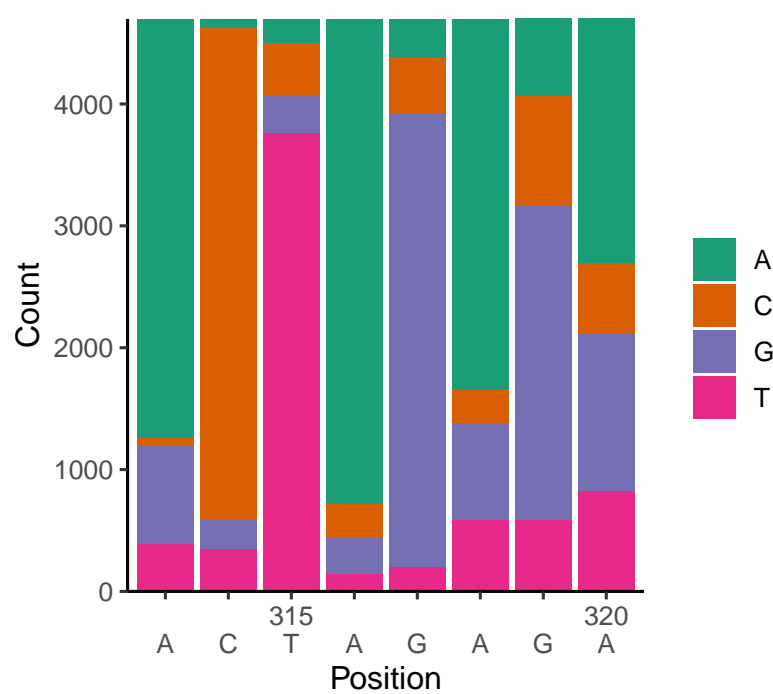
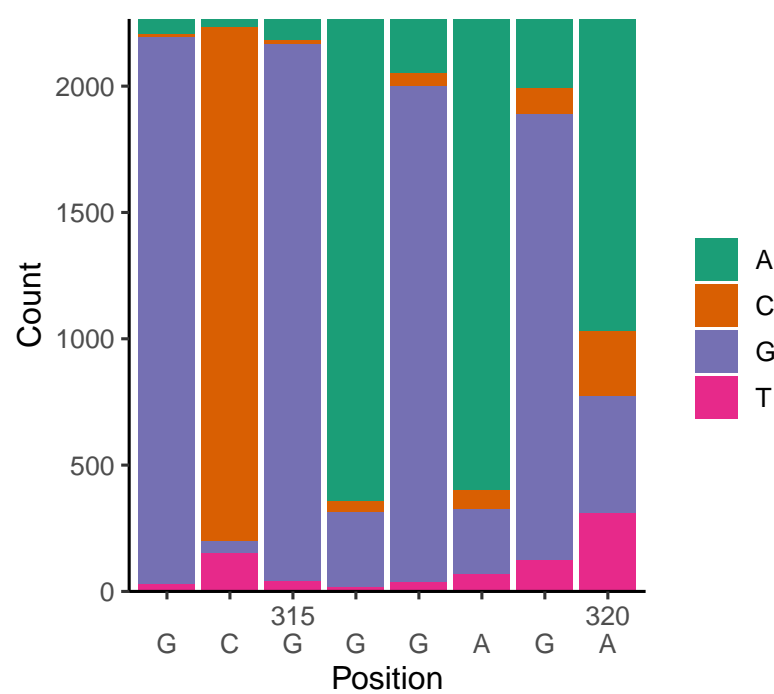


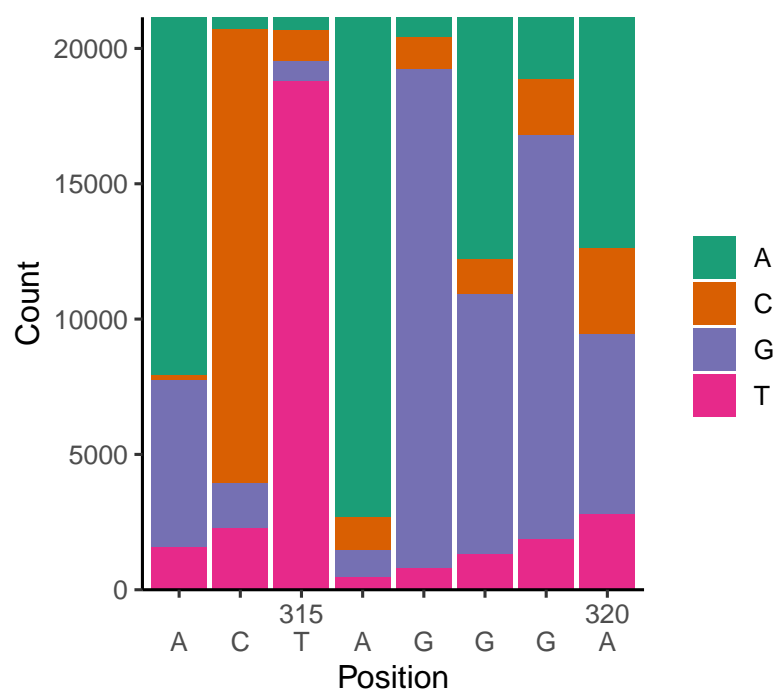
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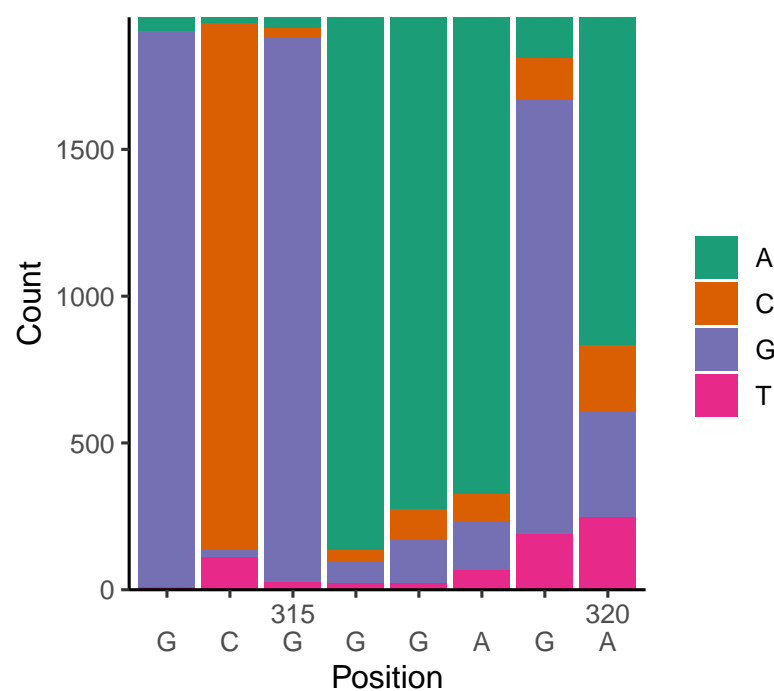
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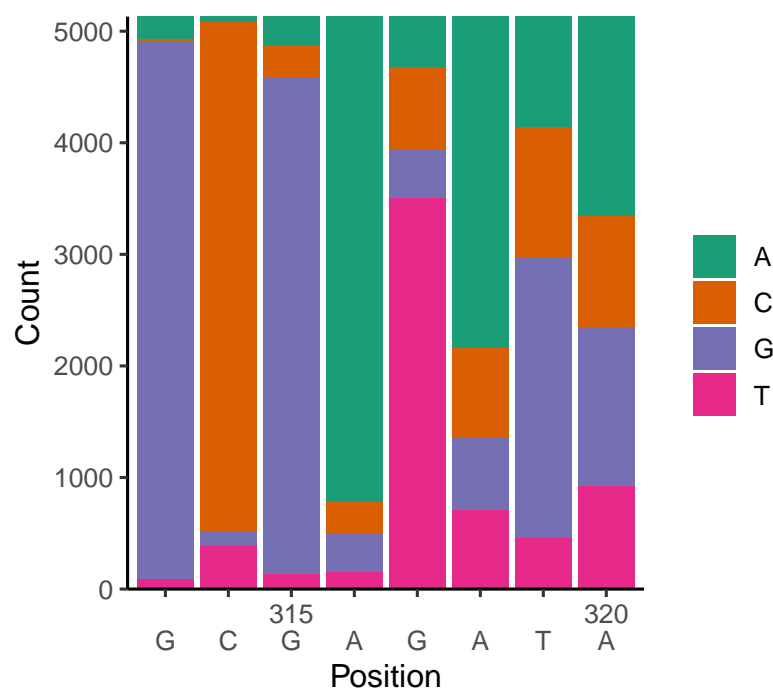
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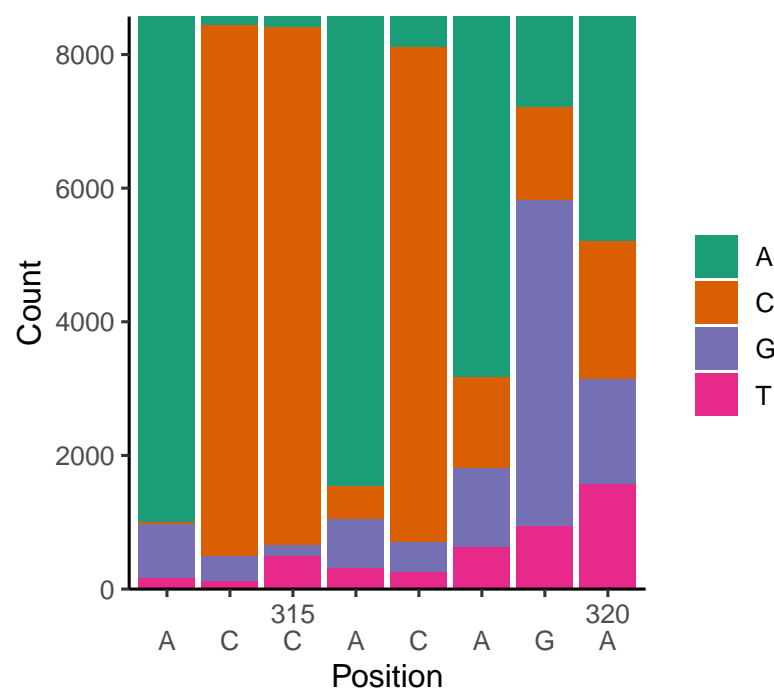
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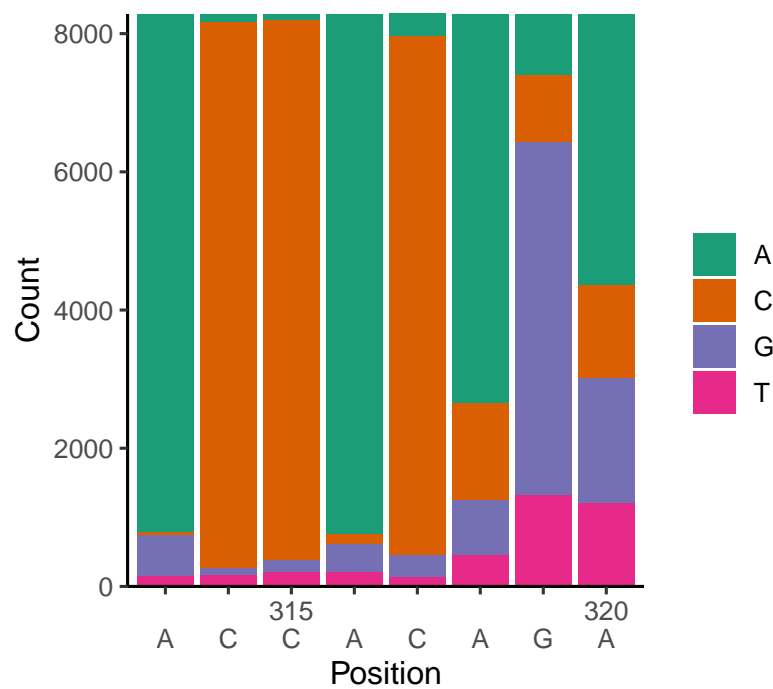
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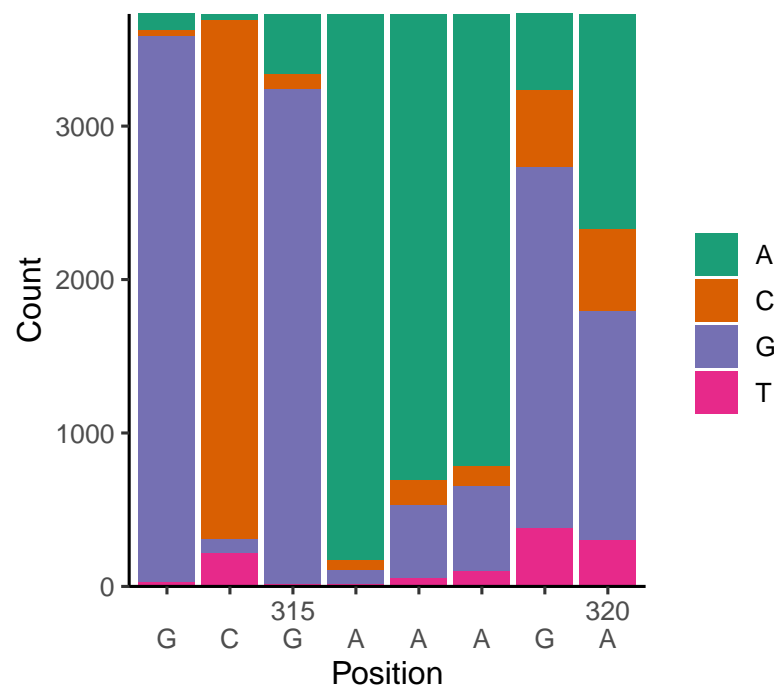
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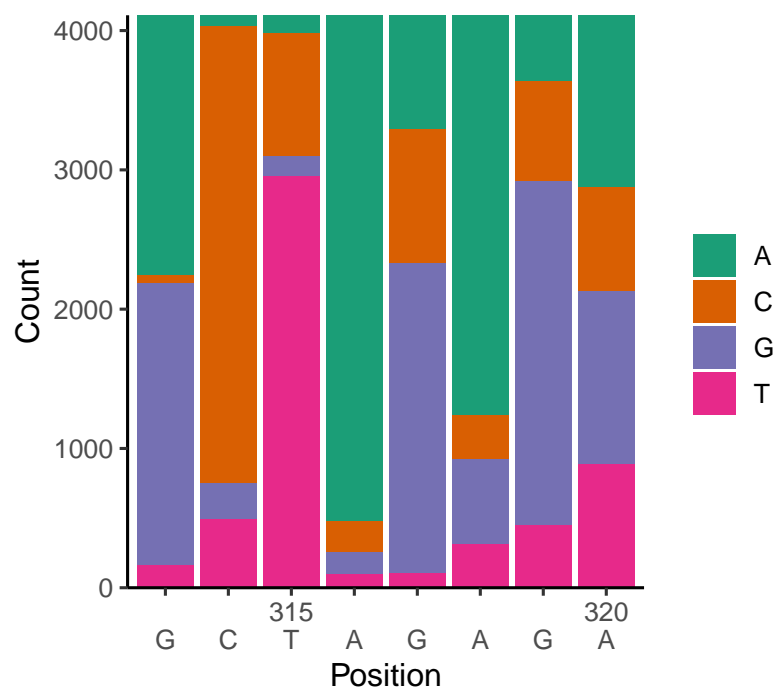
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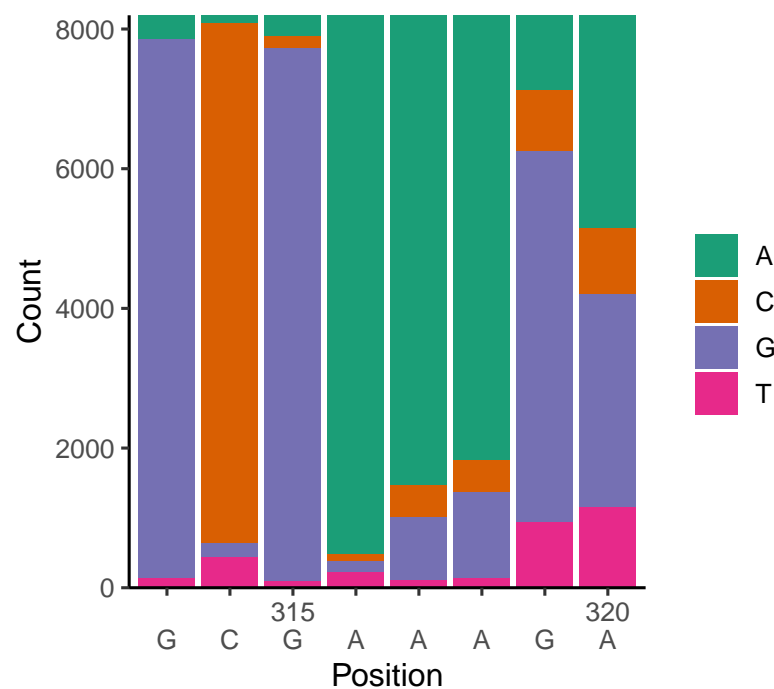
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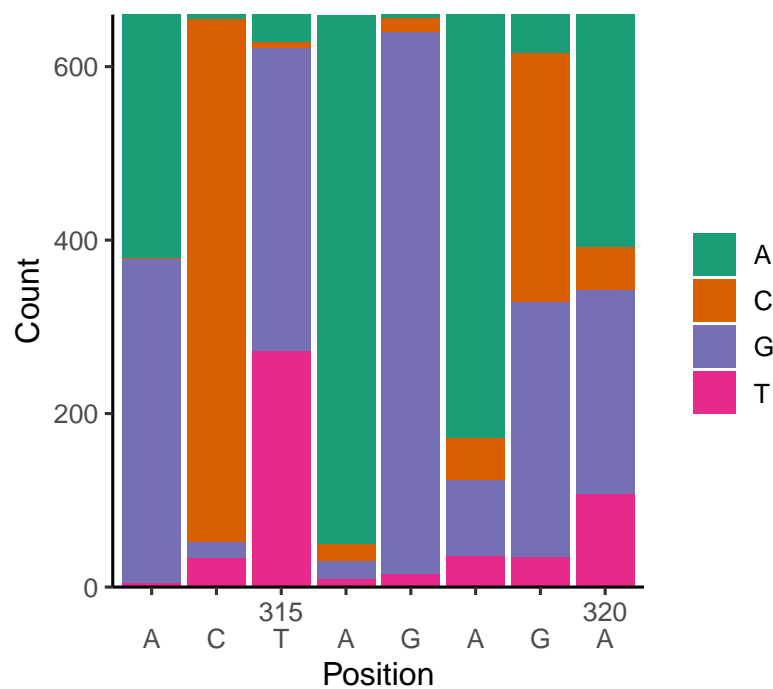
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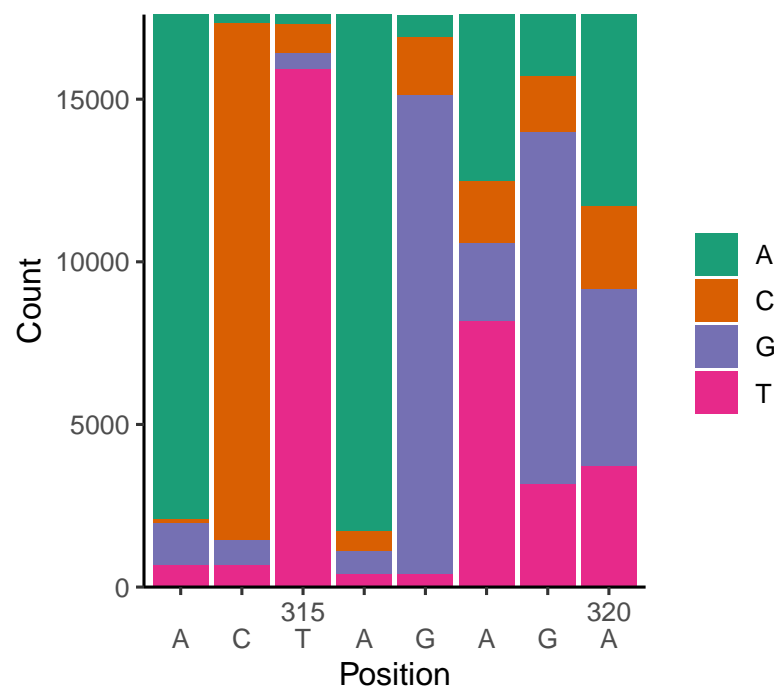
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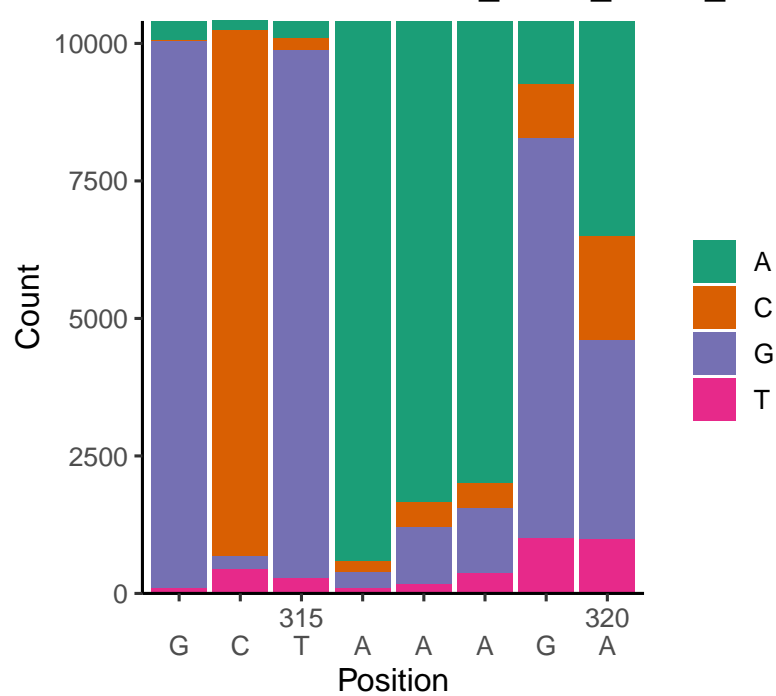
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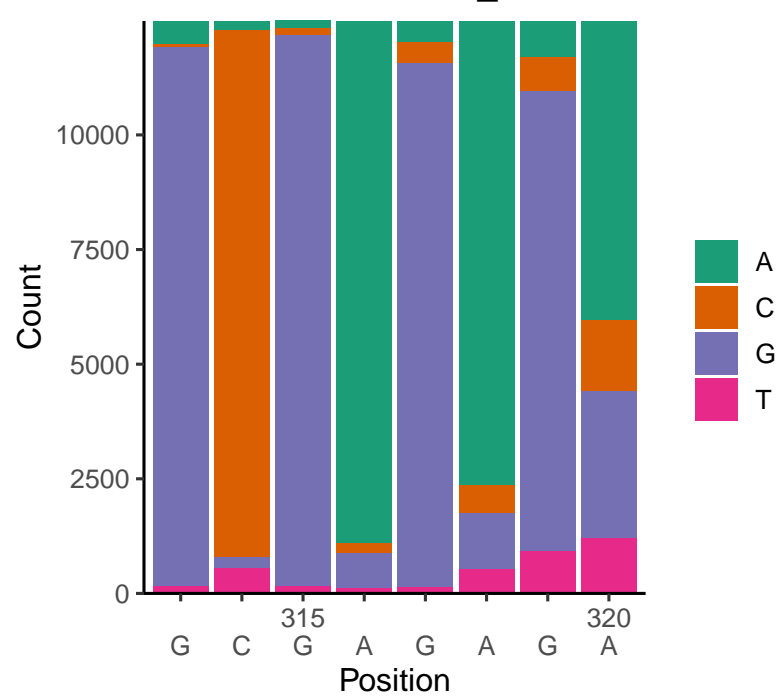
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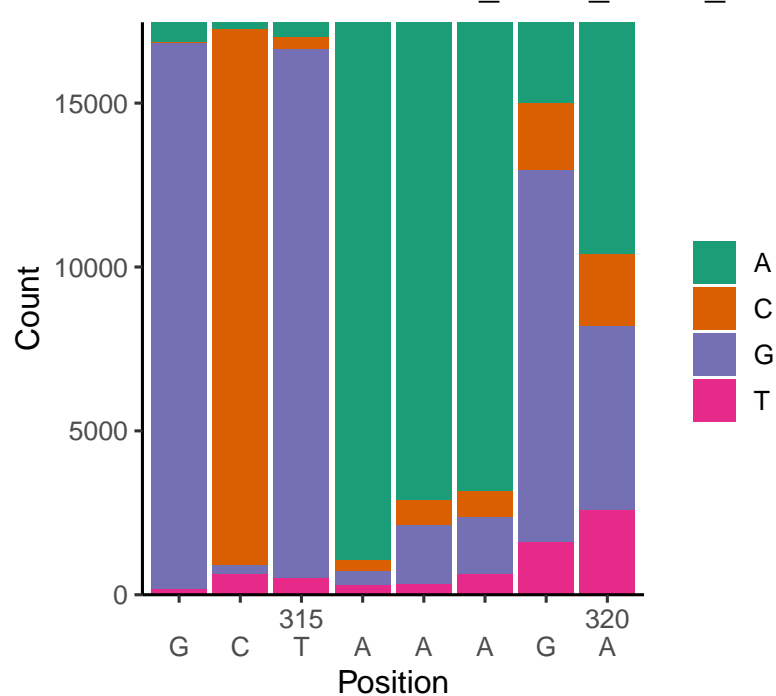
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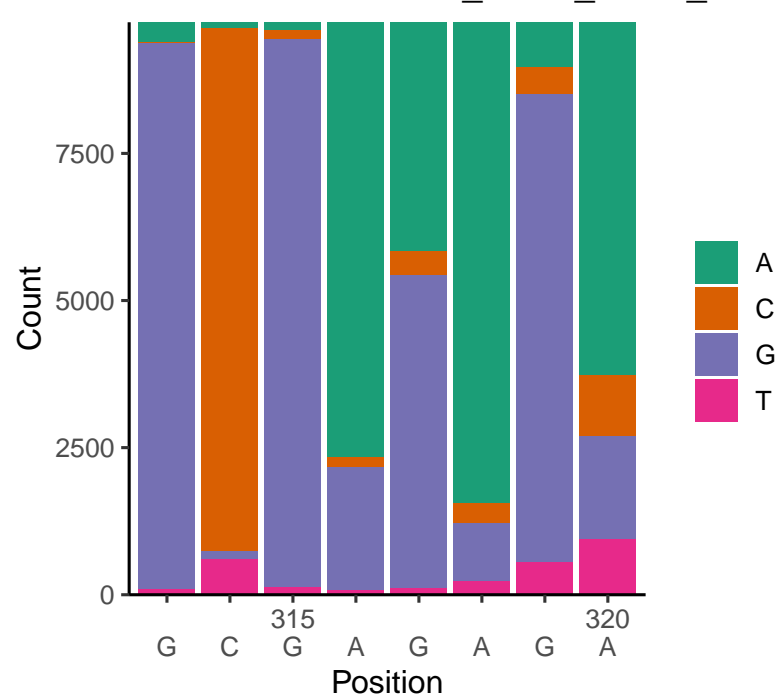
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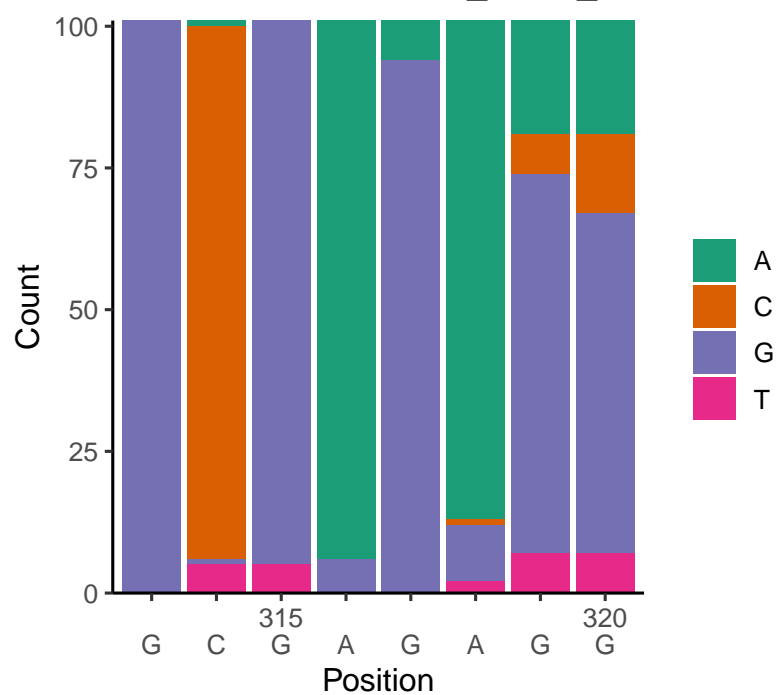
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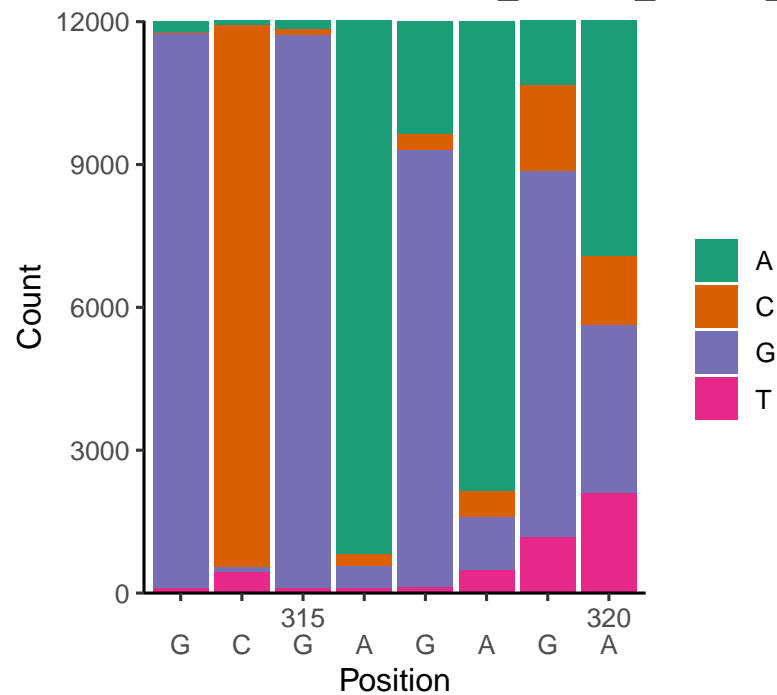
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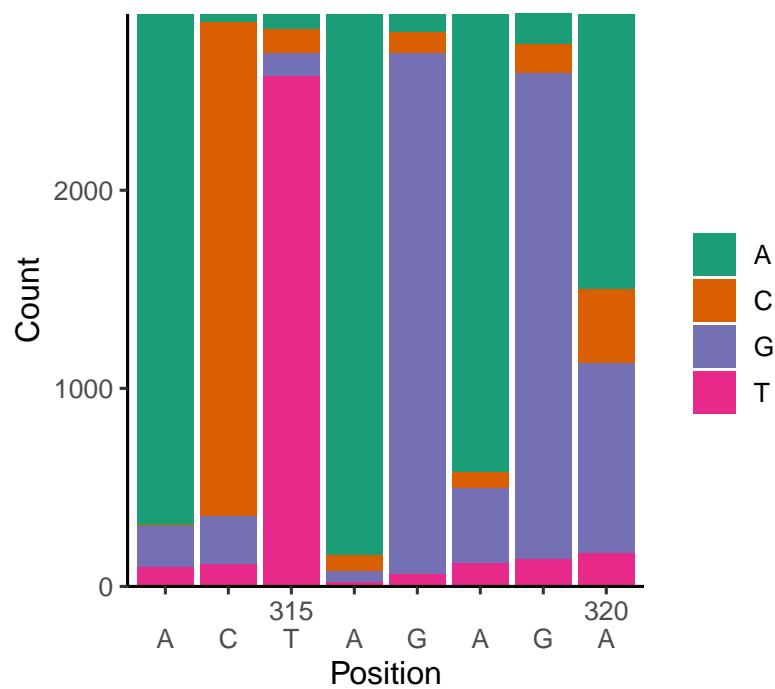
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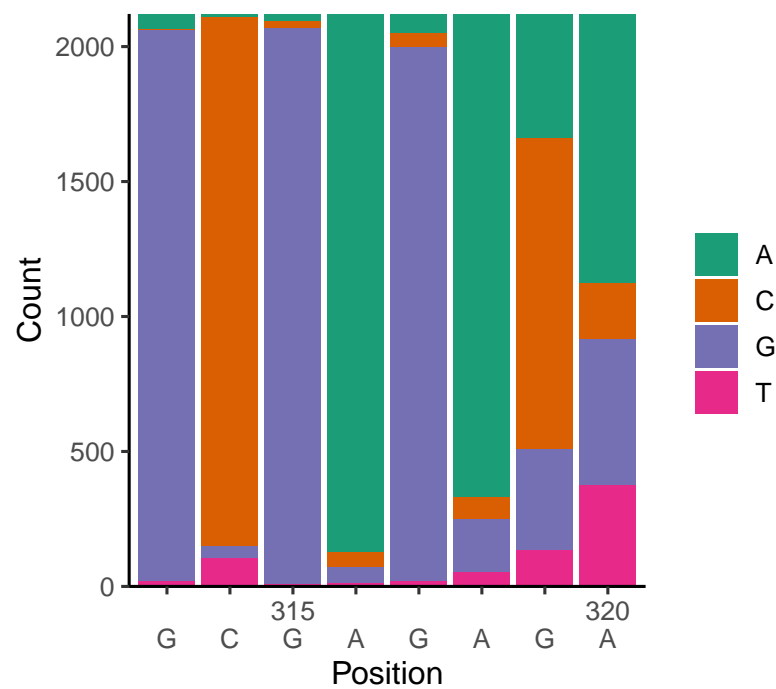
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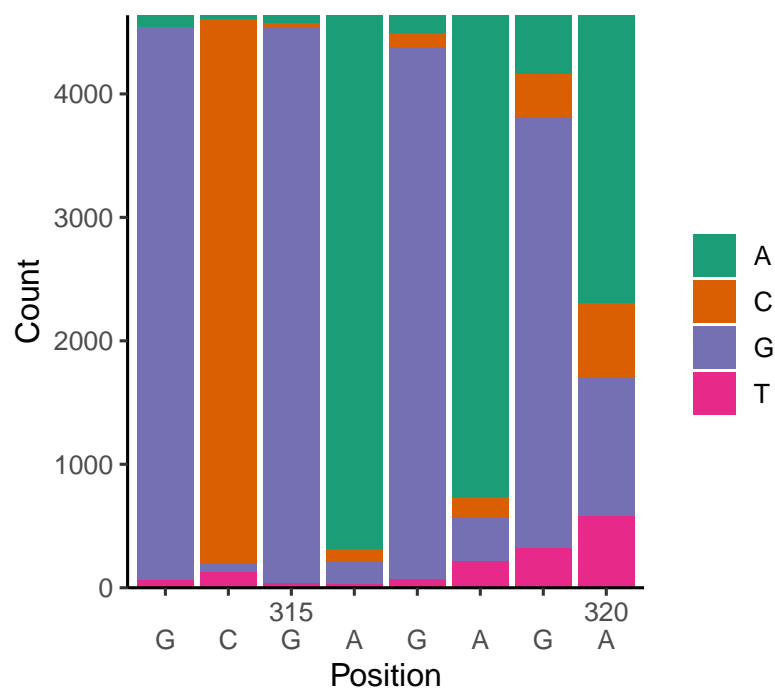
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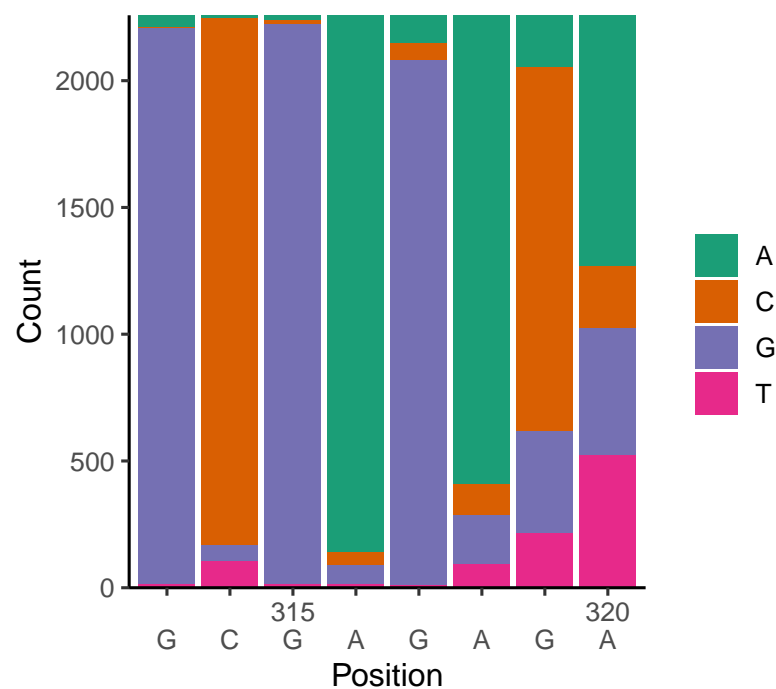
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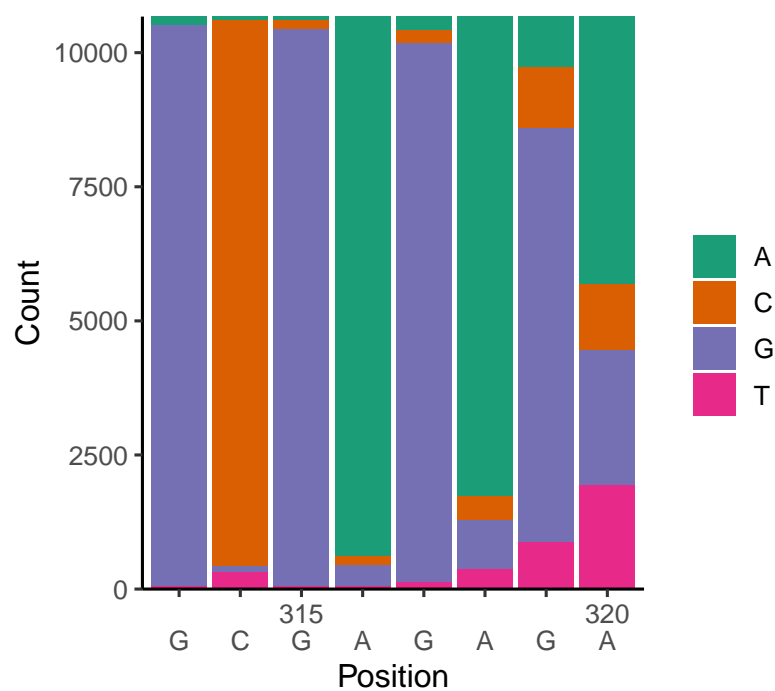
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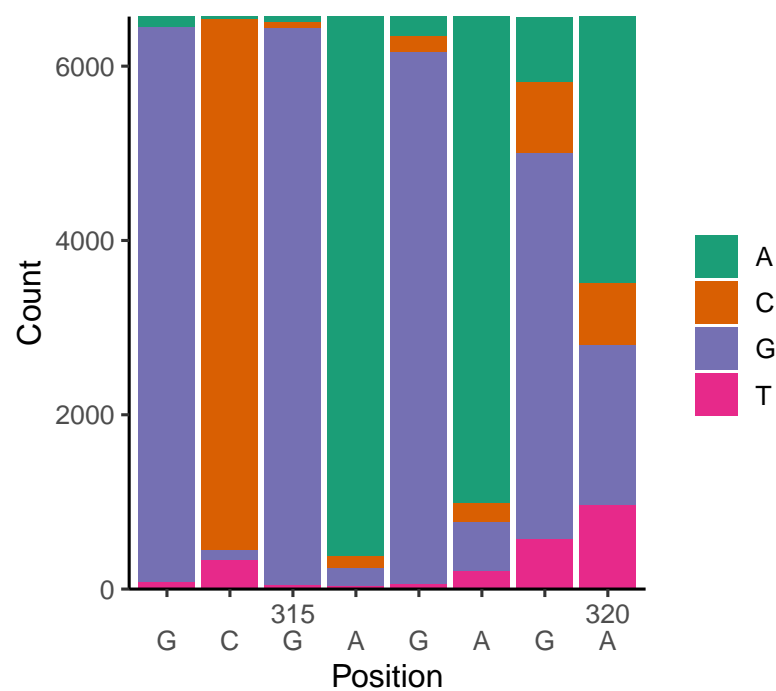
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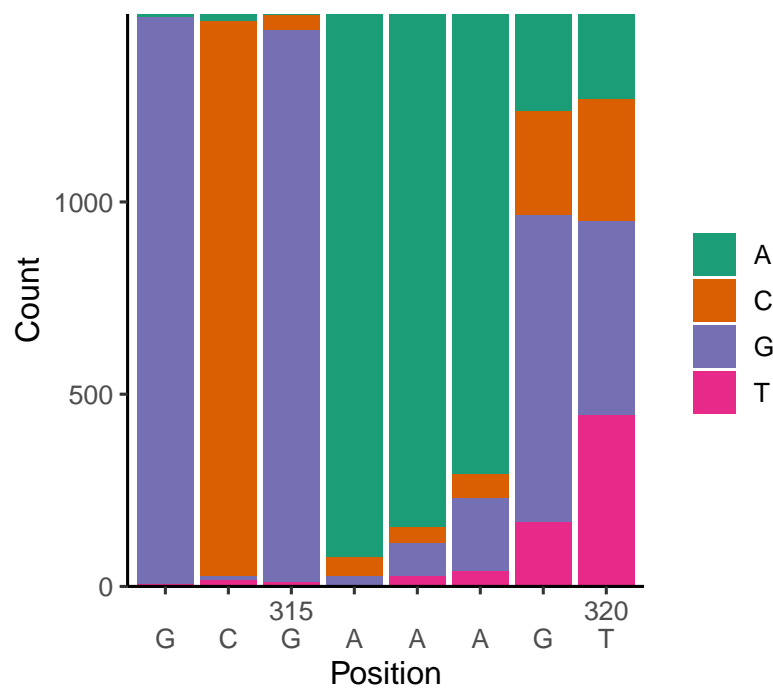
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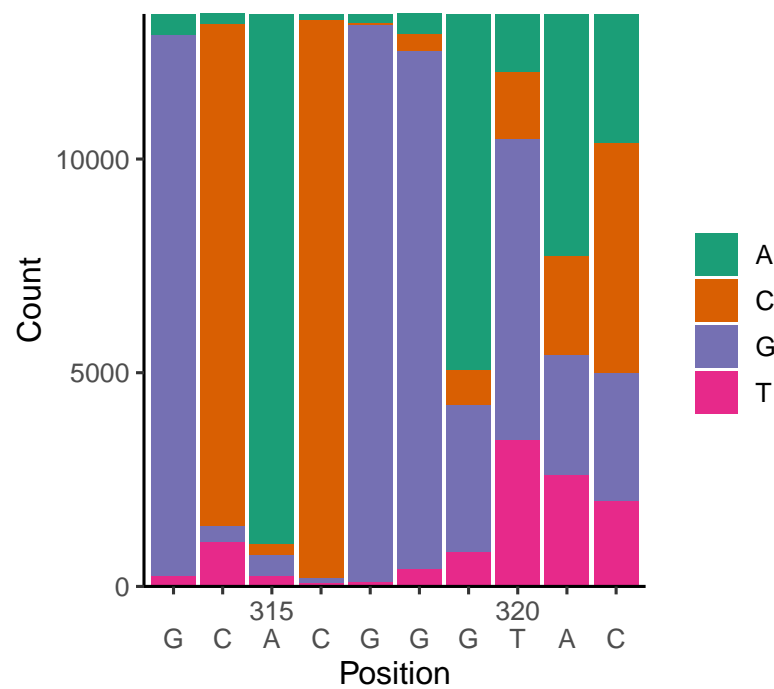
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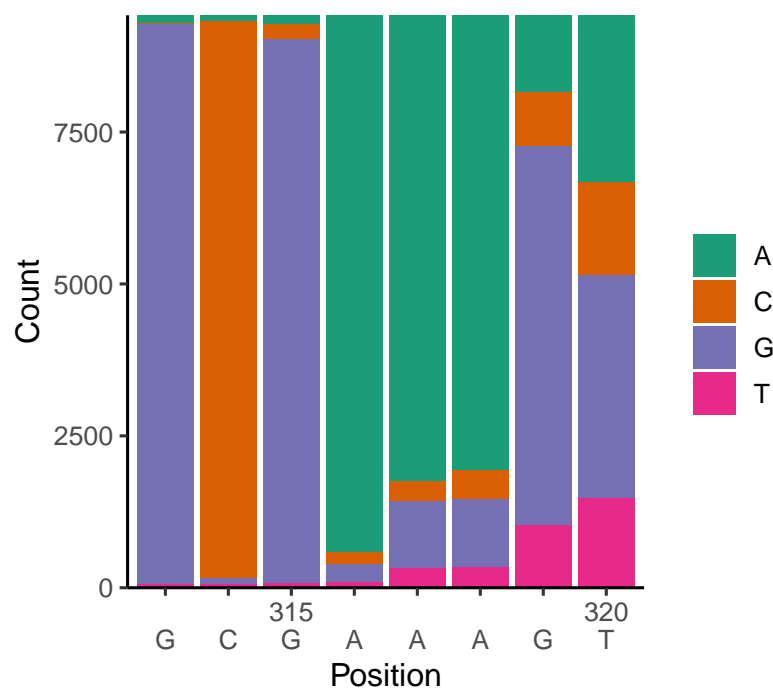
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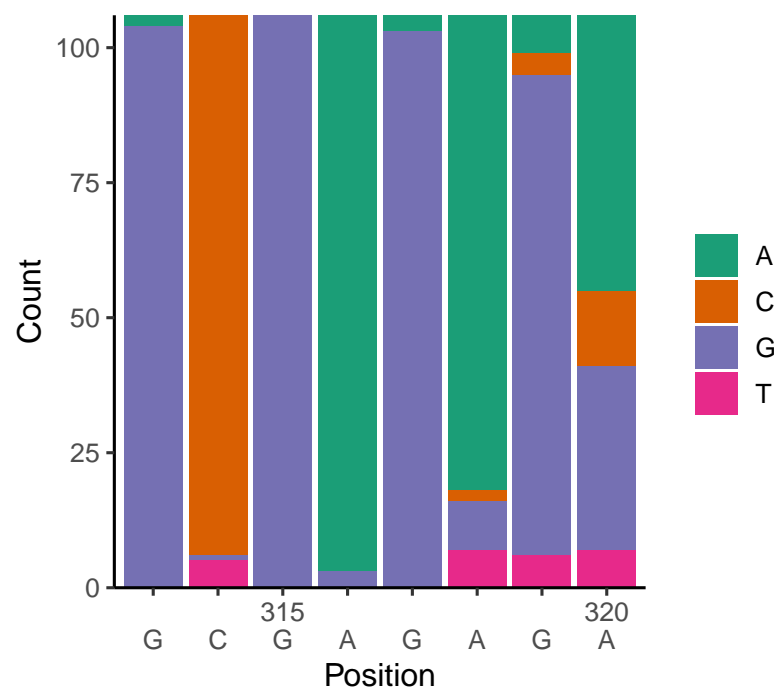
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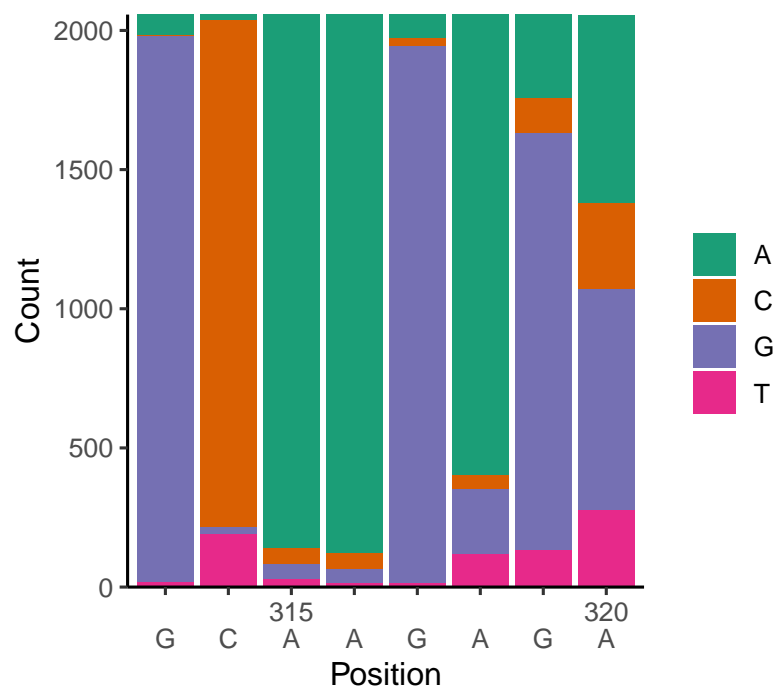
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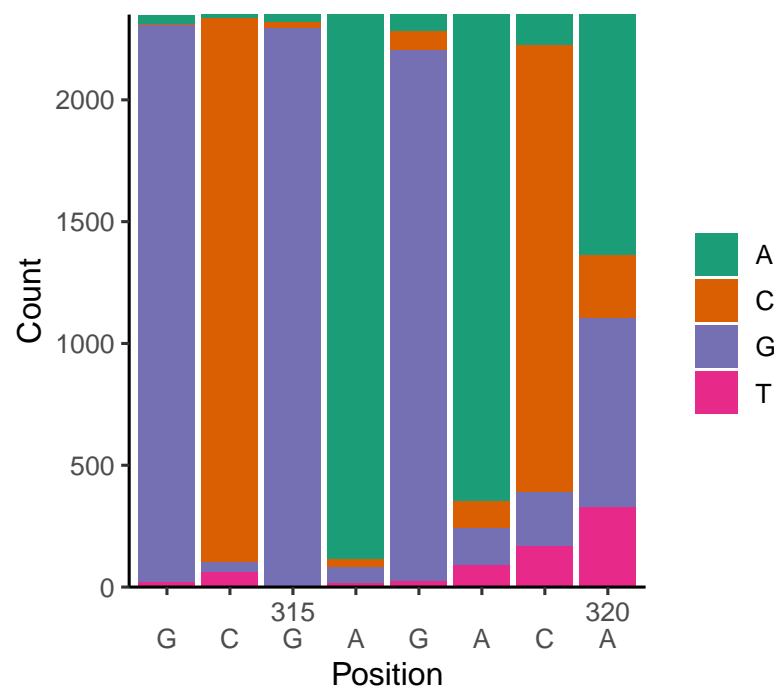
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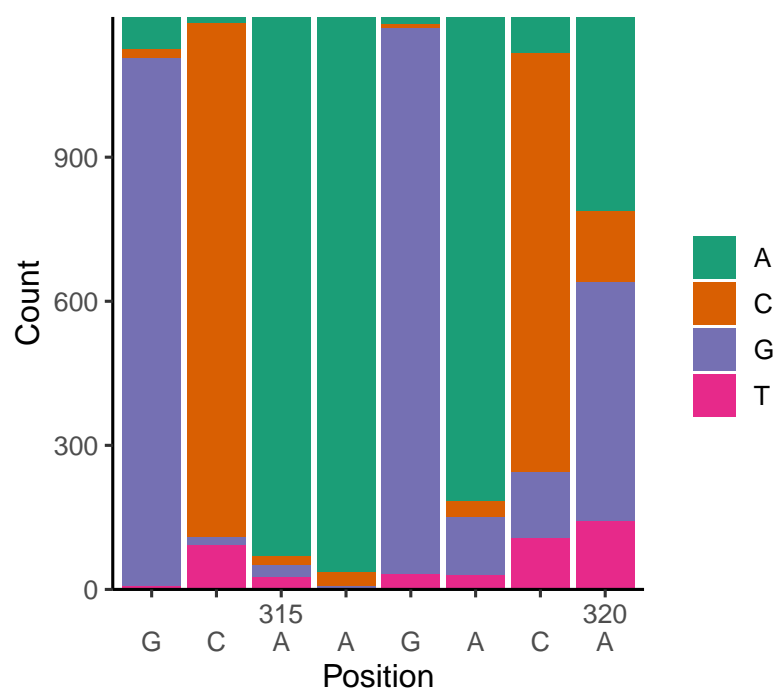
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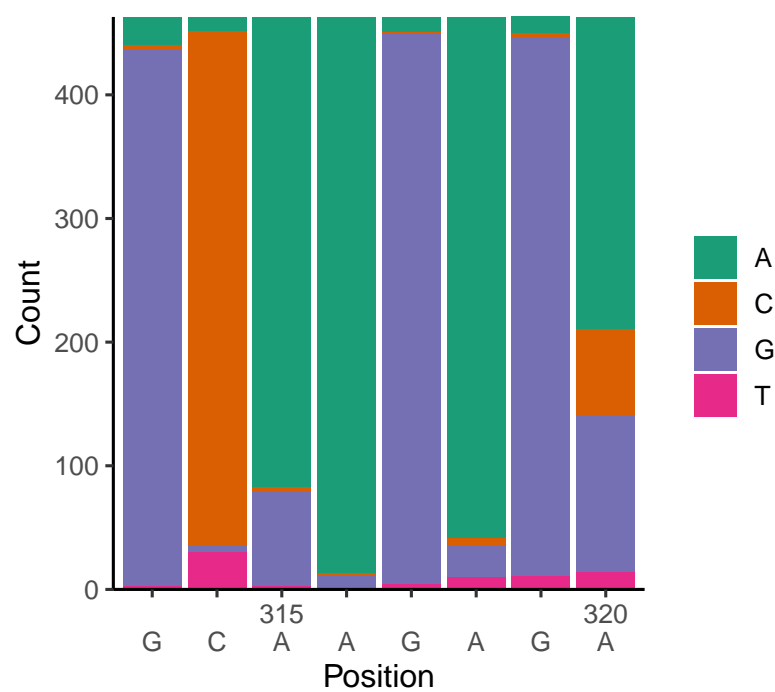
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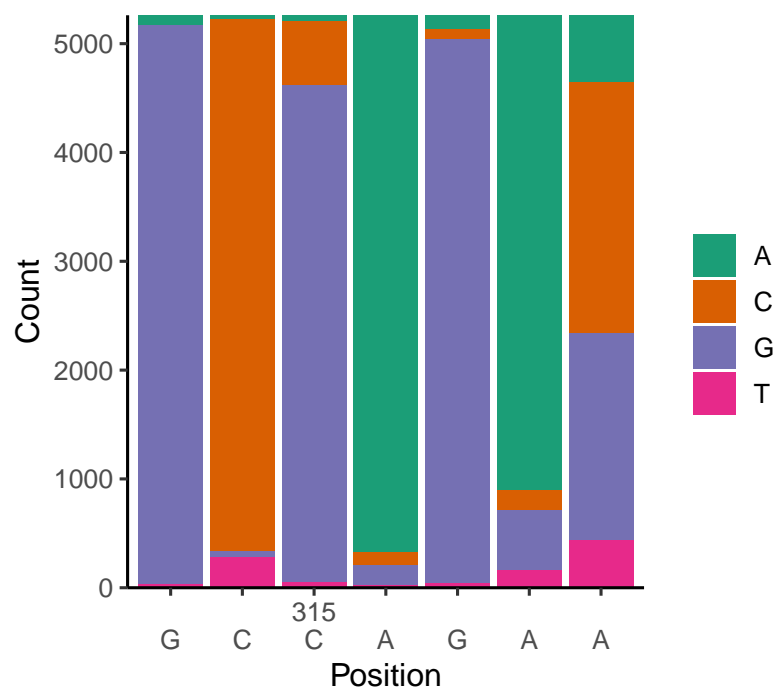
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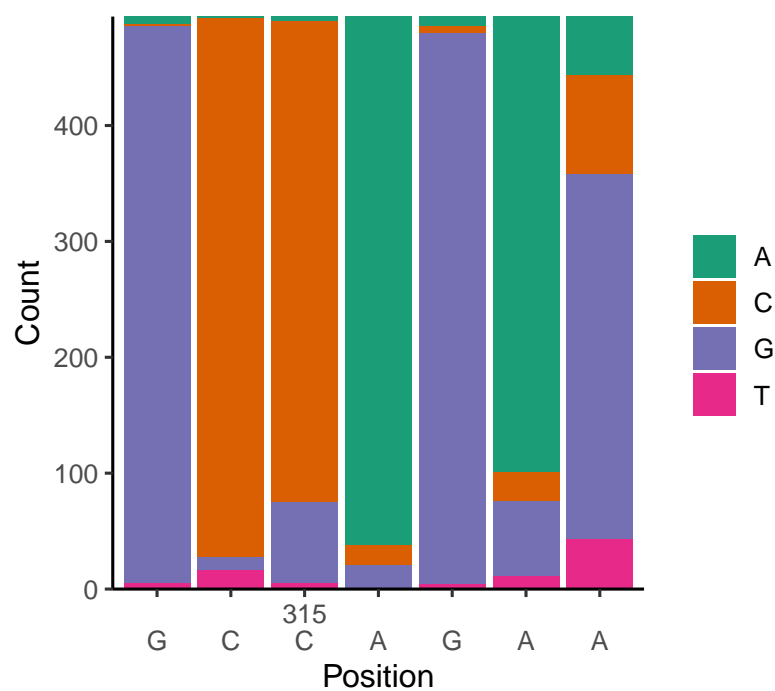
Gene IGHV3-132\*01\_G164C



Gene IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_G315C



Gene IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_A295C\_G315C



Gene IGHV3-16\*01\_A275G



Gene IGHV3-184\*01\_T109C\_G275A



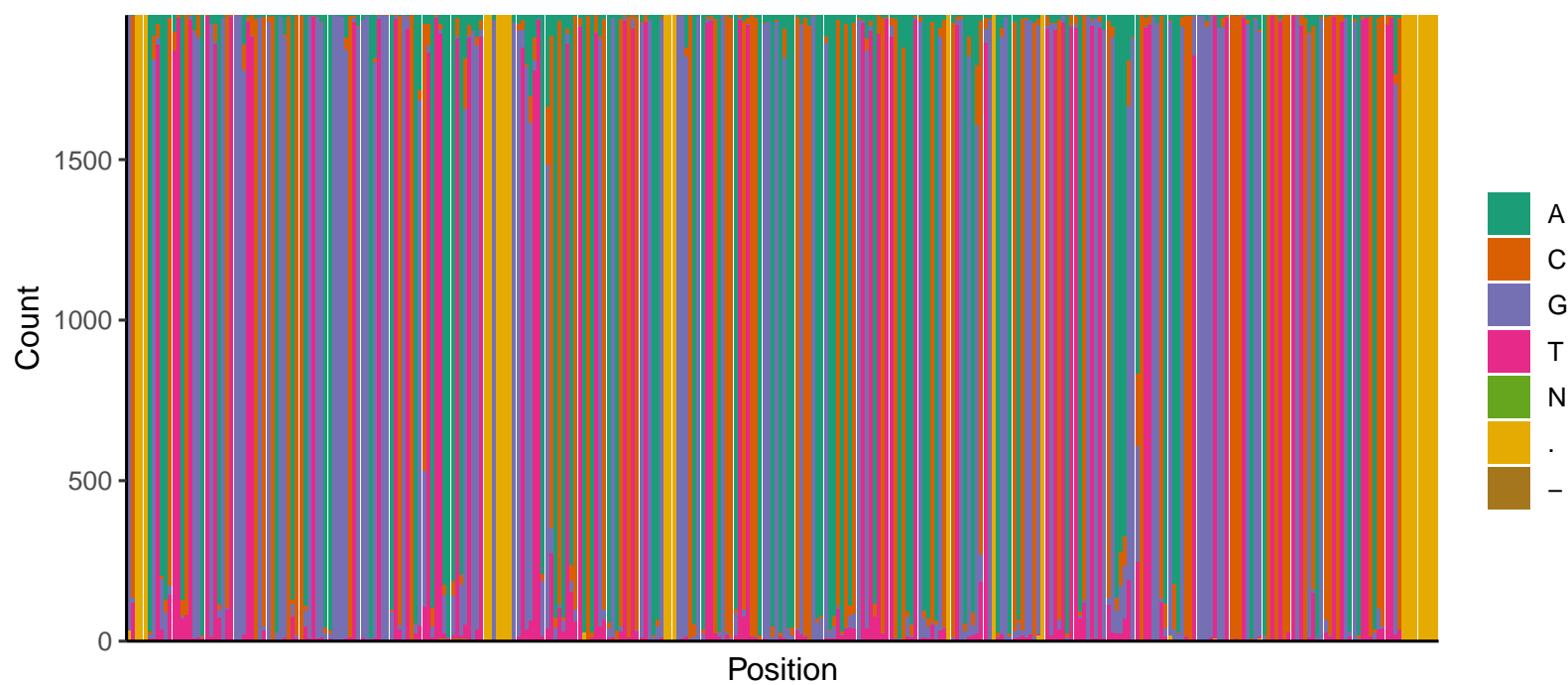
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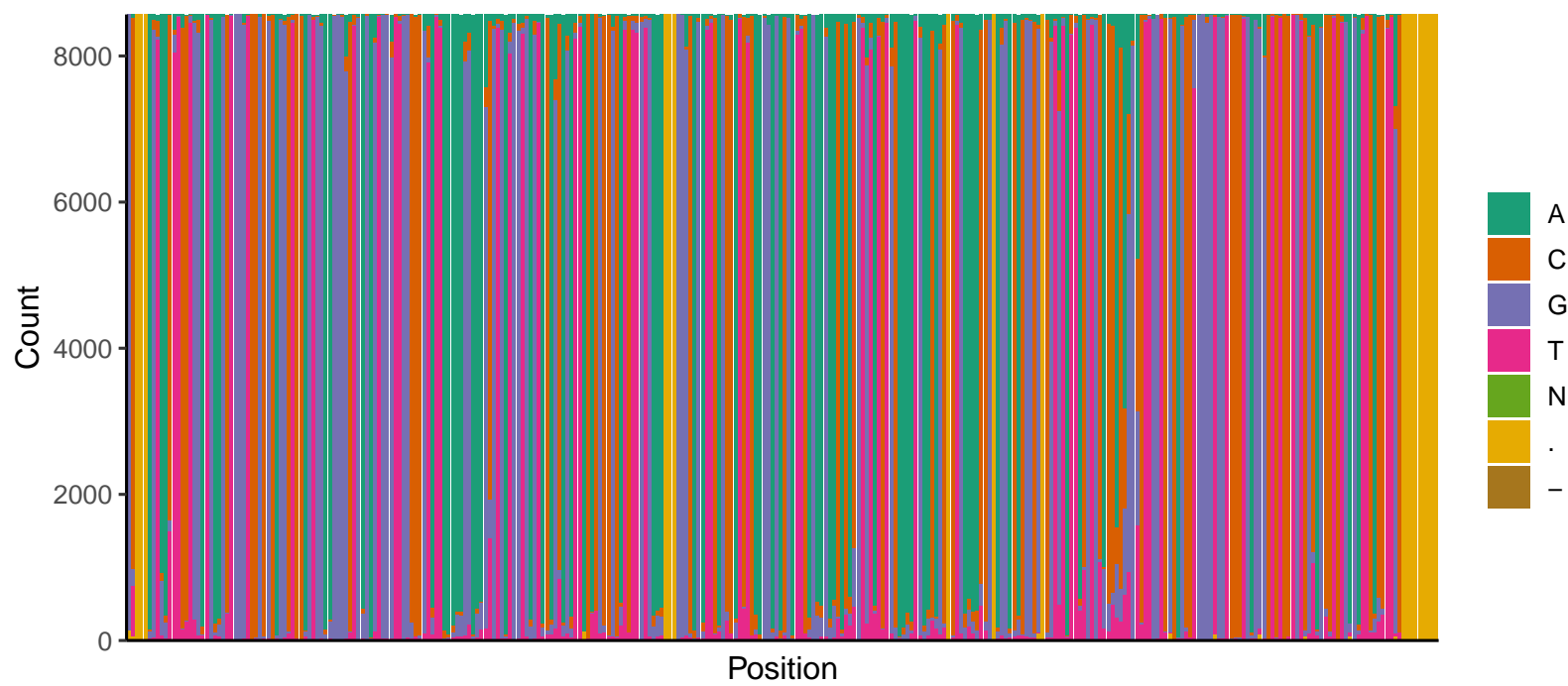
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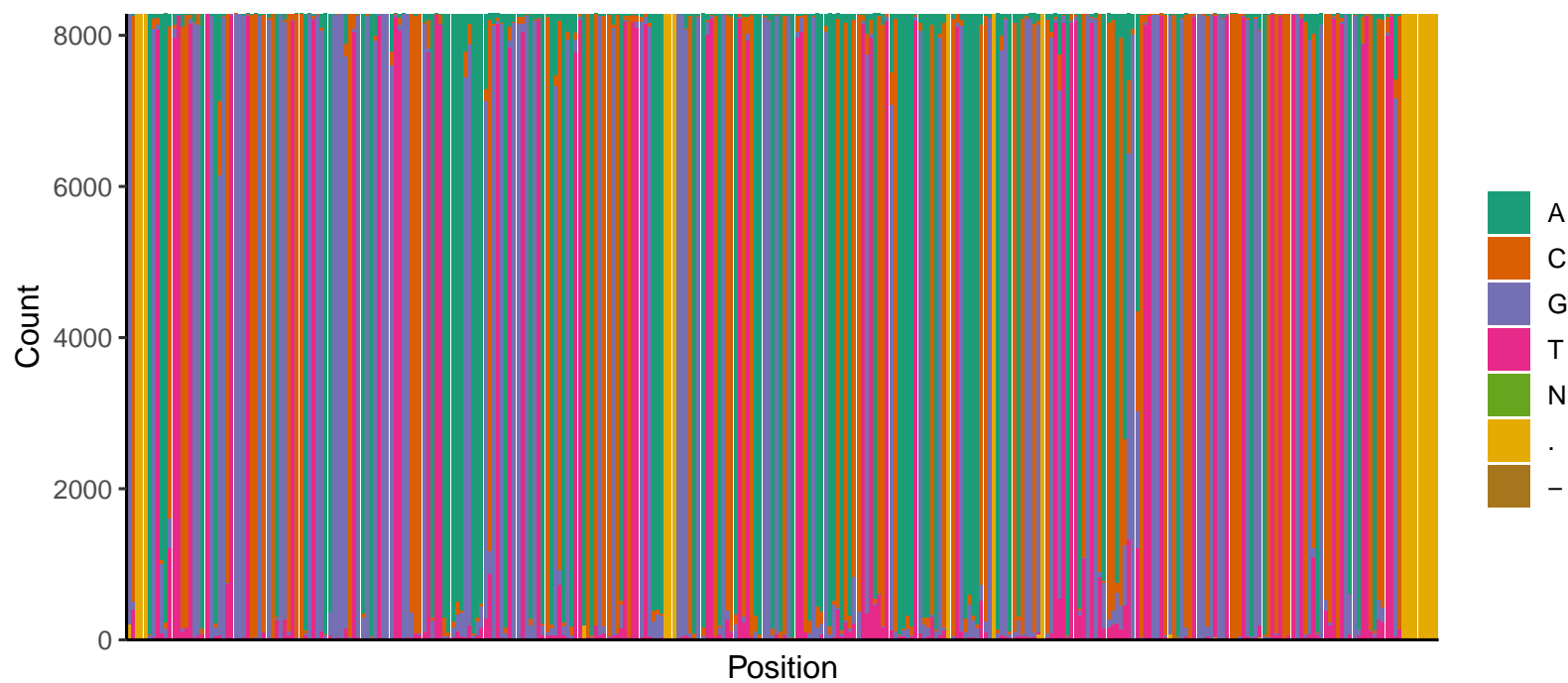


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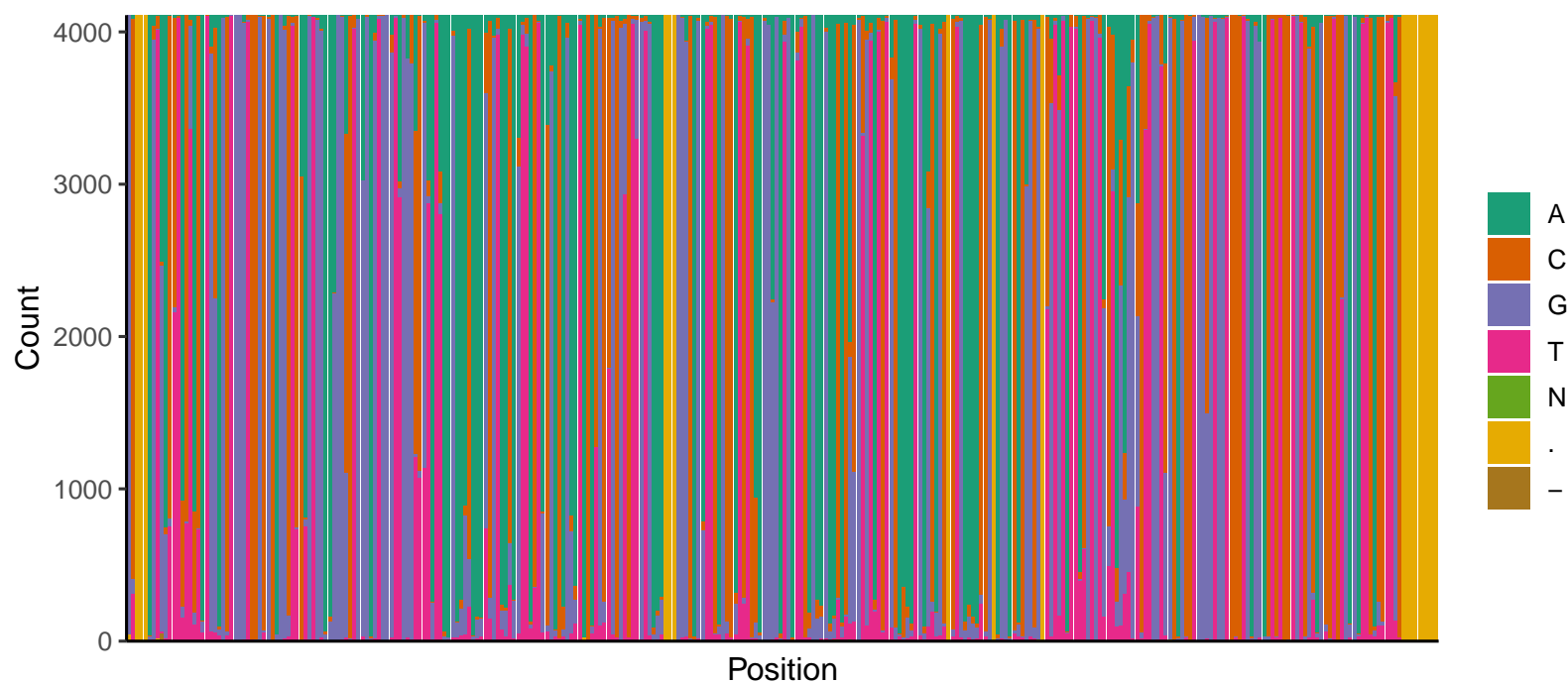




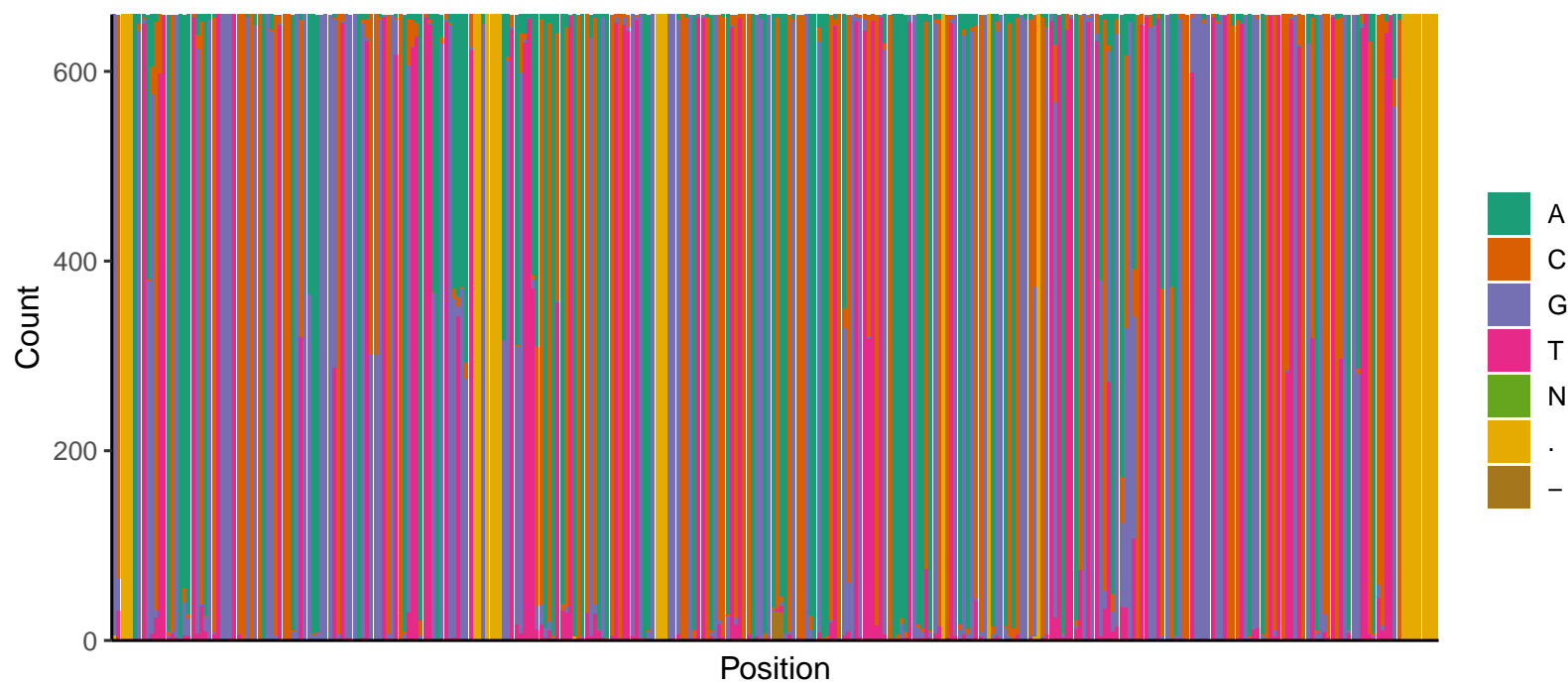
Gene IGHV3-30\*02\_C141G\_C183T



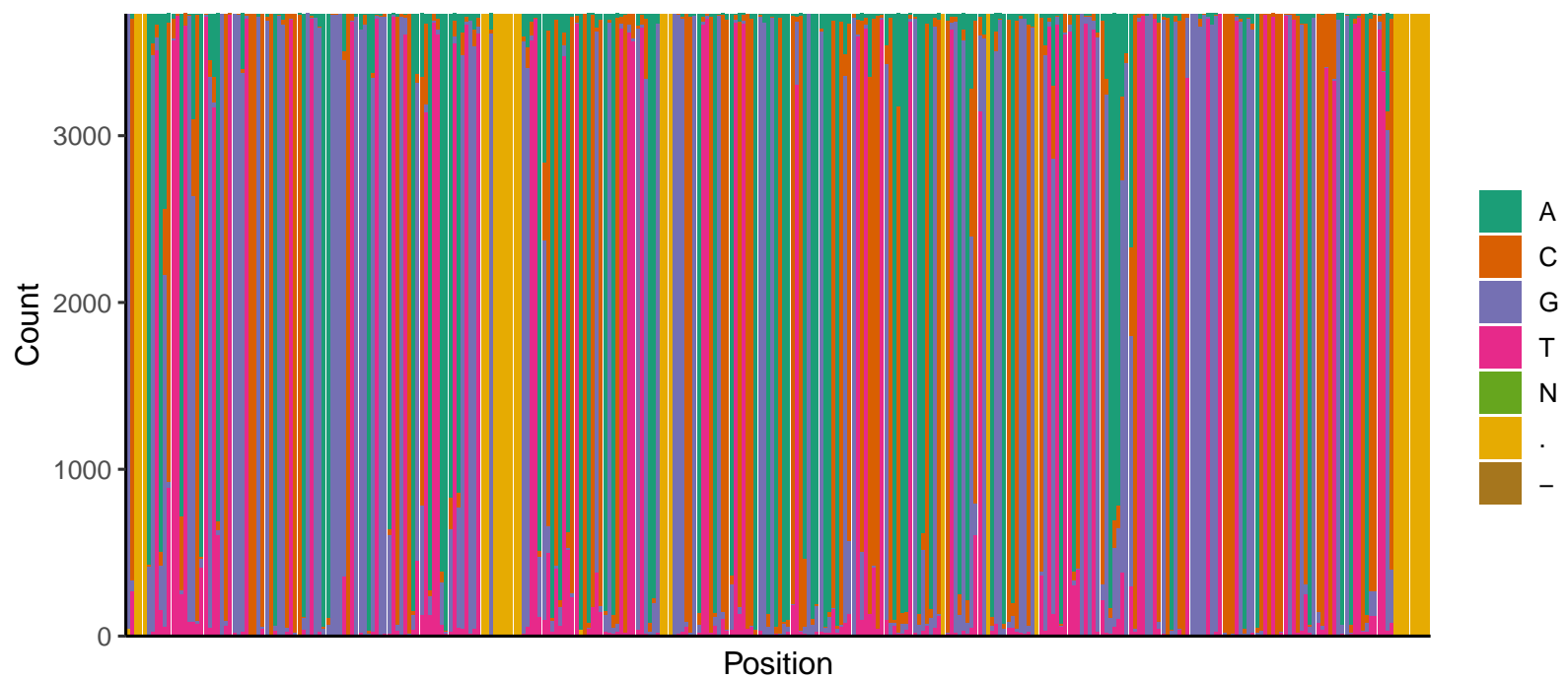
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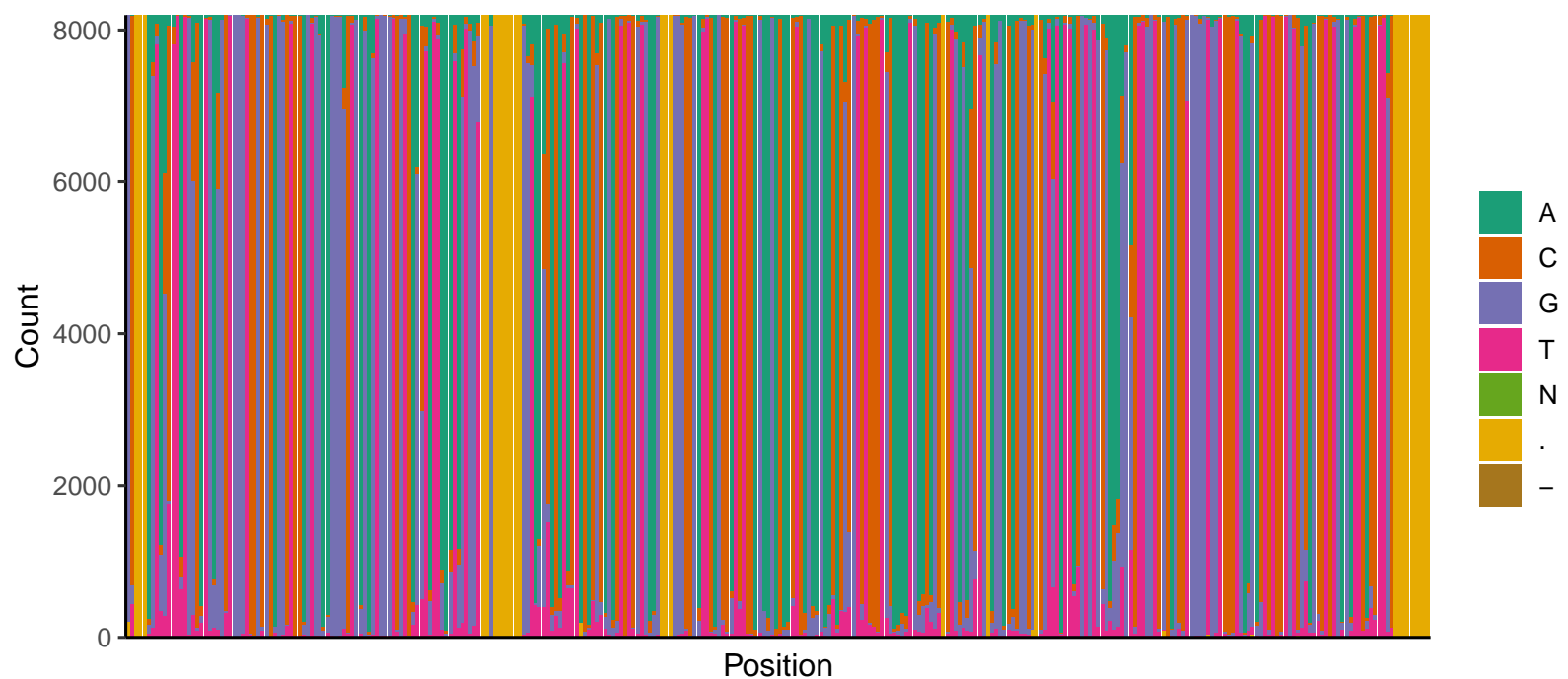
Gene IGHV3-100\*02\_C210T



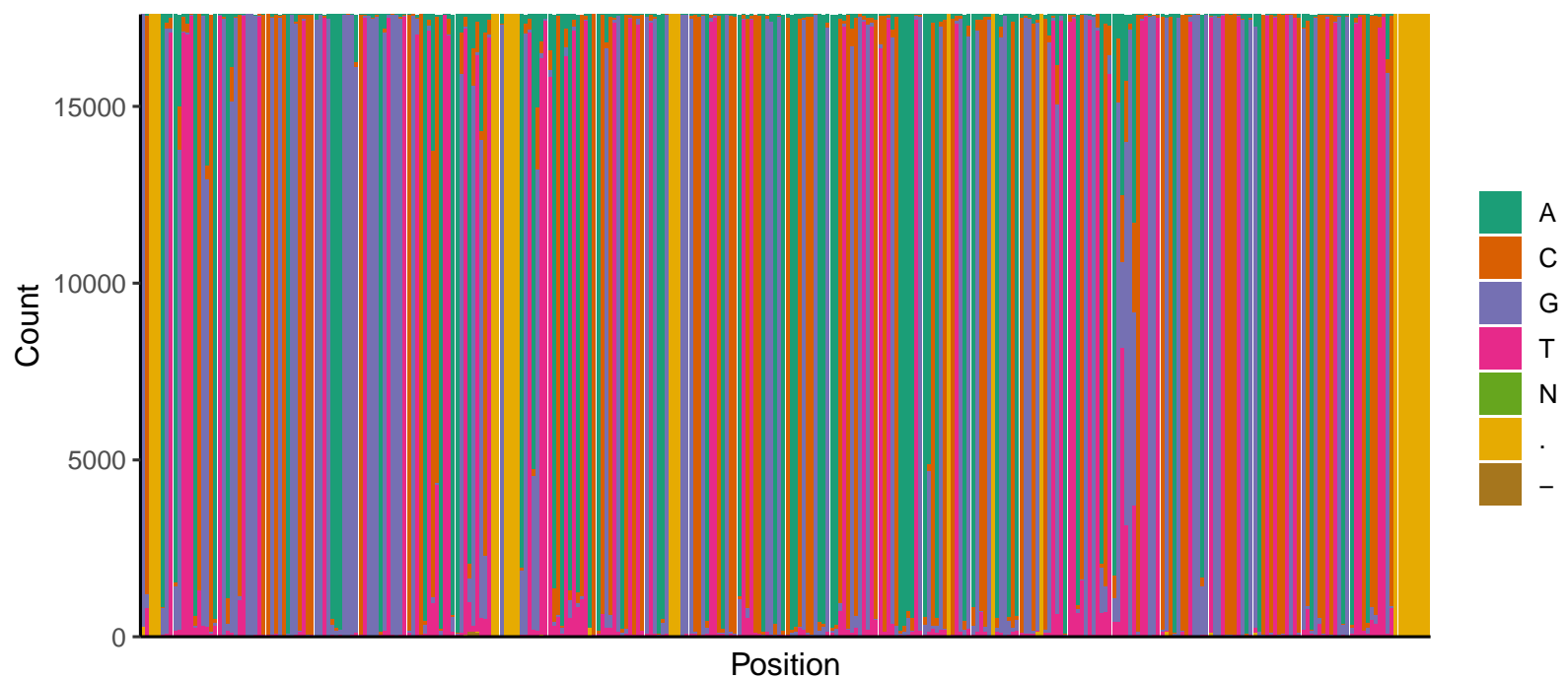
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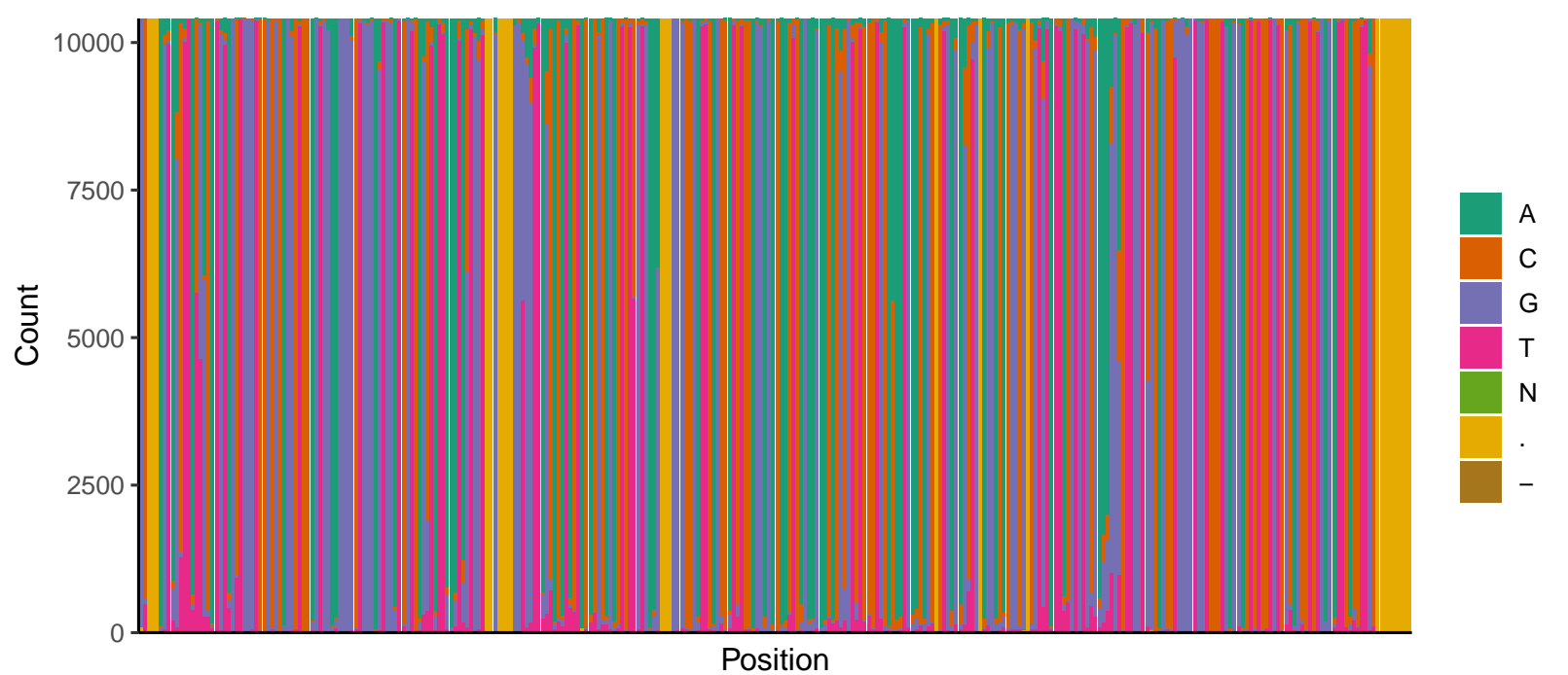
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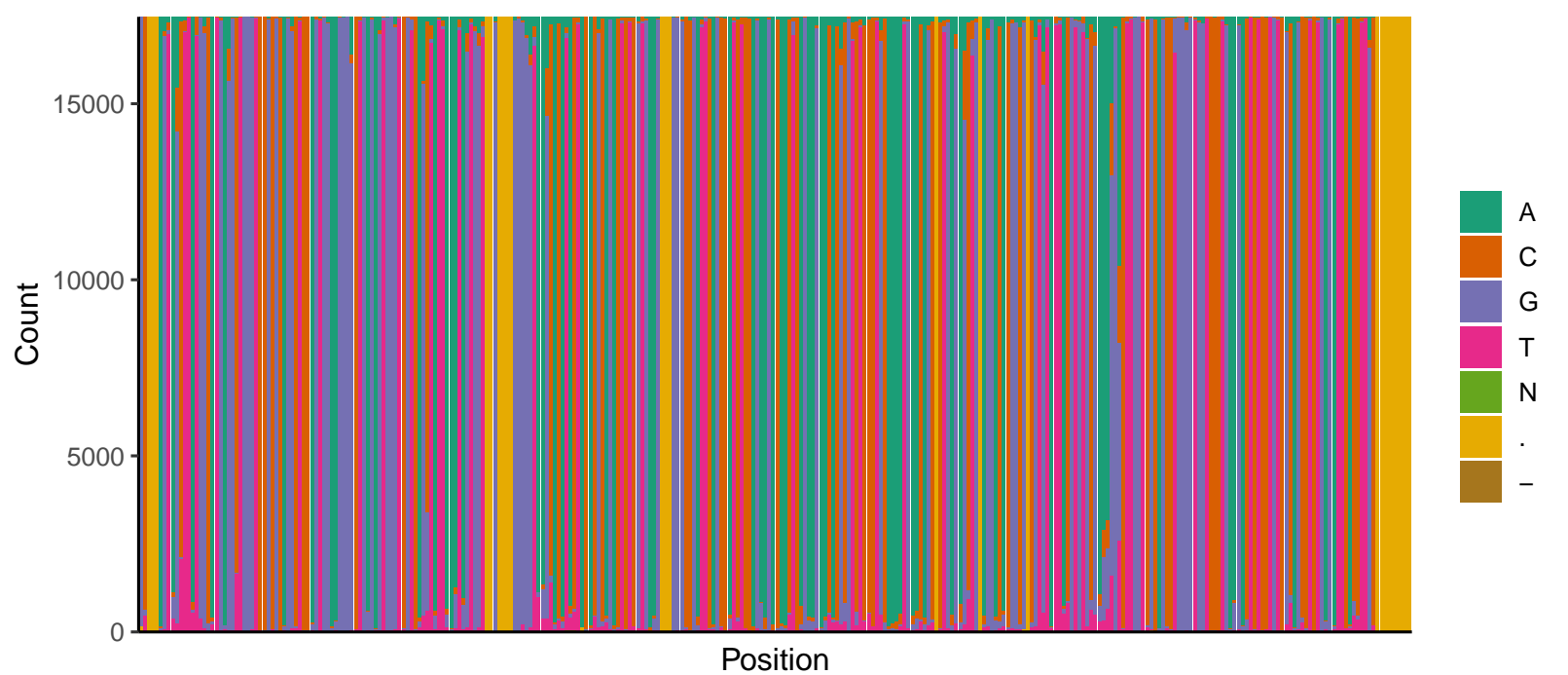
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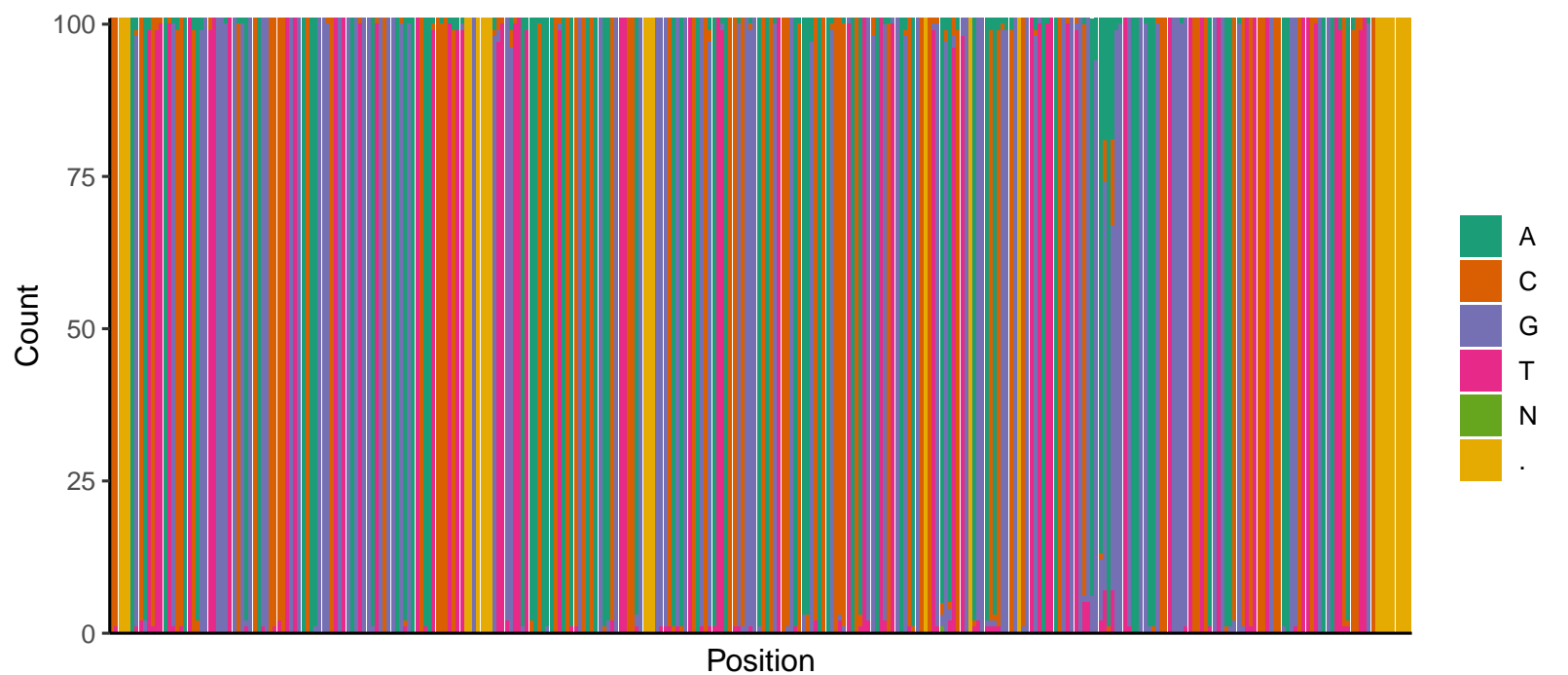
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Gene IGHV3S42\*01\_T19A\_G24A\_C27A\_C38T\_A39C\_A40C\_G59A\_C111T\_T112G\_G114C\_A118T\_T120C\_A133C



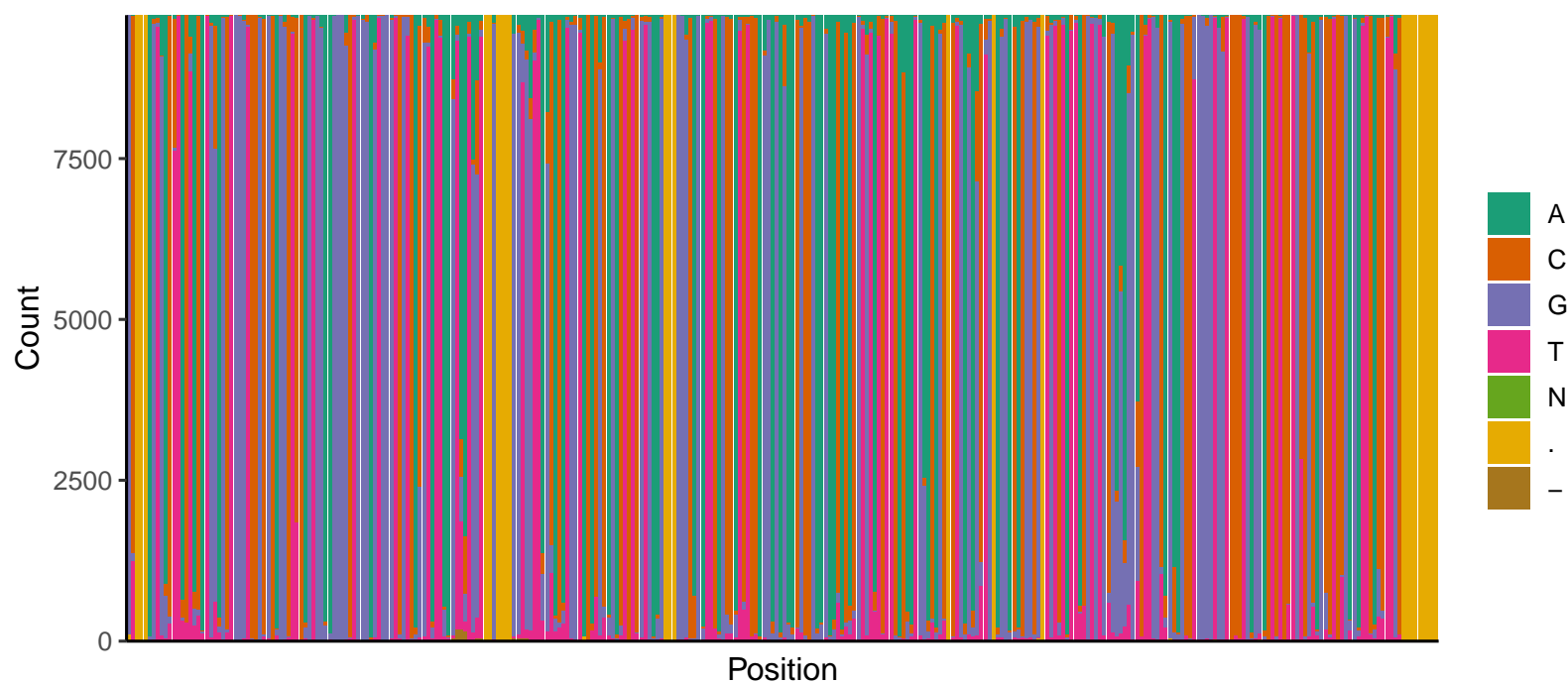
Gene IGHV1-151\*01\_A83T\_G164A



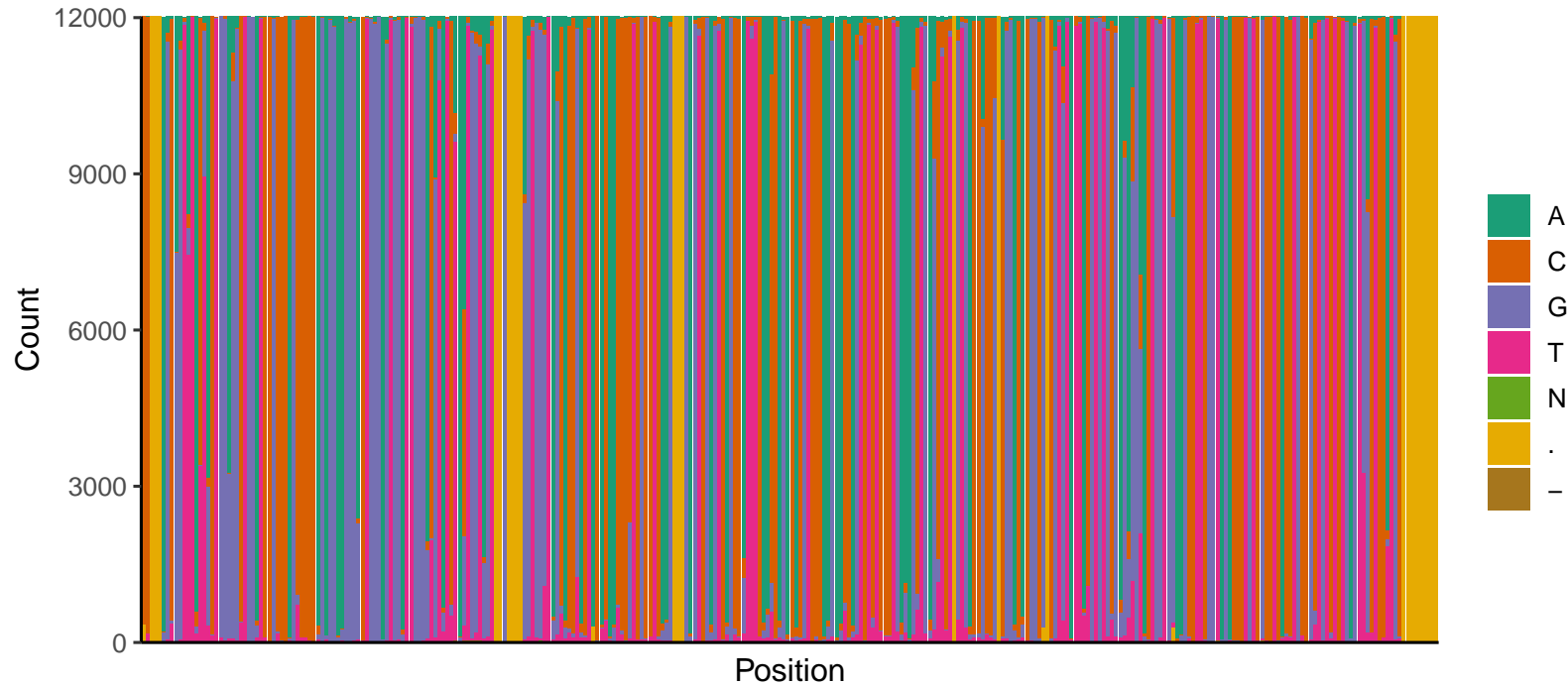
Gene IGHV3-54\*02\_G170C



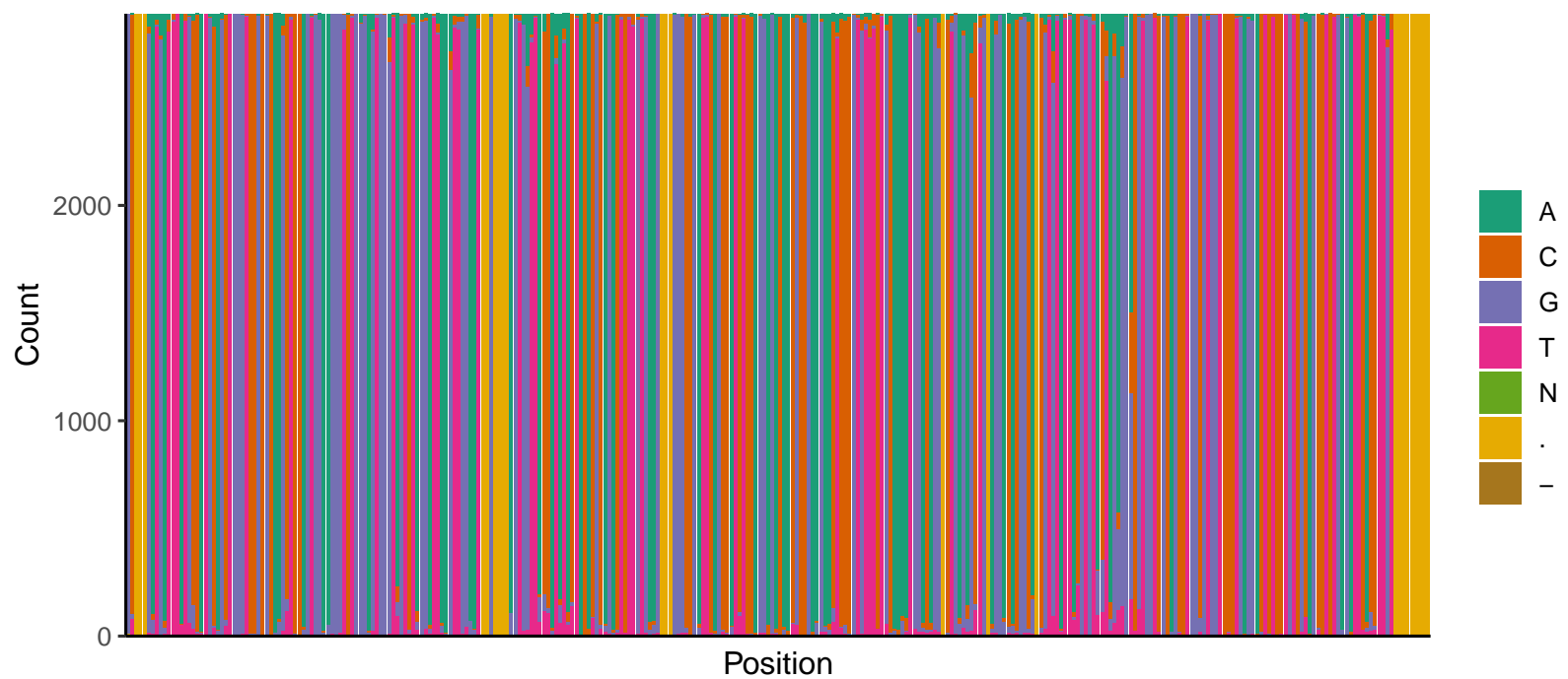
Gene IGHV3-59\*01\_C69T\_T78C\_T109C\_C163G\_A172T\_G175A\_G176C



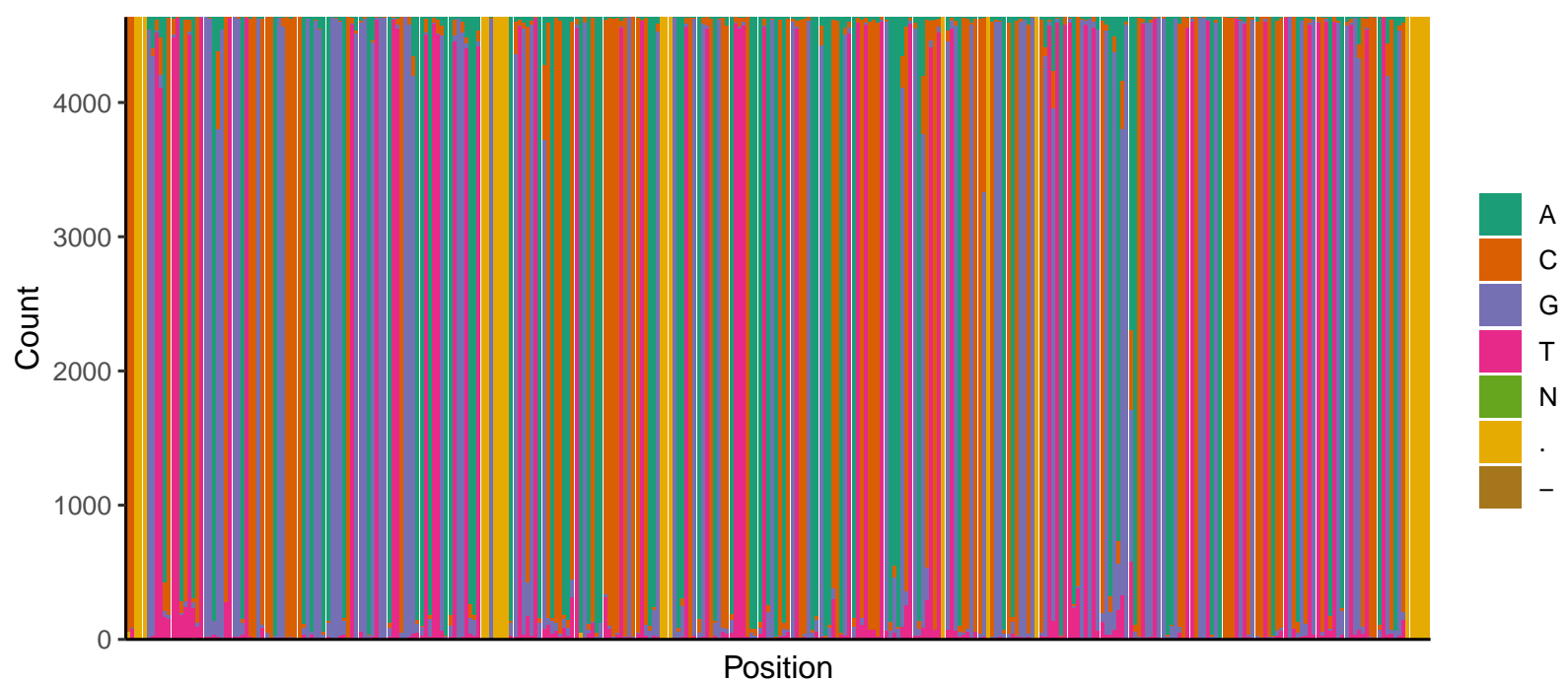
Gene IGHV4-160\*01\_A106G\_A109T\_G147A\_C290A



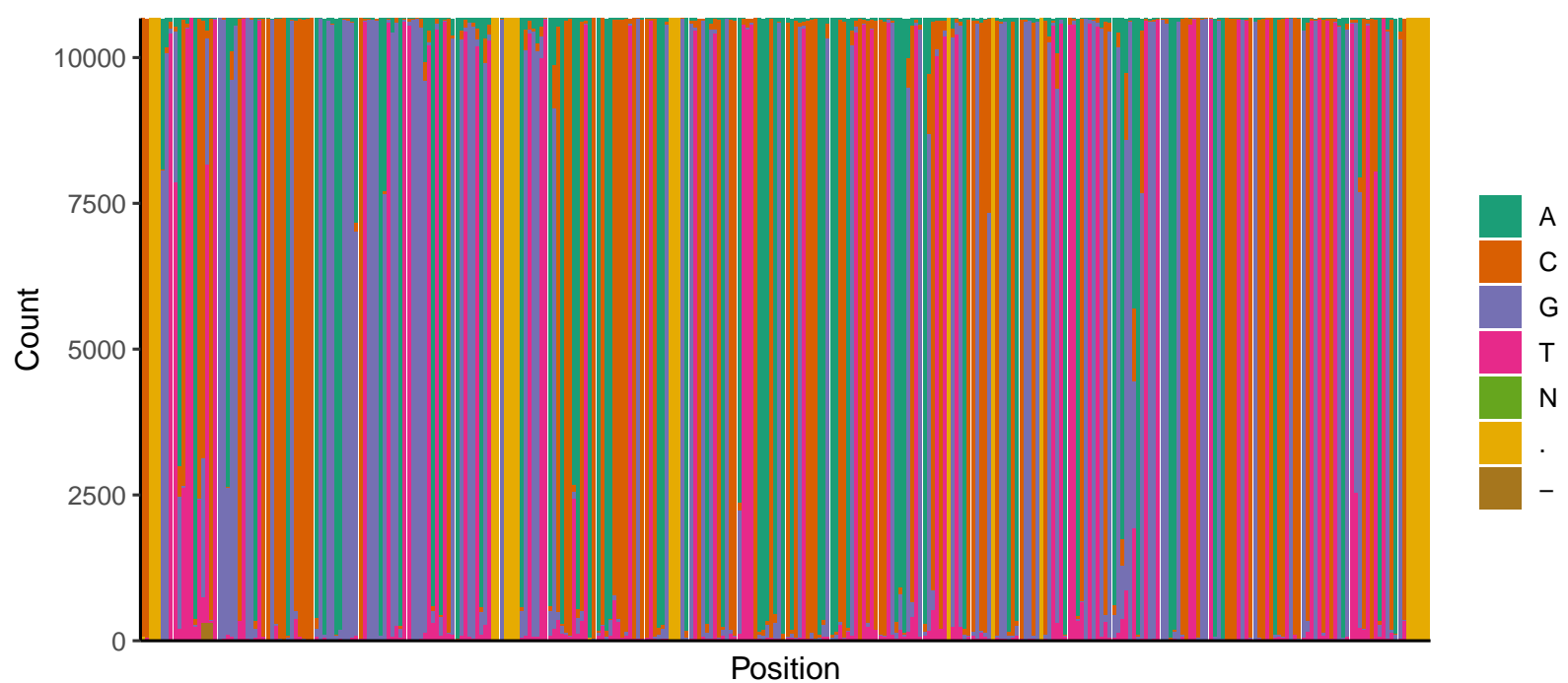
Gene IGHV3-134\*01\_T34G\_A39C\_A40C\_A48C\_G87C\_A118C\_G119A\_G132A\_C163A\_



Gene IGHV4-73\*01\_C24T\_C133G\_G147A\_T163A\_C168T\_T169G



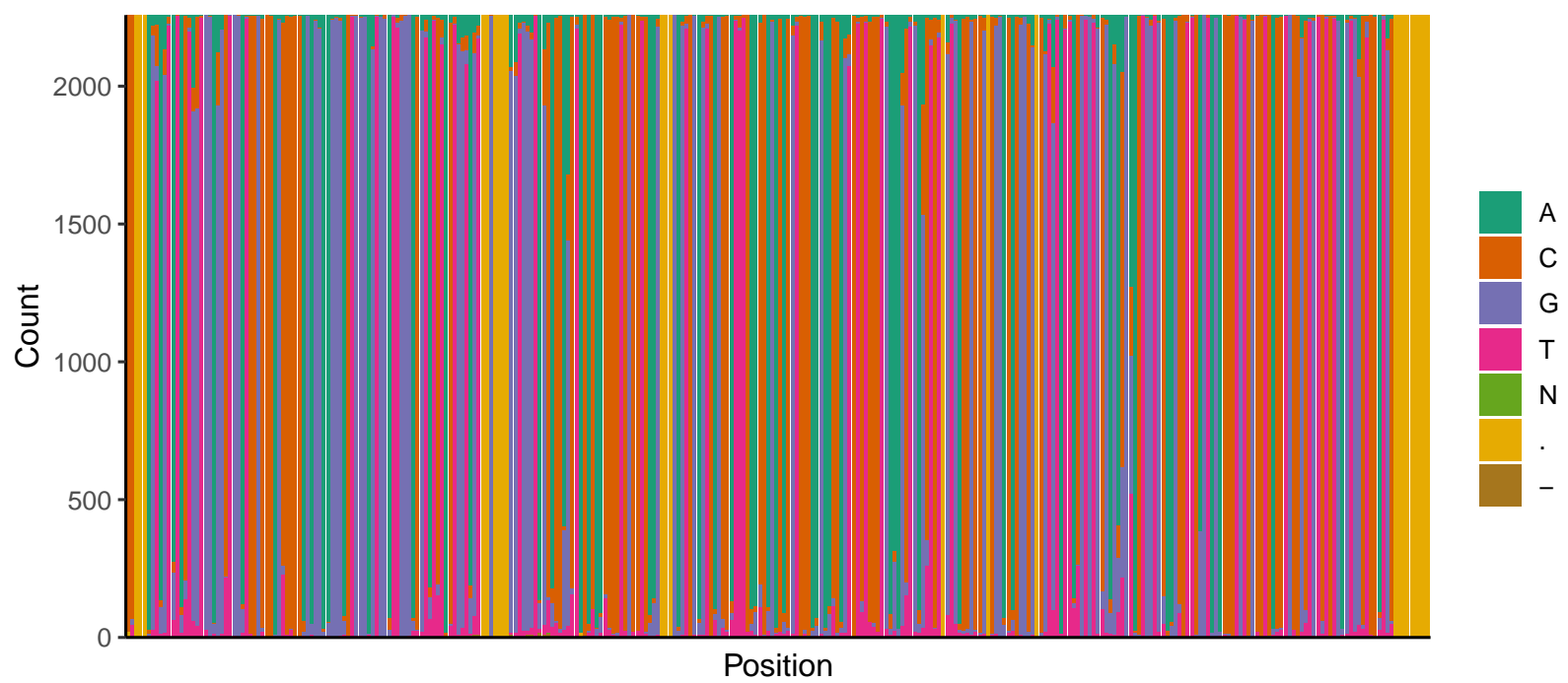
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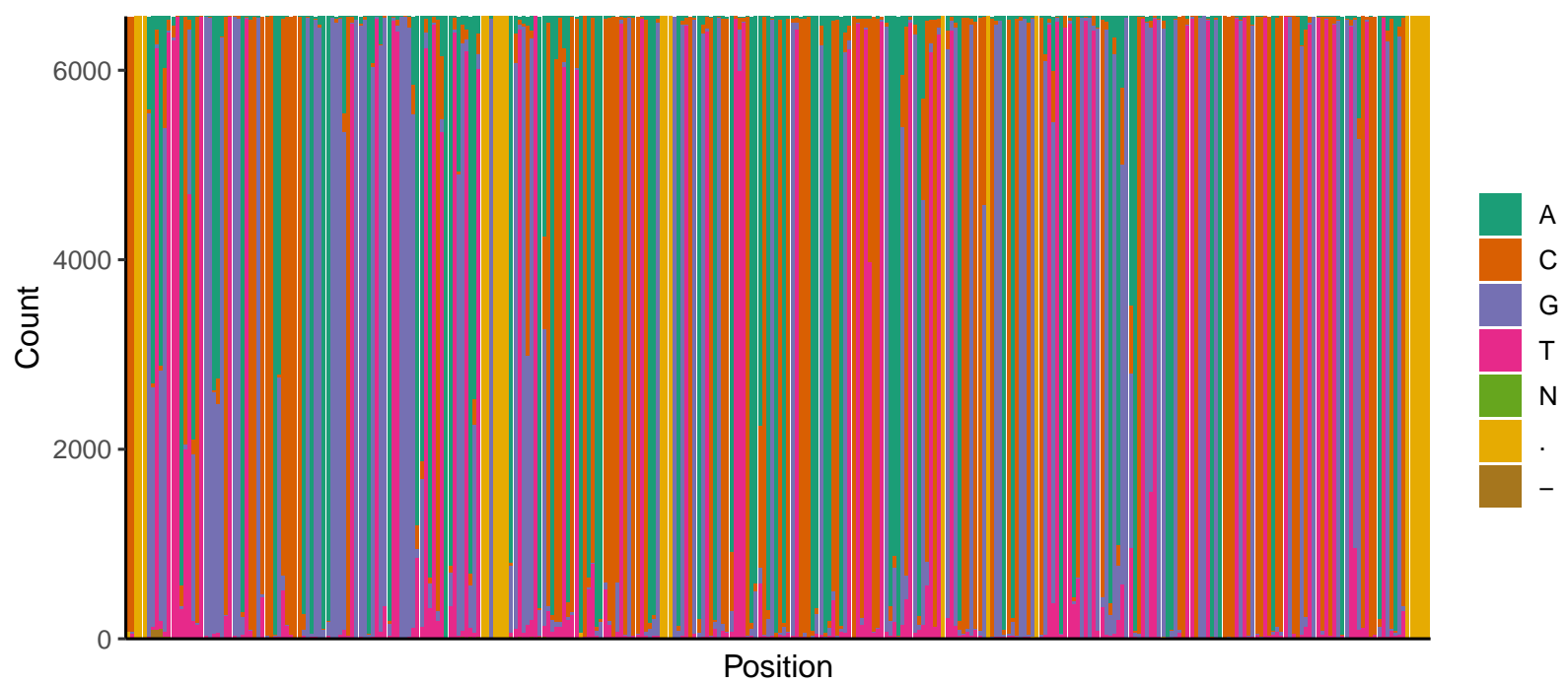
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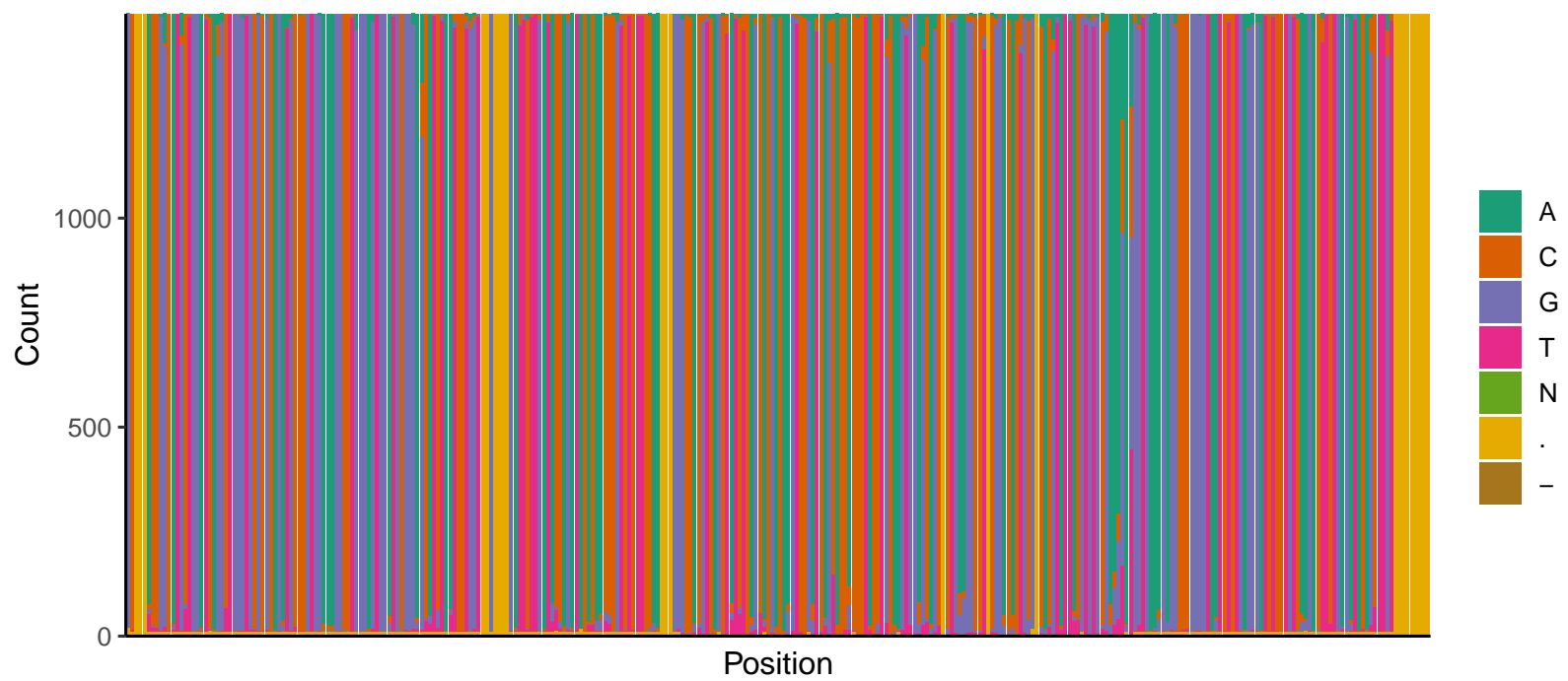
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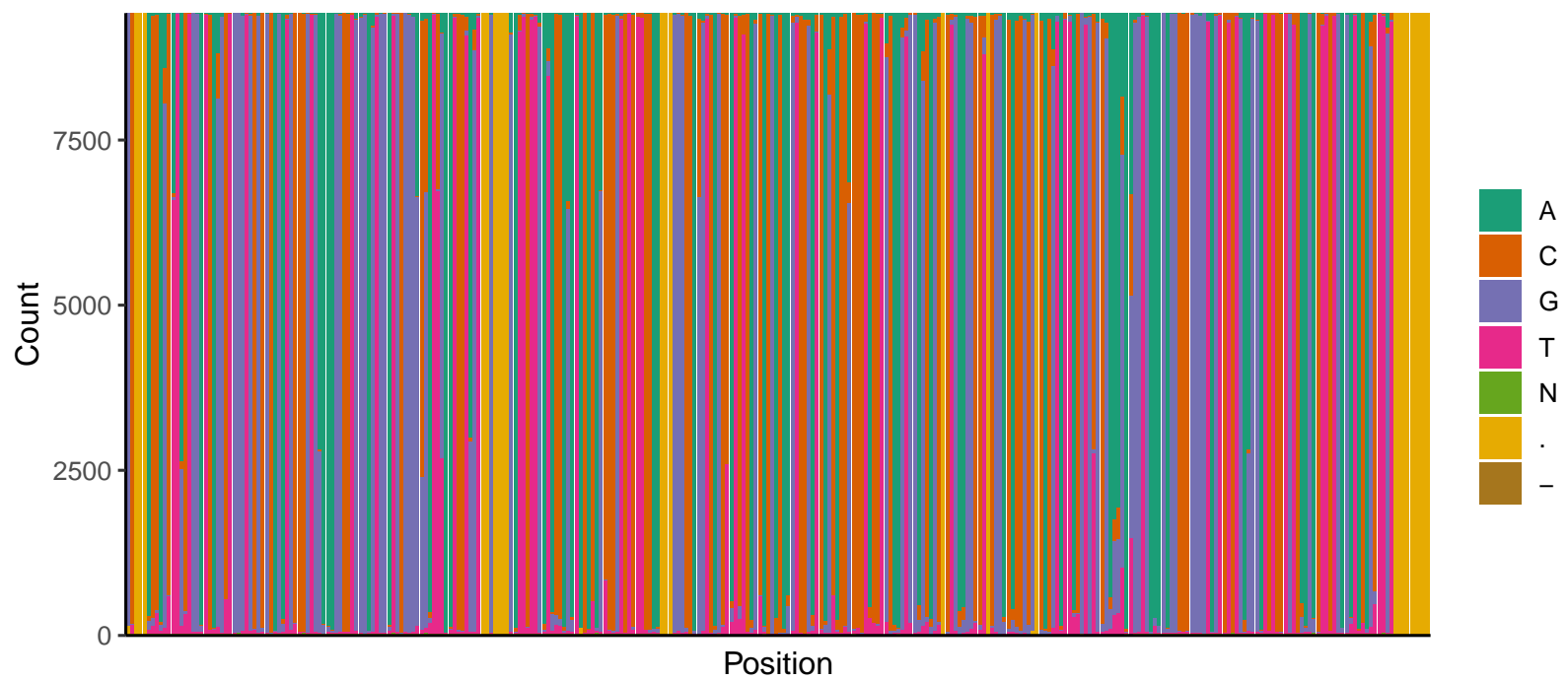
Gene IGHV4S9\*01\_T106A\_A107G\_C108T\_C297G



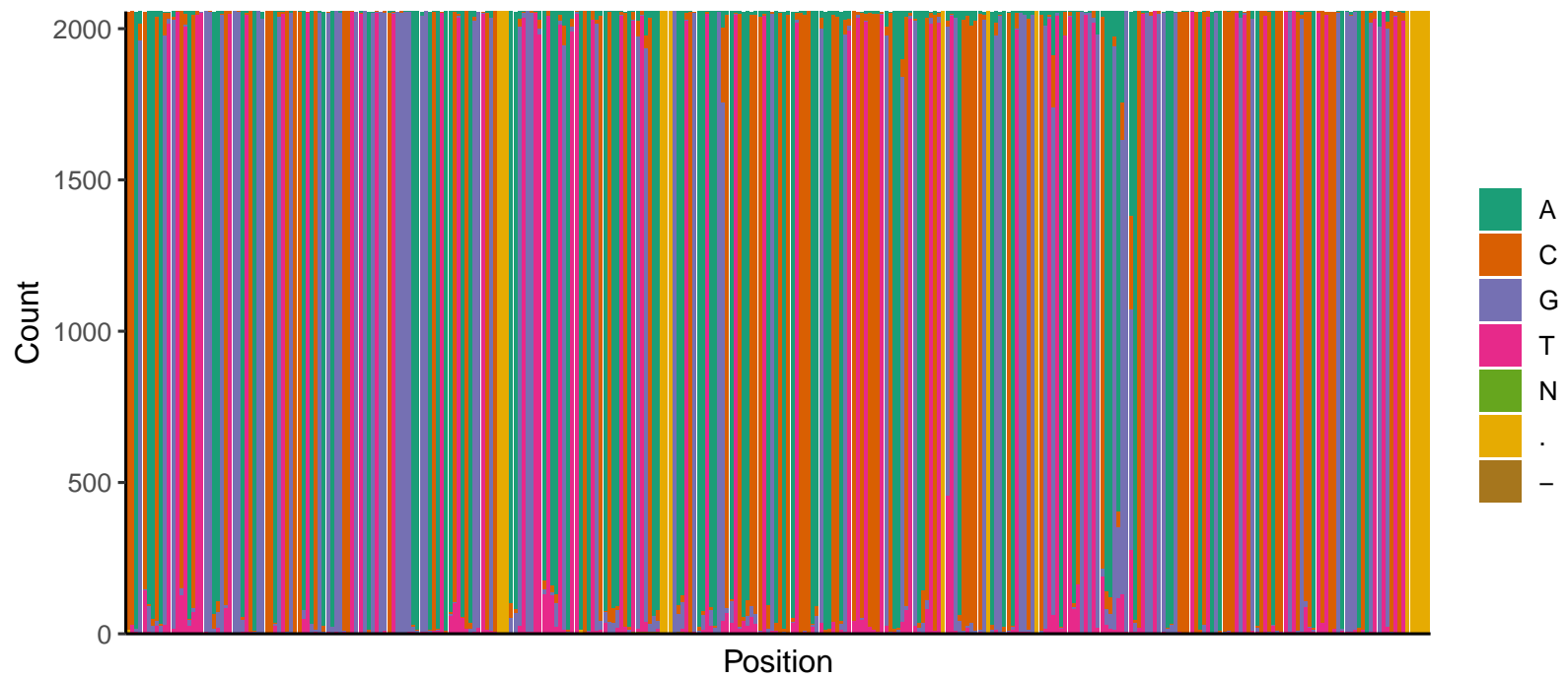
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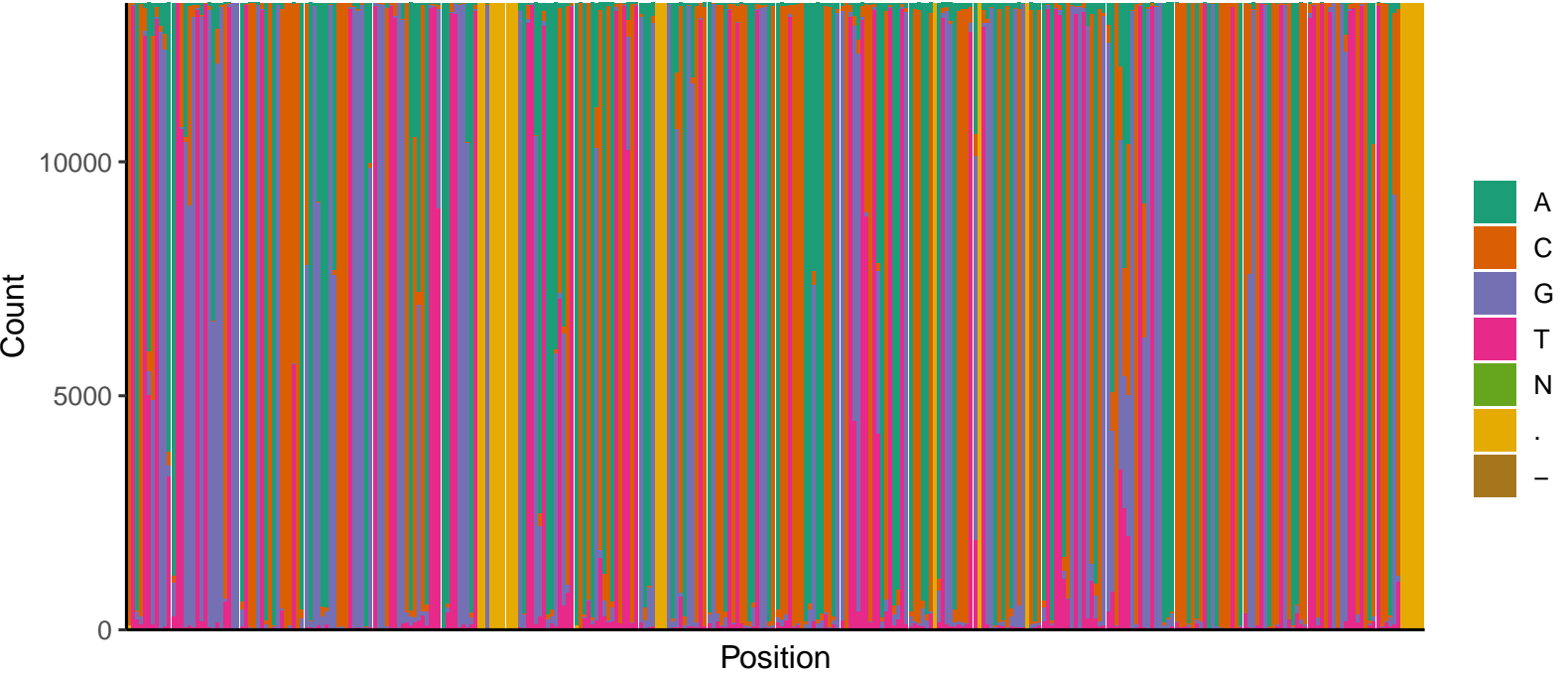
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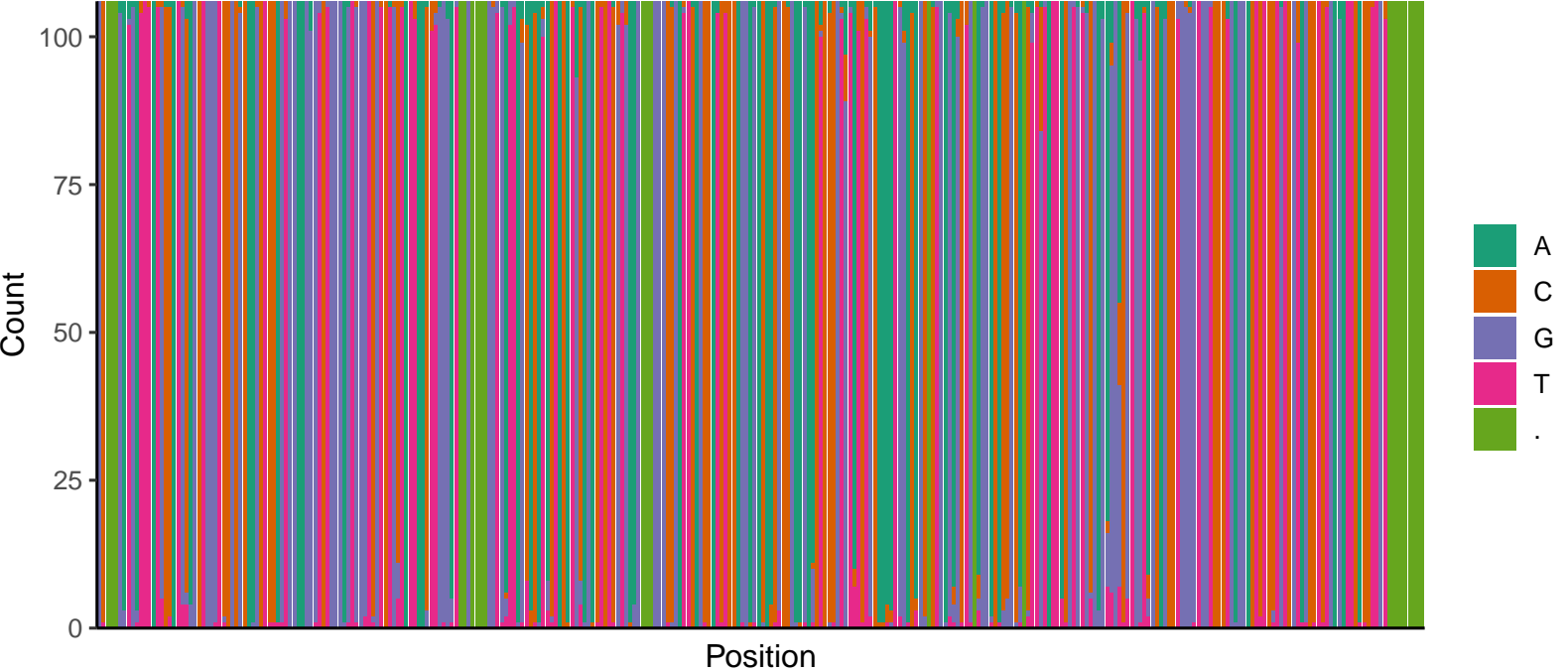
Gene IGHV6-1\*01\_G280T



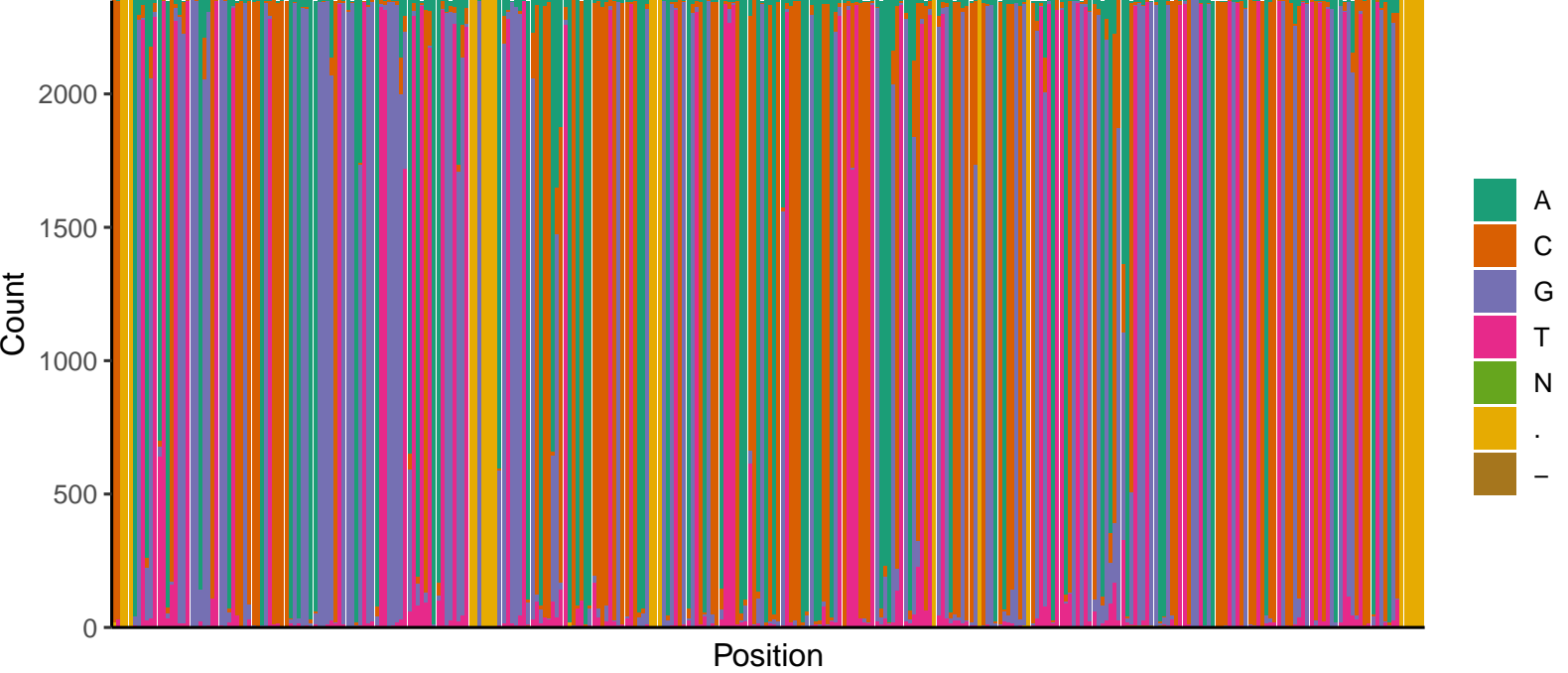
Gene IGHV2-95\*01\_A252G\_A267G



Gene IGHV3-67\*01\_G66C\_C71T\_G118C\_G119A\_G170C\_G188A\_G196T\_G197A\_G275

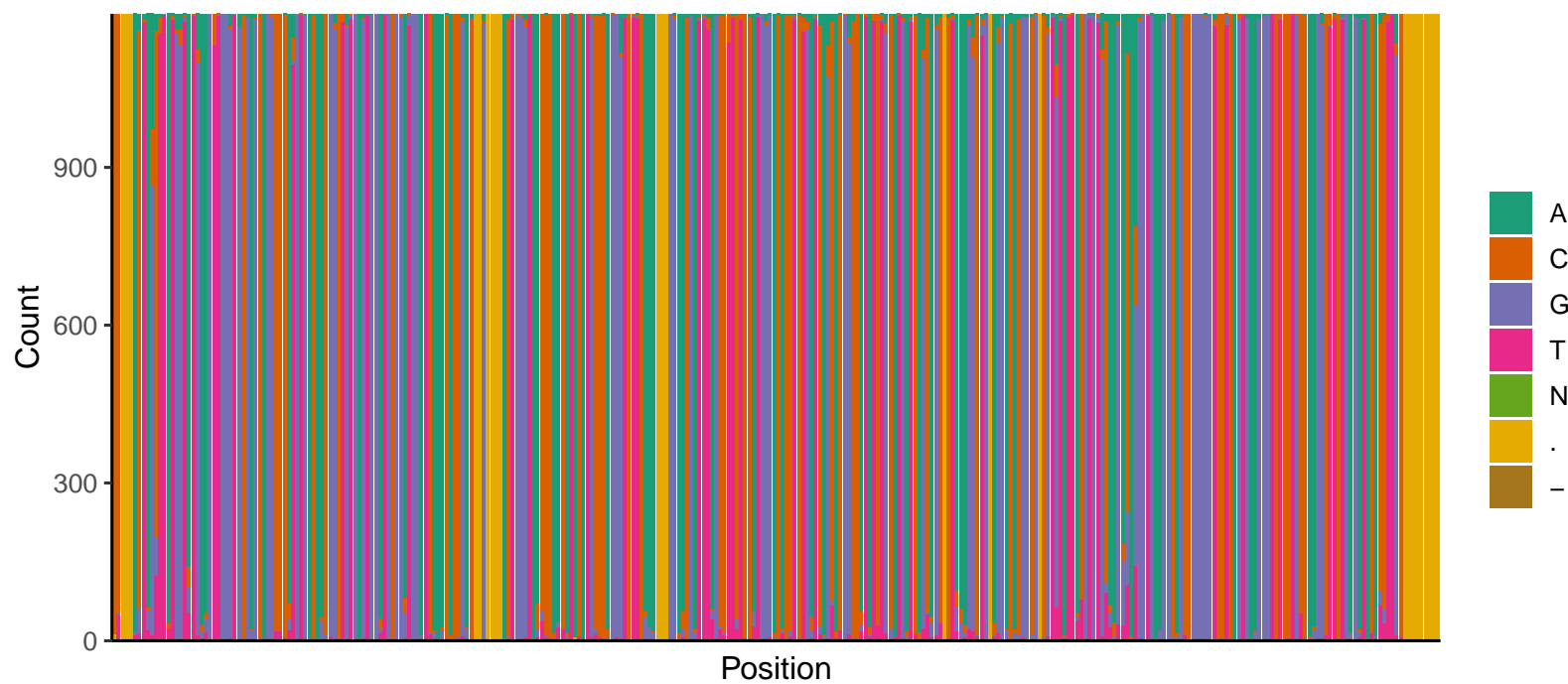


Gene IGHV4-93\*02\_A109T

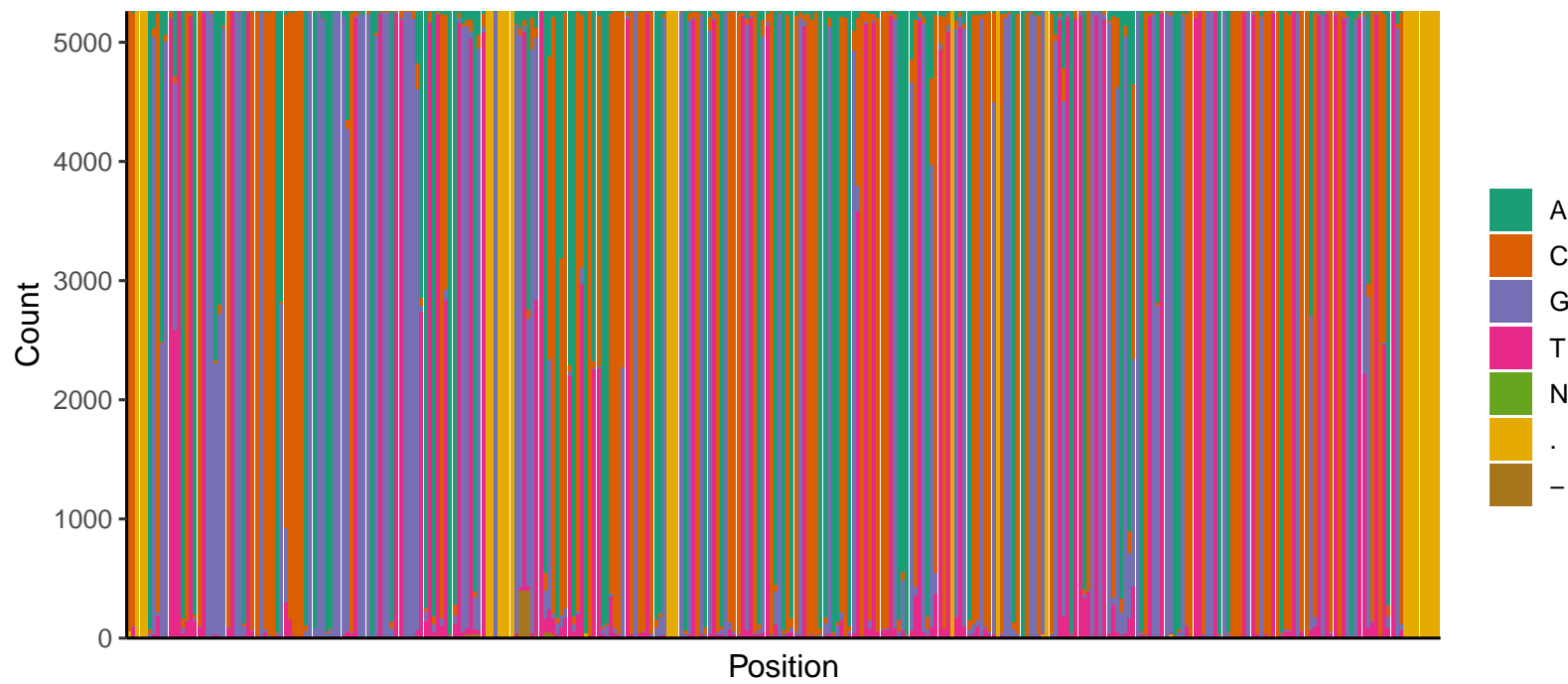




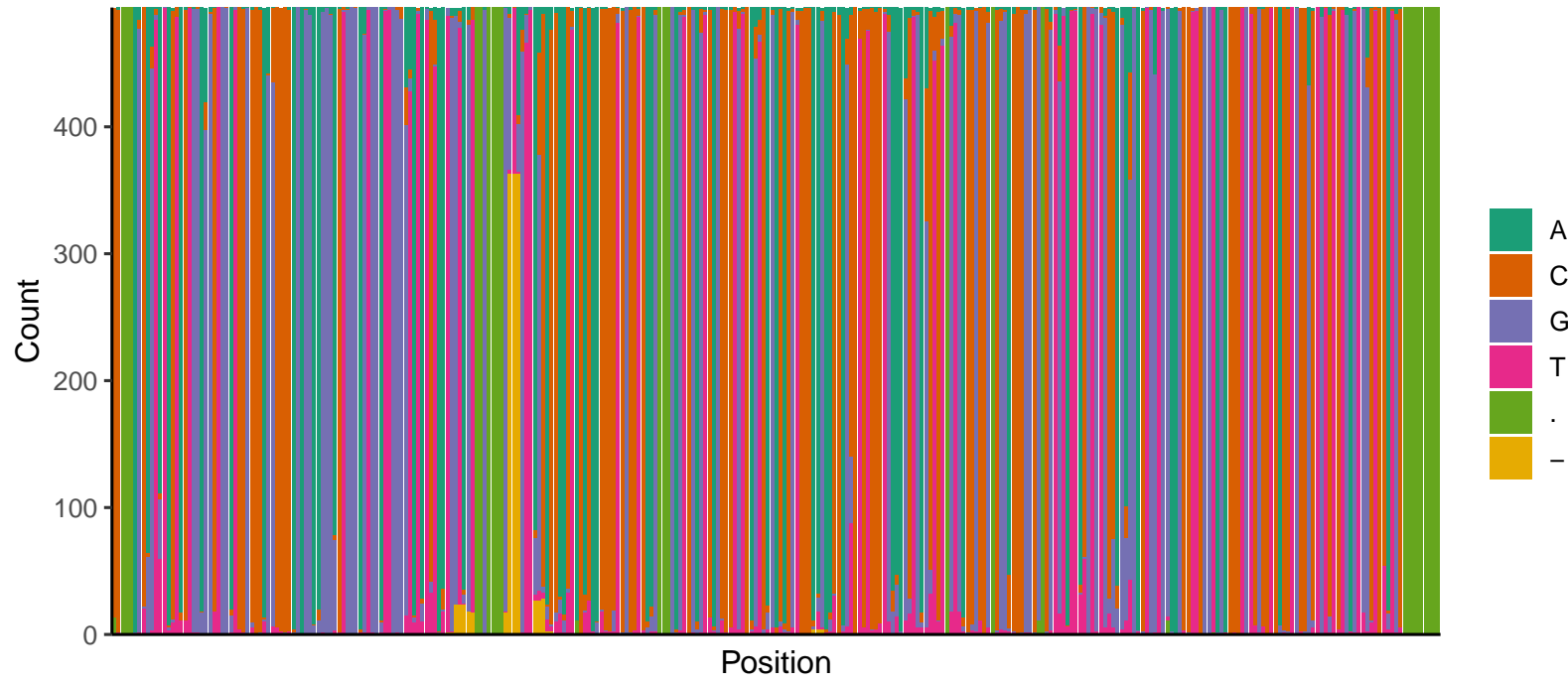
Gene IGHV7-114\*01\_T81A



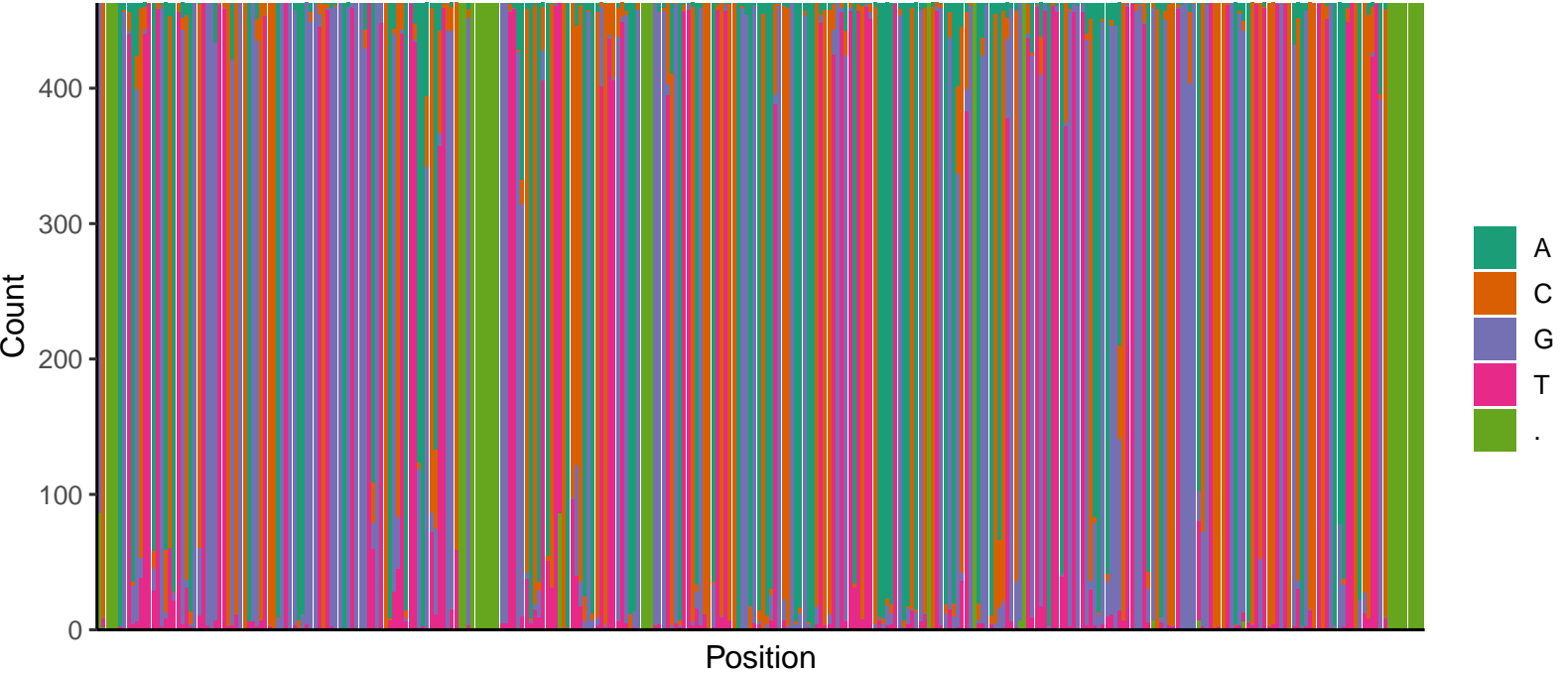
Gene IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_G315C



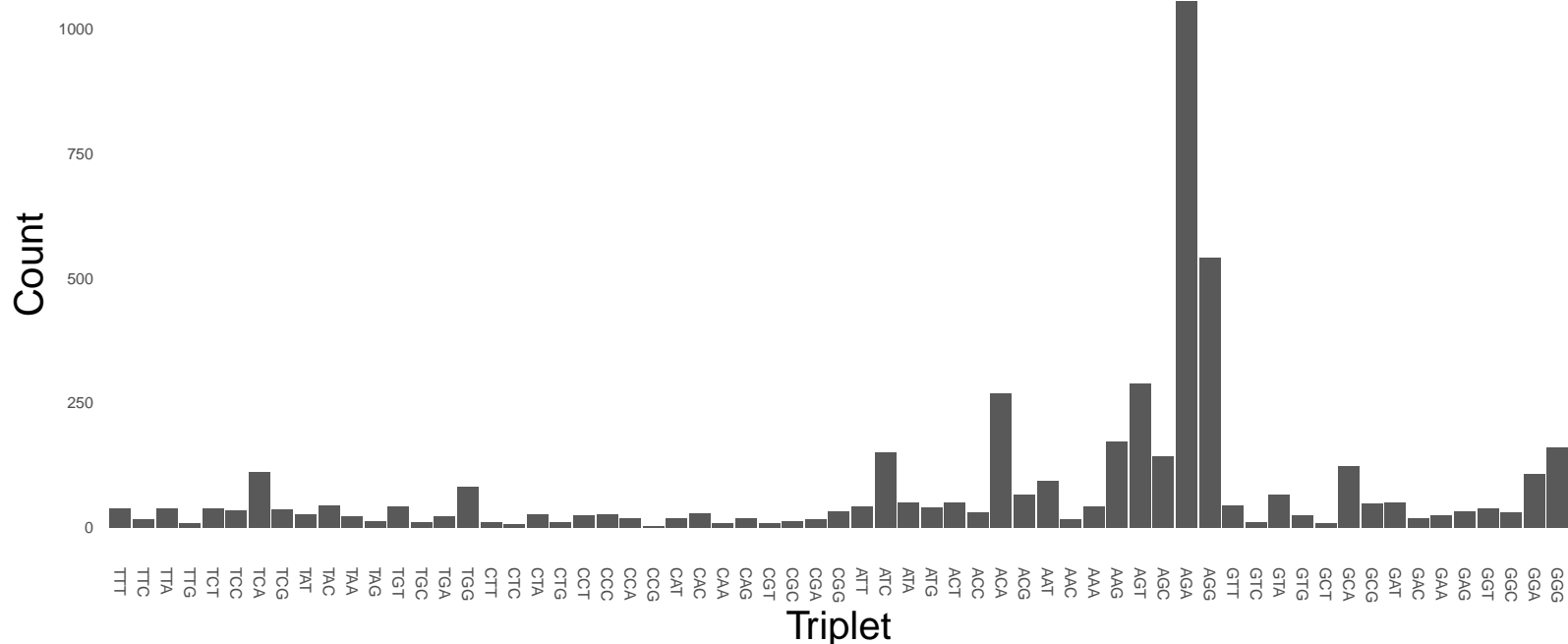
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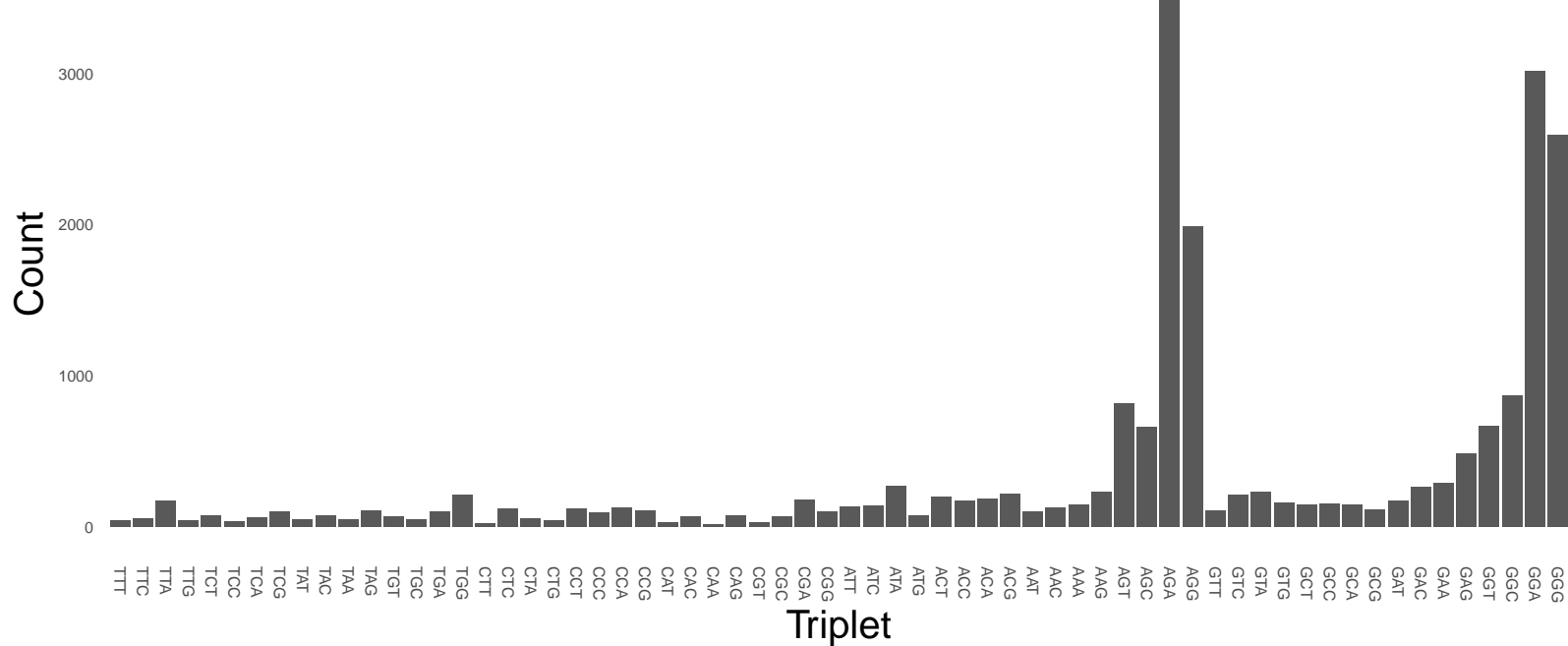
Gene IGHV3-132\*01\_G164C



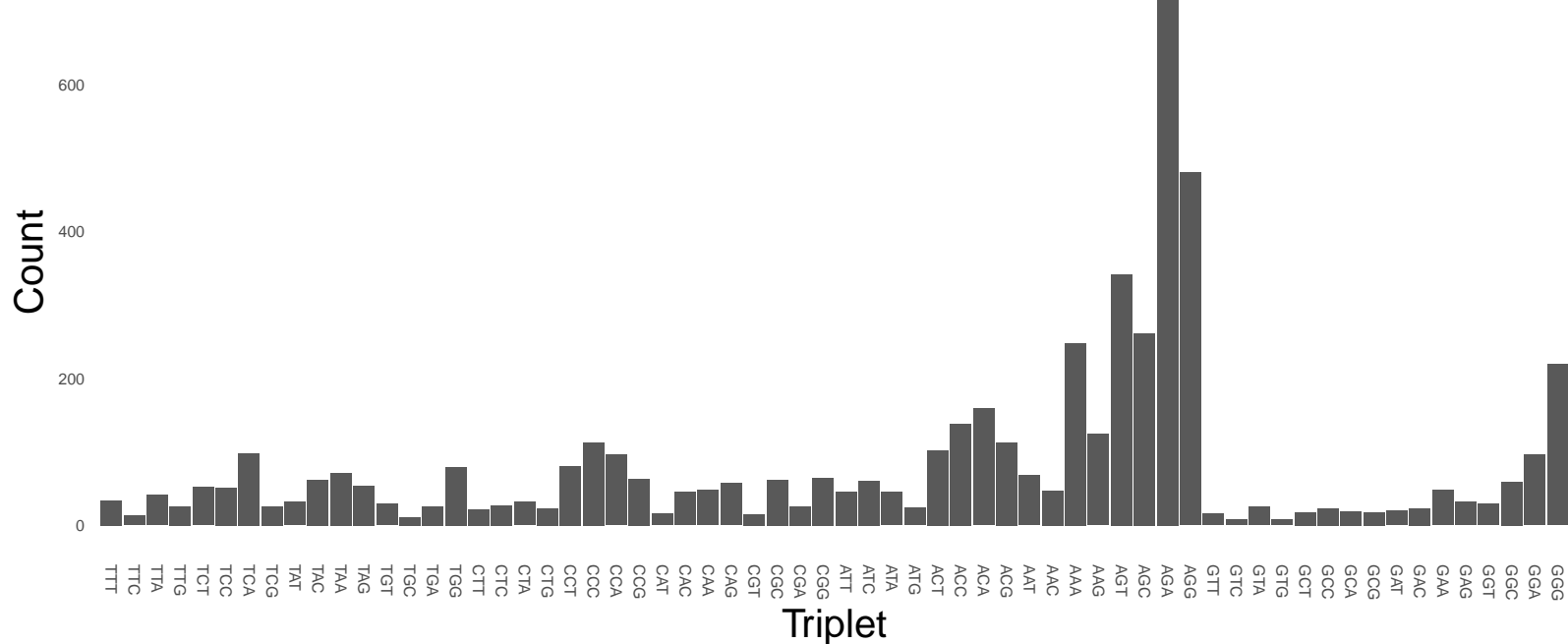
IGHV3-16\*01\_A275G- Final 3 nucleotides as a triplet



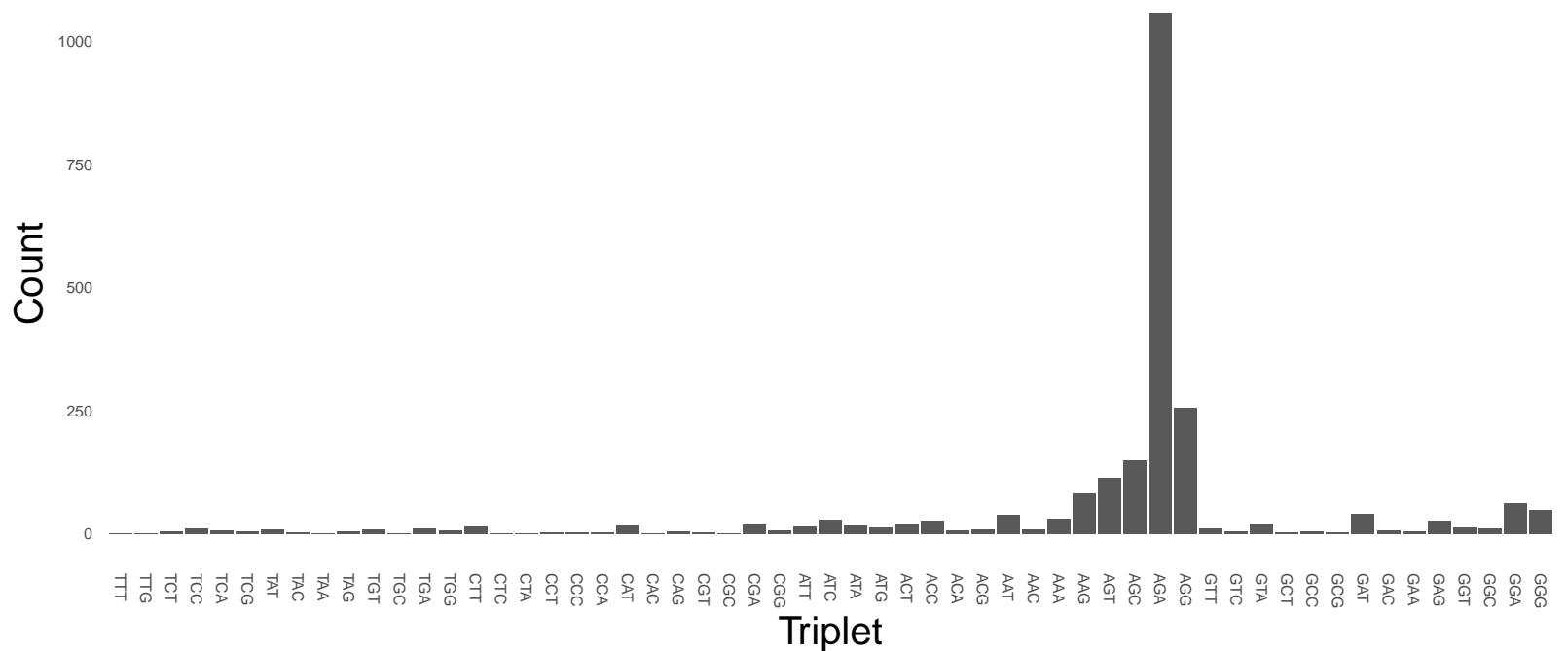
IGHV3-184\*01\_T109C\_G275A- Final 3 nucleotides as a triplet



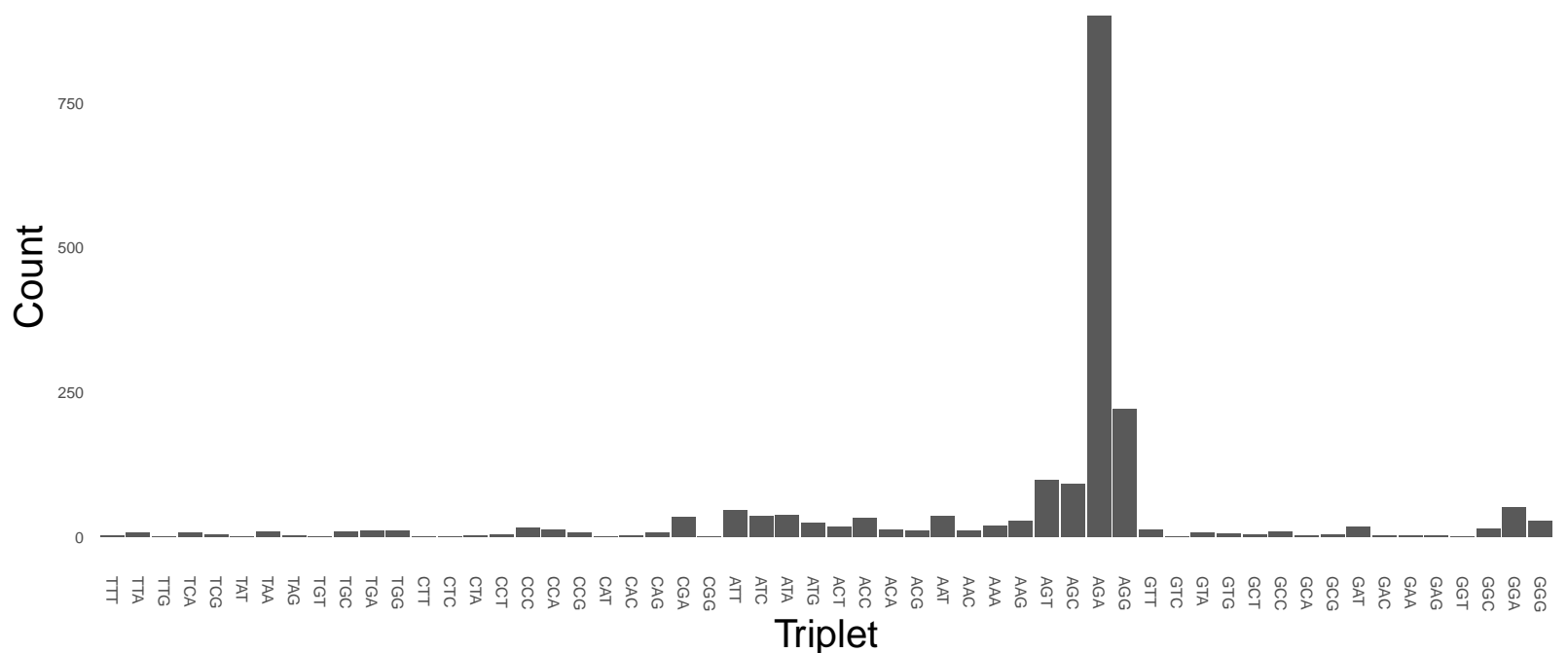
IGHV4-80\*01\_G70A\_T189G\_T196A- Final 3 nucleotides as a triplet



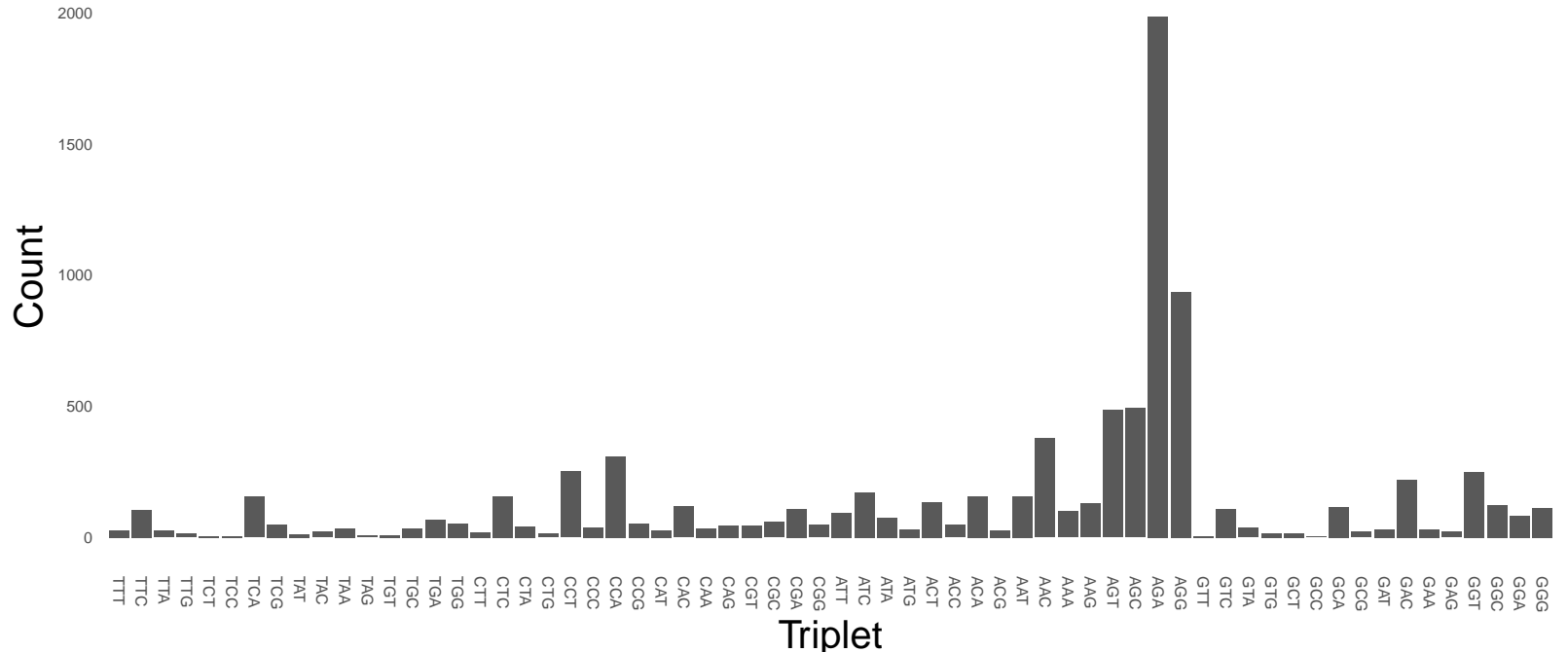
IGHV3-28\*02\_C118T\_T126C\_G277A- Final 3 nucleotides as a triplet



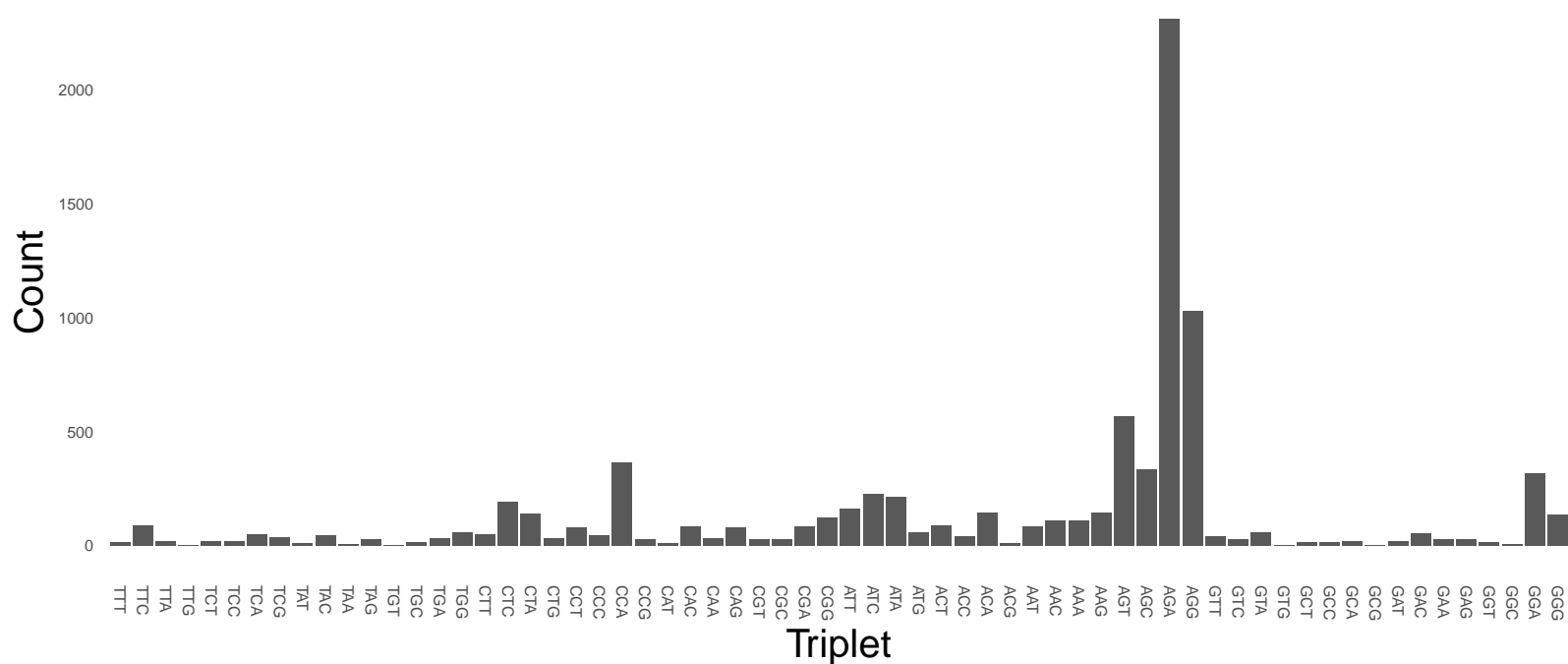
IGHV3-28\*02\_C118T\_C176G\_A187G\_G274A\_G277A- Final 3 nucleotides as a triplet



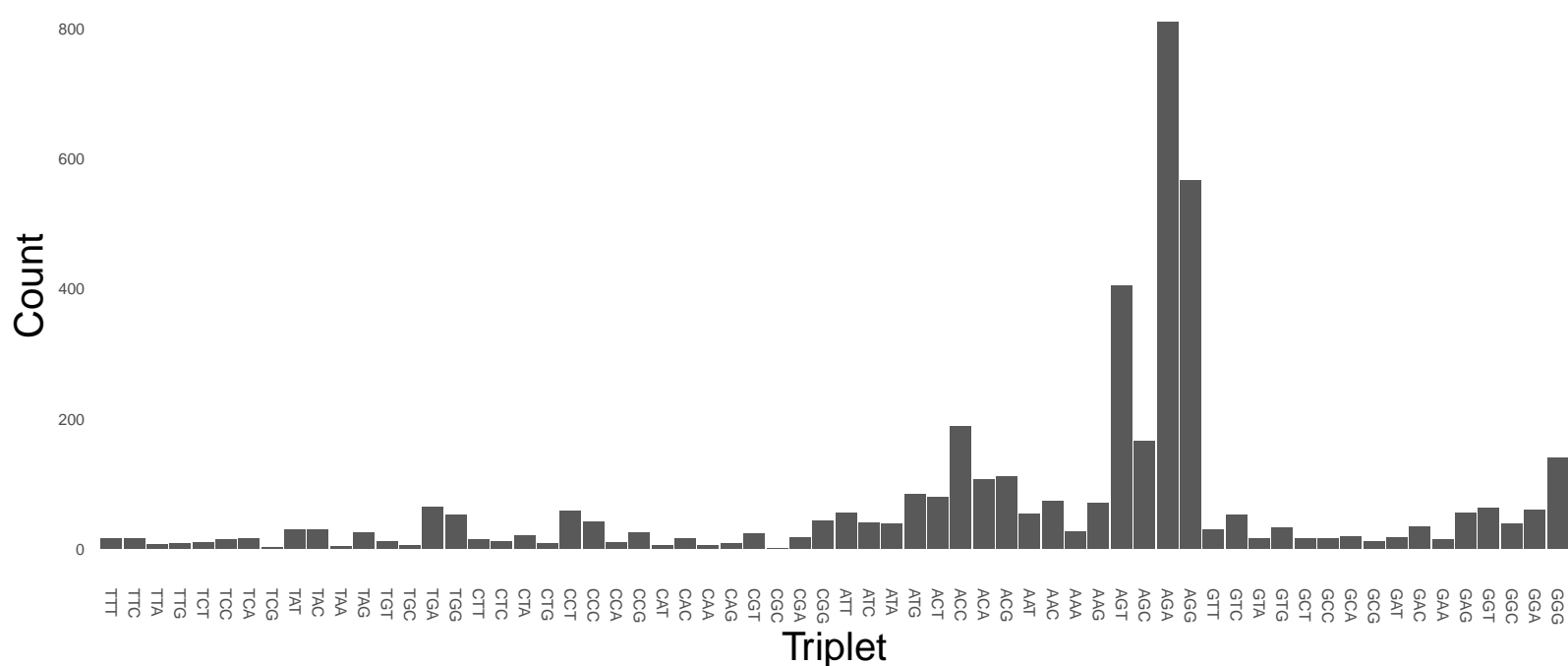
IGHV3-30\*01\_G109T\_T110C\_G207A\_C264T- Final 3 nucleotides as a triplet



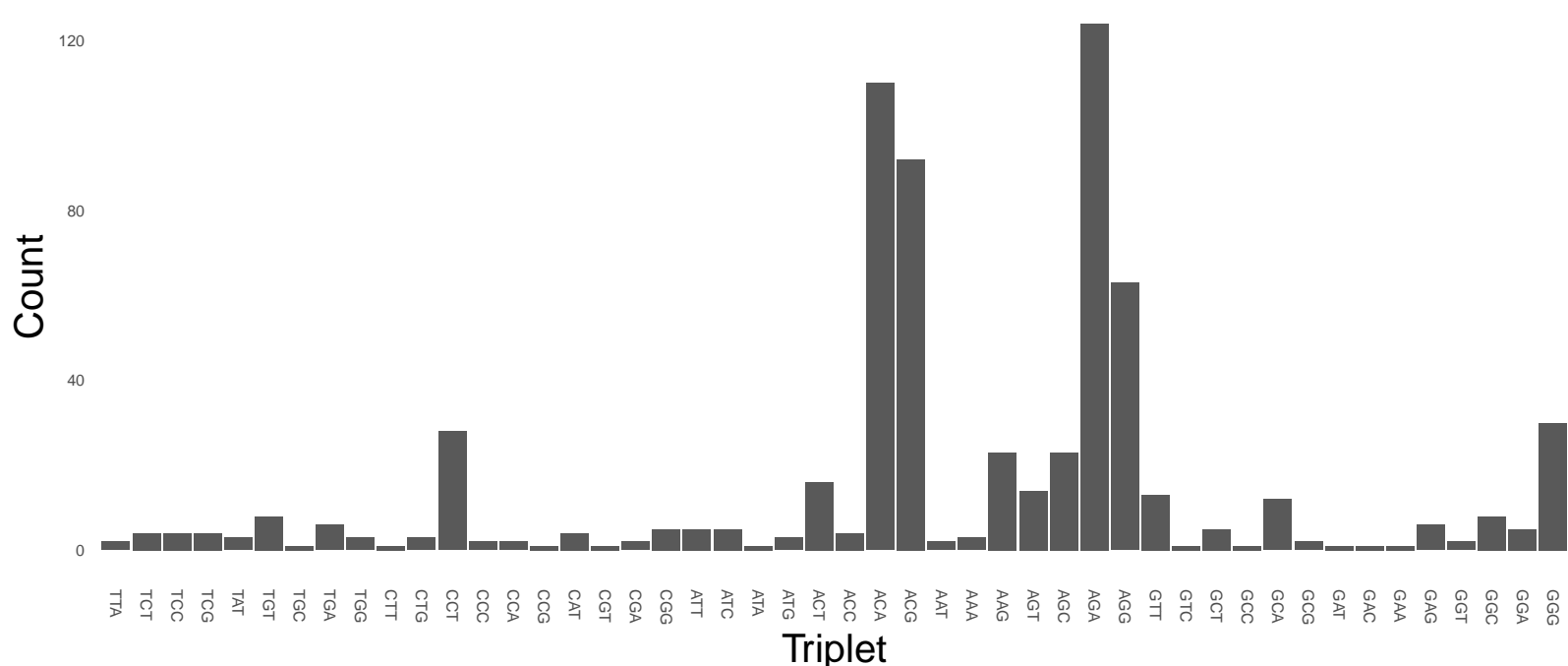
IGHV3-30\*02\_C141G\_C183T- Final 3 nucleotides as a triplet



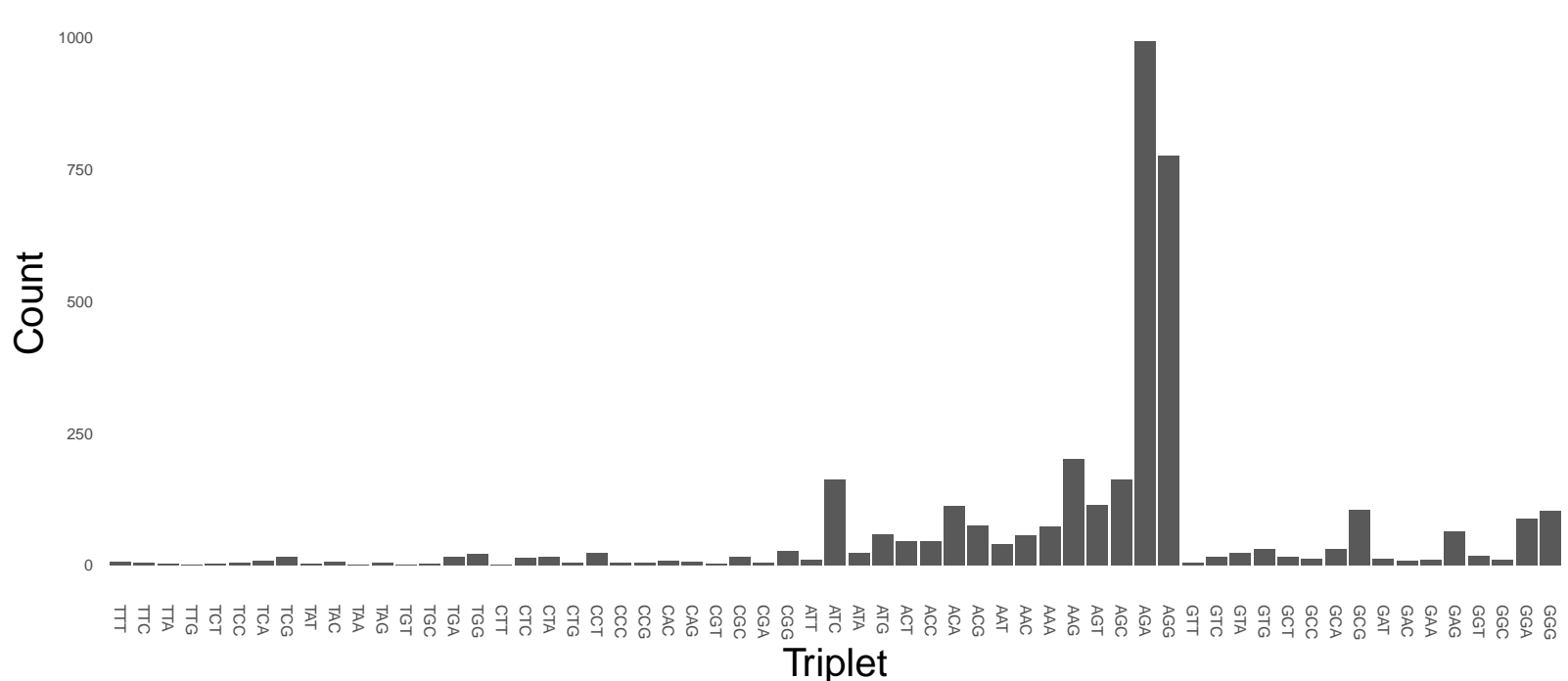
IGHV3-38\*01\_C27A\_C38T\_A39C\_G48C\_T78C\_A192G- Final 3 nucleotides as a triplet



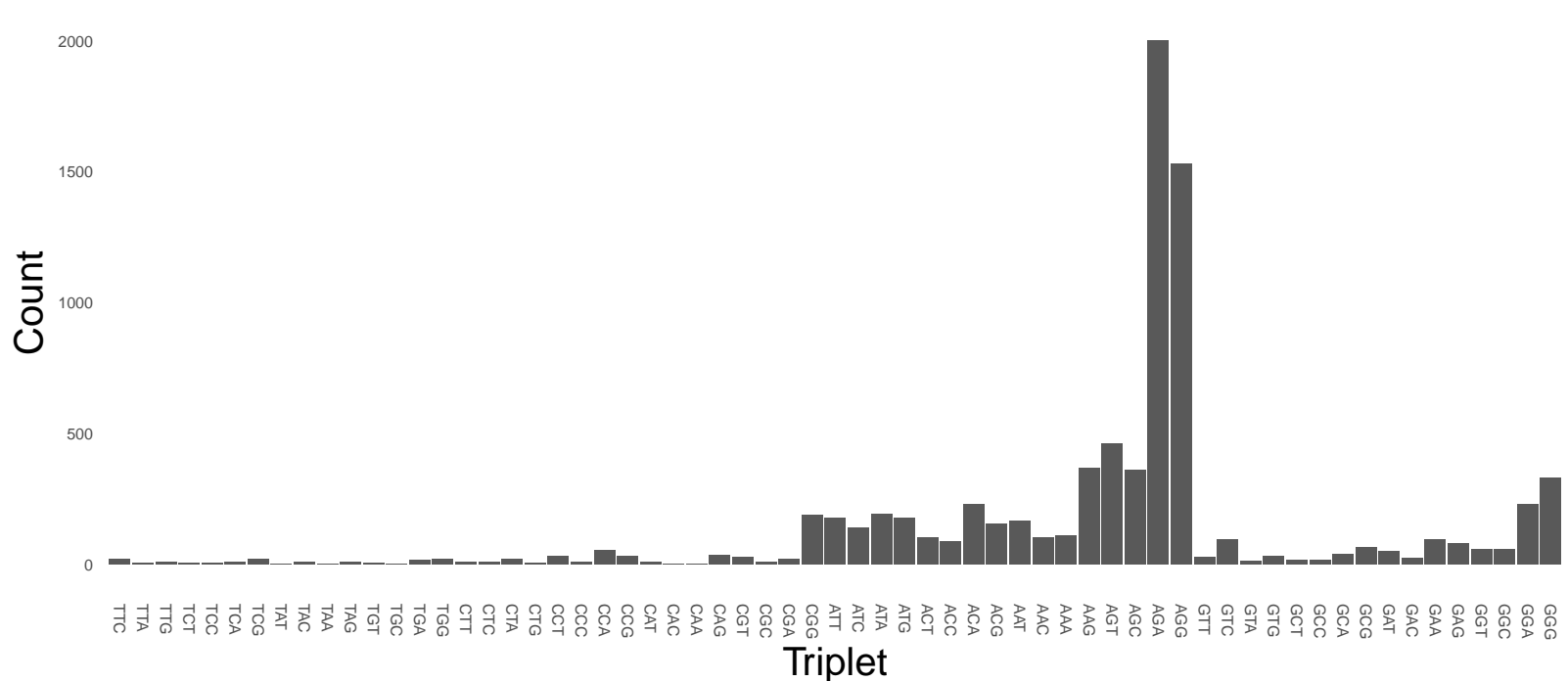
IGHV3-100\*02\_C210T- Final 3 nucleotides as a triplet



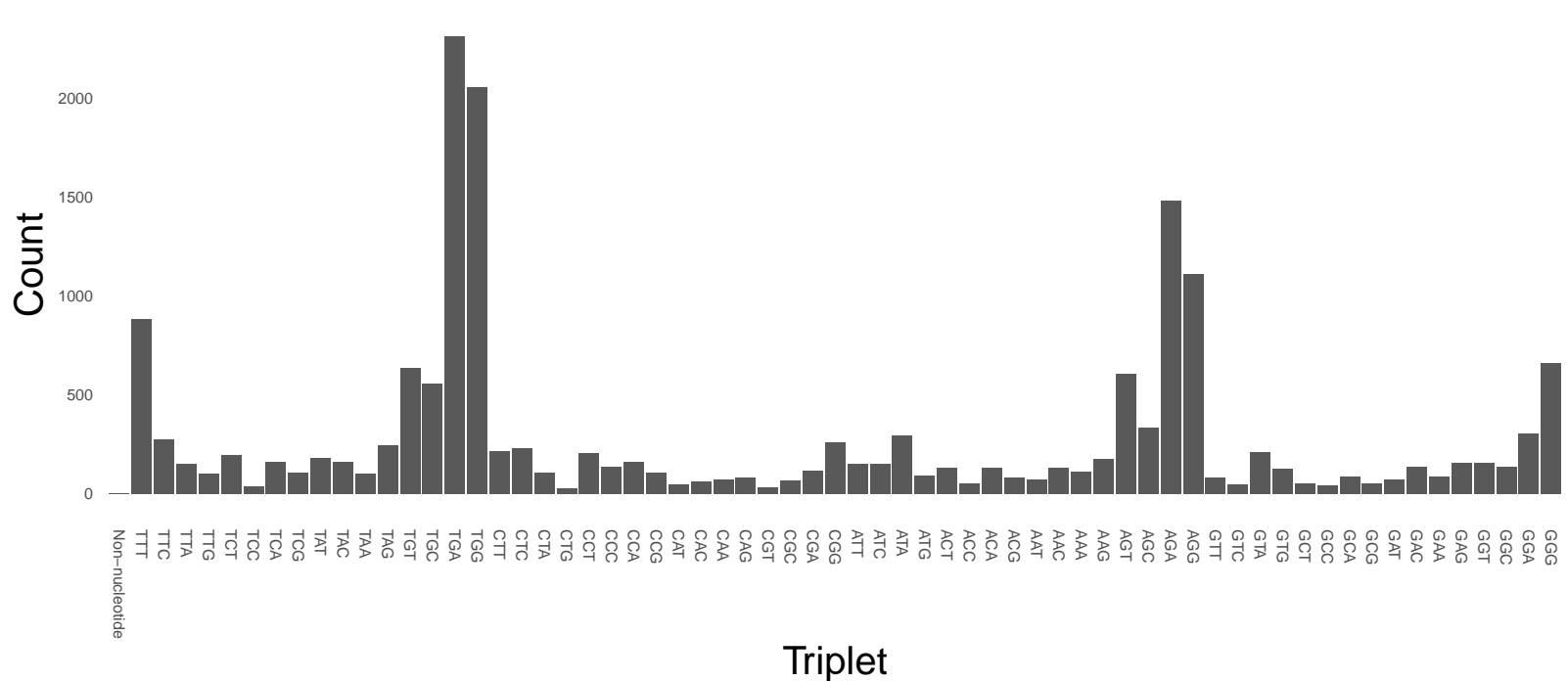
IGHV3-103\*01\_C38T\_A39C\_A40C\_C113G\_T114C\_C118T\_G157A\_C210T- Final 3 nucleotides



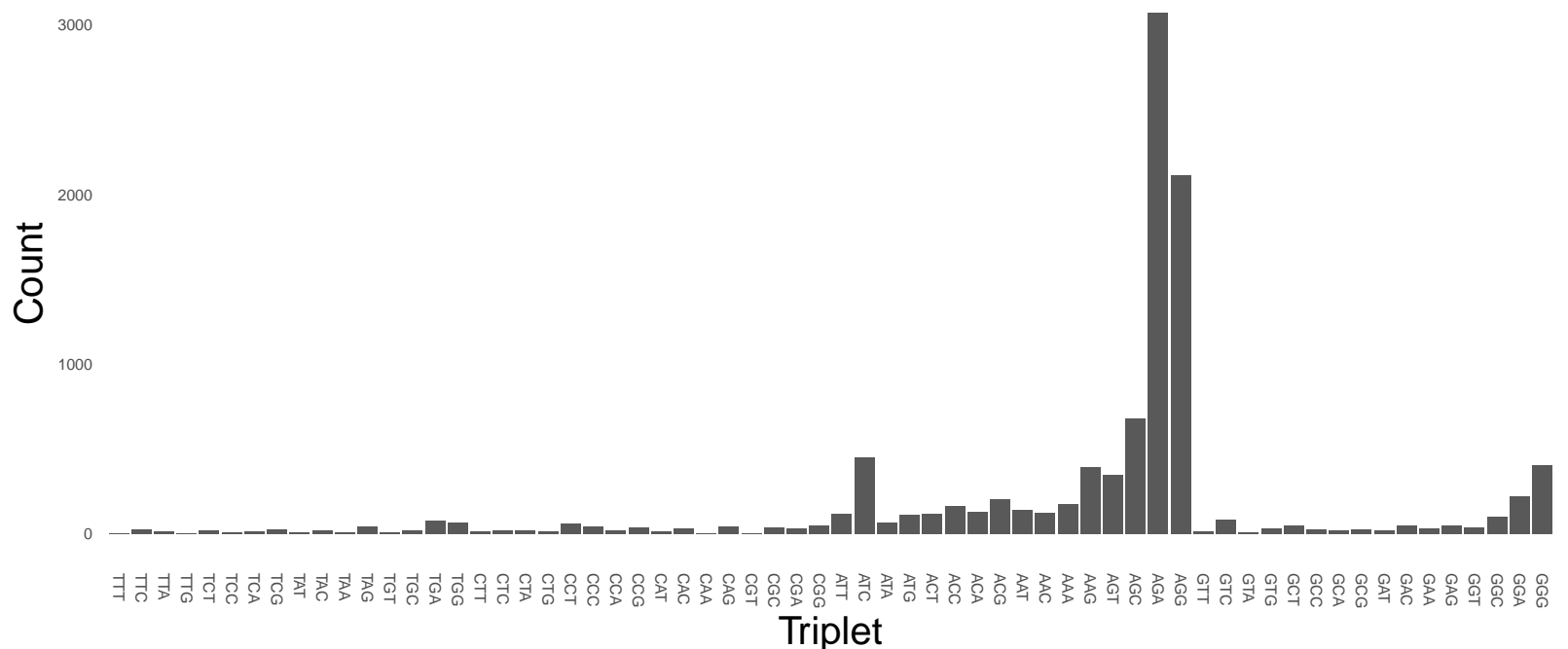
IGHV3-103\*01\_T19A\_G24A\_C27A\_C38T\_A39C\_A40C\_G59A\_C113G\_T114C\_C118A\_A119G\_C



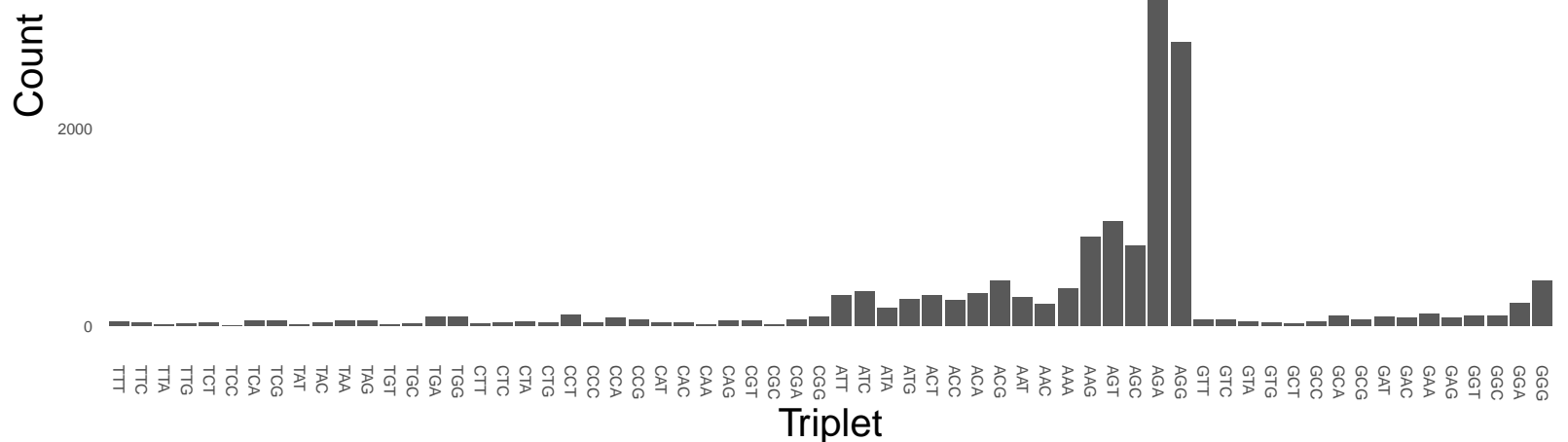
IGHV3-183\*02\_C164T\_A172T\_G193A- Final 3 nucleotides as a triplet



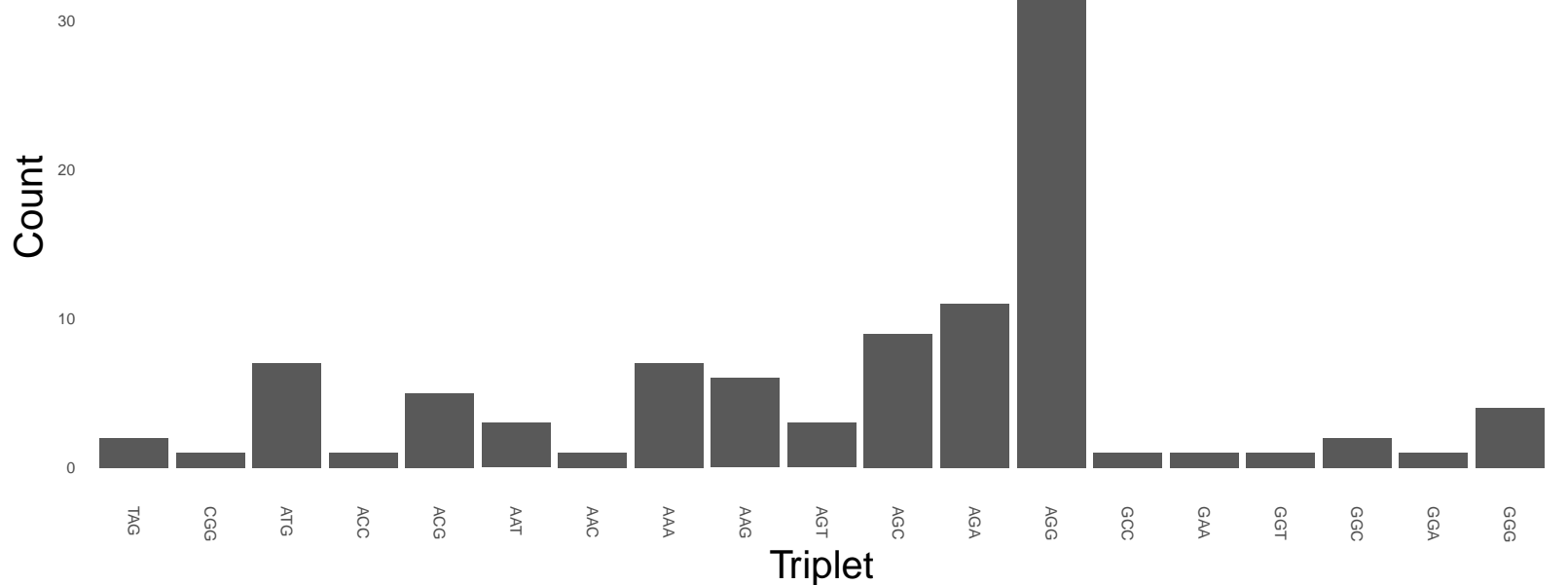
IGHV3S42\*01\_C38T\_A39C\_A40C\_C111T\_T112G\_G114C\_A118T\_T120C\_A133G\_G186T\_C210



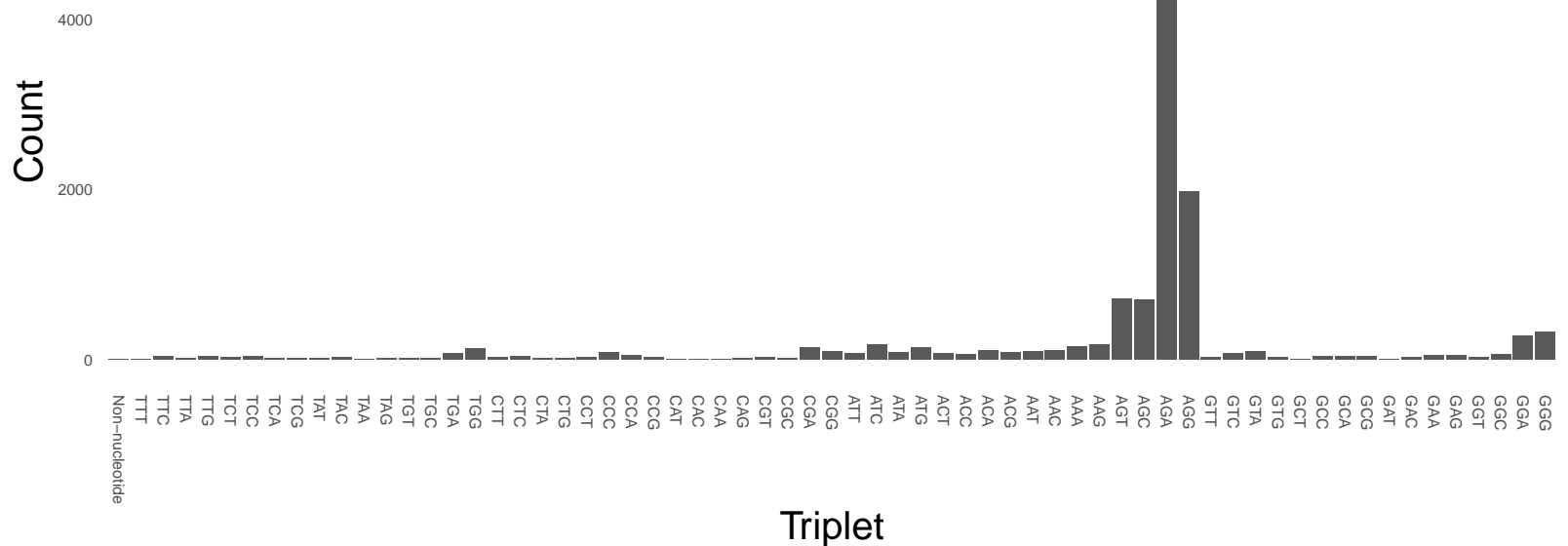
IGHV3S42\*01\_T19A\_G24A\_C27A\_C38T\_A39C\_A40C\_G59A\_C111T\_T112G\_G114C\_A119G\_T



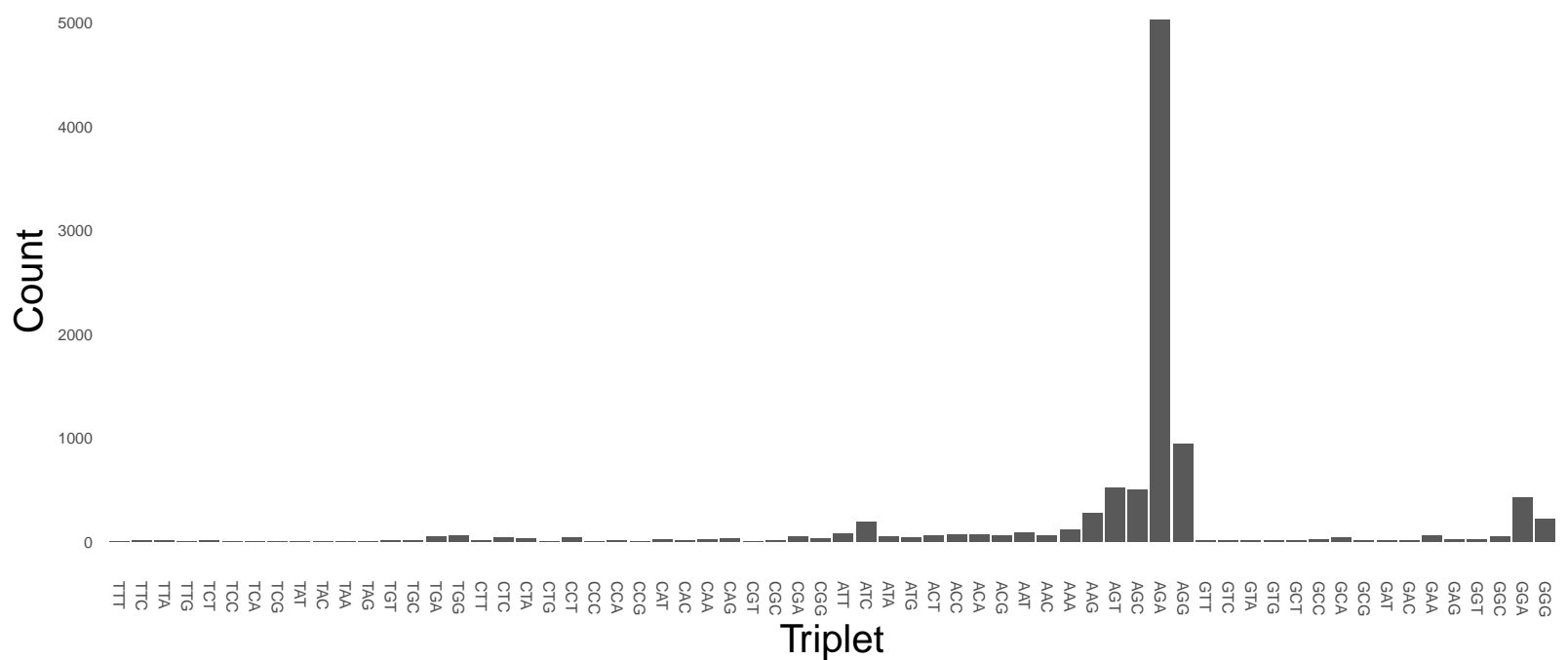
IGHV1-151\*01\_A83T\_G164A- Final 3 nucleotides as a triplet



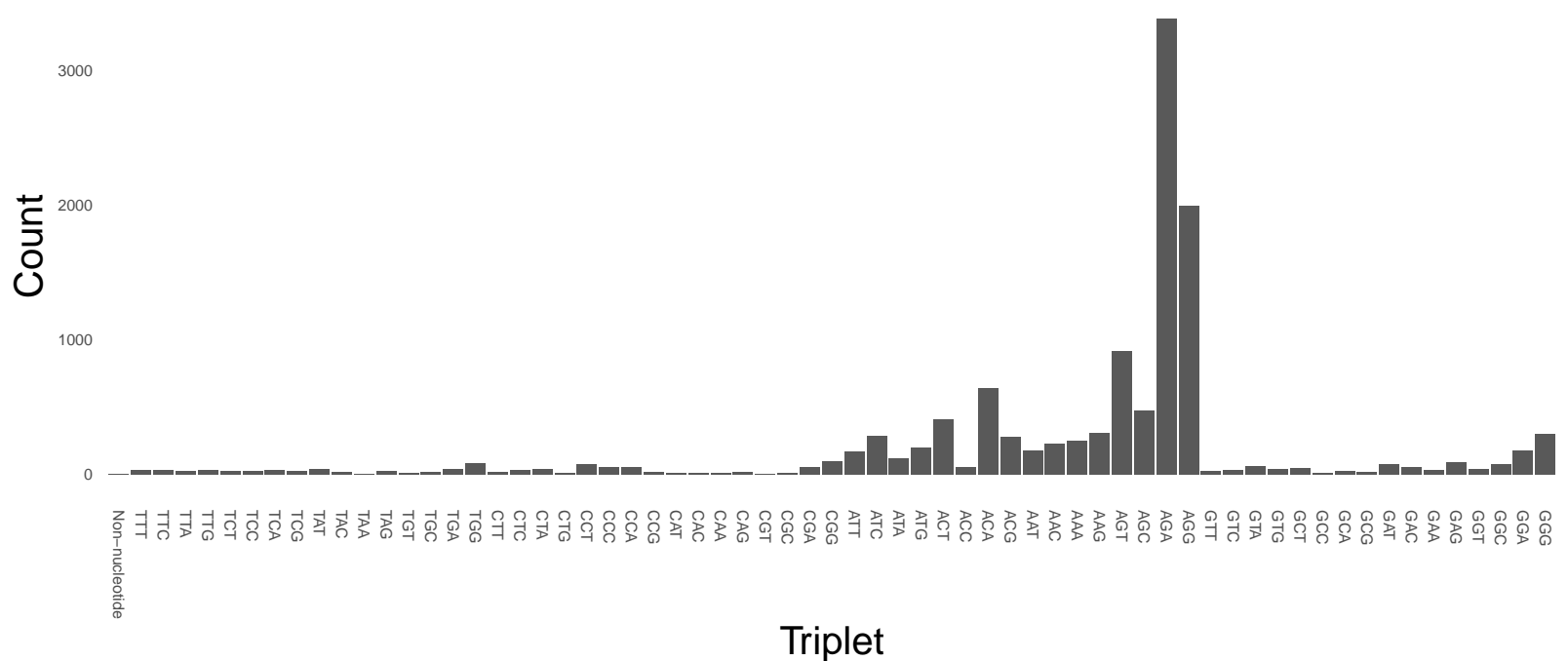
### IGHV3-54\*02\_G170C- Final 3 nucleotides as a triplet



IGHV3-59\*01\_C69T\_T78C\_T109C\_C163G\_A172T\_G175A\_G176C- Final 3 nucleotides as a trip

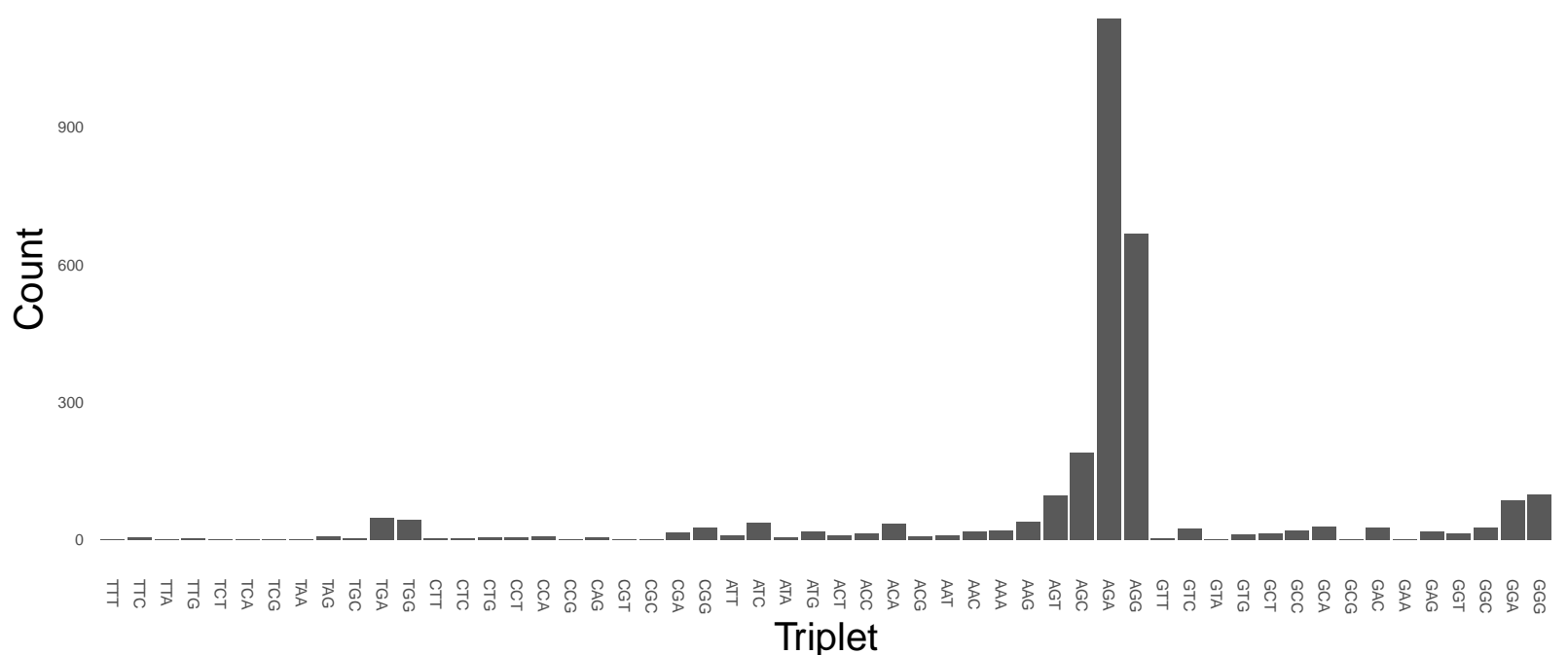


IGHV4-160\*01\_A106G\_A109T\_G147A\_C290A- Final 3 nucleotides as a triplet

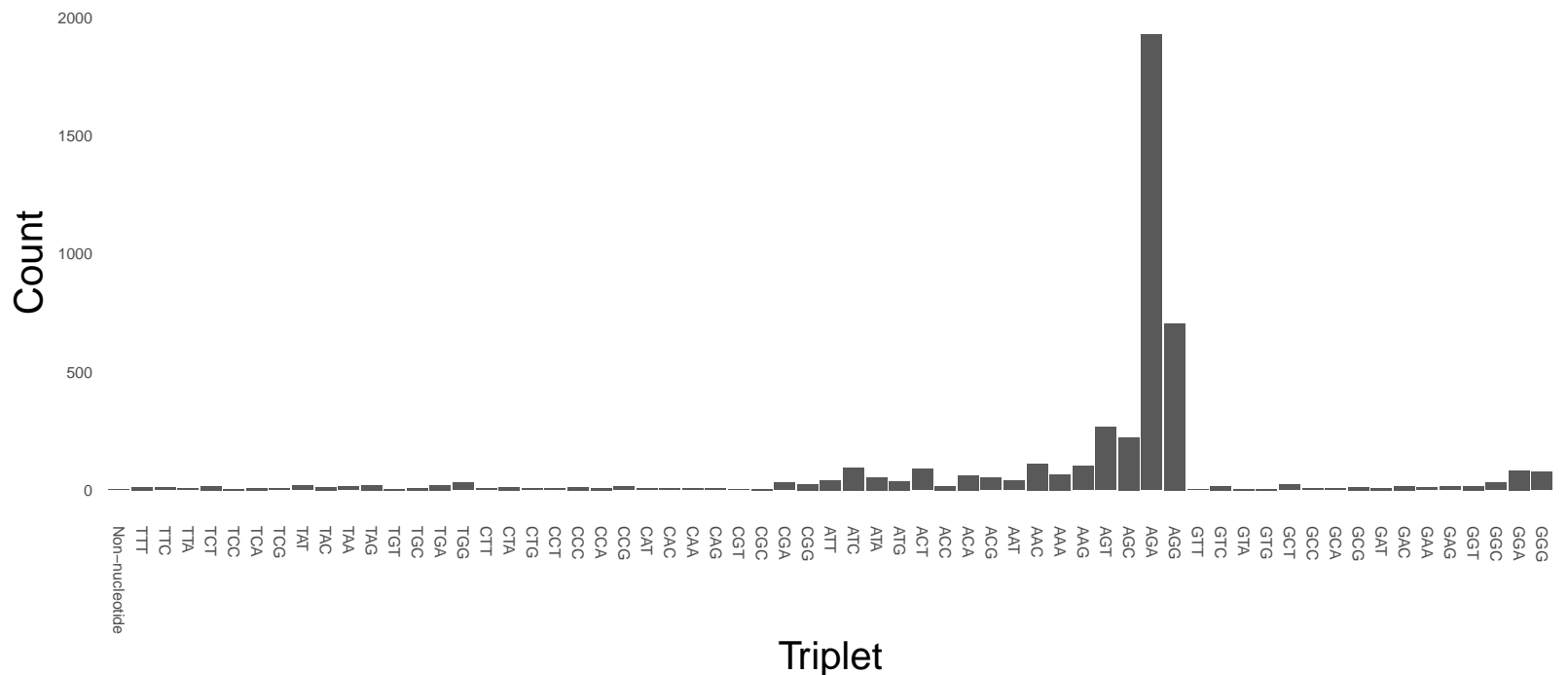




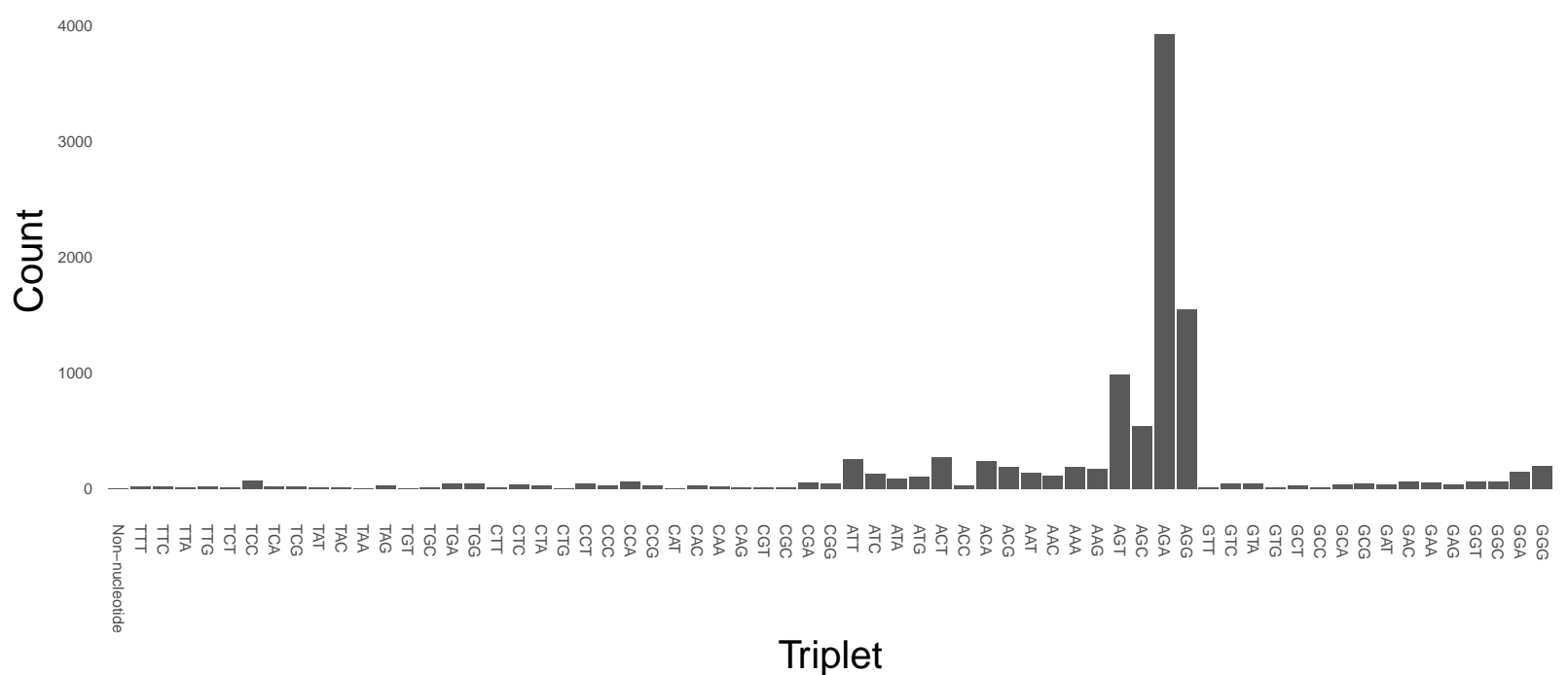
IGHV3-134\*01\_T34G\_A39C\_A40C\_A48C\_G87C\_A118C\_G119A\_G132A\_C163A\_G175A\_G184A



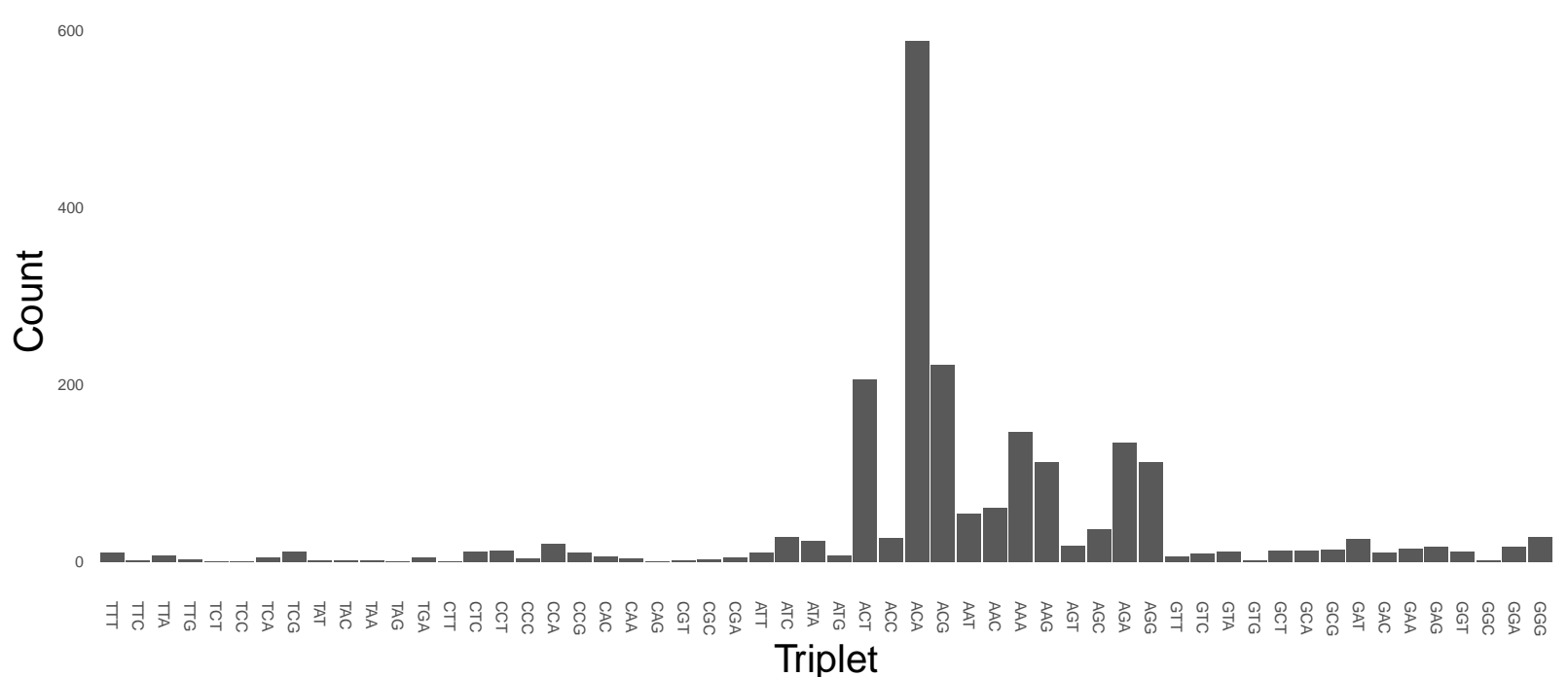
IGHV4-73\*01\_C24T\_C133G\_G147A\_T163A\_C168T\_T169G- Final 3 nucleotides as a triplet



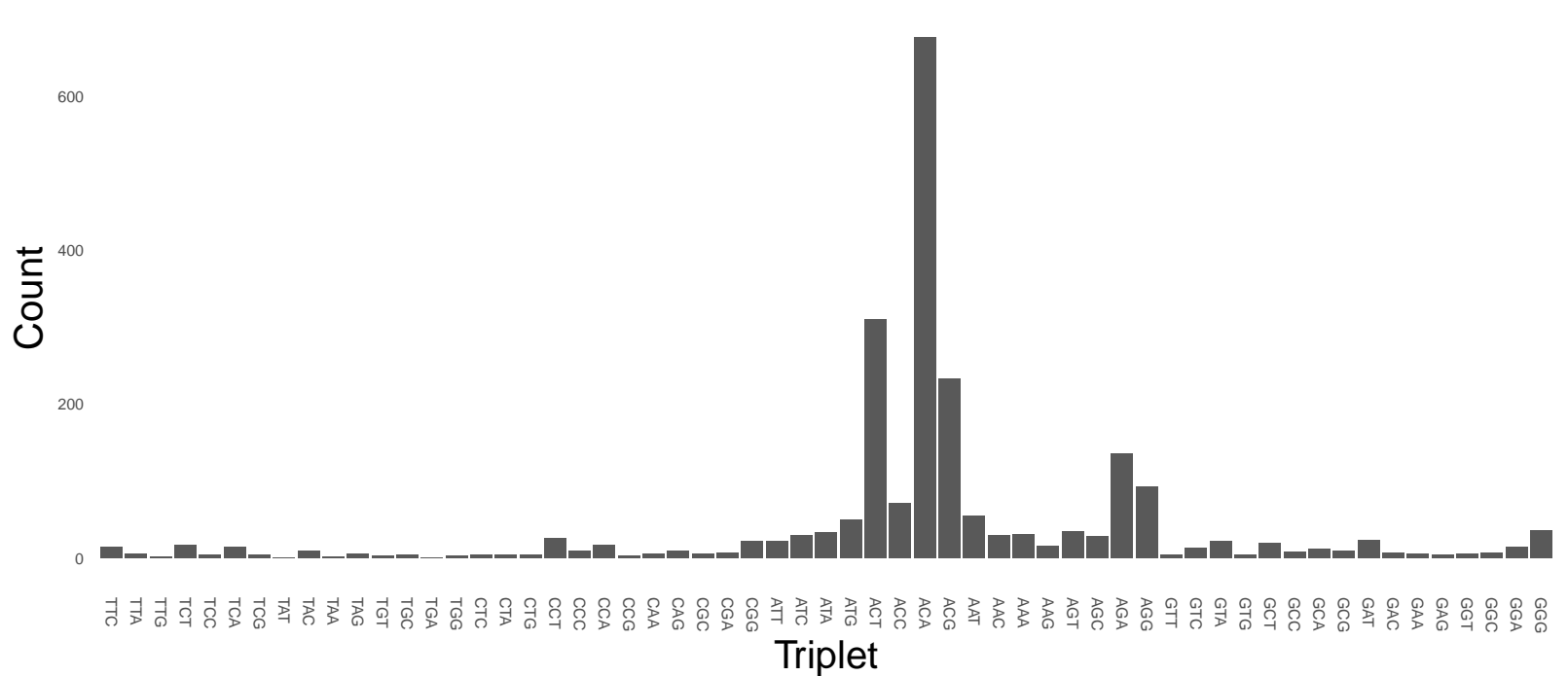
IGHV4-127\*01\_C34G\_T82G\_A83G\_C87T\_A103G\_G106T\_G107A\_T108C\_T111C\_G112C\_G113A



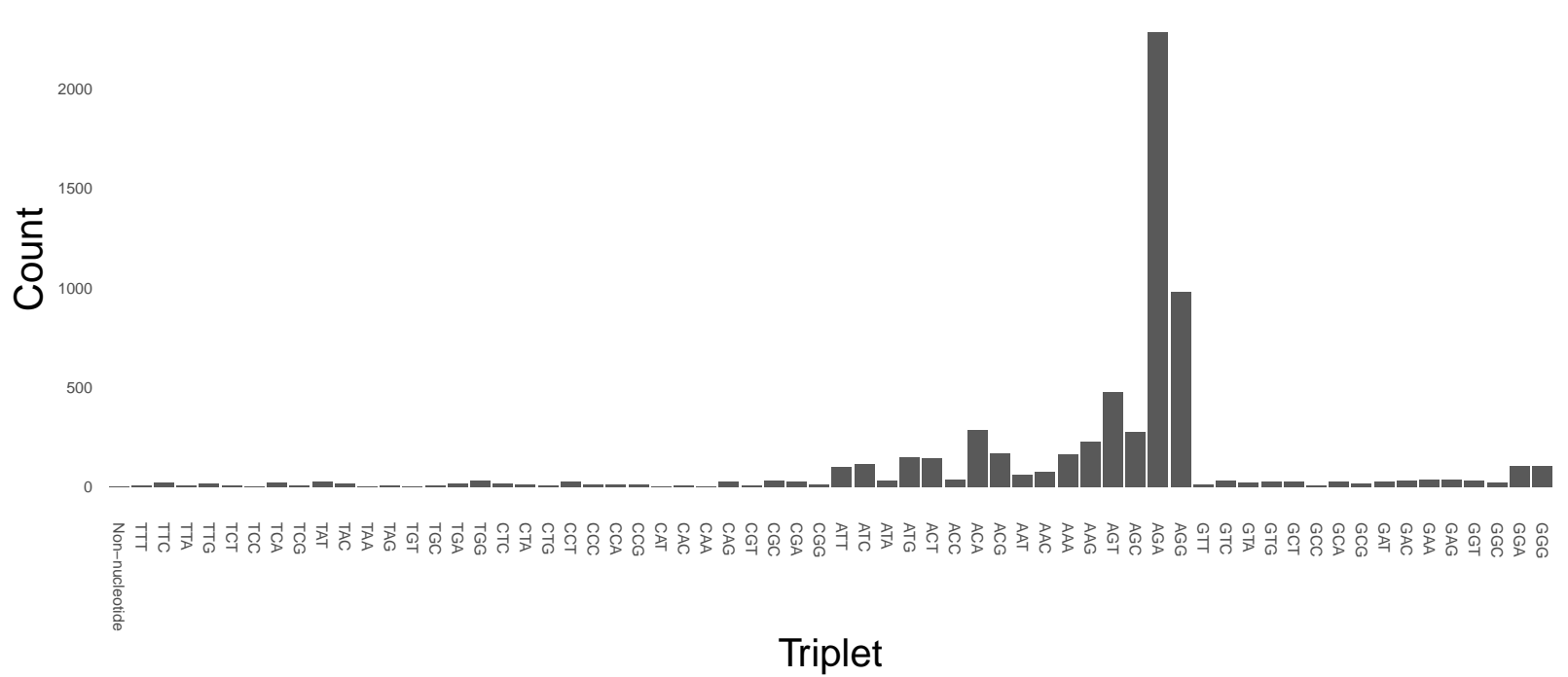
IGHV4-165\*01\_G32A\_G106A\_T109A\_A132G\_G147A\_G153A\_G189T\_T196A\_C255T- Final 3 nucleotides as a triplet



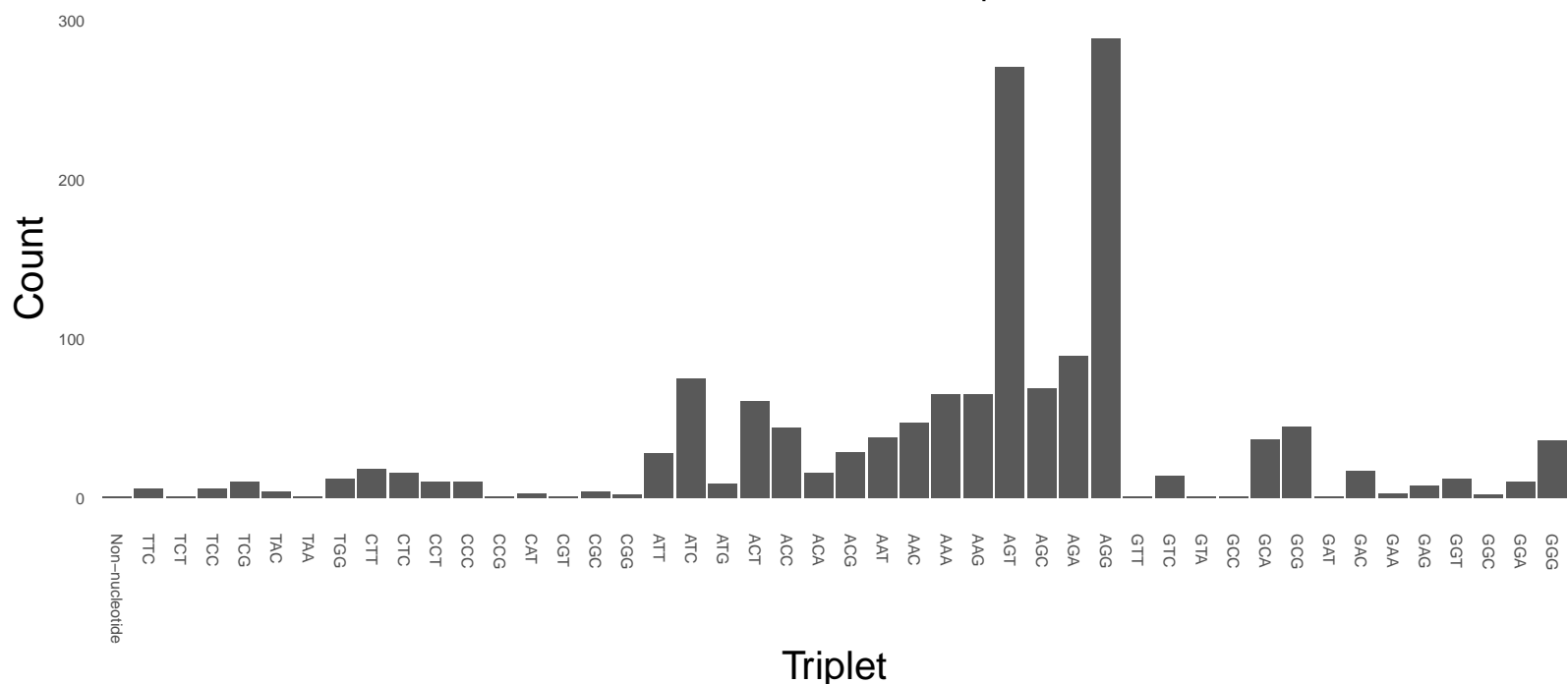
IGHV4-173\*01\_G48A\_C105T\_A113G\_C114G\_G196A\_A197G- Final 3 nucleotides as a triplet



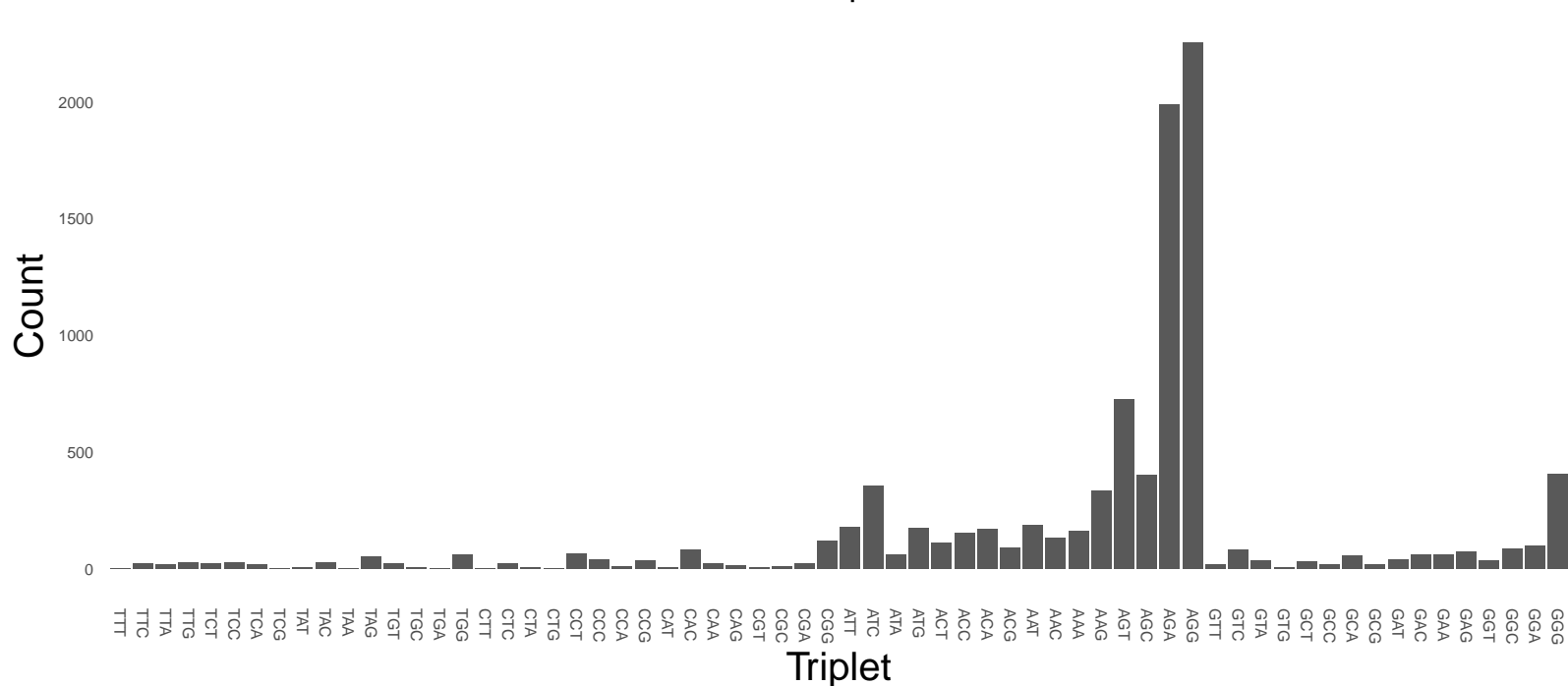
IGHV4S9\*01\_T106A\_A107G\_C108T\_C297G- Final 3 nucleotides as a triplet



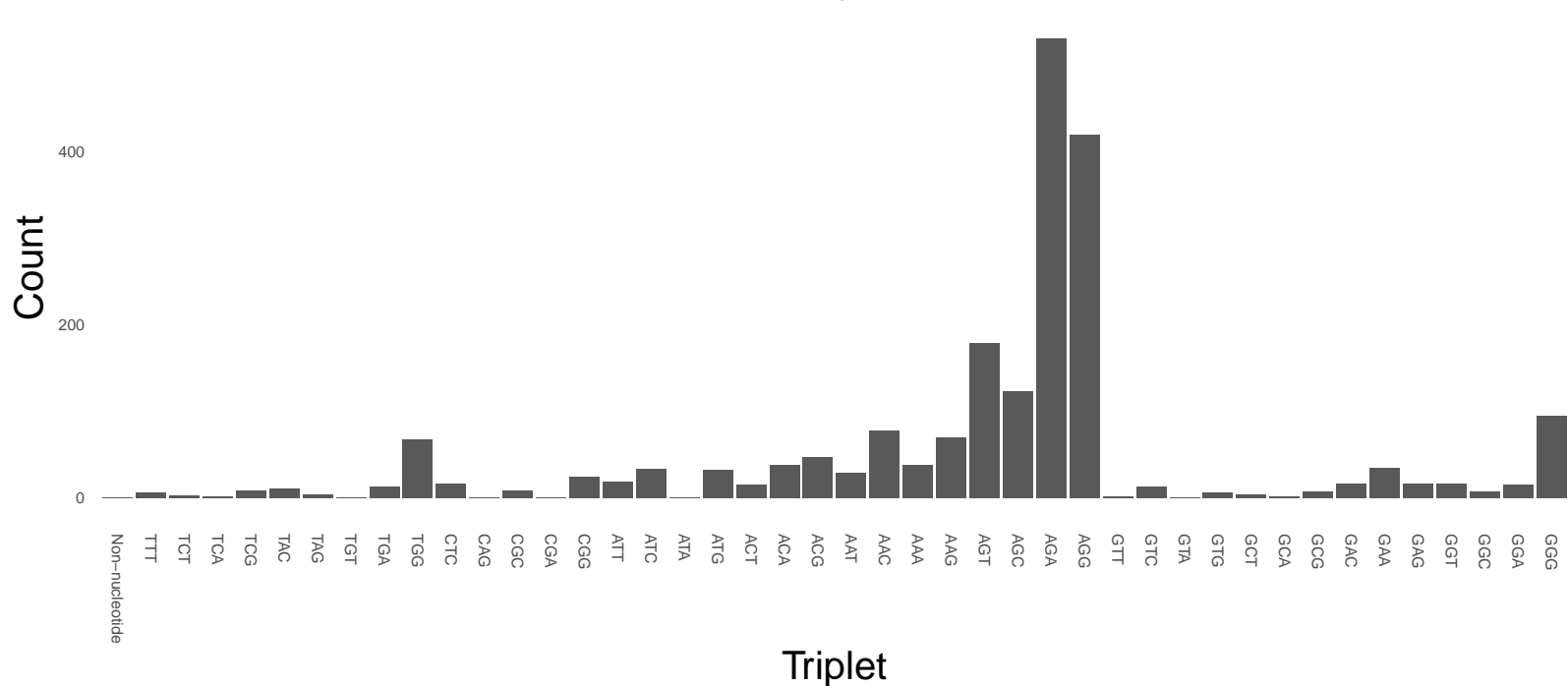
IGHV5-43\*01\_A106G\_C297T- Final 3 nucleotides as a triplet



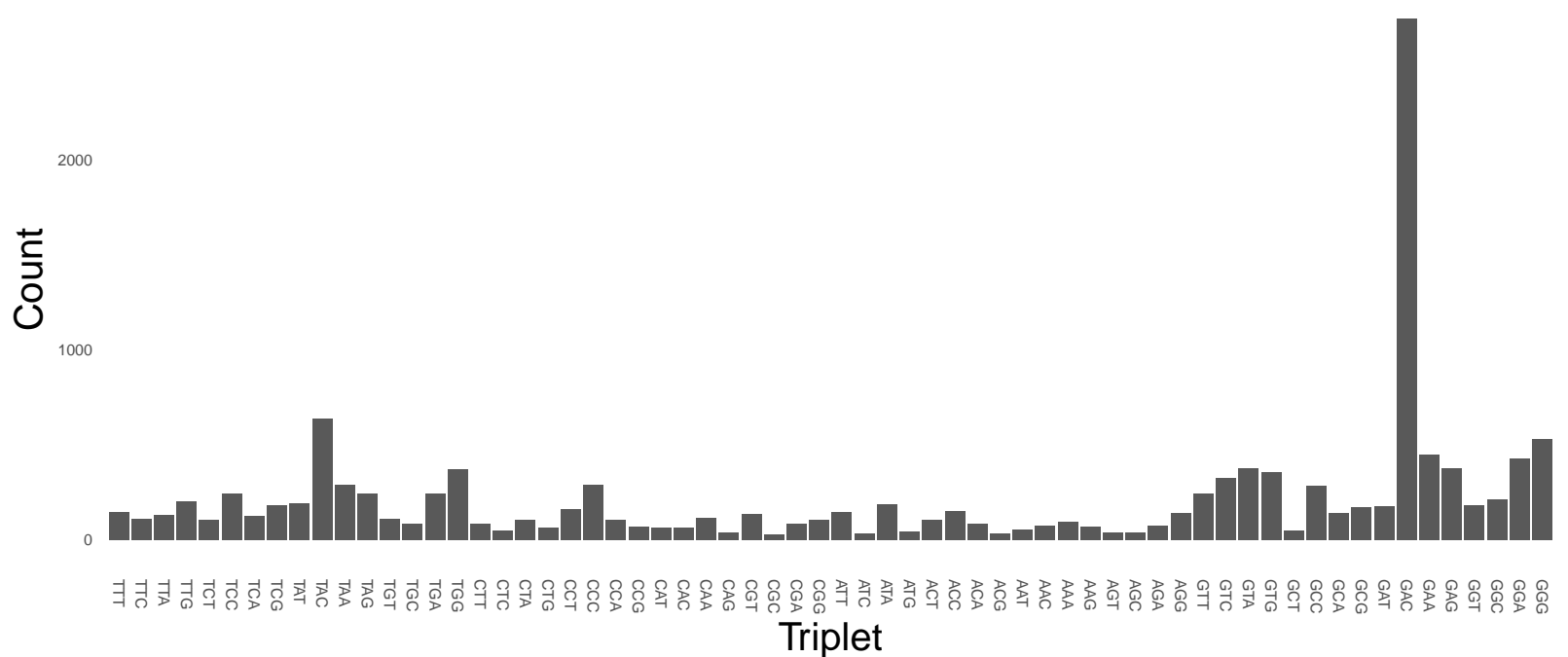
IGHV5-43\*02\_A59G- Final 3 nucleotides as a triplet



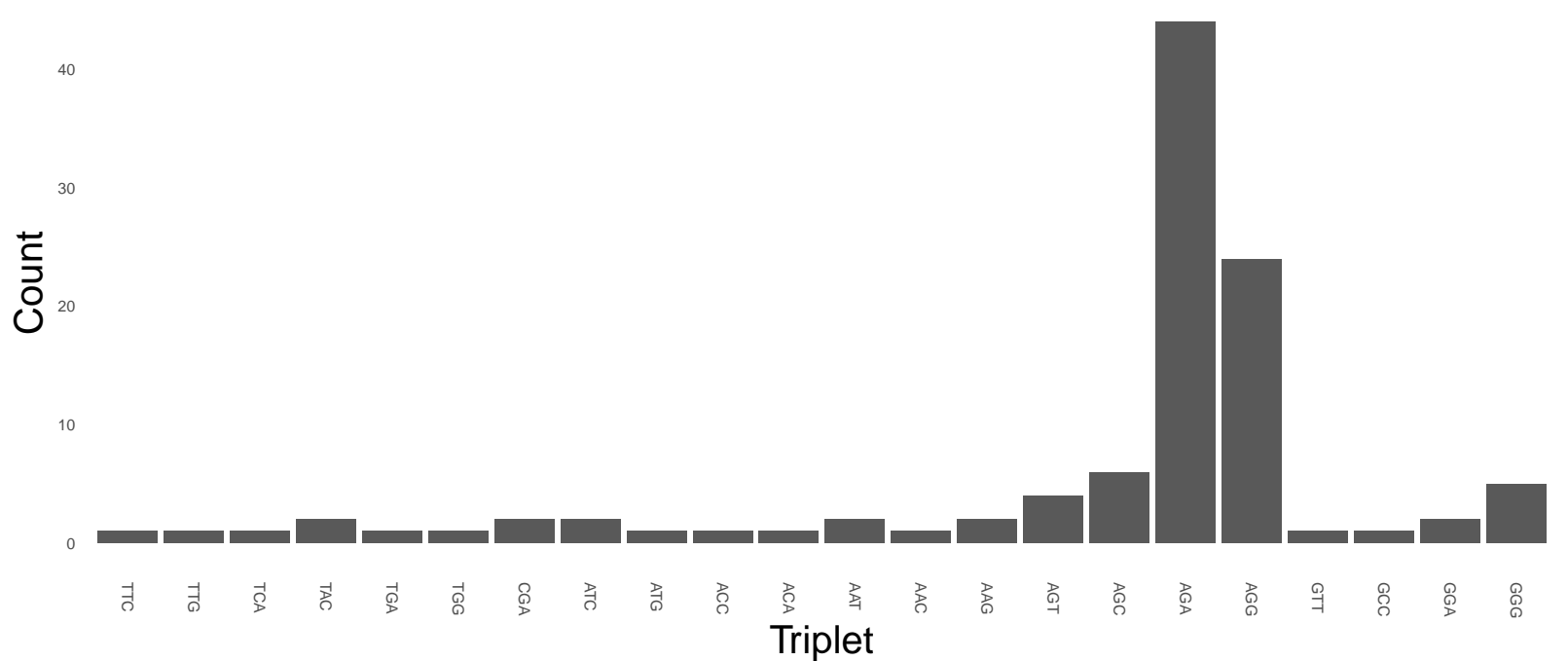
IGHV6-1\*01\_G280T- Final 3 nucleotides as a triplet



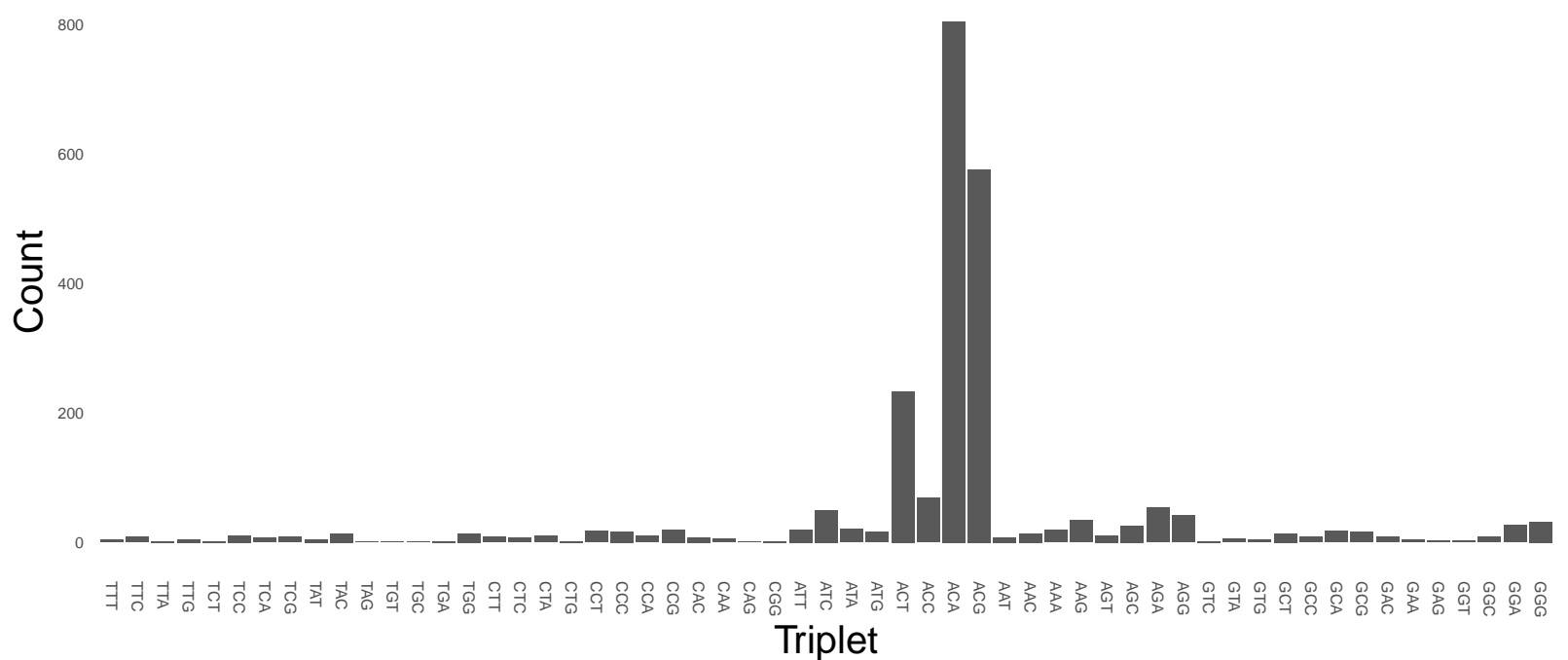
IGHV2-95\*01\_A252G\_A267G- Final 3 nucleotides as a triplet



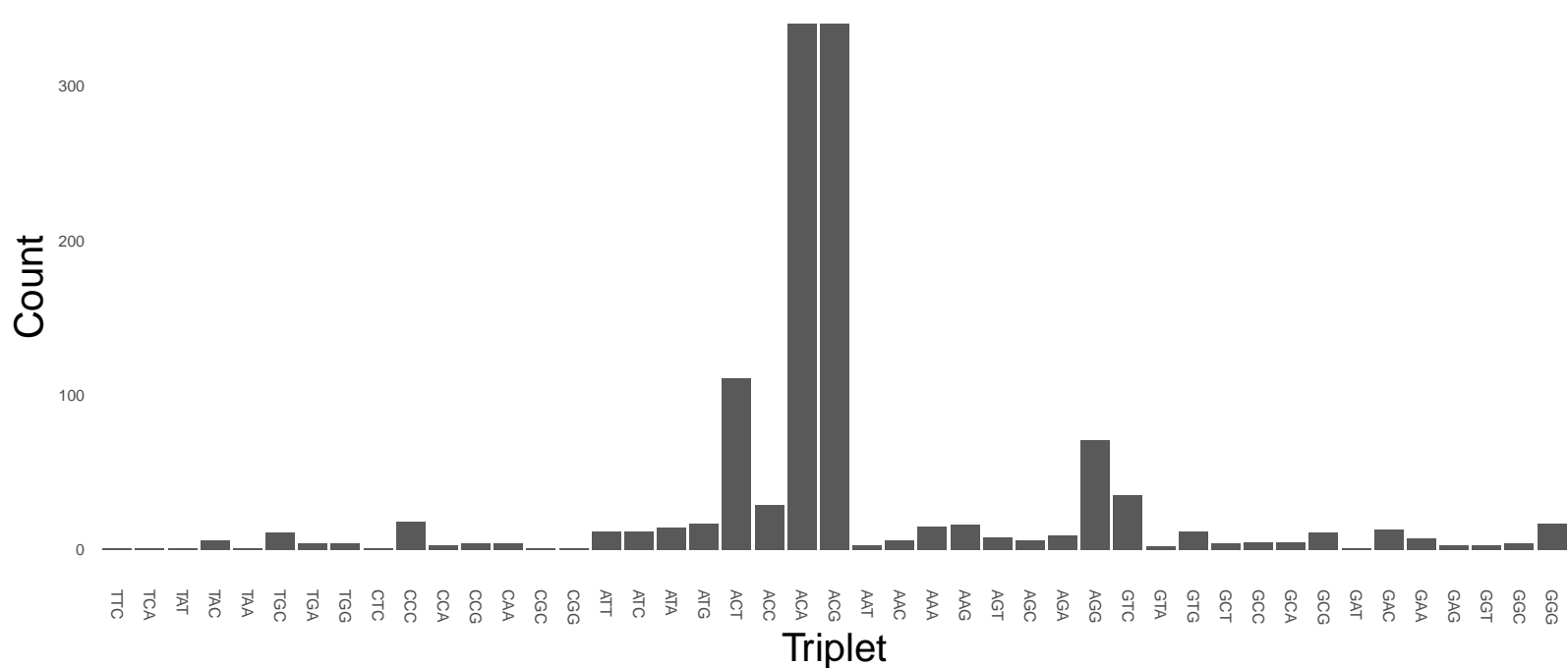
IGHV3-67\*01\_G66C\_C71T\_G118C\_G119A\_G170C\_G188A\_G196T\_G197A\_G275A- Final 3 nucleotides as a triplet



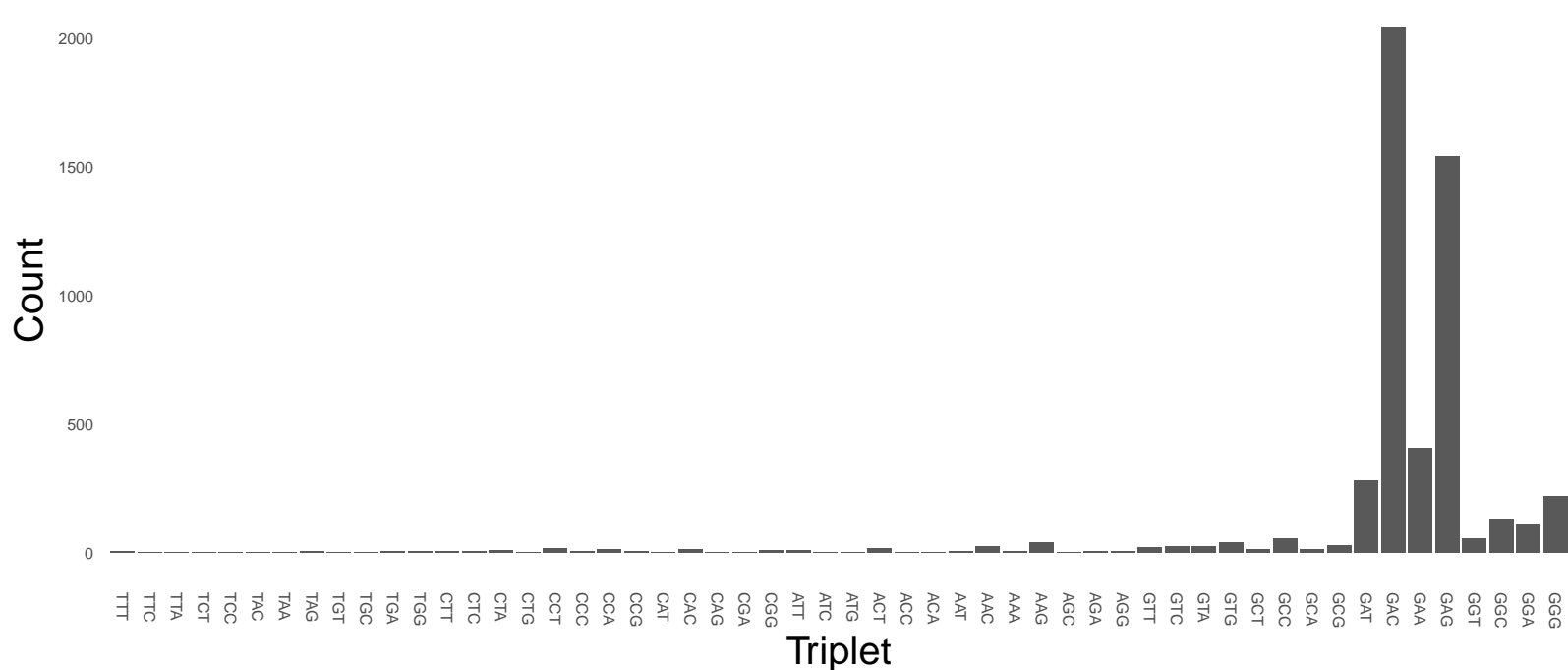
IGHV4-93\*02\_A109T- Final 3 nucleotides as a triplet



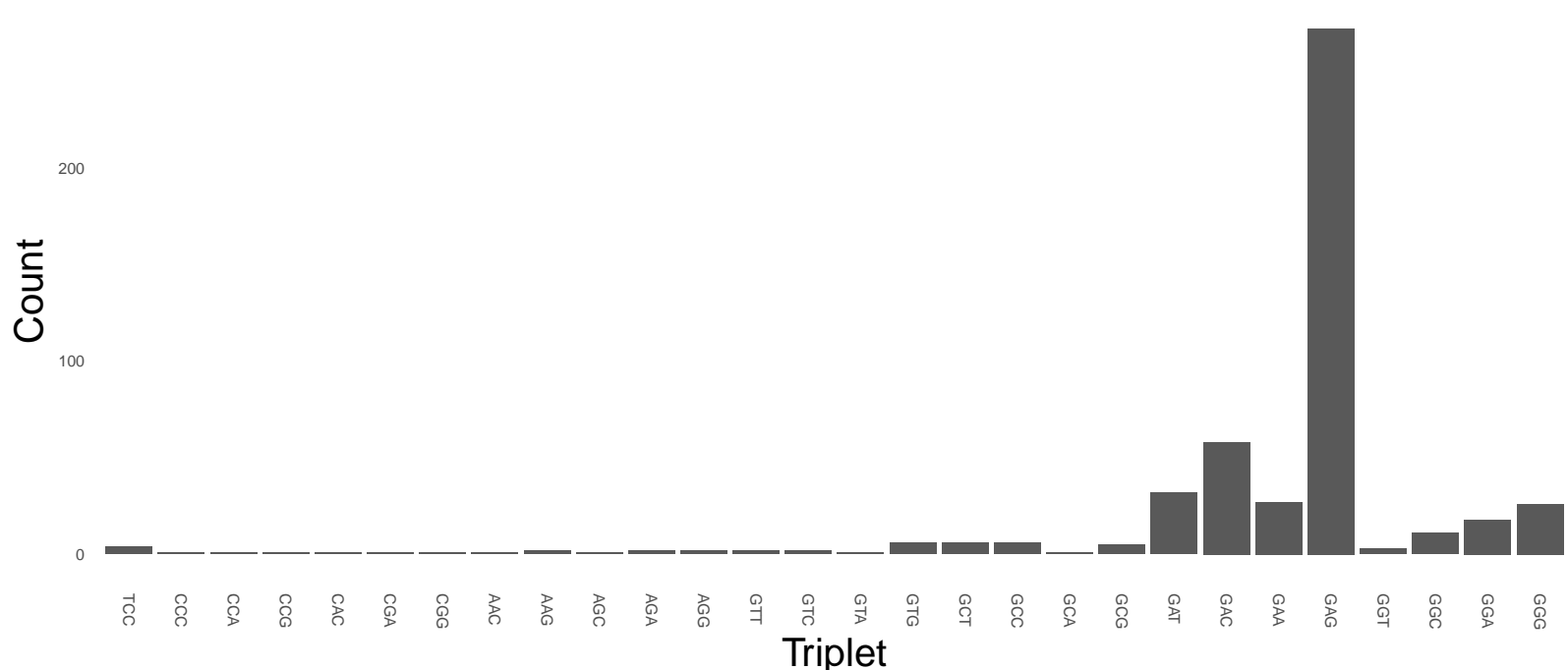
IGHV7-114\*01\_T81A- Final 3 nucleotides as a triplet



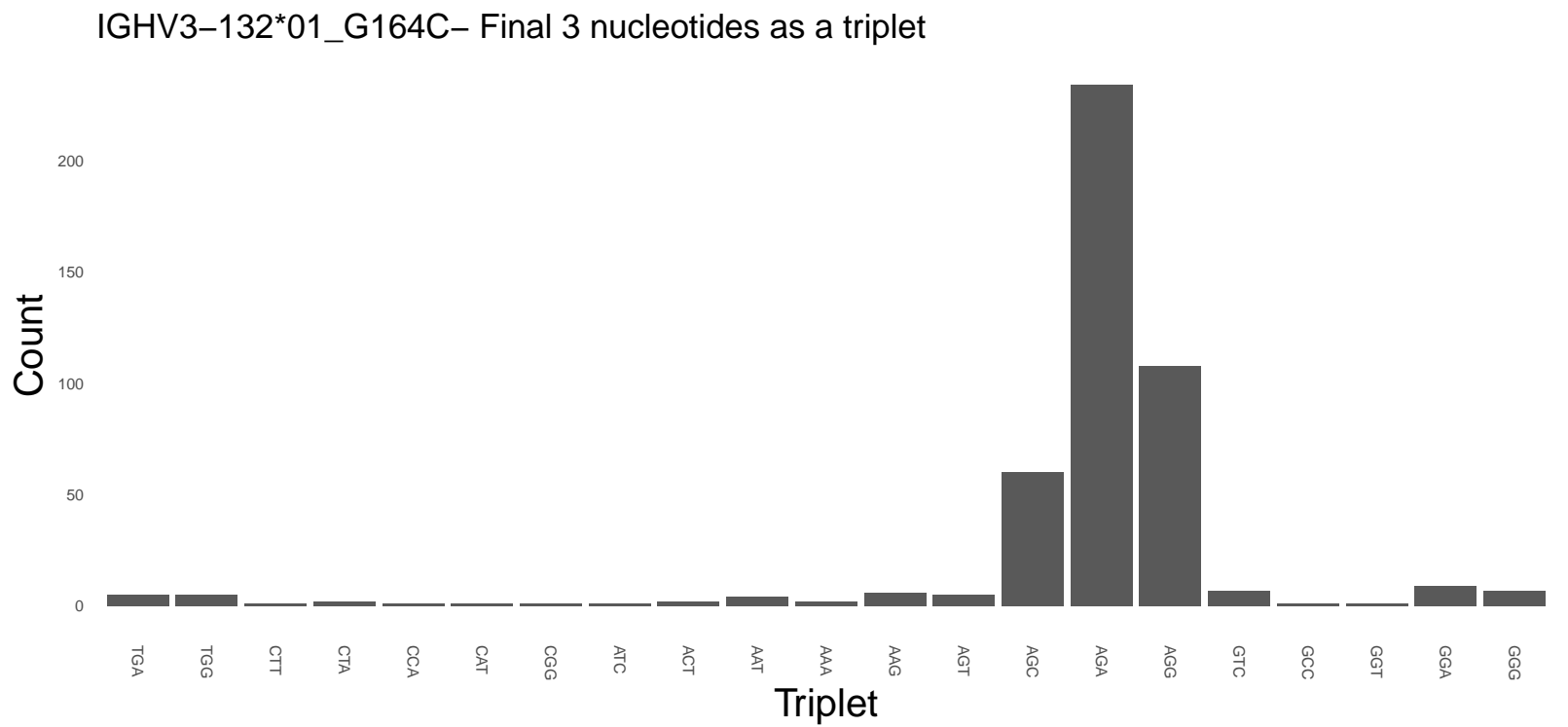
IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_G315C- Final 3 nucleotides as a triplet



IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_A295C\_G315C- Final 3 nucleotides as a triplet

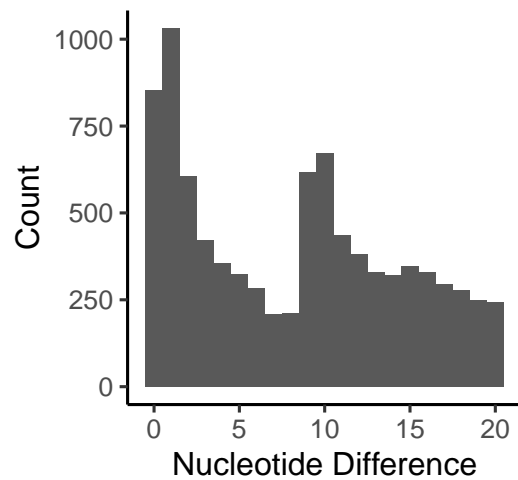


IGHV3-132\*01\_G164C- Final 3 nucleotides as a triplet



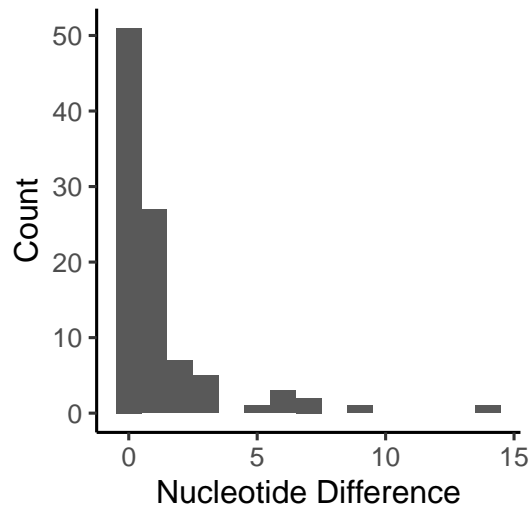
### IGHV3S42\*01\_C38T\_A3

10409 sequences assigned  
853 (8.2%) exact matches, in which:  
772 unique CDR3  
4 unique J



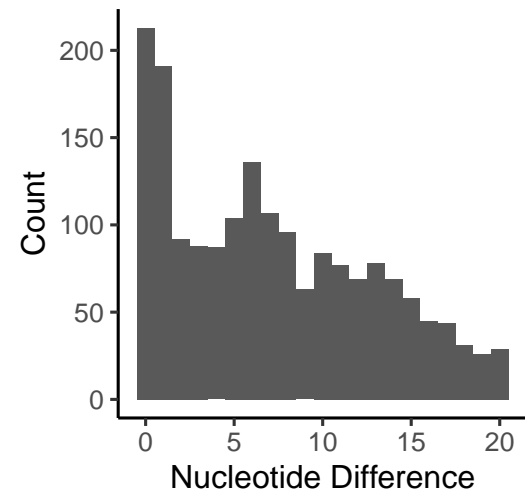
### IGHV1-151\*01\_A83T\_G10

101 sequences assigned  
51 (50.5%) exact matches, in which:  
49 unique CDR3  
4 unique J



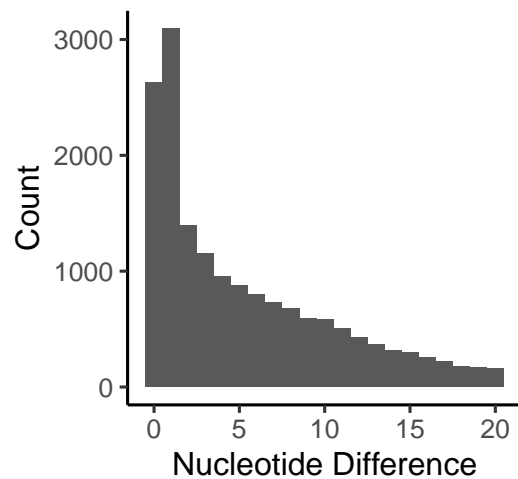
### IGHV3-28\*02\_C118T\_C1

1950 sequences assigned  
213 (10.9%) exact matches, in which:  
195 unique CDR3  
5 unique J



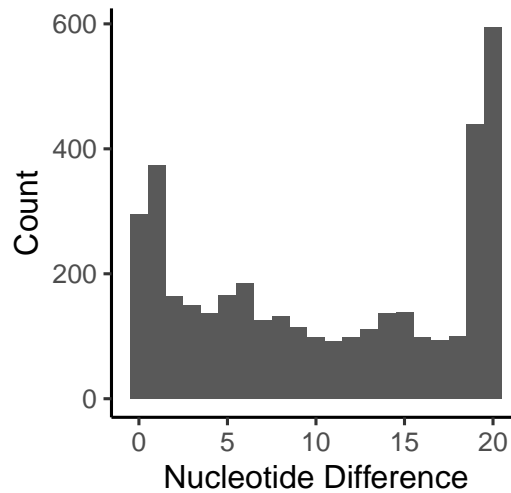
### IGHV3S42\*01\_T19A\_G2

17467 sequences assigned  
2630 (15.1%) exact matches, in which:  
2305 unique CDR3  
5 unique J



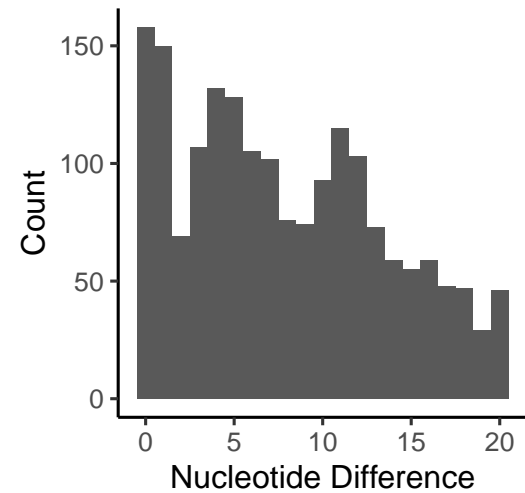
### IGHV2-95\*01\_A252G\_A2

13395 sequences assigned  
296 (2.2%) exact matches, in which:  
263 unique CDR3  
5 unique J



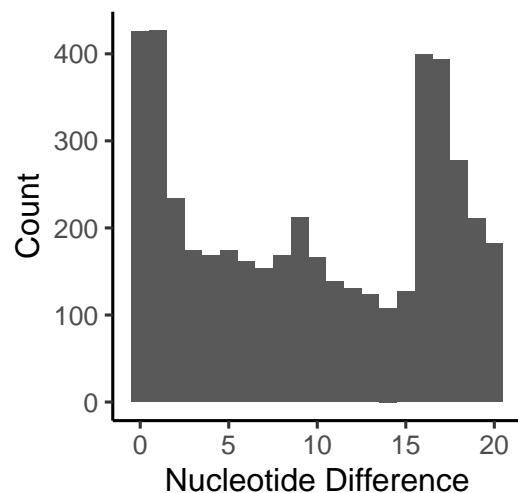
### IGHV3-28\*02\_C118T\_T1

2266 sequences assigned  
158 (7%) exact matches, in which:  
143 unique CDR3  
5 unique J



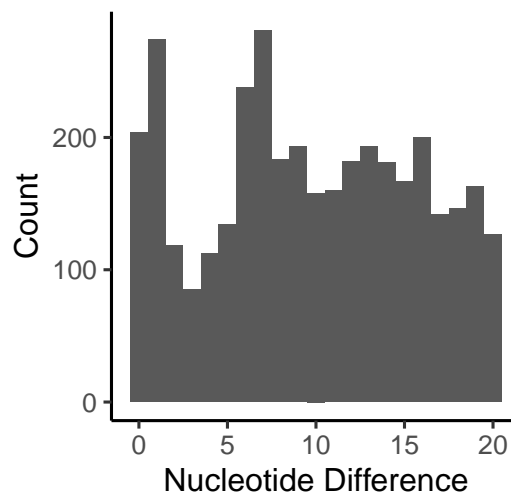
### IGHV4S9\*01\_T106A\_A1C

6569 sequences assigned  
426 (6.5%) exact matches, in which:  
399 unique CDR3  
4 unique J



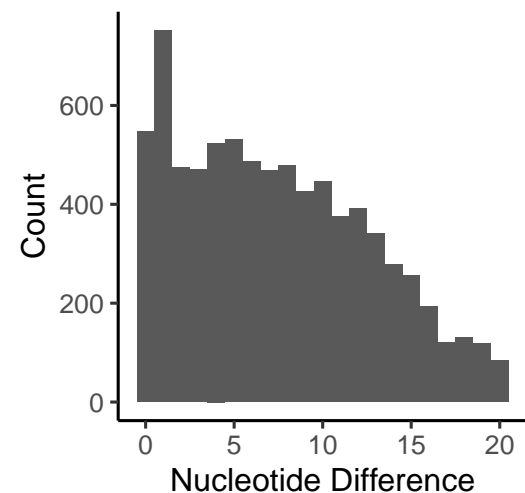
### IGHV3-16\*01\_A275G

4698 sequences assigned  
204 (4.3%) exact matches, in which:  
183 unique CDR3  
5 unique J



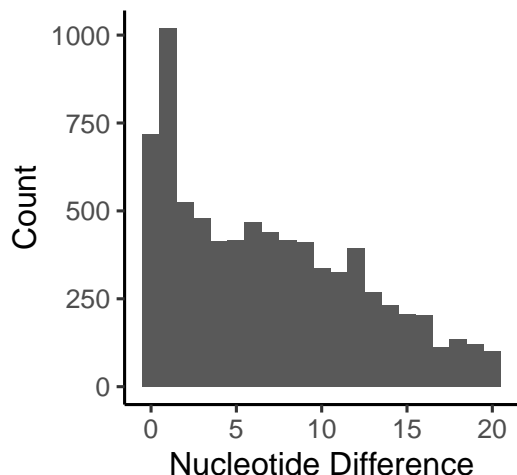
### IGHV3-30\*01\_G109T\_T1

8568 sequences assigned  
548 (6.4%) exact matches, in which:  
482 unique CDR3  
4 unique J



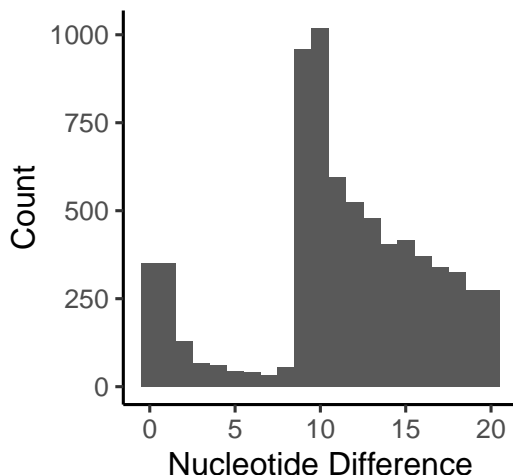
### IGHV3-30\*02\_C141G\_C

8285 sequences assigned  
719 (8.7%) exact matches, in which:  
626 unique CDR3  
4 unique J



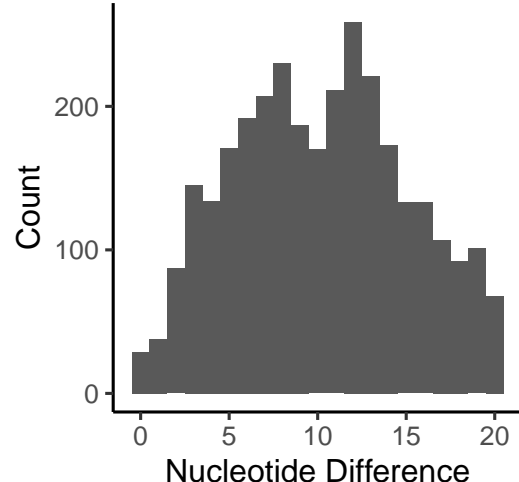
### IGHV3-59\*01\_C69T\_T7

9729 sequences assigned  
351 (3.6%) exact matches, in which:  
312 unique CDR3  
4 unique J



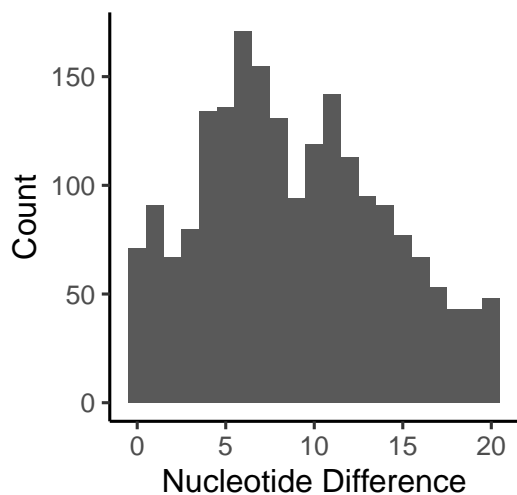
### IGHV3-103\*01\_C38T\_A3

3731 sequences assigned  
29 (0.8%) exact matches, in which:  
29 unique CDR3  
3 unique J



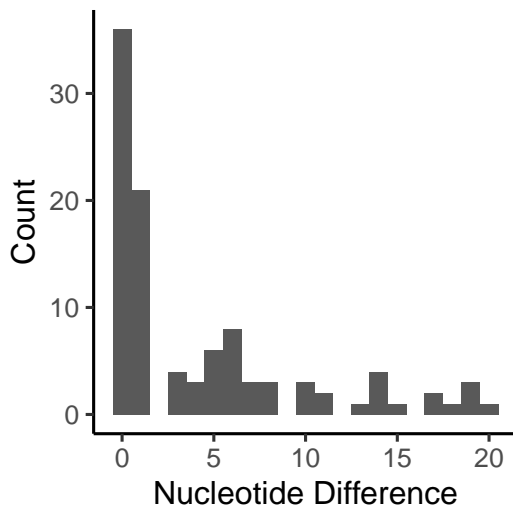
### IGHV3-38\*01\_C27A\_C38

4110 sequences assigned  
71 (1.7%) exact matches, in which:  
65 unique CDR3  
4 unique J



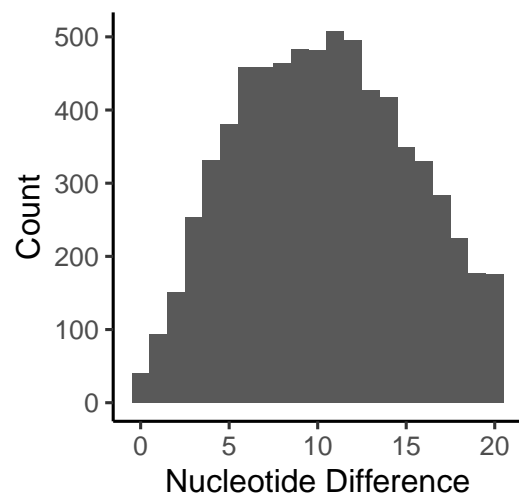
### IGHV3-67\*01\_G66C\_C71

106 sequences assigned  
36 (34%) exact matches, in which:  
34 unique CDR3  
4 unique J



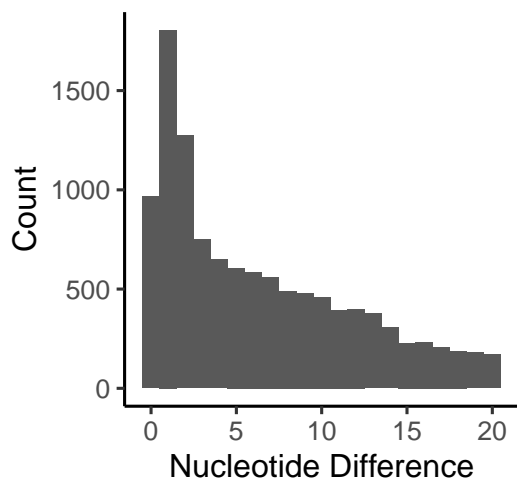
### IGHV3-103\*01\_T19A\_G2

8197 sequences assigned  
40 (0.5%) exact matches, in which:  
40 unique CDR3  
3 unique J



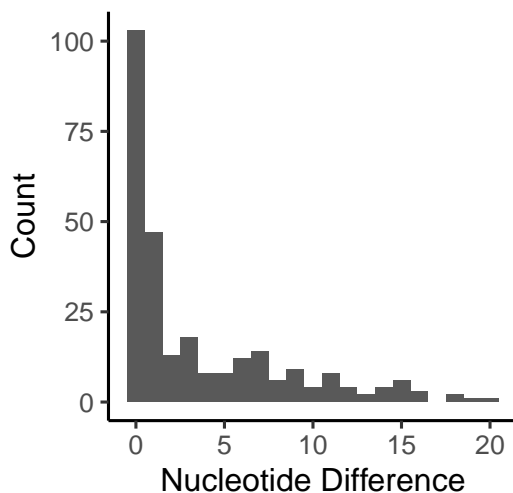
### IGHV3-54\*02\_G170C

12486 sequences assigned  
966 (7.7%) exact matches, in which:  
862 unique CDR3  
5 unique J



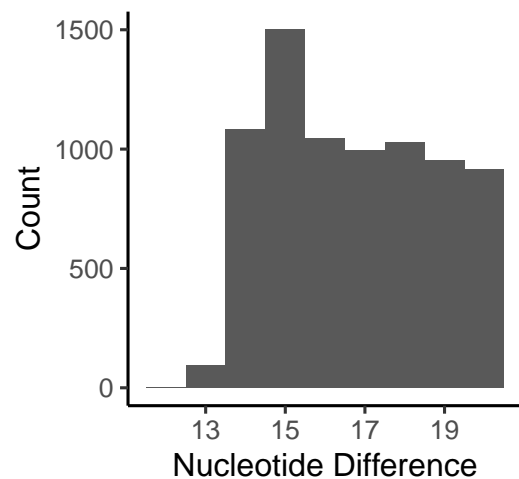
### IGHV3-100\*02\_C210T

660 sequences assigned  
103 (15.6%) exact matches, in which:  
97 unique CDR3  
4 unique J



### IGHV3-108\*01

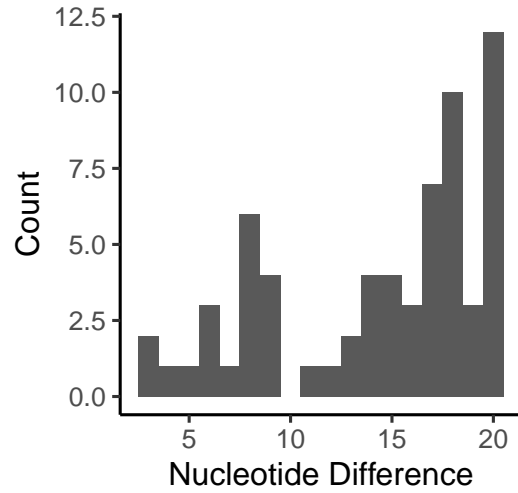
13177 sequences assigned  
No exact matches.





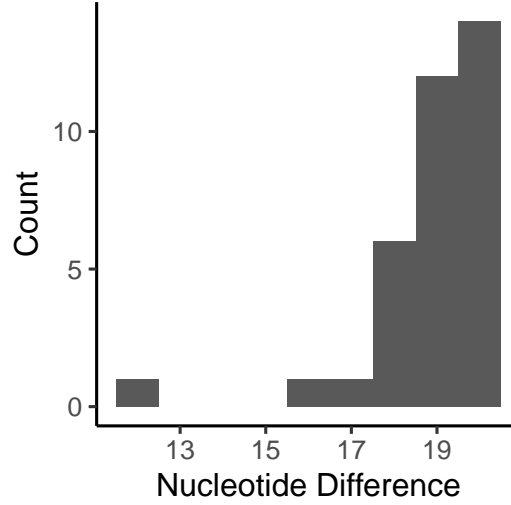
### IGHV3-124\*01

124 sequences assigned  
No exact matches.



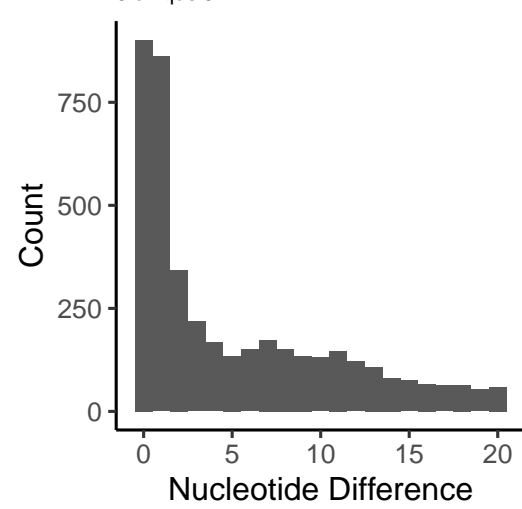
### IGHV3-137\*01

376 sequences assigned  
No exact matches.



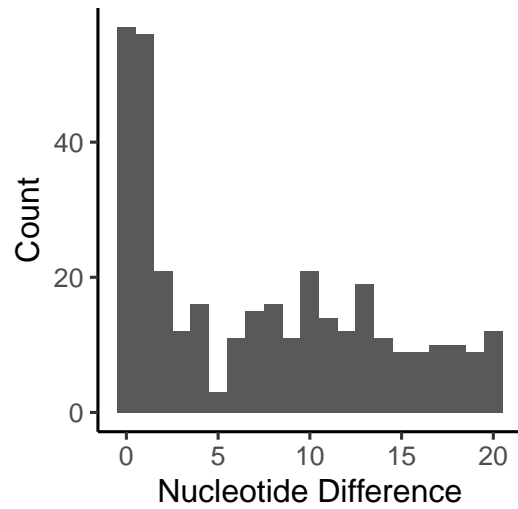
### IGHV4-73\*01\_C24T\_C13

4637 sequences assigned  
902 (19.5%) exact matches, in which:  
839 unique CDR3  
5 unique J



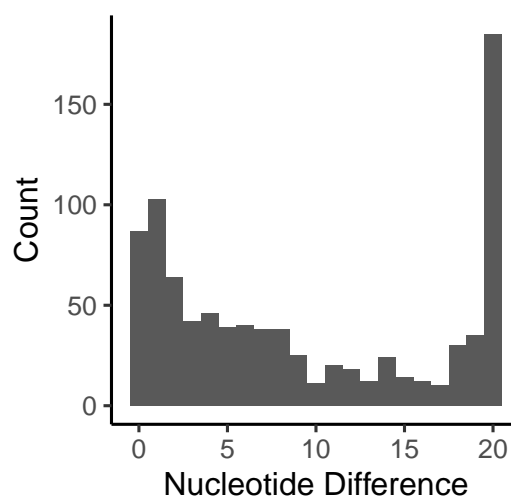
### IGHV3-132\*01\_G164C

463 sequences assigned  
57 (12.3%) exact matches, in which:  
53 unique CDR3  
3 unique J



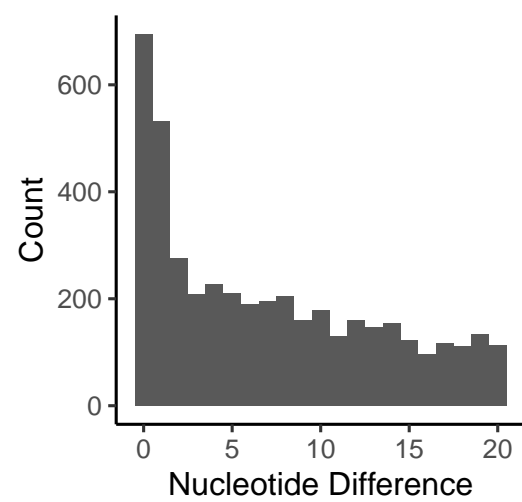
### IGHV3-183\*02\_C164T\_A

17602 sequences assigned  
87 (0.5%) exact matches, in which:  
78 unique CDR3  
4 unique J



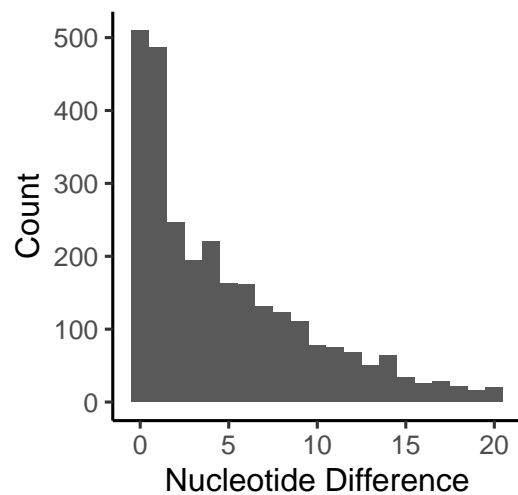
### IGHV4-80\*01\_G70A\_T18

5131 sequences assigned  
695 (13.5%) exact matches, in which:  
659 unique CDR3  
5 unique J



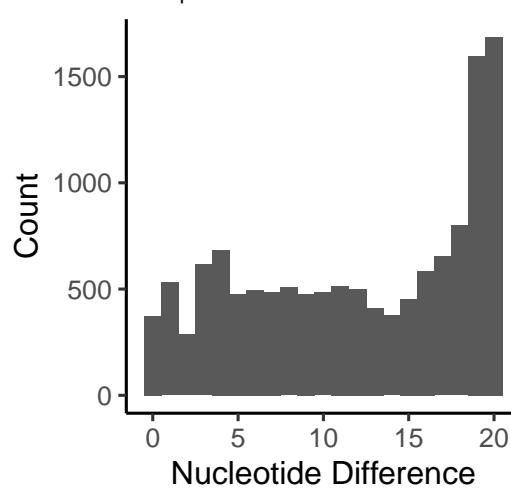
### IGHV3-134\*01\_T34G\_A3

2890 sequences assigned  
510 (17.6%) exact matches, in which:  
470 unique CDR3  
5 unique J



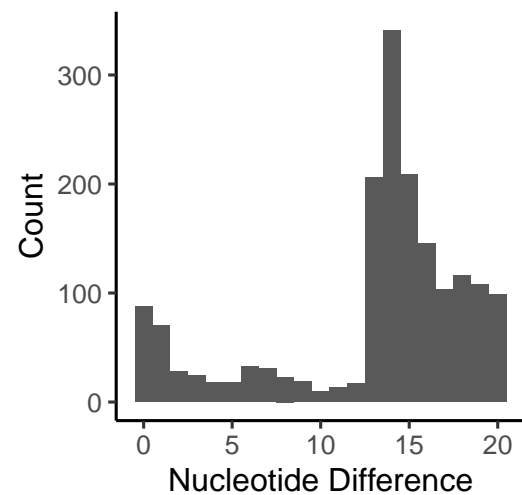
### IGHV3-184\*01\_T109C\_

21152 sequences assigned  
374 (1.8%) exact matches, in which:  
331 unique CDR3  
5 unique J



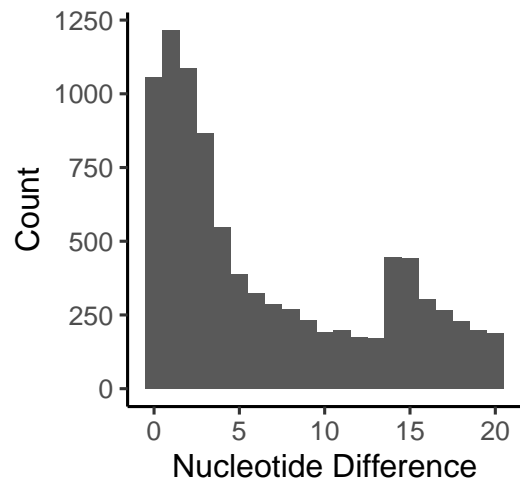
### IGHV4-93\*02\_A109T

2350 sequences assigned  
88 (3.7%) exact matches, in which:  
83 unique CDR3  
4 unique J



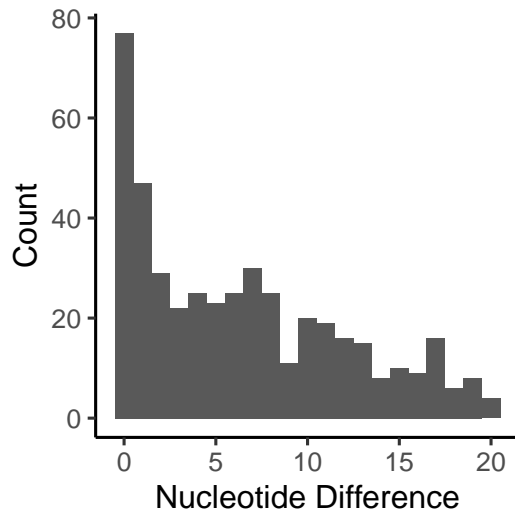
### IGHV4-127\*01\_C34G\_T

10673 sequences assigned  
1055 (9.9%) exact matches, in which:  
994 unique CDR3  
5 unique J



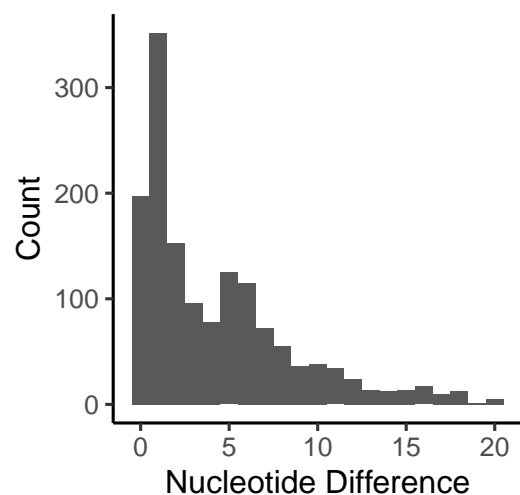
### IGHV4-169\*01\_C4G\_T60

494 sequences assigned  
77 (15.6%) exact matches, in which:  
76 unique CDR3  
5 unique J



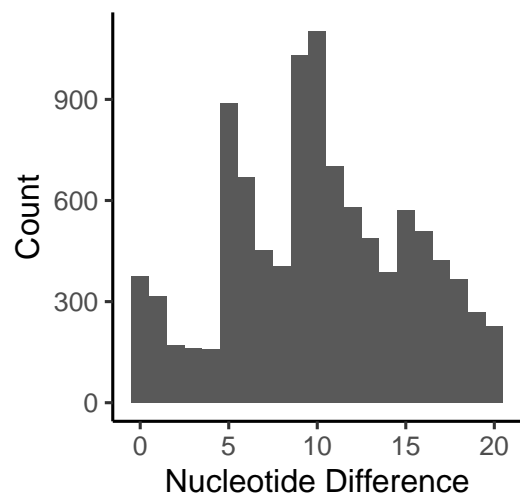
### IGHV5-43\*01\_A106G\_C2

1489 sequences assigned  
197 (13.2%) exact matches, in which:  
165 unique CDR3  
5 unique J



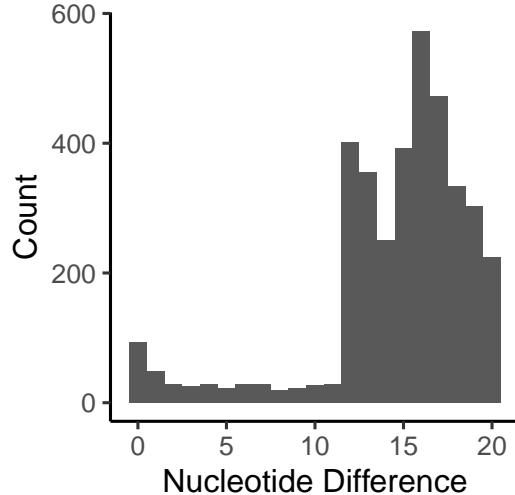
### IGHV4-160\*01\_A106G\_A

12023 sequences assigned  
374 (3.1%) exact matches, in which:  
362 unique CDR3  
5 unique J



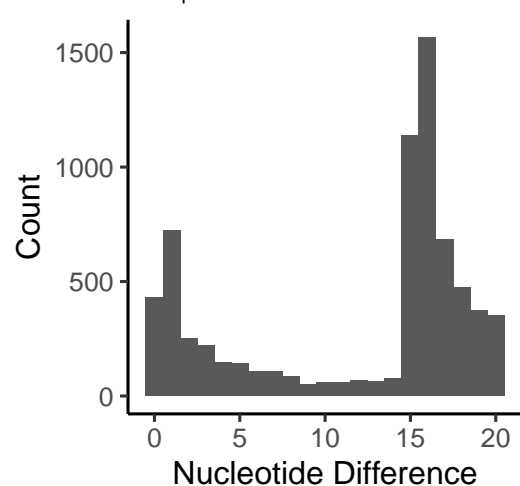
### IGHV4-169\*01\_C4G\_T60

5261 sequences assigned  
94 (1.8%) exact matches, in which:  
93 unique CDR3  
5 unique J



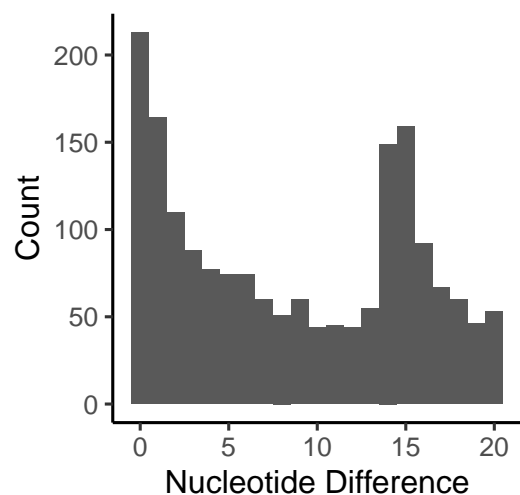
### IGHV5-43\*02\_A59G

9422 sequences assigned  
431 (4.6%) exact matches, in which:  
367 unique CDR3  
5 unique J



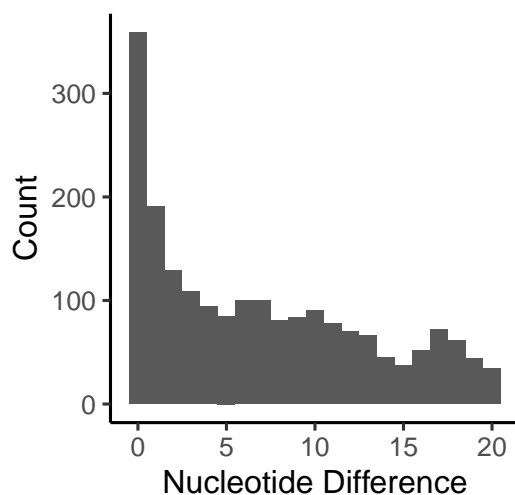
### IGHV4-165\*01\_G32A\_G

2121 sequences assigned  
213 (10%) exact matches, in which:  
205 unique CDR3  
5 unique J



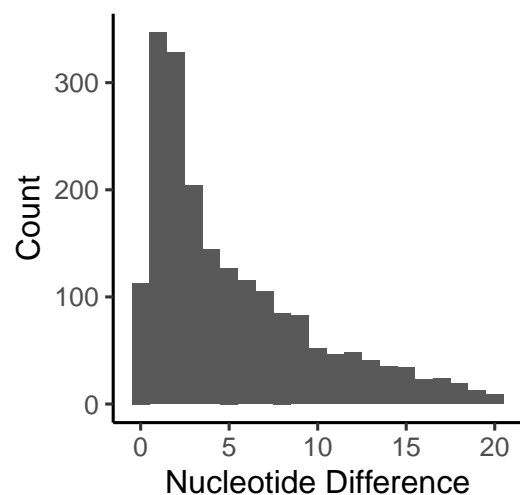
### IGHV4-173\*01\_G48A\_C

2258 sequences assigned  
359 (15.9%) exact matches, in which:  
352 unique CDR3  
4 unique J



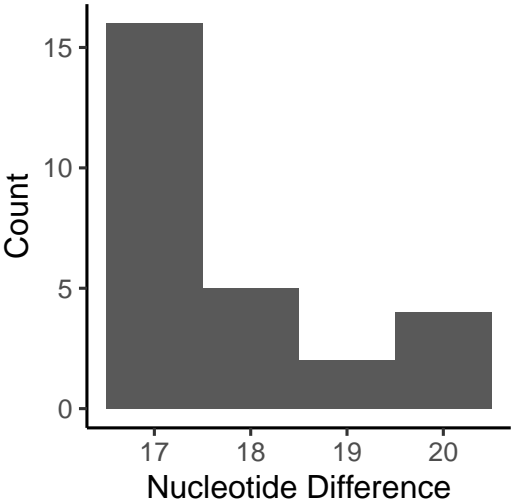
### IGHV6-1\*01\_G280T

2057 sequences assigned  
113 (5.5%) exact matches, in which:  
110 unique CDR3  
4 unique J



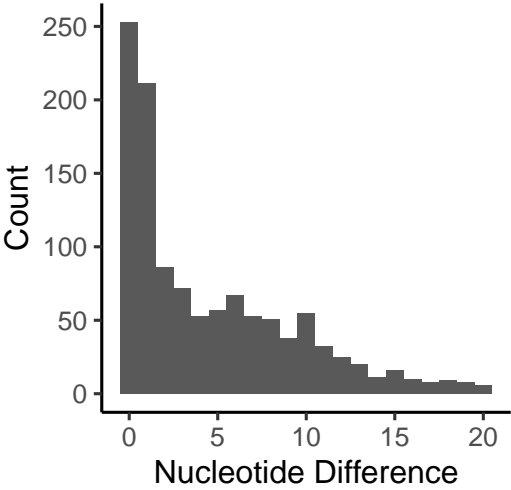
IGHV7-94\*01

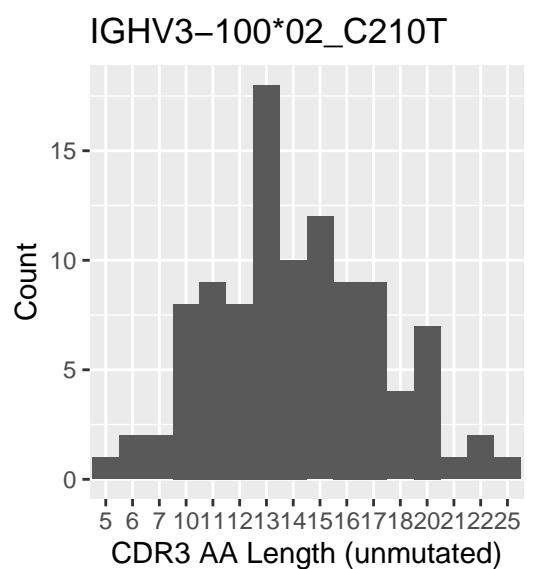
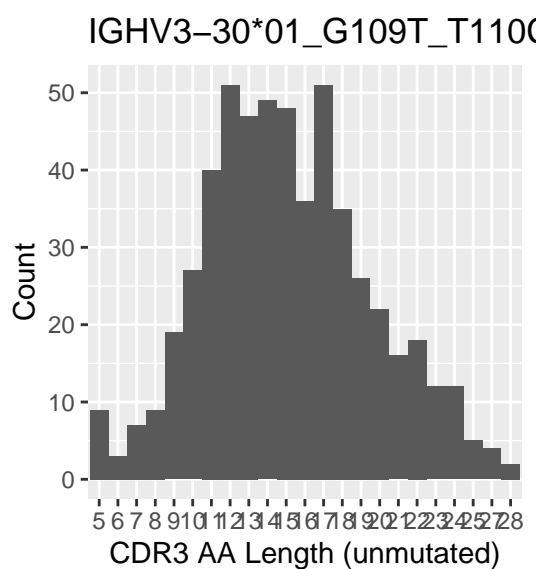
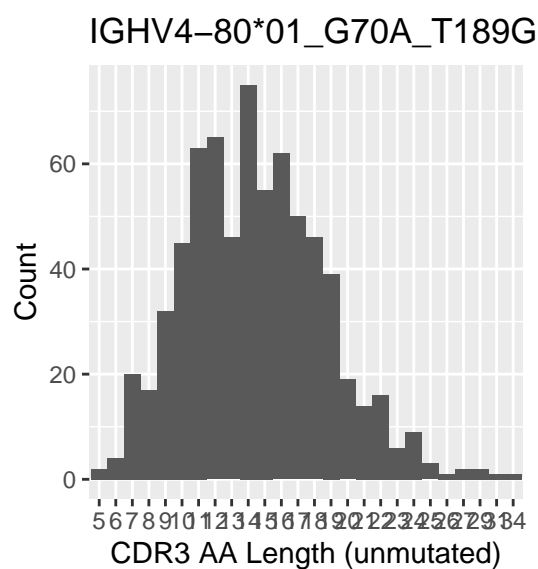
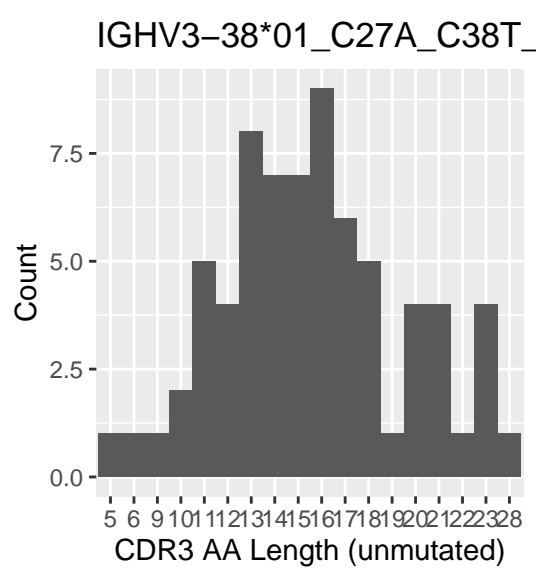
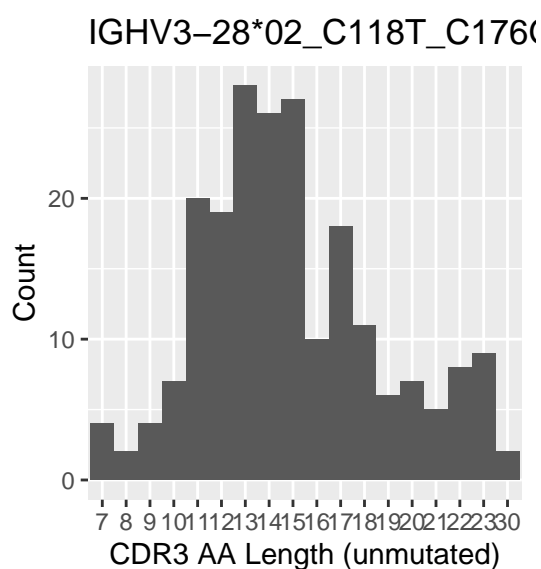
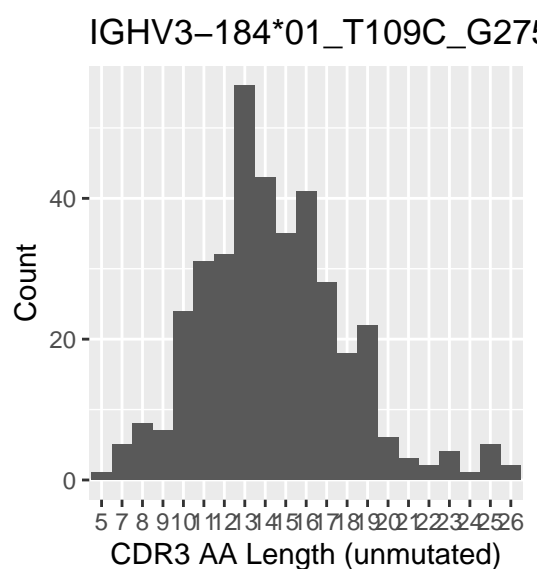
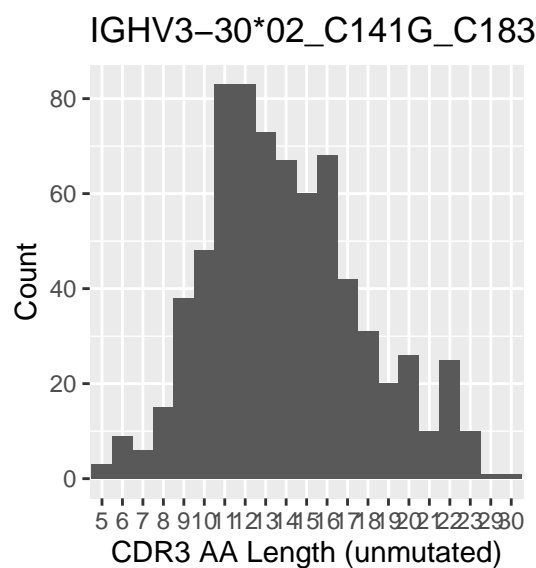
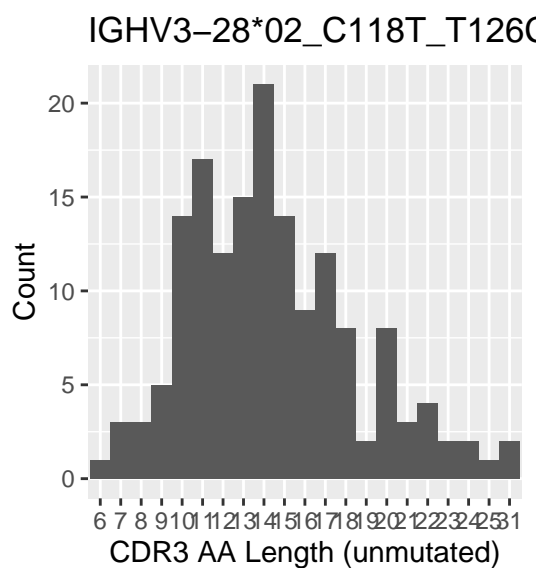
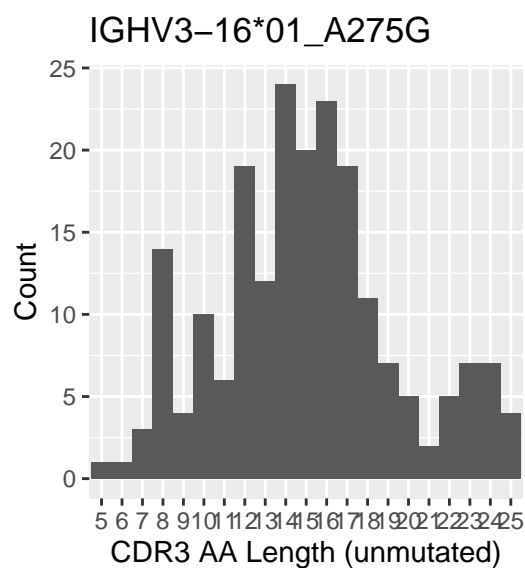
35 sequences assigned  
No exact matches.



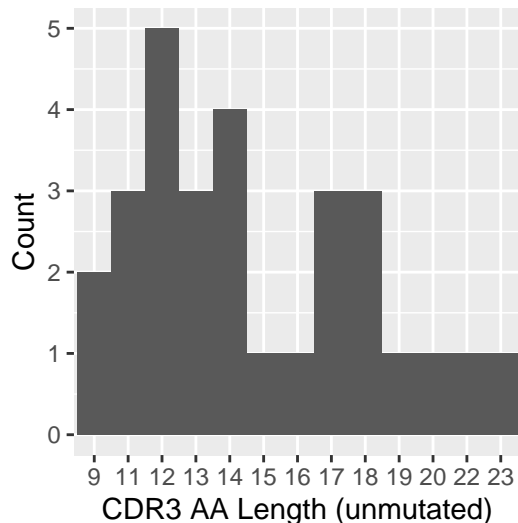
IGHV7-114\*01\_T81A

1192 sequences assigned  
253 (21.2%) exact matches, in which:  
233 unique CDR3  
4 unique J

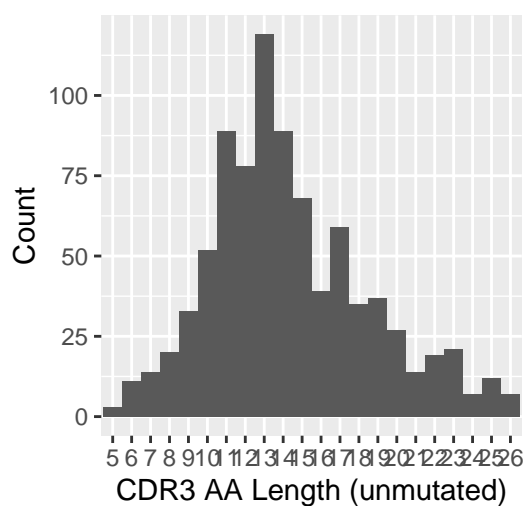




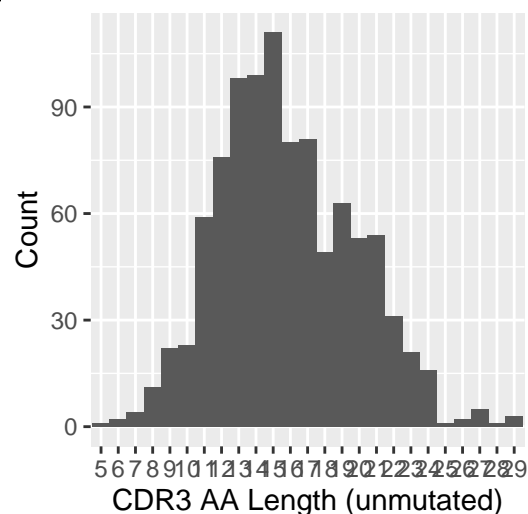
IGHV3-103\*01\_C38T\_A39C\_



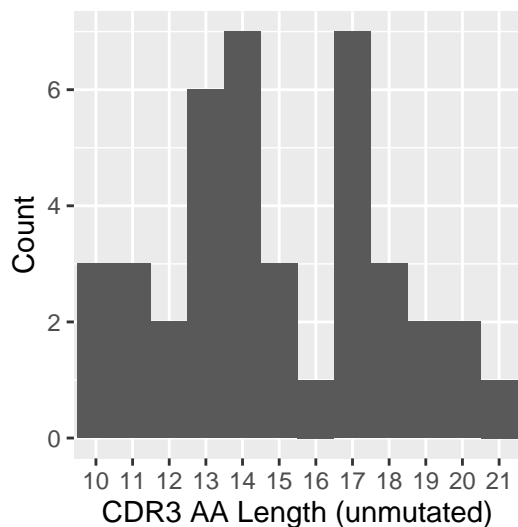
IGHV3S42\*01\_C38T\_A39C\_



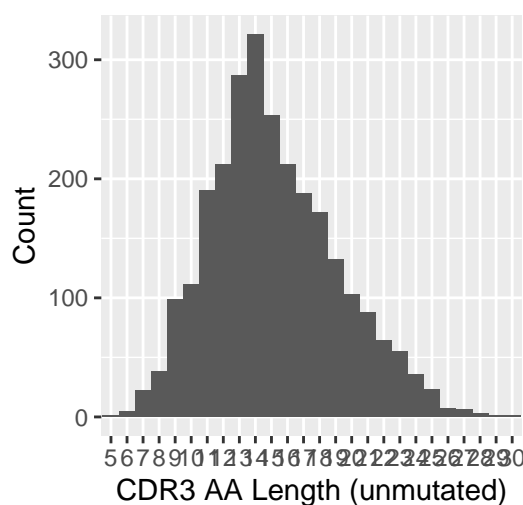
IGHV3-54\*02\_G170C



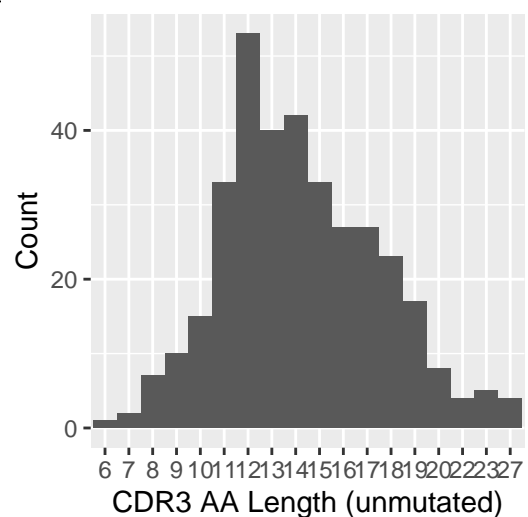
IGHV3-103\*01\_T19A\_G24A\_



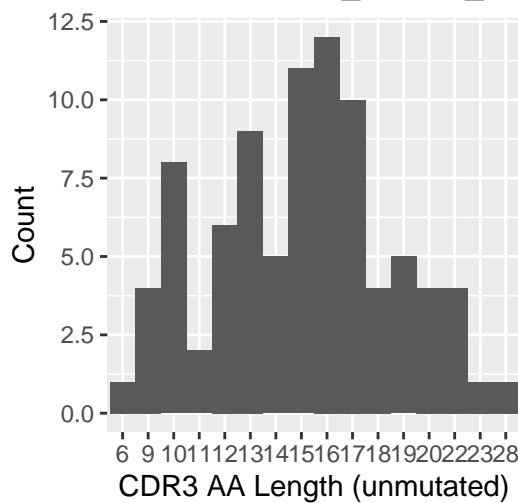
IGHV3S42\*01\_T19A\_G24A\_



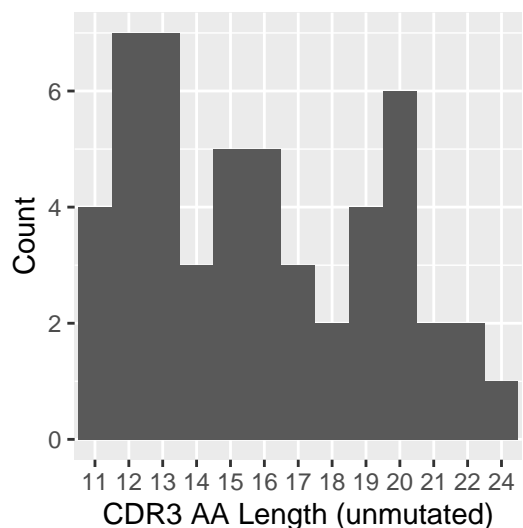
IGHV3-59\*01\_C69T\_T78C\_



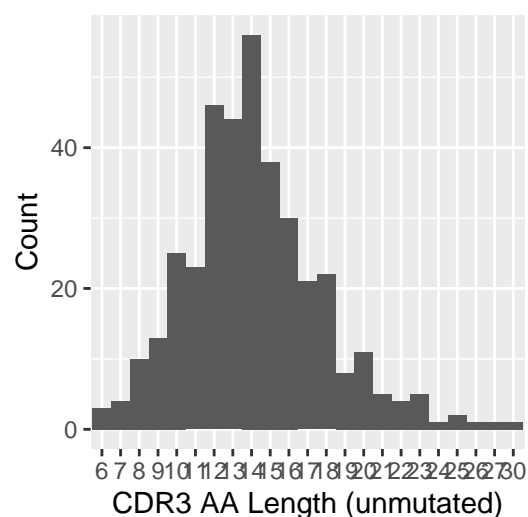
IGHV3-183\*02\_C164T\_A17



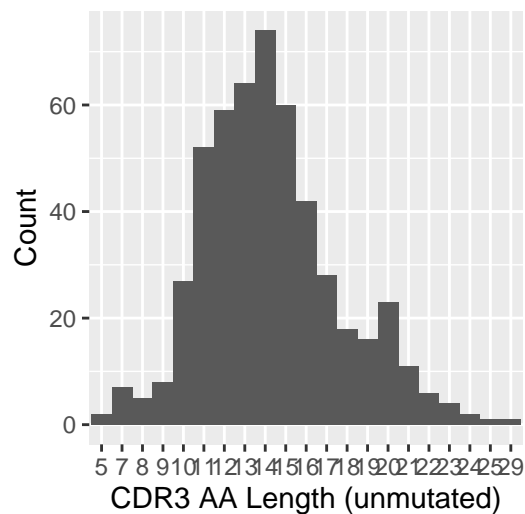
IGHV1-151\*01\_A83T\_G164A



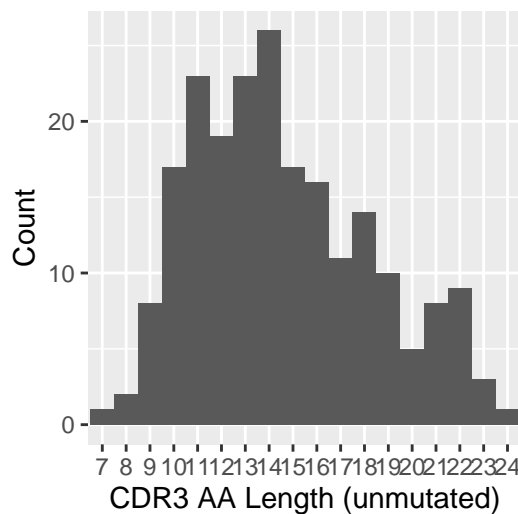
IGHV4-160\*01\_A106G\_A10



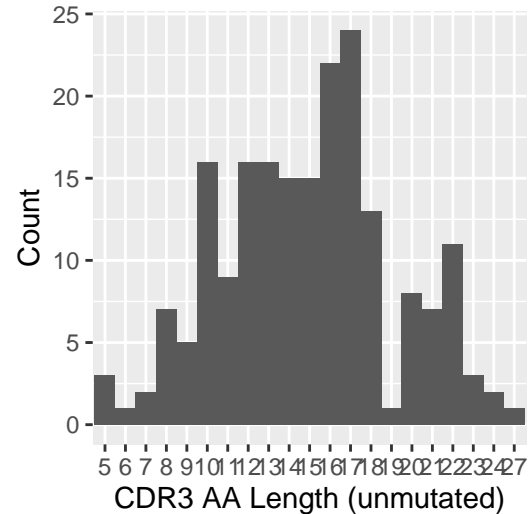
IGHV3-134\*01\_T34G\_A39C



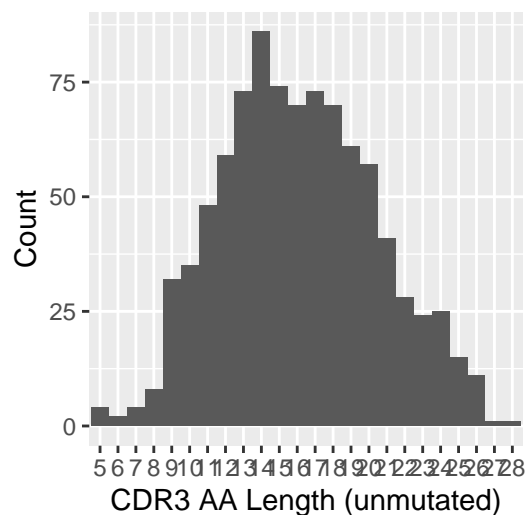
IGHV4-165\*01\_G32A\_G106



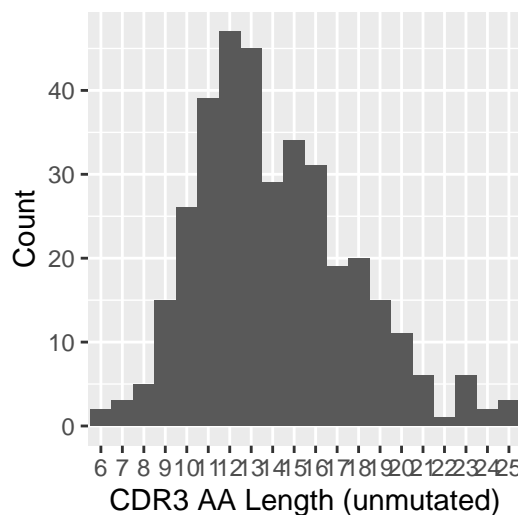
IGHV5-43\*01\_A106G\_C297



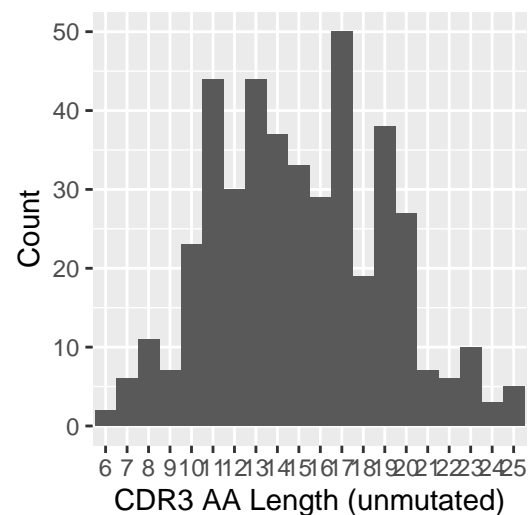
IGHV4-73\*01\_C24T\_C133G



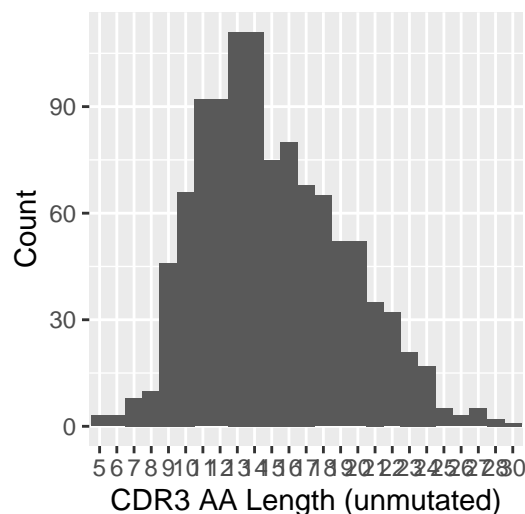
IGHV4-173\*01\_G48A\_C105



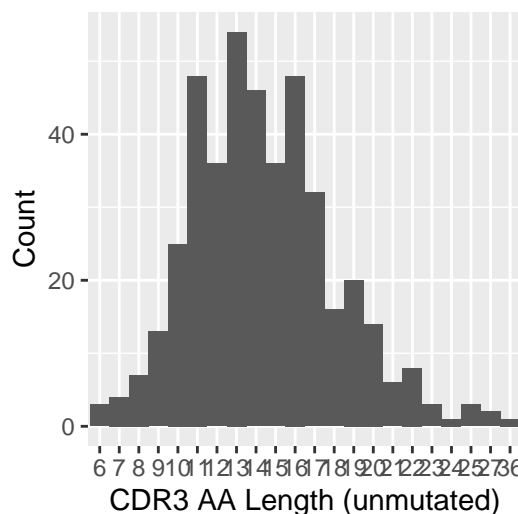
IGHV5-43\*02\_A59G



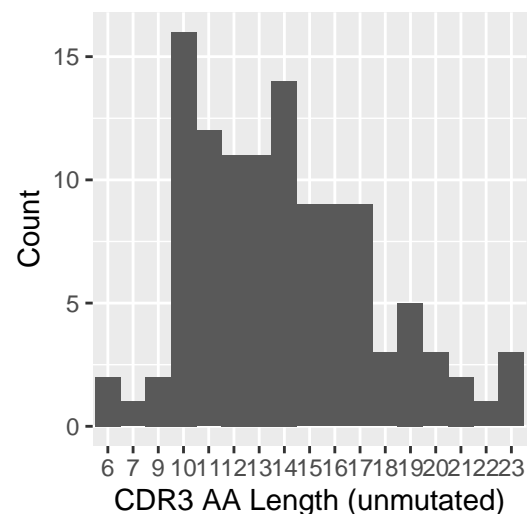
IGHV4-127\*01\_C34G\_T82G



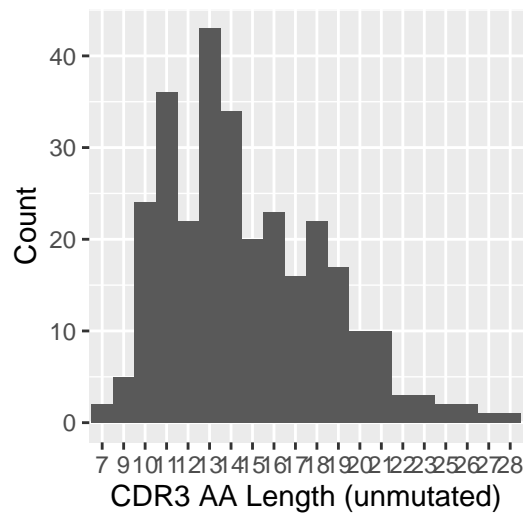
IGHV4S9\*01\_T106A\_A107G



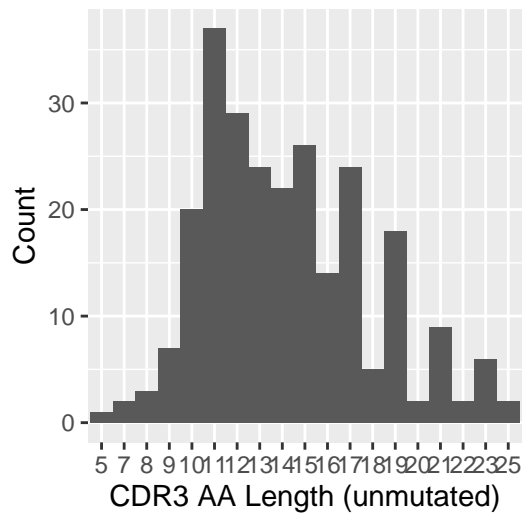
IGHV6-1\*01\_G280T



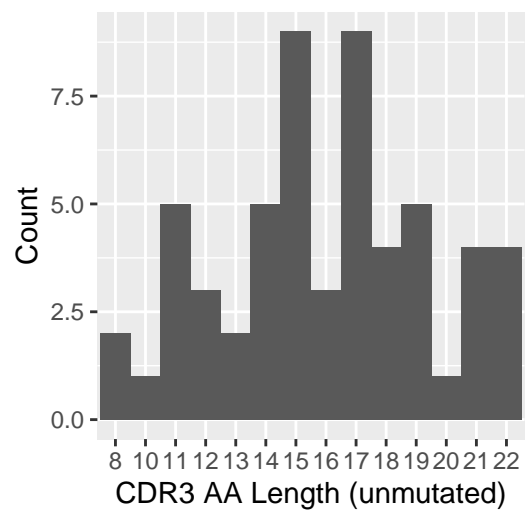
IGHV2-95\*01\_A252G\_A267V



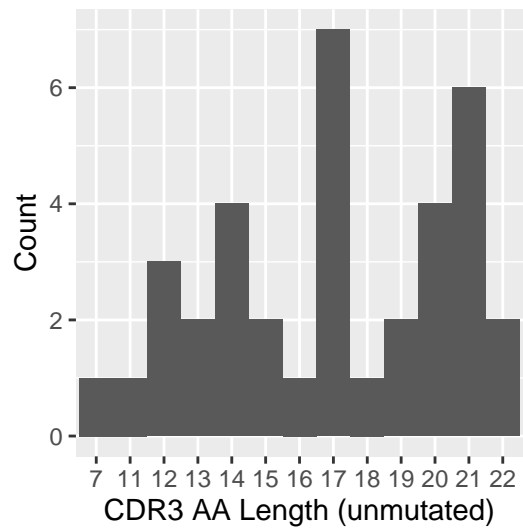
IGHV7-114\*01\_T81A



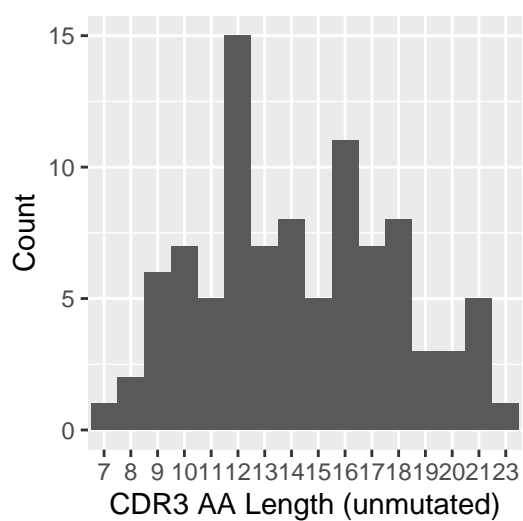
IGHV3-132\*01\_G164C



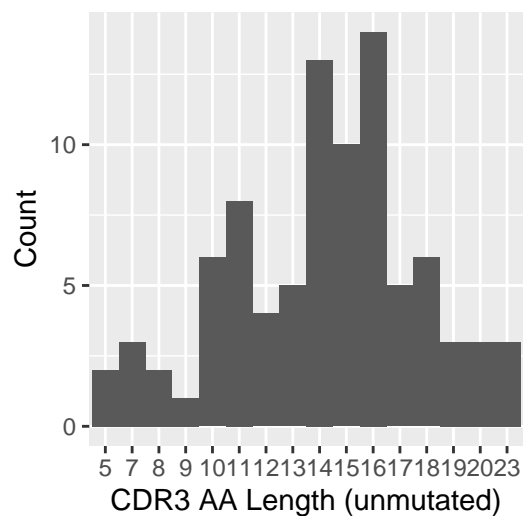
IGHV3-67\*01\_G66C\_C71T\_C



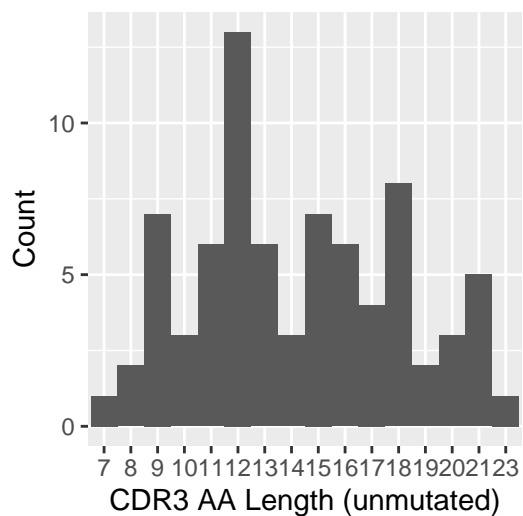
IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_G275A\_G315C

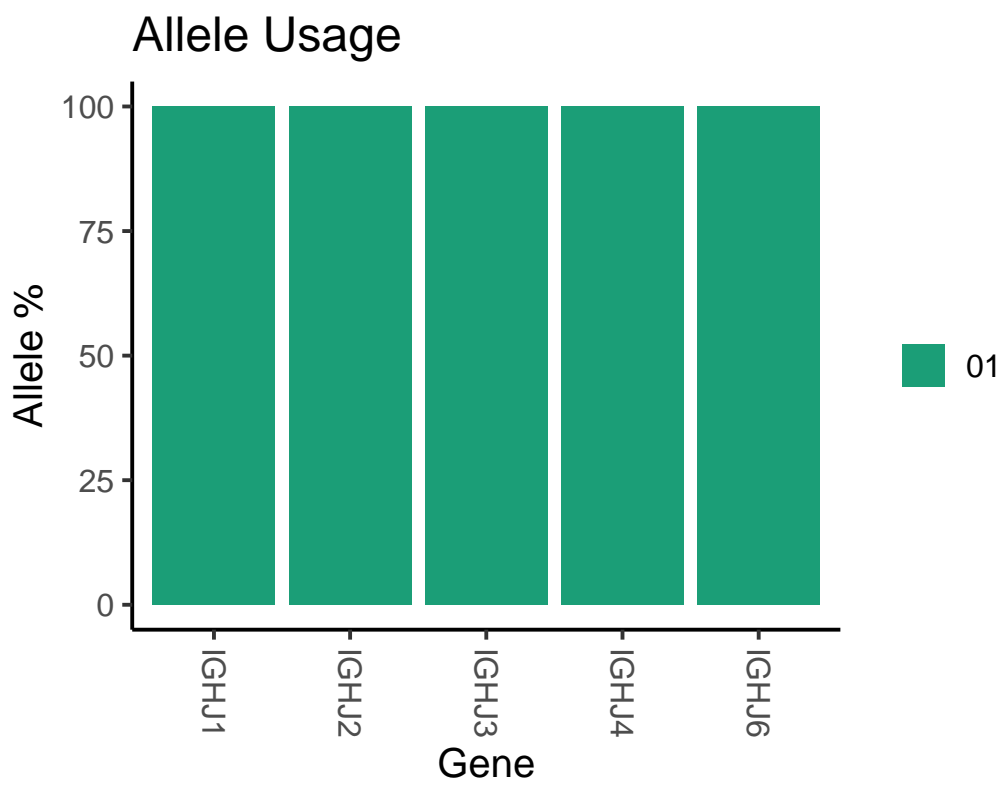


IGHV4-93\*02\_A109T



IGHV4-169\*01\_C4G\_T60C\_G61C\_T87C\_G110A\_A295C\_G315C







Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.