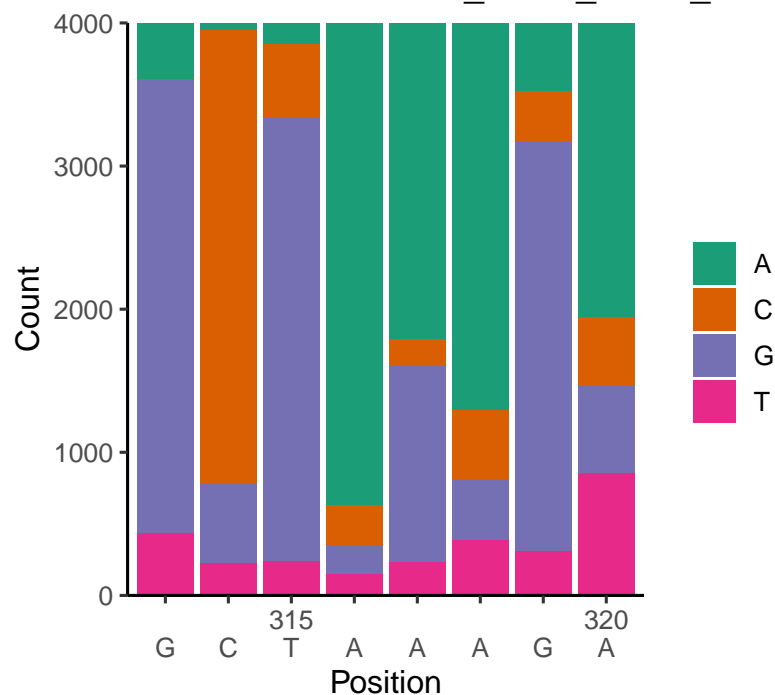
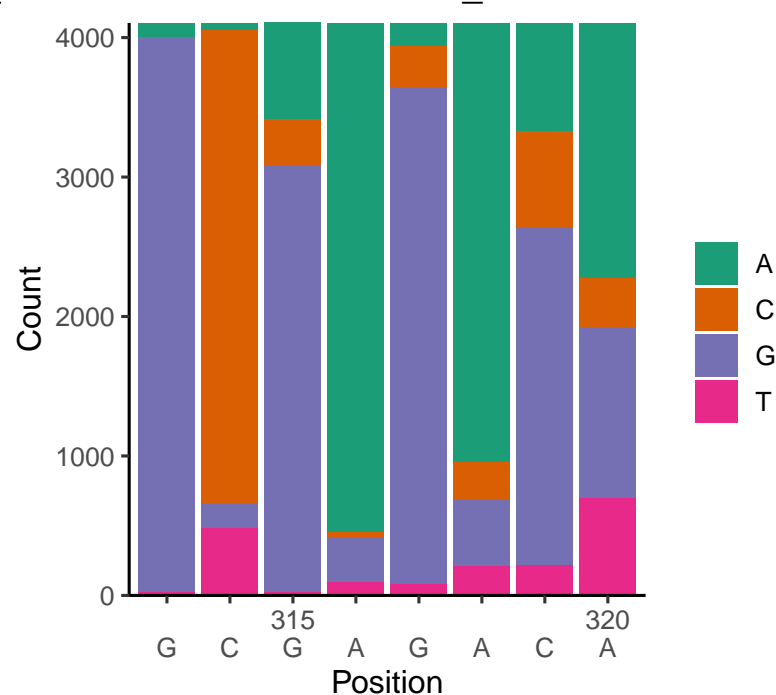


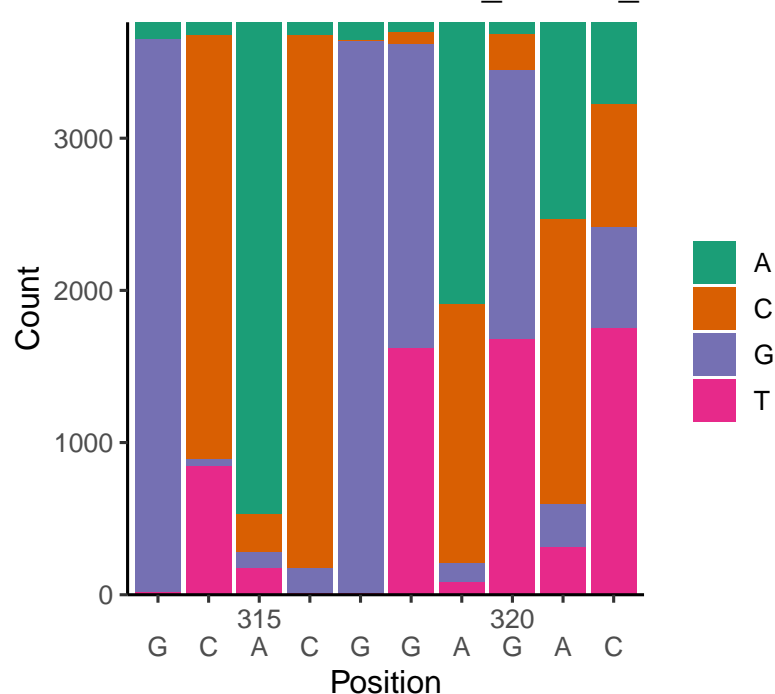
Gene IGHV3S42\*01\_C38T\_A39C\_A40C



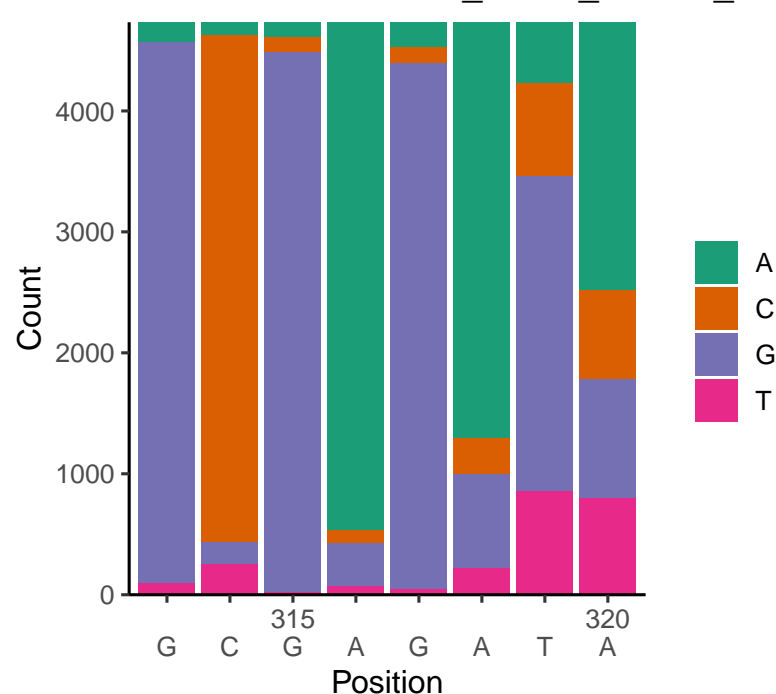
Gene IGHV4-65\*02\_A48G



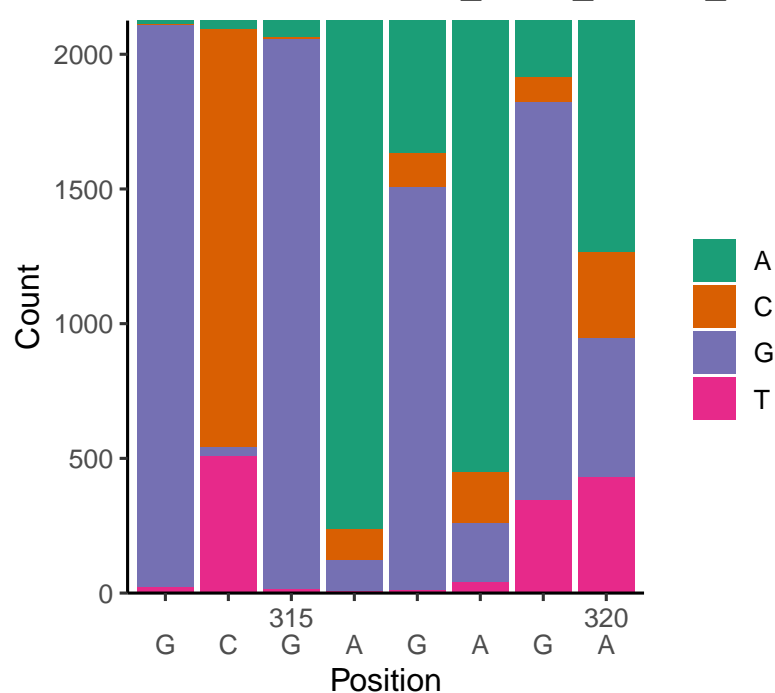
Gene IGHV2-174\*02\_A267G\_A289G



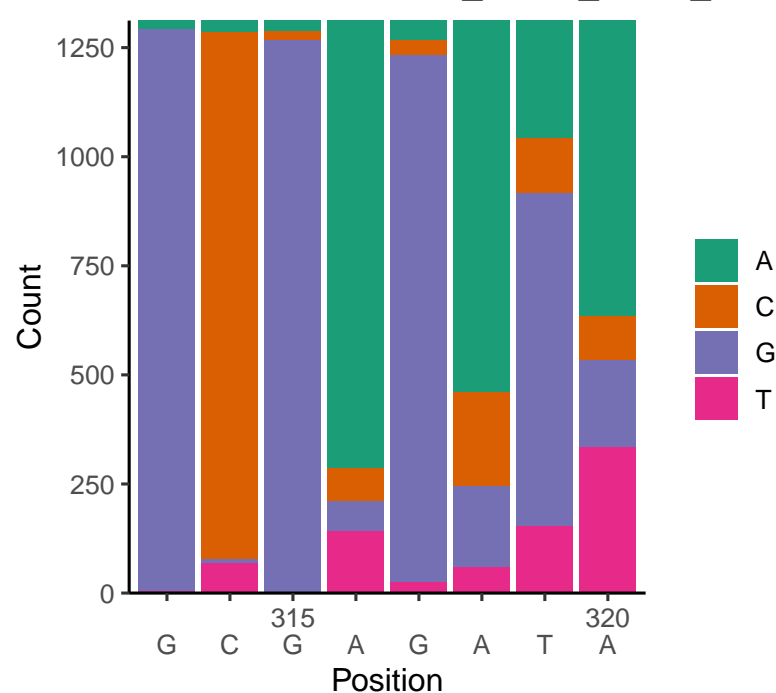
Gene IGHV4-80\*01\_G70A\_T189G\_T190G



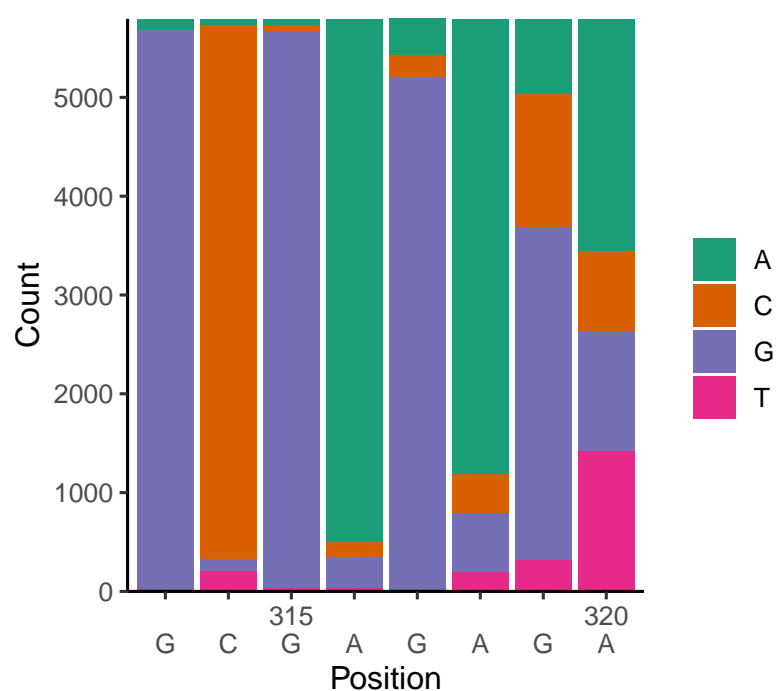
Gene IGHV3-54\*02\_T78C\_T111C\_A284G



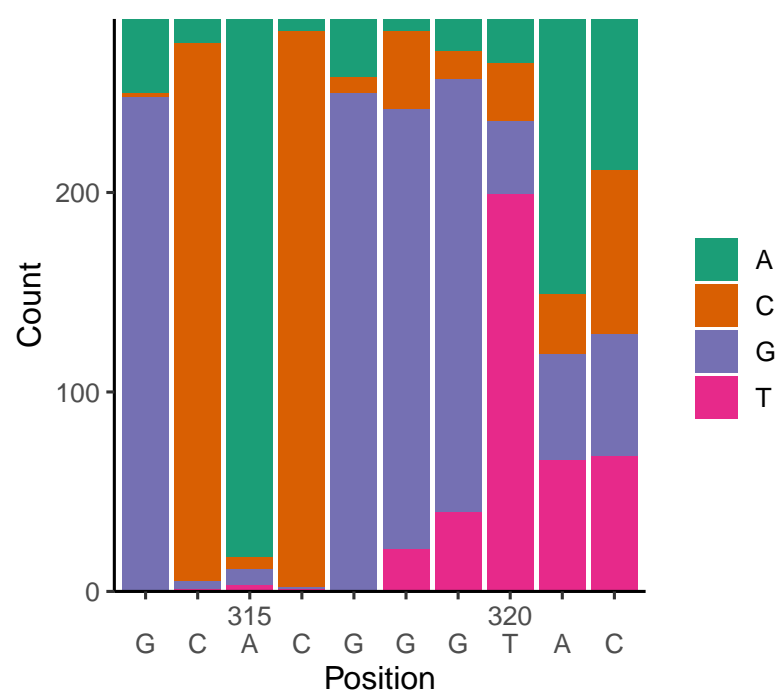
Gene IGHV4-80\*01\_G70A\_C90T\_T109A



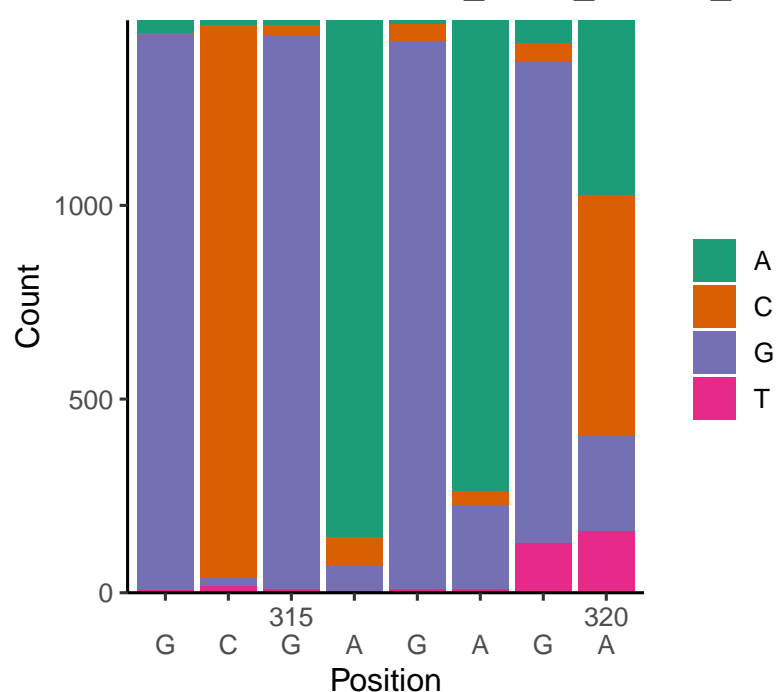
Gene IGHV4-127\*01\_T82G\_A83G\_T111



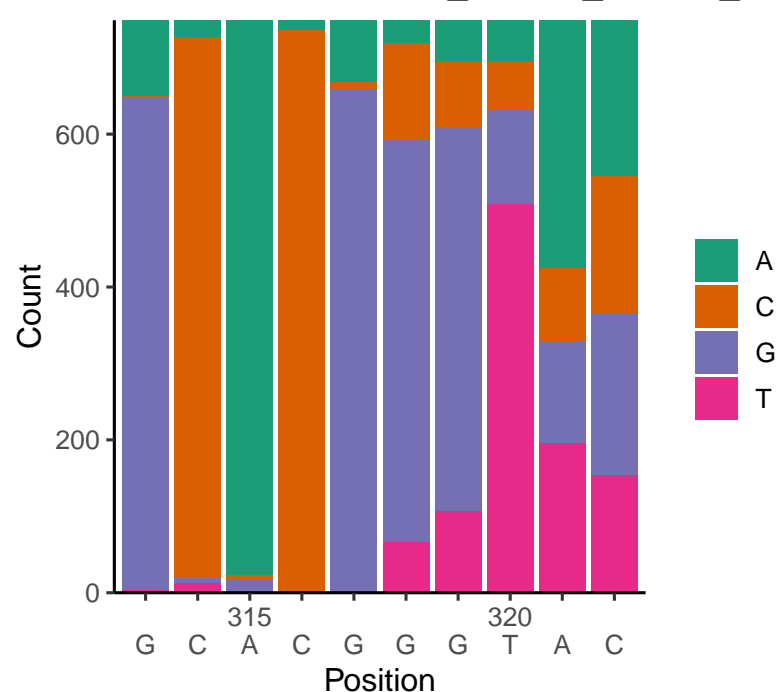
Gene IGHV2-95\*01\_A239C\_A252G\_A26



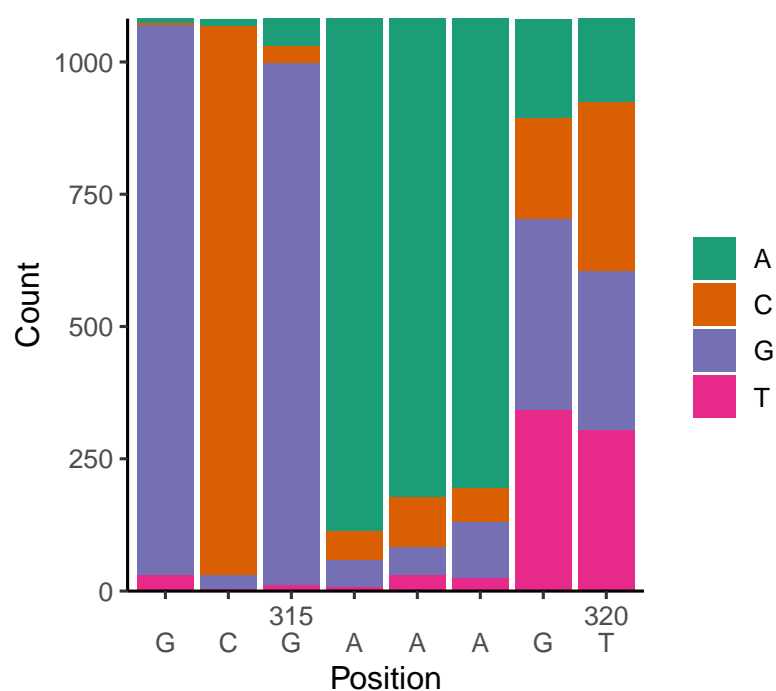
Gene IGHV4S13\*01\_T85A\_G267A\_G28



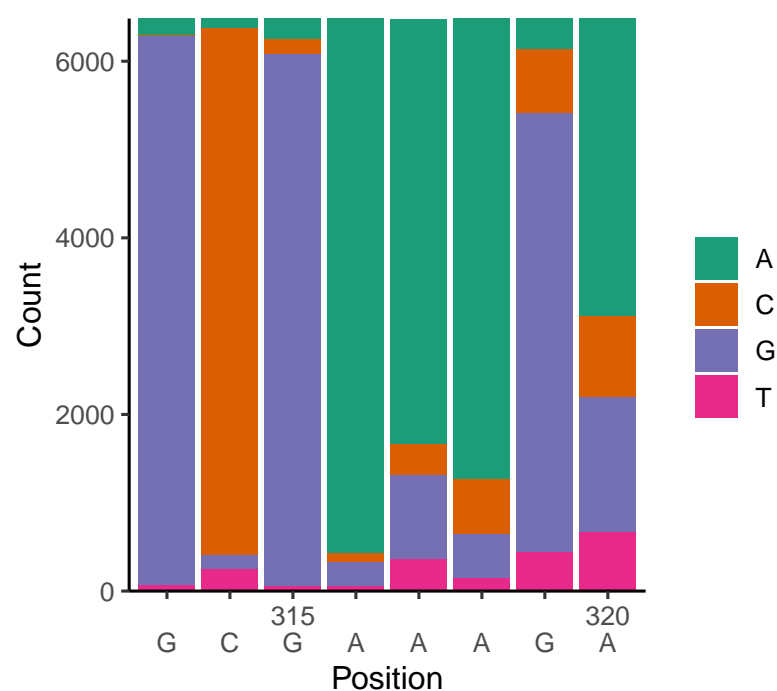
Gene IGHV2-95\*01\_A239C\_A252G\_A26



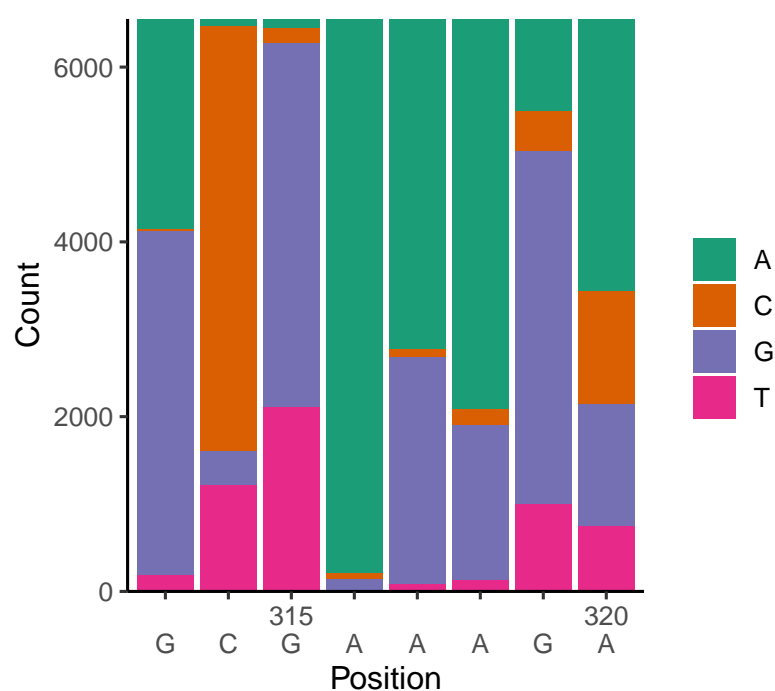
Gene IGHV5-43\*01\_A51G



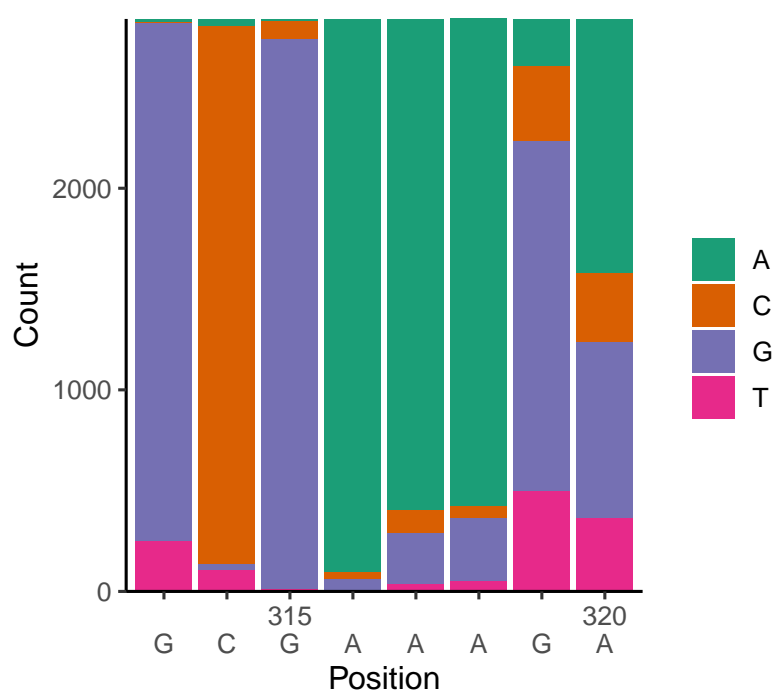
Gene IGHV3-103\*01\_G51A\_A170G



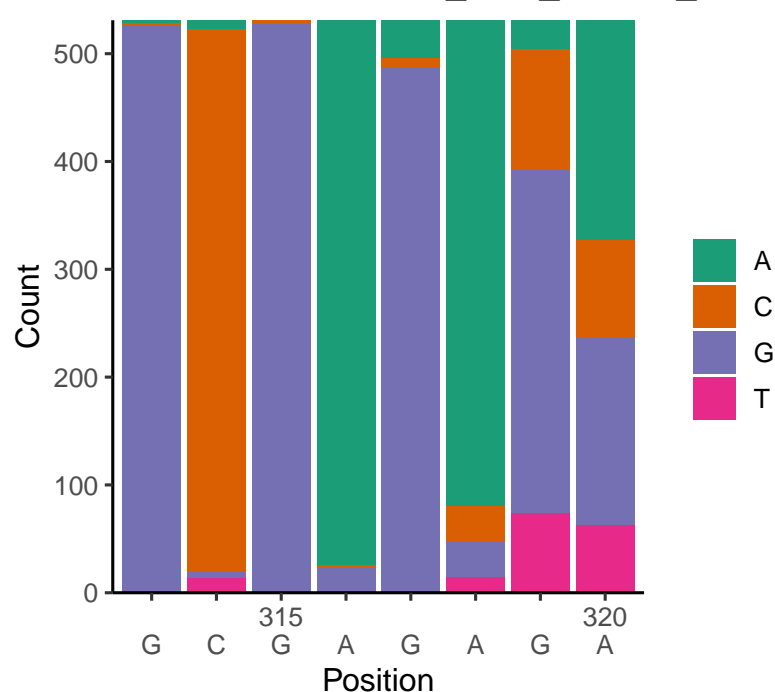
Gene IGHV3-103\*01\_G24A\_C27A\_C38



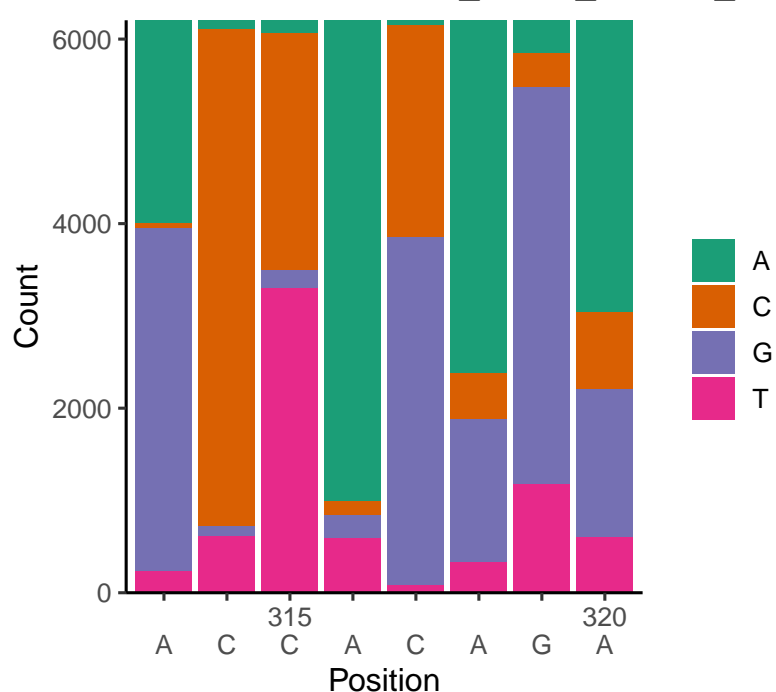
Gene IGHV5-20\*02\_A141G\_A295T\_C3



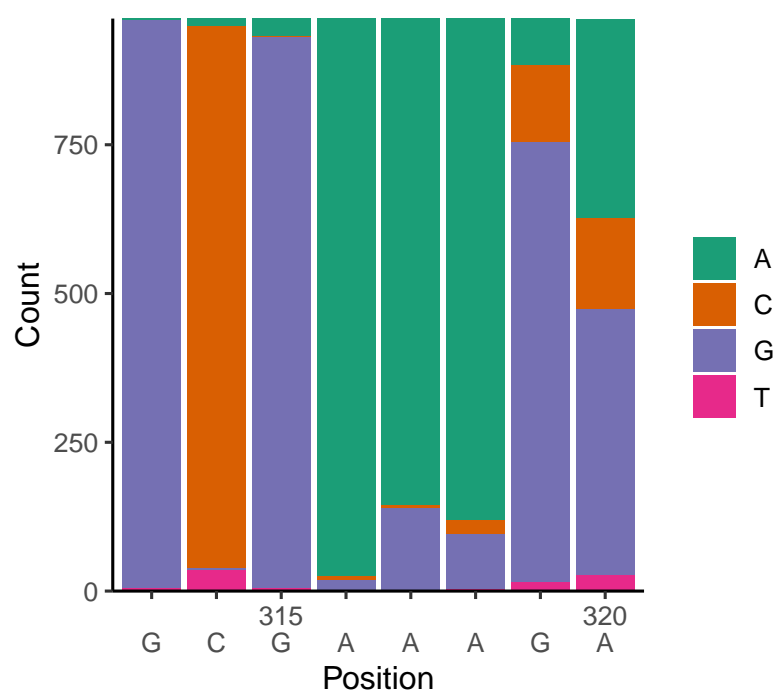
Gene IGHV4-73\*01\_A7C\_G147A\_T163A



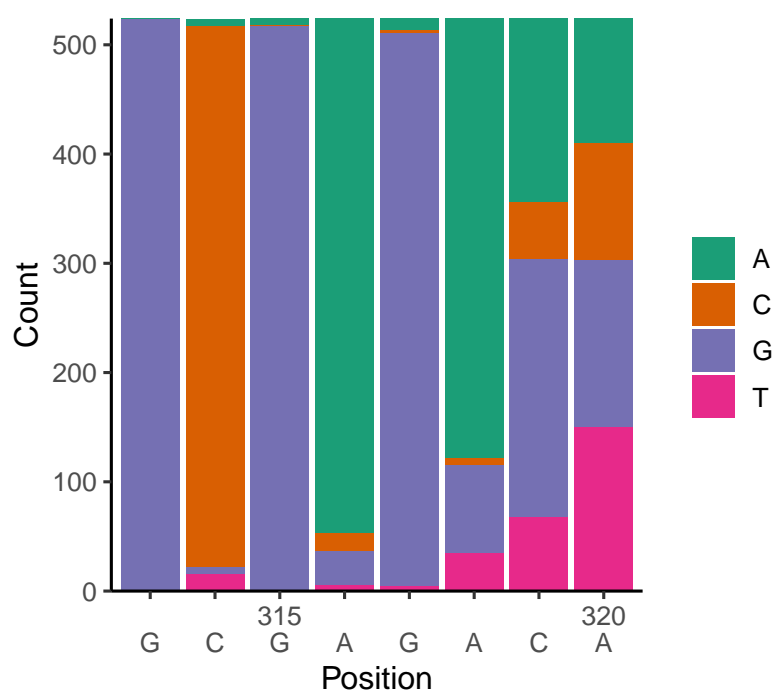
Gene IGHV3-30\*01\_G13A\_G174C\_A18



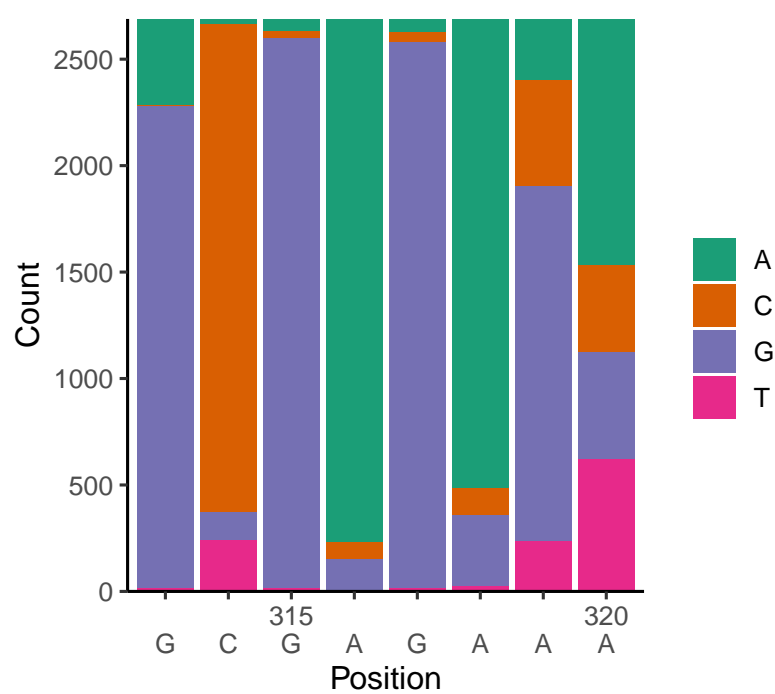
Gene IGHV5-20\*02\_C312T



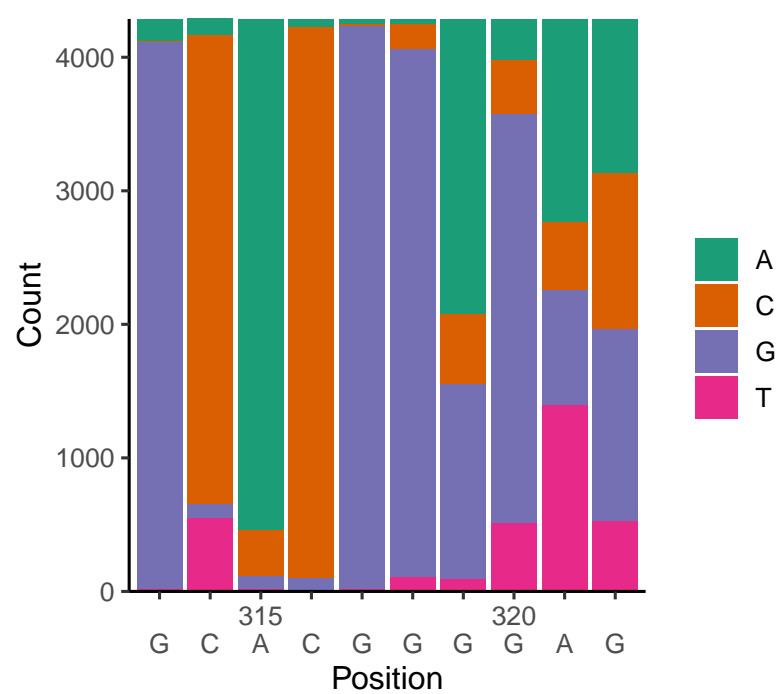
Gene IGHV4-76\*01\_C34G\_G103A\_A244



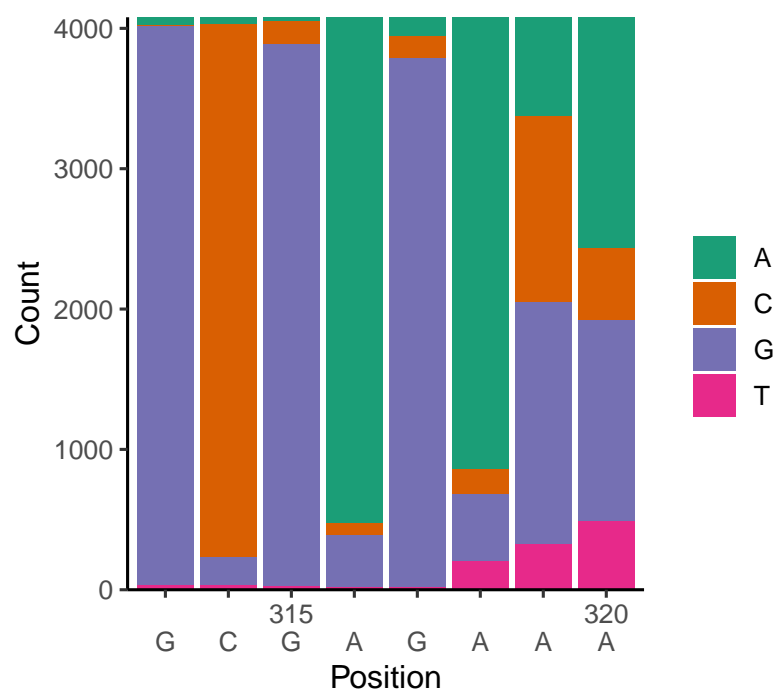
Gene IGHV4-81\*01\_C4G\_T185C\_T255C



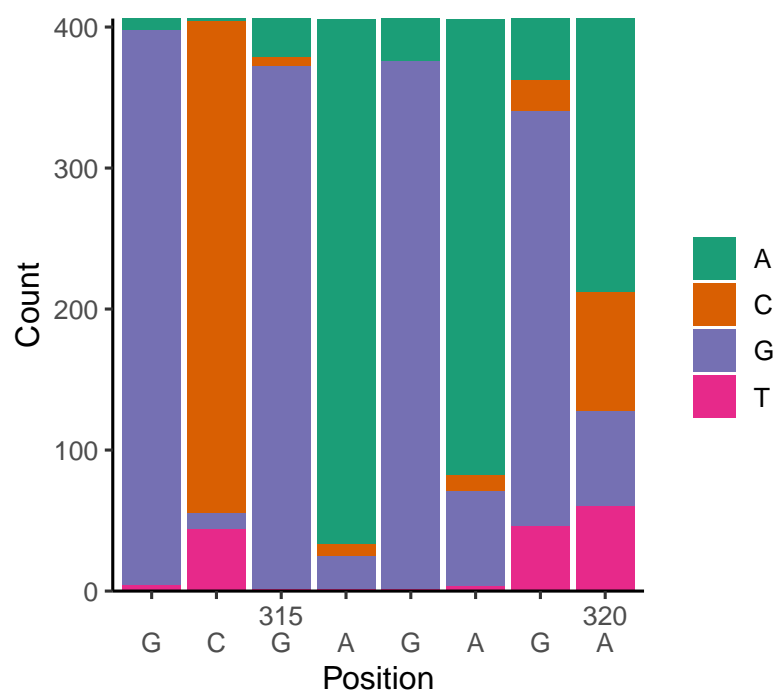
Gene IGHV2-161\*01\_G289T



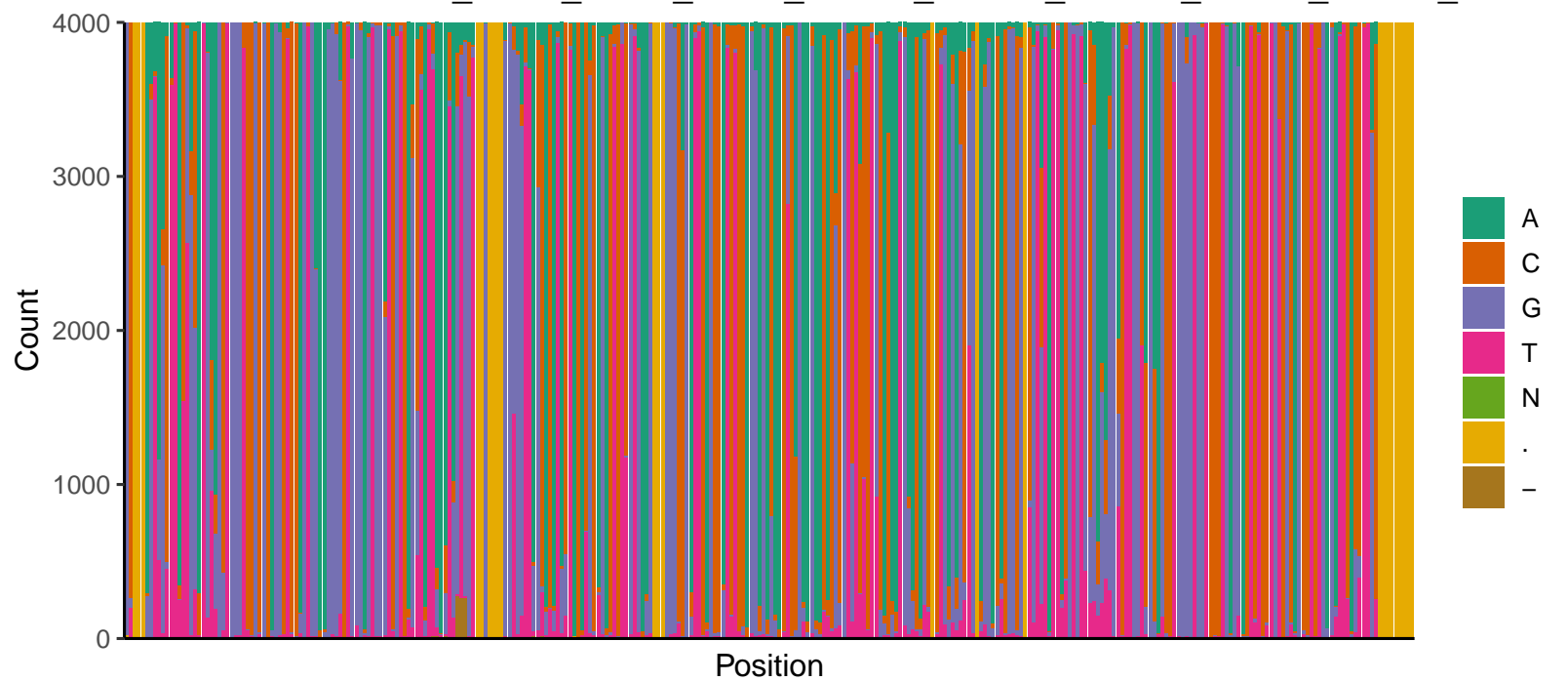
Gene IGHV4-165\*02\_C133A\_C135A\_G240A



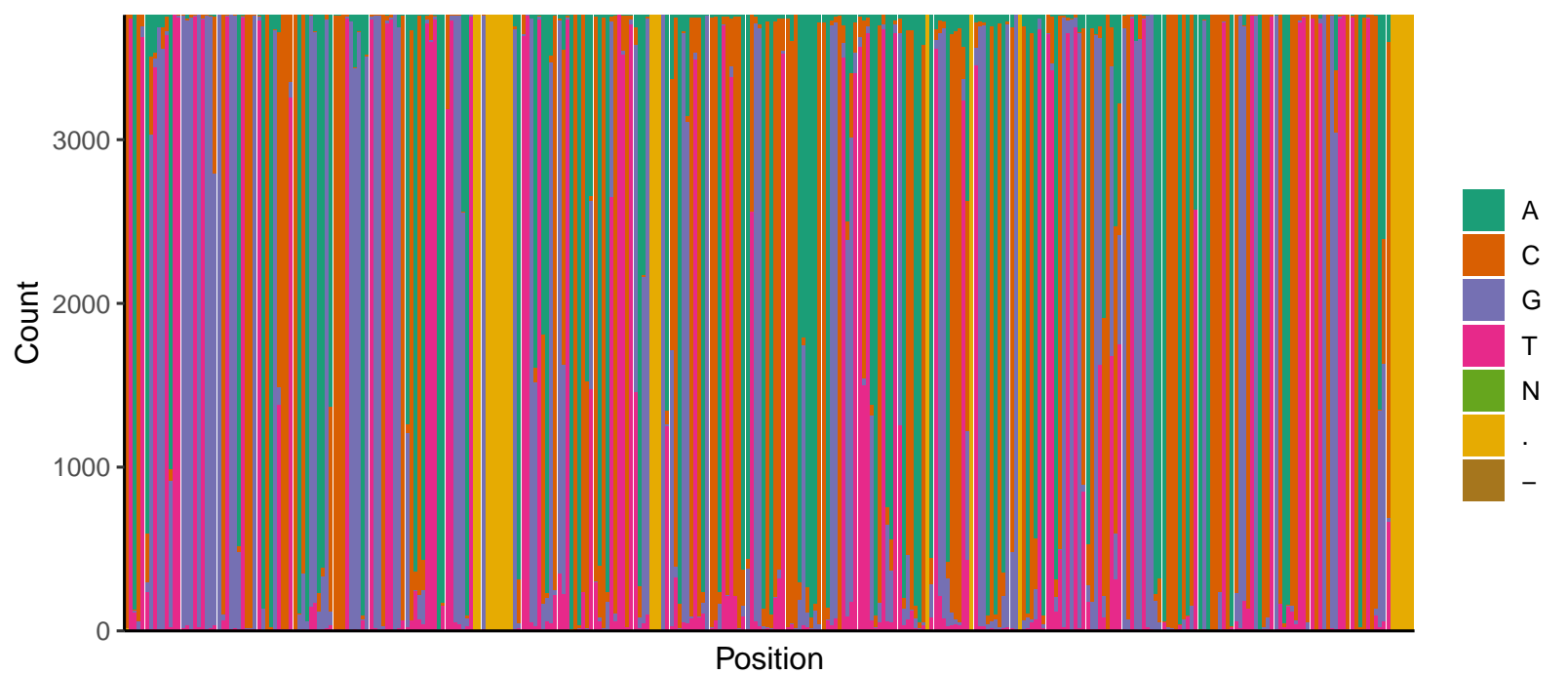
Gene IGHV4S9\*01\_T263C\_T277A\_C297G



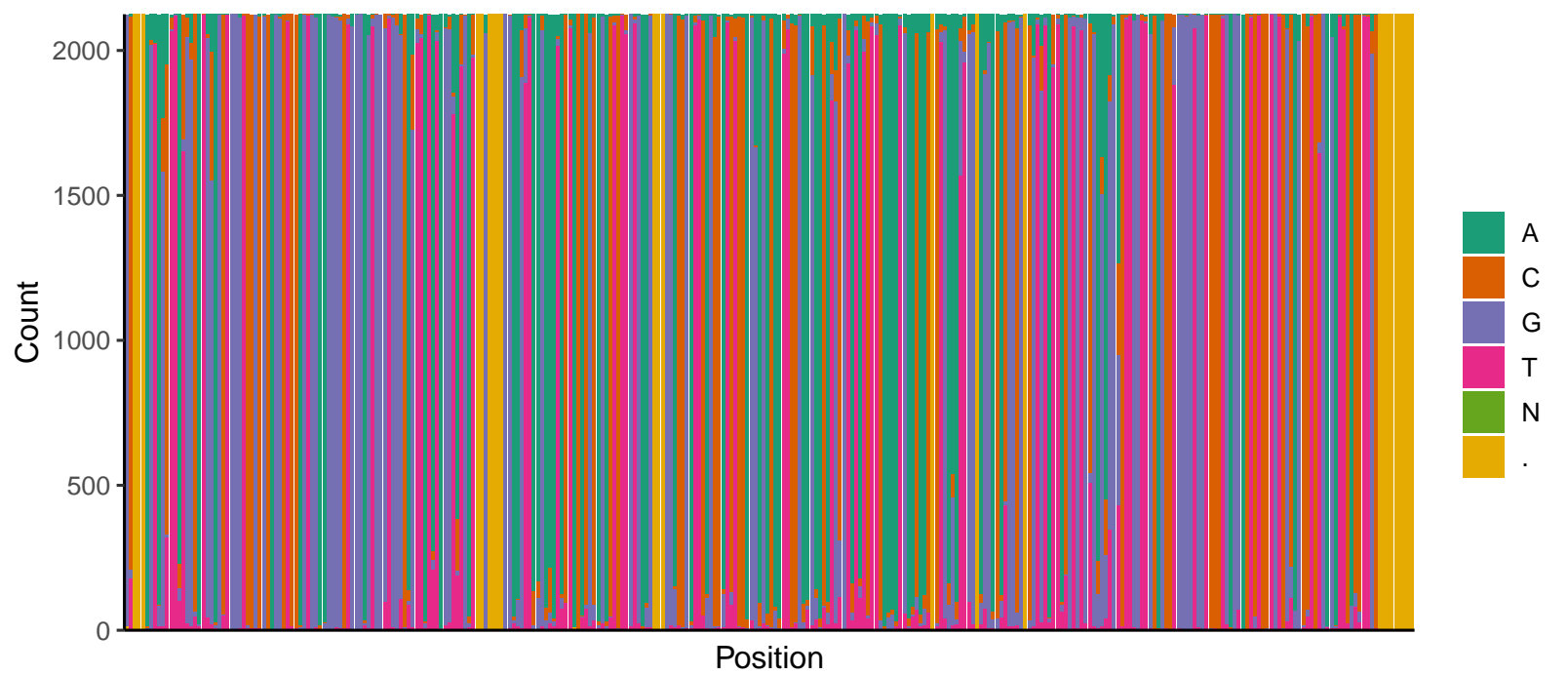
Gene IGHV3S42\*01\_C38T\_A39C\_A40C\_C111T\_T112G\_G114C\_A118T\_T120C\_A133G



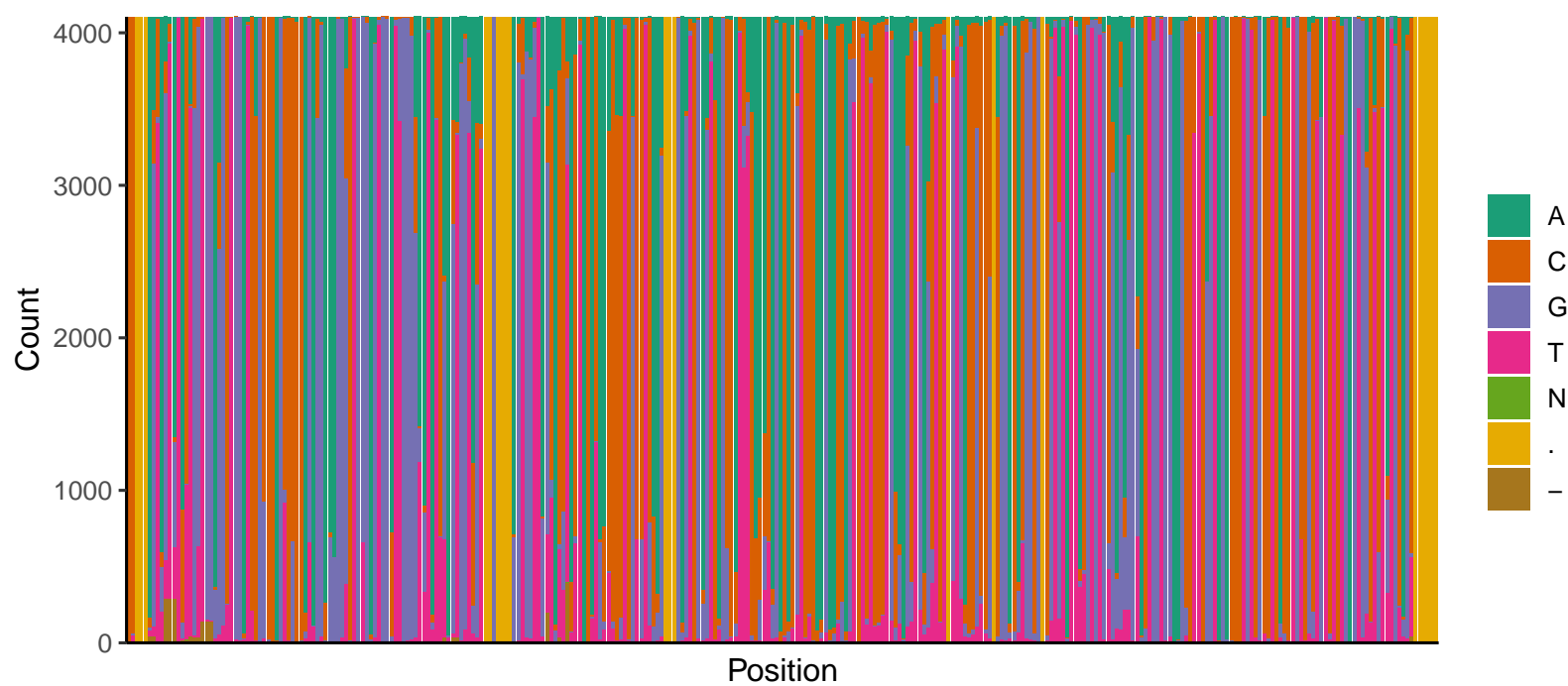
Gene IGHV2-174\*02\_A267G\_A289G



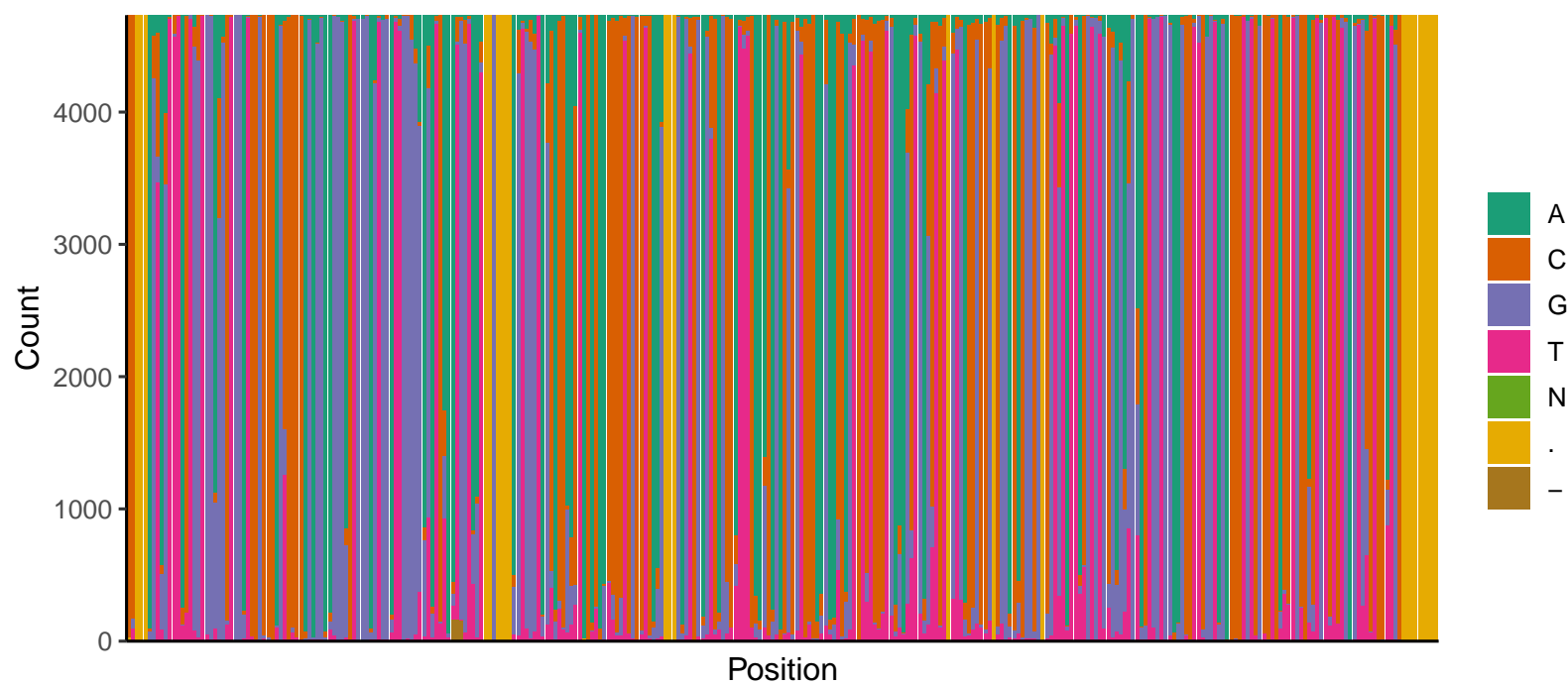
Gene IGHV3-54\*02\_T78C\_T111C\_A284G\_T286G\_C296T



Gene IGHV4-65\*02\_A48G



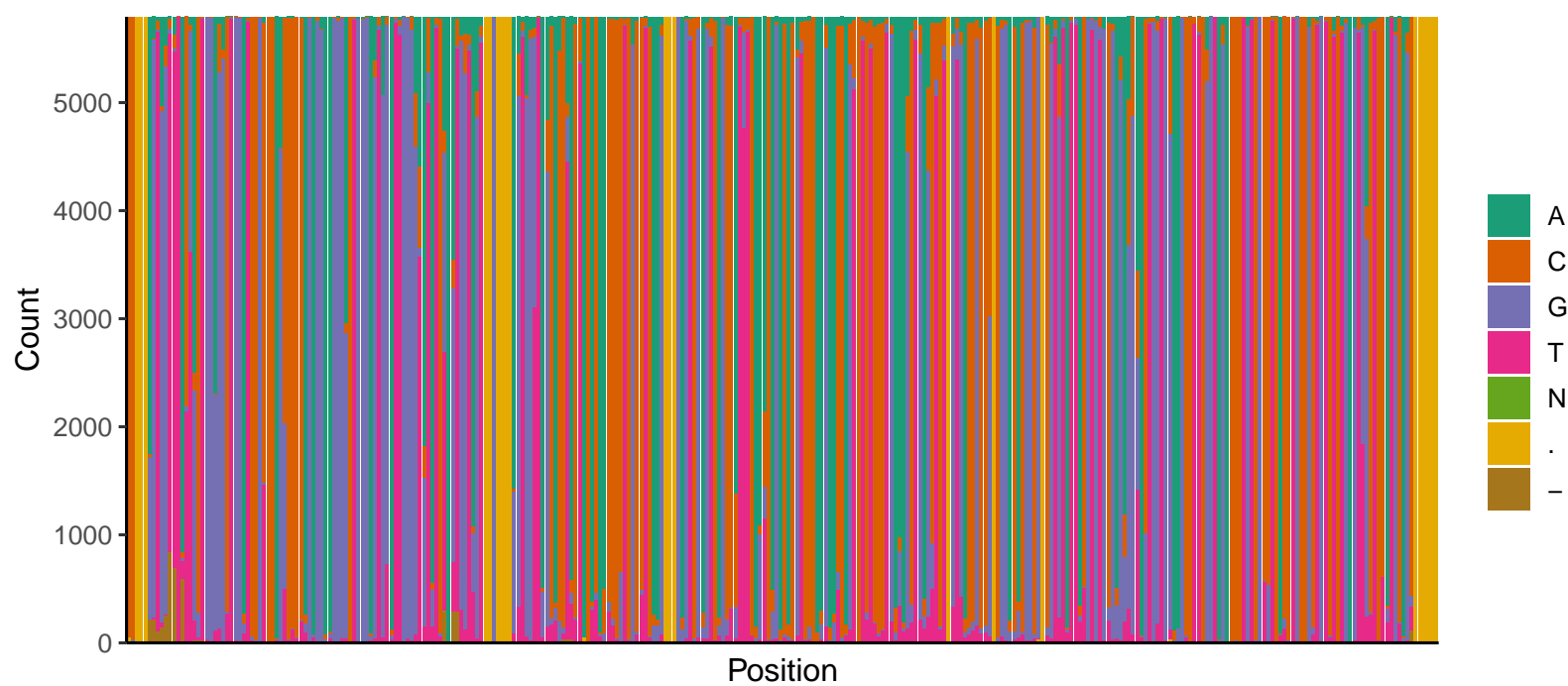
Gene IGHV4-80\*01\_G70A\_T189G\_T196A



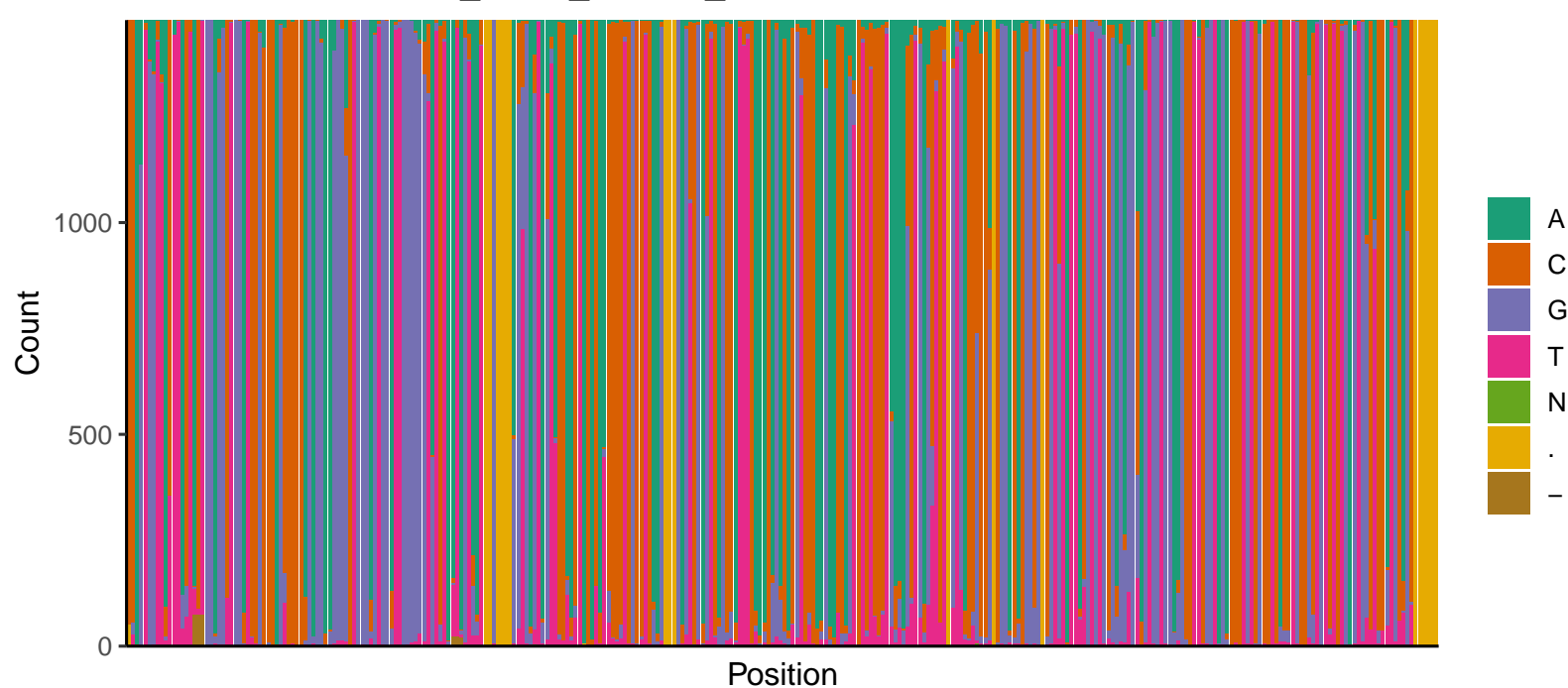
Gene IGHV4-80\*01\_G70A\_C90T\_T109A\_T189G\_T196A



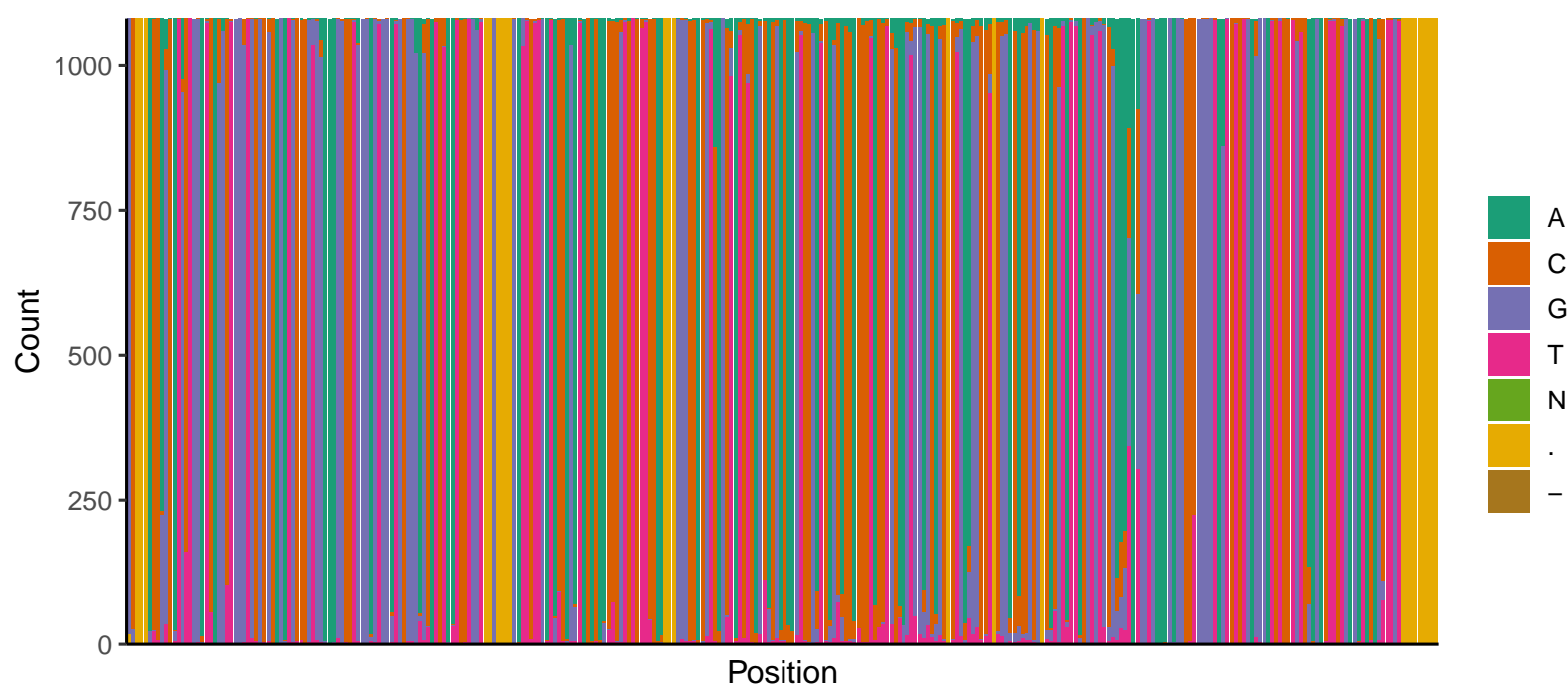
Gene IGHV4-127\*01\_T82G\_A83G\_T111C\_G112T\_G113A\_G132A\_A196T



Gene IGHV4S13\*01\_T85A\_G267A\_G289A



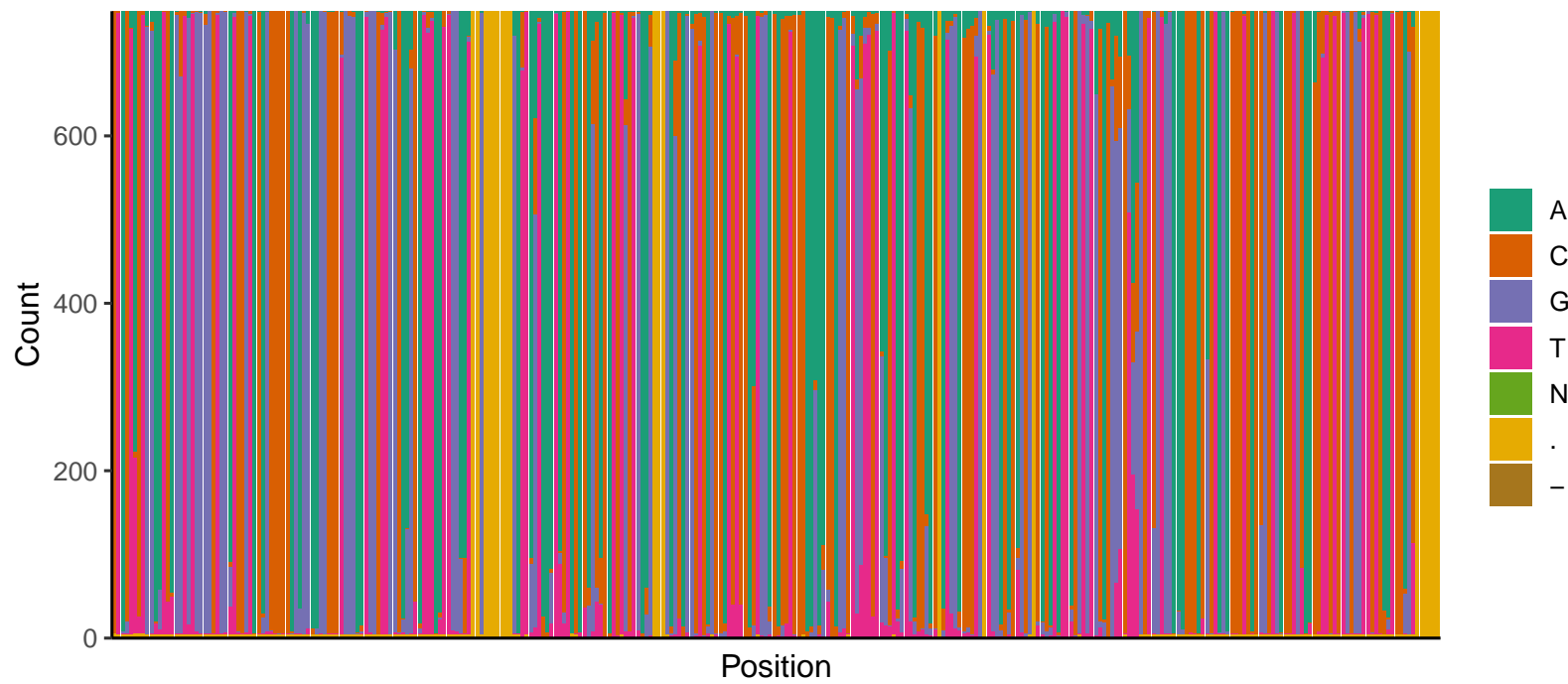
Gene IGHV5-43\*01\_A51G



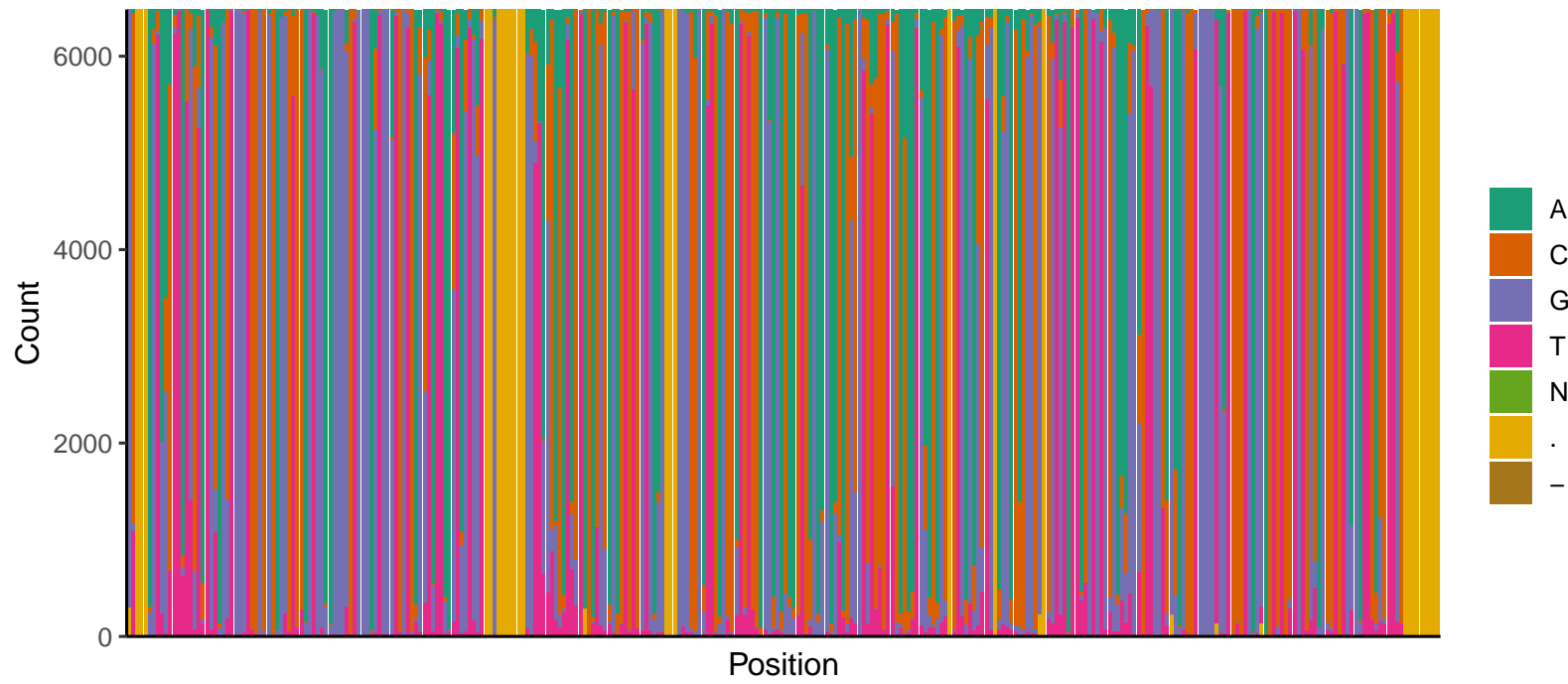
Gene IGHV2-95\*01\_A239C\_A252G\_A267G\_G289T



Gene IGHV2-95\*01\_A239C\_A252G\_A267G



Gene IGHV3-103\*01\_G51A\_A170G

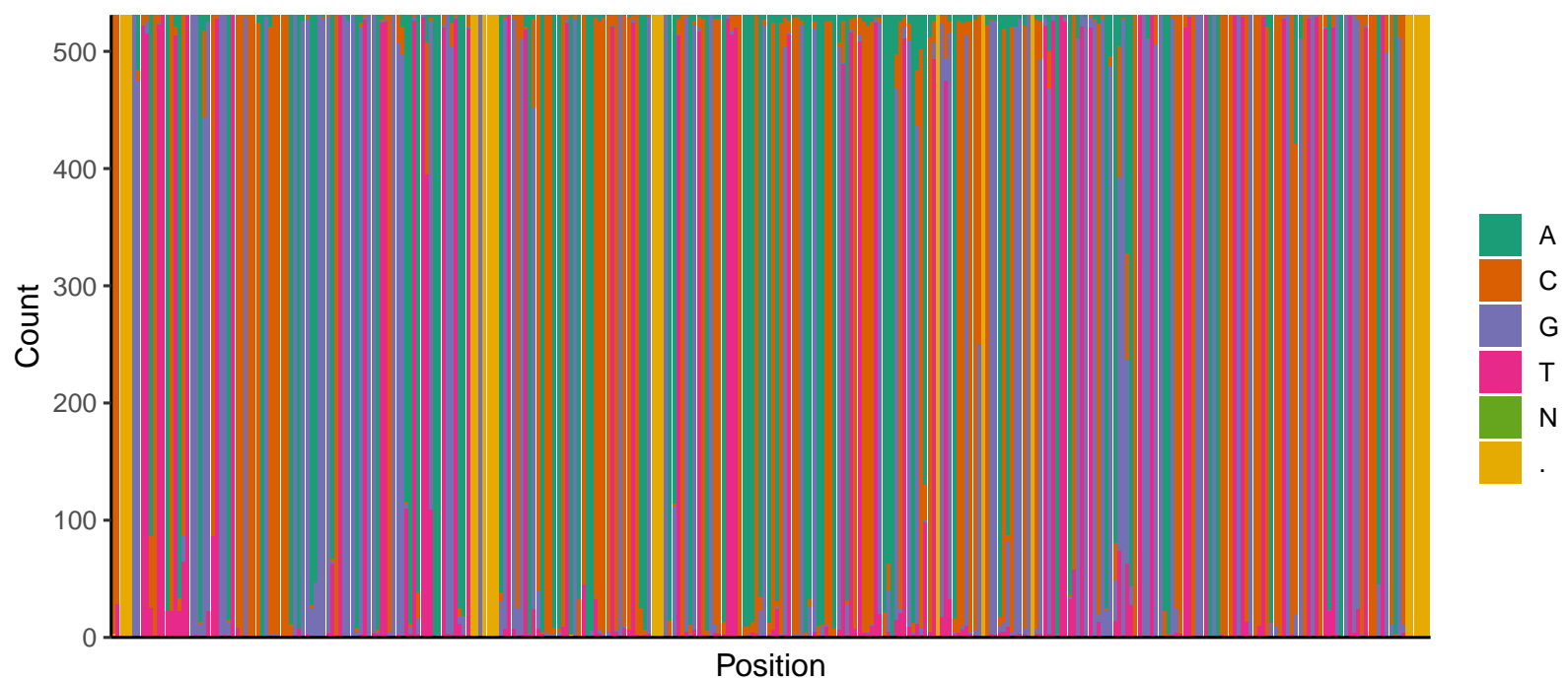




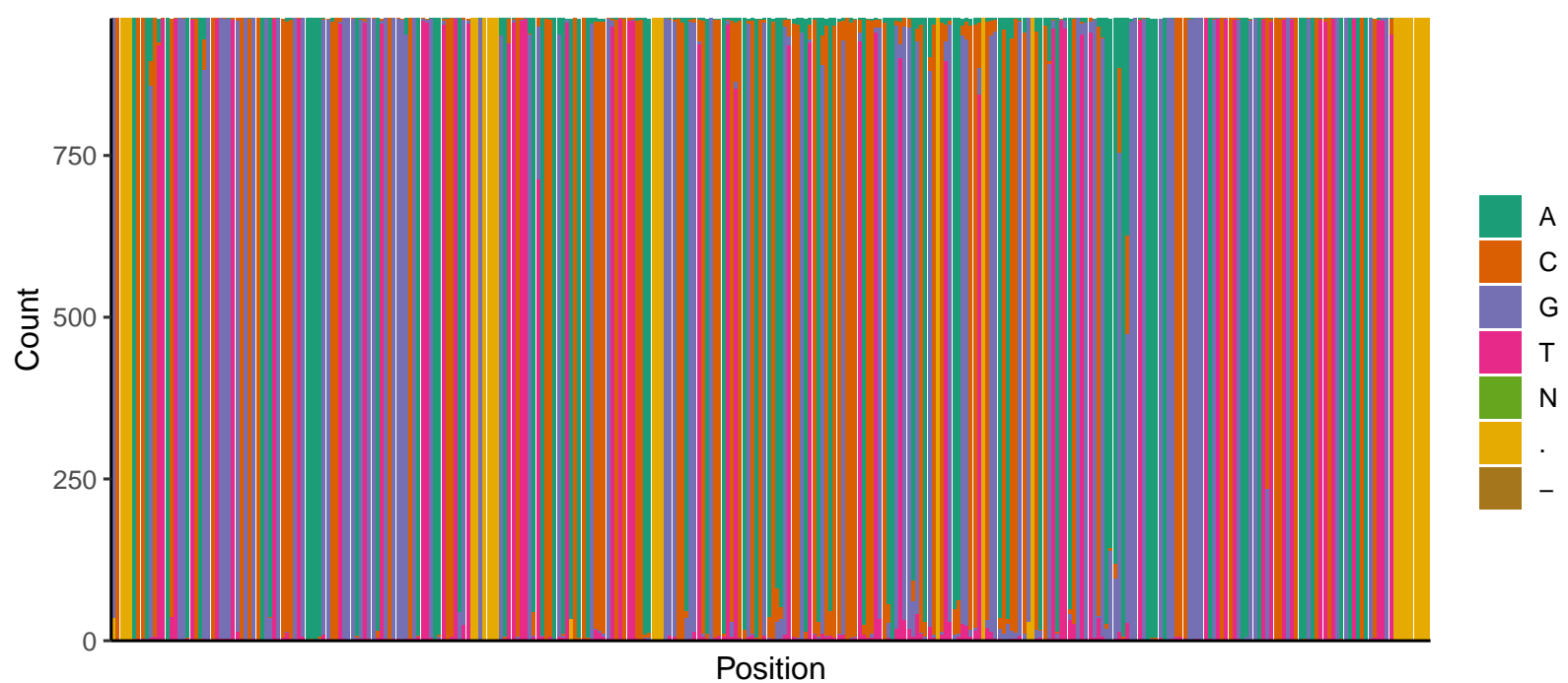
Gene IGHV3-103\*01\_G24A\_C27A\_C38T\_A39C\_A40C\_C113G\_T114C\_C118A\_A119G\_



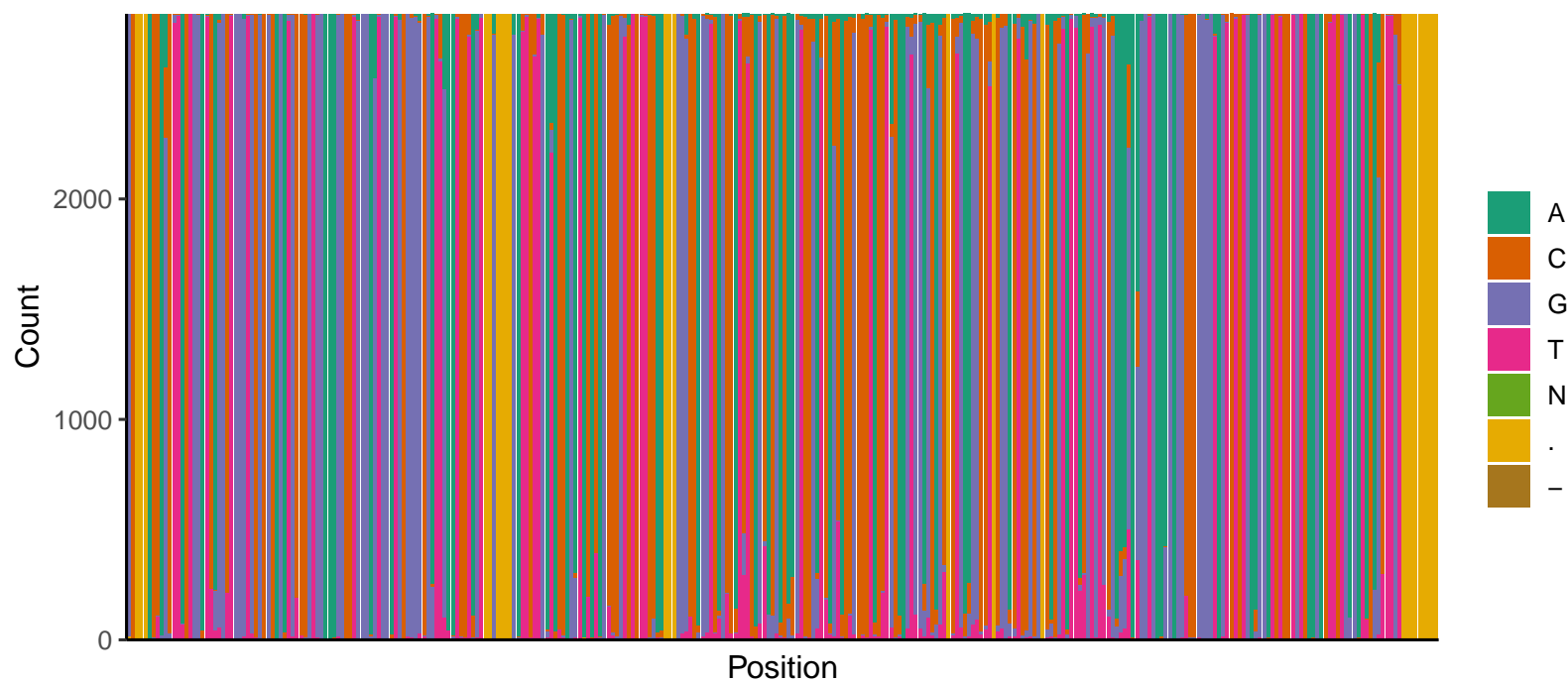
Gene IGHV4-73\*01\_A7C\_G147A\_T163A\_C168T\_T169G\_T277A



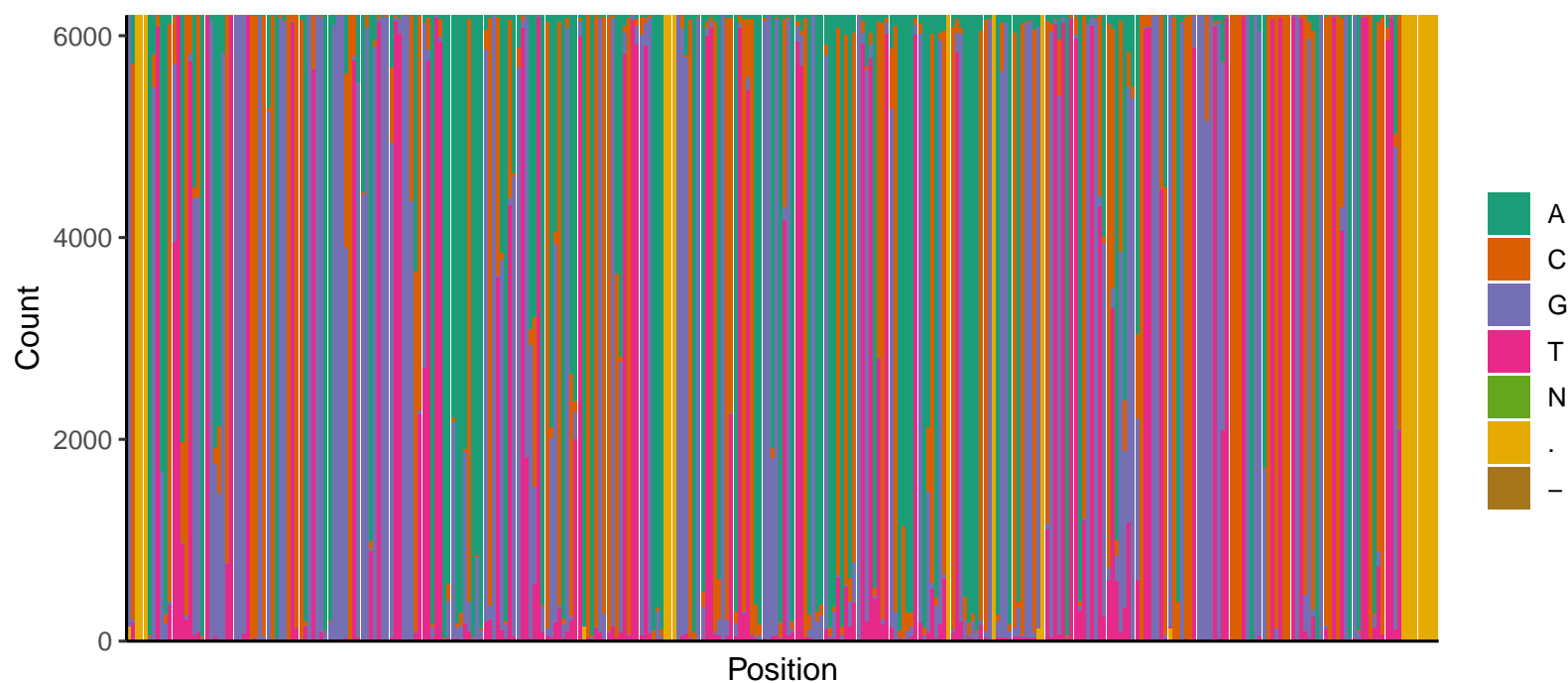
Gene IGHV5-20\*02\_C312T



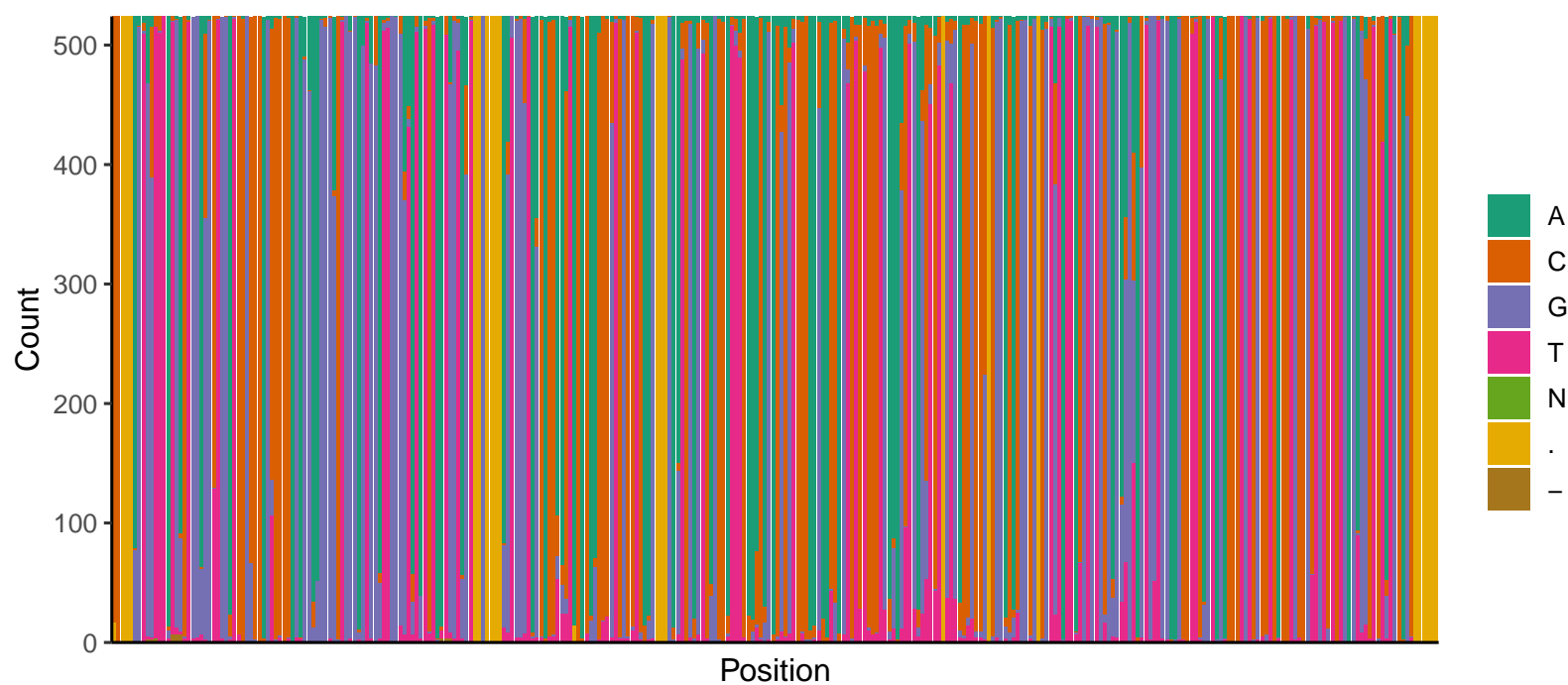
Gene IGHV5-20\*02\_A141G\_A295T\_C312T



Gene IGHV3-30\*01\_G13A\_G174C\_A188G\_G189A\_C264T



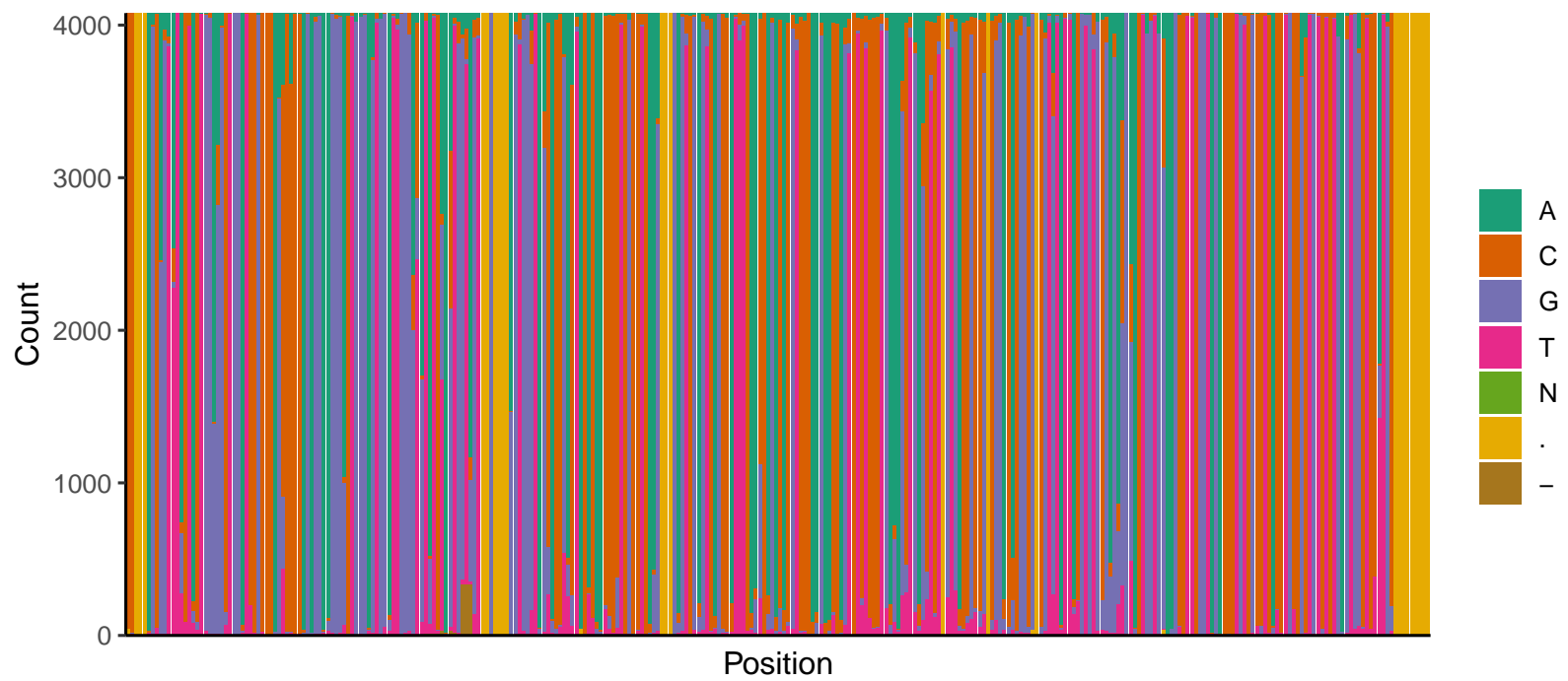
Gene IGHV4-76\*01\_C34G\_G103A\_A244G



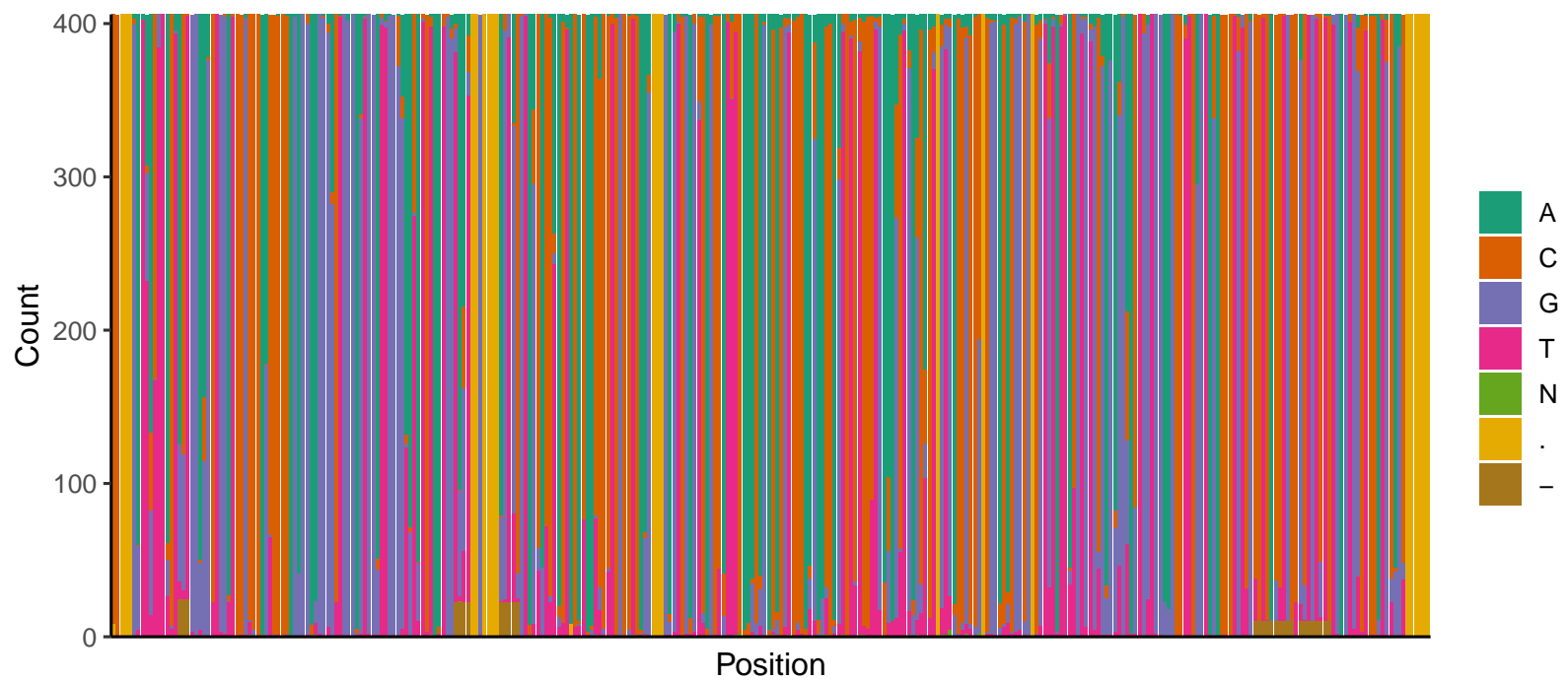
Gene IGHV4-81\*01\_C4G\_T185C\_T255C



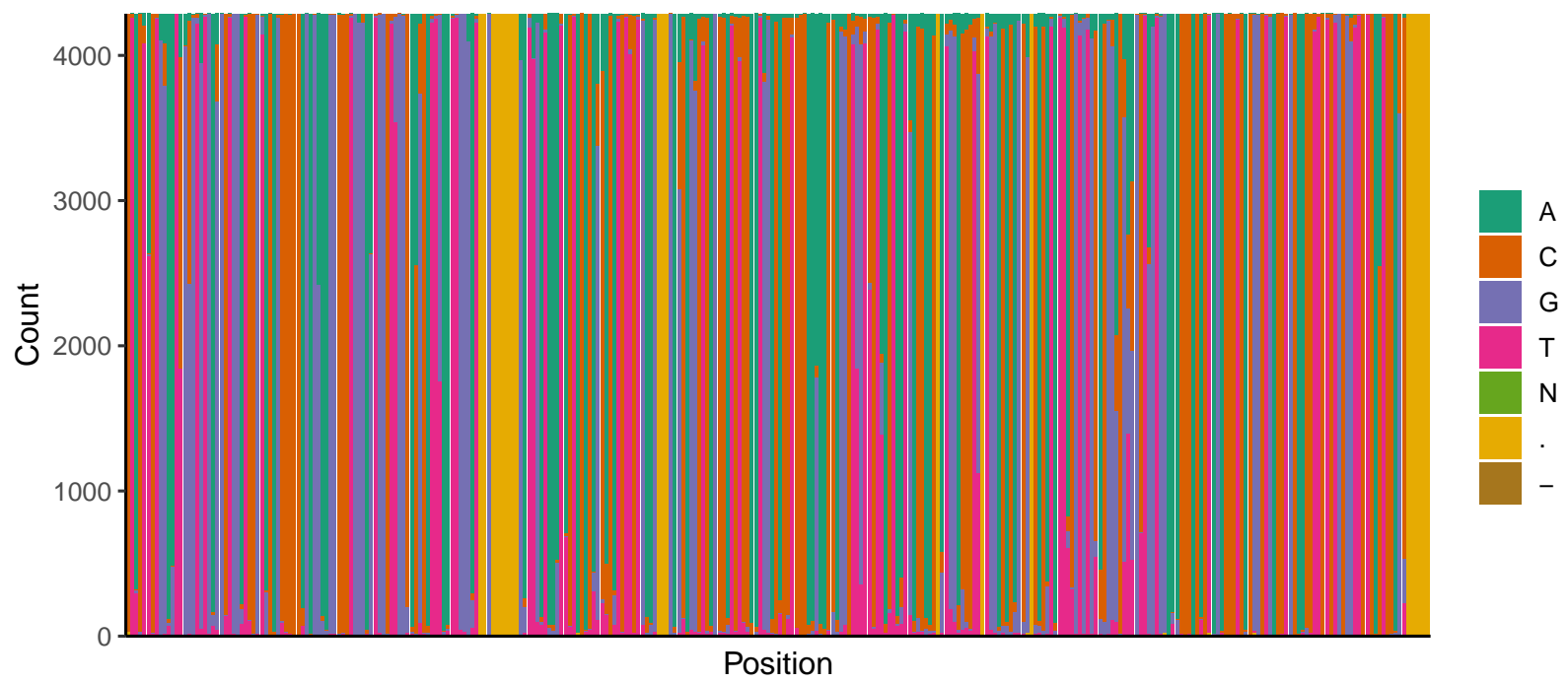
Gene IGHV4-165\*02\_C133A\_C135A\_G240A



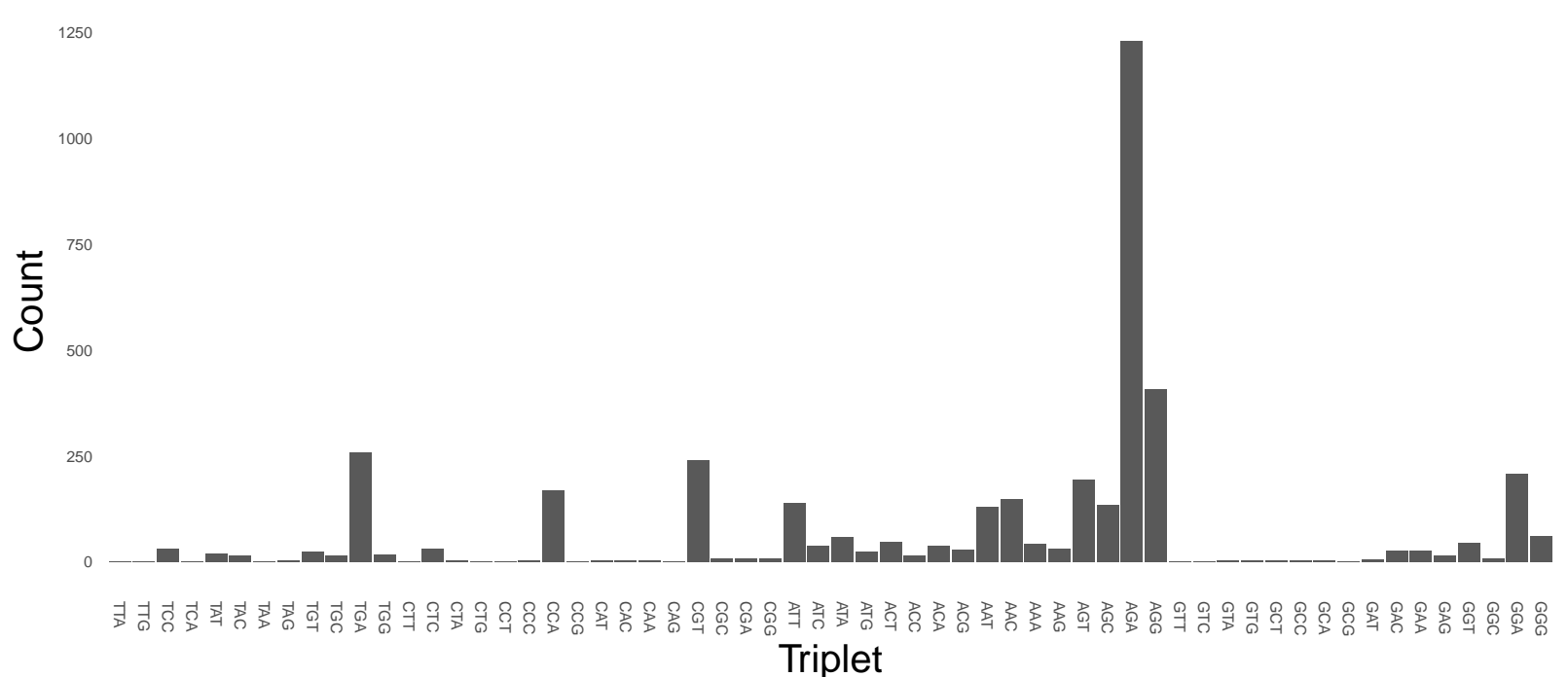
Gene IGHV4S9\*01\_T263C\_T277A\_C297G



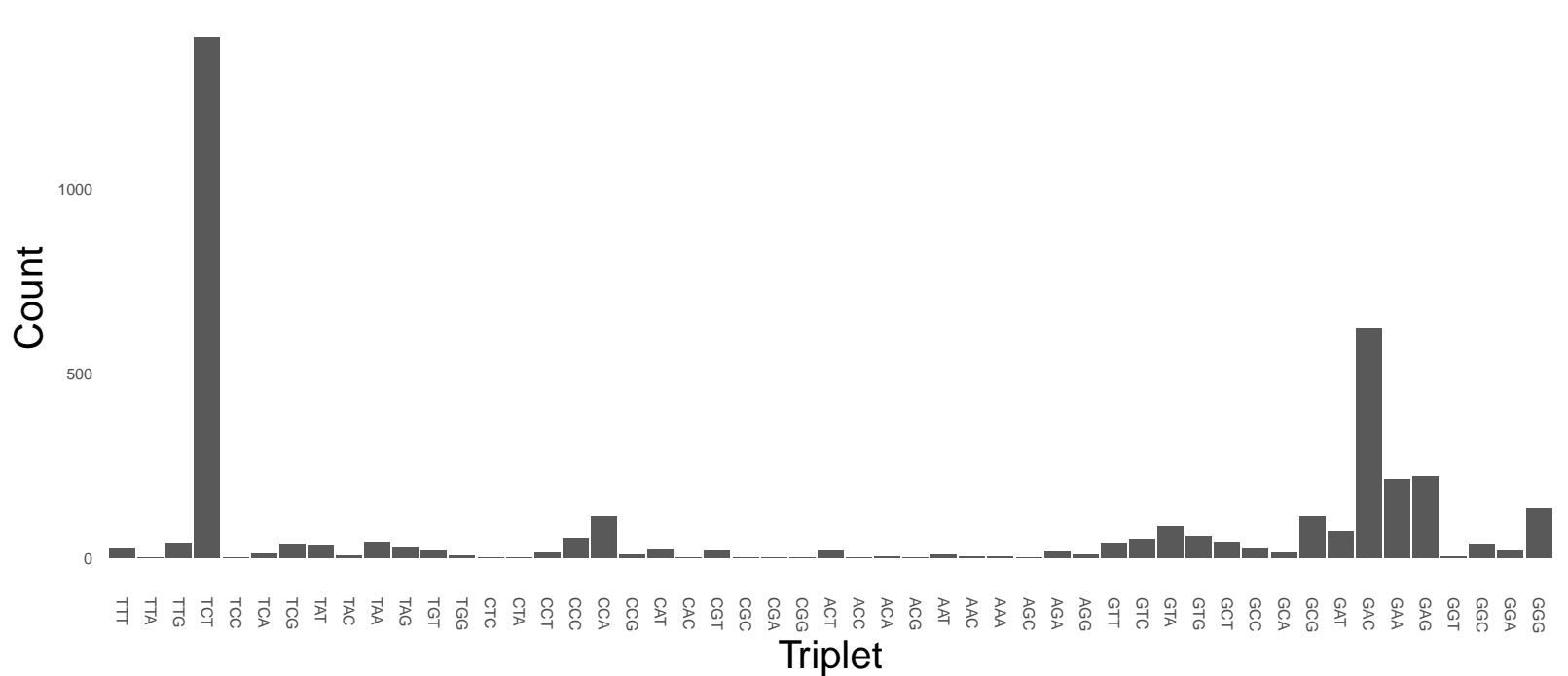
# Gene IGHV2-161\*01\_G289T



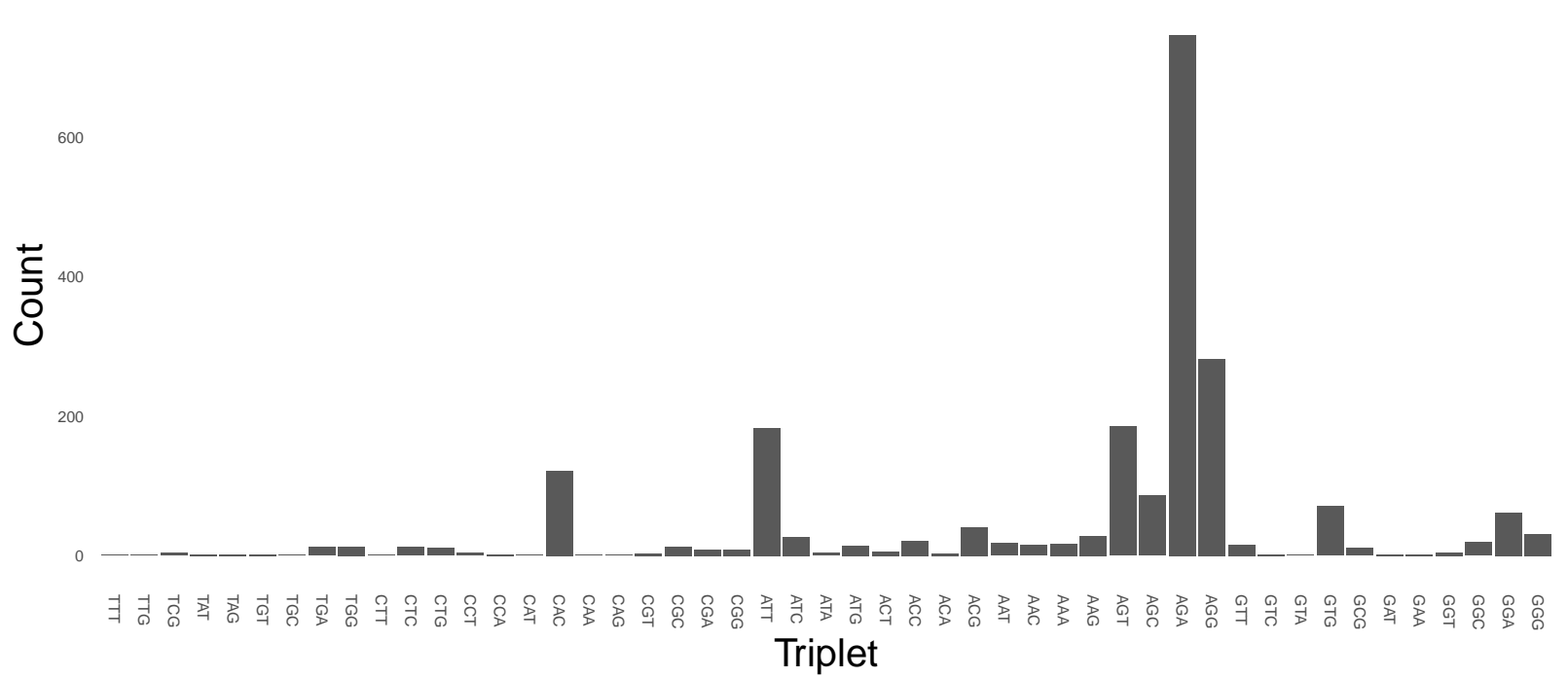
IGHV3S42\*01\_C38T\_A39C\_A40C\_C111T\_T112G\_G114C\_A118T\_T120C\_A133G\_G186T\_C210



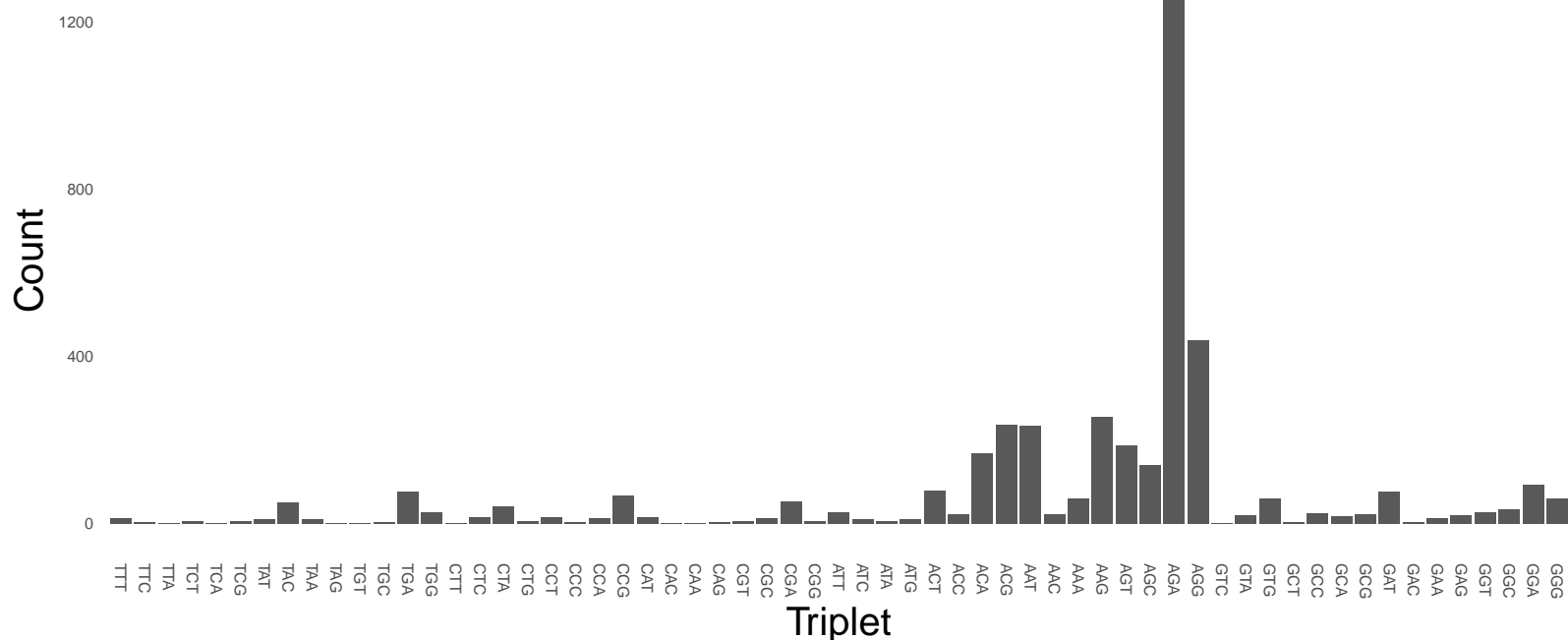
IGHV2-174\*02\_A267G\_A289G- Final 3 nucleotides as a triplet



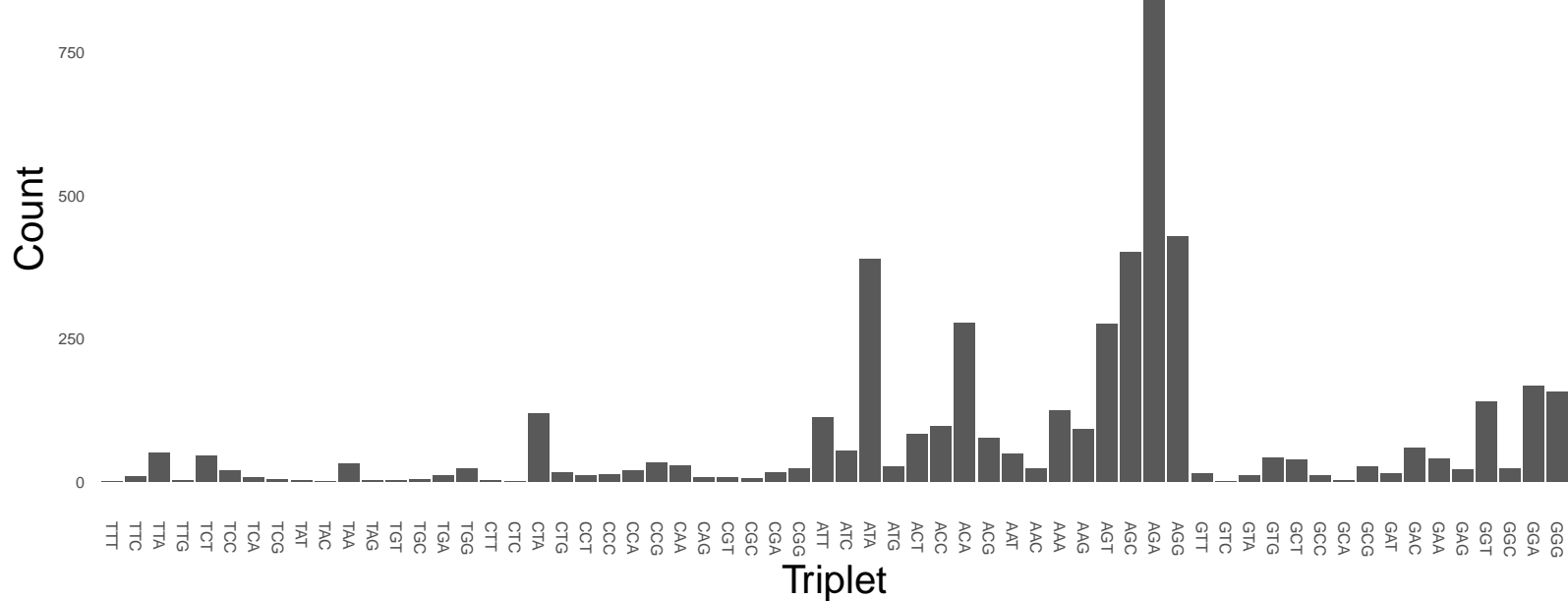
IGHV3-54\*02\_T78C\_T111C\_A284G\_T286G\_C296T- Final 3 nucleotides as a triplet



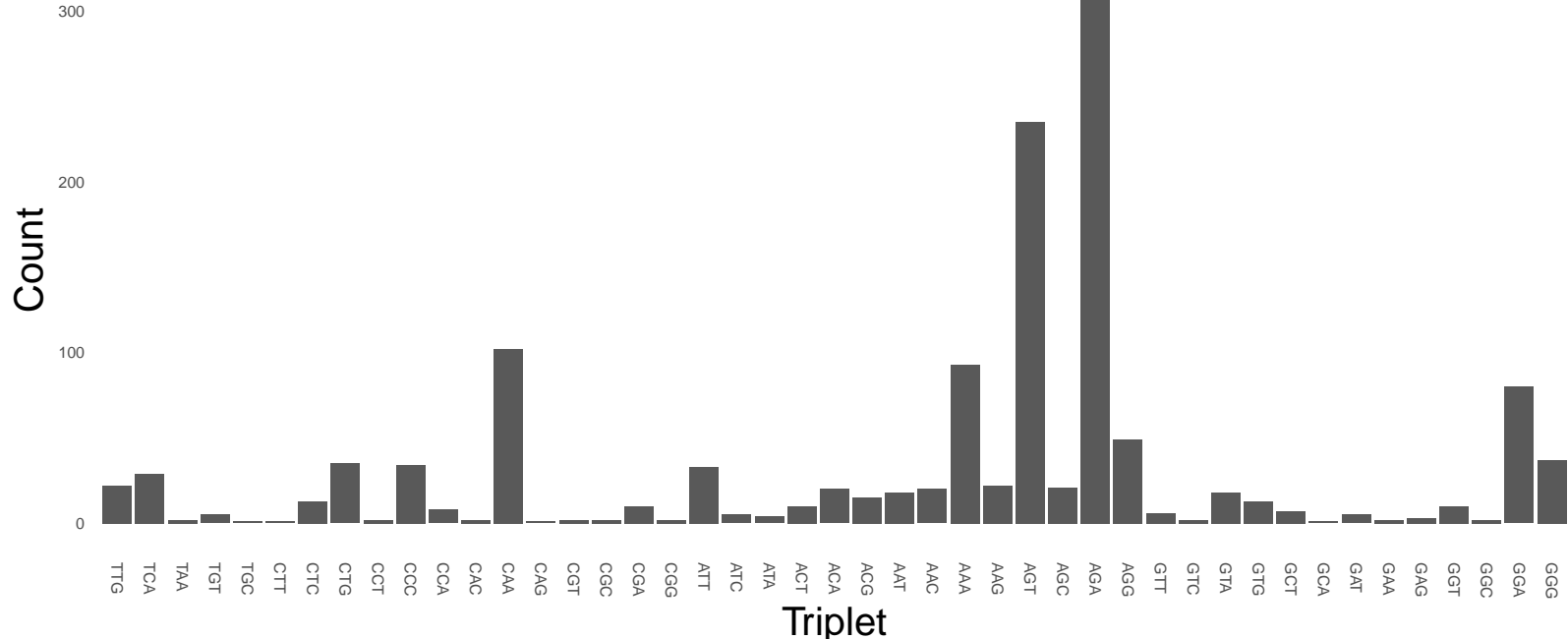
IGHV4-65\*02\_A48G- Final 3 nucleotides as a triplet



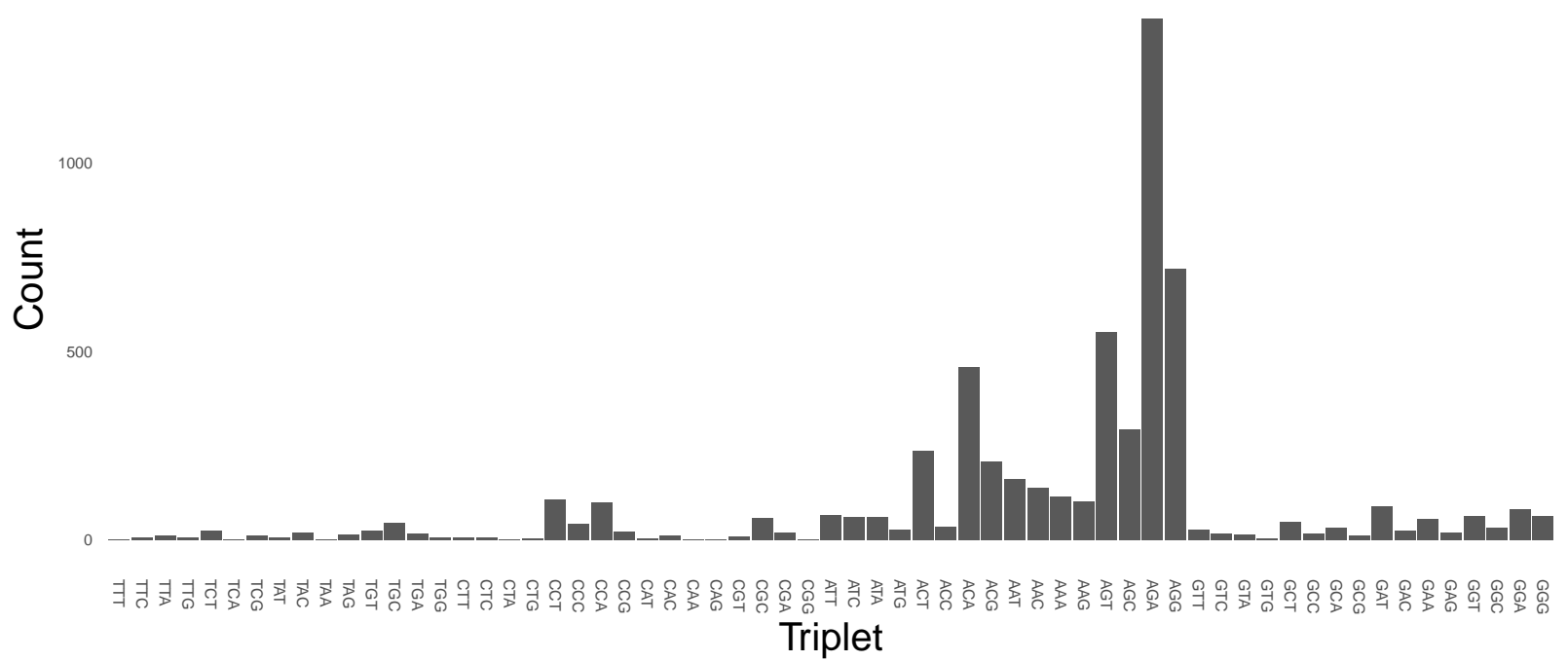
IGHV4-80\*01\_G70A\_T189G\_T196A- Final 3 nucleotides as a triplet



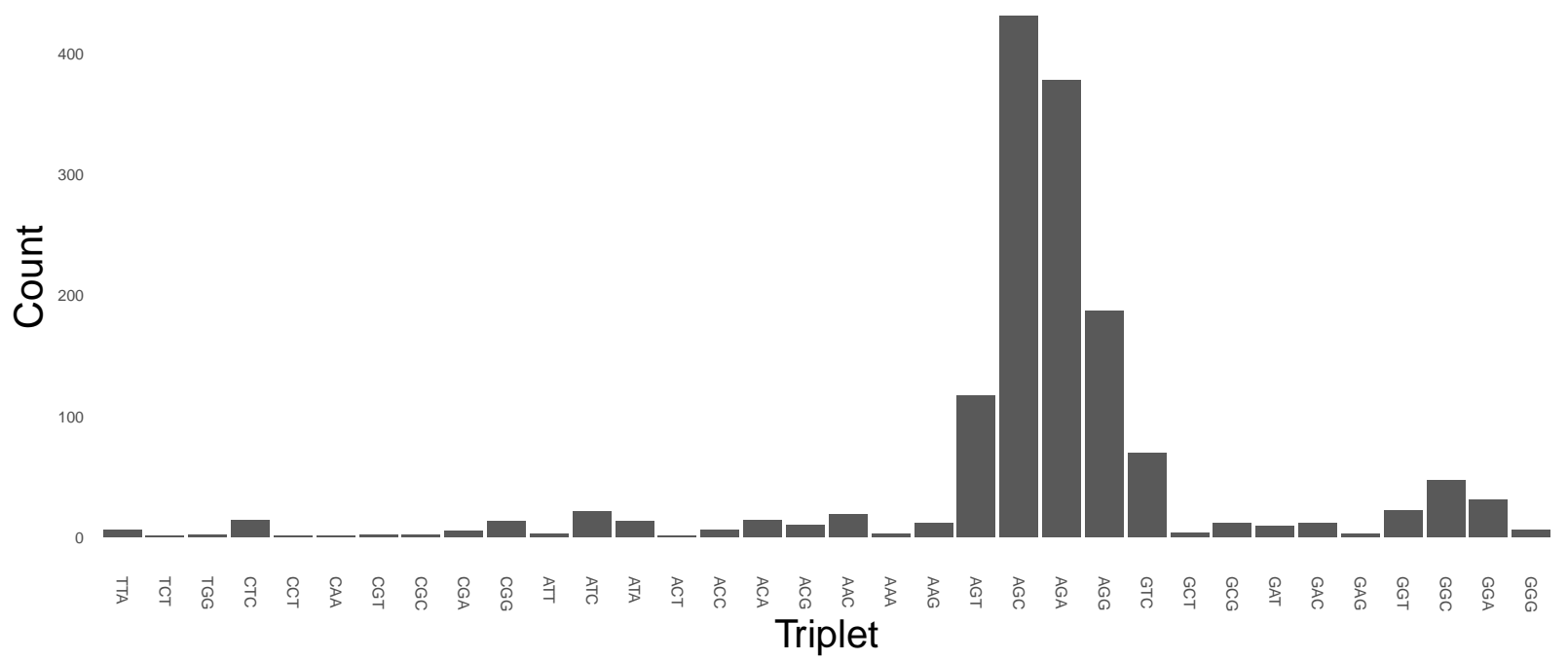
IGHV4-80\*01\_G70A\_C90T\_T109A\_T189G\_T196A- Final 3 nucleotides as a triplet



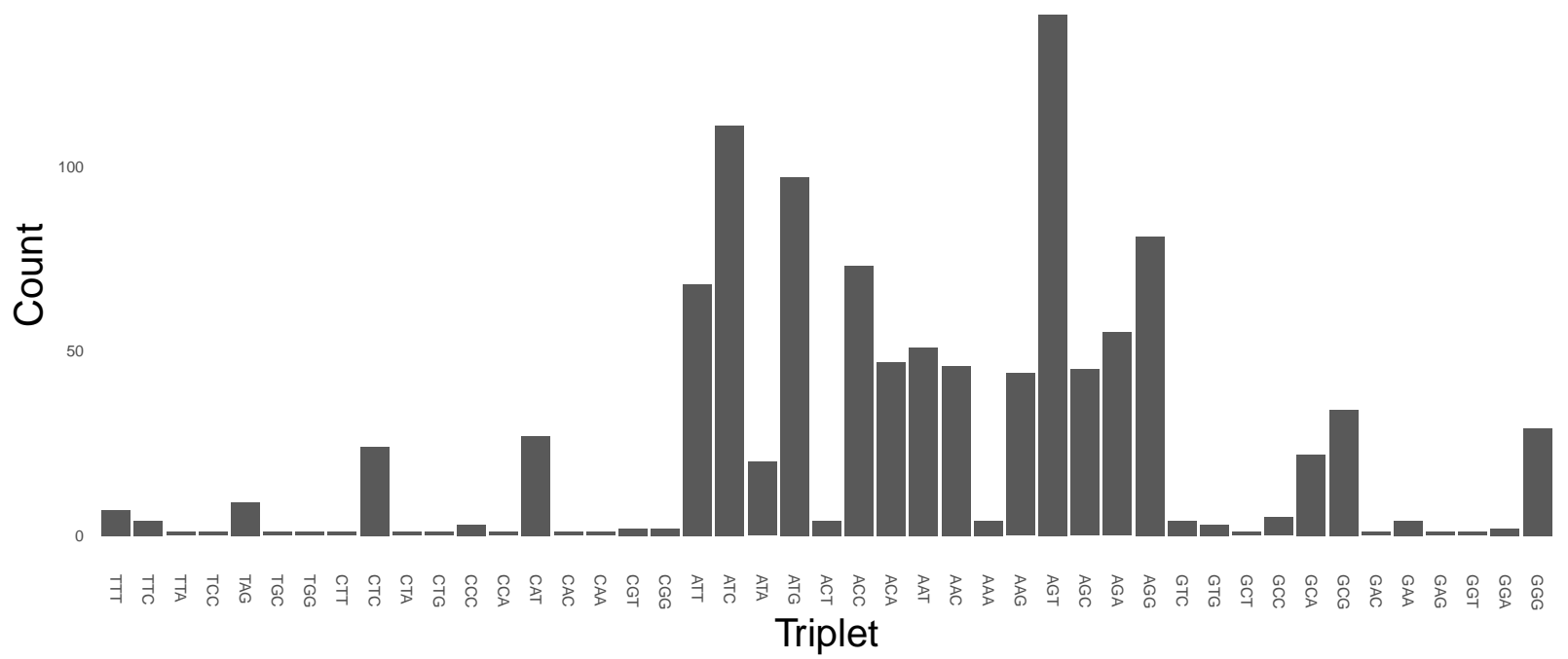
IGHV4-127\*01\_T82G\_A83G\_T111C\_G112T\_G113A\_G132A\_A196T- Final 3 nucleotides as a triplet



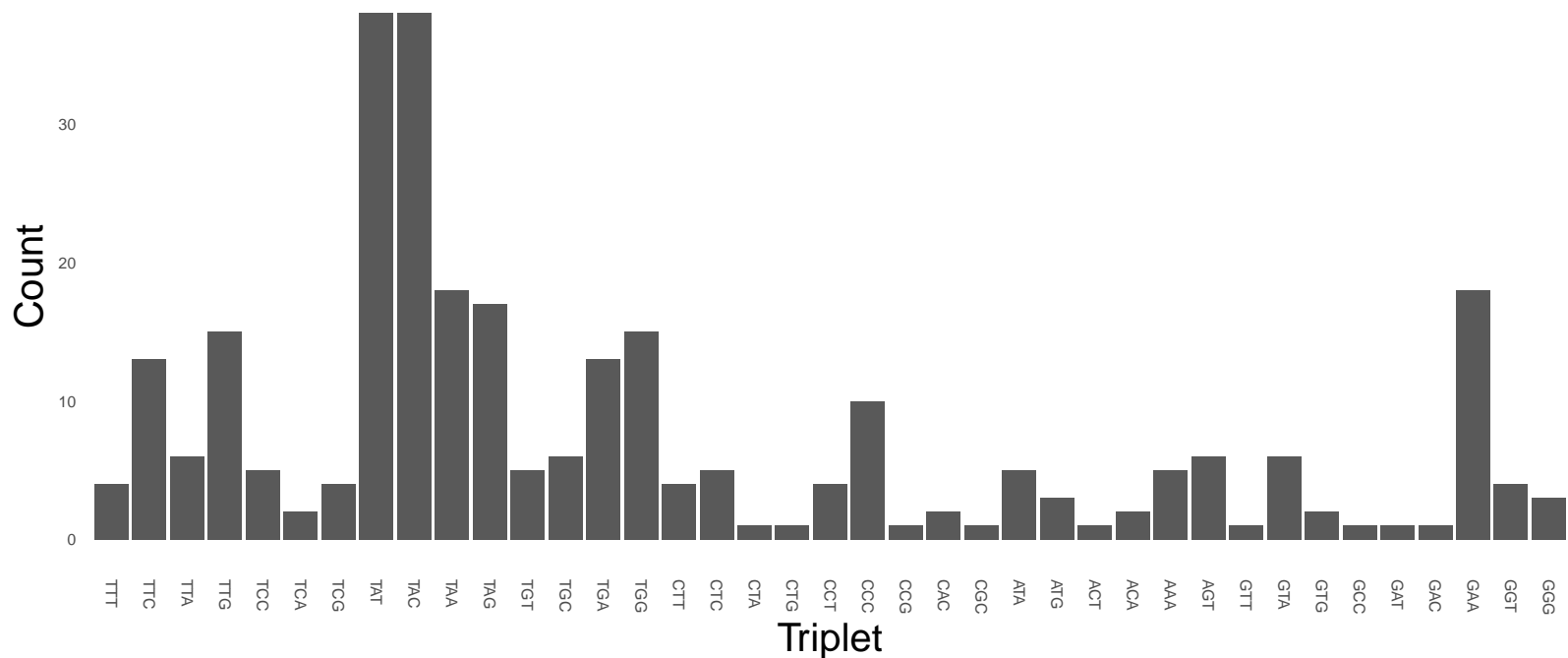
IGHV4S13\*01\_T85A\_G267A\_G289A- Final 3 nucleotides as a triplet



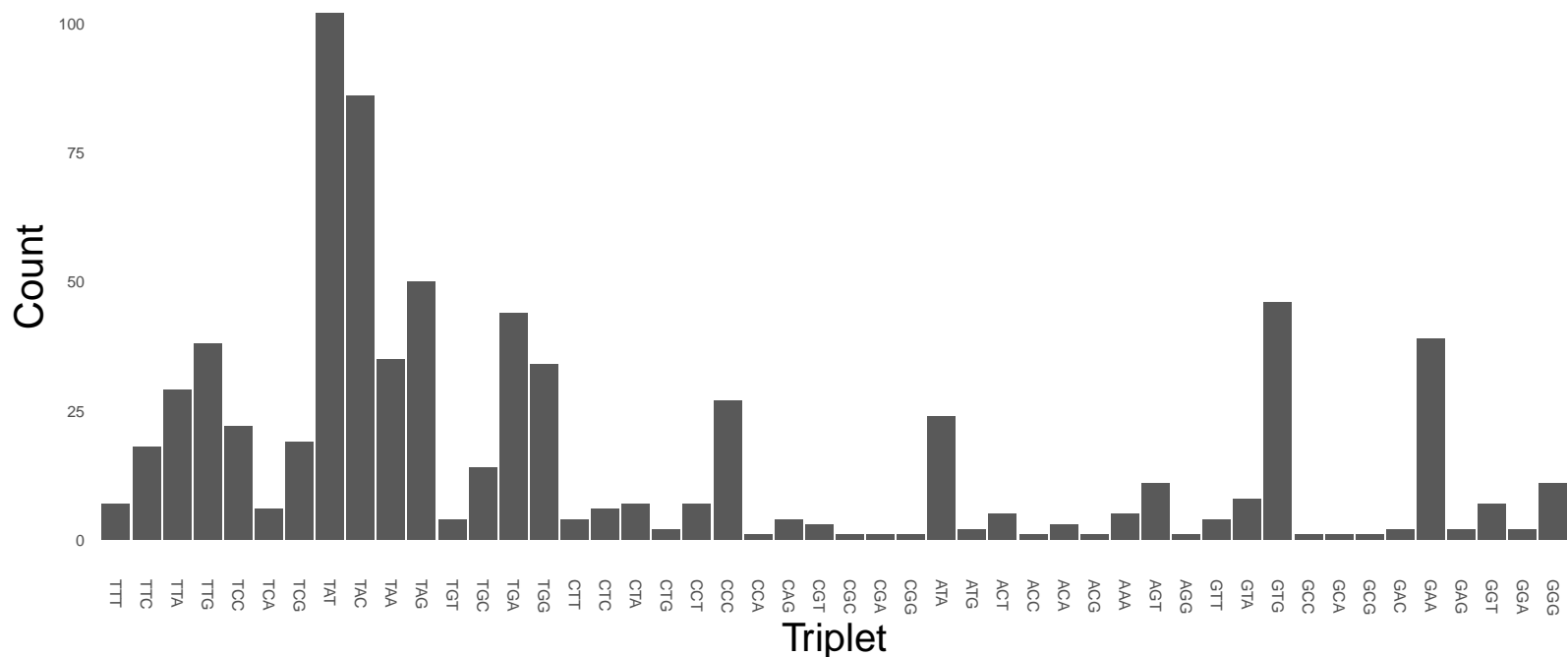
IGHV5-43\*01\_A51G- Final 3 nucleotides as a triplet



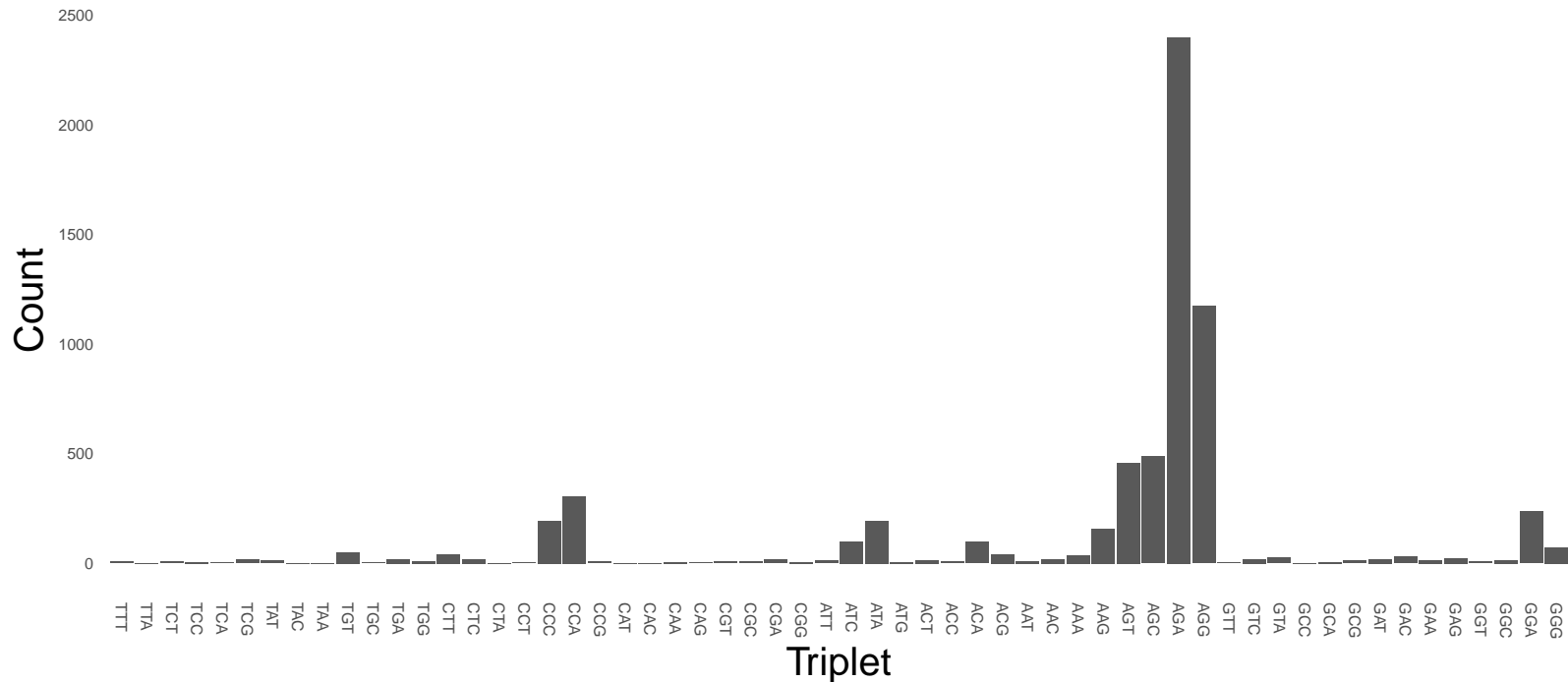
IGHV2-95\*01\_A239C\_A252G\_A267G\_G289T- Final 3 nucleotides as a triplet



IGHV2-95\*01\_A239C\_A252G\_A267G- Final 3 nucleotides as a triplet

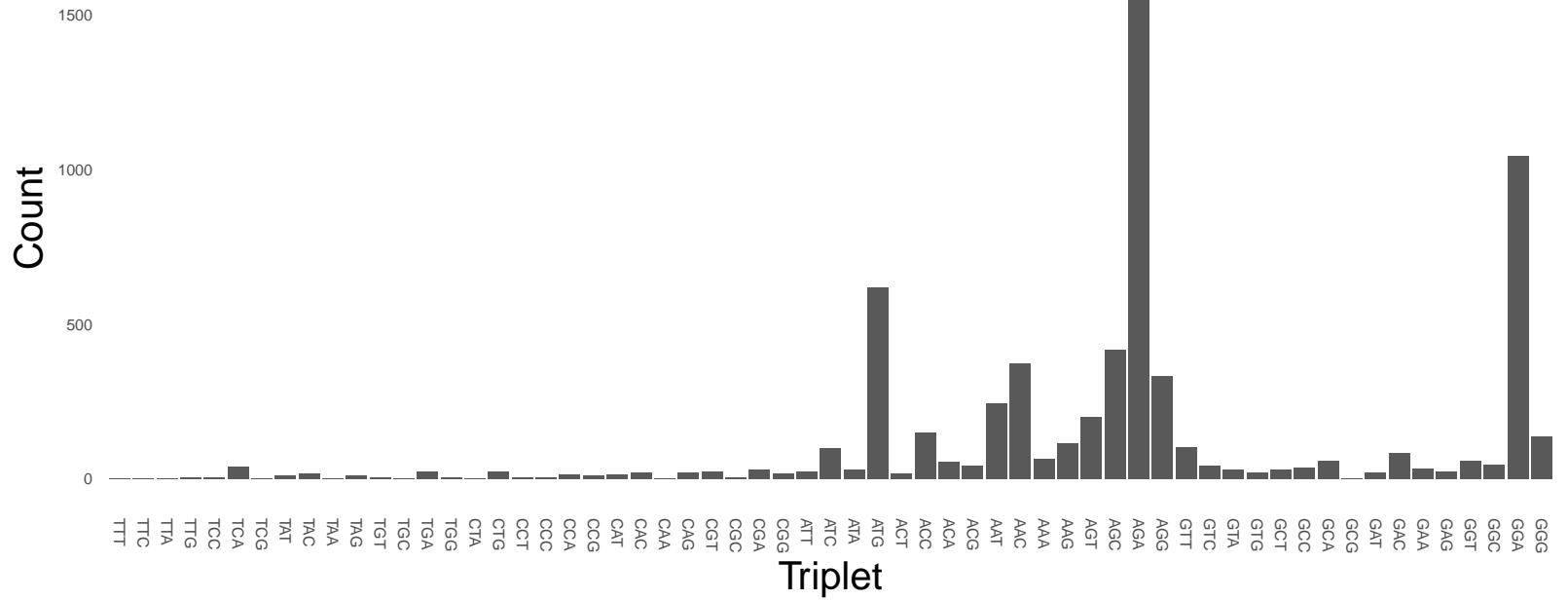


IGHV3-103\*01\_G51A\_A170G- Final 3 nucleotides as a triplet

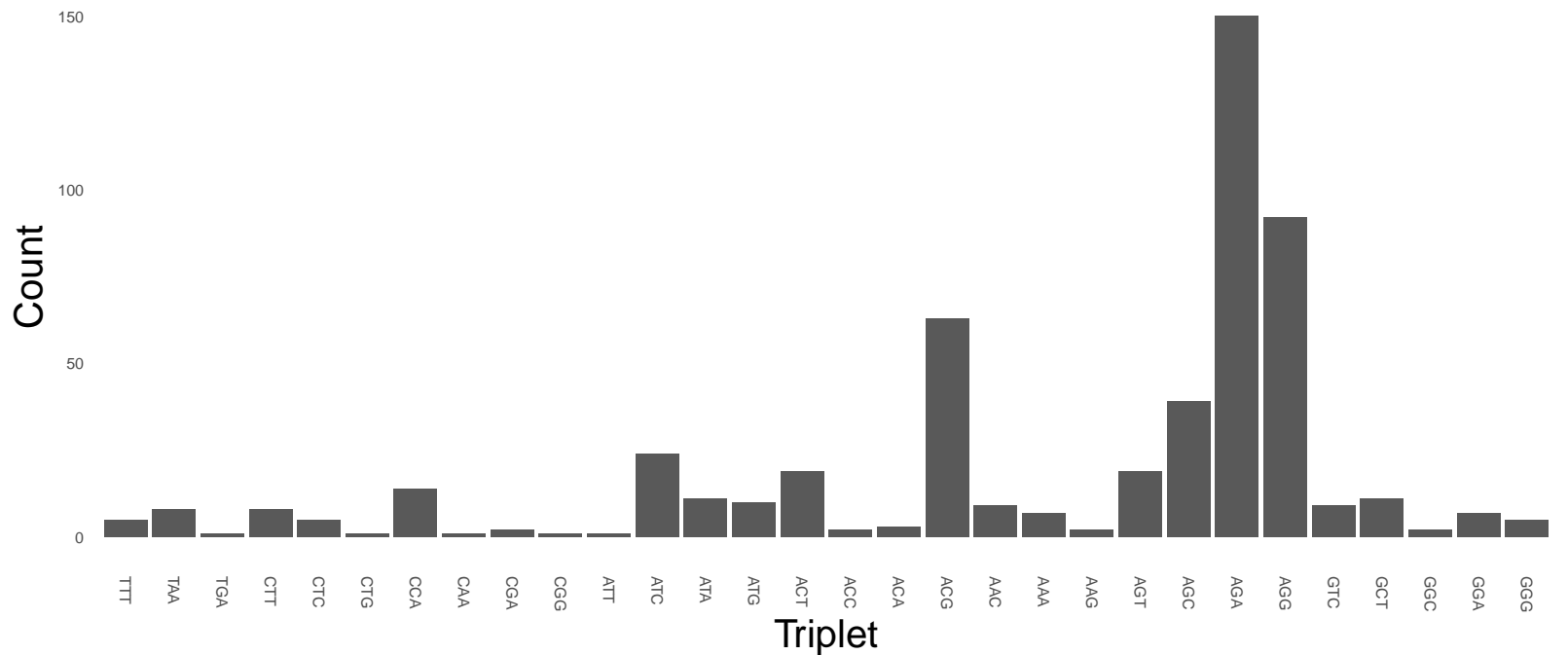




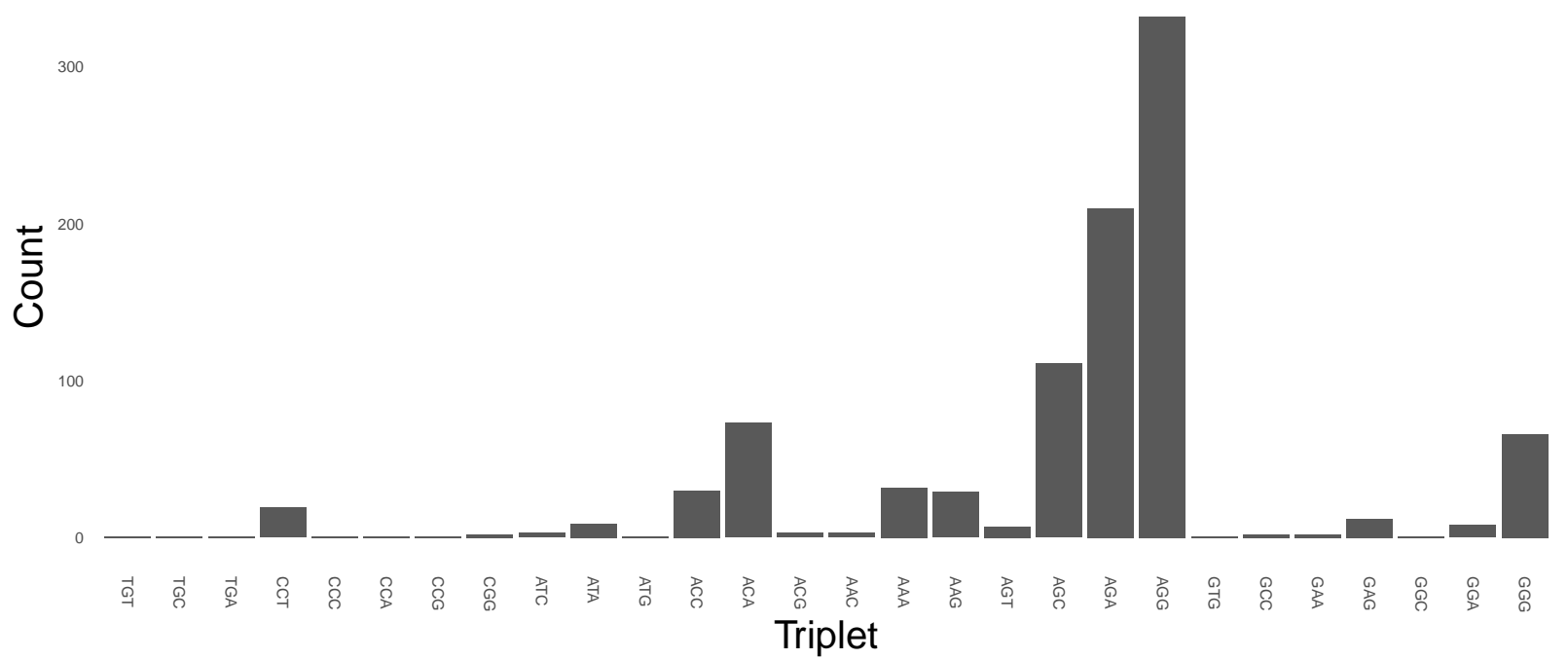
IGHV3-103\*01\_G24A\_C27A\_C38T\_A39C\_A40C\_C113G\_T114C\_C118A\_A119G\_G163T\_C164A



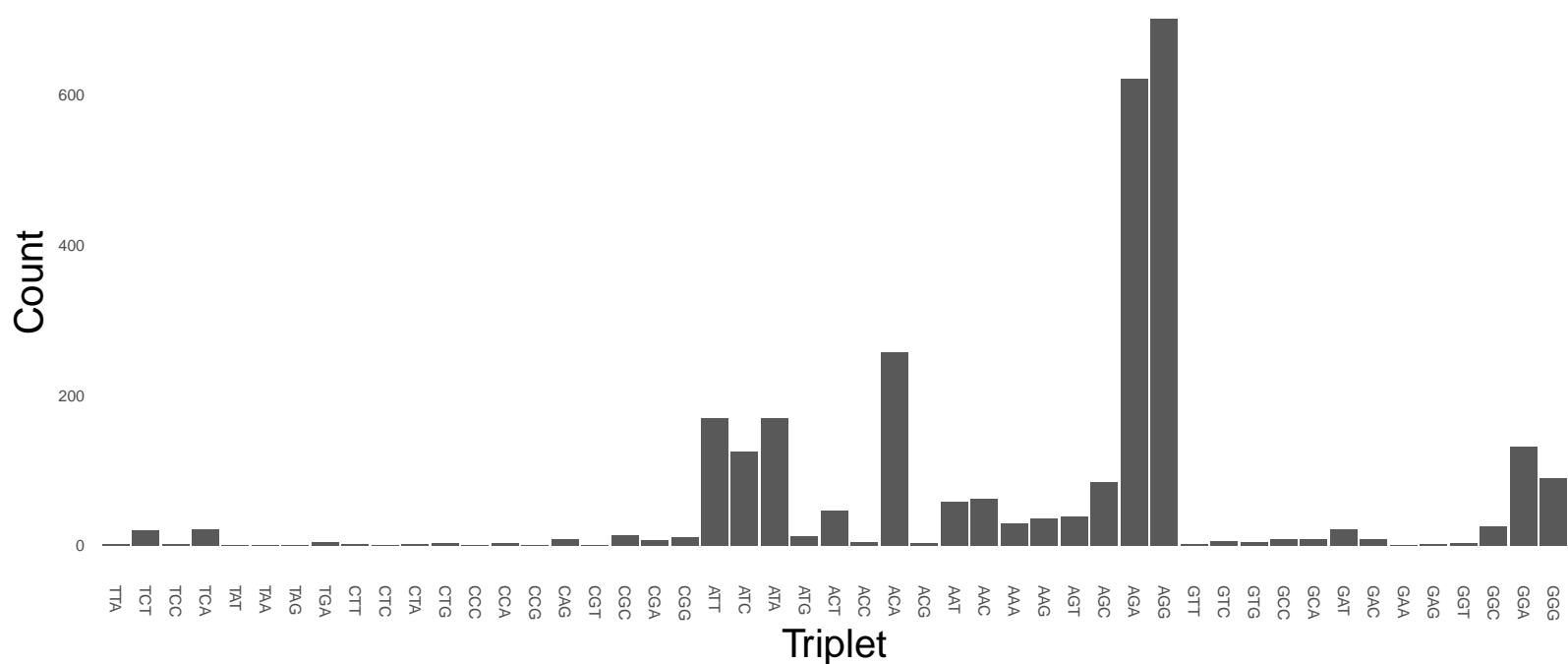
IGHV4-73\*01\_A7C\_G147A\_T163A\_C168T\_T169G\_T277A- Final 3 nucleotides as a triplet



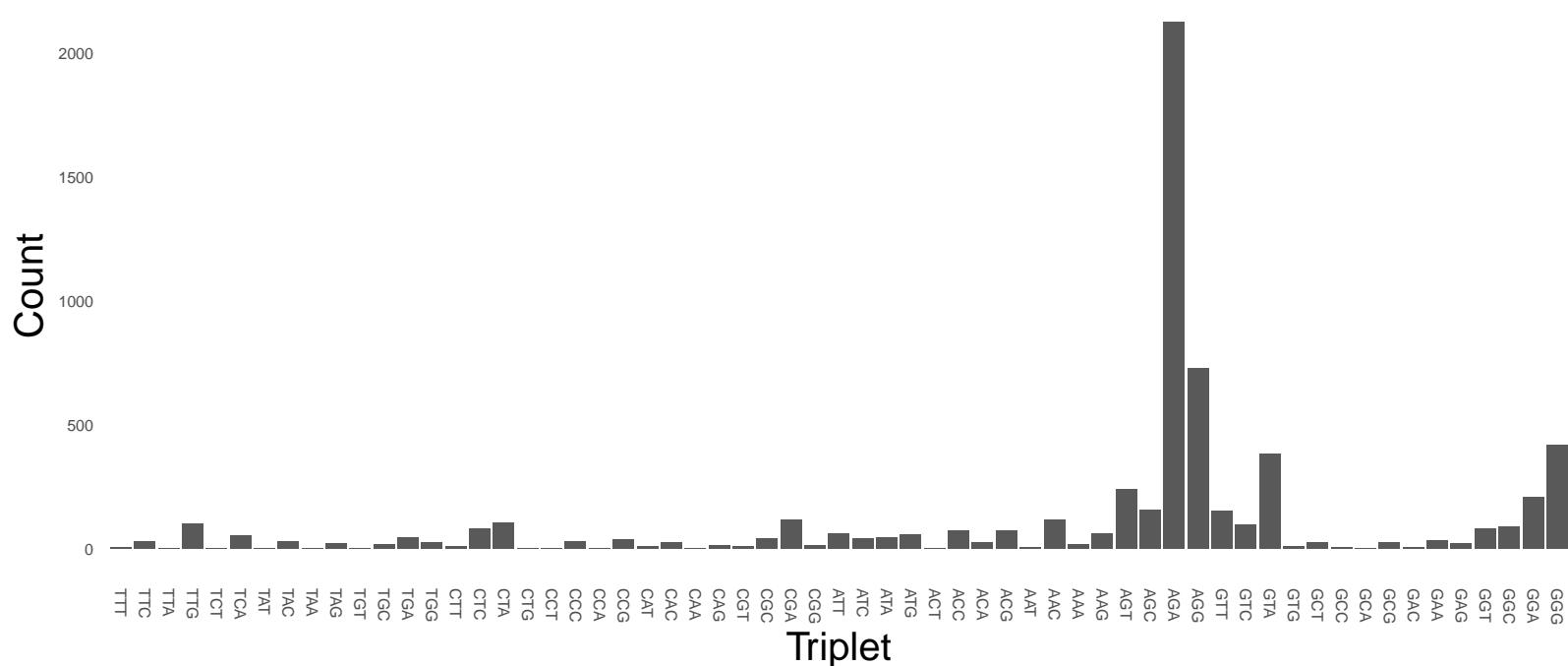
IGHV5-20\*02\_C312T- Final 3 nucleotides as a triplet



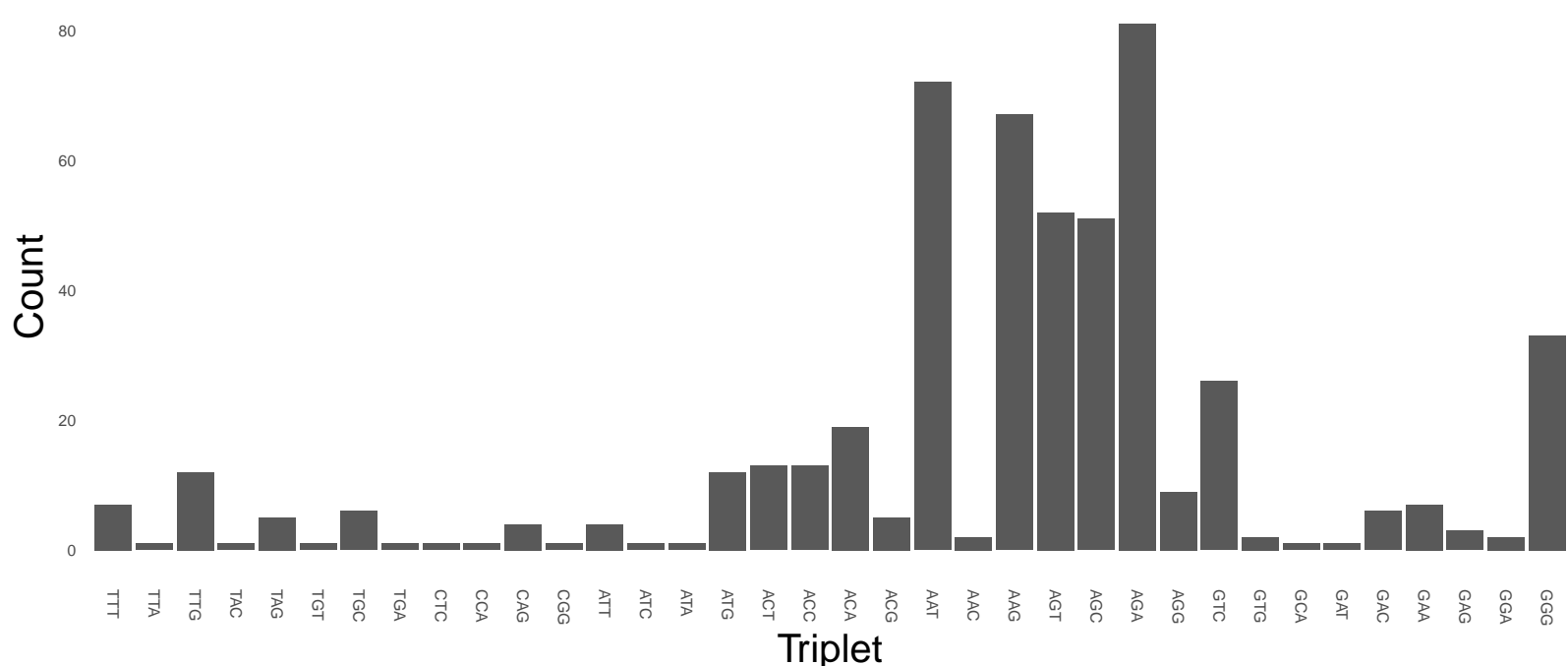
IGHV5–20\*02\_A141G\_A295T\_C312T– Final 3 nucleotides as a triplet



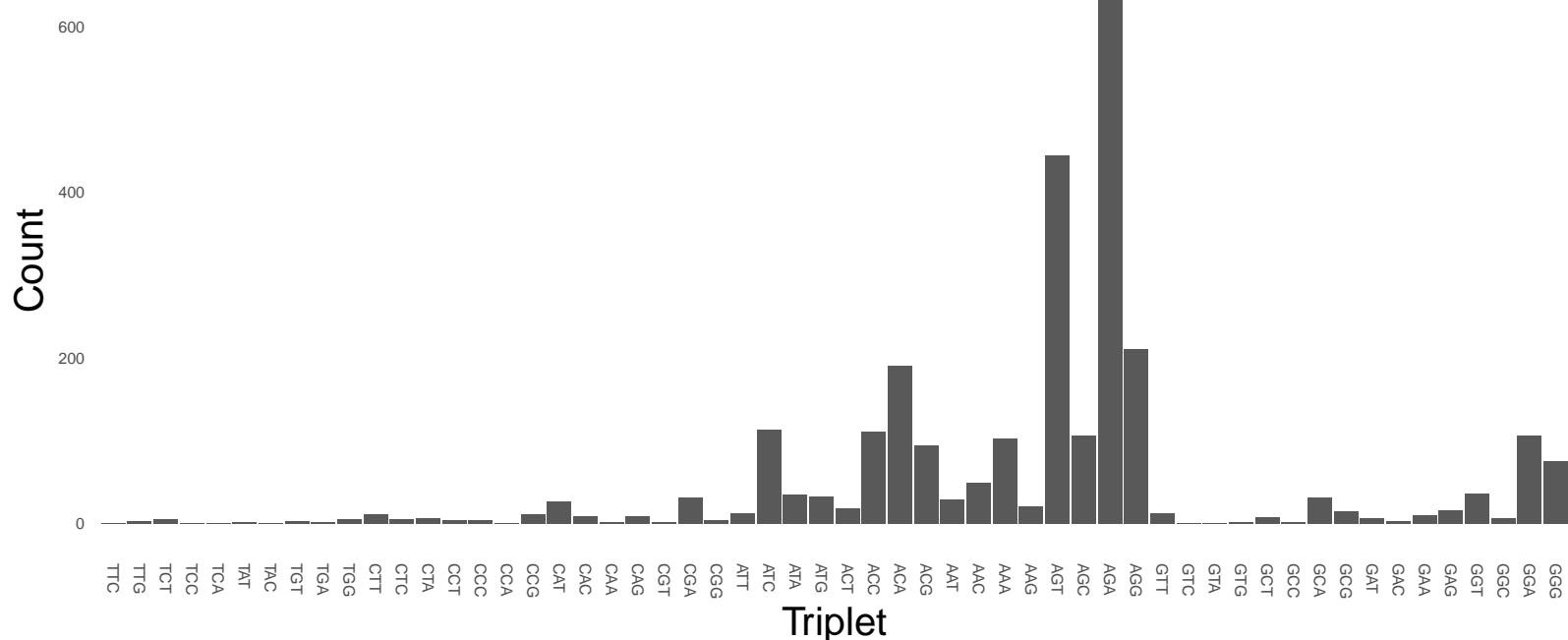
IGHV3–30\*01\_G13A\_G174C\_A188G\_G189A\_C264T– Final 3 nucleotides as a triplet



IGHV4–76\*01\_C34G\_G103A\_A244G– Final 3 nucleotides as a triplet



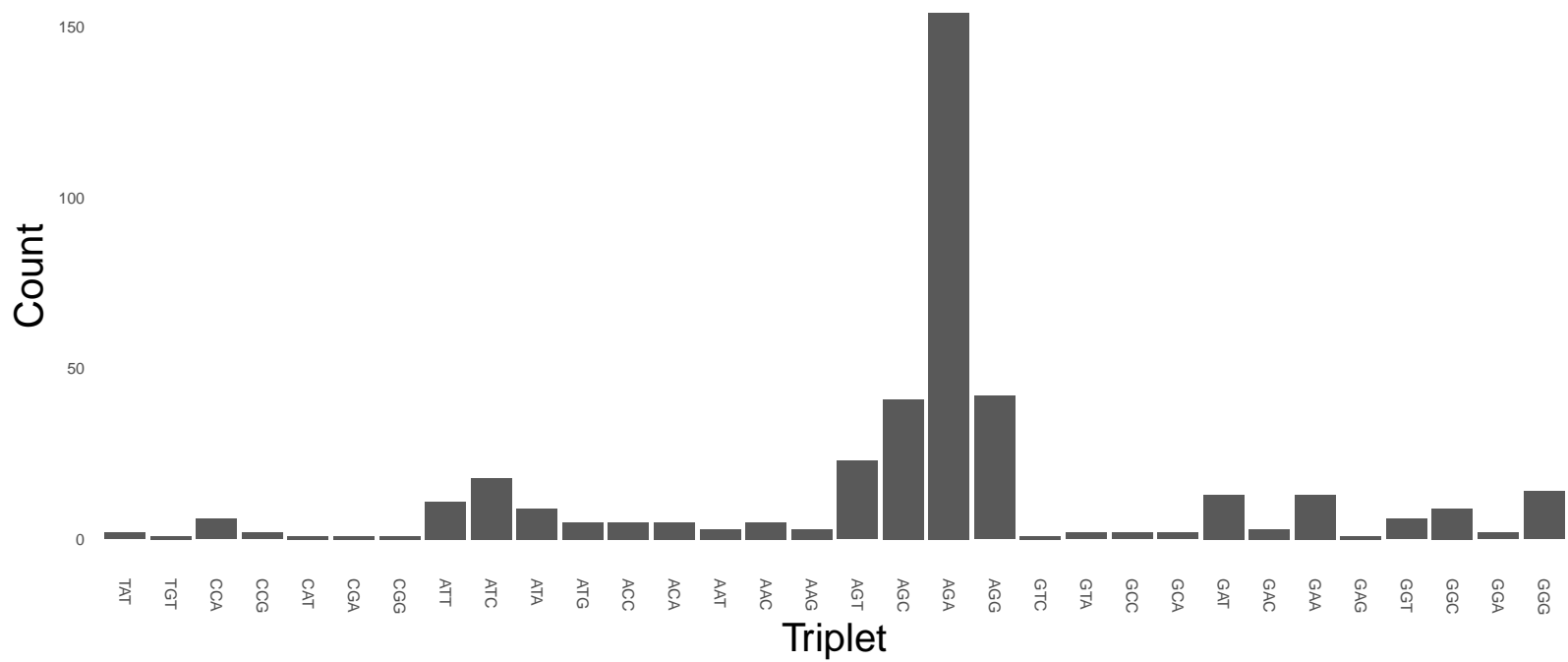
IGHV4-81\*01\_C4G\_T185C\_T255C- Final 3 nucleotides as a triplet



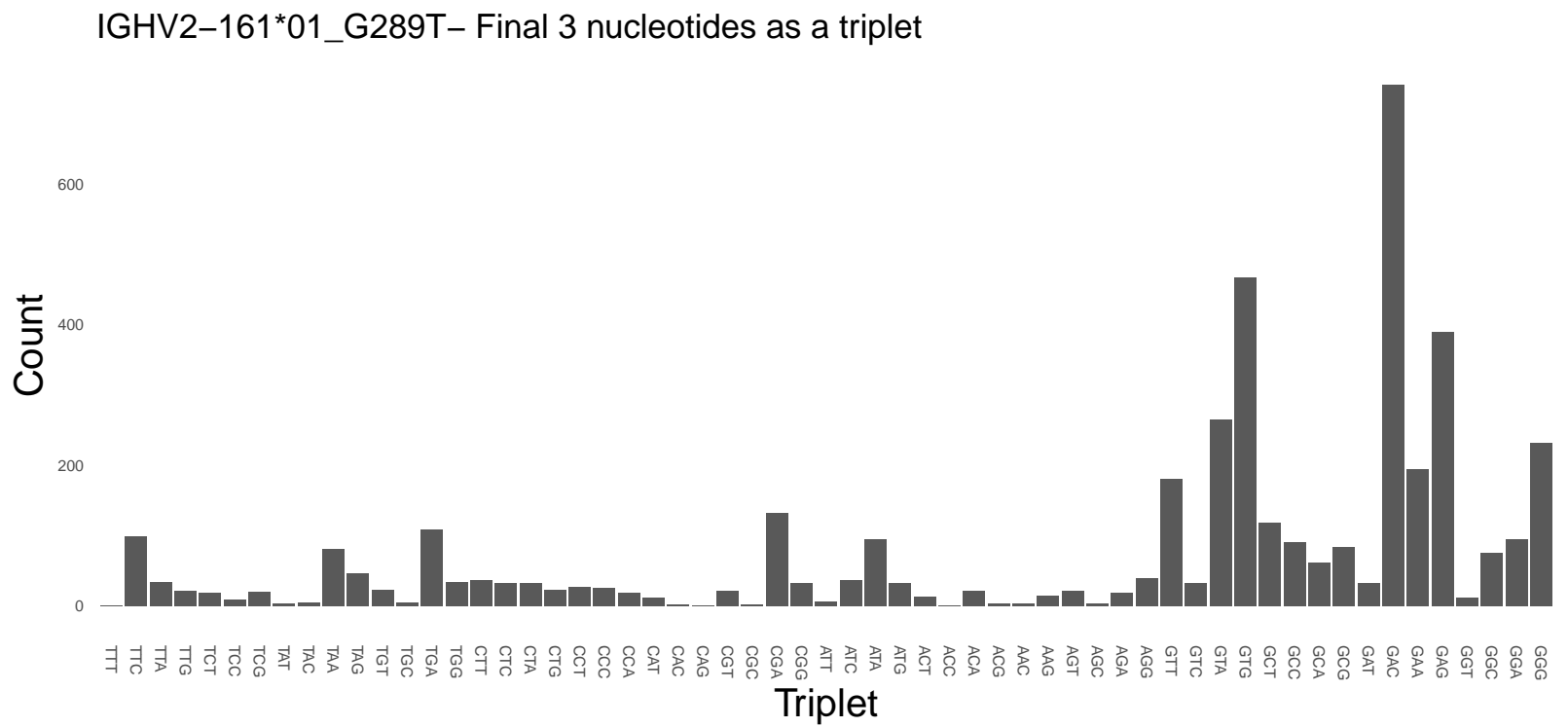
IGHV4-165\*02\_C133A\_C135A\_G240A- Final 3 nucleotides as a triplet



IGHV4S9\*01\_T263C\_T277A\_C297G- Final 3 nucleotides as a triplet

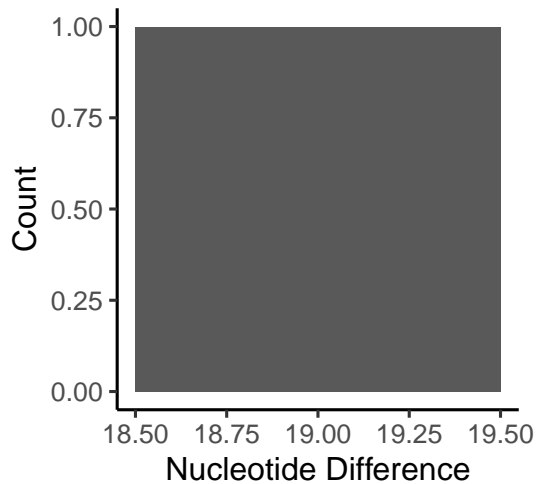


IGHV2-161\*01\_G289T- Final 3 nucleotides as a triplet



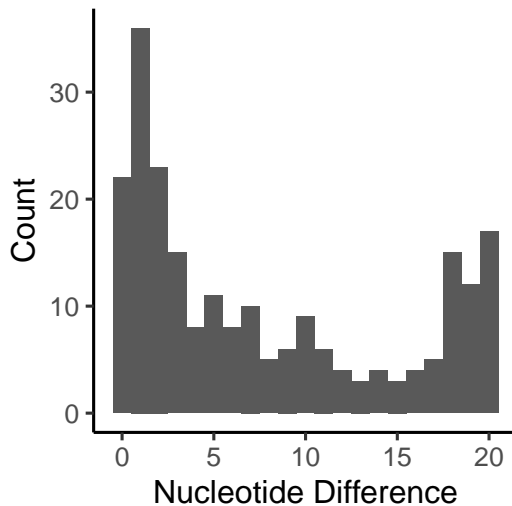
### IGHV3S3\*01

300 sequences assigned  
No exact matches.



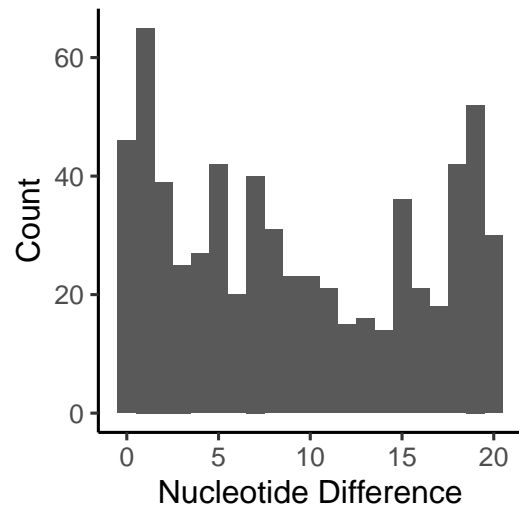
### IGHV4S9\*01\_T263C\_T277

406 sequences assigned  
22 (5.4%) exact matches, in which:  
20 unique CDR3  
3 unique J



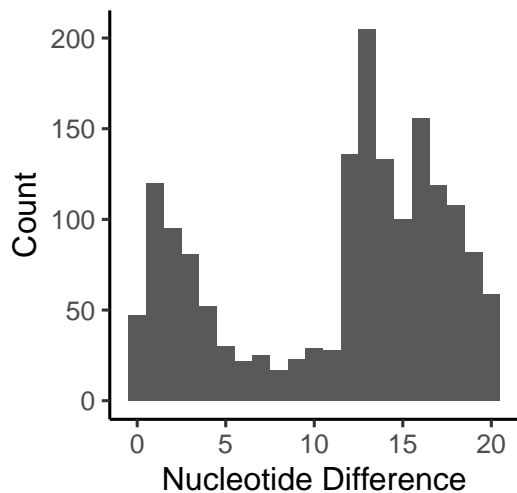
### IGHV2-95\*01\_A239C\_A239

749 sequences assigned  
46 (6.1%) exact matches, in which:  
41 unique CDR3  
4 unique J



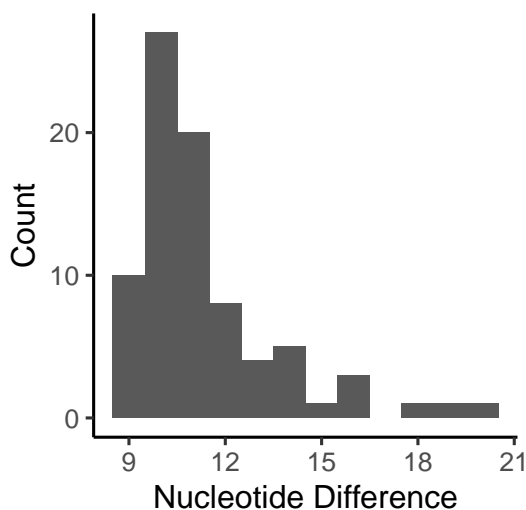
### IGHV3S42\*01\_C38T\_A39

4000 sequences assigned  
47 (1.2%) exact matches, in which:  
40 unique CDR3  
3 unique J



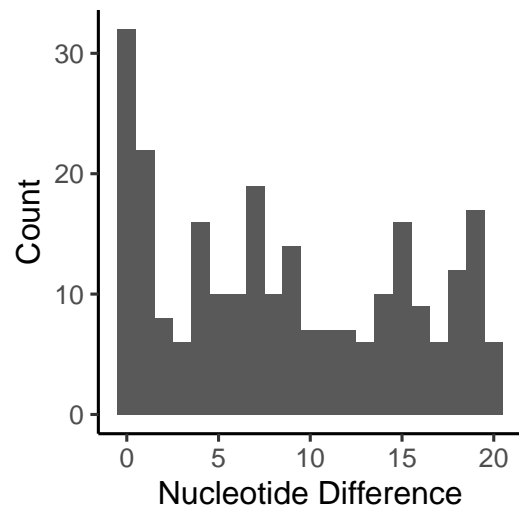
### IGHV1-151\*01

190 sequences assigned  
No exact matches.



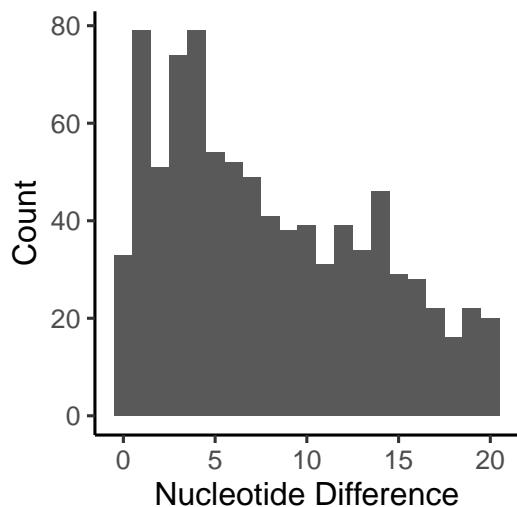
### IGHV2-95\*01\_A239C\_A239

287 sequences assigned  
32 (11.1%) exact matches, in which:  
30 unique CDR3  
4 unique J



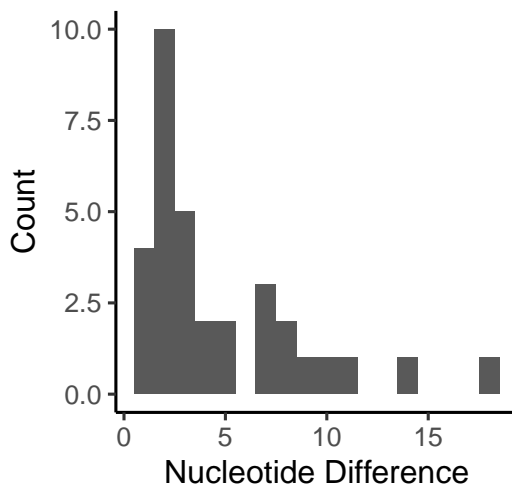
### IGHV4S13\*01\_T85A\_G267^A^

1478 sequences assigned  
33 (2.2%) exact matches, in which:  
31 unique CDR3  
4 unique J



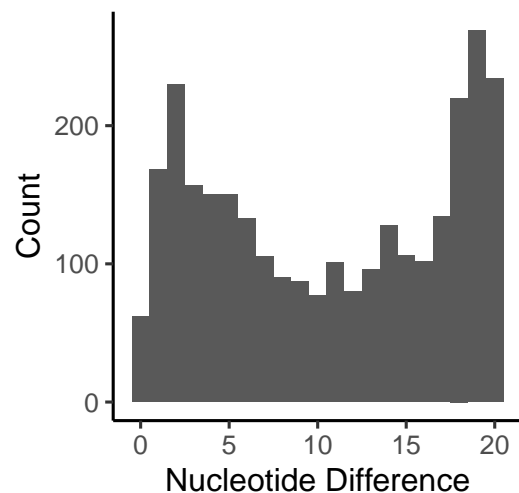
### IGHV1-156\*01

237 sequences assigned  
No exact matches.



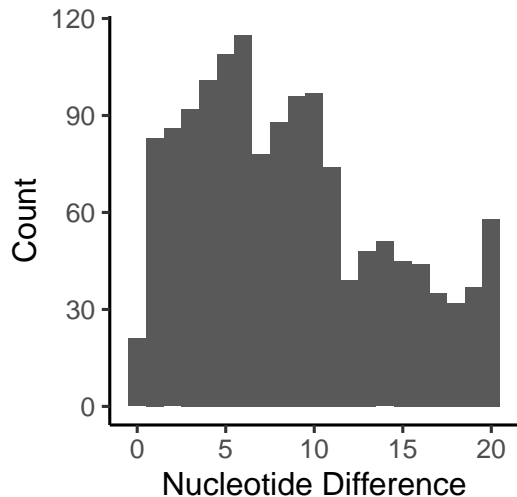
### IGHV2-161\*01\_G289T

4287 sequences assigned  
62 (1.4%) exact matches, in which:  
60 unique CDR3  
4 unique J



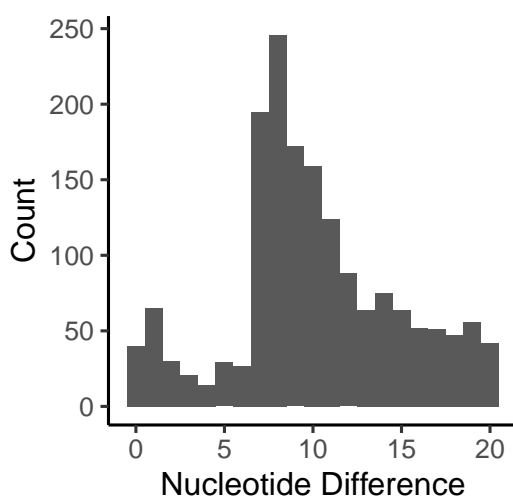
### IGHV2-174\*02\_A267G\_A1

3762 sequences assigned  
21 (0.6%) exact matches, in which:  
19 unique CDR3  
3 unique J



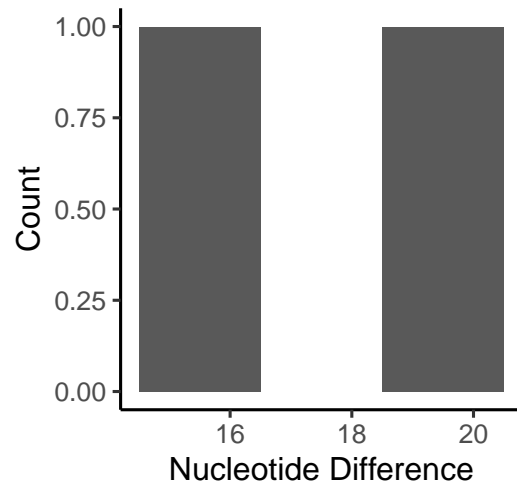
### IGHV3-54\*02\_T78C\_T11

2125 sequences assigned  
40 (1.9%) exact matches, in which:  
35 unique CDR3  
3 unique J



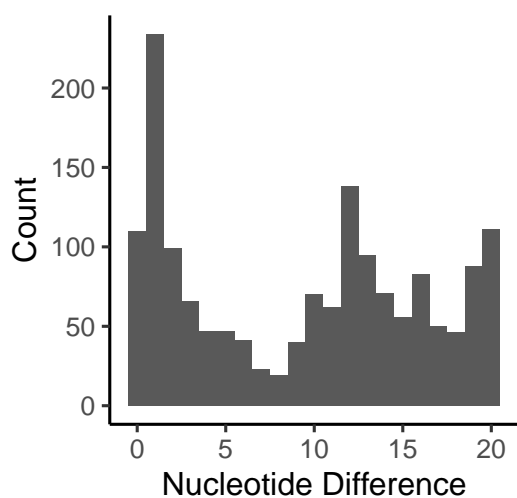
### IGHV3-108\*01

910 sequences assigned  
No exact matches.



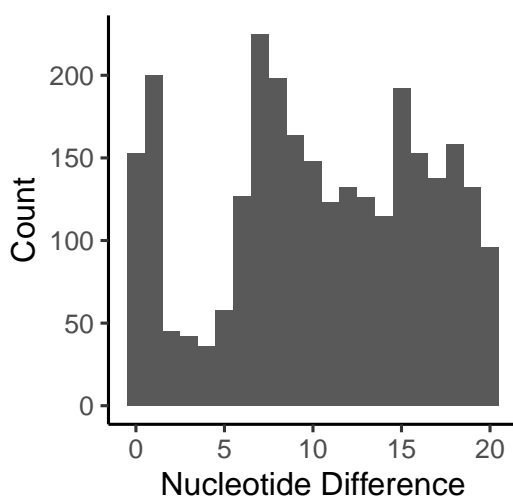
### IGHV3-30\*01\_G13A\_G1

6204 sequences assigned  
110 (1.8%) exact matches, in which:  
106 unique CDR3  
4 unique J



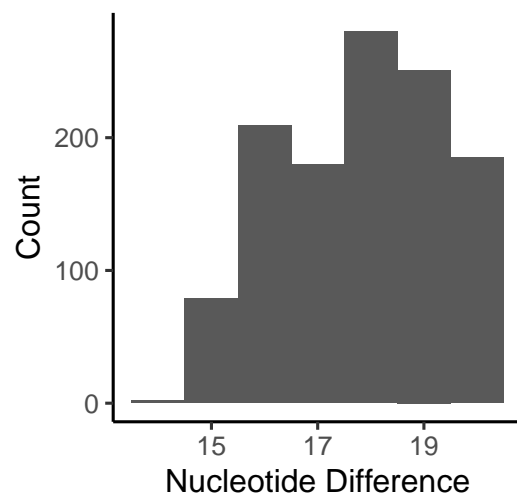
### IGHV3-103\*01\_G24A\_C2

6551 sequences assigned  
153 (2.3%) exact matches, in which:  
129 unique CDR3  
4 unique J



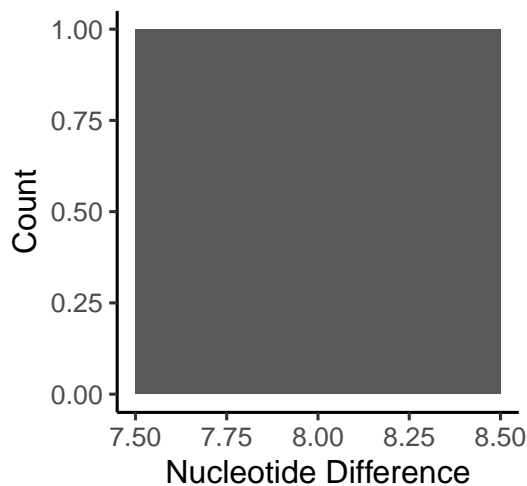
### IGHV3-137\*01

4872 sequences assigned  
No exact matches.



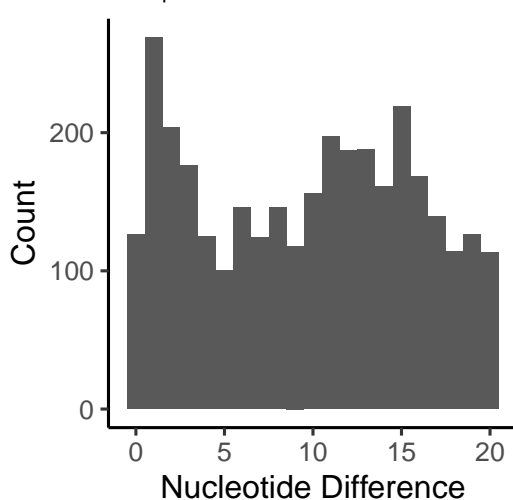
### IGHV3-34\*01

13 sequences assigned  
No exact matches.



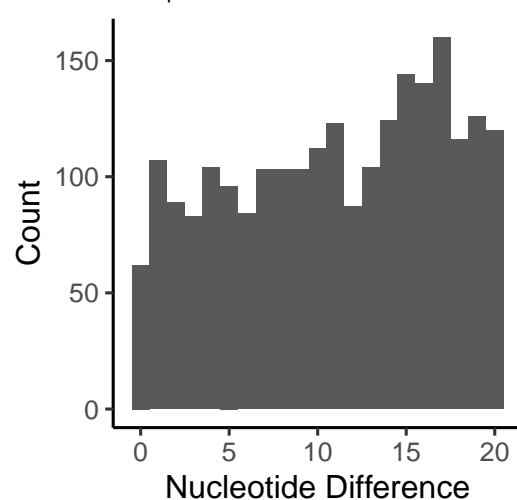
### IGHV3-103\*01\_G51A\_A1

6483 sequences assigned  
126 (1.9%) exact matches, in which:  
101 unique CDR3  
4 unique J



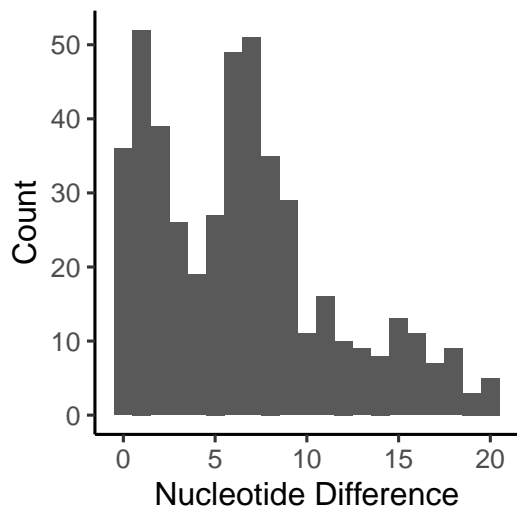
### IGHV4-65\*02\_A48G

4105 sequences assigned  
62 (1.5%) exact matches, in which:  
57 unique CDR3  
4 unique J



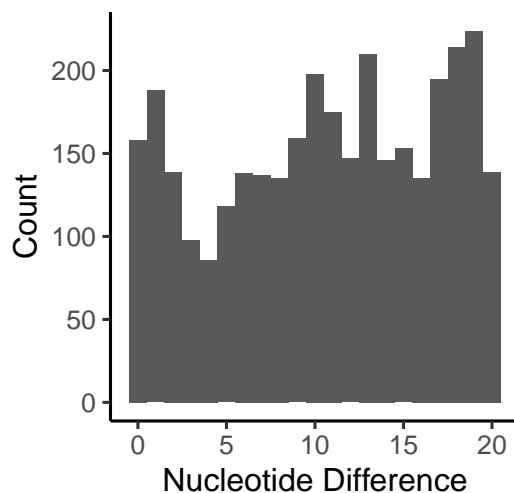
### IGHV4-73\*01\_A7C\_G147

531 sequences assigned  
36 (6.8%) exact matches, in which:  
35 unique CDR3  
4 unique J



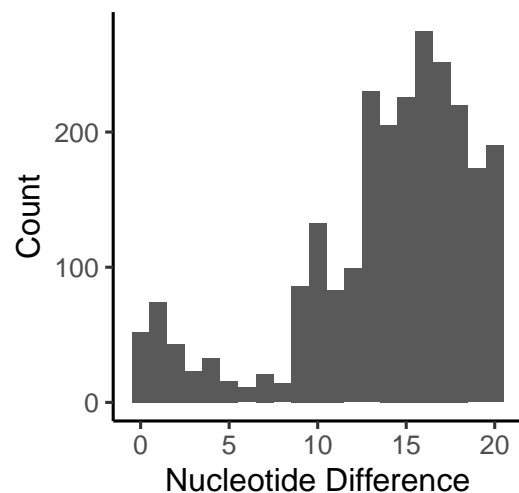
### IGHV4-80\*01\_G70A\_T18

4733 sequences assigned  
158 (3.3%) exact matches, in which:  
142 unique CDR3  
4 unique J



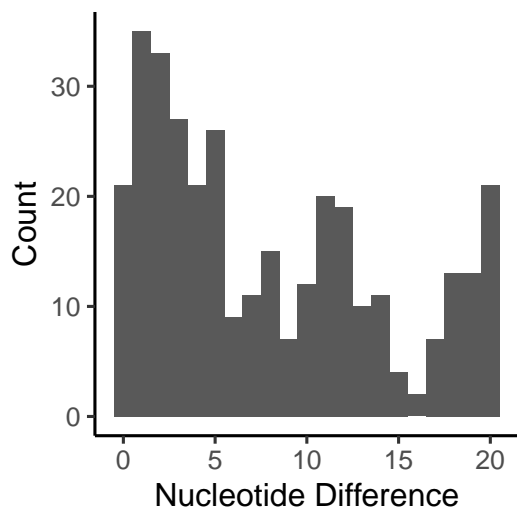
### IGHV4-165\*02\_C133A\_C

4079 sequences assigned  
52 (1.3%) exact matches, in which:  
46 unique CDR3  
4 unique J



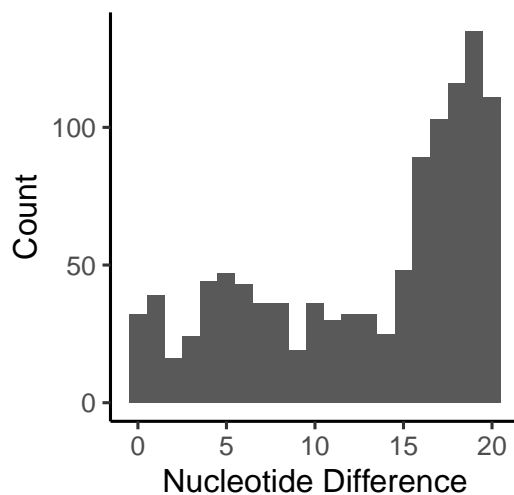
### IGHV4-76\*01\_C34G\_G10

524 sequences assigned  
21 (4%) exact matches, in which:  
20 unique CDR3  
2 unique J



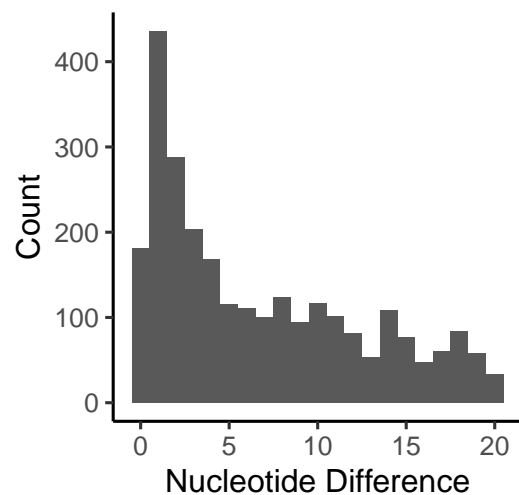
### IGHV4-81\*01\_C4G\_T18

2689 sequences assigned  
32 (1.2%) exact matches, in which:  
29 unique CDR3  
3 unique J



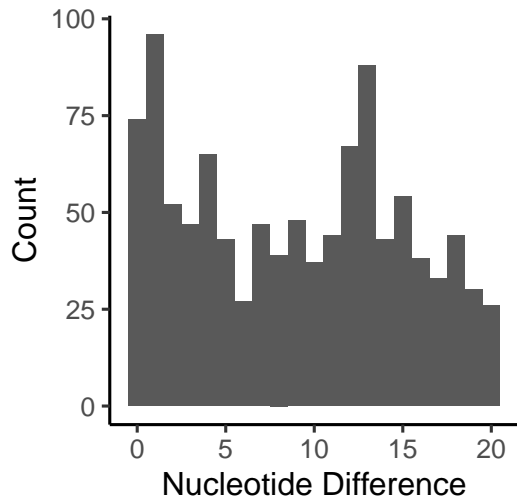
### IGHV5-20\*02\_A141G\_A2

2840 sequences assigned  
181 (6.4%) exact matches, in which:  
147 unique CDR3  
4 unique J



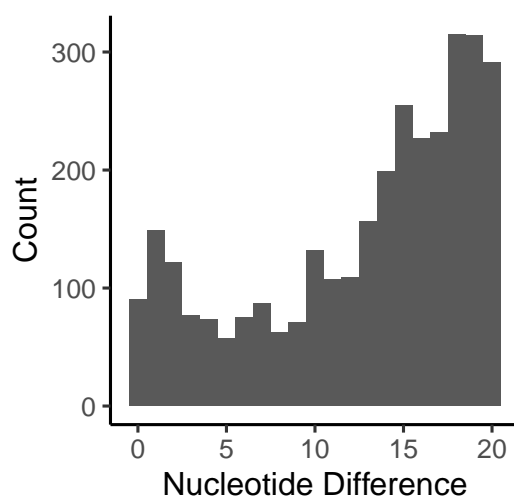
### IGHV4-80\*01\_G70A\_C9

1312 sequences assigned  
74 (5.6%) exact matches, in which:  
67 unique CDR3  
4 unique J



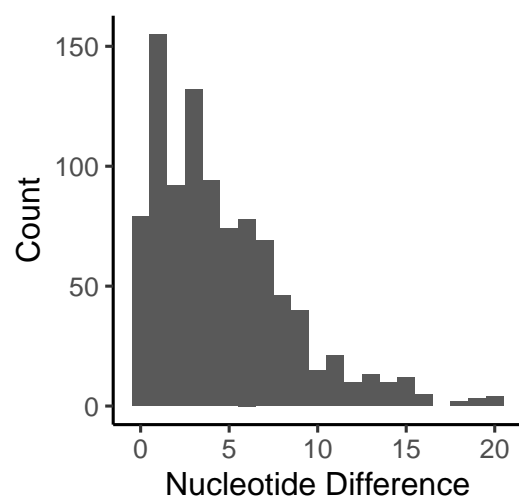
### IGHV4-127\*01\_T82G\_A8

5794 sequences assigned  
90 (1.6%) exact matches, in which:  
79 unique CDR3  
4 unique J



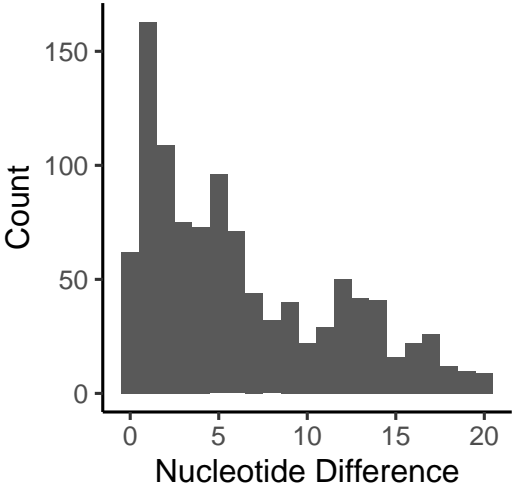
### IGHV5-20\*02\_C312T

962 sequences assigned  
79 (8.2%) exact matches, in which:  
64 unique CDR3  
4 unique J



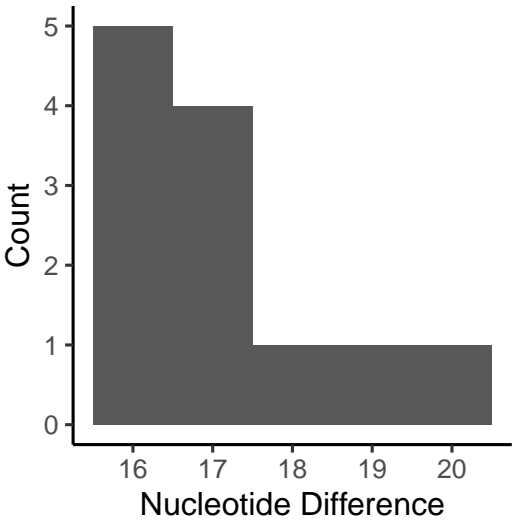
IGHV5-43\*01\_A51G

1082 sequences assigned  
62 (5.7%) exact matches, in which:  
51 unique CDR3  
4 unique J



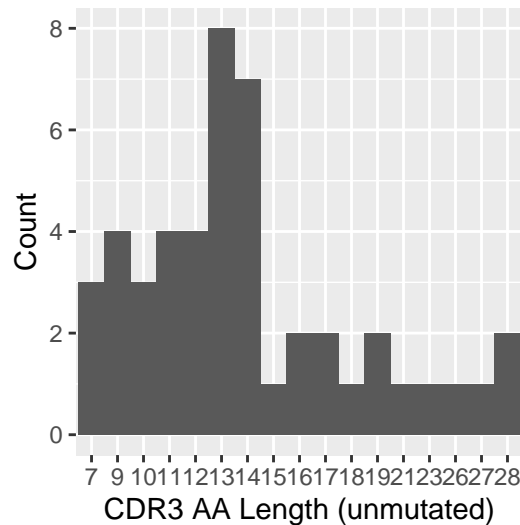
IGHV7-94\*01

29 sequences assigned  
No exact matches.

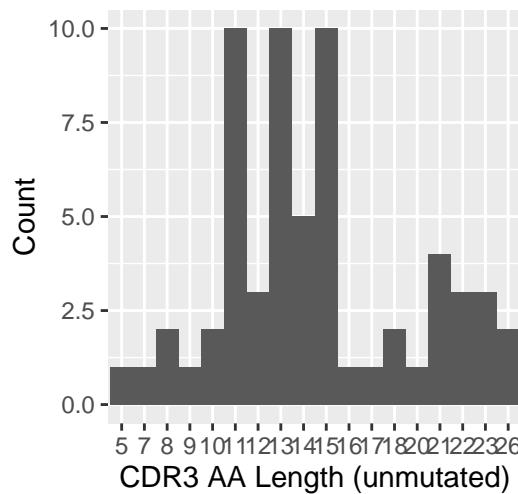




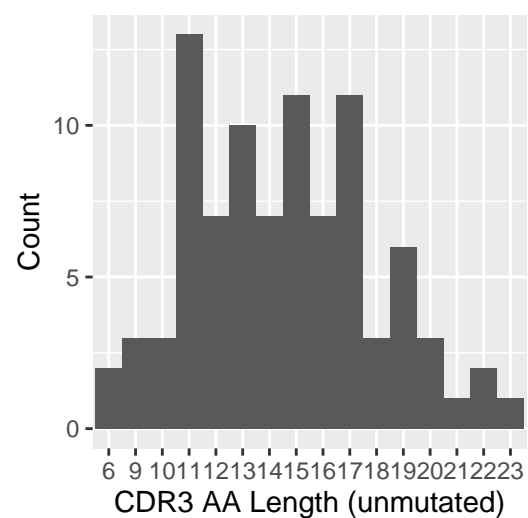
IGHV3S42\*01\_C38T\_A39C\_A



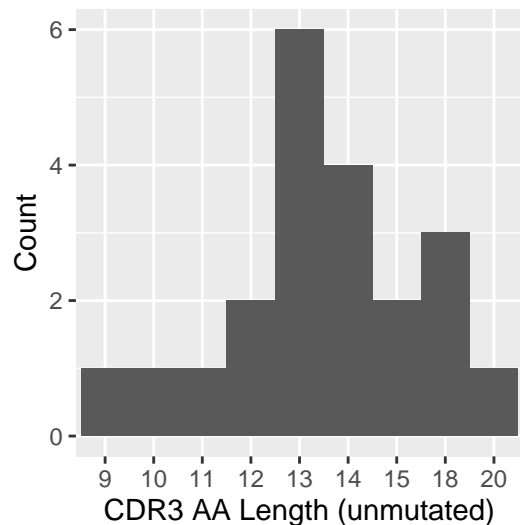
IGHV4-65\*02\_A48G



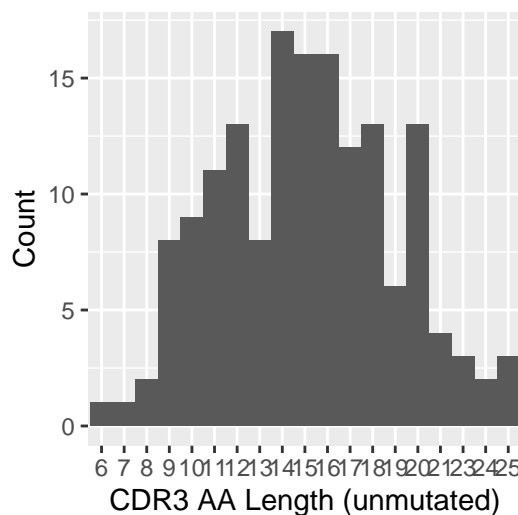
IGHV4-127\*01\_T82G\_A83G



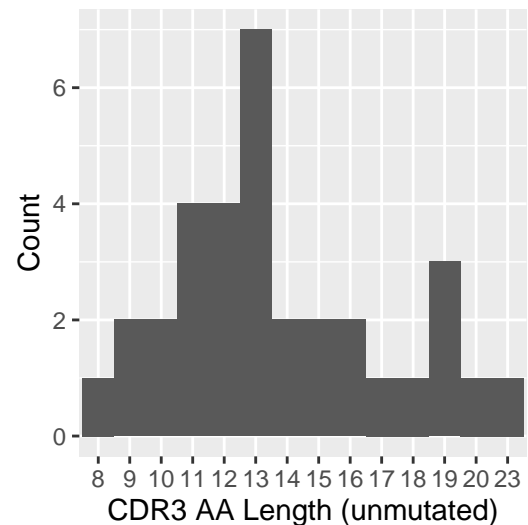
IGHV2-174\*02\_A267G\_A289



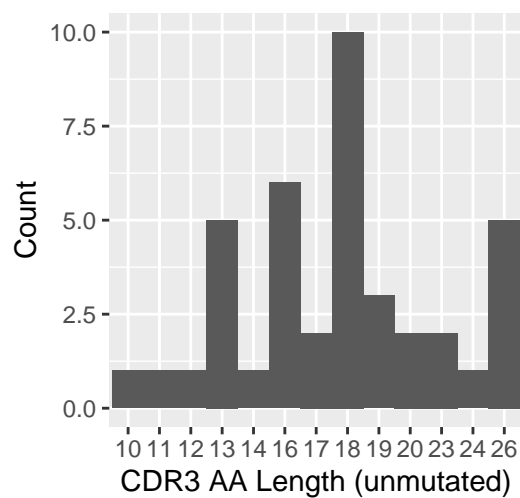
IGHV4-80\*01\_G70A\_T189G



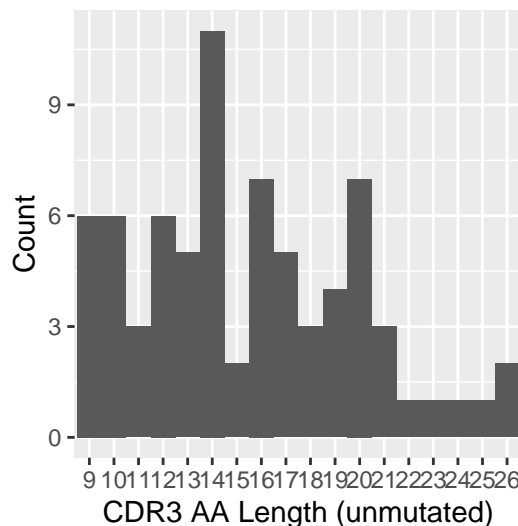
IGHV4S13\*01\_T85A\_G267A



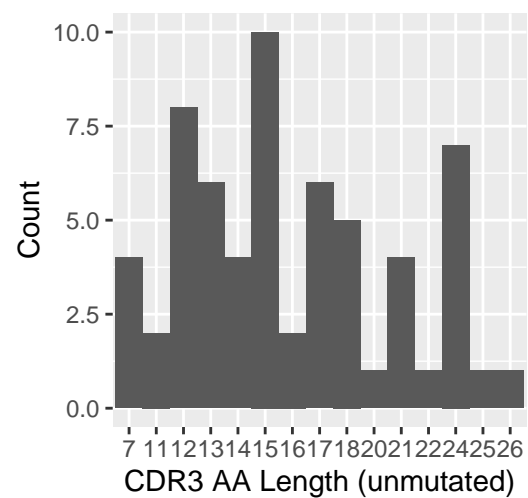
IGHV3-54\*02\_T78C\_T111C



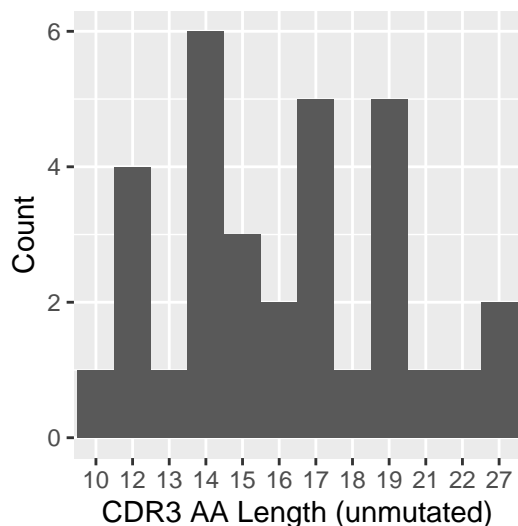
IGHV4-80\*01\_G70A\_C90T\_T



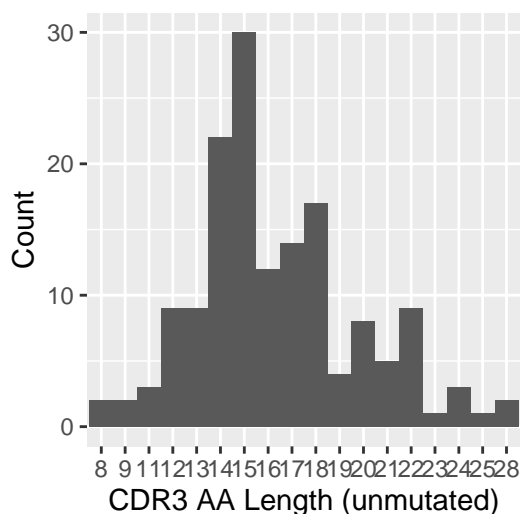
IGHV5-43\*01\_A51G



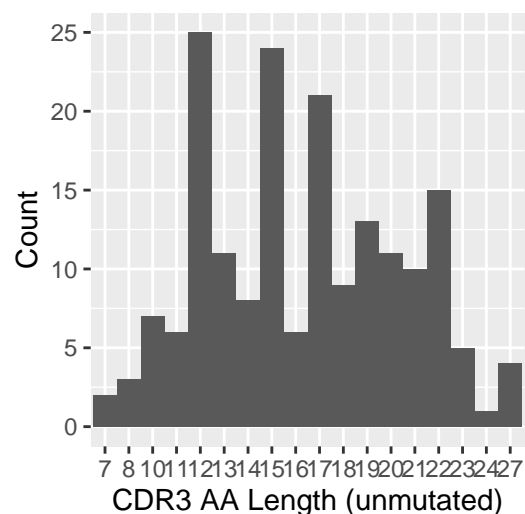
IGHV2-95\*01\_A239C\_A252G



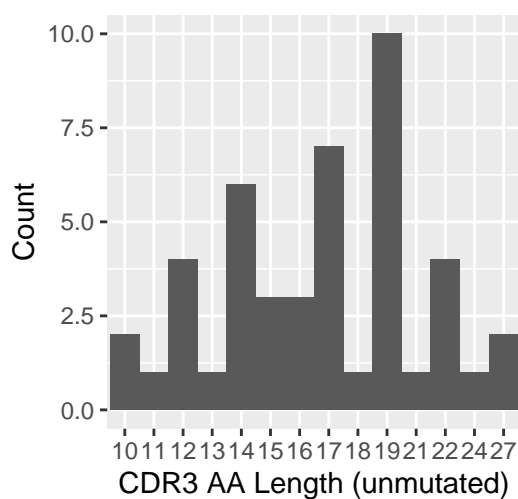
IGHV3-103\*01\_G24A\_C27A



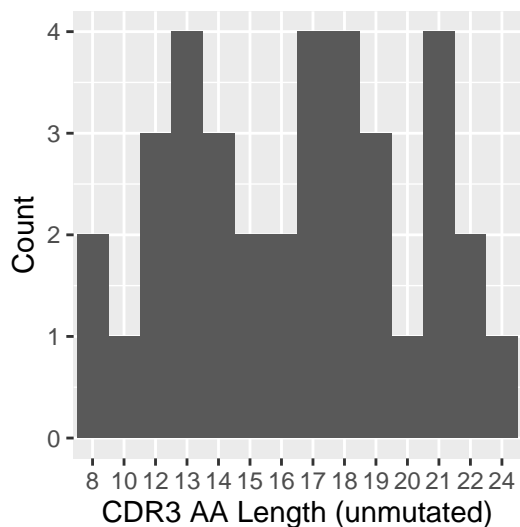
IGHV5-20\*02\_A141G\_A295



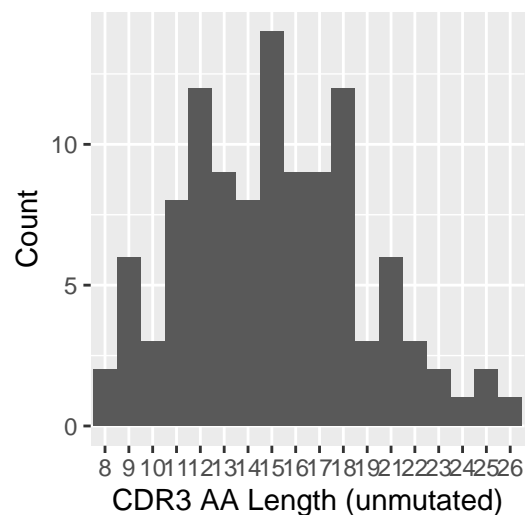
IGHV2-95\*01\_A239C\_A252G



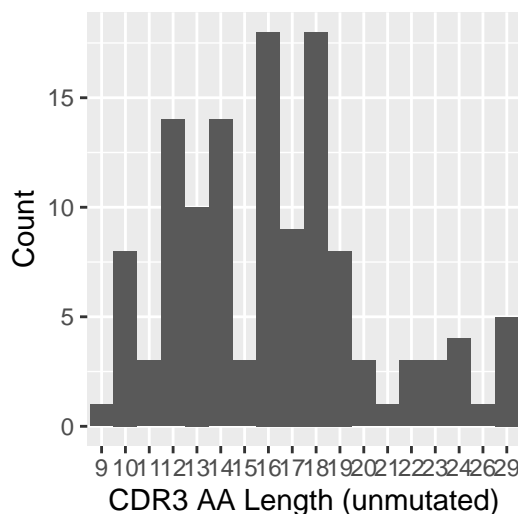
IGHV4-73\*01\_A7C\_G147A\_1



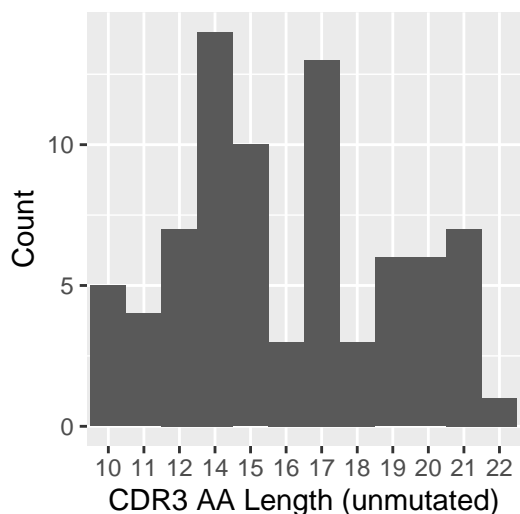
IGHV3-30\*01\_G13A\_G174C



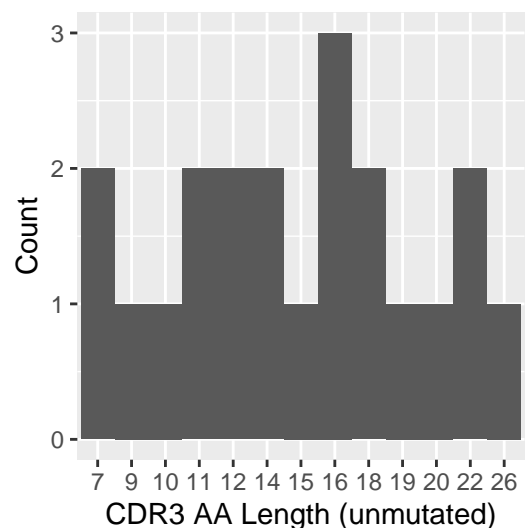
IGHV3-103\*01\_G51A\_A170I



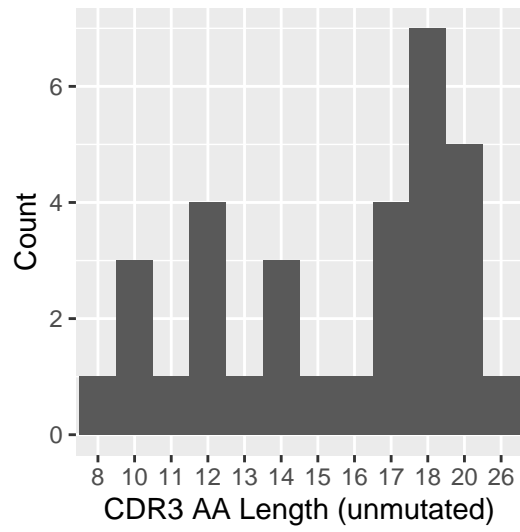
IGHV5-20\*02\_C312T



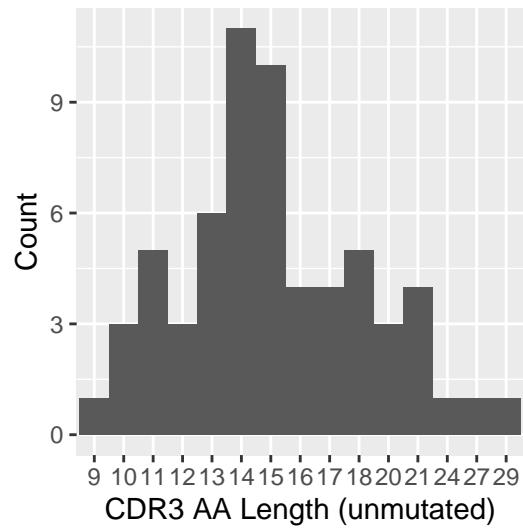
IGHV4-76\*01\_C34G\_G103A\_



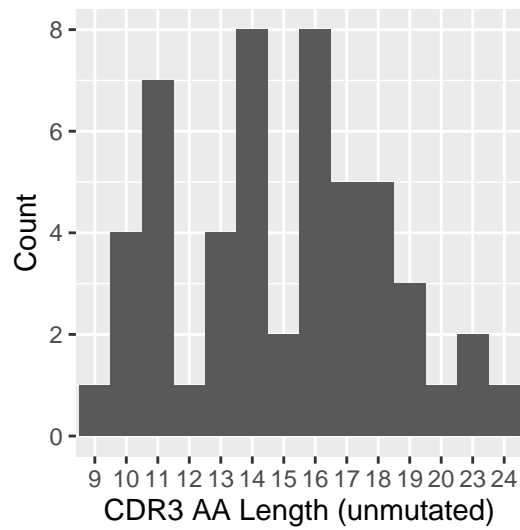
IGHV4-81\*01\_C4G\_T185C\_1



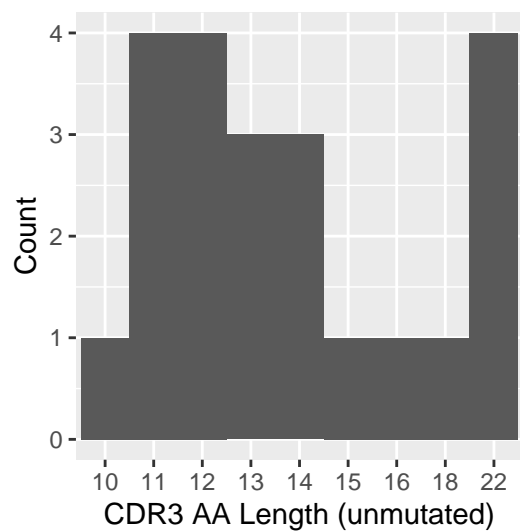
IGHV2-161\*01\_G289T

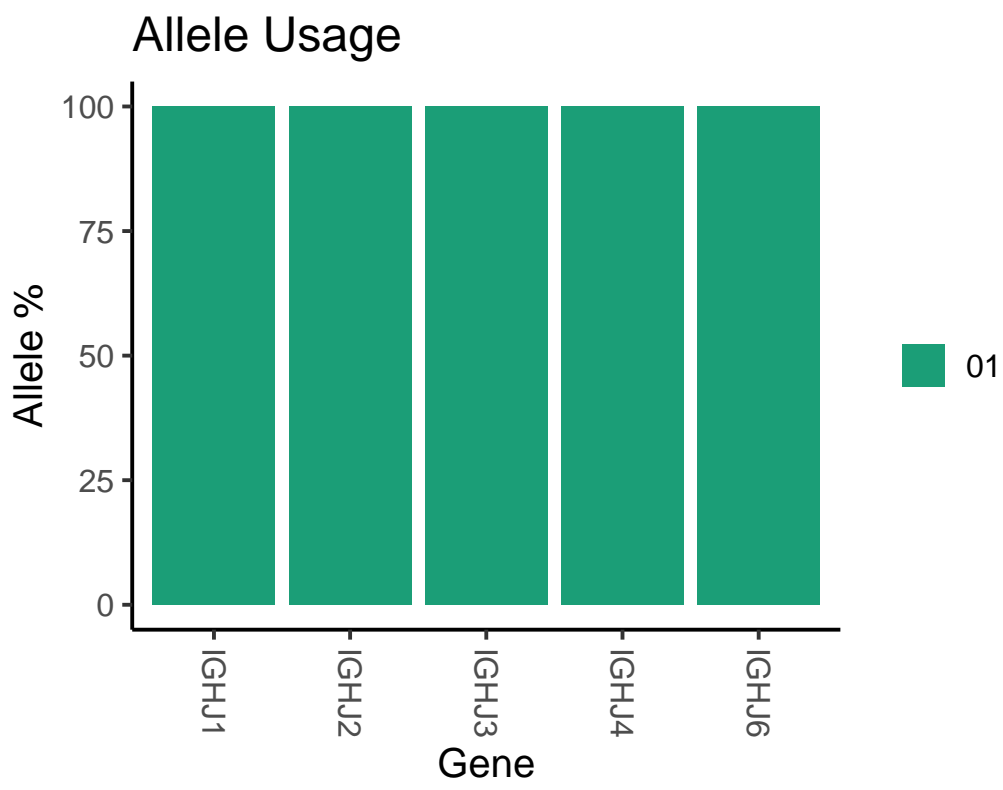


IGHV4-165\*02\_C133A\_C135A\_G240A



IGHV4S9\*01\_T263C\_T277A\_C297G





Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.