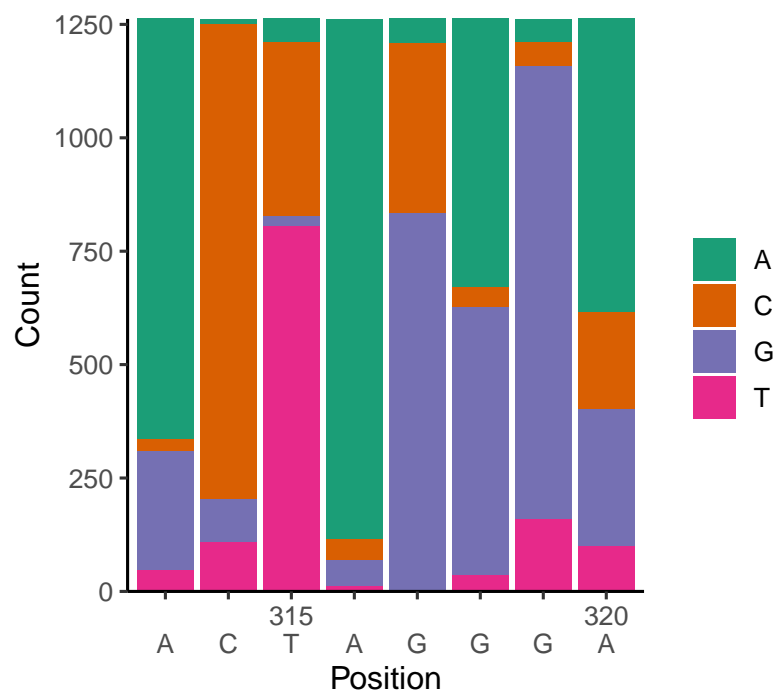
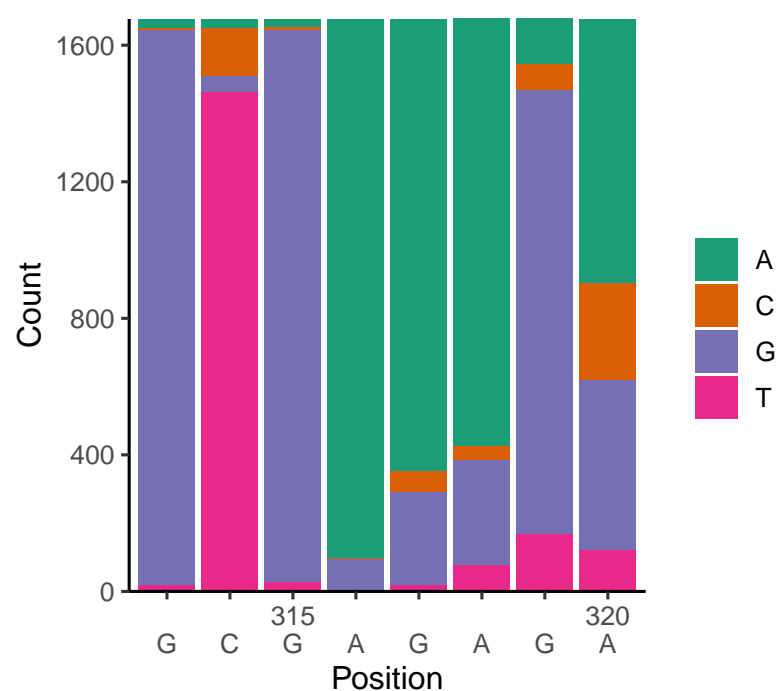


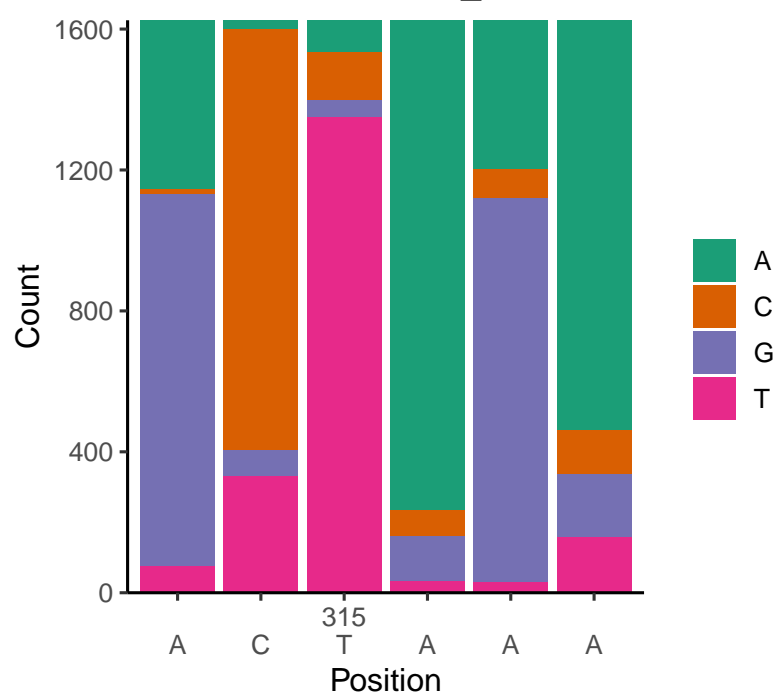
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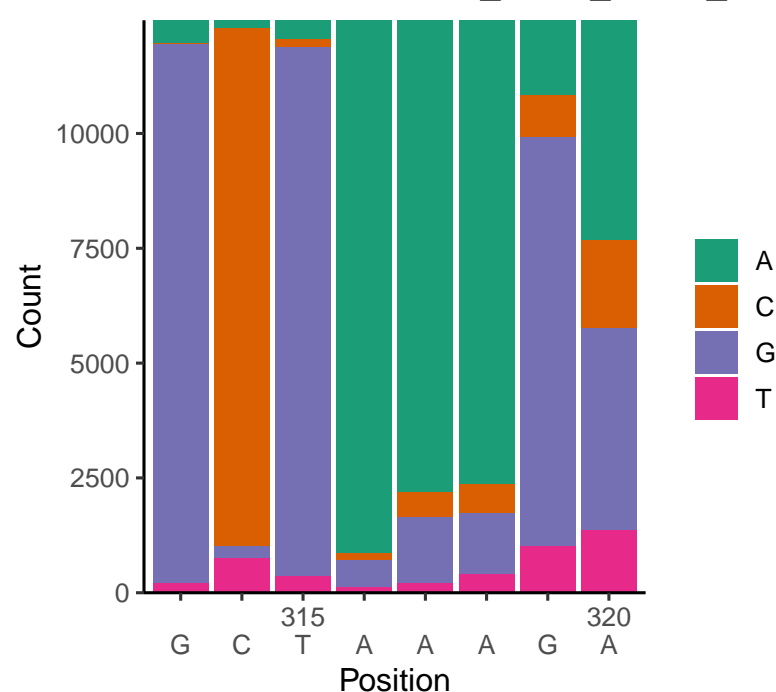
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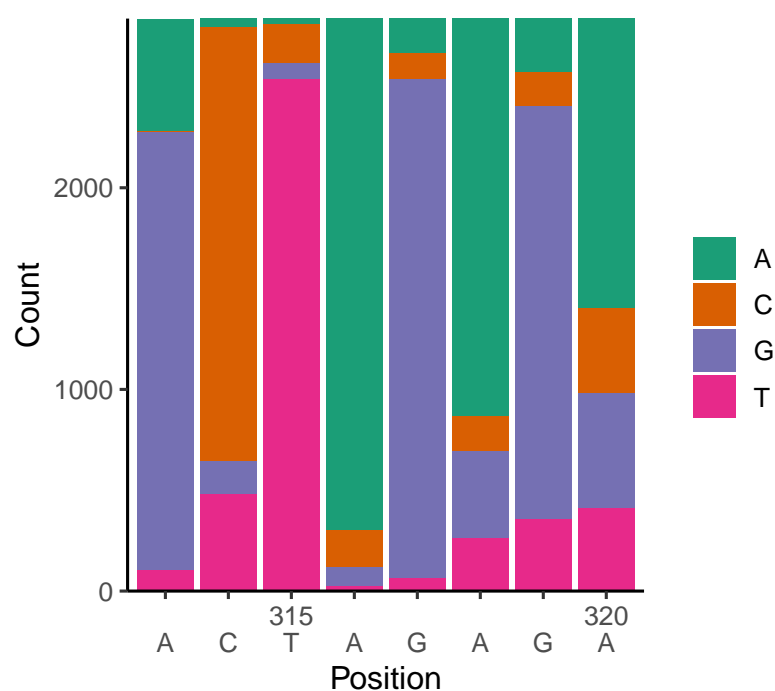
Gene IGHV3-13\*01\_C301G



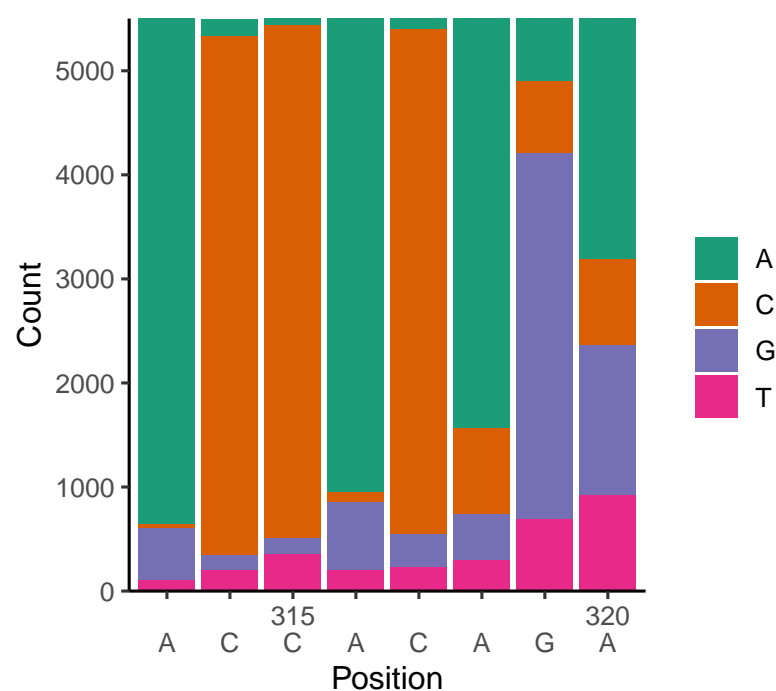
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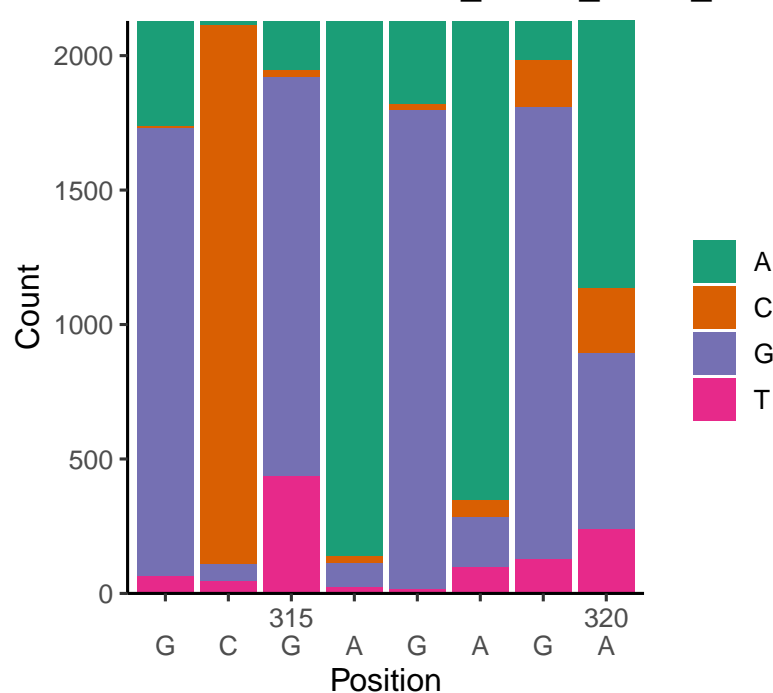
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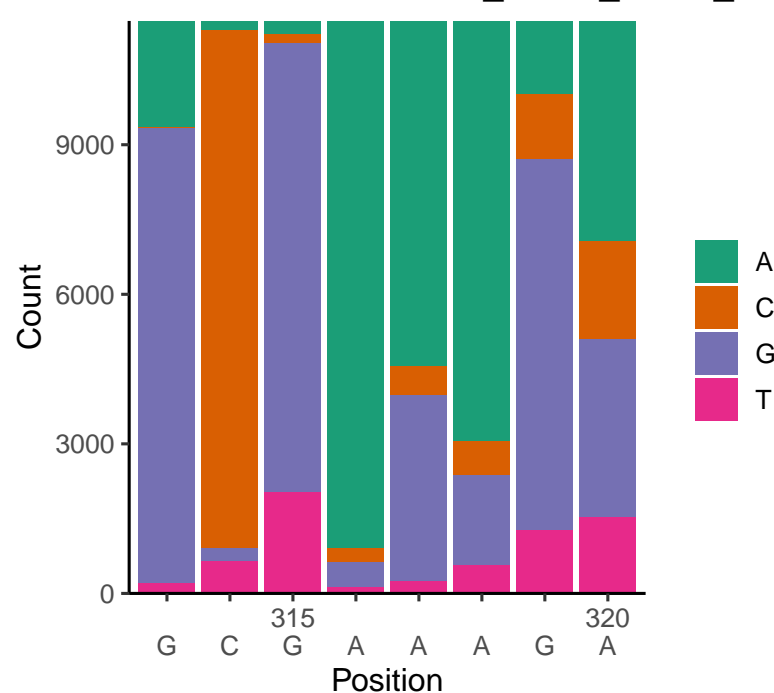
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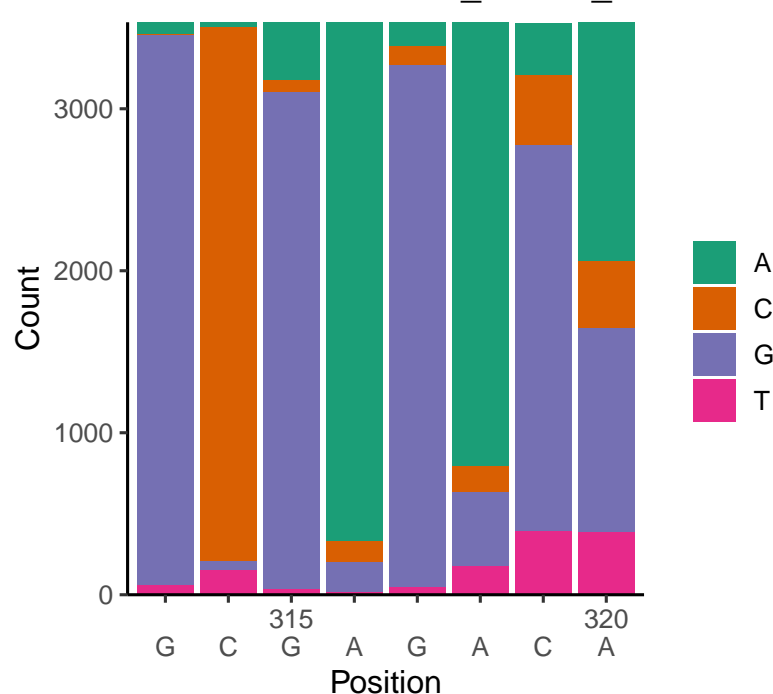
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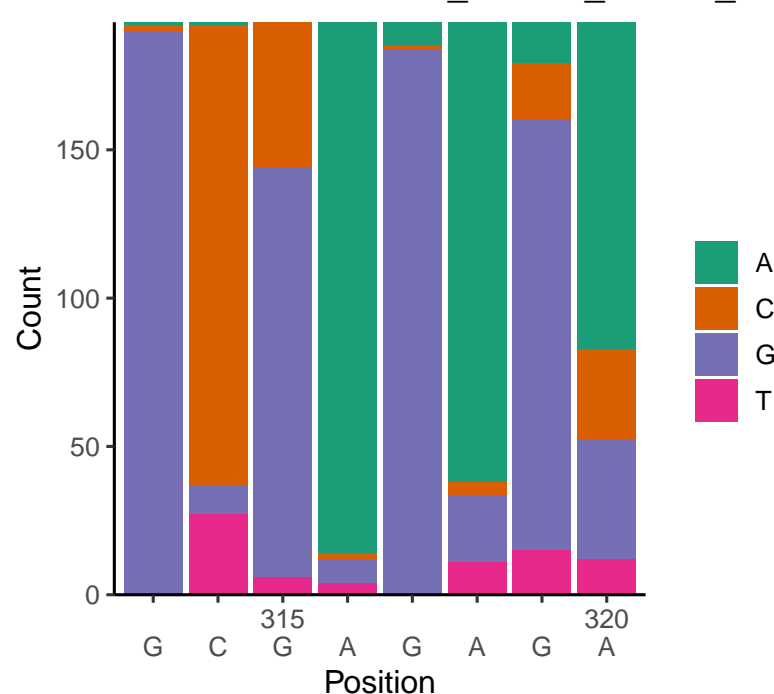
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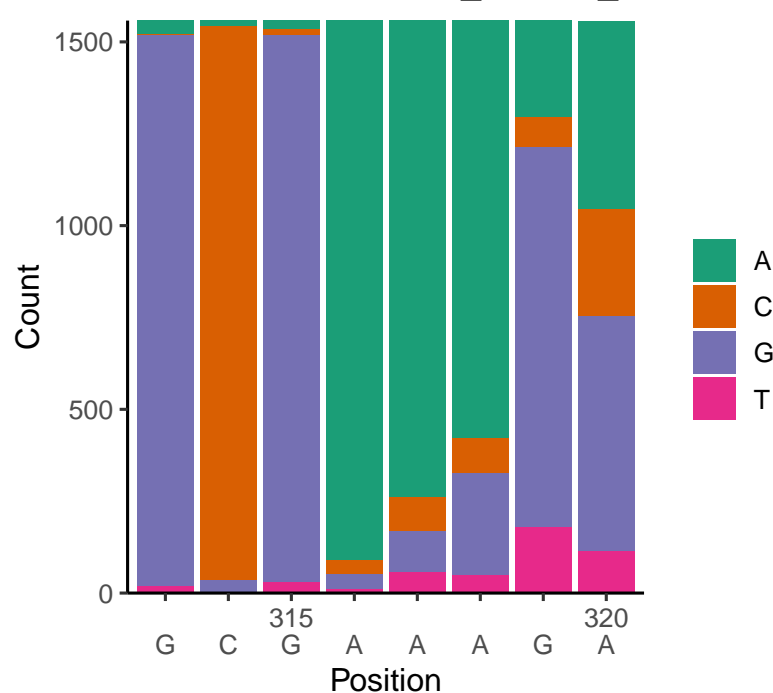
Gene IGHV4-65\*02\_A163T\_G169A



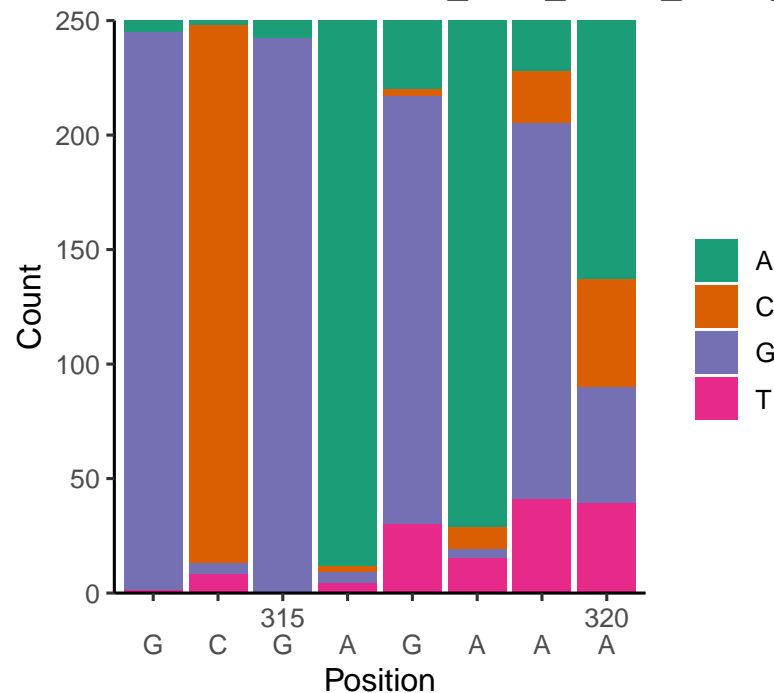
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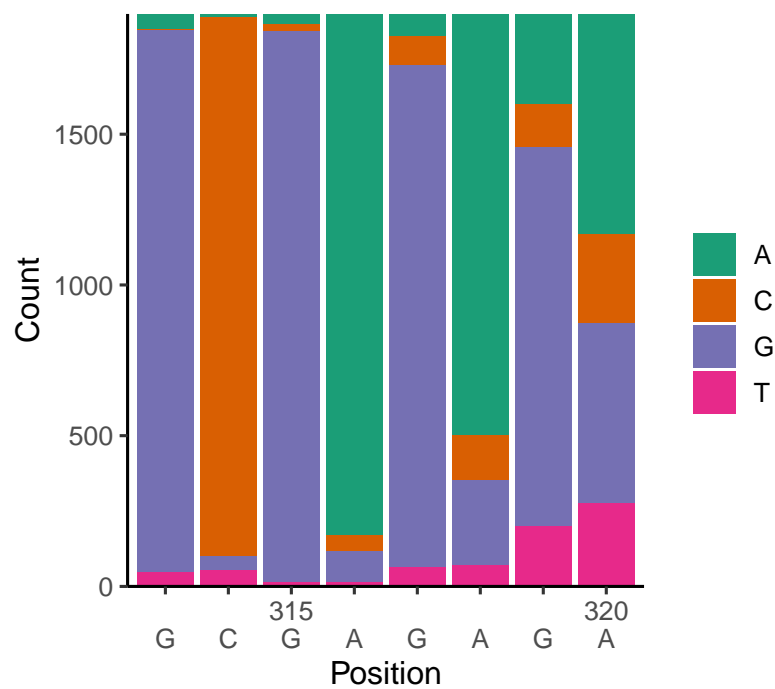
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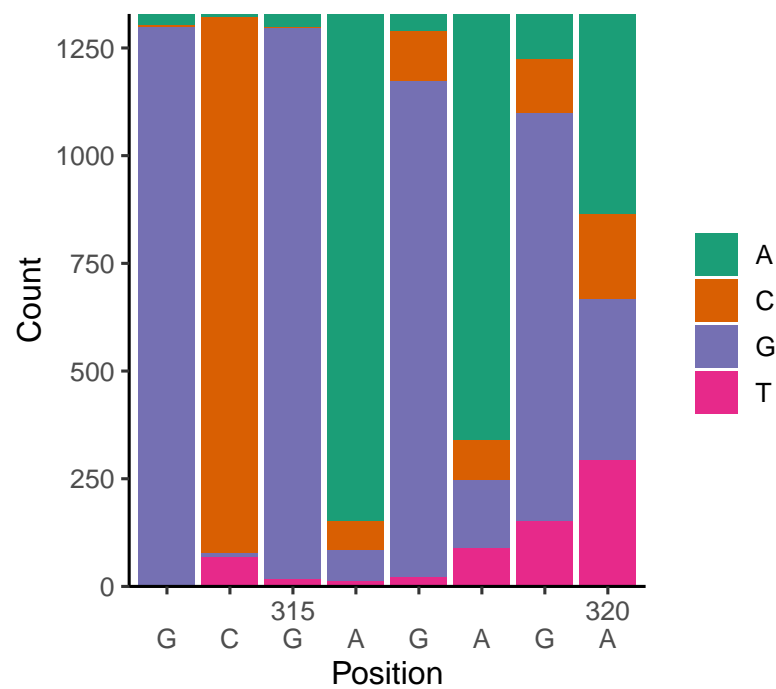
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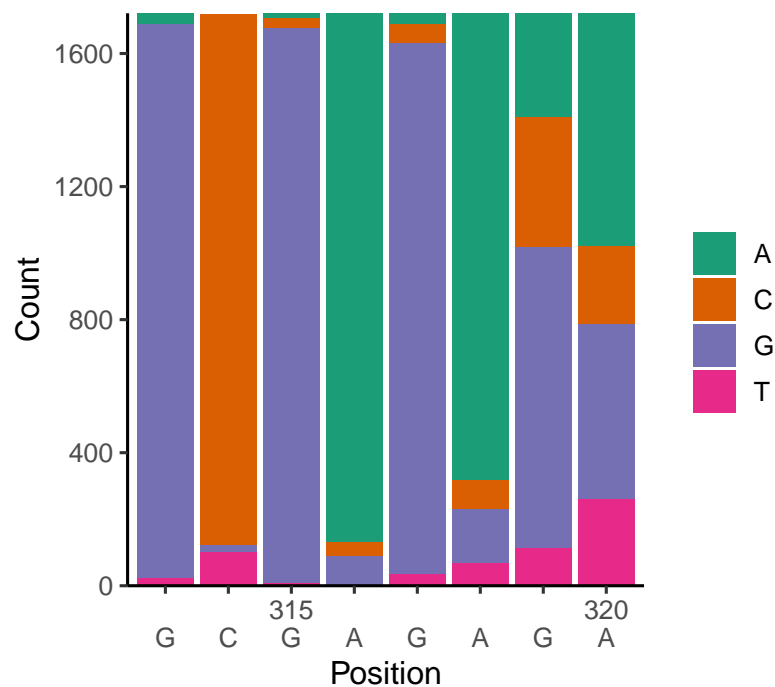
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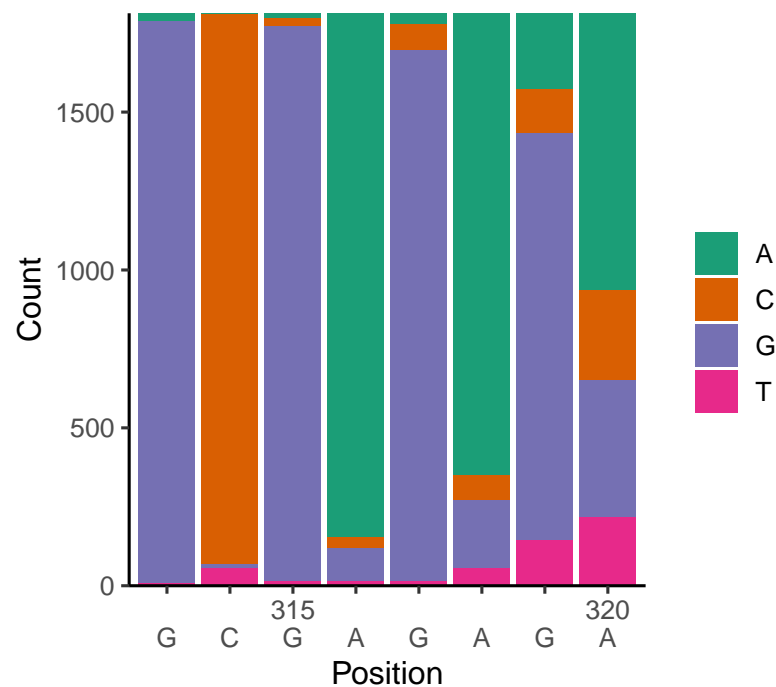
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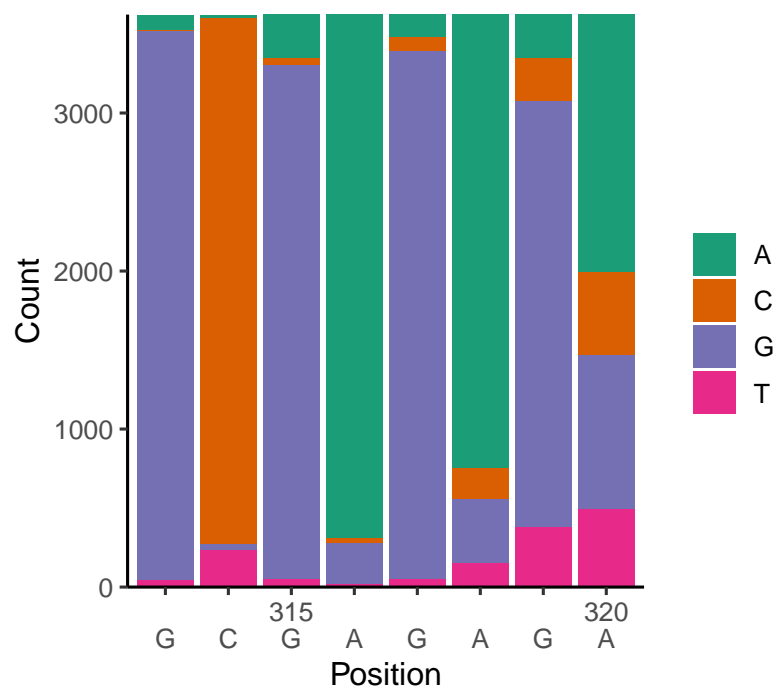
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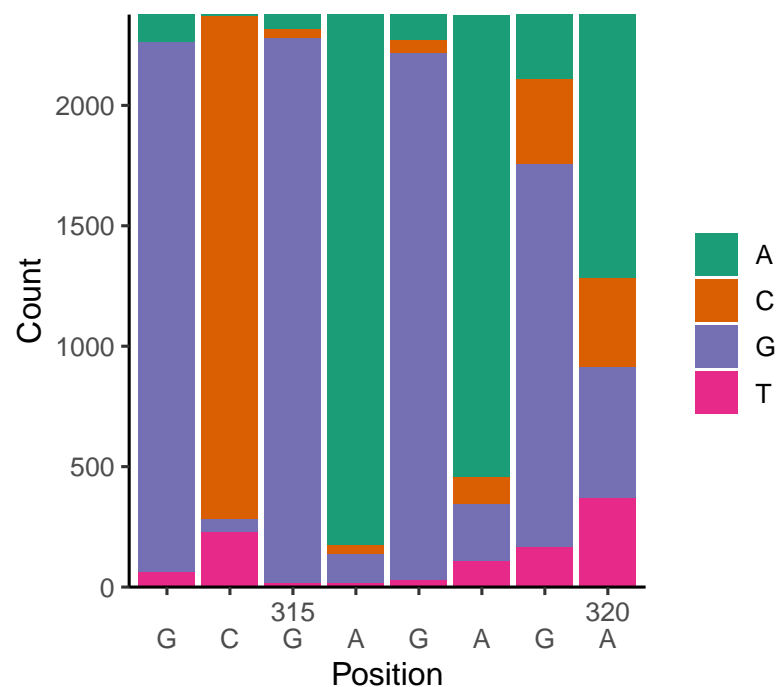
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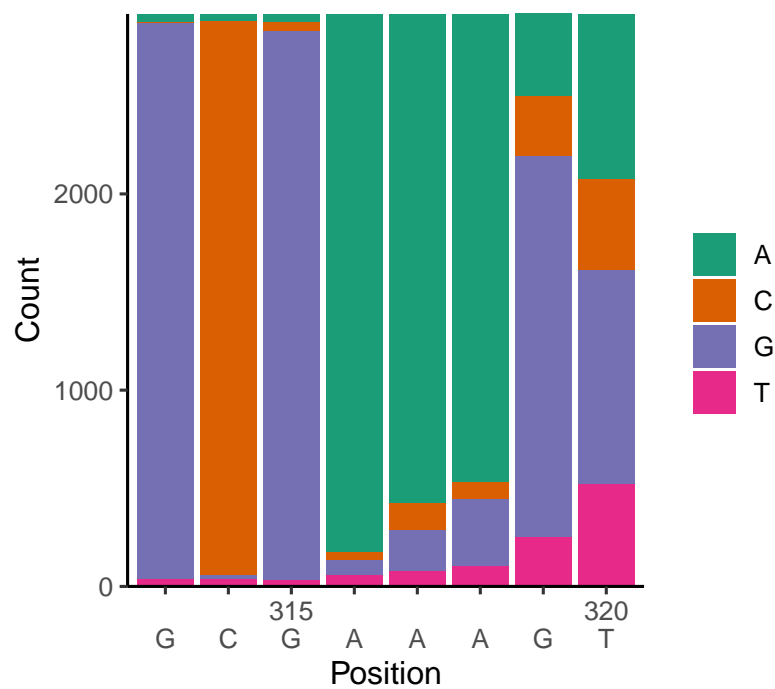
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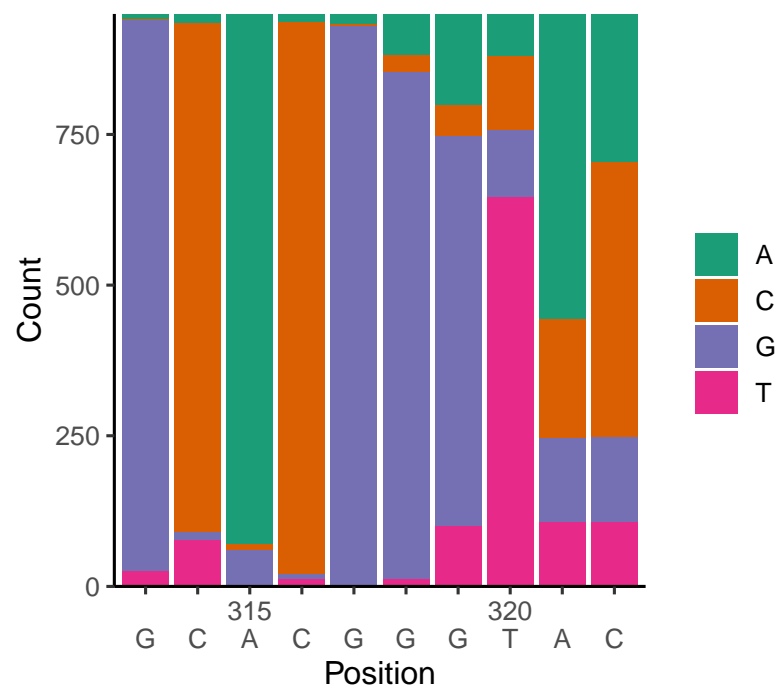
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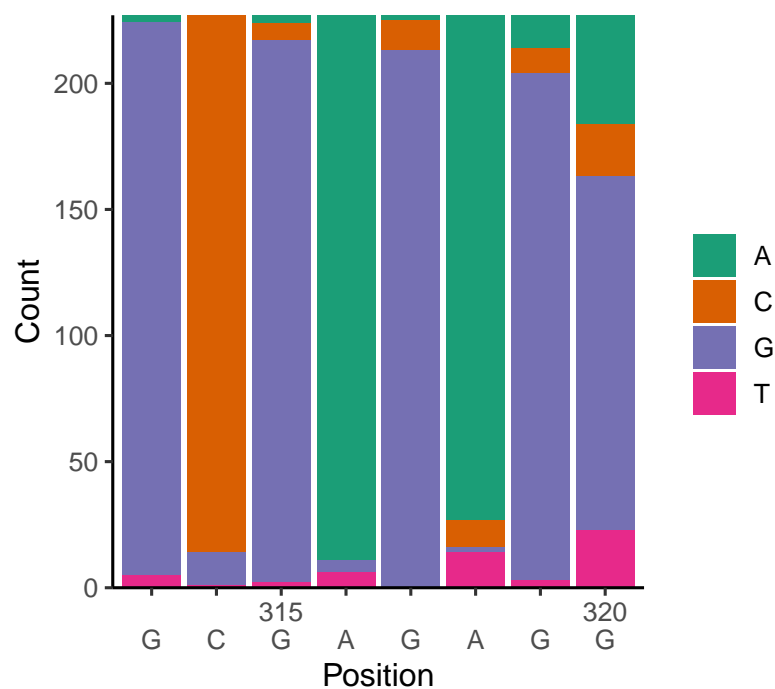
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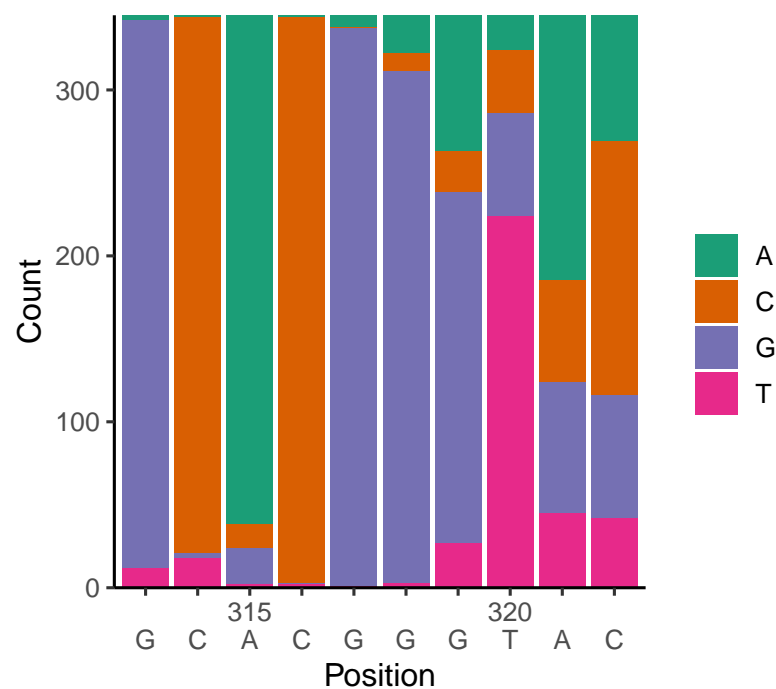
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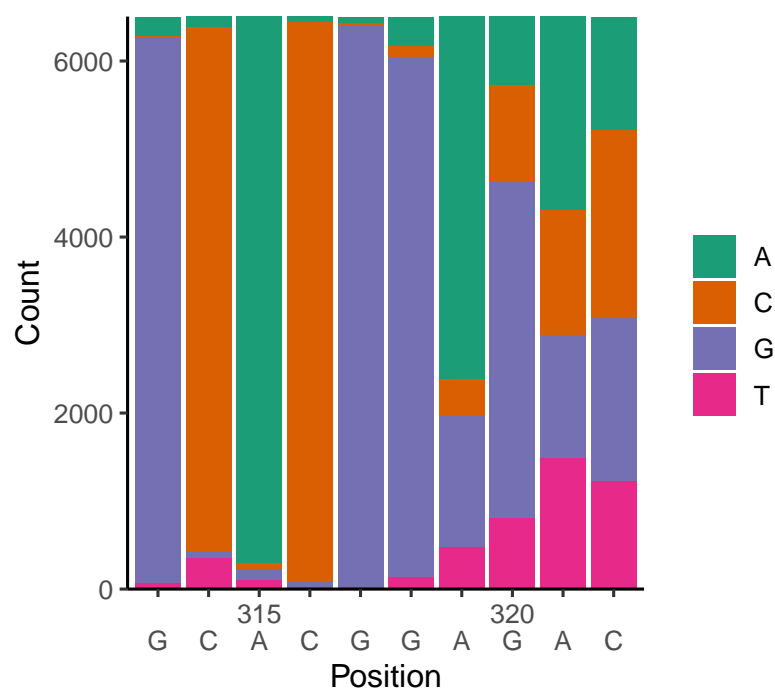
Gene IGHV1-198\*02\_G73A\_A190G



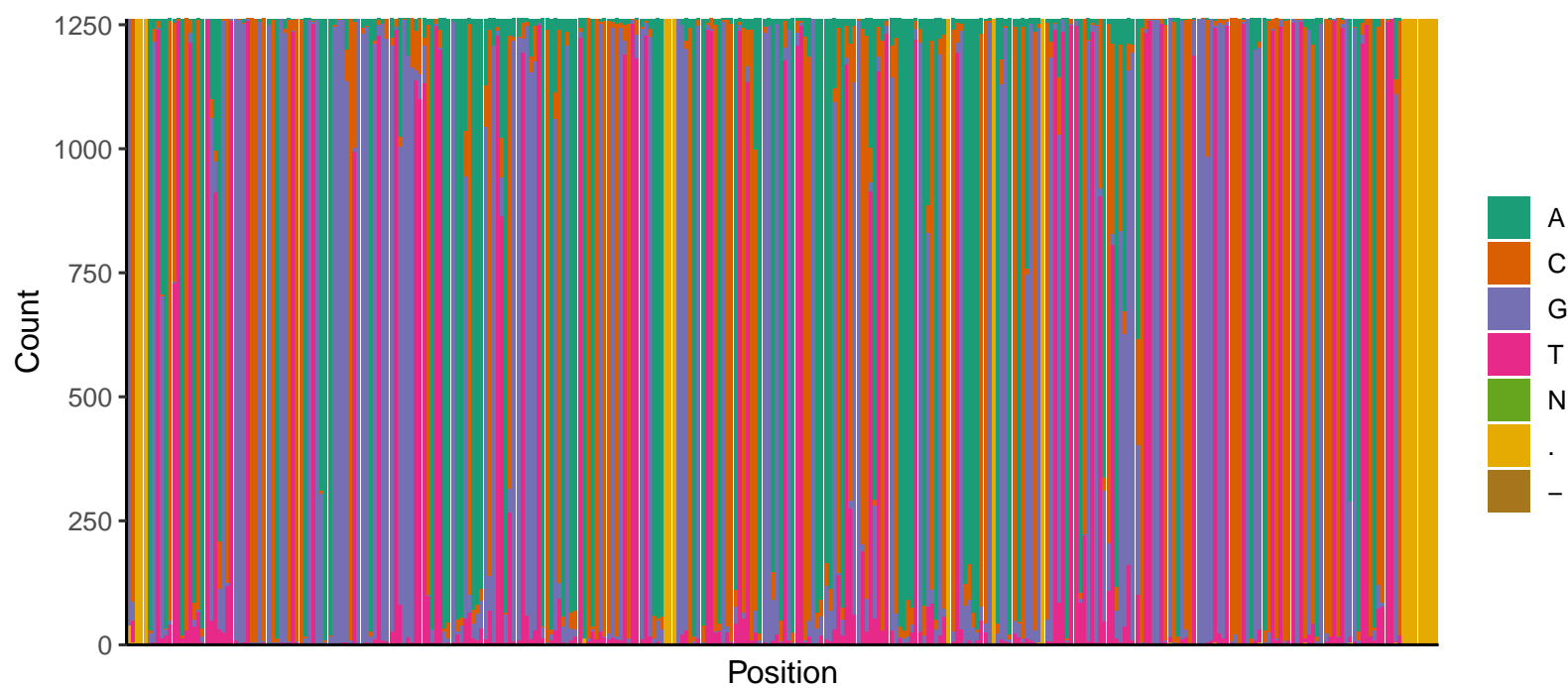
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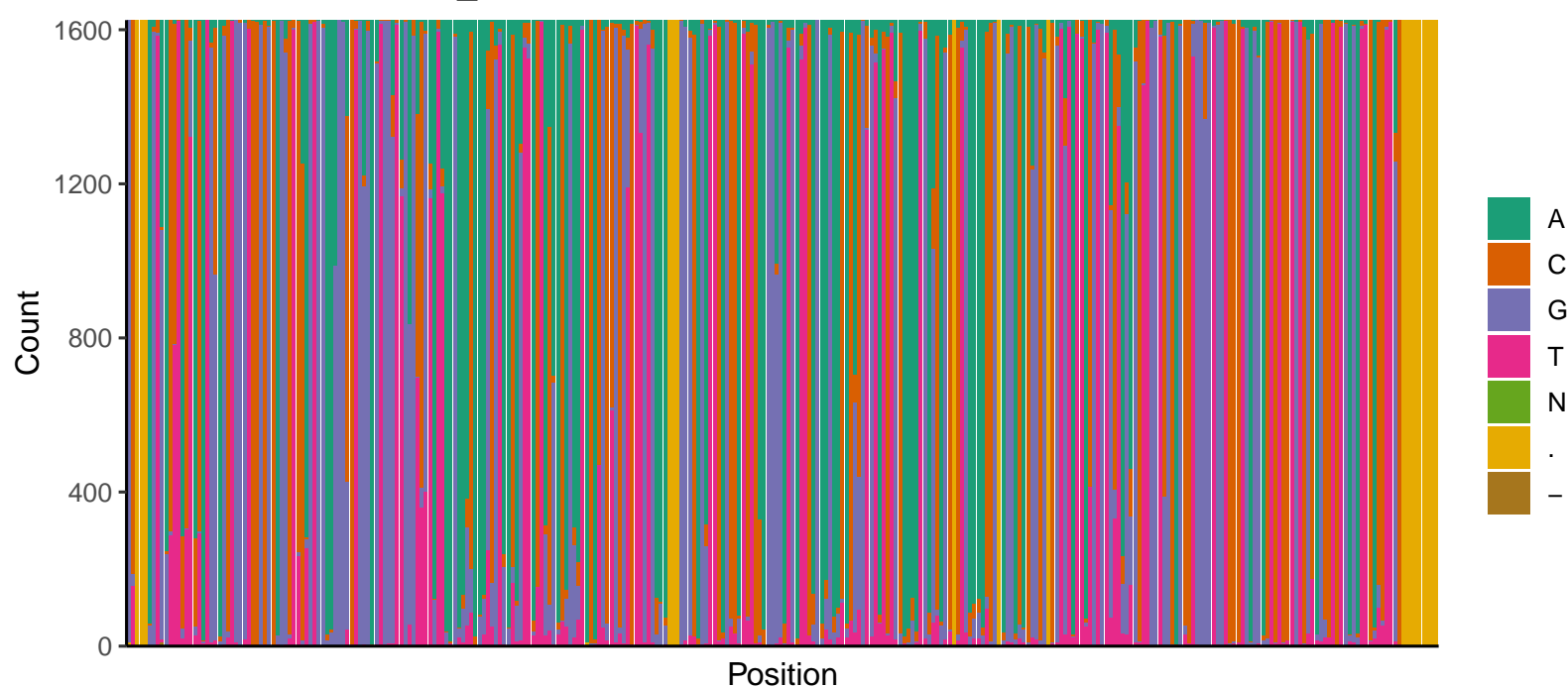
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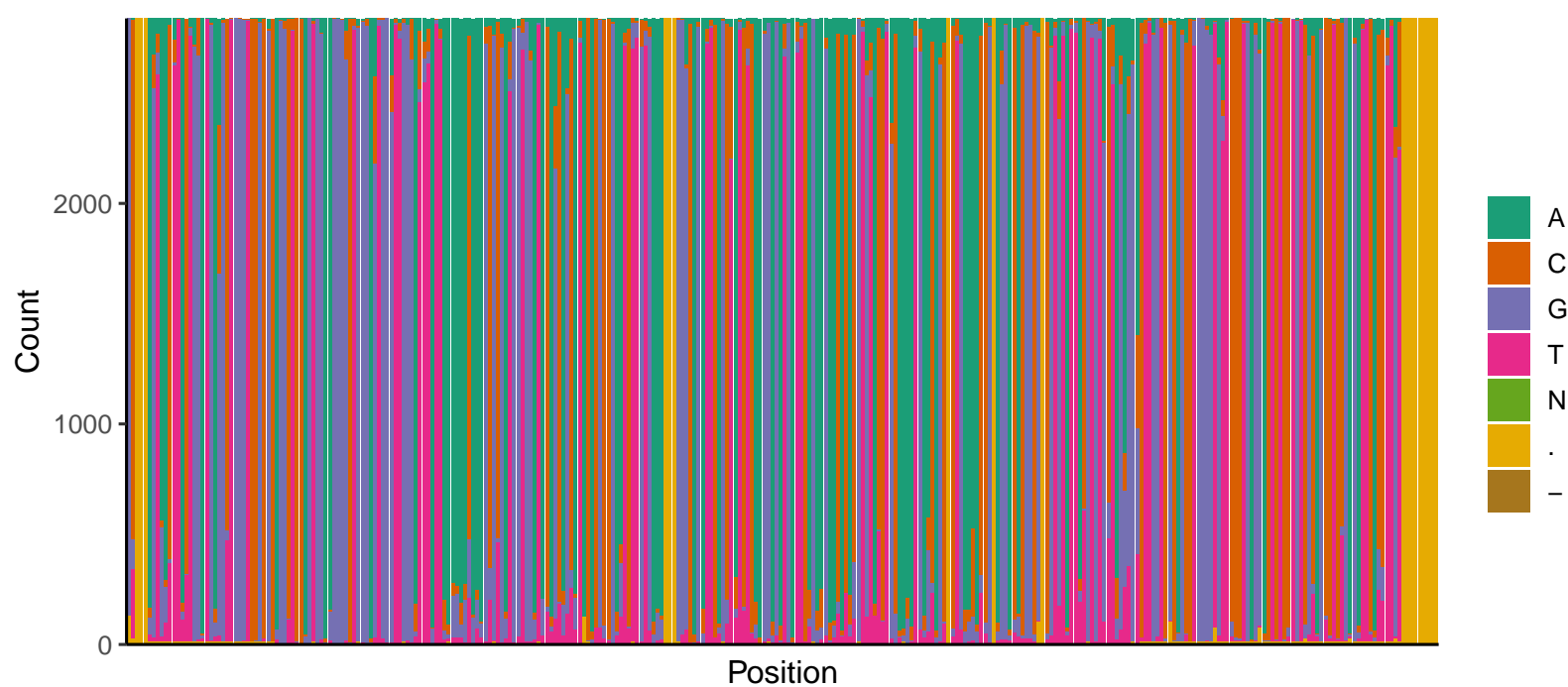
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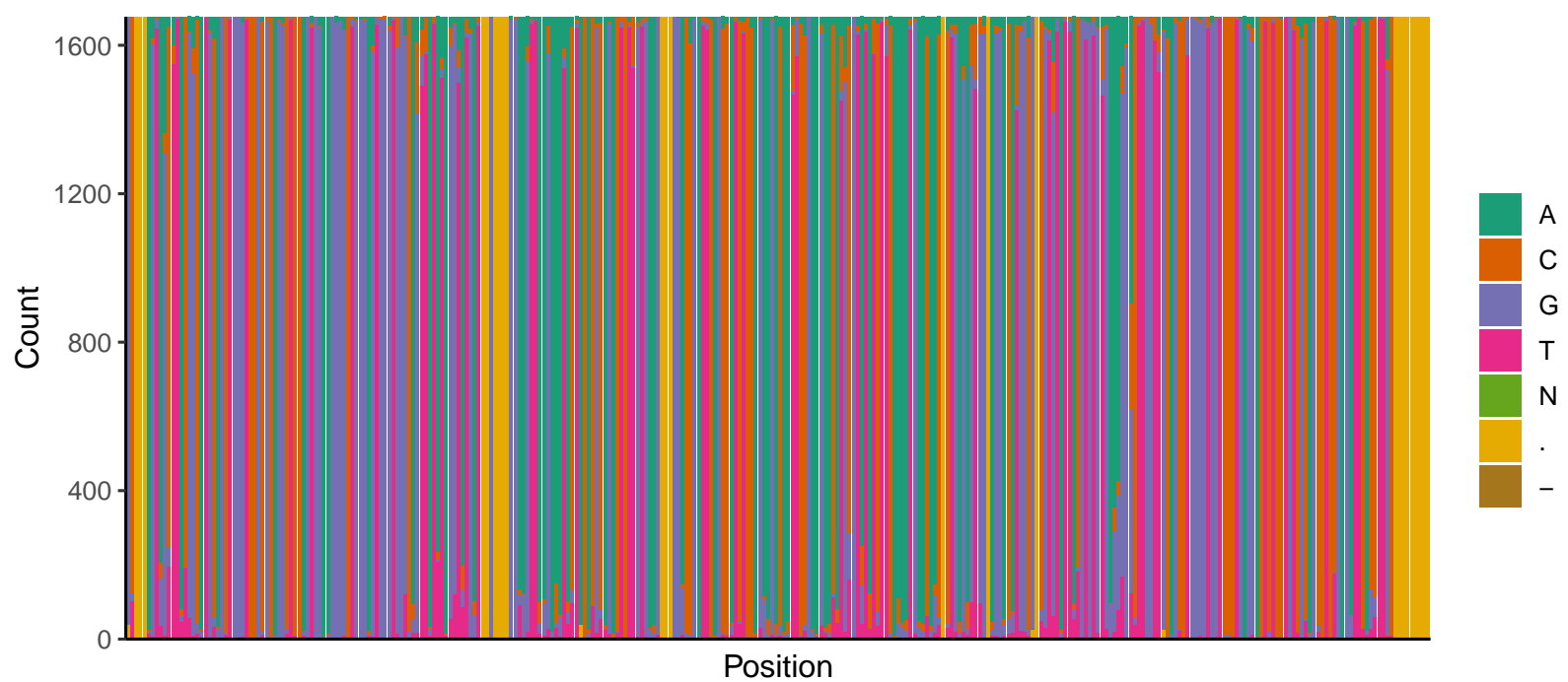
Gene IGHV3-13\*01\_C301G



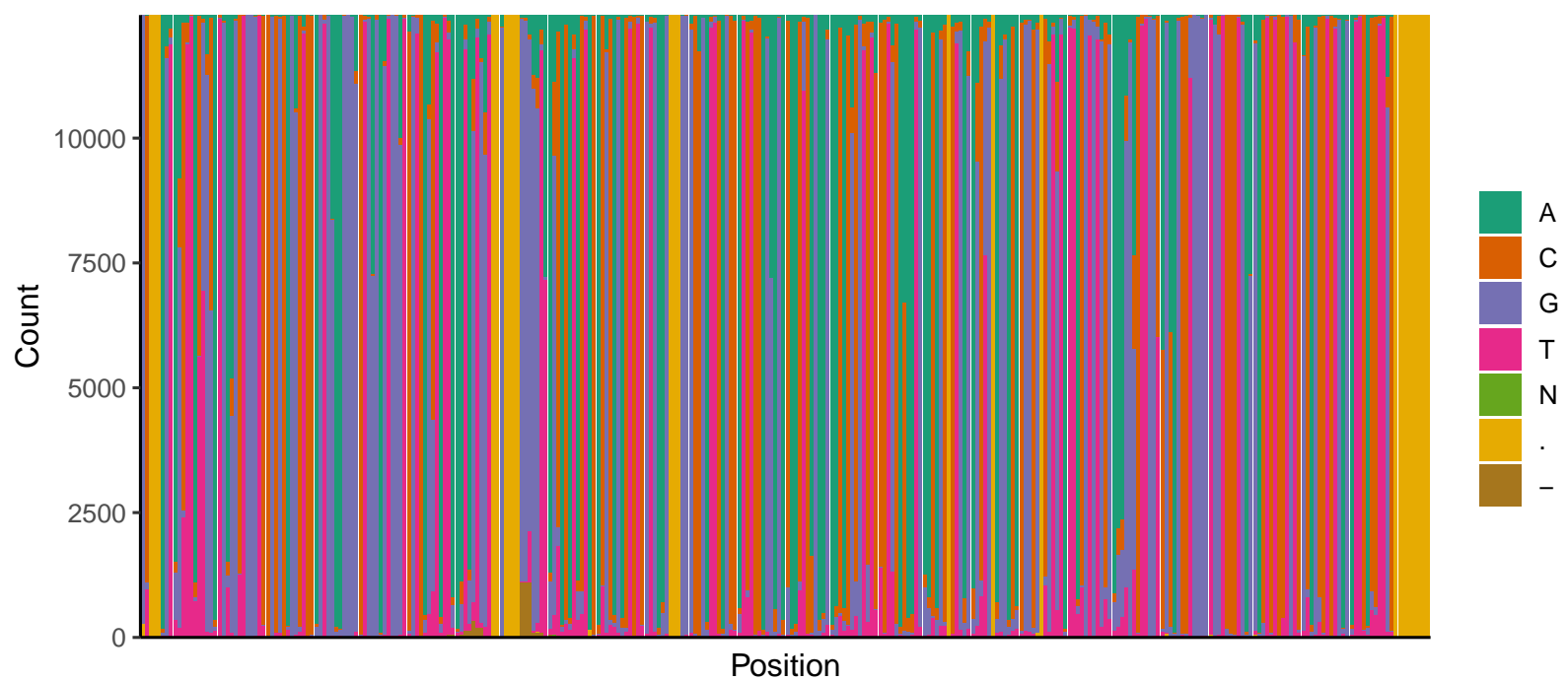
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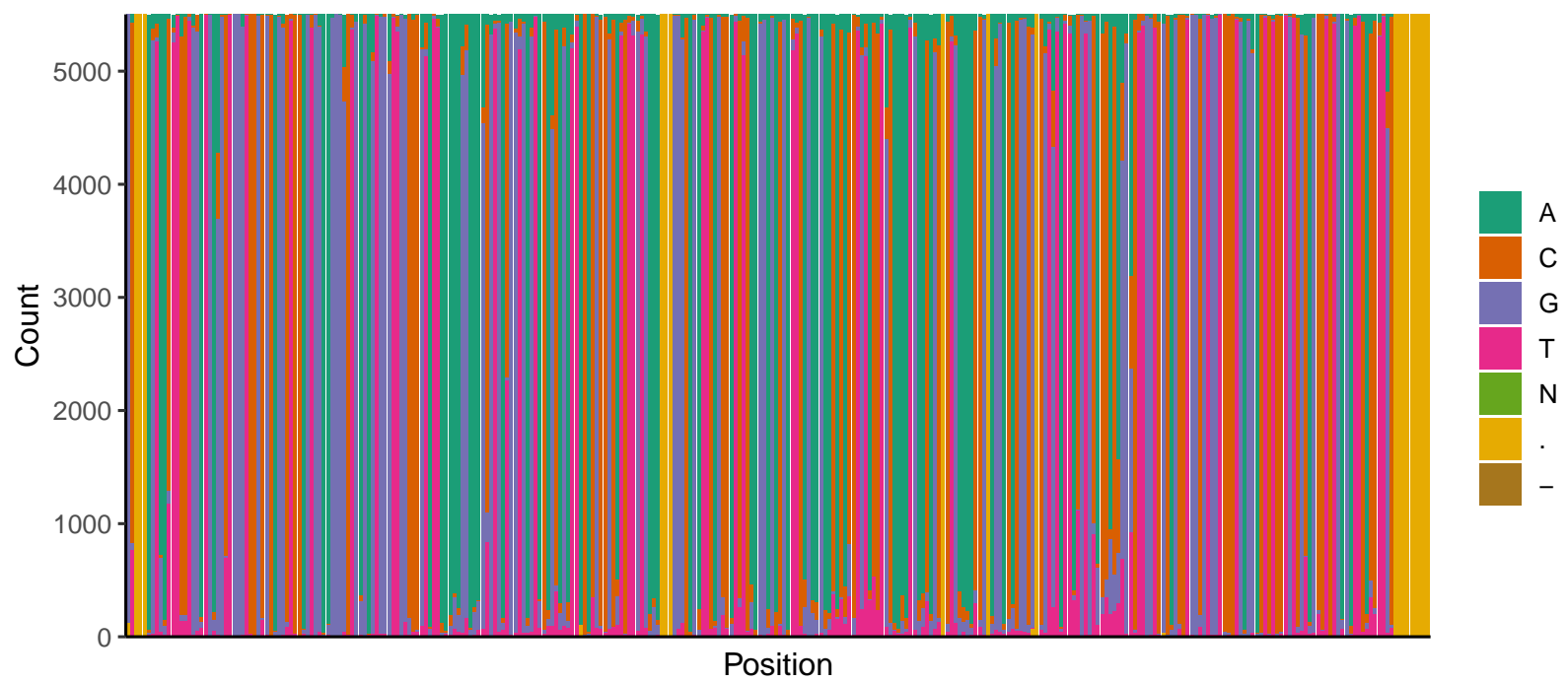
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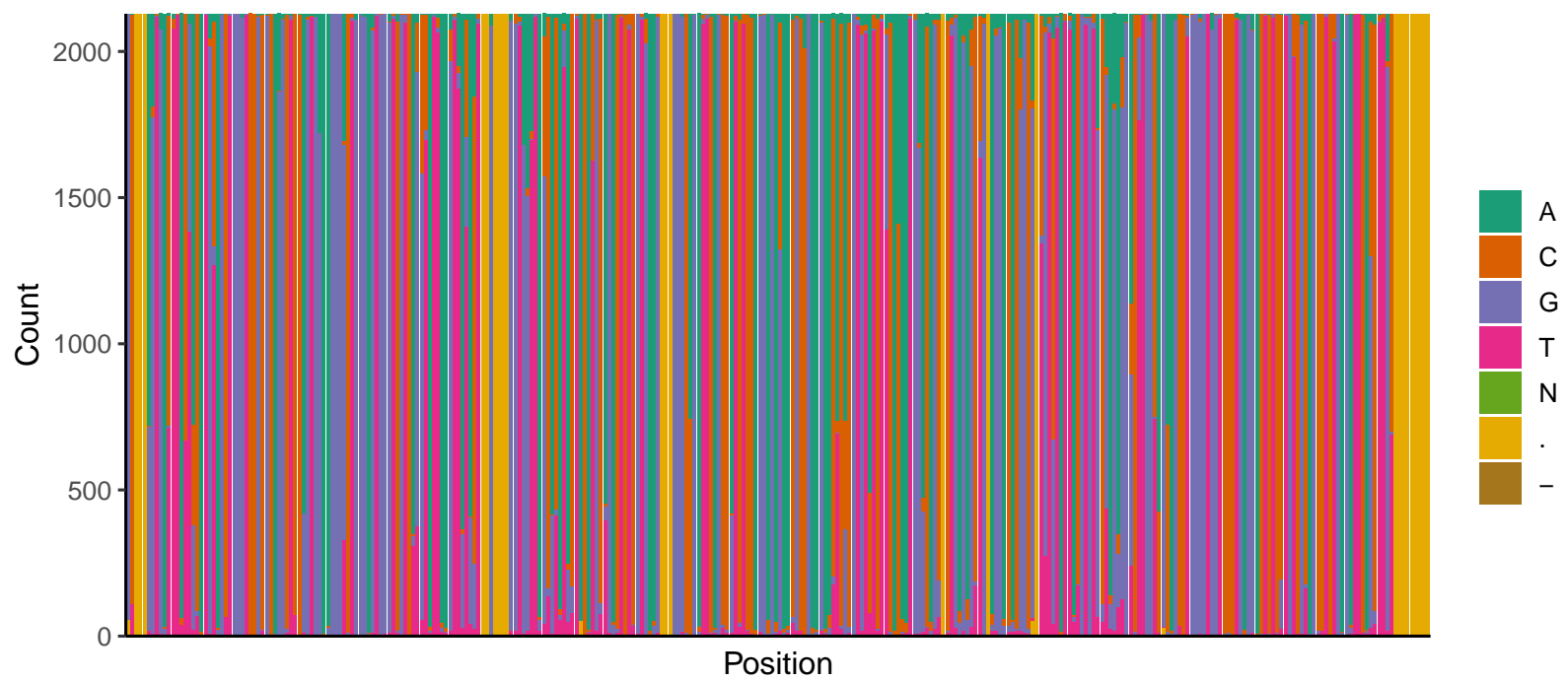
Gene IGHV3S42\*01\_T19A\_G24A\_C27A\_C38T\_A39C\_A40C\_G59A\_C111T\_T112G\_G1



Gene IGHV3-30\*02\_C141G



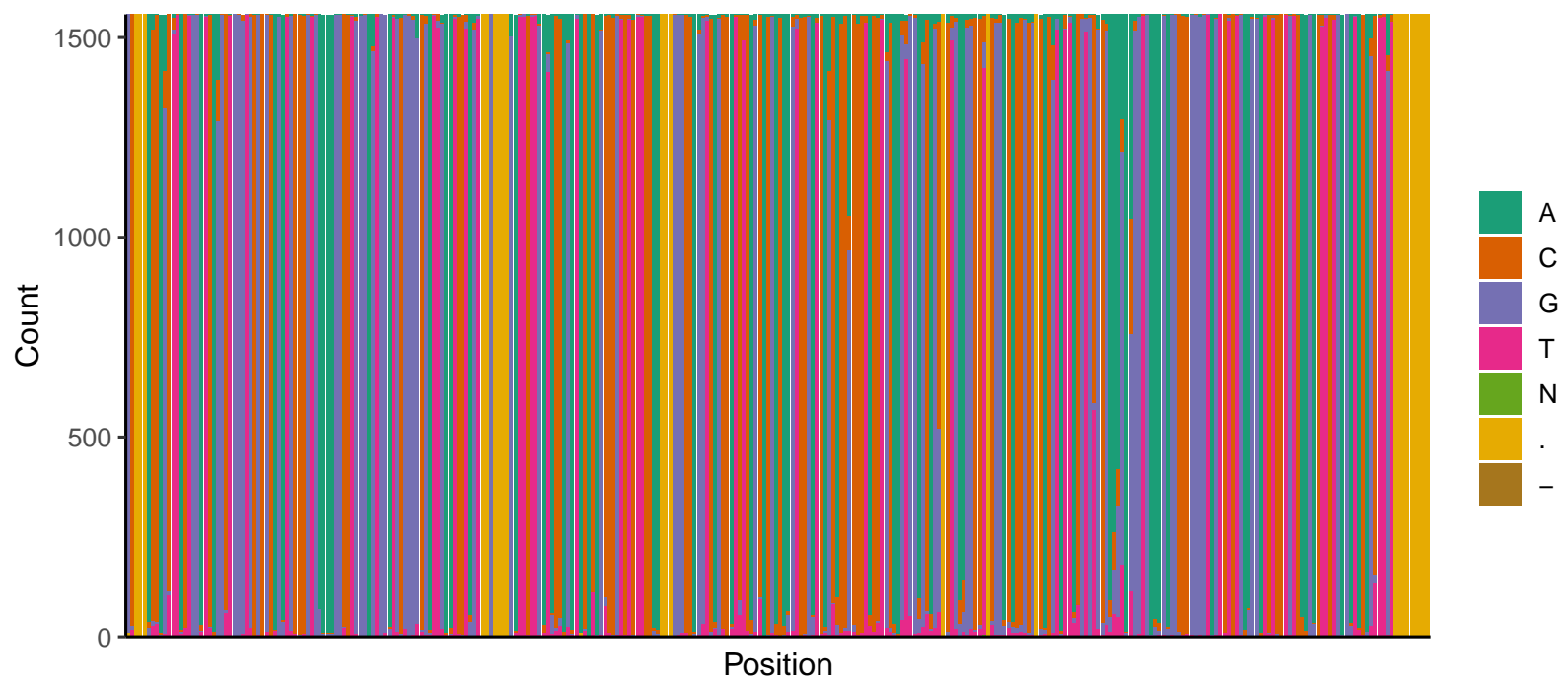
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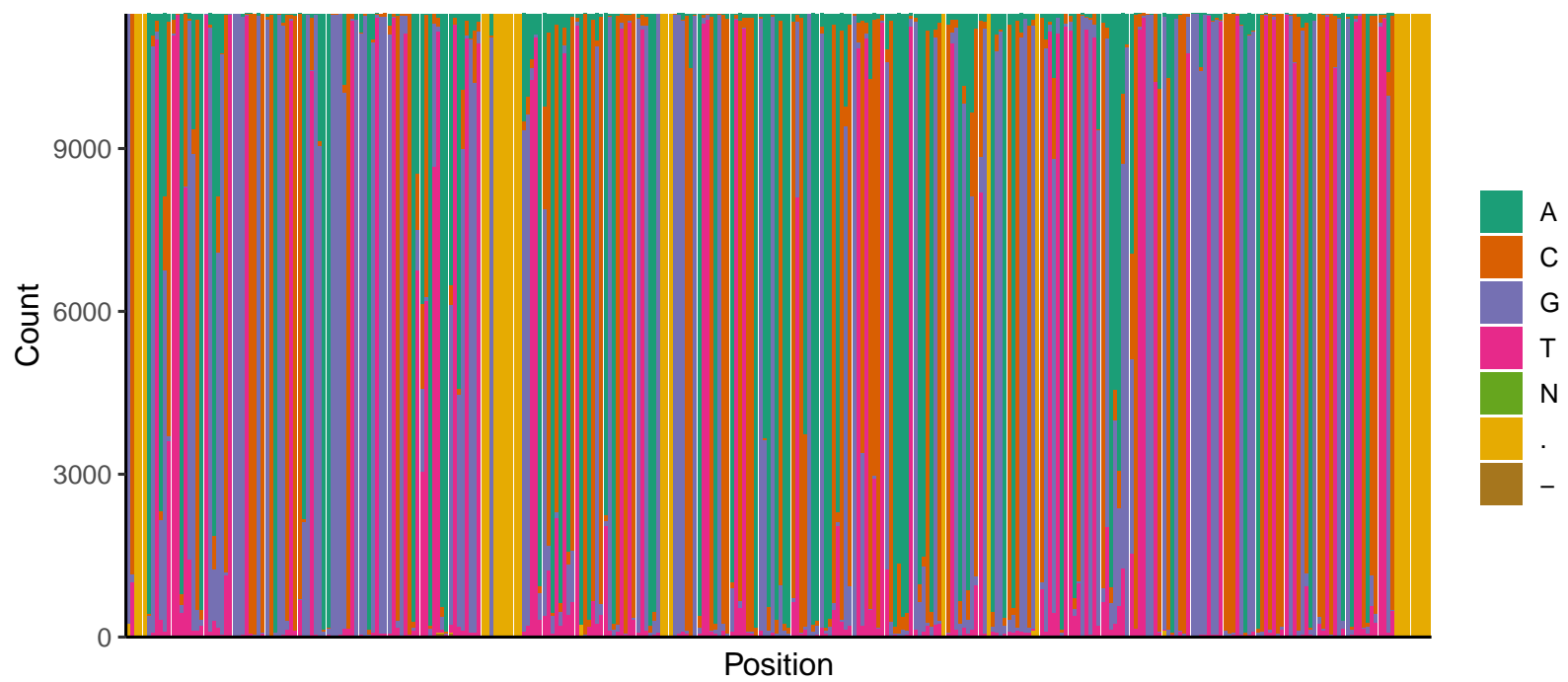
Gene IGHV4-65\*02\_A163T\_G169A



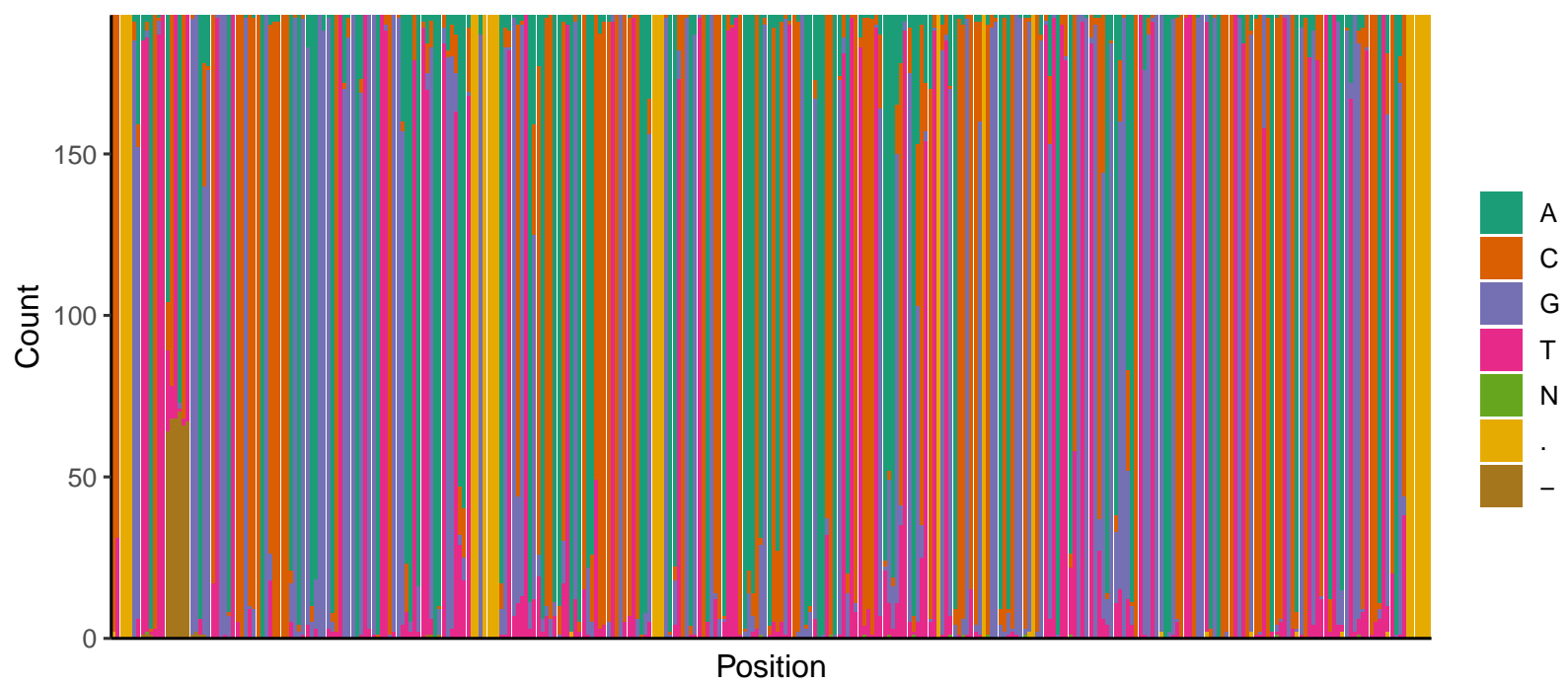
Gene IGHV5-20\*01\_A203G\_G259A



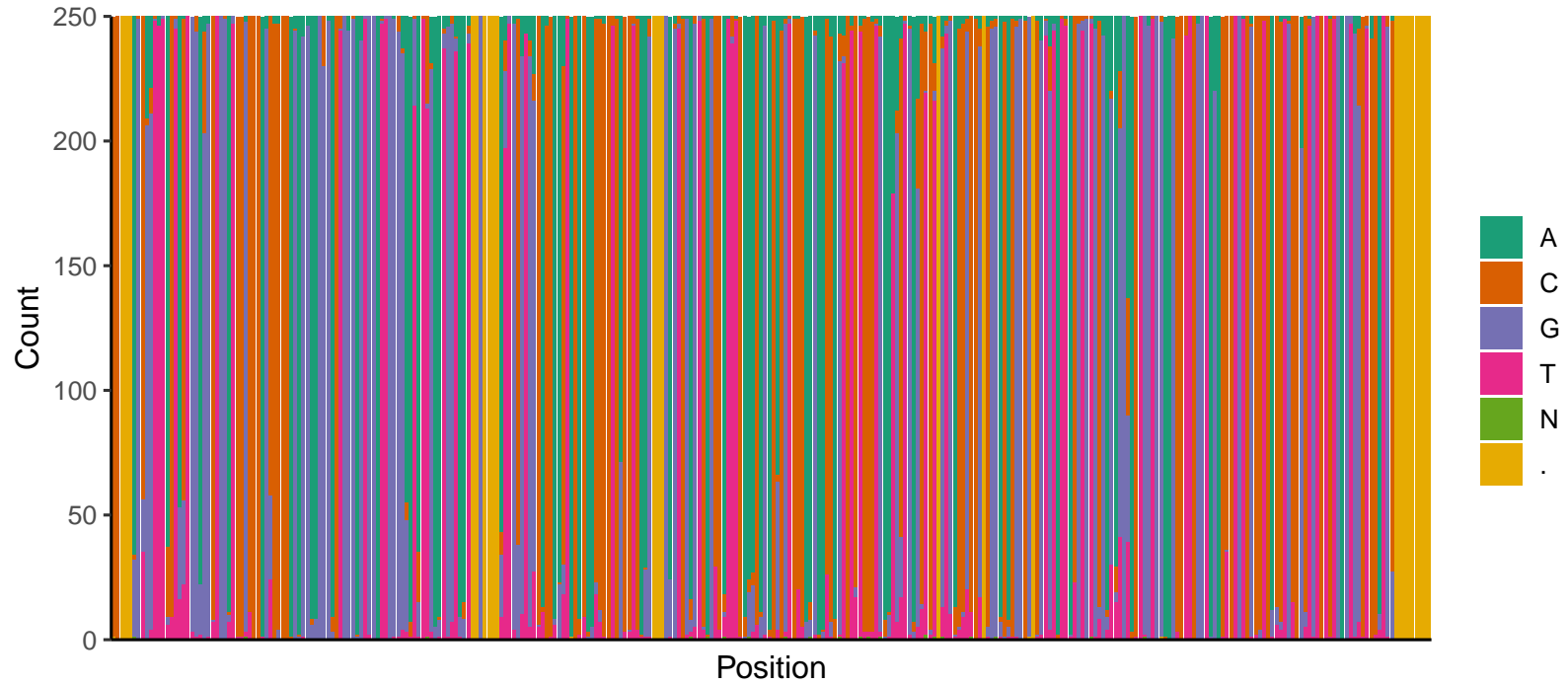
Gene IGHV3-103\*01\_G24A\_C27A\_C38T\_A39C\_A40C\_C113G\_T114C\_C118A\_A119G\_



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

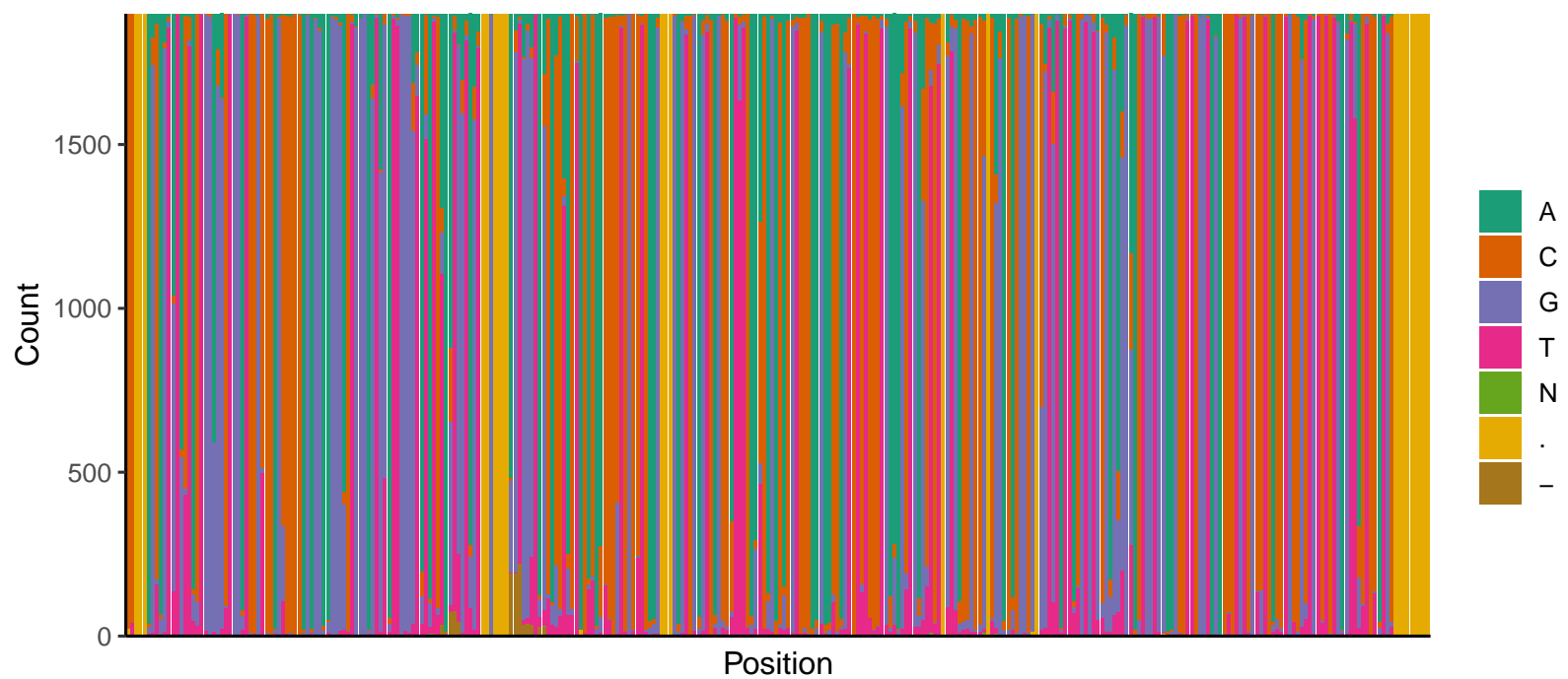


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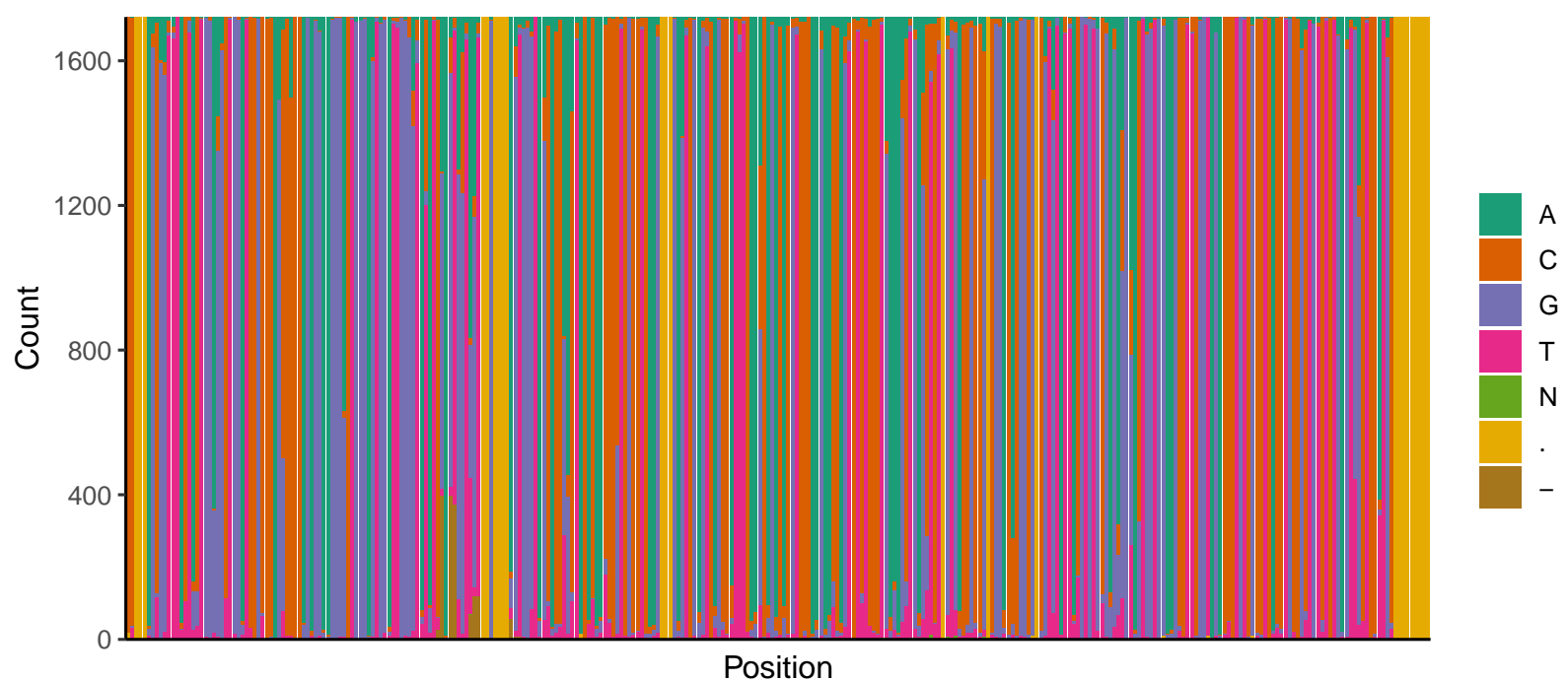




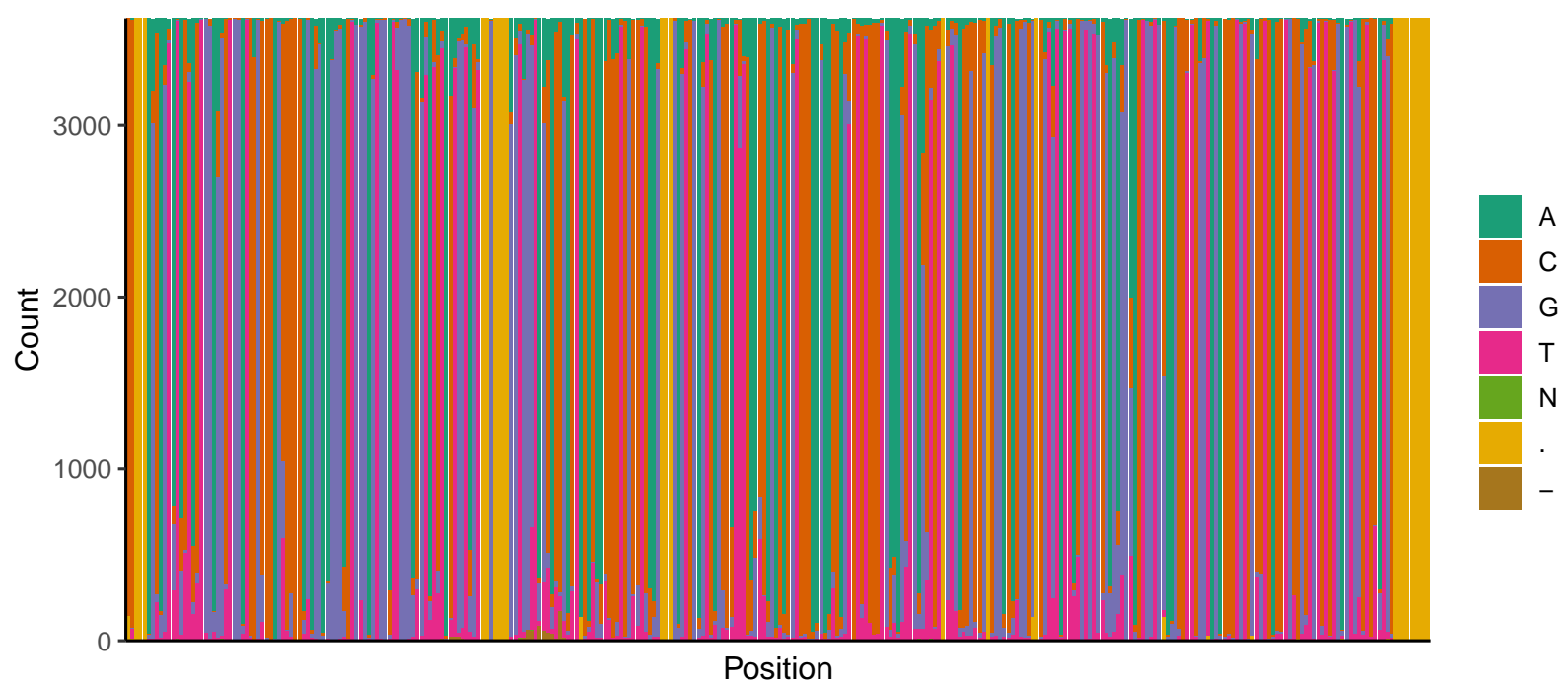
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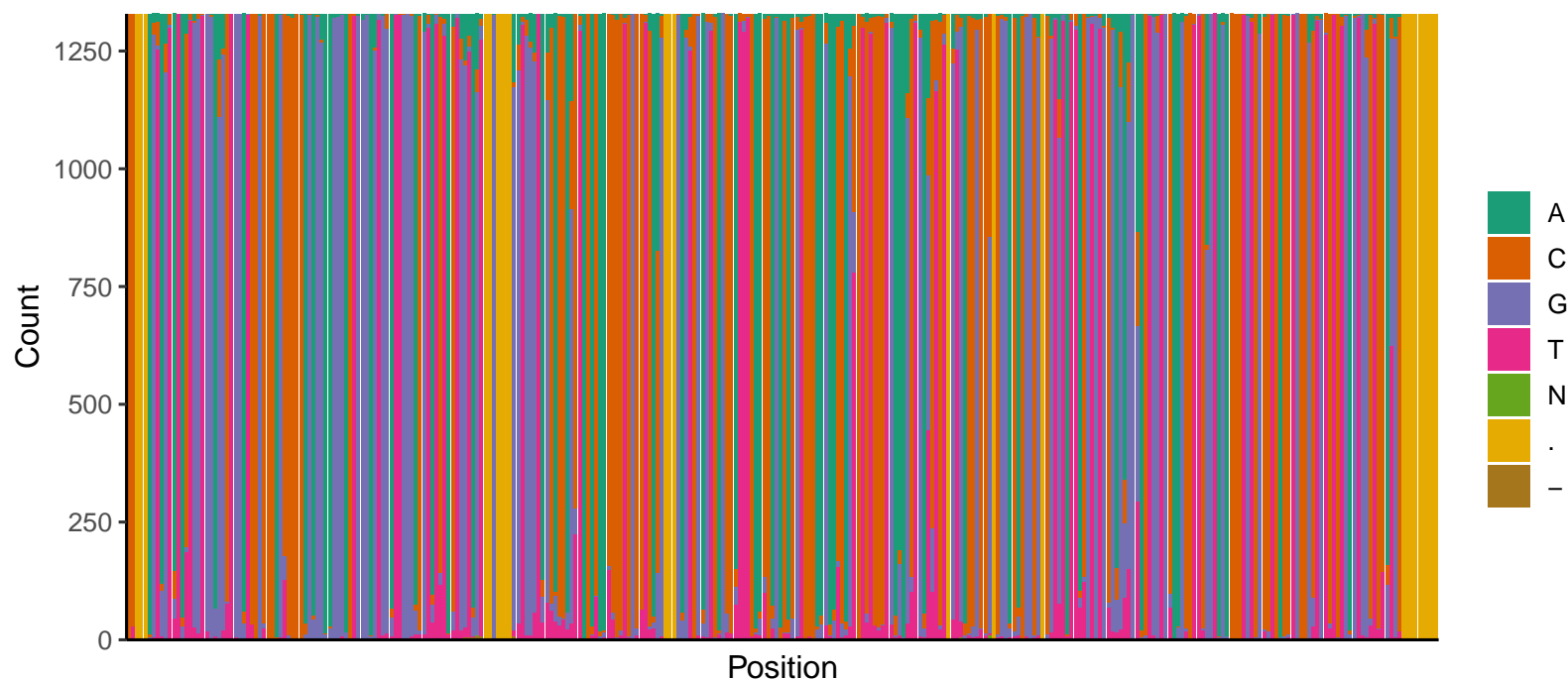
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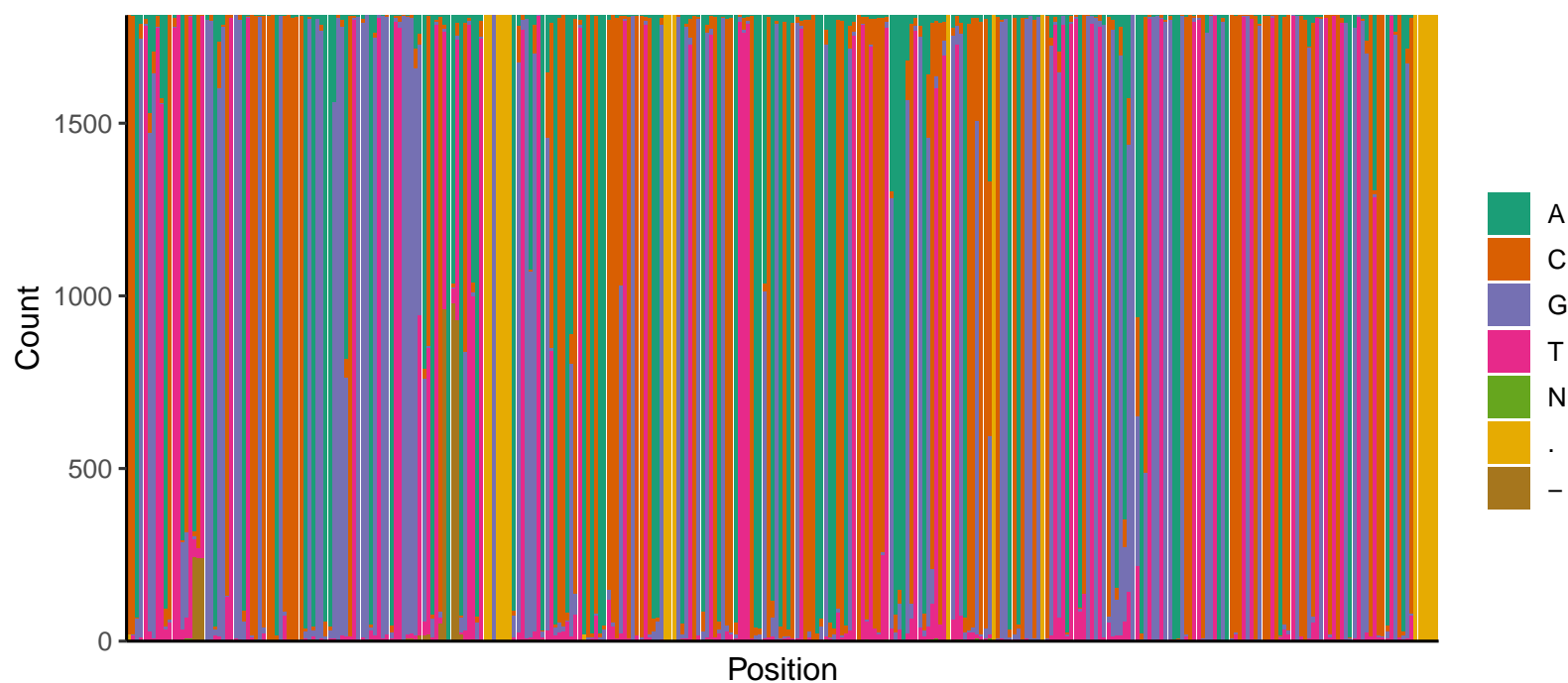
Gene IGHV4-173\*01\_C4G



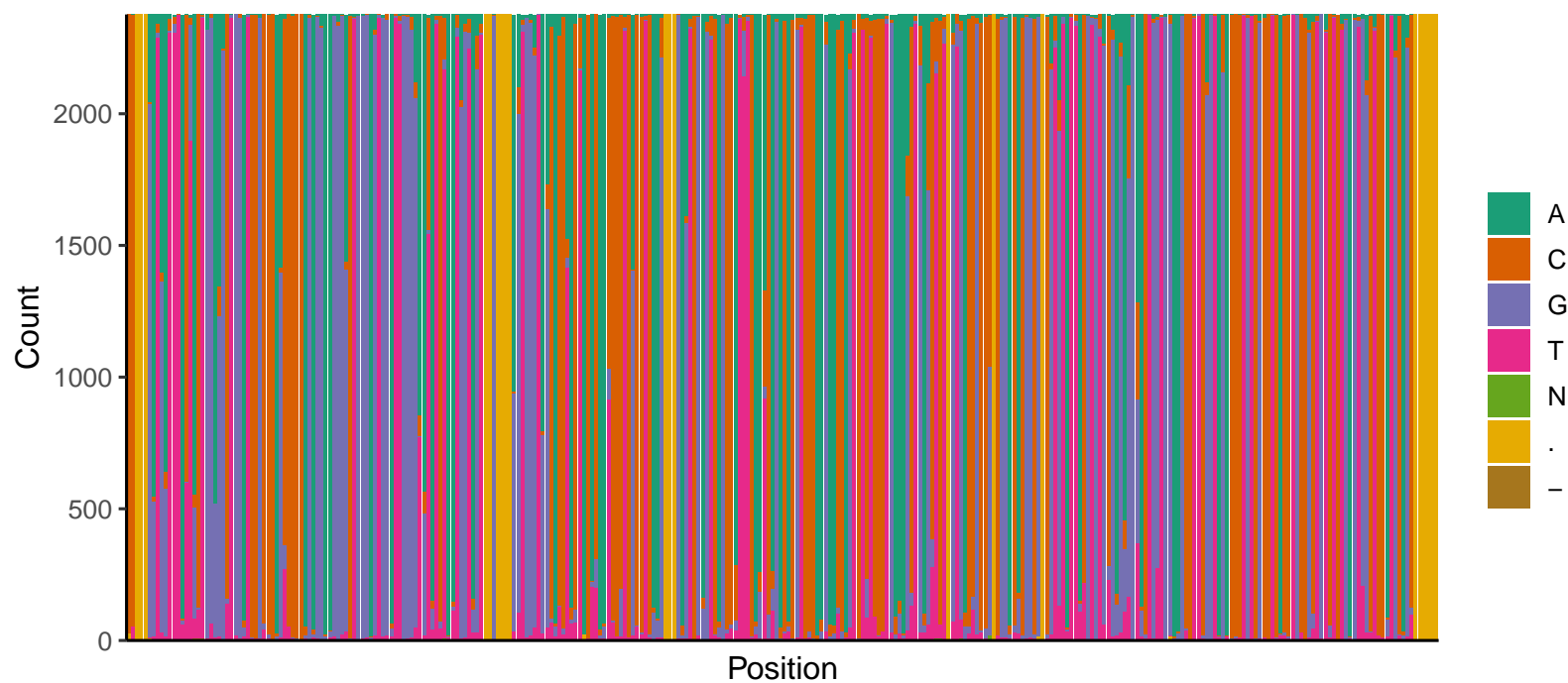
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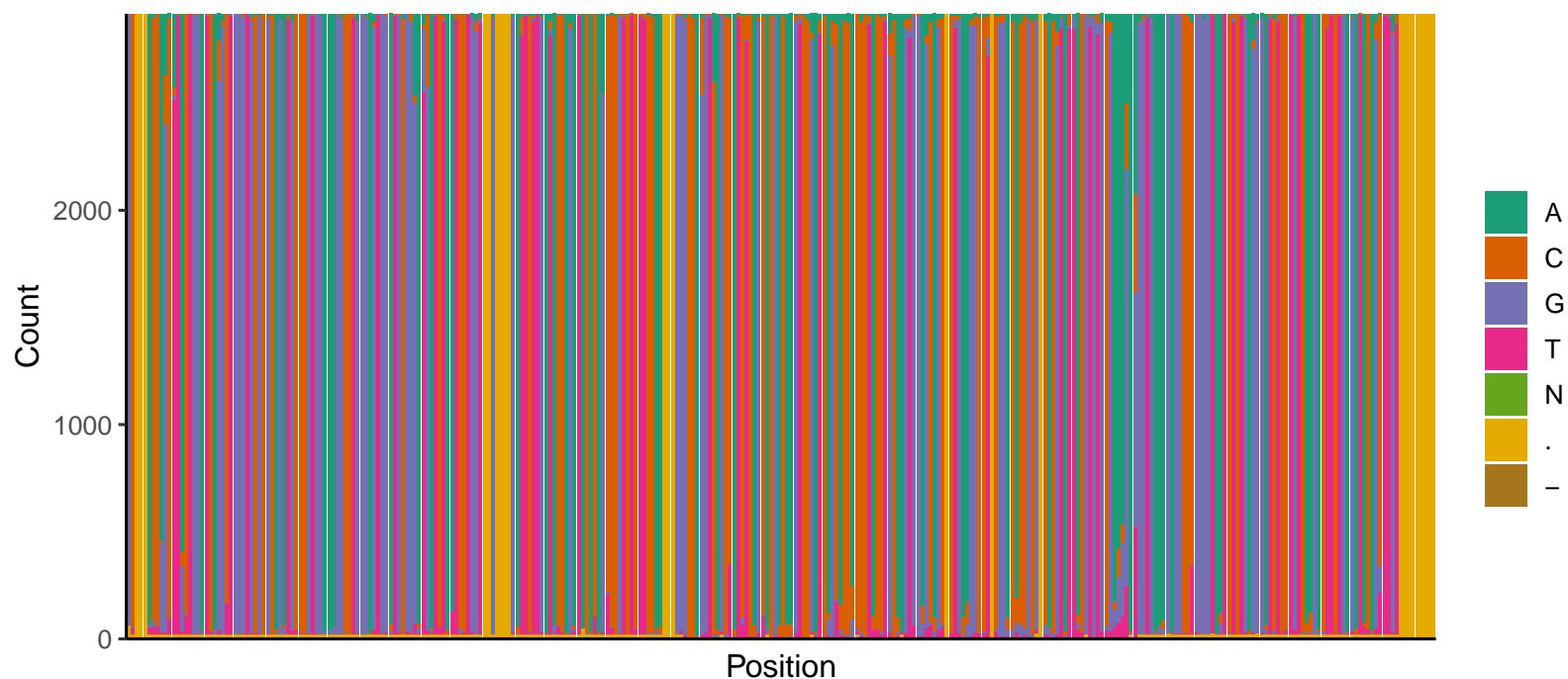
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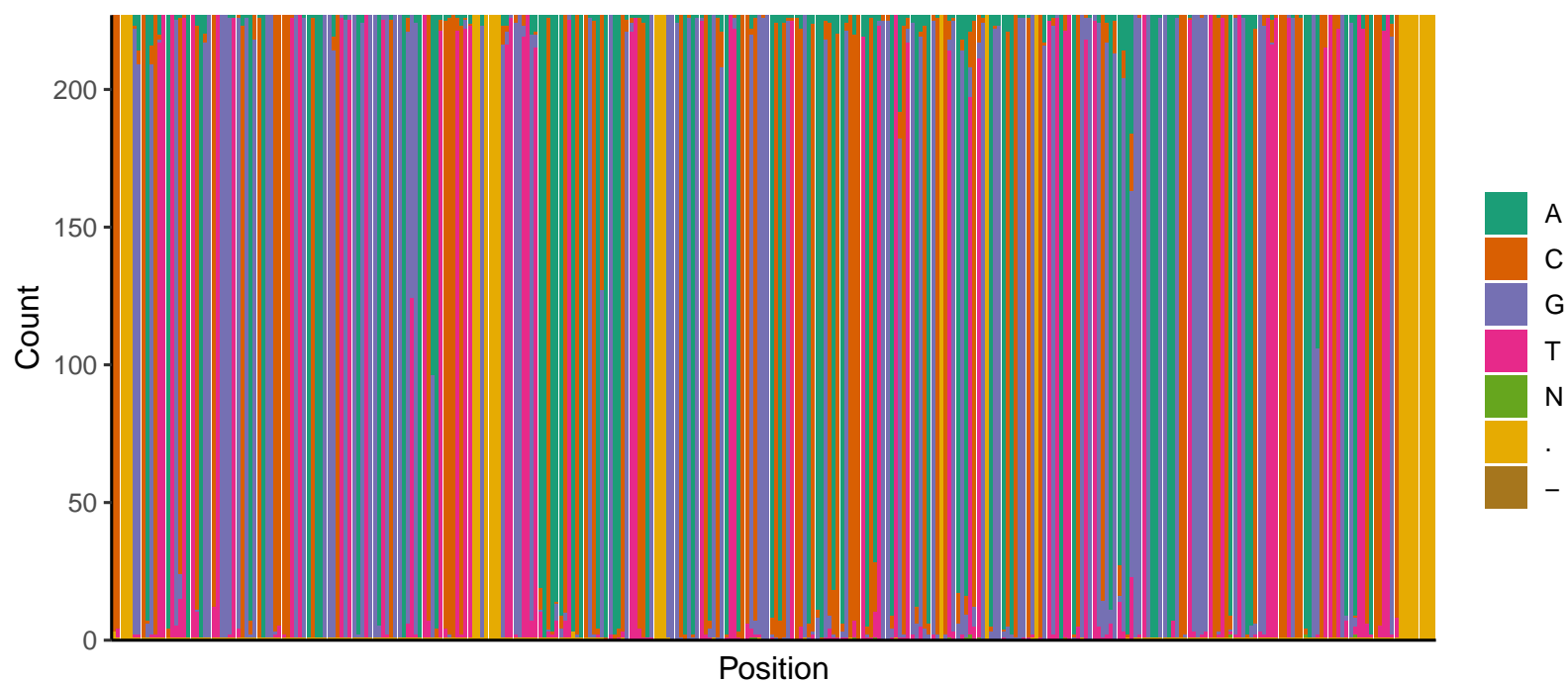
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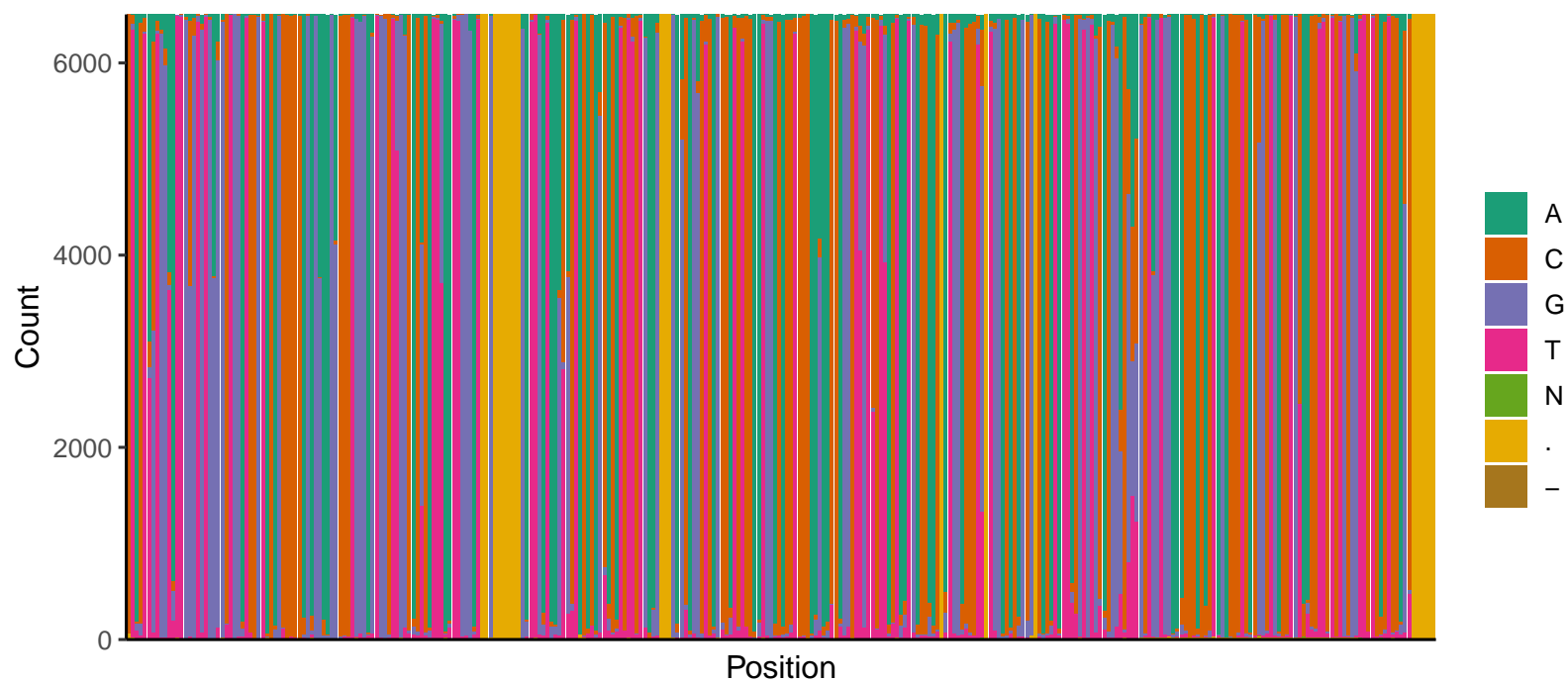
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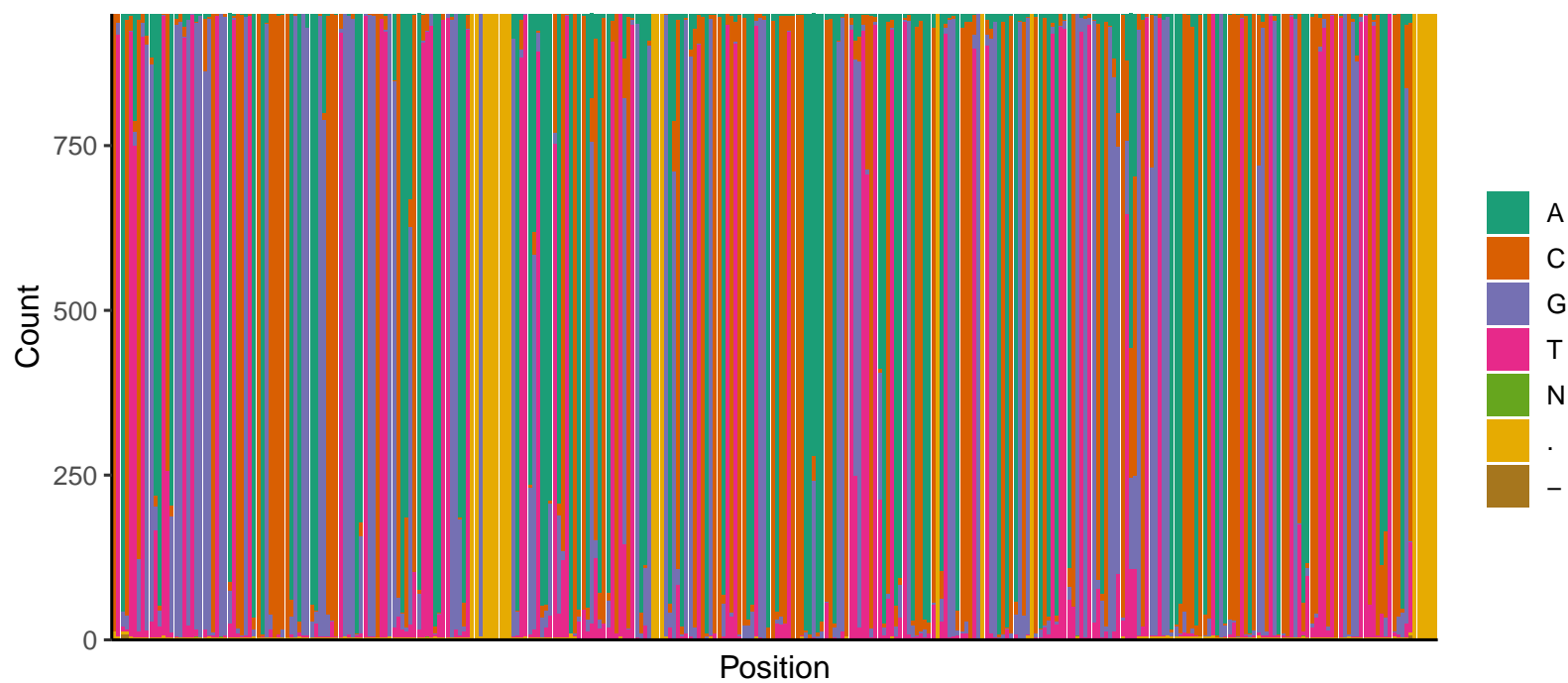
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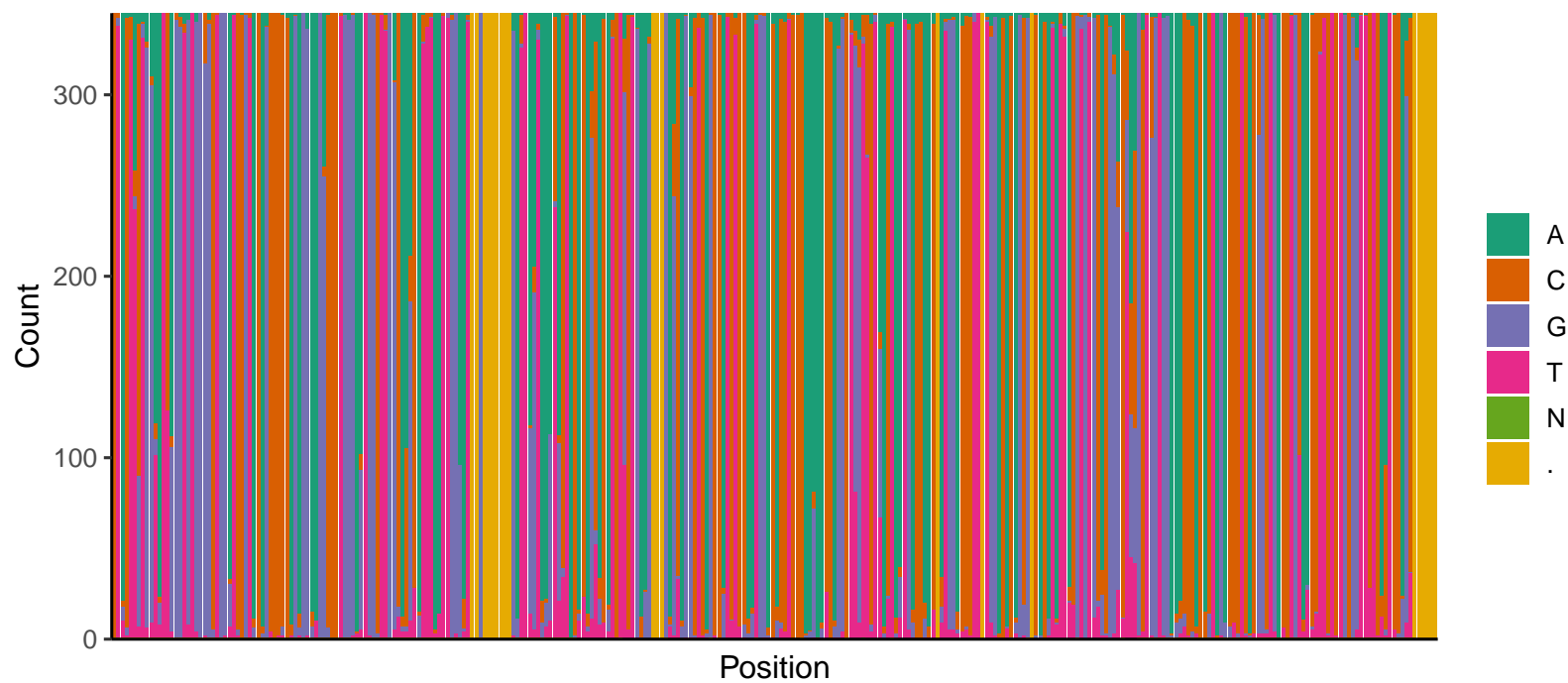
Gene IGHV2-10\*01\_C6G\_A23G\_G112C\_G118A\_A119G\_G121T\_G141A\_C205A\_G210T



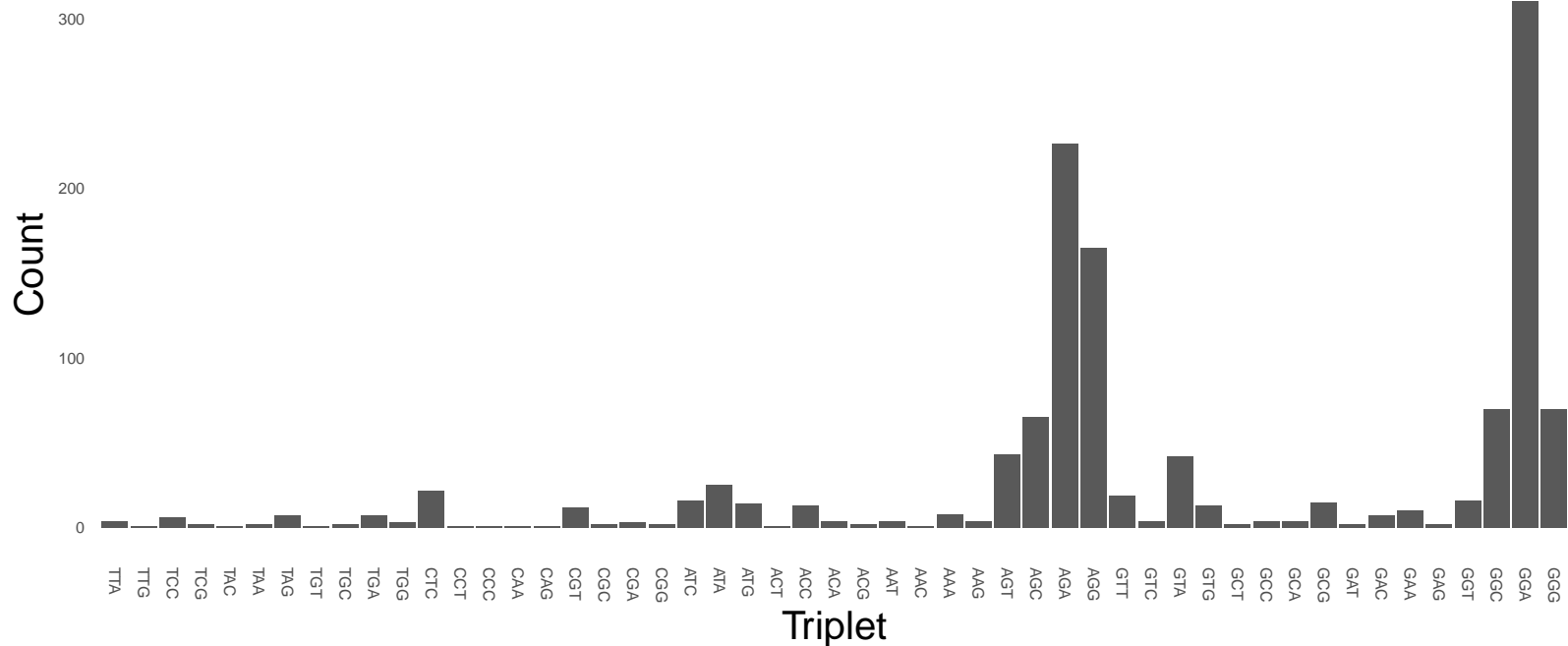
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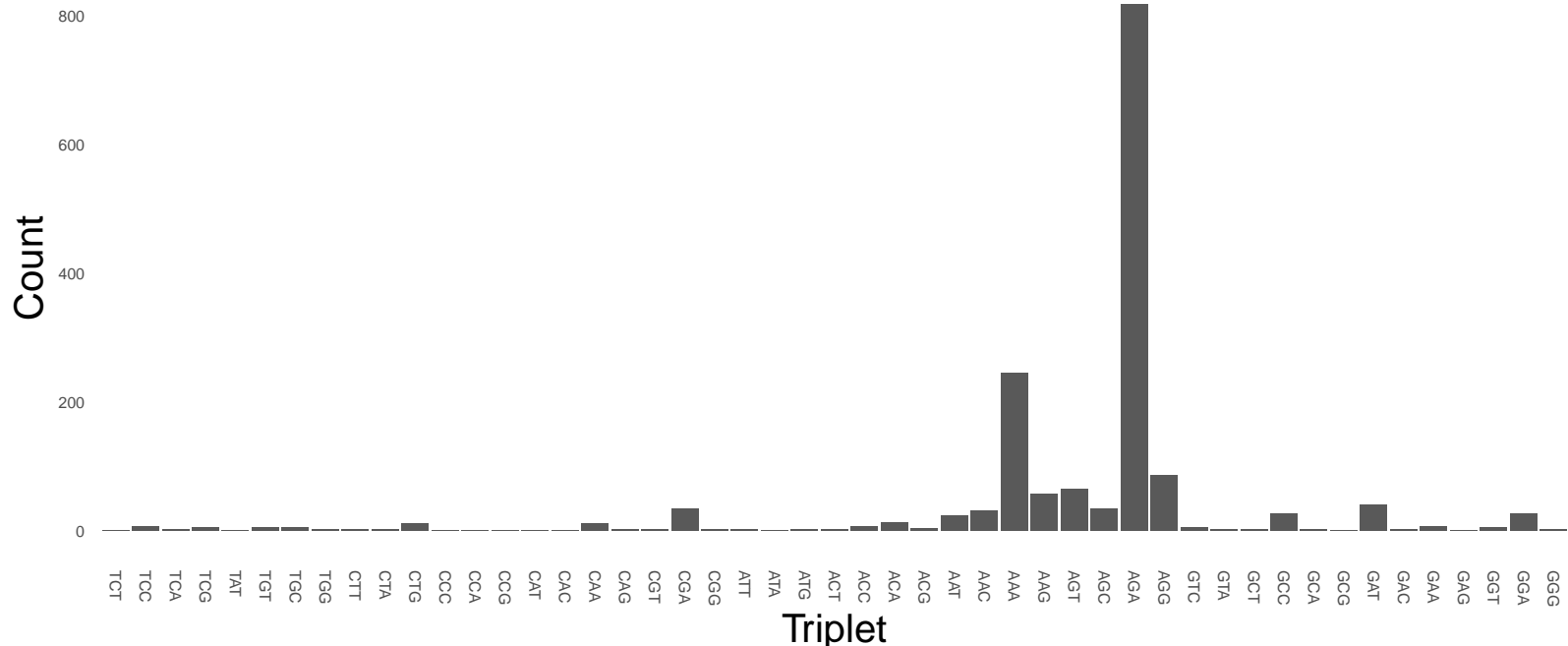
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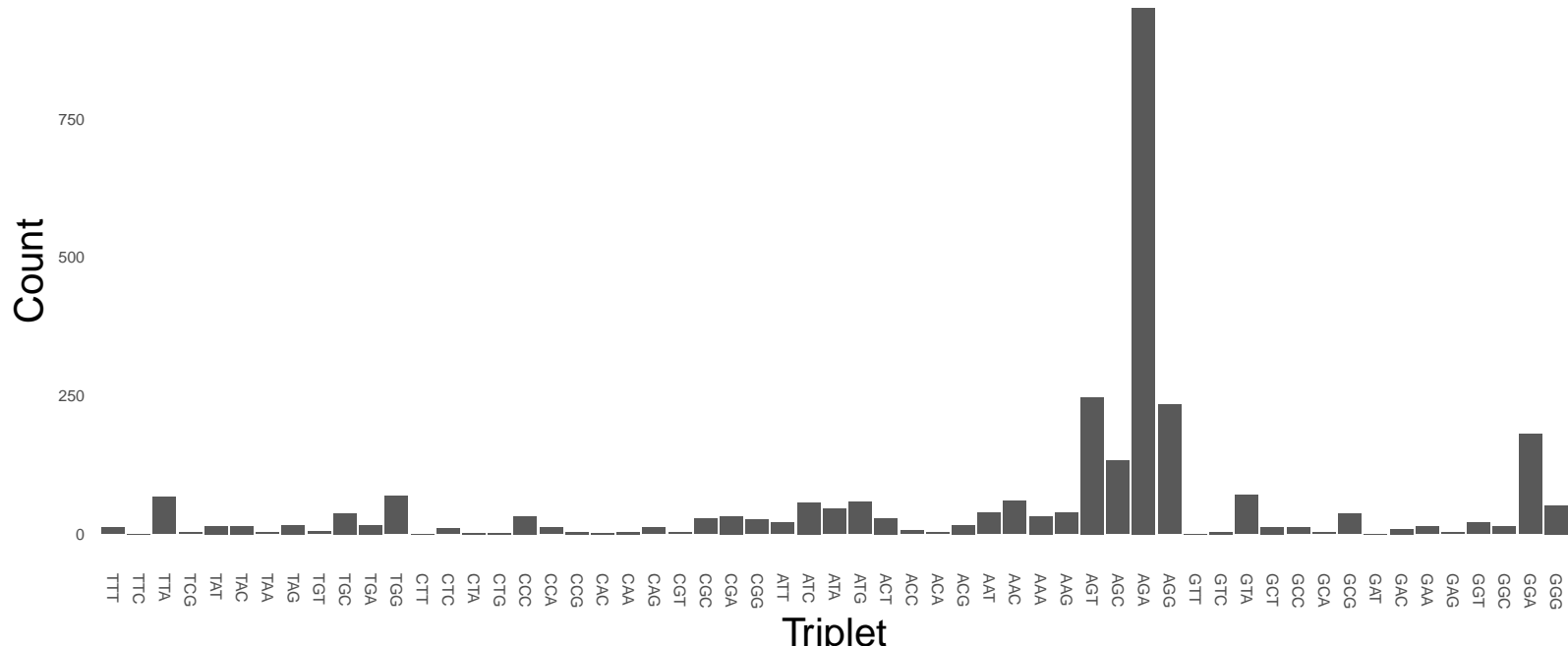
IGHV3-184\*01\_G106A\_T109C\_G297A- Final 3 nucleotides as a triplet



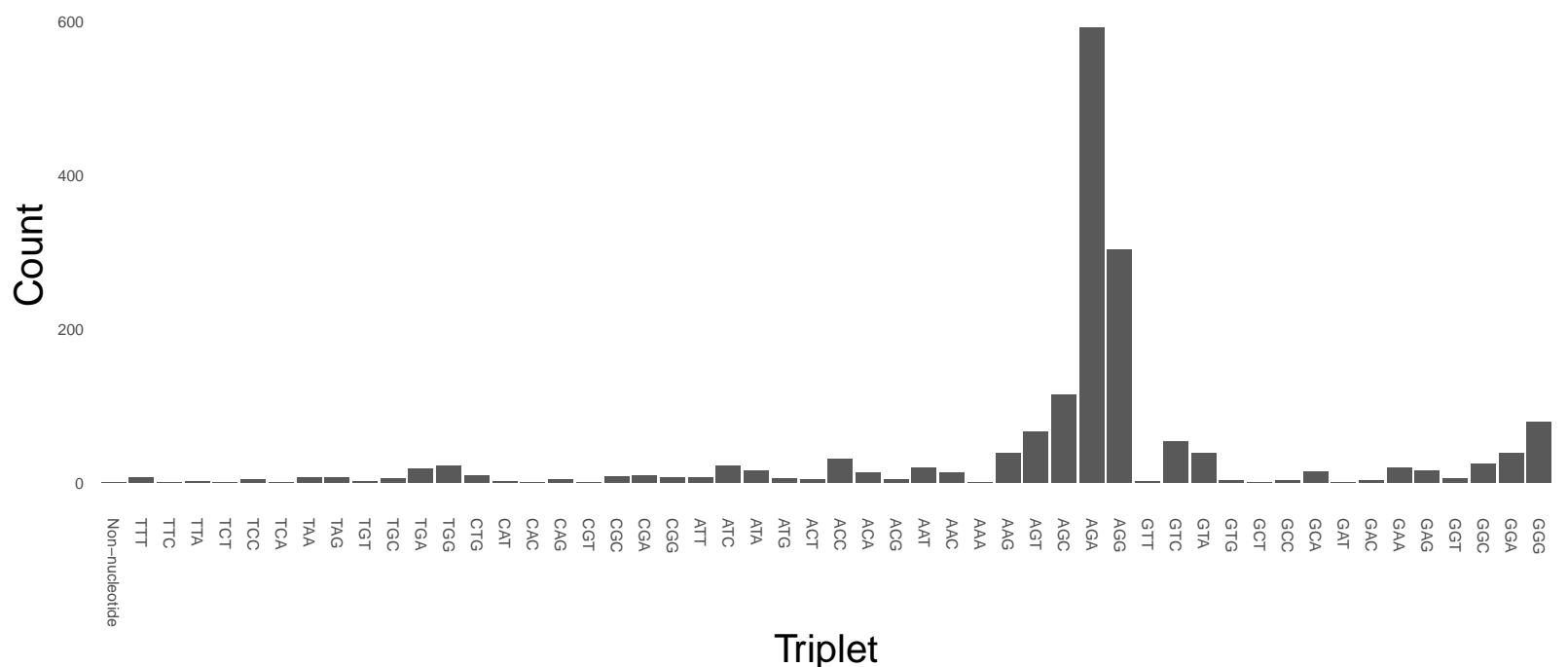
IGHV3-13\*01\_C301G- Final 3 nucleotides as a triplet



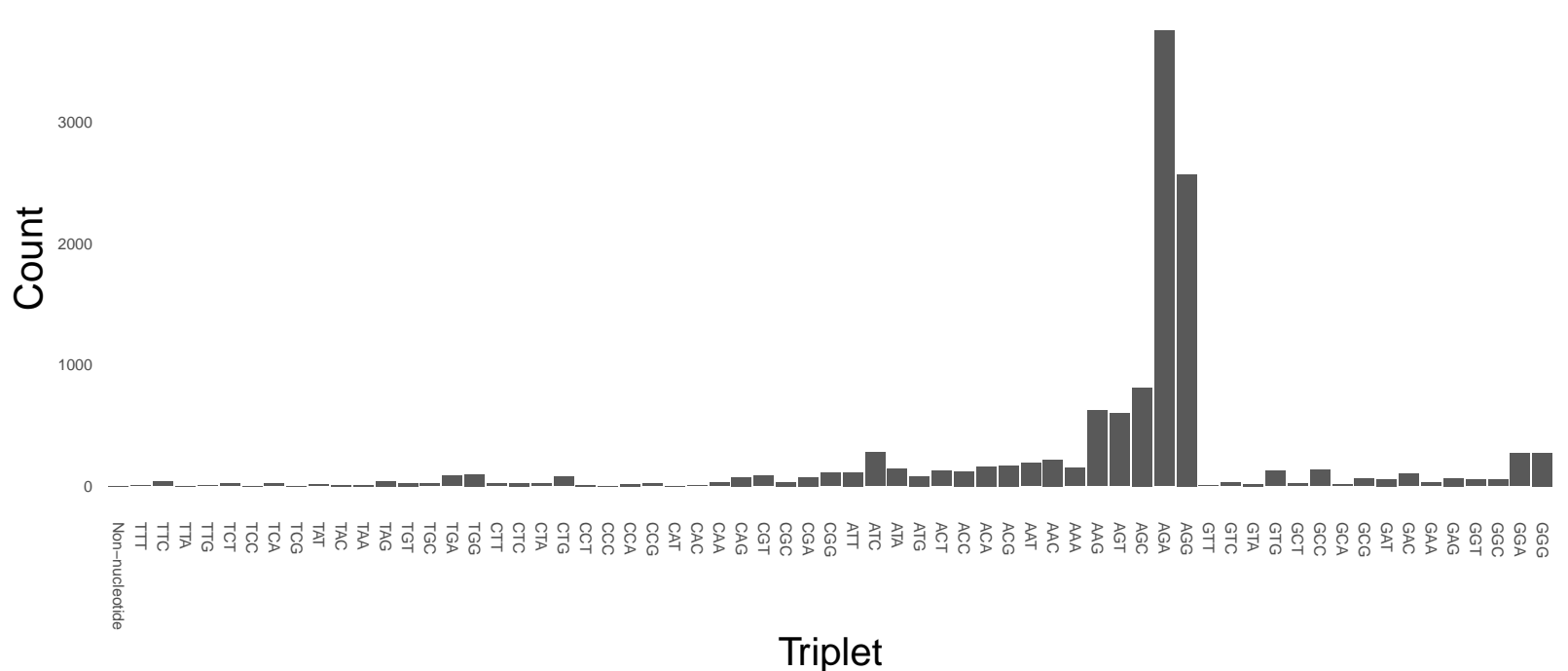
IGHV3-16\*01\_A51T\_T78C\_C90T\_A119G- Final 3 nucleotides as a triplet



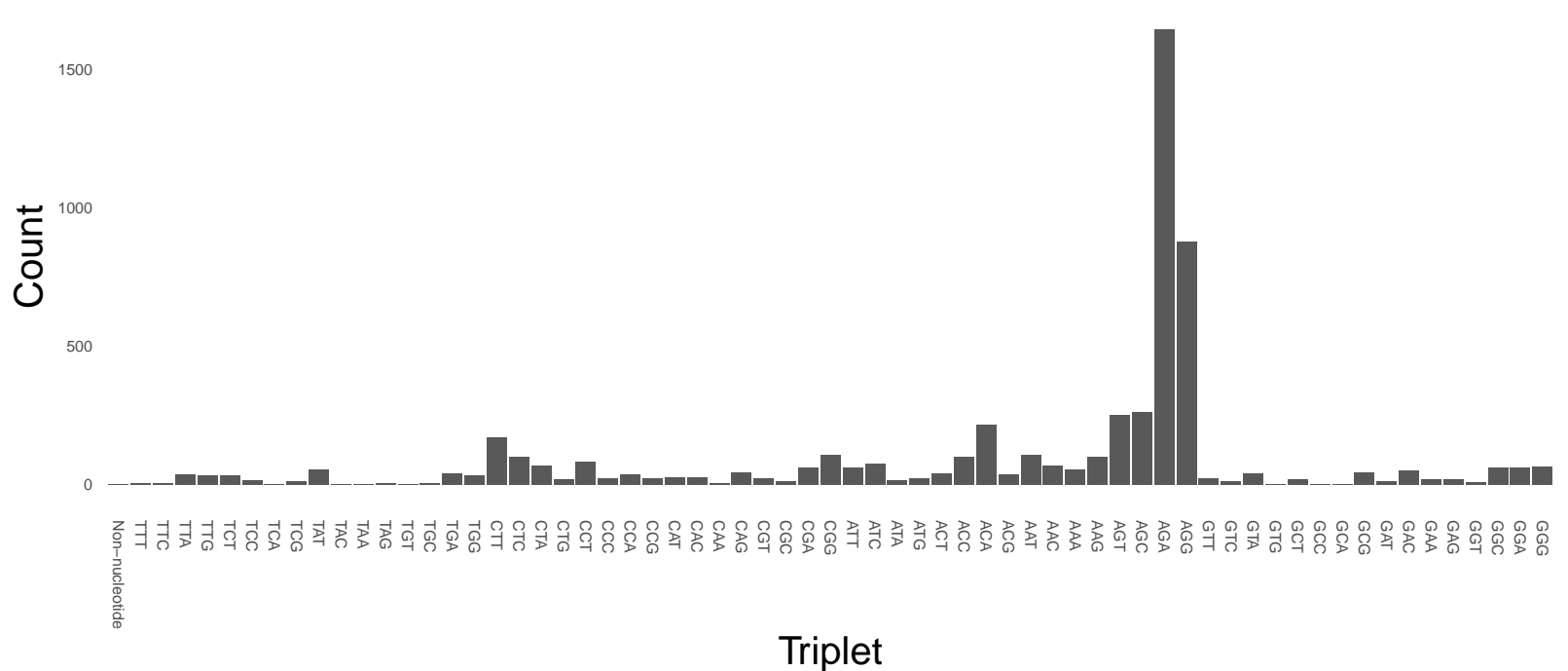
IGHV3-54\*02\_T78C\_T111C\_A284G\_T286G\_C296T- Final 3 nucleotides as a triplet



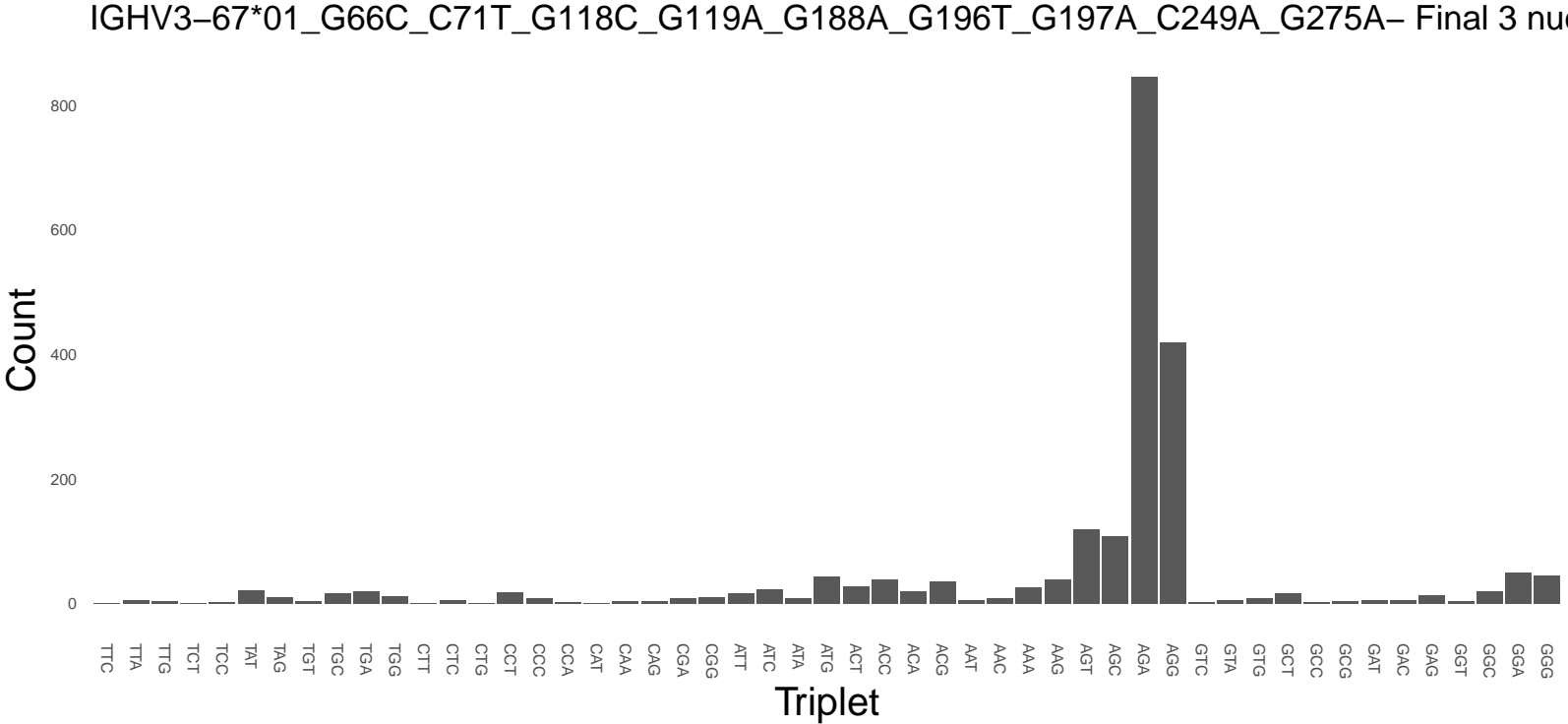
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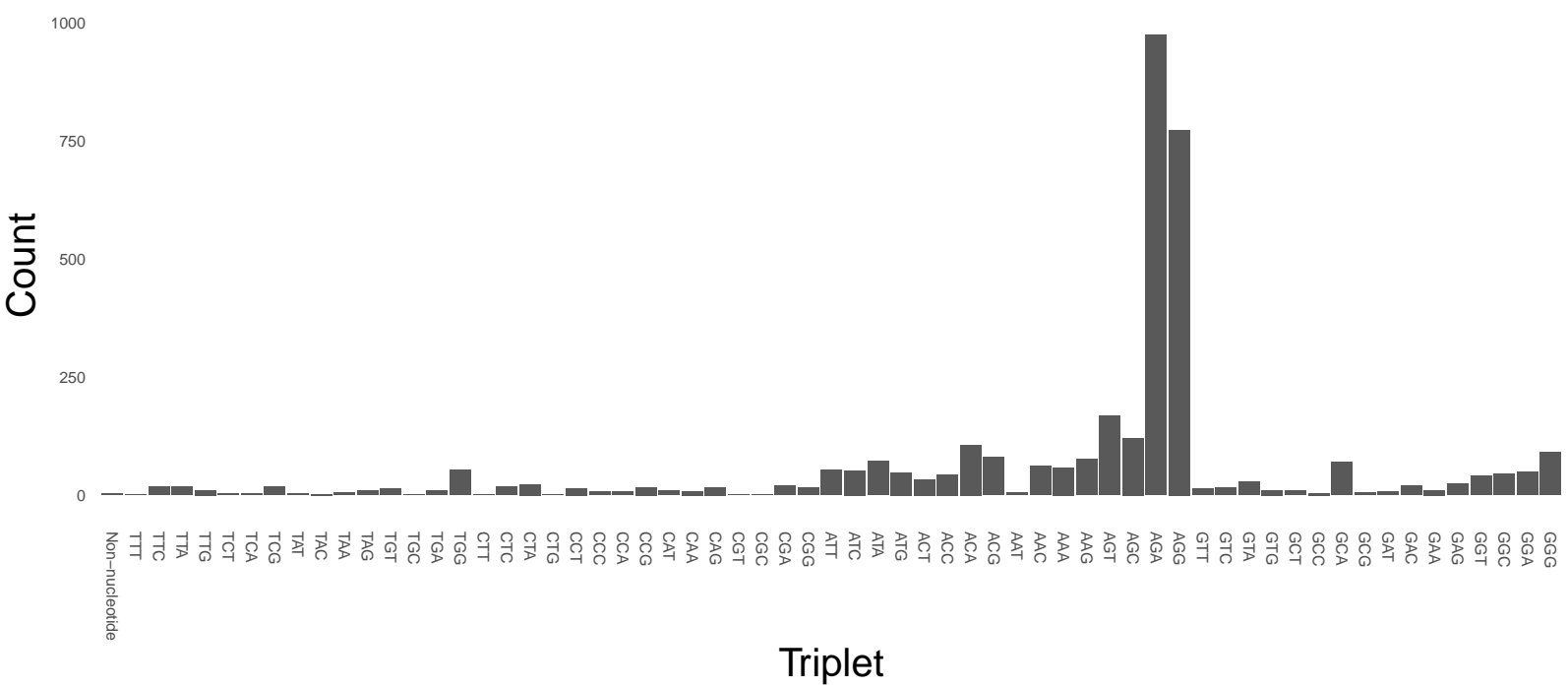
IGHV3-30\*02\_C141G- Final 3 nucleotides as a triplet



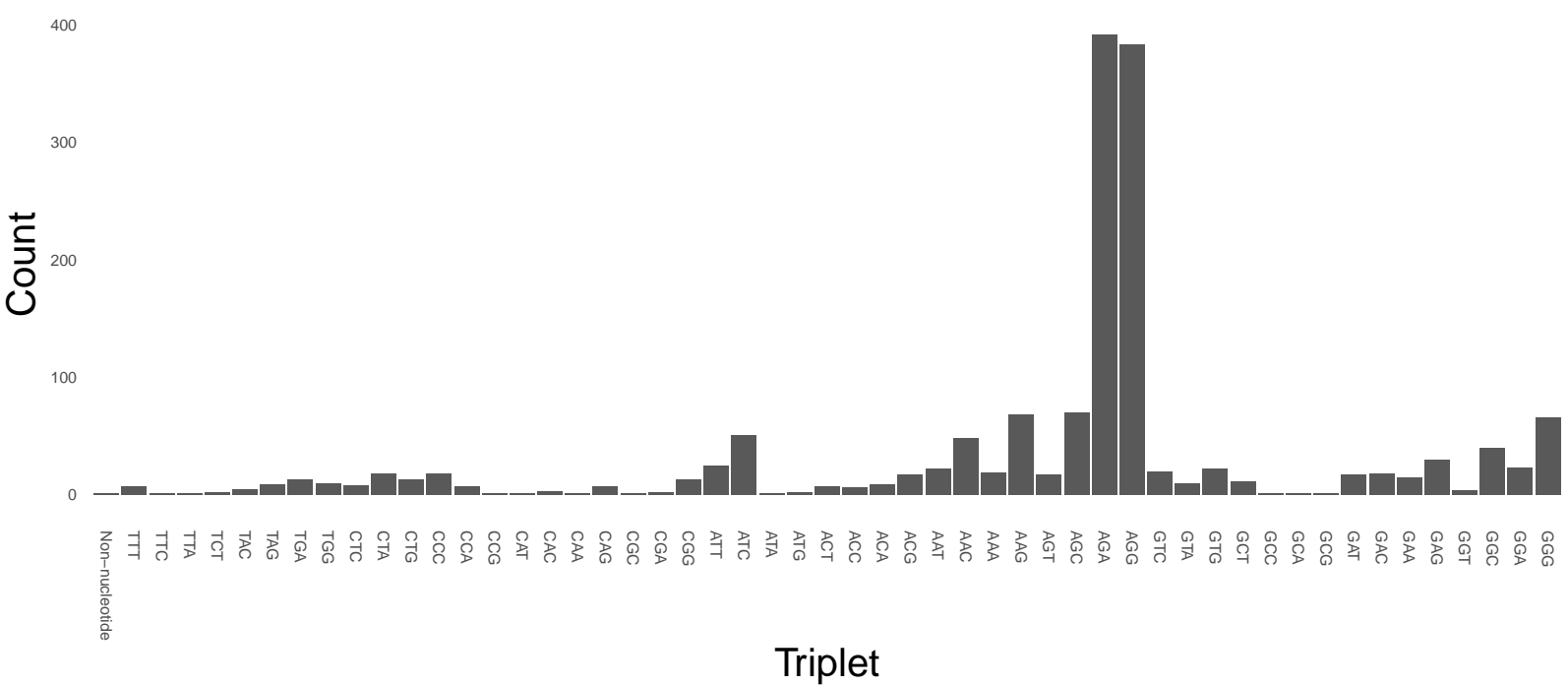
IGHV3-67\*01\_G66C\_C71T\_G118C\_G119A\_G188A\_G196T\_G197A\_C249A\_G275A- Final 3 nucleotides as a triplet



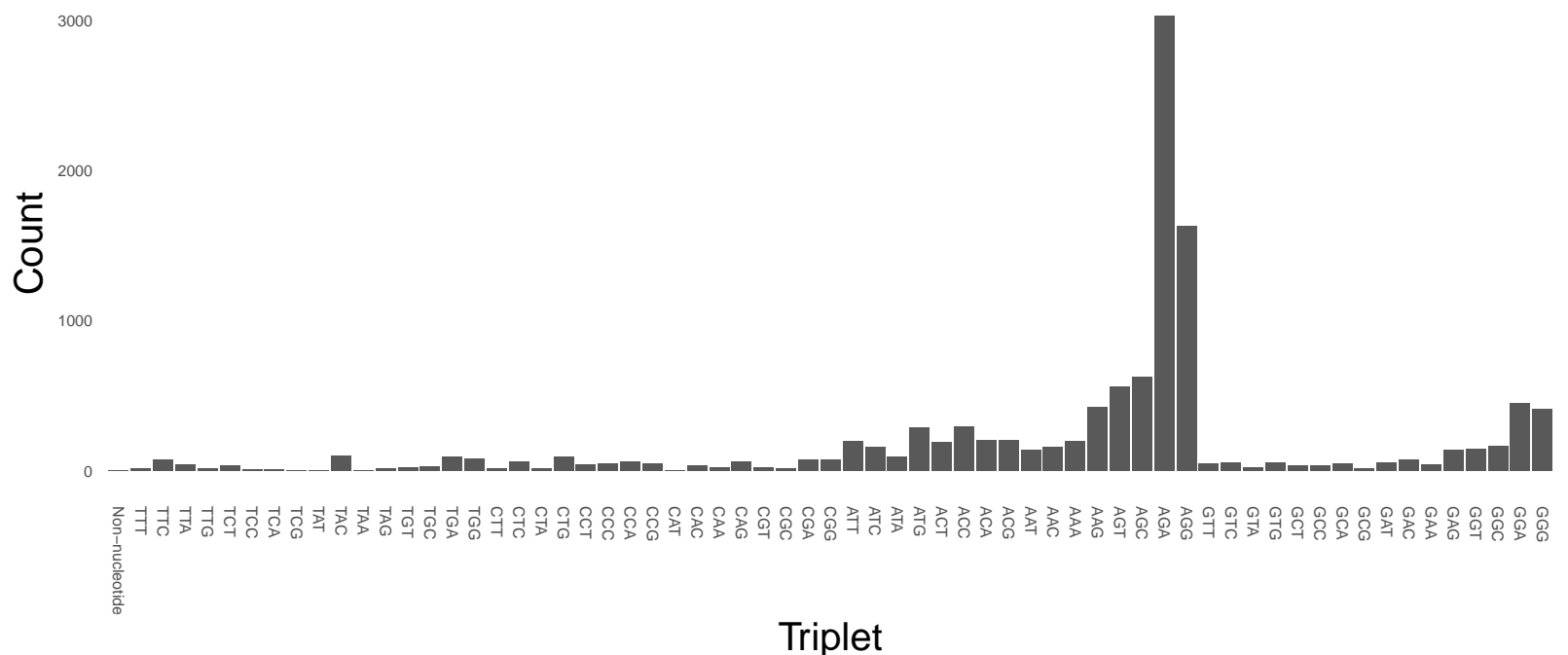
IGHV4-65\*02\_A163T\_G169A- Final 3 nucleotides as a triplet



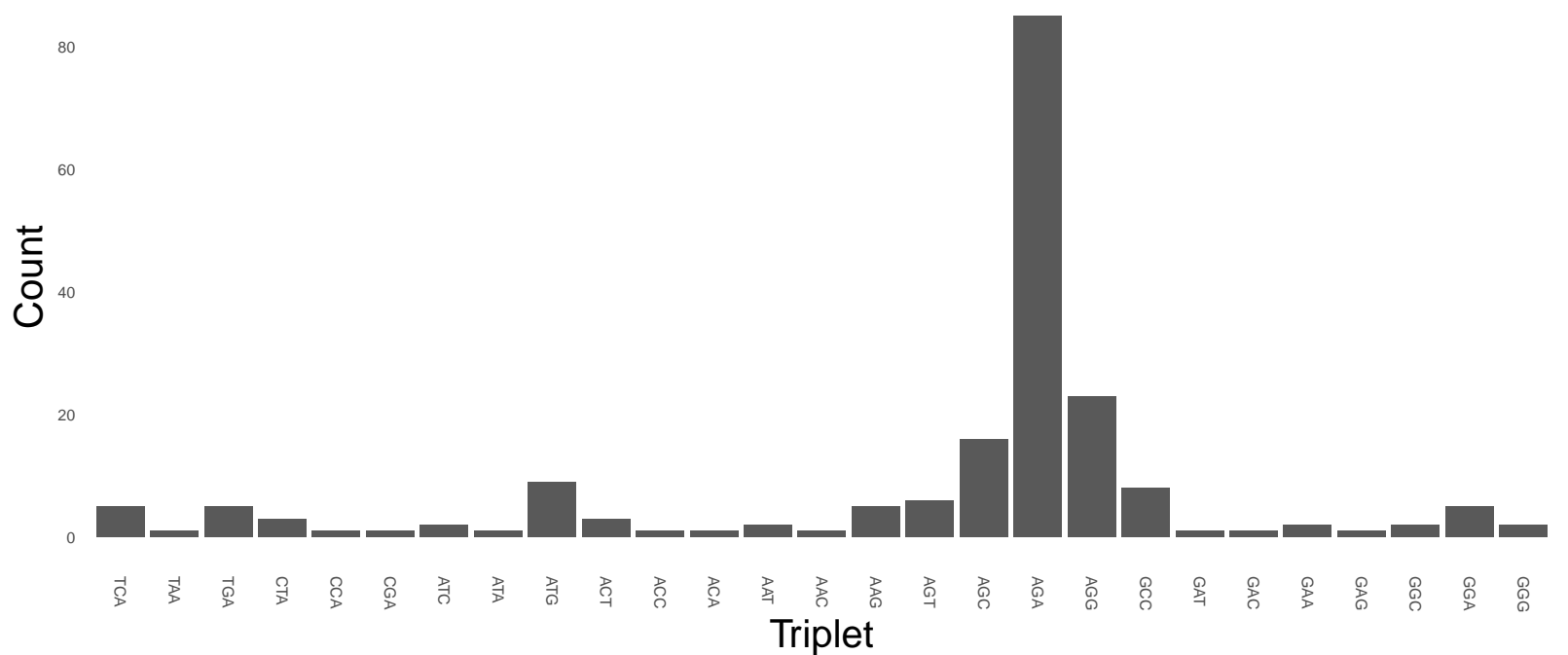
IGHV5-20\*01\_A203G\_G259A- Final 3 nucleotides as a triplet



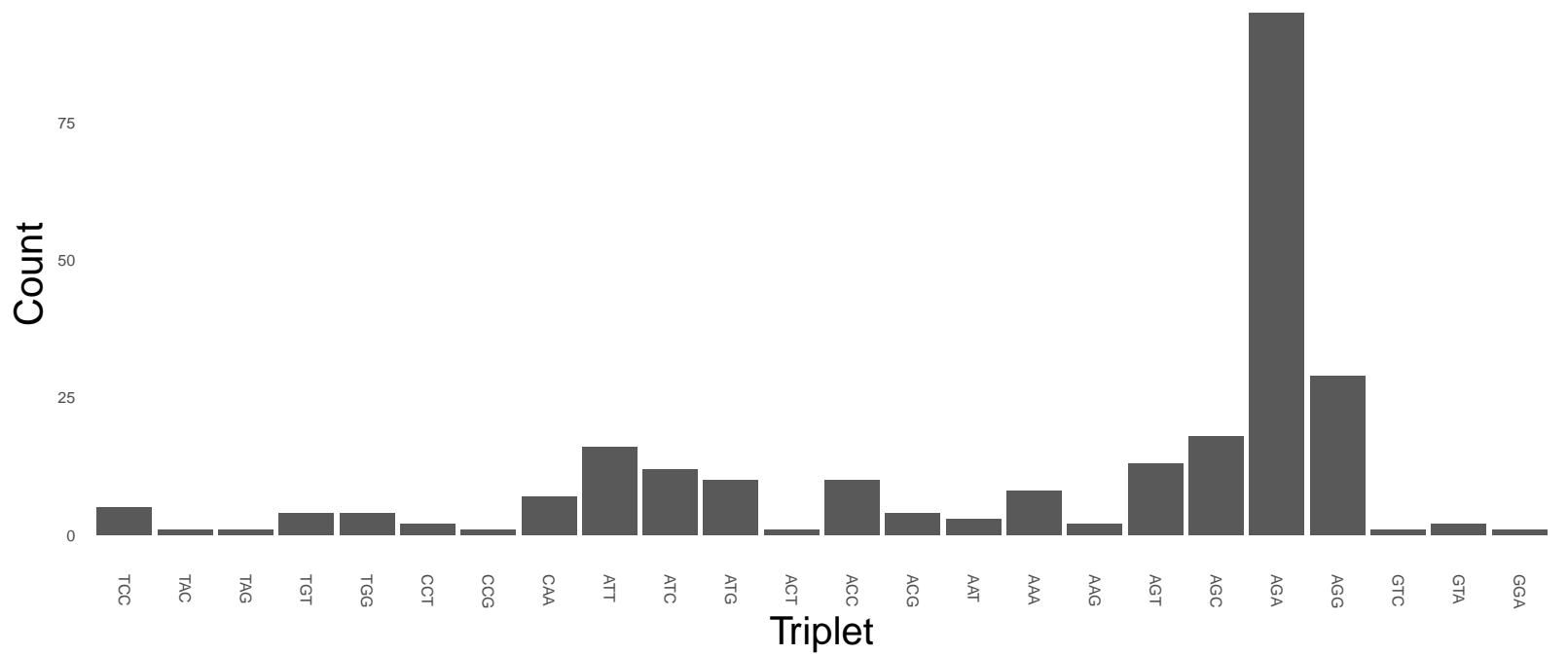
IGHV3-103\*01\_G24A\_C27A\_C38T\_A39C\_A40C\_C113G\_T114C\_C118A\_A119G\_G163T\_C164A



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

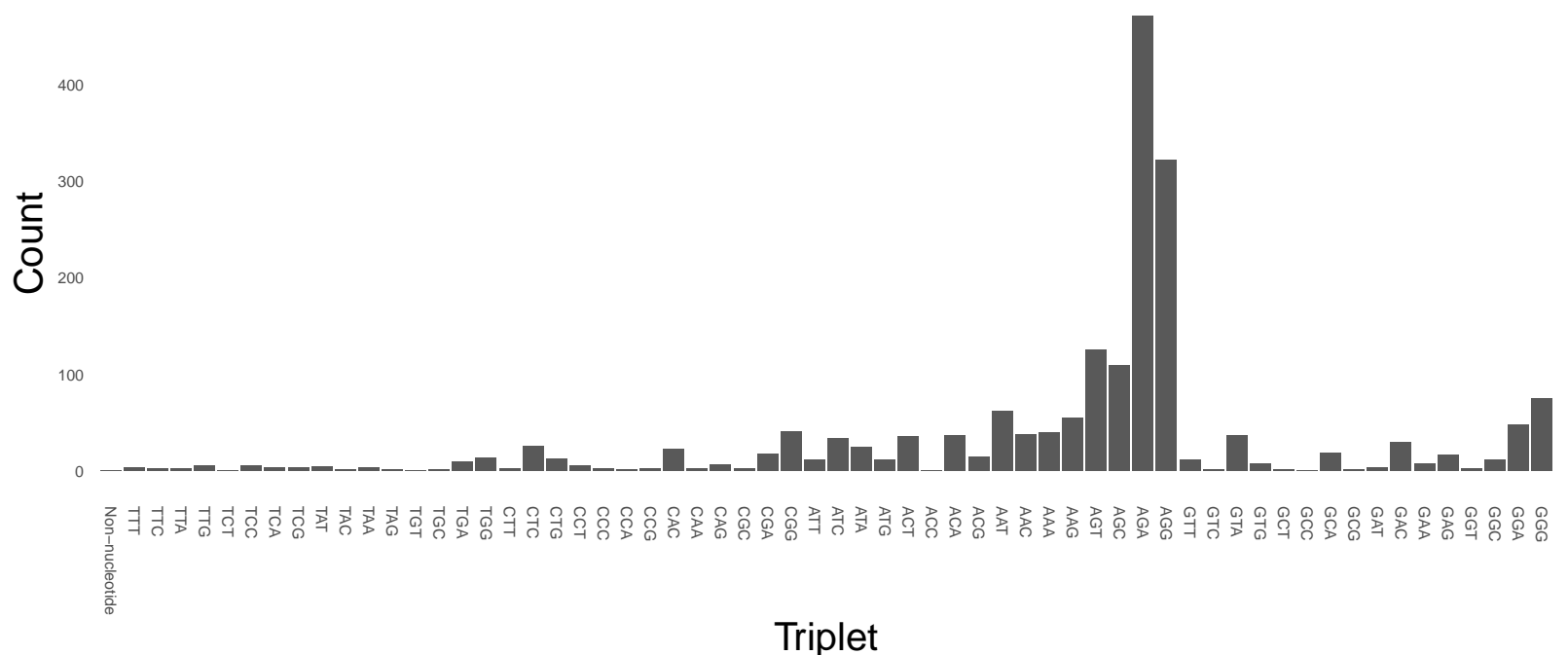


IGHV4-81\*01\_C4G\_G21A\_A27T\_T255C- Final 3 nucleotides as a triplet

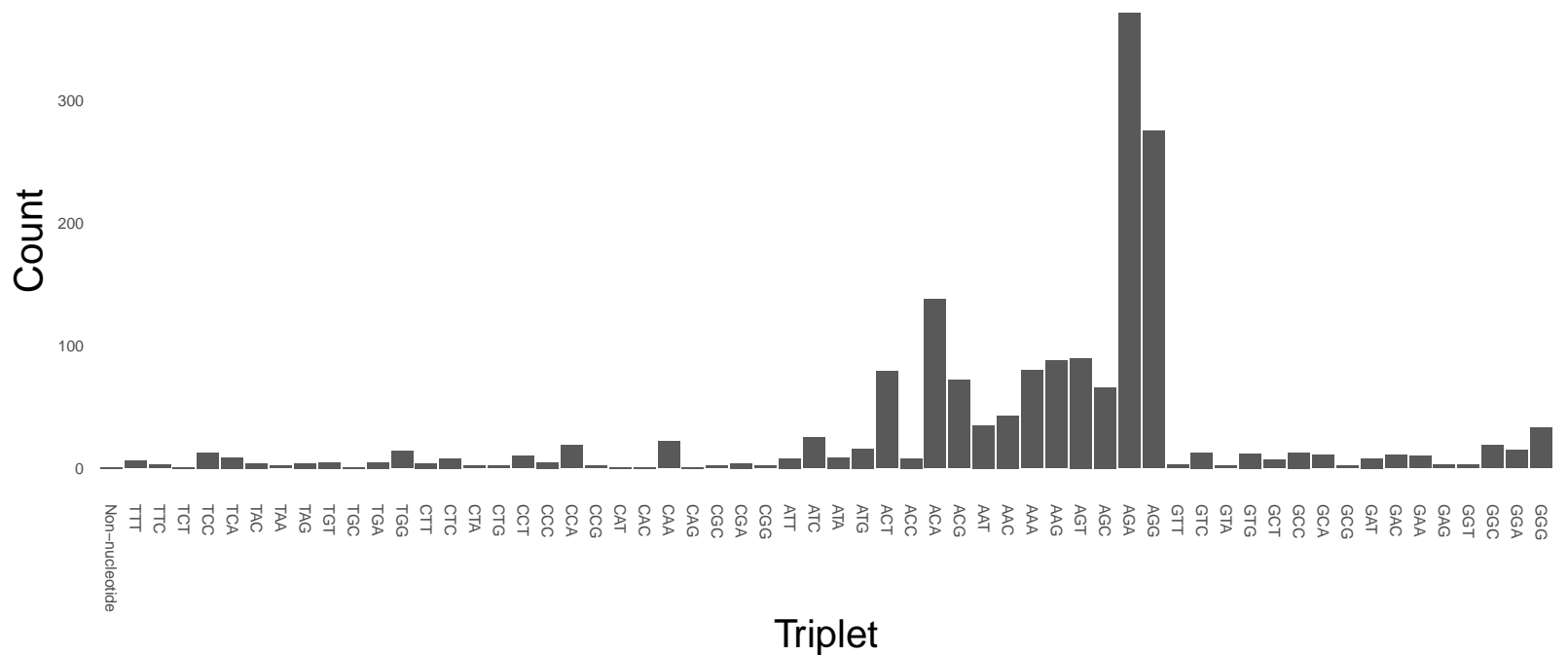




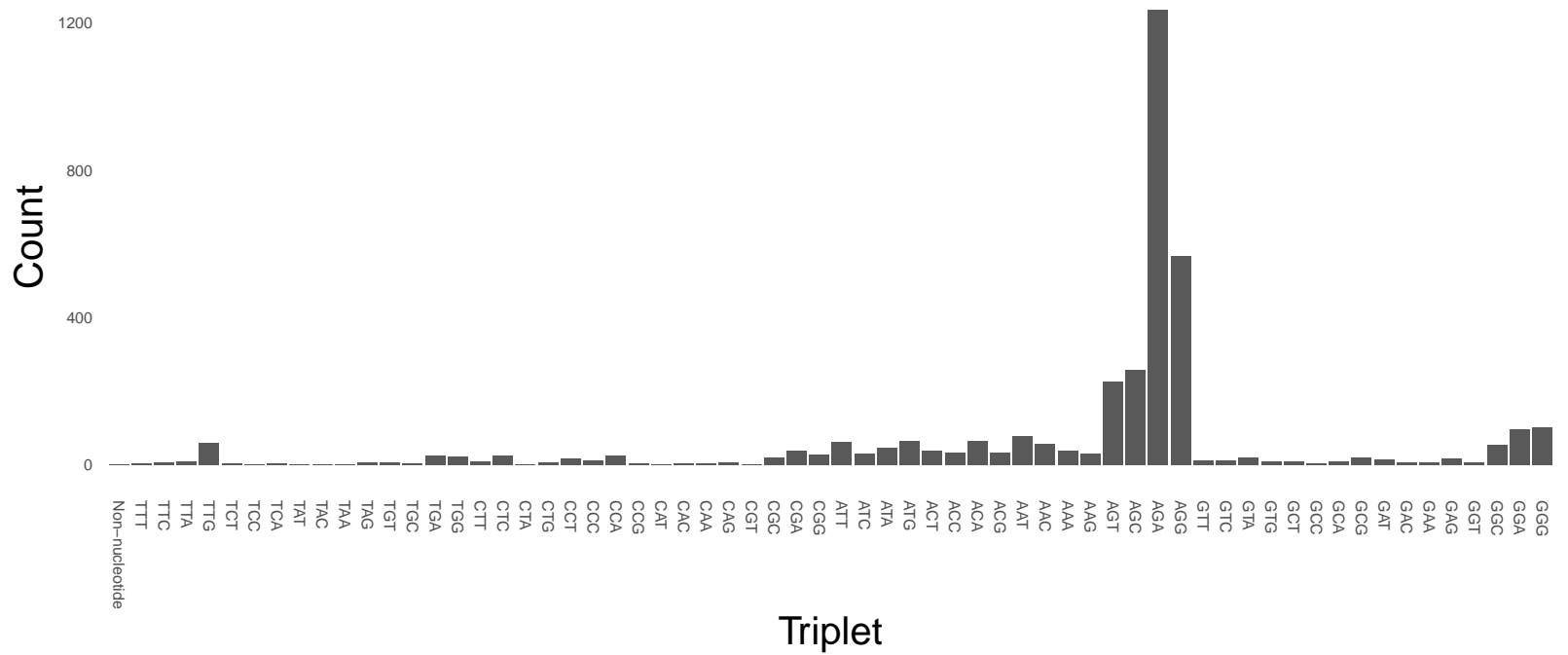
IGHV4-147\*01\_G82T\_G83A\_A162G\_C163T\_G164A\_A196T\_G197A\_C215A\_G291A- Final 3 nu



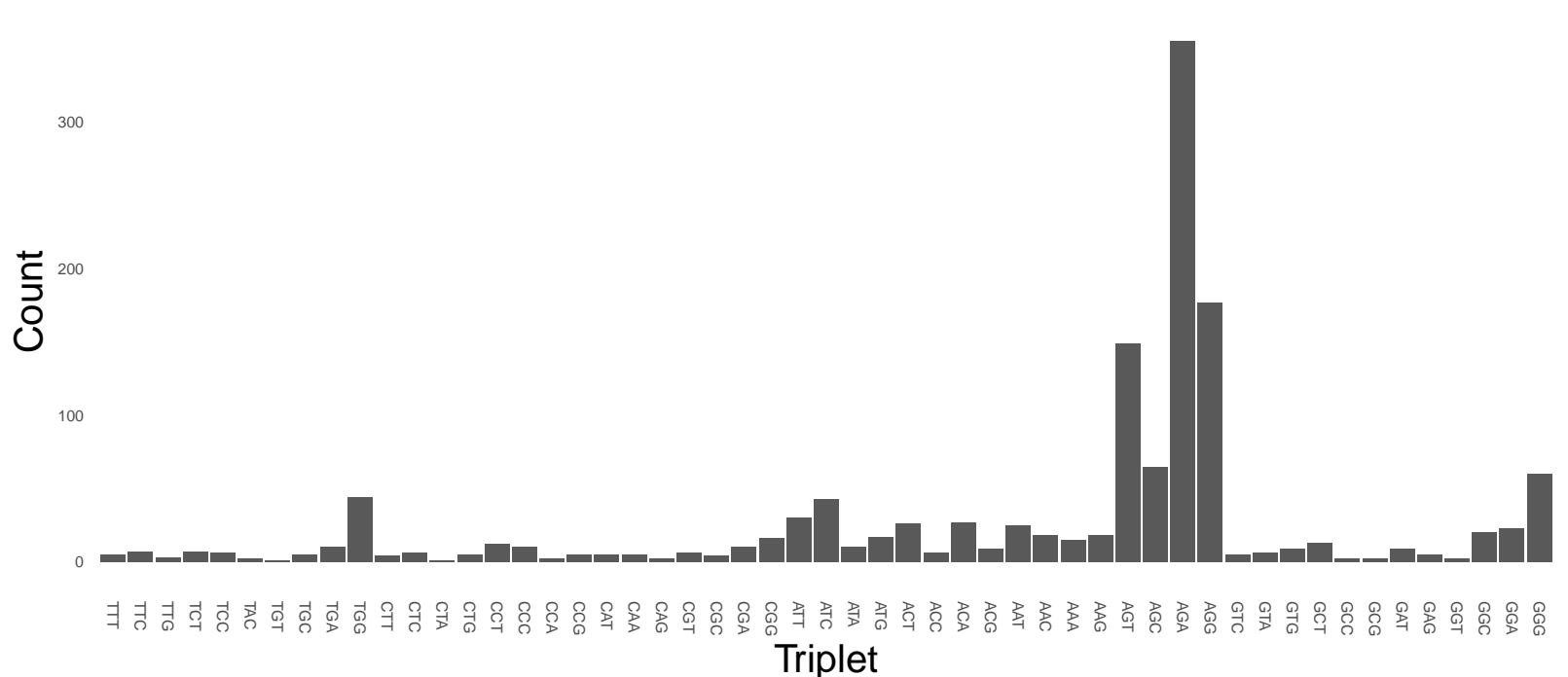
IGHV4-165\*01\_A132G\_G147A\_A175G\_T196G\_C198A\_C239G- Final 3 nucleotides as a triplet



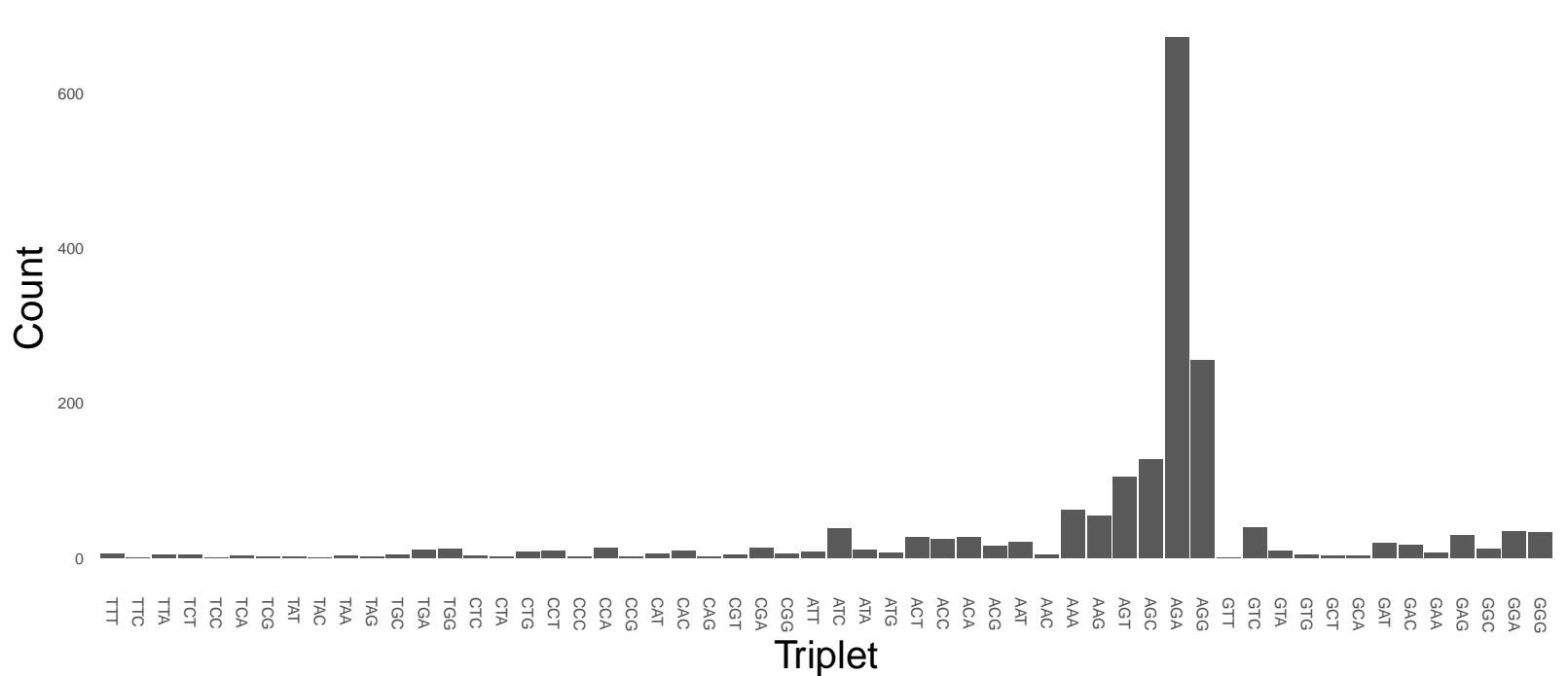
IGHV4-173\*01\_C4G- Final 3 nucleotides as a triplet



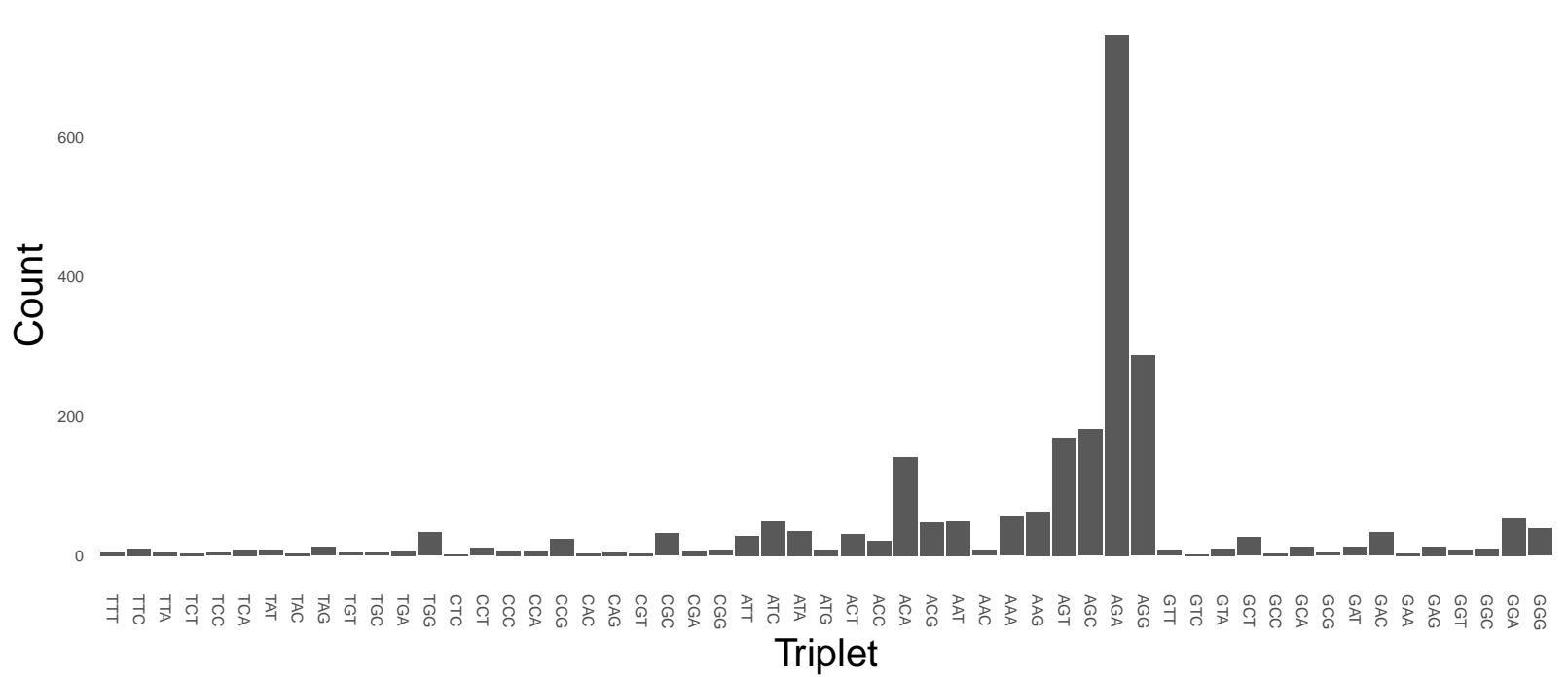
IGHV4-173\*01\_G48A\_C105T\_A113G\_C114G\_G196A\_A197G\_T259C\_G275T- Final 3 nucleotides as a triplet



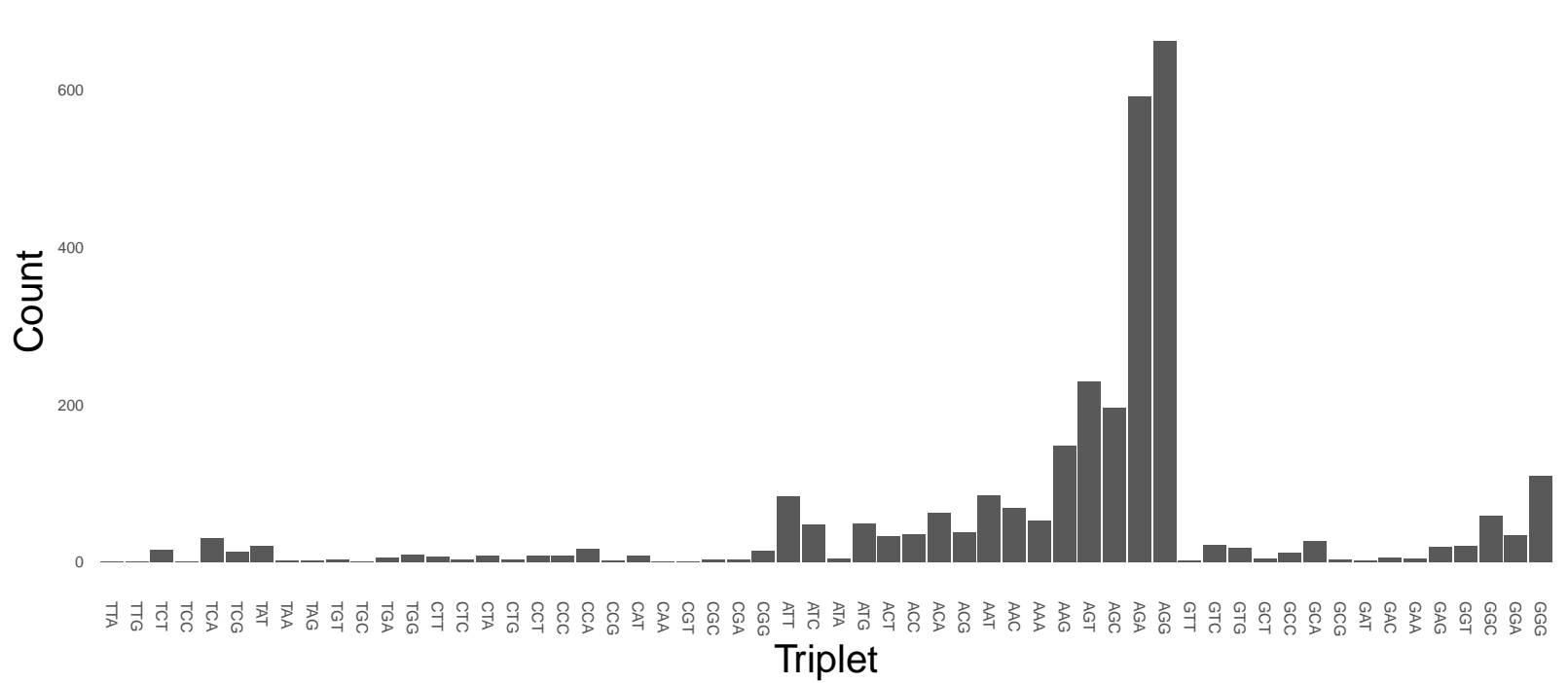
IGHV4S13\*01\_G34C\_G103A\_T106A\_A110G\_C111G\_G144A\_C265T- Final 3 nucleotides as a triplet



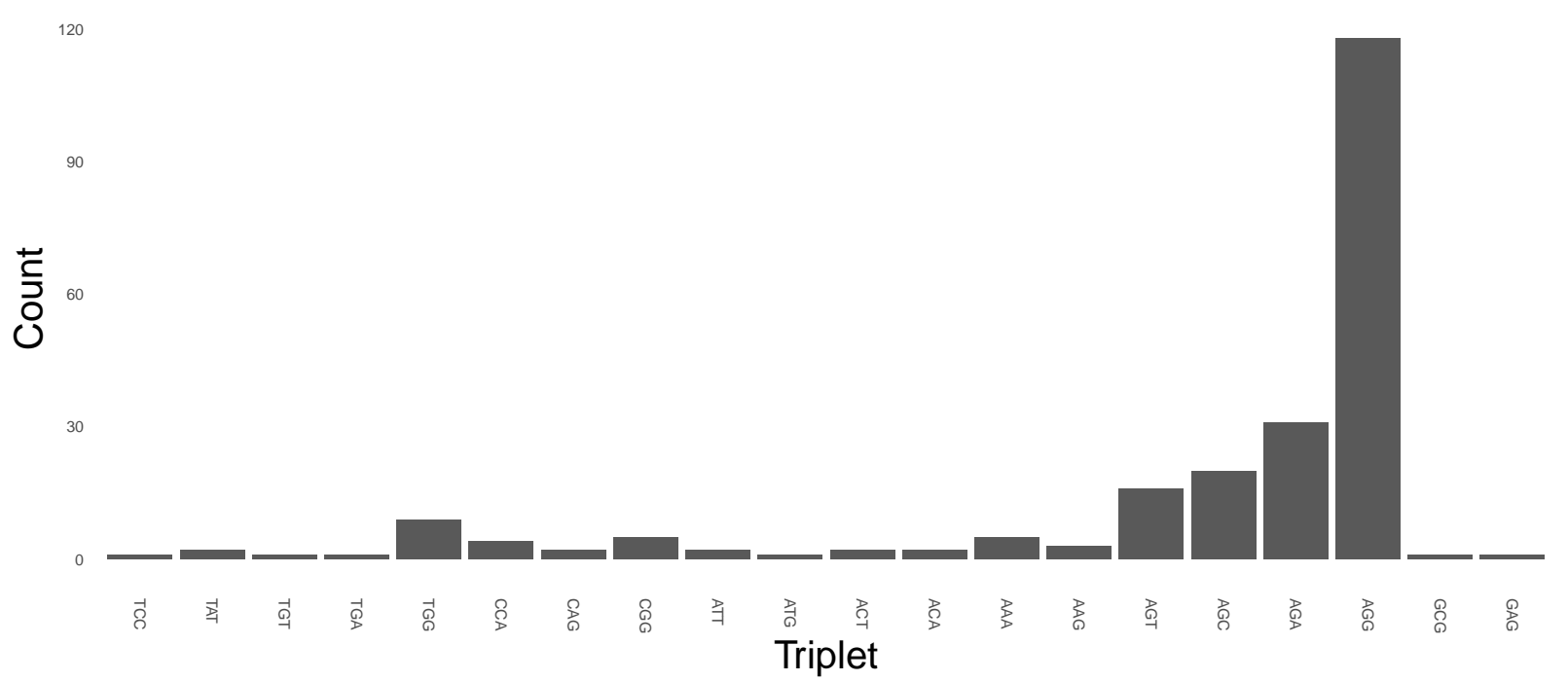
IGHV4S9\*01\_G21A\_T106A\_C108T\_A176G\_C188G\_T263C\_C297G- Final 3 nucleotides as a triplet



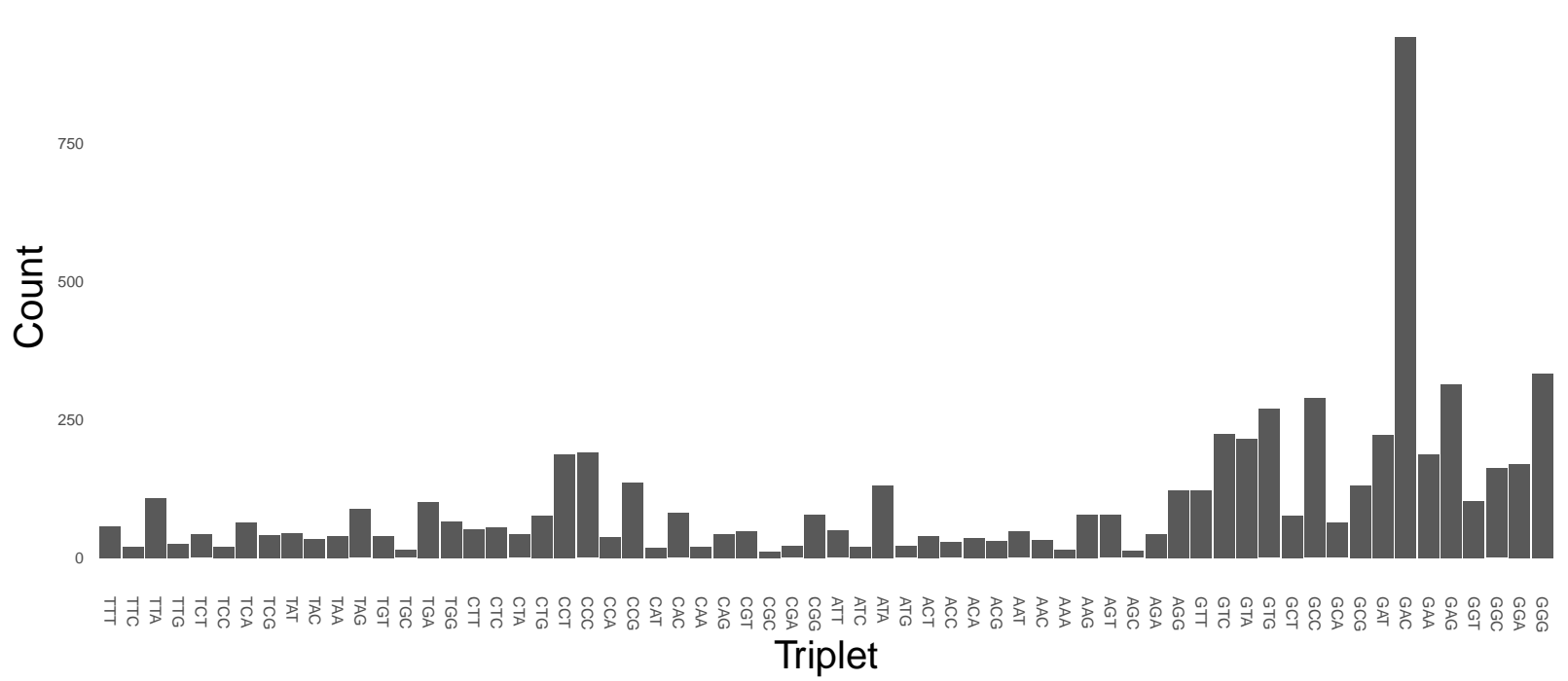
IGHV5–43\*01\_A109T\_G110A\_G164T\_C165G\_A203G\_C225G\_T231C– Final 3 nucleotides as a triplet



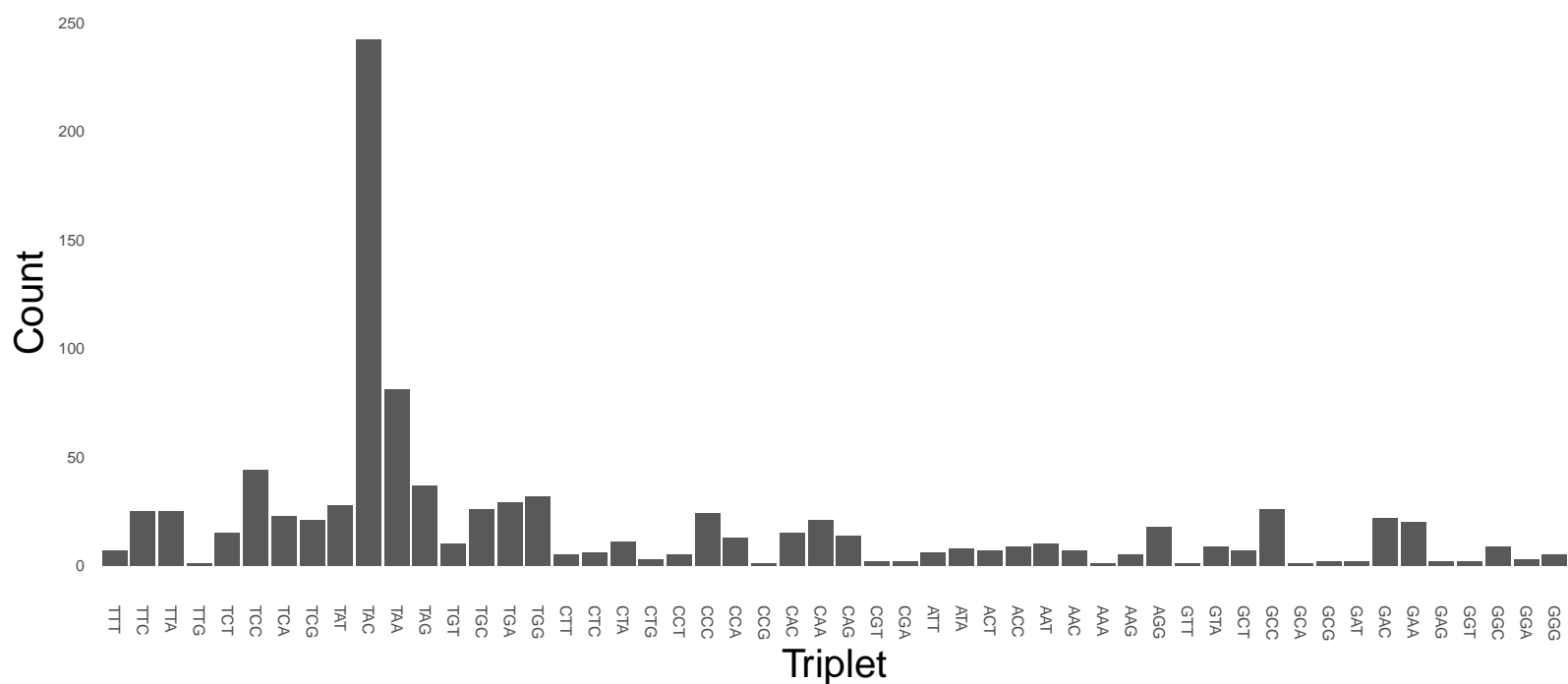
IGHV1–198\*02\_G73A\_A190G– Final 3 nucleotides as a triplet



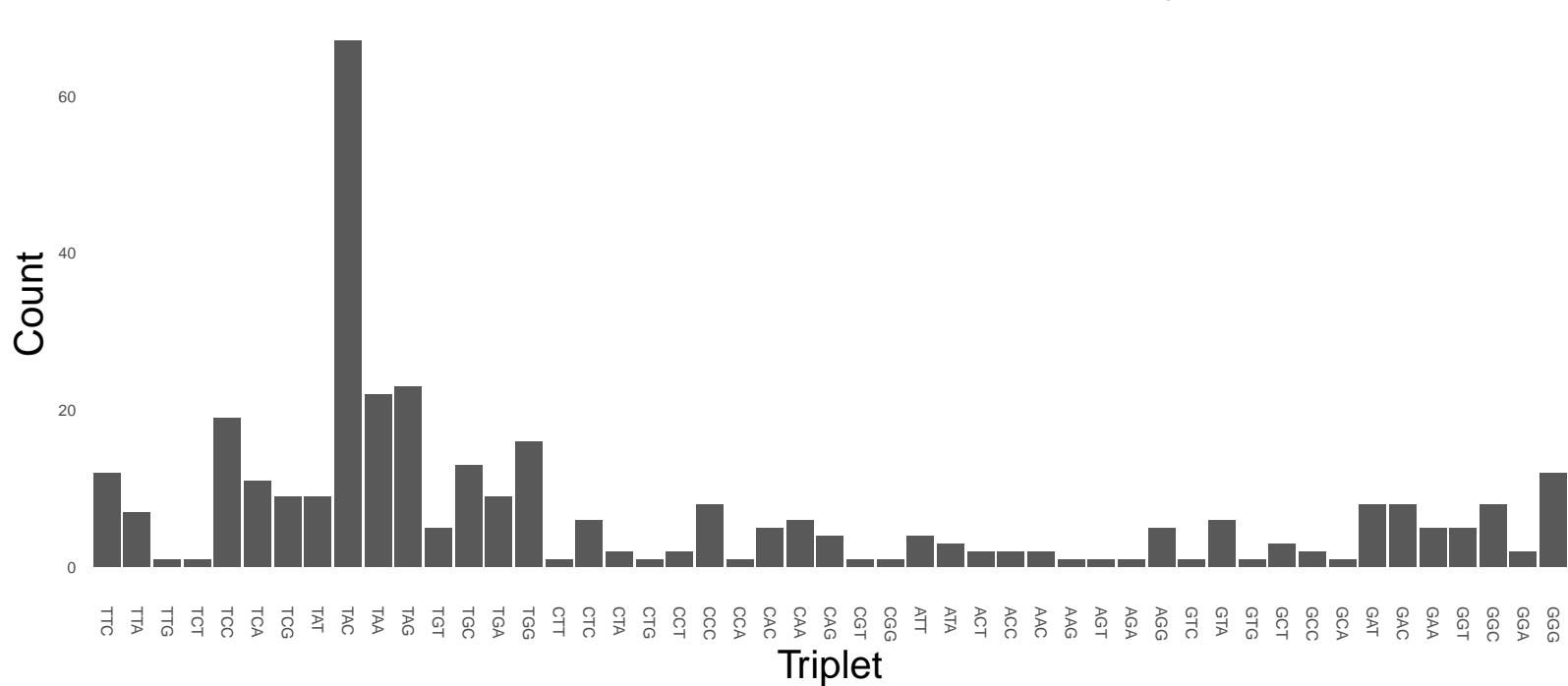
IGHV2–10\*01\_C6G\_A23G\_G112C\_G118A\_A119G\_G121T\_G141A\_C205A\_G210T– Final 3 nucleotides as a triplet



IGHV2-95\*01\_C6G\_C36G\_A103T- Final 3 nucleotides as a triplet

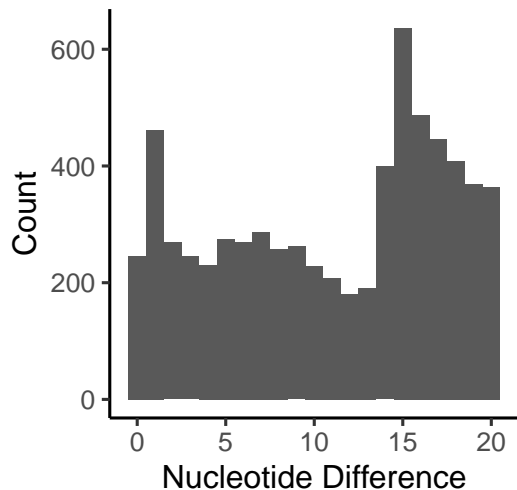


IGHV2-95\*01\_C6G\_C36G\_A103T\_G289T- Final 3 nucleotides as a triplet



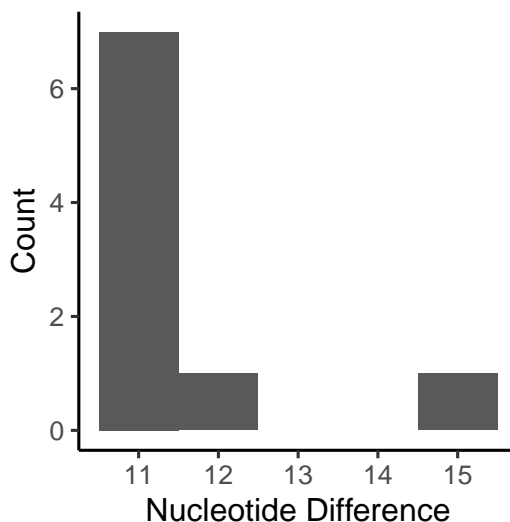
### IGHV3S42\*01\_T19A\_G24

12465 sequences assigned  
246 (2%) exact matches, in which:  
218 unique CDR3  
5 unique J



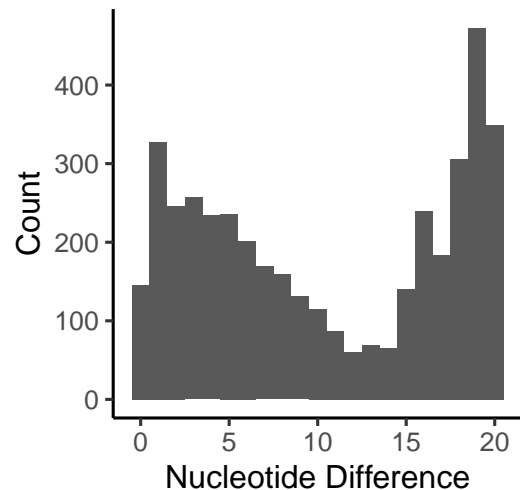
### IGHV1-113\*01

925 sequences assigned  
No exact matches.



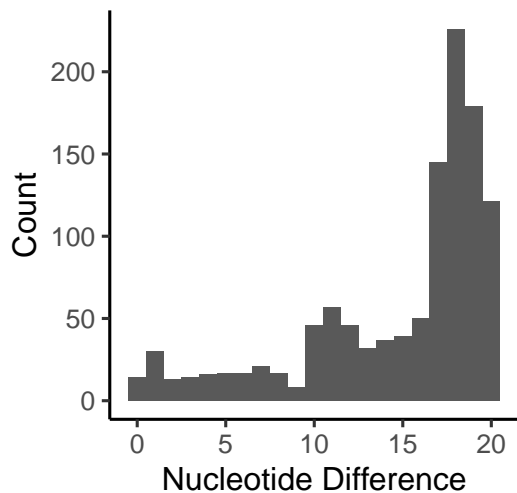
### IGHV2-10\*01\_C6G\_A23

6505 sequences assigned  
146 (2.2%) exact matches, in which:  
126 unique CDR3  
3 unique J



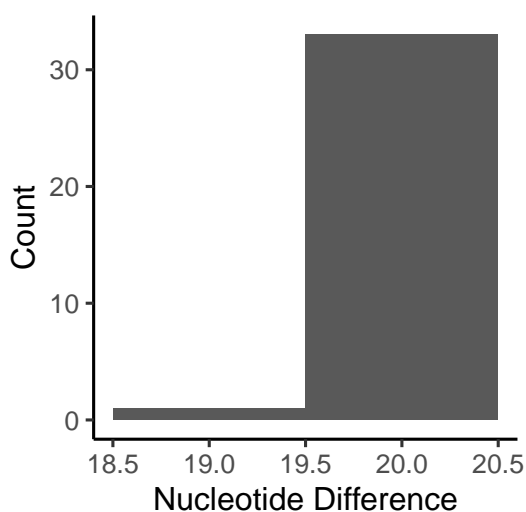
### IGHV4S13\*01\_G34C\_G1

1813 sequences assigned  
14 (0.8%) exact matches, in which:  
14 unique CDR3  
3 unique J



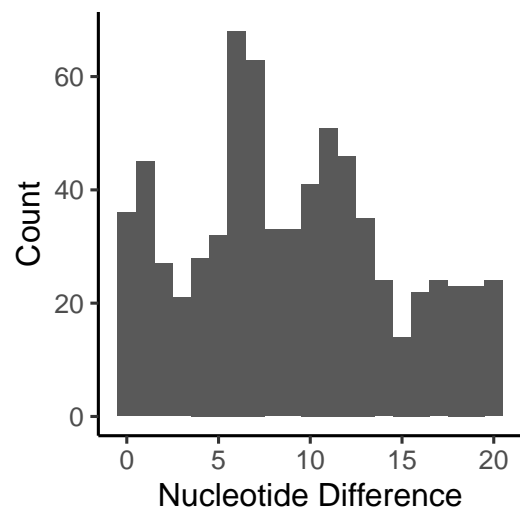
### IGHV1-156D\*01

455 sequences assigned  
No exact matches.



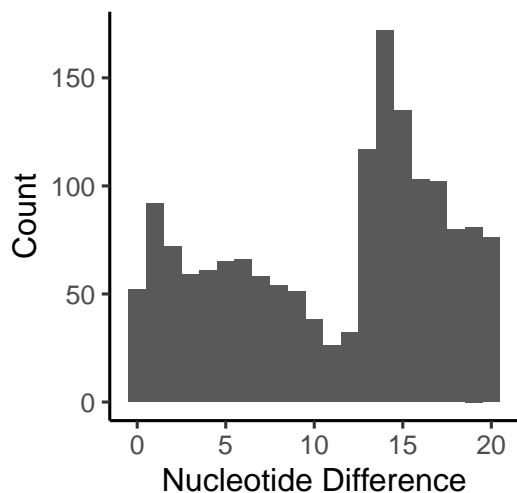
### IGHV2-95\*01\_C6G\_C36G

950 sequences assigned  
36 (3.8%) exact matches, in which:  
32 unique CDR3  
3 unique J



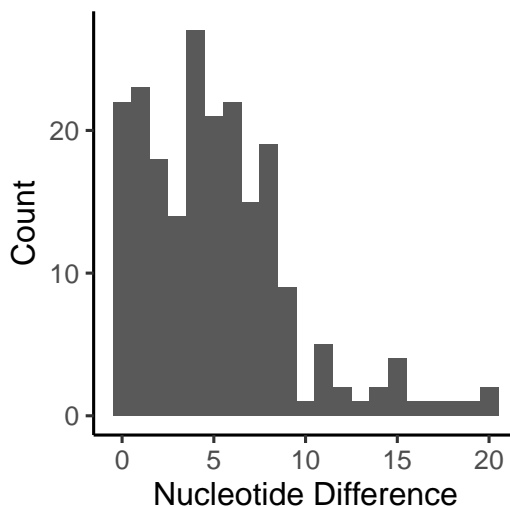
### IGHV4S9\*01\_G21A\_T10C

2377 sequences assigned  
52 (2.2%) exact matches, in which:  
49 unique CDR3  
4 unique J



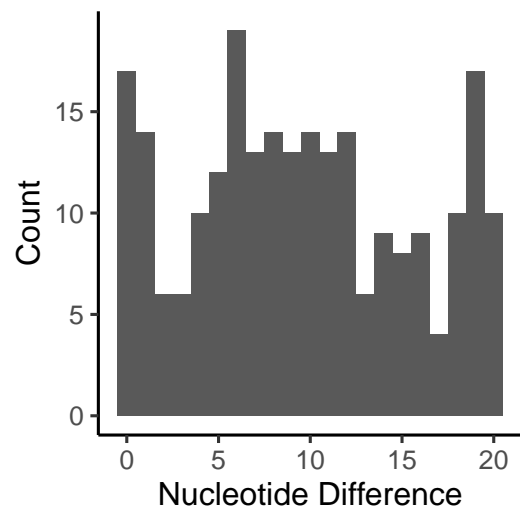
### IGHV1-198\*02\_G73A\_A1

227 sequences assigned  
22 (9.7%) exact matches, in which:  
19 unique CDR3  
3 unique J



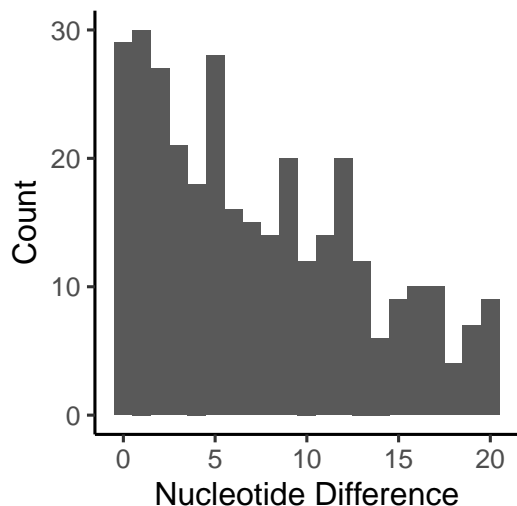
### IGHV2-95\*01\_C6G\_C36G

345 sequences assigned  
17 (4.9%) exact matches, in which:  
17 unique CDR3  
3 unique J



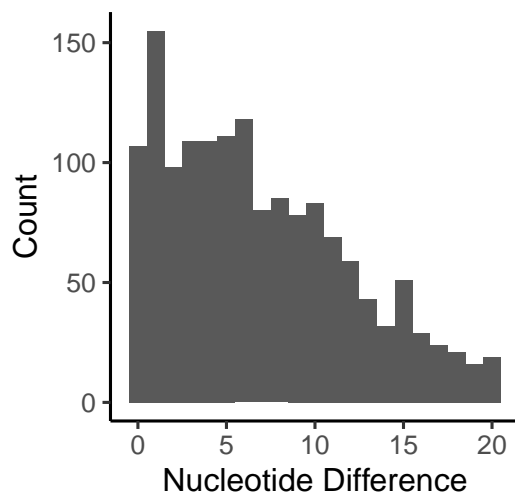
### IGHV3-13\*01\_C301G

1625 sequences assigned  
29 (1.8%) exact matches, in which:  
28 unique CDR3  
3 unique J



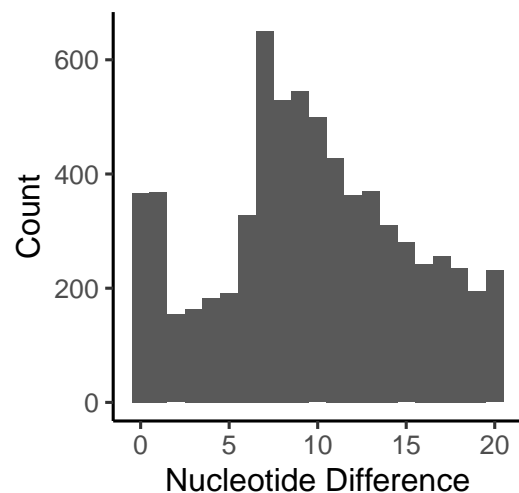
### IGHV3-54\*02\_T78C\_T11

1677 sequences assigned  
107 (6.4%) exact matches, in which:  
97 unique CDR3  
4 unique J



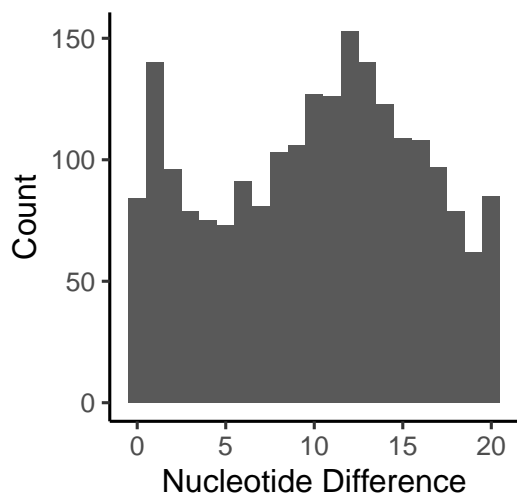
### IGHV3-103\*01\_G24A\_C2

11483 sequences assigned  
367 (3.2%) exact matches, in which:  
334 unique CDR3  
4 unique J



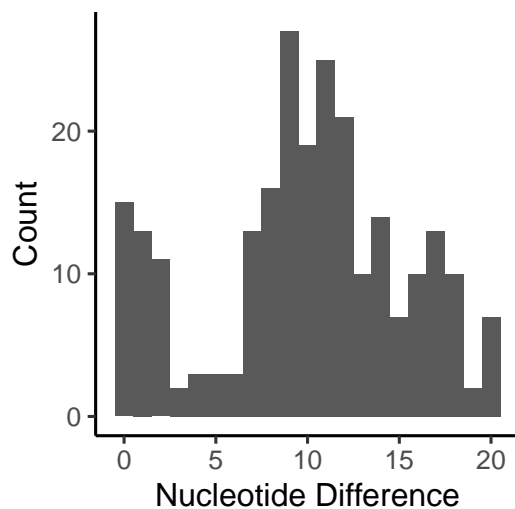
### IGHV3-16\*01\_A51T\_T78

2839 sequences assigned  
84 (3%) exact matches, in which:  
80 unique CDR3  
4 unique J



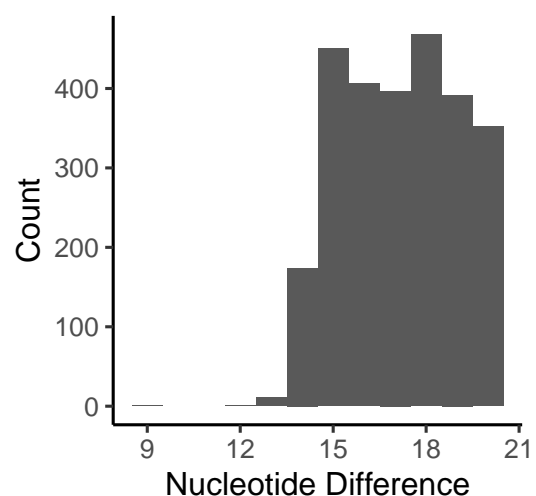
### IGHV3-67\*01\_G66C\_C71

2129 sequences assigned  
15 (0.7%) exact matches, in which:  
14 unique CDR3  
3 unique J



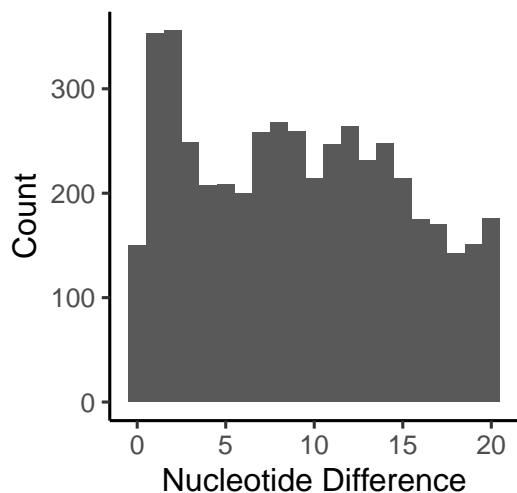
### IGHV3-108\*01

5954 sequences assigned  
No exact matches.



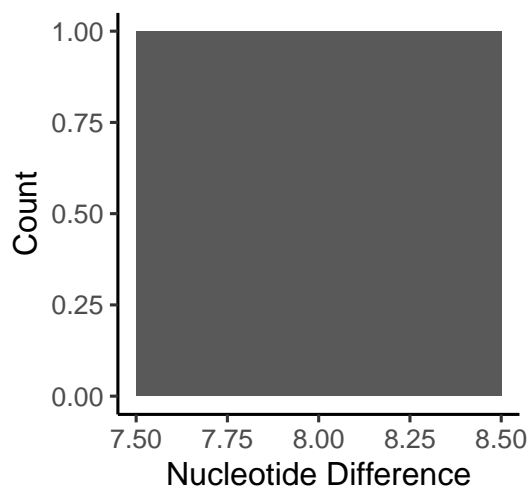
### IGHV3-30\*02\_C141G

5502 sequences assigned  
150 (2.7%) exact matches, in which:  
126 unique CDR3  
3 unique J



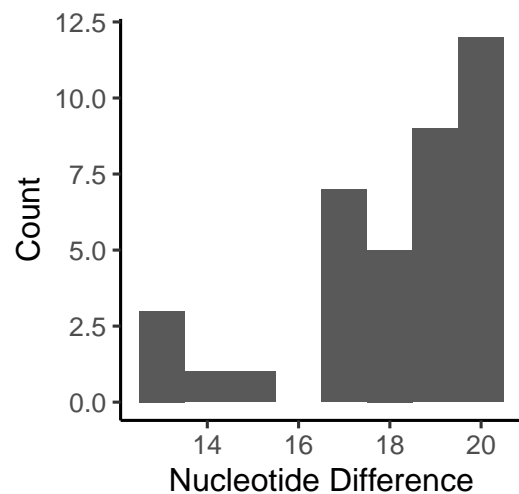
### IGHV3-72\*01

230 sequences assigned  
No exact matches.



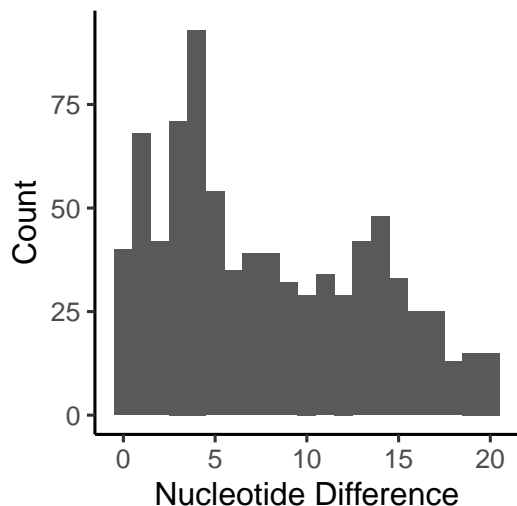
### IGHV3-137\*01

807 sequences assigned  
No exact matches.



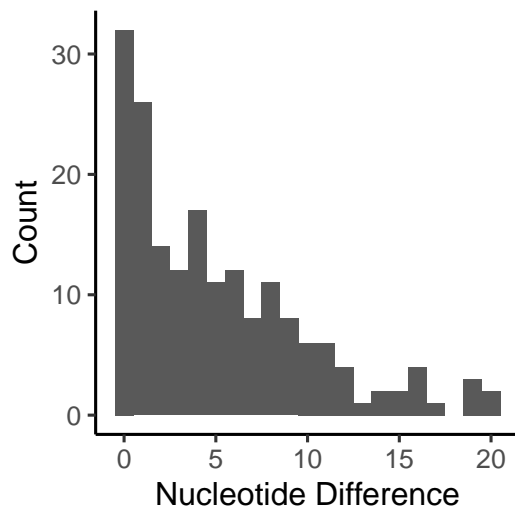
### IGHV3-184\*01\_G106A\_T

1262 sequences assigned  
40 (3.2%) exact matches, in which:  
34 unique CDR3  
3 unique J



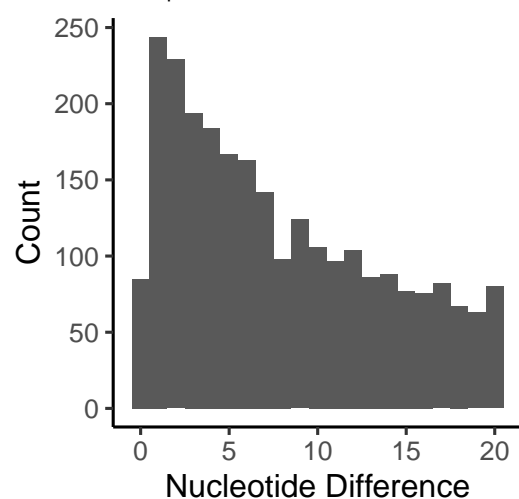
### IGHV4-81\*01\_C4G\_G21A

250 sequences assigned  
32 (12.8%) exact matches, in which:  
32 unique CDR3  
4 unique J



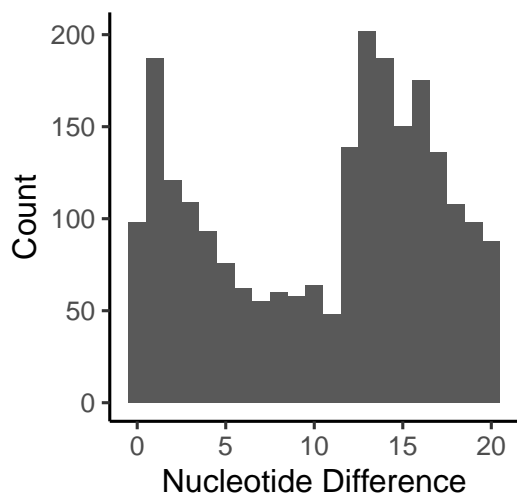
### IGHV4-173\*01\_C4G

3623 sequences assigned  
85 (2.3%) exact matches, in which:  
80 unique CDR3  
4 unique J



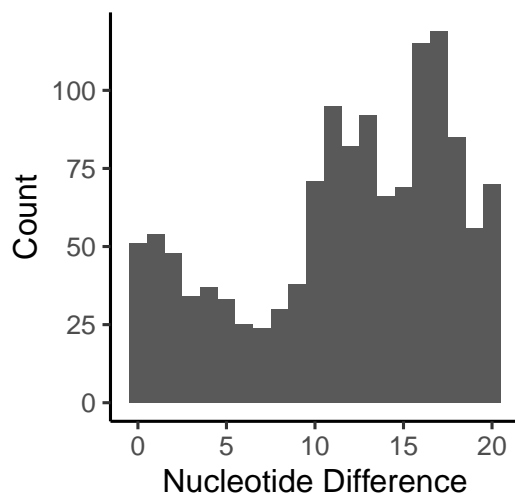
### IGHV4-65\*02\_A163T\_G1

3534 sequences assigned  
98 (2.8%) exact matches, in which:  
89 unique CDR3  
4 unique J



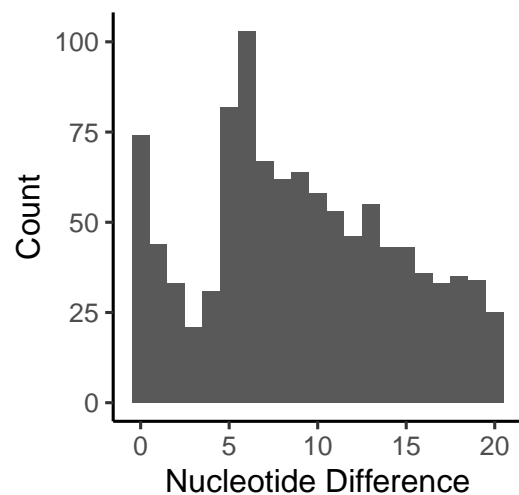
### IGHV4-147\*01\_G82T\_G

1899 sequences assigned  
51 (2.7%) exact matches, in which:  
47 unique CDR3  
4 unique J



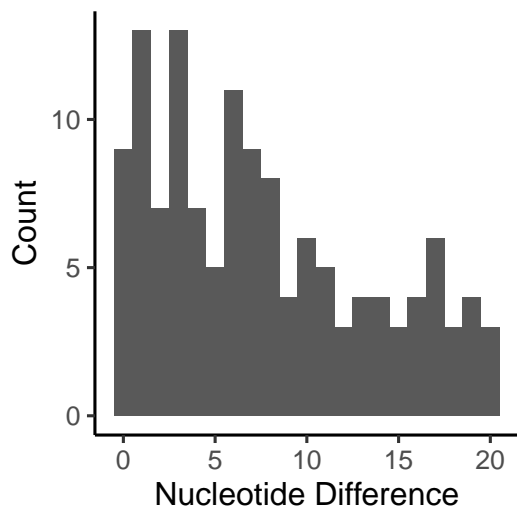
### IGHV4-173\*01\_G48A\_C

1329 sequences assigned  
74 (5.6%) exact matches, in which:  
69 unique CDR3  
4 unique J



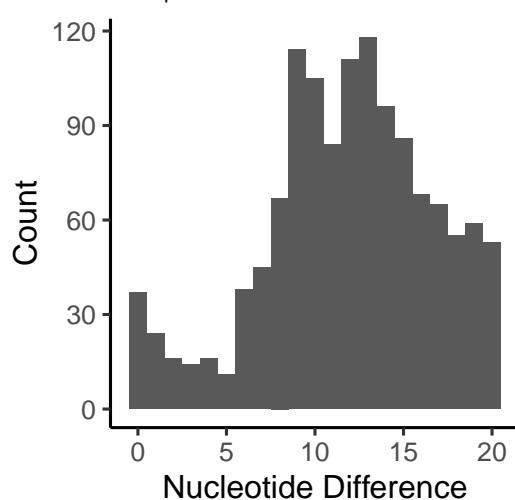
### IGHV4-73\*01\_G147A\_T1

193 sequences assigned  
9 (4.7%) exact matches, in which:  
9 unique CDR3  
3 unique J



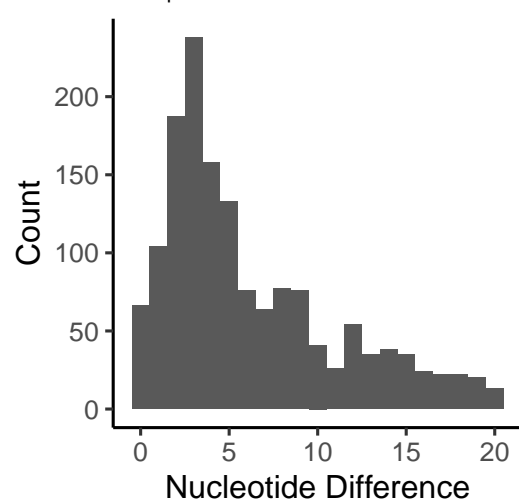
### IGHV4-165\*01\_A132G\_C

1721 sequences assigned  
37 (2.1%) exact matches, in which:  
35 unique CDR3  
4 unique J



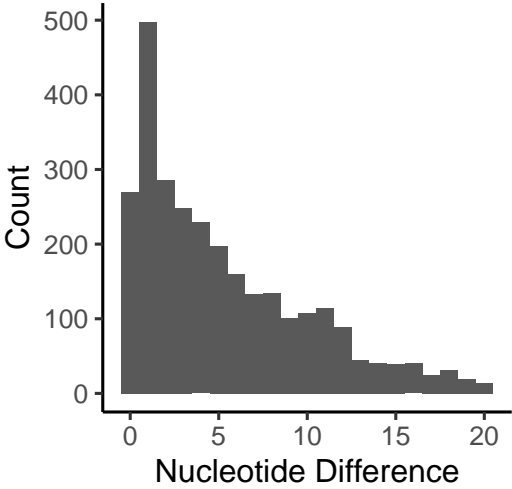
### IGHV5-20\*01\_A203G\_G

1558 sequences assigned  
66 (4.2%) exact matches, in which:  
58 unique CDR3  
4 unique J



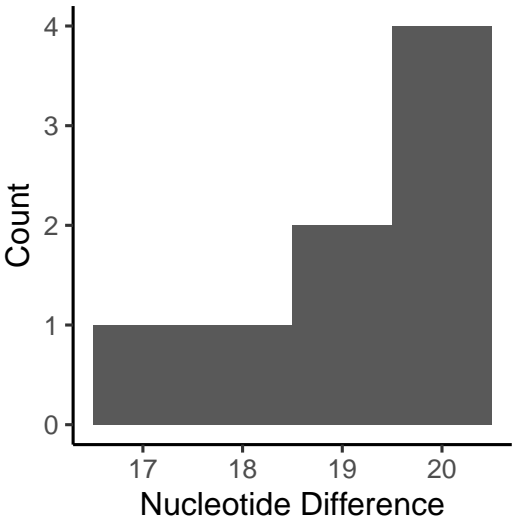
IGHV5-43\*01\_A109T\_G110A\_G164T\_C165G\_A203G\_C225G\_T231C

2917 sequences assigned  
270 (9.3%) exact matches, in which:  
227 unique CDR3  
4 unique J



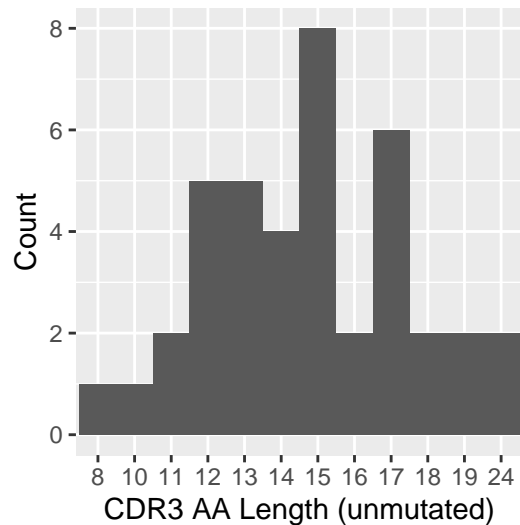
IGHV7-94\*01

27 sequences assigned  
No exact matches.

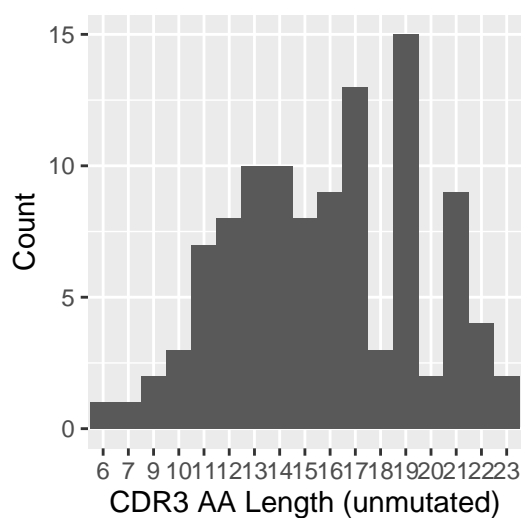




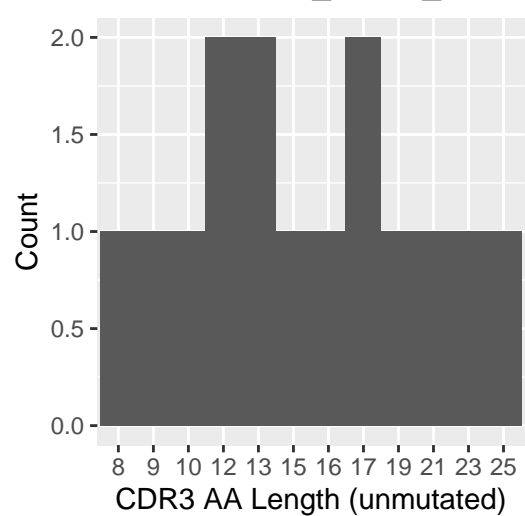
IGHV3-184\*01\_G106A\_T109



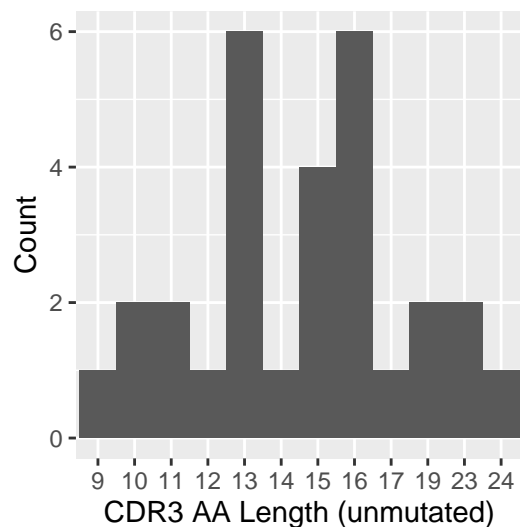
IGHV3-54\*02\_T78C\_T111C\_



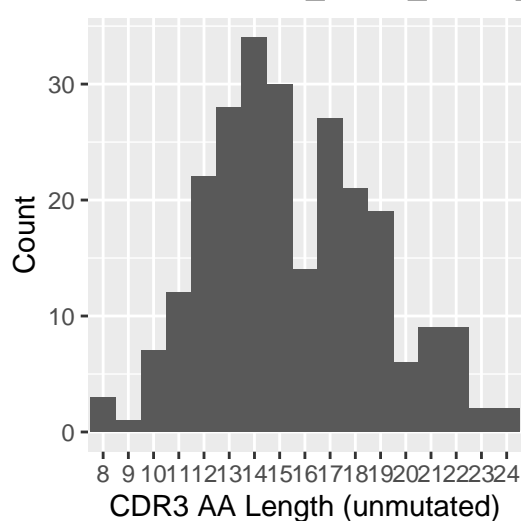
IGHV3-67\*01\_G66C\_C71T\_



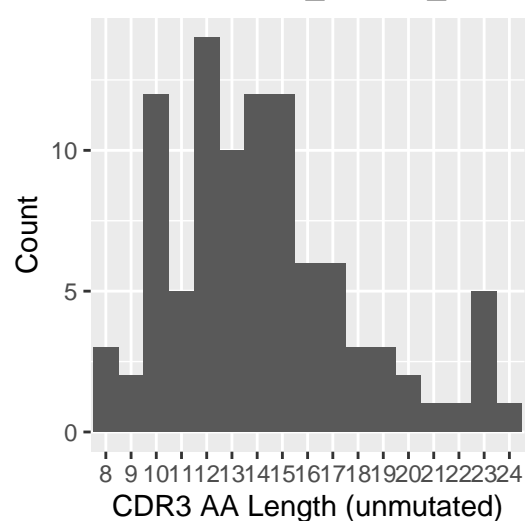
IGHV3-13\*01\_C301G



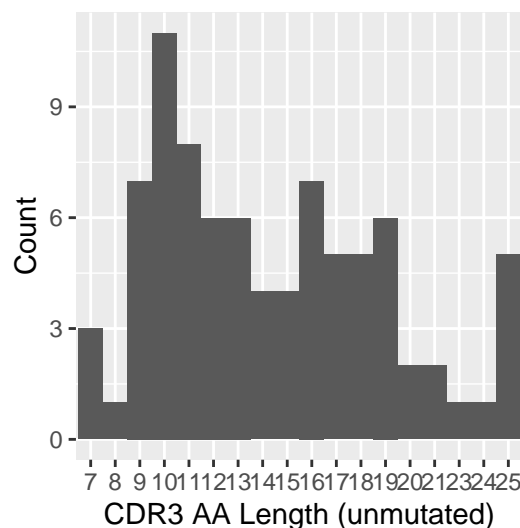
IGHV3S42\*01\_T19A\_G24A\_



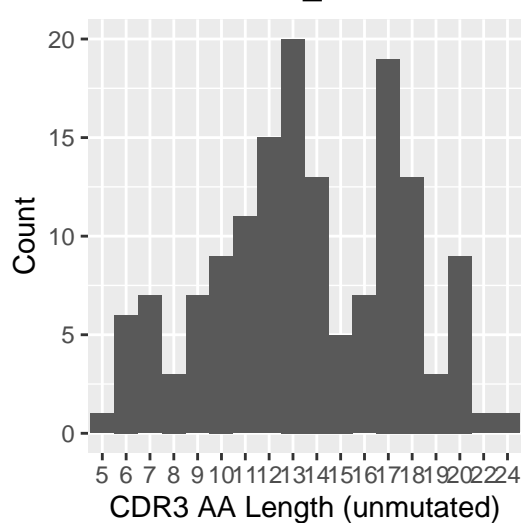
IGHV4-65\*02\_A163T\_G169\_



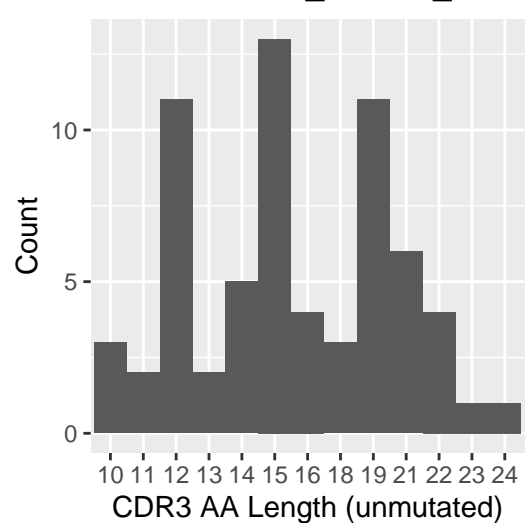
IGHV3-16\*01\_A51T\_T78C\_C



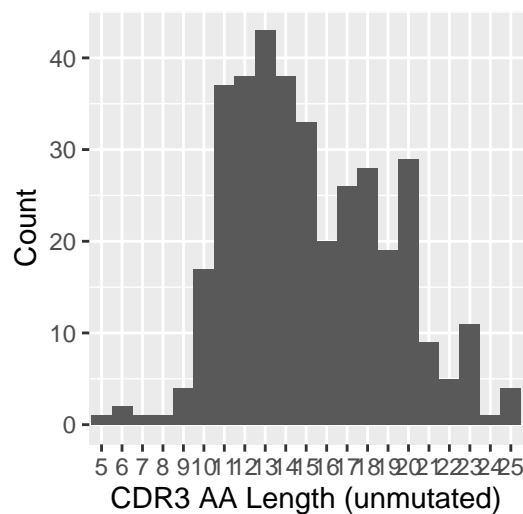
IGHV3-30\*02\_C141G



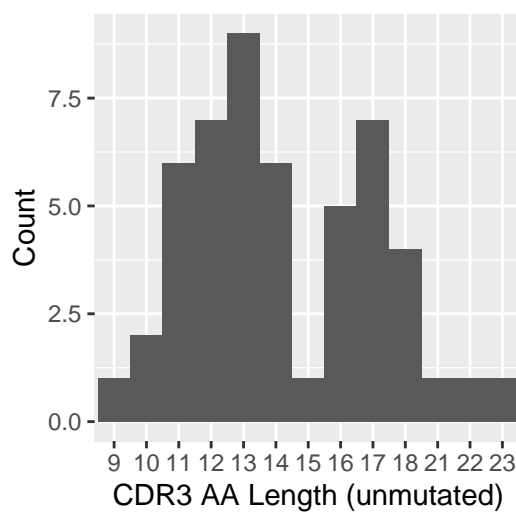
IGHV5-20\*01\_A203G\_G259



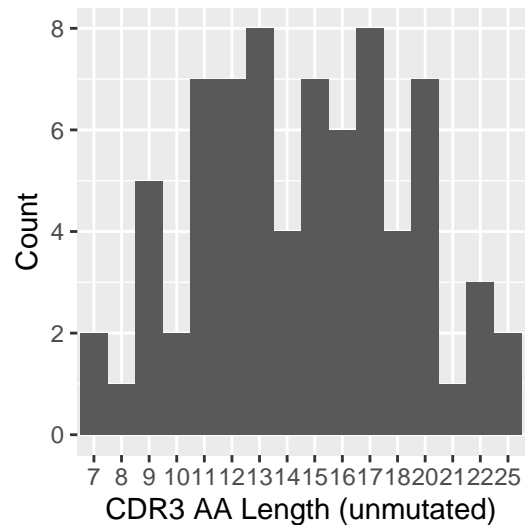
IGHV3-103\*01\_G24A\_C27A



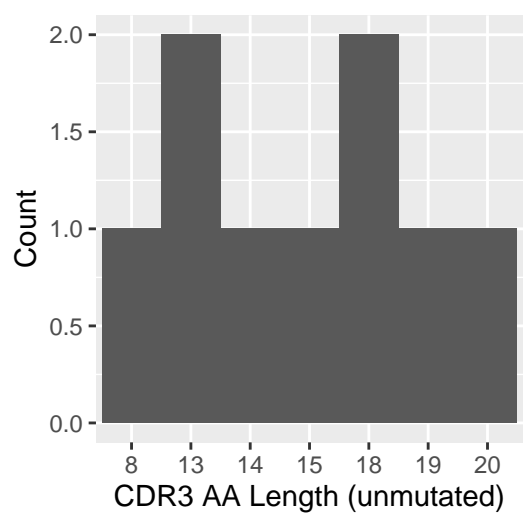
IGHV4-147\*01\_G82T\_G83A



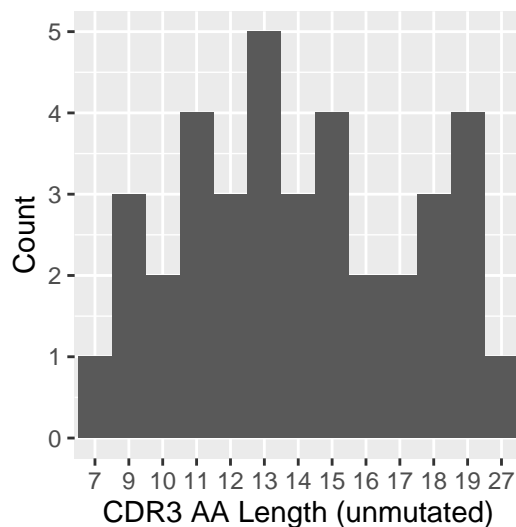
IGHV4-173\*01\_G48A\_C105T



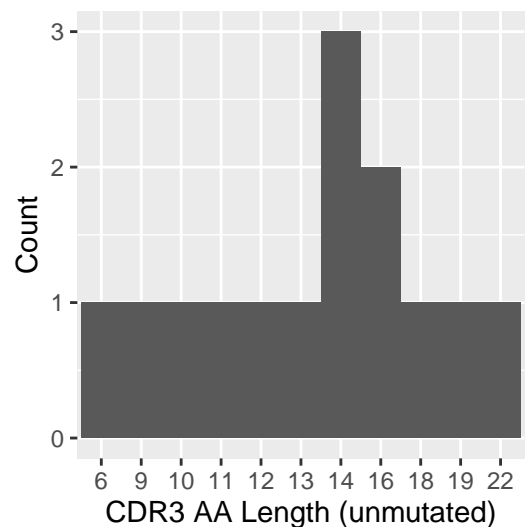
IGHV4-73\*01\_G147A\_T163



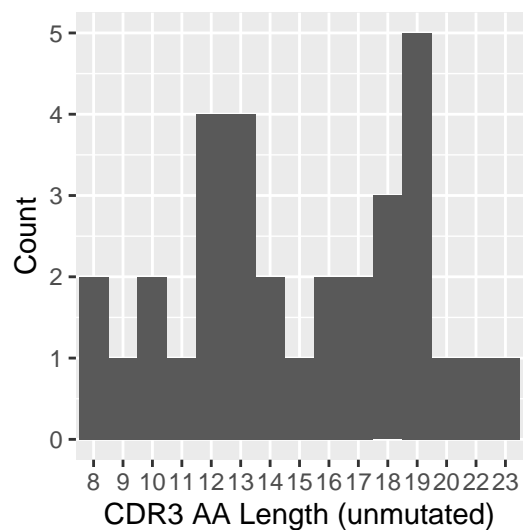
IGHV4-165\*01\_A132G\_G147



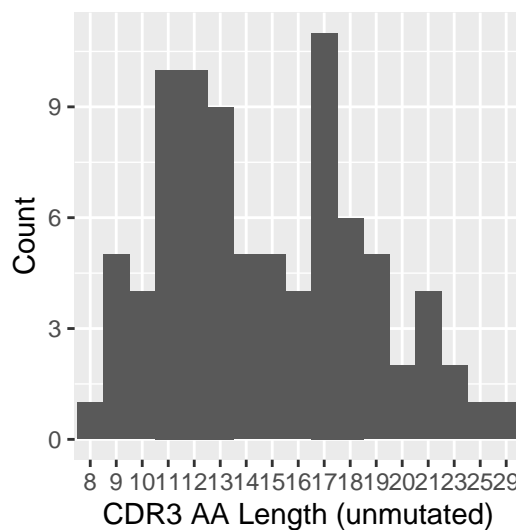
IGHV4S13\*01\_G34C\_G103A



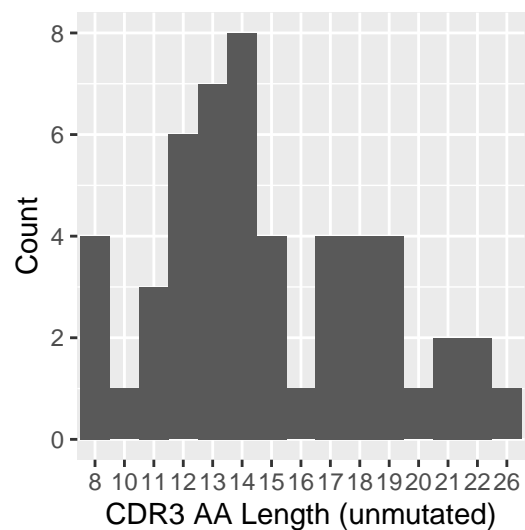
IGHV4-81\*01\_C4G\_G21A\_A:



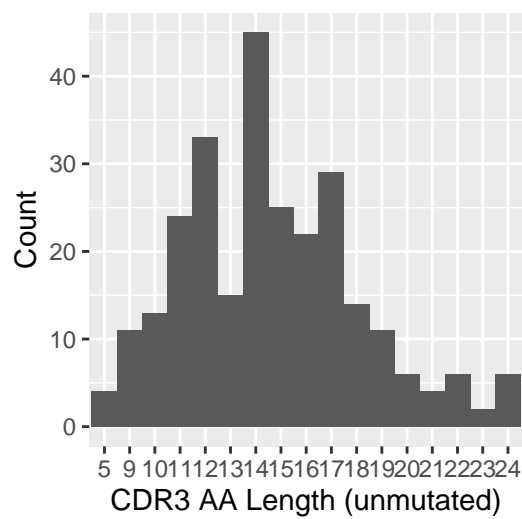
IGHV4-173\*01\_C4G



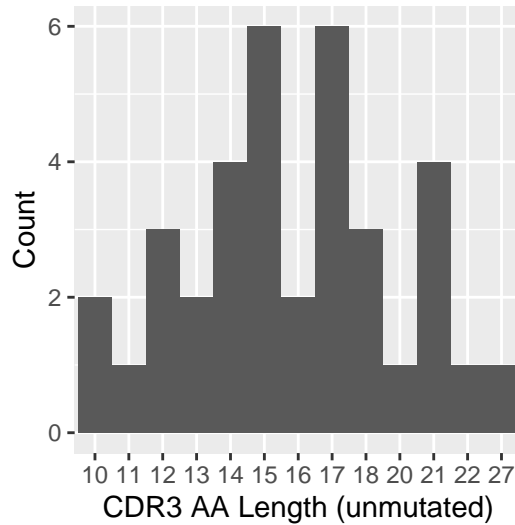
IGHV4S9\*01\_G21A\_T106A\_C



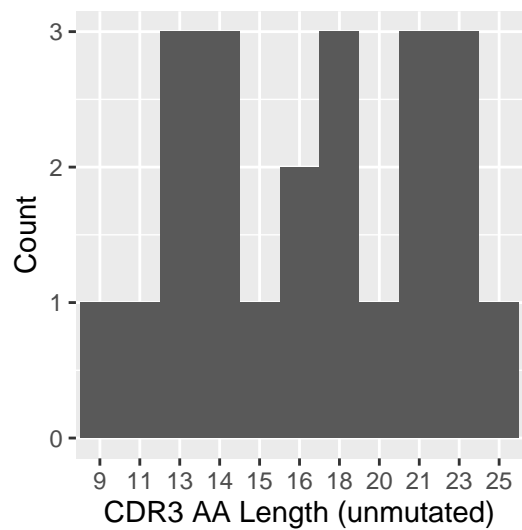
IGHV5-43\*01\_A109T\_G110/



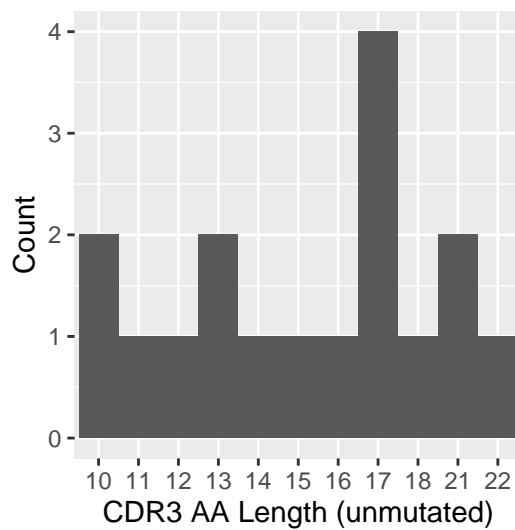
IGHV2-95\*01\_C6G\_C36G\_A103T\_



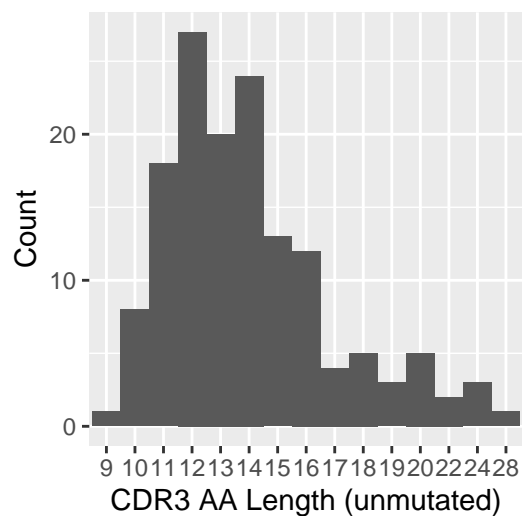
IGHV1-198\*02\_G73A\_A190C

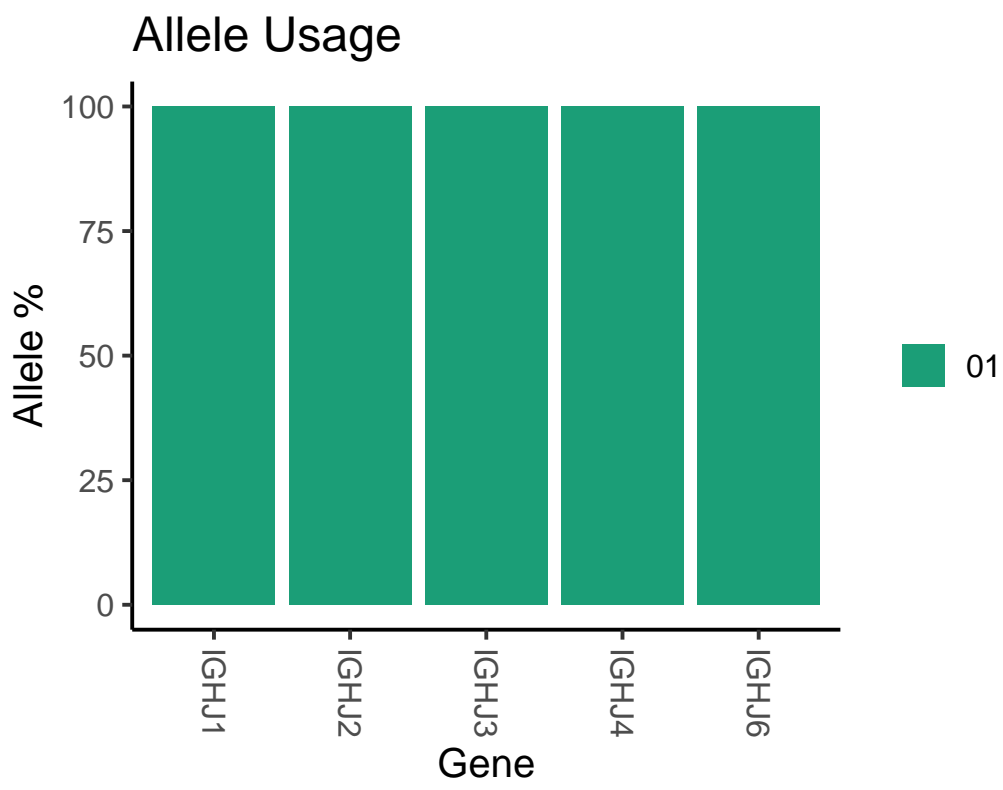


IGHV2-95\*01\_C6G\_C36G\_A103T\_G289T



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





Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.

Warning – no inferred sequences found.