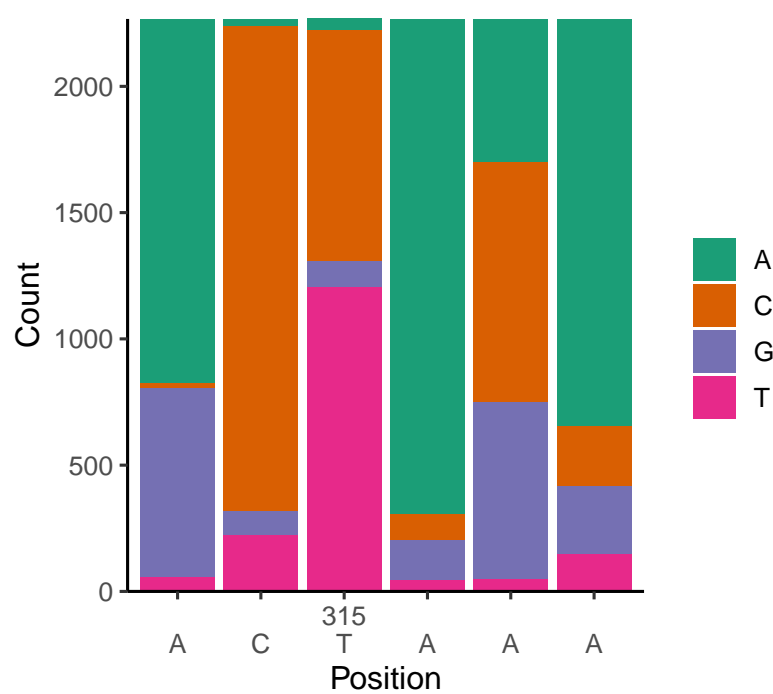
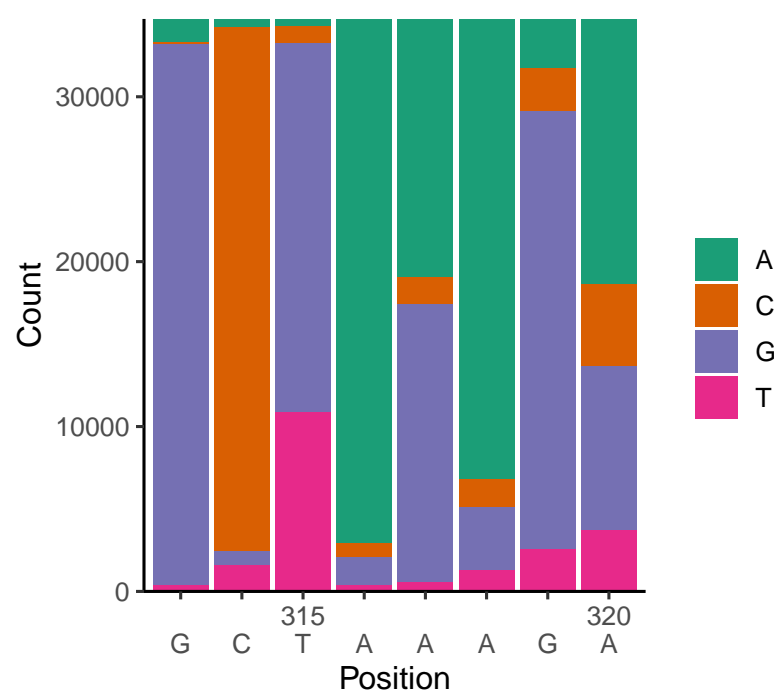


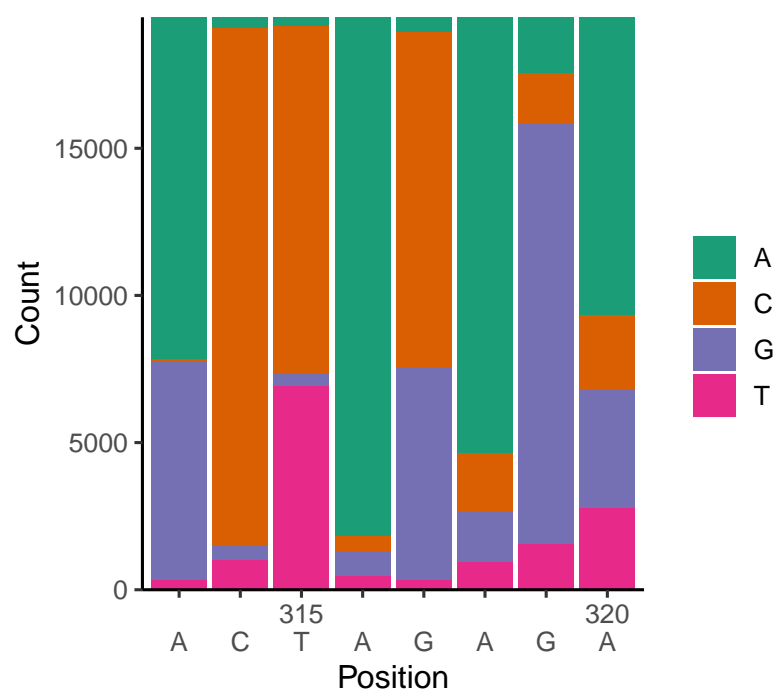
Gene IGHV3-13\*01\_C301G



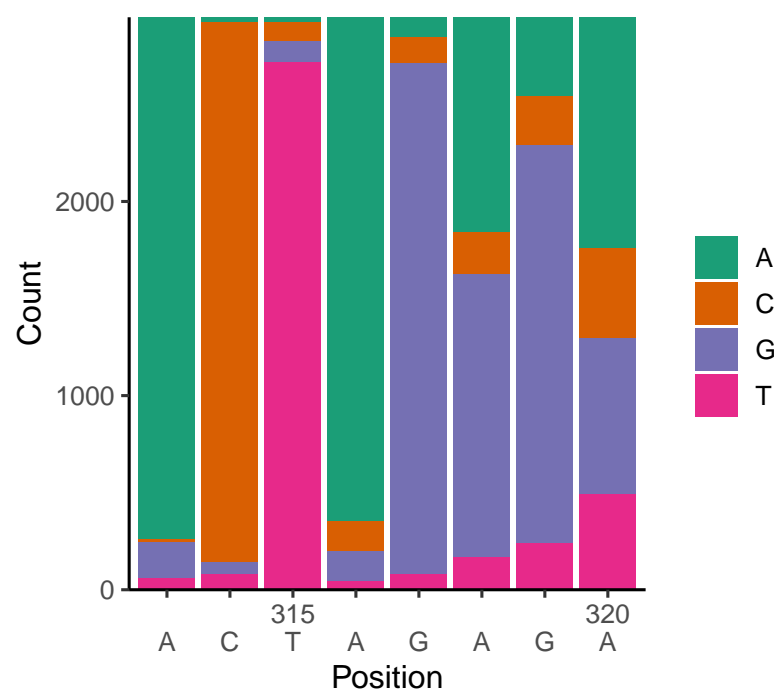
Gene IGHV3S42\*01\_C27A\_C38T\_A39C



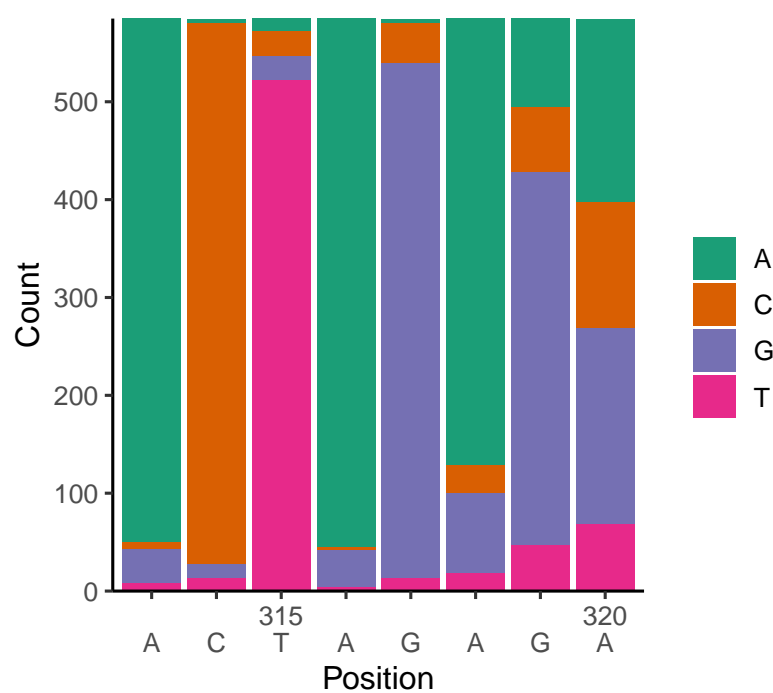
Gene IGHV3-16\*01\_A51T\_T78C\_C90T



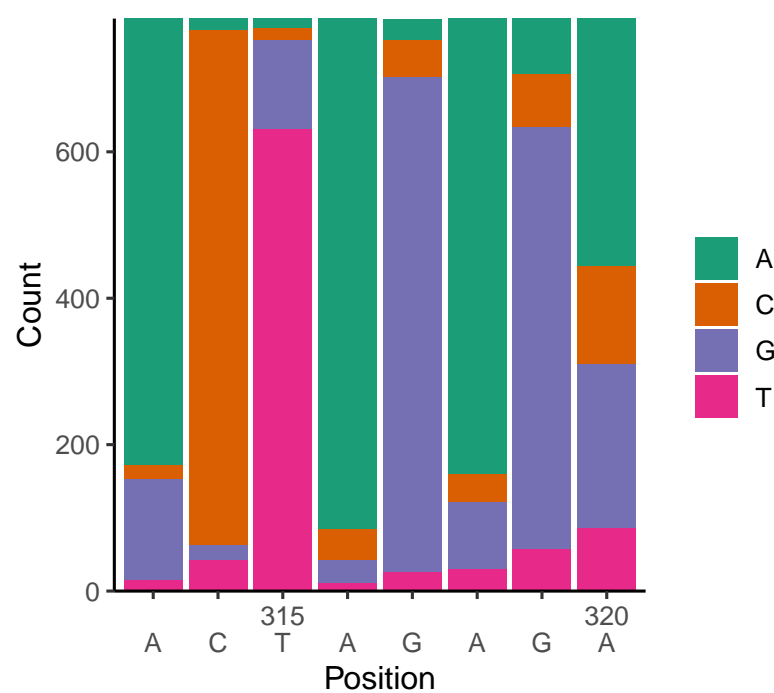
Gene IGHV3-183\*02\_C164T\_A172T\_G172C



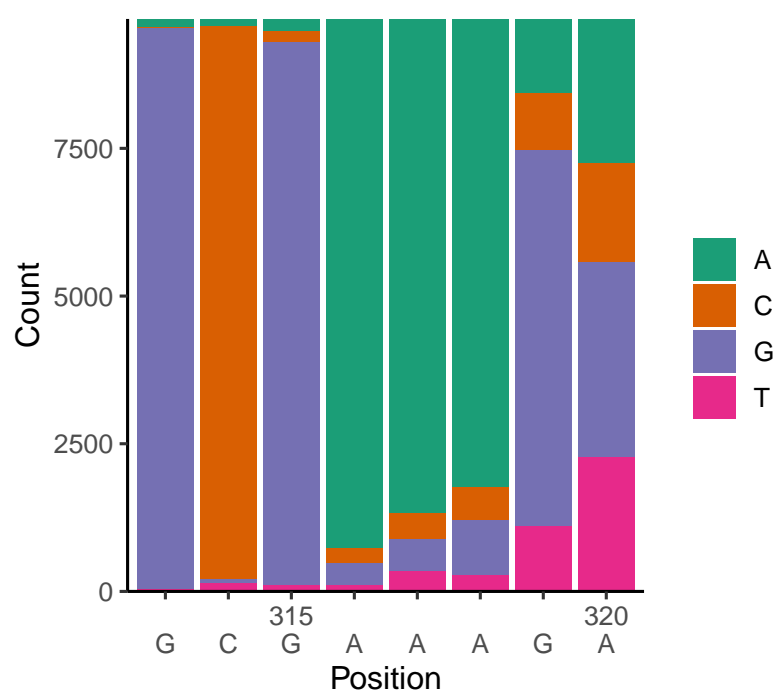
Gene IGHV3-175\*01\_G48A\_A88G\_T127



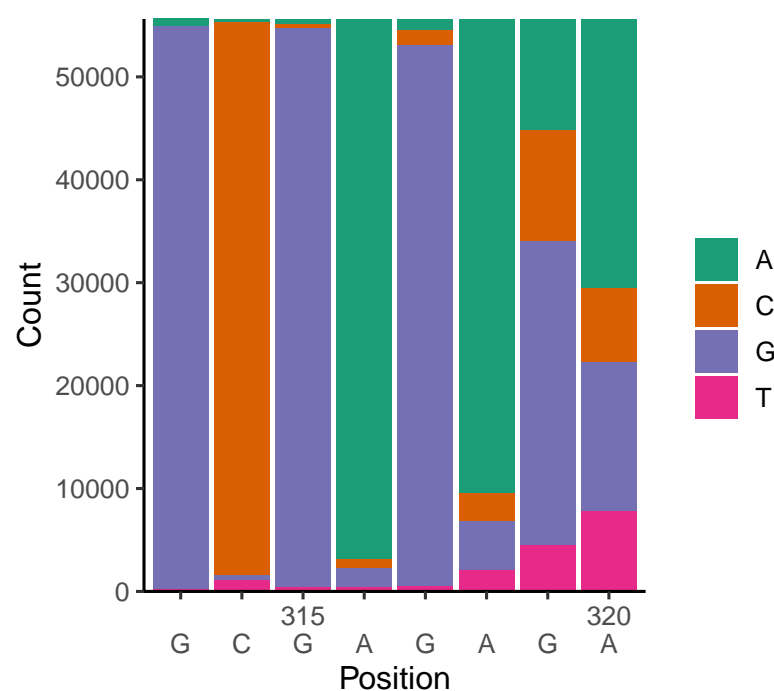
Gene IGHV3-183\*02\_C164T\_A172T\_G172C



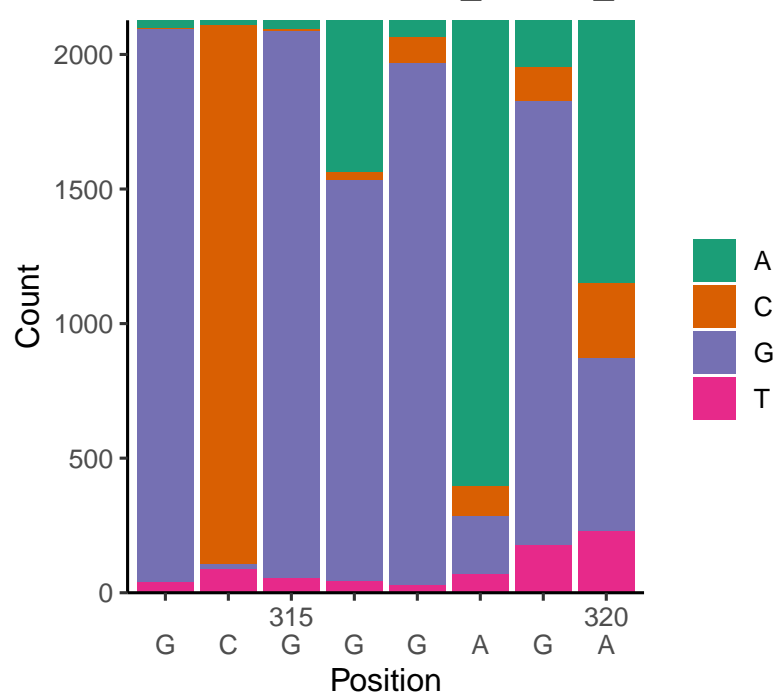
Gene IGHV5-20\*02\_C312T



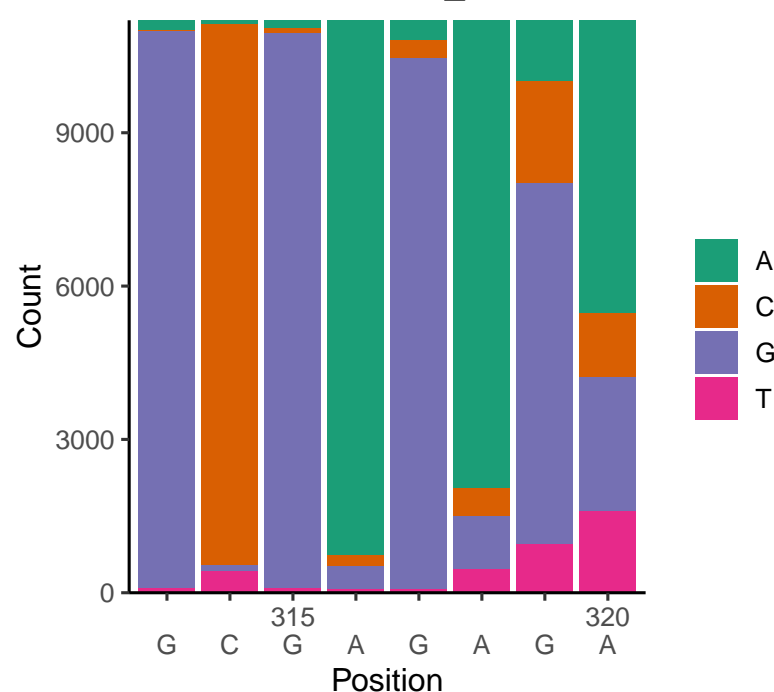
Gene IGHV4-127\*01\_T82G\_A83G



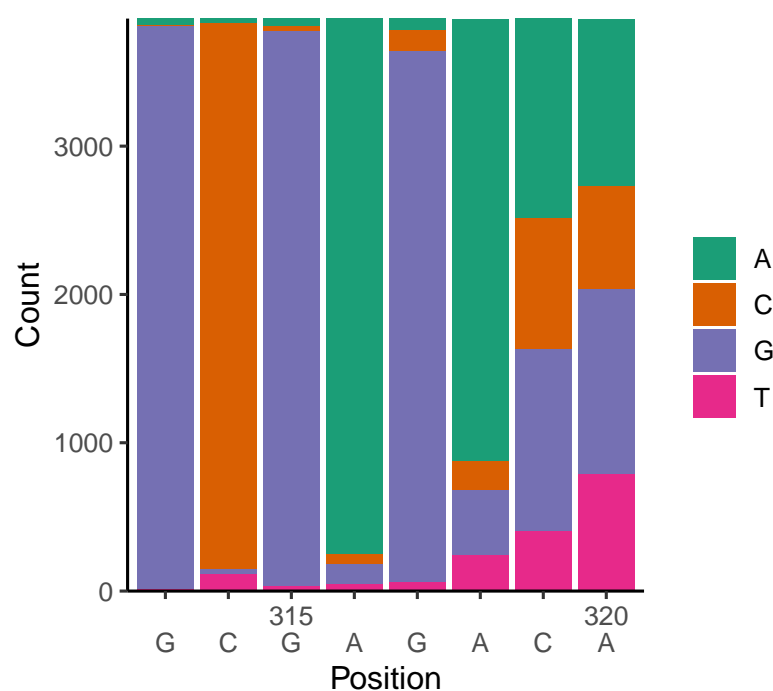
Gene IGHV3-28\*02\_C118T\_G277A



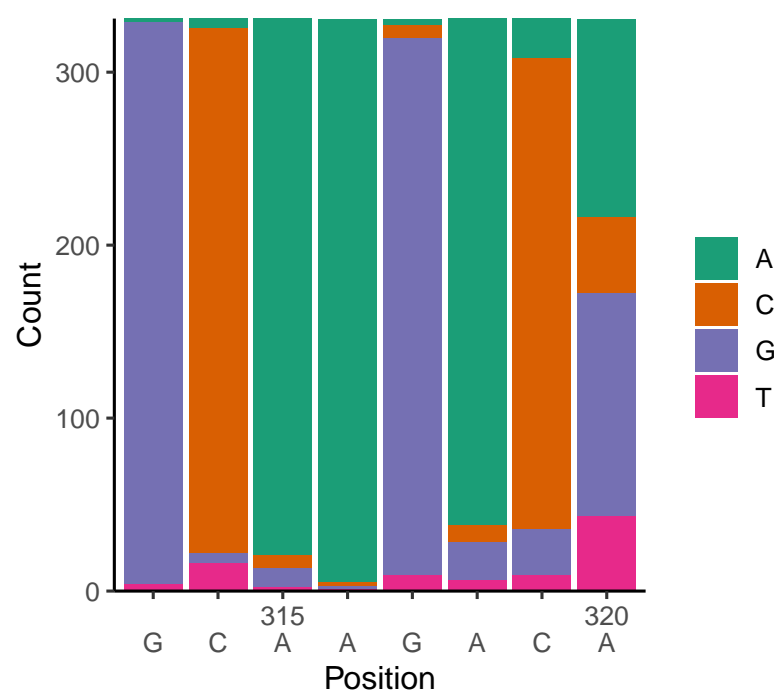
Gene IGHV4S2\*01\_G248C



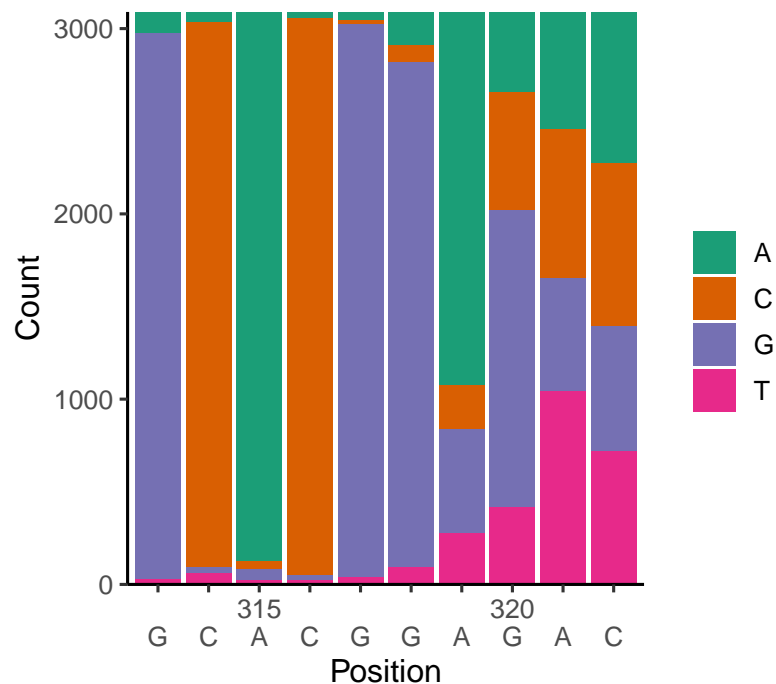
Gene IGHV4-93\*02\_C297G



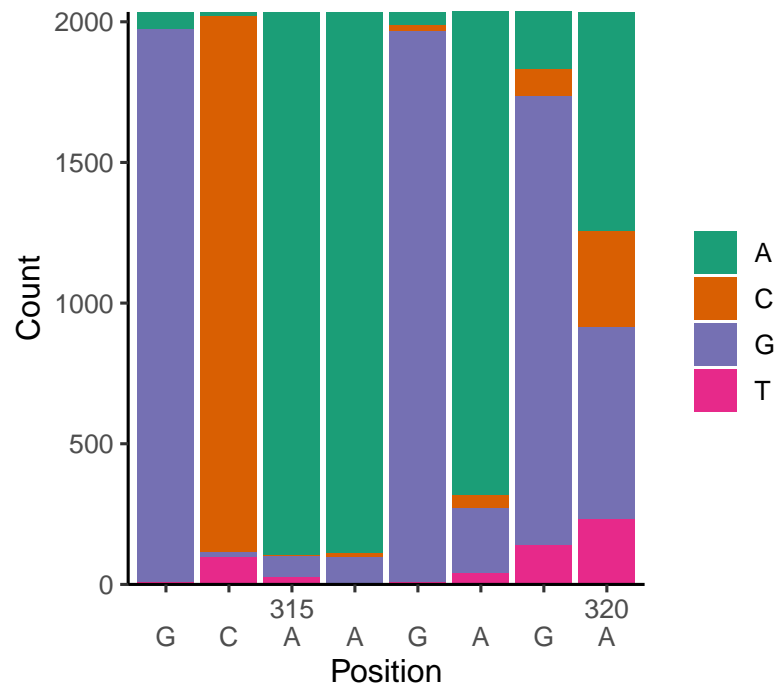
Gene IGHV7-114\*01\_T81A



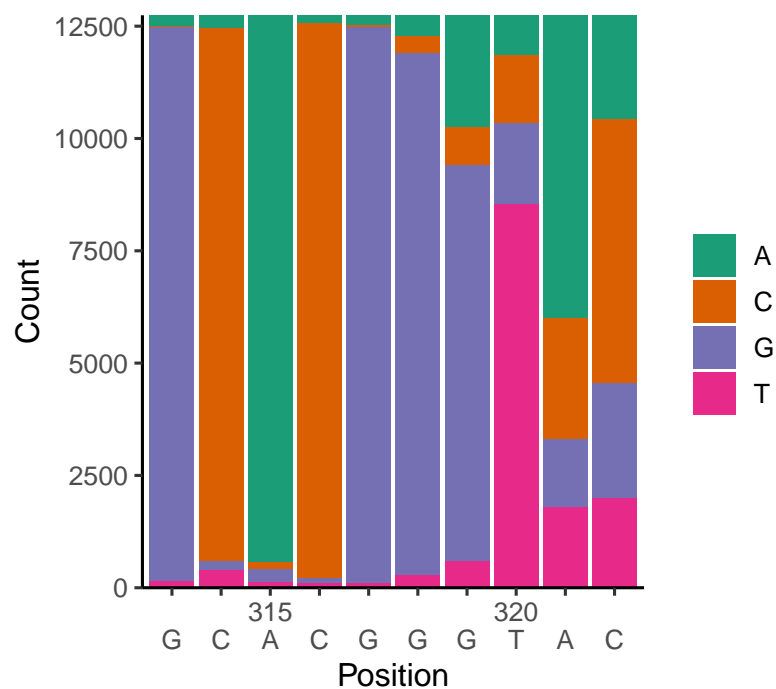
Gene IGHV2-10\*01\_C6G\_A23G\_G112C



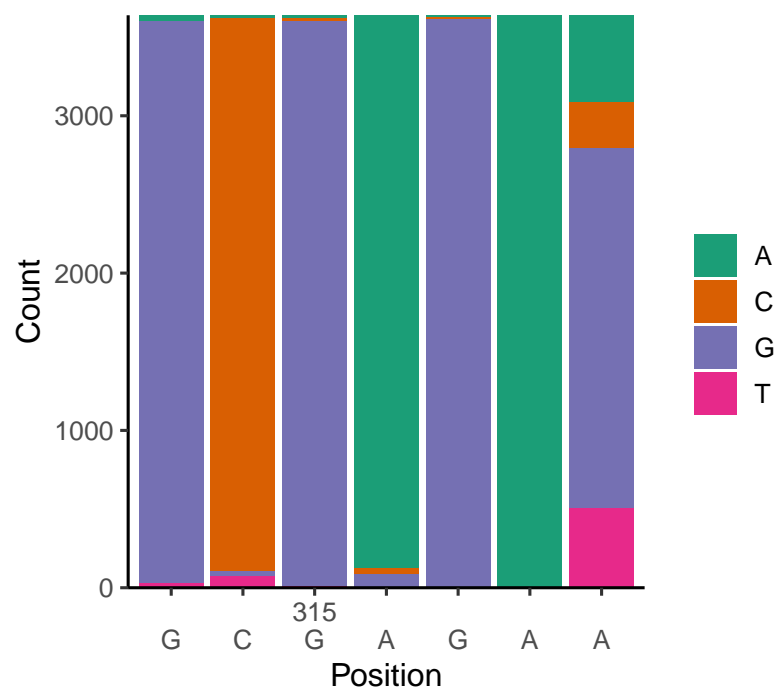
Gene IGHV6-1\*01\_G280T



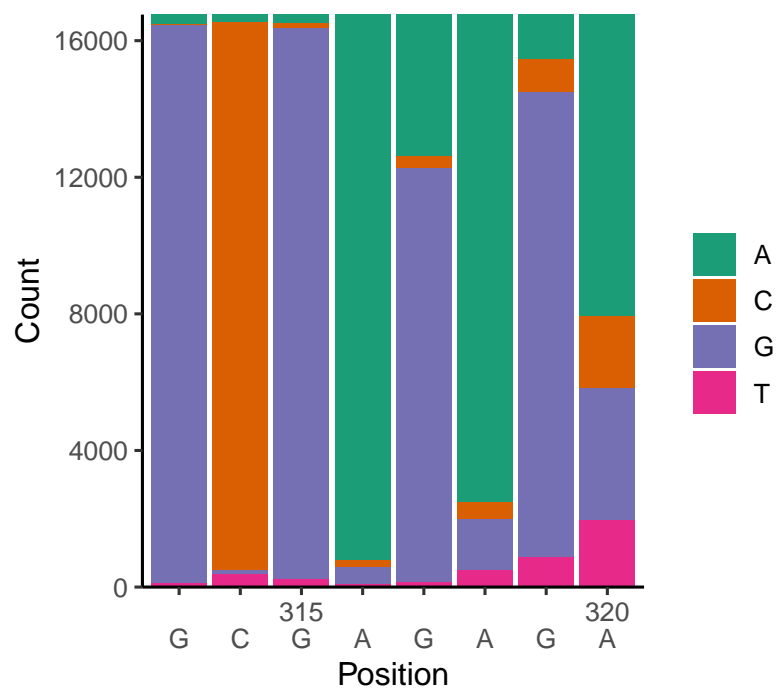
Gene IGHV2S1\*01\_G289T



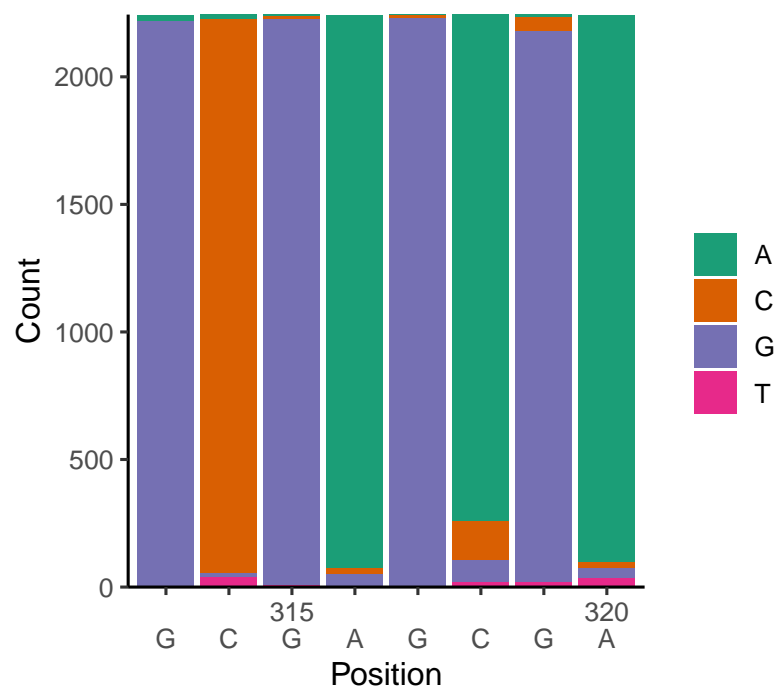
Gene IGHV4-169\*01\_T60C\_G61C



Gene IGHV3-59\*01\_C69T\_C86G\_C118



Gene IGHV4-169\*02\_T60C\_G61C



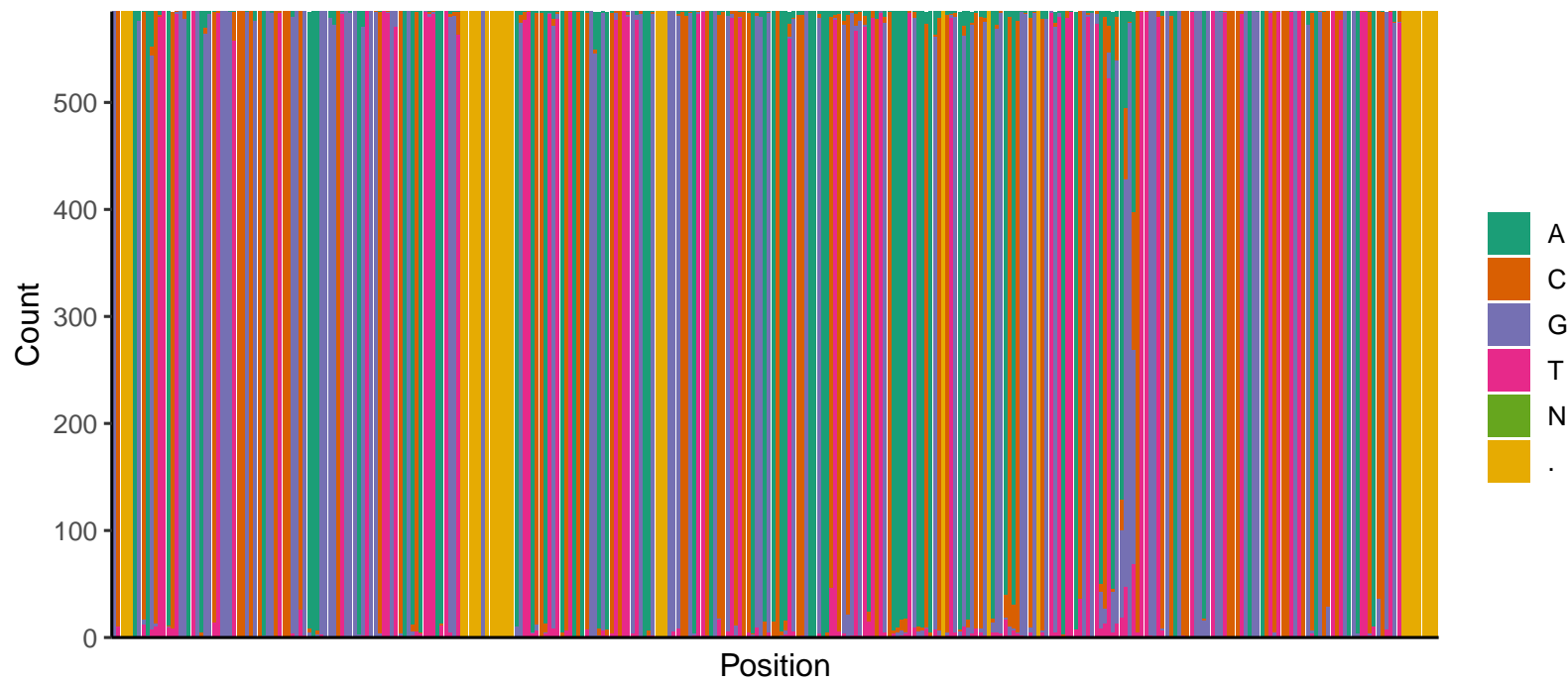
Gene IGHV3-13\*01\_C301G



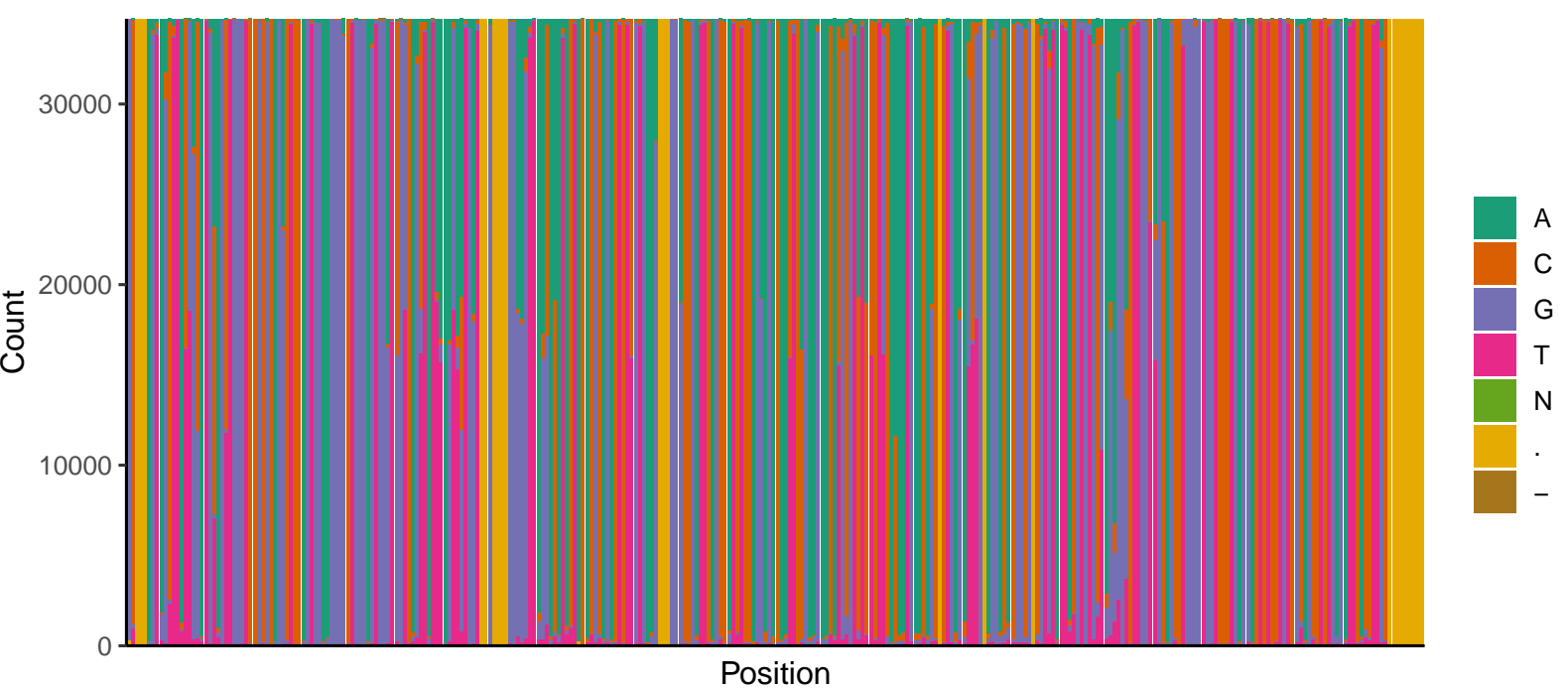
Gene IGHV3-16\*01\_A51T\_T78C\_C90T\_A119G



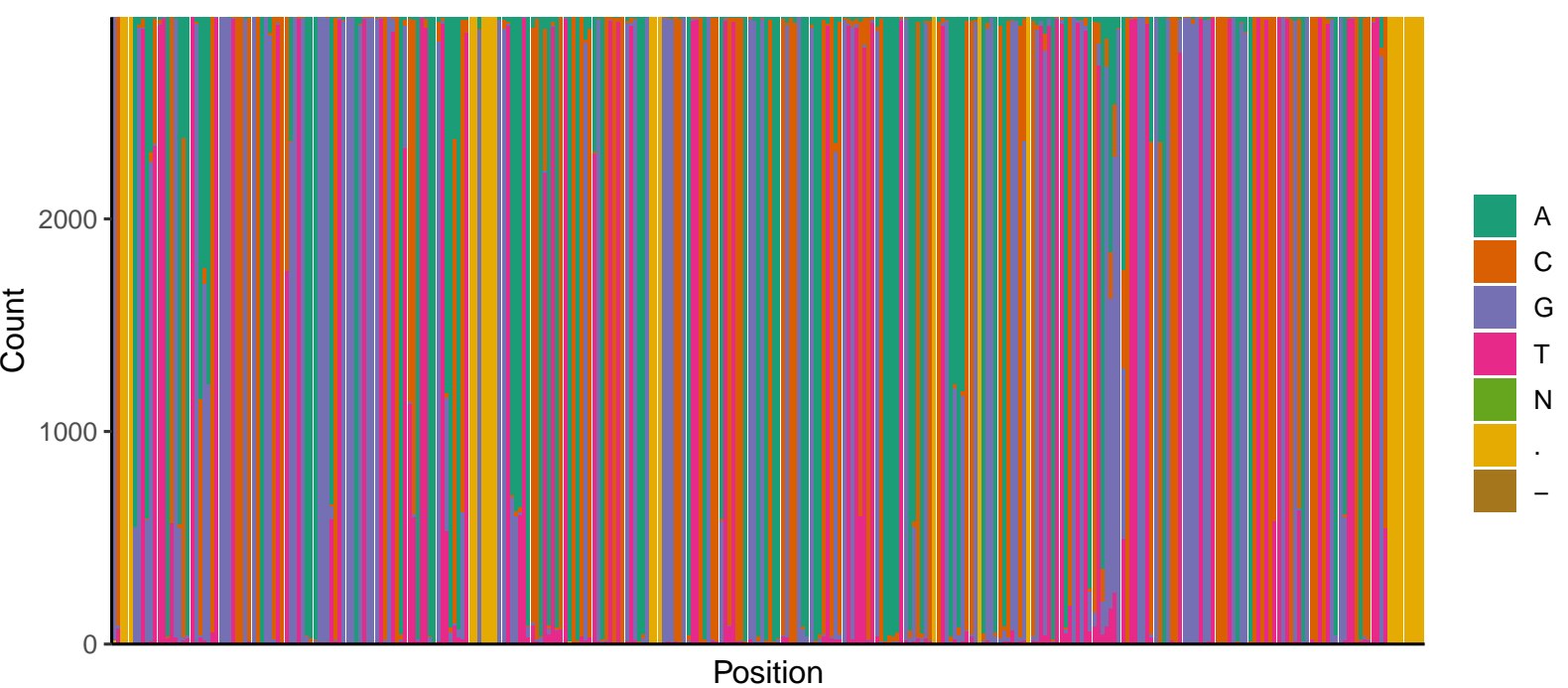
Gene IGHV3-175\*01\_G48A\_A88G\_T127C\_T224G\_T279C



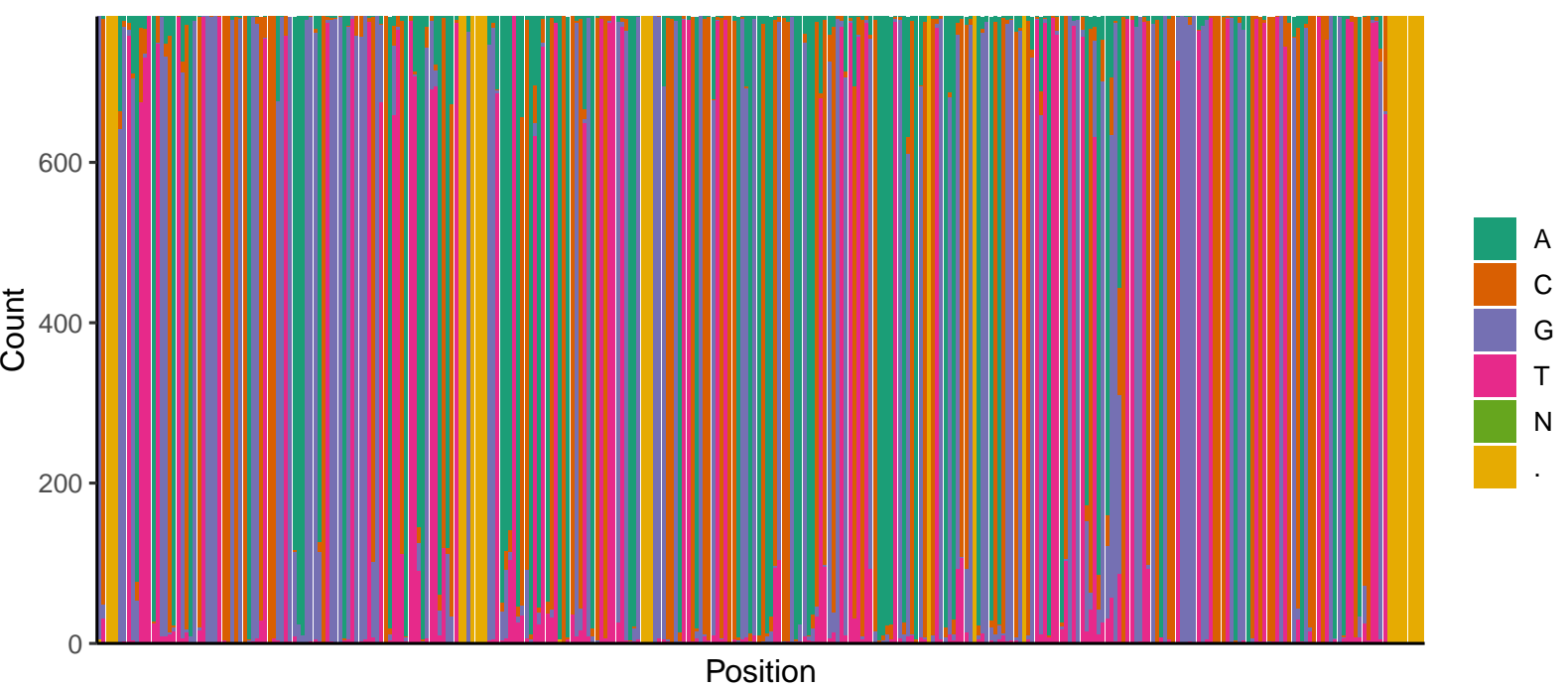
Gene IGHV3S42\*01\_C27A\_C38T\_A39G\_A40C\_G113A\_G114C\_A118T\_T120C\_A133G



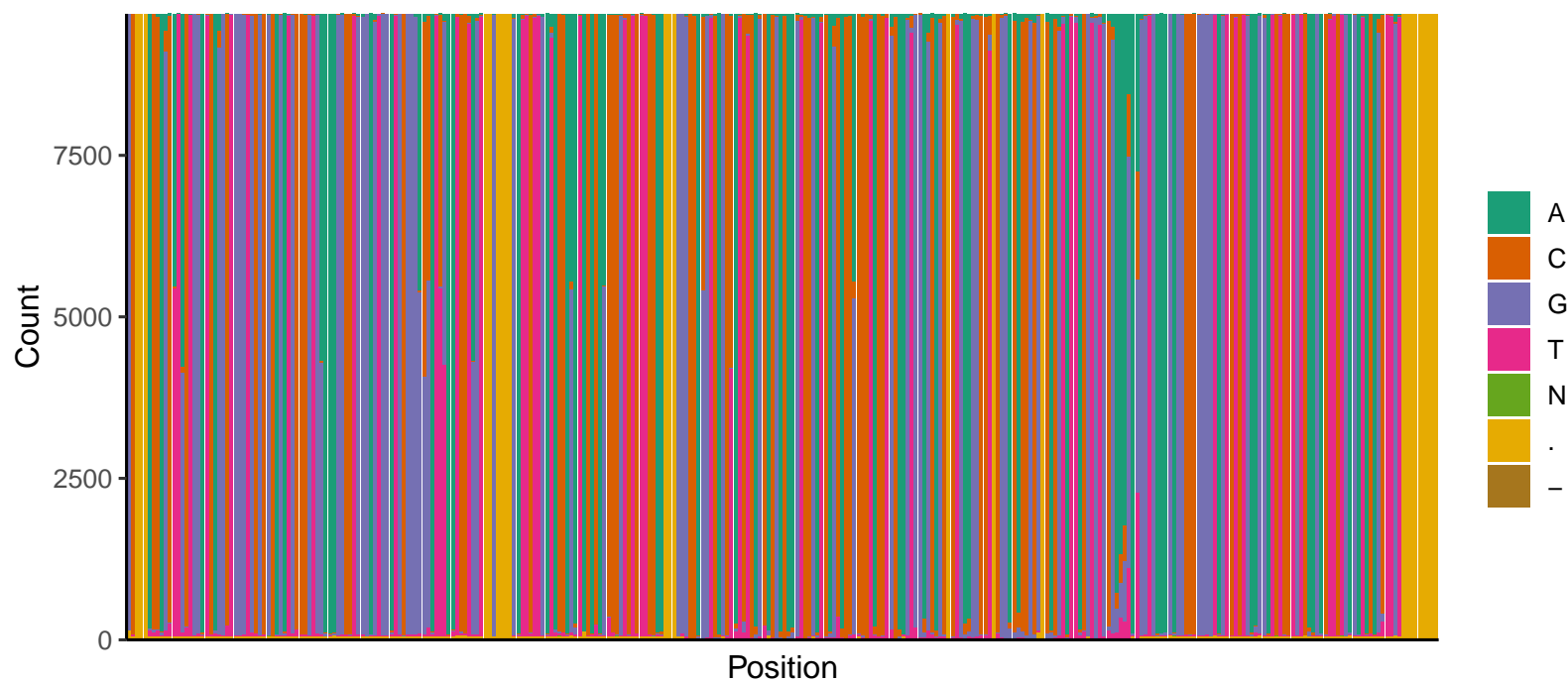
Gene IGHV3-183\*02\_C164T\_A172T\_G193A



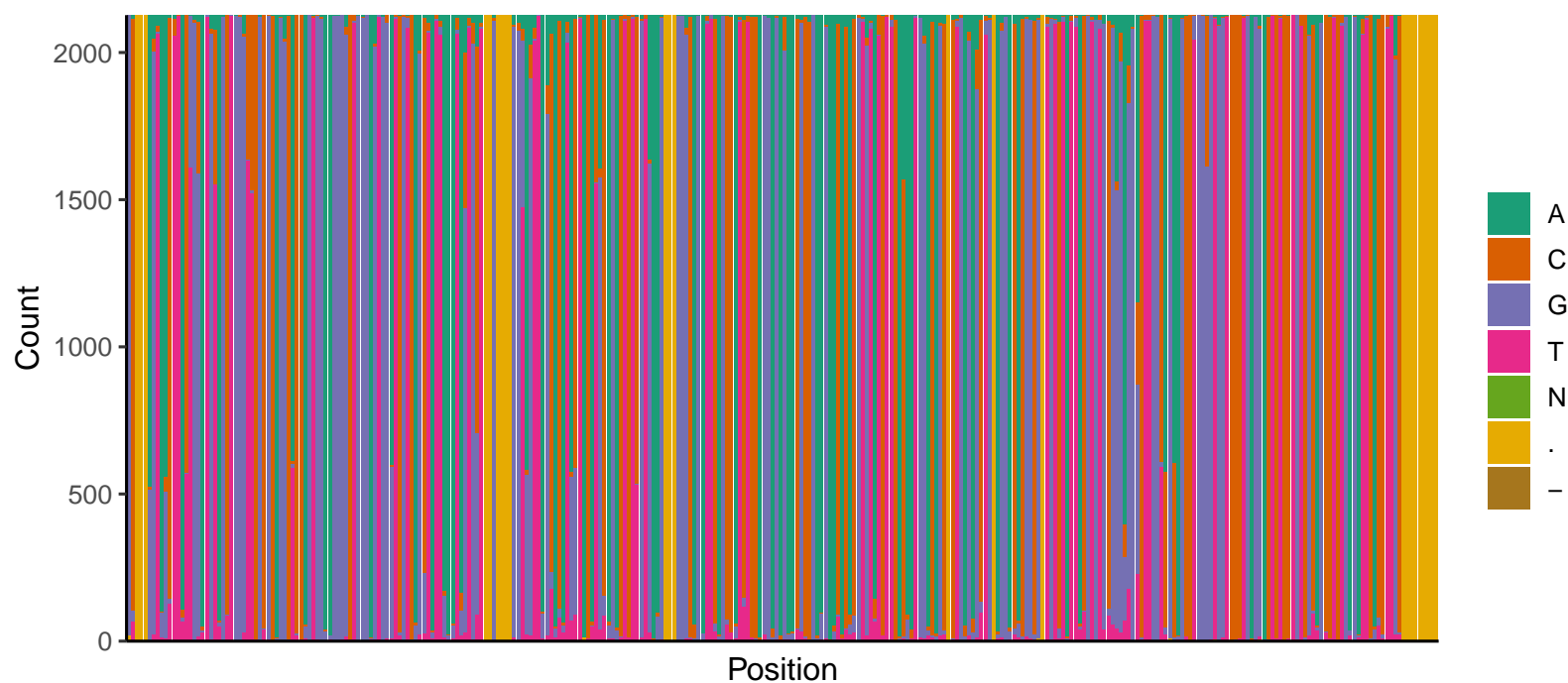
Gene IGHV3-183\*02\_C164T\_A172T\_G193A\_C210T



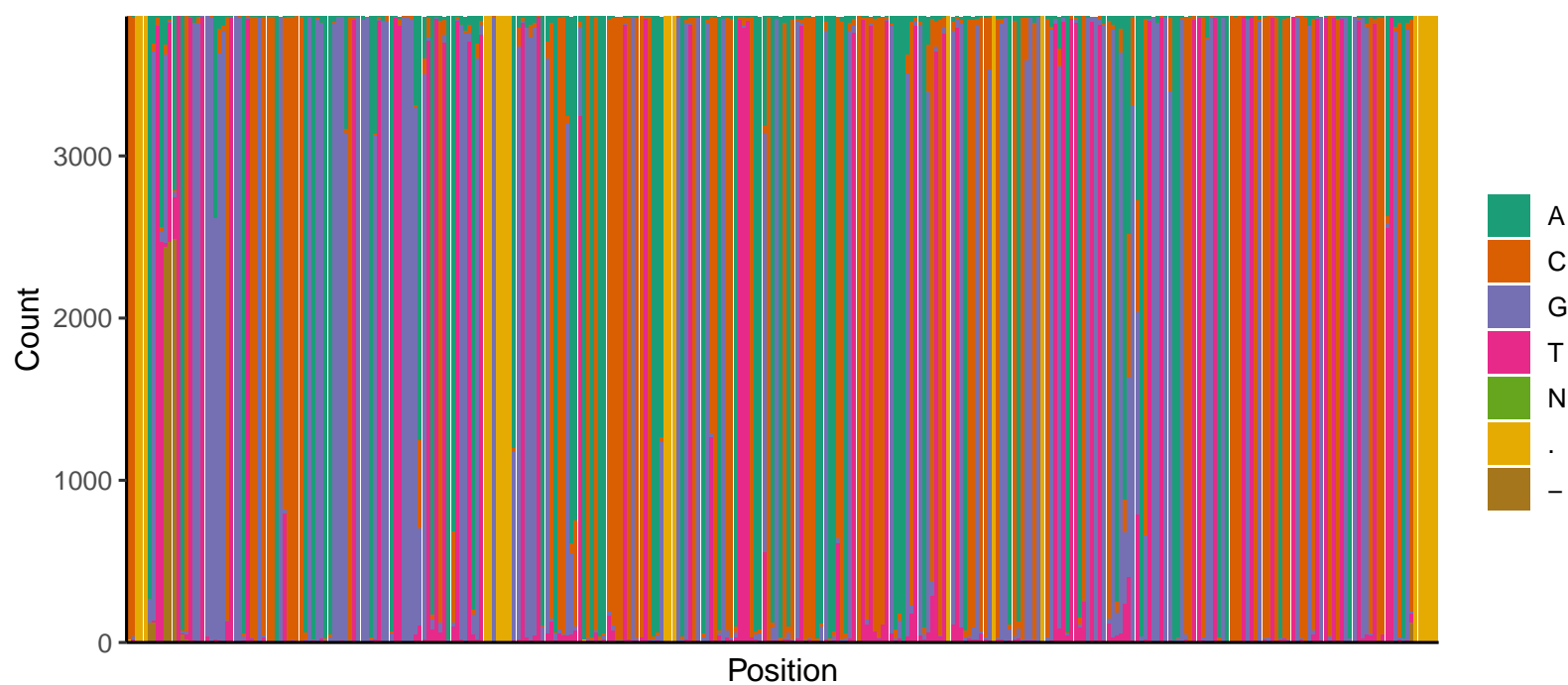
Gene IGHV5-20\*02\_C312T



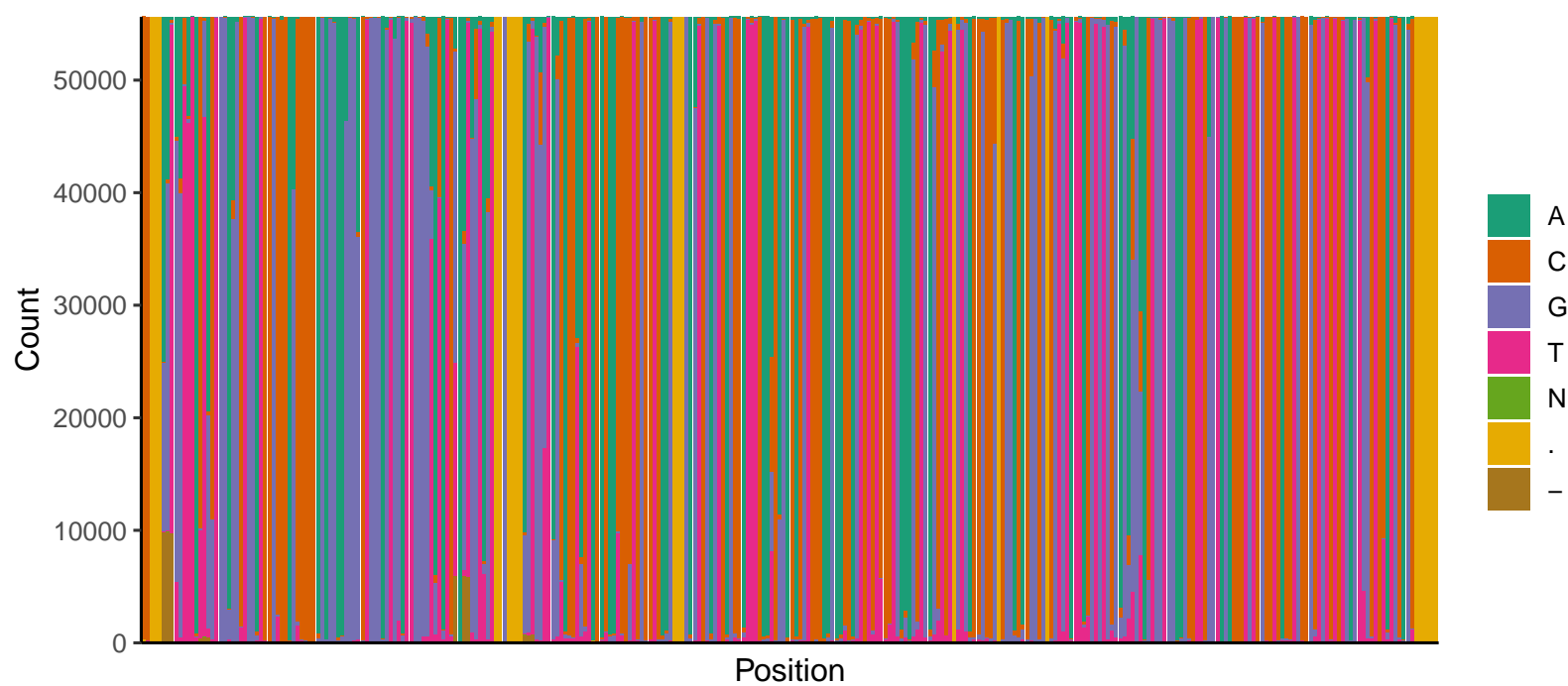
Gene IGHV3-28\*02\_C118T\_G277A



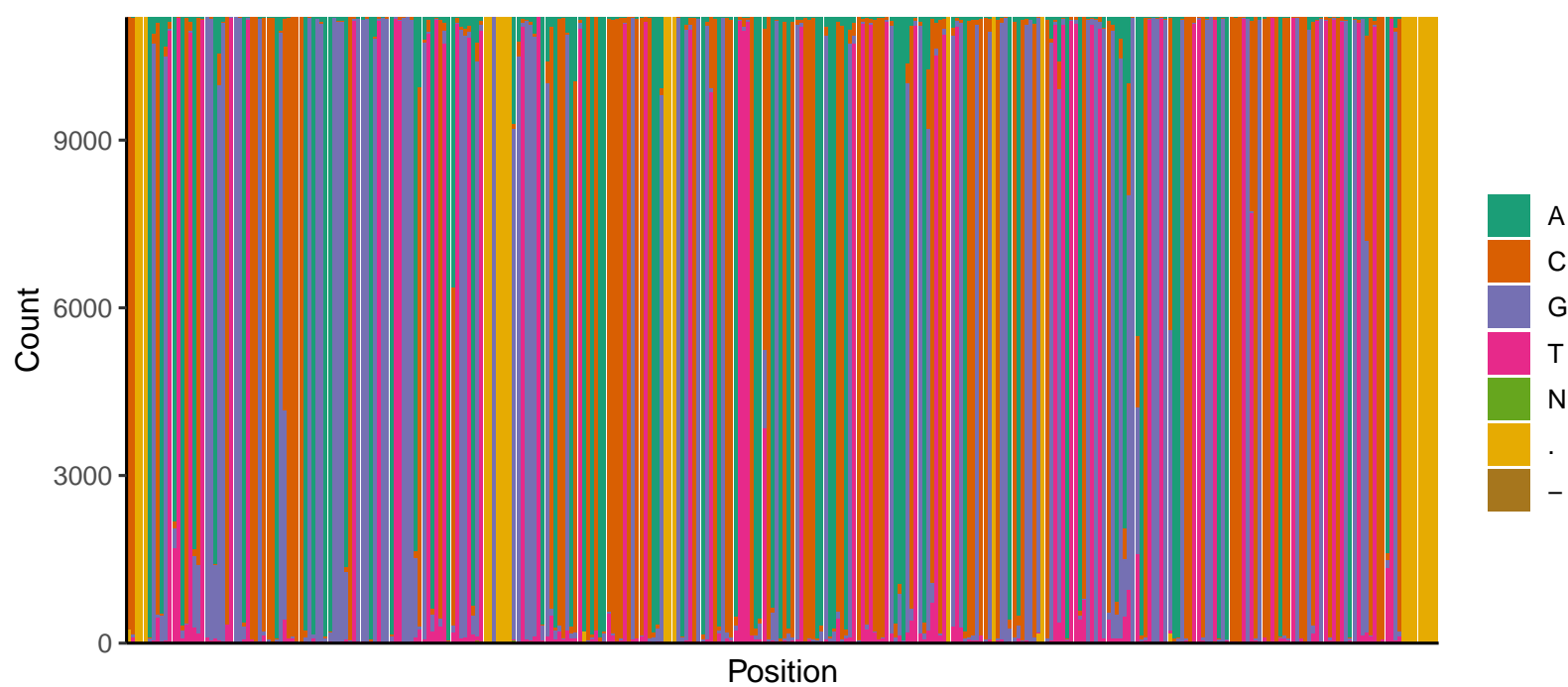
Gene IGHV4-93\*02\_C297G



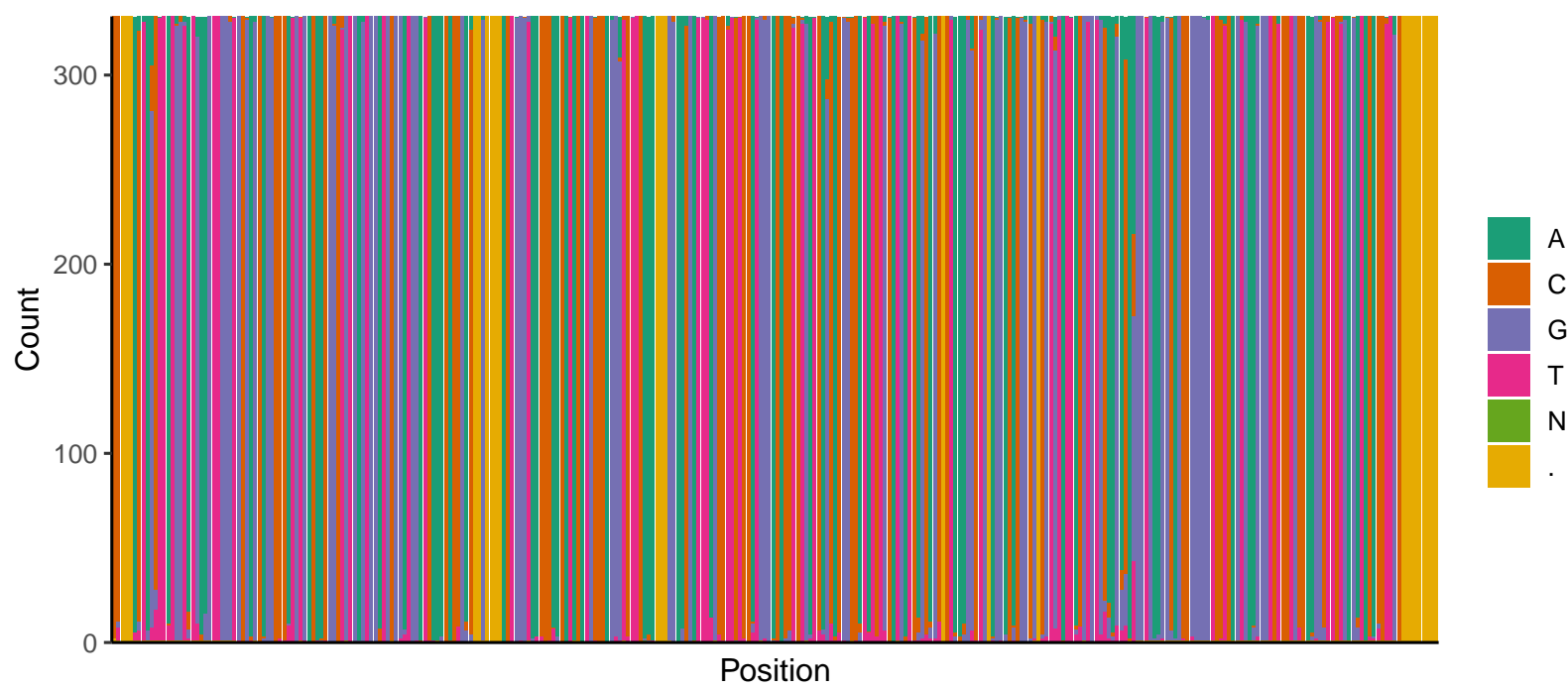
Gene IGHV4-127\*01\_T82G\_A83G



Gene IGHV4S2\*01\_G248C



Gene IGHV7-114\*01\_T81A



Gene IGHV2-10\*01\_C6G\_A23G\_G112C\_G118A\_A119G\_G121T\_G141A\_C205A\_G210



Gene IGHV2S1\*01\_G289T

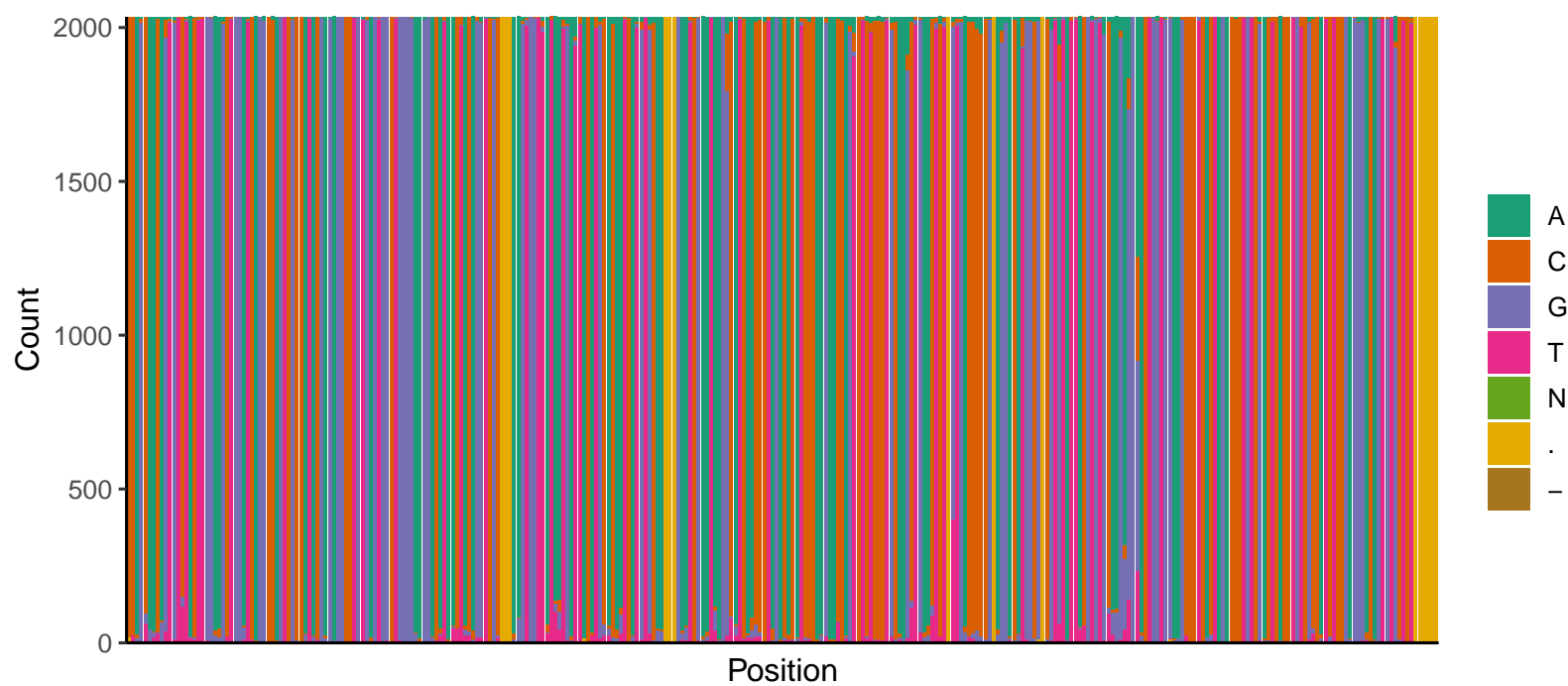


Gene IGHV3-59\*01\_C69T\_C86G\_C118T\_T136C\_C163G\_A172T\_G175A\_G176C\_G19





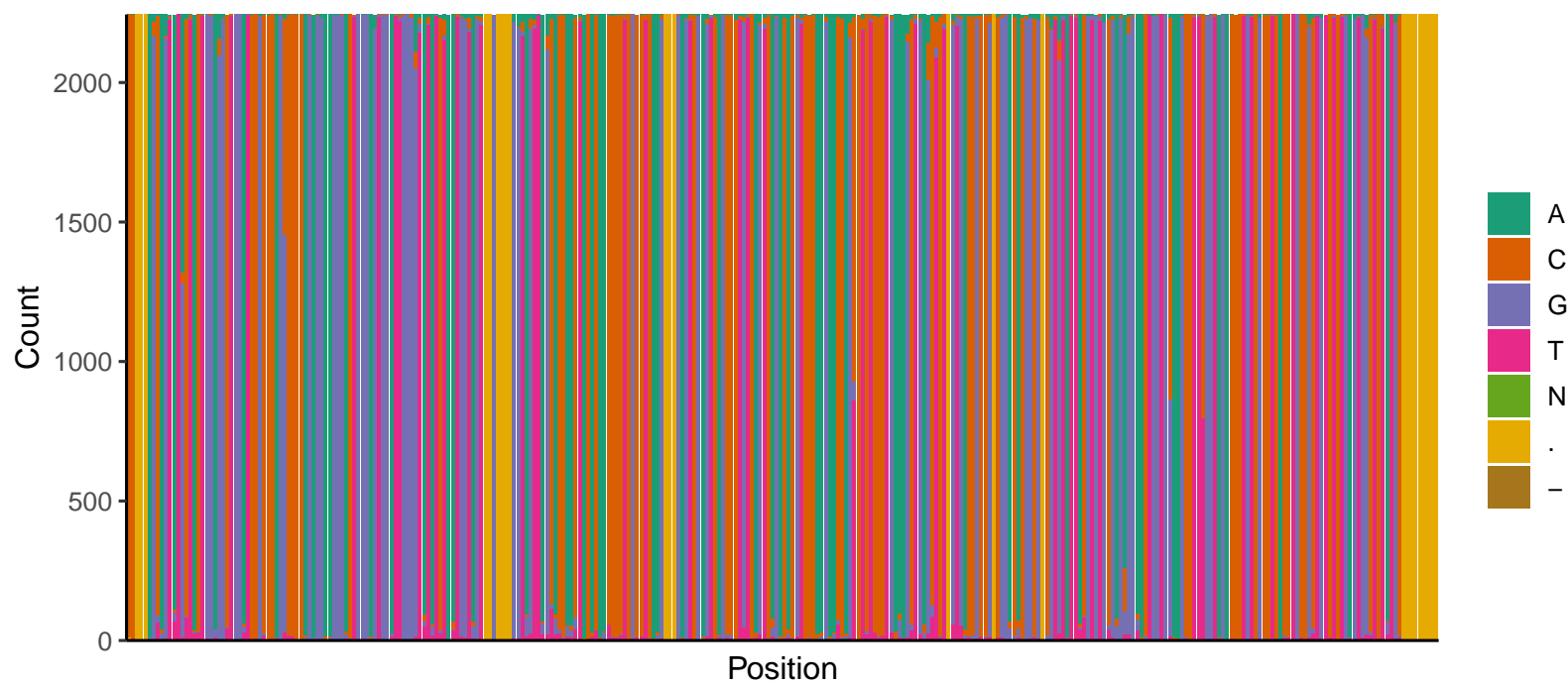
Gene IGHV6-1\*01\_G280T



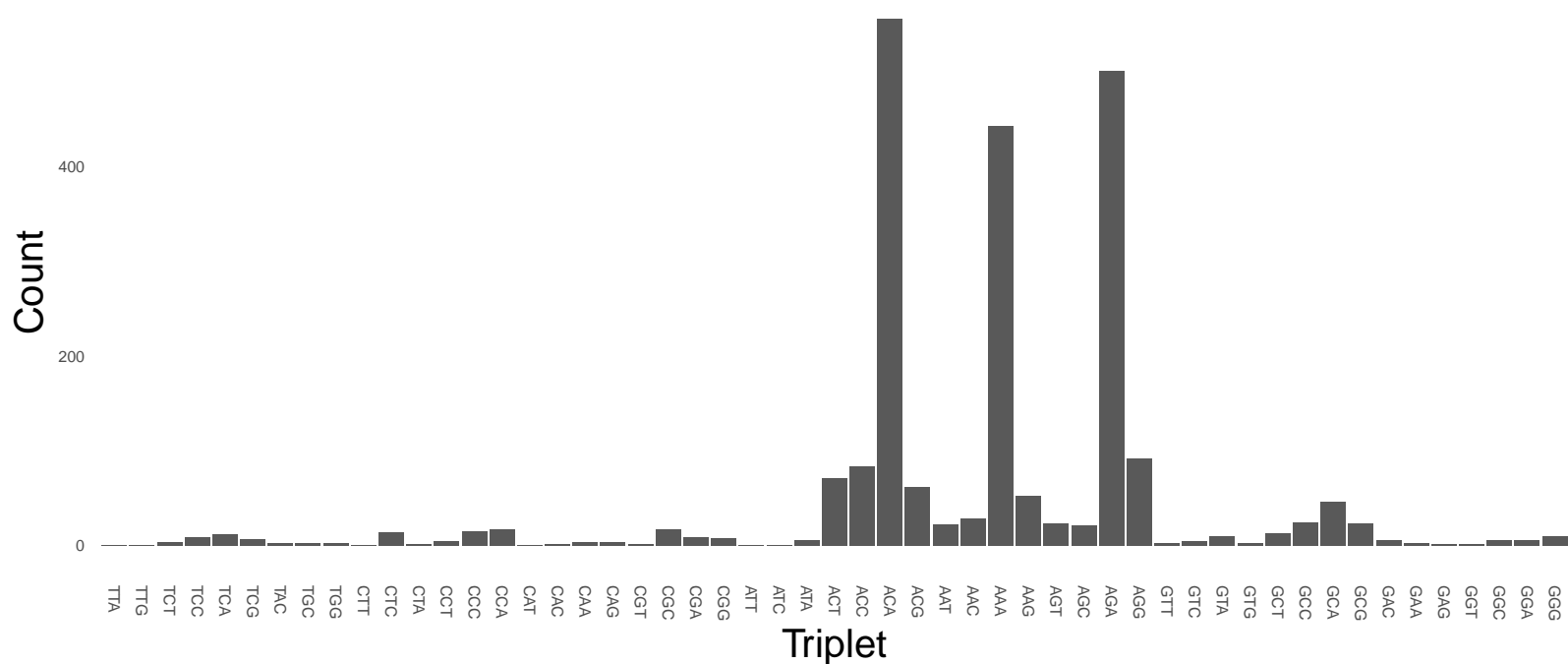
Gene IGHV4-169\*01\_T60C\_G61C



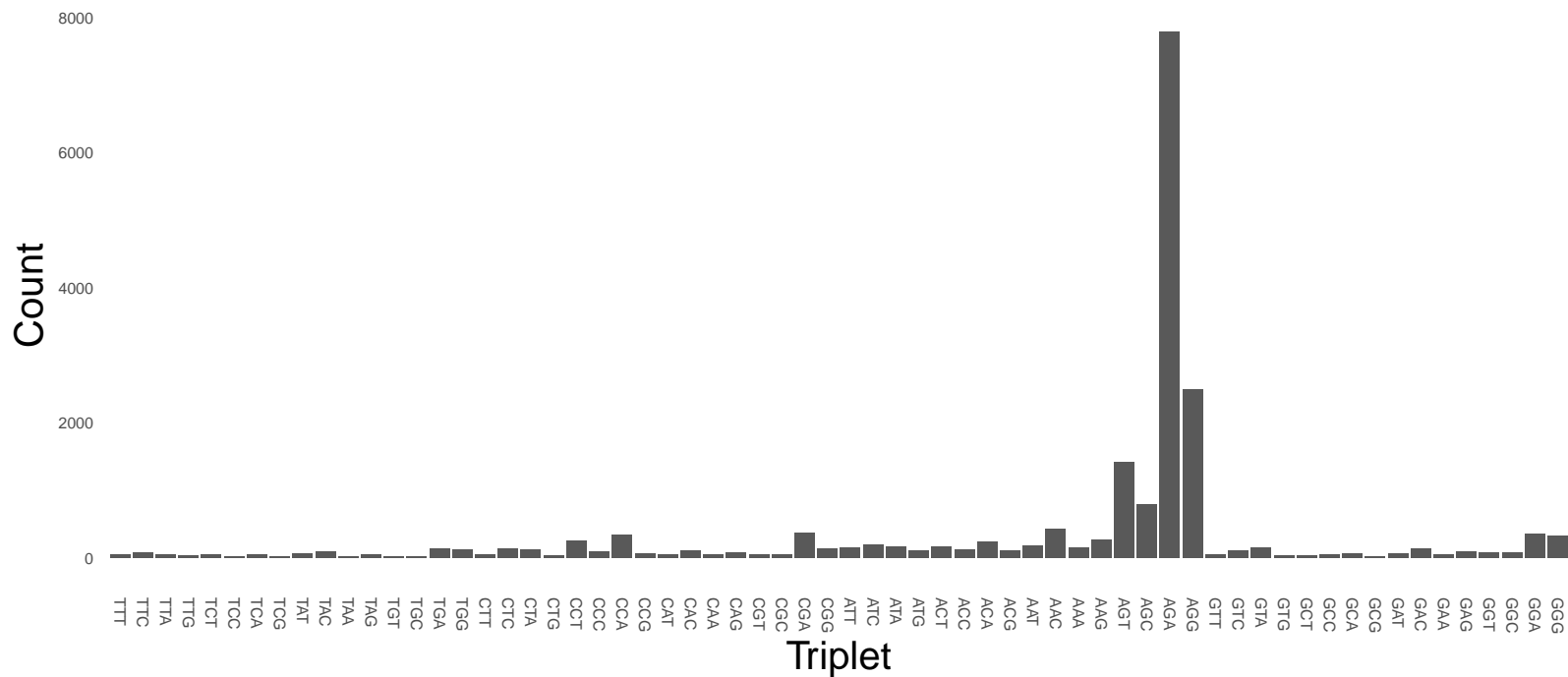
Gene IGHV4-169\*02\_T60C\_G61C



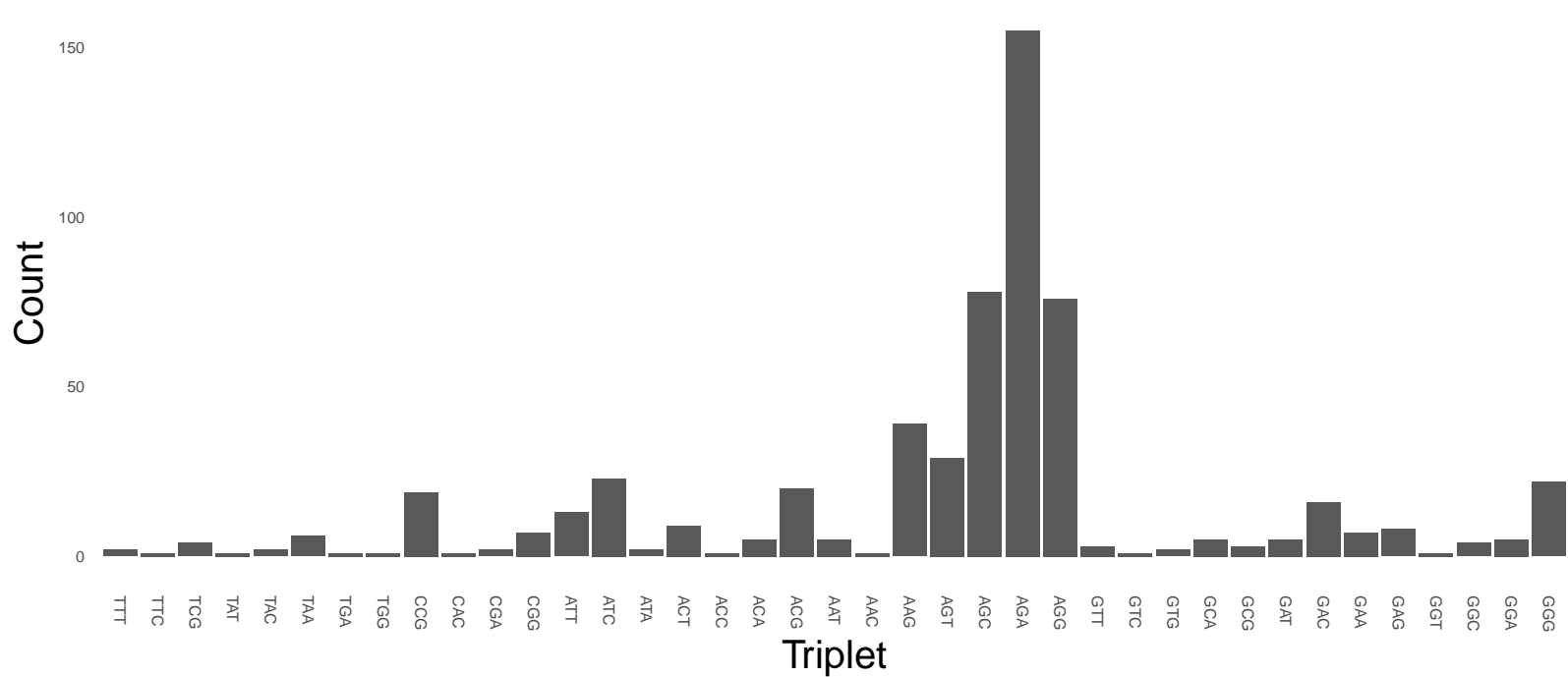
IGHV3-13\*01\_C301G- Final 3 nucleotides as a triplet



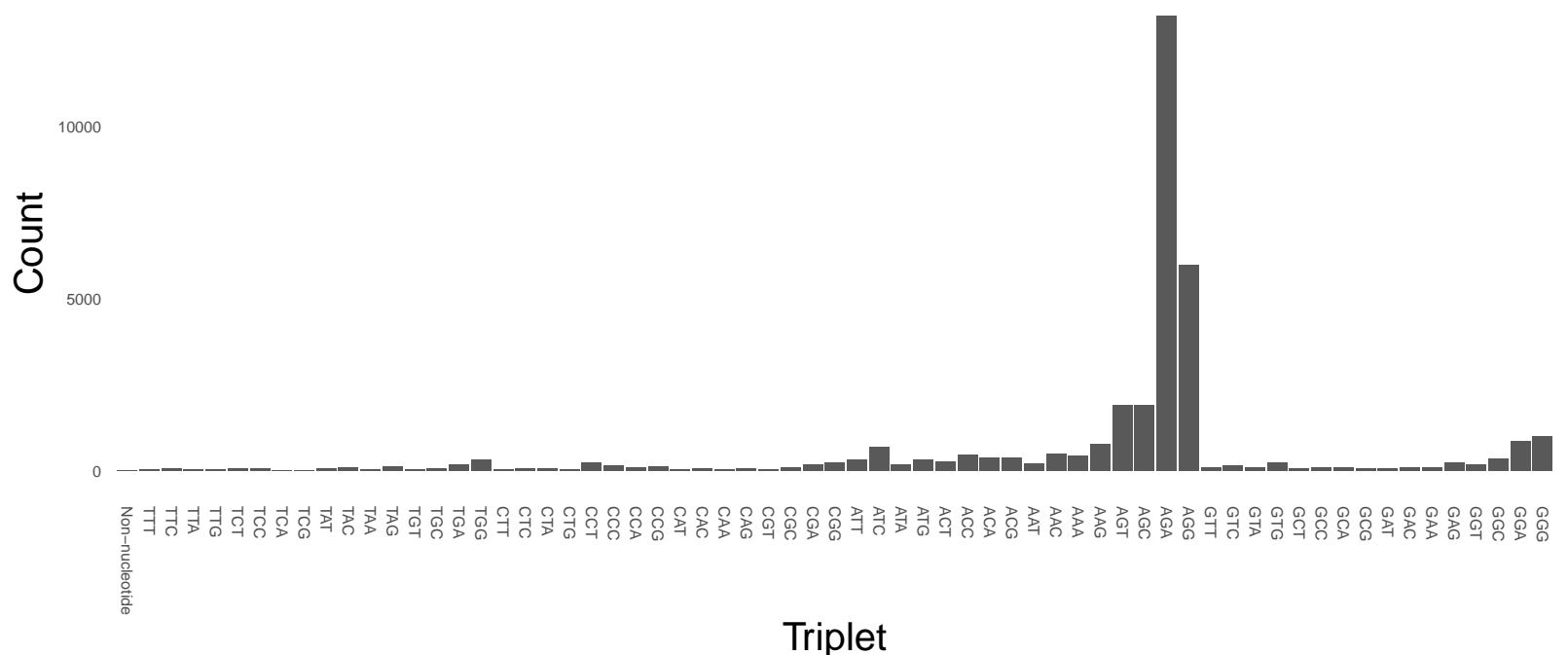
IGHV3-16\*01\_A51T\_T78C\_C90T\_A119G- Final 3 nucleotides as a triplet



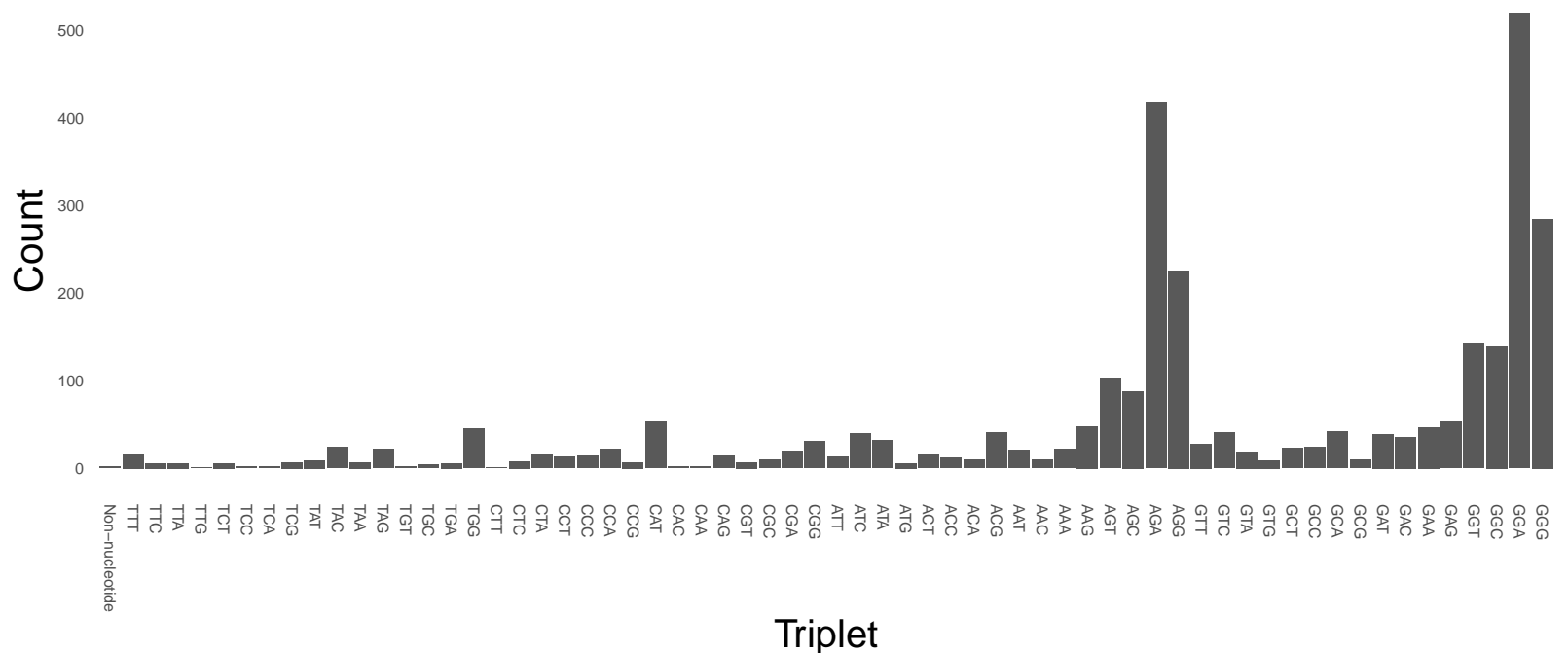
IGHV3-175\*01\_G48A\_A88G\_T127C\_T224G\_T279C- Final 3 nucleotides as a triplet



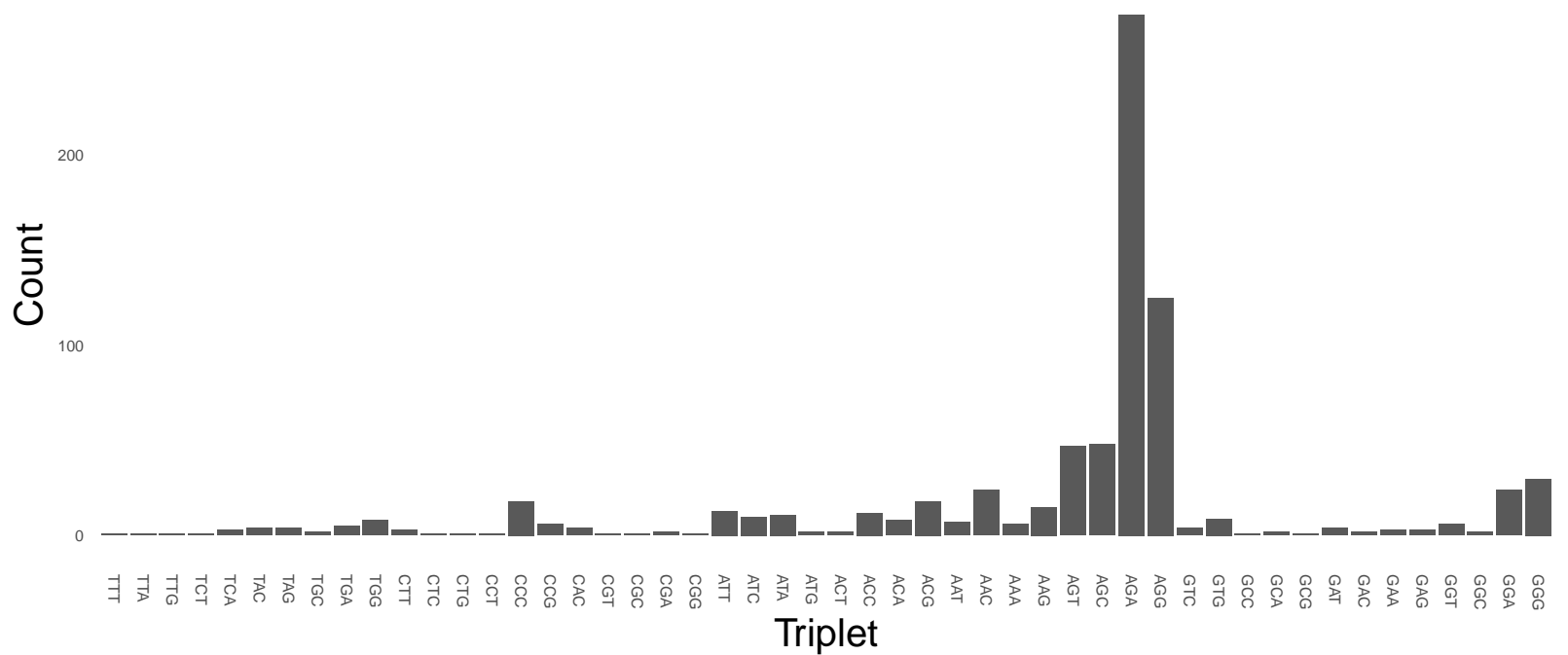
IGHV3S42\*01\_C27A\_C38T\_A39G\_A40C\_G113A\_G114C\_A118T\_T120C\_A133G\_G173C\_G216



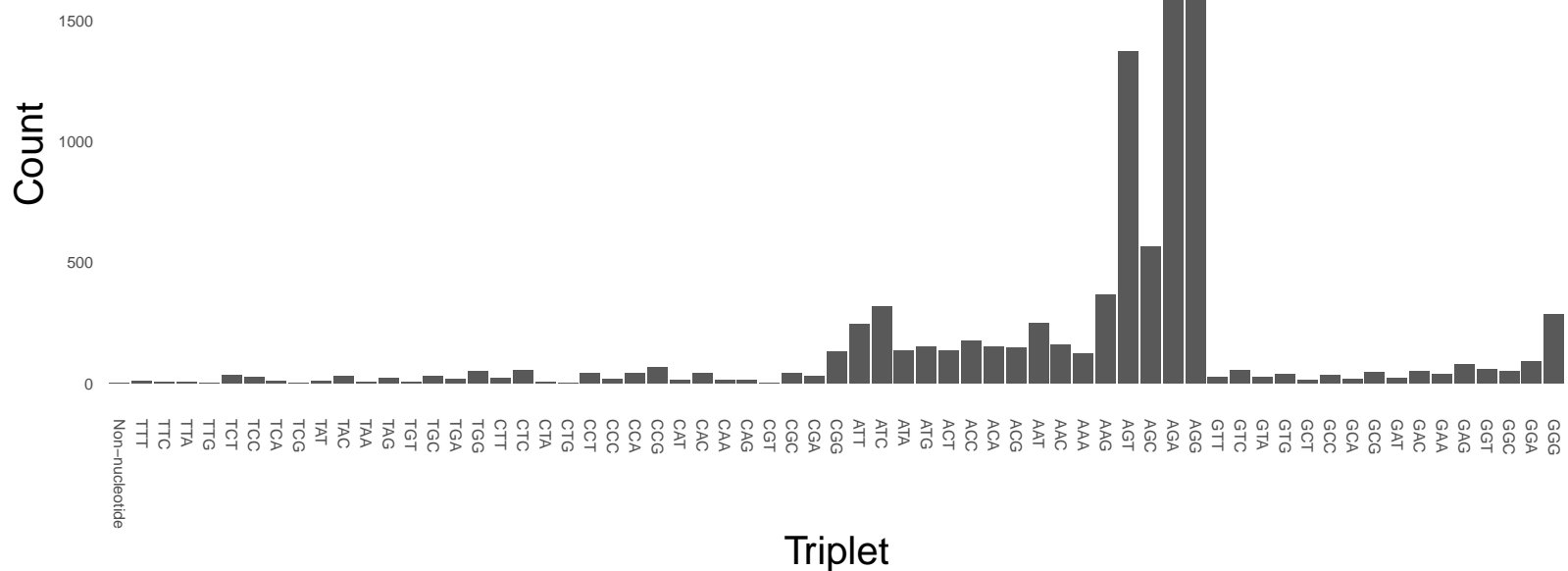
IGHV3-183\*02\_C164T\_A172T\_G193A- Final 3 nucleotides as a triplet



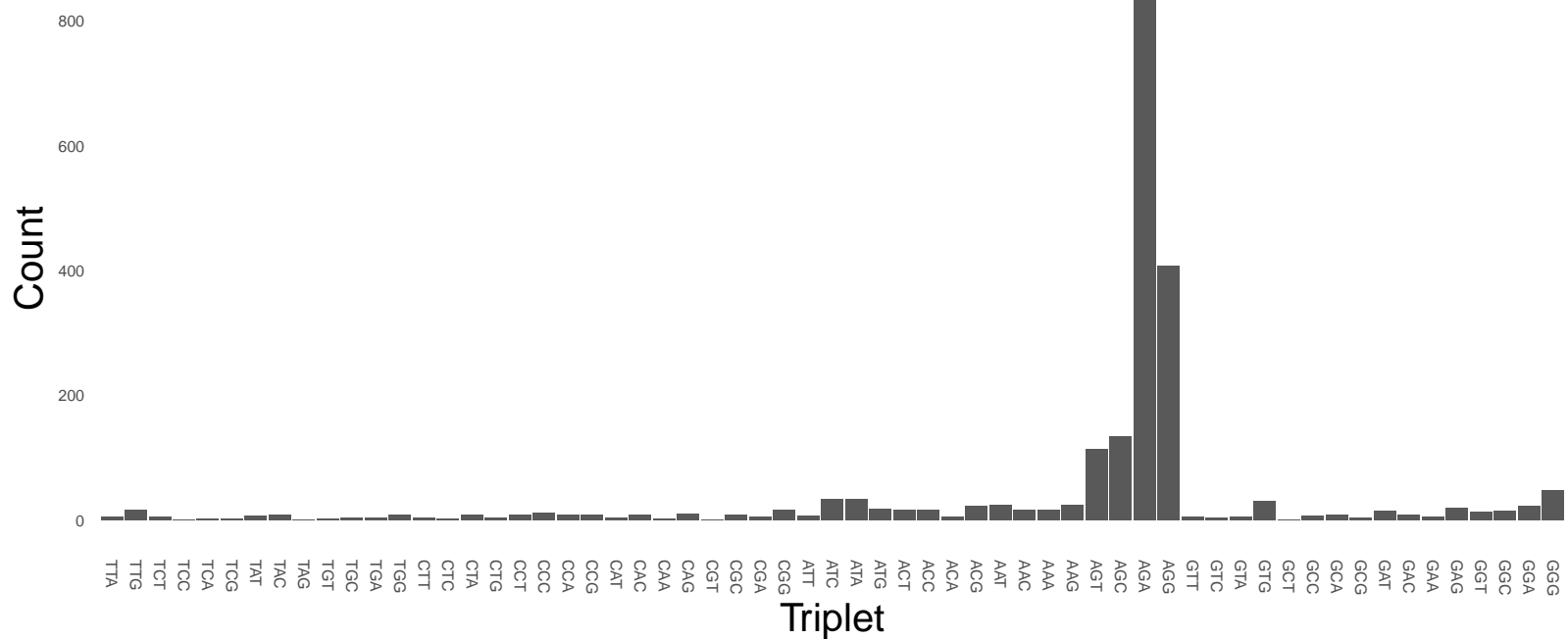
IGHV3-183\*02\_C164T\_A172T\_G193A\_C210T- Final 3 nucleotides as a triplet



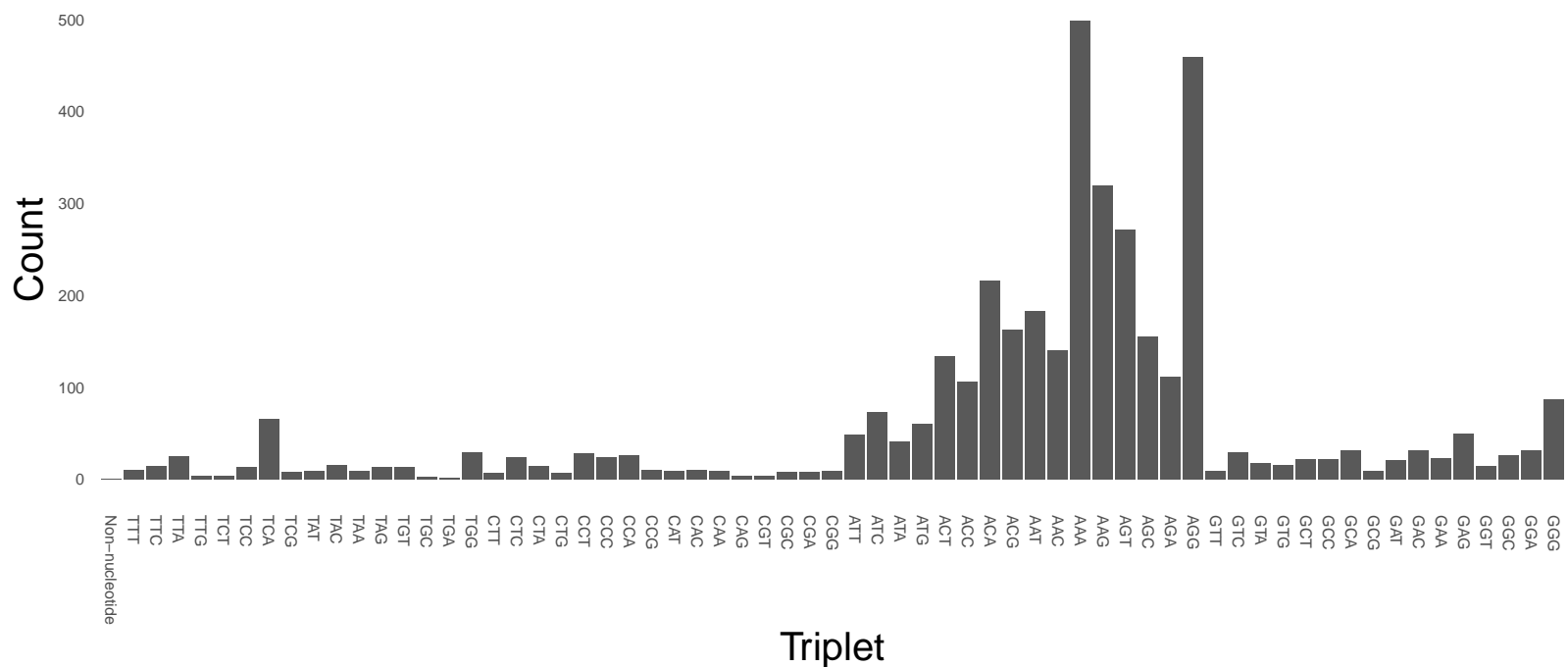
### IGHV5-20\*02\_C312T- Final 3 nucleotides as a triplet



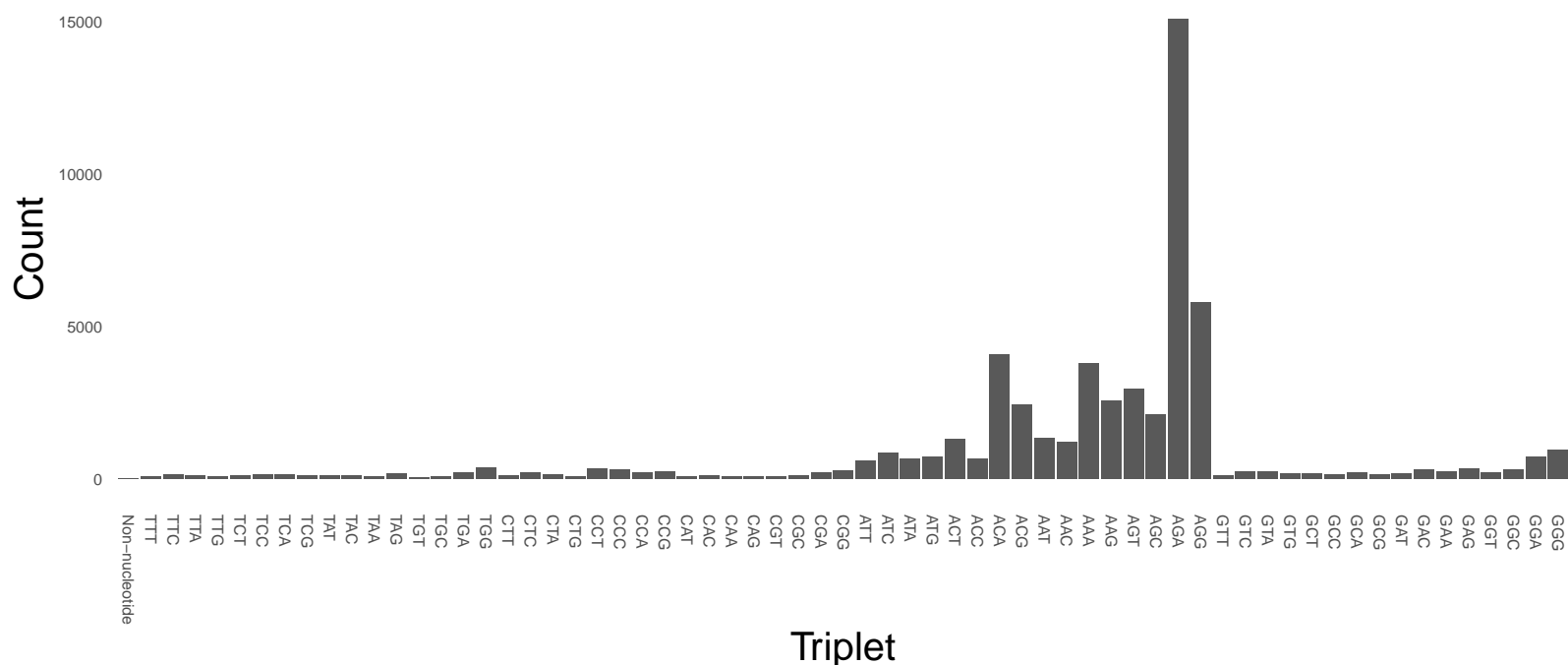
IGHV3-28\*02\_C118T\_G277A- Final 3 nucleotides as a triplet



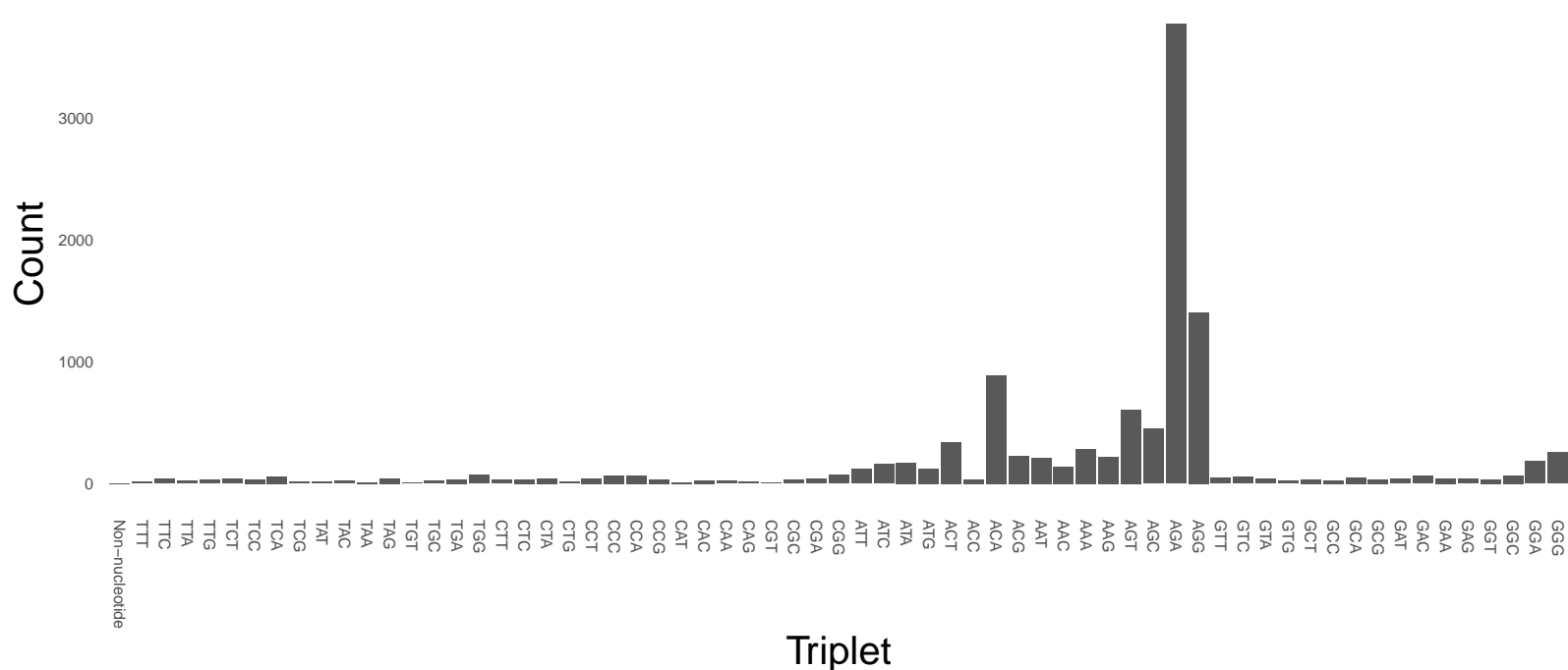
### IGHV4-93\*02\_C297G- Final 3 nucleotides as a triplet



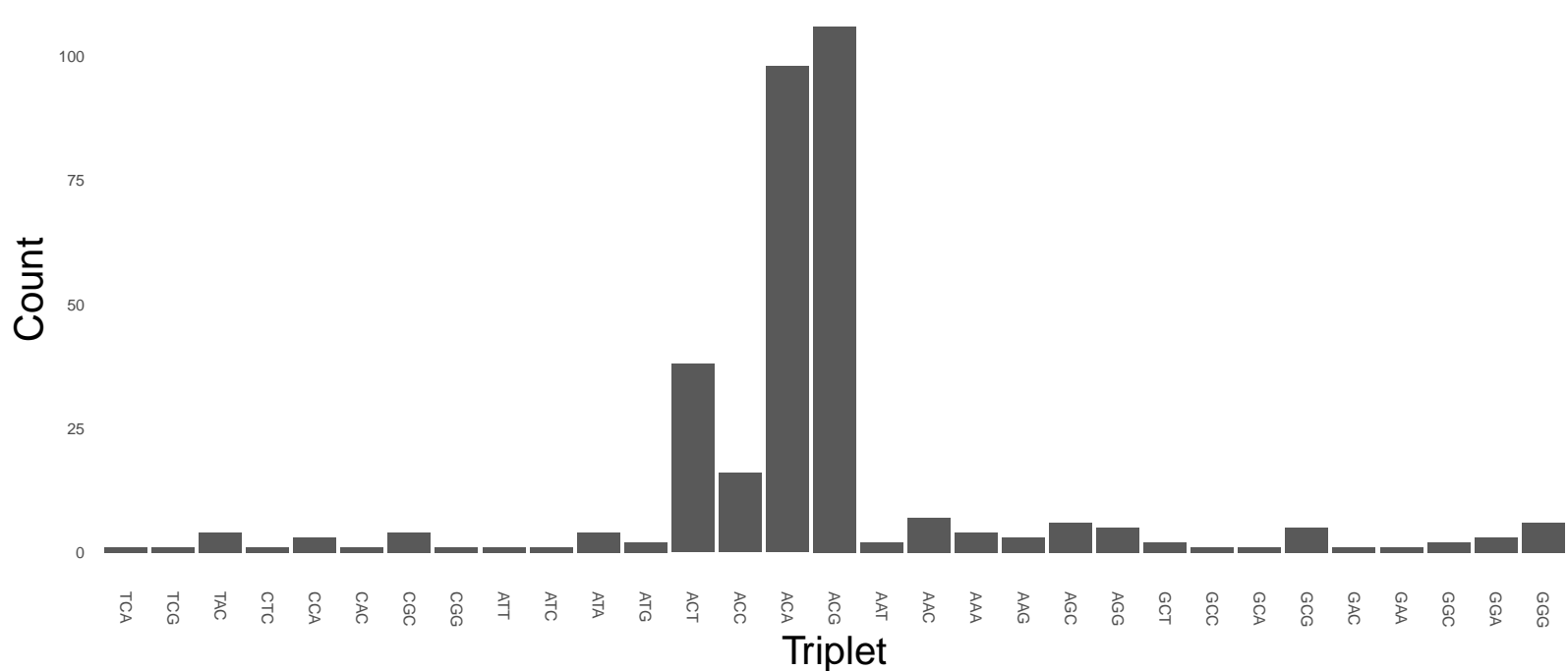
IGHV4–127\*01\_T82G\_A83G– Final 3 nucleotides as a triplet



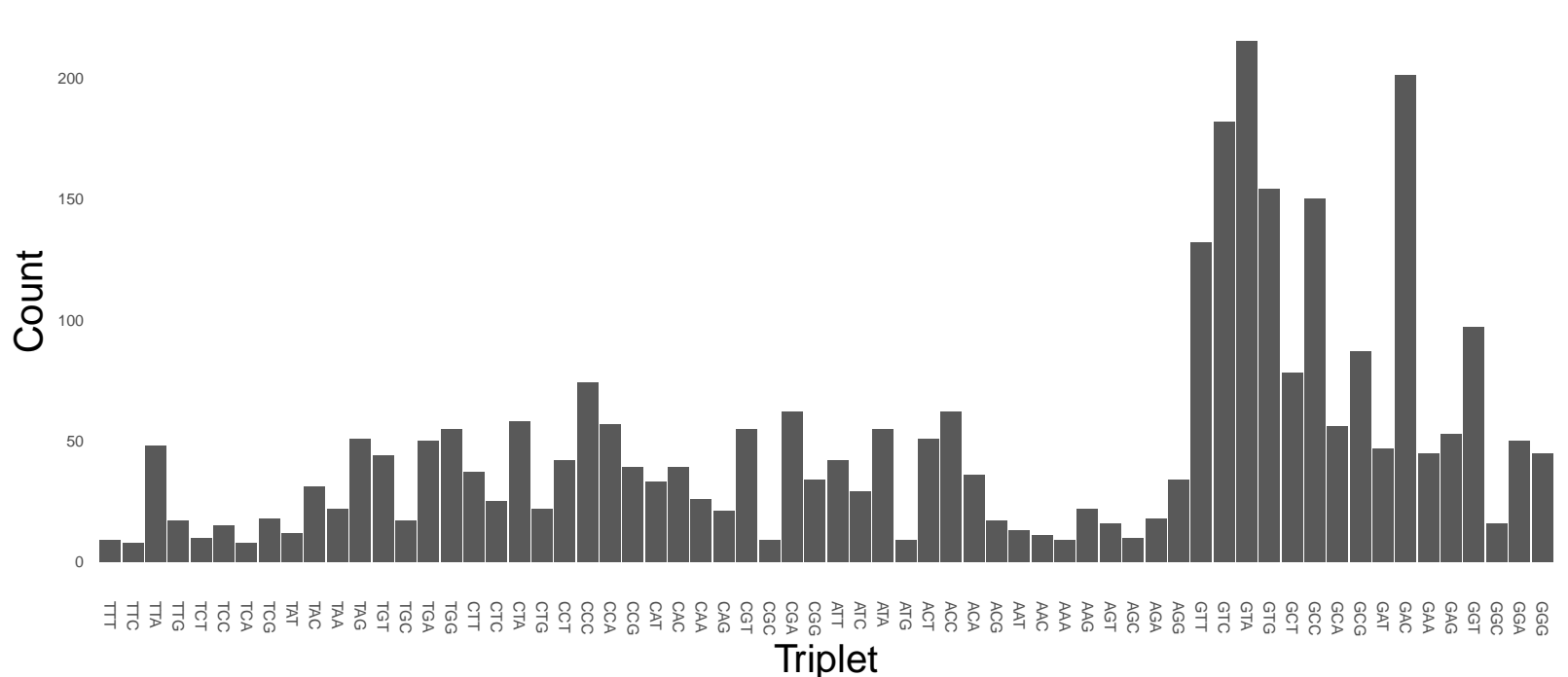
IGHV4S2\*01\_G248C– Final 3 nucleotides as a triplet



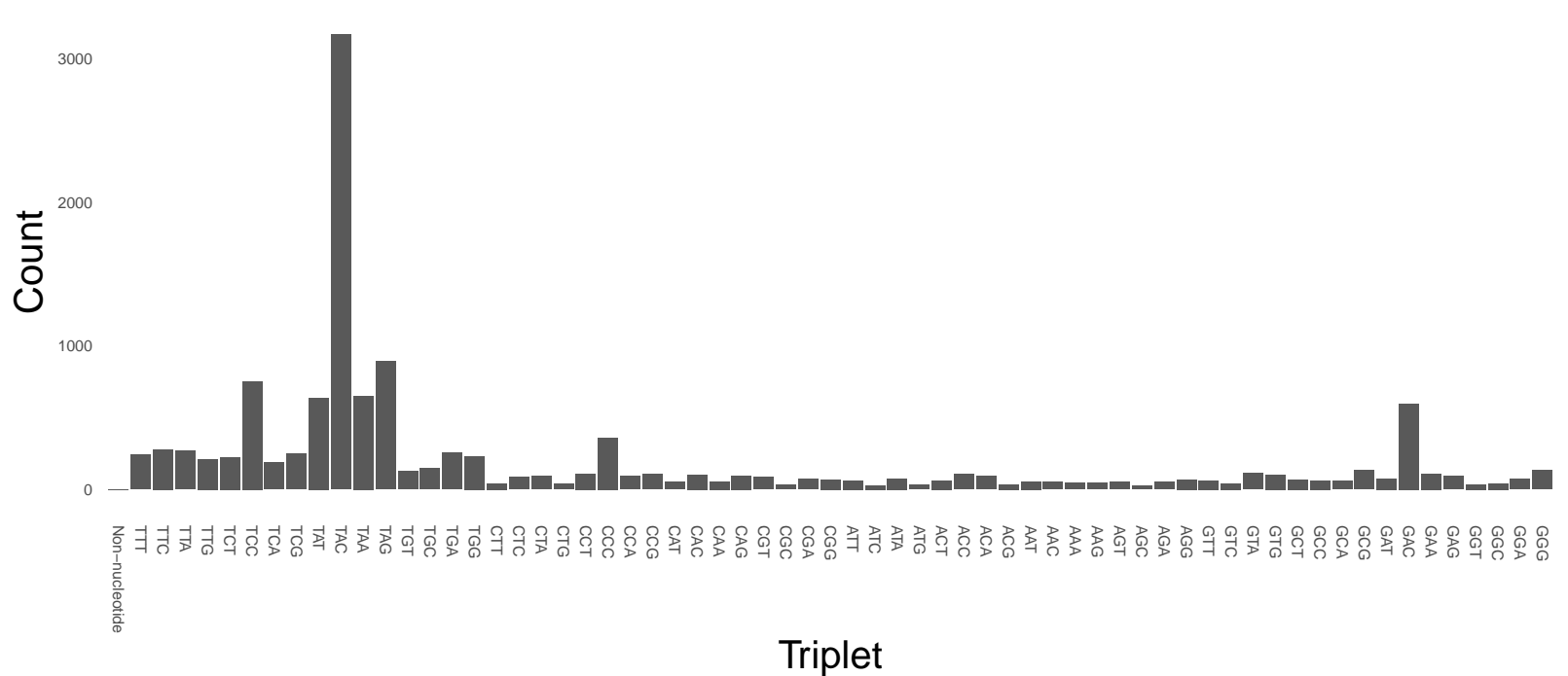
IGHV7–114\*01\_T81A– Final 3 nucleotides as a triplet



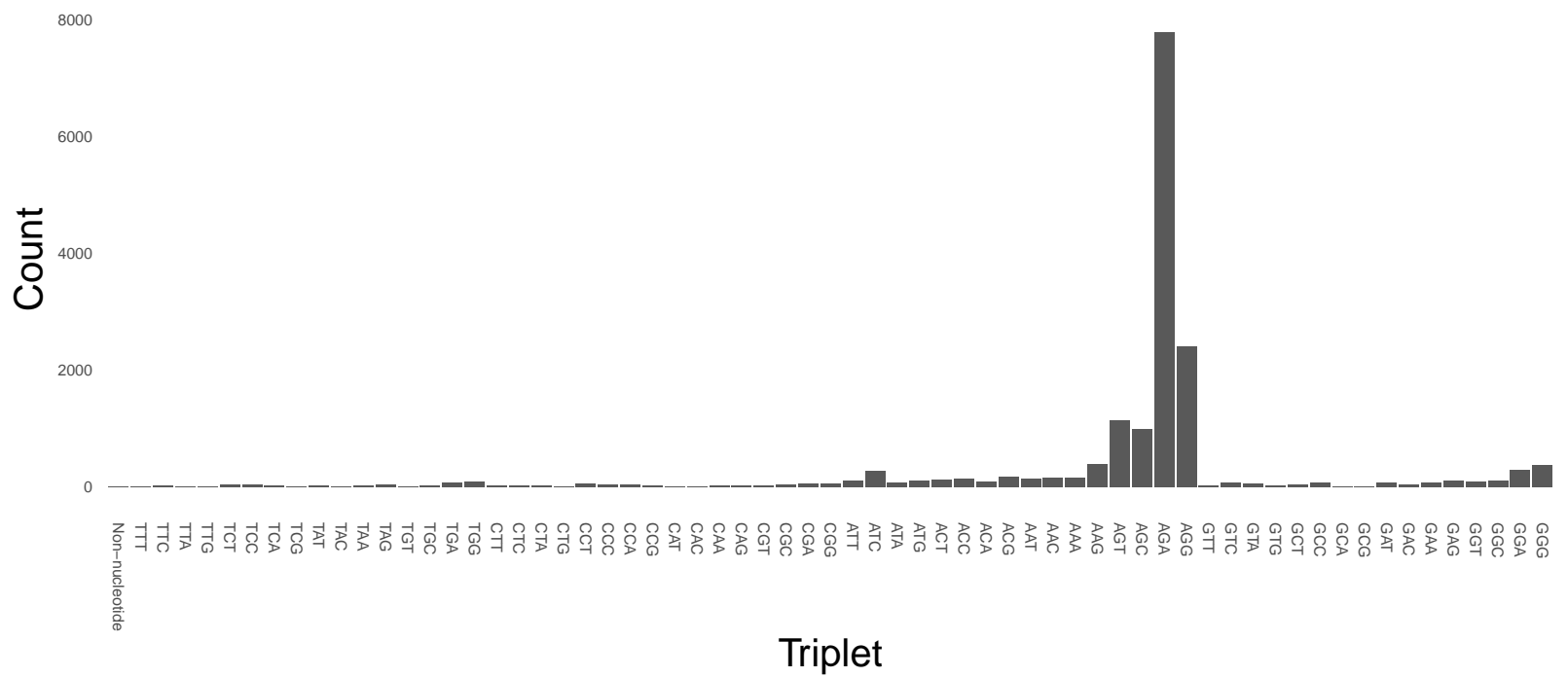
IGHV2-10\*01\_C6G\_A23G\_G112C\_G118A\_A119G\_G121T\_G141A\_C205A\_G210T- Final 3 nucleotides



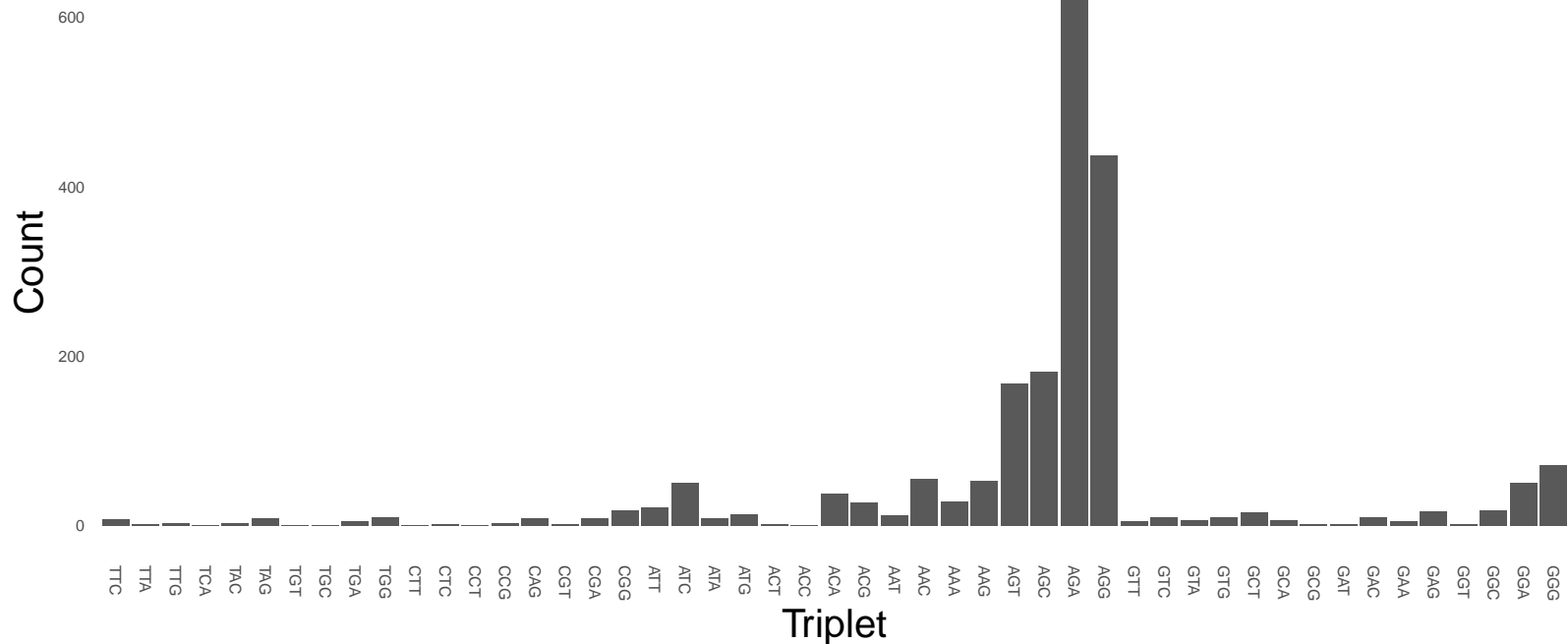
IGHV2S1\*01\_G289T- Final 3 nucleotides as a triplet



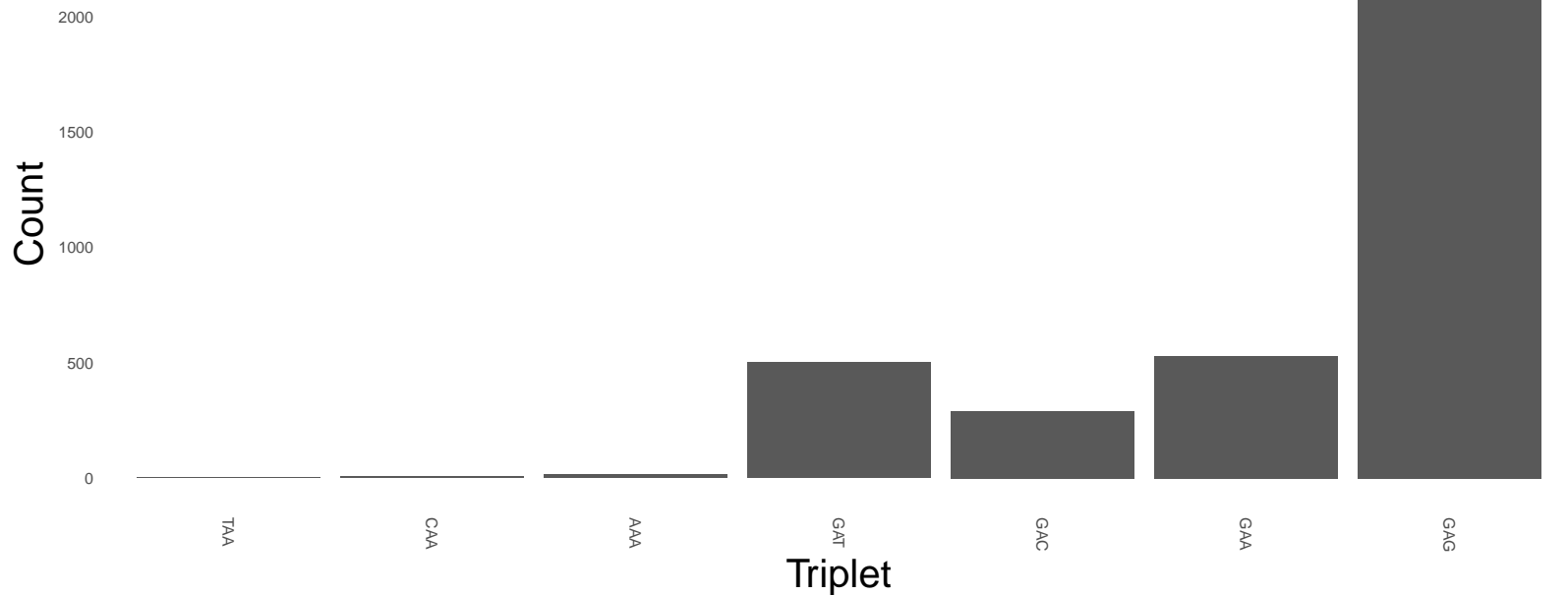
IGHV3-59\*01\_C69T\_C86G\_C118T\_T136C\_C163G\_A172T\_G175A\_G176C\_G197A\_G198C\_C2



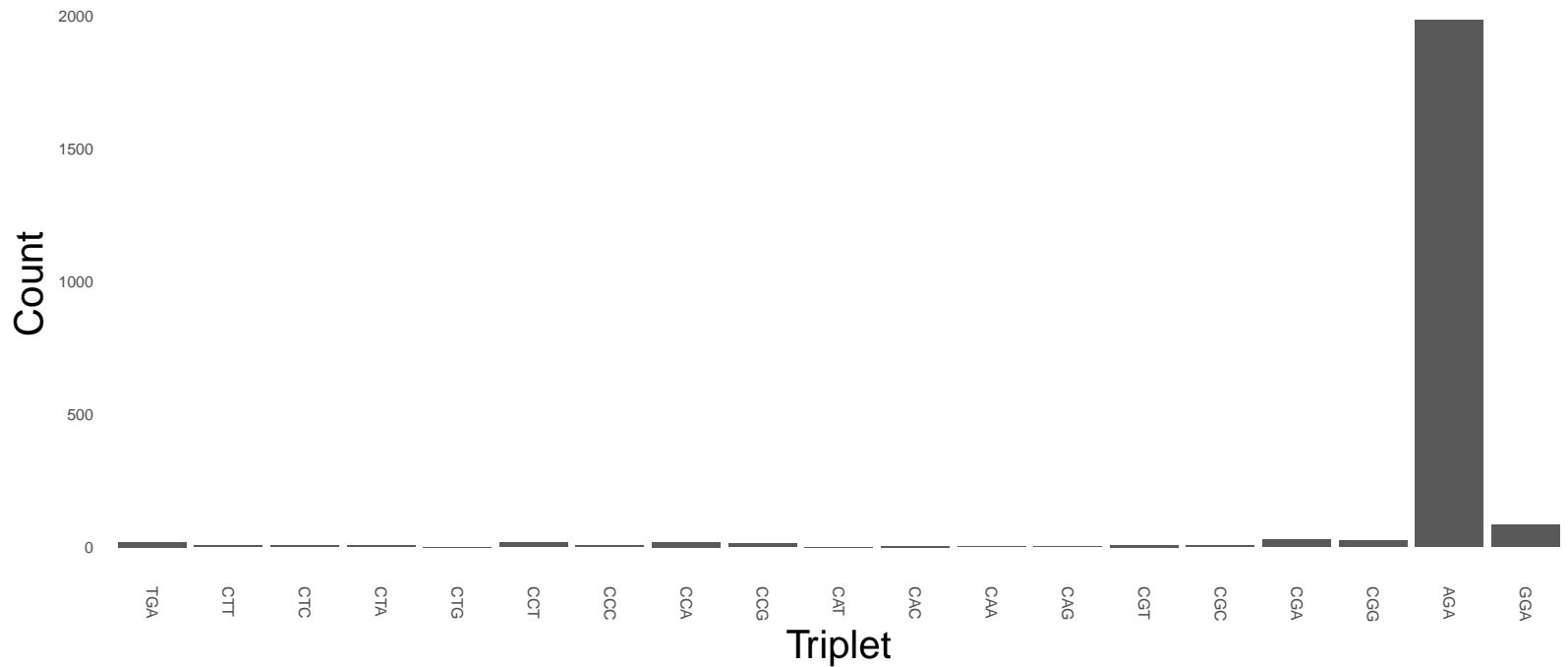
IGHV6-1\*01\_G280T- Final 3 nucleotides as a triplet



IGHV4-169\*01\_T60C\_G61C- Final 3 nucleotides as a triplet

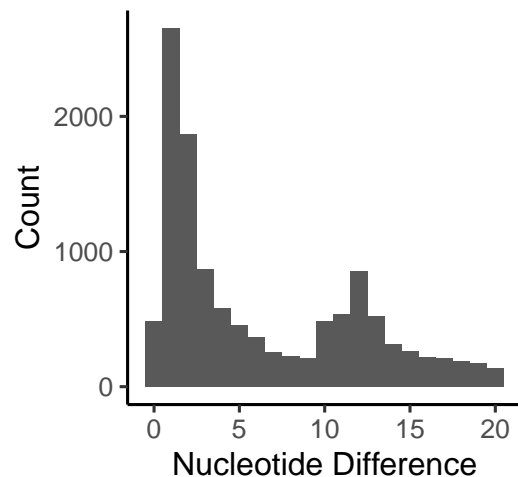


IGHV4-169\*02\_T60C\_G61C- Final 3 nucleotides as a triplet



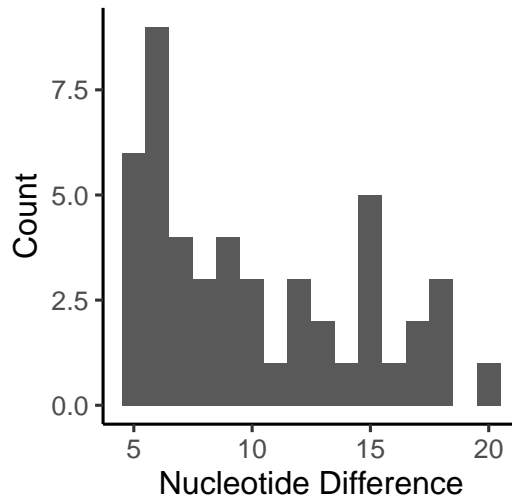
### IGHV2S1\*01\_G289T

12743 sequences assigned  
485 (3.8%) exact matches, in which:  
483 unique CDR3  
5 unique J



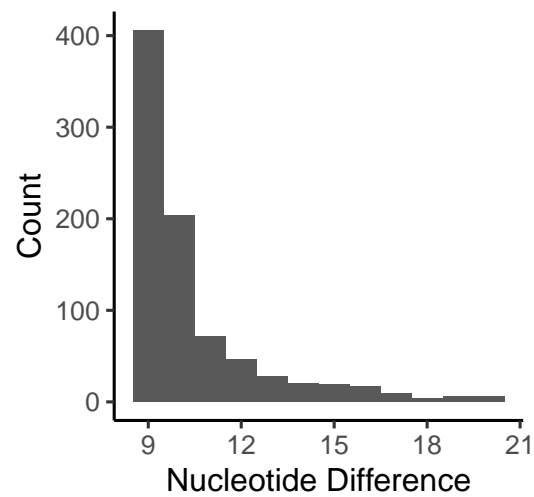
### IGHV3S43\*01

72 sequences assigned  
No exact matches.



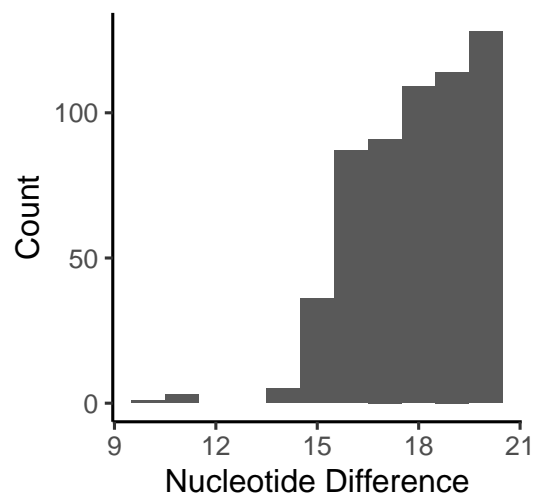
### IGHV1-151\*01

851 sequences assigned  
No exact matches.



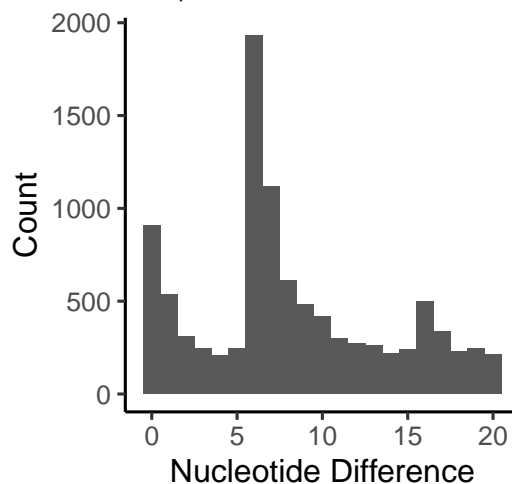
### IGHV3S3\*01

3706 sequences assigned  
No exact matches.



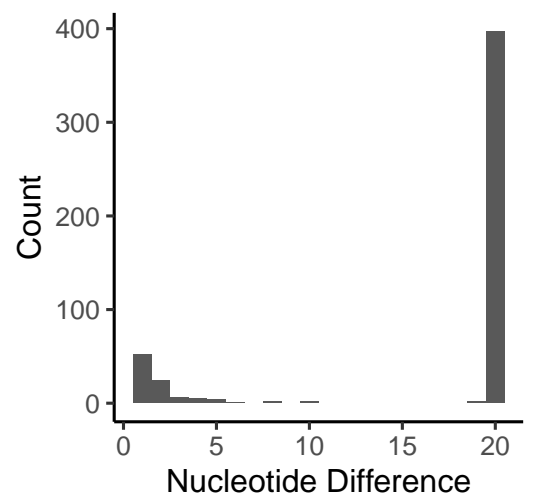
### IGHV4S2\*01\_G248C

11201 sequences assigned  
907 (8.1%) exact matches, in which:  
875 unique CDR3  
5 unique J



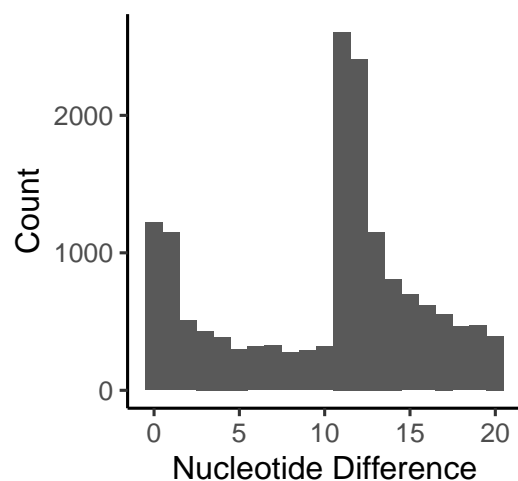
### IGHV1-156D\*01

1037 sequences assigned  
No exact matches.



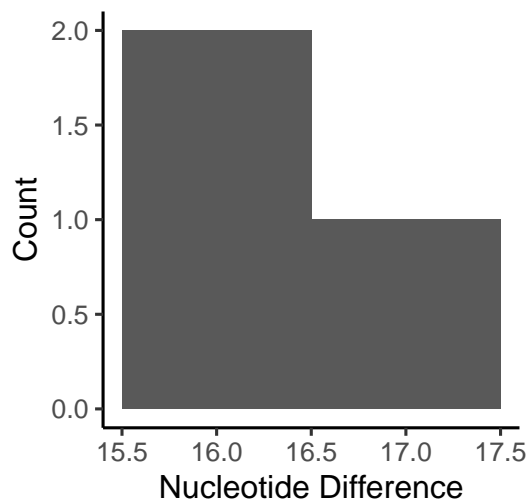
### IGHV3S42\*01\_C27A\_C3

34719 sequences assigned  
1221 (3.5%) exact matches, in which:  
1117 unique CDR3  
5 unique J



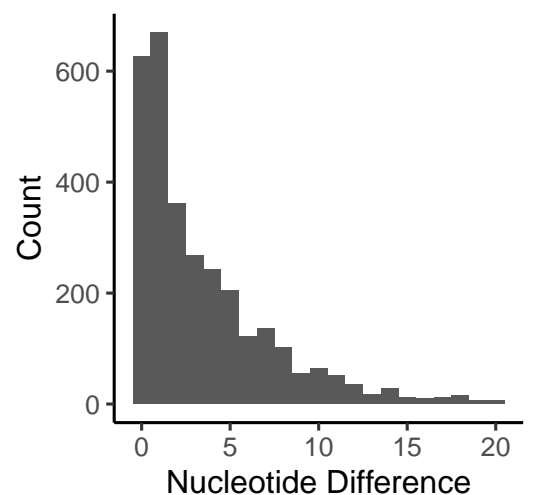
### IGHV1-138\*01

3 sequences assigned  
No exact matches.



### IGHV2-10\*01\_C6G\_A23

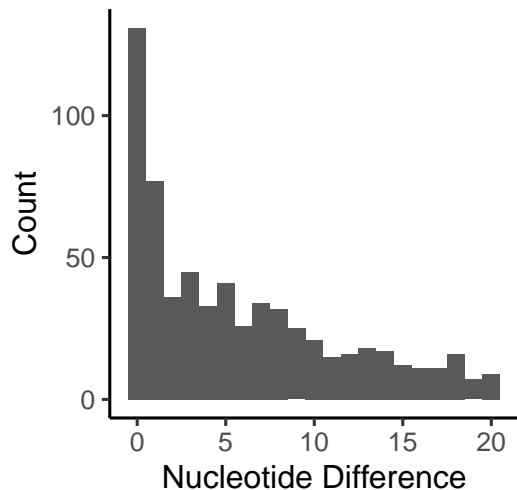
3090 sequences assigned  
627 (20.3%) exact matches, in which:  
577 unique CDR3  
5 unique J





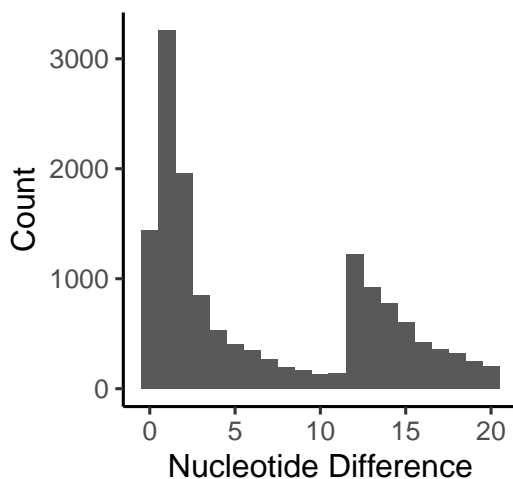
### IGHV3-13\*01\_C301G

2267 sequences assigned  
131 (5.8%) exact matches, in which:  
120 unique CDR3  
5 unique J



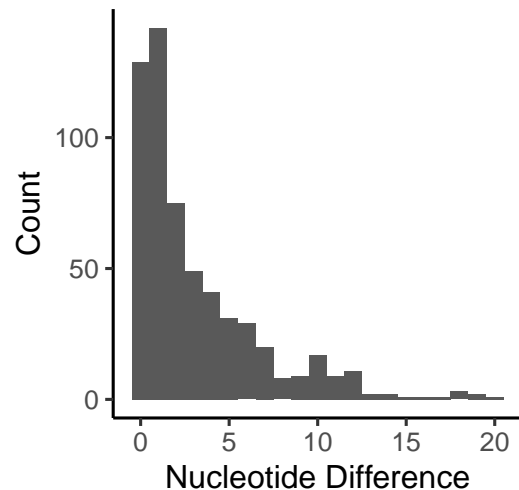
### IGHV3-59\*01\_C69T\_C8

16764 sequences assigned  
1444 (8.6%) exact matches, in which:  
1338 unique CDR3  
5 unique J



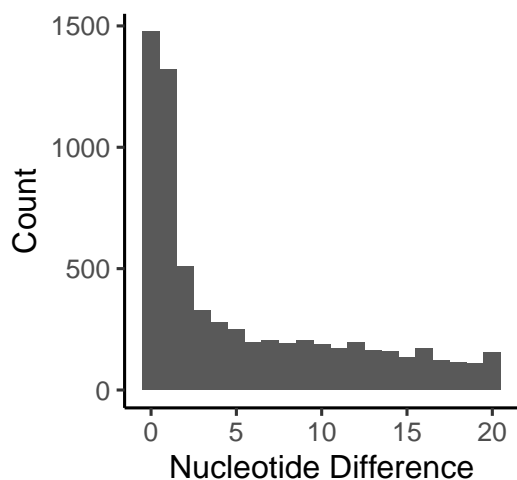
### IGHV3-175\*01\_G48A\_A8

585 sequences assigned  
129 (22.1%) exact matches, in which:  
115 unique CDR3  
5 unique J



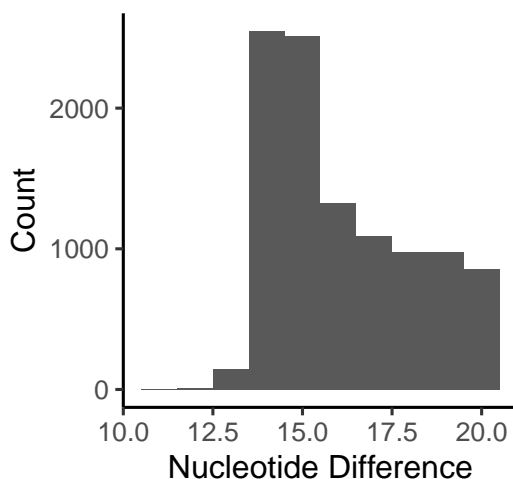
### IGHV3-16\*01\_A51T\_T7

19452 sequences assigned  
1476 (7.6%) exact matches, in which:  
1329 unique CDR3  
5 unique J



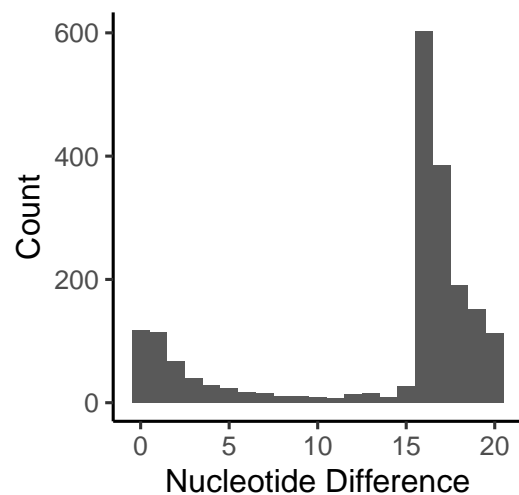
### IGHV3-108\*01

16279 sequences assigned  
No exact matches.



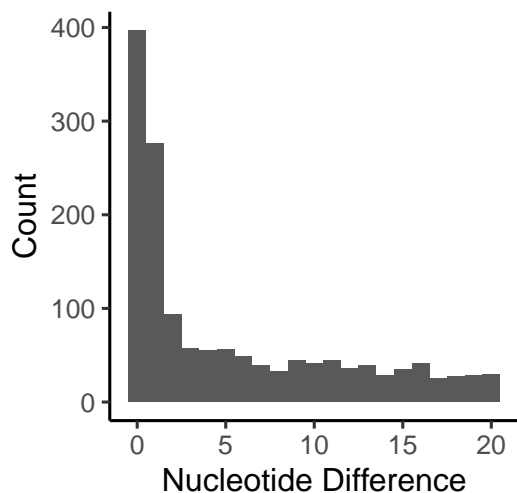
### IGHV3-183\*02\_C164T\_A

2949 sequences assigned  
118 (4%) exact matches, in which:  
109 unique CDR3  
5 unique J



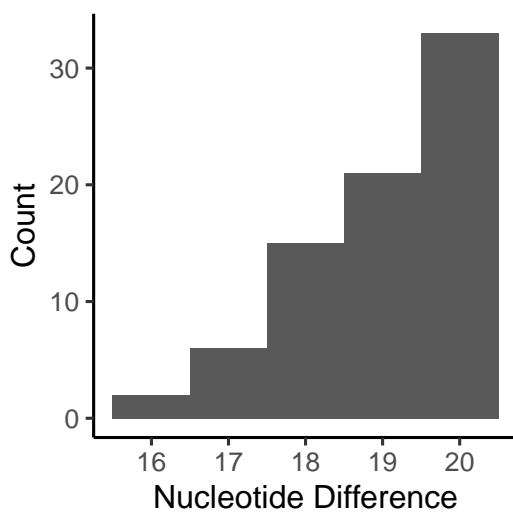
### IGHV3-28\*02\_C118T\_G2

2127 sequences assigned  
397 (18.7%) exact matches, in which:  
365 unique CDR3  
5 unique J



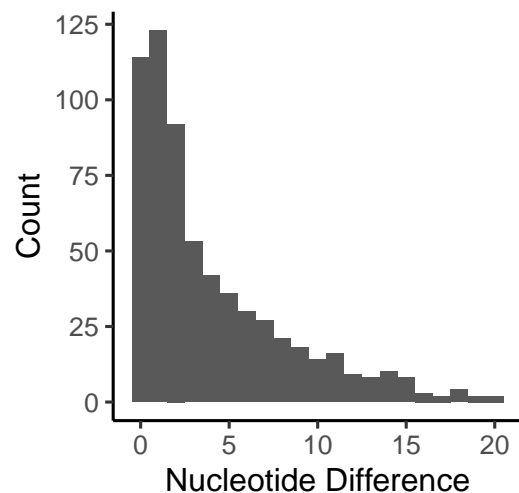
### IGHV3-137\*01

4933 sequences assigned  
No exact matches.



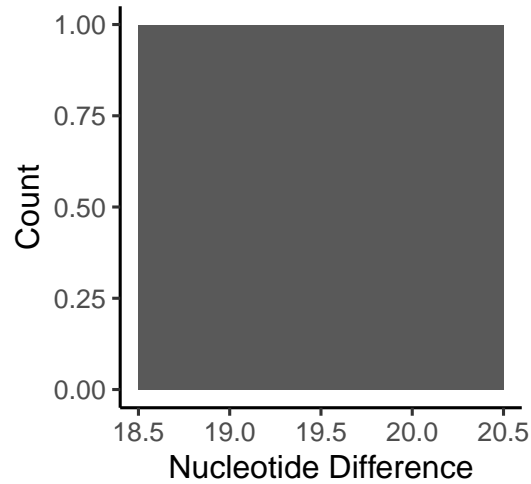
### IGHV3-183\*02\_C164T\_A

782 sequences assigned  
114 (14.6%) exact matches, in which:  
106 unique CDR3  
4 unique J



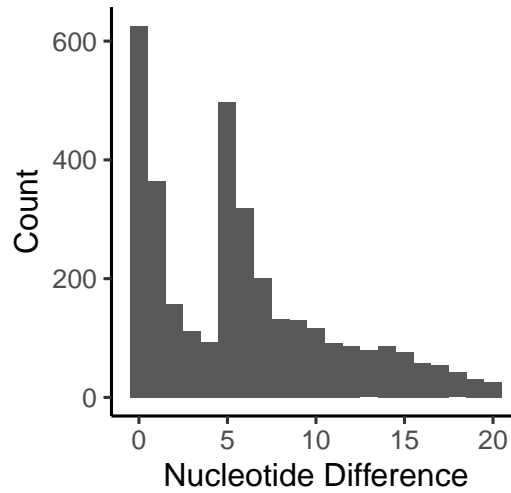
### IGHV3-201\*01

2 sequences assigned  
No exact matches.



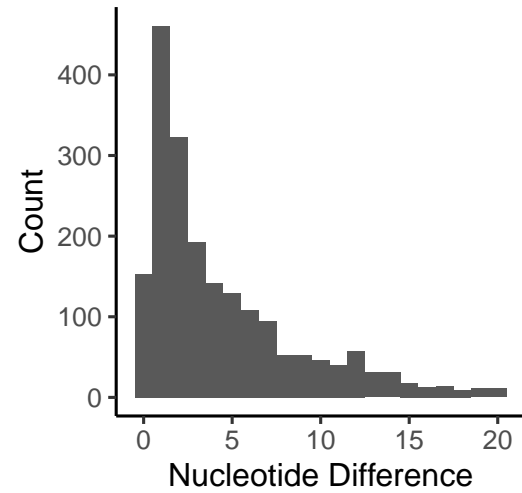
### IGHV4-169\*01\_T60C\_GG

3639 sequences assigned  
626 (17.2%) exact matches, in which:  
597 unique CDR3  
5 unique J



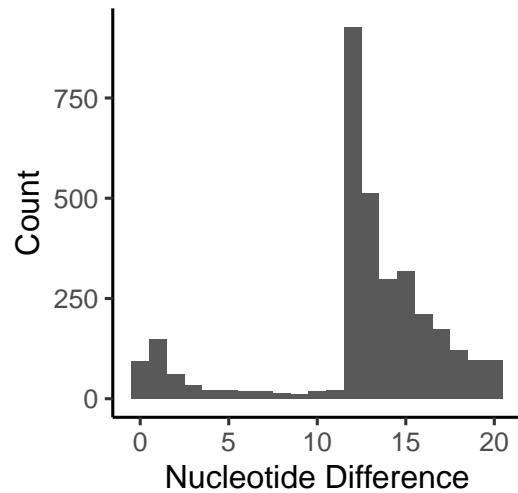
### IGHV6-1\*01\_G280T

2035 sequences assigned  
153 (7.5%) exact matches, in which:  
150 unique CDR3  
5 unique J



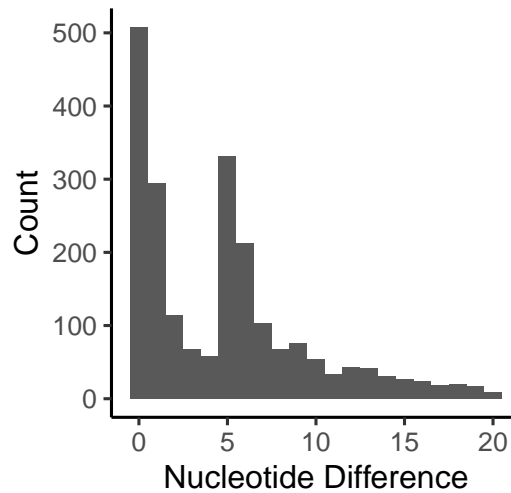
### IGHV4-93\*02\_C297G

3860 sequences assigned  
94 (2.4%) exact matches, in which:  
93 unique CDR3  
5 unique J



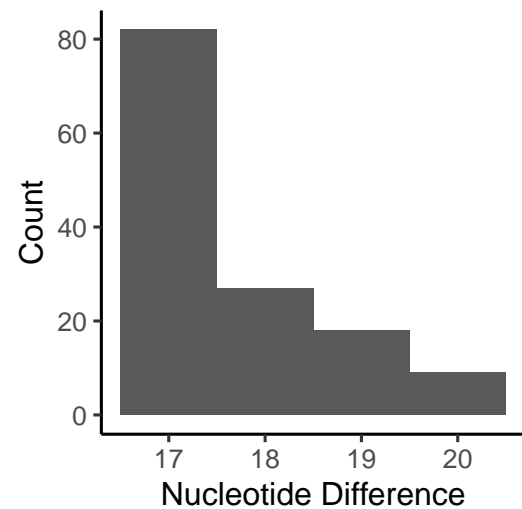
### IGHV4-169\*02\_T60C\_GG

2244 sequences assigned  
508 (22.6%) exact matches, in which:  
487 unique CDR3  
5 unique J



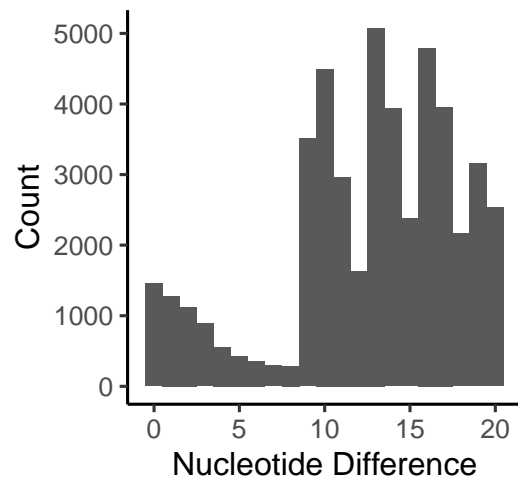
### IGHV7-94\*01

155 sequences assigned  
No exact matches.



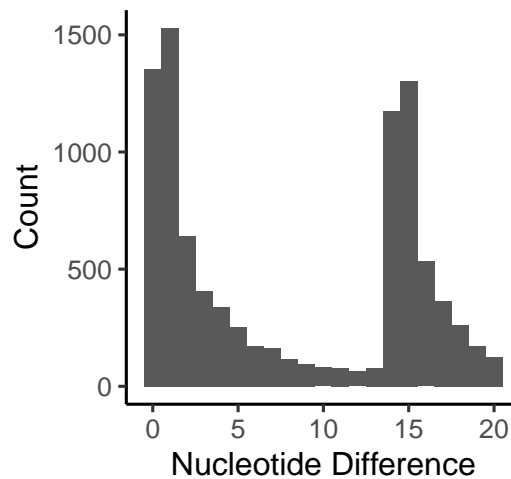
### IGHV4-127\*01\_T82G\_A

55629 sequences assigned  
1459 (2.6%) exact matches, in which:  
1415 unique CDR3  
5 unique J



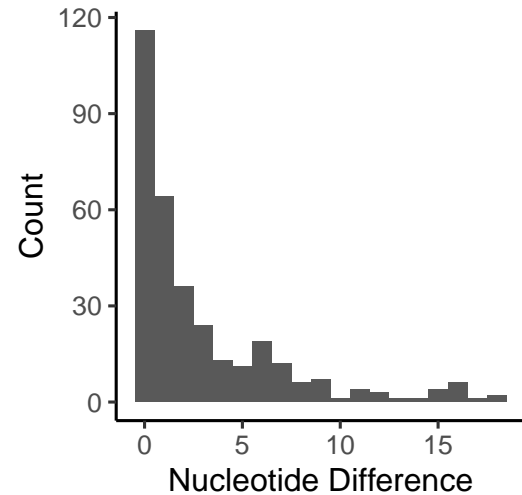
### IGHV5-20\*02\_C312T

9691 sequences assigned  
1354 (14%) exact matches, in which:  
1175 unique CDR3  
5 unique J



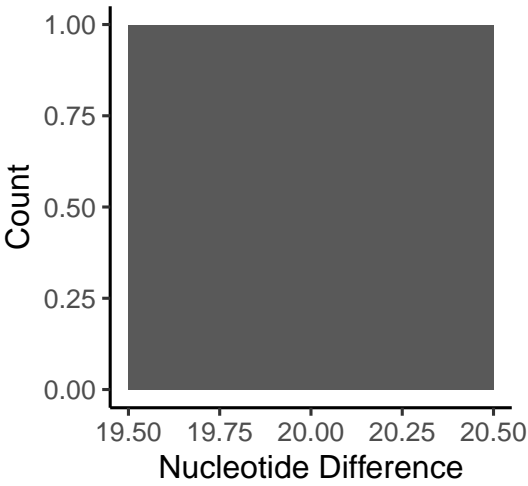
### IGHV7-114\*01\_T81A

331 sequences assigned  
116 (35%) exact matches, in which:  
107 unique CDR3  
5 unique J

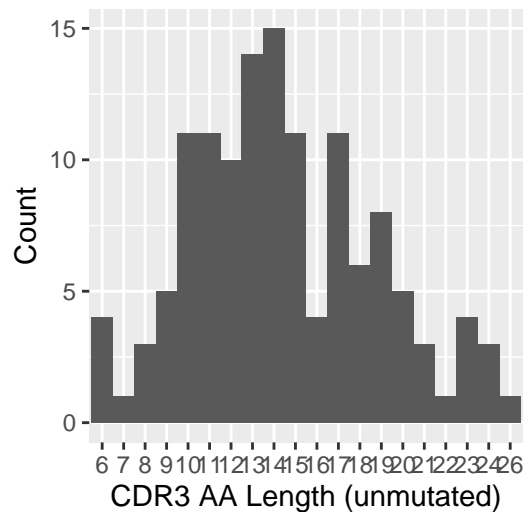


# IGHV7-128\*01

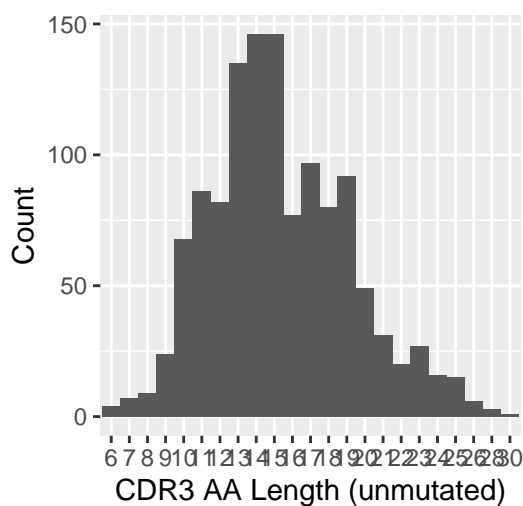
8 sequences assigned  
No exact matches.



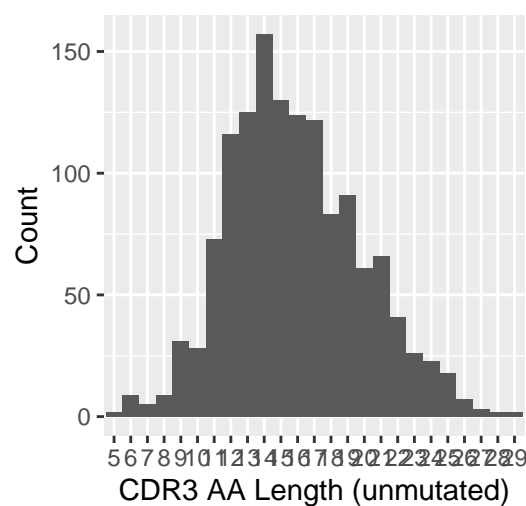
IGHV3-13\*01\_C301G



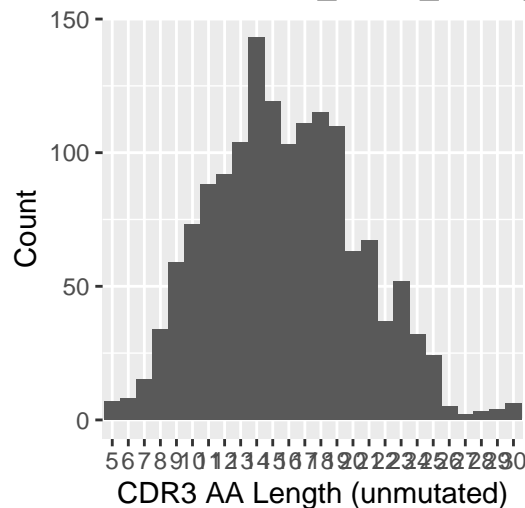
IGHV3S42\*01\_C27A\_C38T\_



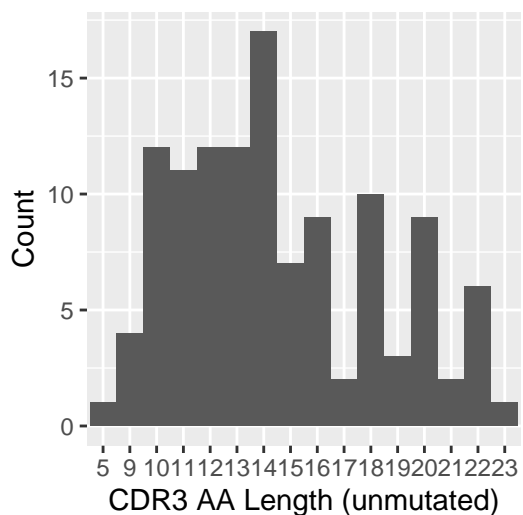
IGHV5-20\*02\_C312T



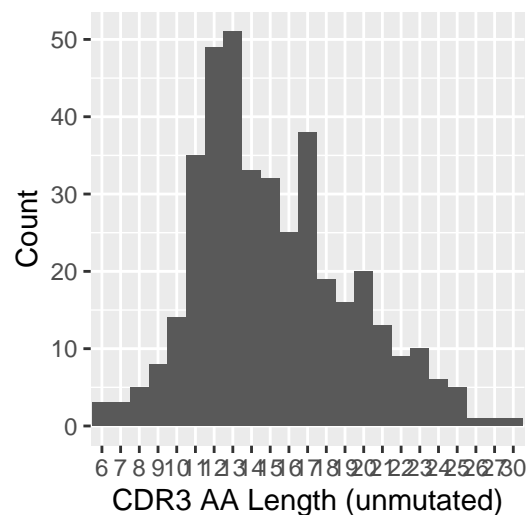
IGHV3-16\*01\_A51T\_T78C\_



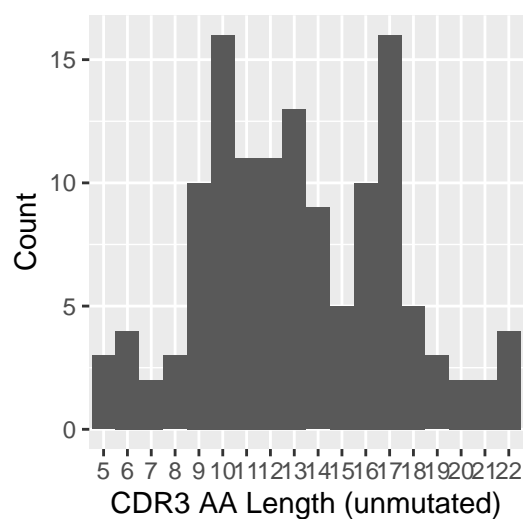
IGHV3-183\*02\_C164T\_A172



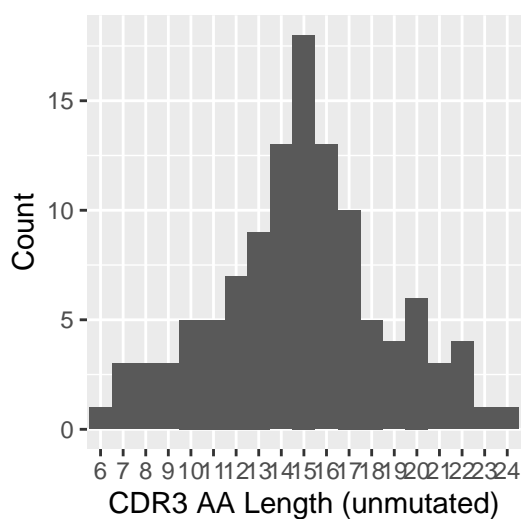
IGHV3-28\*02\_C118T\_G277



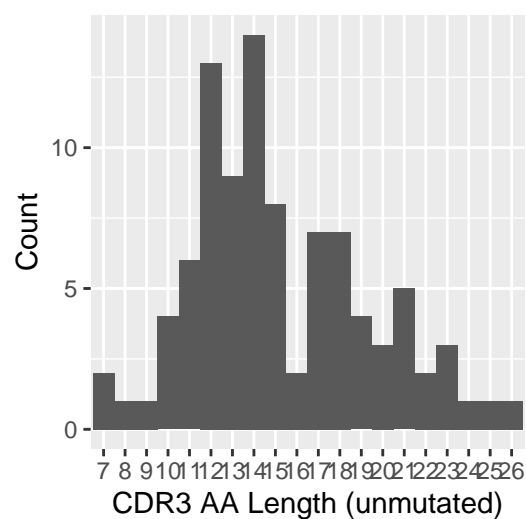
IGHV3-175\*01\_G48A\_A88G



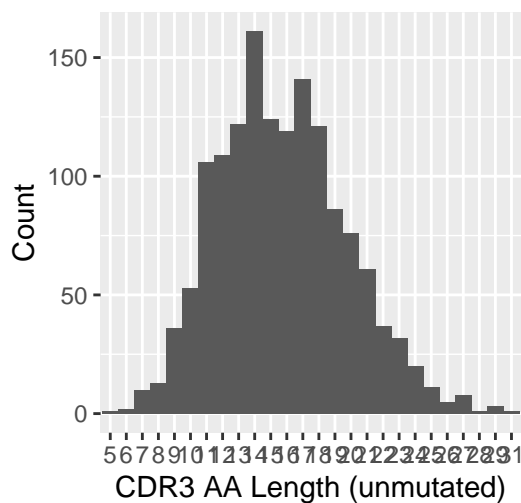
IGHV3-183\*02\_C164T\_A172



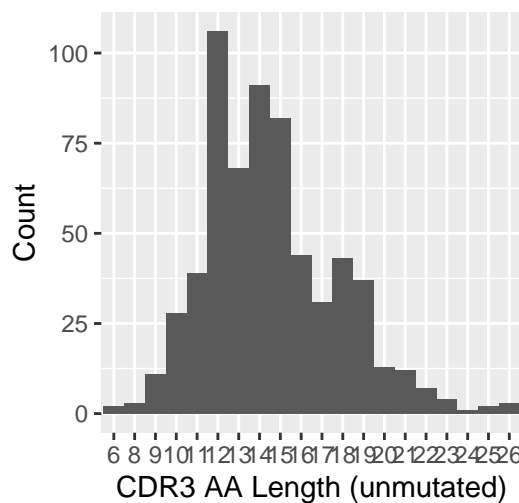
IGHV4-93\*02\_C297G



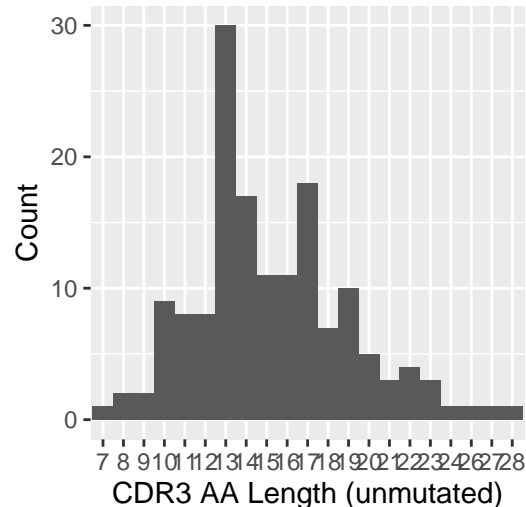
IGHV4-127\*01\_T82G\_A83C



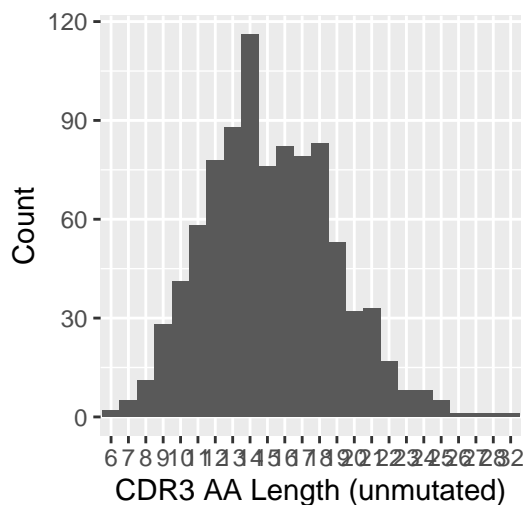
IGHV2-10\*01\_C6G\_A23G\_



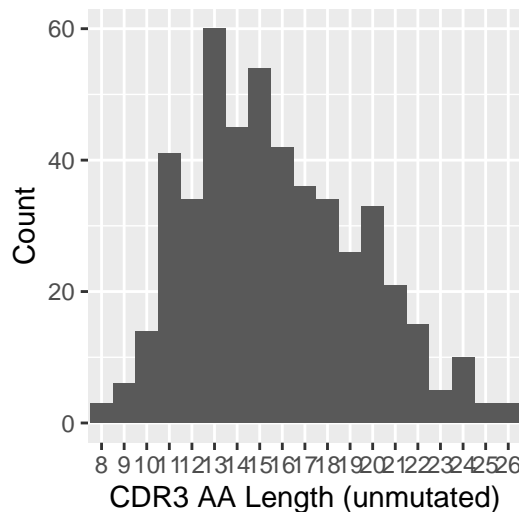
IGHV6-1\*01\_G280T



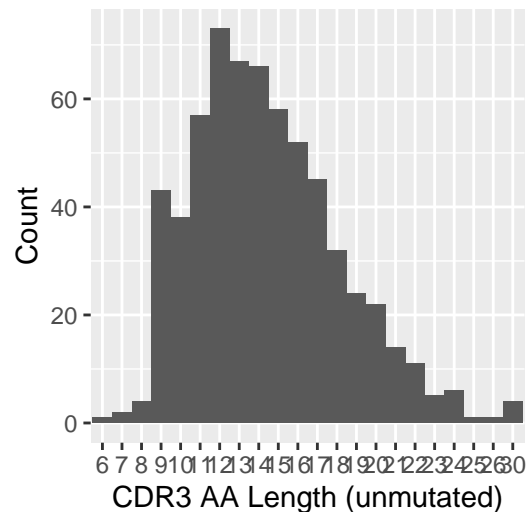
IGHV4S2\*01\_G248C



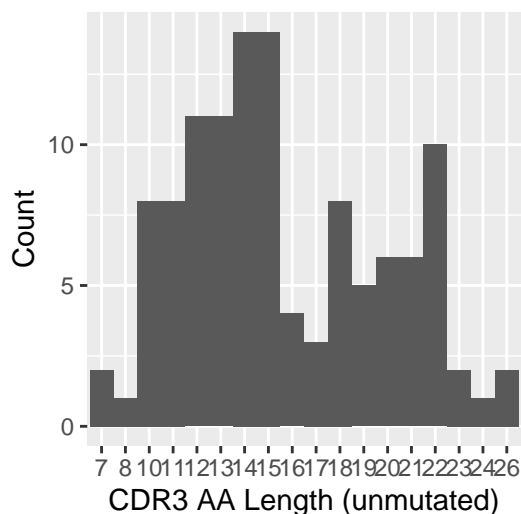
IGHV2S1\*01\_G289T



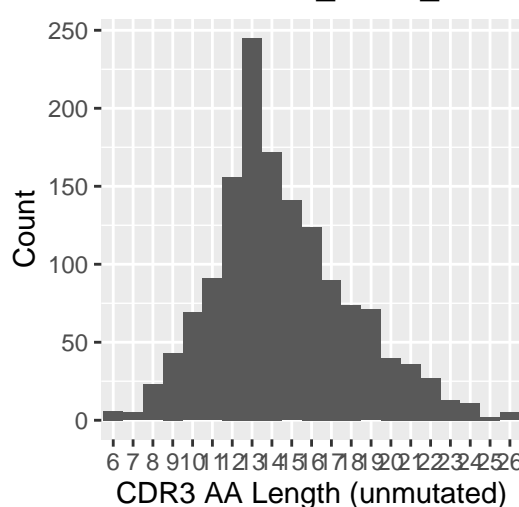
IGHV4-169\*01\_T60C\_G61C



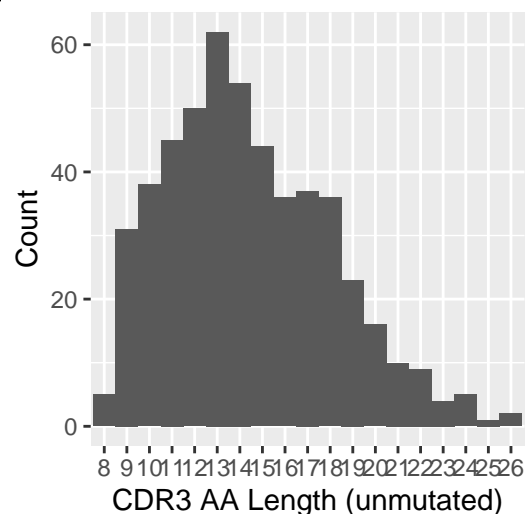
IGHV7-114\*01\_T81A

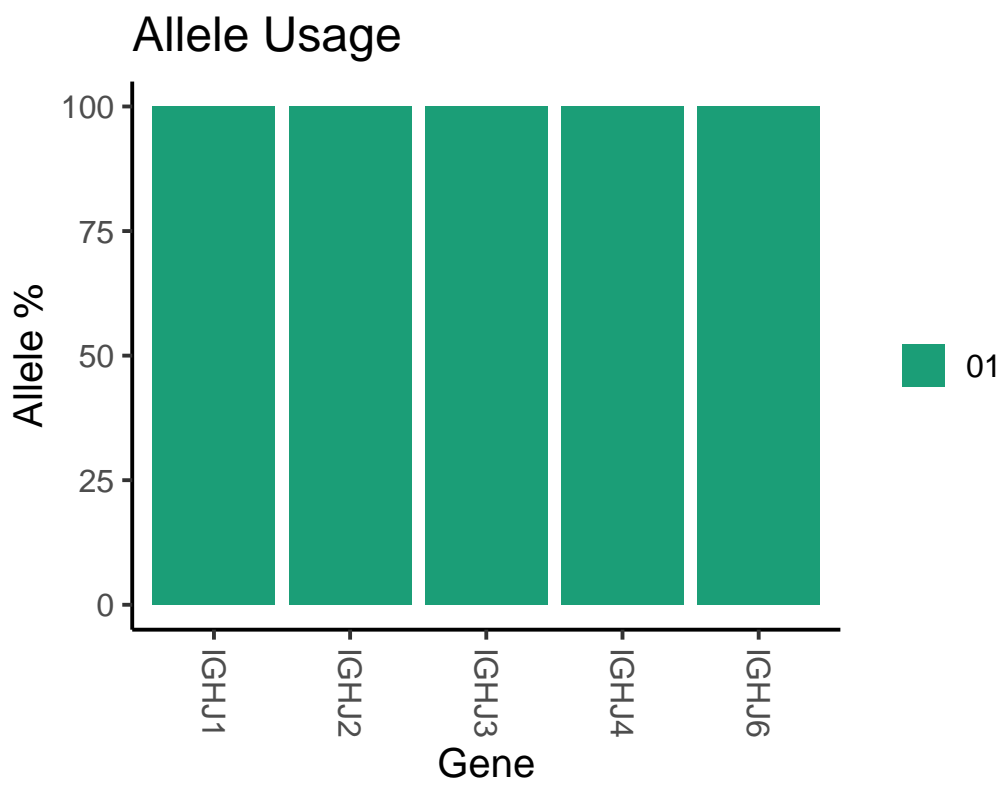


IGHV3-59\*01\_C69T\_C86G\_



IGHV4-169\*02\_T60C\_G61C





Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.