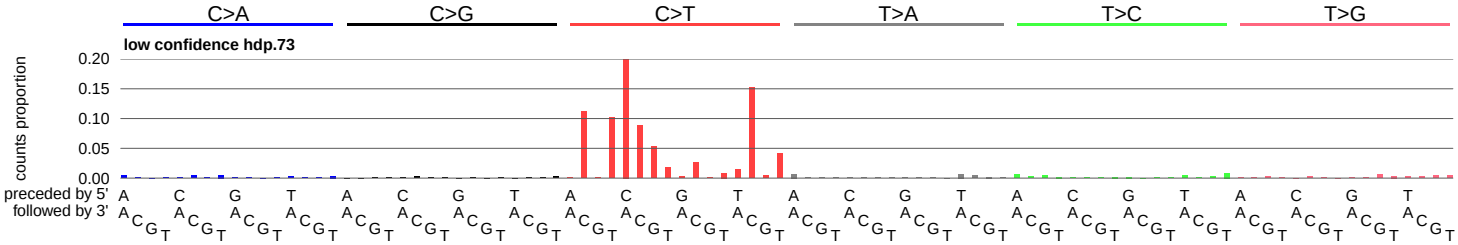

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.68
counts proportion
0.25
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

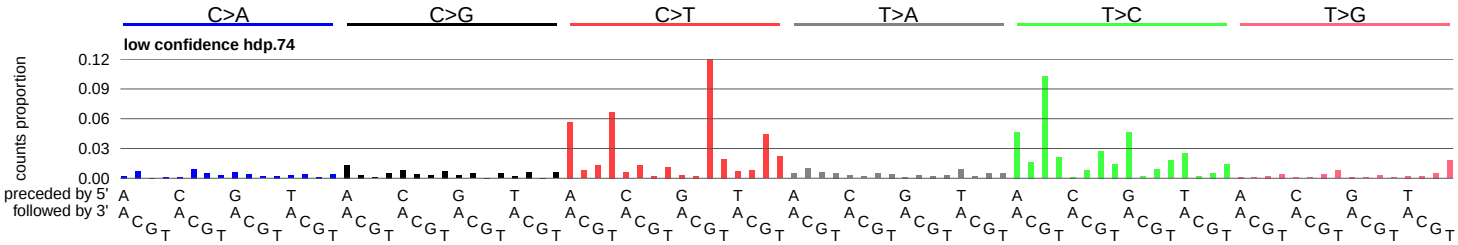

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.69
counts proportion
0.36
0.27
0.18
0.09
0.00
preceded by 5'
followed by 3'

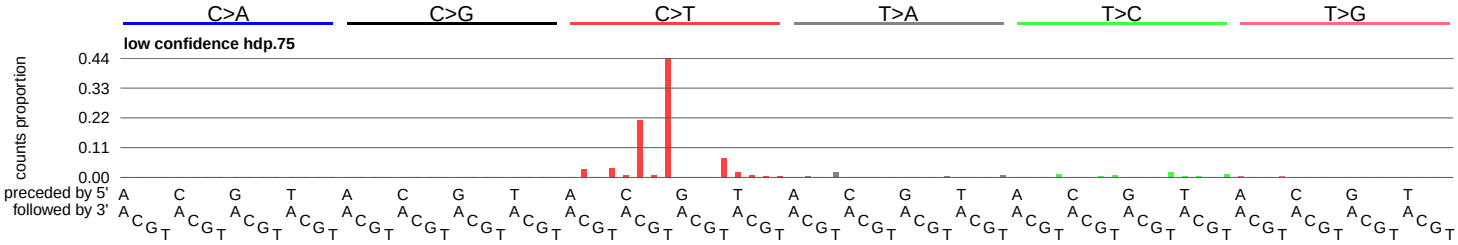

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.70
counts proportion
0.29
0.22
0.15
0.07
0.00
preceded by 5'
followed by 3'

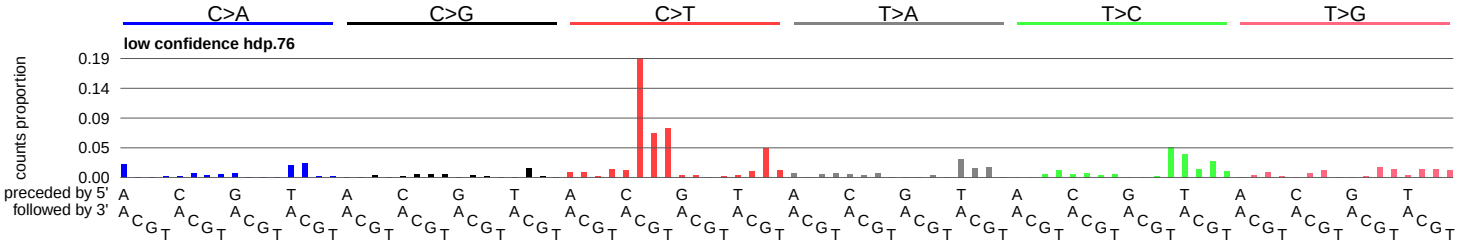

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.71
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

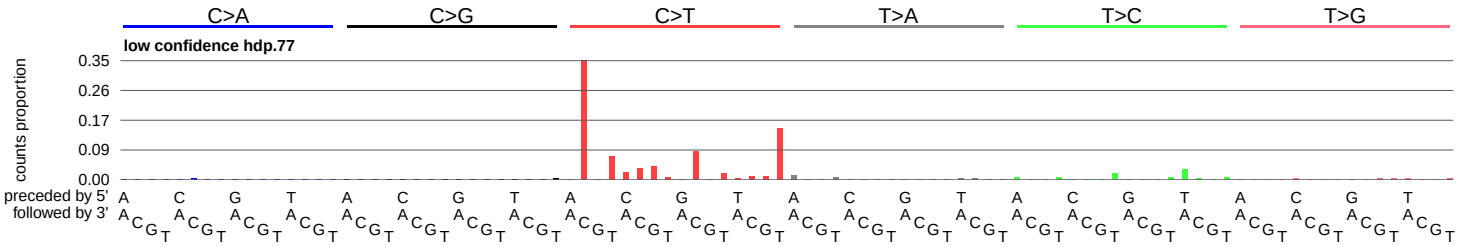

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.72
counts proportion
0.15
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

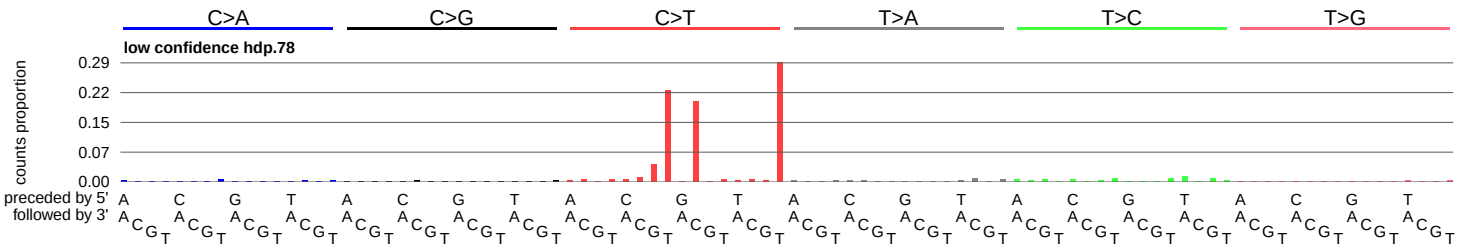

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.73
counts proportion
0.20
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

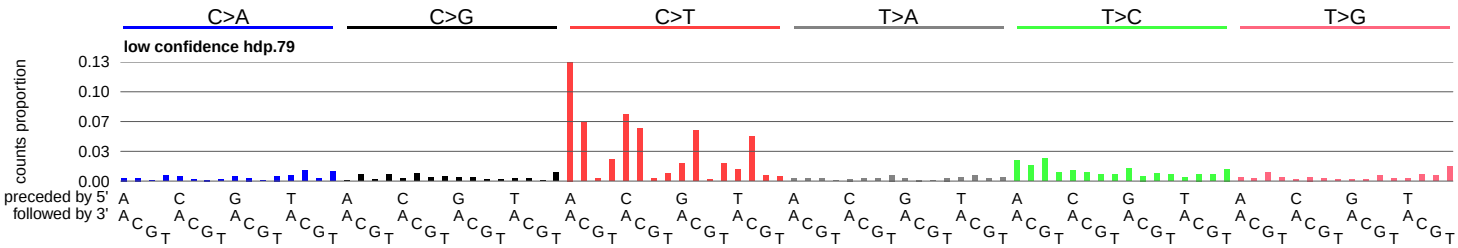

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.74
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

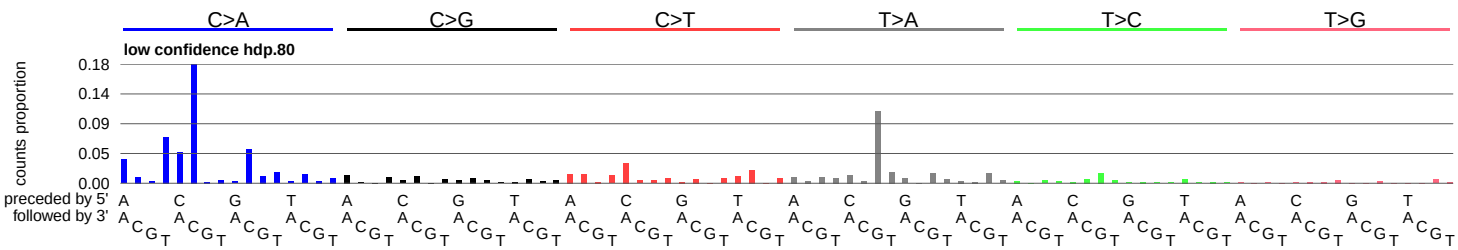

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.75
counts proportion
0.44
0.33
0.22
0.11
0.00
preceded by 5'
followed by 3'

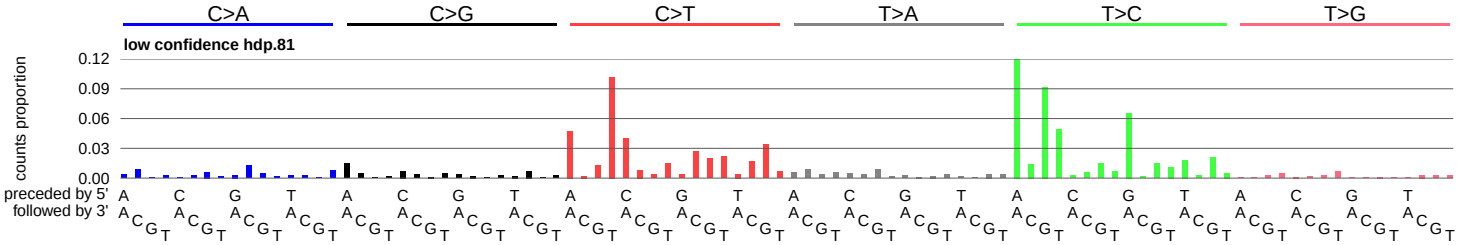

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.76
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

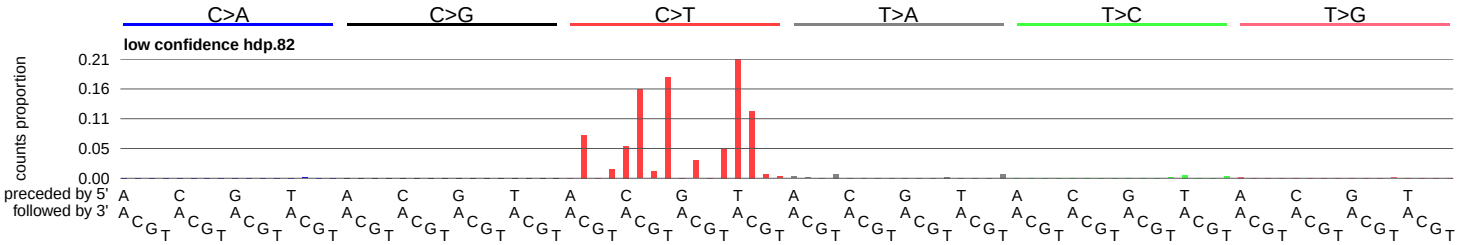

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.77
counts proportion
0.35
0.26
0.17
0.09
0.00
preceded by 5'
followed by 3'

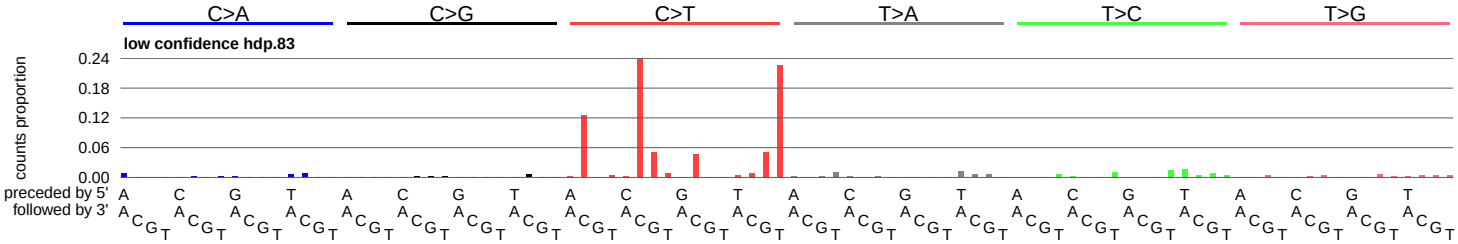

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.78
counts proportion
0.29
0.22
0.15
0.07
0.00
preceded by 5'
followed by 3'

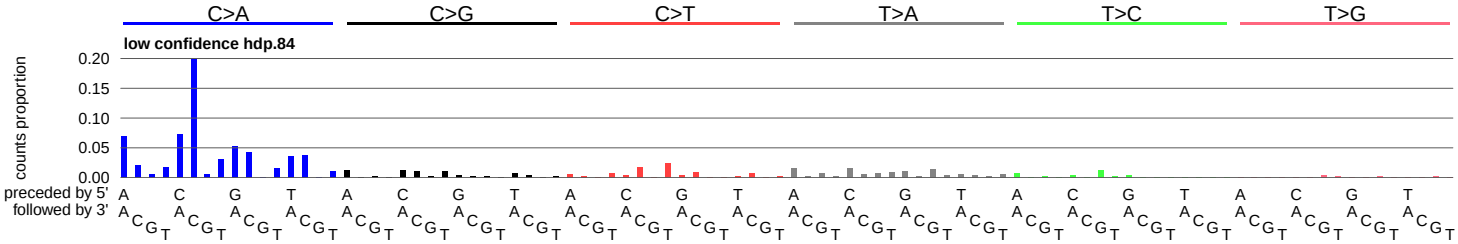

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.79
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

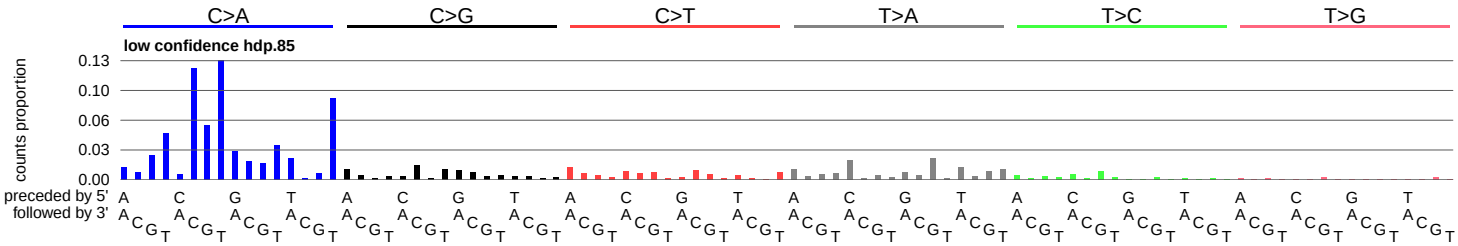

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.80
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

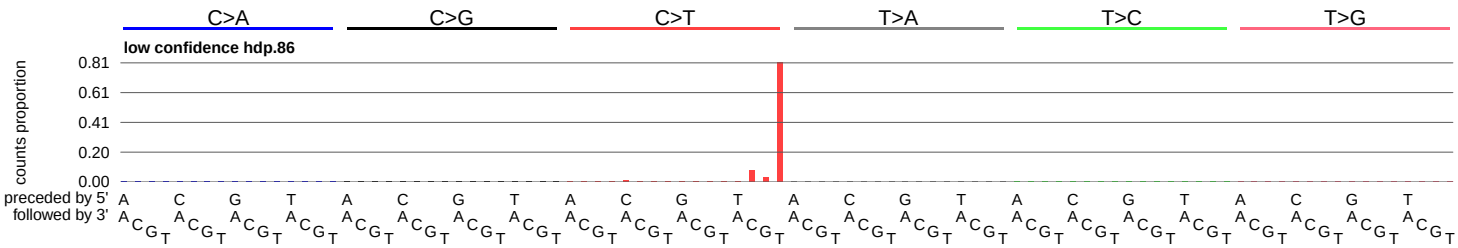

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.81
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

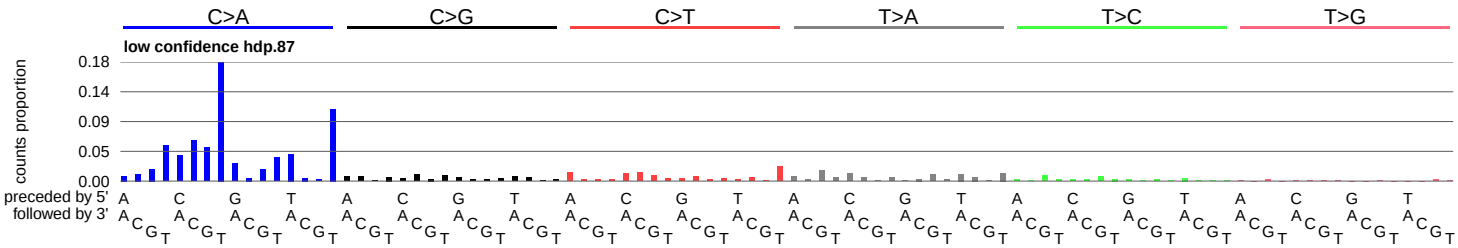

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.82
counts proportion
0.21
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

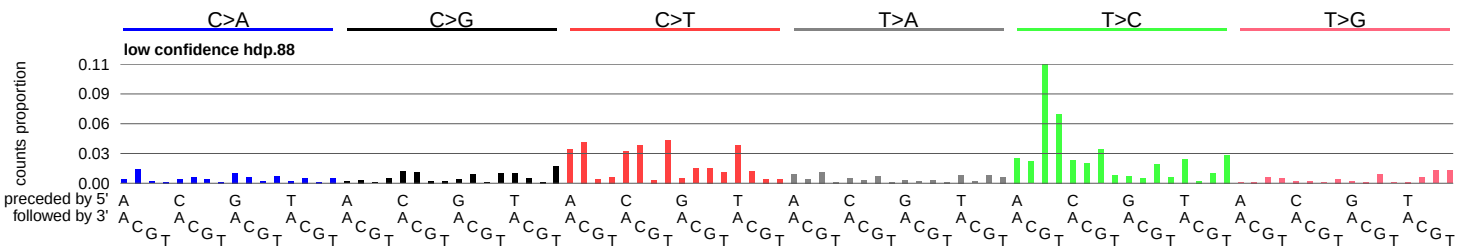

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.83
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

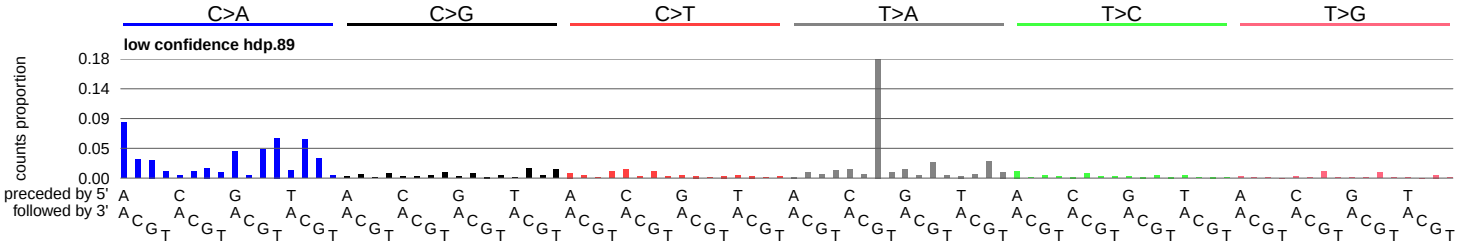

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.84
counts proportion
0.20
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

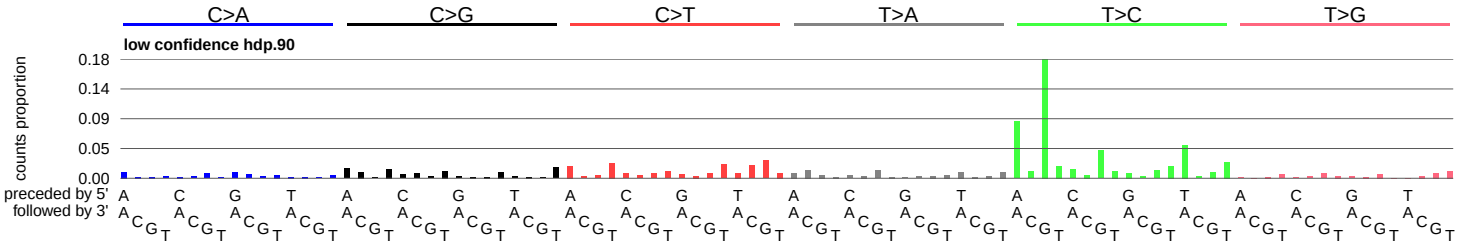

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.85
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

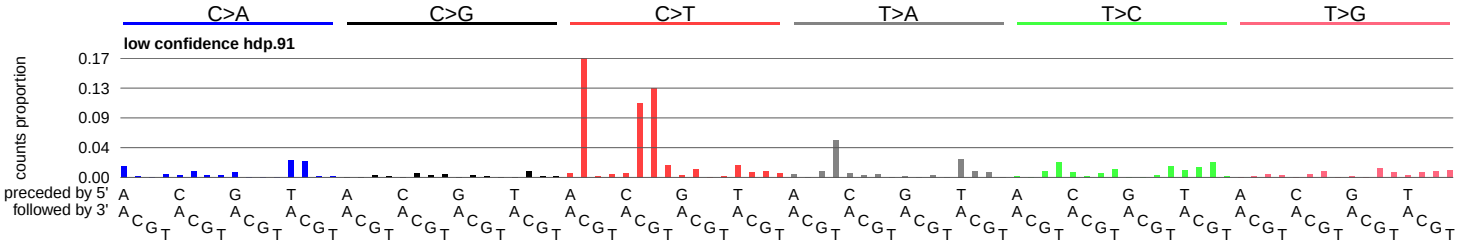

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.86
counts proportion
0.81
0.61
0.41
0.20
0.00
preceded by 5'
followed by 3'

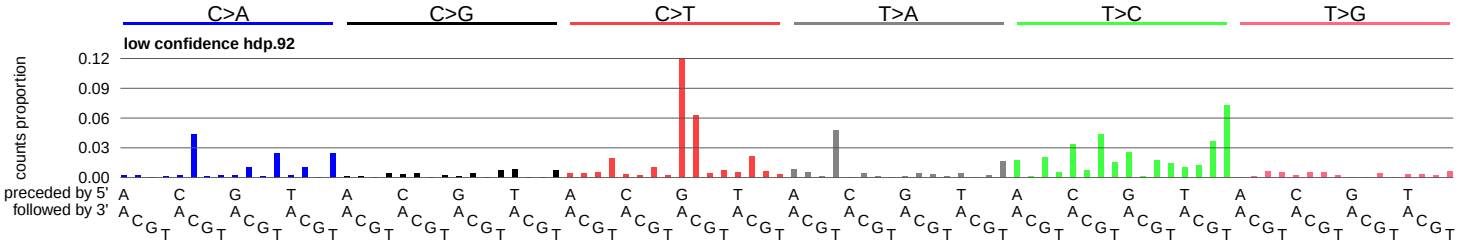

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.87
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

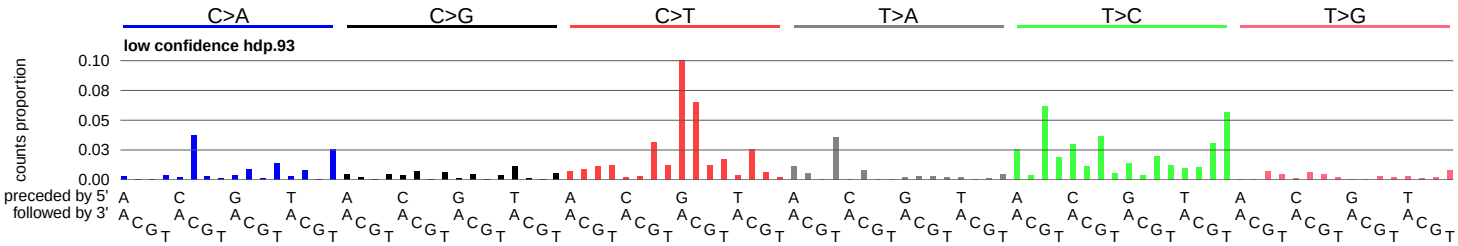

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.88
counts proportion
0.11
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

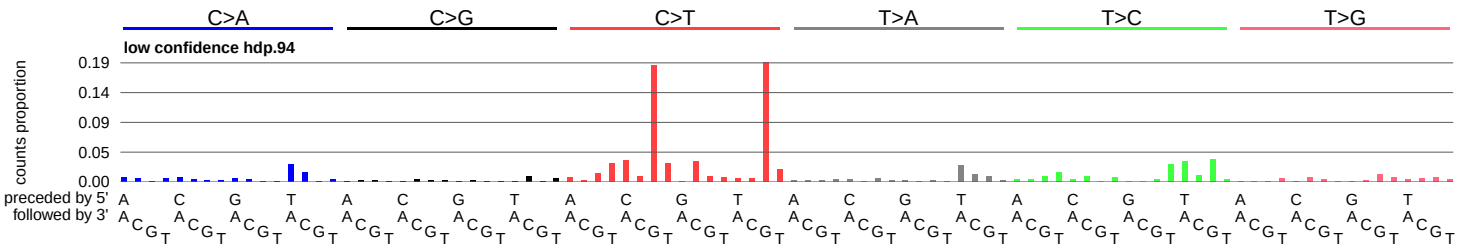

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.89
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

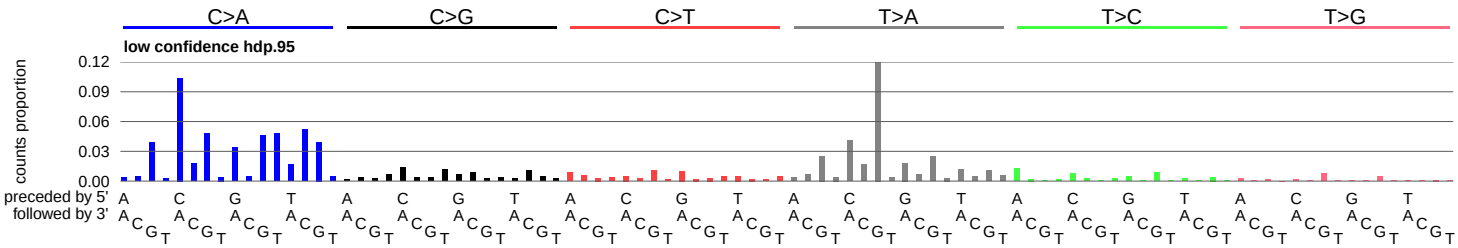

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.90
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

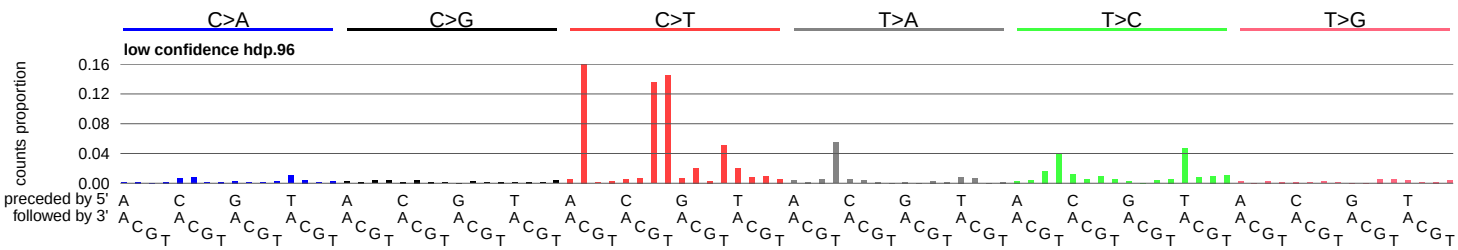

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.91
counts proportion
0.17
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

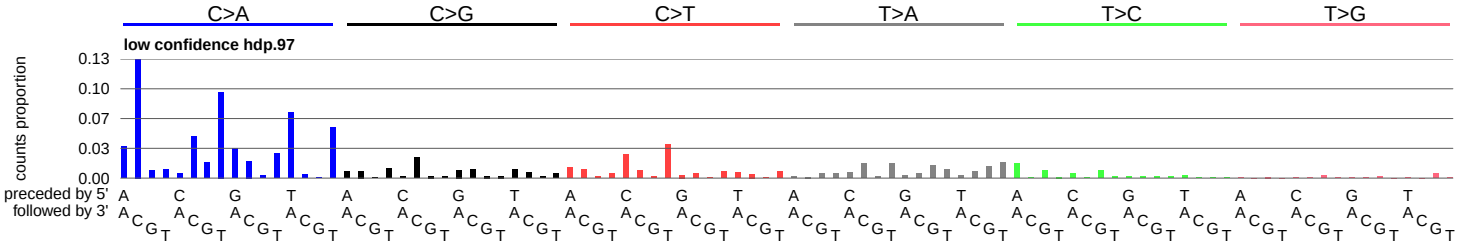

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.92
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

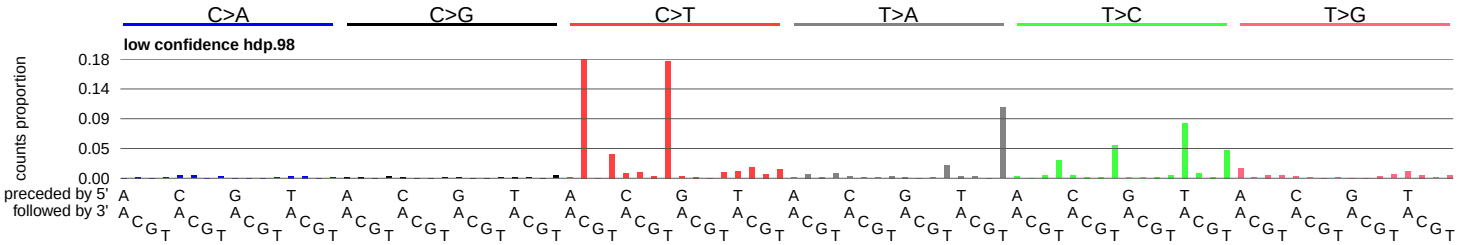

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.93
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

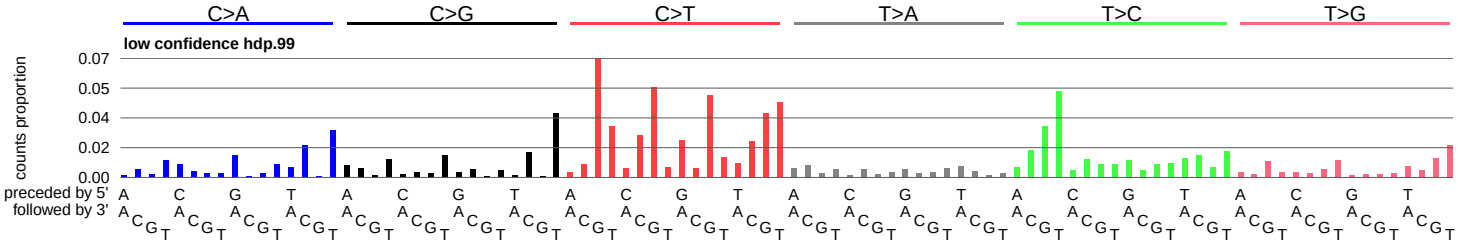

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.94
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

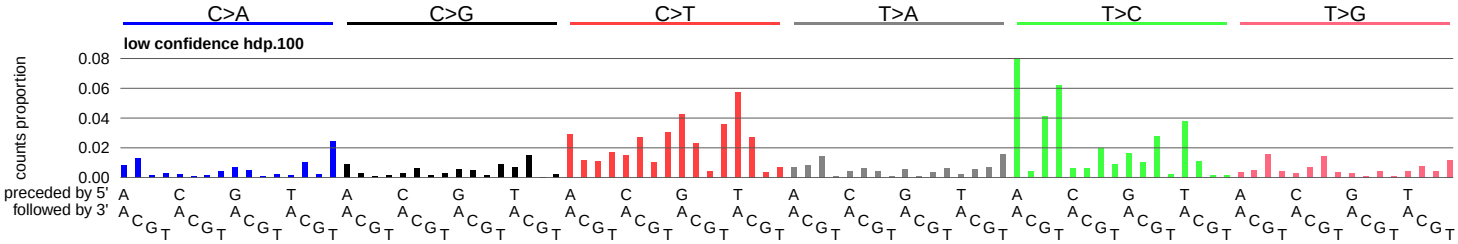

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.95
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

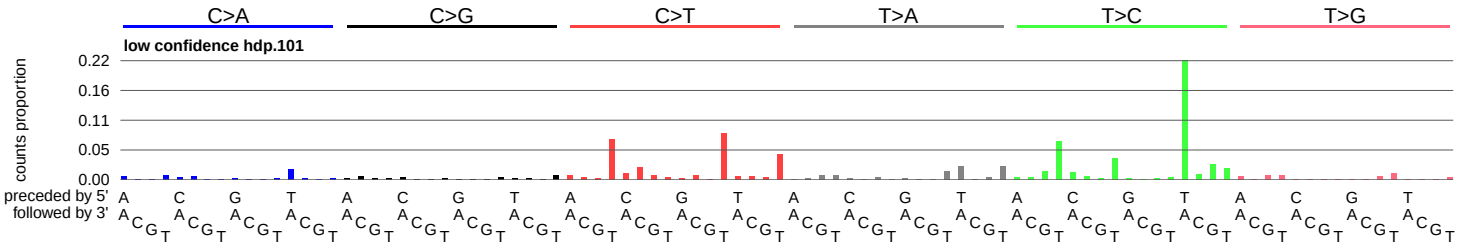

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.96
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

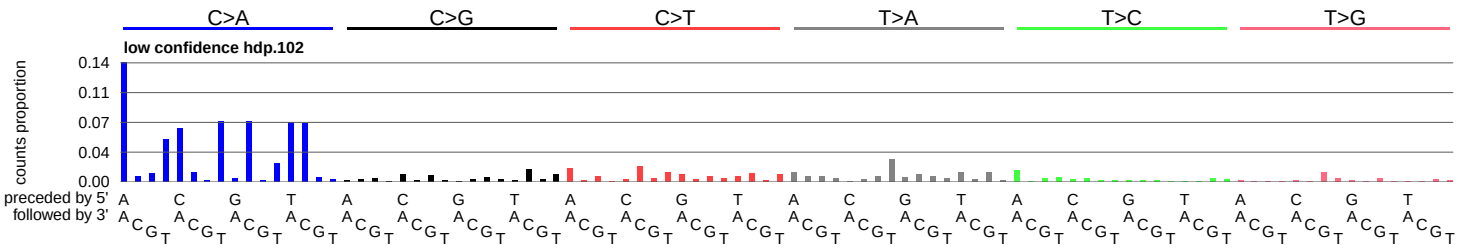

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.97
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

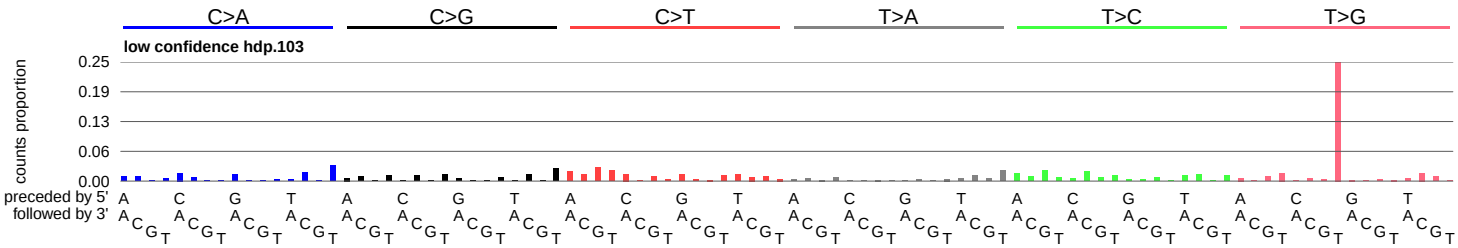

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.98
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

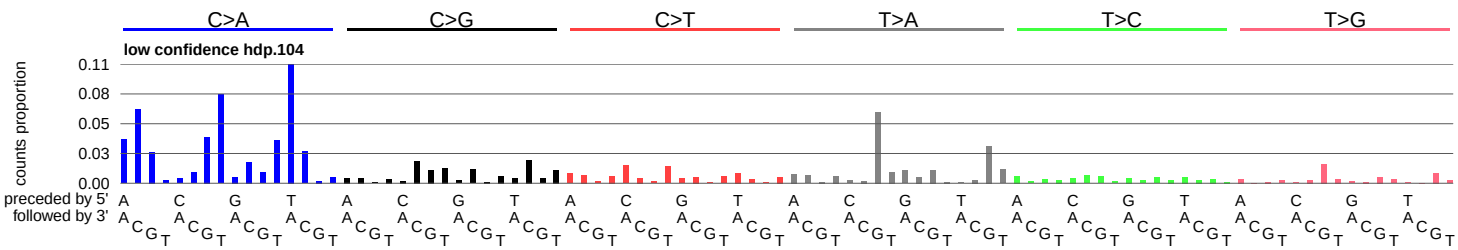

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.99
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

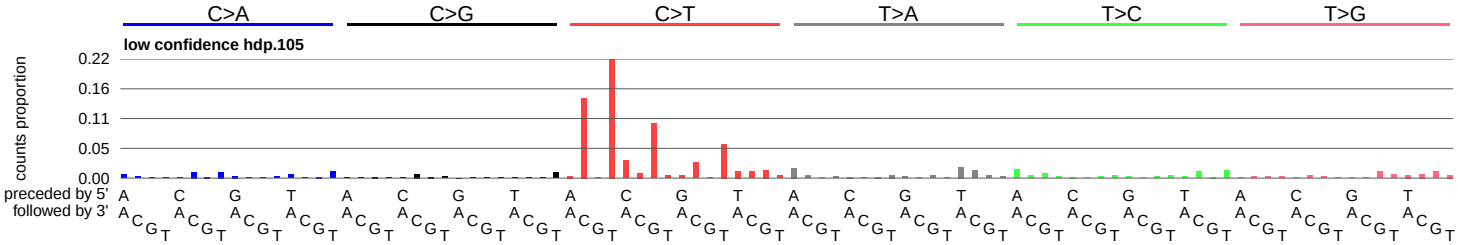

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.100
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

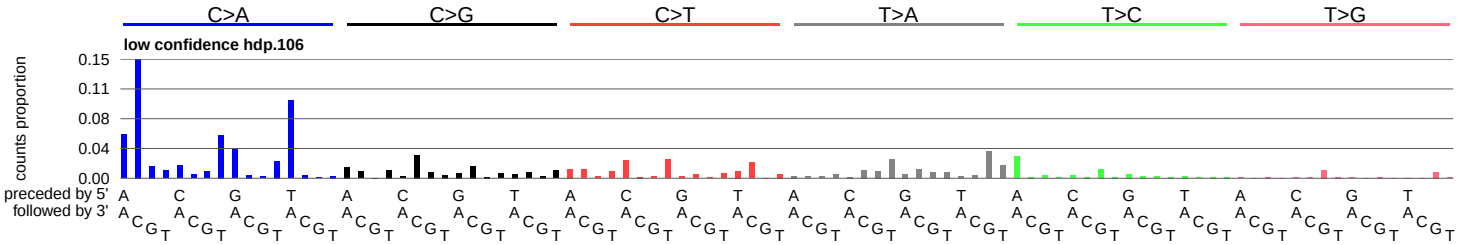

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.101
counts proportion
0.22
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

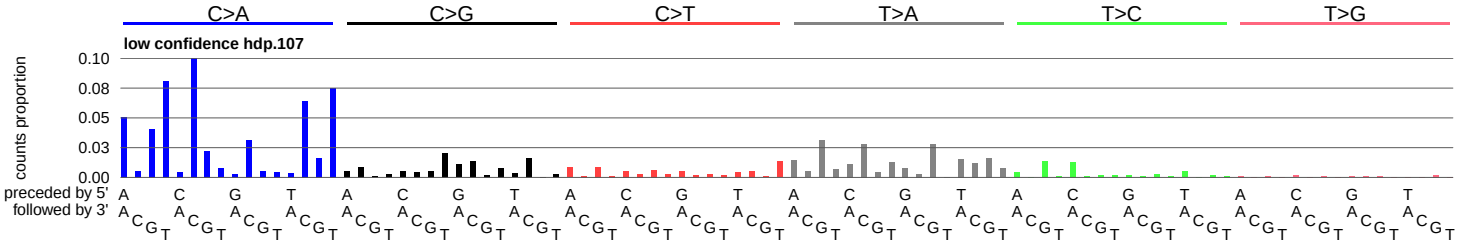

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.102
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

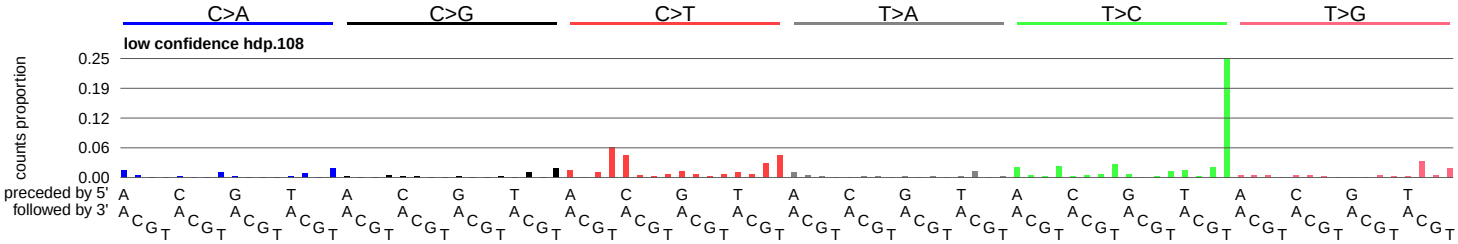

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.103
counts proportion
0.25
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

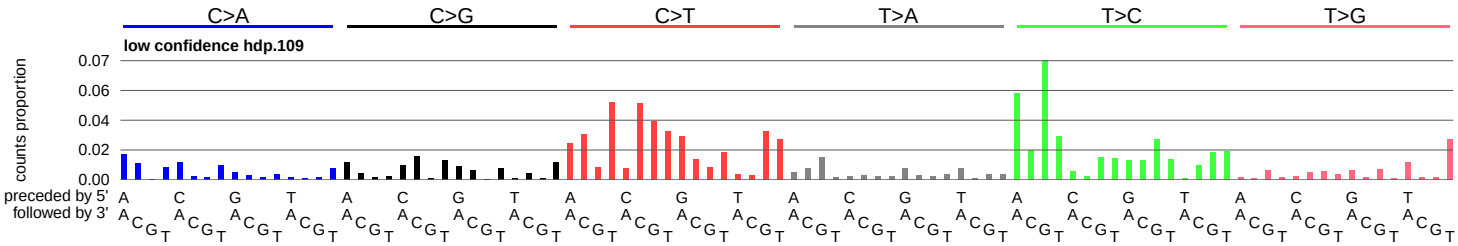

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.104
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

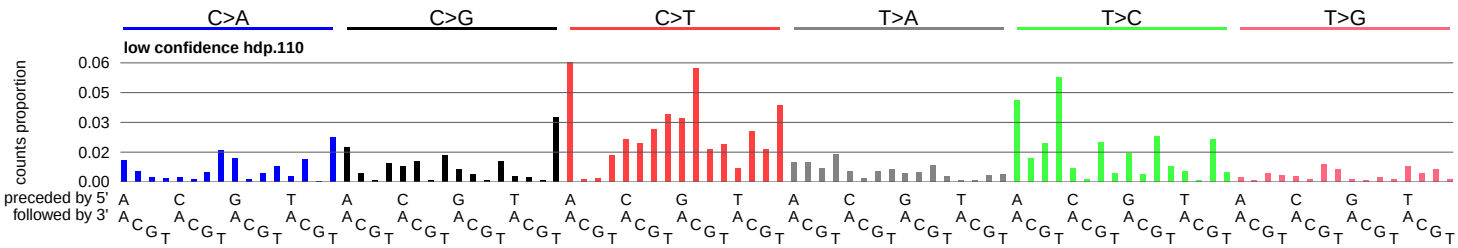

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.105
counts proportion
0.22
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

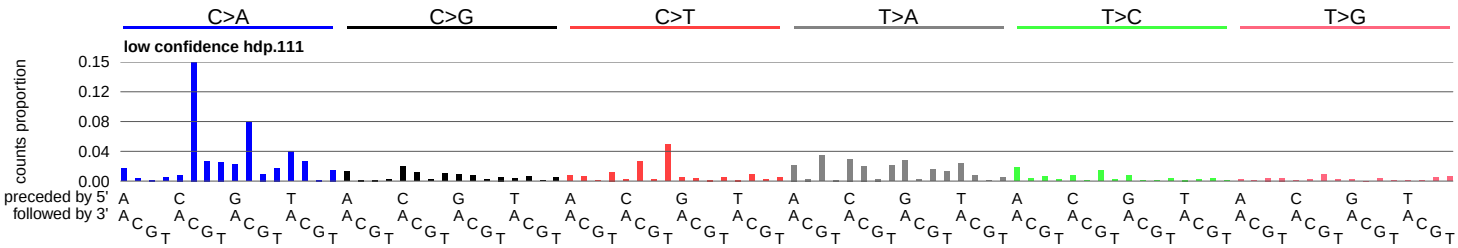

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.106
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

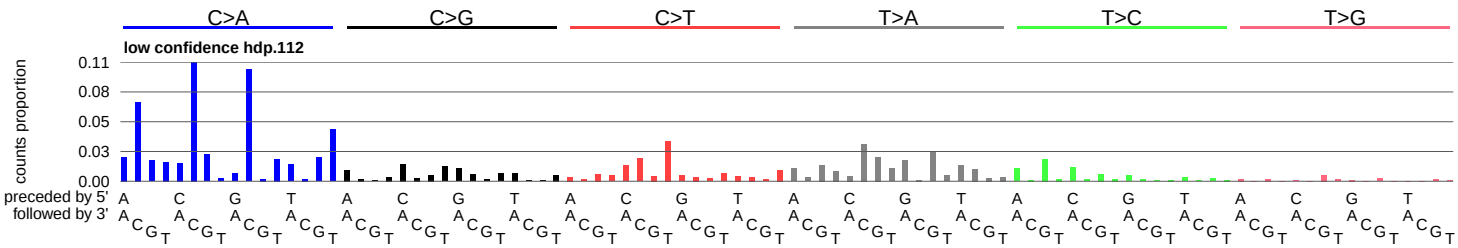

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.107
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

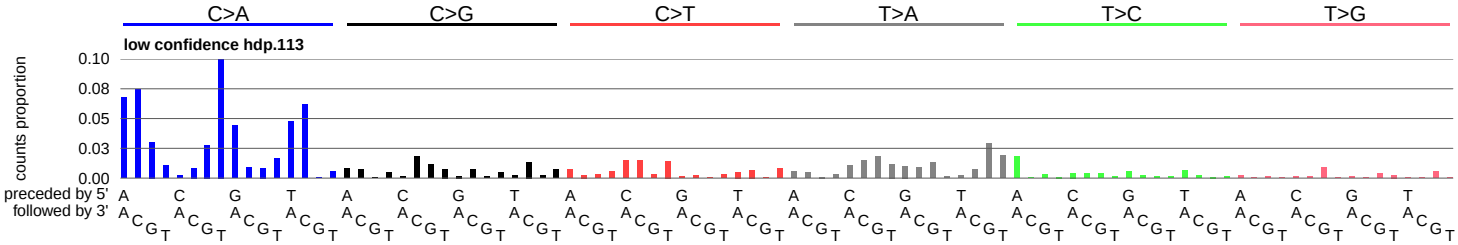

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.108
counts proportion
0.25
0.19
0.12
0.06
0.00
preceded by 5'
followed by 3'

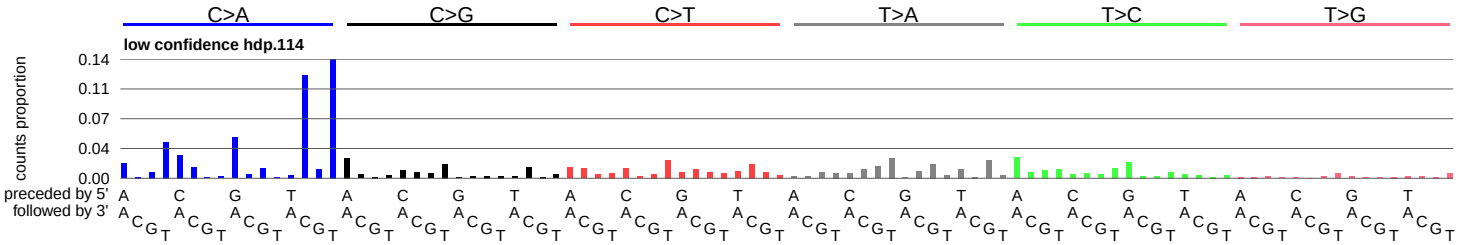

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.109
counts proportion
0.07
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

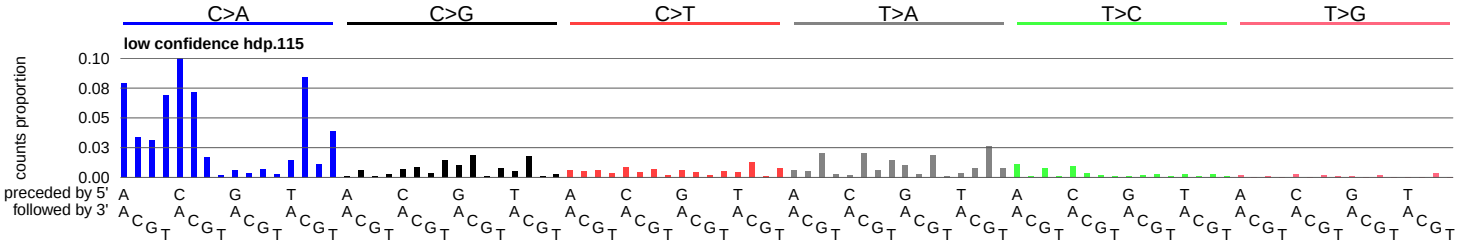

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.110
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

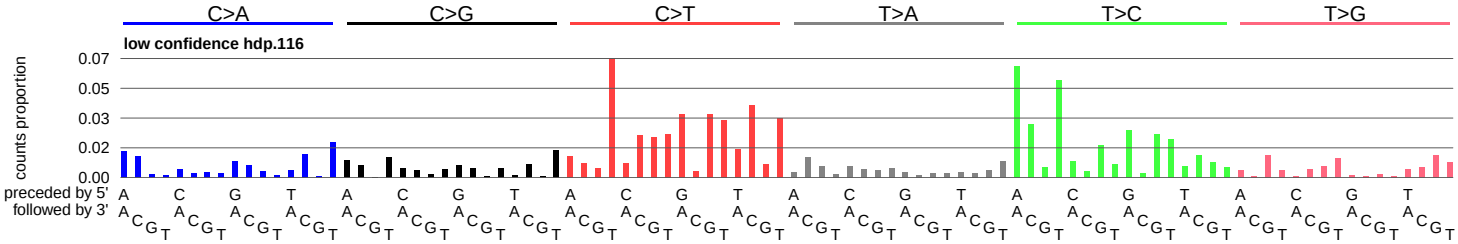

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.111
counts proportion
0.15
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

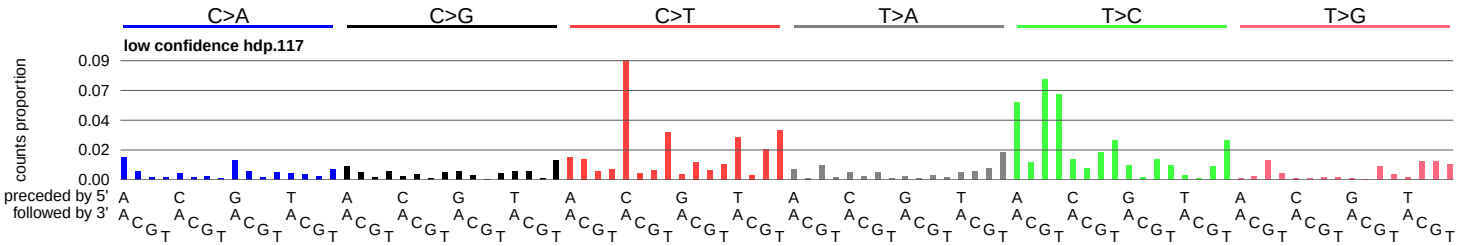

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.112
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

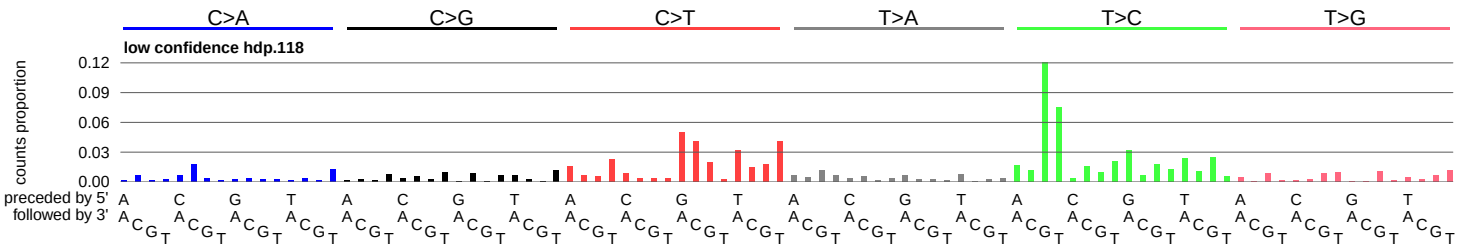

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.113
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

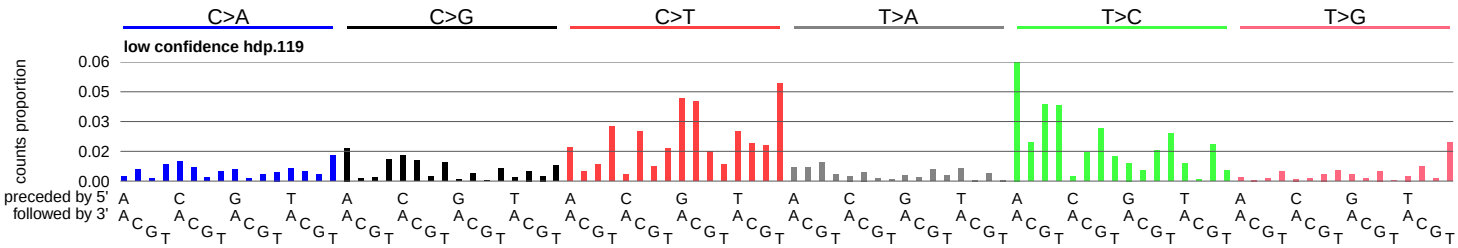

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.114
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

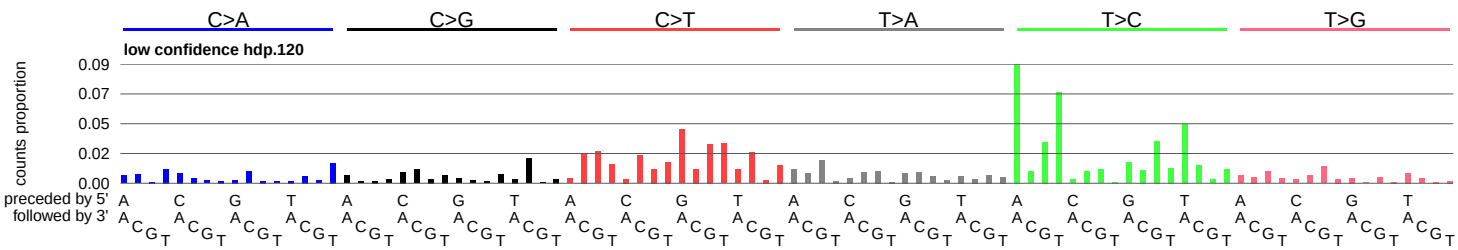

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.115
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

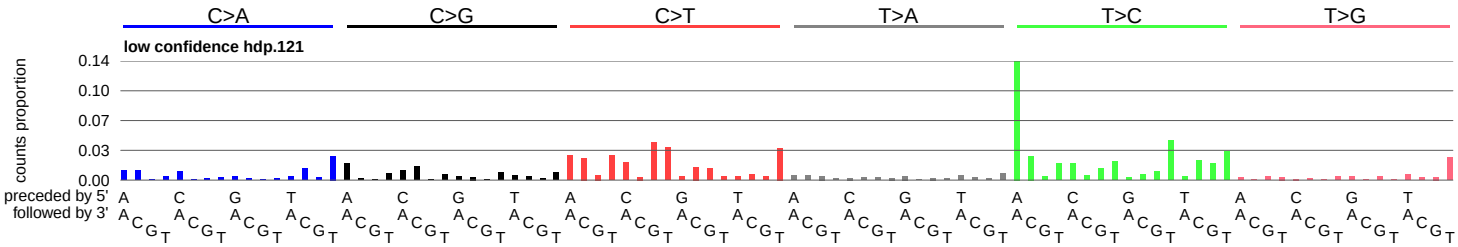

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.116
counts proportion
0.07
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

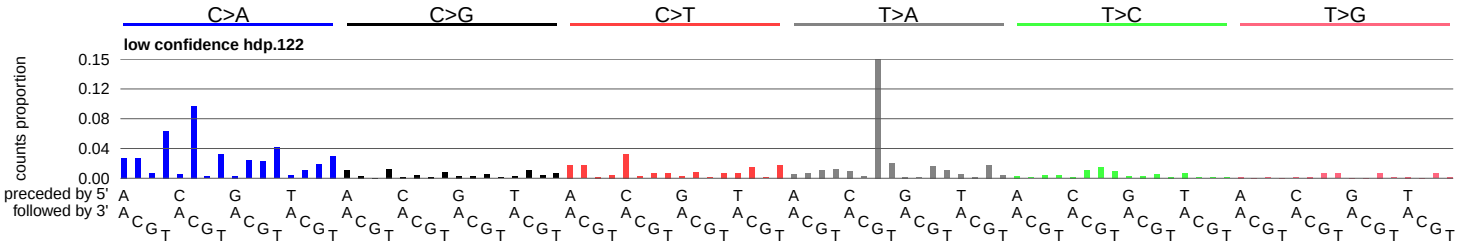

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.117
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

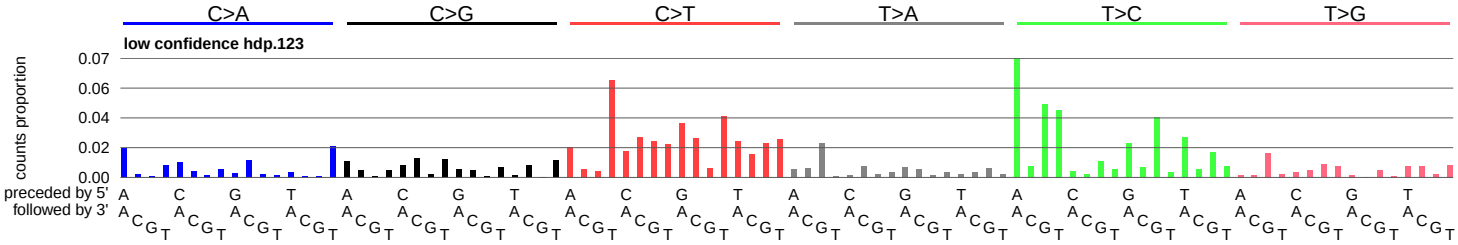

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.118
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

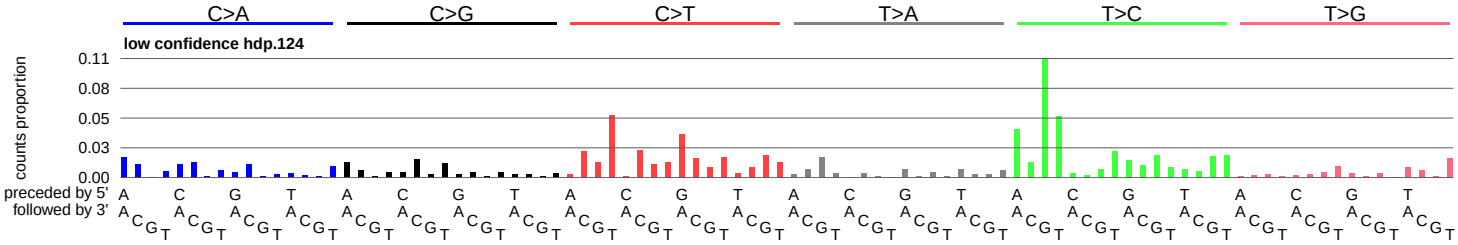

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.119
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

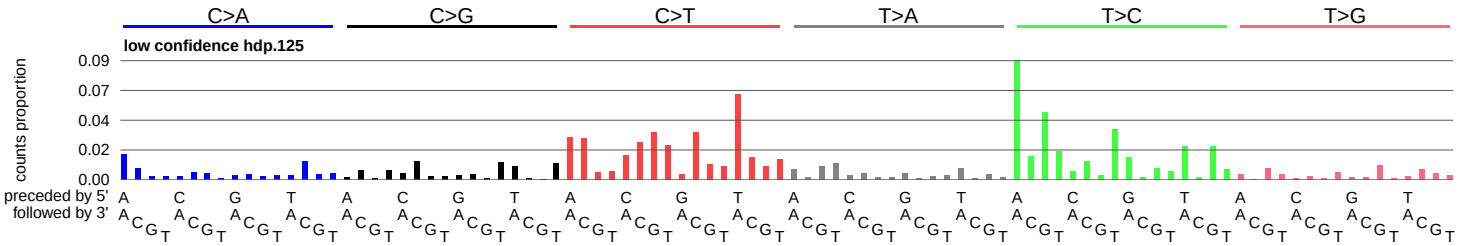

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.120
counts proportion
0.09
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

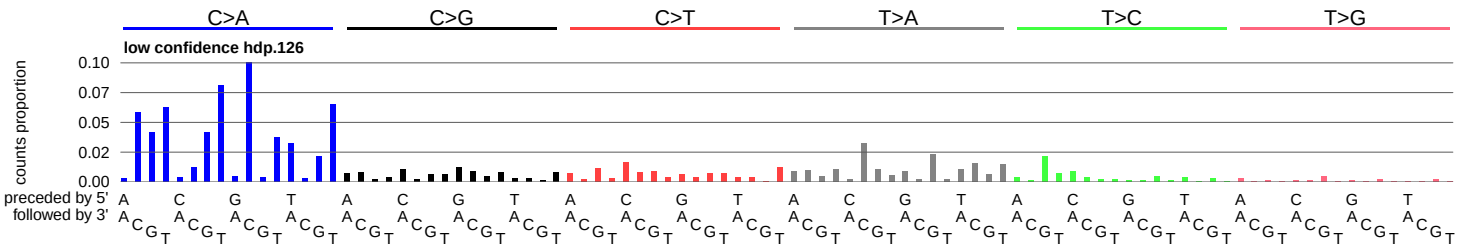

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.121
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

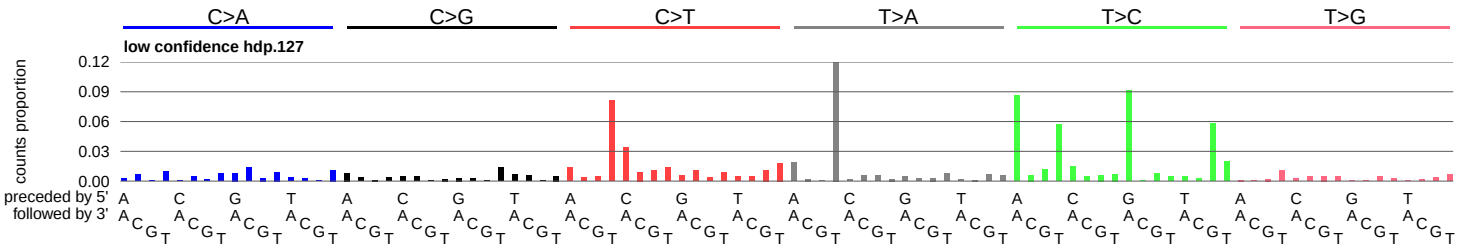

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.122
counts proportion
0.15
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

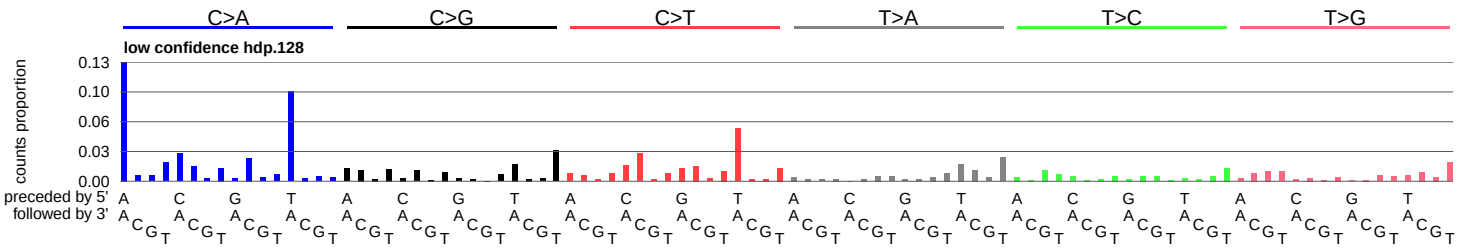

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.123
counts proportion
0.07
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

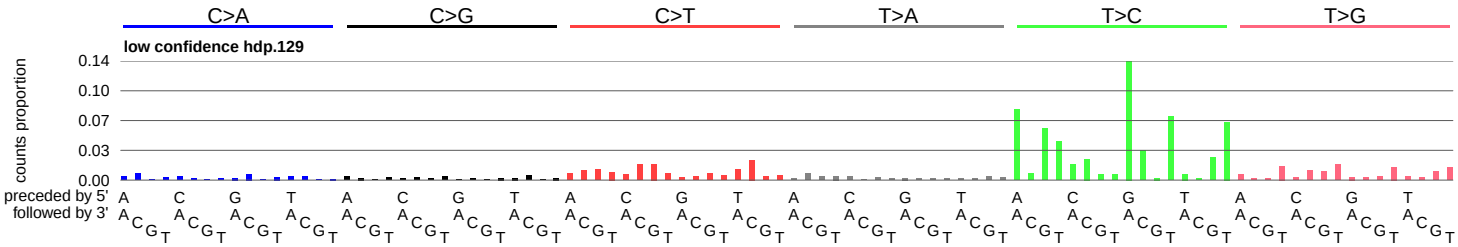

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.124
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

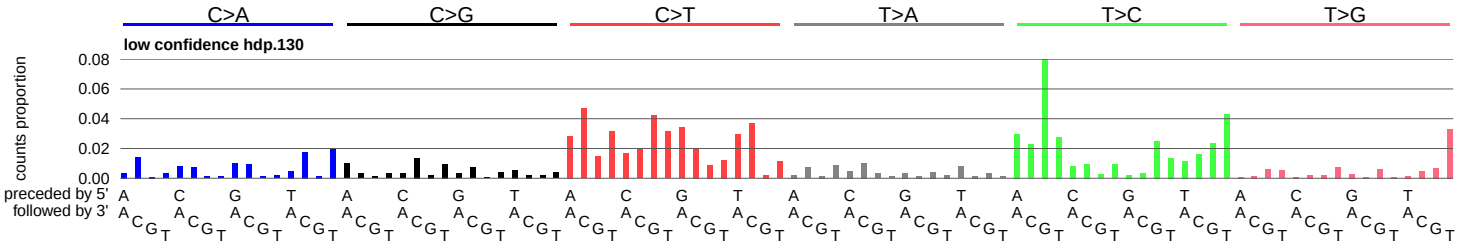

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.125
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

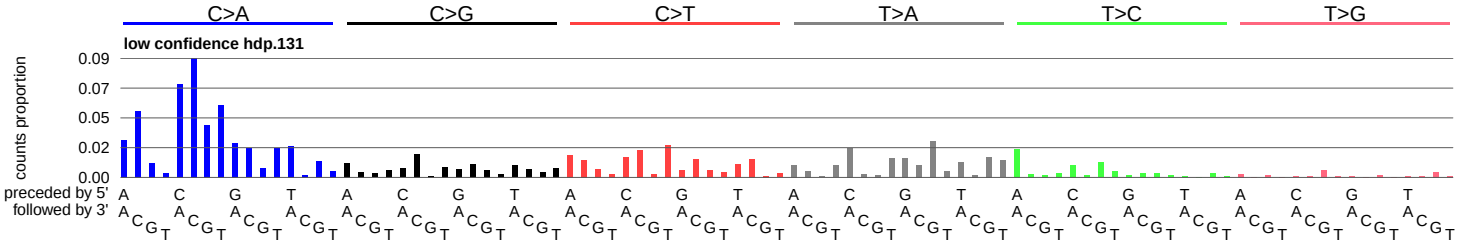

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.126
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

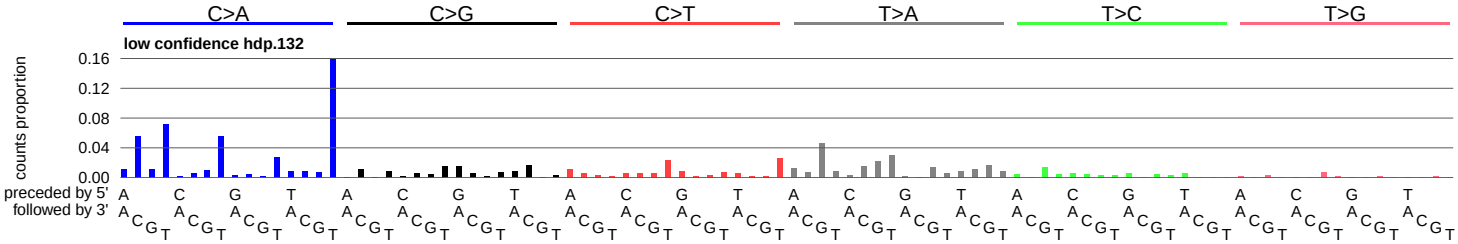

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.127
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

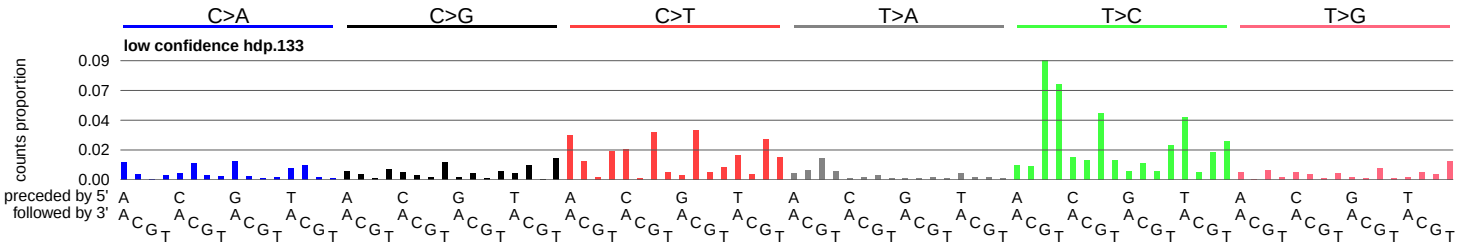

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.128
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

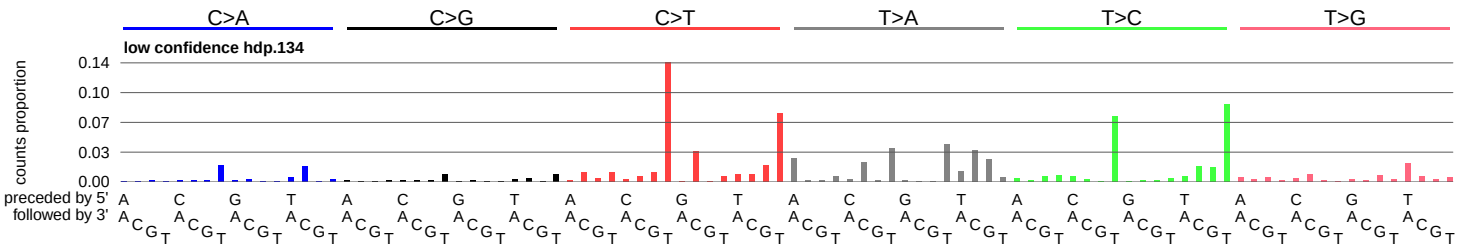

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.129
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

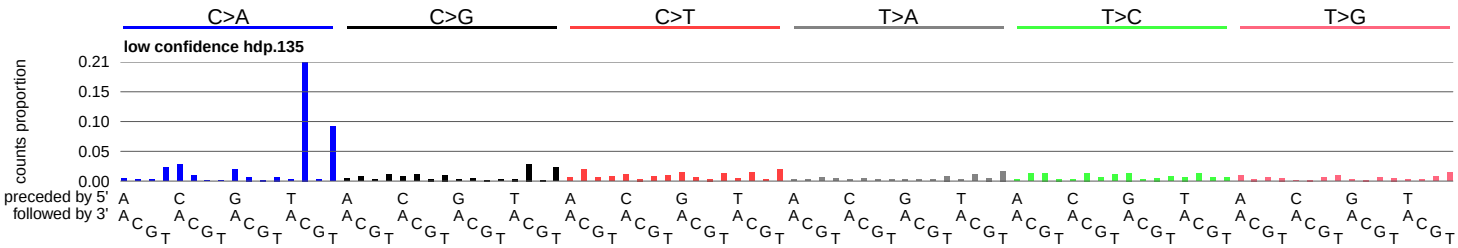

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.130
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

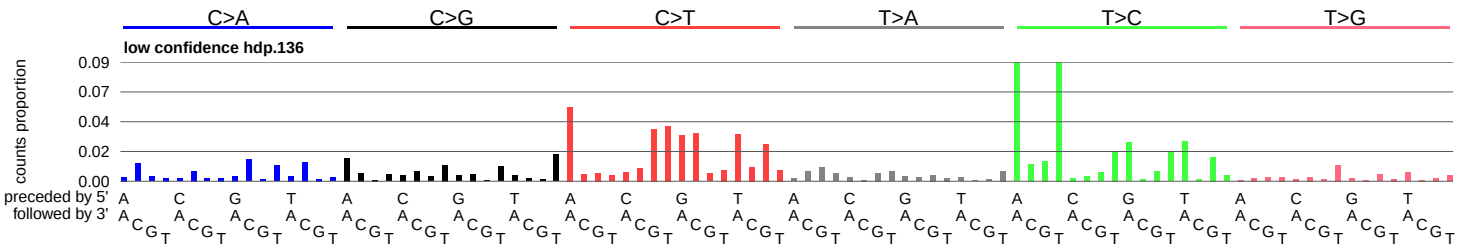

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.131
counts proportion
0.09
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

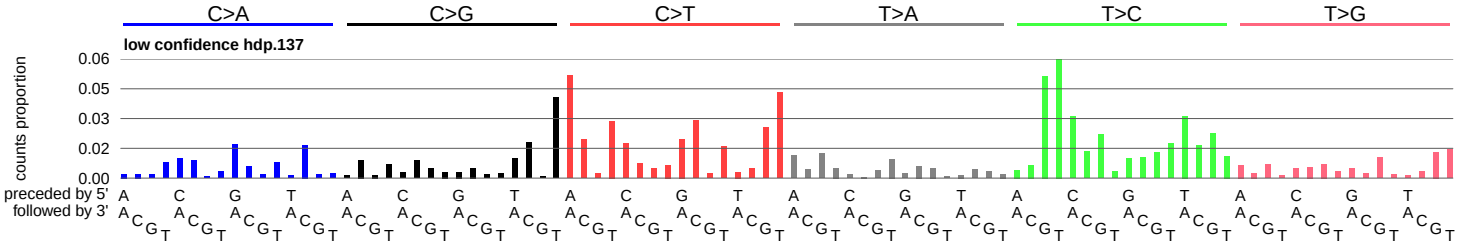

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.132
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

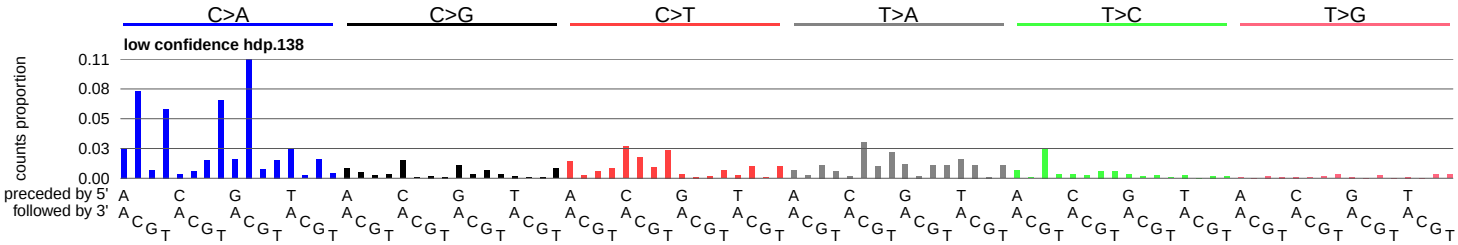

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.133
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

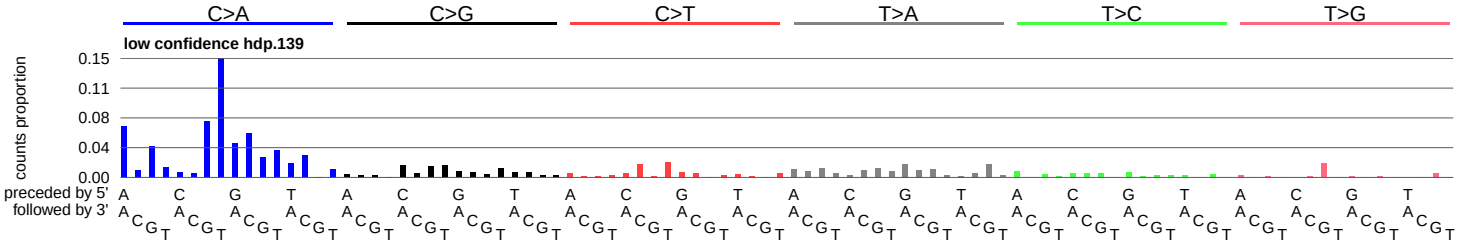

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.134
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

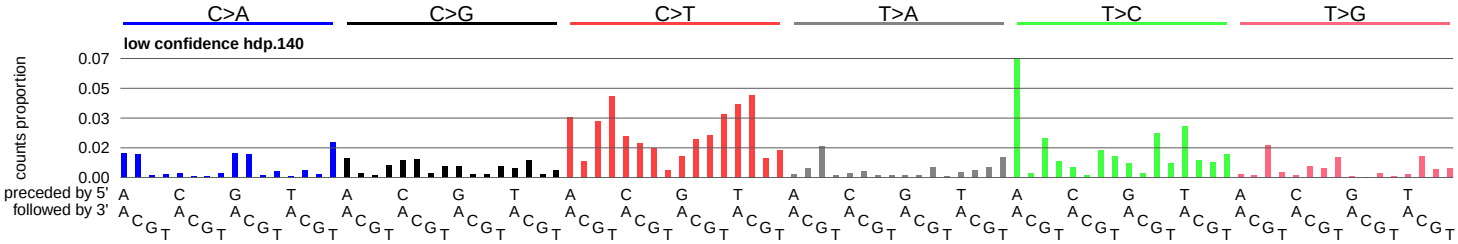

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.135
counts proportion
0.21
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

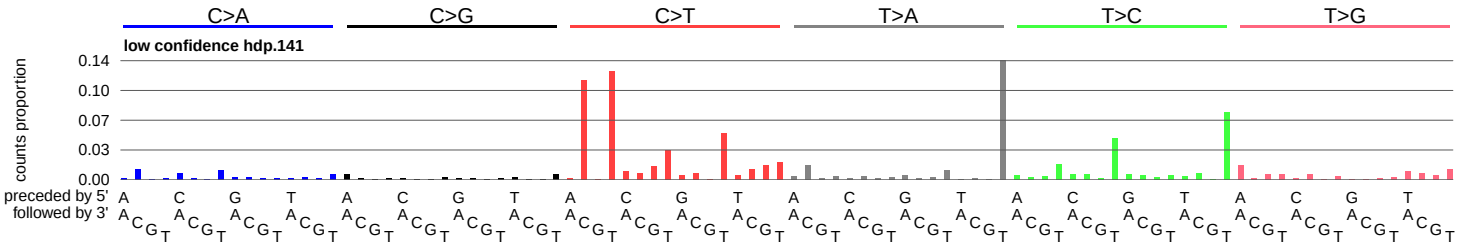

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.136
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

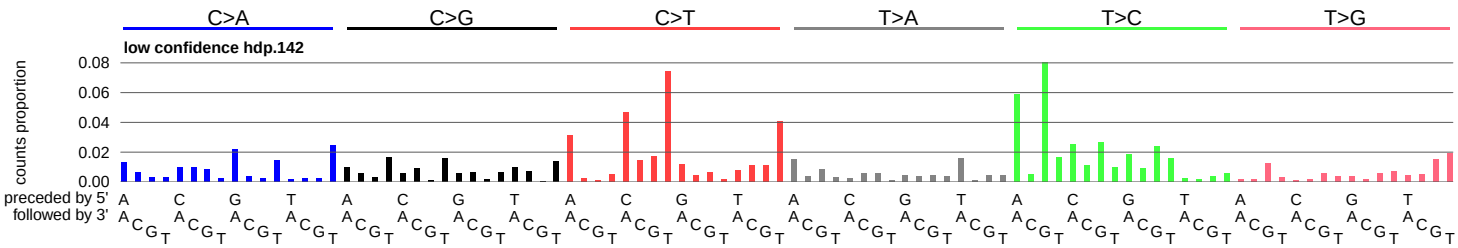

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.137
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

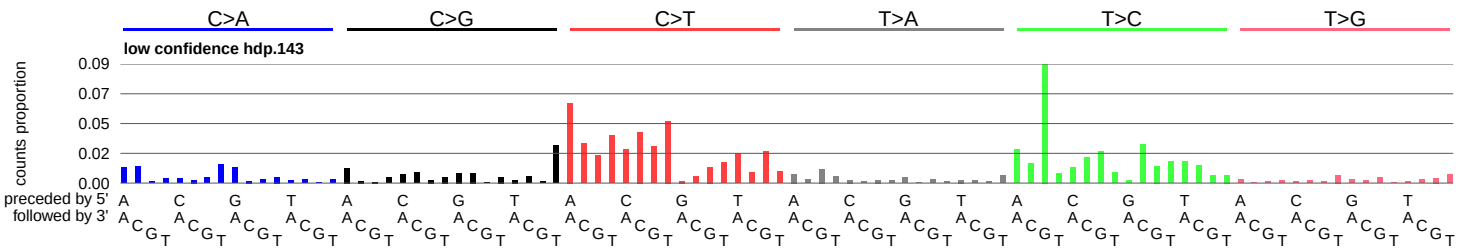

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.138
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

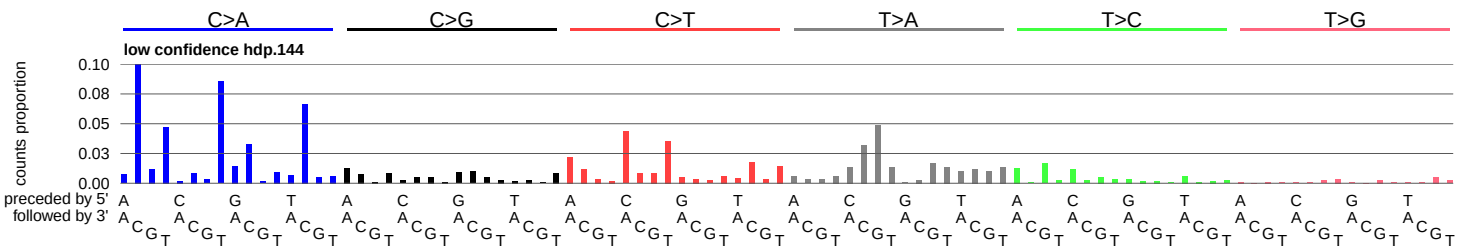

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.139
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

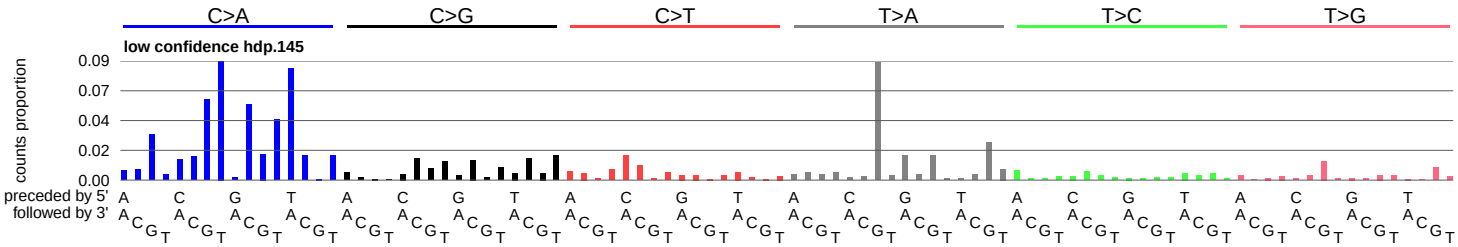

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.140
counts proportion
0.07
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

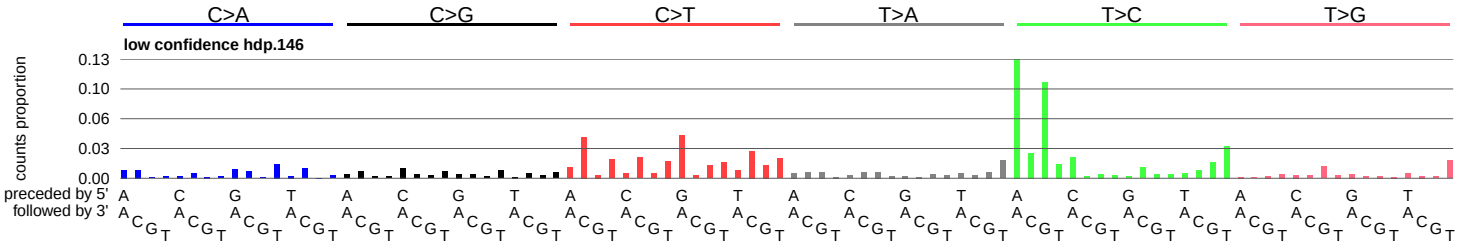

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.141
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

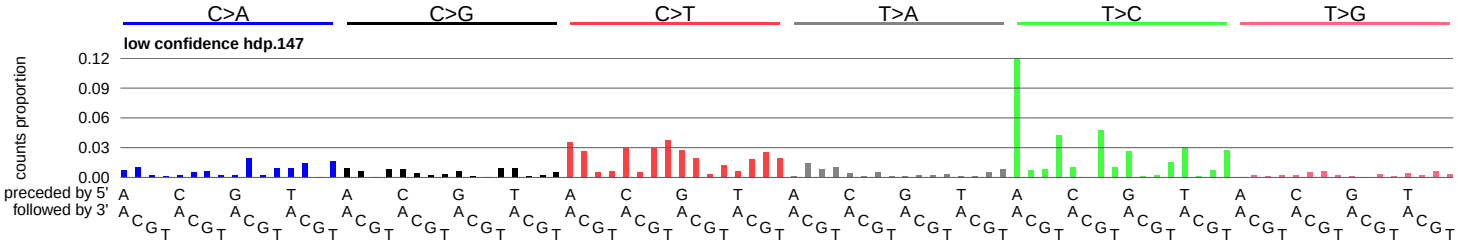

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.142
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

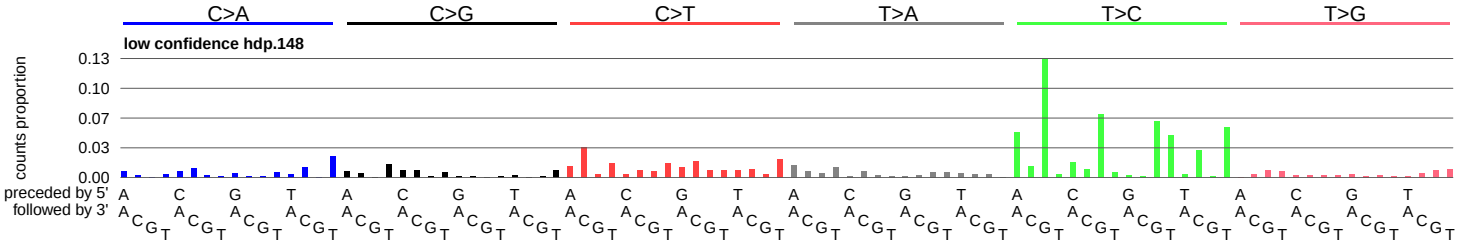

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.143
counts proportion
0.09
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

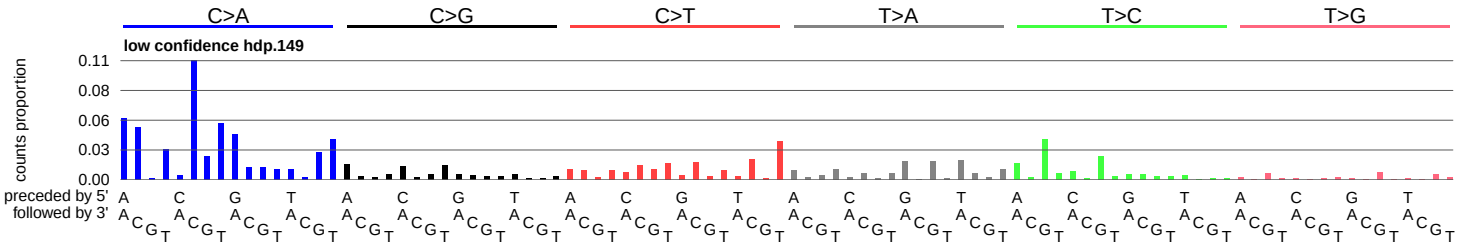

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.144
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

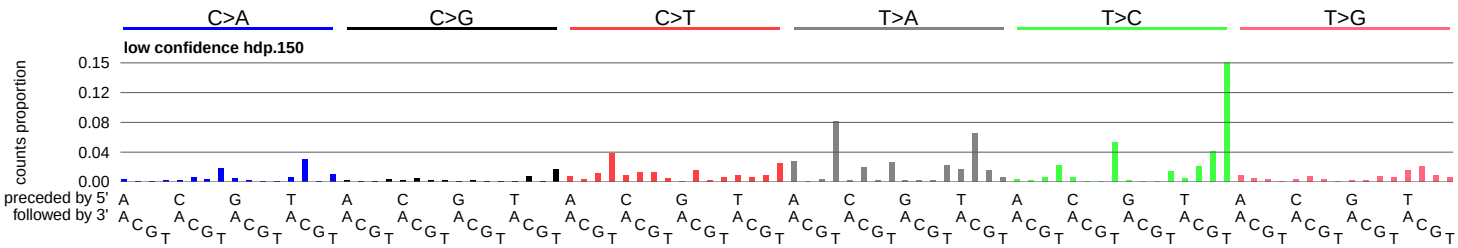

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.145
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

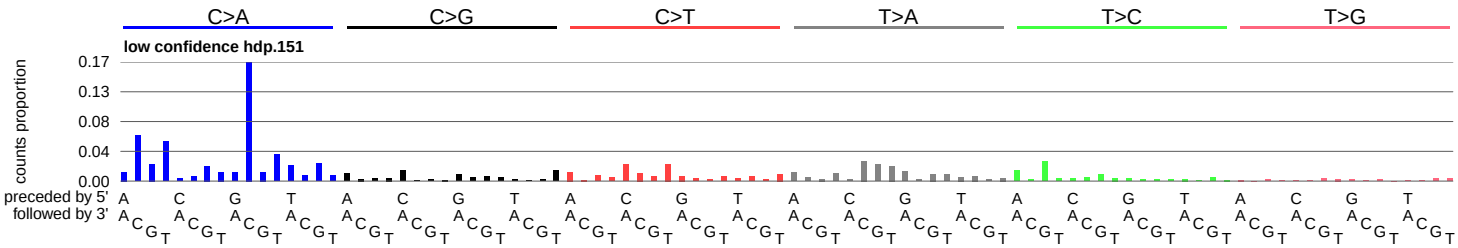

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.146
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

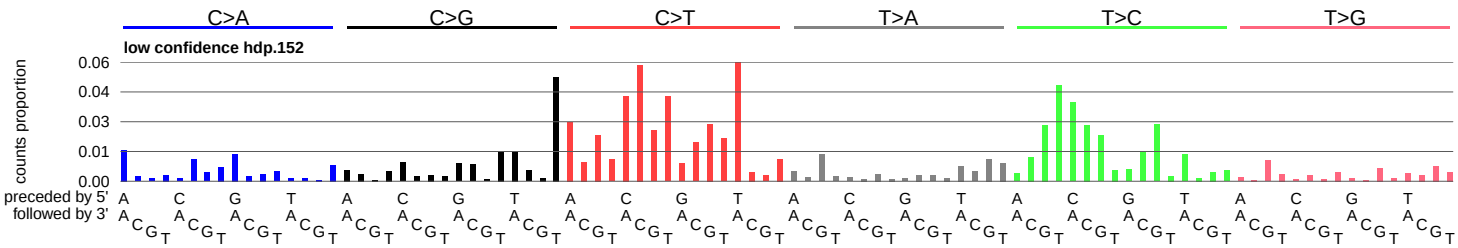

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.147
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

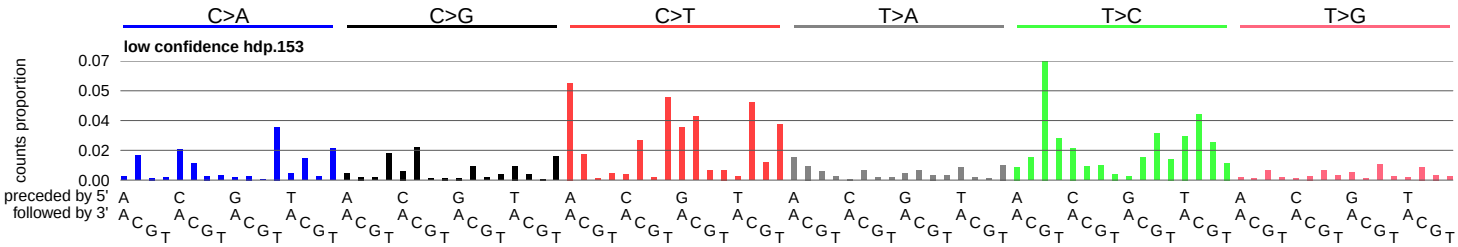

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.148
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

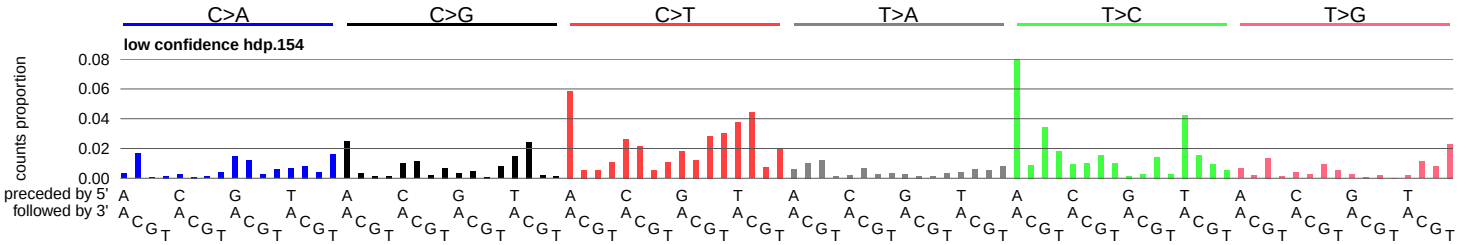

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.149
counts proportion
0.11
0.08
0.06
0.03
0.00
preceded by 5'
followed by 3'

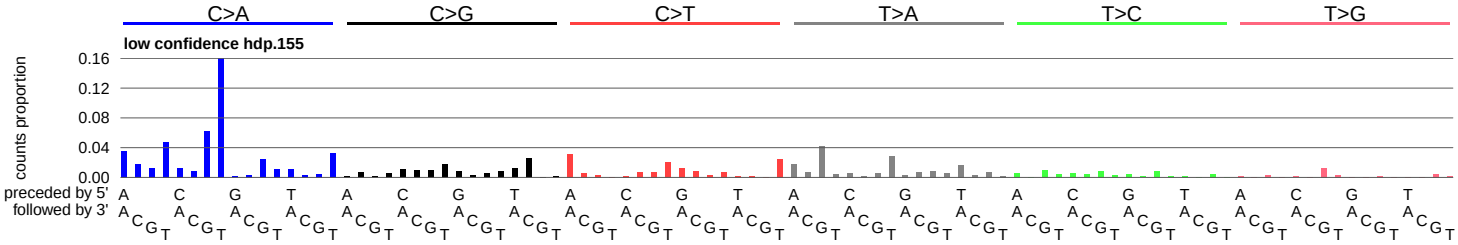

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.150
counts proportion
0.15
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

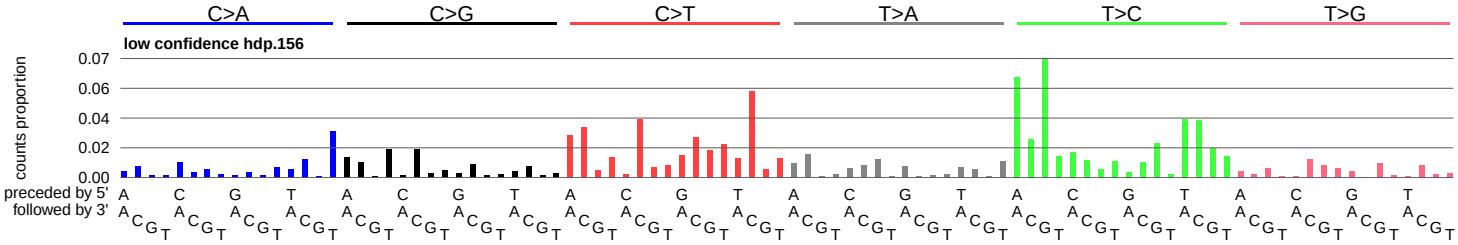

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.151
counts proportion
0.17
0.13
0.08
0.04
0.00
preceded by 5'
followed by 3'

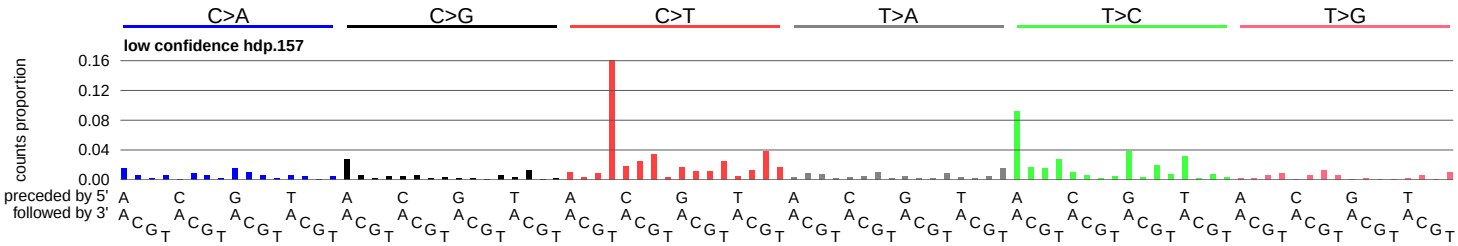

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.152
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

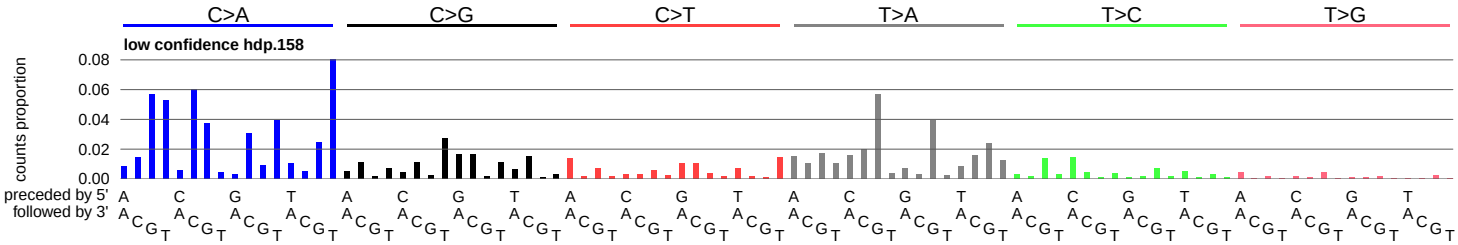

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.153
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

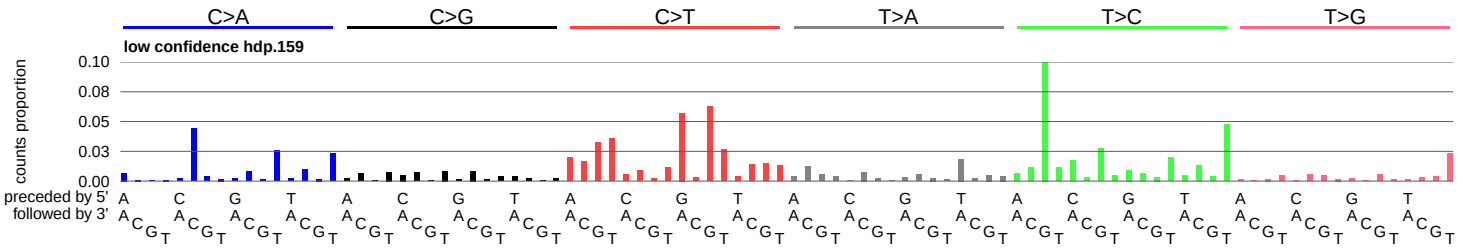

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.154
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

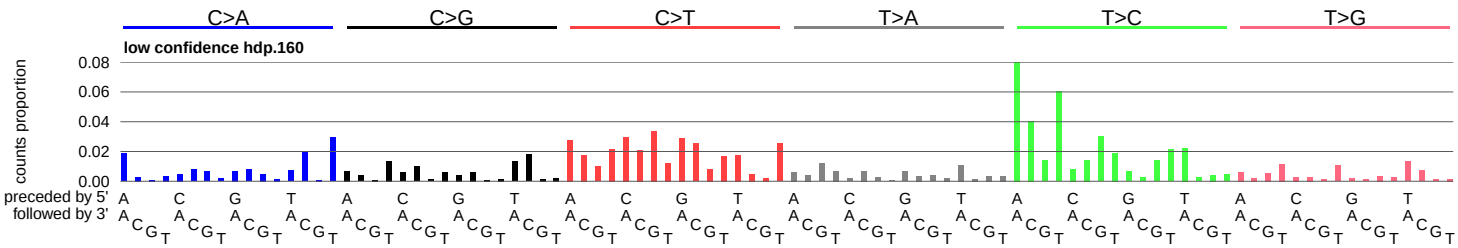

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.155
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

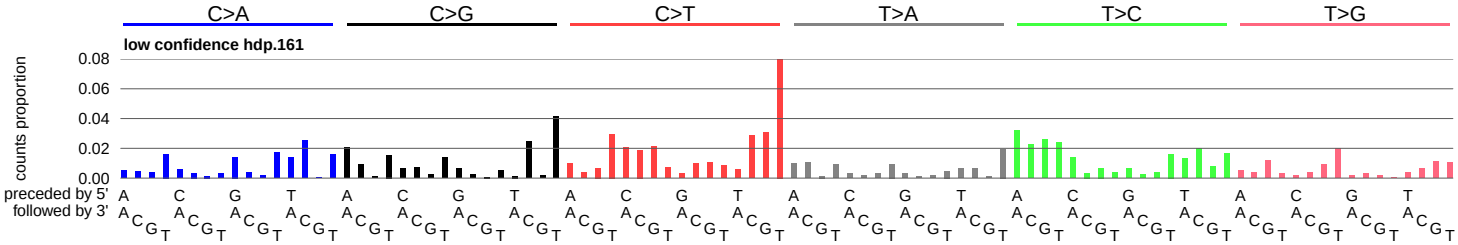

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.156
counts proportion
0.07
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

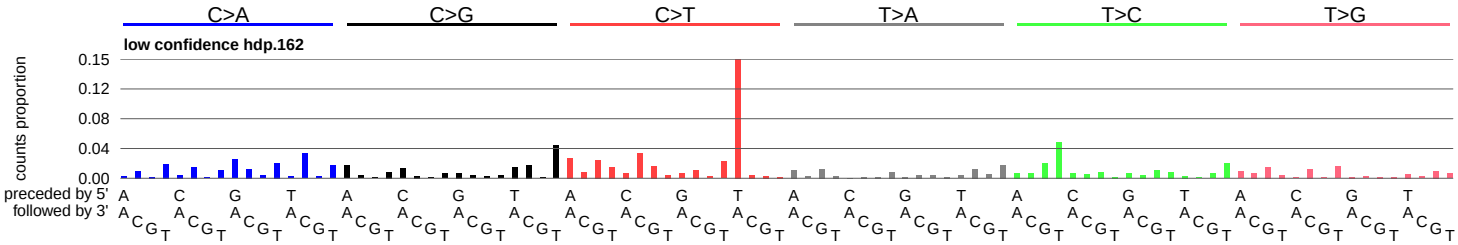

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.157
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

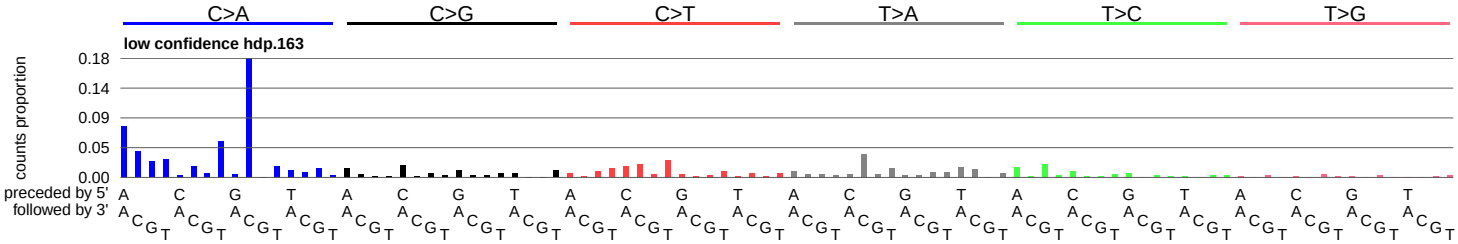

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.158
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

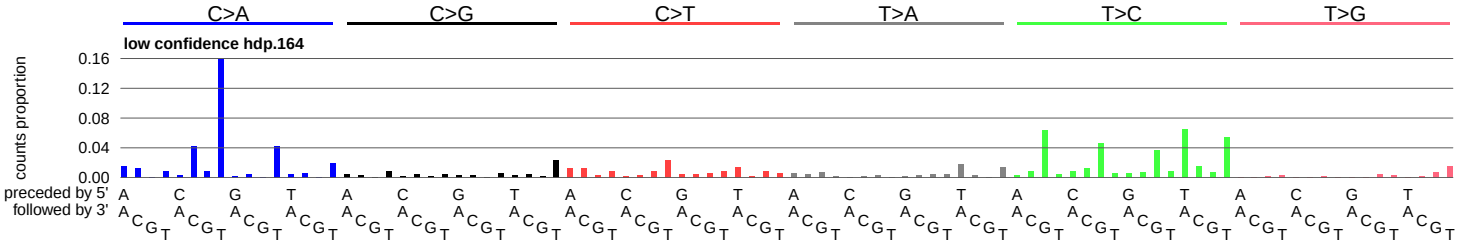

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.159
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

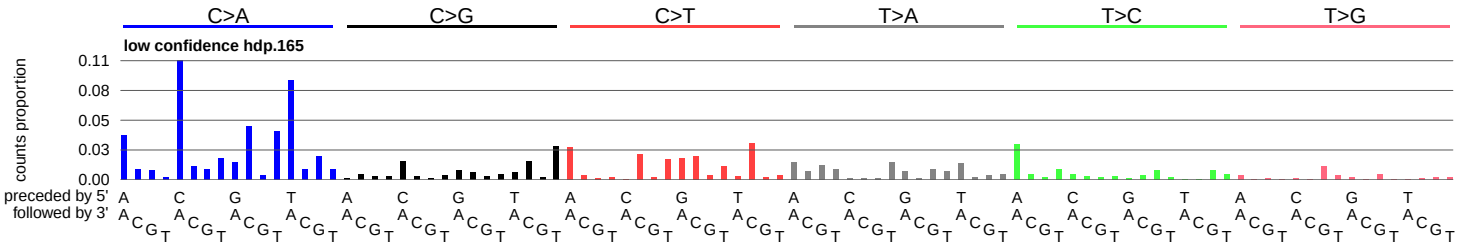

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.160
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

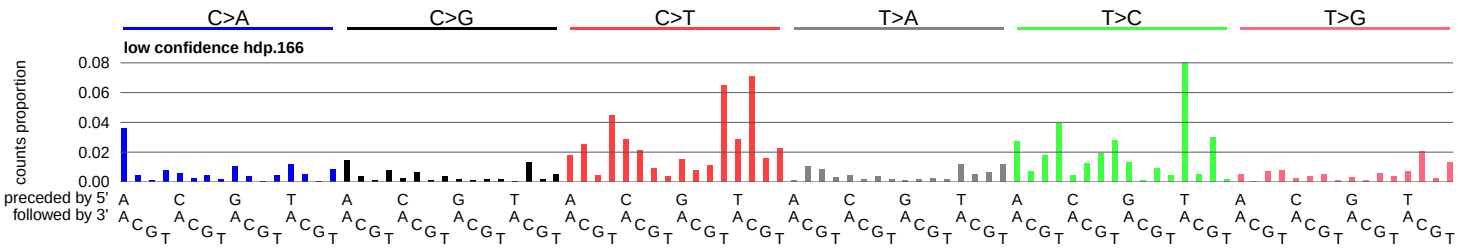

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.161
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

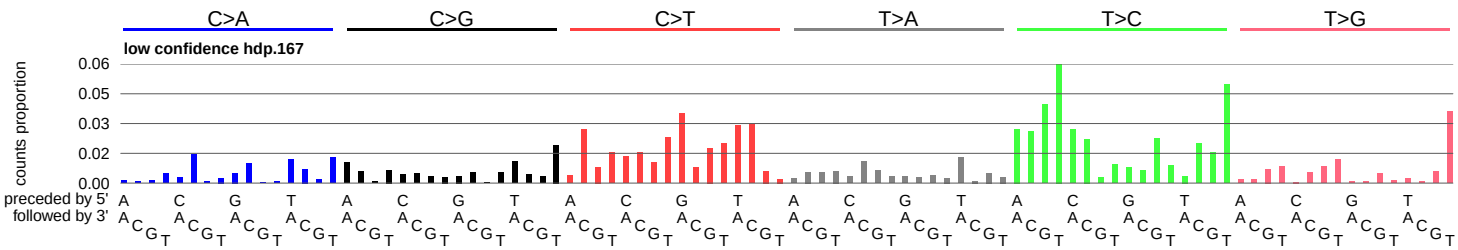

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.162
counts proportion
0.15
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

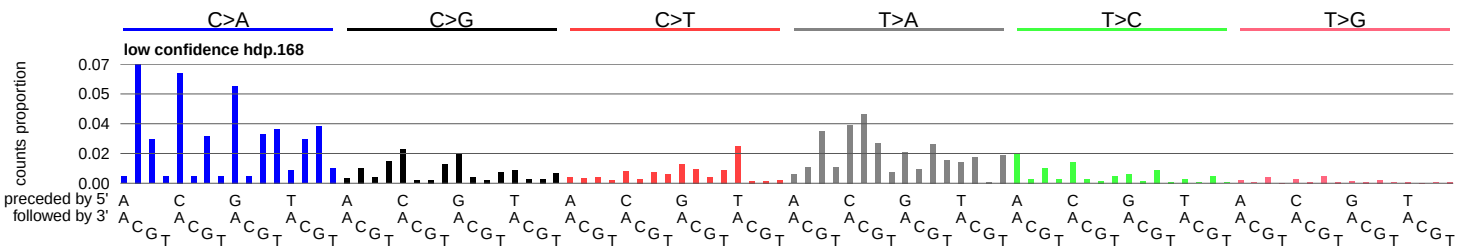

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.163
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

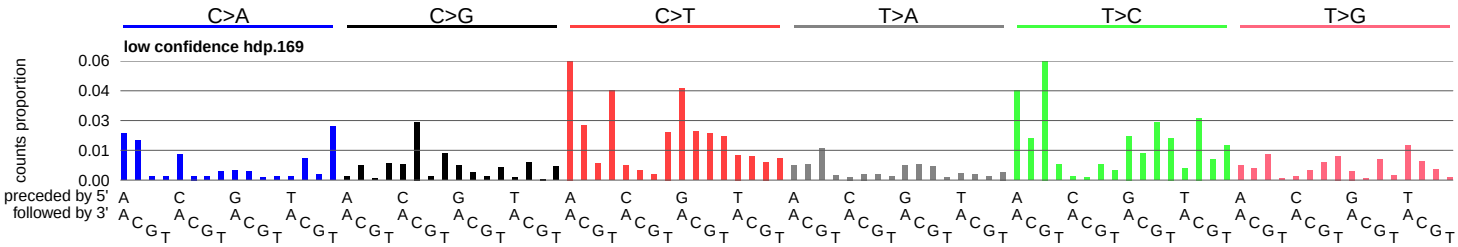

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.164
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

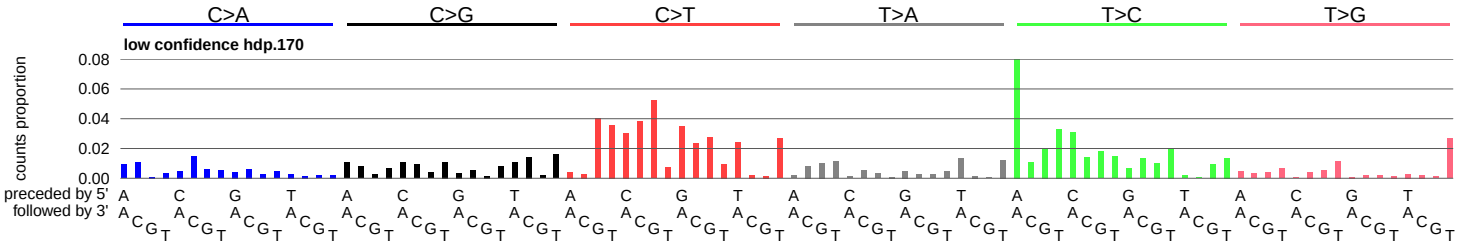

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.165
counts proportion
0.11
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

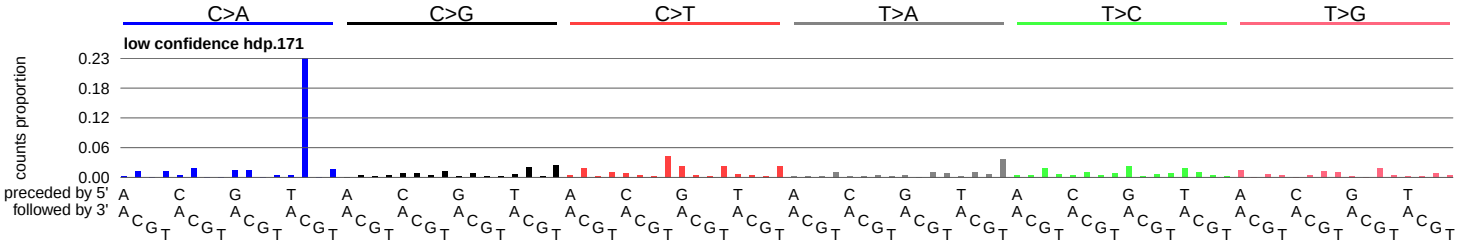

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.166
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

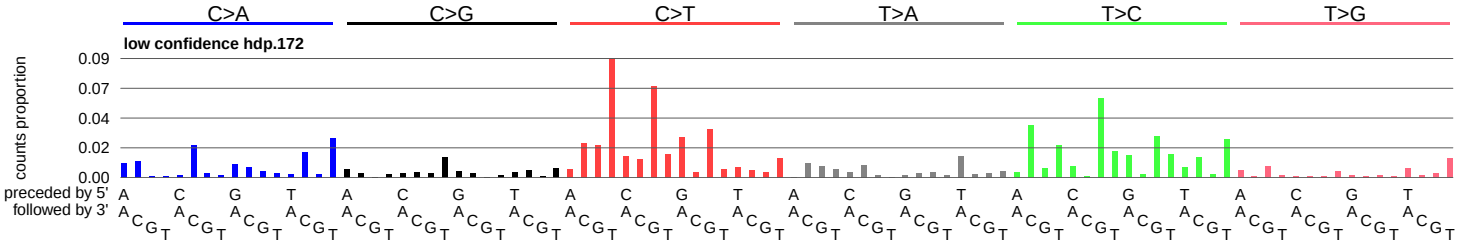

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.167
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

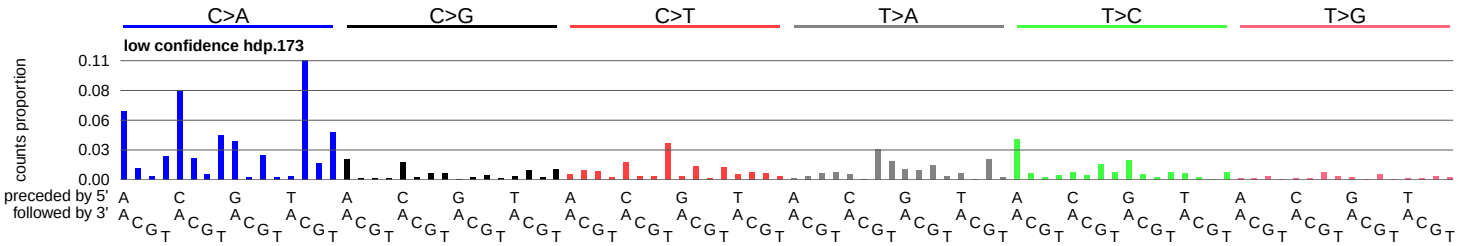

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.168
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

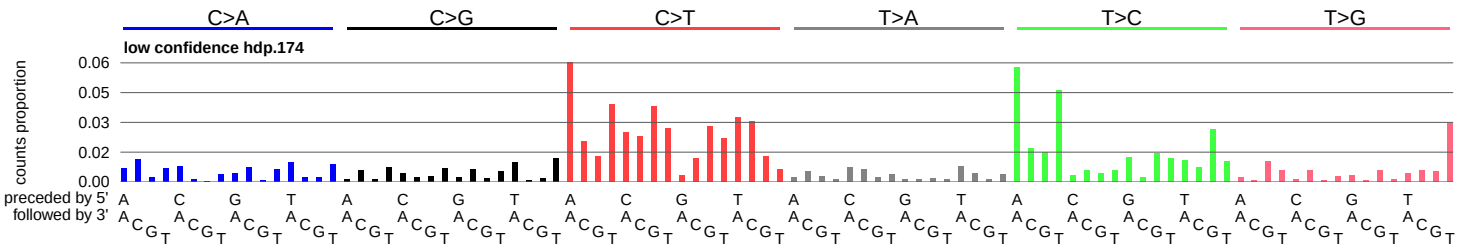

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.169
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

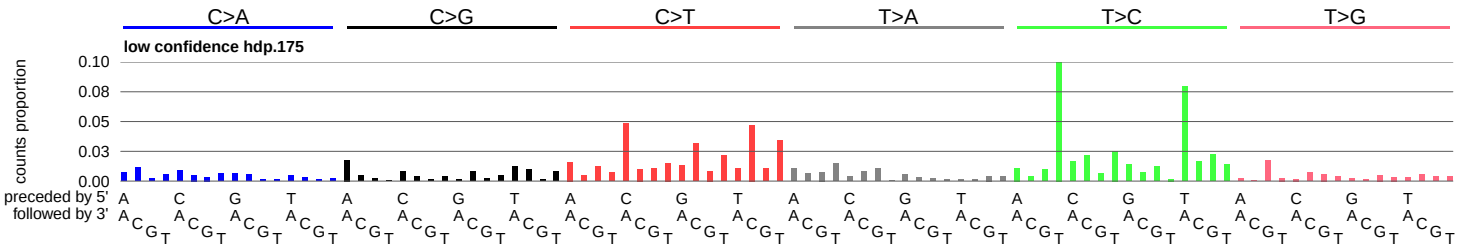

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.170
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

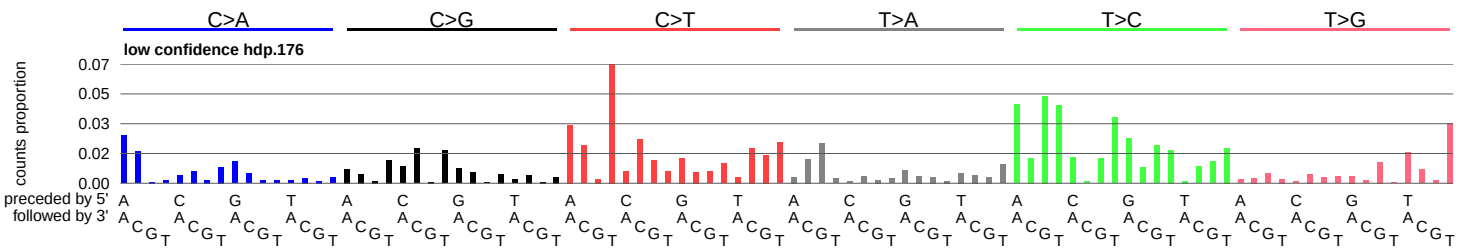

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.171
counts proportion
0.23
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

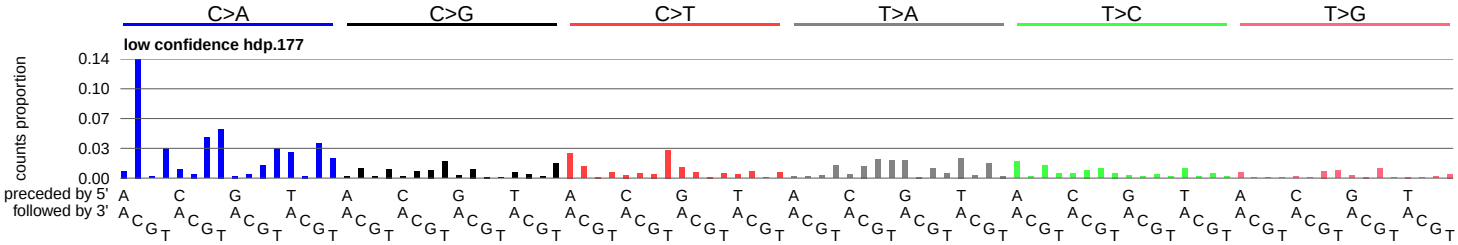

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.172
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

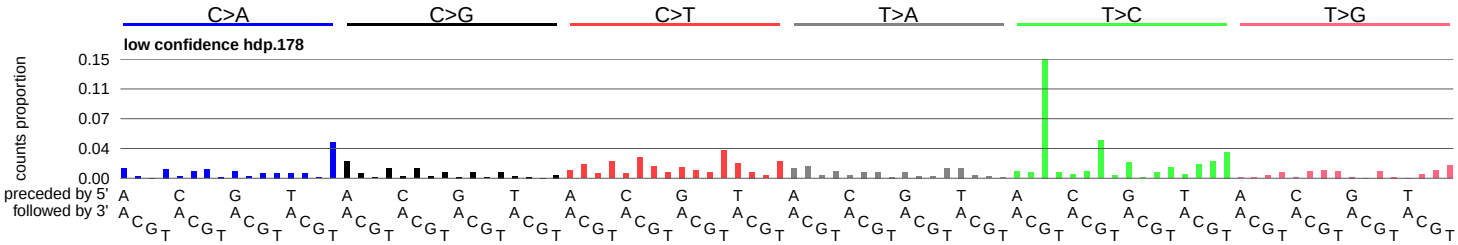

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.173
counts proportion
0.11
0.08
0.06
0.03
0.00
preceded by 5'
followed by 3'

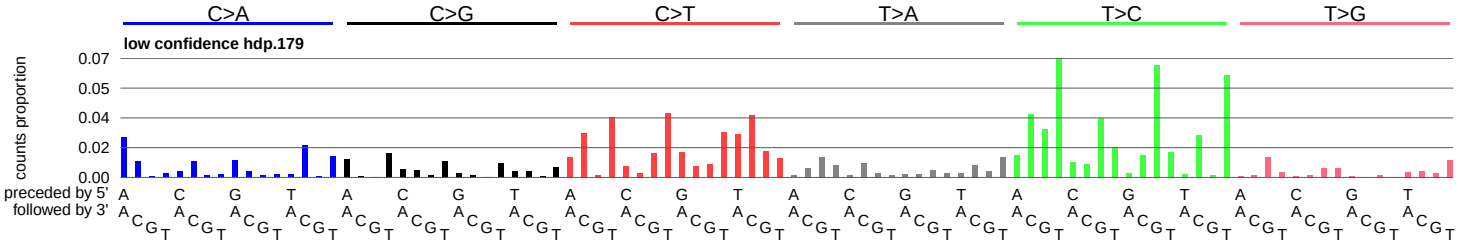

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.174
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

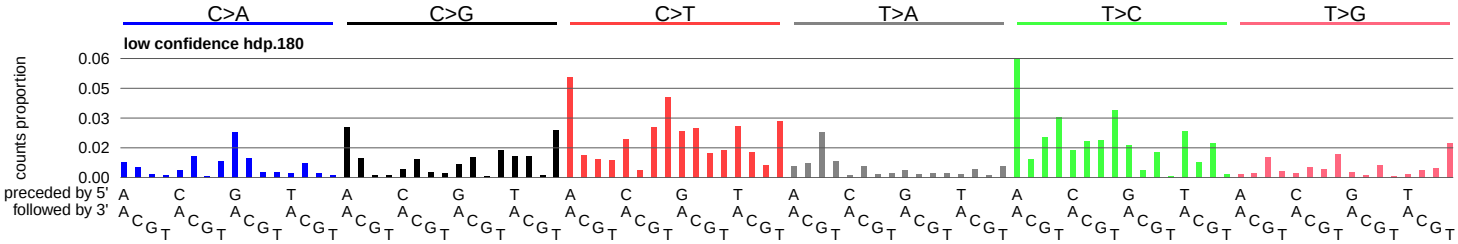

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.175
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

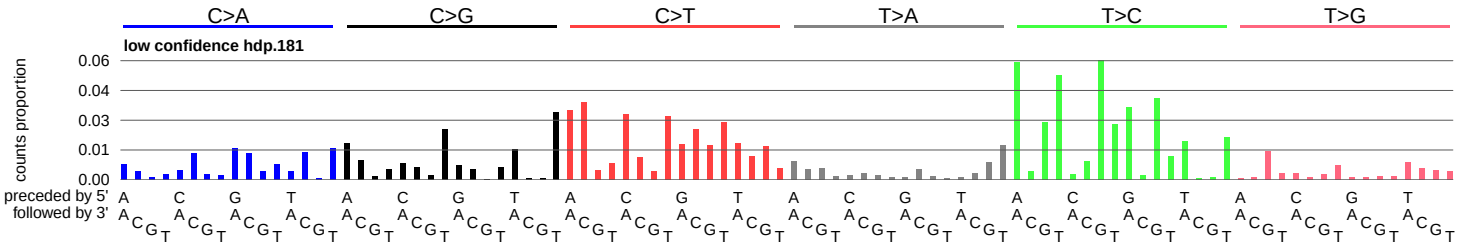

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.176
counts proportion
0.07
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

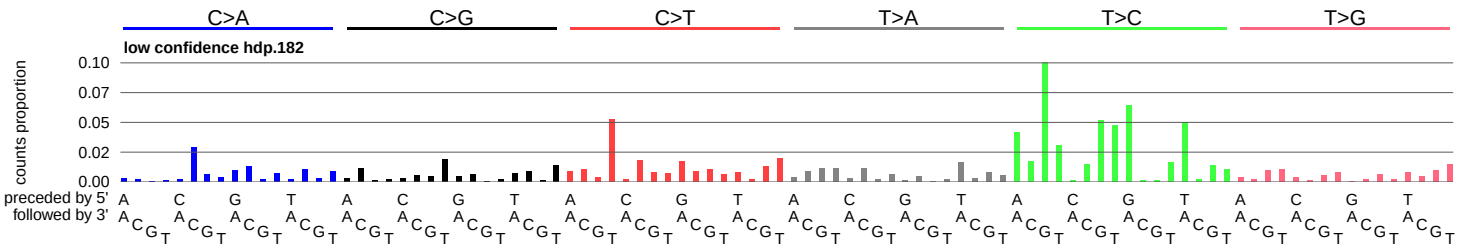

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.177
counts proportion
0.14
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

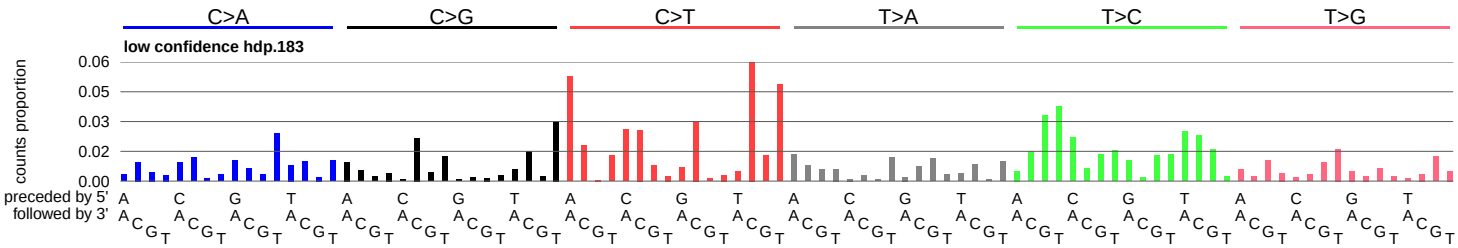

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.178
counts proportion
0.15
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

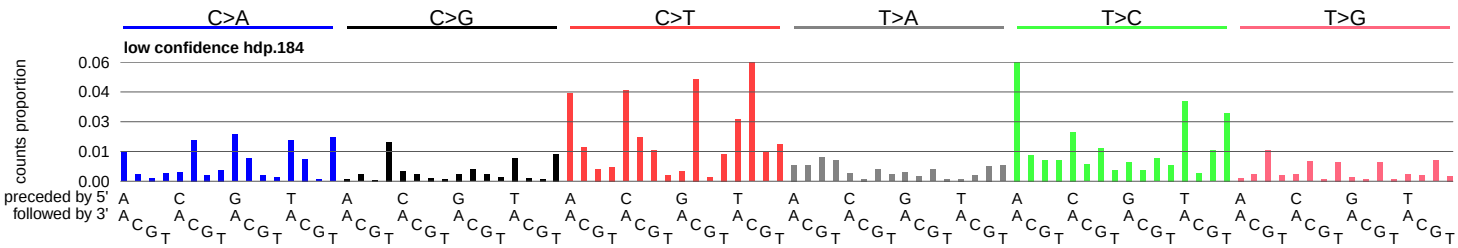

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.179
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

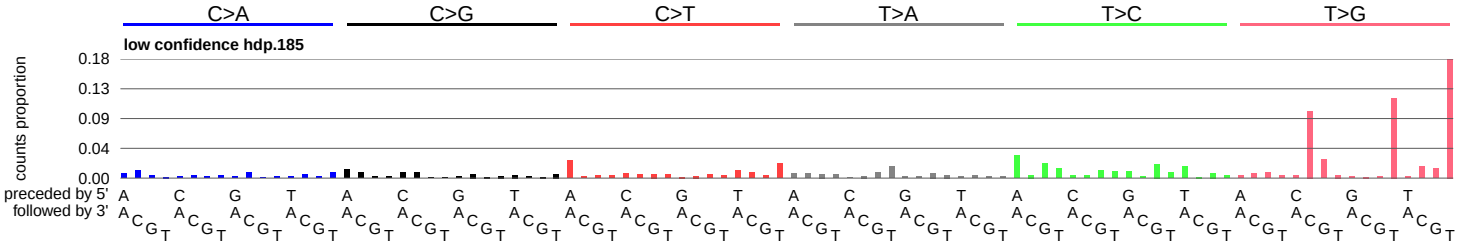

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.180
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

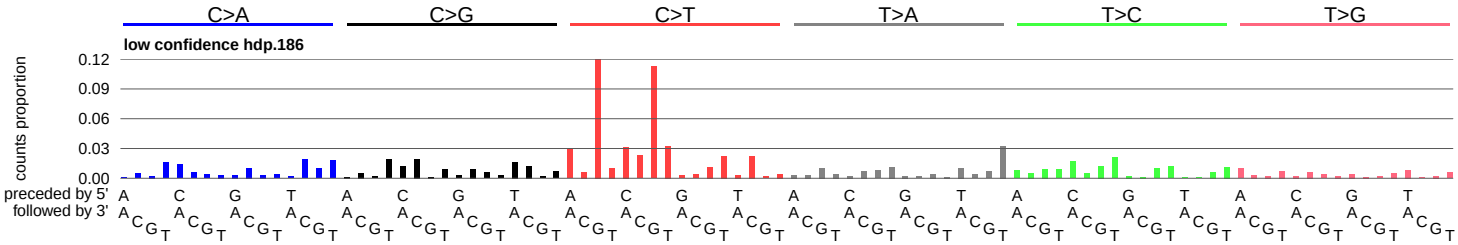

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.181
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

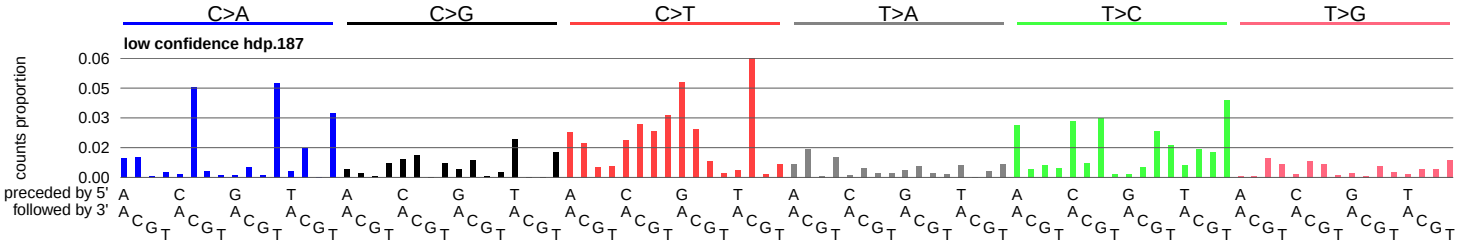

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.182
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

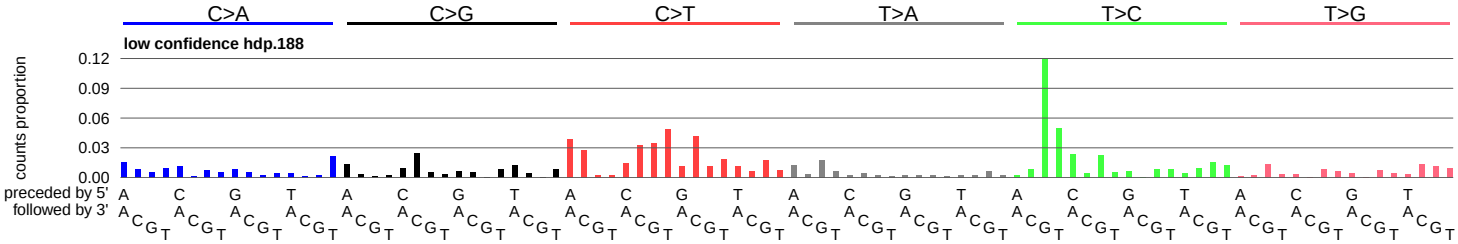

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.183
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

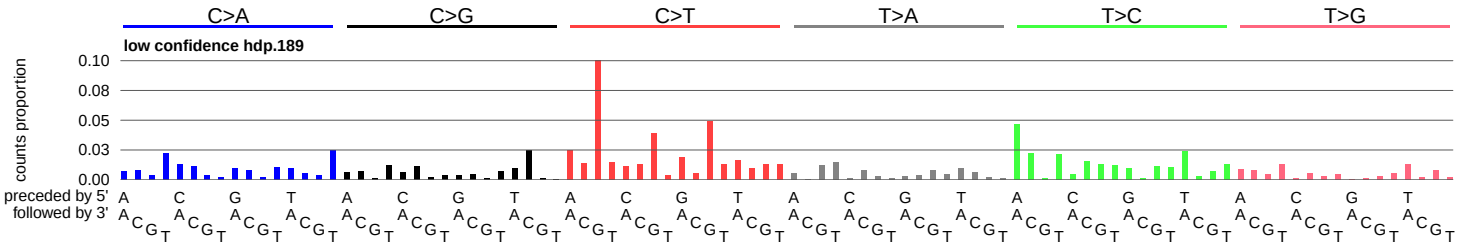

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.184
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

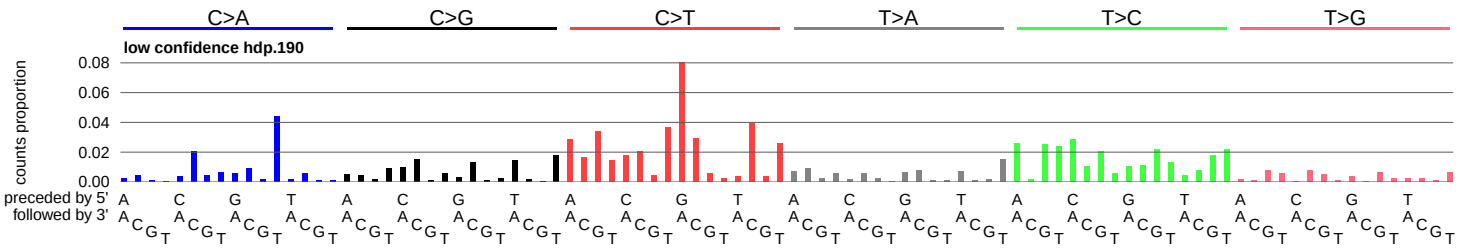

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.185
counts proportion
0.18
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

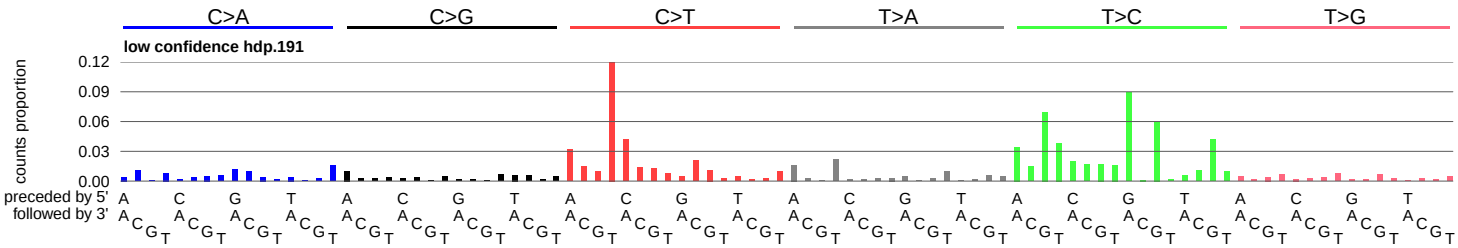

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.186
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

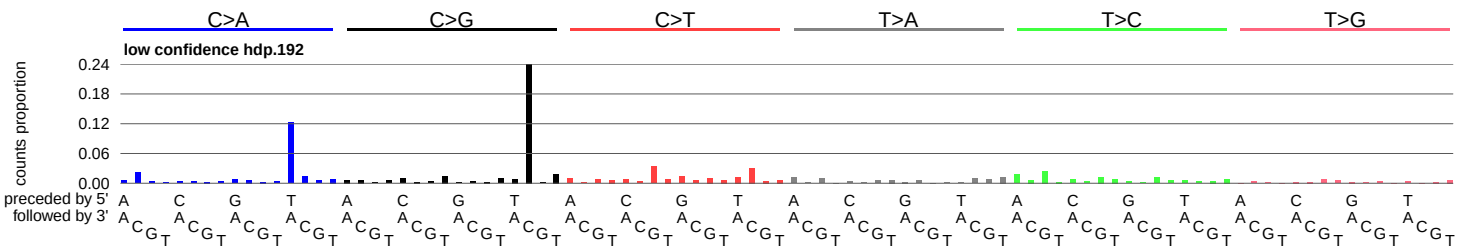

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.187
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

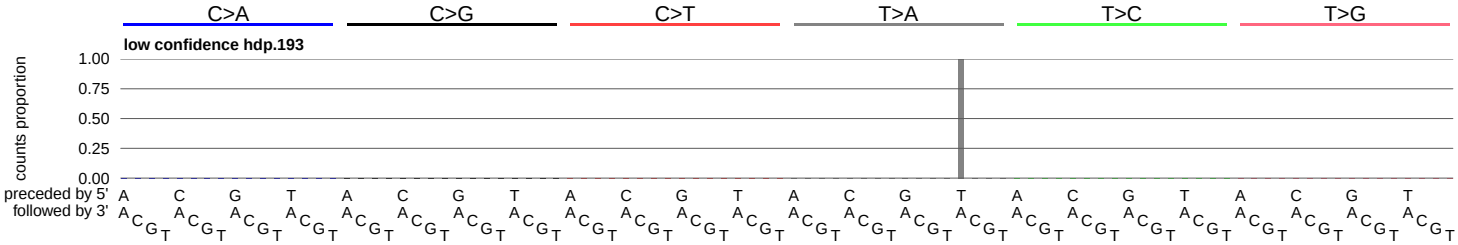

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.188
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

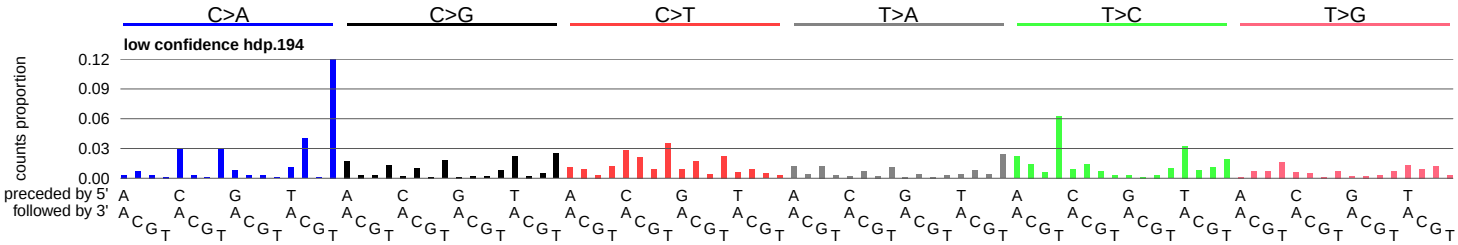

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.189
counts proportion
0.10
0.08
0.05
0.03
0.00
preceded by 5'
followed by 3'

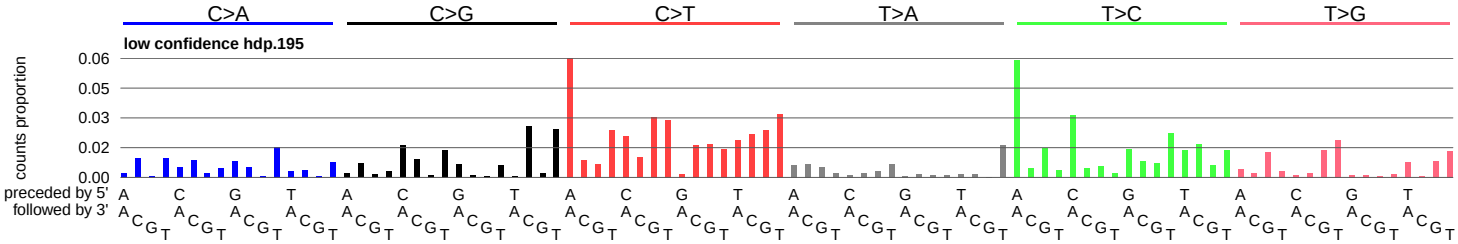

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.190
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

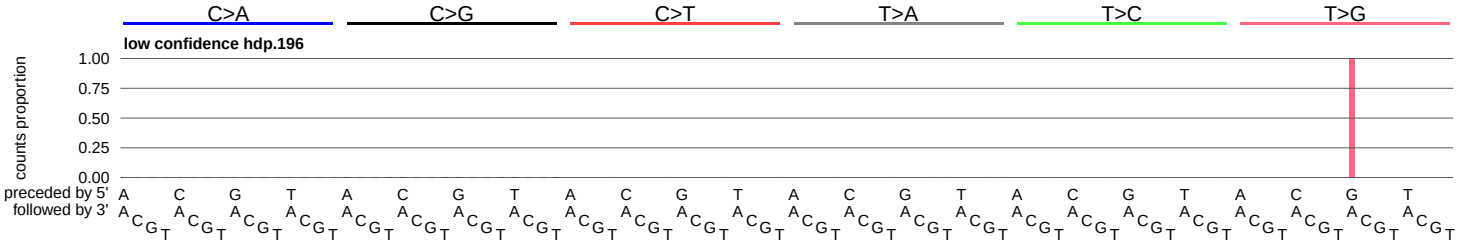

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.191
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

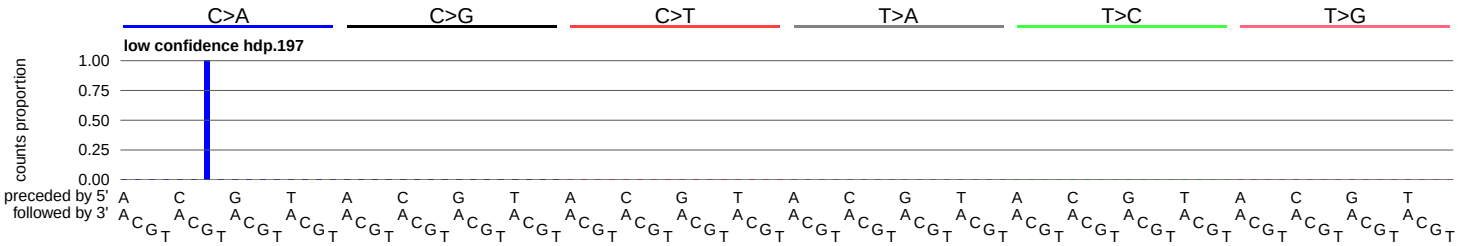

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.192
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

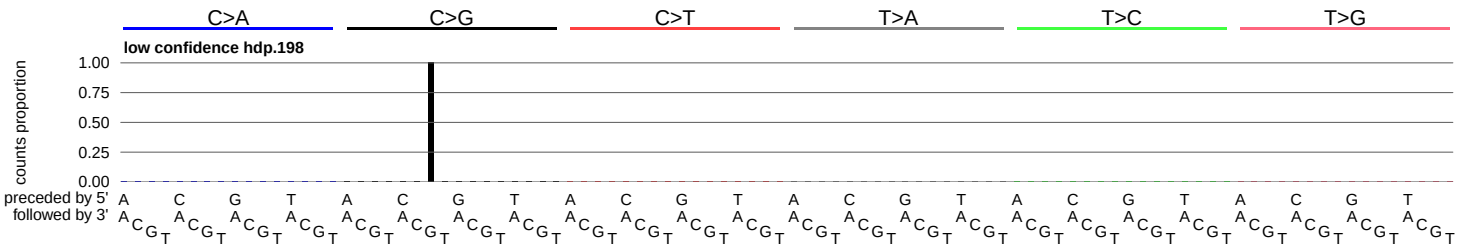

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.193
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

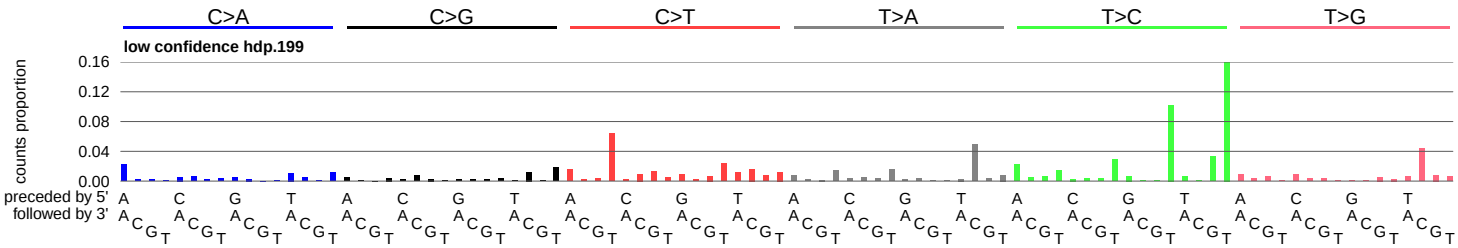

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.194
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

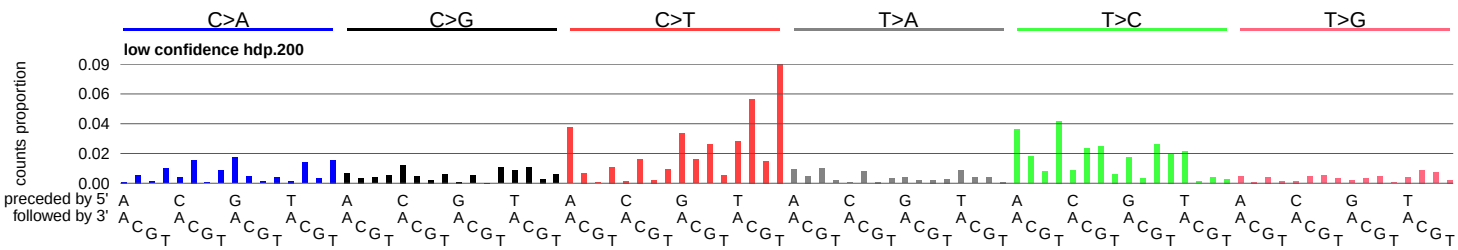

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.195
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

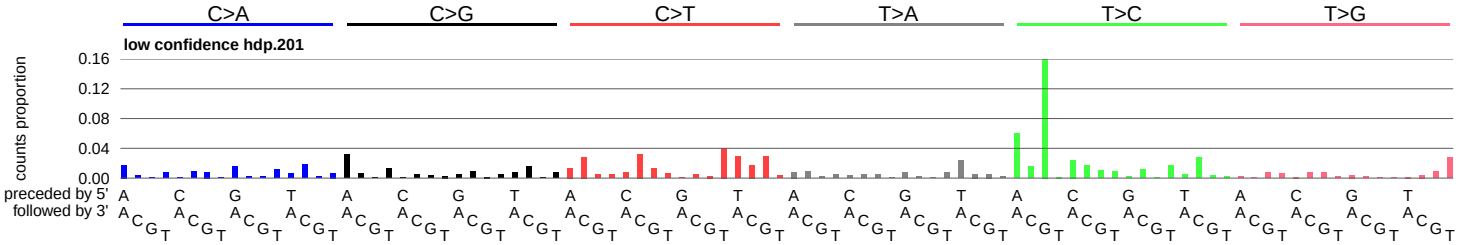

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.196
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

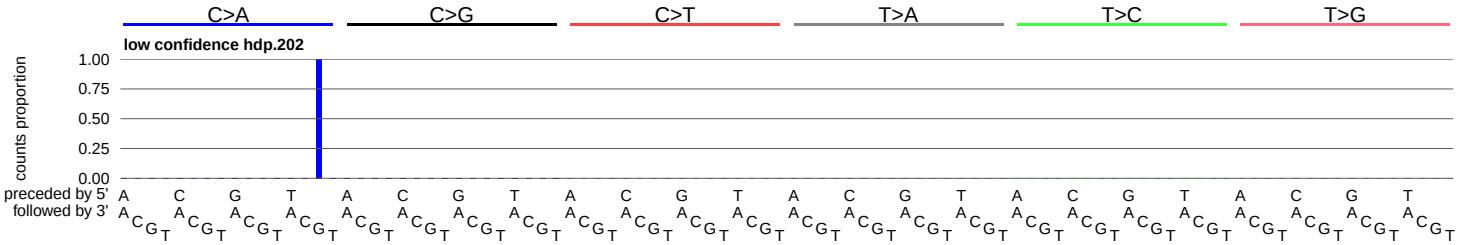

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.197
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

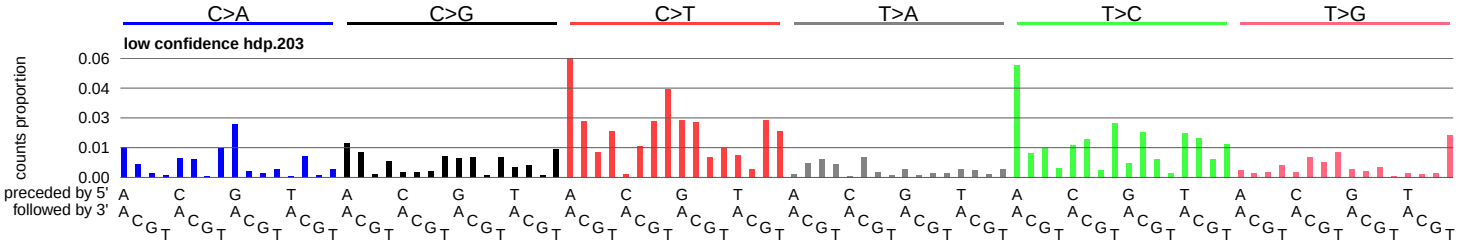

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.198
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

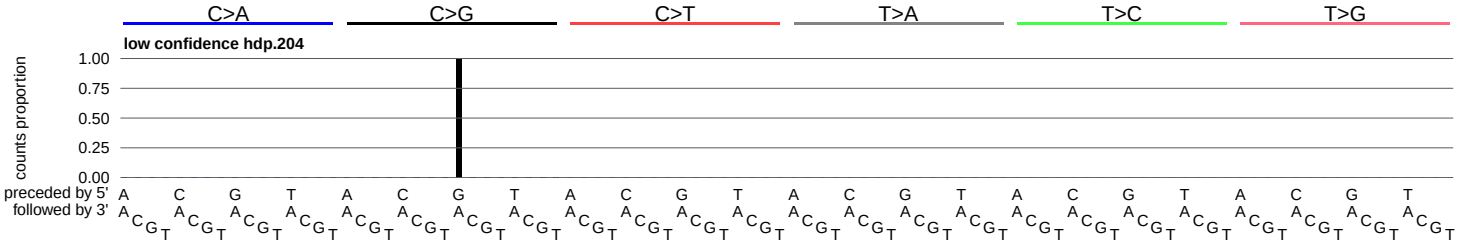

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.199
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

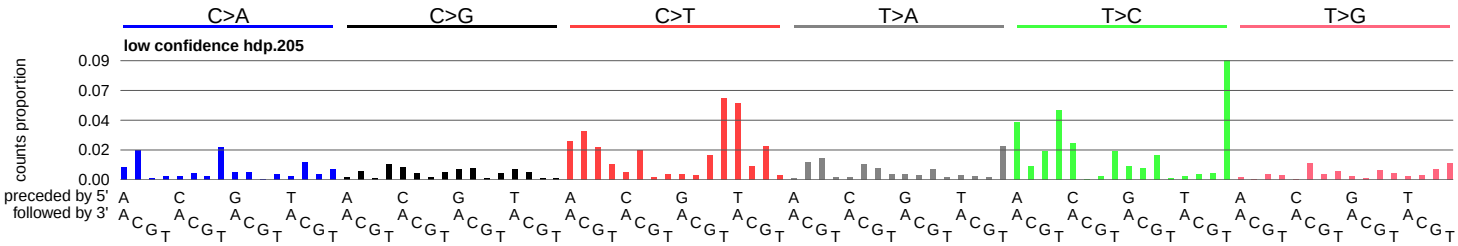

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.200
counts proportion
0.09
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

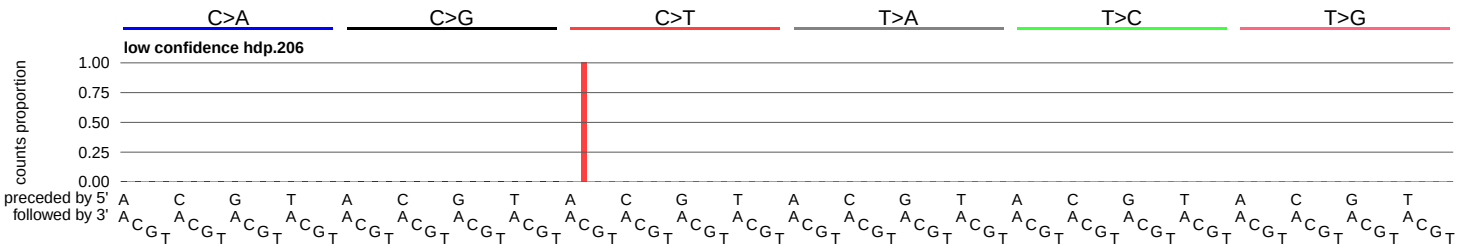

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.201
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

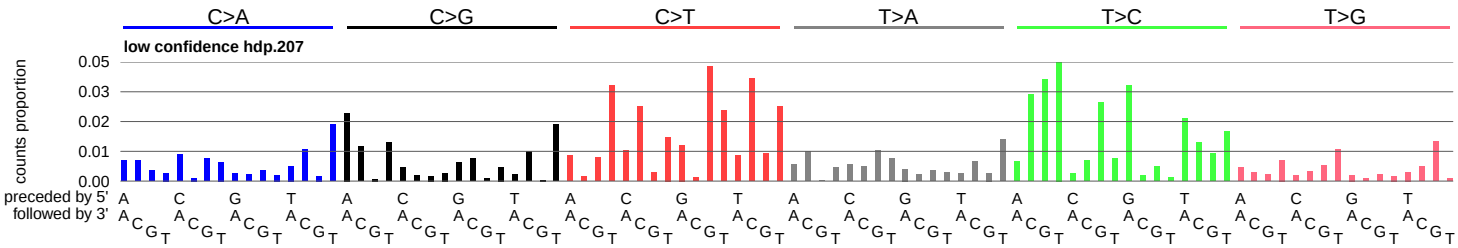

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.202
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

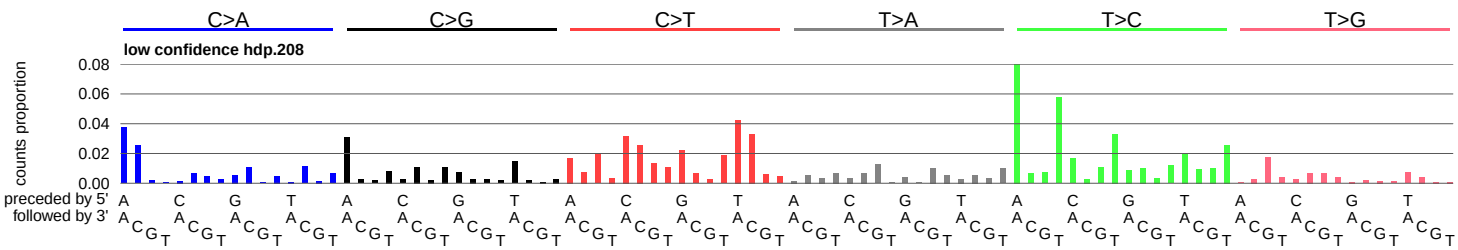

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.203
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

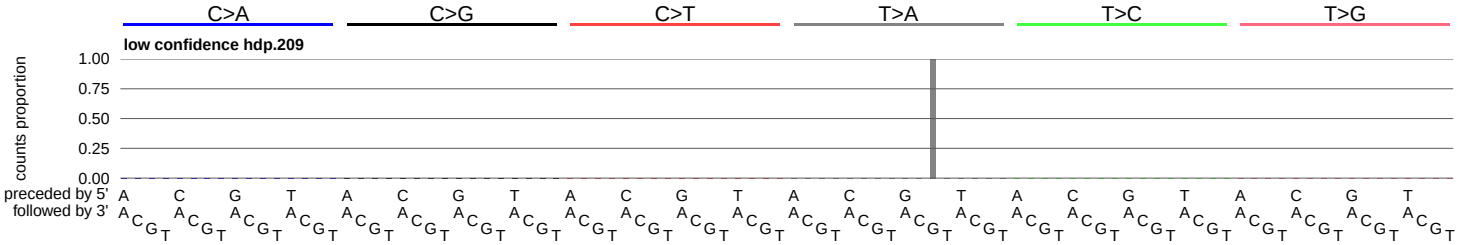

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.204
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

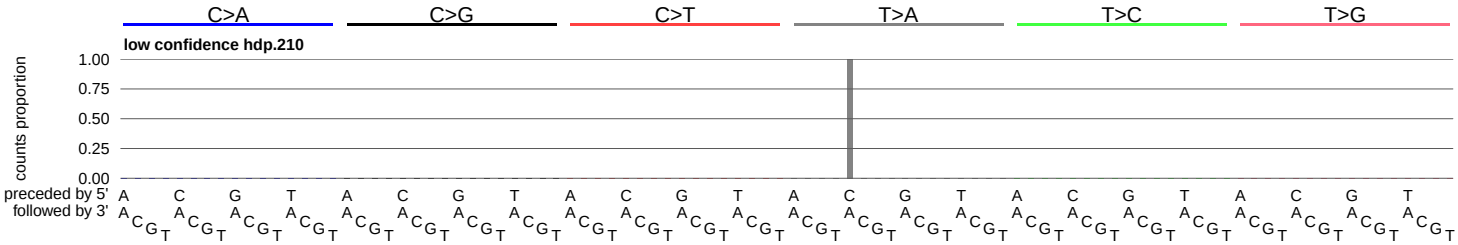

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.205
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

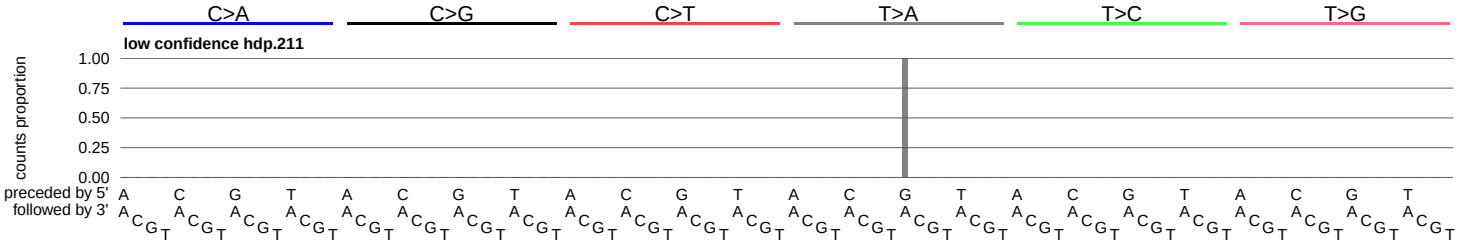

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.206
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

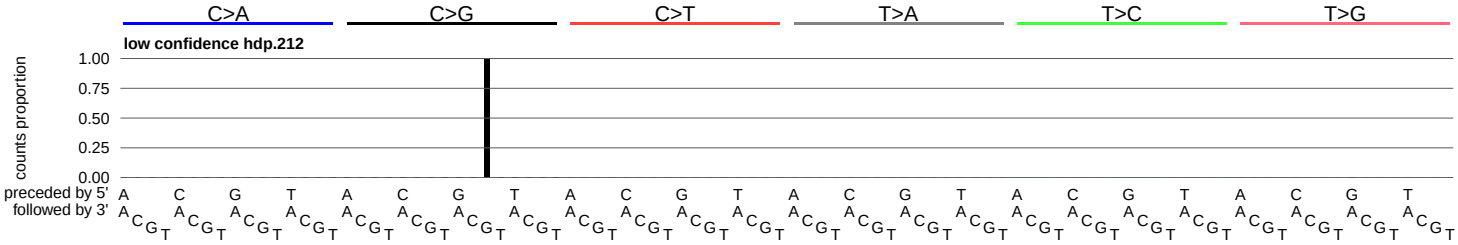

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.207
counts proportion
0.05
0.03
0.02
0.01
0.00
preceded by 5'
followed by 3'

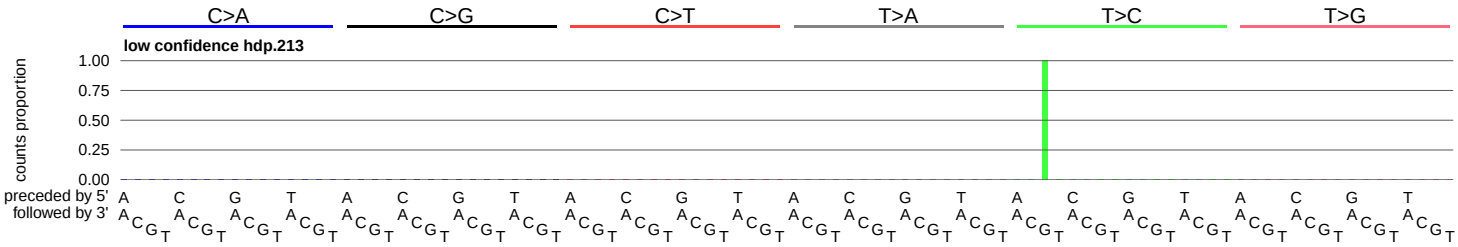

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.208
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

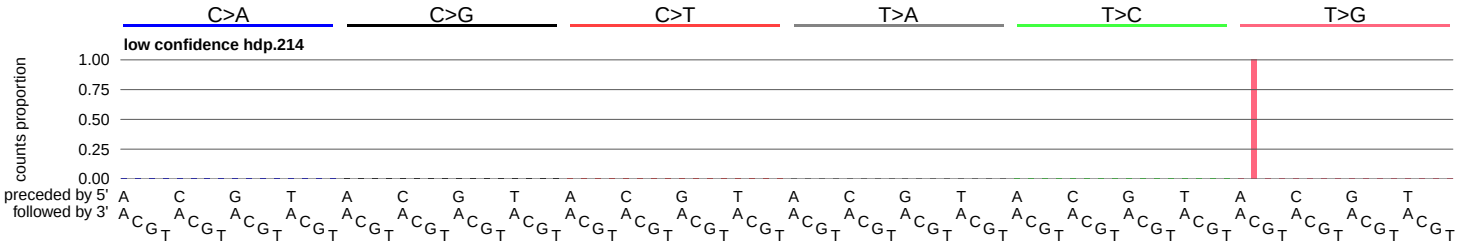

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.209
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

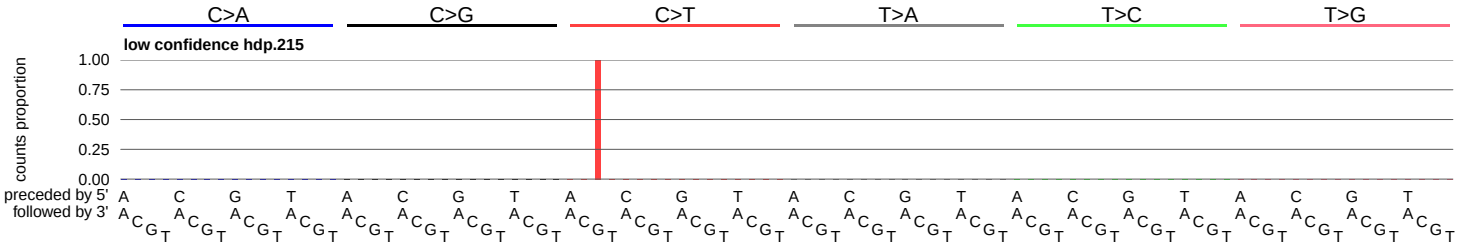

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.210
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

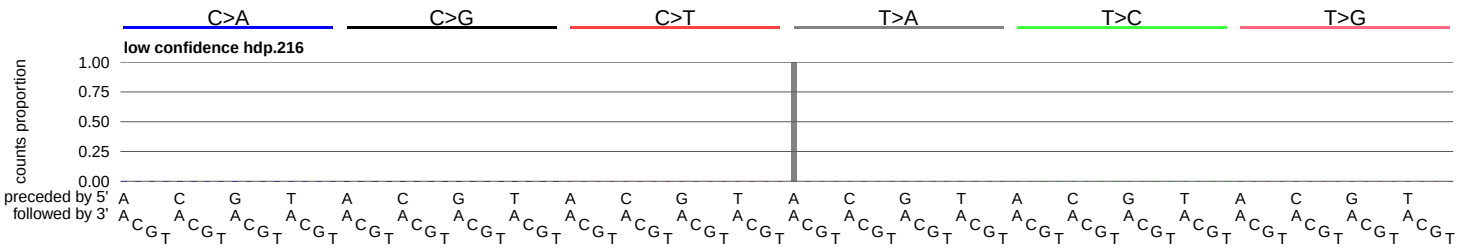

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.211
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

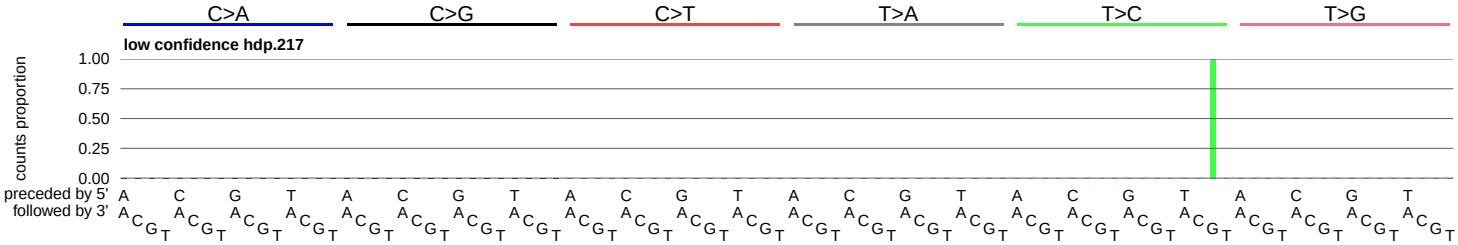

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.212
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

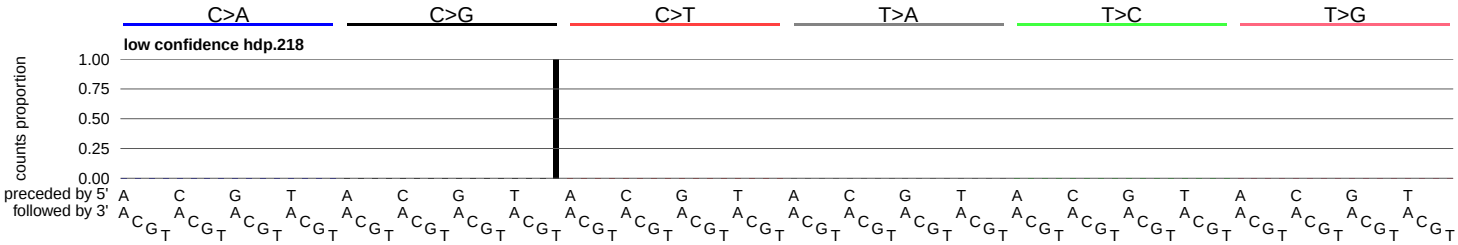

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.213
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

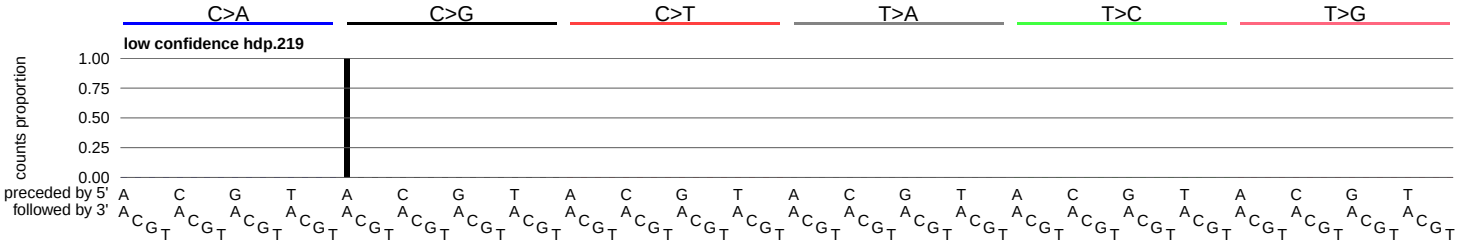

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.214
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

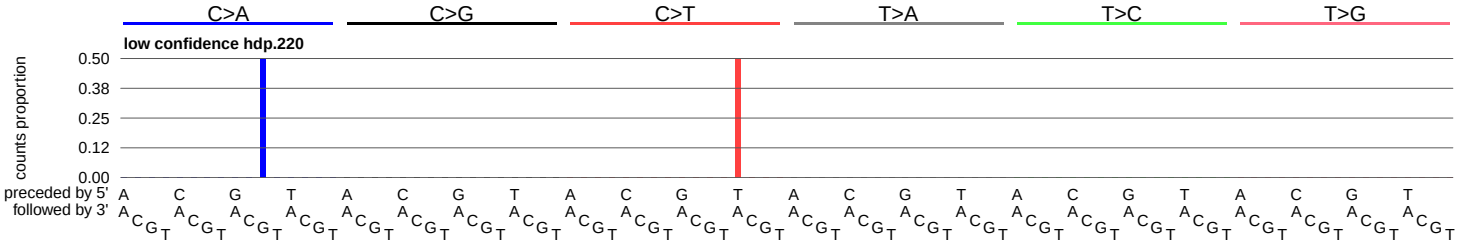

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.215
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

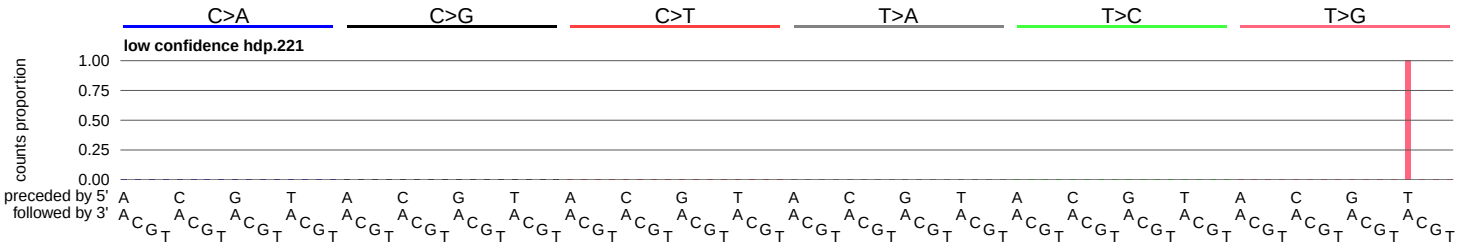

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.216
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

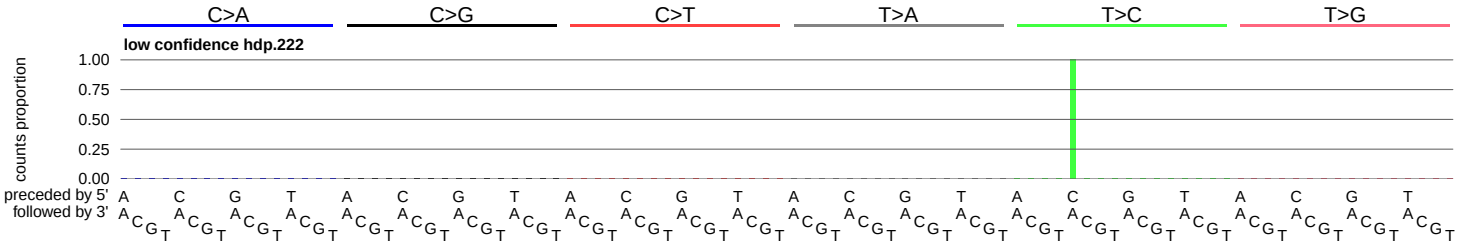

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.217
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

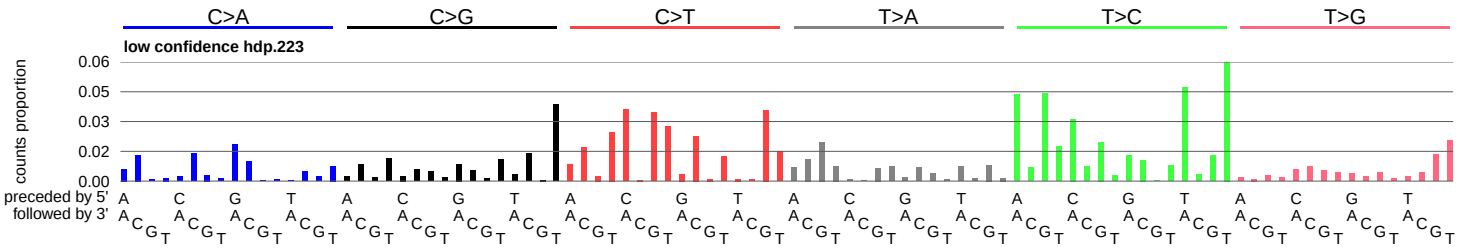

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.218
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

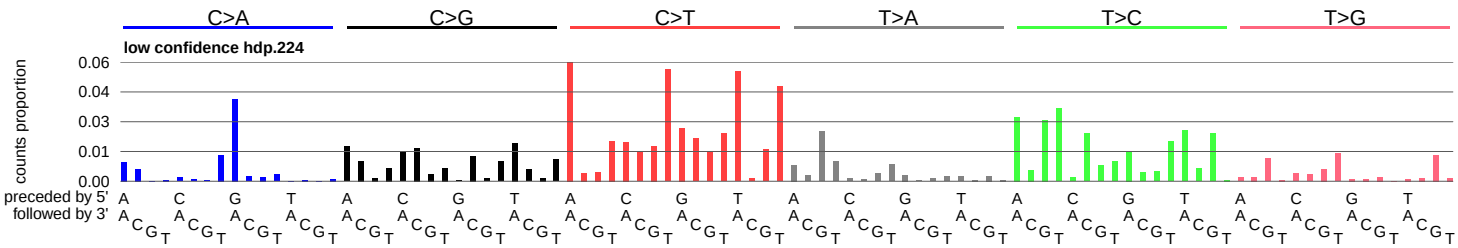

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.219
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

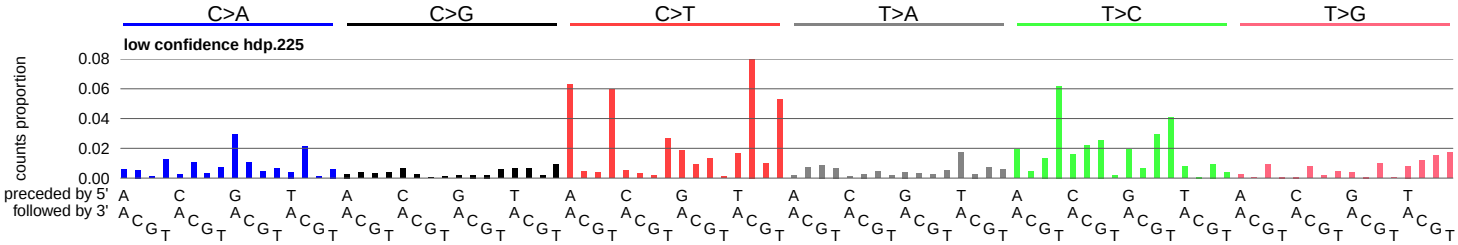

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.220
counts proportion
0.50
0.38
0.25
0.12
0.00
preceded by 5'
followed by 3'

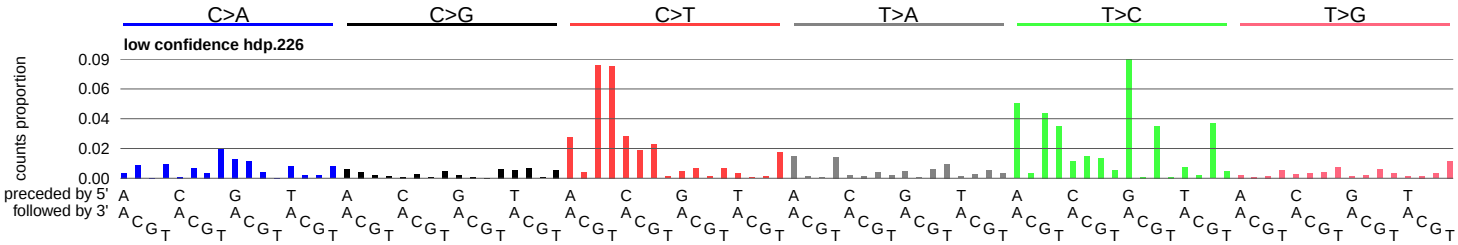

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.221
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

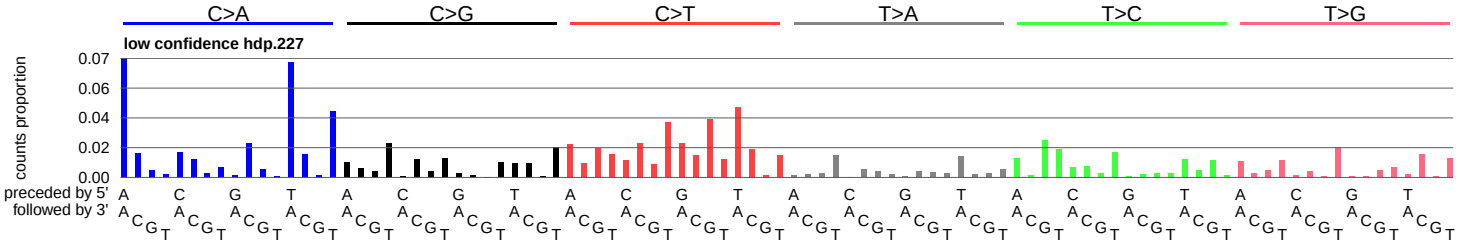

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.222
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

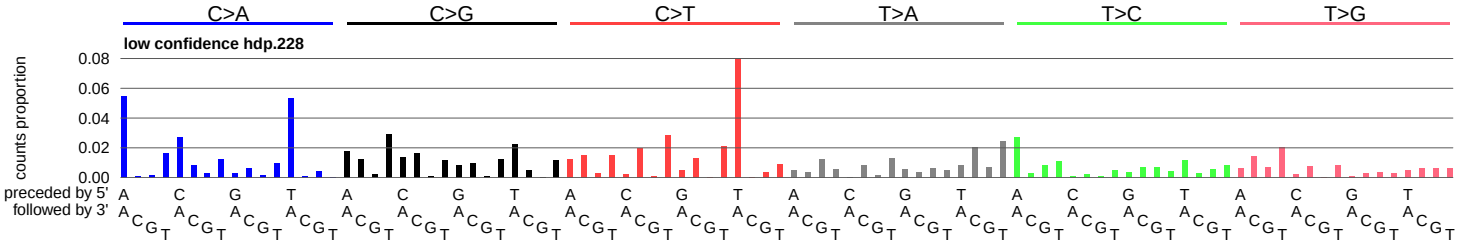

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.223
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

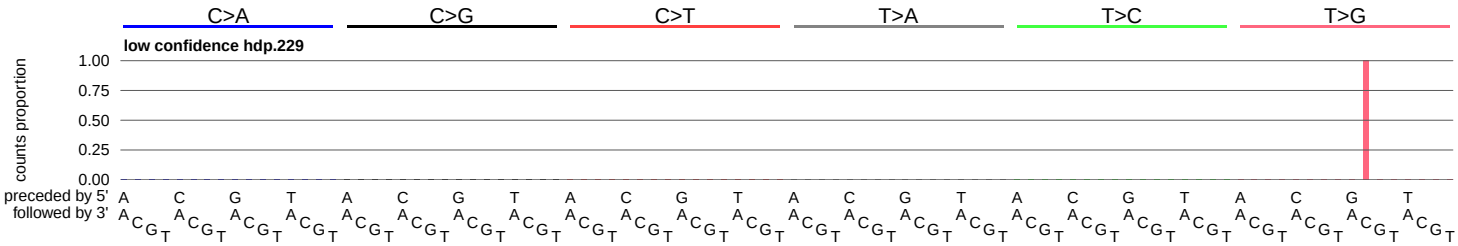

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.224
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

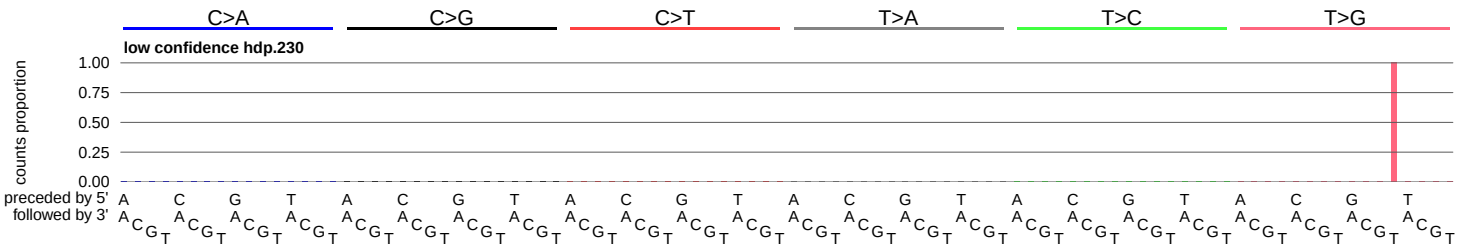

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.225
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

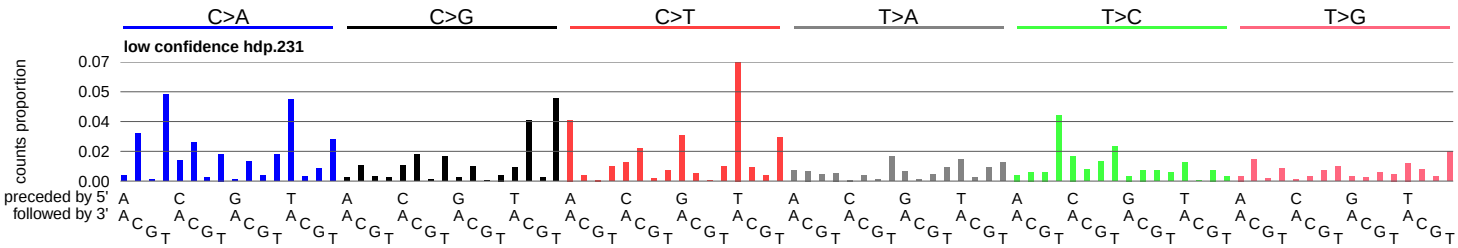

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.226
counts proportion
0.09
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

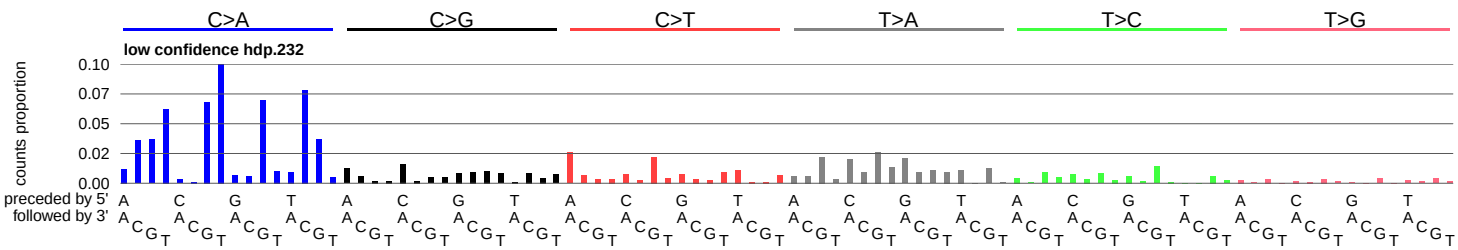

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.227
counts proportion
0.07
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

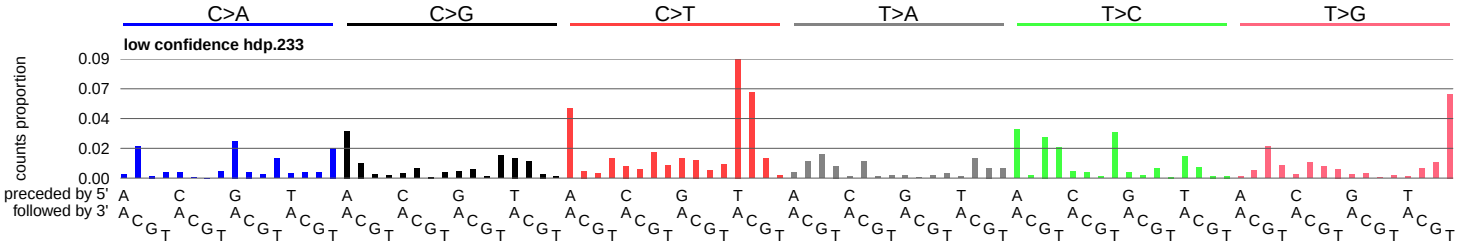

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.228
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

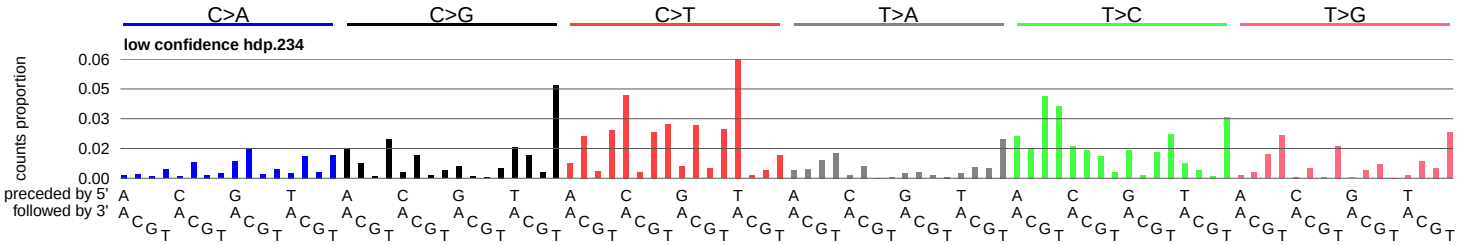

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.229
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

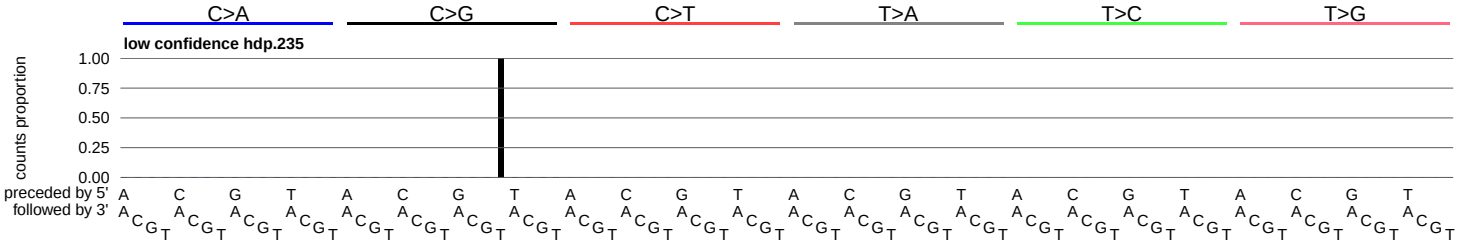

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.230
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

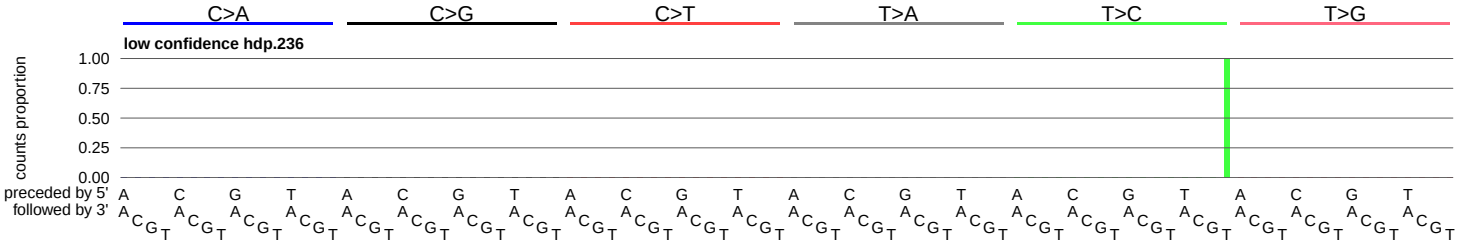

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.231
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

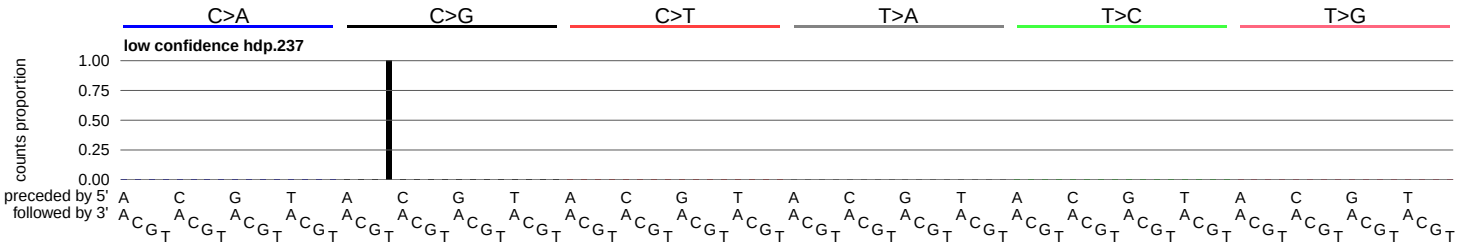

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.232
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

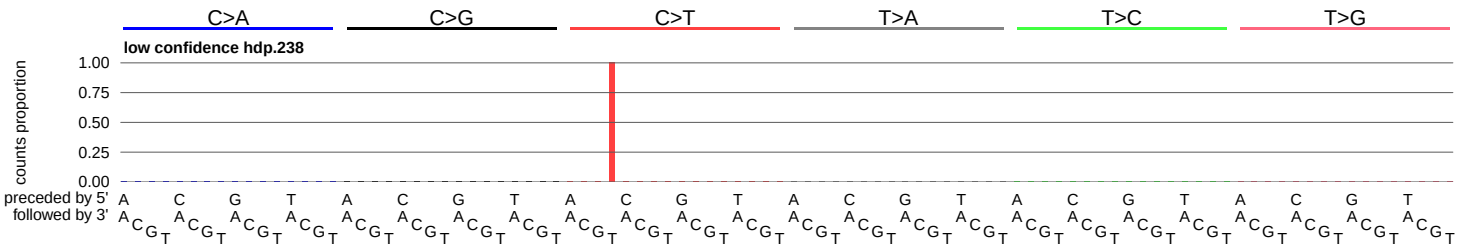

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.233
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

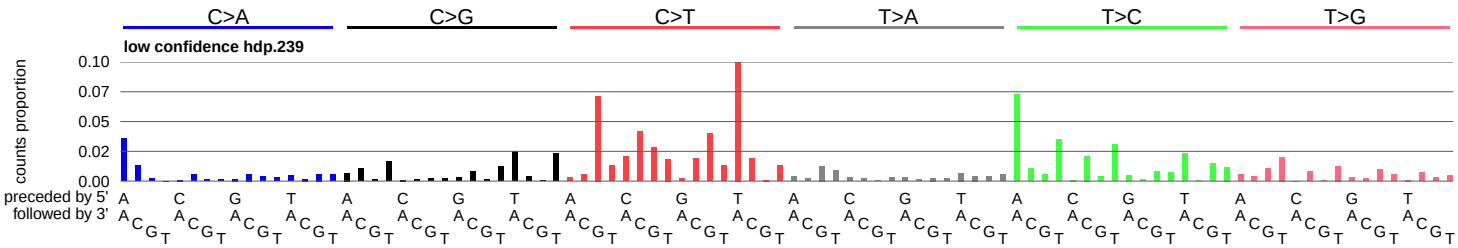

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.234
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

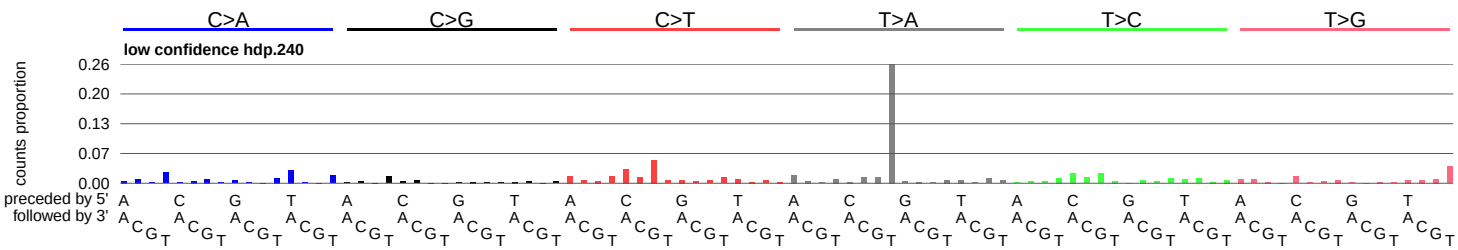

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.235
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

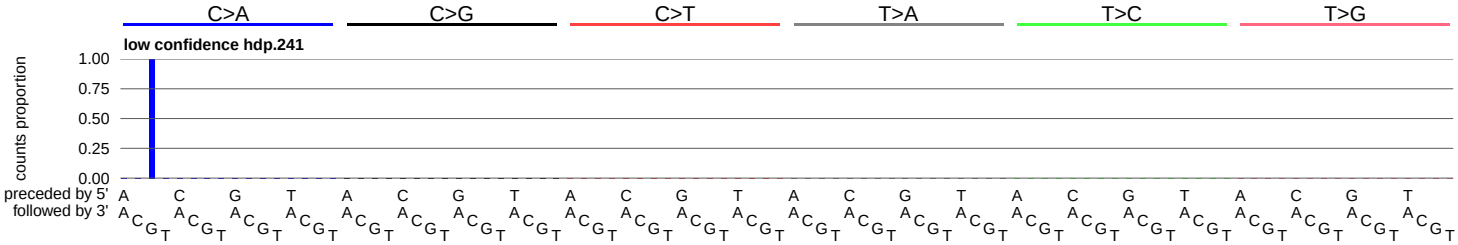

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.236
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

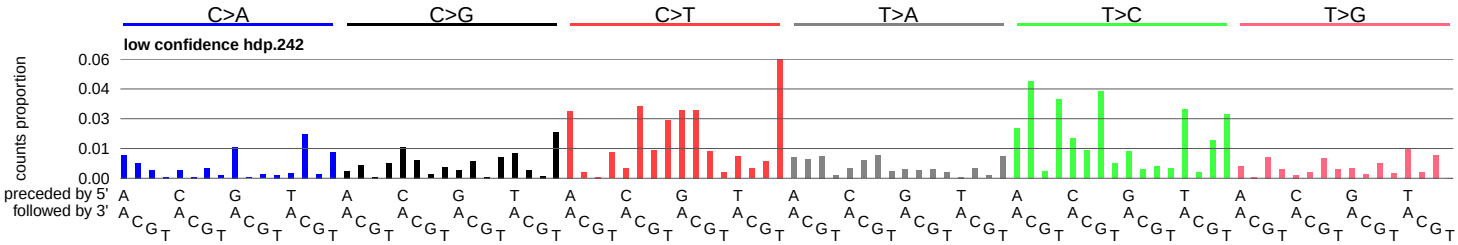

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.237
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

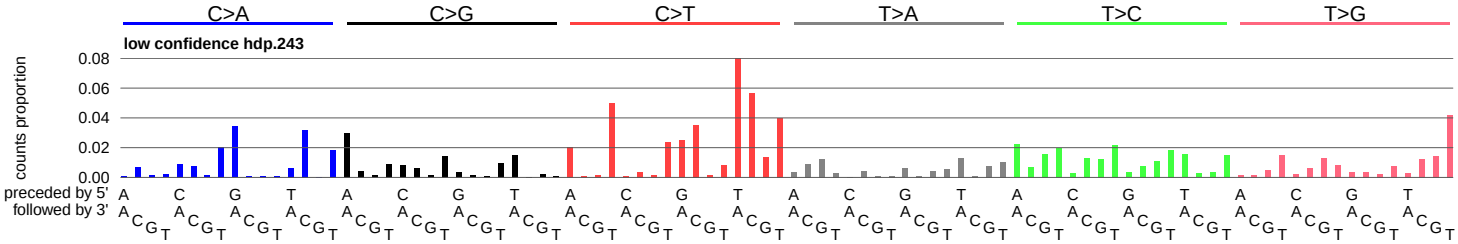

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.238
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

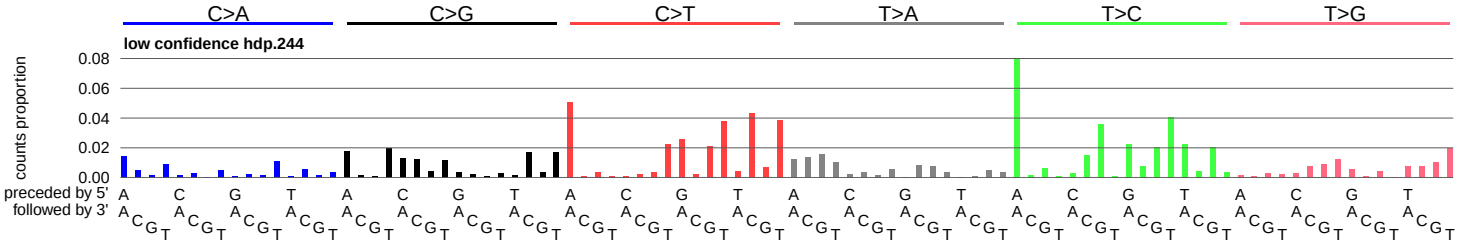

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.239
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

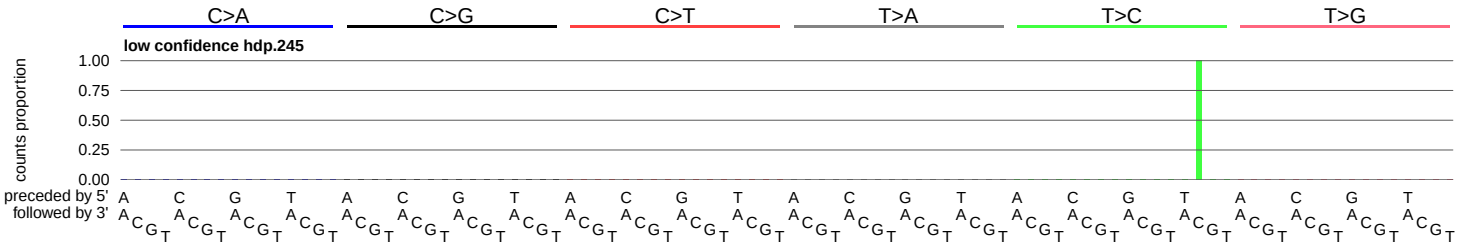

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.240
counts proportion
0.26
0.20
0.13
0.07
0.00
preceded by 5'
followed by 3'

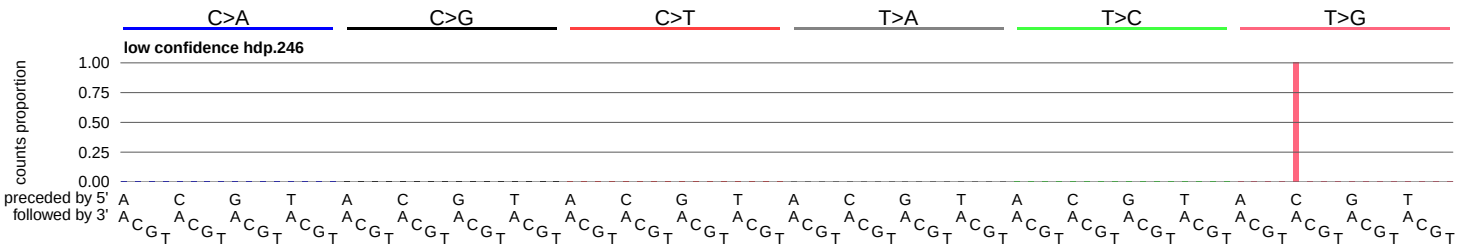

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.241
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

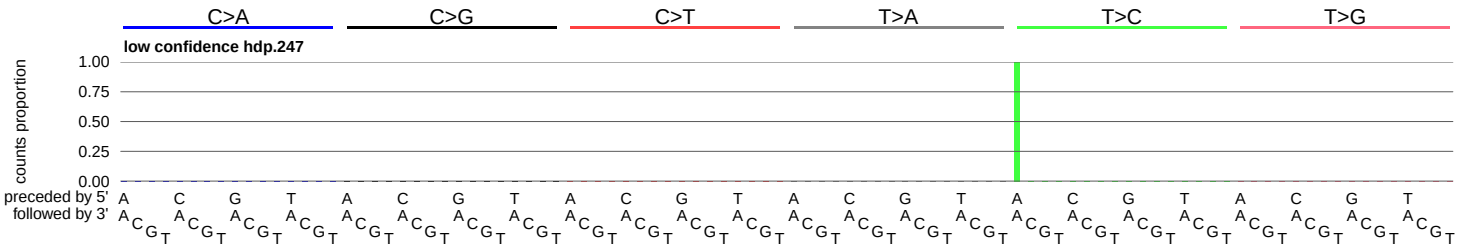

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.242
counts proportion
0.06
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

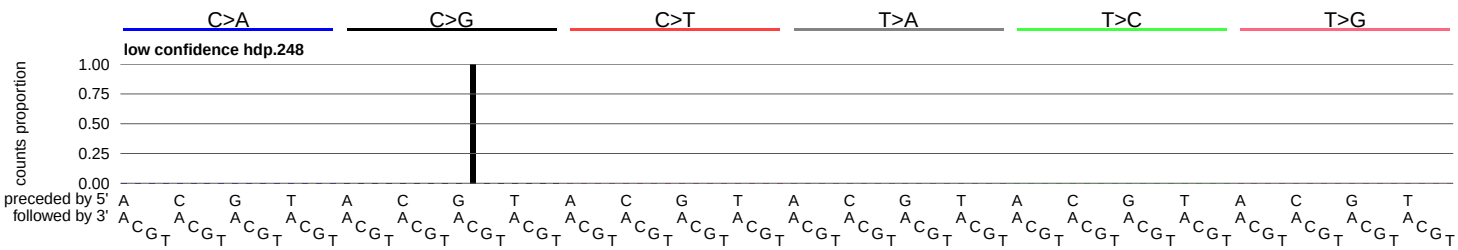

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.243
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

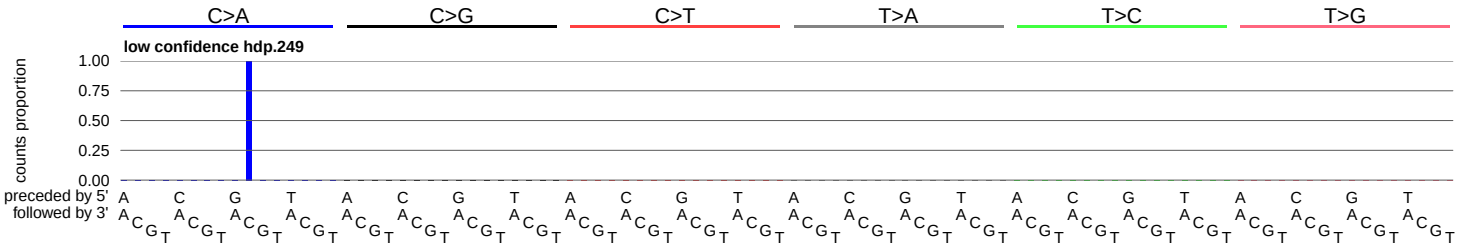

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.244
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

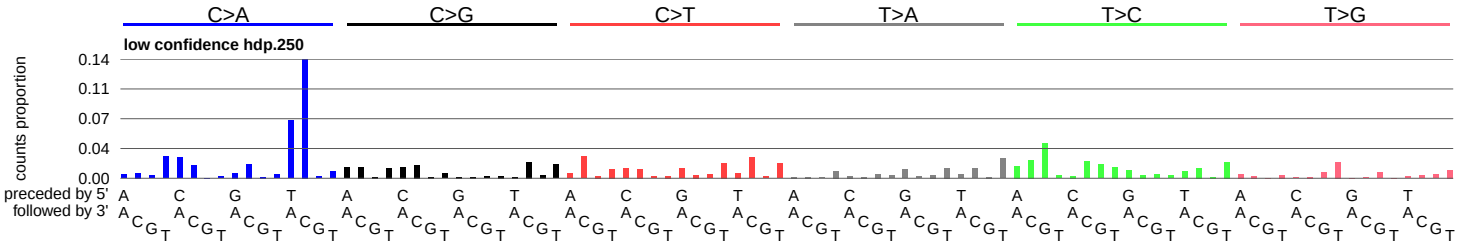

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.245
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

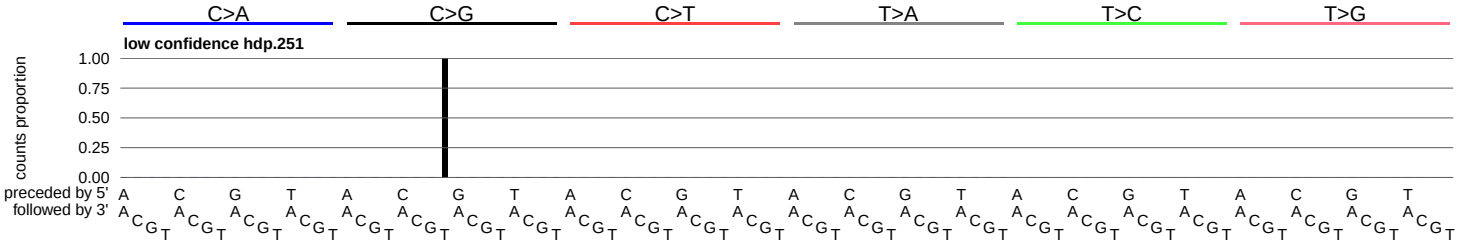

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.246
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'

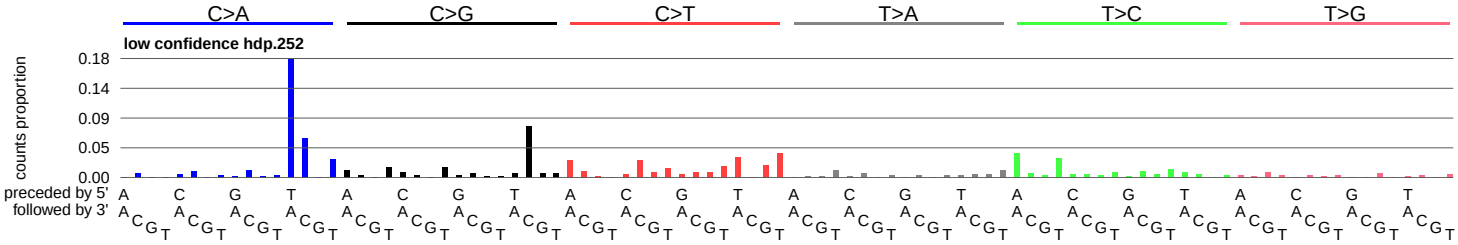

C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.247
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.248
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.249
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.250
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.251
counts proportion
1.00
0.75
0.50
0.25
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
low confidence hdp.252
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'