

SBS3

C>A

C>G

C>T

T>A

T>C

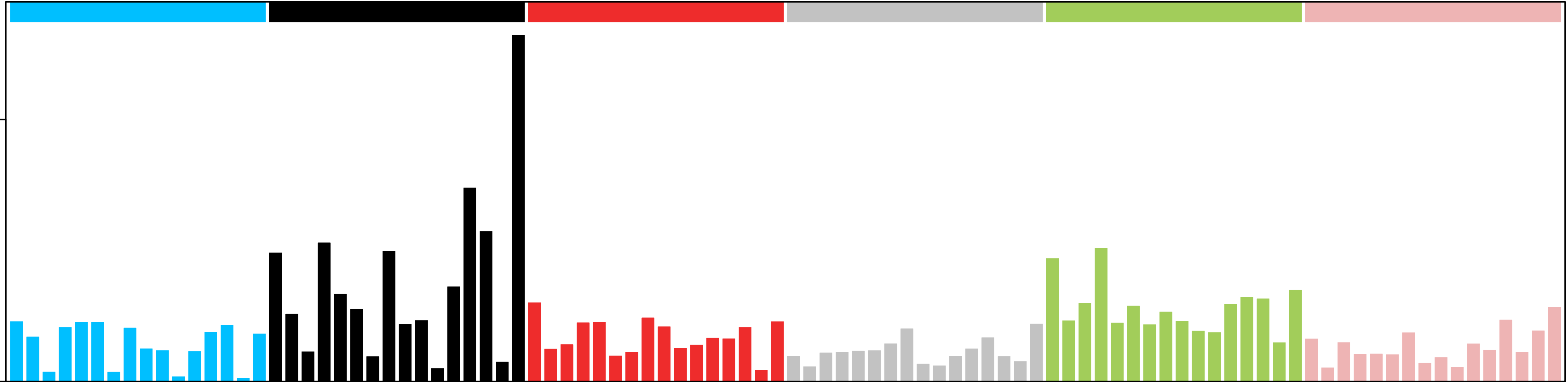
T>G

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

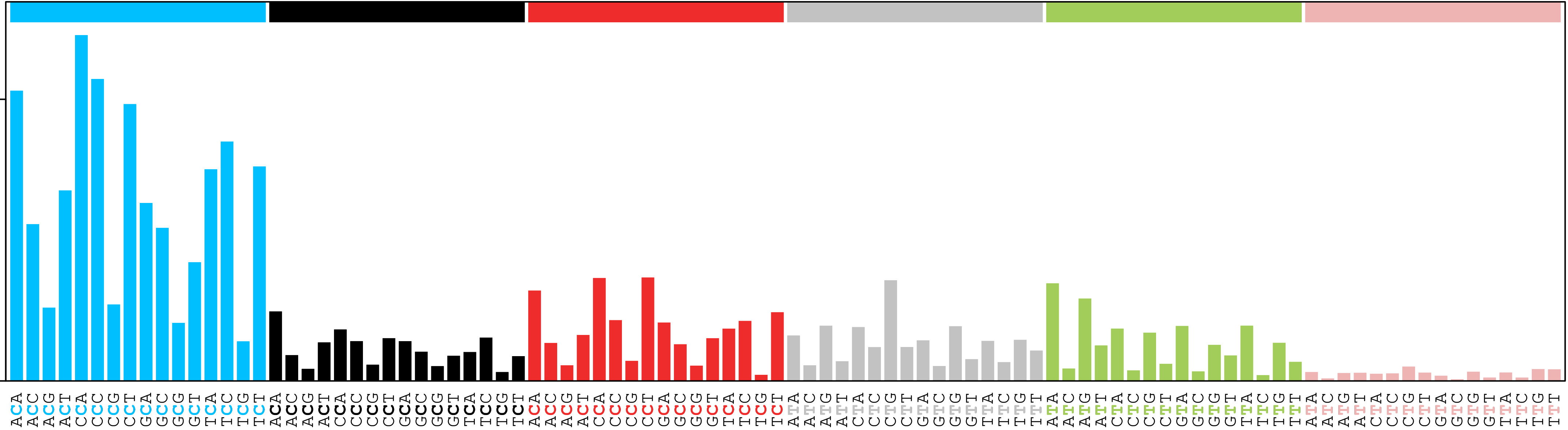
$$T > C$$

$T > G$

Mutation probability

0.05

0.00



SBS5



SBS6

$C > A$

C > G

$$C > T$$

T > A

$T > C$

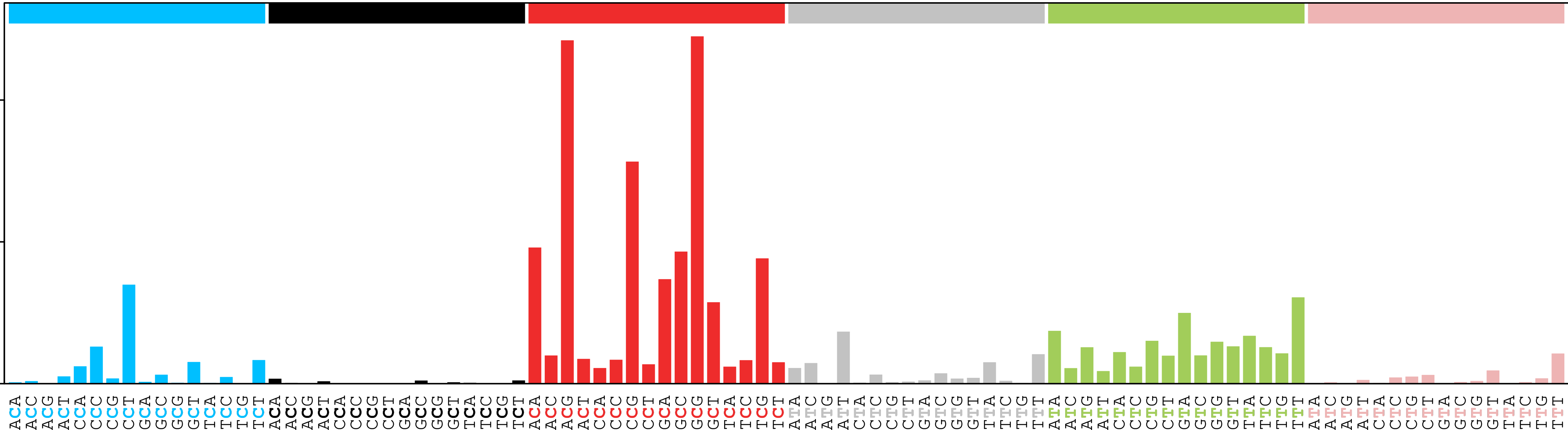
T>G

Mutation probability

0.10

50.0

0.00



SBS7c

$C > A$

C > G

$$C > T$$

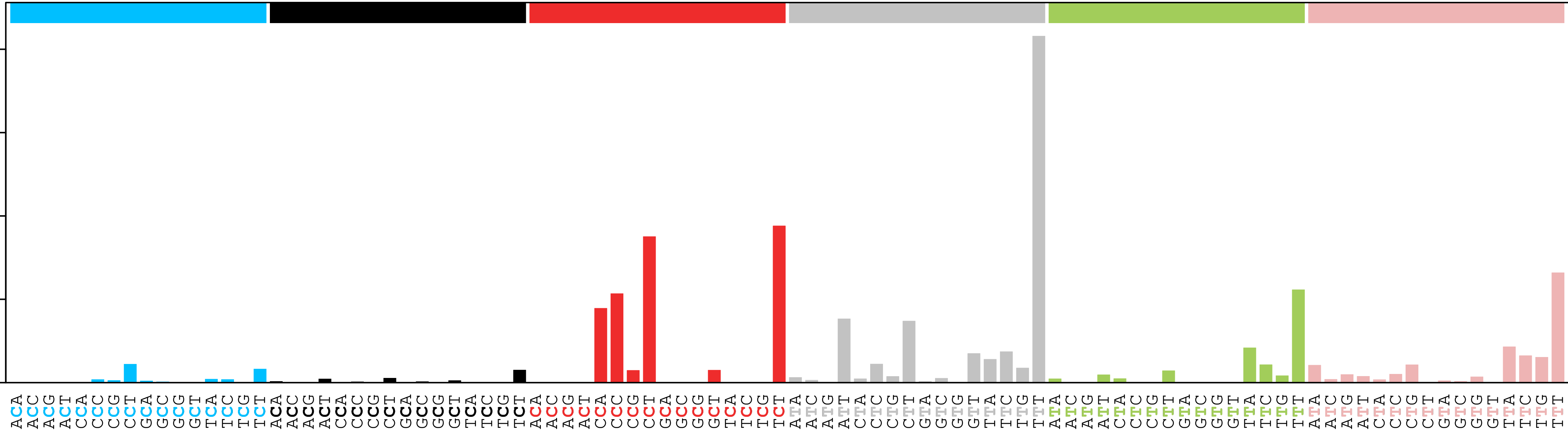
T > A

$T > C$

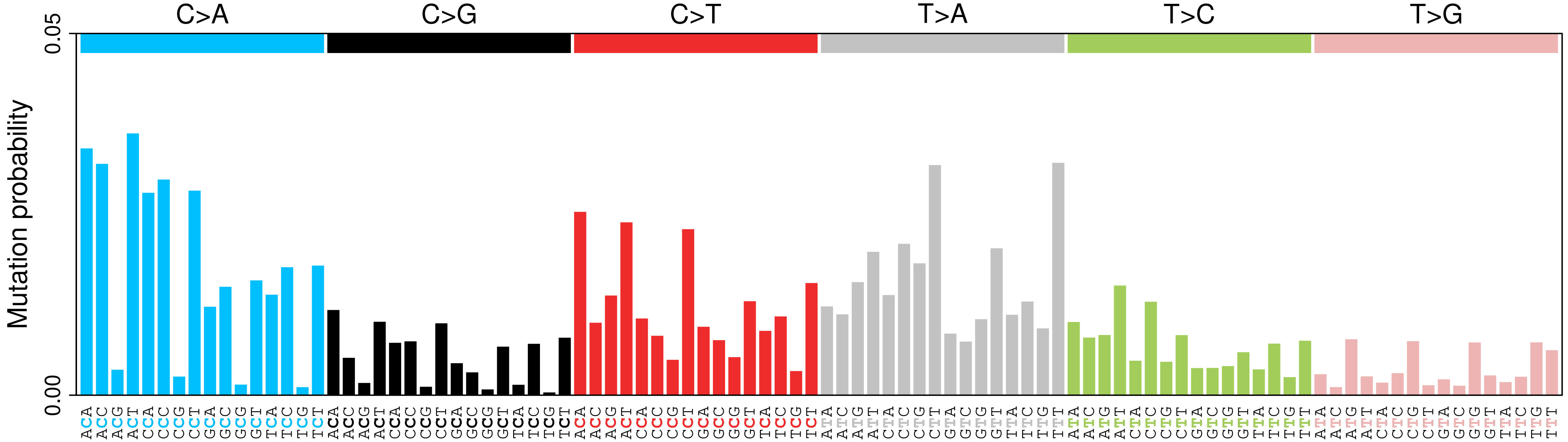
T>G

Mutation probability

0.00 0.05 0.10 0.15 0.20



SBS8



SBS9

C>A

C>G

C>T

T>A

T>C

T>G

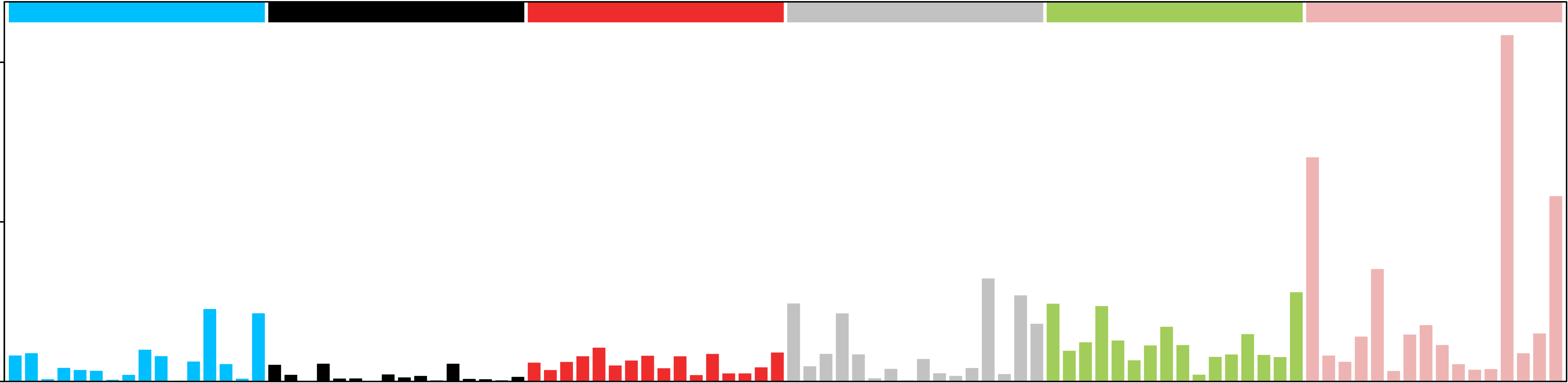
Mutation probability

0.10

0.05

0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT 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 TTA ATC ATG ATT CTA CTC CTG CTT TTA ATC ATG ATT CTA CTC CTG CTT TTA ATC ATG ATT CTA CTC CTG CTT



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 TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT

SBS12

C>A

C>G

C>T

T>A

T>C

T>G

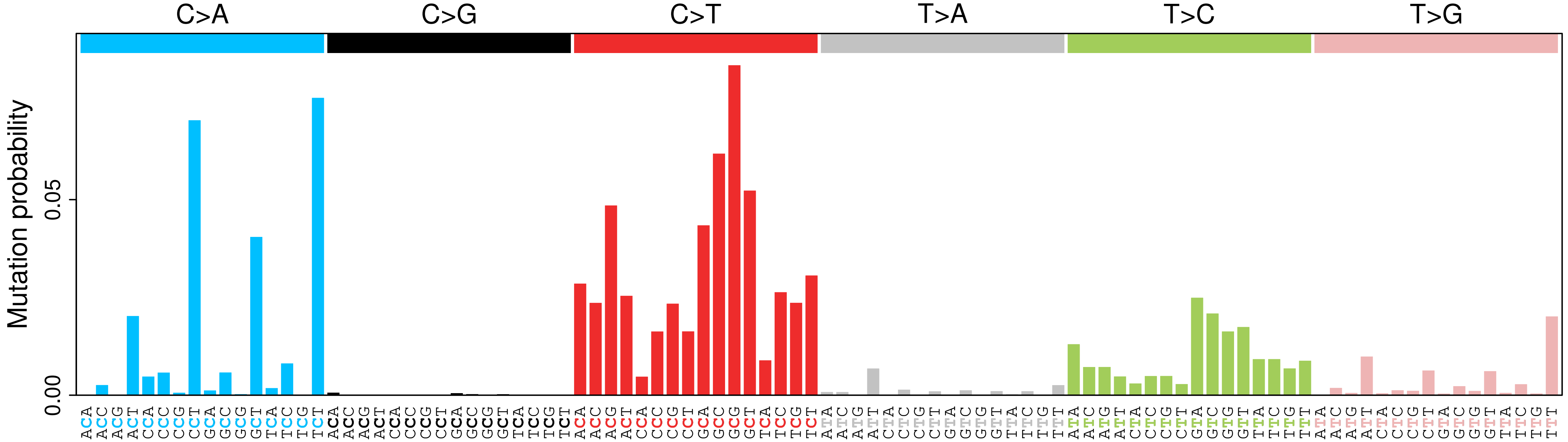
Mutation probability

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

SBS14



SBS15

$C > A$

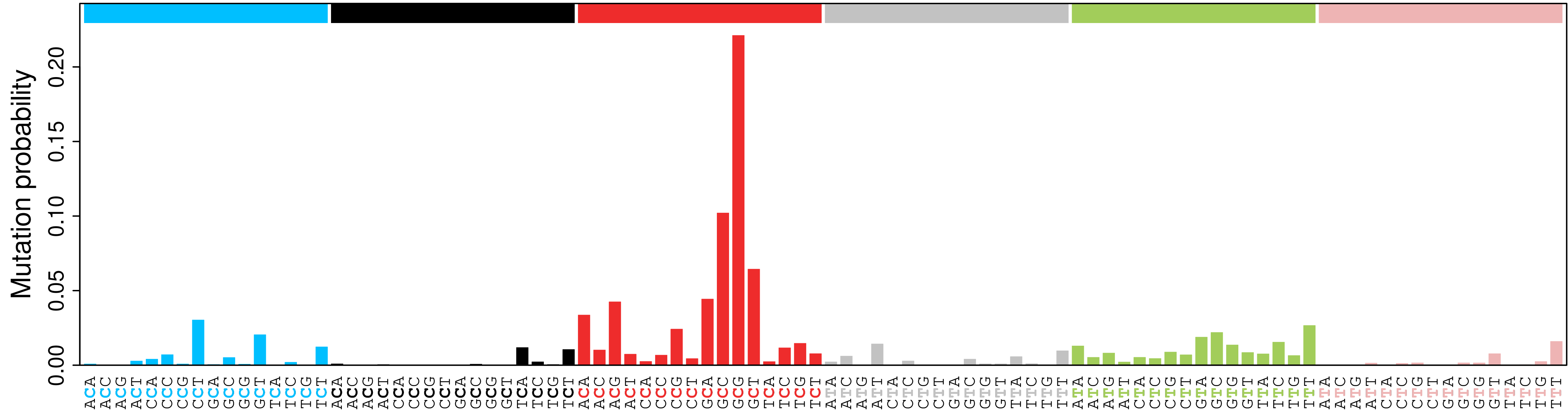
C > G

$$C > T$$

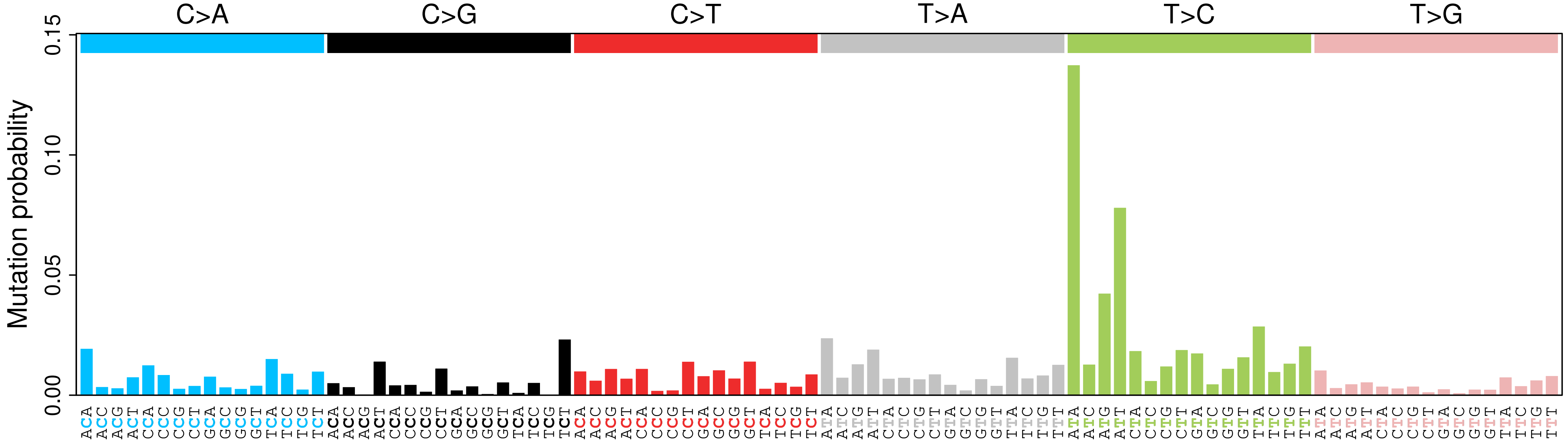
T > A

$T > C$

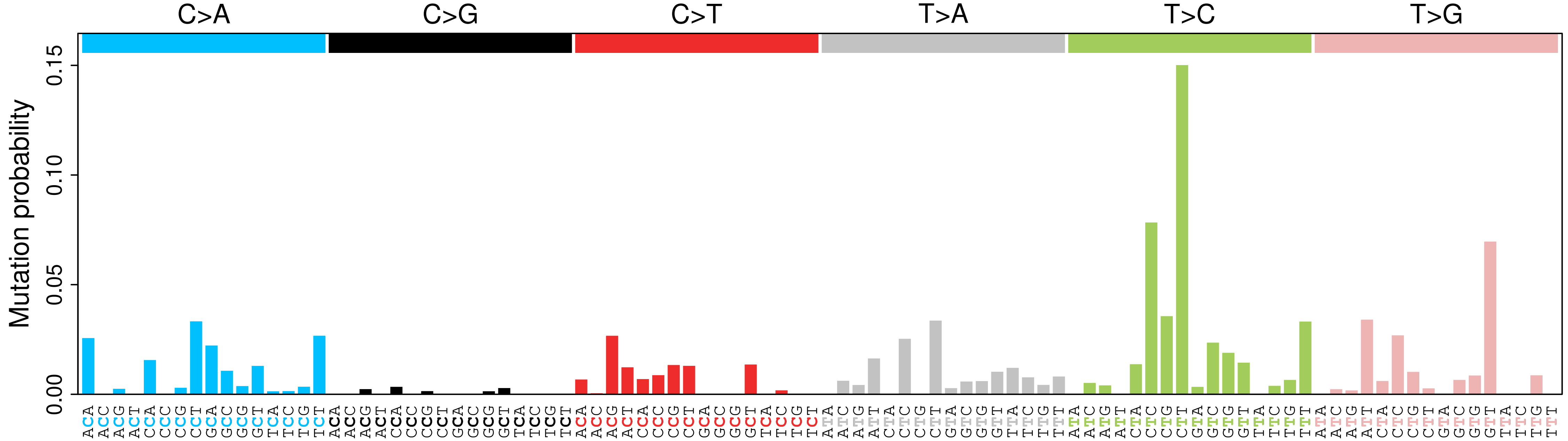
T>G



SBS16



SBS17a



SBS20



SBS22

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.10

0.05

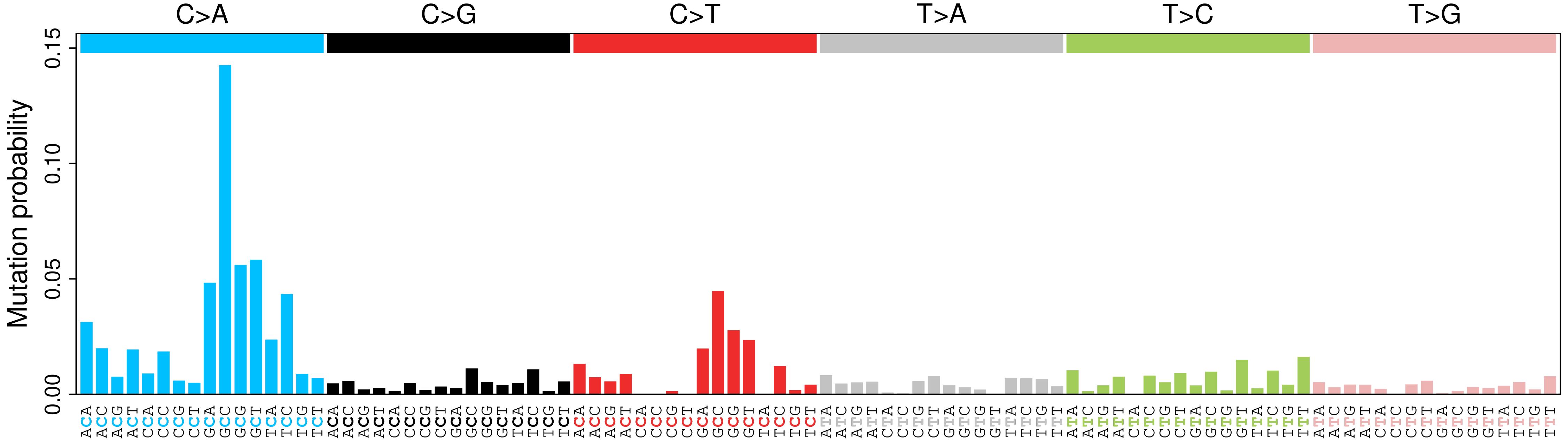
0.00

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

SBS23



SBS24



SBS28



SBS30

$C > A$

C > G

$$C > T$$

T > A

$T > C$

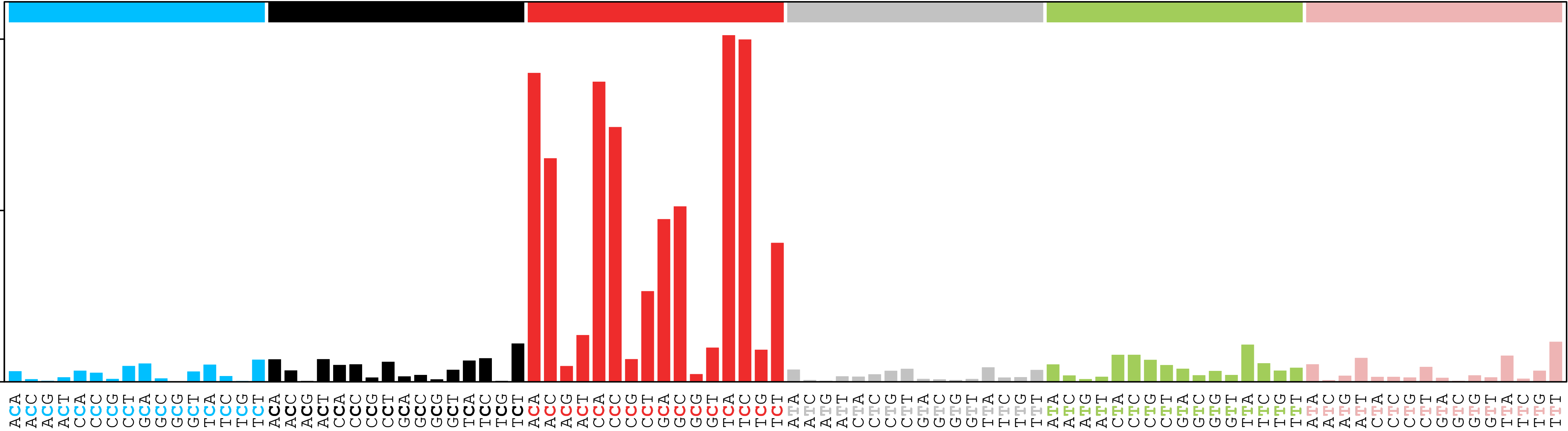
T>G

Mutation probability

0.10

50.0

0.00



SBS31

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

SBS33

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.2
0.1
0.0



SBS35



SBS38

$C > A$

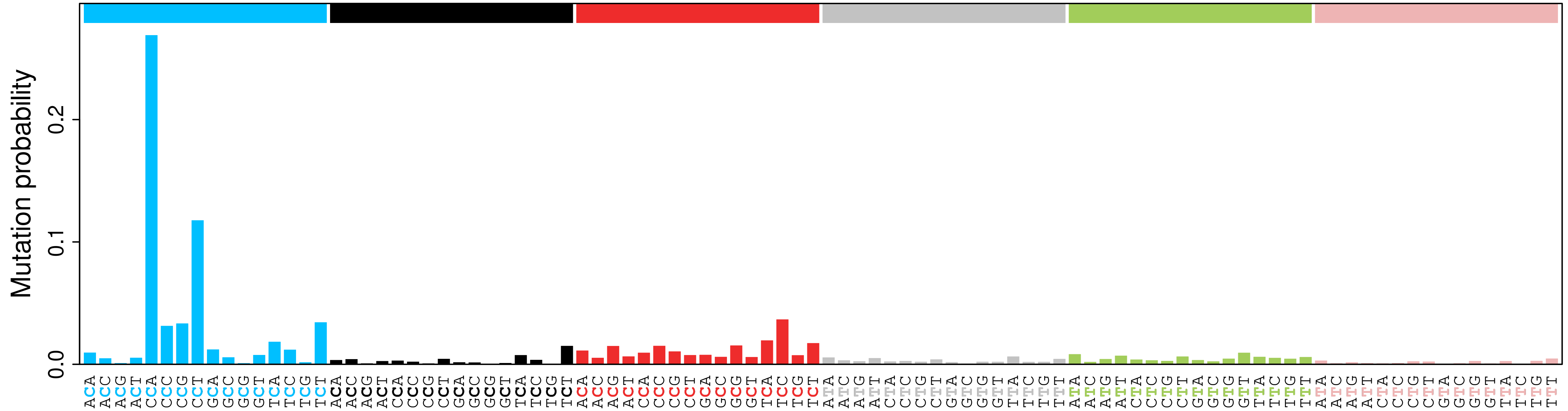
C > G

$C > T$

T > A

$$T > C$$

$T > G$



SBS44

$C > A$

C > G

$$C > T$$

T > A

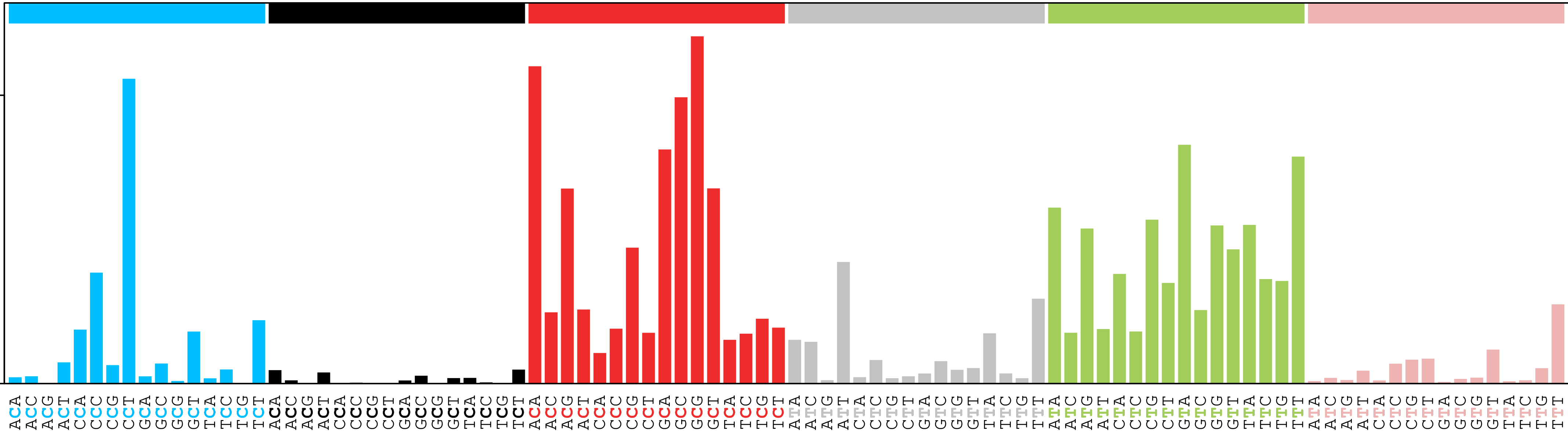
$T > C$

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

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

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 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 TCA TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TCA TTG TTT

SBS88

C>A

C>G

C>T

T>A

T>C

T>G

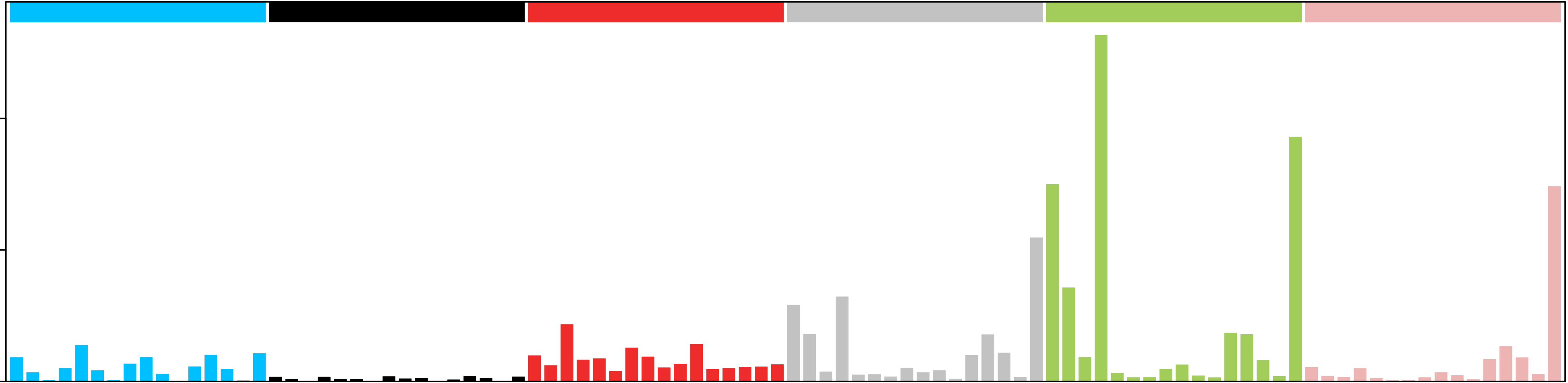
Mutation probability

0.10

0.05

0.00

ACA ACC AGC 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



SBS92

C > A

C > G

$$C > T$$

T > A

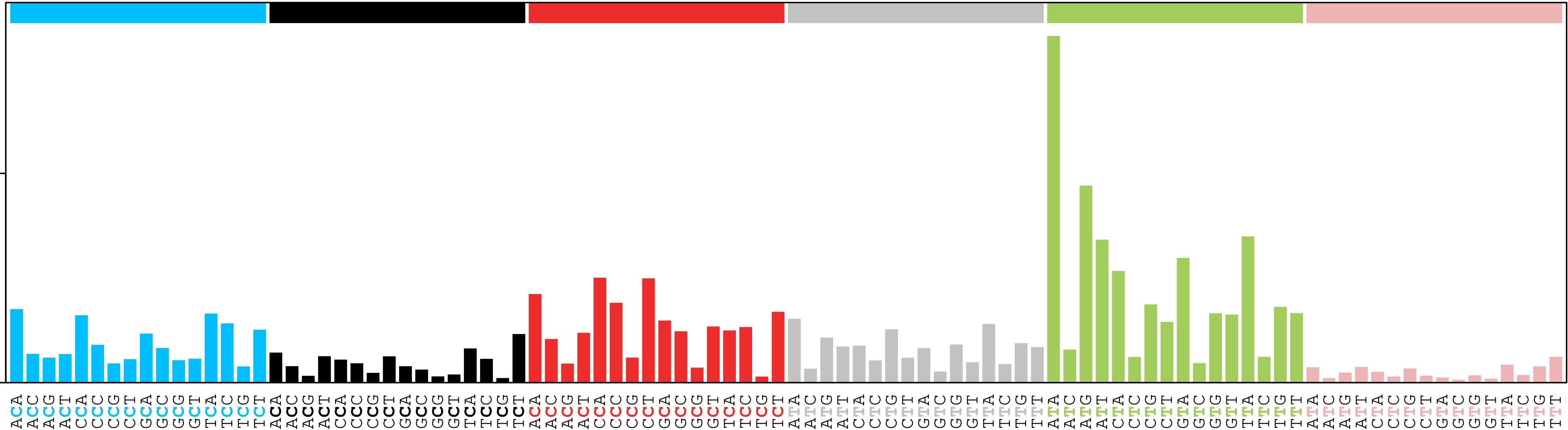
$T > C$

T>G

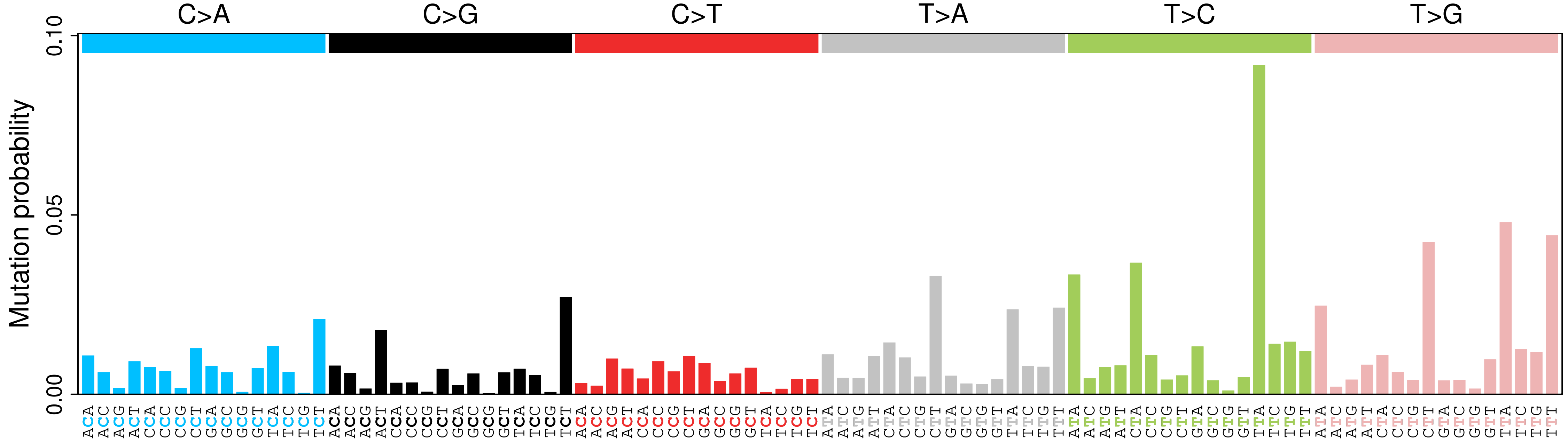
Mutation probability

0.05

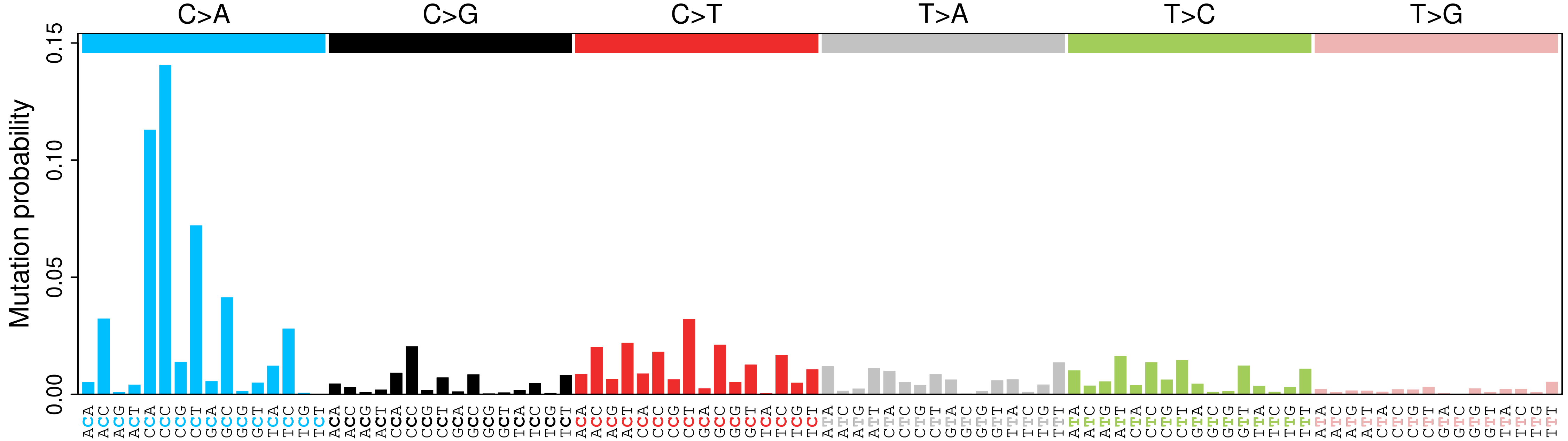
0.00



SBS93



SBS94



SBS95

C>A

C>G

C>T

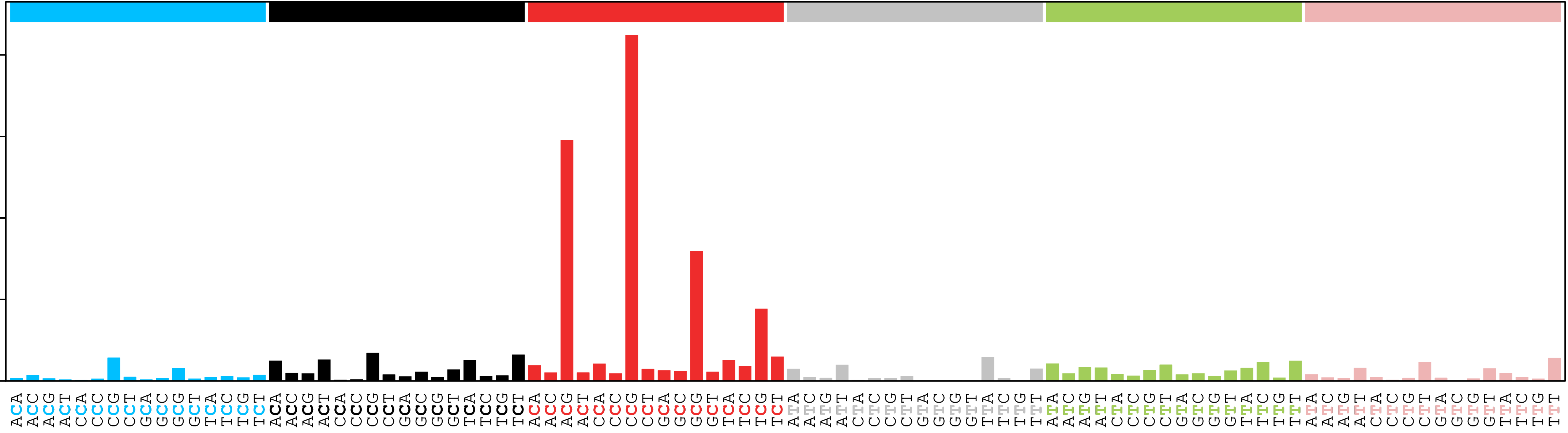
T>A

T>C

T>G

Mutation probability

0.20
0.15
0.10
0.05
0.00



SBS97

$C > A$

C > G

$$C > T$$

T > A

$$T > C$$

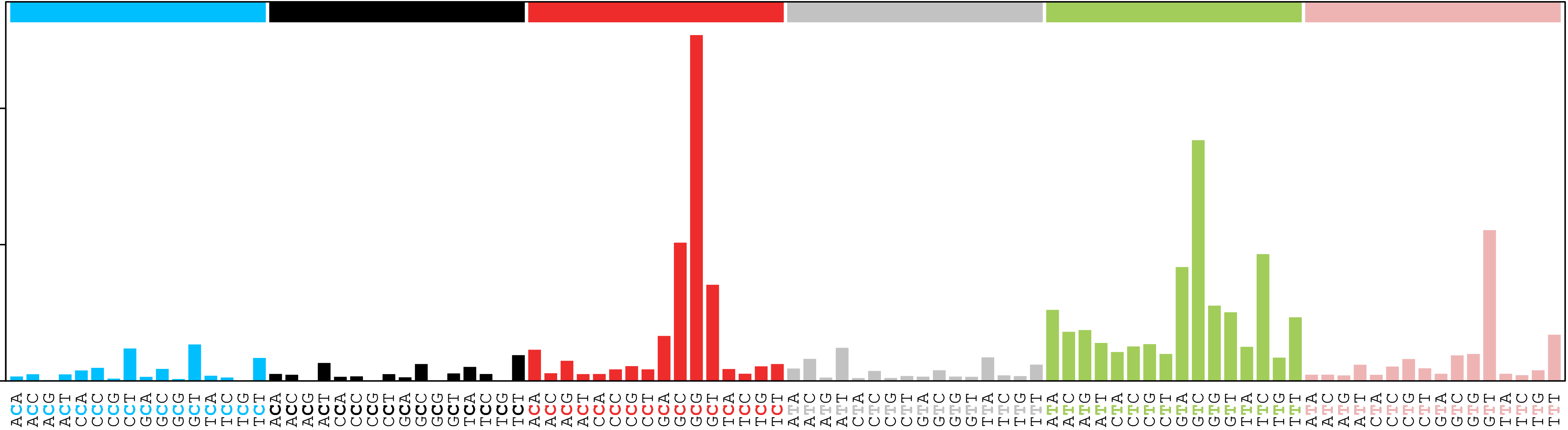
$T > G$

Mutation probability

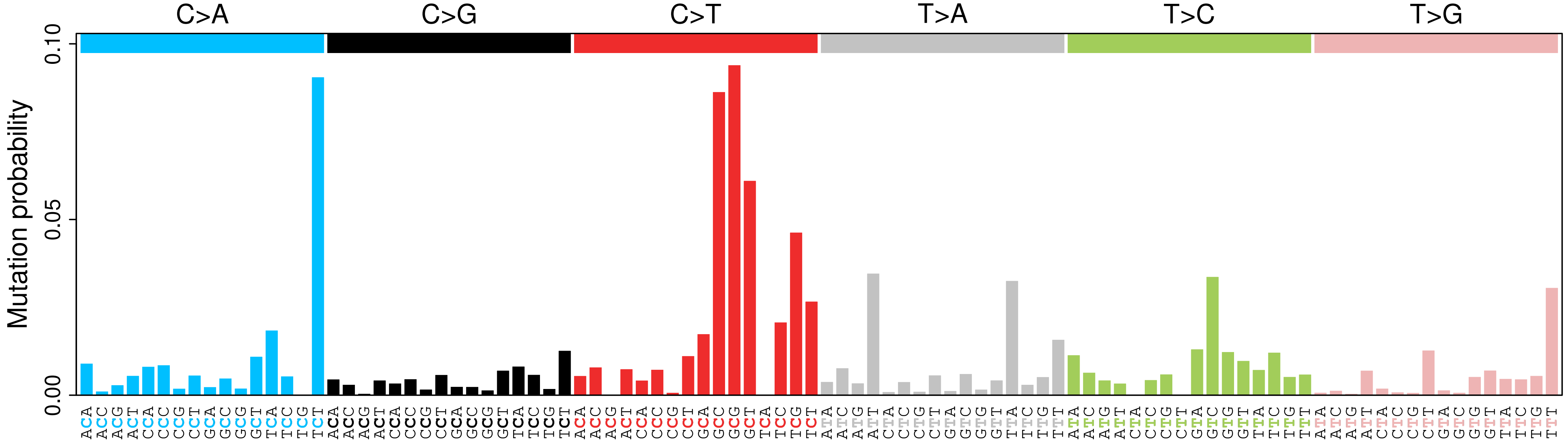
0.10

50

0.00



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

SBS105



SBS107

$C > A$

C > G

$C > T$

T > A

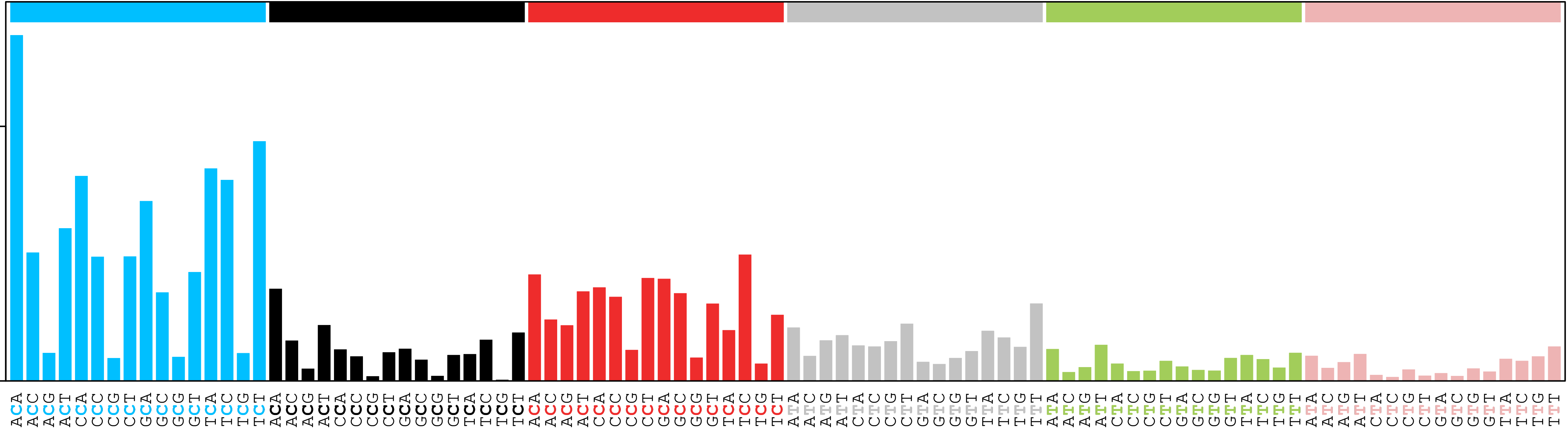
$T > C$

T>G

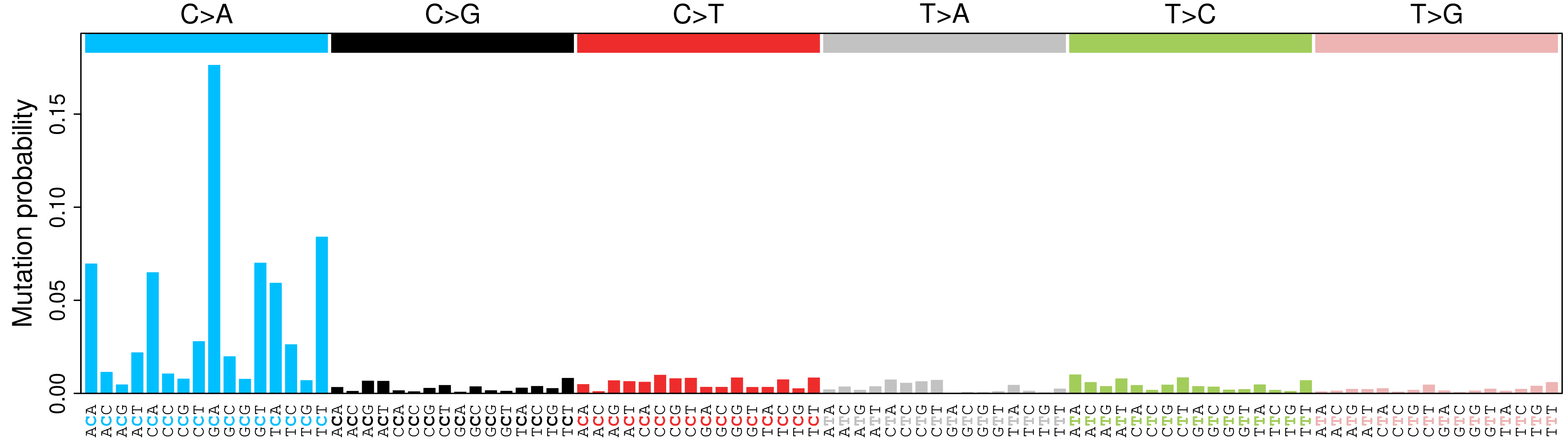
Mutation probability

0.05

0.00.



SBS108



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

$C > A$

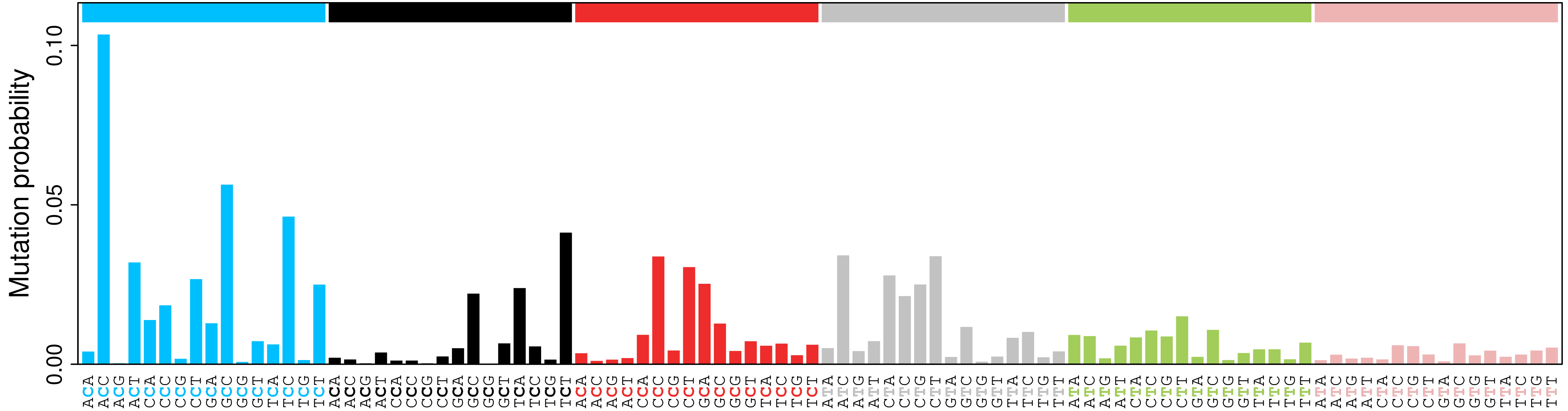
C > G

$$C > T$$

T > A

$T > C$

T>G



SBS114

$C > A$

C > G

$$C > T$$

T > A

$T > C$

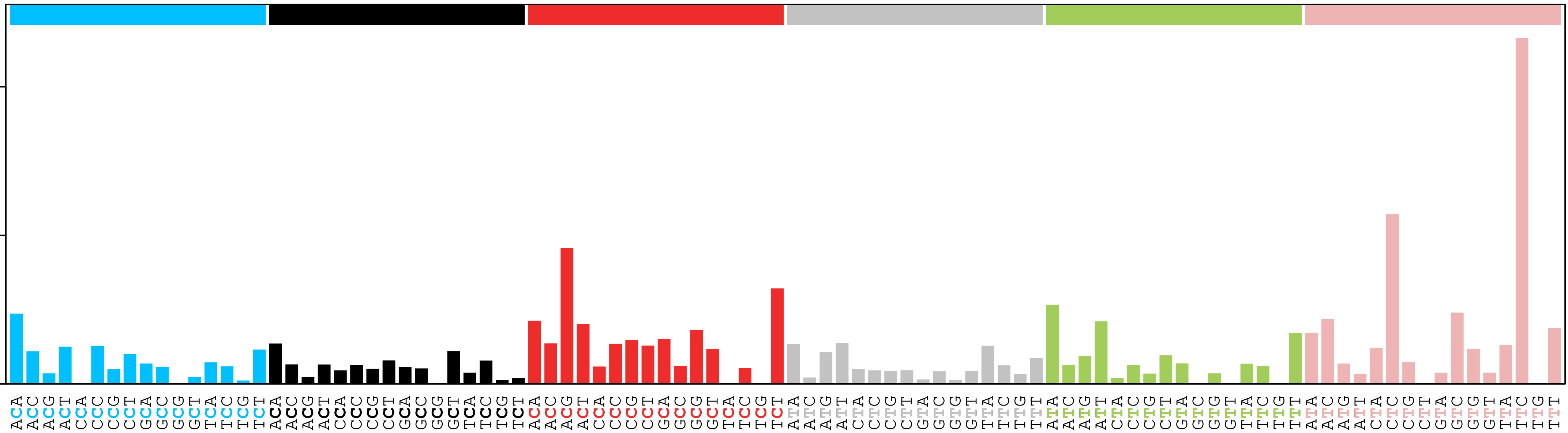
T>G

Mutation probability

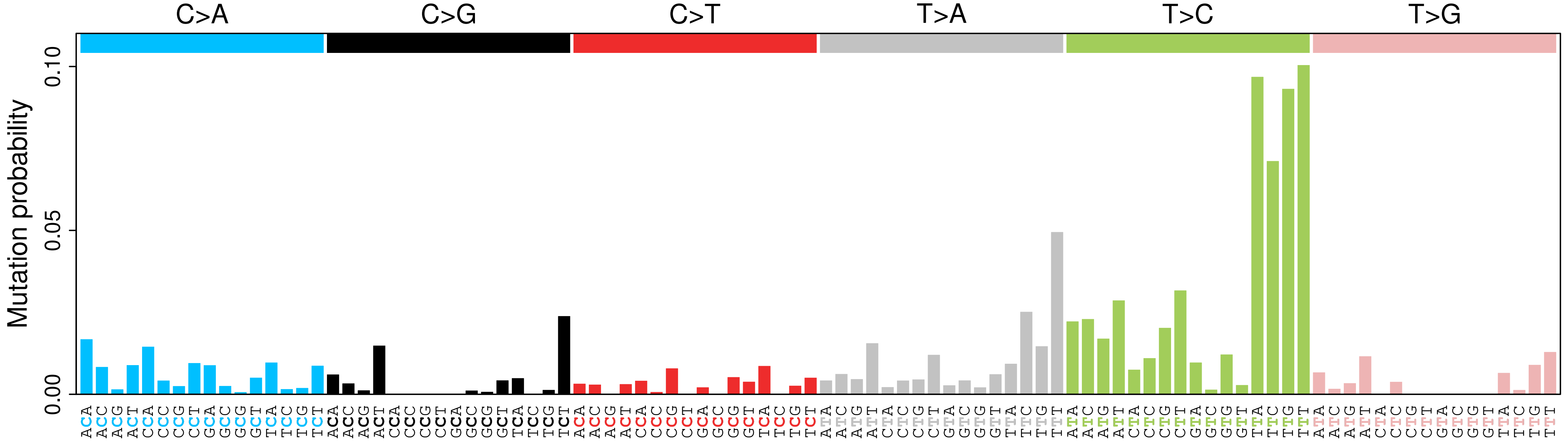
0.10

0.05

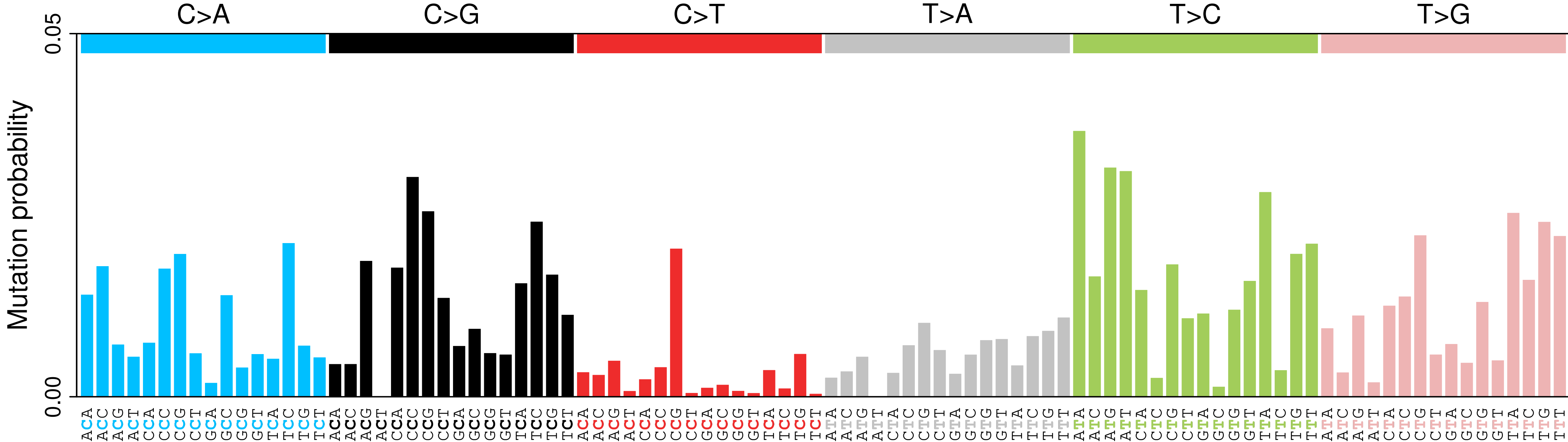
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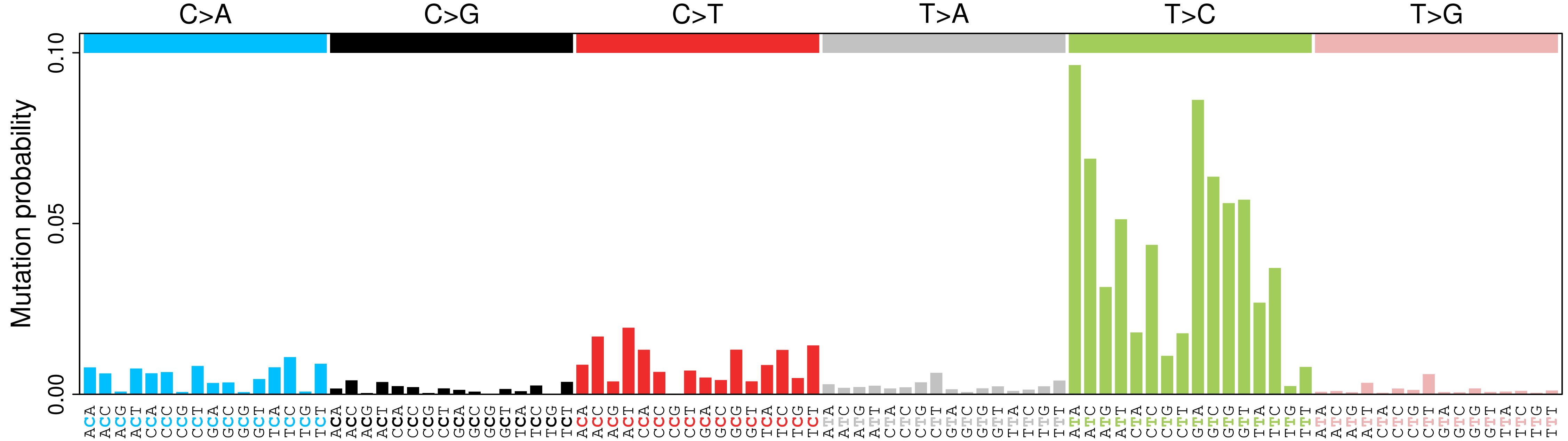
SBS116



SBS117



SBS119



SBS122

$C > A$

C > G

$$C > T$$

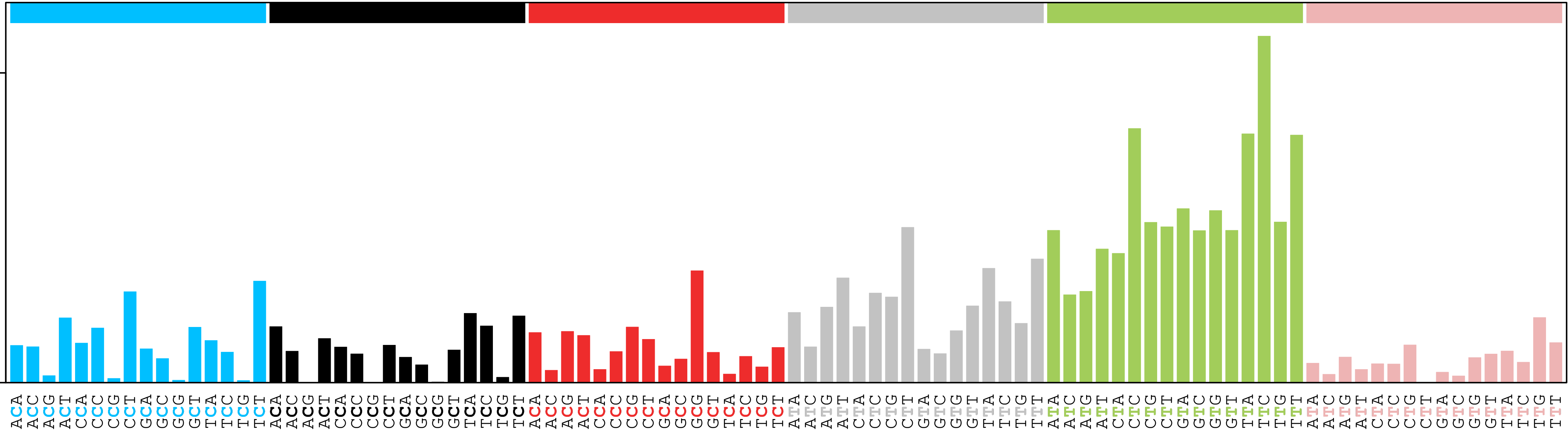
T > A

$$T > C$$

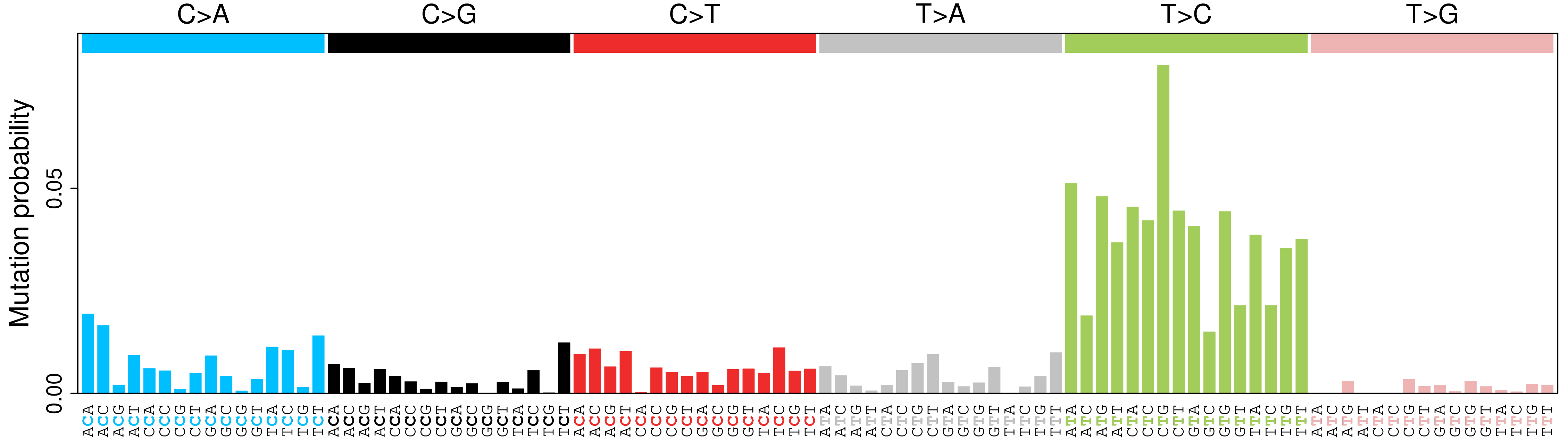
$T > G$

0.05

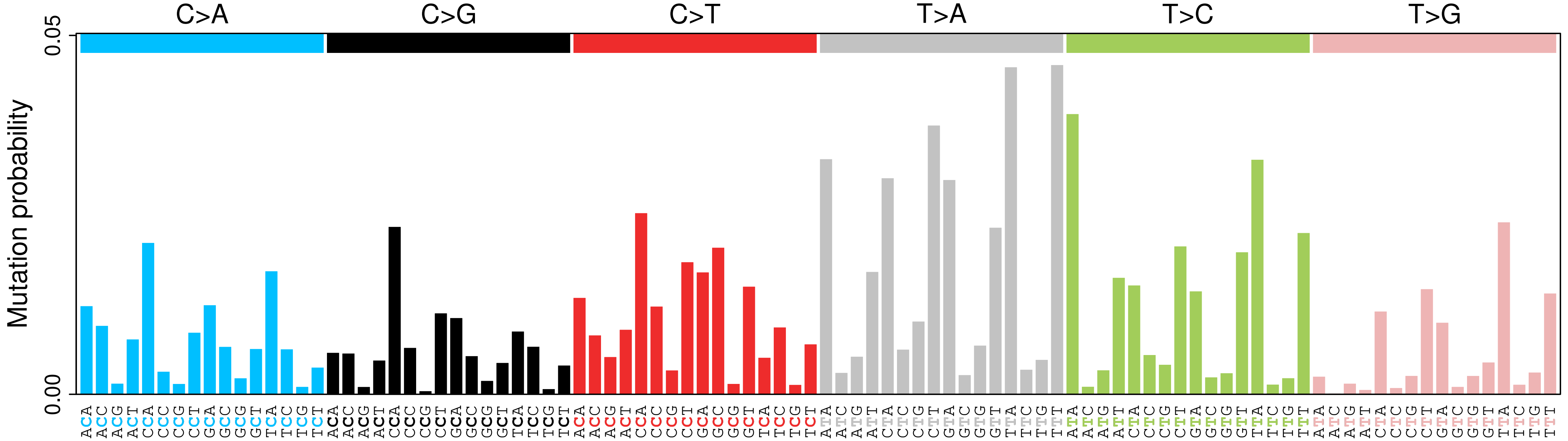
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SBS123



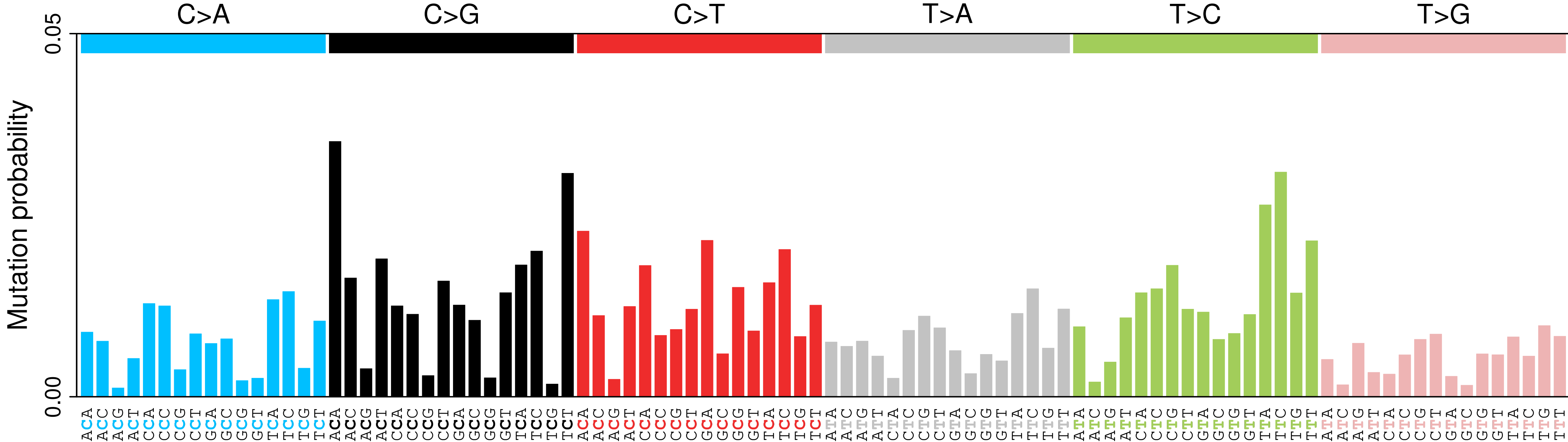
SBS124



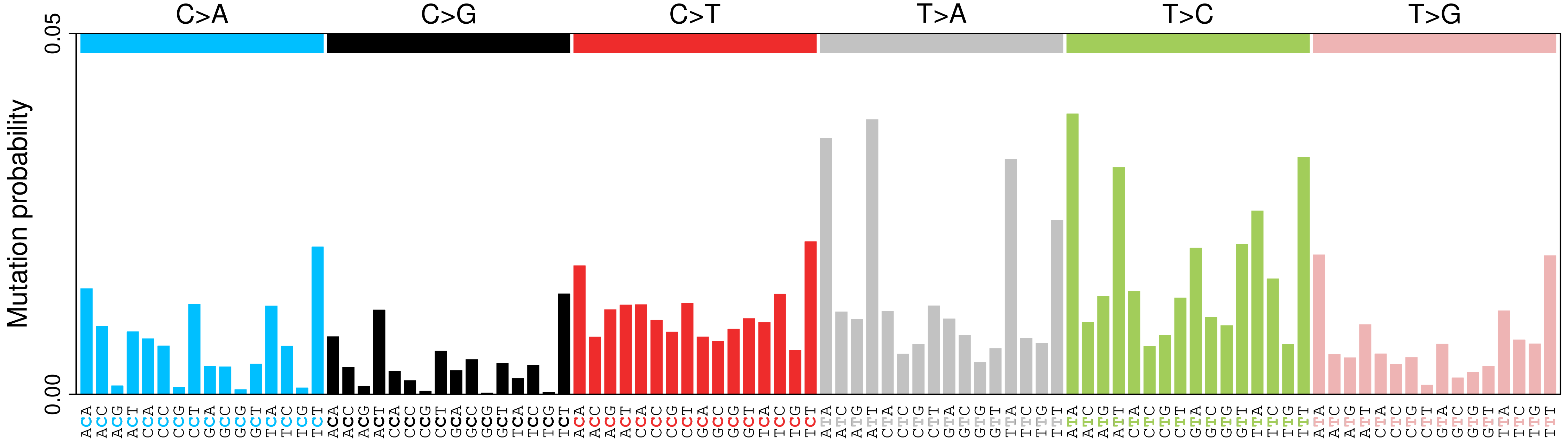
SBS125



SBS126



SBS127



SBS130

$C > A$

C > G

$$C > T$$

T > A

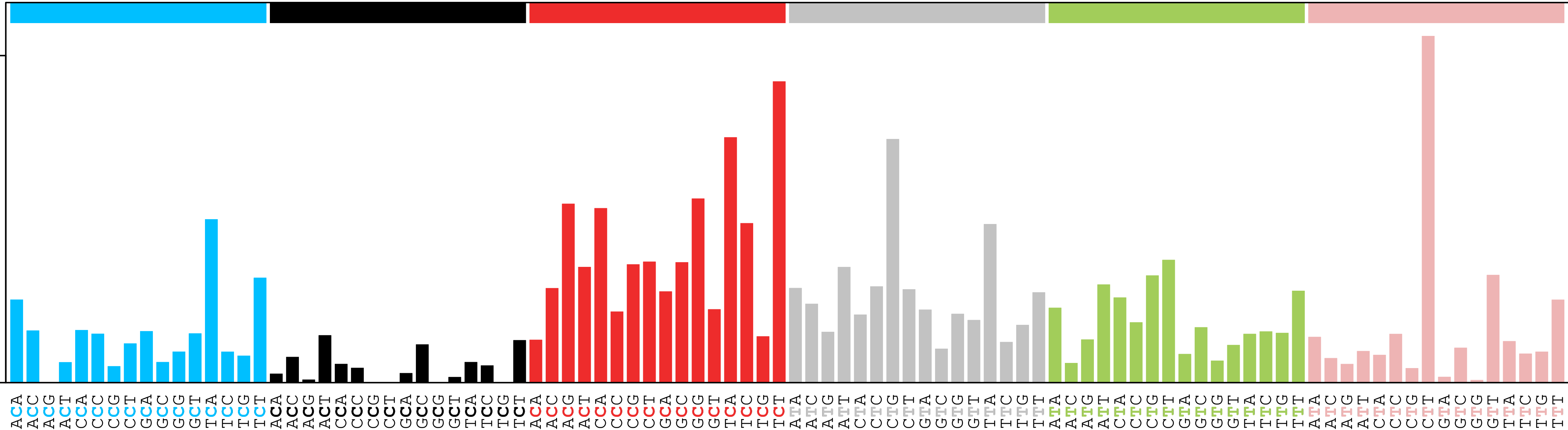
$$T > C$$

$T > G$

0.05

0.05

0.00



SBS132

$$C > A$$

C > G

$$C > T$$

T > A

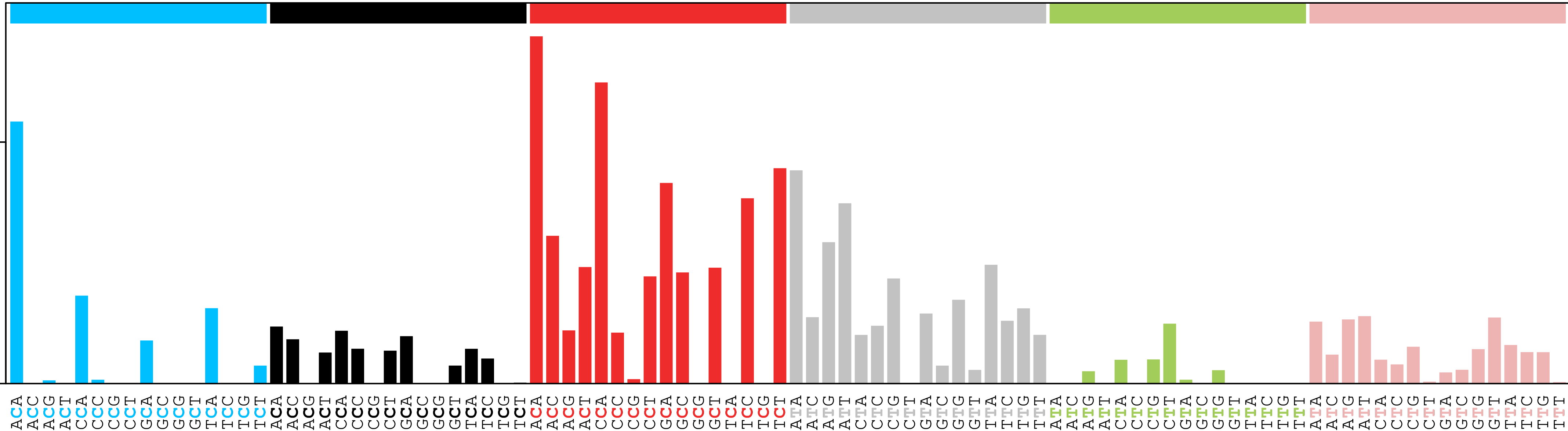
$T > C$

T > G

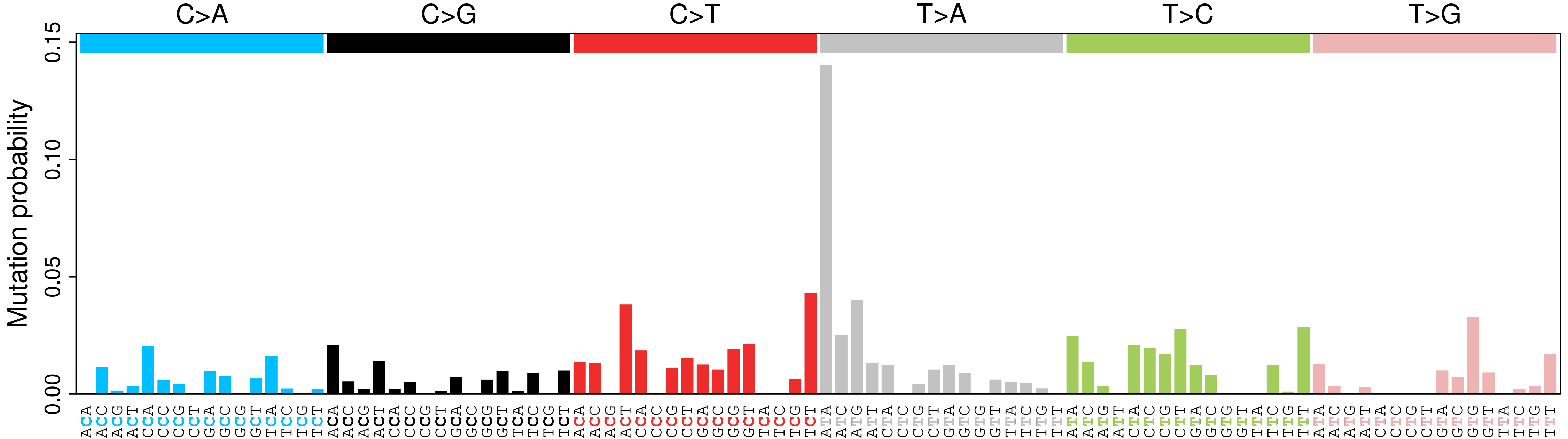
Mutation probability

0.05

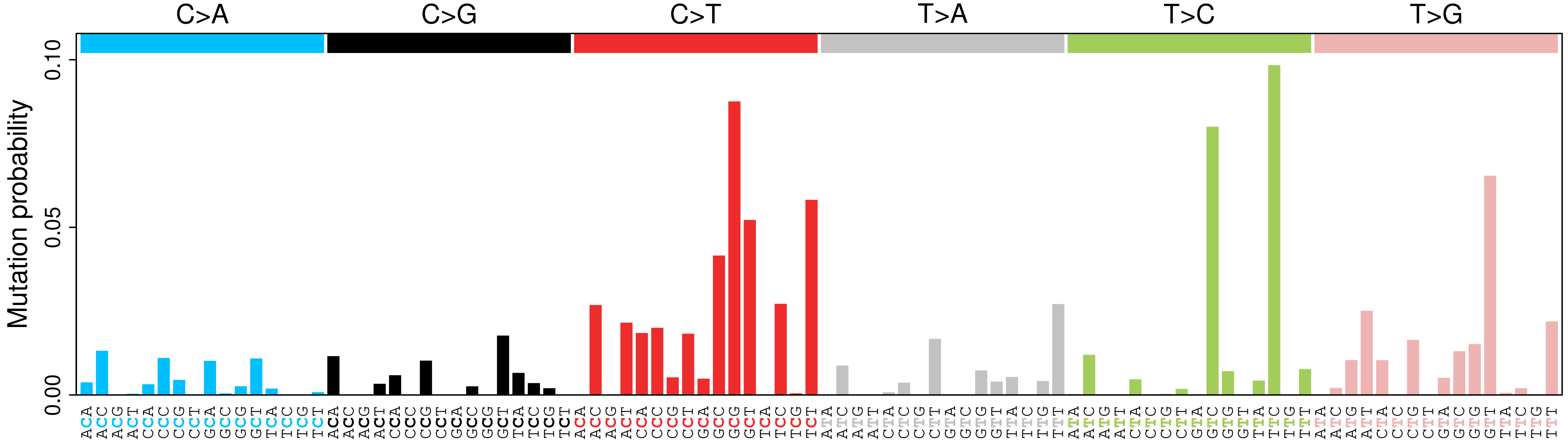
0.00



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 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

SBS140

C > A

C > G

$$C > T$$

T > A

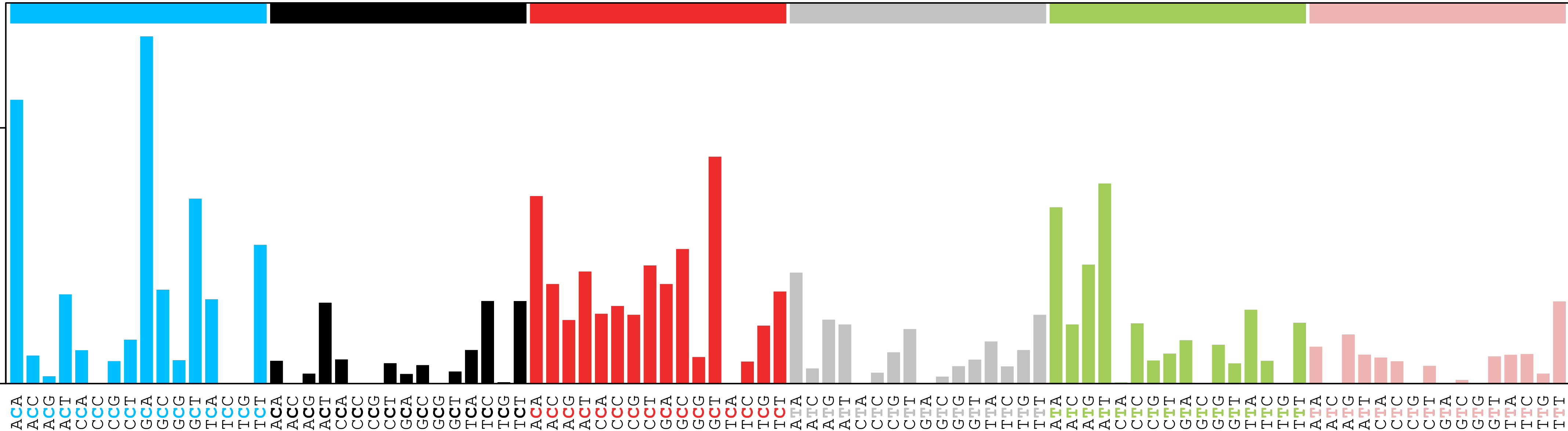
$T > C$

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

SBS143



SBS145

$C > A$

C > G

$C > T$

T>A

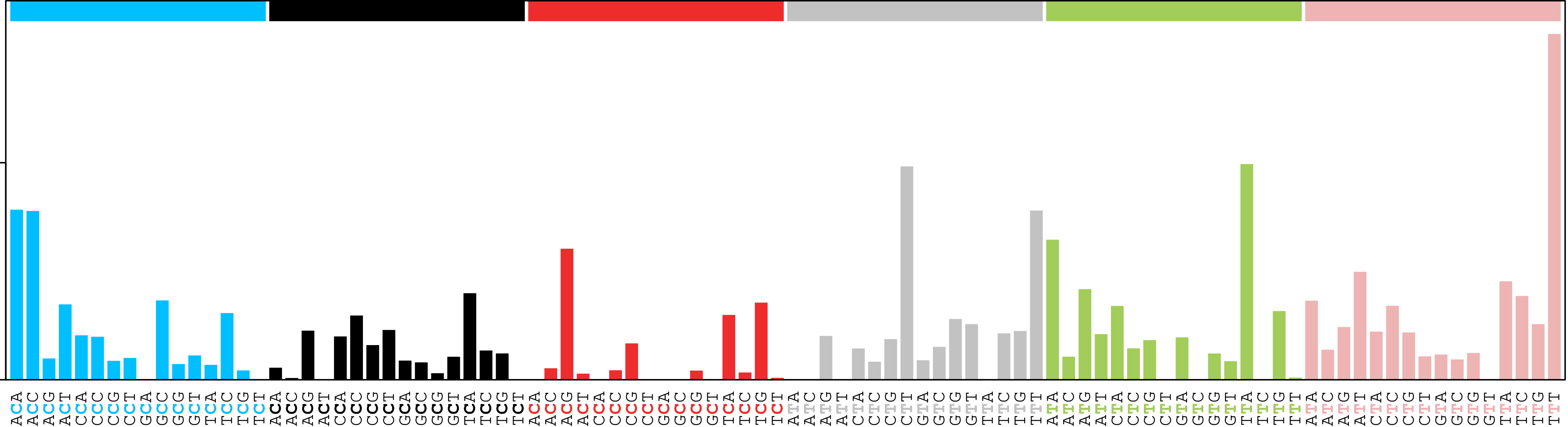
$$T > C$$

T>G

Mutation probability

0.05

0.00



SBS146

C>A

C>G

C>T

T>A

T>C

T>G

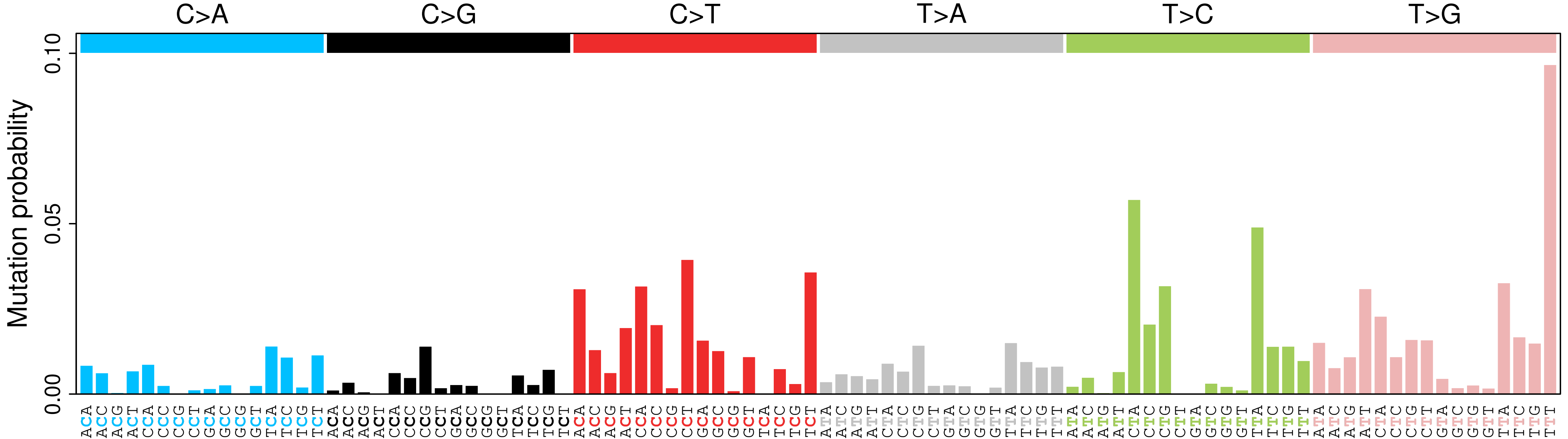
Mutation probability

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 ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

SBS147



SBS148

$C > A$

C > G

$$C > T$$

T > A

$$T > C$$

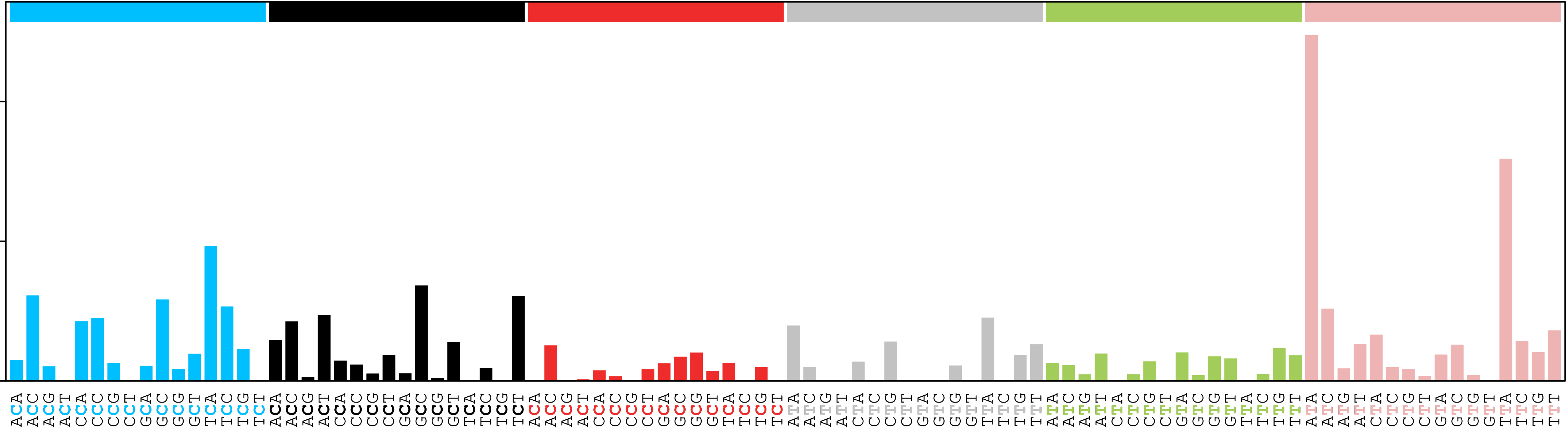
T>G

Mutation probability

0.10

0.05

0.00



SBS149

$C > A$

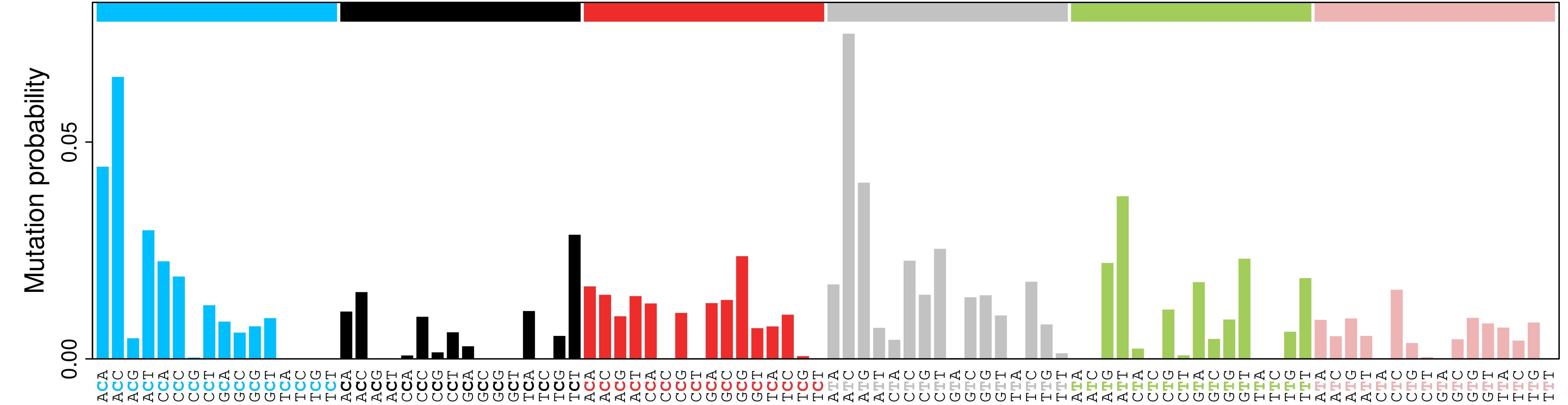
C > G

$C > T$

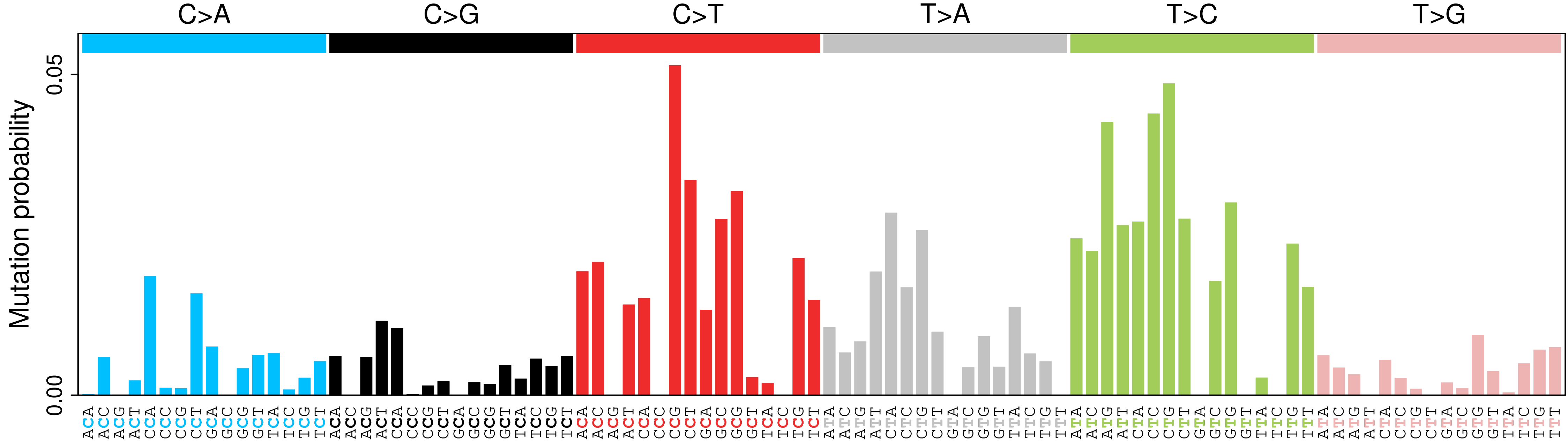
T>A

$$T > C$$

$T > G$



SBS150



SBS151

$$C > A$$

C > G

C>T

T > A

$T > C$

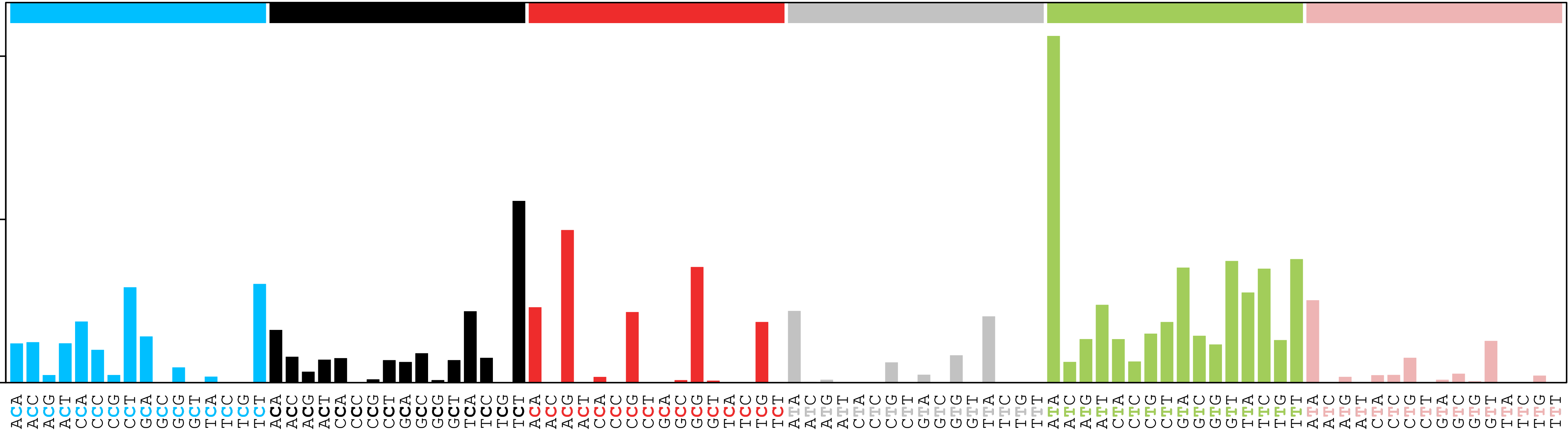
T>G

Mutation probability

0.10

0.05

0.0.



SBS153

C>A

C>G

C>T

T>A

T>C

T>G

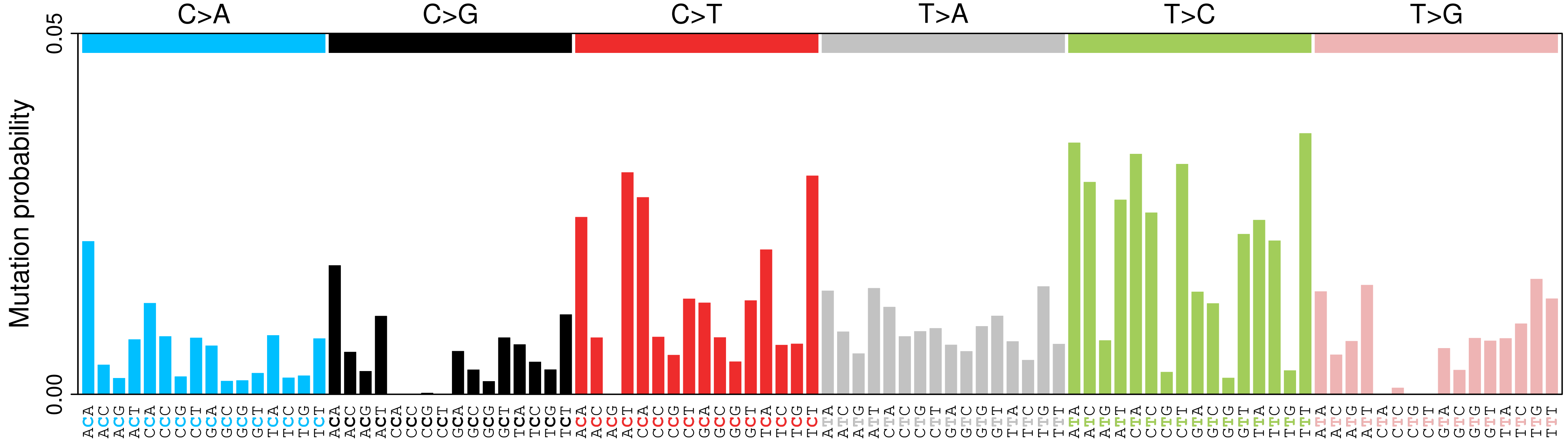
Mutation probability

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



SBS155

$C > A$

C > G

$C > T$

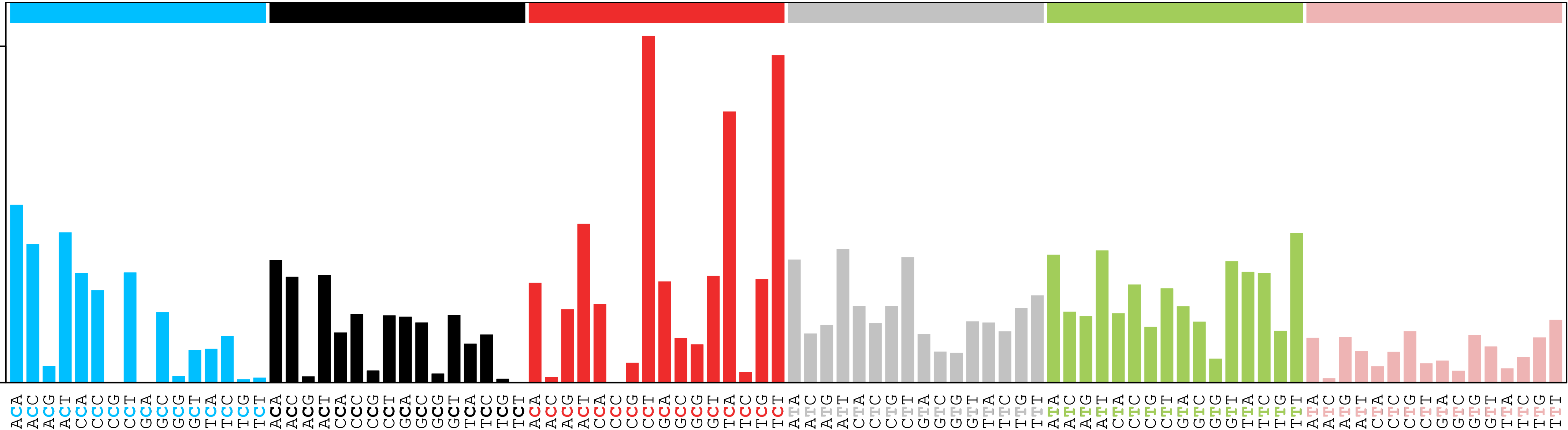
T > A

$$T > C$$

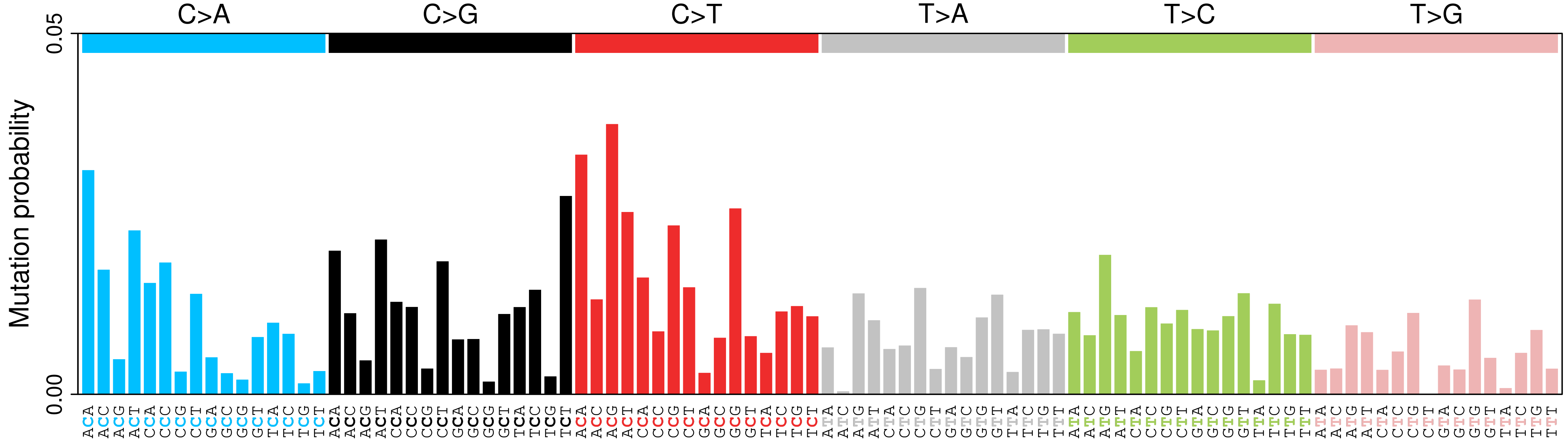
T>G

0.05

0.00



SBS157



SBS158

$C > A$

C > G

$$C > T$$

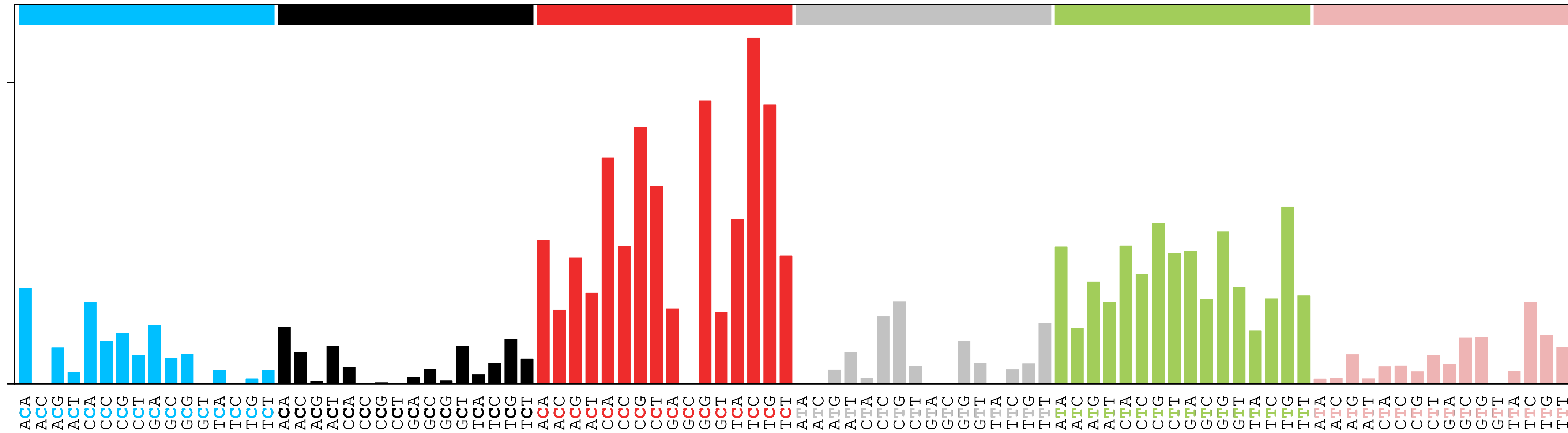
T > A

$T > C$

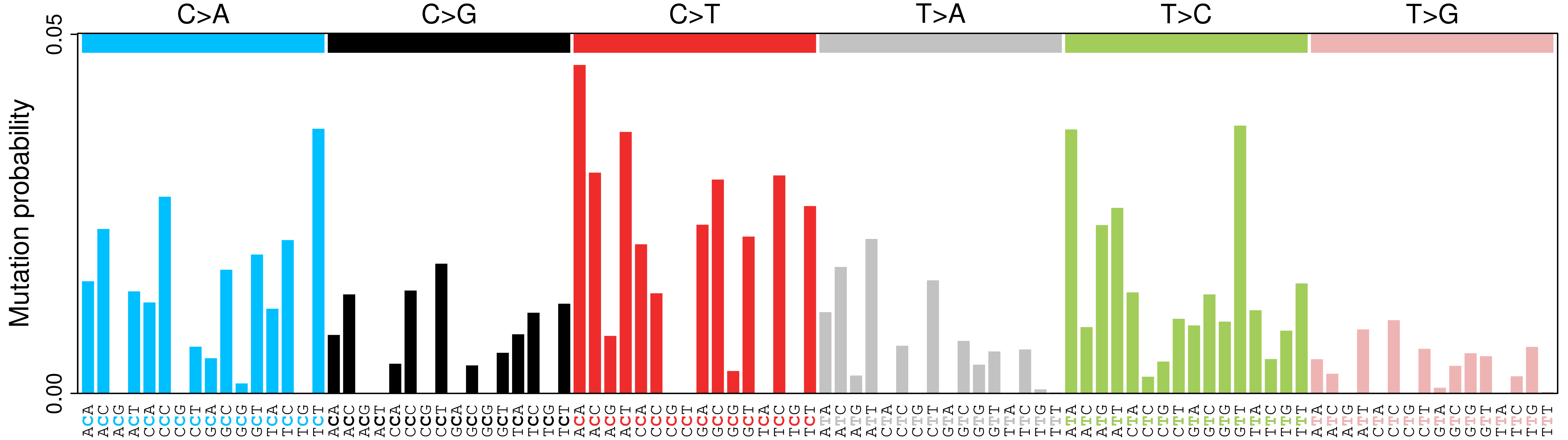
T>G

0.05

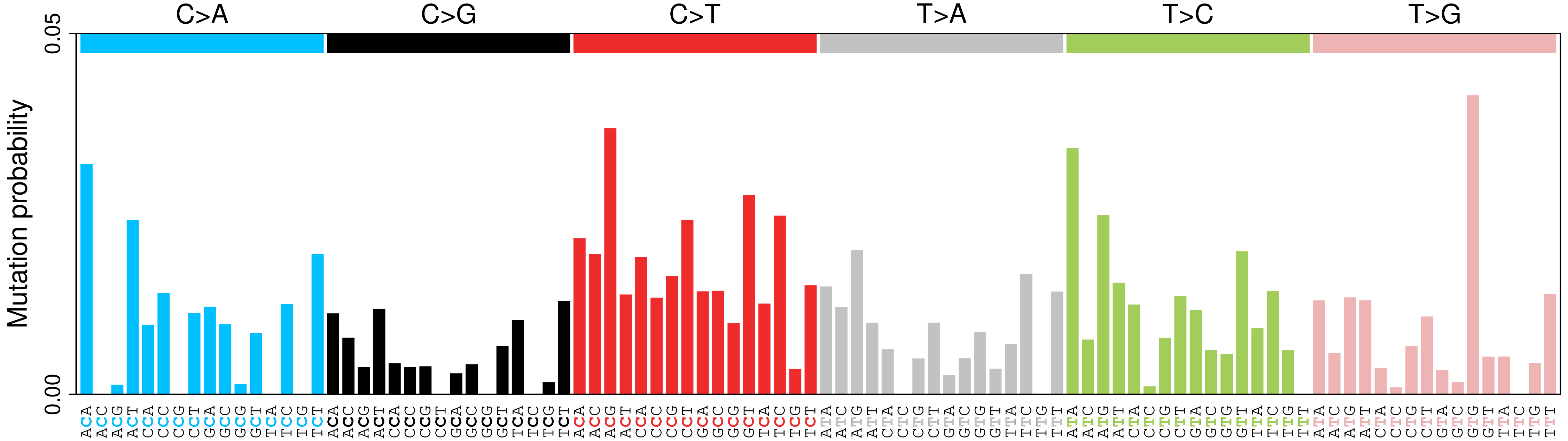
0.00



SBS159



SBS160



SBS161

$$C > A$$

C > G

$$C > T$$

T > A

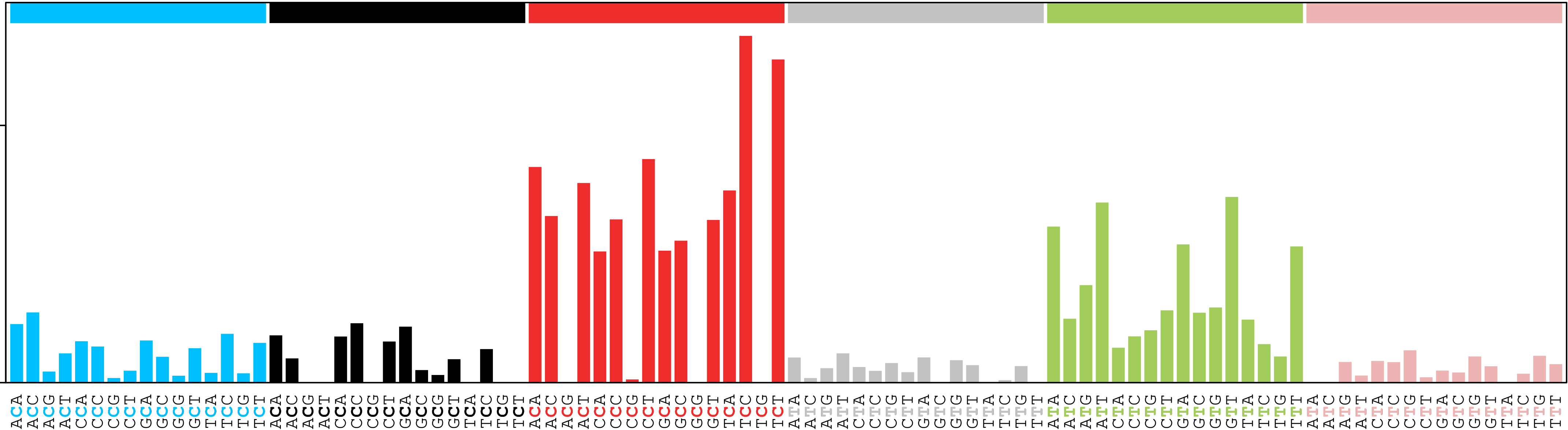
$T > C$

$T > G$

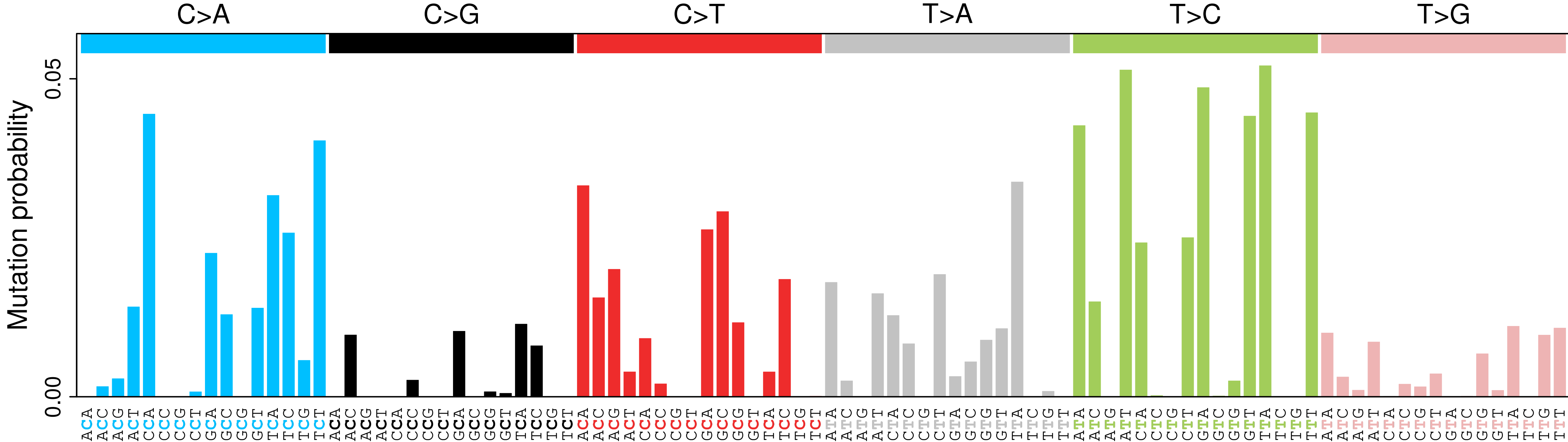
Mutation probability

0.05

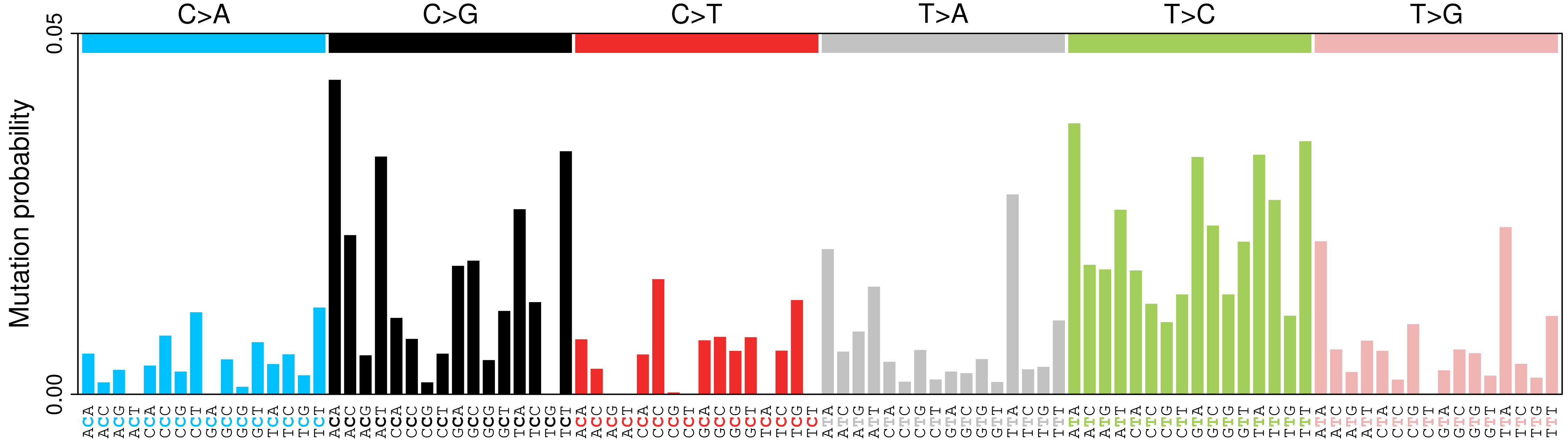
0.00



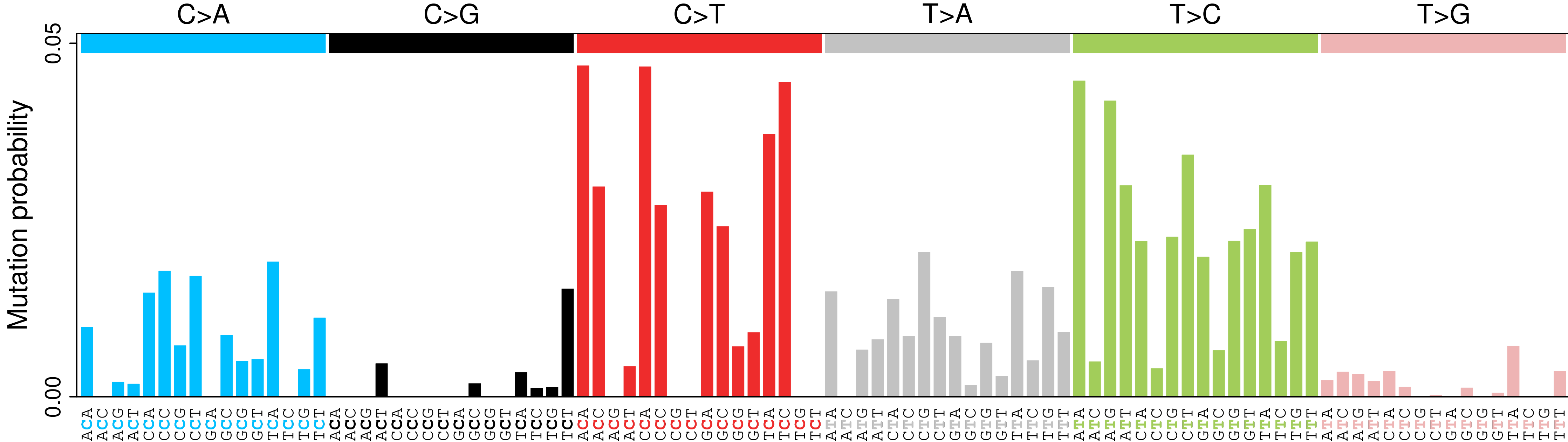
SBS162



SBS163



SBS164



SBS166

$C > A$

C > G

$$C > T$$

T > A

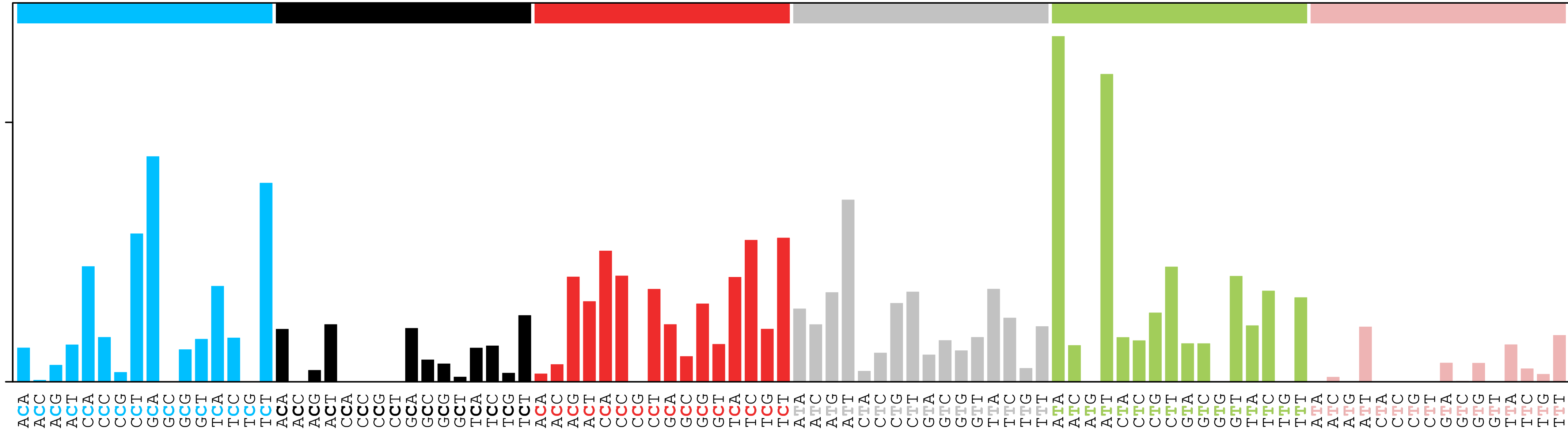
$T > C$

T>G

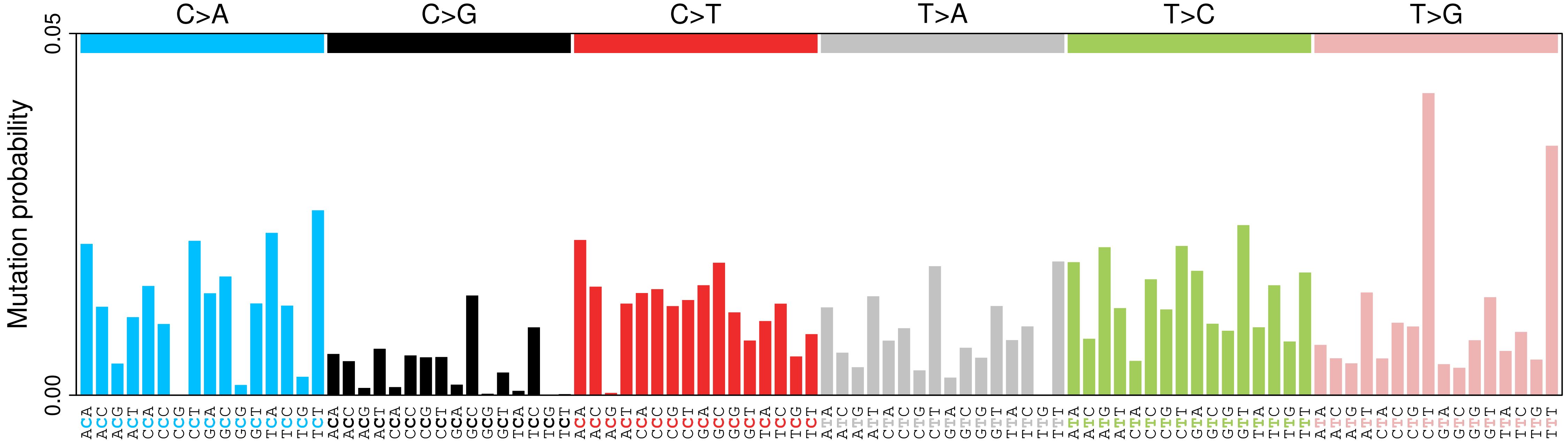
Mutation probability

0.05

0.00



SBS167



SBS168

$C > A$

C > G

$$C > T$$

T > A

$$T > C$$

$T > G$

Mutation probability

0.05

0.00



