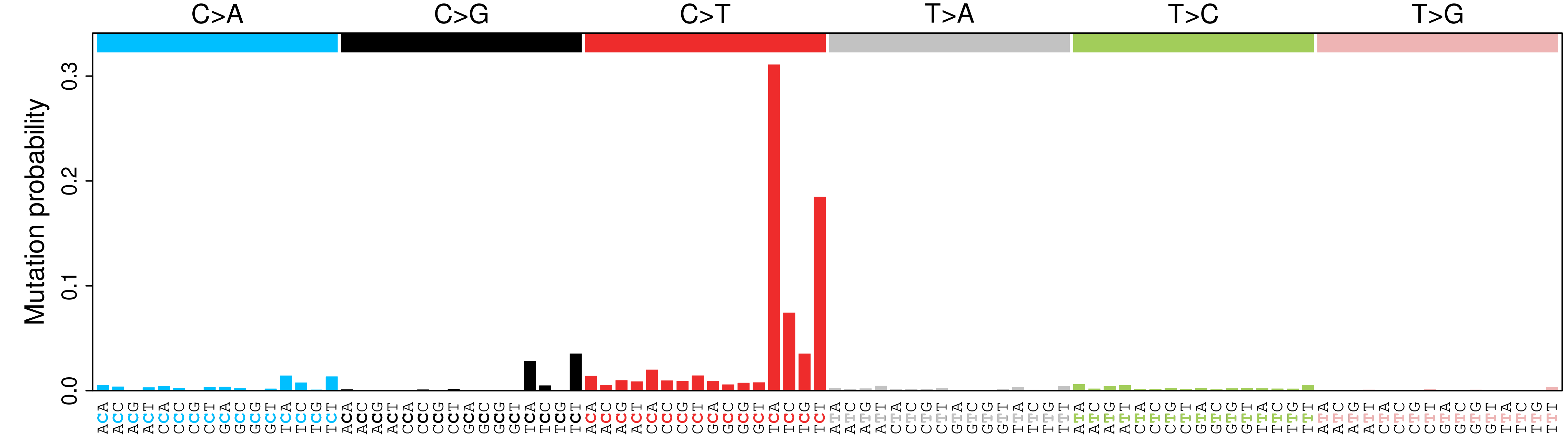


SBS2



SBS3

C>A

C>G

C>T

T>A

T>C

T>G

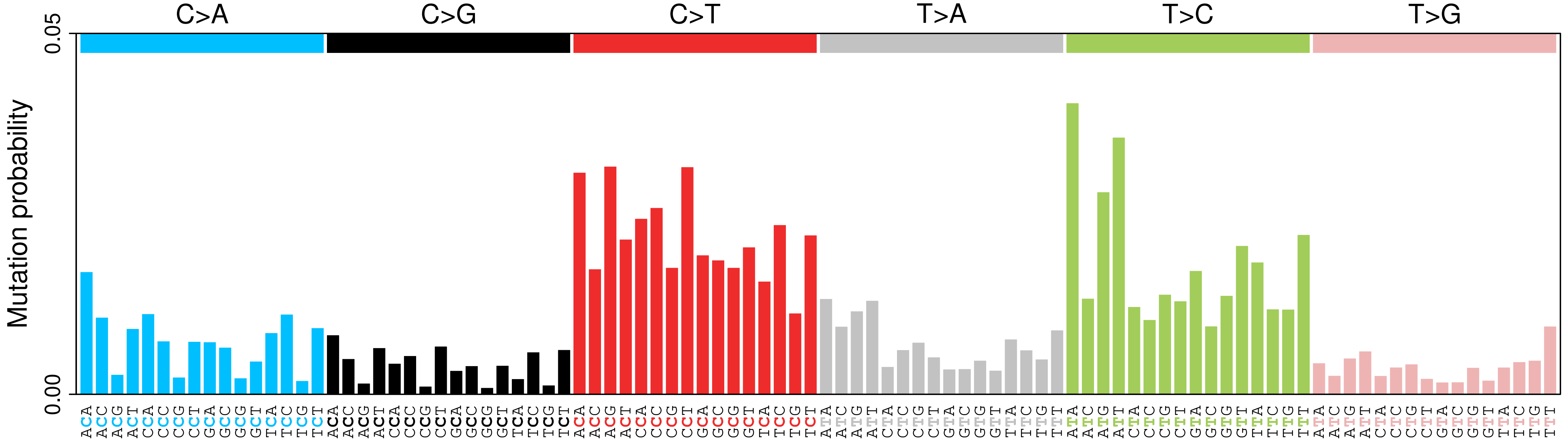
Mutation probability

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

SBS5



SBS7c

C>A

C>G

C>T

T>A

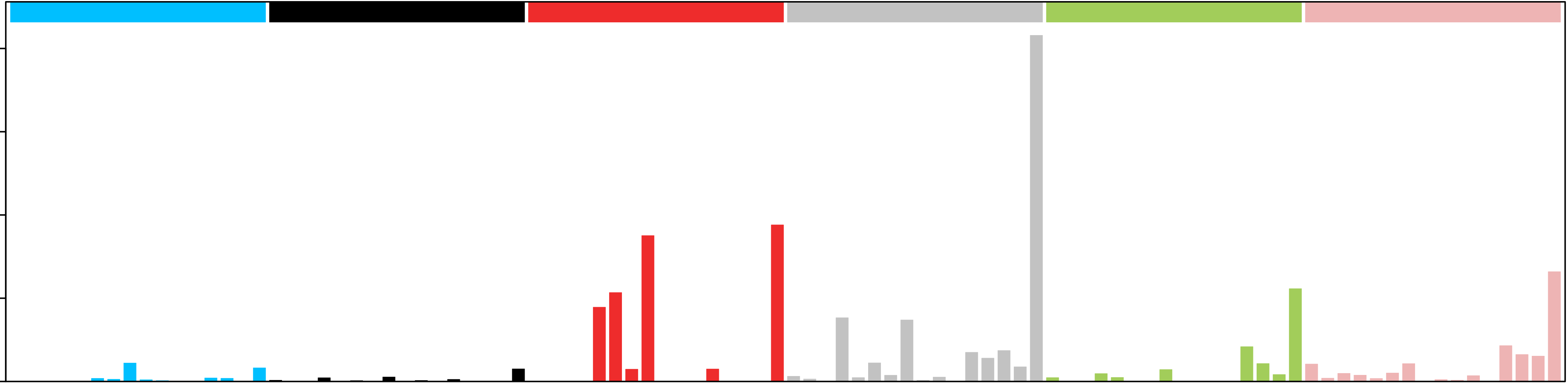
T>C

T>G

Mutation probability

0.20
0.15
0.10
0.05
0.00

ACA ACC AGC ATT CCA CCC CCG CCT CTA 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 GCA GCC GGT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GCA GCC GGT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GCA GCC GGT TTA TTC TTG TTT



SBS8

$C > A$

C > G

$C > T$

T > A

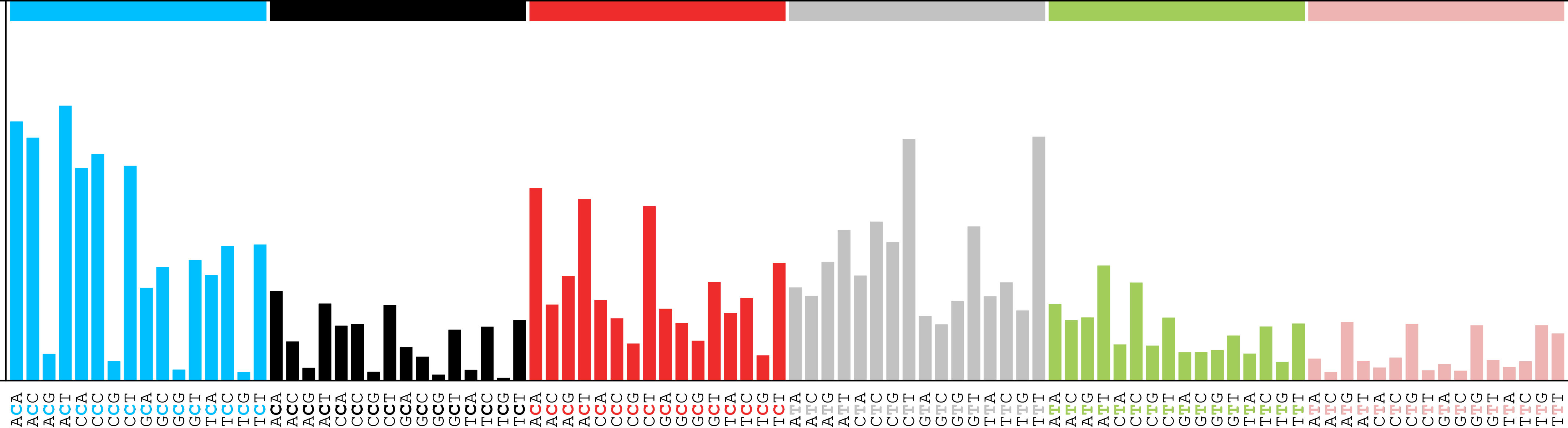
$$T > C$$

T>G

0.05

Mutation probability

0.00



SBS9

C > A

C > G

$C > T$

T > A

$T > C$

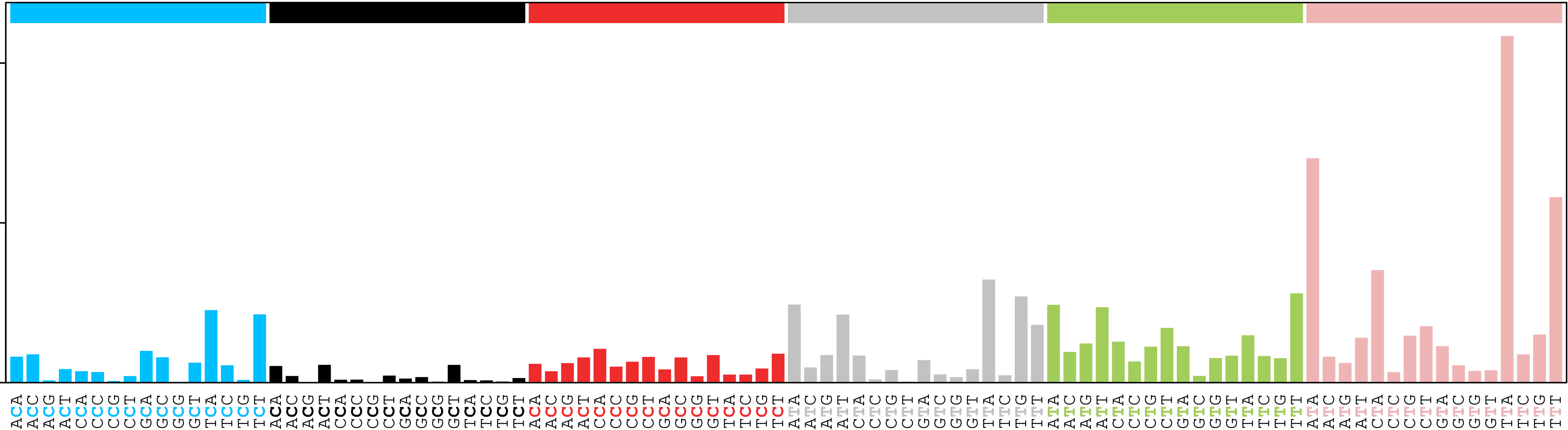
T>G

Mutation probability

0.10

0.05

0.00



SBS10d

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 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 GCA GCC GGT TTA TCC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GCA GCC GGT TTA TCC TTG TTT

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

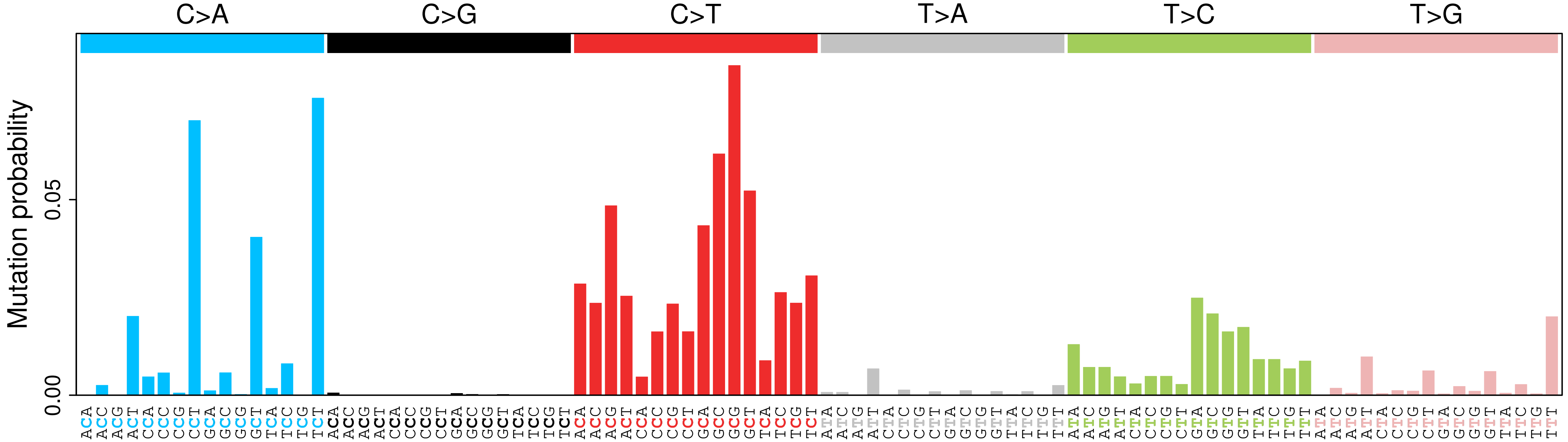
T>G

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



SBS15

C > A

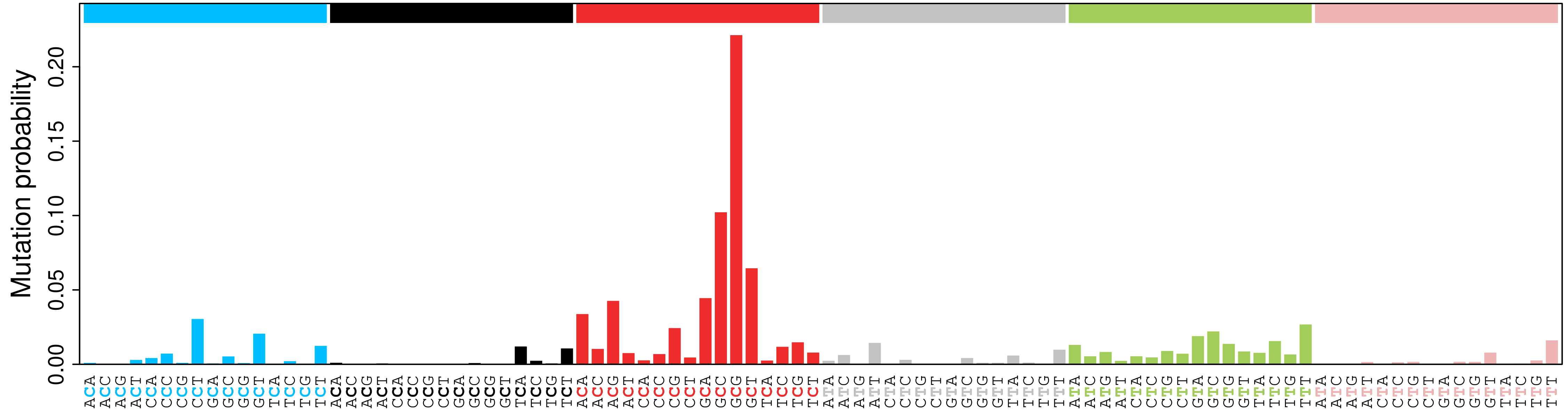
C > G

$C > T$

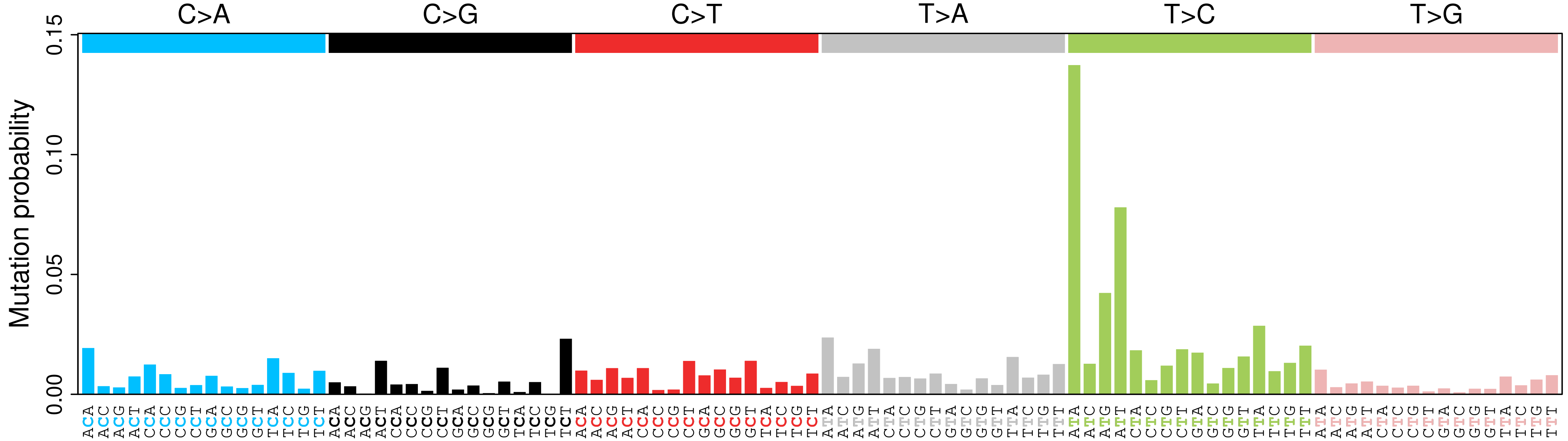
T > A

$T > C$

T>G



SBS16



SBS17

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.20
0.15
0.10
0.05
0.00



SBS18

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 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 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

SBS19

C > A

C > G

$C > T$

T > A

$T > C$

T>G

Mutation probability

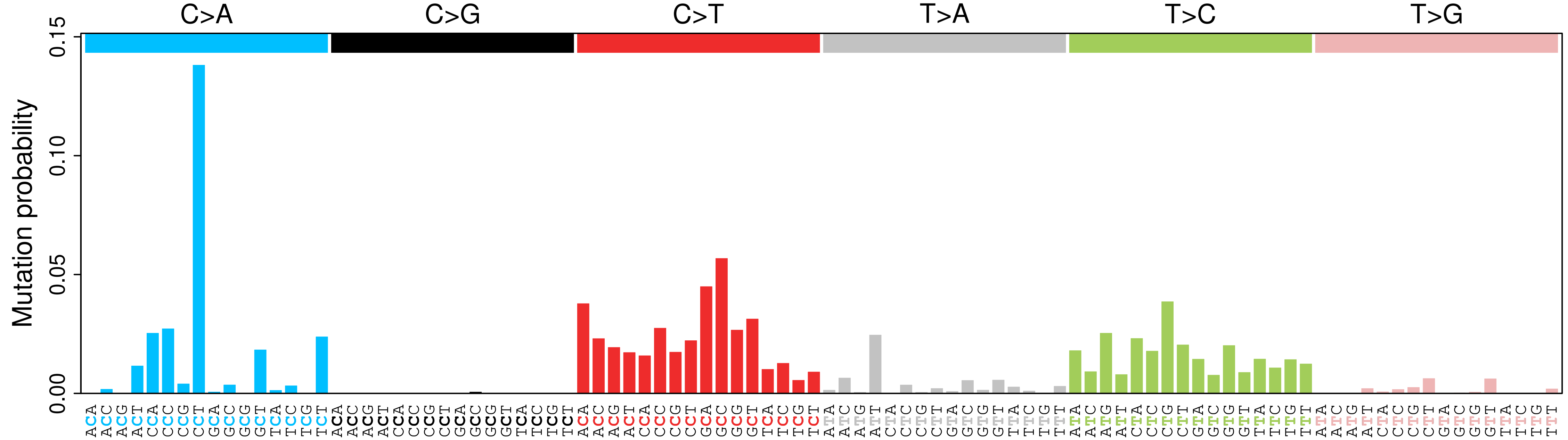
0.2

0.1

0

[illegible]

SBS20



SBS22

$$C > A$$

C > G

C>T

T > A

$T > C$

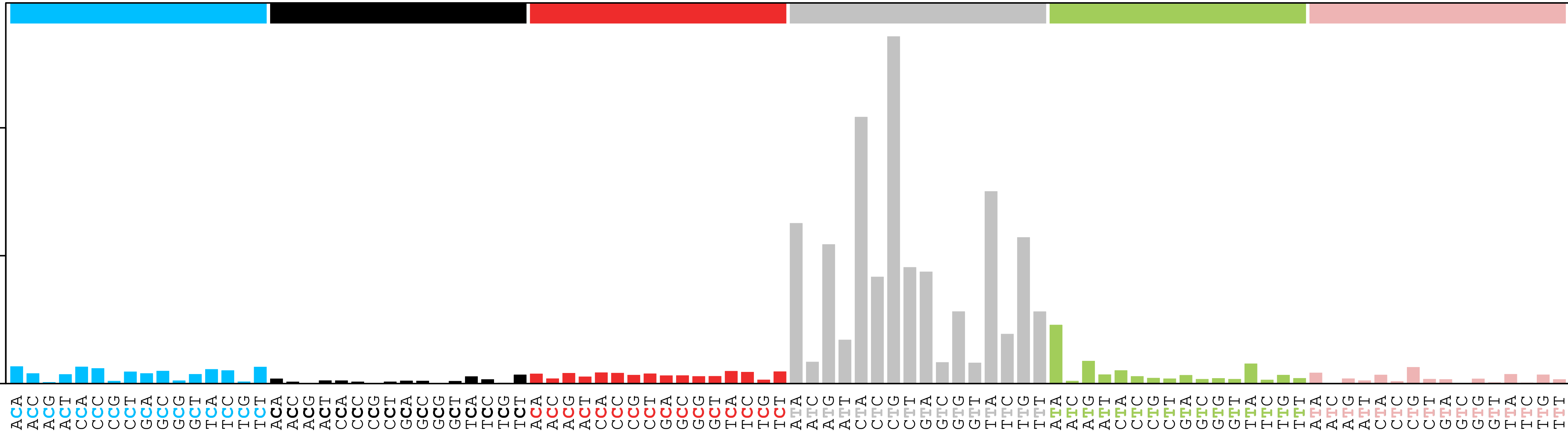
T>G

Mutation probability

0.10

O

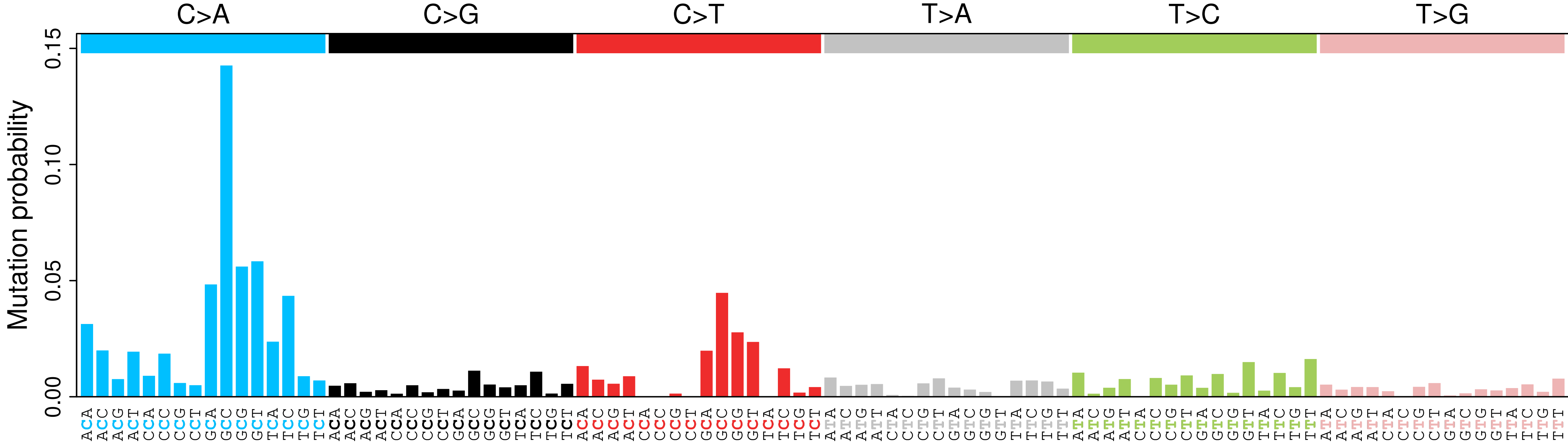
0.00



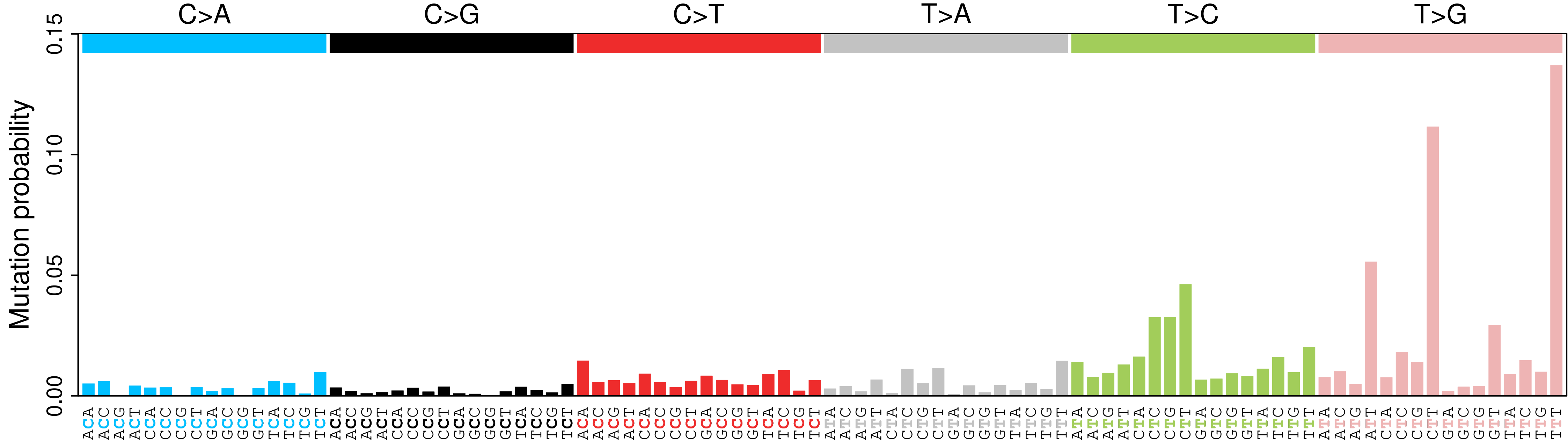
SBS23



SBS24



SBS28



SBS33

C>A

C>G

C>T

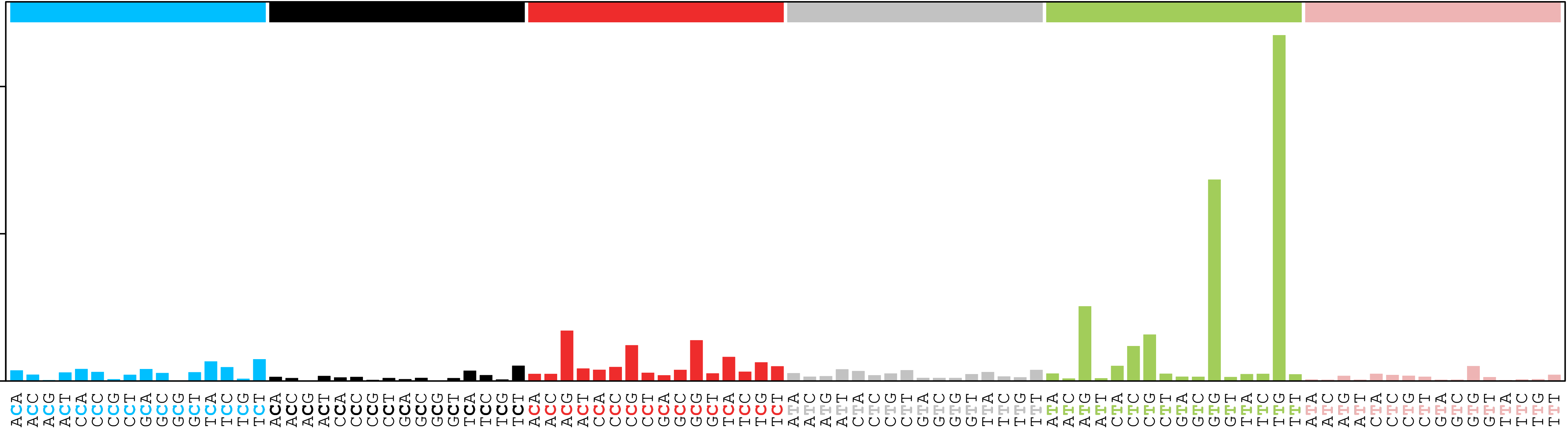
T>A

T>C

T>G

Mutation probability

0.2
0.1
0.0



SBS35



SBS44

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 CTT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CTT 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 GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GCA GCC GGT GCT TCA TCC TCG TCT

SBS53

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

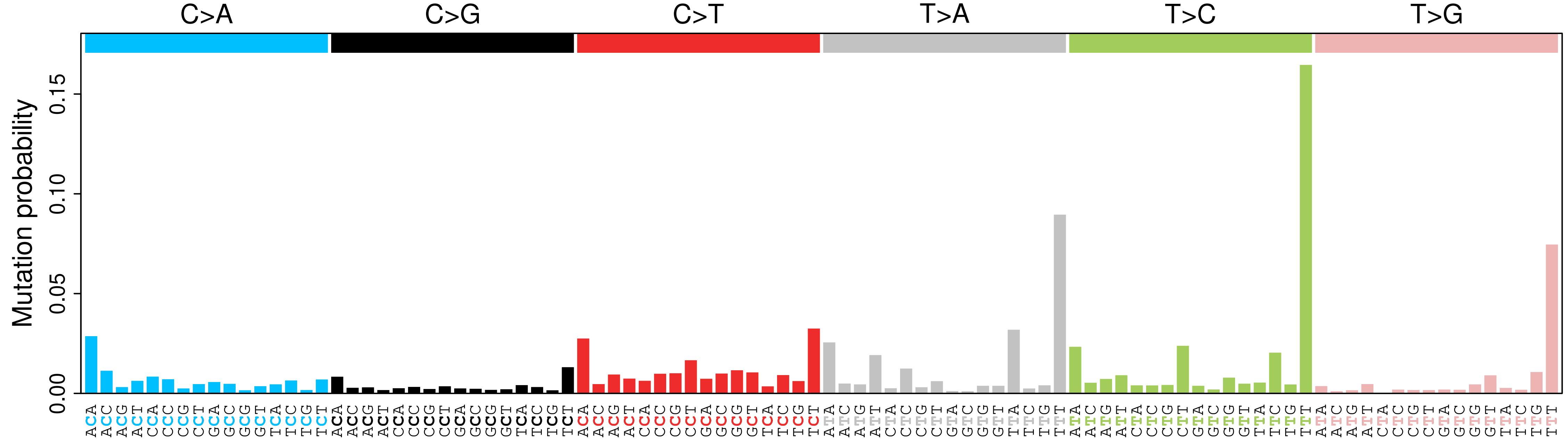
0.10

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC 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

SBS57



SBS87

C > A

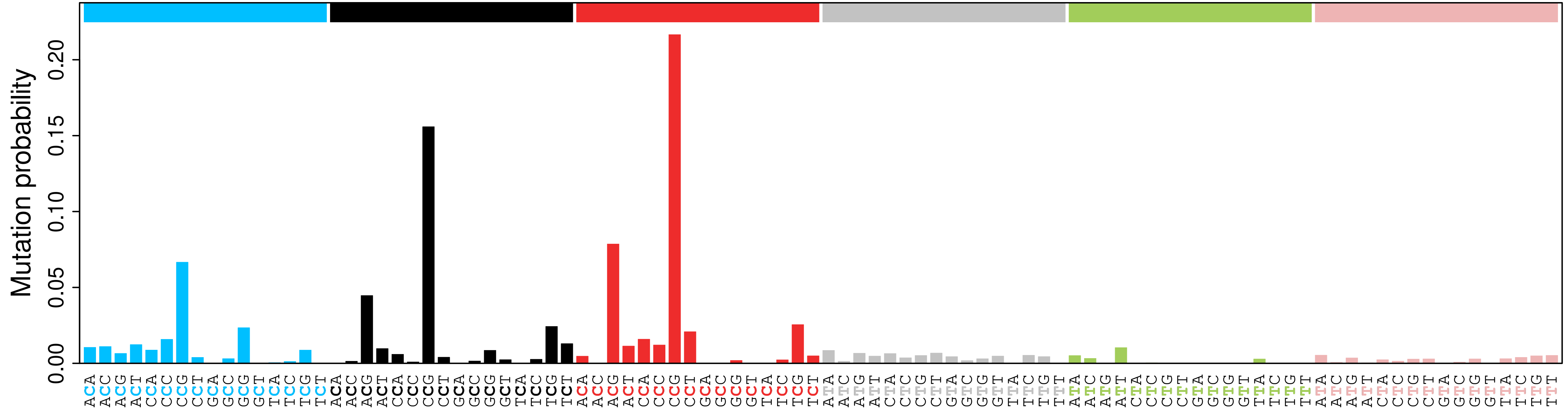
C > G

$C > T$

T > A

$T > C$

T>G



SBS88

$C > A$

C > G

C>T

T > A

$T > C$

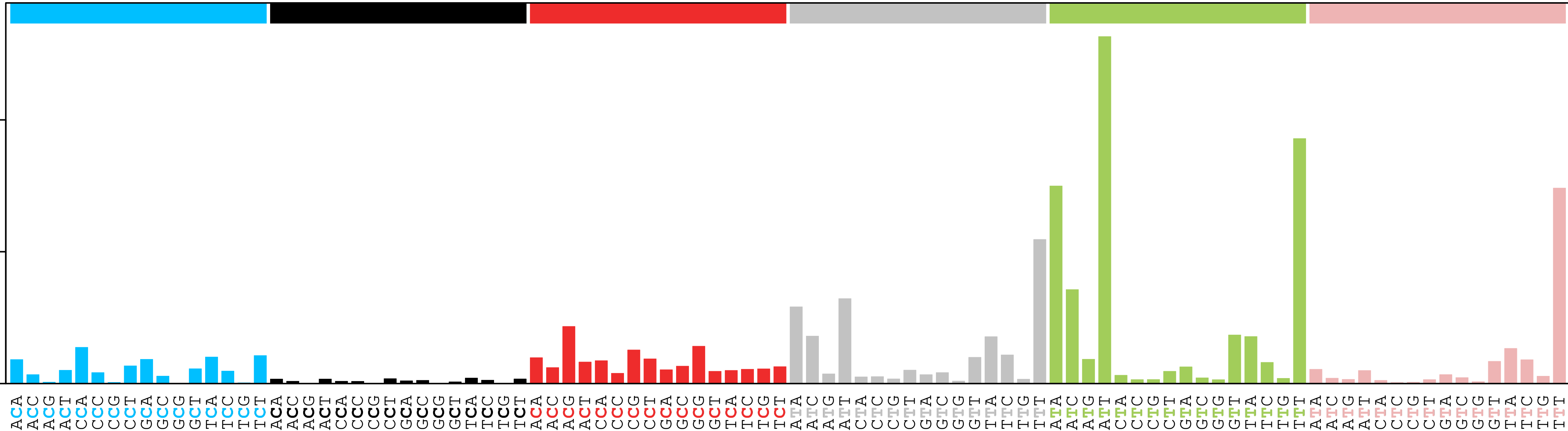
T>G

Mutation probability

0.10

0.05

0.00



SBS90

C > A

C > G

$C > T$

T > A

$$T > C$$

T > G

Mutation probability

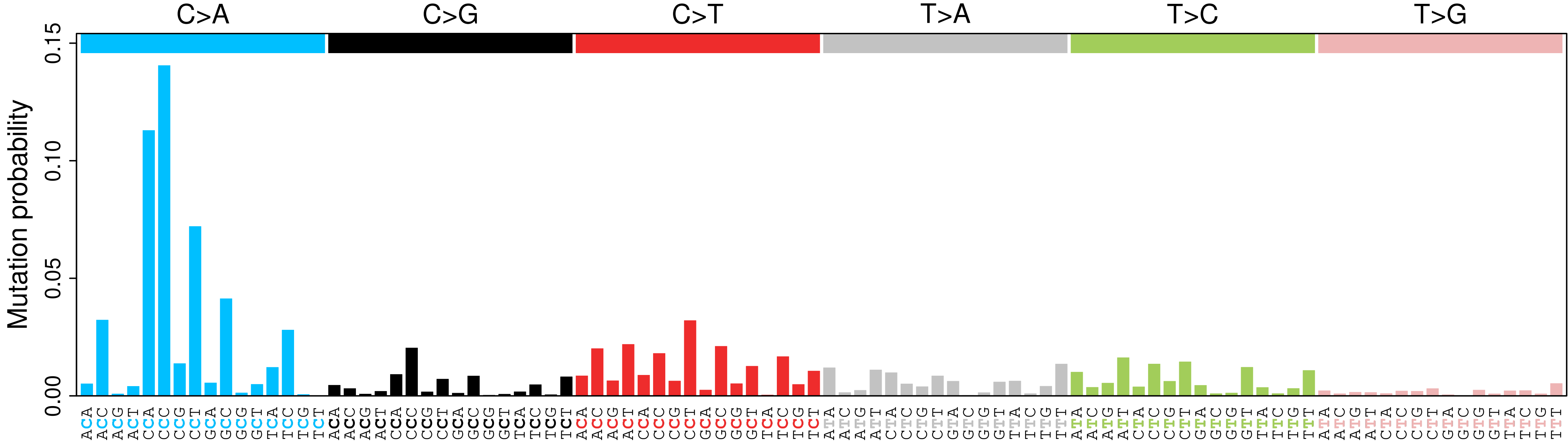
0.00 0.05 0.10 0.15 0.20



SBS93



SBS94



SBS98



SBS99

C>A

C>G

C>T

T>A

T>C

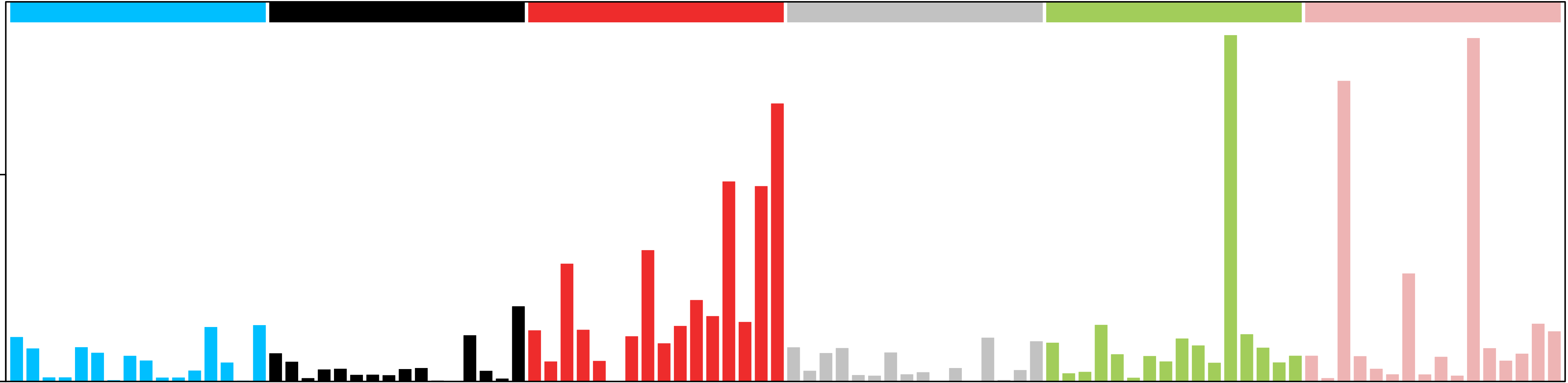
T>G

Mutation probability

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTT 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



SBS100

C > A

C > G

$C > T$

T > A

$$T > C$$

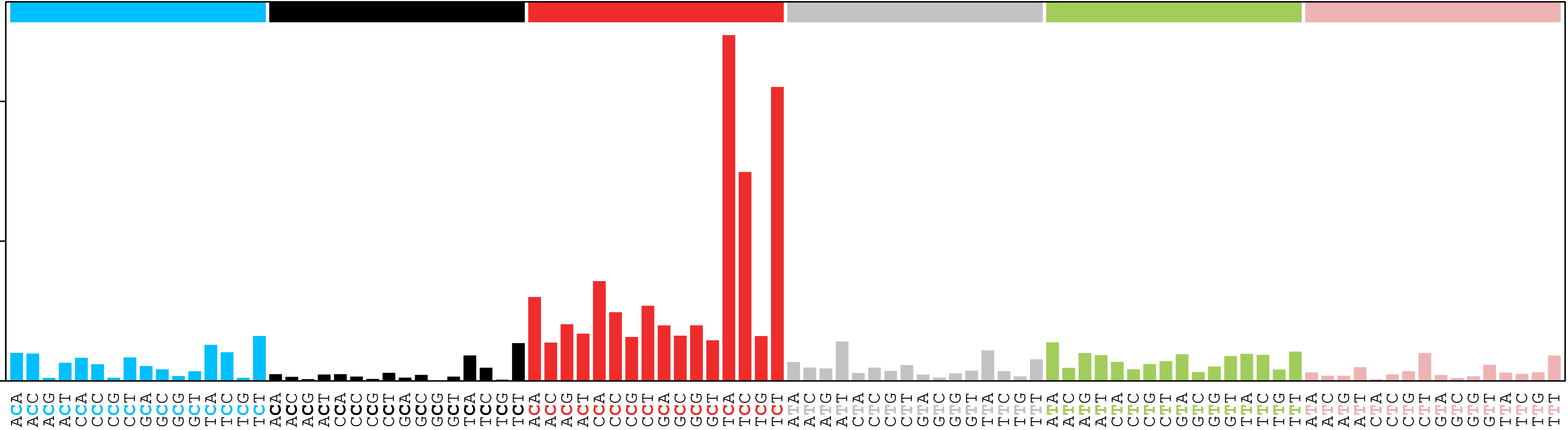
$T > G$

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

SBS102

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 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



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

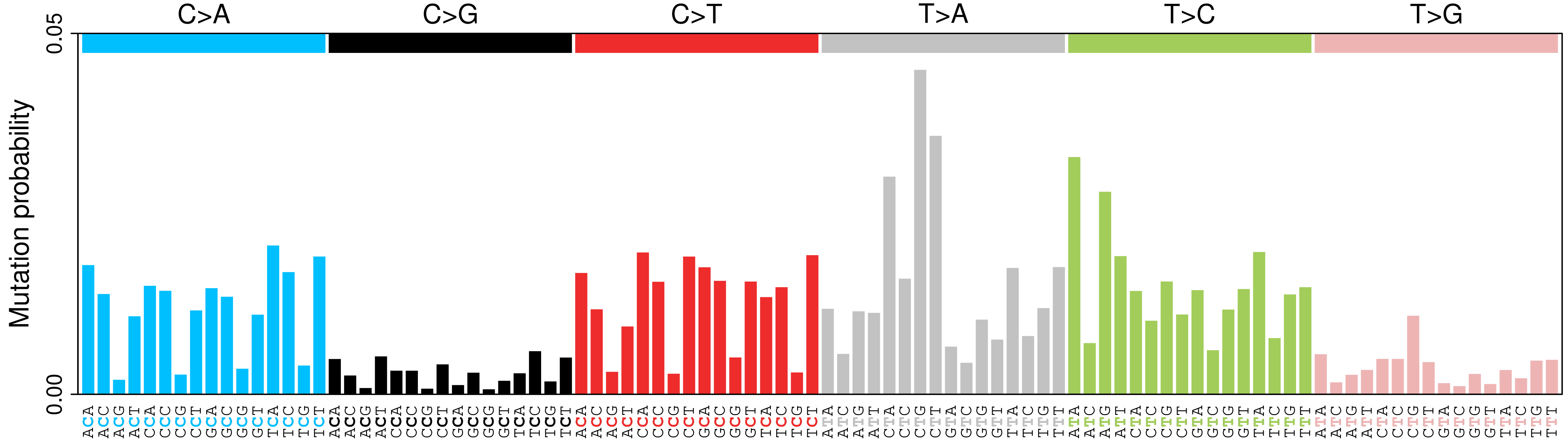
0.10

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC 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 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

SBS110



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

SBS112

$C > A$

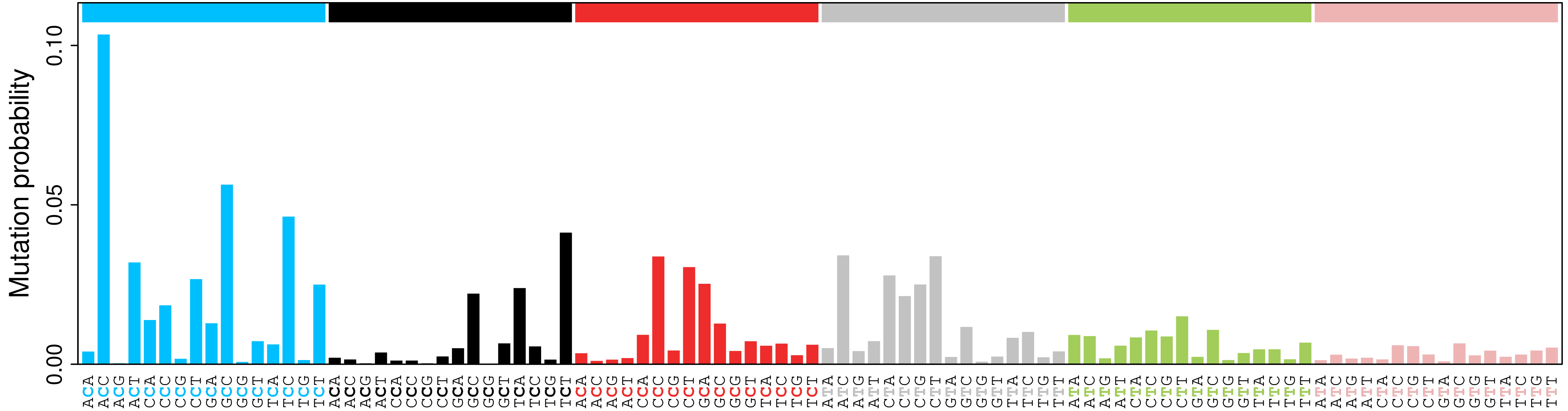
C > G

C>T

T > A

$T > C$

T>G



SBS113

C > A

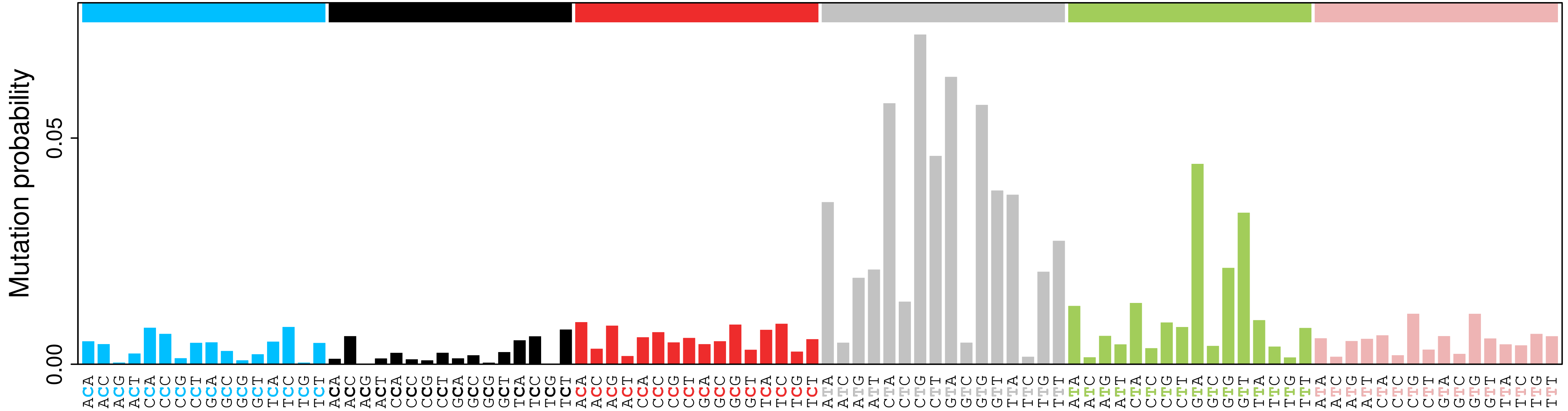
C > G

$C > T$

T > A

$T > C$

T>G



SBS114

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.10

0.05

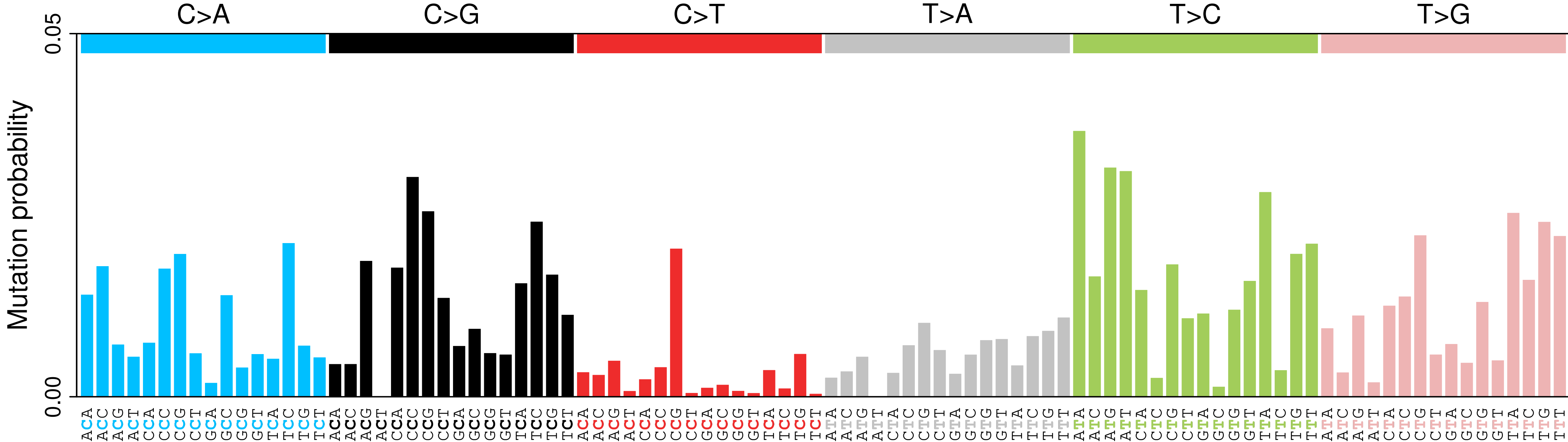
0.00

ACA ACC ACG ACT CCA CCC CCG CCT 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

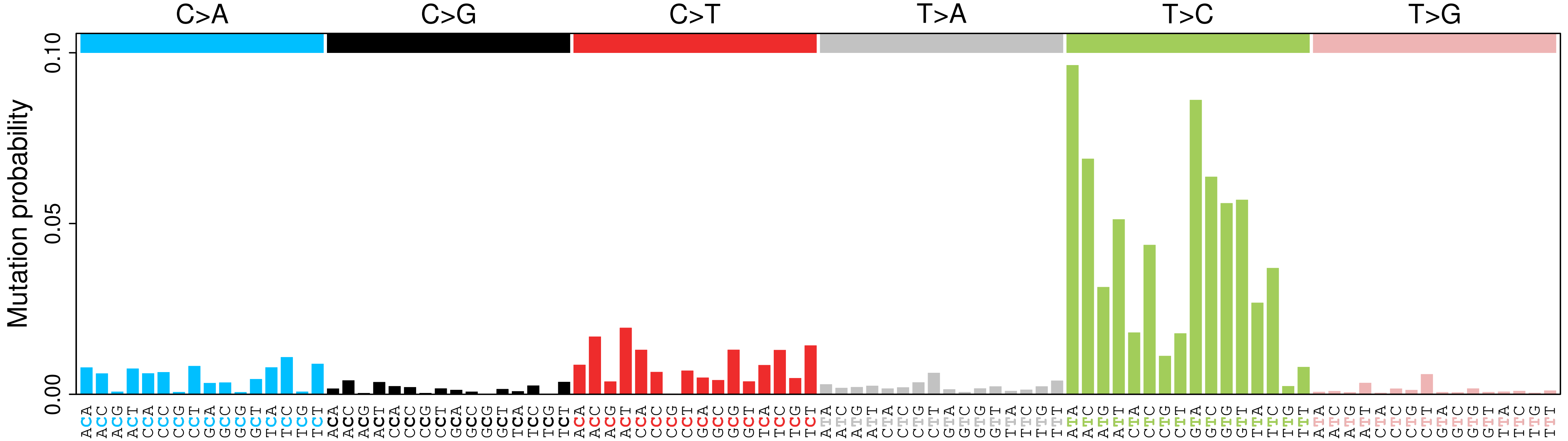
SBS116



SBS117



SBS119



SBS121

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.15

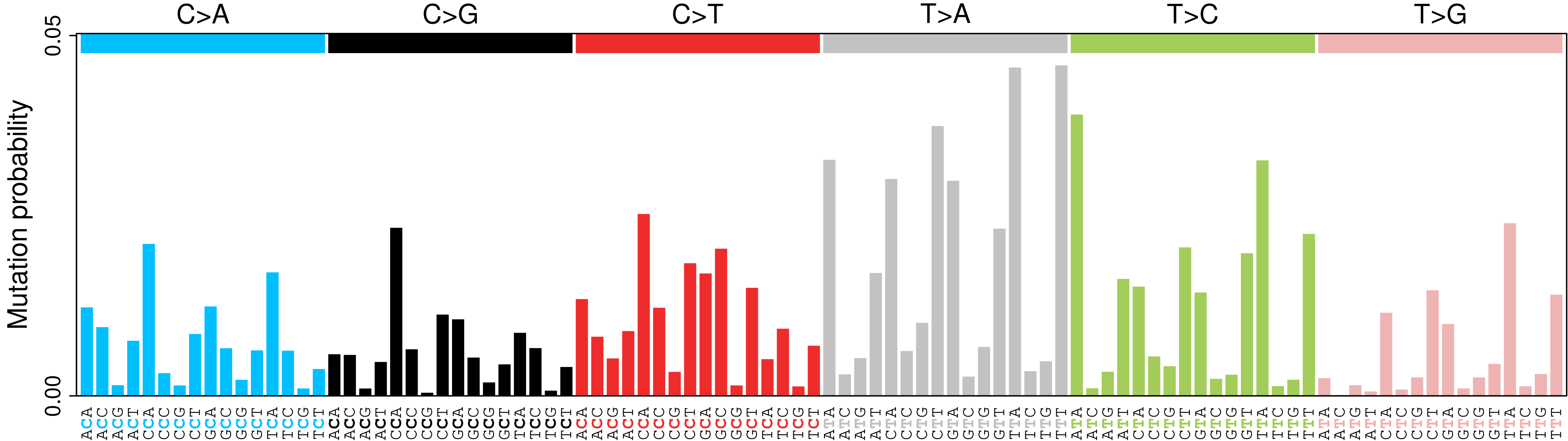
0.10

0.05

0.00

ACA ACC AGC ACT CCA CCC CGC GCA GCC GGC GTT TCA TCC TGT TTT AAT AAC AAG AAT CCA CCC CGC GCA GCC GGC GTT TCA TCC TGT TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG AAT CCA CCC CGC GCA GCC GGC GTT TCA TCC TGT TTT AAT AAC AAG AAT CCA CCC CGC GCA GCC GGC GTT TCA TCC TGT TTT

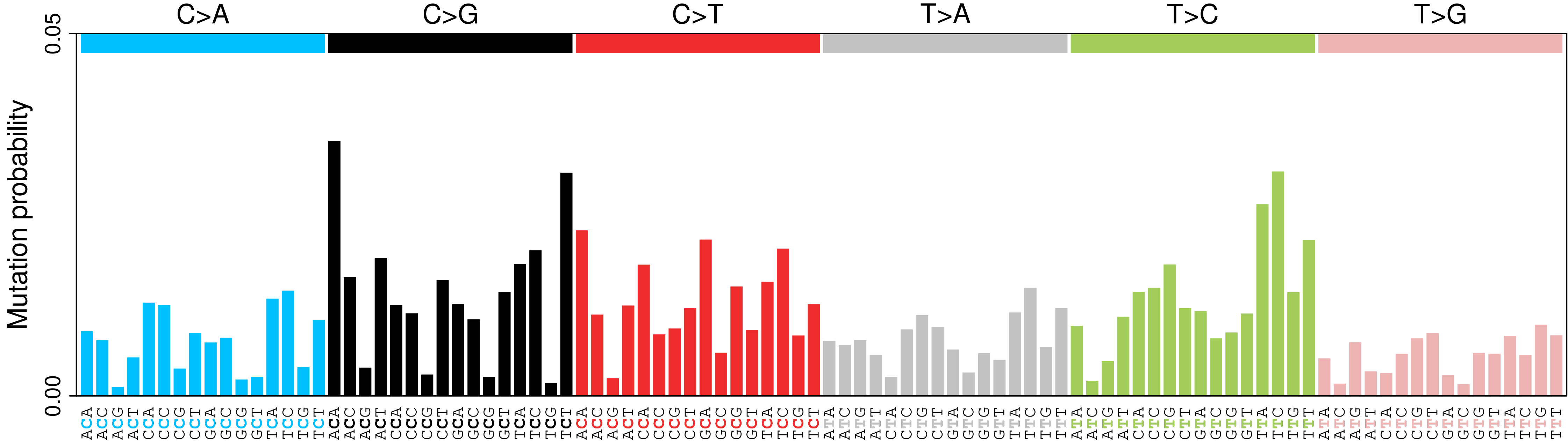
SBS124



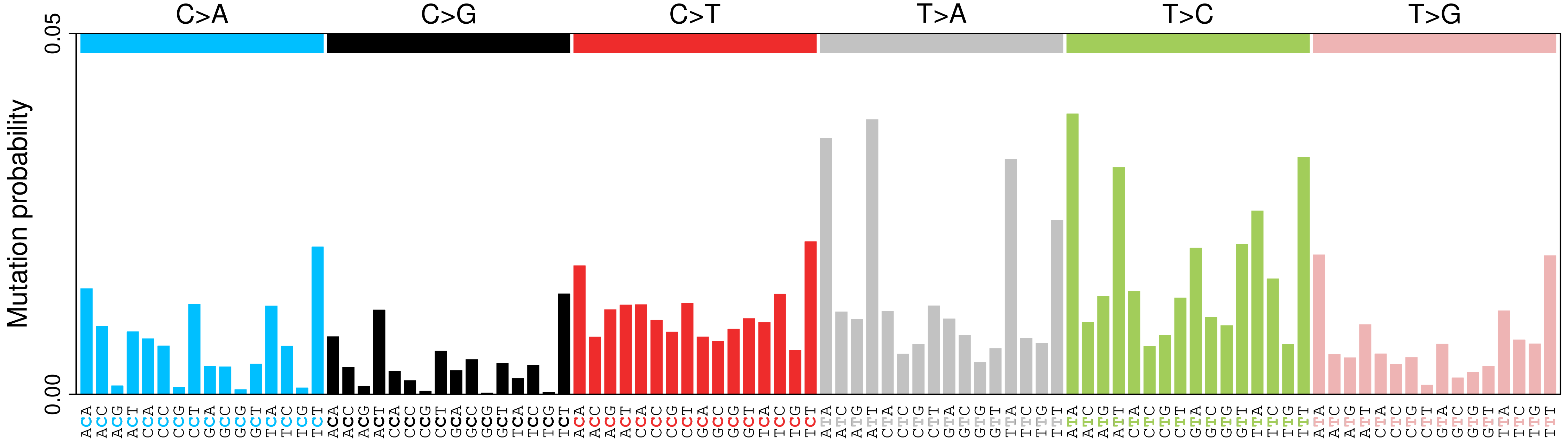
SBS125



SBS126



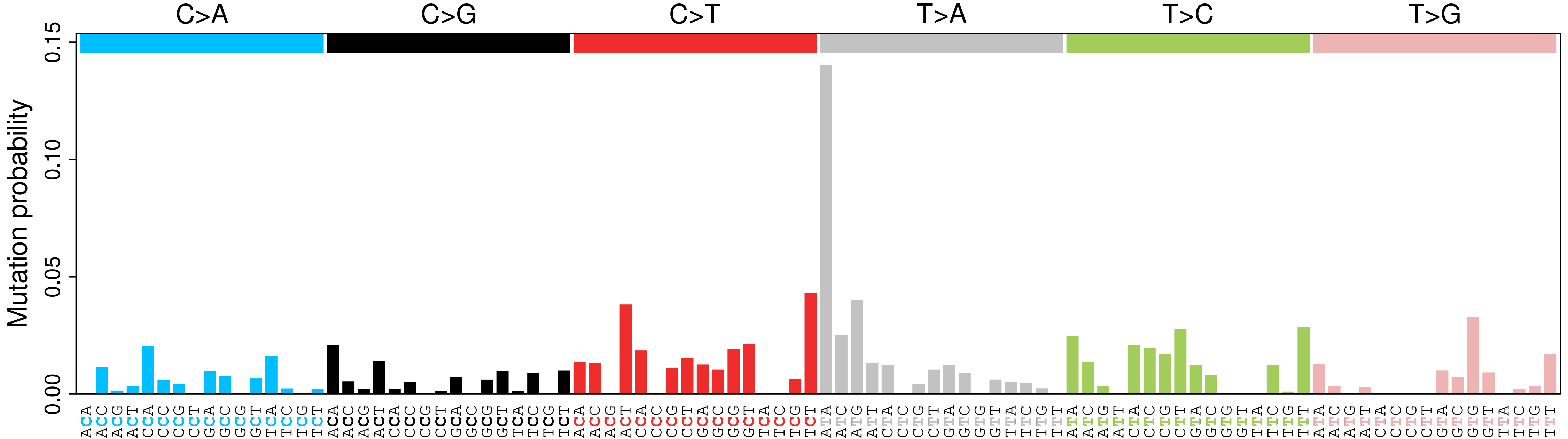
SBS127



SBS132



SBS135



SBS137

$C > A$

C > G

$$C > T$$

T > A

$T > C$

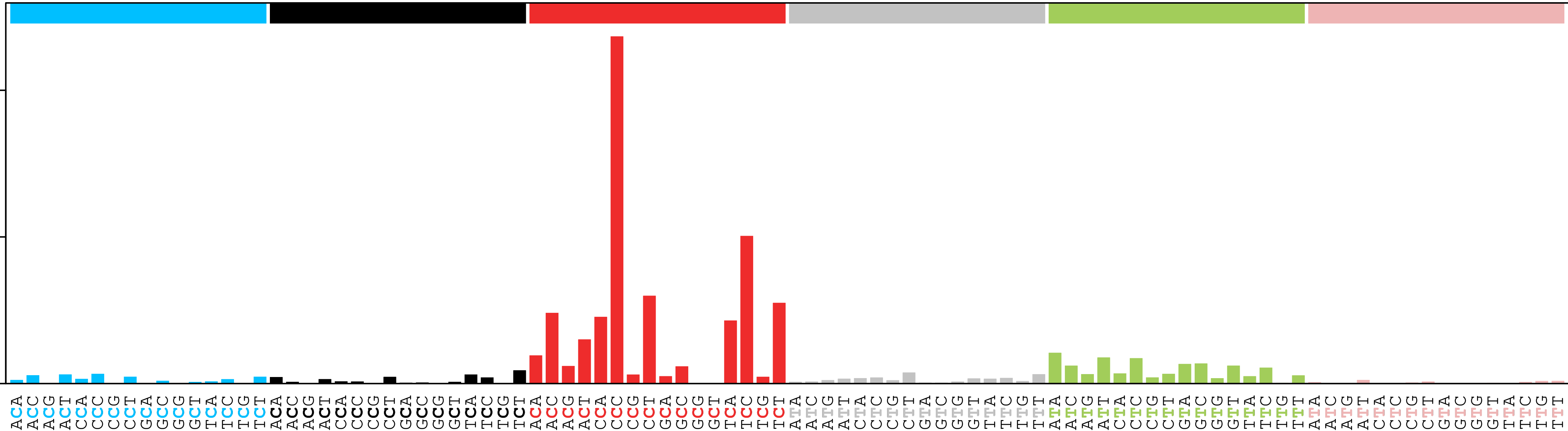
$T > G$

Mutation probability

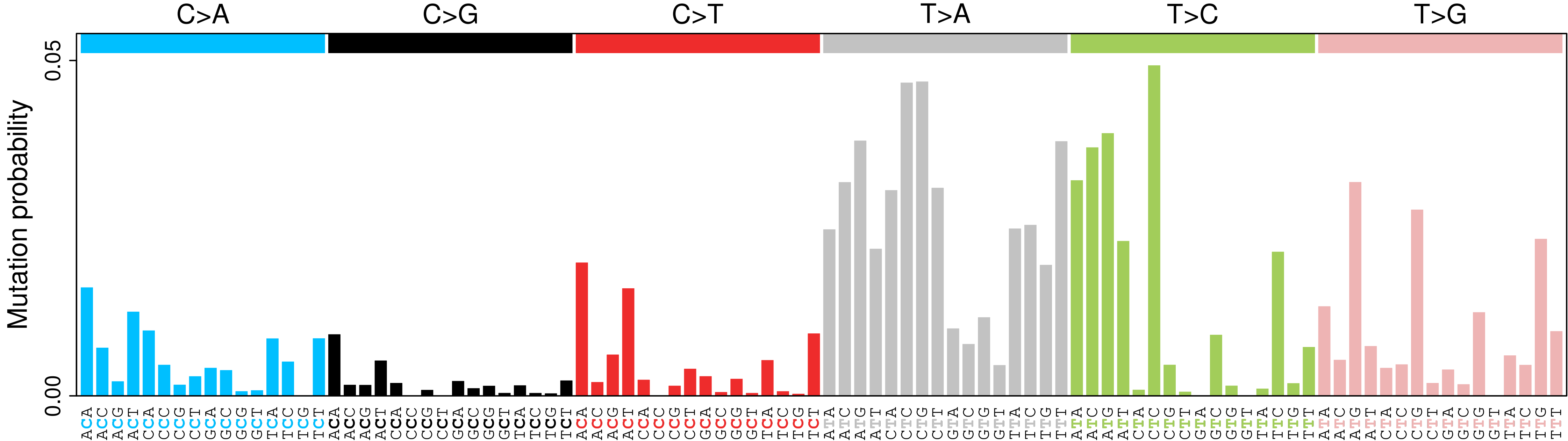
0.2

 \circ

0.



SBS141



SBS142

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 TTA TAC TAT TAA TGA TGC TGT 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 TTA TAC TAT TAA TGA TGC TGT TTT

SBS143



SBS144

C > A

C > G

$C > T$

T > A

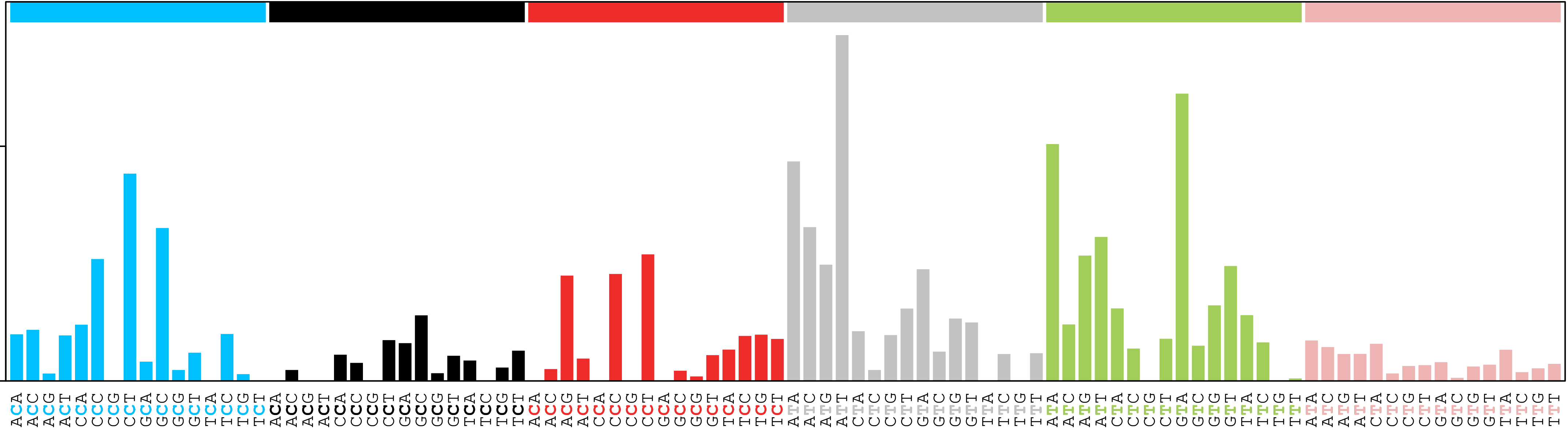
$T > C$

T>G

Mutation probability

0.05

0.00.



SBS145

$C > A$

C > G

$C > T$

T > A

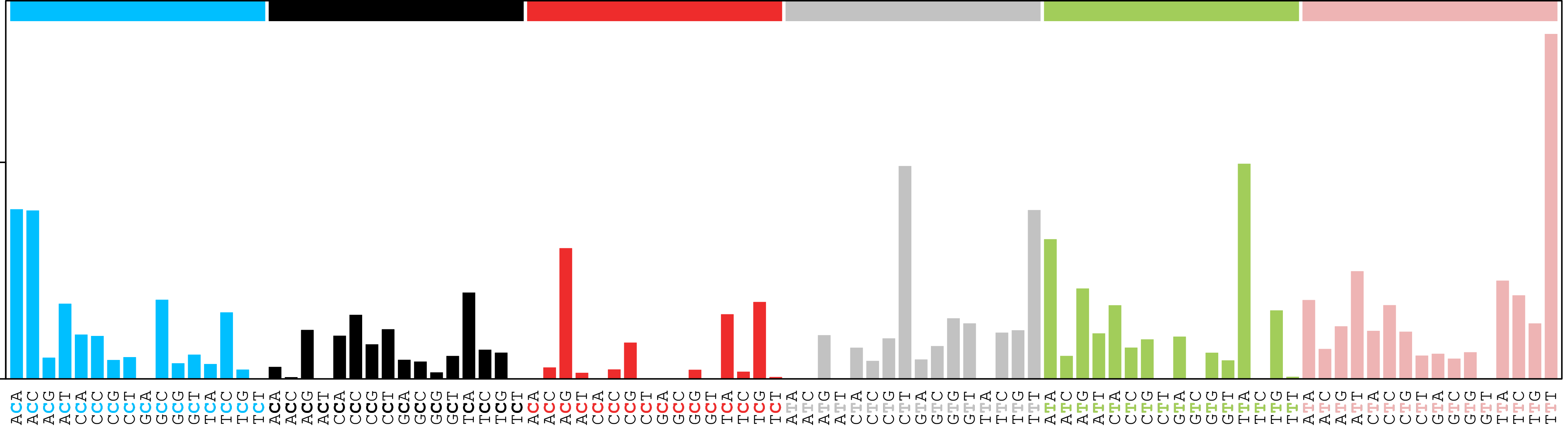
$$T > C$$

$T > G$

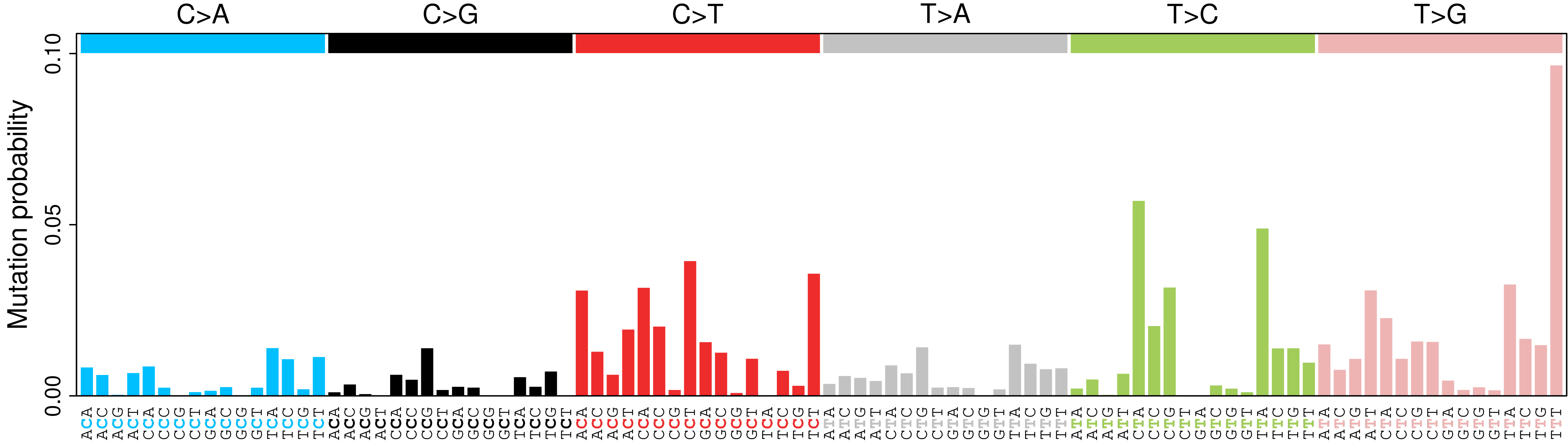
Mutation probability

0.05

0.00



SBS147



SBS148

C > A

C > G

$$C > T$$

T > A

$T > C$

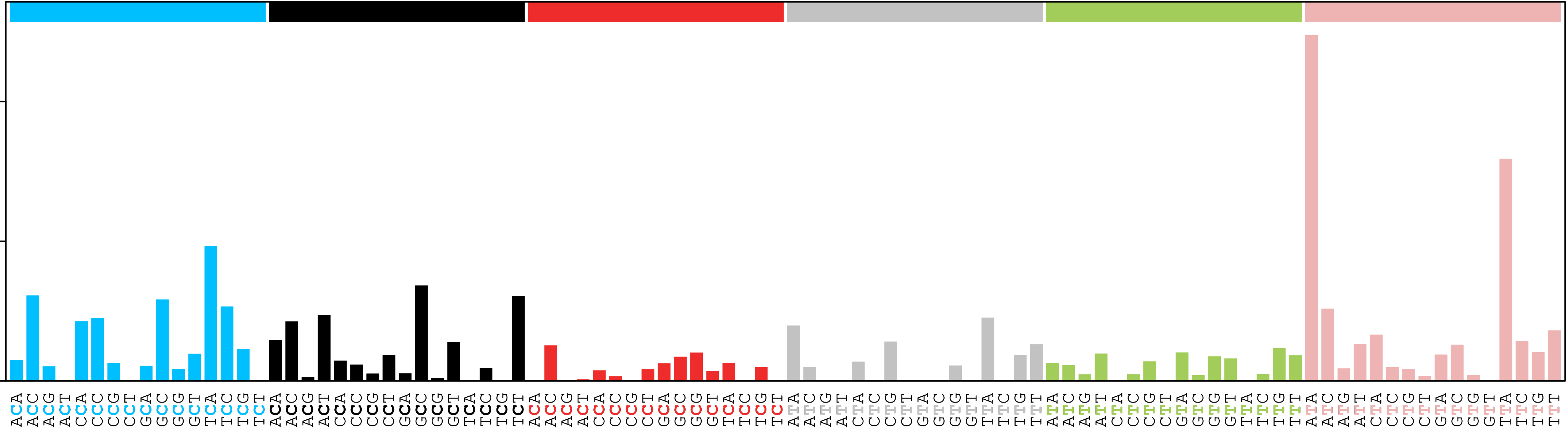
T>G

Mutation probability

0.10

5

0.00



SBS152

C > A

C > G

$$C > T$$

T > A

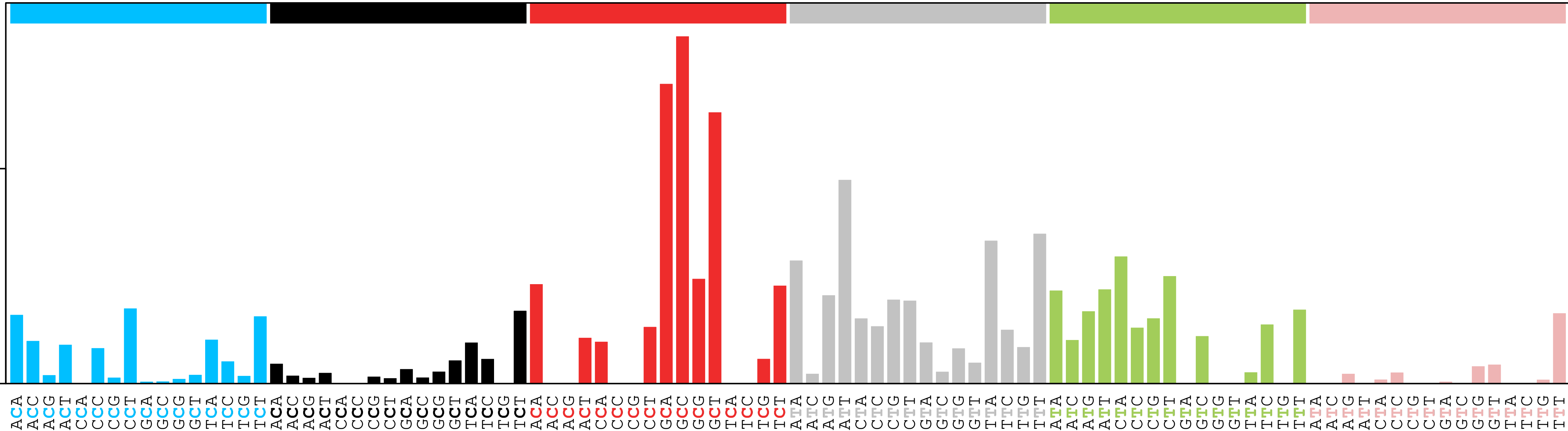
$T > C$

T>G

Mutation probability

0.05

0.00



SBS153

C>A

C>G

C>T

T>A

T>C

T>G

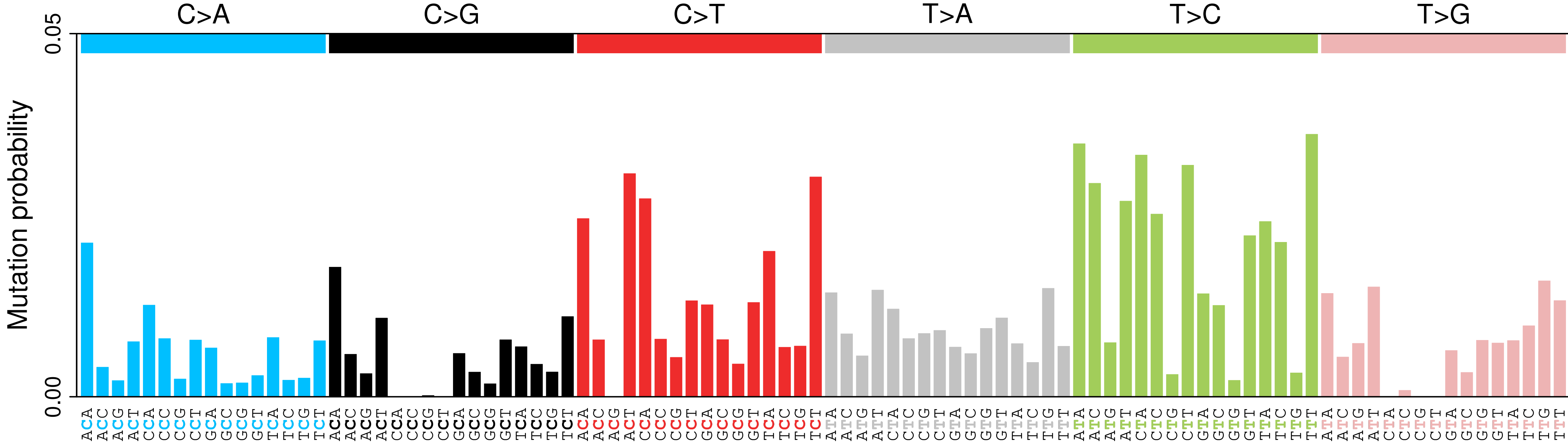
Mutation probability

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 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



SBS155

C > A

C > G

$$C > T$$

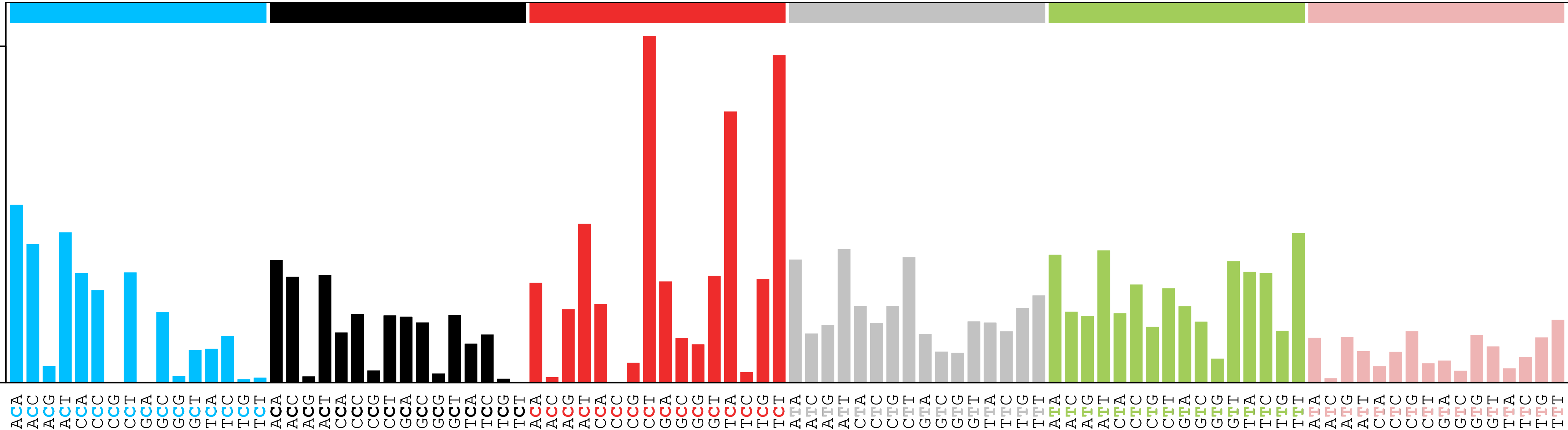
T > A

$T > C$

T>G

0.05

0.00



SBS156

C>A

C>G

C>T

T>A

T>C

T>G

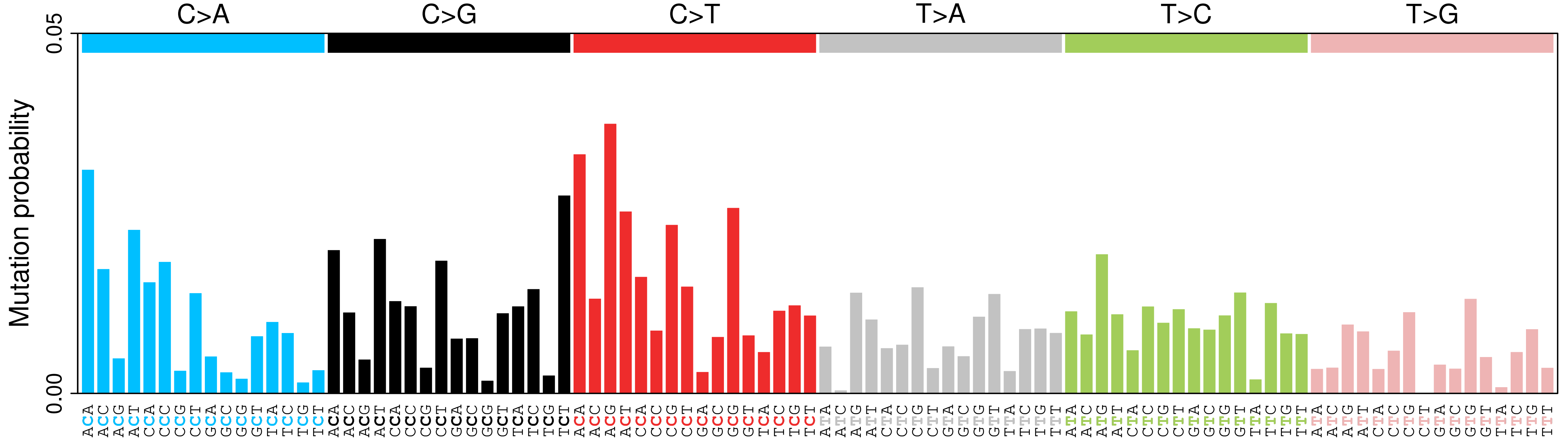
Mutation probability

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

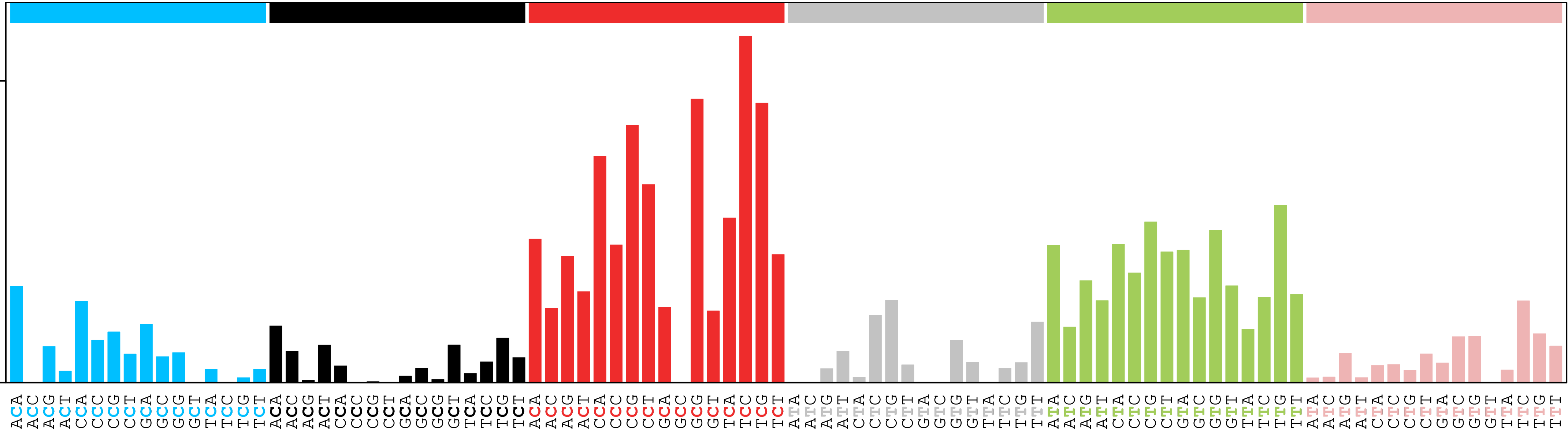
$T > C$

T>G

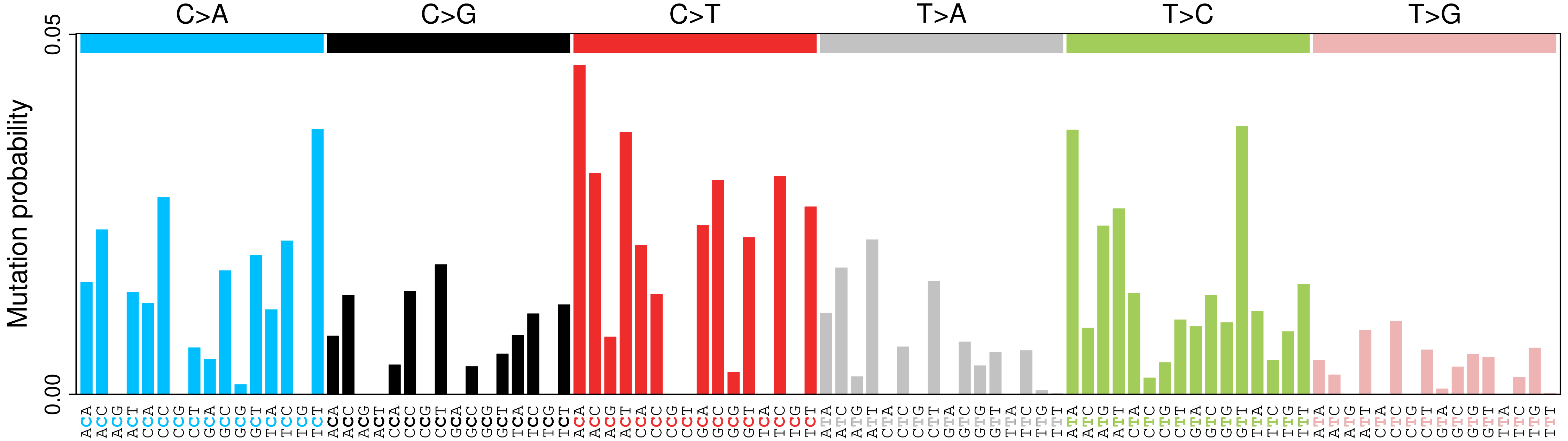
Mutation probability

0.05

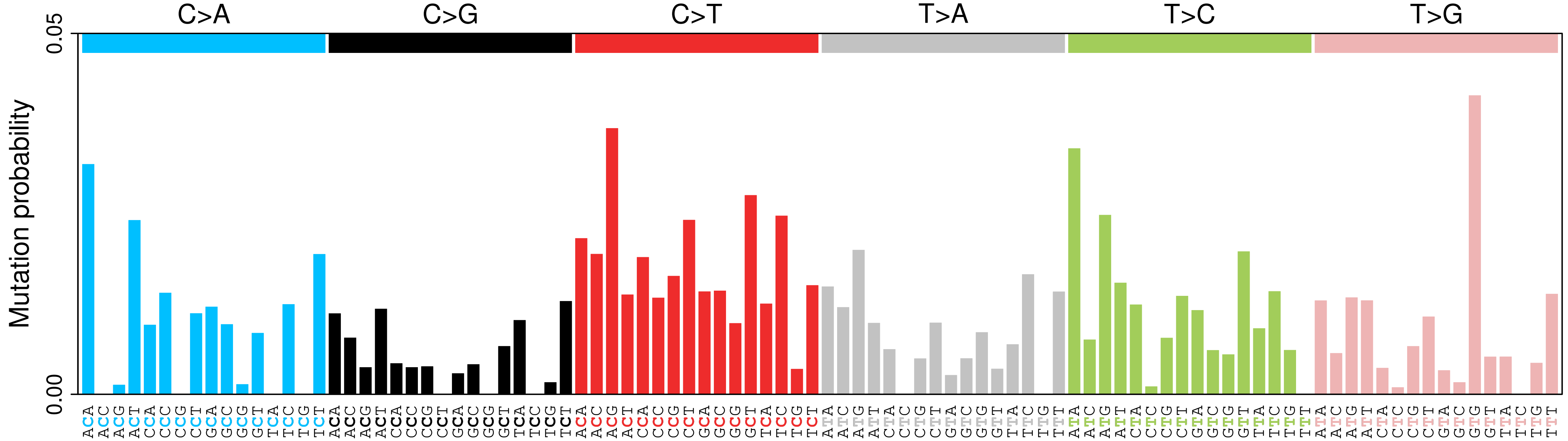
0.00



SBS159



SBS160



SBS161

C>A

C>G

C>T

T>A

T>C

T>G

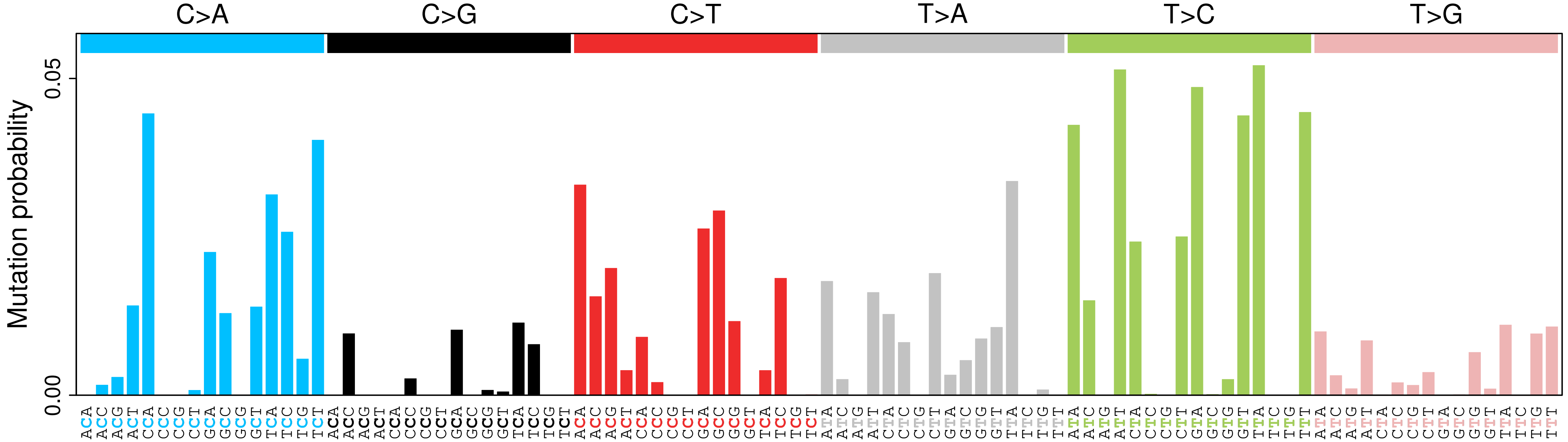
Mutation probability

0.05

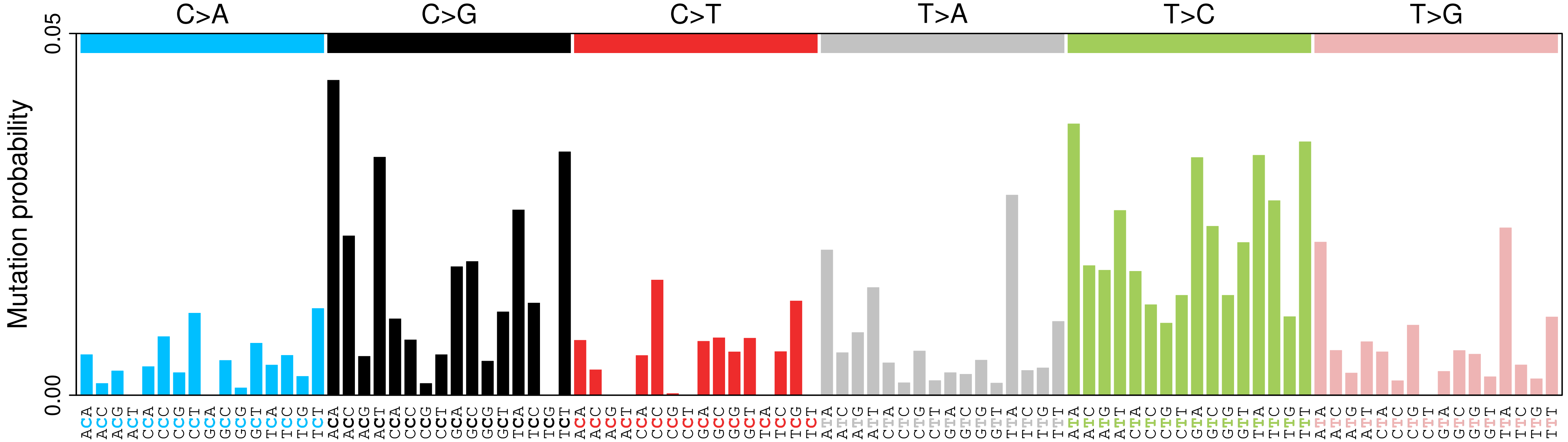
0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT TCA 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 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

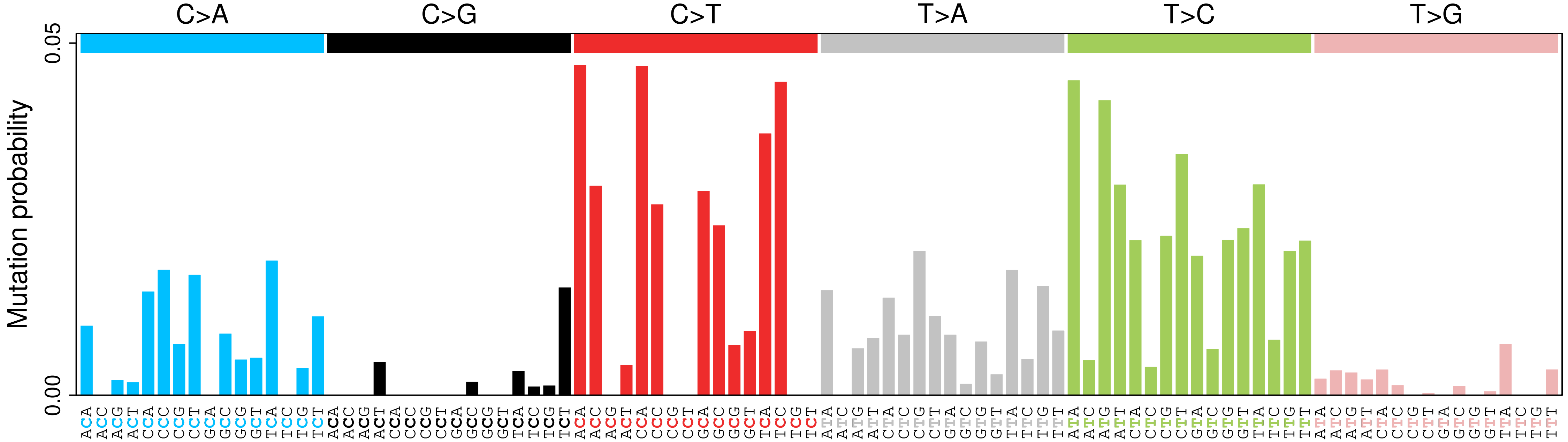
SBS162



SBS163



SBS164



SBS166

C > A

C > G

$C > T$

T > A

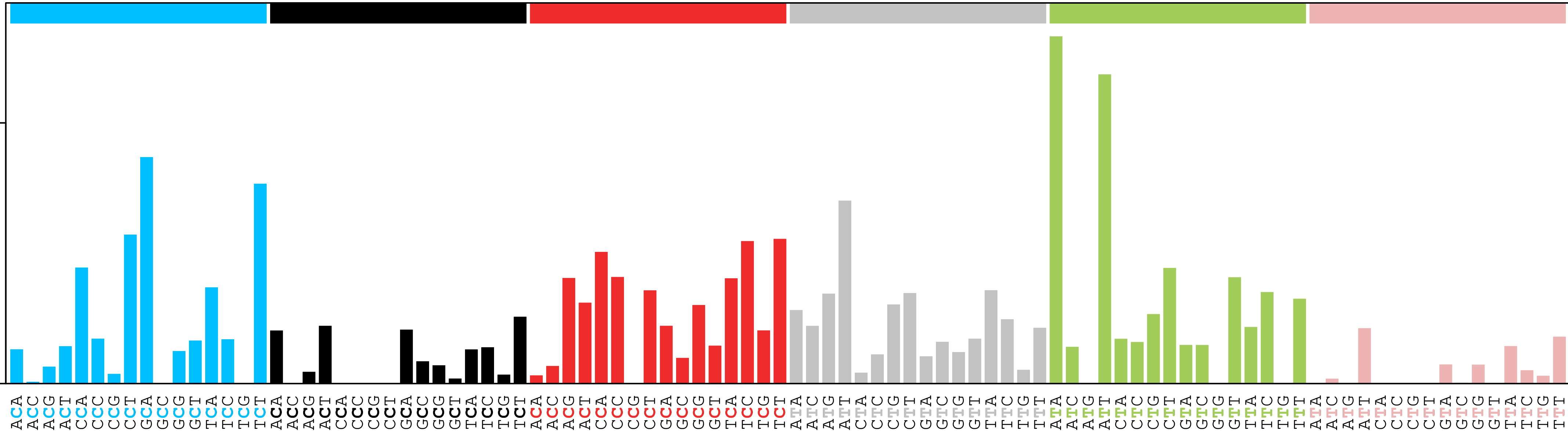
$$T > C$$

$T > G$

Mutation probability

0.05

0.00



SBS167

C > A

C > G

$C > T$

T > A

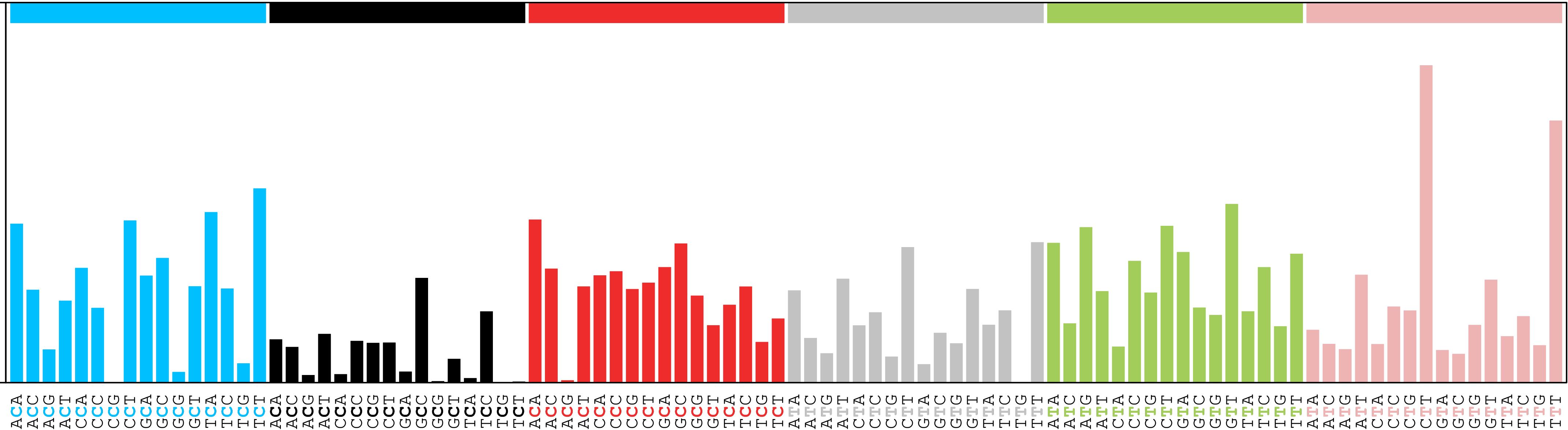
$T > C$

T>G

0.05

Mutation probability

0.00



SBS168

C > A

C > G

$C > T$

T > A

$T > C$

T>G

Mutation probability

0.05

0.00



SBS169

C > A

C > G

$$C > T$$

$T > A$

$T > C$

$T > G$

Mutation probability

0.10

0.05

0.00

