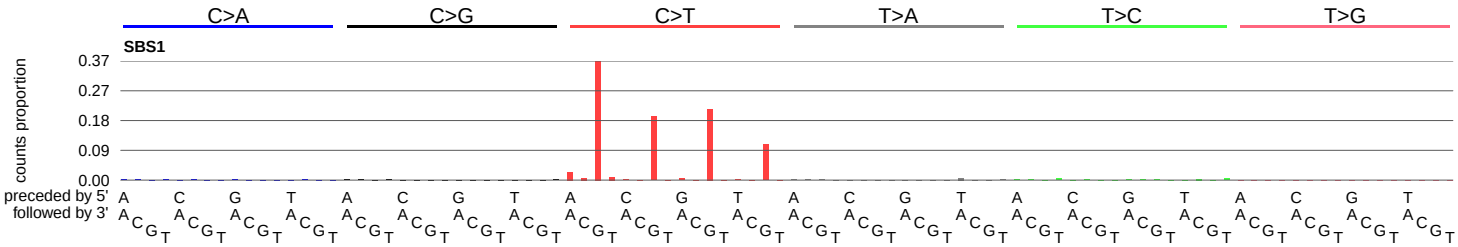
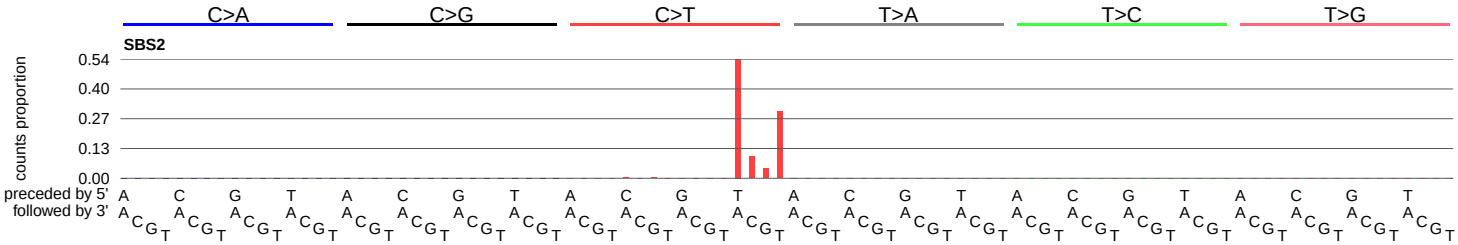
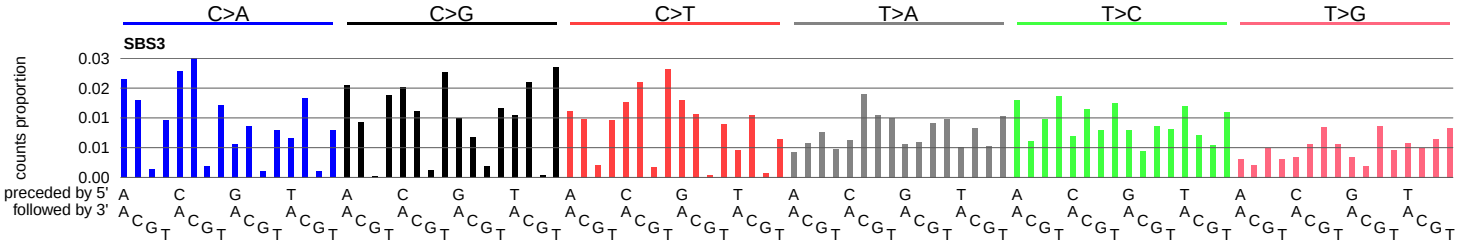
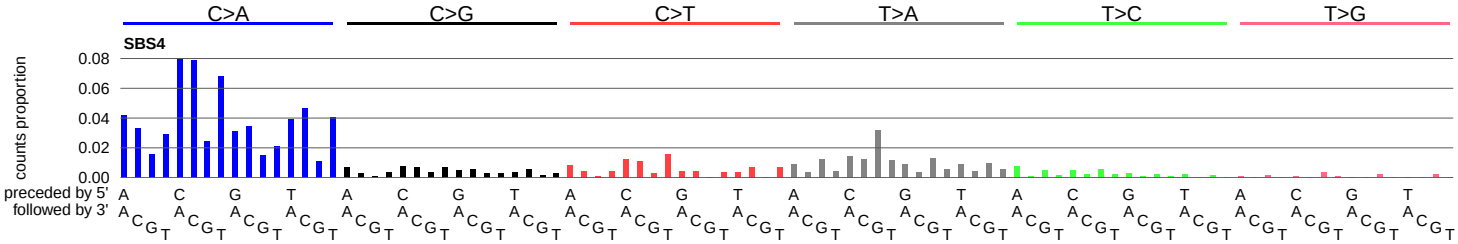
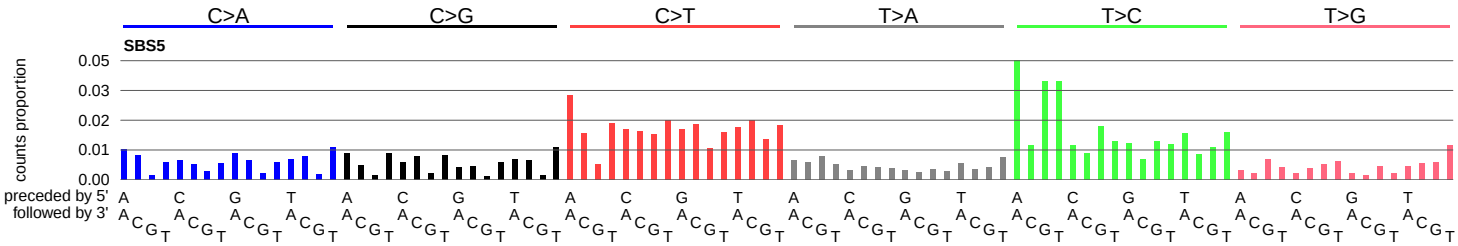
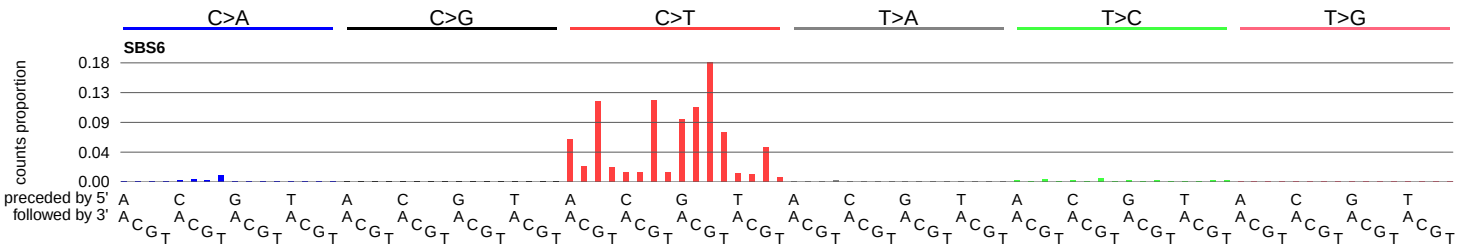

C>A
C>G
C>T
T>A
T>C
T>G
SBS1
counts proportion
0.37
0.27
0.18
0.09
0.00
preceded by 5'
followed by 3'

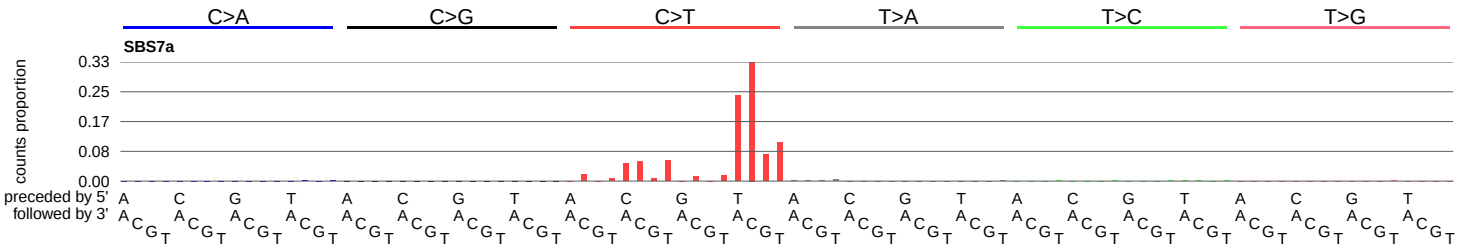

C>A
C>G
C>T
T>A
T>C
T>G
SBS2
counts proportion
0.54
0.40
0.27
0.13
0.00
preceded by 5'
followed by 3'

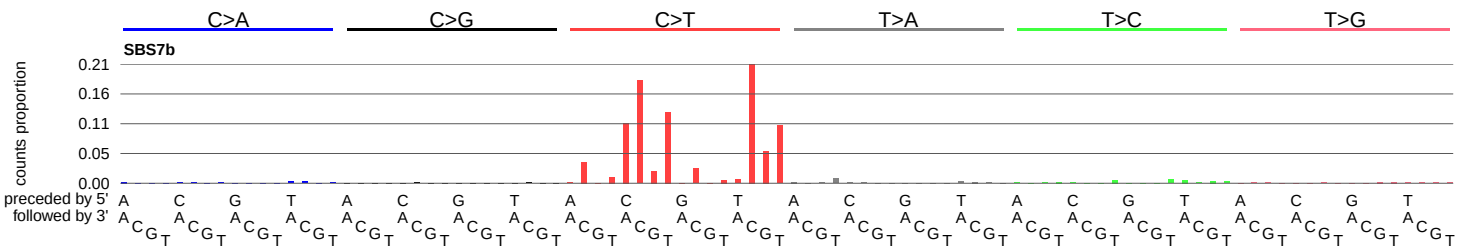

C>A
C>G
C>T
T>A
T>C
T>G
SBS3
counts proportion
0.03
0.02
0.01
0.01
0.00
preceded by 5'
followed by 3'

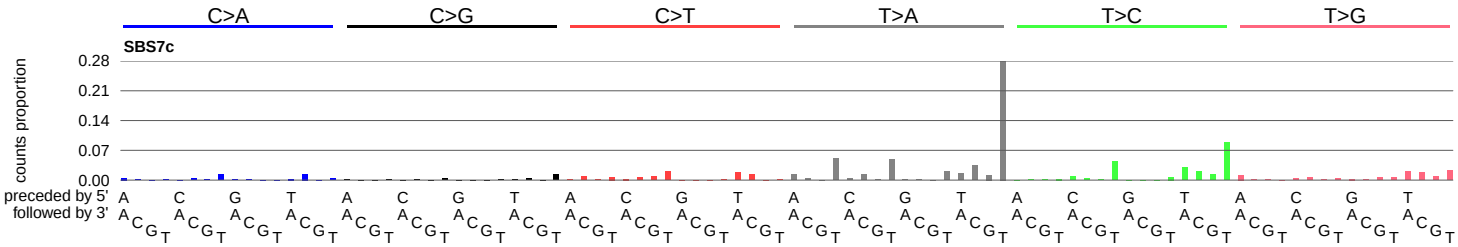

C>A
C>G
C>T
T>A
T>C
T>G
SBS4
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

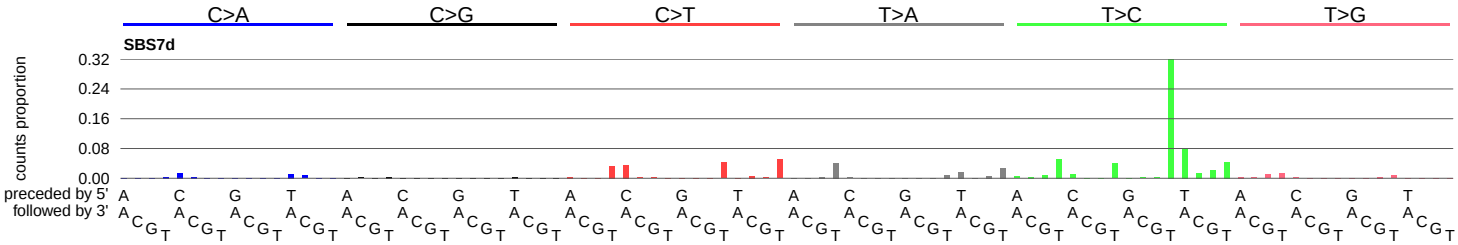

C>A
C>G
C>T
T>A
T>C
T>G
SBS5
counts proportion
0.05
0.03
0.02
0.01
0.00
preceded by 5'
followed by 3'

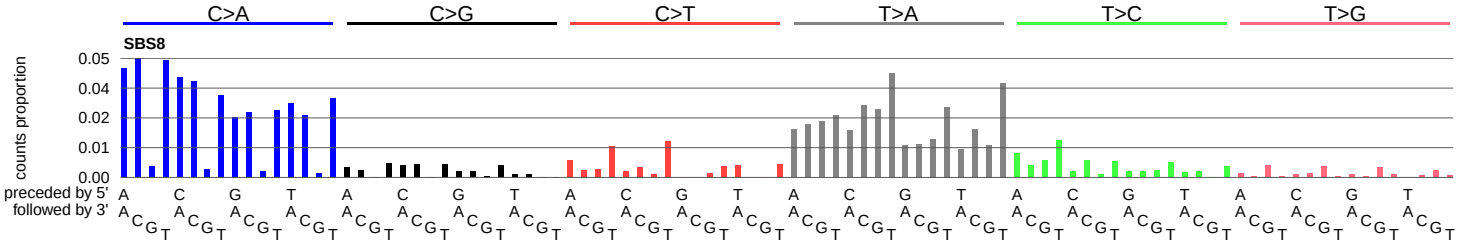

C>A
C>G
C>T
T>A
T>C
T>G
SBS6
counts proportion
0.18
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

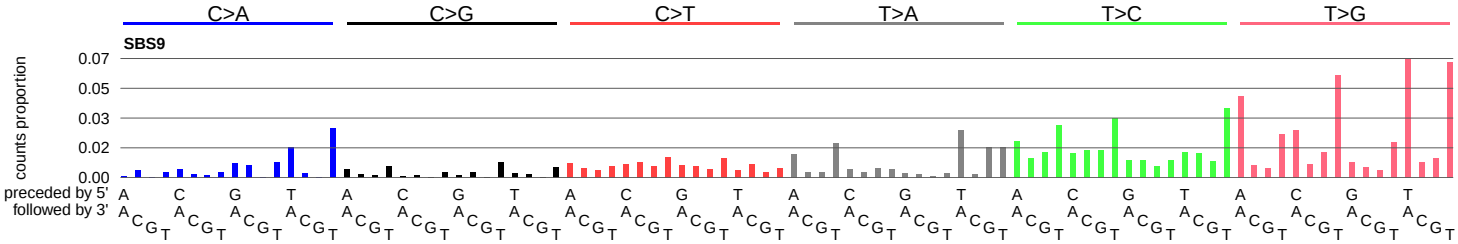

C>A
C>G
C>T
T>A
T>C
T>G
SBS7a
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

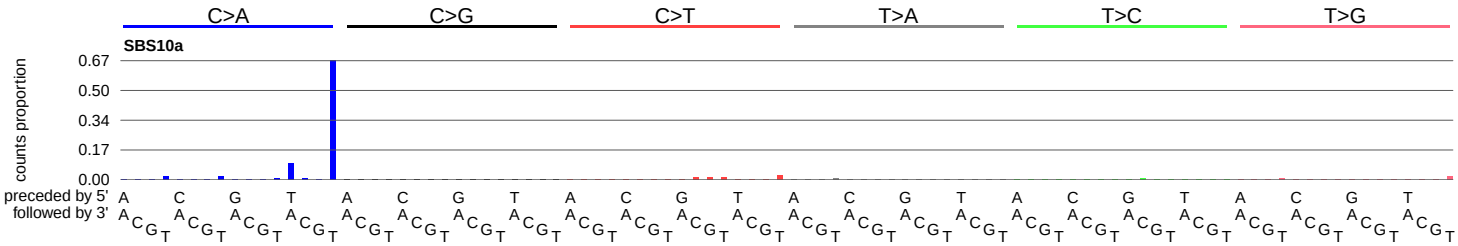

C>A
C>G
C>T
T>A
T>C
T>G
SBS7b
counts proportion
0.21
0.16
0.11
0.05
0.00
preceded by 5'
followed by 3'

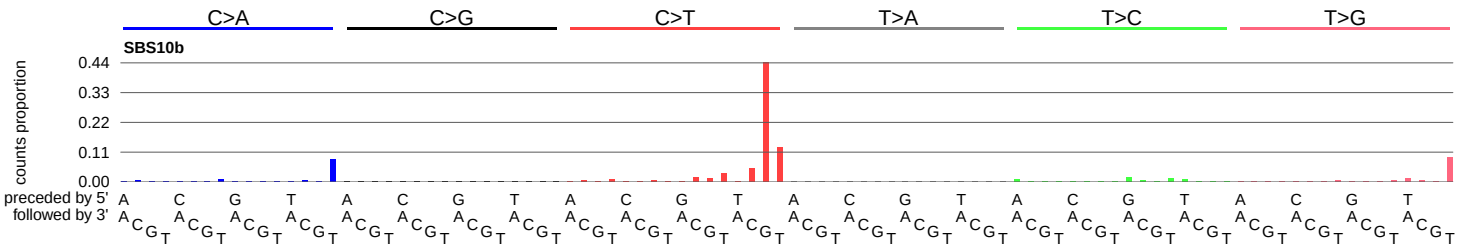

C>A
C>G
C>T
T>A
T>C
T>G
SBS7c
counts proportion
0.28
0.21
0.14
0.07
0.00
preceded by 5'
followed by 3'

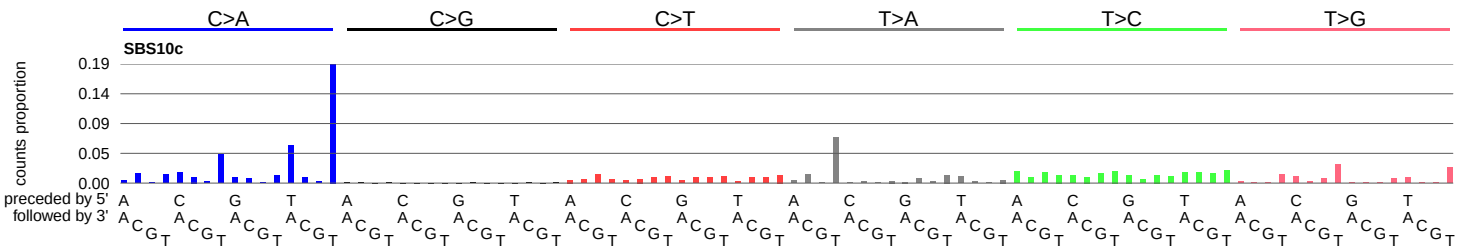

C>A
C>G
C>T
T>A
T>C
T>G
SBS7d
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

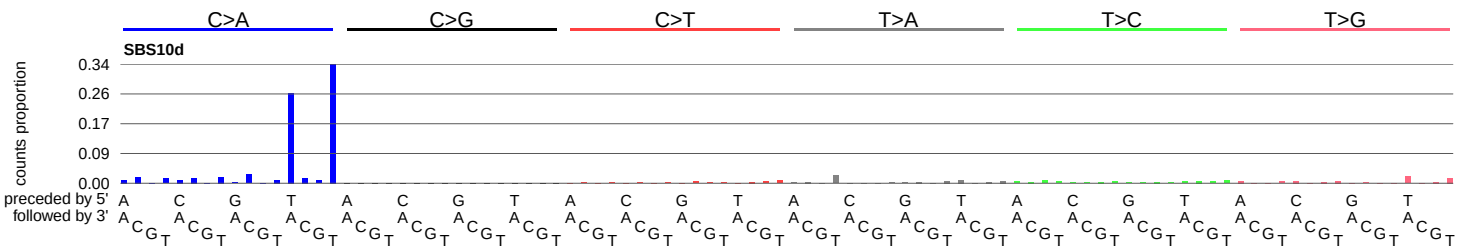

C>A
C>G
C>T
T>A
T>C
T>G
SBS8
counts proportion
0.05
0.04
0.02
0.01
0.00
preceded by 5'
followed by 3'

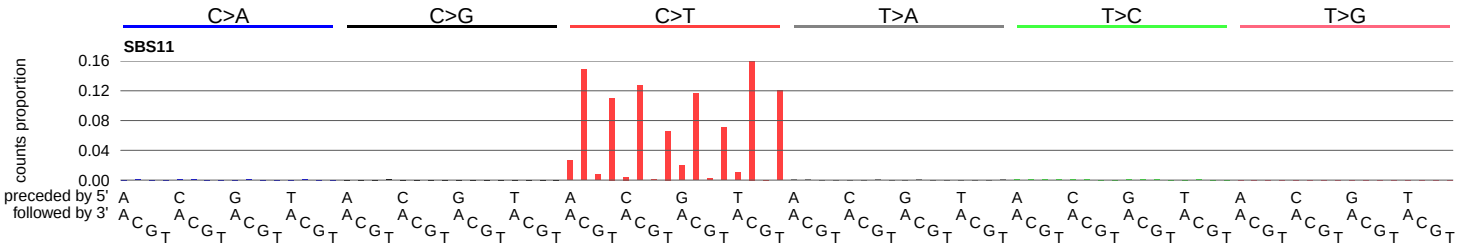

C>A
C>G
C>T
T>A
T>C
T>G
SBS9
counts proportion
0.07
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

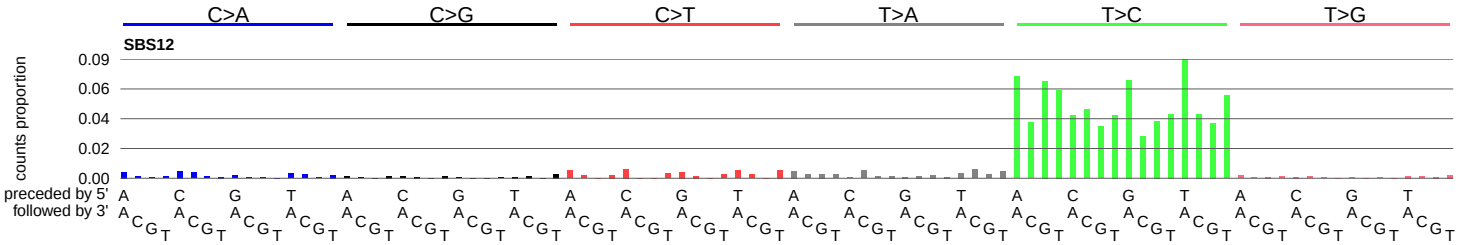

C>A
C>G
C>T
T>A
T>C
T>G
SBS10a
counts proportion
0.67
0.50
0.34
0.17
0.00
preceded by 5'
followed by 3'

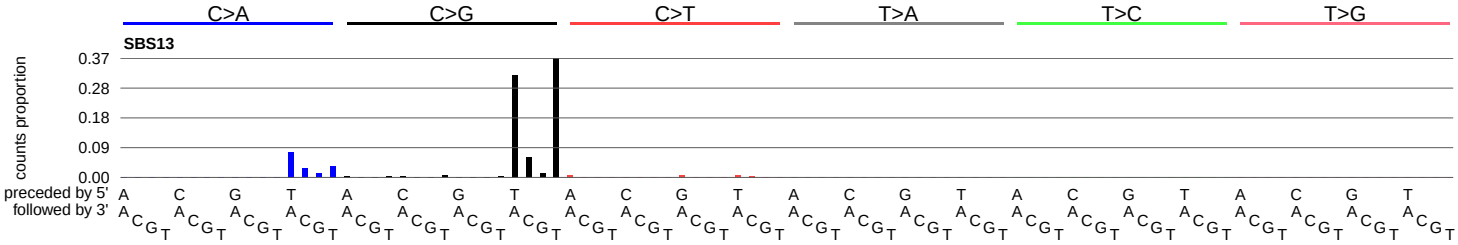

C>A
C>G
C>T
T>A
T>C
T>G
SBS10b
counts proportion
0.44
0.33
0.22
0.11
0.00
preceded by 5'
followed by 3'

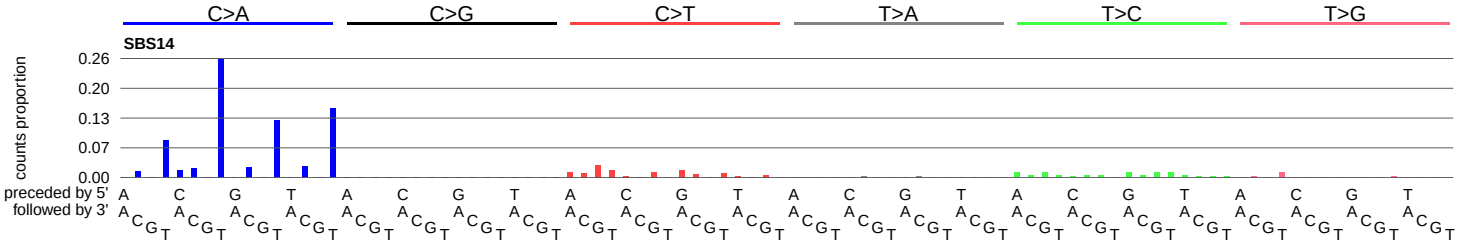

C>A
C>G
C>T
T>A
T>C
T>G
SBS10c
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

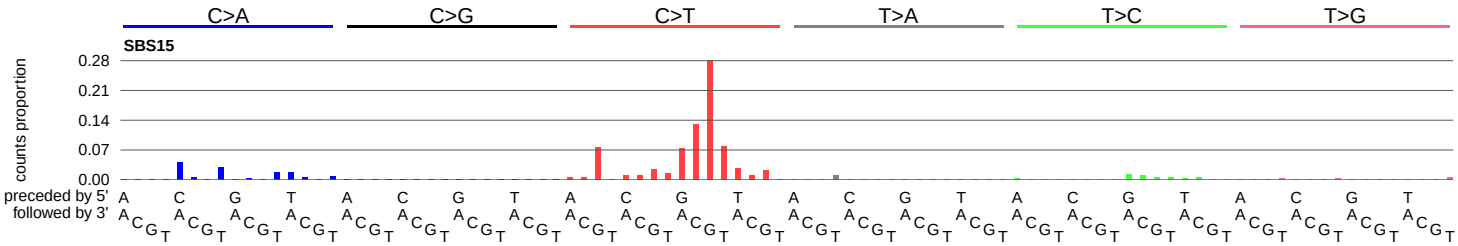

C>A
C>G
C>T
T>A
T>C
T>G
SBS10d
counts proportion
0.34
0.26
0.17
0.09
0.00
preceded by 5'
followed by 3'

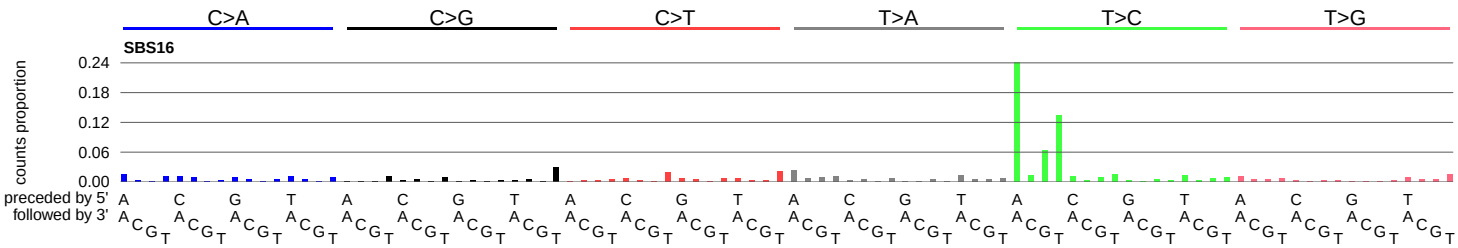

C>A
C>G
C>T
T>A
T>C
T>G
SBS11
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

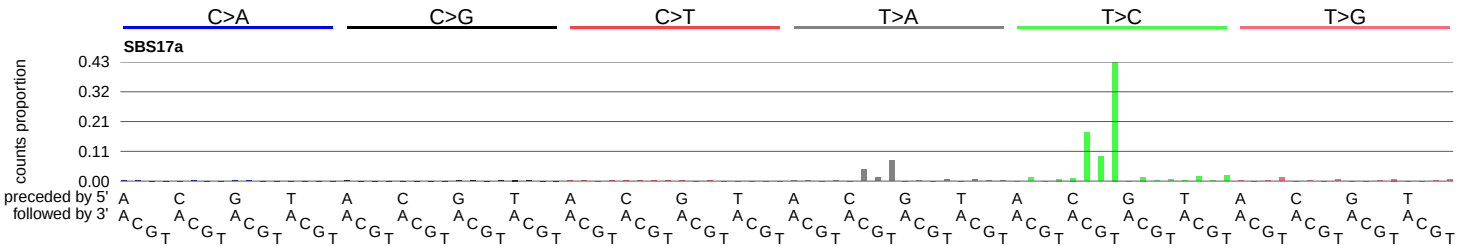

C>A
C>G
C>T
T>A
T>C
T>G
SBS12
counts proportion
0.09
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

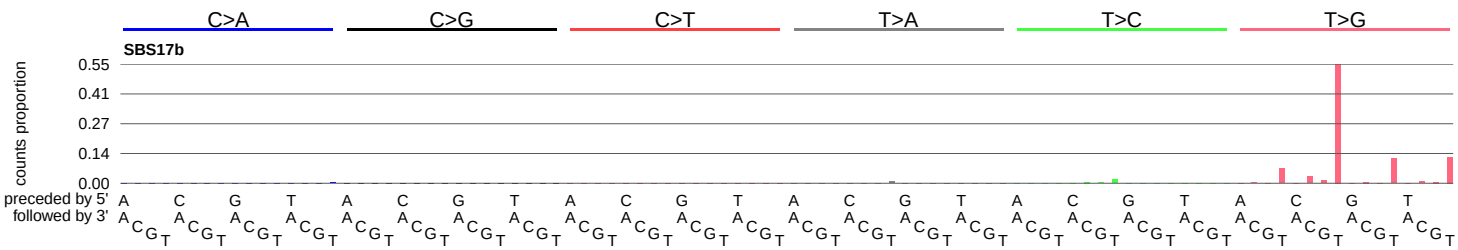

C>A
C>G
C>T
T>A
T>C
T>G
SBS13
counts proportion
0.37
0.28
0.18
0.09
0.00
preceded by 5'
followed by 3'

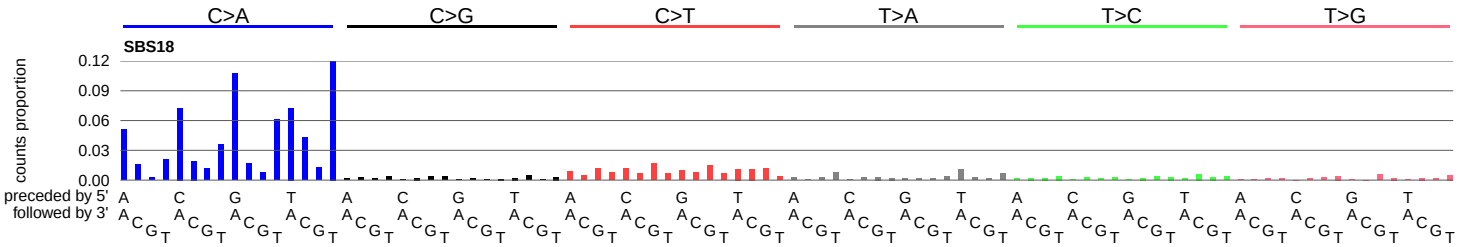

C>A
C>G
C>T
T>A
T>C
T>G
SBS14
counts proportion
0.26
0.20
0.13
0.07
0.00
preceded by 5'
followed by 3'

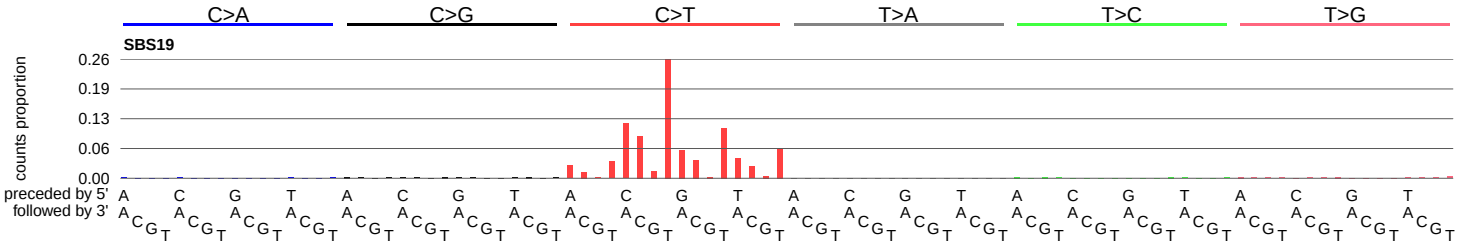

C>A
C>G
C>T
T>A
T>C
T>G
SBS15
counts proportion
0.28
0.21
0.14
0.07
0.00
preceded by 5'
followed by 3'

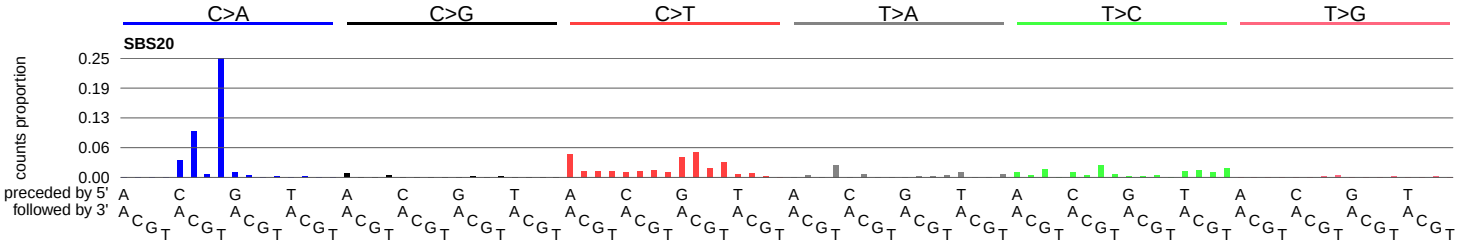

C>A
C>G
C>T
T>A
T>C
T>G
SBS16
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

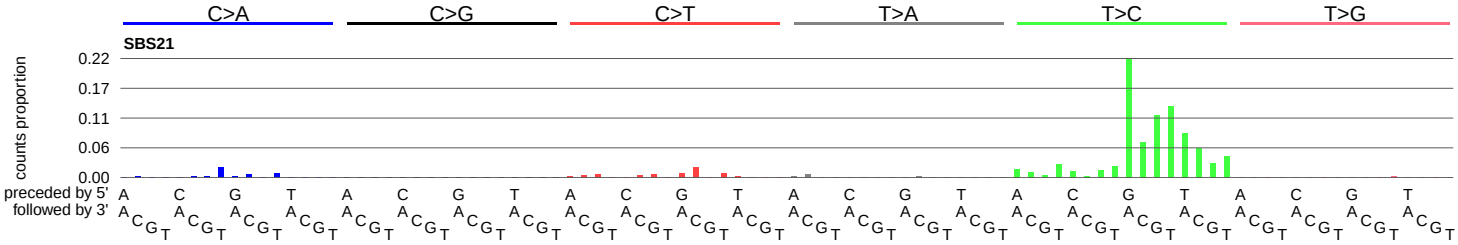

C>A
C>G
C>T
T>A
T>C
T>G
SBS17a
counts proportion
0.43
0.32
0.21
0.11
0.00
preceded by 5'
followed by 3'

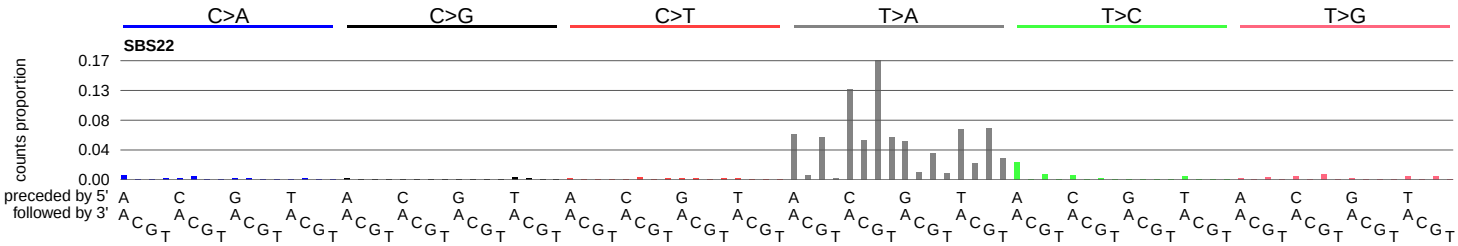

C>A
C>G
C>T
T>A
T>C
T>G
SBS17b
counts proportion
0.55
0.41
0.27
0.14
0.00
preceded by 5'
followed by 3'

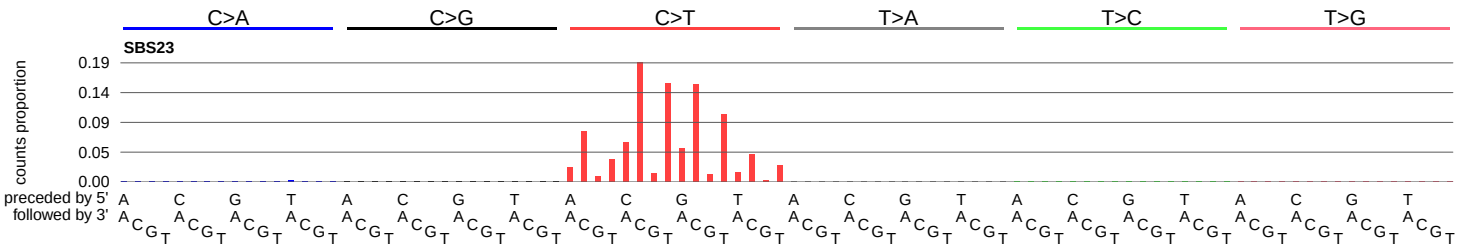

C>A
C>G
C>T
T>A
T>C
T>G
SBS18
counts proportion
0.12
0.09
0.06
0.03
0.00
preceded by 5'
followed by 3'

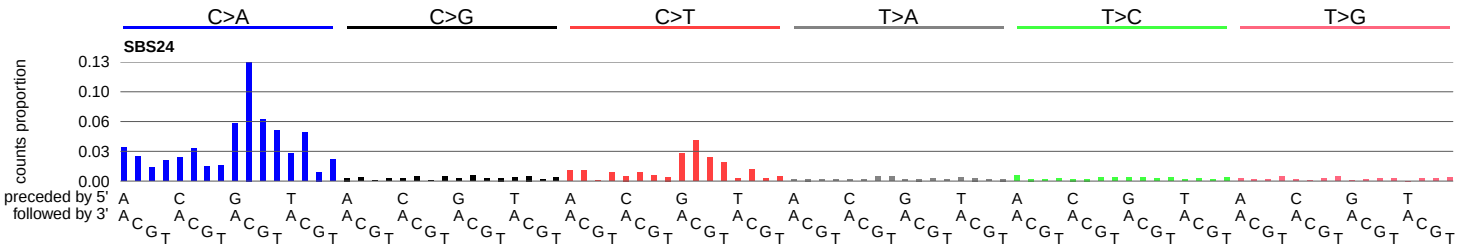

C>A
C>G
C>T
T>A
T>C
T>G
SBS19
counts proportion
0.26
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

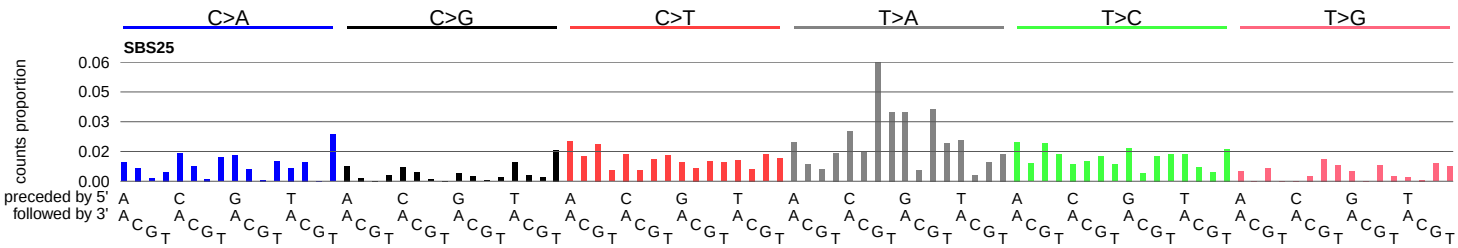

C>A
C>G
C>T
T>A
T>C
T>G
SBS20
counts proportion
0.25
0.19
0.13
0.06
0.00
preceded by 5'
followed by 3'

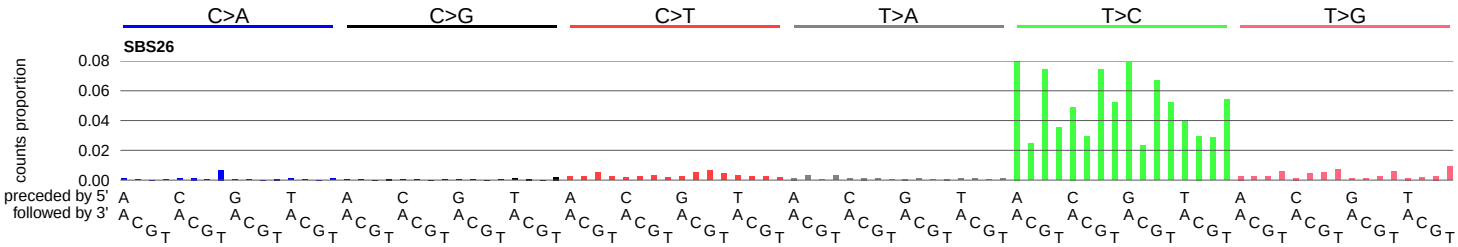

C>A
C>G
C>T
T>A
T>C
T>G
SBS21
counts proportion
0.22
0.17
0.11
0.06
0.00
preceded by 5'
followed by 3'

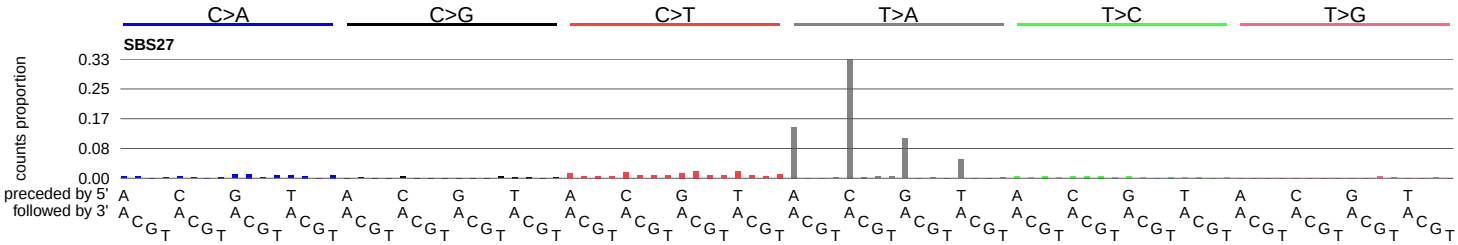

C>A
C>G
C>T
T>A
T>C
T>G
SBS22
counts proportion
0.17
0.13
0.08
0.04
0.00
preceded by 5'
followed by 3'

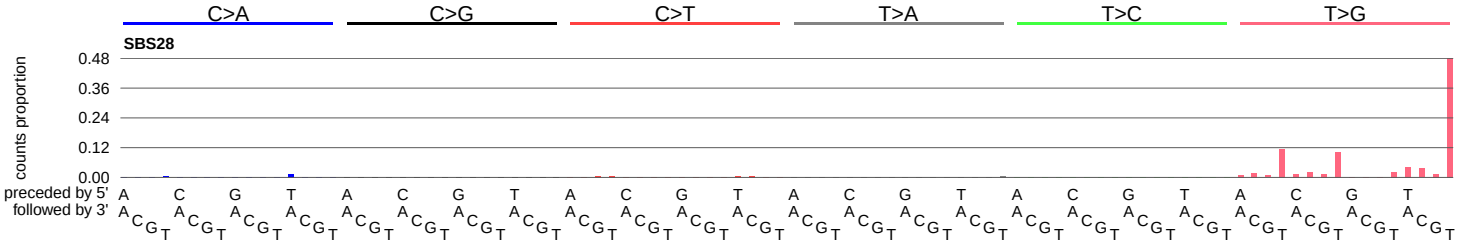

C>A
C>G
C>T
T>A
T>C
T>G
SBS23
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

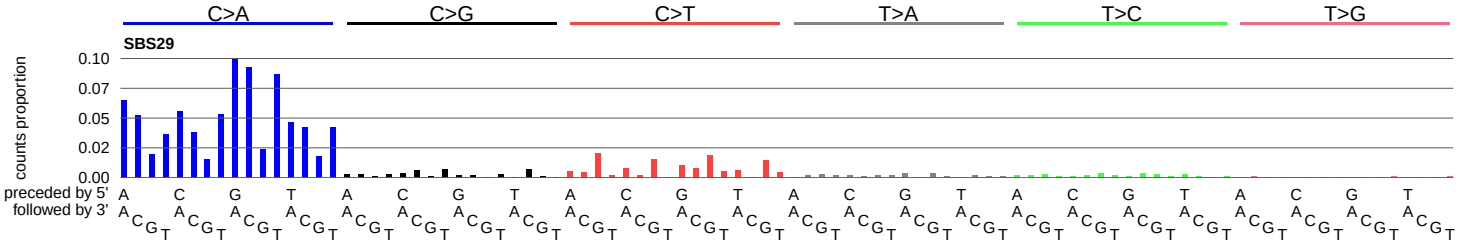

C>A
C>G
C>T
T>A
T>C
T>G
SBS24
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

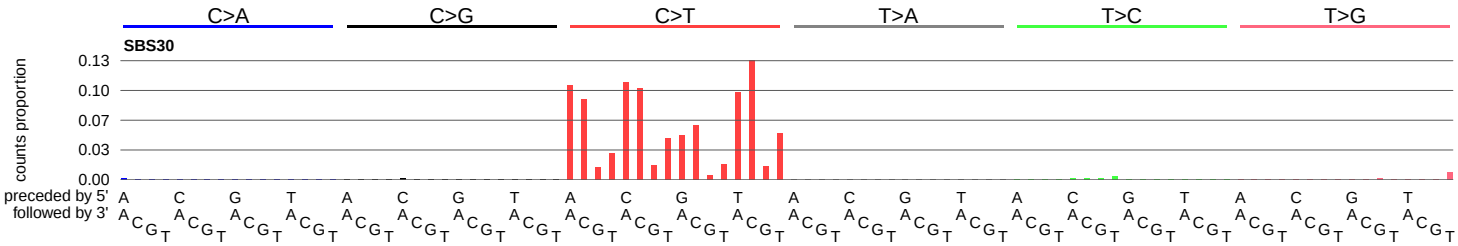

C>A
C>G
C>T
T>A
T>C
T>G
SBS25
counts proportion
0.06
0.05
0.03
0.02
0.00
preceded by 5'
followed by 3'

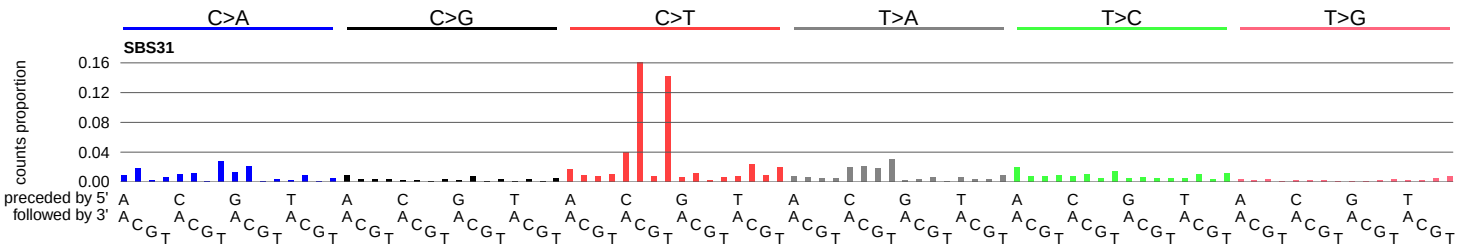

C>A
C>G
C>T
T>A
T>C
T>G
SBS26
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

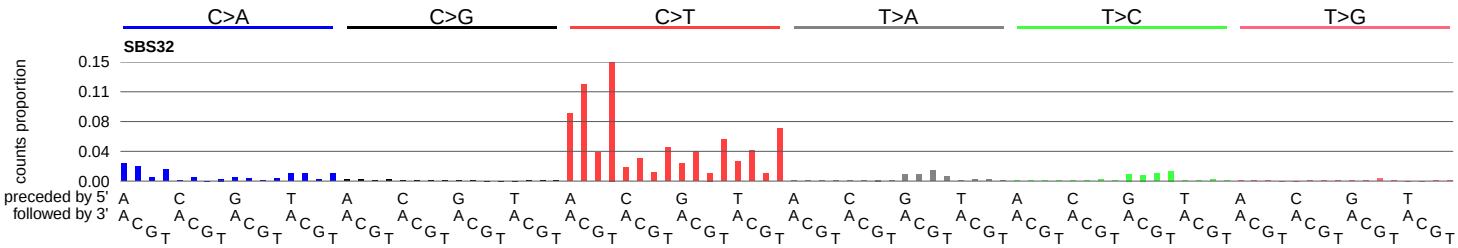

C>A
C>G
C>T
T>A
T>C
T>G
SBS27
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

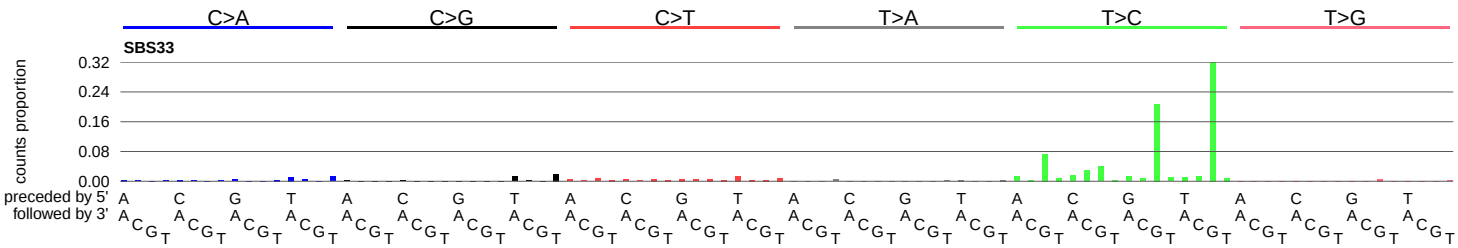

C>A
C>G
C>T
T>A
T>C
T>G
SBS28
counts proportion
0.48
0.36
0.24
0.12
0.00
preceded by 5'
followed by 3'

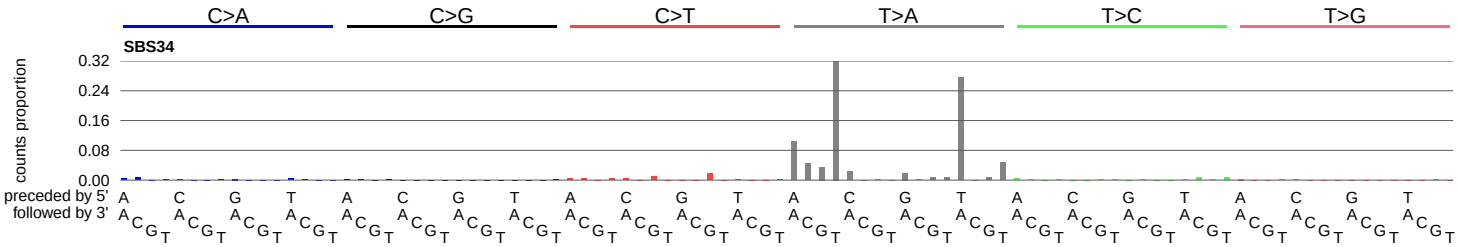

C>A
C>G
C>T
T>A
T>C
T>G
SBS29
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

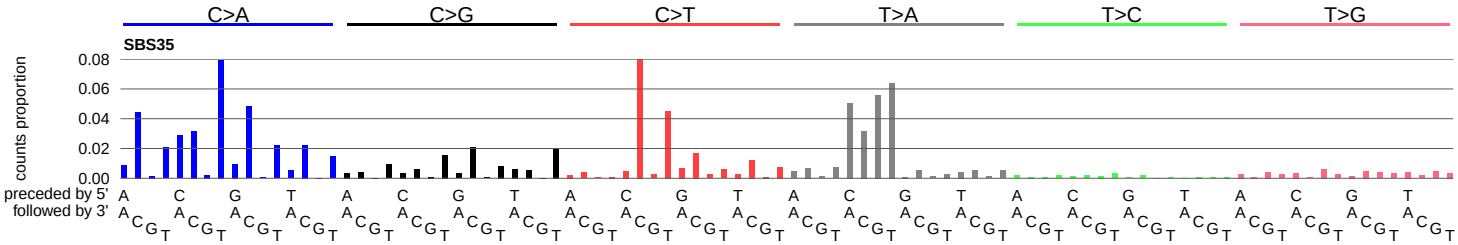

C>A
C>G
C>T
T>A
T>C
T>G
SBS30
counts proportion
0.13
0.10
0.07
0.03
0.00
preceded by 5'
followed by 3'

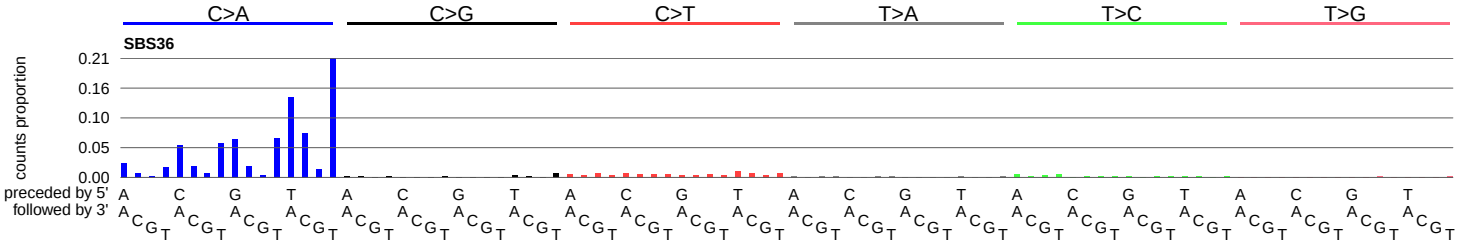

C>A
C>G
C>T
T>A
T>C
T>G
SBS31
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

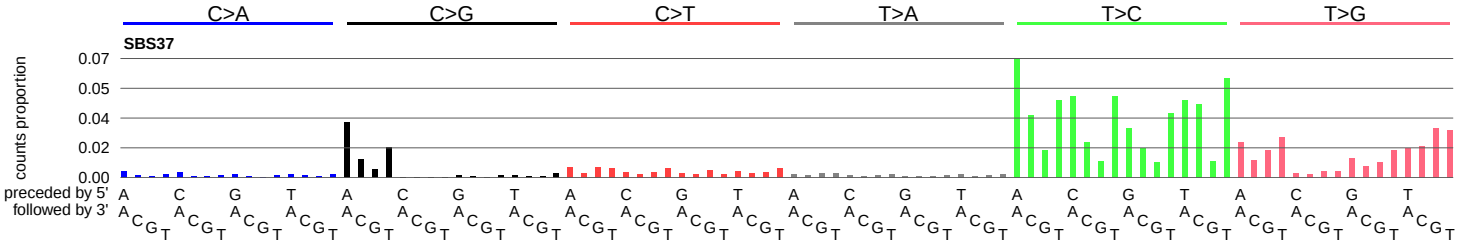

C>A
C>G
C>T
T>A
T>C
T>G
SBS32
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

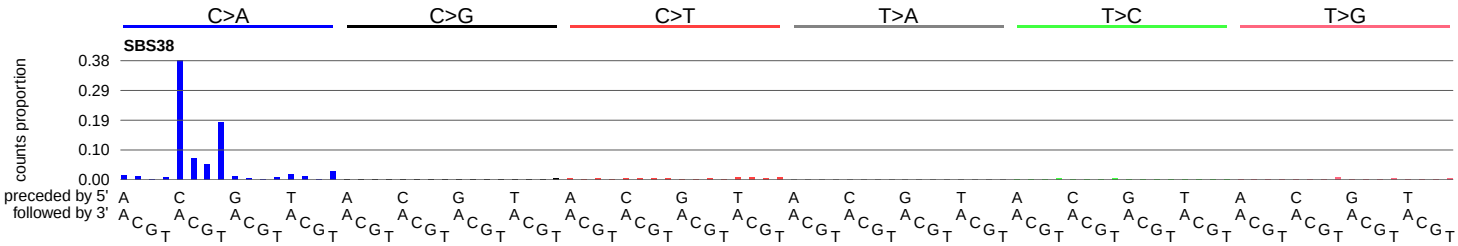

C>A
C>G
C>T
T>A
T>C
T>G
SBS33
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

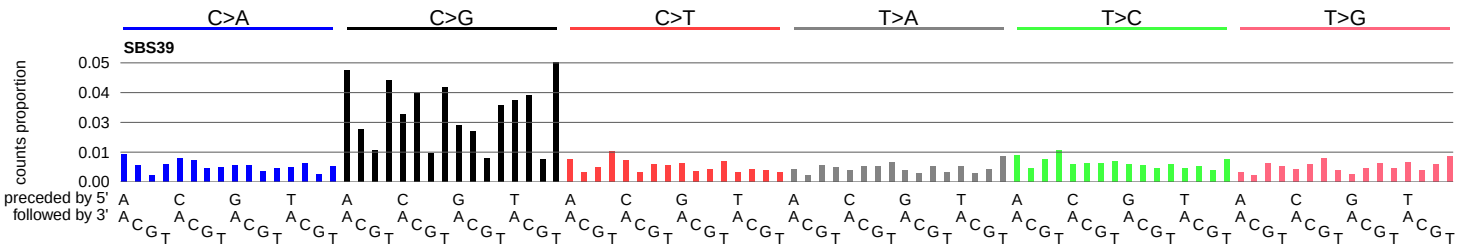

C>A
C>G
C>T
T>A
T>C
T>G
SBS34
counts proportion
0.32
0.24
0.16
0.08
0.00
preceded by 5'
followed by 3'

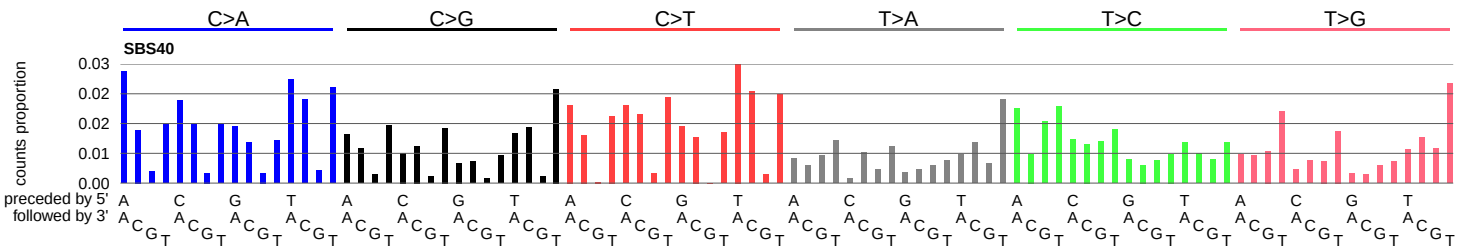

C>A
C>G
C>T
T>A
T>C
T>G
SBS35
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'

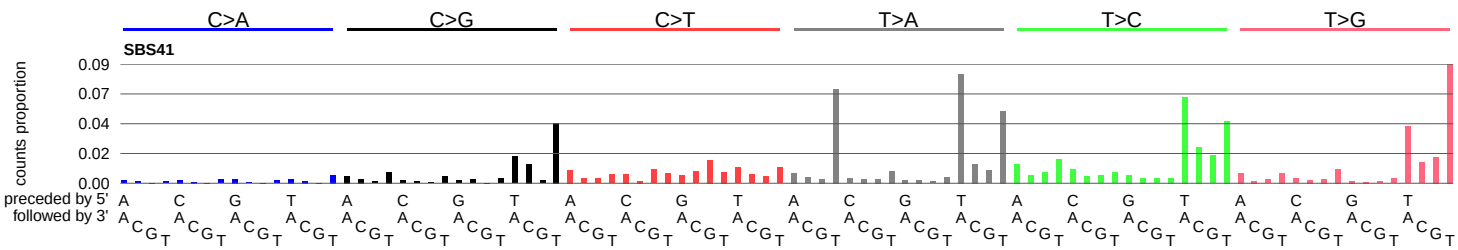

C>A
C>G
C>T
T>A
T>C
T>G
SBS36
counts proportion
0.21
0.16
0.10
0.05
0.00
preceded by 5'
followed by 3'

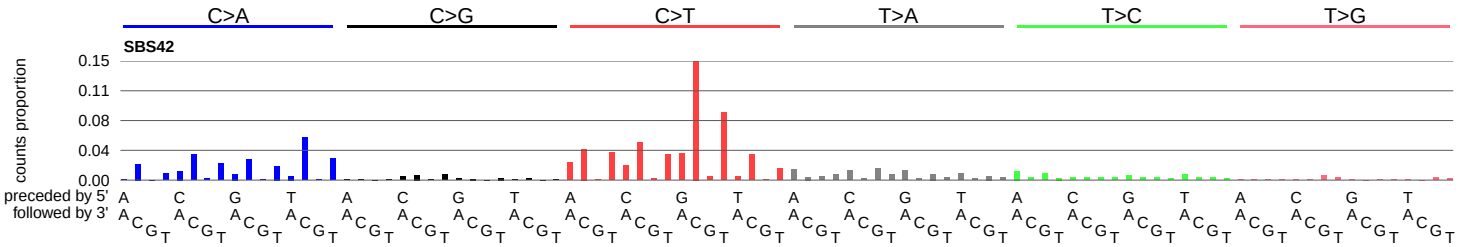

C>A
C>G
C>T
T>A
T>C
T>G
SBS37
counts proportion
0.07
0.05
0.04
0.02
0.00
preceded by 5'
followed by 3'

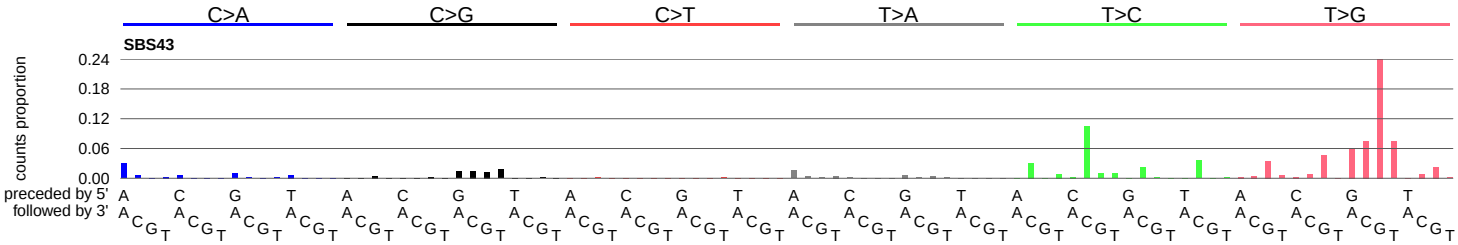

C>A
C>G
C>T
T>A
T>C
T>G
SBS38
counts proportion
0.38
0.29
0.19
0.10
0.00
preceded by 5'
followed by 3'

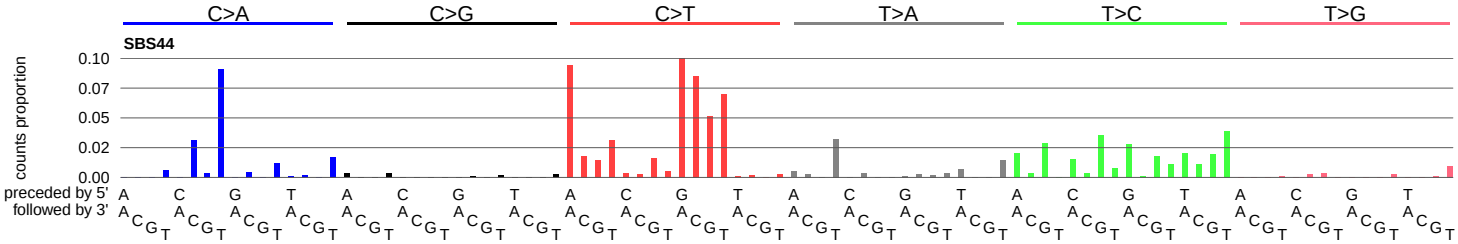

C>A
C>G
C>T
T>A
T>C
T>G
SBS39
counts proportion
0.05
0.04
0.03
0.01
0.00
preceded by 5'
followed by 3'

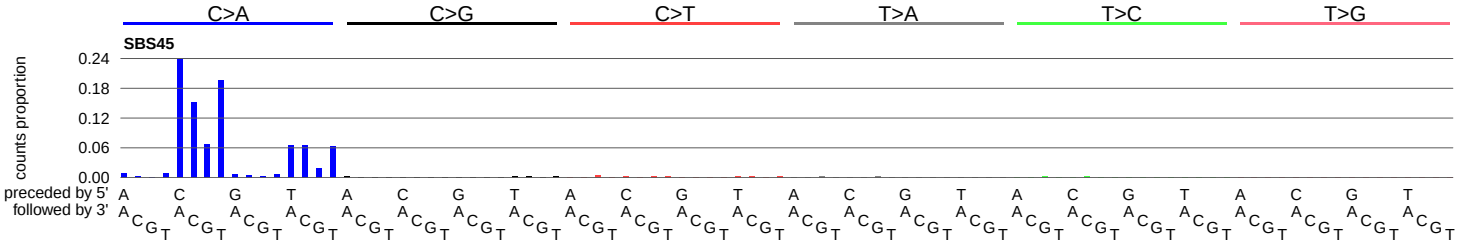

C>A
C>G
C>T
T>A
T>C
T>G
SBS40
counts proportion
0.03
0.02
0.02
0.01
0.00
preceded by 5'
followed by 3'

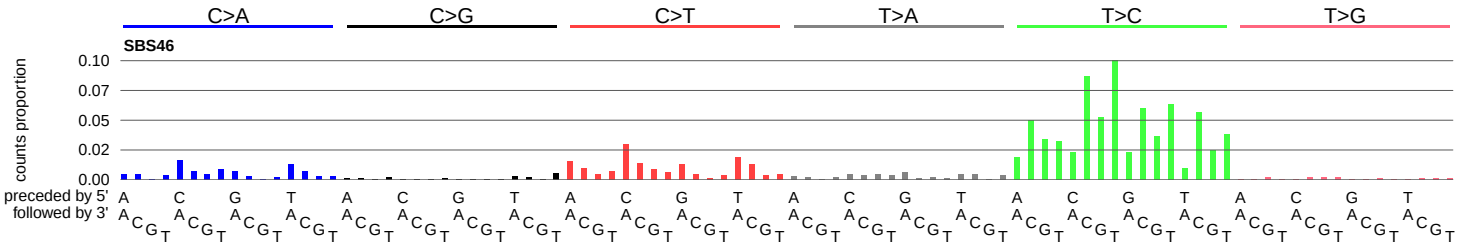

C>A
C>G
C>T
T>A
T>C
T>G
SBS41
counts proportion
0.09
0.07
0.04
0.02
0.00
preceded by 5'
followed by 3'

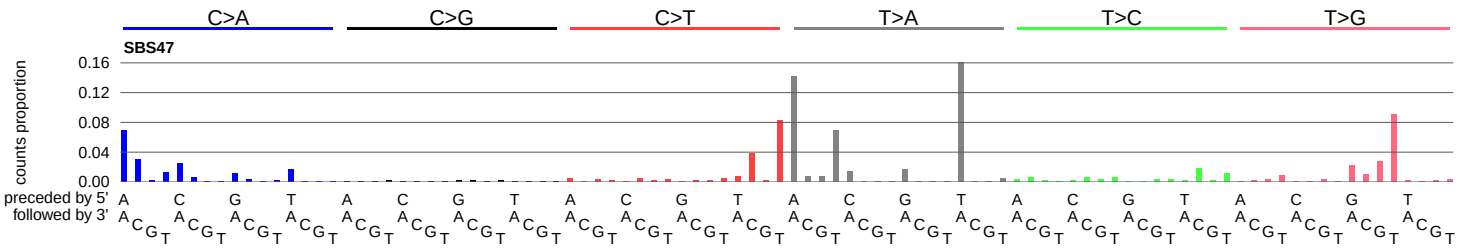

C>A
C>G
C>T
T>A
T>C
T>G
SBS42
counts proportion
0.15
0.11
0.08
0.04
0.00
preceded by 5'
followed by 3'

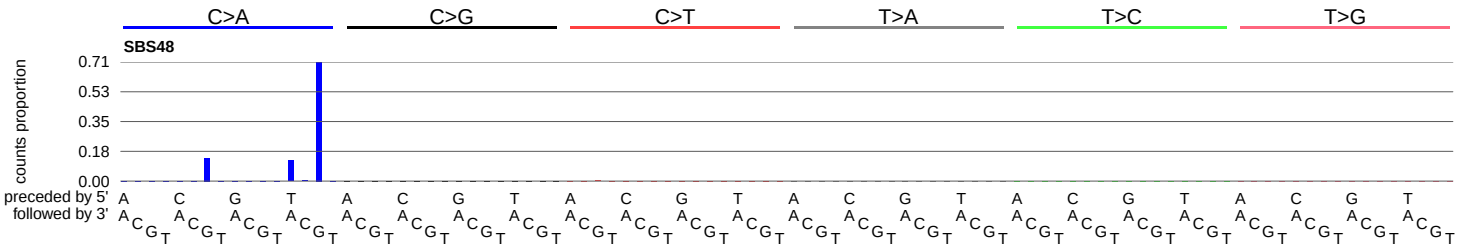

C>A
C>G
C>T
T>A
T>C
T>G
SBS43
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

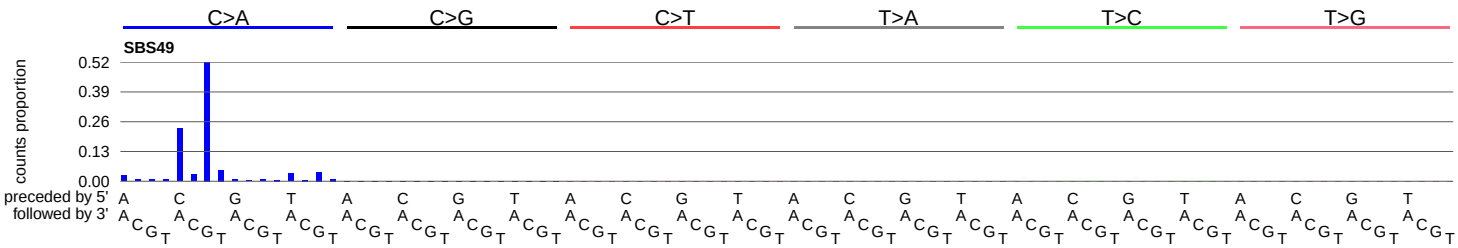

C>A
C>G
C>T
T>A
T>C
T>G
SBS44
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

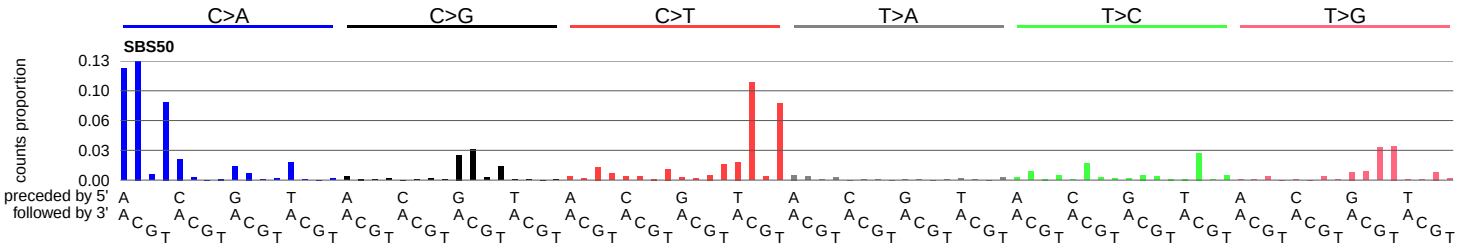

C>A
C>G
C>T
T>A
T>C
T>G
SBS45
counts proportion
0.24
0.18
0.12
0.06
0.00
preceded by 5'
followed by 3'

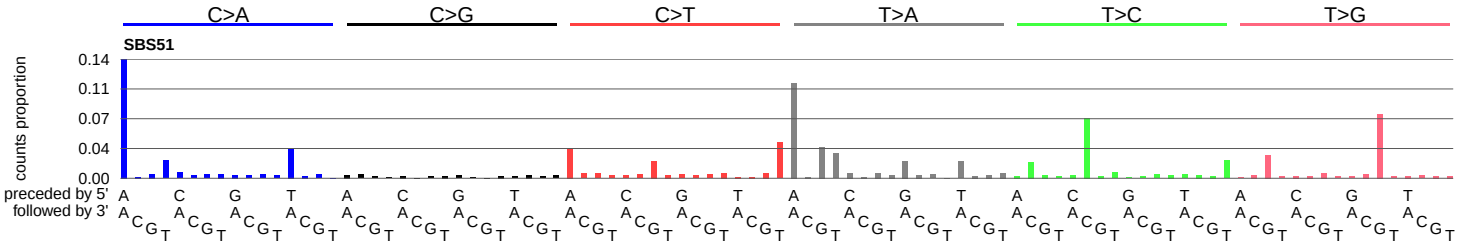

C>A
C>G
C>T
T>A
T>C
T>G
SBS46
counts proportion
0.10
0.07
0.05
0.02
0.00
preceded by 5'
followed by 3'

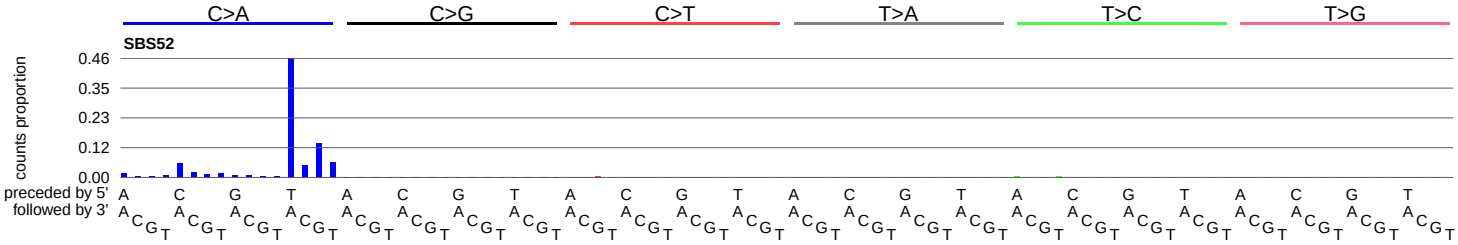

C>A
C>G
C>T
T>A
T>C
T>G
SBS47
counts proportion
0.16
0.12
0.08
0.04
0.00
preceded by 5'
followed by 3'

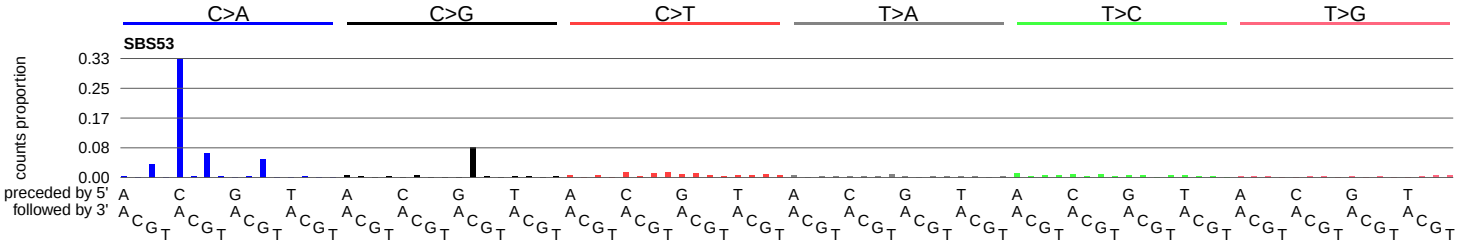

C>A
C>G
C>T
T>A
T>C
T>G
SBS48
counts proportion
0.71
0.53
0.35
0.18
0.00
preceded by 5'
followed by 3'

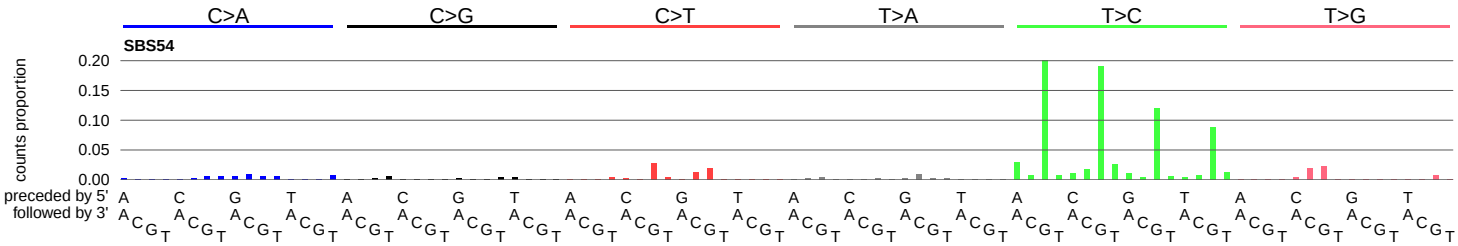

C>A
C>G
C>T
T>A
T>C
T>G
SBS49
counts proportion
0.52
0.39
0.26
0.13
0.00
preceded by 5'
followed by 3'

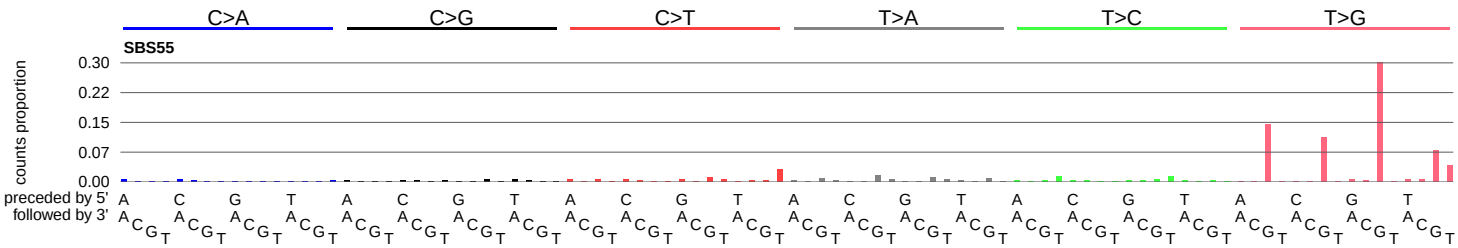

C>A
C>G
C>T
T>A
T>C
T>G
SBS50
counts proportion
0.13
0.10
0.06
0.03
0.00
preceded by 5'
followed by 3'

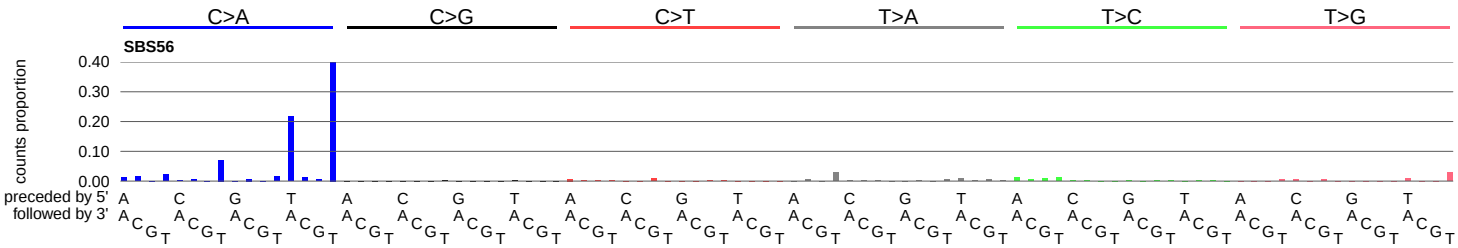

C>A
C>G
C>T
T>A
T>C
T>G
SBS51
counts proportion
0.14
0.11
0.07
0.04
0.00
preceded by 5'
followed by 3'

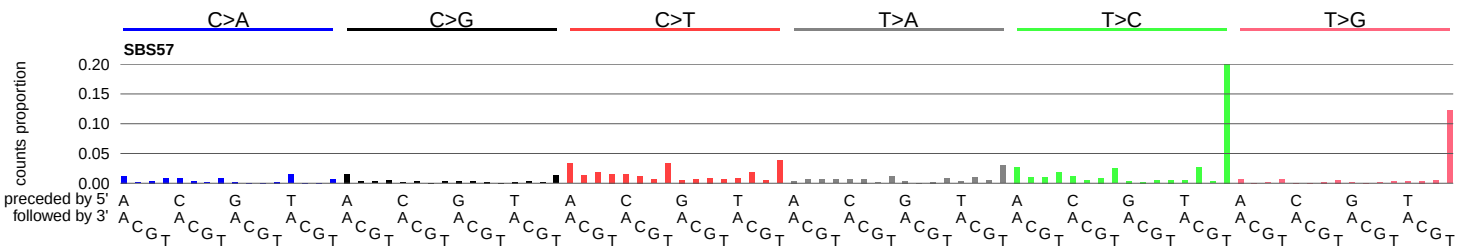

C>A
C>G
C>T
T>A
T>C
T>G
SBS52
counts proportion
0.46
0.35
0.23
0.12
0.00
preceded by 5'
followed by 3'

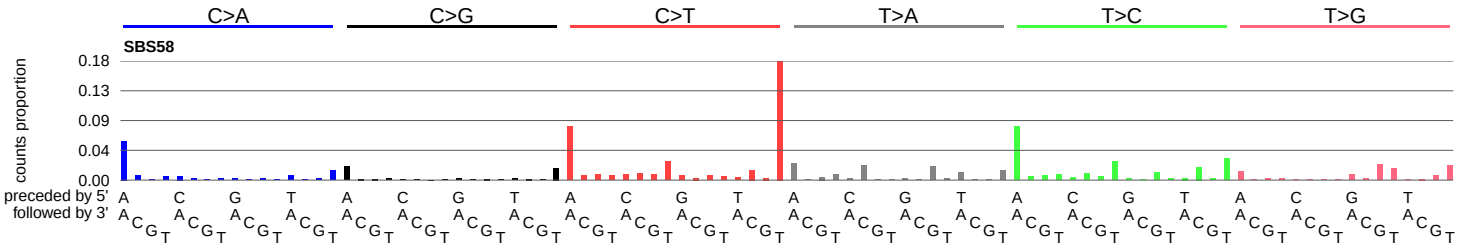

C>A
C>G
C>T
T>A
T>C
T>G
SBS53
counts proportion
0.33
0.25
0.17
0.08
0.00
preceded by 5'
followed by 3'

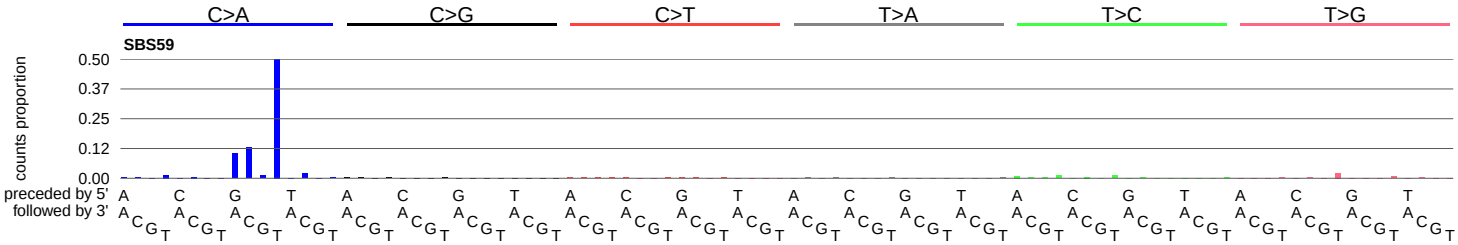

C>A
C>G
C>T
T>A
T>C
T>G
SBS54
counts proportion
0.20
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

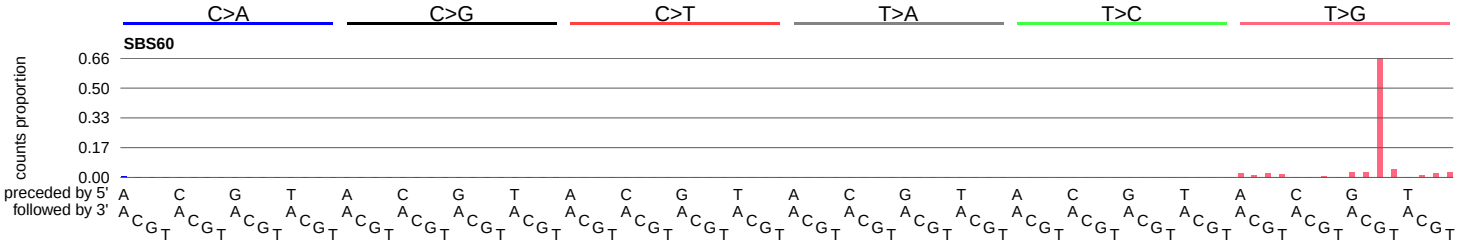

C>A
C>G
C>T
T>A
T>C
T>G
SBS55
counts proportion
0.30
0.22
0.15
0.07
0.00
preceded by 5'
followed by 3'

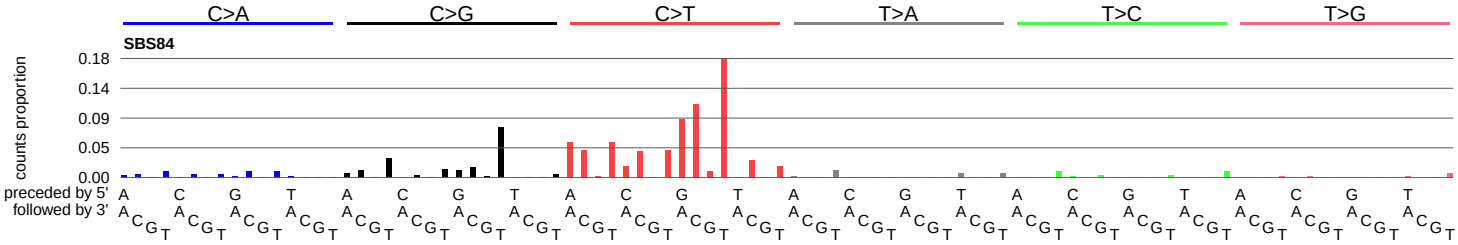

C>A
C>G
C>T
T>A
T>C
T>G
SBS56
counts proportion
0.40
0.30
0.20
0.10
0.00
preceded by 5'
followed by 3'

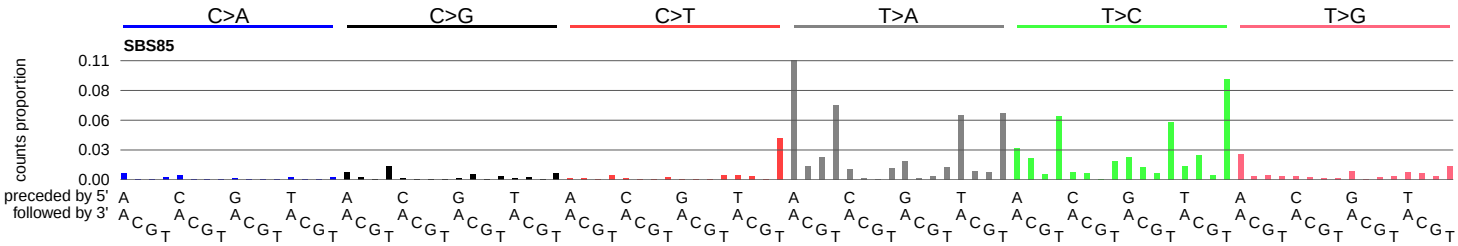

C>A
C>G
C>T
T>A
T>C
T>G
SBS57
counts proportion
0.20
0.15
0.10
0.05
0.00
preceded by 5'
followed by 3'

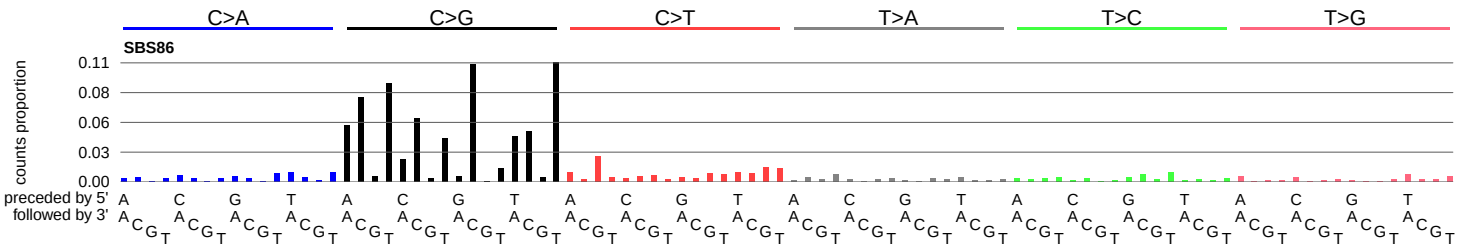

C>A
C>G
C>T
T>A
T>C
T>G
SBS58
counts proportion
0.18
0.13
0.09
0.04
0.00
preceded by 5'
followed by 3'

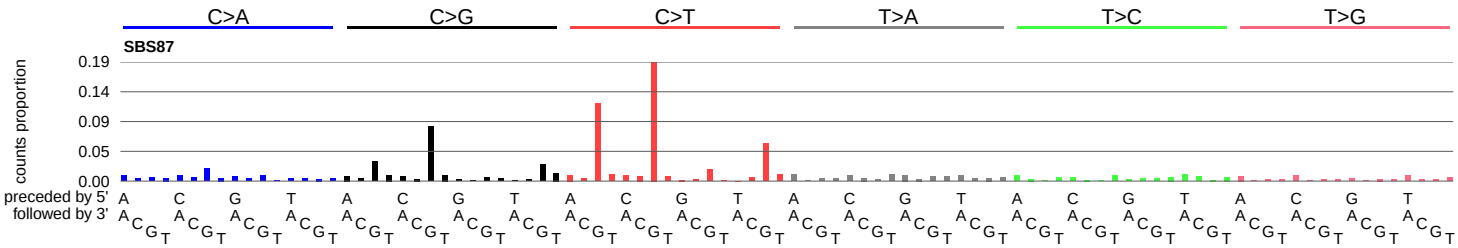

C>A
C>G
C>T
T>A
T>C
T>G
SBS59
counts proportion
0.50
0.37
0.25
0.12
0.00
preceded by 5'
followed by 3'

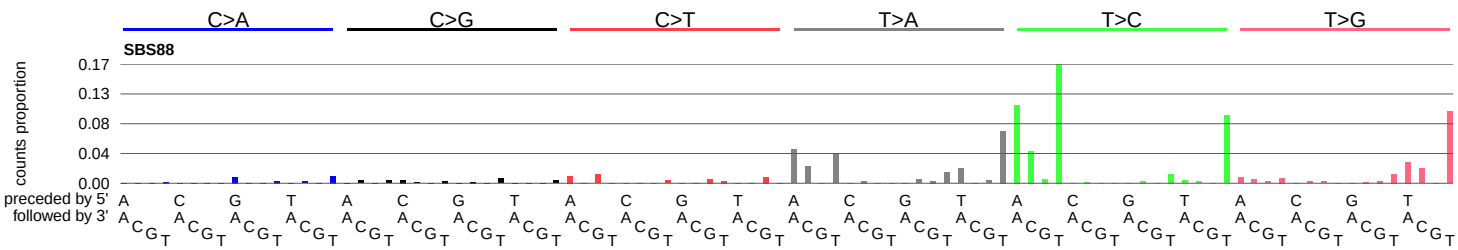

C>A
C>G
C>T
T>A
T>C
T>G
SBS60
counts proportion
0.66
0.50
0.33
0.17
0.00
preceded by 5'
followed by 3'

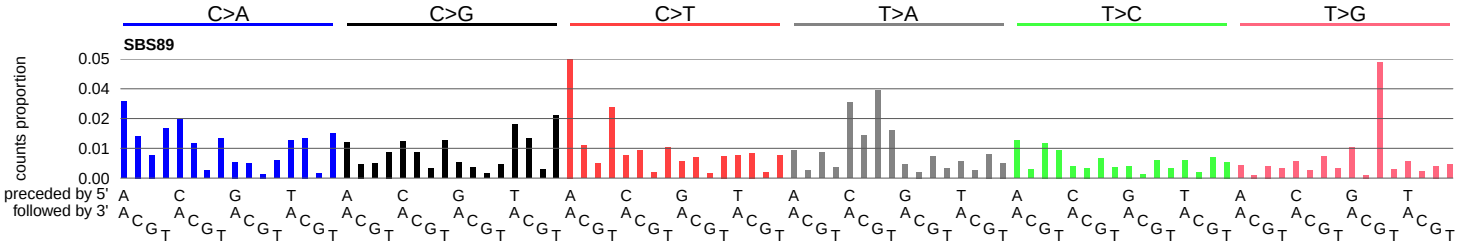

C>A
C>G
C>T
T>A
T>C
T>G
SBS84
counts proportion
0.18
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

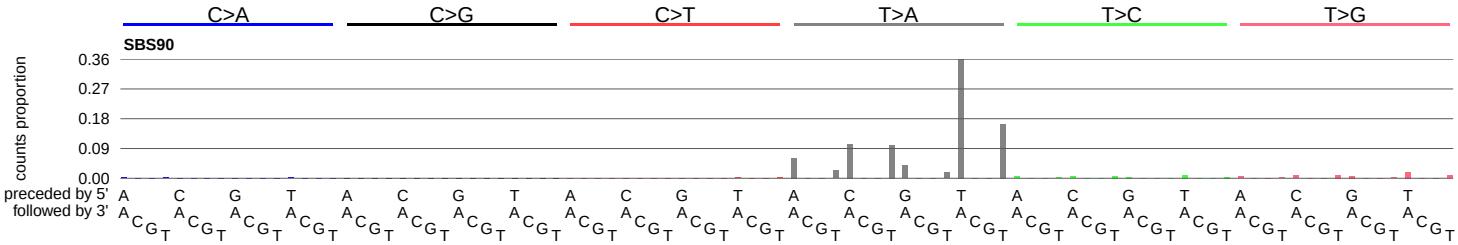

C>A
C>G
C>T
T>A
T>C
T>G
SBS85
counts proportion
0.11
0.08
0.06
0.03
0.00
preceded by 5'
followed by 3'

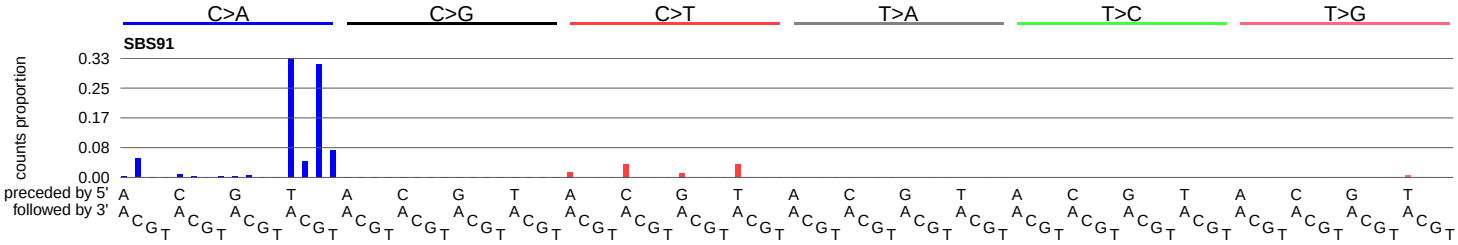

C>A
C>G
C>T
T>A
T>C
T>G
SBS86
counts proportion
0.11
0.08
0.06
0.03
0.00
preceded by 5'
followed by 3'

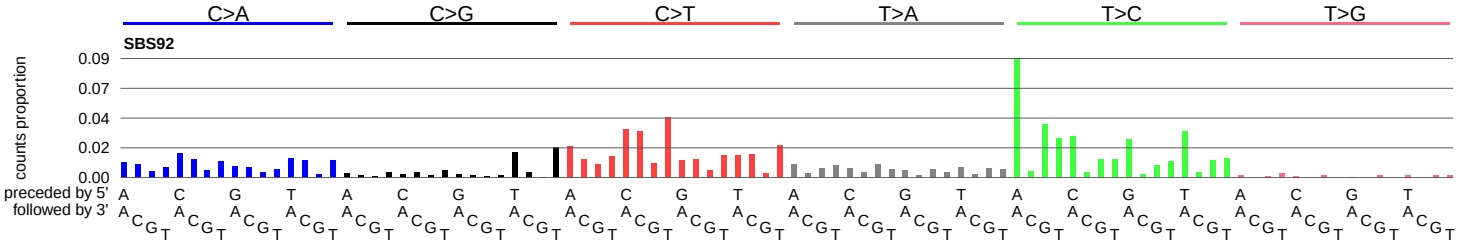

C>A
C>G
C>T
T>A
T>C
T>G
SBS87
counts proportion
0.19
0.14
0.09
0.05
0.00
preceded by 5'
followed by 3'

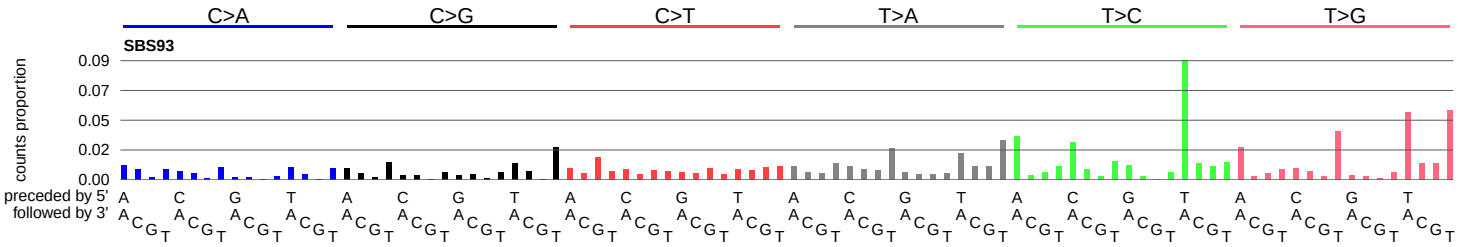

C>A
C>G
C>T
T>A
T>C
T>G
SBS88
counts proportion
0.17
0.13
0.08
0.04
0.00
preceded by 5'
followed by 3'

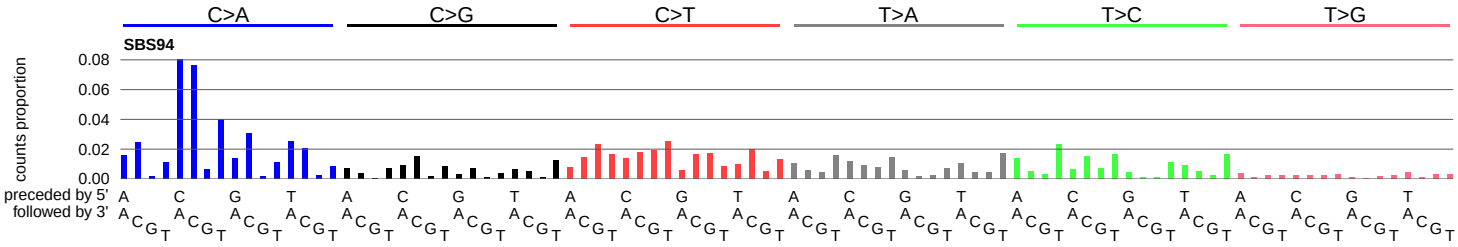

C>A
C>G
C>T
T>A
T>C
T>G
SBS89
counts proportion
0.05
0.04
0.02
0.01
0.00
preceded by 5'
followed by 3'


C>A
C>G
C>T
T>A
T>C
T>G
SBS90
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
SBS91
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
SBS92
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
SBS93
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
SBS94
counts proportion
0.08
0.06
0.04
0.02
0.00
preceded by 5'
followed by 3'