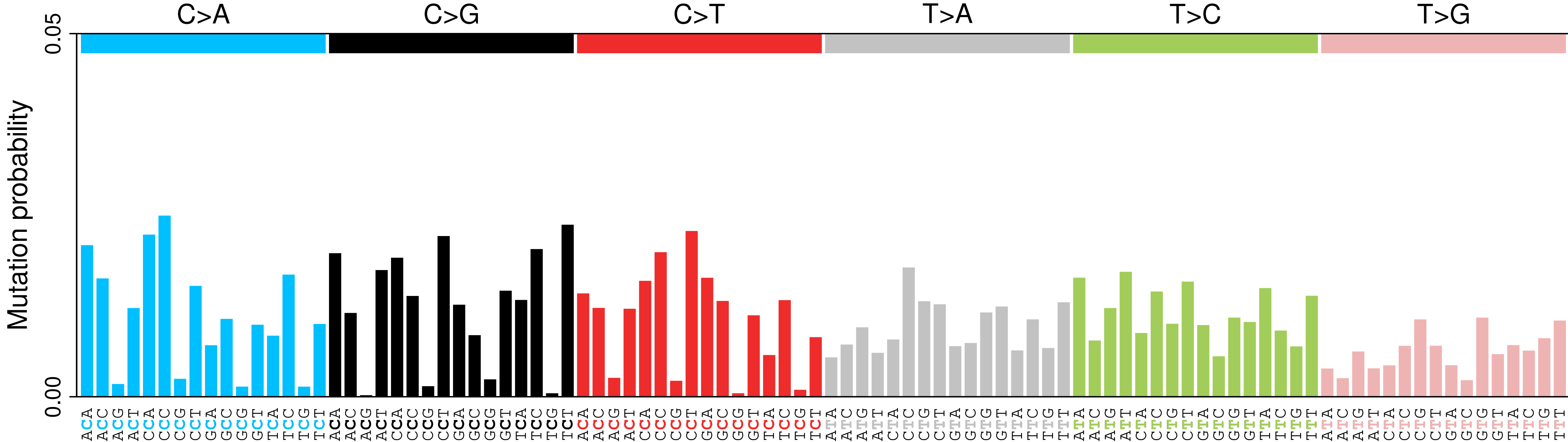




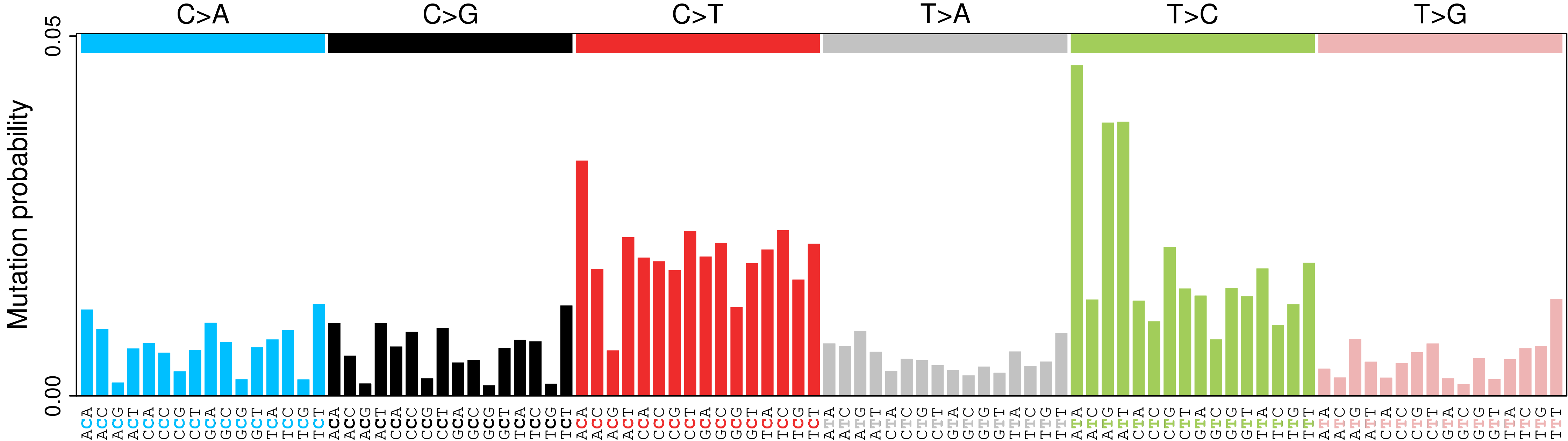


# SBS3





# SBS5



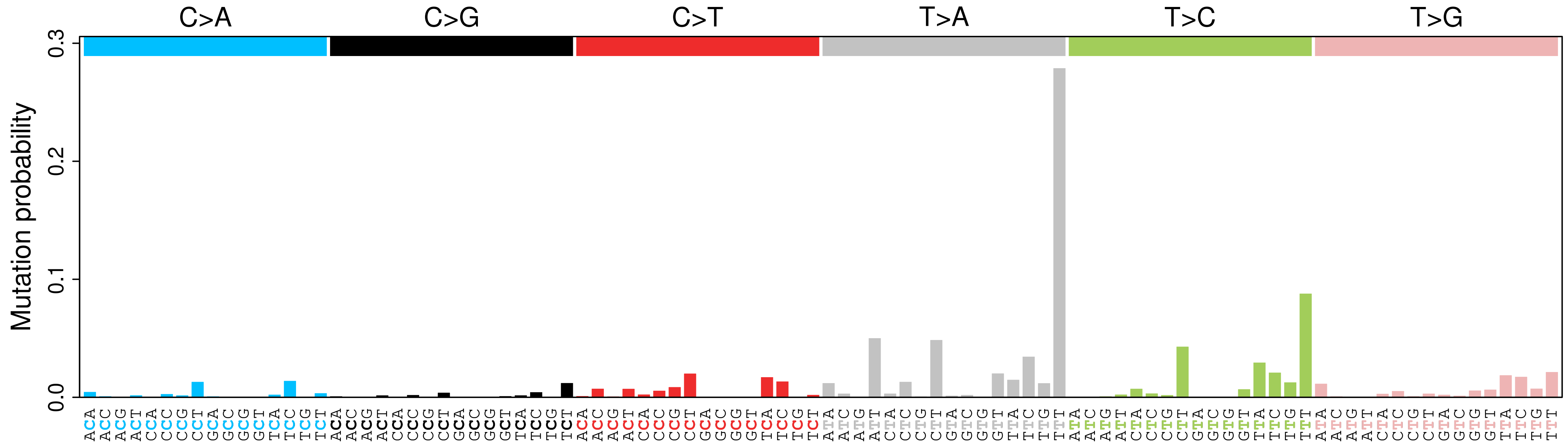








# SBS7c



# SBS7d

$C > A$

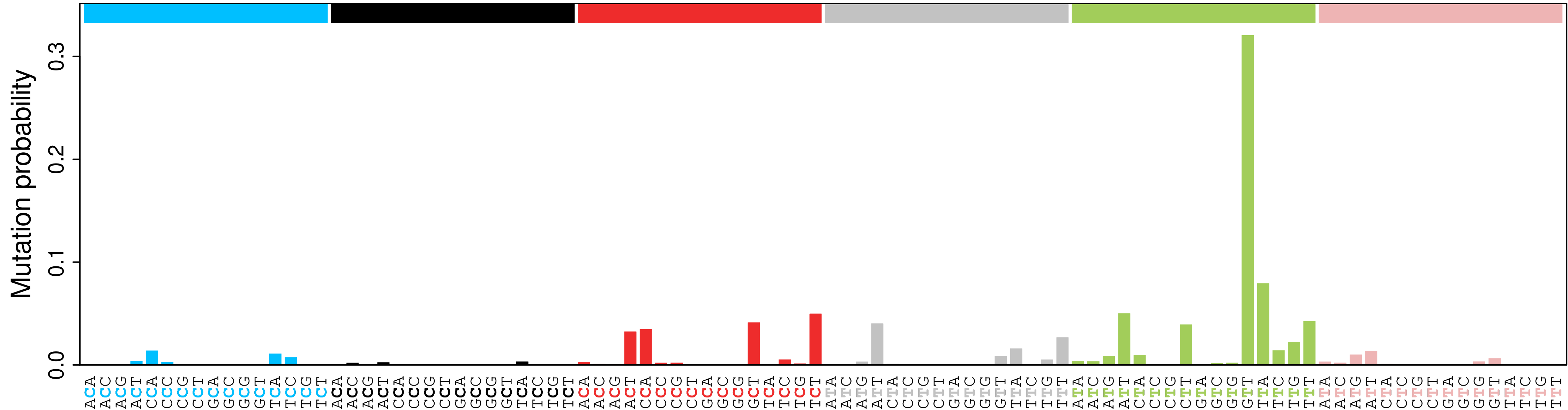
C > G

$$C > T$$

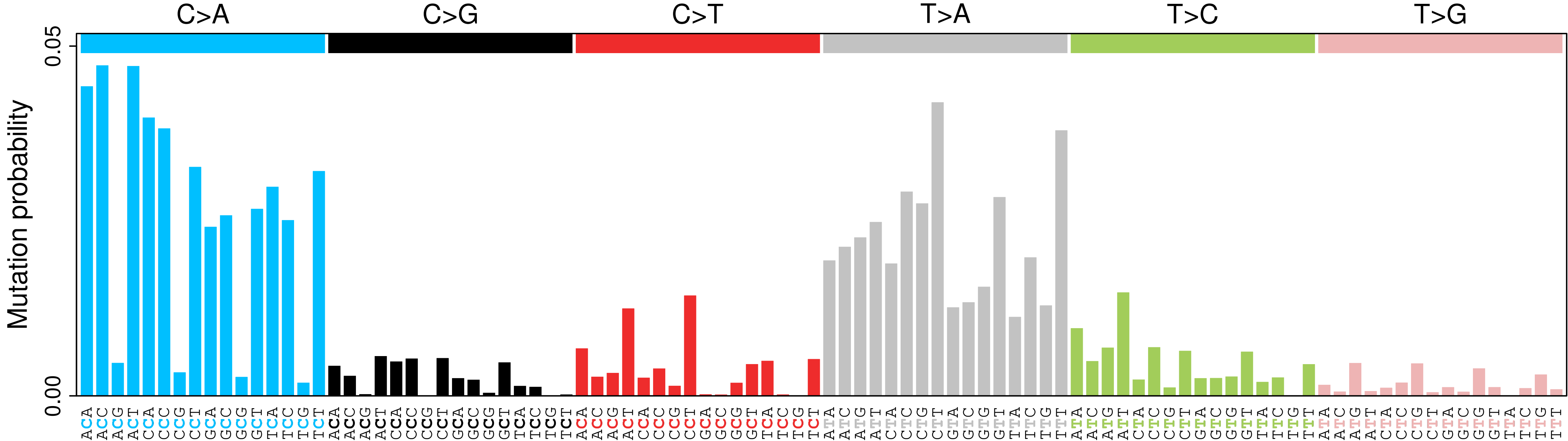
**T > A**

$T > C$

T>G



# SBS8



# SBS9

**C > A**

C > G

$C > T$

**T > A**

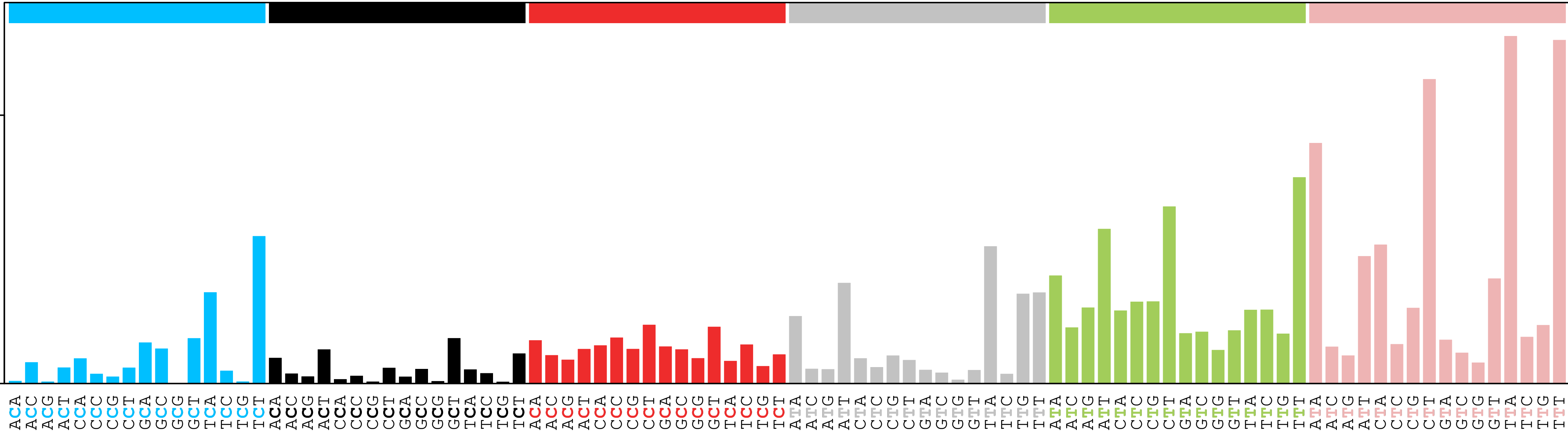
$$T > C$$

$T > G$

# Mutation probability

0.05

0.00



# SBS10a

C>A

C>G

C>T

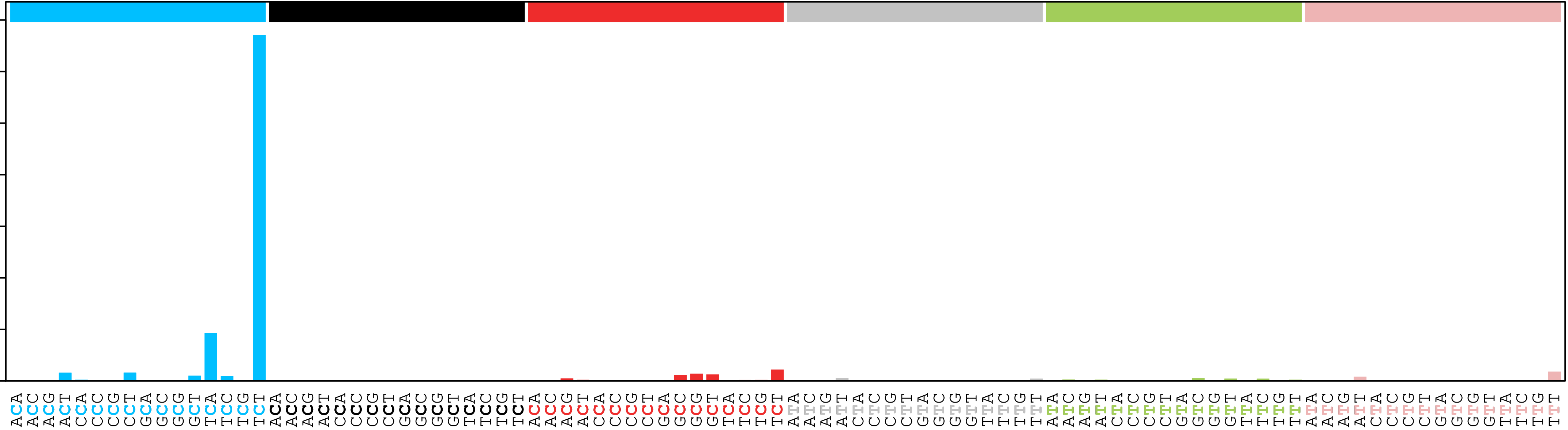
T>A

T>C

T>G

Mutation probability

0.7  
0.6  
0.5  
0.4  
0.3  
0.2  
0.1  
0.0



# SBS10b











# SBS12

C>A

C>G

C>T

T>A

T>C

T>G

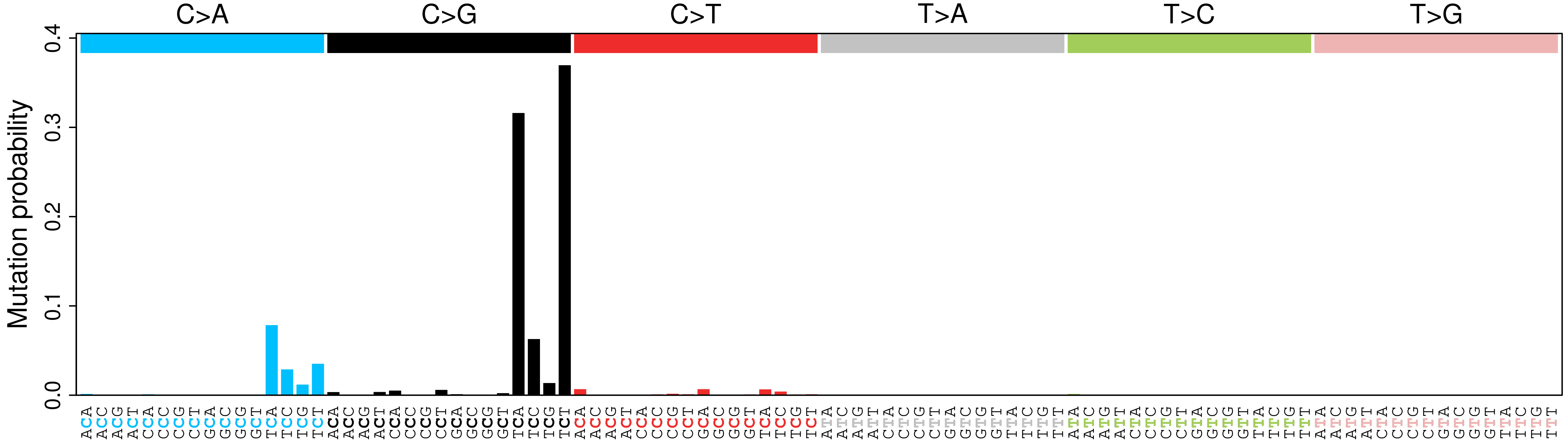
Mutation probability

0.05

0.00

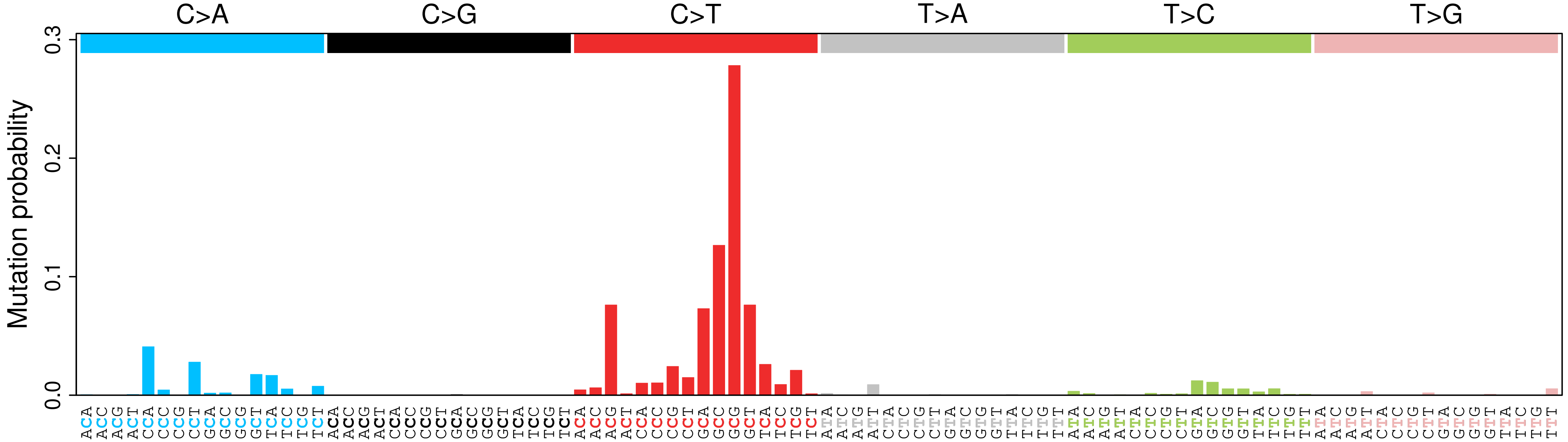
ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

# SBS13





# SBS15





# SBS17a

C>A

C>G

C>T

T>A

T>C

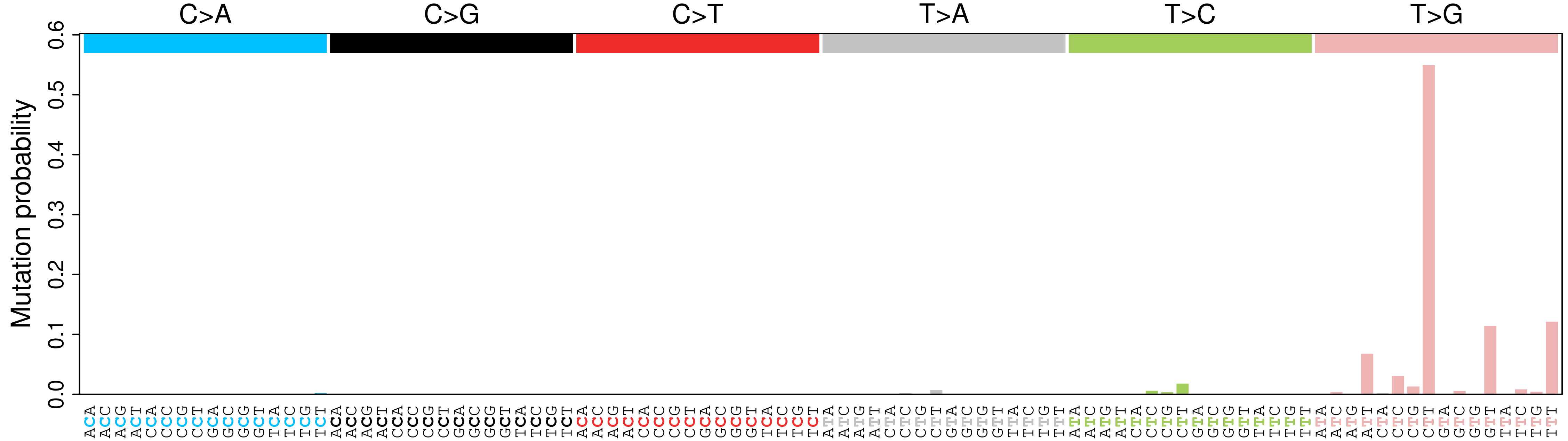
T>G

Mutation probability

0.4  
0.3  
0.2  
0.1  
0.0

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

# SBS17b









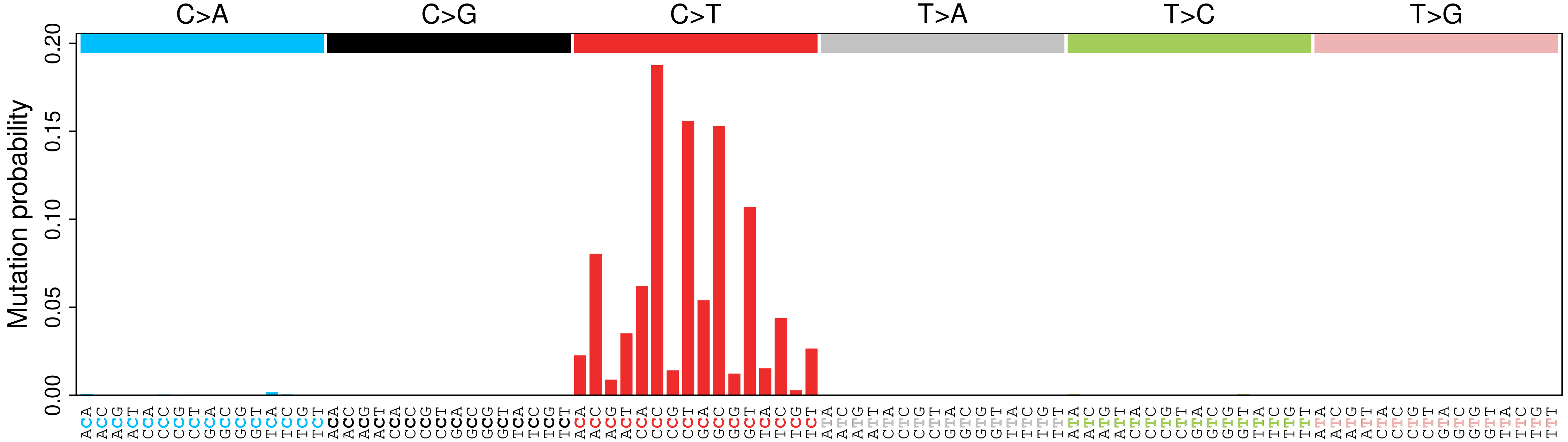








# SBS23







# SBS25

C>A

C>G

C>T

T>A

T>C

T>G

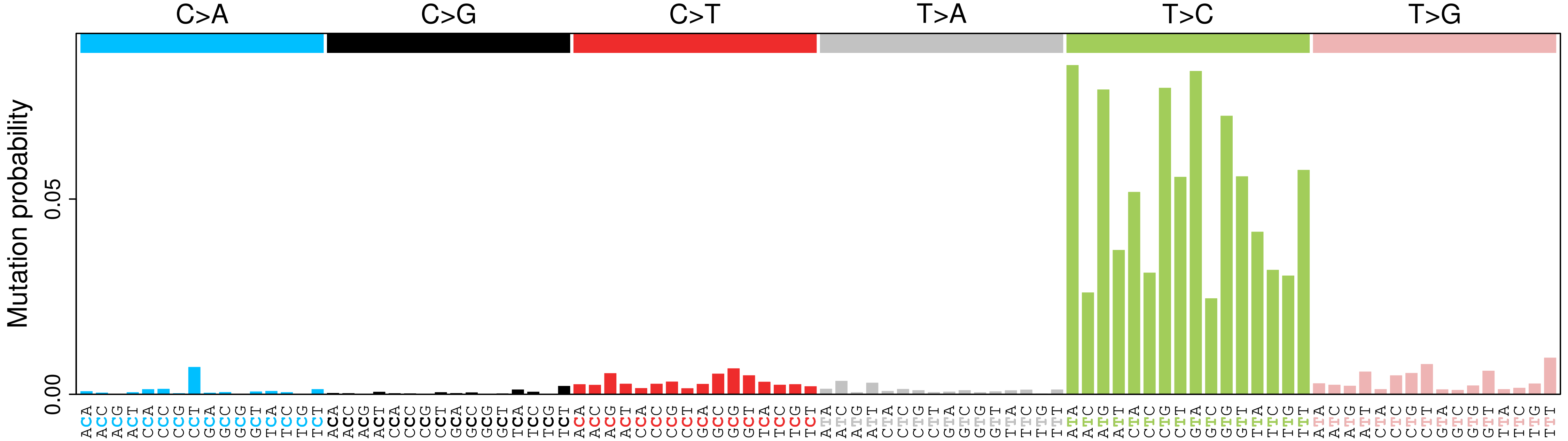
Mutation probability

0.05

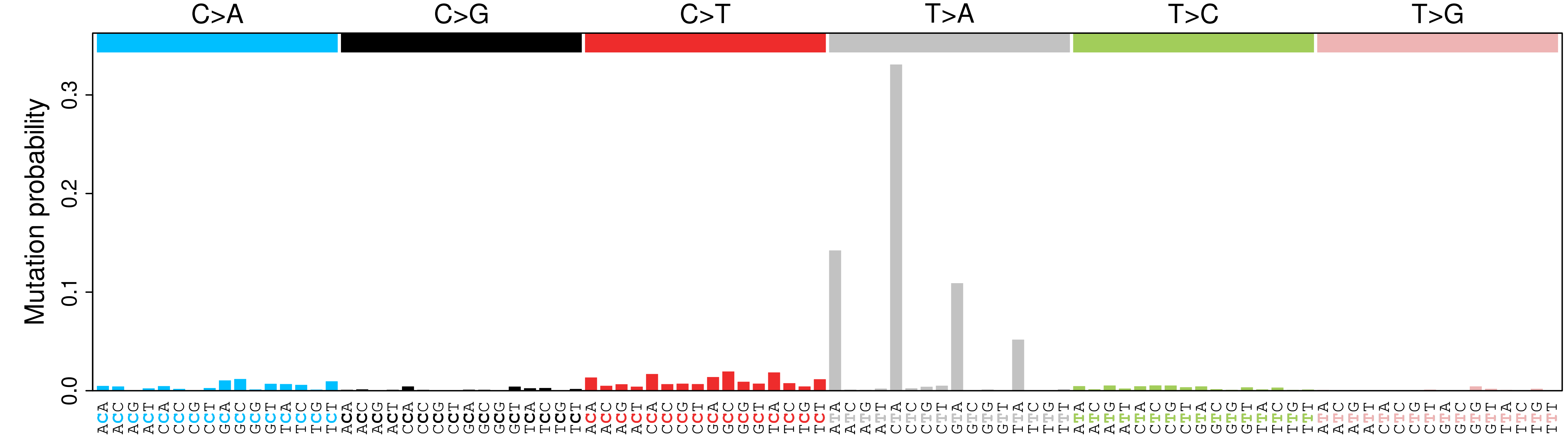
0.00

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

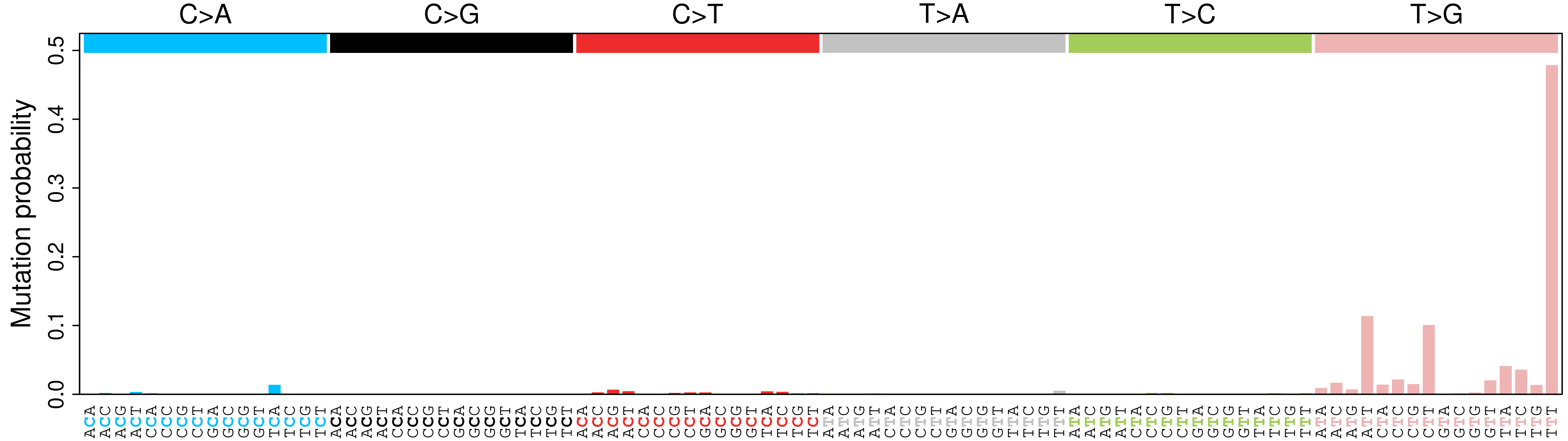
# SBS26



# SBS27



# SBS28







# SBS31

$$C > A$$

C > G

**C>T**

**T > A**

$$T > C$$

**T>G**

# Mutation probability

15

0

0.04

00

[illegible]

# SBS32

$$C > A$$

C > G

C>T

**T > A**

$T > C$

T>G

# Mutation probability

0.15

# 0.1

0

0.0

[illegible]



# SBS33

C>A

C>G

C>T

T>A

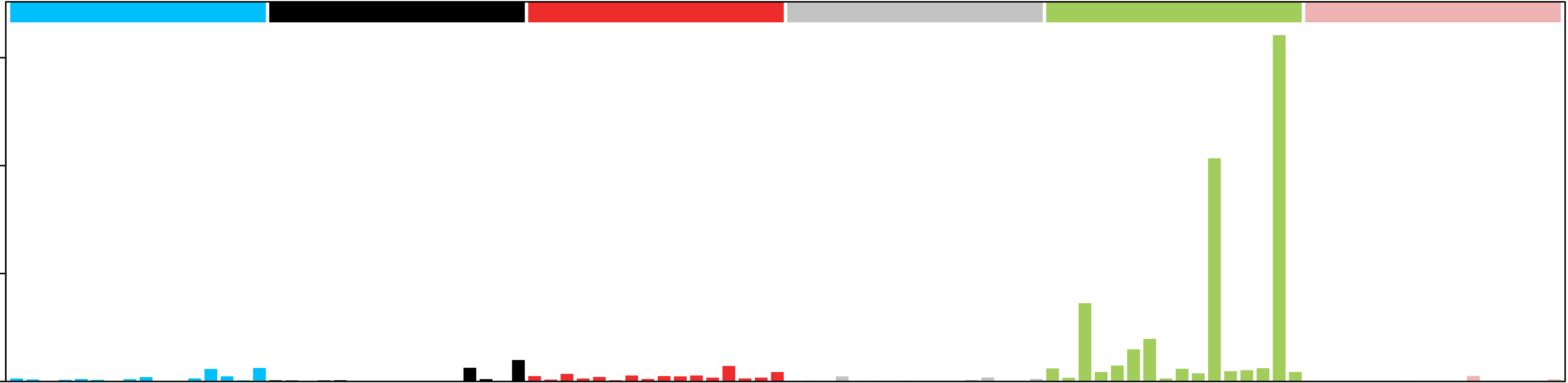
T>C

T>G

Mutation probability

0.3  
0.2  
0.1  
0.0

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



# SBS34

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

T>G

# Mutation probability

3.

 $\circ$ 

1

[illegible]

# SBS35

$C > A$

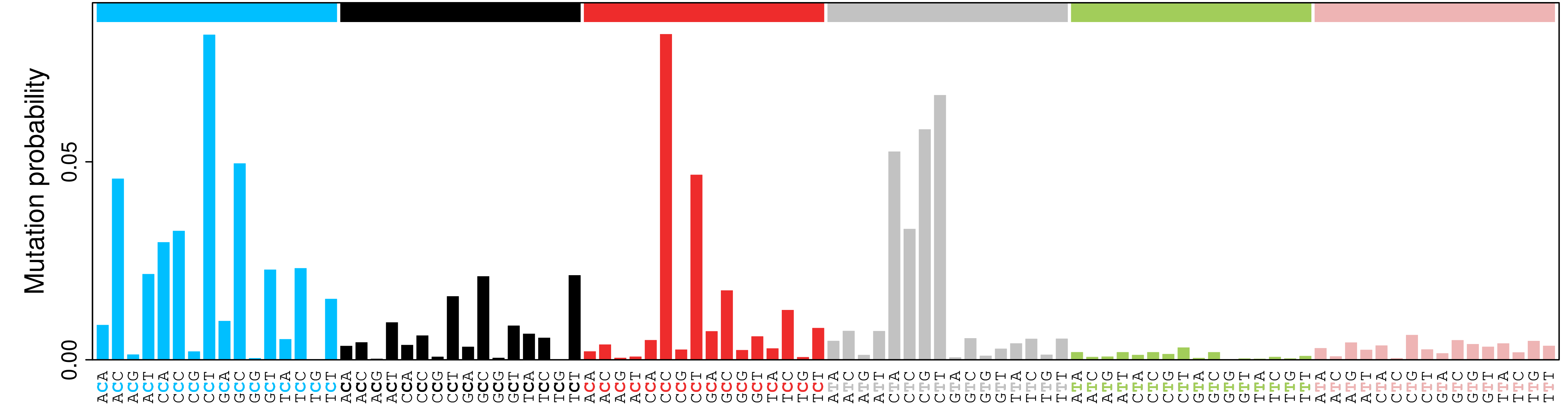
C > G

$$C > T$$

**T > A**

$T > C$

T>G

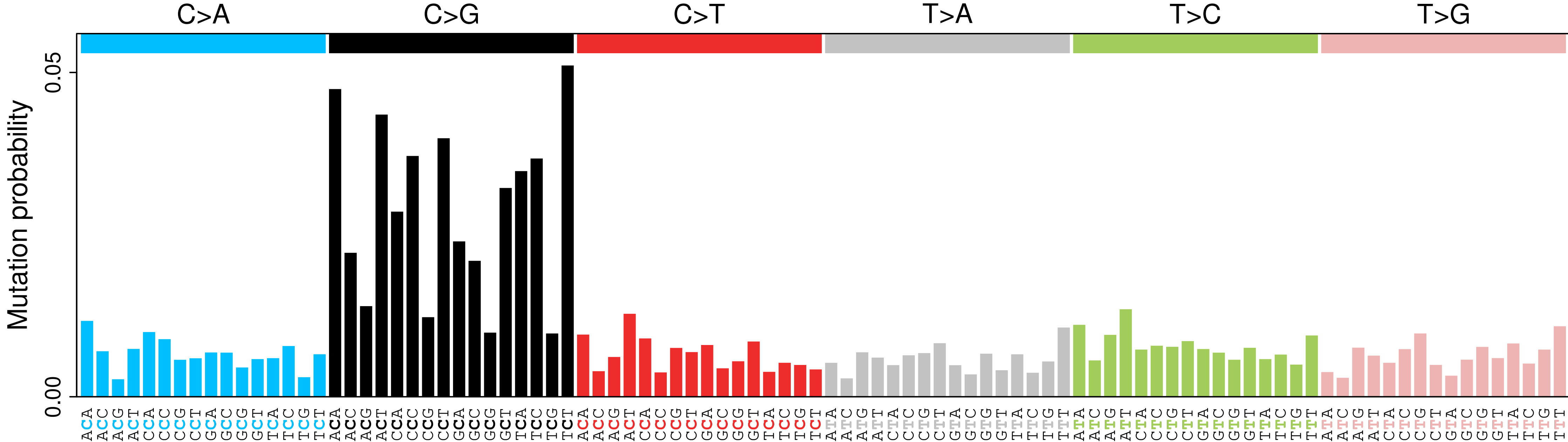








# SBS39



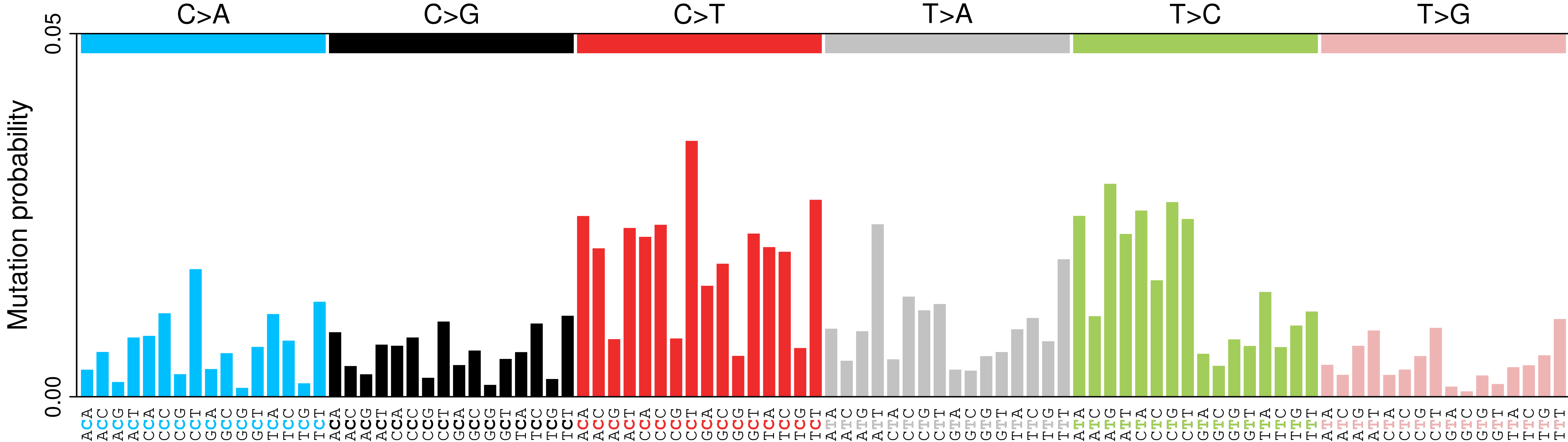
# SBS40a







# SBS40c



# SBS41

$C > A$

C > G

$$C > T$$

**T > A**

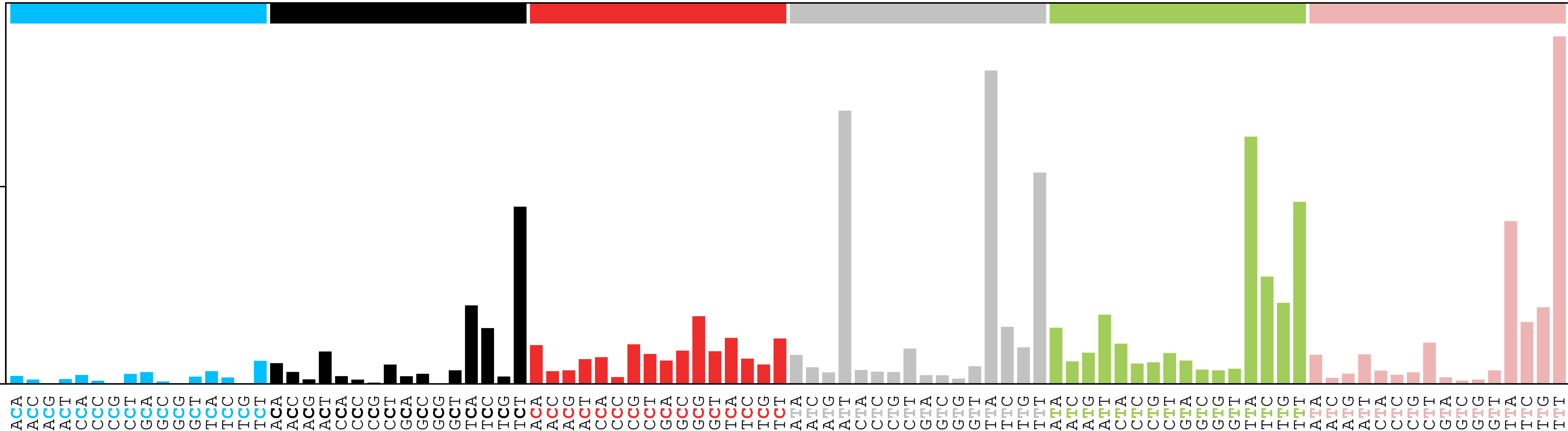
$T > C$

T>G

# Mutation probability

0.05

0.00





# SBS43

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

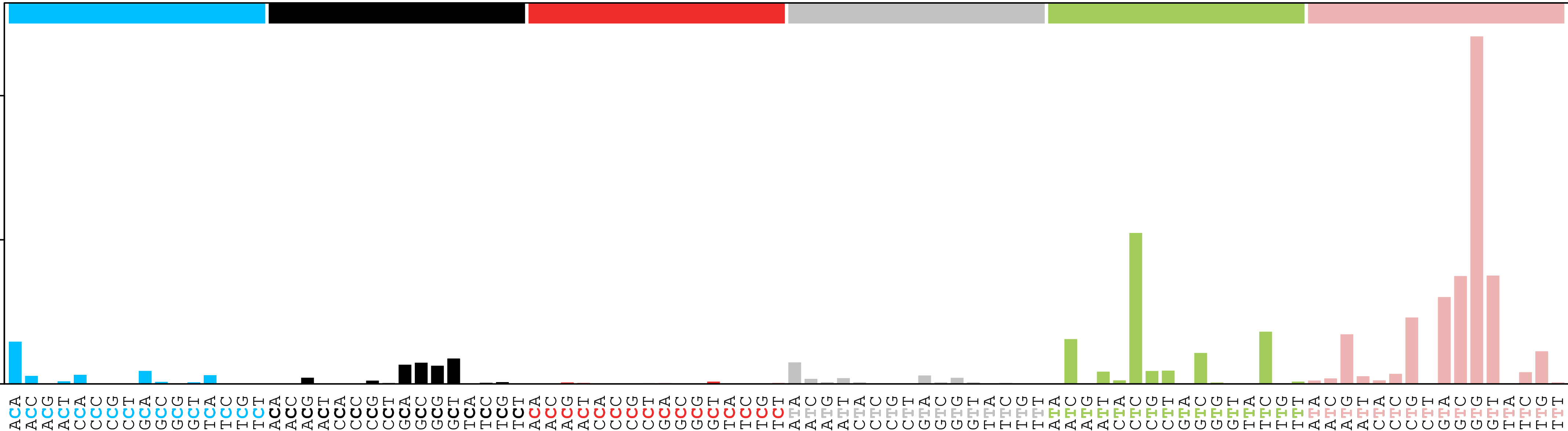
T>G

# Mutation probability

0.2

0

O



# SBS44



# SBS45

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.2  
0.1  
0.0

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 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







# SBS48

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

T>G

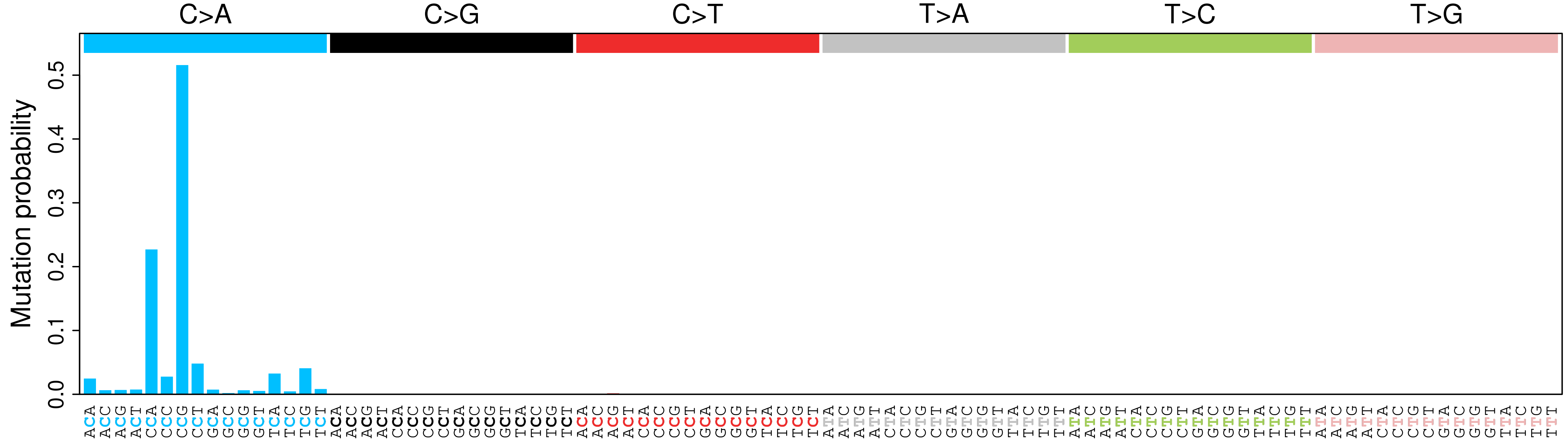
# Mutation probability

## 9.0

0

[illegible]

# SBS49



# SBS50

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

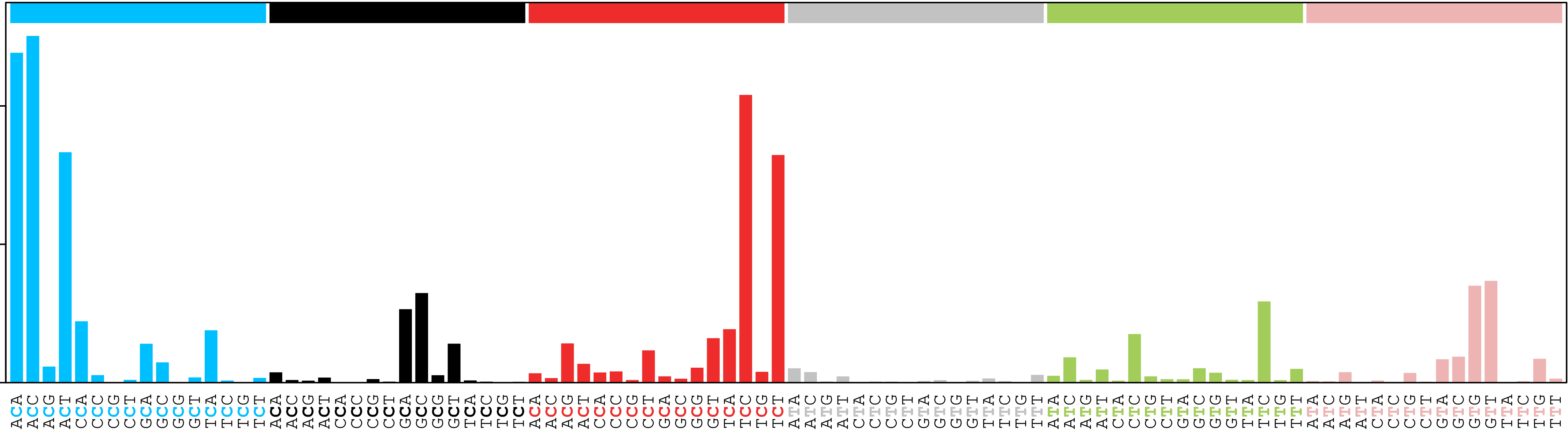
T>G

# Mutation probability

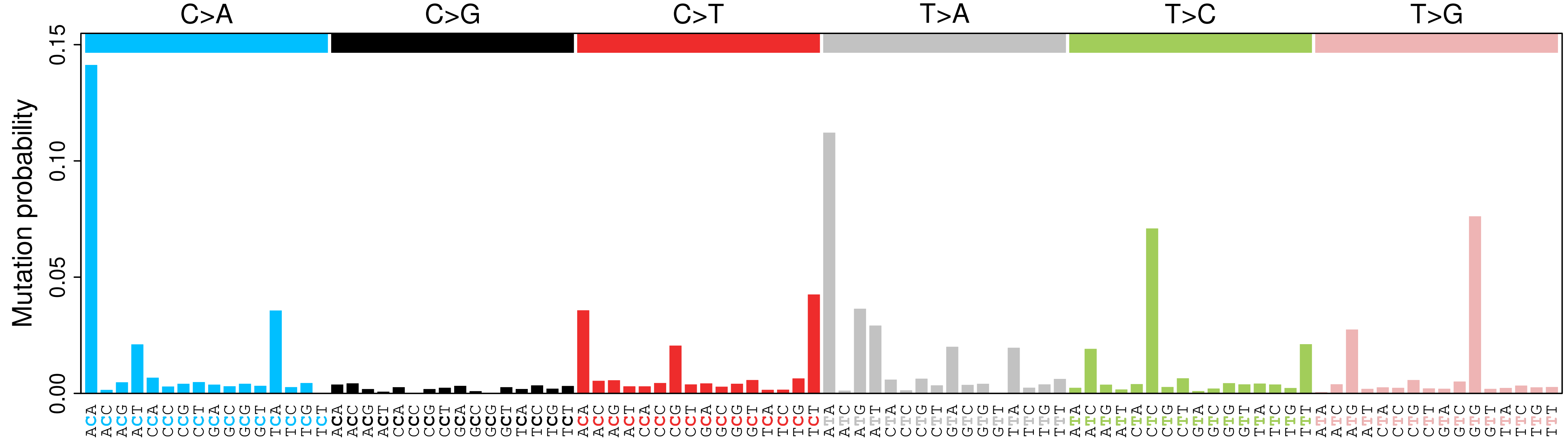
0.10

50.

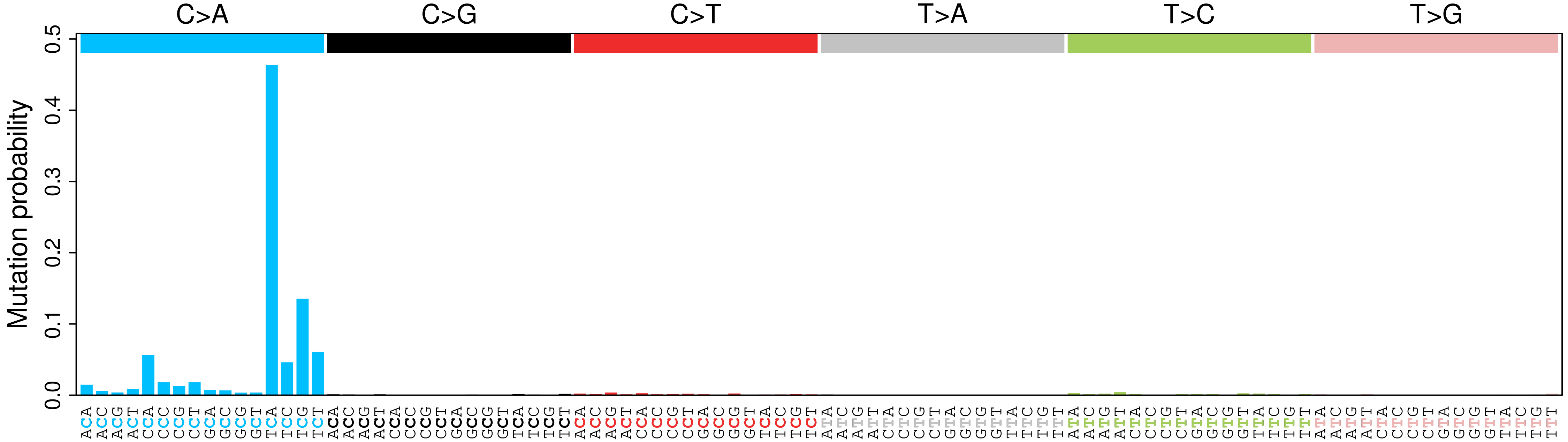
0.00



# SBS51



# SBS52













# SBS57

C>A

C>G

C>T

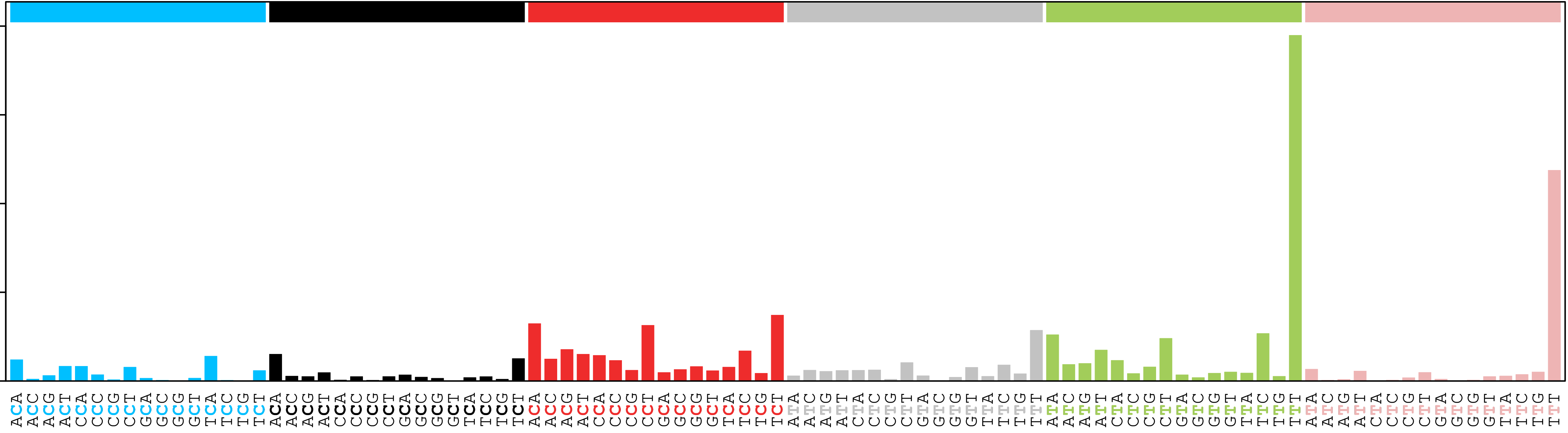
T>A

T>C

T>G

Mutation probability

0.20  
0.15  
0.10  
0.05  
0.00



# SBS58

C>A

C>G

C>T

T>A

T>C

T>G

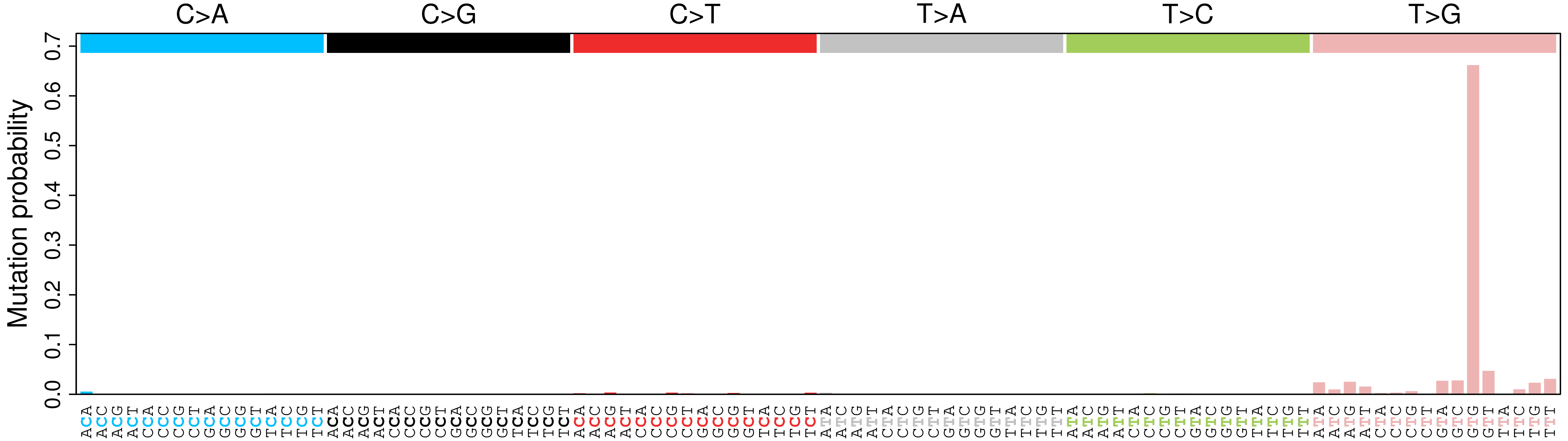
Mutation probability

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 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



# SBS60



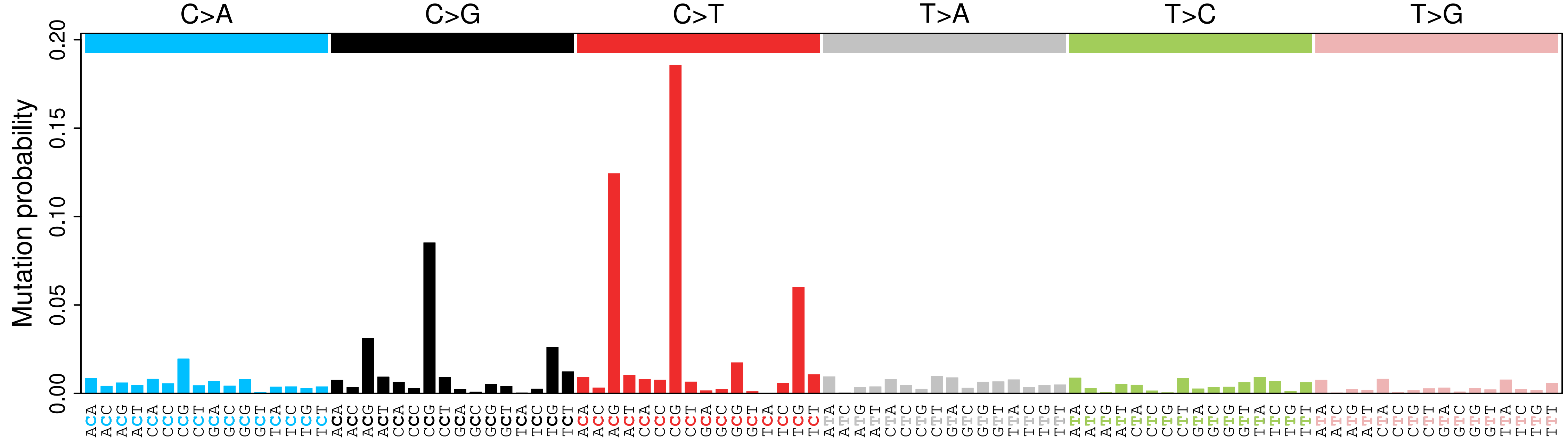








# SBS87



# SBS88

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

$T > G$

# Mutation probability

0.15

## 0.10

50.

00.

[illegible]

# SBS89

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





# SBS92

C>A

C>G

C>T

T>A

T>C

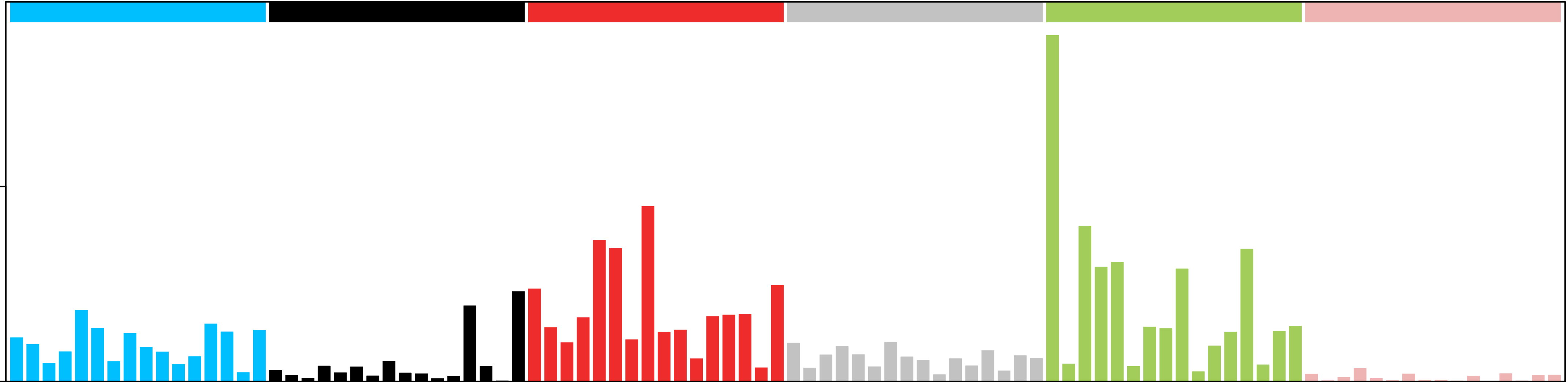
T>G

Mutation probability

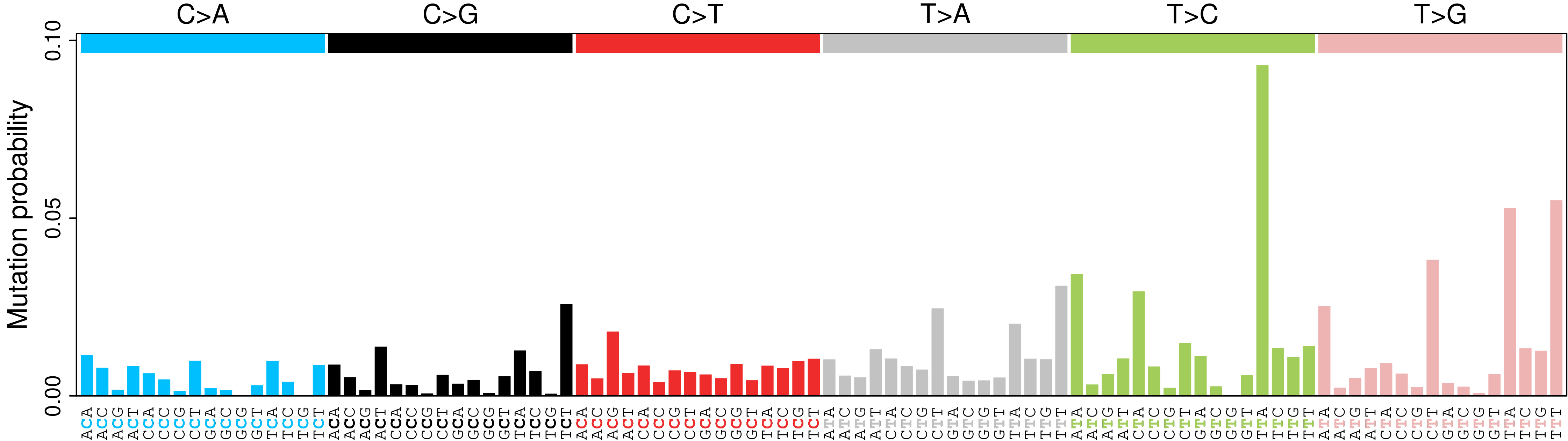
0.05

0.00

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



# SBS93





# SBS94

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

# SBS95

$C > A$

C > G

$$C > T$$

**T > A**

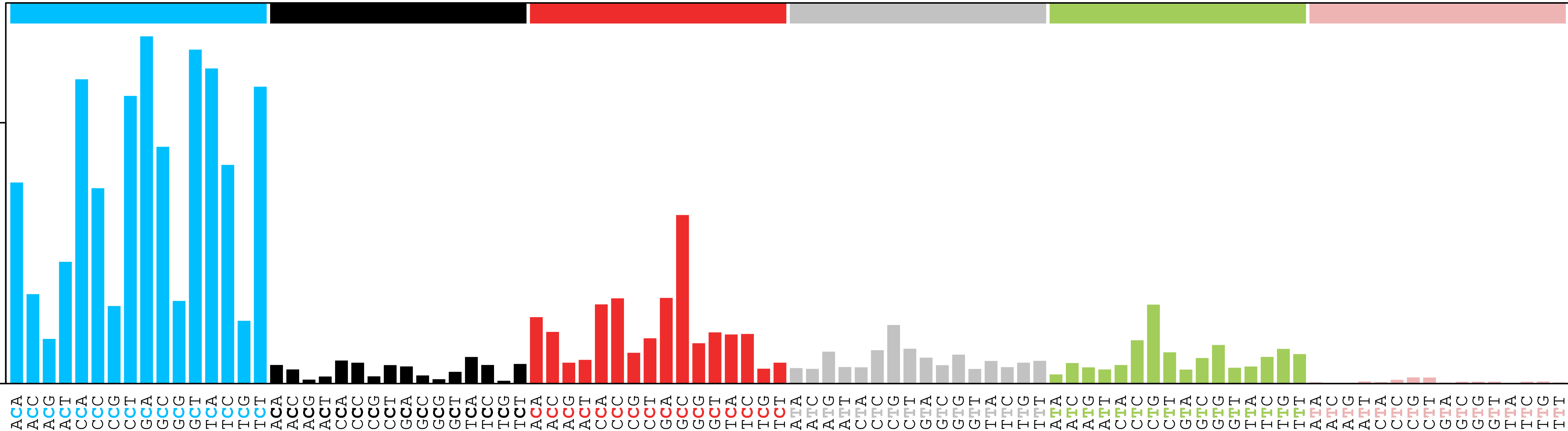
$T > C$

T>G

# Mutation probability

0.05

0.00



# SBS96

C>A

C>G

C>T

T>A

T>C

T>G

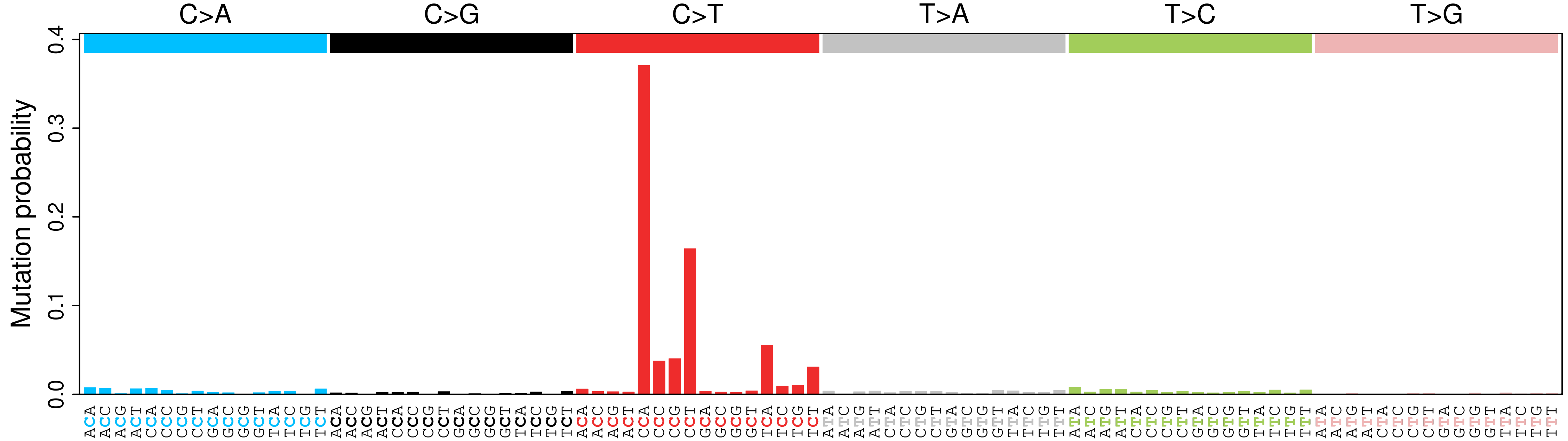
Mutation probability

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

# SBS97





# SBS99

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

T>G

