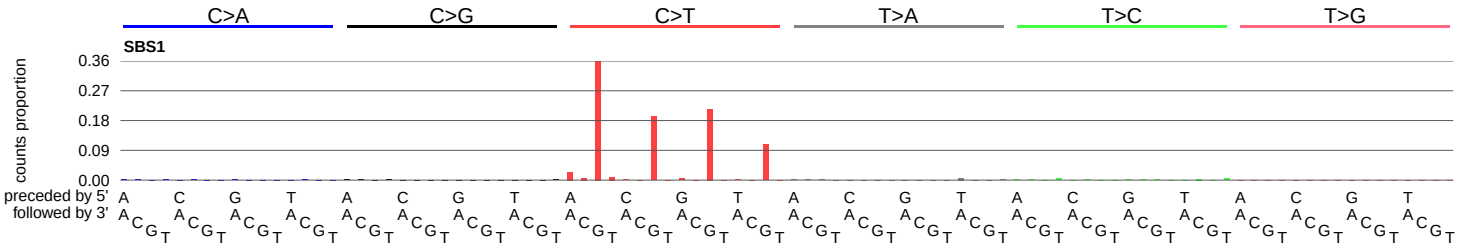
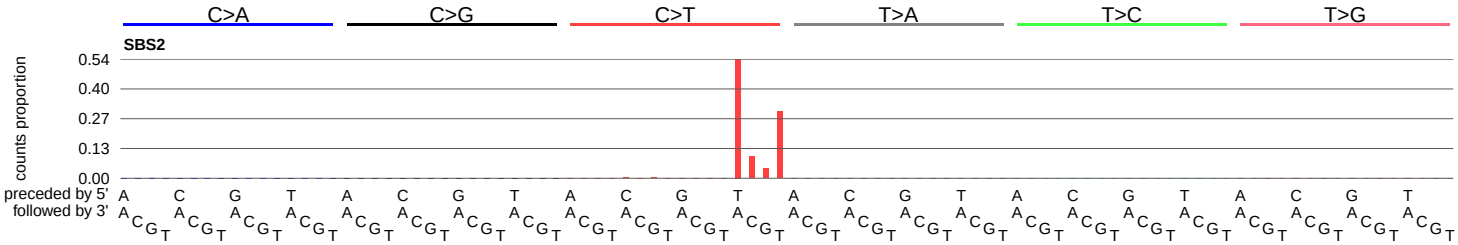
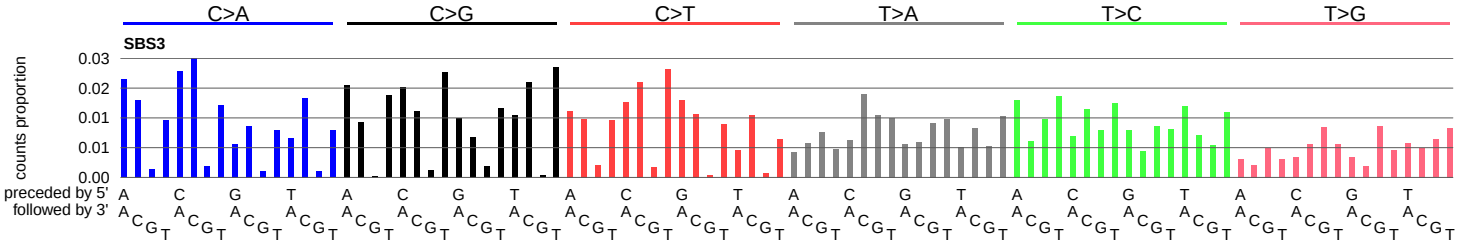
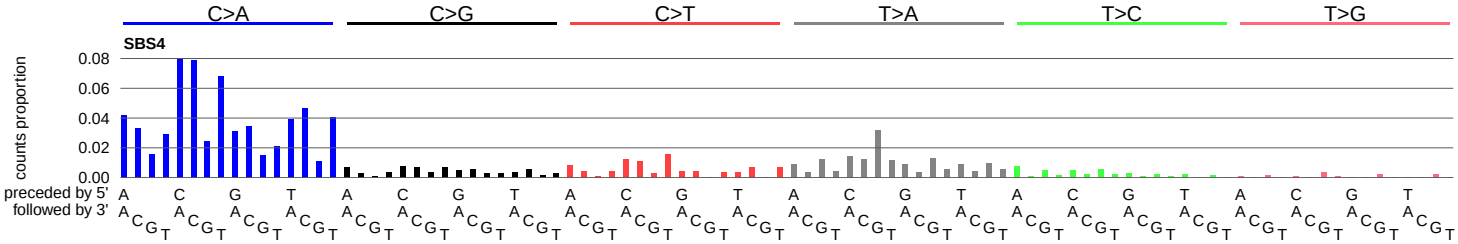
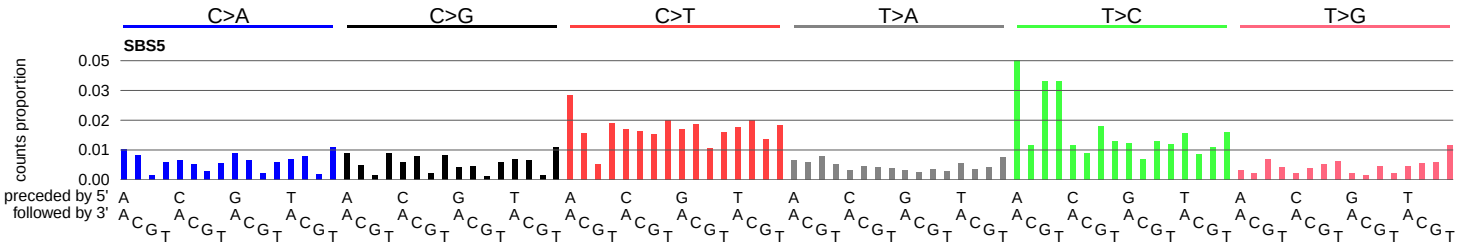
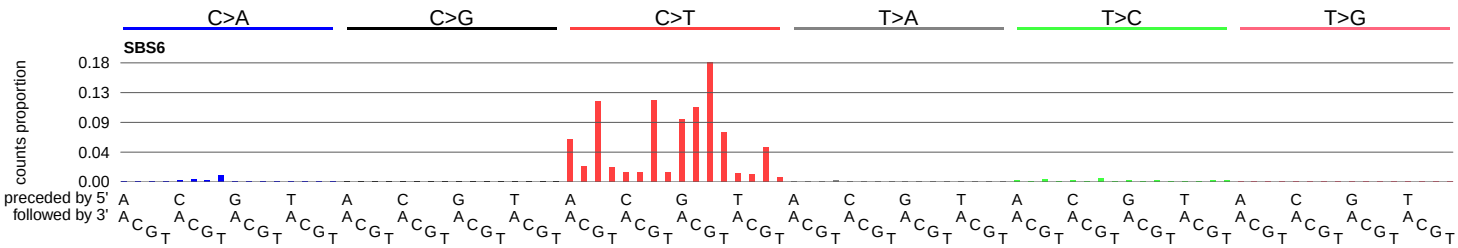

C>A
C>G
C>T
T>A
T>C
T>G
SBS1
counts proportion
0.36
0.27
0.18
0.09
0.00
preceded by 5'
followed by 3'

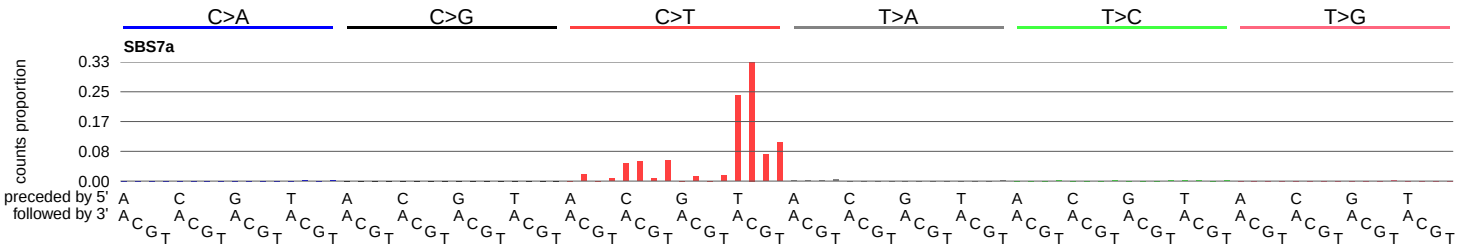

C>A
C>G
C>T
T>A
T>C
T>G
SBS2
counts proportion
0.54
0.40
0.27
0.13
0.00
preceded by 5'
followed by 3'

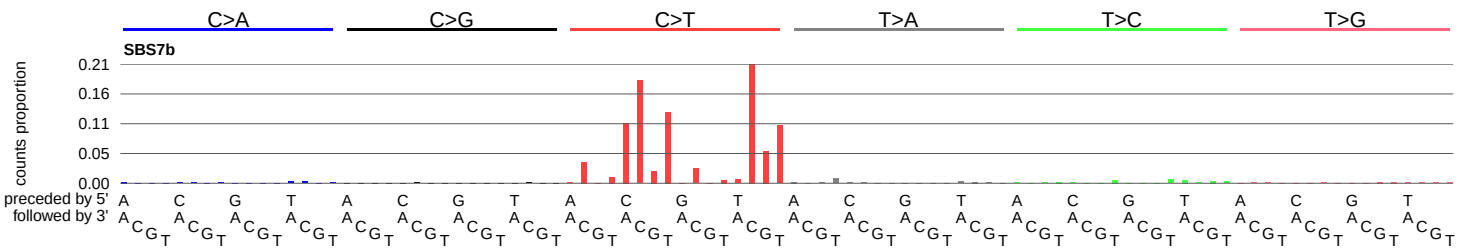

C>A
C>G
C>T
T>A
T>C
T>G
SBS3
counts proportion
0.03
0.02
0.01
0.01
0.00
preceded by 5'
followed by 3'

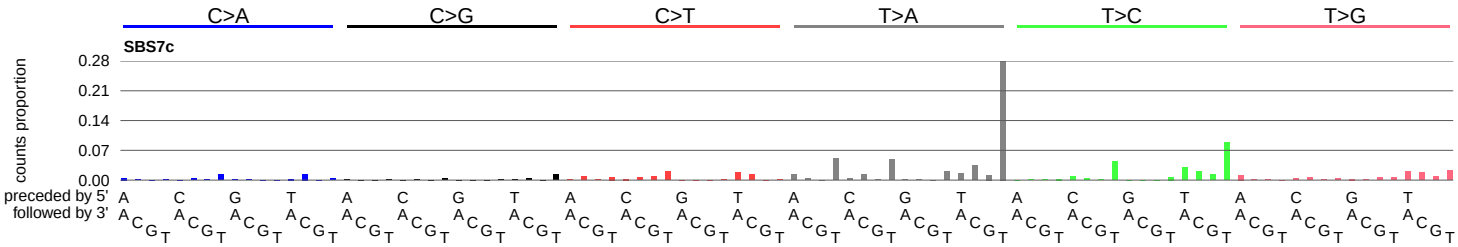

C>A
C>G
C>T
T>A
T>C
T>G
SBS4
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

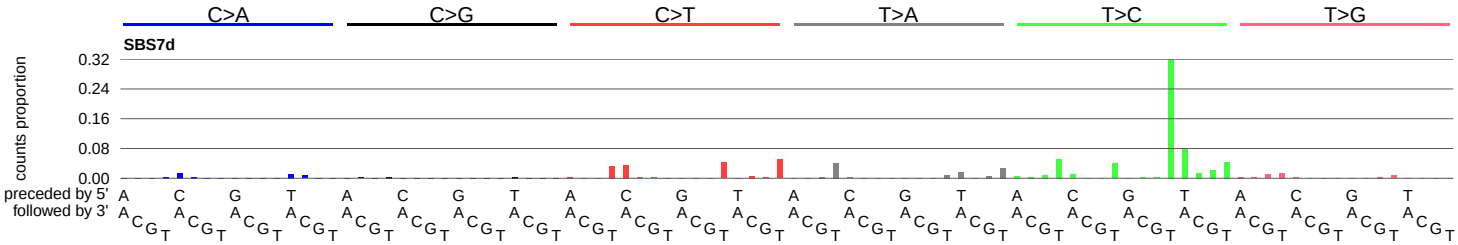

C>A
C>G
C>T
T>A
T>C
T>G
SBS5
counts proportion
0.05
0.03
0.02
0.01
0.00
preceded by 5'
followed by 3'

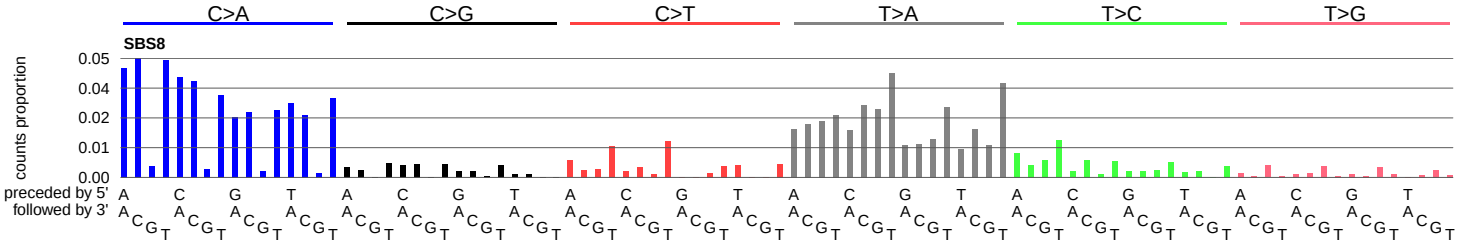

C>A
C>G
C>T
T>A
T>C
T>G
SBS6
counts proportion
0.18
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

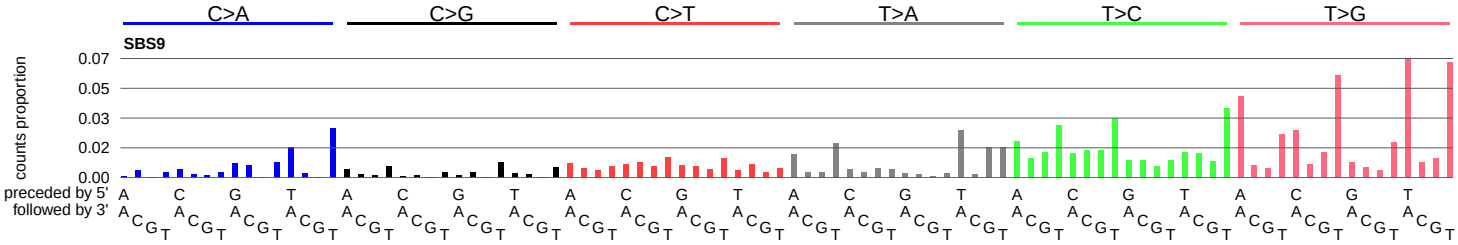

C>A
C>G
C>T
T>A
T>C
T>G
SBS7a
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

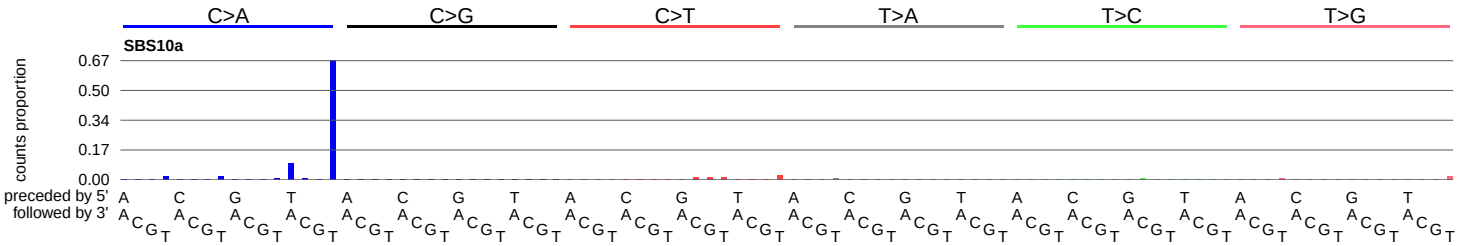

C>A
C>G
C>T
T>A
T>C
T>G
SBS7b
counts proportion
0.21
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

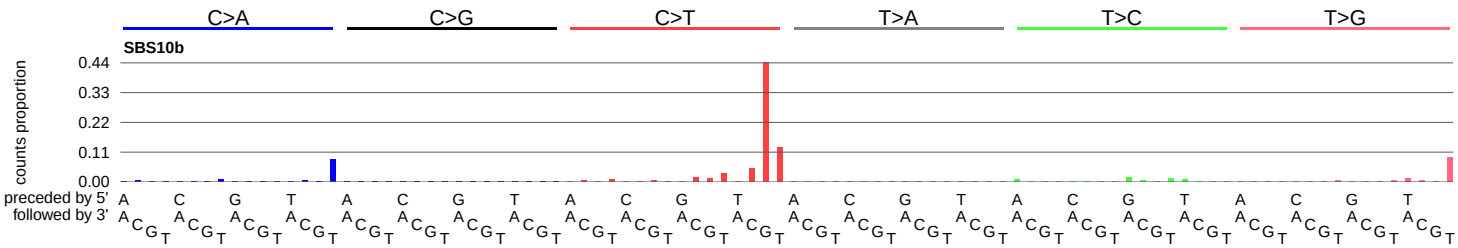

C>A
C>G
C>T
T>A
T>C
T>G
SBS7c
counts proportion
0.28
0.21
0.14
0.07
0.00
preceded by 5'
followed by 3'

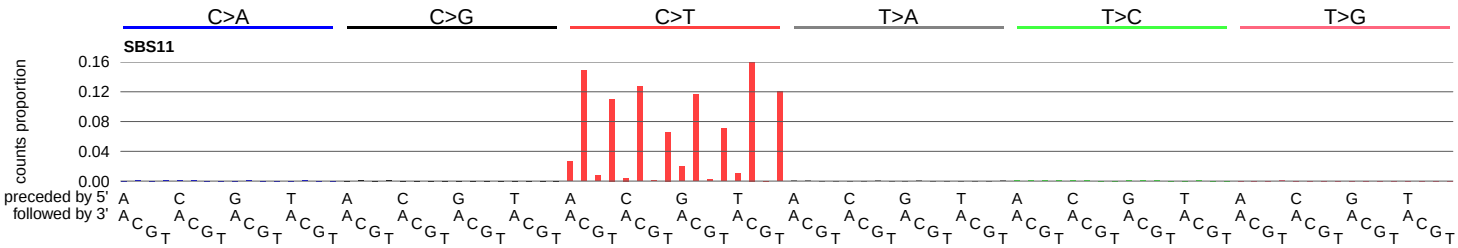

C>A
C>G
C>T
T>A
T>C
T>G
SBS7d
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

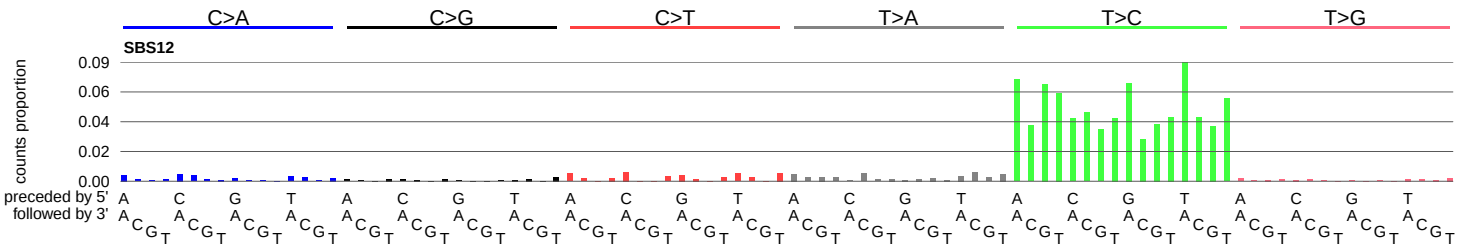

C>A
C>G
C>T
T>A
T>C
T>G
SBS8
counts proportion
0.05
0.04
0.02
0.01
0.00
preceded by 5'
followed by 3'

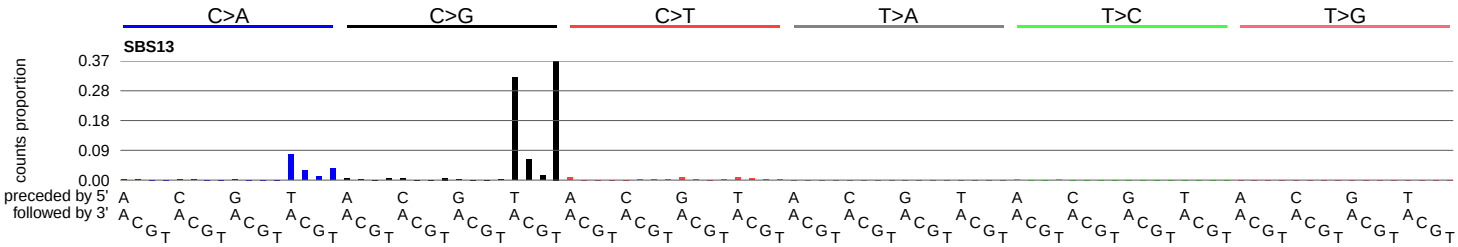

C>A
C>G
C>T
T>A
T>C
T>G
SBS9
counts proportion
0.07
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

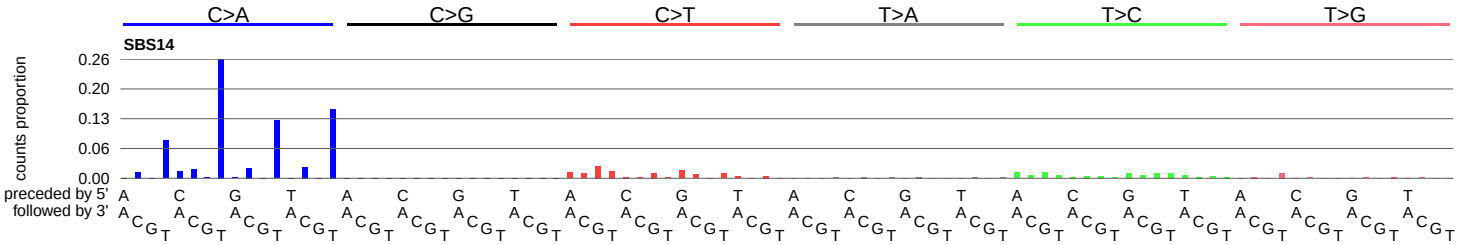

C>A
C>G
C>T
T>A
T>C
T>G
SBS10a
counts proportion
0.67
0.50
0.34
0.17
0.00
preceded by 5'
followed by 3'

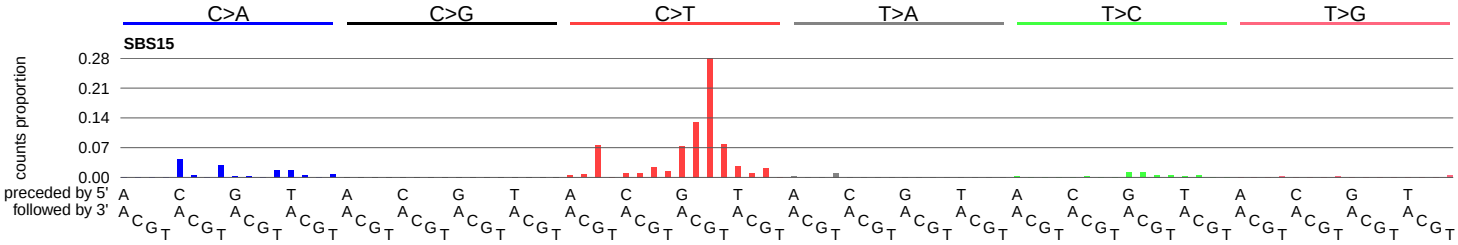

C>A
C>G
C>T
T>A
T>C
T>G
SBS10b
counts proportion
0.44
0.33
0.22
0.11
0.00
preceded by 5'
followed by 3'

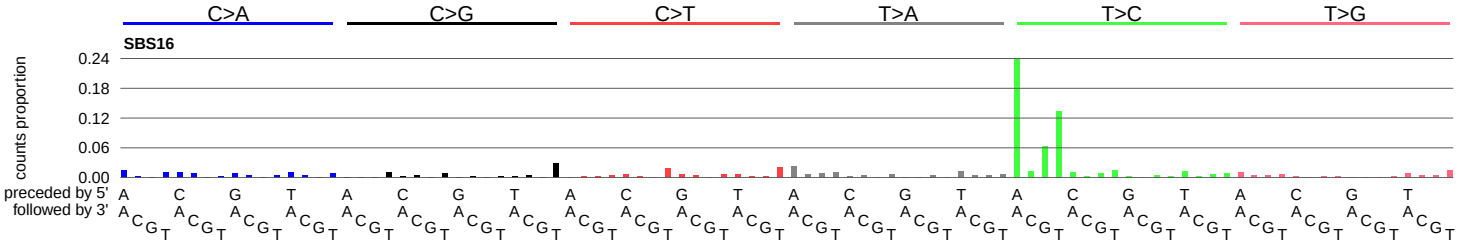

C>A
C>G
C>T
T>A
T>C
T>G
SBS11
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

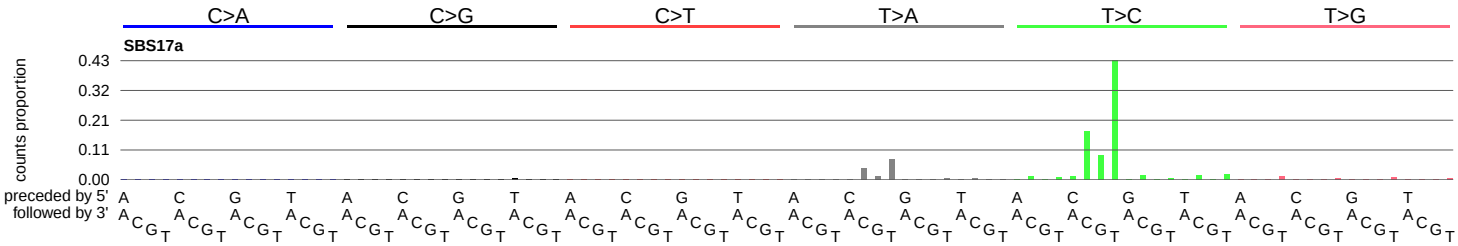

C>A
C>G
C>T
T>A
T>C
T>G
SBS12
counts proportion
0.09
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

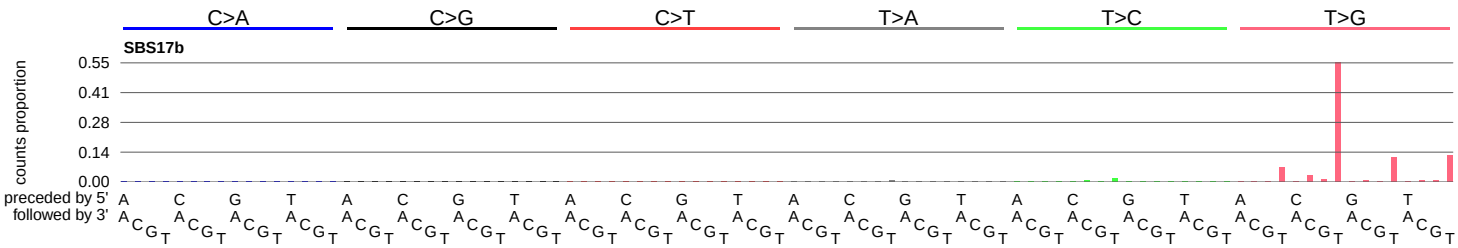

C>A
C>G
C>T
T>A
T>C
T>G
SBS13
counts proportion
0.37
0.28
0.18
0.09
0.00
preceded by 5'
followed by 3'

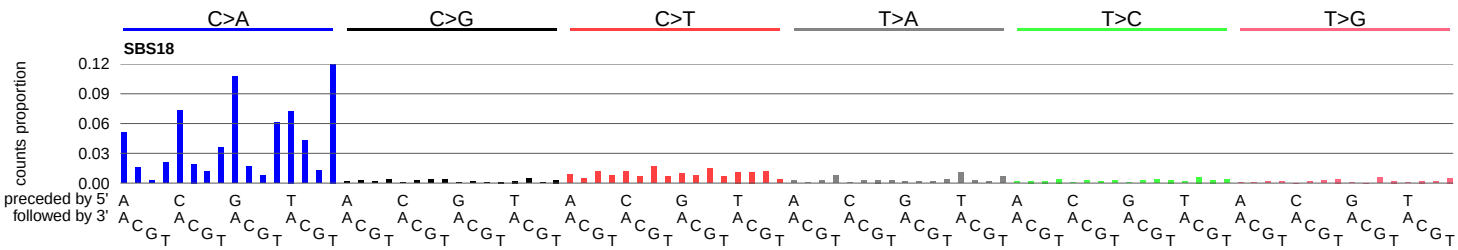

C>A
C>G
C>T
T>A
T>C
T>G
SBS14
counts proportion
0.26
0.20
0.13
0.06
0.00
preceded by 5'
followed by 3'

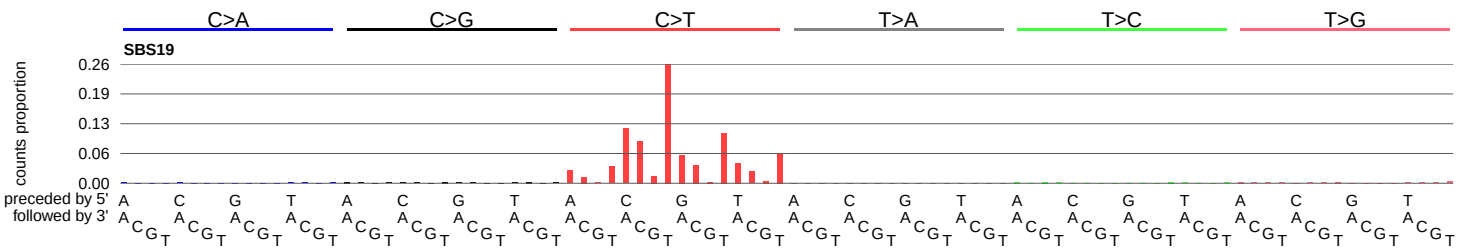

C>A
C>G
C>T
T>A
T>C
T>G
SBS15
counts proportion
0.28
0.21
0.14
0.07
0.00
preceded by 5'
followed by 3'

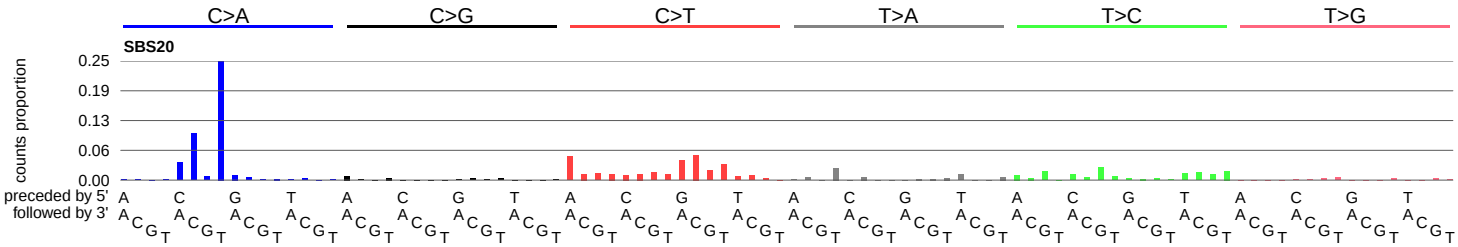

C>A
C>G
C>T
T>A
T>C
T>G
SBS16
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

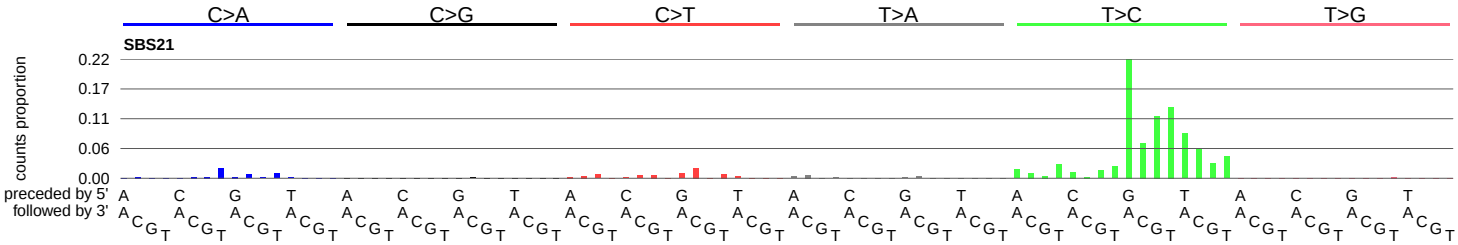

C>A
C>G
C>T
T>A
T>C
T>G
SBS17a
counts proportion
0.43
0.32
0.21
0.11
0.00
preceded by 5'
followed by 3'

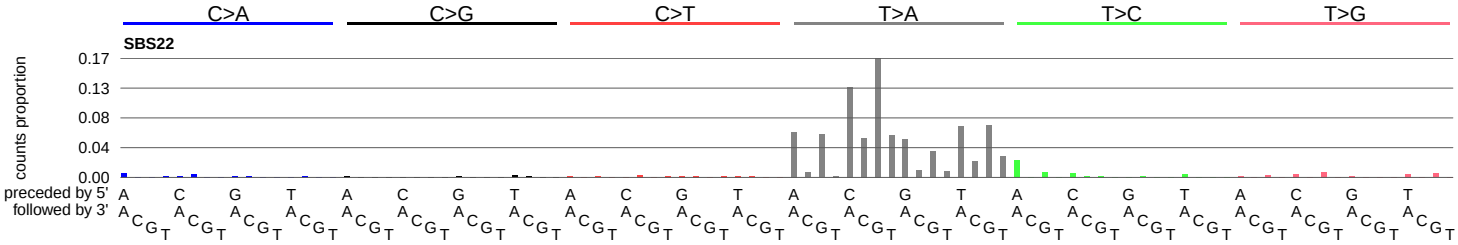

C>A
C>G
C>T
T>A
T>C
T>G
SBS17b
counts proportion
0.55
0.41
0.28
0.14
0.00
preceded by 5'
followed by 3'

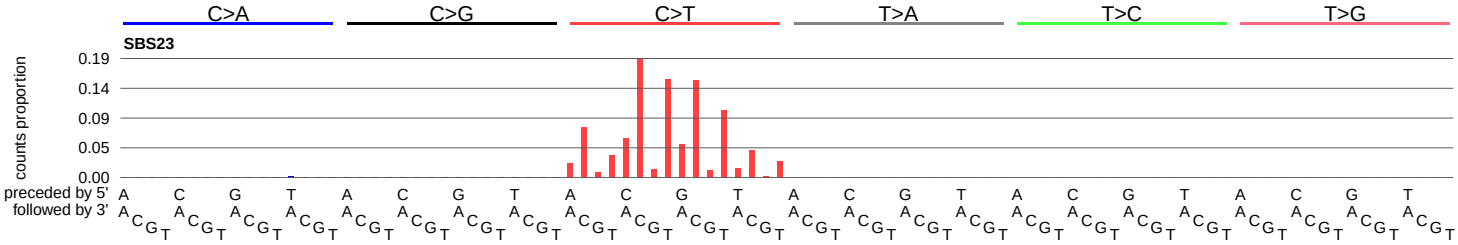

C>A
C>G
C>T
T>A
T>C
T>G
SBS18
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

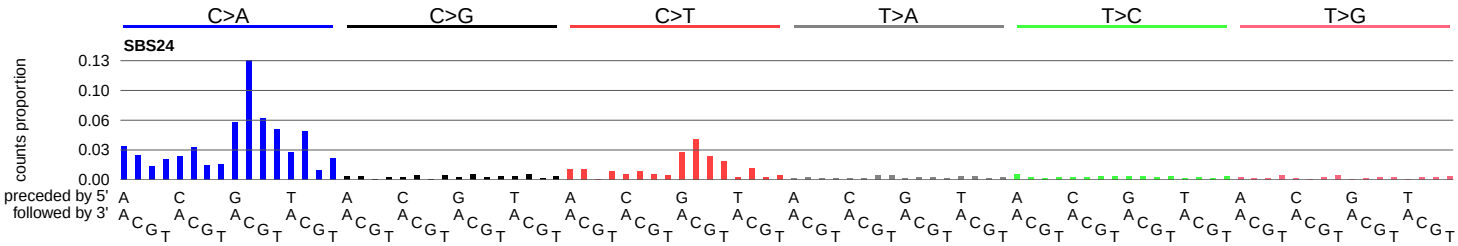

C>A
C>G
C>T
T>A
T>C
T>G
SBS19
counts proportion
0.26
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

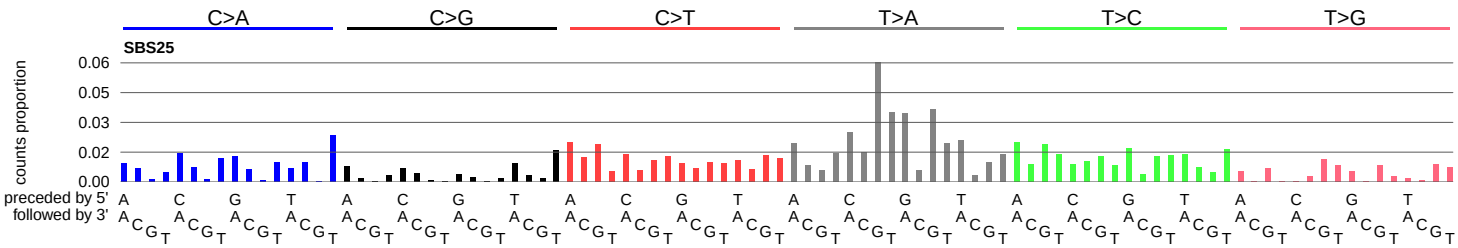

C>A
C>G
C>T
T>A
T>C
T>G
SBS20
counts proportion
0.25
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

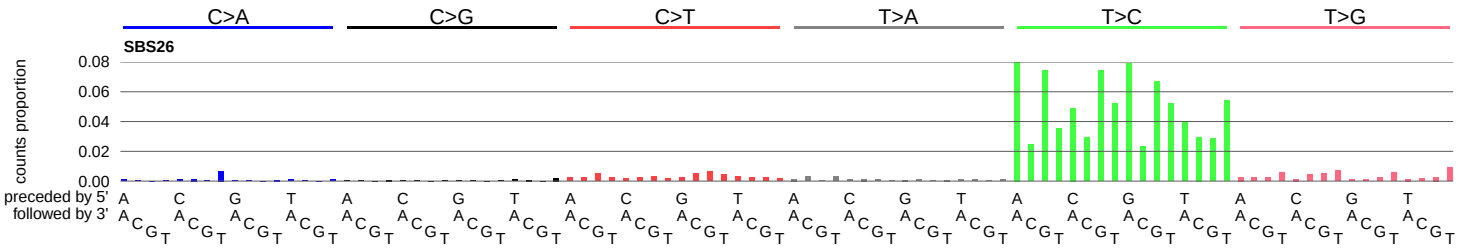

C>A
C>G
C>T
T>A
T>C
T>G
SBS21
counts proportion
0.22
0.17
0.11
0.06
0.00
preceded by 5'
followed by 3'

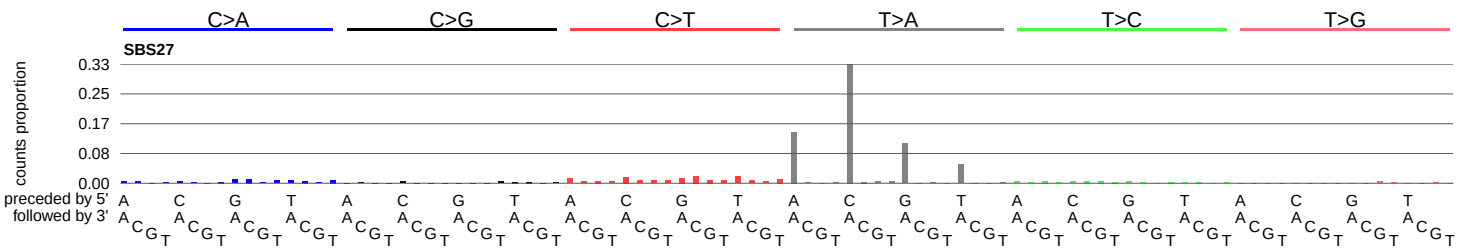

C>A
C>G
C>T
T>A
T>C
T>G
SBS22
counts proportion
0.17
0.13
0.08
0.04
0.00
preceded by 5'
followed by 3'

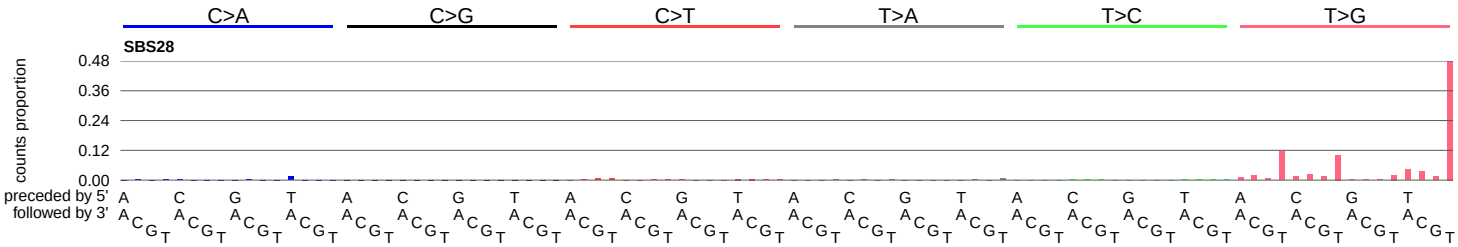

C>A
C>G
C>T
T>A
T>C
T>G
SBS23
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

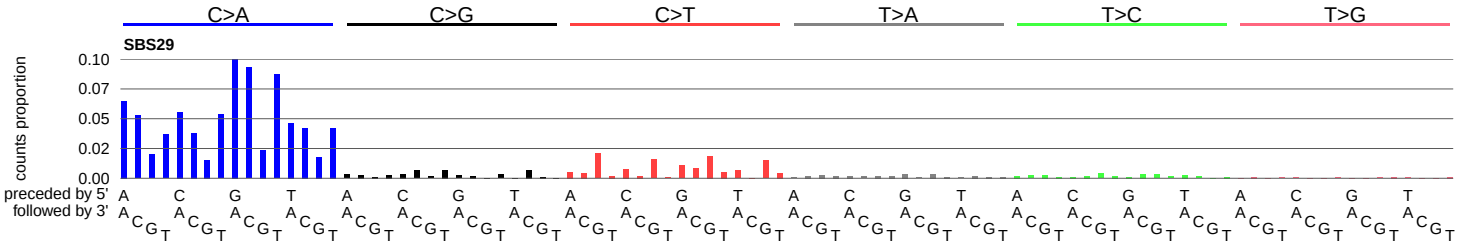

C>A
C>G
C>T
T>A
T>C
T>G
SBS24
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

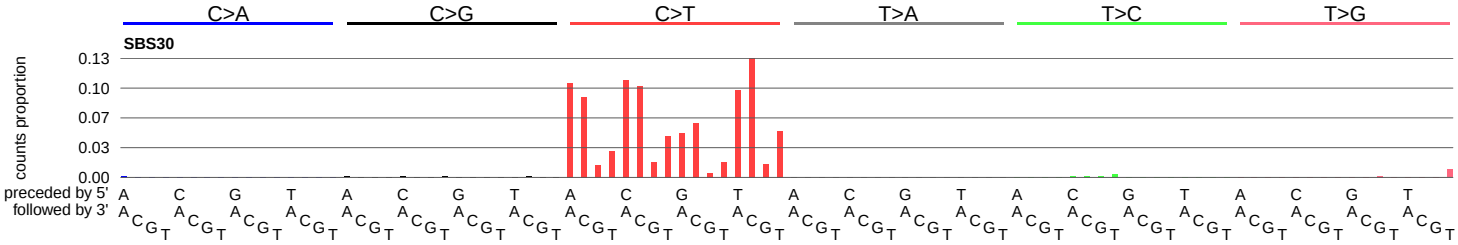

C>A
C>G
C>T
T>A
T>C
T>G
SBS25
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

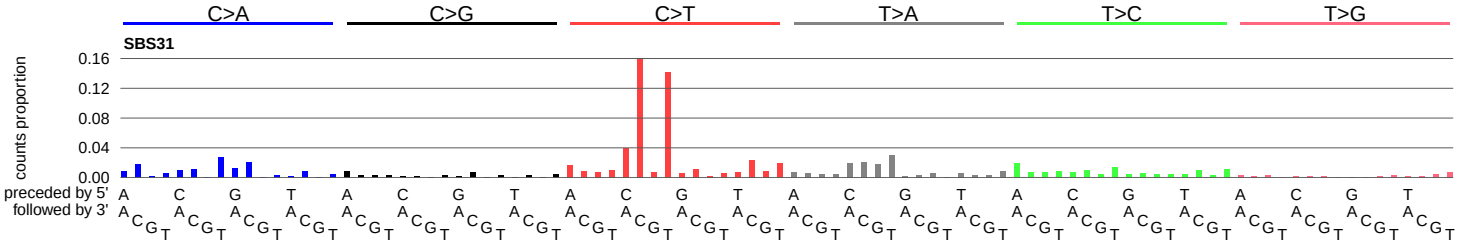

C>A
C>G
C>T
T>A
T>C
T>G
SBS26
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

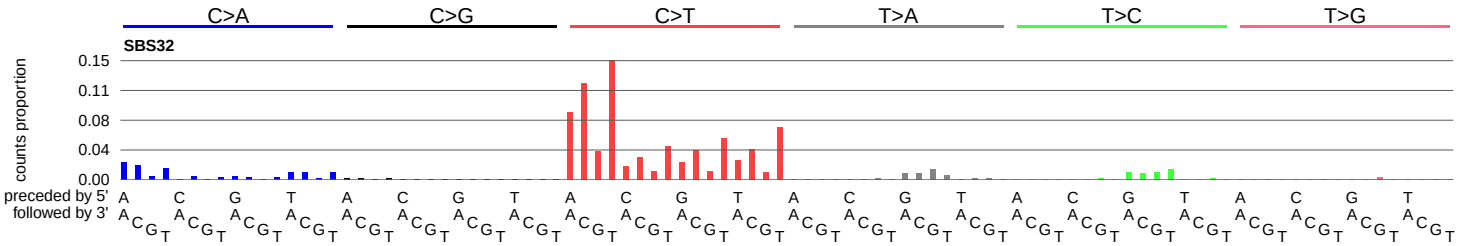

C>A
C>G
C>T
T>A
T>C
T>G
SBS27
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

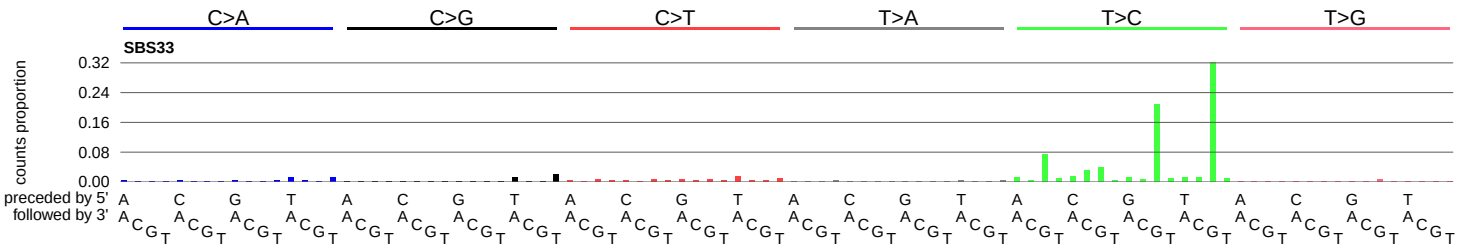

C>A
C>G
C>T
T>A
T>C
T>G
SBS28
counts proportion
0.48
0.36
0.24
0.12
0.00
preceded by 5'
followed by 3'

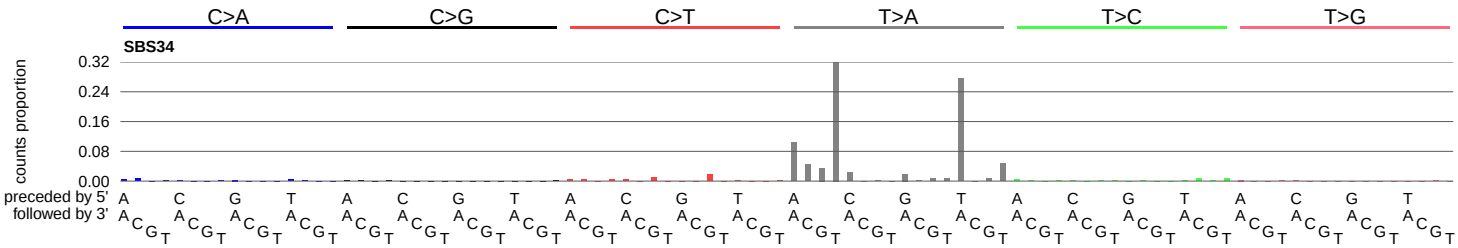

C>A
C>G
C>T
T>A
T>C
T>G
SBS29
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

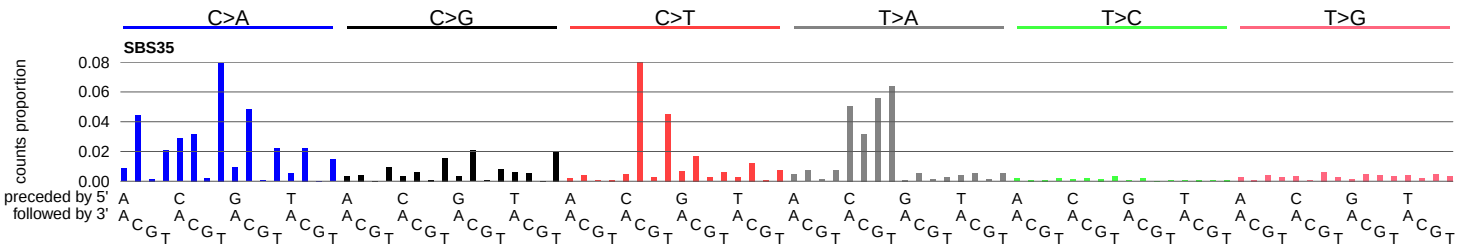

C>A
C>G
C>T
T>A
T>C
T>G
SBS30
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

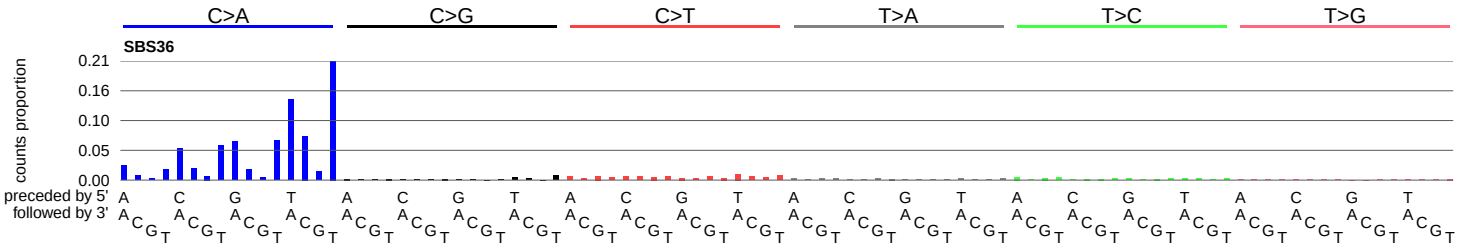

C>A
C>G
C>T
T>A
T>C
T>G
SBS31
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

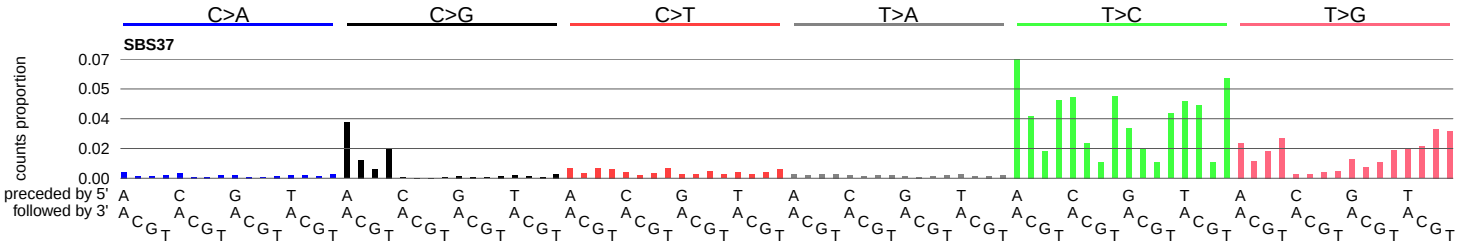

C>A
C>G
C>T
T>A
T>C
T>G
SBS32
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

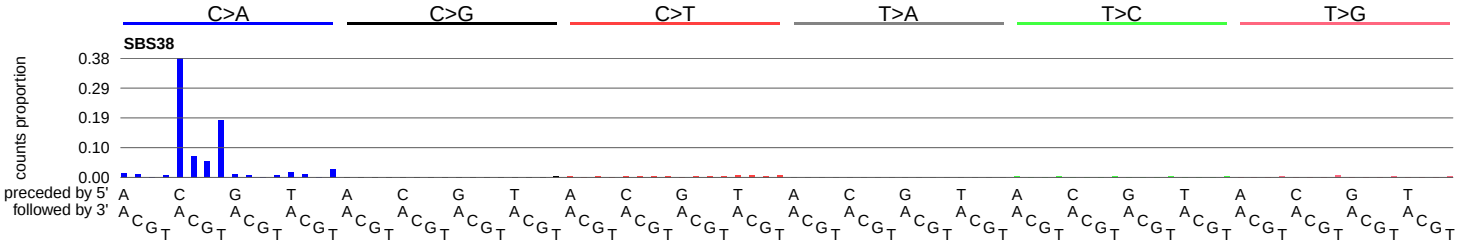

C>A
C>G
C>T
T>A
T>C
T>G
SBS33
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

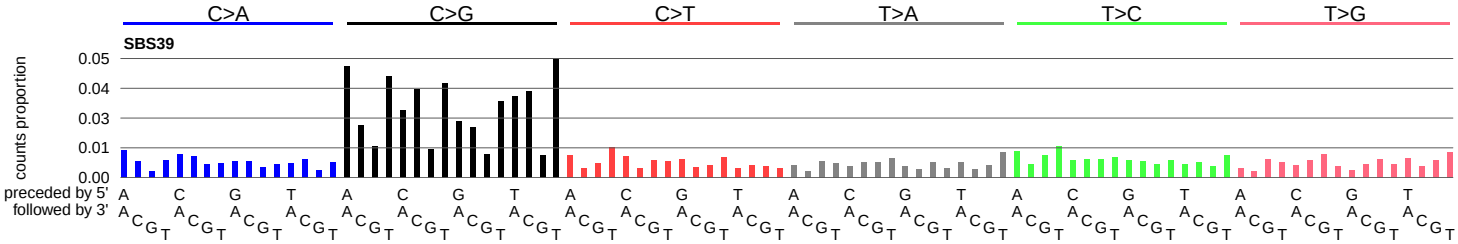

C>A
C>G
C>T
T>A
T>C
T>G
SBS34
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

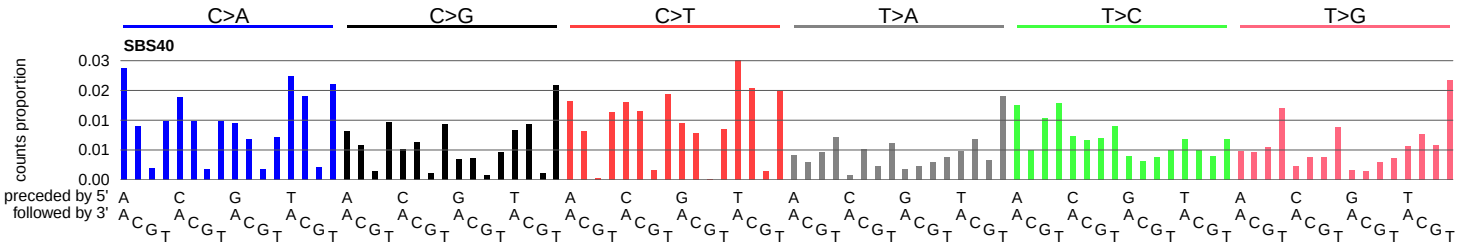

C>A
C>G
C>T
T>A
T>C
T>G
SBS35
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

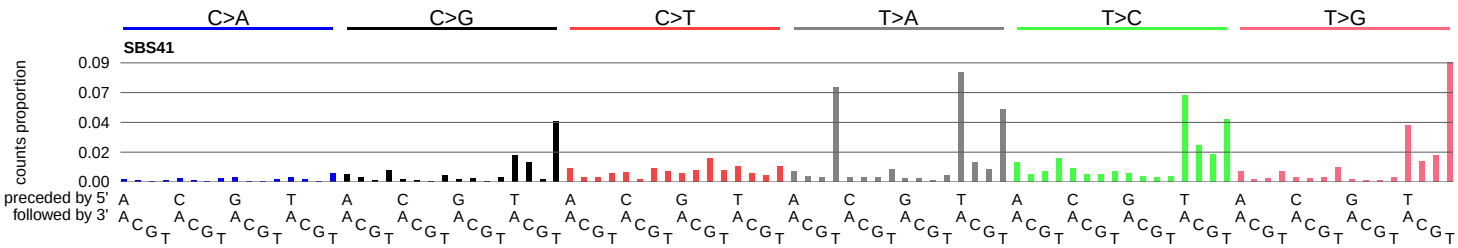

C>A
C>G
C>T
T>A
T>C
T>G
SBS36
counts proportion
0.21
0.16
0.10
0.05
0.00
preceded by 5'
followed by 3'

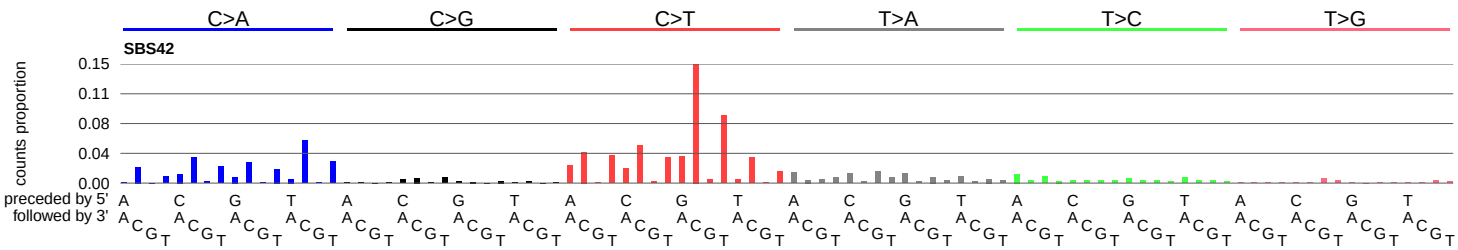

C>A
C>G
C>T
T>A
T>C
T>G
SBS37
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

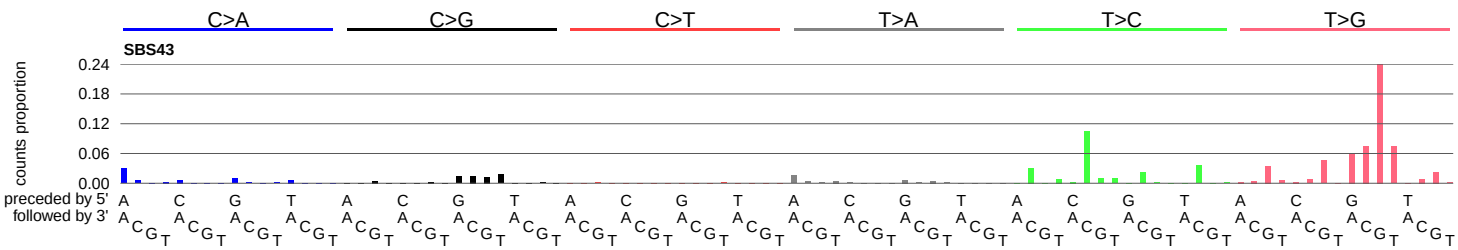

C>A
C>G
C>T
T>A
T>C
T>G
SBS38
counts proportion
0.38
0.29
0.19
0.10
0.00
preceded by 5'
followed by 3'

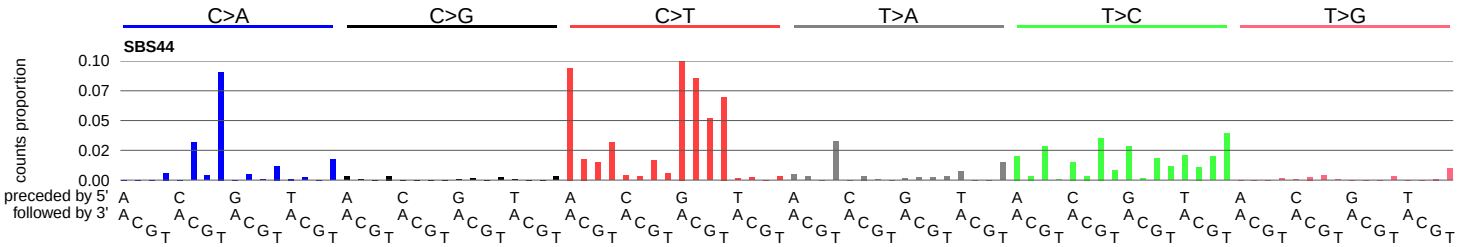

C>A
C>G
C>T
T>A
T>C
T>G
SBS39
counts proportion
0.05
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

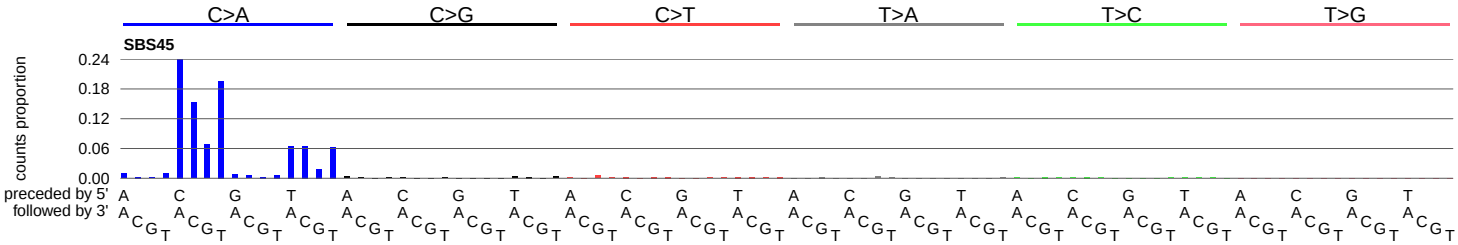

C>A
C>G
C>T
T>A
T>C
T>G
SBS40
counts proportion
0.03
0.02
0.01
0.01
0.00
preceded by 5'
followed by 3'

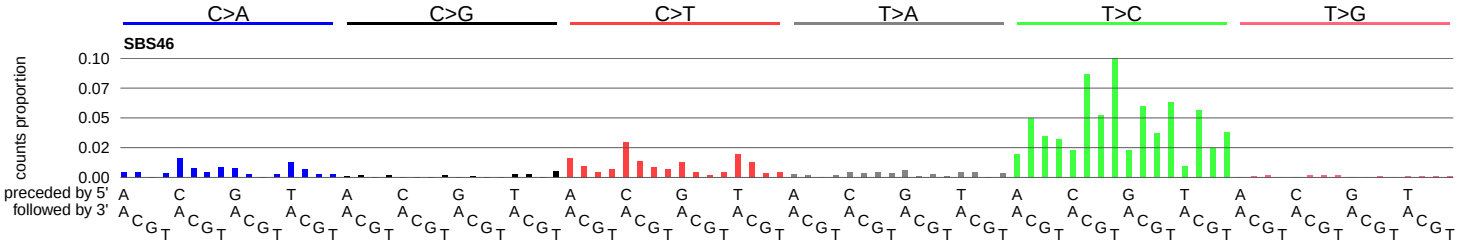

C>A
C>G
C>T
T>A
T>C
T>G
SBS41
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

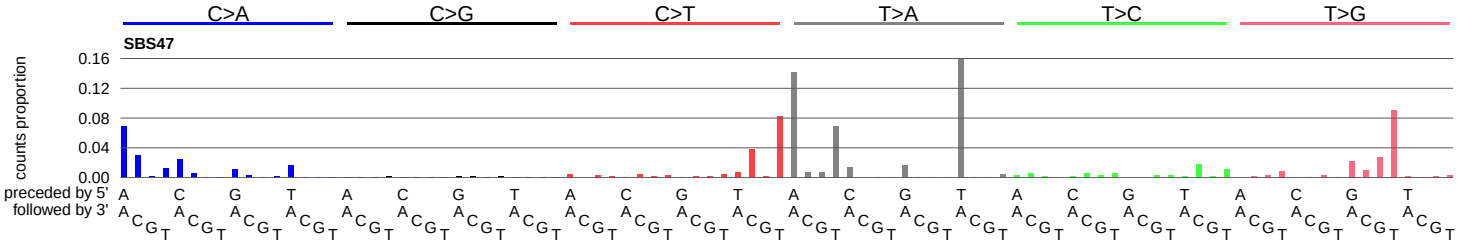

C>A
C>G
C>T
T>A
T>C
T>G
SBS42
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

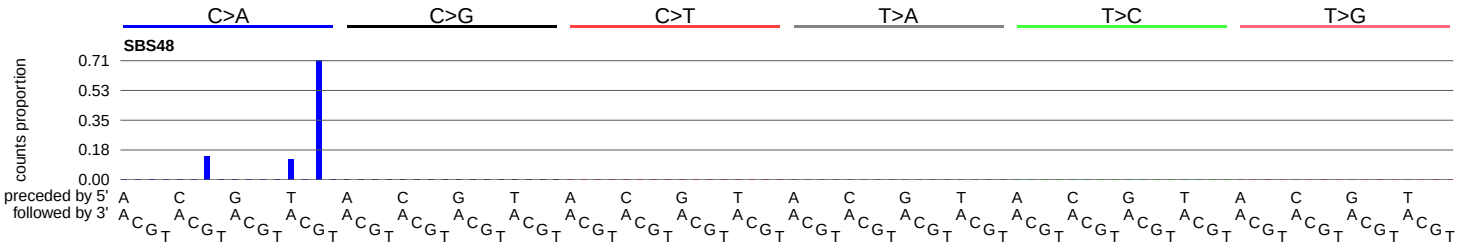

C>A
C>G
C>T
T>A
T>C
T>G
SBS43
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

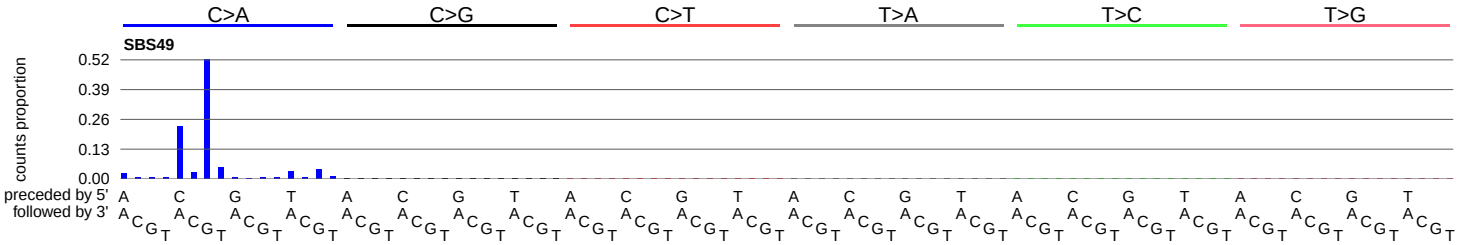

C>A
C>G
C>T
T>A
T>C
T>G
SBS44
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

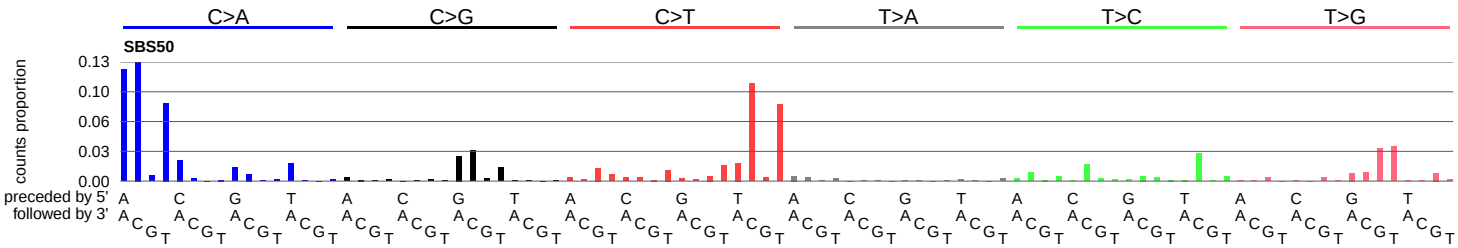

C>A
C>G
C>T
T>A
T>C
T>G
SBS45
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

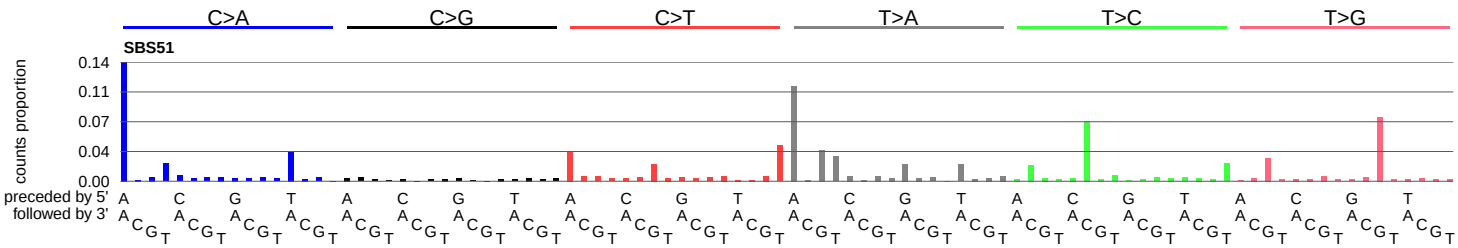

C>A
C>G
C>T
T>A
T>C
T>G
SBS46
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

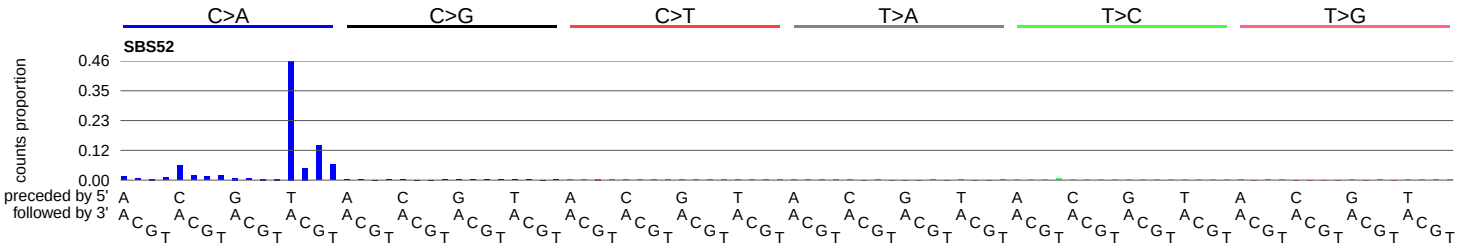

C>A
C>G
C>T
T>A
T>C
T>G
SBS47
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

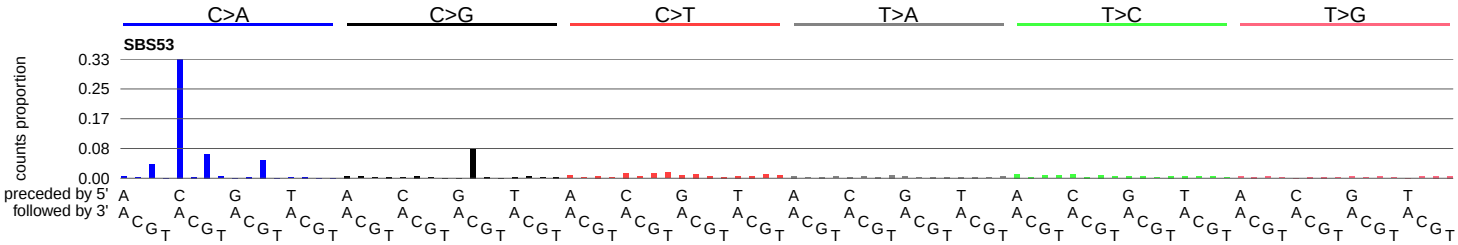

C>A
C>G
C>T
T>A
T>C
T>G
SBS48
counts proportion
0.71
0.53
0.35
0.18
0.00
preceded by 5'
followed by 3'

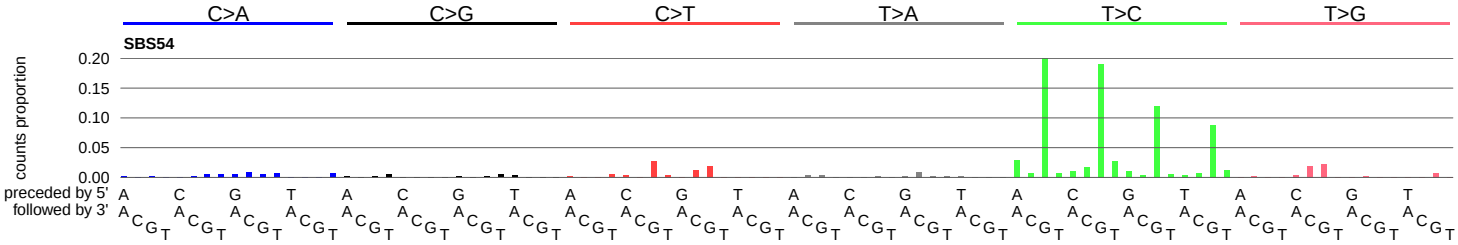

C>A
C>G
C>T
T>A
T>C
T>G
SBS49
counts proportion
0.52
0.39
0.26
0.13
0.00
preceded by 5'
followed by 3'

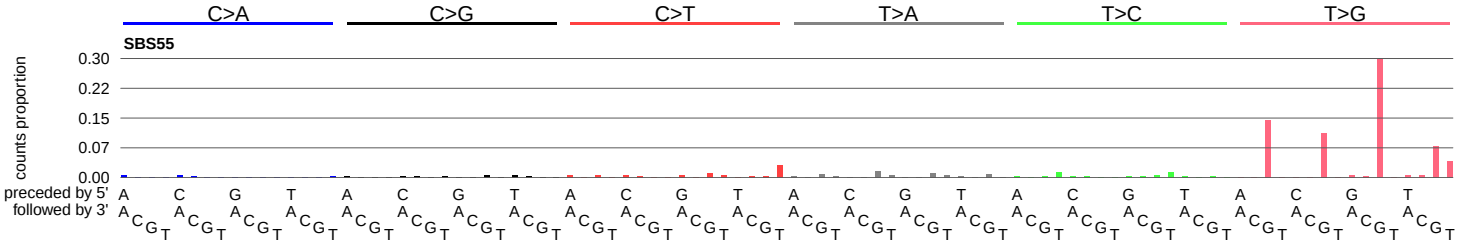

C>A
C>G
C>T
T>A
T>C
T>G
SBS50
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

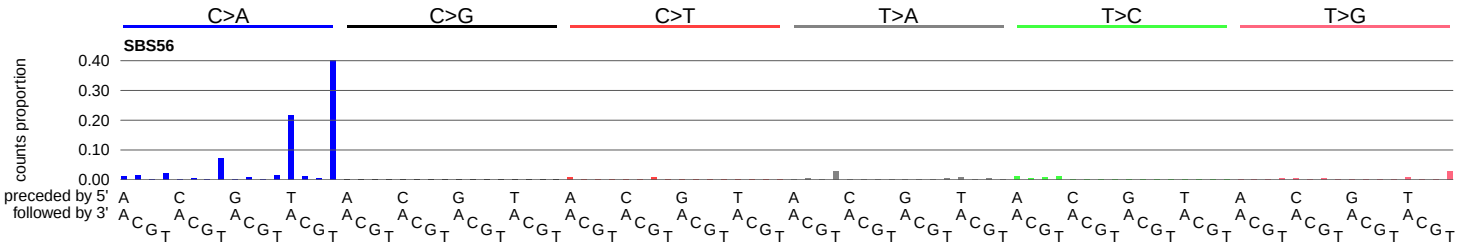

C>A
C>G
C>T
T>A
T>C
T>G
SBS51
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

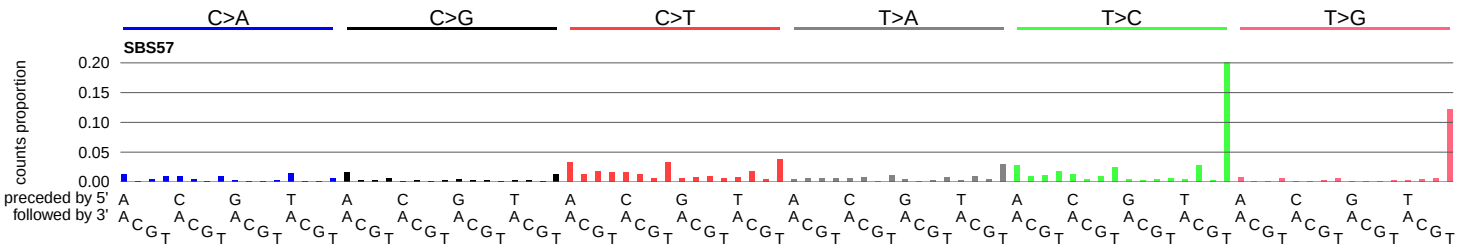

C>A
C>G
C>T
T>A
T>C
T>G
SBS52
counts proportion
0.46
0.35
0.23
0.12
0.00
preceded by 5'
followed by 3'

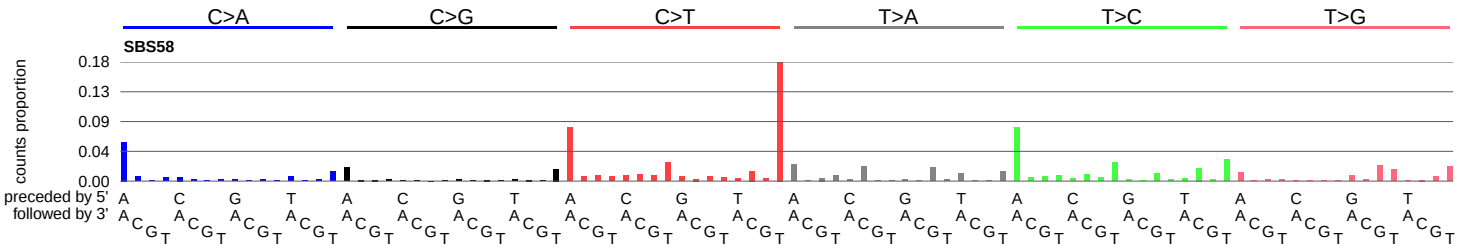

C>A
C>G
C>T
T>A
T>C
T>G
SBS53
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

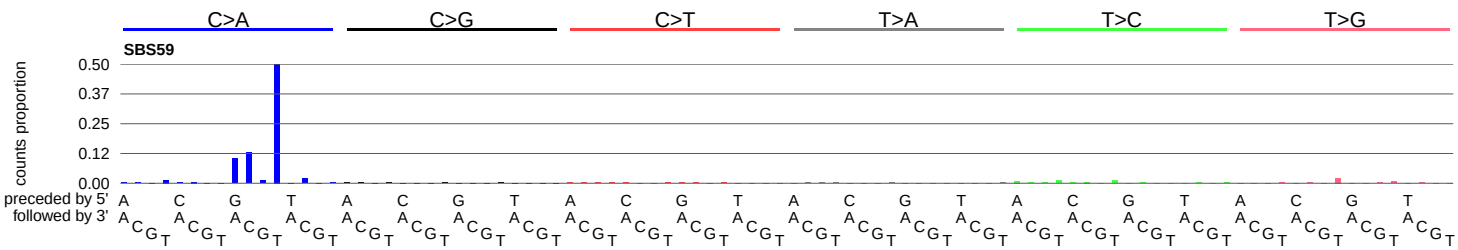

C>A
C>G
C>T
T>A
T>C
T>G
SBS54
counts proportion
0.20
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

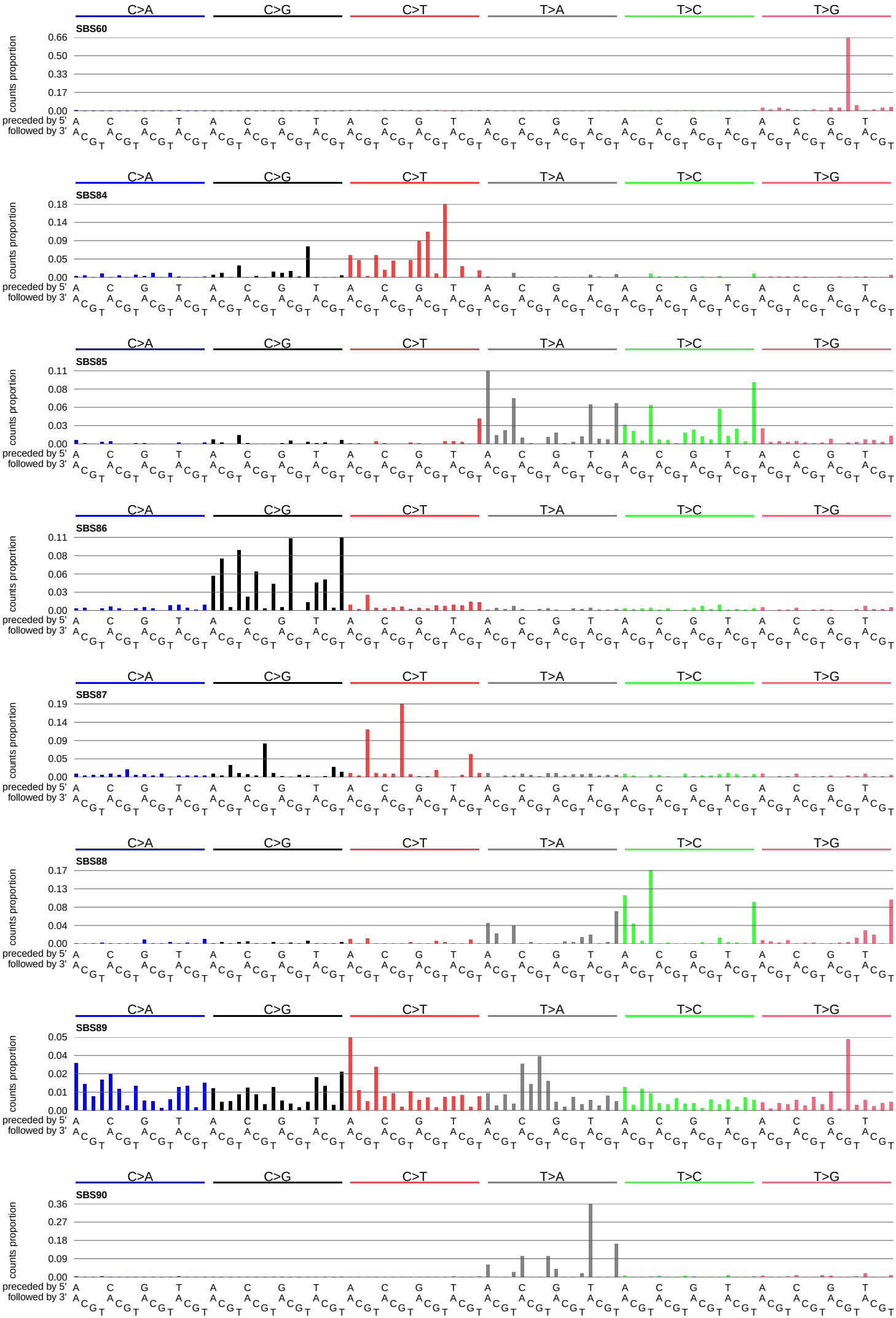

C>A
C>G
C>T
T>A
T>C
T>G
SBS55
counts proportion
0.30
0.22
0.15
0.07
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
SBS56
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
SBS57
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
SBS58
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
SBS59
counts proportion
0.50
0.37
0.25
0.12
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
SBS60
counts proportion
0.66
0.50
0.33
0.17
0.00
SBS84
0.18
0.14
0.09
0.05
0.00
SBS85
0.11
0.08
0.06
0.03
0.00
SBS86
0.11
0.08
0.06
0.03
0.00
SBS87
0.19
0.14
0.09
0.05
0.00
SBS88
0.17
0.13
0.08
0.04
0.00
SBS89
0.05
0.04
0.02
0.01
0.00
SBS90
0.36
0.27
0.18
0.09
0.00
preceded by 5'
followed by 3'