

# SBS1



# SBS2

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

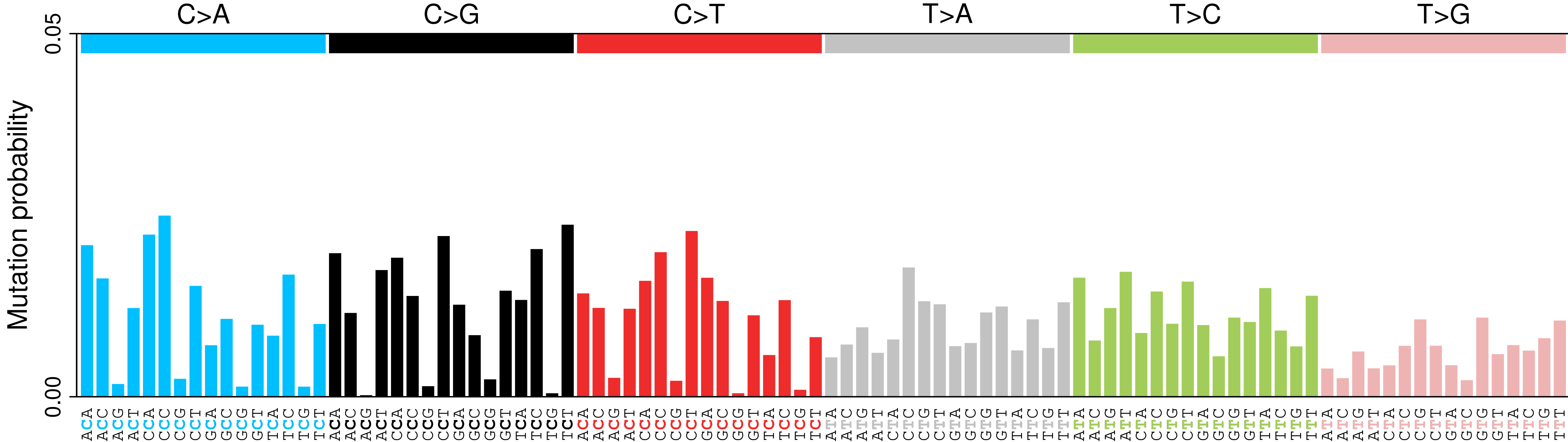
$T > G$

# Mutation probability

0.0 0.1 0.2 0.3 0.4 0.5

[illegible]

# SBS3



# SBS4

**C > A**

C > G

$$C > T$$

**T > A**

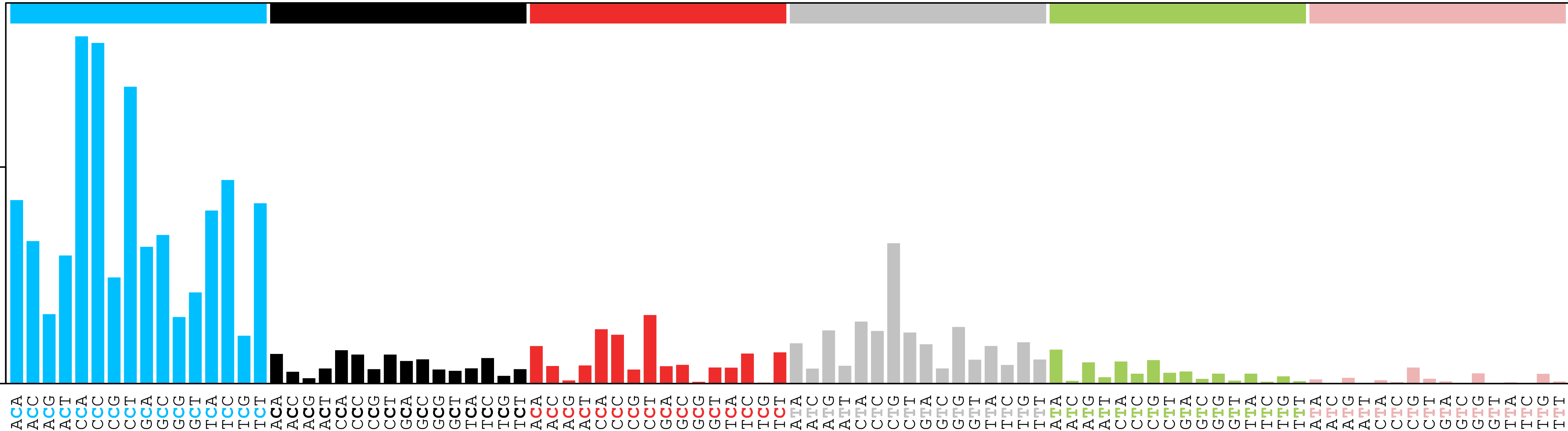
$T > C$

T>G

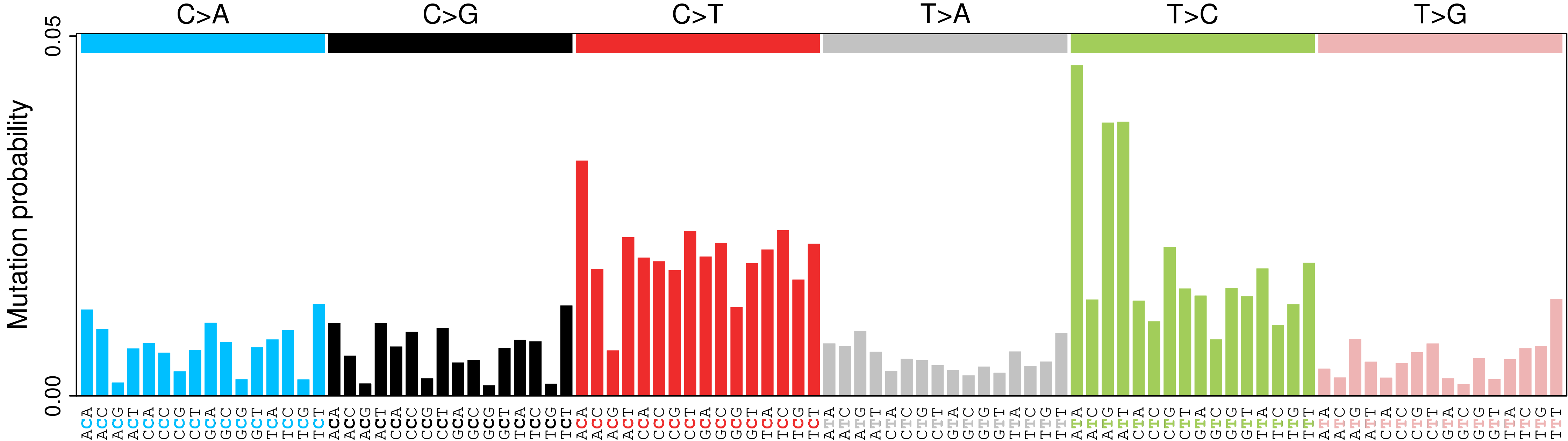
# Mutation probability

0.05

0.00



# SBS5



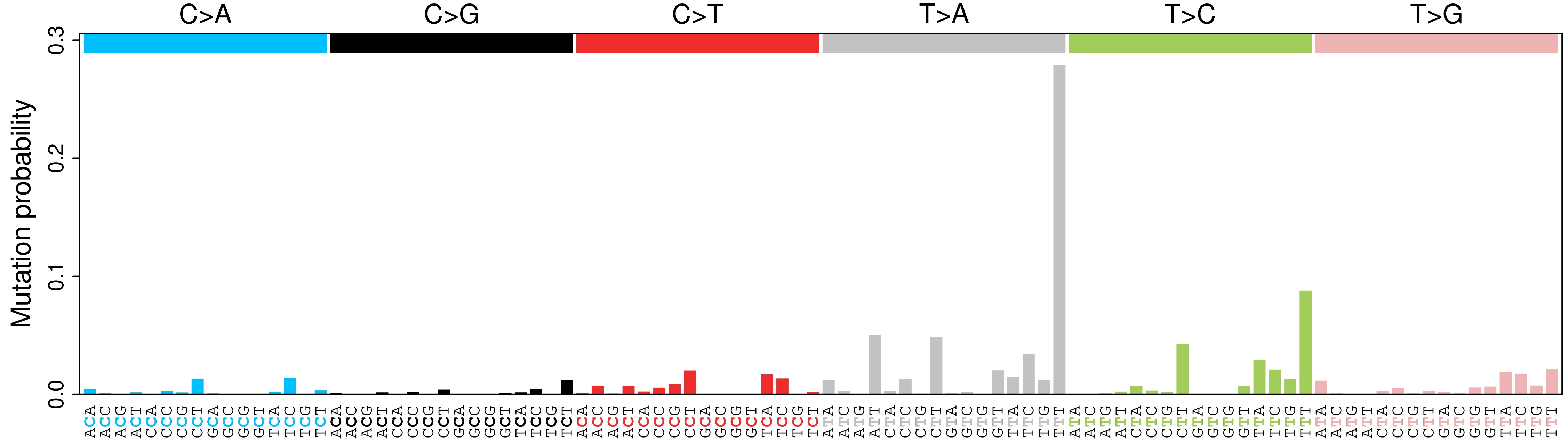






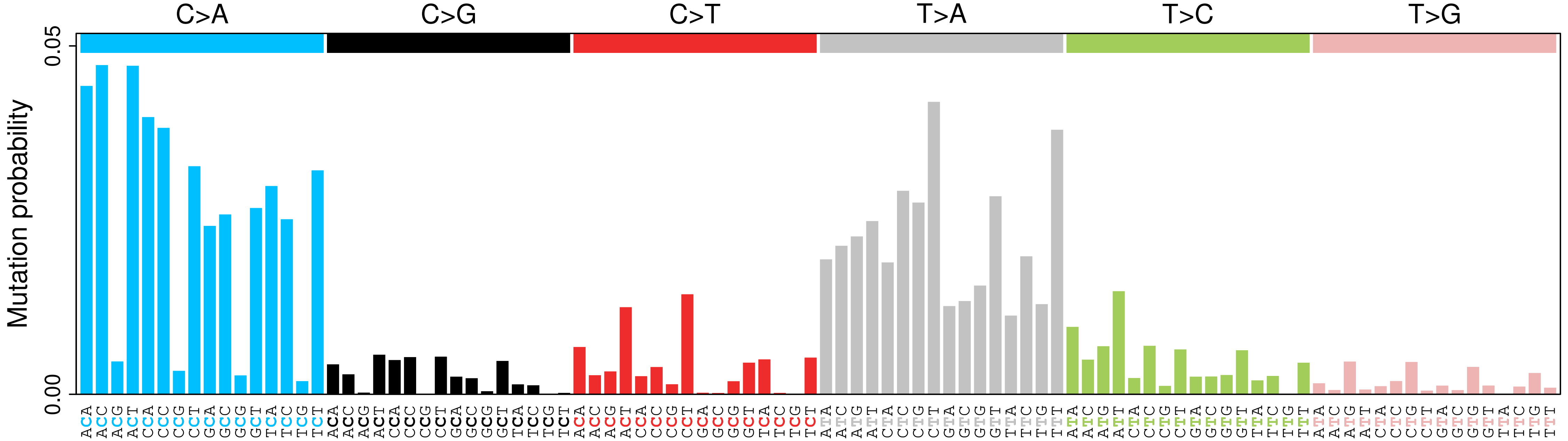


# SBS7c





# SBS8



# SBS9

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

0.00

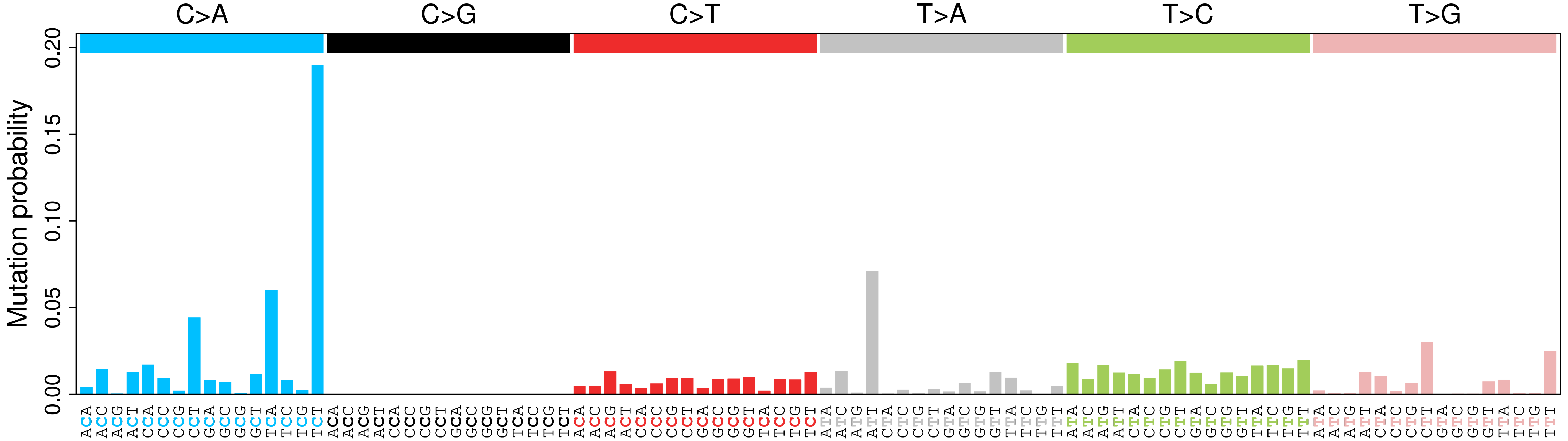
ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GTC TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT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



# SBS10b



# SBS10c









# SBS12

C>A

C>G

C>T

T>A

T>C

T>G

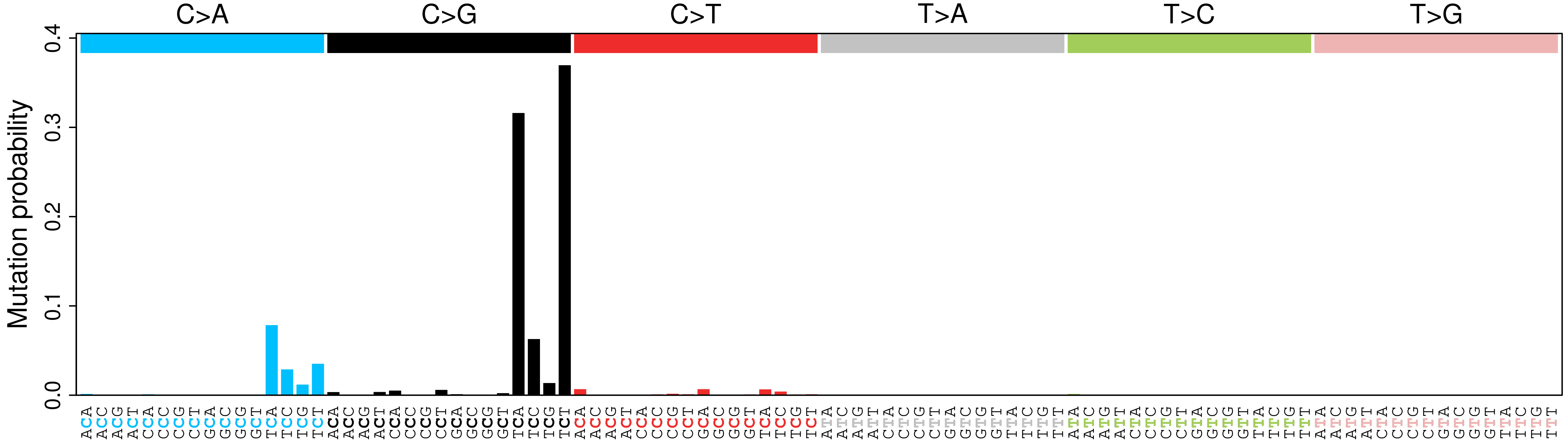
Mutation probability

0.05

0.00

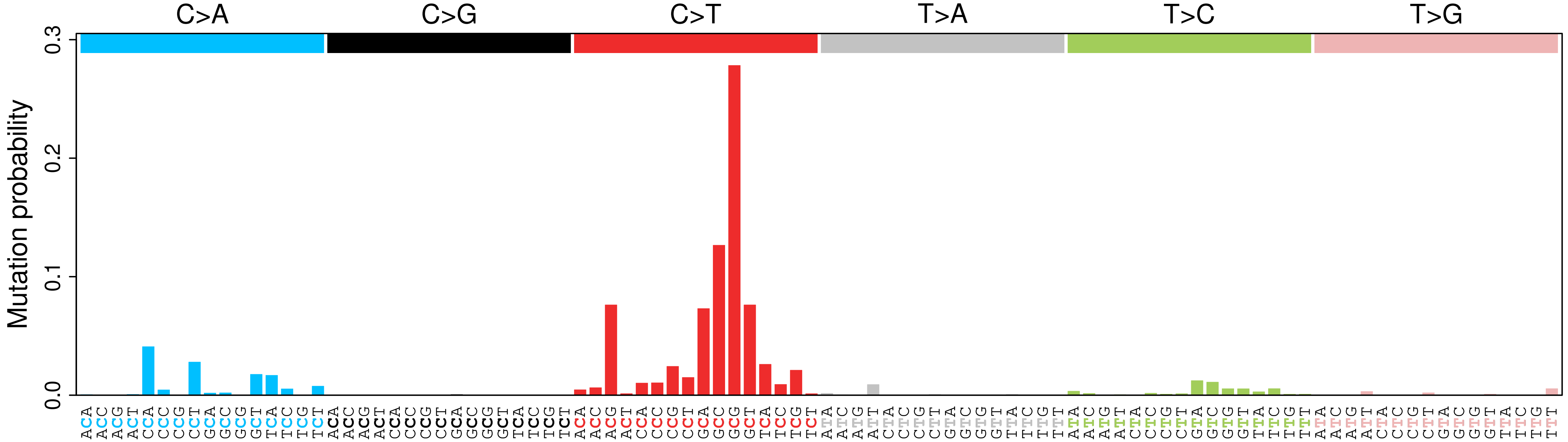
ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT

# SBS13





# SBS15





# SBS17a

C>A

C>G

C>T

T>A

T>C

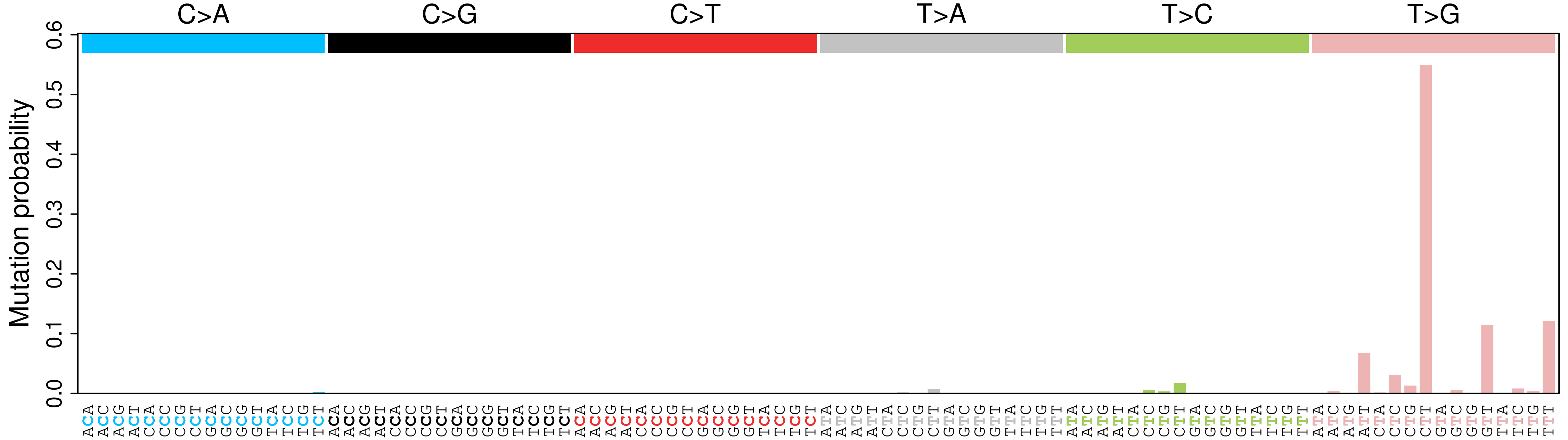
T>G

Mutation probability

0.4  
0.3  
0.2  
0.1  
0.0

ACA ACC AGC 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

# SBS17b











# SBS21

$C > A$

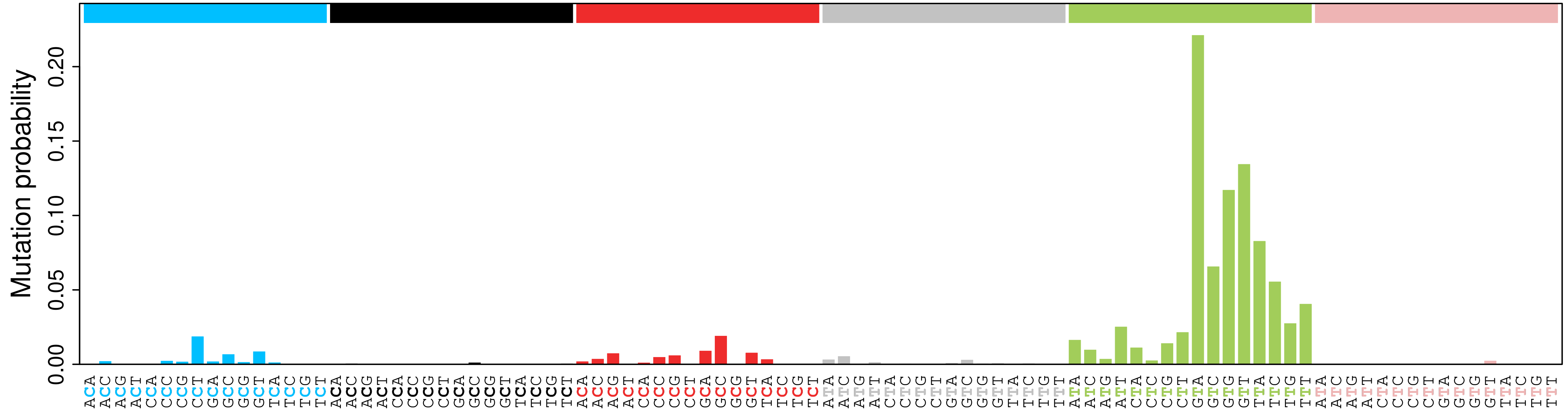
C > G

$$C > T$$

**T > A**

$T > C$

T>G



# SBS22a

C>A

C>G

C>T

T>A

T>C

T>G

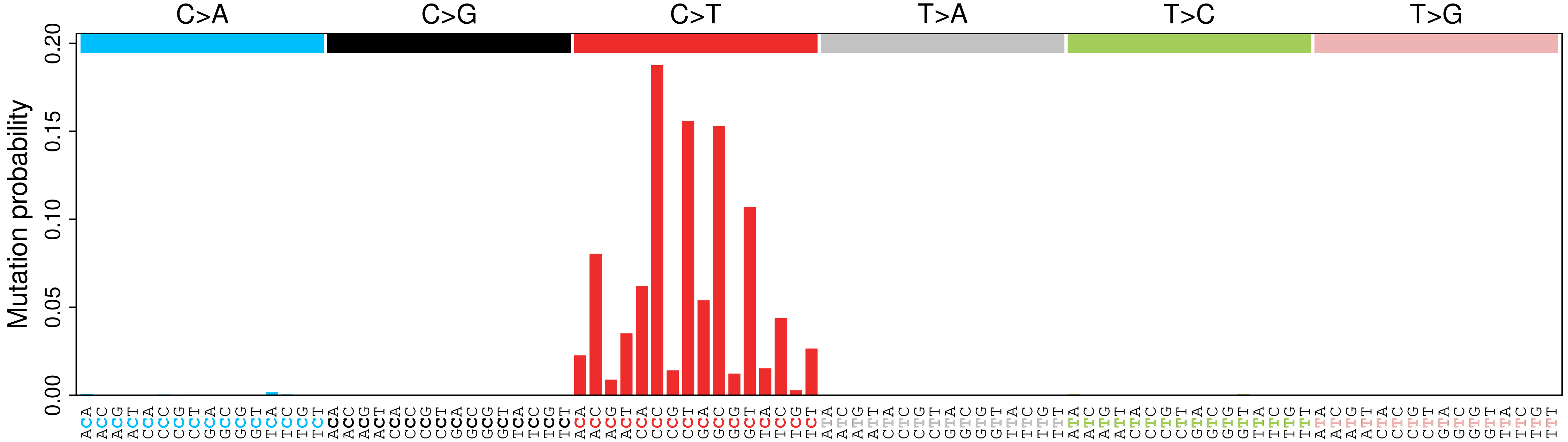
Mutation probability

0.15  
0.10  
0.05  
0.00

ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCA GGT GGT GGT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT 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 CCG CCG CCG CCG TTA TCC TTG TTT ATA ATC ATG ATT CTA CTC CCG CCG CCG CCG TTA TCC TTG TTT ATA ATC ATG ATT CTA CTC CCG CCG CCG CCG TTA TCC TTG TTT



# SBS23







# SBS25

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.05

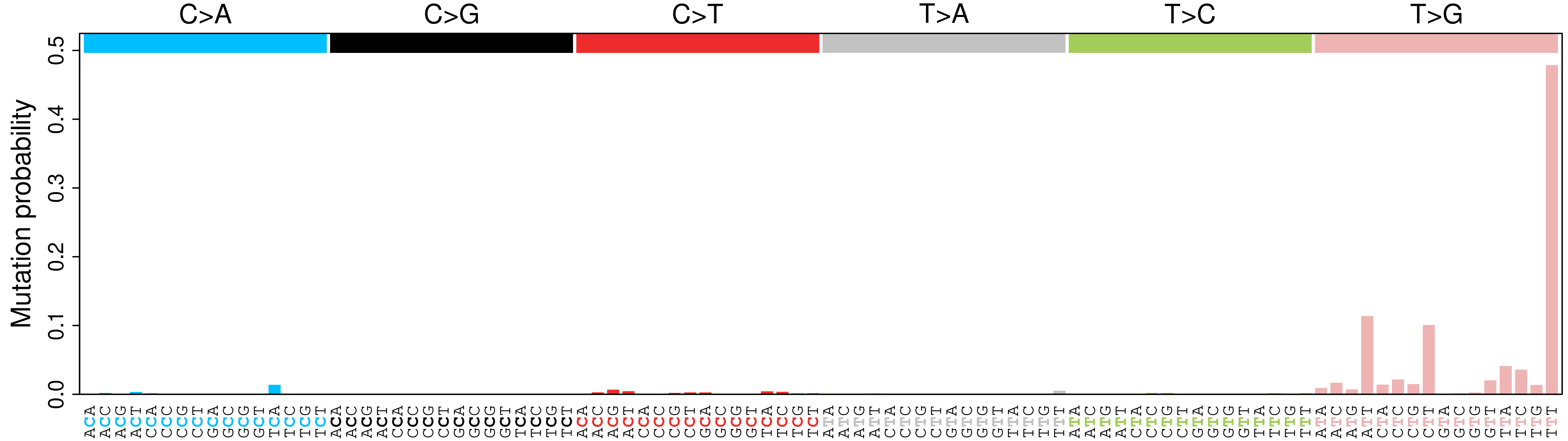
0.00

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





# SBS28







# SBS31

$C > A$

C > G

$$C > T$$

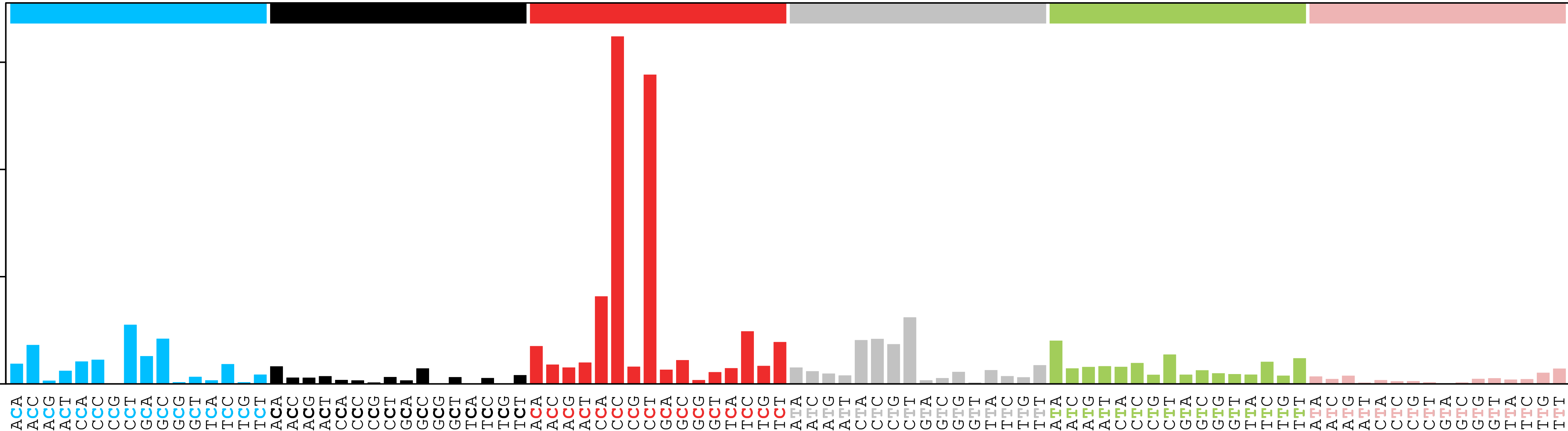
**T > A**

$$T > C$$

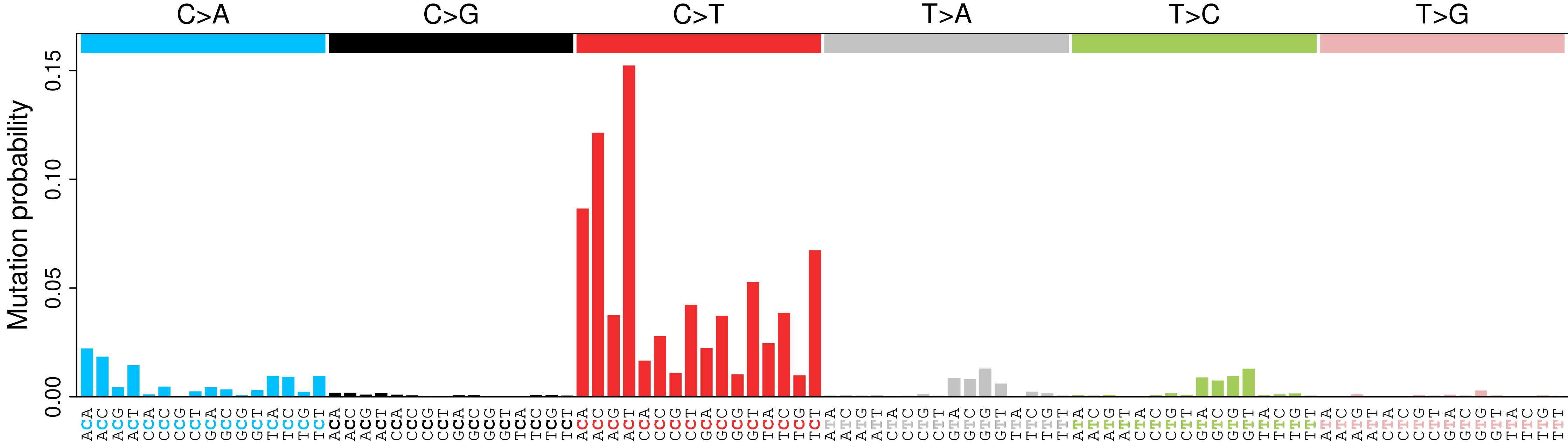
$T > G$

# Mutation probability

0.00 0.05 0.10 0.15



# SBS32







# SBS34

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

T>G

# Mutation probability

3.

0.

0

0

[illegible]

# SBS35

$C > A$

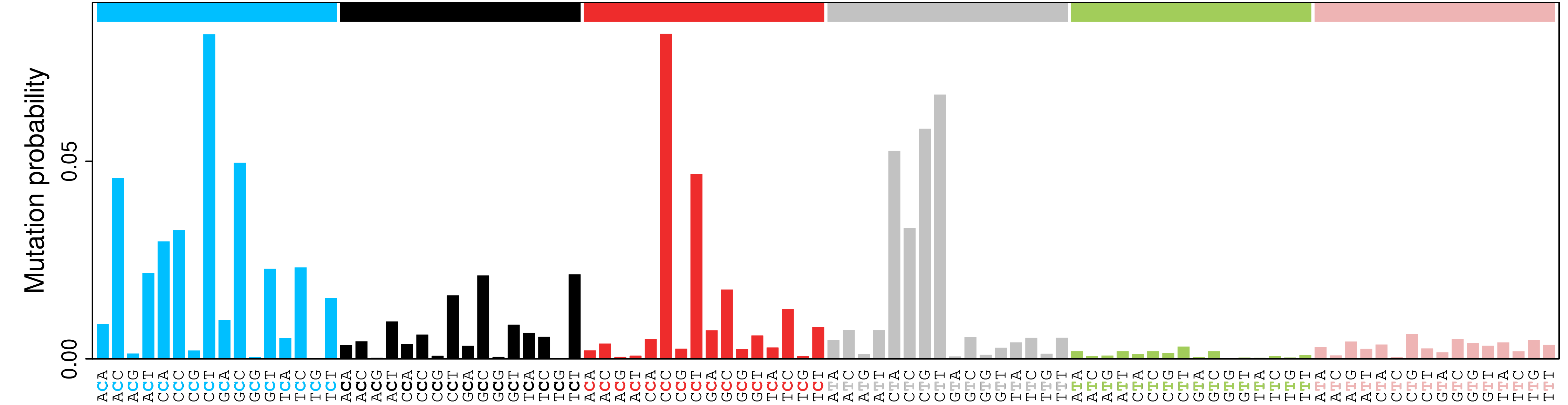
C > G

$$C > T$$

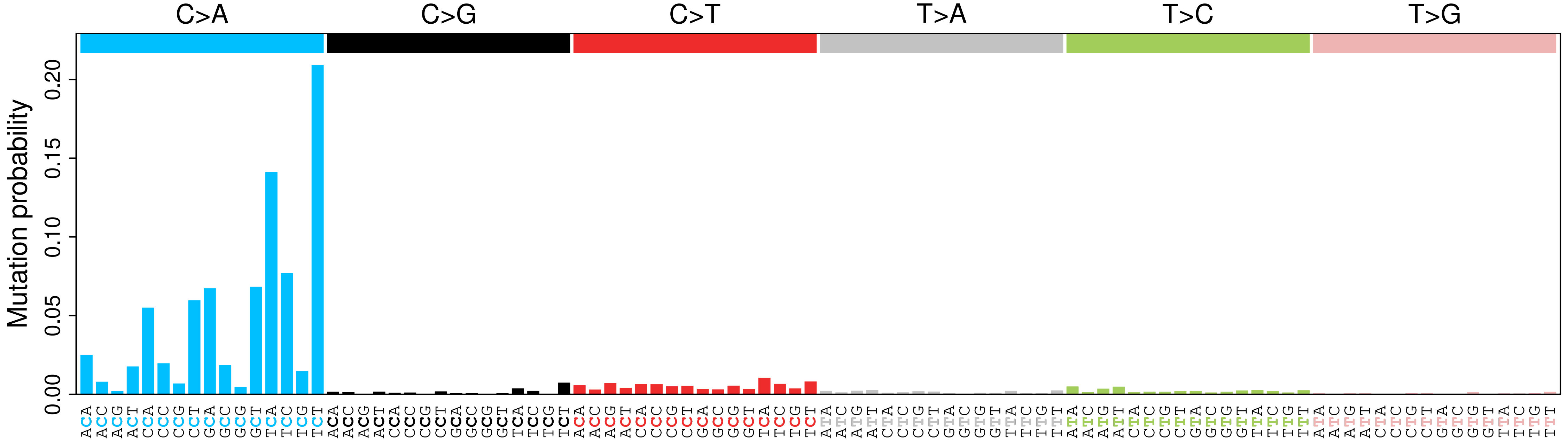
**T > A**

$T > C$

T>G

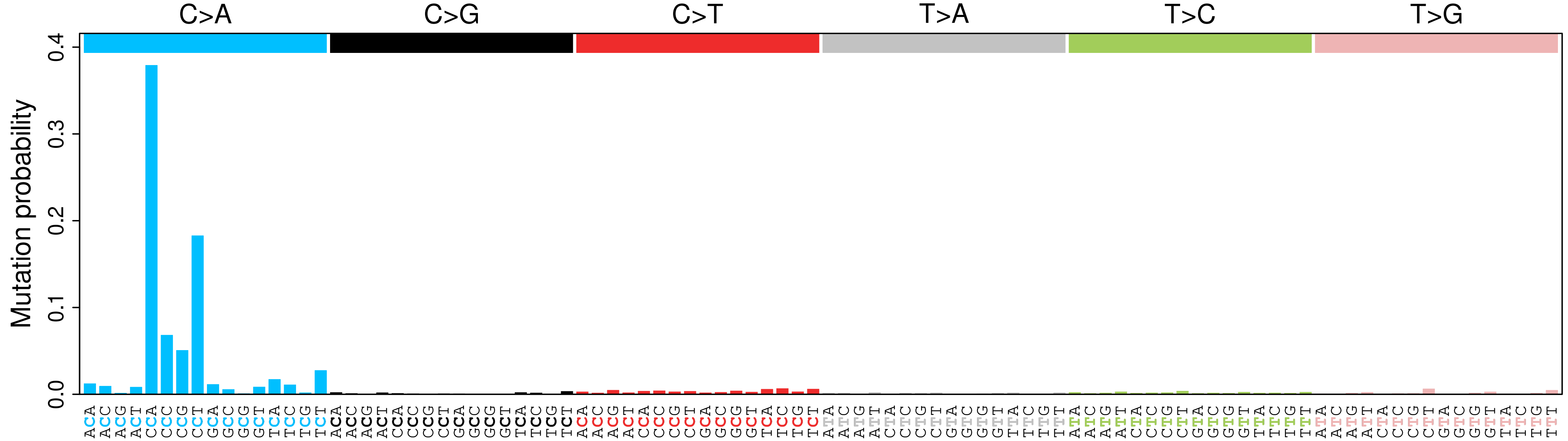


# SBS36

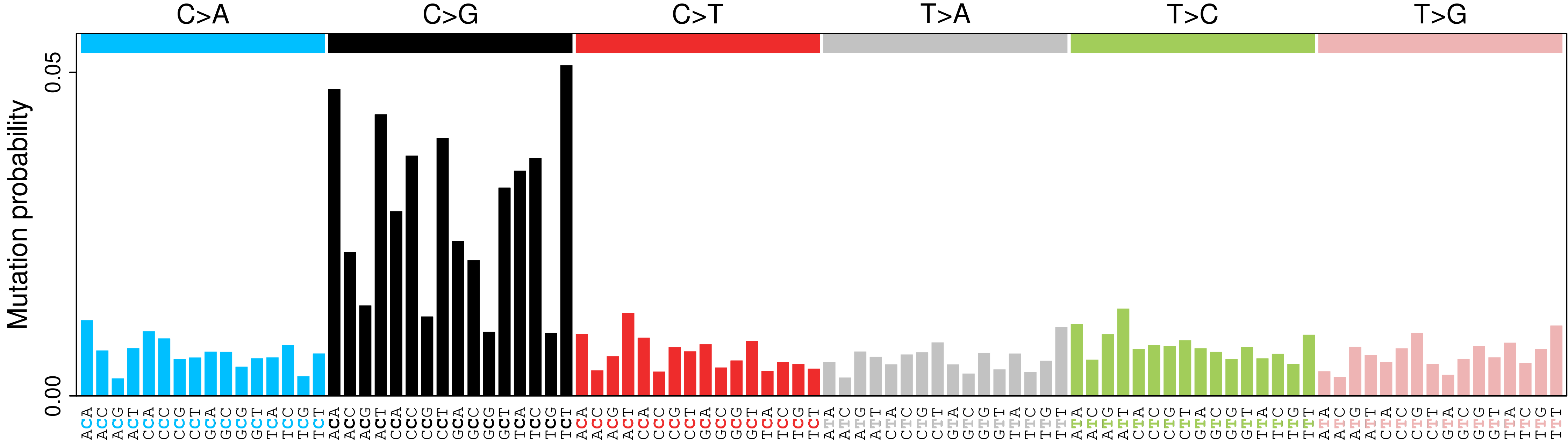




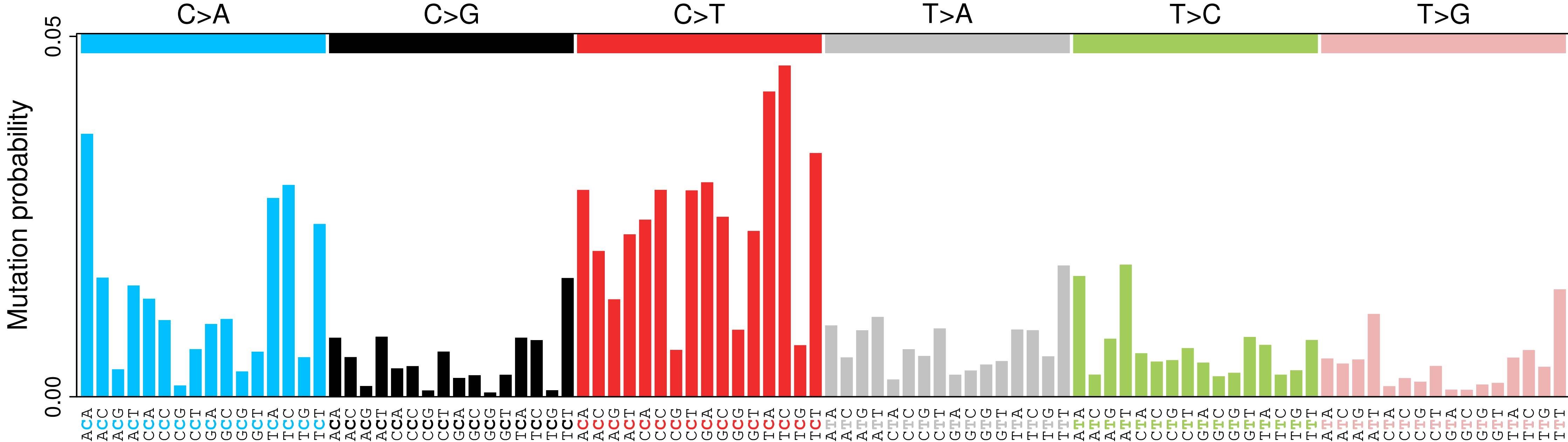
# SBS38



# SBS39



# SBS40a





# SBS40b

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

# SBS40c



# SBS41

$C > A$

C > G

$$C > T$$

**T > A**

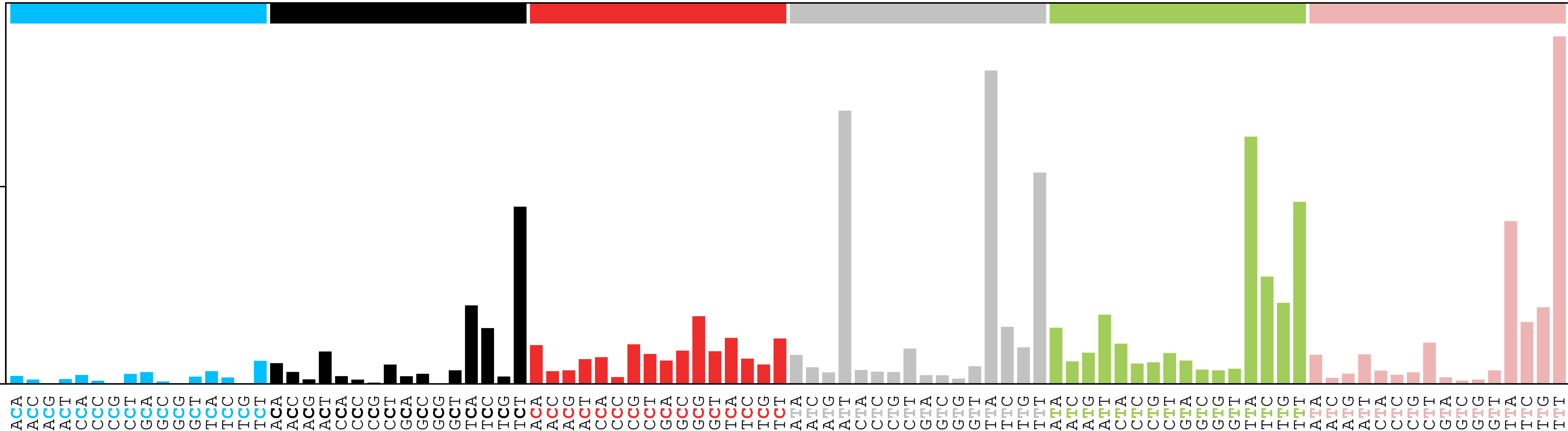
$T > C$

T>G

# Mutation probability

0.05

0.00





# SBS43

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

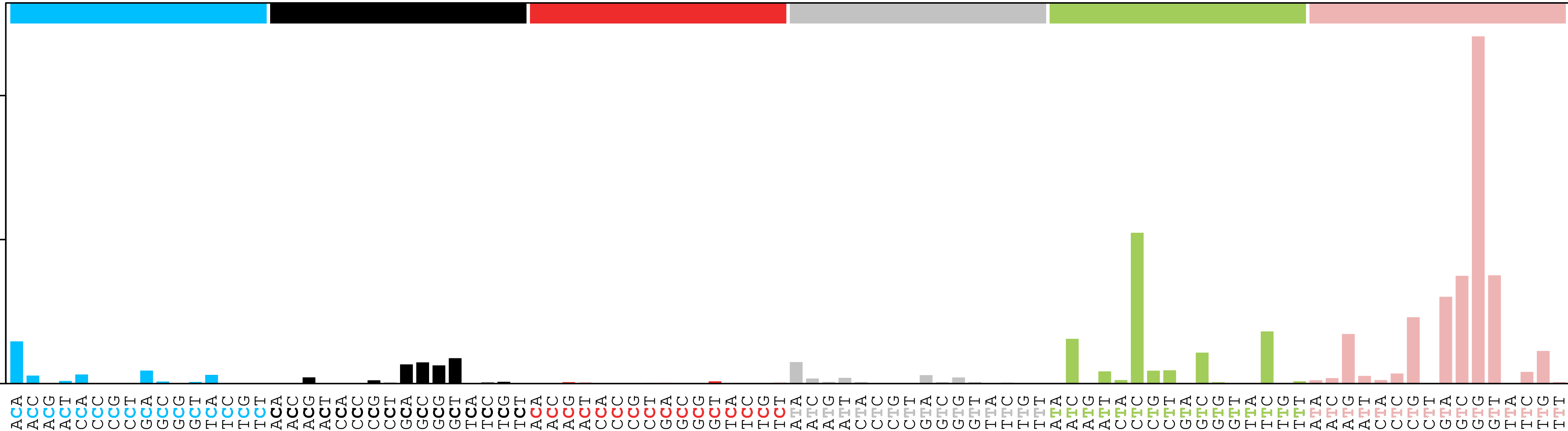
$T > G$

# Mutation probability

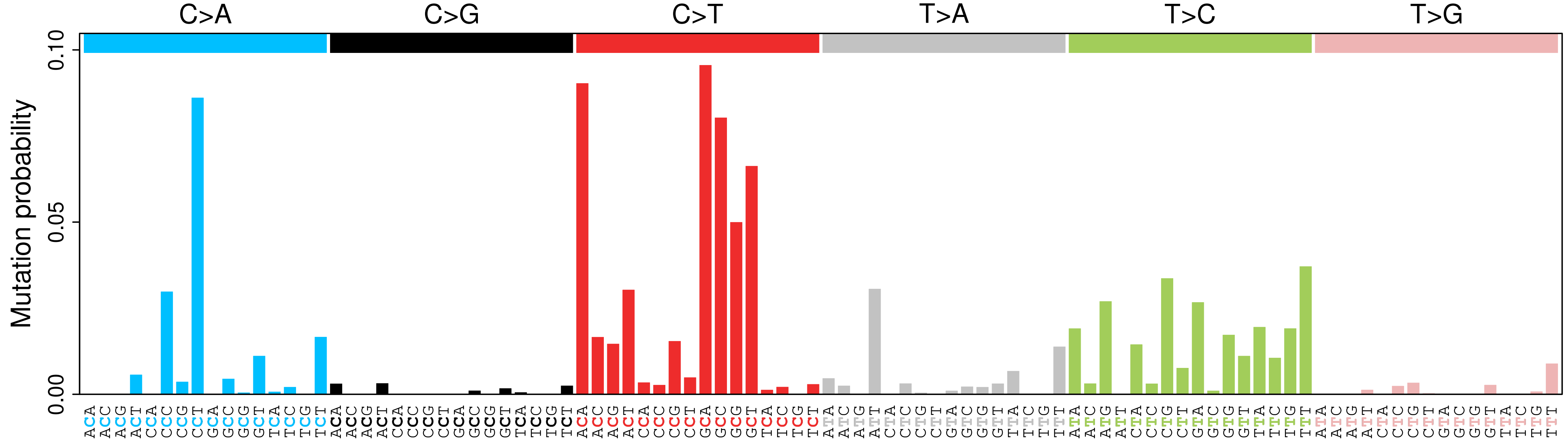
## 0.2

0

0.0



# SBS44



# SBS45

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.2  
0.1  
0.0

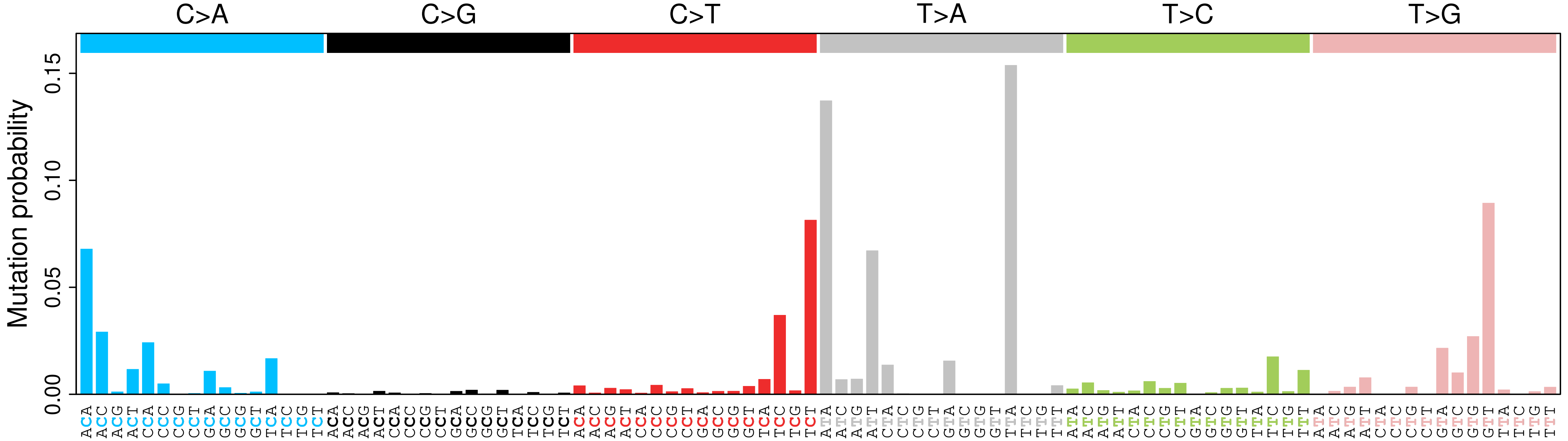
ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT GCT TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG TCT ATA ATC ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ATA ATG ATT CTA CTC CTG CTT GTA GTC GTG GTT TTA TTC TTG TTT ACA ACC ACG ACT CCA CCC CCG CCT GCA GCC GGT TCA TCC TCG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

# SBS46





# SBS47





# SBS49

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

$T > G$

# Mutation probability

0.0 0.1 0.2 0.3 0.4 0.5

[illegible]

# SBS50

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

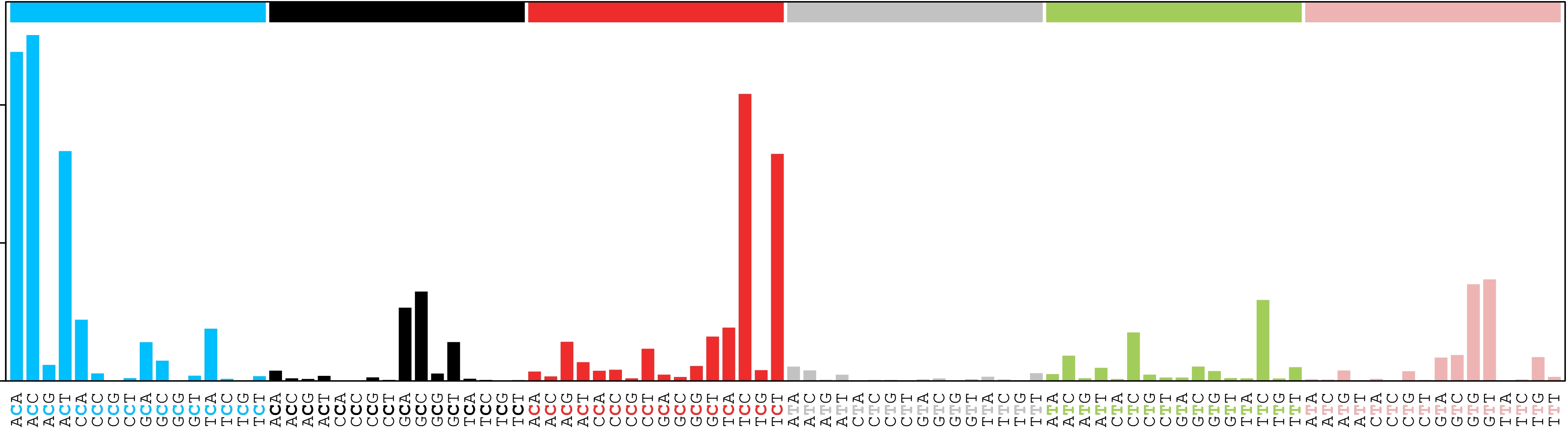
T>G

# Mutation probability

0.10

50.

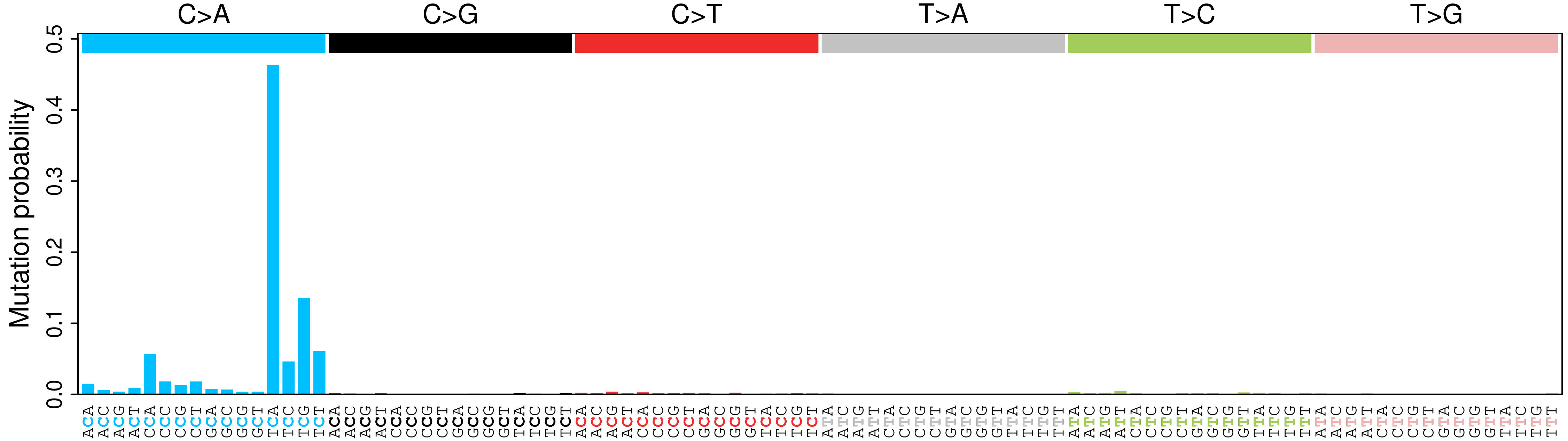
0.00



# SBS51



# SBS52

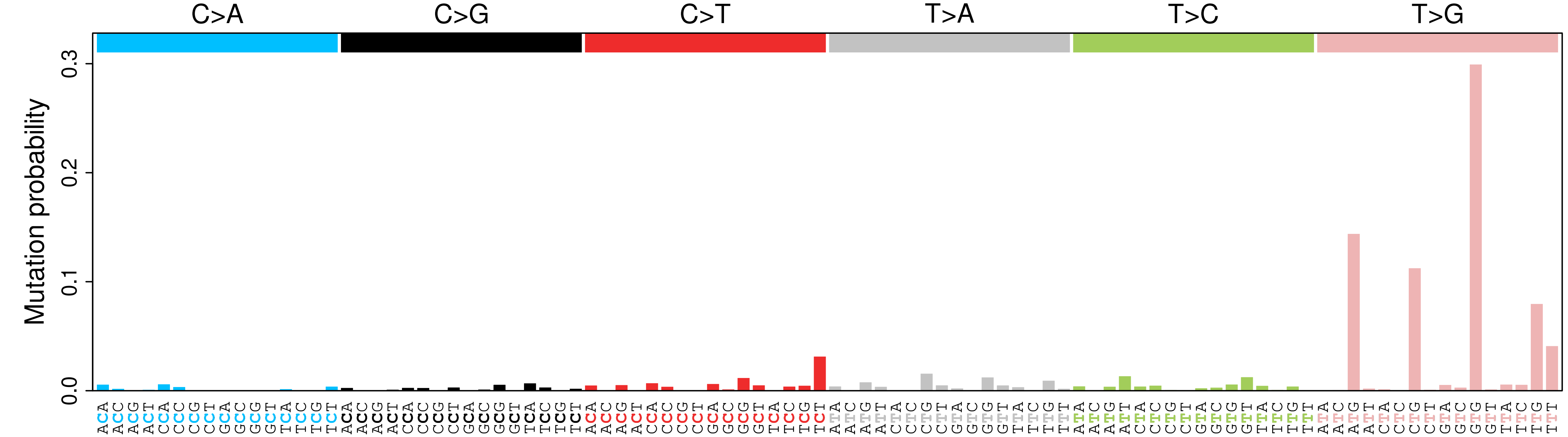








# SBS55





# SBS57

C>A

C>G

C>T

T>A

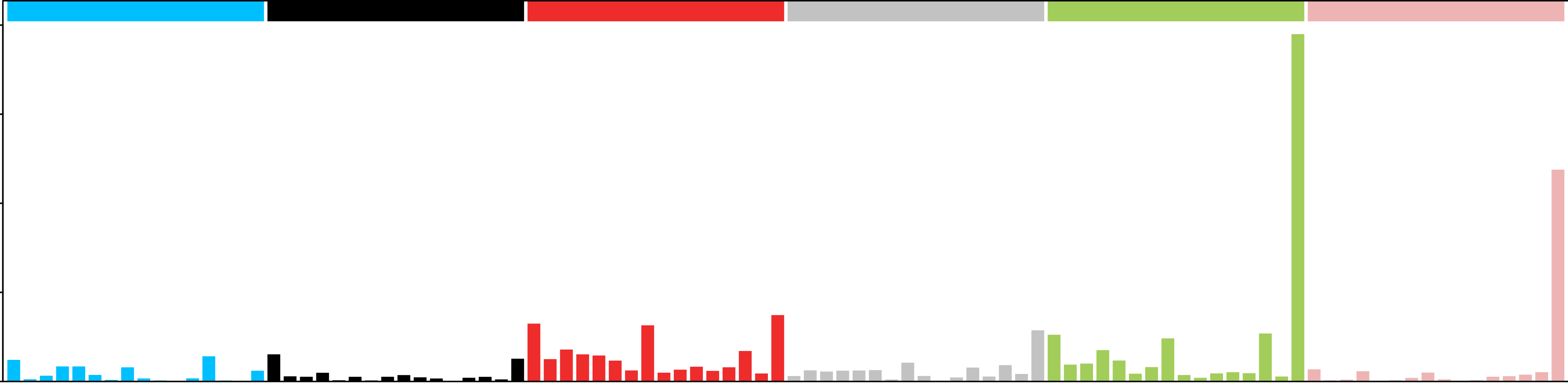
T>C

T>G

Mutation probability

0.20  
0.15  
0.10  
0.05  
0.00

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



# SBS58

C>A

C>G

C>T

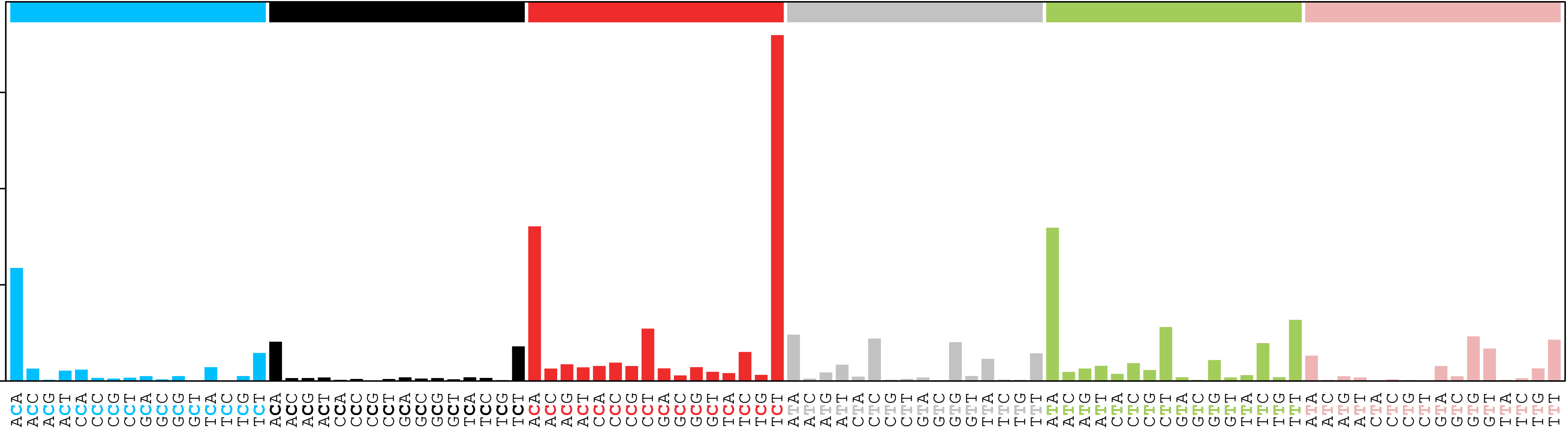
T>A

T>C

T>G

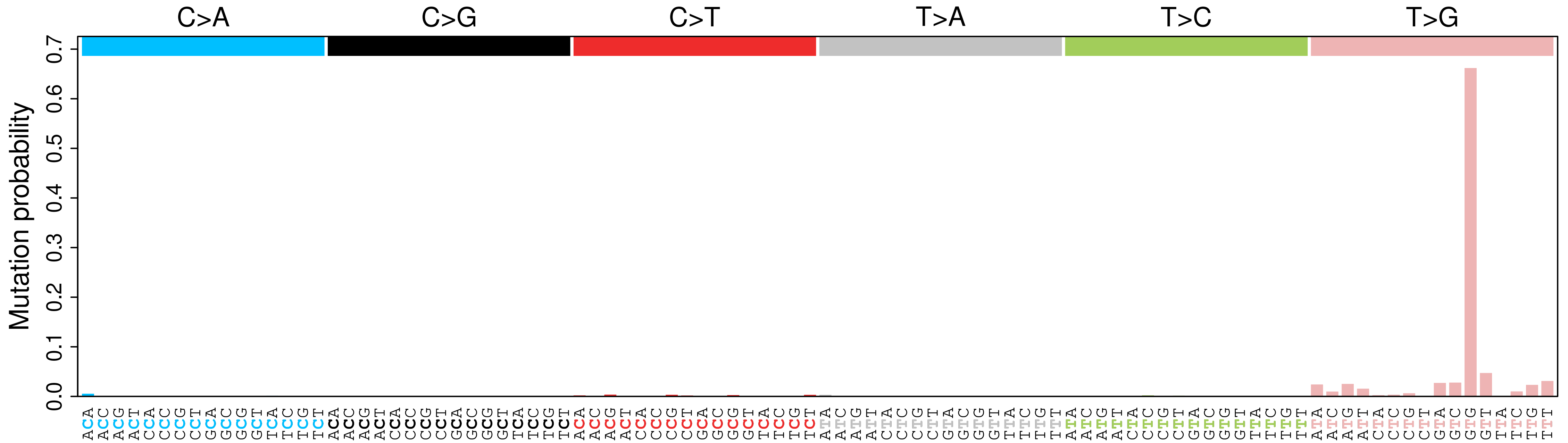
Mutation probability

0.00  
0.05  
0.10  
0.15





# SBS60



# SBS84

C>A

C>G

C>T

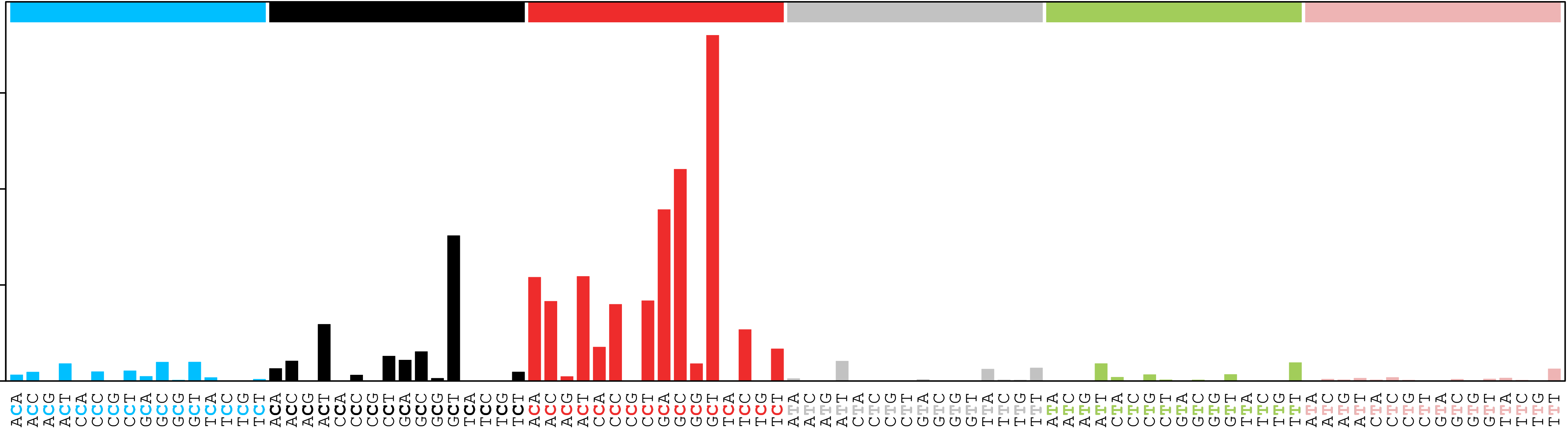
T>A

T>C

T>G

Mutation probability

0.00  
0.05  
0.10  
0.15



# SBS85

$$C > A$$

C > G

$C > T$

**T > A**

$$T > C$$

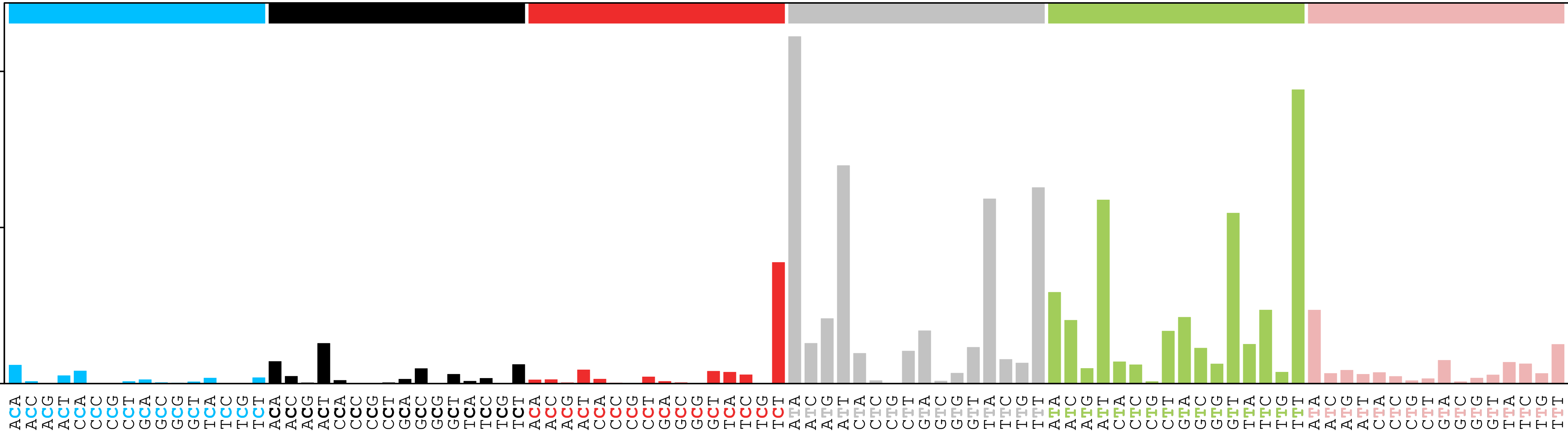
**T>G**

# Mutation probability

10.

50.

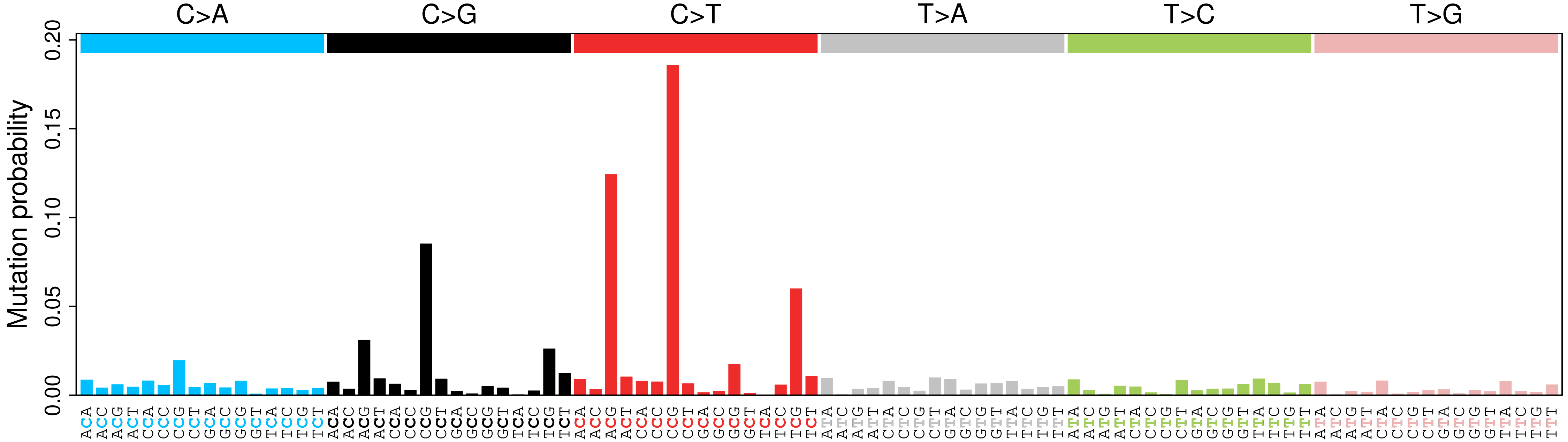
00.







# SBS87



# SBS88

$C > A$

C > G

$$C > T$$

**T > A**

$$T > C$$

T>G

# Mutation probability

0.15

0.10

0.05

0.00

[illegible]





# SBS91

C>A

C>G

C>T

T>A

T>C

T>G

Mutation probability

0.3

0.2

0.1

0.0

ACA ACC AGT CCA CCC CGT CCA GCG GCG GCG TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CGT CCA GCG GCG GCG TCA TCC TCG TCT ACA ACC ACG ACT CCA CCC CGT CCA GCG GCG GCG 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

# SBS92

C>A

C>G

C>T

T>A

T>C

T>G

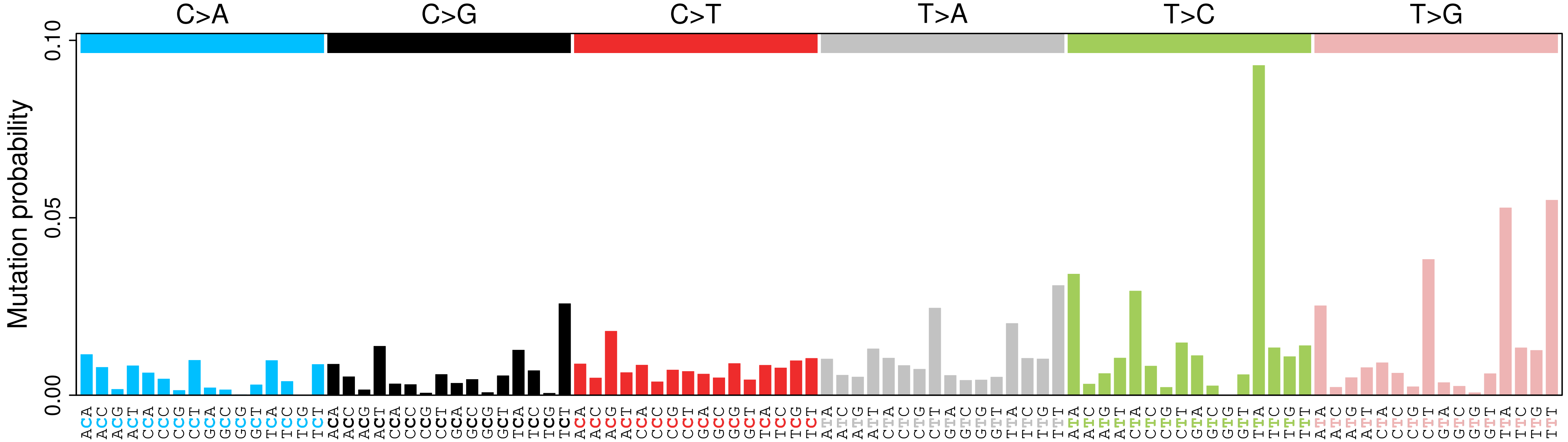
Mutation probability

0.05

0.00

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

$C > A$

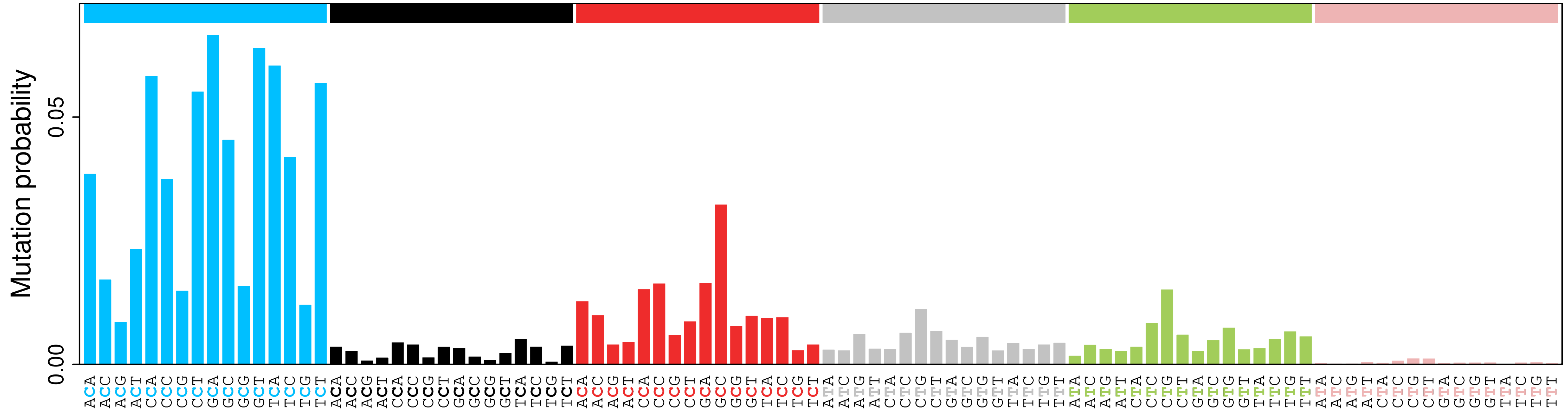
C > G

$$C > T$$

**T > A**

$T > C$

T>G



# SBS96

C>A

C>G

C>T

T>A

T>C

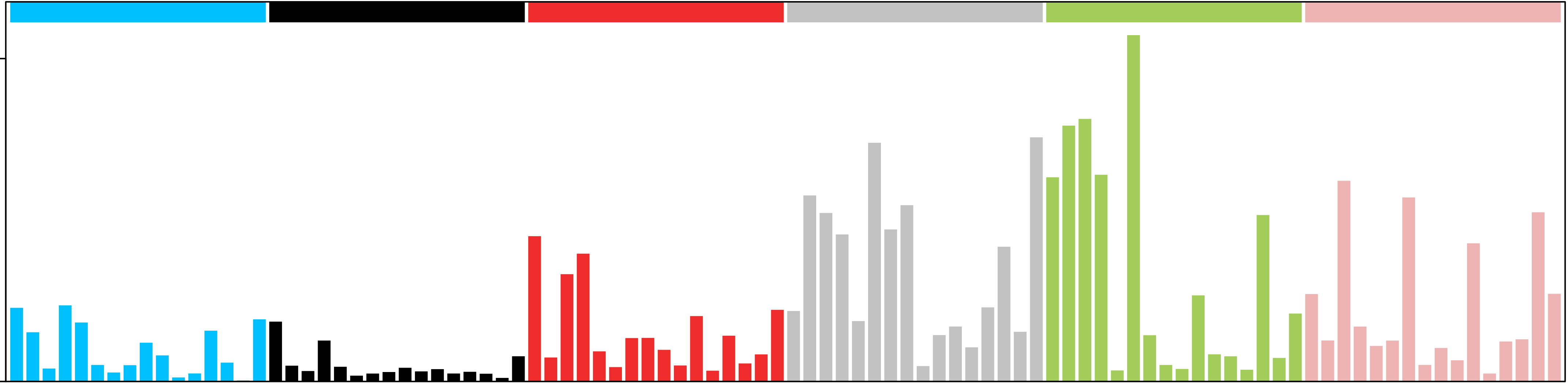
T>G

Mutation probability

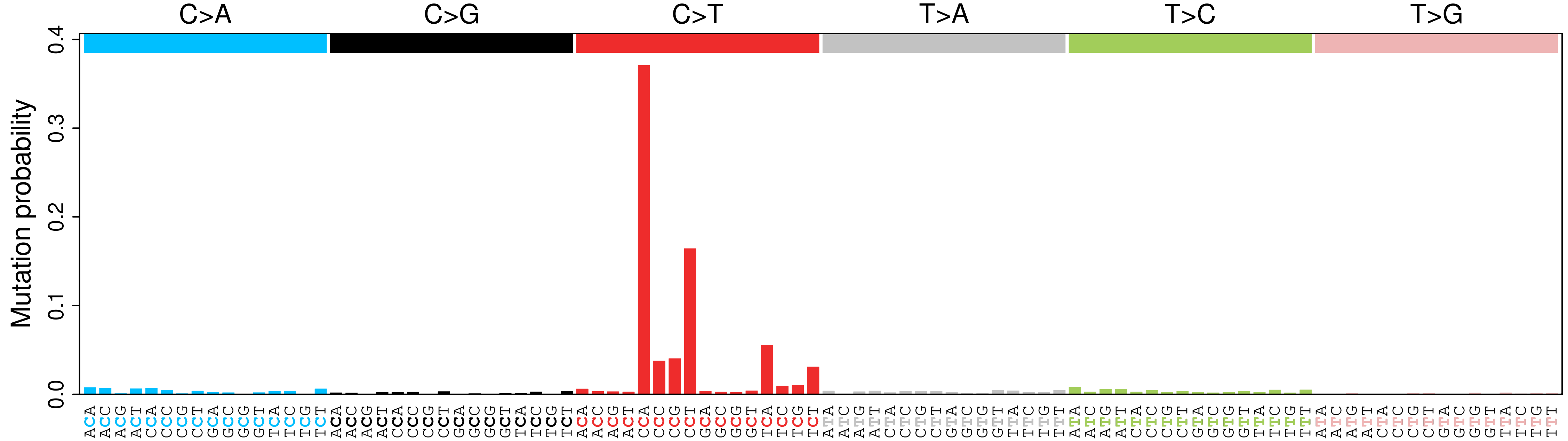
0.05

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



# SBS98

C>A

C>G

C>T

T>A

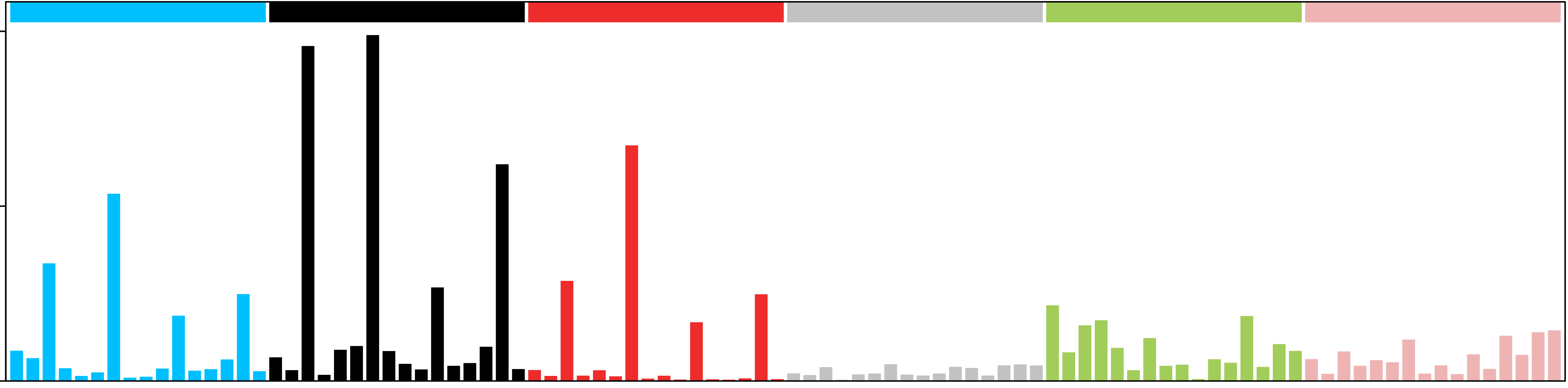
T>C

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



# SBS99

$C > A$

C > G

$$C > T$$

**T > A**

$T > C$

T>G

