

SBS3

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS4

$C > A$

C > G

$$C > T$$

T > A

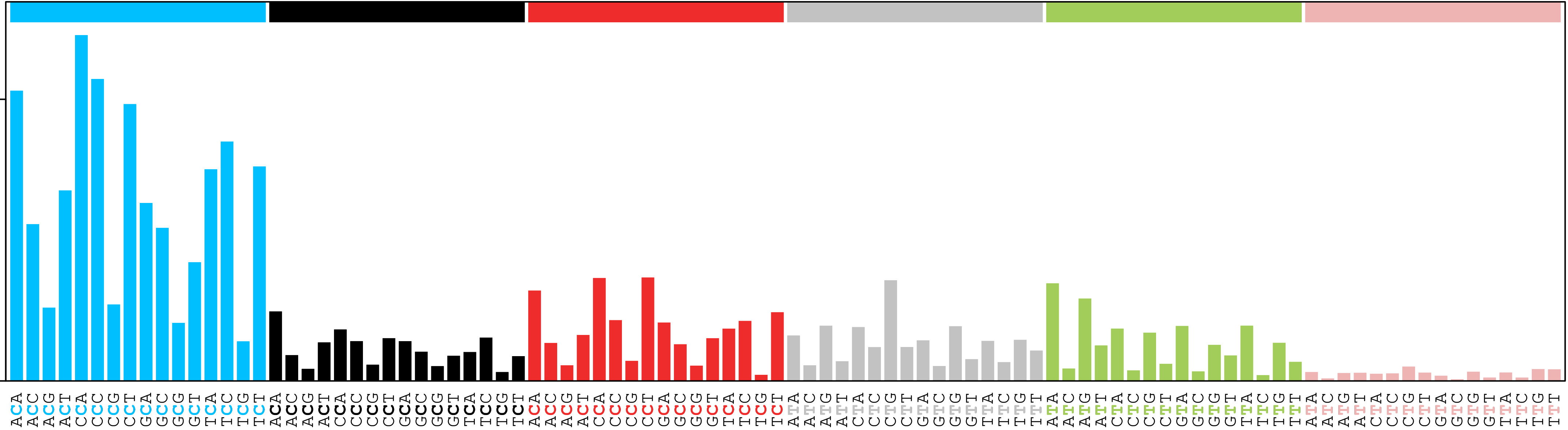
$$T > C$$

$T > G$

Mutation probability

0.05

0.00



SBS5



SBS6

$C > A$

C > G

$$C > T$$

T > A

$T > C$

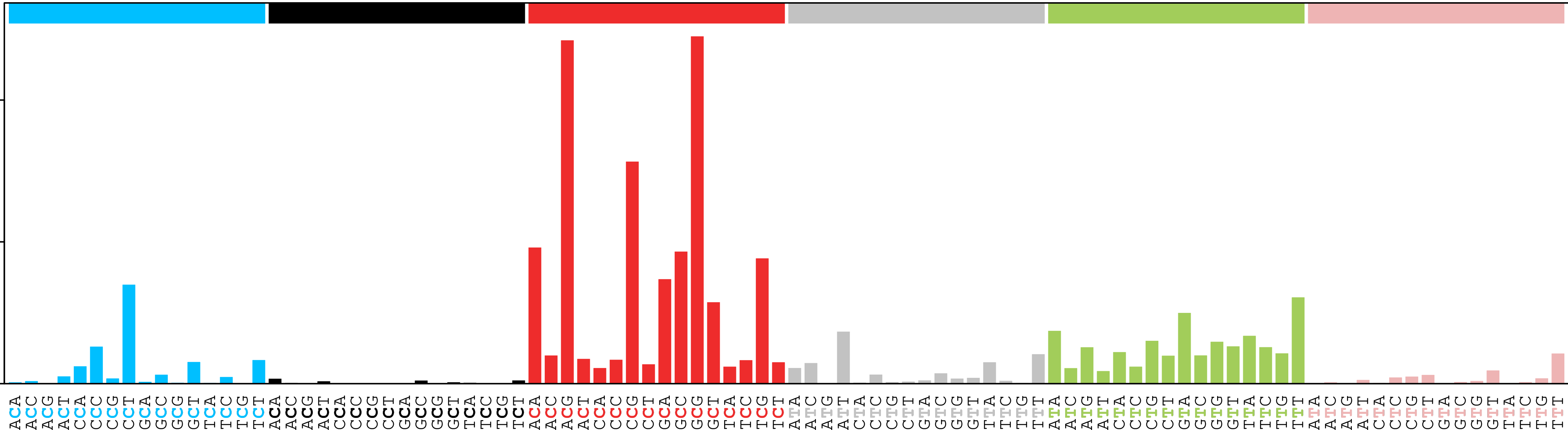
T>G

Mutation probability

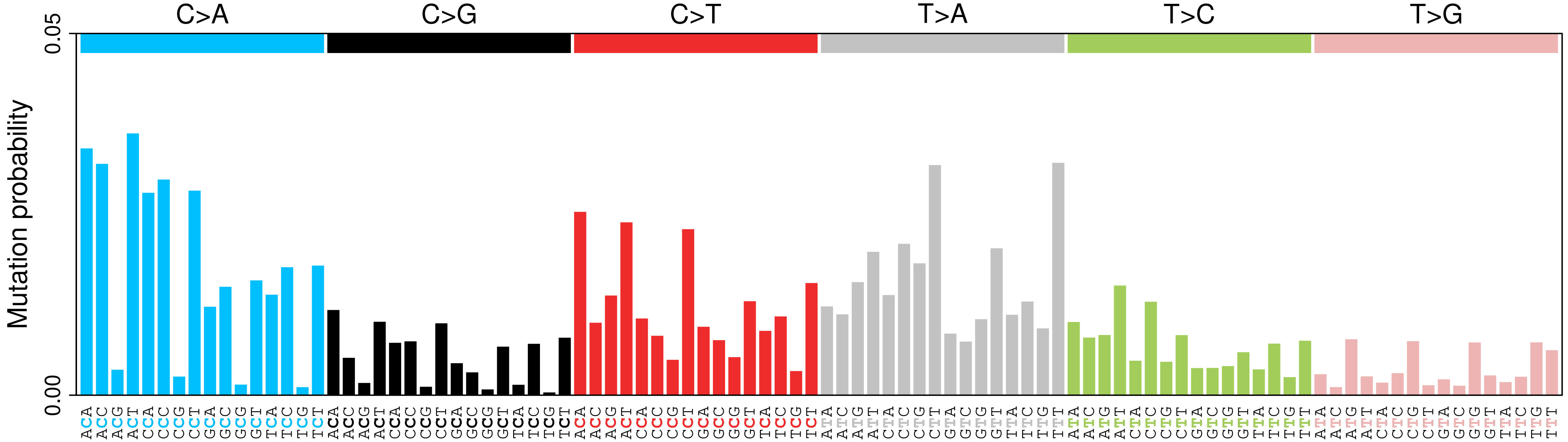
0.10

50.0

0.00



SBS8



SBS11

$$C > A$$

C > G

$$C > T$$

T > A

$T > C$

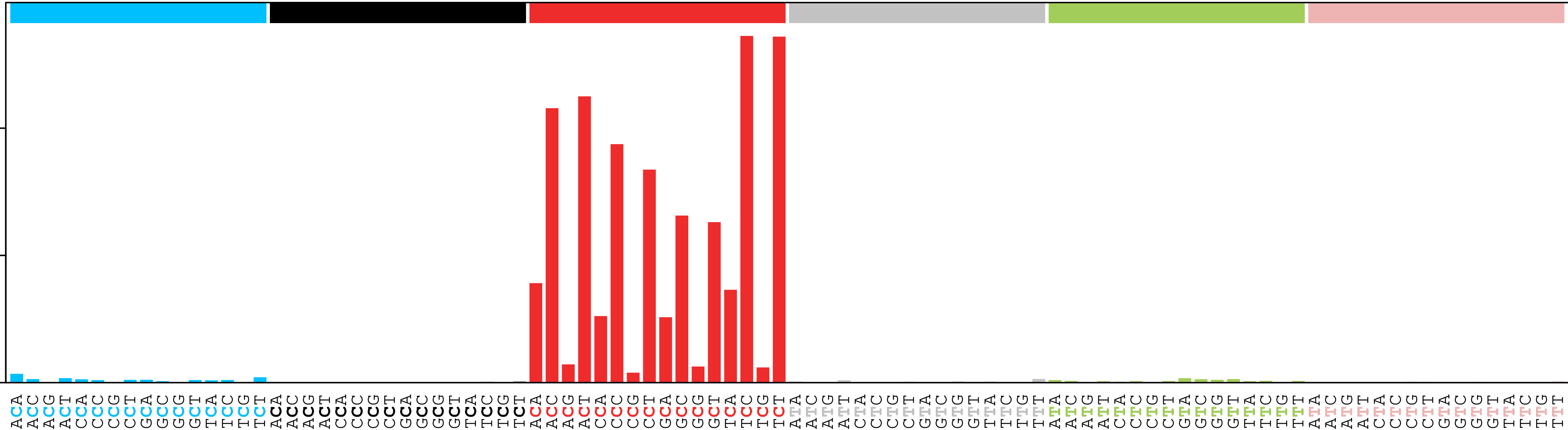
T > G

Mutation probability

0.10

0.05

0.00



SBS12

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS13

C>A

C>G

C>T

T>A

T>C

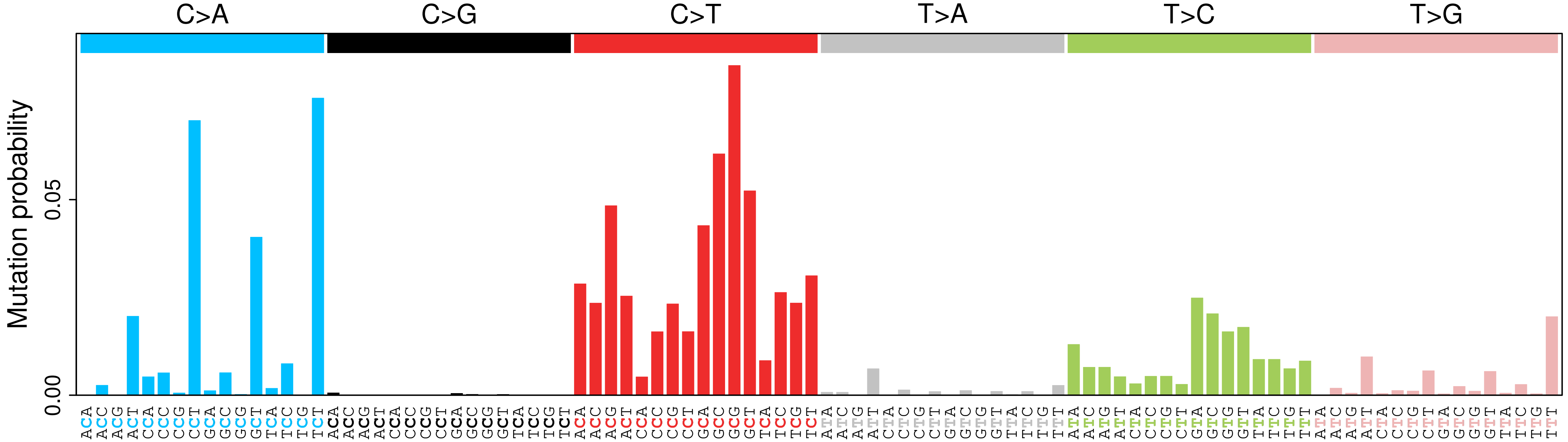
T>G

Mutation probability

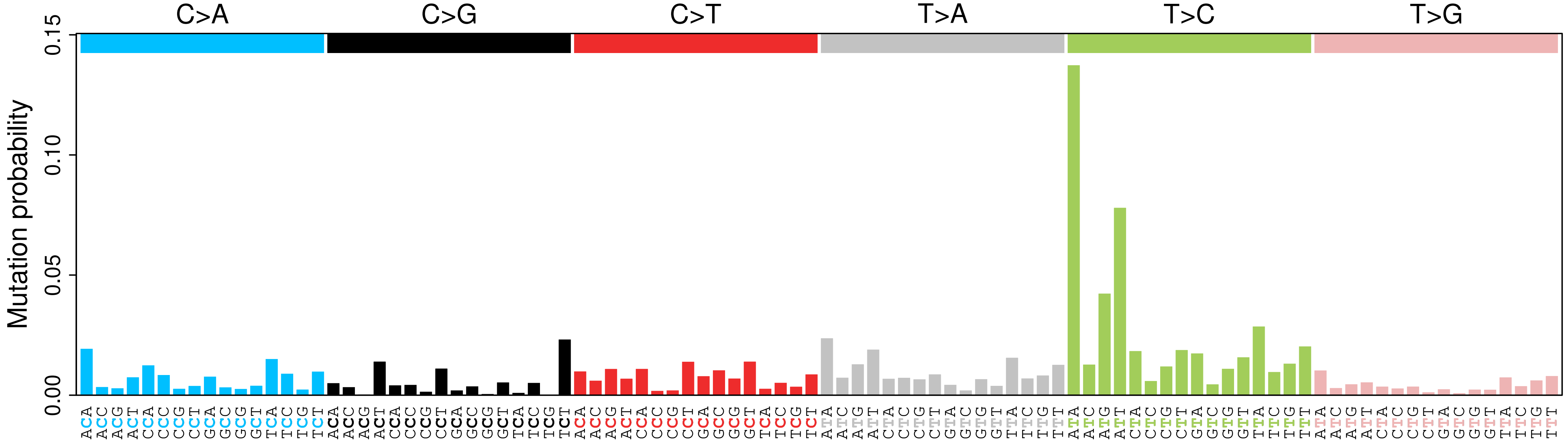
0.20
0.15
0.10
0.05
0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS14



SBS16



SBS17a

C>A

C>G

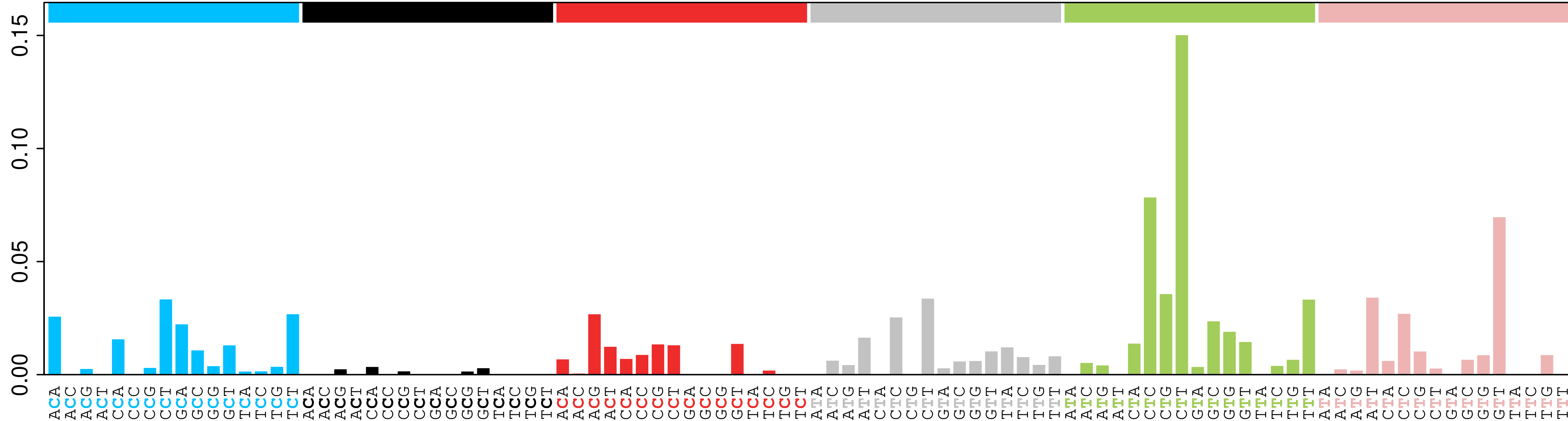
C>T

T>A

T>C

T>G

Mutation probability



SBS18

$C > A$

C > G

$$C > T$$

T > A

$T > C$

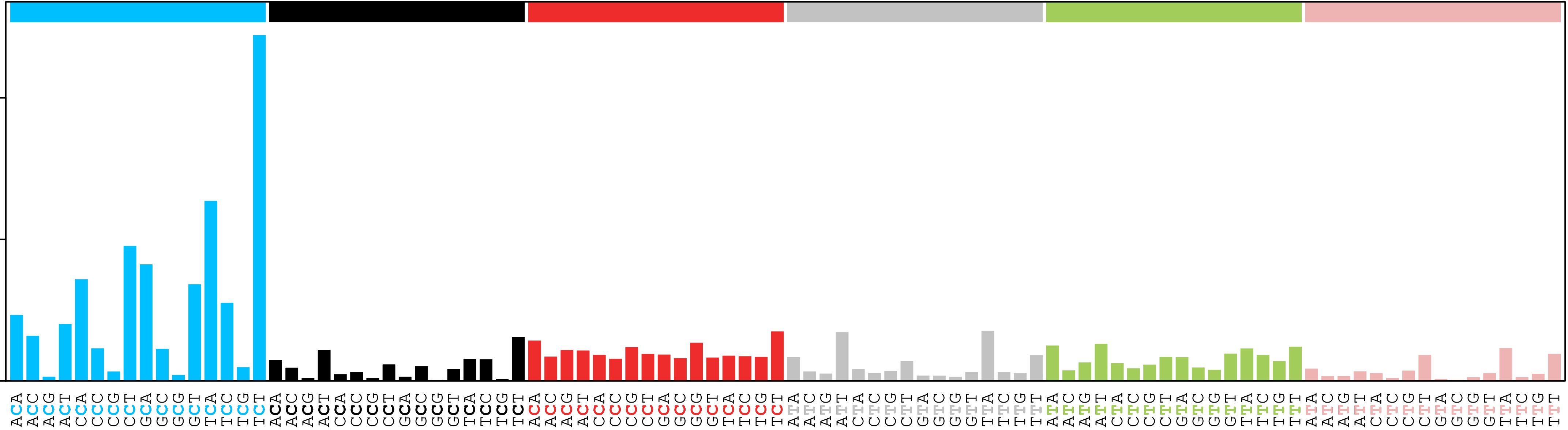
T>G

Mutation probability

0.10

0.05

0.00



SBS19

$C > A$

C > G

$$C > T$$

T > A

$T > C$

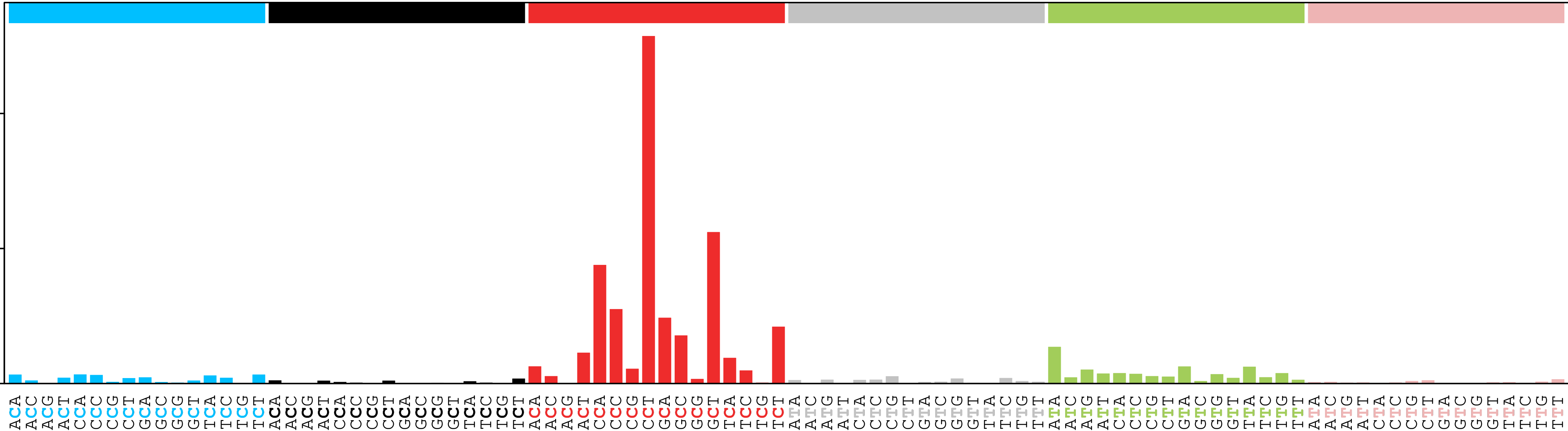
T>G

Mutation probability

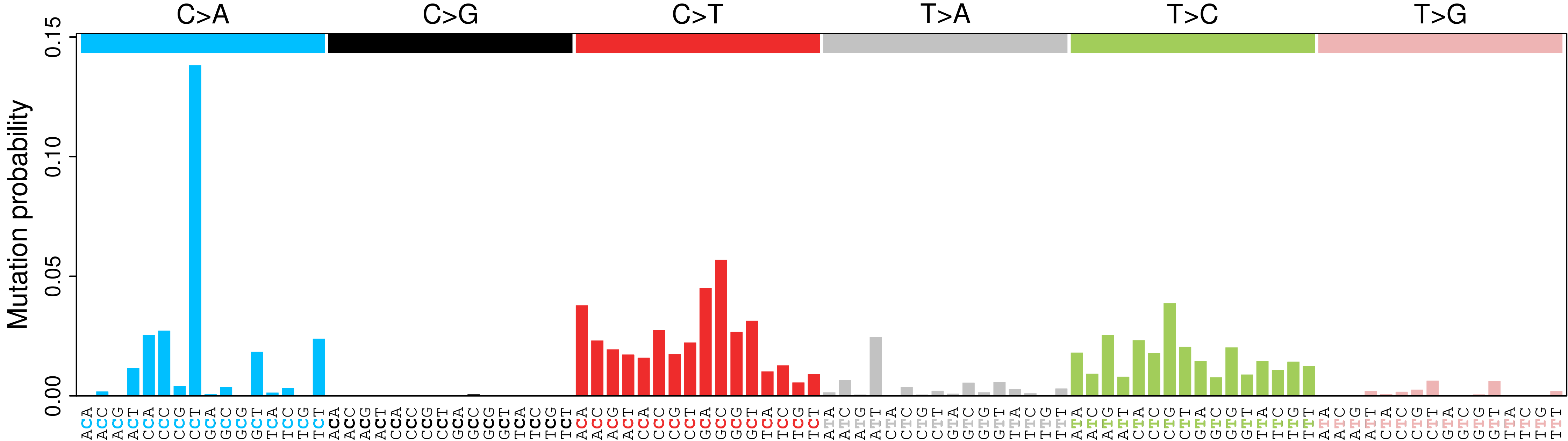
0.2

0.1

0



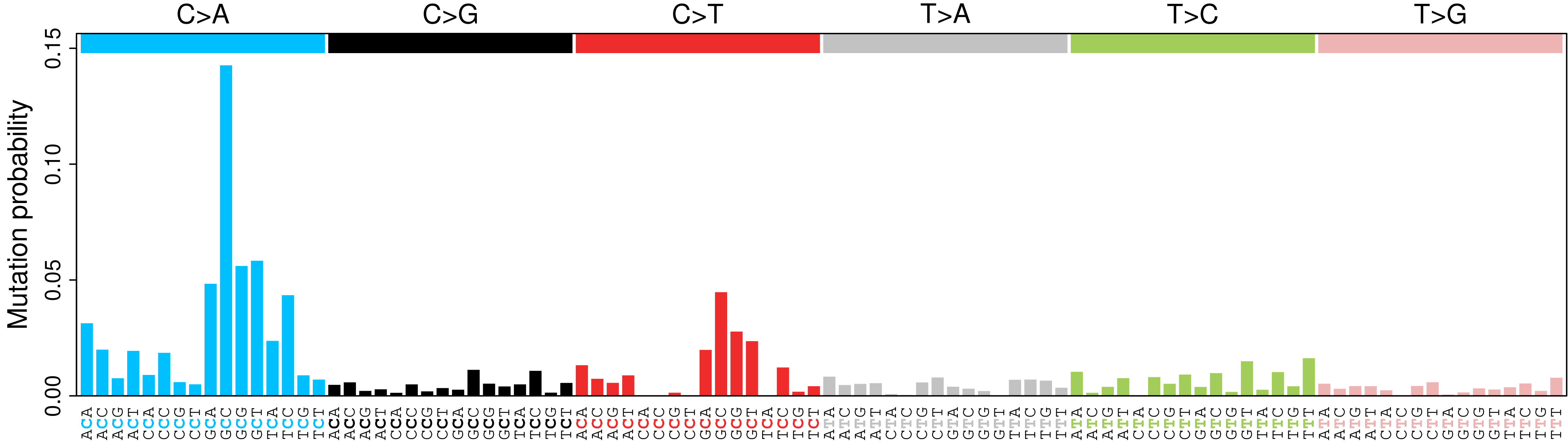
SBS20



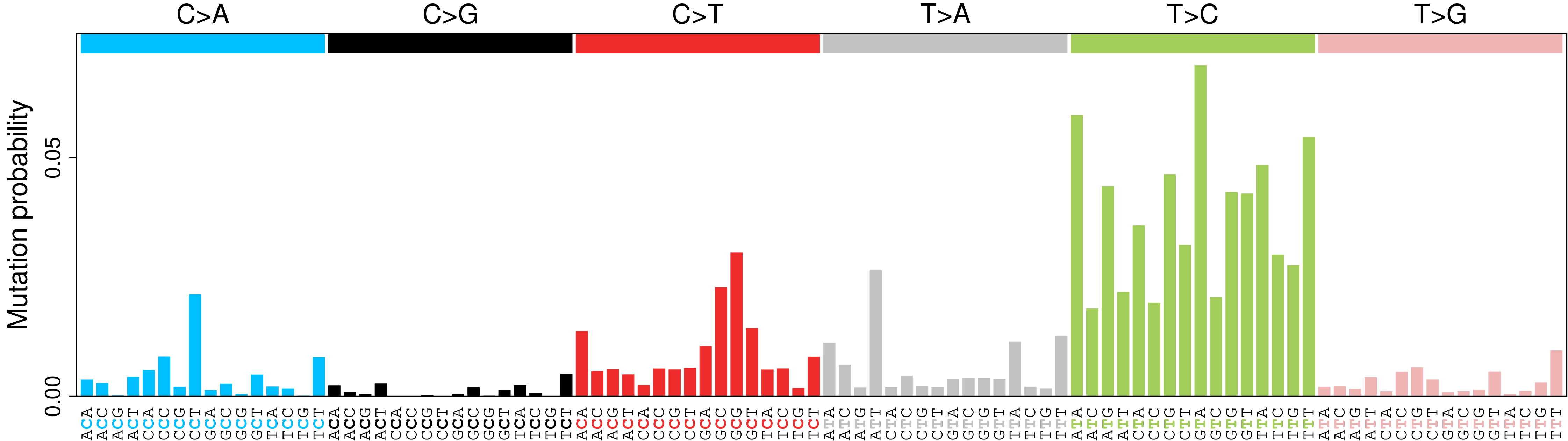
SBS23



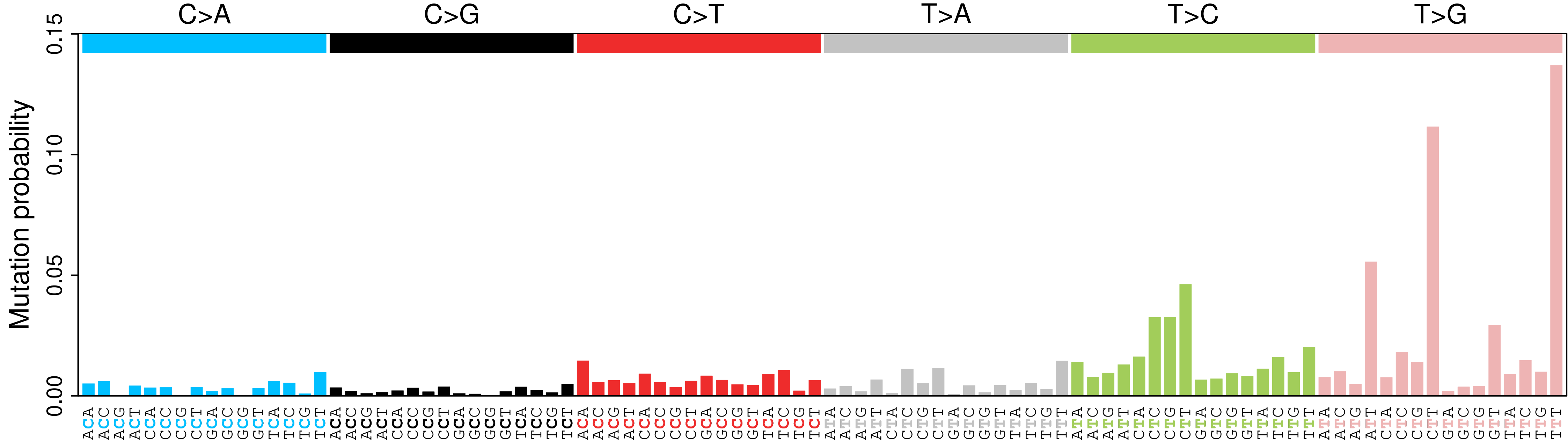
SBS24



SBS26



SBS28



SBS31

$C > A$

C > G

$C > T$

T > A

$$T > C$$

T>G

Mutation probability

15

 \circ

50

00

[illegible]

SBS32

$$C > A$$

C > G

C>T

T > A

$T > C$

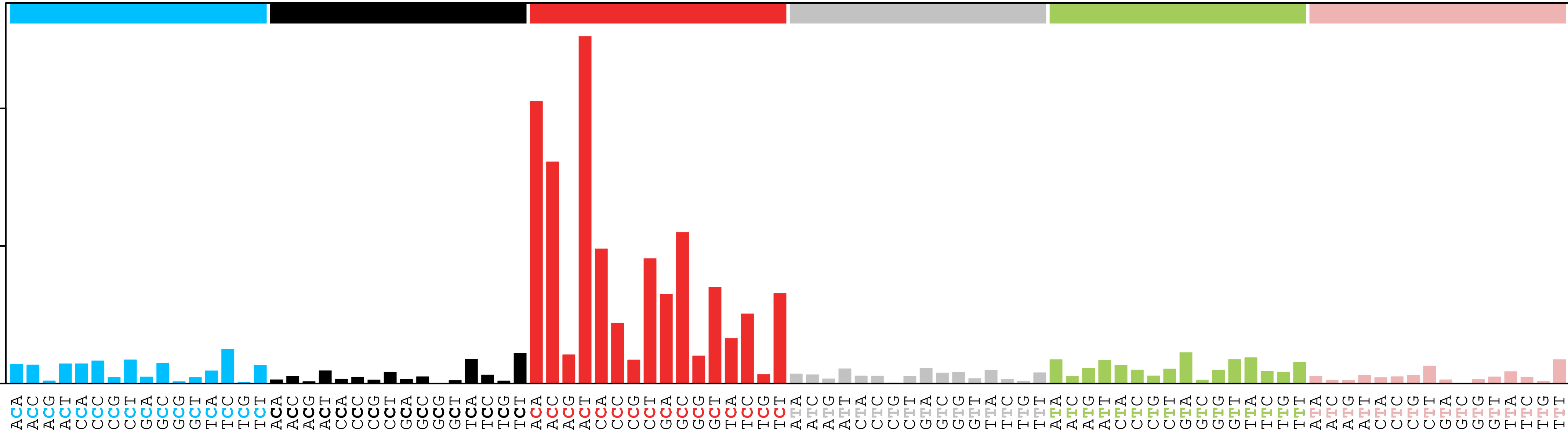
T>G

Mutation probability

0.10

0.0

0.00



SBS33

C>A

C>G

C>T

T>A

T>C

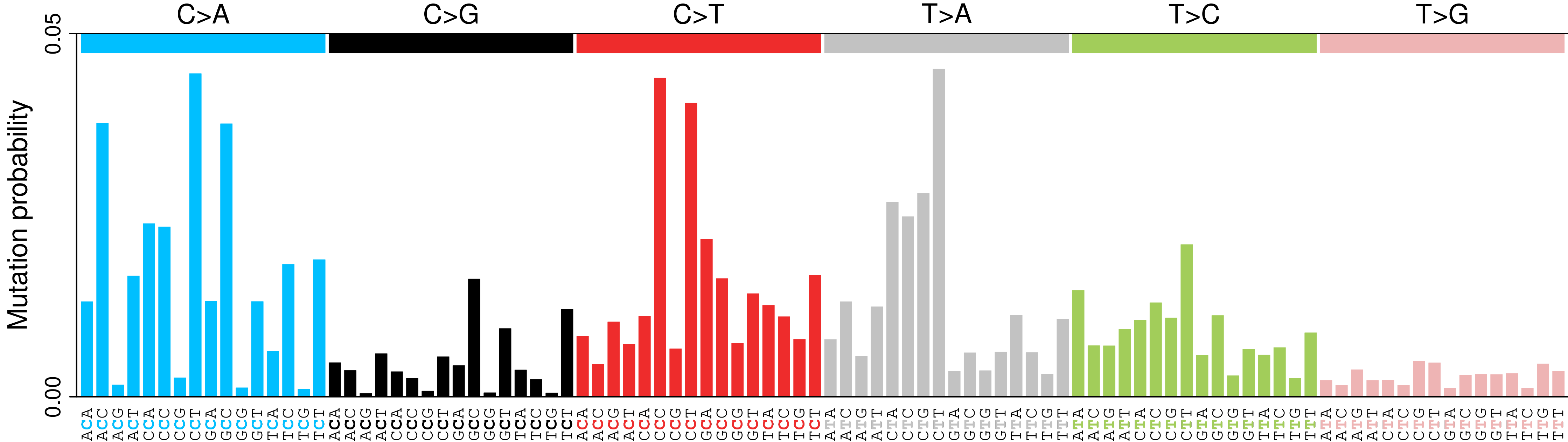
T>G

Mutation probability

0.2
0.1
0.0



SBS35



SBS38

$C > A$

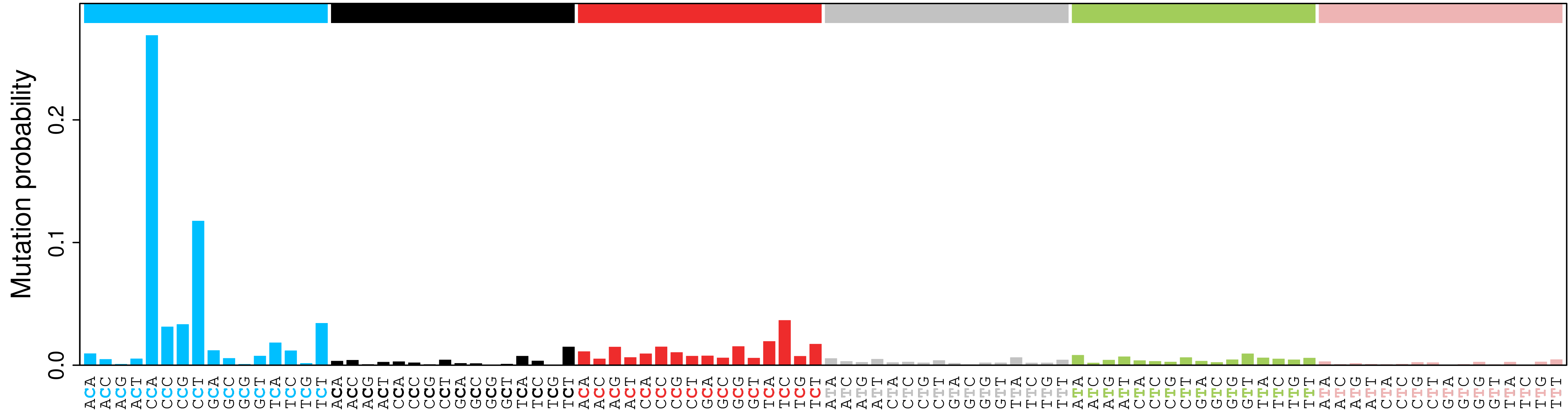
C > G

$C > T$

T > A

$$T > C$$

$T > G$



SBS44

$C > A$

C > G

$$C > T$$

T > A

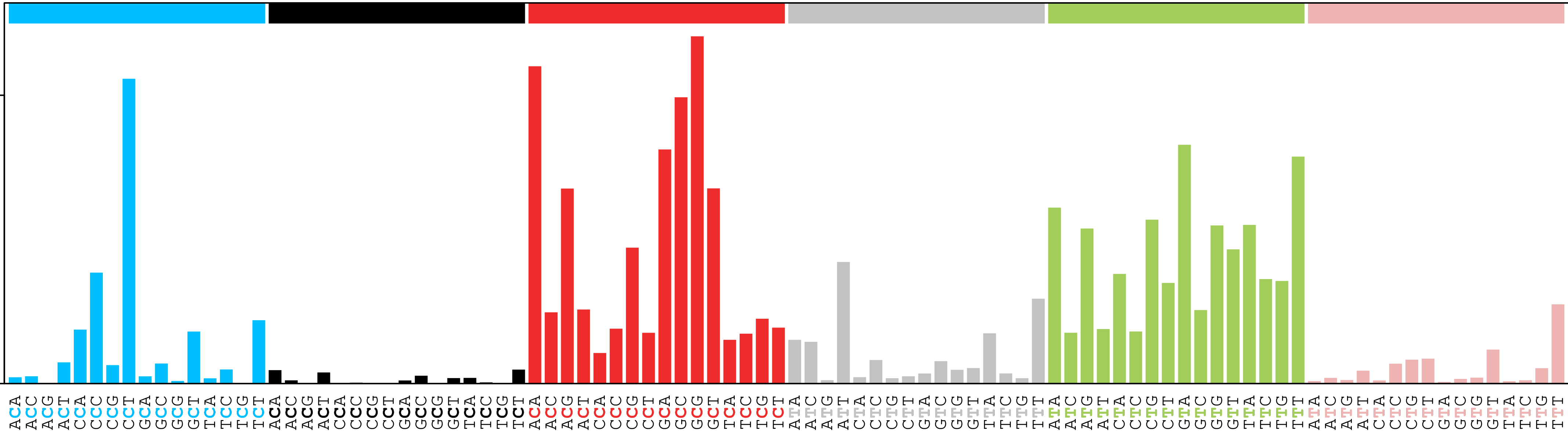
$T > C$

T>G

Mutation probability

0.05

0.00



SBS53

$C > A$

C > G

$$C > T$$

T > A

$T > C$

T>G

Mutation probability

0.10

50

0

AACGACCGTGGGTATCTGAACAGAACCCGCACGGTTCCTCTAAACAGTACCGTGTTAATCATTACTGTA GTGTGTATTTTATAATACA CCGTACGGTATCTGTTAATCACTGTA GGTGTATTTTATAATCACTGTA GGTGTATTTTATAATCACTGTA

SBS84

$$C > A$$

C > G

$$C > T$$

T > A

$T > C$

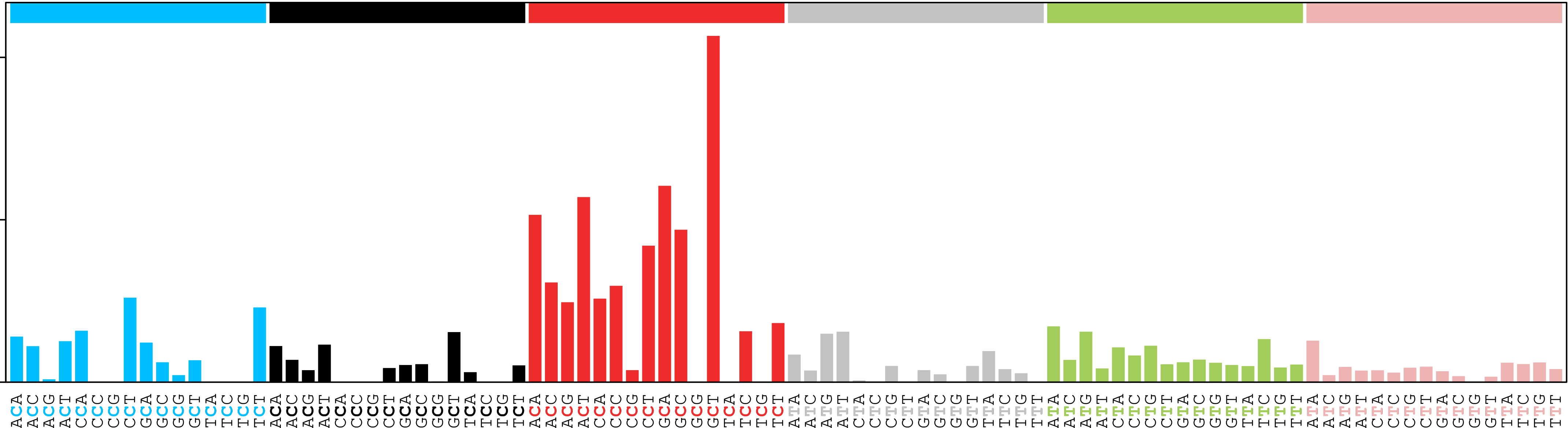
T > G

Mutation probability

0.10

0.05

0.0



SBS88

$C > A$

C > G

$$C > T$$

T > A

$T > C$

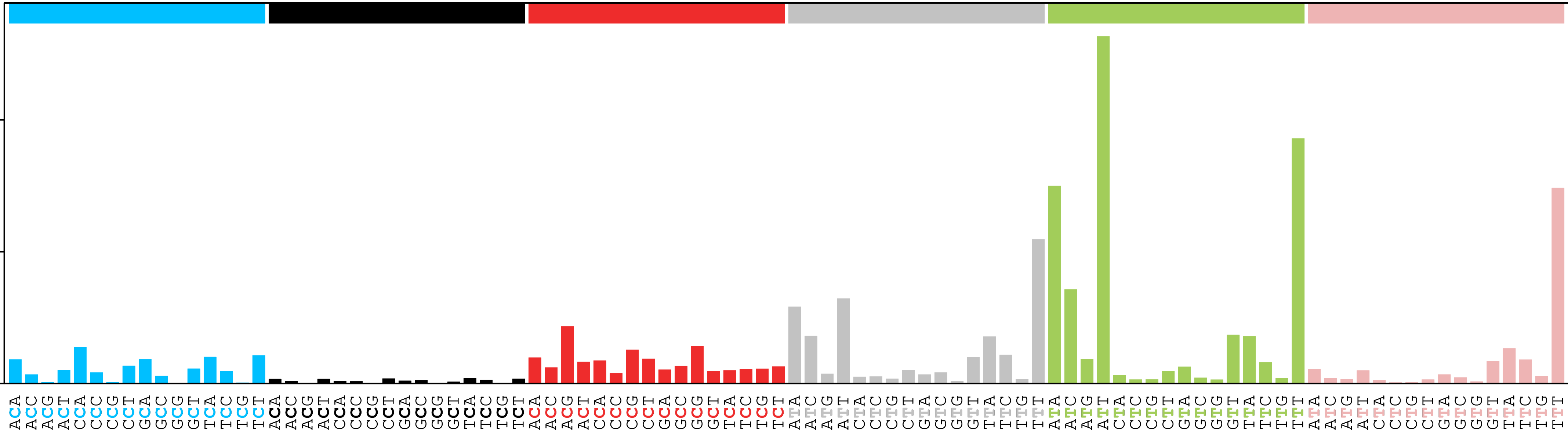
T>G

Mutation probability

0.10

50

0.00



SBS90

$C > A$

C > G

$$C > T$$

T > A

$$T > C$$

$T > G$

Mutation probability

0.00 0.05 0.10 0.15 0.20



SBS92

$C > A$

C > G

$$C > T$$

T > A

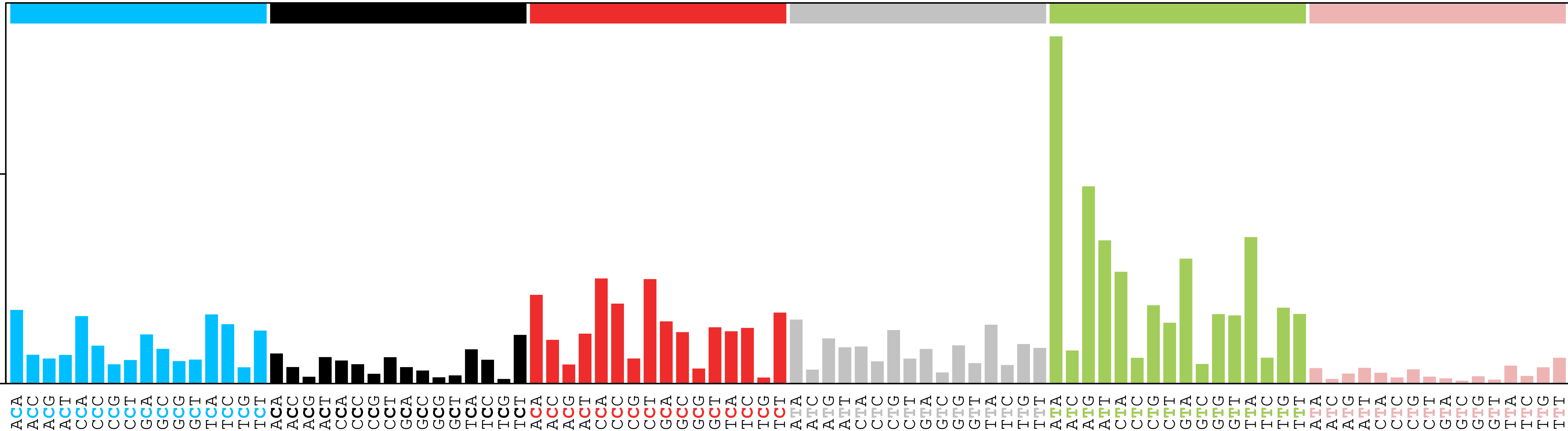
$T > C$

T>G

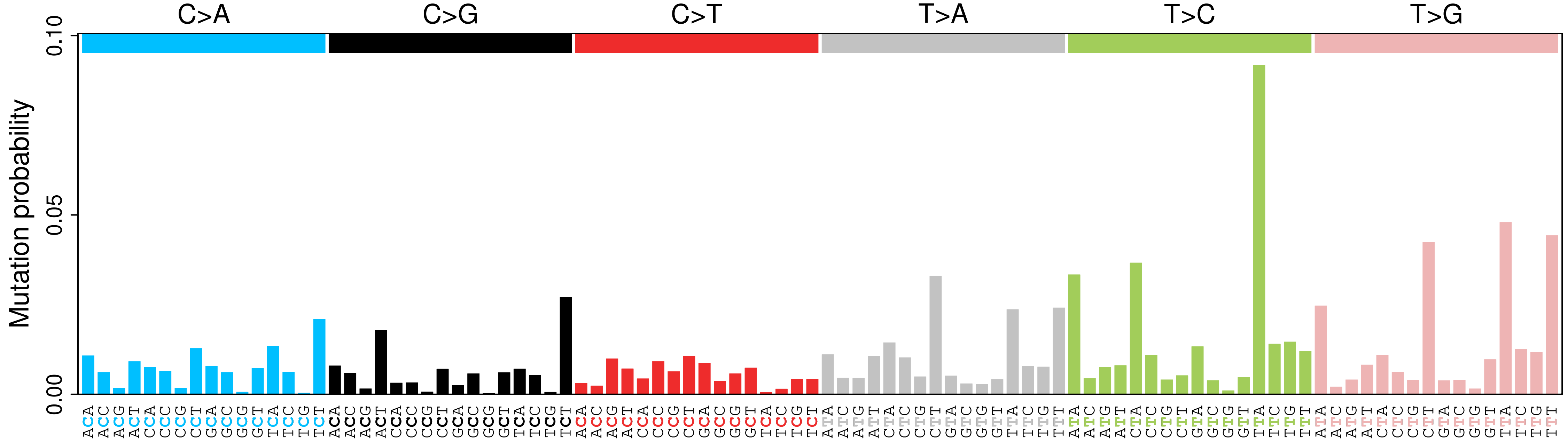
Mutation probability

0.05

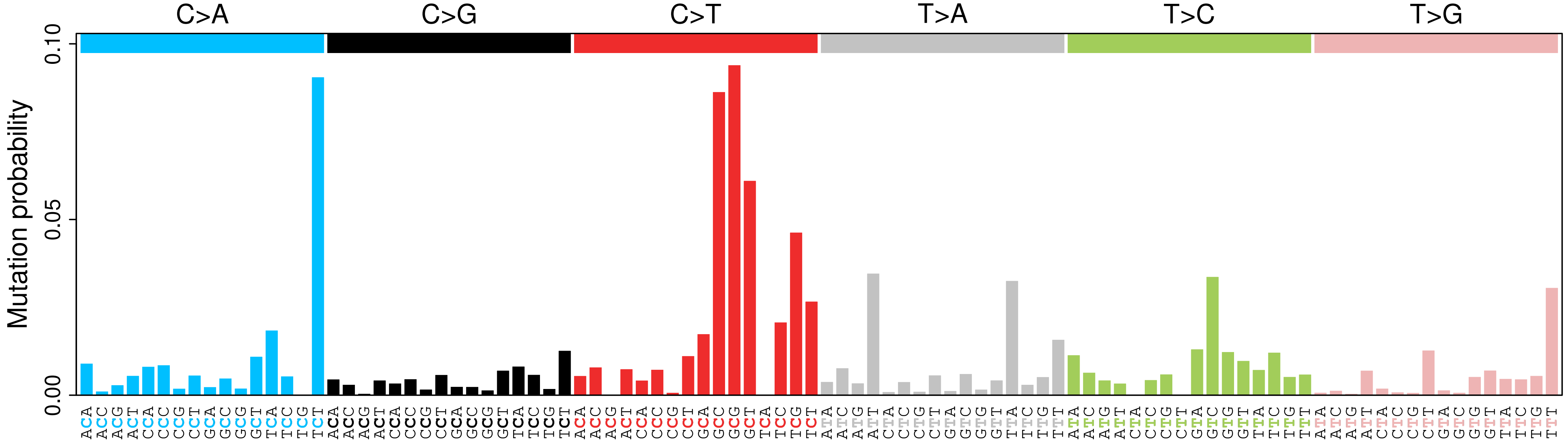
0.00



SBS93



SBS98



SBS99

$C > A$

C > G

$$C > T$$

T > A

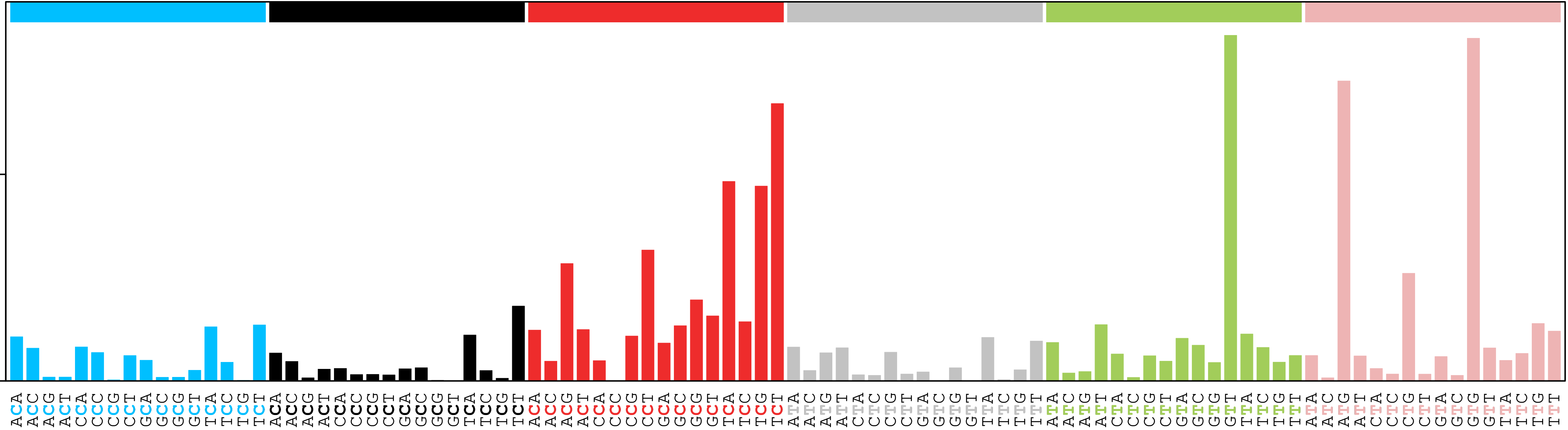
$$T > C$$

$T > G$

Mutation probability

0.05

0.00



SBS100

$C > A$

C > G

C>T

T > A

$$T > C$$

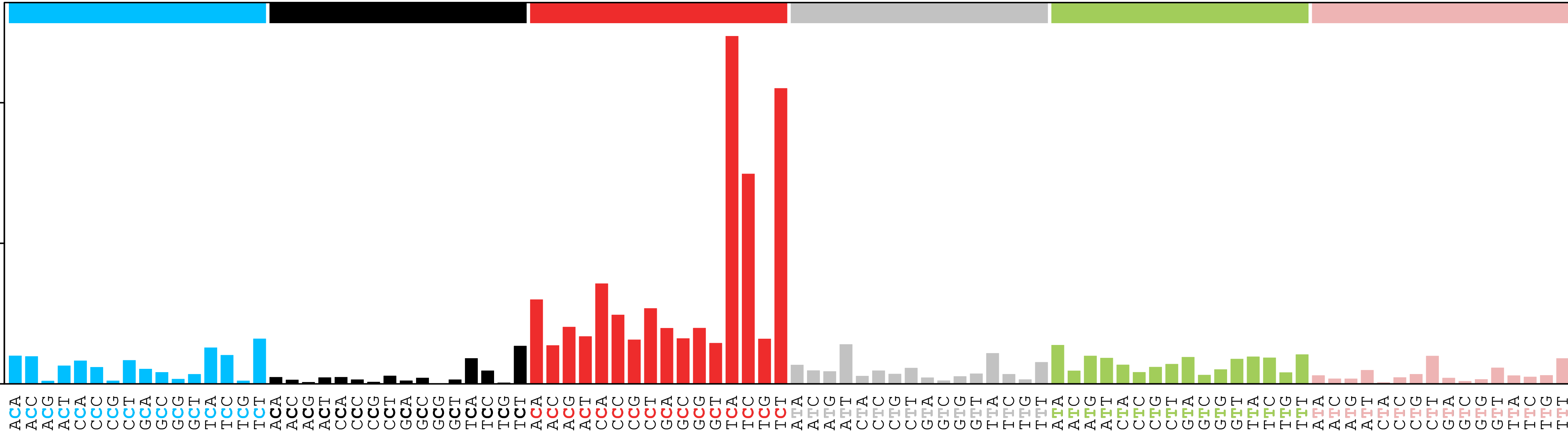
$T > G$

Mutation probability

0.10

0.05

0.00



SBS101

C>A

C>G

C>T

T>A

T>C

T>G

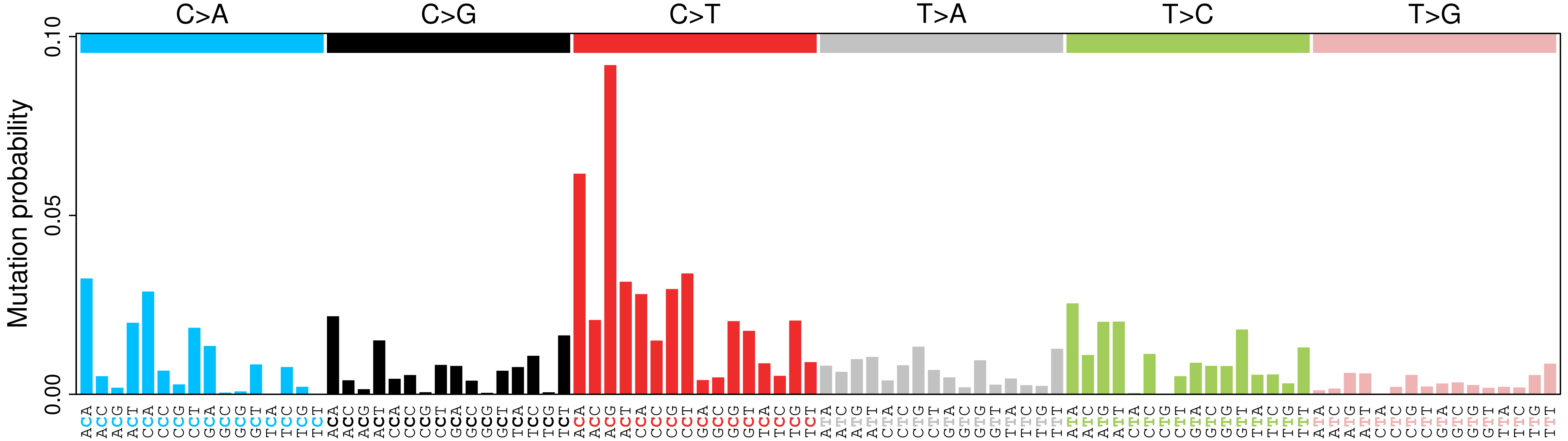
Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CGC CTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CGC CTC GCA GCC GCG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CGC CTC GCA GCC GCG GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS103



SBS104

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.2

0.1

0.0

ACA ACC AGT ACA CCC CCG CCT CCA GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC AGT ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS105



SBS106

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.15
0.10
0.05
0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TTC TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TTC TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TTC TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS108

C>A

C>G

C>T

T>A

T>C

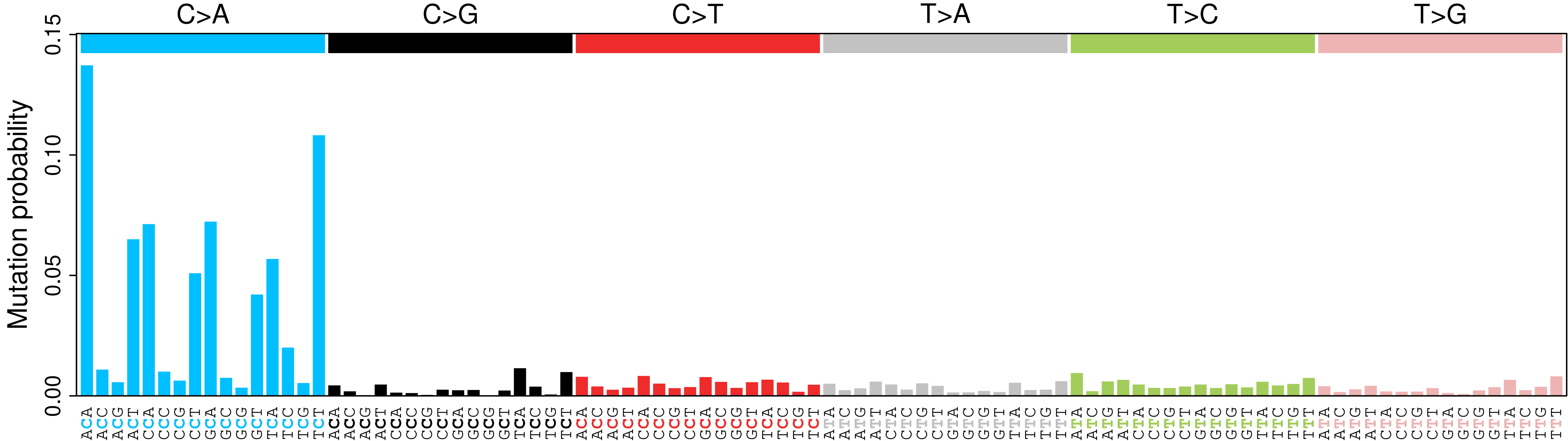
T>G

Mutation probability

0.15
0.10
0.05
0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCA GGC GGT GCA GGC GGT GCA GGC GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GGC GGT GCA GGC GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTG GTT GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTG GTT GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTG GTT GTT TTA TTC TTG TTT

SBS109



SBS111

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GCG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GCG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GCG GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS113

$C > A$

C > G

$$C > T$$

T > A

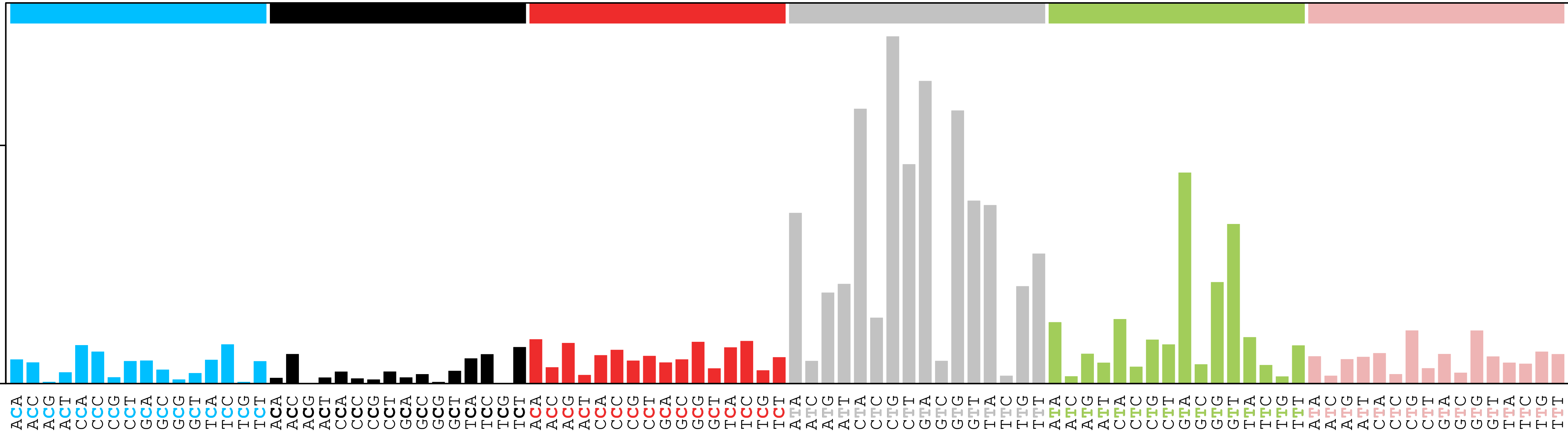
$T > C$

T>G

Mutation probability

0.05

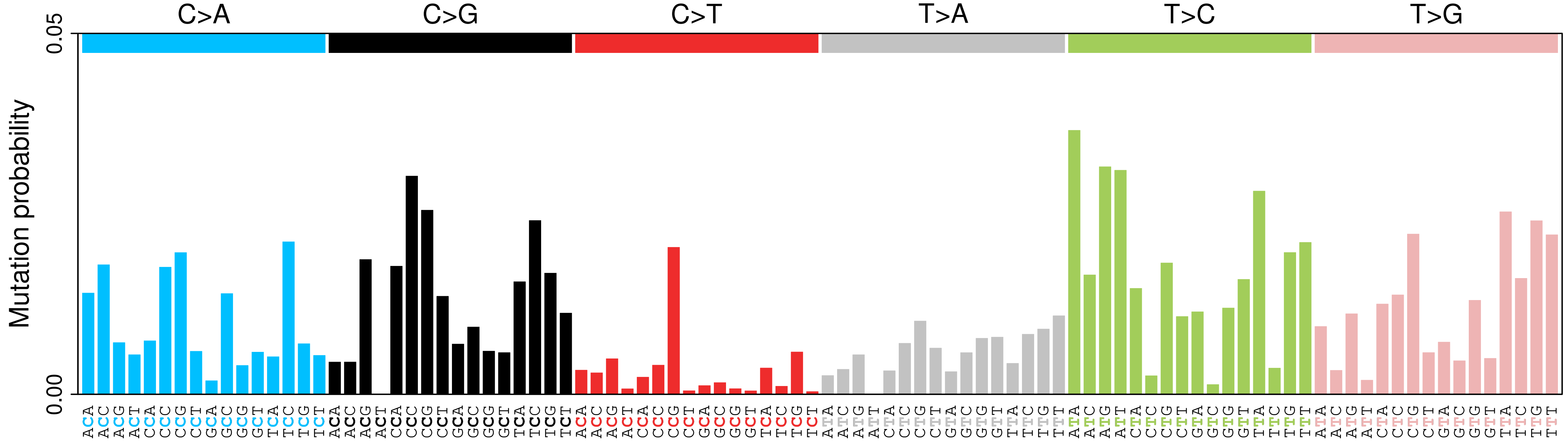
0.00



SBS116



SBS117



SBS118

C>A

C>G

C>T

T>A

T>C

T>G

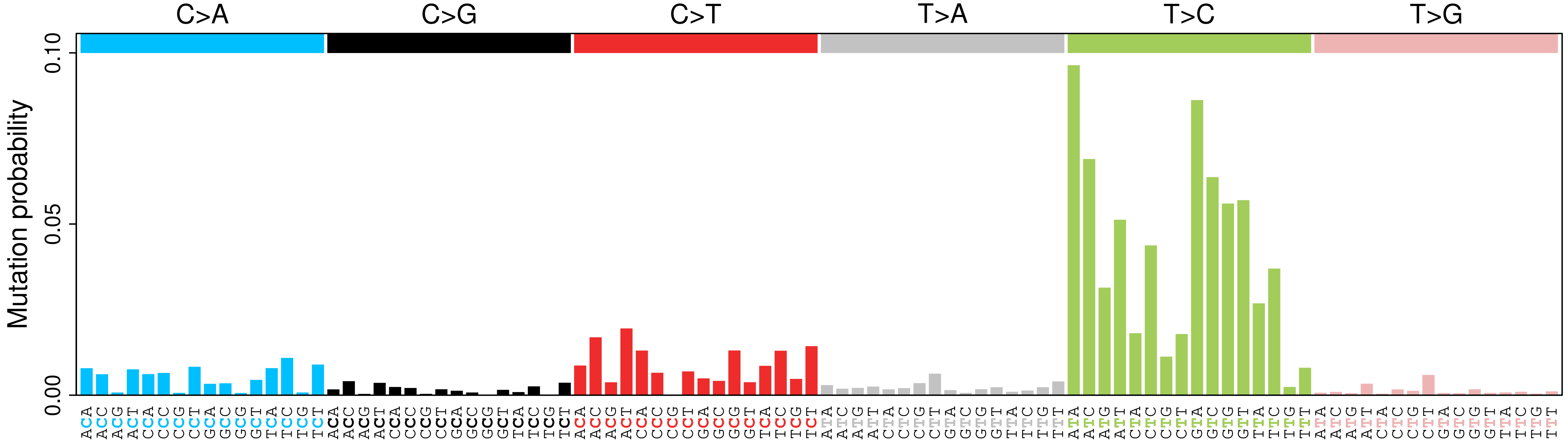
Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS119



SBS121

C>A

C>G

C>T

T>A

T>C

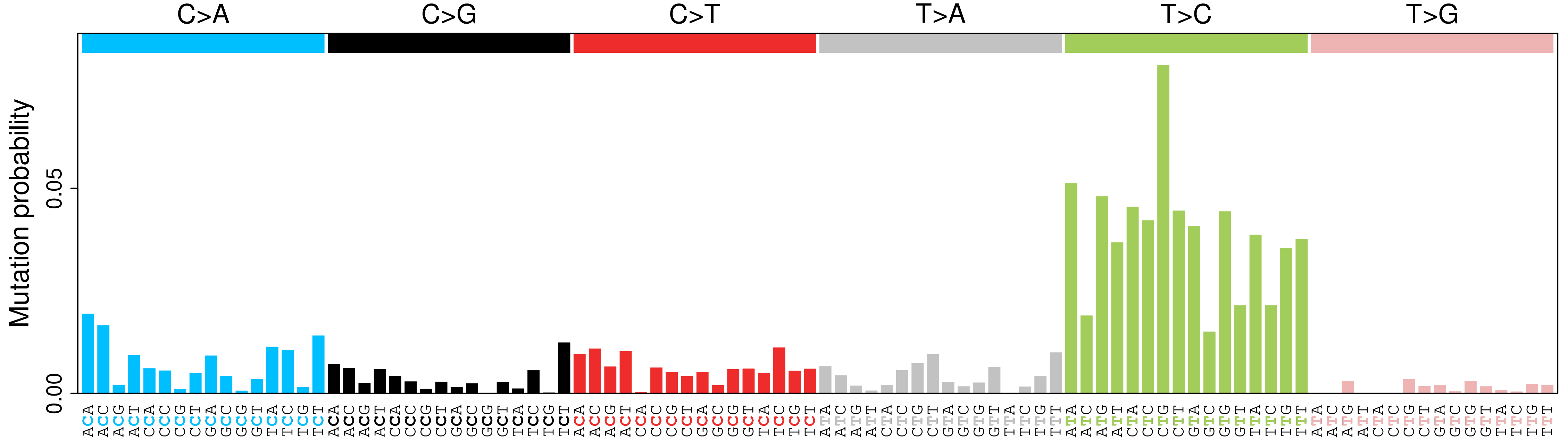
T>G

Mutation probability

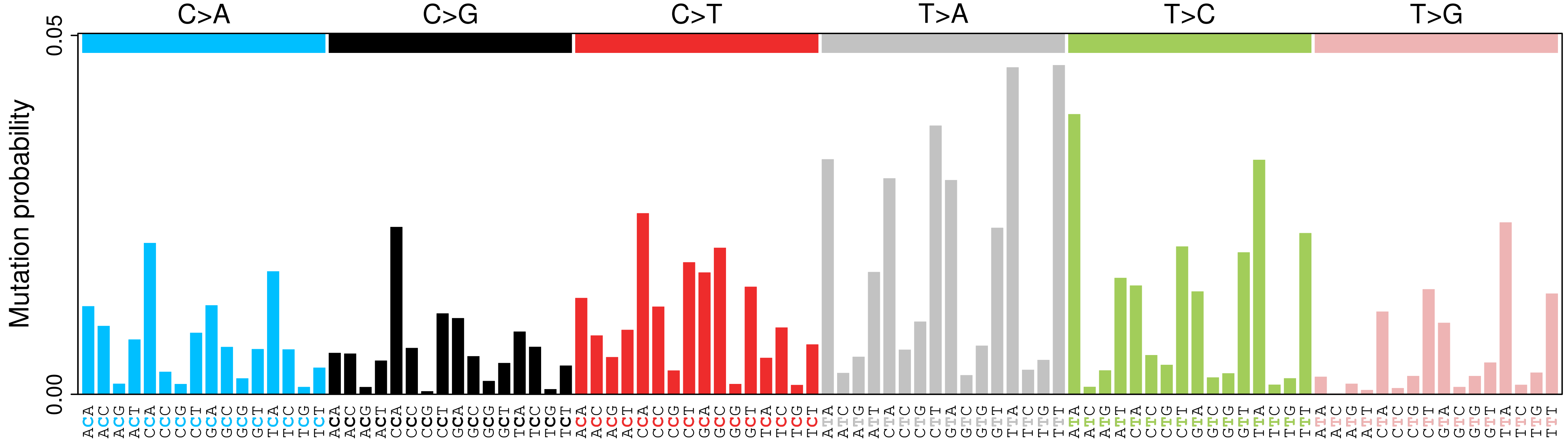
0.15
0.10
0.05
0.00

ACA ACC AGC ACT CCA CCC CGC GCA GGC GTT TCA TCC TGC TTC TCT ACA ACC ACG ACT CCA CCC CGC CCT GCA GGC GCG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CGC CCT GCA GGC GCG GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

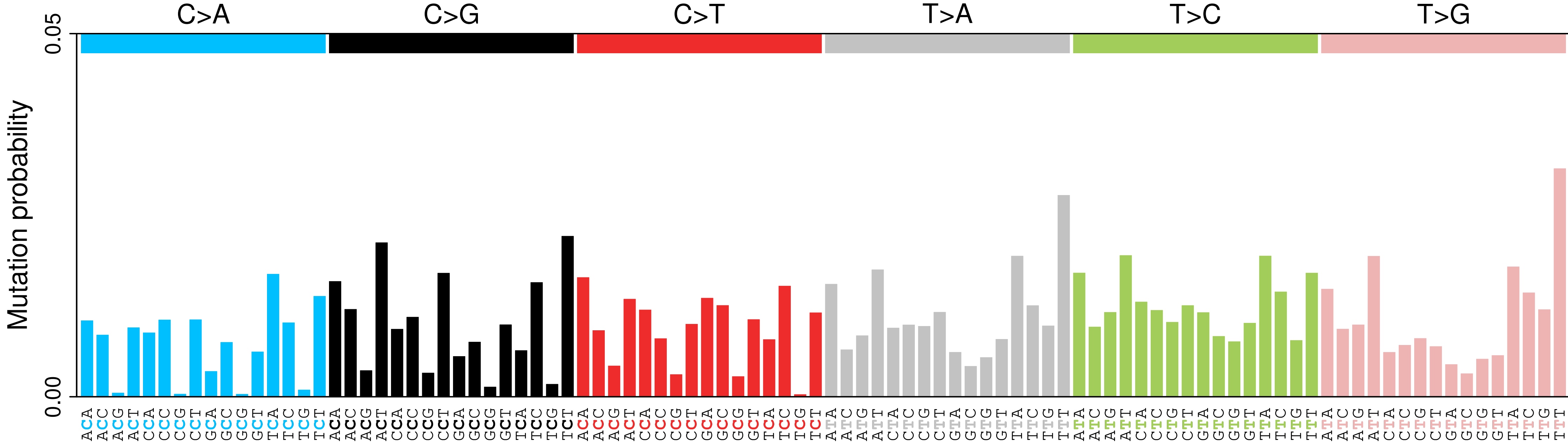
SBS123



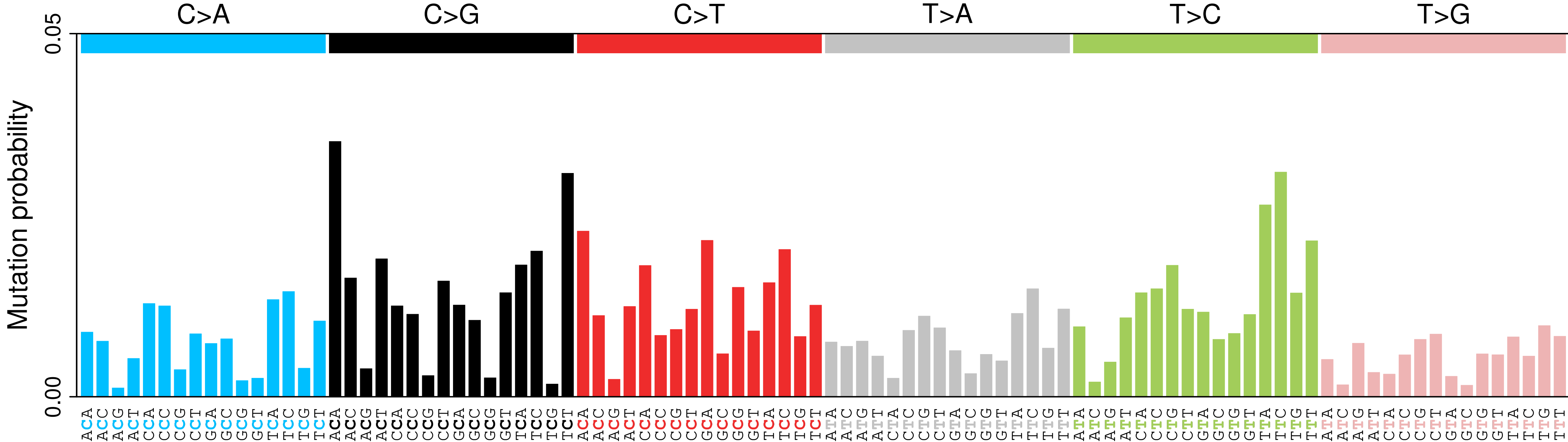
SBS124



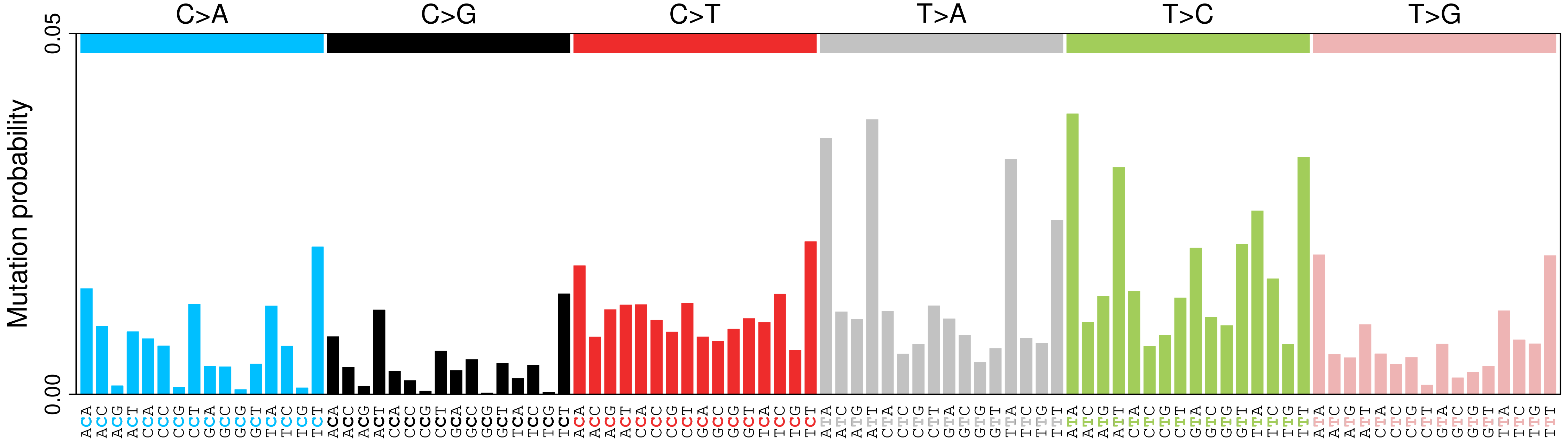
SBS125



SBS126



SBS127



SBS128

C>A

C>G

C>T

T>A

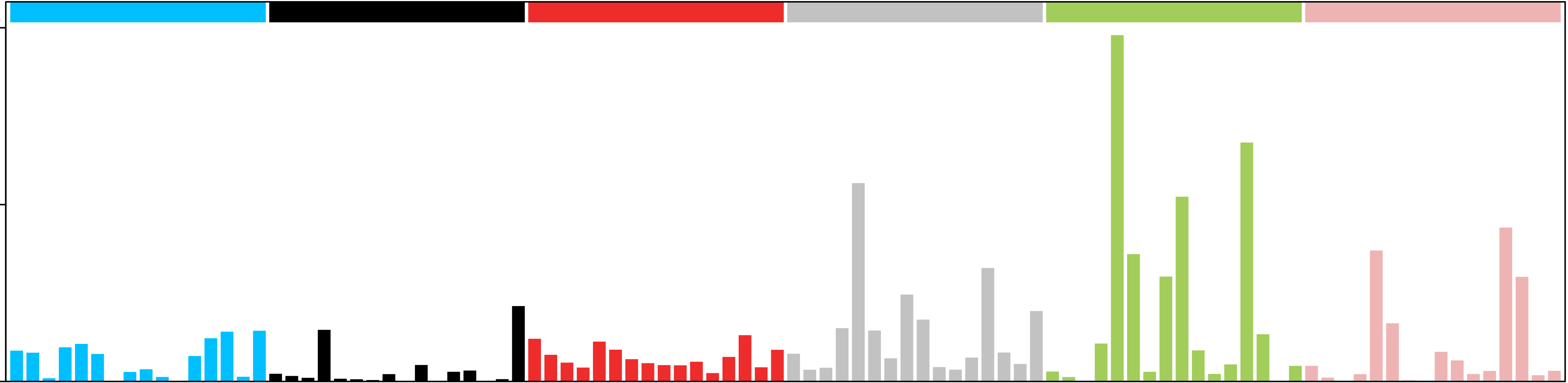
T>C

T>G

Mutation probability

0.10
0.05
0.00

ACA ACC ACG ACT CCA CCC CCG CCT CCA GCC GGT GCA GGC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT CCA GCC GGT GCA GGC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT CCA GCC GGT GCA GGC GGG GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT



SBS130

$C > A$

C > G

$$C > T$$

T > A

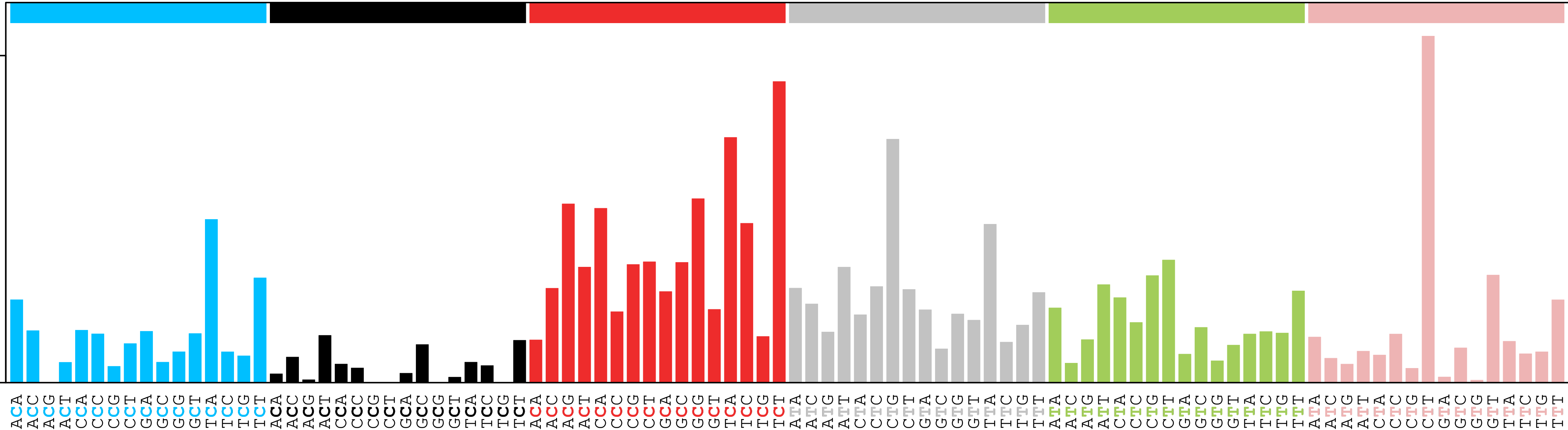
$T > C$

T>G

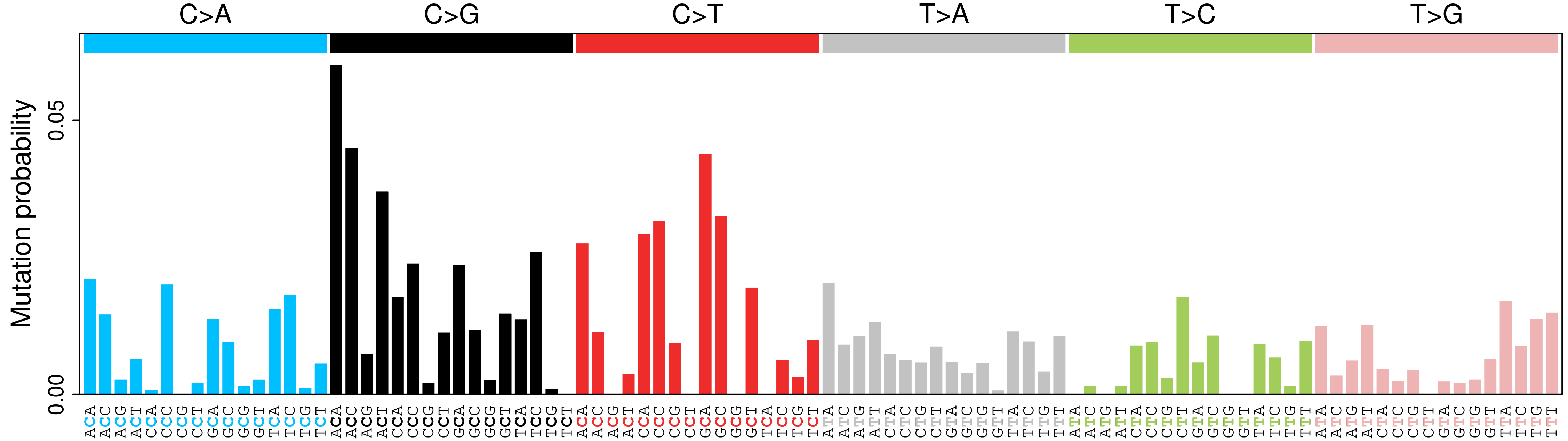
0.05

0.05

0.00



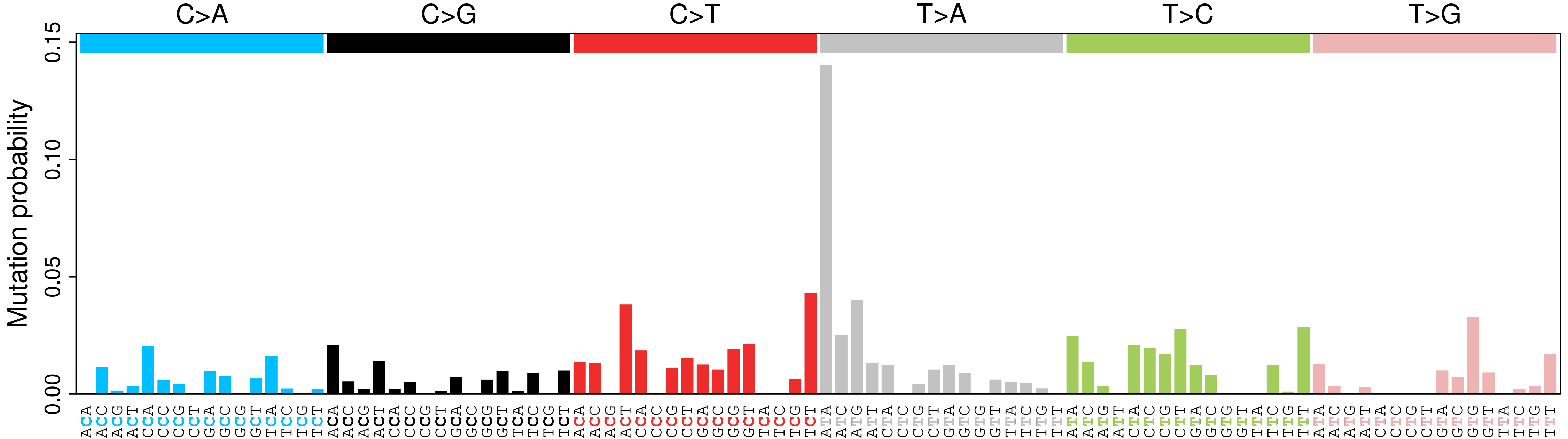
SBS131



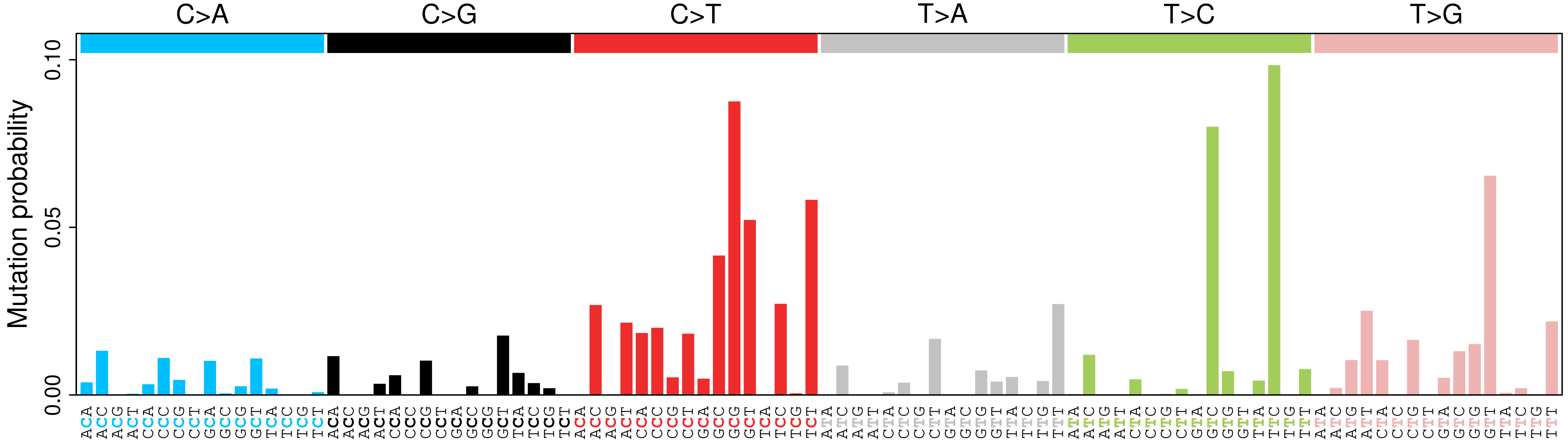
SBS132



SBS135



SBS136



SBS139

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGG GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATG ATT CTA CTC CTG CTT GTC GTG GTT TTA TTC TTG TTT ATA ATG ATT CTA CTC CTG CTT GTC GTG GTT TTA TTC TTG TTT ATA ATG ATT CTA CTC CTG CTT GTC GTG GTT TTA TTC TTG TTT

SBS140

$C > A$

C > G

$$C > T$$

T > A

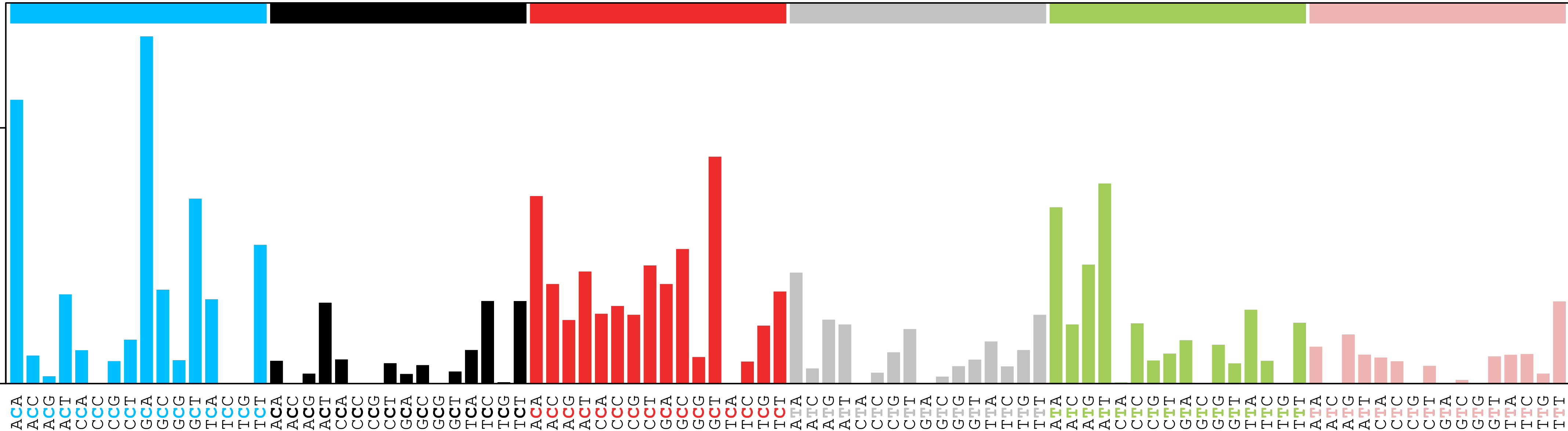
$T > C$

T>G

Mutation probability

0.05

0.00



SBS141

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS142

$C > A$

C > G

$C > T$

T > A

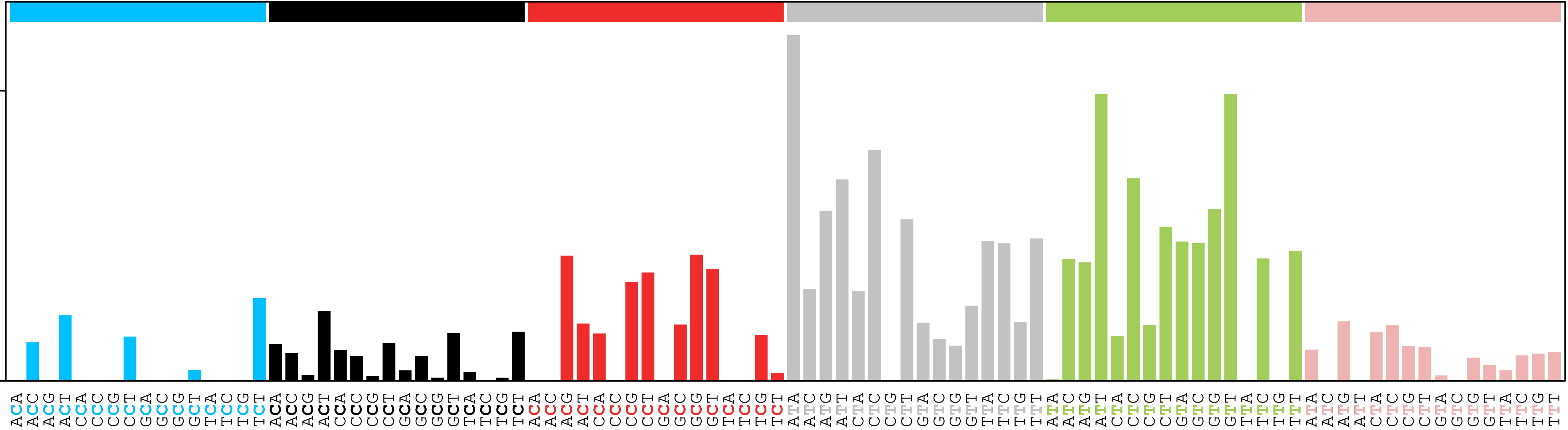
$T > C$

T>G

Mutation probability

0.05

0.00.



SBS144

$C > A$

C > G

$$C > T$$

T > A

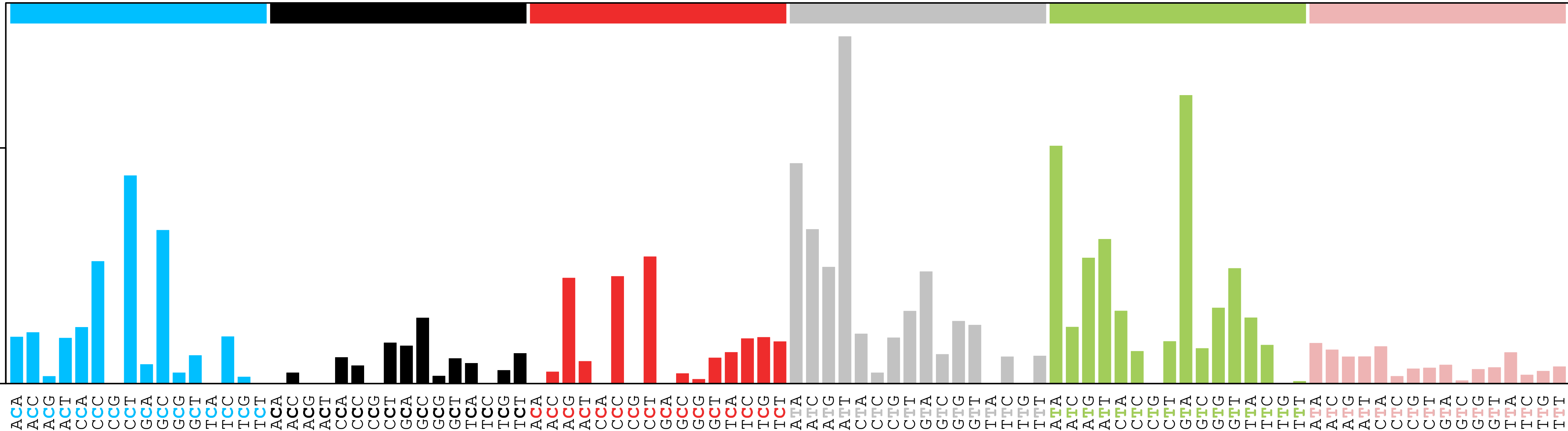
$T > C$

$T > G$

Mutation probability

0.05

0.00



SBS145

$C > A$

C > G

$C > T$

T>A

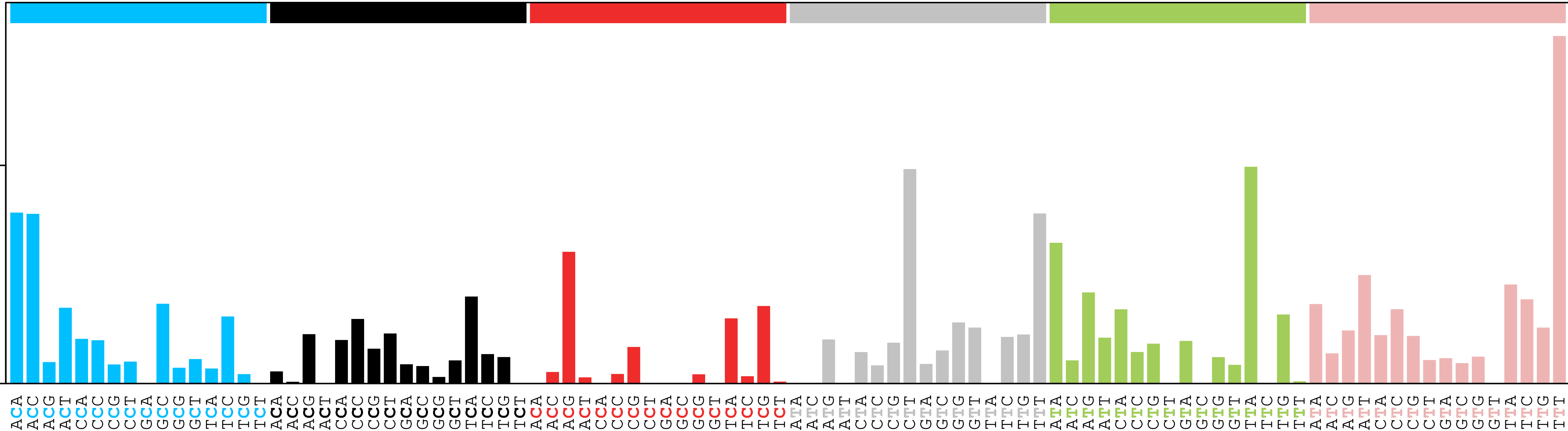
$$T > C$$

$T > G$

Mutation probability

0.05

0.00



SBS146

$C > A$

C > G

C>T

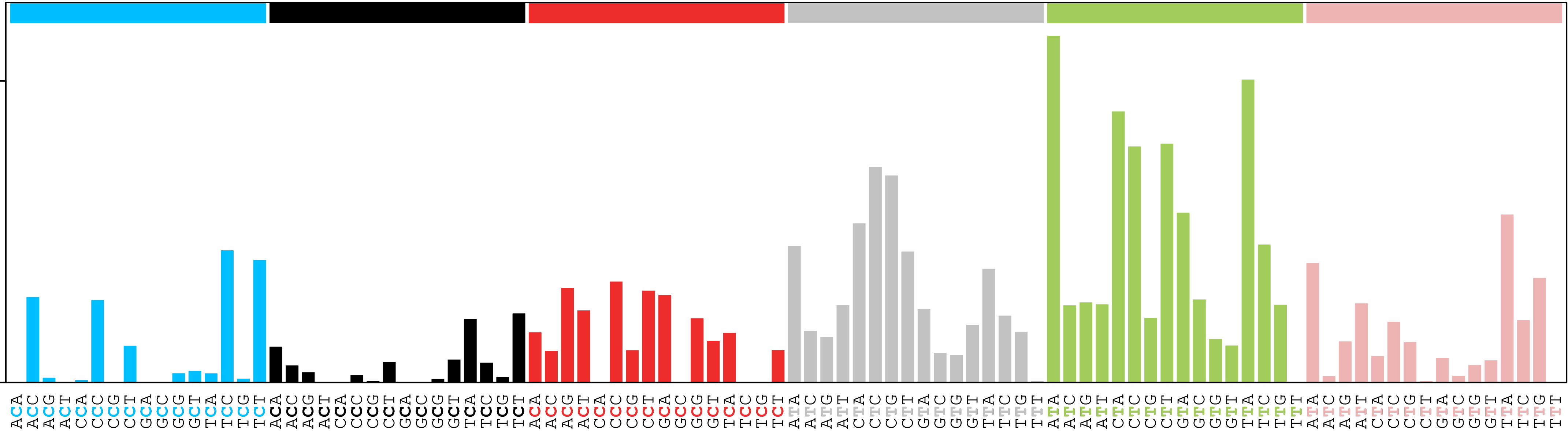
T > A

$T > C$

T>G

0.05

0.00



SBS148

C>A

C>G

C>T

T>A

T>C

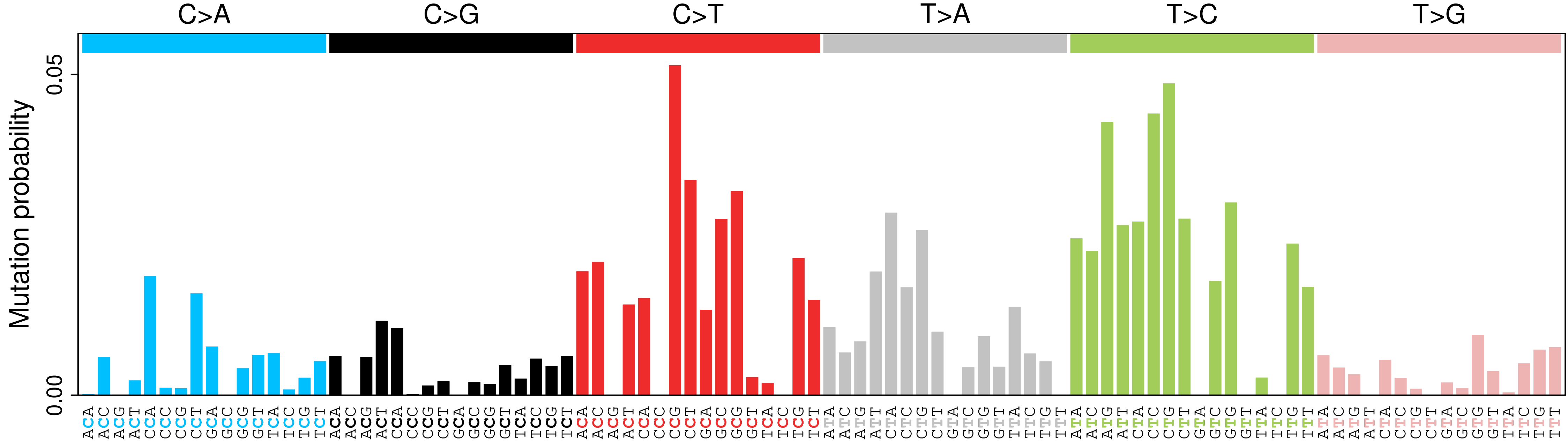
T>G

Mutation probability

0.10
0.05
0.00



SBS150



SBS151

$$C > A$$

C > G

$$C > T$$

T > A

$T > C$

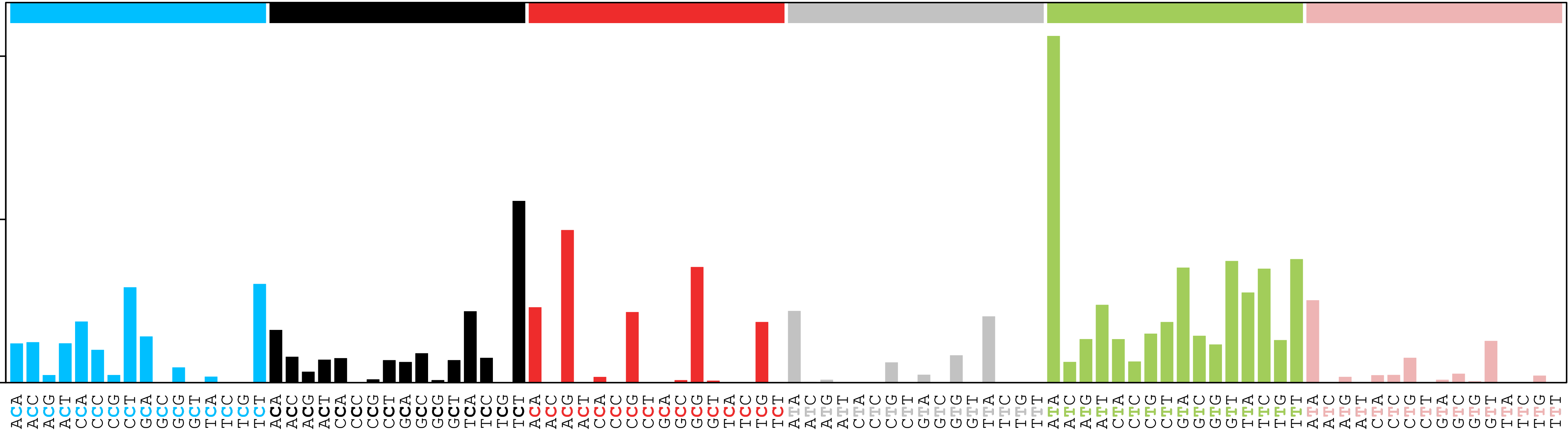
$T > G$

Mutation probability

0.10

0.05

0.0.



SBS153

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS154



SBS156

C>A

C>G

C>T

T>A

T>C

T>G

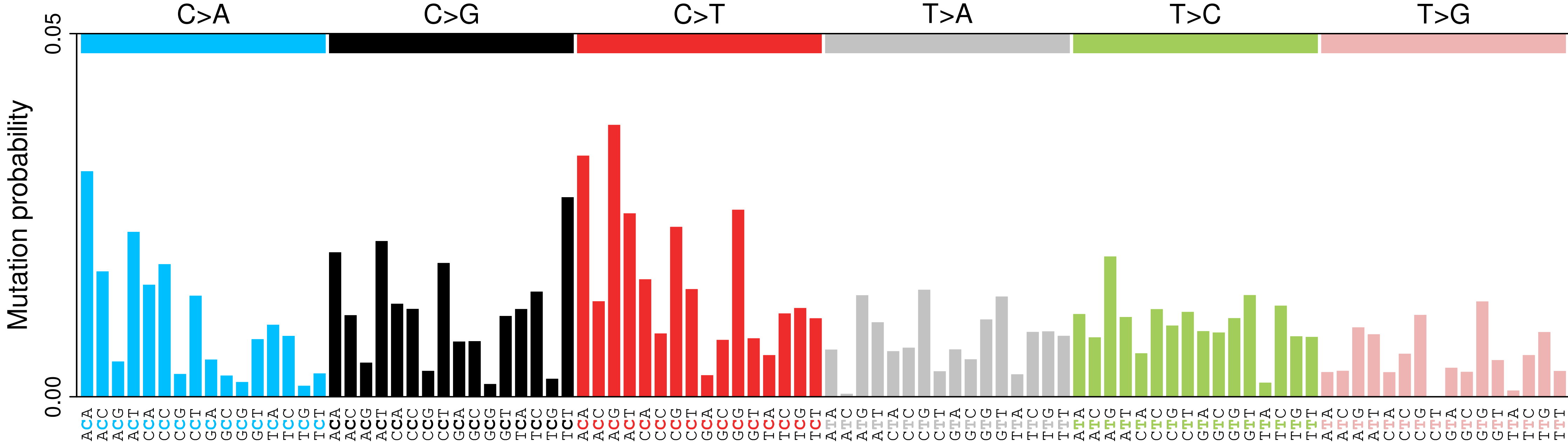
Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS157



SBS158

$C > A$

C > G

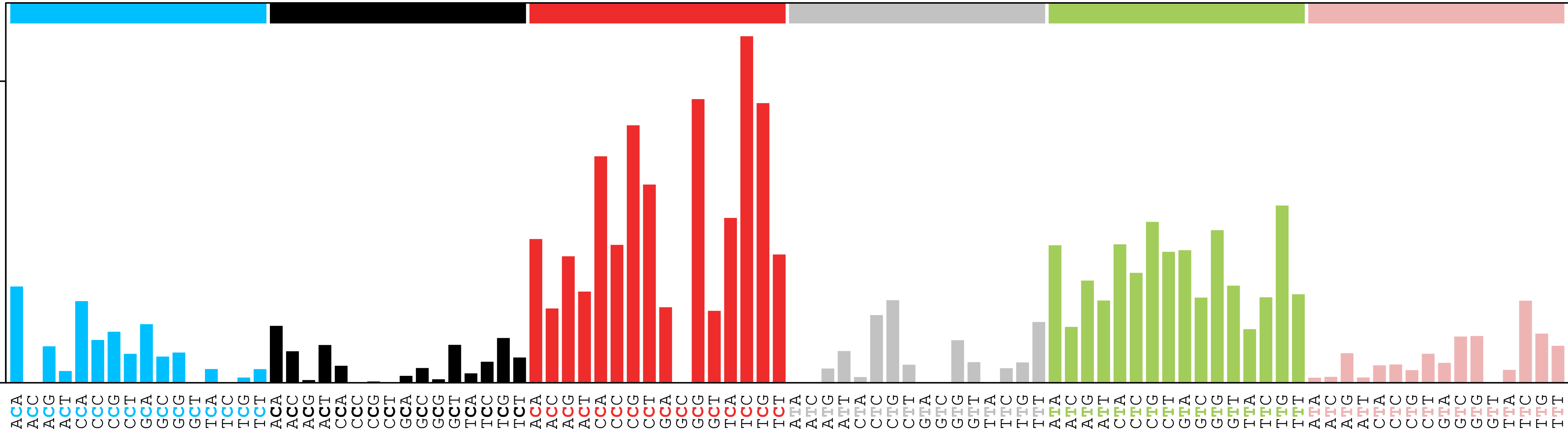
$$C > T$$

T > A

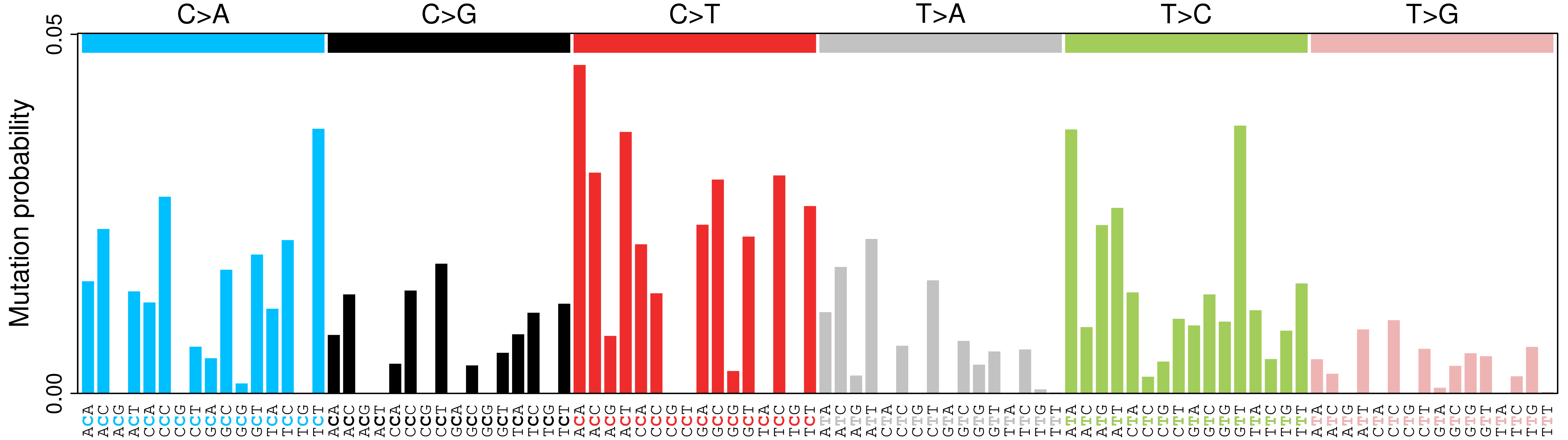
$T > C$

T>G

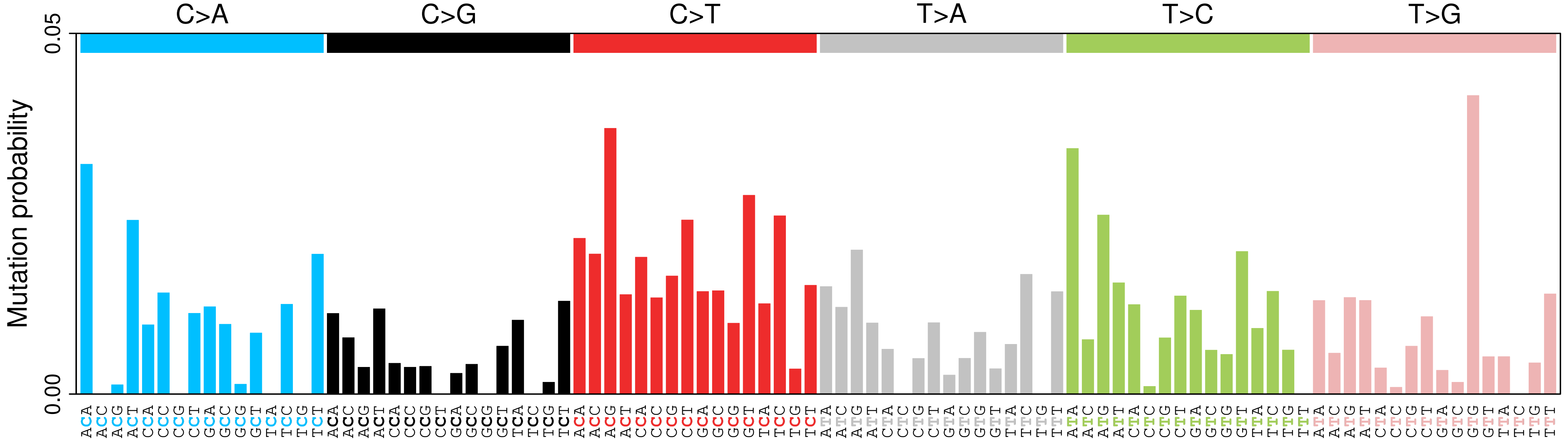
0.00



SBS159



SBS160



SBS161

$C > A$

C > G

$$C > T$$

T > A

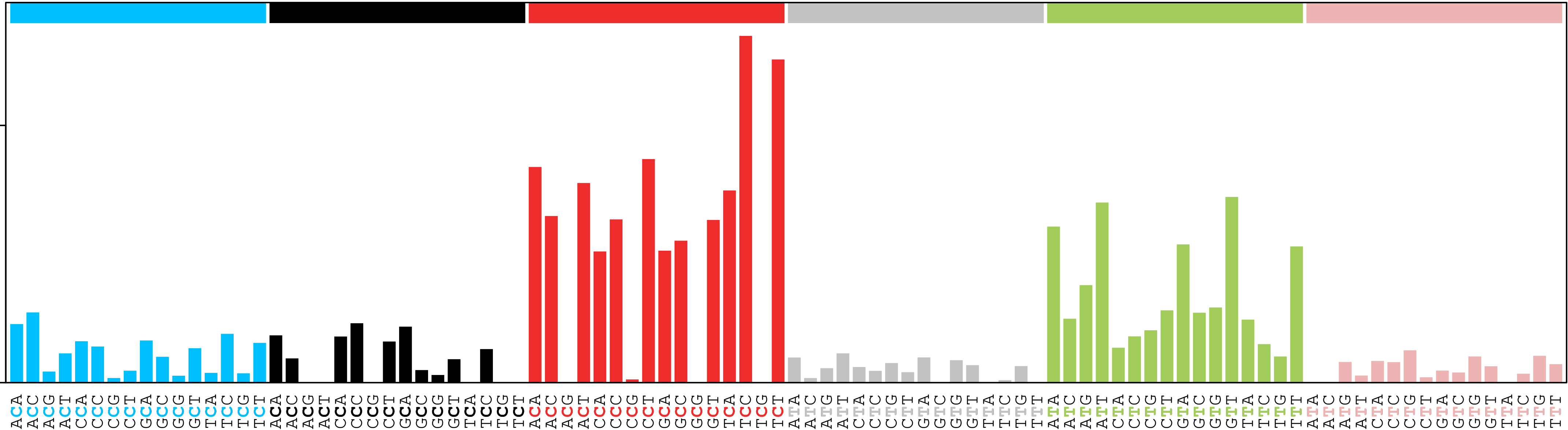
$$T > C$$

T > G

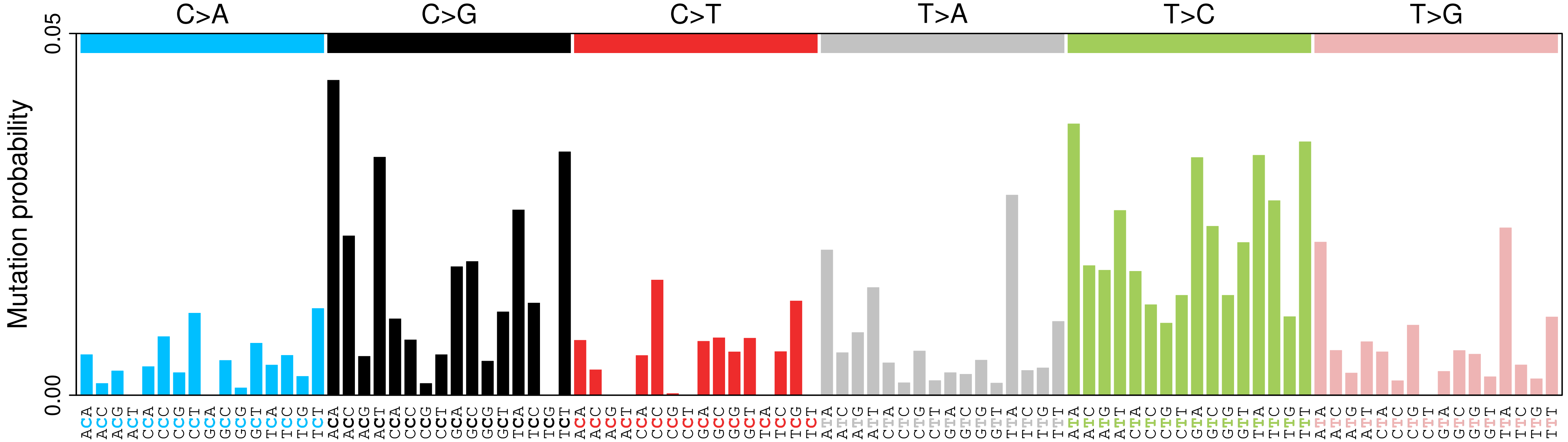
Mutation probability

0.05

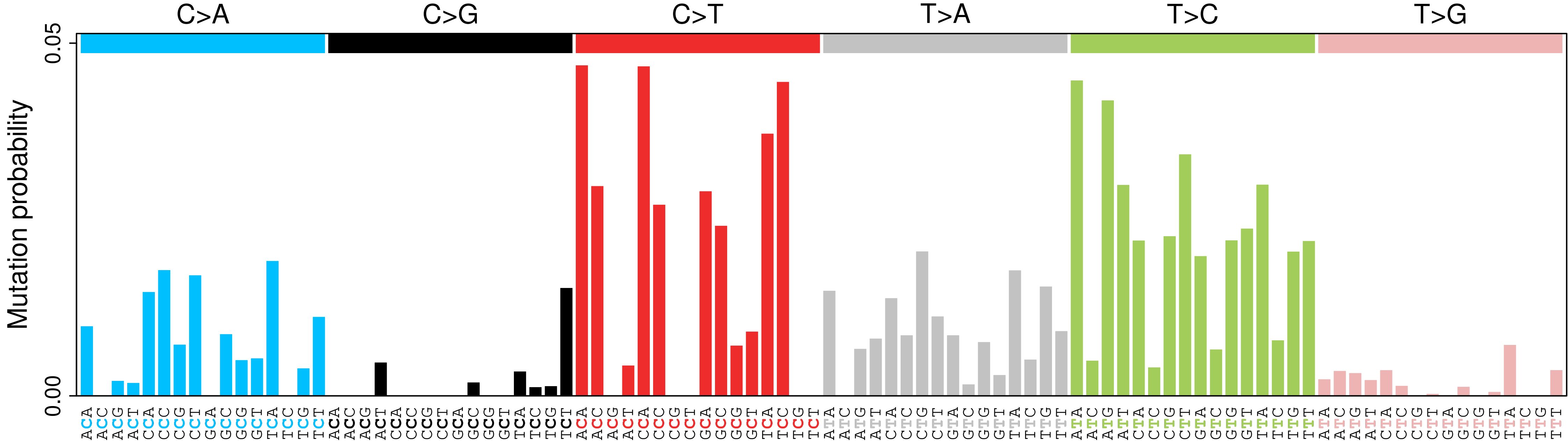
0.00



SBS163



SBS164



SBS166

$C > A$

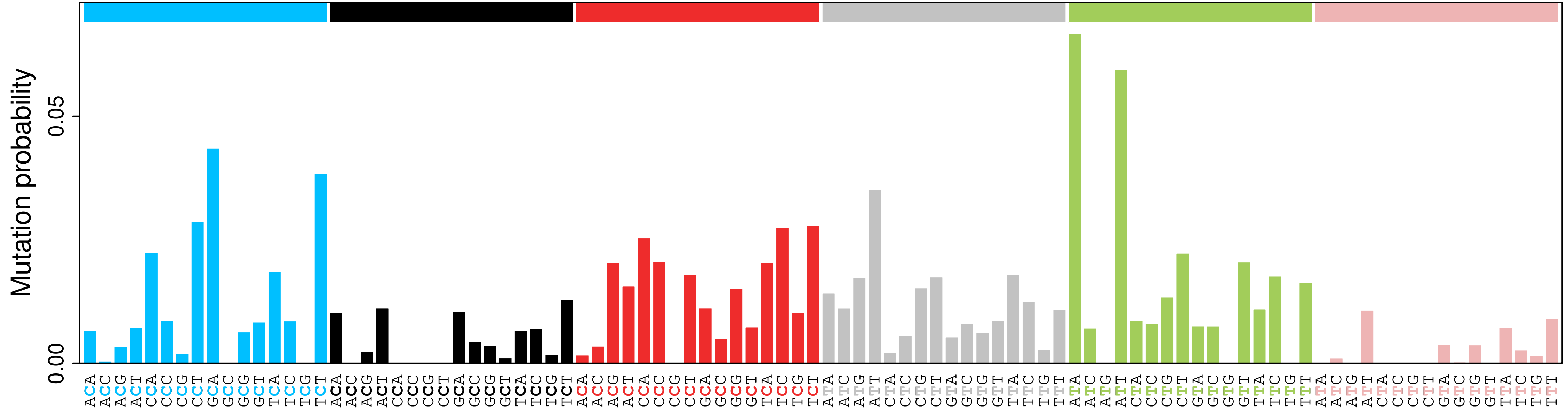
C > G

$$C > T$$

T > A

$$T > C$$

$T > G$



SBS167

